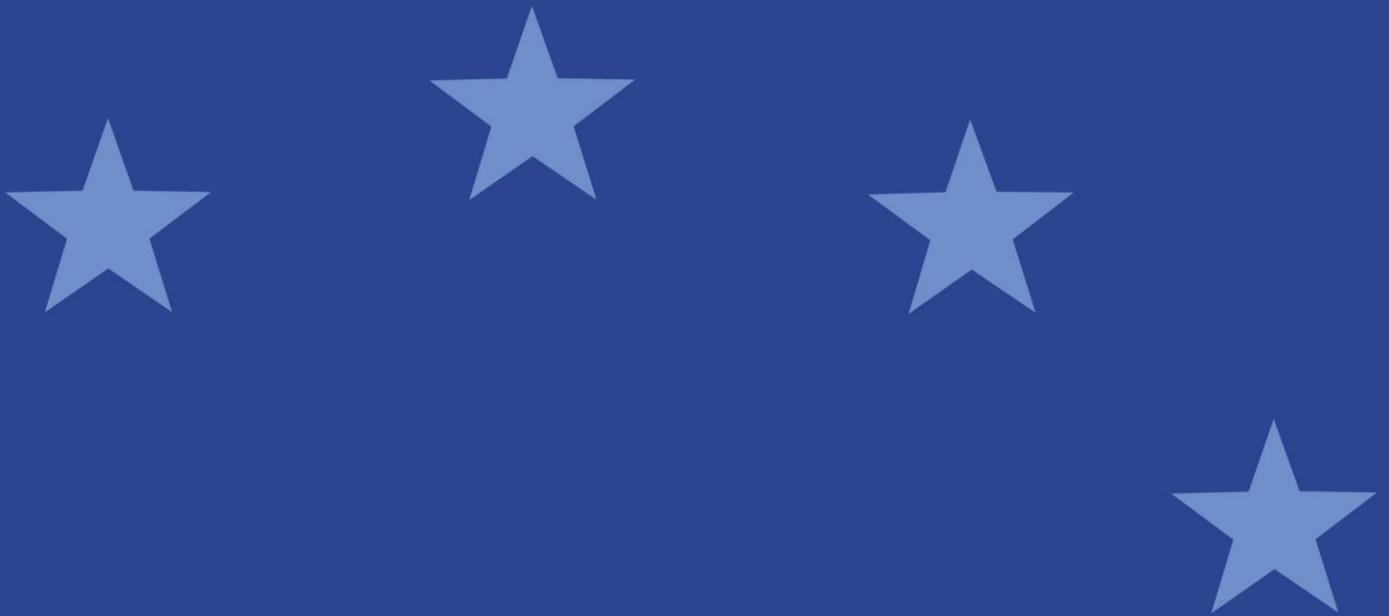




European Securities and
Markets Authority

Consultation Paper

MiFID II/MiFIR



Responding to this paper

The European Securities and Markets Authority (ESMA) invites responses to the specific questions listed in this Consultation Paper.

All contributions should be submitted online at www.esma.europa.eu under the heading 'Your input - Consultations'.

In order to respond to this paper, please follow the instructions given in the document 'Reply form for the MiFID/MIFIR Consultation Paper' also published on the ESMA website.

ESMA will consider all comments received by 2 March 2015.

Publication of responses

All contributions received will be published following the close of the consultation, unless you request otherwise. Please clearly and prominently indicate in your submission any part you do not wish to be publically disclosed. A standard confidentiality statement in an email message will not be treated as a request for non-disclosure. A confidential response may be requested from ESMA in accordance with ESMA's rules on access to documents. ESMA may consult respondents if ESMA receives such a request. Any decision we make not to disclose the response is reviewable by ESMA's Board of Appeal and the European Ombudsman.

Data protection

Information on data protection can be found at www.esma.europa.eu under the heading 'Legal Notice'.

Who should read this paper?

This document will be of interest to all stakeholders involved in the securities markets. It is primarily of interest to competent authorities and firms that are subject to MiFID II and MiFIR – in particular, investment firms and credit institutions performing investment services and activities. This paper is also important for trade associations and industry bodies, institutional and retail investors and their advisers, and consumer groups, as well as any market participant because the MiFID II and MiFIR requirements seek to implement enhanced provisions to ensure investor protection and the transparency and orderly running of financial markets with potential impacts for anyone engaged in the dealing with or processing of financial instruments.

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Acronyms and definitions used

ABCP	Asset-backed commercial paper
ABS	Asset-backed security
ADR	Alternative dispute resolution
ADT	Average daily turnover
AIFMD	Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers (AIFMs)
A-IOI	Actionable indications of interest
AMP	Accepted market practice
AOR	Automated order routing
APA	Approved publication arrangement
AVT	Average value of transactions
BIC	Business Identifier Code. An 11-character alpha-numerical code that uniquely identifies a financial or non-financial institution. It is defined by ISO code 9362
BIS	Bank for International Settlements
CBO	Collateralised bond obligation
CDO	Collateralised debt obligation
CDS	Credit default swap
CEBS	Committee of European Banking Supervisors
CEIOPS	Committee of European Insurance and Occupational Pensions Supervisors
CESR	Committee of European Securities Regulators
CCP	Central counterparty
CFD	Contract for difference
CFI	Classification of Financial Instruments

CFTC	U.S. Commodities Futures Trading Commission
Class+	Class of OTC derivatives subject to the clearing obligation
CLO	Collateralised loan obligation
CMBS	Commercial mortgage backed security
COFIA	Classes of financial instrument approach
Coreper	The Permanent Representatives Committee or Coreper (Article 240 of the Treaty on the Functioning of the European Union – TFEU)
Commission	European Commission
CP	Consultation Paper
CRD IV	Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC
CRR	Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012
CSD	Central securities depository
CSF	Cash settled forward
CT	Consolidated tape
CTP	Consolidated tape provider
DA	Delegated act to be adopted by the European Commission
DEA	Direct electronic access
DP	Discussion Paper
EBA	European Banking Authority
EC	European Commission

ECB	European Central Bank
EEA	European Economic Area
EIOPA	European Insurance and Occupational Pension Authority
EMIR	European Market Infrastructures Regulation – Regulation (EU) 648/2012 of the European Parliament and Council on OTC derivatives, central counterparties and trade repositories – also referred to as “the Regulation”
EOD	End of the day
ESMA	European Securities and Markets Authority
ESMA Regulation	Regulation (EU) No 1095/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Securities and Markets Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/77/EC
ETD	Exchange-traded derivative
ETF	Exchange-traded fund
EU	European Union
FC	Financial counterparty
FCD	Financial Collateral Directive – Directive 2002/47/EC of the European Parliament and the Council.
FESCO	Forum of European Securities Commissions
FINRA	Financial Industry Regulatory Authority
FRA	Forward rate agreement
FSB	Financial Stability Board
FX	Foreign exchange
HFT	High frequency trading
ISIN	International Securities Identification Number: a 12-character alpha-numerical code that uniquely identifies a security. It is defined by ISO code 6166

IBIA	Instrument by instrument approach
IOI	Indication of interest
IOSCO	International Organisation of Securities Commissions
IPO	Initial public offering
IRS	Interest rate swap
ISO	International Organization for Standardization
ITS	Implementing Technical Standards
KID	Key information document
KIID	Key investor information document
LEI	Legal entity identifier
LIS	Large in scale
LRIC	Long-run incremental cost
MAD	Directive 2014/57/EU of the European Parliament and of the Council of 16 April 2014 on criminal sanctions for market abuse
MAR	Regulation (EU) No 596/2014 of the European Parliament and of the Council of 16 April 2014 on market abuse (market abuse regulation).
MiFID or MiFID I	Markets in Financial Instruments Directive – Directive 2004/39/EC of the European Parliament and the Council
MiFID II	Directive 2014/65/EU of the European Parliament and of the Council on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU
MiFIR	Regulation (EU) No 600/2014 of the European Parliament and of the Council on markets in financial instruments and amending Regulation (EU) No 648/2012
MO	Market operator
MMF	Money market fund
MS	Member State

MTF	Multilateral trading facility
MTN	Medium-term note
NCA	National Competent Authority
NDF	Non deliverable forward
NTW	Negotiated trade waiver
NFC	Non-financial counterparty
OIS	Overnight index swap
OJ	The Official Journal of the European Union
OTC	Over-the-counter
OTF	Organised trading facility
PRIIPs	Packaged retail and insurance-based investment products
Q&A	Questions and Answers
RDS	Reference data system
RM	Regulated market
RMBS	Residential mortgage backed securities
RPW	Reference price waiver
RTS	Regulatory Technical Standards
RTS on OTC Derivatives	Commission Delegated Regulation (EU) No 149/2013
RTS on CCP	Commission Delegated Regulation (EU) No 153/2013
SA	Sponsored access
SFI	Structured finance instrument
SFP	Structured finance product
SI	Systematic internaliser
SME	Small and medium sized enterprise

SME-GM	Small and medium sized enterprise – growth market
SMSG	Securities and Markets Stakeholder Group
SOR	Smart order routing
SPV	Special purpose vehicle
TFEU	Treaty on the Functioning of the European Union
TR	Trade repository
UPI	Universal product identifier
TTCA	Title transfer collateral arrangement
TV	Trading venue
UCITS	Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009, on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS)
UTC	Coordinated universal time
WBS	Whole business securitisation

Executive Summary

Reasons for publication

This consultation paper (CP) seeks stakeholders' views on Regulatory Technical Standards (RTS) and Implementing Technical Standards (ITS) ESMA is required to draft under the Directive 2014/65/EU and Regulation (EU) No 600/2014 (MiFID II and MiFIR). Under Articles 10 and 15 of Regulation (EU) No 1095/2010 of the European Parliament and Council establishing ESMA (ESMA Regulation), ESMA needs to conduct a public consultation before submitting draft RTS or ITS to the Commission.

The input from stakeholders will help ESMA in finalising this draft technical standards. Respondents to this consultation are encouraged to provide the relevant data to support their arguments or proposals.

As highlighted in the ESMA discussion paper (DP) on these draft technical standards (ESMA/2014/548 of 22 May 2014)¹, another essential element in the finalisation of draft technical standards is the analysis of the costs and benefits that these legal provisions will imply. The limited information available and collected in the course of the first phase of consultation did not allow ESMA to produce for the purpose of this consultation paper a comprehensive quantitative impact study. However, ESMA is publishing in Annex A of this document a preliminary cost-benefit analysis of the incremental obligations arising from the proposed RTS based on qualitative assessment, exploratory consultations and analysis of current market practices.

Contents

This consultation paper follows the same structure as the DP published by ESMA in May which is: (1) Introduction, (2) Investor protection, (3) Transparency, (4) Micro-structural issues, (5) Data publication, (6) Requirements applying on and to trading venues, (7) Commodity derivatives, (8) Market Data Reporting and (9) Post-trading issues.

This paper also contains summaries of responses to the DP received by ESMA. The rationale of those items covered already in the DP for which no relevant changes have been introduced, is not developed again in this CP. ESMA recommends, therefore, reading this document together with the DP published on 22 May 2014 to have a complete overview of the rationale for ESMA's proposals.

¹ http://www.esma.europa.eu/system/files/2014-548_discussion_paper_mifid-mifir.pdf



Next steps

On the basis of the responses to this CP, ESMA will update the draft technical standards and the impact assessment and send the final report to the European Commission for endorsement.

1. Introduction

1. On 20 October 2011, the Commission adopted two legislative proposals, a directive and a regulation, for the review of MiFID I. The review is an important and integral part of the reforms adopted at EU level in order to establish a safer, sounder, more transparent and more responsible financial system and to strengthen integration, efficiency and competitiveness of EU financial markets.
2. On 14 January 2014, the European Parliament and the Council reached political agreement on a compromise text. The final legislative texts of MiFID II and MiFIR were approved by the European Parliament on 15 April 2014 and by the European Council on 13 May 2014. The two texts were published in the Official Journal on 12 June 2014 and entered into force on the twentieth day following this publication – i.e. 2 July 2014.
3. MiFID II and MiFIR cover a wide scope ranging from an expanded transparency regime for equity, equity-like and non-equity financial instruments, to the obligation to trade on-exchange certain derivatives, the development of a consolidated tape, opening reciprocal access between CCPs and trading venues, a regime for algorithmic or high frequency trading, the provision of net position limits and reporting of positions in commodity derivatives, and disclosure of information relating to the execution of orders. MiFID II and MiFIR delegate or confer powers to the Commission to adopt regulatory technical standards (RTS) and implementing technical standards (ITS) on a number of areas. This consultation paper (CP) covers the majority of the draft RTS and ITS which ESMA is expected to develop in this respect.
4. On 22 May 2014 ESMA released a discussion paper (DP) presenting preliminary views and possible options for the development of the draft technical standards. The consultation period closed on 1 August 2014 and ESMA received 271 responses. On the 7 and 8 July 2014, ESMA also hosted a public hearing on the DP which was well attended with around 350 physically present participants. This paper contains a summary of responses received by ESMA.
5. In the preliminary phase of development of the technical standards, and in addition to the DP and open hearing mentioned above, ESMA has requested the views of the Consultative Working Groups of the concerned standing committees and working groups (the majority of the topics falling under the Secondary Markets, Commodity Derivatives and Investor Protection and Intermediaries Standing Committees/Task Forces) and the Securities and Markets Stakeholder Group.
6. In the third section of this paper on transparency issues, ESMA is presenting a thorough analysis of non-equity instruments aiming at calibrating the new transparency rules through appropriate thresholds. This analysis does not cover foreign exchange derivatives, credit derivatives, other derivatives and contracts for difference. For those asset classes, a separate CP will be published providing a similar analysis to that

undertaken for the other asset classes. It is expected that these CP will be published in early 2015.

7. Lastly, in the context of the preparation of MiFID II and MiFIR technical standards and technical advice to the Commission, ESMA launched a public tender² in July 2013, and subsequently awarded a contract to an external contractor that is supporting ESMA in (i) preparing an in-depth impact assessment for the technical standards in order to meet the standards of the Impact Assessment Guidelines of the Commission³; and (ii) undertaking a data gathering exercise to support the technical advice to be delivered to the Commission for future legal acts.
8. ESMA, in developing the work for the MiFID II and MiFIR technical standards and technical advice, is also taking into consideration the impact assessment accompanying the Commission's proposal of MiFID II and MiFIR.⁴

² Invitation to tender n° OJ/16/07/2013 – PROC/2013/005.

³ SEC(2009) 92.

⁴ SEC(2011) 1226 final.

2. Investor protection

2.1. Procedures for granting and refusing requests for authorisation of investment firms

Regulatory technical standards under Article 7(4) of MiFID II

Background/Mandate

Article 7(4) of MiFID II

ESMA shall develop draft regulatory technical standards to specify:

- (a) the information to be provided to the competent authorities under paragraph 2 of Article 7 of MiFID II;*
- (b) the requirements applicable to the management of investment firms under Article 9(6) of MiFID II and the information for the notifications under Article 9(5) of MiFID II;*
- (c) the requirements applicable to shareholders and members with qualifying holdings, as well as obstacles which may prevent effective exercise of the supervisory functions of the competent authority, under Article 10(1) and (2) of MiFID II.*

ESMA shall submit those draft regulatory technical standards to the Commission by 3 July 2015.

Analysis following feedback from stakeholders

1. MiFID II request competent authorities, when granting an authorisation to a firm for the provision of investment services and/or the performance of investment activities, to assess that the applicant complies with all requirements under the provisions adopted pursuant to this Directive. In particular, the competent authority shall ensure that the management body, the shareholders and the members with qualifying holdings fulfil the regulatory applicable requirements. Furthermore, the competent authority shall refuse this authorisation when obstacles may prevent the competent authority to exercise its supervisory functions.
2. Comments received by respondents on the chapter of the DP on the topic of the 'authorisation of investment firms' were not very numerous, but they reflected a strong support to ESMA's suggested approach, considering that the implementing measures should be based on the existing standards. A large majority of respondents agreed that the existing standards do not need any relevant modification.

3. More specifically:
 - i. Most of the respondents approved the list of information to be provided to the competent authority of the home Member State proposed by ESMA. Nevertheless, a minority noted that this list may be too broad. Comments focus either on the financial forecasts (considered as internal information), information on the management body (information may be too personal) or the lack of proportionality in the approach.
 - ii. Very few respondents proposed to require more information in the application process. Responses mentioned in particular the explanation a firm can provide for wanting to operate from a country where the firm does conduct its main activities.
4. Taking into consideration the answers received, and the broad support to the proposed approach, ESMA has globally kept the approach suggested in the DP, while trying to include more proportionality, which was certainly the main concern expressed in the responses.

Proposal

Information to be provided to the competent authorities under Articles 7(2) and 9(5) of MiFID II

5. In order for the competent authority to fulfil its obligations and to be able to analyse the files received by persons applying to be licensed as investment firms, ESMA considers that the information to be provided by these persons to the competent authority of the home Member State should comprise the following chapters:
 - i. General information;
 - ii. Information on the capital, including, when available, evidence on the source of capital;
 - iii. Information on the shareholders, including documentation relating to their suitability;
 - iv. Information on the management body and persons directing the business, with indication of the position for which they are appointed, their detailed curricula vitae and evidence of their suitability;
 - v. Financial information
 - vi. Information on the organisation.
- Q1. Do you agree with the list of information set out in draft RTS to be provided to the competent authority of the home Member State? If not, what other information should ESMA consider?**

Requirements applicable to the management of investment firms under Article 9(6) of MiFID II

6. ESMA notes that Article 9(1), second sub-paragraph, requires ESMA and the EBA to adopt, jointly, guidelines concerning management bodies and their members, in accordance with Article 91(12) of Directive 2013/36/EU.
 7. ESMA considers that the draft regulatory technical standards should define the requirements applicable to the management of the investment firms under Article 9(6) of MiFID II only for firms that are natural persons or legal persons managed by a single natural person.
 8. ESMA, in the context of the authorisation process, considers that a firm that is a natural person or legal person managed by a single natural person, may be authorised under the following conditions:
 - i. the constitutive rules and national laws of the Member State permit it;
 - ii. the natural person appointed to manage the investment firm, or the natural person investment firm, must be easily contactable at short notice by the competent authorities and have sufficient time dedicated to this function;
 - iii. the governing bodies or bylaws of the investment firm empower a person to substitute the manager immediately and perform all his duties if the latter is unable to perform them; and
 - iv. the person empowered pursuant to the previous point shall be of sufficiently good repute and have sufficient experience to carry out the function of manager for the time of absence of the manager, or until a new manager is appointed, so as to ensure sound and prudent management of the investment firm. The person empowered for investment firms that are natural persons, shall be also available to assist insolvency practitioners and relevant authorities in the liquidation of the firm. This person shall have the necessary availability for this function.
- Q2. Do you agree with the conditions, set out in this CP, under which a firm that is a natural person or a legal person managed by a single natural person can be authorised? If no, which criteria should be added or deleted?**

Requirements applicable to shareholders and members with qualifying holdings

9. Article 13(1) of MiFID II, which applies to proposed acquisition of investment firms, requires that competent authorities shall, in order to ensure the sound and prudent management of the investment firm in which an acquisition is proposed, and having regard to the likely influence of the proposed acquirer on the investment firm, appraise the suitability of the proposed acquirer and the financial soundness of the proposed acquisition against all of the following criteria:

- i. the reputation of the proposed acquirer;
 - ii. the reputation and experience of any person who will direct the business of the investment firm as a result of the proposed acquisition;
 - iii. the financial soundness of the proposed acquirer, in particular in relation to the type of business pursued and envisaged in the investment firm in which the acquisition is proposed;
 - iv. whether the investment firm will be able to comply and continue to comply with the prudential requirements based on this Directive and, where applicable, other Directives, in particular Directives 2002/87/EC and 2013/36/EU, in particular, whether the group of which it will become a part has a structure that makes it possible to exercise effective supervision, effectively exchange information among the competent authorities and determine the allocation of responsibilities among the competent authorities;
 - v. whether there are reasonable grounds to suspect that, in connection with the proposed acquisition, money laundering or terrorist financing within the meaning of Article 1 of Directive 2005/60/EC is being or has been committed or attempted, or that the proposed acquisition could increase the risk thereof.
10. ESMA considers that the requirements applicable to shareholders and members with qualifying holdings, to be assessed by competent authorities when authorising an investment firm, should be as consistent as possible to the criteria set out in Article 13 of MiFID II.

Q3. Do you agree with the criteria proposed by ESMA on the topic of the requirements applicable to shareholders and members with qualifying holdings? If no, which criteria should be added or deleted?

Obstacles which may prevent effective exercise of the supervisory functions of the competent authority

11. ESMA believes that any information or situation that may prevent the competent authority to effectively appraise the suitability of the shareholder or member with qualifying holding or the influence of close links with the applicant firm should be considered to be an obstacle to the exercise of the supervisory function of the competent authority.

Q4. Do you agree with the approach proposed by ESMA on the topic of obstacles which may prevent effective exercise of the supervisory functions of the competent authority?

Implementing technical standards under Article 7(5) of MiFID II

Background/Mandate

Article 7(5) of MiFID II

ESMA shall develop draft implementing technical standards to determine standard forms, templates and procedures for the notification or provision of information provided for in paragraph 2 of this Article and in Article 9(5).

ESMA shall submit those draft implementing technical standards to the Commission by 3 January 2016.

Analysis

12. ESMA believes that it is appropriate to set out common standard forms, templates and procedures to ensure the common understanding and enforcement among Member States' competent authorities of the authorisation process regarding the provision of investment services or activities and, when relevant, of ancillary services.

Proposal

13. ESMA considers that, in order to comply with Article 7(2) of MiFID II, the application form should be sent to the competent authority in a standardised format, in paper or by electronic means. The list of all members of its management body should also be provided. Any future change to its membership will have to be notified in accordance with Article 9(5) of MiFID II.

Q5. Do you consider that the format set out in the ITS allow for a correct transmission of the information requested from the applicant to the competent authority? If no, what modification do you propose?

14. ESMA considers that an acknowledgement of receipt should be sent to the applicant, including the contact details of the department or section or person within the competent authority.

Q6. Do you agree consider that the sending of an acknowledgement of receipt is useful, and do you agree with the proposed content of this document? If no, what changes do you proposed to this process?

Q7. Do you have any comment on the authorisation procedure proposed in the ITS included in Annex B?

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 1: Draft regulatory technical standards under Article 7(4) of MiFID II

Draft ITS 2: Draft implementing technical standards under Article 7(5) of Directive 2014/65/EC

2.2. Freedom to provide investment services and activities / Establishment of a branch

Regulatory technical standards under Article 34(8) and 35(11) of MiFID II

Background/Mandate

Article 34(8) of MiFID II

ESMA shall develop draft regulatory technical standards to specify the information to be notified in accordance with paragraphs 2, 4, 5 and 7.

ESMA shall submit those draft regulatory technical standards to the Commission by 3 July 2015.

Article 35(11) of MiFID II

ESMA shall develop draft regulatory technical standards to specify the information to be notified in accordance with paragraphs 2, 4, 7 and 10.

ESMA shall submit those draft regulatory technical standards to the Commission by 3 July 2015.

Analysis following feedback from stakeholders

1. ESMA published a Discussion Paper in May 2014 to gather input from stakeholders on the proposed RTS and ITS. The responses received on this topic were not very numerous, however, the vast majority of the respondents supported ESMA's view that the development of technical standards required under Articles 34 and 35 of MiFID II should be based on the existing standards and forms contained in the CESR Protocol on MiFID Notifications.
2. Some of the respondents argued that the current technical standards should be adjusted to include provisions related to the information required by Member States when a third country firm wishes to establish a branch within EEA. The scope of Articles 34 and 35 of MiFID II does not capture third country firms, thus information regarding the establishment of a third country firm's branch cannot be subject matter in these technical standards.

Proposal

Information required under the exercise of the right of freedom to provide investment services and activities

3. The proposed provisions require information on the contact details of the investment firm, the particular investment services, activities, ancillary services and financial instruments which will be provided in the host Member State by the investment firm.
4. Article 34(2) of MiFID II requires an investment firm to communicate the identity of the tied agents it intends to use on a cross border basis, in order to provide investment services into the territory of another Member State. ESMA considers that the information communicated to the competent authority should also include the name, address and contact details of each tied agent.
5. The same information shall be notified in accordance with Article 34(5) of MiFID II when a credit institution wishes to use a tied agent in order to provide investment services and activities in another Member State on a cross border basis.

Q8. Do you agree with the information required when an investment firm intends to provide investment services or activities within the territory of another Member State under the right of freedom to provide investment services or activities? Do you consider that additional information is required?

Q9. Do you agree with the content of information to be notified when an investment firm or credit institution intends to provide investment services or activities through the use of a tied agent located in the home Member State?

Information required on the notification for the provision of arrangements to facilitate access to an MTF or OTF

6. Article 34(7) provides that an investment firm or market operator operating an MTF or an OTF shall notify, to the competent authority of its home Member State, the Member States where it intends to provide arrangements as to facilitate access to and trading on the markets that it operates by remote users, members or participants established in their territory.
 7. ESMA considers it useful to prescribe additional information to be notified that include a short description of the appropriate arrangements that the MTF or OTF will have in place in order to facilitate the access (e.g. data centre, HUB, connectivity cables), a short description of the business model of the MTF or OTF, including details on the type of traded financial instruments and type of participants, and the marketing approach of the MTF or OTF to potential members or participants.
- Q10. Do you consider useful to request additional information when an investment firm or market operator operating an MTF or an OTF intends to provide arrangements to another Member State as to facilitate access to and trading on the markets that it operates by remote users, members or participants established in their territory? If not which type of information do you consider useful to be notified?**

Information to be notified in a branch passport notification

8. Detailed information concerning the planned programme of operations and the structural organisation of the branch is required. The information to be notified includes, among other, a high level description of the business plan of the investment firm in relation to the operations of the branch, a description of the type of clients the branch will be dealing with, and summary details of the systems and controls that will be put in place.
 9. Article 35(4) of MiFID II requires that details of the accredited compensation scheme of which the investment firm is a member should also be included in the information to be notified in a branch passport notification.
 10. When a branch intends to use a tied agent in the territory of the host Member State where the branch is to be established, then information on the identity of this tied agent shall also be submitted. If more than one tied agent is to be used, the investment firm shall submit in respect of each tied agent, the branch intends to use, a separate passport notification.
- Q11. Do you agree with the content of information to be provided on a branch passport notification?**
- Q12. Do you find it useful that a separate passport notification to be submitted for each tied agent the branch intends to use?**

Information to be notified for tied agents under the right of establishment

11. Article 35(2) of MiFID II requires an investment firm, wishing to use a tied agent established in another Member State in which it has not established a branch, to provide to the competent authority of the home Member State information that entails a description of the intended use of the tied agent, along with an organisational structure. According to the last subparagraph of the same article, a tied agent established in a Member State where a branch is established shall be assimilated to a branch and same rules as those applied to a branch will apply.
12. For ensuring effective supervision, ESMA considers that an investment firm shall communicate the same information for any tied agent established in another Member State, regardless of the establishment or not of a branch in this Member State. The information provided for a tied agent established in another Member State shall be similar to the one that an investment firm communicates if a branch is to be established.
13. Article 35(7) of MiFID II requires that a credit institution, wishing to provide investment services or activities in another Member State, through the use of a tied agent established in this Member State, shall communicate to the competent authority of the home Member State the information provided for a branch.

Q13. Do you agree with the proposal to have same provisions on the information required for tied agents established in another Member State irrespective of the establishment or not of a branch?

Changes in the particulars of passport notifications

14. Any changes in the particulars of a passport notification shall include the applicable details of any new information that amends the information already provided with any type of passport notification.
 15. The withdrawal or cancellation of the authorisation of an investment firm, that provides investment services or activities, on a cross border basis, to another Member State, shall considered to be a change in the particulars of the passport notification that the competent authority of the home Member State has to notify to the competent authority of the host Member State.
 16. ESMA considers that any changes to the contact details of the investment firm that provides investment services activities under the right of establishment shall be considered to be a change in the particulars of the branch passport notification or, where applicable, of the tied agent passport notification under the right of establishment and be notified.
 17. ESMA considers it useful that specific information should be included at the event of a planned termination of the operation of a branch or the cessation of the use of a tied agent. This information is considered to fall under the information required for any changes in the particulars of a passport notification and mainly focus on the impact of the winding down of the business operations in relation to its existing clients.
 18. Articles 34 and 35 of MiFID II do not require credit institutions to notify changes in the particulars of passport notifications, when using tied agents either on a cross border basis or under the right of establishment. ESMA considers that same requirements, as the requirements applicable to the investment firms, should also apply to credit institutions when changes in the particulars of the passport notifications, already communicated, occur.
- Q14. Do you agree that any changes in the contact details of the investment firm that provides investment services under the right of establishment shall be notified as a change in the particulars of the branch passport notification or as a change of the tied agent passport notification under the right of establishment?**
- Q15. Do you agree that credit institutions needs to notify any changes in the particulars of the passport notifications already communicated?**
- Q16. Is there any other information which should be requested as part of the notification process either under the freedom to provide investment services or**

activities or the right of establishment, or any information that is unnecessary, overly burdensome or duplicative?

Implementing technical standards under Article 34(9) and 35(12) of MiFID II

Background/Mandate

Article 34(9) of MiFID II

ESMA shall develop draft implementing technical standards to establish standard forms, templates and procedures for the transmission of information in accordance with paragraphs 3, 4, 5 and 7.

ESMA shall submit those draft implementing technical standards to the Commission by 31 December 2016.

Article 35(12) of MiFID II

ESMA shall develop draft implementing technical standards to establish standard forms, templates and procedures for the transmission of information in accordance with paragraphs 3, 4, 7 and 10.

ESMA shall submit those draft regulatory technical standards to the Commission by 31 December 2016.

Analysis following feedback from stakeholders

19. ESMA published a Discussion Paper in May 2014 to gather input from stakeholders on the proposed Regulatory Technical Standards (RTS) and Implementing Technical Standards (ITS). The responses received on this topic were not very numerous, however, the vast majority of the respondents supported ESMA's view that the development of technical standards required under Articles 34 and 35 of MiFID II should be based on the existing standards and forms contained in the CESR Protocol on MiFID Notifications.

Proposal

Passport notification process

20. Standardised procedures need to be followed by investment firms, where applicable by credit institutions, and competent authorities and common templates need to be used for the purposes of passport notifications communicated for the first time.

21. With a view to achieving a level playing field, common procedures and templates shall be followed by investment firms, credit institutions and competent authorities also when changes in the particulars of passport notifications occur.
22. In order to enhance supervisory convergence and provide legal clarity, the communication of passport notifications between competent authorities shall be conducted through the use of specific templates submitting also a copy of the passport notification received from the investment firm or credit institution.
23. The one and three month deadline, within which the competent authority of the home Member State has to forward to the competent authority of the host Member State the passport notifications under the right of freedom to provide investment services or activities or under the right of establishment respectively, shall commence only when the competent authority of the home Member State receives all the information necessary, in order to assess the completeness and accuracy of the relevant passport notification.
24. It is considered appropriate that a separate passport notification shall be submitted by the investment firm to the competent authority of the home Member State for each Member State into which the investment firm intends to passport.

Q17. Do you agree that common templates should be used in the passport notifications?

Q18. Do you agree that common procedures and templates to be followed by both investment firms and credit institutions when changes in the particulars of passport notifications occur?

Q19. Do you agree that the deadline to forward to the competent authority of the host Member State the passport notification can commence only when the competent authority of the home Member States receives all the necessary information?

Communication between competent authorities

25. Passport notifications shall be provided in written form in any European language commonly accepted by competent authorities. The passport notifications shall be transmitted in paper form or by electronic means if the latter is accepted by the relevant competent authority.
26. For clarity reasons, each competent authority shall publish available information on the accepted language(s) and means of transmission.
27. A designated contact point responsible for passport notifications shall be appointed by each competent authority.

28. For the avoidance of inconsistencies, the competent authority of the host Member State shall acknowledge receipt of the branch passport notification both to the competent authority of the home Member State and the investment firm.
29. The host Member State shall also acknowledge receipt of a tied agent passport notification under the right of establishment both to the competent authority of the home Member State and the investment firm or credit institution.

Q20. Do you agree with proposed means of transmission?

Q21. Do you find it useful that the competent authority of the host Member State acknowledge receipt of the branch passport notification and the tied agent passport notification under the right of establishment both to the competent authority and the investment firm?

Tied agent passport notification

30. A tied agent can only commence its proposed investment services once it has been registered on the public register of the host Member State.
31. For clarity reasons, it is considered appropriate that the investment firm or credit institution shall notify a separate passport notification in respect of each tied agent, established in another Member State that the investment firm or credit institution intends to use in this Member State.
32. The information, provided with the branch passport notification, on the identity of tied agents to be used by a branch in accordance with Article 35(2) (c) of MiFID II, cannot reverse the obligation of the investment firm to submit a separate passport notification in respect of each tied agent.

Q22. Do you agree with the proposal that a separate passport notification shall be submitted for each tied agent established in another Member State?

Q23. Do you find it useful the investment firm to provide a separate passport notification for each tied agent its branch intends to use in accordance with Article 35(2)(c) of MiFID II? Changes in the particulars of passport notification

Changes in the particulars of passport notification

33. An investment firm or credit institution that notifies any changes in the particulars of its passport notification shall submit the same form, as the one used for the initial notification, completing only those parts relevant to the changes in the particulars of the passport notification.
34. The competent authority of the home Member State shall notify to the competent authority of the host Member State the withdrawal or cancellation of the authorisation of

the investment firm that provides, on a cross border basis, investment services or activities in the host Member State. This notification shall be considered as change in the particulars of the investment firm's passport notification.

35. For clarity reasons, it is considered appropriate that an investment firm or credit institution that wishes to notify changes related to the investment services, activities, ancillary services or financial instruments to be provided on a cross border basis, or under the right of establishment, to list all the investment services, activities, ancillary services or financial instruments that currently provides and intends to provide in the future.
 36. For consistency reasons, any changes in the particulars of the notification for the provision of arrangements to facilitate access to an MTF or OTF shall be notified by the investment firm or market operator to the competent authority of the home Member State.
 37. Information on the planned termination of the operation of a branch or the cessation of the use of a tied agent is considered to fall under the information required for any changes in the particulars of passport notification. Investment firms or credit institutions shall make use of a separate template to notify the relevant information, which mainly focuses on the impact of the winding down of the business operations in relation to its existing clients.
- Q24. Do you agree to notify changes in the particulars of the initial passport notification using the same form, as the one of the initial notification, completing the new information only in the relevant fields to be amended?**
- Q25. Do you agree that all activities and financial instruments (current and intended) should be completed in the form, when changes in the investment services, activities, ancillary services or financial instruments are to be notified?**
- Q26. Do you agree to notify changes in the particulars of the initial notification for the provision of arrangements to facilitate access to an MTF or OTF?**
- Q27. Do you agree with the use of a separate form for the communication of the information on the termination of the operations of a branch or the cessation of the use of a tied agent established in another Member State?**

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 3: Draft regulatory technical standards under Articles 34(8) and 35(11) of

MiFID II

Draft ITS 4: Draft implementing technical standards under Article 34(9) and 35(12) of MiFID II

2.3. Provision of services and performance of activities by third-country firms following an equivalence decision (general provisions)

Background/Mandate

Article 46(7) of MiFIR

ESMA shall develop draft regulatory technical standards to specify the information that the applicant third-country firm shall provide to ESMA in its application for registration in accordance with paragraph 4 and the format of information to be provided in accordance with paragraph 5.

ESMA shall submit those draft regulatory technical standards to the Commission by 3 July 2015.

Analysis

1. The 'Markets in Financial Instruments Regulation' (Regulation (EU) 600/2014) offers the possibility for third-country firms to provide investment services or perform investment activities throughout the Union after registration with ESMA.
2. According to Article 46(4) of MiFIR, the third-country firm shall submit its application to ESMA after the adoption by the Commission of the decision referred to in Article 47 determining that the legal and supervisory framework of the third country in which the third-country firm is authorised is equivalent to the requirements described in Article 47(1). The applicant third-country firm shall provide ESMA with all information necessary for its registration. Within 30 working days of receipt of the application, ESMA shall assess whether the application is complete. If the application is not complete, ESMA shall set a deadline by which the applicant third-country firm is to provide additional information.
3. The third-country firm will also have to inform clients that they are not regulated in the Union. In particular, Article 46(5) of MiFIR states that they are not allowed to provide services to clients other than eligible counterparties and professional clients within the meaning of Section 1 of Annex II to Directive 2014/65/EU and that they are not subject to supervision in the Union. They shall indicate the name and the address of the competent authority responsible for supervision in the third country. The information in the first subparagraph shall be provided in writing and in a prominent way.

Proposal

4. Article 46(2) of MiFIR requires ESMA to register a third-country firm that has applied for the provision of investment services or performance of activities throughout the Union only where the following conditions are met:
 - i. the Commission has adopted a decision in accordance with Article 47(1) of MiFIR;
 - ii. the firm is authorised in the jurisdiction where its head office is established to provide the investment services or activities to be provided in the Union and it is subject to effective supervision and enforcement, ensuring a full compliance with the requirements applicable in that third country;
 - iii. cooperation arrangements have been established pursuant to Article 47(2) of MiFIR.
5. ESMA considers that that the following information should be required by third-country firms applying for registration:
 - i. full name of the firm, including its legal name and any other trading name to be used by the firm;
 - ii. head office address, including building information, street, name and number;
 - iii. contact details of the firm, including address, telephone number and email address;
 - iv. contact details of the person in charge of the application, including telephone number and email address;
 - v. website, where available;
 - vi. national identification number of the firm, where available (i.e. the identifier used to uniquely identify an entity in the national register of the firm's third country competent authority);
 - vii. legal entity identifier of the firm, where available (20-digit, alpha-numeric code that connects to key reference information that enables clear and unique identification of companies participating in global financial markets);
 - viii. BIC code of the firm, where available (i.e. the SWIFT BIC Code used to uniquely identify an entity in the SWIFT BIC Directory);
 - ix. name and address of the competent authority of the third country. Where more than one authority is responsible for supervision, the details of the respective areas of competence shall be provided;
 - x. the link to the register of each competent authority of the third country, where available;

- xii. the types of investment services to be provided and activities to be performed in the European Union, together with any ancillary services as defined in Article 4(1) paragraphs 2 and 3 of MiFID II.
6. ESMA believes that precise information on the identity of the third-country firm is essential for the correct registration of the firm within ESMA's register and to facilitate the subsequent exchange of information with the relevant competent authorities of third countries.⁵
 7. ESMA also believes that a written declaration issued by the competent authority of the third country stating that the firm is subject to its effective supervision and enforcement, specifying which investment services, activities, and ancillary services it is authorised to provide in its home jurisdiction will facilitate the registration process by ESMA allowing the process to be completed in a timely way.

Q28. Do you agree with the list of information to be requested by ESMA to apply to third country firms? If no, which items should be added or deleted. Please provide details on your answer.

8. Article 46(5) of MiFIR requires third-country firms providing services in accordance with that Article and before the provision of any investment services, to inform clients established in the Union, that they are not allowed to provide services to clients other than eligible counterparties and professional clients within the meaning of Section 1 of Annex II to Directive 2014/65/EU and that they are not subject to supervision in the Union. They shall indicate the name and the address of the competent authority responsible for supervision in the third country.
9. ESMA believes that this information should be provided:
 - i. in English or in the official language, or one of the official languages of the Member State where the services will be provided;
 - ii. laid out in a way that is easy to read, using characters of readable size;

⁵ Under Article 47 of MiFIR, ESMA will need to establish cooperation arrangements whose legal and supervisory frameworks have been recognised as effectively equivalent. Such arrangements will specify, amongst other things:

- 1 the mechanism for the exchange of information between ESMA and the competent authorities of third countries concerned, including access to all information regarding the non-Union firms authorised in third countries that is requested by ESMA;
- 2 the mechanism for prompt notification to ESMA where a third-country competent authority deems that a third-country firm that it is supervising and ESMA has registered in the register provided for in Article 48 infringes the conditions of its authorisation or other law to which it is obliged to adhere.

iii. without using colours that may diminish the comprehensibility of the information.

Q29. Do you agree with ESMA's proposal on the form of the information to provide to clients? Please provide details on your answer.

Relevant annexes:

Annex B: Draft RTS 5: Draft regulatory technical standards under Article 46(7) of MiFIR

2.4. Information relating to execution of orders

Background/Mandate

Article 27(10) of MiFID II

ESMA shall develop draft regulatory technical standards to determine:

- (a) the specific content, the format and the periodicity of data relating to the quality of execution to be published in accordance with paragraph 3, taking into account the type of execution venue and the type of financial instrument concerned;*
- (b) the content and the format of information to be published by investment firms in accordance with paragraph 6.*

ESMA shall submit those draft regulatory technical standards to the Commission by 3 July 2015.

Analysis following feedback from stakeholders

Regulatory technical standards under Article 27(10)(a)

1. MiFID II requires ESMA to develop draft regulatory technical standards to determine the content, format and periodicity of data relating to the quality of execution taking into account execution venue and the type of financial instrument. Comments received from respondents on the chapter of the DP were numerous, and while many respondents were supportive of the proposals in the DP, a large number of respondents raised concerns. The main concerns raised are set out below.
2. A large majority of respondents raised concerns about the inclusion of systematic internalisers, market makers and other liquidity providers within the definition of execution venues. Many proposed an exemption for market makers from such reporting. Many other respondents requested that ESMA confirm that inclusion of systematic internalisers and market markets should only apply where orders are executed on a truly OTC basis (and not on a trading venue). A large number of respondents suggested that a minimum threshold of trading volume should determine whether reporting is required, and that different data metrics should be required for different execution venues.
3. A large number of respondents agreed that the reporting requirements should apply to for all types of financial instrument. Although, they suggested that different reporting obligations should apply for different financial instruments, e.g. it was noted that the reporting for equities should not be the same as those for fixed interest instruments. It was also noted that the reporting data should be calibrated to take account of different markets (specifically the difference between order book trading and the price (quote)

driven market. A number of respondents agreed that standardised data should be reported.

4. A large number of respondents stated that their preference was that information should only be published on an annual basis – though some of these respondents stated that quarterly reporting would be acceptable. Some respondents were in favour of monthly reporting.
5. The majority of respondents stated that while the reporting requirements should apply to all financial instruments, there should be different approaches for different financial instrument types. These respondents stated that there should be different treatment for liquid and non-liquid financial instruments. Other respondents (separately) requested different treatment for fixed income, ETFs and commodities.
6. The majority of respondents seemed to support splitting trades into ranges. However there was no clear consensus on whether they should be based on the average trading size of the financial instrument, on the execution venue, or on fixed ranges by volume or value. A number of respondents noted that splitting trades into ranges may result in overly granular information.
7. On the issue of reporting costs, the majority of respondents stated that the execution venue should only be responsible for reporting the costs that it applied. They added that other fees were due to tax and clearing arrangements and were outside the execution venue's control. It was noted that where costs were reported they should explicitly set out to what factors they relate.
8. On the most appropriate way to measure likelihood of execution, the majority of respondents did not agree that the percentage of orders not executed each day was a good indicator of this factor. They argued that there were many other factors that could determine the reasons for execution (e.g. strategic use of stop and limit orders). A number of respondents also stated that this measurement was only suitable for execution venues operating a central limit order book. Some respondents proposed market share and order type as a better measurement of likelihood of execution.
9. The DP also asked whether there were other qualitative or quantitative criteria that are relevant to determine execution quality. The majority of responses focused on exemptions that should apply, for example they stated: that off-order negotiated deals should not be measured for speed, executions on an execution venue should not be compared with OTC executions, that fixed income should be assessed on different factors. Respondents also suggested the following criteria: access to clearing and settlement venues, operation of circuit breakers, whether rebates are paid to brokers, outage of platforms and cleared versus OTC trades.

Proposal

Regulatory technical standards under Article 27(10)(a)

10. Having considered the views raised by respondents to the DP, ESMA has refined its proposals in respect of its obligation to produce RTS under 27(10)(a) of MiFID II. ESMA sets out below its rationale for these proposals having considered their potential impact and the previous views of DP respondents.
11. ESMA considers that differences in the type of execution venue and the financial instrument concerned, require that the content of periodic reporting shall vary depending on several factors such as market mechanism, trading platforms, financial instrument trading obligation, and pre- and post-trade transparency requirements. ESMA, therefore believes that it would be appropriate to segregate the execution venue reporting requirements along the market mechanism (e.g. quote driven and order driven markets) they operate, to incorporate the differences between them.
12. ESMA considers that in order to be useful to market participants, the data to be provided by execution venues should be (i) precisely defined, (ii) published in standardised format and be comparable and (iii) appropriate for investment firms and other market participants already using them or those considering doing so. ESMA therefore proposes that all execution venues should use standardised reporting conventions wherever possible to identify themselves, the financial instruments in which they transact, and any other essential characteristics of those financial instruments. ESMA believes that it would be appropriate to use the standard taxonomy as defined for the purpose of pre- and post-trade transparency and transaction reporting requirements under MiFIR.
13. In determining appropriate information for measuring execution quality across execution venues, ESMA considers that there will be value in assessing both average levels throughout a period as well as point-in-time levels. While there is value in computing averages, they do not on their own speak to the intra-period variability behind them. As such, average price and spread data will not give a complete picture of how execution venues might compare with one another at particular moments through the trading day. For this granularity, ESMA considers that it would be useful to additionally request specific snapshots across consistent times, for transactions and where possible for quotes. In order to compare prices, across different execution venues, the best bid and offers of each, it is necessary to look at these on a live basis at specific points in time. By the same reasoning, point-in-time estimates will not on their own provide a complete picture, as they may not be representative of extreme, or even typical, levels throughout the period.
14. The metrics proposed to capture average data can be calculated on very different periods (e.g. daily, monthly, quarterly). While the usual reference would be daily, it may be more relevant for some instruments or execution venue types to consider a different reporting base. However, making distinctions by type of financial instruments or execution venues may unnecessarily increase the complexity of this report. ESMA therefore considers that a daily basis could be the most appropriate and least burdensome for most of the financial instruments and execution venues.

Q30. Do you agree with the approach taken by ESMA? Would a different period of measurement be more useful for the published reports?

15. ESMA notes in respect of allowing participants to interrogate reported data and make meaningful comparisons, that additional reporting fragmentation would be directly relevant to several dimensions of execution quality. ESMA therefore proposes to split trades into several ranges. The thresholds for these ranges will be determined for each class of financial instrument. This will ensure that the reports are representative in that class of financial instrument in order to offer sufficient granularity to capture liquid and less liquid instruments, as well as differentiate between different types of securities within a given class of financial instruments.

Q31. Do you agree that it is reasonable to split trades into ranges according to the nature of different classes of financial instruments? If not, why?

16. MIFID specifies at least four dimensions of execution quality (price, costs, speed and likelihood of execution) that should be included in the execution venues' reporting. The cost factor is intended to capture the total trading costs faced by the client and is particularly important for retail clients for whom investment firms are required to assess execution quality in terms of total consideration. ESMA notes that some costs such as clearing or settlement services may be more difficult to report for non-vertically integrated venues. ESMA proposes to restrict the execution venue publication to costs which are incurred by the execution venues on behalf of the client. Execution venues shall publish a description of each component of the costs imposed, the value of any rebates, discounts or other payments and the existence of any non-monetary benefit received in connection with each order.
17. ESMA believes that data on transaction volumes and values for received orders, executed orders, modified and cancelled orders will allow for calculation of metrics such as the market share held by any one execution venue in a particular financial instrument and or class of financial instruments, cancellation and fill ratios across execution venues, and that these metrics will be useful in measuring likelihood of execution.

Q32. Are there other metrics that would be useful for measuring likelihood of execution?

18. In the DP, ESMA noted that speed relates to the time interval between an order being received by an execution venue and its execution, since only the execution venue performance is being measured and not the performance of others in the execution chain. It excludes the latency of any connection from the firm responsible for executing the order to that execution venue. ESMA proposes that for quote driven markets additional data shall be published to support the creation of other quality metrics such as the mean and median time elapsed between the request for a quote and the provision of that quote, and between the client's acceptance of a quote and its execution.

19. The DP also asked whether there were other quantitative criteria that are relevant in determining the execution quality. ESMA is mindful of the potential volume of data to be disclosed by execution venues, but believes that order driven markets should report additional elements on execution quality that rely on full pre- and post-trade transparency data. For instance, benchmark prices such as average and realised spreads, best bid and offer, depth weighted spreads as well as more simple metrics like open and close prices and measures such as the high and the low price of the day could be utilised.

Q33. Are those metrics meaningful or are there any additional data or metrics that ESMA should consider?

20. In order for investment firms to compare the market data of different execution venues when establishing their execution policy, it is important that uniform data is collected during the normal operating hours of the execution venues. ESMA proposes that execution venues publish on their internet site, within one month of the end of each quarter, information gathered for each day they opened during that quarter. To make the reporting more readable and to provide investment firms with enough statistical points to conduct meaningful analysis, ESMA considers that when execution venues publish this information each quarter it should be provided in three monthly sub-reports.

Q34. Do you agree with the proposed approach? If not, what other information should ESMA consider?

Analysis following feedback from stakeholders

Regulatory technical standards under Article 27(10)(b)

21. MiFID II also requires ESMA to develop RTS to determine the content and the format of information to be published by investment firms in relation to the top five execution venues in terms of trading volumes where they executed client orders and information on the quality of execution obtained. Again, comments received from respondents on the chapter of the DP were numerous, and while many respondents were supportive of the proposals in the DP, a large number of respondents raised concerns.

22. Some respondents noted that the proposals in the DP did not take account of:

- i. the existing use of transaction cost analysis (TCA) to assess execution quality;
- ii. the difference in execution quality in an order driver market versus a price (quote) driven market;
- iii. market makers and systematic internalisers may have to publish information both as execution venues and as investment firms; and

- iv. the activities of a market maker or when a firm deals on own account and the trade is reported through other execution venues.

Some respondents also requested that clarity be provided on what is meant by class of financial instrument.

23. On the issue of when publication of data should take place, a large majority of respondents (most categories of respondents) agreed that publication within one month of the period end seemed reasonable. A number of respondents (data providers) suggested shorter time periods and some respondents noted that it would depend on the complexity of the data to be published.
24. On the format of the report, a number of respondents stated that a common and consistent report template should be required for all execution venues used by investment firms. However, a number of respondents also stated concerns about the applicability of requirements to venues such as systematic internalisers, market maker or when acting as an OTC counterparty or the wholesale non-equity markets.
25. A number of respondents supported the inclusion of segregated data on directed orders.
26. On the question of recommending an alternative approach to the provision of information on execution quality obtained by investment firms, there was no clear consensus. The vast majority of respondents agreed that ESMA should try to limit the number of definitions of classes of instruments and provide a common harmonised classification. However, a number of respondents stated that due to the complexities of fixed income instruments there should be differentiation between liquid and illiquid assets.
27. On the issue of information to be included on conflicts of interest, there was general support for including specific information relating to inducements, payment for order flow, capital links (more than 5%), information on non-public pricing (providing subsidised spreads), any subsidy or payment that is provided for interacting with an execution venue in any capacity, and any special order types that were designed for the benefit of the participant or group of participants.

Proposal

Regulatory technical standards under Article 27(10)(b)

28. Having considered the views raised by respondents to the DP, ESMA has refined its proposals in respect of its obligation to produce RTS under 27(10)(b) of MiFID II. ESMA sets out its rationale for these proposals having considered their potential impact and the previous views of DP respondents.
29. ESMA notes that investment firm reporting requirements on order flow and on execution quality apply to all MIFID investment firms that execute client orders. These investment firms are required to report the identity of the top five execution venues to which they

directed order flows in terms of trading volumes in the preceding year. ESMA considers that to provide clients with adequate and useful information, investment firms shall also publish the number and volume of orders executed on each venue as a percentage of the investment firm's total executed orders. ESMA believes that where client orders, that are executed OTC are trade reported to a third party, the identity of the firm submitting the trade report (which is the firm executing the order OTC) should be included as a venue in the list of top five venues, where relevant. This is in order to provide clients with adequate context on the investment firm's order execution behaviour.

30. ESMA notes that MIFID II provides that the reporting requirement shall be published in respect of each "class of financial instruments". It is essential that the information provided is easily understandable and comparable. Therefore the highest possible degree of standardisation is desirable. ESMA proposes that all execution venues shall use standardised reporting conventions wherever possible to identify themselves and the classes of financial instruments in which transactions have taken place. ESMA believes that it would be appropriate to use the standard taxonomy as defined for the purpose of pre- and post-trade transparency and transaction reporting requirements under MiFIR.
31. ESMA considers that a class of financial instrument needs to be precise enough to reveal differences in order execution behaviours, but aggregated enough to ensure that the reporting obligation on investment firms is proportionate. ESMA proposes to calibrate the classes of financial instruments in accordance with the taxonomy developed under Art 9(5) of MiFIR and supplement it with additional classes to encompass equity and equity like instruments, ETFs and money market instruments in order to cover the entire breadth of financial instruments as defined in Annex I, section C of MiFID II.

Q35. Do you agree with the proposed approach? If not, what other information should ESMA consider?

32. In the DP, ESMA noted that another potential driver of order routing behaviour is the category of client for whom the investment firm is executing. The best execution obligation imposes different requirements on investment firms executing orders for different categories of clients. ESMA therefore considers that it would be proportionate to require investment firms to publish a breakdown of orders routed to each of the top five execution venues by category of client for each class of financial instrument.
33. ESMA notes that there are several factors which may potentially influence the order execution behaviour of investment firms such as the existence of capital links between investment firms and execution venues, the value of any rebates or other third party payments as well as non-monetary benefits. ESMA recalls that MiFID II sets out that investment firms shall not receive any remuneration, discount or non-monetary benefit for routing client orders to a particular execution venue which would infringe the requirements on conflicts of interest or inducements set out in paragraph 1 of Article 27 and Article 16(3) and Articles 23 and 24. Where such remuneration, discount or non-monetary benefit for routing client orders to a particular execution venue can occur,

ESMA considers that given the potential materiality of these factors investment firms shall publish for each of the top five execution venues for each class of financial instruments the existence and monthly value of any payments, discounts or rebates received. Investment firm shall also publish a description of the nature of any non-monetary benefits received and the existence of close links as defined by MiFID II.

34. ESMA noted in the DP that unlike order flow reporting, which would benefit from harmonisation to allow for comparison, standardised measures of execution quality are more difficult to harmonise given the role played by client instructions, financial instrument and market characteristics, market mechanisms and trading modes, the scale of activities and business models. Accordingly Art 27(6) requires investment firms to summarise and make public information on the quality of execution obtained. ESMA believes that it will be proportionate to request investment firms to publish information relating to the execution quality obtained based on the internal monitoring undertaken by the investment firm pursuant to Article 27(7) of the directive 2014/65/EU.
 35. ESMA noted, in the DP, that in considering minimum standards that should be used to assess how best execution is monitored, investment firms need to demonstrate that their monitoring incorporates information on execution quality in respect of each class of financial instrument, is based on a representative sample of client orders, and that it distinguishes between different categories of clients. ESMA also stated that investment firms should make use of the most recent data published by execution venues relating to the quality of execution among other requirements. ESMA considers that the information to be published on the quality of execution obtained should include an adequate summary of internal monitoring processes, together with an indication if any corrective actions proposed or taken by the investment firm upon reviewing the details of the quarterly execution quality of all execution venues used by the investment firm. The information published on should also include adequate analysis and be presented in a user friendly manner to enable all clients to understand how the investment firm assessed the execution quality in order to ensure that it is achieving best execution on its behalf.
 36. ESMA believes that investment firms should publish on their internet site, within one month of each year end, information relating to the monitoring of client orders executed from the first day to the last day of each calendar year, together with the order flow reporting for each of the top five execution venues on which they executed the client orders in the previous calendar year for each class of financial instruments.
- Q36. Do you agree with the proposed approach? If not, what other information should ESMA consider?**

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 6: Draft regulatory technical standards under Article 27(10)(a) of MiFID II

Draft RTS 7: Draft regulatory technical standards under Article 27(10)(b) of MiFID II

3. Transparency

3.1. Pre-trade transparency for trading venues in respect of equity and equity like financial instruments

Background/Mandate

Article 4(6) of MiFIR

Waivers for equity instruments

[...]

ESMA shall develop draft regulatory technical standards specifying the following:

- (a) the range of bid and offer prices or designated market-maker quotes, and the depth of trading interest at those prices, to be made public for each class of financial instrument concerned in accordance with Article 3(1), taking into account the necessary calibration for different types of trading systems as referred to in Article 3(2);*
- (b) most relevant market in terms of liquidity of a financial instrument in accordance with paragraph 1(a);*
- (c) specific characteristics of a negotiated transaction in relation to the different ways the member or participant of a trading venue can execute such a transaction;*
- (d) negotiated transactions that do not contribute to price formation which avail of the waiver provided for under paragraph 1(b)(iii);*
- (e) the size of orders that are large in scale and the type and the minimum size of orders held in an order management facility of a trading venue pending disclosure for which pre-trade disclosure may be waived under paragraph 1 for each class of financial instrument concerned;*

Pre-trade information to be made public by type of trading system

1. MiFID II provides for two types of trading venues for shares, depositary receipts, ETFs, certificates and other similar financial instruments: regulated markets and MTFs. Under current MiFID within each of those two categories of trading venues different types of trading systems may be operated in order to bring together buying and selling trading interest, such as quote driven systems, continuous auction order book systems and periodic auction systems.

2. ESMA, consistently with current MiFID, is of the view that the type of trading system should be the starting point for determining the appropriate level of pre-trade transparency which must be made public. In that regard Article 3(2) of MiFIR requires that “the transparency requirements referred to in paragraph 1 shall be calibrated for different types of trading systems including order-book, quote-driven, hybrid and periodic auction trading systems”. As a consequence and in order to ensure uniform applicable conditions between trading venues, the same pre-trade transparency requirements, calibrated according to the type of trading system operated, should apply equally to regulated markets and MTFs to the extent that the trading systems can be operated in line with the definition of the trading venues under MiFIR.
3. MiFIR empowers ESMA to calibrate the proper pre-trade transparency regime by defining the range of bid and offer prices or designated market-maker quotes, and the depth of trading interest at those prices, to be made public for each class of financial instrument concerned.
4. In the discussion paper ESMA, on the basis of the assumption that equity-like products are traded principally through the same trading systems as shares, proposed to calibrate the content of the pre-trade transparency requirements according to Table 1 in Annex II of MiFID Regulation 1287/2006 (which only applies to shares admitted to trading on a regulated market) regardless of the type of equity financial instrument traded.

Analysis following feedback from stakeholders

5. The majority of responses to the consultation were in support of the approach proposed in the discussion paper. However a number of respondents, while generally in support of building the transparency regime on the basis of the current Table 1 in Annex II of MiFID Regulation 1287/2006 proposed some amendments to the requirements applicable to hybrid trading systems (i.e. those systems not covered by the first three rows of the table). The main concern expressed by those respondents relate to the lack of level playing field where certain hybrid trading systems are able to operate under a less rigorous transparency regime. Those respondents supported amending the table in regard to the information to be made public in such a way as to clarify that the transactions executed under any trading system, including hybrid systems, should be based on firm trading intentions generated by the interaction of buying and selling interests on the venue concerned. Besides, those respondents argued that where a trading venue imports a price from another venue the activity shall fall under the reference price waiver and be subject to the double volume cap mechanism.
6. Under Article 3(1) of MiFIR all trading venues must make public the current bid and offer prices and the depth of trading interest at those prices which are advertised through their systems. ESMA agrees that those prices should reflect real and firm trading intentions and must be executable within the system operated by the trading venue or, as in the case of periodic auction trading systems, be prices that satisfy a suitable algorithm based on those trading intentions. However ESMA is of the view that the current table already provides sufficient clarity with regard to the requirements applicable to trading

systems depending on the execution system according to which trading interest is brought together. Besides, ESMA disagrees that all trading venues that import prices from another venue shall operate in accordance with the reference price waiver. The reference price waiver is required only where a trading venue does not disclose the information required under Article 3(1) of MiFIR, which includes the depth (i.e. quantity) of trading interest attached to the prices that are advertised through the systems of the trading venue.

7. ESMA also notes that some respondents were concerned with the absence in the current table of any definition of trading systems operating in accordance with a request for quote (RFQ) protocol, which is of particular relevance for certain wholesale markets in equity-like instruments such as ETFs. It was noted that a number of trading venues already operate request for quote systems for ETFs and hence calibration of pre-trade transparency for those systems is warranted.
8. Finally, being functional to establishing the content and the boundaries of pre-trade information to be made public by trading venues, ESMA also consulted on the concept of actionable indication of interest (IOI) and the minimum information content that would make an IOI actionable. In the DP ESMA considered an actionable IOI as a binding expression to trade from one counterparty to another in a specific financial instrument which should contain information such as the price, volume, and the side or direction (i.e. whether it is a buy or a sell order). Most respondents agreed with ESMA's interpretation of which elements make an indication of interest actionable and in particular the binding nature of an actionable IOI was deemed as essential. ESMA is hence of the view that whenever pre-trade transparency requirements apply to bids, offers, quotes and prices, the same requirements shall be considered to apply to actionable IOIs.

Proposal

9. ESMA proposes to amend the current Table 1 in Annex II of MiFID Regulation 1287/2006 for the purpose of establishing the content of pre-trade information that trading venues shall make public depending on the type of trading system operated. The requirements applicable to prices, orders, bids and offers in respect to pre-trade transparency requirements would extend to actionable indications of interest which are, according to Article 2(1)(33) of MiFIR, messages between members or participants of a trading venues containing all the necessary information to agree on a trade.
10. ESMA also proposes, in order to improve legal clarity and deliver greater harmonisation across the Union, to include in the table mentioned above a definition of request for quote systems together with the transparency requirements applicable to those trading systems. A request for quote system is defined as a trading system where a quote or quotes are made available in response to a request submitted by the member or participant and where only the requesting member or participant may conclude transactions by accepting the quote or quotes provided to it on request. A request for quote trading systems is deemed to be in compliance with the pre-trade transparency

requirements set in MiFIR where it makes public the bids and offers together with the volumes submitted by each responding entity.

- Q37. Do you agree with the proposal to add to the current table a definition of request for quote trading systems and to establish precise pre-trade transparency requirements for trading venues operating those systems? Please provide reasons for your answers.**

Most relevant market in terms of liquidity

11. Under Article 4(1)(a) of MiFIR systems operating a trading methodology where orders are matched on the basis of a price derived from another system (the so-called reference price) can operate under a pre-trade transparency waiver provided that certain conditions are met. Firstly the reference price must be widely published and regarded by market participants as a reliable reference price. Secondly, the set of eligible prices for matching orders within the systems operated by the trading venue is limited to the mid-point within the current bid and offer price or where not available, the opening or the closing price of the relevant session. Finally, the reference price can only be sourced from the systems operated by the trading venue where that financial instrument was first admitted to trading or the most relevant market in terms of liquidity.
12. MiFIR empowers ESMA to draft regulatory technical standards specifying the most relevant market in terms of liquidity for the purpose of the reference price waiver. In the DP ESMA noted that the concept of the most relevant market in terms of liquidity is also relevant in the context of the obligation of investment firms to report transactions under Article 26. However ESMA also emphasised the different purposes of the most relevant market in terms of liquidity for transaction reporting and for pre-trade transparency and proposed to adopt two different definitions. For pre-trade transparency, ESMA proposed that the most relevant market in terms of liquidity for a financial instrument should be the trading venue with the highest level of liquidity for that financial instrument measured by the total value of transactions executed by the trading venue during the relevant calendar year. ESMA also proposed, in order to strike an appropriate balance between accuracy and operational costs, that the determination of the most relevant market in terms of liquidity would occur on an annual basis.

Analysis following feedback from stakeholders

13. While the majority of respondents were in favour of the proposed approach with respect to the frequency of calculations (annual basis), views were split between those agreeing and disagreeing with the proposed methodology based on the total turnover. In particular, some of those disagreeing stressed that the turnover is not always a reliable or precise measure of liquidity and that it should be substituted or complemented with other measures such as the market depth, the spread and the number of trades. Others suggested that the calculation of the total turnover of a trading venue should exclude those transactions that are executed under a pre-trade transparency waiver as those transactions would not contribute to the information content of the reference price. A small group of respondents supported introducing a threshold (e.g. 50%) above which a trading venue might be considered the most relevant market in terms of liquidity.
14. ESMA agrees that the total turnover or any other volume-based metric are imperfect measures of liquidity which can be measured according to various, more complex metrics depending on the specific purpose. However, ESMA considers that it is possible to use a price derived from the trading venue with the highest turnover and obtain the

desired outcome of ensuring that orders are crossed at the most reliable and informative price. According to the evidence available to ESMA the European trading venues with the highest turnover in a particular share also displayed the tightest spreads and largest depth for that share for every single month of the first half of 2014. For that reason ESMA believes that relying on the total turnover would deliver a simple and cost-effective definition of the most relevant market in terms of liquidity for the purpose of the reference price waiver.

15. With respect to introducing minimum thresholds (e.g. 50%) above which a trading venue might be considered the most relevant market in terms of liquidity ESMA does not believe that any fixed threshold should be introduced. ESMA notes that the requirement to be regarded by market participants as a reliable reference price as per Article 4(1)(a) of MiFIR should ensure that, in the context of a highly fragmented market, the most relevant market in terms of liquidity remains sufficiently representative and reliable to be used as a reference price.
16. Some respondents argued that the total turnover used to establish the most relevant market in terms of liquidity should only be sourced from the systems of the trading venue from which the price is derived and should include all transactions executed under the relevant trading session (i.e. continuous trading for reference price systems under Article 4(2)(a) and periodic auction systems for reference price systems under Article 4(2)(b)).
17. Some respondents also suggested that the calculation of the turnover should also exclude transactions executed under a pre-trade transparency waiver on the grounds that those transactions do not contribute to the information content to be used as a reference price. ESMA agrees with this proposal but notes that it adds some complexity to the determination of the most relevant market in terms of liquidity.
18. Finally, some respondents raised concerns in relation to circumstances where a price from the market where the instrument was first admitted to trading or the most relevant market in terms of liquidity is not available because of technical outages or other equivalent events. ESMA is of the view that it is the nature of reference price systems to depend on the price formed from another system or another trading venue. Accordingly, in ESMA's view a reference price system shall not be able to operate in the absence of a price from the market where the financial instrument was first admitted to trading or from the most relevant market in terms of liquidity.

Proposal

19. ESMA proposes that the most relevant market in terms of liquidity for a share, depositary receipt, ETF, certificate and other similar financial instrument should be the trading venue with the highest turnover for that share, depositary receipt, ETF, certificate or other similar financial instrument. Transactions executed under a waiver from pre-trade transparency should not count towards the determination of the most relevant market in terms of liquidity.

- Q38. Do you agree with the proposal to determine on an annual basis the most relevant market in terms of liquidity as the trading venue with the highest turnover in the relevant financial instrument by excluding transactions executed under some pre-trade transparency waivers? Please provide reasons for your answers.**

Negotiated transactions

20. A negotiated transaction is a transaction involving one or more members or participants of a trading venue who negotiate privately the terms of the transaction which is then reported under the rules of the trading venue. For example, two members or participants agree the price and volume of a trade bilaterally before transmitting it to the trading venue. In some circumstances the trade could not be executed under the systems operated by the trading venue (e.g. a consolidated limit order book) because of special conditions or requirements attached to the trade (e.g. portfolio trades or contingent transactions like delta-neutral equity hedges of a derivative) or because the transaction does not constitute liquidity addressable by market participants other than the counterparties negotiating the transaction (e.g. a give-up or give-in). The trading venue remains responsible for ensuring that all negotiated transactions meet the relevant conditions for the negotiated trade and all the other applicable requirements.
21. MiFIR allows negotiated transactions to waive pre-trade transparency obligations under certain circumstances. In particular Article 4(1) of MiFIR specifies that:

Article 4 of MiFIR

Waivers for equity instruments

1. *Competent authorities shall be able to waive the obligation for market operators and investment firms operating a trading venue to make public the information referred to in Article 3(1) for:*

[...]

(b) systems that formalise negotiated transactions which are:

(i) made within the current volume weighted spread reflected on the order book or the quotes of the market makers of the trading venue operating that system, subject to the conditions set out in Article 5;

(ii) in an illiquid share, depositary receipt, ETF, certificate or other similar financial instrument that does not fall within the meaning of a liquid market and are dealt within a percentage of a suitable reference price, being a percentage and a reference price set in advance by the system operator; or

(iii) subject to conditions other than the current market price of that financial instrument;

3. *Where trading venues operate systems which formalise negotiated transactions in accordance with paragraph 1(b)(i):*

- (a) those transactions shall be carried out in accordance with the rules of the trading venue;*
- (b) the trading venue shall ensure that arrangements, systems and procedures are in place to prevent and detect market abuse or attempted market abuse in relation to such negotiated transactions in accordance with Article 16 of Regulation EU No 596/2014;*
- (c) the trading venue shall establish, maintain and implement systems to detect any attempt to use the waiver to circumvent other requirements of this Regulation or Directive 2014/65/EU and to report attempts to the competent authority.*

Where a competent authority grants a waiver in accordance with paragraph 1(b) (i) or (iii), that competent authority shall monitor the use of the waiver by the trading venue to ensure that the conditions for use of the waiver are respected.

[...]

22. Under MiFIR negotiated transactions are subject to some restrictions on admissible execution prices depending on the type of the transaction and the trading characteristics of the financial instrument being traded.
23. Negotiated transactions which are subject to conditions other than the current market price can be executed at any price in accordance with the rules of the trading venue.
24. Negotiated transactions which are subject to the current market price must instead comply with price conditions as specified below:
 - i. for liquid financial instruments negotiated transactions must be executed within the spread - negotiated transactions falling under this limb are subject to the double volume cap mechanism as described in the relevant section of this consultation paper.
 - ii. for illiquid financial instruments negotiated transactions can be executed at any price falling within a certain percentage of a suitable reference price provided both the reference price and the percentage are set in advance by the system operator. ESMA is of the view that operators of trading venues should set the reference price and the percentage in an objective and clear manner having regard to the nature of the market in the financial instrument and its overarching obligation to maintain fair and orderly trading.
25. MiFIR empowers ESMA to draft regulatory technical standards specifying the characteristics of a negotiated transaction in relation to the different ways the member or participant of a trading venue can execute such a transaction and the negotiated transactions that do not contribute to price formation which avail themselves of the waiver provided for under Article 4(1)(b)(iii) of MiFIR.

Analysis following feedback from stakeholders

26. In the DP ESMA clarified that negotiated transactions shall be executed under the rules of a trading venue and negotiated privately by members or participants of a trading venue and that negotiated trades shall not be restricted to transactions between members or participants dealing on own account but may involve a client or clients of the members or participants. For that reason and consistent with the existing framework for negotiated transactions under the Implementing Regulation (EC) No 1287/2006, ESMA proposed that a member or participant of a trading venue can execute such a negotiated transaction by undertaking one of the following tasks:
- i. dealing on own account with another member or participant who acts for the account of a client;
 - ii. dealing with another member or participant, where both are executing orders on own account;
 - iii. acting for the account of both the buyer and seller;
 - iv. acting for the account of the buyer, where another member or participant acts for the account of the seller; and
 - v. trading for own account against a client order.
27. Respondents to the DP were in support of maintaining the current approach (i.e. the approach adopted under Article 19 of the Implementing Regulation (EC) No 1287/2006) with regard to the different ways a member or participant of a trading venue can execute a negotiated transaction. In particular, some respondents emphasised that implementing measures under MiFIR should prevent the use of the negotiated trade waiver in ways contrary to the spirit of the waiver. The concerns relate to the use of the negotiated trade waiver in a systematic and generalised basis to replicate functionalities that are currently operating under the reference price waiver. Those respondents supported limiting, as is currently the case under MiFID I, the use of the waiver only to transactions that are negotiated privately but executed within the rules of the trading venue. ESMA agrees that it is important not to undermine the purpose of MiFIR to limit the amount of trading carried out under the reference price waiver and the first limb of the negotiated trade waiver by an improper interpretation of the other waivers available to market participants.
28. Some respondents urged ESMA to clarify that negotiated transactions subject to conditions other than the current market price would not be subject to the volume cap mechanism under Article 5 of MiFIR. ESMA believes that such clarification is unnecessary as MiFIR already makes clear that the volume cap mechanism applies only to the use of the reference price waiver and the first limb of the negotiated trade waiver (negotiated transactions made within the current volume weighted spread in liquid instruments which are subject to current market price conditions).

29. With regard to the negotiated transactions that do not contribute to price formation, ESMA proposed the following list in the DP:
- i. Give-up/give-in transactions. Transaction where an investment firm passes a client trade to, or receives a client trade from another investment firm for the process of post-trade processing.
 - ii. Securities financing transactions. Lending or borrowing stocks transactions, repurchase or reverse repurchase transactions, or a buy-sell back or sell-buy back trade. These trades are between prearranged counterparties.
 - iii. Benchmark trades, where the price is calculated over multiple time instances according to a given benchmark. In other words, the price is derived over a period of time from post-trade prices according to a specified benchmark and hence does not reflect the current price of the stock. Examples that would be covered are VWAP, TWAP and CWAP trades⁶.
 - iv. Delta-Neutral equity hedges of a derivative. A transaction in shares that corresponds to a hedge against the delta risk of the derivative and where these shares are exchanged by the same two counterparties to the derivative trade, at a price mutually agreed upon at the time of the transaction. The shares related trade is part of a more complex trade involving a derivatives trade. The intention of the investor is that by the combination of a shares and a derivatives trade the risk exposure is not sensitive to price movements upwards or downwards (i.e. the investor is taking risk in volatility). The prices of both transactions are pre-arranged by the counter-parties.
 - v. Exchange for physical trades. Transactions in which the buyer of a security or a basket of securities transfers to the seller a corresponding amount of long derivatives contracts or receives from the seller a corresponding amount of short derivatives, at a price mutually agreed upon.
 - vi. Portfolio trades. A transaction in more than one financial instrument where those financial instruments are traded as a single lot against a specific reference price.
30. Respondents had mixed views with regard to the proposed list in respect of two aspects. Firstly, on the content of the list of transactions that do not contribute to price formation. Secondly, on whether the list should be exhaustive.
31. The majority of respondents were in favour of establishing a flexible regulatory framework as the evolution of market practices may result in new types of transactions which need to be accommodated by the negotiated trade waiver. However a sizeable number of respondents were instead in favour of an exhaustive list of transaction types in order to ensure a harmonised regulatory regime and to minimise the risk of

⁶ Respectively Volume Weighted Average Price, Time Weighted Average Price and Competitive Volume Weighted Average Price trades

circumventing restrictions on dark trading placed on the use of pre-trade transparency waivers by MiFIR.

32. As regards the list of transactions which are subject to conditions other than the current market price a number of respondents suggested types of transactions that should complement the list proposed in the discussion paper (such as non-standard or extended settlement trades).
33. Some respondents also highlighted the importance of including in the list of negotiated trades subject to conditions other than the current market price the list of transactions that do not contribute to the price formation process and hence are outside the trading mandate as per Article 23 of MiFIR. It is argued that there should be no reason to exclude these transactions from the possibility of being traded under the rules of a trading venue, and thereby subjecting them to more control and surveillance, through the negotiated trade waiver.
34. Finally some respondents argued that some of the types of trades in the proposed list shall not be considered transactions for the purpose of the transparency regime as is currently the case under Article 5 of MiFID I Implementing Regulation. ESMA appreciates that some of the types of trades in the proposed list could also be exempted from the general transparency regime. However, ESMA notes that MiFID II / MiFIR does not provide ESMA with any empowerment in this respect as further explained below in the chapter on post-trade transparency (section on identifiers).

Proposal

35. ESMA proposes to maintain unchanged the specific characteristics of a negotiated transaction in relation to the different ways a member or participant of a trading venue can execute such transaction.
36. With regard to the types of negotiated transactions that do not contribute to the price formation process ESMA agrees that a consistent and coherent approach to the empowerments in Article 4(6)(d) and Article 23(3) should be adopted. Hence the proposed list, which partly builds on the list proposed in the Discussion Paper, includes any transaction that:
 - i. is executed in reference to a price that is calculated over multiple time instances according to a given benchmark, such as volume-weighted average price or time-weighted average price;
 - ii. is part of a portfolio trade that involves the execution of 10 or more financial instruments from the same client and at the same time and the components of the trade are meant to be executed only as a single lot;
 - iii. is contingent on a derivative contract having the same underlying and where all the components of the trade are meant to be executed only as a single lot; or

- iv. is contingent on technical characteristics of the transaction which are unrelated to the current market valuation of that financial instrument.
37. In order to establish a clear and harmonised regulatory framework in Europe the proposed list is exhaustive. However ESMA is of the view that the list is sufficiently flexible to ensure that the regulatory regime for negotiated transaction remains appropriate as markets evolve.
38. ESMA is interested in views on whether the list should include transactions which, in accordance with Article 5(2) of Regulation 909/2014 (CSDR), are not intended to be settled within the second business day after the transaction takes place. ESMA understands that special or non-standard settlement transactions are currently being executed under the negotiated trade waiver as they may not be executed under prevailing market conditions on order books; however ESMA is also concerned that including those types of trades in the list may potentially undermine the policy objectives of MiFIR of ensuring that price formation remains efficient by limiting the use of waivers not subject to the volume caps.
- Q39. Do you agree with the proposed exhaustive list of negotiated transactions not contributing to the price formation process? What is your view on including non-standard or special settlement trades in the list? Would you support including non-standard settlement transactions only for managing settlement failures? Please provide reasons for your answers.**

Order management facility waiver

39. The order management facility waiver refers to functionalities operated by trading venues where for certain orders pending their disclosure to the market (i.e. subject to being released to an order book prior to execution) pre-trade transparency may be waived. In absence of more specific requirements under MiFID I, competent authorities and ESMA have elaborated opinions aimed at ensuring supervisory convergence on the set of functionalities deemed compliant with the waiver. In accordance with those opinions, contingent orders such as reserve or iceberg orders and stop orders are currently considered orders held in an order management facility deemed compliant with MiFID I.
40. MiFIR empowers ESMA to draft regulatory technical standards specifying the type and minimum size of orders held in an order management facility.

Analysis following feedback from stakeholders

41. In the DP, and consistent with past opinions on the subject, ESMA proposed two main groups of orders that can be waived from pre-trade transparency requirements in the context of the order management facility waiver: 'stop orders' and 'reserve or iceberg orders'.
42. ESMA considers a 'stop order' to be an order to buy or sell an instrument that remains inactive (i.e. invisible and not executable) and that is activated once a specific circumstance or event occurs. Once the order is disclosed to the market (depending on whether it is a market or limit order), it can interact with the order book in accordance with the rules applicable to orders of that kind at the time of disclosure. ESMA considers an 'iceberg/reserve order' to be an order where only part of the volume is visible to others and the remainder remains hidden. Once the visible part is executed or partially executed, the system shows another part of the order and so on until the order is fully completed.
43. In the DP ESMA consulted on a variety of aspects relevant for the order management facility waiver including adopting an approach based on defining the main features of stop and iceberg orders in general terms as well as the main principles such orders must adhere to in substance.
44. The majority of respondents agreed that stop and iceberg orders currently represent the main types of order management facilities and supported the approach proposed in the DP based on setting principles and criteria for those two types of order management facilities. However, some respondents had concerns that such an approach might facilitate the avoidance of restrictions that MiFIR poses on the use of other waivers, such as the reference price waiver and the negotiated trade waiver. ESMA agrees that the new framework should prevent or minimise regulatory avoidance. As emphasised in the context of the negotiated trade waiver, MiFIR further clarifies that a competent authority

may withdraw a waiver if it observes that the waiver is being used in a way that deviates from its original purpose.

45. With respect to the minimum size respondents expressed a strong preference for maintaining as much flexibility as possible for trading venues which should be left to establish, in accordance with their rules and the other requirements applicable to them under MiFID II / MiFIR, adequate sizes depending on the type of market and instrument.

Proposal

46. ESMA proposes to define the relevant characteristics of orders held in an order management facility and not to restrict them to reserve and stop orders. In relation to the minimum size ESMA, in order to ensure that those functionalities are available to a wide set of market participants, proposes that all orders held in an order management facility, should be at the point of entry and following any amendment not smaller than the minimum tradable quantity established by the trading venue. For reserve orders, the minimum size should be, at the point of entry and following any amendment not smaller than €10,000.

- Q40. Do you agree with ESMA's definition of the key characteristics of orders held on order management facilities? Do you agree with the proposed minimum sizes? Please provide reasons for your answers.**

Large in scale waiver

Shares and depositary receipts

47. Under MiFID I, orders that are large in scale could benefit from a waiver from pre-trade transparency. The waiver is designed to protect large orders from adverse market impact and to avoid abrupt price movements that can cause market distortions. MiFIR recognises that mandatory public transparency for large orders can make the costs of execution higher than if the order is not displayed publicly, to the detriment of market liquidity.
48. MiFIR empowers ESMA to draft regulatory technical standards to specify the size of orders that are large in scale compared with normal market size for each class of shares, depositary receipts, ETFs, certificates and other similar financial instruments.
49. Establishing a large in scale regime is a complex task defined by a number of interlinked aspects and issues. In the DP ESMA addressed the various features of the large in scale regime which include the appropriate metrics to define when an order may be considered as large in scale compared with normal market size, how to calibrate the thresholds by class of financial instrument, the frequency at which the regime should be updated and how to establish an adequate regime for stubs (i.e. the remainder of large in scale orders following partial execution that fall below the relevant threshold).

Analysis following feedback from stakeholders

50. In regard to the appropriate metrics to define when an order may be considered large in scale, ESMA proposed to maintain an approach based on the average daily turnover (ADT) as a proxy for liquidity and market impact, which would also apply to depositary receipts and other equity-like instruments.
51. Most respondents agreed that the ADT remains a valid measure which has worked in the past, is easy to calculate and well understood by market participants. Nonetheless some of those supporting building the large in scale thresholds on the basis of the ADT proposed ways to improve it by using normalised averages aimed at filtering out trading days with extraordinary low or high levels of trading.
52. A large number of participants contested the use of the ADT as a valid measure of liquidity and, especially, of market impact and proposed using different measures, to substitute or to complement the ADT, based on the average value of transactions or the depth of the order book. In particular some participants noted that ADT may be poorly correlated with market impact and does not reflect the true conditions of trading in equities as it does not recognise that liquidity can be episodic. Analysis conducted by those market participants showed that approximately only 0.17% of trades are executed above the current LIS threshold for shares. ESMA agrees that approaches different from the proposed one based on the ADT are possible; however it is convinced that any approach has different pros and cons and that, for instance, the approaches based on

order book data would be significantly more complex to use in practice. Therefore, ESMA has maintained its initial proposal to use ADT as a proxy.

53. With regards to the frequency with which the ADT of each financial instrument should be calculated, the vast majority of respondents were in favour of maintaining the existing regime based on yearly calculations. All those disagreeing with yearly calculations proposed more frequent reviews, such as semi-annual or quarterly reviews (based on 12 months averages in order to avoid seasonality) in order to better adjust the transparency regime to changes in market conditions.
54. For shares, the main proposal in the DP was to recalibrate the classes in terms of ADT with the aim of increasing the level of granularity. In particular the discussion paper proposed creating additional classes for the least liquid shares (with lower thresholds) and for the most liquid shares (with higher thresholds). ESMA also proposed to apply the same regime to depositary receipts.

Class in terms of average daily turnover (ADT)	ADT < 100 000	100 000 ≤ ADT < 500 000	500 000 ≤ ADT < 1 000 000	1 000 000 ≤ ADT < 5 000 000	5 000 000 ≤ ADT < 25 000 000	25 000 000 ≤ ADT < 50 000 000	50 000 000 ≤ ADT < 100 000 000	ADT ≥ 100 000 000
Minimum size of orders qualifying as large in scale compared with normal market size	30 000	60 000	100 000	200 000	300 000	400 000	500 000	650 000

Table 1: Shares and depositary receipts orders large in scale compared with normal market size

55. In respect of the proposed new classes of shares by ADT most respondents agreed with the greater granularity. More mixed were the views on the proposed thresholds for each class of ADT. In particular, some respondents expressed concerns about the proposed thresholds for less liquid shares (which often are shares issued by small and medium enterprises). Some of those respondents suggested establishing the large in scale thresholds on the basis of fixed percentages of the ADT for the least liquid shares in order to maintain a sense of proportionality between the liquidity of the share and the minimum size for qualifying for the large in scale waiver. ESMA agrees that it is important that large in scale thresholds are appropriate for less liquid shares and in particular for SMEs' shares. The review of the ADT classes and relevant thresholds proposed by ESMA for the less liquid shares is therefore aimed at properly calibrating the transparency regime for SMEs.
56. Finally, other respondents noted the lack of consistency between the approach used for shares, where thresholds are fixed and are unrelated to either the amount of trades or turnover falling below the threshold, and the approach taken for ETFs where the large in

scale thresholds are based in such a way that no more than 10%, 20% or 30% of the value traded would remain dark.

Proposal

57. In respect of shares and depositary receipts, ESMA proposes to use the average daily turnover as the relevant metric to establish orders that are large in scale and to maintain the table, including the thresholds for orders that are large in scale compared with normal market size, proposed in the DP. While ESMA appreciates that the ADT may not provide the best metric on which to establish the large in scale threshold in all circumstances, it is likely to be a reliable metric positively correlated with liquidity. Besides, from an operational perspective information on the ADT can be collected and processed in a relatively simple way.

58. ESMA also proposes to maintain the current regime where the ADT of each financial instrument is determined on an annual basis.

Q41. Do you agree with the classes, thresholds and frequency of calculation proposed by ESMA for shares and depositary receipts? Please provide reasons for your answers.

ETFs

59. The large in scale regime for ETFs proposed in the discussion paper was similar to the one for shares and depositary receipts in that the large in scale thresholds would increase with the class of ADT. However, differently from that for shares and depositary receipts, the large in scale thresholds were established in such a way so as to achieve a specific objective (i.e. no more than 10%, 20% or 30% of the turnover would remain dark). The analysis presented in the discussion paper was based on data on transactions in ETFs sourced from regulated markets only.

Analysis following feedback from stakeholders

60. The vast majority of the respondents to the DP disagreed with ESMA's proposal on several grounds. From a data perspective many considered that sourcing trading data from regulated markets only represents a serious limitation of the analysis as most of the liquidity in ETFs is executed outside trading venues, i.e. OTC. However, the main argument against the proposal expressed by most respondents relates to the use of the ADT. Respondents argued ADT would not capture the actual liquidity of ETFs where the creation/redemption mechanism inherent to ETFs allows liquidity providers to access additional, non-displayed liquidity. Besides, by deriving their price from an underlying basket of financial instruments or indices, the relevant measure of liquidity of an ETF is not that of the instrument itself but of the underlying.

61. Respondents advanced a number of proposals to address the unsuitability of the ADT as a measure of liquidity and market impact. Some respondents proposed to derive the

relevant ADT by using weighted averages of the ADT of each asset in the underlying index. Others suggested, given the practical and operational difficulty of sourcing and aggregating the liquidity of the constituents of the underlying index, a more pragmatic approach which, on the assumption that ETFs are predominantly liquid, would be based on a single threshold applicable to all ETFs, i.e. regardless of the ADT of each ETF.

Proposal

62. ESMA proposes to establish large in scale thresholds on the basis of the ADT (on the basis of annual calculation) with thresholds determined in such a way as to leave no more than 10% of the total turnover in each class above the threshold.
63. However, ESMA agrees with respondents that ETFs raise challenges in regard of establishing a regime for large in scale orders. For that reason ESMA is interested in views on an alternative approach where a single threshold of €1 million would apply to all ETFs regardless of their liquidity.

Class in terms of average daily turnover (ADT)	ADT < 50 000	50 000 ≤ ADT < 200 000	200 000 ≤ ADT < 500 000	500 000 ≤ ADT < 2 000 000	ADT ≥ 2 000 000
Minimum size of orders qualifying as large in scale compared with normal market size	260 000	550 000	750 000	850 000	1 200 000

Table 2: ETFs orders large in scale compared with normal market size

- Q42. Do you agree with the classes, thresholds and frequency of calculation proposed by ESMA for ETFs? Would you support an alternative approach based on a single large in scale threshold of €1 million to apply to all ETFs regardless of their liquidity? Please provide reasons for your answers.**

Certificates

64. Certificates are defined by MiFIR as transferable securities which are negotiable on the capital market and which in case of repayment of investment by the issuers are ranked above shares but below unsecured bond instruments and other similar financial instruments. ESMA identified two types of financial instruments traded in the Union that would be considered certificates under the above definition: Spanish *Participaciones Preferentes* and German *Genussscheine*.
65. At the time of the publication of the discussion paper ESMA collected data on the trading of those instruments and proposed two possible scenarios based on a different classification of the ADT but did not advance any proposal for large in scale thresholds.
66. During the consultation, ESMA also received feedback suggesting including additional instruments in this category and in particular Rabobank-certificates. As stated in the advice to the European Commission with respect to liquidity thresholds for equity

instruments, ESMA believes that those instruments should fall into the certificate category.

Analysis following feedback from stakeholders

67. ESMA received limited feedback on certificates, probably related to the fact that those financial instruments are available in very few jurisdictions. Some respondents highlighted that where a certificate is economically equivalent to a share issued from the same issuer, the calibration of the classes and the large in scale thresholds should follow those applicable to shares. ESMA, however, considers that where the certificate is a distinct instrument (i.e. with different payoffs from the shares issued by the same issuer) then the large in scale threshold should be calibrated based on its own liquidity features.

Proposal

68. ESMA is of the view that certificates have different payoffs from shares and are hence separate financial instruments which ought to be subject to a different transparency regime. Following consultation ESMA proposes to establish a very simple regime for large in scale orders for certificates with only two ADT classes and large in scale thresholds. As for the other instruments ESMA proposes to determine the ADT of each instrument on an annual basis.

Class in terms of average daily turnover (ADT)	ADT < 50 000	ADT ≥ 50 000
Minimum size of orders qualifying as large in scale compared with normal market size	15 000	30 000

Table 3: Certificates orders large in scale compared with normal market size

Q43. Do you agree with the classes, thresholds and frequency of calculation proposed by ESMA for certificates? Please provide reasons for your answers.

Stubs

69. Stub usually means the remainder of a resting order (i.e. a limit order that is not immediately executed under prevailing market conditions) that is large in scale at the time the order is submitted to a trading venue. Following partial execution the order may fall below the relevant large in scale threshold. In such circumstance it is not clear whether the large in scale threshold shall apply to the stub and hence whether the order shall be made transparent or remain out of the order book.

Analysis following feedback from stakeholders

70. In the discussion paper ESMA evaluated the pros and cons of requiring stubs to meet the relevant large in scale threshold following partial execution. On the one hand ESMA considered that allowing stubs to remain protected under the large in scale waiver would

result in a more consistent treatment of the whole order, greater protection for large orders and greater incentive to execute transaction on order books and ultimately better quality of execution. On the other hand, requiring stubs to be made transparent when falling below the relevant threshold was considered as conducive to greater transparency and consistent with an approach where similar sized orders are, *ceteris paribus*, subject to equivalent transparency requirements.

71. As a compromise, ESMA's proposal in the discussion paper was to require stubs to be made transparent only when, following partial execution, they are below 25% of the relevant large in scale threshold.
72. Overall, respondents did not support ESMA's proposal to make stub orders transparent when falling a certain level below the large in scale threshold and supported an approach where stubs would remain protected under the large in scale waiver. The main reasons were that the proposed approach would hinder investors' ability to execute large orders through order books by revealing sensitive information to the market, would be too complex and difficult to implement and would be disproportionate to the marginal benefits.

Proposal

73. ESMA, differently from the approach proposed in the DP, proposes to clarify that large in scale orders may remain protected under the large in scale waiver regime even when, following partial execution, they fall below the relevant large in scale threshold provided that the price or other relevant conditions for execution are not amended following execution.

Q44. Do you agree with the proposed approach on stubs? Please provide reasons for your answers.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 8: Draft regulatory technical standards on transparency requirements in respect of shares, depositary receipts, ETFs, certificates and other similar financial instruments and on the trading obligation for investment firms

3.2. Pre-trade transparency for investment firms in respect of equity and equity like financial instruments

Background/Mandate

Article 14 of MiFIR

Obligation for systematic internalisers to make public quotes in respect of shares, depositary receipts, ETFs, certificates and other similar financial instruments

[...]

7. *In order to ensure the efficient valuation of shares, depositary receipts, ETFs, certificates and other similar financial instruments and maximise the possibility of investment firms to obtain the best deal for their clients, ESMA shall develop draft regulatory technical standards to specify further the arrangements for the publication of a firm quote as referred to in paragraph 1, the determination of whether prices reflect prevailing market conditions as referred to in paragraph 3, and of the standard market size as referred to in paragraphs 2 and 4.*

Arrangements for the publication of a firm quote

1. Systematic internalisers are required to publish firm quotes in respect of equity instruments traded on a trading venue for which there is a liquid market, provided that the systematic internaliser is dealing below standard market size. MiFIR already specifies or delegates through implementing measures various aspects of the obligation to make those quotes public. Those aspects include, among other things, the means by which a quote is made public such as the facilities of any regulated market that has admitted the financial instrument to trading, an APA or through proprietary arrangements.

Analysis following feedback from stakeholders

2. ESMA decided not to consult on this specific empowerment at the time of the publication of the DP. ESMA understands that the empowerment under MiFIR aims at ensuring that systematic internalisers are subject to harmonised and robust publication requirements and that the information made public is reliable and contributes to the price formation process.
3. ESMA notes that under Article 32 of current MiFID Implementing Regulation, any arrangements to make information public, including those used by systematic internalisers, must satisfy a number of conditions including that the information published is reliable, monitored for errors and corrected. Further, any arrangement for making information public must facilitate the consolidation of the data with other sources.

Proposal

4. In line with MiFID I and with the aim of ensuring that the publication arrangements used by systematic internalisers are rigorous and sound, ESMA is proposing to require systematic internalisers to adopt arrangements for publication which ensure that information is sufficiently reliable and free of errors, capable of being consolidated with other similar data from other sources and that it is made available to market participants on a non-discriminatory basis.
5. ESMA is also considering requiring the time of the quotes (i.e. the time they have been entered or updated by the systematic internaliser) to be made public. The aim of this provision is twofold:
 - i. A timestamp assigned by the systematic internaliser might help to ensure its quotes are firm and reliable by improving the audit chain of the publication to the benefit of market participants. It aims at avoiding potential disputes that may arise when a quote is changed close to the time a client order is entered but due to this change the client order fails to match the new systematic internaliser's quote. This risk is particularly serious when systematic internalisers use a website (which is allowed as a proprietary arrangement according to Article 17(3)(a) of MiFIR) as the publication of quotes may suffer from the website page slowing down and displaying already outdated quotes.
 - ii. Moreover, the inclusion of the timestamp in the pre-trade information published by the systematic internaliser is a key piece of information for the client to better analyse ex-post the quality of prices quoted by systematic internalisers, and in particular to assess with accuracy the responsiveness of the systematic internaliser and the validity periods of quotes. Without a timestamp assigned by the systematic internaliser itself, market participants would need to rely on the information potentially provided by data vendors, the timestamps of which would be less accurate, especially when quotes are published through a website as pointed out by some respondents to the question on access to the quotes of systematic internalisers.

Q45. Do you agree with the proposed conditions and standards that the publication arrangements used by systematic internalisers should comply with? Should systematic internalisers be required to publish with each quote the publication of the time the quote has been entered or updated? Please provide reasons for your answers.

Quotes reflecting prevailing market conditions

6. Under Article 14(3) of MiFIR the prices published by systematic internalisers in accordance with Article 14(1) of MiFIR must reflect the 'prevailing market conditions' for each financial instrument for which the investment firm is a systematic internaliser. However, Article 15(2) of MiFIR permits systematic internalisers 'in justified cases' to execute orders at a better price than those quoted at the time of reception of the order, 'provided that this price falls within a public range close to market conditions'.

Analysis following feedback from stakeholders

7. In the discussion paper ESMA proposed to maintain the existing definition of prevailing market condition of Article 24 of the Implementing Regulation (EC) No 1287/2006, according to which a quote or quotes reflect prevailing market conditions when they are close in price to comparable quotes for the same share on other trading venues. ESMA does not intend to develop a rigid definition of when a quote reflects prevailing market conditions as the concept depends on a variety of time-varying and instrument-specific factors which are difficult to capture by any formulaic definition.
8. The majority of respondents were in favour of the proposed approach albeit some raised important concerns around the flexibility offered by MiFIR to systematic internalisers to trade at different (better) prices from the quoted ones in justified cases. Moreover many respondents urged ESMA to clarify the ambiguities in MiFIR with respect to the potential use of matched trades or riskless principal trading by systematic internalisers. It was argued that the possibility of executing riskless or matched principal transactions by systematic internalisers would undermine the objective of establishing a level playing field between systematic internalisers and trading venues and possibly create arbitrage opportunities in respect of the limits to dark trading established by MiFIR. ESMA appreciates the issue but notes it relates to the level one text for which no relevant empowerments exist and, thus, ESMA cannot provide further clarification in the RTS in this respect.

Proposal

9. ESMA is maintaining the definition proposed in the DP where a price reflects prevailing market conditions if it close to comparable quotes for the same share, depositary receipt, ETF, certificate or other similar financial instrument on other trading venues.
- Q46. Do you agree with the proposed definition of when a price reflects prevailing conditions? Please provide reasons for your answers.**

Standard market size

10. A key aspect of the systematic internaliser regime is the concept of the standard market size. MiFIR requires systematic internalisers to be subject to pre-trade transparency requirements only when dealing in sizes up to standard market size and to make public quotes - a firm bid and a firm offer - of at least 10% of the standard market size for the share, depositary receipt, ETF or certificate for which they are systematic internalisers.
11. Article 14(4) of MiFIR requires shares, depositary receipts, ETFs and certificates to be grouped together in classes on the basis of the arithmetic average value of the orders executed in the market for that financial instrument. The standard market size must be of a size representative of the arithmetic average value of the orders executed in the market for the financial instruments included in each class.

Analysis following feedback from stakeholders

12. In the discussion paper ESMA considered the continued appropriateness of the standard market size under current MiFID I having regard to maintaining a sufficient level of transparency while ensuring that obligations for systematic internalisers remain reasonable and proportionate.
13. On that basis ESMA proposed for discussion three options:
 - i. Option 1: maintain the existing classes while lowering the standard market size (SMS) for the smallest class by average value of transactions (AVT) from €7,500 to €5,000;
 - ii. Option 2: group the two smallest classes into a single class for shares with an AVT between zero and €20,000 and set a standard market size of €10,000; or
 - iii. Option 3: maintain the current classes and standard market sizes for each class as under Table 3 of Annex II of the Implementing Regulation (EC) No 1287/2006 (status quo option).
14. The responses to the DP were mixed. A sizable number of respondents were in favour of a reduction of the standard market size for financial instruments in the smallest class in line with the evidence provided by ESMA that the average transaction size has declined since the introduction of MiFID I in 2007. However, another sizable number of respondents were in favour of increasing the standard market size on the basis that the reduction in the average traded size does not properly reflect the change in the risk systematic internalisers are exposed to. Those respondents noted that any reduction in the standard market size would result in significantly less rigorous transparency regime than the one generally enforced by trading venues in respect to market makers. Some of those respondents also argued that the standard market size should not be calculated on the basis of the average value of transactions but according to methodologies akin to those used to establish large in scale thresholds.

15. ESMA agrees that it is vital to further reinforce the objective of increasing transparency for systematic internalisers through well-targeted implementing measures. On the other hand, ESMA is unconvinced that the reduction in the average size of transaction reflects greater market risk for systematic internalisers. However, ESMA notes that MiFIR defines how the standard market size should be calculated for shares and other equity-like instruments and that that size shall reflect the average size of transaction for each class of financial instruments.

Proposal

16. On the basis of the responses to the DP and the objective to maintain and enhance transparency, ESMA proposes to adopt option 2 and to establish equivalent classes by AVT for financial instruments with an AVT larger than €20,000. The standard market size for the class with an AVT between 0 and €20,000 would be €10,000, for the class (€20,000 - €40,000) would be €30,000 and so forth. ESMA also favours a recalculation of the AVT for each financial instrument on an annual basis.

Q47. Do you agree with the proposed classes by average value of transactions and applicable standard market size? Please provide reasons for your answers.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 8: Draft regulatory technical standards on transparency requirements in respect of shares, depositary receipts, ETFs, certificates and other similar financial instruments and on the trading obligation for investment firms

3.3. Trading obligation for shares

Background/Mandate

Article 23 of MiFIR

Trading obligation for investment firms

[...]

3. *ESMA shall develop draft regulatory technical standards to specify the particular characteristics of those transactions in shares that do not contribute to the price discovery process as referred to in paragraph 1, taking into consideration cases such as:*

- (a) non-addressable liquidity trades; or*
- (b) where the exchange of such financial instruments is determined by factors other than the current market valuation of the financial instrument.*

1. Article 23 of MiFIR requires investment firms to undertake their transactions in shares admitted to trading on a regulated market or traded on an MTF or a systematic internaliser or an equivalent third-country trading venue. However MiFIR waives that obligation in regard of transactions that:
 - i. are non-systematic, ad hoc, irregular and infrequent; or
 - ii. are carried out between eligible or professional counterparties and do not contribute to the price discovery process.
2. In regard to the first exemption from the trading obligation, ESMA notes that the mandate does not include the definition of what is non-systematic, ad hoc, irregular and infrequent, which may result in legal uncertainty on the scope of the exemption and as a consequence, in different interpretations between competent authorities. In regard to the second exemption from the trading obligation, MiFIR requires ESMA to develop regulatory technical standards specifying the particular characteristics of transactions that do not contribute to the price formation process having particular regard to cases such as "non-addressable" liquidity trades or where the exchange of such shares is determined by factors other than the current market valuation of the share.
3. In the discussion paper ESMA consulted on the interpretation of the first exemption from the trading obligation (non-systematic, ad-hoc, irregular and infrequent), on the content of the proposed list of types of transactions not contributing to the price formation process and whether the list should be exhaustive as well as whether benchmark and

portfolio trades could be considered transactions determined by factors other than the current market valuation of the financial instrument.

Analysis following feedback from stakeholders

4. In regard to the first exemption, most respondents agreed with ESMA's view that the determination of what is non-systematic, ad-hoc, irregular and infrequent should be defined within the same parameters applicable to the definition of systematic internaliser. Less support was found for a more restrictive interpretation of the exemption on the basis that ad-hoc and irregular features in Article 23 are not in the definition of systematic internaliser. More generally many respondents agreed with ESMA that the exemption under Article 23 may require greater clarity as the application of the obligation raises a number of relevant issues for a variety of market participants including investment firms and institutional investors such as asset managers. In the absence of any legal empowerment, ESMA may consider, depending on how MiFIR is implemented in the Union, to develop further guidance through guidelines in order to assist national competent authorities in their supervisory duties.
5. Respondents provided a variety of views on the list of transactions not contributing to the price formation process proposed by ESMA. However, most respondents disagreed with ESMA's proposal to establish an exhaustive list. The main reason against an exhaustive list is that it would be overly restrictive and improperly force new types of non-price forming transactions onto trading venues with detriment to investors. ESMA agrees that regulation should be sufficiently flexible to remain relevant as markets evolve. However flexibility should not come at the cost of legal certainty. ESMA is of the view that an exhaustive list would better deliver a clear and harmonised regulatory framework in the Union in respect of the trading mandate provided that the list is able to capture a wide variety of types of transactions that are not price forming and should not or could not take place on a trading venue or a systematic internaliser.
6. On the specific content of the list, the feedback received was mostly supportive of the types of transactions identified by ESMA. However, a number of respondents provided further types of transactions that should benefit from an exemption from the trading mandate. After analysing, however, ESMA found some of them were already covered or were considered price forming.
7. Some of the respondents asked for clarification about the treatment of give-up/give-in, riskless principal and in general to those arrangements to allocate shares finally to investors. Again, ESMA may consider, depending on how MiFIR is implemented in the Union, to develop further guidance through guidelines in order to assist national competent authorities in their supervisory duties.
8. An important topic raised in addition by respondents was the request for clarification of the treatment of significant distribution transactions under the trading obligation regime. In a nutshell, Article 3(2) MAR sets the characteristics of these type of transactions that can take place either as primary market transactions or secondary markets transactions

and where the volume and the allocation mechanism is different from normal trading both in terms of the amount in value of the securities and the selling method to be employed. As these types of transactions have a clear impact on the price discovery process they cannot be under the list of exemptions under this mandate, specifically those one that are a secondary offer. With respect to significant distribution transactions, ESMA clarifies these types of transactions should be understood to occur under the conditions of the first limb of the exemption, as non-systematic, irregular and infrequent.

9. Finally, all respondents considered that benchmark and portfolio trades should be included in the list of those transactions determined by factors other than current valuation of the shares. However some respondents were in favour of further clarifying that in portfolio trades all the components of the portfolio should be non-dissociable, meaning that it should not be possible to execute each component of the portfolio separately. On that specific point ESMA disagrees with the proposed clarification of the definition of portfolio trade; the purpose of the exemption is to facilitate the execution of several shares as a single lot at a price which would not normally reflect the prevailing market conditions of each share but would instead reflect, for example, the combined market risk of the portfolio of shares. For that reason a portfolio trade shall be considered exempt from the trading mandate if it involves the execution of a minimum number of shares from the same client and at the same time and the single components of the trade are meant to be executed only as a single lot.

Proposal

10. ESMA notes that the application of the exemptions to the trading obligation is not subject to further verification or authorisation as is the case for instance with regard to the application of waivers from transparency to trading venues. Consequently, ESMA considers it necessary to provide full clarity to the industry about the identification of transactions that are excluded from the obligation through an exhaustive list.
11. In respect of significant distribution transactions, ESMA clarifies that these types of transactions should be understood to occur under the conditions of the first limb of the exemption, as non-systematic, irregular and infrequent.
12. ESMA proposes an exhaustive list of types of transactions in shares which do not contribute to the price formation process which incorporates some of the suggestions offered by respondents to the discussion paper. The list includes:
 - i. transactions executed in reference to a price that is calculated over multiple time instances according to a given benchmark, such as volume-weighted average price or time-weighted average price;
 - ii. transactions that are part of a portfolio trade that involves the execution of 10 or more shares from the same client and at the same time and the single components of the trade are meant to be executed only as a single lot;

- iii. transactions that are contingent on a derivative contract having the same underlying and where all the components of the trade are meant to be executed only as a single lot;
- iv. transactions executed in the context of an investment firm that provides portfolio management services and transfers the beneficial ownership of a share from one fund to another and where no other investment firm is involved;
- v. give-ups or give-ins;
- vi. transactions executed for the purpose of transferring financial instruments as segregated collateral in bilateral transactions or in the context of a CCP margin and collateral requirements;
- vii. transaction resulting in the delivery of shares in the context of the exercise of convertible bonds, options, covered warrants or other similar derivatives; and
- viii. securities financing transactions.

Q48. Do you agree with the proposed list of transactions not contributing to the price discovery process in the context of the trading obligation for shares? Do you agree that the list should be exhaustive? Please provide reasons for your answers.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 8: Draft regulatory technical standards on transparency requirements in respect of shares, depositary receipts, ETFs, certificates and other similar financial instruments and on the trading obligation for investment firms

3.4. Post-trade transparency for trading venues and investment firms in respect of equity and equity like financial instruments

Background/Mandate

Article 7 of MiFIR

Authorisation of deferred publication

[...]

1. *ESMA shall develop draft regulatory technical standards to specify the following in such a way as to enable the publication of information required under Article 64 of Directive 2014/65/EU:*

- (a) the details of transactions that investment firms, including systematic internalisers and market operators and investment firms operating a trading venue shall make available to the public for each class of financial instrument concerned in accordance with Article 6(1), published under Article 6(1) and Article 20, distinguishing between those determined by factors linked primarily to the valuation of the financial instruments and those determined by other factors;*
- (b) the time limit that would be deemed in compliance with the obligation to publish as close to real time as possible including when trades are executed outside ordinary trading hours.*
- (c) the conditions for authorising investment firms, including systematic internalisers and market operators and investment firms operating a trading venue to provide for deferred publication of the details of transactions for each class of financial instruments concerned in accordance with paragraph 1 of this Article and with Article 20(1);*
- (d) the criteria to be applied when deciding the transactions for which, due to their size or the type, including liquidity profile of the share, depositary receipt, ETF, certificate or other similar financial instrument involved, deferred publication is allowed for each class of financial instrument concerned.*

Article 20 of MiFIR

Post-trade disclosure by investment firms, including systematic internalisers, in respect of shares, depositary receipts, ETFs, certificates and other similar financial instruments

[...]

3. *ESMA shall develop draft regulatory technical standards to specify the following:*

- (a) identifiers for the different types of transactions published under this Article, distinguishing between those determined by factors linked primarily to the valuation of the financial instruments and those determined by other factors*
- (b) the application of the obligation under paragraph 1 to transactions involving the use of those financial instruments for collateral, lending or other purposes where the exchange of financial instruments is determined by factors other than the current market valuation of the financial instrument*
- (c) the party to a transaction that has to make the transaction public in accordance with paragraph 1 if both parties to the transaction are investment firms.*

1. ESMA is required to draft regulatory technical standards implementing the new post-trade transparency regime for equities and equity like instruments. Those measures include the content and timing of the information to be made public, the identifiers for different types of transactions, the criteria and conditions for the deferred publication of transactions and, for OTC transactions, the application of post-trade transparency obligations in respect of transactions involving the use of equity financial instruments for collateral, lending or other purposes where the exchange of financial instruments is determined by factors other than the current market valuation of the financial instrument.

Content of the information to be made public

Analysis following feedback from stakeholders

- 2. In the discussion paper ESMA was of the view that the content of the information currently required to be published for shares admitted to trading on a regulated market was still valid and applicable to equity-like instruments. The information that ESMA proposed to be made public in respect of transactions in shares, depositary receipts, ETFs, certificates and other similar financial instruments included the date and time of the transaction, the instrument identifier, the price and price notation, the quantity and the venue identifier.
- 3. Respondents were mostly in favour of maintaining the current regime for shares and of extending it to equity-like instruments. Various respondents referred to the Market Model Typology developed by a number of market participants, including trading venues, aiming at improving the standardisation and content of post-trade information in Europe. ESMA has considered the various flags proposed in the Market Model Typology in the context of the identifiers for on-venue and OTC transactions. Some respondents highlighted the importance that in the post-trade space, requirements for transactions executed by investment firms OTC are equivalent to those imposed to transactions executed under the rules of a trading venue. Finally, in the context of ETFs, a respondent suggested requiring the net asset value (NAV) at the time of the transaction.

4. ESMA agrees that, in respect of the content of the information to be made public, the same post-trade transparency requirements shall, as much as possible, apply to transactions executed OTC and on a trading venue. In regard of the proposal to report the NAV by trading venues and investment firms, ESMA disagrees that such information should be required in post-trade reports; in many circumstances the information may not always be available during the day (i.e. in real time), besides trading venues and investment firms would not necessarily be in possession of the information on the NAV.

Proposal

5. ESMA, in line with the discussion paper, proposes to require investment firms and trading venues to report the following information in respect of transactions executed by them or under their rules:
 - i. the trading day;
 - ii. the trading time;
 - iii. the instrument identification;
 - iv. the unit price;
 - v. the currency;
 - vi. the quantity; and
 - vii. the venue identification

Q49. Do you agree with the proposed list of information that trading venues and investment firms shall made public? Please provide reasons for your answers.

Q50. Do you consider that it is necessary to include the date and time of publication among the fields included in Table 1 Annex 1 of Draft RTS 8? Please provide reasons for your answer.

Identifiers

6. The main purpose of identifiers is to complement the information content of post-trade reports by disclosing the technical characteristics of a transaction or the particular circumstances under which a transaction has occurred (such as a transaction executed under a pre-trade transparency waiver or which is subject to conditions other than the current market price). Identifiers hence improve price formation in the market and support achieving and monitoring best execution.
7. Under current MiFID trading venues and investment firms are already required to make public additional information in the form of flags when a transaction is determined by factors other than the current market price, in the case of negotiated transaction and following any amendment of previously disclosed information.

Analysis following feedback from stakeholders

8. In the discussion paper, ESMA proposed a list of flags on the basis of the previous work done by CESR in its technical advice to the Commission on post-trade transparency standards (CESR/10-882). ESMA suggested enhancing this list to take into consideration the new transparency requirements imposed by MiFID II and in particular the implementation of the volume cap mechanism under Article 5 of MiFIR and the trading obligation for shares under Article 23 of MiFIR. ESMA also consulted on whether it would be appropriate to add an identifier for large in scale transactions that benefit from a post-trade deferral and to extend the number of identifiers in order to include information on the type of market model (central limit order book, quote driven market, etc.) and the trading mode (continuous trading, call auction, off- and on-exchange reporting).
9. ESMA received a large number of responses which were generally supportive of greater granularity in identifying certain types of transactions through specific flags.
10. However a number of respondents were concerned that introducing an identifier for orders that are large in scale for the purpose of the pre-trade transparency waiver under Article 4(1)(c) would expose them to the rest of the market (e.g. in case of partial execution) and discourage the execution of large orders through central order books.
11. On the other hand, a number of respondents were in favour of adding a specific flag for large in scale transactions for which deferred publication is permitted under MiFIR. Others were of the view that the flag for deferred publication is redundant as the market would identify those transactions through time stamps. ESMA is of the view that there is merit in adding a flag for transactions benefitting from post-trade deferral and is proposing to add it to the list of post-trade flags.
12. The vast majority of respondents were of the view that no specific flags should be introduced for equity-like instruments.

13. Many respondents proposed that the list of identifiers should mirror the Market Model Typology which extends identifiers to market models and trading modes. ESMA supports initiatives aiming at increasing the level of transparency and enhancing information content of post-trade transparency and, therefore, when developing the proposal for a list of identifiers, has taken the Market Model Typology into due consideration.
14. Finally in respect of equity instruments only, Article 65(1)(h) of MiFID II specifies that the information to be published in the consolidated tape shall include, where applicable, the fact that a computer algorithm within the investment firm was responsible for the investment decision and the execution of the transaction. In order to enable CTPs to fulfil their obligation and to apply MiFID II requirements in a consistent way, ESMA is of the opinion that a specific flag should be set for transactions initiated by an algorithm.
15. ESMA did not consult on the algorithmic trading flag at the time of the discussion paper. The need to include such identifier derives from Article 65(1)(h) of MiFID II where CTPs are required, where applicable, to collect and consolidate information about the fact that a computer algorithm was responsible for the investment firm decision and execution of the transaction.
16. Lastly, as mentioned above, ESMA considers that Level 1 text does not provide ESMA with any empowerment to exclude non-price forming transactions from the transparency obligations as is currently the case under Article 5 of MiFID I Implementing Regulation. MiFIR, under Article 20(3)(b) (and Article 21(5)(b) for non-equity instruments) only provides ESMA with an empowerment to exempt OTC transactions from post-trade transparency. In this context, on-venue non-price forming transactions will therefore have to comply with the general transparency obligations and the proposal is to flag them as non-price forming trades in the post-trade transparency feeds in order to make the market aware of their non-price forming nature.

Proposal

17. ESMA has reviewed the list of identifiers following responses to the discussion paper and is proposing to require the following flags to be included in post-trade reports:
 - i. Benchmark trade
 - ii. Agency cross trade
 - iii. Non-price forming trades
 - iv. Special dividend trades
 - v. Technical trade
 - vi. Large in scale

vii. Deferred publication

viii. Reference price

ix. Negotiated trades in liquid financial instruments

x. Negotiated trades in illiquid financial instruments

xi. Negotiated trades subject to conditions other than the current market price

xii. Algorithmic trades

xiii. Cancellations

xiv. Amendments

Q51. Do you agree with the proposed list of flags that trading venues and investment firms shall made public? Please provide reasons for your answers.

Timing

18. MiFIR empowers ESMA to establish technical standards on the time limits that would be in compliance with the obligation to publish the details of a transaction as close to real time as possible including when a transaction is executed outside normal trading hours.
19. Under MiFID I, post-trade information relating to transactions taking place on trading venues and within normal trading hours must be reported as close to real time as possible and in any case within three minutes of the relevant transaction. When a transaction occurs on a trading venue but outside normal trading hours (e.g. a negotiated transaction executed outside the systems operated by the trading venue to bring together buying and selling trading interest) the publication requirement is deemed to be complied with when the transaction is reported to the public before the opening of the next trading day of the trading venue on which the transaction takes place (e.g. a trade occurring late in the evening must be reported before the beginning of the trading day the following day). For transactions executed outside a trading venue (including those executed under the systems of a systematic internaliser) the time limits are set in respect of the trading day of the most relevant market in terms of liquidity or during the investment firm's normal trading hours.

Analysis following feedback from stakeholders

20. In the discussion paper ESMA consulted on the definition of normal trading hours and on the maximum permissible delay of the publication of executed transactions. In line with the previous CESR technical advice to the Commission on equity markets (CESR/10-208) ESMA also proposed that in order to improve the quality of post-trade information and the overall market transparency the maximum permissible delay should be shortened to one minute after the relevant transaction for equity and equity-like instruments. Finally ESMA also consulted on whether different delays should be permissible depending on the type of equity-like instruments.
21. Respondents expressed support for ESMA's proposal to consider that the market opening hours as published by the market operator should be considered as normal trading hours. However a number of market participants had different views in respect of whether the ordinary hours shall include the opening and closing auctions that in most markets and for most securities set the start and the end of the trading day. ESMA is of the view that periodic auctions are systems that significantly contribute to the price discovery process (as market participants are able to execute larger than average transactions at a price which is generally considered reliable). For that reason ESMA considers it important that normal trading hours for a trading venue include the phases during which an instrument is in a periodic auction in order to allow market participants to execute transactions with as much information set on recently executed transactions as possible.

22. In respect of transactions not executed under the rules of a trading venue (i.e. OTC), a number of market participants disagreed with ESMA's proposal that 'normal trading hours' should refer to the most relevant market in terms of liquidity. For OTC trades, it is argued, normal trading hours should be considered as the hours applicable to the market where the concerned instrument is primarily admitted to trading as that concept causes less uncertainty and would not change over time while generally delivering the desired outcome as the primary market is usually the most liquid market for a financial instrument. ESMA remains of the view that the most relevant market in terms of liquidity, established every year on the basis of trading data for the previous year remains the proper concept for defining normal trading hours of a financial instrument.
23. In respect of the maximum permissible delay ESMA received mixed views on the shortening from three minutes to one minute. Some participants expressed the view that the delay should only be permissible in those cases where the systems of the trading venue or of the investment firm would not be technically capable of delivering real-time publication and that should only occur when execution has not been executed electronically. For that reason some respondents argued that no maximum delay should be imposed as some market participants may otherwise decide to comply within the maximum delay even in circumstances where post-trade information could be made public in real time. ESMA agrees that investment firms and trading venues shall make public the details of the transactions executed by them or under their rules in real time whenever that is possible given their technical arrangements.
24. Many respondents expressed concerns with the proposal of shortening the maximum delay to one minute in respect of transactions not executed through electronic systems where the process of data capture and submission may still rely on manual processing. ESMA appreciates that a maximum of one minute delay may be challenging under the technical arrangements currently adopted by certain market participants. However, the aim of the MiFID review is to improve those arrangements and set more rigorous transparency requirement for the benefit of the quality of the price formation process.
25. Finally many respondents were of the view that there is no reason to have different maximum permissible deferrals for different classes of equity-like instruments.

Proposal

26. On the basis of the strong support to the proposed definition of 'normal trading', ESMA suggests to retain the two definitions. In order to respond to the MiFID II objective to increase market transparency and without any strong case against its initial proposal, ESMA suggests to shorten to one minute the maximum permissible delay to publish transaction details.
- Q52. Do you agree with the proposed definitions of normal trading hours for market operators and for OTC? Do you agree with shortening the maximum possible delay to one minute? Do you think some types of transactions, such as**



portfolio trades should benefit from longer delays? Please provide reasons for your answers.

Securities financing transactions and other transactions determined by factors other than the current market valuation of the financial instrument

27. Article 20(3)(b) of MiFIR empowers ESMA to develop draft regulatory technical standards in respect of post-trade disclosure of OTC transactions involving the use of financial instruments for collateral, lending or other purposes where the exchange of financial instruments is determined by factors other than the current market valuation of the financial instrument.
28. ESMA notes that a similar empowerment exists under Article 28 of current MiFID. On the basis of that empowerment Article 5 of the implementing regulation 1287 of 2006 does not consider transactions, for the purpose of the transparency regime, to be securities financing transaction, the exercise of options or of covered warrants and primary market transactions.
29. However, as mentioned above, ESMA notes that the empowerment under Article 20(3)(b) concerns OTC transactions only and that the level 1 text does not provide a similar empowerment for on-venue trades which, therefore, will have to comply with the general post-trade transparency obligations.

Analysis following feedback from stakeholders

30. In the discussion paper ESMA consulted on whether specific flags for securities financing transactions and other types of transaction determined by factors other than the current market valuation of the financial instrument would be necessary. A significant number of respondents were of the view that securities financing transactions should not be considered reportable transactions for various reasons as the publication of those transactions would not contribute to the price discovery process while the administrative burden and costs for market parties would be substantial. Respondents also noted that the reporting requirements are now being dealt with under a separate piece of draft regulation on the Transparency of Securities Financing Transactions and that MiFIR should avoid duplicative or conflicting reporting requirements. Finally some respondents noted the lack of consistency in the discussion paper between the approach taken under Article 20(3)(b) of MiFIR for equities and the one under Article 21(5)(b) for non-equities where ESMA proposed to exclude securities financing transactions from the post-trade transparency regime.

Proposal

31. For OTC non-price forming transactions, ESMA agrees that those transactions should not be considered reportable trades for the purpose of the post trade transparency regime. Further, and consistently with current MiFID, ESMA proposes to establish a list of types of transactions determined by factors other than the current market valuation of the financial instrument to which Article 20 of MiFIR would not apply. The list includes:

- i. securities financing transactions;
- ii. the exercise of options, of covered warrants or convertible bonds;
- iii. primary markets transactions (such as the issuance, allotment or subscription, placements and the exercise of pre-emption rights);
- iv. give-ups or give-ins; and
- v. transfers of financial instruments as segregated collateral in bilateral transactions or in the context of a CCP margin and collateral requirements.

Q53. Do you agree that securities financing transactions and other types of transactions subject to conditions other than the current market valuation of the financial instrument should be exempt from the reporting requirement under article 20? Do you think other types of transactions should be included? Please provide reasons for your answers.

Deferred publication of transactions

32. MiFIR empowers ESMA to draft regulatory technical standards on the deferred publication regime for large in scale transactions in respect of shares, depositary receipts, ETFs, certificates and other similar financial instruments. Under existing MiFID transactions in shares admitted to trading on a regulated market may benefit from a deferred publication regime provided that the transaction is of a size larger than the minimum qualifying size relevant for that class of shares (classes are established on the basis of the average daily turnover with minimum sizes for more liquid shares) and the transaction is between an investment firm dealing on own account and a client of that firm.

Conditions for authorising the deferred publication of transactions

Analysis following feedback from stakeholders

33. In the discussion paper ESMA consulted on a variety of aspects. A key element of the deferred publication regime relates to the necessary condition for authorising a deferred publication that the transaction is between an investment firm dealing on own account and a client of that investment firm. ESMA consulted on whether to maintain that condition under MiFID II.
34. ESMA's proposal received support from a vast majority of respondents. However, many respondents provided qualified answers around the meaning of when an investment firm is at risk and when it deals with a client. A number of respondents specified that the condition should be deemed to be fulfilled (and hence the deferral apply to the transaction) also in circumstances where the investment firm is dealing with another investment firm that is acting on behalf of a client or where the investment firm is dealing with another investment firm both on a principal capacity. Other respondents clarified that dealing on own account (which according to MiFID means trading against proprietary capital resulting in the conclusion of transactions) should be interpreted as being at market risk. Finally, some market participants highlighted that the deferred publication regime should be venue-neutral i.e. that all deferrals should apply equally to transactions regardless of the venue on which they are executed.
35. ESMA agrees that the deferred publication regime should rest on the presumption that the investment firm is at risk. For that reason ESMA proposes to further qualify that the deferral should only apply when the investment firm is dealing on own account other than on a matched principal basis. According to MiFID II, matched principal trading means a transaction where the investment firm imposes itself between the buyer and the seller in such a way that it is never exposed to market risk throughout the execution of the transaction, with both sides executed simultaneously.

Proposal

36. ESMA proposes that a necessary condition to authorise a large in scale transaction to be deferred is that the transaction must be between an investment firm dealing on own account other than on a matched principal basis as per Article 4(1)(38) of MiFID II and another counterparty.

Large in scale thresholds – shares and depositary receipts

37. Under existing MiFID large in scale thresholds are determined on the basis of the liquidity class of the share and the length of the deferral. The minimum qualifying size for a large in scale transaction increases with the liquidity of the share and the length of the deferral.

Analysis following feedback from stakeholders

38. In the discussion paper ESMA, on the basis of the CESR technical advice to the Commission (CESR\10-802) and consistently with the recalibration of the liquidity classes proposed, in the context of the pre-trade waiver for large in scale orders, a new table with 8 liquidity classes and three thresholds increasing with the length of the deferral (60 minutes, 120 minutes and end of the day).

Average daily turnover (ADT) in EUR	Minimum qualifying size of transaction for permitted delay	Timing of publication
> 100m	10,000,000	60 minutes
	20,000,000	120 minutes
	35,000,000	EOD
50m – 100m	7,000,000	60 minutes
	15,000,000	120 minutes
	25,000,000	EOD
25m – 50m	5,000,000	60 minutes
	10,000,000	120 minutes
	12,000,000	EOD
5m – 25m	2,500,000	60 minutes
	4,000,000	120 minutes
	5,000,000	EOD
1m – 5m	450,000	60 minutes
	750,000	120 minutes
	1,000,000	EOD
500,000 – 1m	75,000	60 minutes
	150,000	120 minutes
	225,000	EOD

100,000 – 500,000	30,000	60 minutes
	80,000	120 minutes
	120,000	EOD
< 100 k	15,000	60 minutes
	30,000	120 minutes
	50,000	EOD

39. A majority of respondents suggested to retain the applicable post-trade regime. However, ESMA is of the opinion that the applicable regime should take into account the evolution of equity market and especially the recent phenomenon of fragmentation. As a consequence, retaining the MiFID I regime set up a decade ago is not an option. In the discussion paper, ESMA presented two additional options:

- i. Option A, followed CESR advice of 2010 and proposed to:
 - a. shorten the maximum delay to the end of the day with only the largest transactions occurring late in the day (15.00 or later) to be published prior to the opening of trading on the next day;
 - b. shorten the intra-day delay to 120 minutes; and
 - c. raise all intra-day transaction size thresholds.
- ii. Option B: also adopt CESR advice (Option A) but with one modification: extend the deferred publication of the largest transactions from late in the day (15.00 or later) to noon of the next trading day (instead of prior to the opening of trading on the next trading day).

40. Between the options presented by ESMA in the discussion paper, respondents support option B and a few respondents asked for a longer deferral but ESMA is of the opinion that increasing delays would not be consistent with the MiFID II transparency objective and considers that option A provides for a sufficient deferral period.

41. Specifically, as far as Small and Medium Enterprises (SME) shares are concerned, respondents highlighted the lower level of liquidity of this type of shares and ESMA agrees with this concern. As a consequence, respondents support appropriate and proportionate thresholds in order not to disadvantage SMEs. ESMA believes that the additional ADT class proposed above (ADT < 50,000) permits to decrease applicable thresholds for less liquid stocks and as such would be applicable to SMEs. Thus, ESMA believes it has responded adequately to the respondents' concern.

42. ESMA suggested in the discussion paper that the review of the thresholds determined for deferred publication should not be more frequent than at two year intervals thereafter. Respondents largely support the idea that an annual review is necessary.

43. Respondents expressed strong concern about ESMA's proposal to impose deferred publication at the end of the day during the closing auction period. Respondents highlight the adverse effect of this proposal on the market and especially for market participant who would lose the opportunity to unwind positions during closing auctions. As a consequence, deferred publication should occur at the end of the day and after market close.
44. In respect of the publication of the details of transactions during the closing auction, most respondents were of the view that when end of the day publication is required it should occur after the end of the closing auction. It is argued that publication during or even before the closing auction would further shrink the period (and the available liquidity) during which market participants can manage their exposure and unwind the position. Furthermore many respondents noted that publication during the closing auction might distort the price formation process and increase price volatility which would be particularly harmful as the closing price is generally considered an important benchmark price for valuation purposes.

Proposal

45. In respect of shares, ESMA proposes to increase the number of liquidity bands and, thus, to align pre- and post-trade regimes in this regard so as to simplify the regimes for investment firms and trading venues. ESMA also proposes to establish the thresholds and corresponding delays as specified in the table above and for transactions that can benefit from end of day deferral:
- i. To allow the publication of those transactions after the end of closing auction; or
 - ii. For transactions executed within 2 hours before the end of that trading day, to allow the publication of the details of those transactions before the beginning of the next trading day.

Q54. Do you agree with the proposed classes and thresholds for large in scale transactions in shares and depositary receipts? Please provide reasons for your answers.

Large in scale thresholds – ETFs

Analysis following feedback from stakeholders

46. In respect of ETFs ESMA proposed to establish the same liquidity bands for post-trade deferrals as those proposed for pre-trade waivers. On the basis of the data collected from regulated markets ESMA calculated different thresholds according to different purposes (i.e. setting the large in scale thresholds in such a way that no more than 30%, 20% or 10% of the liquidity by turnover would fall above the thresholds).

47. Many respondents noted that ETFs should be generally considered as liquid and, similarly to feedback received in the context of pre-trade transparency waivers, it is argued that the liquidity of an ETF depends on the liquidity of the underlying and not on the liquidity (as measured by the average daily turnover) of the ETF itself.

Proposal

48. ESMA proposes to establish the following thresholds and delays for ETFs:

Average daily turnover (ADT) in EUR	Minimum qualifying size of transaction for permitted delay	Timing of publication
ADT < 50 000	500 000	60 minutes
	1 000 000	120 minutes
	2 000 000	End of the day
50 000 ≤ ADT < 200 000	1 000 000	60 minutes
	2 000 000	120 minutes
	3 000 000	End of the day
200 000 ≤ ADT < 500 000	2 000 000	60 minutes
	3 000 000	120 minutes
	5 000 000	End of the day
500 000 ≤ ADT < 2 000 000	3 000 000	60 minutes
	5 000 000	120 minutes
	7 000 000	End of the day
ADT ≥ 2 000 000	5 000 000	60 minutes
	7 500 000	120 minutes
	10 000 000	End of the day

49. ESMA is interested in views on an alternative approach where the minimum qualifying size for all ETFs, regardless of their liquidity, is set at €5,000,000 where the publication for any trade beyond that threshold should occur at the end of the trading day.

Q55. Do you agree with the proposed classes and thresholds for large in scale transactions in ETFs? Should instead a single large in scale threshold and deferral period apply to all ETFs regardless of the liquidity of the financial instrument as described in the alternative approach above? Please provide reasons for your answers.

Large in scale thresholds – Certificates

Analysis following feedback from stakeholders

50. In the discussion paper ESMA consulted on the number and ranges of classes for liquidity by ADT but not on the applicable thresholds.

Proposal

51. ESMA proposes to establish two classes of liquidity, above and below €50,000 with deferrals of 120 minutes till end of the trading day according to the following table

Average daily turnover (ADT) in EUR	Minimum qualifying size of transaction for permitted delay	Timing of publication
ADT < 50 000	15 000	120 minutes
	30 000	End of the day
ADT ≥ 50 000	30 000	120 minutes
	60 000	End of the day

Q56. Do you agree with the proposed classes and thresholds for large in scale transactions in certificates? Please provide reasons for your answers

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 8: Draft regulatory technical standards on transparency requirements in respect of shares, depositary receipts, ETFs, certificates and other similar financial instruments and on the trading obligation for investment firms

3.5. Liquid market definition for non-equity financial instruments

General remarks on the definition of liquid market

Background/Mandate

Articles 9(5)(e) of MiFIR

5. *ESMA shall develop draft regulatory technical standards to specify the following:*

[...]

(e) the financial instruments or the classes of financial instruments for which there is not a liquid market where pre-trade disclosure may be waived under paragraph 1.

Articles 11(4)(c) of MiFIR

4. *ESMA shall develop draft regulatory technical standards to specify the following in such a way as to enable the publication of information required under Article 64 of Directive 2014/65/EU:*

[...]

(c) the conditions for authorising investment firms, including systematic internalisers, and market operators and investment firms operating a trading venue, to provide for deferred publication of the details of transactions for each class of financial instrument concerned in accordance with paragraph 1 of this Article and with Article 21(4);

ESMA shall submit those draft regulatory technical standards to the Commission by 3 July 2015. Power is delegated to the Commission to adopt the regulatory technical standards referred to in the first subparagraph in accordance with Articles 10 to 14 of Regulation (EU) No 1095/2010.

1. MiFIR introduces transparency requirements for bonds, structured finance products, emission allowances and derivatives with powers for NCAs under Article 9(1)(c) of MiFIR to waive the obligation for market operators and investment firms operating a trading venue to make public pre-trade information for certain non-equity instruments for which there is not a liquid market. Similarly, on the post-trade side NCAs may under Article 11(1)(b) of MiFIR authorise market operators and investment firms to provide for deferred publication in respect of transactions that are related to non-equity instruments for which there is not a liquid market.
2. The importance of the concept of a liquid market goes beyond the transparency regime. It is also worth noting that the trading obligation for derivatives, defined under Article 32

of MiFIR, applies only to those classes of derivatives which are considered sufficiently liquid. Under Article 32(2), MiFIR empowers ESMA to run for each class of derivatives concerned a specific liquidity assessment which should be similar but not necessarily identical to the liquidity assessment performed for transparency purposes and described in this chapter.

3. The concept of a liquid market for non-equity instruments is defined in Article 2(1)(17)(a) of MiFIR. On the basis of this definition and the above mandate to define the classes of non-equity financial instruments for which a waiver/deferral may be granted because there is not a liquid market for them, ESMA is required to specify the non-equity financial instruments or classes of financial instruments for which there is not a liquid market.

Analysis following feedback from stakeholders

The components of the definition of a liquid market

4. In its Discussion Paper (DP), ESMA consulted on how to interpret the different components of the definition of 'liquid market' for non-equities under Article 2(1)(17)(a), proposing different options and stating its preferences.

Average frequency of transactions

5. Article 2(17)(a)(i) of MiFIR refers to 'the average frequency of transactions over a range of market conditions, having regard to the nature and life-cycle of products within the class of financial instrument'. However, the term 'average frequency' can be interpreted in different ways. In the discussion paper, ESMA proposed three different options that could be used to calculate the average frequency of transactions. Preference was given to the option proposing to set this threshold as a combination of the minimum of transactions plus a minimum number of active trading days. A financial instrument would be considered liquid only if both requirements were met.
6. During the consultation, a majority of respondents agreed with ESMA's proposal that 'average frequency' should be calculated with reference to both a minimum number of trades over a given period and a minimum number of days on which trading occurred over that time period. A couple of respondents stated that when looking at average frequency, ESMA should categorise such by type of market participant. Several participants also stated that technical trades which are non-price forming (e.g. portfolio compression) should not be included and noted that packaged transactions should be given special consideration.

Average size of transactions

7. Article 2(17)(a)(i) of MiFIR also refers to the 'average size of transactions over a range of market conditions, having regard to the nature and life cycle of products within the class of financial instrument'.

8. In the DP, ESMA presented two different options for assessing the average size of transactions and stated its preference for calculating it by dividing the total turnover or notional amount traded over the reference period by the number of trading days. A large majority of respondents to the consultation agreed with this proposal.

Data related to market participants

9. In the DP, ESMA noted that the requirement, under Article 2(17)(a)(ii) of MiFIR, to take ‘the number and type of market participants, including the ratio of market participants to traded financial instruments in a particular product’ into account is not self-explanatory. For example, a high number of market participants might be associated with a high degree of liquidity - as is set out in recital 21 of MiFIR. On the other hand, a low number of market participants might indicate that this market is a predominantly professional market characterised by the existence of ‘liquidity providers’.
10. ESMA also noted that defining and distinguishing different types of market participants is complex. For instance, there is no obvious definition of a retail investor nor could such a definition be applied across all classes of financial instruments.
11. Given all these challenges, ESMA suggested to define a minimum number of (different) market participants trading in a given market and to apply the same thresholds regarding the number of market participants for all classes of financial instruments. This minimum number of market participants would be used as an auxiliary criterion when assessing liquidity. As a result, a market would not be considered liquid if only a de minimis number of market participants trade.
12. Specifically, ESMA proposed that the term ‘market participant’ should be understood as any member or participant of trading venue being involved in at least one transaction in a given market with the data computed by assessing the transaction reporting data (the LEI).
13. Responses received generally agreed with ESMA’s proposal. However, some respondents recommended excluding inactive market participants. Several respondents also stressed that the market participants’ criteria should be given less weight in the final liquidity assessment compared to frequency of trades and ADT.

Average size of spread

14. In the DP, ESMA proposed in a nutshell to implement Article 2(1)(17)(a)(iii) of MiFIR as follows:
 - i. to generally use end-of-day relative bid-ask spreads as published by the most relevant market in terms of liquidity irrespective of the type (indicative or firm) and size of the quotes;

- ii. to calculate the spread data for the whole period or for sufficient long number of trading days and to consider the arithmetic average of this data as the 'average spread'.
15. ESMA also stressed that the spread criterion would only be applied when assessing liquidity if figures were available. During the data gathering further described in the following sections, the use of the average size of spread turned out to be very difficult to take into account in practice. ESMA had to collect data from diverse sources which did not always have this information. Issues also arose with respect to the consistency of the data collected which did not always allow appropriate computation. Finally, no information on spread was available for transactions executed OTC which represent for some classes a very large proportion of the overall trading.

Decision mechanisms for assessing the liquidity criteria

16. In the DP, ESMA presented two options on how to combine the different criteria listed under Article 2(1)(17)(a) of MiFIR. The first option proposed to consider the four criteria as equally important and, thus, all need to be met whereas the second option introduced more flexibility with respect to the combination of criteria and suggested that all four criteria did not have necessarily to be met for an instrument to be considered liquid. In the DP, ESMA expressed a weak preference for the first option while recognising that a different approach could potentially be used for the different asset classes.
17. However, a majority of respondents to the DP recommended using option 2 and to consider primarily the average size and frequency of transactions when assessing the liquidity of financial instruments. The two other criteria should in their view only be taken into account in some specific cases such as, for instance, when an instrument would not have met to two first criteria.
18. ESMA in the proposal described below has indeed adopted a relatively flexible approach to assess the liquidity of non-equity instruments. On the basis of the data available and considering the wide range of instruments to be analysed, ESMA considers that the average size and frequency of transaction are more relevant to perform a consistent assessment of liquidity across the board. However, as suggested in the responses to the consultation, for some asset classes (e.g. securitised derivatives), other criteria were used so as to better capture the intrinsic liquidity of these specific markets.

Liquidity assessment for individual financial instruments or classes thereof (COFIA versus IBIA)

19. According to Article 2(1)(17)(a) of MiFIR, non-equity liquidity can be assessed considering classes of instruments or on a per-instrument basis. Accordingly, ESMA has developed two methods for the liquidity assessment: the Classes of Financial Instruments Approach (COFIA) and the Instrument by Instrument Approach (IBIA). The paragraphs below give a broad overview of the two methods.

20. The COFIA approach requires segmenting asset groups (e.g. bonds, derivatives) into more granular classes that share largely homogenous liquidity characteristics. Subsequently, ESMA assesses the liquidity of these classes based on the liquidity of all the instruments within the specific asset class. Whether a newly issued financial instrument is to be deemed liquid or not therefore becomes a function of the class it belongs to.
21. Using the COFIA approach, asset classes are defined as liquid or not liquid in the Regulatory Technical Standard. Changing the liquidity of an asset class and adapt the system to changing market conditions therefore requires changing the Regulatory Technical Standard.
22. An important advantage of COFIA is that the assessment of newly issued financial instruments is straightforward. Next to that, COFIA also gives greater certainty to the market and allows taking into account instruments with a very short lifespan. Apart from that, some classes require some degree of aggregation (e.g. derivatives) based on common characteristics, as it would be unfeasible to assess a very large number of financial instruments individually. COFIA would also be consistent with, but not necessarily identical to, the approach taken under EMIR.
23. A drawback of using COFIA could be that some instruments within a specific class could have a different liquidity profile compared to the liquidity profile of the entire class based on all instruments within that class.
24. The IBIA approach requires assessing the liquidity of each individual financial instrument, reapplying the liquidity criteria mentioned in Article 2(1)(17)(a) of MiFIR on a recurrent, frequent basis. Using the IBIA approach, the liquidity of individual financial instruments is assessed using the specific liquidity criteria and thresholds, which are defined per asset class in the Regulatory Technical Standard. This liquidity assessment is reviewed on a monthly or quarterly basis in order to make sure that the liquidity assessment still reflects the actual liquidity of the instrument.
25. The most important advantage of IBIA is that the liquidity of each individual financial instrument is assessed individually. This reduces the risk that a financial instrument is classified as liquid, whereas it actually is illiquid and vice versa. A considerable disadvantage of the IBIA approach is that it is not possible to classify a newly issued financial instrument as historical trading data is not available for that instrument.
26. Furthermore, IBIA will bring with it recurrent uncertainty amongst market participants as the liquidity status of a non-equity financial instrument might change as frequently as the frequency of re-assessment. This legal uncertainty might represent a challenge for industry and authorities alike.
27. In general, feedback received during the consultation period stressed the complexity of the new transparency regime for non-equity financial instruments which therefore needs to be considered in its entirety. For this reason, it was, in the respondents' view,

challenging to assess the relative impact of the two approaches without looking at the broad picture and, thus, having further certainty about the other elements of the transparency regime to be implemented.

28. Under these circumstances, the responses received were evenly split with respect to fixed income instruments between those favouring COFIA together with those supporting COFIA but with sufficient granularity and those suggesting the use of IBIA.
29. Most of the respondents recognise that for some asset classes it is not feasible to use IBIA, for example for derivatives, given the large number of such instruments. These respondents stress that, for those asset classes, COFIA should be used.
30. One of the arguments respondents put forward to support the use of IBIA for fixed income products is that there are no intrinsic characteristics that can be used to meaningfully ascribe non-equity financial instruments to a liquidity class. According to these respondents, fixed income markets are too heterogeneous to construct sufficiently granular classes that share a common liquidity profile.
31. Proponents of the IBIA approach recommend sufficiently frequent reviews of the fixed income instruments' liquidity because of their specific seasonality. Those instruments are generally illiquid during a large part of their life but however show episodic liquidity directly after issuance and again towards maturity.
32. For those supporting the use of COFIA, the main argument is that this approach would be more practical and less complex. Some responses also pointed out that this approach would enable ESMA to take into account some key liquidity factors for fixed income instruments which are not mentioned in the definition of liquidity in MiFIR. Furthermore, other respondents stressed that COFIA will give greater certainty to market participants.
33. It is an underlying concern of those who support COFIA with a high degree of granularity (i.e. more granularity than proposed by the taxonomy presented in the discussion paper) that if the classes are not sufficiently granular, there is a risk that some of the financial instruments in the class will be wrongly classified as liquid, whereas they actually are illiquid and vice versa – with the consequences this may have for the future trading of those financial instruments.
34. Having carefully considered the pros and cons of IBIA versus COFIA, including the arguments put forth by the stakeholders, ESMA has come to the conclusion that COFIA is the better solution for a number of reasons. COFIA will provide the market participants with stability and predictability in respect of the transparency rules that apply to non-equity instruments. Moreover, COFIA is much less complex than IBIA and will be less of an administrative burden for industry and authorities alike. Also, applying COFIA will ensure that the liquidity status of newly issued financial instruments can be determined in an easy and straightforward manner. In addition, ESMA agrees with the respondents that for some non-equity instruments it simply will not be possible to use IBIA.

35. As described above, ESMA is aware of the risks that might arise from COFIA. Therefore, ESMA intends to design it with an appropriate level of granularity and will strive to remedy the possible weaknesses. In particular, if some relatively illiquid instrument happens to be wrongly classified as liquid, it is important that the potential adverse impact on liquidity is mitigated by means of the waivers and deferrals for transactions that are large-in-scale ('LIS') or above the size specific to the instrument ('SSTI').

Proposal

36. ESMA proposes to use the COFIA approach as the basis for the determination of the liquidity of all the various non-equity financial instruments.
37. This approach provides for the segmentation of non-equity financial instruments into specific classes and sub-classes defined on the basis of a set of criteria (e.g. maturity, currency, underlying instrument, etc.) which varies from one asset class to the other. On this basis, sub-classes (and all the instruments belonging to those sub-classes), have been deemed liquid or illiquid on the basis of the liquidity criteria listed under Article 2(1)(17)(a) and described above.
38. In the tables proposed in the draft RTS on non-equity transparency, ESMA presents the segmentation of the classes and sub-classes it has arrived at and which constitute the framework for the transparency regime. However, such segmentation is not only functional for the purpose of the determination of the liquid classes/sub-classes, but it is also used as a basis for setting the different thresholds for transactions that are large-in-scale or above the size specific to the instrument for each class. Indeed, in ESMA's view, the liquidity of non-equity instruments and the LIS / SSTI thresholds to be applied to those instruments are closely linked.
39. On the basis of the pre-defined segmentation, any newly issued instrument will automatically be classified as liquid if it belongs to one of the liquid classes listed in the draft RTS without the need for any calculation/estimation of its trading volume.
40. The liquid classes will be firm until the next review of the Regulatory Technical Standard.
41. In the following sections ESMA describes the analysis carried out across different asset classes with the purpose of segmenting non-equity financial instruments so as to define the sub-set of liquid classes. Each asset class, as stated above, was further disaggregated into sub-classes on the basis of qualitative criteria and then deemed to be liquid on the basis of a specific combination of criteria provided under Article 2(1)(17)(a) MiFIR and related thresholds.
42. It is worth noting that for producing this taxonomy, ESMA has considered the following elements:
 - i. Feedback from respondents in relation to the taxonomy in the discussion paper;

- ii. Standard market practices;
 - iii. Taxonomies that have previously been proposed by external stakeholders; and
 - iv. Other pieces of European legislation that could be relevant in the context of MiFID II and MiFIR, including EMIR.
43. Whilst being aware of the need to design the taxonomy with an appropriate level of granularity, ESMA has also paid attention to the fundamental requirement that the taxonomy should be sufficiently clear and simple for NCAs to implement and oversee as well as for market participants to understand and comply with on a pan-European basis.

Fixed income financial instruments

44. With the purpose of determining liquid classes of bonds and SFPs, ESMA collected information from Transaction Reporting from 25 NCAs for the period 1 June 2013 - 31 May 2014. After having performed a number of consistency checks to validate the aggregate values provided by each NCA, ESMA included in the analysis 54,395 bonds and 2,591 SFPs out of which 49% of bonds and 56% of SFPs did not trade over the period.
45. Taking into account the responses from the DP, ESMA decided to consider a bond or SFP liquid if it trades at least on 200 days a year, it records at least 400 trades a year and €100,000 of nominal traded per day (hereinafter liquidity criteria). These liquidity criteria have been tested at ISIN level to build the basis for grouping instruments into liquidity classes (defined in the table below).
46. Different explanatory variables were examined to analyse the predicting power on liquidity: issuance size, time to maturity, currency, instrument type and issuer type (financial vs. non-financial). Some of them have a relatively low predicting power on liquidity so the level of granularity was decided on the basis of the simplest classes with the better predicting power.
47. The empirical exercise demonstrated that there was a clear relationship between liquidity and issuance size (the bigger the issuance size, the more liquid is the bond). Based on that, ESMA designed the classes optimising the issuance size for a given combination of instrument type and issuer type, under the objective of classifying correctly, according to the liquidity criteria, the majority of instruments belonging to a liquid or illiquid class.
48. According to the segmentation proposed below, ESMA is able to classify correctly (as liquid or not) 85% to 99.7%⁷ of instruments, depending on the given class.

BOND TYPE	DEBT SENIORITY	ISSUER SUB-TYPE	ISSUANCE SIZE*	Liquidity Test: 200 days traded, 400 trades and €100,000 nominal amount a year
European Sovereign Bond			greater or equal to 2,000,000,000	Liquid
Non-European Sovereign Bond			greater or equal to 2,000,000,000	Liquid
Other European Public Bond			greater or equal to 1,000,000,000	Liquid
Convertible Bond		Financial	greater or equal to 750,000,000	Liquid
Covered Bond			greater or equal to 750,000,000	Liquid
Corporate Bond	Senior	Financial	greater or equal to 500,000,000	Liquid
Corporate Bond	Senior	Non-financial	greater or equal to 750,000,000	Liquid
Corporate Bond	Subordinated	Financial	greater or equal to 500,000,000	Liquid
Corporate Bond	Subordinated	Non-financial	greater or equal to 500,000,000	Liquid
Convertible Bond		Non-financial		Illiquid
SFPs				Illiquid
Others				Illiquid

⁷ With the exception of the class of Non-EU Sovereign bonds for which the issuance size threshold was set equal to that determined for European Sovereign bonds

Table 4: Bonds and SFPs

49. ESMA is aware that the methodology implies that there will be some bonds belonging to a liquid class that are illiquid in reality (i.e. they do not meet the liquidity criteria) and vice-versa, but ESMA presumes that the potential adverse impact of wrong classification will be mitigated by the existence of other waivers and deferrals (namely, LIS and SSTI). In other words, while a bond might be qualified as pertaining to a liquid class even though the bond itself is characterised by limited trading activity, it can still benefit from the pre-trade waivers and post-trade transparency deferrals for orders and transactions which are large in scale or above the size specific to the instrument.
50. The following table and charts provide further empirical evidence that the majority of the instruments are correctly classified within their class.
51. Table 1 below includes for each bond type the following information: the total number of bonds (per ISIN), the issuance size threshold defined to qualify bonds as either liquid or not liquid and the related number of instruments with an issuance size above/below such threshold, finally the number of bonds with an issuance size above/below the corresponding threshold and meeting/not meeting the liquidity thresholds considered (i.e. 200 traded days in 1 year period, on average 400 trades per day and €100,000 nominal amount per day).
52. As an example, consider the class of EU Sovereign bonds with a total of 3,823 EU Sovereign bonds in the dataset. Out of those, 865 had an issuance size above €2bn and are thus deemed to be liquid. The remaining 2,958 bonds with an issuance size below €2bn are then qualified as illiquid.
53. Out of the 865 liquid bonds, 498 did record trading activity on at least 200 days over 1 year, had an average number of trades per day greater or equal to 400 and an average daily nominal amount traded of at least €100,000. However, the remaining 367 bonds qualified as liquid according to the issuance size criteria did not meet such thresholds. Further, out of these 367 bonds not meeting the liquidity thresholds, 203 did not trade over the year considered.
54. Out of 2,958 illiquid bonds, 2,887 traded less than 200 days over 1 year, had an average number of trades per day smaller than 400 and an average daily nominal amount traded of less than €100,000. The remaining 71 bonds of this category that met these thresholds are qualified as illiquid according to the issuance size criteria.
55. As a result, a total of 3,385 bonds (498 liquid bonds + 2,887 illiquid bonds) out of 3,823 were correctly classified, i.e. 88.54% of the sample.

BOND TYPE	Total number of ISINs	Percentage of ISINs correctly classified	Issuance Size Threshold	Num of ISINs with Issuance Size ABOVE the threshold	ISINs ABOVE the liquidity thresholds		ISINs BELOW the liquidity thresholds			Num of ISINs with Issuance Size BELOW the threshold	ISINs BELOW the liquidity thresholds		ISINs ABOVE the liquidity thresholds	
					Number	Percentage	Number	Percentage	No trades		Number	Percentage	Number	Percentage
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[14]	[9]	[10]	[11]	[12]	[13]	
EU Sovereign Bonds	3,823	88.54%	2,000,000,000	865	498	57.57%	367	42.43%	203	2,958	2,887	97.60%	71	2.40%
Other European Public Bonds	1,368	95.47%	1,000,000,000	80	35	43.75%	45	56.25%	13	1,288	1,271	98.68%	17	1.32%
Covered Bonds	7,786	93.59%	750,000,000	586	155	26.45%	431	73.55%	253	7,200	7,132	99.06%	68	0.94%
Senior Corporate Bonds (Financial)	30,816	97.50%	500,000,000	829	274	33.05%	555	66.95%	259	29,987	29,771	99.28%	216	0.72%
Senior Corporate Bonds (Non-Financial)	3,164	86.57%	750,000,000	399	194	48.62%	205	51.38%	17	2,765	2,545	92.04%	220	7.96%
Subordinated Corporate Bonds (Financial)	5,787	87.37%	500,000,000	890	398	44.72%	492	55.28%	133	4,897	4,658	95.12%	239	4.88%
Subordinated Corporate Bonds (Non-Financial)	1,109	88.01%	500,000,000	203	87	42.86%	116	57.14%	49	906	889	98.12%	17	1.88%
Convertible Bonds (Financial)	127	96.06%	750,000,000	5	3	60.00%	2	40.00%	-	122	119	97.54%	3	2.46%
Convertible Bonds (Non-Financial)	46	97.83%		-	-	-	-	-	-	46	45	97.83%	1	2.17%
SFPs	2,591	99.69%		-	-	0.00%	-	0.00%	-	2,591	2,583	99.69%	8	0.31%

[1] = [5] + [7] + [10] + [12]

[2] = ([5] + [10]) / [1]

[4] = [5] + [7]

[6] = [5] / [4]

[8] = [7] / [4]

[9] = [10] + [12]

[11] = [10] / [9]

[13] = [12] / [9]

[14] = corresponds to the number of ISINs with Issuance Size ABOVE the threshold that do NOT meet the liquidity thresholds because they did not trade during the period considered. For example for EU Sovereign bonds, out of 367 ISINs with Issuance Size ABOVE the threshold and NOT meeting the liquidity thresholds, 203 did not meet the liquidity thresholds because they did not trade over the period.

Table 5: Segmentation assessment

Here below the sequence of charts for each bond type.

56. The first chart relates to the class of EU-sovereign bonds; red points are sovereign bonds with an issuance size greater or equal to €2bn and, therefore, considered liquid as defined in the table above. We can observe that the majority of red points trade more than 200 days a year and more than 400 times a year, and therefore are liquid according to the liquidity criteria. However, there are also some black points (sovereign bonds with an issuance size below €2bn) that also fulfil the liquidity criteria even though they would fall into an illiquid class according to the table above. On the other hand, most black points do not fulfil the liquidity criteria, but there are also some bonds defined as liquid because they have an issuance size above €2bn (red points) that are illiquid according to the liquidity criteria.

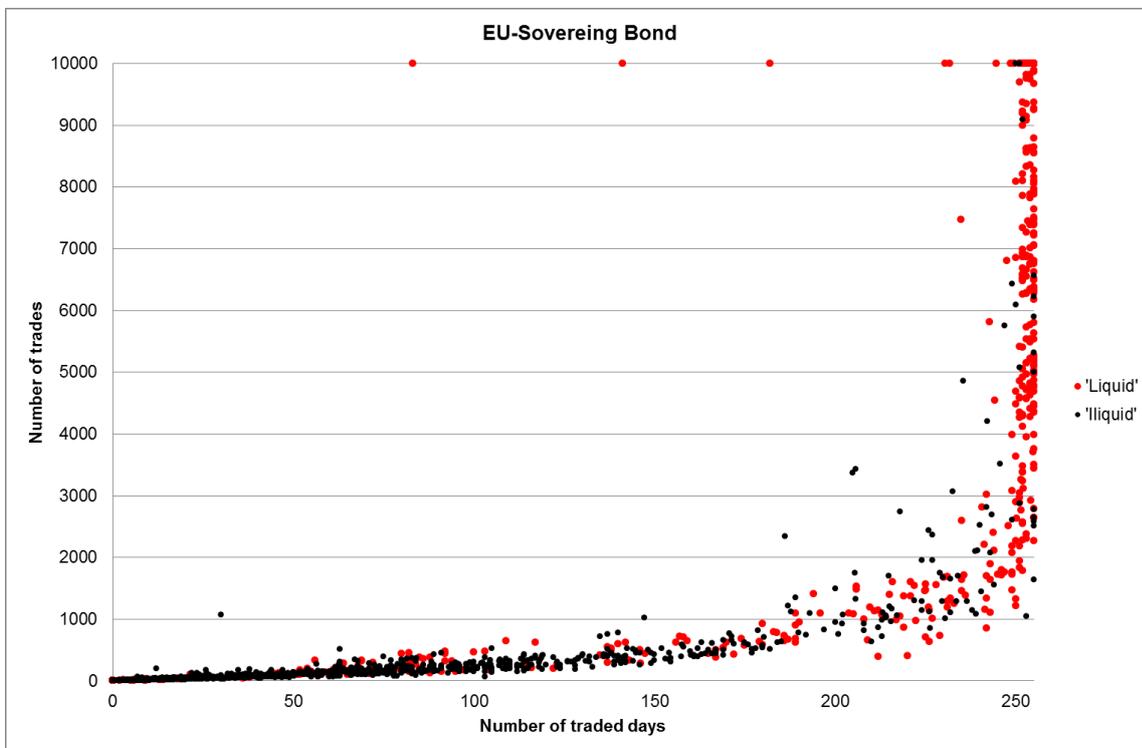


Chart 1: EU-Sovereign Bonds – segmentation assessment

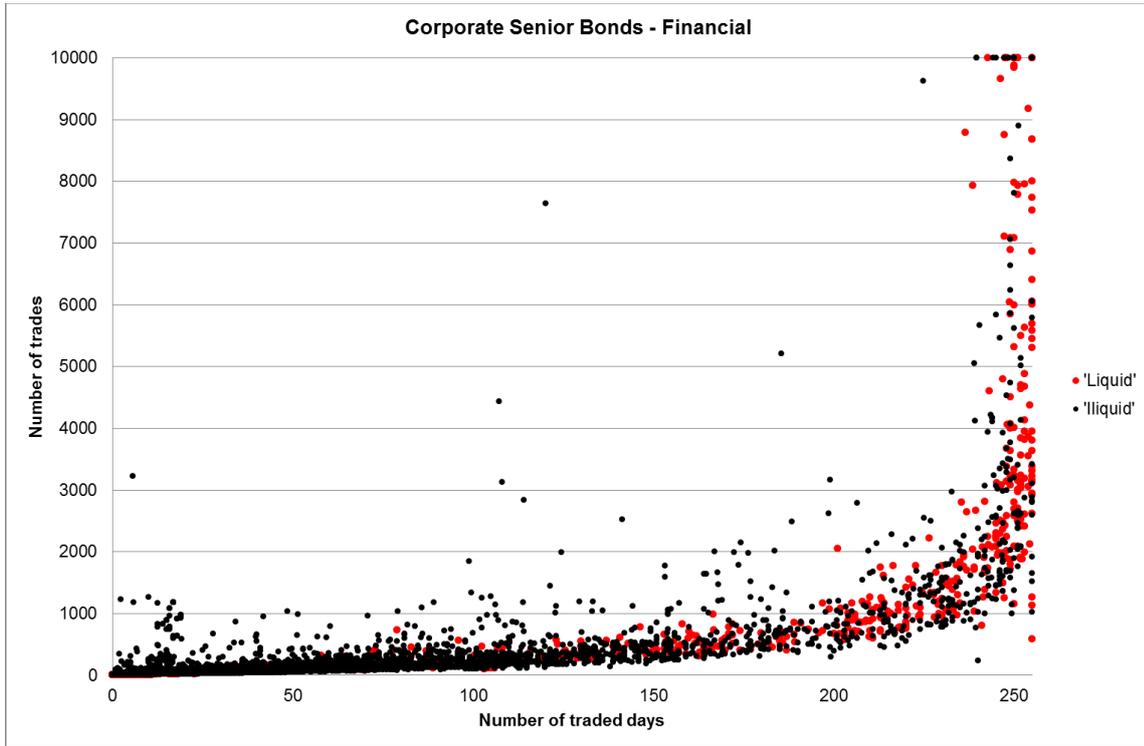


Chart 2: Corporate Senior Bonds – Financial – segmentation assessment

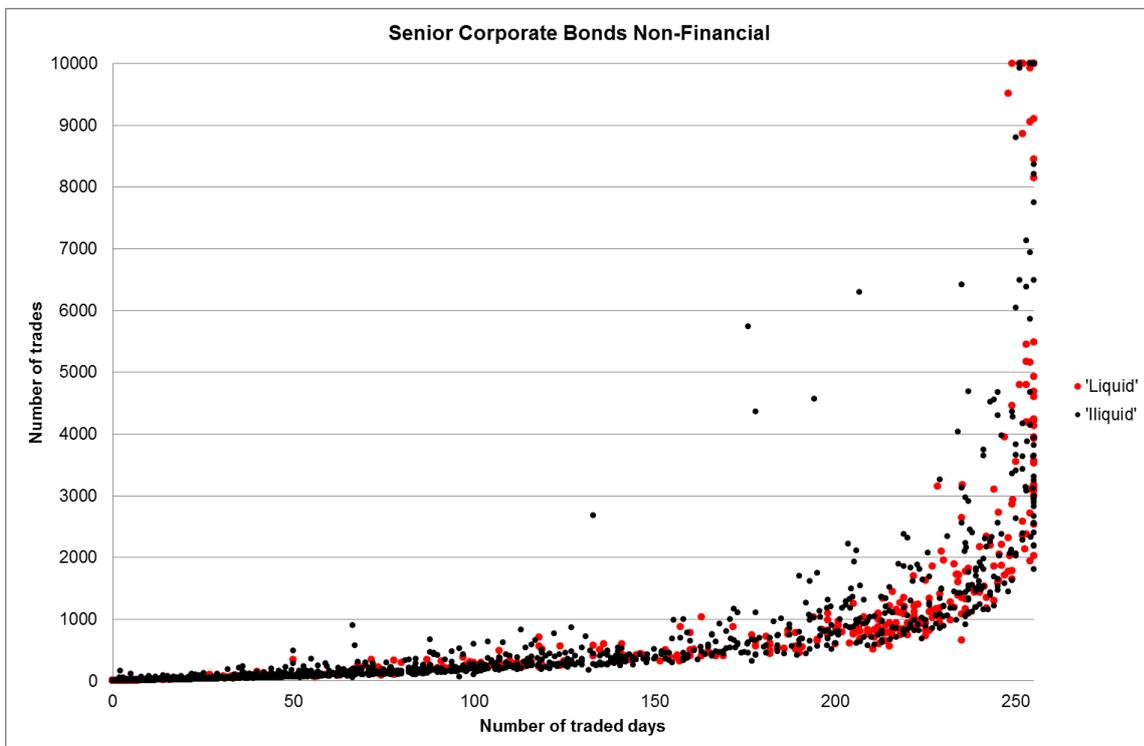


Chart 3: Senior Corporate Bonds Non-Financial – segmentation assessment

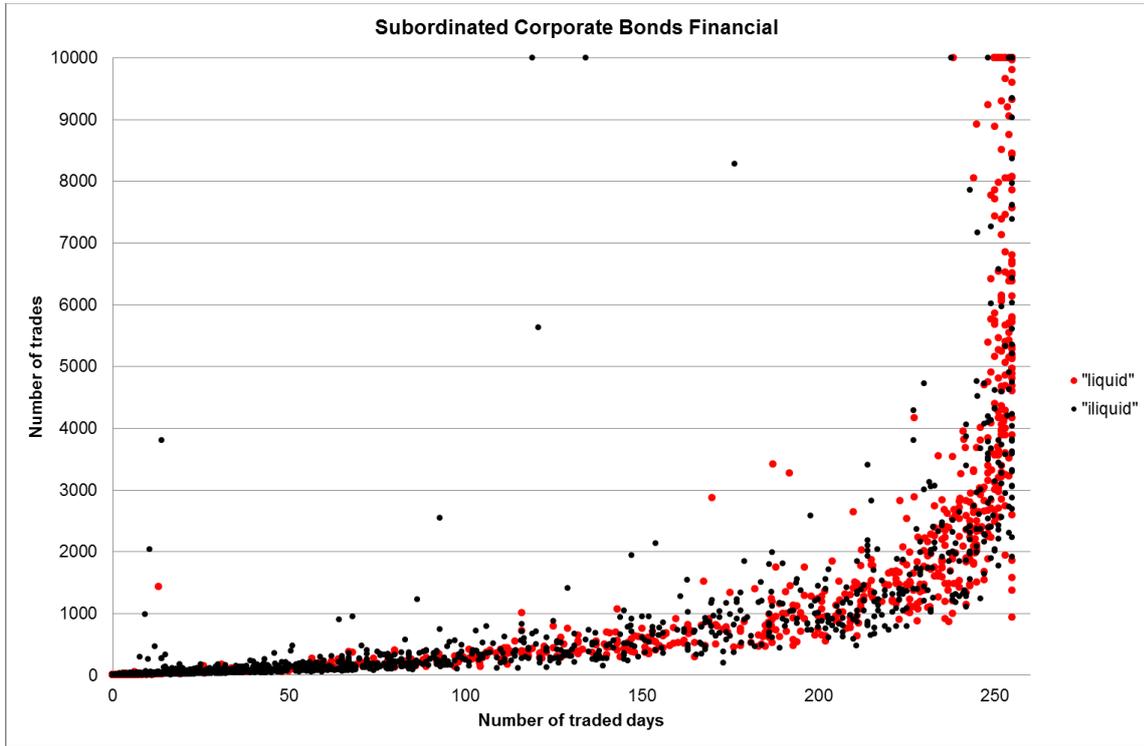


Chart 4: Subordinated Corporate Bonds - Financial – segmentation assessment

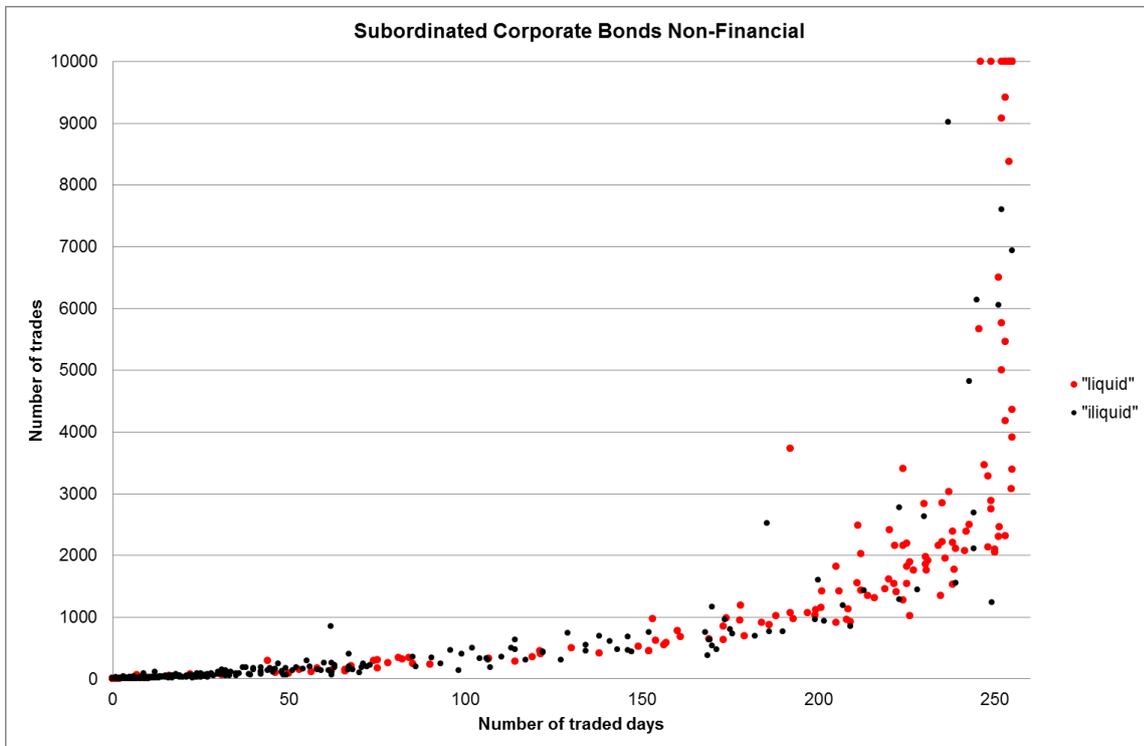


Chart 5: Subordinated Corporate Bonds Non-financial – segmentation assessment

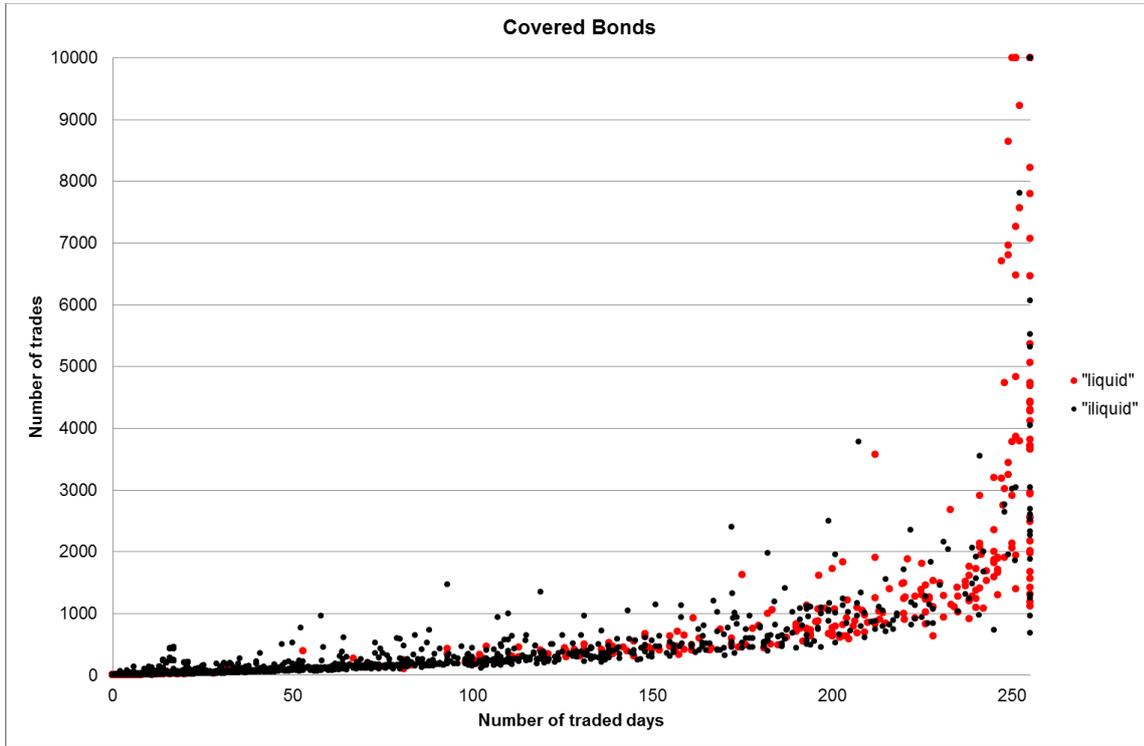


Chart 6: Covered Bonds – segmentation assessment

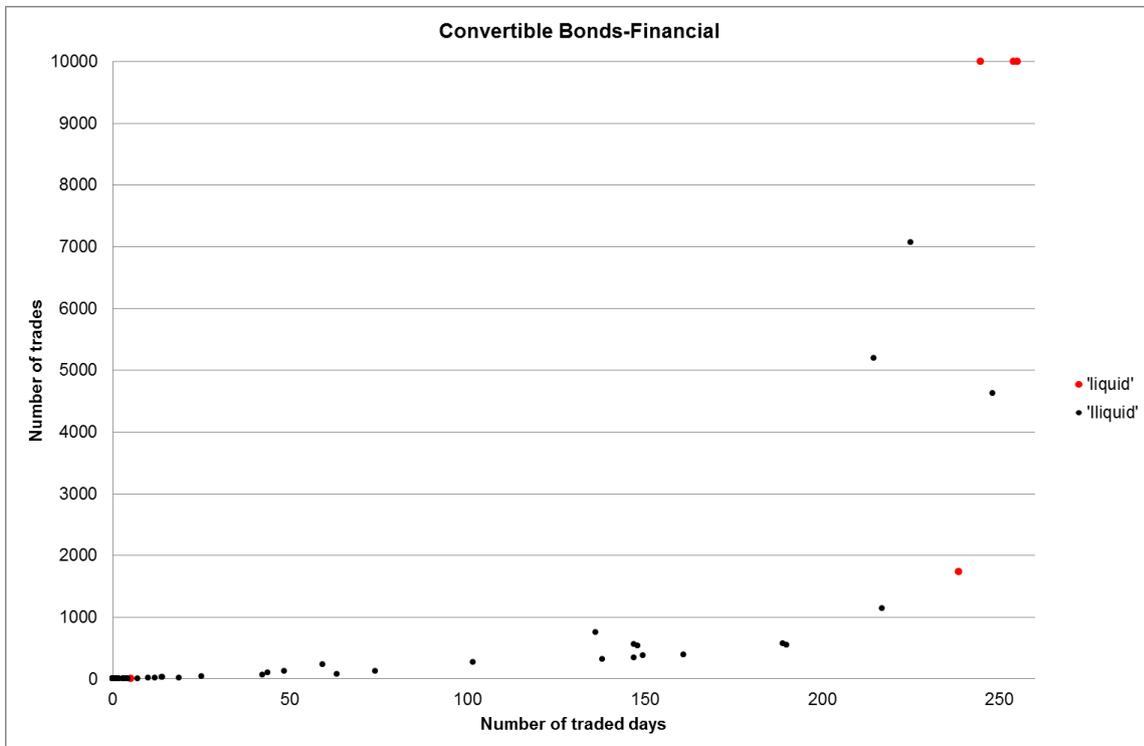


Chart 7: Convertible Bonds – Financial– segmentation assessment

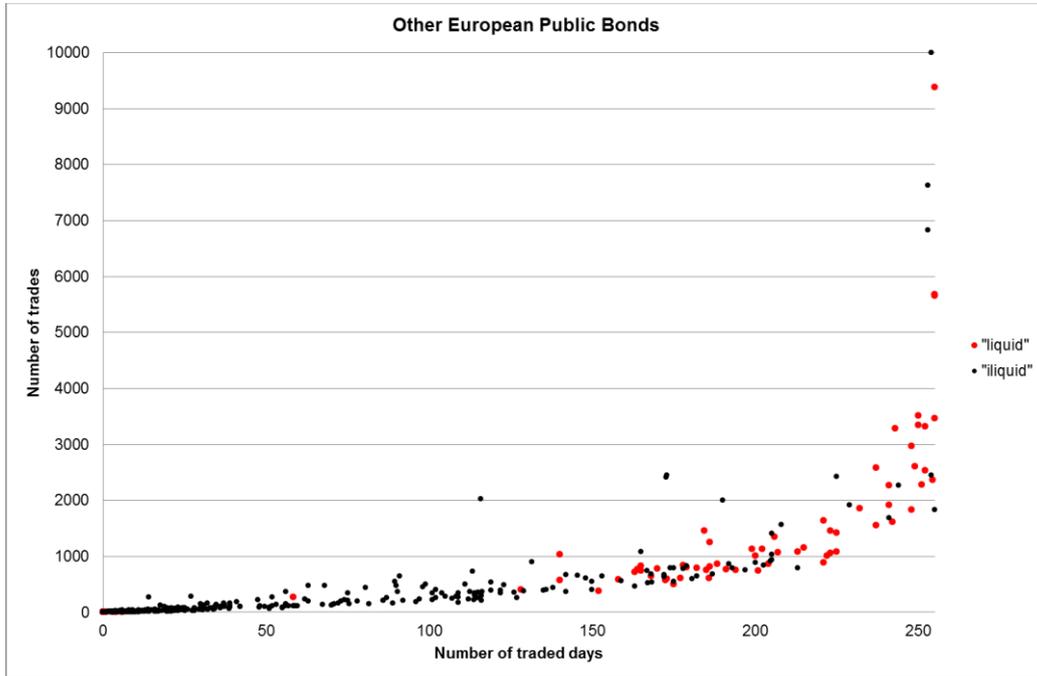


Chart 8: Other European Public Bonds – segmentation assessment

57. The whole class of convertible bonds non-financial and SFPs have been considered illiquid irrespective of the issue size. We can observe in the graphs below that there are only a few of individual instruments that are liquid according to the liquidity criteria with 97.82% of convertible non-financial bonds and 99.69% of SFP being illiquid.

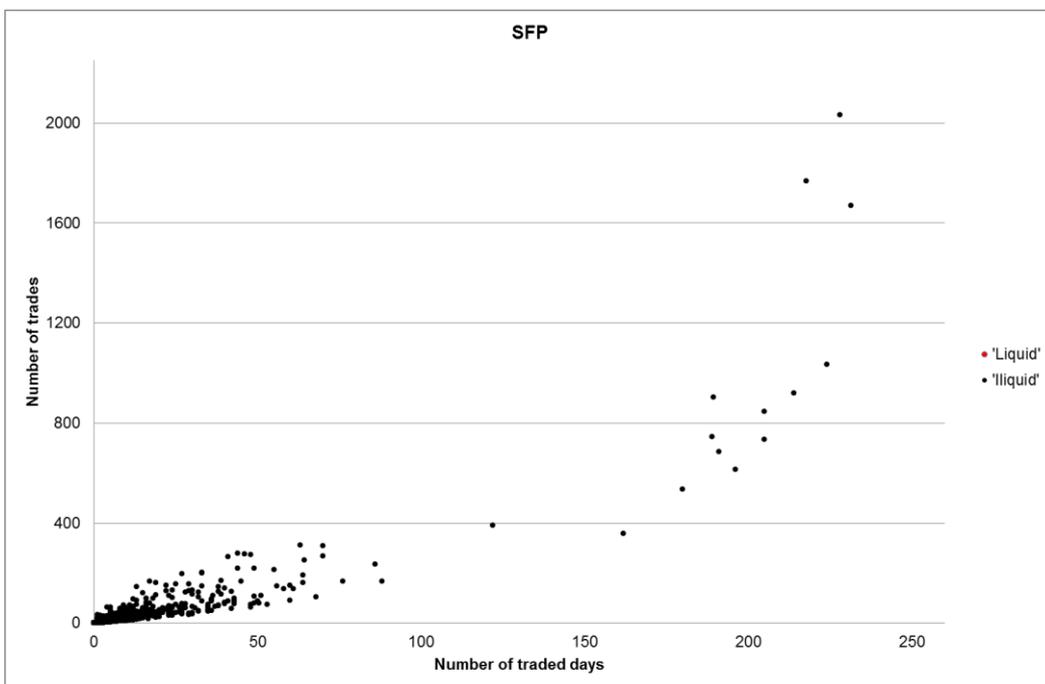


Chart 9: Structured Finance Products (SFP) – segmentation assessment

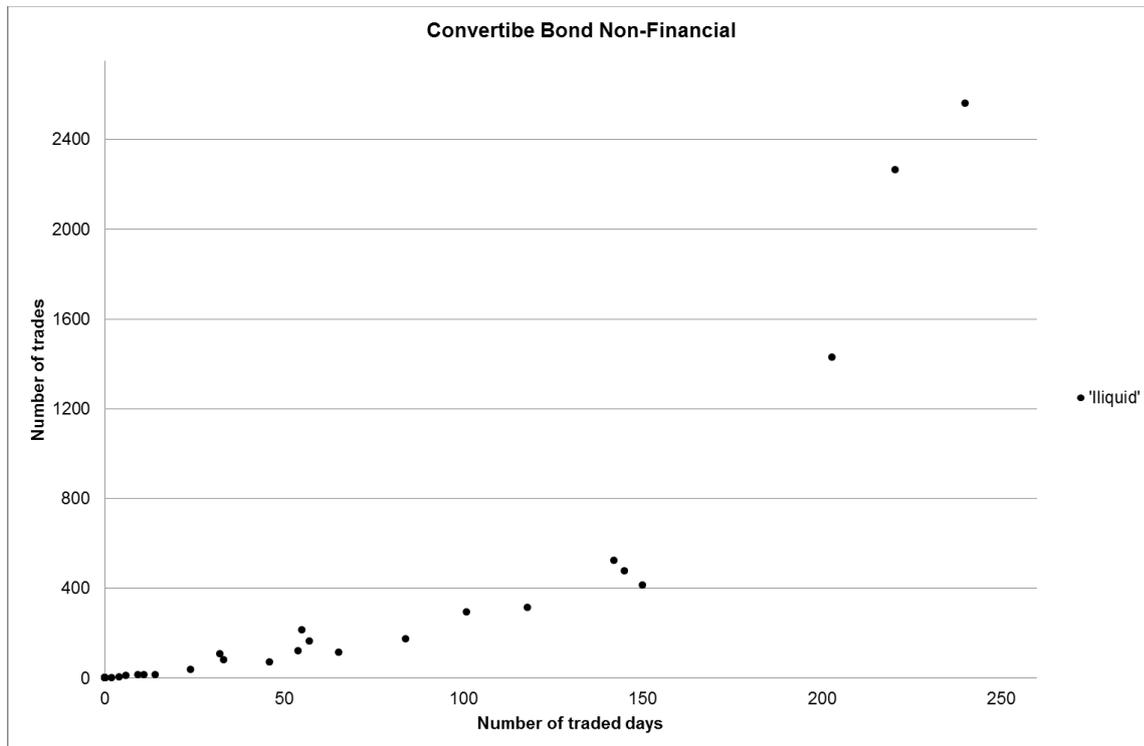


Chart 10: Convertible bonds non-financial – segmentation assessment

Proposal

58. ESMA proposes as classes of financial instruments for which there is a liquid market those included in Annex III of draft RTS 9.

Q57. Do you agree with ESMA's proposal for the definition of a liquid market? Please provide an answer for SFPs and for each of type of bonds identified (European Sovereign Bonds, Non-European Sovereign Bonds, Other European Public Bonds, Financial Convertible Bonds, Non-Financial Convertible Bonds, Covered Bonds, Senior Corporate Bonds-Financial, Senior Corporate Bonds Non-Financial, Subordinated Corporate Bonds-Financial, Subordinated Corporate Bonds Non-Financial) addressing the following points:

- (1) Would you use different qualitative criteria to define the sub-classes with respect to those selected (i.e. bond type, debt seniority, issuer sub-type and issuance size)?
- (2) Would you use different parameters (different from average number of trades per day, average nominal amount per day and number of days traded) or the same parameters but different thresholds in order to define a bond or a SFP as liquid?

(3) Would you define classes declared as liquid in ESMA's proposal as illiquid (or viceversa)? Please provide reasons for your answer.

Q58. Do you agree with the definitions of the bond classes provided in ESMA's proposal (please refer to Annex III of RTS 9)? Please provide reasons for your answer.

Securitised derivatives

59. To assess the liquidity of securitised derivatives, ESMA analysed a dataset collected from 9 trading venues for the period of 1 June 2013 – 31 May 2014. In total, the dataset included 3,427,815 securitised derivatives covering a wide range of product types.
60. The majority of instruments were investment certificates, plain vanilla covered warrants and leverage certificates. The remaining 0.03% of the data set was represented by exotic covered warrants, exchange-traded-commodities, exchange-traded notes, negotiable rights, structured medium-term-notes and other warrants (please refer to the table below).

Securitised Derivatives	Num of Instruments (%)
Investment certificates	29.78%
Plain vanilla covered warrants	25.35%
Leverage certificates	44.83%
Others	0.03%
TOTAL	100.00%

Table 6: Securitised derivatives – Statistics (part I)

61. Roughly 94% of the whole sample (3,224,713 securitised derivatives) traded very little or not at all during the one year period covered (refer to the table below).

Securitised Derivatives	% of instruments that did not trade	% of instruments that traded less than 5% of the number of trading days
Investment certificates	88.98%	9.49%
Plain vanilla covered warrants	83.65%	11.55%
Leverage certificates	84.55%	5.90%

Table 7: Securitised derivatives – Statistics (part II)

62. Furthermore, it appeared that for approximately 98% of the whole sample (3,355,658 securitised derivatives) at least one market maker was available (refer to the table below). However, those instruments admitted to trading without the presence of a market maker constitute 71 % of trades and 61 % of volume traded of the whole sample and on average they traded more than twice a day (2.17 times) with an average volume of €6,843 traded per day.

Securitised Derivatives	% of instruments with market maker	% of instruments without market maker
Investment certificates	99.44%	0.56%
Plain vanilla covered warrants	97.42%	2.58%
Leverage certificates	97.16%	2.84%

Table 8: Securitised derivatives – Statistics (part III)

63. As a result, it is evident that the following parameters are relevant, and proved to be sufficient, in order to determine whether a securitised derivatives is liquid:

- i. the presence of a certain type of market participant, namely a market maker;
- ii. whenever a market maker was not available an instrument was deemed to be liquid if the following two thresholds were both met:
 - a. an average of 1 trade per day⁸ or more;
 - b. an average daily volume⁹ (as defined in Annex II, Table 3 of draft RTS 9) of €5,000 or more.

Those thresholds correspond to the mean values (rounded downwards) of the three biggest sub-classes of securitised derivatives, namely investment certificates, plain vanilla covered warrant and leverage certificates. Indeed, the instruments of the 3 biggest sub-classes trade on average 1.42 times per day with an average daily volume of €5,332.

Proposal

64. ESMA is of the opinion that all securitised derivatives should be qualified as liquid.

Q59. Do you agree with ESMA's proposal for the definition of a liquid market? Please provide an answer per asset class identified (investment certificates, plain vanilla covered warrants, leverage certificates, exotic covered warrants, exchange-traded-commodities, exchange-traded notes, negotiable rights, structured medium-term-notes and other warrants) addressing the following points:

(1) Would you use additional qualitative criteria to define the sub-classes?

⁸ Calculated as total number of trades divided by the number of trading sessions for the instrument

⁹ Calculated as total volume (as defined in Annex II, Table 3 of Draft RTS 9) divided by the number of trading sessions for the instrument

(2) Would you use different parameters or the same parameters (i.e. average daily volume and number of trades per day) but different thresholds in order to define a sub-class as liquid?

(3) Would you qualify certain sub-classes as illiquid? Please provide reasons for your answer.

Q60. Do you agree with the definition of securitised derivatives provided in ESMA's proposal (please refer to Annex III of the RTS)? Please provide reasons for your answer.

Interest rate derivatives

65. ESMA undertook two analyses on interest rate derivatives, the first based on data collected from trading venues and the second on the basis of trade repositories (TRs) data.

Trading Venue Data Analysis

66. The first exercise focused on assessing liquidity of on-venue traded interest rate derivatives, for which ESMA gathered a sample of 15,976 instruments¹⁰ provided by 4 trading venues during the period of 1 June 2013 – 31 May 2014. The dataset collected included the following contract types:

	Number of instruments
Bond futures	99
Interest rate futures	177
Futures on swapnotes	60
Bond options	831
Interest rates options	12,921
Options on swapnotes	1,888
Total	15,976

Table 9: Interest rate derivatives – Statistics

67. However, it was observed that only 17% of the instruments¹¹ had any trading activity during this period. Instruments were then grouped into sub-classes considering the type of financial instrument, underlying and time to maturity.

68. Given an apparent distinction between the liquidity of instruments maturing within 3 months and thereafter, sub-classes were divided into these two maturity periods: time to maturity up to 3 months and longer than 3 months. Indeed, 65% of the liquidity was concentrated in contracts with a time to maturity of 3 months or more. It is noted that the currency of the contract was not included as an additional criteria to define a sub-class because it was considered to be of no added value with respect to the underlying of the contract.

69. Having tested different parameters to assess liquidity, it was decided that, in order to be deemed liquid, a sub-class has to record both:

¹⁰ One instrument corresponds to a different ISIN

¹¹ One instrument corresponds to a different ISIN

- i. an average of 1 trade per day¹² or more and;
- ii. an average notional amount¹³ per day of €5,000,000 or more.

70. ESMA identified 48 sub-classes of interest rate derivatives as liquid during the exercise, of which 27 were futures contracts and 21 option contracts. The following tables provide per sub-class the number of instruments¹⁴ included in it, the average number of trades per day, the average notional amount traded per day and the classification of the class as liquid or illiquid on the basis of the above thresholds.

Contract Type	Underlying Type	Underlying	Time to maturity	Liquidity Test: 1 trade per day and €5,000,000 notional amount per day	Num of instruments	Num of trades per day	Notional Amount per day
Futures	Bond	Ultra long bund (buxl)	=> 3 Months	Liquid	6	5,912.93	1,580,233,858
Futures	Bond	Medium btp	=> 3 Months	Illiquid	4	-	-
Futures	Bond	Long bund	=> 3 Months	Liquid	9	78,121.32	62,752,405,512
Futures	Bond	Long gilt	=> 3 Months	Liquid	6	246,573.02	111,570,345,455
Futures	Bond	Long gilt	Up to 3 Months	Liquid	1	15.18	35,064,330
Futures	Bond	Long spanish government bond	=> 3 Months	Liquid	6	37.33	9,066,667
Futures	Bond	Long spanish government bond	Up to 3 Months	Liquid	1	13.17	9,550,000
Futures	Bond	Long swiss confederation bond	=> 3 Months	Liquid	7	149.58	34,747,107
Futures	Bond	Long btp	=> 3 Months	Liquid	7	9,368.06	3,223,615,748
Futures	Bond	Long btp	Up to 3 Months	Liquid	1	2,656.70	723,256,693
Futures	Bond	Medium bund (bobl)	=> 3 Months	Liquid	7	36,589.33	41,696,610,236
Futures	Bond	Medium gilt	=> 3 Months	Liquid	5	3.63	11,306,217
Futures	Bond	Medium gilt	Up to 3 Months	Illiquid	1	0.01	665,942
Futures	Bond	Medium oat	=> 3 Months	Liquid	9	10,682.44	4,309,834,252
Futures	Bond	Medium spanish government bond	=> 3 Months	Illiquid	2	-	-
Futures	Bond	Medium swiss confederation bond	=> 3 Months	Illiquid	2	-	-
Futures	Bond	Short btp	=> 3 Months	Liquid	7	2,297.04	879,204,331
Futures	Bond	Short bund (schatz)	=> 3 Months	Liquid	8	11,274.65	29,042,965,354
Futures	Bond	Short gilt	=> 3 Months	Liquid	5	16.14	45,535,257
Futures	Bond	Short gilt	Up to 3 Months	Illiquid	1	0.02	930,286
Futures	Bond	Short spanish government bond	=> 3 Months	Illiquid	2	-	-
Futures	Bond	Ultra long gilt	=> 3 Months	Liquid	4	13.83	30,790,014

Table 10: Interest rate derivatives – Bond futures

¹² Calculated as total number of trades divided by the number of trading sessions for the instrument. In the case of options, instruments with the same underlying but different strike prices have been considered as 1 instrument irrespectively from the number of ISINs

¹³ Calculated as total notional amount divided by the number of trading sessions for the instrument. In the case of options, instruments with the same underlying but different strike prices have been considered as 1 instrument irrespectively from the number of ISINs

¹⁴ One instrument corresponds to a different ISIN. However, in the case of options one instrument refers to the aggregate options on the same underlying with the same maturity across different strikes

Underlying	Time to maturity	Liquidity Test: 1 trade per day and €5,000,000 notional amount per day	Num of instruments	Num of trades per day	Notional Amount per day
5yr euro swapnote	Up to 3 Months	Illiquid	3	-	-
10yr euro swapnote	=> 3 Months	Liquid	5	66.23	231,844,231
10yr euro swapnote	Up to 3 Months	Illiquid	1	0.86	2,926,378
10yr sterling swapnote	=> 3 Months	Illiquid	4	-	-
10yr swiss swapnote	=> 3 Months	Illiquid	2	-	-
10yr us dollar swapnote	=> 3 Months	Illiquid	5	-	-
10yr us dollar swapnote	Up to 3 Months	Illiquid	1	-	-
2yr euro swapnote	=> 3 Months	Liquid	5	177.67	825,905,769
2yr euro swapnote	Up to 3 Months	Liquid	1	2.05	13,096,457
2yr sterling swapnote	=> 3 Months	Illiquid	4	-	-
2yr swiss swapnote	=> 3 Months	Illiquid	2	-	-
2yr us dollar swapnote	=> 3 Months	Illiquid	5	-	-
2yr us dollar swapnote	Up to 3 Months	Illiquid	1	-	-
30yr euro swapnote	=> 3 Months	Illiquid	2	-	-
30yr sterling swapnote	=> 3 Months	Illiquid	1	-	-
30yr us dollar swapnote	=> 3 Months	Illiquid	2	-	-
5yr euro swapnote	=> 3 Months	Liquid	5	346.46	644,428,846
5yr euro swapnote	Up to 3 Months	Liquid	1	4.96	11,729,134
5yr sterling swapnote	=> 3 Months	Illiquid	3	0.06	9,085
5yr swiss swapnote	=> 3 Months	Illiquid	2	-	-
5yr us dollar swapnote	=> 3 Months	Illiquid	5	-	-
5yr us dollar swapnote	Up to 3 Months	Illiquid	1	-	-

Table 11: Interest rate derivatives – Futures on swapnotes

Underlying	Time to maturity	Liquidity Test: 1 trade per day and €5,000,000 notional amount per day	Num of instruments	Num of trades per day	Notional Amount per day
One month eonia	=> 3 Months	Illiquid	21	-	-
One month eonia	Up to 3 Months	Illiquid	2	-	-
Three month eonia	=> 3 Months	Illiquid	21	-	-
Three month eonia	Up to 3 Months	Illiquid	2	-	-
Three month euro (euribor)	=> 3 Months	Liquid	59	121,345.33	757,780,275,591
Three month euro (euribor)	Up to 3 Months	Liquid	4	437.62	3,839,015,748
Three month euroswiss	=> 3 Months	Liquid	27	11,577.16	47,941,479,167
Three month euroswiss	Up to 3 Months	Liquid	1	22.57	62,247,949
Three month sterling	=> 3 Months	Liquid	35	65,857.54	395,634,876,033
Three month sterling	Up to 3 Months	Liquid	2	201.79	515,374,935

Table 12: Interest rate derivatives – Interest rate futures

Underlying	Time to maturity	Liquidity Test: 1 trade per day and €5,000,000 notional amount per day	Num of instruments	Num of trades per day	Notional Amount per day
Long bund future	=> 3 Months	Liquid	13	772.79	2,606,936,220
Long bund future	Up to 3 Months	Liquid	3	184.53	692,464,961
Long gilt	=> 3 Months	Illiquid	650	-	-
Long gilt	Up to 3 Months	Illiquid	124	-	-
Medium bund (bobl) future	=> 3 Months	Liquid	12	78.46	558,972,835
Medium bund (bobl) future	Up to 3 Months	Liquid	3	16.96	124,102,756
Oat futures	=> 3 Months	Liquid	11	1.32	5,053,261
Short bund (schatz) future	=> 3 Months	Liquid	12	23.25	502,695,276
Short bund (schatz) future	Up to 3 Months	Liquid	3	8.89	147,703,150

Table 13: Interest rate derivatives – Bond options

Underlying	Time to maturity	Liquidity Test: 1 trade per day and €5,000,000 notional amount per day	Num of instruments	Num of trades per day	Notional Amount per day
5yr euro swapnote	Up to 3 Months	Illiquid	453	-	-
10yr euro swapnote	=> 3 Months	Illiquid	498	-	-
10yr euro swapnote	Up to 3 Months	Illiquid	49	-	-
2yr euro swapnote	=> 3 Months	Illiquid	426	-	-
2yr euro swapnote	Up to 3 Months	Illiquid	88	-	-
5yr euro swapnote	=> 3 Months	Illiquid	534	-	-
5yr euro swapnote	Up to 3 Months	Illiquid	293	-	-

Table 14: Interest rate derivatives – Options on swapnotes

Underlying	Time to maturity	Liquidity Test: 1 trade per day and €5,000,000 notional amount per day	Num of instruments	Num of trades per day	Notional Amount per day
Euribor one year mid-curve	=> 3 Months	Illiquid	787	-	-
Euribor one year mid-curve	Up to 3 Months	Illiquid	75	-	-
Short sterling one year mid-curve	=> 3 Months	Illiquid	706	-	-
Short sterling one year mid-curve	Up to 3 Months	Illiquid	73	-	-
Three month euro (euribor)	=> 3 Months	Liquid	1,272	126.04	136,126,964,706
Three month euro (euribor)	Up to 3 Months	Liquid	156	9.55	7,037,661,290
Three month euro (euribor) 2 year mid-curve	=> 3 Months	Liquid	1,058	39.83	57,810,844,262
Three month euro (euribor) 2 year mid-curve	Up to 3 Months	Liquid	131	20.55	23,445,016,129
Three month euro (euribor) 3 year mid-curve	=> 3 Months	Liquid	1,034	9.81	14,905,077,869
Three month euro (euribor) 3 year mid-curve	Up to 3 Months	Liquid	156	11.94	10,212,483,871
Three month euro (euribor) 4 year mid-curve	=> 3 Months	Illiquid	1,030	0.23	120,295,082
Three month euro (euribor) 4 year mid-curve	Up to 3 Months	Illiquid	128	0.41	517,491,525
Three month euro (euribor) mid-curve	=> 3 Months	Liquid	211	42.14	4,207,305,906
Three month euro (euribor) mid-curve	Up to 3 Months	Liquid	41	6.99	335,762,598
Three month euroswiss	=> 3 Months	Illiquid	192	-	-
Three month sterling	=> 3 Months	Liquid	1,330	38.68	29,004,369,804
Three month sterling	Up to 3 Months	Illiquid	136	0.91	414,975,756
Three month sterling 2 year mid-curve	=> 3 Months	Liquid	1,100	25.07	22,106,540,496
Three month sterling 2 year mid-curve	Up to 3 Months	Liquid	125	4.94	4,382,260,772
Three month sterling 3 year mid-curve	=> 3 Months	Liquid	1,132	2.11	1,346,738,962
Three month sterling 3 year mid-curve	Up to 3 Months	Illiquid	132	0.42	416,382,944
Three month sterling 4 year mid-curve	=> 3 Months	Illiquid	1,078	0.01	5,068
Three month sterling 4 year mid-curve	Up to 3 Months	Illiquid	134	-	-
Three month sterling mid-curve	=> 3 Months	Liquid	217	26.69	25,220,481,102
Three month sterling mid-curve	Up to 3 Months	Liquid	34	1.36	1,017,356,830

Table 15: Interest rate derivatives – Interest rate options

TR Data Analysis

71. The second analysis carried out for interest rate derivatives based on TRs data focused on the assessment of the liquidity of OTC traded derivatives. Data was collected over the period 1 March 2014 – 31 May 2014 and required an extensive cleaning and screening phase (for further details please refer to Annex 3.5.2) that enabled identification of the following classes :

- i. FRA
- ii. Swaptions
- iii. Bond options
- iv. Interest rate options
- v. Single-currency swaps further divided into the following categories:
 - a. Fixed-to-fixed
 - b. Fixed-to-float
 - c. Float-to-float

- d. OIS
- e. Inflation
- vi. Multi-currency swaps further divided into the following categories:
 - a. Fixed-to-fixed
 - b. Fixed-to-float
 - c. Float-to-float
 - d. OIS

72. The following chart represents the distribution of notional amount recorded over the three-month period among the above product categories:

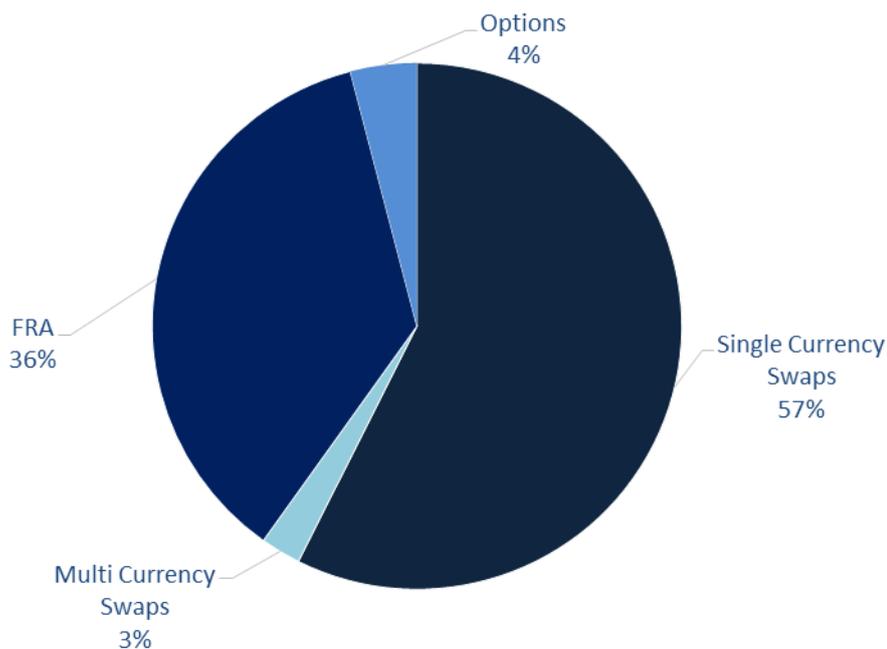


Chart 11: Interest rate derivatives – Notional amount distribution

73. The first step of the analysis required the classification of the above classes as liquid or illiquid on the basis of the following criteria:
- i. average notional amount per day¹⁵ greater or equal to €500 m;
 - ii. number of days traded greater or equal to 80% of the available trading days in the period¹⁶;

¹⁵ Calculated as total notional amount traded divided by the number of trading days over the period, considered to be 65

iii. average number of trades per day¹⁷ greater or equal to 100.

74. On the basis of the above the following classes were defined to be illiquid as a whole:

- i. fixed-to-fixed single-currency swaps
- ii. fixed-to-fixed multi-currency swaps
- iii. OIS multi-currency swaps

75. The following table provides for each class of interest rate derivatives statistics on the number of trades, the notional amount and traded days and the final classification of the class as liquid or illiquid on the basis of the thresholds determined above.

SINGLE CCY SWAPS	Num of trades	Num of trades (%)	Num of trades per day	Notional Amount	Notional Amount (%)	Notional Amount per day	Num of days traded	Num of days traded (%)	Liquid/Illiquid Classes
FIXED-FLOATING	754,921	92.64%	11,614	46,028,462,699,568	79.05%	708,130,195,378	77	118%	LIQUID
FLOAT-FLOAT	19,115	2.35%	294	2,384,256,408,993	4.09%	36,680,867,831	64	98%	LIQUID
OIS	34,127	4.19%	525	9,652,658,209,994	16.58%	148,502,434,000	65	100%	LIQUID
INFLATION	6,617	0.81%	102	152,913,179,408	0.26%	2,352,510,452	53	82%	LIQUID
FIXED-FXED	75	0.01%	1	5,535,523,974	0.01%	85,161,907	6	9%	ILLIQUID
Total	814,855	100.00%	12,536	58,223,826,021,939	100.00%	895,751,169,568			
MULTI CCY SWAPS	Num of trades	Num of trades (%)	Num of trades per day	Notional Amount	Notional Amount (%)	Notional Amount per day	Num of days traded	Num of days traded (%)	Liquid/Illiquid Classes
FIXED-FLOATING	15,981	37.00%	246	350,263,179,502	14.01%	5,388,664,300	63	97%	LIQUID
FLOAT-FLOAT	25,759	59.63%	396	2,049,800,617,343	81.99%	31,535,394,113	65	100%	LIQUID
FIXED-FXED	1,400	3.24%	22	89,932,716,662	3.60%	1,383,580,256	31	48%	ILLIQUID
OIS	55	0.13%	1	10,100,450,332	0.40%	155,391,544	6	9%	ILLIQUID
Total	43,195	100.00%	665	2,500,096,963,839	100.00%	38,463,030,213			
FRA	Num of trades	Num of trades (%)	Num of trades per day	Notional Amount	Notional Amount (%)	Notional Amount per day	Num of days traded	Num of days traded (%)	Liquid/Illiquid Classes
FRA	157,080	100.00%	2,417	36,618,505,995,656	100.00%	563,361,630,702	65	100%	LIQUID
Total	157,080	100.00%	2,417	36,618,505,995,656	100.00%	563,361,630,702			
OPTIONS	Num of trades	Num of trades (%)	Num of trades per day	Notional Amount	Notional Amount (%)	Notional Amount per day	Num of days traded	Num of days traded (%)	Liquid/Illiquid Classes
SWAPTION	36,357	89.29%	559	4,064,210,683,883	98.76%	62,526,318,214	67	103%	LIQUID
INTEREST_RATE	3,817	9.37%	59	28,702,100,360	0.70%	441,570,775	76	117%	ILLIQUID
BOND	546	1.34%	8	22,119,413,681	0.54%	340,298,672	58	89%	ILLIQUID
Total	40,720	100.00%	626	4,115,032,197,924	100.00%	63,308,187,660			

Table 16: Interest rate derivatives – Statistics (part I)

76. The subsequent step of the analysis consisted in further refining those liquid classes into liquid and illiquid sub-classes. Sub-classes were identified on the basis of additional

¹⁶ Calculated number of different days on which a trade was recorded divided by the number of trading days over the period, considered to be 65

¹⁷ Calculated as total number of trades divided by the number of trading days over the period, considered to be 65

qualitative criteria namely, underlying, tenor and notional currency or currency pair. Then, the liquidity of each sub-class was assessed on the basis of quantitative thresholds, defined per asset class in terms of average number of trades per day and notional amount per day. However, the final selection of the liquid sub-classes was also based on two additional principles: first, a sub-class meeting the thresholds for only one (or few) maturity(ies) was not deemed to be liquid. In other words, concentration of liquidity across different maturities had to be present. Secondly, a 50% coverage ratio in terms of number of trades and notional amount had to be met for the entire asset class¹⁸.

77. The table below summarises per asset class the following information:

- i. the criteria used to define the related sub-classes (refer to columns “Criterion to define sub-classes #1”, “Criterion to define sub-classes #2” and “Criterion to define sub-classes #3”). The criteria used vary per asset class, e.g. the underlying rate is only used for FRA, thus allowing for a sub-categorisation according to three criteria;
- ii. the total number of sub-classes identified using such criteria (refer to column “Total num of sub-classes”), e.g. for FRA a total number of 108 sub-classes was defined,
- iii. the related number of sub-classes deemed to be liquid criteria (refer to column “Num of liquid sub-classes”) on the basis of the two criteria provided in the two subsequent columns, e.g. for FRA a total number of 28 sub-classes qualified as liquid;
- iv. the two criteria used to qualify a sub-class as liquid, namely number of trades per day (refer to column “Trades per day”) and notional amount per day (refer to column “Notional per day (m EUR)”). For example, a sub-class of FRA qualifies as liquid if it recorded on average 5 trades and €500 m of notional amount per day;
- v. the last two columns provide the percentage of trades and notional amount related to the liquid sub-classes (refer to columns “Percentage of trades captured” and “Percentage of notional amount captured”).

¹⁸ Inflation single currency swaps is the only asset class for which the 50% coverage ratio of trades and notional amount is not met

SINGLE CCY SWAPS	Criterion to define sub-classes #1	Criterion to define sub-classes #2	Criterion to define sub-classes #3	Total num of sub-classes	Num of liquid sub-classes	Trades per day threshold	Notional per day (m EUR) threshold	Percentage of trades captured	Percentage of notional amount captured
FIXED-FLOATING	Currency	Tenor		829	247	2.0	100	90%	97%
FLOAT-FLOAT	Currency	Tenor		290	48	1.0	50	72%	80%
OIS	Currency	Tenor		282	32	1.0	100	69%	89%
INFLATION	Currency	Tenor		165	6	1.0	50	19%	26%
MULTI CCY SWAPS	Criterion to define sub-classes #1	Criterion to define sub-classes #2	Criterion to define sub-classes #3	Total num of sub-classes	Num of liquid sub-classes	Trades per day	Notional per day (m EUR)	Percentage of trades captured	Percentage of notional amount captured
FIXED-FLOATING	Currency pair	Tenor		597	22	1.0	10	74%	65%
FLOAT-FLOAT	Currency pair	Tenor		711	39	1.0	100	55%	69%
FRA	Criterion to define sub-classes #1	Criterion to define sub-classes #2	Criterion to define sub-classes #3	Total num of sub-classes	Num of liquid sub-classes	Trades per day	Notional per day (m EUR)	Percentage of trades captured	Percentage of notional amount captured
FRA	Currency	Tenor	Underlying rate	108	28	5.0	500	92%	95%
SWAPTION	Criterion to define sub-classes #1	Criterion to define sub-classes #2	Criterion to define sub-classes #3	Total num of sub-classes	Num of liquid sub-classes	Trades per day	Notional per day (m EUR)	Percentage of trades captured	Percentage of notional amount captured
SWAPTION	Currency			24	5	10.0	2,000	96%	98%

Table 17: Interest rate derivatives – Statistics (part II)

78. The thresholds differ per asset class and they are based on the number of criteria used to define the sub-classes and the relevance of the sub-class in terms of notional amount. As an example, thresholds for swaptions are more demanding with respect to those of other classes since sub-classes are defined only on the basis of one criterion, i.e. the notional currency. Furthermore, in the case of multi-currency swaps (the same reasoning is also valid for single currency swaps) more severe thresholds are applied to float-to-float swaps since they represent 82% of the total notional amount traded for multi-currency swaps.
79. In Annex 3.5.3 a set of the tables provides the detailed results per sub-class. Please, be aware that tenor was calculated as the difference between the maturity date and the execution date. In particular, the following formula was applied:
- i. Tenor = “1.5 months” when the difference between the maturity date and the execution date is greater than or equal to zero and smaller than 45 days;
 - ii. Tenor = “3 months” when the difference between the maturity date and the execution date is greater than or equal to 45 days and smaller than 90 days;
 - iii. Tenor = “6 months” when the difference between the maturity date and the execution date is greater than or equal to 90 days and smaller than 182 days;
 - iv. Tenor = “1 year” when the difference between the maturity date and the execution date is greater than or equal to 182 days and smaller than 365 days.

- v. Tenor = “X years” where X is the number obtained by rounding up the ratio of days between maturity and execution date and 365 to the next whole number. In other words, whenever the ratio of days to maturity and 365 is 2.7 then, the tenor is “3 years”.

As a result, even though a class is assigned with a tenor of “x” months/years, all contracts having a maturity included in the time period defined in accordance with the above paragraph were included in the class for the purpose of the calculations of the measures included in the tables in Annex 3.5.3.

80. Among the category of OTC traded option contracts, bond options and interest rate options were also identified. These products are traded both on and off-venue. However, the notional amount related to interest rate options traded OTC represented less than 1% of that on-venue. As a result, the liquid sub-classes of interest rate options are only those identified on the basis of the analysis of on-venue traded contracts (refer to Table 15 Interest rate derivatives – Interest rate options). The same conclusion applies to bond options. Indeed, even though the trading activity for this class is equally distributed on and off-venue, the contract types traded are different. The underlying instruments of on-venue traded options are mainly EU sovereign bonds or bond futures while off-venue traded options are mostly on long-term non-EU sovereign bonds (please refer to the table below). As a result, the liquid sub-classes of bond options are only those identified on the basis of the analysis of on-venue traded contracts (refer to Table 13 Interest rate derivatives – Bond options).

Contract Maturity	SovereignNonEU			SovereignEU			Corporate		
	Total num of trades	Total Notional Amount	Total Notional Amount (%)	Total num of trades	Total Notional Amount	Total Notional Amount (%)	Total num of trades	Total Notional Amount	Total Notional Amount (%)
1 week	6	107,215,438	0.65%	-	-	-	-	-	-
2 weeks	7	1,043,177,839	6.34%	1	15,000,000	0.27%	-	-	-
1 month	68	4,116,245,404	25.02%	9	151,000,000	2.76%	-	-	-
3 months	155	10,548,538,969	64.11%	66	4,338,000,000	79.41%	3	14,504,654	18.77%
6 months	4	566,661,144	3.44%	15	426,415,000	7.81%	3	8,485,223	10.98%
1 year	30	71,039,910	0.43%	13	532,250,000	9.74%	86	50,673,815	65.56%
2 years	-	-	-	-	-	-	1	3,626,164	4.69%
3 years	-	-	-	-	-	-	-	-	-
TOTAL	270	16,452,878,706	100.00%	104	5,462,665,000	100.00%	93	77,289,855	100.00%
		74.81%			24.84%			0.35%	

Table 18: Interest rate derivatives – Bond options

Proposal

81. ESMA proposes as classes of financial instruments for which there is a liquid market two options:

- i. Option 1: classes of financial instruments included in Annex III of draft RTS 9 of this CP whose tenor is included over the period specified for the related sub-class;

- ii. Option 2: classes of financial instruments included in Annex III of draft RTS 9 of this CP whose tenor is not a broken date. Whether the tenor is a broken date should be calculated as the difference between the maturity date and the execution date with a tolerance of +/- 5 days. As an example if a contract is executed on 12 January 2015 and the related maturity is 14 January 2016, the tenor is 1 year benchmark. Instead, if the related maturity is 20 January 2016, the tenor would be qualified as a broken date and as a result the instrument would not fall in the liquid sub-class.
82. ESMA has a preference for option 1 and considers that differentiating contracts on the basis of broken date maturity vs. benchmark maturity is more relevant for the definition of liquid classes subject to the trading obligations.
- Q61. Do you agree with ESMA's proposal for the definition of a liquid market? Please provide an answer for each of the asset classes identified (FRA, Swaptions, Fixed-to-Fixed single currency swaps, Fixed-to-Float single currency swaps, Float -to- Float single currency swaps, OIS single currency swaps, Inflation single currency swaps, Fixed-to-Fixed multi-currency swaps, Fixed-to-Float multi-currency swaps, Float -to- Float multi-currency swaps, OIS multi-currency swaps, bond options, bond futures, interest rate options, interest rate futures) addressing the following points:**
- (1) Would you use different criteria to define the sub-classes (e.g. currency, tenor, etc.)?**
 - (2) Would you use different parameters (among those provided by Level 1, i.e. the average frequency and size of transactions, the number and type of market participants, the average size of spreads, where available) or the same parameters but different thresholds in order to define a sub-class as liquid (state also your preference for option 1 vs. option 2, i.e. application of the tenor criteria as a range as in ESMA's preferred option or taking into account broken dates. In the latter case please also provide suggestions regarding what should be set as the non-broken dates)?**
 - (3) Would you define classes declared as liquid in ESMA's proposal as illiquid (or vice versa)? Please provide reasons for your answer.**
- Q62. Do you agree with the definitions of the interest rate derivatives classes provided in ESMA's proposal (please refer to Annex III of draft RTS 9)? Please provide reasons for your answer.**

Equity derivatives

83. ESMA has undertaken an analysis on a sample of equity derivative contracts traded in the period between 1 June 2013 and 31 May 2014. Transaction data of 407,563 different listed futures and options (classes as well as series) has been received from 15 trading venues established in Europe. The following type of contracts were identified:

- i. Index options (options on a specific index composed of shares);
- ii. Stock options (options on a specific share);
- iii. Options on a basket or portfolio of shares;
- iv. Dividend index options (options on an index composed of the dividends of shares);
- v. Options on other underlying values (i.e. volatility index or ETFs);
- vi. Stock dividend options (options on the dividend from a specific share);
- vii. Index futures (futures on a specific index composed of shares);
- viii. Stock futures (futures on a specific share);
- ix. Futures on a basket or portfolio of shares;
- x. Dividend index futures (futures on an index composed of the dividends of shares);
- xi. Futures on other underlying values (i.e. volatility index or ETFs);
- xii. Stock dividend futures (futures on the dividend from a specific share).

Futures			
Underlying	Num of instruments (%)	Num of trades (%)	Notional amount (%)
Stock	59.31034%	0.77988%	0.04523%
Basket/Portfolio	0.86207%	0.00011%	0.00003%
Dividend Index	2.67241%	0.12267%	0.18843%
Stock Index	31.20690%	98.47086%	99.69379%
Others	5.94828%	0.62648%	0.07252%
TOTAL	100%	100%	100%

Table 19: Equity derivatives – Statistics on futures

Options			
Underlying	Num of instruments (%)	Num of trades (%)	Notional amount (%)
Stock	90.45017%	18.89079%	6.06375%
Basket/Portfolio	0.07127%	0.00111%	0.00045%
Dividend Index	0.02376%	0.00071%	0.00237%
Stock Index	6.80603%	79.29687%	93.84684%
Others	2.64877%	1.81053%	0.08660%
TOTAL	100%	100%	100%

Table 20: Equity derivatives – Statistics on options

84. As regards the distribution of liquidity the main findings from the data analysis are the following:

- i. within the population of futures contracts the data sample shows that index futures account approximately for 99% of the trades and notional amount traded across all types of futures contracts. As regards the population of option contracts, index options represent approximately 93% of total notional amount traded in option contracts and account for 79% of trades. Stock options account for approximately 6% of notional amount and 19% of transactions respectively.
- ii. in particular, for index options close to 97% of the number of trades relate to contracts with an expiry date within 3 months. These trades represent approximately 94% of total notional amount traded for index options on the 15 trading venues that have provided data. The chart below shows the aggregated number of transactions (blue line) and the aggregated notional amount (NA) for index options (red line) expressed in percentages of total number of trades and total notional amount for the month June 2013. The x-axis shows the time to maturity as of 1 June 2013 expressed in months.

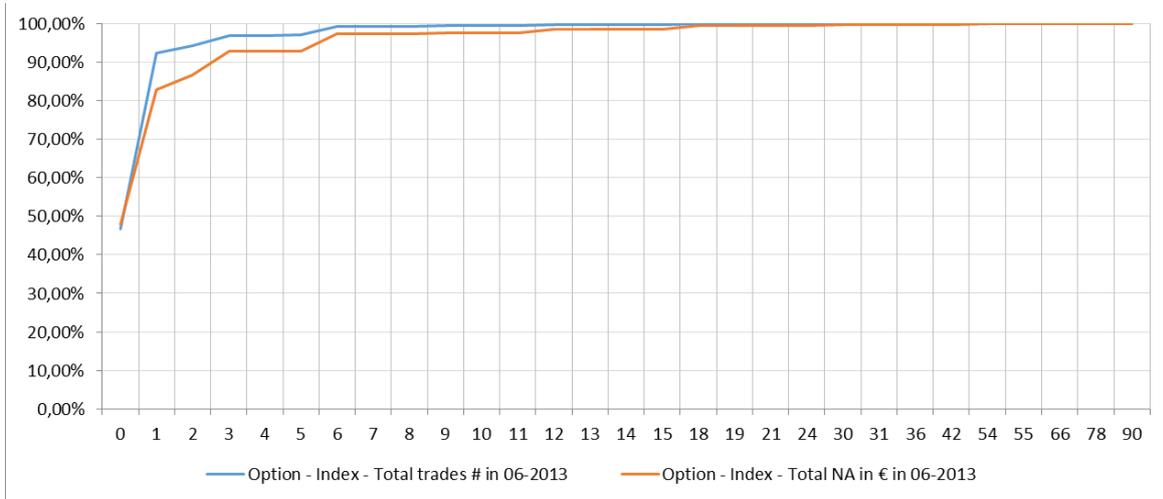


Chart 12: Equity derivatives – index options: number of trades and notional amount distribution across maturities

- iii. for index futures the results for notional amount and trades are similar: more than 99% of notional amount traded relates to futures contracts with a maturity up to 3 months, comprising more than 99% of trades. The graph below shows the aggregated number of transactions (blue line) and the aggregated notional amount (NA) for index futures (red line) expressed in percentages of total number of transactions and total notional amount for the month June 2013. The x-axis shows the time to maturity as of 1 June 2013 expressed in months.

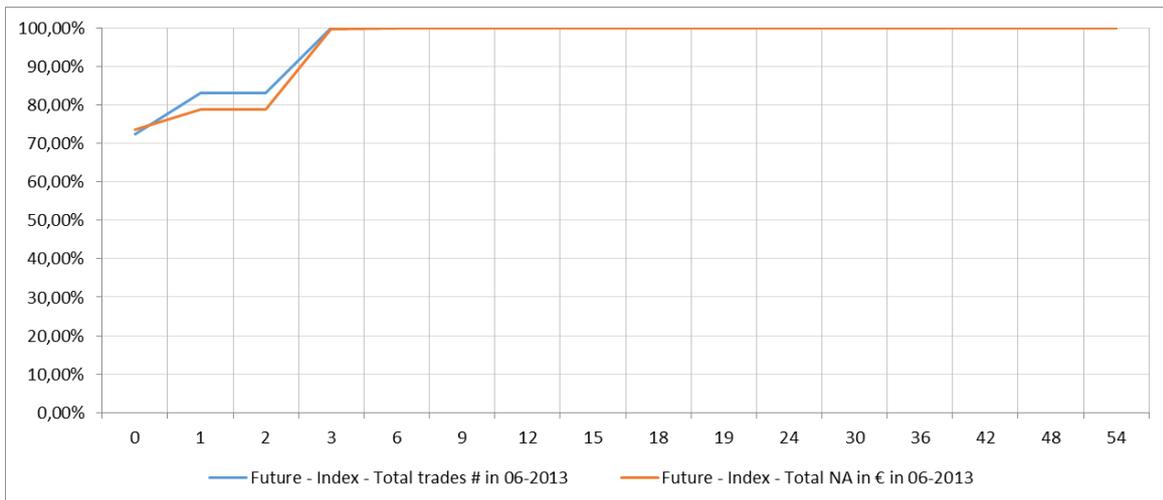


Chart 13: Equity derivatives – index futures: number of trades and notional amount distribution across maturities

- iv. for stock futures the data analysis shows that approximately 99% of total notional amount traded and number of trades for this type of product is traded via contracts that have a maturity of 3 months or less. The chart below shows the aggregated number of transactions (blue line) and the aggregated notional amount (NA) for

single name futures (red line) expressed in percentages of total number of trades and total notional amount for the month June 2013. The x-axis shows the time to maturity as of 1 June 2013 expressed in months.

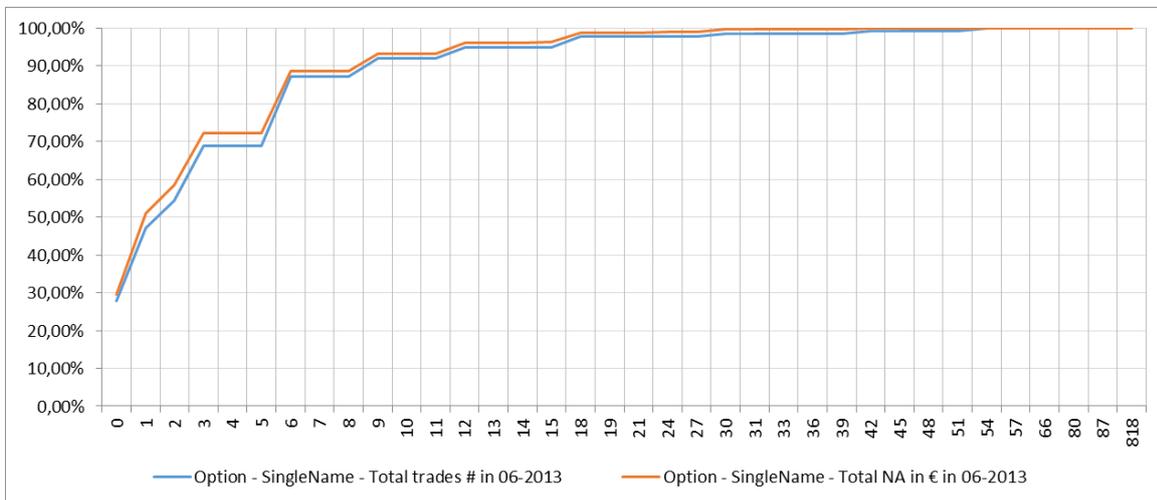


Chart 14: Equity derivatives – stock futures: number of trades and notional amount distribution across maturities

- v. for stock futures the data analysis shows that approximately 99% of total notional amount traded and number of trades for this type of product is traded via contracts that have a maturity of 3 months or less. The chart below shows the aggregated number of transactions (blue line) and the aggregated notional amount (NA) for single name futures (red line) expressed in percentages of total number of trades and total notional amount for the month June 2013. The x-axis shows the time to maturity as of 1 June 2013 expressed in months.

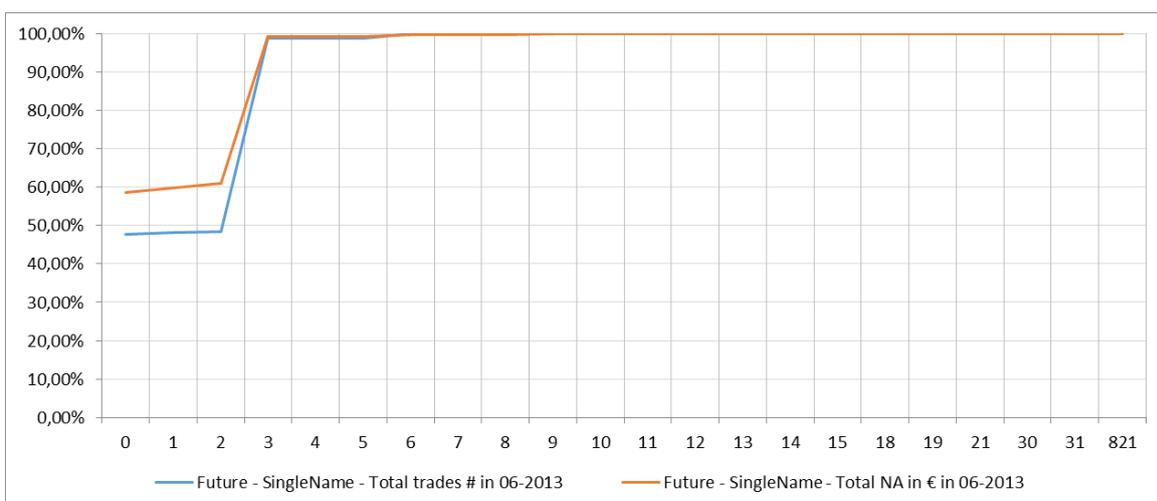


Chart 15: Equity derivatives – stock futures: number of trades and notional amount distribution across maturities

- vi. options as well as futures contracts on a basket or portfolio of shares appear to be rarely listed and, as a result, the number of trades and the notional amount traded in those options or futures is negligible compared to index and stock options and futures contracts. Results are similar for dividend index derivatives and futures and options on other underlying values.
85. Although the availability of contract maturities beyond three months could be an indicator of the liquidity of the underlying value, it does not necessarily mean that the equity derivative contract itself is liquid. As explained above, a significant amount of transactions and volume is traded via contracts having a maturity up to three months.
86. Nevertheless, although no mandatory transparency regime for equity derivatives is in place yet, current market practice for on-exchange trading of equity derivatives reflects that pre-trade and post-trade transparency is available, predominantly achieved via market making and liquidity provision schemes for a wide range of instruments, expiration dates and strike prices.
87. As a result, ESMA provides two options in relation to the liquidity of equity derivatives.

Proposal

88. ESMA proposes two options with regard to liquid classes for equity derivatives.
89. The first option (Option 1) relies on the results of the above analysis from which it is evident that contracts with a time to maturity up to 3 months represent the majority of the overall trading for a sub-class. As a result, ESMA would consider time to maturity as a criterion to disentangle liquid vs. illiquid equity derivatives. However, in order to take into account the rolling between one maturity and the other, the “maturity frontier” is set up to 6 months. In conclusion, a first option would be to qualify the following contract types with a time to maturity up to 6 months as liquid:
- i. Index options (options on a specific index composed of shares);
 - ii. Stock options (options on a specific share);
 - iii. Options on a basket or portfolio of shares;
 - iv. Dividend index options (options on an index composed of the dividends of shares);
 - v. Options on other underlying values (i.e. volatility index or ETFs);
 - vi. Stock dividend options (options on the dividend from a specific share);
 - vii. Index futures (futures on a specific index composed of shares);
 - viii. Stock futures (futures on a specific share);

- ix. Futures on a basket or portfolio of shares;
 - x. Dividend index futures (futures on an index composed of the dividends of shares);
 - xi. Futures on other underlying values (i.e. volatility index or ETFs);
 - xii. Stock dividend futures (futures on the dividend from a specific share).
90. However, ESMA is of the opinion that the current level of (voluntary) transparency should be maintained, if not enhanced. As a consequence, ESMA proposes a second option (Option 2) that extends MiFIR pre-trade and post-trade transparency obligations to all equity derivatives instruments available for trading on a trading venue irrespectively of the time to maturity. Indeed, determining equity derivatives contracts that have a maturity beyond 6 months as illiquid effectively leads to less transparent markets compared to the current status.
91. ESMA has a preference for Option 2. Section 4 of Annex III of draft RTS 9 provides for the list of liquid sub-classes of financial instruments for equity derivatives.
- Q63. With regard to the definition of liquid classes for equity derivatives, which one is your preferred option? Please be specific in relation to each of the asset classes identified and provide a reason for your answer.**
- Q64. If you do not agree with ESMA's proposal for the definition of a liquid market, please specify for each of the asset classes identified (stock options, stock futures, index options, index futures, dividend index options, dividend index futures, stock dividend options, stock dividend futures, options on a basket or portfolio of shares, futures on a basket or portfolio of shares, options on other underlying values (i.e. volatility index or ETFs), futures on other underlying values (i.e. volatility index or ETFs):**
- (1) your alternative proposal**
 - (2) which qualitative criteria would you use to define the sub-classes**
 - (3) which parameters and related threshold values would you use in order to define a sub-class as liquid.**
- Q65. Do you agree with the definitions of the equity derivatives classes provided in ESMA's proposal (please refer to Annex III of draft RTS 9)? Please provide reasons for your answer.**

Commodity derivatives - Metals

92. To assess the liquidity of metal commodity derivatives, ESMA analysed the dataset collected from 5 trading venues for the period of 1 June 2013 – 31 May 2014, which included 284 instruments out of which 80% traded over the period.
93. For this exercise, homogenous sub-classes were developed on the basis of the following characteristics:
- i. underlying type, i.e. a commodity or an index on commodity;
 - ii. specific underlying metal, i.e. aluminium, cobalt, etc.;
 - iii. notional currency of the contract.
94. Subsequently, each sub-class was defined as liquid on the basis of the following parameters:
- i. an average of 1 trade per day¹⁹ or more and;
 - ii. an average notional amount²⁰ per day of €100,000 or more.
95. Out of a total of 49 sub-classes identified, 40 sub-classes were deemed liquid (31 future contracts and 9 option contracts). In particular, USD was the dominant currency accounting for 65% of the liquid sub-classes. The tables below provide an overview of the commodity derivatives for which data were collected and the related classification based on the above thresholds.

¹⁹ Calculated as total number of trades divided by the number of trading sessions for the instrument. In the case of options, instruments with the same underlying but different strike prices have been considered as 1 instrument irrespectively from the number of ISINs

²⁰ Calculated as total notional amount divided by the number of trading sessions for the instrument. In the case of options, instruments with the same underlying but different strike prices have been considered as 1 instrument irrespectively from the number of ISINs

Underlying Type	Underlying	Currency	Liquidity Test: 1 trade per day and €100,000 notional amount per day	Num of instruments	Num of trades per day	Notional Amount per day
Single Name	Aluminium	EUR	Liquid	4	155.57	43,060,653
Single Name	Aluminium	GBP	Liquid	1	4.35	267,114
Single Name	Aluminium	USD	Liquid	5	14,759.09	5,375,160,714
Single Name	Aluminium Alloy	USD	Liquid	5	68.04	27,442,872
Single Name	Aluminium swap	USD	Liquid	1	2.93	2,294,059
Single Name	Cobalt	USD	Liquid	5	11.01	1,048,366
Index	Commodities	USD	Liquid	6	3.29	3,565,771
Single Name	Copper	EUR	Liquid	3	22.91	2,775,019
Single Name	Copper	GBP	Liquid	1	12.99	2,771,326
Single Name	Copper	USD	Liquid	5	26,358.56	11,135,617,857
Single Name	Copper Swaps	USD	Liquid	1	1.06	3,993,089
Index	Gold	USD	Liquid	12	1.90	305,271
Index	Gold	EUR	Illiquid	1	0.03	809
Single Name	Gold	RON	Liquid	18	36.31	178,170
Index	Ind.Metal	USD	Illiquid	5	0.18	104,176
Single Name	Iron	USD	Illiquid	52	-	-
Single Name	Lead	EUR	Liquid	2	9.44	5,315,393
Single Name	Lead	GBP	Liquid	2	8.04	874,262
Single Name	Lead	USD	Liquid	5	6,525.98	1,148,412,407
Single Name	Lead Swap	USD	Liquid	1	1.00	1,430,498
Single Name	Molybdenum	USD	Liquid	2	3.11	685,000
Single Name	Nickel	EUR	Liquid	4	29.84	3,310,261
Single Name	Nickel	GBP	Liquid	1	1.68	262,047
Single Name	Nickel	USD	Liquid	5	6,970.86	2,715,949,592
Single Name	Nickel swap	USD	Liquid	1	2.59	198,116
Single Name	North American Special Aluminium Alloy	EUR	Liquid	1	7.85	1,775,084
Single Name	North American Special Aluminium Alloy	USD	Liquid	5	74.29	48,953,826
Index	Prec. Metals	USD	Illiquid	5	0.48	488,615
Index	Silver	USD	Illiquid	9	0.68	89,218
Single Name	Silver	RON	Illiquid	4	-	-
Single Name	Steel Billet	USD	Liquid	5	10.84	764,870
Single Name	Tin	EUR	Liquid	1	2.18	462,247
Single Name	Tin	GBP	Liquid	2	1.22	123,369
Single Name	Tin	USD	Liquid	5	932.44	440,943,606
Single Name	Tin swap	USD	Liquid	2	2.29	1,499,667
Single Name	Zinc	EUR	Liquid	2	113.68	22,787,519
Single Name	Zinc	GBP	Illiquid	3	2.14	85,677
Single Name	Zinc	USD	Liquid	5	12,719.04	2,525,025,052

Table 21: Commodity derivatives (Metals) – Futures

Underlying Type	Underlying	Currency	Liquidity Test: 1 trade per day and €100,000 notional amount per day	Num of instruments	Num of trades per day	Notional Amount per day
Single Name	Aluminium	EUR	Liquid	2	8.67	487,813
Single Name	Aluminium	USD	Liquid	9	58.13	168,681,711
Single Name	Copper	EUR	Illiquid	2	0.40	159,000
Single Name	Copper	USD	Liquid	7	120.29	417,422,397
Index	Gold	USD	Liquid	31	5.04	1,761,337
Single Name	Lead	USD	Liquid	5	12.86	15,308,344
Single Name	Nickel	USD	Liquid	6	36.21	103,635,395
Single Name	North American Special Aluminium Alloy	USD	Liquid	3	18.38	5,230,535
Index	Silver	USD	Illiquid	13	0.62	118,924
Single Name	Tin	USD	Liquid	4	13.08	37,615,808
Single Name	Zinc	USD	Liquid	5	29.82	49,004,031

Table 22: Commodity derivatives (Metals) - Options

Proposal

96. ESMA is of the opinion that classes of financial instruments included in Annex III, Section 5 of draft RTS 9 are liquid.

Q66. Do you agree with ESMA's proposal for the definition of a liquid market? Please provide an answer detailed per contract type, underlying type and underlying identified, addressing the following points:

- (1) Would you use different qualitative criteria to define the sub-classes? In particular, do you consider the notional currency as a relevant criterion to define sub-classes, or in other words should a sub-class deemed as liquid in one currency be declared liquid for all currencies?**
- (2) Would you use different parameters or the same parameters (i.e. average number of trades per day and average notional amount traded per day) but different thresholds in order to define a sub-class as liquid?**
- (3) Would you define classes declared as liquid in ESMA's proposal as illiquid (or vice versa)? Please provide reasons for your answer.**

Commodity derivatives - Energy

97. To assess the liquidity of energy commodity derivatives, ESMA analysed the dataset collected from 7 trading venues for the period of 1 June 2013 – 31 May 2014, which included 8,247 instruments out of which 92% traded over the period.
98. For this exercise, homogenous sub-classes were developed on the basis of the following characteristics:
- i. underlying type, i.e. a commodity or an index on commodity;
 - ii. specific underlying source of energy, i.e. electricity, natural gas, etc.;
 - iii. notional currency of the contract;
 - iv. time to maturity.
99. Subsequently, each sub-class was defined as liquid on the basis of the following parameters:
- i. an average of 1 trade per day²¹ or more and;
 - ii. an average notional amount²² per day of €100,000 or more.
100. In total, 22 sub-classes were identified: 19 future contracts and 3 option contracts. However, 8 sub-classes, all future contracts, were deemed to be liquid. The tables below provide an overview of the commodity derivatives for which data were collected and the related classification based on the above thresholds.

²¹ Calculated as total number of trades divided by the number of trading sessions for the instrument. In the case of options, instruments with the same underlying but different strike prices have been considered as 1 instrument irrespectively from the number of ISINs

²² Calculated as total notional amount divided by the number of trading sessions for the instrument. In the case of options, instruments with the same underlying but different strike prices have been considered as 1 instrument irrespectively from the number of ISINs

Underlying Type	Underlying	Currency	Time to maturity	Liquidity Test: 1 trade per day and €100,000 notional amount per day	Num of instruments	Num of trades per day	Notional Amount per day
Index	Energy	USD	Up to 3 Months	Illiquid	6	0.20	69,830
Index	Electricity	EUR	=> 3 Months	Liquid	867	12.20	8,520,929
Index	Electricity	EUR	Up to 3 Months	Liquid	205	8.47	1,523,432
Index	Petroleum	USD	Up to 3 Months	Illiquid	6	0.05	147,178
Single Name	Electricity	EUR	=> 3 Months	Liquid	3,538	340.50	150,404,324
Single Name	Electricity	EUR	Up to 3 Months	Liquid	1,060	29.24	6,659,451
Single Name	Electricity	GBP	=> 3 Months	Illiquid	144	0.18	195,448
Single Name	Electricity	GBP	Up to 3 Months	Illiquid	35	0.18	146,861
Single Name	Electricity	GBX	=> 3 Months	Illiquid	84	-	-
Single Name	Electricity	GBX	Up to 3 Months	Illiquid	17	-	-
Single Name	Electricity	SEK	=> 3 Months	Liquid	122	3.02	212,149
Single Name	Electricity	USD	=> 3 Months	Illiquid	64	-	-
Single Name	Electricity	USD	Up to 3 Months	Illiquid	8	-	-
Single Name	Natural Gas	EUR	=> 3 Months	Liquid	62	7.12	5,711,401
Single Name	Natural Gas	EUR	Up to 3 Months	Illiquid	24	0.45	180,813
Single Name	Natural Gas	GBP	=> 3 Months	Illiquid	354	-	-
Single Name	Natural Gas	GBP	Up to 3 Months	Illiquid	111	-	-
Single Name	Oil	RON	=> 3 Months	Liquid	10	31.95	304,954
Single Name	Oil	RON	Up to 3 Months	Liquid	3	20.52	210,642

Table 23: Commodity derivatives (Energy) - Futures

Underlying Type	Underlying	Currency	Time to maturity	Liquidity Test: 1 trade per day and €100,000 notional amount per day	Num of instruments	Num of trades per day	Notional Amount per day
Index	Electricity	EUR	=> 3 Months	Illiquid	4	0.41	6,136
Single Name	Electricity	EUR	=> 3 Months	Illiquid	1,265	0.66	4,247,128
Single Name	Electricity	EUR	Up to 3 Months	Illiquid	252	0.03	60,542

Table 24: Commodity derivatives (Energy) – Options

Proposal

101. ESMA is of the opinion that classes of financial instruments included in Annex III, Section 5 of draft RTS 9 are liquid.

Q67. Do you agree with ESMA's proposal for the definition of a liquid market? Please provide an answer detailed per contract type, underlying type and underlying identified, addressing the following points:

(1) Would you use different qualitative criteria to define the sub-classes? In particular, do you consider the notional currency as a relevant criteria to define sub-classes, or in other words should a sub-class deemed as liquid in one currency be declared liquid for all currencies?

(2) Would you use different parameters or the same parameters (i.e. average number of trades per day and average notional amount traded per day) but different thresholds in order to define a sub-class as liquid?

(3) Would you define classes declared as liquid in ESMA's proposal as illiquid (or vice versa)? Please provide reasons for your answer.

Commodity derivatives - Agricultural

102. To assess the liquidity of agricultural commodity derivatives, ESMA analysed the dataset collected from 7 trading venues for the period of 1 June 2013 – 31 May 2014, which included 13,088.

103. For this exercise, homogenous sub-classes were developed on the basis of the specific underlying commodity. Maturity was not considered due to the mixed results of the analysis. For futures, roughly 75% of liquidity is concentrated in short maturities (less than 6 months); for options, the evidence is mixed. The two tables below summarise the percentage of trades and notional amount across 3 different maturity buckets.

Futures	% of trades			% notional amount traded		
	1-3 months	3-6 months	> 6 months	1-3 months	3-6 months	> 6 months
cocoa	32	41	27	32	39	29
coffee	44	45	11	43	46	11
corn	35	41	24	43	38	19
Wheat (milling & feed)	31	35	34	33	37	30
potato	23	28	49	23	28	49
rapeseed	28	47	25	34	44	22
sugar	30	47	23	32	47	21

Table 25: Commodity derivatives (Agricultural) – Statistics across different maturity buckets

Options	% of trades			% notional amount traded		
	1-3 months	3-6 months	> 6 months	1-3 months	3-6 months	> 6 months
cocoa	27	35	38	22	33	45
coffee	38	51	11	28	60	12
corn	12	34	54	14	38	48
Wheat (milling & feed)	14	33	53	13	36	51
rapeseed	21	30	49	18	44	38

Table 26: Commodity derivatives (Agricultural) – Statistics across different maturity buckets

104. Furthermore, the currency of the underlying was not taken into account as a criterion to define the classes of instruments since the level of granularity reached using the underlying was considered to be sufficient. Indeed, each underlying included in the dataset, for which trading activity was recorded during the period considered, was traded in only one currency.
105. After having identified the appropriate level of granularity, each sub-class was defined as liquid if the following two thresholds were both met²³:
- i. an average of 10 trades per day²⁴ or more;
 - ii. an average notional amount²⁵ per day of €500,000 or more of.

²³ Only one sub-class, i.e. corn options meets only the notional amount threshold

²⁴ Calculated as total number of trades divided by the number of trading sessions for the instrument

²⁵ Calculated as total notional amount divided by the number of trading sessions for the instrument

106. The above thresholds were defined after consideration of the trading activity of each class. From the dataset analysed a split between, on the one hand, classes with few transactions (an average number of trades per day below 10) and a relatively low notional amount per day (less than €500,000) and, on the other hand, classes with a higher number of trades and notional amount is evident. This is true for all classes except for corn options which have an average of 6 trades per day and an average notional amount traded per day of around €2.4 m).

107. Therefore, every class of financial instruments satisfying the above thresholds was considered liquid. Additionally, ESMA is of the view that classes like the corn options class, characterised by significant notional amount traded despite a lower number of trades per day, should also be deemed liquid.

108. In summary, 21 sub-classes were identified: 13 futures and 8 option contracts. In total, 13 sub-classes were deemed to be liquid on the basis of the above thresholds (for these classes, the average number of trades per day is 1,903 and the average notional amount traded per day is around €118m), consequently the remaining 8 classes were deemed illiquid (for these classes, the average number of trades per day is 3 and the average notional amount traded per day is roughly €180,000). The tables below provide an overview of the commodity derivatives for which data were collected and the related liquidity classification.

Underlying	Liquidity Test: 10 trades per day, €500,000 notional amount per day	Num of instruments	Num of trades per day	Notional Amount per day
Cocoa	Liquid	16	7,278	456,017,794
Coffee	Liquid	16	6,102	224,953,753
Corn	Liquid	16	433	17,361,104
Potato	Liquid	6	67	888,608
Rapeseed	Liquid	14	2,452	142,853,818
Sugar	Liquid	14	4,454	142,173,351
Wheat (feed)	Liquid	16	92.53	10,391,327
Wheat (milling)	Liquid	16	3,709	280,734,458
Dairy	Illiquid	46	2.58	202,371
Livestock	Illiquid	31	2.26	47,474
Malting barley	Illiquid	16	1.40	3,403
Olive oil	Illiquid	9	5.75	480,270
Salmon	Illiquid	89	7.81	352,656

Table 27: Commodity derivatives (Agricultural) - Futures

Underlying	Liquidity Test: 10 trades per day, €500,000 notional amount per day	Num of instruments	Num of trades per day	Notional Amount per day
Cocoa	Liquid	1,690	19	122,201,411
Coffee	Liquid	1,464	36	52,182,230
Corn	Liquid	3,238	6	2,378,855
Rapeseed	Liquid	2,626	22	20,521,884
Wheat (milling)	Liquid	1,644	66	64,139,156
Wheat (feed)	Illiquid	1,412	0.38	140,581
Salmon	Illiquid	179	0.09	17,666
Sugar	Illiquid	530	0.14	200,634

Table 28: Commodity derivatives (Agricultural) - Options

Proposal

109. ESMA is of the opinion that classes of financial instruments included in Annex III, Section 5 of draft RTS 9 should be deemed as liquid.

Q68. Do you agree with ESMA's proposal for the definition of a liquid market? Please provide an answer detailed per contract type and underlying (identified addressing the following points:

- (1) Would you use different qualitative criteria to define the sub-classes?**
- (2) Would you use different parameters or the same parameters (i.e. average number of trades per day and average notional amount traded per day) but different thresholds in order to define a sub-class as liquid?**
- (3) Would you define classes declared as liquid in ESMA's proposal as illiquid (or vice versa)? Please provide reasons for your answer.**

Foreign exchange derivatives

110. A separate CP will be published providing a similar analysis to that undertaken for the other asset classes on both the assessment of the liquidity and on the definition of the LIS and SSTI thresholds. It is expected that the CP will be published in the next few weeks.

Credit derivatives

111. A separate CP will be published providing a similar analysis to that undertaken for the other asset classes on both the assessment of the liquidity and on the definition of the LIS and SSTI thresholds. It is expected that the CP will be published in the next few weeks.

Other derivatives

112. A separate CP will be published providing a similar analysis to that undertaken for the other asset classes on both the assessment of the liquidity and on the definition of the LIS and SSTI thresholds. It is expected that the CP will be published in the next few weeks.

Contracts for difference

113. A separate CP will be published providing a similar analysis to that undertaken for the other asset classes on both the assessment of the liquidity and on the definition of the LIS and SSTI thresholds. It is expected that the CP will be published in the next few weeks.

Emission allowances

114. To assess the liquidity of emission allowances, ESMA analysed a dataset collected from 3 trading venues for the period of 1 June 2013 – 31 May 2014. In total, the dataset included 1,142 instruments covering 4 types of emission allowances, with the majority accounting for either EUA or CER.

115. From the table below it is evident that trading activity is concentrated in the class of EUA contacts. Furthermore, an average of 5 trades per day and 150,000 tons of carbon dioxide per day, which represent roughly €750,000, are considered as sufficient trading activity to qualify this class as liquid.

Emission allowances		Num of instruments (%) (*)	Total qty traded (in tons of Carbon Dioxide) and related percentage		N. of trades per day	Total turnover (in EUR)	Average qty traded (in tons of Carbon Dioxide) per day for the class (**)
EUA	European Union Allowances	52.1%	38,850,000	99.9%	5.6	187,788,560	155,400
CER	Certified Emission Reductions	46.7%	44,000	0.1%	0.004	17,600	176
EUAA	European Union Aviation Allowance	1.1%	-	0.0%	-	-	-
ERU	Emission Reduction Units	0.1%	-	0.0%	-	-	-
Total			38,894,000			187,806,160	

(*) one instrument corresponds to an ISIN

(**) Calculations were performed at the class level, not at ISIN level (classes are: EUA, CER, EUAA, ERU)

Table 29: Emission allowances – Statistics

Proposal

116. ESMA is of the opinion that classes of financial instruments included in Annex III, Section 10 of draft RTS 9 should be deemed as liquid.

Q69. Do you agree with ESMA's proposal for the definition of a liquid market? Please provide an answer per asset class identified (EUA, CER, EUAA, ERU) addressing the following points:

- (1) Would you use additional qualitative criteria to define the sub-classes?**
- (2) Would you use different parameters or the same parameters (i.e. average number of trades per day and average number of tons of carbon dioxide traded per day) but different thresholds in order to define a sub-class as liquid?**
- (3) Would you qualify as liquid certain sub-classes qualified as illiquid (or vice versa)? Please provide reasons for your answer.**

Relevant annexes:

Annex B: Draft RTS 9: Draft regulatory technical standards on transparency requirements in respect of bonds, structured finance products, emission allowances and derivatives

Annex 3.5.1: General taxonomy of non-equity financial instruments for the purpose of pre-trade and post-trade transparency

TAXONOMY							
Financial Instrument	Product Type	Underlying type					
Equity derivatives	Options	Stock					
		Index					
		Dividend Index					
		Stock Dividend					
		Basket or portfolio of shares					
			On other underlying values (e.g. volatility index,ETF, etc.)				
	Futures	Stock					
		Index					
		Dividend Index					
		Stock Dividend					
Basket or portfolio of shares							
		On other underlying values (e.g. volatility index,ETF, etc.)					
Financial Instrument	Product Type	Underlying type		Criterion#1	Criterion#2	Criterion#3	
Commodity derivatives (Agricultural)	Futures					Specific underlying commodity type	
	Options					Specific underlying commodity type	
Commodity derivatives (Energy)	Futures	Single name		Notional currency	Time to maturity	Specific underlying commodity type	
		Index		Notional currency	Time to maturity	Specific underlying commodity type	
	Options	Single name		Notional currency	Time to maturity	Specific underlying commodity type	
		Index		Notional currency	Time to maturity	Specific underlying commodity type	
Commodity derivatives (Metals)	Futures	Single name		Notional currency		Specific underlying commodity type	
		Index		Notional currency		Specific underlying commodity type	
	Options	Single name		Notional currency		Specific underlying commodity type	
		Index		Notional currency		Specific underlying commodity type	

Financial Instrument	Product Type	Sub-product type	Underlying type	Criterion#1	Criterion#2	Criterion#3	
IR derivatives	Swaptions			Notional currency			
	FRA			Notional currency	Tenor	Specific underlying Interest Rate	
	Multi-currency swaps	fixed-to float			Currency pair	Tenor	
		float-to-float			Currency pair	Tenor	
		fixed-to-fixed					
		Inflation					
		OIS					
	Single-currency swaps	fixed-to float			Notional currency	Tenor	
		float-to-float			Notional currency	Tenor	
		fixed-to-fixed					
		Inflation			Notional currency	Tenor	
		OIS			Notional currency	Tenor	
	Futures			Interest rate		Time to maturity	Specific underlying Interest Rate
				Bonds (including swapnotes)		Time to maturity	Specific underlying Bond or Swapnote
	Options			Interest rate		Time to maturity	Specific underlying Interest Rate
			Bonds (including swapnotes)		Time to maturity	Specific underlying Bond or Swapnote	

Financial Instrument						
Securitised derivatives						

Financial Instrument	Bond Type	Debt Seniority	Issuer sub-type	Issuance size		
Bonds	European Sovereign Bond					
	Non-European Sovereign Bond					
	Other European Public Bond					
	Convertible Bond			Financial		
	Convertible Bond			Non-financial		
	Covered Bond					
	Corporate Bond		Senior	Financial		
	Corporate Bond		Senior	Non-financial		
	Corporate Bond		Subordinated	Financial		
	Corporate Bond		Subordinated	Non-financial		
Others						

Financial Instrument						
Structured Finance Products (SFPs)						

Financial Instrument	Type of contract					
Emission Allowances	EUA					
	EUAA					
	CER					
	ERU					

Annex 3.5.2: Details on the cleansing of TRs data

117. The analysis based on TRs data, which focused on the assessment of the liquidity of OTC traded interest rate derivatives, required an extensive cleansing and screening phase. In particular, the following steps were undertaken:

- i. selection of records based on the date of execution of the trade; only trades executed in the period 1 March – 31 May 2014 were retained;
- ii. selection of records based on the venue of execution in order to disentangle only OTC trades, i.e. those flagged as XOFF, XXXX²⁶;
- iii. in general, only records whose action type was flagged as “N=new” or “M=modify” were considered for the analysis;
- iv. selection of unique trade ID records per TR and across all TRs, in other words only one record per trade ID was included in the final dataset;
- v. records flagged as contract resulting from a compression exercise or intragroup transactions as defined in Article 3 of Regulation (EU) No 648/2012 or compressions were excluded;
- vi. identification of interest rate derivatives. Although some TRs provide data per asset class, for other TRs the selection was carried out by means of field 2 of Table 2 included in the delegated regulation (EU) No 148/213, i.e. “Product ID 1” equal to “IR”. Further screening for contract type (i.e. futures, options, swaps, etc.) was possible by means of field 3 of Table 2 (“Product ID 2”) or CFI code. However, the identification of the sub-products (i.e. fixed to fixed single currency swaps, OIS multi-currency swaps, etc.) could only be inferred from the data. In particular:
 - a. single vs. multi-currency swaps were screened on the basis of the difference or equality of the notional currency of the two legs;
 - b. inflation and OIS products were identified on the basis of the description of the underlying interest rate. In the case of multi-currency swaps, if the interest rate of one leg qualified as OIS rate then, the contract was included in the OIS multi-currency swap dataset;
 - c. fixed-to-fixed, float-to-float and fixed-to-float were identified on the basis of the fields 33, 34, 37 and 38 of Table 2 included in the delegated regulation (EU) No 148/213, which provide information on the type of fixed/floating rate of leg 1/2 of the swap;

²⁶ Those records with an empty field were considered to be OTC trades

- d. last but not least, the screening of the different underlying interest rates used as one of the criteria to build the sub-classes of FRA, was based on the description provided for the interest rate (fields 4 of Table 2 included in the delegated regulation (EU) No 148/213, i.e. “underlying”).
 - vii. all records for which a classification was not possible because of missing or incoherent information provided in the report were excluded;
 - viii. extreme values of notional amount were excluded from the calculations;
 - ix. all values were converted into Euro on the basis of the simple average of the ECB foreign exchange reference rates over the three-month period considered.
118. ESMA is fully aware of quality issues related to the data reported to TRs, especially in the first months after the start of TR reporting. ESMA already put in practice in October 2014 a data quality plan to address those issues. They are mainly due to the absence of a commonly-agreed trade identifier, the incorrect or inconsistent reporting of some data fields or the difficulty that some counterparties faced in obtaining the LEI on time for the go-live of the trade repository system on 12 February 2014. Indeed, a wider use of a unique trade identifier and of the LEI would have facilitated reconciliation of the reports per and across TRs and ESMA’s analysis of liquidity. Furthermore, data quality issues are further exacerbated by the heterogeneous interpretation of the requirements provided by the Regulation in terms of product classification during the initial implementation period of the reporting system, which corresponds to the period available for a comprehensive analysis of the non-equity universe. However, ESMA considers that the quality of TRs’ data is, all in all, sufficient to provide a general overview of the OTC trading activity of a class of derivatives over a certain period.

Annex 3.5.3. Interest rate derivatives data analysis tables

119. Here below is a set of tables providing the detailed results per sub-class in relation to the assessment of liquidity. On the top of each table are indicated the criteria applied to assess the liquidity and on the basis of these the “Liquidity Flag” is provided. However, as already stated, the final selection of the liquid sub-classes was based on two additional principles: first, a sub-class meeting the thresholds for only one (or a few) maturity(ies) was not deemed to be liquid. In other words, concentration of liquidity across different maturities had to be present. Secondly, a 50% coverage ratio in terms of number of trades and notional amount had to be met for the entire asset class. As a result, the “Final Liquidity Flag” represents the ultimate classification of the class.

120. Please be aware that the notional amount represents the notional amount traded whose value was then converted into Euro on the basis of the simple average of the ECB exchange rate over the three-month period considered.

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						10.00	19.68
Notional Amount per day						2,000,000,000	2,160,876,290
SWAPTIONS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
AUD_SWAPTION	1,279	19.68	63	140,456,958,854	2,160,876,290	Liquid	Liquid
BRL_SWAPTION	224	3.45	33	19,104,799,418	293,919,991	Illiquid	Illiquid
CAD_SWAPTION	23	0.35	18	1,361,181,207	20,941,249	Illiquid	Illiquid
CHF_SWAPTION	18	0.28	11	730,096,019	11,232,246	Illiquid	Illiquid
DKK_SWAPTION	4	0.06	3	18,701,811	287,720	Illiquid	Illiquid
EUR_SWAPTION	9,486	145.94	67	1,012,399,057,448	15,575,370,115	Liquid	Liquid
GBP_SWAPTION	2,569	39.52	63	287,645,837,585	4,425,320,578	Liquid	Liquid
HKD_SWAPTION	8	0.12	4	98,180,464	1,510,469	Illiquid	Illiquid
ILS_SWAPTION	60	0.92	32	2,408,284,685	37,050,534	Illiquid	Illiquid
JPY_SWAPTION	3,852	59.26	64	309,377,996,751	4,759,661,488	Liquid	Liquid
KRW_SWAPTION	389	5.98	56	20,005,113,547	307,770,978	Illiquid	Illiquid
MXN_SWAPTION	121	1.86	30	4,220,738,835	64,934,444	Illiquid	Illiquid
MYR_SWAPTION	10	0.15	4	679,374,185	10,451,911	Illiquid	Illiquid
NZD_SWAPTION	16	0.25	5	1,431,627,187	22,025,034	Illiquid	Illiquid
PLN_SWAPTION	42	0.65	16	1,728,435,690	26,591,318	Illiquid	Illiquid
RUB_SWAPTION	4	0.06	4	112,189,383	1,725,991	Illiquid	Illiquid
SAR_SWAPTION	2	0.03	2	67,681,611	1,041,256	Illiquid	Illiquid
SEK_SWAPTION	82	1.26	34	9,662,266,473	148,650,253	Illiquid	Illiquid
SGD_SWAPTION	36	0.55	17	2,021,232,521	31,095,885	Illiquid	Illiquid
THB_SWAPTION	3	0.05	2	44,739,404	688,299	Illiquid	Illiquid
TRY_SWAPTION	27	0.42	12	1,703,943,452	26,214,515	Illiquid	Illiquid
TWD_SWAPTION	14	0.22	8	467,270,822	7,188,782	Illiquid	Illiquid
USD_SWAPTION	17,818	274.12	66	2,243,202,937,089	34,510,814,417	Liquid	Liquid
ZAR_SWAPTION	270	4.15	47	5,262,039,442	80,954,453	Illiquid	Illiquid

Table 30: Swaptions liquidity assessment

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						5.00	4.55
Notional Amount per day						500,000,000	608,691,138
FRA	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
BBSW_AUD_1.5 months	520	8.00	47	87,352,817,613	1,343,889,502	Liquid	Liquid
BBSW_AUD_3 months	388	5.97	22	47,601,768,804	732,334,905	Liquid	Liquid
BBSW_AUD_6 months	380	5.85	19	41,546,685,089	639,179,771	Liquid	Liquid
BBSW_AUD_1 year	359	5.52	15	39,564,923,944	608,691,138	Liquid	Liquid
BBSW_AUD_2 years	3	0.05	3	1,061,849,046	16,336,139	Illiquid	Illiquid
BUBOR_HUF_1.5 months	79	1.22	17	9,560,462,420	147,084,037	Illiquid	Illiquid
BUBOR_HUF_3 months	92	1.42	27	14,892,639,862	229,117,536	Illiquid	Illiquid
BUBOR_HUF_6 months	583	8.97	53	92,984,829,326	1,430,535,836	Liquid	Illiquid
BUBOR_HUF_1 year	653	10.05	56	123,144,171,927	1,894,525,722	Liquid	Illiquid
BUBOR_HUF_2 years	151	2.32	31	22,695,093,434	349,155,284	Illiquid	Illiquid
BUBOR_HUF_3 years	5	0.08	5	503,541,294	7,746,789	Illiquid	Illiquid
CDOR_CAD_1.5 months	2	0.03	1	4,202,862,165	64,659,418	Illiquid	Illiquid
CDOR_CAD_3 months	3	0.05	1	989,374,333	15,221,144	Illiquid	Illiquid
CDOR_CAD_6 months	4	0.06	2	3,358,596,068	51,670,709	Illiquid	Illiquid
CDOR_CAD_1 year	26	0.40	11	11,536,896,219	177,490,711	Illiquid	Illiquid
CDOR_CAD_2 years	43	0.66	18	23,396,064,637	359,939,456	Illiquid	Illiquid
CDOR_CAD_3 years	4	0.06	2	640,454,985	9,853,154	Illiquid	Illiquid
CDOR_CAD_5 years	2	0.03	1	7,279,816	111,997	Illiquid	Illiquid
CIBOR_DKK_1.5 months	192	2.95	36	20,063,988,750	308,676,750	Illiquid	Illiquid
CIBOR_DKK_3 months	69	1.06	9	10,613,143,774	163,279,135	Illiquid	Illiquid
CIBOR_DKK_6 months	143	2.20	6	12,417,547,014	191,039,185	Illiquid	Illiquid
CIBOR_DKK_1 year	115	1.77	8	9,302,945,267	143,122,235	Illiquid	Illiquid
CIBOR_DKK_2 years	37	0.57	8	3,939,303,384	60,604,667	Illiquid	Illiquid
EURIBOR_EUR_1.5 months	7,647	117.65	63	2,726,801,700,000	41,950,795,385	Liquid	Liquid
EURIBOR_EUR_3 months	8,588	132.12	54	2,308,758,400,000	35,519,360,000	Liquid	Liquid
EURIBOR_EUR_6 months	18,937	291.34	60	4,828,640,400,000	74,286,775,385	Liquid	Liquid
EURIBOR_EUR_1 year	27,313	420.20	65	6,163,359,060,480	94,820,908,623	Liquid	Liquid
EURIBOR_EUR_2 years	11,937	183.65	54	2,557,731,393,773	39,349,713,750	Liquid	Liquid
EURIBOR_EUR_3 years	41	0.63	14	10,175,593,615	156,547,594	Illiquid	Illiquid
JIBAR_ZAR_1.5 months	554	8.52	49	62,677,926,338	964,275,790	Liquid	Liquid
JIBAR_ZAR_3 months	452	6.95	52	48,995,295,733	753,773,781	Liquid	Liquid
JIBAR_ZAR_6 months	727	11.18	56	79,998,586,172	1,230,747,480	Liquid	Liquid
JIBAR_ZAR_1 year	921	14.17	59	107,561,507,843	1,654,792,428	Liquid	Liquid
JIBAR_ZAR_2 years	180	2.77	41	23,852,001,923	366,953,876	Illiquid	Illiquid
LIBOR_CHF_1.5 months	265	4.08	12	31,985,588,607	492,085,979	Illiquid	Illiquid
LIBOR_CHF_3 months	384	5.91	15	61,834,210,777	951,295,550	Liquid	Illiquid
LIBOR_CHF_6 months	896	13.78	19	114,515,970,679	1,761,784,164	Liquid	Illiquid
LIBOR_CHF_1 year	2,061	31.71	30	243,607,611,086	3,747,809,401	Liquid	Illiquid
LIBOR_CHF_2 years	267	4.11	14	37,929,718,664	583,534,133	Illiquid	Illiquid
LIBOR_CHF_3 years	8	0.12	4	4,716,912,480	72,567,884	Illiquid	Illiquid
LIBOR_GBP_1.5 months	2,750	42.31	48	587,266,174,664	9,034,864,226	Liquid	Liquid
LIBOR_GBP_3 months	3,222	49.57	37	579,063,384,634	8,908,667,456	Liquid	Liquid
LIBOR_GBP_6 months	7,060	108.62	50	1,288,649,751,153	19,825,380,787	Liquid	Liquid
LIBOR_GBP_1 year	10,948	168.43	54	1,946,775,169,794	29,950,387,228	Liquid	Liquid
LIBOR_GBP_2 years	3,240	49.85	45	837,694,480,899	12,887,607,398	Liquid	Liquid
LIBOR_GBP_3 years	30	0.46	12	31,120,239,779	478,772,920	Illiquid	Illiquid
LIBOR_GBP_4 years	5	0.08	2	6,674,256,923	102,680,876	Illiquid	Illiquid
LIBOR_ILS_1.5 months	6	0.09	2	499,820,853	7,689,552	Illiquid	Illiquid
LIBOR_ILS_3 months	9	0.14	1	204,187,466	3,141,346	Illiquid	Illiquid
LIBOR_ILS_6 months	2	0.03	1	292,292,896	4,496,814	Illiquid	Illiquid
LIBOR_ILS_1 year	3	0.05	2	788,146,917	12,125,337	Illiquid	Illiquid
LIBOR_JPY_1 year	1	0.02	1	74,501,492	1,146,177	Illiquid	Illiquid
LIBOR_JPY_2 years	2	0.03	1	709,538,022	10,915,970	Illiquid	Illiquid
LIBOR_USD_1.5 months	2,397	36.88	54	738,660,401,557	11,364,006,178	Liquid	Liquid
LIBOR_USD_3 months	3,002	46.18	50	865,026,400,766	13,308,098,473	Liquid	Liquid
LIBOR_USD_6 months	9,914	152.52	59	2,873,271,945,759	44,204,183,781	Liquid	Liquid
LIBOR_USD_1 year	13,119	201.83	62	3,490,069,970,757	53,693,384,165	Liquid	Liquid
LIBOR_USD_2 years	5,772	88.80	58	1,582,319,995,996	24,343,384,554	Liquid	Liquid
LIBOR_USD_3 years	134	2.06	32	80,563,926,921	1,239,445,030	Illiquid	Illiquid
LIBOR_USD_4 years	1	0.02	1	725,232,718	11,157,426	Illiquid	Illiquid
LIBOR_USD_5 years	2	0.03	1	2,973,454,143	45,745,448	Illiquid	Illiquid
LIBOR_ZAR_1.5 months	13	0.20	11	2,911,373,517	44,790,362	Illiquid	Illiquid
LIBOR_ZAR_3 months	34	0.52	19	5,296,299,375	81,481,529	Illiquid	Illiquid
LIBOR_ZAR_6 months	52	0.80	24	6,921,730,525	106,488,162	Illiquid	Illiquid
LIBOR_ZAR_1 year	65	1.00	29	7,223,525,767	111,131,166	Illiquid	Illiquid
LIBOR_ZAR_2 years	5	0.08	4	960,170,300	14,771,851	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						5.00	4.55
Notional Amount per day						500,000,000	608,691,138
FRA	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
MOSPRIM RUB 1.5 months	32	0.49	8	478,416,325	7,360,251	Illiquid	Illiquid
MOSPRIM RUB 3 months	87	1.34	2	1,103,453,976	16,976,215	Illiquid	Illiquid
MOSPRIM RUB 6 months	136	2.09	6	2,334,824,246	35,920,373	Illiquid	Illiquid
MOSPRIM RUB 1 year	26	0.40	8	682,111,449	10,494,022	Illiquid	Illiquid
NIBOR_NOK 1.5 months	297	4.57	47	30,215,947,427	464,860,730	Illiquid	Illiquid
NIBOR_NOK 3 months	258	3.97	25	27,757,986,098	427,045,940	Illiquid	Illiquid
NIBOR_NOK 6 months	630	9.69	48	68,004,855,608	1,046,228,548	Liquid	Illiquid
NIBOR_NOK 1 year	1,055	16.23	55	110,855,358,001	1,705,467,046	Liquid	Illiquid
NIBOR_NOK 2 years	523	8.05	54	98,851,517,070	1,520,792,570	Liquid	Illiquid
NIBOR_NOK 3 years	60	0.92	33	11,420,889,567	175,705,993	Illiquid	Illiquid
NIBOR_NOK 4 years	2	0.03	2	485,995,301	7,476,851	Illiquid	Illiquid
OTHER_AED 1.5 months	1	0.02	1	108,596,322	1,670,713	Illiquid	Illiquid
OTHER_AED 6 months	1	0.02	1	138,213,500	2,126,362	Illiquid	Illiquid
OTHER_AED 1 year	1	0.02	1	197,447,858	3,037,659	Illiquid	Illiquid
OTHER_CHF 1 year	1	0.02	1	123,049,891	1,893,075	Illiquid	Illiquid
OTHER_NZD 1.5 months	119	1.83	18	12,420,537,012	191,085,185	Illiquid	Illiquid
OTHER_NZD 3 months	79	1.22	10	9,349,319,948	143,835,692	Illiquid	Illiquid
OTHER_NZD 6 months	22	0.34	4	3,735,869,510	57,474,916	Illiquid	Illiquid
OTHER_NZD 1 year	9	0.14	1	701,992,472	10,799,884	Illiquid	Illiquid
OTHER_RUB 1.5 months	3	0.05	2	54,442,448	837,576	Illiquid	Illiquid
OTHER_RUB 3 months	2	0.03	1	46,181,230	710,480	Illiquid	Illiquid
PRIBOR_CZK 6 months	13	0.20	5	1,112,038,954	17,108,292	Illiquid	Illiquid
PRIBOR_CZK 1 year	21	0.32	10	4,065,322,733	62,543,427	Illiquid	Illiquid
PRIBOR_CZK 2 years	16	0.25	7	2,462,892,831	37,890,659	Illiquid	Illiquid
PRIBOR_CZK 3 years	4	0.06	3	822,179,620	12,648,917	Illiquid	Illiquid
STIBOR_SEK 1.5 months	296	4.55	33	50,570,362,334	778,005,574	Illiquid	Liquid
STIBOR_SEK 3 months	535	8.23	37	108,538,836,130	1,669,828,248	Liquid	Liquid
STIBOR_SEK 6 months	947	14.57	50	164,048,543,648	2,523,823,748	Liquid	Liquid
STIBOR_SEK 1 year	1,800	27.69	57	364,154,717,366	5,602,380,267	Liquid	Liquid
STIBOR_SEK 2 years	818	12.58	58	270,476,144,917	4,161,171,460	Liquid	Liquid
STIBOR_SEK 3 years	79	1.22	34	27,758,794,472	427,058,376	Illiquid	Illiquid
TELBOR_ILS 1.5 months	115	1.77	11	6,143,996,681	94,523,026	Illiquid	Illiquid
TELBOR_ILS 3 months	159	2.45	7	7,276,840,435	111,951,391	Illiquid	Illiquid
TELBOR_ILS 6 months	143	2.20	24	13,790,170,069	212,156,463	Illiquid	Illiquid
TELBOR_ILS 1 year	136	2.09	39	24,832,369,351	382,036,452	Illiquid	Illiquid
TELBOR_ILS 2 years	9	0.14	3	2,755,904,451	42,398,530	Illiquid	Illiquid
WIBOR_PLN 1.5 months	196	3.02	25	15,726,227,787	241,941,966	Illiquid	Illiquid
WIBOR_PLN 3 months	229	3.52	20	16,685,866,265	256,705,635	Illiquid	Illiquid
WIBOR_PLN 6 months	312	4.80	39	36,943,574,282	568,362,681	Illiquid	Illiquid
WIBOR_PLN 1 year	714	10.98	54	120,110,706,302	1,847,857,020	Liquid	Illiquid
WIBOR_PLN 2 years	353	5.43	53	67,012,858,671	1,030,967,056	Liquid	Illiquid
WIBOR_PLN 3 years	22	0.34	13	2,895,152,165	44,540,803	Illiquid	Illiquid

Table 31: FRA liquidity assessment

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	0.94
Notional Amount per day						10,000,000	9,336,410
FIXED TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING AED-QAR 6 years	2	0.03	2	13,942,318	214,497	Illiquid	Illiquid
FIXED-FLOATING AED-QAR 7 years	2	0.03	2	1,991,760	30,642	Illiquid	Illiquid
FIXED-FLOATING AED-USD 2 years	1	0.02	1	1,974,470	30,376	Illiquid	Illiquid
FIXED-FLOATING AUD-CLP 3 years	1	0.02	1	83,689,238	1,287,527	Illiquid	Illiquid
FIXED-FLOATING AUD-CNY 1 year	1	0.02	1	11,675,078	179,617	Illiquid	Illiquid
FIXED-FLOATING AUD-CNY 2 years	2	0.03	1	21,015,141	323,310	Illiquid	Illiquid
FIXED-FLOATING AUD-EUR 1 year	1	0.02	1	66,951,390	1,030,021	Illiquid	Illiquid
FIXED-FLOATING AUD-EUR 2 years	5	0.08	5	532,963,355	8,199,436	Illiquid	Illiquid
FIXED-FLOATING AUD-EUR 3 years	1	0.02	1	89,045,349	1,369,928	Illiquid	Illiquid
FIXED-FLOATING AUD-EUR 4 years	6	0.09	5	85,697,779	1,318,427	Illiquid	Illiquid
FIXED-FLOATING AUD-EUR 5 years	7	0.11	6	569,086,815	8,755,182	Illiquid	Illiquid
FIXED-FLOATING AUD-EUR 6 years	4	0.06	3	121,943,627	1,876,056	Illiquid	Illiquid
FIXED-FLOATING AUD-EUR 7 years	5	0.08	3	647,904,799	9,967,766	Illiquid	Illiquid
FIXED-FLOATING AUD-EUR 8 years	6	0.09	3	2,107,363,379	32,420,975	Illiquid	Illiquid
FIXED-FLOATING AUD-EUR 10 years	7	0.11	5	405,958,649	6,245,518	Illiquid	Illiquid
FIXED-FLOATING AUD-EUR 11 years	17	0.26	10	774,974,028	11,922,677	Illiquid	Illiquid
FIXED-FLOATING AUD-EUR 13 years	1	0.02	1	23,775,500	365,777	Illiquid	Illiquid
FIXED-FLOATING AUD-EUR 16 years	3	0.05	3	17,374,093	267,294	Illiquid	Illiquid
FIXED-FLOATING AUD-EUR 19 years	1	0.02	1	4,210,779	64,781	Illiquid	Illiquid
FIXED-FLOATING AUD-GBP 3 years	1	0.02	1	6,067,506	93,346	Illiquid	Illiquid
FIXED-FLOATING AUD-GBP 6 years	3	0.05	1	4,812,746	74,042	Illiquid	Illiquid
FIXED-FLOATING AUD-GBP 9 years	1	0.02	1	6,695,139	103,002	Illiquid	Illiquid
FIXED-FLOATING AUD-HKD 6 years	1	0.02	1	4,675,260	71,927	Illiquid	Illiquid
FIXED-FLOATING AUD-JPY 8 years	2	0.03	2	67,001,367	1,030,790	Illiquid	Illiquid
FIXED-FLOATING AUD-JPY 10 years	3	0.05	3	87,413,743	1,344,827	Illiquid	Illiquid
FIXED-FLOATING AUD-SEK 9 years	3	0.05	1	184,116,323	2,832,559	Illiquid	Illiquid
FIXED-FLOATING AUD-USD 6 months	1	0.02	1	4,830,548	74,316	Illiquid	Illiquid
FIXED-FLOATING AUD-USD 1 year	2	0.03	1	50,548,299	777,666	Illiquid	Illiquid
FIXED-FLOATING AUD-USD 2 years	13	0.20	9	335,113,882	5,155,598	Illiquid	Illiquid
FIXED-FLOATING AUD-USD 3 years	3	0.05	2	29,003,694	446,211	Illiquid	Illiquid
FIXED-FLOATING AUD-USD 4 years	6	0.09	5	234,828,819	3,612,751	Illiquid	Illiquid
FIXED-FLOATING AUD-USD 5 years	10	0.15	6	239,491,878	3,684,490	Illiquid	Illiquid
FIXED-FLOATING AUD-USD 6 years	19	0.29	12	1,433,419,843	22,052,613	Illiquid	Illiquid
FIXED-FLOATING AUD-USD 7 years	4	0.06	3	303,386,719	4,667,488	Illiquid	Illiquid
FIXED-FLOATING AUD-USD 8 years	2	0.03	2	4,947,708	76,119	Illiquid	Illiquid
FIXED-FLOATING AUD-USD 9 years	6	0.09	4	105,267,671	1,619,503	Illiquid	Illiquid
FIXED-FLOATING AUD-USD 10 years	1	0.02	1	6,695,139	103,002	Illiquid	Illiquid
FIXED-FLOATING AUD-USD 11 years	13	0.20	12	237,047,363	3,646,883	Illiquid	Illiquid
FIXED-FLOATING AUD-USD 12 years	1	0.02	1	13,390,278	206,004	Illiquid	Illiquid
FIXED-FLOATING AUD-USD 16 years	2	0.03	1	33,475,695	515,011	Illiquid	Illiquid
FIXED-FLOATING AUD-ZAR 3 years	1	0.02	1	56,512,881	869,429	Illiquid	Illiquid
FIXED-FLOATING BHD-USD 4 years	1	0.02	1	203,065,161	3,124,079	Illiquid	Illiquid
FIXED-FLOATING BHD-USD 8 years	1	0.02	1	20,748,908	319,214	Illiquid	Illiquid
FIXED-FLOATING BRL-EUR 2 years	2	0.03	2	66,183,533	1,018,208	Illiquid	Illiquid
FIXED-FLOATING BRL-EUR 3 years	1	0.02	1	15,267,176	234,880	Illiquid	Illiquid
FIXED-FLOATING BRL-EUR 4 years	1	0.02	1	12,823,430	197,284	Illiquid	Illiquid
FIXED-FLOATING BRL-MXN 1 year	2	0.03	2	2,871,903	44,183	Illiquid	Illiquid
FIXED-FLOATING BRL-USD 1.5 months	1	0.02	1	39,683,947	610,522	Illiquid	Illiquid
FIXED-FLOATING BRL-USD 3 months	1	0.02	1	1,143,611	17,594	Illiquid	Illiquid
FIXED-FLOATING BRL-USD 1 year	8	0.12	8	394,472,099	6,068,802	Illiquid	Illiquid
FIXED-FLOATING BRL-USD 2 years	14	0.22	8	304,830,190	4,689,695	Illiquid	Illiquid
FIXED-FLOATING BRL-USD 3 years	11	0.17	9	239,256,865	3,680,875	Illiquid	Illiquid
FIXED-FLOATING BRL-USD 4 years	19	0.29	14	352,302,915	5,420,045	Illiquid	Illiquid
FIXED-FLOATING BRL-USD 5 years	11	0.17	7	452,378,793	6,959,674	Illiquid	Illiquid
FIXED-FLOATING BRL-USD 6 years	8	0.12	7	111,390,654	1,713,702	Illiquid	Illiquid
FIXED-FLOATING BRL-USD 7 years	4	0.06	4	50,902,785	783,120	Illiquid	Illiquid
FIXED-FLOATING BRL-USD 8 years	2	0.03	2	4,872,903	74,968	Illiquid	Illiquid
FIXED-FLOATING BRL-USD 11 years	1	0.02	1	784,794	12,074	Illiquid	Illiquid
FIXED-FLOATING BWP-USD 2 years	1	0.02	1	7,376,149	113,479	Illiquid	Illiquid
FIXED-FLOATING BWP-USD 3 years	1	0.02	1	7,376,149	113,479	Illiquid	Illiquid
FIXED-FLOATING CAD-CHF 1 year	2	0.03	1	36,128,653	555,825	Illiquid	Illiquid
FIXED-FLOATING CAD-EUR 1 year	1	0.02	1	100,000,000	1,538,462	Illiquid	Illiquid
FIXED-FLOATING CAD-EUR 2 years	3	0.05	2	53,983,562	830,516	Illiquid	Illiquid
FIXED-FLOATING CAD-EUR 3 years	1	0.02	1	19,739,931	303,691	Illiquid	Illiquid
FIXED-FLOATING CAD-EUR 4 years	2	0.03	2	19,400,673	298,472	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	0.94
Notional Amount per day						10,000,000	9,336,410
FIXED TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING CAD-EUR 5 years	2	0.03	1	9,893,743	152,211	Illiquid	Illiquid
FIXED-FLOATING CAD-EUR 6 years	4	0.06	3	161,239,549	2,480,608	Illiquid	Illiquid
FIXED-FLOATING CAD-EUR 7 years	1	0.02	1	6,595,829	101,474	Illiquid	Illiquid
FIXED-FLOATING CAD-EUR 15 years	1	0.02	1	45,846,395	705,329	Illiquid	Illiquid
FIXED-FLOATING CAD-EUR 21 years	2	0.03	2	13,915,482	214,084	Illiquid	Illiquid
FIXED-FLOATING CAD-GBP 3 years	2	0.03	1	134,325,918	2,066,553	Illiquid	Illiquid
FIXED-FLOATING CAD-JPY 2 years	1	0.02	1	527,666	8,118	Illiquid	Illiquid
FIXED-FLOATING CAD-JPY 3 years	2	0.03	2	23,843,921	366,830	Illiquid	Illiquid
FIXED-FLOATING CAD-JPY 4 years	1	0.02	1	1,253,207	19,280	Illiquid	Illiquid
FIXED-FLOATING CAD-JPY 5 years	1	0.02	1	725,541	11,162	Illiquid	Illiquid
FIXED-FLOATING CAD-SEK 1 year	1	0.02	1	55,706,993	857,031	Illiquid	Illiquid
FIXED-FLOATING CAD-USD 3 months	3	0.05	2	268,250,987	4,126,938	Illiquid	Illiquid
FIXED-FLOATING CAD-USD 6 months	3	0.05	2	4,006,306	61,635	Illiquid	Illiquid
FIXED-FLOATING CAD-USD 1 year	5	0.08	4	247,323,533	3,804,977	Illiquid	Illiquid
FIXED-FLOATING CAD-USD 2 years	4	0.06	3	23,080,809	355,089	Illiquid	Illiquid
FIXED-FLOATING CAD-USD 3 years	4	0.06	2	34,313,151	527,895	Illiquid	Illiquid
FIXED-FLOATING CAD-USD 4 years	2	0.03	1	41,133,987	632,831	Illiquid	Illiquid
FIXED-FLOATING CAD-USD 5 years	4	0.06	3	87,311,706	1,343,257	Illiquid	Illiquid
FIXED-FLOATING CAD-USD 6 years	3	0.05	2	51,358,711	790,134	Illiquid	Illiquid
FIXED-FLOATING CHF-CLP 4 years	1	0.02	1	90,236,587	1,388,255	Illiquid	Illiquid
FIXED-FLOATING CHF-DKK 2 years	2	0.03	2	3,728,721	57,365	Illiquid	Illiquid
FIXED-FLOATING CHF-DKK 4 years	1	0.02	1	580,837	8,936	Illiquid	Illiquid
FIXED-FLOATING CHF-DKK 5 years	3	0.05	2	5,597,521	86,116	Illiquid	Illiquid
FIXED-FLOATING CHF-DKK 7 years	1	0.02	1	689,332	10,605	Illiquid	Illiquid
FIXED-FLOATING CHF-EUR 6 months	4	0.06	1	492,199,563	7,572,301	Illiquid	Illiquid
FIXED-FLOATING CHF-EUR 1 year	3	0.05	2	49,219,956	757,230	Illiquid	Illiquid
FIXED-FLOATING CHF-EUR 2 years	2	0.03	2	17,202,512	264,654	Illiquid	Illiquid
FIXED-FLOATING CHF-EUR 3 years	8	0.12	8	281,641,214	4,332,942	Illiquid	Illiquid
FIXED-FLOATING CHF-EUR 4 years	9	0.14	6	501,921,959	7,721,876	Illiquid	Illiquid
FIXED-FLOATING CHF-EUR 5 years	6	0.09	4	243,023,569	3,738,824	Illiquid	Illiquid
FIXED-FLOATING CHF-EUR 6 years	5	0.08	3	369,149,672	5,679,226	Illiquid	Illiquid
FIXED-FLOATING CHF-EUR 7 years	1	0.02	1	500,000	7,692	Illiquid	Illiquid
FIXED-FLOATING CHF-EUR 8 years	3	0.05	3	206,841,607	3,182,179	Illiquid	Illiquid
FIXED-FLOATING CHF-EUR 11 years	3	0.05	3	274,712,352	4,226,344	Illiquid	Illiquid
FIXED-FLOATING CHF-EUR 12 years	2	0.03	1	61,524,945	946,538	Illiquid	Illiquid
FIXED-FLOATING CHF-EUR 13 years	2	0.03	1	188,676,499	2,902,715	Illiquid	Illiquid
FIXED-FLOATING CHF-EUR 14 years	1	0.02	1	42,657,295	656,266	Illiquid	Illiquid
FIXED-FLOATING CHF-EUR 18 years	1	0.02	1	500,000	7,692	Illiquid	Illiquid
FIXED-FLOATING CHF-GBP 5 years	1	0.02	1	121,350,126	1,866,925	Illiquid	Illiquid
FIXED-FLOATING CHF-SEK 3 years	3	0.05	2	205,083,151	3,155,125	Illiquid	Illiquid
FIXED-FLOATING CHF-SEK 5 years	2	0.03	2	164,066,521	2,524,100	Illiquid	Illiquid
FIXED-FLOATING CHF-USD 1 year	1	0.02	1	5,814,102	89,448	Illiquid	Illiquid
FIXED-FLOATING CHF-USD 2 years	11	0.17	9	583,146,667	8,971,487	Illiquid	Illiquid
FIXED-FLOATING CHF-USD 3 years	8	0.12	5	351,097,454	5,401,499	Illiquid	Illiquid
FIXED-FLOATING CHF-USD 4 years	4	0.06	4	258,738,454	3,980,592	Illiquid	Illiquid
FIXED-FLOATING CHF-USD 6 years	1	0.02	1	82,033,261	1,262,050	Illiquid	Illiquid
FIXED-FLOATING CHF-USD 7 years	1	0.02	1	52,501,287	807,712	Illiquid	Illiquid
FIXED-FLOATING CHF-USD 8 years	1	0.02	1	123,049,891	1,893,075	Illiquid	Illiquid
FIXED-FLOATING CHF-USD 9 years	1	0.02	1	22,148,980	340,754	Illiquid	Illiquid
FIXED-FLOATING CHF-USD 10 years	1	0.02	1	61,524,945	946,538	Illiquid	Illiquid
FIXED-FLOATING CHF-USD 12 years	1	0.02	1	143,558,206	2,208,588	Illiquid	Illiquid
FIXED-FLOATING CHF-ZAR 5 years	1	0.02	1	45,118,293	694,128	Illiquid	Illiquid
FIXED-FLOATING CLP-JPY 4 years	1	0.02	1	14,157,727	217,811	Illiquid	Illiquid
FIXED-FLOATING CLP-JPY 6 years	1	0.02	1	132,374,748	2,036,535	Illiquid	Illiquid
FIXED-FLOATING CLP-USD 2 years	3	0.05	2	109,498,569	1,684,593	Illiquid	Illiquid
FIXED-FLOATING CLP-USD 3 years	1	0.02	1	1,299,659	19,995	Illiquid	Illiquid
FIXED-FLOATING CLP-USD 4 years	3	0.05	3	53,777,126	827,340	Illiquid	Illiquid
FIXED-FLOATING CLP-USD 5 years	4	0.06	3	35,090,792	539,858	Illiquid	Illiquid
FIXED-FLOATING CNH-USD 2 years	10	0.15	7	161,411,813	2,483,259	Illiquid	Illiquid
FIXED-FLOATING CNH-USD 3 years	9	0.14	7	90,834,185	1,397,449	Illiquid	Illiquid
FIXED-FLOATING CNH-USD 4 years	2	0.03	2	14,328,237	220,434	Illiquid	Illiquid
FIXED-FLOATING CNY-EUR 1 year	2	0.03	2	28,955,224	445,465	Illiquid	Illiquid
FIXED-FLOATING CNY-EUR 2 years	4	0.06	2	53,159,312	817,836	Illiquid	Illiquid
FIXED-FLOATING CNY-EUR 3 years	3	0.05	2	43,699,609	672,302	Illiquid	Illiquid
FIXED-FLOATING CNY-EUR 4 years	3	0.05	2	27,116,866	417,183	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	0.94
Notional Amount per day						10,000,000	9,336,410
FIXED TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING CNY-EUR 5 years	2	0.03	2	93,364,808	1,436,382	Illiquid	Illiquid
FIXED-FLOATING CNY-EUR 6 years	5	0.08	5	122,975,627	1,891,933	Illiquid	Illiquid
FIXED-FLOATING CNY-EUR 9 years	2	0.03	2	23,290,154	358,310	Illiquid	Illiquid
FIXED-FLOATING CNY-HKD 6 months	5	0.08	1	240,739,272	3,703,681	Illiquid	Illiquid
FIXED-FLOATING CNY-HKD 2 years	6	0.09	2	277,977,608	4,276,579	Illiquid	Illiquid
FIXED-FLOATING CNY-HKD 3 years	7	0.11	4	264,089,618	4,062,917	Illiquid	Illiquid
FIXED-FLOATING CNY-JPY 3 years	1	0.02	1	7,005,047	107,770	Illiquid	Illiquid
FIXED-FLOATING CNY-NZD 1 year	1	0.02	1	11,675,078	179,617	Illiquid	Illiquid
FIXED-FLOATING CNY-NZD 3 years	1	0.02	1	23,350,156	359,233	Illiquid	Illiquid
FIXED-FLOATING CNY-USD 1.5 months	41	0.63	15	1,239,909,370	19,075,529	Illiquid	Illiquid
FIXED-FLOATING CNY-USD 3 months	4	0.06	4	174,217,076	2,680,263	Illiquid	Illiquid
FIXED-FLOATING CNY-USD 6 months	30	0.46	16	481,054,136	7,400,833	Illiquid	Illiquid
FIXED-FLOATING CNY-USD 1 year	268	4.12	43	4,255,469,974	65,468,769	Liquid	Liquid
FIXED-FLOATING CNY-USD 2 years	1,336	20.55	60	27,417,070,527	421,801,085	Liquid	Liquid
FIXED-FLOATING CNY-USD 3 years	1,112	17.11	63	16,166,417,090	248,714,109	Liquid	Liquid
FIXED-FLOATING CNY-USD 4 years	494	7.60	60	7,787,225,815	119,803,474	Liquid	Liquid
FIXED-FLOATING CNY-USD 5 years	102	1.57	30	811,156,112	12,479,325	Liquid	Liquid
FIXED-FLOATING CNY-USD 6 years	78	1.20	22	606,866,649	9,336,410	Illiquid	Liquid
FIXED-FLOATING CNY-USD 7 years	12	0.18	4	51,461,262	791,712	Illiquid	Illiquid
FIXED-FLOATING CNY-USD 8 years	14	0.22	10	114,915,786	1,767,935	Illiquid	Illiquid
FIXED-FLOATING CNY-USD 9 years	1	0.02	1	11,675,078	179,617	Illiquid	Illiquid
FIXED-FLOATING CNY-USD 10 years	1	0.02	1	5,677,544	87,347	Illiquid	Illiquid
FIXED-FLOATING CNY-USD 11 years	1	0.02	1	2,175,698	33,472	Illiquid	Illiquid
FIXED-FLOATING CNY-USD 94 years	1	0.02	1	7,352,769	113,120	Illiquid	Illiquid
FIXED-FLOATING COP-USD 3 months	1	0.02	1	361,557	5,562	Illiquid	Illiquid
FIXED-FLOATING COP-USD 6 months	1	0.02	1	3,626,164	55,787	Illiquid	Illiquid
FIXED-FLOATING COP-USD 1 year	4	0.06	4	31,440,446	483,699	Illiquid	Illiquid
FIXED-FLOATING COP-USD 2 years	5	0.08	4	30,439,830	468,305	Illiquid	Illiquid
FIXED-FLOATING COP-USD 3 years	5	0.08	5	80,610,343	1,240,159	Illiquid	Illiquid
FIXED-FLOATING COP-USD 4 years	17	0.26	10	78,355,839	1,205,474	Illiquid	Illiquid
FIXED-FLOATING COP-USD 5 years	20	0.31	13	165,232,013	2,542,031	Illiquid	Illiquid
FIXED-FLOATING COP-USD 6 years	12	0.18	9	60,180,337	925,851	Illiquid	Illiquid
FIXED-FLOATING COP-USD 8 years	3	0.05	2	12,893,621	198,363	Illiquid	Illiquid
FIXED-FLOATING COP-USD 10 years	3	0.05	3	8,567,187	131,803	Illiquid	Illiquid
FIXED-FLOATING COP-USD 11 years	6	0.09	4	21,526,645	331,179	Illiquid	Illiquid
FIXED-FLOATING CZK-EUR 6 months	1	0.02	1	11,708,567	180,132	Illiquid	Illiquid
FIXED-FLOATING CZK-EUR 1 year	1	0.02	1	9,115,073	140,232	Illiquid	Illiquid
FIXED-FLOATING CZK-EUR 2 years	4	0.06	4	26,827,484	412,731	Illiquid	Illiquid
FIXED-FLOATING CZK-EUR 3 years	3	0.05	3	6,923,584	106,517	Illiquid	Illiquid
FIXED-FLOATING CZK-EUR 5 years	3	0.05	2	616,117	9,479	Illiquid	Illiquid
FIXED-FLOATING CZK-EUR 11 years	1	0.02	1	36,460,294	560,928	Illiquid	Illiquid
FIXED-FLOATING DKK-EUR 6 months	3	0.05	3	33,702,645	518,502	Illiquid	Illiquid
FIXED-FLOATING DKK-EUR 1 year	5	0.08	3	66,570,834	1,024,167	Illiquid	Illiquid
FIXED-FLOATING DKK-EUR 2 years	10	0.15	6	124,197,073	1,910,724	Illiquid	Illiquid
FIXED-FLOATING DKK-EUR 3 years	4	0.06	4	96,166,238	1,479,481	Illiquid	Illiquid
FIXED-FLOATING DKK-EUR 4 years	12	0.18	7	166,764,883	2,565,614	Illiquid	Illiquid
FIXED-FLOATING DKK-EUR 5 years	2	0.03	1	3,200,440	49,238	Illiquid	Illiquid
FIXED-FLOATING DKK-EUR 6 years	3	0.05	3	103,757,540	1,596,270	Illiquid	Illiquid
FIXED-FLOATING DKK-EUR 8 years	3	0.05	2	9,984,643	153,610	Illiquid	Illiquid
FIXED-FLOATING DKK-EUR 9 years	1	0.02	1	1,724,219	26,526	Illiquid	Illiquid
FIXED-FLOATING DKK-EUR 11 years	2	0.03	1	189,161,584	2,910,178	Illiquid	Illiquid
FIXED-FLOATING DKK-EUR 16 years	1	0.02	1	6,982,186	107,418	Illiquid	Illiquid
FIXED-FLOATING DKK-EUR 19 years	2	0.03	1	2,354,472	36,223	Illiquid	Illiquid
FIXED-FLOATING DKK-GBP 2 years	1	0.02	1	24,783,919	381,291	Illiquid	Illiquid
FIXED-FLOATING DKK-GBP 3 years	2	0.03	2	48,568,543	747,208	Illiquid	Illiquid
FIXED-FLOATING DKK-GBP 4 years	1	0.02	1	23,179,558	356,609	Illiquid	Illiquid
FIXED-FLOATING DKK-JPY 5 years	1	0.02	1	19,278,630	296,594	Illiquid	Illiquid
FIXED-FLOATING DKK-NOK 1 year	1	0.02	1	49,453,697	760,826	Illiquid	Illiquid
FIXED-FLOATING DKK-NOK 2 years	1	0.02	1	121,498,825	1,869,213	Illiquid	Illiquid
FIXED-FLOATING DKK-NOK 5 years	1	0.02	1	182,248,238	2,803,819	Illiquid	Illiquid
FIXED-FLOATING DKK-SEK 1 year	3	0.05	2	98,246,962	1,511,492	Illiquid	Illiquid
FIXED-FLOATING DKK-SGD 1 year	1	0.02	1	5,187,643	79,810	Illiquid	Illiquid
FIXED-FLOATING DKK-USD 6 months	7	0.11	5	447,945,544	6,891,470	Illiquid	Illiquid
FIXED-FLOATING DKK-USD 1 year	7	0.11	6	303,624,657	4,671,149	Illiquid	Illiquid
FIXED-FLOATING DKK-USD 2 years	1	0.02	1	20,095,069	309,155	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	0.94
Notional Amount per day						10,000,000	9,336,410
FIXED TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING DKK-USD 3 years	1	0.02	1	5,358,685	82,441	Illiquid	Illiquid
FIXED-FLOATING DKK-USD 5 years	1	0.02	1	7,542,349	116,036	Illiquid	Illiquid
FIXED-FLOATING DKK-USD 11 years	1	0.02	1	1,473,638	22,671	Illiquid	Illiquid
FIXED-FLOATING DKK-USD 14 years	1	0.02	1	47,185,056	725,924	Illiquid	Illiquid
FIXED-FLOATING DKK-USD 15 years	1	0.02	1	6,052,635	93,117	Illiquid	Illiquid
FIXED-FLOATING DKK-USD 16 years	2	0.03	1	166,653,767	2,563,904	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 3 months	1	0.02	1	37,455,464	576,238	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 6 months	1	0.02	1	84,945,088	1,306,848	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 1 year	2	0.03	1	242,700,252	3,733,850	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 2 years	9	0.14	7	301,515,321	4,638,697	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 3 years	12	0.18	6	1,450,257,319	22,311,651	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 4 years	17	0.26	11	948,451,922	14,591,568	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 5 years	12	0.18	7	1,273,997,433	19,599,961	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 6 years	3	0.05	3	360,575,953	5,547,322	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 7 years	1	0.02	1	1,000,000,000	15,384,615	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 8 years	6	0.09	5	191,640,831	2,948,320	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 9 years	4	0.06	3	168,466,771	2,591,796	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 10 years	2	0.03	2	141,372,897	2,174,968	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 12 years	5	0.08	3	133,969,600	2,061,071	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 15 years	17	0.26	5	591,060,833	9,093,244	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 16 years	1	0.02	1	455,062,972	7,000,969	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 17 years	1	0.02	1	125,000,000	1,923,077	Illiquid	Illiquid
FIXED-FLOATING EUR-GBP 19 years	4	0.06	3	91,816,891	1,412,568	Illiquid	Illiquid
FIXED-FLOATING EUR-HKD 6 months	1	0.02	1	18,701,041	287,708	Illiquid	Illiquid
FIXED-FLOATING EUR-HKD 2 years	2	0.03	2	38,804,660	596,995	Illiquid	Illiquid
FIXED-FLOATING EUR-HKD 5 years	4	0.06	3	91,635,100	1,409,771	Illiquid	Illiquid
FIXED-FLOATING EUR-HUF 2 years	2	0.03	2	143,265,620	2,204,086	Illiquid	Illiquid
FIXED-FLOATING EUR-HUF 3 years	2	0.03	2	10,101,936	155,414	Illiquid	Illiquid
FIXED-FLOATING EUR-HUF 4 years	3	0.05	3	7,233,455	111,284	Illiquid	Illiquid
FIXED-FLOATING EUR-HUF 5 years	1	0.02	1	18,933,910	291,291	Illiquid	Illiquid
FIXED-FLOATING EUR-IDR 4 years	1	0.02	1	6,326,728	97,334	Illiquid	Illiquid
FIXED-FLOATING EUR-IDR 7 years	1	0.02	1	36,200,526	556,931	Illiquid	Illiquid
FIXED-FLOATING EUR-IDR 8 years	1	0.02	1	44,806,438	689,330	Illiquid	Illiquid
FIXED-FLOATING EUR-IDR 9 years	1	0.02	1	25,888,164	398,279	Illiquid	Illiquid
FIXED-FLOATING EUR-INR 6 months	2	0.03	2	5,644,719	86,842	Illiquid	Illiquid
FIXED-FLOATING EUR-INR 2 years	2	0.03	2	10,000,000	153,846	Illiquid	Illiquid
FIXED-FLOATING EUR-INR 3 years	1	0.02	1	29,405,088	452,386	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 3 months	1	0.02	1	3,492,000	53,723	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 6 months	2	0.03	1	7,107,000	109,338	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 1 year	5	0.08	3	71,065,601	1,093,317	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 2 years	9	0.14	5	230,646,672	3,548,410	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 3 years	9	0.14	6	500,074,156	7,693,449	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 4 years	4	0.06	4	134,820,956	2,074,169	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 5 years	2	0.03	1	852,864,703	13,120,995	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 6 years	3	0.05	3	152,475,492	2,345,777	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 7 years	2	0.03	1	3,000,000	46,154	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 8 years	2	0.03	1	210,437,710	3,237,503	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 11 years	2	0.03	2	58,182,118	895,110	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 16 years	1	0.02	1	193,194,000	2,972,215	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 17 years	1	0.02	1	137,095,000	2,109,154	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 18 years	1	0.02	1	13,931,624	214,333	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 24 years	1	0.02	1	24,691,358	379,867	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 26 years	1	0.02	1	3,547,690	54,580	Illiquid	Illiquid
FIXED-FLOATING EUR-JPY 41 years	2	0.03	2	42,427,790	652,735	Illiquid	Illiquid
FIXED-FLOATING EUR-KRW 3 years	1	0.02	1	39,062,500	600,962	Illiquid	Illiquid
FIXED-FLOATING EUR-KRW 7 years	1	0.02	1	4,977,671	76,580	Illiquid	Illiquid
FIXED-FLOATING EUR-MXN 1 year	1	0.02	1	947,075	14,570	Illiquid	Illiquid
FIXED-FLOATING EUR-MXN 3 years	1	0.02	1	7,215,033	111,001	Illiquid	Illiquid
FIXED-FLOATING EUR-MXN 4 years	7	0.11	1	46,541,653	716,025	Illiquid	Illiquid
FIXED-FLOATING EUR-MXN 8 years	1	0.02	1	49,656,266	763,943	Illiquid	Illiquid
FIXED-FLOATING EUR-MYR 3 years	1	0.02	1	3,562,945	54,815	Illiquid	Illiquid
FIXED-FLOATING EUR-NOK 1.5 months	1	0.02	1	24,299,765	373,843	Illiquid	Illiquid
FIXED-FLOATING EUR-NOK 6 months	4	0.06	4	126,908,669	1,952,441	Illiquid	Illiquid
FIXED-FLOATING EUR-NOK 1 year	5	0.08	4	83,039,342	1,277,528	Illiquid	Illiquid
FIXED-FLOATING EUR-NOK 2 years	31	0.48	11	1,048,150,833	16,125,397	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	0.94
Notional Amount per day						10,000,000	9,336,410
FIXED TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING EUR-NOK 3 years	26	0.40	8	200,579,669	3,085,841	Illiquid	Illiquid
FIXED-FLOATING EUR-NOK 4 years	11	0.17	8	533,342,067	8,205,263	Illiquid	Illiquid
FIXED-FLOATING EUR-NOK 5 years	5	0.08	4	112,993,907	1,738,368	Illiquid	Illiquid
FIXED-FLOATING EUR-NOK 6 years	4	0.06	3	228,772,827	3,519,582	Illiquid	Illiquid
FIXED-FLOATING EUR-NOK 7 years	2	0.03	2	7,600,000	116,923	Illiquid	Illiquid
FIXED-FLOATING EUR-NOK 8 years	3	0.05	3	75,749,413	1,165,376	Illiquid	Illiquid
FIXED-FLOATING EUR-NOK 10 years	4	0.06	4	154,190,885	2,372,167	Illiquid	Illiquid
FIXED-FLOATING EUR-NOK 12 years	1	0.02	1	97,199,060	1,495,370	Illiquid	Illiquid
FIXED-FLOATING EUR-NOK 13 years	1	0.02	1	60,749,413	934,606	Illiquid	Illiquid
FIXED-FLOATING EUR-NOK 14 years	2	0.03	1	194,398,120	2,990,740	Illiquid	Illiquid
FIXED-FLOATING EUR-NOK 16 years	2	0.03	1	48,599,530	747,685	Illiquid	Illiquid
FIXED-FLOATING EUR-NZD 3 years	1	0.02	1	10,330,740	158,934	Illiquid	Illiquid
FIXED-FLOATING EUR-NZD 4 years	1	0.02	1	62,233,375	957,437	Illiquid	Illiquid
FIXED-FLOATING EUR-NZD 5 years	1	0.02	1	31,116,688	478,718	Illiquid	Illiquid
FIXED-FLOATING EUR-NZD 16 years	1	0.02	1	1,244,668	19,149	Illiquid	Illiquid
FIXED-FLOATING EUR-PEN 2 years	1	0.02	1	3,017,291	46,420	Illiquid	Illiquid
FIXED-FLOATING EUR-PLN 2 years	2	0.03	2	11,938,772	183,673	Illiquid	Illiquid
FIXED-FLOATING EUR-PLN 3 years	1	0.02	1	72,815,534	1,120,239	Illiquid	Illiquid
FIXED-FLOATING EUR-PLN 5 years	1	0.02	1	5,969,386	91,837	Illiquid	Illiquid
FIXED-FLOATING EUR-RON 3 months	1	0.02	1	4,787,394	73,652	Illiquid	Illiquid
FIXED-FLOATING EUR-RON 6 months	2	0.03	2	21,797,312	335,343	Illiquid	Illiquid
FIXED-FLOATING EUR-RON 1 year	4	0.06	4	29,992,278	461,420	Illiquid	Illiquid
FIXED-FLOATING EUR-RON 2 years	15	0.23	7	69,509,286	1,069,374	Illiquid	Illiquid
FIXED-FLOATING EUR-RON 3 years	7	0.11	5	56,213,283	864,820	Illiquid	Illiquid
FIXED-FLOATING EUR-RON 5 years	2	0.03	1	10,000,000	153,846	Illiquid	Illiquid
FIXED-FLOATING EUR-RON 6 years	6	0.09	5	53,256,327	819,328	Illiquid	Illiquid
FIXED-FLOATING EUR-RON 7 years	1	0.02	1	1,000,000	15,385	Illiquid	Illiquid
FIXED-FLOATING EUR-RON 8 years	1	0.02	1	970,933	14,937	Illiquid	Illiquid
FIXED-FLOATING EUR-RUB 1.5 months	3	0.05	2	245,248	3,773	Illiquid	Illiquid
FIXED-FLOATING EUR-RUB 6 months	5	0.08	4	23,739,944	365,230	Illiquid	Illiquid
FIXED-FLOATING EUR-RUB 1 year	8	0.12	5	44,516,702	684,872	Illiquid	Illiquid
FIXED-FLOATING EUR-RUB 2 years	52	0.80	22	332,740,476	5,119,084	Illiquid	Illiquid
FIXED-FLOATING EUR-RUB 3 years	63	0.97	14	159,036,468	2,446,715	Illiquid	Illiquid
FIXED-FLOATING EUR-RUB 4 years	19	0.29	12	63,424,398	975,760	Illiquid	Illiquid
FIXED-FLOATING EUR-RUB 6 years	6	0.09	3	56,913,701	875,595	Illiquid	Illiquid
FIXED-FLOATING EUR-SEK 3 months	1	0.02	1	28,410,566	437,086	Illiquid	Illiquid
FIXED-FLOATING EUR-SEK 6 months	2	0.03	2	727,853,496	11,197,746	Illiquid	Illiquid
FIXED-FLOATING EUR-SEK 1 year	5	0.08	5	616,731,051	9,488,170	Illiquid	Illiquid
FIXED-FLOATING EUR-SEK 2 years	15	0.23	10	2,299,037,516	35,369,808	Illiquid	Illiquid
FIXED-FLOATING EUR-SEK 3 years	38	0.58	18	1,250,924,329	19,244,990	Illiquid	Illiquid
FIXED-FLOATING EUR-SEK 4 years	29	0.45	18	1,389,496,945	21,376,876	Illiquid	Illiquid
FIXED-FLOATING EUR-SEK 5 years	8	0.12	7	262,865,873	4,044,090	Illiquid	Illiquid
FIXED-FLOATING EUR-SEK 6 years	34	0.52	18	1,166,508,930	17,946,291	Illiquid	Illiquid
FIXED-FLOATING EUR-SEK 7 years	3	0.05	3	565,706,993	8,703,185	Illiquid	Illiquid
FIXED-FLOATING EUR-SEK 8 years	7	0.11	6	821,413,985	12,637,138	Illiquid	Illiquid
FIXED-FLOATING EUR-SEK 10 years	1	0.02	1	83,560,489	1,285,546	Illiquid	Illiquid
FIXED-FLOATING EUR-SEK 13 years	1	0.02	1	10,000,000	153,846	Illiquid	Illiquid
FIXED-FLOATING EUR-SEK 14 years	1	0.02	1	53,976,362	830,406	Illiquid	Illiquid
FIXED-FLOATING EUR-SEK 16 years	3	0.05	3	98,306,011	1,512,400	Illiquid	Illiquid
FIXED-FLOATING EUR-TRY 6 months	3	0.05	3	25,249,045	388,447	Illiquid	Illiquid
FIXED-FLOATING EUR-TRY 1 year	3	0.05	3	12,513,834	192,521	Illiquid	Illiquid
FIXED-FLOATING EUR-TRY 2 years	10	0.15	8	104,977,567	1,615,039	Illiquid	Illiquid
FIXED-FLOATING EUR-TRY 3 years	11	0.17	9	86,209,565	1,326,301	Illiquid	Illiquid
FIXED-FLOATING EUR-TRY 4 years	10	0.15	10	206,457,920	3,176,276	Illiquid	Illiquid
FIXED-FLOATING EUR-TRY 5 years	1	0.02	1	11,828,611	181,979	Illiquid	Illiquid
FIXED-FLOATING EUR-TRY 6 years	6	0.09	6	79,420,671	1,221,856	Illiquid	Illiquid
FIXED-FLOATING EUR-TRY 11 years	1	0.02	1	25,347,023	389,954	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 1.5 months	5	0.08	5	263,569,579	4,054,917	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 6 months	3	0.05	3	37,315,892	574,091	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 1 year	8	0.12	7	1,406,017,595	21,631,040	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 2 years	20	0.31	13	1,850,570,144	28,470,310	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 3 years	34	0.52	19	2,364,606,333	36,378,559	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 4 years	22	0.34	14	4,469,955,631	68,768,548	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 5 years	21	0.32	13	1,356,654,149	20,871,602	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 6 years	41	0.63	24	2,186,682,039	33,641,262	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	0.94
Notional Amount per day						10,000,000	9,336,410
FIXED TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING EUR-USD 7 years	24	0.37	15	355,718,914	5,472,599	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 8 years	34	0.52	20	6,464,862,891	99,459,429	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 9 years	5	0.08	4	42,819,787	658,766	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 10 years	12	0.18	10	365,648,373	5,625,360	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 11 years	10	0.15	8	2,423,552,606	37,285,425	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 12 years	3	0.05	3	256,539,969	3,946,769	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 13 years	12	0.18	4	2,963,138,710	45,586,749	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 14 years	1	0.02	1	7,140,455	109,853	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 15 years	5	0.08	2	170,551,968	2,623,876	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 16 years	5	0.08	3	120,006,331	1,846,251	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 17 years	3	0.05	2	31,106,838	478,567	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 18 years	1	0.02	1	12,328,956	189,676	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 19 years	1	0.02	1	4,714,013	72,523	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 20 years	8	0.12	4	351,450,451	5,406,930	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 23 years	1	0.02	1	5,801,862	89,259	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 29 years	2	0.03	2	72,323,663	1,112,672	Illiquid	Illiquid
FIXED-FLOATING EUR-USD 31 years	1	0.02	1	51,514,730	792,534	Illiquid	Illiquid
FIXED-FLOATING EUR-ZAR 2 years	1	0.02	1	81,227,437	1,249,653	Illiquid	Illiquid
FIXED-FLOATING EUR-ZAR 3 years	1	0.02	1	17,145,898	263,783	Illiquid	Illiquid
FIXED-FLOATING EUR-ZAR 4 years	2	0.03	2	397,555,977	6,116,246	Illiquid	Illiquid
FIXED-FLOATING EUR-ZAR 5 years	3	0.05	2	84,391,091	1,298,324	Illiquid	Illiquid
FIXED-FLOATING EUR-ZAR 6 years	1	0.02	1	51,153,206	786,972	Illiquid	Illiquid
FIXED-FLOATING EUR-ZAR 7 years	2	0.03	2	68,583,593	1,055,132	Illiquid	Illiquid
FIXED-FLOATING EUR-ZAR 8 years	2	0.03	2	48,008,515	738,593	Illiquid	Illiquid
FIXED-FLOATING EUR-ZAR 11 years	2	0.03	2	252,897,183	3,890,726	Illiquid	Illiquid
FIXED-FLOATING EUR-ZAR 13 years	1	0.02	1	486,944,602	7,491,455	Illiquid	Illiquid
FIXED-FLOATING EUR-ZAR 14 years	1	0.02	1	485,388,584	7,467,517	Illiquid	Illiquid
FIXED-FLOATING EUR-ZAR 15 years	1	0.02	1	37,409,515	575,531	Illiquid	Illiquid
FIXED-FLOATING EUR-ZAR 16 years	4	0.06	3	792,027,863	12,185,044	Illiquid	Illiquid
FIXED-FLOATING EUR-ZAR 17 years	2	0.03	1	1,840,788	28,320	Illiquid	Illiquid
FIXED-FLOATING GBP-HKD 2 years	1	0.02	1	18,701,041	287,708	Illiquid	Illiquid
FIXED-FLOATING GBP-JPY 2 years	2	0.03	2	42,572,281	654,958	Illiquid	Illiquid
FIXED-FLOATING GBP-JPY 3 years	2	0.03	2	140,264,959	2,157,922	Illiquid	Illiquid
FIXED-FLOATING GBP-NOK 7 years	1	0.02	1	91,124,119	1,401,910	Illiquid	Illiquid
FIXED-FLOATING GBP-NOK 10 years	1	0.02	1	60,749,413	934,606	Illiquid	Illiquid
FIXED-FLOATING GBP-NZD 5 years	1	0.02	1	59,255,266	911,619	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 1.5 months	2	0.03	1	182,025,189	2,800,388	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 1 year	2	0.03	2	423,396,519	6,513,793	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 2 years	7	0.11	6	167,864,240	2,582,527	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 3 years	4	0.06	4	119,479,327	1,838,143	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 4 years	5	0.08	4	494,278,053	7,604,278	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 5 years	8	0.12	5	1,306,162,926	20,094,814	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 6 years	2	0.03	2	14,455,866	222,398	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 7 years	6	0.09	5	158,449,692	2,437,688	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 8 years	12	0.18	7	54,994,345	846,067	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 9 years	6	0.09	3	25,365,447	390,238	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 10 years	10	0.15	6	1,477,344,800	22,728,382	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 11 years	4	0.06	3	289,815,539	4,458,701	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 15 years	7	0.11	5	97,808,201	1,504,742	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 17 years	2	0.03	1	145,046,544	2,231,485	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 19 years	2	0.03	1	9,051,561	139,255	Illiquid	Illiquid
FIXED-FLOATING GBP-USD 25 years	1	0.02	1	60,368,371	928,744	Illiquid	Illiquid
FIXED-FLOATING GHS-USD 2 years	3	0.05	3	14,802,229	227,727	Illiquid	Illiquid
FIXED-FLOATING GHS-USD 5 years	1	0.02	1	11,285,387	173,621	Illiquid	Illiquid
FIXED-FLOATING HKD-USD 6 months	2	0.03	2	23,191,876	356,798	Illiquid	Illiquid
FIXED-FLOATING HKD-USD 1 year	1	0.02	1	11,220,624	172,625	Illiquid	Illiquid
FIXED-FLOATING HKD-USD 2 years	3	0.05	2	17,461,118	268,633	Illiquid	Illiquid
FIXED-FLOATING HKD-USD 3 years	2	0.03	2	11,407,635	175,502	Illiquid	Illiquid
FIXED-FLOATING HKD-USD 4 years	3	0.05	2	42,077,342	647,344	Illiquid	Illiquid
FIXED-FLOATING HKD-USD 5 years	3	0.05	2	61,619,064	947,986	Illiquid	Illiquid
FIXED-FLOATING HKD-USD 8 years	1	0.02	1	97,432,422	1,498,960	Illiquid	Illiquid
FIXED-FLOATING HKD-USD 16 years	1	0.02	1	37,395,659	575,318	Illiquid	Illiquid
FIXED-FLOATING HUF-USD 6 months	1	0.02	1	11,555,259	177,773	Illiquid	Illiquid
FIXED-FLOATING HUF-USD 2 years	2	0.03	1	71,470,377	1,099,544	Illiquid	Illiquid
FIXED-FLOATING HUF-USD 4 years	2	0.03	1	7,309,470	112,453	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	0.94
Notional Amount per day						10,000,000	9,336,410
FIXED TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING IDR-JPY 1.5 months	1	0.02	1	7,155,529	110,085	Illiquid	Illiquid
FIXED-FLOATING IDR-JPY 3 months	1	0.02	1	7,161,856	110,182	Illiquid	Illiquid
FIXED-FLOATING IDR-JPY 6 months	1	0.02	1	4,577,071	70,416	Illiquid	Illiquid
FIXED-FLOATING IDR-JPY 3 years	4	0.06	4	28,530,380	438,929	Illiquid	Illiquid
FIXED-FLOATING IDR-JPY 4 years	3	0.05	3	21,194,539	326,070	Illiquid	Illiquid
FIXED-FLOATING IDR-USD 1.5 months	4	0.06	4	59,265,297	911,774	Illiquid	Illiquid
FIXED-FLOATING IDR-USD 3 months	4	0.06	2	19,024,471	292,684	Illiquid	Illiquid
FIXED-FLOATING IDR-USD 6 months	16	0.25	9	43,167,695	664,118	Illiquid	Illiquid
FIXED-FLOATING IDR-USD 1 year	14	0.22	6	56,343,335	866,821	Illiquid	Illiquid
FIXED-FLOATING IDR-USD 2 years	28	0.43	10	137,768,502	2,119,515	Illiquid	Illiquid
FIXED-FLOATING IDR-USD 3 years	92	1.42	31	439,354,391	6,759,298	Illiquid	Illiquid
FIXED-FLOATING IDR-USD 4 years	64	0.98	33	422,930,764	6,506,627	Illiquid	Illiquid
FIXED-FLOATING IDR-USD 5 years	27	0.42	10	194,464,098	2,991,755	Illiquid	Illiquid
FIXED-FLOATING IDR-USD 6 years	15	0.23	10	98,687,466	1,518,269	Illiquid	Illiquid
FIXED-FLOATING INR-JPY 4 years	1	0.02	1	3,164,540	48,685	Illiquid	Illiquid
FIXED-FLOATING INR-USD 1.5 months	2	0.03	1	15,512,425	238,653	Illiquid	Illiquid
FIXED-FLOATING INR-USD 3 months	2	0.03	2	16,317,736	251,042	Illiquid	Illiquid
FIXED-FLOATING INR-USD 6 months	4	0.06	3	35,152,098	540,802	Illiquid	Illiquid
FIXED-FLOATING INR-USD 1 year	22	0.34	6	221,142,999	3,402,200	Illiquid	Illiquid
FIXED-FLOATING INR-USD 2 years	54	0.83	12	739,007,002	11,369,338	Illiquid	Illiquid
FIXED-FLOATING INR-USD 3 years	92	1.42	26	818,356,508	12,590,100	Liquid	Illiquid
FIXED-FLOATING INR-USD 4 years	22	0.34	12	219,558,896	3,377,829	Illiquid	Illiquid
FIXED-FLOATING INR-USD 5 years	28	0.43	11	251,822,423	3,874,191	Illiquid	Illiquid
FIXED-FLOATING INR-USD 6 years	19	0.29	11	138,818,841	2,135,674	Illiquid	Illiquid
FIXED-FLOATING INR-USD 7 years	2	0.03	2	12,563,109	193,279	Illiquid	Illiquid
FIXED-FLOATING INR-USD 8 years	1	0.02	1	2,965,617	45,625	Illiquid	Illiquid
FIXED-FLOATING INR-USD 10 years	1	0.02	1	7,252,327	111,574	Illiquid	Illiquid
FIXED-FLOATING INR-USD 11 years	1	0.02	1	12,959,909	199,383	Illiquid	Illiquid
FIXED-FLOATING INR-USD 12 years	1	0.02	1	2,289,543	35,224	Illiquid	Illiquid
FIXED-FLOATING INR-USD 13 years	2	0.03	1	8,055,337	123,928	Illiquid	Illiquid
FIXED-FLOATING JPY-THB 1 year	2	0.03	2	17,738,451	272,899	Illiquid	Illiquid
FIXED-FLOATING JPY-THB 2 years	3	0.05	2	33,348,287	513,051	Illiquid	Illiquid
FIXED-FLOATING JPY-THB 3 years	6	0.09	5	29,515,528	454,085	Illiquid	Illiquid
FIXED-FLOATING JPY-THB 4 years	6	0.09	4	16,323,983	251,138	Illiquid	Illiquid
FIXED-FLOATING JPY-THB 5 years	1	0.02	1	342,776	5,273	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 6 months	2	0.03	2	15,766,783	242,566	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 1 year	3	0.05	3	92,949,481	1,429,992	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 2 years	26	0.40	17	1,003,113,255	15,432,512	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 3 years	29	0.45	15	820,542,677	12,623,733	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 4 years	13	0.20	9	979,361,141	15,067,094	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 5 years	6	0.09	5	295,029,973	4,538,923	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 6 years	11	0.17	9	234,129,282	3,601,989	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 7 years	1	0.02	1	3,404,848	52,382	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 8 years	5	0.08	5	158,883,302	2,444,358	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 9 years	3	0.05	3	372,840,944	5,736,015	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 10 years	5	0.08	3	952,549,396	14,654,606	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 11 years	6	0.09	5	237,907,097	3,660,109	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 13 years	2	0.03	2	106,430,703	1,637,395	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 16 years	4	0.06	1	142,421,080	2,191,094	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 17 years	2	0.03	1	68,622,821	1,055,736	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 18 years	1	0.02	1	32,297,813	496,889	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 19 years	2	0.03	1	348,613,373	5,363,283	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 20 years	2	0.03	2	126,658,974	1,948,600	Illiquid	Illiquid
FIXED-FLOATING JPY-USD 21 years	1	0.02	1	20,089,549	309,070	Illiquid	Illiquid
FIXED-FLOATING KRW-USD 1.5 months	1	0.02	1	72,523,272	1,115,743	Illiquid	Illiquid
FIXED-FLOATING KRW-USD 6 months	1	0.02	1	8,639,312	132,912	Illiquid	Illiquid
FIXED-FLOATING KRW-USD 1 year	16	0.25	9	445,747,930	6,857,660	Illiquid	Illiquid
FIXED-FLOATING KRW-USD 2 years	132	2.03	45	2,922,844,237	44,966,834	Liquid	Illiquid
FIXED-FLOATING KRW-USD 3 years	186	2.86	50	3,286,373,780	50,559,597	Liquid	Illiquid
FIXED-FLOATING KRW-USD 4 years	177	2.72	50	2,912,316,351	44,804,867	Liquid	Illiquid
FIXED-FLOATING KRW-USD 5 years	50	0.77	26	662,091,626	10,186,025	Illiquid	Illiquid
FIXED-FLOATING KRW-USD 6 years	88	1.35	37	1,098,990,997	16,907,554	Liquid	Illiquid
FIXED-FLOATING KRW-USD 7 years	15	0.23	8	145,386,885	2,236,721	Illiquid	Illiquid
FIXED-FLOATING KRW-USD 8 years	36	0.55	19	345,993,582	5,322,978	Illiquid	Illiquid
FIXED-FLOATING KRW-USD 9 years	5	0.08	3	44,873,872	690,367	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	0.94
Notional Amount per day						10,000,000	9,336,410
FIXED TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING_KRW-USD_11 years	5	0.08	4	43,564,588	670,224	Illiquid	Illiquid
FIXED-FLOATING_KZT-USD_2 years	1	0.02	1	2,900,931	44,630	Illiquid	Illiquid
FIXED-FLOATING_MXN-USD_1 year	5	0.08	4	101,679,313	1,564,297	Illiquid	Illiquid
FIXED-FLOATING_MXN-USD_2 years	2	0.03	2	11,360,266	174,773	Illiquid	Illiquid
FIXED-FLOATING_MXN-USD_3 years	11	0.17	5	133,829,266	2,058,912	Illiquid	Illiquid
FIXED-FLOATING_MXN-USD_4 years	6	0.09	6	106,967,380	1,645,652	Illiquid	Illiquid
FIXED-FLOATING_MXN-USD_5 years	10	0.15	9	677,887,161	10,429,033	Illiquid	Illiquid
FIXED-FLOATING_MXN-USD_6 years	7	0.11	6	42,791,834	658,336	Illiquid	Illiquid
FIXED-FLOATING_MXN-USD_7 years	1	0.02	1	19,425,089	298,848	Illiquid	Illiquid
FIXED-FLOATING_MXN-USD_8 years	1	0.02	1	2,961,494	45,561	Illiquid	Illiquid
FIXED-FLOATING_MXN-USD_9 years	1	0.02	1	832,504	12,808	Illiquid	Illiquid
FIXED-FLOATING_MXN-USD_10 years	5	0.08	2	181,308,179	2,789,357	Illiquid	Illiquid
FIXED-FLOATING_MXN-USD_11 years	6	0.09	5	377,103,144	5,801,587	Illiquid	Illiquid
FIXED-FLOATING_MXN-USD_19 years	1	0.02	1	7,161,388	110,175	Illiquid	Illiquid
FIXED-FLOATING_MXN-USD_21 years	1	0.02	1	743,207	11,434	Illiquid	Illiquid
FIXED-FLOATING_MYR-USD_1.5 months	2	0.03	2	13,636,933	209,799	Illiquid	Illiquid
FIXED-FLOATING_MYR-USD_6 months	1	0.02	1	3,318,910	51,060	Illiquid	Illiquid
FIXED-FLOATING_MYR-USD_1 year	1	0.02	1	82,415,885	1,267,937	Illiquid	Illiquid
FIXED-FLOATING_MYR-USD_2 years	2	0.03	2	15,872,447	244,191	Illiquid	Illiquid
FIXED-FLOATING_MYR-USD_3 years	8	0.12	6	83,796,848	1,289,182	Illiquid	Illiquid
FIXED-FLOATING_MYR-USD_5 years	1	0.02	1	10,579,248	162,758	Illiquid	Illiquid
FIXED-FLOATING_MYR-USD_6 years	1	0.02	1	3,390,300	52,158	Illiquid	Illiquid
FIXED-FLOATING_NGN-USD_4 years	2	0.03	2	8,893,074	136,817	Illiquid	Illiquid
FIXED-FLOATING_NGN-USD_5 years	2	0.03	2	2,657,853	40,890	Illiquid	Illiquid
FIXED-FLOATING_NGN-USD_6 years	9	0.14	3	26,710,349	410,928	Illiquid	Illiquid
FIXED-FLOATING_NOK-SEK_2 years	1	0.02	1	5,461,372	84,021	Illiquid	Illiquid
FIXED-FLOATING_NOK-SEK_4 years	4	0.06	1	136,078,684	2,093,518	Illiquid	Illiquid
FIXED-FLOATING_NOK-SEK_6 years	1	0.02	1	41,646,548	640,716	Illiquid	Illiquid
FIXED-FLOATING_NOK-SEK_8 years	2	0.03	1	121,498,825	1,869,213	Illiquid	Illiquid
FIXED-FLOATING_NOK-USD_2 years	6	0.09	5	208,070,992	3,201,092	Illiquid	Illiquid
FIXED-FLOATING_NOK-USD_3 years	5	0.08	5	60,858,198	936,280	Illiquid	Illiquid
FIXED-FLOATING_NOK-USD_4 years	10	0.15	9	136,580,982	2,101,246	Illiquid	Illiquid
FIXED-FLOATING_NOK-USD_5 years	6	0.09	6	77,158,180	1,187,049	Illiquid	Illiquid
FIXED-FLOATING_NOK-USD_6 years	3	0.05	3	63,874,186	982,680	Illiquid	Illiquid
FIXED-FLOATING_NOK-USD_7 years	2	0.03	1	121,724,189	1,872,680	Illiquid	Illiquid
FIXED-FLOATING_NOK-USD_8 years	4	0.06	2	118,157,607	1,817,809	Illiquid	Illiquid
FIXED-FLOATING_NOK-USD_10 years	2	0.03	1	121,498,825	1,869,213	Illiquid	Illiquid
FIXED-FLOATING_NZD-USD_6 months	4	0.06	2	6,843,848	105,290	Illiquid	Illiquid
FIXED-FLOATING_NZD-USD_3 years	1	0.02	1	101,129,235	1,555,834	Illiquid	Illiquid
FIXED-FLOATING_NZD-USD_4 years	4	0.06	3	223,852,915	3,443,891	Illiquid	Illiquid
FIXED-FLOATING_NZD-USD_5 years	5	0.08	5	85,422,849	1,314,198	Illiquid	Illiquid
FIXED-FLOATING_NZD-USD_6 years	5	0.08	5	91,887,578	1,413,655	Illiquid	Illiquid
FIXED-FLOATING_NZD-USD_7 years	1	0.02	1	12,446,675	191,487	Illiquid	Illiquid
FIXED-FLOATING_NZD-USD_9 years	5	0.08	2	57,254,705	880,842	Illiquid	Illiquid
FIXED-FLOATING_NZD-USD_15 years	1	0.02	1	1,244,668	19,149	Illiquid	Illiquid
FIXED-FLOATING_NZD-USD_16 years	1	0.02	1	1,244,668	19,149	Illiquid	Illiquid
FIXED-FLOATING_OMR-USD_4 years	4	0.06	3	217,577,546	3,347,347	Illiquid	Illiquid
FIXED-FLOATING_PEN-USD_1.5 months	1	0.02	1	543,985	8,369	Illiquid	Illiquid
FIXED-FLOATING_PEN-USD_6 months	2	0.03	2	26,017,619	400,271	Illiquid	Illiquid
FIXED-FLOATING_PEN-USD_1 year	5	0.08	5	22,302,362	343,113	Illiquid	Illiquid
FIXED-FLOATING_PEN-USD_2 years	4	0.06	3	20,632,560	317,424	Illiquid	Illiquid
FIXED-FLOATING_PEN-USD_3 years	19	0.29	10	145,584,709	2,239,765	Illiquid	Illiquid
FIXED-FLOATING_PEN-USD_4 years	9	0.14	5	40,558,824	623,982	Illiquid	Illiquid
FIXED-FLOATING_PEN-USD_5 years	7	0.11	4	46,801,098	720,017	Illiquid	Illiquid
FIXED-FLOATING_PEN-USD_6 years	15	0.23	6	57,614,403	886,375	Illiquid	Illiquid
FIXED-FLOATING_PEN-USD_7 years	5	0.08	2	23,232,893	357,429	Illiquid	Illiquid
FIXED-FLOATING_PEN-USD_8 years	9	0.14	5	56,653,444	871,591	Illiquid	Illiquid
FIXED-FLOATING_PEN-USD_9 years	9	0.14	5	32,616,478	501,792	Illiquid	Illiquid
FIXED-FLOATING_PEN-USD_10 years	14	0.22	7	64,537,864	992,890	Illiquid	Illiquid
FIXED-FLOATING_PEN-USD_11 years	6	0.09	2	26,707,004	410,877	Illiquid	Illiquid
FIXED-FLOATING_PHP-USD_6 months	3	0.05	1	4,176,305	64,251	Illiquid	Illiquid
FIXED-FLOATING_PHP-USD_1 year	4	0.06	2	26,682,360	410,498	Illiquid	Illiquid
FIXED-FLOATING_PHP-USD_2 years	23	0.35	7	178,339,412	2,743,683	Illiquid	Illiquid
FIXED-FLOATING_PHP-USD_3 years	6	0.09	4	33,089,101	509,063	Illiquid	Illiquid
FIXED-FLOATING_PHP-USD_4 years	12	0.18	8	95,454,194	1,468,526	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	0.94
Notional Amount per day						10,000,000	9,336,410
FIXED TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING_PHP-USD_5 years	1	0.02	1	5,881,204	90,480	Illiquid	Illiquid
FIXED-FLOATING_PHP-USD_6 years	2	0.03	2	10,772,485	165,731	Illiquid	Illiquid
FIXED-FLOATING_PHP-USD_7 years	2	0.03	1	8,381,469	128,946	Illiquid	Illiquid
FIXED-FLOATING_PLN-USD_6 months	2	0.03	2	8,760,910	134,783	Illiquid	Illiquid
FIXED-FLOATING_PLN-USD_6 years	1	0.02	1	3,342,856	51,429	Illiquid	Illiquid
FIXED-FLOATING_RUB-USD_1.5 months	10	0.15	5	69,070,255	1,062,619	Illiquid	Illiquid
FIXED-FLOATING_RUB-USD_3 months	7	0.11	3	124,090,624	1,909,087	Illiquid	Illiquid
FIXED-FLOATING_RUB-USD_6 months	83	1.28	30	1,602,029,674	24,646,610	Liquid	Liquid
FIXED-FLOATING_RUB-USD_1 year	233	3.58	56	3,761,609,875	57,870,921	Liquid	Liquid
FIXED-FLOATING_RUB-USD_2 years	831	12.78	60	11,450,793,611	176,166,056	Liquid	Liquid
FIXED-FLOATING_RUB-USD_3 years	315	4.85	59	3,780,098,235	58,155,357	Liquid	Liquid
FIXED-FLOATING_RUB-USD_4 years	216	3.32	47	1,856,455,866	28,560,859	Liquid	Liquid
FIXED-FLOATING_RUB-USD_5 years	103	1.58	42	931,824,953	14,335,769	Liquid	Liquid
FIXED-FLOATING_RUB-USD_6 years	204	3.14	47	1,479,761,936	22,765,568	Liquid	Liquid
FIXED-FLOATING_RUB-USD_7 years	31	0.48	16	377,383,317	5,805,897	Illiquid	Illiquid
FIXED-FLOATING_RUB-USD_8 years	15	0.23	9	164,440,785	2,529,858	Illiquid	Illiquid
FIXED-FLOATING_RUB-USD_9 years	8	0.12	5	48,237,352	742,113	Illiquid	Illiquid
FIXED-FLOATING_RUB-USD_10 years	2	0.03	2	9,805,352	150,852	Illiquid	Illiquid
FIXED-FLOATING_RUB-USD_11 years	2	0.03	1	11,876,776	182,720	Illiquid	Illiquid
FIXED-FLOATING_SAR-USD_3 years	4	0.06	1	145,032,023	2,231,262	Illiquid	Illiquid
FIXED-FLOATING_SEK-USD_1 year	1	0.02	1	65,270,945	1,004,168	Illiquid	Illiquid
FIXED-FLOATING_SEK-USD_2 years	1	0.02	1	7,019,081	107,986	Illiquid	Illiquid
FIXED-FLOATING_SEK-USD_3 years	1	0.02	1	36,261,636	557,871	Illiquid	Illiquid
FIXED-FLOATING_SEK-USD_4 years	1	0.02	1	14,504,654	223,149	Illiquid	Illiquid
FIXED-FLOATING_SEK-USD_5 years	2	0.03	2	90,155,547	1,387,008	Illiquid	Illiquid
FIXED-FLOATING_SEK-USD_6 years	3	0.05	3	130,306,254	2,004,712	Illiquid	Illiquid
FIXED-FLOATING_SEK-USD_8 years	1	0.02	1	1,093,288	16,820	Illiquid	Illiquid
FIXED-FLOATING_SEK-USD_10 years	1	0.02	1	1,153,120	17,740	Illiquid	Illiquid
FIXED-FLOATING_SGD-USD_1 year	1	0.02	1	5,187,643	79,810	Illiquid	Illiquid
FIXED-FLOATING_SGD-USD_2 years	1	0.02	1	28,820,239	443,388	Illiquid	Illiquid
FIXED-FLOATING_SGD-USD_3 years	5	0.08	3	131,221,430	2,018,791	Illiquid	Illiquid
FIXED-FLOATING_SGD-USD_5 years	1	0.02	1	2,882,024	44,339	Illiquid	Illiquid
FIXED-FLOATING_THB-USD_1.5 months	2	0.03	2	4,071,914	62,645	Illiquid	Illiquid
FIXED-FLOATING_THB-USD_3 months	1	0.02	1	7,252,327	111,574	Illiquid	Illiquid
FIXED-FLOATING_THB-USD_6 months	2	0.03	1	21,756,982	334,723	Illiquid	Illiquid
FIXED-FLOATING_THB-USD_1 year	2	0.03	2	37,820,886	581,860	Illiquid	Illiquid
FIXED-FLOATING_THB-USD_2 years	16	0.25	12	195,636,163	3,009,787	Illiquid	Illiquid
FIXED-FLOATING_THB-USD_3 years	7	0.11	4	64,153,876	986,983	Illiquid	Illiquid
FIXED-FLOATING_THB-USD_4 years	5	0.08	4	66,293,501	1,019,900	Illiquid	Illiquid
FIXED-FLOATING_THB-USD_5 years	3	0.05	3	29,873,750	459,596	Illiquid	Illiquid
FIXED-FLOATING_THB-USD_6 years	9	0.14	9	236,811,557	3,643,255	Illiquid	Illiquid
FIXED-FLOATING_TRY-USD_1.5 months	25	0.38	14	1,000,430,595	15,391,240	Illiquid	Illiquid
FIXED-FLOATING_TRY-USD_3 months	13	0.20	7	776,852,269	11,951,573	Illiquid	Illiquid
FIXED-FLOATING_TRY-USD_6 months	191	2.94	52	11,941,266,361	183,711,790	Liquid	Liquid
FIXED-FLOATING_TRY-USD_1 year	396	6.09	58	16,328,425,984	251,206,554	Liquid	Liquid
FIXED-FLOATING_TRY-USD_2 years	2,355	36.23	61	66,784,086,138	1,027,447,479	Liquid	Liquid
FIXED-FLOATING_TRY-USD_3 years	1,043	16.05	62	20,302,832,885	312,351,275	Liquid	Liquid
FIXED-FLOATING_TRY-USD_4 years	490	7.54	59	7,104,909,574	109,306,301	Liquid	Liquid
FIXED-FLOATING_TRY-USD_5 years	348	5.35	56	4,711,649,111	72,486,909	Liquid	Liquid
FIXED-FLOATING_TRY-USD_6 years	1,537	23.65	62	16,710,811,945	257,089,415	Liquid	Liquid
FIXED-FLOATING_TRY-USD_7 years	61	0.94	30	1,159,857,766	17,843,966	Illiquid	Liquid
FIXED-FLOATING_TRY-USD_8 years	80	1.23	29	675,147,206	10,386,880	Liquid	Liquid
FIXED-FLOATING_TRY-USD_9 years	30	0.46	14	298,477,259	4,591,958	Illiquid	Illiquid
FIXED-FLOATING_TRY-USD_10 years	19	0.29	5	243,964,821	3,753,305	Illiquid	Illiquid
FIXED-FLOATING_TRY-USD_11 years	165	2.54	33	1,548,311,505	23,820,177	Liquid	Illiquid
FIXED-FLOATING_TRY-USD_16 years	3	0.05	2	18,542,192	285,264	Illiquid	Illiquid
FIXED-FLOATING_TWD-USD_6 months	2	0.03	1	14,351,684	220,795	Illiquid	Illiquid
FIXED-FLOATING_TWD-USD_1 year	13	0.20	7	176,602,812	2,716,966	Illiquid	Illiquid
FIXED-FLOATING_TWD-USD_2 years	43	0.66	24	366,898,717	5,644,596	Illiquid	Illiquid
FIXED-FLOATING_TWD-USD_3 years	5	0.08	5	61,862,006	951,723	Illiquid	Illiquid
FIXED-FLOATING_TWD-USD_4 years	8	0.12	7	119,698,653	1,841,518	Illiquid	Illiquid
FIXED-FLOATING_TWD-USD_5 years	3	0.05	3	26,297,762	404,581	Illiquid	Illiquid
FIXED-FLOATING_TWD-USD_6 years	2	0.03	2	11,648,223	179,203	Illiquid	Illiquid
FIXED-FLOATING_TWD-USD_7 years	2	0.03	2	10,705,774	164,704	Illiquid	Illiquid
FIXED-FLOATING_USD-ZAR_6 months	1	0.02	1	14,772,906	227,275	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	0.94
Notional Amount per day						10,000,000	9,336,410
FIXED TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING USD-ZAR 1 year	2	0.03	2	5,692,438	87,576	Illiquid	Illiquid
FIXED-FLOATING USD-ZAR 2 years	7	0.11	5	27,299,699	419,995	Illiquid	Illiquid
FIXED-FLOATING USD-ZAR 3 years	10	0.15	6	177,638,001	2,732,892	Illiquid	Illiquid
FIXED-FLOATING USD-ZAR 5 years	9	0.14	8	481,302,107	7,404,648	Illiquid	Illiquid
FIXED-FLOATING USD-ZAR 6 years	10	0.15	7	1,862,396,468	28,652,253	Illiquid	Illiquid
FIXED-FLOATING USD-ZAR 8 years	1	0.02	1	2,057,508	31,654	Illiquid	Illiquid
FIXED-FLOATING USD-ZAR 9 years	1	0.02	1	3,643,503	56,054	Illiquid	Illiquid
FIXED-FLOATING USD-ZAR 11 years	1	0.02	1	6,567,565	101,039	Illiquid	Illiquid
FIXED-FLOATING USD-ZAR 12 years	1	0.02	1	144,386,602	2,221,332	Illiquid	Illiquid
FIXED-FLOATING USD-ZAR 13 years	1	0.02	1	7,210,193	110,926	Illiquid	Illiquid
FIXED-FLOATING USD-ZAR 17 years	10	0.15	3	29,462,932	453,276	Illiquid	Illiquid
FIXED-FLOATING USD-ZAR 25 years	2	0.03	2	145,046,544	2,231,485	Illiquid	Illiquid

Table 32: Fixed to Float Multi-currency swaps liquidity assessment

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	1.12
Notional Amount per day						100,000,000	104,331,370
FLOAT TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT_AED-USD_2 years	2	0.03	1	171,984,010	2,645,908	Illiquid	Illiquid
FLOAT-FLOAT_AED-USD_5 years	9	0.14	7	861,603,760	13,255,442	Illiquid	Illiquid
FLOAT-FLOAT_AED-USD_6 years	1	0.02	1	19,744,786	303,766	Illiquid	Illiquid
FLOAT-FLOAT_AUD-EUR_6 months	1	0.02	1	20,085,417	309,006	Illiquid	Illiquid
FLOAT-FLOAT_AUD-EUR_3 years	3	0.05	3	211,566,393	3,254,868	Illiquid	Illiquid
FLOAT-FLOAT_AUD-EUR_4 years	3	0.05	3	32,941,795	506,797	Illiquid	Illiquid
FLOAT-FLOAT_AUD-EUR_5 years	6	0.09	6	320,310,610	4,927,856	Illiquid	Illiquid
FLOAT-FLOAT_AUD-EUR_6 years	5	0.08	5	631,951,390	9,722,329	Illiquid	Illiquid
FLOAT-FLOAT_AUD-EUR_24 years	1	0.02	1	70,074,622	1,078,071	Illiquid	Illiquid
FLOAT-FLOAT_AUD-EUR_25 years	2	0.03	2	900,000,000	13,846,154	Illiquid	Illiquid
FLOAT-FLOAT_AUD-GBP_6 months	4	0.06	3	1,087,960,088	16,737,848	Illiquid	Illiquid
FLOAT-FLOAT_AUD-JPY_3 months	1	0.02	1	2,728,269	41,973	Illiquid	Illiquid
FLOAT-FLOAT_AUD-JPY_6 months	1	0.02	1	1,294,197	19,911	Illiquid	Illiquid
FLOAT-FLOAT_AUD-JPY_1 year	5	0.08	2	90,129,961	1,386,615	Illiquid	Illiquid
FLOAT-FLOAT_AUD-JPY_2 years	1	0.02	1	33,475,695	515,011	Illiquid	Illiquid
FLOAT-FLOAT_AUD-JPY_4 years	3	0.05	3	797,391,055	12,267,555	Illiquid	Illiquid
FLOAT-FLOAT_AUD-NOK_1 year	1	0.02	1	24,299,765	373,843	Illiquid	Illiquid
FLOAT-FLOAT_AUD-NZD_3 years	1	0.02	1	419,701,882	6,456,952	Illiquid	Illiquid
FLOAT-FLOAT_AUD-NZD_6 years	1	0.02	1	13,193,476	202,977	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_1.5 months	6	0.09	3	497,698,970	7,656,907	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_3 months	8	0.12	3	1,160,213,561	17,849,439	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_6 months	137	2.11	33	19,050,594,455	293,086,069	Liquid	Liquid
FLOAT-FLOAT_AUD-USD_1 year	292	4.49	48	30,698,626,651	472,286,564	Liquid	Liquid
FLOAT-FLOAT_AUD-USD_2 years	368	5.66	52	31,249,972,751	480,768,812	Liquid	Liquid
FLOAT-FLOAT_AUD-USD_3 years	324	4.98	52	23,584,452,852	362,837,736	Liquid	Liquid
FLOAT-FLOAT_AUD-USD_4 years	238	3.66	53	16,767,196,231	257,956,865	Liquid	Liquid
FLOAT-FLOAT_AUD-USD_5 years	174	2.68	51	12,293,189,814	189,125,997	Liquid	Liquid
FLOAT-FLOAT_AUD-USD_6 years	285	4.38	52	17,430,524,618	268,161,917	Liquid	Liquid
FLOAT-FLOAT_AUD-USD_7 years	182	2.80	34	7,413,795,831	114,058,397	Liquid	Liquid
FLOAT-FLOAT_AUD-USD_8 years	186	2.86	39	10,473,498,402	161,130,745	Liquid	Liquid
FLOAT-FLOAT_AUD-USD_9 years	91	1.40	31	3,324,685,105	51,149,002	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_10 years	44	0.68	22	1,389,256,995	21,373,185	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_11 years	123	1.89	43	3,158,404,833	48,590,844	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_12 years	33	0.51	9	1,158,142,605	17,817,579	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_13 years	80	1.23	20	2,498,458,739	38,437,827	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_14 years	16	0.25	8	309,084,257	4,755,142	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_15 years	11	0.17	6	403,326,061	6,205,016	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_16 years	19	0.29	13	286,397,055	4,406,109	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_17 years	6	0.09	2	883,786,721	13,596,719	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_18 years	24	0.37	9	540,341,677	8,312,949	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_19 years	6	0.09	4	64,516,793	992,566	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_20 years	11	0.17	9	145,276,500	2,235,023	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_21 years	13	0.20	7	247,631,086	3,809,709	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_23 years	10	0.15	5	207,431,612	3,191,256	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_24 years	4	0.06	3	1,082,368,844	16,651,828	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_25 years	3	0.05	2	11,409,152	175,525	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_26 years	6	0.09	5	56,448,047	868,431	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_27 years	2	0.03	1	99,587,144	1,532,110	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_28 years	6	0.09	3	94,889,449	1,459,838	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_29 years	3	0.05	2	13,415,041	206,385	Illiquid	Illiquid
FLOAT-FLOAT_AUD-USD_31 years	1	0.02	1	1,138,174	17,510	Illiquid	Illiquid
FLOAT-FLOAT_BHD-USD_4 years	1	0.02	1	203,065,161	3,124,079	Illiquid	Illiquid
FLOAT-FLOAT_BHD-USD_8 years	1	0.02	1	20,748,278	319,204	Illiquid	Illiquid
FLOAT-FLOAT_BRL-EUR_3 years	4	0.06	1	19,555,730	300,857	Illiquid	Illiquid
FLOAT-FLOAT_BRL-EUR_4 years	2	0.03	2	17,497,965	269,199	Illiquid	Illiquid
FLOAT-FLOAT_BRL-EUR_5 years	2	0.03	1	300,000,000	4,615,385	Illiquid	Illiquid
FLOAT-FLOAT_BRL-USD_6 months	9	0.14	1	115,706,310	1,780,097	Illiquid	Illiquid
FLOAT-FLOAT_BRL-USD_1 year	3	0.05	1	31,975,552	491,932	Illiquid	Illiquid
FLOAT-FLOAT_BRL-USD_2 years	1	0.02	1	6,084,719	93,611	Illiquid	Illiquid
FLOAT-FLOAT_BRL-USD_3 years	1	0.02	1	5,449,958	83,846	Illiquid	Illiquid
FLOAT-FLOAT_BRL-USD_4 years	2	0.03	1	72,523,272	1,115,743	Illiquid	Illiquid
FLOAT-FLOAT_BRL-USD_6 years	1	0.02	1	3,205,857	49,321	Illiquid	Illiquid
FLOAT-FLOAT_BRL-USD_7 years	1	0.02	1	35,792,597	550,655	Illiquid	Illiquid
FLOAT-FLOAT_CAD-EUR_6 months	2	0.03	1	923,416,044	14,206,401	Illiquid	Illiquid
FLOAT-FLOAT_CAD-EUR_1 year	1	0.02	1	53,020,546	815,701	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	1.12
Notional Amount per day						100,000,000	104,331,370
FLOAT TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT_CAD-EUR_2 years	8	0.12	3	1,922,186,067	29,572,093	Illiquid	Illiquid
FLOAT-FLOAT_CAD-EUR_3 years	9	0.14	8	447,574,892	6,885,768	Illiquid	Illiquid
FLOAT-FLOAT_CAD-EUR_4 years	3	0.05	3	195,953,239	3,014,665	Illiquid	Illiquid
FLOAT-FLOAT_CAD-GBP_4 years	1	0.02	1	306,562,779	4,716,350	Illiquid	Illiquid
FLOAT-FLOAT_CAD-SEK_2 years	1	0.02	1	69,572,463	1,070,346	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_1.5 months	11	0.17	5	1,091,061,466	16,785,561	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_3 months	10	0.15	6	1,200,830,178	18,474,310	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_6 months	21	0.32	17	2,672,303,977	41,112,369	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_1 year	71	1.09	32	8,095,526,470	124,546,561	Liquid	Illiquid
FLOAT-FLOAT_CAD-USD_2 years	69	1.06	29	8,676,821,005	133,489,554	Liquid	Illiquid
FLOAT-FLOAT_CAD-USD_3 years	74	1.14	32	5,681,040,715	87,400,626	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_4 years	60	0.92	24	4,228,201,515	65,049,254	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_5 years	23	0.35	13	1,467,511,670	22,577,103	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_6 years	30	0.46	19	2,626,036,975	40,400,569	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_7 years	20	0.31	9	1,036,203,074	15,941,586	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_8 years	19	0.29	10	1,210,103,074	18,616,970	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_9 years	25	0.38	13	1,373,445,404	21,129,929	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_10 years	13	0.20	7	590,765,778	9,088,704	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_11 years	6	0.09	3	154,325,291	2,374,235	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_13 years	9	0.14	6	483,944,274	7,445,297	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_14 years	1	0.02	1	29,057,837	447,044	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_15 years	6	0.09	3	239,730,833	3,688,167	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_16 years	6	0.09	4	448,617,367	6,901,806	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_19 years	3	0.05	3	117,059,389	1,800,914	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_20 years	3	0.05	2	139,268,800	2,142,597	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_21 years	2	0.03	2	67,739,163	1,042,141	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_22 years	2	0.03	2	77,484,755	1,192,073	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_24 years	1	0.02	1	32,979,144	507,371	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_25 years	3	0.05	3	96,545,030	1,485,308	Illiquid	Illiquid
FLOAT-FLOAT_CAD-USD_26 years	3	0.05	2	63,149,765	971,535	Illiquid	Illiquid
FLOAT-FLOAT_CHF-DKK_1 year	4	0.06	1	27,412,333	421,728	Illiquid	Illiquid
FLOAT-FLOAT_CHF-DKK_3 years	1	0.02	1	32,813,304	504,820	Illiquid	Illiquid
FLOAT-FLOAT_CHF-DKK_4 years	1	0.02	1	32,813,304	504,820	Illiquid	Illiquid
FLOAT-FLOAT_CHF-DKK_8 years	1	0.02	1	5,073,239	78,050	Illiquid	Illiquid
FLOAT-FLOAT_CHF-DKK_16 years	1	0.02	1	8,433,529	129,747	Illiquid	Illiquid
FLOAT-FLOAT_CHF-DKK_18 years	1	0.02	1	82,033,261	1,262,050	Illiquid	Illiquid
FLOAT-FLOAT_CHF-EUR_6 months	4	0.06	4	672,293,068	10,342,970	Illiquid	Illiquid
FLOAT-FLOAT_CHF-EUR_1 year	17	0.26	8	1,077,243,328	16,572,974	Illiquid	Illiquid
FLOAT-FLOAT_CHF-EUR_2 years	17	0.26	12	1,456,755,719	22,411,626	Illiquid	Illiquid
FLOAT-FLOAT_CHF-EUR_3 years	30	0.46	22	2,605,383,151	40,082,818	Illiquid	Illiquid
FLOAT-FLOAT_CHF-EUR_4 years	9	0.14	9	686,858,218	10,567,050	Illiquid	Illiquid
FLOAT-FLOAT_CHF-EUR_5 years	11	0.17	11	966,609,625	14,870,917	Illiquid	Illiquid
FLOAT-FLOAT_CHF-EUR_6 years	10	0.15	7	857,265,701	13,188,703	Illiquid	Illiquid
FLOAT-FLOAT_CHF-EUR_7 years	4	0.06	4	491,639,423	7,563,683	Illiquid	Illiquid
FLOAT-FLOAT_CHF-EUR_8 years	1	0.02	1	10,222,858	157,275	Illiquid	Illiquid
FLOAT-FLOAT_CHF-EUR_9 years	1	0.02	1	67,315,573	1,035,624	Illiquid	Illiquid
FLOAT-FLOAT_CHF-EUR_11 years	9	0.14	6	474,879,143	7,305,833	Illiquid	Illiquid
FLOAT-FLOAT_CHF-EUR_12 years	2	0.03	2	27,580,451	424,315	Illiquid	Illiquid
FLOAT-FLOAT_CHF-EUR_14 years	1	0.02	1	5,541,986	85,261	Illiquid	Illiquid
FLOAT-FLOAT_CHF-EUR_16 years	4	0.06	1	123,049,891	1,893,075	Illiquid	Illiquid
FLOAT-FLOAT_CHF-GBP_3 months	1	0.02	1	48,632,214	748,188	Illiquid	Illiquid
FLOAT-FLOAT_CHF-GBP_6 months	2	0.03	2	49,036,958	754,415	Illiquid	Illiquid
FLOAT-FLOAT_CHF-HUF_1 year	1	0.02	1	9,102,727	140,042	Illiquid	Illiquid
FLOAT-FLOAT_CHF-HUF_3 years	1	0.02	1	24,949,659	383,841	Illiquid	Illiquid
FLOAT-FLOAT_CHF-HUF_4 years	1	0.02	1	8,314,279	127,912	Illiquid	Illiquid
FLOAT-FLOAT_CHF-PLN_2 years	4	0.06	4	219,146,902	3,371,491	Illiquid	Illiquid
FLOAT-FLOAT_CHF-PLN_3 years	5	0.08	5	288,808,441	4,443,207	Illiquid	Illiquid
FLOAT-FLOAT_CHF-PLN_4 years	2	0.03	2	153,735,565	2,365,163	Illiquid	Illiquid
FLOAT-FLOAT_CHF-PLN_6 years	1	0.02	1	41,413,212	637,126	Illiquid	Illiquid
FLOAT-FLOAT_CHF-PLN_7 years	9	0.14	6	393,816,687	6,058,718	Illiquid	Illiquid
FLOAT-FLOAT_CHF-PLN_11 years	4	0.06	4	111,236,522	1,711,331	Illiquid	Illiquid
FLOAT-FLOAT_CHF-PLN_13 years	3	0.05	3	63,621,715	978,796	Illiquid	Illiquid
FLOAT-FLOAT_CHF-PLN_14 years	2	0.03	2	70,374,284	1,082,681	Illiquid	Illiquid
FLOAT-FLOAT_CHF-SEK_1 year	2	0.03	1	246,099,782	3,786,150	Illiquid	Illiquid
FLOAT-FLOAT_CHF-SEK_4 years	1	0.02	1	62,370,942	959,553	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	1.12
Notional Amount per day						100,000,000	104,331,370
FLOAT TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT_CHF-SEK_9 years	2	0.03	2	55,706,993	857,031	Illiquid	Illiquid
FLOAT-FLOAT_CHF-SEK_10 years	2	0.03	2	111,413,985	1,714,061	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_1.5 months	9	0.14	5	556,342,682	8,559,118	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_3 months	4	0.06	4	263,124,032	4,048,062	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_6 months	43	0.66	21	8,072,040,297	124,185,235	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_1 year	100	1.54	41	17,596,764,663	270,719,456	Liquid	Illiquid
FLOAT-FLOAT_CHF-USD_2 years	166	2.55	47	17,779,600,255	273,532,312	Liquid	Illiquid
FLOAT-FLOAT_CHF-USD_3 years	132	2.03	46	9,989,725,413	153,688,083	Liquid	Illiquid
FLOAT-FLOAT_CHF-USD_4 years	85	1.31	35	7,344,303,576	112,989,286	Liquid	Illiquid
FLOAT-FLOAT_CHF-USD_5 years	105	1.62	45	7,866,843,809	121,028,366	Liquid	Illiquid
FLOAT-FLOAT_CHF-USD_6 years	89	1.37	37	5,899,008,472	90,753,976	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_7 years	42	0.65	24	2,716,817,920	41,797,199	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_8 years	33	0.51	17	1,515,326,957	23,312,722	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_9 years	22	0.34	15	1,000,749,486	15,396,146	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_10 years	7	0.11	6	259,467,496	3,991,808	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_11 years	27	0.42	18	1,124,345,527	17,297,623	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_12 years	3	0.05	3	55,782,617	858,194	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_13 years	3	0.05	3	221,489,803	3,407,535	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_14 years	10	0.15	7	397,880,373	6,121,237	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_15 years	1	0.02	1	61,524,945	946,538	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_16 years	18	0.28	10	369,094,000	5,678,369	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_17 years	2	0.03	2	82,033,261	1,262,050	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_18 years	5	0.08	4	172,116,905	2,647,952	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_19 years	2	0.03	2	45,254,654	696,225	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_21 years	4	0.06	2	78,669,897	1,210,306	Illiquid	Illiquid
FLOAT-FLOAT_CHF-USD_31 years	4	0.06	2	57,601,080	886,170	Illiquid	Illiquid
FLOAT-FLOAT_CLP-EUR_1 year	1	0.02	1	24,532,352	377,421	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_1.5 months	3	0.05	1	87,027,926	1,338,891	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_3 months	1	0.02	1	32,556,457	500,869	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_6 months	1	0.02	1	16,031,293	246,635	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_1 year	12	0.18	6	176,783,214	2,719,742	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_2 years	14	0.22	9	207,244,120	3,188,371	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_3 years	34	0.52	10	411,796,302	6,335,328	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_4 years	24	0.37	12	211,934,532	3,260,531	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_5 years	21	0.32	13	159,437,637	2,452,887	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_6 years	58	0.89	30	619,255,326	9,527,005	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_7 years	20	0.31	11	192,115,022	2,955,616	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_8 years	10	0.15	7	67,909,066	1,044,755	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_9 years	16	0.25	9	99,456,522	1,530,100	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_10 years	9	0.14	7	39,450,486	606,931	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_11 years	18	0.28	13	124,071,658	1,908,795	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_12 years	2	0.03	1	16,540,253	254,465	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_13 years	7	0.11	4	36,185,335	556,697	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_16 years	3	0.05	2	10,515,874	161,783	Illiquid	Illiquid
FLOAT-FLOAT_CLP-USD_21 years	1	0.02	1	3,671,537	56,485	Illiquid	Illiquid
FLOAT-FLOAT_CNY-EUR_3 years	10	0.15	7	308,932,518	4,752,808	Illiquid	Illiquid
FLOAT-FLOAT_COP-USD_3 years	1	0.02	1	3,760,987	57,861	Illiquid	Illiquid
FLOAT-FLOAT_COP-USD_4 years	1	0.02	1	3,760,987	57,861	Illiquid	Illiquid
FLOAT-FLOAT_COP-USD_5 years	1	0.02	1	7,121,396	109,560	Illiquid	Illiquid
FLOAT-FLOAT_COP-USD_6 years	1	0.02	1	3,523,607	54,209	Illiquid	Illiquid
FLOAT-FLOAT_COP-USD_7 years	2	0.03	1	7,121,396	109,560	Illiquid	Illiquid
FLOAT-FLOAT_CZK-EUR_6 months	8	0.12	6	388,262,373	5,973,267	Illiquid	Illiquid
FLOAT-FLOAT_CZK-EUR_1 year	27	0.42	16	766,849,893	11,797,691	Illiquid	Illiquid
FLOAT-FLOAT_CZK-EUR_2 years	34	0.52	21	934,826,560	14,381,947	Illiquid	Illiquid
FLOAT-FLOAT_CZK-EUR_3 years	36	0.55	19	872,904,457	13,429,299	Illiquid	Illiquid
FLOAT-FLOAT_CZK-EUR_4 years	18	0.28	13	548,457,841	8,437,813	Illiquid	Illiquid
FLOAT-FLOAT_CZK-EUR_5 years	17	0.26	9	323,222,308	4,972,651	Illiquid	Illiquid
FLOAT-FLOAT_CZK-EUR_6 years	8	0.12	6	140,122,609	2,155,732	Illiquid	Illiquid
FLOAT-FLOAT_CZK-EUR_7 years	13	0.20	10	298,338,517	4,589,823	Illiquid	Illiquid
FLOAT-FLOAT_CZK-EUR_8 years	16	0.25	12	465,873,797	7,167,289	Illiquid	Illiquid
FLOAT-FLOAT_CZK-EUR_9 years	5	0.08	4	110,441,498	1,699,100	Illiquid	Illiquid
FLOAT-FLOAT_CZK-EUR_10 years	2	0.03	2	72,179,532	1,110,454	Illiquid	Illiquid
FLOAT-FLOAT_CZK-EUR_11 years	4	0.06	4	87,608,981	1,347,830	Illiquid	Illiquid
FLOAT-FLOAT_CZK-EUR_12 years	5	0.08	5	162,840,739	2,505,242	Illiquid	Illiquid
FLOAT-FLOAT_CZK-EUR_13 years	4	0.06	3	64,461,748	991,719	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	1.12
Notional Amount per day						100,000,000	104,331,370
FLOAT TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT_CZK-USD_2 years	1	0.02	1	72,523,272	1,115,743	Illiquid	Illiquid
FLOAT-FLOAT_CZK-USD_3 years	2	0.03	2	10,086,264	155,173	Illiquid	Illiquid
FLOAT-FLOAT_CZK-USD_4 years	1	0.02	1	10,026,581	154,255	Illiquid	Illiquid
FLOAT-FLOAT_CZK-USD_5 years	1	0.02	1	27,345,220	420,696	Illiquid	Illiquid
FLOAT-FLOAT_CZK-USD_7 years	1	0.02	1	3,026,204	46,557	Illiquid	Illiquid
FLOAT-FLOAT_CZK-USD_8 years	1	0.02	1	4,861,960	74,799	Illiquid	Illiquid
FLOAT-FLOAT_DKK-EUR_6 months	1	0.02	1	25,000,000	384,615	Illiquid	Illiquid
FLOAT-FLOAT_DKK-EUR_1 year	19	0.29	12	1,308,139,732	20,125,227	Illiquid	Illiquid
FLOAT-FLOAT_DKK-EUR_2 years	21	0.32	14	1,039,147,346	15,986,882	Illiquid	Illiquid
FLOAT-FLOAT_DKK-EUR_3 years	12	0.18	9	378,266,117	5,819,479	Illiquid	Illiquid
FLOAT-FLOAT_DKK-EUR_4 years	10	0.15	6	383,598,138	5,901,510	Illiquid	Illiquid
FLOAT-FLOAT_DKK-EUR_5 years	8	0.12	7	766,088,166	11,785,972	Illiquid	Illiquid
FLOAT-FLOAT_DKK-EUR_6 years	6	0.09	6	386,542,709	5,946,811	Illiquid	Illiquid
FLOAT-FLOAT_DKK-EUR_7 years	3	0.05	2	114,013,064	1,754,047	Illiquid	Illiquid
FLOAT-FLOAT_DKK-EUR_8 years	1	0.02	1	133,999,682	2,061,534	Illiquid	Illiquid
FLOAT-FLOAT_DKK-EUR_12 years	3	0.05	3	106,793,130	1,642,971	Illiquid	Illiquid
FLOAT-FLOAT_DKK-EUR_14 years	1	0.02	1	7,283,357	112,052	Illiquid	Illiquid
FLOAT-FLOAT_DKK-EUR_18 years	1	0.02	1	12,419,963	191,076	Illiquid	Illiquid
FLOAT-FLOAT_DKK-EUR_22 years	2	0.03	2	50,000,000	769,231	Illiquid	Illiquid
FLOAT-FLOAT_DKK-EUR_25 years	1	0.02	1	40,000,000	615,385	Illiquid	Illiquid
FLOAT-FLOAT_DKK-GBP_1 year	4	0.06	3	63,022,780	969,581	Illiquid	Illiquid
FLOAT-FLOAT_DKK-GBP_2 years	6	0.09	4	165,396,990	2,544,569	Illiquid	Illiquid
FLOAT-FLOAT_DKK-GBP_3 years	6	0.09	5	238,243,237	3,665,281	Illiquid	Illiquid
FLOAT-FLOAT_DKK-GBP_4 years	4	0.06	4	122,920,989	1,891,092	Illiquid	Illiquid
FLOAT-FLOAT_DKK-GBP_5 years	5	0.08	5	264,605,447	4,070,853	Illiquid	Illiquid
FLOAT-FLOAT_DKK-GBP_6 years	2	0.03	2	27,936,288	429,789	Illiquid	Illiquid
FLOAT-FLOAT_DKK-GBP_7 years	4	0.06	4	206,345,815	3,174,551	Illiquid	Illiquid
FLOAT-FLOAT_DKK-GBP_8 years	3	0.05	2	175,542,754	2,700,658	Illiquid	Illiquid
FLOAT-FLOAT_DKK-GBP_9 years	4	0.06	4	218,255,107	3,357,771	Illiquid	Illiquid
FLOAT-FLOAT_DKK-GBP_10 years	2	0.03	1	101,934,106	1,568,217	Illiquid	Illiquid
FLOAT-FLOAT_DKK-JPY_3 years	1	0.02	1	11,438,113	175,971	Illiquid	Illiquid
FLOAT-FLOAT_DKK-JPY_5 years	3	0.05	2	17,214,776	264,843	Illiquid	Illiquid
FLOAT-FLOAT_DKK-NOK_1.5 months	1	0.02	1	53,056,341	816,251	Illiquid	Illiquid
FLOAT-FLOAT_DKK-NOK_3 years	2	0.03	2	94,586,821	1,455,182	Illiquid	Illiquid
FLOAT-FLOAT_DKK-NOK_4 years	2	0.03	1	99,480,640	1,530,471	Illiquid	Illiquid
FLOAT-FLOAT_DKK-NOK_5 years	1	0.02	1	53,056,341	816,251	Illiquid	Illiquid
FLOAT-FLOAT_DKK-NOK_10 years	1	0.02	1	64,236,032	988,247	Illiquid	Illiquid
FLOAT-FLOAT_DKK-SEK_1.5 months	1	0.02	1	12,915,221	198,696	Illiquid	Illiquid
FLOAT-FLOAT_DKK-SEK_6 months	4	0.06	3	88,327,527	1,358,885	Illiquid	Illiquid
FLOAT-FLOAT_DKK-SEK_1 year	1	0.02	1	25,992,883	399,891	Illiquid	Illiquid
FLOAT-FLOAT_DKK-SEK_2 years	2	0.03	2	39,887,865	613,659	Illiquid	Illiquid
FLOAT-FLOAT_DKK-SEK_3 years	4	0.06	3	75,833,391	1,166,668	Illiquid	Illiquid
FLOAT-FLOAT_DKK-SEK_4 years	3	0.05	3	40,941,511	629,869	Illiquid	Illiquid
FLOAT-FLOAT_DKK-SEK_5 years	2	0.03	2	39,286,236	604,404	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_3 months	1	0.02	1	84,131,356	1,294,329	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_6 months	12	0.18	10	738,753,431	11,365,437	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_1 year	31	0.48	19	2,235,367,893	34,390,275	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_2 years	32	0.49	25	2,644,301,730	40,681,565	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_3 years	41	0.63	25	3,602,098,154	55,416,895	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_4 years	22	0.34	16	2,850,197,466	43,849,192	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_5 years	26	0.40	17	1,562,964,915	24,045,614	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_6 years	14	0.22	13	1,042,637,968	16,040,584	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_7 years	2	0.03	2	67,552,394	1,039,268	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_8 years	4	0.06	4	258,300,932	3,973,860	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_9 years	4	0.06	4	290,606,270	4,470,866	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_10 years	6	0.09	4	356,243,295	5,480,666	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_11 years	1	0.02	1	120,581,830	1,855,105	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_12 years	5	0.08	4	181,444,918	2,791,460	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_13 years	4	0.06	3	189,555,969	2,916,246	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_14 years	2	0.03	2	20,083,757	308,981	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_15 years	1	0.02	1	13,512,814	207,889	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_16 years	2	0.03	2	100,475,346	1,545,775	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_17 years	1	0.02	1	6,141,996	94,492	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_18 years	1	0.02	1	80,380,276	1,236,620	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD_19 years	3	0.05	2	56,745,699	873,011	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	1.12
Notional Amount per day						100,000,000	104,331,370
FLOAT TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT_DKK-USD 20 years	1	0.02	1	3,089,491	47,531	Illiquid	Illiquid
FLOAT-FLOAT_DKK-USD 22 years	1	0.02	1	6,172,456	94,961	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 1.5 months	8	0.12	8	731,205,778	11,249,320	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 3 months	1	0.02	1	261,864,031	4,028,677	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 6 months	22	0.34	13	2,839,351,951	43,682,338	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 1 year	30	0.46	21	3,670,489,852	56,469,075	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 2 years	55	0.85	25	5,447,783,418	83,812,053	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 3 years	24	0.37	18	2,880,345,011	44,313,000	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 4 years	22	0.34	14	2,780,129,159	42,771,218	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 5 years	23	0.35	17	1,899,376,458	29,221,176	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 6 years	15	0.23	11	1,869,063,245	28,754,819	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 7 years	7	0.11	5	1,228,565,983	18,901,015	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 8 years	14	0.22	14	3,372,878,682	51,890,441	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 9 years	5	0.08	5	666,743,286	10,103,743	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 10 years	2	0.03	2	60,432,651	929,733	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 11 years	1	0.02	1	73,313,783	1,127,904	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 12 years	2	0.03	2	290,323,877	4,466,521	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 13 years	1	0.02	1	70,000,000	1,076,923	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 15 years	1	0.02	1	121,350,126	1,866,925	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 16 years	1	0.02	1	40,000,000	615,385	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 17 years	4	0.06	2	756,575,053	11,639,616	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 18 years	5	0.08	5	868,245,784	13,357,627	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 23 years	1	0.02	1	2,965,800	45,628	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 25 years	3	0.05	3	221,768,186	3,411,818	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 26 years	5	0.08	3	523,200,378	8,049,237	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 28 years	3	0.05	2	174,900,000	2,690,769	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 29 years	3	0.05	1	164,600,000	2,532,308	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 31 years	1	0.02	1	98,500,000	1,515,385	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 32 years	2	0.03	2	308,600,000	4,747,692	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 33 years	1	0.02	1	21,901,007	336,939	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 36 years	3	0.05	1	44,804,912	689,306	Illiquid	Illiquid
FLOAT-FLOAT_EUR-GBP 41 years	1	0.02	1	129,000,000	1,984,615	Illiquid	Illiquid
FLOAT-FLOAT_EUR-HKD 1.5 months	1	0.02	1	46,752,602	719,271	Illiquid	Illiquid
FLOAT-FLOAT_EUR-HKD 6 months	1	0.02	1	31,102,006	478,492	Illiquid	Illiquid
FLOAT-FLOAT_EUR-HUF 1.5 months	1	0.02	1	25,000,000	384,615	Illiquid	Illiquid
FLOAT-FLOAT_EUR-HUF 3 months	8	0.12	3	202,216,806	3,111,028	Illiquid	Illiquid
FLOAT-FLOAT_EUR-HUF 6 months	44	0.68	22	1,547,700,567	23,810,778	Illiquid	Illiquid
FLOAT-FLOAT_EUR-HUF 1 year	19	0.29	9	497,614,830	7,655,613	Illiquid	Illiquid
FLOAT-FLOAT_EUR-HUF 2 years	51	0.78	24	1,744,990,629	26,846,010	Illiquid	Illiquid
FLOAT-FLOAT_EUR-HUF 3 years	55	0.85	26	1,621,477,284	24,945,804	Illiquid	Illiquid
FLOAT-FLOAT_EUR-HUF 4 years	47	0.72	19	1,118,794,534	17,212,224	Illiquid	Illiquid
FLOAT-FLOAT_EUR-HUF 5 years	14	0.22	13	216,991,939	3,338,338	Illiquid	Illiquid
FLOAT-FLOAT_EUR-HUF 6 years	41	0.63	21	795,411,191	12,237,095	Illiquid	Illiquid
FLOAT-FLOAT_EUR-HUF 7 years	5	0.08	3	58,830,511	905,085	Illiquid	Illiquid
FLOAT-FLOAT_EUR-HUF 8 years	10	0.15	6	122,125,021	1,878,846	Illiquid	Illiquid
FLOAT-FLOAT_EUR-HUF 11 years	1	0.02	1	8,480,123	130,463	Illiquid	Illiquid
FLOAT-FLOAT_EUR-JPY 3 months	1	0.02	1	167,883,212	2,582,819	Illiquid	Illiquid
FLOAT-FLOAT_EUR-JPY 6 months	4	0.06	4	334,756,491	5,150,100	Illiquid	Illiquid
FLOAT-FLOAT_EUR-JPY 1 year	7	0.11	6	519,767,793	7,996,428	Illiquid	Illiquid
FLOAT-FLOAT_EUR-JPY 2 years	29	0.45	24	2,236,195,414	34,403,006	Illiquid	Illiquid
FLOAT-FLOAT_EUR-JPY 3 years	17	0.26	13	739,415,516	11,375,623	Illiquid	Illiquid
FLOAT-FLOAT_EUR-JPY 4 years	19	0.29	15	751,985,839	11,569,013	Illiquid	Illiquid
FLOAT-FLOAT_EUR-JPY 5 years	3	0.05	3	950,154,622	14,617,763	Illiquid	Illiquid
FLOAT-FLOAT_EUR-JPY 6 years	3	0.05	3	411,461,099	6,330,171	Illiquid	Illiquid
FLOAT-FLOAT_EUR-JPY 7 years	1	0.02	1	10,643,070	163,740	Illiquid	Illiquid
FLOAT-FLOAT_EUR-JPY 8 years	1	0.02	1	9,814,330	150,990	Illiquid	Illiquid
FLOAT-FLOAT_EUR-JPY 9 years	1	0.02	1	168,588,363	2,593,667	Illiquid	Illiquid
FLOAT-FLOAT_EUR-JPY 10 years	3	0.05	2	221,810,810	3,412,474	Illiquid	Illiquid
FLOAT-FLOAT_EUR-JPY 11 years	2	0.03	2	217,943,827	3,352,982	Illiquid	Illiquid
FLOAT-FLOAT_EUR-MXN 3 years	1	0.02	1	3,121,889	48,029	Illiquid	Illiquid
FLOAT-FLOAT_EUR-MXN 5 years	1	0.02	1	4,717,522	72,577	Illiquid	Illiquid
FLOAT-FLOAT_EUR-NOK 6 months	3	0.05	3	109,541,683	1,685,257	Illiquid	Illiquid
FLOAT-FLOAT_EUR-NOK 1 year	9	0.14	9	791,661,369	12,179,406	Illiquid	Illiquid
FLOAT-FLOAT_EUR-NOK 2 years	17	0.26	13	3,701,460,424	56,945,545	Illiquid	Illiquid
FLOAT-FLOAT_EUR-NOK 3 years	17	0.26	13	1,096,403,100	16,867,740	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
						1.00	1.12
						100,000,000	104,331,370
FLOAT TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT EUR-NOK 4 years	11	0.17	6	729,741,488	11,226,792	Illiquid	Illiquid
FLOAT-FLOAT EUR-NOK 5 years	8	0.12	6	923,302,918	14,204,660	Illiquid	Illiquid
FLOAT-FLOAT EUR-NOK 6 years	1	0.02	1	60,749,413	934,606	Illiquid	Illiquid
FLOAT-FLOAT EUR-NOK 7 years	8	0.12	7	1,764,264,210	27,142,526	Illiquid	Illiquid
FLOAT-FLOAT EUR-NOK 8 years	4	0.06	4	707,719,338	10,887,990	Illiquid	Illiquid
FLOAT-FLOAT EUR-NOK 9 years	1	0.02	1	100,000,000	1,538,462	Illiquid	Illiquid
FLOAT-FLOAT EUR-NOK 10 years	5	0.08	4	349,422,657	5,375,733	Illiquid	Illiquid
FLOAT-FLOAT EUR-NOK 11 years	2	0.03	2	304,092,478	4,678,346	Illiquid	Illiquid
FLOAT-FLOAT EUR-NZD 4 years	1	0.02	1	12,446,675	191,487	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 1.5 months	1	0.02	1	50,000,000	769,231	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 6 months	20	0.31	12	624,977,224	9,615,034	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 1 year	36	0.55	21	2,016,569,830	31,024,151	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 2 years	61	0.94	30	2,783,050,315	42,816,159	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 3 years	84	1.29	37	2,757,957,623	42,430,117	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 4 years	70	1.08	35	1,797,115,200	27,647,926	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 5 years	61	0.94	32	1,661,827,370	25,566,575	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 6 years	49	0.75	28	1,365,855,893	21,013,168	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 7 years	22	0.34	16	467,978,005	7,199,662	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 8 years	36	0.55	20	606,139,492	9,325,223	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 9 years	6	0.09	6	127,564,550	1,962,532	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 10 years	9	0.14	7	309,939,484	4,768,300	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 11 years	4	0.06	2	93,661,309	1,440,943	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 12 years	4	0.06	4	69,373,506	1,067,285	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 13 years	16	0.25	9	291,391,665	4,482,949	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 14 years	2	0.03	1	39,775,790	611,935	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 15 years	2	0.03	2	65,010,618	1,000,163	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 16 years	1	0.02	1	15,100,405	232,314	Illiquid	Illiquid
FLOAT-FLOAT EUR-PLN 17 years	1	0.02	1	24,813,896	381,752	Illiquid	Illiquid
FLOAT-FLOAT EUR-RUB 1 year	3	0.05	3	21,417,973	329,507	Illiquid	Illiquid
FLOAT-FLOAT EUR-RUB 3 years	3	0.05	2	32,390,106	498,309	Illiquid	Illiquid
FLOAT-FLOAT EUR-RUB 4 years	3	0.05	1	40,413,540	621,747	Illiquid	Illiquid
FLOAT-FLOAT EUR-RUB 6 years	1	0.02	1	3,560,381	54,775	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 1.5 months	3	0.05	3	147,028,267	2,261,973	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 3 months	3	0.05	3	135,831,211	2,089,711	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 6 months	5	0.08	4	542,330,358	8,343,544	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 1 year	23	0.35	17	1,983,270,054	30,511,847	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 2 years	66	1.02	34	4,932,492,865	75,884,506	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 3 years	57	0.88	27	6,748,248,477	103,819,207	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 4 years	26	0.40	22	1,810,834,470	27,858,992	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 5 years	27	0.42	18	2,148,081,246	33,047,404	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 6 years	40	0.62	19	3,883,498,339	59,746,128	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 7 years	24	0.37	15	1,980,591,060	30,470,632	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 8 years	13	0.20	6	1,283,526,342	19,746,559	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 9 years	11	0.17	9	438,238,943	6,742,138	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 11 years	6	0.09	6	221,916,726	3,414,103	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 12 years	4	0.06	4	310,822,356	4,781,882	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 13 years	1	0.02	1	13,000,000	200,000	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 15 years	1	0.02	1	77,989,790	1,199,843	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 16 years	3	0.05	2	170,912,008	2,629,416	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 17 years	1	0.02	1	40,000,000	615,385	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 18 years	1	0.02	1	12,000,000	184,615	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 34 years	2	0.03	1	7,923,257	121,896	Illiquid	Illiquid
FLOAT-FLOAT EUR-SEK 42 years	1	0.02	1	140,000,000	2,153,846	Illiquid	Illiquid
FLOAT-FLOAT EUR-SGD 9 years	1	0.02	1	6,453,065	99,278	Illiquid	Illiquid
FLOAT-FLOAT EUR-THB 1 year	1	0.02	1	6,500,000	100,000	Illiquid	Illiquid
FLOAT-FLOAT EUR-THB 3 years	2	0.03	1	19,000,000	292,308	Illiquid	Illiquid
FLOAT-FLOAT EUR-USD 1.5 months	76	1.17	20	10,167,856,294	156,428,558	Liquid	Illiquid
FLOAT-FLOAT EUR-USD 3 months	21	0.32	12	3,213,194,188	49,433,757	Illiquid	Illiquid
FLOAT-FLOAT EUR-USD 6 months	232	3.57	55	42,277,928,196	650,429,665	Liquid	Liquid
FLOAT-FLOAT EUR-USD 1 year	540	8.31	61	83,852,418,810	1,290,037,212	Liquid	Liquid
FLOAT-FLOAT EUR-USD 2 years	1,061	16.32	63	150,559,313,748	2,316,297,135	Liquid	Liquid
FLOAT-FLOAT EUR-USD 3 years	895	13.77	63	111,996,229,952	1,723,018,922	Liquid	Liquid
FLOAT-FLOAT EUR-USD 4 years	718	11.05	62	86,949,947,720	1,337,691,503	Liquid	Liquid
FLOAT-FLOAT EUR-USD 5 years	550	8.46	64	51,530,083,418	792,770,514	Liquid	Liquid
FLOAT-FLOAT EUR-USD 6 years	628	9.66	63	60,325,117,836	928,078,736	Liquid	Liquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	1.12
Notional Amount per day						100,000,000	104,331,370
FLOAT TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT_EUR-USD_7 years	280	4.31	58	22,716,088,948	349,478,292	Liquid	Liquid
FLOAT-FLOAT_EUR-USD_8 years	399	6.14	58	34,375,256,263	528,850,096	Liquid	Liquid
FLOAT-FLOAT_EUR-USD_9 years	218	3.35	54	16,875,053,662	259,616,210	Liquid	Liquid
FLOAT-FLOAT_EUR-USD_10 years	175	2.69	47	12,193,741,870	187,596,029	Liquid	Liquid
FLOAT-FLOAT_EUR-USD_11 years	353	5.43	58	22,149,046,790	340,754,566	Liquid	Liquid
FLOAT-FLOAT_EUR-USD_12 years	48	0.74	31	3,902,415,998	60,037,169	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_13 years	155	2.38	44	12,180,663,718	187,394,826	Liquid	Illiquid
FLOAT-FLOAT_EUR-USD_14 years	60	0.92	29	4,814,807,994	74,073,969	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_15 years	40	0.62	20	1,910,505,408	29,392,391	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_16 years	85	1.31	33	4,497,236,017	69,188,246	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_17 years	26	0.40	17	1,487,546,313	22,885,328	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_18 years	35	0.54	21	2,455,484,108	37,776,679	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_19 years	52	0.80	22	2,844,977,336	43,768,882	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_20 years	23	0.35	13	1,126,665,203	17,333,311	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_21 years	87	1.34	34	3,908,121,986	60,124,954	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_22 years	11	0.17	10	586,459,379	9,022,452	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_23 years	28	0.43	15	3,070,073,372	47,231,898	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_24 years	23	0.35	12	1,559,003,646	23,984,671	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_25 years	16	0.25	14	1,146,260,717	17,634,780	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_26 years	15	0.23	10	1,161,231,777	17,865,104	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_27 years	16	0.25	10	1,110,653,683	17,086,980	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_28 years	32	0.49	15	1,965,590,407	30,239,852	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_29 years	44	0.68	19	2,304,142,039	35,448,339	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_30 years	17	0.26	9	455,723,323	7,011,128	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_31 years	36	0.55	19	1,248,496,763	19,207,643	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_33 years	1	0.02	1	94,287,506	1,450,577	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_35 years	1	0.02	1	206,990,483	3,184,469	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_37 years	1	0.02	1	25,000,000	384,615	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_39 years	8	0.12	7	180,508,253	2,777,050	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_40 years	2	0.03	2	44,622,272	686,496	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_41 years	12	0.18	9	456,821,737	7,028,027	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_46 years	1	0.02	1	115,000,000	1,769,231	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_48 years	2	0.03	1	314,926,471	4,845,023	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_49 years	1	0.02	1	24,772,137	381,110	Illiquid	Illiquid
FLOAT-FLOAT_EUR-USD_51 years	2	0.03	2	80,900,000	1,244,615	Illiquid	Illiquid
FLOAT-FLOAT_EUR-ZAR_2 years	1	0.02	1	8,319,468	127,992	Illiquid	Illiquid
FLOAT-FLOAT_EUR-ZAR_5 years	1	0.02	1	1,600,000	24,615	Illiquid	Illiquid
FLOAT-FLOAT_EUR-ZAR_6 years	4	0.06	4	113,162,928	1,740,968	Illiquid	Illiquid
FLOAT-FLOAT_EUR-ZAR_8 years	1	0.02	1	700,000,000	10,769,231	Illiquid	Illiquid
FLOAT-FLOAT_EUR-ZAR_11 years	3	0.05	2	295,861,640	4,551,718	Illiquid	Illiquid
FLOAT-FLOAT_GBP-HKD_2 years	1	0.02	1	60,675,063	933,463	Illiquid	Illiquid
FLOAT-FLOAT_GBP-JPY_1.5 months	1	0.02	1	1,436,096	22,094	Illiquid	Illiquid
FLOAT-FLOAT_GBP-JPY_3 years	2	0.03	1	121,350,126	1,866,925	Illiquid	Illiquid
FLOAT-FLOAT_GBP-JPY_6 years	1	0.02	1	4,705,836	72,397	Illiquid	Illiquid
FLOAT-FLOAT_GBP-NOK_5 years	1	0.02	1	48,599,530	747,685	Illiquid	Illiquid
FLOAT-FLOAT_GBP-NOK_7 years	1	0.02	1	60,749,413	934,606	Illiquid	Illiquid
FLOAT-FLOAT_GBP-NZD_4 years	1	0.02	1	230,565,239	3,547,158	Illiquid	Illiquid
FLOAT-FLOAT_GBP-SEK_6 months	1	0.02	1	4,426,413	68,099	Illiquid	Illiquid
FLOAT-FLOAT_GBP-SEK_1 year	2	0.03	2	106,166,387	1,633,329	Illiquid	Illiquid
FLOAT-FLOAT_GBP-SEK_2 years	1	0.02	1	23,802,484	366,192	Illiquid	Illiquid
FLOAT-FLOAT_GBP-SEK_3 years	3	0.05	3	65,380,207	1,005,849	Illiquid	Illiquid
FLOAT-FLOAT_GBP-SEK_4 years	2	0.03	2	24,319,445	374,145	Illiquid	Illiquid
FLOAT-FLOAT_GBP-SEK_5 years	1	0.02	1	9,507,178	146,264	Illiquid	Illiquid
FLOAT-FLOAT_GBP-SEK_6 years	1	0.02	1	167,120,978	2,571,092	Illiquid	Illiquid
FLOAT-FLOAT_GBP-USD_1.5 months	28	0.43	12	2,781,245,920	42,788,399	Illiquid	Illiquid
FLOAT-FLOAT_GBP-USD_3 months	3	0.05	3	691,986,513	10,645,946	Illiquid	Illiquid
FLOAT-FLOAT_GBP-USD_6 months	90	1.38	35	14,152,692,200	217,733,726	Liquid	Liquid
FLOAT-FLOAT_GBP-USD_1 year	187	2.88	50	30,623,209,013	471,126,293	Liquid	Liquid
FLOAT-FLOAT_GBP-USD_2 years	252	3.88	56	36,383,199,685	559,741,534	Liquid	Liquid
FLOAT-FLOAT_GBP-USD_3 years	211	3.25	54	24,504,908,199	376,998,588	Liquid	Liquid
FLOAT-FLOAT_GBP-USD_4 years	220	3.38	54	27,091,980,212	416,799,696	Liquid	Liquid
FLOAT-FLOAT_GBP-USD_5 years	151	2.32	47	17,531,562,256	269,716,342	Liquid	Liquid
FLOAT-FLOAT_GBP-USD_6 years	158	2.43	49	14,430,438,461	222,006,746	Liquid	Liquid
FLOAT-FLOAT_GBP-USD_7 years	73	1.12	33	7,594,990,535	116,846,008	Liquid	Liquid
FLOAT-FLOAT_GBP-USD_8 years	75	1.15	35	6,801,175,538	104,633,470	Liquid	Liquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	1.12
Notional Amount per day						100,000,000	104,331,370
FLOAT TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT GBP-USD 9 years	49	0.75	30	4,369,274,561	67,219,609	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 10 years	33	0.51	22	3,257,143,847	50,109,905	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 11 years	63	0.97	30	5,938,103,015	91,355,431	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 12 years	3	0.05	3	189,000,851	2,907,705	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 13 years	40	0.62	19	3,886,793,686	59,796,826	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 14 years	20	0.31	14	1,232,139,234	18,955,988	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 15 years	16	0.25	12	1,076,526,327	16,561,943	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 16 years	58	0.89	22	4,459,986,925	68,615,183	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 17 years	7	0.11	6	388,893,277	5,982,973	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 18 years	13	0.20	8	854,071,830	13,139,567	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 19 years	15	0.23	12	800,165,799	12,310,243	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 20 years	8	0.12	6	441,430,008	6,791,231	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 21 years	29	0.45	19	1,725,568,386	26,547,206	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 22 years	3	0.05	2	175,626,236	2,701,942	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 23 years	7	0.11	6	267,129,798	4,109,689	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 24 years	5	0.08	3	259,867,542	3,997,962	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 25 years	4	0.06	4	2,308,546,563	35,516,101	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 26 years	13	0.20	9	3,236,299,237	49,789,219	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 27 years	11	0.17	7	501,283,630	7,712,056	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 28 years	17	0.26	12	1,505,200,758	23,156,935	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 29 years	16	0.25	10	1,432,852,482	22,043,884	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 30 years	5	0.08	4	210,770,469	3,242,623	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 31 years	39	0.60	21	2,013,098,928	30,970,753	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 32 years	2	0.03	2	106,609,210	1,640,142	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 38 years	6	0.09	4	236,632,745	3,640,504	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 39 years	2	0.03	2	78,877,582	1,213,501	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 40 years	1	0.02	1	24,582,488	378,192	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 41 years	4	0.06	4	1,252,686,487	19,272,100	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 43 years	2	0.03	2	86,194,077	1,326,063	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 48 years	5	0.08	4	282,699,340	4,349,221	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 49 years	2	0.03	2	40,181,519	618,177	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 51 years	3	0.05	2	244,690,290	3,764,466	Illiquid	Illiquid
FLOAT-FLOAT GBP-USD 61 years	2	0.03	2	170,588,197	2,624,434	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 1.5 months	8	0.12	1	492,145,464	7,571,469	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 3 months	4	0.06	2	72,642,390	1,117,575	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 6 months	16	0.25	8	540,500,945	8,315,399	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 1 year	29	0.45	15	1,085,056,916	16,693,183	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 2 years	49	0.75	26	1,762,077,381	27,108,883	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 3 years	35	0.54	20	1,150,972,046	17,707,262	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 4 years	70	1.08	26	2,453,966,425	37,753,330	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 5 years	36	0.55	18	1,186,674,968	18,256,538	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 6 years	39	0.60	14	690,840,468	10,628,315	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 7 years	6	0.09	2	79,845,593	1,228,394	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 8 years	11	0.17	6	136,820,503	2,104,931	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 9 years	8	0.12	6	94,313,317	1,450,974	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 10 years	1	0.02	1	7,252,327	111,574	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 11 years	11	0.17	6	120,575,199	1,855,003	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 13 years	3	0.05	2	20,632,858	317,429	Illiquid	Illiquid
FLOAT-FLOAT HKD-USD 16 years	1	0.02	1	7,250,019	111,539	Illiquid	Illiquid
FLOAT-FLOAT HUF-USD 1 year	2	0.03	2	1,665,661,393	25,625,560	Illiquid	Illiquid
FLOAT-FLOAT IDR-USD 6 years	1	0.02	1	725,233	11,157	Illiquid	Illiquid
FLOAT-FLOAT ILS-USD 6 months	6	0.09	2	174,055,852	2,677,782	Illiquid	Illiquid
FLOAT-FLOAT ILS-USD 2 years	6	0.09	3	437,605,490	6,732,392	Illiquid	Illiquid
FLOAT-FLOAT ILS-USD 3 years	9	0.14	5	201,031,833	3,092,797	Illiquid	Illiquid
FLOAT-FLOAT ILS-USD 4 years	4	0.06	4	91,694,369	1,410,683	Illiquid	Illiquid
FLOAT-FLOAT ILS-USD 5 years	11	0.17	6	289,632,493	4,455,885	Illiquid	Illiquid
FLOAT-FLOAT ILS-USD 6 years	16	0.25	9	347,129,031	5,340,447	Illiquid	Illiquid
FLOAT-FLOAT ILS-USD 7 years	3	0.05	2	67,084,026	1,032,062	Illiquid	Illiquid
FLOAT-FLOAT ILS-USD 8 years	5	0.08	3	66,570,082	1,024,155	Illiquid	Illiquid
FLOAT-FLOAT ILS-USD 9 years	1	0.02	1	3,626,164	55,787	Illiquid	Illiquid
FLOAT-FLOAT ILS-USD 10 years	1	0.02	1	13,416,805	206,412	Illiquid	Illiquid
FLOAT-FLOAT ILS-USD 11 years	11	0.17	7	191,098,821	2,939,982	Illiquid	Illiquid
FLOAT-FLOAT ILS-USD 13 years	2	0.03	2	27,558,843	423,982	Illiquid	Illiquid
FLOAT-FLOAT ILS-USD 14 years	2	0.03	2	42,933,777	660,520	Illiquid	Illiquid
FLOAT-FLOAT ILS-USD 15 years	1	0.02	1	13,779,422	211,991	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	1.12
Notional Amount per day						100,000,000	104,331,370
FLOAT TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT_INR-JPY_3 years	1	0.02	1	8,301,595	127,717	Illiquid	Illiquid
FLOAT-FLOAT_INR-JPY_4 years	2	0.03	1	22,478,165	345,818	Illiquid	Illiquid
FLOAT-FLOAT_JPY-SEK_3 years	1	0.02	1	57,472,580	884,194	Illiquid	Illiquid
FLOAT-FLOAT_JPY-SEK_6 years	2	0.03	2	111,413,985	1,714,061	Illiquid	Illiquid
FLOAT-FLOAT_JPY-SEK_8 years	4	0.06	4	139,267,482	2,142,577	Illiquid	Illiquid
FLOAT-FLOAT_JPY-SEK_9 years	9	0.14	8	417,802,445	6,427,730	Illiquid	Illiquid
FLOAT-FLOAT_JPY-SEK_10 years	5	0.08	4	222,827,971	3,428,123	Illiquid	Illiquid
FLOAT-FLOAT_JPY-SGD_4 years	1	0.02	1	275,388,635	4,236,748	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_1.5 months	85	1.31	20	10,279,478,192	158,145,818	Liquid	Illiquid
FLOAT-FLOAT_JPY-USD_3 months	35	0.54	7	2,772,162,543	42,648,655	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_6 months	293	4.51	55	43,300,581,201	666,162,788	Liquid	Liquid
FLOAT-FLOAT_JPY-USD_1 year	576	8.86	63	77,679,413,804	1,195,067,905	Liquid	Liquid
FLOAT-FLOAT_JPY-USD_2 years	986	15.17	65	93,568,038,790	1,439,508,289	Liquid	Liquid
FLOAT-FLOAT_JPY-USD_3 years	812	12.49	63	64,731,392,201	995,867,572	Liquid	Liquid
FLOAT-FLOAT_JPY-USD_4 years	634	9.75	60	41,374,579,286	636,531,989	Liquid	Liquid
FLOAT-FLOAT_JPY-USD_5 years	348	5.35	56	16,549,149,014	254,602,293	Liquid	Liquid
FLOAT-FLOAT_JPY-USD_6 years	504	7.75	59	21,207,575,984	326,270,400	Liquid	Liquid
FLOAT-FLOAT_JPY-USD_7 years	192	2.95	43	6,781,539,072	104,331,370	Liquid	Liquid
FLOAT-FLOAT_JPY-USD_8 years	233	3.58	46	8,569,777,588	131,842,732	Liquid	Liquid
FLOAT-FLOAT_JPY-USD_9 years	130	2.00	37	2,827,223,140	43,495,741	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_10 years	141	2.17	45	4,423,158,553	68,048,593	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_11 years	187	2.88	55	4,752,079,760	73,108,919	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_12 years	36	0.55	16	1,428,736,147	21,980,556	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_13 years	64	0.98	32	1,865,836,468	28,705,176	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_14 years	32	0.49	17	610,158,054	9,387,047	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_15 years	25	0.38	15	542,460,031	8,345,539	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_16 years	103	1.58	34	2,373,305,581	36,512,394	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_17 years	61	0.94	24	1,269,647,025	19,533,031	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_18 years	42	0.65	18	678,554,722	10,439,303	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_19 years	55	0.85	25	999,290,591	15,373,701	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_20 years	66	1.02	32	1,148,426,892	17,668,106	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_21 years	107	1.65	38	2,526,186,458	38,864,407	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_22 years	44	0.68	20	918,754,886	14,134,691	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_23 years	15	0.23	10	227,840,567	3,505,239	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_24 years	40	0.62	22	861,511,168	13,254,018	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_25 years	34	0.52	18	815,229,865	12,541,998	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_26 years	101	1.55	27	1,969,822,584	30,304,963	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_27 years	21	0.32	9	227,272,082	3,496,494	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_28 years	5	0.08	5	38,569,415	593,376	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_29 years	8	0.12	6	102,228,903	1,572,752	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_30 years	2	0.03	2	19,170,078	294,924	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_31 years	17	0.26	15	235,707,064	3,626,263	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_33 years	1	0.02	1	1,774,303	27,297	Illiquid	Illiquid
FLOAT-FLOAT_JPY-USD_36 years	8	0.12	3	157,768,658	2,427,210	Illiquid	Illiquid
FLOAT-FLOAT_JPY-ZAR_1.5 months	2	0.03	2	10,287,539	158,270	Illiquid	Illiquid
FLOAT-FLOAT_JPY-ZAR_4 years	1	0.02	1	9,927,856	152,736	Illiquid	Illiquid
FLOAT-FLOAT_KRW-USD_2 years	1	0.02	1	76,672,594	1,179,578	Illiquid	Illiquid
FLOAT-FLOAT_KRW-USD_3 years	1	0.02	1	21,756,982	334,723	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_1.5 months	3	0.05	2	21,582,770	332,043	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_3 months	15	0.23	9	194,631,592	2,994,332	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_6 months	26	0.40	13	591,260,327	9,096,313	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_1 year	52	0.80	19	981,179,000	15,095,062	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_2 years	104	1.60	29	1,810,746,503	27,857,639	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_3 years	126	1.94	31	2,251,233,874	34,634,367	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_4 years	92	1.42	33	2,000,751,634	30,780,794	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_5 years	130	2.00	39	2,355,995,916	36,246,091	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_6 years	72	1.11	20	1,193,911,102	18,367,863	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_7 years	68	1.05	30	957,689,323	14,733,682	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_8 years	40	0.62	16	499,079,488	7,678,146	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_9 years	61	0.94	17	1,363,001,039	20,969,247	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_10 years	125	1.92	34	4,282,423,207	65,883,434	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_11 years	17	0.26	12	581,083,087	8,939,740	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_12 years	10	0.15	8	91,968,716	1,414,903	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_13 years	7	0.11	6	59,380,778	913,550	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_14 years	14	0.22	8	171,515,197	2,638,695	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	1.12
Notional Amount per day						100,000,000	104,331,370
FLOAT TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT_MXN-USD_15 years	7	0.11	5	69,565,731	1,070,242	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_16 years	3	0.05	3	40,043,433	616,053	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_17 years	3	0.05	3	41,810,224	643,234	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_18 years	3	0.05	3	23,026,000	354,246	Illiquid	Illiquid
FLOAT-FLOAT_MXN-USD_19 years	2	0.03	2	23,785,494	365,931	Illiquid	Illiquid
FLOAT-FLOAT_NOK-SEK_1 year	4	0.06	2	76,582,117	1,178,186	Illiquid	Illiquid
FLOAT-FLOAT_NOK-SEK_2 years	2	0.03	2	20,253,810	311,597	Illiquid	Illiquid
FLOAT-FLOAT_NOK-SEK_3 years	1	0.02	1	36,449,648	560,764	Illiquid	Illiquid
FLOAT-FLOAT_NOK-SEK_4 years	2	0.03	2	45,524,869	700,383	Illiquid	Illiquid
FLOAT-FLOAT_NOK-SEK_5 years	3	0.05	3	32,127,662	494,272	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_1.5 months	1	0.02	1	60,365,633	928,702	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_3 months	1	0.02	1	30,372,423	467,268	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_6 months	11	0.17	9	1,355,574,064	20,854,986	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_1 year	30	0.46	22	2,922,664,671	44,964,072	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_2 years	56	0.86	29	5,054,223,345	77,757,282	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_3 years	66	1.02	30	4,884,882,495	75,152,038	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_4 years	43	0.66	26	3,095,496,666	47,623,026	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_5 years	16	0.25	15	882,590,009	13,578,308	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_6 years	37	0.57	23	2,589,986,725	39,845,950	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_7 years	18	0.28	15	1,428,616,790	21,978,720	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_8 years	18	0.28	11	1,389,617,190	21,378,726	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_9 years	7	0.11	6	397,776,897	6,119,645	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_10 years	9	0.14	7	479,207,526	7,372,423	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_11 years	3	0.05	3	240,790,584	3,704,471	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_12 years	2	0.03	2	139,414,622	2,144,840	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_13 years	6	0.09	4	274,053,847	4,216,213	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_14 years	4	0.06	3	159,295,584	2,450,701	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_15 years	1	0.02	1	60,749,413	934,606	Illiquid	Illiquid
FLOAT-FLOAT_NOK-USD_16 years	1	0.02	1	50,294,549	773,762	Illiquid	Illiquid
FLOAT-FLOAT_NZD-USD_6 months	9	0.14	4	1,137,877,166	17,505,803	Illiquid	Illiquid
FLOAT-FLOAT_NZD-USD_1 year	36	0.55	20	3,024,646,244	46,533,019	Illiquid	Illiquid
FLOAT-FLOAT_NZD-USD_2 years	38	0.58	18	6,058,330,790	93,205,089	Illiquid	Illiquid
FLOAT-FLOAT_NZD-USD_3 years	27	0.42	15	1,663,148,768	25,586,904	Illiquid	Illiquid
FLOAT-FLOAT_NZD-USD_4 years	23	0.35	12	1,075,096,492	16,539,946	Illiquid	Illiquid
FLOAT-FLOAT_NZD-USD_5 years	11	0.17	6	730,425,277	11,237,312	Illiquid	Illiquid
FLOAT-FLOAT_NZD-USD_6 years	9	0.14	8	231,531,657	3,562,025	Illiquid	Illiquid
FLOAT-FLOAT_NZD-USD_7 years	3	0.05	3	56,867,512	874,885	Illiquid	Illiquid
FLOAT-FLOAT_NZD-USD_8 years	8	0.12	7	216,995,759	3,338,396	Illiquid	Illiquid
FLOAT-FLOAT_NZD-USD_9 years	2	0.03	2	37,340,025	574,462	Illiquid	Illiquid
FLOAT-FLOAT_NZD-USD_10 years	1	0.02	1	31,116,688	478,718	Illiquid	Illiquid
FLOAT-FLOAT_NZD-USD_11 years	2	0.03	2	31,051,128	477,710	Illiquid	Illiquid
FLOAT-FLOAT_NZD-USD_16 years	1	0.02	1	43,563,363	670,206	Illiquid	Illiquid
FLOAT-FLOAT_PLN-USD_1 year	3	0.05	3	1,748,558,869	26,900,906	Illiquid	Illiquid
FLOAT-FLOAT_PLN-USD_4 years	3	0.05	2	137,089,335	2,109,067	Illiquid	Illiquid
FLOAT-FLOAT_PLN-USD_5 years	2	0.03	1	14,326,526	220,408	Illiquid	Illiquid
FLOAT-FLOAT_RUB-SEK_2 years	2	0.03	1	7,946,835	122,259	Illiquid	Illiquid
FLOAT-FLOAT_RUB-SEK_3 years	6	0.09	3	34,180,566	525,855	Illiquid	Illiquid
FLOAT-FLOAT_RUB-SEK_4 years	6	0.09	2	40,487,167	622,879	Illiquid	Illiquid
FLOAT-FLOAT_RUB-SEK_5 years	2	0.03	1	16,270,166	250,310	Illiquid	Illiquid
FLOAT-FLOAT_RUB-USD_6 months	18	0.28	10	283,448,760	4,360,750	Illiquid	Illiquid
FLOAT-FLOAT_RUB-USD_1 year	12	0.18	10	372,124,847	5,724,998	Illiquid	Illiquid
FLOAT-FLOAT_RUB-USD_2 years	51	0.78	24	973,565,078	14,977,924	Illiquid	Illiquid
FLOAT-FLOAT_RUB-USD_3 years	48	0.74	27	912,537,521	14,039,039	Illiquid	Illiquid
FLOAT-FLOAT_RUB-USD_4 years	39	0.60	19	504,220,065	7,757,232	Illiquid	Illiquid
FLOAT-FLOAT_RUB-USD_5 years	12	0.18	10	211,161,684	3,248,641	Illiquid	Illiquid
FLOAT-FLOAT_RUB-USD_6 years	6	0.09	6	74,662,228	1,148,650	Illiquid	Illiquid
FLOAT-FLOAT_RUB-USD_7 years	1	0.02	1	8,702,793	133,889	Illiquid	Illiquid
FLOAT-FLOAT_RUB-USD_8 years	1	0.02	1	7,252,327	111,574	Illiquid	Illiquid
FLOAT-FLOAT_RUB-USD_10 years	3	0.05	2	25,383,145	390,510	Illiquid	Illiquid
FLOAT-FLOAT_SEK-USD_6 months	48	0.74	28	6,557,099,209	100,878,449	Illiquid	Illiquid
FLOAT-FLOAT_SEK-USD_1 year	115	1.77	36	12,682,503,651	195,115,441	Liquid	Illiquid
FLOAT-FLOAT_SEK-USD_2 years	164	2.52	48	22,417,240,128	344,880,617	Liquid	Illiquid
FLOAT-FLOAT_SEK-USD_3 years	73	1.12	38	6,885,065,714	105,924,088	Liquid	Illiquid
FLOAT-FLOAT_SEK-USD_4 years	65	1.00	32	5,150,796,985	79,243,031	Illiquid	Illiquid
FLOAT-FLOAT_SEK-USD_5 years	44	0.68	26	2,704,798,968	41,612,292	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	1.12
Notional Amount per day						100,000,000	104,331,370
FLOAT TO FLOAT MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT_SEK-USD_6 years	44	0.68	30	3,368,988,283	51,830,589	Illiquid	Illiquid
FLOAT-FLOAT_SEK-USD_7 years	37	0.57	18	2,671,851,055	41,105,401	Illiquid	Illiquid
FLOAT-FLOAT_SEK-USD_8 years	21	0.32	17	1,136,858,311	17,490,128	Illiquid	Illiquid
FLOAT-FLOAT_SEK-USD_9 years	14	0.22	8	687,446,323	10,576,097	Illiquid	Illiquid
FLOAT-FLOAT_SEK-USD_10 years	7	0.11	3	448,730,965	6,903,553	Illiquid	Illiquid
FLOAT-FLOAT_SEK-USD_11 years	7	0.11	6	284,463,000	4,376,354	Illiquid	Illiquid
FLOAT-FLOAT_SEK-USD_13 years	1	0.02	1	16,712,098	257,109	Illiquid	Illiquid
FLOAT-FLOAT_SEK-USD_15 years	1	0.02	1	82,574,204	1,270,372	Illiquid	Illiquid
FLOAT-FLOAT_SEK-USD_16 years	5	0.08	3	240,492,469	3,699,884	Illiquid	Illiquid
FLOAT-FLOAT_SEK-USD_18 years	4	0.06	4	55,706,993	857,031	Illiquid	Illiquid
FLOAT-FLOAT_SEK-USD_26 years	1	0.02	1	11,141,399	171,406	Illiquid	Illiquid
FLOAT-FLOAT_SGD-USD_1.5 months	3	0.05	2	316,503,421	4,869,283	Illiquid	Illiquid
FLOAT-FLOAT_SGD-USD_6 months	2	0.03	1	48,994,406	753,760	Illiquid	Illiquid
FLOAT-FLOAT_SGD-USD_1 year	63	0.97	29	5,770,669,551	88,779,532	Illiquid	Illiquid
FLOAT-FLOAT_SGD-USD_2 years	59	0.91	26	3,239,460,716	49,837,857	Illiquid	Illiquid
FLOAT-FLOAT_SGD-USD_3 years	64	0.98	25	2,571,962,779	39,568,658	Illiquid	Illiquid
FLOAT-FLOAT_SGD-USD_4 years	25	0.38	14	486,269,215	7,481,065	Illiquid	Illiquid
FLOAT-FLOAT_SGD-USD_5 years	37	0.57	13	599,470,676	9,222,626	Illiquid	Illiquid
FLOAT-FLOAT_SGD-USD_6 years	50	0.77	14	969,667,254	14,917,958	Illiquid	Illiquid
FLOAT-FLOAT_SGD-USD_7 years	13	0.20	9	167,215,711	2,572,549	Illiquid	Illiquid
FLOAT-FLOAT_SGD-USD_8 years	14	0.22	9	218,307,736	3,358,581	Illiquid	Illiquid
FLOAT-FLOAT_SGD-USD_10 years	4	0.06	3	60,182,434	925,884	Illiquid	Illiquid
FLOAT-FLOAT_SGD-USD_11 years	9	0.14	3	61,760,529	950,162	Illiquid	Illiquid
FLOAT-FLOAT_SGD-USD_13 years	1	0.02	1	7,252,327	111,574	Illiquid	Illiquid
FLOAT-FLOAT_SGD-USD_14 years	2	0.03	1	36,720,644	564,933	Illiquid	Illiquid
FLOAT-FLOAT_SGD-USD_16 years	1	0.02	1	5,764,048	88,678	Illiquid	Illiquid
FLOAT-FLOAT_THB-USD_1.5 months	1	0.02	1	14,504,654	223,149	Illiquid	Illiquid
FLOAT-FLOAT_THB-USD_1 year	9	0.14	5	119,968,711	1,845,672	Illiquid	Illiquid
FLOAT-FLOAT_THB-USD_2 years	4	0.06	3	89,765,419	1,381,006	Illiquid	Illiquid
FLOAT-FLOAT_THB-USD_3 years	11	0.17	7	121,179,680	1,864,303	Illiquid	Illiquid
FLOAT-FLOAT_THB-USD_4 years	9	0.14	8	125,236,007	1,926,708	Illiquid	Illiquid
FLOAT-FLOAT_THB-USD_5 years	13	0.20	8	162,619,029	2,501,831	Illiquid	Illiquid
FLOAT-FLOAT_THB-USD_6 years	16	0.25	11	250,141,851	3,848,336	Illiquid	Illiquid
FLOAT-FLOAT_THB-USD_8 years	18	0.28	10	224,667,130	3,456,417	Illiquid	Illiquid
FLOAT-FLOAT_THB-USD_11 years	4	0.06	3	50,631,653	778,949	Illiquid	Illiquid
FLOAT-FLOAT_TRY-USD_5 years	1	0.02	1	1,622,209	24,957	Illiquid	Illiquid
FLOAT-FLOAT_TWD-USD_3 years	1	0.02	1	7,225,832	111,167	Illiquid	Illiquid
FLOAT-FLOAT_TWD-USD_4 years	1	0.02	1	94,953,713	1,460,826	Illiquid	Illiquid
FLOAT-FLOAT_TZS-USD_2 years	1	0.02	1	210,217	3,234	Illiquid	Illiquid
FLOAT-FLOAT_TZS-USD_4 years	1	0.02	1	2,175,698	33,472	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_1.5 months	8	0.12	2	204,325,605	3,143,471	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_3 months	3	0.05	2	57,910,443	890,930	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_6 months	9	0.14	8	287,880,977	4,428,938	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_1 year	38	0.58	17	1,584,077,156	24,370,418	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_2 years	93	1.43	32	3,038,100,429	46,740,007	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_3 years	52	0.80	22	1,191,121,742	18,324,950	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_4 years	63	0.97	30	1,024,124,667	15,755,764	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_5 years	74	1.14	34	1,094,138,849	16,832,905	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_6 years	109	1.68	35	1,726,345,561	26,559,162	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_7 years	32	0.49	19	552,358,974	8,497,830	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_8 years	47	0.72	18	752,314,296	11,574,066	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_9 years	28	0.43	15	246,548,175	3,793,049	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_10 years	19	0.29	11	329,204,191	5,064,680	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_11 years	54	0.83	17	443,558,304	6,823,974	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_12 years	1	0.02	1	145,046,544	2,231,485	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_13 years	5	0.08	3	65,011,912	1,000,183	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_15 years	2	0.03	1	20,838,439	320,591	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_16 years	20	0.31	9	386,500,155	5,946,156	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_21 years	9	0.14	3	122,777,775	1,888,889	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_26 years	2	0.03	1	21,706,707	333,949	Illiquid	Illiquid
FLOAT-FLOAT_USD-ZAR_31 years	4	0.06	1	43,644,302	671,451	Illiquid	Illiquid

Table 33: Float to Float Multi-currency swaps liquidity assessment

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	
Notional Amount per day						100,000,000	
FIXED TO FIXED MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FIXED AED-USD 3 years	6	0.09	4	72,522,882	1,115,737	Illiquid	Illiquid
FIXED-FIXED AUD-CAD 10 years	1	0.02	1	32,979,144	507,371	Illiquid	Illiquid
FIXED-FIXED AUD-EUR 6 years	2	0.03	1	3,200,000	49,231	Illiquid	Illiquid
FIXED-FIXED AUD-EUR 7 years	1	0.02	1	14,463,910	222,522	Illiquid	Illiquid
FIXED-FIXED AUD-GBP 6 years	2	0.03	1	63,382,024	975,108	Illiquid	Illiquid
FIXED-FIXED AUD-JPY 11 years	1	0.02	1	46,865,973	721,015	Illiquid	Illiquid
FIXED-FIXED AUD-JPY 17 years	1	0.02	1	42,972,651	661,118	Illiquid	Illiquid
FIXED-FIXED AUD-JPY 20 years	1	0.02	1	3,661,216	56,326	Illiquid	Illiquid
FIXED-FIXED AUD-JPY 25 years	1	0.02	1	35,349,202	543,834	Illiquid	Illiquid
FIXED-FIXED AUD-JPY 29 years	1	0.02	1	7,095,380	109,160	Illiquid	Illiquid
FIXED-FIXED AUD-JPY 30 years	1	0.02	1	8,550,625	131,548	Illiquid	Illiquid
FIXED-FIXED AUD-USD 3 months	2	0.03	1	1,391,026,087	21,400,401	Illiquid	Illiquid
FIXED-FIXED AUD-USD 6 months	1	0.02	1	2,678,056	41,201	Illiquid	Illiquid
FIXED-FIXED AUD-USD 5 years	1	0.02	1	5,409,205	83,219	Illiquid	Illiquid
FIXED-FIXED AUD-USD 6 years	3	0.05	2	77,769,800	1,196,458	Illiquid	Illiquid
FIXED-FIXED AUD-USD 8 years	3	0.05	2	3,553,640	54,671	Illiquid	Illiquid
FIXED-FIXED AUD-USD 10 years	1	0.02	1	36,261,636	557,871	Illiquid	Illiquid
FIXED-FIXED AUD-USD 11 years	3	0.05	2	27,833,918	428,214	Illiquid	Illiquid
FIXED-FIXED AUD-USD 14 years	2	0.03	1	6,860,530	105,547	Illiquid	Illiquid
FIXED-FIXED AUD-USD 17 years	1	0.02	1	7,252,327	111,574	Illiquid	Illiquid
FIXED-FIXED AUD-USD 18 years	1	0.02	1	2,108,969	32,446	Illiquid	Illiquid
FIXED-FIXED AUD-USD 24 years	2	0.03	1	14,504,654	223,149	Illiquid	Illiquid
FIXED-FIXED AUD-USD 28 years	1	0.02	1	3,682,326	56,651	Illiquid	Illiquid
FIXED-FIXED AUD-USD 29 years	1	0.02	1	7,252,327	111,574	Illiquid	Illiquid
FIXED-FIXED BOB-USD 3 years	1	0.02	1	362,616	5,579	Illiquid	Illiquid
FIXED-FIXED BRL-EUR 1.5 months	1	0.02	1	37,622,279	578,804	Illiquid	Illiquid
FIXED-FIXED BRL-EUR 6 months	2	0.03	2	112,205,009	1,726,231	Illiquid	Illiquid
FIXED-FIXED BRL-EUR 2 years	4	0.06	3	391,056,015	6,016,246	Illiquid	Illiquid
FIXED-FIXED BRL-EUR 3 years	3	0.05	3	29,453,754	453,135	Illiquid	Illiquid
FIXED-FIXED BRL-EUR 4 years	1	0.02	1	1,000,000	15,385	Illiquid	Illiquid
FIXED-FIXED BRL-JPY 2 years	2	0.03	1	13,561,554	208,639	Illiquid	Illiquid
FIXED-FIXED BRL-USD 1.5 months	3	0.05	1	362,616,359	5,578,713	Illiquid	Illiquid
FIXED-FIXED BRL-USD 2 years	1	0.02	1	117,302,579	1,804,655	Illiquid	Illiquid
FIXED-FIXED BRL-USD 4 years	1	0.02	1	651,751	10,027	Illiquid	Illiquid
FIXED-FIXED CAD-GBP 4 years	1	0.02	1	281,971,685	4,338,026	Illiquid	Illiquid
FIXED-FIXED CAD-GBP 6 years	1	0.02	1	91,467,657	1,407,195	Illiquid	Illiquid
FIXED-FIXED CAD-USD 1.5 months	2	0.03	2	116,084,712	1,785,919	Illiquid	Illiquid
FIXED-FIXED CAD-USD 1 year	2	0.03	1	13,132,295	202,035	Illiquid	Illiquid
FIXED-FIXED CAD-USD 2 years	4	0.06	3	80,935,256	1,245,158	Illiquid	Illiquid
FIXED-FIXED CAD-USD 3 years	2	0.03	1	7,545,463	116,084	Illiquid	Illiquid
FIXED-FIXED CAD-USD 4 years	6	0.09	2	129,673,320	1,994,974	Illiquid	Illiquid
FIXED-FIXED CAD-USD 5 years	3	0.05	3	34,578,766	531,981	Illiquid	Illiquid
FIXED-FIXED CAD-USD 6 years	3	0.05	2	25,246,223	388,403	Illiquid	Illiquid
FIXED-FIXED CAD-USD 7 years	3	0.05	1	36,691,759	564,489	Illiquid	Illiquid
FIXED-FIXED CAD-USD 8 years	6	0.09	2	429,252,936	6,603,891	Illiquid	Illiquid
FIXED-FIXED CAD-USD 10 years	3	0.05	1	26,423,946	406,522	Illiquid	Illiquid
FIXED-FIXED CAD-USD 11 years	7	0.11	2	132,777,154	2,042,725	Illiquid	Illiquid
FIXED-FIXED CAD-USD 13 years	1	0.02	1	10,530,794	162,012	Illiquid	Illiquid
FIXED-FIXED CAD-USD 14 years	1	0.02	1	19,509,945	300,153	Illiquid	Illiquid
FIXED-FIXED CAD-USD 15 years	1	0.02	1	3,563,074	54,817	Illiquid	Illiquid
FIXED-FIXED CAD-USD 17 years	1	0.02	1	18,130,818	278,936	Illiquid	Illiquid
FIXED-FIXED CAD-USD 18 years	1	0.02	1	3,928,905	60,445	Illiquid	Illiquid
FIXED-FIXED CAD-USD 19 years	1	0.02	1	1,367,919	21,045	Illiquid	Illiquid
FIXED-FIXED CAD-USD 22 years	1	0.02	1	10,337,809	159,043	Illiquid	Illiquid
FIXED-FIXED CAD-USD 26 years	1	0.02	1	5,076,629	78,102	Illiquid	Illiquid
FIXED-FIXED CAD-USD 27 years	1	0.02	1	3,357,277	51,650	Illiquid	Illiquid
FIXED-FIXED CAD-USD 33 years	2	0.03	1	31,190,889	479,860	Illiquid	Illiquid
FIXED-FIXED CHF-EUR 1.5 months	1	0.02	1	123,049,891	1,893,075	Illiquid	Illiquid
FIXED-FIXED CHF-EUR 3 years	2	0.03	1	41,016,630	631,025	Illiquid	Illiquid
FIXED-FIXED CHF-EUR 4 years	5	0.08	5	41,124,088	632,678	Illiquid	Illiquid
FIXED-FIXED CHF-EUR 5 years	4	0.06	3	438,634,443	6,748,222	Illiquid	Illiquid
FIXED-FIXED CHF-EUR 11 years	1	0.02	1	24,671,661	379,564	Illiquid	Illiquid
FIXED-FIXED CHF-KRW 5 years	1	0.02	1	41,016,630	631,025	Illiquid	Illiquid
FIXED-FIXED CHF-USD 5 years	1	0.02	1	8,203,326	126,205	Illiquid	Illiquid
FIXED-FIXED CHF-USD 6 years	6	0.09	4	865,032,963	13,308,199	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	
Notional Amount per day						100,000,000	
FIXED TO FIXED MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FIXED CHF-USD 9 years	3	0.05	1	471,401,267	7,252,327	Illiquid	Illiquid
FIXED-FIXED CHF-USD 10 years	3	0.05	2	203,065,161	3,124,079	Illiquid	Illiquid
FIXED-FIXED CHF-USD 11 years	4	0.06	2	615,257,754	9,465,504	Illiquid	Illiquid
FIXED-FIXED CHF-USD 16 years	1	0.02	1	123,049,891	1,893,075	Illiquid	Illiquid
FIXED-FIXED CLP-EUR 2 years	1	0.02	1	112,420,501	1,729,546	Illiquid	Illiquid
FIXED-FIXED CLP-USD 7 years	1	0.02	1	19,410,667	298,626	Illiquid	Illiquid
FIXED-FIXED CLP-USD 8 years	3	0.05	2	499,368,053	7,682,585	Illiquid	Illiquid
FIXED-FIXED CNH-JPY 2 years	1	0.02	1	7,123,654	109,595	Illiquid	Illiquid
FIXED-FIXED CNY-EUR 1 year	3	0.05	2	233,501,561	3,592,332	Illiquid	Illiquid
FIXED-FIXED CNY-EUR 2 years	1	0.02	1	11,698,232	179,973	Illiquid	Illiquid
FIXED-FIXED CNY-EUR 3 years	1	0.02	1	58,421,452	898,792	Illiquid	Illiquid
FIXED-FIXED CNY-EUR 6 years	2	0.03	2	18,544,178	285,295	Illiquid	Illiquid
FIXED-FIXED CNY-HKD 2 years	1	0.02	1	8,756,309	134,712	Illiquid	Illiquid
FIXED-FIXED CNY-HKD 3 years	5	0.08	3	107,642,096	1,656,032	Illiquid	Illiquid
FIXED-FIXED CNY-JPY 1 year	1	0.02	1	2,942,120	45,263	Illiquid	Illiquid
FIXED-FIXED CNY-USD 1 year	3	0.05	3	8,639,943	132,922	Illiquid	Illiquid
FIXED-FIXED CNY-USD 2 years	12	0.18	9	148,859,955	2,290,153	Illiquid	Illiquid
FIXED-FIXED CNY-USD 3 years	15	0.23	11	228,107,596	3,509,348	Illiquid	Illiquid
FIXED-FIXED CNY-USD 4 years	1	0.02	1	7,787,277	119,804	Illiquid	Illiquid
FIXED-FIXED COP-USD 3 years	2	0.03	2	9,018,106	138,740	Illiquid	Illiquid
FIXED-FIXED COP-USD 8 years	1	0.02	1	359,171,479	5,525,715	Illiquid	Illiquid
FIXED-FIXED CZK-EUR 2 years	3	0.05	3	25,157,603	387,040	Illiquid	Illiquid
FIXED-FIXED CZK-USD 1 year	5	0.08	4	305,549,381	4,700,760	Illiquid	Illiquid
FIXED-FIXED CZK-USD 2 years	4	0.06	4	18,438,726	283,673	Illiquid	Illiquid
FIXED-FIXED DKK-EUR 1.5 months	2	0.03	1	140,000,000	2,153,846	Illiquid	Illiquid
FIXED-FIXED DKK-EUR 3 months	1	0.02	1	64,308,682	989,364	Illiquid	Illiquid
FIXED-FIXED DKK-EUR 6 months	5	0.08	5	121,937,222	1,875,957	Illiquid	Illiquid
FIXED-FIXED DKK-EUR 2 years	1	0.02	1	6,703,311	103,128	Illiquid	Illiquid
FIXED-FIXED DKK-EUR 3 years	2	0.03	2	27,349,439	420,761	Illiquid	Illiquid
FIXED-FIXED DKK-EUR 4 years	3	0.05	1	1,474,125	22,679	Illiquid	Illiquid
FIXED-FIXED DKK-EUR 5 years	2	0.03	2	40,234,795	618,997	Illiquid	Illiquid
FIXED-FIXED DKK-EUR 10 years	1	0.02	1	5,000,000	76,923	Illiquid	Illiquid
FIXED-FIXED DKK-GBP 5 years	1	0.02	1	13,948,290	214,589	Illiquid	Illiquid
FIXED-FIXED DKK-USD 3 months	1	0.02	1	134,327,231	2,066,573	Illiquid	Illiquid
FIXED-FIXED DKK-USD 10 years	1	0.02	1	14,101,747	216,950	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 1.5 months	1	0.02	1	75,591,741	1,162,950	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 1 year	1	0.02	1	56,915,196	875,618	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 2 years	4	0.06	2	149,291,910	2,296,799	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 3 years	6	0.09	3	154,928,933	2,383,522	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 4 years	14	0.22	4	1,168,532,244	17,977,419	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 5 years	7	0.11	2	1,443,900,175	22,213,849	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 6 years	7	0.11	6	455,428,978	7,006,600	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 7 years	2	0.03	2	219,425,298	3,375,774	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 8 years	4	0.06	3	102,942,035	1,583,724	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 9 years	2	0.03	2	55,214,307	849,451	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 10 years	1	0.02	1	14,367,816	221,043	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 11 years	5	0.08	3	137,547,619	2,116,117	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 12 years	2	0.03	2	116,298,141	1,789,202	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 15 years	1	0.02	1	159,108,990	2,447,831	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 16 years	3	0.05	2	334,254,336	5,142,374	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 20 years	1	0.02	1	60,675,063	933,463	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 21 years	1	0.02	1	860,090	13,232	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 26 years	3	0.05	1	99,879,975	1,536,615	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 27 years	3	0.05	2	254,305,493	3,912,392	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 28 years	1	0.02	1	5,000,000	76,923	Illiquid	Illiquid
FIXED-FIXED EUR-GBP 47 years	4	0.06	1	469,139,587	7,217,532	Illiquid	Illiquid
FIXED-FIXED EUR-INR 5 years	1	0.02	1	1,264,087	19,447	Illiquid	Illiquid
FIXED-FIXED EUR-JPY 1.5 months	1	0.02	1	7,321,079	112,632	Illiquid	Illiquid
FIXED-FIXED EUR-JPY 2 years	1	0.02	1	21,286,141	327,479	Illiquid	Illiquid
FIXED-FIXED EUR-JPY 3 years	2	0.03	1	289,336,155	4,451,325	Illiquid	Illiquid
FIXED-FIXED EUR-JPY 4 years	3	0.05	3	23,673,381	364,206	Illiquid	Illiquid
FIXED-FIXED EUR-JPY 6 years	1	0.02	1	74,638,006	1,148,277	Illiquid	Illiquid
FIXED-FIXED EUR-JPY 10 years	2	0.03	2	7,139,017	109,831	Illiquid	Illiquid
FIXED-FIXED EUR-JPY 11 years	2	0.03	2	4,969,250	76,450	Illiquid	Illiquid
FIXED-FIXED EUR-JPY 13 years	5	0.08	2	177,384,506	2,728,992	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	
Notional Amount per day						100,000,000	
FIXED TO FIXED MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FIXED EUR-JPY 22 years	1	0.02	1	243,200,000	3,741,538	Illiquid	Illiquid
FIXED-FIXED EUR-JPY 25 years	1	0.02	1	141,907,604	2,183,194	Illiquid	Illiquid
FIXED-FIXED EUR-JPY 26 years	2	0.03	1	121,040,000	1,862,154	Illiquid	Illiquid
FIXED-FIXED EUR-KHR 3 years	1	0.02	1	1,081,081	16,632	Illiquid	Illiquid
FIXED-FIXED EUR-KRW 6 years	1	0.02	1	2,800,000	43,077	Illiquid	Illiquid
FIXED-FIXED EUR-KZT 5 years	1	0.02	1	2,900,278	44,620	Illiquid	Illiquid
FIXED-FIXED EUR-MXN 2 years	1	0.02	1	2,284,409	35,145	Illiquid	Illiquid
FIXED-FIXED EUR-MXN 5 years	2	0.03	2	34,021,656	523,410	Illiquid	Illiquid
FIXED-FIXED EUR-MXN 13 years	2	0.03	1	7,016,897	107,952	Illiquid	Illiquid
FIXED-FIXED EUR-MXN 15 years	1	0.02	1	4,894,429	75,299	Illiquid	Illiquid
FIXED-FIXED EUR-MYR 5 years	1	0.02	1	4,540,811	69,859	Illiquid	Illiquid
FIXED-FIXED EUR-NOK 6 months	4	0.06	4	206,688,475	3,179,823	Illiquid	Illiquid
FIXED-FIXED EUR-NOK 2 years	1	0.02	1	26,441,736	406,796	Illiquid	Illiquid
FIXED-FIXED EUR-NOK 7 years	2	0.03	2	150,633,019	2,317,431	Illiquid	Illiquid
FIXED-FIXED EUR-NOK 8 years	2	0.03	1	150,000,000	2,307,692	Illiquid	Illiquid
FIXED-FIXED EUR-NOK 13 years	1	0.02	1	60,749,413	934,606	Illiquid	Illiquid
FIXED-FIXED EUR-NZD 4 years	1	0.02	1	40,500,000	623,077	Illiquid	Illiquid
FIXED-FIXED EUR-NZD 7 years	1	0.02	1	1,442,006	22,185	Illiquid	Illiquid
FIXED-FIXED EUR-NZD 8 years	1	0.02	1	1,244,668	19,149	Illiquid	Illiquid
FIXED-FIXED EUR-PEN 1 year	1	0.02	1	740,000	11,385	Illiquid	Illiquid
FIXED-FIXED EUR-PLN 3 months	1	0.02	1	3,581,632	55,102	Illiquid	Illiquid
FIXED-FIXED EUR-PLN 3 years	3	0.05	1	3,135,488	48,238	Illiquid	Illiquid
FIXED-FIXED EUR-PLN 4 years	4	0.06	3	102,387,754	1,575,196	Illiquid	Illiquid
FIXED-FIXED EUR-PLN 5 years	2	0.03	2	18,388,256	282,896	Illiquid	Illiquid
FIXED-FIXED EUR-RUB 1 year	3	0.05	3	7,873,078	121,124	Illiquid	Illiquid
FIXED-FIXED EUR-RUB 2 years	5	0.08	4	39,277,473	604,269	Illiquid	Illiquid
FIXED-FIXED EUR-RUB 3 years	3	0.05	2	23,019,903	354,152	Illiquid	Illiquid
FIXED-FIXED EUR-RUB 4 years	1	0.02	1	1,019,903	15,691	Illiquid	Illiquid
FIXED-FIXED EUR-RUB 5 years	1	0.02	1	23,523,877	361,906	Illiquid	Illiquid
FIXED-FIXED EUR-RUB 10 years	1	0.02	1	3,407,740	52,427	Illiquid	Illiquid
FIXED-FIXED EUR-SEK 1.5 months	2	0.03	2	10,360,374	159,390	Illiquid	Illiquid
FIXED-FIXED EUR-SEK 6 months	2	0.03	2	107,417,997	1,652,585	Illiquid	Illiquid
FIXED-FIXED EUR-SEK 2 years	1	0.02	1	221,650	3,410	Illiquid	Illiquid
FIXED-FIXED EUR-SEK 3 years	2	0.03	2	628,100	9,663	Illiquid	Illiquid
FIXED-FIXED EUR-SEK 4 years	5	0.08	4	1,031,688	15,872	Illiquid	Illiquid
FIXED-FIXED EUR-SEK 5 years	18	0.28	15	7,320,865	112,629	Illiquid	Illiquid
FIXED-FIXED EUR-SEK 6 years	74	1.14	31	19,256,845	296,259	Illiquid	Illiquid
FIXED-FIXED EUR-SEK 7 years	6	0.09	4	5,798,300	89,205	Illiquid	Illiquid
FIXED-FIXED EUR-SEK 21 years	4	0.06	1	40,000,000	615,385	Illiquid	Illiquid
FIXED-FIXED EUR-SGD 10 years	4	0.06	3	80,696,669	1,241,487	Illiquid	Illiquid
FIXED-FIXED EUR-TRY 2 years	4	0.06	4	52,383,847	805,905	Illiquid	Illiquid
FIXED-FIXED EUR-TRY 8 years	1	0.02	1	2,000,000	30,769	Illiquid	Illiquid
FIXED-FIXED EUR-TRY 11 years	1	0.02	1	2,963,174	45,587	Illiquid	Illiquid
FIXED-FIXED EUR-USD 1.5 months	1	0.02	1	239,326,797	3,681,951	Illiquid	Illiquid
FIXED-FIXED EUR-USD 3 months	2	0.03	1	7,418,223	114,127	Illiquid	Illiquid
FIXED-FIXED EUR-USD 6 months	5	0.08	4	203,775,193	3,135,003	Illiquid	Illiquid
FIXED-FIXED EUR-USD 1 year	17	0.26	5	309,218,401	4,757,206	Illiquid	Illiquid
FIXED-FIXED EUR-USD 2 years	15	0.23	5	1,136,526,773	17,485,027	Illiquid	Illiquid
FIXED-FIXED EUR-USD 3 years	37	0.57	12	3,123,066,847	48,047,182	Illiquid	Illiquid
FIXED-FIXED EUR-USD 4 years	12	0.18	6	472,774,477	7,273,453	Illiquid	Illiquid
FIXED-FIXED EUR-USD 5 years	38	0.58	15	2,512,705,134	38,657,002	Illiquid	Illiquid
FIXED-FIXED EUR-USD 6 years	113	1.74	18	21,891,115,585	336,786,394	Liquid	Illiquid
FIXED-FIXED EUR-USD 7 years	13	0.20	7	339,940,857	5,229,859	Illiquid	Illiquid
FIXED-FIXED EUR-USD 8 years	33	0.51	13	2,235,277,531	34,388,885	Illiquid	Illiquid
FIXED-FIXED EUR-USD 9 years	80	1.23	12	15,716,125,788	241,786,551	Liquid	Illiquid
FIXED-FIXED EUR-USD 10 years	9	0.14	7	582,518,512	8,961,823	Illiquid	Illiquid
FIXED-FIXED EUR-USD 11 years	25	0.38	10	3,132,343,115	48,189,894	Illiquid	Illiquid
FIXED-FIXED EUR-USD 12 years	4	0.06	3	488,790,480	7,519,854	Illiquid	Illiquid
FIXED-FIXED EUR-USD 13 years	9	0.14	7	1,248,589,430	19,209,068	Illiquid	Illiquid
FIXED-FIXED EUR-USD 15 years	1	0.02	1	181,308,179	2,789,357	Illiquid	Illiquid
FIXED-FIXED EUR-USD 16 years	2	0.03	2	40,613,032	624,816	Illiquid	Illiquid
FIXED-FIXED EUR-USD 22 years	1	0.02	1	36,261,636	557,871	Illiquid	Illiquid
FIXED-FIXED EUR-USD 25 years	6	0.09	2	582,067,664	8,954,887	Illiquid	Illiquid
FIXED-FIXED EUR-USD 31 years	2	0.03	2	195,812,834	3,012,505	Illiquid	Illiquid
FIXED-FIXED EUR-ZAR 11 years	1	0.02	1	71,265,028	1,096,385	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	
Notional Amount per day						100,000,000	
FIXED TO FIXED MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FIXED GBP-INR 10 years	1	0.02	1	4,854,005	74,677	Illiquid	Illiquid
FIXED-FIXED GBP-JPY 11 years	1	0.02	1	4,881,054	75,093	Illiquid	Illiquid
FIXED-FIXED GBP-KRW 6 years	3	0.05	2	83,932,735	1,291,273	Illiquid	Illiquid
FIXED-FIXED GBP-MXN 10 years	1	0.02	1	6,171,628	94,948	Illiquid	Illiquid
FIXED-FIXED GBP-SEK 3 years	1	0.02	1	256,898	3,952	Illiquid	Illiquid
FIXED-FIXED GBP-SEK 4 years	13	0.20	11	2,591,167	39,864	Illiquid	Illiquid
FIXED-FIXED GBP-USD 1.5 months	2	0.03	2	149,031,212	2,292,788	Illiquid	Illiquid
FIXED-FIXED GBP-USD 3 months	1	0.02	1	242,700,252	3,733,850	Illiquid	Illiquid
FIXED-FIXED GBP-USD 6 months	2	0.03	2	25,469,186	391,834	Illiquid	Illiquid
FIXED-FIXED GBP-USD 1 year	1	0.02	1	1,238,029	19,047	Illiquid	Illiquid
FIXED-FIXED GBP-USD 2 years	5	0.08	4	487,408,128	7,498,587	Illiquid	Illiquid
FIXED-FIXED GBP-USD 3 years	10	0.15	4	216,670,989	3,333,400	Illiquid	Illiquid
FIXED-FIXED GBP-USD 4 years	27	0.42	9	1,699,273,354	26,142,667	Illiquid	Illiquid
FIXED-FIXED GBP-USD 5 years	17	0.26	9	459,070,041	7,062,616	Illiquid	Illiquid
FIXED-FIXED GBP-USD 6 years	36	0.55	15	2,737,531,112	42,115,863	Illiquid	Illiquid
FIXED-FIXED GBP-USD 7 years	5	0.08	3	283,465,911	4,361,014	Illiquid	Illiquid
FIXED-FIXED GBP-USD 8 years	10	0.15	6	358,204,516	5,510,839	Illiquid	Illiquid
FIXED-FIXED GBP-USD 9 years	7	0.11	4	304,121,616	4,678,794	Illiquid	Illiquid
FIXED-FIXED GBP-USD 10 years	5	0.08	1	118,444,613	1,822,225	Illiquid	Illiquid
FIXED-FIXED GBP-USD 11 years	7	0.11	5	211,799,622	3,258,456	Illiquid	Illiquid
FIXED-FIXED GBP-USD 12 years	4	0.06	1	279,105,290	4,293,928	Illiquid	Illiquid
FIXED-FIXED GBP-USD 13 years	12	0.18	5	396,283,015	6,096,662	Illiquid	Illiquid
FIXED-FIXED GBP-USD 15 years	4	0.06	2	118,082,391	1,816,652	Illiquid	Illiquid
FIXED-FIXED GBP-USD 16 years	1	0.02	1	11,743,453	180,669	Illiquid	Illiquid
FIXED-FIXED GBP-USD 17 years	3	0.05	1	60,540,338	931,390	Illiquid	Illiquid
FIXED-FIXED GBP-USD 18 years	1	0.02	1	27,848,936	428,445	Illiquid	Illiquid
FIXED-FIXED GBP-USD 19 years	1	0.02	1	6,934,293	106,681	Illiquid	Illiquid
FIXED-FIXED GBP-USD 20 years	2	0.03	1	108,204,721	1,664,688	Illiquid	Illiquid
FIXED-FIXED GBP-USD 21 years	1	0.02	1	15,360,775	236,320	Illiquid	Illiquid
FIXED-FIXED GBP-USD 23 years	3	0.05	2	18,705,811	287,782	Illiquid	Illiquid
FIXED-FIXED GBP-USD 24 years	2	0.03	2	7,252,327	111,574	Illiquid	Illiquid
FIXED-FIXED GBP-USD 25 years	6	0.09	3	1,847,039,850	28,415,998	Illiquid	Illiquid
FIXED-FIXED GBP-USD 26 years	2	0.03	2	65,739,433	1,011,376	Illiquid	Illiquid
FIXED-FIXED GBP-USD 27 years	1	0.02	1	18,901,889	290,798	Illiquid	Illiquid
FIXED-FIXED GBP-USD 28 years	1	0.02	1	7,816,162	120,249	Illiquid	Illiquid
FIXED-FIXED GBP-USD 29 years	1	0.02	1	12,135,013	186,693	Illiquid	Illiquid
FIXED-FIXED GBP-USD 30 years	1	0.02	1	28,900,524	444,623	Illiquid	Illiquid
FIXED-FIXED GBP-USD 31 years	1	0.02	1	3,759,065	57,832	Illiquid	Illiquid
FIXED-FIXED GBP-USD 38 years	1	0.02	1	54,208,736	833,981	Illiquid	Illiquid
FIXED-FIXED GBP-ZAR 5 years	2	0.03	1	357,230,073	5,495,847	Illiquid	Illiquid
FIXED-FIXED HKD-USD 8 years	3	0.05	3	85,678,912	1,318,137	Illiquid	Illiquid
FIXED-FIXED HKD-USD 9 years	2	0.03	1	7,259,791	111,689	Illiquid	Illiquid
FIXED-FIXED HKD-USD 10 years	1	0.02	1	3,629,895	55,845	Illiquid	Illiquid
FIXED-FIXED IDR-USD 3 years	1	0.02	1	7,215,633	111,010	Illiquid	Illiquid
FIXED-FIXED IDR-USD 7 years	1	0.02	1	12,260,440	188,622	Illiquid	Illiquid
FIXED-FIXED ILS-USD 11 years	1	0.02	1	49,513,055	761,739	Illiquid	Illiquid
FIXED-FIXED INR-JPY 5 years	2	0.03	1	14,561,128	224,017	Illiquid	Illiquid
FIXED-FIXED INR-JPY 10 years	3	0.05	2	39,816,225	612,557	Illiquid	Illiquid
FIXED-FIXED INR-USD 2 years	2	0.03	2	5,900,202	90,772	Illiquid	Illiquid
FIXED-FIXED INR-USD 6 years	3	0.05	3	14,695,025	226,077	Illiquid	Illiquid
FIXED-FIXED JPY-KRW 5 years	1	0.02	1	1,404,191	21,603	Illiquid	Illiquid
FIXED-FIXED JPY-USD 1 year	4	0.06	4	116,244,437	1,788,376	Illiquid	Illiquid
FIXED-FIXED JPY-USD 2 years	3	0.05	3	92,828,286	1,428,127	Illiquid	Illiquid
FIXED-FIXED JPY-USD 3 years	2	0.03	2	136,861,212	2,105,557	Illiquid	Illiquid
FIXED-FIXED JPY-USD 4 years	4	0.06	4	82,485,537	1,269,008	Illiquid	Illiquid
FIXED-FIXED JPY-USD 5 years	2	0.03	2	9,706,218	149,326	Illiquid	Illiquid
FIXED-FIXED JPY-USD 6 years	9	0.14	9	553,297,754	8,512,273	Illiquid	Illiquid
FIXED-FIXED JPY-USD 7 years	1	0.02	1	7,252,327	111,574	Illiquid	Illiquid
FIXED-FIXED JPY-USD 9 years	2	0.03	2	23,140,187	356,003	Illiquid	Illiquid
FIXED-FIXED JPY-USD 10 years	1	0.02	1	175,036,053	2,692,862	Illiquid	Illiquid
FIXED-FIXED JPY-USD 11 years	4	0.06	3	76,874,668	1,182,687	Illiquid	Illiquid
FIXED-FIXED JPY-USD 31 years	1	0.02	1	3,626,164	55,787	Illiquid	Illiquid
FIXED-FIXED KRW-USD 2 years	17	0.26	13	279,076,049	4,293,478	Illiquid	Illiquid
FIXED-FIXED KRW-USD 3 years	12	0.18	4	223,843,499	3,443,746	Illiquid	Illiquid
FIXED-FIXED KRW-USD 4 years	11	0.17	8	200,400,639	3,083,087	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	
Notional Amount per day						100,000,000	
FIXED TO FIXED MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FIXED_KRW-USD_5 years	3	0.05	3	15,350,460	236,161	Illiquid	Illiquid
FIXED-FIXED_KRW-USD_6 years	1	0.02	1	7,190,763	110,627	Illiquid	Illiquid
FIXED-FIXED_KZT-USD_2 years	3	0.05	2	2,538,315	39,051	Illiquid	Illiquid
FIXED-FIXED_MAD-USD_6 years	1	0.02	1	8,702,793	133,889	Illiquid	Illiquid
FIXED-FIXED_MXN-USD_2 years	2	0.03	1	18,130,818	278,936	Illiquid	Illiquid
FIXED-FIXED_MXN-USD_3 years	1	0.02	1	363,249	5,588	Illiquid	Illiquid
FIXED-FIXED_MXN-USD_5 years	12	0.18	10	538,228,193	8,280,434	Illiquid	Illiquid
FIXED-FIXED_MXN-USD_6 years	5	0.08	4	396,165,801	6,094,858	Illiquid	Illiquid
FIXED-FIXED_MXN-USD_7 years	4	0.06	3	60,645,533	933,008	Illiquid	Illiquid
FIXED-FIXED_MXN-USD_8 years	3	0.05	3	54,500,736	838,473	Illiquid	Illiquid
FIXED-FIXED_MXN-USD_10 years	1	0.02	1	42,568,052	654,893	Illiquid	Illiquid
FIXED-FIXED_MYR-USD_1 year	2	0.03	2	5,318,533	81,824	Illiquid	Illiquid
FIXED-FIXED_NGN-USD_4 years	2	0.03	1	725,233	11,157	Illiquid	Illiquid
FIXED-FIXED_NOK-SEK_5 years	1	0.02	1	255,148	3,925	Illiquid	Illiquid
FIXED-FIXED_NOK-USD_1 year	1	0.02	1	4,327,019	66,570	Illiquid	Illiquid
FIXED-FIXED_NOK-USD_4 years	1	0.02	1	36,261,636	557,871	Illiquid	Illiquid
FIXED-FIXED_NOK-USD_5 years	1	0.02	1	170,098,355	2,616,898	Illiquid	Illiquid
FIXED-FIXED_NZD-USD_1 year	2	0.03	1	298,720,201	4,595,695	Illiquid	Illiquid
FIXED-FIXED_NZD-USD_2 years	1	0.02	1	97,084,065	1,493,601	Illiquid	Illiquid
FIXED-FIXED_NZD-USD_3 years	1	0.02	1	63,478,043	976,585	Illiquid	Illiquid
FIXED-FIXED_NZD-USD_4 years	1	0.02	1	63,478,043	976,585	Illiquid	Illiquid
FIXED-FIXED_NZD-USD_5 years	3	0.05	2	135,064,187	2,077,911	Illiquid	Illiquid
FIXED-FIXED_PEN-USD_1 year	1	0.02	1	363,954	5,599	Illiquid	Illiquid
FIXED-FIXED_PEN-USD_2 years	1	0.02	1	217,570	3,347	Illiquid	Illiquid
FIXED-FIXED_PEN-USD_3 years	3	0.05	3	1,557,819	23,966	Illiquid	Illiquid
FIXED-FIXED_PEN-USD_4 years	2	0.03	2	5,098,752	78,442	Illiquid	Illiquid
FIXED-FIXED_PEN-USD_5 years	1	0.02	1	310,022	4,770	Illiquid	Illiquid
FIXED-FIXED_PEN-USD_6 years	4	0.06	4	5,303,492	81,592	Illiquid	Illiquid
FIXED-FIXED_PEN-USD_9 years	1	0.02	1	5,790,052	89,078	Illiquid	Illiquid
FIXED-FIXED_PHP-USD_4 years	2	0.03	2	15,088,074	232,124	Illiquid	Illiquid
FIXED-FIXED_PHP-USD_5 years	1	0.02	1	452,052	6,955	Illiquid	Illiquid
FIXED-FIXED_PHP-USD_6 years	2	0.03	1	2,576,463	39,638	Illiquid	Illiquid
FIXED-FIXED_PHP-USD_7 years	9	0.14	9	5,013,575	77,132	Illiquid	Illiquid
FIXED-FIXED_RUB-USD_6 months	5	0.08	5	248,760,643	3,827,087	Illiquid	Illiquid
FIXED-FIXED_RUB-USD_1 year	3	0.05	2	132,587,453	2,039,807	Illiquid	Illiquid
FIXED-FIXED_RUB-USD_2 years	4	0.06	3	489,107,339	7,524,728	Illiquid	Illiquid
FIXED-FIXED_RUB-USD_3 years	9	0.14	6	138,259,818	2,127,074	Illiquid	Illiquid
FIXED-FIXED_RUB-USD_4 years	1	0.02	1	72,523,272	1,115,743	Illiquid	Illiquid
FIXED-FIXED_SEK-USD_3 years	2	0.03	2	36,586,685	562,872	Illiquid	Illiquid
FIXED-FIXED_SEK-USD_4 years	14	0.22	11	3,038,188	46,741	Illiquid	Illiquid
FIXED-FIXED_SEK-USD_5 years	4	0.06	3	724,184	11,141	Illiquid	Illiquid
FIXED-FIXED_SEK-USD_6 years	1	0.02	1	588,889	9,060	Illiquid	Illiquid
FIXED-FIXED_SEK-USD_7 years	5	0.08	5	1,344,599	20,686	Illiquid	Illiquid
FIXED-FIXED_SEK-USD_8 years	4	0.06	3	3,089,491	47,531	Illiquid	Illiquid
FIXED-FIXED_SGD-USD_4 years	1	0.02	1	7,674,253	118,065	Illiquid	Illiquid
FIXED-FIXED_SGD-USD_5 years	3	0.05	3	8,689,763	133,689	Illiquid	Illiquid
FIXED-FIXED_SGD-USD_6 years	2	0.03	2	20,283,915	312,060	Illiquid	Illiquid
FIXED-FIXED_SGD-USD_7 years	1	0.02	1	14,472,371	222,652	Illiquid	Illiquid
FIXED-FIXED_SGD-USD_9 years	1	0.02	1	13,750,943	211,553	Illiquid	Illiquid
FIXED-FIXED_SGD-USD_10 years	1	0.02	1	3,992,900	61,429	Illiquid	Illiquid
FIXED-FIXED_SGD-USD_11 years	3	0.05	3	18,109,485	278,607	Illiquid	Illiquid
FIXED-FIXED_THB-USD_1 year	1	0.02	1	43,901,192	675,403	Illiquid	Illiquid
FIXED-FIXED_THB-USD_4 years	1	0.02	1	25,234,142	388,218	Illiquid	Illiquid
FIXED-FIXED_THB-USD_6 years	5	0.08	4	42,480,719	653,550	Illiquid	Illiquid
FIXED-FIXED_THB-USD_7 years	1	0.02	1	3,663,598	56,363	Illiquid	Illiquid
FIXED-FIXED_THB-USD_10 years	2	0.03	2	4,331,893	66,645	Illiquid	Illiquid
FIXED-FIXED_THB-USD_11 years	2	0.03	2	21,716,576	334,101	Illiquid	Illiquid
FIXED-FIXED_TWD-USD_1.5 months	11	0.17	9	75,791,687	1,166,026	Illiquid	Illiquid
FIXED-FIXED_TWD-USD_3 months	2	0.03	2	14,468,187	222,587	Illiquid	Illiquid
FIXED-FIXED_TWD-USD_6 months	2	0.03	2	43,513,963	669,446	Illiquid	Illiquid
FIXED-FIXED_TWD-USD_1 year	2	0.03	2	51,077,582	785,809	Illiquid	Illiquid
FIXED-FIXED_USD-VND_4 years	1	0.02	1	201,233	3,096	Illiquid	Illiquid
FIXED-FIXED_USD-ZAR_6 years	1	0.02	1	362,616,359	5,578,713	Illiquid	Illiquid
FIXED-FIXED_USD-ZAR_17 years	4	0.06	3	5,059,429	77,837	Illiquid	Illiquid

Table 34: Fixed to Fixed Multi-currency swaps liquidity assessment

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	
Notional Amount per day						100,000,000	
OIS MULTI-CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
OIS_BRL-EUR_3 years	1	0.02	1	22,788,779	350,597	Illiquid	Illiquid
OIS_BRL-MXN_6 years	1	0.02	1	20,482,483	315,115	Illiquid	Illiquid
OIS_BRL-USD_3 years	1	0.02	1	23,329,520	358,916	Illiquid	Illiquid
OIS_CAD-USD_1.5 months	2	0.03	1	5,233,031,246	80,508,173	Illiquid	Illiquid
OIS_CHF-EUR_6 years	1	0.02	1	82,033,261	1,262,050	Illiquid	Illiquid
OIS_CLP-USD_2 years	6	0.09	4	108,472,299	1,668,805	Illiquid	Illiquid
OIS_CLP-USD_3 years	1	0.02	1	6,147,387	94,575	Illiquid	Illiquid
OIS_CLP-USD_4 years	3	0.05	3	22,572,868	347,275	Illiquid	Illiquid
OIS_CLP-USD_5 years	1	0.02	1	10,153,258	156,204	Illiquid	Illiquid
OIS_CLP-USD_6 years	1	0.02	1	3,626,049	55,785	Illiquid	Illiquid
OIS_COP-USD_3 years	5	0.08	2	30,038,381	462,129	Illiquid	Illiquid
OIS_COP-USD_4 years	3	0.05	2	14,183,446	218,207	Illiquid	Illiquid
OIS_COP-USD_5 years	4	0.06	2	24,954,557	383,916	Illiquid	Illiquid
OIS_COP-USD_8 years	1	0.02	1	362,616,359	5,578,713	Illiquid	Illiquid
OIS_COP-USD_11 years	2	0.03	2	7,197,989	110,738	Illiquid	Illiquid
OIS_EUR-GBP_1.5 months	4	0.06	3	1,257,502,855	19,346,198	Illiquid	Illiquid
OIS_EUR-GBP_3 months	1	0.02	1	48,780,488	750,469	Illiquid	Illiquid
OIS_EUR-GBP_6 months	3	0.05	2	91,463,415	1,407,129	Illiquid	Illiquid
OIS_EUR-GBP_1 year	1	0.02	1	18,292,683	281,426	Illiquid	Illiquid
OIS_EUR-GBP_2 years	1	0.02	1	200,000,000	3,076,923	Illiquid	Illiquid
OIS_EUR-GBP_3 years	9	0.14	6	1,862,041,012	28,646,785	Illiquid	Illiquid
OIS_EUR-GBP_6 years	1	0.02	1	300,000,000	4,615,385	Illiquid	Illiquid
OIS_EUR-USD_6 months	1	0.02	1	28,993,954	446,061	Illiquid	Illiquid
OIS_EUR-USD_2 years	1	0.02	1	321,748,045	4,949,970	Illiquid	Illiquid

Table 35: OIS Multi-currency swaps liquidity assessment

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						2.00	1.20
Notional Amount per day						100,000,000	76,167,945
FIXED TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING AED 6 months	6	0.09	6	232,988,472	3,584,438	Illiquid	Illiquid
FIXED-FLOATING AED 1 year	12	0.18	10	373,472,638	5,745,733	Illiquid	Illiquid
FIXED-FLOATING AED 2 years	45	0.69	28	1,166,650,238	17,948,465	Illiquid	Illiquid
FIXED-FLOATING AED 3 years	61	0.94	32	1,947,479,754	29,961,227	Illiquid	Illiquid
FIXED-FLOATING AED 4 years	45	0.69	24	1,243,421,277	19,129,558	Illiquid	Illiquid
FIXED-FLOATING AED 5 years	44	0.68	24	976,643,850	15,025,290	Illiquid	Illiquid
FIXED-FLOATING AED 6 years	41	0.63	25	740,544,656	11,392,995	Illiquid	Illiquid
FIXED-FLOATING AED 7 years	18	0.28	14	195,173,046	3,002,662	Illiquid	Illiquid
FIXED-FLOATING AED 8 years	22	0.34	11	450,478,867	6,930,444	Illiquid	Illiquid
FIXED-FLOATING AED 9 years	7	0.11	4	216,322,293	3,328,035	Illiquid	Illiquid
FIXED-FLOATING AED 10 years	3	0.05	3	36,014,489	554,069	Illiquid	Illiquid
FIXED-FLOATING AED 11 years	13	0.20	10	215,632,805	3,317,428	Illiquid	Illiquid
FIXED-FLOATING AUD 1.5 months	336	5.17	31	12,020,867,945	184,936,430	Liquid	Illiquid
FIXED-FLOATING AUD 3 months	59	0.91	13	4,097,758,735	63,042,442	Illiquid	Illiquid
FIXED-FLOATING AUD 6 months	260	4.00	53	46,213,902,349	710,983,113	Liquid	Liquid
FIXED-FLOATING AUD 1 year	933	14.35	62	83,140,229,021	1,279,080,446	Liquid	Liquid
FIXED-FLOATING AUD 2 years	2,512	38.65	69	224,099,978,021	3,447,691,970	Liquid	Liquid
FIXED-FLOATING AUD 3 years	3,793	58.35	70	331,761,506,315	5,104,023,174	Liquid	Liquid
FIXED-FLOATING AUD 4 years	4,836	74.40	71	287,951,799,892	4,430,027,691	Liquid	Liquid
FIXED-FLOATING AUD 5 years	2,325	35.77	65	108,305,935,760	1,666,245,166	Liquid	Liquid
FIXED-FLOATING AUD 6 years	3,244	49.91	71	90,788,598,021	1,396,747,662	Liquid	Liquid
FIXED-FLOATING AUD 7 years	727	11.18	62	23,424,265,280	360,373,312	Liquid	Liquid
FIXED-FLOATING AUD 8 years	971	14.94	63	28,892,615,193	444,501,772	Liquid	Liquid
FIXED-FLOATING AUD 9 years	1,244	19.14	59	21,141,918,671	325,260,287	Liquid	Liquid
FIXED-FLOATING AUD 10 years	1,990	30.62	64	39,952,417,841	614,652,582	Liquid	Liquid
FIXED-FLOATING AUD 11 years	3,370	51.85	71	68,408,863,062	1,052,444,047	Liquid	Liquid
FIXED-FLOATING AUD 12 years	102	1.57	34	2,803,612,636	43,132,502	Illiquid	Illiquid
FIXED-FLOATING AUD 13 years	263	4.05	44	6,493,884,733	99,905,919	Illiquid	Illiquid
FIXED-FLOATING AUD 14 years	50	0.77	14	1,182,013,503	18,184,823	Illiquid	Illiquid
FIXED-FLOATING AUD 15 years	58	0.89	22	1,160,684,812	17,856,689	Illiquid	Illiquid
FIXED-FLOATING AUD 16 years	213	3.28	38	2,646,100,928	40,709,245	Illiquid	Illiquid
FIXED-FLOATING AUD 17 years	18	0.28	9	374,752,640	5,765,425	Illiquid	Illiquid
FIXED-FLOATING AUD 18 years	21	0.32	13	332,241,790	5,111,412	Illiquid	Illiquid
FIXED-FLOATING AUD 19 years	38	0.58	17	503,699,963	7,749,230	Illiquid	Illiquid
FIXED-FLOATING AUD 20 years	64	0.98	22	717,343,897	11,036,060	Illiquid	Illiquid
FIXED-FLOATING AUD 21 years	147	2.26	38	1,259,027,439	19,369,653	Illiquid	Illiquid
FIXED-FLOATING AUD 22 years	11	0.17	5	87,045,834	1,339,167	Illiquid	Illiquid
FIXED-FLOATING AUD 23 years	19	0.29	8	431,850,754	6,643,858	Illiquid	Illiquid
FIXED-FLOATING AUD 24 years	14	0.22	9	133,252,367	2,050,036	Illiquid	Illiquid
FIXED-FLOATING AUD 25 years	43	0.66	18	591,737,735	9,103,657	Illiquid	Illiquid
FIXED-FLOATING AUD 26 years	52	0.80	22	438,385,581	6,744,394	Illiquid	Illiquid
FIXED-FLOATING AUD 27 years	3	0.05	2	62,934,307	968,220	Illiquid	Illiquid
FIXED-FLOATING AUD 28 years	2	0.03	2	50,737,139	780,571	Illiquid	Illiquid
FIXED-FLOATING AUD 29 years	7	0.11	4	85,144,514	1,309,916	Illiquid	Illiquid
FIXED-FLOATING AUD 30 years	3	0.05	2	20,085,417	309,006	Illiquid	Illiquid
FIXED-FLOATING AUD 31 years	22	0.34	9	102,390,244	1,575,235	Illiquid	Illiquid
FIXED-FLOATING AUD 37 years	1	0.02	1	6,025,625	92,702	Illiquid	Illiquid
FIXED-FLOATING BHD 4 years	1	0.02	1	555,717	8,549	Illiquid	Illiquid
FIXED-FLOATING BHD 6 years	1	0.02	1	19,236,358	295,944	Illiquid	Illiquid
FIXED-FLOATING BRL 1.5 months	20	0.31	5	1,752,517,836	26,961,813	Illiquid	Illiquid
FIXED-FLOATING BRL 3 months	81	1.25	9	18,338,378,779	282,128,904	Illiquid	Illiquid
FIXED-FLOATING BRL 6 months	112	1.72	17	10,991,215,686	169,095,626	Illiquid	Illiquid
FIXED-FLOATING BRL 1 year	551	8.48	49	36,683,602,117	564,363,109	Liquid	Illiquid
FIXED-FLOATING BRL 2 years	1,267	19.49	63	55,112,854,144	847,890,064	Liquid	Illiquid
FIXED-FLOATING BRL 3 years	1,755	27.00	64	31,890,599,041	490,624,601	Liquid	Illiquid
FIXED-FLOATING BRL 4 years	47	0.72	22	1,639,238,583	25,219,055	Illiquid	Illiquid
FIXED-FLOATING BRL 6 years	1	0.02	1	25,459,957	391,692	Illiquid	Illiquid
FIXED-FLOATING BRL 7 years	815	12.54	57	3,842,347,368	59,113,036	Illiquid	Illiquid
FIXED-FLOATING BRL 9 years	27	0.42	13	267,064,690	4,108,688	Illiquid	Illiquid
FIXED-FLOATING BRL 11 years	4	0.06	4	66,557,190	1,023,957	Illiquid	Illiquid
FIXED-FLOATING BRL 15 years	2	0.03	2	18,737,266	288,266	Illiquid	Illiquid
FIXED-FLOATING CAD 1.5 months	40	0.62	14	2,360,906,374	36,321,637	Illiquid	Illiquid
FIXED-FLOATING CAD 3 months	5	0.08	3	481,495,509	7,407,623	Illiquid	Illiquid
FIXED-FLOATING CAD 6 months	499	7.68	53	101,803,198,464	1,566,203,053	Liquid	Liquid
FIXED-FLOATING CAD 1 year	719	11.06	64	108,972,568,520	1,676,501,054	Liquid	Liquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						2.00	1.20
Notional Amount per day						100,000,000	76,167,945
FIXED TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING CAD 2 years	1,368	21.05	65	172,222,033,191	2,649,569,741	Liquid	Liquid
FIXED-FLOATING CAD 3 years	1,638	25.20	63	162,934,502,383	2,506,684,652	Liquid	Liquid
FIXED-FLOATING CAD 4 years	1,037	15.95	63	87,376,711,838	1,344,257,105	Liquid	Liquid
FIXED-FLOATING CAD 5 years	1,741	26.78	63	111,125,983,859	1,709,630,521	Liquid	Liquid
FIXED-FLOATING CAD 6 years	2,193	33.74	64	116,948,924,404	1,799,214,222	Liquid	Liquid
FIXED-FLOATING CAD 7 years	491	7.55	58	28,735,026,157	442,077,325	Liquid	Liquid
FIXED-FLOATING CAD 8 years	341	5.25	59	24,592,149,074	378,340,755	Liquid	Liquid
FIXED-FLOATING CAD 9 years	451	6.94	62	15,487,704,002	238,272,369	Liquid	Liquid
FIXED-FLOATING CAD 10 years	1,104	16.98	61	25,665,969,552	394,861,070	Liquid	Liquid
FIXED-FLOATING CAD 11 years	1,698	26.12	64	37,963,663,410	584,056,360	Liquid	Liquid
FIXED-FLOATING CAD 12 years	153	2.35	32	3,958,923,744	60,906,519	Illiquid	Illiquid
FIXED-FLOATING CAD 13 years	184	2.83	43	4,707,288,237	72,419,819	Illiquid	Illiquid
FIXED-FLOATING CAD 14 years	40	0.62	21	815,206,479	12,541,638	Illiquid	Illiquid
FIXED-FLOATING CAD 15 years	73	1.12	26	2,279,088,976	35,062,907	Illiquid	Illiquid
FIXED-FLOATING CAD 16 years	234	3.60	42	4,376,125,773	67,325,012	Illiquid	Illiquid
FIXED-FLOATING CAD 17 years	24	0.37	11	408,610,103	6,286,309	Illiquid	Illiquid
FIXED-FLOATING CAD 18 years	28	0.43	12	548,197,158	8,433,802	Illiquid	Illiquid
FIXED-FLOATING CAD 19 years	40	0.62	17	546,921,155	8,414,172	Illiquid	Illiquid
FIXED-FLOATING CAD 20 years	93	1.43	25	3,066,827,902	47,181,968	Illiquid	Illiquid
FIXED-FLOATING CAD 21 years	119	1.83	29	2,483,919,449	38,214,145	Illiquid	Illiquid
FIXED-FLOATING CAD 22 years	200	3.08	17	3,621,539,359	55,715,990	Illiquid	Illiquid
FIXED-FLOATING CAD 23 years	48	0.74	10	373,473,287	5,745,743	Illiquid	Illiquid
FIXED-FLOATING CAD 24 years	49	0.75	23	1,784,590,002	27,455,231	Illiquid	Illiquid
FIXED-FLOATING CAD 25 years	58	0.89	17	1,794,971,995	27,614,954	Illiquid	Illiquid
FIXED-FLOATING CAD 26 years	90	1.38	25	2,190,002,914	33,692,353	Illiquid	Illiquid
FIXED-FLOATING CAD 27 years	20	0.31	12	269,520,370	4,146,467	Illiquid	Illiquid
FIXED-FLOATING CAD 28 years	33	0.51	10	747,637,204	11,502,111	Illiquid	Illiquid
FIXED-FLOATING CAD 29 years	40	0.62	16	388,091,976	5,970,646	Illiquid	Illiquid
FIXED-FLOATING CAD 30 years	51	0.78	17	1,172,765,748	18,042,550	Illiquid	Illiquid
FIXED-FLOATING CAD 31 years	237	3.65	40	3,225,723,095	49,626,509	Illiquid	Illiquid
FIXED-FLOATING CHF 1.5 months	33	0.51	13	3,482,385,285	53,575,158	Illiquid	Illiquid
FIXED-FLOATING CHF 3 months	20	0.31	10	2,027,287,967	31,189,046	Illiquid	Illiquid
FIXED-FLOATING CHF 6 months	30	0.46	15	1,899,152,014	29,217,723	Illiquid	Illiquid
FIXED-FLOATING CHF 1 year	161	2.48	43	12,184,254,214	187,450,065	Liquid	Liquid
FIXED-FLOATING CHF 2 years	452	6.95	58	36,610,435,926	563,237,476	Liquid	Liquid
FIXED-FLOATING CHF 3 years	800	12.31	64	76,897,228,650	1,183,034,287	Liquid	Liquid
FIXED-FLOATING CHF 4 years	713	10.97	60	47,699,531,079	733,838,940	Liquid	Liquid
FIXED-FLOATING CHF 5 years	653	10.05	61	29,189,600,246	449,070,773	Liquid	Liquid
FIXED-FLOATING CHF 6 years	1,055	16.23	62	56,620,607,102	871,086,263	Liquid	Liquid
FIXED-FLOATING CHF 7 years	519	7.98	57	25,710,333,795	395,543,597	Liquid	Liquid
FIXED-FLOATING CHF 8 years	495	7.62	59	24,207,265,020	372,419,462	Liquid	Liquid
FIXED-FLOATING CHF 9 years	622	9.57	53	10,843,874,236	166,828,834	Liquid	Liquid
FIXED-FLOATING CHF 10 years	1,381	21.25	60	18,555,594,411	285,470,683	Liquid	Liquid
FIXED-FLOATING CHF 11 years	1,504	23.14	63	41,305,562,912	635,470,199	Liquid	Liquid
FIXED-FLOATING CHF 12 years	134	2.06	28	3,081,545,564	47,408,393	Illiquid	Illiquid
FIXED-FLOATING CHF 13 years	123	1.89	30	3,449,031,473	53,062,023	Illiquid	Illiquid
FIXED-FLOATING CHF 14 years	60	0.92	26	4,371,755,750	67,257,781	Illiquid	Illiquid
FIXED-FLOATING CHF 15 years	89	1.37	28	1,879,350,984	28,913,092	Illiquid	Illiquid
FIXED-FLOATING CHF 16 years	119	1.83	34	3,792,594,513	58,347,608	Illiquid	Illiquid
FIXED-FLOATING CHF 17 years	25	0.38	10	610,258,385	9,388,591	Illiquid	Illiquid
FIXED-FLOATING CHF 18 years	10	0.15	6	180,469,312	2,776,451	Illiquid	Illiquid
FIXED-FLOATING CHF 19 years	25	0.38	13	441,755,197	6,796,234	Illiquid	Illiquid
FIXED-FLOATING CHF 20 years	22	0.34	9	282,808,814	4,350,905	Illiquid	Illiquid
FIXED-FLOATING CHF 21 years	105	1.62	26	1,527,529,859	23,500,459	Illiquid	Illiquid
FIXED-FLOATING CHF 22 years	3	0.05	2	33,816,435	520,253	Illiquid	Illiquid
FIXED-FLOATING CHF 23 years	6	0.09	5	91,835,934	1,412,861	Illiquid	Illiquid
FIXED-FLOATING CHF 24 years	14	0.22	7	225,055,848	3,462,398	Illiquid	Illiquid
FIXED-FLOATING CHF 25 years	11	0.17	7	401,968,066	6,184,124	Illiquid	Illiquid
FIXED-FLOATING CHF 26 years	28	0.43	10	457,986,653	7,045,949	Illiquid	Illiquid
FIXED-FLOATING CHF 27 years	14	0.22	4	540,086,138	8,309,018	Illiquid	Illiquid
FIXED-FLOATING CHF 28 years	2	0.03	2	49,105,362	755,467	Illiquid	Illiquid
FIXED-FLOATING CHF 29 years	17	0.26	7	373,265,621	5,742,548	Illiquid	Illiquid
FIXED-FLOATING CHF 30 years	27	0.42	11	331,114,875	5,094,075	Illiquid	Illiquid
FIXED-FLOATING CHF 31 years	51	0.78	14	620,868,732	9,551,827	Illiquid	Illiquid
FIXED-FLOATING CHF 41 years	1	0.02	1	4,101,663	63,103	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						2.00	1.20
Notional Amount per day						100,000,000	76,167,945
FIXED TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING CLP 1.5 months	12	0.18	4	130,997,787	2,015,351	Illiquid	Illiquid
FIXED-FLOATING CLP 3 months	15	0.23	4	445,783,027	6,858,200	Illiquid	Illiquid
FIXED-FLOATING CLP 6 months	74	1.14	22	2,587,896,087	39,813,786	Illiquid	Illiquid
FIXED-FLOATING CLP 1 year	196	3.02	48	3,760,375,687	57,851,934	Illiquid	Illiquid
FIXED-FLOATING CLP 2 years	325	5.00	59	5,971,791,135	91,873,710	Illiquid	Illiquid
FIXED-FLOATING CLP 3 years	392	6.03	56	5,722,960,128	88,045,540	Illiquid	Illiquid
FIXED-FLOATING CLP 4 years	228	3.51	39	2,892,057,993	44,493,200	Illiquid	Illiquid
FIXED-FLOATING CLP 5 years	133	2.05	44	1,391,466,076	21,407,170	Illiquid	Illiquid
FIXED-FLOATING CLP 6 years	388	5.97	53	2,357,923,194	36,275,741	Illiquid	Illiquid
FIXED-FLOATING CLP 7 years	33	0.51	14	251,552,877	3,870,044	Illiquid	Illiquid
FIXED-FLOATING CLP 8 years	53	0.82	19	364,127,727	5,601,965	Illiquid	Illiquid
FIXED-FLOATING CLP 9 years	71	1.09	24	393,970,263	6,061,081	Illiquid	Illiquid
FIXED-FLOATING CLP 10 years	28	0.43	13	97,756,321	1,503,943	Illiquid	Illiquid
FIXED-FLOATING CLP 11 years	78	1.20	34	382,752,719	5,888,503	Illiquid	Illiquid
FIXED-FLOATING CLP 13 years	1	0.02	1	3,314,130	50,987	Illiquid	Illiquid
FIXED-FLOATING CNY 1.5 months	265	4.08	46	6,142,759,256	94,503,989	Illiquid	Illiquid
FIXED-FLOATING CNY 3 months	102	1.57	13	1,912,947,424	29,429,960	Illiquid	Illiquid
FIXED-FLOATING CNY 6 months	230	3.54	26	7,025,946,083	108,091,478	Liquid	Illiquid
FIXED-FLOATING CNY 1 year	551	8.48	55	20,697,767,131	318,427,187	Liquid	Illiquid
FIXED-FLOATING CNY 2 years	1,609	24.75	62	40,436,324,849	622,097,305	Liquid	Illiquid
FIXED-FLOATING CNY 3 years	1,074	16.52	64	20,979,726,462	322,765,022	Liquid	Illiquid
FIXED-FLOATING CNY 4 years	372	5.72	38	4,620,939,434	71,091,376	Illiquid	Illiquid
FIXED-FLOATING CNY 5 years	507	7.80	55	5,386,746,915	82,873,029	Illiquid	Illiquid
FIXED-FLOATING CNY 6 years	784	12.06	60	7,748,509,968	119,207,846	Liquid	Illiquid
FIXED-FLOATING CNY 7 years	4	0.06	4	31,610,274	486,312	Illiquid	Illiquid
FIXED-FLOATING CNY 8 years	1	0.02	1	5,837,539	89,808	Illiquid	Illiquid
FIXED-FLOATING COP 1.5 months	1	0.02	1	14,836,241	228,250	Illiquid	Illiquid
FIXED-FLOATING COP 3 months	1	0.02	1	140,944,287	2,168,374	Illiquid	Illiquid
FIXED-FLOATING COP 6 months	17	0.26	9	736,396,808	11,329,182	Illiquid	Illiquid
FIXED-FLOATING COP 1 year	70	1.08	27	1,008,122,557	15,509,578	Illiquid	Illiquid
FIXED-FLOATING COP 2 years	190	2.92	44	2,410,127,542	37,078,885	Illiquid	Illiquid
FIXED-FLOATING COP 3 years	165	2.54	40	1,771,943,414	27,260,668	Illiquid	Illiquid
FIXED-FLOATING COP 4 years	48	0.74	24	186,653,700	2,871,595	Illiquid	Illiquid
FIXED-FLOATING COP 5 years	15	0.23	9	56,095,900	863,014	Illiquid	Illiquid
FIXED-FLOATING COP 6 years	58	0.89	22	192,864,208	2,967,142	Illiquid	Illiquid
FIXED-FLOATING COP 7 years	4	0.06	3	14,465,335	222,544	Illiquid	Illiquid
FIXED-FLOATING COP 8 years	42	0.65	13	129,423,946	1,991,138	Illiquid	Illiquid
FIXED-FLOATING COP 9 years	23	0.35	9	63,628,927	978,907	Illiquid	Illiquid
FIXED-FLOATING COP 10 years	12	0.18	10	58,684,750	902,842	Illiquid	Illiquid
FIXED-FLOATING COP 11 years	105	1.62	28	324,562,572	4,993,270	Illiquid	Illiquid
FIXED-FLOATING CZK 1.5 months	6	0.09	6	40,371,774	621,104	Illiquid	Illiquid
FIXED-FLOATING CZK 3 months	5	0.08	3	74,852,983	1,151,584	Illiquid	Illiquid
FIXED-FLOATING CZK 6 months	15	0.23	11	310,918,289	4,783,358	Illiquid	Illiquid
FIXED-FLOATING CZK 1 year	67	1.03	27	1,422,522,570	21,884,963	Illiquid	Illiquid
FIXED-FLOATING CZK 2 years	209	3.22	49	6,865,079,999	105,616,615	Liquid	Illiquid
FIXED-FLOATING CZK 3 years	462	7.11	57	11,386,050,065	175,170,001	Liquid	Illiquid
FIXED-FLOATING CZK 4 years	264	4.06	52	5,466,365,883	84,097,937	Illiquid	Illiquid
FIXED-FLOATING CZK 5 years	334	5.14	52	5,758,796,500	88,596,869	Illiquid	Illiquid
FIXED-FLOATING CZK 6 years	354	5.45	56	6,503,076,108	100,047,325	Liquid	Illiquid
FIXED-FLOATING CZK 7 years	213	3.28	47	2,612,903,605	40,198,517	Illiquid	Illiquid
FIXED-FLOATING CZK 8 years	111	1.71	35	1,559,489,162	23,992,141	Illiquid	Illiquid
FIXED-FLOATING CZK 9 years	139	2.14	37	1,586,404,898	24,406,229	Illiquid	Illiquid
FIXED-FLOATING CZK 10 years	124	1.91	37	1,320,870,598	20,321,086	Illiquid	Illiquid
FIXED-FLOATING CZK 11 years	203	3.12	44	1,595,958,200	24,553,203	Illiquid	Illiquid
FIXED-FLOATING CZK 12 years	11	0.17	8	93,338,352	1,435,975	Illiquid	Illiquid
FIXED-FLOATING CZK 13 years	5	0.08	5	25,376,364	390,406	Illiquid	Illiquid
FIXED-FLOATING CZK 14 years	1	0.02	1	7,292,059	112,186	Illiquid	Illiquid
FIXED-FLOATING CZK 15 years	7	0.11	4	46,669,176	717,987	Illiquid	Illiquid
FIXED-FLOATING CZK 16 years	1	0.02	1	5,104,441	78,530	Illiquid	Illiquid
FIXED-FLOATING DKK 1.5 months	343	5.28	20	13,499,154,471	207,679,300	Liquid	Illiquid
FIXED-FLOATING DKK 3 months	11	0.17	8	4,122,429,318	63,421,990	Illiquid	Illiquid
FIXED-FLOATING DKK 6 months	59	0.91	29	5,206,790,956	80,104,476	Illiquid	Illiquid
FIXED-FLOATING DKK 1 year	320	4.92	57	24,093,697,408	370,672,268	Liquid	Liquid
FIXED-FLOATING DKK 2 years	422	6.49	53	32,201,666,979	495,410,261	Liquid	Liquid
FIXED-FLOATING DKK 3 years	434	6.68	58	27,791,544,283	427,562,220	Liquid	Liquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						2.00	1.20
Notional Amount per day						100,000,000	76,167,945
FIXED TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING DKK 4 years	390	6.00	54	17,951,731,509	276,180,485	Liquid	Liquid
FIXED-FLOATING DKK 5 years	332	5.11	56	19,377,217,958	298,111,046	Liquid	Liquid
FIXED-FLOATING DKK 6 years	265	4.08	55	10,650,429,107	163,852,755	Liquid	Liquid
FIXED-FLOATING DKK 7 years	175	2.69	47	5,869,850,422	90,305,391	Illiquid	Illiquid
FIXED-FLOATING DKK 8 years	125	1.92	45	8,411,582,022	129,408,954	Illiquid	Illiquid
FIXED-FLOATING DKK 9 years	120	1.85	46	5,955,316,589	91,620,255	Illiquid	Illiquid
FIXED-FLOATING DKK 10 years	163	2.51	46	7,750,925,714	119,245,011	Liquid	Illiquid
FIXED-FLOATING DKK 11 years	128	1.97	42	2,718,163,239	41,817,896	Illiquid	Illiquid
FIXED-FLOATING DKK 12 years	54	0.83	29	1,107,124,093	17,032,678	Illiquid	Illiquid
FIXED-FLOATING DKK 13 years	79	1.22	36	1,875,300,735	28,850,781	Illiquid	Illiquid
FIXED-FLOATING DKK 14 years	47	0.72	28	783,959,738	12,060,919	Illiquid	Illiquid
FIXED-FLOATING DKK 15 years	61	0.94	31	1,243,053,408	19,123,899	Illiquid	Illiquid
FIXED-FLOATING DKK 16 years	44	0.68	25	796,853,525	12,259,285	Illiquid	Illiquid
FIXED-FLOATING DKK 17 years	23	0.35	16	320,161,655	4,925,564	Illiquid	Illiquid
FIXED-FLOATING DKK 18 years	42	0.65	24	815,939,368	12,552,913	Illiquid	Illiquid
FIXED-FLOATING DKK 19 years	48	0.74	28	845,985,606	13,015,163	Illiquid	Illiquid
FIXED-FLOATING DKK 20 years	37	0.57	22	620,562,924	9,547,122	Illiquid	Illiquid
FIXED-FLOATING DKK 21 years	42	0.65	24	690,099,232	10,616,911	Illiquid	Illiquid
FIXED-FLOATING DKK 22 years	34	0.52	24	302,020,274	4,646,466	Illiquid	Illiquid
FIXED-FLOATING DKK 23 years	54	0.83	26	600,045,650	9,231,472	Illiquid	Illiquid
FIXED-FLOATING DKK 24 years	64	0.98	32	1,312,914,024	20,198,677	Illiquid	Illiquid
FIXED-FLOATING DKK 25 years	56	0.86	34	730,391,085	11,236,786	Illiquid	Illiquid
FIXED-FLOATING DKK 26 years	61	0.94	30	792,062,485	12,185,577	Illiquid	Illiquid
FIXED-FLOATING DKK 27 years	17	0.26	10	996,899,455	15,336,915	Illiquid	Illiquid
FIXED-FLOATING DKK 28 years	17	0.26	12	443,965,362	6,830,236	Illiquid	Illiquid
FIXED-FLOATING DKK 29 years	12	0.18	8	277,981,790	4,276,643	Illiquid	Illiquid
FIXED-FLOATING DKK 30 years	19	0.29	13	608,210,759	9,357,089	Illiquid	Illiquid
FIXED-FLOATING DKK 31 years	8	0.12	8	229,619,657	3,532,610	Illiquid	Illiquid
FIXED-FLOATING EUR 1.5 months	3,286	50.55	65	289,485,637,745	4,453,625,196	Liquid	Liquid
FIXED-FLOATING EUR 3 months	639	9.83	59	74,386,751,656	1,144,411,564	Liquid	Liquid
FIXED-FLOATING EUR 6 months	1,915	29.46	68	287,513,480,437	4,423,284,314	Liquid	Liquid
FIXED-FLOATING EUR 1 year	5,500	84.62	69	731,954,169,823	11,260,833,382	Liquid	Liquid
FIXED-FLOATING EUR 2 years	12,896	198.40	72	1,702,777,343,179	26,196,574,510	Liquid	Liquid
FIXED-FLOATING EUR 3 years	17,632	271.26	75	2,336,506,852,320	35,946,259,266	Liquid	Liquid
FIXED-FLOATING EUR 4 years	15,665	241.00	74	1,621,550,748,619	24,946,934,594	Liquid	Liquid
FIXED-FLOATING EUR 5 years	16,232	249.72	77	1,533,552,017,585	23,593,107,963	Liquid	Liquid
FIXED-FLOATING EUR 6 years	22,240	342.15	70	1,644,101,200,166	25,293,864,618	Liquid	Liquid
FIXED-FLOATING EUR 7 years	7,735	119.00	69	661,006,344,419	10,169,328,376	Liquid	Liquid
FIXED-FLOATING EUR 8 years	9,770	150.31	73	879,536,212,902	13,531,326,352	Liquid	Liquid
FIXED-FLOATING EUR 9 years	9,564	147.14	73	726,397,666,495	11,175,348,715	Liquid	Liquid
FIXED-FLOATING EUR 10 years	8,698	133.82	73	585,898,584,606	9,013,824,379	Liquid	Liquid
FIXED-FLOATING EUR 11 years	22,800	350.77	73	1,255,585,130,281	19,316,694,312	Liquid	Liquid
FIXED-FLOATING EUR 12 years	2,286	35.17	67	199,317,082,795	3,066,416,658	Liquid	Liquid
FIXED-FLOATING EUR 13 years	3,376	51.94	68	281,951,644,224	4,337,717,603	Liquid	Liquid
FIXED-FLOATING EUR 14 years	1,777	27.34	70	109,183,556,687	1,679,747,026	Liquid	Liquid
FIXED-FLOATING EUR 15 years	2,115	32.54	70	124,905,712,542	1,921,626,347	Liquid	Liquid
FIXED-FLOATING EUR 16 years	3,761	57.86	68	229,401,319,781	3,529,251,074	Liquid	Liquid
FIXED-FLOATING EUR 17 years	807	12.42	67	43,720,818,461	672,627,976	Liquid	Liquid
FIXED-FLOATING EUR 18 years	871	13.40	67	42,891,025,348	659,861,928	Liquid	Liquid
FIXED-FLOATING EUR 19 years	1,094	16.83	71	46,951,809,303	722,335,528	Liquid	Liquid
FIXED-FLOATING EUR 20 years	1,122	17.26	69	60,274,072,287	927,293,420	Liquid	Liquid
FIXED-FLOATING EUR 21 years	3,502	53.88	68	174,152,086,128	2,679,262,864	Liquid	Liquid
FIXED-FLOATING EUR 22 years	545	8.38	63	28,417,147,061	437,186,878	Liquid	Liquid
FIXED-FLOATING EUR 23 years	768	11.82	65	35,304,241,684	543,142,180	Liquid	Liquid
FIXED-FLOATING EUR 24 years	841	12.94	66	39,695,714,685	610,703,303	Liquid	Liquid
FIXED-FLOATING EUR 25 years	1,051	16.17	67	50,362,852,815	774,813,120	Liquid	Liquid
FIXED-FLOATING EUR 26 years	1,776	27.32	66	83,207,606,919	1,280,117,030	Liquid	Liquid
FIXED-FLOATING EUR 27 years	620	9.54	62	30,237,660,309	465,194,774	Liquid	Liquid
FIXED-FLOATING EUR 28 years	757	11.65	63	33,338,476,441	512,899,638	Liquid	Liquid
FIXED-FLOATING EUR 29 years	970	14.92	65	32,788,455,100	504,437,771	Liquid	Liquid
FIXED-FLOATING EUR 30 years	1,286	19.78	64	33,421,235,834	514,172,859	Liquid	Liquid
FIXED-FLOATING EUR 31 years	7,629	117.37	65	190,241,560,343	2,926,793,236	Liquid	Liquid
FIXED-FLOATING EUR 32 years	404	6.22	57	20,476,362,977	315,020,969	Liquid	Illiquid
FIXED-FLOATING EUR 33 years	296	4.55	53	6,437,660,210	99,040,926	Illiquid	Illiquid
FIXED-FLOATING EUR 34 years	172	2.65	45	5,630,349,264	86,620,758	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						2.00	1.20
Notional Amount per day						100,000,000	76,167,945
FIXED TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING EUR 35 years	158	2.43	46	7,242,884,287	111,428,989	Liquid	Illiquid
FIXED-FLOATING EUR 36 years	173	2.66	45	9,582,117,073	147,417,186	Liquid	Illiquid
FIXED-FLOATING EUR 37 years	122	1.88	34	4,825,320,732	74,235,704	Illiquid	Illiquid
FIXED-FLOATING EUR 38 years	124	1.91	29	3,857,049,623	59,339,225	Illiquid	Illiquid
FIXED-FLOATING EUR 39 years	204	3.14	37	5,013,521,073	77,131,093	Illiquid	Illiquid
FIXED-FLOATING EUR 40 years	131	2.02	28	7,328,048,207	112,739,203	Liquid	Illiquid
FIXED-FLOATING EUR 41 years	793	12.20	60	24,260,133,093	373,232,817	Liquid	Illiquid
FIXED-FLOATING EUR 42 years	68	1.05	15	2,305,135,611	35,463,625	Illiquid	Illiquid
FIXED-FLOATING EUR 43 years	19	0.29	10	1,054,549,428	16,223,837	Illiquid	Illiquid
FIXED-FLOATING EUR 44 years	26	0.40	15	2,058,709,573	31,672,455	Illiquid	Illiquid
FIXED-FLOATING EUR 45 years	50	0.77	18	2,145,258,331	33,003,974	Illiquid	Illiquid
FIXED-FLOATING EUR 46 years	52	0.80	26	1,217,019,925	18,723,383	Illiquid	Illiquid
FIXED-FLOATING EUR 47 years	79	1.22	25	3,625,288,742	55,773,673	Illiquid	Illiquid
FIXED-FLOATING EUR 48 years	88	1.35	24	2,899,577,209	44,608,880	Illiquid	Illiquid
FIXED-FLOATING EUR 49 years	77	1.18	28	2,107,272,205	32,419,572	Illiquid	Illiquid
FIXED-FLOATING EUR 50 years	84	1.29	25	2,066,773,230	31,796,511	Illiquid	Illiquid
FIXED-FLOATING EUR 51 years	364	5.60	48	10,651,756,803	163,873,182	Liquid	Illiquid
FIXED-FLOATING EUR 54 years	1	0.02	1	75,000,000	1,153,846	Illiquid	Illiquid
FIXED-FLOATING EUR 57 years	1	0.02	1	20,000,000	307,692	Illiquid	Illiquid
FIXED-FLOATING EUR 58 years	1	0.02	1	9,300,000	143,077	Illiquid	Illiquid
FIXED-FLOATING EUR 61 years	2	0.03	2	58,650,302	902,312	Illiquid	Illiquid
FIXED-FLOATING GBP 1.5 months	396	6.09	43	16,268,240,743	250,280,627	Liquid	Liquid
FIXED-FLOATING GBP 3 months	78	1.20	21	4,950,916,455	76,167,945	Illiquid	Liquid
FIXED-FLOATING GBP 6 months	586	9.02	56	42,917,280,204	660,265,849	Liquid	Liquid
FIXED-FLOATING GBP 1 year	1,866	28.71	61	201,830,450,224	3,105,083,850	Liquid	Liquid
FIXED-FLOATING GBP 2 years	3,668	56.43	63	406,634,722,053	6,255,918,801	Liquid	Liquid
FIXED-FLOATING GBP 3 years	6,542	100.65	66	647,346,176,741	9,959,171,950	Liquid	Liquid
FIXED-FLOATING GBP 4 years	5,608	86.28	64	464,768,000,031	7,150,276,924	Liquid	Liquid
FIXED-FLOATING GBP 5 years	5,789	89.06	66	395,889,666,291	6,090,610,251	Liquid	Liquid
FIXED-FLOATING GBP 6 years	8,122	124.95	64	434,823,894,635	6,689,598,379	Liquid	Liquid
FIXED-FLOATING GBP 7 years	2,840	43.69	63	133,253,822,194	2,050,058,803	Liquid	Liquid
FIXED-FLOATING GBP 8 years	2,622	40.34	64	151,741,345,254	2,334,482,235	Liquid	Liquid
FIXED-FLOATING GBP 9 years	2,141	32.94	62	122,954,169,807	1,891,602,612	Liquid	Liquid
FIXED-FLOATING GBP 10 years	4,759	73.22	64	152,640,748,694	2,348,319,211	Liquid	Liquid
FIXED-FLOATING GBP 11 years	8,843	136.05	66	318,246,629,929	4,896,101,999	Liquid	Liquid
FIXED-FLOATING GBP 12 years	1,377	21.18	58	43,445,094,449	668,386,068	Liquid	Liquid
FIXED-FLOATING GBP 13 years	744	11.45	62	58,097,605,093	893,809,309	Liquid	Liquid
FIXED-FLOATING GBP 14 years	428	6.58	58	16,885,411,571	259,775,563	Liquid	Liquid
FIXED-FLOATING GBP 15 years	570	8.77	60	34,984,684,710	538,225,919	Liquid	Liquid
FIXED-FLOATING GBP 16 years	1,192	18.34	62	49,156,564,875	756,254,844	Liquid	Liquid
FIXED-FLOATING GBP 17 years	314	4.83	46	10,110,705,190	155,549,311	Liquid	Liquid
FIXED-FLOATING GBP 18 years	263	4.05	48	7,258,459,385	111,668,606	Liquid	Liquid
FIXED-FLOATING GBP 19 years	260	4.00	52	11,809,078,947	181,678,138	Liquid	Liquid
FIXED-FLOATING GBP 20 years	488	7.51	59	20,864,361,728	320,990,180	Liquid	Liquid
FIXED-FLOATING GBP 21 years	1,518	23.35	62	52,016,212,081	800,249,417	Liquid	Liquid
FIXED-FLOATING GBP 22 years	623	9.58	50	15,389,333,677	236,758,980	Liquid	Liquid
FIXED-FLOATING GBP 23 years	274	4.22	43	13,904,987,901	213,922,891	Liquid	Liquid
FIXED-FLOATING GBP 24 years	463	7.12	52	14,702,796,128	226,196,864	Liquid	Liquid
FIXED-FLOATING GBP 25 years	488	7.51	54	23,887,707,207	367,503,188	Liquid	Liquid
FIXED-FLOATING GBP 26 years	816	12.55	58	24,292,668,363	373,733,359	Liquid	Liquid
FIXED-FLOATING GBP 27 years	441	6.78	51	11,571,731,449	178,026,638	Liquid	Liquid
FIXED-FLOATING GBP 28 years	298	4.58	42	8,220,767,064	126,473,339	Liquid	Liquid
FIXED-FLOATING GBP 29 years	427	6.57	49	12,441,731,098	191,411,248	Liquid	Liquid
FIXED-FLOATING GBP 30 years	1,247	19.18	62	35,559,395,720	547,067,626	Liquid	Liquid
FIXED-FLOATING GBP 31 years	4,132	63.57	63	83,899,134,904	1,290,755,922	Liquid	Liquid
FIXED-FLOATING GBP 32 years	72	1.11	26	1,822,466,690	28,037,949	Illiquid	Illiquid
FIXED-FLOATING GBP 33 years	135	2.08	36	4,307,125,939	66,263,476	Illiquid	Illiquid
FIXED-FLOATING GBP 34 years	84	1.29	26	2,923,151,347	44,971,559	Illiquid	Illiquid
FIXED-FLOATING GBP 35 years	125	1.92	27	7,285,147,304	112,079,189	Illiquid	Illiquid
FIXED-FLOATING GBP 36 years	112	1.72	33	5,133,799,568	78,981,532	Illiquid	Illiquid
FIXED-FLOATING GBP 37 years	85	1.31	29	1,265,129,968	19,463,538	Illiquid	Illiquid
FIXED-FLOATING GBP 38 years	49	0.75	21	1,447,800,277	22,273,850	Illiquid	Illiquid
FIXED-FLOATING GBP 39 years	131	2.02	37	3,212,694,142	49,426,064	Illiquid	Illiquid
FIXED-FLOATING GBP 40 years	112	1.72	29	6,148,790,620	94,596,779	Illiquid	Illiquid
FIXED-FLOATING GBP 41 years	509	7.83	56	16,169,703,868	248,764,675	Liquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						2.00	1.20
Notional Amount per day						100,000,000	76,167,945
FIXED TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING GBP 42 years	70	1.08	28	1,330,964,158	20,476,372	Illiquid	Illiquid
FIXED-FLOATING GBP 43 years	57	0.88	24	4,325,363,121	66,544,048	Illiquid	Illiquid
FIXED-FLOATING GBP 44 years	58	0.89	19	4,743,428,226	72,975,819	Illiquid	Illiquid
FIXED-FLOATING GBP 45 years	51	0.78	22	2,841,933,715	43,722,057	Illiquid	Illiquid
FIXED-FLOATING GBP 46 years	109	1.68	32	4,038,926,758	62,137,335	Illiquid	Illiquid
FIXED-FLOATING GBP 47 years	37	0.57	10	1,826,853,513	28,105,439	Illiquid	Illiquid
FIXED-FLOATING GBP 48 years	36	0.55	10	2,055,647,516	31,625,346	Illiquid	Illiquid
FIXED-FLOATING GBP 49 years	78	1.20	19	1,757,877,254	27,044,265	Illiquid	Illiquid
FIXED-FLOATING GBP 50 years	216	3.32	32	4,404,402,908	67,760,045	Illiquid	Illiquid
FIXED-FLOATING GBP 51 years	531	8.17	57	17,475,014,330	268,846,374	Liquid	Illiquid
FIXED-FLOATING GBP 52 years	3	0.05	3	48,999,969	753,846	Illiquid	Illiquid
FIXED-FLOATING GBP 53 years	3	0.05	3	78,270,831	1,204,167	Illiquid	Illiquid
FIXED-FLOATING GBP 54 years	8	0.12	7	582,955,732	8,968,550	Illiquid	Illiquid
FIXED-FLOATING GBP 55 years	8	0.12	5	260,539,986	4,008,307	Illiquid	Illiquid
FIXED-FLOATING GBP 56 years	17	0.26	10	403,082,057	6,201,262	Illiquid	Illiquid
FIXED-FLOATING GBP 57 years	2	0.03	2	33,001,229	507,711	Illiquid	Illiquid
FIXED-FLOATING GBP 58 years	2	0.03	1	60,675,063	933,463	Illiquid	Illiquid
FIXED-FLOATING GBP 59 years	1	0.02	1	24,270,025	373,385	Illiquid	Illiquid
FIXED-FLOATING GBP 60 years	1	0.02	1	11,292,941	173,738	Illiquid	Illiquid
FIXED-FLOATING GBP 61 years	5	0.08	4	223,379,402	3,436,606	Illiquid	Illiquid
FIXED-FLOATING GBP 63 years	1	0.02	1	21,843,023	336,047	Illiquid	Illiquid
FIXED-FLOATING GBP 64 years	1	0.02	1	17,595,768	270,704	Illiquid	Illiquid
FIXED-FLOATING GBP 65 years	1	0.02	1	5,272,860	81,121	Illiquid	Illiquid
FIXED-FLOATING GBP 67 years	1	0.02	1	13,166,489	202,561	Illiquid	Illiquid
FIXED-FLOATING GBP 71 years	3	0.05	3	57,104,742	878,534	Illiquid	Illiquid
FIXED-FLOATING HKD 1.5 months	23	0.35	14	1,020,241,582	15,696,024	Illiquid	Illiquid
FIXED-FLOATING HKD 3 months	14	0.22	11	221,851,962	3,413,107	Illiquid	Illiquid
FIXED-FLOATING HKD 6 months	155	2.38	41	2,540,436,453	39,083,638	Illiquid	Illiquid
FIXED-FLOATING HKD 1 year	506	7.78	58	23,172,272,125	356,496,494	Liquid	Liquid
FIXED-FLOATING HKD 2 years	593	9.12	61	25,526,683,437	392,718,207	Liquid	Liquid
FIXED-FLOATING HKD 3 years	830	12.77	61	28,978,747,159	445,826,879	Liquid	Liquid
FIXED-FLOATING HKD 4 years	940	14.46	61	27,404,861,619	421,613,256	Liquid	Liquid
FIXED-FLOATING HKD 5 years	506	7.78	57	10,791,637,554	166,025,193	Liquid	Liquid
FIXED-FLOATING HKD 6 years	1,031	15.86	60	24,758,907,173	380,906,264	Liquid	Liquid
FIXED-FLOATING HKD 7 years	115	1.77	37	1,867,682,293	28,733,574	Illiquid	Illiquid
FIXED-FLOATING HKD 8 years	148	2.28	34	2,480,871,570	38,167,255	Illiquid	Illiquid
FIXED-FLOATING HKD 9 years	91	1.40	32	1,143,624,747	17,594,227	Illiquid	Illiquid
FIXED-FLOATING HKD 10 years	112	1.72	41	1,494,119,653	22,986,456	Illiquid	Illiquid
FIXED-FLOATING HKD 11 years	252	3.88	46	3,605,969,280	55,476,450	Illiquid	Illiquid
FIXED-FLOATING HKD 12 years	4	0.06	4	39,805,165	612,387	Illiquid	Illiquid
FIXED-FLOATING HKD 13 years	1	0.02	1	3,833,713	58,980	Illiquid	Illiquid
FIXED-FLOATING HKD 14 years	2	0.03	2	16,830,937	258,937	Illiquid	Illiquid
FIXED-FLOATING HKD 15 years	2	0.03	2	19,636,093	302,094	Illiquid	Illiquid
FIXED-FLOATING HKD 16 years	12	0.18	6	118,564,599	1,824,071	Illiquid	Illiquid
FIXED-FLOATING HUF 1.5 months	24	0.37	10	514,217,040	7,911,031	Illiquid	Illiquid
FIXED-FLOATING HUF 3 months	15	0.23	6	374,746,802	5,765,335	Illiquid	Illiquid
FIXED-FLOATING HUF 6 months	78	1.20	10	1,911,606,810	29,409,336	Illiquid	Illiquid
FIXED-FLOATING HUF 1 year	150	2.31	42	6,478,644,557	99,671,455	Illiquid	Illiquid
FIXED-FLOATING HUF 2 years	390	6.00	50	10,045,575,689	154,547,318	Liquid	Illiquid
FIXED-FLOATING HUF 3 years	1,499	23.06	62	30,863,994,199	474,830,680	Liquid	Illiquid
FIXED-FLOATING HUF 4 years	222	3.42	43	3,271,089,466	50,324,453	Illiquid	Illiquid
FIXED-FLOATING HUF 5 years	999	15.37	57	9,286,579,152	142,870,448	Liquid	Illiquid
FIXED-FLOATING HUF 6 years	1,358	20.89	60	13,164,413,320	202,529,436	Liquid	Illiquid
FIXED-FLOATING HUF 7 years	68	1.05	24	654,385,342	10,067,467	Illiquid	Illiquid
FIXED-FLOATING HUF 8 years	138	2.12	30	888,727,836	13,672,736	Illiquid	Illiquid
FIXED-FLOATING HUF 9 years	67	1.03	20	539,698,808	8,303,059	Illiquid	Illiquid
FIXED-FLOATING HUF 10 years	156	2.40	36	710,076,342	10,924,251	Illiquid	Illiquid
FIXED-FLOATING HUF 11 years	426	6.55	53	2,014,402,238	30,990,804	Illiquid	Illiquid
FIXED-FLOATING HUF 12 years	4	0.06	3	27,613,555	424,824	Illiquid	Illiquid
FIXED-FLOATING HUF 13 years	6	0.09	5	39,970,621	614,933	Illiquid	Illiquid
FIXED-FLOATING IDR 6 months	1	0.02	1	6,326,728	97,334	Illiquid	Illiquid
FIXED-FLOATING IDR 2 years	1	0.02	1	31,633,640	486,671	Illiquid	Illiquid
FIXED-FLOATING ILS 1.5 months	21	0.32	13	721,187,208	11,095,188	Illiquid	Illiquid
FIXED-FLOATING ILS 3 months	7	0.11	1	238,009,930	3,661,691	Illiquid	Illiquid
FIXED-FLOATING ILS 6 months	40	0.62	24	1,501,341,584	23,097,563	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						2.00	1.20
Notional Amount per day						100,000,000	76,167,945
FIXED TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING ILS 1 year	39	0.60	24	1,341,220,091	20,634,155	Illiquid	Illiquid
FIXED-FLOATING ILS 2 years	251	3.86	57	10,729,947,791	165,076,120	Liquid	Illiquid
FIXED-FLOATING ILS 3 years	526	8.09	57	15,544,283,835	239,142,828	Liquid	Illiquid
FIXED-FLOATING ILS 4 years	212	3.26	52	5,534,394,205	85,144,526	Illiquid	Illiquid
FIXED-FLOATING ILS 5 years	156	2.40	42	2,062,237,747	31,726,735	Illiquid	Illiquid
FIXED-FLOATING ILS 6 years	433	6.66	60	5,847,408,123	89,960,125	Illiquid	Illiquid
FIXED-FLOATING ILS 7 years	66	1.02	28	764,588,109	11,762,894	Illiquid	Illiquid
FIXED-FLOATING ILS 8 years	82	1.26	37	972,997,903	14,969,199	Illiquid	Illiquid
FIXED-FLOATING ILS 9 years	52	0.80	24	430,714,461	6,626,376	Illiquid	Illiquid
FIXED-FLOATING ILS 10 years	73	1.12	30	505,707,423	7,780,114	Illiquid	Illiquid
FIXED-FLOATING ILS 11 years	236	3.63	43	2,049,385,023	31,529,000	Illiquid	Illiquid
FIXED-FLOATING ILS 12 years	1	0.02	1	6,263,419	96,360	Illiquid	Illiquid
FIXED-FLOATING ILS 13 years	12	0.18	5	182,056,718	2,800,873	Illiquid	Illiquid
FIXED-FLOATING ILS 14 years	3	0.05	2	56,892,724	875,273	Illiquid	Illiquid
FIXED-FLOATING ILS 16 years	25	0.38	8	232,375,149	3,575,002	Illiquid	Illiquid
FIXED-FLOATING ILS 21 years	2	0.03	1	8,351,226	128,480	Illiquid	Illiquid
FIXED-FLOATING INR 1.5 months	55	0.85	11	5,616,576,834	86,408,874	Illiquid	Illiquid
FIXED-FLOATING INR 3 months	24	0.37	7	1,606,129,124	24,709,679	Illiquid	Illiquid
FIXED-FLOATING INR 6 months	43	0.66	8	2,560,360,225	39,390,157	Illiquid	Illiquid
FIXED-FLOATING INR 1 year	130	2.00	29	8,849,238,513	136,142,131	Liquid	Illiquid
FIXED-FLOATING INR 2 years	238	3.66	47	9,575,975,700	147,322,703	Liquid	Illiquid
FIXED-FLOATING INR 3 years	207	3.18	48	2,901,976,220	44,645,788	Illiquid	Illiquid
FIXED-FLOATING INR 4 years	99	1.52	33	743,302,426	11,435,422	Illiquid	Illiquid
FIXED-FLOATING INR 5 years	295	4.54	32	3,417,742,822	52,580,659	Illiquid	Illiquid
FIXED-FLOATING INR 6 years	273	4.20	52	2,434,880,912	37,459,706	Illiquid	Illiquid
FIXED-FLOATING INR 7 years	19	0.29	13	212,850,708	3,274,626	Illiquid	Illiquid
FIXED-FLOATING INR 8 years	6	0.09	6	30,111,157	463,249	Illiquid	Illiquid
FIXED-FLOATING INR 9 years	3	0.05	3	36,133,389	555,898	Illiquid	Illiquid
FIXED-FLOATING INR 10 years	1	0.02	1	2,675,497	41,161	Illiquid	Illiquid
FIXED-FLOATING INR 11 years	12	0.18	10	85,515,686	1,315,626	Illiquid	Illiquid
FIXED-FLOATING INR 12 years	2	0.03	2	69,376,106	1,067,325	Illiquid	Illiquid
FIXED-FLOATING ISK 3 years	1	0.02	1	4,620,285	71,081	Illiquid	Illiquid
FIXED-FLOATING JPY 1.5 months	161	2.48	31	16,137,178,343	248,264,282	Liquid	Liquid
FIXED-FLOATING JPY 3 months	155	2.38	27	9,165,918,798	141,014,135	Liquid	Liquid
FIXED-FLOATING JPY 6 months	1,039	15.98	62	130,444,229,419	2,006,834,299	Liquid	Liquid
FIXED-FLOATING JPY 1 year	4,251	65.40	66	652,919,516,839	10,044,915,644	Liquid	Liquid
FIXED-FLOATING JPY 2 years	3,704	56.98	68	461,552,271,036	7,100,804,170	Liquid	Liquid
FIXED-FLOATING JPY 3 years	2,804	43.14	65	291,703,252,408	4,487,742,345	Liquid	Liquid
FIXED-FLOATING JPY 4 years	2,566	39.48	67	200,254,486,116	3,080,838,248	Liquid	Liquid
FIXED-FLOATING JPY 5 years	3,156	48.55	67	216,432,387,897	3,329,729,045	Liquid	Liquid
FIXED-FLOATING JPY 6 years	4,301	66.17	67	270,494,670,489	4,161,456,469	Liquid	Liquid
FIXED-FLOATING JPY 7 years	2,644	40.68	68	147,023,606,337	2,261,901,636	Liquid	Liquid
FIXED-FLOATING JPY 8 years	5,088	78.28	67	278,114,842,134	4,278,689,879	Liquid	Liquid
FIXED-FLOATING JPY 9 years	1,994	30.68	67	102,236,521,662	1,572,869,564	Liquid	Liquid
FIXED-FLOATING JPY 10 years	3,518	54.12	67	119,397,580,044	1,836,885,847	Liquid	Liquid
FIXED-FLOATING JPY 11 years	9,780	150.46	68	338,831,367,267	5,212,790,266	Liquid	Liquid
FIXED-FLOATING JPY 12 years	598	9.20	62	32,139,659,842	494,456,305	Liquid	Liquid
FIXED-FLOATING JPY 13 years	996	15.32	63	44,270,010,115	681,077,079	Liquid	Liquid
FIXED-FLOATING JPY 14 years	400	6.15	56	10,758,482,550	165,515,116	Liquid	Liquid
FIXED-FLOATING JPY 15 years	539	8.29	63	15,242,809,386	234,504,760	Liquid	Liquid
FIXED-FLOATING JPY 16 years	892	13.72	64	21,438,607,641	329,824,733	Liquid	Liquid
FIXED-FLOATING JPY 17 years	369	5.68	48	7,625,051,822	117,308,490	Liquid	Liquid
FIXED-FLOATING JPY 18 years	325	5.00	49	8,279,187,509	127,372,116	Liquid	Liquid
FIXED-FLOATING JPY 19 years	410	6.31	58	7,848,251,749	120,742,335	Liquid	Liquid
FIXED-FLOATING JPY 20 years	1,030	15.85	67	17,923,917,013	275,752,569	Liquid	Liquid
FIXED-FLOATING JPY 21 years	2,884	44.37	65	45,995,828,628	707,628,133	Liquid	Liquid
FIXED-FLOATING JPY 22 years	154	2.37	40	2,729,950,453	41,999,238	Illiquid	Illiquid
FIXED-FLOATING JPY 23 years	132	2.03	32	3,662,869,295	56,351,835	Illiquid	Illiquid
FIXED-FLOATING JPY 24 years	167	2.57	37	4,731,318,741	72,789,519	Illiquid	Illiquid
FIXED-FLOATING JPY 25 years	338	5.20	45	4,480,632,453	68,932,807	Illiquid	Illiquid
FIXED-FLOATING JPY 26 years	356	5.48	58	7,552,824,955	116,197,307	Liquid	Illiquid
FIXED-FLOATING JPY 27 years	83	1.28	20	1,311,919,078	20,183,370	Illiquid	Illiquid
FIXED-FLOATING JPY 28 years	76	1.17	27	1,610,667,370	24,779,498	Illiquid	Illiquid
FIXED-FLOATING JPY 29 years	134	2.06	35	2,247,381,093	34,575,094	Illiquid	Illiquid
FIXED-FLOATING JPY 30 years	311	4.78	49	2,761,342,139	42,482,187	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						2.00	1.20
Notional Amount per day						100,000,000	76,167,945
FIXED TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING JPY 31 years	738	11.35	59	8,134,285,920	125,142,860	Liquid	Illiquid
FIXED-FLOATING JPY 32 years	7	0.11	5	79,080,293	1,216,620	Illiquid	Illiquid
FIXED-FLOATING JPY 33 years	4	0.06	4	3,689,598	56,763	Illiquid	Illiquid
FIXED-FLOATING JPY 34 years	16	0.25	6	153,104,114	2,355,448	Illiquid	Illiquid
FIXED-FLOATING JPY 35 years	8	0.12	5	120,982,334	1,861,267	Illiquid	Illiquid
FIXED-FLOATING JPY 36 years	9	0.14	7	184,337,978	2,835,969	Illiquid	Illiquid
FIXED-FLOATING JPY 37 years	1	0.02	1	7,095,380	109,160	Illiquid	Illiquid
FIXED-FLOATING JPY 38 years	2	0.03	2	28,381,521	436,639	Illiquid	Illiquid
FIXED-FLOATING JPY 39 years	5	0.08	2	53,945,393	829,929	Illiquid	Illiquid
FIXED-FLOATING JPY 40 years	1	0.02	1	60,097,870	924,583	Illiquid	Illiquid
FIXED-FLOATING JPY 41 years	29	0.45	13	378,964,258	5,830,219	Illiquid	Illiquid
FIXED-FLOATING KRW 1.5 months	163	2.51	42	4,496,375,955	69,175,015	Illiquid	Illiquid
FIXED-FLOATING KRW 3 months	26	0.40	8	578,014,676	8,892,533	Illiquid	Illiquid
FIXED-FLOATING KRW 6 months	484	7.45	55	12,364,497,079	190,223,032	Liquid	Liquid
FIXED-FLOATING KRW 1 year	822	12.65	61	29,349,682,828	451,533,582	Liquid	Liquid
FIXED-FLOATING KRW 2 years	1,770	27.23	63	52,326,731,268	805,026,635	Liquid	Liquid
FIXED-FLOATING KRW 3 years	1,845	28.38	63	42,137,290,517	648,266,008	Liquid	Liquid
FIXED-FLOATING KRW 4 years	1,433	22.05	62	26,515,042,733	407,923,734	Liquid	Liquid
FIXED-FLOATING KRW 5 years	1,017	15.65	64	19,015,623,804	292,548,059	Liquid	Liquid
FIXED-FLOATING KRW 6 years	1,282	19.72	62	22,474,803,172	345,766,203	Liquid	Liquid
FIXED-FLOATING KRW 7 years	323	4.97	58	4,136,075,635	63,631,933	Illiquid	Illiquid
FIXED-FLOATING KRW 8 years	489	7.52	57	5,251,621,860	80,794,182	Illiquid	Illiquid
FIXED-FLOATING KRW 9 years	361	5.55	55	3,718,601,378	57,209,252	Illiquid	Illiquid
FIXED-FLOATING KRW 10 years	463	7.12	56	5,232,649,526	80,502,300	Illiquid	Illiquid
FIXED-FLOATING KRW 11 years	590	9.08	62	7,051,084,270	108,478,220	Liquid	Illiquid
FIXED-FLOATING KRW 12 years	17	0.26	13	272,729,183	4,195,834	Illiquid	Illiquid
FIXED-FLOATING KRW 13 years	57	0.88	29	509,972,384	7,845,729	Illiquid	Illiquid
FIXED-FLOATING KRW 14 years	68	1.05	38	772,475,869	11,884,244	Illiquid	Illiquid
FIXED-FLOATING KRW 15 years	61	0.94	32	726,952,936	11,183,891	Illiquid	Illiquid
FIXED-FLOATING KRW 16 years	97	1.49	27	1,034,083,714	15,908,980	Illiquid	Illiquid
FIXED-FLOATING KRW 17 years	4	0.06	3	39,505,879	607,783	Illiquid	Illiquid
FIXED-FLOATING KRW 18 years	3	0.05	2	7,574,802	116,535	Illiquid	Illiquid
FIXED-FLOATING KRW 19 years	9	0.14	5	39,678,149	610,433	Illiquid	Illiquid
FIXED-FLOATING KRW 20 years	4	0.06	3	19,406,397	298,560	Illiquid	Illiquid
FIXED-FLOATING KRW 21 years	5	0.08	2	47,684,289	733,604	Illiquid	Illiquid
FIXED-FLOATING MXN 1.5 months	375	5.77	49	11,721,320,233	180,328,004	Liquid	Liquid
FIXED-FLOATING MXN 3 months	155	2.38	39	9,832,802,693	151,273,888	Liquid	Liquid
FIXED-FLOATING MXN 6 months	352	5.42	54	26,175,799,296	402,704,605	Liquid	Liquid
FIXED-FLOATING MXN 1 year	772	11.88	59	41,810,609,151	643,240,141	Liquid	Liquid
FIXED-FLOATING MXN 2 years	1,903	29.28	65	46,799,560,801	719,993,243	Liquid	Liquid
FIXED-FLOATING MXN 3 years	1,935	29.77	64	38,512,327,759	592,497,350	Liquid	Liquid
FIXED-FLOATING MXN 4 years	1,811	27.86	63	21,568,525,816	331,823,474	Liquid	Liquid
FIXED-FLOATING MXN 5 years	1,949	29.98	63	18,746,548,958	288,408,446	Liquid	Liquid
FIXED-FLOATING MXN 6 years	530	8.15	53	7,457,626,272	114,732,712	Liquid	Liquid
FIXED-FLOATING MXN 7 years	961	14.78	60	7,223,176,326	111,125,790	Liquid	Liquid
FIXED-FLOATING MXN 8 years	850	13.08	44	4,150,789,843	63,858,305	Illiquid	Illiquid
FIXED-FLOATING MXN 9 years	529	8.14	44	3,079,862,333	47,382,497	Illiquid	Illiquid
FIXED-FLOATING MXN 10 years	3,352	51.57	64	20,060,303,421	308,620,053	Liquid	Illiquid
FIXED-FLOATING MXN 11 years	149	2.29	36	1,356,910,401	20,875,545	Illiquid	Illiquid
FIXED-FLOATING MXN 12 years	89	1.37	32	751,052,347	11,554,651	Illiquid	Illiquid
FIXED-FLOATING MXN 13 years	57	0.88	16	717,779,291	11,042,758	Illiquid	Illiquid
FIXED-FLOATING MXN 14 years	52	0.80	17	408,206,011	6,280,092	Illiquid	Illiquid
FIXED-FLOATING MXN 15 years	323	4.97	48	1,309,350,835	20,143,859	Illiquid	Illiquid
FIXED-FLOATING MXN 16 years	29	0.45	12	199,800,915	3,073,860	Illiquid	Illiquid
FIXED-FLOATING MXN 17 years	7	0.11	4	46,205,784	710,858	Illiquid	Illiquid
FIXED-FLOATING MXN 18 years	29	0.45	13	127,163,558	1,956,362	Illiquid	Illiquid
FIXED-FLOATING MXN 19 years	16	0.25	10	89,619,883	1,378,767	Illiquid	Illiquid
FIXED-FLOATING MXN 20 years	169	2.60	37	887,166,983	13,648,723	Illiquid	Illiquid
FIXED-FLOATING MXN 23 years	3	0.05	2	44,400,203	683,080	Illiquid	Illiquid
FIXED-FLOATING MXN 25 years	1	0.02	1	3,885,018	59,770	Illiquid	Illiquid
FIXED-FLOATING MXN 28 years	1	0.02	1	1,665,008	25,616	Illiquid	Illiquid
FIXED-FLOATING MXN 30 years	15	0.23	9	60,051,275	923,866	Illiquid	Illiquid
FIXED-FLOATING MYR 1.5 months	124	1.91	39	3,790,712,554	58,318,655	Illiquid	Illiquid
FIXED-FLOATING MYR 3 months	24	0.37	8	613,664,223	9,440,988	Illiquid	Illiquid
FIXED-FLOATING MYR 6 months	108	1.66	40	2,648,558,518	40,747,054	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						2.00	1.20
Notional Amount per day						100,000,000	76,167,945
FIXED TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING MYR 1 year	463	7.12	58	31,536,620,966	485,178,784	Liquid	Liquid
FIXED-FLOATING MYR 2 years	599	9.22	57	20,438,684,759	314,441,304	Liquid	Liquid
FIXED-FLOATING MYR 3 years	878	13.51	62	22,399,386,816	344,605,951	Liquid	Liquid
FIXED-FLOATING MYR 4 years	452	6.95	57	8,025,235,644	123,465,164	Liquid	Liquid
FIXED-FLOATING MYR 5 years	615	9.46	59	7,160,215,474	110,157,161	Liquid	Liquid
FIXED-FLOATING MYR 6 years	828	12.74	62	11,518,189,683	177,202,918	Liquid	Liquid
FIXED-FLOATING MYR 7 years	87	1.34	28	895,103,333	13,770,821	Illiquid	Illiquid
FIXED-FLOATING MYR 8 years	127	1.95	30	1,123,566,848	17,285,644	Illiquid	Illiquid
FIXED-FLOATING MYR 9 years	48	0.74	18	315,831,035	4,858,939	Illiquid	Illiquid
FIXED-FLOATING MYR 10 years	77	1.18	28	1,216,854,947	18,720,845	Illiquid	Illiquid
FIXED-FLOATING MYR 11 years	111	1.71	24	1,006,292,052	15,481,416	Illiquid	Illiquid
FIXED-FLOATING MYR 12 years	1	0.02	1	8,464,334	130,221	Illiquid	Illiquid
FIXED-FLOATING NOK 1.5 months	800	12.31	26	14,959,462,278	230,145,574	Liquid	Illiquid
FIXED-FLOATING NOK 3 months	9	0.14	6	36,678,484	564,284	Illiquid	Illiquid
FIXED-FLOATING NOK 6 months	64	0.98	33	2,192,293,162	33,727,587	Illiquid	Illiquid
FIXED-FLOATING NOK 1 year	371	5.71	56	10,839,065,698	166,754,857	Liquid	Liquid
FIXED-FLOATING NOK 2 years	813	12.51	60	34,690,894,830	533,706,074	Liquid	Liquid
FIXED-FLOATING NOK 3 years	899	13.83	60	36,586,992,377	562,876,806	Liquid	Liquid
FIXED-FLOATING NOK 4 years	853	13.12	60	23,049,769,092	354,611,832	Liquid	Liquid
FIXED-FLOATING NOK 5 years	662	10.18	60	15,066,016,953	231,784,876	Liquid	Liquid
FIXED-FLOATING NOK 6 years	651	10.02	58	17,315,992,676	266,399,887	Liquid	Liquid
FIXED-FLOATING NOK 7 years	322	4.95	52	9,001,605,129	138,486,233	Liquid	Liquid
FIXED-FLOATING NOK 8 years	367	5.65	57	7,503,803,386	115,443,129	Liquid	Liquid
FIXED-FLOATING NOK 9 years	1,149	17.68	57	7,300,511,987	112,315,569	Liquid	Liquid
FIXED-FLOATING NOK 10 years	540	8.31	57	10,633,188,766	163,587,519	Liquid	Liquid
FIXED-FLOATING NOK 11 years	491	7.55	54	9,119,790,857	140,304,475	Liquid	Liquid
FIXED-FLOATING NOK 12 years	45	0.69	29	2,125,879,873	32,705,844	Illiquid	Illiquid
FIXED-FLOATING NOK 13 years	30	0.46	17	1,237,256,155	19,034,710	Illiquid	Illiquid
FIXED-FLOATING NOK 14 years	20	0.31	13	517,242,388	7,957,575	Illiquid	Illiquid
FIXED-FLOATING NOK 15 years	12	0.18	8	334,741,413	5,149,868	Illiquid	Illiquid
FIXED-FLOATING NOK 16 years	13	0.20	8	266,510,646	4,100,164	Illiquid	Illiquid
FIXED-FLOATING NOK 17 years	4	0.06	2	208,735,328	3,211,313	Illiquid	Illiquid
FIXED-FLOATING NOK 18 years	2	0.03	2	11,548,463	177,669	Illiquid	Illiquid
FIXED-FLOATING NOK 19 years	2	0.03	2	24,299,765	373,843	Illiquid	Illiquid
FIXED-FLOATING NOK 20 years	10	0.15	8	176,385,433	2,713,622	Illiquid	Illiquid
FIXED-FLOATING NOK 21 years	4	0.06	4	121,181,464	1,864,330	Illiquid	Illiquid
FIXED-FLOATING NOK 26 years	1	0.02	1	36,132,286	555,881	Illiquid	Illiquid
FIXED-FLOATING NOK 31 years	1	0.02	1	4,677,705	71,965	Illiquid	Illiquid
FIXED-FLOATING NZD 1.5 months	131	2.02	28	7,343,296,861	112,973,798	Liquid	Illiquid
FIXED-FLOATING NZD 3 months	47	0.72	6	2,684,249,937	41,296,153	Illiquid	Illiquid
FIXED-FLOATING NZD 6 months	205	3.15	48	15,027,866,497	231,197,946	Liquid	Liquid
FIXED-FLOATING NZD 1 year	912	14.03	63	79,279,274,905	1,219,681,152	Liquid	Liquid
FIXED-FLOATING NZD 2 years	2,510	38.62	67	96,309,023,571	1,481,677,286	Liquid	Liquid
FIXED-FLOATING NZD 3 years	3,162	48.65	67	155,248,294,797	2,388,435,305	Liquid	Liquid
FIXED-FLOATING NZD 4 years	1,647	25.34	65	66,505,621,031	1,023,163,400	Liquid	Liquid
FIXED-FLOATING NZD 5 years	947	14.57	64	30,928,818,467	475,827,976	Liquid	Liquid
FIXED-FLOATING NZD 6 years	1,146	17.63	66	28,759,663,123	442,456,356	Liquid	Liquid
FIXED-FLOATING NZD 7 years	382	5.88	54	11,279,009,815	173,523,228	Liquid	Liquid
FIXED-FLOATING NZD 8 years	561	8.63	55	14,690,372,354	226,005,729	Liquid	Liquid
FIXED-FLOATING NZD 9 years	489	7.52	49	9,207,279,737	141,650,457	Liquid	Liquid
FIXED-FLOATING NZD 10 years	591	9.09	54	6,477,265,116	99,650,233	Illiquid	Illiquid
FIXED-FLOATING NZD 11 years	1,557	23.95	65	20,726,092,794	318,862,966	Liquid	Illiquid
FIXED-FLOATING NZD 12 years	43	0.66	13	566,699,292	8,718,451	Illiquid	Illiquid
FIXED-FLOATING NZD 13 years	65	1.00	21	1,225,586,985	18,855,184	Illiquid	Illiquid
FIXED-FLOATING NZD 16 years	12	0.18	4	103,182,936	1,587,430	Illiquid	Illiquid
FIXED-FLOATING PEN 2 years	2	0.03	2	3,891,164	59,864	Illiquid	Illiquid
FIXED-FLOATING PHP 6 months	2	0.03	1	1,632,326	25,113	Illiquid	Illiquid
FIXED-FLOATING PHP 1 year	4	0.06	3	6,529,302	100,451	Illiquid	Illiquid
FIXED-FLOATING PHP 2 years	8	0.12	7	12,242,441	188,345	Illiquid	Illiquid
FIXED-FLOATING PHP 3 years	14	0.22	5	13,874,767	213,458	Illiquid	Illiquid
FIXED-FLOATING PHP 4 years	26	0.40	12	30,198,022	464,585	Illiquid	Illiquid
FIXED-FLOATING PHP 5 years	8	0.12	3	26,933,371	414,360	Illiquid	Illiquid
FIXED-FLOATING PHP 6 years	5	0.08	5	6,529,302	100,451	Illiquid	Illiquid
FIXED-FLOATING PHP 8 years	32	0.49	7	26,117,208	401,803	Illiquid	Illiquid
FIXED-FLOATING PLN 1.5 months	81	1.25	34	3,008,901,429	46,290,791	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						2.00	1.20
Notional Amount per day						100,000,000	76,167,945
FIXED TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING_PLN_3 months	63	0.97	14	2,608,612,258	40,132,496	Illiquid	Illiquid
FIXED-FLOATING_PLN_6 months	141	2.17	30	6,405,533,120	98,546,663	Illiquid	Illiquid
FIXED-FLOATING_PLN_1 year	363	5.58	50	20,144,735,335	309,919,005	Liquid	Liquid
FIXED-FLOATING_PLN_2 years	714	10.98	61	31,218,085,036	480,278,231	Liquid	Liquid
FIXED-FLOATING_PLN_3 years	1,867	28.72	60	53,624,548,583	824,993,055	Liquid	Liquid
FIXED-FLOATING_PLN_4 years	701	10.78	60	18,064,695,318	277,918,390	Liquid	Liquid
FIXED-FLOATING_PLN_5 years	553	8.51	55	10,119,298,456	155,681,515	Liquid	Liquid
FIXED-FLOATING_PLN_6 years	2,061	31.71	61	24,756,720,069	380,872,616	Liquid	Liquid
FIXED-FLOATING_PLN_7 years	311	4.78	44	5,017,398,505	77,190,746	Illiquid	Illiquid
FIXED-FLOATING_PLN_8 years	219	3.37	42	2,768,072,823	42,585,736	Illiquid	Illiquid
FIXED-FLOATING_PLN_9 years	103	1.58	30	1,236,866,311	19,028,712	Illiquid	Illiquid
FIXED-FLOATING_PLN_10 years	518	7.97	45	2,411,713,012	37,103,277	Illiquid	Illiquid
FIXED-FLOATING_PLN_11 years	895	13.77	59	7,128,463,093	109,668,663	Liquid	Illiquid
FIXED-FLOATING_PLN_12 years	3	0.05	3	48,571,021	747,246	Illiquid	Illiquid
FIXED-FLOATING_PLN_13 years	14	0.22	7	156,159,135	2,402,448	Illiquid	Illiquid
FIXED-FLOATING_PLN_14 years	1	0.02	1	14,326,526	220,408	Illiquid	Illiquid
FIXED-FLOATING_PLN_15 years	2	0.03	2	811,836	12,490	Illiquid	Illiquid
FIXED-FLOATING_PLN_16 years	2	0.03	1	22,683,666	348,979	Illiquid	Illiquid
FIXED-FLOATING RON_2 years	1	0.02	1	22,423,390	344,975	Illiquid	Illiquid
FIXED-FLOATING RUB_1.5 months	3	0.05	3	48,404,619	744,686	Illiquid	Illiquid
FIXED-FLOATING RUB_3 months	4	0.06	2	67,313,630	1,035,594	Illiquid	Illiquid
FIXED-FLOATING RUB_6 months	33	0.51	22	599,580,859	9,224,321	Illiquid	Illiquid
FIXED-FLOATING RUB_1 year	101	1.55	43	2,085,829,089	32,089,678	Illiquid	Illiquid
FIXED-FLOATING RUB_2 years	246	3.78	45	4,098,385,253	63,052,081	Illiquid	Illiquid
FIXED-FLOATING RUB_3 years	130	2.00	44	1,546,881,492	23,798,177	Illiquid	Illiquid
FIXED-FLOATING RUB_4 years	87	1.34	37	790,435,398	12,160,545	Illiquid	Illiquid
FIXED-FLOATING RUB_5 years	70	1.08	29	914,929,916	14,075,845	Illiquid	Illiquid
FIXED-FLOATING RUB_6 years	53	0.82	22	566,240,700	8,711,395	Illiquid	Illiquid
FIXED-FLOATING RUB_7 years	5	0.08	5	29,205,956	449,322	Illiquid	Illiquid
FIXED-FLOATING RUB_8 years	1	0.02	1	14,278,649	219,672	Illiquid	Illiquid
FIXED-FLOATING RUB_9 years	3	0.05	1	30,597,104	470,725	Illiquid	Illiquid
FIXED-FLOATING RUB_10 years	2	0.03	2	11,218,938	172,599	Illiquid	Illiquid
FIXED-FLOATING RUB_11 years	7	0.11	7	36,381,997	559,723	Illiquid	Illiquid
FIXED-FLOATING SAR_6 months	15	0.23	12	418,272,353	6,434,959	Illiquid	Illiquid
FIXED-FLOATING SAR_1 year	23	0.35	16	672,421,373	10,344,944	Illiquid	Illiquid
FIXED-FLOATING SAR_2 years	51	0.78	31	1,937,728,487	29,811,207	Illiquid	Illiquid
FIXED-FLOATING SAR_3 years	103	1.58	43	3,881,899,143	59,721,525	Illiquid	Illiquid
FIXED-FLOATING SAR_4 years	91	1.40	40	2,063,709,772	31,749,381	Illiquid	Illiquid
FIXED-FLOATING SAR_5 years	74	1.14	37	1,830,865,146	28,167,156	Illiquid	Illiquid
FIXED-FLOATING SAR_6 years	87	1.34	33	2,387,060,384	36,724,006	Illiquid	Illiquid
FIXED-FLOATING SAR_7 years	7	0.11	5	104,423,056	1,606,509	Illiquid	Illiquid
FIXED-FLOATING SAR_8 years	11	0.17	8	172,467,247	2,653,342	Illiquid	Illiquid
FIXED-FLOATING SAR_9 years	2	0.03	1	20,304,483	312,377	Illiquid	Illiquid
FIXED-FLOATING SAR_11 years	7	0.11	4	75,174,932	1,156,537	Illiquid	Illiquid
FIXED-FLOATING SEK_1.5 months	245	3.77	35	7,883,273,111	121,281,125	Liquid	Illiquid
FIXED-FLOATING SEK_3 months	53	0.82	16	1,981,758,885	30,488,598	Illiquid	Illiquid
FIXED-FLOATING SEK_6 months	313	4.82	55	17,309,040,402	266,292,929	Liquid	Liquid
FIXED-FLOATING SEK_1 year	786	12.09	61	57,647,926,244	886,891,173	Liquid	Liquid
FIXED-FLOATING SEK_2 years	2,247	34.57	61	148,361,070,033	2,282,478,001	Liquid	Liquid
FIXED-FLOATING SEK_3 years	3,827	58.88	61	169,972,151,596	2,614,956,178	Liquid	Liquid
FIXED-FLOATING SEK_4 years	2,022	31.11	62	84,857,289,817	1,305,496,766	Liquid	Liquid
FIXED-FLOATING SEK_5 years	2,125	32.69	61	78,905,329,153	1,213,928,141	Liquid	Liquid
FIXED-FLOATING SEK_6 years	2,908	44.74	61	65,521,156,061	1,008,017,786	Liquid	Liquid
FIXED-FLOATING SEK_7 years	801	12.32	61	22,476,755,283	345,796,235	Liquid	Liquid
FIXED-FLOATING SEK_8 years	824	12.68	60	20,412,697,149	314,041,495	Liquid	Liquid
FIXED-FLOATING SEK_9 years	818	12.58	61	17,630,643,121	271,240,663	Liquid	Liquid
FIXED-FLOATING SEK_10 years	1,256	19.32	60	22,443,425,073	345,283,463	Liquid	Liquid
FIXED-FLOATING SEK_11 years	2,275	35.00	62	32,905,690,426	506,241,391	Liquid	Liquid
FIXED-FLOATING SEK_12 years	68	1.05	28	1,699,946,172	26,153,018	Illiquid	Illiquid
FIXED-FLOATING SEK_13 years	78	1.20	29	2,740,568,963	42,162,599	Illiquid	Illiquid
FIXED-FLOATING SEK_14 years	44	0.68	24	1,166,261,780	17,942,489	Illiquid	Illiquid
FIXED-FLOATING SEK_15 years	41	0.63	24	1,164,674,728	17,918,073	Illiquid	Illiquid
FIXED-FLOATING SEK_16 years	41	0.63	17	862,216,197	13,264,865	Illiquid	Illiquid
FIXED-FLOATING SEK_17 years	7	0.11	5	130,231,808	2,003,566	Illiquid	Illiquid
FIXED-FLOATING SEK_18 years	21	0.32	14	405,969,484	6,245,684	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						2.00	1.20
Notional Amount per day						100,000,000	76,167,945
FIXED TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING SEK 19 years	17	0.26	15	231,297,314	3,558,420	Illiquid	Illiquid
FIXED-FLOATING SEK 20 years	24	0.37	16	559,049,086	8,600,755	Illiquid	Illiquid
FIXED-FLOATING SEK 21 years	29	0.45	15	570,002,261	8,769,266	Illiquid	Illiquid
FIXED-FLOATING SEK 22 years	2	0.03	2	58,492,342	899,882	Illiquid	Illiquid
FIXED-FLOATING SEK 23 years	7	0.11	7	97,710,065	1,503,232	Illiquid	Illiquid
FIXED-FLOATING SEK 24 years	6	0.09	6	110,522,674	1,700,349	Illiquid	Illiquid
FIXED-FLOATING SEK 25 years	27	0.42	15	465,580,012	7,162,769	Illiquid	Illiquid
FIXED-FLOATING SEK 26 years	22	0.34	11	338,902,782	5,213,889	Illiquid	Illiquid
FIXED-FLOATING SEK 27 years	13	0.20	8	254,878,726	3,921,211	Illiquid	Illiquid
FIXED-FLOATING SEK 28 years	3	0.05	2	70,112,821	1,078,659	Illiquid	Illiquid
FIXED-FLOATING SEK 29 years	4	0.06	3	44,565,594	685,625	Illiquid	Illiquid
FIXED-FLOATING SEK 30 years	4	0.06	2	61,277,692	942,734	Illiquid	Illiquid
FIXED-FLOATING SEK 31 years	7	0.11	3	40,888,933	629,061	Illiquid	Illiquid
FIXED-FLOATING SEK 32 years	1	0.02	1	8,801,705	135,411	Illiquid	Illiquid
FIXED-FLOATING SGD 1.5 months	64	0.98	18	1,316,753,098	20,257,740	Illiquid	Illiquid
FIXED-FLOATING SGD 3 months	16	0.25	2	221,961,952	3,414,799	Illiquid	Illiquid
FIXED-FLOATING SGD 6 months	86	1.32	25	2,440,542,585	37,546,809	Illiquid	Illiquid
FIXED-FLOATING SGD 1 year	748	11.51	52	30,898,886,395	475,367,483	Liquid	Liquid
FIXED-FLOATING SGD 2 years	879	13.52	60	47,377,785,497	728,889,008	Liquid	Liquid
FIXED-FLOATING SGD 3 years	1,086	16.71	61	46,861,377,851	720,944,275	Liquid	Liquid
FIXED-FLOATING SGD 4 years	1,102	16.95	62	33,191,481,414	510,638,176	Liquid	Liquid
FIXED-FLOATING SGD 5 years	1,141	17.55	62	29,393,992,197	452,215,265	Liquid	Liquid
FIXED-FLOATING SGD 6 years	1,844	28.37	62	37,851,894,677	582,336,841	Liquid	Liquid
FIXED-FLOATING SGD 7 years	256	3.94	48	5,314,081,631	81,755,102	Illiquid	Illiquid
FIXED-FLOATING SGD 8 years	396	6.09	45	6,130,519,964	94,315,692	Illiquid	Illiquid
FIXED-FLOATING SGD 9 years	110	1.69	35	1,112,053,127	17,108,510	Illiquid	Illiquid
FIXED-FLOATING SGD 10 years	328	5.05	49	4,054,795,369	62,381,467	Illiquid	Illiquid
FIXED-FLOATING SGD 11 years	862	13.26	60	9,608,477,429	147,822,730	Liquid	Illiquid
FIXED-FLOATING SGD 12 years	10	0.15	5	127,558,377	1,962,437	Illiquid	Illiquid
FIXED-FLOATING SGD 13 years	41	0.63	14	301,286,777	4,635,181	Illiquid	Illiquid
FIXED-FLOATING SGD 14 years	9	0.14	6	70,897,788	1,090,735	Illiquid	Illiquid
FIXED-FLOATING SGD 15 years	22	0.34	7	138,106,585	2,124,717	Illiquid	Illiquid
FIXED-FLOATING SGD 16 years	28	0.43	14	215,402,465	3,313,884	Illiquid	Illiquid
FIXED-FLOATING SGD 17 years	11	0.17	10	55,709,522	857,070	Illiquid	Illiquid
FIXED-FLOATING SGD 18 years	6	0.09	4	33,143,275	509,897	Illiquid	Illiquid
FIXED-FLOATING SGD 19 years	6	0.09	3	40,867,099	628,725	Illiquid	Illiquid
FIXED-FLOATING SGD 21 years	10	0.15	5	77,814,645	1,197,148	Illiquid	Illiquid
FIXED-FLOATING SGD 24 years	1	0.02	1	8,069,667	124,149	Illiquid	Illiquid
FIXED-FLOATING SGD 25 years	3	0.05	1	17,292,143	266,033	Illiquid	Illiquid
FIXED-FLOATING SGD 26 years	2	0.03	2	15,851,131	243,864	Illiquid	Illiquid
FIXED-FLOATING SGD 27 years	1	0.02	1	2,882,024	44,339	Illiquid	Illiquid
FIXED-FLOATING SGD 29 years	1	0.02	1	7,377,981	113,507	Illiquid	Illiquid
FIXED-FLOATING THB 1.5 months	124	1.91	26	3,945,409,377	60,698,606	Illiquid	Illiquid
FIXED-FLOATING THB 3 months	81	1.25	4	1,366,676,938	21,025,799	Illiquid	Illiquid
FIXED-FLOATING THB 6 months	75	1.15	4	1,405,355,290	21,620,851	Illiquid	Illiquid
FIXED-FLOATING THB 1 year	409	6.29	51	14,358,474,825	220,899,613	Liquid	Illiquid
FIXED-FLOATING THB 2 years	757	11.65	52	23,401,492,673	360,022,964	Liquid	Illiquid
FIXED-FLOATING THB 3 years	707	10.88	53	18,789,712,747	289,072,504	Liquid	Illiquid
FIXED-FLOATING THB 4 years	616	9.48	56	12,040,792,995	185,242,969	Liquid	Illiquid
FIXED-FLOATING THB 5 years	308	4.74	47	4,175,571,117	64,239,556	Illiquid	Illiquid
FIXED-FLOATING THB 6 years	507	7.80	60	8,351,962,700	128,491,734	Liquid	Illiquid
FIXED-FLOATING THB 7 years	93	1.43	16	837,790,450	12,889,084	Illiquid	Illiquid
FIXED-FLOATING THB 8 years	46	0.71	18	377,879,966	5,813,538	Illiquid	Illiquid
FIXED-FLOATING THB 9 years	27	0.42	12	216,768,485	3,334,900	Illiquid	Illiquid
FIXED-FLOATING THB 10 years	58	0.89	26	1,122,335,177	17,266,695	Illiquid	Illiquid
FIXED-FLOATING THB 11 years	93	1.43	26	1,153,607,764	17,747,812	Illiquid	Illiquid
FIXED-FLOATING THB 12 years	1	0.02	1	2,281,710	35,103	Illiquid	Illiquid
FIXED-FLOATING THB 14 years	2	0.03	2	6,710,911	103,245	Illiquid	Illiquid
FIXED-FLOATING THB 15 years	1	0.02	1	6,710,911	103,245	Illiquid	Illiquid
FIXED-FLOATING THB 16 years	2	0.03	1	15,300,876	235,398	Illiquid	Illiquid
FIXED-FLOATING TRY 1.5 months	1	0.02	1	337,960	5,199	Illiquid	Illiquid
FIXED-FLOATING TRY 6 months	7	0.11	3	68,141,246	1,048,327	Illiquid	Illiquid
FIXED-FLOATING TRY 1 year	5	0.08	3	58,555,002	900,846	Illiquid	Illiquid
FIXED-FLOATING TRY 2 years	15	0.23	7	239,879,152	3,690,448	Illiquid	Illiquid
FIXED-FLOATING TRY 3 years	16	0.25	14	468,257,515	7,203,962	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						2.00	1.20
Notional Amount per day						100,000,000	76,167,945
FIXED TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING TRY 4 years	3	0.05	2	76,041,068	1,169,863	Illiquid	Illiquid
FIXED-FLOATING TRY 5 years	2	0.03	2	9,847,165	151,495	Illiquid	Illiquid
FIXED-FLOATING TRY 6 years	16	0.25	11	364,712,540	5,610,962	Illiquid	Illiquid
FIXED-FLOATING TRY 7 years	1	0.02	1	16,898,015	259,969	Illiquid	Illiquid
FIXED-FLOATING TRY 8 years	2	0.03	2	73,675,346	1,133,467	Illiquid	Illiquid
FIXED-FLOATING TRY 9 years	2	0.03	2	168,980,150	2,599,695	Illiquid	Illiquid
FIXED-FLOATING TWD 1.5 months	15	0.23	9	211,937,271	3,260,573	Illiquid	Illiquid
FIXED-FLOATING TWD 3 months	2	0.03	1	23,962,606	368,655	Illiquid	Illiquid
FIXED-FLOATING TWD 6 months	60	0.92	29	1,038,685,526	15,979,777	Illiquid	Illiquid
FIXED-FLOATING TWD 1 year	215	3.31	47	4,455,684,394	68,548,991	Illiquid	Illiquid
FIXED-FLOATING TWD 2 years	565	8.69	58	9,460,423,893	145,544,983	Liquid	Illiquid
FIXED-FLOATING TWD 3 years	481	7.40	62	7,246,770,656	111,488,779	Liquid	Illiquid
FIXED-FLOATING TWD 4 years	522	8.03	59	7,043,701,806	108,364,643	Liquid	Illiquid
FIXED-FLOATING TWD 5 years	564	8.68	58	6,132,767,801	94,350,274	Illiquid	Illiquid
FIXED-FLOATING TWD 6 years	482	7.42	54	7,600,667,024	116,933,339	Liquid	Illiquid
FIXED-FLOATING TWD 7 years	45	0.69	22	521,148,064	8,017,663	Illiquid	Illiquid
FIXED-FLOATING TWD 8 years	43	0.66	25	403,554,252	6,208,527	Illiquid	Illiquid
FIXED-FLOATING TWD 9 years	19	0.29	11	147,722,533	2,272,654	Illiquid	Illiquid
FIXED-FLOATING TWD 10 years	15	0.23	13	152,182,745	2,341,273	Illiquid	Illiquid
FIXED-FLOATING TWD 11 years	21	0.32	15	201,345,799	3,097,628	Illiquid	Illiquid
FIXED-FLOATING TWD 13 years	3	0.05	3	26,358,867	405,521	Illiquid	Illiquid
FIXED-FLOATING USD 1.5 months	2,560	39.38	60	151,540,404,250	2,331,390,835	Liquid	Liquid
FIXED-FLOATING USD 3 months	342	5.26	50	42,312,423,535	650,960,362	Liquid	Liquid
FIXED-FLOATING USD 6 months	1,502	23.11	66	207,128,845,596	3,186,597,625	Liquid	Liquid
FIXED-FLOATING USD 1 year	3,051	46.94	69	372,324,086,696	5,728,062,872	Liquid	Liquid
FIXED-FLOATING USD 2 years	9,258	142.43	71	1,143,239,339,610	17,588,297,532	Liquid	Liquid
FIXED-FLOATING USD 3 years	18,354	282.37	70	2,038,024,274,590	31,354,219,609	Liquid	Liquid
FIXED-FLOATING USD 4 years	23,028	354.28	72	2,287,989,862,070	35,199,844,032	Liquid	Liquid
FIXED-FLOATING USD 5 years	21,260	327.08	70	1,908,523,820,341	29,361,904,928	Liquid	Liquid
FIXED-FLOATING USD 6 years	34,729	534.29	68	2,271,406,392,727	34,944,713,734	Liquid	Liquid
FIXED-FLOATING USD 7 years	11,635	179.00	68	781,751,769,012	12,026,950,292	Liquid	Liquid
FIXED-FLOATING USD 8 years	12,788	196.74	68	767,878,299,911	11,813,512,306	Liquid	Liquid
FIXED-FLOATING USD 9 years	5,563	85.58	67	296,982,677,256	4,568,964,265	Liquid	Liquid
FIXED-FLOATING USD 10 years	15,574	239.60	68	607,857,916,623	9,351,660,256	Liquid	Liquid
FIXED-FLOATING USD 11 years	33,624	517.29	69	1,360,050,117,437	20,923,847,961	Liquid	Liquid
FIXED-FLOATING USD 12 years	1,656	25.48	66	98,702,589,130	1,518,501,371	Liquid	Liquid
FIXED-FLOATING USD 13 years	1,966	30.25	66	111,258,100,984	1,711,663,092	Liquid	Liquid
FIXED-FLOATING USD 14 years	793	12.20	66	42,873,352,205	659,590,034	Liquid	Liquid
FIXED-FLOATING USD 15 years	1,122	17.26	66	58,593,681,498	901,441,254	Liquid	Liquid
FIXED-FLOATING USD 16 years	2,635	40.54	65	97,389,540,550	1,498,300,624	Liquid	Liquid
FIXED-FLOATING USD 17 years	458	7.05	63	18,716,606,526	287,947,793	Liquid	Liquid
FIXED-FLOATING USD 18 years	368	5.66	58	13,078,647,074	201,209,955	Liquid	Liquid
FIXED-FLOATING USD 19 years	433	6.66	61	21,539,955,327	331,383,928	Liquid	Liquid
FIXED-FLOATING USD 20 years	868	13.35	67	40,249,072,866	619,216,506	Liquid	Liquid
FIXED-FLOATING USD 21 years	2,260	34.77	66	86,228,786,796	1,326,596,720	Liquid	Liquid
FIXED-FLOATING USD 22 years	356	5.48	58	14,638,641,590	225,209,871	Liquid	Liquid
FIXED-FLOATING USD 23 years	418	6.43	65	19,959,266,582	307,065,640	Liquid	Liquid
FIXED-FLOATING USD 24 years	542	8.34	65	27,167,185,314	417,956,697	Liquid	Liquid
FIXED-FLOATING USD 25 years	991	15.25	63	35,391,714,953	544,487,922	Liquid	Liquid
FIXED-FLOATING USD 26 years	1,355	20.85	65	49,532,253,736	762,034,673	Liquid	Liquid
FIXED-FLOATING USD 27 years	774	11.91	61	24,521,329,399	377,251,222	Liquid	Liquid
FIXED-FLOATING USD 28 years	837	12.88	61	32,013,296,460	492,512,253	Liquid	Liquid
FIXED-FLOATING USD 29 years	967	14.88	62	33,825,212,003	520,387,877	Liquid	Liquid
FIXED-FLOATING USD 30 years	4,083	62.82	66	92,629,219,800	1,425,064,920	Liquid	Liquid
FIXED-FLOATING USD 31 years	12,484	192.06	64	220,783,387,454	3,396,667,499	Liquid	Liquid
FIXED-FLOATING USD 32 years	445	6.85	48	9,356,063,976	143,939,446	Liquid	Illiquid
FIXED-FLOATING USD 33 years	185	2.85	41	3,526,240,007	54,249,846	Illiquid	Illiquid
FIXED-FLOATING USD 34 years	122	1.88	36	3,071,253,363	47,250,052	Illiquid	Illiquid
FIXED-FLOATING USD 35 years	175	2.69	46	4,896,456,925	75,330,107	Illiquid	Illiquid
FIXED-FLOATING USD 36 years	135	2.08	42	6,862,009,486	105,569,377	Liquid	Illiquid
FIXED-FLOATING USD 37 years	46	0.71	25	993,122,016	15,278,800	Illiquid	Illiquid
FIXED-FLOATING USD 38 years	51	0.78	20	631,160,773	9,710,166	Illiquid	Illiquid
FIXED-FLOATING USD 39 years	61	0.94	24	1,275,604,566	19,624,686	Illiquid	Illiquid
FIXED-FLOATING USD 40 years	69	1.06	17	1,665,728,222	25,626,588	Illiquid	Illiquid
FIXED-FLOATING USD 41 years	140	2.15	32	4,342,065,397	66,801,006	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						2.00	1.20
Notional Amount per day						100,000,000	76,167,945
FIXED TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FLOATING USD 43 years	1	0.02	1	102,347,635	1,574,579	Illiquid	Illiquid
FIXED-FLOATING USD 44 years	8	0.12	7	479,094,632	7,370,687	Illiquid	Illiquid
FIXED-FLOATING USD 45 years	15	0.23	5	612,820,866	9,428,013	Illiquid	Illiquid
FIXED-FLOATING USD 46 years	1	0.02	1	5,070,483	78,007	Illiquid	Illiquid
FIXED-FLOATING USD 47 years	1	0.02	1	36,261,636	557,871	Illiquid	Illiquid
FIXED-FLOATING USD 48 years	3	0.05	3	177,157,294	2,725,497	Illiquid	Illiquid
FIXED-FLOATING USD 49 years	23	0.35	10	550,607,405	8,470,883	Illiquid	Illiquid
FIXED-FLOATING USD 50 years	5	0.08	3	507,662,902	7,810,198	Illiquid	Illiquid
FIXED-FLOATING USD 51 years	6	0.09	3	777,032,922	11,954,353	Illiquid	Illiquid
FIXED-FLOATING XAU 3 months	1	0.02	1	30,319	466	Illiquid	Illiquid
FIXED-FLOATING XAU 6 months	1	0.02	1	23,687	364	Illiquid	Illiquid
FIXED-FLOATING XAU 1 year	3	0.05	1	96,643	1,487	Illiquid	Illiquid
FIXED-FLOATING XAU 2 years	1	0.02	1	23,687	364	Illiquid	Illiquid
FIXED-FLOATING XAU 3 years	4	0.06	3	307,931	4,737	Illiquid	Illiquid
FIXED-FLOATING XAU 4 years	2	0.03	1	94,748	1,458	Illiquid	Illiquid
FIXED-FLOATING XAU 6 years	2	0.03	2	165,809	2,551	Illiquid	Illiquid
FIXED-FLOATING ZAR 1.5 months	87	1.34	20	1,347,156,527	20,725,485	Illiquid	Illiquid
FIXED-FLOATING ZAR 3 months	42	0.65	15	752,293,430	11,573,745	Illiquid	Illiquid
FIXED-FLOATING ZAR 6 months	202	3.11	36	4,724,064,838	72,677,921	Illiquid	Illiquid
FIXED-FLOATING ZAR 1 year	1,070	16.46	61	40,497,797,753	623,043,042	Liquid	Liquid
FIXED-FLOATING ZAR 2 years	1,725	26.54	61	37,067,626,813	570,271,182	Liquid	Liquid
FIXED-FLOATING ZAR 3 years	2,239	34.45	61	46,726,451,603	718,868,486	Liquid	Liquid
FIXED-FLOATING ZAR 4 years	850	13.08	60	11,548,619,167	177,671,064	Liquid	Liquid
FIXED-FLOATING ZAR 5 years	969	14.91	63	16,398,235,297	252,280,543	Liquid	Liquid
FIXED-FLOATING ZAR 6 years	1,985	30.54	59	22,109,498,063	340,146,124	Liquid	Liquid
FIXED-FLOATING ZAR 7 years	242	3.72	48	2,913,495,705	44,823,011	Illiquid	Illiquid
FIXED-FLOATING ZAR 8 years	440	6.77	48	4,337,746,945	66,734,568	Illiquid	Illiquid
FIXED-FLOATING ZAR 9 years	323	4.97	55	2,456,387,399	37,790,575	Illiquid	Illiquid
FIXED-FLOATING ZAR 10 years	348	5.35	56	2,960,223,215	45,541,896	Illiquid	Illiquid
FIXED-FLOATING ZAR 11 years	1,228	18.89	59	10,311,277,048	158,635,032	Liquid	Illiquid
FIXED-FLOATING ZAR 12 years	13	0.20	9	102,937,776	1,583,658	Illiquid	Illiquid
FIXED-FLOATING ZAR 13 years	43	0.66	23	589,875,003	9,075,000	Illiquid	Illiquid
FIXED-FLOATING ZAR 14 years	26	0.40	13	142,040,277	2,185,235	Illiquid	Illiquid
FIXED-FLOATING ZAR 15 years	19	0.29	6	38,526,990	592,723	Illiquid	Illiquid
FIXED-FLOATING ZAR 16 years	67	1.03	27	621,093,017	9,555,277	Illiquid	Illiquid
FIXED-FLOATING ZAR 17 years	24	0.37	13	597,911,763	9,198,643	Illiquid	Illiquid
FIXED-FLOATING ZAR 18 years	10	0.15	8	306,568,660	4,716,441	Illiquid	Illiquid
FIXED-FLOATING ZAR 19 years	6	0.09	4	48,008,515	738,593	Illiquid	Illiquid
FIXED-FLOATING ZAR 20 years	11	0.17	3	117,896,541	1,813,793	Illiquid	Illiquid
FIXED-FLOATING ZAR 21 years	33	0.51	16	385,371,208	5,928,788	Illiquid	Illiquid
FIXED-FLOATING ZAR 22 years	3	0.05	3	43,070,496	662,623	Illiquid	Illiquid
FIXED-FLOATING ZAR 23 years	3	0.05	2	1,872,332	28,805	Illiquid	Illiquid
FIXED-FLOATING ZAR 24 years	1	0.02	1	1,714,590	26,378	Illiquid	Illiquid
FIXED-FLOATING ZAR 25 years	7	0.11	4	20,917,996	321,815	Illiquid	Illiquid
FIXED-FLOATING ZAR 26 years	13	0.20	6	185,038,534	2,846,747	Illiquid	Illiquid
FIXED-FLOATING ZAR 27 years	15	0.23	10	304,099,651	4,678,456	Illiquid	Illiquid
FIXED-FLOATING ZAR 28 years	4	0.06	4	148,620,646	2,286,471	Illiquid	Illiquid
FIXED-FLOATING ZAR 30 years	1	0.02	1	1,028,754	15,827	Illiquid	Illiquid
FIXED-FLOATING ZAR 31 years	7	0.11	4	49,791,688	766,026	Illiquid	Illiquid

Table 36: Fixed to Float Single-currency swaps liquidity assessment

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	2.00
Notional Amount per day						50,000,000	86,884,615
INFLATION SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
INFLATION_AUD_6 years	2	0.03	2	32,806,181	504,710	Illiquid	Illiquid
INFLATION_AUD_7 years	2	0.03	2	35,484,237	545,911	Illiquid	Illiquid
INFLATION_AUD_9 years	1	0.02	1	22,093,959	339,907	Illiquid	Illiquid
INFLATION_AUD_10 years	6	0.09	2	75,989,828	1,169,074	Illiquid	Illiquid
INFLATION_AUD_11 years	8	0.12	6	78,801,786	1,212,335	Illiquid	Illiquid
INFLATION_AUD_16 years	4	0.06	3	35,484,237	545,911	Illiquid	Illiquid
INFLATION_AUD_20 years	1	0.02	1	6,695,139	103,002	Illiquid	Illiquid
INFLATION_AUD_21 years	1	0.02	1	6,695,139	103,002	Illiquid	Illiquid
INFLATION_AUD_23 years	1	0.02	1	803,417	12,360	Illiquid	Illiquid
INFLATION_AUD_26 years	1	0.02	1	3,347,570	51,501	Illiquid	Illiquid
INFLATION_AUD_28 years	1	0.02	1	4,753,549	73,132	Illiquid	Illiquid
INFLATION_AUD_29 years	1	0.02	1	5,891,722	90,642	Illiquid	Illiquid
INFLATION_EUR_1.5 months	6	0.09	5	226,000,000	3,476,923	Illiquid	Illiquid
INFLATION_EUR_3 months	72	1.11	35	3,874,600,000	59,609,231	Liquid	Liquid
INFLATION_EUR_6 months	44	0.68	25	1,773,250,000	27,280,769	Illiquid	Illiquid
INFLATION_EUR_1 year	130	2.00	46	5,647,500,000	86,884,615	Liquid	Liquid
INFLATION_EUR_2 years	189	2.91	39	6,805,408,000	104,698,585	Liquid	Liquid
INFLATION_EUR_3 years	335	5.15	49	6,570,730,000	101,088,154	Liquid	Liquid
INFLATION_EUR_4 years	199	3.06	42	6,936,420,811	106,714,166	Liquid	Liquid
INFLATION_EUR_5 years	200	3.08	49	6,959,087,279	107,062,881	Liquid	Liquid
INFLATION_EUR_6 years	231	3.55	49	7,406,345,100	113,943,771	Liquid	Liquid
INFLATION_EUR_7 years	119	1.83	37	2,264,789,633	34,842,917	Illiquid	Illiquid
INFLATION_EUR_8 years	97	1.49	34	2,183,546,883	33,593,029	Illiquid	Illiquid
INFLATION_EUR_9 years	62	0.95	21	1,485,160,000	22,848,615	Illiquid	Illiquid
INFLATION_EUR_10 years	143	2.20	37	3,169,314,325	48,758,682	Illiquid	Illiquid
INFLATION_EUR_11 years	256	3.94	51	7,671,032,141	118,015,879	Liquid	Illiquid
INFLATION_EUR_12 years	14	0.22	6	180,383,930	2,775,137	Illiquid	Illiquid
INFLATION_EUR_13 years	24	0.37	11	424,885,000	6,536,692	Illiquid	Illiquid
INFLATION_EUR_14 years	9	0.14	3	50,375,000	775,000	Illiquid	Illiquid
INFLATION_EUR_15 years	11	0.17	5	75,365,000	1,159,462	Illiquid	Illiquid
INFLATION_EUR_16 years	35	0.54	17	1,538,259,000	23,665,523	Illiquid	Illiquid
INFLATION_EUR_17 years	8	0.12	2	355,000	5,462	Illiquid	Illiquid
INFLATION_EUR_18 years	16	0.25	7	458,107,261	7,047,804	Illiquid	Illiquid
INFLATION_EUR_19 years	14	0.22	8	106,749,400	1,642,298	Illiquid	Illiquid
INFLATION_EUR_20 years	16	0.25	7	270,184,350	4,156,682	Illiquid	Illiquid
INFLATION_EUR_21 years	24	0.37	12	581,425,000	8,945,000	Illiquid	Illiquid
INFLATION_EUR_22 years	14	0.22	5	450,325,000	6,928,077	Illiquid	Illiquid
INFLATION_EUR_23 years	15	0.23	8	229,002,964	3,523,123	Illiquid	Illiquid
INFLATION_EUR_24 years	9	0.14	3	139,305,000	2,143,154	Illiquid	Illiquid
INFLATION_EUR_25 years	15	0.23	7	311,665,000	4,794,846	Illiquid	Illiquid
INFLATION_EUR_26 years	10	0.15	10	117,400,300	1,806,158	Illiquid	Illiquid
INFLATION_EUR_27 years	5	0.08	5	74,079,312	1,139,682	Illiquid	Illiquid
INFLATION_EUR_28 years	2	0.03	2	10,060,000	154,769	Illiquid	Illiquid
INFLATION_EUR_29 years	2	0.03	2	15,920,000	244,923	Illiquid	Illiquid
INFLATION_EUR_30 years	2	0.03	2	5,060,000	77,846	Illiquid	Illiquid
INFLATION_EUR_31 years	5	0.08	5	65,261,700	1,004,026	Illiquid	Illiquid
INFLATION_EUR_32 years	1	0.02	1	55,000	846	Illiquid	Illiquid
INFLATION_EUR_33 years	1	0.02	1	55,000	846	Illiquid	Illiquid
INFLATION_EUR_34 years	1	0.02	1	55,000	846	Illiquid	Illiquid
INFLATION_EUR_35 years	1	0.02	1	55,000	846	Illiquid	Illiquid
INFLATION_EUR_36 years	1	0.02	1	50,000	769	Illiquid	Illiquid
INFLATION_EUR_37 years	1	0.02	1	50,000	769	Illiquid	Illiquid
INFLATION_EUR_38 years	3	0.05	2	56,050,000	862,308	Illiquid	Illiquid
INFLATION_EUR_39 years	1	0.02	1	50,000	769	Illiquid	Illiquid
INFLATION_EUR_40 years	1	0.02	1	50,000	769	Illiquid	Illiquid
INFLATION_EUR_41 years	1	0.02	1	45,000	692	Illiquid	Illiquid
INFLATION_EUR_42 years	1	0.02	1	45,000	692	Illiquid	Illiquid
INFLATION_EUR_43 years	1	0.02	1	45,000	692	Illiquid	Illiquid
INFLATION_EUR_44 years	1	0.02	1	45,000	692	Illiquid	Illiquid
INFLATION_EUR_45 years	1	0.02	1	45,000	692	Illiquid	Illiquid
INFLATION_EUR_46 years	1	0.02	1	45,000	692	Illiquid	Illiquid
INFLATION_EUR_47 years	1	0.02	1	1,585,000	24,385	Illiquid	Illiquid
INFLATION_GBP_1.5 months	36	0.55	14	2,000,782,286	30,781,266	Illiquid	Illiquid
INFLATION_GBP_3 months	31	0.48	11	2,278,787,312	35,058,266	Illiquid	Illiquid
INFLATION_GBP_6 months	14	0.22	7	1,183,163,727	18,202,519	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	2.00
Notional Amount per day						50,000,000	86,884,615
INFLATION SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
INFLATION GBP 1 year	63	0.97	21	2,806,181,573	43,172,024	Illiquid	Illiquid
INFLATION GBP 2 years	44	0.68	19	1,482,276,131	22,804,248	Illiquid	Illiquid
INFLATION GBP 3 years	89	1.37	35	3,596,163,207	55,325,588	Liquid	Illiquid
INFLATION GBP 4 years	74	1.14	23	3,383,329,408	52,051,222	Liquid	Illiquid
INFLATION GBP 5 years	65	1.00	28	2,242,183,809	34,495,136	Illiquid	Illiquid
INFLATION GBP 6 years	166	2.55	41	4,836,466,219	74,407,173	Liquid	Illiquid
INFLATION GBP 7 years	34	0.52	17	668,860,575	10,290,163	Illiquid	Illiquid
INFLATION GBP 8 years	46	0.71	26	1,029,569,615	15,839,533	Illiquid	Illiquid
INFLATION GBP 9 years	63	0.97	25	1,237,055,145	19,031,618	Illiquid	Illiquid
INFLATION GBP 10 years	82	1.26	33	1,875,613,997	28,855,600	Illiquid	Illiquid
INFLATION GBP 11 years	184	2.83	49	5,122,411,368	78,806,329	Liquid	Illiquid
INFLATION GBP 12 years	23	0.35	15	199,511,330	3,069,405	Illiquid	Illiquid
INFLATION GBP 13 years	63	0.97	30	1,561,059,895	24,016,306	Illiquid	Illiquid
INFLATION GBP 14 years	49	0.75	20	866,870,336	13,336,467	Illiquid	Illiquid
INFLATION GBP 15 years	45	0.69	20	2,325,719,605	35,780,302	Illiquid	Illiquid
INFLATION GBP 16 years	133	2.05	37	2,472,899,152	38,044,602	Illiquid	Illiquid
INFLATION GBP 17 years	36	0.55	18	252,790,335	3,889,082	Illiquid	Illiquid
INFLATION GBP 18 years	43	0.66	22	603,393,996	9,282,985	Illiquid	Illiquid
INFLATION GBP 19 years	47	0.72	25	748,669,396	11,517,991	Illiquid	Illiquid
INFLATION GBP 20 years	67	1.03	27	1,476,336,653	22,712,872	Illiquid	Illiquid
INFLATION GBP 21 years	136	2.09	43	2,578,176,223	39,664,250	Illiquid	Illiquid
INFLATION GBP 22 years	70	1.08	21	1,063,100,613	16,355,394	Illiquid	Illiquid
INFLATION GBP 23 years	33	0.51	20	1,054,672,239	16,225,727	Illiquid	Illiquid
INFLATION GBP 24 years	63	0.97	25	942,110,045	14,494,001	Illiquid	Illiquid
INFLATION GBP 25 years	38	0.58	20	355,427,698	5,468,118	Illiquid	Illiquid
INFLATION GBP 26 years	82	1.26	32	1,671,441,250	25,714,481	Illiquid	Illiquid
INFLATION GBP 27 years	86	1.32	22	899,593,001	13,839,892	Illiquid	Illiquid
INFLATION GBP 28 years	44	0.68	20	746,289,418	11,481,376	Illiquid	Illiquid
INFLATION GBP 29 years	71	1.09	26	1,109,081,133	17,062,787	Illiquid	Illiquid
INFLATION GBP 30 years	82	1.26	30	608,044,195	9,354,526	Illiquid	Illiquid
INFLATION GBP 31 years	240	3.69	53	4,201,998,056	64,646,124	Liquid	Illiquid
INFLATION GBP 32 years	31	0.48	15	138,129,779	2,125,074	Illiquid	Illiquid
INFLATION GBP 33 years	36	0.55	21	208,346,993	3,205,338	Illiquid	Illiquid
INFLATION GBP 34 years	64	0.98	22	649,808,853	9,997,059	Illiquid	Illiquid
INFLATION GBP 35 years	37	0.57	15	246,034,709	3,785,149	Illiquid	Illiquid
INFLATION GBP 36 years	39	0.60	19	441,326,771	6,789,643	Illiquid	Illiquid
INFLATION GBP 37 years	33	0.51	17	183,335,792	2,820,551	Illiquid	Illiquid
INFLATION GBP 38 years	38	0.58	15	322,530,414	4,962,006	Illiquid	Illiquid
INFLATION GBP 39 years	30	0.46	15	163,680,249	2,518,158	Illiquid	Illiquid
INFLATION GBP 40 years	30	0.46	15	187,214,153	2,880,218	Illiquid	Illiquid
INFLATION GBP 41 years	94	1.45	41	1,552,662,898	23,887,122	Illiquid	Illiquid
INFLATION GBP 42 years	55	0.85	22	354,617,019	5,455,646	Illiquid	Illiquid
INFLATION GBP 43 years	45	0.69	22	217,848,371	3,351,513	Illiquid	Illiquid
INFLATION GBP 44 years	25	0.38	14	66,150,093	1,017,694	Illiquid	Illiquid
INFLATION GBP 45 years	23	0.35	10	163,739,171	2,519,064	Illiquid	Illiquid
INFLATION GBP 46 years	20	0.31	15	94,443,473	1,452,977	Illiquid	Illiquid
INFLATION GBP 47 years	17	0.26	10	77,489,276	1,192,143	Illiquid	Illiquid
INFLATION GBP 48 years	29	0.45	16	322,375,829	4,959,628	Illiquid	Illiquid
INFLATION GBP 49 years	39	0.60	17	206,844,486	3,182,223	Illiquid	Illiquid
INFLATION GBP 50 years	23	0.35	15	171,160,847	2,633,244	Illiquid	Illiquid
INFLATION GBP 51 years	47	0.72	27	562,445,759	8,653,012	Illiquid	Illiquid
INFLATION GBP 52 years	3	0.05	3	3,415,763	52,550	Illiquid	Illiquid
INFLATION GBP 54 years	2	0.03	1	43,079,295	662,758	Illiquid	Illiquid
INFLATION GBP 55 years	2	0.03	2	30,959,572	476,301	Illiquid	Illiquid
INFLATION GBP 56 years	2	0.03	1	36,405,038	560,078	Illiquid	Illiquid
INFLATION ILS 3 months	1	0.02	1	18,268,306	281,051	Illiquid	Illiquid
INFLATION ILS 1 year	1	0.02	1	52,195,160	803,002	Illiquid	Illiquid
INFLATION ILS 4 years	1	0.02	1	16,911,232	260,173	Illiquid	Illiquid
INFLATION ILS 5 years	2	0.03	2	16,493,671	253,749	Illiquid	Illiquid
INFLATION ILS 6 years	3	0.05	3	19,207,819	295,505	Illiquid	Illiquid
INFLATION ILS 7 years	1	0.02	1	2,505,368	38,544	Illiquid	Illiquid
INFLATION JPY 2 years	1	0.02	1	7,095,380	109,160	Illiquid	Illiquid
INFLATION JPY 3 years	1	0.02	1	35,476,901	545,798	Illiquid	Illiquid
INFLATION JPY 4 years	2	0.03	1	102,883,013	1,582,816	Illiquid	Illiquid
INFLATION MXN 3 years	1	0.02	1	14,430,066	222,001	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	2.00
Notional Amount per day						50,000,000	86,884,615
INFLATION SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
INFLATION_MXN_5 years	1	0.02	1	8,880,041	136,616	Illiquid	Illiquid
INFLATION_MXN_7 years	5	0.08	3	20,535,094	315,925	Illiquid	Illiquid
INFLATION_MXN_9 years	1	0.02	1	8,273,003	127,277	Illiquid	Illiquid
INFLATION_MXN_10 years	2	0.03	2	8,325,038	128,078	Illiquid	Illiquid
INFLATION_MXN_11 years	1	0.02	1	6,168,653	94,902	Illiquid	Illiquid
INFLATION_NOK_3 years	2	0.03	1	206,548,003	3,177,662	Illiquid	Illiquid
INFLATION_NOK_5 years	1	0.02	1	48,599,530	747,685	Illiquid	Illiquid
INFLATION_SEK_2 years	1	0.02	1	22,282,797	342,812	Illiquid	Illiquid
INFLATION_SEK_8 years	2	0.03	2	41,780,245	642,773	Illiquid	Illiquid
INFLATION_SEK_13 years	1	0.02	1	11,141,399	171,406	Illiquid	Illiquid
INFLATION_SEK_14 years	1	0.02	1	11,141,399	171,406	Illiquid	Illiquid
INFLATION_USD_1.5 months	3	0.05	2	110,053,617	1,693,133	Illiquid	Illiquid
INFLATION_USD_3 months	19	0.29	15	1,168,909,619	17,983,225	Illiquid	Illiquid
INFLATION_USD_6 months	32	0.49	19	1,160,634,290	17,855,912	Illiquid	Illiquid
INFLATION_USD_1 year	40	0.62	20	1,401,837,076	21,566,724	Illiquid	Illiquid
INFLATION_USD_2 years	133	2.05	33	2,089,575,305	32,147,312	Illiquid	Illiquid
INFLATION_USD_3 years	126	1.94	35	2,451,019,792	37,707,997	Illiquid	Illiquid
INFLATION_USD_4 years	58	0.89	25	1,046,421,288	16,098,789	Illiquid	Illiquid
INFLATION_USD_5 years	56	0.86	24	1,177,501,609	18,115,409	Illiquid	Illiquid
INFLATION_USD_6 years	115	1.77	35	2,149,747,514	33,073,039	Illiquid	Illiquid
INFLATION_USD_7 years	11	0.17	8	293,719,251	4,518,758	Illiquid	Illiquid
INFLATION_USD_8 years	13	0.20	9	426,260,716	6,557,857	Illiquid	Illiquid
INFLATION_USD_9 years	65	1.00	10	407,363,218	6,267,126	Illiquid	Illiquid
INFLATION_USD_10 years	22	0.34	10	175,509,944	2,700,153	Illiquid	Illiquid
INFLATION_USD_11 years	279	4.29	43	3,479,732,576	53,534,347	Liquid	Illiquid
INFLATION_USD_13 years	1	0.02	1	18,130,818	278,936	Illiquid	Illiquid
INFLATION_USD_16 years	4	0.06	3	69,549,818	1,069,997	Illiquid	Illiquid
INFLATION_USD_21 years	2	0.03	2	29,009,309	446,297	Illiquid	Illiquid
INFLATION_USD_24 years	1	0.02	1	29,009,309	446,297	Illiquid	Illiquid
INFLATION_USD_26 years	2	0.03	1	21,031,749	323,565	Illiquid	Illiquid
INFLATION_USD_27 years	1	0.02	1	14,504,654	223,149	Illiquid	Illiquid
INFLATION_USD_28 years	1	0.02	1	14,504,654	223,149	Illiquid	Illiquid
INFLATION_USD_30 years	1	0.02	1	7,252,327	111,574	Illiquid	Illiquid
INFLATION_USD_31 years	13	0.20	8	109,800,233	1,689,234	Illiquid	Illiquid
INFLATION_ZAR_5 years	1	0.02	1	14,360,910	220,937	Illiquid	Illiquid

Table 37: Inflation Single-currency swaps liquidity assessment

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	0.58
Notional Amount per day						50,000,000	58,031,528
OIS SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
OIS_AUD_1.5 months	47	0.72	11	14,793,308,660	227,589,364	Illiquid	Illiquid
OIS_AUD_3 months	79	1.22	16	22,837,989,511	351,353,685	Liquid	Illiquid
OIS_AUD_6 months	225	3.46	47	102,098,499,731	1,570,746,150	Liquid	Illiquid
OIS_AUD_1 year	390	6.00	53	218,232,960,861	3,357,430,167	Liquid	Illiquid
OIS_AUD_2 years	60	0.92	33	18,769,152,684	288,756,195	Illiquid	Illiquid
OIS_AUD_3 years	4	0.06	4	773,288,555	11,896,747	Illiquid	Illiquid
OIS_BRL_3 months	5	0.08	2	1,238,816,652	19,058,718	Illiquid	Illiquid
OIS_BRL_6 months	2	0.03	2	999,944,069	15,383,755	Illiquid	Illiquid
OIS_BRL_1 year	246	3.78	20	9,547,376,473	146,882,715	Liquid	Illiquid
OIS_BRL_2 years	79	1.22	30	4,608,934,438	70,906,684	Liquid	Illiquid
OIS_BRL_3 years	355	5.46	41	3,021,912,980	46,490,969	Illiquid	Illiquid
OIS_BRL_4 years	7	0.11	5	661,794,900	10,181,460	Illiquid	Illiquid
OIS_BRL_5 years	1	0.02	1	4,092,987	62,969	Illiquid	Illiquid
OIS_BRL_6 years	1	0.02	1	6,615,001	101,769	Illiquid	Illiquid
OIS_BRL_7 years	157	2.42	23	348,417,391	5,360,268	Illiquid	Illiquid
OIS_BRL_9 years	4	0.06	2	164,696,779	2,533,797	Illiquid	Illiquid
OIS_CAD_1.5 months	20	0.31	6	16,336,548,982	251,331,523	Illiquid	Illiquid
OIS_CAD_3 months	10	0.15	6	10,627,773,336	163,504,205	Illiquid	Illiquid
OIS_CAD_6 months	52	0.80	17	41,608,467,354	640,130,267	Illiquid	Illiquid
OIS_CAD_1 year	152	2.34	38	98,990,133,944	1,522,925,138	Liquid	Illiquid
OIS_CAD_2 years	135	2.08	40	40,279,958,093	619,691,663	Liquid	Illiquid
OIS_CAD_3 years	29	0.45	14	6,883,077,233	105,893,496	Illiquid	Illiquid
OIS_CAD_4 years	19	0.29	8	3,327,912,272	51,198,650	Illiquid	Illiquid
OIS_CAD_5 years	12	0.18	4	698,669,770	10,748,766	Illiquid	Illiquid
OIS_CAD_11 years	2	0.03	1	65,958,289	1,014,743	Illiquid	Illiquid
OIS_CHF_1.5 months	1	0.02	1	164,066,521	2,524,100	Illiquid	Illiquid
OIS_CHF_6 months	17	0.26	8	5,643,888,323	86,829,051	Illiquid	Illiquid
OIS_CHF_1 year	40	0.62	13	22,263,826,903	342,520,414	Illiquid	Illiquid
OIS_CHF_2 years	27	0.42	10	3,476,569,581	53,485,686	Illiquid	Illiquid
OIS_CHF_3 years	10	0.15	7	556,185,506	8,556,700	Illiquid	Illiquid
OIS_CHF_4 years	1	0.02	1	75,880,766	1,167,396	Illiquid	Illiquid
OIS_CHF_6 years	2	0.03	2	62,345,278	959,158	Illiquid	Illiquid
OIS_CHF_7 years	7	0.11	2	236,583,923	3,639,753	Illiquid	Illiquid
OIS_CHF_8 years	4	0.06	2	133,386,082	2,052,094	Illiquid	Illiquid
OIS_CHF_9 years	6	0.09	2	573,412,491	8,821,731	Illiquid	Illiquid
OIS_CHF_10 years	2	0.03	1	16,406,652	252,410	Illiquid	Illiquid
OIS_CHF_12 years	1	0.02	1	6,562,661	100,964	Illiquid	Illiquid
OIS_CHF_14 years	1	0.02	1	28,711,641	441,718	Illiquid	Illiquid
OIS_CLP_1.5 months	2	0.03	1	16,825,547	258,855	Illiquid	Illiquid
OIS_CLP_6 months	3	0.05	2	91,449,161	1,406,910	Illiquid	Illiquid
OIS_CLP_1 year	19	0.29	11	333,082,580	5,124,347	Illiquid	Illiquid
OIS_CLP_2 years	24	0.37	10	460,514,184	7,084,834	Illiquid	Illiquid
OIS_CLP_3 years	28	0.43	13	220,880,723	3,398,165	Illiquid	Illiquid
OIS_CLP_4 years	14	0.22	10	113,012,912	1,738,660	Illiquid	Illiquid
OIS_CLP_5 years	9	0.14	8	152,275,340	2,342,698	Illiquid	Illiquid
OIS_CLP_6 years	20	0.31	9	148,940,918	2,291,399	Illiquid	Illiquid
OIS_CLP_7 years	3	0.05	1	12,848,824	197,674	Illiquid	Illiquid
OIS_CLP_8 years	4	0.06	1	14,047,459	216,115	Illiquid	Illiquid
OIS_CLP_9 years	1	0.02	1	1,548,152	23,818	Illiquid	Illiquid
OIS_CLP_11 years	5	0.08	3	19,104,987	293,923	Illiquid	Illiquid
OIS_COP_6 months	4	0.06	3	97,993,370	1,507,590	Illiquid	Illiquid
OIS_COP_1 year	25	0.38	14	432,476,417	6,653,483	Illiquid	Illiquid
OIS_COP_2 years	32	0.49	21	369,533,666	5,685,133	Illiquid	Illiquid
OIS_COP_3 years	18	0.28	13	135,380,697	2,082,780	Illiquid	Illiquid
OIS_COP_4 years	14	0.22	11	98,705,786	1,518,551	Illiquid	Illiquid
OIS_COP_5 years	3	0.05	3	14,836,241	228,250	Illiquid	Illiquid
OIS_COP_6 years	4	0.06	4	12,610,805	194,012	Illiquid	Illiquid
OIS_COP_10 years	3	0.05	3	11,015,909	169,476	Illiquid	Illiquid
OIS_COP_11 years	12	0.18	9	26,074,693	401,149	Illiquid	Illiquid
OIS_DKK_1.5 months	14	0.22	8	3,732,779,392	57,427,375	Illiquid	Illiquid
OIS_DKK_3 months	6	0.09	3	1,205,704,147	18,549,295	Illiquid	Illiquid
OIS_DKK_6 months	9	0.14	8	3,282,194,624	50,495,302	Illiquid	Illiquid
OIS_DKK_1 year	28	0.43	15	4,261,249,166	65,557,679	Illiquid	Illiquid
OIS_DKK_2 years	54	0.83	21	12,960,649,749	199,394,612	Illiquid	Illiquid
OIS_DKK_3 years	30	0.46	16	3,447,376,092	53,036,555	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	0.58
Notional Amount per day						50,000,000	58,031,528
OIS SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
OIS_DKK_4 years	18	0.28	8	1,765,505,885	27,161,629	Illiquid	Illiquid
OIS_DKK_5 years	7	0.11	5	251,188,364	3,864,436	Illiquid	Illiquid
OIS_DKK_6 years	1	0.02	1	26,793,425	412,207	Illiquid	Illiquid
OIS_DKK_10 years	1	0.02	1	13,396,713	206,103	Illiquid	Illiquid
OIS_EUR_1.5 months	1,583	24.35	65	1,120,688,230,102	17,241,357,386	Liquid	Liquid
OIS_EUR_3 months	913	14.05	62	611,910,773,295	9,414,011,897	Liquid	Liquid
OIS_EUR_6 months	2,491	38.32	64	1,389,254,897,679	21,373,152,272	Liquid	Liquid
OIS_EUR_1 year	1,986	30.55	63	792,773,152,809	12,196,510,043	Liquid	Liquid
OIS_EUR_2 years	3,248	49.97	64	797,112,893,340	12,263,275,282	Liquid	Liquid
OIS_EUR_3 years	1,456	22.40	64	267,707,703,048	4,118,580,047	Liquid	Liquid
OIS_EUR_4 years	873	13.43	64	117,398,292,554	1,806,127,578	Liquid	Liquid
OIS_EUR_5 years	1,108	17.05	65	131,216,687,768	2,018,718,273	Liquid	Liquid
OIS_EUR_6 years	577	8.88	63	80,912,002,310	1,244,800,036	Liquid	Liquid
OIS_EUR_7 years	199	3.06	45	24,176,671,922	371,948,799	Liquid	Liquid
OIS_EUR_8 years	218	3.35	51	23,425,165,297	360,387,158	Liquid	Liquid
OIS_EUR_9 years	382	5.88	56	29,930,580,000	460,470,462	Liquid	Liquid
OIS_EUR_10 years	269	4.14	52	14,214,974,063	218,691,909	Liquid	Liquid
OIS_EUR_11 years	355	5.46	55	33,835,286,144	520,542,864	Liquid	Liquid
OIS_EUR_12 years	23	0.35	16	1,242,565,280	19,116,389	Illiquid	Illiquid
OIS_EUR_13 years	71	1.09	24	7,886,748,000	121,334,585	Liquid	Illiquid
OIS_EUR_14 years	20	0.31	12	1,049,000,000	16,138,462	Illiquid	Illiquid
OIS_EUR_15 years	22	0.34	10	1,833,000,000	28,200,000	Illiquid	Illiquid
OIS_EUR_16 years	110	1.69	32	8,254,372,000	126,990,338	Liquid	Illiquid
OIS_EUR_17 years	6	0.09	3	244,500,000	3,761,538	Illiquid	Illiquid
OIS_EUR_18 years	15	0.23	9	539,200,000	8,295,385	Illiquid	Illiquid
OIS_EUR_19 years	51	0.78	20	3,587,400,000	55,190,769	Illiquid	Illiquid
OIS_EUR_20 years	21	0.32	12	1,795,600,000	27,624,615	Illiquid	Illiquid
OIS_EUR_21 years	78	1.20	25	4,411,500,000	67,869,231	Liquid	Illiquid
OIS_EUR_22 years	7	0.11	5	403,930,009	6,214,308	Illiquid	Illiquid
OIS_EUR_23 years	6	0.09	5	260,000,000	4,000,000	Illiquid	Illiquid
OIS_EUR_24 years	23	0.35	14	1,186,800,000	18,258,462	Illiquid	Illiquid
OIS_EUR_25 years	3	0.05	2	80,000,000	1,230,769	Illiquid	Illiquid
OIS_EUR_26 years	30	0.46	13	1,153,650,000	17,748,462	Illiquid	Illiquid
OIS_EUR_27 years	5	0.08	2	252,510,779	3,884,781	Illiquid	Illiquid
OIS_EUR_28 years	14	0.22	7	822,192,281	12,649,112	Illiquid	Illiquid
OIS_EUR_29 years	72	1.11	25	3,672,775,000	56,504,231	Liquid	Illiquid
OIS_EUR_30 years	14	0.22	8	448,683,933	6,902,830	Illiquid	Illiquid
OIS_EUR_31 years	93	1.43	25	4,224,255,229	64,988,542	Liquid	Illiquid
OIS_EUR_38 years	1	0.02	1	20,000,000	307,692	Illiquid	Illiquid
OIS_EUR_39 years	2	0.03	2	100,000,000	1,538,462	Illiquid	Illiquid
OIS_EUR_40 years	1	0.02	1	180,000,000	2,769,231	Illiquid	Illiquid
OIS_EUR_41 years	2	0.03	2	673,820,000	10,366,462	Illiquid	Illiquid
OIS_EUR_51 years	1	0.02	1	447,700,000	6,887,692	Illiquid	Illiquid
OIS_GBP_1.5 months	38	0.58	15	26,915,579,268	414,085,835	Illiquid	Liquid
OIS_GBP_3 months	71	1.09	23	52,285,434,247	804,391,296	Liquid	Liquid
OIS_GBP_6 months	277	4.26	52	175,678,022,968	2,702,738,815	Liquid	Liquid
OIS_GBP_1 year	769	11.83	61	535,339,848,199	8,235,997,665	Liquid	Liquid
OIS_GBP_2 years	669	10.29	57	284,557,945,046	4,377,814,539	Liquid	Liquid
OIS_GBP_3 years	531	8.17	59	109,956,716,285	1,691,641,789	Liquid	Liquid
OIS_GBP_4 years	279	4.29	45	51,845,688,452	797,625,976	Liquid	Liquid
OIS_GBP_5 years	211	3.25	44	12,859,617,245	197,840,265	Liquid	Liquid
OIS_GBP_6 years	251	3.86	46	18,115,435,725	278,699,011	Liquid	Liquid
OIS_GBP_7 years	23	0.35	9	1,633,372,694	25,128,811	Illiquid	Illiquid
OIS_GBP_8 years	49	0.75	17	5,277,698,999	81,195,369	Illiquid	Illiquid
OIS_GBP_9 years	94	1.45	29	5,932,216,679	91,264,872	Liquid	Illiquid
OIS_GBP_10 years	92	1.42	25	6,879,508,526	105,838,593	Liquid	Illiquid
OIS_GBP_11 years	236	3.63	42	13,308,352,403	204,743,883	Liquid	Illiquid
OIS_GBP_12 years	11	0.17	6	135,742,251	2,088,342	Illiquid	Illiquid
OIS_GBP_13 years	36	0.55	15	3,179,858,698	48,920,903	Illiquid	Illiquid
OIS_GBP_14 years	12	0.18	6	706,257,733	10,865,504	Illiquid	Illiquid
OIS_GBP_15 years	10	0.15	5	528,136,741	8,125,181	Illiquid	Illiquid
OIS_GBP_16 years	23	0.35	10	946,834,357	14,566,682	Illiquid	Illiquid
OIS_GBP_17 years	2	0.03	1	33,978,035	522,739	Illiquid	Illiquid
OIS_GBP_18 years	4	0.06	3	133,970,539	2,061,085	Illiquid	Illiquid
OIS_GBP_19 years	3	0.05	3	115,282,620	1,773,579	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	0.58
Notional Amount per day						50,000,000	58,031,528
OIS SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
OIS GBP 20 years	16	0.25	9	1,690,892,654	26,013,733	Illiquid	Illiquid
OIS GBP 21 years	18	0.28	9	1,215,552,076	18,700,801	Illiquid	Illiquid
OIS GBP 24 years	3	0.05	2	126,204,131	1,941,602	Illiquid	Illiquid
OIS GBP 25 years	2	0.03	2	58,976,161	907,326	Illiquid	Illiquid
OIS GBP 26 years	16	0.25	7	1,428,290,981	21,973,707	Illiquid	Illiquid
OIS GBP 28 years	62	0.95	8	4,652,563,826	71,577,905	Illiquid	Illiquid
OIS GBP 29 years	7	0.11	5	453,546,095	6,977,632	Illiquid	Illiquid
OIS GBP 30 years	24	0.37	9	2,976,718,588	45,795,671	Illiquid	Illiquid
OIS GBP 31 years	75	1.15	24	3,816,461,459	58,714,792	Liquid	Illiquid
OIS GBP 35 years	1	0.02	1	24,270,025	373,385	Illiquid	Illiquid
OIS GBP 39 years	2	0.03	2	303,375,315	4,667,313	Illiquid	Illiquid
OIS GBP 40 years	6	0.09	5	486,007,254	7,477,035	Illiquid	Illiquid
OIS GBP 41 years	13	0.20	5	562,457,833	8,653,197	Illiquid	Illiquid
OIS GBP 46 years	1	0.02	1	5,934,628	91,302	Illiquid	Illiquid
OIS GBP 50 years	8	0.12	5	466,591,234	7,178,327	Illiquid	Illiquid
OIS GBP 51 years	5	0.08	3	417,444,433	6,422,222	Illiquid	Illiquid
OIS INR 1.5 months	149	2.29	32	7,059,952,246	108,614,650	Liquid	Illiquid
OIS INR 3 months	32	0.49	11	1,240,579,676	19,085,841	Illiquid	Illiquid
OIS INR 6 months	133	2.05	41	5,242,617,443	80,655,653	Liquid	Illiquid
OIS INR 1 year	403	6.20	60	17,067,813,001	262,581,738	Liquid	Illiquid
OIS INR 2 years	893	13.74	61	32,200,777,978	495,396,584	Liquid	Illiquid
OIS INR 3 years	556	8.55	57	8,933,959,960	137,445,538	Liquid	Illiquid
OIS INR 4 years	160	2.46	44	1,295,717,384	19,934,114	Illiquid	Illiquid
OIS INR 5 years	251	3.86	48	3,253,051,061	50,046,939	Liquid	Illiquid
OIS INR 6 years	1,209	18.60	62	11,929,592,192	183,532,188	Liquid	Illiquid
OIS INR 7 years	16	0.25	9	98,680,284	1,518,158	Illiquid	Illiquid
OIS INR 8 years	5	0.08	5	31,110,848	478,628	Illiquid	Illiquid
OIS INR 10 years	1	0.02	1	51,791	797	Illiquid	Illiquid
OIS INR 11 years	4	0.06	4	15,677,796	241,197	Illiquid	Illiquid
OIS JPY 1.5 months	10	0.15	7	2,547,241,499	39,188,331	Illiquid	Illiquid
OIS JPY 3 months	7	0.11	2	7,804,918,243	120,075,665	Illiquid	Illiquid
OIS JPY 6 months	14	0.22	9	4,986,633,219	76,717,434	Illiquid	Illiquid
OIS JPY 1 year	22	0.34	15	4,395,688,328	67,625,974	Illiquid	Illiquid
OIS JPY 2 years	49	0.75	21	14,735,259,919	226,696,306	Illiquid	Illiquid
OIS JPY 3 years	28	0.43	8	6,463,891,381	99,444,483	Illiquid	Illiquid
OIS JPY 4 years	4	0.06	3	3,902,459,121	60,037,833	Illiquid	Illiquid
OIS JPY 5 years	18	0.28	6	15,748,196,399	242,279,945	Illiquid	Illiquid
OIS JPY 6 years	3	0.05	2	70,953,802	1,091,597	Illiquid	Illiquid
OIS JPY 8 years	2	0.03	2	56,763,042	873,278	Illiquid	Illiquid
OIS JPY 9 years	8	0.12	3	332,134,748	5,109,765	Illiquid	Illiquid
OIS JPY 10 years	1	0.02	1	17,738,451	272,899	Illiquid	Illiquid
OIS JPY 11 years	10	0.15	6	238,475,729	3,668,857	Illiquid	Illiquid
OIS JPY 13 years	3	0.05	1	39,166,499	602,562	Illiquid	Illiquid
OIS JPY 14 years	3	0.05	2	113,526,084	1,746,555	Illiquid	Illiquid
OIS JPY 16 years	10	0.15	3	250,112,153	3,847,879	Illiquid	Illiquid
OIS JPY 19 years	4	0.06	1	85,144,563	1,309,916	Illiquid	Illiquid
OIS JPY 21 years	13	0.20	3	241,242,927	3,711,430	Illiquid	Illiquid
OIS KRW 1.5 months	5	0.08	1	129,953,550	1,999,285	Illiquid	Illiquid
OIS KRW 3 months	2	0.03	1	95,992,355	1,476,805	Illiquid	Illiquid
OIS KRW 6 months	7	0.11	1	119,903,809	1,844,674	Illiquid	Illiquid
OIS KRW 1 year	18	0.28	4	278,273,868	4,281,136	Illiquid	Illiquid
OIS KRW 2 years	41	0.63	13	1,107,065,627	17,031,779	Illiquid	Illiquid
OIS KRW 3 years	30	0.46	13	657,391,691	10,113,718	Illiquid	Illiquid
OIS KRW 4 years	34	0.52	13	686,639,903	10,563,691	Illiquid	Illiquid
OIS KRW 5 years	6	0.09	5	58,565,733	901,011	Illiquid	Illiquid
OIS KRW 6 years	44	0.68	20	454,273,069	6,988,816	Illiquid	Illiquid
OIS KRW 7 years	4	0.06	2	70,694,731	1,087,611	Illiquid	Illiquid
OIS KRW 8 years	11	0.17	5	126,626,739	1,948,104	Illiquid	Illiquid
OIS KRW 9 years	19	0.29	4	192,019,365	2,954,144	Illiquid	Illiquid
OIS KRW 10 years	12	0.18	5	119,262,704	1,834,811	Illiquid	Illiquid
OIS KRW 11 years	19	0.29	13	176,555,707	2,716,242	Illiquid	Illiquid
OIS KRW 12 years	1	0.02	1	9,010,113	138,617	Illiquid	Illiquid
OIS KRW 13 years	2	0.03	2	11,782,455	181,269	Illiquid	Illiquid
OIS KRW 14 years	8	0.12	2	81,437,558	1,252,886	Illiquid	Illiquid
OIS KRW 15 years	3	0.05	1	30,842,309	474,497	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	0.58
Notional Amount per day						50,000,000	58,031,528
OIS SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
OIS_KRW_16 years	1	0.02	1	9,356,656	143,949	Illiquid	Illiquid
OIS_MYR_1.5 months	15	0.23	2	344,364,751	5,297,919	Illiquid	Illiquid
OIS_MYR_3 months	9	0.14	2	160,599,603	2,470,763	Illiquid	Illiquid
OIS_MYR_6 months	21	0.32	5	671,355,343	10,328,544	Illiquid	Illiquid
OIS_MYR_1 year	41	0.63	10	1,550,008,619	23,846,286	Illiquid	Illiquid
OIS_MYR_2 years	169	2.60	6	3,320,453,077	51,083,893	Liquid	Illiquid
OIS_MYR_3 years	66	1.02	12	1,001,130,255	15,402,004	Illiquid	Illiquid
OIS_MYR_4 years	67	1.03	5	869,758,804	13,380,905	Illiquid	Illiquid
OIS_MYR_5 years	119	1.83	8	1,371,077,868	21,093,506	Illiquid	Illiquid
OIS_MYR_6 years	56	0.86	32	681,824,387	10,489,606	Illiquid	Illiquid
OIS_MYR_7 years	23	0.35	3	151,610,562	2,332,470	Illiquid	Illiquid
OIS_MYR_8 years	11	0.17	5	73,066,276	1,124,097	Illiquid	Illiquid
OIS_MYR_9 years	10	0.15	3	104,579,075	1,608,909	Illiquid	Illiquid
OIS_MYR_10 years	2	0.03	2	25,393,002	390,662	Illiquid	Illiquid
OIS_MYR_11 years	8	0.12	7	65,153,098	1,002,355	Illiquid	Illiquid
OIS_NZD_1.5 months	12	0.18	6	6,041,364,885	92,944,075	Illiquid	Illiquid
OIS_NZD_3 months	35	0.54	22	21,906,148,051	337,017,662	Illiquid	Illiquid
OIS_NZD_6 months	65	1.00	31	39,711,116,680	610,940,257	Liquid	Illiquid
OIS_NZD_1 year	48	0.74	20	21,454,956,081	330,076,247	Illiquid	Illiquid
OIS_NZD_2 years	4	0.06	3	239,598,494	3,686,131	Illiquid	Illiquid
OIS_PLN_1.5 months	12	0.18	6	2,053,468,752	31,591,827	Illiquid	Illiquid
OIS_PLN_6 months	2	0.03	1	191,020,349	2,938,775	Illiquid	Illiquid
OIS_PLN_1 year	3	0.05	3	286,530,524	4,408,162	Illiquid	Illiquid
OIS_PLN_2 years	3	0.05	2	71,632,631	1,102,040	Illiquid	Illiquid
OIS_PLN_3 years	1	0.02	1	11,938,772	183,673	Illiquid	Illiquid
OIS_SEK_1.5 months	33	0.51	20	5,907,169,508	90,879,531	Illiquid	Illiquid
OIS_SEK_3 months	2	0.03	1	668,483,913	10,284,368	Illiquid	Illiquid
OIS_SEK_6 months	12	0.18	6	4,100,034,664	63,077,456	Illiquid	Illiquid
OIS_SEK_1 year	18	0.28	12	2,707,359,846	41,651,690	Illiquid	Illiquid
OIS_SEK_2 years	11	0.17	8	724,190,905	11,141,399	Illiquid	Illiquid
OIS_THB_1.5 months	18	0.28	1	734,061,768	11,293,258	Illiquid	Illiquid
OIS_THB_3 months	14	0.22	1	285,571,614	4,393,409	Illiquid	Illiquid
OIS_THB_6 months	27	0.42	2	586,640,743	9,025,242	Illiquid	Illiquid
OIS_THB_1 year	70	1.08	9	2,307,578,389	35,501,206	Illiquid	Illiquid
OIS_THB_2 years	189	2.91	14	5,111,435,928	78,637,476	Liquid	Illiquid
OIS_THB_3 years	161	2.48	22	2,988,736,461	45,980,561	Illiquid	Illiquid
OIS_THB_4 years	82	1.26	14	1,058,571,269	16,285,712	Illiquid	Illiquid
OIS_THB_5 years	114	1.75	7	1,835,349,164	28,236,141	Illiquid	Illiquid
OIS_THB_6 years	47	0.72	26	610,044,140	9,385,294	Illiquid	Illiquid
OIS_THB_7 years	15	0.23	3	185,784,836	2,858,228	Illiquid	Illiquid
OIS_THB_8 years	31	0.48	8	364,394,629	5,606,071	Illiquid	Illiquid
OIS_THB_9 years	8	0.12	2	64,417,554	991,039	Illiquid	Illiquid
OIS_THB_10 years	36	0.55	2	514,337,041	7,912,878	Illiquid	Illiquid
OIS_THB_11 years	8	0.12	8	87,465,534	1,345,624	Illiquid	Illiquid
OIS_TRY_2 years	5	0.08	5	135,184,120	2,079,756	Illiquid	Illiquid
OIS_TRY_3 years	3	0.05	3	67,592,060	1,039,878	Illiquid	Illiquid
OIS_TRY_5 years	1	0.02	1	33,796,030	519,939	Illiquid	Illiquid
OIS_TRY_6 years	3	0.05	3	147,126,196	2,263,480	Illiquid	Illiquid
OIS_TWD_6 months	1	0.02	1	11,981,303	184,328	Illiquid	Illiquid
OIS_TWD_1 year	1	0.02	1	14,856,816	228,566	Illiquid	Illiquid
OIS_TWD_2 years	11	0.17	2	110,056,827	1,693,182	Illiquid	Illiquid
OIS_TWD_3 years	5	0.08	2	12,368,302	190,282	Illiquid	Illiquid
OIS_TWD_4 years	4	0.06	3	23,962,606	368,655	Illiquid	Illiquid
OIS_TWD_5 years	6	0.09	1	19,050,272	293,081	Illiquid	Illiquid
OIS_TWD_6 years	4	0.06	3	59,609,379	917,067	Illiquid	Illiquid
OIS_TWD_11 years	1	0.02	1	23,962,606	368,655	Illiquid	Illiquid
OIS_USD_1.5 months	132	2.03	45	77,631,270,375	1,194,327,237	Liquid	Liquid
OIS_USD_3 months	86	1.32	28	54,391,200,632	836,787,702	Liquid	Liquid
OIS_USD_6 months	528	8.12	63	293,741,725,818	4,519,103,474	Liquid	Liquid
OIS_USD_1 year	971	14.94	65	506,212,188,349	7,787,879,821	Liquid	Liquid
OIS_USD_2 years	1,761	27.09	63	675,191,745,481	10,387,565,315	Liquid	Liquid
OIS_USD_3 years	947	14.57	63	206,979,496,406	3,184,299,945	Liquid	Liquid
OIS_USD_4 years	278	4.28	48	29,087,904,392	447,506,221	Liquid	Liquid
OIS_USD_5 years	204	3.14	52	14,363,951,057	220,983,862	Liquid	Liquid
OIS_USD_6 years	49	0.75	20	3,772,049,298	58,031,528	Illiquid	Liquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	0.58
Notional Amount per day						50,000,000	58,031,528
OIS SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
OIS_USD_7 years	14	0.22	7	1,041,354,407	16,020,837	Illiquid	Illiquid
OIS_USD_8 years	43	0.66	20	2,462,696,175	37,887,633	Illiquid	Illiquid
OIS_USD_9 years	20	0.31	13	2,337,388,788	35,959,828	Illiquid	Illiquid
OIS_USD_10 years	21	0.32	14	839,145,539	12,909,931	Illiquid	Illiquid
OIS_USD_11 years	16	0.25	11	511,911,316	7,875,559	Illiquid	Illiquid
OIS_USD_13 years	4	0.06	4	204,220,998	3,141,862	Illiquid	Illiquid
OIS_USD_14 years	4	0.06	3	350,512,457	5,392,499	Illiquid	Illiquid
OIS_USD_15 years	6	0.09	5	156,650,267	2,410,004	Illiquid	Illiquid
OIS_USD_16 years	12	0.18	7	284,532,553	4,377,424	Illiquid	Illiquid
OIS_USD_19 years	3	0.05	3	97,906,417	1,506,253	Illiquid	Illiquid
OIS_USD_20 years	5	0.08	5	126,915,726	1,952,550	Illiquid	Illiquid
OIS_USD_21 years	9	0.14	5	408,883,553	6,290,516	Illiquid	Illiquid
OIS_USD_24 years	5	0.08	4	172,081,572	2,647,409	Illiquid	Illiquid
OIS_USD_25 years	2	0.03	1	29,009,309	446,297	Illiquid	Illiquid
OIS_USD_26 years	2	0.03	2	60,194,316	926,066	Illiquid	Illiquid
OIS_USD_27 years	2	0.03	1	75,524,010	1,161,908	Illiquid	Illiquid
OIS_USD_28 years	1	0.02	1	354,638,799	5,455,982	Illiquid	Illiquid
OIS_USD_29 years	12	0.18	7	239,326,797	3,681,951	Illiquid	Illiquid
OIS_USD_30 years	10	0.15	8	203,065,161	3,124,079	Illiquid	Illiquid
OIS_USD_31 years	17	0.26	11	643,710,230	9,903,234	Illiquid	Illiquid
OIS_USD_41 years	5	0.08	5	3,722,358,457	57,267,053	Illiquid	Illiquid
OIS_USD_51 years	1	0.02	1	18,130,818	278,936	Illiquid	Illiquid

Table 38: OIS Single-currency swaps liquidity assessment

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	1.02
Notional Amount per day						50,000,000	64,912,735
FLOAT TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT AED 3 years	2	0.03	2	29,617,179	455,649	Illiquid	Illiquid
FLOAT-FLOAT AED 4 years	1	0.02	1	118,468,715	1,822,596	Illiquid	Illiquid
FLOAT-FLOAT AED 5 years	3	0.05	2	73,055,707	1,123,934	Illiquid	Illiquid
FLOAT-FLOAT AUD 1.5 months	11	0.17	6	1,305,552,106	20,085,417	Illiquid	Illiquid
FLOAT-FLOAT AUD 3 months	3	0.05	2	515,525,703	7,931,165	Illiquid	Illiquid
FLOAT-FLOAT AUD 6 months	39	0.60	15	3,726,514,370	57,330,990	Illiquid	Illiquid
FLOAT-FLOAT AUD 1 year	104	1.60	25	13,183,398,213	202,821,511	Liquid	Liquid
FLOAT-FLOAT AUD 2 years	84	1.29	28	7,643,471,968	117,591,876	Liquid	Liquid
FLOAT-FLOAT AUD 3 years	260	4.00	48	27,555,116,647	423,924,871	Liquid	Liquid
FLOAT-FLOAT AUD 4 years	156	2.40	32	13,139,545,052	202,146,847	Liquid	Liquid
FLOAT-FLOAT AUD 5 years	202	3.11	41	17,153,280,885	263,896,629	Liquid	Liquid
FLOAT-FLOAT AUD 6 years	149	2.29	33	9,353,778,702	143,904,288	Liquid	Liquid
FLOAT-FLOAT AUD 7 years	66	1.02	22	2,833,382,826	43,590,505	Illiquid	Illiquid
FLOAT-FLOAT AUD 8 years	89	1.37	25	4,957,080,919	76,262,783	Liquid	Illiquid
FLOAT-FLOAT AUD 9 years	32	0.49	12	1,405,644,434	21,625,299	Illiquid	Illiquid
FLOAT-FLOAT AUD 10 years	54	0.83	23	1,583,400,374	24,360,006	Illiquid	Illiquid
FLOAT-FLOAT AUD 11 years	136	2.09	31	5,028,585,003	77,362,846	Liquid	Illiquid
FLOAT-FLOAT AUD 12 years	4	0.06	4	123,860,072	1,905,540	Illiquid	Illiquid
FLOAT-FLOAT AUD 13 years	34	0.52	13	971,129,913	14,940,460	Illiquid	Illiquid
FLOAT-FLOAT AUD 15 years	29	0.45	10	488,118,482	7,509,515	Illiquid	Illiquid
FLOAT-FLOAT AUD 16 years	21	0.32	10	754,140,457	11,602,161	Illiquid	Illiquid
FLOAT-FLOAT AUD 17 years	1	0.02	1	147,293,058	2,266,047	Illiquid	Illiquid
FLOAT-FLOAT AUD 18 years	2	0.03	1	66,951,390	1,030,021	Illiquid	Illiquid
FLOAT-FLOAT AUD 19 years	1	0.02	1	23,432,987	360,507	Illiquid	Illiquid
FLOAT-FLOAT AUD 20 years	7	0.11	7	106,452,710	1,637,734	Illiquid	Illiquid
FLOAT-FLOAT AUD 21 years	15	0.23	7	171,060,802	2,631,705	Illiquid	Illiquid
FLOAT-FLOAT AUD 26 years	29	0.45	6	823,836,854	12,674,413	Illiquid	Illiquid
FLOAT-FLOAT AUD 31 years	12	0.18	4	113,616,509	1,747,946	Illiquid	Illiquid
FLOAT-FLOAT CAD 1.5 months	1	0.02	1	145,108,235	2,232,434	Illiquid	Illiquid
FLOAT-FLOAT CAD 6 months	1	0.02	1	263,833,155	4,058,972	Illiquid	Illiquid
FLOAT-FLOAT CAD 1 year	17	0.26	10	3,924,518,186	60,377,203	Illiquid	Illiquid
FLOAT-FLOAT CAD 2 years	25	0.38	11	5,582,709,568	85,887,840	Illiquid	Illiquid
FLOAT-FLOAT CAD 3 years	27	0.42	12	5,031,957,856	77,414,736	Illiquid	Illiquid
FLOAT-FLOAT CAD 4 years	25	0.38	12	3,438,405,598	52,898,548	Illiquid	Illiquid
FLOAT-FLOAT CAD 5 years	45	0.69	13	4,606,828,322	70,874,282	Illiquid	Illiquid
FLOAT-FLOAT CAD 6 years	40	0.62	15	3,325,616,924	51,163,337	Illiquid	Illiquid
FLOAT-FLOAT CAD 7 years	2	0.03	1	131,916,578	2,029,486	Illiquid	Illiquid
FLOAT-FLOAT CAD 9 years	4	0.06	2	147,086,984	2,262,877	Illiquid	Illiquid
FLOAT-FLOAT CAD 10 years	2	0.03	1	131,916,578	2,029,486	Illiquid	Illiquid
FLOAT-FLOAT CAD 12 years	2	0.03	1	65,958,289	1,014,743	Illiquid	Illiquid
FLOAT-FLOAT CAD 36 years	2	0.03	1	141,810,321	2,181,697	Illiquid	Illiquid
FLOAT-FLOAT CHF 1.5 months	2	0.03	2	164,066,521	2,524,100	Illiquid	Illiquid
FLOAT-FLOAT CHF 6 months	16	0.25	9	2,540,980,244	39,092,004	Illiquid	Illiquid
FLOAT-FLOAT CHF 1 year	46	0.71	25	13,172,900,973	202,660,015	Illiquid	Illiquid
FLOAT-FLOAT CHF 2 years	87	1.34	37	19,248,874,886	296,136,537	Liquid	Illiquid
FLOAT-FLOAT CHF 3 years	63	0.97	30	10,969,323,529	168,758,824	Illiquid	Illiquid
FLOAT-FLOAT CHF 4 years	59	0.91	24	9,110,039,680	140,154,457	Illiquid	Illiquid
FLOAT-FLOAT CHF 5 years	48	0.74	25	6,106,719,979	93,949,538	Illiquid	Illiquid
FLOAT-FLOAT CHF 6 years	66	1.02	28	7,399,810,265	113,843,235	Liquid	Illiquid
FLOAT-FLOAT CHF 7 years	15	0.23	10	1,260,851,214	19,397,711	Illiquid	Illiquid
FLOAT-FLOAT CHF 8 years	16	0.25	10	1,197,685,603	18,425,932	Illiquid	Illiquid
FLOAT-FLOAT CHF 9 years	20	0.31	12	1,320,735,494	20,319,008	Illiquid	Illiquid
FLOAT-FLOAT CHF 10 years	8	0.12	5	391,965,483	6,030,238	Illiquid	Illiquid
FLOAT-FLOAT CHF 11 years	31	0.48	9	2,026,221,535	31,172,639	Illiquid	Illiquid
FLOAT-FLOAT CHF 12 years	1	0.02	1	16,406,652	252,410	Illiquid	Illiquid
FLOAT-FLOAT CHF 13 years	5	0.08	4	213,286,477	3,281,330	Illiquid	Illiquid
FLOAT-FLOAT CHF 15 years	1	0.02	1	12,304,989	189,308	Illiquid	Illiquid
FLOAT-FLOAT CHF 16 years	6	0.09	2	393,759,650	6,057,841	Illiquid	Illiquid
FLOAT-FLOAT CHF 17 years	6	0.09	5	183,123,878	2,817,290	Illiquid	Illiquid
FLOAT-FLOAT CHF 18 years	1	0.02	1	41,016,630	631,025	Illiquid	Illiquid
FLOAT-FLOAT CHF 27 years	1	0.02	1	36,094,635	555,302	Illiquid	Illiquid
FLOAT-FLOAT CZK 6 months	4	0.06	3	56,463,852	868,675	Illiquid	Illiquid
FLOAT-FLOAT CZK 2 years	1	0.02	1	3,509,303	53,989	Illiquid	Illiquid
FLOAT-FLOAT CZK 4 years	1	0.02	1	11,302,691	173,888	Illiquid	Illiquid
FLOAT-FLOAT CZK 5 years	1	0.02	1	3,463,728	53,288	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	1.02
Notional Amount per day						50,000,000	64,912,735
FLOAT TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT_CZK_7 years	1	0.02	1	1,816,104	27,940	Illiquid	Illiquid
FLOAT-FLOAT_DKK_1.5 months	1	0.02	1	11,119,272	171,066	Illiquid	Illiquid
FLOAT-FLOAT_DKK_6 months	2	0.03	2	25,760,336	396,313	Illiquid	Illiquid
FLOAT-FLOAT_DKK_1 year	1	0.02	1	30,209,587	464,763	Illiquid	Illiquid
FLOAT-FLOAT_DKK_2 years	3	0.05	3	177,573,427	2,731,899	Illiquid	Illiquid
FLOAT-FLOAT_DKK_3 years	4	0.06	3	169,334,449	2,605,145	Illiquid	Illiquid
FLOAT-FLOAT_DKK_4 years	7	0.11	3	1,236,248,652	19,019,210	Illiquid	Illiquid
FLOAT-FLOAT_DKK_5 years	3	0.05	3	590,969,190	9,091,834	Illiquid	Illiquid
FLOAT-FLOAT_DKK_6 years	1	0.02	1	227,744,117	3,503,756	Illiquid	Illiquid
FLOAT-FLOAT_DKK_8 years	1	0.02	1	267,934,255	4,122,065	Illiquid	Illiquid
FLOAT-FLOAT_DKK_9 years	2	0.03	2	160,760,553	2,473,239	Illiquid	Illiquid
FLOAT-FLOAT_DKK_12 years	2	0.03	2	133,967,127	2,061,033	Illiquid	Illiquid
FLOAT-FLOAT_DKK_13 years	1	0.02	1	20,095,069	309,155	Illiquid	Illiquid
FLOAT-FLOAT_DKK_17 years	1	0.02	1	33,491,782	515,258	Illiquid	Illiquid
FLOAT-FLOAT_DKK_22 years	6	0.09	4	266,089,023	4,093,677	Illiquid	Illiquid
FLOAT-FLOAT_DKK_23 years	1	0.02	1	28,681,853	441,259	Illiquid	Illiquid
FLOAT-FLOAT_EUR_1.5 months	22	0.34	16	1,071,330,417	16,482,006	Illiquid	Illiquid
FLOAT-FLOAT_EUR_3 months	11	0.17	5	129,340,213	1,989,849	Illiquid	Illiquid
FLOAT-FLOAT_EUR_6 months	82	1.26	34	4,662,505,598	71,730,855	Liquid	Liquid
FLOAT-FLOAT_EUR_1 year	224	3.45	49	7,648,843,902	117,674,522	Liquid	Liquid
FLOAT-FLOAT_EUR_2 years	388	5.97	56	16,615,622,525	255,624,962	Liquid	Liquid
FLOAT-FLOAT_EUR_3 years	329	5.06	55	11,110,640,230	170,932,927	Liquid	Liquid
FLOAT-FLOAT_EUR_4 years	259	3.98	52	8,660,419,335	133,237,221	Liquid	Liquid
FLOAT-FLOAT_EUR_5 years	224	3.45	57	8,875,476,953	136,545,799	Liquid	Liquid
FLOAT-FLOAT_EUR_6 years	205	3.15	58	5,052,369,040	77,728,754	Liquid	Liquid
FLOAT-FLOAT_EUR_7 years	176	2.71	48	4,219,327,799	64,912,735	Liquid	Liquid
FLOAT-FLOAT_EUR_8 years	99	1.52	38	5,328,805,145	81,981,618	Liquid	Liquid
FLOAT-FLOAT_EUR_9 years	74	1.14	38	5,830,093,871	89,693,752	Liquid	Liquid
FLOAT-FLOAT_EUR_10 years	46	0.71	29	4,311,923,747	66,337,288	Illiquid	Illiquid
FLOAT-FLOAT_EUR_11 years	47	0.72	31	4,620,230,394	71,080,468	Illiquid	Illiquid
FLOAT-FLOAT_EUR_12 years	37	0.57	15	2,666,382,593	41,021,271	Illiquid	Illiquid
FLOAT-FLOAT_EUR_13 years	28	0.43	21	2,437,458,890	37,499,368	Illiquid	Illiquid
FLOAT-FLOAT_EUR_14 years	18	0.28	15	1,258,606,717	19,363,180	Illiquid	Illiquid
FLOAT-FLOAT_EUR_15 years	24	0.37	16	880,637,957	13,548,276	Illiquid	Illiquid
FLOAT-FLOAT_EUR_16 years	27	0.42	19	1,640,666,739	25,241,027	Illiquid	Illiquid
FLOAT-FLOAT_EUR_17 years	9	0.14	6	477,504,838	7,346,228	Illiquid	Illiquid
FLOAT-FLOAT_EUR_18 years	11	0.17	6	4,655,351,464	71,620,792	Illiquid	Illiquid
FLOAT-FLOAT_EUR_19 years	3	0.05	3	105,481,368	1,622,790	Illiquid	Illiquid
FLOAT-FLOAT_EUR_20 years	7	0.11	6	599,103,337	9,216,974	Illiquid	Illiquid
FLOAT-FLOAT_EUR_21 years	6	0.09	6	384,463,451	5,914,822	Illiquid	Illiquid
FLOAT-FLOAT_EUR_22 years	6	0.09	5	260,431,550	4,006,639	Illiquid	Illiquid
FLOAT-FLOAT_EUR_23 years	9	0.14	7	1,923,186,124	29,587,479	Illiquid	Illiquid
FLOAT-FLOAT_EUR_24 years	23	0.35	5	1,334,066,958	20,524,107	Illiquid	Illiquid
FLOAT-FLOAT_EUR_25 years	4	0.06	4	1,088,400,383	16,744,621	Illiquid	Illiquid
FLOAT-FLOAT_EUR_26 years	8	0.12	2	666,852,360	10,259,267	Illiquid	Illiquid
FLOAT-FLOAT_EUR_27 years	10	0.15	5	1,424,486,927	21,915,183	Illiquid	Illiquid
FLOAT-FLOAT_EUR_28 years	8	0.12	5	1,518,460,971	23,360,938	Illiquid	Illiquid
FLOAT-FLOAT_EUR_30 years	1	0.02	1	1,399,761,759	21,534,796	Illiquid	Illiquid
FLOAT-FLOAT_EUR_31 years	3	0.05	3	430,000,000	6,615,385	Illiquid	Illiquid
FLOAT-FLOAT_EUR_32 years	2	0.03	1	98,014,843	1,507,921	Illiquid	Illiquid
FLOAT-FLOAT_EUR_33 years	1	0.02	1	109,821,057	1,689,555	Illiquid	Illiquid
FLOAT-FLOAT_EUR_34 years	5	0.08	4	1,155,669,150	17,779,525	Illiquid	Illiquid
FLOAT-FLOAT_EUR_35 years	2	0.03	2	1,198,893,094	18,444,509	Illiquid	Illiquid
FLOAT-FLOAT_EUR_36 years	4	0.06	2	2,267,113,038	34,878,662	Illiquid	Illiquid
FLOAT-FLOAT_EUR_37 years	11	0.17	4	2,627,213,032	40,418,662	Illiquid	Illiquid
FLOAT-FLOAT_EUR_38 years	2	0.03	2	609,144,643	9,371,456	Illiquid	Illiquid
FLOAT-FLOAT_EUR_39 years	4	0.06	1	2,753,554,708	42,362,380	Illiquid	Illiquid
FLOAT-FLOAT_EUR_41 years	2	0.03	2	100,000,000	1,538,462	Illiquid	Illiquid
FLOAT-FLOAT_EUR_50 years	1	0.02	1	95,292,959	1,466,046	Illiquid	Illiquid
FLOAT-FLOAT_EUR_51 years	1	0.02	1	432,560,000	6,654,769	Illiquid	Illiquid
FLOAT-FLOAT_GBP_1.5 months	6	0.09	5	644,369,168	9,913,372	Illiquid	Illiquid
FLOAT-FLOAT_GBP_3 months	11	0.17	8	2,732,786,025	42,042,862	Illiquid	Illiquid
FLOAT-FLOAT_GBP_6 months	59	0.91	25	23,574,688,953	362,687,522	Illiquid	Illiquid
FLOAT-FLOAT_GBP_1 year	214	3.29	50	76,999,809,968	1,184,612,461	Liquid	Liquid
FLOAT-FLOAT_GBP_2 years	222	3.42	49	59,091,686,493	909,102,869	Liquid	Liquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	1.02
Notional Amount per day						50,000,000	64,912,735
FLOAT TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT_GBP_3 years	340	5.23	50	109,545,710,770	1,685,318,627	Liquid	Liquid
FLOAT-FLOAT_GBP_4 years	286	4.40	52	56,849,888,538	874,613,670	Liquid	Liquid
FLOAT-FLOAT_GBP_5 years	190	2.92	48	34,017,147,338	523,340,728	Liquid	Liquid
FLOAT-FLOAT_GBP_6 years	370	5.69	54	63,628,831,567	978,905,101	Liquid	Liquid
FLOAT-FLOAT_GBP_7 years	219	3.37	52	31,320,274,233	481,850,373	Liquid	Liquid
FLOAT-FLOAT_GBP_8 years	135	2.08	38	18,051,763,259	277,719,435	Liquid	Liquid
FLOAT-FLOAT_GBP_9 years	95	1.46	35	8,350,514,752	128,469,458	Liquid	Liquid
FLOAT-FLOAT_GBP_10 years	94	1.45	31	8,812,142,765	135,571,427	Liquid	Liquid
FLOAT-FLOAT_GBP_11 years	304	4.68	55	36,519,771,725	561,842,642	Liquid	Liquid
FLOAT-FLOAT_GBP_12 years	39	0.60	14	5,072,131,886	78,032,798	Illiquid	Illiquid
FLOAT-FLOAT_GBP_13 years	101	1.55	23	9,102,958,342	140,045,513	Liquid	Illiquid
FLOAT-FLOAT_GBP_14 years	32	0.49	19	2,067,745,470	31,811,469	Illiquid	Illiquid
FLOAT-FLOAT_GBP_15 years	20	0.31	13	1,479,258,034	22,757,816	Illiquid	Illiquid
FLOAT-FLOAT_GBP_16 years	137	2.11	37	13,372,298,470	205,727,669	Liquid	Illiquid
FLOAT-FLOAT_GBP_17 years	12	0.18	6	876,548,364	13,485,359	Illiquid	Illiquid
FLOAT-FLOAT_GBP_18 years	19	0.29	12	1,589,807,999	24,458,585	Illiquid	Illiquid
FLOAT-FLOAT_GBP_19 years	23	0.35	12	2,052,394,679	31,575,303	Illiquid	Illiquid
FLOAT-FLOAT_GBP_20 years	17	0.26	8	1,401,593,954	21,562,984	Illiquid	Illiquid
FLOAT-FLOAT_GBP_21 years	97	1.49	18	6,827,036,731	105,031,334	Liquid	Illiquid
FLOAT-FLOAT_GBP_22 years	11	0.17	7	663,635,233	10,209,773	Illiquid	Illiquid
FLOAT-FLOAT_GBP_23 years	13	0.20	9	643,155,667	9,894,703	Illiquid	Illiquid
FLOAT-FLOAT_GBP_24 years	17	0.26	12	2,075,710,641	31,934,010	Illiquid	Illiquid
FLOAT-FLOAT_GBP_25 years	7	0.11	5	315,510,327	4,854,005	Illiquid	Illiquid
FLOAT-FLOAT_GBP_26 years	98	1.51	28	8,655,758,858	133,165,521	Liquid	Illiquid
FLOAT-FLOAT_GBP_27 years	34	0.52	16	3,530,328,026	54,312,739	Illiquid	Illiquid
FLOAT-FLOAT_GBP_28 years	33	0.51	15	2,988,838,871	45,982,136	Illiquid	Illiquid
FLOAT-FLOAT_GBP_29 years	85	1.31	29	5,649,143,517	86,909,900	Liquid	Illiquid
FLOAT-FLOAT_GBP_30 years	23	0.35	9	1,252,448,691	19,268,441	Illiquid	Illiquid
FLOAT-FLOAT_GBP_31 years	126	1.94	23	6,547,804,874	100,735,460	Liquid	Illiquid
FLOAT-FLOAT_GBP_33 years	1	0.02	1	375,243,076	5,772,970	Illiquid	Illiquid
FLOAT-FLOAT_GBP_36 years	7	0.11	5	832,219,163	12,803,372	Illiquid	Illiquid
FLOAT-FLOAT_GBP_37 years	4	0.06	4	488,757,982	7,519,354	Illiquid	Illiquid
FLOAT-FLOAT_GBP_38 years	9	0.14	5	888,404,271	13,667,758	Illiquid	Illiquid
FLOAT-FLOAT_GBP_39 years	10	0.15	7	1,035,116,574	15,924,870	Illiquid	Illiquid
FLOAT-FLOAT_GBP_40 years	2	0.03	2	115,282,620	1,773,579	Illiquid	Illiquid
FLOAT-FLOAT_GBP_41 years	43	0.66	13	2,294,682,340	35,302,805	Illiquid	Illiquid
FLOAT-FLOAT_GBP_45 years	2	0.03	1	121,350,126	1,866,925	Illiquid	Illiquid
FLOAT-FLOAT_GBP_47 years	1	0.02	1	12,135,013	186,693	Illiquid	Illiquid
FLOAT-FLOAT_GBP_48 years	6	0.09	5	406,522,922	6,254,199	Illiquid	Illiquid
FLOAT-FLOAT_GBP_49 years	14	0.22	8	1,751,082,316	26,939,728	Illiquid	Illiquid
FLOAT-FLOAT_GBP_51 years	25	0.38	5	1,504,741,561	23,149,870	Illiquid	Illiquid
FLOAT-FLOAT_GBP_54 years	1	0.02	1	18,202,519	280,039	Illiquid	Illiquid
FLOAT-FLOAT_HKD_6 months	2	0.03	2	2,805,156	43,156	Illiquid	Illiquid
FLOAT-FLOAT_HKD_1 year	5	0.08	4	387,847,698	5,966,888	Illiquid	Illiquid
FLOAT-FLOAT_HKD_2 years	1	0.02	1	18,701,041	287,708	Illiquid	Illiquid
FLOAT-FLOAT_HKD_3 years	4	0.06	4	10,753,098	165,432	Illiquid	Illiquid
FLOAT-FLOAT_HKD_6 years	1	0.02	1	18,701,041	287,708	Illiquid	Illiquid
FLOAT-FLOAT_HKD_8 years	2	0.03	1	18,701,041	287,708	Illiquid	Illiquid
FLOAT-FLOAT_JPY_1.5 months	1	0.02	1	212,861,407	3,274,791	Illiquid	Illiquid
FLOAT-FLOAT_JPY_3 months	10	0.15	3	673,351,583	10,359,255	Illiquid	Illiquid
FLOAT-FLOAT_JPY_6 months	66	1.02	24	11,599,030,908	178,446,629	Liquid	Liquid
FLOAT-FLOAT_JPY_1 year	199	3.06	36	29,152,362,989	448,497,892	Liquid	Liquid
FLOAT-FLOAT_JPY_2 years	413	6.35	58	86,175,166,623	1,325,771,794	Liquid	Liquid
FLOAT-FLOAT_JPY_3 years	405	6.23	59	50,437,297,436	775,958,422	Liquid	Liquid
FLOAT-FLOAT_JPY_4 years	323	4.97	57	39,408,322,669	606,251,118	Liquid	Liquid
FLOAT-FLOAT_JPY_5 years	317	4.88	61	25,249,549,099	388,454,602	Liquid	Liquid
FLOAT-FLOAT_JPY_6 years	569	8.75	59	40,002,689,376	615,425,990	Liquid	Liquid
FLOAT-FLOAT_JPY_7 years	197	3.03	47	9,053,776,115	139,288,863	Liquid	Liquid
FLOAT-FLOAT_JPY_8 years	293	4.51	57	18,139,410,488	279,067,854	Liquid	Liquid
FLOAT-FLOAT_JPY_9 years	126	1.94	44	6,860,239,320	105,542,143	Liquid	Liquid
FLOAT-FLOAT_JPY_10 years	88	1.35	37	5,303,654,807	81,594,689	Liquid	Illiquid
FLOAT-FLOAT_JPY_11 years	387	5.95	55	15,633,251,240	240,511,558	Liquid	Illiquid
FLOAT-FLOAT_JPY_12 years	41	0.63	17	1,122,247,908	17,265,352	Illiquid	Illiquid
FLOAT-FLOAT_JPY_13 years	60	0.92	23	3,326,810,924	51,181,707	Illiquid	Illiquid
FLOAT-FLOAT_JPY_14 years	12	0.18	7	715,781,957	11,012,030	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	1.02
Notional Amount per day						50,000,000	64,912,735
FLOAT TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT_JPY_15 years	27	0.42	13	1,133,841,759	17,443,719	Illiquid	Illiquid
FLOAT-FLOAT_JPY_16 years	125	1.92	34	4,342,230,787	66,803,551	Liquid	Illiquid
FLOAT-FLOAT_JPY_17 years	17	0.26	12	514,060,297	7,908,620	Illiquid	Illiquid
FLOAT-FLOAT_JPY_18 years	21	0.32	7	407,274,825	6,265,767	Illiquid	Illiquid
FLOAT-FLOAT_JPY_19 years	22	0.34	10	530,876,348	8,167,328	Illiquid	Illiquid
FLOAT-FLOAT_JPY_20 years	15	0.23	12	196,045,355	3,016,082	Illiquid	Illiquid
FLOAT-FLOAT_JPY_21 years	88	1.35	29	2,230,290,865	34,312,167	Illiquid	Illiquid
FLOAT-FLOAT_JPY_22 years	17	0.26	11	612,544,174	9,423,757	Illiquid	Illiquid
FLOAT-FLOAT_JPY_23 years	5	0.08	4	149,002,985	2,292,354	Illiquid	Illiquid
FLOAT-FLOAT_JPY_24 years	10	0.15	8	486,743,083	7,488,355	Illiquid	Illiquid
FLOAT-FLOAT_JPY_25 years	9	0.14	8	111,397,469	1,713,807	Illiquid	Illiquid
FLOAT-FLOAT_JPY_26 years	73	1.12	21	2,197,297,347	33,804,575	Illiquid	Illiquid
FLOAT-FLOAT_JPY_27 years	17	0.26	13	475,499,826	7,315,382	Illiquid	Illiquid
FLOAT-FLOAT_JPY_28 years	5	0.08	4	85,144,563	1,309,916	Illiquid	Illiquid
FLOAT-FLOAT_JPY_29 years	4	0.06	2	17,454,635	268,533	Illiquid	Illiquid
FLOAT-FLOAT_JPY_30 years	5	0.08	4	44,984,711	692,072	Illiquid	Illiquid
FLOAT-FLOAT_JPY_31 years	11	0.17	4	126,865,398	1,951,775	Illiquid	Illiquid
FLOAT-FLOAT_JPY_34 years	2	0.03	1	25,543,369	392,975	Illiquid	Illiquid
FLOAT-FLOAT_JPY_36 years	8	0.12	2	166,741,435	2,565,253	Illiquid	Illiquid
FLOAT-FLOAT_MXN_17 years	1	0.02	1	54,139,456	832,915	Illiquid	Illiquid
FLOAT-FLOAT_NOK_1.5 months	1	0.02	1	121,498,825	1,869,213	Illiquid	Illiquid
FLOAT-FLOAT_NOK_3 months	2	0.03	1	182,248,238	2,803,819	Illiquid	Illiquid
FLOAT-FLOAT_NOK_1 year	6	0.09	4	604,394,205	9,298,372	Illiquid	Illiquid
FLOAT-FLOAT_NOK_2 years	14	0.22	12	1,372,168,852	21,110,290	Illiquid	Illiquid
FLOAT-FLOAT_NOK_3 years	7	0.11	6	373,632,987	5,748,200	Illiquid	Illiquid
FLOAT-FLOAT_NOK_4 years	4	0.06	2	77,710,649	1,195,548	Illiquid	Illiquid
FLOAT-FLOAT_NOK_5 years	3	0.05	3	261,064,526	4,016,377	Illiquid	Illiquid
FLOAT-FLOAT_NOK_6 years	1	0.02	1	30,253,207	465,434	Illiquid	Illiquid
FLOAT-FLOAT_NOK_7 years	3	0.05	2	80,650,920	1,240,783	Illiquid	Illiquid
FLOAT-FLOAT_NOK_8 years	2	0.03	1	53,921,179	829,557	Illiquid	Illiquid
FLOAT-FLOAT_NOK_9 years	2	0.03	1	61,745,703	949,934	Illiquid	Illiquid
FLOAT-FLOAT_NOK_14 years	2	0.03	2	42,524,589	654,224	Illiquid	Illiquid
FLOAT-FLOAT_NOK_18 years	1	0.02	1	23,327,774	358,889	Illiquid	Illiquid
FLOAT-FLOAT_PLN_1 year	1	0.02	1	59,693,859	918,367	Illiquid	Illiquid
FLOAT-FLOAT_SAR_6 years	2	0.03	2	9,185,361	141,313	Illiquid	Illiquid
FLOAT-FLOAT_SEK_1 year	2	0.03	2	14,038,162	215,972	Illiquid	Illiquid
FLOAT-FLOAT_SEK_2 years	3	0.05	3	92,473,608	1,422,671	Illiquid	Illiquid
FLOAT-FLOAT_SEK_3 years	5	0.08	4	137,596,272	2,116,866	Illiquid	Illiquid
FLOAT-FLOAT_SEK_4 years	2	0.03	2	61,277,692	942,734	Illiquid	Illiquid
FLOAT-FLOAT_SEK_5 years	4	0.06	4	77,989,790	1,199,843	Illiquid	Illiquid
FLOAT-FLOAT_SEK_6 years	1	0.02	1	11,141,399	171,406	Illiquid	Illiquid
FLOAT-FLOAT_SEK_8 years	2	0.03	1	66,848,391	1,028,437	Illiquid	Illiquid
FLOAT-FLOAT_SEK_9 years	2	0.03	2	55,706,993	857,031	Illiquid	Illiquid
FLOAT-FLOAT_SEK_12 years	2	0.03	2	89,131,188	1,371,249	Illiquid	Illiquid
FLOAT-FLOAT_USD_1.5 months	43	0.66	25	15,049,304,127	231,527,756	Illiquid	Illiquid
FLOAT-FLOAT_USD_3 months	36	0.55	19	13,415,609,370	206,393,990	Illiquid	Illiquid
FLOAT-FLOAT_USD_6 months	165	2.54	49	46,421,104,331	714,170,836	Liquid	Illiquid
FLOAT-FLOAT_USD_1 year	475	7.31	61	167,222,301,720	2,572,650,796	Liquid	Liquid
FLOAT-FLOAT_USD_2 years	918	14.12	63	232,203,926,527	3,572,368,100	Liquid	Liquid
FLOAT-FLOAT_USD_3 years	716	11.02	63	157,141,676,150	2,417,564,248	Liquid	Liquid
FLOAT-FLOAT_USD_4 years	748	11.51	64	127,204,679,906	1,956,995,075	Liquid	Liquid
FLOAT-FLOAT_USD_5 years	539	8.29	62	72,607,883,403	1,117,044,360	Liquid	Liquid
FLOAT-FLOAT_USD_6 years	669	10.29	63	78,165,685,420	1,202,549,006	Liquid	Liquid
FLOAT-FLOAT_USD_7 years	271	4.17	61	20,188,133,737	310,586,673	Liquid	Liquid
FLOAT-FLOAT_USD_8 years	392	6.03	59	31,714,061,492	487,908,638	Liquid	Liquid
FLOAT-FLOAT_USD_9 years	144	2.22	41	10,963,165,557	168,664,085	Liquid	Liquid
FLOAT-FLOAT_USD_10 years	129	1.98	45	8,489,356,625	130,605,487	Liquid	Liquid
FLOAT-FLOAT_USD_11 years	340	5.23	58	19,868,106,393	305,663,175	Liquid	Liquid
FLOAT-FLOAT_USD_12 years	43	0.66	23	2,561,642,831	39,409,890	Illiquid	Illiquid
FLOAT-FLOAT_USD_13 years	172	2.65	47	16,467,990,568	253,353,701	Liquid	Illiquid
FLOAT-FLOAT_USD_14 years	34	0.52	22	1,674,707,392	25,764,729	Illiquid	Illiquid
FLOAT-FLOAT_USD_15 years	71	1.09	24	7,892,898,041	121,429,201	Liquid	Illiquid
FLOAT-FLOAT_USD_16 years	143	2.20	47	6,488,229,239	99,818,911	Liquid	Illiquid
FLOAT-FLOAT_USD_17 years	37	0.57	21	1,610,016,633	24,769,487	Illiquid	Illiquid
FLOAT-FLOAT_USD_18 years	33	0.51	20	1,655,706,295	25,472,405	Illiquid	Illiquid

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	1.02
Notional Amount per day						50,000,000	64,912,735
FLOAT TO FLOAT SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FLOAT-FLOAT USD 19 years	20	0.31	17	583,364,869	8,974,844	Illiquid	Illiquid
FLOAT-FLOAT USD 20 years	16	0.25	14	517,090,928	7,955,245	Illiquid	Illiquid
FLOAT-FLOAT USD 21 years	94	1.45	38	3,804,446,362	58,529,944	Liquid	Illiquid
FLOAT-FLOAT USD 22 years	30	0.46	11	1,094,064,507	16,831,762	Illiquid	Illiquid
FLOAT-FLOAT USD 23 years	26	0.40	11	1,248,631,091	19,209,709	Illiquid	Illiquid
FLOAT-FLOAT USD 24 years	50	0.77	19	2,060,187,437	31,695,191	Illiquid	Illiquid
FLOAT-FLOAT USD 25 years	55	0.85	18	6,291,481,483	96,792,023	Illiquid	Illiquid
FLOAT-FLOAT USD 26 years	89	1.37	36	2,561,599,997	39,409,231	Illiquid	Illiquid
FLOAT-FLOAT USD 27 years	36	0.55	23	1,054,111,383	16,217,098	Illiquid	Illiquid
FLOAT-FLOAT USD 28 years	18	0.28	12	362,545,928	5,577,630	Illiquid	Illiquid
FLOAT-FLOAT USD 29 years	9	0.14	8	150,848,405	2,320,745	Illiquid	Illiquid
FLOAT-FLOAT USD 30 years	20	0.31	14	386,397,818	5,944,582	Illiquid	Illiquid
FLOAT-FLOAT USD 31 years	51	0.78	24	1,418,772,766	21,827,273	Illiquid	Illiquid
FLOAT-FLOAT USD 33 years	8	0.12	3	851,258,622	13,096,286	Illiquid	Illiquid
FLOAT-FLOAT USD 34 years	1	0.02	1	72,523,272	1,115,743	Illiquid	Illiquid
FLOAT-FLOAT USD 40 years	3	0.05	3	43,513,963	669,446	Illiquid	Illiquid
FLOAT-FLOAT USD 41 years	4	0.06	3	142,870,845	2,198,013	Illiquid	Illiquid
FLOAT-FLOAT USD 50 years	4	0.06	2	72,523,272	1,115,743	Illiquid	Illiquid
FLOAT-FLOAT USD 51 years	1	0.02	1	43,513,963	669,446	Illiquid	Illiquid
FLOAT-FLOAT ZAR 6 months	2	0.03	1	22,769,753	350,304	Illiquid	Illiquid
FLOAT-FLOAT ZAR 1 year	5	0.08	3	171,458,982	2,637,830	Illiquid	Illiquid
FLOAT-FLOAT ZAR 2 years	6	0.09	4	188,604,880	2,901,614	Illiquid	Illiquid
FLOAT-FLOAT ZAR 3 years	4	0.06	1	56,238,546	865,208	Illiquid	Illiquid
FLOAT-FLOAT ZAR 4 years	2	0.03	2	18,860,488	290,161	Illiquid	Illiquid
FLOAT-FLOAT ZAR 5 years	1	0.02	1	13,716,719	211,026	Illiquid	Illiquid
FLOAT-FLOAT ZAR 6 years	2	0.03	1	44,579,335	685,836	Illiquid	Illiquid
FLOAT-FLOAT ZAR 7 years	1	0.02	1	51,437,695	791,349	Illiquid	Illiquid
FLOAT-FLOAT ZAR 8 years	1	0.02	1	6,858,359	105,513	Illiquid	Illiquid
FLOAT-FLOAT ZAR 12 years	1	0.02	1	34,291,796	527,566	Illiquid	Illiquid
FLOAT-FLOAT ZAR 16 years	1	0.02	1	13,716,719	211,026	Illiquid	Illiquid

Table 39: Float to Float Single-currency swaps liquidity assessment

						Criteria applied for liquidity classification	Min values across liquid classes
Num of trades per day						1.00	
Notional Amount per day						50,000,000	
FIXED TO FIXED SINGLE CURRENCY SWAPS	Num of trades	Num of trades per day	Num of days traded	Notional Amount	Notional Amount per day	Liquidity Flag	Final Liquidity Flag
FIXED-FIXED_AUD_6 years	1	0.02	1	648,903,584	9,983,132	Illiquid	Illiquid
FIXED-FIXED_CNY_1.5 months	2	0.03	2	619,237,734	9,526,734	Illiquid	Illiquid
FIXED-FIXED_CNY_3 months	1	0.02	1	809,285,939	12,450,553	Illiquid	Illiquid
FIXED-FIXED_CNY_1 year	2	0.03	2	18,848,143	289,971	Illiquid	Illiquid
FIXED-FIXED_CZK_1 year	1	0.02	1	2,552,221	39,265	Illiquid	Illiquid
FIXED-FIXED_CZK_4 years	2	0.03	2	37,849,704	582,303	Illiquid	Illiquid
FIXED-FIXED_CZK_5 years	2	0.03	2	72,920,587	1,121,855	Illiquid	Illiquid
FIXED-FIXED_CZK_7 years	2	0.03	2	24,246,095	373,017	Illiquid	Illiquid
FIXED-FIXED_CZK_16 years	1	0.02	1	18,230,147	280,464	Illiquid	Illiquid
FIXED-FIXED_DKK_1 year	1	0.02	1	2,146,763	33,027	Illiquid	Illiquid
FIXED-FIXED_DKK_4 years	2	0.03	1	3,945,191	60,695	Illiquid	Illiquid
FIXED-FIXED_EUR_3 months	4	0.06	3	138,947,368	2,137,652	Illiquid	Illiquid
FIXED-FIXED_EUR_6 months	2	0.03	2	17,590,000	270,615	Illiquid	Illiquid
FIXED-FIXED_EUR_1 year	6	0.09	6	346,742,915	5,334,506	Illiquid	Illiquid
FIXED-FIXED_EUR_2 years	6	0.09	5	139,758,293	2,150,128	Illiquid	Illiquid
FIXED-FIXED_EUR_3 years	2	0.03	2	1,481,352,598	22,790,040	Illiquid	Illiquid
FIXED-FIXED_EUR_4 years	3	0.05	2	2,697,558	41,501	Illiquid	Illiquid
FIXED-FIXED_EUR_5 years	1	0.02	1	2,140,000	32,923	Illiquid	Illiquid
FIXED-FIXED_EUR_7 years	2	0.03	2	41,162,152	633,264	Illiquid	Illiquid
FIXED-FIXED_EUR_8 years	2	0.03	1	40,772,728	627,273	Illiquid	Illiquid
FIXED-FIXED_EUR_9 years	5	0.08	4	75,213,546	1,157,131	Illiquid	Illiquid
FIXED-FIXED_EUR_10 years	2	0.03	1	21,764,064	334,832	Illiquid	Illiquid
FIXED-FIXED_EUR_11 years	2	0.03	2	104,500,000	1,607,692	Illiquid	Illiquid
FIXED-FIXED_EUR_14 years	2	0.03	1	75,000,000	1,153,846	Illiquid	Illiquid
FIXED-FIXED_EUR_15 years	1	0.02	1	1,393,500	21,438	Illiquid	Illiquid
FIXED-FIXED_EUR_19 years	1	0.02	1	118,242,660	1,819,118	Illiquid	Illiquid
FIXED-FIXED_EUR_20 years	1	0.02	1	137,267,093	2,111,801	Illiquid	Illiquid
FIXED-FIXED_EUR_21 years	1	0.02	1	1,400,000	21,538	Illiquid	Illiquid
FIXED-FIXED_EUR_23 years	1	0.02	1	111,790,301	1,719,851	Illiquid	Illiquid
FIXED-FIXED_EUR_24 years	2	0.03	1	40,000,000	615,385	Illiquid	Illiquid
FIXED-FIXED_EUR_28 years	1	0.02	1	4,000,000	61,538	Illiquid	Illiquid
FIXED-FIXED_GBP_27 years	1	0.02	1	121,350	1,867	Illiquid	Illiquid
FIXED-FIXED_GHS_2 years	1	0.02	1	1,574,705	24,226	Illiquid	Illiquid
FIXED-FIXED_ILS_1.5 months	2	0.03	2	31,884,979	490,538	Illiquid	Illiquid
FIXED-FIXED_JPY_6 months	1	0.02	1	212,861,407	3,274,791	Illiquid	Illiquid
FIXED-FIXED_JPY_4 years	2	0.03	1	7,095,380	109,160	Illiquid	Illiquid
FIXED-FIXED_JPY_6 years	1	0.02	1	14,190,760	218,319	Illiquid	Illiquid
FIXED-FIXED_JPY_20 years	1	0.02	1	3,547,690	54,580	Illiquid	Illiquid
FIXED-FIXED_TRY_2 years	1	0.02	1	60,832,854	935,890	Illiquid	Illiquid
FIXED-FIXED_USD_13 years	1	0.02	1	43,513,963	669,446	Illiquid	Illiquid

Table 40: Fixed to Fixed Single-currency swaps liquidity assessment

3.6. Pre-trade transparency for non-equity instruments

Trading Models

Background/Mandate

Article 9(5) of MiFIR

5. *ESMA shall develop draft regulatory technical standards to specify the following:*

[...]

(b) the range of bid and offer prices or quotes and the depth of trading interests at those prices, or indicative pre-trade bid and offer prices which are close to the price of the trading interest, to be made public for each class of financial instrument concerned in accordance with Article 8(1) and (4), taking into account the necessary calibration for different types of trading systems as referred to in Article 8(2);

1. MiFID II provides for three types of trading venues for bonds, structured finance products, emission allowances and derivatives: regulated markets, MTFs and OTFs. Within each of these trading venues different types of trading systems may be operated in order to bring together buying and selling trading interest such as quote driven systems, continuous auction order book systems, periodic auction systems, request-for-quote systems and voice systems.
2. ESMA is of the opinion that the type of trading system should be the starting point for determining the appropriate level of pre-trade transparency. In that regard Article 8(2) of MiFIR requires the calibration of the transparency requirements for different types of trading systems, including order-book, quote-driven, periodic auction trading, request for quote, voice and hybrid trading systems. In order to ensure uniform applicable conditions for trading venues, the same pre-trade transparency requirements, defined at trading system level, would then apply equally to regulated markets, MTFs and OTFs to the extent that the trading systems can be operated in line with the definition of the trading venues under MiFIR²⁷.
3. Article 9(5)(b) of MiFIR empowers ESMA to specify the pre-trade transparency obligations by defining the range of bid and offer prices or quotes and the depth of trading interests at those prices, or indicative pre-trade bid and offer prices which are close to the price of the trading interest, to be made public for each class of financial instrument concerned taking into account the different types of trading systems.

²⁷ Recital 16 of MiFIR

4. In calibrating the requirements for different trading systems, the definitions of request-for-quote systems and voice trading systems are key in determining the minimum amount of pre-trade information they must offer. The definitions of these systems are also relevant for determining when pre-trade transparency obligations can be waived for orders above a size specific to the instrument. Article 9(1)(b) of MiFIR states that NCAs can authorise waivers to pre-trade transparency requirements for actionable indications of interest in request-for-quote and voice trading systems that are above a size specific to the instrument.

Analysis following feedback from stakeholders

5. In the DP ESMA proposed to use, for non-equity instruments, the approach for calibrating the content of the pre-trade transparency requirements for shares according to Table 1 in Annex II of MiFID Regulation 1287/2006 as a basis regardless of the type of non-equity financial instrument traded, and to add the commonly used trading systems for non-equities (request for quote and voice systems).
6. The majority of responses to the consultation were in support of this approach. However, a number of respondents, while generally in support of building the transparency regime on the basis of the current Table 1 in Annex II of MiFID Regulation 1287/2006 proposed some amendments to the requirements applicable to hybrid trading systems. The main concerns expressed by those respondents relate to the lack of level playing field where certain hybrid trading systems are able to operate under a less rigorous transparency regime. Those respondents supported amending the table in regard to the information to be made public in such a way that it is clear that the transactions executed under any trading system, including hybrid systems, should be based on firm trading intentions generated by the interaction of buying and selling interests on the venue concerned.
7. Under Article 8(1) of MiFIR all trading venues must make public the current bid and offer prices and the depth of trading interest at those prices which are advertised through their systems. ESMA agrees that those prices should reflect real and firm trading intentions executable within the system operated by the trading venue or, as in the case of periodic auction trading systems, be prices that satisfy a suitable algorithm based on those trading intentions. However, ESMA is of the opinion that the current table already provides sufficient clarity with regard to the requirements applicable to trading systems depending on the execution system according to which trading interest is brought together.
8. The views were split in the response to the proposal for the definition of request-for-quote systems and many respondents were of the opinion that the definition needed to be amended. Many respondents thought the description was too broad and that it did not reflect the exclusivity feature of request-for-quote systems to elucidate that the requesting party to which the quote is disclosed is the only counterparty entitled to trade against it. Other respondents thought the description was too narrow not taking into account the multilateral element of those trading venues that use request-for-quote

systems and proposed that the quote be open to all participants of the trading venue to conclude a transaction.

9. Broadening the scope to all members would, in ESMA's opinion, not be coherent with how most request-for-quote systems are operated. However, in the light of the responses, ESMA slightly amended the definition of the request-for-quote system and incorporated the exclusivity feature into the definition.
10. Regarding the definition of voice systems many agreed with ESMA's definition. However, a significant number of respondents thought the definition would be too broad and would capture a range of hybrid systems which to some extent use electronic means to conclude a transaction but have an element of voice negotiation, and some other respondents also believed that the definition was too narrow and that the description should include a summary of hybrid execution methodologies replicating voice such as free text, electronic chat rooms and instant messenger systems.
11. ESMA is well aware of the many hybrid systems which are arranged by voice and the technological support to conclude transactions, however ESMA is of the opinion that the essential element to consider for classifying a system as a voice trading system is that the voice element is the core part of the system to negotiate and conclude transactions. This may be supported by other technological tools. If the voice element is not the essential part of the system then the operator of the trading venue need to classify the system as a hybrid trading system.

Proposal

12. ESMA proposes to use the approach for calibrating the content of the pre-trade transparency requirements for shares according to Table 1 in Annex II of MiFID Regulation 1287/2006 for all types of non-equity financial instruments traded as a basis, and to add the commonly used trading systems for non-equities: request-for-quote and voice systems.
13. On the basis that there is support for the proposed definition for a voice trading system and that some concerns are, in ESMA's view, already contemplated in the description, ESMA suggests retaining the definition on which it consulted. Regarding the definition of a request-for-quote system ESMA proposes to amend the definition as follows:

“A trading system where a quote or quotes are published in response to a request for a quote submitted by one or more other members or participants. The quote is executable exclusively by the requesting member or market participant. The requesting member or participant may conclude a transaction by accepting the quote or quotes provided to it on request.”

- Q70. Do you agree with ESMA's proposal with regard to the content of pre-trade transparency? Please provide reasons for your answer.**

Waivers for non-equity instruments

Background/Mandate

Article 9(5) of MiFIR

5. *ESMA shall develop draft regulatory technical standards to specify the following:*

[...]

- (c) the size of orders that are large in scale and the type and the minimum size of orders held in an order management facility pending disclosure for which pre-trade disclosure may be waived under paragraph 1 for each class of financial instrument concerned;*
- (d) the size specific to the financial instrument referred to in paragraph 1(b) and the definition of re-request-for-quote and voice trading systems for which pre-trade disclosure may be waived under paragraph 1;*

14. According to Article 9(1) of MiFIR competent authorities shall be able to waive the obligation for market operators and investment firms operating a trading venue to make public pre-trade information for:
- i. orders that are large in scale compared with normal market size
 - ii. orders held in an order management facility of the trading venue pending disclosure;
 - iii. actionable indications of interest in request-for-quote and voice trading systems that are above a size specific to the financial instrument, which would expose liquidity providers to undue risk and takes into account whether the relevant market participants are retail or wholesale investors;
 - iv. derivatives which are not subject to the trading obligation and other financial instruments for which there is not a liquid market.
15. ESMA has been given the mandate in accordance with Article 9(5) paragraphs (c), (d) and (e) of MiFIR to draft technical standards specifying where pre-trade disclosure may be waived due to the size of orders for large in scale and size specific to the financial instrument, type and minimum size of orders held in an order management facility and the financial instruments or classes of instruments for which there is not a liquid market.

Large in scale waiver

16. According to Article 9(1)(a) of MiFIR orders in non-equity financial instruments that are large in scale compared with the normal market size are able to benefit from a waiver from pre-trade transparency.

17. ESMA is of the opinion that granting waivers for large in scale orders and authorising deferred publication for large in scale transactions should be regulated under a common framework in order to avoid inconsistent application of distinct but correlated MiFIR provisions. Therefore, ESMA is of view that the same thresholds should be used for pre-trade waivers and post-trade deferrals.

Analysis following feedback from stakeholders

18. In the DP ESMA presented two different approaches to determine the large in scale waiver for non-equities. Option 1 involved the use of ADT in the same manner as under the large in scale regime used for shares under the current MiFID I regime. As a result, the thresholds would be different for instruments clustered in a given liquidity band compared to those clustered in another band of the same asset class. In option 2, which was ESMA's preferred option, the large in scale threshold would be determined for each asset class defined in accordance with the COFIA approach.
19. The vast majority of respondents agreed with ESMA's preferred option and that the choice between the options should be consistent with the approach adopted for the assessment of liquidity. However, some respondents preferred option 1 due to the fact that the underlying data set was remarkably heterogeneous and therefore needed to be treated at a more granular level.

Proposal

20. Considering that there is strong support for option 2 and that the concerns expressed regarding homogeneity of the classes have been taken into account when determining the classes of liquid instruments in the COFIA regime, ESMA proposes to set the large in scale thresholds for each asset class in accordance with the suggested approach in option 2.
21. ESMA proposes that the large in scale thresholds should be the same pre- and post-trade and set as per Annex III of RTS 9 until 30 April 2018 and calculated yearly according to the methodology set out in Article 11 of the draft RTS 9.

Order management facilities waiver

22. Under MiFIR the order management facility waiver is introduced for non-equities. ESMA is of the opinion that the proposed approach for applying the order management facility waiver for equities would be appropriate to use for non-equities.
23. The order management facility waiver refers to functionalities operated by trading venues where certain orders may waive pre-trade transparency pending their disclosure to the market (i.e. subject to being released to an order book prior to execution). With regard to the practice developed under MiFID I contingent orders such as reserve or iceberg orders and stop orders are considered orders held on an order management facility deemed compliant with MiFID I.

24. MiFIR empowers ESMA to draft regulatory technical standards specifying the type and minimum size of orders held in an order management facility.

Analysis following feedback from stakeholders

25. ESMA did not consult on this specific empowerment. ESMA is of the view that the waiver for orders held in an order management facility for non-equities should be aligned with the waiver for equity instruments.

Proposal

26. Similarly to its' proposed for equity and equity-like financial instruments, ESMA proposes to define the key characteristics of orders held in an order management facility without narrowly prescribing specific characteristics of those orders. In relation to the minimum size ESMA proposes that for all orders held in an order management facility, with the exception of reserve orders, the minimum size should be, at the point of entry of the order, the minimum tradable quantity established by the trading venue. For reserve orders the minimum size shall be not smaller than €10,000.

- Q71. Do you agree with ESMA's proposal with regard to the order management facilities waiver? Please provide reasons for your answer.**

Size specific to the financial instrument (SSTI) waiver

27. The size specific to the instrument waiver (SSTI) granted by the competent authority in accordance with Article 9(1)(b) of MiFIR is applicable to actionable indications of interest²⁸ in request-for-quote and voice trading systems and firm quotes (for systematic internalisers as specified under Article 18(10) of MiFIR) which are above a certain size. When the actionable indication of interest is above the SSTI threshold the market operator and investments firms operating a trading venue which is an RFQ or voice trading system are required in accordance with Article 8(4) of MiFIR to make public at least indicative pre-trade bid and offer prices which are close to the price of the trading interest advertised through their system.

Analysis following feedback from stakeholders

Method for calculating the indicative price which is close to the price of the trading interest

28. The vast majority of the respondents agreed on the approach proposed by ESMA in the DP. In ESMA's view, the indicative prices which are close to the price of the trading interests should be calculated and displayed by the operator of the trading venue in a transparent fashion. The composition and calculation of these indicative prices should be based on a clear and comprehensive methodology that is made transparent to the public beforehand and laid down in the rules of the trading venue.

²⁸ As defined under Article 2(1)(33) of MiFIR.

29. In the DP ESMA noted that indicative pre-trade bid and offer prices which are close to the price of the trading interests could for example consist of an indicator reflecting the average of volume weighted bid and offer prices. Several respondents provided an alternative approach. Some respondents proposed for instance to derive indicative pre-trade bids and offers from available post-trade information, while others proposed that actual quotes and firm prices should be used.
30. In ESMA's view, the market operator of the trading venue should determine which methodology to use. However, ESMA considers it is essential that a clear and comprehensive description of the methodology is disclosed to the public beforehand.

Determination of the size specific to the instrument threshold

31. ESMA is of the opinion that granting waivers for SSTI and authorisation of deferred publication for transactions that are at a SSTI should be regulated under a common framework in order to avoid inconsistent application of distinct but correlated MiFIR provisions. ESMA is hence of the view that the same thresholds should be used for pre-trade and post-trade purposes.
32. In the DP most respondents supported the use of a same threshold for pre- and post-trade purposes, but there was little consensus as to how these thresholds should be set.
33. The scope and level of the SSTI threshold is further discussed in the following chapter on post-trade transparency, under the section on the deferred publication regimes.

Proposal

34. ESMA proposes that the size specific to the instrument threshold should be the same for both pre- and post-trade and set as per Annex III of RTS 9.
 35. The market operator of the trading venue shall use a clear methodology to calculate the indicative price that is close to the price of the trading interest and make it transparent to the public through the rules of the trading venue beforehand.
 36. Please provide your feedback on the proposal for the size of the SSTI thresholds in the related question in the Post-trade transparency section.
- Q72. ESMA seeks further input on how to frame the obligation to make indicative prices public for the purpose of the Technical Standards. Which methodology do you prefer? Do you have other proposals?**

Waiver for financial instruments for which there is not a liquid market

Analysis following feedback from stakeholders

37. Several respondents pointed out that Article 9(1)(c) of MiFIR needed to be clarified to prevent misleading interpretations which could introduce a loophole in the pre-trade

transparency regime for derivatives. In their view, without any further clarification, Article 9(1)(c) could be read as granting a waiver for “derivatives not subject to the trading obligation” and would thus apply to a wide population of derivatives, in particular all derivatives outside of the scope of the clearing obligation under EMIR (for example securitized derivatives) which, hence, will never be subject to the trading obligation. ESMA agrees that Article 9(1)(c) should be clarified to prevent this waiver from being used for all derivatives not subject to the trading obligation.

Proposal

38. ESMA proposes to clarify that the instruments eligible for the pre-trade transparency waiver under Article 9(1)(c) are the following:
- i. derivatives subject to the clearing obligation but for which ESMA has determined that they shall not be subject to the trading obligation; and
 - ii. bonds, derivatives, structured finance products and emission allowances deemed illiquid as per Annex III of RTS 9.

Relevant annexes:

Annex B: Draft RTS 9: Draft regulatory technical standards on transparency requirements in respect of bonds, structured finance products, emission allowances and derivatives

3.7. Post-trade transparency requirements for non-equity instruments

Content and timing of post-trade transparency requirements

Background/Mandate

Article 11(4) of MiFIR

4. *ESMA shall develop draft regulatory technical standards to specify the following in such a way as to enable the publication of information required under Article 64 of Directive 2014/65/EU:*
- (a) the details of transactions that investment firms, including systematic internalisers, and market operators and investment firms operating a trading venue shall make available to the public for each class of financial instrument concerned in accordance with Article 10(1), including identifiers for the different types of transactions published under Article 10(1) and Article 21(1), distinguishing between those determined by factors linked primarily to the valuation of the financial instruments and those determined by other factors;*
 - (b) the time limit that would be deemed in compliance with the obligation to publish as close to real time as possible including when trades are executed outside ordinary trading hours;*

[...]

Article 21(5) of MiFIR

5. *ESMA shall develop draft regulatory technical standards in such a way as to enable the publication of information required under Article 64 of Directive 2014/65/EU to specify the following:*
- (a) the identifiers for the different types of transactions published in accordance with this Article, distinguishing between those determined by factors linked primarily to the valuation of the financial instruments and those determined by other factors;*
 - (b) the application of the obligation under paragraph 1 to transactions involving the use of those financial instruments for collateral, lending or other purposes where the exchange of financial instruments is determined by factors other than the current market valuation of the financial instrument;*

[...]

1. Article 10(1) of MiFIR requires that market operators and investment firms operating a trading venue shall make public the price, volume and time of transactions executed in bonds, structured finance products, emission allowances and derivatives which are traded on a trading venue. Article 21(1) of MiFIR extends the post-trade transparency requirements to investment firms, including systematic internalisers (SI), which either on own account or on behalf of clients, conclude transactions outside trading venues (RMs, MTFs and OTFs) in non-equity financial instruments under the scope of the transparency regime.
2. ESMA is required to develop draft RTS for the implementation of the new post-trade transparency regime. These will include the content and timing of the information to be made public as well as identifiers for different types of transactions.

Content of post-trade transparency

3. In its DP, ESMA proposed the set of details to be made public to be the same as for shares under the new MiFIR transparency regime, with the addition of information on the quantity notation. ESMA also proposed emission allowances be identified on the basis of the type of scheme under which they are exchanged and the relevant trading period as that defined in the schemes.

Analysis following feedback from stakeholders

4. Responses to ESMA's consultation broadly supported ESMA's proposals and generally agreed with the list of details proposed. The importance of making the reporting fields for post-trade publication consistent with those of transaction reporting requirements was noted. In addition, some respondents suggested to align post-trade public information with the public post-trade reporting regimes in other global jurisdictions and, in particular, with the US TRACE requirements.
5. Specific comments were made in terms of additional clarity of the different fields (trading time, identifier of the financial instrument, price notation, quantity notation). Furthermore, some respondents suggested additional fields be considered e.g. currency, yields quotation, dirty/clean price, settlement data, publication time, benchmark, spread to benchmark and trade side.
6. On SI identification, the vast majority of responses recommended the SI's identity should remain anonymous. Some respondents disagreed with the publication of periodic reports emphasising the differences between equity and non-equity markets, the relative illiquidity of the latter and the risks taken by the SIs on the specific financial instrument, and that the SI is a counterparty and not a trading venue and as such, dissemination of the identities of counterparties to a trade would not be required.

Proposal

7. ESMA is still of the view that the set of details, standards and specific content to be made public should be consistent with the one used for transaction reporting requirements, of which the public information is a minimum subset. Under this approach, ESMA would like to clarify that under the current draft RTS for the purpose of Article 26 of MiFIR, the price at which the transaction was concluded refers to “ex coupon price” (clean price). However, differently from what is required under Article 26 of MiFIR, ESMA considers that, for the purpose of transparency requirements, the SI identification could be removed from the list of details, considering the risks taken by the SIs on the specific financial instrument which could be exacerbating by revealing the SI identity to third parties.
 8. ESMA is still of the view that the set of details to be made public should be consistent with the one for shares. However, ESMA is also conscious of the need to take into account the inclusion of currency as an additional field, since the current definition of price notation refers to it “The currency in which the price is expressed [...]”, whereas the new proposal on transaction reporting is “Indication as to whether the quantity is expressed in monetary value, in percentage or in yield”.
 9. ESMA also considered the consistency with public post-trade information in TRACE system as suggested by some respondents. In this respect, ESMA does not consider useful at this stage adding additional details to the proposed list to make it consistent with TRACE system, considering the differences in the overall regulatory regime for non-equities and the benefits of making the overall system more complicated than what it already is.
 10. Finally, ESMA is aware of the operational issues arising from the request of an “Identifier of the financial instrument” for many derivatives. Indeed, even though there are market initiatives attempting to solve the issues, currently a unique way of identification of the instruments at a sufficiently granular level across the different derivatives classes for transparency purposes, is not available. However, it is ESMA’s intention to address this issue in the near future.
- Q73. Do you consider it necessary to include the date and time of publication among the fields included in Annex II, Table 1 of RTS 9? Do you consider that other relevant fields should be added to such a list? Please provide reasons for your answer.**

Identifiers for different types of transactions (Flags)

11. In its DP, ESMA was considering a set of flags identifying transactions carried out under each of the permissible waivers from pre-trade transparency, with the aim of improving the content of public information and assisting NCAs in monitoring the extent to which waivers from pre-trade transparency are used. ESMA proposed using the flags in relation to benchmark trades, agency cross trades, give up/give in trades, technical trades, large in scale trades, illiquid instrument trades, above specific size trades, cancellations and amendments, clarifying that a trade should be marked with more than

one flag where it meets more than one of the above criteria. ESMA also asked for views on the inclusion of a flag for transactions ex/cum coupon.

Analysis following feedback from stakeholders

12. Responses to ESMA's consultation broadly supported ESMA's proposals. However, comments were made with respect to specific flags suggesting:

- i. not to include certain flags, such as the benchmark trade flag, the agency cross trade flag, the give up/give-in trade flag, the technical trade flag and the large in scale, illiquid and size specific to the instrument flags;
- ii. to include specific flags, such as a riskless principal trade flag, a trade side flag (dealer buy/sell/ interdealer), "Exchange for Physical trades" and "cross transactions" flags, a 'package trade' flag, a flag for post-trade risk reduction service component transactions and a non-standard settlement trade flag.

13. The majority of respondents:

- i. are in favour of including identifiers indicating that a transaction has benefitted from a deferral;
- ii. do not consider that an additional flag related to coupon payments (ex/cum) should be introduced;
- iii. expressed a view against the give-up/give-in trades inclusion in the post-trade regime, considering that such transactions do not contribute to the price formation, do not reflect underlying liquidity and would inflate the views on trading interests and volumes.

14. ESMA considers it necessary to include a flag covering all transactions on trading venues that are not considered price forming and that are excluded from the application of Article 21 (see the section on the application of OTC post-trade transparency to certain transactions).

Proposal

15. ESMA proposes to amend the list of flags (see Annex II, Table 2 of RTS 9) in light of the comments received by:

- i. substituting the pre-trade LIS flag with the post-trade LIS flag;
- ii. including a non-price forming flag and flags for transactions benefiting from deferrals at the discretion of the NCA.

16. In terms of defining of the content of each flag, where applicable, the description will be in line with the corresponding transaction reporting field under Article 26 of MiFIR.



Q74. Do you agree with ESMA's proposal on the applicable flags in the context of post-trade transparency? Please provide reasons for your answer.

Timing of post-trade transparency

17. According to MiFIR Article 10, post-trade information for non-equity instruments must be published as close to real time as technically possible. Article 11(4)(b) of MiFIR requires ESMA to draft regulatory technical standards to specify the maximum permissible delay for the publication to be deemed 'close to real time'.
18. In the DP, ESMA proposed that where real time transparency requirements apply (i.e. in the absence of an authorisation for deferred publication), details of non-equity transactions should be made public within a maximum limit of 5 minutes after the transaction.

Analysis following feedback from stakeholders

19. The vast majority of respondents disagreed with ESMA's proposal, considering 5 minutes as too short a time for the maximum permissible delay. Many of those respondents supporting an extended delay argued that a 5 minute maximum permissible delay was too challenging to meet for non-equity markets that rely on manual booking processes and would result in a greater number of booking errors and hence less reliable post-trade transparency data. Many of those respondents also insisted on the importance of consistency with the US regime and pointed out that the TRACE system sets a 15 minute maximum permissible delay. Some respondents expressed their concerns about arbitrage opportunities to the disadvantage of electronic platforms, should backstop delays be used routinely to delay the publication of transparency information.

Proposal

20. ESMA proposes to set the maximum permissible delay at 15 minutes for real-time post trade transparency publication for a period of 3 years after this entry into application of Regulation (EU) No 600/2014. After this 3 year period lapses, ESMA proposes to set to the maximum permissible delay at 5 minutes for real-time post trade transparency publication. ESMA believes this way of implementing the requirement will allow sufficient time and flexibility for market participants to adapt to the 5 minutes maximum delay. ESMA also notes that the maximum permissible delay should only be used by market participants who for technical reasons cannot achieve real-time publication as promptly as a fully automated process.

Q75. Do you agree with ESMA's proposal? Please specify in your answer if you agree with:

(1) a 3-year initial implementation period

(2) a maximum delay of 15 minutes during this period

(3) a maximum delay of 5 minutes thereafter. Please provide reasons for your answer.

Application of post-trade transparency to certain OTC-transactions

21. MiFIR empowers ESMA to develop draft regulatory technical standards in respect of post-trade disclosure of OTC transactions involving the use of financial instruments for collateral, lending or other purposes where the exchange of financial instruments is determined by factors other than the current market valuation of the financial instrument.
22. ESMA notes that a similar, although broader, empowerment exists under Article 28 of current MiFID. On the basis of that empowerment, Article 5 of the implementing regulation 1287/2006 does not consider, for the purpose of the transparency regime, securities financing transactions, the exercise of options or of covered warrants and primary market transactions.

Analysis following feedback from stakeholders

23. In the DP ESMA suggested exempting securities financing transactions and other types of transactions determined by factors other than the current market valuation of the financial instrument. A vast majority of respondents agreed arguing that the publication of those transactions would not contribute to the price discovery process while the administrative burden and costs for market participants would be substantial. Respondents also noted that the reporting requirements are now being dealt with under a separate piece of draft regulation on the Transparency of Securities Financing Transactions and that MiFIR should avoid duplicative or conflicting reporting requirements. Only a few respondents considered that securities financing transactions and other types of transactions determined by factors other than the current market valuation of financial instruments should be subject to post-trade transparency.
24. ESMA agrees that securities financing transactions should not be considered reportable trades for the purpose of the post trade transparency regime. However, ESMA notes that the empowerment in Article 21(5) only encompasses investment firms trading OTC and is not applicable to on venue trading.

Proposal

25. ESMA proposes to establish a list of types of transactions determined by factors other than the current market valuation of the share to which Article 21 of MiFIR would not apply. The list includes:
 - i. securities financing transactions;
 - ii. the exercise of options, of covered warrants or convertible bonds;
 - iii. primary markets transactions (such as the issuance, allotment or subscription, placements and the exercise of pre-emption rights);
 - iv. give-ups or give-ins; and

- v. transfers of financial instruments such as segregated collateral in bilateral transactions or in the context of a CCP margin and collateral requirements.
26. In order to be able to identify trades taking place on trading venues, ESMA suggests introducing a flag for the same type of transactions as in the previous paragraph since it considers that such transactions do not contribute to the current valuation of the financial instrument.
- Q76. Do you agree that securities financing transactions and other types of transactions subject to conditions other than the current market valuation of the financial instrument should be exempt from the reporting requirement under article 21? Do you think other types of transactions should be included? Please provide reasons for your answers.**

Deferred publication regimes

Background/Mandate

Article 11(4) of MiFIR

4. *ESMA shall develop draft regulatory technical standards to specify the following in such a way as to enable the publication of information required under Article 64 of Directive 2014/65/EU:*

[...]

(c) the conditions for authorising investment firms, including systematic internalisers, and market operators and investment firms operating a trading venue, to provide for deferred publication of the details of transactions for each class of financial instrument concerned in accordance with paragraph 1 of this Article and with Article 21(4);

[...]

27. Article 11(1) of MiFIR provides that NCAs shall be able to authorise investment firms, including SIs, market operators and investment firms operating a trading venue, to provide for deferred publication of the details of transactions based on the size or type of transaction.

28. The deferral of publication may be authorised for:

- i. large in scale transactions compared with the normal market size for the financial instrument or for the asset class;
- ii. transactions that are related to financial instruments or to the related asset class for which there is not a liquid market; and
- iii. transactions that are above a size specific to that financial instrument or that class of financial instruments traded on a trading venue, which would expose liquidity providers to undue risk and takes into account whether the relevant market participants are retail or wholesale investors.

29. Article 11(4)(c) of MiFIR requires ESMA to draft technical standards specifying the conditions for authorising deferred publication. On a practical level, ESMA needs to provide a framework indicating the deferral time allowed for each of the 3 cases where a deferral of publication may be authorised. Once the deferral period lapses, all the details of the transaction have to be published, except when the NCA authorises, for an extended or indefinite period of deferral, the publication of transactions in an aggregated form or the omission of the volume, as provided for in Articles 11(3)(b), 11(3)(c) and

11(3)(d) of MiFIR, which are explained in the next section describing the supplementary deferral regime at the discretion of the NCA.

Analysis following feedback from stakeholders

30. In the DP, ESMA proposed a deferral table based on the assumption that the large in scale threshold would be greater than the SSTI threshold and that the size specific and large in scale deferrals would only apply to liquid instruments, illiquid instruments benefiting as such from a specific authorisation of deferred publication. Based on these assumptions, ESMA proposed the following deferral periods for each of the 3 cases when a deferral may be authorised:
- i. Transactions in liquid instruments with a size above the size specific to the instrument and below the large in scale threshold: deferral period between 60 and 120 minutes
 - ii. Transactions in liquid instruments with a size above the large in scale thresholds: deferral period between 120 minutes and End of Day. Additionally, ESMA consulted on whether this delay should be extended to the opening of the next trading session for transactions carried out after 3pm.
 - iii. Transactions in illiquid instruments: deferral period of End of Day + 1
31. With regard to the possibility of authorising deferred publication for certain types of transactions, ESMA did not identify any specific type of transaction requiring particular deferred publication.
32. With regard to the large in scale thresholds, ESMA, in line with its preference for the COFIA approach, expressed its preference for defining a single large in scale threshold for each asset class (here asset classes are to be understood as the granular subcategories defined in the COFIA approach). In the DP, ESMA left largely open the question as to how the threshold should be determined and suggested to use a statistical measure of the overall trading size or a target “coverage ratio” to capture a certain proportion of trading activity.
33. With regard to the SSTI threshold, ESMA proposed to set this threshold as a percentage of the large in scale threshold. Additionally, ESMA proposed that any transaction that is above the SSTI should be eligible for deferred publication, irrespective of the type of trading system within which the transaction was executed.
34. A majority of respondents disagreed with the deferral table proposed by ESMA and supported much longer deferrals and a harmonised deferral regime across the Union. Respondents’ views were split between a majority supporting a less stringent deferral regime with longer deferrals and those either supporting ESMA’s proposal or calling for shorter deferrals in order to prevent an erosion of transparency in markets that currently operate with transparency. Respondents in favour of longer deferrals often called for a

similar treatment for large in scale transactions and transactions in illiquid instruments and a capping of the volume disclosed for an extended time of deferral (which is equivalent to a volume omission above a certain size). Many respondents also pointed out that the concept of “End of Day” was irrelevant for non-equity markets which often operate around the clock.

35. ESMA agrees that the concept of “End of Day” would be challenging to define for non-equity markets and that a simplified deferral table with longer deferrals is warranted. ESMA also agrees that there is a rationale for aligning the deferral for large in scale transactions with the deferral for illiquid instruments. With regard to the omission of the volume for an extended period of deferral for the publication of trades above a certain size, ESMA has considered a deferral publication regime which provides for the publication of the price within a relatively short period of time and the publication of the volume after a much longer time period. Such a regime would have the advantage of allowing for volume omission for an extended deferral period in a harmonised way across the Union, thus limiting the risk of regulatory arbitrage between jurisdictions. However, ESMA is of the opinion that such a proposal would not be consistent with Article 11(3)(b) of MiFIR, which explicitly provides for the possibility of volume omission, but only if the NCA decides to retain this feature in conjunction with an authorisation of deferred publication. As a consequence, some jurisdictions may decide to request volume omission while others may not. This is discussed further in the next section related to the supplementary deferral regime at the discretion of the NCA
36. With regard to the thresholds, a majority supported ESMA’s proposal to set the size specific threshold as a percentage of the large in scale threshold and to set a static large in scale threshold per asset class, provided these classes display sufficient granularity. Most respondents supported the use of a same threshold pre-trade and post-trade, but there was little consensus as to how these thresholds should be set. Several respondents also supported tighter conditions for authorised deferred publication related to the size specific to the instrument.
37. After further consideration, ESMA believes the applicability of the SSTI should be restricted to market participants trading on own account other than matched principal, while the large in scale threshold should be applicable to all transactions.
38. More practically, ESMA proposes to set the SSTI threshold as a percentage of the large in scale threshold (with SSTI threshold being lower than the LIS threshold) but to use the same deferral period for the two thresholds. As mentioned above, ESMA is also of the view that the same threshold should be used for both pre- and post-trade purposes.
39. Additionally, after further consideration, ESMA is of the view that large in scale and size specific thresholds must also be set for illiquid instruments: such thresholds would be necessary in the instance where an NCA does not wish to authorise deferred publication for all transactions in illiquid instruments but wishes to allow such deferral for transactions above a certain size.

40. ESMA considers that the thresholds and deferrals should be reviewed after MiFIR has been applied in practice for an appropriate period of time and data available to ESMA for determining thresholds has improved. While there is no self-empowerment for ESMA to carry out reviews at specified dates, ESMA will constantly monitor the application of the transparency regime and may decide at any time, if thresholds or deferrals are deemed to require re-calibration, to initiate an amendment of the implementing measures. Finally, several respondents supported either a deferral or an exemption from post-trade transparency for non-price forming trades. ESMA is of the view that non-price forming trades should not be subject to post-trade transparency as such information would be of limited use to market participants and would not be consistent with the proposal to exclude non-price forming trades for equity-like instruments. However, ESMA notes that the only empowerment that can be interpreted as allowing for the non-publication of such trades is in Article 31(5) (b) which only applies to OTC transactions.
41. ESMA has carefully considered promoting convergence with the United States by designing a similar transparency regime but notes that only partial convergence can be achieved as MiFIR defines a framework with major differences compared to the rules implemented in the United States. For example, while the CFTC rules restrict in specific cases the trading protocol that can be used, they do not require pre-trade transparency on platforms like MiFIR does. With regard to the thresholds, the CFTC rules define one “block” threshold and do not distinguish between liquid and illiquid instruments for post-trade transparency while MiFIR defines large in scale and size specific thresholds and distinguishes between liquid and illiquid instruments.

Proposal

42. ESMA proposes the following:
- i. to set to 48 hours the deferral period that may be authorised for transactions that are large in scale, transactions above the size specific to the instrument if carried out on own account other than matched principal, and transactions in illiquid instruments;
 - ii. a size specific to the instrument threshold equal to 50% of the large in scale threshold;
 - iii. to set identical large in scale and size specific thresholds for both pre-trade and post-trade purposes;
 - iv. to set large in scale and size specific thresholds according to the volume measure included in Annex II, Table 3 of draft RTS 9.
 - v. to exclude for OTC transactions non-price forming trades from post-trade transparency obligations and provide a list of transactions which should not qualify as transactions for the transparency regime.

43. In addition to the above proposals, two options are proposed with regard to the large in scale and size specific to the instrument thresholds:

- i. the thresholds proposed for the first option are provided in Annex III of draft RTS 9 . The threshold determined for each sub-class will be the greater of a pre-determined floor based on expert judgement and a threshold meeting the policy objective to capture at least 90% of the trades²⁹ below the large in scale threshold for both liquid and illiquid classes³⁰. The latter was calculated on the basis of transactions data collected from trading venues and trade repositories for derivatives and from transaction reporting data for bonds and structured finance products. The distribution of trades on which the thresholds for bonds was calculated excluded trades with a size below €100,000. Furthermore, for the category of other illiquid bonds a floor of €1,000,000 was applied. More specifically, the floors considered were the following:
 - a. €100,000 for securitised derivatives;
 - b. €1,000,000 for commodity derivatives;
 - c. €10,000,000 for interest rate derivatives;
 - d. €500,000 for equity derivatives.

Under this option, concrete thresholds would be specified in the RTS and, thus, a revision of the thresholds would imply a revision of the RTS itself.

- ii. the second option instead would provide for a more dynamic regime that would adapt to changing market conditions. More specifically, the thresholds defined under option 1 would be applied only for year 2017 and, from 2018 onwards, the thresholds would be recalculated on a yearly basis according to a pre-determined methodology: the thresholds would be set for each sub-class included in Annex III of draft RTS 9 as the greater of:

²⁹ The thresholds were estimated from the percentiles related to the distribution of trades for those instruments for which trading venue or transaction reporting data were used. In particular, the percentile requested was defined as follows: the notional amount value V above which $(100 - p)\%$ of the trades have a notional amount value greater than V . e.g. in the case of the 90th percentile the notional amount value above which 10% of the trades have a notional amount value greater than that has to be provided. The figure had to be expressed in euros. Last but not least, the percentiles from 5% to 95% at 5% steps (i.e. 5%, 10%, 15%, ..., 90%, 95%) were requested. However, the thresholds were estimated directly from the distribution of trades for those derivatives for which trade repositories data was used.

³⁰ In order to set the threshold of illiquid classes for interest rate derivatives traded OTC, for which trade repositories data was used, a 70% coverage ratio was applied instead of 90%. For more details on the methodology and results refer to the section "Interest rate derivatives – Pilot exercise on setting the large in scale thresholds". Furthermore, for ETD contracts, i.e. bond futures and interest rate futures, the related thresholds were calculated on the whole distribution of trades related to both sub-classes. The same applied to bond options and interest rate options. Moreover, for equity derivatives only the thresholds for index options and futures and for stock options and futures are based on the 90% coverage ratio in terms of number of trades, while those for the other classes were derived from those 4 values. Finally, the thresholds set for emission allowances are set on the basis of the average amount of tons of carbon dioxide traded and not according to any the policy of objective to capture $x\%$ of the trading volume.

- a. the threshold determined so that at least 90% of the trades would lie below the threshold (**criterion 1**);
 - b. the threshold determined so that at least 70% of the total volume traded for that sub-class would lie below the threshold (**criterion 2**) or;
 - c. the threshold floor determined for the class as provided in Annex III, Table 47 of draft RTS 9³¹.
44. Furthermore, the thresholds would be recalculated on the basis of the distribution of trades of each sub-class. In order to do so, at the beginning of each year, NCAs should collect, from trading venues, APAs and/or CTPs, trade by trade data related to the previous calendar year (from 1 January to 31 December). In particular, in order to set the thresholds the distribution of trades should be sorted in decreasing order and the cumulative volume below each trade value should be calculated. The trade value should be expressed according to the definition of volume provided in Annex II, Table III of draft RTS 9. Subsequently, two sets of thresholds should be determined, the first set of thresholds should assess criterion 1 and the second set should assess criterion 2. Finally, the greater of the three would qualify as the final threshold for the sub-class (see Annex 3.7.3 for an explanatory example of such methodology) unless the value is below the threshold floor, in which case the threshold floor would be used. The resulting value should be rounded up to:
- a. 100,000 if the trade value is smaller than 1 million;
 - b. 500,000 if the trade value is greater or equal than 1 million but smaller than 10 million;
 - c. 5 million if the trade value is greater or equal than 10 million but smaller than 100 million;
 - d. 25 million if the trade value is greater or equal than 100 million.
45. Once the large in scale thresholds are determined the corresponding size specific to the instrument should be calculated as 50% of the large in scale value.
- On the first trading day of April of each year the list of sub-classes and the related large in scale and size specific to the instrument thresholds should be published and be applicable for the 12-month period starting on 1 May and ending on 30 April of the following year.
46. ESMA has a preference for option 2. The details of a pilot exercise conducted on interest rate derivatives (for which trade repositories data was used) is provided in Annex 3.7.1.

³¹ In other words, the thresholds floors would represent the minimum applicable thresholds, replicating to a large extent the thresholds applicable for 2017.

Q77. Do you agree with ESMA's proposal for bonds and SFPs? Please specify, for each type of bonds identified, if you agree on the following points, providing reasons for your answer and if you disagree providing ESMA with your alternative proposal:

- (1) deferral period set to 48 hours**
- (2) size specific to the instrument threshold set as 50% of the large in scale threshold**
- (3) volume measure used to set the large in scale threshold as specified in Annex II, Table 3 of draft RTS 9**
- (4) pre-trade and post-trade thresholds set at the same size**
- (5) large in scale thresholds: (a) state your preference for the system to set the thresholds (i.e. annual recalculation of the thresholds vs. no recalculation of the thresholds) (b) in the case of a preference for a system with no recalculation (i.e. option 1) provide feedback on the thresholds determined. In the case of a preference for a system with recalculation (i.e. option 2) provide feedback on the thresholds determined for 2017 and on the methodology to recalculate the thresholds from 2018 onwards including the level of granularity of the classes on which the recalculations will be performed.**

Q78. Do you agree with ESMA's proposal for interest rate derivatives? Please specify, for each sub-class (FRA, Swaptions, Fixed-to-Fixed single currency swaps, Fixed-to-Float single currency swaps, Float -to- Float single currency swaps, OIS single currency swaps, Inflation single currency swaps, Fixed-to-Fixed multi-currency swaps, Fixed-to-Float multi-currency swaps, Float -to-Float multi-currency swaps, OIS multi-currency swaps, bond options, bond futures, interest rate options, interest rate futures) if you agree on the following points providing reasons for your answer and, if you disagree, providing ESMA with your alternative proposal:

- (1) deferral period set to 48 hours**
- (2) size specific to the instrument threshold set as 50% of the large in scale threshold**
- (3) volume measure used to set the large in scale and size specific to the instrument threshold as specified in Annex II, Table 3 of draft RTS 9**
- (4) pre-trade and post-trade thresholds set at the same size**
- (5) large in scale thresholds: (a) state your preference for the system to set the thresholds (i.e. annual recalculation of the thresholds vs. no recalculation of**

the thresholds) (b) in the case of a preference for a system with no recalculation (i.e. option 1), provide feedback on the thresholds determined. In the case of a preference for a system with recalculation (i.e. option 2), provide feedback on the thresholds determined for 2017 and on the methodology to recalculate the thresholds from 2018 onwards including the level of granularity of the classes on which the recalculations will be performed (c) irrespective of your preference for option 1 or 2 and, with particular reference to OTC traded interest rates derivatives, provide feedback on the granularity of the tenor buckets defined. In other words, would you use a different level of granularity for maturities shorter than 1 year with respect to those set which are: 1 day- 1.5 months, 1.5-3 months, 3-6 months, 6 months – 1 year? Would you group maturities longer than 1 year into buckets (e.g. 1-2 years, 2-5 years, 5-10 years, 10-30 years and above 30 years)?

Q79. Do you agree with ESMA's proposal for commodity derivatives? Please specify, for each type of commodity derivatives, i.e. agricultural, metals and energy, if you agree on the following points providing reasons for your answer and if you disagree, providing ESMA with your alternative proposal:

(1) deferral period set to 48 hours

(2) size specific to the instrument threshold set as 50% of the large in scale threshold

(3) volume measure used to set the large in scale threshold as specified in Annex II, Table 3 of draft RTS 9

(4) pre-trade and post-trade thresholds set at the same size

(5) large in scale thresholds: (a) state your preference for the system to set the thresholds (i.e. annual recalculation of the thresholds vs. no recalculation of the thresholds) (b) in the case of a preference for a system with no recalculation (i.e. option 1) provide feedback on the thresholds determined. In the case of a preference for a system with recalculation (i.e. option 2) provide feedback on the thresholds determined for 2017 and on the methodology to recalculate the thresholds from 2018 onwards including the level of granularity of the classes on which the recalculations will be performed.

Q80. Do you agree with ESMA's proposal for equity derivatives? Please specify, for each type of equity derivatives [stock options, stock futures, index options, index futures, dividend index options, dividend index futures, stock dividend options, stock dividend futures, options on a basket or portfolio of shares, futures on a basket or portfolio of shares, options on other underlying values (i.e. volatility index or ETFs), futures on other underlying values (i.e. volatility index or ETFs)], if you agree on the following points providing reasons for your answer and if you disagree, providing ESMA with your alternative proposal:

- (1) deferral period set to 48 hours**
- (2) size specific to the instrument threshold set as 50% of the large in scale threshold**
- (3) volume measure used to set the large in scale threshold as specified in Annex II, Table 3 of draft RTS 9**
- (4) pre-trade and post-trade thresholds set at the same size**
- (5) large in scale thresholds: (a) state your preference for the system to set the thresholds (i.e. annual recalculation of the thresholds vs. no recalculation of the thresholds) (b) in the case of a preference for a system with no recalculation (i.e. option 1) provide feedback on the thresholds determined. In the case of a preference for a system with recalculation (i.e. option 2) provide feedback on the thresholds determined for 2017 and on the methodology to recalculate the thresholds from 2018 onwards including the level of granularity of the classes on which the recalculations will be performed.**

Q81. Do you agree with ESMA's proposal for securitised derivatives? Please specify if you agree on the following points providing reasons for your answer and if you disagree, providing ESMA with your alternative proposal:

- (1) deferral period set to 48 hours**
- (2) size specific to the instrument threshold set as 50% of the large in scale threshold**
- (3) volume measure used to set the large in scale threshold as specified in Annex II, Table 3 of draft RTS 9**
- (4) pre-trade and post-trade thresholds set at the same size**
- (5) large in scale thresholds: (a) state your preference for the system to set the thresholds (i.e. annual recalculation of the thresholds vs. no recalculation of the thresholds) (b) in the case of a preference for a system with no recalculation (i.e. option 1) provide feedback on the thresholds determined. In the case of a preference for a system with recalculation (i.e. option 2) provide feedback on the thresholds determined for 2017 and on the methodology to recalculate the thresholds from 2018 onwards including the level of granularity of the classes on which the recalculations will be performed.**

Q82. Do you agree with ESMA's proposal for emission allowances? Please specify if you agree on the following points providing reasons for your answer and if you disagree, providing ESMA with your alternative proposal:

- (1) deferral period set to 48 hours**
- (2) size specific to the instrument threshold set as 50% of the large in scale threshold**
- (3) volume measure used to set the large in scale threshold as specified in Annex II, Table 3 of draft RTS 9**
- (4) pre-trade and post-trade thresholds set at the same size**
- (5) large in scale thresholds: (a) state your preference for the system to set the thresholds (i.e. annual recalculation of the thresholds vs. no recalculation of the thresholds) (b) in the case of a preference for a system with no recalculation (i.e. option 1) provide feedback on the thresholds determined. In the case of a preference for a system with recalculation (i.e. option 2) provide feedback on the thresholds determined for 2017 and on the methodology to recalculate the thresholds from 2018 onwards including the level of granularity of the classes on which the recalculations will be performed.**

Annex 3.7.1 Interest rate derivatives – Pilot exercise on setting the large in scale thresholds

47. In this section a detailed analysis on the methodology to set the large in scale thresholds, together with the results of the application of the two options proposed by ESMA, are provided. The analysis relates only to each class of interest rate derivatives for which trade repositories data was used. More specifically:

- i. The first two tables for each asset class in Annex 3.7.2 correspond to the calculation of the thresholds for each sub-class according to criterion 1 under the following two scenarios:
 - a. In the first scenario thresholds were calculated for each of the sub-classes qualified as having a liquid market so that at least 90% of the trades of the related sub-class would have been below the threshold. Final thresholds were then rounded³² (refer to the tables named “LIS calculations on the basis of 10% of trades above LIS rule” for the thresholds set according to this option).
 - b. In the second scenario the same 90% coverage ratio was applied to calculate the thresholds. However, the distribution of trades considered for the calculation were allocated to a sub-class defined with a different level of granularity. More specifically, whenever the tenor was among the criteria used to define the sub-classes, for each unique combination of the other criteria used (currency/currency-pair/underlying), the sub-classes were regrouped irrespective of the tenor (refer to the tables named “LIS calculations on the basis of 10% of trades above LIS rule irrespective of tenor”). However, setting the same threshold across tenors would have resulted in extreme scenarios for certain sub-classes, i.e. either all or none of the trades would have been above such threshold (refer to the tables named “Impact of implementation of one LIS per class irrespective of tenor” for the detailed results on the impact of the application of those thresholds applied to the sub-classes defined taking into account the tenor as a criterion). As a result, ESMA’s preference is to set LIS thresholds for each sub-class defined as liquid without reducing the level of granularity.
- ii. The fourth table provided for each asset class in Annex 3.7.2 corresponds to the calculation of the thresholds for each sub-class according to criterion 2 and the final selection of the threshold according to the second option proposed by ESMA to set the large in scale thresholds. In particular, for each liquid sub-class the threshold was calculated so that 70% of notional amount would have been below such trade (refer to the tables named “LIS calculations on the basis of 30% notional amount above LIS rule” for the thresholds set according to this option). Finally, the threshold

³² Rounding was either to €25m when the majority of the thresholds for the class were above €100m or to €5m when majority of the thresholds for the class were below €100m

to be applied to the sub-class was selected as the greater of the threshold set according to criterion 1 and that set according to criterion 2. The selected threshold was then rounded³³ (please refer to the columns under the title “Combination of 2 rules” in the last table provided for each class)

48. The large in scale thresholds for the sub-classes not having a liquid market would be set according to the same methodology applied to liquid classes under both options proposed by ESMA. However, the thresholds for such sub-classes under option 1, which also correspond to the thresholds set for the year 2017 under option 2, were determined so that 70% of the trades would be below the threshold, i.e. no coverage ratio of volume was targeted. However, whenever such threshold was above the minimum threshold set for a liquid sub-class on the basis of criterion 1 (90% of trades below the threshold) it was further lowered by the rounding value (refer to the rows related to the “OTHERS” category in the tables named “LIS calculations on the basis of 10% of trades above LIS rule irrespectively of tenor” for details of the threshold calculations for illiquid sub-classes.
49. The first “OTHERS” row corresponds to the threshold calculated according to the 90% of the trades below the LIS rule, the second “OTHERS” row corresponds to the threshold calculated according to the 70% of the trades below the LIS rule, the third “OTHERS” row corresponds to the thresholds further lowered by the rounding value. If there was no need to lower the threshold, the third “OTHERS” row corresponds to the thresholds calculated according to the 70% of the volume below the LIS rule. Last but not least, the “OTHERS” sub-class includes all the contracts not belonging to any liquid sub-class.

³³ Rounding was either to €25m when the majority of the thresholds for the class were above €100m or to €5m when majority of the thresholds for the class were below €100m

Annex 3.7.2 Interest rate derivatives – Tables relating to the pilot exercise on setting the large in scale thresholds

50. For each class a series of tables is presented in relation to the pilot exercise to set the large in scale thresholds. In detail:

- i. TABLE 1 - “LIS calculations on the basis of 10% of trades above LIS rule irrespectively of tenor”, this first table provides the following information:
 - a. for each sub-class, the LIS calculated so that at least 90% of the trades were below the threshold (sub-classes defined for the calculations were aggregated across tenors whenever it was used as a criterion to define sub-classes);
 - b. the number of days on which at least one trade was recorded;
 - c. the number of trades above the LIS threshold;
 - d. the notional amount corresponding to the trades above the LIS threshold;
 - e. the related percentages of trades and notional amount of the trades above the LIS threshold;
 - f. the rounded value of the LIS threshold;
 - g. the last four rows of the table are related to the “OTHERS” category, which is the residual class of all illiquid contracts:
 1. the first row provides the LIS so that at least 90% of the trades were below the threshold;
 2. the second row provides the LIS so that at least 70% of the trades were below the threshold;
 3. a third row corresponds, for certain asset classes, to the LIS threshold set so that it is not greater or equal to the minimum LIS threshold set for any liquid sub-class;
 4. a fourth (or third row if the previous table does not apply), corresponds to the LIS so that at least 70% of the notional amount traded was below the LIS threshold.

Please be aware that for swaptions, where the tenor was not used as a criterion to define the sub-classes this table is not provided.

- ii. TABLE 2 - “LIS calculations on the basis of 10% of trades above LIS rule”, this table provides the following information:

- a. for each sub-class the LIS is calculated so that at least 90% of the trades were below the LIS threshold;
 - b. the number of days on which at least one trade was recorded;
 - c. the number of trades above the LIS threshold;
 - d. the notional amount corresponding to the trades above the LIS threshold;
 - e. the related percentages of trades and notional amount of the trades above the LIS threshold;
 - f. the rounded value of the LIS threshold.
- iii. TABLE 3 - “Impact of implementation of one LIS per class irrespectively of tenor”. Whenever the first table with the LIS calculated for the liquid sub-classes irrespectively of the tenor is provided, this table is also presented. Such table provides for the impact of the application of the LIS threshold calculated as in the first table for each sub-class. In particular, the following information is provided:
- a. the LIS (rounded value) calculated so that at least 90% of the trades were below the threshold calculated on the basis of sub-classes defined irrespectively of tenors;
 - b. the number of trades above the LIS threshold;
 - c. the notional amount corresponding to the trades above the LIS threshold;
 - d. the related percentages of trades and notional amount of the trades above the LIS threshold.
- iv. TABLE 4 - “LIS calculations on the basis of 30% notional amount above LIS rule”. In this table the LIS is calculated so that 30% of the notional amount is above the threshold. In particular, the following information is included:
- a. the LIS calculated so that at least 70% of the notional amount is below the threshold;
 - b. the number of trades above the LIS threshold;
 - c. the notional amount corresponding to the trades above the LIS threshold;
 - d. the related percentages of trades and notional amount of the trades above the LIS threshold;
 - e. the last two columns under the heading “Combination of 2 rules” provide for the selection of the LIS. In other words, the greater between the LIS set so that

10% of the trades were above the threshold and, the LIS determined so that 30% of the notional amount was above the threshold is selected. The selected LIS threshold was then rounded.

51. Please be aware that for illiquid classes, such as fixed to fixed single currency swap, only one table, named “LIS calculations”, is provided with the calculation of the LIS so that (i) 10% of the trades are above the threshold, (ii) 30% of the trades are above the threshold, (iii) 30% of the notional amount is above the threshold.

52. Please consider the following explanatory examples:

- i. In the second row of table “LIS calculations on the basis of 10% of trades above LIS rule” for FRA, the threshold calculated for “EURIBOR_EUR_3 months”, so that 90% of trades are below the value, is €662,000,000. However, the percentage of notional amount above the LIS is 40.42%, higher than the maximum allowed (30%). As a result, in the second row of table “LIS calculations on the basis of 30% notional amount” the LIS, leaving 70% of notional below the threshold, is provided for the class “EURIBOR_EUR_3 months”, i.e. €876,000,000. Such threshold is also included in the last two columns of this table (“Combination of 2 rules”), since it is the greater LIS value of the two calculated. The value in the first column is the raw value of the threshold while the second value is the rounded threshold.
- ii. In the last row of table “LIS calculations on the basis of 10% of trades above LIS rule” for FRA, the threshold calculated for “JIBAR_ZAR_1 year”, so that 90% of trades are below the value, is €224,199,765. In this case, since the percentage of notional amount above the LIS is 27.49%, lower than the maximum allowed (30%), no further calculation is necessary and this, once rounded, would be the applicable LIS for this class. Indeed, this is the threshold provided in the last row of the two columns of table “LIS calculations on the basis of 30% notional amount” (“Combination of 2 rules”). For information purposes, the threshold allowing 70% of the notional amount below the threshold was also calculated and provided in the last row of table “LIS calculations on the basis of 30% notional amount”, i.e. €205,750,779.

LIS calculations on the basis of 10% of trades above LIS rule								
SWAPTIONS	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
USD__SWAPTION	10%	66	362,616,359	1,782	1,161,845,974,864	10.00%	51.79%	375,000,000
EUR__SWAPTION	10%	67	250,000,000	949	473,371,493,535	10.00%	46.76%	250,000,000
JPY__SWAPTION	10%	64	177,384,506	385	134,093,391,219	9.99%	43.34%	175,000,000
GBP__SWAPTION	10%	63	303,375,315	257	151,293,464,835	10.00%	52.60%	300,000,000
AUD__SWAPTION	10%	63	334,756,950	128	60,830,292,254	10.01%	43.31%	325,000,000
OTHERS	10%	66	137,167,186	135	34,336,228,547	9.98%	48.27%	125,000,000
OTHERS	30%	66	47,609,789	406	55,480,652,031	30.01%	78.00%	50,000,000
OTHERS	30%	66	182,974,598	15	6,096,380,930	3.86%	30.47%	175,000,000

Table 41: Swaptions: LIS calculations on the basis of 10% of trades above the LIS rule

LIS calculations on the basis of 30% of notional amount above LIS rule							Combination of 2 rules	
SWAPTIONS	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
USD__SWAPTION	30%	725,232,718	698	673,129,268,317	3.92%	30.01%	725,232,718	725,000,000
EUR__SWAPTION	30%	500,000,000	440	303,979,366,535	4.64%	30.03%	500,000,000	500,000,000
JPY__SWAPTION	30%	290,910,589	201	93,002,625,286	5.22%	30.06%	290,910,589	300,000,000
GBP__SWAPTION	30%	606,750,629	90	86,313,917,529	3.50%	30.01%	606,750,629	600,000,000
AUD__SWAPTION	30%	334,756,950	72	42,418,659,993	5.63%	30.20%	334,756,950	325,000,000

Table 42: Swaptions: LIS calculations on the basis of 30% of notional amount above the LIS rule

LIS calculations on the basis of 10% of trades above LIS rule irrespectively of tenor								
FRA	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
EURIBOR_EUR_1.5 months-2 years	10%	66	600,000,000	7,442	7,760,461,000,000	10.00%	41.76%	600,000,000
LIBOR_USD_1.5 months-2 years	10%	63	725,232,718	3,420	3,860,013,355,799	10.00%	40.42%	725,000,000
LIBOR_GBP_1.5 months-2 years	10%	60	498,749,017	2,722	2,399,960,376,883	10.00%	45.81%	500,000,000
STIBOR_SEK_1.5 months-2 years	10%	62	557,069,927	440	350,946,054,605	10.01%	36.64%	550,000,000
BBSW_AUD_1.5 months-1 year	10%	51	334,756,950	165	76,799,270,001	10.02%	35.54%	325,000,000
JIBAR_ZAR_1.5 months-1 year	10%	60	239,219,572	265	90,244,355,845	9.98%	30.16%	250,000,000
OTHERS	10%	64	322,346,839	1,254	722,434,731,434	10.00%	40.78%	325,000,000
OTHERS	30%	64	146,189,408	3,771	1,262,156,667,840	30.08%	71.25%	150,000,000
OTHERS	30%	64	428,213,620	724	531,548,327,539	5.77%	30.01%	425,000,000

Table 43: FRA: LIS calculations on the basis of 10% of trades above the LIS rule irrespectively of tenor

LIS calculations on the basis of 10% of trades above LIS rule								
FRA	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
EURIBOR_EUR_1.5 months	10%	63	1,000,000,000	765	1,063,193,000,000	10.00%	38.99%	1,000,000,000
EURIBOR_EUR_3 months	10%	54	662,000,000	859	933,182,000,000	10.00%	40.42%	650,000,000
EURIBOR_EUR_6 months	10%	60	608,000,000	1,894	1,936,095,000,000	10.00%	40.10%	600,000,000
EURIBOR_EUR_1 year	10%	65	528,000,000	2,731	2,603,453,400,000	10.00%	42.24%	525,000,000
EURIBOR_EUR_2 years	10%	54	528,000,000	1,194	1,081,445,000,000	10.00%	42.28%	525,000,000
LIBOR_USD_1.5 months	10%	54	725,232,718	240	294,742,554,069	10.01%	39.90%	725,000,000
LIBOR_USD_3 months	10%	50	725,232,718	300	348,265,453,874	9.99%	40.26%	725,000,000
LIBOR_USD_6 months	10%	59	725,232,718	991	1,153,507,295,553	10.00%	40.15%	725,000,000
LIBOR_USD_1 year	10%	62	725,232,718	1,312	1,420,730,096,389	10.00%	40.71%	725,000,000
LIBOR_USD_2 years	10%	58	725,232,718	577	642,767,955,913	10.00%	40.62%	725,000,000
LIBOR_GBP_1.5 months	10%	48	566,705,088	275	270,072,721,155	10.00%	45.99%	575,000,000
LIBOR_GBP_3 months	10%	37	440,500,957	322	249,209,472,493	9.99%	43.04%	450,000,000
LIBOR_GBP_6 months	10%	50	480,546,498	706	582,457,547,655	10.00%	45.20%	475,000,000
LIBOR_GBP_1 year	10%	54	458,703,476	1,095	903,012,399,651	10.00%	46.39%	450,000,000
LIBOR_GBP_2 years	10%	45	688,055,214	324	371,667,525,013	10.00%	44.37%	700,000,000
STIBOR_SEK_1.5 months	10%	33	445,655,942	30	17,722,177,008	10.14%	35.04%	450,000,000
STIBOR_SEK_3 months	10%	37	557,069,927	54	40,479,040,603	10.09%	37.29%	550,000,000
STIBOR_SEK_6 months	10%	50	445,655,942	95	60,298,675,018	10.03%	36.76%	450,000,000
STIBOR_SEK_1 year	10%	57	557,069,927	180	147,909,296,436	10.00%	40.62%	550,000,000
STIBOR_SEK_2 years	10%	58	724,190,905	82	81,269,082,205	10.02%	30.05%	725,000,000
BBSW_AUD_1.5 months	10%	47	334,756,950	52	28,848,684,454	10.00%	33.03%	325,000,000
BBSW_AUD_3 months	10%	22	279,856,810	39	17,021,721,404	10.05%	35.76%	275,000,000
BBSW_AUD_6 months	10%	19	251,067,713	38	15,037,951,717	10.00%	36.20%	250,000,000
BBSW_AUD_1 year	10%	15	237,007,921	36	13,853,581,627	10.03%	35.01%	225,000,000
JIBAR_ZAR_1.5 months	10%	49	225,434,270	55	19,464,778,072	9.93%	31.06%	225,000,000
JIBAR_ZAR_3 months	10%	52	270,905,192	45	15,984,023,567	9.96%	32.62%	275,000,000
JIBAR_ZAR_6 months	10%	56	239,288,155	73	25,191,748,118	10.04%	31.49%	250,000,000
JIBAR_ZAR_1 year	10%	59	224,199,765	92	29,573,012,055	9.99%	27.49%	225,000,000

Table 44: FRA: LIS calculations on the basis of 10% of trades above the LIS rule

Impact of implementation of one LIS per class irrespectively of tenor					
FRA	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
EURIBOR_EUR_1.5 months	600,000,000	1,326	1,515,465,000,000	17.34%	55.58%
EURIBOR_EUR_3 months	600,000,000	941	984,822,000,000	10.96%	42.66%
EURIBOR_EUR_6 months	600,000,000	1,927	1,956,042,000,000	10.18%	40.51%
EURIBOR_EUR_1 year	600,000,000	2,280	2,349,424,000,000	8.35%	38.12%
EURIBOR_EUR_2 years	600,000,000	948	942,708,000,000	7.94%	36.86%
LIBOR_USD_1.5 months	725,000,000	317	350,585,473,338	13.22%	47.46%
LIBOR_USD_3 months	725,000,000	341	377,999,995,303	11.36%	43.70%
LIBOR_USD_6 months	725,000,000	1,142	1,263,017,435,939	11.52%	43.96%
LIBOR_USD_1 year	725,000,000	1,408	1,490,352,437,297	10.73%	42.70%
LIBOR_USD_2 years	725,000,000	805	808,121,015,569	13.95%	51.07%
LIBOR_GBP_1.5 months	500,000,000	311	289,178,084,972	11.31%	49.24%
LIBOR_GBP_3 months	500,000,000	257	218,657,151,302	7.98%	37.76%
LIBOR_GBP_6 months	500,000,000	666	562,909,255,878	9.43%	43.68%
LIBOR_GBP_1 year	500,000,000	950	833,755,455,814	8.68%	42.83%
LIBOR_GBP_2 years	500,000,000	528	490,463,230,733	16.30%	58.55%
STIBOR_SEK_1.5 months	550,000,000	19	12,710,998,771	6.42%	25.14%
STIBOR_SEK_3 months	550,000,000	74	51,620,439,147	13.83%	47.56%
STIBOR_SEK_6 months	550,000,000	88	57,021,209,808	9.29%	34.76%
STIBOR_SEK_1 year	550,000,000	224	172,420,373,233	12.44%	47.35%
STIBOR_SEK_2 years	550,000,000	220	160,230,970,176	26.89%	59.24%
BBSW_AUD_1.5 months	325,000,000	109	47,922,465,963	20.96%	54.86%
BBSW_AUD_3 months	325,000,000	33	15,202,652,136	8.51%	31.94%
BBSW_AUD_6 months	325,000,000	24	11,224,400,540	6.32%	27.02%
BBSW_AUD_1 year	325,000,000	21	9,792,979,821	5.85%	24.75%
JIBAR_ZAR_1.5 months	250,000,000	53	18,999,301,227	9.57%	30.31%
JIBAR_ZAR_3 months	250,000,000	45	15,984,023,567	9.96%	32.62%
JIBAR_ZAR_6 months	250,000,000	63	22,781,103,413	8.67%	28.48%
JIBAR_ZAR_1 year	250,000,000	86	28,146,267,573	9.34%	26.17%

Table 45: FRA: Impact of the implementation of one LIS per class irrespectively of tenor

LIS calculations on the basis of 30% of notional amount above LIS rule							COMBINATION OF 2 RULES	
FRA	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
EURIBOR_EUR_1.5 months	30%	1,000,000,000	519	818,193,000,000	6.79%	30.01%	1,000,000,000	1,000,000,000
EURIBOR_EUR_3 months	30%	876,000,000	545	693,188,000,000	6.35%	30.02%	876,000,000	875,000,000
EURIBOR_EUR_6 months	30%	805,000,000	1,194	1,448,973,000,000	6.31%	30.01%	805,000,000	800,000,000
EURIBOR_EUR_1 year	30%	760,000,000	1,541	1,849,350,000,000	5.64%	30.01%	760,000,000	750,000,000
EURIBOR_EUR_2 years	30%	744,000,000	685	768,035,000,000	5.74%	30.03%	744,000,000	750,000,000
LIBOR_USD_1.5 months	30%	1,019,677,201	153	221,741,353,929	6.38%	30.02%	1,019,677,201	1,025,000,000
LIBOR_USD_3 months	30%	951,505,326	190	259,860,310,809	6.33%	30.04%	951,505,326	950,000,000
LIBOR_USD_6 months	30%	942,802,533	634	862,342,314,481	6.39%	30.01%	942,802,533	950,000,000
LIBOR_USD_1 year	30%	870,279,261	815	1,047,418,005,374	6.21%	30.01%	870,279,261	875,000,000
LIBOR_USD_2 years	30%	906,540,897	357	475,113,732,844	6.19%	30.03%	906,540,897	900,000,000
LIBOR_GBP_1.5 months	30%	930,755,465	132	176,337,029,928	4.80%	30.03%	930,755,465	925,000,000
LIBOR_GBP_3 months	30%	606,750,629	175	173,800,077,274	5.43%	30.01%	606,750,629	600,000,000
LIBOR_GBP_6 months	30%	680,774,206	368	386,832,650,243	5.21%	30.02%	680,774,206	675,000,000
LIBOR_GBP_1 year	30%	700,190,226	524	584,588,455,865	4.79%	30.03%	700,190,226	700,000,000
LIBOR_GBP_2 years	30%	1,078,802,619	180	251,990,817,378	5.56%	30.08%	1,078,802,619	1,075,000,000
STIBOR_SEK_1.5 months	30%	445,655,942	24	15,493,897,299	8.11%	30.64%	445,655,942	450,000,000
STIBOR_SEK_3 months	30%	557,069,927	39	32,680,061,623	7.29%	30.11%	557,069,927	550,000,000
STIBOR_SEK_6 months	30%	557,069,927	73	49,222,230,828	7.71%	30.00%	557,069,927	550,000,000
STIBOR_SEK_1 year	30%	557,069,927	110	109,471,471,460	6.11%	30.06%	557,069,927	550,000,000
STIBOR_SEK_2 years	30%	724,190,905	81	81,269,082,205	9.90%	30.05%	724,190,905	725,000,000
BBSW_AUD_1.5 months	30%	395,013,201	44	26,455,172,260	8.46%	30.29%	395,013,201	400,000,000
BBSW_AUD_3 months	30%	334,756,950	30	14,536,485,805	7.73%	30.54%	334,756,950	325,000,000
BBSW_AUD_6 months	30%	276,509,241	28	12,671,889,593	7.37%	30.50%	276,509,241	275,000,000
BBSW_AUD_1 year	30%	262,449,449	28	12,131,591,875	7.80%	30.66%	262,449,449	250,000,000
JIBAR_ZAR_1.5 months	30%	257,119,890	52	18,999,301,227	9.39%	30.31%	257,119,890	250,000,000
JIBAR_ZAR_3 months	30%	274,334,371	40	14,890,115,261	8.85%	30.39%	274,334,371	275,000,000
JIBAR_ZAR_6 months	30%	240,042,575	68	24,232,880,906	9.35%	30.29%	240,042,575	250,000,000
JIBAR_ZAR_1 year	30%	205,750,779	104	32,298,318,284	11.29%	30.03%	224,199,765	225,000,000

Table 46: FRA: LIS calculations on the basis of 30% of notional amount above the LIS rule

LIS calculations on the basis of 10% of trades above LIS rule irrespectively of tenor								
MULTI CURRENCY FIXED TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FIXED-FLOATING_TRY-USD_6 months to 8 years	10%	64	44,798,666	650	55,857,741,086	10.00%	38.33%	45,000,000
FIXED-FLOATING_CNY-USD_1 year to 6 years	10%	63	36,356,193	339	21,568,631,540	10.00%	37.81%	35,000,000
FIXED-FLOATING_RUB-USD_6 months to 6 years	10%	63	22,255,599	199	8,329,166,982	10.03%	33.50%	20,000,000
OTHERS	10%	67	65,626,608	411	75,309,385,542	10.01%	61.41%	65,000,000
OTHERS	30%	67	18,078,709	1,233	102,970,168,362	30.04%	83.96%	20,000,000
OTHERS		67		1,888	111,800,524,153	45.99%	91.16%	10,000,000
OTHERS	30%	67	291,486,704	67	37,075,483,744	1.63%	30.23%	10,000,000

Table 47: Fixed to Float Multi-currency swaps: LIS calculations on the basis of 10% of trades above the LIS rule irrespectively of tenor

LIS calculations on the basis of 10% of trades above LIS rule								
MULTI CURRENCY FIXED TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FIXED-FLOATING TRY-USD 6 months	10%	52	152,745,213	19	4,486,285,872	9.95%	37.57%	155,000,000
FIXED-FLOATING TRY-USD 1 year	10%	58	77,690,652	40	6,340,920,303	10.10%	38.83%	80,000,000
FIXED-FLOATING TRY-USD 2 years	10%	61	59,954,698	236	20,902,842,094	10.02%	31.30%	60,000,000
FIXED-FLOATING TRY-USD 3 years	10%	62	38,867,124	104	6,548,754,623	9.97%	32.26%	40,000,000
FIXED-FLOATING TRY-USD 4 years	10%	59	30,754,387	49	2,567,271,195	10.00%	36.13%	30,000,000
FIXED-FLOATING TRY-USD 5 years	10%	56	26,961,121	35	1,854,849,276	10.06%	39.37%	25,000,000
FIXED-FLOATING TRY-USD 6 years	10%	62	18,777,750	154	5,110,245,826	10.02%	30.58%	20,000,000
FIXED-FLOATING TRY-USD 7 years	10%	30	53,095,321	6	404,893,744	9.84%	34.91%	55,000,000
FIXED-FLOATING TRY-USD 8 years	10%	29	17,717,569	8	187,906,952	10.00%	27.83%	20,000,000
FIXED-FLOATING CNY-USD 1 year	10%	43	28,603,941	27	1,805,855,660	10.07%	42.44%	30,000,000
FIXED-FLOATING CNY-USD 2 years	10%	60	47,865,359	134	9,601,474,258	10.03%	35.02%	50,000,000
FIXED-FLOATING CNY-USD 3 years	10%	63	24,830,579	111	5,537,308,571	9.98%	34.25%	25,000,000
FIXED-FLOATING CNY-USD 4 years	10%	60	36,576,852	49	3,099,471,695	9.92%	39.80%	35,000,000
FIXED-FLOATING CNY-USD 5 years	10%	30	14,504,654	10	204,734,802	9.80%	25.24%	15,000,000
FIXED-FLOATING CNY-USD 6 years	10%	22	14,504,654	8	127,716,566	10.26%	21.05%	15,000,000
FIXED-FLOATING RUB-USD 6 months	10%	30	44,121,025	8	508,522,652	9.64%	31.74%	45,000,000
FIXED-FLOATING RUB-USD 1 year	10%	56	32,635,472	23	1,203,076,381	9.87%	31.98%	35,000,000
FIXED-FLOATING RUB-USD 2 years	10%	60	25,958,583	83	3,607,504,191	9.99%	31.50%	25,000,000
FIXED-FLOATING RUB-USD 3 years	10%	59	20,769,111	32	1,330,427,375	10.16%	35.20%	20,000,000
FIXED-FLOATING RUB-USD 4 years	10%	47	14,292,927	22	526,105,535	10.19%	28.34%	15,000,000
FIXED-FLOATING RUB-USD 5 years	10%	42	16,318,456	10	292,716,601	9.71%	31.41%	15,000,000
FIXED-FLOATING RUB-USD 6 years	10%	47	14,519,346	20	372,405,328	9.80%	25.17%	15,000,000

Table 48: Fixed to Float Multi-currency swaps: LIS calculations on the basis of 10% of trades above the LIS rule

Impact of implementation of one LIS per class irrespectively of tenor					
MULTI CURRENCY FIXED TO FLOAT	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
FIXED-FLOATING TRY-USD 6 months	45,000,000	80	9,985,558,885	41.88%	83.62%
FIXED-FLOATING TRY-USD 1 year	45,000,000	106	10,292,128,184	26.77%	63.03%
FIXED-FLOATING TRY-USD 2 years	45,000,000	325	25,486,513,447	13.80%	38.16%
FIXED-FLOATING TRY-USD 3 years	45,000,000	60	4,774,427,465	5.75%	23.52%
FIXED-FLOATING TRY-USD 4 years	45,000,000	23	1,617,276,806	4.69%	22.76%
FIXED-FLOATING TRY-USD 5 years	45,000,000	18	1,289,126,106	5.17%	27.36%
FIXED-FLOATING TRY-USD 6 years	45,000,000	17	1,298,726,894	1.11%	7.77%
FIXED-FLOATING TRY-USD 7 years	45,000,000	11	664,817,540	18.03%	57.32%
FIXED-FLOATING TRY-USD 8 years	45,000,000	-	-	0.00%	0.00%
FIXED-FLOATING CNY-USD 1 year	35,000,000	23	1,690,660,925	8.58%	39.73%
FIXED-FLOATING CNY-USD 2 years	35,000,000	250	14,402,437,428	18.71%	52.53%
FIXED-FLOATING CNY-USD 3 years	35,000,000	77	4,536,649,986	6.92%	28.06%
FIXED-FLOATING CNY-USD 4 years	35,000,000	60	3,494,925,908	12.15%	44.88%
FIXED-FLOATING CNY-USD 5 years	35,000,000	-	-	0.00%	0.00%
FIXED-FLOATING CNY-USD 6 years	35,000,000	-	-	0.00%	0.00%
FIXED-FLOATING RUB-USD 6 months	20,000,000	24	975,522,034	28.92%	60.89%
FIXED-FLOATING RUB-USD 1 year	20,000,000	54	1,961,211,184	23.18%	52.14%
FIXED-FLOATING RUB-USD 2 years	20,000,000	142	4,925,234,862	17.09%	43.01%
FIXED-FLOATING RUB-USD 3 years	20,000,000	33	1,350,988,630	10.48%	35.74%
FIXED-FLOATING RUB-USD 4 years	20,000,000	7	281,185,085	3.24%	15.15%
FIXED-FLOATING RUB-USD 5 years	20,000,000	2	150,663,736	1.94%	16.17%
FIXED-FLOATING RUB-USD 6 years	20,000,000	3	102,471,029	1.47%	6.92%

Table 49: Fixed to Float Multi-currency swaps: Impact of the implementation of one LIS per class irrespectively of tenor

LIS calculations on the basis of 30% of notional amount above LIS rule							Combination of 2 rules	
MULTI CURRENCY FIXED TO FLOAT	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
FIXED-FLOATING TRY-USD 6 months	30%	171,954,201	13	3,683,718,552	6.81%	30.85%	171,954,201	170,000,000
FIXED-FLOATING TRY-USD 1 year	30%	125,537,783	24	4,910,061,883	6.06%	30.07%	125,537,783	125,000,000
FIXED-FLOATING TRY-USD 2 years	30%	60,162,333	221	20,062,199,204	9.38%	30.04%	60,162,333	60,000,000
FIXED-FLOATING TRY-USD 3 years	30%	39,308,838	92	6,119,715,170	8.82%	30.14%	39,308,838	40,000,000
FIXED-FLOATING TRY-USD 4 years	30%	35,773,098	35	2,134,732,501	7.14%	30.05%	35,773,098	35,000,000
FIXED-FLOATING TRY-USD 5 years	30%	42,470,964	20	1,419,306,261	5.75%	30.12%	42,470,964	40,000,000
FIXED-FLOATING TRY-USD 6 years	30%	18,849,736	148	5,016,288,807	9.63%	30.02%	18,849,736	20,000,000
FIXED-FLOATING TRY-USD 7 years	30%	61,862,957	4	351,798,423	6.56%	30.33%	61,862,957	60,000,000
FIXED-FLOATING TRY-USD 8 years	30%	17,717,569	8	205,624,521	10.00%	30.46%	17,717,569	20,000,000
FIXED-FLOATING CNY-USD 1 year	30%	44,652,469	12	1,308,745,575	4.48%	30.75%	44,652,469	45,000,000
FIXED-FLOATING CNY-USD 2 years	30%	49,315,825	105	8,250,885,582	7.86%	30.09%	49,315,825	50,000,000
FIXED-FLOATING CNY-USD 3 years	30%	32,387,484	86	4,863,532,120	7.73%	30.08%	32,387,484	30,000,000
FIXED-FLOATING CNY-USD 4 years	30%	50,661,666	31	2,360,712,413	6.28%	30.32%	50,661,666	50,000,000
FIXED-FLOATING CNY-USD 5 years	30%	13,460,215	12	245,848,753	11.76%	30.31%	14,504,654	15,000,000
FIXED-FLOATING CNY-USD 6 years	30%	10,878,491	12	182,246,656	15.38%	30.03%	14,504,654	15,000,000
FIXED-FLOATING RUB-USD 6 months	30%	44,121,025	7	508,522,652	8.43%	31.74%	44,121,025	45,000,000
FIXED-FLOATING RUB-USD 1 year	30%	34,095,700	20	1,136,345,209	8.58%	30.21%	34,095,700	35,000,000
FIXED-FLOATING RUB-USD 2 years	30%	27,881,305	76	3,446,626,044	9.15%	30.10%	27,881,305	30,000,000
FIXED-FLOATING RUB-USD 3 years	30%	22,482,214	22	1,134,499,640	6.98%	30.01%	22,482,214	20,000,000
FIXED-FLOATING RUB-USD 4 years	30%	13,299,541	24	567,068,939	11.11%	30.55%	14,292,927	15,000,000
FIXED-FLOATING RUB-USD 5 years	30%	16,318,456	9	292,716,601	8.74%	31.41%	16,318,456	15,000,000
FIXED-FLOATING RUB-USD 6 years	30%	12,183,910	25	451,884,259	12.25%	30.54%	14,519,346	15,000,000

Table 50: Fixed to Float Multi-currency swaps: LIS calculations on the basis of 30% of notional amount above the LIS rule

LIS calculations on the basis of 10% of trades above LIS rule irrespectively of tenor								
MULTI CURRENCY FLOAT TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FLOAT-FLOAT_ 6 months to 11 years _EUR-USD	10%	65	246,000,000	605	225,823,000,000	10.00%	32.46%	250,000,000
FLOAT-FLOAT_ 6 months to 8 years _JPY-USD	10%	65	174,586,596	458	146,915,000,000	10.00%	39.31%	175,000,000
FLOAT-FLOAT_ 6 months to 8 years _GBP-USD	10%	62	243,678,193	118	44,618,100,574	10.01%	29.63%	250,000,000
FLOAT-FLOAT_ 6 months to 8 years _AUD-USD	10%	68	167,378,475	182	52,607,081,112	10.01%	34.82%	175,000,000
OTHERS	10%	67	119,770,034	1,153	276,316,464,339	10.00%	43.71%	125,000,000
OTHERS	30%	67	54,716,185	3,459	455,539,314,600	30.00%	72.06%	50,000,000
OTHERS		67	185,600,184	553	189,695,147,419	4.80%	30.01%	175,000,000

Table 51: Float to Float Multi-currency swaps: LIS calculations on the basis of 10% of trades above the LIS rule irrespectively of tenor

LIS calculations on the basis of 10% of trades above LIS rule

MULTI CURRENCY FLOAT TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FLOAT-FLOAT_EUR-USD_6 months	10%	55	337,000,000	23	14,522,661,249	9.91%	34.35%	325,000,000
FLOAT-FLOAT_EUR-USD_1 year	10%	61	300,000,000	54	27,276,909,780	10.00%	32.53%	300,000,000
FLOAT-FLOAT_EUR-USD_2 years	10%	63	286,496,107	106	43,765,810,361	9.99%	29.07%	275,000,000
FLOAT-FLOAT_EUR-USD_3 years	10%	63	250,205,288	90	34,492,552,574	10.06%	30.80%	250,000,000
FLOAT-FLOAT_EUR-USD_4 years	10%	62	223,000,000	72	26,585,392,542	10.03%	30.58%	225,000,000
FLOAT-FLOAT_EUR-USD_5 years	10%	64	185,000,000	55	14,940,874,257	10.00%	28.99%	175,000,000
FLOAT-FLOAT_EUR-USD_6 years	10%	63	200,000,000	63	18,777,784,044	10.03%	31.13%	200,000,000
FLOAT-FLOAT_EUR-USD_7 years	10%	58	150,000,000	28	6,554,678,528	10.00%	28.85%	150,000,000
FLOAT-FLOAT_EUR-USD_8 years	10%	58	170,000,000	40	12,224,777,777	10.03%	35.56%	175,000,000
FLOAT-FLOAT_EUR-USD_9 years	10%	54	150,000,000	22	5,274,258,310	10.09%	31.25%	150,000,000
FLOAT-FLOAT_EUR-USD_10 years	10%	47	115,000,000	18	3,598,416,960	10.29%	29.51%	125,000,000
FLOAT-FLOAT_EUR-USD_11 years	10%	58	100,952,394	35	6,756,273,911	9.92%	30.50%	100,000,000
FLOAT-FLOAT_JPY-USD_6 months	10%	55	305,101,349	29	16,293,291,824	9.90%	37.63%	300,000,000
FLOAT-FLOAT_JPY-USD_1 year	10%	63	283,815,209	58	32,504,193,715	10.07%	41.84%	275,000,000
FLOAT-FLOAT_JPY-USD_2 years	10%	65	180,492,492	99	31,879,796,730	10.04%	34.07%	175,000,000
FLOAT-FLOAT_JPY-USD_3 years	10%	63	145,046,544	81	22,465,930,728	9.98%	34.71%	150,000,000
FLOAT-FLOAT_JPY-USD_4 years	10%	60	141,907,604	63	13,954,450,651	9.94%	33.73%	150,000,000
FLOAT-FLOAT_JPY-USD_5 years	10%	56	106,430,703	35	5,273,729,048	10.06%	31.87%	100,000,000
FLOAT-FLOAT_JPY-USD_6 years	10%	59	72,912,127	50	6,831,997,452	9.92%	32.21%	75,000,000
FLOAT-FLOAT_JPY-USD_7 years	10%	43	70,953,802	19	2,303,029,617	9.90%	33.96%	75,000,000
FLOAT-FLOAT_JPY-USD_8 years	10%	46	70,953,802	23	2,473,945,289	9.87%	28.87%	75,000,000
FLOAT-FLOAT_GBP-USD_6 months	10%	35	346,910,719	9	3,563,051,817	10.00%	25.18%	350,000,000
FLOAT-FLOAT_GBP-USD_1 year	10%	50	303,375,315	19	8,883,020,223	10.16%	29.01%	300,000,000
FLOAT-FLOAT_GBP-USD_2 years	10%	56	303,375,315	25	10,654,026,351	9.92%	29.28%	300,000,000
FLOAT-FLOAT_GBP-USD_3 years	10%	54	242,700,252	21	6,035,191,057	9.95%	24.63%	250,000,000
FLOAT-FLOAT_GBP-USD_4 years	10%	54	241,284,925	22	8,253,300,460	10.00%	30.46%	250,000,000
FLOAT-FLOAT_GBP-USD_5 years	10%	47	243,388,100	15	5,332,216,017	9.93%	30.41%	250,000,000
FLOAT-FLOAT_GBP-USD_6 years	10%	49	152,570,833	16	3,434,076,425	10.13%	23.80%	150,000,000
FLOAT-FLOAT_GBP-USD_7 years	10%	33	190,736,205	7	1,982,379,736	9.59%	26.10%	200,000,000
FLOAT-FLOAT_GBP-USD_8 years	10%	35	151,687,657	8	2,071,856,202	10.67%	30.46%	150,000,000

MULTI CURRENCY FLOAT TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FLOAT-FLOAT_AUD-USD_6 months	10%	33	334,756,950	14	7,002,092,933	10.22%	36.76%	325,000,000
FLOAT-FLOAT_AUD-USD_1 year	10%	48	217,569,815	29	10,265,101,168	9.93%	33.44%	225,000,000
FLOAT-FLOAT_AUD-USD_2 years	10%	52	159,581,839	37	9,117,742,830	10.05%	29.18%	150,000,000
FLOAT-FLOAT_AUD-USD_3 years	10%	52	149,325,417	32	6,780,029,525	9.88%	28.75%	150,000,000
FLOAT-FLOAT_AUD-USD_4 years	10%	53	134,508,912	24	5,983,337,814	10.08%	35.68%	125,000,000
FLOAT-FLOAT_AUD-USD_5 years	10%	51	130,555,211	17	4,209,149,416	9.77%	34.24%	125,000,000
FLOAT-FLOAT_AUD-USD_6 years	10%	52	131,730,599	29	6,323,138,931	10.18%	36.28%	125,000,000
FLOAT-FLOAT_AUD-USD_7 years	10%	34	73,646,529	18	2,113,820,328	9.89%	28.51%	75,000,000
FLOAT-FLOAT_AUD-USD_8 years	10%	39	80,413,804	19	4,869,219,924	10.22%	46.49%	75,000,000

Table 52: Float to Float Multi-currency swaps: LIS calculations on the basis of 10% of trades above the LIS rule

Impact of implementation of one LIS per class irrespectively of tenor

MULTI CURRENCY FLOAT TO FLOAT	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
FLOAT-FLOAT_EUR-USD_6 months	250,000,000	50	22,594,384,000	21.55%	53.44%
FLOAT-FLOAT_EUR-USD_1 year	250,000,000	71	31,992,837,316	13.15%	38.15%
FLOAT-FLOAT_EUR-USD_2 years	250,000,000	129	49,709,255,516	12.16%	33.02%
FLOAT-FLOAT_EUR-USD_3 years	250,000,000	92	34,992,600,532	10.28%	31.24%
FLOAT-FLOAT_EUR-USD_4 years	250,000,000	55	22,534,711,760	7.66%	25.92%
FLOAT-FLOAT_EUR-USD_5 years	250,000,000	22	7,870,711,305	4.00%	15.27%
FLOAT-FLOAT_EUR-USD_6 years	250,000,000	32	12,219,238,828	5.10%	20.26%
FLOAT-FLOAT_EUR-USD_7 years	250,000,000	7	2,520,628,593	2.50%	11.10%
FLOAT-FLOAT_EUR-USD_8 years	250,000,000	26	9,287,149,092	6.52%	27.02%
FLOAT-FLOAT_EUR-USD_9 years	250,000,000	6	2,050,128,515	2.75%	12.15%
FLOAT-FLOAT_EUR-USD_10 years	250,000,000	2	943,366,155	1.14%	7.74%
FLOAT-FLOAT_EUR-USD_11 years	250,000,000	4	1,897,032,713	1.13%	8.56%
FLOAT-FLOAT_JPY-USD_6 months	175,000,000	74	26,498,650,711	25.26%	61.20%
FLOAT-FLOAT_JPY-USD_1 year	175,000,000	124	47,169,770,168	21.53%	60.72%
FLOAT-FLOAT_JPY-USD_2 years	175,000,000	123	36,137,926,815	12.47%	38.62%
FLOAT-FLOAT_JPY-USD_3 years	175,000,000	67	20,247,831,848	8.25%	31.28%
FLOAT-FLOAT_JPY-USD_4 years	175,000,000	46	11,466,590,621	7.26%	27.71%
FLOAT-FLOAT_JPY-USD_5 years	175,000,000	6	1,450,347,107	1.72%	8.76%
FLOAT-FLOAT_JPY-USD_6 years	175,000,000	12	2,593,859,260	2.38%	12.23%
FLOAT-FLOAT_JPY-USD_7 years	175,000,000	3	642,207,860	1.56%	9.47%
FLOAT-FLOAT_JPY-USD_8 years	175,000,000	2	532,863,055	0.86%	6.22%
FLOAT-FLOAT_GBP-USD_6 months	250,000,000	18	6,252,641,299	20.00%	44.18%
FLOAT-FLOAT_GBP-USD_1 year	250,000,000	35	13,658,147,676	18.72%	44.60%
FLOAT-FLOAT_GBP-USD_2 years	250,000,000	35	13,486,886,214	13.89%	37.07%
FLOAT-FLOAT_GBP-USD_3 years	250,000,000	14	4,334,179,990	6.64%	17.69%
FLOAT-FLOAT_GBP-USD_4 years	250,000,000	17	7,041,869,482	7.73%	25.99%
FLOAT-FLOAT_GBP-USD_5 years	250,000,000	8	3,627,629,037	5.30%	20.69%
FLOAT-FLOAT_GBP-USD_6 years	250,000,000	2	748,608,926	1.27%	5.19%
FLOAT-FLOAT_GBP-USD_7 years	250,000,000	3	1,137,056,591	4.11%	14.97%
FLOAT-FLOAT_GBP-USD_8 years	250,000,000	1	653,955,828	1.33%	9.62%

MULTI CURRENCY FLOAT TO FLOAT	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
FLOAT-FLOAT_AUD-USD_6 months	175,000,000	27	10,785,357,047	19.71%	56.61%
FLOAT-FLOAT_AUD-USD_1 year	175,000,000	45	13,455,355,596	15.41%	43.83%
FLOAT-FLOAT_AUD-USD_2 years	175,000,000	24	6,947,661,871	6.52%	22.23%
FLOAT-FLOAT_AUD-USD_3 years	175,000,000	21	5,069,749,177	6.48%	21.50%
FLOAT-FLOAT_AUD-USD_4 years	175,000,000	17	4,965,033,181	7.14%	29.61%
FLOAT-FLOAT_AUD-USD_5 years	175,000,000	13	3,629,898,162	7.47%	29.53%
FLOAT-FLOAT_AUD-USD_6 years	175,000,000	16	4,532,164,162	5.61%	26.00%
FLOAT-FLOAT_AUD-USD_7 years	175,000,000	2	401,708,340	1.10%	5.42%
FLOAT-FLOAT_AUD-USD_8 years	175,000,000	6	3,277,642,732	3.23%	31.29%

Table 53: Float to Float Multi-currency swaps: Impact of the implementation of one LIS per class irrespectively of tenor

LIS calculations on the basis of 30% of notional amount above LIS rule							Combination of 2 rules	
MULTI CURRENCY FLOAT TO FLOAT	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
FLOAT-FLOAT_EUR-USD_6 months	30%	451,177,681	17	12,758,039,077	7.33%	30.18%	451,177,681	450,000,000
FLOAT-FLOAT_EUR-USD_1 year	30%	319,102,396	46	25,162,663,435	8.52%	30.01%	319,102,396	325,000,000
FLOAT-FLOAT_EUR-USD_2 years	30%	267,539,800	111	45,427,282,691	10.46%	30.17%	286,496,107	275,000,000
FLOAT-FLOAT_EUR-USD_3 years	30%	251,000,000	86	33,741,574,094	9.61%	30.13%	251,000,000	250,000,000
FLOAT-FLOAT_EUR-USD_4 years	30%	223,300,000	69	26,139,392,542	9.61%	30.06%	223,300,000	225,000,000
FLOAT-FLOAT_EUR-USD_5 years	30%	181,308,179	57	15,485,432,436	10.36%	30.05%	185,000,000	175,000,000
FLOAT-FLOAT_EUR-USD_6 years	30%	200,000,000	59	18,177,784,044	9.39%	30.13%	200,000,000	200,000,000
FLOAT-FLOAT_EUR-USD_7 years	30%	150,000,000	29	6,854,678,528	10.36%	30.18%	150,000,000	150,000,000
FLOAT-FLOAT_EUR-USD_8 years	30%	219,480,000	30	10,484,529,092	7.52%	30.50%	219,480,000	225,000,000
FLOAT-FLOAT_EUR-USD_9 years	30%	150,000,000	20	5,124,258,310	9.17%	30.37%	150,000,000	150,000,000
FLOAT-FLOAT_EUR-USD_10 years	30%	114,424,317	18	3,712,841,277	10.29%	30.45%	115,000,000	125,000,000
FLOAT-FLOAT_EUR-USD_11 years	30%	101,532,580	33	6,655,321,517	9.35%	30.05%	101,532,580	100,000,000
FLOAT-FLOAT_JPY-USD_6 months	30%	354,769,011	19	13,225,896,247	6.48%	30.54%	354,769,011	350,000,000
FLOAT-FLOAT_JPY-USD_1 year	30%	354,769,011	28	23,614,048,432	4.86%	30.40%	354,769,011	350,000,000
FLOAT-FLOAT_JPY-USD_2 years	30%	212,861,407	80	28,241,653,150	8.11%	30.18%	212,861,407	225,000,000
FLOAT-FLOAT_JPY-USD_3 years	30%	177,384,506	62	19,539,704,253	7.64%	30.19%	177,384,506	175,000,000
FLOAT-FLOAT_JPY-USD_4 years	30%	142,411,923	52	12,535,030,307	8.20%	30.30%	142,411,923	150,000,000
FLOAT-FLOAT_JPY-USD_5 years	30%	106,430,703	32	5,060,867,641	9.20%	30.58%	106,430,703	100,000,000
FLOAT-FLOAT_JPY-USD_6 years	30%	77,234,582	43	6,389,948,787	8.53%	30.13%	77,234,582	75,000,000
FLOAT-FLOAT_JPY-USD_7 years	30%	70,953,802	15	2,090,168,211	7.81%	30.82%	70,953,802	75,000,000
FLOAT-FLOAT_JPY-USD_8 years	30%	70,953,802	24	2,615,852,893	10.30%	30.52%	70,953,802	75,000,000
FLOAT-FLOAT_GBP-USD_6 months	30%	303,375,315	11	4,505,857,157	12.22%	31.84%	346,910,719	350,000,000
FLOAT-FLOAT_GBP-USD_1 year	30%	303,375,315	20	9,489,770,853	10.70%	30.99%	303,375,315	300,000,000
FLOAT-FLOAT_GBP-USD_2 years	30%	301,334,194	25	10,955,360,545	9.92%	30.11%	303,375,315	300,000,000
FLOAT-FLOAT_GBP-USD_3 years	30%	225,820,097	26	7,456,663,570	12.32%	30.43%	242,700,252	250,000,000
FLOAT-FLOAT_GBP-USD_4 years	30%	241,284,925	21	8,253,300,460	9.55%	30.46%	241,284,925	250,000,000
FLOAT-FLOAT_GBP-USD_5 years	30%	243,388,100	14	5,332,216,017	9.27%	30.41%	243,388,100	250,000,000
FLOAT-FLOAT_GBP-USD_6 years	30%	127,969,126	22	4,440,321,712	13.92%	30.77%	152,570,833	150,000,000
FLOAT-FLOAT_GBP-USD_7 years	30%	184,834,986	8	2,352,049,708	10.96%	30.97%	190,736,205	200,000,000
FLOAT-FLOAT_GBP-USD_8 years	30%	151,687,657	7	2,071,856,202	9.33%	30.46%	151,687,657	150,000,000

MULTI CURRENCY FLOAT TO FLOAT	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
FLOAT-FLOAT_AUD-USD_6 months	30%	345,469,173	10	5,996,578,714	7.30%	31.48%	345,469,173	350,000,000
FLOAT-FLOAT_AUD-USD_1 year	30%	240,737,933	24	9,357,405,555	8.22%	30.48%	240,737,933	250,000,000
FLOAT-FLOAT_AUD-USD_2 years	30%	155,996,739	38	9,431,980,163	10.33%	30.18%	159,581,839	150,000,000
FLOAT-FLOAT_AUD-USD_3 years	30%	148,632,086	33	7,077,293,697	10.19%	30.01%	149,325,417	150,000,000
FLOAT-FLOAT_AUD-USD_4 years	30%	166,984,833	17	5,132,018,014	7.14%	30.61%	166,984,833	175,000,000
FLOAT-FLOAT_AUD-USD_5 years	30%	160,004,468	13	3,789,902,630	7.47%	30.83%	160,004,468	150,000,000
FLOAT-FLOAT_AUD-USD_6 years	30%	134,706,411	20	5,253,925,132	7.02%	30.14%	134,706,411	125,000,000
FLOAT-FLOAT_AUD-USD_7 years	30%	72,307,501	19	2,258,435,330	10.44%	30.46%	73,646,529	75,000,000
FLOAT-FLOAT_AUD-USD_8 years	30%	201,252,079	5	3,277,642,732	2.69%	31.29%	201,252,079	200,000,000

Table 54: Float to Float Multi-currency swaps: LIS calculations on the basis of 30% of notional amount above the LIS rule

LIS calculations								
MULTI CURRENCY FIXED TO FIXED	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
ALL	10%	66	159,605,493.50	140	53,225,805,328	10.00%	59.18%	150,000,000
ALL	30%	66	49,843,295.27	419	78,534,291,507	29.93%	87.33%	50,000,000
ALL	30%	66	362,616,358.89	27	27,056,173,294	1.93%	30.08%	375,000,000

Table 55: Fixed to Fixed Multi-currency swaps: LIS calculations

LIS calculations								
MULTI CURRENCY OIS	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
ALL	10%	26	321,748,045	6	6,867,257,194	10.91%	67.99%	325,000,000
ALL	30%	26	150,716,856	17	9,329,582,489	30.91%	92.37%	150,000,000
ALL	30%	26	3,270,644,529	-	-	0.00%	0.00%	3,275,000,000

Table 56: OIS Multi-currency swaps: LIS calculations

LIS calculations on the basis of 10% of trades above LIS rule irrespectively of tenor								
SINGLE CURRENCY FIXED TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FIXED-FLOATING_EUR_1.5 months to 31 years	10%	89	200,000,000	19,153	8,337,102,751,853	10.00%	51.46%	200,000,000
FIXED-FLOATING_USD_1.5 months to 31 years	10%	76	154,764,662	22,863	7,553,047,403,117	10.00%	49.12%	155,000,000
FIXED-FLOATING_GBP_1.5 months to 31 years	10%	70	127,417,632	7,022	1,938,262,815,437	10.00%	47.94%	125,000,000
FIXED-FLOATING_JPY_1.5 months to 21 years	10%	73	141,907,604	5,360	1,843,352,207,239	10.00%	53.49%	140,000,000
FIXED-FLOATING_KRW_6 months to 6 years	10%	65	43,317,850	865	89,327,442,843	10.00%	43.75%	45,000,000
FIXED-FLOATING_DKK_1 year to 6 years	10%	61	133,967,127	216	57,997,787,070	9.99%	43.92%	135,000,000
FIXED-FLOATING_HKD_1 year to 6 years	10%	62	69,848,387	441	63,249,827,931	10.01%	44.98%	70,000,000
FIXED-FLOATING_MYR_1 year to 6 years	10%	64	61,566,893	384	48,610,587,781	10.01%	48.09%	60,000,000
FIXED-FLOATING_PLN_1 year to 6 years	10%	64	59,693,859	626	70,390,201,235	10.00%	44.57%	60,000,000
FIXED-FLOATING_SGD_1 year to 6 years	10%	63	73,779,812	680	88,134,441,596	10.00%	39.07%	75,000,000
FIXED-FLOATING_ZAR_1 year to 6 years	10%	63	41,150,156	884	73,853,690,039	10.00%	42.36%	40,000,000
FIXED-FLOATING_NZD_6 months to 9 years	10%	73	90,238,394	1,196	199,518,610,086	10.00%	39.33%	90,000,000
FIXED-FLOATING_AUD_6 months to 11 years	10%	75	112,813,092	2,621	556,565,286,799	10.00%	41.10%	115,000,000
FIXED-FLOATING_CAD_6 months to 11 years	10%	67	164,895,722	1,328	396,202,056,588	10.00%	39.87%	165,000,000
FIXED-FLOATING_SEK_6 months to 11 years	10%	63	98,601,377	2,020	328,987,444,856	10.00%	44.55%	100,000,000
FIXED-FLOATING_CHF_1 year to 11 years	10%	67	105,822,906	836	160,095,592,973	10.01%	42.15%	105,000,000
FIXED-FLOATING_NOK_1 years to 11 years	10%	62	60,749,413	712	77,844,869,941	10.00%	42.98%	60,000,000
FIXED-FLOATING_MXN_1.5 months to 7 years	10%	65	49,388,289	1,074	126,492,154,642	10.00%	55.03%	50,000,000
OTHERS	10%	82	43,882,715	7,212	691,765,326,547	10.00%	47.93%	45,000,000
OTHERS	30%	82	17,895,762	21,589	1,088,123,284,703	29.94%	75.40%	20,000,000
OTHERS		82		35,577	1,275,639,031,071	49.33%	88.39%	10,000,000
OTHERS	30%	82	78,658,497	2,794	432,952,320,661	3.87%	30.00%	10,000,000

Table 57: Fixed to Float Single-currency swaps: LIS calculations on the basis of 10% of trades above the LIS rule irrespectively of tenor

LIS calculations on the basis of 10% of trades above LIS rule

SINGLE CURRENCY FIXED TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FIXED-FLOATING_EUR_1.5 months	10%	65	200,000,000	329	135,043,330,077	10.01%	46.65%	200,000,000
FIXED-FLOATING_EUR_3 months	10%	59	250,000,000	64	43,923,320,121	10.02%	59.05%	250,000,000
FIXED-FLOATING_EUR_6 months	10%	68	500,000,000	192	151,520,060,229	10.03%	52.70%	500,000,000
FIXED-FLOATING_EUR_1 year	10%	69	403,918,000	550	395,114,262,851	10.00%	53.98%	405,000,000
FIXED-FLOATING_EUR_2 years	10%	72	394,470,222	1,290	878,204,902,434	10.00%	51.57%	395,000,000
FIXED-FLOATING_EUR_3 years	10%	75	309,920,272	1,763	1,157,094,433,307	10.00%	49.52%	310,000,000
FIXED-FLOATING_EUR_4 years	10%	74	250,000,000	1,567	789,161,346,409	10.00%	48.67%	250,000,000
FIXED-FLOATING_EUR_5 years	10%	77	221,400,000	1,623	726,818,039,233	10.00%	47.39%	220,000,000
FIXED-FLOATING_EUR_6 years	10%	70	162,000,000	2,224	720,453,111,643	10.00%	43.82%	160,000,000
FIXED-FLOATING_EUR_7 years	10%	69	208,800,000	774	340,916,140,665	10.01%	51.58%	210,000,000
FIXED-FLOATING_EUR_8 years	10%	73	215,700,000	977	436,717,498,465	10.00%	49.65%	215,000,000
FIXED-FLOATING_EUR_9 years	10%	73	150,000,000	956	342,970,760,132	10.00%	47.22%	150,000,000
FIXED-FLOATING_EUR_10 years	10%	73	164,900,000	870	296,583,562,240	10.00%	50.62%	165,000,000
FIXED-FLOATING_EUR_11 years	10%	73	104,000,000	2,280	544,477,741,604	10.00%	43.36%	105,000,000
FIXED-FLOATING_EUR_12 years	10%	67	229,600,000	229	95,353,304,125	10.02%	47.84%	230,000,000
FIXED-FLOATING_EUR_13 years	10%	68	213,800,000	338	134,167,467,814	10.01%	47.59%	215,000,000
FIXED-FLOATING_EUR_14 years	10%	70	142,200,000	178	59,944,310,248	10.02%	54.90%	140,000,000
FIXED-FLOATING_EUR_15 years	10%	70	130,000,000	212	60,939,837,147	10.02%	48.79%	130,000,000
FIXED-FLOATING_EUR_16 years	10%	68	125,000,000	376	96,472,196,225	10.00%	42.05%	125,000,000
FIXED-FLOATING_EUR_17 years	10%	67	145,401,239	81	18,546,128,494	10.04%	42.42%	145,000,000
FIXED-FLOATING_EUR_18 years	10%	67	100,000,000	87	20,177,883,925	9.99%	47.04%	100,000,000
FIXED-FLOATING_EUR_19 years	10%	71	95,921,481	109	22,760,249,080	9.96%	48.48%	95,000,000
FIXED-FLOATING_EUR_20 years	10%	69	111,000,000	112	30,866,722,302	9.98%	51.21%	110,000,000
FIXED-FLOATING_EUR_21 years	10%	68	100,000,000	350	78,209,200,670	9.99%	44.91%	100,000,000
FIXED-FLOATING_EUR_22 years	10%	63	114,900,000	55	13,587,726,243	10.09%	47.82%	115,000,000
FIXED-FLOATING_EUR_23 years	10%	65	100,000,000	77	16,557,787,417	10.03%	46.90%	100,000,000
FIXED-FLOATING_EUR_24 years	10%	66	100,000,000	84	18,900,268,644	9.99%	47.61%	100,000,000
FIXED-FLOATING_EUR_25 years	10%	67	100,419,933	105	26,037,529,144	9.99%	51.70%	100,000,000
FIXED-FLOATING_EUR_26 years	10%	66	100,000,000	178	44,449,185,096	10.02%	53.42%	100,000,000
FIXED-FLOATING_EUR_27 years	10%	62	100,000,000	62	16,470,447,303	10.00%	54.47%	100,000,000
FIXED-FLOATING_EUR_28 years	10%	63	100,000,000	76	16,203,715,735	10.04%	48.60%	100,000,000

SINGLE CURRENCY FIXED TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FIXED-FLOATING EUR 29 years	10%	65	75,000,000	97	14,124,286,575	10.00%	43.08%	75,000,000
FIXED-FLOATING EUR 30 years	10%	64	55,000,000	129	12,664,837,306	10.03%	37.89%	55,000,000
FIXED-FLOATING EUR 31 years	10%	65	50,000,000	763	70,867,848,638	10.00%	37.25%	50,000,000
FIXED-FLOATING USD 1.5 months	10%	60	122,564,329	256	65,340,170,941	10.00%	43.12%	125,000,000
FIXED-FLOATING USD 3 months	10%	50	290,093,087	34	21,202,030,504	9.94%	50.11%	290,000,000
FIXED-FLOATING USD 6 months	10%	66	362,616,359	150	118,136,488,531	9.99%	57.04%	365,000,000
FIXED-FLOATING USD 1 year	10%	69	362,616,359	305	178,086,058,191	10.00%	47.83%	365,000,000
FIXED-FLOATING USD 2 years	10%	71	362,616,359	926	543,247,431,547	10.00%	47.52%	365,000,000
FIXED-FLOATING USD 3 years	10%	70	271,237,036	1,835	936,106,824,566	10.00%	45.93%	270,000,000
FIXED-FLOATING USD 4 years	10%	72	236,425,866	2,303	1,106,418,392,715	10.00%	48.36%	235,000,000
FIXED-FLOATING USD 5 years	10%	70	189,285,739	2,126	813,609,625,025	10.00%	42.63%	190,000,000
FIXED-FLOATING USD 6 years	10%	68	145,046,544	3,473	911,450,213,632	10.00%	40.13%	145,000,000
FIXED-FLOATING USD 7 years	10%	68	163,177,362	1,164	362,531,194,990	10.00%	46.37%	165,000,000
FIXED-FLOATING USD 8 years	10%	68	145,046,544	1,279	337,600,837,767	10.00%	43.97%	145,000,000
FIXED-FLOATING USD 9 years	10%	67	143,269,723	556	144,197,676,459	9.99%	48.55%	145,000,000
FIXED-FLOATING USD 10 years	10%	68	88,478,392	1,557	291,792,576,171	10.00%	48.00%	90,000,000
FIXED-FLOATING USD 11 years	10%	69	79,050,366	3,362	558,030,381,070	10.00%	41.03%	80,000,000
FIXED-FLOATING USD 12 years	10%	66	129,091,424	166	48,284,886,813	10.02%	48.92%	130,000,000
FIXED-FLOATING USD 13 years	10%	66	145,046,544	197	54,286,737,661	10.02%	48.79%	145,000,000
FIXED-FLOATING USD 14 years	10%	66	110,235,373	79	20,053,019,363	9.96%	46.77%	110,000,000
FIXED-FLOATING USD 15 years	10%	66	132,717,587	112	24,571,654,140	9.98%	41.94%	135,000,000
FIXED-FLOATING USD 16 years	10%	65	79,775,599	264	41,714,082,268	10.02%	42.83%	80,000,000
FIXED-FLOATING USD 17 years	10%	63	108,784,908	46	8,371,550,380	10.04%	44.73%	110,000,000
FIXED-FLOATING USD 18 years	10%	58	72,523,272	37	5,955,897,870	10.05%	45.54%	75,000,000
FIXED-FLOATING USD 19 years	10%	61	106,609,210	43	9,238,771,762	9.93%	42.89%	105,000,000
FIXED-FLOATING USD 20 years	10%	67	108,784,908	87	17,887,054,226	10.02%	44.44%	110,000,000
FIXED-FLOATING USD 21 years	10%	66	72,523,272	226	41,607,884,548	10.00%	48.25%	75,000,000
FIXED-FLOATING USD 22 years	10%	58	81,951,297	36	6,750,571,005	10.11%	46.11%	80,000,000
FIXED-FLOATING USD 23 years	10%	65	119,663,398	42	10,338,824,193	10.05%	51.80%	120,000,000
FIXED-FLOATING USD 24 years	10%	65	108,784,908	54	13,827,254,024	9.96%	50.90%	110,000,000
FIXED-FLOATING USD 25 years	10%	63	78,325,134	99	19,188,299,366	9.99%	54.22%	80,000,000

SINGLE CURRENCY FIXED TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FIXED-FLOATING_USD_26 years	10%	65	72,523,272	136	25,531,091,782	10.04%	51.54%	75,000,000
FIXED-FLOATING_USD_27 years	10%	61	72,523,272	77	11,731,940,447	9.95%	47.84%	75,000,000
FIXED-FLOATING_USD_28 years	10%	61	68,715,800	84	20,464,622,022	10.04%	63.93%	70,000,000
FIXED-FLOATING_USD_29 years	10%	62	72,523,272	97	15,677,935,267	10.03%	46.35%	75,000,000
FIXED-FLOATING_USD_30 years	10%	66	51,165,168	408	39,132,730,717	9.99%	42.25%	50,000,000
FIXED-FLOATING_USD_31 years	10%	64	36,261,636	1,248	94,061,734,330	10.00%	42.60%	35,000,000
FIXED-FLOATING_GBP_1.5 months	10%	43	93,439,597	40	7,535,175,441	10.10%	46.32%	95,000,000
FIXED-FLOATING_GBP_3 months	10%	21	242,700,252	8	2,749,793,852	10.26%	55.54%	245,000,000
FIXED-FLOATING_GBP_6 months	10%	56	225,163,898	59	29,664,061,050	10.07%	69.12%	225,000,000
FIXED-FLOATING_GBP_1 year	10%	61	291,240,302	187	98,441,453,541	10.02%	48.77%	290,000,000
FIXED-FLOATING_GBP_2 years	10%	63	279,226,640	367	186,613,524,148	10.01%	45.89%	280,000,000
FIXED-FLOATING_GBP_3 years	10%	66	242,700,252	654	286,836,583,069	10.00%	44.31%	245,000,000
FIXED-FLOATING_GBP_4 years	10%	64	196,587,204	561	193,638,967,425	10.00%	41.66%	195,000,000
FIXED-FLOATING_GBP_5 years	10%	66	158,968,665	579	179,629,783,441	10.00%	45.37%	160,000,000
FIXED-FLOATING_GBP_6 years	10%	64	121,350,126	812	161,385,553,760	10.00%	37.12%	120,000,000
FIXED-FLOATING_GBP_7 years	10%	63	121,350,126	284	54,221,463,866	10.00%	40.69%	120,000,000
FIXED-FLOATING_GBP_8 years	10%	64	134,577,290	262	62,902,370,239	9.99%	41.45%	135,000,000
FIXED-FLOATING_GBP_9 years	10%	62	133,485,138	214	51,994,211,863	10.00%	42.29%	135,000,000
FIXED-FLOATING_GBP_10 years	10%	64	89,799,093	476	77,723,861,902	10.00%	50.92%	90,000,000
FIXED-FLOATING_GBP_11 years	10%	66	67,956,070	884	120,578,585,369	10.00%	37.89%	70,000,000
FIXED-FLOATING_GBP_12 years	10%	58	83,488,887	138	25,101,041,148	10.02%	57.78%	85,000,000
FIXED-FLOATING_GBP_13 years	10%	62	179,586,421	74	25,246,263,651	9.95%	43.45%	180,000,000
FIXED-FLOATING_GBP_14 years	10%	58	92,487,235	43	8,307,305,261	10.05%	49.20%	90,000,000
FIXED-FLOATING_GBP_15 years	10%	60	125,395,042	57	19,788,791,797	10.00%	56.56%	125,000,000
FIXED-FLOATING_GBP_16 years	10%	62	76,571,929	119	17,399,512,324	9.98%	35.40%	75,000,000
FIXED-FLOATING_GBP_17 years	10%	46	72,810,076	31	3,842,170,489	9.87%	38.00%	75,000,000
FIXED-FLOATING_GBP_18 years	10%	48	64,315,567	26	3,161,023,886	9.89%	43.55%	65,000,000
FIXED-FLOATING_GBP_19 years	10%	52	84,945,088	26	5,459,767,321	10.00%	46.23%	85,000,000
FIXED-FLOATING_GBP_20 years	10%	59	114,386,997	49	9,051,201,785	10.04%	43.38%	115,000,000
FIXED-FLOATING_GBP_21 years	10%	62	60,675,063	152	18,347,459,218	10.01%	35.27%	60,000,000
FIXED-FLOATING_GBP_22 years	10%	50	66,985,269	62	9,622,377,546	9.95%	62.53%	65,000,000

SINGLE CURRENCY FIXED TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FIXED-FLOATING_GBP_23 years	10%	43	121,350,126	27	7,014,461,748	9.85%	50.45%	120,000,000
FIXED-FLOATING_GBP_24 years	10%	52	81,911,335	46	6,253,801,418	9.94%	42.53%	80,000,000
FIXED-FLOATING_GBP_25 years	10%	54	108,001,612	49	11,606,539,852	10.04%	48.59%	110,000,000
FIXED-FLOATING_GBP_26 years	10%	58	60,675,063	82	9,733,651,128	10.05%	40.07%	60,000,000
FIXED-FLOATING_GBP_27 years	10%	51	60,675,063	44	4,535,089,817	9.98%	39.19%	60,000,000
FIXED-FLOATING_GBP_28 years	10%	42	60,675,063	30	2,739,386,720	10.07%	33.32%	60,000,000
FIXED-FLOATING_GBP_29 years	10%	49	61,281,814	43	4,467,961,453	10.07%	35.91%	60,000,000
FIXED-FLOATING_GBP_30 years	10%	62	52,665,955	125	18,585,707,152	10.02%	52.27%	55,000,000
FIXED-FLOATING_GBP_31 years	10%	63	36,405,038	413	29,364,817,822	10.00%	35.00%	35,000,000
FIXED-FLOATING_JPY_1.5 months	10%	31	212,861,407	16	8,549,933,166	9.94%	52.98%	215,000,000
FIXED-FLOATING_JPY_3 months	10%	27	106,430,703	16	4,233,742,424	10.32%	46.19%	105,000,000
FIXED-FLOATING_JPY_6 months	10%	62	269,624,448	104	66,260,123,045	10.01%	50.80%	270,000,000
FIXED-FLOATING_JPY_1 year	10%	66	383,150,532	425	322,720,066,297	10.00%	49.43%	385,000,000
FIXED-FLOATING_JPY_2 years	10%	68	354,769,011	370	224,331,823,872	9.99%	48.60%	355,000,000
FIXED-FLOATING_JPY_3 years	10%	65	212,861,407	280	141,623,922,039	9.99%	48.55%	215,000,000
FIXED-FLOATING_JPY_4 years	10%	67	145,810,064	257	99,703,707,037	10.02%	49.79%	145,000,000
FIXED-FLOATING_JPY_5 years	10%	67	141,907,604	316	112,634,939,088	10.01%	52.04%	140,000,000
FIXED-FLOATING_JPY_6 years	10%	67	141,907,604	430	113,916,960,908	10.00%	42.11%	140,000,000
FIXED-FLOATING_JPY_7 years	10%	68	124,027,246	264	61,798,060,074	9.98%	42.03%	125,000,000
FIXED-FLOATING_JPY_8 years	10%	67	106,430,703	509	122,160,718,161	10.00%	43.92%	105,000,000
FIXED-FLOATING_JPY_9 years	10%	67	119,486,203	199	40,175,722,355	9.98%	39.30%	120,000,000
FIXED-FLOATING_JPY_10 years	10%	67	78,474,905	352	54,636,312,120	10.01%	45.76%	80,000,000
FIXED-FLOATING_JPY_11 years	10%	68	70,953,802	978	173,848,836,121	10.00%	51.31%	70,000,000
FIXED-FLOATING_JPY_12 years	10%	62	141,907,604	60	15,417,781,682	10.03%	47.97%	140,000,000
FIXED-FLOATING_JPY_13 years	10%	63	93,659,019	100	19,103,188,400	10.04%	43.15%	95,000,000
FIXED-FLOATING_JPY_14 years	10%	56	49,667,662	40	4,155,832,547	10.00%	38.63%	50,000,000
FIXED-FLOATING_JPY_15 years	10%	63	66,980,389	54	6,112,975,499	10.02%	40.10%	65,000,000
FIXED-FLOATING_JPY_16 years	10%	64	52,732,926	89	8,697,592,410	9.98%	40.57%	55,000,000
FIXED-FLOATING_JPY_17 years	10%	48	44,268,800	37	2,921,014,954	10.03%	38.31%	45,000,000
FIXED-FLOATING_JPY_18 years	10%	49	49,667,662	33	3,958,481,871	10.15%	47.81%	50,000,000
FIXED-FLOATING_JPY_19 years	10%	58	41,862,743	41	2,615,377,229	10.00%	33.32%	40,000,000

SINGLE CURRENCY FIXED TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FIXED-FLOATING_JPY_20 years	10%	67	35,476,901	103	7,758,810,859	10.00%	43.29%	35,000,000
FIXED-FLOATING_JPY_21 years	10%	65	33,348,287	288	17,229,236,301	9.99%	37.46%	35,000,000
FIXED-FLOATING_KRW_6 months	10%	55	49,902,163	48	4,154,874,895	9.92%	33.60%	50,000,000
FIXED-FLOATING_KRW_1 year	10%	61	76,239,416	82	13,541,019,589	9.98%	46.14%	75,000,000
FIXED-FLOATING_KRW_2 years	10%	63	68,615,474	177	22,482,200,306	10.00%	42.97%	70,000,000
FIXED-FLOATING_KRW_3 years	10%	63	41,585,136	185	18,034,508,956	10.03%	42.80%	40,000,000
FIXED-FLOATING_KRW_4 years	10%	62	34,654,280	143	10,728,371,017	9.98%	40.46%	35,000,000
FIXED-FLOATING_KRW_5 years	10%	64	36,439,668	102	7,958,612,758	10.03%	41.85%	35,000,000
FIXED-FLOATING_KRW_6 years	10%	62	29,109,595	128	9,600,342,364	9.98%	42.72%	30,000,000
FIXED-FLOATING_DKK_1 year	10%	57	149,641,281	32	11,465,710,573	10.00%	47.59%	150,000,000
FIXED-FLOATING_DKK_2 years	10%	53	200,950,691	42	13,722,910,457	9.95%	42.62%	200,000,000
FIXED-FLOATING_DKK_3 years	10%	58	133,967,127	43	10,002,253,673	9.91%	35.99%	135,000,000
FIXED-FLOATING_DKK_4 years	10%	54	100,475,346	39	7,057,785,762	10.00%	39.32%	100,000,000
FIXED-FLOATING_DKK_5 years	10%	56	107,173,702	33	10,306,868,127	9.94%	53.19%	105,000,000
FIXED-FLOATING_DKK_6 years	10%	55	100,475,346	27	4,763,323,385	10.19%	44.72%	100,000,000
FIXED-FLOATING_HKD_1 year	10%	58	124,642,437	51	11,258,120,055	10.08%	48.58%	125,000,000
FIXED-FLOATING_HKD_2 years	10%	61	99,209,021	59	9,514,996,044	9.95%	37.27%	100,000,000
FIXED-FLOATING_HKD_3 years	10%	61	74,243,132	83	12,061,918,839	10.00%	41.62%	75,000,000
FIXED-FLOATING_HKD_4 years	10%	61	54,999,761	94	10,349,146,617	10.00%	37.76%	55,000,000
FIXED-FLOATING_HKD_5 years	10%	57	38,337,134	51	3,892,271,929	10.08%	36.07%	40,000,000
FIXED-FLOATING_HKD_6 years	10%	60	37,402,082	103	11,531,501,220	9.99%	46.58%	35,000,000
FIXED-FLOATING_MYR_1 year	10%	58	149,239,575	46	10,989,174,147	9.94%	34.85%	150,000,000
FIXED-FLOATING_MYR_2 years	10%	57	94,666,895	60	10,326,120,554	10.02%	50.52%	95,000,000
FIXED-FLOATING_MYR_3 years	10%	62	56,800,137	88	8,974,217,848	10.02%	40.06%	55,000,000
FIXED-FLOATING_MYR_4 years	10%	57	37,421,267	45	2,563,189,703	9.96%	31.94%	35,000,000
FIXED-FLOATING_MYR_5 years	10%	59	30,070,661	62	2,942,984,408	10.08%	41.10%	30,000,000
FIXED-FLOATING_MYR_6 years	10%	62	24,056,529	83	3,123,661,155	10.02%	27.12%	25,000,000
FIXED-FLOATING_PLN_1 year	10%	50	119,387,718	36	6,699,799,968	9.92%	33.26%	120,000,000
FIXED-FLOATING_PLN_2 years	10%	61	115,806,087	71	13,125,803,306	9.94%	42.05%	115,000,000
FIXED-FLOATING_PLN_3 years	10%	60	56,351,003	187	20,968,279,360	10.02%	39.10%	55,000,000
FIXED-FLOATING_PLN_4 years	10%	60	59,693,859	70	6,936,665,200	9.99%	38.40%	60,000,000

SINGLE CURRENCY FIXED TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FIXED-FLOATING_PLN_5 years	10%	55	40,591,824	55	4,096,789,549	9.95%	40.48%	40,000,000
FIXED-FLOATING_PLN_6 years	10%	61	24,116,319	206	9,430,882,606	10.00%	38.09%	25,000,000
FIXED-FLOATING_SGD_1 year	10%	52	86,460,717	75	11,460,159,286	10.03%	37.09%	85,000,000
FIXED-FLOATING_SGD_2 years	10%	60	119,263,913	88	17,418,079,588	10.01%	36.76%	120,000,000
FIXED-FLOATING_SGD_3 years	10%	61	90,495,550	109	15,706,972,550	10.04%	33.52%	90,000,000
FIXED-FLOATING_SGD_4 years	10%	62	59,946,097	110	10,998,091,360	9.98%	33.14%	60,000,000
FIXED-FLOATING_SGD_5 years	10%	62	55,334,859	114	11,450,678,627	9.99%	38.96%	55,000,000
FIXED-FLOATING_SGD_6 years	10%	62	34,987,770	184	12,972,658,669	9.98%	34.27%	35,000,000
FIXED-FLOATING_ZAR_1 year	10%	61	79,556,968	107	14,579,856,804	10.00%	36.00%	80,000,000
FIXED-FLOATING_ZAR_2 years	10%	61	56,581,464	173	15,294,391,022	10.03%	41.26%	55,000,000
FIXED-FLOATING_ZAR_3 years	10%	61	37,720,976	224	17,895,041,188	10.00%	38.30%	40,000,000
FIXED-FLOATING_ZAR_4 years	10%	60	26,473,267	85	3,896,404,820	10.00%	33.74%	25,000,000
FIXED-FLOATING_ZAR_5 years	10%	63	34,291,796	97	7,557,397,556	10.01%	46.09%	35,000,000
FIXED-FLOATING_ZAR_6 years	10%	59	20,575,078	199	8,130,417,589	10.03%	36.77%	20,000,000
FIXED-FLOATING_NZD_6 months	10%	48	151,849,435	21	6,070,398,995	10.24%	40.39%	150,000,000
FIXED-FLOATING_NZD_1 year	10%	63	193,117,558	91	31,536,926,635	9.98%	39.78%	195,000,000
FIXED-FLOATING_NZD_2 years	10%	67	103,505,305	251	47,823,303,760	10.00%	49.66%	105,000,000
FIXED-FLOATING_NZD_3 years	10%	67	93,350,063	316	48,361,238,747	9.99%	31.15%	95,000,000
FIXED-FLOATING_NZD_4 years	10%	65	77,791,719	165	20,864,427,630	10.02%	31.37%	80,000,000
FIXED-FLOATING_NZD_5 years	10%	64	65,345,044	95	9,923,273,474	10.03%	32.08%	65,000,000
FIXED-FLOATING_NZD_6 years	10%	66	55,076,537	115	9,737,631,316	10.03%	33.86%	55,000,000
FIXED-FLOATING_NZD_7 years	10%	54	53,676,286	38	3,227,267,252	9.95%	28.61%	55,000,000
FIXED-FLOATING_NZD_8 years	10%	55	52,898,369	56	4,798,255,457	9.98%	32.66%	55,000,000
FIXED-FLOATING_NZD_9 years	10%	49	41,198,494	49	3,238,593,726	10.02%	35.17%	40,000,000
FIXED-FLOATING_AUD_6 months	10%	53	669,513,900	26	23,757,700,756	10.00%	51.41%	670,000,000
FIXED-FLOATING_AUD_1 year	10%	62	170,726,045	93	36,986,379,739	9.97%	44.49%	170,000,000
FIXED-FLOATING_AUD_2 years	10%	69	194,493,788	251	83,263,957,603	9.99%	37.15%	195,000,000
FIXED-FLOATING_AUD_3 years	10%	70	180,768,753	379	112,286,462,137	9.99%	33.85%	180,000,000
FIXED-FLOATING_AUD_4 years	10%	71	117,164,933	484	85,019,767,545	10.01%	29.53%	115,000,000
FIXED-FLOATING_AUD_5 years	10%	65	89,045,349	233	35,097,747,816	10.02%	32.41%	90,000,000
FIXED-FLOATING_AUD_6 years	10%	71	66,951,390	324	31,509,023,048	9.99%	34.71%	65,000,000

SINGLE CURRENCY FIXED TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FIXED-FLOATING_AUD_7 years	10%	62	66,951,390	73	8,060,553,759	10.04%	34.41%	65,000,000
FIXED-FLOATING_AUD_8 years	10%	63	58,415,088	97	8,241,407,606	9.99%	28.52%	60,000,000
FIXED-FLOATING_AUD_9 years	10%	59	41,501,379	124	8,423,909,072	9.97%	39.84%	40,000,000
FIXED-FLOATING_AUD_10 years	10%	64	49,209,272	199	17,356,625,748	10.00%	43.44%	50,000,000
FIXED-FLOATING_AUD_11 years	10%	71	41,509,862	337	20,462,550,370	10.00%	29.91%	40,000,000
FIXED-FLOATING_CAD_6 months	10%	53	494,687,166	50	34,155,840,297	10.02%	33.55%	495,000,000
FIXED-FLOATING_CAD_1 year	10%	64	329,791,444	72	41,039,379,237	10.01%	37.66%	330,000,000
FIXED-FLOATING_CAD_2 years	10%	65	230,854,011	137	58,793,822,581	10.01%	34.14%	230,000,000
FIXED-FLOATING_CAD_3 years	10%	63	189,959,872	164	49,923,145,548	10.01%	30.64%	190,000,000
FIXED-FLOATING_CAD_4 years	10%	63	173,140,508	104	22,724,991,815	10.03%	26.01%	175,000,000
FIXED-FLOATING_CAD_5 years	10%	63	135,214,492	174	33,518,867,980	9.99%	30.16%	135,000,000
FIXED-FLOATING_CAD_6 years	10%	64	124,001,583	219	42,267,924,661	9.99%	36.14%	125,000,000
FIXED-FLOATING_CAD_7 years	10%	58	98,937,433	49	11,948,278,066	9.98%	41.58%	100,000,000
FIXED-FLOATING_CAD_8 years	10%	59	130,597,412	34	10,219,841,107	9.97%	41.56%	130,000,000
FIXED-FLOATING_CAD_9 years	10%	62	66,617,872	45	4,804,072,101	9.98%	31.02%	65,000,000
FIXED-FLOATING_CAD_10 years	10%	61	60,022,043	110	8,938,935,095	9.96%	34.83%	60,000,000
FIXED-FLOATING_CAD_11 years	10%	64	49,468,717	170	12,441,525,255	10.01%	32.77%	50,000,000
FIXED-FLOATING_SEK_6 months	10%	55	111,413,985	31	6,326,816,412	9.90%	36.55%	110,000,000
FIXED-FLOATING_SEK_1 year	10%	61	167,120,978	79	21,608,029,426	10.05%	37.48%	165,000,000
FIXED-FLOATING_SEK_2 years	10%	61	167,120,978	225	53,570,405,701	10.01%	36.11%	165,000,000
FIXED-FLOATING_SEK_3 years	10%	61	111,413,985	383	79,446,222,681	10.01%	46.74%	110,000,000
FIXED-FLOATING_SEK_4 years	10%	62	111,413,985	202	28,967,664,818	9.99%	34.14%	110,000,000
FIXED-FLOATING_SEK_5 years	10%	61	94,701,888	213	26,415,197,269	10.02%	33.48%	95,000,000
FIXED-FLOATING_SEK_6 years	10%	61	55,706,993	291	27,520,056,040	10.01%	42.00%	55,000,000
FIXED-FLOATING_SEK_7 years	10%	61	60,163,552	80	7,796,066,551	9.99%	34.69%	60,000,000
FIXED-FLOATING_SEK_8 years	10%	60	55,706,993	82	6,183,647,535	9.95%	30.29%	55,000,000
FIXED-FLOATING_SEK_9 years	10%	61	50,136,293	82	7,576,485,252	10.02%	42.97%	50,000,000
FIXED-FLOATING_SEK_10 years	10%	60	42,192,476	126	9,566,585,052	10.03%	42.63%	40,000,000
FIXED-FLOATING_SEK_11 years	10%	62	31,264,993	228	14,803,587,129	10.02%	44.99%	30,000,000
FIXED-FLOATING_CHF_1 year	10%	43	164,066,521	16	6,800,557,297	9.94%	55.81%	165,000,000
FIXED-FLOATING_CHF_2 years	10%	58	205,083,151	45	15,946,404,495	9.96%	43.56%	205,000,000

SINGLE CURRENCY FIXED TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FIXED-FLOATING_CHF_3 years	10%	64	205,083,151	80	26,674,283,630	10.00%	34.69%	205,000,000
FIXED-FLOATING_CHF_4 years	10%	60	123,049,891	71	16,088,696,068	9.96%	33.73%	125,000,000
FIXED-FLOATING_CHF_5 years	10%	61	102,951,742	65	10,240,301,254	9.95%	35.08%	105,000,000
FIXED-FLOATING_CHF_6 years	10%	62	114,026,232	106	17,181,645,181	10.05%	30.35%	115,000,000
FIXED-FLOATING_CHF_7 years	10%	57	118,948,228	52	7,861,247,355	10.02%	30.58%	120,000,000
FIXED-FLOATING_CHF_8 years	10%	59	106,069,006	50	7,696,114,402	10.10%	31.79%	105,000,000
FIXED-FLOATING_CHF_9 years	10%	53	45,118,293	62	5,518,989,215	9.97%	50.89%	45,000,000
FIXED-FLOATING_CHF_10 years	10%	60	41,016,630	138	10,487,733,271	9.99%	56.52%	40,000,000
FIXED-FLOATING_CHF_11 years	10%	63	61,524,945	150	14,915,169,144	9.97%	36.11%	60,000,000
FIXED-FLOATING_NOK_1 year	10%	56	72,899,295	37	4,099,677,754	9.97%	37.82%	75,000,000
FIXED-FLOATING_NOK_2 years	10%	60	91,124,119	81	17,288,595,891	9.96%	49.84%	90,000,000
FIXED-FLOATING_NOK_3 years	10%	60	98,414,048	90	12,824,322,497	10.01%	35.05%	100,000,000
FIXED-FLOATING_NOK_4 years	10%	60	60,749,413	85	7,665,361,670	9.96%	33.26%	60,000,000
FIXED-FLOATING_NOK_5 years	10%	60	48,599,530	66	5,024,715,209	9.97%	33.35%	50,000,000
FIXED-FLOATING_NOK_6 years	10%	58	60,749,413	65	5,737,655,296	9.98%	33.14%	60,000,000
FIXED-FLOATING_NOK_7 years	10%	52	60,749,413	32	2,944,864,030	9.94%	32.71%	60,000,000
FIXED-FLOATING_NOK_8 years	10%	57	48,599,530	37	2,779,042,628	10.08%	37.04%	50,000,000
FIXED-FLOATING_NOK_9 years	10%	57	16,280,843	115	4,323,327,145	10.01%	59.22%	15,000,000
FIXED-FLOATING_NOK_10 years	10%	57	48,415,399	54	5,399,712,860	10.00%	50.78%	50,000,000
FIXED-FLOATING_NOK_11 years	10%	54	36,449,648	49	3,267,710,903	9.98%	35.83%	35,000,000
FIXED-FLOATING_MXN_1.5 months	10%	49	69,375,318	38	6,480,291,270	10.13%	55.29%	70,000,000
FIXED-FLOATING_MXN_3 months	10%	39	155,400,712	16	5,619,400,742	10.32%	57.15%	155,000,000
FIXED-FLOATING_MXN_6 months	10%	54	166,500,763	35	12,456,542,132	9.94%	47.59%	165,000,000
FIXED-FLOATING_MXN_1 year	10%	59	117,854,282	77	16,156,538,957	9.97%	38.64%	120,000,000
FIXED-FLOATING_MXN_2 years	10%	65	64,260,294	190	21,706,454,239	9.98%	46.38%	65,000,000
FIXED-FLOATING_MXN_3 years	10%	64	39,127,679	194	18,733,247,306	10.03%	48.64%	40,000,000
FIXED-FLOATING_MXN_4 years	10%	63	22,200,102	181	8,882,984,228	9.99%	41.18%	20,000,000
FIXED-FLOATING_MXN_5 years	10%	63	19,425,089	195	7,591,588,631	10.01%	40.50%	20,000,000
FIXED-FLOATING_MXN_6 years	10%	53	23,865,109	53	4,417,368,465	10.00%	59.23%	25,000,000
FIXED-FLOATING_MXN_7 years	10%	60	14,152,565	96	2,908,659,937	9.99%	40.27%	15,000,000

Table 58: Fixed to Float Single-currency swaps: LIS calculations on the basis of 10% of trades above the LIS rule

Impact of implementation of one LIS per class irrespectively of tenor

SINGLE CURRENCY FIXED TO FLOAT	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
FIXED-FLOATING_EUR_1.5 months	200,000,000	280	125,243,330,077	8.52%	43.26%
FIXED-FLOATING_EUR_3 months	200,000,000	78	47,300,573,372	12.21%	63.59%
FIXED-FLOATING_EUR_6 months	200,000,000	416	226,682,813,432	21.72%	78.84%
FIXED-FLOATING_EUR_1 year	200,000,000	992	522,708,025,976	18.04%	71.41%
FIXED-FLOATING_EUR_2 years	200,000,000	2,513	1,213,571,195,317	19.49%	71.27%
FIXED-FLOATING_EUR_3 years	200,000,000	3,096	1,494,285,706,745	17.56%	63.95%
FIXED-FLOATING_EUR_4 years	200,000,000	1,973	884,018,798,279	12.59%	54.52%
FIXED-FLOATING_EUR_5 years	200,000,000	1,779	759,706,109,041	10.96%	49.54%
FIXED-FLOATING_EUR_6 years	200,000,000	1,510	585,698,890,535	6.79%	35.62%
FIXED-FLOATING_EUR_7 years	200,000,000	810	348,257,234,380	10.47%	52.69%
FIXED-FLOATING_EUR_8 years	200,000,000	1,011	443,889,189,020	10.35%	50.47%
FIXED-FLOATING_EUR_9 years	200,000,000	698	296,111,263,767	7.30%	40.76%
FIXED-FLOATING_EUR_10 years	200,000,000	623	249,414,764,075	7.16%	42.57%
FIXED-FLOATING_EUR_11 years	200,000,000	848	334,544,825,809	3.72%	26.64%
FIXED-FLOATING_EUR_12 years	200,000,000	267	103,673,220,856	11.68%	52.01%
FIXED-FLOATING_EUR_13 years	200,000,000	343	135,207,359,771	10.16%	47.95%
FIXED-FLOATING_EUR_14 years	200,000,000	112	48,840,360,365	6.30%	44.73%
FIXED-FLOATING_EUR_15 years	200,000,000	101	42,399,791,113	4.78%	33.95%
FIXED-FLOATING_EUR_16 years	200,000,000	178	63,975,227,229	4.73%	27.89%
FIXED-FLOATING_EUR_17 years	200,000,000	39	11,554,464,041	4.83%	26.43%
FIXED-FLOATING_EUR_18 years	200,000,000	26	11,547,731,019	2.99%	26.92%
FIXED-FLOATING_EUR_19 years	200,000,000	33	12,658,368,049	3.02%	26.96%
FIXED-FLOATING_EUR_20 years	200,000,000	56	22,429,791,112	4.99%	37.21%
FIXED-FLOATING_EUR_21 years	200,000,000	137	50,928,229,180	3.91%	29.24%

SINGLE CURRENCY FIXED TO FLOAT	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
FIXED-FLOATING_EUR_22 years	200,000,000	27	9,242,655,677	4.95%	32.52%
FIXED-FLOATING_EUR_23 years	200,000,000	33	10,515,450,762	4.30%	29.79%
FIXED-FLOATING_EUR_24 years	200,000,000	28	11,177,072,966	3.33%	28.16%
FIXED-FLOATING_EUR_25 years	200,000,000	41	16,858,244,212	3.90%	33.47%
FIXED-FLOATING_EUR_26 years	200,000,000	70	30,379,363,772	3.94%	36.51%
FIXED-FLOATING_EUR_27 years	200,000,000	22	11,168,721,375	3.55%	36.94%
FIXED-FLOATING_EUR_28 years	200,000,000	24	9,459,524,143	3.17%	28.37%
FIXED-FLOATING_EUR_29 years	200,000,000	15	4,392,501,789	1.55%	13.40%
FIXED-FLOATING_EUR_30 years	200,000,000	6	1,968,252,494	0.47%	5.89%
FIXED-FLOATING_EUR_31 years	200,000,000	41	11,893,702,101	0.54%	6.25%
FIXED-FLOATING_USD_1.5 months	155,000,000	172	53,424,883,685	6.72%	35.25%
FIXED-FLOATING_USD_3 months	155,000,000	80	30,747,221,447	23.39%	72.67%
FIXED-FLOATING_USD_6 months	155,000,000	318	158,467,484,465	21.17%	76.51%
FIXED-FLOATING_USD_1 year	155,000,000	760	276,340,345,290	24.91%	74.22%
FIXED-FLOATING_USD_2 years	155,000,000	2,155	816,379,414,094	23.28%	71.41%
FIXED-FLOATING_USD_3 years	155,000,000	4,056	1,377,027,863,328	22.10%	67.57%
FIXED-FLOATING_USD_4 years	155,000,000	3,795	1,391,127,834,754	16.48%	60.80%
FIXED-FLOATING_USD_5 years	155,000,000	3,382	1,038,040,315,377	15.91%	54.39%
FIXED-FLOATING_USD_6 years	155,000,000	2,365	748,464,140,862	6.81%	32.95%
FIXED-FLOATING_USD_7 years	155,000,000	1,221	371,688,291,479	10.49%	47.55%
FIXED-FLOATING_USD_8 years	155,000,000	1,223	329,205,016,849	9.56%	42.87%
FIXED-FLOATING_USD_9 years	155,000,000	462	130,410,671,684	8.30%	43.91%
FIXED-FLOATING_USD_10 years	155,000,000	733	193,835,131,848	4.71%	31.89%
FIXED-FLOATING_USD_11 years	155,000,000	1,063	306,546,347,335	3.16%	22.54%
FIXED-FLOATING_USD_12 years	155,000,000	140	44,534,646,429	8.45%	45.12%
FIXED-FLOATING_USD_13 years	155,000,000	170	50,341,471,677	8.65%	45.25%

SINGLE CURRENCY FIXED TO FLOAT	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
FIXED-FLOATING_USD_14 years	155,000,000	51	16,215,081,791	6.43%	37.82%
FIXED-FLOATING_USD_15 years	155,000,000	75	19,159,943,295	6.68%	32.70%
FIXED-FLOATING_USD_16 years	155,000,000	76	20,449,707,060	2.88%	21.00%
FIXED-FLOATING_USD_17 years	155,000,000	28	6,113,719,740	6.11%	32.66%
FIXED-FLOATING_USD_18 years	155,000,000	8	2,902,602,512	2.17%	22.19%
FIXED-FLOATING_USD_19 years	155,000,000	27	7,278,109,201	6.24%	33.79%
FIXED-FLOATING_USD_20 years	155,000,000	47	12,925,329,039	5.41%	32.11%
FIXED-FLOATING_USD_21 years	155,000,000	81	26,654,355,283	3.58%	30.91%
FIXED-FLOATING_USD_22 years	155,000,000	16	4,685,009,747	4.49%	32.00%
FIXED-FLOATING_USD_23 years	155,000,000	26	8,128,705,497	6.22%	40.73%
FIXED-FLOATING_USD_24 years	155,000,000	33	11,134,149,533	6.09%	40.98%
FIXED-FLOATING_USD_25 years	155,000,000	32	12,119,785,134	3.23%	34.24%
FIXED-FLOATING_USD_26 years	155,000,000	54	17,437,326,615	3.99%	35.20%
FIXED-FLOATING_USD_27 years	155,000,000	19	6,442,827,137	2.45%	26.27%
FIXED-FLOATING_USD_28 years	155,000,000	23	14,528,040,667	2.75%	45.38%
FIXED-FLOATING_USD_29 years	155,000,000	27	8,476,254,356	2.79%	25.06%
FIXED-FLOATING_USD_30 years	155,000,000	42	11,587,063,843	1.03%	12.51%
FIXED-FLOATING_USD_31 years	155,000,000	84	27,286,244,356	0.67%	12.36%
FIXED-FLOATING_GBP_1.5 months	125,000,000	25	5,798,412,439	6.31%	35.64%
FIXED-FLOATING_GBP_3 months	125,000,000	11	3,252,732,718	14.10%	65.70%
FIXED-FLOATING_GBP_6 months	125,000,000	82	33,147,430,688	13.99%	77.24%
FIXED-FLOATING_GBP_1 year	125,000,000	444	148,381,744,571	23.79%	73.52%
FIXED-FLOATING_GBP_2 years	125,000,000	887	284,945,090,035	24.18%	70.07%
FIXED-FLOATING_GBP_3 years	125,000,000	1,438	422,788,223,767	21.98%	65.31%
FIXED-FLOATING_GBP_4 years	125,000,000	998	263,498,381,944	17.80%	56.69%
FIXED-FLOATING_GBP_5 years	125,000,000	787	208,927,565,353	13.59%	52.77%

SINGLE CURRENCY FIXED TO FLOAT	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
FIXED-FLOATING_GBP_6 years	125,000,000	604	136,062,209,493	7.44%	31.29%
FIXED-FLOATING_GBP_7 years	125,000,000	220	46,418,448,634	7.75%	34.83%
FIXED-FLOATING_GBP_8 years	125,000,000	287	66,143,383,901	10.95%	43.59%
FIXED-FLOATING_GBP_9 years	125,000,000	232	54,337,860,538	10.84%	44.19%
FIXED-FLOATING_GBP_10 years	125,000,000	242	52,610,829,759	5.09%	34.47%
FIXED-FLOATING_GBP_11 years	125,000,000	270	64,113,637,132	3.05%	20.15%
FIXED-FLOATING_GBP_12 years	125,000,000	70	18,245,374,995	5.08%	42.00%
FIXED-FLOATING_GBP_13 years	125,000,000	106	29,937,835,774	14.25%	51.53%
FIXED-FLOATING_GBP_14 years	125,000,000	12	4,799,097,546	2.80%	28.42%
FIXED-FLOATING_GBP_15 years	125,000,000	61	20,290,048,541	10.70%	58.00%
FIXED-FLOATING_GBP_16 years	125,000,000	30	8,442,656,489	2.52%	17.18%
FIXED-FLOATING_GBP_17 years	125,000,000	11	2,000,412,065	3.50%	19.79%
FIXED-FLOATING_GBP_18 years	125,000,000	8	1,480,697,189	3.04%	20.40%
FIXED-FLOATING_GBP_19 years	125,000,000	15	4,310,252,929	5.77%	36.50%
FIXED-FLOATING_GBP_20 years	125,000,000	43	8,339,286,768	8.81%	39.97%
FIXED-FLOATING_GBP_21 years	125,000,000	31	8,579,056,788	2.04%	16.49%
FIXED-FLOATING_GBP_22 years	125,000,000	27	6,592,846,855	4.33%	42.84%
FIXED-FLOATING_GBP_23 years	125,000,000	22	6,405,284,116	8.03%	46.06%
FIXED-FLOATING_GBP_24 years	125,000,000	21	3,758,325,427	4.54%	25.56%
FIXED-FLOATING_GBP_25 years	125,000,000	38	10,320,037,163	7.79%	43.20%
FIXED-FLOATING_GBP_26 years	125,000,000	16	4,326,278,816	1.96%	17.81%
FIXED-FLOATING_GBP_27 years	125,000,000	9	1,942,968,096	2.04%	16.79%
FIXED-FLOATING_GBP_28 years	125,000,000	6	879,545,712	2.01%	10.70%
FIXED-FLOATING_GBP_29 years	125,000,000	15	2,353,058,578	3.51%	18.91%
FIXED-FLOATING_GBP_30 years	125,000,000	50	12,810,385,025	4.01%	36.03%
FIXED-FLOATING_GBP_31 years	125,000,000	35	8,545,892,093	0.85%	10.19%

SINGLE CURRENCY FIXED TO FLOAT	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
FIXED-FLOATING_JPY_1.5 months	140,000,000	34	11,552,981,890	21.12%	71.59%
FIXED-FLOATING_JPY_3 months	140,000,000	11	3,674,484,555	7.10%	40.09%
FIXED-FLOATING_JPY_6 months	140,000,000	252	93,326,869,972	24.25%	71.55%
FIXED-FLOATING_JPY_1 year	140,000,000	1,206	503,166,713,514	28.37%	77.06%
FIXED-FLOATING_JPY_2 years	140,000,000	1,004	348,881,219,714	27.11%	75.59%
FIXED-FLOATING_JPY_3 years	140,000,000	607	194,979,263,697	21.65%	66.84%
FIXED-FLOATING_JPY_4 years	140,000,000	344	112,061,462,338	13.41%	55.96%
FIXED-FLOATING_JPY_5 years	140,000,000	346	116,890,038,606	10.96%	54.01%
FIXED-FLOATING_JPY_6 years	140,000,000	476	120,439,814,898	11.07%	44.53%
FIXED-FLOATING_JPY_7 years	140,000,000	242	58,946,127,630	9.15%	40.09%
FIXED-FLOATING_JPY_8 years	140,000,000	401	108,987,707,717	7.88%	39.19%
FIXED-FLOATING_JPY_9 years	140,000,000	155	34,522,584,456	7.77%	33.77%
FIXED-FLOATING_JPY_10 years	140,000,000	142	33,691,719,988	4.04%	28.22%
FIXED-FLOATING_JPY_11 years	140,000,000	430	125,547,073,411	4.40%	37.05%
FIXED-FLOATING_JPY_12 years	140,000,000	61	15,559,689,287	10.20%	48.41%
FIXED-FLOATING_JPY_13 years	140,000,000	59	14,657,565,506	5.92%	33.11%
FIXED-FLOATING_JPY_14 years	140,000,000	9	2,065,290,066	2.25%	19.20%
FIXED-FLOATING_JPY_15 years	140,000,000	8	1,758,799,623	1.48%	11.54%
FIXED-FLOATING_JPY_16 years	140,000,000	7	1,622,926,318	0.78%	7.57%
FIXED-FLOATING_JPY_17 years	140,000,000	5	748,148,740	1.36%	9.81%
FIXED-FLOATING_JPY_18 years	140,000,000	5	2,205,077,745	1.54%	26.63%
FIXED-FLOATING_JPY_19 years	140,000,000	1	141,907,604	0.24%	1.81%
FIXED-FLOATING_JPY_20 years	140,000,000	9	1,902,271,437	0.87%	10.61%
FIXED-FLOATING_JPY_21 years	140,000,000	14	2,408,010,581	0.49%	5.24%
FIXED-FLOATING_KRW_6 months	45,000,000	53	4,387,751,657	10.95%	35.49%
FIXED-FLOATING_KRW_1 year	45,000,000	154	17,719,692,271	18.73%	60.37%

SINGLE CURRENCY FIXED TO FLOAT	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
FIXED-FLOATING_KRW_2 years	45,000,000	259	26,890,580,279	14.63%	51.39%
FIXED-FLOATING_KRW_3 years	45,000,000	173	17,518,555,244	9.38%	41.57%
FIXED-FLOATING_KRW_4 years	45,000,000	90	8,684,972,472	6.28%	32.75%
FIXED-FLOATING_KRW_5 years	45,000,000	66	6,515,584,444	6.49%	34.26%
FIXED-FLOATING_KRW_6 years	45,000,000	49	6,684,184,706	3.82%	29.74%
FIXED-FLOATING_DKK_1 year	135,000,000	32	11,465,710,573	10.00%	47.59%
FIXED-FLOATING_DKK_2 years	135,000,000	52	15,412,343,377	12.32%	47.86%
FIXED-FLOATING_DKK_3 years	135,000,000	29	8,126,713,888	6.68%	29.24%
FIXED-FLOATING_DKK_4 years	135,000,000	12	3,547,047,635	3.08%	19.76%
FIXED-FLOATING_DKK_5 years	135,000,000	14	7,823,117,584	4.22%	40.37%
FIXED-FLOATING_DKK_6 years	135,000,000	8	2,379,122,217	3.02%	22.34%
FIXED-FLOATING_HKD_1 year	70,000,000	85	14,623,746,364	16.80%	63.11%
FIXED-FLOATING_HKD_2 years	70,000,000	127	15,264,294,413	21.42%	59.80%
FIXED-FLOATING_HKD_3 years	70,000,000	103	13,534,691,254	12.41%	46.71%
FIXED-FLOATING_HKD_4 years	70,000,000	74	9,133,653,771	7.87%	33.33%
FIXED-FLOATING_HKD_5 years	70,000,000	21	2,436,745,614	4.15%	22.58%
FIXED-FLOATING_HKD_6 years	70,000,000	29	8,116,999,740	2.81%	32.78%
FIXED-FLOATING_MYR_1 year	60,000,000	189	24,941,128,964	40.82%	79.09%
FIXED-FLOATING_MYR_2 years	60,000,000	93	12,952,851,540	15.53%	63.37%
FIXED-FLOATING_MYR_3 years	60,000,000	75	8,231,806,648	8.54%	36.75%
FIXED-FLOATING_MYR_4 years	60,000,000	10	1,031,757,779	2.21%	12.86%
FIXED-FLOATING_MYR_5 years	60,000,000	10	882,903,123	1.63%	12.33%
FIXED-FLOATING_MYR_6 years	60,000,000	10	751,900,164	1.21%	6.53%
FIXED-FLOATING_PLN_1 year	60,000,000	129	14,612,998,203	35.54%	72.54%
FIXED-FLOATING_PLN_2 years	60,000,000	165	20,821,554,123	23.11%	66.70%
FIXED-FLOATING_PLN_3 years	60,000,000	158	19,256,760,910	8.46%	35.91%

SINGLE CURRENCY FIXED TO FLOAT	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
FIXED-FLOATING_PLN_4 years	60,000,000	65	6,638,195,905	9.27%	36.75%
FIXED-FLOATING_PLN_5 years	60,000,000	27	2,712,369,569	4.88%	26.80%
FIXED-FLOATING_PLN_6 years	60,000,000	22	2,766,690,981	1.07%	11.18%
FIXED-FLOATING_SGD_1 year	75,000,000	105	13,960,603,211	14.04%	45.18%
FIXED-FLOATING_SGD_2 years	75,000,000	171	26,013,256,843	19.45%	54.91%
FIXED-FLOATING_SGD_3 years	75,000,000	139	18,322,293,947	12.80%	39.10%
FIXED-FLOATING_SGD_4 years	75,000,000	55	7,178,141,617	4.99%	21.63%
FIXED-FLOATING_SGD_5 years	75,000,000	76	9,002,174,536	6.66%	30.63%
FIXED-FLOATING_SGD_6 years	75,000,000	43	6,872,555,379	2.33%	18.16%
FIXED-FLOATING_ZAR_1 year	40,000,000	261	23,817,723,844	24.39%	58.81%
FIXED-FLOATING_ZAR_2 years	40,000,000	305	21,526,925,964	17.68%	58.07%
FIXED-FLOATING_ZAR_3 years	40,000,000	189	16,542,572,737	8.44%	35.40%
FIXED-FLOATING_ZAR_4 years	40,000,000	39	2,481,285,806	4.59%	21.49%
FIXED-FLOATING_ZAR_5 years	40,000,000	78	6,874,373,554	8.05%	41.92%
FIXED-FLOATING_ZAR_6 years	40,000,000	44	3,908,803,568	2.22%	17.68%
FIXED-FLOATING_NZD_6 months	90,000,000	42	8,436,356,335	20.49%	56.14%
FIXED-FLOATING_NZD_1 year	90,000,000	257	53,928,367,654	28.18%	68.02%
FIXED-FLOATING_NZD_2 years	90,000,000	318	54,159,599,829	12.67%	56.24%
FIXED-FLOATING_NZD_3 years	90,000,000	367	53,057,201,205	11.61%	34.18%
FIXED-FLOATING_NZD_4 years	90,000,000	107	16,098,479,696	6.50%	24.21%
FIXED-FLOATING_NZD_5 years	90,000,000	50	6,433,779,673	5.28%	20.80%
FIXED-FLOATING_NZD_6 years	90,000,000	31	3,990,329,334	2.71%	13.87%
FIXED-FLOATING_NZD_7 years	90,000,000	12	1,468,085,320	3.14%	13.02%
FIXED-FLOATING_NZD_8 years	90,000,000	17	2,244,508,908	3.03%	15.28%
FIXED-FLOATING_NZD_9 years	90,000,000	6	694,524,467	1.23%	7.54%
FIXED-FLOATING_AUD_6 months	115,000,000	75	38,107,057,426	28.85%	82.46%

SINGLE CURRENCY FIXED TO FLOAT	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
FIXED-FLOATING_AUD_1 year	115,000,000	201	52,047,009,803	21.54%	62.60%
FIXED-FLOATING_AUD_2 years	115,000,000	597	135,693,174,700	23.77%	60.55%
FIXED-FLOATING_AUD_3 years	115,000,000	814	175,567,848,117	21.46%	52.92%
FIXED-FLOATING_AUD_4 years	115,000,000	539	91,436,054,010	11.15%	31.75%
FIXED-FLOATING_AUD_5 years	115,000,000	166	28,325,024,157	7.14%	26.15%
FIXED-FLOATING_AUD_6 years	115,000,000	58	10,186,964,649	1.79%	11.22%
FIXED-FLOATING_AUD_7 years	115,000,000	19	3,502,227,213	2.61%	14.95%
FIXED-FLOATING_AUD_8 years	115,000,000	11	1,702,206,423	1.13%	5.89%
FIXED-FLOATING_AUD_9 years	115,000,000	10	1,644,593,945	0.80%	7.78%
FIXED-FLOATING_AUD_10 years	115,000,000	35	6,770,425,842	1.76%	16.95%
FIXED-FLOATING_AUD_11 years	115,000,000	16	2,476,853,284	0.47%	3.62%
FIXED-FLOATING_CAD_6 months	165,000,000	179	75,039,426,056	35.87%	73.71%
FIXED-FLOATING_CAD_1 year	165,000,000	179	67,600,807,880	24.90%	62.03%
FIXED-FLOATING_CAD_2 years	165,000,000	284	85,952,145,376	20.76%	49.91%
FIXED-FLOATING_CAD_3 years	165,000,000	248	64,368,340,597	15.14%	39.51%
FIXED-FLOATING_CAD_4 years	165,000,000	130	27,195,908,466	12.54%	31.12%
FIXED-FLOATING_CAD_5 years	165,000,000	101	22,262,901,235	5.80%	20.03%
FIXED-FLOATING_CAD_6 years	165,000,000	83	22,767,092,730	3.78%	19.47%
FIXED-FLOATING_CAD_7 years	165,000,000	21	8,385,277,261	4.28%	29.18%
FIXED-FLOATING_CAD_8 years	165,000,000	19	8,137,142,179	5.57%	33.09%
FIXED-FLOATING_CAD_9 years	165,000,000	3	626,603,744	0.67%	4.05%
FIXED-FLOATING_CAD_10 years	165,000,000	2	428,728,878	0.18%	1.67%
FIXED-FLOATING_CAD_11 years	165,000,000	4	1,070,503,028	0.24%	2.82%
FIXED-FLOATING_SEK_6 months	100,000,000	55	8,979,669,872	17.57%	51.88%
FIXED-FLOATING_SEK_1 year	100,000,000	223	39,621,470,752	28.37%	68.73%
FIXED-FLOATING_SEK_2 years	100,000,000	590	96,760,925,993	26.26%	65.22%

SINGLE CURRENCY FIXED TO FLOAT	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
FIXED-FLOATING_SEK_3 years	100,000,000	511	93,400,150,287	13.35%	54.95%
FIXED-FLOATING_SEK_4 years	100,000,000	232	32,241,364,234	11.47%	37.99%
FIXED-FLOATING_SEK_5 years	100,000,000	191	24,316,414,385	8.99%	30.82%
FIXED-FLOATING_SEK_6 years	100,000,000	101	14,845,423,121	3.47%	22.66%
FIXED-FLOATING_SEK_7 years	100,000,000	27	4,003,828,688	3.37%	17.81%
FIXED-FLOATING_SEK_8 years	100,000,000	10	1,298,685,980	1.21%	6.36%
FIXED-FLOATING_SEK_9 years	100,000,000	21	3,581,157,451	2.57%	20.31%
FIXED-FLOATING_SEK_10 years	100,000,000	15	3,295,558,148	1.19%	14.68%
FIXED-FLOATING_SEK_11 years	100,000,000	35	5,749,255,782	1.54%	17.47%
FIXED-FLOATING_CHF_1 year	105,000,000	23	7,659,445,534	14.29%	62.86%
FIXED-FLOATING_CHF_2 years	105,000,000	110	25,736,520,412	24.34%	70.30%
FIXED-FLOATING_CHF_3 years	105,000,000	237	50,603,188,638	29.63%	65.81%
FIXED-FLOATING_CHF_4 years	105,000,000	115	21,398,380,888	16.13%	44.86%
FIXED-FLOATING_CHF_5 years	105,000,000	58	9,516,719,913	8.88%	32.60%
FIXED-FLOATING_CHF_6 years	105,000,000	116	18,285,238,634	11.00%	32.29%
FIXED-FLOATING_CHF_7 years	105,000,000	65	9,310,200,835	12.52%	36.21%
FIXED-FLOATING_CHF_8 years	105,000,000	61	8,857,623,337	12.32%	36.59%
FIXED-FLOATING_CHF_9 years	105,000,000	10	1,657,071,862	1.61%	15.28%
FIXED-FLOATING_CHF_10 years	105,000,000	15	2,192,311,000	1.09%	11.81%
FIXED-FLOATING_CHF_11 years	105,000,000	37	6,039,662,556	2.46%	14.62%
FIXED-FLOATING_NOK_1 year	60,000,000	70	6,202,620,670	18.87%	57.22%
FIXED-FLOATING_NOK_2 years	60,000,000	204	25,456,351,381	25.09%	73.38%
FIXED-FLOATING_NOK_3 years	60,000,000	247	24,047,921,886	27.47%	65.73%
FIXED-FLOATING_NOK_4 years	60,000,000	111	9,244,360,402	13.01%	40.11%
FIXED-FLOATING_NOK_5 years	60,000,000	57	4,562,617,363	8.61%	30.28%
FIXED-FLOATING_NOK_6 years	60,000,000	73	6,221,828,114	11.21%	35.93%

SINGLE CURRENCY FIXED TO FLOAT	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
FIXED-FLOATING__NOK__7 years	60,000,000	63	4,828,095,821	19.57%	53.64%
FIXED-FLOATING__NOK__8 years	60,000,000	30	2,413,938,659	8.17%	32.17%
FIXED-FLOATING__NOK__9 years	60,000,000	17	1,756,822,831	1.48%	24.06%
FIXED-FLOATING__NOK__10 years	60,000,000	44	4,866,296,142	8.15%	45.77%
FIXED-FLOATING__NOK__11 years	60,000,000	28	2,335,571,917	5.70%	25.61%
FIXED-FLOATING__MXN__1.5 months	50,000,000	53	7,341,380,007	14.13%	62.63%
FIXED-FLOATING__MXN__3 months	50,000,000	41	7,909,604,294	26.45%	80.44%
FIXED-FLOATING__MXN__6 months	50,000,000	139	22,756,192,204	39.49%	86.94%
FIXED-FLOATING__MXN__1 year	50,000,000	316	34,623,388,865	40.93%	82.81%
FIXED-FLOATING__MXN__2 years	50,000,000	234	24,176,688,780	12.30%	51.66%
FIXED-FLOATING__MXN__3 years	50,000,000	155	17,027,846,123	8.01%	44.21%
FIXED-FLOATING__MXN__4 years	50,000,000	60	5,050,362,929	3.31%	23.42%
FIXED-FLOATING__MXN__5 years	50,000,000	29	2,721,460,270	1.49%	14.52%
FIXED-FLOATING__MXN__6 years	50,000,000	22	3,316,695,193	4.15%	44.47%
FIXED-FLOATING__MXN__7 years	50,000,000	8	721,671,472	0.83%	9.99%

Table 59: Fixed to Float Single-currency swaps: Impact of the implementation of one LIS per class irrespectively of tenor

LIS calculations on the basis of 30% of notional amount above LIS rule							Combination of 2 rules	
SINGLE CURRENCY FIXED TO FLOAT	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
FIXED-FLOATING EUR 1.5 months	30%	350,000,000	131	87,077,357,254	3.99%	30.08%	350,000,000	350,000,000
FIXED-FLOATING EUR 3 months	30%	1,000,000,000	20	22,650,000,000	3.13%	30.45%	1,000,000,000	1,000,000,000
FIXED-FLOATING EUR 6 months	30%	800,000,000	79	86,739,070,991	4.13%	30.17%	800,000,000	800,000,000
FIXED-FLOATING EUR 1 year	30%	750,000,000	211	219,949,541,135	3.84%	30.05%	750,000,000	750,000,000
FIXED-FLOATING EUR 2 years	30%	625,000,000	537	511,303,098,205	4.16%	30.03%	625,000,000	625,000,000
FIXED-FLOATING EUR 3 years	30%	601,668,196	722	701,421,964,869	4.09%	30.02%	601,668,196	600,000,000
FIXED-FLOATING EUR 4 years	30%	500,000,000	672	486,601,084,206	4.29%	30.01%	500,000,000	500,000,000
FIXED-FLOATING EUR 5 years	30%	406,000,000	691	460,308,878,846	4.26%	30.02%	406,000,000	405,000,000
FIXED-FLOATING EUR 6 years	30%	250,000,000	1,100	493,369,095,119	4.95%	30.01%	250,000,000	250,000,000
FIXED-FLOATING EUR 7 years	30%	446,500,000	287	198,378,802,136	3.71%	30.01%	446,500,000	445,000,000
FIXED-FLOATING EUR 8 years	30%	435,998,000	369	263,910,804,968	3.78%	30.01%	435,998,000	435,000,000
FIXED-FLOATING EUR 9 years	30%	290,000,000	379	218,132,873,094	3.96%	30.03%	290,000,000	290,000,000
FIXED-FLOATING EUR 10 years	30%	300,000,000	325	176,037,803,315	3.74%	30.05%	300,000,000	300,000,000
FIXED-FLOATING EUR 11 years	30%	193,000,000	1,059	376,827,755,809	4.64%	30.01%	193,000,000	195,000,000
FIXED-FLOATING EUR 12 years	30%	359,700,000	99	60,090,395,798	4.33%	30.15%	359,700,000	360,000,000
FIXED-FLOATING EUR 13 years	30%	315,000,000	150	84,687,850,462	4.44%	30.04%	315,000,000	315,000,000
FIXED-FLOATING EUR 14 years	30%	326,724,878	49	32,859,329,338	2.76%	30.10%	326,724,878	325,000,000
FIXED-FLOATING EUR 15 years	30%	254,000,000	79	37,514,692,892	3.74%	30.03%	254,000,000	255,000,000
FIXED-FLOATING EUR 16 years	30%	200,000,000	202	68,975,227,229	5.37%	30.07%	200,000,000	200,000,000
FIXED-FLOATING EUR 17 years	30%	192,480,876	46	13,128,617,630	5.70%	30.03%	192,480,876	190,000,000
FIXED-FLOATING EUR 18 years	30%	200,000,000	32	12,947,731,019	3.67%	30.19%	200,000,000	200,000,000
FIXED-FLOATING EUR 19 years	30%	188,500,000	40	14,231,181,510	3.66%	30.31%	188,500,000	190,000,000
FIXED-FLOATING EUR 20 years	30%	292,200,000	37	18,096,580,514	3.30%	30.02%	292,200,000	290,000,000
FIXED-FLOATING EUR 21 years	30%	200,000,000	143	52,328,229,180	4.08%	30.05%	200,000,000	200,000,000
FIXED-FLOATING EUR 22 years	30%	215,816,549	23	8,638,432,505	4.22%	30.40%	215,816,549	215,000,000
FIXED-FLOATING EUR 23 years	30%	200,000,000	33	10,715,450,762	4.30%	30.35%	200,000,000	200,000,000
FIXED-FLOATING EUR 24 years	30%	199,253,814	31	11,976,326,780	3.69%	30.17%	199,253,814	200,000,000

SINGLE CURRENCY FIXED TO FLOAT	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
FIXED-FLOATING_EUR_25 years	30%	250,000,000	33	15,265,230,572	3.14%	30.31%	250,000,000	250,000,000
FIXED-FLOATING_EUR_26 years	30%	300,000,000	48	25,088,766,780	2.70%	30.15%	300,000,000	300,000,000
FIXED-FLOATING_EUR_27 years	30%	256,300,000	13	9,248,330,894	2.10%	30.59%	256,300,000	255,000,000
FIXED-FLOATING_EUR_28 years	30%	190,000,000	26	10,049,524,143	3.43%	30.14%	190,000,000	190,000,000
FIXED-FLOATING_EUR_29 years	30%	105,000,000	51	9,846,950,722	5.26%	30.03%	105,000,000	105,000,000
FIXED-FLOATING_EUR_30 years	30%	67,750,000	85	10,078,337,247	6.61%	30.16%	67,750,000	70,000,000
FIXED-FLOATING_EUR_31 years	30%	59,800,000	500	57,124,915,914	6.55%	30.03%	59,800,000	60,000,000
FIXED-FLOATING_USD_1.5 months	30%	181,308,179	125	45,523,010,053	4.88%	30.04%	181,308,179	180,000,000
FIXED-FLOATING_USD_3 months	30%	725,232,718	13	12,909,142,377	3.80%	30.51%	725,232,718	725,000,000
FIXED-FLOATING_USD_6 months	30%	725,232,718	52	62,593,771,170	3.46%	30.22%	725,232,718	725,000,000
FIXED-FLOATING_USD_1 year	30%	543,924,538	135	112,031,025,433	4.42%	30.09%	543,924,538	545,000,000
FIXED-FLOATING_USD_2 years	30%	543,416,875	428	343,355,910,936	4.62%	30.03%	543,416,875	545,000,000
FIXED-FLOATING_USD_3 years	30%	417,734,045	888	611,737,529,634	4.84%	30.02%	417,734,045	420,000,000
FIXED-FLOATING_USD_4 years	30%	375,670,548	941	686,503,831,394	4.09%	30.00%	375,670,548	375,000,000
FIXED-FLOATING_USD_5 years	30%	319,971,950	1,126	572,720,742,648	5.30%	30.01%	319,971,950	320,000,000
FIXED-FLOATING_USD_6 years	30%	181,308,179	1,978	681,590,639,625	5.70%	30.01%	181,308,179	180,000,000
FIXED-FLOATING_USD_7 years	30%	253,831,451	517	234,705,044,943	4.44%	30.02%	253,831,451	255,000,000
FIXED-FLOATING_USD_8 years	30%	204,515,626	672	230,545,195,979	5.25%	30.02%	204,515,626	205,000,000
FIXED-FLOATING_USD_9 years	30%	217,569,815	240	89,137,849,596	4.31%	30.01%	217,569,815	220,000,000
FIXED-FLOATING_USD_10 years	30%	160,348,954	660	182,406,122,001	4.24%	30.01%	160,348,954	160,000,000
FIXED-FLOATING_USD_11 years	30%	119,663,398	1,791	408,071,030,910	5.33%	30.00%	119,663,398	120,000,000
FIXED-FLOATING_USD_12 years	30%	263,332,000	66	29,807,556,178	3.99%	30.20%	263,332,000	265,000,000
FIXED-FLOATING_USD_13 years	30%	239,326,797	79	33,453,439,399	4.02%	30.07%	239,326,797	240,000,000
FIXED-FLOATING_USD_14 years	30%	224,096,910	32	12,944,143,571	4.04%	30.19%	224,096,910	225,000,000
FIXED-FLOATING_USD_15 years	30%	166,803,525	65	17,682,083,947	5.79%	30.18%	166,803,525	165,000,000
FIXED-FLOATING_USD_16 years	30%	118,140,410	138	29,230,950,328	5.24%	30.01%	118,140,410	120,000,000
FIXED-FLOATING_USD_17 years	30%	170,429,689	25	5,780,837,922	5.46%	30.89%	170,429,689	170,000,000
FIXED-FLOATING_USD_18 years	30%	136,343,751	15	4,055,420,223	4.08%	31.01%	136,343,751	135,000,000

SINGLE CURRENCY FIXED TO FLOAT	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
FIXED-FLOATING_USD_19 years	30%	179,495,098	22	6,561,941,892	5.08%	30.46%	179,495,098	180,000,000
FIXED-FLOATING_USD_20 years	30%	179,578,942	42	12,243,385,819	4.84%	30.42%	179,578,942	180,000,000
FIXED-FLOATING_USD_21 years	30%	181,308,179	76	25,972,999,145	3.36%	30.12%	181,308,179	180,000,000
FIXED-FLOATING_USD_22 years	30%	166,658,479	14	4,525,458,549	3.93%	30.91%	166,658,479	165,000,000
FIXED-FLOATING_USD_23 years	30%	272,687,502	15	6,023,089,393	3.59%	30.18%	272,687,502	275,000,000
FIXED-FLOATING_USD_24 years	30%	237,151,099	16	8,227,443,583	2.95%	30.28%	237,151,099	235,000,000
FIXED-FLOATING_USD_25 years	30%	195,666,158	23	10,712,469,642	2.32%	30.27%	195,666,158	195,000,000
FIXED-FLOATING_USD_26 years	30%	181,308,179	38	14,951,184,303	2.80%	30.18%	181,308,179	180,000,000
FIXED-FLOATING_USD_27 years	30%	119,663,398	25	7,408,302,548	3.23%	30.21%	119,663,398	120,000,000
FIXED-FLOATING_USD_28 years	30%	725,232,718	8	9,864,573,439	0.96%	30.81%	725,232,718	725,000,000
FIXED-FLOATING_USD_29 years	30%	134,168,053	38	10,174,024,148	3.93%	30.08%	134,168,053	135,000,000
FIXED-FLOATING_USD_30 years	30%	72,523,272	216	27,806,827,943	5.29%	30.02%	72,523,272	75,000,000
FIXED-FLOATING_USD_31 years	30%	54,392,454	560	66,258,361,252	4.49%	30.01%	54,392,454	55,000,000
FIXED-FLOATING_GBP_1.5 months	30%	139,431,295	18	4,996,677,591	4.55%	30.71%	139,431,295	140,000,000
FIXED-FLOATING_GBP_3 months	30%	313,083,325	3	1,647,934,709	3.85%	33.29%	313,083,325	315,000,000
FIXED-FLOATING_GBP_6 months	30%	606,750,629	12	13,190,096,806	2.05%	30.73%	606,750,629	605,000,000
FIXED-FLOATING_GBP_1 year	30%	514,524,534	76	60,791,444,486	4.07%	30.12%	514,524,534	515,000,000
FIXED-FLOATING_GBP_2 years	30%	431,706,173	172	122,224,757,058	4.69%	30.06%	431,706,173	430,000,000
FIXED-FLOATING_GBP_3 years	30%	361,623,375	332	194,552,101,428	5.07%	30.05%	361,623,375	360,000,000
FIXED-FLOATING_GBP_4 years	30%	270,586,511	320	139,639,173,998	5.71%	30.04%	270,586,511	270,000,000
FIXED-FLOATING_GBP_5 years	30%	251,194,761	279	118,825,404,784	4.82%	30.01%	251,194,761	250,000,000
FIXED-FLOATING_GBP_6 years	30%	129,844,635	559	130,483,258,806	6.88%	30.01%	129,844,635	130,000,000
FIXED-FLOATING_GBP_7 years	30%	141,865,117	171	40,068,393,740	6.02%	30.07%	141,865,117	140,000,000
FIXED-FLOATING_GBP_8 years	30%	182,025,189	148	45,699,203,801	5.64%	30.12%	182,025,189	180,000,000
FIXED-FLOATING_GBP_9 years	30%	182,025,189	117	36,944,706,385	5.46%	30.05%	182,025,189	180,000,000
FIXED-FLOATING_GBP_10 years	30%	137,125,642	190	45,829,800,376	3.99%	30.02%	137,125,642	135,000,000
FIXED-FLOATING_GBP_11 years	30%	91,012,594	562	95,518,884,348	6.36%	30.01%	91,012,594	90,000,000
FIXED-FLOATING_GBP_12 years	30%	198,271,626	37	13,165,884,053	2.69%	30.30%	198,271,626	200,000,000

SINGLE CURRENCY FIXED TO FLOAT	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
FIXED-FLOATING_GBP_13 years	30%	254,383,827	36	17,467,304,609	4.84%	30.07%	254,383,827	255,000,000
FIXED-FLOATING_GBP_14 years	30%	123,170,378	14	5,168,608,679	3.27%	30.61%	123,170,378	125,000,000
FIXED-FLOATING_GBP_15 years	30%	501,246,066	10	10,786,784,398	1.75%	30.83%	501,246,066	500,000,000
FIXED-FLOATING_GBP_16 years	30%	91,012,594	87	14,803,287,056	7.30%	30.11%	91,012,594	90,000,000
FIXED-FLOATING_GBP_17 years	30%	87,968,567	20	3,036,110,182	6.37%	30.03%	87,968,567	90,000,000
FIXED-FLOATING_GBP_18 years	30%	97,080,101	14	2,261,614,101	5.32%	31.16%	97,080,101	95,000,000
FIXED-FLOATING_GBP_19 years	30%	182,025,189	10	3,691,946,825	3.85%	31.26%	182,025,189	180,000,000
FIXED-FLOATING_GBP_20 years	30%	151,198,230	28	6,314,272,716	5.74%	30.26%	151,198,230	150,000,000
FIXED-FLOATING_GBP_21 years	30%	66,985,269	107	15,647,661,618	7.05%	30.08%	66,985,269	65,000,000
FIXED-FLOATING_GBP_22 years	30%	181,294,136	13	4,645,740,487	2.09%	30.19%	181,294,136	180,000,000
FIXED-FLOATING_GBP_23 years	30%	240,273,249	10	4,334,393,273	3.65%	31.17%	240,273,249	240,000,000
FIXED-FLOATING_GBP_24 years	30%	112,855,617	26	4,472,538,960	5.62%	30.42%	112,855,617	115,000,000
FIXED-FLOATING_GBP_25 years	30%	190,911,393	18	7,217,993,075	3.69%	30.22%	190,911,393	190,000,000
FIXED-FLOATING_GBP_26 years	30%	84,581,038	46	7,305,921,456	5.64%	30.07%	84,581,038	85,000,000
FIXED-FLOATING_GBP_27 years	30%	69,169,572	26	3,485,962,139	5.90%	30.12%	69,169,572	70,000,000
FIXED-FLOATING_GBP_28 years	30%	67,567,750	25	2,478,629,569	8.39%	30.15%	67,567,750	70,000,000
FIXED-FLOATING_GBP_29 years	30%	71,790,734	31	3,750,713,359	7.26%	30.15%	71,790,734	70,000,000
FIXED-FLOATING_GBP_30 years	30%	160,303,516	35	10,793,480,851	2.81%	30.35%	160,303,516	160,000,000
FIXED-FLOATING_GBP_31 years	30%	40,652,292	304	25,178,449,629	7.36%	30.01%	40,652,292	40,000,000
FIXED-FLOATING_JPY_1.5 months	30%	709,538,022	4	5,094,482,998	2.48%	31.57%	709,538,022	710,000,000
FIXED-FLOATING_JPY_3 months	30%	248,338,308	5	2,799,624,174	3.23%	30.54%	248,338,308	250,000,000
FIXED-FLOATING_JPY_6 months	30%	681,156,501	34	39,318,964,347	3.27%	30.14%	681,156,501	680,000,000
FIXED-FLOATING_JPY_1 year	30%	709,538,022	185	196,301,723,761	4.35%	30.07%	709,538,022	710,000,000
FIXED-FLOATING_JPY_2 years	30%	566,778,972	161	138,698,916,661	4.35%	30.05%	566,778,972	565,000,000
FIXED-FLOATING_JPY_3 years	30%	433,290,720	107	87,698,530,148	3.82%	30.06%	433,290,720	435,000,000
FIXED-FLOATING_JPY_4 years	30%	378,751,396	84	60,154,370,965	3.27%	30.04%	378,751,396	380,000,000
FIXED-FLOATING_JPY_5 years	30%	354,769,011	103	65,153,011,472	3.26%	30.10%	354,769,011	355,000,000
FIXED-FLOATING_JPY_6 years	30%	184,479,886	217	81,261,086,004	5.05%	30.04%	184,479,886	185,000,000

SINGLE CURRENCY FIXED TO FLOAT	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
FIXED-FLOATING_JPY_7 years	30%	178,094,044	144	44,190,981,436	5.45%	30.06%	178,094,044	180,000,000
FIXED-FLOATING_JPY_8 years	30%	181,641,734	235	83,464,013,297	4.62%	30.01%	181,641,734	180,000,000
FIXED-FLOATING_JPY_9 years	30%	155,388,827	128	30,807,443,372	6.42%	30.13%	155,388,827	155,000,000
FIXED-FLOATING_JPY_10 years	30%	127,716,844	157	35,850,104,583	4.46%	30.03%	127,716,844	130,000,000
FIXED-FLOATING_JPY_11 years	30%	184,479,886	277	101,799,535,085	2.83%	30.04%	184,479,886	185,000,000
FIXED-FLOATING_JPY_12 years	30%	212,263,181	26	9,676,421,046	4.35%	30.11%	212,263,181	210,000,000
FIXED-FLOATING_JPY_13 years	30%	141,907,604	49	13,380,397,066	4.92%	30.22%	141,907,604	140,000,000
FIXED-FLOATING_JPY_14 years	30%	70,953,802	23	3,261,511,762	5.75%	30.32%	70,953,802	70,000,000
FIXED-FLOATING_JPY_15 years	30%	80,887,335	32	4,613,126,663	5.94%	30.26%	80,887,335	80,000,000
FIXED-FLOATING_JPY_16 years	30%	70,953,802	52	6,438,702,781	5.83%	30.03%	70,953,802	70,000,000
FIXED-FLOATING_JPY_17 years	30%	56,763,042	24	2,316,491,149	6.50%	30.38%	56,763,042	55,000,000
FIXED-FLOATING_JPY_18 years	30%	70,953,802	8	2,554,685,685	2.46%	30.86%	70,953,802	70,000,000
FIXED-FLOATING_JPY_19 years	30%	43,281,819	34	2,361,340,195	8.29%	30.09%	43,281,819	45,000,000
FIXED-FLOATING_JPY_20 years	30%	61,375,039	48	5,384,452,860	4.66%	30.04%	61,375,039	60,000,000
FIXED-FLOATING_JPY_21 years	30%	35,476,901	190	13,809,192,081	6.59%	30.02%	35,476,901	35,000,000
FIXED-FLOATING_KRW_6 months	30%	55,446,848	39	3,746,647,477	8.06%	30.30%	55,446,848	55,000,000
FIXED-FLOATING_KRW_1 year	30%	138,617,120	35	8,885,944,817	4.26%	30.28%	138,617,120	140,000,000
FIXED-FLOATING_KRW_2 years	30%	103,962,840	86	15,701,985,939	4.86%	30.01%	103,962,840	105,000,000
FIXED-FLOATING_KRW_3 years	30%	69,308,560	84	12,706,029,039	4.55%	30.15%	69,308,560	70,000,000
FIXED-FLOATING_KRW_4 years	30%	52,023,005	75	8,004,015,871	5.23%	30.19%	52,023,005	50,000,000
FIXED-FLOATING_KRW_5 years	30%	58,912,276	49	5,717,842,920	4.82%	30.07%	58,912,276	60,000,000
FIXED-FLOATING_KRW_6 years	30%	43,317,850	50	6,771,652,108	3.90%	30.13%	43,317,850	45,000,000
FIXED-FLOATING_DKK_1 year	30%	334,917,819	13	7,410,927,526	4.06%	30.76%	334,917,819	335,000,000
FIXED-FLOATING_DKK_2 years	30%	267,934,255	24	9,928,303,818	5.69%	30.83%	267,934,255	270,000,000
FIXED-FLOATING_DKK_3 years	30%	133,967,127	30	8,394,648,143	6.91%	30.21%	133,967,127	135,000,000
FIXED-FLOATING_DKK_4 years	30%	133,967,127	25	5,422,587,419	6.41%	30.21%	133,967,127	135,000,000
FIXED-FLOATING_DKK_5 years	30%	535,868,510	7	5,894,553,610	2.11%	30.42%	535,868,510	535,000,000
FIXED-FLOATING_DKK_6 years	30%	133,967,127	14	3,316,892,110	5.28%	31.14%	133,967,127	135,000,000

SINGLE CURRENCY FIXED TO FLOAT	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
FIXED-FLOATING_HKD_1 year	30%	248,723,842	24	6,996,059,356	4.74%	30.19%	248,723,842	250,000,000
FIXED-FLOATING_HKD_2 years	30%	108,840,057	41	7,696,787,354	6.91%	30.15%	108,840,057	110,000,000
FIXED-FLOATING_HKD_3 years	30%	112,206,245	44	8,722,530,090	5.30%	30.10%	112,206,245	110,000,000
FIXED-FLOATING_HKD_4 years	30%	73,308,080	61	8,282,101,879	6.49%	30.22%	73,308,080	75,000,000
FIXED-FLOATING_HKD_5 years	30%	46,752,602	36	3,278,737,534	7.11%	30.38%	46,752,602	45,000,000
FIXED-FLOATING_HKD_6 years	30%	105,941,396	20	7,479,855,281	1.94%	30.21%	105,941,396	105,000,000
FIXED-FLOATING_MYR_1 year	30%	193,343,211	36	9,506,801,948	7.78%	30.15%	193,343,211	195,000,000
FIXED-FLOATING_MYR_2 years	30%	149,239,575	25	6,260,123,529	4.17%	30.63%	149,239,575	150,000,000
FIXED-FLOATING_MYR_3 years	30%	75,956,261	54	6,768,145,083	6.15%	30.22%	75,956,261	75,000,000
FIXED-FLOATING_MYR_4 years	30%	37,866,758	40	2,412,390,909	8.85%	30.06%	37,866,758	40,000,000
FIXED-FLOATING_MYR_5 years	30%	38,757,740	38	2,180,431,015	6.18%	30.45%	38,757,740	40,000,000
FIXED-FLOATING_MYR_6 years	30%	23,900,607	96	3,460,296,633	11.59%	30.04%	24,056,529	25,000,000
FIXED-FLOATING_PLN_1 year	30%	119,387,718	30	6,102,861,377	8.26%	30.30%	119,387,718	120,000,000
FIXED-FLOATING_PLN_2 years	30%	149,234,648	41	9,438,315,447	5.74%	30.23%	149,234,648	150,000,000
FIXED-FLOATING_PLN_3 years	30%	76,885,690	112	16,087,580,981	6.00%	30.00%	76,885,690	75,000,000
FIXED-FLOATING_PLN_4 years	30%	77,602,017	47	5,456,257,495	6.70%	30.20%	77,602,017	80,000,000
FIXED-FLOATING_PLN_5 years	30%	57,306,105	32	3,068,144,969	5.79%	30.32%	57,306,105	55,000,000
FIXED-FLOATING_PLN_6 years	30%	32,592,847	140	7,448,454,083	6.79%	30.09%	32,592,847	35,000,000
FIXED-FLOATING_SGD_1 year	30%	109,117,554	52	9,374,824,355	6.95%	30.34%	109,117,554	110,000,000
FIXED-FLOATING_SGD_2 years	30%	145,254,004	65	14,328,188,574	7.39%	30.24%	145,254,004	145,000,000
FIXED-FLOATING_SGD_3 years	30%	108,364,098	92	14,136,096,609	8.47%	30.17%	108,364,098	110,000,000
FIXED-FLOATING_SGD_4 years	30%	62,251,716	92	9,959,064,107	8.35%	30.00%	62,251,716	60,000,000
FIXED-FLOATING_SGD_5 years	30%	76,085,431	73	8,850,983,563	6.40%	30.11%	76,085,431	75,000,000
FIXED-FLOATING_SGD_6 years	30%	37,466,311	140	11,376,639,952	7.59%	30.06%	37,466,311	35,000,000
FIXED-FLOATING_ZAR_1 year	30%	96,181,631	80	12,194,286,260	7.48%	30.11%	96,181,631	95,000,000
FIXED-FLOATING_ZAR_2 years	30%	73,594,104	107	11,177,958,122	6.20%	30.16%	73,594,104	75,000,000
FIXED-FLOATING_ZAR_3 years	30%	58,981,890	133	14,037,762,141	5.94%	30.04%	58,981,890	60,000,000
FIXED-FLOATING_ZAR_4 years	30%	27,433,437	69	3,486,034,893	8.12%	30.19%	27,433,437	25,000,000

SINGLE CURRENCY FIXED TO FLOAT	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
FIXED-FLOATING_ZAR_5 years	30%	61,725,234	35	4,925,810,806	3.61%	30.04%	61,725,234	60,000,000
FIXED-FLOATING_ZAR_6 years	30%	23,729,923	130	6,647,269,960	6.55%	30.07%	23,729,923	25,000,000
FIXED-FLOATING_NZD_6 months	30%	311,166,876	13	4,703,131,743	6.34%	31.30%	311,166,876	310,000,000
FIXED-FLOATING_NZD_1 year	30%	262,898,670	56	23,924,309,369	6.14%	30.18%	262,898,670	265,000,000
FIXED-FLOATING_NZD_2 years	30%	180,476,788	105	29,042,965,716	4.18%	30.16%	180,476,788	180,000,000
FIXED-FLOATING_NZD_3 years	30%	93,350,063	296	46,587,587,555	9.36%	30.01%	93,350,063	95,000,000
FIXED-FLOATING_NZD_4 years	30%	79,036,386	153	20,003,740,052	9.29%	30.08%	79,036,386	80,000,000
FIXED-FLOATING_NZD_5 years	30%	69,732,497	85	9,323,343,737	8.98%	30.14%	69,732,497	70,000,000
FIXED-FLOATING_NZD_6 years	30%	57,254,705	95	8,680,348,505	8.29%	30.18%	57,254,705	55,000,000
FIXED-FLOATING_NZD_7 years	30%	49,786,700	41	3,428,281,053	10.73%	30.40%	53,676,286	55,000,000
FIXED-FLOATING_NZD_8 years	30%	56,010,038	48	4,424,232,872	8.56%	30.12%	56,010,038	55,000,000
FIXED-FLOATING_NZD_9 years	30%	46,675,031	38	2,801,217,565	7.77%	30.42%	46,675,031	45,000,000
FIXED-FLOATING_AUD_6 months	30%	769,940,985	11	14,330,945,038	4.23%	31.01%	769,940,985	770,000,000
FIXED-FLOATING_AUD_1 year	30%	334,756,950	40	25,042,835,718	4.29%	30.12%	334,756,950	335,000,000
FIXED-FLOATING_AUD_2 years	30%	234,329,865	177	67,317,140,767	7.05%	30.04%	234,329,865	235,000,000
FIXED-FLOATING_AUD_3 years	30%	194,159,031	311	99,537,109,786	8.20%	30.00%	194,159,031	195,000,000
FIXED-FLOATING_AUD_4 years	30%	117,164,933	495	86,425,746,736	10.24%	30.01%	117,164,933	115,000,000
FIXED-FLOATING_AUD_5 years	30%	100,427,085	205	32,494,508,134	8.82%	30.00%	100,427,085	100,000,000
FIXED-FLOATING_AUD_6 years	30%	66,951,390	260	27,291,085,475	8.01%	30.06%	66,951,390	65,000,000
FIXED-FLOATING_AUD_7 years	30%	71,303,230	58	7,095,449,471	7.98%	30.29%	71,303,230	70,000,000
FIXED-FLOATING_AUD_8 years	30%	56,908,682	104	8,702,133,596	10.71%	30.12%	58,415,088	60,000,000
FIXED-FLOATING_AUD_9 years	30%	50,213,543	79	6,383,991,836	6.35%	30.20%	50,213,543	50,000,000
FIXED-FLOATING_AUD_10 years	30%	62,264,793	102	12,039,018,188	5.13%	30.13%	62,264,793	60,000,000
FIXED-FLOATING_AUD_11 years	30%	41,175,105	338	20,544,967,531	10.03%	30.03%	41,509,862	40,000,000
FIXED-FLOATING_CAD_6 months	30%	516,453,402	42	30,613,880,186	8.42%	30.07%	516,453,402	515,000,000
FIXED-FLOATING_CAD_1 year	30%	395,749,733	47	32,871,632,413	6.54%	30.17%	395,749,733	395,000,000
FIXED-FLOATING_CAD_2 years	30%	290,876,054	109	51,950,489,595	7.97%	30.16%	290,876,054	290,000,000
FIXED-FLOATING_CAD_3 years	30%	196,555,701	158	48,953,558,702	9.65%	30.04%	196,555,701	195,000,000

SINGLE CURRENCY FIXED TO FLOAT	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
FIXED-FLOATING_CAD_4 years	30%	171,491,551	124	26,344,650,790	11.96%	30.15%	173,140,508	175,000,000
FIXED-FLOATING_CAD_5 years	30%	135,214,492	172	33,383,653,487	9.88%	30.04%	135,214,492	135,000,000
FIXED-FLOATING_CAD_6 years	30%	132,576,161	164	35,174,110,696	7.48%	30.08%	132,576,161	135,000,000
FIXED-FLOATING_CAD_7 years	30%	164,895,722	22	8,715,068,705	4.48%	30.33%	164,895,722	165,000,000
FIXED-FLOATING_CAD_8 years	30%	221,619,851	15	7,523,070,509	4.40%	30.59%	221,619,851	220,000,000
FIXED-FLOATING_CAD_9 years	30%	67,079,580	42	4,670,836,358	9.31%	30.16%	67,079,580	65,000,000
FIXED-FLOATING_CAD_10 years	30%	65,958,289	90	7,751,949,729	8.15%	30.20%	65,958,289	65,000,000
FIXED-FLOATING_CAD_11 years	30%	49,468,717	148	11,402,682,206	8.72%	30.04%	49,468,717	50,000,000
FIXED-FLOATING_SEK_6 months	30%	133,696,783	21	5,227,544,197	6.71%	30.20%	133,696,783	135,000,000
FIXED-FLOATING_SEK_1 year	30%	221,491,003	55	17,498,034,352	7.00%	30.35%	221,491,003	220,000,000
FIXED-FLOATING_SEK_2 years	30%	170,463,398	170	44,542,530,461	7.57%	30.02%	170,463,398	170,000,000
FIXED-FLOATING_SEK_3 years	30%	167,120,978	166	51,077,383,985	4.34%	30.05%	167,120,978	165,000,000
FIXED-FLOATING_SEK_4 years	30%	111,413,985	170	25,513,831,269	8.41%	30.07%	111,413,985	110,000,000
FIXED-FLOATING_SEK_5 years	30%	103,280,765	184	23,702,077,669	8.66%	30.04%	103,280,765	105,000,000
FIXED-FLOATING_SEK_6 years	30%	68,486,177	159	19,723,681,622	5.47%	30.10%	68,486,177	70,000,000
FIXED-FLOATING_SEK_7 years	30%	62,503,246	62	6,767,715,465	7.74%	30.11%	62,503,246	65,000,000
FIXED-FLOATING_SEK_8 years	30%	55,706,993	80	6,127,940,542	9.71%	30.02%	55,706,993	55,000,000
FIXED-FLOATING_SEK_9 years	30%	66,848,391	42	5,331,783,122	5.13%	30.24%	66,848,391	65,000,000
FIXED-FLOATING_SEK_10 years	30%	55,706,993	68	6,752,934,662	5.41%	30.09%	55,706,993	55,000,000
FIXED-FLOATING_SEK_11 years	30%	45,679,734	101	9,910,640,557	4.44%	30.12%	45,679,734	45,000,000
FIXED-FLOATING_CHF_1 year	30%	615,249,454	4	4,093,459,700	2.48%	33.60%	615,249,454	615,000,000
FIXED-FLOATING_CHF_2 years	30%	328,133,042	23	11,046,598,861	5.09%	30.17%	328,133,042	330,000,000
FIXED-FLOATING_CHF_3 years	30%	233,200,051	62	23,114,040,124	7.75%	30.06%	233,200,051	235,000,000
FIXED-FLOATING_CHF_4 years	30%	136,421,312	57	14,396,021,770	7.99%	30.18%	136,421,312	135,000,000
FIXED-FLOATING_CHF_5 years	30%	114,846,565	51	8,867,508,689	7.81%	30.38%	114,846,565	115,000,000
FIXED-FLOATING_CHF_6 years	30%	114,026,232	104	17,067,618,949	9.86%	30.14%	114,026,232	115,000,000
FIXED-FLOATING_CHF_7 years	30%	118,948,228	50	7,742,299,127	9.63%	30.11%	118,948,228	120,000,000
FIXED-FLOATING_CHF_8 years	30%	106,233,072	45	7,271,674,312	9.09%	30.04%	106,233,072	105,000,000

SINGLE CURRENCY FIXED TO FLOAT	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
FIXED-FLOATING_CHF_9 years	30%	90,236,587	27	3,339,081,836	4.34%	30.79%	90,236,587	90,000,000
FIXED-FLOATING_CHF_10 years	30%	80,556,662	51	5,613,803,449	3.69%	30.25%	80,556,662	80,000,000
FIXED-FLOATING_CHF_11 years	30%	73,829,934	112	12,428,658,984	7.45%	30.09%	73,829,934	75,000,000
FIXED-FLOATING_NOK_1 year	30%	91,124,119	27	3,337,637,122	7.28%	30.79%	91,124,119	90,000,000
FIXED-FLOATING_NOK_2 years	30%	206,548,003	25	10,582,790,671	3.08%	30.51%	206,548,003	205,000,000
FIXED-FLOATING_NOK_3 years	30%	121,498,825	73	11,088,104,285	8.12%	30.31%	121,498,825	120,000,000
FIXED-FLOATING_NOK_4 years	30%	60,749,413	72	6,936,368,719	8.44%	30.09%	60,749,413	60,000,000
FIXED-FLOATING_NOK_5 years	30%	60,749,413	56	4,562,617,363	8.46%	30.28%	60,749,413	60,000,000
FIXED-FLOATING_NOK_6 years	30%	60,749,413	56	5,251,659,995	8.60%	30.33%	60,749,413	60,000,000
FIXED-FLOATING_NOK_7 years	30%	60,749,413	27	2,701,866,380	8.39%	30.02%	60,749,413	60,000,000
FIXED-FLOATING_NOK_8 years	30%	60,749,413	27	2,292,439,834	7.36%	30.55%	60,749,413	60,000,000
FIXED-FLOATING_NOK_9 years	30%	36,449,648	27	2,213,578,291	2.35%	30.32%	36,449,648	35,000,000
FIXED-FLOATING_NOK_10 years	30%	99,507,538	20	3,196,120,460	3.70%	30.06%	99,507,538	100,000,000
FIXED-FLOATING_NOK_11 years	30%	46,655,549	36	2,778,313,636	7.33%	30.46%	46,655,549	45,000,000
FIXED-FLOATING_MXN_1.5 months	30%	183,150,839	12	3,641,926,683	3.20%	31.07%	183,150,839	185,000,000
FIXED-FLOATING_MXN_3 months	30%	388,501,780	5	3,196,814,644	3.23%	32.51%	388,501,780	390,000,000
FIXED-FLOATING_MXN_6 months	30%	310,801,424	15	8,046,149,358	4.26%	30.74%	310,801,424	310,000,000
FIXED-FLOATING_MXN_1 year	30%	155,400,712	50	12,600,200,520	6.48%	30.14%	155,400,712	155,000,000
FIXED-FLOATING_MXN_2 years	30%	92,685,425	86	14,069,181,438	4.52%	30.06%	92,685,425	95,000,000
FIXED-FLOATING_MXN_3 years	30%	83,250,381	72	11,580,849,273	3.72%	30.07%	83,250,381	85,000,000
FIXED-FLOATING_MXN_4 years	30%	38,295,175	94	6,500,755,367	5.19%	30.14%	38,295,175	40,000,000
FIXED-FLOATING_MXN_5 years	30%	27,750,127	109	5,650,029,471	5.59%	30.14%	27,750,127	30,000,000
FIXED-FLOATING_MXN_6 years	30%	226,441,037	9	2,397,055,981	1.70%	32.14%	226,441,037	225,000,000
FIXED-FLOATING_MXN_7 years	30%	22,200,102	53	2,173,466,822	5.52%	30.09%	22,200,102	20,000,000

Table 60: Fixed to Float Single-currency swaps: LIS calculations on the basis of 30% of notional amount above the LIS rule

LIS calculations on the basis of 10% of trades above LIS rule irrespectively of tenor								
SINGLE CURRENCY INFLATION	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
INFLATION__EUR__1 year to 8 years	10%	62	75,000,000	128	16,202,077,000	9.97%	40.18%	75,000,000
OTHERS	10%	68	50,000,000	533	47,988,308,157	9.99%	42.62%	50,000,000
OTHERS	30%	68	25,000,000	1,390	78,043,078,582	26.06%	69.32%	25,000,000
OTHERS	30%	68	68,562,821	283	33,780,672,224	5.31%	30.00%	70,000,000

Table 61: Inflation Single-currency swaps: LIS calculations on the basis of 10% of trades above the LIS rule irrespectively of tenor

LIS calculations on the basis of 10% of trades above LIS rule								
SINGLE CURRENCY INFLATION	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
INFLATION_EUR_1 year	10%	46	100,000,000	13	1,575,000,000	10.00%	27.89%	100,000,000
INFLATION_EUR_2 years	10%	39	100,000,000	19	2,210,000,000	10.05%	32.47%	100,000,000
INFLATION_EUR_3 years	10%	49	50,000,000	34	2,999,000,000	10.15%	45.64%	50,000,000
INFLATION_EUR_4 years	10%	42	70,000,000	20	3,019,437,000	10.05%	43.53%	70,000,000
INFLATION_EUR_5 years	10%	49	87,000,000	20	2,992,150,000	10.00%	43.00%	85,000,000
INFLATION_EUR_6 years	10%	49	69,900,000	23	2,905,390,000	9.96%	39.23%	70,000,000

Table 62: Inflation Single-currency swaps: LIS calculations on the basis of 10% of trades above the LIS rule

Impact of implementation of one LIS per class irrespectively of tenor					
SINGLE CURRENCY INFLATION	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
INFLATION_EUR_1 year	75,000,000	20	2,275,000,000	15.38%	40.28%
INFLATION_EUR_2 years	75,000,000	26	2,801,000,000	13.76%	41.16%
INFLATION_EUR_3 years	75,000,000	13	1,744,000,000	3.88%	26.54%
INFLATION_EUR_4 years	75,000,000	19	2,949,437,000	9.55%	42.52%
INFLATION_EUR_5 years	75,000,000	20	2,992,150,000	10.00%	43.00%
INFLATION_EUR_6 years	75,000,000	17	2,465,490,000	7.36%	33.29%

Table 63: Inflation Single-currency swaps: Impact of the implementation of one LIS per class irrespectively of tenor

LIS calculations on the basis of 30% notional amount above LIS rule							Combination of 2 rules	
SINGLE CURRENCY INFLATION	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
INFLATION_EUR_1 year	30%	100,000,000	14	1,775,000,000	10.77%	31.43%	100,000,000	100,000,000
INFLATION_EUR_2 years	30%	100,000,000	17	2,110,000,000	8.99%	31.00%	100,000,000	100,000,000
INFLATION_EUR_3 years	30%	75,000,000	16	2,044,000,000	4.78%	31.11%	75,000,000	75,000,000
INFLATION_EUR_4 years	30%	100,000,000	9	2,092,337,000	4.52%	30.16%	100,000,000	100,000,000
INFLATION_EUR_5 years	30%	125,500,000	11	2,143,700,000	5.50%	30.80%	125,500,000	125,000,000
INFLATION_EUR_6 years	30%	97,400,000	14	2,296,640,000	6.06%	31.01%	97,400,000	95,000,000

Table 64: Inflation Single-currency swaps: LIS calculations on the basis of 30% of notional amount above the LIS rule

LIS calculations on the basis of 10% of trades above LIS rule irrespectively of tenor								
SINGLE CURRENCY OIS	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
OIS_EUR_1.5 months to 11 years	10%	69	1,000,000,000	1,566	1,852,620,130,592	10.00%	34.09%	1,000,000,000
OIS_USD_1.5 months to 6 years	10%	65	725,232,718	496	616,059,634,574	10.01%	33.10%	725,000,000
OIS_GBP_1.5 months to 6 years	10%	61	1,213,501,259	310	393,462,404,051	10.01%	31.04%	1,225,000,000
OTHERS	10%	71	272,107,856	1,042	761,107,109,620	10.00%	69.88%	275,000,000
OTHERS	30%	71	48,177,851	3,124	988,778,151,431	29.99%	90.78%	50,000,000
OTHERS	30%	71	1,004,270,851	263	327,037,424,797	2.52%	30.03%	1,000,000,000

Table 65: OIS Single-currency swaps: LIS calculations on the basis of 10% of trades above the LIS rule irrespectively of tenor

LIS calculations on the basis of 10% of trades above LIS rule

SINGLE CURRENCY OIS	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
OIS_EUR_1.5 months	10%	65	1,285,000,000	158	233,420,000,000	9.98%	20.83%	1,275,000,000
OIS_EUR_3 months	10%	62	1,500,000,000	91	136,500,000,000	9.97%	22.31%	1,500,000,000
OIS_EUR_6 months	10%	64	1,000,000,000	249	329,220,400,000	10.00%	23.70%	1,000,000,000
OIS_EUR_1 year	10%	63	1,000,000,000	199	232,455,000,000	10.02%	29.32%	1,000,000,000
OIS_EUR_2 years	10%	64	500,000,000	325	300,797,590,000	10.01%	37.74%	500,000,000
OIS_EUR_3 years	10%	64	367,300,000	146	99,246,116,092	10.03%	37.07%	375,000,000
OIS_EUR_4 years	10%	64	300,000,000	87	45,834,968,500	9.97%	39.04%	300,000,000
OIS_EUR_5 years	10%	65	213,800,000	111	47,826,600,000	10.02%	36.45%	225,000,000
OIS_EUR_6 years	10%	63	266,500,000	58	26,750,500,000	10.05%	33.06%	275,000,000
OIS_EUR_7 years	10%	45	250,000,000	20	9,543,286,810	10.05%	39.47%	250,000,000
OIS_EUR_8 years	10%	51	200,000,000	22	7,647,800,000	10.09%	32.65%	200,000,000
OIS_EUR_9 years	10%	56	142,000,000	38	13,120,630,000	9.95%	43.84%	150,000,000
OIS_EUR_10 years	10%	52	86,870,684	27	7,287,800,684	10.04%	51.27%	75,000,000
OIS_EUR_11 years	10%	55	200,000,000	36	12,004,700,000	10.14%	35.48%	200,000,000
OIS_USD_1.5 months	10%	45	1,450,465,436	13	18,928,573,934	9.85%	24.38%	1,450,000,000
OIS_USD_3 months	10%	28	1,450,465,436	9	13,054,188,920	10.47%	24.00%	1,450,000,000
OIS_USD_6 months	10%	63	1,446,839,272	53	76,871,041,922	10.04%	26.17%	1,450,000,000
OIS_USD_1 year	10%	65	1,087,849,077	97	137,313,603,207	9.99%	27.13%	1,100,000,000
OIS_USD_2 years	10%	63	725,232,718	176	205,047,218,028	9.99%	30.37%	725,000,000
OIS_USD_3 years	10%	63	725,232,718	95	86,426,756,669	10.03%	41.76%	725,000,000
OIS_USD_4 years	10%	48	179,495,098	28	9,430,314,201	10.07%	32.42%	175,000,000
OIS_USD_5 years	10%	52	131,992,355	20	3,501,542,326	9.80%	24.38%	125,000,000
OIS_USD_6 years	10%	20	145,046,544	5	1,122,977,970	10.20%	29.77%	150,000,000
OIS_GBP_1.5 months	10%	15	1,328,298,478	4	5,671,419,483	10.53%	21.07%	1,325,000,000
OIS_GBP_3 months	10%	23	1,213,501,259	7	8,737,209,063	9.86%	16.71%	1,225,000,000
OIS_GBP_6 months	10%	52	1,213,501,259	28	37,679,214,083	10.11%	21.45%	1,225,000,000
OIS_GBP_1 year	10%	61	1,213,501,259	77	104,419,356,309	10.01%	19.51%	1,225,000,000
OIS_GBP_2 years	10%	57	1,213,501,259	67	82,129,765,189	10.01%	28.86%	1,225,000,000
OIS_GBP_3 years	10%	59	606,750,629	53	43,398,113,847	9.98%	39.47%	600,000,000
OIS_GBP_4 years	10%	45	606,750,629	28	26,345,112,326	10.04%	50.81%	600,000,000
OIS_GBP_5 years	10%	44	121,350,126	21	4,185,972,592	9.95%	32.55%	125,000,000

SINGLE CURRENCY OIS	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
OIS GBP 6 years	10%	46	167,463,174	25	5,079,655,594	9.96%	28.04%	175,000,000

Table 66: OIS Single-currency swaps: LIS calculations on the basis of 10% of trades above the LIS rule

Impact of implementation of one LIS per class irrespectively of tenor

SINGLE CURRENCY OIS	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
OIS_EUR_1.5 months	1,000,000,000	202	286,281,942,000	12.76%	25.55%
OIS_EUR_3 months	1,000,000,000	132	189,051,000,000	14.46%	30.90%
OIS_EUR_6 months	1,000,000,000	190	270,220,400,000	7.63%	19.45%
OIS_EUR_1 year	1,000,000,000	82	115,455,000,000	4.13%	14.56%
OIS_EUR_2 years	1,000,000,000	59	84,834,000,000	1.82%	10.64%
OIS_EUR_3 years	1,000,000,000	16	19,928,284,092	1.10%	7.44%
OIS_EUR_4 years	1,000,000,000	6	6,254,704,500	0.69%	5.33%
OIS_EUR_5 years	1,000,000,000	7	8,194,800,000	0.63%	6.25%
OIS_EUR_6 years	1,000,000,000	-	-	0.00%	0.00%
OIS_EUR_7 years	1,000,000,000	-	-	0.00%	0.00%
OIS_EUR_8 years	1,000,000,000	1	1,100,000,000	0.46%	4.70%
OIS_EUR_9 years	1,000,000,000	3	3,300,000,000	0.79%	11.03%
OIS_EUR_10 years	1,000,000,000	-	-	0.00%	0.00%
OIS_EUR_11 years	1,000,000,000	-	-	0.00%	0.00%
OIS_USD_1.5 months	725,000,000	62	64,334,669,162	46.97%	82.87%
OIS_USD_3 months	725,000,000	41	44,358,859,183	47.67%	81.56%
OIS_USD_6 months	725,000,000	239	223,368,050,915	45.27%	76.04%
OIS_USD_1 year	725,000,000	431	389,058,848,489	44.39%	76.86%
OIS_USD_2 years	725,000,000	458	409,562,844,444	26.01%	60.66%
OIS_USD_3 years	725,000,000	96	87,151,989,386	10.14%	42.11%
OIS_USD_4 years	725,000,000	5	4,518,925,065	1.80%	15.54%
OIS_USD_5 years	725,000,000	-	-	0.00%	0.00%
OIS_USD_6 years	725,000,000	-	-	0.00%	0.00%
OIS_GBP_1.5 months	1,225,000,000	4	5,671,419,483	10.53%	21.07%
OIS_GBP_3 months	1,225,000,000	2	2,669,702,769	2.82%	5.11%
OIS_GBP_6 months	1,225,000,000	13	19,476,695,202	4.69%	11.09%
OIS_GBP_1 year	1,225,000,000	47	68,005,824,039	6.11%	12.70%

SINGLE CURRENCY OIS	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
OIS_GBP_2 years	1,225,000,000	6	8,106,188,408	0.90%	2.85%
OIS_GBP_3 years	1,225,000,000	6	7,991,787,621	1.13%	7.27%
OIS_GBP_4 years	1,225,000,000	-	-	0.00%	0.00%
OIS_GBP_5 years	1,225,000,000	-	-	0.00%	0.00%
OIS_GBP_6 years	1,225,000,000	-	-	0.00%	0.00%

Table 67: OIS Single-currency swaps: Impact of the implementation of one LIS per class irrespectively of tenor

LIS calculations on the basis of 30% notional amount above LIS rule							Combination of 2 rules	
SINGLE CURRENCY OIS	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
OIS_EUR_1.5 months	30%	1,000,000,000	251	336,281,942,000	15.86%	30.01%	1,285,000,000	1,275,000,000
OIS_EUR_3 months	30%	1,166,000,000	126	183,635,000,000	13.80%	30.01%	1,500,000,000	1,500,000,000
OIS_EUR_6 months	30%	1,000,000,000	336	417,220,400,000	13.49%	30.03%	1,000,000,000	1,000,000,000
OIS_EUR_1 year	30%	1,000,000,000	204	238,455,000,000	10.27%	30.08%	1,000,000,000	1,000,000,000
OIS_EUR_2 years	30%	735,000,000	217	239,197,700,000	6.68%	30.01%	735,000,000	725,000,000
OIS_EUR_3 years	30%	500,000,000	102	80,795,796,092	7.01%	30.18%	500,000,000	500,000,000
OIS_EUR_4 years	30%	400,000,000	55	35,249,468,500	6.30%	30.03%	400,000,000	400,000,000
OIS_EUR_5 years	30%	248,700,000	74	39,576,700,000	6.68%	30.16%	248,700,000	250,000,000
OIS_EUR_6 years	30%	300,000,000	49	24,443,000,000	8.49%	30.21%	300,000,000	300,000,000
OIS_EUR_7 years	30%	350,000,000	12	7,507,686,810	6.03%	31.05%	350,000,000	350,000,000
OIS_EUR_8 years	30%	207,000,000	18	7,047,800,000	8.26%	30.09%	207,000,000	200,000,000
OIS_EUR_9 years	30%	250,000,000	17	9,129,550,000	4.45%	30.50%	250,000,000	250,000,000
OIS_EUR_10 years	30%	250,000,000	7	4,472,530,000	2.60%	31.46%	250,000,000	250,000,000
OIS_EUR_11 years	30%	225,000,000	26	10,194,700,000	7.32%	30.13%	225,000,000	225,000,000
OIS_USD_1.5 months	30%	1,450,465,436	16	24,730,435,677	12.12%	31.86%	1,450,465,436	1,450,000,000
OIS_USD_3 months	30%	1,450,465,436	11	17,405,585,227	12.79%	32.00%	1,450,465,436	1,450,000,000
OIS_USD_6 months	30%	1,087,849,077	62	88,728,596,858	11.74%	30.21%	1,446,839,272	1,450,000,000
OIS_USD_1 year	30%	1,087,849,077	110	152,543,490,281	11.33%	30.13%	1,087,849,077	1,100,000,000
OIS_USD_2 years	30%	725,232,718	172	202,871,519,874	9.77%	30.05%	725,232,718	725,000,000
OIS_USD_3 years	30%	725,232,718	61	62,494,076,982	6.44%	30.19%	725,232,718	725,000,000
OIS_USD_4 years	30%	181,308,179	24	8,890,015,826	8.63%	30.56%	181,308,179	175,000,000
OIS_USD_5 years	30%	122,056,666	26	4,389,009,602	12.75%	30.56%	131,992,355	125,000,000
OIS_USD_6 years	30%	145,046,544	5	1,268,024,514	10.20%	33.62%	145,046,544	150,000,000
OIS_GBP_1.5 months	30%	1,213,501,259	5	8,098,422,000	13.16%	30.09%	1,328,298,478	1,325,000,000
OIS_GBP_3 months	30%	1,213,501,259	12	16,018,216,615	16.90%	30.64%	1,213,501,259	1,225,000,000

SINGLE CURRENCY OIS	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
OIS_GBP_6 months	30%	1,213,501,259	40	53,454,730,446	14.44%	30.43%	1,213,501,259	1,225,000,000
OIS_GBP_1 year	30%	1,213,501,259	123	161,453,915,468	15.99%	30.16%	1,213,501,259	1,225,000,000
OIS_GBP_2 years	30%	1,213,501,259	69	85,770,268,965	10.31%	30.14%	1,213,501,259	1,225,000,000
OIS_GBP_3 years	30%	617,672,141	35	33,061,510,125	6.59%	30.07%	617,672,141	625,000,000
OIS_GBP_4 years	30%	1,213,501,259	12	15,775,516,363	4.30%	30.43%	1,213,501,259	1,225,000,000
OIS_GBP_5 years	30%	121,350,126	18	3,943,272,340	8.53%	30.66%	121,350,126	125,000,000
OIS_GBP_6 years	30%	157,269,763	27	5,551,464,883	10.76%	30.64%	167,463,174	175,000,000

Table 68: OIS Single-currency swaps: LIS calculations on the basis of 30% of notional amount above the LIS rule

LIS calculations on the basis of 10% of trades above LIS rule irrespectively of tenor								
SINGLE CURRENCY FLOAT TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FLOAT-FLOAT__USD__1 year to 11 years	10%	64	362,616,359	534	372,113,860,545	10.00%	40.20%	375,000,000
FLOAT-FLOAT__GBP__1 year to 11 years	10%	61	485,400,503	247	189,088,961,377	10.00%	37.58%	475,000,000
FLOAT-FLOAT__EUR__6 months to 9 years	10%	66	100,000,000	206	60,167,623,748	10.01%	46.04%	100,000,000
FLOAT-FLOAT__JPY__6 months to 9 years	10%	65	212,861,407	291	145,511,348,024	10.00%	77.13%	225,000,000
FLOAT-FLOAT__AUD__1 year to 6 years	10%	60	167,378,475	96	23,103,585,675	10.05%	26.25%	175,000,000
OTHER	10%	68	182,025,189	538	231,685,797,270	10.00%	48.96%	175,000,000
OTHER	30%	68	72,523,272	1,573	356,605,448,638	29.23%	75.36%	75,000,000
OTHER		68		3,616	448,893,585,984	67.19%	94.87%	25,000,000
OTHER	30%	68	369,149,672	203	141,986,607,443	3.77%	30.01%	25,000,000

Table 69: Float to Float Single-currency swaps: LIS calculations on the basis of 10% of trades above the LIS rule irrespectively of tenor

LIS calculations on the basis of 10% of trades above LIS rule								
SINGLE CURRENCY FLOAT TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FLOAT-FLOAT_USD_1 year	10%	61	725,232,718	48	56,205,535,629	10.11%	33.61%	725,000,000
FLOAT-FLOAT_USD_2 years	10%	63	725,232,718	92	83,921,029,171	10.02%	36.14%	725,000,000
FLOAT-FLOAT_USD_3 years	10%	63	507,662,902	72	57,647,298,271	10.06%	36.68%	500,000,000
FLOAT-FLOAT_USD_4 years	10%	64	362,616,359	75	41,905,759,516	10.03%	32.94%	375,000,000
FLOAT-FLOAT_USD_5 years	10%	62	362,616,359	54	26,140,288,080	10.02%	36.00%	375,000,000
FLOAT-FLOAT_USD_6 years	10%	63	217,569,815	67	25,464,016,651	10.01%	32.58%	225,000,000
FLOAT-FLOAT_USD_7 years	10%	61	145,046,544	27	5,936,840,253	9.96%	29.41%	150,000,000
FLOAT-FLOAT_USD_8 years	10%	59	181,308,179	39	10,267,844,818	9.95%	32.38%	175,000,000
FLOAT-FLOAT_USD_9 years	10%	41	210,317,488	14	3,964,038,878	9.72%	36.16%	200,000,000
FLOAT-FLOAT_USD_10 years	10%	45	181,308,179	13	3,311,412,589	10.08%	39.01%	175,000,000
FLOAT-FLOAT_USD_11 years	10%	58	108,784,908	34	5,648,112,406	10.00%	28.43%	100,000,000
FLOAT-FLOAT_GBP_1 year	10%	50	910,125,944	21	23,238,549,104	9.81%	30.18%	900,000,000
FLOAT-FLOAT_GBP_2 years	10%	49	606,750,629	22	19,536,156,764	9.91%	33.06%	600,000,000
FLOAT-FLOAT_GBP_3 years	10%	50	728,100,755	34	33,925,611,989	10.00%	30.97%	725,000,000
FLOAT-FLOAT_GBP_4 years	10%	52	376,185,390	29	19,956,028,199	10.14%	35.10%	375,000,000
FLOAT-FLOAT_GBP_5 years	10%	48	323,155,385	19	12,126,582,010	10.00%	35.65%	325,000,000
FLOAT-FLOAT_GBP_6 years	10%	54	327,645,340	37	17,685,955,665	10.00%	27.80%	325,000,000
FLOAT-FLOAT_GBP_7 years	10%	52	303,375,315	22	10,688,419,993	10.05%	34.13%	300,000,000
FLOAT-FLOAT_GBP_8 years	10%	38	212,362,720	14	6,026,463,321	10.37%	33.38%	200,000,000
FLOAT-FLOAT_GBP_9 years	10%	35	182,025,189	10	2,249,952,684	10.53%	26.94%	175,000,000
FLOAT-FLOAT_GBP_10 years	10%	31	199,014,206	9	1,878,499,948	9.57%	21.32%	200,000,000
FLOAT-FLOAT_GBP_11 years	10%	55	242,700,252	30	13,399,723,599	9.87%	36.69%	250,000,000
FLOAT-FLOAT_EUR_6 months	10%	34	200,000,000	8	3,440,000,000	9.76%	73.78%	200,000,000
FLOAT-FLOAT_EUR_1 year	10%	49	80,000,000	22	6,189,240,785	9.82%	80.92%	75,000,000
FLOAT-FLOAT_EUR_2 years	10%	56	100,000,000	39	14,168,158,000	10.05%	85.27%	100,000,000
FLOAT-FLOAT_EUR_3 years	10%	55	100,000,000	33	7,947,044,392	10.03%	71.53%	100,000,000
FLOAT-FLOAT_EUR_4 years	10%	52	79,870,000	26	7,211,518,813	10.04%	83.27%	75,000,000
FLOAT-FLOAT_EUR_5 years	10%	57	100,000,000	22	6,807,500,000	9.82%	76.70%	100,000,000
FLOAT-FLOAT_EUR_6 years	10%	58	72,863,000	21	3,409,663,319	10.24%	67.49%	75,000,000
FLOAT-FLOAT_EUR_7 years	10%	48	50,000,000	18	3,331,599,518	10.23%	78.96%	50,000,000
FLOAT-FLOAT_EUR_8 years	10%	38	200,000,000	10	3,476,470,000	10.10%	65.24%	200,000,000
FLOAT-FLOAT_EUR_9 years	10%	38	200,000,000	7	3,250,000,000	9.46%	55.75%	200,000,000

SINGLE CURRENCY FLOAT TO FLOAT	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
FLOAT-FLOAT_JPY_6 months	10%	24	354,769,011	7	4,789,381,649	10.61%	41.29%	350,000,000
FLOAT-FLOAT_JPY_1 year	10%	36	262,529,068	20	15,727,265,028	10.05%	53.95%	275,000,000
FLOAT-FLOAT_JPY_2 years	10%	58	567,630,418	41	34,651,069,799	9.93%	40.21%	575,000,000
FLOAT-FLOAT_JPY_3 years	10%	59	283,815,209	41	18,868,531,759	10.12%	37.41%	275,000,000
FLOAT-FLOAT_JPY_4 years	10%	57	236,134,254	32	17,563,265,614	9.91%	44.57%	225,000,000
FLOAT-FLOAT_JPY_5 years	10%	61	156,098,365	32	10,151,431,435	10.09%	40.20%	150,000,000
FLOAT-FLOAT_JPY_6 years	10%	59	141,907,604	57	14,509,484,921	10.02%	36.27%	150,000,000
FLOAT-FLOAT_JPY_7 years	10%	47	80,177,796	20	3,379,671,507	10.15%	37.33%	75,000,000
FLOAT-FLOAT_JPY_8 years	10%	57	141,907,604	29	6,289,415,981	9.90%	34.67%	150,000,000
FLOAT-FLOAT_JPY_9 years	10%	44	99,335,323	13	2,500,411,990	10.32%	36.45%	100,000,000
FLOAT-FLOAT_AUD_1 year	10%	25	234,329,865	10	2,811,958,382	9.62%	21.33%	225,000,000
FLOAT-FLOAT_AUD_2 years	10%	28	167,378,475	8	2,187,301,913	9.52%	28.62%	175,000,000
FLOAT-FLOAT_AUD_3 years	10%	48	200,854,170	26	6,126,721,703	10.00%	22.23%	200,000,000
FLOAT-FLOAT_AUD_4 years	10%	32	160,683,336	16	3,241,786,306	10.26%	24.67%	150,000,000
FLOAT-FLOAT_AUD_5 years	10%	41	167,378,475	20	5,372,849,051	9.90%	31.32%	175,000,000
FLOAT-FLOAT_AUD_6 years	10%	33	97,079,516	15	1,770,864,267	10.07%	18.93%	100,000,000

Table 70: Float to Float Single-currency swaps: LIS calculations on the basis of 10% of trades above the LIS rule

Impact of implementation of one LIS per class irrespectively of tenor					
SINGLE CURRENCY FLOAT TO FLOAT	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
FLOAT-FLOAT_USD_1 year	375,000,000	125	107,737,446,801	26.32%	64.43%
FLOAT-FLOAT_USD_2 years	375,000,000	127	103,206,417,603	13.83%	44.45%
FLOAT-FLOAT_USD_3 years	375,000,000	77	59,895,519,697	10.75%	38.12%
FLOAT-FLOAT_USD_4 years	375,000,000	48	32,049,121,648	6.42%	25.19%
FLOAT-FLOAT_USD_5 years	375,000,000	34	18,858,951,593	6.31%	25.97%
FLOAT-FLOAT_USD_6 years	375,000,000	23	13,043,681,126	3.44%	16.69%
FLOAT-FLOAT_USD_7 years	375,000,000	1	539,643,862	0.37%	2.67%
FLOAT-FLOAT_USD_8 years	375,000,000	2	979,064,169	0.51%	3.09%
FLOAT-FLOAT_USD_9 years	375,000,000	-	-	0.00%	0.00%
FLOAT-FLOAT_USD_10 years	375,000,000	1	877,531,589	0.78%	10.34%
FLOAT-FLOAT_USD_11 years	375,000,000	-	-	0.00%	0.00%
FLOAT-FLOAT_GBP_1 year	475,000,000	63	48,992,443,617	29.44%	63.63%
FLOAT-FLOAT_GBP_2 years	475,000,000	42	30,709,845,789	18.92%	51.97%
FLOAT-FLOAT_GBP_3 years	475,000,000	75	57,534,674,428	22.06%	52.52%
FLOAT-FLOAT_GBP_4 years	475,000,000	21	16,665,619,536	7.34%	29.32%
FLOAT-FLOAT_GBP_5 years	475,000,000	11	9,444,258,828	5.79%	27.76%
FLOAT-FLOAT_GBP_6 years	475,000,000	14	9,480,235,883	3.78%	14.90%
FLOAT-FLOAT_GBP_7 years	475,000,000	8	5,746,193,417	3.65%	18.35%
FLOAT-FLOAT_GBP_8 years	475,000,000	3	3,035,182,718	2.22%	16.81%
FLOAT-FLOAT_GBP_9 years	475,000,000	-	-	0.00%	0.00%
FLOAT-FLOAT_GBP_10 years	475,000,000	-	-	0.00%	0.00%
FLOAT-FLOAT_GBP_11 years	475,000,000	13	8,936,708,670	4.28%	24.47%
FLOAT-FLOAT_EUR_6 months	100,000,000	9	3,640,000,000	10.98%	78.07%
FLOAT-FLOAT_EUR_1 year	100,000,000	15	5,537,202,707	6.70%	72.39%
FLOAT-FLOAT_EUR_2 years	100,000,000	37	13,968,158,000	9.54%	84.07%
FLOAT-FLOAT_EUR_3 years	100,000,000	23	6,947,044,392	6.99%	62.53%
FLOAT-FLOAT_EUR_4 years	100,000,000	20	6,631,648,813	7.72%	76.57%
FLOAT-FLOAT_EUR_5 years	100,000,000	21	6,707,500,000	9.38%	75.57%

SINGLE CURRENCY FLOAT TO FLOAT	LIS value rounded	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)
FLOAT-FLOAT_EUR_6 years	100,000,000	10	2,401,400,319	4.88%	47.53%
FLOAT-FLOAT_EUR_7 years	100,000,000	10	2,741,599,518	5.68%	64.98%
FLOAT-FLOAT_EUR_8 years	100,000,000	14	3,953,570,000	14.14%	74.19%
FLOAT-FLOAT_EUR_9 years	100,000,000	16	4,539,500,000	21.62%	77.86%
FLOAT-FLOAT_JPY_6 months	225,000,000	12	6,332,130,170	18.18%	54.59%
FLOAT-FLOAT_JPY_1 year	225,000,000	23	16,512,723,618	11.56%	56.64%
FLOAT-FLOAT_JPY_2 years	225,000,000	108	60,317,188,670	26.15%	69.99%
FLOAT-FLOAT_JPY_3 years	225,000,000	52	21,695,756,962	12.84%	43.02%
FLOAT-FLOAT_JPY_4 years	225,000,000	34	18,035,534,121	10.53%	45.77%
FLOAT-FLOAT_JPY_5 years	225,000,000	17	7,189,110,193	5.36%	28.47%
FLOAT-FLOAT_JPY_6 years	225,000,000	21	8,581,720,469	3.69%	21.45%
FLOAT-FLOAT_JPY_7 years	225,000,000	4	1,204,937,469	2.03%	13.31%
FLOAT-FLOAT_JPY_8 years	225,000,000	8	2,660,767,583	2.73%	14.67%
FLOAT-FLOAT_JPY_9 years	225,000,000	3	1,064,307,033	2.38%	15.51%
FLOAT-FLOAT_AUD_1 year	175,000,000	17	4,308,321,949	16.35%	32.68%
FLOAT-FLOAT_AUD_2 years	175,000,000	7	2,019,923,437	8.33%	26.43%
FLOAT-FLOAT_AUD_3 years	175,000,000	38	8,388,339,658	14.62%	30.44%
FLOAT-FLOAT_AUD_4 years	175,000,000	10	2,264,296,011	6.41%	17.23%
FLOAT-FLOAT_AUD_5 years	175,000,000	19	5,205,470,576	9.41%	30.35%
FLOAT-FLOAT_AUD_6 years	175,000,000	2	401,708,340	1.34%	4.29%

Table 71: Float to Float Single-currency swaps: Impact of the implementation of one LIS per class irrespectively of tenor

LIS calculations on the basis of 30% of notional amount above LIS rule							Combination of 2 rules	
SINGLE CURRENCY FLOAT TO FLOAT	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
FLOAT-FLOAT USD 1 year	30%	725,232,718	39	50,403,673,886	8.21%	30.14%	725,232,718	725,000,000
FLOAT-FLOAT USD 2 years	30%	725,232,718	72	70,141,607,534	7.84%	30.21%	725,232,718	725,000,000
FLOAT-FLOAT USD 3 years	30%	725,232,718	53	47,385,255,315	7.40%	30.15%	725,232,718	725,000,000
FLOAT-FLOAT USD 4 years	30%	362,616,359	64	38,279,595,927	8.56%	30.09%	362,616,359	375,000,000
FLOAT-FLOAT USD 5 years	30%	362,616,359	41	21,788,891,773	7.61%	30.01%	362,616,359	375,000,000
FLOAT-FLOAT USD 6 years	30%	246,579,124	58	23,636,430,202	8.67%	30.24%	246,579,124	250,000,000
FLOAT-FLOAT USD 7 years	30%	145,046,544	27	6,081,886,796	9.96%	30.13%	145,046,544	150,000,000
FLOAT-FLOAT USD 8 years	30%	181,308,179	34	9,542,612,101	8.67%	30.09%	181,308,179	175,000,000
FLOAT-FLOAT USD 9 years	30%	210,317,488	10	3,333,086,414	6.94%	30.40%	210,317,488	200,000,000
FLOAT-FLOAT USD 10 years	30%	181,308,179	8	2,586,179,872	6.20%	30.46%	181,308,179	175,000,000
FLOAT-FLOAT USD 11 years	30%	108,784,908	36	5,974,467,129	10.59%	30.07%	108,784,908	100,000,000
FLOAT-FLOAT GBP 1 year	30%	910,125,944	20	23,238,549,104	9.35%	30.18%	910,125,944	900,000,000
FLOAT-FLOAT GBP 2 years	30%	606,750,629	19	18,322,655,505	8.56%	31.01%	606,750,629	600,000,000
FLOAT-FLOAT GBP 3 years	30%	728,100,755	32	33,197,511,234	9.41%	30.30%	728,100,755	725,000,000
FLOAT-FLOAT GBP 4 years	30%	450,815,718	21	17,116,435,254	7.34%	30.11%	450,815,718	450,000,000
FLOAT-FLOAT GBP 5 years	30%	337,717,400	13	10,496,243,069	6.84%	30.86%	337,717,400	350,000,000
FLOAT-FLOAT GBP 6 years	30%	322,305,934	41	19,313,382,203	11.08%	30.35%	327,645,340	325,000,000
FLOAT-FLOAT GBP 7 years	30%	334,926,347	17	9,443,610,402	7.76%	30.15%	334,926,347	325,000,000
FLOAT-FLOAT GBP 8 years	30%	214,182,972	11	5,601,737,880	8.15%	31.03%	214,182,972	225,000,000
FLOAT-FLOAT GBP 9 years	30%	172,317,179	11	2,604,295,051	11.58%	31.19%	182,025,189	175,000,000
FLOAT-FLOAT GBP 10 years	30%	182,025,189	13	2,788,625,893	13.83%	31.65%	199,014,206	200,000,000
FLOAT-FLOAT GBP 11 years	30%	253,015,012	20	11,205,106,573	6.58%	30.68%	253,015,012	250,000,000
FLOAT-FLOAT EUR 6 months	30%	420,000,000	1	1,716,000,000	1.22%	36.80%	420,000,000	425,000,000
FLOAT-FLOAT EUR 1 year	30%	500,000,000	2	2,500,000,000	0.89%	32.68%	500,000,000	500,000,000
FLOAT-FLOAT EUR 2 years	30%	750,000,000	5	5,250,000,000	1.29%	31.60%	750,000,000	750,000,000
FLOAT-FLOAT EUR 3 years	30%	350,000,000	6	3,419,825,392	1.82%	30.78%	350,000,000	350,000,000
FLOAT-FLOAT EUR 4 years	30%	500,000,000	3	2,950,000,000	1.16%	34.06%	500,000,000	500,000,000
FLOAT-FLOAT EUR 5 years	30%	400,000,000	4	3,000,000,000	1.79%	33.80%	400,000,000	400,000,000
FLOAT-FLOAT EUR 6 years	30%	194,400,319	4	1,651,400,319	1.95%	32.69%	194,400,319	200,000,000

SINGLE CURRENCY FLOAT TO FLOAT	%	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value combined rule	LIS value rounded
FLOAT-FLOAT_EUR_7 years	30%	500,000,000	2	1,621,099,518	1.14%	38.42%	500,000,000	500,000,000
FLOAT-FLOAT_EUR_8 years	30%	453,360,000	2	1,656,720,000	2.02%	31.09%	453,360,000	450,000,000
FLOAT-FLOAT_EUR_9 years	30%	1,000,000,000	1	2,000,000,000	1.35%	34.30%	1,000,000,000	1,000,000,000
FLOAT-FLOAT_JPY_6 months	30%	532,153,517	3	3,725,074,616	4.55%	32.12%	532,153,517	525,000,000
FLOAT-FLOAT_JPY_1 year	30%	709,538,022	6	8,750,732,426	3.02%	30.02%	709,538,022	700,000,000
FLOAT-FLOAT_JPY_2 years	30%	709,538,022	27	25,852,798,325	6.54%	30.00%	709,538,022	700,000,000
FLOAT-FLOAT_JPY_3 years	30%	354,769,011	29	15,157,647,904	7.16%	30.05%	354,769,011	350,000,000
FLOAT-FLOAT_JPY_4 years	30%	530,734,440	16	12,252,799,241	4.95%	31.09%	530,734,440	525,000,000
FLOAT-FLOAT_JPY_5 years	30%	212,861,407	18	7,614,833,006	5.68%	30.16%	212,861,407	225,000,000
FLOAT-FLOAT_JPY_6 years	30%	142,049,512	39	12,097,055,646	6.85%	30.24%	142,049,512	150,000,000
FLOAT-FLOAT_JPY_7 years	30%	140,914,251	13	2,736,404,336	6.60%	30.22%	140,914,251	150,000,000
FLOAT-FLOAT_JPY_8 years	30%	141,907,604	23	5,579,877,959	7.85%	30.76%	141,907,604	150,000,000
FLOAT-FLOAT_JPY_9 years	30%	107,495,010	8	2,080,010,712	6.35%	30.32%	107,495,010	100,000,000
FLOAT-FLOAT_AUD_1 year	30%	200,854,170	15	4,107,467,779	14.42%	31.16%	234,329,865	225,000,000
FLOAT-FLOAT_AUD_2 years	30%	167,378,475	8	2,354,680,388	9.52%	30.81%	167,378,475	175,000,000
FLOAT-FLOAT_AUD_3 years	30%	184,116,323	37	8,388,339,658	14.23%	30.44%	200,854,170	200,000,000
FLOAT-FLOAT_AUD_4 years	30%	159,344,308	20	4,041,185,903	12.82%	30.76%	160,683,336	150,000,000
FLOAT-FLOAT_AUD_5 years	30%	180,768,753	18	5,205,470,576	8.91%	30.35%	180,768,753	175,000,000
FLOAT-FLOAT_AUD_6 years	30%	66,951,390	27	2,815,975,465	18.12%	30.11%	97,079,516	100,000,000

Table 72: Float to Float Single-currency swaps: LIS calculations on the basis of 30% of notional amount above the LIS rule

LIS calculations								
SINGLE CURRENCY FIXED TO FIXED	%	Num of days traded	LIS value	Trades above LIS	Notional Amount above LIS	Trades above LIS (%)	Notional Amount above LIS (%)	LIS value rounded
ALL	10%	34	137,267,093	8	4,224,205,602	10.67%	76.31%	125,000,000
ALL	30%	34	35,500,000	22	5,062,075,780	29.33%	91.45%	25,000,000
ALL	30%	34	809,285,939	1	2,289,285,939	1.33%	41.36%	800,000,000

Table 73: Fixed to Fixed Single-currency swaps: LIS calculations

Annex 3.7.3 Explanatory example for setting the large in scale thresholds and the size specific to the instrument thresholds

53. The below table shows the distribution of 100 trades, assumed to be executed over a calendar year, sorted in decreasing order for a sub-class of financial instruments for which the large in scale threshold should be set according to the option 2 methodology, as proposed in this chapter of the CP. In particular, the following information is provided:

- i. “Trade number”, corresponds to the number assigned to the trade when sorted by date and time of execution;
- ii. “Number of trades below the trade value” corresponds to the number of trades below each trade value;
- iii. Cumulative number of trades below the trade value (%), corresponds to the number of trades below each trade value expressed as a percentage of the total number of trades for the sub-class;
- iv. “Trade value in €”, corresponds to the value of an executed trade in Euro;
- v. “Cumulative volume in €”, corresponds to the sum of the trade values below each trade value;
- vi. “Cumulative volume in € (%)”, corresponds to the sum of the trade values below each trade value expressed as a percentage of the total volume for the sub-class.

54. The thresholds have been selected as follows:

- i. €249,679,639 is the large in scale threshold selected according to criterion 1. Indeed, since the total number of trades for the sub-class is 100 the 10th trade value (counting from the start of the distribution) is the value such that 90 trades (i.e. 90% of the trades) are below such value;
- ii. €499,360,947 (corresponding to trade#42) is the large in scale threshold selected according to criterion 2. Indeed, since the total volume of trades for the sub-class is €17,675,957,490, trade#71 is the one for which the total volume below such value is 70% of the total volume for the sub-class;
- iii. the last step of the procedure consists of selecting the greater of these two values and rounding it. As a result, the large in scale for the class would be €500,000,000 which is €499,360,947 rounded up by €25m.

Trade number	Number of trades below the trade value	Cumulative number of trades below the trade value (%)	Trade value in €	Cumulative volume in € below the trade value	Cumulative volume in € (%)	LIS calculation on the basis of the 2 criteria
trade#28	99	99%	1,060,589,457	16,615,368,033	94.00%	
trade#87	98	98%	1,060,573,841	15,554,794,192	88.00%	
trade#16	97	97%	1,060,572,190	14,494,222,002	82.00%	
trade#65	96	96%	1,060,557,025	13,433,664,977	76.00%	
trade#71	95	95%	1,060,555,480	12,373,109,497	70.00%	LIS based on criteria #2 => 499,360,948
trade#42	94	94%	499,360,948	11,873,748,549	67.17%	
trade#38	93	93%	249,680,474	11,624,068,076	65.76%	
trade#88	92	92%	249,679,820	11,374,388,256	64.35%	
trade#95	91	91%	249,679,804	11,124,708,452	62.94%	
trade#1	90	90%	249,679,639	10,875,028,813	61.52%	LIS based on criteria #1 => 249,679,639
trade#12	89	89%	249,679,474	10,625,349,339	60.11%	
trade#20	88	88%	249,679,313	10,375,670,027	58.70%	
trade#9	87	87%	249,677,662	10,125,992,365	57.29%	
trade#61	86	86%	249,673,008	9,876,319,357	55.87%	
trade#99	85	85%	249,657,392	9,626,661,965	54.46%	
trade#74	84	84%	249,657,231	9,377,004,734	53.05%	
trade#94	83	83%	249,655,580	9,127,349,155	51.64%	
trade#30	82	82%	249,655,424	8,877,693,731	50.22%	
trade#4	81	81%	249,639,008	8,628,054,723	48.81%	
trade#39	80	80%	249,622,497	8,378,432,226	47.40%	
trade#41	79	79%	249,621,982	8,128,810,244	45.99%	
trade#23	78	78%	249,465,517	7,879,344,728	44.58%	
trade#98	77	77%	249,309,052	7,630,035,676	43.17%	
trade#66	76	76%	249,293,637	7,380,742,039	41.76%	
trade#48	75	75%	163,293,637	7,217,448,402	40.83%	
trade#72	74	74%	163,128,221	7,054,320,181	39.91%	
trade#43	73	73%	163,126,372	6,891,193,810	38.99%	
trade#14	72	72%	163,126,208	6,728,067,602	38.06%	
trade#54	71	71%	163,109,693	6,564,957,909	37.14%	
trade#29	70	70%	135,924,744	6,429,033,165	36.37%	
trade#11	69	69%	119,378,328	6,309,654,837	35.70%	
trade#27	68	68%	119,226,687	6,190,428,150	35.02%	
trade#13	67	67%	118,332,531	6,072,095,619	34.35%	
trade#63	66	66%	116,748,380	5,955,347,239	33.69%	
trade#58	65	65%	116,258,882	5,839,088,357	33.03%	
trade#37	64	64%	113,613,237	5,725,475,120	32.39%	
trade#19	63	63%	112,157,081	5,613,318,039	31.76%	
trade#52	62	62%	112,157,080	5,501,160,959	31.12%	
trade#57	61	61%	112,108,139	5,389,052,820	30.49%	
trade#91	60	60%	112,106,594	5,276,946,226	29.85%	
trade#36	59	59%	112,105,033	5,164,841,193	29.22%	
trade#45	58	58%	112,103,379	5,052,737,814	28.59%	
trade#32	57	57%	112,102,834	4,940,634,980	27.95%	
trade#35	56	56%	112,086,288	4,828,548,692	27.32%	
trade#81	55	55%	93,405,240	4,735,143,452	26.79%	
trade#80	54	54%	93,388,724	4,641,754,728	26.26%	
trade#83	53	53%	93,337,073	4,548,417,655	25.73%	
trade#56	52	52%	93,180,612	4,455,237,043	25.21%	
trade#24	51	51%	92,762,064	4,362,474,979	24.68%	
trade#26	50	50%	92,761,913	4,269,713,066	24.16%	
trade#78	49	49%	92,760,368	4,176,952,698	23.63%	
trade#77	48	48%	92,744,723	4,084,207,975	23.11%	
trade#67	47	47%	92,728,207	3,991,479,768	22.58%	

Trade number	Number of trades below the trade value	Cumulative number of trades below the trade value (%)	Trade value in €	Cumulative volume in € below the trade value	Cumulative volume in € (%)	LIS calculation on the basis of the 2 criteria
trade#31	46	46%	92,686,666	3,898,793,102	22.06%	
trade#34	45	45%	92,686,502	3,806,106,600	21.53%	
trade#10	44	44%	92,670,828	3,713,435,772	21.01%	
trade#64	43	43%	92,670,663	3,620,765,109	20.48%	
trade#97	42	42%	92,654,117	3,528,110,992	19.96%	
trade#76	41	41%	92,652,572	3,435,458,420	19.44%	
trade#5	40	40%	92,651,008	3,342,807,412	18.91%	
trade#47	39	39%	92,634,543	3,250,172,869	18.39%	
trade#25	38	38%	92,632,889	3,157,539,980	17.86%	
trade#7	37	37%	92,631,235	3,064,908,745	17.34%	
trade#51	36	36%	92,474,770	2,972,433,975	16.82%	
trade#85	35	35%	92,474,606	2,879,959,369	16.29%	
trade#90	34	34%	92,474,458	2,787,484,911	15.77%	
trade#69	33	33%	92,474,303	2,695,010,608	15.25%	
trade#59	32	32%	92,472,742	2,602,537,866	14.72%	
trade#21	31	31%	92,468,088	2,510,069,778	14.20%	
trade#49	30	30%	92,402,624	2,417,667,154	13.68%	
trade#15	29	29%	90,836,983	2,326,830,171	13.16%	
trade#46	28	28%	89,182,419	2,237,647,752	12.66%	
trade#53	27	27%	89,097,435	2,148,550,317	12.16%	
trade#79	26	26%	89,091,990	2,059,458,327	11.65%	
trade#18	25	25%	89,076,344	1,970,381,983	11.15%	
trade#92	24	24%	89,074,690	1,881,307,293	10.64%	
trade#89	23	23%	89,073,175	1,792,234,118	10.14%	
trade#84	22	22%	89,071,521	1,703,162,597	9.64%	
trade#96	21	21%	89,066,365	1,614,096,232	9.13%	
trade#22	20	20%	89,061,781	1,525,034,451	8.63%	
trade#2	19	19%	88,974,316	1,436,060,135	8.12%	
trade#73	18	18%	88,973,605	1,347,086,530	7.62%	
trade#44	17	17%	88,966,494	1,258,120,036	7.12%	
trade#17	16	16%	88,964,753	1,169,155,283	6.61%	
trade#70	15	15%	88,963,099	1,080,192,184	6.11%	
trade#86	14	14%	88,958,328	991,233,856	5.61%	
trade#50	13	13%	88,956,767	902,277,089	5.10%	
trade#60	12	12%	88,956,311	813,320,778	4.60%	
trade#82	11	11%	88,877,324	724,443,454	4.10%	
trade#6	10	10%	88,876,540	635,566,914	3.60%	
trade#8	9	9%	88,876,075	546,690,839	3.09%	
trade#40	8	8%	79,647,941	467,042,898	2.64%	
trade#100	7	7%	77,042,940	389,999,958	2.21%	
trade#55	6	6%	76,181,586	313,818,372	1.78%	
trade#62	5	5%	74,765,779	239,052,593	1.35%	
trade#3	4	4%	68,353,301	170,699,292	0.97%	
trade#75	3	3%	59,315,371	111,383,921	0.63%	
trade#93	2	2%	44,560,393	66,823,528	0.38%	
trade#33	1	1%	38,775,753	28,047,775	0.16%	
trade#68	0	0%	28,047,775	-	0.00%	

Supplementary deferral regime at the discretion of the NCA

Background/Mandate

Article 11(3) of MiFIR

3. *Competent authorities may, in conjunction with an authorisation of deferred publication:*

- (a) request the publication of limited details of a transaction or details of several transactions in an aggregated form, or a combination thereof, during the time period of deferral;*
- (b) allow the omission of the publication of the volume of an individual transaction during an extended time period of deferral;*
- (c) regarding non-equity instruments that are not sovereign debt, allow the publication of several transactions in an aggregated form during an extended time period of deferral;*
- (d) regarding sovereign debt instruments, allow the publication of several transactions in an aggregated form for an indefinite period of time.*

In relation to sovereign debt instruments, points (b) and (d) may be used either separately or consecutively whereby once the volume omission extended period lapses, the volumes could then be published in aggregated form.

In relation to all other financial instruments, when the deferral time period lapses, the outstanding details of the transaction and all the details of the transactions on an individual basis shall be published.

Article 11(4) of MiFIR

4. *ESMA shall develop draft regulatory technical standards to specify the following in such a way as to enable the publication of information required under Article 64 of Directive 2014/65/EU:*

[...]

- (d) the criteria to be applied when determining the size or type of a transaction for which deferred publication and publication of limited details of a transaction, or publication of details of several transactions in an aggregated form, or omission of the publication of the volume of a transaction with particular reference to allowing an extended length of time of deferral for certain financial instruments depending on their liquidity, is allowed under paragraph 3.*

55. According to Article 11(3) of MiFIR, NCAs may, in conjunction with an authorisation of deferred publication, supplement the deferred publication regime with additional features. Combined with the deferred publication regime, some of these features effectively provide additional transparency (e.g. publication of limited details during the time period of deferral) while others provide less transparency (e.g. extended time of deferral).
56. Article 11(4)(d) of MiFIR requires ESMA to draft technical standards specifying the criteria to be applied when determining the features described in Article 11(3) of MiFIR.
57. The possibility for NCAs to grant an authorization of deferred publication and the possibility to allow or request additional features listed in Article 11(3) of MiFIR means that there are effectively 3 different transparency regimes that may apply for transactions eligible for a deferral:
 - i. Real-time transparency if the NCA does not allow deferred publication
 - ii. Deferred publication if the NCA allows deferred publication
 - iii. Deferred publication with supplementary features (e.g. volume omission for an extended period of deferral) if the NCA allows deferred publication in conjunction with any additional feature listed in Article 11(3) of MiFIR.
58. ESMA is therefore of the view that, while MiFIR provides for a European framework for post-trade transparency, it does not require each NCA to adopt the same level of transparency.

Analysis following feedback from stakeholders

59. In the DP, ESMA proposed that the possibility for the NCA to request the publication of limited details as described in Article 11(3)(a) of MiFIR should be specified as: the-real time publication of all details except the volume (which could be omitted during the deferral period) for the large in scale and the size specific deferrals; for illiquid instruments, the publication of all the details of the transaction by the End of Day, except the volume which could be omitted until T+1, when the deferral period lapses. After further consideration, ESMA is of the view that when an NCA decides to request additional transparency during a deferral period, the price should be published in real time. Therefore ESMA does not intend to prescribe a specific time for the publication of additional details as per Article 11(3)(a) of MiFIR.
60. In the DP, ESMA did not put forward a specific proposal regarding the possibility to aggregate transactions during the deferral period (Article 11(3)(a) of MiFIR) or during an extended deferral period (Article 11(3)(d)). ESMA did also not propose specific figures for the “extended time period of deferral” mentioned in Articles 11(3)(b) and 11(3)(c) of MiFIR. With regard to sovereign debt, ESMA proposed that aggregation and volume omission for an extended/indefinite period of time (Article 11(3)(b) and 11(3)(d) of MiFIR)

be restricted to limited circumstances where conditions are such that they might impact on the market as a whole, create uncertainty, or affect financial stability. Some respondents supported ESMA's proposal but many others disagreed, pointing out that MiFIR does not restrict Article 11(3) of MiFIR to limited circumstances. ESMA agrees that MiFIR does not provide for such limitation and that the decision to apply any of the features in Article 11(3) should be left to the sole discretion of the NCAs.

61. ESMA also notes that it is necessary to clarify whether it is possible to combine different features of Article 11 (3) and which combinations are allowed among the various possible combinations. ESMA is of the view that only the combination of Articles 11 (3) (b) and Articles 11 (3) (d) in the case of sovereign debt should be allowed, as this combination is the only one specifically mentioned in MiFIR.

Proposal

62. ESMA proposes to set to 4 weeks the length of the extended time period of deferral described in Articles 11(3)(b) and 11(3)(c)
63. With regard to the publication of transactions in an aggregated form:
 - a. as referred to in Article 11(3)(a) of MiFIR, ESMA proposes a daily aggregation of transactions during the 48h time period of deferral.
 - b. as referred to in Article 11(3)(c) of MiFIR ESMA proposes that transactions benefitting from a deferral would be aggregated by the respective trading venues and APAs over the course of one calendar week and would be published on the following Tuesday before 9.00 CET. Once the four week period lapses transactions would be published on an individual basis.
 - c. as referred to in 11(3)(d) of MiFIR, ESMA proposes that transactions benefitting from a deferral would be aggregated by the respective trading venues and APAs over the course of one calendar week and would be published on the following Tuesday before 9.00 CET.
64. For sovereign debt instruments for which the options in Article 11 (3) (b) and (d) are applied consecutively ESMA proposes that transactions are aggregated over the course of one calendar week and published on the Tuesday following the expiry of the extended period of deferral of four weeks counting from the last day of the calendar week before 9.00 CET.
65. ESMA is aware that this proposal implies that transactions for which NCAs are applying the option under Article 11(3)(c) and (d) would benefit from slightly longer and varying periods of deferrals before aggregated data would be published and in the cases covered by Article 11(3)(c) to slightly varying extended periods of deferrals. However, ESMA considers that this is a pragmatic solution which avoids overburdening trading venues and APAs with potentially numerous aggregation periods that might lead to

confusion in markets. Furthermore, it addresses concerns that too short periods for aggregating transactions might lead to situations where only very few transactions are aggregated thereby exposing risk positions to the public and impairing liquidity.

66. For the content of the aggregated data to be published, ESMA proposes to include the weighted average price, the total volume traded and the total number of transactions. ESMA proposes that the data shall only be aggregated at an instrument level.

67. ESMA proposes that Articles 11 (3) (a), (b), (c) and (d) shall not be used in combination, except in the case of sovereign debt where a combination of Articles 11 (3) (b) and (d) is allowed.

Q83. Do you agree with ESMA’s proposal in relation to the supplementary deferral regime at the discretion of the NCA? Please provide reasons for your answer.

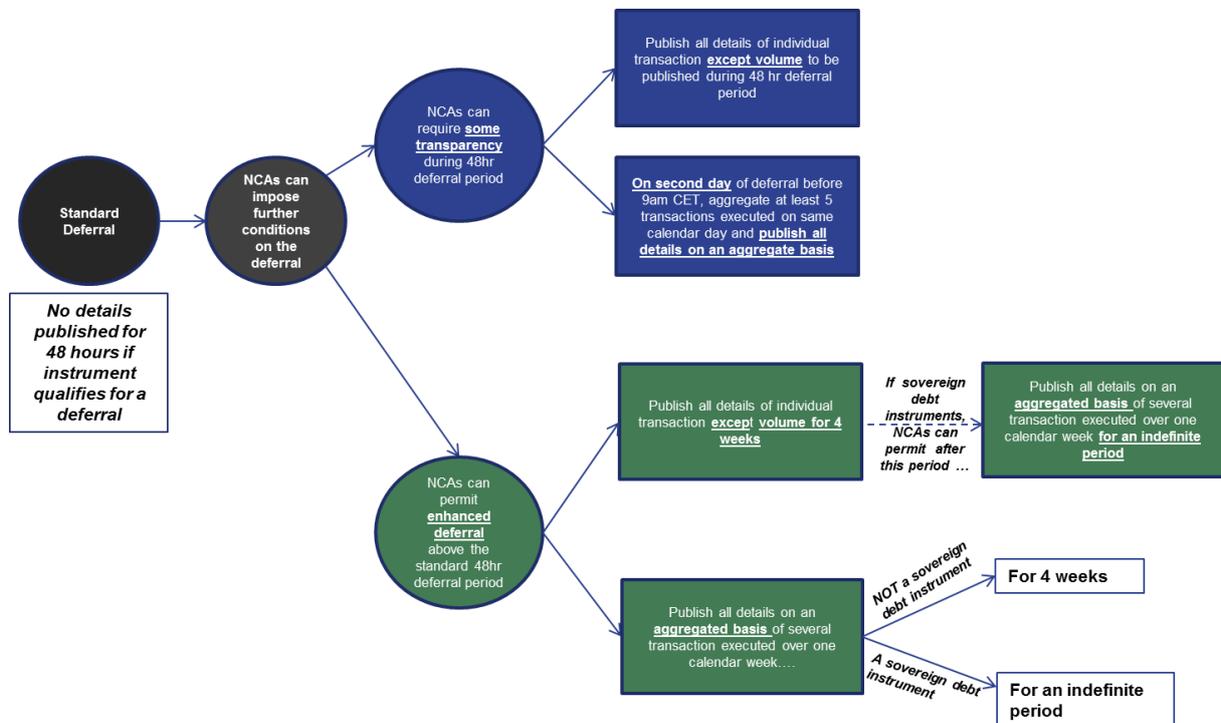


Chart 16: General description of the supplementary deferral regime at the discretion of the NCA (Part I)

		Article 10(1)(a)(i) of the draft RTS	Article 10(1)(a)(ii) of the draft RTS	Article 10(1)(b) of the draft RTS	Article 10(1)(c) of the draft RTS (non-sovereign debt only)	Article 10(1)(d) of the draft RTS (sovereign debt only)	Article 10(1)(b) and Article 10(1)(d) of the draft RTS applied consecutively
Initial publication	Content	All details except the quantity	Aggregated publication of at least 5 transactions using the flag "G"	All details except the quantity	Aggregated publication of transactions executed over the course of one calendar week using the flag "J"	Aggregated publication of transactions executed over the course of one calendar week using the flag "K"	All details except the quantity
	Timing	As close to real time as possible	The next day before 09.00 am CET	After the initial 48 hours of deferral (in accordance with Article 11(1) of MiFIR)	The following Tuesday before 09.00 am CET	The following Tuesday before 09.00 am CET for an indefinite period of time	After the initial 48 hours of deferral (in accordance with Article 11(1) of MiFIR) and for four weeks
Second publication	Content	All details of the transaction and using the flag "U"	All individual transactions with all details	All details of the transaction and using the flag "V"	All individual transactions with all details and using the flag "J"	-	Aggregated publication of transactions executed over the course of one calendar week using the flag "w"
	Timing	48 hours after initial publication	48 hours after initial publication	Four weeks after initial publication, the next working day before 09.00 am CET	Four weeks after initial publication, the next working day before 09.00 am CET	-	The following Tuesday before 09.00 am CET for an indefinite period of time

Table 74: General description of the supplementary deferral regime at the discretion of the NCA (Part II)

Relevant annexes:

Annex B: Draft RTS 9: Draft regulatory technical standards on transparency requirements in respect of bonds, structured finance products, emission allowances and derivatives

3.8. Temporary suspension of transparency requirements

Background/Mandate

Article 9(4) of MiFIR

4. *The competent authority responsible for supervising one or more trading venues on which a class of bond, structured finance product, emission allowance or derivative is traded may, where the liquidity of that class of financial instrument falls below a specified threshold, temporarily suspend the obligations referred to in Article 8. The specified threshold shall be defined based on the basis of objective criteria specific to the market for the financial instrument concerned. Notification of such temporary suspension shall be published on the website of the relevant competent authority.*

The temporary suspension shall be valid for an initial period not exceeding three months from the date of its publication on the website of the relevant competent authority. Such a suspension may be renewed for further periods not exceeding three months at a time if the grounds for the temporary suspension continue to be applicable. Where the temporary suspension is not renewed after that three-month period, it shall automatically lapse.

Before suspending or renewing the temporary suspension under this paragraph of the obligations referred to in Article 8, the relevant competent authority shall notify ESMA of its intention and provide an explanation. ESMA shall issue an opinion to the competent authority as soon as practicable on whether in its view the suspension or the renewal of the temporary suspension is justified in accordance with the first and second subparagraphs.

Article 11(2) of MiFIR

2. *The competent authority responsible for supervising one or more trading venues on which a class of bond, structured finance product, emission allowance or derivative is traded may, where the liquidity of that class of financial instrument falls below the threshold determined in accordance with the methodology as referred to in Article 9(5)(a), temporarily suspend the obligations referred to in Article 10. That threshold shall be defined based on objective criteria specific to the market for the financial instrument concerned. Such temporary suspension shall be published on the website of the relevant competent authority.*

The temporary suspension shall be valid for an initial period not exceeding three months from the date of its publication on the website of the relevant competent authority. Such a suspension may be renewed for further periods not exceeding three months at a time if the grounds for the temporary suspension continue to be applicable. Where the temporary suspension is not renewed after that three-month period, it shall automatically lapse.

Before suspending or renewing the temporary suspension of the obligations referred to in Article 10, the relevant competent authority shall notify ESMA of its intention and provide an

explanation. ESMA shall issue an opinion to the competent authority as soon as practicable on whether in its view the suspension or the renewal of the temporary suspension is justified in accordance with the first and second subparagraphs.

Article 9(5)(a) of MiFIR

5. *ESMA shall develop draft regulatory technical standards to specify the following:*

(a) the parameters and methods for calculating the threshold of liquidity referred to in paragraph 4 in relation to the financial instrument. The parameters and methods for Member States to calculate the threshold shall be set in such a way that when the threshold is reached, it represents a significant decline in liquidity across all venues within the Union for the financial instrument concerned based on the criteria used under Article 2(1)(17);

1. Articles 9(4) and 11(2) of MiFIR allow NCAs to temporarily suspend pre-trade and post-trade transparency requirements for trading venues and investment firms when the liquidity of a class of financial instrument falls below a specified threshold. Article 9(5) requires ESMA to specify the parameters and methods for calculating the threshold in draft RTS.
2. MiFIR requires the threshold to be set on the basis of objective criteria specific to the market for the financial instrument concerned and in such a way that it represents a significant decline in the liquidity within a class of bond, structured finance product, emission allowance or derivative across all venues within the Union based on the criteria used under Article 2(1)(17)(a) of MiFIR.
3. While there is some overlap between the 'liquid' market and the 'liquidity threshold' to be specified under Article 9(5)(a) MiFIR, the two provisions have different rationales and produce different effects. The 'liquid market' provision deals with more structural aspects of liquidity and follows the standard procedure for granting a waiver or deferral of transparency requirements, whereas the 'liquidity threshold' is meant to address an unexpected drop in liquidity allowing an NCA to immediately suspend all transparency obligations for a limited period of time. ESMA's understanding of the rationale for this provision is that temporarily removing transparency requirements in markets suffering from a temporary lack of liquidity can contribute to restoring liquidity.
4. In the DP ESMA suggested that the power to suspend transparency obligations should be used only in exceptional market circumstances and that the threshold should be set at a sufficiently low level in order to avoid unnecessary fluctuations in transparency requirements and maintain a level playing field for the transparency requirements across the Union. ESMA therefore proposed the following parameters and methods:

- i. The Average Daily Turnover (ADT). A decline in liquidity could be expressed as a percentage. The 'specified threshold' would be met if the current ADT (measured over the last 20 trading days) falls below a certain percentage of the ADT as calculated at the latest official liquidity assessment. With regard to classes of financial instruments for which there is a liquid market the value shall be a 80 percent decline, with regard to classes of financial instruments for which there is no liquid market the value shall be a 60 percent decline.
 - ii. However, in case of extremely uneven distributions this measure might not correctly capture the decline. In order to avoid misjudgements the quantitative criterion should be complemented by qualitative arguments considering all criteria used for assessing liquidity (i.e. average frequency of transactions, average size of transactions, spreads, number of participants). In its notification to ESMA, the relevant competent authority should cover a period of no less than one year.
5. Before suspending or renewing the temporary suspension the relevant competent authority shall provide data and arguments to ESMA in order to allow for forming an opinion. This information shall comprise at a minimum the items described above.

Analysis following feedback from stakeholders

6. In general, the responses received to the consultation supported the approach of combining qualitative and quantitative criteria. A number of respondents criticised using ADT as reference parameter but did not propose a practical alternative. ESMA agrees that turnover traded might not be suitable for derivatives and emission allowances. Some of the criticism related to ADT was based on the concern that it would be used as a sole criterion.
7. Another main criticism was that the approach would not be suitable for certain instruments, e.g. fixed income, due to their inherent peculiarities, in particular the trading performance according to the lifecycle. While ESMA recognises that the universe of financial instruments covered under the temporary suspension is very broad, it does not consider that inherent peculiarities of different financial instruments, e.g. the reduction of liquidity of bonds during their lifecycle, should be considered as a sudden drop in liquidity for the purposes of Articles 9(4) and 11(2) MiFIR since they are known to market participants in advance.
8. Most respondents considered the proposed thresholds as being too high. However, responses revealed that respondents did not always have the same understanding of the thresholds proposed and that further clarification is needed. Some respondents suggested that the thresholds should be set per class of instruments.
9. Furthermore, the period of 20 trading days for assessing the liquidity was deemed too long and a periodic liquidity assessment not appropriate to measure a sudden drop in liquidity. Respondents considered that with regard to the intention of Articles 9(4) and

11(2) of MiFIR the assessment should be able to detect sudden change in the market to have an effective instrument. ESMA understands this concern but is also aware of the need of providing for a stable environment and avoiding unnecessary fluctuations in transparency requirements.

10. ESMA considers that the temporary suspension of transparency will be used in practice only occasionally given that Articles 9(4) and 11(2) MiFIR confine the temporary suspension of the transparency requirements to a significant drop in liquidity across all venue trades across the Union for an entire class of instrument. It is unlikely that a decline in liquidity for just one or a few instruments will significantly affect the liquidity of an entire class. Furthermore, it has to be noted that examples mentioned in the responses (e.g. credit downgrade of a instrument, issuer entering insolvency proceedings) will most likely lead to increased volatility but not necessarily to reduced liquidity.
11. Finally, some respondents flagged concerns whether NCAs would be well placed to calculate the thresholds. ESMA agrees that it might be challenging for NCAs to assess the decline in liquidity for a class of instruments across the whole Union. However, since a temporary suspension of the transparency requirements in case of a significant decline in liquidity is in the interest of market participants ESMA anticipates that market participants would contact the relevant competent authority in case a temporary suspension of a class of instrument appears warranted and support their case by providing relevant market data demonstrating the decline in liquidity.

Proposal

12. ESMA maintains its approach to set different thresholds for financial instruments for which there is a liquid market and financial instruments for which there is not a liquid market. In light of the feedback received ESMA considers it necessary to further refine its proposal. The following thresholds are proposed:
 - i. Financial instruments for which there is a liquid market:
 - a. Class of bond or structured finance product: The total volume (nominal amount) traded during the last 30 days represents less than 40% of the average monthly volume (nominal amount) for the preceding 12 full calendar months.
 - b. Class of derivative: The total volume (notional amount) traded during the last 30 days represents less than 40% of the average monthly volume (notional amount) for the preceding 12 full calendar months.
 - c. Class of emission allowance: The total volume (tons of carbon dioxide) traded during the last 30 days represents less than 40% of the average monthly volume (tons of carbon dioxide) traded for the preceding 12 full calendar months.

- ii. Financial instruments for which there is not a liquid market:
 - a. Class of bond or structured finance product: The total volume (nominal amount) traded during the last 30 days represents less than 20% of the average monthly volume (nominal amount) for the preceding 12 full calendar months.
 - b. Class of derivative: The total volume (notional amount) traded during the last 30 days represents less than 20% of the average monthly volume (notional amount) for the preceding 12 full calendar months.
 - c. Class of emission allowance: The total volume (tons of carbon dioxide) traded during the last 30 days represents less than 20% of the average monthly volume (tons of carbon dioxide) traded for the preceding 12 full calendar months.
- 13. The measures of total volume for each type of financial instruments correspond to those defined in Annex II, Table 3 of draft RTS 9
- 14. The NCA should include all transactions executed on venues across the Union for the class of instrument concerned when calculating whether a threshold has been reached. If the thresholds are met NCAs should also consider qualitative criteria to avoid that transparency suspensions are imposed due to effects that do not warrant for suspending transparency requirements, e.g. seasonal effects.

Q84. Do you agree with ESMA's proposal with regard to the temporary suspension of transparency requirements? Please provide feedback on the following points:

- (1) the measure used to calculate the volume as specified in Annex II, Table 3**
- (2) the methodology as to assess a drop in liquidity**
- (3) the percentages determined for liquid and illiquid instruments to assess the drop in liquidity. Please provide reasons for your answer.**

Relevant annexes:

Annex B: Draft RTS 9: Draft regulatory technical standards on transparency requirements in respect of bonds, structured finance products, emission allowances and derivatives

3.9. Exemptions from transparency requirements in respect of transactions executed by a member of the ESCB

Background/Mandate

Article 1 of MiFIR

[...]

6. *Articles 8, 10, 18 and 21 shall not apply to regulated markets, market operators and investment firms in respect of a transaction where the counterparty is a member of the European System of Central Banks (ESCB) and where that transaction is entered into in performance of monetary, foreign exchange and financial stability policy which that member of the ESCB is legally empowered to pursue and where that member has given prior notification to its counterparty that the transaction is exempt.*

7. *Paragraph 6 shall not apply in respect of transactions entered into by any member of the ESCB members in performance of their investment operations.*

8. *ESMA shall, in close cooperation with the ESCB, develop draft regulatory technical standards to specify the monetary foreign exchange and financial stability policy operations and the types of transactions to which paragraphs 6 and 7 apply.*

ESMA shall submit those draft regulatory technical standards to the Commission by 3 July 2015.

Power is delegated to the Commission to adopt the regulatory technical standards referred to in the first subparagraph in accordance with the procedure laid down in Articles 10 to 14 of Regulation (EU) No 1095/2010.

1. Article 1(6) of MiFIR exempts regulated markets, market operators and investment firms from transparency requirements in respect of transactions in non-equity instruments where the counterparty is a member of the European System of Central Banks (ESCB) and where a transaction is carried out for the purpose of monetary, foreign exchange and financial stability policy.
2. MiFIR empowers ESMA to develop, in close collaboration with the ESCB, draft RTS specifying the monetary, foreign exchange and financial stability policy operations and other tasks in the public interest of each member of the ESCB and the type of transactions to which the exemption applies.
3. MiFIR also empowers the Commission to adopt delegated acts to extend the scope of the exemption from transparency requirements in relation of transactions carried out by

central banks that are not members of the ESCB. ESMA stands ready to provide technical advice to the Commission on the extension of the exemption to other central banks.

Analysis following feedback from stakeholders

4. The purpose of the exemption is to ensure that members of the ESCB can carry out their monetary, foreign exchange and financial stability policy operations without those policy operations being within the transparency requirements set by MiFIR. The issue arises because while the members of the ESCB are excluded from transparency provisions in MiFIR, investment firms that are counterparties to transactions with a member of the ESCB are not. The disclosure to the market of those policy operations may impair the proper implementation of those tasks that have been conferred upon them in the interest of the public.
5. In the DP ESMA consulted on the types of operations and the types of transactions to which the exemption from pre- and post-trade transparency might apply. Respondents generally shared ESMA's understanding of the exemption provided by Article 1(6) of MiFIR and the boundaries within which it operates. Respondents also agreed that the provision of legal acts, standard legal documentation or contractual or regulatory arrangements would provide sufficient legal certainty that the transaction is carried out by a member of the ESCB in its capacity as monetary, foreign exchange or financial stability authorities.
6. This notwithstanding a number of respondents highlighted the challenge to provide prior notification to a counterparty of a transaction in the context of certain systems operated by trading venues such as electronic order books where counterparties are anonymous.

Proposal

7. ESMA's proposal for draft RTS clarifies the operations and types of transactions for which the exemption from pre- and post-trade transparency in Article 1(6) of MiFIR apply. The proposed drafted RTS define monetary, foreign exchange and financial stability policy operations in relation to the legal acts or statutes laying down the duties and powers of members of the ESCB. ESMA is of the view that the requirement to provide prior notification rests only on the member of the ESCB in the form of legal documentation or contractual or regulatory arrangements.
8. ESMA is of the view that in the context of certain trading systems such as anonymous electronic order books, prior notification shall be provided by the member of the ESCB to the operator of the trading venue rather than to the counterparty. Under MiFIR the pre- and post-trade obligation rests on the market operator or the investment firm operating the trading venue rather than the counterparty to the transaction, hence it is proper that the notification is provided to the operator of the venue rather than the counterparty of the transaction.

9. Finally, the proposal clarifies the types of investment operations for which the exemption under Article 1(6) does not apply which includes those where the member of the ESCB acts in its capacity as administrator of a pension scheme.

Q85. Do you agree with ESMA's proposal with regard to the exemptions from transparency requirements in respect of transactions executed by a member of the ESCB? Please provide reasons for your answer.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 9: Draft regulatory technical standards on transparency requirements in respect of bonds, structured finance products, emission allowances and derivatives

3.10. Double volume cap mechanism and the provision of information for the purposes of transparency and other calculations

Double volume cap mechanism

Background/Mandate

Article 5 of MiFIR

1. *In order to ensure that the use of the waivers provided for in Article 4(1)(a) and 4(1)(b)(i) does not unduly harm price formation, trading under those waivers is restricted as follows:*

- (a) the percentage of trading in a financial instrument carried out on a trading venue under those waivers shall be limited to 4% of the total volume of trading in that financial instrument on all trading venues across the Union over the previous 12 months.*
- (b) overall EU trading in a financial instrument carried out under those waivers shall be limited to 8% of the total volume of trading in that financial instrument on all trading venues across the Union over the previous 12 months.*

That volume cap mechanism shall not apply to negotiated transactions which are in a share, depositary receipt, ETF, certificate or other similar financial instrument for which there is not a liquid market as determined in accordance with Article 2(1)(17)(b) and are dealt within a percentage of a suitable reference price as referred to in Article 4(1)(b)(ii), or to negotiated transactions that are subject to conditions other than the current market price of that financial instrument as referred to in Art 4(1)(b)(iii).

[...]

4. *ESMA shall publish within five working days of the end of each calendar month, the total volume of Union trading per financial instrument in the previous 12 months, the percentage of trading in a financial instrument carried out across the Union under those waivers and on each trading venue in the previous 12 months, and the methodology that is used to derive those percentages.*

5. *In the event that the report as referred to paragraph 4 identifies any trading venue where trading in any financial instrument carried out under the waivers has exceeded 3.75% of the total trading in the Union in that financial instrument, based on the previous 12 months trading, ESMA shall publish an additional report within 5 working days of the 15th day of the calendar month in which the report referred to in paragraph 4 is published. That report shall contain the information specified in paragraph 4 in respect of those financial instruments where 3.75% has been exceeded.*

6. *In the event that the report referred to paragraph 4 identifies that overall EU trading in any financial instrument carried out under the waivers has exceeded 7.75% of the total EU trading in the financial instrument, based on the previous 12 months trading, ESMA shall publish an additional report within five working days of the 15th on the day of the calendar month in which the report referred to in paragraph 4 is published. That report shall contain the information specified in paragraph 4 in respect of those financial instruments where 7.75% has been exceeded.*

[...]

9. *ESMA shall develop draft regulatory technical standards to specify the method, including the flagging of transactions, by which it collates, calculates and publishes the transaction data, as outlined in paragraph 4, in order to provide an accurate measurement of the total volume of trading per financial instrument and the percentages of trading that use those waivers across the Union and per trading venue.*

Analysis

1. In order to ensure that the use of waivers from pre-trade transparency does not unduly harm price formation, MiFIR introduces in Article 5 a mechanism that caps the amount of trading, as measured by the volume, carried out under:
 - i. systems matching orders based on a trading methodology by which the price is determined in accordance with a reference price; and
 - ii. negotiated transactions in liquid instruments carried out under limb (i) of Article 4(1)(b) of MiFIR.
2. This double volume cap mechanism is to be implemented and supervised on the basis of ESMA publications regarding the volume of trading under the waivers and an empowerment for a technical standard enabling competent authorities to obtain the data for making such publications.
3. The first volume cap is calculated on a trading venue by trading venue basis and is set at the level of 4% of the overall amount of trading across all trading venues in the EU. That means that the volume of trading on any trading venue using the reference price waiver and/or the first limb of the negotiated trade waiver should not exceed the 4% threshold. As an example a trading venue would be in breach of the 4% threshold when the amount of trading carried out under the reference price waiver and the relevant negotiated trade waiver is 2% and 3% respectively. If the 4% cap is breached by a trading venue in a particular financial instrument, the competent authority that has authorised the use of these waivers shall suspend within 2 working days their use for that trading venue for that particular financial instrument for a period of 6 months.

4. The second volume cap is calculated across all trading venues operating under one or both of the relevant waivers and is at the level of 8% of the overall amount of trading across all trading venues in the EU. That means that the total volume of trading on all trading venues using the reference price waiver and/or the first limb of the negotiated trade waiver should not exceed the 8% threshold. As an example the 8% threshold would be considered to be breached when the amount of trading in the EU carried out under the reference price waiver and the relevant negotiated trade waiver is 4% and 5% respectively. If the 8% cap is breached all competent authorities shall within 2 working days suspend the use of those waivers across all trading venues in the EU for a period of 6 months.
5. Both volume caps are measured against a rolling 12 month period with monthly updates published by ESMA as well as updates published twice a month in certain circumstances.
6. ESMA is aware of the sensitivity of this task and the potential commercial consequences for venues, issuers and other market participants alike of publishing incorrect information which would then lead to the suspension of the use of one waiver or of all waivers across the EU for one particular financial instrument. ESMA therefore considers it as crucial to set up efficient IT structures of high quality in cooperation with trading venues and other stakeholders to ensure timely and correct publication of the required data and the timely implementation of the double volume cap.
7. In order to effect such publications of actual volume traded within waiver facilities, ESMA is empowered to design technical standards specifying the methods by which ESMA can collate the necessary information, calculate the actual volumes traded and publish the information.

Proposal

Volume traded via waiver facilities

8. Each trading venue operating a reference price or relevant negotiated trade waiver facility has to submit the total volume of trading executed via each waiver facility during the relevant 12 months period to its NCA. In the DP ESMA clarified that the volume of individual transactions should be calculated by multiplying the price of the instrument times number of units and that the total volume should be obtained by collating all individual transactions (single-counted) sent by the different venues and, if necessary, converted into euros (trading in currencies other than the euro shall be converted into euros by using the ECB monthly average rate).
9. The volumes collected from the waiver facilities then have to be measured against the volume traded in the EU on-venue market as a whole. To this end, ESMA is considering using two different channels for collecting data so as to determine the overall size of the market per financial instrument:

- i. First source of data - Collation of volume from trading venues: One way to collect the entire volume of on-venue trading consists of requesting all trading venues to submit the total volume of all trading during the relevant 12 months period to their NCA. Requests for submitting such data would be sent to trading venues in parallel with the requests for volumes executed via the waiver facilities. Therefore it is expected that the quality of data submitted by the venues will be of a sufficiently high standard and consistent.
 - ii. Second source of data - Collation of volumes from CTPs: ESMA considers that the entire on-venue trading volume per financial instrument should also be retrieved from the CTPs. This has the advantage that ESMA would not have to aggregate trading volumes received from a multitude of venues but would receive the complete volume via one channel.
10. As mentioned above, ESMA is of the view that both sources of data should be used and that collecting data from CTPs can then serve as a tool for checking the validity and completeness of data submitted by trading venues.

Frequency of the calculations and publications

11. Under Article 5(4) of MiFIR, “ESMA shall publish within five working days of the end of each calendar month, the total volume of Union trading per financial instrument in the previous 12 months, the percentage of trading in a financial instrument carried out across the Union under those waiver and on each trading venue in the previous 12 months, and the methodology that is used to derive those percentages”. The second paragraph of this Article stipulates that, in case of breach of one of two thresholds, the competent authority will have two days after this publication by ESMA to suspend the use of the waiver concerned. Therefore, and given the limited timeframe granted to NCAs to react and in order to ensure timely publication, ESMA believes that the use of waivers should be monitored on a more frequent basis and proposes to request data from trading venues and CTPs and perform the calculations twice a month. Updates will however still be published monthly as prescribed by Level 1 text or twice a month in the cases described in Article 5(5) and (6) of MiFIR.
12. To this end, trading venues and CTPs will be required to send all data required on the first and sixteenth day of each calendar month by 13.00 CET to their respective NCA. All such dates are subject to adjustments if they fall on a public holiday or a non-trading day according to the trading venue’s or CTP’s home country calendar. In this case, data should be reported on the following working day before the opening of the markets. Competent authorities should forward the data to ESMA by 13.00 CET on the next working day for its aggregation and subsequent publication.
13. ESMA is proposing submissions of data twice in a month for two reasons:

- i. to minimise the impact of potential errors in the data delivery; if ESMA notices a sudden spike or drop in trading volume on a particular venue or venues, ESMA would ask competent authorities to go back to the venue to verify the submission and compare the data with CTP data submitted; by supervising this twice a month, issues can be detected earlier rather than leaving it all to the end of the month where rectifying any errors will run against the publication deadline of within five days at the end of the calendar month foreseen in Article 5(4) MiFIR;
 - ii. to be prepared from the outset with dealing with the publications that are required twice a month in the cases of Article 5(5) and (6) as ESMA will have to publish also around the 20th of each month in case the thresholds of 3.75% per trading venue or 7.75% overall are reached; data has therefore to be requested on the 16th of each calendar month to incorporate all trading from the 1st to the 15th of each calendar month into the calculations.
14. With a view to simplifying the periodic submission of data, ESMA believes that trading volumes should be requested not for the previous 12 months but only for the last 15 days (or 13, 14, 15 or 16 days in the second half of the month, depending on the calendar month). The volumes will then be aggregated with the data collected previously from which the trading volume for the first 15 days (or again 13, 14, 15 or 16 as the case may be) of the rolling calendar year will be removed. As an example on 1 March 2017, trading venues and CTPs will be requested to submit data for the period from 16 February 2017 to 28 February 2017 (end of the month). Volumes collected will then be added to the calculation sample from which volumes for the period from 16 February 2016 to 29 February 2016 (end of the month) would have been removed.
15. However, ESMA also foresees the need for ad-hoc requests and, thus, trading venues and CTPs should have systems and IT infrastructures in place to submit, by close of business on the next working day following the request, data for last 12 months aggregated over different time horizons (e.g. last 12 months aggregation, monthly aggregation over the last year, etc.). This data could for instance be used in case errors are detected in the main data sample.
16. Article 5(8) of MiFIR stipulates that “the period for the publication of trading data by ESMA, and for which trading in a financial instrument under those waivers is to be monitored shall start on 3 January 2016. Without prejudice to Article 4(5), competent authorities shall be empowered to suspend the use of those waiver from the date of application of this Regulation [i.e. 3 January 2017] and thereafter on monthly basis”. On this basis, trading venues and CTPs will have to submit their first report to their respective NCA by 3 January 2017. This report will include trading data for the previous 12 months (i.e. from 3 January 2016 to 31 December 2016) and will be published by ESMA within five working days. The data to be submitted in this respect should be granular enough so as to allow ESMA to collate data to be received in line with the methodology described in the paragraphs above. In other words, the aggregated data to

be submitted will need to be split into 24 distinct periods as follows: from 3 January 2016 to 15 January 2016; from 16 January 2016 to 31 January 2016, etc.

Consolidation and calculation of actual volumes by ESMA

17. With regard to the consolidation and calculation of the relevant data for the operation of the volume cap, ESMA is minded to establish technical arrangements seeking to ensure that the data is consolidated on a timely basis and that proper procedures for the identification and correction of errors are in place.
18. To ensure a timely publication of data each month ESMA intends to design templates in a format allowing for a seamless aggregation of volumes across venues which must be completed by stakeholders.

Publication of Information by ESMA

19. Finally with regard to the publication, ESMA will make available to the public on its website free of charge and in a machine-readable format all the necessary information for the operation of the volume cap and the monitoring of the thresholds.

Q86. Do you agree with the articles on the double volume cap mechanism in the proposed draft RTS 10? Please provide reasons to support your answer.

Article 22, MiFIR: Providing information for the purposes of transparency and other calculations

Background/Mandate

Article 22(4) of MiFIR

4. ESMA shall develop draft regulatory technical standards to specify the content and frequency of data requests and the formats and the timeframe in which trading venues, APAs and CTPs shall respond to such requests in accordance with paragraph 1 and the type of data that must be stored and the minimum period of time trading venues, APAs and CTPs shall store data in order to be able to respond to such requests in accordance with paragraph 2.

20. MiFIR requires competent authorities and ESMA to perform a significant number of calculations in order to determine whether financial instruments are liquid and the level at which various thresholds (e.g. the ones for the large in scale waiver and the deferred publication regime) are set for such instruments. More specifically, these calculations are for the following purposes:

- i. determining whether equity, equity-like and non-equity financial instruments have a liquid market;
- ii. setting the thresholds for pre-trade transparency waivers for equity, equity-like and non-equity financial instruments;
- iii. setting the thresholds for post-trade transparency deferrals for equity, equity-like and non-equity financial instruments;
- iv. determining whether an investment firm deals on own account OTC on a systematic, frequent and substantial basis for the purposes of the systematic internaliser definition;
- v. setting the standard market size applicable to systematic internalisers dealing in equity and equity-like instruments, and the size specific to the instrument applicable to systematic internalisers dealing in non-equity instruments; and
- vi. determining whether derivatives are sufficiently liquid for the purposes of implementing the trading obligation for derivatives.

21. In order to perform the necessary calculations, both NCAs and ESMA must be able to obtain robust data of a high quality for each asset class to which MiFIR applies. ESMA is conscious that in the current environment it will need to collect data from a variety of

sources that may not always hold a complete data set for an asset class or even a particular instrument and, therefore, ESMA will need to rely on sample calculations to a certain extent for some asset classes. The intention of Article 22 of MiFIR is to improve the availability and quality of data available to regulators following MiFID II implementation so that the classification of financial instruments, according to Level 2 thresholds, and also potential re-calibrations of such Level 2 thresholds, can be calculated on a better statistical basis after MiFID II has been in force for a certain period of time. Therefore, Article 22 of MiFIR enables regulators to request information from trading venues, APAs and CTPs in the context of carrying out MiFIR calculations.

22. Under Article 22(4), ESMA is empowered to further specify:
- i. the content, frequency and formats of such requests;
 - ii. the timeframe within which trading venues, APAs and CTPs must respond to such requests; and
 - iii. the rules applying to the storage of data by trading venues, APAs and CTPs.

Analysis following feedback from stakeholders

Content of Data Requests

23. As noted in the DP, the content of data requests under Article 22 of MiFIR will depend, to a large extent, on the methodologies ESMA will use for determining the various thresholds. Therefore this section must be read in the context of ESMA's proposals on how to determine the diverse thresholds for the pre- and post-trade transparency requirements for equity, equity-like and non-equity instruments.
24. However, the Level 1 text already imposes a number of specific parameters. For instance, Article 2(1)(17)(a) already stipulates criteria to be used when assessing the liquidity of non-equity financial instruments for transparency purposes and, hence, data requests to trading venues, APAs and CTPs should entail parameters like the number of transactions in instruments over a specified period of time, the volume executed, the number and type of market participants active and the size of spreads. Similar criteria also apply to the determination of whether an instrument is sufficiently liquid for the purposes of the trading obligation for derivatives.
25. ESMA noted in the DP that the number of market participants needed to be counted on the basis of the direct market participants/trading members active in a particular financial instrument. ESMA sought views on how this information could be collected in practice. Responses received suggest that transaction reporting could provide some information in this respect and that NCAs could collect specific information on the number and type of market participants in a product by using the Legal Entity Identifier (LEI) and, when necessary, reference data to be received under Article 27 of MiFIR. Other respondents

also proposed to base the number of market participants on the number of participants on venue rather than the whole market. In this case, venues could provide the list of LEIs per instrument. Lastly, some responses stressed that the concept of “market participants” should refer to the number of “market makers” and, thus, they invite ESMA to also include this information into the content of the data requests.

26. In addition, regulators will also seek information on the free float of equity and equity-like instruments in accordance with Article 2(1)(17)(b) of MiFIR. In this regard, ESMA noted that NCAs might need to adjust the content of requests based on the type of entity with which the NCAs is dealing and the information it may hold based on its role in the market (e.g. the size of spreads may be an item of information which trading venues are more likely to be able to deliver).
27. More generally, feedback to the consultation stressed that the content of the data requests should leverage, as much as possible, from the current market practices and existing industry standards such as the Market Model Typology (MMT) so as to avoid unnecessary implementing costs for the industry. Other respondents also pointed out that trading venues may run multiple trading protocols (e.g. CLOB, RfQ, click-to-trade, OTC registration) which should also be included so as to better understand the source of liquidity.

Frequency of Data Requests

28. ESMA considers that carrying out the calculations for determining the requirements for pre-trade and post-trade transparency and the trading obligation regimes might imply both periodic and ad hoc requests from NCAs.
29. For instance, with respect to determining whether equity and equity-like instruments have a liquid market, ESMA currently works under the assumption that this calculations will be performed periodically and that the recalculation and reclassification of instruments based on their liquidity will be conducted on an annual basis as is the case today under MiFID I.
30. However, in ESMA’s view, the calculations to be carried out for determining the various transparency requirements listed under Article 22(1) MiFIR cannot all be performed on a periodic basis and, thus, ESMA also foresees the need for ad-hoc requests. This concerns, for instance, future recalculations of the thresholds to adapt potential market changes, re-setting of the liquidity categories, production of reports as required under Article 4(4) of MiFIR, etc.

Formats of Data Requests

31. In the DP, ESMA explained that it considered that trading venues, APAs and CTPs should be required to deliver the requested data in a format that is commonly used in the

market. In doing so, ESMA's intention was to minimise the IT investment costs trading venues, APAs and CTPs may incur in meeting this obligation.

32. To this end, ESMA stated its intention to develop templates for making data requests in due course during the implementation period of MiFID II. Such templates should make it easier and more cost efficient for trading venues, APAs and CTPs to respond to requests and should help in automating - to the extent possible - any future re-classifications of financial instruments and any recalibrations of thresholds.
33. ESMA also stressed that such templates must be sufficiently adaptable so that they can incorporate any changes considered necessary at a later stage in a pragmatic fashion. Therefore ESMA did not propose integrating any templates into the technical standards given that any changes to technical standards require a significant period of time.
34. Respondents unanimously supported ESMA proposal here and agreed that templates should be developed on the basis of existing industry standards so as to make them cost-efficient and useful for all parties involved.
35. More concretely, some respondents suggested the data format to be as raw as possible to ensure as few inconsistencies as possible between the data sets. In their view, this could be achieved through the use of CSV or XML formats. Another respondent recommended investigating whether the FIX protocol could be a viable option.

Timeframe to Respond to Data Requests

36. ESMA proposed setting a period of a maximum of two weeks for trading venues, APAs and CTPs to respond to data requests.
37. A vast majority of responses stressed that the time required to deliver the data will depend on the level of complexity and scale of the data request. In particular, if some respondents consider that two weeks could be sufficient for requests in the form of templates using standardised formats and made at regular pre-set dates, there is a general consensus that two weeks would be insufficient for ad hoc requests. For this type of request, a four weeks period would be more suitable in their view.
38. ESMA agrees that the timeframe to respond to data requests very much depends on the level of automation and standardisation reached in the data request processes. In general, ESMA believes, in line with the responses received, that four weeks would be an appropriate timeframe to respond to ad hoc data requests. However, for periodic requests happening at pre-set dates clearly defined within the technical standard, ESMA is of the view that information should in those cases be provided at the pre-set dates without any additional delay permitted.

Type of Data to be Stored

39. As noted in the DP, trading venues, APAs and CTPs will be required to store the type of data which meets the content of data requests described above. Therefore, and as noted above, the type of data will depend on the methodologies agreed upon at Level 2 for determining thresholds. ESMA refers to its deliberations under the 'Content of Data Requests' heading.

Minimum Period for Storage

40. As the annual calculations ESMA proposed for equity and equity-like instruments were the maximum timeframe proposed in the DP, ESMA did not consider it necessary to follow the record keeping rules for investment firms and require trading venues, APAs and CTPs to store data for five years.
41. Taking into account however that at times consistency checks may be necessary, leading to additional requests to identify and remove erroneous data, ESMA considered a period of two years as appropriate.
42. A majority of respondents agreed with the ESMA proposal whereas some others (in particular responses coming from trading venue representatives) requested for having a longer period of storage. In their view, relevant data should be stored for five years.

Proposal

43. The draft RTS presented in this paper have been drafted so as to give sufficient clarity to market stakeholders on the data they might be requested to submit to their competent authority while, at the same time, providing enough flexibility in case additional ad hoc data gathering are needed to enable NCAs and ESMA to comply with obligations imposed by MiFIR (such as monitoring the use of waivers). ESMA is indeed of the view that determining the requirements for pre-trade and post-trade transparency will involve both periodic and ad hoc calculations and this is reflected in the proposed draft standards.
44. In ESMA's view, the data will be used notably to carry out the periodic transparency calculations imposed by Articles 3 to 11, Articles 14 to 21 and Article 32 of MiFIR and to determine whether an investment firm is a systematic internaliser. Therefore, in order to ensure that the content, format, quality and frequency of the data submitted is fully consistent with the level 1 text as well as with ESMA standards specifying the methodologies to perform those calculations, cross-references to the relevant technical standards have been introduced.
45. Lastly, in order to ensure sufficient consistency between data collected from various sources, it is ESMA's intention to develop specific templates and protocols so as to make the data collection easier and more cost efficient as well as facilitate the collation of data at NCA or ESMA level. Such templates must be sufficiently adaptable so that

they can incorporate any changes considered necessary at a later stage in a pragmatic fashion without having to change the technical standard first.

Q87. Do you agree with the proposed draft RTS in respect of implementing Article 22 MiFIR? Please provide reasons to support your answer.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 10: Draft regulatory technical standards on the double volume cap mechanism and the provision of information for the purposes of transparency and other calculations

3.11. Trading Obligation

Criteria for determining whether derivatives should be subject to the trading obligation

Background/Mandate

Article 32(6) of MiFIR – Criteria for determining whether derivatives should be subject to the trading obligation

[...]

ESMA shall develop draft regulatory technical standards to specify the criteria referred to in paragraph 2(b):

Article 32(1) – (3)

1. *ESMA shall develop draft regulatory technical standards to specify the following:*

- (a) which of the class of derivatives declared subject to the clearing obligation in accordance with Article 5(2) and (4) of Regulation (EU) No 648/2012 or a relevant subset thereof shall be traded on the venues referred to in Article 28(1) of this Regulation;*
- (b) the date or dates from which the trading obligation takes effect, including any phase-in and the categories of counterparties to which the obligation applies where such phase-in and such categories of counterparties have been provided for in regulatory technical standards in accordance with Article 5(2)(b) of Regulation (EU) No 648/2012.*

ESMA shall submit those draft regulatory technical standards to the Commission within six months after the adoption of the regulatory technical standards in accordance with Article 5(2) Regulation (EU) No 648/2012 by the Commission.

Before submitting the draft regulatory technical standards to the Commission for adoption, ESMA shall conduct a public consultation and, where appropriate, may consult third-country competent authorities.

2. *In order for the trading obligation to take effect:*

- (a) the class of derivatives pursuant to paragraph 1(a) or a relevant subset thereof must be admitted to trading or traded on at least one trading venue as referred to in Article 28(1); and*
- (b) there must be sufficient third-party buying and selling interest in the class of derivatives or a relevant subset thereof so that such a class of derivatives is considered sufficiently*

liquid to trade only on the venues referred to in Article 28(1).

3. *In developing the draft regulatory technical standards referred to paragraph 1, ESMA shall consider the class of derivatives or a relevant subset thereof as sufficiently liquid pursuant to the following criteria:*

- (a) the average frequency and size of trades over a range of market conditions, having regard to the nature and lifecycle of products within the class of derivatives;*
- (b) the number and type of active market participants including the ratio of market participants to products/contracts traded in a given product market;*
- (c) the average of the size of the spreads.*

In preparing those draft regulatory technical standards, ESMA shall take into consideration the anticipated impact that trading obligation might have on the liquidity of a class of derivatives or a relevant subset thereof and the commercial activities of end users which are not financial entities.

ESMA shall determine whether the class of derivatives or relevant subset is only sufficiently liquid in transactions below a certain size.

4. *ESMA shall, on its own initiative, in accordance with the criteria set out in paragraph 2 and after conducting a public consultation, identify and notify to the Commission the classes of derivatives or individual derivative contracts that should be subject to the obligation to trade on the venues referred to in Article 28(1), but for which no CCP has yet received authorisation under Article 14 or 15 of Regulation (EU) No 648/2012 or which is not admitted to trading or traded on a trading venue referred to in Article 28(1).*

Following the notification by ESMA referred to in the first subparagraph, the Commission may publish a call for development of proposals for the trading of those derivatives on the venues referred to in Article 28(1).

5. *ESMA shall in accordance with paragraph 1, submit to the Commission draft regulatory technical standards to amend, suspend or revoke existing regulatory technical standards whenever there is a material change in the criteria set out in paragraph 2. Before doing so, ESMA may, where appropriate, consult the competent authorities of third countries.*

The trading obligation procedure

1. The application of the trading obligation is defined by Article 32 MiFIR which outlines the process for deciding which derivatives should be declared subject to mandatory trading. Once a class of derivatives has been mandated as subject to the clearing obligation under EMIR, ESMA must determine whether those derivatives (or a subset of such) should be subject to the trading obligation, meaning they can only be traded on an RM,

MTF, OTF or a third country trading venue deemed to be equivalent by the Commission. In summary, whether or not a class of derivatives subject to the clearing obligation should also be made subject to the trading venue will be determined by two main factors:

- i. The venue test: the class of derivatives must be admitted to trading or traded on at least one admissible trading venue; and
 - ii. The liquidity test: whether the derivatives are 'sufficiently liquid' and there is sufficient third party and selling interest.
2. Under Article 32(1) of MiFIR, every time a class of derivatives (or subset) is declared subject to the clearing obligation, ESMA has 6 months in which to prepare, consult on and present to the Commission draft RTS stating whether those derivative should also be made subject to the trading obligation and if so, when³⁴.
 3. Article 32(6) MiFIR empowers ESMA to draft regulatory technical standards to specify the criteria under Article 32(2)(b) which require there to be sufficient third-party buying and selling interest in the class of derivatives (or subset) so that such a class of derivatives (or subset) is considered "sufficiently liquid" to trade on trading venues only. Article 32(3) MiFIR requires ESMA to consider a list of further criteria when making a determination regarding whether the class of derivatives (or subset) is "sufficiently liquid" to be subject to the trading obligation. In summary, these are: the average frequency and size of trades, the number and type of active market participants, the average size of spreads, the anticipated impact of the trading obligation on liquidity and the size of the transactions to which it should apply.
 4. ESMA is of the view that the empowerment under Article 32(2)(b) should be read broadly and in conjunction with the criteria set out under Article 32(3)(a),(b) and (c) given the link with determining what is "sufficiently liquid". Consequently, in this section of the CP ESMA sets out its proposals in preparing draft RTS which set out the broad approach ESMA will take in assessing whether a class of derivatives (or subset) should be subject to the trading obligation.
 5. ESMA notes that Article 32(3) also requires it to take into consideration the anticipated impact of the trading obligation on liquidity and the commercial activities of end users which are not financial entities, and the size of the transactions to which it should apply in determining whether a specific class or subset of derivatives should be subject to the trading obligation. Given the more subjective nature of these criteria in that they do not provide for objective measurements regarding whether a class of derivatives or subset is sufficiently liquid, ESMA does not intend to include level 2 rules on these criteria in its draft RTS which specify the general approach ESMA will adopt in determining whether a class of derivatives or subset is sufficiently liquid. However, ESMA will address these

³⁴ ESMA noted in its DP that outlining in advance the approach it plans to use for the trading obligation will assist the industry.

criteria in the draft RTS prepared regarding whether a specific class of derivatives or subset should be subject to the trading obligation.

6. As ESMA noted in its DP, the definition of the liquidity test for the trading obligation is very similar to the definition of 'liquid market' for non-equities under Article 2(1)(17)(a), which ESMA must also further specify. The definition of the liquidity test for the trading obligation differs in the following:
 - i. Article 32(3)(a) refers to trades instead of transactions (however it is assumed the terms are used interchangeably);
 - ii. Article 32(3)(b) refers to the number and type of active market participants, "including the ratio of market participants to products/contracts traded in a given product market" rather than "including the ratio of market participants to traded instruments in a particular product"; and
 - iii. When referring to the use of spreads, Article 32(3)(c) does not qualify the criterion with 'when available'.
7. The trading obligation assessment is triggered when a class of derivatives has been mandated as subject to the clearing obligation under EMIR. In determining whether the clearing obligation should apply, ESMA must perform a liquidity assessment as specified under Article 5(4)(b) of EMIR and further elaborated at level 2 under Article 7(2) of Commission Delegated Regulation 149/2013:

Article 7(2), EMIR Commission Delegated Regulation 149/2013

1. *In relation to the volume and liquidity of the relevant class of OTC derivative contracts, ESMA shall take into consideration:*

- (a) *Whether the margins or financial requirements of the CCP would be proportionate to the risk that the clearing obligation intends to mitigate;*
- (b) *The stability of the market size and depth in respect of the product over time;*
- (c) *The likelihood that market dispersion would remain sufficient in the event of the default of the clearing member;*
- (d) *The number and value of the transactions.*

8. ESMA has considered to what extent, if any, the liquidity assessment for the clearing obligation can be aligned with that of the trading obligation and concludes that the two sets of factors differ. ESMA notes that a complete alignment with the EMIR liquidity test is neither desirable nor feasible. The clearing and the trading obligation serve different

regulatory purposes, therefore a 100% alignment would not reflect these purposes adequately. In addition, the factors of the liquidity test prescribed in Article 32 (3) of MiFIR only partially match those in the EMIR framework so that the MiFIR liquidity test which incorporates factors such as the number and type of market participants and the size of spreads will always have to be operated in a different fashion from the EMIR one.

Analysis following feedback from stakeholders

9. In its DP, ESMA consulted under section 3.6 on how to interpret the different components of the definition of 'liquid market' for non-equities under Article 2(1)(17)(a), proposing different options and stating its preference. Under section 3.11 of the DP, ESMA asked for views on how to undertake the trading obligation assessment and whether there should be any differences between the two assessments. The below summary of feedback takes into account the feedback received for both of these sections in the DP where relevant.
10. Alignment of criteria under the definition of 'liquid market' with the trading obligation criteria: The majority of responses agreed that the criteria for determining which classes (or subsets) of derivatives should be subject to the trading obligation should follow a similar approach to that used for the determination of whether a liquid market exists under Article 2(1)(17)(a). However, respondents also emphasised that the thresholds for transparency and trading obligation purposes should not necessarily be the same and generally considered that the thresholds should be higher for the trading obligation, noting that the transparency rules are conditional on a liquid market existing whereas the trading obligation requires that derivatives subject to the trading obligation are 'sufficiently liquid'.
11. Average frequency of transactions: The majority of respondents agreed with ESMA's proposal that 'average frequency' should be calculated with reference to both a minimum number of trades over a given period and a minimum number of days on which trading occurred over that time period. A couple of respondents stated that when looking at average frequency, ESMA should categorise such by type of market participant. Several participants also stated that technical trades which are non-price forming (e.g. portfolio compression) should not be included and noted that packaged transactions should be given special consideration; in particular, that until all transactions of a package are subject to the clearing obligation and satisfy the criteria for the trading obligation, none of its transactions should be within scope.
12. Assessment reference period: ESMA sought views on whether the given time period for making the liquidity assessment would need to vary by asset class. Most respondents favoured flexibility so that the time period could be varied as liquidity can be affected by different factors, for example, seasonal factors can be an important feature during the life cycle of some commodity derivatives.

13. Average size of transactions: The majority of respondents agreed with ESMA's proposal that 'average size' should be calculated by dividing the notional size by number of trading days.
14. Number and type of active market participants: ESMA proposed defining a minimum number of different market participants trading in a given market on the assumption that all other things being equal, liquidity is positively correlated with the number of participants. Specifically, ESMA proposed that the term 'market participant' should be understood as any member or participant of a trading venue being involved in at least one transaction in a given market with the data computed by assessing the transaction reporting data (the LEI). Overall, the feedback received indicated a slight preference for the option proposed by ESMA. However, some respondents proposed that this criterion should be considered as met where either any member or participant of a trading venue is involved in at least one transaction in a given market or where any member or participant of a trading venue has a contractual arrangement to provide liquidity in a financial instrument at least on one trading venue, (as per option 2 in the DP, page 120). Several respondents considered that less weight should be given to this criterion in a liquidity assessment than to the frequency and size of trades and some suggested discounting it completely.
15. Average size of spreads: Recital 21 of MiFIR indicates that the term 'spread' refers to the quoted bid-ask spread i.e. the spread between the highest quote for purchasing a financial instrument (bid) and the lowest quote for selling this financial instrument ('ask') with the ask being higher than the bid. The tighter the bid-ask spread, the more liquid the respective financial instrument is perceived to be. In applying such a concept to a class of financial instruments, the bid-ask spread would relate to a proxy for a given class of financial instruments. ESMA's proposal for this criterion was to use end-of-day relative bid-ask spreads as published by the most relevant market in terms of liquidity irrespective of the type (indicative or firm) and size of the quotes. However, this criterion would only be applied if the following requirements are met:
 - i. Trading takes place on the (lit) order book of the trading venue, otherwise the spread data is considered non-available;
 - ii. Both sides of the spread are available;
 - iii. The spread has a volume attached; and
 - iv. The spread data is easily accessible via a central source (i.e. electronically and in a standardised format).
16. The spread data would be calculated for the whole period or for a number of trading days. The arithmetic average of this data would be considered as the 'average spread'.

17. Respondents acknowledged that this is a particularly challenging criterion to define with the data difficult to obtain; however, the majority did not favour ESMA's proposal, arguing that an end-of-day spread is not representative. Various suggestions were put forward such as end-of-day relative bid-ask spreads, time weighted spreads, volume weighted spreads calculated by random snapshots during the day and using a US dollar equivalent of the bid-ask spread. With respect to the challenges in collecting this data, some respondents suggested that where little data is available, or spreads are relatively wide, transactions may be insufficiently liquid to apply the trading mandate whilst others considered that this criterion should be dropped from the assessment as there may not be a practical way of calculating spreads.
18. Anticipated impact of the trading obligation on liquidity and the commercial activities of end users which are not financial entities: Several respondents proposed that ESMA looks at examples of the impact of the trading obligation in other jurisdictions where it has already been introduced, in particular in the US and the CFTC's made available to trade (MAT) rule. It was noted that the derivatives market is global and therefore concerns were raised that a cross-jurisdiction trade could result in the derivative being subject to different rules, consequently there is a need for alignment and for participants to be able to rely on one set of rules.
19. One respondent noted that whilst the trading obligation should, in general, serve vanilla, standardised derivatives it would be less suitable for tailored and /or exotic derivatives. However, if ESMA does not calibrate the rules appropriately, this could lead to a shift in trading more complex derivatives precisely because they are not subject to the trading obligation and so would be a way of evading it. ESMA was also advised to consider the impact of any trading obligation on derivatives used for hedging purposes as, if costs of hedging rise, the markets may become less resilient through participants being less likely to engage in hedges.
20. Some respondents noted that ESMA should take into account the number of trading venues which trade the derivatives class (or subset) subject to the trading obligation: if traded on only a small number of venues, the threshold should be correspondingly higher as firms may not have access at the time the trading obligation is imposed and need to pay for access (fees, IT systems, connectivity, etc.). Consequently the cost of trading and accessing the venue(s) should be considered. Further, if the only trading venue(s) on which the instrument trades are OTFs, ESMA should consider that the operators are able to determine and restrict access. A minimum number of trading venues (three was one suggestion) should be set on which the class of derivative or subset trades before applying the trading obligation.
21. Some respondents proposed that ESMA should consider the number of participants in the trading venues which will trade the derivatives and whether they can provide access to their clients' clients. It was suggested that ESMA set a de minimis of participants in the trading venues which trade the derivatives before the trading obligation is applied

and again, the smaller the number of participants and trading venues, the higher the threshold.

22. Feedback also included proposing that ESMA considers whether there are alternative instruments which market participants could move to if certain classes of derivatives (or subsets) are subject to the trading obligation. If so, participants may opt for these and therefore liquidity would decrease in the on-venue traded derivatives.
23. Whether the trading obligation is suitable only for transactions below a certain size: The key comments made in relation to this criterion were that large in scale transactions should be excluded from the scope of the trading obligation as there is unlikely to be sufficient liquidity on trading venues to support them. In support of their arguments, respondents noted the CFTC has block sizes above which trades can be executed off venue.
24. Decision mechanism for assessing liquidity criteria: With respect to how the criteria would be combined to determine whether an instrument or class of instruments was liquid, ESMA proposed a weak preference for given equal weight to each of the four criteria with each one having to be met. As noted above, some respondents considered that some criteria should be given more weight than others. Others proposed an alternative 'cascade' approach whereby the first criteria to be assessed would be frequency and a class of derivatives (or subset) would only continue to be assessed against the next criterion if it 'passed' the frequency one.
25. Other comments: Several responses voiced concern that under Article 32(4) a trading obligation could be applied to non-cleared products not subject to the clearing obligation.

Proposal

26. ESMA proposes to specify the set of criteria of the liquidity test in Article 32(3)(a), (b) and (c) of MiFIR by undertaking to take into consideration the factors listed below when carrying out the liquidity tests in order to make the concrete determinations of the application of the trading obligation to a class of derivatives or a relevant subset thereof in accordance with Article 32(1) of MiFIR.
27. ESMA emphasises, however, that any application of the liquidity test to a specific class of derivatives or a relevant subset thereof has to fit the specific characteristics of each class or sub-class. Therefore, ESMA will always have to first make an assessment of which specific liquidity factors are relevant on a case-by-case basis and then apply them taking into account such relevance for each class or sub-class. ESMA therefore will apply the liquidity factors based on different weightings as they are appropriate for each class or sub-class. The ultimate application of the trading obligation under Article 32(1) of MiFIR will always have to be based on an overall assessment of whether a class or sub-class is sufficiently liquid to support the introduction of a trading obligation.

28. Alignment of criteria under the definition of 'liquid market' with the trading obligation criteria: ESMA agrees with the majority of the comments received that the assessments for determining whether there is a 'liquid market' under Article 2(1)(17)(a) and for the trading obligation should follow a similar approach but the thresholds should not necessarily be the same. In addition, given the different purposes of the two assessments, ESMA intends to build sufficient flexibility into its draft RTS so that it does not close down approaches to assessing the criteria which may, subsequently, prove to be valid.
29. Average frequency of transactions: In line with the majority of feedback received, ESMA's preferred approach for calculating this criterion will be to set thresholds for both a minimum number of trades per day and a minimum number of days on which trading took place, over a specified period of time (the 'assessment reference period'). ESMA's intention is to provide for flexibility in the draft RTS so that alternative approaches for calculating this criterion, for example, taking into account the number of trades per day and/ or the nominal size per day, are not limited.
30. ESMA received a number of comments stressing the importance of removing technical trades from the calculation of average frequency of transactions. ESMA notes that Recital 27 MiFIR states "The [trading] obligation...should not apply to the components of non-price forming post-trade risk reduction services which reduce non-market risks in derivatives portfolios in accordance with [EMIR]...without changing the risk of the portfolios. In addition, while it is appropriate to make specific provision for portfolio compression, this Regulation is not intended to prevent the use of other post-trade risk reduction services." ESMA considers the intention of MiFIR is to not include such trades within the scope of the trading obligation assessment and notes that in its analysis of the data for calculating the transparency thresholds for thresholds, portfolio compression and intragroup transactions were removed from the data. The extent to which such trades can be removed from the data depends on whether they are flagged.
31. Average size of transactions: ESMA's preferred approach for calculating this criterion will be the division of notional size by number of trading days during the specified period. However, ESMA proposes to draft the RTS sufficiently broad so that other options, e.g. calculation of notional size divided by number of trades, are not limited.
32. Assessment reference period: In line with the majority of comments received, ESMA considers that the assessment reference period may need to vary depending on the class of derivatives or subset. ESMA does not intend to introduce hard timeframes within its draft RTS but allow maximum flexibility, noting that the assessment reference period will depend on both the class (or subset) and the quantity and quality of data available for such classes (or subsets).
33. Number and type of active market participants: ESMA will assess this criterion by giving consideration to the number of members or participants of a trading venue involved in at least one transaction in a given market or where any member or participant of a trading

venue has a contractual arrangement to provide liquidity in a financial instrument at least on one trading venue.

34. Average size of spreads: ESMA has considered the responses and agrees that the end-of-day spread provides a very limited snapshot. Therefore, ESMA proposes to use the average size of weighted spreads over different periods of time.
 35. Anticipated impact of the trading obligation on liquidity and the commercial activities of end users which are not financial entities: As noted in the feedback section above, ESMA received a number of useful proposals on the factors it should consider when assessing the anticipated impact of the trading obligation on liquidity, for example:
 - i. Data on historical trading patterns;
 - ii. The type of trading venues on which the class of derivatives or subset thereof is admitted to trading or trades at the time the trading obligation comes into force;
 - iii. Whether the class of derivatives or subset thereof is subject to a trading obligation in another jurisdiction; and
 - iv. The availability of alternative instruments to the class of derivatives or subset thereof at the time the trading obligation comes into force which may lead to a migration of trading activity if not also subject to the trading obligation.
 36. Whether the trading obligation is suitable only for transactions below a certain size: With regard to the requirement to determine whether or not a subset of derivatives is only liquid below transactions below a certain size, ESMA noted in its DP a preference to align the methodology of any assessment with that for the large in scale waiver and describe any threshold in similar terms. This does not mean the sizes will necessarily be identical and an assessment will be made on a case by case basis. Any size threshold set would take into account the specific characteristics of the class of derivatives or subset under analysis and be laid forth for consultation with market participants in the mandatory public consultation ESMA must undertake before submitting the RTS to the Commission for approval.
 37. Decision mechanism for assessing liquidity criteria: The trading obligation determination for each class or sub class of derivatives will be made on a case-by-case basis. The advantage of this approach is that a one size methodology does not need to be imposed on all assessments but provides flexibility so that where some criteria are more important than others for certain classes or sub classes of derivatives, ESMA will focus on these criteria. Consequently, ESMA may not always give equal weight to each criteria but judge each case separately.
- Q88. Are there any other criteria that ESMA should take into account when assessing whether there are sufficient third-party buying and selling interest in**

the class of derivatives or subset so that such a class of derivatives is considered sufficiently liquid to trade only on venues?

Q89. Do you have any other comments on ESMA's proposed overall approach?

Criteria for determining whether derivatives have a direct, substantial and foreseeable effect within the EU

Background/Mandate

Article 28(5) of MiFIR – Criteria for determining whether derivatives have a direct, substantial and foreseeable effect within the EU

In order to ensure consistent application of this Article, ESMA shall develop draft regulatory technical standards to specify the types of contracts referred to in paragraph 2 which have a direct, substantial and foreseeable effect within the Union and the cases where the trading obligation is necessary or appropriate to prevent the evasion of any provision of this Regulation.

ESMA shall submit those draft regulatory technical standards to the Commission by 3 July 2015.

38. The last paragraph of Article 28(5) MiFIR prescribes that “where possible and appropriate, the regulatory technical standards referred to in this paragraph shall be identical to those adopted under Article 4(4) of Regulation (EU) No 648/2012”.
39. The Commission published on 21 of March 2014 the Delegated Regulation (EU) No 285/2014, of 13 February supplementing Regulation (EU) No 648/2012 on direct, substantial and foreseeable effect of contracts within the Union and to prevent the evasion of rules and obligations (Regulation 285/2014).
40. The DP proposed a framework closely linked to Regulation 285/2014 for the purposes of the trading obligation for derivatives, based on the following key elements:
 - i. Considering as contracts with a direct, substantial and foreseeable effect within the Union:
 - a. Contracts entered into by a third country entity which has a guarantee from an EU financial counterparty and would be subject to the clearing obligation if they were established in the EU.
 - b. Contracts entered into between two European branches of non-EU financial and non-financial counterparties.
 - ii. An indicative set of criteria to measure the substance or effect on the Union of trading which would normally be subject to the trading obligation but escapes it by virtue of a unique business arrangement, considering mainly as such those designed for the purpose of avoiding the trading obligation.

Analysis following feedback from stakeholders

41. Almost all respondents supported the proposed approach.
42. However, several respondents highlighted that adopting a consistent approach between EMIR and MiFIR may not be sufficient given the global nature of financial markets. These respondents requested ESMA ensure that no conflicts with other jurisdictions or scope for arbitrage arise as a result of the provision on third-country firms and to facilitate compliance through third-country trading venues. In particular, respondents asked ESMA to specify in the draft MiFIR RTS that the criteria will not have been met if the clearing obligation does not apply to the transaction as a result of the application of Article 13 of EMIR. Recognising the relevant third country's trading platforms pursuant to Article 28(4) of MiFIR alone does not sufficiently address the potential for duplicative and conflicting rules as the legislation of the relevant third country may not (for legitimate reasons) impose a trading obligation on the particular transaction.
43. Several responses stress that the proposal is not fully consistent with Regulation No 285/2014 Article 2(2) as the proposal in relation to the trading obligation for derivatives expands the original scope to European branches of non-EU financial and non-financial counterparties, as opposed to Regulation No 285/2014 which only refers to EU branches of financial counterparties. Regarding the scope of the draft RTS, one respondent also supported extending it to transactions entered into between an EU branch of a third country and a third country as the impact would be the same as the other cases covered by EMIR.
44. Regarding the EU guarantee of a contract, it was requested that the technical standards specify which arrangements, in the form of a guarantee, are covered to avoid requiring counterparties to verify the enforceability of such guarantee.

Proposal

45. In line with the responses received and the mandate included in Article 28(5) of MiFIR, ESMA has maintained the draft RTS in line with Regulation No 285/2014.
46. ESMA acknowledges that there was a misalignment in terms of the scope between the DP and Regulation No 285/2014 that has been corrected. Nevertheless, ESMA welcomes additional comments regarding the need to expand the scope of the RTS and non-financial counterparties.
47. ESMA was asked to clarify in the draft RTS that the criteria are not met if the clearing obligation does not apply to the transaction as a result of the application of Article 13 of EMIR. In that regard, it is noted that:
 - i. the scope of Article 28(5) of MiFIR refers to derivatives that would fall out of the scope of the trading obligation otherwise; and

- ii. the determination of the equivalence under the clearing (Article 13 EMIR) and the trading obligations (Article 28 MiFIR) are independent of each other.
48. As a consequence, a class of derivatives that has been exempt from the clearing obligation in accordance with the procedure set out in Article 13 of EMIR might still be subject to the trading obligation in case it had a direct, substantial and foreseeable effect within the Union unless an implementing act on equivalence under Article 33(3) of MiFIR has been adopted.
49. Finally, with respect to the point made on the eventual obligation of counterparties to verify the enforceability of a guarantee, it is noted that ESMA has already analysed the responsibility of counterparties in relation to a different topic (see OTC question 4 on Questions and Answers. Implementation of the Regulation (EU) No 648/2012 on OTC derivatives, central counterparties and trade repositories³⁵). Along the same principle, it is noted that counterparties are not expected to conduct verifications of the representations received and may rely on such representations unless they are in possession of information which clearly demonstrates that those representations are incorrect.
- Q90. Do you agree with the proposed draft RTS in relation to the criteria for determining whether derivatives have a direct, substantial and foreseeable effect within the EU?**
- Q91. Should the scope of the draft RTS be expanded to contracts involving European branches of non-EU non-financial counterparties?**
- Q92. Please indicate what are the main costs and benefits that you envisage in implementing of the proposal.**

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 11: Draft regulatory technical standards on criteria for determining whether derivatives should be subject to the trading obligation (Article 32(6) of MiFIR)

Draft RTS 12: Draft regulatory technical standards on criteria for determining whether derivatives have a direct, substantial and foreseeable effect within the EU (Article 28(5) of MiFIR)

³⁵ http://www.esma.europa.eu/system/files/2014-1300_qa_xi_on_emir_implementation_october_2014.pdf

4. Microstructural issues

4.1. Organisational requirements for investment firms (Article 17 MiFID II)

Background/Mandate

Article 17(7)(a) of MiFID II

7. *ESMA shall develop draft regulatory technical standards to specify the following :*

(a) The details of organisational requirements laid down in paragraphs 1 to 6 to be imposed on investment firms providing different investment services and/or activities and ancillary services or combinations thereof, whereby the specifications in relation to the organisational requirements laid down in paragraph 5 shall set out specific requirements for direct market access and for sponsored access in such a way as to ensure that the controls applied to sponsored access are at least equivalent to those applied to direct market access.

Analysis following feedback from stakeholders

Governance

1. ESMA's proposal in this respect replicates the arguments made in the consultation paper for the ESMA Guidelines on Systems and controls in an automated trading environment for trading platforms, investment firms and competent authorities (Ref. ESMA/2012/122; from now on, the Guidelines)³⁶. However, ESMA has expanded on the guidelines by further specifying that compliance staff need to be in close contact with relevant trading personnel.
2. Regarding governance of the investment firm's algorithmic trading systems, the proposal remains in line with the Guidelines. This proposal has to be read in conjunction with the new requirements on the annual review and validation of systems which clarify the investment firm's senior management responsibility in understanding the risks to which the firm is exposed, setting and adjusting the firm's risk appetite accordingly, and ensuring that staff act in line with the firm's risk appetite.

Staffing, training on order entry, and training on the prevention of market abuse

³⁶ http://www.esma.europa.eu/system/files/esma_2012_122_en.pdf

3. ESMA's proposal in this respect replicates the arguments made in the consultation paper for the Guidelines. Regarding staff training programs ESMA has clarified that such programs should be organised in a format that ensure an effective outcome for the group of persons involved. Additionally, ESMA has refined the wording to give more focus to ensuring staff have a clear knowledge of regulatory requirements regarding market abuse.

Business continuity arrangements

4. ESMA's proposal in this respect replicates the arguments made in the consultation paper for the Guidelines. However, this consultation has added to the Guidelines by providing a minimum range of disruptive scenarios related to the operation of trading systems to be considered by investment firms. The proposed list has been developed to provide firms with greater clarity over what ESMA expects to be considered as a minimum. ESMA is keen to know whether this list of disruptive scenarios is appropriate and whether it should be reduced or expanded.

Q93. Should the list of disruptive scenarios to be considered for the business continuity arrangements expanded or reduced? Please elaborate.

5. The requirement to review these continuity arrangements at least on an annual basis is to ensure that firms are continually reviewing arrangements.

IT Security

6. A majority of respondents generally agreed with the presented approach to IT security.
7. However, a significant number of respondents criticized the requirement to adhere to "internationally accepted IT standards" as being too inflexible, especially for specialised proprietary trading firms. Hence, the requirement has been adapted to make clear that only an appropriate adherence to standards, where applicable, is expected.
8. Some respondents argued that measures against cyber-attacks (Article 2 of Directive 2013/40/EU) are not proportionate for some firms, in particular where systems and networks are encapsulated in a dedicated infrastructure. The text has been adapted to make clear that only appropriate measures against cyber-attacks are intended that are in line with the individual circumstances of the firm.
9. A number of respondents pointed out that not in all cases penetration tests are necessary. The text has been adapted to make clear that the scope and frequency of penetration tests and vulnerability scans depend upon the individual circumstances.
10. Some respondents stated that two factor authentication is only significant for retail banking. The text has been adapted to make clear that appropriate measures against internal attackers are to be in place, especially for internal users with critical access rights (e.g. server administrators).

11. A significant number of respondents argued that source code escrow and full scale software audits of purchased software would be unrealistic and too cost intensive. ESMA has adapted the proposed requirement to be less prescriptive on the concrete measures and also clarifying that confidentiality concerns for the vendor may be addressed in the contract between the firm and its vendor.

Record keeping

12. DP respondents requested that ESMA provides more clarity on the different record keeping requirements for investment firms trading algorithmically, and those pursuing a high frequency algorithmic technique. Respondents noted that the requirement to keep time sequenced records of order data (outlined under Article 17(2) subparagraph 5 of MiFID II) is only applicable to firms using a high frequency algorithmic trading technique and not to all firms trading algorithmically.
13. Although Article 17 (2) subparagraph 5 only makes reference firms using a high frequency algorithmic trading technique, Level 1 text, in particular under Article 25 MiFIR and Article 16(6) of MiFID II, broadens the scope of the record keeping obligation and requires investment firms to keep record of orders and transactions regardless of whether they are engaged in HFT or not.
14. ESMA also stated in the DP that it was considering whether the following data should be stored:
 - i. Each parameter set up to calibrate the trading algorithm of the investment firm at any given time.
 - ii. Market data messages that the investment firm received.
15. Respondents were strongly opposed to the above proposals. Responses argued that ESMA was exceeding its given mandate by proposing to keep record of such information, that retaining such information would be extremely costly, and that it would simply create replication of trading venue data. One respondent provided a practical example which highlighted the volume of data being discussed and the length of time it could potentially take to process this. In light of the DP feedback and practical examples provided ESMA has decided not to pursue the proposals further as it would create a burden which was disproportionate to any potential benefits.

Testing of algorithms and systems and change management

16. According to Article 17(1) of MiFID II investment firms must ensure their systems are fully tested and properly monitored. The DP outlined several proposals to aid firms in achieving this objective.

Restricted deployment

17. The proposal in the DP suggested that algorithms being deployed in a live trade environment should have restrictions placed with regard to the number of financial instruments being traded, price, value and number of trades, the strategy positions and the number of markets to which orders are sent. Respondents noted that restricted deployments would aid in identifying errors but that ESMA had been too prescriptive in the approach outlined. The majority of respondents felt that the parameters for restriction were relevant. Enforcing restricted deployment on all algorithms was not well received. The most common argument against this approach was that it would not be adequate given the variety of algorithms and participants active in the market. Market-makers, for example, would not be able to fully restrict the deployment of a change to an algorithm and still satisfy their obligation to quote on a continuous basis.
18. ESMA notes the concerns that industry respondents have raised with respect to this proposal but has not changed the proposal outlined in the DP.

Testing scenarios

19. Respondents were concerned that the scenarios outlined by ESMA for on-going testing did not adequately cover the risk that high messaging volumes posed to orderly trading. In particular, firms felt that running and stopping a large number of models in parallel was not as important as testing a system's reaction to peak messaging volumes. ESMA appreciates this concern and its proposal with respect to annual stress testing has been complemented with a specific test covering peak messaging volumes. The requirement to run and stop models in parallel has also been kept as this may aid firms in identifying and assessing undesirable interactions between their algorithms.

Non-live test environments

20. ESMA outlined in the DP a proposal which would require firms to test an algorithm/strategy in the non-live test environment of each and every venue it wished to deploy the algorithm/strategy. The responses received to this proposal were varied.
21. The first concern that respondents raised was with respect to the availability, and quality, of non-live testing environments. Respondents felt that the quality of these environments was not sufficient to enable them to be compliant with the ESMA proposal. Article 48(6) of MiFID II, however, requires trading venues to provide environments which facilitate such testing. Concerns around availability and quality, therefore, should be addressed by this requirement. Some trading venues were also critical of the proposal, as they felt that creating a realistic non-live environment would require an aggregation of pan-European trade data. They felt that achieving this was likely to be impossible and so the effectiveness of the proposal would be limited. Market participants noted that minimal value is added when non-live testing is undertaken across a range of venues which are part of the same group. Respondents felt that replicating non-live testing across a series of venues which operate using the same matching logic was an unnecessary cost for them to bear.

22. Market microstructure differs greatly from venue to venue. Non-live testing on a venue by venue basis, therefore, is essential in assessing how an algorithm may perform within that particular market microstructure. ESMA notes the concerns that industry respondents have risen with respect to this proposal but has not materially changed the proposal outlined in the DP.
23. Respondents also demanded clarity on the level of segregation which ESMA would expect between the production and testing environments. Respondents were concerned that if ESMA required full segregation of all hardware, software and network elements then important synergies would be lost. ESMA has clarified in this CP that the segregation applies to functions which are critical to the independent functioning of these systems.

Sign-off and review procedures in relation to change management and testing

24. The change management principles outlined by ESMA were well received by respondents.

Real time monitoring

25. ESMA proposed that investment firms should employ drop copies in the context of the requirement to perform real time monitoring of their order flow. In response to the feedback received, ESMA has further clarified what it means by the term “drop copy.” As in other areas, in light of the feedback received, ESMA has changed the periodicity for mandatory reviews to annually (instead of twice yearly).
26. Respondents widely agreed that drop copies are useful in the context of monitoring. Some respondents questioned, however, the usefulness of drop copies for the identification of disorderly trading (as opposed to their use in financial risk management). ESMA agrees that drop copies are important for financial risk management purposes, but also continues to consider that they are useful in the context of monitoring for disorderly trading, for example in instances where the internal systems of the firm seem to indicate normal quoting behaviour by the firm’s trading algorithms, but where the drop copies received from third parties indicate otherwise.
27. Some respondents expressed concerns that in certain less electronic or less liquid markets (such as those for fixed income instruments) drop copies may not be available in real time. ESMA took note of this concern. While ESMA considers that drop copies can normally be expected to be available in (near) real time from trading venues that allow algorithmic trading to take place on its systems, ESMA has undertaken to address these concerns by clarifying that the requirement for firms to reconcile their own electronic trading logs with records regarding their current outstanding orders and risk exposures via drop copies is additional to (rather than following from) their responsibility to maintain real-time and accurate trade and account information.

28. In the context of the requirement for investment firms that monitoring should be conducted by staff who understand the firm's trading flow, ESMA proposed in the DP that such monitoring should be undertaken by an independent risk control function within the firm. In its DP, ESMA addressed the issue that there would be no such independence in cases where the monitoring would be undertaken by the actual trader in charge of the algorithm. Respondents were critical of the proposed approach, arguing that there is an important monitoring role for traders in the three-lines-of-defense model of risk management. These respondents pointed out that the trader in charge of the algorithm is considered to be in the best position to detect signs of disorderly trading, and therefore should clearly have a role in the monitoring of the order flow. ESMA did not have the intention to prevent traders from monitoring the order flow, but rather to ensure that, additionally, an independent function within the firm also monitors this flow. ESMA recognises, however, that its intention may not have been expressed sufficiently clear in the DP. Therefore, ESMA has now clarified that monitoring should be performed both by the actual trader in charge of the algorithm and by one or more independent risk control functions within the firm.
29. Finally, ESMA had proposed in the DP that investment firms would have to use internal algorithms flags as an additional risk management tool. Respondents were very critical of this proposal, pointing out that such a requirement would be disproportionate and add undue complexity to the order entry process. In particular, respondents warned that the approach as proposed by ESMA would generate an excessive amount of data with little added value for the stated goal of internal risk management. Additionally, respondents pointed to the operational difficulties in putting such an approach in effect, in particular due to the fact that while computers can execute calculations at very high speeds, they cannot store or write data at the same tempo. Redundant systems would be needed to address this mismatch, at a cost that would be disproportionate to the limited benefit associated with the retention of this data. After due consideration of the arguments put forward by the respondents, ESMA has decided not to pursue its initial proposal further, and not to integrate this requirement in the draft RTS. ESMA notes that this is without prejudice to the other level 2 requirements regarding the flagging of algorithms.

Kill functionality

30. There was widespread support for ESMA's proposal of a 'kill button'. However several respondents strongly advised that such functionalities should only be used in an emergency. Respondents warned that kill switches can be dangerous to operate because it can be difficult for a human operator to distinguish legitimate from non-legitimate systems activity, particularly in turbulent markets. Therefore, kill switches should be used lightly, and the decision to kill or halt activity should be made with due precision and optimal information about the risks involved. ESMA has taken note of these concerns, and has clarified in the proposed RTS that kill switches are to be used as an emergency measure, i.e. only when absolutely necessary.

31. Regarding the proposals on monitoring for the prevention and identification of potential market abuse, the responses received were mixed. ESMA has taken note of the concerns expressed by respondents and has taken the following approach outlined below. As in other areas, in light of the feedback received, ESMA has changed the periodicity for mandatory reviews to annually (instead of twice yearly).
32. A majority of respondents considered that the requirement for the monitoring system to generate operable alerts at the start of the next trading day would not be realistic for certain markets or products where manual handling is required and therefore require more time. ESMA recognises this concern, and has clarified that its expectation for monitoring systems to generate operable alerts at the start of the next trading day only applies to fully automated reports. Reports that need manual handling are expected to be generated before the end of the next trading day.
33. Respondents expressed cost concerns regarding a requirement for undertaking automated monitoring on algorithmic trading activities and argued that the decision to automate market surveillance alerts should be at the discretion of the firm. However, given the large amount of data that needs to be analysed, as well as the complexity of algorithmically generated trading patterns, ESMA considers that the nature of algorithmic trading activity is such that applying non-automated (i.e. manual) surveillance filters will not be sufficient to identify potential instances of market manipulation. Therefore, ESMA considers that automated alert systems to identify potential market manipulation should be in place in all cases where an investment firm undertakes algorithmic trading activities. ESMA has clarified that such an automated system should be able to at least analyse in an automated way the indicators of manipulative behaviour relating to false or misleading signals and to price securing as specified by Annex 1.A of Regulation (EU) No. 596/2014 on market abuse.
34. However, ESMA does see room for applying a level of proportionality regarding the implementation of automated alerts for the identification of other forms of market abuse, i.e. insider dealing, unlawful disclosure of inside information, and market manipulation by means of the employ of a fictitious device or any other form of deception or contrivance. ESMA considers that, based on a rigorous risk assessment, firms could decide not to automate the alerts for the latter mentioned types of market abuse, e.g. because the firm does not have any clients, or because the firm is certain that the trading activity they allow to take place via their systems cannot be used for these forms of market abuse.
35. In this context, ESMA wants to clarify that the requirements regarding market surveillance and the use of automated alerts does not presuppose a requirement to contract with a third party provider. ESMA considers that investment firms are free to develop their own automated surveillance alerts, as long as these are fit for purpose.
36. In order to adequately deal (in terms of follow-up) with alerts that have been generated by the surveillance systems ESMA proposed in the DP that the surveillance system should have “integrated workflow creation and management capabilities.” Respondents

were critical of the requirement to mandate the integrated nature of such capabilities, noting that this would restrict market participants' options to only a limited number of vendors. ESMA has taken note of this concern, and clarified that the workflow creation and management capabilities can run in parallel to the surveillance system, i.e., do not necessarily have to be integrated within it.

37. ESMA also received feedback arguing that a requirement to undertake cross-market, cross-asset and cross-product monitoring (where a firm engages in such activities) would be disproportionate. ESMA recognises that currently there exist certain constraints in undertaking these types of monitoring, in particular regarding cross-asset class and cross-product surveillance (depending on the products involved and the nature of the trading activities of the firm). To take into account these constraints, ESMA has clarified that these types of monitoring should take place where practicable. ESMA notes, however, that its concept of practicability in this instance only relates to the genuine technical or operational inability to undertake such monitoring.

Accessibility and competence of monitoring staff

38. Respondents were in agreement with ESMA's proposed approach in the DP. Consequently, ESMA has replicated these requirements in the RTS without making any changes.

Pre-trade controls on order entry and post-trade controls

39. Most respondents agreed that the individual controls as outlined by ESMA in the DP were reasonable with some revisions. In order to address reasonable concerns expressed by respondents, ESMA has further specified its proposal as follows: ESMA has clarified that controls on maximum order value should only apply for shares and equity like-instruments. ESMA agrees with comments from respondents that the control on maximum long/short positions and overall strategy can be appropriately considered as a post-trade control. Additionally, ESMA has clarified that this control should only apply for derivatives products.
40. In light of feedback received in regard of the proposed inclusion of market maker protections, questioning the relevance of this requirement as a pre-trade control, ESMA has removed this control from the list.
41. Additionally, ESMA is further considering supplementing the maximum order value and maximum order volume pre-trade controls with a "market impact assessment" of the orders submitted. The latter would consist in anticipating and measuring ex-ante the potential impact of orders submitted to the trading venue on the price of the financial instrument. Hence, contrary to the maximum order value and maximum order volume pre-trade controls, the market impact assessment would be dynamic (as it is not set on fixed values) and would take into account the financial instrument's liquidity at the time when the order would be sent to the trading venue.

42. This “market impact assessment” would identify outsized market orders (or limit orders where the limit is far from the current spread) leading to a sharp variation of the share price due to the strong imbalance between the submitted quantity and the actual liquidity of the share. Some market participants currently use this tool to identify and prevent “fat finger” errors.
43. ESMA considers that in case the market impact assessment pre-trade control would become compulsory, it should only be applied to immediately tradable orders (thus excluding stop orders, passive orders or Valid-For-Auction orders).
44. Several respondents commented negatively on ESMA’s proposal that all pre-trade controls should be applied as a minimum at all times. Some respondents argued that, in particular, clients of DEA providers should be subjected to fewer controls than the DEA providers themselves.
45. ESMA does not agree with the concept of applying fewer pre-trade controls on the order flow of DEA users. ESMA considers that in order to ensure for DEA providers to be able to effectively control the order flow of their clients, the controls of these clients should as a minimum be the same ones as the DEA providers themselves apply on the orders that are being sent to the market in their name. Multiple recent incidents in European and global markets have shown that there is a realistic risk that the pre-trade controls at the level of the DEA provider or at the level of the trading venue may be inadequate or can be circumvented. As an additional protection, ESMA considers therefore that an adequate control framework around algorithmic trading necessitates redundancy of such pre-trade controls at all steps in the trading chain, i.e. including DEA users, additional to the pre-trade controls at the DEA provider and trading venue levels.
46. This is without prejudice to the fact that the DEA providers and DEA users are responsible for setting out the actual levels of the various controls. These limits should be calibrated in line with the nature, scale and complexity of their trading activities and the role of the investment firm, taking into account the need for the firm to prevent any disruption of orderly trading on the wider market. Additionally, these limits may be subject to contractual obligations, e.g. where a DEA provider requires its clients to set their control limits at predefined levels.
47. In this context, ESMA would like to point out that the pre-trade controls that it has proposed in the DP are currently already implemented by the main DEA providers in Europe, by means of adherence to industry best practice guidance. ESMA understands that the application of multiple pre-trade controls has latency implications for DEA users. However, ESMA considers that these latency concerns are being addressed by ensuring a level playing field in terms of controls amongst users and providers of DEA as well as direct members of trading venues. Additionally, requiring a minimum set of controls to be in place will prevent a detrimental race to the bottom in terms of pre-trade risk management. For these reasons, ESMA considers that setting out mandatory minimum

requirements for pre-trade controls for all investment firms undertaking algorithmic trading activity is appropriate.

48. ESMA received specific comments from some respondents regarding the pre-trade controls on outbound message rates and maximum messages limits. These respondents argued that these controls would limit a firm's ability to take appropriate action in stressed market situations or grasp commercial opportunities when these present themselves. ESMA is of the opinion that these considerations could be of concern only to the extent that in those cases the limits would not have been appropriately calibrated, thus preventing legitimate trading activity to take place. However, ESMA considers that with proper calibration these controls would still allow firms to send sufficient messages for legitimate purposes, while at the same time capping algorithmic trading activity that is clearly excessive, e.g. due to a runaway algorithm. For this reason, ESMA has decided to retain these requirements as initially proposed.

- Q94. With respect to the section on Testing of algorithms and systems and change management, do you need clarification or have any suggestions on how testing scenarios can be improved?**
- Q95. Do you have any further suggestions or comments on the pre-trade and post-trade controls as proposed above?**
- Q96. In particular, do you agree with including "market impact assessment" as a pre-trade control that investment firms should have in place?**
- Q97. Do you agree with the proposal regarding monitoring for the prevention and identification of potential market abuse?**

Direct Electronic Access

49. The majority of respondents supported ESMA's proposals with respect to DEA, and did not identify additional elements to be considered. However, the ESMA proposals intending to allow DEA providers significant insight into the business of prospective clients were not well received by DP respondents. The two elements in question were for DEA providers to assess:
- i. The training and competency of individuals entering orders; and,
 - ii. All algorithms the investment firm has received from the DEA user in order to deploy them for the execution of orders;
50. Respondents felt that it would be impractical to require a DEA provider to assess the training and competency of their client's staff. A number of respondents noted that this element would already be part of the "know-your-client" (KYC) checks. Upon reviewing the DP feedback ESMA has decided to remove this provision from the draft RTS. The drafting of the DP put the onus on the DEA provider to ensure that the staff of its clients

is adequately trained. The onus, however, should be on a prospective client to ensure that its staff has adequate permissions and training. Prospective clients should evidence, as part of KYC that their staff are adequately trained, and have appropriate trading permissions, but DEA providers will not be expected to undertake this assessment of their clients staff themselves.

51. The second element which respondents considered unreasonable was the analysis of a client's algorithms and source code. A number of trade associations, buy and sell side firms felt that this would create a significant conflict of interest between a DEA provider and its clients. DEA providers may also be direct competitors of their clients and respondents felt that the provision of such information would give a DEA provider an unfair advantage over its client. Respondents also raised the concern that the provision of this proprietary information could breach intellectual property law. The feedback from questions 215 and 216 both express these opinions strongly and, thus, ESMA has decided not to include this provision in the draft RTS.
52. In a nutshell, in the draft RTS, it has been clarified that: the DEA provider shall at least be aware of the types of strategies pursued by the potential DEA user; DEA providers must undertake comprehensive due diligence under the draft RTS; DEA clients must ensure that their algorithms are tested in a non-live environment under the draft RTS and, finally, the activity of a DEA client is ultimately still the responsibility of a DEA provider. These layers of control aim at giving ESMA the comfort that DEA providers will have both the controls, and incentives, to ensure that their clients make every effort to ensure that their algorithms do not contribute to disorderly trading.
53. A number of additional elements were suggested to be included into the due diligence process. It is important to note that the requirements outline a minimum expectation from firms with respect to their due diligence. ESMA has prioritised those issues that it believes to be most important in this respect. This does not prohibit firms incorporating additional elements if they believe them to be appropriate to their individual business.
54. Another proposal that ESMA consulted on was the idea that the due diligence process could be different for new and existing clients. Respondents felt that a long-term relationship did not lend itself to applying a lower form of due diligence with respect to DEA provision. The majority of respondents felt that regardless of the length of a pre-existing relationship, the due diligence process should be the same. Respondents stated that whilst a long-term relationship may give a DEA provider a greater degree of comfort, with respect to DEA provision, this should not be used as a tool to forego a robust due diligence process. As a result of this feedback ESMA has decided not to differentiate between the due diligence process for new or existing clients.

Firms acting as general clearing members (GCMs)

55. The ESMA DP outlined a list of minimum criteria that clearing firms should assess their clients by. Buy-side respondents expressed a desire for a less prescriptive approach to

be taken by ESMA with respect to the assessment criteria. The list has been outlined, however, to ensure that firms acting as GCMs have clarity over what ESMA expects to be assessed during the assessment process. Outlining minimum criteria will ensure a greater level of consistency amongst firms acting as GCMs. Assessments may be more stringent on a per client basis, but setting a minimum set of criteria is essential.

56. ESMA also consulted on whether GCMs should make public their criteria for accepting new clients. In general, buy-side firms were not supportive of this proposal. Respondents were concerned that publishing minimum criteria would be difficult because of the number of factors that go into the decision to take on a new client. Respondents felt that outlining minimum criteria may lead to GCMs competing for business by eroding the quality of their criteria and controls. ESMA recognises this potential risk and the importance for firms to maintain commercial flexibility over who they on-board as clients. The proposal outlined in this CP sets minimum criteria which clearing firms should be assessing clients against but does not impose upon them the requirement to disclose the levels of these criteria.
57. Industry feedback indicated that maintaining a real-time view on clients' positions was desirable. ESMA supports this view given the risk that without real-time monitoring there is a risk that clients could create significant credit risk for a GCM without the GCM being fully aware.

Proposal

58. Further to the feedback above, ESMA has developed its draft proposal which is presented in the draft RTS in Annex of this document.

Q98. Do you have any comments on Organisational Requirements for Investment Firms as set out above?

Q99. Do you have any additional comments or questions that need to be raised with regards to the Consultation Paper?

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 13: Draft regulatory technical standards on organisational requirements of investment firms engaged in algorithmic trading

4.2. Organisational requirements for trading venues (Article 48 of MiFID)

Background/Mandate

Article 48 (12) of MiFID II

12. *ESMA shall develop draft regulatory technical standards further specifying:*

(a) *the requirements to ensure trading systems of regulated markets are resilient and have adequate capacity;*

[...]

(c) *the controls concerning direct electronic access in such a way as to ensure that the controls applied to sponsored access are at least equivalent to those applied to direct market access;*

[...]

(g) *the requirements to ensure appropriate testing of algorithms so as to ensure that algorithmic trading systems including high-frequency algorithmic trading systems cannot create or contribute to disorderly trading conditions on the market.*

1. Article 48 of MiFID II requires a regulated market:

- i. to have in place effective systems, procedures and arrangements to ensure its trading systems are resilient, have sufficient capacity to deal with peak order and message volumes, are able to ensure orderly trading under conditions of severe market stress, are fully tested to ensure such conditions are met and are subject to effective business continuity arrangements to ensure continuity of its services if there is any failure of its trading systems;
- ii. to have in place effective systems, procedures and arrangements to reject orders that exceed pre-determined volume and price thresholds or are clearly erroneous;
- iii. to be able to temporarily halt or constrain trading if there is a significant price movement in a financial instrument on that market or a related market during a short period and, in exceptional cases, to be able to cancel, vary or correct any transaction. Regulated markets are required to ensure that the parameters for halting trading are appropriately calibrated in a way which takes into account the liquidity of different asset classes and sub-classes, the nature of the market model and types of users and is sufficient to avoid significant disruptions to the orderliness of trading;

- iv. to have in place effective systems, procedures and arrangements, including requiring members or participants to carry out appropriate testing of algorithms and providing environments to facilitate such testing, to ensure that algorithmic trading systems cannot create or contribute to disorderly trading conditions on the market and to manage any disorderly trading conditions which do arise from such algorithmic trading systems;
 - v. to set and apply appropriate criteria regarding the suitability of persons to whom direct electronic access may be provided. Member States shall also require that the regulated market set appropriate standards regarding risk controls and thresholds on trading through such access and is able to distinguish and if necessary to stop orders or trading by a person using direct electronic access separately from other orders or trading by the member or participant. The regulated market shall have arrangements in place to suspend or terminate the provision of direct electronic access by a member or participant to a client in the case of non-compliance;
 - vi. to be able to identify, by means of flagging from members or participants, orders generated by algorithmic trading, the different algorithms used for the creation of orders and the relevant persons initiating those orders. That information shall be available to competent authorities upon request
2. Article 18(5) of MiFID II requires investment firms and market operators operating an MTF or OTF to comply with Article 48 and have in place all the necessary effective systems, procedures and arrangements to do so.

Analysis following feedback from stakeholders

Definitions and introductory elements for trading venues

3. ESMA's proposal in relation to the organisational requirements for trading venues captured by the scope of Article 48 of MiFID II aims at setting the minimum requirements that all trading venues should meet in relation to their trading systems linked to algorithmic trading. In its Discussion paper, ESMA considered for trading venues a number of definitions and clarifications as to:
- i. the term "trading system";
 - ii. the trading venues to which the requirements would apply;
 - iii. the "Real time" and "T+1" definitions in relation to the monitoring of algorithmic order entry and execution;
 - iv. the "severe market stress" and "disorderly trading conditions" definitions for the purposes of Articles 17 and 48.

4. Most of the respondents agreed with the definition of trading system. Many respondents considered that algorithmic trading can be performed on any trading system that allows automated execution, including periodic auctions and that, therefore, all trading systems should be covered to avoid circumvention. However, some respondents expressed concerns on the overly prescriptive nature of the definition and on the potential risk of capturing non pertinent elements and omitting critical ones. In addition, it was suggested to use the definitions in annex II of existing Regulation 1287/2006 for continuous order book trading systems and quote driven systems to be used. Few respondents indicated the need to qualify the term “hybrid” and to give appropriate consideration (with appropriate proportionality) to certain hybrid systems and request for quote systems which entail algorithmic trading.
5. As regards the definitions of “stressed market conditions” and “disorderly trading conditions”, many respondents supported ESMA’s proposal in the Discussion Paper. However, many respondents also underlined that the listed factors may be symptomatic of activity that is simply responding to market events and that an alternate approach might be to refer to a market stress when price formation is particularly vulnerable and disorderly trading conditions when such vulnerability has materialised into failure. Few respondents suggested qualifying “stressed market conditions” as referring to liquidity issues rather than IT system requirements and capacity issues and “disorderly trading conditions” to reflect situations where price formation is disrupted, significant delays and interruptions are experienced and message traffic increased to the point where buffering or increase in capacity is necessary.
6. In light of the responses received, ESMA considered not to amend the definitions of “trading system”. However, ESMA has revised its proposal to clarify that, in terms of scope, the requirements applies to trading venues allowing or enabling algorithmic trading through its systems, and it is considered that a trading venue allows or enables algorithmic trading where order submission and order matching is facilitated by electronic means.
7. In light of the comments received, ESMA has also revisited the definitions of “disorderly trading conditions” and “stressed market conditions”.
8. ESMA has also clarified the concept of “messages” for the purposes of the capacity of trading venues. It now refers to any kind of input (such as but not limited to the submission, modification or cancellation of an order) that implies independent use of the trading venue’s trading system’s capacity, including market orders and limit orders submitted to the trading venue by a member or participant and any quotes including any indications of interest (irrespective of whether or not they are actionable). It is also clarified that the output by the trading venue (such as the response of its system to an input by a member or participant in the form of an acknowledgement and confirmation of receipt by the trading venue) as well as batched orders (which shall be broken down into each individual component) shall be included in this definition.

General organisation requirements for trading venues

Proportionality principle

9. In its Discussion Paper, ESMA considered that trading venues should in all cases assess their degree of compliance with Article 48 of MiFID II, taking into account the nature, scale and complexity of their business. In undertaking this self-assessment, ESMA considered that trading venues should take into account at least the elements contained in a non-exhaustive list detailed in the Discussion Paper.
10. ESMA's proposal in the Discussion paper on the non-exhaustive list of factors to be considered for the purpose of the application of the proportionality principle was broadly supported by respondents to the consultation. Concerns and specific suggestions were made, among others, with respect to access provided to different CCPs, frequency of self-assessment and types of strategies incentivised by the venue's fee structure. Some respondents also raised concerns around the availability of certain information to trading venues (such as number of algorithms used and strategies implemented by market participants).
11. ESMA has maintained the principle that trading venues have to assess, before deployment of any trading system and at least once a year, the degree of compliance with Article 48 of MiFID taking into account the nature, scale and complexity of their business, maintaining more stringent requirements where appropriate. ESMA has maintained the non-exhaustive list of elements to be taken into account as a minimum by trading venues and has revised the list in light of the responses received. Under the proposed RTS, trading venues are asked to send their self-assessment to their NCAs upon approval of these self-assessments by the trading venues' senior management.

Governance and staffing

12. On February 24, 2012, ESMA published the Guidelines on systems and controls in an automated trading environment for trading platforms, investment firms and competent authorities. Governance and staffing were not part of the topics covered by the ESMA's Discussion Paper. Broadly speaking, ESMA's advice in this respect replicates the arguments made in the Consultation Paper for the Guidelines.
13. ESMA's proposal in this area focuses on the following main elements:
 - i. trading venues should, within their overall governance and decision making framework, develop, procure and monitor their trading systems through a clear and formalised governance procedure and process. The governance procedure and process must ensure that: (i) all of the relevant considerations (technical, risk and compliance) are considered when making the key decisions; (ii) the trading venue has clear lines of accountability (including procedures for sign-off for development, initial deployment, subsequent updates and resolution of problems identified through

monitoring in relation to the trading systems); (iii) the trading venue ensures an appropriate segregation of functions to ensure effective supervision of the venue's compliance with its legal and regulatory obligations;

- ii. senior management should sign-off the self-assessment of compliance with Article 48, the periodic self-assessment of compliance with Article 48 MiFID; the measures planned to expand the capacity of the trading venue and planned actions to remedy any shortcomings detected in the course of the stress tests;
- iii. compliance staff should be responsible for providing clarity about the trading venues' regulatory obligations and the policies and procedures to be developed and maintained to ensure that the use of the trading systems complies with their obligations and that any failures to comply are detected and remedied. To this end, compliance staff need to be in continual contact with the persons having relevant technical knowledge of the venue's trading activities, systems and algorithms;
- iv. trading venues should have recruitment and training to determine their staffing requirements and then to ensure they employ a sufficient number of staff with the necessary skills and expertise to manage their trading systems. This will include employing staff with knowledge of relevant trading systems, the monitoring and testing of such systems, of the sort of trading that will be undertaken by members, participants or other users of the trading venue and of the trading venue's legal and regulatory obligations.

Outsourcing

14. Outsourcing was not part of the topics covered by the ESMA's Discussion Paper.
15. ESMA's proposal in this area focuses on the following main elements:
 - i. when trading venues outsource all or part of their operational functions, they remain fully and ultimately responsible for discharging all of their obligations;
 - ii. trading venues should exercise due skill, care and diligence when entering into, managing, monitoring or terminating any arrangement for the outsourcing of all or part of their operational functions to a service provider. Trading venues should in particular take the necessary steps to ensure that, at all times, a number of conditions are satisfied (such as the service provider must have the ability, capacity, and any authorisation required by law to perform the outsourced functions, services or activities reliably and professionally; the service provider must properly supervise the carrying out of the outsourced functions, and adequately manage the risks associated with the outsourcing; the service provider must carry out the outsourced services effectively, and to this end the trading venue must establish methods for assessing the standard of performance of the service provider, including metrics to measure the service provided and specify the standards that should be met);

- iii. the respective rights and obligations of the trading venue and of the service provider in relation to the outsourcing shall be clearly allocated and set out in a legally binding written agreement, which should provide for a clear description of the operational functions that are outsourced, the access of the outsourcing trading venue, of its national competent authority and of its auditors to the books and records of the service provider, as well as the way potential conflicts of interest are identified and addressed;
- iv. trading venues should report to their national competent authorities their intention to outsource all or part of their operational functions notably where the service provider is providing the same service to other trading venues and where the trading venue intends to outsource critical operational functions. In case of outsourcing of critical operational functions the authorisation of the NCA shall be necessary.
- v. trading venues should make available, upon request, to the competent authority all information necessary to enable the authority to supervise the compliance of the performance of the outsourced activities with the requirements of these technical standards. Trading venues shall ensure that its authority may access information or inspect offices of the service provider to exercise its supervisory powers;
- vi. the provisions on outsourcing apply regardless of whether or not the outsourcing trading venue and the service provider belong to the same corporate group. However, where the trading venue and the service provider are members of the same group, the trading venue shall, in monitoring the service provider's performance of the outsourced activity, take into account the extent to which the venue controls the service provider or has the ability to influence its actions.

Capacity and resilience of trading venues

Due diligence for members or participants of trading venues

16. In its Discussion Paper, ESMA considered that a trading venue which permits algorithmic trading through its systems, should perform an adequate due diligence to ensure that all members or participants meet certain pre-defined parameters. In addition, periodic reviews should be designed and implemented by trading venues. To this end, ESMA included a list of elements to be taken into account by the trading venue when performing due diligence (pre-trade and post-trade controls on trading activities, staff selection policy and training practice, technical and functional conformance testing, testing of algorithms, existence of kill button functionality, business continuity and disaster recovery, outsourcing policy). ESMA also considered that trading venues should maintain an up-to-date list of trader IDs within members/participants and users of trading systems.
17. Responses to consultation broadly supported ESMA proposals. Most of the respondents considered that appropriate due diligence should be carried out on all entities applying to

become members/participants of a trading venue, regardless of the type of activity in which the member is involved. Views were also equally split on whether the due diligence should take into account the regulatory status of the potential member/participant.

18. Specific concerns were raised on the following elements:

- i. the need to clarify that due diligence could be performed by trading venues only with respect to members/participants for which a contractual relationship is in place;
- ii. the need to avoid duplication between any assessment made by the CA and the trading venue's due diligence as well as the need to take into account the requirements for investment firms under Article 17 of MiFID;
- iii. the difficulties to carry out at least yearly reviews where a firm is a member of several trading venues and is subject to a number of reviews concurrently and resource intensive. It was suggested trading venues to adopt a risk based approach in determining the frequency of on-going due diligence, recognising the scale and potential impact of trading undertaken by a member as well as the time elapsed since the member's last review;
- iv. the difficulties for trading venues to test investment firms' algorithms to ensure that they cannot create or contribute to disorderly trading conditions since firms do not share the details of their algorithms with trading venues and trading venues have no control over changes to algorithms;
- v. the difficulties for trading venues to scrutinize investment firms' staff selection and HR policies so that any assessment could eventually be made only on experience of staff in key positions within the trading firm;

19. In light of the comments received, ESMA revised its proposal and clarified that:

- i. trading venues shall have pre-defined publicly available standards specifically relevant to their trading model; the standards should cover the knowledge of staff and technical arrangements within all members who will be using order submission systems of the trading venue;
- ii. trading venues shall undertake a due diligence of prospective members against the standards set out by trading venues;
- iii. additional revisions of the on-going due diligence on members may be determined on the basis of the yearly risk based assessment carried out by the trading venue;
- iv. the standards shall cover, at least pre-trade and post-trade controls on investment firms' trading activities, experience of staff in key positions within the members, responsible manager/s for the operation of the trading system/s, structure and

segregation of the risk as well as compliance and monitoring functions with respect to the operation of the member, technical and functional conformance testing, where members are involved in algorithmic trading, testing of algorithms to ensure they cannot create or contribute to disorderly trading conditions, policy of use of the kill functionality, whether the member may provide DEA to its own clients and in case they may provide that service, the conditions to do that, business continuity and disaster recovery procedures and outsourcing policy at the member's level.

Testing the capacity of members or participants to access trading systems

20. ESMA preliminary view was that trading venues should establish standardised conformance testing, at both technical and functional level. The former might include tests at least for connectivity, recovery and the handling of suspended instruments or stale market data, while the latter was referred to test the ability of download static and market data as well as all business data flows. The initial proposal did not consider that testing of most basic functionalities (such as checking whether the investment firm's systems are able to submit an order or delete it) were not included under the concept of conformance testing.
21. Existing and prospective market members should test their compatibility with the trading venue's trading systems both prior to accessing and when new functionalities were deployed but not when minor changes are affected. Trading venues should facilitate data sets and access to testing environment to develop the required tests.
22. ESMA completed its proposal with the identification of the characteristics that a conformance testing at least should have:
 - i. Be easily accessible;
 - ii. The list of instruments available for testing should be consistent with the ones available in the live environment;
 - iii. A self-certification front-end so as to permit unusual scenarios to be simulated;
 - iv. Availability during general market hours or pre-scheduled periodic basis if outside market hours;
 - v. Supported by knowledgeable staff; and
 - vi. A report with the outcome of the testing should be made available to the member/participant or prospective member/participant.
23. Finally, ESMA requested views of market participants about the ability of trading venues to impose the process, content and timing of testing and the possibility of alternative means other than the offered by trading venues to develop them.

24. The majority of respondents supported the proposal although some of them asked for more clarity regarding the characteristics that a conformance test should have. For instance, some respondents demanded more granularity regarding the concept of “being easily accessible” or about leaving at the discretion of the trading venue the reports with the outcome of the tests. The insertion of self-certification front-end did not count with support as some respondents pointed out that this concept should be further clarified or replace by more general requirement for testing exceptional scenarios. Additionally, there were opinions about that the access must be free of charge.
25. Regarding the alternatives ways to comply with the testing obligations, although the respondents favoured this possibility there were no clear consensus on the fact that these alternative means must be a complement or a substitute.
26. ESMA proposes to integrate under conformance testing the testing of the most basic functionalities in order to have a comprehensive approach regarding all necessary identified tasks.
27. Trading venues should play a key role regarding the organization of the testing activities as a way to ensure its completeness and accuracy. The requirement to use the trading venue’s facilities is without prejudice of any additional testing methods the members may use.
28. It also clarifies that the access to testing services should be offered on equivalent conditions to the rest of the trading venue’s services.

Testing the member’s algorithms to avoid disorderly trading conditions

29. The purpose of this specific testing is to avoid disorderly trading conditions through the recreation of real market conditions to ensure the well-functioning of algorithms under changing circumstances.
30. ESMA preliminary view was that these testing should be part of the regular procedure before accessing to a trading venue, where apart from the possibility of using alternative means to the same purpose investment firms should use the testing facilities provided by the trading venue in which they plan to operate.
31. A key point is that trading venues should ensure the separation of testing activities from the real market flow.
32. ESMA requested views regarding the sufficiency of alternative means to avoid potential creation of or contribution to disorderly trading conditions such as a certificate from an external IT audit ensuring the completeness of the undertaken test. ESMA asked what would be the minimum capabilities that testing environment should have to avoid disorderly trading conditions.

33. Several responses considered that alternative testing scenarios designed and conducted by investment firms are a substantially superior method of testing than using trading venue's provided scenarios. However, again they did not agree whether they have to be a complement or a substitute.
34. In addition, a few respondents consider that testing should be carried out only by the trading venue. Regarding a certificate from an external IT audit to be sufficient only is strongly supported by a small number of respondents.
35. A majority of responses suggested that trading venues should specify minimum standards and include certification, conformance and failovers test scenarios. The test environment should replicate functionalities, protocols and structures similar to the ones applicable in real conditions, giving the opportunity to detect unsuitable conditions in production environment. They suggested that testing scenarios should be statistically representative, active, and working in real time. However, there were many respondents who agreed that it would be better to approach the testing of trading systems holistically, rather than focusing on attempting to enumerate all possible disorderly trading conditions.
36. Due to the importance of this issue to the market integrity, ESMA weights up the fact that it is necessary a certain degree of harmonisation of testing of algorithms and considers that the best option is to carry them out by trading venues. This is without prejudice that an investment firm additionally may decide to test its algorithms through alternative means as a complement or may need or want to test unusual scenarios. In these cases, trading venues should facilitate the means to do it. With this approach ESMA considers that the opinion expressed by the respondents is taken in consideration as the investment firm can always go as further as needed while ensuring that every algorithm has been tested in the trading venue where it operates.
37. ESMA is of the opinion that the scenarios selected by the trading venues should be appropriate to the nature and scale of trading activity that takes place on them. They should be comprehensive in terms of functionalities, protocols and structure and should be as close as to real market conditions, including disorderly market conditions.

Trading venue's capacity

38. In its Discussion paper, ESMA considered that trading venues' trading systems should have sufficient capacity to accommodate at least twice the highest number of messages per second value ever recorded on any given day regarding any of the elements of the trading system. In this respect, trading venues were required to assess the capacity on an on-going basis so as to consider that the capacity might no longer be sufficient and might require to be expanded once the number of messages had overridden the recorded peak of messages. NCAs should be immediately informed about the measures planned to expand capacity, including a proposal referred to the expected timing of the arrangements to increase its capacity.

39. Most of the respondents broadly supported the proposal. Those respondents not supporting ESMA's approach stated that trading venues have sufficient commercial incentives in this area to get to the desired outcome and therefore it should be left to discretion of trading venues. It was also considered that twice the peak volume requirement should be seen only as an orientation point and that there are other adequate mechanisms to ensure resiliency such as throttling mechanisms.
40. Among those supporting ESMA's approach, comments were made on the need for some flexibility for trading venues to operate at lower standard with some tolerance to judge whether the anomalous event is an isolated event. Trading venues should basically maintain some discretion to observe trading activity over a reasonable reference period to judge whether rescaled capacity is required. Clarifications were also asked on the time allowed for trading venues to upscale capacity. The requirement of notification to NCA of any change in capacity as well as NCA final discretion on this matters has been considered by some respondents as being too onerous also considering that trading venues often make adjustments and minor changes to trading systems for which they do not see reasons for communication to NCAs.
41. Some respondents also commented on the fact that even if a trading system has enough capacity to handle a high amount of order flow, it might still not be able to execute orders in an adequate amount of time, resulting in "stale" orders and thus impose risk on the member/participant. The disadvantage for the member could be that due to out-dated orders in the queue something will be matched that is already outdated, although the capacity of the trading venue has not been impaired. It is therefore recommended to add the principle of 'no transaction lost' for both, the trading venue and the members, regardless of any buffer proposed.
42. In light of the responses received, ESMA would like to confirm the approach and require trading venues' trading systems to have sufficient capacity to accommodate at least twice the highest number of messages per second and per value ever recorded on any given day regarding any of the elements of the trading system. ESMA did not consider opportune to fix any specific timing within which trading venues are required to install new capacity or upgrade the functionalities but indicated that the design of the trading system should permit installing new capacity "within a reasonable timeframe if necessary". In light of the comments received, ESMA considers that trading venues are allowed not to increase the capacity in justified cases providing the NCA with reasons so as not to expand their capacity.
43. With respect to the principle of 'no transaction lost', ESMA already clarified that it will be considered that the capacity of a trading system is not overwhelmed when the elements of that trading systems perform their functions without systems failures or outages, errors in matching transactions (e.g. no order lost), missing or incorrect data (e.g. no transaction lost, no display of blank or incorrect prices, no wrong trading volumes).

44. ESMA would also like to clarify that the involvement of the NCA should cover the measures planned to expand capacity and/or add new capabilities. Trading venues shall be able to scale the performance of their systems in order to respond to rising message flow that might threaten their proper operation.

On-going monitoring and periodic review of the performance and capacity of the trading systems

45. ESMA's preliminary view in the Discussion paper was that, on an on-going basis, the systems of trading venues should be well adapted to the business which takes place through them and are robust enough to ensure continuity and regularity of performance. To this end, in its Discussion paper, ESMA considered that trading venues should be able to demonstrate at all times to NCAs continuous real-time monitoring of the performance and degree of usage of the elements of their trading systems in relation to a number of parameters (such as percentage of the maximum message capacity used per second, number of trades executed per second, total number of messages received/sent/rejected per second, gateway-to-gateway latency).
46. As far as periodic review of the system is concerned, ESMA proposal required trading venues to review and evaluate the performance of their trading systems (and associated process for governance, accountability and sign-off and associated business continuity arrangements), to act on the basis of these reviews and evaluations to remedy deficiencies and consider as part of the review programme, elements such as stress tests.
47. Views on the list of elements to be monitored in real time by trading venues were mixed. Some respondents agreed with the list and asked for more clarity with respect to specific definitions (such as "real time" and "algorithmic trading" definitions). Some other respondents considered the list too prescriptive and were advocating for more flexibility to be left to trading venues in order to be tailored to the size and business of the specific trading venue.
48. Specific comments were made with respect to periodic reviews of the systems including stress tests. In particular, concerns were raised on: (i) "independent" review twice a year; (ii) requirement to run stress tests and the difficulties to recreate in a test environment all real-life conditions; (iii) the need for trading venues to structure their stress test according to the needs of the system and its architecture.
49. ESMA would like to reiterate the importance of real time monitoring activity on the performance and capacity of trading systems. To this end, ESMA considers that the real time monitoring activity should at least cover the performance and capacity of the systems, the orders sent by members/participants in order to prevent excessive flooding of the order book by the operation of throttle limits as well as the concentration flow of orders to detect potential threats to the orderly functioning of the market.

50. In light of the comments received, the definition of “real time” and the list of elements to be taken into account by trading venues to perform real time monitoring activity on the performance and capacity of trading systems have been revised by deleting the number of trades executed per second and the total daily trades. ESMA would like to reiterate the need to set a minimum common denominator to be met by trading venues. Some trading venues might need to consider and monitor additional elements according to the nature, scale and complexity of their business.
51. In terms of periodic reviews, the timeframe has been modified (from at least twice a year to at least once a year) and the importance of stress tests confirmed as part of the review programme.

Means to ensure resilience of trading venues

Business continuity

52. On February 24, 2012, ESMA published the Guidelines on systems and controls in an automated trading environment for trading platforms, investment firms and competent authorities. Business continuity was not part of the topics covered by the ESMA’s Discussion Paper. Broadly speaking, ESMA’s advice in this respect replicates the arguments made in the Consultation Paper for the Guidelines.
53. ESMA’s proposal in this area focuses on the following main elements:
- i. Trading venues should be able to demonstrate on an on-going basis that their systems have sufficient stability by effective business continuity arrangements to address disruptive incidents. The business continuity arrangements shall ensure a timely resumption of trading, targeting a recovery time no later than 2 hours and a recovery point objective close to zero;
 - ii. Trading venues shall set up a business continuity plan and shall implement effective business continuity arrangements in relation to their trading systems. The business continuity plan shall be framed in the context of the trading venue’s overall policy of risk management and shall include the procedures and arrangements identified to address and manage disruptive incidents. A minimum content for the business continuity plan as well as a list of adverse scenarios and risks to be taken into account are provided in the draft RTS;
 - iii. The definition of a business continuity plan should be assisted by an impact assessment, subject to periodic revision, in which the risks are identified and the potential negative consequences of the risks are highlighted. Any decision by the operator of a trading venue not to take into account a specific risk in the business continuity plan shall be adequately documented and explicitly signed-off by its Board of Directors or any other competent management body;

- iv. Trading venues should ensure that their Board of Directors or any other competent management body establishes clear objectives and strategies in terms of business continuity, allocates adequate human, technological and financial resources, approves the business continuity plan and any amendments necessary, is informed, at least on a yearly basis, on the outcome of the controls and audits performed on the adequacy of the business continuity plan, and appoints a staff member responsible for the business continuity plan;
- v. Trading venues should make sure that appropriate consideration is given to policies and procedures to address any disruptions of outsourced critical services. To this end, operators of trading venues should adequately consider in their business continuity plan and disaster recovery plan the possibility that the supplying firm's services becomes unavailable, specify in the outsourcing contract the obligations of the supplying firm in case it cannot provide its services and have access to information in relation to the business continuity or disaster recovery arrangements of the entity providing the service;
- vi. Trading venues are required to test, at least once a year and on a basis of scenarios as realistic as possible, the operation of the business continuity plan, verifying the capability of the trading venue to recover from incidents under the predefined objectives in terms of timely resumption of trading. The results of the testing activity shall be documented in writing, stored and submitted to the trading venue's Board of Directors or other competent management body and made available to the national competent authority on request.

Prevention of disorderly trading conditions

54. In its Discussion Paper, ESMA proposed that trading venues should have a minimum set of arrangements to prevent disorderly trading and breaches of capacity limits. Such arrangements were referring to limits per participant on the number of orders sent (throttle limits) per second to prevent flooding of the order book; mechanisms to manage volatility, pre- and post-trade controls, ability to obtain information from any member/participant or user to monitor compliance with the rules and procedures of the trading venue, suspension of access of a member/participant to the market, cancellation and amendment of orders under a set of predefined set of circumstances, cancellation and amendment of transactions.
55. ESMA also proposed that pre-definition and publication of a list of arrangements, such as mechanisms to manage volatility, pre and post-trade controls, suspension of access, policies on interventions on orders and transactions as well as framework of throttling mechanisms.
56. Some respondents were not agreeing with the list of arrangements proposed and the approached suggested by ESMA stating, on one side, that trading venues should maintain flexibility in fine-tuning trade controls to make sure they adapt to market

characteristics and developments and, on the other, that some arrangements (such as pre-trade and post-trade controls and cancellation/amendments of orders) should not be controlled by trading venues but left to NCAs. Finally, few respondents considered that the requirements are appropriate for continuous order book functionalities and not for request-driven markets or wholesale markets.

57. Most of the respondents agreed with ESMA's proposed approach. However, a number of comments were made on the specific arrangements proposed. In particular, it was underlined that:
- i. With respect to cancellation/amendments of transactions, trading venues can do it only if the transaction was concluded against the rules of the market. Some respondents suggested to restrict the requirement to cancellation of transactions and not considering amendments of transaction
 - ii. With respect to cancellation/amendments of orders, requiring trading venues to cancel or amend orders in case of the order book being corrupted by erroneous orders will expose the venue to severe legal risk, as it will be forced to make a decision on what would be defined as an erroneous order. Some respondents suggested restricting the requirement to cancellation of orders and not considering amendments of orders. Comments were also received on the need to have policies and procedures on cancellation of orders clearly stated and communicated to market participants.
58. Most of the respondents agreed on the publication by trading venues of the general framework around the implemented arrangements. Concerns were raised on the publication of any market or commercially sensitive information or proprietary information. It was considered that publishing more information than the general arrangements in respect to the different safety mechanisms would lead to increased risk and would enable participants to circumvent the specific measures. Some respondents suggested that arrangements should not be public but available to participants and clients upon request and that throttling mechanisms are member-specific arrangements and should not be published at all.
59. ESMA would like to reiterate the importance of arrangements to prevent disorderly trading and breaches of capacity limits. In light of the comments received, ESMA has maintained its approach and list of arrangements, such the mechanisms to manage volatility, the pre- and post-trade controls as well as the need for trading venues to require members/participants to have in place pre- and post-trade controls. The requirement for trading venues to be able to amend orders has been revised, considering the potential drawback and difficulties highlighted by responses to the consultation. Some clarifications have been added in the terms of arrangements.

60. ESMA also specified that the scope of the publication requirement covers only the policies and procedures. In addition, throttling arrangements have been explicitly excluded from the publication requirement.

Mechanisms to manage volatility

61. In its Discussion paper, ESMA's approach in this area was focused on the need for trading venues to:

- i. ensure that appropriate mechanisms to halt trading are in place in all phases of trading (i.e. from opening to close of trading);
- ii. perform an in-depth assessment to evaluate the potential risks, pros and cons to investors and the market arising from different approaches to trading halts, taking into account a number of elements (such as the specific trading model, the trading profile of the financial instrument, the volatility history of financial instruments that are considered to have similar characteristics);
- iii. ensure that appropriate mechanisms and arrangements are in place for initial and periodic testing of the mechanisms to halt or constrain trading as well as to allocate specific and adequate IT and human resources to deal with the design, maintenance and monitoring of the effectiveness of the mechanisms implemented;
- iv. continuously monitor the adequacy of the thresholds in light of the observed volatility to ensure that they are in line with market developments;
- v. disclose on their respective websites the relevant information relating to the basis for halting or constraining trading and the rules and protocols under which they are implemented in order to provide market participants with sufficient predictability and certainty.

62. Most of the respondents agreed with ESMA's suggested approach. Comments were made on the need to clarify that, in the definition of the mechanisms to manage volatility, trading venues should take into account the specific market model and not the members' trading model. Some respondents also suggested to include requirements on resumption of trading after a halt has been triggered and on the coordination of trading halts among trading venues in case of disorderly trading or price dislocation as well as on set of circuit breakers to be implemented across trading venues.

63. On the publication of the operating mode of trading halts, almost all respondents agreed on the publication of the framework/operating mode. However, concerns were raised to the level of detail to be included and ESMA was asked to clarify that detailed parameters are excluded for the publication requirement. The reasons being that thresholds are of a dynamic rather than a fixed nature and as such vary from day to day depending on

event-related volatility. In addition, the publication would cause the risk that the price exhibits a “magnet” effect towards the threshold.

64. In accordance with current market practice, ESMA would like to confirm the proposed approach and has provided clarification on the fact that trading venues shall disclose on their websites the rules, policies and procedures relating to the operating conditions of the mechanisms to manage volatility and that this obligation does not include the specific parameters (i.e. triggering thresholds) of dynamic mechanisms to manage volatility. It is also ESMA's intention to further specify those mechanisms in guidelines after the final adoption of the RTS.

Pre-trade controls

65. ESMA proposed a list of pre-trade controls that trading venues should ensure their market members and participants have before accessing. These pre-trade controls are widely explained in the relevant section under the organisational requirements for investment firms.
66. The proposal also included that these pre-trade risk limits and controls should be automated and monitored on a continuous basis where trading venues should make its general framework available publicly.
67. There was no consensus between respondents on the pre-trade risk limits and controls proposed. Views were mixed amid a set of relevant topics such as the need to involve clearing members in setting the trading thresholds. Others pointed out the feasibility of some pre-trade controls as trading venue cannot have access to the relevant information, for instance about positions or highlighted concerns regarding latency of the systems. One response proposed trading venues to authorise orders above the set thresholds upon a specific request of the investment firm.
68. ESMA proposes that apart from the general obligation of trading venues to ensure market members and participants have pre-trade risk limits and controls, trading venues should have its own pre-trade risk and controls referred as:
- i. Price collars - the system should automatically block or cancel orders that do not meet set price parameters (differentiated as necessary for different financial instruments), both on an order-by-order basis and over a specified period of time
 - ii. Maximum order value (fat-finger notional limits) – the system should prevent orders with uncommonly large order values from entering order books. Limits should be set in notional value with the ability to be set per product
 - iii. Maximum order volume - orders with an uncommonly large order size should be prevented from entering order books. Limits should be set in shares or lots;

- iv. Kill buttons - trading systems should have a manual “kill button” that, when activated, disables the system’s ability to trade and cancels all resting orders at all trading venues to which the firm has been sending orders.
69. These controls should ensure their automated application and the real time monitoring with the ability to readjust the limits even during the trading session and in all its phases. They also enable trading venues to stop order submission entirely once a threshold is breached but also to authorize orders above the limits upon specific request from members.

Direct electronic access

70. ESMA proposed two options regarding the power of trading venues to permit their members or participants to provide DEA to their clients:
- i. option a: trading venues should set out a general framework that should be met by its members or participants in case they want to offer DEA. In case the trading venue detected that the frame work is not met by a member/participant, it should ban the provision of DEA by that member/participant;
 - ii. option b: trading venues should authorise the provision of DEA by each and every one of its members or participants before those members/participants may offer that service to their clients.
71. Following the existing MiFID I requirements, evidence gathered by ESMA in relation to current market practice and also the IOSCO principles for Direct Access to Markets, ESMA proposes a list of conditions taking into consideration that trading venues are best placed to determine which systems and controls are adequate for the DEA provision:
- i. regardless of the system used to permit the provision of DEA, trading venues should set out and make public a framework for potential applicants to provide DEA to their clients;
 - ii. the framework should cover, at least the following conditions:
 - a. being registered as an investment firm under MiFID or authorized as a credit institution under Directive 2006/48/EC;
 - b. the necessary due diligence on clients to which they intend to provide DEA service with the objective of ensuring minimum standards regarding DEA user:
 - (i) has appropriate financial resources;
 - (ii) the relevant persons of the DEA user have sufficient knowledge of market rules and trading systems; and

- (iii) the relevant persons of the DEA user have sufficient knowledge of and proficiency in the use of the order entry system used.
 - c. the necessary existence of a binding written agreement between DEA provider and DEA user, according to the nature and scale of the provided service;
 - d. description of what should be the adequate systems and effective controls to ensure that the provision of DEA does not adversely affect compliance with the rules of the venue, lead to disorderly trading or facilitate conduct that may involve market abuse. The means to ensure that adequacy should include at least:
 - (i) monitoring requirements such as user definition and product definition, recognition of DEA orders submitted by the clients, control of the overall trading activity carried out by DEA clients, monitoring the frequency of DEA orders that have overridden the existing controls and system alerts in terms of price, size and number;
 - (ii) pre-trade and post-trade risk management trade controls such as kill functionality, position limits, maximum order size per user, automatic order rejection (when the limit is exceeded) or the order is being held subject to manual override by authorized risk manager. Naked (i.e. unfiltered) sponsored access should not be possible;
 - (iii) authorisation policy in relation to clients' outsourcing; and
 - (iv) periodic stress testing.
 - e. responsibility (including sanctions) vis-à-vis trading venues, reflecting that DEA providers remain responsible to the trading venue for all trades using their market participant ID code or any other related identification.
72. ESMA additionally proposed that where a trading venue permits DEA through its trading systems, the trading venues should maintain, at least, the ability to:
- i. monitor orders sent to its systems by an individual user through DEA provided by a member or participant;
 - ii. stop orders transmitted by any single DEA client of on the basis of its specific DEA client ID;
 - iii. suspend or withdraw DEA to clients of investment firms where they are not satisfied that continued access would be consistent with their rules and procedures for fair and orderly trading;

- iv. carry out, where necessary, a review of a member, participant or user's internal risk control systems; and
 - v. restrict DEA services provision of an investment firm where the venue is not satisfied with the application of the DEA legal framework, its internal rules, the regulations for fair and orderly trading in MiFID and these technical standards.
73. ESMA asked views about these elements.
74. A majority of respondents supported a general framework (option A) regarding the power of trading venue to permit their members or participants to provide DEA to their clients. One alternative suggestion proposed to follow option A as de minimis without prejudice that a particular trading venue may choose to follow option B voluntarily through tighter requirements.
75. Additionally, a good number of responses pointed out the need of clarification about how the framework would interact for DEA providers that allow their clients to provide DEA access to their own customers (sub-delegated access).
76. The list of pre-determined conditions is supported by most of the respondents, even though the situation of firms established in a third country is not clear as pointed out by some of them. Regarding the ones who do not agree with the proposal, they were concerned that trading venues should not be able to check some of the elements and that others were simply considered inappropriate.
77. Regarding the empowerment of trading venues in relation to DEA activity that takes place through their systems, most respondents considered that trading venues do not need additional powers with respect of the provision of DEA apart from the ones proposed. However, some of them would require more clarification, for instance a respondent demanded to include an additional condition for members who permit its DEA customers to sub-delegate its access.
78. Many respondents call on ESMA to clarify that the DEA provider is responsible for ensuring that the trading venue can identify each individual user.
79. ESMA proposes to follow option A where trading venues should set out and make public the rules and conditions for DEA provisions applicable to market members and participants and where trading venues may decide alternatively to impose an authorisation process. The proposed approach is based on the requirement of legal binding agreement between DEA provider and DEA user for specific products and pre-determined individuals. DEA conditions should set clearly that the responsibility vis-à-vis trading venues remains ultimately on the DEA provider.

80. When sub-delegation is permitted by the DEA provider, it should follow an equivalent due diligence to the one that itself went through to become member or participant of a particular trading venue.
81. In order to ensure a more robust regime regarding DEA, ESMA proposes in this round of consultation that the prospective sponsored access user (SA) was subject to a specific authorisation process by the trading venue where it should meet the same type of requirements than market members do.
82. Trading venues should request DEA providers to have the ability to monitor and stop flow of orders submitted to their systems by DEA users, to suspend and withdraw DEA services to any client where DEA provider is not satisfied that continuing access would be consistent with their rules and procedures for fair and orderly trading and market integrity and to carry out, whenever necessary, a review of the internal risk control systems of a DEA user. Additionally and due to the specific circumstances around sponsored access, trading venues should be able directly to monitor the orders flow and to stop orders transmitted by sponsored access users.

Security

83. On February 24, 2012, ESMA published the Guidelines on systems and controls in an automated trading environment for trading platforms, investment firms and competent authorities. Business continuity was not part of the topics covered by the ESMA's Discussion Paper. Broadly speaking, ESMA's advice in this respect replicates the arguments made in the Consultation Paper for the Guidelines.
84. ESMA's proposal in this area focuses on the following main elements:
 - i. trading venues should have procedures and arrangements for physical and electronic security designed to protect their systems from misuse or unauthorised access and to ensure the integrity of the data that is part of or passes through the systems, including arrangements that allows the prevention and minimization of the risks of attacks against the information systems;
 - ii. trading venues should set up and maintain measures and arrangements to promptly identify and manage the risks related to any access its trading system;
 - iii. trading venues should inform the competent authority of any successful breaches in the physical and electronic security measures undertaken. An incident report shall be promptly provided to the competent authority indicating the nature of the incident, the measures adopted to cope with the emergency situation and the initiatives taken to avoid similar incidents to happen in the future.

Proposal

85. Further to the feedback above, ESMA has developed its draft proposal which is presented in the draft RTS in Annex of this document along the following main lines:
- i. The RTS applies to regulated markets, multilateral trading facilities and organised trading facilities allowing for or enabling algorithmic trading through their systems considering as such those where algorithmic trading may take place as opposed to trading venues which do not permit algorithmic trading;
 - ii. Determination of the conditions for trading venues to outsource operational functions;
 - iii. Due diligence to become member or participant of a trading venue and also periodic review to existing members;
 - iv. Specification of the obligations for trading venues with respect conformance testing and testing to prevent disorderly trading conditions;
 - v. Obligation of trading venues to have sufficient capacity to accommodate at least twice the highest number of messages ever recorded;
 - vi. Annual revision of the performance and capacity of the systems including a stress test;
 - vii. Business continuity arrangements;
 - viii. Basic obligations with respect to mechanisms to manage volatility;
 - ix. Trading venues shall operate pre-trade controls at aggregated level in addition to the ones required to the members or participants;
 - x. The investment firm shall be ultimately responsible for all trades made using its market member/participant ID. Additionally, the provision of direct electronic access shall be subject to a number of requirements including the ability of the member of the trading venue to have DEA user definition and product definition, recognition of DEA orders submitted by DEA users, control of the overall trading activity carried out by DEA users, monitoring the frequency of DEA orders that have overridden the existing controls and system alerts in terms of price, size and number and prior written authorisation policy by the DEA provider in relation to DEA users' sub-delegating the DEA access to their own clients; and
 - xi. Specific monitoring requirements for trading venues with respect to the order flow coming from firms using sponsored access.

- Q100. Do you have any comments on Organisational Requirements for trading venues as set out above? Is there any element that should be clarified? Please provide reasons for your answer.**
- Q101. Is there any element in particular that should be clarified with respect to the outsourcing obligations for trading venues?**
- Q102. Is there any additional element to be addressed with respect to the testing obligations?**
- Q103. In particular, do you agree with the proposals regarding the conditions to provide DEA?**

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 14: Draft regulatory technical standards on organisational requirements of regulated markets, multilateral trading facilities and organised trading facilities

4.3. Market making, market making agreements and marking making schemes

Background/Mandate

Article 17(7) of MiFID II

7. *ESMA shall develop draft regulatory technical standards to specify the following:*

[...]

- (b) The circumstances in which an investment firm would be obliged to enter into the market making agreement referred to in point (b) of paragraph 3 and the content of such agreements, including the proportion of the trading venue's trading hours laid down in paragraph 3;*
- (c) The situations constituting exceptional circumstances referred to in paragraph 3, including circumstances of extreme volatility, political and macroeconomic issues, system and operational matters, and circumstances which contradict the investment firm's ability to maintain prudent risk management practices as laid down in paragraph 1;*

Article 48(12), MiFID II

12. *ESMA shall develop draft regulatory technical standards further specifying:*

[...]

- (f) The requirements to ensure that market making schemes are fair and non-discriminatory and to establish minimum market making obligations that regulated markets must provide for when designing a market making scheme and the conditions under which the requirement to have in place a market making scheme is not appropriate, taking into account the nature and scale of the trading on that regulated market, including whether the regulated market allows for or enables algorithmic trading to take place through its systems;*

1. Articles 17 and 48 of Directive 2014/65/EU [MiFID II] introduce requirements on investment firms pursuing what is defined as “Market Making Strategy” and trading venues where market making activities are undertaken using an algorithmic trading technique. As stated in Recitals (62) and (113) of MiFID II, there are two main goals of MiFID II in this respect. Firstly, the introduction of an element of predictability to the apparent liquidity in the order book by introducing contractual obligations to firms performing certain types of strategies. Secondly, as advanced technologies may bring

new risks to the market, MiFID II aims to maintain market participants' ability to transfer risks efficiently during stressed market conditions.

2. MiFID II introduces a number of concepts to promote orderly and efficient functioning of markets in the current market environment in relation to firms pursuing a market making strategies and trading venues.
3. Article 17(3) of MiFID determines that “an investment firm that engages in algorithmic trading to pursue a market making strategy shall, taking into account the liquidity, scale and nature of the specific market and the characteristics of the instrument traded:
 - i. carry out this market making continuously during a specified proportion of the trading venue's trading hours, except under exceptional circumstances, with the result of providing liquidity on a regular and predictable basis to the trading venue;
 - ii. enter into a binding written agreement with the trading venue which shall at least specify the obligations of the investment firm in accordance with point (a); and
 - iii. have in place effective systems and controls to ensure that it fulfils its obligations under the agreement referred to in point (b) at all times”.
4. According to Article 17(4) of MiFID II, “an investment firm that engages in algorithmic trading shall be considered to be pursuing a market making strategy when, as a member or participant of one or more trading venues, its strategy, when dealing on own account, involves posting firm, simultaneous two-way quotes of comparable size and at competitive prices relating to one or more financial instruments on a single trading venue or across different trading venues, with the result of providing liquidity on a regular and frequent basis to the overall market”.
5. Article 48 determines that Member States shall require a regulated market to have in place:
 - i. written agreements with all investment firms pursuing a market making strategy on the regulated market;
 - ii. schemes to ensure that a sufficient number of investment firms participate in such agreements which require them to post firm quotes at competitive prices with the result of providing liquidity to the market on a regular and predictable basis, where such a requirement is appropriate to the nature and scale of the trading on that regulated market.
6. The written agreement between the trading venue and the investment firm pursuing a market making strategy shall at least specify:

- i. the obligations of the investment firm in relation to the provision of liquidity and where applicable, any other obligation arising from participation in the scheme referred to in paragraph 2(b);
 - ii. any incentives in terms of rebates or otherwise offered by the regulated market to an investment firm so as to provide liquidity to the market on a regular and predictable basis and, where applicable, any other rights accruing to the investment firm as a result of participation in the scheme referred to in paragraph 2(b).
7. The regulated market shall monitor and enforce compliance by investment firms with the requirements of such binding written agreements. The regulated market shall inform the competent authority about the content of the binding written agreement and shall, upon request, provide to the competent authority all additional information necessary to enable the competent authority to monitor itself the compliance by the regulated market with this paragraph.
8. Article 18(5) extends the obligations of Article 48 and 49 to multilateral trading facilities and organised trading facilities.

Analysis following feedback from stakeholders

On the purpose of Articles 17 and 48 of MiFID II

9. ESMA considered that market making agreements and market making strategies are subject to the same set of requirements: where a firm is engaged in algorithmic trading pursuing a market making strategy in a trading venue, the venue must have in place a market making agreement with that investment firm where the investment firm would formalise its activity. As a result, the requirements in Articles 17 and 48 of MiFID II in terms of market making agreements should be addressed jointly.
10. Responses obtained in the Discussion Paper largely support this view. However, several respondents raised their concern on ESMA applying the same terminology to essentially two different activities, with the possible confusion such an interpretation may create.
11. ESMA has clarified in the draft regulatory technical standards that when an investment firm engaged in algorithmic trading pursues a market making strategy, it shall sign a market making agreement that may impose tougher requirements in terms of (i) maximum spread, (ii) minimum size or amount and (iii) minimum percentage quoting presence during applicable trading hours to ensure it provides liquidity on a regular and frequent basis.

Circumstances in which an investment firm would be obliged to enter into the market making agreement

12. ESMA explored further the different elements of the definition of “market making strategy” in Article 17(4) as a necessary step to further clarify the circumstances in which

an investment firm would be obliged to enter into a market making agreement. In that context, ESMA analysed the concepts of “member or participant”, “posting firm quotes”, “comparable size” and “competitive prices”. Respondents broadly agreed with the interpretation proposed by ESMA and therefore, ESMA has maintained its original approach.

13. With respect to “quotes of comparable size”, ESMA proposed making this assessment using the overall exposure of the firm on an on-going basis. A majority of the respondents disagreed with the ESMA proposal that monitoring a firm’s overall exposure in a specific instrument would be an appropriate way to conducting the “comparable size” test, as by doing so, ESMA would increase the risk of capturing hedging activity rather than market making. One respondent pointed out the fact that looking at a firm-wide net exposure on a single trading venue would not work where a firm uses multiple venues. Another remarked that ESMA’s approach would be inconsistent with the approach taken in the rest of the section, where it seeks to identify MM strategies on an individual basis, rather than on an aggregate basis.
14. Following the responses received, ESMA has revised its original proposal considering that quotes shall be of comparable size when they are at least within 50% of each other. For example, if a bid is entered for 10,000 units, the corresponding offer should be between 5,000-20,000 units.
15. ESMA specifically requested the views of market participants on the interpretation of “posting simultaneous two-way quotes in one or more trading venues relating to one or more financial instrument”, whereby it was proposed to consider as such strategies involving at least one financial instrument on one trading venue.
16. Respondents were largely supportive of ESMA’s proposal above. Respondents’ view was almost unanimous in noting that in practice, it would be practically impossible for either the trading venues or the regulator to identify when a market making strategy as defined in Article 17(4) has been deployed across different venues without first establishing an elaborate system to facilitate information sharing between all the venues across EU. However, establishing such a system for the sole purpose of capturing market making activities across venues would appear unjustified at this time. ESMA agrees with the points made by the respondents regarding the practical difficulty a trading venue would have in ascertaining whether an investment firm has posted the one-half of the two-way quotes to another, unrelated, trading venue.
17. In this respect, it is important to note that MiFID II is clear with respect to the definition of ‘market making strategy’ in Article 17(4), whereby it may imply one or several financial instruments and one or several trading venues, and that definition is not questioned by ESMA.
18. However, in light of the responses received, ESMA proposes that for the purposes of the practical implementation of the obligations derived from Article 17(3), the type of strategy

that trading venues should be able to identify affects one financial instrument on a single trading venue. This minimum requirement should apply where it is not practically possible for trading venues to identify strategies involving more than one venue or more than one financial instrument as defined by Article 17(4) of MiFID II.

19. Finally, ESMA requested the views of market participants about the appropriate observation period. Responses were diverse: amongst respondents who commented on the observation period, most respondents did not see a need for such observation, and several respondents proposed different timeframes (1 to 3 months, 6 months and 12 months). Those who felt that it was not necessary to set such observation periods, cited the following reasons: (i) setting an observation period would create an arbitrary threshold, allowing for gaming to occur, and is against the principle of a level playing field, (ii) trading venues would be required to create a mechanism to check the use of market making strategies and (iii) investment firms are required to document information about their algorithms so a self-assessment by investment firms would suffice. For these respondents trading venues are not in a position to judge whether a market making strategy is being pursued by an investment firm, so they should not be forced to do this.
20. ESMA has considered the responses received and proposes setting as observation period just one day, to avoid “gaming” strategies described above.
21. ESMA also consulted on the percentage of the observation period in which an investment firm pursuing a market making strategy should meet the requirements of Article 17(4) so as to sign a market making agreement.
22. Most respondents suggested an observation period of 75-90%, in line with the current market practice, but only for cash equities noting that for other asset classes these percentages might not be appropriate. Some responses proposed to leave this decision to the trading venues as the parameters are tightly coupled with trading procedures and instrument types. A mention was also made that establishing a specific percentage may offer investment firms an easy way to circumvent the obligations set out in Articles 17 and 48. Finally, a limited number of respondents stated that the obligations for investment firms pursuing a market making strategy should be synchronised with the parameters stipulated under a market making agreement.
23. ESMA has revised its original proposal following the comments received. In the new proposal, an investment firm is considered to be pursuing a market making strategy, and therefore, should sign a market making agreement, if it is posting firm, simultaneous two-way quotes of comparable size and competitive prices in at least one financial instrument on a single trading venue for no less than 30% of the daily trading hours during one trading day.

Articles 48 and 17 of MiFID II: Minimum market making obligations

24. ESMA proposed the following as the main elements to be included in the market making agreements for firms engaged in algorithmic trading quoting requirements and organisational requirements.

Quoting requirements

25. In the Discussion Paper, ESMA proposed establishing a set of minimum requirements to apply across all types of market making agreements rather than specifying 'hard-coded' conditions. Most respondents agreed with this proposal, perceiving the prescription of quoting parameters to be tangential to ESMA's role. In line with that, ESMA proposes in the draft RTS a limited number of minimum requirements that have to be established in the market making agreements, leaving significant discretion to trading venues to set out the specific quoting parameters relevant to their market.
26. In the Discussion Paper, ESMA sought views from the market as to the appropriate level of presence expected from a market maker. Many respondents suggested a range between 70% and 90% of the trading time as an appropriate presence requirement. At the same time, these respondents noted that despite these requirements vary according to the financial instrument traded and the venue's purpose for the individual scheme, many of the existing market making schemes are for equity markets.
27. A number of respondents questioned the rationale for such a requirement to be imposed by regulators, who instead recommended that such parameters should be set by the trading venues. In this respect, it is important to note that ESMA is mandated under Article 17(7)(b) of MiFID II to specify the content of the agreement including the proportion of trading hours.
28. ESMA has taken into consideration the responses described above as well as the fact that the regulatory technical standard currently consulted shall also have an impact on existing market making/liquidity provision schemes. In that context, ESMA proposes that a market maker should be present continuously in the market for the proportion of the trading hours as stipulated by each trading venue in their market making agreement but which should be no less than 50 % of the trading hours. By deliberately proposing a lower threshold than the ones most commonly used, ESMA aims at permitting a sufficient degree of flexibility to accommodate the new regulatory requirements for different trading models and financial instruments.

Organisational requirements for investment firms performing a market making strategy

29. ESMA considered that, in pursuing a market making strategy, investment firms would be expected to have the following organisational capabilities in addition to the requirements set out in Article 16 and 17 of MiFID II and Articles 25(1) of MiFIR, as well as other legislations such as the Capital Requirement Directives IV and Capital Requirements Regulation:

- i. To be able to distinguish between orders submitted as part of their market making activities, and other order flows such as handling client orders;
 - ii. To maintain order and trade records relating to market making activities;
 - iii. To have internal procedures to enable immediate identification of their market making activities for the purposes of reporting to relevant authorities;
 - iv. To have appropriate and effective surveillance, compliance and audit resources and frameworks to monitor their market making activities. These include alerts and indicators;
 - v. To have a dedicated remuneration scheme for the staff involved in market making; and,
 - vi. To commit to settle, close or transfer all open positions to another trading venue member or participant if the market maker decides to exit the market permanently.
30. A number of respondents questioned the duplicative nature of some of the above requirements proposed for market makers, stating they are already imposed on algorithmic trading firms more generally. ESMA considers the above requirements to be important in ensuring that market making firms have adequate capability to monitor their market making strategies, and to take appropriate actions when a market making strategy exhibits an unpredictable behaviour in order to pre-empt the strategy from having a detrimental effect on the market. However, taking note of concerns expressed by respondents, and the fact that MiFID II restricts the application of the Article 17 to members or participants of trading venues, which have to become investment firms under Article 2(1) of MiFID II, ESMA has decided not to include such duplicative requirements.

Exceptional circumstances which contradict the firm's ability to maintain prudent risk management practices

31. In the Discussion Paper, ESMA only identified two circumstances that may qualify as "exceptional circumstances": (i) issues involving technological problems such as data-feeds, or other issues relating to technology which may inhibit the capability to continue pursuing a market making strategy, and (ii) internal risk management issues including problems relating to the investment firm's capital, or clearing and settlement.
32. ESMA sought view's on these circumstances. The responses were mixed. Many disagreed with ESMA's interpretation of "exceptional circumstances" considering it to be overly restrictive, and noting that by doing so this would dissuade market participants from being a market maker. They argued ESMA risked interfering with MiFID II's objective of achieving liquidity resilience. In particular, excluding information events as a valid circumstance would leave no option for market makers other than to reduce their

activity or withdraw from the market precisely when market risk rises and the end-users' need for liquidity is at its greatest. Rather than prescribe a list of eligible circumstances, some respondents suggested that ESMA should set a non-exhaustive list of "exceptional circumstances" that the trading venues should be able to modify as deemed necessary, taking into consideration the products traded and trading models utilised.

33. In the Discussion Paper, a question was also included on what circumstances might constitute valid "political and macroeconomic issues". Given the responses, which suggest a wide variety of events be included in such a category, ESMA has decided not to create an exhaustive list on the basis that such a list would include too many situations.
34. Some respondents noted in particular that circumstances of extreme volatility should be added to the proposed list. One respondent pointed out that ESMA had not adequately addressed the issue of volatility, despite its mandate under Article 17(7)(c) of MiFID II was to clarify "circumstances of extreme volatility". Once addressed, ESMA should then include situations in which continued performance would become commercially unviable. However, as regards the definition of "circumstances of extreme volatility", one respondent noted that it should be determined by trading venues, as volatility is a relative term dependent on the instrument traded. Finally, another respondent mentioned that under current practice, exclusions apply under the following circumstances:
 - i. Cases of a trading halt, specific auctions, the closure of an underlying market, or the suspension or removal from trading of an underlying product.
 - ii. Cases of a "fast market" or other equivalent decision by a market operator/investment firm operating a trading venue regarding extreme volatility.
 - iii. Cases where a trading venue has reported any of (a) significant infringements of rules, (b) disorderly trading conditions, or (c) system disruptions to its NCA per Article 31(2) or 54(2) of MiFID II.
35. ESMA has included the reference to cases of extreme volatility as prescribed by MiFID II, but has considered as such only those situations leading to an interruption of trading with respect to all instruments traded on that venue as opposed to stressed market conditions. ESMA notes there is a difference between "exceptional circumstances" and stressed market conditions, which occur frequently. In this regard, ESMA proposes that trading venues should have a scheme of incentives in place so as to foster the presence of firms engaged in market making agreements.
36. With respect to non-equity instruments, ESMA has added in to this list the situation where a national competent authority temporarily suspends the pre-trade transparency requirements following a significant decline in liquidity of a particular class of financial instrument in accordance with Article 9(4) of MiFIR.

37. On the question of when should such exceptional circumstances be deemed to have ended, respondents argued against ESMA setting an ex-ante timeframe, preferring that each situation is judged on a case-by-case basis. Many respondents suggested that the trading venues should determine, on their own or together with the NCAs, when an exceptional circumstance no longer applied, although some suggested that investment firms should also be involved in the trading venue's decision making process. More importantly, respondents stressed the importance of communicating such decisions by the trading venue in order to resume normal trading well in advance of the market's opening times.
38. On this basis, ESMA proposes that trading venues will be responsible for determining when a market is under exceptional circumstances and must make public both this decision, and when such exceptional circumstances are deemed to no longer apply. The exception to this rule would be circumstances that impede the firm's ability to maintain prudent risk management practices, in which case the trading venue should not publish anything but should validate such a situation.

Fair and non-discriminatory market making schemes

39. In view of the fact that some trading venues are conferring technological or information advantages to liquidity providers in relation to their market making activities in illiquid instruments, ESMA sought market views on how the terms "fair and non-discriminatory" should be further defined, taking into account the need to confer on market makers some sort of advantage.
40. The respondents were keen to point out that trading venues should not set an upper limit in terms of the number of market makers participating in the scheme other than for technological or capacity reasons. More generally, the opinion was divided as to whether an advantage, be this advantage technological or informational, should be conferred on the market makers. Half believed that market making activity should be excluded in the calculation of order-to-trade ratios, whilst the other half believed that no particular advantage should be conferred on the market makers as this would increase the sense of unfairness among participants.
41. ESMA considers that market making activities may require ad hoc arrangements derogating from order-to-trade ratios in place as long as market makers are providing a value added service to the market participants.
42. ESMA's preliminary view was that all market participants should have the opportunity to participate in the market making schemes in a fair and non-discriminatory basis. A question was also included in the Discussion Paper that sought views on whether trading venues should be entitled to limit the number of firms taking part in a market making scheme. In this respect, ESMA requested views on the degree of flexibility that trading venues should have in determining how many participants should be participating in a market making scheme. It asked whether a point may exist where the

addition of further participants to a market making scheme becomes detrimental in achieving the objectives as set out in Article 48 and Recital 44 of MiFID II.

43. A vast majority of the respondents did not agree with this proposal, on the basis that doing so would result in an unfair competition and may negatively affect the liquidity of stocks, particularly in small-mid caps.
44. ESMA's view is that, apart from economic incentives that would directly influence the attractiveness of participating in the market making scheme, there is no need for regulation to dictate a maximum number of firms able to participate in any particular market making scheme. In particular, ESMA considers that nothing prevents trading venues from establishing systems whereby only those firms providing a certain degree of quality in the liquidity provider should access the incentives.
45. ESMA considers that to be fair the incentives offered under the scheme should be proportionate to the quality of the liquidity provided. A particular case would be periods of market stress, where the liquidity provision services rendered by these firms to the market would be particularly valuable. In line with that, ESMA has revised its original approach and proposes that the incentives offered under the market making scheme have to be proportionate to the effective contribution to the liquidity in the trading venue measured in terms of presence, size and spread. In particular, those incentives should promote the presence of members engaged in market making agreements in cases of stressed market conditions.

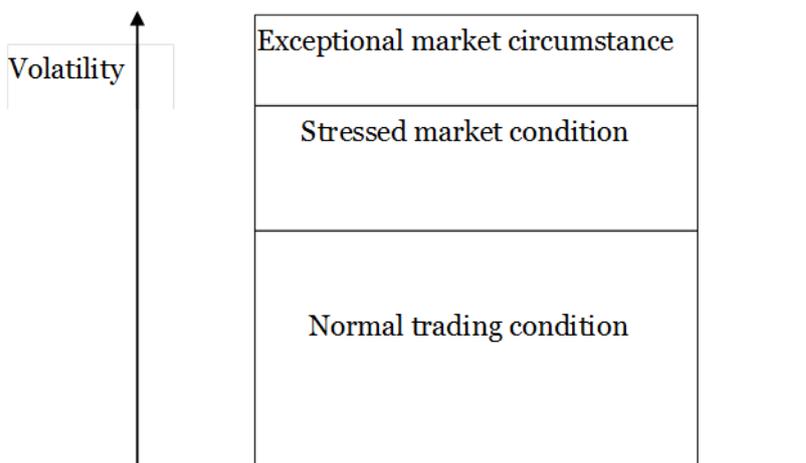


Chart 17: Article 17/48 Market Making Regime Schematics

46. In particular, trading venues should determine the specific parameters to be met by investment firms under a market making agreement to access any type of incentives

according to their business models. In that context, trading venues may determine whether only the firms that have performed better in terms of presence, size and spread should access the incentives provided under the market making schemes. Therefore, a firm may have to comply with a set of obligations in terms of presence, size and spread but it may not access any type of incentives if the trading venue has foreseen in its scheme of incentives that only the firms with the best performance shall receive them.

Article 48 MiFID II: Conditions under which the requirement to have in place a market making scheme is not appropriate

47. In the Discussion Paper, ESMA remarked that one of the purposes of Article 48 of MiFID II (and the corresponding obligations in Article 17 of MiFID II) was to reduce the impact of potentially systemic volatility peaks in instruments where algorithmic traders are present. ESMA proposed that trading venues should have a market making scheme in place only for liquid instruments which do not have a sufficient number of market making agreements in place to provide sufficient coverage against disorderly trading conditions.
48. Many respondents supported the notion that market making in the context of Articles 17 and 48 are mostly relevant for liquid instruments, as per the definition of liquid under Article 2(1)(17) of MiFIR. However, some respondents questioned the logic of restricting the application of market making per as Articles 17 and 48 to market making activities in liquid instruments. Also, most respondents advised against ESMA specifying the maximum number of firms that can take part in a market making regime, instead leaving it up to the trading venues to determine.
49. Based on the responses obtained, ESMA proposes not limiting the scope in terms of instruments for the purposes of the market making regimes under Articles 17 and 48. Instead, all trading venues allowing or enabling algorithmic trading through its systems shall have market making schemes in place only with respect to the investment firms engaged in algorithmic trading that pursue market making strategies in it.

Proposal

50. ESMA has re-considered its original proposal in line with the comments received as presented in the draft regulatory technical standards included in the Annex. The main elements of the proposal are:
 - i. An investment firm is considered to be pursuing a market making strategy, and therefore, should sign a market making agreement, if it is posting firm, simultaneous two-way quotes of comparable size and at competitive prices in at least one financial instrument on a single trading venue for no less than 30% of the daily trading hours during one trading day;

- ii. The market making agreement shall establish the obligation to post firm, simultaneous two-way quotes of comparable size and competitive prices for no less than 50% of the daily trading hours;
- iii. Only trading venues or market segments where algorithmic trading may take place shall be subject to the obligation to have a market making scheme in place;
- iv. A restrictive interpretation of what are the exceptional circumstances which impede providing liquidity on a regular and predictable basis;
- v. No limitation of the number of investment firms taking part in a market making scheme, but acknowledgement of the ability of trading venues to limit the access to the incentives to those which have a better performance;
- vi. Access to incentives should be proportional to the effective contribution to the liquidity in the market measured in terms of presence, size and spread;
- vii. Obligation to incentivise the presence of firms engaged in a market making agreement in stressed market conditions; and
- viii. Obligation for trading venues to make publicly available the conditions of the market making scheme.

- Q104. Do you agree with the proposed draft RTS? Please provide reasons for your answer.**
- Q105. Should an investment firm pursuing a market making strategy for 30% of the daily trading hours during one trading day be subject to the obligation to sign a market making agreement? Please give reasons for your answer.**
- Q106. Should a market maker be obliged to remain present in the market for higher or lower than the proposed 50% of trading hours? Please specify in your response the type of instrument/s to which you refer.**
- Q107. Do you agree with the proposed circumstances included as “exceptional circumstances”? Please provide reasons for your answer.**
- Q108. Have you any additional proposal to ensure that market making schemes are fair and non-discriminatory? Please provide reasons for your answer.**

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 15: Draft regulatory technical standards on market making, market making agreements and marking making schemes

4.4. Ratio of unexecuted orders to transactions

Background/Mandate

Article 48 of MiFID II

6. *Member States shall require a regulated market to have in place effective systems, procedures and arrangements, including requiring members or participants to carry out appropriate testing of algorithms and providing environments to facilitate such testing, to ensure that algorithmic trading systems cannot create or contribute to disorderly trading conditions on the market and to manage any disorderly trading conditions which do arise from such algorithmic trading systems, including systems to limit the ratio of unexecuted orders to transactions that may be entered into the system by a member or participant, to be able to slow down the flow of orders if there is a risk of its system capacity being reached and to limit and enforce the minimum tick size that may be executed on the market.*

[...]

12. *ESMA shall develop draft regulatory technical standards further specifying:*

[...]

(b) the ratio referred to in paragraph 6, taking into account factors such as the value of unexecuted orders in relation to the value of executed transactions;

1. Under Articles 48(6) and 18(5) of MiFID II, trading venues have to have in place effective systems, procedures and arrangements to ensure algorithmic trading systems cannot create or contribute to disorderly trading conditions on their market and to manage any disorderly trading conditions arising from such algorithmic trading systems, including systems to limit the ratio of unexecuted orders to transactions that may be entered into the system by a member or participant. In order to meet this objective, ESMA is required to further specify the ratio of unexecuted orders to transactions that may be submitted to a trading venue by a member or participant taking into account factors such as the value of unexecuted orders in relation to the value of executed transactions.
2. In the Discussion Paper put out to public consultation in May 2014, ESMA made a two-fold proposal with a view to on the one hand, defining the unexecuted order to transaction ratio (OTR) and on the other hand, determining the method for limiting the ratio and setting up a maximum threshold.
3. With regard to the OTR limitation proposal (whereby ESMA proposed that a maximum should be set out by observing the average OTR on a given electronic trading venue per group of financial instruments and by capping it using a multiplier “x” to be set and reviewed at least on an annual basis), the Commission has recently specified that this

proposal would not fall within the scope of the draft regulatory technical standards (RTS) to be developed under Article 48(12) of MiFID II. This proposal has therefore been removed and this section of the Consultation Paper only focuses on the methodology to determine the OTR.

Analysis following feedback from stakeholders

4. Regarding the scope of the obligation to set out an OTR under Article 48(6) of MiFID II, ESMA initially proposed limiting it to equity, equity-like and bonds traded on electronic trading venues, but excluding derivatives on the grounds that any change in the OTR of an underlying instrument would necessarily affect that of the relevant derivatives. ESMA also noted that high frequency traders usually tend to trade liquid stocks with high market value ('blue chips') and considered to focus, for the purpose of calculating OTR, on liquid instruments as defined under Article 2(1)(17) of MiFIR. However, ESMA noted that this should not prevent any trading venue to develop a specific OTR regime for derivatives and ETFs when deemed appropriate. The vast majority of the respondents agreed with ESMA's proposal in this respect.
5. The vast majority of the responses received supported ESMA's proposal to limit the scope to liquid cash instruments traded on electronic trading systems. Respondents who disagreed with ESMA's proposal, considered either that the proposed scope of the OTR regime under MiFID II should extend beyond liquid cash instruments traded on electronic systems to all instruments traded on an electronic trading system (including both liquid and illiquid financial instruments) or took the view that ESMA has only been tasked with how the ratio should be calculated and that there is therefore no need to define the scope due to the fact that all venues have in place the capability of monitoring and calculating OTRs.
6. For the purpose of ensuring a level-playing field, ESMA also proposed considering newly launched trading venues to be out of the scope. In the same line of thinking, ESMA considered applying a messaging floor below which a member or participant would not be covered by the OTR regime.
7. With regard to the OTR definition, acknowledging that a simplistic definition (i.e. only based on the total number of orders compared to the total number of transactions executed) may be easily circumvented in practice, ESMA proposed to clarify the methodology pursuant to which the OTR should be determined by every trading venue. More specifically, ESMA consulted on three methodologies to calculate the OTR, namely on the basis of the number of orders, the value and volume of financial instruments, taking into account every order (submission, modification and deletion).
8. Most respondents suggested taking the volume of orders in the OTRs calculations into account and not the value; only a few respondents suggested taking the value of orders into account. Some respondents preferred counting the number of messages instead of using volume or value of orders as a metric in computing the OTR. The vast majority

among the respondents suggested that the OTR shall be adapted by volume, i.e. the number of shares (for unit based instruments), and the nominal value (for instruments such as bonds) of orders and executed transactions because otherwise (in case of taking the number of orders and executed transactions into account) trade ratios will tend to encourage smaller lot sizes per trade, as they allow market participants to place more orders to achieve a lower ratio. It was also mentioned that taking volume into account serves to correct distortions in the calculation of the OTR, e.g. distortions caused by partial execution because in case of partial execution, an order will be split automatically into several trades.

9. Apart from that, most market participants supported ESMA's proposals in relation to the OTR determination. Some of them nevertheless requested that the treatment of pegged orders, Immediate or Cancel Orders (IOC) and batched orders be expressly specified in the paper.
10. In order to address practical difficulties and to be able to rely on sufficient data gathering when determining the OTR, ESMA proposed that trading venues having been in operation for a limited period of time (e.g., less than six months) in relation to the trading of a given financial instrument or group of financial instruments should not be required to establish an OTR for their members or participants in respect of this financial instrument or group of financial instruments. The majority of respondents agreed with ESMA's approach, as there already exist differences between venues with OTR regimes in place and those without, and this would not materially impact the market. However, a significant number of responses disagreed with ESMA's proposal and took the view that a future OTR regime shall apply to all trading venues independently of the time of their existence as they are part of the European trading landscape.

Proposal

11. In light of the revised scope of ESMA's mandate in this regard, it is proposed not to limit the obligation to set out the OTR for any type of financial instrument and therefore, all trading venues allowing for or enabling algorithmic trading through their systems should establish an OTR for their members or participants.
12. In light of the responses received and in order to address the respondents' gaming concerns, ESMA has revised its original proposal and the current draft proposes that trading venues should establish an OTR in terms of volume and in terms of number of orders. Accordingly, the breach of any of those OTRs by a member or participant should be considered as a breach of the OTR.
13. In the draft RTS, ESMA seeks to address the concerns raised by respondents in relation to the methodology to determine the OTR. In particular, ESMA has further specified the definition of the orders to be taken into account in the determination of the OTR so as to clarify particular instances and notably the specific cases of quotes, indications of interest and IOCs. Nonetheless, no general messaging floor has been provided so that a

trading venue needs to establish an OTR for every member and participant regardless of their messaging level. ESMA annexes a table with an indicative list of order types and how they should be counted for these purposes and welcomes comments on it from market participants.

14. In light of the revised scope of ESMA's mandate in this regard, it is proposed not to waive the obligation to set out the OTR for any type of trading venues regardless of the time of existence.
15. ESMA also proposes that in addition to the requirement that the OTR be calculated at least per group of financial instruments, trading venues have the discretion to establish an OTR on a more granular basis (e.g., per type of derivative). It is further specified that the OTR determination covers all trading phases within the trading session including auctions.

- Q109. Do you agree with the proposed regulatory technical standards? Please provide reasons for your answer.**
- Q110. Do you agree with the counting methodology proposed in the Annex in relation to the various order types? Please provide reasons for your answer.**
- Q111. Is the definition of "orders" sufficiently precise or does it need to be further supplemented? Please provide reasons for your answer.**
- Q112. Is more clarification needed with respect to the calculation method in terms of volume?**
- Q113. Do you agree that the determination of the maximum OTR should be made at least once a year? Please specify the arguments for your view.**
- Q114. Should the monitoring of the ratio of unexecuted orders to transactions by the trading venue cover all trading phases of the trading session including auctions, or just the continuous phase? Should the monitoring take place on at least a monthly basis? Please provide reasons for your answer.**
- Q115. Do you agree with the proposal included in the Technical Annex regarding the different order types? Is there any other type of order that should be reflected? Please provide reasons for your answer.**

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 16: Draft regulatory technical standards on orders to transactions ratio

Annex 4.4.1: Order types (indicative list)

Types of orders currently available on the EU trading venues	Number of orders received by the trading venue to be counted when calculating the ratio of unexecuted orders to transactions (each submission, modification, cancellation shall be counted as one single order)	Updates potentially sent by the trading venue not to be counted when calculating the ratio of unexecuted orders to transactions (excluding executions / cancellations by market operations)
Limit	1	0
Limit - add	1	0
Limit - delete	1	0
Limit - modify	2 (any modifications entails a cancellation and a new insertion)	0
Stop	1	1 (when triggered)
Immediate (Market)	1	0
Immediate (Fill-or-Kill, Immediate-or-Cancel)	1 (and if deleted/cancelled 2)	0
Iceberg / reserve	1	0
Market-to-limit	1	1 (when triggered)
Quote	2 (1 for the buy side and 1 for the sell side)	0
Quote - add	2	0
Quote - delete	2	0
Quote - modify	4(any modifications entails a cancellation and a new insertion)	0
Peg Market peg an order to the opposite side of the (E)BBO Primary peg an order to the same side of the (E)BBO Midpoint peg an order to the midpoint of the (E)BBO Alternate peg to the less aggressive of the midpoint or 1	1	potentially unlimited as the order tracks the BBO

tick		
Midpoint inside the same side of the PBBO		
One-cancels-the-other two orders are linked so that if one of the two is executed, then, the other one is removed by market operations	2	1 (when one leg trades, the other is cancelled)
One-cancels-the-other - add	2	
One-cancels-the-other - delete	2	
One-cancels-the-other - modify	4	
Trailing stop Stop order which stop price at which the order is triggered changes in function of the (E)BBO	1	potentially unlimited as the stop limit tracks the BBO
At best limit order where the limit price is equal to the opposite side of the EBBO at the time of entry	1	0
Spread limit order whose yield is calculated by adding a spread to a benchmark's yield (two parameters: spread and benchmark)	1	potentially unlimited as the limit is dependant on another asset's quote
Strike match minimum price for buy orders and maximum price for sell orders	1	potentially unlimited but limited in time (the lasting of the auction)
Order-on-event Order that is inactive until it is triggered by a specific event (similar to a stop order, except that the order, once triggered, does not necessarily be in the same way as the trend of the underlying: a buy order can be triggered while the stop price was triggered due to a fall of the financial instrument)	1	1 (when triggered)

Book-or-cancel / Post: order that cannot match the other side of the order book at the time it enters into the order book		
Book-or-cancel / Post - add	1 (and if deleted/cancelled 2)	0
Book-or-cancel / Post - delete	1 (and if deleted/cancelled 2)	0
Book-or-cancel / Post - modify	2	0
Withheld: order entered in the order book that is ready to be transformed as a firm order	2 (submission of the order + confirmation)	0
Deal order	1	0
TOP, TOP+ either placed on the top of the book or rejected (+: check on the available volume)	1	0
Imbalance Order (IOOP or IOOC)	1	potentially unlimited but limited in time (the lasting of the auction)
Linked order that defines a total quantity of bonds to buy among several instruments, independently of which one are bought => when a certain quantity is traded on one instrument, then the overall size is reduced by this quantity.	1	potentially equal to the quantity of underlying entered
Sweep: allows participants to access integrated order-books. Best price sweep will work through price levels from the combined order books, to the limit price Sequential lit sweep will execute to the limit order price on the book of entry before any quantity is sent to the other book	1	0

Named: non-anonymous order	1	0
If-touched: triggered when the last, bid or ask price touches a certain level	1	1 (when triggered)
Guaranteed stop: This guarantees the execution at the stop price	1	1 (when triggered)
Combined orders (e.g. options' strategy, futures' roll, ...)	1	potentially unlimited

4.5. Co-location and fee structures

Co-location

Background/Mandate

Article 48 of MiFID II

[...]

8. *Member States shall require a regulated market to ensure that its rules on co-location services are transparent, fair and non-discriminatory.*

[...]

12. *ESMA shall develop draft regulatory technical standards further specifying (...) the requirements to ensure that co-location services and fee structures are fair and non-discriminatory and that fee structures do not create incentives for disorderly trading conditions or market abuse.*

ESMA shall submit those regulatory technical standards to the Commission by 3 July 2015.

1. In the Discussion Paper, ESMA proposed to split the issue concerning co-location services into three elements – the level of access to such services, the pricing models used by providers of such services and the technical support that the service providers offer to its users and requested the views of market participants about which elements should be considered for the purpose of ensuring that co-location services are provided in a transparent, fair and non-discriminatory manner.

Analysis following feedback from stakeholders

2. In general the respondents supported the three elements into which ESMA proposed to split the issue concerning co-location. In addition, multiple respondents identified practical situations to illustrate what should be understood as fair, transparent and non-discriminatory for each of these elements.
3. With regard to the level of access offered to the users, there was wide dispersion in the responses: some respondents suggested that such access should encompass the availability of all co-location users to access the services under equal conditions. Others requested the ability to subscribe only to those services needed. Some respondents believed that the providers of co-location services should allow for sufficient capacity to allow new participants easy access to these services.

4. Different views were expressed with respect to which type of entities should have access to the co-location services: market participants/members of the trading venue only or also third party providers that may not necessarily be a member of the trading venue but that provide technical support directly to trading participants.
5. ESMA agrees that in addition to members or participants of trading venues there may be other types of users having direct proximate access to the trading venue such as IT providers or data vendors where this is foreseen in the commercial policy of the trading venue and this is reflected in the RTS. In line with other sections of this Consultation Paper, the possibility of having access to unbundled services has also been included. However, the draft RTS reflects that trading venues should not be forced to an endless expansion of their capacities to cater further co-location requests.
6. With regard to the pricing models used by providers of co-location, several respondents understood that the requirement to be fair, transparent and non-discriminatory would be met by making public sufficient detail of all direct and indirect fees per service provided. Most respondents expressed the view that the information with regard to the pricing models needs to be made public, whilst some others would also accept if this type of information would only be made available on demand.
7. Other respondents considered that the level of the fees or prices needs to be consistent with standard pricing based on objective factors (such as contract term, size of space required, connectivity specifications, etc...). The effective fees or prices charged should be the same for all users using the same services, including any applicable fee-reduction incentives or fee breaks.
8. Finally, the following additional factors were suggested by some respondents to be considered in ensuring that co-location services are provided in a transparent, fair and non-discriminatory manner. In order to be transparent, the published information should consist of clear documentation about all possible products and services offered with all relevant information, including pricing. Other respondents requested ESMA to consider whether co-location providers should be required to disclose information on the quality of their services (e.g. latency percentiles). One respondent suggested that co-location centers should be supervised by ESMA or NCAs as regulated entities via the actions taken by the trading venue (as opposed to proximity hosting provided by third parties having no direct link to the trading venues).
9. ESMA agrees that there should be sufficient publicity in terms of price and conditions. Regarding pricing levels, the section on Fee structures of the RTS reflects that pricing should be based on non-discriminatory and publicly known commercial grounds such as the quantity, scope or field of use demanded.
10. With regard to the level of technical support provided to users of co-location services by the providers, respondents suggested that the level of technical support, including the level of latency, should be the same for all users making use of the same type of

service(s) (including same cable length and access to communication). ESMA has taken that point on board noting that what is expected is that users get access on equal footing according to publicly available conditions.

Proposal

11. ESMA has re-considered its original proposal in line with the comments received as presented in the draft regulatory technical standards included in the Annex.

Q116. Do you agree with the proposed draft RTS with respect to co-location services? Please provide reasons for your answer.

Fee structures

Background/Mandate

Article 48 of MiFID II

[...]

9. *Member States shall require that a regulated market ensure that its fee structures including execution fees, ancillary fees and any rebates are transparent, fair and non-discriminatory and that they do not create incentives to place, modify or cancel orders or to execute transactions in a way which contributes to disorderly trading conditions or market abuse. In particular, Member States shall require a regulated market to impose market making obligations in individual shares or a suitable basket of shares in exchange for any rebates that are granted.*

Member States shall allow a regulated market to adjust its fees for cancelled orders according to the length of time for which the order was maintained and to calibrate the fees to each financial instrument to which they apply.

Member States may allow a regulated market to impose a higher fee for placing an order that is subsequently cancelled than an order which is executed and to impose a higher fee on participants placing a high ratio of cancelled orders to executed orders and on those operating a high-frequency algorithmic trading technique in order to reflect the additional burden on system capacity.

[...]

12. *ESMA shall develop draft regulatory technical standards further specifying:*

[...]

(d) *the requirements to ensure that co-location services and fee structures are fair and non-discriminatory and that fee structures do not create incentives for disorderly trading conditions or market abuse;*

ESMA shall submit those draft regulatory technical standards to the Commission by 3 July 2015.

12. In the Discussion Paper, market participants were asked whether they agree with ESMA approach to take regulatory action only to address specific risks linked to certain fee structures, that fees should be sufficiently granular without obligation to pay for other bundled services and that the same conditions should apply to all users in the same position according to published, objective criteria.

13. In the Discussion Paper, ESMA asked market participants to advise on 1) practice that might need regulatory action in terms of transparency or predictability of trading fees; 2) any specific difficulties in obtaining adequate information in relation to fees and rebates that would need regulatory action and 3) cases of discriminatory access that would need regulatory action.

Analysis following feedback from stakeholders

14. A large number of the respondents agreed with the proposed approach. Some of these respondents also added some additional suggestions or reservations on specific points:
 - i. Scope of fees: Principles should not be limited to trading fees and access fees but should apply to all types of fees that a trading venue may charge, e.g. fees for access to market data;
 - ii. Transparency: headline fee schedules should be available online whilst the disclosure of market making and liquidity provision schemes should be left to the discretion of the exchange.
 - iii. Non-discrimination: the same requirements should apply in the same way to all trading venues within the same context and differences in fees should be allowed as long as they are applied to all the members/participants meeting the same conditions.
 - iv. Several respondents agreed with the ESMA approach adding that its empowerment should not be a justification to directly interfere in the fee policy of the venues. For these respondents, the trading venues in close collaboration with their clients are the ones to assess the level of their fees and tariffs.
15. The respondents who disagreed with the ESMA approach highlighted that the requirement for fees to be fair, reasonable and non-discriminatory does not mean that these have to be the same for all members.
16. ESMA agrees that any interference to the commercial arrangements of trading venues and their clients has to be limited to those cases where fees would give rise to identifiable cases of unfair discrimination, lack of transparency, risks to the orderliness of the market or abusive behaviour.

Transparency

17. To enhance the principle of transparency and to ensure that fee structures are easily accessible, ESMA proposed that trading venues should publish their fee structures, including execution fees, ancillary fees and any rebates in one comprehensive document or place on their website. Market participants meeting the requirements set out by the trading venue should be able to access the same fees and rebates. In particular, it should be clear that as long as pre-determined and non-discriminatory objective

requirements are met, all market participants should be able to access the same rebates, not just a sub-set of them.

18. With regard to any specific difficulties in obtaining adequate information in relation to fees and rebates, the majority of respondents did not identify any issues with obtaining adequate information as far as, as highlighted by some respondents, all information is published (e.g. including relevant annexes). Some respondents reported that trading venues should be banned from providing information on discounts/rebates only upon request to a restricted category of customer or potential customer.
19. Respondents noted that overall transparency of a general tariff accompanied with all programmes in one place at the trading venues' website would be beneficial. One respondent noted that if specific programmes are offered, their requirements and tariffs should be published and in case requirements and tariffs are the result of a negotiation process, transparency should be required ex ante regarding the negotiation criteria and ex post regarding the negotiation results.
20. It was also stressed in some responses that no unlevel playing field should be created, i.e. equal requirements should apply for services provided not only by trading venues within the scope of MiFID II but also for providers outside the scope of MiFID II that offer the same services (e.g. third party providers that are not regulated entities such as data centers).
21. Respondents expressed a preference to include into the RTS a detailed description of what should be understood by "transparent" and specify the type of instruments, types of trading venues, types of members, rationale for distinguishing between different types of members, etc.
22. The draft RTS reflects that there are many tariffs, prices and fees to be considered within the fee structure of a venue. On those grounds, all of them should be reflected on the public available information that trading venues should display.

Fair and non-discriminatory access to fees

23. Some attention was drawn to the practice of the maker-taker model and the payment-for-order-flow since they may have negative effects on the markets. Some respondents put forward a number of arguments against these models.
24. With respect to maker-taker model the core arguments were: negative fees result in lower spreads by market maker but those spreads do not reflect the true costs and risks associated with market making; it is an artificial transfer of profits and costs across the market; distortion of understanding a fair spread (creating artificial spreads) and distortion of price discovery (artificial pricing); maker-taker model exploits market fragmentation and it reinforces it further; and it has an impact on transparency and

complexity of the market system (it becomes difficult for takers to estimate the true total costs of execution).

25. ESMA notes these comments, however it believes that at this point in time there is insufficient evidence supporting the connection between this type of fee structure and disorderly trading conditions or market abuse.
26. With respect to payment for order flow, the comments received noted that it results in conflict of interest and absence of best execution for clients, may create a barrier of entry for new market makers and may lead to more orders being filled on non-lit markets.
27. ESMA notes these comments, however it believes that at this point in time there is insufficient evidence supporting the connection between this type of payments and disorderly trading conditions or market abuse. However, it notes as well that Article 27(2) of MiFID II states that “an investment firm shall not receive any remuneration, discount or non-monetary benefit for routing client orders to a particular trading venue or execution venue which would infringe the requirements on conflicts of interest or inducements set out in paragraph 1 of this Article and Article 16(3) and Articles 23 and 24».
28. With regard to cases of discriminatory access that would need regulatory action, respondents highlighted the need to provide additional clarification around the principle of non-discriminatory access without necessarily proposing the means of doing it. Some respondents stressed that certain discriminative practices should be prohibited, such as:
 - i. ability for certain participants to “pay for an early look” ;
 - ii. setting a limit by trading venues for the number of Market Makers they allow;
 - iii. restricting market access with best performance/highest speed to certain vendors/members ;
 - iv. offering permanent benefits to some of trading venues’ members (while volumes discounts are legitimate).
29. ESMA notes that fee structures should not permit the possibility for activities such as “payment for an early look” as it would open the door for abusive practice and has addressed this with respect to the fee structures that may create incentives for market abuse.

Scope of ‘fee structures’ concept

30. ESMA described in its Discussion Paper three possible types of incentives and disincentives:
 - i. ‘rebate’ as used in MiFID II should be considered as “refunding by the trading venue a portion of the trading fee charged to the market maker for its market making

service” , i.e. for the addition of liquidity to the order book that do not reflect genuine interest to trade;

- ii. ‘volume discount’ is a price differentiation scheme for large and active participants: either based on the total trading volume or on the total number of trades. An alternative of this scheme is fee discounts based on the cumulated trading fees per member; and
 - iii. penalties for excessive OTRs, is a monetary amount, in fixed or variable format, that is charged by a trading venue once that venue’s OTR is breached. These penalties are an additional charge to account for the operational cost incurred by the trading venue to sustain such an activity.
31. Market participants were asked in the Discussion paper whether there are other incentives or disincentives that should be considered. Several respondents answered that the described were too limited or too prescriptive. Some other practices were proposed for consideration of ESMA: maker/taker schemes or pricing (with divided views about it); payment for order flow; discounts for certain type of orders; top of the book orders; revenue sharing models to incentivize participation in newly launched products; introductory offers, promotions, cross-selling and responding to ad hoc requests from customers and some others.
32. ESMA notes the suggestions received from market participants. However they do not allow drafting a stable list of practices. Nonetheless, ESMA believes that the principle underlying the comments received is addressed in the draft RTS when it permits different pricing based on non-discriminatory and published commercial grounds such as the quantity, scope or field of use.

Fee structures that might lead to disorderly trading conditions

33. ESMA described in the DP a number of parameters to be considered by trading venues in the design of its fee structures and asked market participants whether any of them might increase the probability of trading behaviour that would lead to disorderly trading conditions.
34. The vast majority of respondents agreed with ESMA’s position and indicated that structural parameters of fee schedules in themselves do not contribute significantly to the probability of trading behaviour which may lead to disorderly and unfair trading conditions. Some of them proposed additional parameters, especially maker/taker models that may jeopardise the best execution obligation towards clients. With respect to these responses, we cross-refer to the point made above.
35. One respondent noted that fees set independently from the level of activity may encourage such disorderly trading behaviour. ESMA agrees with this point and

accordingly, the draft RTS only permits incentives based on non-discriminatory, measure and objective parameters and would exclude these cases.

36. Several respondents noted that rebates should never be so high to encourage improper trading. With a view to the final draft RTS, ESMA welcomes any type of evidence regarding which would be the degree of rebates that may foster disorderly trading.
37. To ESMA's question on whether market participants can identify any potential risks from charging differently the submission of orders to the successive trading phases, the majority of respondents replied that they do not see any additional risks. Among those respondents who have certain reservations, there is no consistent opinion how these risks can be mapped and mitigated.
38. ESMA notes that despite some of the concerns are valid ones, the regulatory action is framed by the wording of Article 48 of MiFID II which determines that fee structures should be fair, non-discriminatory and should not foster market abuse or disorderly trading conditions.
39. ESMA raised in the Discussion Paper its concerns about the existence of an embedded 'cliff edge' component. Most of the respondents agreed to ban this practice. However, not all respondents seem to have understood the question in the same manner. Some have specifically mentioned 'cliff edge' type situations, where others have answered more in general that volume discounts should be allowed or have identified other types of fee structures. Some respondents believe a cliff edge price structure might be acceptable if the threshold for reaching the discount is not known in advance. Also, a ban should not outlaw other schemes that may encourage meeting a certain measure in order to gain a benefit over a defined period, e.g. a discount for certain ratio of passive or aggressive trading. Other respondents suggested banning related market practice such as offering participants heavily discounted or free market data where they agree to trade solely on the operator's trading venue or rebates based on number of trades or payment for order flow by the trading venue.
40. Some respondents identified other types of fee structures that may provide certain market participants with more favourable trading conditions than their competitors:
 - i. fee structures which do not support genuine orders;
 - ii. rebates which are discriminatory, i.e. favouring a specific user or segment of users;
 - iii. charging fees/penalties to specific participants for high messaging/OTRs;
 - iv. some type of bundling of services in a fee structure, i.e. a motivation to trade excessively to achieve another rebate or service ;
 - v. different pricing per trading phase may incentivise higher risks behaviour of participants seeking cheaper prices elsewhere during that trading phase;

- vi. offering free admission to trading to certain instruments if the issuer delists the same instrument from other markets;
 - vii. payments to firms for becoming members of markets, without any related obligations;
 - viii. fees set independently from the level of activity;
 - ix. services not controlled fully by the trading venue, i.e. feed prices, may create a non-level playing field.
41. ESMA notes that most of these comments have been addressed in the proposed RTS.

Relationship between fee structures and testing obligation for trading venues

42. ESMA proposed to encompass two types of testing under the provision of Article 48(6) of MiFID II for trading venues to require members or participants to carry out appropriate testing of algorithms and provide environments to facilitate such testing:
- i. conformance testing on the compatibility of the members or participants to the trading system and their ability to process market data; and
 - ii. testing of algorithms to avoid disorderly trading conditions.
43. ESMA's view is that trading venues may legitimately transfer the costs of the provision of these services to its members or participants. At the same time, ESMA also considers that members or participants deploying new algorithms are fully responsible for testing them under appropriate scenarios and there may be cases under which the scenarios provided by trading venues might not be sufficient for those purposes.
44. The views of market participants were split: almost half of them believed that there should be no charging for (often mandatory or technical) conformance testing. Other respondents believed that the costs generated by the testing platform should be charged, but left to the discretion of the trading venue whether this is charged for separately on a fair, transparent and non-discriminatory basis.
45. With regard to testing of algorithms, more respondents are in favour of charging costs. Importantly, testing of algorithms should not be a revenue generating product and any charges should be nominal only to cover the provider's costs.
46. ESMA has addressed this point in the RTS noting that there are obligations arising from regulation where trading venues should be entitled to recover the costs of provision. In particular in the case of testing of algorithms against disorderly trading conditions trading venues should offer a product that effectively considers the core scenarios that may take place when entering the market and should recover the costs of providing such service. However, nothing prevents the venues from designing and offering other products with

more value added, for example, additional testing scenarios to their clients according to their commercial policy.

Relationship between fee structures and market making schemes

47. ESMA presented in the Discussion paper its view that the provisions on market making schemes must be read in conjunction with fee structures and the following principles should apply:
- i. trading venues should develop a market making scheme/incentives for those instruments considered as liquid according to Article 2(1)(17) of MiFIR which do not have a sufficient number of firms engaged in market making agreements;
 - ii. trading venues should put in place effective measures to detect the effective provision of liquidity on an on-going basis and also to detect that the obligations under the market making arrangement are strictly met. In particular, that monitoring obligations should focus on ensuring that these firms meet the minimum presence time;
 - iii. trading venues should have a system of penalties to ensure that the firms engaged in the market making arrangements are not only excluded from those benefits when they do not meet the requirements on a systematic basis but also risk a sufficient fine. The system should ensure that firms are not only present when additional provision of liquidity is not necessary, but also when it is needed; and
 - iv. trading venues shall keep detailed records on the measures and/or penalties adopted as well as on the monitoring activity carried out on members and participants behaviour with respect to market making arrangements.
48. As a whole, respondents raised concerns and suggestions in line with their positions reflected in the section of the Discussion Paper on Market Makers.
49. Many respondents, especially trading venues, raised the following concerns:
- i. It would not be possible for trading venues to guarantee that a specific number of firms enter into a market making agreement. There is a risk of placing obligations on venues which are unattainable.
 - ii. The requirement that “the system should ensure that firms are not only present when additional provision of liquidity is not necessary, but also when it is needed” is not clear and raises questions what does it mean in practical terms. Such a principle would be arbitrary by nature, and would conflict with the ability for market makers to withdraw their quotes under certain extreme conditions.
 - iii. a system of penalties would either lower the willingness to engage in market making agreements, or would require higher incentives for such activities. Market makers

who fail to be compliant with minimum requirements should only face the risk of no rebates and termination of agreement but not an additional risk of fine.

50. ESMA has revised its draft RTS on Market Making strategies, market Making Agreements and Market Making Schemes in line with the comments received.

Relationship between fee structures and OTRs

51. ESMA's preliminary view was that an OTR regime should be read in conjunction with fee structures leading to a situation where a number of principles should apply, such as that trading venues should have in place effective measures to detect any breach of the OTR, that for those cases trading venues should impose effectively deterrent economic penalties and that venues should keep records of them.
52. A vast majority among the respondents agreed with ESMA's proposal. Only four respondents objected and took the view that a penalty fee is not necessary.
53. In addition, some respondents supporting ESMA's proposal emphasized that they prefer an economic penalty to any form of trading ban placed on the relevant participant. Aside from that, one respondent disagreed with the word "penalty fee" in this context and would prefer a more neutral wording, e.g. "excessive usage fee".
54. Some respondents took the view that trading venues should have the flexibility to choose whether to impose penalties for high OTRs based on their specific circumstances and that no mandatory OTR should be imposed. In addition, it was also mentioned that trading venues may also choose to impose non-financial penalties as alternative arrangements, for example, temporary suspension of access to the market and that the venue in question should decide which approach is most appropriate.
55. It has recently been clarified to ESMA with regard to the imposition of penalties in case of breach of the OTR that it could not be considered as falling within the scope of the draft regulatory technical standards to be developed under Article 48(12) of MiFID II. This proposal has therefore been removed.

Relationship between fee structures and market abuse

56. Several respondents did not see any situation in which fee structures could incentivise abusive behaviour or believe that fee structures generally do not induce participants to undertake market abuse; any such behaviour is to be dealt with under relevant anti-market abuse provisions.
57. Reference was made to fee structures not based on genuine trading activity. When asked about cases of discriminatory access, one respondent suggests that ESMA should ensure that fee structures do not permit the ability of certain participants to pay for "an early look".

58. Other respondents referred to fee structures addressed in the section «Fee structures that may lead to disorderly trading conditions», such as «cliff edge» or those that fall out of the scope of ESMA’s mandate, like fostering excessive OTRs.
 59. On the basis of the feedback received, ESMA lacks of sufficient input with respect to the ability of certain market participants to pay for an “early look” considering as such the possibility of discriminating within the same type of users in the access to pre- and post-trade transparency information.
 60. However, ESMA’s view is that that type of activity would significantly differ from current market practice, whereby trading venues offer data feeds at different latencies, depending on whether the data is consolidated or not, but at the same latency to all the participants which have the same type of data feed. In principle, such current market practice is not questioned.
 61. Consequently, ESMA welcomes the views of market participants about the elements that would be characteristic of that “payment for an early look”.
 62. ESMA would be keen to collect additional evidence about cases where fee structures are not based on genuine trading activity.
- Q117. Do you agree with the proposed draft RTS with respect to fee structures? Please provide reasons for your answer.**
- Q118. At which point rebates would be high enough to encourage improper trading? Please elaborate.**
- Q119. Is there any other type of incentives that should be described in the draft RTS?**
- Q120. Can you provide further evidence about fee structures supporting payments for an “early look”? In particular, do you agree with ESMA’s preliminary view regarding the differentiation between that activity and the provision of data feeds at different latencies?**
- Q121. Can you provide examples of fee structures that would support non-genuine orders, payments for uneven access to market data or any other type of abusive behaviour? Please provide reasons for your answer.**
- Q122. Is the distinction between volume discounts and cliff edge type fee structures in this RTS sufficiently clear? Please elaborate**

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 17: Draft regulatory technical standards on co-location and fee structure

4.6. Tick sizes (Article 48(6) and Article 49 of MiFID II)

Background/Mandate

Article 48(6) of MiFID II - Systems resilience, circuit breakers and electronic trading

6. *Member States shall require a regulated market to have in place effective systems, procedures and arrangements, including requiring members or participants to carry out appropriate testing of algorithms and providing environments to facilitate such testing, to ensure that algorithmic trading systems cannot create or contribute to disorderly trading conditions on the market and to manage any disorderly trading conditions which do arise from such algorithmic trading systems, including systems to limit the ratio of unexecuted orders to transactions that may be entered into the system by a member or participant, to be able to slow down the flow of orders if there is a risk of its system capacity being reached and to limit and enforce the minimum tick size that may be executed on the market.*

Article 49 of MiFID II - Tick sizes

1. *Member States shall require regulated markets to adopt tick size regimes in shares, depositary receipts, exchange-traded funds, certificates and other similar financial instruments and in any other financial instrument for which regulatory technical standards are developed in accordance with paragraph 4.*

2. *The tick size regimes referred to in paragraph 1 shall:*

(a) *be calibrated to reflect the liquidity profile of the financial instrument in different markets and the average bid-ask spread, taking into account the desirability of enabling reasonably stable prices without unduly constraining further narrowing of spreads;*

(b) *adapt the tick size for each financial instrument appropriately.*

3. *ESMA shall develop draft regulatory technical standards to specify minimum tick sizes or tick size regimes for specific shares, depositary receipts, exchange-traded funds, certificates, and other similar financial instruments where necessary to ensure the orderly functioning of markets, in accordance with the factors in paragraph 2 and the price, spreads and depth of liquidity of the financial instruments.*

ESMA shall submit those draft regulatory technical standards to the Commission by 3 July 2015.

4. *ESMA may develop draft regulatory technical standards to specify minimum tick sizes or tick size regimes for specific financial instruments other than those listed in paragraph 3 where necessary to ensure the orderly functioning of markets, in accordance with the factors in paragraph 2 and the price, spreads and depth of liquidity of the financial instruments.*

1. MiFID II provides for the harmonisation of tick size regimes with the aim of preventing the disorderly functioning of the financial markets in the EU.
2. For the purpose of its mandate on tick size regimes, ESMA proposed in the Discussion Paper on MiFID II / MiFIR dated 22 May 2014 two approaches:
 - i. The first approach (option 1) provided for a tick size regime based on a two dimensional tick size table with 2 entries:
 - a. The price (as is currently the case in most of the existing regimes);
 - b. The liquidity (being measured through the proxy of the average daily number of trades per trading day and implying that the stocks are grouped per liquidity class so that the approach is a “per group of financial instruments” one).

This two dimensional tick size table was built with a view to defining a tick size being sufficiently small in order to avoid increasing viscosity and at the same time being sufficiently large in order to ensure that there is a relevant cost to overbidding. To that end, the tick size table proposed under option 1 was designed to target a spread to tick ratio (i.e., the number of ticks between the bid and the offer) with both a floor (i.e., the minimum number of ticks) and a ceiling (i.e., the maximum number of ticks): the targeted spread to tick ratio was ranging between 1.4 (floor) to 2.5 (ceiling) for liquid stocks and between 1.4 (floor) to 5 (ceiling) for poorly liquid stocks. The proposed tick size table further aimed at maintaining a relevant control group for each class of financial instruments being within the same price range and liquidity band in order to monitor its impact.
 - ii. The second approach (option 2) provided for a tick size regime based on the FESE table 2, adjusted on a spread adjustment factor (SAF) being defined on a “per financial instrument basis”. The SAF aimed at having a spread to tick ratio always greater than 2 (floor) for each single stock. This adjustment was made for liquid stocks only.
3. It is noteworthy that both approaches provided for the use of three increments in the tick size table (1, 2 and 5) and an annual reassessment of financial instruments in terms of liquidity and price.

Analysis following feedback from stakeholders

Tick size regime for equity financial instruments

4. Further to the public consultation initiated in May 2014, ESMA received responses which provided for technical comments (including requests for clarification) regarding both approaches. In light of these responses (which are described hereunder), ESMA has been in a position to develop a unified tick size approach with a view to addressing the different concerns raised by respondents for both equity and equity like financial

instruments. To this end, ESMA has notably used elements of both options 1 and 2 that had been identified by respondents as being relevant for the purpose of Article 49 of MiFID II.

5. As regards the liquidity indicator to be used to determine the liquidity profile of financial instruments under the new tick size regime, ESMA asked in its Discussion Paper whether the average number of trades per day was a relevant liquidity proxy. Some respondents argued that this metric did not appear adequate for ETFs whose liquidity is primarily dependent on the liquidity of the underlying (stock or index) as opposed to the number of trades. They further considered that the use of the average number of trades might introduce some endogeneity³⁷ issues for the determination of the tick size. These respondents proposed to use a combination of indicators which were in their view more relevant liquidity proxies such as the turnover, the volume or the market capitalisation.
6. In its Discussion Paper, ESMA further considered whether to apply the new tick size regime on a per group of financial instruments basis (option 1 provided for one tick size table per liquidity class) or on a per financial instrument basis (option 2 provided one SAF per financial instrument).
7. Respondents agreed that financial instruments needed to be grouped into homogeneous classes of stocks. However, their comments on the relevant number of liquidity bands to be set in the new tick size table were varied ranging from 2 to 20 liquidity bands. The majority of respondents also argued that the proposal needed more granularity and that an additional liquid band for extremely liquid stocks should be inserted in the proposed tick size table. Furthermore, they insisted on the fact that a per group of financial instruments approach was much easier to implement and understand. Indeed, even though a per instrument approach would fit every single instrument, it would be too complex to read, understand and implement.
8. With regard to the spread to tick ratio (i.e., the number of ticks between the bid and the offer) to be targeted for the purpose of the elaboration of the common tick size table as per Article 49 of MiFID II, most of the respondents considered it important that this ratio has both a floor (i.e., a minimum number of ticks) and a ceiling (i.e., a maximum number of ticks) so as to avoid a new race to the bottom between trading venues in terms of spreads. They notably insisted on the fact that tick sizes should not be reduced if one wanted to avoid increasing the noise in the order-book.
9. Most of the respondents further recommended that the new tick size regime should imply limited changes from the current regime in order to avoid an overall large decrease or increase in current tick sizes.

³⁷ In case of a tick size decrease, it should be expected an increase of the number of transactions as the size of executions decrease as well, leading to a situation where the average number of transactions would increase again even if the notional traded remains the same.

Tick size regime for equity-like financial instruments

10. In the Discussion Paper, ESMA considered whether the new tick size regime to be developed should apply to equity-like financial instruments such as ETF, depositary receipts and certificates and in the affirmative, whether the regime to be applied should be the same as that provided for equity financial instruments.
11. The vast majority of respondents agreed that some equity-like financial instruments require a tick size regulation being equivalent to that developed for equities. They added that the absence of a consistent tick size treatment for equity-like financial instruments would risk creating potential arbitrages, having tick sizes being used as a tool for competition between trading venues and a migration across instrument types with unintended effects on other products.
12. Some respondents agreed that the tick size regime for equity-like financial instruments should be based on a similar concept as that applying for equities but should be calibrated differently according to the instrument or trading venue (for a few respondents). On the other hand, some respondents opposed to the elaboration of a tick size regime for equity-like financial instruments on the ground that this would negatively impact the current market structure and limit the flexibility necessary to develop the ETF market.
13. In particular for ETFs, whereas some respondents proposed to use the liquidity of the underlying as a proxy, other suggested that the liquidity of both the ETF and the underlying should be taken into consideration. A significant number of responses supported taking the highest liquidity level of the equity tick size regime for ETFs.

Tick size for non-equity financial instruments

14. In its initial proposal, ESMA considered that the need for developing a tick size regime for non-equity financial instruments (through the elaboration of RTS) to ensure the orderly functioning of the markets had not been established. ESMA therefore proposed not to elaborate any tick size regime proposal for these financial instruments.
15. The vast majority of respondents supported ESMA's approach. ESMA therefore confirms its initial approach. However, ESMA does not exclude to consider the relevancy of the elaboration of an harmonized tick size regime for non-equity financial instruments in the future should the need for this exercise be demonstrated.

Annual review and monitoring of the regime

16. Another key feature of the new tick size table developed by ESMA relates to its monitoring and the revision of its parameters. In the two options provided in its Discussion Paper, ESMA envisaged a periodic review (e.g., yearly, quarterly) and potentially a dynamic one.

Proposal

17. ESMA has developed a unified tick size approach with a view to addressing the different concerns raised by respondents for both equity and equity like financial instruments. To this end, ESMA has notably used the elements of both options 1 and 2 that had been identified by respondents as being relevant for the purpose of Article 49 of MiFID II.
18. In light of the comments received, ESMA agrees that the proposed liquidity indicator may not be relevant for ETF and thus decides not to use it for these financial instruments. However, as regards equities, ESMA decides to maintain the liquidity proxy it proposed originally (i.e. average number of daily trades) on the ground that using other proxies such as the average number of trades per day on all trading venues or the turnover or the market capitalisation would most likely be of limited added value. Notably, if these other proxies are very well correlated to the number of trades per day, they nonetheless are much more complex to implement notably as the currency exchange rate needs to be taken into account in the calculation. Moreover, a combination of multiple indicators would add a lot of complexity to the definition of the liquidity bands and should therefore be disregarded.
19. Hence, for the harmonised tick size regime to be easy to implement ESMA proposes to use the average number of trades per day on the most relevant market in terms of liquidity³⁸ as specified in the draft RTS on equity transparency which it considers to be the most relevant proxy of liquidity and easy to assess.
20. In light of the responses received, and in order to further simplify the common tick size regime to be developed under MiFID II, ESMA proposes to use a per group of financial instruments approach as opposed to a per financial instrument one. ESMA considers that a per group approach is a simple way to take into account the liquidity profile of each single stock: equity financial instruments with an homogeneous spread will be grouped together within the same liquidity class on the basis of their respective average number of trades per day (as a liquidity proxy). Moreover, as suggested by the majority of respondents, ESMA proposes to supplement the new tick size table with an additional liquidity band (a fifth one) for extremely liquid stocks (as it is legitimate to expect a reduction in tick sizes for extremely liquid stocks for which the spread might currently be constrained). Further details on the determination of the liquidity bands are provided in technical annex 4.6.1 hereto.

³⁸ As defined in Article 16 (Most relevant market in terms of liquidity) of the draft RTS in relation to Article 4(6)(b) of Regulation (EU) 600/2014:

1. For the purposes of article 4(1)(a) of Regulation 600/2014, the most relevant market in terms of liquidity for a share, depositary receipt, ETF, certificate or other similar financial instrument should be the trading venue with the highest turnover for that share, depositary receipt, ETF, certificate or other similar financial instrument.

2. The calculation of the turnover shall exclude all transactions executed in accordance with one of the pre-trade transparency waivers in article 4(1)(a) to (c) of Regulation 600/2014 where applicable.

3. The turnover shall be calculated on the basis of all the transactions executed under the rules of the trading venue for the period between 1 January and 31 December of the preceding year and for each financial instrument referred to in paragraph 1. A list of the most relevant markets in terms of liquidity in respect of each financial instrument referred to in paragraph 1 shall be maintained and made public not later than on the first trading day of March of each year.

21. ESMA further proposes to organise groups of equity financial instruments under a two-dimensional (double entry) tick size table with one dimension being the share's liquidity profile, measured in average number of trades per day on the most relevant market in terms of liquidity, and with the other dimension being the price of the shares, expressed in monetary units and grouped in ranges. ESMA proposes to use this two-dimensional table because it allows an assignment of a tick size to each single share at any point in time in consideration of its liquidity profile and its price. For the purpose of simplicity of implementation and following the suggestion of many respondents, ESMA proposes to build the new tick size regime on the basis of the existing FESE table 2 with three tick size increments: 1, 2 and 5. As a result, each group of stocks will be assigned a tailored version of FESE table 2 based on its liquidity, as follows:

LESS LIQUID		→ → → → → → → → → → → → → →					LIQUID	
FESE 2	FESE 2	FESE 2	FESE 2	FESE 2	FESE 2	FESE 2	FESE 2	FESE 2
up 3 levels	up 2 levels	up 1 level	(amended with three increments)	down 1 level				

22. ESMA proposes that the liquidity/price classes of the common tick size table be adjusted so as to accommodate most of the spread to tick ratios currently observable in the various Member States³⁹. As a result, ESMA proposes to use the following ranges:

- i. [1.5; 3] for liquid shares, depository receipts and certificates.
- ii. [1.5; 5] for illiquid shares, depository receipts and certificates (the less liquid classes of stocks).

23. In light of all respondents' comments, ESMA proposes to establish the common tick size regime provided under Article 49 of MiFID II on the basis of the tick size table presented below. It is highlighted that this tick size table was built with a view to being simple to understand and implement while having a controlled impact to the extent possible⁴⁰. Under the proposed approach, each liquidity class will be assigned a unique, price driven, tick size table such that in a given liquidity band, the tick size evolves continuously with the price of the financial instrument. Also and as indicated above, it is proposed to add a liquidity band for extremely liquid stocks.

24. Moreover, ESMA has refined the common tick size table after conducting impact and sensitivity assessment exercises such that the market microstructural effects (e.g. on the spread to tick ratio, liquidity) of a change in ticks made to shares can be compared with

³⁹ Due to the large disparity in spreads, it is reasonable to say that it is not possible to have all stocks lying within the targeted spread to tick ratio range.

⁴⁰ It is noteworthy that it is not possible to predict with certainty what the exact impact of a change in tick sizes will be to the spread to tick ratio.

the market microstructural effects on those shares that remained in the same tick range (please see the impact analysis in technical annex 4.6.2 hereto).

25. The column titles of the proposed common tick size table relates to liquidity bands (based on the average daily number of trades per day) whereas the row titles relate to the price ranges.

			Liquidity bands				
Price ranges			0-100	100-500	500-2000	2000-15000	15000-
0	≤...<	0,1	0,0002	0,0001	0,0001	0,0001	0,0001
0,1	≤...<	0,2	0,0005	0,0002	0,0001	0,0001	0,0001
0,2	≤...<	0,5	0,001	0,0005	0,0002	0,0001	0,0001
0,5	≤...<	1	0,002	0,001	0,0005	0,0002	0,0001
1	≤...<	2	0,005	0,002	0,001	0,0005	0,0002
2	≤...<	5	0,01	0,005	0,002	0,001	0,0005
5	≤...<	10	0,02	0,01	0,005	0,002	0,001
10	≤...<	20	0,05	0,02	0,01	0,005	0,002
20	≤...<	50	0,1	0,05	0,02	0,01	0,005
50	≤...<	100	0,2	0,1	0,05	0,02	0,01
100	≤...<	200	0,5	0,2	0,1	0,05	0,02
200	≤...<	500	1	0,5	0,2	0,1	0,05
500	≤...<	1000	2	1	0,5	0,2	0,1
1000	≤...<	2000	5	2	1	0,5	0,2
2000	≤...<	5000	10	5	2	1	0,5
5000	≤...<	10000	20	10	5	2	1
10000	≤...<	...	50	20	10	5	2

26. ESMA considers that for shares, depositary receipts and certificates the average number of trades per day on the most relevant market in terms of liquidity is calculated on a yearly basis over a calendar year basis and that this calculation (reflecting the liquidity of the equity) is made publicly available.
27. Under this approach, once an equity or equity-like financial instrument falls into a liquidity band (for instance, equal or greater to 100 and below 500), it will remain in that liquidity band until the next annual review and each change in its price range will result in a change in the applicable tick (for example, if the equity's price increases from the range [5 to 10] to the range [10 to 20], the equity's tick size will change from 0.01 to 0.02). Hence, only price movements will determine a tick size change on an intra-day and day-by-day basis. For each equity financial instrument, both the applicable tick size table and the liquidity band to which it belongs (including the average number of trades per day) should be made available to all market participants with the MiFID database.
28. ESMA has also identified several particular or exceptional circumstances under which the tick size should be subject to a specific liquidity band:
- With regard to equity and equity-like instruments admitted to trading in a fixing segment, ESMA proposes that they be assigned to the tick size regime of the lowest liquidity band as these stocks are less liquid.

- ii. It is proposed that before the admission to trading or the date in which the share, depositary receipt and certificate actually starts trading, the competent authority for that instrument shall ensure that estimates of the average daily number of transactions are provided for the share. To this end, the listing trading venue shall consider the previous trading history of that share if such history exists, or the trading history of shares having similar characteristics such as the market capitalisation and free float, in case of an initial public offering, and determine on this basis the applicable liquidity band. No later than six weeks after the share has started trading, the tick size of the share shall be calculated on the basis of the first four weeks of trading and the instrument will remain in the tick size corresponding to that liquidity band till the next annual calculation of the average number of trades.
29. Considering the respondents' comments, ESMA proposes to determine the appropriate tick size as follows:
 - i. With regard to depositary receipts and certificates: ESMA proposes to apply the tick size regime which is applicable to equity financial instruments as specified above;
 - ii. With regard to ETF: in light of the large variety of ETF products and of their potential underlyings (e.g. equity, indexes, Forex) and for the purpose of simplicity, ESMA proposes to apply the tick size table of the most liquid band.
30. Given the large support of respondents for an annual review of the common tick size regime, ESMA engages to provide for such a review at its own initiative. In case from that revision it is considered necessary, ESMA would propose a revision of the draft technical standards to the Commission.
31. ESMA believes that an annual review is key in order to determine whether or not the liquidity bands have to be adjusted (so as to increase or decrease the tick). Considering that the new tick size regime relies on many market quality indicators (other than the spread to tick ratio) that may be impacted by the tick, ESMA recommends that during the annual review a particular attention be given to the following non-exhaustive list of indicators: the spread to tick ratio, as described above; the noise in the order-book; the median lifetime of the orders or the order-to-trade ratio: where these indicators reflect a very high flow of orders, this is generally linked to a too low viscosity (i.e. too small ticks); the queuing time: if this indicator increases significantly, this means that the viscosity is too high and that the tick size is too large; the behaviour of the instruments that did not change the tick size band (control group) any other indicator that could reflect the market quality (such as the price volatility of the stocks).
32. In case these indicators show a degradation of market microstructure during an annual review, ESMA would propose to the Commission a revision of the regulatory technical standards including an adjustment of the liquidity bands such that it increases or reduces the tick. The proposed review process does not require any annual recalculation of the overall tick size table nor does it require a recalculation of the annual spread data for

each stock. It is closely linked to the evolution of the market microstructure and it can interact with it (through the adjustment of the liquidity bands).

33. In case the proposed regulatory technical standard is approved, ESMA considers necessary to provide for an earlier revision of the regime following its effective implementation based on the analysis of data from the first two quarters. It is noteworthy that this approach received significant support from the respondents to the Discussion Paper.
34. ESMA considers that trading venues should have the ability to react to exceptional situations where the tick prescribed according to these Technical Standards may no longer be appropriate. To that end, these Standards set out a specific procedure for corporate actions that may make the tick of one specific instrument unsuitable to ensure to avoid disorderliness of the market and also provide a definition of “corporate action”, considering as such a situation known in advance that may lead to a change in the number of financial instruments or the price of the financial instrument or its nature, including splits (sub-division), reverse splits (consolidation), scrip issues (capitalisation or bonus issue), capital repayments, rights issues/entitlement offers, takeovers and mergers and stock conversions.
35. Further details on ESMA’s proposal on a common tick size table are provided in the attached technical annex below.

- Q123. Do you agree that the average number of trades per day should be considered on the most relevant market in terms of liquidity? Or should it be considered on another market such as the primary listing market (the trading venue where the financial instrument was originally listed)? Please provide reasons for your answer.**
- Q124. Do you believe a more granular approach (i.e. additional liquidity bands) would be more suitable for very liquid stocks and/or for poorly liquid stocks? Do you consider the proposed tick sizes adequate in particular with respect to the smaller price ranges and less liquid instruments as well as higher price ranges and highly liquid instruments? Please provide reasons for your answer.**
- Q125. Do you agree with the approach regarding instruments admitted to trading in fixing segments and shares newly admitted to trading? Please provide reasons for your answer.**
- Q126. Do you agree with the proposed approach regarding corporate actions? Please provide reasons for your answer.**
- Q127. In your view, are there any other particular or exceptional circumstances for which the tick size may have to be specifically adjusted? Please provide reasons for your answer.**

- Q128. In your view, should other equity-like financial instruments be considered for the purpose of the new tick size regime? If yes, which ones and how should their tick size regime be determined? Please provide reasons for your answer.**
- Q129. To what extent does an annual revision of the liquidity bands (number and bounds) allow interacting efficiently with the market microstructure? Can you propose other way to interact efficiently with the market microstructure? Please provide reasons for your answer.**
- Q130. Do you envisage any short-term impacts following the implementation of the new regime that might need technical adjustments? Please provide reasons for your answer.**
- Q131. Do you agree with the definition of the “corporate action”? Please provide reasons for your answer.**

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 18: Draft regulatory technical standards on the tick size regime for shares, depositary receipts, exchange traded funds and certificates

Annex 4.6.1: Definition of the liquidity bands

36. As presented in the technical annex of ESMA's Discussion Paper (dated May 2014), the spread is a decreasing function of the liquidity (expressed as the average number of trades per day). The liquidity bands were created such that the spread is as homogeneous as possible in each of them.
37. The approach carried out by ESMA to define the liquidity bands consisting in firstly using very granular liquidity bands (e.g. a range of 50 trades per day: 0-50 / 50-100/ 100-150 etc.) and then to group those liquidity bands for which it could be expected that the same tick size would apply as they would fall within a similar spread to tick ratio range. The application of this methodology leads to proposing a new tick size table with 5 liquidity bands: 0-100/100-500/500-2000/2000-15 000/15 000-.

Annex 4.6.2: Impact analysis of the proposed tick size table

38. The following impact analysis covers the same perimeter as the one presented in ESMA's Discussion Paper that-is-to-say, 829,076 observations on 4,220 shares over a 1 year period, from 1st November 2012 to 31st October 2013.
39. The impact analysis presented hereunder shows the expected evolution of the spread to tick ratio of all stocks, and the change in the applicable tick size.

liquidity bands	liquidity bands									
	0-100		100-500		500-2000		2000-15000		15000-	
Number of stocks	2830		619		445		873		6	
Spread to tick ratio distribution	Current situation	New regime situation								
10th percentile	2,1	1,9	1,4	1,6	1,7	1,5	1,4	1,6	1,3	2,3
1st quarter	4,7	3,1	2,5	2,4	2,4	1,9	1,7	2,0	2,1	2,9
Median	12,6	5,6	6,3	3,5	4,3	2,7	2,5	2,8	2,9	3,3
3rd quarter	33,9	10,7	14,0	5,6	7,9	4,1	3,8	3,9	3,4	4,3
90th percentile	78,3	20,2	26,0	9,5	13,5	6,7	5,6	5,6	4,0	5,4
Interquartile Range	29,2	7,6	11,5	3,2	5,5	2,2	2,1	1,9	1,3	1,4
Control Group	16,0%		8,5%		38,0%		34,5%		78,5%	
Roundup	25,6%		32,5%		40,5%		30,5%		0,0%	
Rounddown	14,4%		20,7%		3,5%		32,5%		18,8%	
Adjusted No Change	56,0%		61,7%		82,0%		97,5%		97,3%	
Increase	35,5%		28,8%		11,5%		0,0%		0,0%	
Decrease	8,5%		9,5%		6,5%		2,5%		2,7%	

40. For the purpose of the spread to tick ratio impact analysis, the distribution of the spread to tick ratio over all observations is described by the following percentiles: 10%, 25% (1st quarter), 50% (median), 75% (3rd quarter), 90%. The current situation is compared to the new expected situation with the new regime.
41. For the purpose of the tick size analysis, the following terms are used:
- Control Group refers to the size (in term of observations) of the control group (shares that would not change tick size on a given observation).
 - Round up refers to size of the group for which the tick is rounded up to the nearest new increment (1->2).
 - Round down refers to the size of the group for which the tick is rounded down to the nearest increment (5->2).
 - Adjusted no change refers to the sum of the 3 metrics presented above. This measure the number of observations that wouldn't have changed tick without the new increment of 2.

- v. Increase refers to the size of the group for which the tick increases by 2 levels (1->5)
 - vi. Decrease refers to the size of the group for which the tick decreases by 2 levels (5-> 1 or 1 -> 0.5).
42. It results from the analysis that the impact on the 3 most liquid classes (> 500 trades per day) is well balanced on all stocks with an important control group (always >33%). The expected average spread to tick ratio gets close to the targeted range (around 3) but does not constrain the spread (it does not get too close to 1.5). Most of the stocks for this class only change tick because of the new increment in the table (the Adjusted No Change is always greater than 80%) so one can conclude that the impact on these stocks is rather limited.
43. For these classes that represent more than 90% of the traded amounts, the new regime should achieve the desired outcome: harmonizing tick size over the EU with a limited impact while making sure that overbidding is always relevant.
44. For the less liquid stocks (0-500), there is a global increase in tick sizes but the Control Group remains relevant. The Adjusted No Change (very limited impact) still represents more than 55% of the stocks. The impact on the spread to tick ratio is a global decrease but with no constraint on the spread (the median spread to tick ratio gets between 3 and 5).
45. For the less liquid stocks, the new regime should achieve the desired impact even though there is a larger increase in ticks.
46. It is stressed that the large control group for all liquidity classes will allow proper monitoring of the impact of the new regime.

4.7. Material markets in terms of liquidity

Background/Mandate

Article 48(5) of MiFID II

5. *Member States shall require a regulated market to be able to temporarily halt or constrain trading if there is a significant price movement in a financial instrument on that market or a related market during a short period and, in exceptional cases, to be able to cancel, vary or correct any transaction. Member States shall require a regulated market to ensure that the parameters for halting trading are appropriately calibrated in a way which takes into account the liquidity of different asset classes and sub-classes, the nature of the market model and types of users and is sufficient to avoid significant disruptions to the orderliness of trading.*

Member States shall ensure that a regulated market reports the parameters for halting trading and any material changes to those parameters to the competent authority in a consistent and comparable manner, and that the competent authority shall in turn report them to ESMA. Member States shall require that where a regulated market which is material in terms of liquidity in that financial instrument halts trading, in any Member State, that trading venue has the necessary systems and procedures in place to ensure that it will notify competent authorities in order for them to coordinate a market-wide response and determine whether it is appropriate to halt trading on other venues on which the financial instrument is traded until trading resumes on the original market.

Article 48(12)(e) of MiFID II

12. *ESMA shall develop draft regulatory technical standards further specifying:*

[...]

(e) The determination of where a regulated market is material in terms of liquidity in that instrument;

1. Article 18(5) and 48(5) of MiFID II imposes on regulated markets, multilateral trading facilities and organized trading facilities which are material in terms of liquidity in a given instrument to have the necessary systems and procedures in place to notify competent authorities trading halts.

Analysis following feedback from stakeholders

2. In the discussion paper ESMA proposed to deem the following markets as material in terms of liquidity in a financial instrument:

- i. the regulated market where the instrument was first admitted to trading; and
 - ii. the trading venue with the highest level of liquidity during a certain time period in the relevant financial instrument (as measured by the total value of transactions executed on that trading venue).
3. The majority of respondents were in favour of the proposed approach. ESMA maintains the two elements of the specification of market material in terms of liquidity.
4. Despite a minority of respondents opposed the proposal, on the grounds that first admission to trading is not a measure of liquidity, most respondents concurred that the regulated market of first admission to trading is significant for the trading of a financial instrument that it should be deemed as relevant in terms of liquidity for the purposes of Article 48(12)(e).
5. Several respondents proposed clarifying that when the instrument had been listing on more than one regulated market on the same date (i.e. dual listings), both venues should be considered as relevant markets for this purpose. ESMA agrees with the rationale behind this proposal.
6. A number of respondents also proposed ESMA to consider a relevance threshold for considering a market relevant in terms of liquidity in the range of 5% to 10% of market share. This proposal was based on the different purpose served by Article 48(12)(e) of MiFID II vis-a-vis Article 4(6)(b) of Regulation (EU) No 600/2014 on markets in financial instruments and amending Regulation 648/2012, and also on the fact that considering just one trading venue under the second element could imply considering a small proportion of trading regarding instruments whose liquidity is highly fragmented. ESMA welcomes any proposal with respect to which should be considered as the adequate threshold in this respect.
7. Despite ESMA agrees that the purpose of Article 48(12)(e) is to determine when the percentage of trading taking place in a given venue is sufficiently substantial so that the information regarding one trading halt should be “passed on” to other venues to prevent potentially systemic events it seems that only trading venue which concentrate the main bulk of trading in terms of total turnover would meet such requirement.

Proposal

8. ESMA proposes that material market in terms of liquidity in a financial instrument are:
 - i. the trading venue where the financial instrument was first admitted to trading, including all the venues where the instrument was simultaneously admitted to trading in case of multiple listing; or,
 - ii. the most relevant market in terms of liquidity for a financial instrument as verified during the preceding year.

Q132. Do you agree with the proposed regulatory technical standards?

Q133. Which would be an adequate threshold in terms of turnover for the purposes of considering a market as “material in terms of liquidity”?

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 19: Draft regulatory technical standards on material market in terms of liquidity

5. Data publication and access

5.1. General authorisation and organisational requirements for data reporting services

Background/Mandate/Empowerment

Article 61(4) (a) and (b) of MiFID II

ESMA shall develop draft regulatory technical standards to determine:

- (a) the information to be provided to the competent authorities under paragraph 2, including the programme of operations;*
- (b) the information included in the notifications under Article 63(3)*

Article 64(8)(c) of MiFID II

ESMA shall develop draft regulatory technical standards specifying:

- (c) the concrete organisational requirements laid down in paragraphs 3, 4 and 5.*

Article 65(6) of MiFID II

ESMA shall develop draft regulatory technical standards to determine [...] additional services the CTP could perform which increase the efficiency of the market.

Article 65(8)(e) of MiFID II

ESMA shall develop draft regulatory technical standards specifying:

- (e) the concrete organisational requirements laid down in paragraphs 4 and 5.*

Article 66(5)(a) and (b) of MiFID II

ESMA shall develop draft regulatory technical standards specifying:

- (a) the means by which the ARM may comply with the information obligation referred to in paragraph 1; and*
- (b) the concrete organisational requirements laid down in paragraphs 2, 3 and 4.*

1. Title V of Directive 2014/65/EU (MiFID II) deals with three new types of entities prescribed as being 'data reporting services providers' (DRSPs). These entities are

approved publication arrangements (APAs), consolidated tape providers (CTPs) and approved reporting mechanisms (ARMs).

2. Some of these types of entities already exist in certain Member States, however MiFID II brings in new formal authorisation and organisational requirements to govern how those entities operate.
3. In preparing the draft technical standards, ESMA has given consideration to the technical standards which apply to the authorisation of credit rating agencies (Commission Delegated Regulation (EU) No 449/2012⁴¹) as well as to the recommendations set out in 'CESR Technical Advice to the European Commission in the Context of the MiFID Review – Equity Markets' (CESR/10-394) in relation to APAs.
4. The responses to the ESMA Discussion Paper (DP) generally believed that the CESR advice was potentially relevant for all DRSPs. Several respondents noted however that some of the recommendations in the advice would need to be adjusted to accommodate for ARMs and CTPs given that the advice was originally designed to apply to APAs. ESMA has therefore drafted the technical standards to include similar rules governing all types of DRSPs but has distinguished instances where the nature of the service provided means that some obligations are not applicable or should be treated differently.
5. The new requirements placed on DRSPs broadly cover:
 - i. the information which must be provided by a DRSP applicant when applying to become authorised as a DRSP;
 - ii. the means by which a DRSP will be taken to have complied with their obligations set out in Article 64 (APAs), Article 65 (CTPs) or Article 66 (ARMs) of the Directive;
 - iii. management body requirements;
 - iv. sound security mechanisms, adequate resources and systems and back-up facilities;
 - v. policies and procedures to deal with conflicts of interest; and
 - vi. the ability to detect and correct errors or omissions in trade reports and transaction reports and ensure that the DRSP does not introduce errors or omissions into the information which it makes public or submits to competent authorities.

Analysis following feedback from stakeholders and proposal

⁴¹ OJ L 140, 30.5.2012, p. 32–52

6. ESMA would like to highlight four areas where respondents sought further clarification about how the requirements would apply for each type of DRSP or where ESMA would appreciate additional feedback.

Detection of errors and omissions

7. Article 64(5) and Article 66(4) of the Directive place new requirements on APAs and ARMs to check for errors and omissions in the information they receive and to notify their clients of these mistakes and to request re-transmission of correct information.
8. There were mixed responses to the DP about how an APA should handle potentially erroneous trade reports which it had received. It was suggested that the APA should either not publish the trade report or alternatively, should publish it but with an alert flag to indicate that the report could be erroneous. ESMA considers that there are two competing considerations. On the one hand, the information contained in a trade report is time sensitive, meaning that outdated trade reports are of less value to the market, which suggests that the trade report should be published immediately but with an alert flag. On the other hand, it is important that the information is as accurate as possible since it could impact price formation.
9. On balance, ESMA considers that it would be more appropriate for the APA not to publish the trade report due to the impact that inaccurate information could have on the price formation process. Using an alert flag may not be effective as the market may not know how to interpret to a trade report with such a flag and may lead to confusion.
10. ESMA wishes to clarify that while CTPs are not obliged under Article 65 of the Directive to detect errors or omissions in the information they receive from APAs and trading venues, CTPs hold the same responsibilities as APAs and ARMs in ensuring that they do not introduce errors or omissions into the information which they handle. This is part of the CTP's fundamental obligation under Article 65(1) and (2) of the Directive.

Correction of errors and omissions

11. Based on the DP responses, there appeared to be a number of respondents which expressed concern or uncertainty about CESR's recommendation concerning the correction of trade information. Some respondents suggested that it would be inappropriate for a DRSP to correct the trade or transaction report information submitted by its clients as the DRSP would not be in a better position to correct the information than the client and it could potentially interfere with the client's compliance with its own obligations.
12. ESMA would therefore like to clarify that the DRSP's obligation to correct trade report or transaction report information applies:

- i. where the DRSP is responsible for the error or omission: In this situation, ESMA considers that in order to comply with the obligations in Articles 64(1), 65(1) and (2) and 66(1) of the Directive, the DRSP ought to correct their own error or omission in order to accurately transmit or publish the information; and
 - ii. where the client requests the DRSP to correct the information which the client has submitted: For example, this may occur where, in exceptional circumstances, the client cannot correct the information itself such as due to a technical malfunction. This means that in general, a DRSP should not correct or amend the information it handles on behalf of its client without the client's permission. Such action could interfere with the fulfilment of the trade reporting or transaction reporting obligations by the client.
13. In order for a DRSP to be able to identify whether the DRSP itself has introduced errors or omissions into the information it handles, ESMA is proposing that a DRSP shall be required to undertake periodic reconciliations between the information which it has received and the information which it has published (in the case of APAs and CTPs) or submitted to the competent authority (in the case of ARMs).
 14. DRSPs are generally under the supervisory authority of the competent authority of their home Member State according to Title V of the Directive. However, in the case of ARMs, ESMA is considering allowing the competent authority to whom the ARM submitted the transaction report to also be entitled to ask the ARM to undertake periodic reconciliations given that that competent authority has an interest in ensuring that the ARM submits correct and accurate information to it.

Q134. Do you agree with ESMA's proposal to allow the competent authority to whom the ARM submitted the transaction report to request the ARM to undertake periodic reconciliations? Please provide reasons.

Business continuity

15. Under Articles 64(4), 65(5) and 66(3) of the Directive, DRSPs are required to 'maintain adequate resources and have back-up facilities in place in order to offer and maintain its services at all times'.
16. ESMA interprets that this would, for example, include having business continuity arrangements in place in order to resume critical services within a reasonable period of time following a disruptive incident.
17. In its draft RTS, ESMA has proposed establishing maximum recovery times for DRSPs. In formulating these time periods, ESMA has differentiated between APAs and CTPs on the one hand and ARMs. This is due to the differences in the time periods during which APAs and CTPs must publish trade reporting information compared to when an ARM must submit transaction reports.

18. As ARMs have a longer period (T+1) to submit transaction reports to competent authorities, it is expected that an ARM would have a maximum recovery period of up to the close of the next working day. APAs and CTPs would have six hours to resume critical services.

Q135. Do you agree with ESMA's proposal to establish maximum recovery times for DRSPs? Do you agree with the time periods proposed by ESMA for APAs and CTPs (six hours) and ARMs (close of next working day)? Please provide reasons.

Operational Hours

19. The operating hours of the DRSP are particularly relevant in the case of APAs and CTPs as they deal with the 'as close to real time' publication and dissemination of trade information. As OTC trades can take place at any time and are not limited to the normal opening hours of trading venues, there is a need for APAs and CTPs to be open at extended hours in order to publish and disseminate those trade reports within the required post-trade transparency time limits. By contrast, ESMA's initial view is that the operating hours of an ARM are not as significant an issue due to the longer time frame for submitting transaction reports to competent authorities (T+1).

20. The DP responses were split on the issue of the operating hours of APAs (it should be noted that the focus of the responses appeared to be on the operating hours of APAs although arguably the same considerations apply to CTPs).

21. Some respondents indicated that they believed that APAs should be allowed to establish their own operating hours provided that they were transparent about the hours offered. Under this approach, APAs would compete for clients based on their operating hours and clients would choose an APA that was most appropriate for their needs. On the other hand, one large industry association supported a more prescriptive approach which would require APAs to be open 24 hours/7 days a week so that there would always be an APA available to publish an OTC trade report.

22. On balance, ESMA proposes that ARMs, APAs and CTPs should be given the freedom to establish their own operating hours on the basis that DRSPs will have a commercial incentive to be open for a sufficient number of hours and potentially for different periods in a day in order to satisfy the trade reporting and transaction reporting needs of their clients.

Q136. Do you agree with the proposal to permit DRSPs to be able to establish their own operational hours provided they pre-establish their hours and make their operational hours public? Please provide reasons. Alternatively, please suggest an alternative method for setting operating hours.

Q137. Do you agree with the draft technical standards in relation to data reporting services providers? Please provide reasons.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 20: Draft regulatory technical standards on authorisation and organisational requirements for data reporting services providers

5.2. Publication chain of post-trade transparency information

1. This section addresses issues related to the publication chain of post-trade transparency information from investment firms and trading venues to the CTPs through APAs, including:
 - i. The scope of the CTP in terms of source of information
 - ii. The technical arrangements to facilitate the consolidation of information
 - iii. The required fields of the APAs and CTPs
2. These technical issues were not included in the DP, and so they are explained in necessary detail here.

Scope of the consolidated tape for equity and equity-like instruments

Background/Mandate/Empowerment

Article 65(8)(c) of MiFID II

ESMA shall develop draft regulatory technical standards specifying:

- (c) the financial instruments data of which must be provided in the data stream and for non-equity instruments the trading venues and APAs which need to be included.*

Analysis

3. It should be recalled that the European Commission's services have indicated to ESMA that the consolidated tape for equities and equity-like instruments should encompass trade data with respect to all equities and equity-like instruments traded on a trading venue, i.e. 100% of trading in equities and equity-like instruments.
4. Nevertheless some respondents to the consultation argued for a relaxation of this absolute requirement in the particular case of new sources (a new APA or new trading venue) at the start of their operations. As the launch of a new business may constitute a critical period during which delays in technical or contractual implementation are more likely to arise, ESMA considers that granting a grace period at the inception of a new source is reasonable.

Proposal

5. ESMA suggests therefore that a CTP should collect data from a new trading venue or a new APA as soon as possible and in any case no later than 3 months after the start of the APA's or trading venue's operations.

Q138. Do you agree with ESMA's proposal?

Technical arrangements facilitating the consolidation of information - Machine readability

Mandate/Empowerment/Background

Article 64 (6) of MiFID II

ESMA shall develop draft regulatory technical standards to determine [...] technical arrangements facilitating the consolidation of information as referred to in paragraph 1.

Article 65(6) of MiFID II

ESMA shall develop draft regulatory technical standards to determine [...] technical arrangements promoting an efficient and consistent dissemination of information in a way ensuring for it to be easily accessible and utilisable for market participants as referred to in paragraphs 1 and 2 [...].

6. In the DP, ESMA proposed requiring APAs and CTPs to disseminate data in a machine readable format in order to ensure "fast access to the information" and suggested a definition of what a machine readable format should be.

Analysis

7. In its DP, ESMA proposed the following definition of machine readability:

The 'machine-readable' criteria shall be met where the data:

- i. is in an electronic form that is designed to be directly and automatically read by a computer; and
- ii. is in a location on a computer storage device where that location is known in advance by the party wishing to access the data. Data may also be located in a website, in which case it shall remain accessible by electronic means through an automated process; and
- iii. is in a format that is known in advance by the party wishing to access the data. Format includes in particular the type of files or messages, the rules to identify them, and the name and data type of the fields they contain. Instructions outlining how

users can access the data shall be made easily and continuously available to all parties wishing to access the data.

8. Simultaneously, ESMA recognised the challenges associated with consolidation of data available on websites.
9. A considerable number of respondents concurred with ESMA on the challenges presented by the use of websites as they may not offer an architecture that is both robust enough and allows high speed access, proposing that data published on a website should not be deemed machine readable.
10. However, ESMA is in favour of not prescribing a particular technology as technological evolution may overcome current constraints of some technologies. Accordingly, ESMA's approach rests on specifying criteria to be met.
11. Some respondents also expressed their concerns related to the use of proprietary solutions, which might potentially be easy for the disseminator to use but expensive for end-users and to which those users might be tied to access or manipulate the data. As a consequence they suggested forbidding encryption.
12. ESMA does not see the need of proscribing encryption, as it may be a useful tool in certain circumstances. Therefore, ESMA rather favours requiring that, in case encryption is used, there should no additional burdens for the user of the information. In this regard, ESMA would expect the use of free open source encryption tools⁴² so that the software required to decrypt the data is freely available to the public (not only to the clients of the APA or CTP).
13. One respondent suggested specifying Application Programming Interfaces (API) as a possible means to access data in machine readable format. ESMA takes the view that APIs facilitate the access to data in a machine readable format. APIs are precisely designed to enable other client programs to access the information via automated access thanks to normalised libraries which are supported by descriptions on how to use them. APIs should be offered in cases where websites are used to provide machine-readable information.

Proposal

14. The 'machine-readable' criteria shall be met where the data:
 - i. Is in an electronic format designed to be directly and automatically read by a computer and known in advance by the party wishing to access the data.

⁴² I.e. when the specifications for the software are available to anyone free of charge and when those specifications can be used without limitations derived from intellectual property rights.

- ii. Is in a location known in advance by the party wishing to access the data and stored in an appropriate IT architecture in accordance with Article 12(7) of [draft RTS on the authorisation and organisational requirements for DRSPs] that enables automatic access, is robust and ensures adequate access in terms of speed.
- iii. Can be accessed, read, used and copied by freely and publicly available computer software, the source code of which is openly shared.

15. Instructions outlining how users can access and use the data shall be made easily and continuously available to all parties wishing to access the data. Changes to those instructions shall be made public at least one month before coming into effect. The homepage of the APA or the CTP should contain a link to this information, if applicable.

Q139. Do you agree with this definition of machine-readable format, especially with respect to the requirement for data to be accessible using free open source software, and the 1-month notice prior to any change in the instructions?

Consolidation of information specific to equities and equity-like instruments

Background/Mandate/Empowerment

Article 64(6) of MiFID II

ESMA shall develop draft regulatory technical standards specifying [...] technical arrangements promoting an efficient and consistent dissemination of information in a way ensuring for it to be easily accessible and utilisable for market participants as referred to in paragraphs 1 and 2 [...].

Article 65(8)(d) of MiFID II

ESMA shall develop draft regulatory technical standards specifying:

(d) other means to ensure that the data published by different CTPs is consistent and allows for comprehensive mapping and cross-referencing against similar data from other sources, and is capable of being aggregated at Union level.

Analysis

16. ESMA has to ensure that CTPs consolidate and publish transactions without any duplication. Since Article 20(1) of MiFIR does not prevent an investment firm from reporting the same trade to several APAs, the CTP may collect the same trade from several APAs and there is a risk that a single transaction might be duplicated in the tape.

Proposal

17. In order to prevent such an outcome, ESMA suggests that an APA publishes transactions reported by investment firms in a format that facilitates consolidation by including a reprint field which flags whether a report is a duplicate. ESMA considers that an APA can meet this requirement in two ways: (i) by requiring investment firms to report transactions exclusively to that APA, or (ii) by requiring the investment firm to use an identification mechanism which flags one report as the original one and all other reports of the same transaction as duplicates. This provision will allow a CTP to identify duplicates and keep them out of the published tape.
18. ESMA invites views of market participants on any other technical arrangement that should be made mandatory to facilitate consolidation of the information to be published under Articles 64(6) and 65(6) and/or any technical issue that should be addressed from a regulatory perspective. Similarly, ESMA welcomes the views of market participants about any technical arrangement or practice that would hamper the achievement of that goal.

Q140. Do you agree with the draft RTS's treatment of this issue?

Content of the information published by the equity CTP and the APA

Background/Mandate/Empowerment

Article 65(8)(a) and (b) of MiFID II

ESMA shall develop draft regulatory technical standards specifying:

- (a) the means by which the CTP may comply with the information obligation referred to in paragraphs 1 and 2;*
- (b) the content of information published under paragraphs 1 and 2;*

Article 64(8)(a) and (b) of MiFID II

ESMA shall develop draft regulatory technical standards specifying:

- (a) the means by which an APA may comply with the information obligation referred to in paragraph 1;*
- (b) the content of the information published under paragraph 1, including at least the information referred to in paragraph 2 in such a way as to enable the publication of information required under Article 64;*

Analysis and proposal

Trade ID

19. Article 65 of MiFID specifies the minimum requirement in terms of information that shall be published in the consolidated tape for equities and equity-like instruments (paragraph 1).
20. In order to determine the data fields, standards and formats for the information to be published by the CTP, the general approach that ESMA proposes to adopt consists in requiring essentially the same information from both trading venues and investment firms with respect to post-trade transparency.
21. One of the objectives of the consolidated tape is to provide market participants with an integrated and comprehensive solution serving as reference for post-trade transparency information. In order to enable market participants to refer to a specific trade in the consolidated tape (and all information associated to it through one field), there should be an identifier for each trade.
22. This trade ID would be assigned by the CTP and made available to users of the CTP. The format of such trade ID could be left to the discretion of the CTP provided that this ID is unique at least for a given day. A unique key for a trade would be therefore constituted of the date and the trade ID.

Q141. Do you agree that CTPs should assign trade IDs and add them to trade reports? Do you consider necessary to introduce a similar requirement for APAs?

Publication time

23. APAs and CTPs are required to publish “the time the transaction was reported” in addition to the time of the transaction according to Articles 64(2)(d) and (e), 65(1)(d) and (e) and 65(2)(d) and (e) of MiFID II.
24. The “time the transaction was reported” should be understood as the time when the transaction was published by the APA or the trading venue since this gives market participants valuable information to understand better to what events the market actually reacted and when.
25. ESMA considered requiring the CTP to timestamp the publication of a transaction but considered that this option would make the existence of a CTP a prerequisite for this publication timestamp and would not cover circumstances if there were no CTP available on the market.
26. For CTPs, “the time the transaction was reported” should therefore be:

- i. In the case of information reported to an APA: the “time the transaction was published by the APA.
- ii. In the case of information related to trades that took place on a trading venue (i.e. received by the CTP from a trading venue): the time of publication to the market i.e. when the market data was released by the trading venue.

27. Ensuring a reliable audit chain for trade information also implies meaningful timestamping (whether corresponding to receiving or publishing information) along the publication chain.

28. ESMA proposes to require an APA to timestamp transaction reports, granular at and accurate to the second. Should the APA, however, publish trades executed in electronic systems, a granularity at and accuracy to the millisecond should be required. ESMA is aware that this rule, while being simple and straightforward, is not future proof as it does not take into account the future evolution of the technology standards.

Q142. Do you agree with ESMA’s proposal? In particular, do you consider it appropriate to require for trades taking place on a trading venue the publication time as assigned by the trading venue or would you recommend another timestamp (e.g. CTP timestamp), and if yes why?

Q143. Do you agree with ESMA’s suggestions on timestamp accuracy required of APAs? What alternative would you recommend for the timestamp accuracy of APAs?

Identification of the source

29. As CTPs collect information from APAs and trading venues, ESMA believes for transparency purposes that the CTP should publish the identification of its source for each trade. When receiving information from a trading venue, the source will be the same as the venue of execution, which is already required information. For OTC trades or trades that took place on an SI, the identification of the venue and the identification of the source (i.e. the APA) will be different. In this case, the identification of the source will be meaningful, especially as the same trade can be published by different APAs.

30. ESMA notes that since this information is public in any case, as the published trades can be collected directly from the APA by the market participants, it would not create a significant burden for CTPs to add it while increasing transparency for all market participants.

Q144. Do you agree with ESMA’s proposal? Do you think that the CTP should identify the original APA collecting the information from the investment firm or the last source reporting it to the CTP? Please explain your rationale.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 21: Draft regulatory technical standards on the publication of transactions by APAs and CTPs

5.3. Data disaggregation

Background/Mandate/Empowerment

Article 12 of MiFIR

1. *Market operators and investment firms operating a trading venue shall make the information published in accordance with Articles 3, 4 and 6 to 11 available to the public by offering pre-trade and post-trade transparency data separately.*

2. *ESMA shall develop draft regulatory technical standards to specify the offering of pre-trade and post-trade transparency data, including the level of disaggregation of the data to be made available to the public as referred to in paragraph 1.*

ESMA shall submit those draft regulatory technical standards to the Commission by 3 July 2015

1. In the DP, ESMA proposed that venues should be obliged to disaggregate pre- and post-trade data by asset class – with a proposed list of eight classes – and should further be obliged to disaggregate by a list of criteria unless there was insufficient demand. These criteria were: country of issue, currency, industry sector of issuer, all members of a major index, and data about auctions as opposed to continuous trading.
2. The effect of these RTS will complement the Delegated Acts the Commission are empowered to make under Article 13(2) of MiFIR to clarify the meaning of “reasonable commercial basis” in relation to data publication by venues.

Analysis following feedback from stakeholders

3. Most respondents agreed that ESMA should not require venues to disaggregate by individual instrument. Views were split on mandatory disaggregation by asset class, and many noted that it would not be onerous as it was already normal practice. Views were also split on the list of asset classes proposed in the DP: some supported the list of eight classes, some wanted a longer list, and some a shorter.
4. In response to the proposal that venues should disaggregate further by specified criteria unless there was insufficient demand, around half (being trading venues and their trade association) opposed, while the other half either supported or considered it too weak, as they thought all disaggregation should be mandatory. Several exchanges and their trade associations were specifically against separating continuous trading data from auction data, while a few other responses specifically supported it.
5. Most respondents who addressed the question about costs said that disaggregation would increase costs for venues, some seeing extra administrative work for venues, data

vendors and brokers to cope with disaggregated data. Some of those argued that applying the criteria accurately would in some circumstances be difficult, particularly for complex derivatives, and that the venues would be at legal risk if their judgements were challenged. Other responses thought that costs for users would go down, though a few said that costs would only go down if there was regulatory intervention to ensure this.

6. In the light of the responses, ESMA made two changes to the proposals set out in the DP. Firstly, the draft RTS in the annex has a shorter list of asset classes for which disaggregation is mandatory, as all derivatives are treated as a single class. Differentiating between classes of derivatives has instead been added to the list of criteria where venues should disaggregate unless there is insufficient demand. The second change is to seek to ensure that venues will not be at risk of legal challenge for any reasonable judgement about the way in which to disaggregate where there is uncertainty.

Proposal

7. The main proposals contained in the Annex are:
 - i. each venue must offer its pre- and post-trade data disaggregated by four asset classes;
 - ii. each venue must also disaggregate by further criteria, unless there is insufficient demand for such data streams;
 - iii. if a venue decides that there is not sufficient demand to disaggregate by a particular criterion, it should state this alongside its price lists, and in response to any request for pricing information.

Q145. Do you agree with the proposed draft RTS? Please indicate which are the main costs and benefits that you envisage in case of implementation of the proposal.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 22: Draft regulatory technical standards on data disaggregation

5.4. Identification of the investment firm responsible for making public the volume and price of a transaction (Articles 20(3)(c) and 21(5)(c), MiFIR)

Background/Mandate/Empowerment

1. Investment firms and systematic internalisers trading OTC need to make public the price and volume of transactions with respect to instruments traded on a venue⁴³ – Articles 20(1) and 21(1) of MiFIR. Publication occurs through an APA.
2. When a transaction involves two investment firms, it is necessary to determine which of the investment firms should report such a transaction, and ESMA is to specify which of the investment firms is responsible for ensuring publication.
3. These provisions will be included in the draft RTS on transparency requirements for equity instruments and the draft RTS on transparency requirements for non-equity instruments. However, in order to allow stakeholders to form a clear view on the provisions laying down which investment firm is responsible for reporting transactions to APAs ESMA decided for the purpose of this consultation only to consult on this part of the draft RTS in a dedicated section.

Articles 20(3)(c) and 21(5)(c) of MiFIR:

ESMA shall develop draft regulatory technical standards to specify the following:

“(c) the party to a transaction that has to make the transaction public in accordance with Paragraph 1 if both parties to the transaction are investment firms;”

4. Currently Article 27(4) of the MiFID I Implementing Regulation states that:

“Where the transaction is executed outside the rules of a regulated market or an MTF, one of the following investment firms shall, by agreement between the parties, arrange to make the information public:

- (a) the investment firm that sells the share concerned;*
- (b) the investment firm that acts on behalf of or arranges the transaction for the seller;*
- (c) the investment firm that acts on behalf of or arranges the transaction for the buyer;*
- (d) the investment firm that buys the share concerned.*

⁴³ The duty to make sure a trade is published falls only on investment firms, including where applicable systematic internalisers.

In the absence of such an agreement, the information shall be made public by the investment firm determined by proceeding sequentially from point (a) to point (d) until the first point that applies to the case in question.

The parties shall take all reasonable steps to ensure that the transaction is made public as a single transaction. For those purposes two matching trades entered at the same time and price with a single party interposed shall be considered to be a single transaction.”

Analysis following feedback from stakeholders

5. All respondents to the DP agreed that there is a need for clarification with regard to publication. They stressed that duplication was a major issue that had led to low quality transaction data. Therefore, most of the respondents express some doubts with respect to maintaining a system of notification which has proved to be not clear enough to market stakeholders, impractical and not fully efficient.
6. Thus, a significant part of respondents proposed to use an alternative approach: for them, the responsibility of the reporting should always fall to the seller party.
7. A few respondents believed that the current framework was suitable and does not require changes, but that there was a need for more stringent and more consistent enforcement by national supervisors.
8. Although not raised in the written responses, during the consultation period it was also put to ESMA that the existing fallback rule of seller disclosing applies only to shares, and it might be less clear in relation to derivatives, particularly swaps, who is the seller and who the buyer.
9. ESMA notes, however, that the parties to an off-market derivatives transaction will have to establish who is the seller and who is the buyer for the purposes of reporting the transaction to a Trade Repository under EMIR⁴⁴ and therefore concludes that the participants in such a transaction will identify the seller. The rule that the seller should report should hence be easy to implement in relation to derivatives.

Proposal

10. In light of the responses received to the DP, ESMA believes that in order to ensure a clear and enforceable regime the responsibility to publish transactions should always fall on the seller. Furthermore, ESMA is concerned that granting investment firms the

⁴⁴ The requirement is in item 13 of Table 1 of the Annex to Regulation (EU) No 148/2013 of 19 December 2012. ESMA has supplemented this with Q&A guidance, i.e., Questions and Answers: Implementation of Regulation (EU) No 648/2012 on OTC derivatives, central counterparties and trade repositories (EMIR), ESMA, 10 July 2014, <http://www.esma.europa.eu/system/files/2014-815.pdf>. See “TR Question 24”. And ESMA is currently consulting on new RTS reflecting this guidance. (Please refer to Consultation Paper ESMA/2014/1352, available at http://www.esma.europa.eu/system/files/esma-2014-1352_consultation_paper_on_the_review_of_emir_reporting_standards_under_article_9_0.pdf, page 39.)

discretion of choosing which party is responsible for publishing a transaction may lead to regulatory arbitrage since CAs may choose to apply deferrals regarding post trade transparency differently (in particular for non-equity instruments). Requiring the publication of transactions by the one party would hence reduce the risk of regulatory arbitrage.

11. Accordingly, ESMA proposes that investment firms apply the criteria set forth under Article 9 of EMIR when determining whether they qualify as buyer or seller for this purpose.
12. When a systematic internaliser (SI) is involved in a transaction, however, there are two further considerations: first, there might be an expectation on the part of the SI's client that the SI will be responsible for reporting; and secondly, the trade report will need to have "SI" entered in the venue field. As a result, ESMA believes that as an exception to the principle that the seller should report, if one of the investment firms party to the transaction is an SI in the given instrument, it is the SI that should report the transaction, irrespective of whether it was buyer or seller. In the unlikely case where both parties to the transaction are SIs in the given instrument, the selling firm should report the transaction, following the usual principle of 'seller reports'.

Q146. Do you agree with the proposed draft RTS? Please indicate which are the main costs and benefits that you envisage in case of implementation of the proposal.

Q147. With the exception of transaction with SIs, do you agree that the obligation to publish the transaction should always fall on the seller? Are there circumstances under which the buyer should be allowed to publish the transaction?

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 23: Draft regulatory technical standards on identification of the investment firm responsible for making public the volume and price transparency of a transaction

5.5. Non-discriminatory Access to CCPs and Trading Venues

Introduction

1. Articles 35 and 36 of MiFIR require ESMA to develop RTS in relation to various issues covered in the following sections of this paper. As both trading venues and CCPs are regulated under Union law, that fact has to be taken into account when drafting implementing measures under the said MiFIR articles.
2. Therefore, this section of the paper takes the assumption that both entities are regulated and supervised (e.g. under EMIR, MAD/MAR and MiFID/MiFIR or, if not EU entities, under legislation recognised as equivalent by a decision prior to an access request being made –Article 25 of EMIR for CCPs, and Article 38 of MiFIR for trading venues) and does not question the proper enforcement of such regulations against the relevant entities.
3. Article 37 of MiFIR supports Articles 35 and 36 of MiFIR by giving trading venues and CCPs a right of access to benchmarks so that they can trade or clear relevant financial instruments.

Denial of access by a CCP or trading venue

Background/Mandate/Empowerment

Article 35(6)(a) of MiFIR

ESMA shall develop draft regulatory technical standards specifying:

“the specific conditions under which an access request may be denied by a CCP, including:

- (a) the anticipated volume of transactions,*
- (b) the number and type of users,*
- (c) arrangements for managing operational risk and complexity, or*
- (d) other factors creating significant undue risks.”*

Article 36(6)(a) of MiFIR

ESMA shall develop draft regulatory technical standards specifying:

“the specific conditions under which an access request may be denied by a trading venue, including:

- (a) conditions based on the anticipated volume of transactions,*
- (b) the number of users,*
- (c) arrangements for managing operational risk and complexity, or*
- (d) other factors creating significant undue risks.”*

4. ESMA considers that access should be granted if after reasonable efforts to manage the risks arising from access no significant undue risks remain. The conditions for denying access and the conditions under which access is granted should be aimed at meeting these objectives.
5. With that in mind, differences in asset classes may be relevant and need, in some circumstances, to be taken into account. For example, managing risks in relation to derivatives is in most cases much more complex and challenging than in relation to securities. This is a point which ESMA made in the DP and which received support from the respondents. Another issue that was raised by a significant number of respondents was the need to take into account the differences between financial and non-financial derivatives.

6. The diverse nature of the different financial instruments concerned is reflected in the text of the proposed RTS and will, to a greater extent, be reflected through the practical application of the rules. The differences between the instruments will play a significant role in the moment of application of the rules, i.e., what constitutes a significant undue risk may differ when considering access (to CCPs or trading venues) in relation to, for example, blue chips or power derivatives.
7. Additionally, ESMA notes that although the legal text of the empowerments in both Articles 35 and 36 of MiFIR is very similar, in practice they impact CCPs and trading venues differently.
8. Therefore, this CP analyses conditions, under which an access request may be denied by a CCP and by a trading venue separately.

Conditions under which an access request may be denied by a CCP to a trading venue – Article 35(6)(a)

Anticipated volume of transactions

9. Article 35 of MiFIR recognises that by providing access to a trading venue, the volume of transactions cleared by a given CCP may substantially increase and is possible grounds for a CCP to deny access. It is therefore important for CCPs to consider their systems' operational reliability and scalable capacity and, indeed, EMIR requires CCPs to have adequate scalability⁴⁵.
10. In the DP, ESMA consulted on whether Article 35 of MiFIR, envisages a situation in which the expected growth in volume arising from granting access is so substantial that it exceeds the capacity planning of the CCP (i.e. the design of the CCP's systems, including hardware and software, will not be able to cope with the anticipated volume of transactions) and how that situation could be assessed.
11. The majority of respondents agreed that exceeding the capacity of the CCP could be grounds to deny access. It is important to mention that the increase in the foreseeable flow would have to be so substantial that the CCP would not in due time be able to acquire the necessary dimension to cope with it, such that granting access would leave significant undue risks.
12. Furthermore, the majority of respondents advised against setting a precise threshold (e.g. foreseeable increase/current capacity), as it is not a continuous function of a CCP's clearing service to increase its systems scalable capacity and depending on the

⁴⁵ Pursuant to Article 26(9) EMIR, Article 9(1) of the Commission Delegated Regulation (EU) No 153/2013, of 19 December 2012 specifies that "The systems shall be designed to deal with the CCP's operational needs and the risks the CCP faces, be resilient, including in stressed market conditions, and be scalable, if necessary, to process additional information. The CCP shall provide for procedures and capacity planning as well as for sufficient redundant capacity (...)"

particular circumstances of a given CCP, coping with the same increase in transaction flow could imply significant investments or none at all.

13. ESMA is of the view that, taking into account the EMIR regulatory requirements on CCPs, to deny access CCPs will need to demonstrate what capacity they have installed, (in use and idle) as well as their ability to increase capacity, the foreseeable increase in flow and how the concrete increase in flow could not be manageable in a given timeframe, i.e., why and how the CCP would not be able to acquire the needed capacity, so that granting access would, therefore, leave a significant undue risk.
14. On the slightly different question of the determination of the anticipated volume of transactions respondents also mentioned that the foreseeable increase in flow should be assessed by assessing the business case on the basis of current and historical volumes of comparable data and a forecast on the share that is likely to migrate following the access agreement.
15. On the question of other risks related to the anticipated volume of transactions, respondents identified the need to cater for the costs of granting access, the time spent considering access requests and the relationship with clearing members. A significant number of respondents were more concerned by a request for access which would bring low volumes, as the CCP would incur costs and could not expect to recover them easily. This has been addressed in the section of this CP that looks at one-off and on-going costs included in the conditions under which access must be permitted. Some respondents also mentioned the need for the access arrangement to encompass access to the exchange operated warehouse.
16. Notwithstanding the obvious interest of these aspects, ESMA notes that they cannot be catered for under Article 35(6)(a) of MiFIR. In the particular case of costs, ESMA is considering them under “other factors creating significant undue risk” but notes that it has otherwise only a considerably limited empowerment in Articles 35(6)(b) and 36(6)(b). Regarding the other issues there is no empowerment under which ESMA could act.

Number and type of users

17. Article 35 of MiFIR also considers the number and types of users as possible grounds for a CCP to deny access. By providing access to a trading venue, the number of users connected to the CCP may substantially increase. ESMA consulted on whether similar considerations to the ones under anticipated volume of transactions would be relevant in this remit.
18. Regarding the number of users, several respondents made the point that where users would demand individually segregated accounts (ISA) in accordance with Article 39 of EMIR this could cause problems for the CCP in terms of managing those accounts.

19. ESMA fails to understand how the CCP would not be able to manage an increase in the number of ISAs and still be in compliance with its requirements under EMIR.
20. The public consultation did not yield an identification of additional risks from the types of users accessing a CCP that could arise from an access arrangement.
21. With that in mind, ESMA proposes not to consider types of users as grounds to deny access. Granting access to a trading venue does not, in itself, entail automatic membership of the CCP for market participants. The general legal framework applies and nothing suggests that CCPs should lower their membership eligibility criteria as a result of granting access.
22. Market participants will find a way to access the CCP's services, either by applying to become a clearing member of the CCP (direct access) or by becoming a client of a clearing member or of a client.
23. For direct access CCPs must comply with Article 37 of EMIR, which allows for fair and open access to the extent that it does not expose the CCP to additional risks. Article 37 of EMIR also requires that CCP rules allow for relevant concentrations of risks relating to the provision of services to clients to be identified, monitored and managed.
24. EMIR (Article 4(3) and Regulation 149/2013 of 19 December 2012 supplementing EMIR - Articles 2 and 3) also applies relevant requirements for indirect client clearing (clearing of clients of clients of clearing members), but only in relation to OTC derivatives under a clearing obligation. Under Article 30 of MiFIR, ESMA has to develop draft RTS specifying the types of indirect clearing service arrangements that will be permissible with regard to exchange-traded derivatives, ensuring consistency with provisions established for OTC derivatives.

Arrangements for managing operational risk and complexity

25. Having asked market participants how a CCP would establish that the anticipated operational risk would exceed its operational risk management design and what other risks should be considered in this respect, ESMA received very comprehensive and detailed lists of the possible relevant risks.
26. It should be once more noted that ESMA's empowerment relates to risks that simultaneously (i) are created by granting access, (ii) cannot be managed and (iii) pose significant undue risks to the CCP. When analysing the several types of operational risks listed by market participants, ESMA came to the conclusion that most of them are either already covered in ESMA's proposal (e.g. settlement arrangements), or would not pass the three criteria above. For example, it should be possible for a trading venue requesting access and for the CCP to work together to align their processes and manage the risks so that the request for access would not be denied on the grounds of incompatible business continuity plans or straight through processing (STP).

27. Accordingly, ESMA identified the following as relevant risks:
- i. the incompatibility of CCP and trading venue IT systems such that the CCP cannot provide for connectivity between the systems; and
 - ii. the fact that the CCP does not have, nor is it able to get in due time, the necessary human resources with the necessary knowledge, skills and experience to perform its functions regarding the risks stemming from additional financial instruments where these differ from financial instruments already cleared by the CCP. Obviously, this could not be applicable when the request for access is for clearing instruments that the CCP is already clearing.
28. Special mention should be made of two categories of risks that were widely mentioned by respondents which ESMA did not acknowledge as relevant for denying access for different reasons. Those risks relate to the need for trading venues to fulfil position management control obligations under Article 57(8) of MiFID II, and the risks relating to the allegedly insufficient quality control of checks performed by the counterparty relating to its institution regarding money laundering, the financing of terrorism and other aspects.
29. ESMA acknowledges that both risks may be important, contesting however their ability to be the grounds on which access is denied. In the context of position management controls, as required under Article 57(8) of MiFID II, if a CCP nets commodity derivative contracts, then a trading venue's ability to fulfil its obligations regarding the application of position management controls will be highly dependent on collaboration with the CCP to obtain relevant information. ESMA considers that the CCP has to engage with each trading venue in information sharing agreements to enable the latter to meet its regulatory obligations and the extra work involved in meeting the requirement to apply position management control cannot in itself be the basis for refusing access.
30. Regarding the alleged lower standard of quality control of checks performed by the counterparty to the access agreement, ESMA does not accept this as grounds to refuse access as the relevant quality controls are the ones stemming from existing legislation. Regarding these, both regulated entities are subject to supervision and competent authorities will supervise compliance with regulatory requirements. Furthermore, competent authorities have a specific role to play in terms of an access request that will be analysed below.

Other factors creating significant undue risks

Authorisation under EMIR

31. Risk management is an important function for CCPs. ESMA therefore believes that CCPs may deny access on grounds related to other factors that would lead to significant undue risk, for example, when access would prevent the CCP from being able to comply

with relevant requirements it is subject to. Article 14(3) EMIR specifies that the authorisation of a CCP should specify the services or activities for which the CCP is authorised to provide or perform, including the classes of financial instruments covered by such authorisation. Additionally, although there are a number of prudential requirements CCPs will have to ensure they comply with on an on-going basis⁴⁶, CCP risk-management frameworks will vary depending on the services or activities, including the classes of financial instruments, which the CCP is authorised to provide or perform. Article 35(2) of MiFIR states that a trading venue requesting access to a CCP should specify to which types of financial instruments access is requested. If a trading venue requests access to a CCP, but it deals in financial instruments not covered by the CCP's authorisation under EMIR, the CCP should deny access when it cannot obtain the necessary authorisation. This way a full correspondence is ensured between the mandate to provide access and the necessary risk management CCPs have to perform under EMIR.

Relevance of costs

32. Separately, and as noted in the DP, CCPs may incur significant costs to facilitate access. Although Article 35 of MiFIR does not make any explicit reference to costs, ESMA's preliminary view was that where such costs would threaten the viability of the CCP as a standalone entity that would be considered a significant undue risk and can be used as grounds to deny access. This view was not challenged in the public consultation. On the other hand following responses to the DP, ESMA has added further detail by specifying in the draft RTS that a CCP may deny access when access would threaten its ability to meet its minimum capital requirements under Article 16 of EMIR.
33. Due to the formulation of MiFIR, ESMA believes that any further consideration of cost would not be in accordance with the decision by the co-legislators as it is the stated aim of Articles 35 and 36 of MiFIR to eliminate other restrictions on access than the ones based on significant undue risk.

Conflicts of law

34. In cross-border, as well as some national contexts, different bodies of law can apply to a single transaction, including to the parties to that transaction.
35. Most respondents broadly agreed with ESMA that conflicts of law could in certain circumstances lead to unmanageable significant undue risks. On the basis of the responses ESMA further detailed its thinking on legal risks, which presently encompass two situations, i.e. the inability for a CCP to enforce its rules relating to close out netting

⁴⁶ For example, and from an IT perspective, Article 26.6 EMIR requires CCPs to maintain "information technology systems adequate to deal with the complexity, variety and type of services and activities performed so as to ensure high standards of security and the integrity and confidentiality of the information maintained".

and default procedures and the inability to manage the risks arising from the simultaneous use of different trade acceptance models.

36. Many respondents agreed with ESMA that conflicts of law that could lead to refusing access would be rare within the EEA, quoting live examples of currently operational access agreements. There were, however, several respondents who stated that conflicts of law cannot be totally excluded within the EEA as some areas of law are not sufficiently harmonised. In this context insolvency law, which is covered in the paragraph above by reference to the enforceability of close-out netting, and indirect clearing were mentioned. ESMA does not rule out the possibility that conflicts of law could lead to a refusal, but expects the cases to be rare.

Incompatibility between CCP and trading venue rules

37. ESMA also accepted an additional source of significant undue risk that could arise from granting access, i.e., the incompatibility of trading venue and CCP rules beyond remedial action.
38. In fact, granting access needs to rely on the frictionless interplay of the two institutions, each of them performing their role. Should it not be possible to achieve this collaboration due to incompatibility in the respective rules that cannot be avoided, it is possible for a CCP to deny access.

Q148. Do you agree with the elements of the draft RTS that cover a CCP's ability to deny access? If not, please explain why and, where possible, propose an alternative approach.

Conditions under which an access request may be denied by a trading venue to a CCP – Article 36(6)(a) of MiFIR

39. Article 36 of MiFIR provides that a trading venue may be allowed to deny access to a CCP on the grounds of the anticipated volume of transactions, the number of users, arrangements for managing operational risk and complexity or other factors creating significant undue risks.
- i. Conditions based on the anticipated volume of transactions
 - ii. The number of users
40. ESMA asked for views of market participants on how the factors above could constitute grounds for denying access, being unclear on how to take account of them, because in terms of providing access they are less relevant for trading venues than they are for CCPs. The consultation failed to yield significant input in this regard. ESMA has not yet identified how granting access to a new CCP would impact a trading venue in such a way that it would have to deny access on reasonable risk grounds, i.e. it is not clear how

granting access to a CCP would cause users of the trading venue to change their trading behaviour to the extent that it would put the trading venue at risk.

41. It is not obvious that the availability of more clearing options, i.e. granting access, would directly translate into more flow upstream in the trading venue. The responses to the consultation do not identify such a link. ESMA is therefore not proposing to acknowledge these situations as giving rise to significant undue risks that would justify denial of access by a trading venue.

iii. Arrangements for managing operational risk and complexity

42. As for CCPs, ESMA considers that IT incompatibility could in certain circumstances impede granting access. The same considerations as expended above on CCPs apply *mutatis mutandis*.

i. Other factors creating significant undue risks

43. As above, trading venues may incur significant costs to facilitate access, and ESMA believes that where such costs would threaten the viability of the trading venue, as a standalone entity, that would be considered a significant undue risk and can be used as grounds to deny access. According to the results of the public consultation ESMA is enlarging its original proposal to also encompass denial of access when as a result of granting access a trading venue cannot meet its minimum capital requirements under Article 47 (1)(f) of MiFID.

44. Also in parallel to ESMA's proposal on CCPs, and according to the received feedback, ESMA is also acknowledging that incompatibility of trading venue and CCP rules beyond remedial action may be grounds for denying access.

45. Lastly in cross-border, as well as some national contexts, different bodies of law can apply to a single transaction, including to the parties to that transaction. ESMA believes that potential legal risks, including the compatibility of different legal regimes, are less relevant for trading venues than they are for CCPs. Having consulted on this aspect, respondents have not been able to identify situations beyond those identified above (incompatibility of rules) where granting access could increase such risks.

Q149. Do you agree with the elements of the draft RTS that cover a trading venue's ability to deny access? If not, please explain why and, where possible, propose an alternative approach.

Q150. In particular, do you agree with ESMA's assessment that the inability to acquire the necessary human resources in due time should not have the same relevance for trading venues as it has regarding CCPs?

Conditions under which granting access will threaten the smooth and orderly functioning of the markets or would otherwise adversely affect systemic risk

Background/Mandate/Empowerment

Article 35(6)(c) and 36(6)(c) of MiFIR

ESMA shall develop draft regulatory technical standards to specify the following:

“the party to a transaction that has to make the transaction public in accordance with Paragraph 1 if both parties to the transaction are investment firms;”

46. Articles 35(6)(c) and 36(6)(c) of MiFIR require ESMA to further specify the conditions under which granting access will threaten the smooth and orderly functioning of the markets or would adversely affect systemic risk.

Analysis following feedback from stakeholders and proposal

47. The relevant competent authorities (CAs) will assess whether granting access is likely to threaten the smooth and orderly functioning of the markets or adversely affect systemic risk. ESMA notes that MiFIR requires CAs to make this assessment before any access arrangement has been agreed, and it will base its assessment on the conditions at the time and how it expects them to evolve. If things develop in an unexpected way and an CA at a later stage assesses that increased risks might threaten the smooth and orderly functioning of the markets or adversely affect systemic risk, it may take necessary action, which may result in requiring termination of the access arrangement.

48. In the DP ESMA identified two circumstances in which granting access would threaten the smooth and orderly functioning of the markets or would adversely affect systemic risk:

- i. Where CAs, due to the exercise of their supervisory functions are in possession of knowledge that a trading venue or a CCP is not meeting its relevant legal obligations (e.g. stemming from EMIR, MiFID, MiFIR or, where applicable, relevant third country law) or is unlikely to meet them as a consequence of granting access, and there are no remedial actions that would allow the trading venue or CCP to meet its legal obligations within a sufficient timeframe; and
- ii. Liquidity fragmentation.

49. Following the feedback received, ESMA has further developed the first condition, enabling an CA to block an access request where:

- i. one of the parties to it is not meeting its legal obligations, or would be unlikely to meet its legal obligations as a consequence of granting access;
 - ii. granting access would create significant undue risks for either counterparty in the access arrangement in a way that would have a wider negative impact on the market; and
 - iii. there is no remedial action that would allow the relevant party to meet its legal obligations with reasonable effort prior to the access arrangement being put in place.
50. Other aspects mentioned by respondents were the need to control all sorts of risk (which is already mandated by MiFIR/MiFID and EMIR requirements), concerns regarding outages due to the trading venue's unreliable service (this risk should be managed through the fact that trading venues will need to comply with various organisational requirements under MiFID II and where there is still a risk it is already covered by denial of access on the grounds of operational risk) and technology requirements related to front running of trades on different trading venues due to different latency times between each trading venue (an aspect that is not particular to access). Another respondent mentioned that access could impede innovation and competition, however, it would be impossible for an CA to make a judgement in this respect and about whether such a risk could threaten the smooth and orderly functioning of the markets or adversely affect systemic risk.

Q151. Do you agree with the elements of the draft RTS that cover an CA's ability to deny access? If not, please explain why and, where possible, propose an alternative approach.

Conditions under which access must be permitted

51. This section addresses the conditions under which access to a CCP or a trading venue must be permitted, composed of the general terms of access arrangements and the requirements for non-discriminatory fees, collateral requirements and operational requirements regarding margining.

Background/Mandate/Empowerment

Article 35(6)(b) of MiFIR

ESMA shall develop draft regulatory technical standards to specify:

“(b) the conditions under which access must be permitted by a CCP, including confidentiality of information provided regarding financial instruments during the development phase, the non-discriminatory and transparent basis as regards clearing fees, collateral

requirements and operational requirements regarding margining.”

Article 36(6)(b) of MiFIR

ESMA shall develop draft regulatory technical standards to specify:

“(b) the conditions under which access shall be granted, including confidentiality of information provided regarding financial instruments during the development phase and the non-discriminatory and transparent basis as regards fees related to access.”

General terms of access conditions

Analysis following feedback from stakeholders

52. In the DP ESMA proposed a list of minimum requirements for the terms of an access arrangement in order to specify rights and obligations of the parties. Apart from general requirements parties to an access arrangement should have put in place specific policies, procedures and systems to enhance communication, ensure confidentiality and reduce potential risks. The majority of respondents agreed with the conditions outlined in the DP. Some respondents suggested additional conditions, which were examined, and, with some modifications, included in the text of the draft RTS.
53. Some respondents suggested that the terms of the access arrangements should specify which financial instruments will be subject to the access arrangement. ESMA agrees that this is an important and sensible point.
54. A couple of respondents suggested that the applying party should cover the costs arising from the access arrangements; ESMA's view is that the allocation of costs should be subject to individual agreements between the involved entities and not be prescribed by this regulation. Costs triggered by the access request should be dealt with by the involved parties in a non-discriminatory way taking into account common business standards. However, any relevant arrangement should be part of the access arrangement terms, as the cost allocation is a crucial part of non-discriminatory access. The matter is also dealt with under the requirement for non-discriminatory and transparent fees (see below in the section on fees charged by CCPs and trading venues).
55. One respondent suggested that the applying party should be liable for damages and claims arising from the access arrangement. ESMA's view is that the allocation of liabilities should be, as per costs mentioned above, subject to individual agreements between the involved entities and included in the terms of the arrangement, but that this regulation should not prescribe how liabilities should be allocated. Liability triggered by the access request should be dealt with by the involved parties in a non-discriminatory way taking into account common business standards.

Proposal

56. The following conditions to be addressed in the terms of the access arrangement were added to the ones, which were already covered by the text of the DP:
- i. Specify the instruments subject to the access arrangements;
 - ii. Specify the cover of the one-off and ongoing costs triggered by the access request;
 - iii. Cater appropriately for claims and liabilities stemming from the access arrangements.

Q152. Do you agree with the elements of the draft RTS that cover the conditions under which access is granted? If not, please explain why and, where possible, propose an alternative approach.

Fees charged by CCPs and trading venues

Analysis following feedback from stakeholders

57. According to Article 35(6)(b) of MiFIR, a CCP has to charge clearing fees on a transparent and non-discriminatory basis. In the DP ESMA identified fees charged by a CCP to its clearing members for clearing transactions that take place on a trading venue to which it has granted access as relevant in this context.
58. ESMA suggested that non-discrimination in this context implied objective criteria for all clearing members regardless of the trading venue where the transaction takes place and for all clearing members to be subject to the same fee and rebate schedule, not just a subset, of them.
59. According to Article 36(6)(b) of MiFIR, a trading venue has to charge fees related to access on a transparent and non-discriminatory basis. In the DP ESMA identified fees for the data feed from the trading venue to the CCP to which it has granted access as relevant in this context.
60. ESMA suggested that requesting CCPs should be subject to the same fee and rebate schedule as other CCPs accessing the trading venue for the same or similar instruments.
61. According to the DP, transparency in both cases should mean that all fees are easily accessible, adequately identified per service provided and sufficiently granular to ensure predictability. Respondents to the DP largely agreed with this approach and identified fees charged by CCPs to trading venues in relation to access as another type of fee that ESMA should consider. Respondents additionally proposed the consideration and inclusion of the following fees:

- i. Collateral fees
 - ii. Technology/connection fees
 - iii. Membership fees
 - iv. CSD fees
 - v. Fees earned on treasury investment
 - vi. Fees for recovering (part of) the increase of regulatory capital requirements of the CCP as consequence of an access arrangement
62. A couple of respondents suggested that the access requestor should have to pay for one-off and ongoing costs of the access request, like administration costs, infrastructure, IT and connectivity arrangements and legal fees. A few respondents pointed out that the offer of incentive pricing should be possible. Several respondents remarked that the terminology “same schedule of fees and rebates” could be misleading, as there might be legitimate grounds for different fees under different circumstances.

Proposal

63. ESMA is aware that there could be a variety of other relevant fees related to access. However, the RTS should refrain from specifying a catalogue of relevant fees, which could be misleading and incomplete. The proposal in the draft RTS therefore does not include a list of specific types of fees, but requires that all fees related to access be non-discriminatory and transparent in line with the level 1 text.
64. ESMA recognises the need for different charges to be applied where these are justified by objective criteria. Non-discrimination does not imply the same fees for different situations with different cost structures. Therefore, the proposed drafting includes the possibility for charging different fees on an objective basis.
65. One-off and ongoing costs of the access arrangement should be included in the fees charged by CCPs and trading venues in this context, which means they are covered by the requirement of non-discrimination and transparency. However, objective criteria, like reasonable and sufficiently justified different administrative, legal and IT costs, could lead to different fees.
- Q153. Do you agree with the elements of the draft RTS that cover fees? If not, please explain why and, where possible, propose an alternative approach.**

Conditions for non-discriminatory treatment of contracts

Background/Mandate

Article 35(6)(e) of MiFIR

ESMA shall develop draft regulatory technical standards to specify:

“(e) conditions for non-discriminatory treatment in terms of how contracts traded on that trading venue are treated in terms of collateral requirements and netting of economically equivalent contracts and cross-margining with correlated contracts cleared by the same CCP”

66. ESMA has been given the mandate to specify the conditions for non-discriminatory treatment where a CCP grants access to a trading venue with regards to three aspects:
- i. collateral requirements of economically equivalent contracts,
 - ii. netting of economically equivalent contracts,
 - iii. cross-margining of correlated contracts.

Analysis following feedback from stakeholders

Collateral requirements of economically equivalent contracts

67. On the first aspect on collateral requirements of economically equivalent contracts, respondents largely agreed on the approach ESMA proposed in the DP, according to which the CCP should apply to the contracts executed on the trading venue to which it has granted access the same margin and collateral methodologies as applied to economically equivalent contracts already cleared by the CCP.
68. Several respondents questioned who should determine what contracts traded on different venues can be considered economically equivalent and asked for guidance on how to do so.
69. According to most respondents, economically equivalent contracts shall include, at minimum, those identical contracts, where the only difference between the contracts is the trading venue on which they are traded. Respondent proposed that a CCP should apply the same margin methodology for identical contracts, independently from the trading venue where the contracts are traded.
70. Some respondents noted that the characteristics of the new contracts may require the CCP to apply risk parameters that are specific to the platform where the contracts are

traded (e.g. to reflect different liquidity risk conditions). In such cases, the application of the same margining methodologies, but with the use of specific parameters may result in different margining requirements.

71. Some respondents added that economically equivalent contracts may also include non-identical contracts belonging to a class of instruments that the CCP has been authorised to clear, even where differences to contracts currently cleared emerge with respect to the characteristics of the contract (i.e. the underlying constituents of the contract, the weights of different constituents, the contract specifications (including the strike, expiry, tenor etc.), treatment of corporate actions by contracts traded on different venues, manifestly different liquidities for different contracts etc.). In other respondents' views, a CCP may apply different risk models and parameters to the new contracts (leading to different margin requirements) where such differences are to reflect a contract's unique risk characteristics, in particular with regard to credit, market and/or liquidity risk.
72. In ESMA's view, it is the CCP that shall determine whether a contract traded on the trading venue to which it has granted access is economically equivalent to those contract it clears, with the understanding that any such a contract shall belong to the class(es) of financial instruments for which the CCP was authorised under Article 14 of EMIR. The CCP should apply to the contracts executed on the trading venue to which it has granted access the same margin and collateral methodologies as applied to economically equivalent contracts already cleared by the CCP. If the CCP introduces any specific model and/or parameters for (either identical or non-identical) economically equivalent contracts executed on the trading venue to which it has granted access, such models and parameters shall be non-discriminatory and subject to the review by the Risk Committee as well as to the procedure for the review of significant changes to models and parameters foreseen in Article 49 of EMIR (including an independent validation, the validation by the CCP's competent authority and ESMA, and the opinion of the CCP college). In particular, the CCP shall demonstrate that this different treatment is non-discriminatory and based on risk considerations.

Netting of economically equivalent contracts

73. On the second aspect around the netting of economically equivalent contracts, the majority of respondents supported ESMA's approach in the DP, according to which, when the economically equivalent contracts from the trading venue to which it has granted access can be legally netted with the contracts already cleared by the CCP, in compliance with the insolvency law applicable to the CCP, these economically equivalent contracts should be netted with the contracts already cleared.
74. In particular, some respondents suggested to require the CCP to ascertain through legal analysis (e.g. based on an appropriate legal opinion) where netting (be that via position offsetting, pre-default payment netting or close-out netting) is valid, binding and enforceable in compliance with the SFD and the relevant insolvency law, as well as for

the purpose of regulatory capital requirements under CRD IV (and for balance sheet netting purposes under IAS 32).

75. Moreover, several respondents suggested to distinguish by type of financial instruments and proposed that the CCP shall, where legally sound, apply netting for securities, OTC derivatives, and identical Exchange-Traded-Derivatives (ETD), while suggesting that a CCP could decide not to apply close-out netting of non-identical ETD across trading venues. It was indeed specified that while pre-default payment netting and position offsetting was possible in all cases, the close-out netting of ETD would be more difficult to achieve where the ETD contracts are not absolutely identical.⁴⁷ It was then suggested that the CCP shall provide an appropriate level of disclosure on the application of netting, through its website and clearing member communication, in order to ensure sufficient transparency of its offering.
76. In ESMA's view, the CCP shall net economically equivalent contracts traded on the trading venue to which it has granted access with the contracts already cleared by the CCP when legally sound, in compliance with the insolvency law applicable to the CCP. The CCP shall ascertain through legal analysis (e.g. based on an appropriate legal opinion) that the applied netting process (be that via position offsetting, pre-default payment netting or close-out netting) is valid, binding and enforceable in compliance with the SFD and the relevant insolvency law.
77. However, when a CCP confirms through a sound legal analysis that a netting process would not be valid, binding or enforceable in case of insolvency of the relevant trading venue⁴⁸ or in the case of a default of the clearing member or, where relevant, of its client, or that it cannot mitigate basis risk following reasonable attempts to manage the risk, the CCP can decide not to apply such a netting process to the economically equivalent contracts. This determination shall be subject to the approval of its Risk Committee, as well as the review under article 49 of EMIR.
78. Moreover, the CCP can decide not to apply close-out netting of non-identical ETD across trading venues, if it demonstrates that this different treatment is non-discriminatory and based on legal or basis risk considerations. This determination shall be subject to the approval of its Risk Committee, as well as the review under article 49 of EMIR.
79. Basis risk means the risk arising from less than perfectly correlated movements between two or more assets or contracts cleared by the central counterparty (CCP). CCPs and

⁴⁷ One respondent pointed out that, even when two ETD contracts are identical at the outset of any netting process, there is a need to make sure that they remain identical throughout their lifetime. This is dictated by the need to ensure that the contracts effectively remain identical. Towards this end respondent proposed two measures which could be taken, either "freezing" both contracts i.e., prohibiting each and every change to their respective specifications, or requesting the applicant to follow the contract specifications of the contracts already cleared by the trading venue.

⁴⁸ The insolvency of a trading venue is relevant because the CCP might, as part of its default management approach, want to be able to rely on trading on both venues in order to close out the positions of a defaulting member.

trading venues could mitigate basis risks by ensuring that differences between ETD could never emerge.⁴⁹

Cross-margining of correlated contracts

80. On the third aspect of cross margining, the respondents largely agreed on the approach proposed by ESMA in the DP, according to which, in order to ensure non-discriminatory treatment for cross margining with correlated contracts, the risk policy implemented by the CCP to offer portfolio margining (in compliance with Article 41 of EMIR and Article 27 of the RTS on CCP requirements) should apply to these contracts independently from the trading venue where they were traded. Non-discriminatory treatment means these contracts traded on a different trading venue would benefit from the same offsets or reductions as the contracts with significant and reliable correlation, or an equivalent statistical parameter of dependence, already cleared by the CCP.
81. It was noted though that the term “portfolio margining” should be used rather than “cross-margining”, the latter being used in contexts involving two CCPs. A respondent also noted that it should be clarified that trading venues cannot force a CCP to offer portfolio margining, unless it is already offering such service.

Proposal

82. ESMA proposed specific articles introducing transparent and non-discriminatory requirements for the CCP when determining collateral and margining requirements, the netting process of economically equivalent contracts and portfolio margining of correlated contracts traded on the trading venue to which it has granted access. The full draft RTS can be found in Annex X.
83. The main proposals contained in the Annex are:
- i. A CCP shall consider economically equivalent any contracts traded on the trading venue to which it has granted access which do not require an extension of the current authorisation of the CCP referred to in Article 15 of Regulation (EU) No. 648/2012, being such contracts covered by its initial authorisation referred to in Article 14 of Regulation (EU) No. 648/2012 or any subsequent extension of authorisation referred to in Article 15 of Regulation (EU) No. 648/2012.
 - ii. The CCP shall apply to economically equivalent contracts the same margin and collateral methodologies, netting process and portfolio margining approach, irrespective of where the contracts are executed.

⁴⁹ This could, for instance, be achieved if the venue that has been granted access could i) make its contracts functionally identical to the incumbent venue's contracts and reach agreement with the incumbent venue to copy any changes which the incumbent venue may make to its contracts in the future; or ii) directly reference the incumbent venue's contract in its own contract.

- iii. A CCP may introduce changes to models or parameters regarding the clearing of economically equivalent contracts or exclude some economically equivalent contract from the netting process, where needed to mitigate uncovered risks. These changes to models or parameters, including changes to netting process, shall be subject to a review by the Risk Committee of the CCP and be considered significant changes for the purpose of the review procedure referred to in Article 49 of Regulation (EU) No 648/2012.

Q154. Do you agree with the proposed draft RTS? Please indicate which are the main costs and benefits that do you envisage in case of implementation of the proposal.

Notification procedure and calculation of notional amount with regard to transitional provisions

Background/Mandate/Empowerment

Article 35(6)(d) of MiFIR

ESMA shall develop draft regulatory technical standards to specify:

“(c) the procedure for making a notification under paragraph 5.”

Article 36(6)(d) of MiFIR

ESMA shall develop draft regulatory technical standards to specify:

“(d) the procedure for making a notification under paragraph 5, including further specifications for calculation of the notional amount and the method by which ESMA may verify the calculation of the volumes and approve the opt-out.”

Notification procedure

Analysis following feedback from stakeholders

84. Articles 35(5) and 36(5) of MiFIR recognise the potential difficulty for newly established CCPs and smaller trading venues to be able to comply with the access obligations from the application of MiFIR, and therefore allow, under specific circumstances, transitional provisions for a temporary exemption to comply with the obligations for a thirty month period. In the case of Article 36 of MiFIR, the exemption requires the relevant trading venue to be under the threshold of €1,000,000 million annual traded notional amount in exchange-traded derivatives and grants the possibility of an extension if the condition is still met. Due to possible implications for other entities and supervisory authorities, especially with regard to reciprocal effects, opting-out CCPs and trading venues have to

undergo a notification procedure involving their national competent authority and, where relevant, ESMA. In relation to opting-out CCPs, relevant competent authorities must also notify ESMA and the CCP college of their decision regarding any approvals of a transitional. ESMA has developed draft RTS to specify this procedure.

Proposal

85. The specification of these procedures were not part of the DP because they cover only procedural aspects between 1) CCPs and their CA, 2) relevant CAs, ESMA and the CCP college and 3) trading venues, their CA and ESMA. These procedures are now outlined in Title IV of the draft RTS.

Q155. Do you agree with the elements of the draft RTS specified in Annex X that cover notification procedures? If not, please explain why and, where possible, propose an alternative approach.

Notional amount

86. ESMA has been asked to further specify the calculation of notional amount in the context of Article 36(5) of MiFIR. Three options were presented in ESMA's DP that set out how ESMA might approach drafting of this RTS.

87. ESMA considered that the most feasible option was to adopt the approach taken in the ESMA Q&A on EMIR implementation, in which examples are given to describe how notional amount should be calculated for certain instrument types where there have been notable differences in industry practices.

88. It was also noted that where, for certain types of instruments, there are equally accepted alternative approaches to calculating notional amount, but there are notable differences in the values to which these calculation methods give rise, it is appropriate to specify that the method which gives the higher value is used.

Analysis following feedback from stakeholders

89. The majority of respondents agreed with ESMA's proposed approach and with the examples set out in the DP, and no alternatives for how notional amount should otherwise be calculated were proposed.

90. A few respondents asked ESMA to consider calculating notional amounts in a way that would reflect risk rather than pure notional. Although ESMA understands this view, Article 36(5) of MiFIR asks trading venues to look at their notional amount and not their risk exposure so it would be outside the scope of ESMA's mandate to specify that notional amount should be calculated in this way.

91. Lastly, ESMA asked respondents if there were any other considerations that should be taken into account when further specifying how notional amount should be calculated.

One respondent said that there should be a mechanism to adopt different weightings since notional amounts can differ significantly between asset classes; for example, FX products typically trade at a much larger notional amount than equity derivative products. ESMA understands the concern, but it would be outside the scope of its mandate to make these types of specifications, and it would also be very difficult to do, particularly choosing the level at which the weightings should be set.

92. One respondent asked for a general direction about which trades must be included in the calculation of a trading venue's notional amount, and which must not. As set out in the DP, Article 36(5) of MiFIR requires that all transactions in exchange-traded derivatives concluded under the rules of the trading venue should be included in the trading venue's calculation. Practices may differ between different trading venues as to which types of trades are considered transactions under the rules of the trading venue, but this is a requirement set in MiFIR.

Proposal

93. ESMA has drafted the RTS on the basis of the most favoured option mentioned above and, where appropriate, referred to specific types of exchange-traded derivatives.
94. The level 1 text makes clear that a trading venue that does not wish to be bound by Article 36 of MiFIR from the application of MiFIR will need to calculate its annual notional amount from the calendar year preceding entry into application of MiFIR. Consequently, when notifying the competent authority and ESMA, the trading venue will have to, to the extent possible, use all actual data from 2016 and estimate data for the remaining part of that year. For a trading venue that wishes to continue to not be bound by Article 36 for any further thirty month period, ESMA has clarified that it will need to calculate its annual notional amount using only the first 24 months (i.e. two years) of the 30-month period. For example, for an extension to a transitional ending in June 2019, the trading venue would only count data from January 2017 to December 2018 and would disregard data from the first 6 months in 2019, during which time it will submit its application to its national competent authority. For an extension to a transitional ending in December 2021, the trading venue would only count data from July 2019 to June 2021, disregarding data from the last 6 months in 2021. A table has been included below to help illustrate how this works in respect of the first four possible opt-out periods.
95. ESMA should have sufficient time to verify and approve a notification for an opt-out. Therefore, the draft RTS grant ESMA 3 months for said verification. This period shall begin after the reception of the trading venue's notification that includes actual data for at least 8 consecutive months as well as additional information requested by ESMA.

30-month opt-out period	Data to be used	Data to be disregarded
First opt-out period, i.e., from the application of MiFIR (January 2017) to end of June 2019.	Use actual figures from first x months of 2016 and estimated figures from the remaining months of 2016.	N/A
First extension, i.e., from July 2019 to end of December 2021.	Use figures from calendar years 2017 and 2018.	Disregards first 6 months in 2019.
Second extension, i.e., from January 2022 to end of June 2024.	Use figures from July 2019 to June 2021.	Disregards last 6 months in 2021.
Third extension, i.e., from July 2024 to December 2026.	Use figures from calendar years 2022 and 2023.	Disregards first 6 months in 2024

Table 75: Illustration of the calculation of the notional amount for the purpose of the opt-out provision for trading venues under Article 36(5) MiFIR

Q156. Do you agree with the elements of the draft RTS specified in [Annex X] that cover the calculation of notional amount? If not, please explain why and, where possible, propose an alternative approach.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 24: Draft regulatory technical standards on access in respect of trading venues, central counterparties and benchmarks

5.6. Non-discriminatory access to and licencing of benchmarks

Benchmark information

Background/Mandate/Empowerment

Article 37(4)(a) of MiFIR

ESMA shall develop draft regulatory technical standards to specify:

“(a) the information through licensing to be made available under paragraph 1(a) for the sole use of the CCP or trading venue; [...]”

1. ESMA has been asked to specify the information through licensing that persons with proprietary rights to a benchmark should make available to CCPs and trading venues in respect of relevant price and data feeds, composition, methodology and pricing for the purposes of clearing and trading.
2. The DP set out some of the complexities around benchmarks and data, including issues around the ownership of data. It also proposed which types of information might be made available and how a person with proprietary rights to a benchmark could facilitate access to data it does not own.

Analysis following feedback from stakeholders

3. Generally, just over half of the responses were supportive of ESMA’s proposals, but did not provide any further analysis to support their view. Many of the respondents that disagreed with ESMA’s proposals provided thorough arguments to support their points and have significant expertise in this field. These respondents had concerns regarding the extent to which data was needed for trading and clearing purposes, explaining that the data required by a trading venue or CCP will vary on a case by case basis depending on various factors, including the financial instrument being traded or cleared, or the type of benchmark it references. They also had concerns about the ownership of data, explaining that there is a possibility that the person with proprietary rights to the benchmark may not be able to fulfil its obligations if the third party refuses to provide the trading venue or CCP with an appropriate data feed. ESMA understands both concerns raised and also notes that different trading venues and CCPs may require different sets of data depending on the types of models, including risk models, they use. ESMA also accepts that there may be other specific types of information that a trading venue or CCP requires which depend on the type of benchmark concerned; for example, one respondent raised the point that for option benchmarks it may be necessary to know whether the option model is volatility or premium based. As a result, it would not be appropriate for ESMA to include in the RTS an exhaustive list of the types of information

that should be made available to trading venues and CCPs as there is a risk that the list will fail to cover all relevant types of information that are specific to the type of benchmark concerned and the use to which the trading venue or CCP intends to put it.

4. Broadly speaking, ESMA believes that the best approach is for the RTS to list the types of information a trading venue or CCP may need, allowing them to require such information if needed for trading or clearing purposes and to explain why such information is necessary. Additionally, ESMA is proposing that where the person with proprietary rights to a benchmark is not in a position to pass on information, it should notify the trading venue or CCP, where necessary, of whom it may need to contact at the third party or parties so that the trading venue or CCP can request access to such information.
5. ESMA notes that the RTS should also allow for a certain degree of flexibility so that a person with proprietary rights to a benchmark can take particular considerations into account, where appropriate, that will require the information provided to trading venues and CCPs to be modified appropriately. For instance, as mentioned in the DP, for reference rate benchmarks pricing information should include the names of the contributors, but not the values of individual submissions.
6. There were a few responses that interpreted the terms “trading” and “clearing” in a very limited way. To ensure Articles 35 and 36 of MiFIR work effectively the terms trading and clearing for the purposes of Article 37(1) of MiFIR should include all functions that the trading venue and CCP will be obliged to fulfil as part of its trading and clearing business, for example, market surveillance and margining.
7. ESMA asked a question about how quickly trading venues and CCPs should receive benchmark values. The responses said that it would be unfair and create legal risks to provide trading venues and CCPs with information ahead of other licensees. A number of respondents said that information should be submitted to licensees at the same time, which ESMA has adopted and should address the legal risk point mentioned.
8. One respondent suggested the establishment of a formalised ESMA procedure in cases of dispute about access to information between the person with proprietary rights to the benchmark and a trading venue or CCP, including a right of ESMA to compel the licence to be granted. ESMA understands the concern here, but does not have a role within its mandate to settle disputes between private parties in a formalised manner.
9. Separately, ESMA notes that legislation is being negotiated within Europe on benchmarks, in particular the draft Regulation on indices used as benchmarks in financial instruments and financial contracts proposed by the Commission in September 2013.⁵⁰ ESMA believes at this point in time that this draft RTS does not affect the

⁵⁰ Commission proposal for a regulation on indices used as benchmarks in financial instruments and financial contracts, COM/2013/0641 final - 2013/0314 (COD), European Commission,

outcome of those negotiations, and that the RTS when finalised is unlikely to need revision in the light of the outcome of those negotiations.

Proposal

10. ESMA has taken due regard of the responses when developing the proposed draft RTS and prescribing the content of information that should be provided to CCPs and trading venues requesting access. However, given the very heterogeneous universe of benchmarks, ESMA suggests the specified content of information should not constitute an exhaustive list to be made available to all trading venues and CCPs.
 11. With that in mind, ESMA acknowledges that CCPs or trading venues may, considering the different nature and characteristics of the benchmarks to which access is sought, need to request further information required for trading and clearing purposes. Persons with proprietary rights to a benchmark should provide this information on a non-discriminatory basis.
 12. Furthermore, the draft RTS sets out principles guiding the provision of information from persons with proprietary rights to a benchmark to CCPs and trading venues.
 13. Where a person with proprietary rights to a benchmark is not in a position to pass on relevant information to trading venues or CCPs because it does not have access to such information or is restricted due to legal or non-discriminatory contractual obligations from passing on that information, it should notify, where appropriate, the trading venue or CCP of whom it may contact for the trading venue or CCP to be able to request that information from the relevant third party or third parties directly.
- Q157. Do you agree with the elements of the draft RTS that cover relevant benchmark information? If not, please explain why and, where possible, propose an alternative approach. In particular, how could information requirements reflect the different nature and characteristics of benchmarks?**

Other conditions under which access must be granted

Background/Mandate/Empowerment

Article 37(4)(b) of MiFIR

ESMA shall develop draft regulatory technical standards specifying the following:

“(b) Other conditions under which access is granted, including confidentiality of the

information provide; [...]"

14. In order to achieve the target of granting access on a fair and non-discriminatory basis a person with proprietary rights to a benchmark should provide licences, including all the necessary elements to set the legal commercial relationship, covering rights and obligations. ESMA notes that the mandate above relates solely to the conditions under which access is granted and it is not asked to set requirements regarding conditions under which access can be denied.
15. As long as pre-determined and non-discriminatory objective requirements are met, a person with proprietary rights to a benchmark should offer other trading venues and CCPs access on the same terms and conditions as it does for existing licensees. Furthermore, persons with proprietary rights to a benchmark may only charge different prices to different categories of licensees where objectively justified having regard to reasonable commercial grounds such as the quantity, scope or field of use demanded as per the last sentence of Article 37 (1) of MiFIR.
16. When a person with proprietary rights to a benchmark is part of the same group as a trading venue or CCP that uses that benchmark, that person must ensure that it provides access to other trading venues or CCPs on a fair and reasonable basis in accordance with Articles 101 and 102 TFEU.
17. ESMA is aware that the licence agreement is subject to the legal frameworks set out by contractual law, trademark and intellectual property law, which apply. However, in line with Article 37 of MiFIR and Recital 40 of MiFIR it should not be possible to use a licence agreement in a way that would restrict a market participant's ability to exercise their rights under Articles 35, 36 and 37 of MiFIR.
18. ESMA is aware that licence agreements are usually based on international standard terms and share, to a considerable extent, a common structure, encompassing conditions on the following matters:
 - i. Scope of use: these terms specify the concrete use of the index, the information to which the licensee has access and the use of trademarks.
 - ii. Control of the use of the licence: agreements normally include terms to ensure the control of the use of the benchmark (e.g. confidentiality).
 - iii. Termination. These are standard conditions under which access may be terminated based on

- a. the expiration or termination date has come;
- b. material breaches or reputational damages; and
- c. changes in legislation, litigation, violation of law, insolvency event or change of control of licensee.

Analysis following feedback from stakeholders

19. The feedback from the respondents covered three main aspects: i) the need to strike the right balance between granting access to the benchmark and the protection of intellectual property rights belonging to the person with proprietary rights to the benchmark, ii) access by users of trading venues and CCPs to benchmark information and iii) conditions of the licence agreement.
20. Some respondents agreed that the person with rights to a benchmark has exclusive rights towards the benchmark that should be protected. Therefore, the responses emphasised that the scope of the mandatory licensing of information has to be strictly limited for trading and clearing purposes.
21. In relation to the access of users of trading venues and CCPs to benchmarks, most of the respondents believe that any benchmark-related relevant information is already publicly available. If any other type of information was needed, the users of trading venues and CCPs would be able to acquire it by licensing data directly from the data providers on a commercial basis.
22. As regards existing terms and conditions of licensing agreements, a number of respondents asked ESMA to review several specific terms that they believe might be discriminatory or give rise to preventing access. They support licence terms not being overly prescriptive and commercial conditions that may differ depending on the service provided.
23. According to the respondents, the termination of the licence agreement should be agreed by the counterparties in a transparent and orderly way in order to limit the impact on the market and on benchmark users.

Proposal

24. ESMA considers that the diversity of benchmarks and the different identified uses make it difficult to achieve a high degree of harmonisation on the content of licence agreements and that constraining the conditions to predetermined terms might be detrimental to all parties.
25. ESMA therefore proposes that persons with proprietary rights to a benchmark set conditions for trading venues and CCPs to access their benchmarks and those persons may set different conditions for different categories of trading venues and CCPs, but only

where those differences are objectively justified based on criteria such as quantity, scope or field of use demanded and this should be applied in a non-discriminatory way and in a proportionate manner.

26. Additionally, a person with proprietary rights to a benchmark should make the criteria determining the identification of different categories of licensees publicly available. A trading venue or CCP can then self-assess to which category its activity would correspond to and subsequently request to see the conditions applicable to that category. Therefore, persons with proprietary rights to a benchmark will only be required to make the licencing and pricing conditions available to the CCP or trading venue requesting access that would apply to the category to which the trading venue or CCP belongs.
 27. The set of conditions should cover a series of mandatory elements: scope of use, conditions of redistribution of information (if allowed), the technical requirements to provide the service, the fee and payment conditions, the conditions under which the agreement expires, the related contingency circumstances and the governing law and allocation of liabilities.
 28. If a person with proprietary rights to a benchmark adds or modifies any of the conditions from the set conditions for licensing to a particular trading venue or CCP bilaterally, the person with proprietary rights to a benchmark should also make the bilaterally agreed condition available to the rest of licensees within the same category.
 29. The conditions should set the same rights and obligations to the same category of licensee, including where the person with proprietary rights to a benchmark and a trading venue or CCP are connected by close links.
 30. Article 37 of MiFIR is silent on whether the foreseen license agreement includes the right for licensees (trading venue or CCP) to pass on relevant information to their users. ESMA considers that the decision to authorise the redistribution of information by licenced trading venues and CCPs to their market members or participants should be left to the discretion of the person with proprietary rights to a benchmark. However, if redistribution of information is allowed for one single trading venue or CCP, other trading venues and CCPs should be able to claim redistribution rights on the same conditions.
- Q158. Do you agree with the elements of the draft RTS that cover licensing conditions? If not, please explain why and, where possible, propose an alternative approach.**

New benchmarks

Background/Mandate/Empowerment

Article 37(4)(c) of MiFIR

ESMA shall develop draft regulatory technical standards specifying the following:

“(c) the standards guiding how a benchmark may be proven to be new in accordance with paragraph 2(a) and (b).”

31. ESMA has been asked to specify the standards guiding how a benchmark may be proven to be new. ESMA proposed in its DP a number of factors that could be used to assess whether a benchmark is new. It was proposed that the assessment will vary on a case by case basis and that the factors should be appropriately weighed against one another.

Analysis following feedback from stakeholders

32. The majority of respondents agreed with ESMA’s proposal, the factors proposed and also that newly released series of a benchmark should not be considered a new benchmark.

33. A few respondents proposed a number of factors to be included in the RTS that are specific to certain benchmark types. ESMA agrees that specific factors should be considered depending on the type of benchmark being assessed, but believes that it would not be appropriate to include an exhaustive list in the RTS as MiFIR captures many types of benchmarks and there would then be a risk that the RTS omits certain relevant factors.

34. In the DP, ESMA proposed a factor that looked at the fungibility/netting capability of two contracts, one based on the newer benchmark and the other based on the relevant existing benchmark. Having undertaken further analysis, ESMA considers that the meaning of the term fungible is unclear and that the extent to which two contracts are capable of being offset is also important. ESMA has amended the factor to provide further clarity so that it only considers contracts that are capable of being netted or substantially offset.

35. One respondent said that a benchmark that does not meet the cumulative criteria set out in Article 37(2) of MiFIR should not be considered new if it is published by a company affiliated with the benchmark owner. ESMA notes that the scope of the level 1 text applies only to the person with proprietary rights to a benchmark and is unable to extend the scope in any way in the RTS.

36. Another respondent disagreed with ESMA’s view that any adaptation to an existing benchmark, whether material or not, would not constitute a new benchmark because a new benchmark that is similar to, or the same as, an existing one might be created to address the launch of a new product that is targeted at a different user group. Other

respondents did not share this view and the cumulative criteria set out in MiFIR do not allow for such an exemption.

Proposal

37. ESMA has used the approach proposed in the DP and the factors set out therein as the basis for drafting the RTS. ESMA has also clarified that the list included in the draft RTS is non-exhaustive and included a recital that provides examples of factors specific to certain types of benchmark.

Q159. Do you agree with the elements of the draft RTS that cover new benchmarks? If not, please explain why and, where possible, propose an alternative approach.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 24: Draft regulatory technical standards on access in respect of trading venues, central counterparties and benchmarks

6. Requirements applying on and to trading venues

6.1. Admission to trading

Background/Mandate

1. Article 51 of Directive 2014/65/EU (MiFID II)⁵¹ deals with the basic requirements that shall be fulfilled for the admission to trading of financial instruments to regulated markets.
2. Article 51(6) of MiFID II requires ESMA to develop RTS which shall specify and clarify a number of aspects in relation to characteristics financial instruments shall have for being considered eligible for admission to trading on a regulated market and arrangements regulated markets shall have in place concerning certain aspects of disclosure obligations and access to information.

Article 51(6) of MiFID II

ESMA shall develop draft regulatory technical standards specifying the following:

- (a) specify the characteristics of different classes of instruments to be taken into account by the regulated market when assessing whether an instrument is issued in a manner consistent with the conditions laid down in the second subparagraph of paragraph 1 for admission to trading on the different market segments which it operates;*
- (b) clarify the arrangements that the regulated market is required to implement so as to be considered to have fulfilled its obligation to verify that the issuer of a transferable security complies with its obligations under European Union law in respect of initial, ongoing or ad hoc disclosure obligations;*
- (c) clarify the arrangements that the regulated market has to establish pursuant to paragraph 3 in order to facilitate its members or participants in obtaining access to information which has been made public under the conditions established by European Union law.*

3. The Article is virtually identical with Article 40 of Directive 2004/39/EC (MiFID I)⁵² in respect of which implementing measures have been adopted in the MiFID I Level 2 Regulation (Commission Regulation (EC) No 1287/2006⁵³).

⁵¹ Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU (OJ L 173, 12.6.2014, p. 349).

⁵² Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments amending Council Directives 85/611/EEC and 93/6/EEC and Directive 2000/12/EC of the European Parliament and of the Council and repealing Council Directive 93/22/EEC (OJ L 145, 30.4.2004, p. 1).

4. The text of those existing implementing provisions is displayed below.

Article 35 (Article 40(1) of Directive 2004/39/EC) Transferable securities

1. *Transferable securities shall be considered freely negotiable for the purposes of Article 40(1) of Directive 2004/39/EC if they can be traded between the parties to a transaction, and subsequently transferred without restriction, and if all securities within the same class as the security in question are fungible.*

2. *Transferable securities which are subject to a restriction on transfer shall not be considered as freely negotiable unless that restriction is not likely to disturb the market.*

3. *Transferable securities that are not fully paid may be considered as freely negotiable if arrangements have been made to ensure that the negotiability of such securities is not restricted and that adequate information concerning the fact that the securities are not fully paid, and the implications of that fact for shareholders, is publicly available.*

4. *When exercising its discretion whether to admit a share to trading, a regulated market shall, in assessing whether the share is capable of being traded in a fair, orderly and efficient manner, take into account the following:*

(a) the distribution of those shares to the public;

(b) such historical financial information, information about the issuer, and information providing a business overview as is required to be prepared under Directive 2003/71/EC, or is or will be otherwise publicly available.

5. *A transferable security that is officially listed in accordance with Directive 2001/34/EC of the European Parliament and of the Council [7], and the listing of which is not suspended, shall be deemed to be freely negotiable and capable of being traded in a fair, orderly and efficient manner.*

6. *For the purposes of Article 40(1) of Directive 2004/39/EC, when assessing whether a transferable security referred to in Article 4(1)(18)(c) of that Directive is capable of being traded in a fair, orderly and efficient manner, the regulated market shall take into account, depending on the nature of the security being admitted, whether the following criteria are satisfied:*

(a) the terms of the security are clear and unambiguous and allow for a correlation between

⁵³ Commission Regulation (EC) No 1287/2006 of 10 August 2006 implementing Directive 2004/39/EC of the European Parliament and of the Council as regards record-keeping obligations for investment firms, transaction reporting, market transparency, admission of financial instruments to trading, and defined terms for the purposes of that Directive (OJ L 241, 2.9.2006, p. 1).

- the price of the security and the price or other value measure of the underlying;*
- (b) the price or other value measure of the underlying is reliable and publicly available;*
 - (c) there is sufficient information publicly available of a kind needed to value the security;*
 - (d) the arrangements for determining the settlement price of the security ensure that this price properly reflects the price or other value measure of the underlying;*
 - (e) where the settlement of the security requires or provides for the possibility of the delivery of an underlying security or asset rather than cash settlement, there are adequate settlement and delivery procedures for that underlying as well as adequate arrangements to obtain relevant information about that underlying.*

Article 36 (Article 40(1) of Directive 2004/39/EC) Units in collective investment undertakings

1. *A regulated market shall, when admitting to trading units in a collective investment undertaking, whether or not that undertaking is constituted in accordance with Directive 85/611/EEC, satisfy itself that the collective investment undertaking complies or has complied with the registration, notification or other procedures which are a necessary precondition for the marketing of the collective investment undertaking in the jurisdiction of the regulated market.*

2. *Without prejudice to Directive 85/611/EEC or any other Community legislation or national law relating to collective investment undertakings, Member States may provide that compliance with the requirements referred to in paragraph 1 is not a necessary precondition for the admission of units in a collective investment undertaking to trading on a regulated market.*

3. *When assessing whether units in an open-ended collective investment undertaking are capable of being traded in a fair, orderly and efficient manner in accordance with Article 40(1) of Directive 2004/39/EC, the regulated market shall take the following aspects into account:*

- (a) the distribution of those units to the public;*
- (b) whether there are appropriate market-making arrangements, or whether the management company of the scheme provides appropriate alternative arrangements for investors to redeem the units;*
- (c) whether the value of the units is made sufficiently transparent to investors by means of the periodic publication of the net asset value.*

4. *When assessing whether units in a closed-end collective investment undertaking are capable of being traded in a fair, orderly and efficient manner in accordance with Article 40(1)*

of Directive 2004/39/EC, the regulated market shall take the following aspects into account:

- (a) the distribution of those units to the public;*
- (b) whether the value of the units is made sufficiently transparent to investors, either by publication of information on the fund's investment strategy or by the periodic publication of net asset value.*

Article 37 (Article 40(1) and (2) of Directive 2004/39/EC) Derivatives

1. When admitting to trading a financial instrument of a kind listed in points of Sections C(4) to (10) of Annex I to Directive 2004/39/EC, regulated markets shall verify that the following conditions are satisfied:

- (a) the terms of the contract establishing the financial instrument must be clear and unambiguous, and enable a correlation between the price of the financial instrument and the price or other value measure of the underlying;*
- (b) the price or other value measure of the underlying must be reliable and publicly available;*
- (c) sufficient information of a kind needed to value the derivative must be publicly available;*
- (d) the arrangements for determining the settlement price of the contract must be such that the price properly reflects the price or other value measure of the underlying;*
- (e) where the settlement of the derivative requires or provides for the possibility of the delivery of an underlying security or asset rather than cash settlement, there must be adequate arrangements to enable market participants to obtain relevant information about that underlying as well as adequate settlement and delivery procedures for the underlying.*

2. Where the financial instruments concerned are of a kind listed in Sections C (5), (6), (7) or (10) of Annex I to Directive 2004/39/EC, point (b) of paragraph 1 shall not apply if the following conditions are satisfied:

- (a) the contract establishing that instrument must be likely to provide a means of disclosing to the market, or enabling the market to assess, the price or other value measure of the underlying, where the price or value measure is not otherwise publicly available;*
- (b) the regulated market must ensure that appropriate supervisory arrangements are in place to monitor trading and settlement in such financial instruments;*
- (c) the regulated market must ensure that settlement and delivery, whether physical delivery or by cash settlement, can be effected in accordance with the contract terms and*

conditions of those financial instruments.

Analysis following feedback from stakeholders

5. Again the empowerment in substance is virtually identical with the empowerment contained in Article 40(6) of MiFID I.
6. ESMA has noted that the empowerments in Article 40(6) of MiFID I and Article 51(6) of MiFID II consist of three different parts whereas the existing requirements in Articles 35 to 37 of Regulation (EC) No 1287/2006 in essence only provide implementing measures in relation to one of those parts, i.e. the empowerment in letter (a) of Article 40(6) of MiFID I.
7. In the Discussion Paper ESMA has taken the existing rules in Articles 35 to 37 of Regulation (EC) No 1287/2006 as a basis for developing technical standards under Article 51(6)(a) while ESMA has not had the benefit of existing rules on which to develop the technical standards for letters (b) and (c).

Article 51(6)(a), MiFID II – Specifying Characteristics of Different Classes of Financial Instruments

8. ESMA conducted an initial fact-finding with competent authorities to assess how the rules in the existing Level 2 Regulation have worked in practice ever since the application of MiFID I from 1 November 2007. The evidence and the information provided in response indicated that overall the above-mentioned provisions have proven to be appropriate and no specific problems in supervisory practice have been reported.
9. It was also noted that the requirements for admitting securities to trading on a regulated market can operate and may need to be assessed in conjunction with the requirements for admitting securities to official listing on a stock exchange as prescribed by Directive 2001/34/EC (Consolidated Listing Directive)⁵⁴. Generally speaking, the regulatory requirements for admission to trading on a regulated market as prescribed by MiFID should not be stricter than the requirements for being listed on an official list as prescribed by the Consolidated Listing Directive. To be officially listed is normally a label of first rate listing, meaning higher eligibility criteria.
10. In addition, it was considered that any requirements imposed by the Consolidated Listing Directive could not be altered in this process but would require a separate legislative process.
11. Taking past supervisory experiences and the continued application of the Consolidated Listing Directive into consideration, in the DP ESMA used the existing framework in

⁵⁴ Directive 2001/34/EC of the European Parliament and of the Council of 28 May 2001 on the admission of securities to official stock exchange listing and on information to be published on those securities (OJ L 184, 6.7.2001, p. 1).

Articles 35 to 37 of Regulation (EC) 1287/2006 as the benchmark for future RTS in respect of specifying characteristics for transferable securities, units in collective investment undertakings and derivatives. Respondents to the consultation were very supportive of this approach. They commented that current requirements have proven to be adequate and satisfactory and that they did not envisage the need to change or amend them. At this stage ESMA would only consider minor adaptations to the existing regime as necessary.

12. One of the minor adaptations ESMA had considered in the DP was in respect of the requirements applicable to units in collective investment undertakings. Article 36 (3)(b) of Regulation (EC) No 1287/2006 currently requires regulated markets to take into account whether there are appropriate market-making arrangements, or whether the management company of the scheme provides appropriate alternative arrangements for investors to redeem the units when assessing whether units can be traded in a fair, orderly and efficient manner.
13. ESMA had noted that in the context of ETFs, ESMA's Guidelines on ETFs and other UCITS issues clarify that ETFs not only need to have at least one market maker but, if they are admitted to trading on a regulated market, they also need to have alternative arrangements for investors to redeem units at least in cases where the regulated market value of units or shares significantly varies from the net asset value. ESMA therefore considered that all ETFs in order to be capable of being traded in a fair, orderly and efficient manner need to offer market making arrangements and direct redemption facilities at least in cases where the price of units or shares significantly varies from the net asset value. ESMA also noted that its Guidelines on ETFs and other UCITS issues only apply to UCITS ETFs. ESMA however considered the provision of alternative redemption facilities in addition to market making arrangements also important for non-UCITS ETFs so that the draft regulatory technical standard does not differentiate between UCITS ETFs and other ETFs and the new requirement will apply to all ETFs admitted to trading on a regulated market.
14. Respondents to the DP were mostly supportive of introducing this requirement considering it as useful and noting that it reflects current practice existing in some markets already. The minority opposing this requirement requested leaving this to the discretion of the market operator or the CA. Therefore ESMA decided to maintain this new requirement and has included it in the draft technical standard.

Article 51(6)(b) of MiFID II – Clarifying Arrangements for Ensuring Compliance with Disclosure Obligations

15. Article 51(3)(1) of MiFID II requires regulated markets to establish and maintain effective arrangements to verify that issuers of transferable securities comply with obligations of initial, on-going and ad hoc disclosure under Union Law.

16. ESMA shall develop RTS to clarify the arrangements a regulated market has to implement so as to be considered in compliance with this requirement.
17. The obligations under Union law mentioned stem from the Prospectus, the Transparency and the Market Abuse Directive (in the future the Market Abuse Regulation). While it is mainly the issuers who are under the direct responsibility to comply with these obligations, regulated markets shall also have arrangements in place to be able to verify compliance of issuers.
18. Existing practice on regulated markets seems to vary significantly: some regulated markets only require that issuers are aware of their obligation under disclosure rules and transparency rules applicable to listed companies, others require issuers to adopt an appropriate management control system, others require that a sponsor (or other independent financial advisers) undertake the duty to inform the management body with regard to the responsibilities and obligations resulting under the laws in force from admission to trading.
19. ESMA therefore intended to use the DP from May 2014 in order to identify best practices in application on European markets at the moment.
20. However, none of the respondents to the DP have submitted concrete descriptions of arrangements in place. At the same time, none of the respondents indicated that the practices in place are deficient in any way. On the contrary, there seem to be agreement that the arrangements in place are adequate and that the details should be left to the discretion of each regulated market.
21. Therefore, ESMA decided to clarify the arrangements regulated markets are required to implement by imposing on regulated markets the requirement to adopt a policy to verify compliance which shall be published on the website of the regulated markets. Furthermore, ESMA considered that regulated markets should check compliance with the policy mentioned above and that the mentioned check is adequate to the nature of the obligation under review.
22. In order for the policy to be efficient it should not only entail the processes the regulated market employs, but also give guidance to the issuers on how best to demonstrate compliance in this remit.
23. The regulated market should ensure knowledge of the obligations by issuers.

Article 51(6)(c) of MiFID II – Clarifying Arrangements for Facilitating Access to Information

24. Article 51(3)(2) requires regulated markets to establish arrangements to facilitate the access of members or participants to information being made public under Union law.
25. ESMA shall develop RTS to clarify the arrangements a regulated market has to establish in order to facilitate such access.

26. ESMA noted in the DP that this requirement shall promote access of members and participants on regulated markets to information published in accordance with Union law. The relevant Union law for these purposes appear to be the Prospectus, Transparency and Market Abuse Directives (in the future the Market Abuse Regulation) as well as potentially the trade transparency information required by Regulation (EU) No 600/2014 (MiFIR)⁵⁵ as it shall be ensured that members and participants are aware of relevant information that may have an influence on the valuation of a financial instrument on as equal terms as possible.
27. As in the previous case, the substantive requirement without implementing measures is already applicable since 1 November 2007. Therefore, ESMA was also interested in this case to find out about existing arrangements and asked for experiences with them before forming its final view on future implementing measures.
28. Respondents to the DP pointed out that they had in place appropriate arrangements in order to facilitate access of members or participants to this kind of information either through the regulated market itself or through other mechanisms. The majority of respondents were stock exchanges which agreed that the arrangements were effective in achieving their goals, so there was no need to change or amend them.
29. Respondents broadly agreed that the arrangements for facilitating access to information shall encompass the forthcoming Market Abuse Regulation. Nevertheless, regarding the MiFIR trade transparency obligations, most respondents were not in favour of including them, as they seem to be separate requirements and not obligations relevant to the issuer.
30. Therefore ESMA decided to delete the proposal that the arrangements shall include MiFIR trade transparency obligations.
31. ESMA also notes that no members or participants came forward who were dissatisfied with the arrangements currently put in place by regulated markets. Therefore, ESMA does not see a need for detailed, prescriptive requirements in this context and intends to clarify only that arrangements in place should grant easy, fair and non-discriminatory access while also clarifying the scope of the information obligations. In addition, those arrangements shall be published on the website of the regulated market.

Proposal

Q160. Do you agree with the attached draft technical standard on admission to trading?

⁵⁵ Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Regulation (EU) No 648/2012 (OJ L 173, 12.6.2014, p. 84).

- Q161. In particular, do you agree with the arrangements proposed by ESMA for verifying compliance by issuers with obligations under Union law?**
- Q162. Do you agree with the arrangements proposed by ESMA for facilitating access to information published under Union law for members and participants of a regulated market?**

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 25: Draft regulatory technical standards on the admission of financial instruments to trading on regulated markets

6.2. Suspension and Removal of Financial Instruments from Trading -connection between a derivative and the underlying financial instrument

Background/Mandate

1. Article 52(1) of Directive 2014/65/EU (MiFID II) empowers a market operator (MO) to suspend or remove from trading financial instruments which no longer comply with the rules of the regulated market (RM), unless such a step would be likely to cause significant damage to investors' interests or the orderly functioning of the market.
2. Article 52(2) MiFID II also requires that "a market operator that suspends or removes from trading a financial instrument also suspends or removes from trading the derivatives as referred to in points (4) to (10) of Section C of Annex 1 that relate or are referenced to that financial instrument where necessary to support the objectives of the suspension or removal of the underlying financial instrument".
3. According to Article 52(2) of MiFID II the national competent authority (CA) in whose jurisdiction the suspension or removal originated has to decide whether it is necessary to expand the suspension or removal if one of the three reasons for doing so exists, i.e. suspected market abuse, a take-over bid or the non-disclosure of inside information about the issuer or financial instrument in breach of Articles 7 and 17 of Regulation (EU) No. 596/2014 on market abuse (market abuse regulation)⁵⁶. The expansion would apply to the trading of the same financial instrument or related derivatives on other regulated markets, MTFs, OTFs and SIs within its jurisdiction. If none of the three reasons apply, the CA is not required to expand the suspension or removal and does not need to inform ESMA and the competent authorities of the other Member States.
4. If the suspension is due to one of the three reasons and in the event of a suspension originating from a MO, Article 52(2) of MiFID II details the process that must be followed:
 - i. The MO suspends the derivatives where this is necessary to support the objectives of the suspension or removal of the underlying financial instrument.
 - ii. The MO makes public its decision to suspend the financial instrument and any related derivatives and communicates relevant information to its relevant CA.
 - iii. If the suspension or removal is due to suspected market abuse, a take-over bid or non-disclosure of inside information about the issuer or financial instrument in breach of Articles 7 and 17 market abuse regulation, the CA shall require that other RMs, MTFs, OTFs and SIs, which are under its jurisdiction and trade the same

financial instruments or any related derivatives, suspend or remove that financial instrument or derivatives unless this could cause significant damage to investors' interests or the orderly functioning of the market.

- iv. The CA makes public such a suspension decision and communicates it to ESMA and other CAs ('notified CAs') including an explanation if the decision was not to follow the suspension.
 - v. The notified CAs order suspension of trading on RMs, other MTFs, other OTFs and SIs in their jurisdictions trading the suspended instruments or any related derivatives, unless this could cause significant damage to investors' interests or the orderly functioning of the market in the notified CAs' jurisdictions.
 - vi. The notified CAs communicate their decision on whether to follow the suspension to ESMA and other CAs, including an explanation if the decision was not to follow the suspension.
5. This regime is without prejudice to the power of CAs to initiate a suspension or removal from trading at their own initiative under points (m) and (n) of Article 69(2) of MiFID II.
 6. The process detailed above also applies – in general - in the case of removal of a financial instrument and any related derivatives from trading and when a suspension is lifted, whereas a removal decision by the originating CA does not necessarily lead to mandatory removal by the notified CA(s) but could lead to a mere 'suspension' as well.
 7. Article 52(2) of MiFID II also stipulates that the above notification process applies in the case where the decision to suspend or remove a financial instrument from trading is taken by the CA pursuant to points (m) and (n) of Article 69(2) of MiFID II.
 8. Article 32 of MiFID II applies the same rules as outlined above where the operator of an MTF or OTF suspends or removes a financial instrument and related derivatives from trading. All the explanations and statements in this section in respect of Article 52 shall be read as applying to Article 32 as well.

Article 52(2) of MiFID II

In order to ensure that the obligation to suspend or remove from trading such derivatives is applied proportionately, ESMA shall develop draft regulatory technical standards to further specify the cases in which the connection between a derivative relating or referenced to a financial instrument suspended or removed from trading and the original financial instrument implies that the derivative are also to be suspended or removed from trading, in order to achieve the objective of the suspension or removal of the underlying financial instrument.

9. Article 52 of MiFID II contains three empowerments for implementing measures in Level 2. The first one, in Article 52(2), requires ESMA to specify cases in which the connection between a derivative relating or referenced to a financial instrument suspended or removed from trading and the original financial instrument implies that the derivative should also be suspended or removed from trading, in order to achieve the objective of the suspension or removal of the underlying financial instrument.
10. The second one, in Article 52(3) of MiFID II, requires ESMA to develop implementing technical standards to determine the format and timing of all the communications and publications. This, and some other empowerments to develop Implementing Technical Standards, will be consulted upon by ESMA in 2015.
11. The third empowerment in Article 52(4) of MiFID II empowers the European Commission to adopt delegated acts in order to specify a list of circumstances constituting significant damage to investors' interests and the orderly functioning of the market which could then be the basis of a decision not to follow a suspension or removal notification. Such list of circumstances is in ESMA's Technical Advice to the European Commission.
12. Article 32 of MiFID II contains a parallel set of empowerments for MTFs and OTFs. Therefore all the proposals shall be read as applying to regulated markets, MTFs and OTFs.

Analysis following feedback from stakeholders

13. The rationale of this proposal was covered already in the DP to which no relevant changes have been introduced, so it is not developed again in this CP. The related legal text can be found in the relevant sections of the annexes. ESMA recommends, therefore, to read this consultation together with the DP to have a complete vision of the rationale for the proposed measures.
14. ESMA consulted on the cases in which the connection between a derivative and its underlying instrument implies that the derivative is to be suspended or removed from trading following a suspension or removal of the underlying instrument.
15. Respondents to the consultation broadly agreed with ESMA's proposal of considering that a derivative, whose price or value is dependent of the prevailing price or value of the underlying financial instrument (its sole underlying), should also be suspended or removed as a consequence of the suspension or removal of the underlying instrument.
16. The majority of the respondents agreed with ESMA's proposal of not considering a relevant connection between derivatives and respective underlying, when the latter are indices, baskets or other tradable financial instruments that consist in multiple price inputs.

17. Not surprisingly, very few respondents proposed a methodology to identify which derivatives should be suspended or removed from trading as a consequence of the suspension or removal from trading of their multiple price inputs underlyings. Proposals included the identification of thresholds (i.e. 20% and 50%) of contribution from the underlying instrument to the value of the derivative and to take the rules and methodology for the calculation of the index and the representativeness of the suspended financial instrument into consideration.

Proposal

Specification of cases in which the connection between a derivative and the underlying implies that the derivative should also be suspended or removed from trading

18. For the purpose of achieving the objective of the suspension or removal, ESMA considers that a derivative whose price or value is dependent on the prevailing price or value of the financial instrument that has been suspended or removed from trading as its sole underlying, should also be suspended or removed as a consequence of the suspension or removal of the relevant instrument, making no difference as to what the original objective of the suspension or removal of the underlying financial instrument was.
19. The rationale for extending the obligation to related derivatives is to ensure that behaviour which a suspension is designed to prevent cannot simply transfer to a related market, and to support fair and orderly markets. The inability to correctly price related derivatives, leading to a disorderly market, would be strongest for the cases where the price or value of the related derivative is completely dependent on the prevailing price or value of the financial instrument that is suspended or removed from trading as its sole underlying. When the underlying is a basket of financial instruments or an index of which the suspended financial instrument is only one part, the ability of market participants to determine the correct price would be less affected. Thus, it would be feasible to make treat single and multiple underlying derivatives differently.
20. Moreover, ESMA considers the establishment of a method of calculating the correlation between the development of the price or value of a particular financial instrument and the development of the value of the index or basket of financial instruments as a whole, that takes into account all the issues of (real-time) valuation and changing weights of constituents, to be too complex for the sake of this empowerment. As a consequence, ESMA maintains the policy proposal it consulted upon, i.e., a suspension or removal from trading of a financial instrument does not necessarily imply the suspension or removal of the derivative that relates or is referenced to that financial instrument, where the derivative relates or is referenced to indices, baskets or other tradable financial instruments that consist in multiple price inputs.
21. It should, however, be noted that the suspensions/removals regime is without prejudice to the fair and orderly trading obligations of a trading venue, and so even in cases where

a trading venue is not required by its competent authority to suspend a derivative, it is subject to an overarching responsibility to consider whether it is offering particular contracts that can continue to trade in an orderly way.

Q163. Do you agree with the proposed RTS? What and how should it be changed?

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 26: Draft regulatory technical standards on suspension and removal of financial instruments from trading

6.3. Information requirements of MTFs and OTFs

Art. 18 (10) (11), MiFID II

Background/Mandate

Article 18 (11) of MiFID II

ESMA shall develop draft implementing technical standards to determine the content and format of the description and notification referred to in paragraph 10.

Article 18 (10), of MiFID II

10. Member States shall require that investment firms and market operators operating an MTF or an OTF provide the competent authority with a detailed description of the functioning of the MTF or OTF, including [...] any links to or participation by a regulated market, an MTF, an OTF or a systematic internaliser owned by the same investment firm or market operator, and a list of their members, participants and/or users. [...]

1. Article 18(10) of Directive 2014/65/EU of the European Parliament and of the Council (MiFID) requires investment firms and market operators running an MTF or an OTF to provide a detailed description of the functioning of the trading venue to the national competent authority.
2. To ensure all necessary information is provided, Article 18(10) of Directive 2014/65/EU of the European Parliament and of the Council (MiFID) provides that Member States shall require investment firms or market operators operating an MTF or an OTF to provide its competent authority with a detailed description of the functioning of the MTF or OTF, including any links to or participation by a regulated market, an MTF, an OTF or a systematic internaliser owned by the same investment firm or market operator, and a list of their members and users.
3. This information should build upon the information an investment firm or market operator is required to provide as part of the general authorisation requirements under MiFID. It should focus upon the specific functionality of the trading system to enable national authorities to assess whether the system satisfies the definition of an MTF or OTF and to assess its compliance with the particular, venue-orientated requirements of MiFID and Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Regulation (EU) No 648/2012⁵⁷ (MiFIR). The requirement for a detailed description does not affect the duty of an investment firm or market operator to provide other information to its competent authority

⁵⁷ OJ L 173, 12.06.2014, p. 84.

as required under other provisions of MiFID and MiFIR, or the rights of competent authorities to request other information as part of their on-going supervision of trading venues.

4. To ensure the uniform application of MiFID, and in particular Article 18(10) thereof, and to achieve an efficient processing of this information, for existing MTFs already operating in accordance with national authorisation at the point in time when the requirement comes into application, it is appropriate and proportionate for competent authorities to make use of their supervisory powers to request the information needed in order to assess compliance with the rules of MiFID and MiFIR.
5. Since SME Growth Markets are subject to additional rules in relation to other MTFs, it is necessary that SME Growth Markets shall provide additional information.
6. To ensure the uniform application of MiFID, and in particular Article 18(10) thereof, and since OTFs represent a new type of trading venue, it is appropriate that OTFs provide all the necessary information required in this Regulation for their initial authorisation.
7. Since OTFs are distinguished from MTFs in that the trading process will involve the use of discretion by the operator, and because the operator of an OTF will owe client facing responsibilities to users of the system, it is necessary that OTFs shall provide further information.
8. ESMA considers that an approach which provides an exhaustive list of types of information which the investment firms and market operators operating an MTF or an OTF shall provide will ensure certainty and clarity in terms of obligations for the purpose of authorisation and supervision. It will also facilitate the collection of information by ESMA for the purpose of publication of the list of the MTFs and the OTFs in the Union.
9. ESMA considers that MTF and OTF operators shall provide the competent authority with detailed information both as part of the general authorisation requirements, at the time of the notification as well as in advance of the start-up date of a new functionality implemented by an already authorised MTF/OTF. The information should focus upon the specific functionality of the trading system such as to enable the competent authority to assess its compliance with the particular, venue-orientated requirements of MiFID. In addition, ESMA considers it necessary that MTF and OTF operators provide competent authorities with all relevant information in case of any change in the information provided.

Proposal

10. ESMA considers that detailed information should be set out in the implementing technical standard and provided to its competent authority by an investment firm or a market operator operating an MTF or an OTF. In particular, ESMA has focused on the

following information, as specified in the list drawn up in the draft implementing technical standards:

- i. information on the asset class and number of financial instruments traded on the MTF or OTF;
- ii. the rules and procedures :
 - a. for making financial instruments available to trade together with details of the publication arrangements used to make that information available to the public;
 - b. to ensure the objective and non-discriminatory access to the facility together with details on the publication arrangements used to make that information available to the public;
 - c. for suspension and removal of financial instruments from trading required by Article 32 of MiFID;
- iii. the measures and procedures to ensure that sufficient information is publicly available to users of the MTF or OTF to form an investment judgement, taking into account both the nature of the users and the classes of financial instruments traded;
- iv. the systems, procedures and arrangements to facilitate compliance with the conditions laid down by Articles 48 and 49 of MiFID as required by Article 18(5) thereof;
- v. a detailed description of the arrangements to facilitate the provision of liquidity to the system (such as market maker or liquidity incentive schemes);
- vi. the arrangements and procedures :
 - a. to monitor transactions undertaken by members or participants by means of its facilities, such as to identify potential breaches of its trading rules, disorderly trading conditions, systems disruptions or conduct that may involve market abuse, required by Article 31 of MiFID;
 - b. to comply with pre and post-trade transparency obligations, as applicable to the financial instruments traded and the trading functionality of the MTF or OTF together with information on the intention to use waivers under Articles 4 and 8 and deferred publication under Article 7 and 11 of MiFIR;
 - c. for the efficient settlement of the transactions effected under its systems and to ensure that users are aware of their respective responsibilities in this regard;
 - d. a list of the members or participants of the MTF or OTF which it operates.

11. ESMA is also of the view that the following information shall be provided to competent authorities by an investment firm or a market operator operating an MTF or an OTF:
 - i. a detailed description of the functioning of the system specifying whether the system represents a voice, electronic or hybrid functionality and, in the case of an electronic or hybrid trading system, the nature of any algorithm or program used to determine the matching and execution of trading interests; in the case of a voice trading system, the rules and protocols used to determine the matching and execution of trading interests;
 - ii. information on how and in what instances the operation of the MTF or OTF will give rise to any potential conflicts between the interests of the MTF or OTF, its operator or its owners and the sound functioning of the MTF or OTF, specifying the procedures and arrangements to be used to identify and to manage any adverse consequences for the operation of the MTF or OTF, or its members or participants, that could result from such conflicts required by Article 18(4) of MiFID;
 - iii. information on its outsourcing arrangements that relate to the management, operation or oversight of any MTF or OTF which it operates and, in particular: i) the organisational measures to identify the risks in relation to those outsourced activities and to monitor the outsourced activities; ii) the contractual agreement between the MTF or OTF operator and the entity providing the outsourced service in which the nature, scope, objectives, and service level agreements are outlined;
 - iv. information on any links to or participation by a regulated market, MTF, OTF or systematic internaliser owned by the same relevant operator.
12. ESMA considers also necessary that, relating to its obligation in Article 19(3) of MiFID, the following additional information has to be provided by MTFs:
 - i. a description of the arrangements and the systems implemented to manage the risks to which it is exposed, to identify all significant risks to its operation and to put in place effective measures to mitigate those risks;
 - ii. a description of the arrangements implemented to facilitate the efficient and timely finalisation of the transactions executed under its systems;
 - iii. having regard to the nature and extent of the transactions concluded on the market and the range and degree of the risks to which it is exposed, the financial resources considered sufficient to facilitate its orderly functioning.
13. In the case of an MTF which is applying for registration as an SME growth market, the investment firm or market operator operating that MTF shall ensure that the information provided clearly identifies which functionalities or arrangements are applicable to the SME growth market.

14. Since OTFs are distinguished from MTFs in that the trading process will involve the use of discretion by the operator, and because the operator will owe client facing responsibilities to users of the system, ESMA considers it necessary that OTF operators shall provide further information - for each asset class traded on the OTF, if relevant- in addition to that outlined for MTF operators. In particular:
 - i. information on whether another investment firm is engaged to carry out market making on its OTF on an independent basis in accordance with Article 20(5) of MiFID.
 - ii. a detailed description of how and under what circumstances it executes orders on the OTF on a discretionary basis in accordance with Article 20(6) of MiFID;
 - iii. the rules, procedures and protocols which allow the operator to route the trading interest of a member or participant outside the facilities of the OTF;
 - iv. a description of the use of matched principal trading which complies with Article 20(7) of MiFID;
 - v. the rules and procedures to ensure compliance with Articles 24, 25, 27 and 28 of MiFID for transactions concluded on the OTF where those rules are applicable to the investment firm or market operator operating the OTF in relation to an OTF user.
15. ESMA considers that to ensure the efficient processing of the information required an investment firm or a market operator operating an MTF or an OTF shall provide its competent authority with the detailed information by filling in a standard template in electronic format. In particular:
 - i. in providing the information required by this Regulation, it is mandatory to include references to the appropriate provisions of the rules of their MTF or OTF, agreements or contracts with participants or relevant third parties;
 - ii. in providing new description to correct, update or clarify information previously submitted in accordance with this Regulation, there is no need to include information which is of a purely minor or technical nature that would not be relevant for an assessment of their compliance with MiFID or MiFIR or other information considered not relevant for the competent authority's tasks under Article 18 of MiFID; and
 - iii. where the same entity requests authorisation to provide more than one service at the same time, it will submit one application which shall clearly identify the services to which the information provided applies.
16. ESMA also considers that to ensure the efficient processing of notifications to ESMA of every authorisation of an investment firm or market operator as an MTF or an OTF, it is necessary for it to be provided in an electronic format and to fill in a standard template in

order to facilitate the publication, on ESMA's website, of the list of all MTFs and OTFs in the Union containing information on the services provided and the unique code identifying each MTF and OTF.

Proposal

17. ESMA's proposal, for details and information on the functioning of the system, to be provided by investment firms and market operators operating an MTF or an OTF to competent authorities, is set out in the following text of the draft implementing technical standards including the Annex III that contains the tables regarding the format of the information to be provided.

- Q164. Do you agree with the approach of providing an exhaustive list of details that the MTF/OTF should fulfil?**
- Q165. Do you agree with the proposed list? Are there any other factors that should be considered?**
- Q166. Do you think that there should be one standard format to provide the information to the competent authority? Do you agree with the proposed format?**
- Q167. Do you think that there should be one standard format to notify to ESMA the authorisation of an investment firm or market operator as an MTF or an OTF? Do you agree with the proposed format?**

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft ITS 27: Draft implementing technical standards description of MTFs and OTFs

7. Commodity derivatives

7.1. Ancillary Activity

Background/Mandate

1. The review of MiFID aims to prevent market abuse, systemic risk and to achieve a level playing field. In line with these goals the revised Article 2 MiFID II is driven by the intention to provide for a more narrow interpretation of allowed exempt activities thereby capturing within the scope of MiFID II a range of firms previously excluded and addressing any competitive distortions that arise under the existing exemptions for commodity firms under Articles 2(1)(i) and 2(1)(k) of MiFID I.
2. Under the current regulatory regime Article 2(1)(i) of MiFID I exempts persons dealing on own account in financial instruments, or providing investment services in commodity derivatives to the clients of their main business, provided this is an ancillary activity to their main business, when considered on a group basis, and that the main business is not the provision of investment services within the meaning of MiFID or banking services under Directive 2000/12/EC. This exemption and the one currently provided by Article 2(1)(k) of MiFID I are intended to cover commercial users and producers of commodities, under the assumption that commercial firms and specialist commodity firms do not pose systemic risks comparable to traditional financial institutions or interact with investors .
3. The exemptions currently available are effectively carried over under Article 2(1)(j) of MiFID II in similar but not identical terms. However, the exemption that is currently available under Article 2(1)(k) of MiFID I will cease to exist thereby additional focus will be placed on those exemptions that are carried over. Article 2(1)(j) sets forth that MiFID II shall not apply to persons:
 - i. dealing on own account, including market makers, in commodity derivatives, emission allowances or derivatives thereof, excluding persons who deal on own account when executing client orders; or
 - ii. providing investment services, other than dealing on own account, in commodity derivatives or emission allowances or derivatives thereof to the customers or suppliers of their main business.
4. In both cases the exemption is subject to the condition that the activity is individually and on an aggregate basis an ancillary activity to the persons' main business, when considered on a group basis, and that main business is not the provision of investment services within the meaning of MiFID II or banking activities under Directive 2013/36/EU, or acting as a market maker in relation to commodity derivatives, and the persons do not apply a high frequency algorithmic trading technique. Furthermore, the exemption is subject to the condition that the persons concerned notify annually the relevant NCA that

they make use of this exemption and upon request report to the NCA the basis on which they consider that their activity is ancillary to their main business.

5. Article 2(4) MiFID II requires ESMA to develop draft RTS in respect of the exemption in Article 2(1)(j) to specify the criteria for establishing when an activity is to be considered as ancillary to the main business on a group level. When specifying the criteria ESMA will have to consider the elements mentioned in Article 2(4) of MiFID II. Recital 20 sets forth that the criteria specified by ESMA should ensure that non-financial firms dealing in financial instruments in a disproportionate manner compared with the level of investment in the main business are covered by the scope of MiFID II.
6. The main purpose of the DP published in summer 2014 was to explore how the elements mentioned in Article 2(4) may best be taken into account when determining criteria for establishing when an activity is considered to be ancillary. On the basis of the feedback received ESMA has determined a methodology for the calculation of the relevant thresholds. The main purpose of the present CP is to explore the appropriate setting of the actual thresholds.

Article 2(4) of MiFID II

4. *ESMA shall develop draft regulatory technical standards to specify, for the purposes of point (j) of paragraph 1 the criteria for establishing when an activity is to be considered to be ancillary to the main business at a group level:*

Those criteria shall take into account at least the following elements:

- (a) the need for ancillary activities to constitute a minority of activities at a group level;*
- (b) the size of their trading activity compared to the overall market trading activity in that asset class*

In determining the extent to which ancillary activities constitute a minority of activities at a group level ESMA may determine that the capital employed for carrying out the ancillary activity relative to the capital employed for carrying out the main business is to be considered. However, that factor shall in no case be sufficient to demonstrate that the activity is ancillary to the main business of the group

The activities referred to in this paragraph shall be considered at a group level.

The elements referred to in the second subparagraph shall exclude:

- (a) intra-group transactions as referred to in Article 3 of Regulation (EU) No 648/2012 that serve group-wide liquidity or risk management purposes;*
- (b) transactions in derivatives which are objectively measurable as reducing risks directly*

related to the commercial activity or treasury financing activity;

- (c) *transactions in commodity derivatives and emission allowances entered into to fulfil obligations to provide liquidity on a trading venue, where such obligations are required by regulatory authorities in accordance with Union law or with national laws, regulations and administrative provisions, or by trading venues.*

Analysis following feedback from stakeholders

7. ESMA would like to clarify that it understands the MiFID II text in relation to the exemptions under Article 2 as follows:

Combination of exemptions

8. MiFID II provides for additional exemptions in Article 2(1)(d) and (e). Whereas Article 2(1)(e) exempts operators covered by the EU emission trading scheme from MiFID II, Article 2(1)(d) allows for an exemption for persons who deal on own account in financial instruments other than commodity derivatives, emission allowances or derivatives thereof if they do not provide any other investment services or perform any other investment activities in such instruments. This exemption is, however, not available for market makers, members or participants of an RM or an MTF, persons having direct electronic access to a trading venue, persons applying a high frequency algorithmic trading technique or persons dealing on own account when executing client orders. As Recital 22 clarifies that exemptions may apply cumulatively, the exemptions under Article 2(1)(d) and (j) MiFID II can be used in conjunction. However, Recital 23 clarifies that market makers in financial instruments, other than market makers covered by the exemption in Article 2(1)(j), persons dealing on own account when executing client orders or persons applying a high frequency technique should be covered by the scope of MiFID II and should not benefit from any exemption. As already expressed in the DP and taking into account Recitals 24 and 25, ESMA is of the view that the execution of orders in financial instruments between two non-financials directly and without any further intermediation by third parties as ancillary activity is not covered by the term 'dealing on own account when executing client orders' and would therefore not prevent the persons concerned from using the exemptions under paragraphs (d) and (j) of Article 2(1) MiFID II.
9. ESMA further stated in the DP that commodity derivatives traders can combine the exemptions available under Articles 2(1)(d) and 2(1)(j) MiFID II if they meet the requirements set forth by those provisions. However, they are not able to make use of the exemption for dealing on own account in financial instruments other than commodity derivatives, emission allowances and derivatives thereof under Article 2(1)(d) MiFID II if they are either a member or participant of a RM or MTF or if they have direct electronic access. Some respondents disagreed with this analysis of ESMA. Partly they believe that persons fulfilling the criteria of Article 2(1)(j) are not required to meet the conditions

of Article 2(1)(d) in order to be exempt in relation to dealing on own account in financial instruments other than commodity derivatives, emission allowances and derivatives thereof. Others underlined the importance of the exemption for dealing on own account under Article 2(1)(d) for non-financials in relation to risk managing activities. As it is common practice for non-financials to use electronic platforms for this purpose they ask ESMA for clarification that non-financials are only users or clients of such platforms and that the use of these platforms does not prevent non-financials from using the exemption under Article 2(1)(d). Some respondents argued that the term “regulated market or MTF” in Article 2(1)(d) only refers to regulated markets and MTFs where financial instruments other than commodity derivatives, emission allowances or derivatives thereof are traded so that participation or membership at energy exchanges would not prevent non-financials from using the exemption for dealing on own account under Article 2(1)(d).

10. Under Article 2(4) ESMA has no mandate to clarify questions in relation to the interpretation of Article 2(1)(d). However, ESMA would like to take the opportunity to clarify its view on the last sentence of Article 2(1)(d). ESMA is of the view that this sentence cannot be understood in a way that persons fulfilling the criteria of Article 2(1)(j) are not required to meet the conditions of Article 2(1)(d) in order to be exempt in relation to dealing on own account in financial instruments other than commodity derivatives, emission allowances and derivatives thereof. The differentiation between Article 2(1)(d) and (j) reflects different criteria being applicable to different asset classes. Consequently, ESMA understands the second sentence of Article 2(1)(d) to determine that persons seeking exemption under Article 2(1)(j) are not in addition required to meet the conditions laid down in Article 2(1)(d) in order to be exempt for the exemption under Article 2(1)(j).
11. Some respondents also suggest that activities exempt under Article 2(1)(e) should not be counted when defining what is ancillary to the main business under Article 2(1)(j) and (4). ESMA does not share this view as it would result in enlarging the scope of privileged transactions mentioned in Article 2(4) and is therefore not in line with the MiFID II Level 1 text. As far as transactions in emission allowances can be considered as being part of the privileged transactions they will not count towards the ancillary activity.
12. ESMA adheres to the view that persons exempt under Article 2(1)(j) and being a member or participant of a RM or MTF have to comply with the organisational requirements for algorithmic trading set forth in Articles 17(1) and (6) as this is in line with Article 1(5) of MiFID II. In accordance with Article 1(6) position limits and position reporting obligations will always be applicable, even if commodity derivatives traders are exempt under Articles 2(1)(d) and 2(1)(j). However, positions held by or on behalf of non-financials which are objectively measurable as reducing risks directly relating to commercial activity will not count towards the limits. In accordance with Article 1(3) MiFIR, the trading and clearing obligations apply to all financial counterparties as defined in Article 2(8) EMIR and to all non-financial counterparties falling under Article 10(1)(b) EMIR (i.e. non-financial counterparties who exceed the clearing threshold).

Consequences of becoming a MiFID II authorised firm

13. The exemptions under Article 2 MiFID II should be viewed in a broad context as they will interact with other legislation and may have a significant impact on firms that currently use the exemptions under MiFID.
14. If firms cannot make use of an exemption under MiFID II, capital requirements under the new banking regulatory framework will apply to them. This new framework consists of Regulation EU No 575/2013 (CRR) and Directive 2013/36/EU (CRD IV), repealing Directives 2006/48/EC and 2006/49/EC. While CRD IV is addressed to NCAs and includes, inter alia, qualitative provisions on the Internal Capital Adequacy Assessment Process (ICAAP) and the Supervisory Review and Evaluation Process (SREP), the new CRR imposes quantitative requirements and disclosure obligations pursuant to Basel III recommendations on credit institutions and investment firms, including own funds definition, minimum own funds requirements and liquidity requirements. However, under Article 498(1) of CRR some commodity dealers falling within the scope of MiFID are transitionally exempt from the CRR's provisions on own funds requirements until 31 December 2017 at the latest if their main business consists exclusively of providing investment services or activities relating to commodity derivatives.
15. Moreover, firms falling within the scope of MiFID II will be considered to be financial counterparties rather than non-financial counterparties under Article 2(8) EMIR. Therefore, they will not be able to benefit from the clearing thresholds or the hedging exemption available to the latter under Article 10 EMIR. An additional consequence of being classified as a financial counterparty will be that the trading obligation (i.e. the obligation to trade derivatives which are subject to the clearing obligation and sufficiently liquid on certain trading venues only, cf. Article 28 MiFIR) would apply in full without being subject to a threshold.
16. For firms that will fall under MiFID II it is also worth keeping in mind that the hedging exemption in relation to the position limits regime will only apply to non-financial entities as Article 57(1) MiFID II states that position limits shall not apply to positions held by or on behalf of a non-financial entity which are objectively measurable as reducing risks directly related to the commercial activity of that non-financial entity. Furthermore, derivative transactions of non-financial counterparties which are objectively measurable as reducing risks directly related to commercial activity or treasury financing activity of the non-financial counterparty or of the group are not subject to pre-trade transparency requirements in accordance with Article 8(1) MiFIR.
17. In relation to derivative contracts mentioned in Annex I Section C paragraph (6) MiFID II relating to coal or oil that are traded on an OTF and must be physically settled the clearing obligation set out in Article 4 EMIR and the risk mitigation techniques set out in Article 11(3) EMIR shall not apply for a transitional period of six years if entered into by non-financial counterparties that meet the conditions of Article 10(1) EMIR or that shall be authorised for the first time as an investment firm under MiFID II (cf. Article 95 of

MiFID II). Furthermore, such derivative contracts on coal or oil shall not be considered as OTC derivative contracts for the purpose of the clearing threshold set out in Article 10 EMIR during the transitional period.

Elements to be considered

18. Article 2(4) MiFID II requires ESMA to take into account at least the following elements:
- i. the need for ancillary activities to constitute a minority of activities at a group level; and
 - ii. the size of their trading activity compared to the overall market trading activity in that asset class.
19. Article 2(4) of MiFID II further stipulates that in determining the extent to which ancillary activities constitute a minority of activities at a group level, ESMA may determine that the capital employed for carrying out the ancillary activity relative to the capital employed for carrying out the main business is to be considered. However, that factor shall in no case be sufficient to demonstrate that the activity is ancillary to the main business of the group. The elements mentioned above shall exclude intra-group transactions as referred to in Article 3 EMIR that serve group-wide liquidity and risk management purposes, transactions in derivatives being objectively measurable as reducing risks directly related to the commercial activity or treasury financing activity and transactions in commodity derivatives and emission allowances entered into to fulfil obligations to provide liquidity on a trading venue where required by regulatory authorities or trading venues.

Overall application of the thresholds

20. After evaluation of the feedback received during the consultation ESMA envisages that the procedure for determining whether firms fall within the scope of MiFID II under Article 2(1)(j) is in summary as follows:
- i. A firm will be captured by the scope of MiFID II if it either exceeds the threshold set in the ancillary activity test or if it exceeds the threshold set in the trading activity test .
 - ii. **For the ancillary activity test calculation:** divide the capital employed by the person for MiFID II activity in the EU at group level by the capital employed for business globally at group level. To obtain the capital employed for MiFID II activity in the EU at group level, the person should subtract the sum of all their “privileged transactions⁵⁸” undertaken in the EU at group level and the capital employed for

⁵⁸ Privileged transactions is the collective term used in this CP for the following transactions:

1. intra-group transactions as referred to in Article 3 EMIR that serve group-wide liquidity and/or risk management purposes;

licensed activity (i.e. trading activity that is undertaken by a MiFID authorised entity of the group) from the total amount of capital employed for MiFID II activity in the EU at group level. A person will be captured by the scope of MiFID if the capital employed for its MiFID II activity constitutes more than 5% of the capital employed for the overall activities of the group.

- iii. **For the trading activity test calculation:** divide the size of the person's trading activity per commodity class in the EU at group level by the size of trading activity in the EU market for the corresponding commodity class. To obtain the size of its trading activity in the EU at group level, the person should first subtract the sum of all its privileged transactions undertaken in the EU at group level and the volume of trading licensed activity (i.e. trading activity that is undertaken by a MiFID authorised entity of the group) in the EU at group level from the volume of the overall trading activity undertaken by that person in the EU at group level. ESMA proposes the following eight commodity asset classes: metals, oil, coal, emission allowances, gas, power, agricultural products or others. The volume of the trading activity should be measured on the basis of the gross notional value of contracts. A person will be captured by the scope of MiFID II if the size of its trading activity constitutes more than 0.5% of the overall market activity in the EU in one of the above mentioned commodity classes.
- iv. In order to avoid unnecessary burden for small and medium sized entities, ESMA proposes to establish a de-minimis threshold. A person whose trading activity constitutes less than 0.25% of the overall market trading activity in each of the relevant asset classes will benefit from the exemption under Article 2(1)(j) and will not be required to undertake the calculation in relation to the first test (capital employed).
- v. Where a person undertakes the trading activity test calculation and exceeds the de minimis threshold of 0.25% in one or more commodity asset class but is below the 0.5% threshold, it must undertake the calculation in relation to the first test (capital employed).

Q168. Do you agree with the approach suggested by ESMA in relation to the overall application of the thresholds? If you do not agree please provide reasons.

Minority of activities

Analysis following feedback from stakeholders and proposal

2. transactions in derivatives which are objectively measurable as reducing risks directly related to the commercial activity or treasury financing activity; and
3. transactions in commodity derivatives and emission allowances entered into to fulfil obligations to provide liquidity on a trading venue, where such obligations are required by regulatory authorities in accordance with Union or national laws, regulations and administrative provisions or by trading venues.

21. Ancillary activities must constitute a minority of activities at group level. In order to define the minority of activities ESMA may consider the capital employed for carrying out the ancillary activity relative to the capital employed for carrying out the main business. However, this factor is not sufficient to demonstrate that the activity is ancillary to the main business of the group.

Definition of the terms 'group' and 'control'

22. For the definition of the term 'group' ESMA referred to the definition of Article 2(11) of Directive 2013/34/EU on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings (Accounting Directive) in the DP as this is in line with Article 4(1)(34) MiFID II. According to this definition 'group' means a parent undertaking and all its subsidiary undertakings whereupon a parent undertaking is an undertaking which controls one or more subsidiary undertakings and a subsidiary undertaking is an undertaking controlled by a parent undertaking, including any subsidiary undertaking of an ultimate parent undertaking. Article 22 of the Accounting Directive (to which Articles 4(1)(32) and (33) MiFID II also refer) sets forth elements of control characterising the relationship between a parent undertaking and a subsidiary undertaking.
23. On this basis ESMA considered that the term 'group' comprises the parent undertaking and all its subsidiary undertakings. Subsidiary undertakings are those undertakings that are controlled by a parent undertaking under consideration of the elements of control set out in Article 22(1) and (2) of the Accounting Directive. While ESMA pointed out in the DP that it could be considered to only take activities of a group undertaken in the EU into account when considering whether the activity is ancillary to the main business, ESMA preferred a broader group definition which includes the non-EU entities of a group regardless of whether the group is headquartered inside or outside the EU when considering the main business.
24. Most of the respondents supported the approach to define the group in accordance with the Accounting Directive as this Directive already applies to the preparation of (consolidated) financial statements of undertakings. Furthermore, the majority of respondents supported the preferred option of ESMA to also consider non-EU activities of a group in relation to the group definition as the main commercial activities of commodity firms are often located outside the EU. Others stressed the importance of a global approach taking into account the activities of all subsidiaries under control of the parent in order to provide a full picture of the group's activities for competent authorities and in order to avoid loopholes. Some argued that a group definition which does not take into account global activities would give rise to competitive distortions. An "EU-only-approach" would further require firms to differentiate between EU and non-EU activities in the financial reporting and accounting processes and, thus, require amendments to those processes. Some respondents also mentioned that a global group definition would be consistent with the group definition under Article 10 EMIR that refers to clearing thresholds. However, a minority of respondents favoured an EU approach in relation to

the group definition as, in their view, a definition encompassing non-EU activities is likely to cause considerable burden in terms of obtaining global data and differing regulatory requirements. Furthermore, some respondents pointed out that trading decisions are often taken or coordinated at a regional rather than at a global level.

25. On the basis of the feedback received, ESMA intends to adhere to the suggested approach and to define the group in accordance with the Accounting Directive. ESMA proposes to take into account also non-EU activities of a group when looking at capital employed for the main business as this would be in line with the Accounting Directive and reflect commercial practice of commodity firms being active globally.
26. Some respondents suggested that the term “control” should be defined in the regulatory technical standard in line with Article 22(1) of the Accounting Directive. They support the meaning to cover a subsidiary of which the parent is a shareholder or member pursuant to a contract or the articles of association. However, they believe that a stand-alone reference to influence or dominant control should be avoided due to divergent interpretation. Others favoured an expansion of the definition of control in order to include elements of indirect control, such as dominance over marketing channels, client relationships, IT infrastructure, administration and back-office procedures. Other respondents mentioned that the circumstances when “control” does exist in accordance with Article 22 of the Accounting Directive are already used in other Directives and that there is already an understanding regarding how these terms should be interpreted.
27. As Article 4(32) and (33) of MiFID II refer to Article 22 of the Accounting Directive where elements of control are listed and as there is already interpretation in place for this provision, ESMA is of the view that further guidance on the question of when a subsidiary is controlled by a parent undertaking is not required. Therefore, ESMA envisages keeping a reference to Article 22(1) and (2) of the Accounting Directive.

Scope of the ancillary activity and the main activity at group level and calculation method

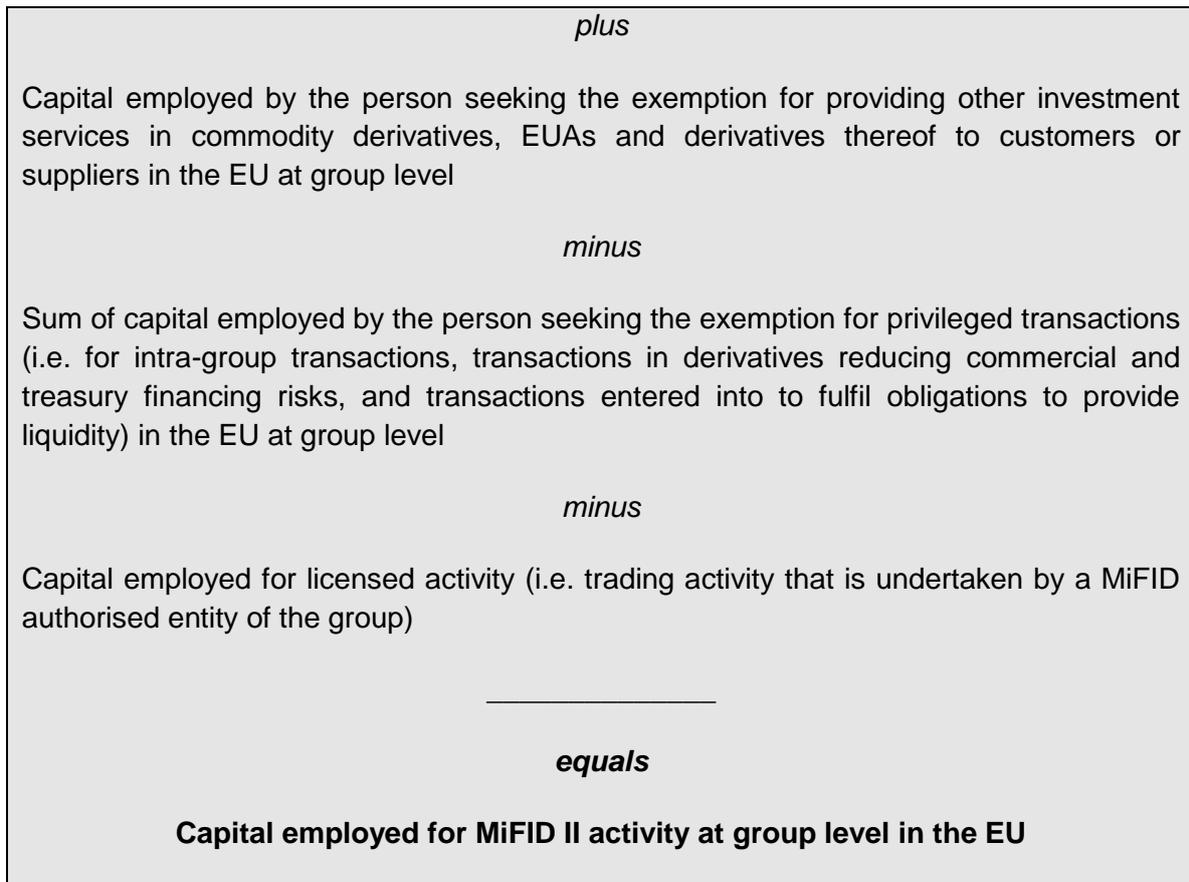
28. In order to assess whether ancillary activities constitute a minority of activities at group level it is necessary to define how to exclude the physical hedging activities discussed below and what is considered as ancillary activity and as main activity at group level.
29. With regard to the scope of the main activity the majority of respondents are of the view that, in line with the group definition, non-EU activities should be taken into account provided that these activities are related to hedging activities in the EU. For the scope of the ancillary activity, some respondents believe that only activities on EU level should be considered. They base their view on the geographical scope of MiFID II, potential conflicting regulation and differing definitions of financial instruments stressing that only firms trading in the EU can be subject to MiFID II or its exemptions and that commodity derivatives are defined differently on a global level. If non-EU companies were obliged to apply the ancillary test they would be forced to consider certain products under MiFID II as financial instruments while the same products might not be financial instruments

under their respective third country regulation. Others point out that, Article 2(1)(j) refers to persons and that the ancillary activity test should therefore be applied to the legal entity invoking the exemption regardless of where such activities are conducted. A minority believes that in relation to the first test (ancillary activity versus main activity) ESMA should only compare activities conducted within the EU. This view is again based on the geographical scope of MiFID II and the fact that EU authorities have better monitoring and enforcement abilities within their jurisdiction.

30. On the basis of the feedback received ESMA considers, in relation to the first threshold (i.e. comparison of the capital employed for ancillary activity against the capital employed for main activity), to take into account non-EU activities in order to define what constitutes the main business of the group. The scope of the ancillary activity would encompass ancillary activities (i.e. dealing on own account and providing other investment services to customers/suppliers in commodity derivatives, emission allowances and derivatives thereof) undertaken by the person seeking the exemption in the EU at group level. ESMA is of the view that this approach is in line with the level 1 text of MiFID II and with the group definition under the Accounting Directive. Furthermore, this approach considers that commercial activities of some commodity firms are located outside the EU while not resulting in extraterritorial application of MiFID II.
31. Some respondents also asked ESMA to clarify that a group is able to maintain a MiFID-licensed entity while other entities of the group remain exempt. They believe that it should be sufficient that one company of the group becomes subject to MiFID II by applying for a licence if the group fails the ancillary activity test, provided that the remaining firms within the same group meet the criteria of the ancillary activity exemption. Furthermore, they are of the view that the activities performed by the MiFID II regulated entity within a non-financial group should not be considered when defining the scope of the ancillary activities in relation to the group.
32. ESMA notes that Article 2(1)(j) refers to “persons”. In the view of ESMA the term “person” comprises natural and legal persons. Therefore, the ancillary activity test can only be applied to natural and legal persons. As MiFID II does not contain requirements in relation to the structure of a group, ESMA is of the view that a group is able to establish a subsidiary in which all activities requiring a MiFID-licence are bundled. As licenced activity undertaken by such a subsidiary is part of the overall activity of the group it will be considered and included in the calculation of the main business (denominator). However, it is less clear if licenced activity should or should not be deducted from the ancillary activity (numerator). The approach taken under EMIR, when NFCs calculate whether they are below or above the clearing threshold, is that only the positions taken by non-financial entities of the same group count for the calculation of the clearing threshold. Therefore, ESMA is of the view that licensed activity should not be counted towards the ancillary activity.

33. For the calculation of the first test, i.e. comparing the ancillary activity against the main activity, ESMA suggested in the DP an approach whereby the sum of the capital employed for privileged transactions would be deducted from the capital employed for the main business and the ancillary activity.
34. While some respondents supported the proposal of ESMA, the majority of respondents did not favour this approach. They stated that the suggested approach does not take into account that the privileged transactions form an integral part of a group's main business as the industrial activity implies risks, the management of which is essential. They asked ESMA to clarify that the sums of the capital employed for dealing on own account and for the provision of other investment services to customers/suppliers exclude capital employed for privileged transactions. In addition, some respondents claimed that the calculation suggested by ESMA is too complex. One respondent is of the view that the main activity should only include the activity within the relevant commodity asset class that the ancillary activity relates to and should not include other activities unrelated to this asset class.
35. On the basis of the feedback received, ESMA intends to amend its approach and envisages a simpler calculation. ESMA intends to take the following approach:

<p><u>Calculation for determining % capital employed for ancillary activity</u></p> <p>Capital employed for MiFID II activity at group level in the EU (numerator)</p> <p><i>divided by</i></p> <p>Capital employed for business globally at group level (denominator)</p> <hr style="width: 20%; margin: auto;"/> <p><i>equals</i></p> <p>% of capital used by a group for MiFID II activity</p>
<p><u>Calculation for capital employed for MiFID II activity at group level in the EU</u> <u>(numerator)</u></p> <p>Capital employed by the person seeking the exemption for dealing on own account in commodity derivatives, EUAs and derivatives thereof in the EU at group level (excluding dealing on own account when executing client orders unless the execution of orders is done between two non-financials directly and without any further intermediation of a third party)</p>



- Q169. Do you agree with ESMA’s approach to include non-EU activities with regard to the scope of the main business?**
- Q170. Do you consider the revised method of calculation for the first test (i.e. capital employed for ancillary activity relative to capital employed for main business) as being appropriate? Please provide reasons if you do not agree with the revised approach.**
- Q171. With regard to trading activity undertaken by a MiFID licensed subsidiary of the group, do you agree that this activity should be deducted from the ancillary activity (i.e. the numerator)?**
- Q172. ESMA suggests that in relation to the ancillary activity (numerator) the calculation should be done on the basis of the group rather than on the basis of the person. What are the advantages or disadvantages in relation to this approach? Do you think that it would be preferable to do the calculation on the basis of the person? Please provide reasons. (Please note that altering the suggested approach may also have an impact on the threshold suggested further below).**

Setting the threshold

36. For the assessment of whether the ancillary activity constitutes a minority of activities at group level ESMA suggested in the DP that a firm can only be below the threshold if the ancillary activities individually and on an aggregate basis account for less than a maximum of 50% of the group's main business.
37. While most respondents support setting the threshold close to 50%, others are of the view that a threshold of 50% is too high. They believe that the threshold should be lower in order to ensure that any ancillary activity fairly represents a minority of activities at group level. Some are of the view that a 50% threshold is not in line with the intent of the legislator as it was the goal of MiFID II to mitigate systemic risk, improve the functioning of the market and increase the level of investor protection. They advocate a lower threshold as the capital employed for privileged transactions is already excluded from the calculation. Respondents believing that a threshold of 50% is too high suggested either a threshold of 10-15% or of 5%.
38. ESMA has reviewed and amended the suggested approach in relation to the calculation and is now taking into account the overall activity of a group's main business without any further reductions. Therefore, ESMA believes it is necessary to reduce the threshold significantly as otherwise even entities with a very low level of commercial activity would not exceed the threshold. Furthermore, as set forth by recital 19, it is the intention of MiFID II in line with the communiqué of the G20 finance ministers and central bank governors of 15 April 2011 that participants on commodity derivatives markets are subject to appropriate regulation and supervision. For this reason the co-legislators have modified and narrowed down the exemptions provided for in MiFID I. In particular, MiFID II aims to capture non-financial firms dealing in financial instruments in a disproportionate manner compared with the level of investment in the main business. In order to ensure appropriate regulation, the co-legislators have determined that intra-group transactions, transactions in derivatives that are objectively measurable as reducing risks directly relating to commercial activity or treasury financing activity and transactions in commodity derivatives and emission allowances entered into to fulfil obligations to provide liquidity shall be deducted from the ancillary activities. Therefore, in relation to the first test only trading activity undertaken for non-hedging purposes has to be taken into account. The test will include a comparison of the capital employed by the person seeking the exemption for trading activities undertaken in the EU for non-hedging purposes on the one hand and the capital employed for the overall activity undertaken by the whole group globally on the other hand. Taking into account the intention of the legislation and the revised calculation methodology, ESMA proposes to set the threshold at 5%.
39. ESMA would also like to clarify that the comparison of the ancillary activity against the main activity (the ancillary test) should be done by comparing all ancillary activities taken together against the main activity. Where a firm undertakes only one of the ancillary activities mentioned in Article 2(1)(j) (i.e. dealing on own account or providing investment

services), it would only have to undertake the ancillary test on the basis of this individual ancillary activity.

Q173. Do you consider that a threshold of 5% in relation to the first test is appropriate? Please provide reasons and alternative proposals if you do not agree.

Definition of the term 'capital'

40. In its DP ESMA pointed out that the term 'capital' may be interpreted in different ways and either a regulatory, economic or accounting capital measure could be used. Due to the lack of a clear definition, ESMA considered that economic capital would be difficult to measure. Furthermore, ESMA envisaged calculating the capital measure by using figures that firms already calculate, rather than requiring new calculations. As using a regulatory capital measure would be inappropriate for unregulated firms that may not perform a regulatory capital calculation, ESMA favoured the use of an accounting capital measure. As an alternative, ESMA considered using an economic capital measure.
41. Most of the respondents prefer the use of the accounting capital measure for reasons of simplicity and availability. They believe that this approach would enable a consistent application of the rules across all market participants as company balance sheets and financial figures are independently audited on a yearly basis mainly relying on IFRS or equivalent principles and are publicly available. This approach would avoid additional compliance burden for firms. However, some respondents point out that it may be difficult to assign capital under accounting capital measures to the different activities, i.e. the ancillary activities, the group's main business and the privileged transactions. They see a need for further clarification on the definition of accounting capital and a need for identifying proxies in order to determine the respective amount of the capital employed for the different activities. It was suggested that ESMA defines capital as encompassing equity, current debt and non-current debt. Potential proxies suggested for the capital employed for ancillary activity and privileged transactions include the fair value considering the net position of all deals and being widely used for accounting purposes and the amount of collateral posted with CCPs and other counterparties as initial margin when trading in commodity derivatives.
42. Some respondents are of the view that risk-weighted capital rather than gross capital should be taken into account. They claim that potential losses are more relevant than the actual capital allocated when determining the degree to which a company's derivatives book can affect its business. These respondents seem to be in favour of using an economic capital measure as this usually encompasses the risks of activities concerned. Other respondents stated that the capital for a transaction normally covers the risk associated with this transaction. Therefore, they believe that, in relation to intra group and hedging transactions, the capital for the borrower's default risk and, in relation to dealing on own account, the capital for the coverage of the risk of loss has to be taken into account. Some respondents supporting the use of an accounting capital measure

mentioned that ESMA could also use an economic capital measure. They stated that an economic capital approach typically uses a variety of internal stress test methodologies in its calculation and tends to be based on differing proprietary risk evaluation models. However, in the absence of a clear definition, they believe that the use of an economic capital measure would need substantial future efforts in terms of convention and harmonisation as the term is currently not subject to international generally accepted conventions and is not applied in a harmonised manner by firms. Although ESMA asked in its DP for views on the definition of economic capital, ESMA received very few concrete suggestions.

43. Considering the feedback received, ESMA intends to use an accounting capital measure as this is also in line with the wording used in Article 2(4) referring to the “capital employed”. Moreover, despite the fact that the term “accounting capital” requires further clarification, it seems to be the less burdensome approach than defining a common economic capital measure. ESMA is of the view that the term capital should be defined as encompassing equity, current debt and non-current debt.
44. Some respondents suggested that ESMA should also take into account qualitative criteria, including market presence in the relevant activity, VaR used in the relevant activity, compensation structure (e.g. do employees work to sales targets or receive bonuses based on level of business granted), headcount and whether the entity is a member of relevant exchanges or other trading venues. Other respondents did not support such an approach.
45. ESMA is of the view that none of the suggested qualitative criteria should be taken into account. ESMA does not see a legal basis for these criteria. Furthermore, the suggested criteria seem to be directed to establish the market presence in the relevant activity. However, ESMA is of the view that the market presence is already taken into account by the second criterion considering the size of the trading activity relative to overall market size.

Q174. Do you agree with ESMA’s intention to use an accounting capital measure?

Q175. Do you agree that the term capital should encompass equity, current debt and non-current debt? If you see a need for further clarification of the term capital, please provide concrete suggestions.

Size of trading activity

Analysis following feedback from stakeholders and proposal

46. In addition to considering whether a person’s MiFID II activities constitute a minority of activities at a group level, the size of the firm’s trading activity has to be compared with the size of the overall market trading activity. In this regard, the objective should be to capture the size of the firm’s trading activity in the EU rather than all trading activity,

noting that there may be practical difficulties in doing this. Respondents generally welcomed the approach of using only EU trading activity, notably for issues of data availability. Again it is necessary to define how to exclude the physical hedging activities discussed below and how to define the size of the trading activity and the size of the overall market trading activity.

Methodology for calculating the size of trading activity

47. The size of the trading activity should be defined by deducting the sum of the volume of the privileged transactions from the volume of the trading activity of the person undertaken in the EU at group level. The size of the trading activity of the person must then be compared with the size of the overall market trading activity in the relevant asset class in the EU:

<p><u>Calculation for size of trading activity</u></p> <p>Size of the trading activity at group level in the relevant commodity asset class in the EU (numerator)</p> <p style="text-align: center;"><i>divided by</i></p> <p>Size of the overall market trading activity in the relevant commodity asset class in the EU (denominator)</p> <p style="text-align: center;">—————</p> <p style="text-align: center;"><i>Equals</i></p> <p>% of firm’s trading activity in a commodity asset class compared with the size of the overall market trading activity in the EU in that asset class</p>
<p><u>Calculation for determining the size of the firm’s trading activity in a commodity asset class at group level in the EU (numerator)</u></p> <p>Volume of the overall trading activity in the relevant commodity asset class of the person seeking the exemption at group level in the EU</p> <p style="text-align: center;"><i>minus</i></p> <p>Volume of privileged transactions (i.e. for intra-group transactions, transactions in derivatives reducing commercial and treasury financing risks, and transactions entered into to fulfil obligations to provide liquidity) in the relevant commodity asset class at group level in the EU</p> <p style="text-align: center;"><i>minus</i></p>

Volume of trading licensed activity (i.e. trading activity that is undertaken by a MiFID authorised entity of the group) in the relevant commodity class at group level in the EU

equals

Size of the firm's trading activity in a commodity asset class at group level in the EU

48. When defining the size of the trading activity it should be noted that derivatives on wholesale energy products defined under Article 2(4) REMIT are not financial instruments in accordance with Article 4(1)(15) and Annex I C 6 MiFID II provided that they are traded on an OTF and “must be physically settled”. Furthermore, it has to be determined how the volume of the overall trading activity of the person at group level and the volume of the transactions entered into in order to hedge physical activities are defined.

49. In the DP ESMA asked whether the trading volume should be measured as number of contracts or nominal value of contracts bought and sold during a specific period of time. Almost all respondents to the consultation suggest using the gross notional value of contracts held. Some suggested including a timeframe and specifying the contracts to be included for this measure, but ESMA considers the timeframe and scope for this measure should be the same as that for the calculation in general.

Q176. Do you agree with the proposal to use the gross notional value of contracts? Please provide reasons if you do not agree.

Q177. Do you agree that the calculation in relation to the size of the trading activity (numerator) should be done on the basis of the group rather than on the basis of the person? (Please note that that altering the suggested approach may also have an impact on the threshold suggested further below)

Commodity asset classes

50. As expressed in the DP ESMA is of the view that where an entity operates simultaneously in different commodity markets, and exceeds the threshold set for one asset class of commodities but not another, it will be subject to MiFID II for all commodity asset classes. Some respondents argued against this view, but ESMA finds no basis in the legal text for alternative interpretations. ESMA suggested in the DP that the size of the trading activity could be divided into broad asset classes as follows: Metals, Oil, Coal, Emission allowances, Gas, Power, Agricultural products and Freight.

51. Respondents generally agreed with ESMA's approach of defining wide categories. A few asked for more granular categories. Many, however, argued for categories wider than those presented above, asking to merge the categories related to energy into one. Many respondents also suggested ESMA merge freight with another category or to subsume freight positions into those for the commodity which they serve to transport.
52. ESMA acknowledges the concerns expressed about freight, and considers freight to be a commodity which is ancillary to the trading of other commodities. Freight will therefore not be considered as a separate asset class. ESMA also considered there is a need to add an additional class for commodities which fall under the definition of financial instruments in C10 of article 1 of Annex I of MiFID II and proposes replacing the class 'freight' with 'other commodities, including freight and commodities referred to in Section C 10 of Annex I of Directive 2014/65/EU'. Therefore, ESMA intends to divide the size of the trading activity into the following broad asset classes:
- i. Metals
 - ii. Oil and oil products
 - iii. Coal
 - iv. Emission allowances
 - v. Gas
 - vi. Power
 - vii. Agricultural products
 - viii. Other commodities, including freight and commodities referred to in Annex I C 10 MiFID II

Q178. Do you agree with the introduction of a separate asset class for commodities referred to in Section C 10 of Annex I and subsuming freight under this new asset class?

Use of TR data

53. ESMA also notes concerns that the size of the different categories is not the same, and would therefore lead to some specialised firms being unwittingly caught. However, ESMA does not consider this to be a risk since ESMA intends to set the threshold as a percentage of the overall market activity in the relevant asset class. Therefore, the size of the threshold will be relative to the size of the different categories.

54. ESMA suggests that the size of the trading activity should be determined by comparison of the size of activity against other market participants within the same asset class on a European level, reflecting the characteristics of particular markets.
55. In the DP, ESMA suggested that the use of TRs could be a way for persons wishing to benefit from the exemption to obtain the relevant data on the size of the overall market trading activity. The DP presented at length how TR data contains information on the quantity (i.e. the number of contracts in the report), the notional amount of the contract (i.e. the original value of the contract) and on the purpose (i.e. whether the contract is objectively measurable as directly linked to the reporting counterparty's commercial or treasury financing activity or whether it is for intra-group transactions). Furthermore, trade reports contain details on the underlying commodities.
56. The DP asked whether the data available will enable entities to perform the necessary calculations. Some respondents disagreed, while most agreed. Both opponents and proponents all cited the same issues, noting problems of aggregation across different TR's and commodities, issues around data quality, availability and cost, as well as issues of access to TR's. Many also noted that relevant activity should be limited to EU trading, and argued that firms should be allowed to use their own data as well.
57. Many respondents confirm that TRs do not collect data on transactions that have been entered into in order to fulfil liquidity obligations established by authorities or trading venues, and argue that systems costs will be incurred in order to identify these transactions. ESMA appreciates these concerns, but sees no possibility of identifying these transactions without developing the necessary systems. As these costs would be incurred in order for firms to benefit from an exemption, it would be up to the firm to weigh the relative costs of developing these systems.
58. Some respondents have suggested that position reports might be a better measure for assessing trading activity than TR data. However, ESMA does not understand how this might be the case, as issues of data consolidation would be the same. There appears to be no viable alternative to using TR data for these purposes. Therefore, the size of overall trading activity should be considered on an EU basis using TR data.
59. The DP suggested that TR data may be used for either determining the denominator of the size of trading activity equation only or for identifying both the numerator and the denominator. Accordingly, one option might be that persons wishing to benefit from the exemption could calculate the size of their trading activity on their own and obtain data on the overall market trading activity from the TR. Or that, alternatively, persons may receive data on their own trading activity and on the overall trading activity from the TRs.
60. Views appear to be mixed. A number of respondents suggested that firms should receive both sets of data from the TR's, while others argued that they should also be allowed to use their own data. ESMA considers that, in any case, all firms should use the same basis for their calculations.

61. ESMA continues to believe the advantage of using existing data of TRs is that persons wishing to assess whether they are able to benefit from the exemption under Article 2(1)(j) MiFID II do not have to calculate their trading activity and the overall market trading activity. A further advantage of this approach is that the data is verified by a third party, namely the TR. ESMA therefore suggests that the calculation for the size of the trading activity in the EU of the person seeking the exemption (numerator) and the size of the overall market activity in the relevant asset class in the EU (denominator) should be undertaken on the basis of TR data.

Setting the threshold

62. When defining a threshold for determining whether the person's trading activity is high in relation to the overall market trading activity, Recital 20 requiring that the criteria specified by ESMA should ensure that non-financial firms dealing in financial instruments in a disproportionate manner compared with the level of investment in the main business are covered by the scope of MiFID II should be kept in mind. ESMA aims to capture entities that trade to a significant extent in comparison with authorised firms in a specific asset class. A number of respondents argued against this approach, on the erroneous interpretation that only financial firms' activity would be included in calculating overall market activity. ESMA's aim would be to compare entities' trading activity relative to overall market activity with financial firms' activity relative to overall market activity.

63. Some respondents noted that the level of the threshold could only be assessed once the methodology has been fixed and data are available. ESMA will, however, need to specify both at the same time. Some respondents suggested 50% as a suitable threshold, while others noted this same figure as being a prudent threshold in light of uncertainties over how it might work out in practice. Still others suggested this threshold should be based on the thresholds developed for position limits, and should amount to 5 or 10%.

64. In relation to the second threshold ESMA again has to take into consideration the intention of the co-legislators to narrow down the scope of the exemptions under MiFID II. Furthermore, ESMA notes that also for the second test, only trading activity undertaken for non-hedging purposes has to be taken into account. Transactions undertaken in order to hedge commercial activities and in order to fulfil liquidity obligations are deducted from the size of the trading activity of the person seeking the exemption before the comparison with the overall market trading activity in the relevant asset class takes place. Therefore, ESMA considers it is appropriate to set a low threshold in relation to the second test and suggests setting the threshold at 0.5% of the overall market trading activity in each of the asset classes mentioned above.

Q179. Do you agree with the threshold of 0.5% proposed by ESMA for all asset classes? If you do not agree please provide reasons and alternative proposals.

De minimis exemption

65. Some respondents also suggested a de minimis exemption, under which smaller firms should not be required to undertake further calculations and should not be required to make an annual notification to the competent authority. ESMA appreciates this suggestion, as it would mitigate the impact on the market of every natural or legal person undertaking a transaction in a commodity derivative from having to notify annually the competent authority of the use of the exemption and being required to demonstrate their bona fide use of the exemption on request. Therefore, ESMA has explored the option of introducing a de minimis threshold. However, the mandate given to ESMA in the Level 1 text leaves very limited scope for the introduction of a de minimis threshold.
66. ESMA is not able to introduce a de minimis threshold in relation to the annual notification. The only way ESMA may be able to introduce a de minimis threshold would be to establish a relative threshold comparing the size of the ancillary activity to the main activity of the group. It may be possible to establish a de minimis threshold if a person's trading activity only constitutes a small share of the overall market trading activity in each asset class. For example, a person may not be captured by the scope of MiFID if the size of its trading activity constitutes less than 0.25% of the overall market trading activity in each asset class. A person that falls below this threshold would not have to undertake the first test in relation to the capital employed but would still be required to make an annual notification to the competent authority.

Q180. Do you think that the introduction of a de minimis threshold on the basis of a limited scope as described above is useful?

Privileged transactions

Analysis following feedback from stakeholders and proposal

67. Article 2(4) MiFID II sets three exemptions which shall be excluded from the elements mentioned above:
- i. intra-group transactions as referred to in Article 3 EMIR that serve group-wide liquidity and/or risk management purposes;
 - ii. transactions in derivatives which are objectively measurable as reducing risks directly related to the commercial activity or treasury financing activity; and,
 - iii. transactions in commodity derivatives and emission allowances entered into to fulfil obligations to provide liquidity on a trading venue, where such obligations are required by regulatory authorities in accordance with Union or national laws, regulations and administrative provisions or by trading venues.
68. Recital 21 of MiFID II stipulates that the activities that are deemed to be objectively measurable as reducing risks directly related to commercial activity or treasury financing activity and intragroup transactions should be considered in a consistent way with EMIR.

69. As expressed in the DP, ESMA is of the view that Article 3 EMIR is sufficiently clear regarding what is defined as intra-group transactions serving group-wide liquidity and risk management purposes. Respondents generally welcomed this approach and believe that the use of Article 3 EMIR for defining the exemption of intra-group transactions is appropriate.
70. In the DP, ESMA considered in relation to derivatives transactions objectively mitigating risks relating to the commercial or treasury financing activity, that the wording of Article 10 of the Commission Delegated Regulation (EU) No 149/2013 supplementing EMIR, should be taken into account. Respondents supported this approach, however, they pointed out that the hedging exemption under Article 2(4)(ii) covers all derivatives and is not limited to OTC derivatives as mentioned in Article 10 of the Commission Delegated Regulation (EU) No 149/2013 supplementing EMIR. ESMA appreciates the concern pointed out above and intends to complement the reference in order to include all derivatives and not just OTC derivatives.
71. Furthermore, transactions in commodity derivatives and emission allowances entered into to fulfil obligations to provide liquidity on a trading venue shall not be taken into account, where such obligations are required by regulatory authorities in accordance with EU or national laws, regulations and administrative provisions or by trading venues. An example of such obligations is the mandatory market making requirements established by the UK energy regulator Ofgem obliging the large electricity suppliers to post the prices at which they buy and sell wholesale electricity on power trading platforms up to two years in advance and to trade at these prices. Other examples for obligations to provide liquidity could be established by rules of trading venues. In the DP ESMA asked for other specific examples of obligations to enter into transactions in commodity derivatives or emission allowances in order to provide liquidity on a trading venue. Respondents did not mention any further examples. As further rules or obligations to provide liquidity may be established by trading venues or competent authorities in the future, ESMA is of the view that the examples mentioned above do not constitute an exhaustive list of obligations to provide liquidity.
72. ESMA also expressed the view that the obligation to provide liquidity when engaging in algorithmic trading and pursuing market making strategies under Article 17(3) MiFID II will not be considered as falling under the hedging exemption as the persons performing that activity are excluded from the exemption. Moreover, the requirement imposed by trading venues by means of position management controls under Article 57(8)(d) MiFID II to provide liquidity back into the market at an agreed price and volume on a temporary basis with the express intent of mitigating the effects of a large or dominant position will not be considered as falling into the hedging exemption as this obligation only applies on a temporary basis. Although a number of respondents argued against this approach indicating that if a firm is required to provide liquidity back into the market it would not be able to control the direction and size of the trading it would be required to undertake, ESMA still considers that the obligation to provide liquidity under Article 17(3) and Article

57(8) MiFID II will not be taken into account for triggering the hedging exemption under Article 2(4)(c).

Q181. Do you agree with the conclusions drawn by ESMA in relation to the privileged transactions?

Period for calculation in relation to exemption

Analysis following feedback from stakeholders and proposal

73. Recital 36 sets forth that, in order to benefit from the exemptions, the person concerned should comply on a continuous basis with the conditions laid down for the exemptions. In particular, if a person provides investment services or performs investment activities and is exempted from the scope of MiFID II because such services or activities are ancillary to the main business, when considered on a group basis, the person should no longer be covered by the exemption related to ancillary services where the provision of those services or activities cease to be ancillary to the main business.
74. Furthermore, persons that intend to make use of the exemptions have to notify the NCA accordingly and then on an annual basis and, upon request, have to report to the NCA the basis on which they consider that their activity is ancillary to their main business. In the DP ESMA suggested that the NCA was the authority in the jurisdiction of the place of incorporation of the entity concerned. Most of the respondents to the consultation supported ESMA's proposal as it is consistent with regulatory supervisory regimes already in place and avoids potential conflicts, double regulation and inconsistencies if more than one financial regulator is the competent authority over the same firm. Therefore the proposal is maintained in the CP. If an entity situated in a third country undertakes ancillary activities in the EU and wishes to benefit from the exemption it shall make the notification to the NCA of the Member State where its branch is situated.
75. In order to allow for market participants to plan and operate a business in a reasonable way, the calculation to determine whether a person still fulfils the requirements for the exemption should take place at specified intervals. It would be unhelpful and impractical for the operation of the business if it were possible to 'fall in and out' of regulation due to seasonal patterns of activity. Furthermore, requiring calculations in short time intervals could be prejudicial to smaller firms which are not required to mark-to-market their positions daily. A daily calculation on a rolling basis (as EMIR provides for calculating clearing thresholds) may not be appropriate since falling in and out of the scope of MiFID II has broader implications than falling under the clearing obligation. Falling within the scope of MiFID II, inter alia, results in authorisation requirements, being subject to the trading and clearing obligations and potentially being subject to prudential requirements under CRD IV.

76. In the DP ESMA proposed an annual test regarding whether the requirements of the exemption are still fulfilled based on an audit report, as this approach was in line with the requirement of annual notification.
77. A majority of the respondents supported the annual timeframe for the previously mentioned test, but most of them disagreed with its link to an external annual audit. These answers emphasised that the audit process does not currently cover the data with the granularity needed for the checking of the requirements to benefit from the ancillary activity exemption and, therefore, additional new audit content would have to be set up for this purpose
78. Some respondents proposed that firms report annually to the NCA their figures about their capital employed and trading activities independently of an external audit report. Such a report should be provided by the concerned firm only on a justified request of the NCA or, alternatively, if the above mentioned figures exceeded the “de minimis” thresholds for the benefit of those companies which are far below the ancillary activity thresholds. However, in the DP ESMA stated that, even if calculated annually, the amount of capital employed and the size of the trading activity in financial instruments might fluctuate from year to year. Therefore, a firm may fall within the scope of MiFID II because it fulfils the relevant criteria one year but it may qualify for an exemption from MiFID II the following year.
79. To address this issue ESMA suggested determining the qualification for exemption on the basis of a rolling average of three years, although the notification to the competent authority will have to be made annually as set forth by Article 2(1)(j) MiFID II. This proposal was widely supported: a workable approach for most respondents consisted of monthly input of the data, at the end of every month. At the end of every year the firms would obtain the yearly calendar data as a simple average of the monthly input, and finally the assessment would consist of three rolling calendar years average.
80. Most respondents also noted it is crucial to have a minimum transitional period of twelve months after a firm is deemed to be a MIFID II firm. According to those answers, this is the minimum time taken by licensing proceedings and their preparation until a licence is granted by a financial regulator, and it is the time needed to implement the substantial reorganisation and new compliance obligations that a non-financial firm must establish if it becomes subject to a MiFID licensing regime.
81. Additionally some respondents suggested allowing for a “second chance” for the exemption in the way of a later reassessment after the firm has failed the annual test, in order to allow the firm reduce the trading activity in commodity derivatives to a level below the thresholds. However, ESMA is not including this proposal in the CP as the general procedure that relies on monthly inputs for 36 consecutive months seems to provide several chances to check the firm’s position against the thresholds and decide whether to reduce the trading in these instruments in order to fulfil the requirements to benefit from the exemption in the regular annual test.

82. In the DP ESMA stated that, in order to establish this process of the assessment of a three years rolling average, at the beginning an interim approach would have to be applied and asked for input on this issue. The main features of ESMA's proposal for an interim procedure are that the first period for collecting the data prior to the first notification might be shorter than three years and the following calculations could then be made on an annual basis using a rolling approach until data for a three year period is available to then proceed to the three years on a rolling basis.
83. Most of the respondents were of the view that the first assessment should not be done using trading data before the date of entry into force for MiFID II (3 of January 2017) as they are of the opinion that, before that date, firms must be able to rely on the current own account exemption included in MiFID I. Thus their proposal is that the first notification to the NCA to use the ancillary activity exemption should not be made before January 2018 because the first annual calculation period would finish on 3 January 2018, using trading data from previous year.
84. ESMA does not agree with this approach. A firm that is using the current own account exemption included in MiFID I in 2016 is certainly able to rely on that regulation, but this does not mean that the exemption is automatically extended because the trading data should not be used to perform the ancillary activity test as stipulated by MiFID II. On the contrary, the approach suggested by the respondents means in practice maintaining the current own account exemption under MiFID I and to postpone for one year the actual entry into force of the ancillary activity exemption regime included in MiFID II without the correspondent provision in the Level I text.
85. As there is general agreement on the consideration of a year as the shortest period to be used in the calculations for the ancillary activity annual test, ESMA proposes the following interim approach: on 3 January 2017, persons/groups aiming to make use of the ancillary activity exemption for 2017 must notify the NCA accordingly, based on the trading data from January 2016 to December 2016 (simple average of monthly input). On 3 January 2018 NCAs will receive the notifications for the ancillary activity exemption of 2018, based on the trading data from January 2016 to December 2017 (simple average of 24 monthly inputs) and at the beginning of 2019 the interim period will end as the notifications to make use of the ancillary activity exemption for 2019 will be based on calculations using the 3 year rolling average procedure.
- Q182. Do you agree with ESMA's conclusions in relation to the period for the calculation of the thresholds? Do you agree with the calculation approach in the initial period suggested by ESMA? If you do not agree, please provide reasons and alternative proposals.**

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 28: Draft regulatory technical standards on criteria for establishing when an activity is to be considered to be ancillary to the main business

7.2. Methodology for calculating position limits

Background/Mandate

Article 57(3) of MiFID II

3. *ESMA shall develop draft regulatory technical standards to determine the methodology for calculation that competent authorities are to apply in establishing the spot month position limits and other months' position limits for physically settled and cash settled commodity derivatives based on the characteristics of the relevant derivative. The methodology for calculation shall take into account at least the following factors:*

- (a) the maturity of the commodity derivative contracts;*
- (b) the deliverable supply in the underlying commodity;*
- (c) the overall open interest in that contract and the overall open interest in other financial instruments with the same underlying commodity;*
- (d) the volatility of the relevant markets, including substitute derivatives and the underlying commodity markets;*
- (e) the number and size of the market participants;*
- (f) the characteristics of the underlying commodity market, including patterns of production, consumption and transportation to market;*
- (g) the development of new contracts.*

ESMA shall take into account experience regarding the position limits of investment firms or market operators operating a trading venue and of other jurisdictions.

ESMA shall submit those draft regulatory technical standards referred to in the first subparagraph to the Commission by 3 July 2015.

Power is delegated to the Commission to adopt the regulatory technical standards referred to in the first subparagraph in accordance with Articles 10 to 14 of Regulation (EU) No 1095/2010.

Background

1. Article 57(1) MiFID II requires that Member States shall ensure that competent authorities establish and apply position limits on the size of a net position which a person

can hold at all times in commodity derivatives traded on trading venues and economically equivalent OTC contracts.

2. The position limits are intended to: prevent market abuse, support orderly pricing and settlement conditions (including preventing market distorting positions) and to ensure, in particular, the convergence between prices of derivatives in the delivery month and spot prices for the underlying commodity, without prejudice to price discovery on the market for the underlying commodity.
3. Article 57(3) MiFID II requires ESMA to develop regulatory technical standards to determine the methodology for the calculation that competent authorities are to apply in establishing the spot month position limits and other months' position limits for physically settled and cash settled commodity derivatives based on the characteristics of the relevant derivative. Article 57(3) also requires the methodology for the calculation to take into account at least the following seven factors: the maturity of the commodity derivative contracts; the deliverable supply in the underlying commodity; the overall open interest in that contract and the overall open interest in other financial instruments with the same underlying commodity; the volatility of the relevant markets, including substitute derivatives and the underlying commodity markets; the number and size of the market participants; the characteristics of the underlying commodity market, including patterns of production, consumption and transportation to market; and, the development of new contracts.

Analysis following feedback from stakeholders

Overall comment

4. Respondents were generally supportive of ESMA's proposed approach for the methodology for national competent authorities to use in calculating position limits. However, respondents highlighted the importance of creating a methodology that enables national competent authorities to consider sufficiently the different factors in a broad, proportionate and non-arbitrary manner in order to effectively capture, and to take into account appropriately, the significant specific characteristics of different commodity derivatives and their different markets, and the underlying commodities. With respect to ESMA's question on whether position limits for cash settled contracts should be set with or without reference to the underlying physical market, the majority of respondents considered that they should be based on deliverable supply as for physically settled contracts.
5. In particular, respondents cited the importance of position limits sufficiently taking into account the development of new contracts and the trading of less-liquid contracts. They highlighted that for these contracts there may be very few market participants and as a consequence, those participants' share of open interest would inherently be significantly higher.

Maturity of Contracts

6. Respondents generally agreed that in order to achieve orderly settlement it is necessary to have a different position limit for the spot month compared to that for all other months. A number of respondents suggested that the definition of “spot” should be different between different asset classes. However, ESMA has not been mandated to define this term in the context of the “nearest derivative contract to expiry”⁵⁹ and therefore ‘spot’ will be defined in accordance with commonly understood market practice.
7. Several respondents highlighted the question of how participants would transition their position from the other months limit to the spot limit. Respondents also noted the importance of setting limits at an appropriate level in all other months in order to ensure that there was sufficient liquidity to achieve orderly trading in that commodity derivative. These questions will be addressed by the competent authority ensuring that the characteristics of the specific commodity derivative and the trading in it are considered properly in the application of the seven factors that determine the position limit. ESMA does note that the responsibility to transition smoothly between the other months’ and spot limits is that of the person holding the position and that they should be aware of both limits that will apply and the point at which they change.

Deliverable Supply

8. Respondents supported ESMA’s proposal to obtain data on the quantity of the deliverable supply that is used either as settlement for, or a pricing reference to, a commodity derivative contract from the trading venue that lists the relevant contract. Respondents highlighted the difficulties of obtaining conclusive and reliable information on deliverable supply from other sources and that any information received may not be an accurate reflection of deliverable supply in the underlying commodities market. Therefore, respondents suggested that national competent authorities should be able to adjust the level of deliverable supply by taking into account other quantitative and qualitative factors relating to the specific characteristics of the commodity derivative, its market, and its commodity, which might provide a more robust estimation of deliverable supply.
9. Respondents supported deliverable supply being used as the baseline for the position limit calculation. However, given the potential uncertainties about the accuracy of information on deliverable supply above, the vast majority of respondents highlighted the risk to market liquidity of the baseline figure being incorrectly established and consequently of position limits being set too low. Respondents therefore proposed that national competent authorities should be able to set position limits at a higher level if necessary, in order to avoid adversely impacting the smooth and orderly functioning of the market.

⁵⁹ Note that ESMA has been mandated to consider the definition of “spot” for the purpose of establishing whether a C7 derivative contract has the characteristics of other derivative financial instruments.

Open Interest

10. There was a mix of views on how the methodology should consider open interest across global commodity markets as a means of establishing a figure for the open interest in a particular commodity derivative contract that is traded on a trading venue. Some respondents noted that MIFID II is a piece of legislation with a European scope and therefore regard it as unnecessary to consider other financial markets. Those respondents that supported the use of global data emphasised that commodities are generally a global market, and that the volumes of trading in similar financial instruments is a relevant factor in setting an appropriate position limit.

Volatility

11. A majority of respondents commented that the volatility of the markets in commodity derivatives is not a relevant factor in determining the size of a position limit that should apply to commodity derivatives on those markets. These respondents questioned how this factor could be meaningfully included in the calculation. Many respondents also pointed out the lack of available data on market volatility and questioned how competent authorities may obtain this. However, ESMA notes that this factor is included in Article 57 of MiFID II as a relevant factor and therefore ESMA cannot exclude volatility from the methodology.
12. Several respondents commented that the volatility of a particular commodity derivative contract typically arises from a lack of liquidity in that contract or other structural features related to the underlying market, and therefore observed that position limits should not be so restrictive as to drive liquidity from the market with negative effects on end-users, i.e. that position limits should not further increase volatility.

Number and Size of Participants

13. A significant majority of respondents agreed with ESMA's proposals that in a "normal market" scenario where there are more participants to "share around" the contracts, a person's position can become individually dominant at a lower level. In a new or illiquid market the lack of participants can lead to a participant having a sizeable, and potentially dominant, market share, perhaps regardless of whether they intend to or not.
14. A number of respondents with specific knowledge of the subject agreed that concentration of positions in a market will particularly be a factor in national gas and power markets, which may need to set limits to reflect the existence of 'national champions', depending on the extent of fragmentation of former state-owned incumbents and the terms of any market maker schemes operated by venues as necessary for proper market operation.

Characteristics of the underlying commodity markets

15. Respondents highlighted the importance of the methodology taking into account sufficiently the specific characteristics of commodity derivatives, their markets, and their underlying commodities in order to set appropriate position limits that support smooth and orderly functioning of those markets. A narrow and arbitrary approach could result in the significance of important characteristics not being properly taken into account. This may result in position limits that act to undermine market liquidity and orderly settlement. Respondents overwhelmingly agreed that competent authorities should consider the nature of the physical market in applying the methodology to determine position limits. In particular, respondents noted the seasonality that is present in many commodity markets, of both an extractive and agricultural nature, and the necessity of a position limit regime that accommodated these changes, although it was also highlighted that the position limits should be stable in nature and that they should not change with such frequency as to be disruptive to market participants or disincentivise the participation of end users in commodity markets.
16. Some respondents highlighted the complexity of the different factors and the relationships between them and proposed that competent authorities should be able to apply different factors differently across different commodity derivatives to ensure that the specific characteristics of different commodity derivatives were sufficiently taken into account. Respondents also emphasised the importance of national competent authorities taking into account the experience of trading venues when considering position limits on commodity derivative contracts that are traded on those venues.

New Contracts

17. In considering the characteristics of a new contract in relation to the setting of position limits, a significant number of respondents emphasised the need to treat these commodity derivative contracts on a case by case basis, and not seek to apply a standardised treatment to these products. Respondents also noted that new contracts are initially illiquid and often remain illiquid for some period of time. New contracts may be used by a smaller number of participants and such contracts would therefore require higher position limits, in a similar manner to the factor of the consideration of the number of participants in a market. A number of respondents emphasised that during the launch period of a contract, the trading venue involved may be better placed than the competent authority to oversee a position limit regime for new contracts as they would have better quality information on the participation and nature of trading in that contract.
18. ESMA also notes the comment made by a small number of respondents that the creation of new contracts in a lookalike manner should not be capable of being used to circumvent position limits on other, equivalent, existing commodity derivative contracts.

Other Factors

19. In considering whether there are other factors that should be incorporated in the methodology for establishing position limits, a small number of respondents suggested

that limits should consider the level of “speculation” in a commodity derivative as a measure that may be set. ESMA considers that this measure is impractical as MiFID II does not provide a definition of speculative activity. MiFID II further does not distinguish between the activities of persons that are not non-financial entities that may be judged to be speculative and their activities that provide liquidity to the market for the benefit of end-users.

20. Other respondents commented that the use of seven different factors would already make the position limit methodology complex and difficult to understand, and expressed a preference for fewer factors rather than more. ESMA is not empowered to reduce the number of factors to be taken into account beyond those set out in Article 57(3) MiFID II. Some respondents highlighted the importance of the position limits set by the national competent authority and the position management regime of the trading venue being complementary in order to avoid conflicting requirements which might adversely impact on the orderly pricing and settlement of commodity derivatives.

Proposal

The framework methodology

21. ESMA proposes to maintain the key features of the methodology it set out in the DP and, based on feedback, to set position limits for both cash settled and physically settled contracts with reference to the deliverable supply. The baseline figure for the position limit for each commodity derivative, for both spot month limit and the other months limit, will be 25% of deliverable supply that would be available for the spot month contract, or for the appropriate prediction of deliverable supply that will be available to meet the obligations arising for the other months. The deliverable supply will mean the commodity that is used either as settlement for, or as a pricing reference to, that commodity derivative contract. ESMA is of the view that the limit for the spot month should in general be lower than the other month limit. This is to reflect the fact that this limit will apply to a single month, whereas the other months’ limit will apply to positions that are held across a multiple of expiries.
22. In assessing the factors under Article 57(3)(a) to (g) of MiFID II, competent authorities will have the flexibility to adjust this baseline figure by an absolute value of plus or minus 15% (so that no position limit will be higher than 40% of deliverable supply or lower than 10% of deliverable supply) depending on the extent to which competent authorities consider the potential impact of such factors require the baseline figure to be adjusted. Although the position limit will be determined as a percentage of deliverable supply, the limit itself will be specified for market participants in lots, with lots meaning the unit of quantity used by the trading venue on which the commodity derivative contract trades. ESMA will publish and maintain a list of position limits and position management controls in place in the EU on its website, as required under Article 57(10).

- Q183. Do you have any comments on the proposed framework of the methodology for calculating position limits?**
- Q184. Would a baseline of 25% of deliverable supply be suitable for all commodity derivatives to meet position limit objectives? For which commodity derivatives would 25% not be suitable and why? What baseline would be suitable and why?**
- Q185. Would a maximum of 40% position limit be suitable for all commodity derivatives to meet position limit objectives. For which commodity derivatives would 40% not be suitable and why? What maximum position limit would be suitable and why?**
- Q186. Are +/- 15% parameters for altering the baseline position limit suitable for all commodity derivatives? For which commodity derivatives would such parameters not be suitable and why? What parameters would be suitable and why?**
- Q187. Are +/- 15% parameters suitable for all the factors being considered? For which factors should such parameters be changed, what to, and why?**
- Q188. Do you consider the methodology for setting the spot month position limit should differ in any way from the methodology for setting the other months position limit? If so, in what way?**
23. There are two circumstances where ESMA considers there may be, in particular, justification for permitting greater flexibility in setting position limits than the method described above, i.e. that the limits could be lower than 10% or higher than 40% of deliverable supply. These circumstances are when new commodity derivatives are being developed and when the markets in commodity derivatives are illiquid. ESMA notes Recital 130 of MIFID II requires that position limits should not create barriers to the development of new commodity derivatives. Therefore there may be cases where competent authorities need to apply position limits that are higher than average to support the development of a new commodity derivatives. The purpose of the higher position limits would be to ensure that they do not constrain liquidity or prevent the participation of end users for new commodity derivatives and take into account the time required to develop and attract liquidity on both new and existing commodity derivatives, and in particular such commodity derivatives that may be supporting bespoke or immature markets or be seeking to develop new hedging arrangements in new commodities.
24. ESMA seeks views from respondents regarding how they consider the methodology should address the issue of new contracts and illiquid markets.
- Q189. How do you suggest establishing a methodology that balances providing greater flexibility for new and illiquid contracts whilst still providing a level of**

constraint in a clear and quantifiable way? What limit would you consider as appropriate per product class? Could the assessment of whether a contract is illiquid, triggering a potential wider limit, be based on the technical standard ESMA is proposing for non-equity transparency?

The assessment of factors under Article 57(3)(a) to (g) of MiFID II

25. Based on the feedback described above, ESMA does not intend to add any additional factors that competent authorities must take into account when determining the size of the position limit to those listed under Article 57(3)(a) to (g). With respect to those seven factors that ESMA is required to build into the methodology, it proposes to follow broadly the approach it outlined in the DP.

Maturity of Contracts

26. In determining whether the baseline figure for the position limit should be adjusted because of the potential impact of this factor, ESMA proposes the competent authority makes any adjustment in line with the following principles:

- i. the longer the maturity of a commodity derivative, the higher the overall position limit for the other months' limit may be as there will be a greater number of open positions held by persons; and
- ii. the greater the frequency of expiry of a commodity derivative contract, the higher the overall position limit because traded volume or open interest of a specific contract is smaller when the contract expires more frequently e.g. daily. Therefore the person would hold a higher percentage of the deliverable supply or open interest because the total market size of a single day will be a smaller proportion of the whole market.

Deliverable supply

27. In determining whether the baseline figure for the position limit should be adjusted because of the potential impact of this factor, ESMA proposes the competent authority makes any adjustment in line with the following principles:

- i. the greater the quantity of deliverable supply in the underlying commodity, the higher the overall position limit; and
- ii. the accuracy with which the deliverable supply can be determined, for example, where delivery is from licenced warehouses, deliverable supply is capable of precise and frequently updated measurement.

Q190. What wider factors should competent authorities consider for specific commodity markets for adjusting the level of deliverable supply calculated by trading venues?

Q191. What are the specific features of certain commodity derivatives which might impact on deliverable supply?

Open Interest

28. In determining whether the baseline figure for the position limit should be adjusted because of the potential impact of this factor, ESMA proposes the competent authority makes any adjustment in line with the following principle:

- i. the greater the volume of overall open interest, the higher the overall position limit; and
- ii. other financial instruments which are correlated to the commodity derivative will not be included in the calculation of the volume of the overall open interest.

Q192. How should ‘less-liquid’ be considered and defined in the context of position limits and meeting the position limit objectives?

Volatility

29. In determining whether the baseline figure for the position limit should be adjusted because of the potential impact of this factor, ESMA proposes the competent authority makes any adjustment in line with the following principle:

- i. position limits should not further increase volatility, by, for example, being so restrictive they drive liquidity from the market.

Number and Size of Participants

30. In determining whether the baseline figure for the position limit should be adjusted because of the potential impact of this factor, ESMA proposes the competent authority makes any adjustment in line with the following principles:

- i. the greater the number of position holders, the lower the overall position limit, on the basis that a person’s position can become individually dominant at a lower level. In a new or illiquid market, the reverse is true where the lack of participants can lead to a participant having a sizeable, and potentially dominant, market share, perhaps regardless of whether they intend to or not.

ESMA notes that there is a commonality between this factor and the factors for developing new contracts and for the amount of overall open interest.

Q193. What participation features in specific commodity markets around the organisation, structure, or behaviour should competent authorities take into account?

Characteristics of the underlying commodity markets

31. In determining whether the baseline figure for the position limit should be adjusted because of the potential impact of this factor, ESMA proposes the competent authority makes any adjustment in line with the following principles:

- i. the greater the flexibility of the commodity market, the higher the position limit. In considering the extent to which the underlying commodity market is flexible, the competent authority will consider:
 - a. whether there are restrictions on the supply of the commodity including but not limited to the perishability of the deliverable commodity;
 - b. the method of transportation and delivery of the physical commodity including but not limited to whether the commodity can be delivered to specified delivery points only and the capacity constraints of specified delivery points; and
 - c. the structure of the market, including but not limited to the seasonality present in extractive and agricultural commodity markets whereby physical supply fluctuates over the calendar year; and
 - d. the features of the underlying commodity.

Q194. How could the calculation methodology enable competent authorities to more accurately take into account specific factors or characteristics of commodity derivatives, their underlying markets and commodities?

Development of new contracts

32. As noted above under the section for the framework methodology, ESMA considers there may be justification for permitting greater flexibility in setting position limits when new commodity derivatives are being developed and when the markets in commodity derivatives are illiquid.

33. In determining whether the baseline figure for the position limit should be adjusted because of the potential impact of this factor, the competent authority will make any adjustment in line with the following principle:

- i. the position limit shall be set at a higher level for new contracts.

34. ESMA considers that there is a commonality between this factor and the factors for the number and size of participants and for the amount of overall open interest.

Q195. For what time period can a contract be considered as “new” and therefore benefit from higher position limits?

- Q196. Should the application of less-liquid parameters be based on the age of the commodity derivative or the ongoing liquidity of that contract.**
- Q197. Do you have any further comments regarding the above proposals on how the factors will be taken into account for the position limit calculation methodology?**

Different asset classes

35. In the DP ESMA noted that the application of the methodology would require flexibility to take account of the prevailing different characteristics of different asset classes within commodity markets. Therefore it proposed to group similar commodity markets under high-level asset classes (metals, oil and oil products, coal, gas, power, agricultural products, freight, climatic variables, inflation rates and economic statistics) to permit the application of certain key variable factors under a given class as a basis for deriving the limits. For example, in applying limits to instruments under climatic variables, the methodology would reflect the low volume and relative lack of liquidity.
36. ESMA considers that whilst it is important to consider the different characteristics of the different commodity markets, the factors under Article 57(3)(a) to (g) and the way in which ESMA proposes to frame the methodology provides competent authorities with sufficient scope to take into account the specificities of these different markets without incorporating asset-class specific elements in the methodology.

- Q198. Do you agree with ESMA's proposal to not include asset-class specific elements in the methodology?**

Existing position limits and management regimes

37. Article 57(3) states "ESMA shall take into account experience regarding the position limits of investment firms or market operators operating a trading venue and of other jurisdictions". ESMA is interested in understanding whether the parameters of the proposed methodology differ significantly with any existing position limits and management regimes.
- Q199. How are the seven factors (listed under Article 57(3)(a) to (g) and discussed above) currently taken into account in the setting and management of existing position limits?**

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 29: Draft regulatory technical standards on methodology for calculating position limits for commodity derivatives traded on trading venues and economically equivalent OTC contracts

7.3. Application of position limits

Background/Mandate

Article 57(12) of MiFID II

12. ESMA shall develop draft regulatory technical standards to determine:

- (a) the criteria and methods for determining whether a position qualifies as reducing risks directly relating to commercial activities;
- (b) the methods to determine when positions of a person are to be aggregated within a group;
- (c) the criteria for determining whether a contract is an economically equivalent OTC contract to that traded on a trading venue, referred to in paragraph 1, in a way that facilitates the reporting of positions taken in equivalent OTC contracts to the relevant competent authority as determined in Article 58(2);
- (d) the definition of what constitutes the same commodity derivative and significant volumes under paragraph 6 of this Article;
- (e) the methodology for aggregating and netting OTC and on-venue commodity derivatives positions to establish the net position for purposes of assessing compliance with the limits. Such methodologies shall establish criteria to determine which positions may be netted against one another and shall not facilitate the build-up of positions in a manner inconsistent with the objectives set out in paragraph 1 of this Article;
- (f) the procedure setting out how persons may apply for the exemption under the second subparagraph of paragraph 1 of this Article and how the relevant competent authority will approve such applications;
- (g) the method for calculation to determine the venue where the largest volume of trading in a commodity derivative takes place and significant volumes under paragraph 6 of this Article.

ESMA shall submit those draft regulatory technical standards referred to in the first subparagraph to the Commission by 3 July 2015.

Power shall be delegated to the Commission to adopt the regulatory technical standards referred to in the first subparagraph in accordance with Articles 10 to 14 of Regulation (EU) No 1095/2010.

1. Article 57(1) MiFID II requires that Member States shall ensure that competent authorities establish and apply position limits on the size of a net position which a person can hold at all times in commodity derivatives traded on trading venues and economically equivalent OTC contracts.
2. The position limits are intended to be set in order to: prevent market abuse, support orderly pricing and settlement conditions (including preventing market distorting positions) and to ensure in particular the convergence between prices of derivatives in the delivery month and spot prices for the underlying commodity, without prejudice to price discovery on the market for the underlying commodity.
3. Article 57 MiFID II sets out how national competent authorities should establish and apply position limits:
 - i. Article 57(1) MiFID II states that position limits shall not apply to positions held by or on behalf of a non-financial entity and which are objectively measurable as reducing risks directly relating to the commercial activity of that non-financial entity.
 - ii. Article 57(1) MiFID II states that position limits shall be set on the basis of all positions held by a person and those held on its behalf at an aggregate group level.
 - iii. Articles 57(1) and 57(4) MiFID II state that position limits should be applied to persons' positions in commodity derivatives traded on trading venues and economically equivalent OTC contracts.
 - iv. Article 57(6) MiFID II states that where the same commodity derivative is traded on significant trading venues in more than one jurisdiction, that the competent authority of the trading venue where the largest volume of trading takes place (the central competent authority) shall set the single position limit to be applied on all trading in that contract.
 - v. Article 57(1) MiFID II states that position limits should apply on the size of a net position which a person can hold at all times in commodity derivatives traded on trading venues and economically equivalent OTC contracts.
4. Article 57(12) MiFID II requires ESMA to develop draft regulatory technical standards to further specify how the elements above should be applied for position limits.
 - i. the criteria and methods for determining whether a position qualifies as reducing risks directly relating to commercial activities;
 - ii. the methods for determining when positions of a person are to be aggregated within a group;
 - iii. the criteria for determining whether a contract is an economically equivalent OTC contract to that traded on a trading venue in a way that facilitates the reporting of

positions taken in equivalent OTC contracts to the relevant competent authority as determined in Article 58(2) MiFID II;

- iv. the definition of what constitutes the same commodity derivative and significant volumes under Article 57(6) MiFID II;
- v. the methodology for aggregating and netting OTC and on-venue commodity derivatives positions to establish the net position for purposes of assessing compliance with the limits. Such methodologies shall establish criteria to determine which positions may be netted against one another and shall not facilitate the build-up of positions in a manner inconsistent with the objectives set out in Article 57(1) MiFID II.
- vi. the procedure setting out how persons may apply for the exemption and how the relevant competent authority will approve such applications;
- vii. the method for the calculation to determine the venue where the largest volume of trading in a commodity derivative takes place and significant volumes under Article 57(6) MiFID II.

Analysis following feedback from stakeholders

Notice periods

5. In the DP, ESMA asked stakeholders for views regarding transitioning into new position limits, specifically, what period a position limit should be fixed for a specific contract (except in exceptional cases) and how much notice of subsequent adjustments to a position limit would respondents consider appropriate.
6. All respondents agreed with ESMA's proposal that position limits should be set for a fixed period rather than amending them on a real time basis. Opinions varied, however, regarding the length of such a period, depending on the type of commodity targeted or on the periodicity of the publication of the deliverable supply statistics. Approximately half of respondents proposed an initial period of two years followed by annual reviews.
7. Most of the respondents considered it important that there is a sufficiently long notification period of changes to existing position limits to minimise potential market disruption. A majority supported a 3 to 6 month notice period for new limits although some respondents considered a shorter period would be manageable. Respondents also noted that the notification period is strongly linked to a number of factors including: frequency of the periodic review, itself linked to the type of commodity and the access of deliverable supply data; the grandfathering of open positions prior to the revision; and, the level of the limits and of their revisions.

8. ESMA does not address these points in the attached RTS as they are not within the mandate; however, it notes this is an important implementation issue that will form part of its and national competent authorities' later work to make this regime operational

Risk Reducing positions Article 57(12)(a)

9. Respondents overwhelmingly agreed with ESMA's approach to defining what are risk reducing positions by linking the usage of the criteria and methods under MiFID II with those already established under EMIR. One respondent expressed a preference for aligning the definition with that of the CFTC's. However, ESMA notes that Recital 21 requires risk reducing activities to be considered in a consistent way with Regulation (EU) No 648/2012 (EMIR)
10. Some respondents suggested that ESMA should specifically state that the use of portfolio, macro or proxy hedging techniques of itself constitute risk reducing positions. ESMA is of the view that this is unnecessary and inappropriate as (i) these terms are by their nature imprecise and open to differing interpretations; and (ii) it may produce outcomes that are inconsistent with the treatment of risk-reducing positions under EMIR.
11. ESMA notes that OTC Question 10(c) of the ESMA EMIR Q&As⁶⁰ clarifies the approach to be taken when it is not possible to establish a one-to-one link between a derivative and a specific risk arising from commercial activities. ESMA proposes that persons will be expected to follow a similar approach, and notes that following the issuance of the EMIR Q&A, persons have opted for a tagging system to ensure that each trade or position is identifiable as either a hedge or a speculative trade or position. ESMA expects that the treatment adopted for these trades will be consistent and auditable for the purpose of assuring compliance with MiFID II.
12. ESMA is of the view that Article 3 EMIR is sufficiently clear regarding what is defined as intra-group transactions serving group-wide liquidity and risk management purposes. Therefore, ESMA intends to refer to Article 3 EMIR without providing further guidance.
13. Article 57(1) states that position limits will not apply to positions held by or on behalf of a non-financial entity which are objectively measurable as reducing risks directly relating its commercial activity. In the absence of a definition of 'non-financial entity' respondents agreed with ESMA's proposal that a non-financial entity is considered as any entity which is not a financial institution under MiFID II or other relevant EU legislation.
14. A number of comments were received that highlighted that the definition of a financial entity, and hence its inverse of a non-financial entity should include entities that are outside the EU but would be a financial entity under the various directives if their activities were performed in the EU. ESMA agrees with this proposal on what should be considered a financial entity and non-financial entity.

⁶⁰ <http://www.esma.europa.eu/page/post-trading>

15. A proposal was received that there be a “positive definition” of a non-financial entity based on the holding of physical assets or production capacity. Whilst this could be seen as having certain advantages, it also would create overlaps or gaps between MiFID II and different EU legislation. It would also be vulnerable to abuse, e.g. by a bank that owned an oil refinery, unless a clear hierarchy of definitions was established. Thus ESMA does not consider that this proposal offers particular advantages and introduces significant additional complexity.
16. Some respondents gave examples of scenarios where they considered that entities either should, or should not, be within the scope of the Article 57 regime, and they perceived that MiFID II would not deliver this outcome. ESMA notes that the scope of the regime is defined in the Level 1 text, and it is not possible for ESMA to amend the intentions set out by the co-legislators.

Q200. Do you agree with the proposed draft RTS regarding risk reducing positions?

Q201. Do you have any comments regarding ESMA’s proposal regarding what is a non-financial entity?

Methods for aggregation of a person’s positions within a group (Article 57(12)(b))

17. ESMA is required by Article 57(12)(b) MiFID II to develop the methods to determine when positions of a person should be aggregated within a group. In the context of MiFID II, the term “group” is defined in Article 2(34) and provides a cross-reference to Article 2(11) of Directive 2013/34/EU (“Accounting Directive”). This states that a group is “a parent undertaking and all its subsidiary undertakings”, and the proposals relating to position limits are to be read in relation to this definition.
18. Article 57(1) MiFID II states that the position limit requirement applies to positions which a ‘person’ can hold. In common with the position reporting obligations set out in Article 58(2) and (3), this requires the application of the limits to the positions held by the end customer, which may be either a legal person or a natural person. Applying limits at the level of the end customer addresses the risk of a customer holding, through several intermediaries, positions which are individually of moderate size but in aggregate may be considered significant.
19. In order for the limits to be applied correctly to all positions held by a person and also those held on its behalf, an aggregation is required. ESMA proposes that the aggregation comprise of the positions of a person (whether held directly by itself or on its behalf by third parties such as investment firms under a client relationship) together with those of any wholly or partly owned subsidiaries of that entity, but not aggregation with the positions of fellow subsidiaries of a mutual parent or ultimate holding company.

20. For the purpose of consistency within EU legislation, reference has been made to the definitions in EU Accounting Directive 2013/34/EU regarding entities, group structures and concepts of control.
21. A majority of respondents agreed with ESMA's proposal to aggregate the positions in commodity derivatives that a person holds or controls. A number of respondents discussed the precise level of ownership that may, or may not, reflect control over the activity of a subsidiary undertaking. In this respect ESMA believes that the specification of a specific percentage within MIFID II framework may provide opportunities for avoidance of the rules that alignment with the concepts expressed in the Accounting Directive do not.
22. ESMA proposes that the commodity derivative positions of a person should be aggregated on a 'whole' position basis with those that are under the beneficial ownership of the position holder which means that although a firm may own a percentage of another firm it must aggregate the position in its entirety and not on a pro rata basis the position held by that firm according to the percentage of its holding). ESMA notes that this approach could lead to double counting and seeks stakeholders views on whether they consider any issues may arise from such.

Q202. Do you agree with the proposed draft RTS regarding the aggregation of a person's positions?

Q203. Do you agree with ESMA's proposal that a person's position in a commodity derivative should be aggregated on a 'whole' position basis with those that are under the beneficial ownership of the position holder? If not, please provide reasons.

Criteria for determining an Economically Equivalent OTC Contract (Article 57(12)(c))

23. For the purpose of preventing the avoidance of position limits on exchange traded derivative contracts (ETD) by persons entering into Over The Counter (OTC) contracts instead, ESMA is required by Article 57(12)(c) MiFID II to determine the criteria by which an OTC contract is judged to be economically equivalent (an EEOTC) to an ETD that is traded on an EU trading venue.
24. ESMA initially proposed that the criteria for determining "economically equivalent" should be the same as the usage of that term in other parts of MIFID II, most notably for the purpose of the access provisions. ESMA further asked for comments on whether cash-settled and physically-settled EEOTCs should be considered to be comparable to the ETD that is traded on a trading venue.
25. Respondents largely disagreed with ESMA using the same definition of economically equivalent as used in other parts of MIFID II. Such respondents highlighted that the terms embodied different concepts and usage. Accordingly, ESMA does not propose

aligning its definition of what economically equivalent means in its draft regulatory technical standard on position limits with the definition used in other parts of MiFID II.

26. The majority of respondents favoured a CFTC-style approach to equivalence rather than a rigidly rules-based approach. Emphasis was placed on the need for clarity of the definition and the linkage to the on-venue ETD to which an OTC would be equivalent. Respondents also emphasised the benefits of global regulatory consistency, where this was possible under MiFID II, with a consequent reduction in the complexity of systems required by firms that are subject to different regimes.
27. A significant number of respondents considered that both cash-settled and physically-settled EEOTCs should be considered to be comparable to the ETD that is traded on a trading venue, as the requirement set out in the Level 1 text is for an equivalence of economic outcome i.e. financial value rather than an equivalence in terms of the deliverable asset underlying the OTC contract. Whilst it was noted by one respondent that cash-settled and physically-settled contracts are usually entered into for different purposes, ESMA notes that where a non-financial entity enters into a position in a commodity derivative for risk-reducing purposes it would anyway be excluded from the position limits regime under Article 57(1).
28. ESMA proposes that the criteria for an EEOTC are based upon an OTC contract being referenced to an ETD contract that is traded on a trading venue within the European Union, or has fundamentally the same characteristics with regard to the contract specification as the relevant ETD contract.
29. ESMA notes that respondents continue to have different views concerning the scope of EEOTC contracts. Some respondents argue for a wide scope for EEOTC contracts so that they can net down their long and short positions over a wider number and range of contracts. ESMA's view is that there should be a narrower scope for EEOTC contracts as a wider scope would risk diluting the integrity of position limits for commodity derivatives by allowing inappropriate netting of positions. A wide approach would also create additional complexity and uncertainty for position holders as regards the same commodity derivative potentially being simultaneously subject to several position limits.

Q204. Do you agree with the proposed draft RTS regarding the criteria for determining whether a contract is an economically equivalent OTC contract?

Definition of the same commodity derivative (Article 57(12)(d))

30. ESMA is required under Article 57(12)(d) MiFID II to define what constitutes the same commodity derivative. A central competent authority has responsibility for setting the position limits on the same contract, when the same contract is traded on two or more trading venues that are within the European Union.

31. In the view of ESMA, “same” is a subset of economically equivalent. A commodity derivative is the same if it is at least economically equivalent and in addition has other equivalent properties, such as accepting the same deliverable supply for settlement, and the contracts are traded under or with reference to the same set of trading venue rules. ESMA notes that it is not possible for a cash-settled contract to be the same as a physically-settled contract and vice versa.
32. ESMA notes that, by definition, an EEOC contract cannot be the same as a contract that is traded on a trading venue under the rules of that trading venue.
33. A majority of the respondents agreed with ESMA’s proposal on the definition of the same derivative contract. A minority of respondents expressed the view that the terms “same” and “economically equivalent” were synonyms and the definition and usage should be identical. ESMA disagrees with this view as it is possible for a contract to be economically equivalent in terms of outcome without necessarily being the same in all its characteristics.
34. ESMA proposes that the definition of same derivative contract is where an identical contract is traded independently on two or more different trading venues, under the same rules of a trading venue, and creates a single fungible pool of open interest.

Q205. Do you agree with the proposed draft RTS regarding the definition of same derivative contract?

Definition of significant volumes on trading venues for same commodity derivatives (Article 57(12)(d))

35. ESMA is required under Article 57(12)(d) to define what is a significant volume of trading in a same commodity derivative. For the avoidance of doubt, ESMA notes that this will only be required where the same contract in a commodity derivative is traded on two or more trading venues within the European Union.
36. ESMA believes that it would be contrary to the objective of Article 57 MiFID II of preventing market abuse to facilitate a different treatment of the same contract on different trading venues. This would permit the avoidance of a specific position limit by the mere selection of an alternative trading venue for the same commodity derivative contract that had a different position limit.
37. Therefore as an anti-avoidance measure ESMA proposed that where the same commodity derivative contract is traded on two or more trading venues within the European Union, the determination of a central competent authority will be required whenever there are more than three lots of open interest in the same commodity derivative contract across more than one trading venue. ESMA notes that trading venues that list the same commodity derivative contract must put in place appropriate

communication and liaison arrangements to ensure that the volumes of open interest are known at all times to the relevant competent authorities.

38. A majority of the respondents agreed with ESMA's proposal on this matter, recognising the importance of establishing a framework within which avoidance of the intent of the position limits regime is not possible.

Q206. Do you agree with the proposed draft RTS regarding the definition of significant volume for the purpose of article 57(6)?

Aggregation and netting of OTC and on-venue commodity derivatives (Article 57(12)(e))

39. ESMA is required under Article 57(12)(e) to define the methodology for aggregating and netting OTC and on-venue commodity derivative positions for the purpose of assessing compliance with the position limits. It is important that the methodology shall not permit the build-up of positions that are inconsistent with the objectives of the position limits regime that are set out in Article 57(1).
40. Respondents noted the rules should recognise the operation of markets in commodity derivatives and the persons that participate within them. A number of important practical issues were raised that will be considered at the implementation stage of MIFID II.
41. Some respondents commented on the existence of third country venues on which derivatives on commodities are listed and noted the impracticality of trying to impose position limits over contracts that are traded on venues outside the European Union. As the Level 1 text does not address the possibility of the same derivative contract being listed on a third-country venue (i.e. a venue that is not a trading venue as defined by MIFID II) and MIFID II is therefore silent on this matter, ESMA considers that the geographical scope of Article 57 is bounded at European level. Therefore the netting and aggregation of positions on third-country venues is not included within the draft regulatory technical standard.
42. Similarly, in establishing the exemption for wholesale energy products under the definition of C6 financial instruments, the Level 1 text expresses the intent that these will be subject to the REMIT regime and not the MIFID II regime. Therefore it would be inappropriate for persons to be permitted to net, or be required to aggregate, instruments that are not financial instruments under MiFID II.
43. ESMA also notes that Article 57(1) MiFID II refers to the holdings of a person in a commodity derivative and EEOC contracts. It does not refer to holdings of an underlying commodity and therefore the netting and/or aggregation of underlying physical assets is not considered to be within the intentions of the Level 1 text.

Q207. Do you agree with the proposed draft RTS regarding the aggregation and netting of OTC and on-venue commodity derivatives?

Procedure for applying for an exemption from commodity derivative position limits (Article 57(12)(f))

44. ESMA is required under Article 57(12)(f) to determine the procedure by which non-financial entities that are holding positions for the purpose of risk-reduction may be exempted from the position limits regime. ESMA is also required to specify how the relevant competent authority will approve such applications.
45. ESMA notes the intention of the Level 1 text is that the exemption is available only in respect of specific positions: it is not a universal exemption for certain types of persons, which exempts them from position limits for all their activities that person undertakes in all commodity derivative contracts regardless of whether they were risk-reducing or speculative.
46. MiFID II does not define to whom the notification of exemption should be made. As the notification is an exemption from the position limits regime in relation to holdings in a specific contract, ESMA considers that this is the basis for the notification. ESMA considers that, for both persons that are incorporated in an EU member state and persons that are incorporated in a third country, the notification should be made to the national competent authority of the relevant trading venue. ESMA considers this to be appropriate as a person may be eligible, as noted above, for an exemption in relation to certain contracts, i.e. related to its commercial activities, and not eligible for an exemption in relation to other activities.
47. ESMA proposes that a person applies for a general exemption from a position limit for risk reducing positions for a commodity derivative to the competent authority for the trading venue for that contract. The competent authority may require the person to demonstrate that a specific position is risk reducing and may withdraw the exemption for that position if insufficient information is provided.
48. ESMA proposes that each competent authority has up to 30 calendar days to consider a request for a general exemption and to decide whether to approve it, after which a reply will be given.

Q208. Do you agree with the proposed draft RTS regarding the procedure for the application for exemption from the Article 57 position limits regime?

Method for the calculation to determine the trading venue where the largest volume of trading takes place and to determine significant volumes (Article 57(12)(g))

49. ESMA is required under Article 57(12)(g) to define the method for determining the venue on which the largest volume of trading in a commodity derivative takes place. For the avoidance of doubt, ESMA notes that this will only be required where the same in a commodity derivative contract is traded on two or more trading venues within the EU.

50. The overwhelming majority of respondents agreed with ESMA's approach. A significant number of respondents also emphasised that this calculation should only be required when the same commodity derivative contract, as defined by MIFID II, is traded on different trading venues within the European Union. Some respondents disagreed with the principle of a central competent authority for the setting of position limits; however, ESMA notes that the role of the central competent authority is set out in the Level 1 text.
51. ESMA proposes that the draft regulatory technical standard sets out the basis of the determination on a strictly mathematical basis, and that there is no de minimis limit by which this determination is not made.

Q209. Do you agree with the proposed draft RTS regarding the aggregation and netting of OTC and on-venue commodity derivatives?

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 30: Draft regulatory technical standards on the application of position limits for commodity derivatives traded on trading venues and economically equivalent OTC contracts

7.4. Position Reporting

Background/Mandate

Article 58 of MiFID II

1. *Member States shall ensure that an investment firm or a market operator operating a trading venue which trades commodity derivatives or emission allowances or derivatives thereof:*

- (a) make public a weekly report with the aggregate positions held by the different categories of persons for the different commodity derivatives or emission allowances or derivatives thereof traded on their trading venue, specifying the number of long and short positions by such categories, changes thereto since the previous report, the percentage of the total open interest represented by each category and the number of persons holding a position in each category in accordance with paragraph 4 and communicate that report to the competent authority and to ESMA; ESMA shall proceed to a centralised publication of the information included in those reports;*
- (b) provide the competent authority with a complete breakdown of the positions held by all persons, including the members or participants and the clients thereof, on that trading venue, at least on a daily basis.*

The obligation laid down in point (a) shall only apply when both the number of persons and their open positions exceed minimum thresholds.

2. *Member States shall ensure that investment firms trading in commodity derivatives or emission allowances or derivatives thereof outside a trading venue provide the competent authority of the trading venue where the commodity derivatives or emission allowances or derivatives thereof are traded or the central competent authority where the commodity derivatives or emission allowances or derivatives thereof are traded in significant volumes on trading venues in more than one jurisdiction at least on a daily basis with a complete breakdown of their positions taken in commodity derivatives or emission allowances or derivatives thereof traded on a trading venue and economically equivalent OTC contracts, as well as of those of their clients and the clients of those clients until the end client is reached, in accordance with Article 26 of Regulation (EU) No 600/2014 and, where applicable, of Article 8 of Regulation (EU) No 1227/2011.*

3. *In order to enable monitoring of compliance with Article 57(1), Member States shall require members or participants of regulated markets, MTFs and clients of OTFs to report to the investment firm or market operator operating that trading venue the details of their own positions held through contracts traded on that trading venue at least on a daily basis, as well as those of their clients and the clients of those clients until the end client is*

reached.

4. *Persons holding positions in a commodity derivative or emission allowance or derivative thereof shall be classified by the investment firm or market operator operating that trading venue according to the nature of their main business, taking account of any applicable authorisation, as either:*

- (a) investment firms or credit institutions;*
- (b) investment funds, either an undertaking for collective investments in transferable securities (UCITS) as defined in Directive 2009/65/EC, or an alternative investment fund manager as defined in Directive 2011/61/EC;*
- (c) other financial institutions, including insurance undertakings and reinsurance undertakings as defined in Directive 2009/138/EC, and institutions for occupational retirement provision as defined in Directive 2003/41/EC;*
- (d) commercial undertakings;*
- (e) in the case of emission allowances or derivatives thereof, operators with compliance obligations under Directive 2003/87/EC.*

The reports referred to in point (a) of paragraph 1 shall specify the number of long and short positions by category of persons, any changes thereto since the previous report, percent of total open interest represented by each category, and the number of persons in each category.

The reports referred to in point (a) of paragraph 1 and the breakdowns referred to in paragraph 2 shall differentiate between:

- (a) positions identified as positions which in an objectively measurable way reduce risks directly relating to commercial activities; and*
- (b) other positions.*

5. *ESMA shall develop draft implementing technical standards to determine the format of the reports referred to in point (a) of paragraph 1 and of the breakdowns referred to in paragraph 2.*

ESMA shall submit those draft implementing technical standards to the Commission by 3 January 2016.

Power is conferred on the Commission to adopt the implementing technical standards referred to in the first subparagraph in accordance with Article 15 of Regulation (EU) No 1095/2010.

1. Article 58(1)(a) of MiFID II requires investment firms and market operators operating a trading venue to produce and publish weekly position reports (“Commitment of Trader” or “CoT” reports). Article 58(2) requires investment firms trading in commodity derivatives or emission allowances or derivatives thereof outside a trading venue to provide to their competent authority daily position breakdown reports (Position Reports) for commodity derivatives, emission allowances, and derivatives thereof. Article 58(3) of MiFID II notes that data provided to competent authorities should be used to enable the monitoring of compliance with the position limits that are established under Article 57 of MiFID II. Article 58 of MiFID II sets out various requirements for the content and format of these two reports.
2. ESMA has been mandated under Article 58(5) of MiFID II to develop draft implementing technical standards to determine the format of CoT reports in Article 58(1)(a) of MiFID II and the position reports in Article 58(2) of MiFID II⁶¹.

Analysis following feedback from stakeholders

3. Respondents to the DP generally agreed with ESMA’s proposals for the basis and format of the daily Position Reports.
4. A small number of respondents stated that the reporting was duplicative given the existing requirements to provide transaction reports and trade reports under MIFID and EMIR. Certain respondents also commented that the level of detail was insufficient, and further information on the trading strategies and intentions of the position holders should be required. In response to both of these sets of comments ESMA notes that the requirements and scope are determined in the Level 1 text of MIFID II. Some respondents wanted to report net positions. ESMA notes that position reporting has to be gross to support the accurate publication of CoT reports and the maintenance of the position limits regime.
5. There was strong support for ESMA’s proposals to use existing protocols for the identification of and reporting on natural and legal persons that are position holders, and for the use of reference data from trading venues for the identification of commodity derivatives.

Proposed Reporting Formats

6. ESMA proposes the report formats for CoT reports and daily Position Reports in the Annex of the draft ITS.
7. ESMA, where appropriate, will continue to seek to use reporting formats from other market or regulatory initiatives. In particular, ESMA will continue to consider whether and

⁶¹ ESMA will consult on the draft ITS to be developed under Article 58(7) of MiFID in 2015.

how position reporting can be aligned with reporting formats for transaction reporting under MiFID II, particularly for the identification of legal and of natural persons.

Q210. Do you agree with the reporting format for CoT reports?

Q211. Do you agree with the reporting format for the daily Position Reports?

Other Position Reporting Considerations

8. The Level 1 text provides ESMA with a limited mandate to produce technical standards that set out and explain the MiFID II reporting requirements. ESMA is aware of the practical benefits of providing more detail in order to facilitate market participants establishing harmonised position reporting arrangements.
9. Furthermore, the Level 1 text does not provide a mandate for ESMA to establish a comprehensive mechanism for the practical implementation of position reporting between the various parties. For example, the Level 1 text does not mandate ESMA to define the reporting format for trading venues providing daily position reports to the relevant competent authority under Article 58(1)(b) of MiFID II, as opposed to the mandated format of Article 58(2). This may give rise to inconsistencies in implementation that produce inefficiencies and extra costs for persons, investment firms, trading venues and competent authorities.
10. ESMA is aware of this issue and the risks to the objectives of MiFID II that it poses. ESMA plans to further consider what other arrangements may be necessary to facilitate efficient and effective position reporting arrangements and to propose how such arrangements could be communicated to the market. For example, after the format for reports required by Article 58(2) has been determined, ESMA may issue Guidance that the same format of report should be used in applying Article 58(3) for the reporting by investment firms to trading venues and for Article 58(1)(b) for reports by trading venues to competent authorities.
11. ESMA may also explore ways in which it is possible for investment firms to meet their obligations for reporting exchange traded derivatives under Article 58(2) by delegating the reporting to that required by Article 58(3). This would have the benefits of reducing the operational tasks of reporting whilst also avoiding the inherent duplication of position reports that would otherwise occur.

Q212. What other reporting arrangements should ESMA consider specifying to facilitate position reporting arrangements?

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft ITS 31: Draft implementing technical standards on position reporting

8. Market data reporting

8.1. Data standards and formats

1. The new Transaction reporting regime will be standardised throughout the EU, establishing uniform requirements. The Transaction Reporting and Reference data regime, under MiFIR, sets out a number of reporting requirements in relation to the disclosure of transaction data and reference data on financial instruments falling within the scope of MiFID II to the competent authority. The increase in financial instruments scope and data fields to be reported will extend to more trading venues and more firms. The new MiFIR reporting requirements will replace national regimes in existence under current MiFID that will result in all stakeholders (competent authorities, trading venues, investment firms) having to upgrade or replace their system infrastructure.
2. In order to achieve this, ESMA is currently assessing and evaluating key elements of existing technical formats for transaction reporting and financial instruments reference data. The current landscape of these technical formats throughout the EU is currently thoroughly examined. A review of the level of appropriateness of available formats for MiFIR transaction reporting and for financial instruments reference data currently in use is conducted. The current scope includes in particular the following standards: FpML, ISO 20022, TREM (a custom XML format defined by ESMA and currently used for Transaction Reporting and Instrument Reference data exchanges between NCAs), IFX, FIX and XBRL.
3. The aim of this assessment is to evaluate the suitability of the above formats for the MiFIR reporting purpose under to the requirements set under Articles 26 and 27. The assessment involves stakeholder analysis and interaction with key stakeholder groups including investment firms, systemic internalisers, and national competent authorities, trading venues, third party reporting entities and standardisation organisations.
4. The assessment is based on a set of key characteristics, i.e. scope of financial instruments, scope of transactions to be reported, performance, and current application of the standard into other rules or legislations. The reviewed technical formats will go through an assessment making use of selection criteria relevant to the decision-making process on the future MiFIR reporting regime. The criteria used are:
 - i. Scope of standard
 - ii. Level of compliance
 - iii. Implementation feasibility (e.g. cost)
 - iv. Non-functional requirements (e.g. extensibility)
 - v. Openness

vi. Reusability

vii. Level of adoption in other regulatory framework

viii. Governance & Change Management

5. The outcome of the study, which is planned for March 2015, will assist ESMA in selecting the format for transaction reporting and reference data to be used along with their respective standard schema.

Q213. Which of the formats specified in paragraph 2 would pose you the most substantial implementation challenge from technical and compliance point of view for transaction and/or reference data reporting? Please explain.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 32: Draft regulatory technical standards on reporting obligations under Article 26 of MiFIR

Draft RTS 33: Draft RTS on obligation to supply financial instrument reference data

8.2. Obligation to report transactions

Transaction and execution of a transaction

General Approach

1. The concept of transaction for the purpose of transaction reporting under Article 26 of MiFIR is one of the issues that respondents to the Discussion Paper indicated as requiring further clarification. While the majority of respondents supported the principles of the original proposal, they wished for more clarity on the requirements on what the concept of transaction covers and what it does not. In addition, it was requested that other certain specific activity should be excluded. The majority of respondents wanted to restrict activity that was reportable to the extent possible.
2. Respondents also requested alignment of transaction reporting under MiFIR with other European reporting regulation, particularly EMIR.

Definitions

3. Some of those that did not support the proposal raised concerns about the ESMA empowerment disagreeing with the approach of having a definition of execution for the purposes of transaction reporting only. ESMA cannot take these into account as Article 26(9) (h) of MiFIR explicitly requires ESMA to specify both – what constitutes a transaction and execution of a transaction for the purpose of that Article. ESMA also continues to be of the view that transaction reporting is for a specific purpose and as such requires a tailored definition for execution. Some respondents raised concerns about the impact of the transaction reporting definition on other areas. ESMA stresses that the mandate is for execution to be defined for the purposes of Article 26 MiFIR only and relevant specification has been included in the text of the RTS to make this explicitly clear.
4. A few respondents, some of which generally supported the proposal, advised that the definitions for transaction and/or execution of a transaction were too broad and expressed concerns that ESMA is going further than required to comply with MiFIR requirements or than needed for detecting market abuse and ensuring a fair and orderly functioning of the markets. It was suggested that there was a risk that the definitions would include other activity that was not intended to be caught such as advice to clients.
5. Some respondents suggested that the concept of intentionality/intervention by a decision maker should be included as part of the definition of execution of a transaction. ESMA considered this proposal but decided that this could result in some activity that the CAs require in order to monitor for market abuse being excluded. ESMA has therefore decided to retain the definition as it is and specifically exclude activity that CAs are not interested in having reported in a clearly defined list of exclusions.

6. ESMA acknowledges that the definitions for transaction and execution of a transaction are broad but believes that this is necessary to cover the scope of activity that CAs need in order to monitor for market abuse and ensure that investment firms act honestly, fairly and professionally and in a manner which promotes the integrity of the market. ESMA confirms that the intention is to only cover activity that is required for market monitoring purposes and is only seeking to capture instances where the investment firm is acting directly itself or instructing a third party to undertake the actions and not to capture changes of positions which occur as a result of purely external events. As a result of the feedback to the Discussion Paper, ESMA has clarified and expanded the list of excluded activity and notes that the scope of reportable activity is reduced considerably once the excluded activity is taken into account.
7. Some respondents raised issues around discrepancies between the definition of transaction and execution and the excluded or included activities.
8. ESMA clarifies that the transaction is the outcome and the execution is the activity by the investment firm that results in that outcome. ESMA has defined these separately in the RTS, setting out the outcomes that constitute a transaction and the activity by an investment firm that constitutes execution. Direct action by the investment firm clearly constitutes execution and this includes where it acts through its branches regardless of whether these are located inside or outside of the EEA. Unlike subsidiaries, branches have the same legal identity as the investment firm itself and therefore activity by them is reportable. This is also essential in order to monitor effectively for market abuse. In addition to direct action by the firm, where an investment firm instructs third parties that results in the transaction this also constitutes execution by the investment firm.

Clarification or issues raised on inclusion of specified activity

9. There was very clear opposition by respondents to the inclusion of securities financing activity given the duplication that would arise as a result of the Commission's proposal for Regulation on Reporting and Transparency of Securities Financing Transactions (2014/0017). ESMA agrees that securities financing transactions should be excluded from transaction reporting where they will have been already reported under the above mentioned Regulations.
10. There were many responses requesting clarification around life cycle events (post-trade assignments, novations, modifications and terminations). Respondents advised that the approach proposed in the Discussion Paper (whereby life cycle events are reportable and clearing only activity is not) blurred the line between clearing and execution. They therefore requested clarity on exactly what type of activity was reportable.
11. There was a request that where lifecycle events are managed at the position level rather than the transaction level that they should be reported at the position level as is the case under EMIR.

12. Respondents also raised the issue that post-trade life cycle event information usually rests with the clearing entities and not with those firms that execute the transactions.
13. ESMA recognises the need for clarity in this area and confirms that CAs are not interested in receiving any transactions that arise solely and exclusively for clearing and/or settlement purposes.⁶²
14. ESMA proposes to simplify the approach. The life cycle activity that ESMA regards as most susceptible to market abuse and most useful to regulators is decreases in notional (early and partial terminations) and increases in notional. This is in line with the position taken in the CESR/10-661 guidance. In ESMA's view, the benefit of including other life cycle activity in transaction reporting would not justify the additional complexity and commensurate costs that this would introduce into transaction reporting, particularly since these are already reported under EMIR. ESMA is therefore proposing to include decreases and increases in notional in transaction reporting and exclude assignments and novations in derivatives and portfolio compressions as defined in Article 2(1)(47) of MiFIR. Portfolio compressions are not susceptible to market abuse and were only proposed to be included in order to provide an audit trail for subsequent post-trade events. ESMA has concluded that for CAs to be able to monitor for market abuse, reporting is required at the transaction level rather than the position level and that reporting of the increases and decreases in notional alone should be sufficient without a separate reporting of the compressions in the transaction reports.
15. ESMA therefore proposes that increases and decreases in notional are reported as new transactions. The quantity for the new transaction will reflect the amount of the change (i.e. the amount of increase or decrease). Decreases in notional will be reported as reverses with the quantity field indicating the amount of the reverse. Where an increase or decrease in notional is reported, the original transaction report should not be cancelled or amended. This is in line with the general approach in transaction reporting for acquisitions and disposals. In order that CAs can differentiate these transactions as the result of increases/decreases in notional from other purchases or sales it is proposed that the transactions reports for these transactions are flagged accordingly. This is illustrated below:

Firm A sells protection to Firm B on 21/11/2014 for 2 million in a CDS. The up-front payment is €100,000.

Original report		
Reporting firm	Firm A	Firm B
Trading day	21-11-2014	21-11-2014

⁶² In some scenarios the clearing broker rather than the executing broker has the obligation to report because only the clearing broker has the client information. ESMA clarifies that in such a scenario the clearing broker is executing for transaction reporting purposes and must report that execution. In this instance they are reporting the execution rather than clearing activity.

Buyer	Firm B	Firm B
Seller	Firm A	Firm A
Trading capacity	P	P
Up-front payment	100000	100000
Quantity	2000000	2000000

On 25/11/2014 the parties agree to increase the notional to 5 million and set an additional payment of €125,000

Reporting of increase in notional		
Reporting firm	Firm A	Firm B
Trading day	25-11-2014	25-11-2014
Buyer	Firm B	Firm B
Seller	Firm A	Firm A
Trading capacity	P	P
Up-front payment	125000	125000
Quantity	3000000 ⁶³	3000000
Modification of the contract	I (for increase)	I (for increase)

The two reports taken together indicate that Firm A has sold protection to Firm B for 5 million for a payment of €225,000.

If instead the parties to the original contract agreed to reduce the notional to 1.5 million (by decrease of 0.5 million) with payment for the reduction of €75,000, this would be reported as:

Reporting of decrease in notional		
Reporting firm	Firm A	Firm B
Trading day	25-11-2014	25-11-2014
Buyer	Firm A ⁶⁴	Firm A
Seller	Firm B	Firm B
Trading capacity	P	P
Up-front payment	75000	75000
Quantity	500000	500000
Modification of the contract	D (for decrease)	D (for decrease)

The two reports taken together indicate that Firm A has sold protection to Firm B for 1.5 million for a payment of €25,000.

⁶³ Increase in notional

⁶⁴ Since this is a reduction and A was originally selling, A is now buying

16. While this is a different approach from the reporting of these events under EMIR, ESMA believes this approach is justified by the different purposes of EMIR and transaction reporting, the necessity of CAs receiving the information on changes in notional at the transaction level in such a way that it can be usefully analysed by CAs, the fact that this reporting is in line with the general approach for reporting acquisitions and disposals, the desirability of having a clear distinction between executing and clearing activity and the need to avoid unduly complicating transaction reporting.
17. As a result of ESMA's decision to only require increases and decreases in notional to be reported as proposed above and not require other life cycle events, the compression and early termination field have been removed from the proposed table of fields in Annex 1 of the RTS and a new field 'modification of the contract' has been introduced.
18. Clarification was requested by respondents on whether 'follow on' issuance is reportable, and whether grey market activity is reportable. ESMA confirms that the test for whether activity is reportable is whether the relevant financial instrument falls within the scope of Article 26(2) of MiFIR and if this condition is met then this activity is reportable.
19. Clarification was sought on intra-group activity. There were several comments ranging from suggestions to exclude all such activity from reporting to a suggestion that such activity for the purpose of transferring risk should be excluded. There was also a request for confirmation that transactions between two branches of the same investment firm should be excluded. ESMA considers that where there is a change of position of investment firms within the same group this activity should be reported since otherwise CAs will not be able to link transactions in a chain and there are also risks that changes in positions will not be reported accurately. ESMA does not therefore propose to change the approach. Transactions between branches of the same investment firm or between a branch and the head office of the investment firm will be excluded so long as they are purely internal movements. This has been clarified in the RTS.
20. Some respondents queried the inclusion of the exercise of options as reportable, arguing that holders of options would only exercise them if the option was in the money and that therefore those transactions were not susceptible to market abuse. There were also questions around how exercises of options should be reported (e.g., whether the resultant cash or physical delivery of the underlying or a change to the original option transaction should be reported or both) and suggestions that the counterparty being exercised against should not have to report the resulting transaction since they are not making a decision at the point of exercise but are just being exercised against.
21. Although the CESR/10-661 guidance indicates that ESMA determined that exercise of options was not reportable from the perspective of preventing market abuse ESMA has reconsidered the issue. ESMA believes that there are circumstances where exercises of options or exercises of other financial instruments can be used to commit market abuse, such as exercising out of the money options on the basis of inside information, and

therefore proposes that where a financial instrument is exercised, that results in a purchase and sale of a reportable financial instrument, this is reportable. The party exercising the instrument and the party being exercised against should submit a transaction report showing only the resultant delivery of the underlying, with a flag to indicate that the transaction is the result of an option exercise. No change should be reported to the original transaction report of the acquisition/disposal of the option or other financial instrument. While ESMA considered the issue of whether the party being exercised against needs to report, it is of the view that it is useful for the CAs to see this information and therefore both the party exercising the options and the party being exercised against should report. ESMA thus confirms that since exercises will result in a purchase/sale by the exerciser of the option and a corresponding sale/purchase by the party being exercised against and there is no exclusion for this activity proposed in the draft RTS, these are reportable.

22. For the avoidance of doubt ESMA confirms that a ‘transaction’ includes but is not limited to:
- i. any decrease or increase in notional before the expiry date of a reportable financial instrument;
 - ii. issuance, allotment or subscription, placements ;
 - iii. exercise of options, warrants or convertible bonds or other financial instrument that results in a purchase or sale of a reportable financial instrument;
 - iv. trades in rights;
 - v. transfers between funds;
 - vi. in specie transfers where there is a change in beneficial ownership, gifts and transfers of title;
 - vii. where the acquisition or disposal of the financial instrument or conclusion or termination of the derivative contract was effected by the same investment firm but there was a change in beneficial ownership;
 - viii. where the acquisition or disposal of the financial instrument or conclusion or termination of the derivative contract was between different investment firms belonging to the same group. This includes transactions between an investment firm and one of its subsidiaries or between two subsidiaries of the same investment firm.

Clarifications on Excluded activity

23. There were several requests for clarification that the exclusion of expiry/redemptions as a result of pre-determined contractual terms or mandatory events should also apply to

derivative transactions and not just securities as originally proposed in the discussion paper. ESMA confirms that this is the case and this has been reflected in the draft RTS.

24. Respondents requested clarity on what precisely was meant by corporate events and there were several suggestions that none corporate event, whether mandatory or voluntary should be reportable. The main argument presented for the exclusion of this activity and other events such as transfer of title was that they did not contribute to the price discovery process. ESMA does not consider this to be a valid argument – while CAs are obviously interested in trading activity that contributes to price discovery the test for activity's inclusion within transaction reporting requirements is whether the activity is susceptible to market abuse.
25. ESMA therefore proposes to remove the reference to corporate events but to specify more clearly the actual activity that it intends to exclude from transaction reporting and this has been included in the list of excluded activity in the draft RTS.
26. Respondents also suggested that some activity should be excluded as it represented administrative activity and/or a very low risk of market abuse due to the limited size of the transactions and other restrictions. These respondents raised several examples of such activity such as dividend re-investment plans, employee share incentive plans, and unclaimed assets trusts. ESMA agrees with this concept and therefore proposes to exclude specified activity that is subject to the following criteria:
 - i. Transaction dates are pre-established and published in advance; and
 - ii. The investment decision taken by the investor amounts to an election to enter into the transaction with no ability to vary the terms of the transaction ; and
 - iii. There is a material time delay between the election and the time the transaction is executed; and
 - iv. The transaction value has a specified cap.
27. In summary, the approach in the discussion paper is proposed to be adopted with the following changes or additional clarity:
 - i. The definition of transaction and execution are to be amended to make it clear that a transaction is a reportable outcome and execution is any action by an investment firm that results in a transaction;
 - ii. Outcomes from specified activities that CAs do not believe are susceptible to market abuse are excluded from the definition of transaction;
 - iii. Neither assignments and novations in derivatives nor compressions will be required to be reported, but

- iv. Increases in notional and decreases in notional before the expiry date of an OTC derivative contract will be required to be reported;
- v. The definition of execution is to be amended to make it clear that action by the investment firm that results in a transaction includes where the action is by a branch of the firm whether located inside or outside of the Union.

Q214. Do you anticipate any difficulties with the proposed definition for a transaction and execution?

Q215. In your view, is there any other outcome or activity that should be excluded from the definition of transaction or execution? Please justify.

Transmission of an order

General approach

28. In general the approach proposed in the Discussion Paper was regarded by respondents as too complex and costly to comply with by both transmitting firms and receiving firms. Several respondents noted that in practice the result would be that firms would transaction report rather than transmit the required details. However, most of the difficulties appeared to relate directly or indirectly to the increased complexity of transaction reporting under MiFIR, specifically the requirement to report designation to identify a short sale, decision maker and enhanced client identifying details.
29. The difficulties mentioned for transmitting firms seeking to rely on the fact that they had complied with the conditions in respect of transmission of the details were that:
- i. They would have to have a large number of bilateral agreements in place;
 - ii. The requirements could be different for different counterparties; and
 - iii. Agreeing formats and procedures would be onerous.
30. The difficulties for receiving firms were:
- i. The fact that data not normally present on an order would have to be provided by the transmitting firm;
 - ii. Agreeing formats and procedures would be onerous;
 - iii. There could be difficulties in verifying the accuracy of their transaction reports since some of the data was provided by the transmitting firm.
31. Some respondents advised that the current approach for receipt and transmission worked well. However, under the current arrangements, CAs receive a multiplication of

some positions in some instances or do not receive client information in other situations as the criteria for determining whether receipt and transmission has taken place are not sufficiently clear. The current approach also does not cater for the information required for the additional fields relating to client information.

32. The only other variation to the approach proposed was that there should not be a requirement for the receiving firm to be an EEA firm with reporting responsibilities and that instead a contractual arrangement with the receiving firm whereby the receiving firm would transaction report should suffice. However, ESMA does not consider this to be a feasible solution since there would not be any requirements on the receiving firm to transaction report accurately and no sanctions could be applied to the reporting firm in the event the reports were incomplete or inaccurate.
33. A couple of respondents also raised concerns over the security and data protection aspects of the information, particularly when an onward chain was involved.
34. Given Article 26 of MiFIR requirements there is little scope to simplify the approach and no viable alternative was proposed. ESMA has therefore decided to retain the general approach proposed but to clarify areas where respondents did not find the proposal sufficiently clear.

Definition

35. Respondents requested clarification in the draft RTS that transmission has a specific meaning for transaction reporting and that it applies to investment firms carrying out receipt and transmission where an investment firm receives an order from a client and sends this to a third party to be filled and also to investment firms acting on a discretionary basis placing an order with a third party.
36. ESMA confirms that this is the case and this is reflected in the draft RTS. ESMA also believes it is helpful to clarify the obligations on transmitting and receiving firms. In particular, to make it clear that:
 - i. Where an investment firm is carrying out receipt and transmission (where it receives an order from a client or clients and sends it to a third party to be filled) or is acting on a discretionary basis and places an order with a third party to be filled and does not meet the conditions for exemption from transaction reporting it must transaction report and include a flag that it is for a transmitted order;
 - ii. Where an investment firm is transmitting and meets the conditions for exemption from transaction reporting it should not transaction report
37. There was confusion among respondents over whether the receiving firm had the ability to refuse to enter into a transmission agreement. Some respondents interpreted the requirements to mean the receiving firm could refuse (as was the intention) while others

assumed this was not the case and have requested that the receiving firm be given discretion to refuse to transaction report the details of the information passed by the transmitting firm.

38. ESMA confirms that the receiving firm can refuse to enter into a transmission agreement. However, where the receiving firm has entered into a transmission agreement it cannot refuse to report the transmitted details for an individual transaction unless the requirements for transmission of the required details as specified in the draft RTS have not been complied with for that transaction.
39. There was a request for clarification on whether the transmission agreement needed to be exhaustive in detail or to merely agree that order transmission was allowed. Some respondents also requested further clarity or prescriptive criteria in order to ensure it was clear when a transmission exempt from transaction reporting had taken place, while others requested that the criteria should be sufficiently flexible to take into account different requirements for different types of instrument. ESMA does not intend to be prescriptive about the content of the agreement however the agreement must specify the circumstances under which the relevant details will be deemed to be passed with sufficient granularity and clarity so that it is possible to determine with certainty whether the conditions have been met for a given transaction. Equally, the details to be passed must be sufficient to enable the receiving firm to report the transaction for a given instrument or type of transaction. This should include the time by which the information is required to be received by the receiving firm, which as noted below may be subsequent to the transaction taking place.

Issues with particular fields in the context of transmission

40. Respondents raised issues with reporting the price and the short selling flag in particular:
 - i. On the price, respondents pointed out that although the order information could contain an indication of the price at which the order could potentially trade at (e.g. by specifying a limit price), the final price is determined at the time of the actual trade.
 - ii. On the short selling flag, the issue seemed to be related to a lack of understanding that the indication of whether or not the client of the transmitting firm was short selling needed to be provided by the transmitting firm to the receiving firm
41. ESMA confirms that the relevant price conditions should be included in the order (e.g. limit price) and the quantity and price reported by the receiving firm should be the actual quantity and price of the resulting transaction.
42. On a related issue respondents sought confirmation that the receiving firm could report based on its own data but include specified transmitted fields in the transaction report. ESMA confirms that this is the case. The receiving firm will be the source of some of the

data for the transaction effected and may rely on its reference data but must report the following information as provided by the transmitting firm:

- i. Client information (designation and additional details);
 - ii. Designation to identify short sale by the client; and
 - iii. Where the order is aggregated for several clients, details of the allocations.
43. There was a request for clarity regarding the obligations of receiving firms to validate the information provided by the transmitting firm and concern that the receiving firm would not be in a position to validate this data. ESMA proposes that while the responsibility is on the receiving firm for the other aspects of its transaction report since it is the reporting firm, in respect of the information provided by the transmitting firm its obligation is limited to validating for obvious errors only and this has been specified in the draft RTS.

Timing

44. Several issues were raised around timing. There were requests for clarification over whether the requirements would apply at the point of execution/placing the order and a concern that if this was the case the delay in collating the required information would interfere with best execution. It was also noted by some respondents that client information would only be available when the transmitting firm had given the receiving firm the allocations and this might not be available by T+1. There was also a query on whether adjustments could be made during the day to resolve missing information.
45. ESMA acknowledges that not all of the information will be available at the time of the transmission of the order to the receiving firm. For example, until the transaction is completed the quantity may not be known and therefore the fact whether the client acquired a short position may not be known yet or may change, as may the allocations where there is more than one client. The information may be provided by the transmitting firm after the transaction has taken place but must be provided in accordance with the timing requirements specified in the transmission agreement and these must be such as to enable the receiving firm to be able to meet its transaction reporting obligation by T+1.

Other issues

46. Clarity was requested on how the concept of transmission would apply where a firm transmitting an order is exempt from MiFID (non-MiFID firm) and therefore from transaction reporting. Where a firm is exempt and thus not subject to Article 26 requirements, it would not qualify as a transmitting firm and would not transaction report nor would it have to pass on the details to the receiving firm. The receiving firm would, therefore, only report the non-MiFID firm as its counterparty/client.

Q216. Do you foresee any difficulties with the suggested approach? Please justify.

General approach to reporting

47. A predominant theme in the responses to the Discussion Paper in the Market data reporting section were concerns about the increase of complexity in transaction reporting under MiFIR, when under MiFID transaction reporting already has complex requirements. ESMA recognises the value in having a simple approach as far as possible.
48. ESMA is also conscious of the fact that investment firms have difficulty in understanding the transaction reporting requirements currently and continue to make mistakes in their transaction reports.
49. ESMA has therefore considered how it could simplify the approach to reporting and re-examined the purpose for and use of certain fields that are key in interpreting transaction reports under the current arrangements. In particular, these fields are:
 - i. Buy/sell indicator
 - ii. The counterparty and client fields
 - iii. Trading capacity
 - iv. Reporting firm
50. CAs use the combination of the content of these fields to determine who has bought, who has sold and who is reporting the transaction with all information having to be populated in the correct field to provide the correct result. Transaction reporting under current MiFID requires investment firms to transform information on who is buying and who is selling into specific fields such as counterparty and client fields and CAs then effectively have to interpret the information reported in order to understand what events are actually taking place.
51. This approach is not intuitive and is prone to conversion error by firms. ESMA therefore proposes a simplified approach, which focuses on clearly and simply reporting the events that have objectively taken place. ESMA anticipates that by making the reporting logic easier to understand this will improve the data quality of transaction reports.

Proposed approach

52. The buy/sell indicator fields and counterparty and client fields will be replaced with a buyer field and a seller field.
53. Trading capacity will remain but will be independent of the determination of who is buying or who is selling. The reporting firm field will remain to indicate the firm that is

reporting but, again, will be independent from whether a reporting firm or a counterparty is buying or selling.

54. ESMA is of the view that this approach has the following benefits:

- i. It is a more intuitive approach that produces reports that are easier to analyse and verify by the CA.
- ii. Reporting by investment firms should be less prone to error since there is less transformation of information required.
- iii. It will be much easier for investment firms to reconcile transaction report samples from the CA against their trading data and firms should therefore identify any errors in their transactions reports more easily.
- iv. Gross and net changes of position will be much simpler for CAs to calculate.
- v. Reporting of designation to identify a short sale is simplified since the selling party is being reported objectively rather than from the perspective of the reporting firm or client and the short selling flag can be linked directly to the seller irrespective of the trading capacity.

55. ESMA acknowledges that the new approach will be a change for investment firms but believes that this is justified by the benefits and should not be too onerous since the new reporting approach will reflect more closely the data maintained within the firms' trading records.

Current	Proposed
Strong dependencies and interrelations between data in the following fields: Reporting firm Trading capacity B/S indicator Counterparty Client	The logic of populating the following fields is not dependent on their interrelation: Reporting firm Trading capacity Buyer Seller
Buy/sell indicator The counterparty and client fields	Replaced by: Buyer Seller

Examples

56. The following examples show how this would translate into population of the fields in different circumstances.

Scenario 1 - Investment Firm X trading on behalf of Client John Smith purchases shares on a venue

- i. Where trading under agency capacity

This could be reported currently as⁶⁵:

Buy/Sell Indicator	Reporting Firm	Counterparty	Client	Trading Capacity
B	Firm X	Venue/CCP	John Smith	Agency

The combination of trading capacity and B/S indicator indicates that the entity in the client field is buying and the entity in the counterparty field is by inference selling.

Under the new approach it would be reported as:

Reporting Firm	Buyer	Seller	Trading Capacity
Firm X	John Smith	Venue/CCP	Agent

The buyer and seller are reported directly in the dedicated fields and do not need to be deduced.

- ii. Where trading under principal capacity but on behalf of a client

This would be reported currently as:

Buy/Sell Indicator	Reporting Firm	Counterparty	Client	Trading Capacity
B	Firm X	Venue/CCP		Principal
S	Firm X	John Smith		Principal

The combination of trading capacity and buy/sell indicator indicates that the reporting Firm X is buying in the first report and selling in the second and by inference the venue/CCP is selling and John Smith is buying.

Under the new approach it would be reported as:

Reporting Firm	Buyer	Seller	Trading Capacity
Firm X	Firm X	Venue/CCP	Principal
Firm X	John Smith	Firm X	Principal

⁶⁵ This varies across different jurisdictions due to varying implementation of current MiFID across different Member States

The buyer and seller are reported directly in the dedicated fields and do not need to be deduced.

Scenario 2 - Investment Firm X trading on its own behalf purchases shares on a venue

This would be reported currently as:

Buy/Sell Indicator	Reporting Firm	Counterparty	Client	Trading Capacity
B	Firm X	Venue/CCP		Principal

The combination of trading capacity and buy/sell indicator indicates that the reporting Firm X is buying and by inference the venue/CCP is selling.

Under the new approach it would be reported as:

Reporting Firm	Buyer	Seller	Trading Capacity
Firm X	Firm X	Venue/CCP	Principal

Again, the buyer and seller are reported directly in the dedicated fields and do not need to be deduced.

Scenario 3 - Investment Firm X trading on behalf of client John Smith buys shares from investment Firm Y which in turn buys the shares from a venue. Investment Firm X does not meet the conditions for transmission and therefore must report itself

Assumption: For simplicity, Firm X trades as agent and Firm Y trades as principal.

This would be reported currently as:

Buy/Sell Indicator	Reporting Firm	Counterparty	Client	Trading Capacity
B	Firm X	Firm Y	John Smith	Agency
B	Firm Y	Venue/CCP		Principal
S	Firm Y	Firm X		Principal

As above, in the first report the combination of agency trading capacity and B/S indicator indicates that John Smith has bought and by inference Firm Y has sold.

For the second and third reports the combination of trading capacity and buy/sell indicator indicates that the reporting Firm Y is buying in the second report and selling in the third report and by inference the venue/CCP is selling and Firm X is buying in the second and third reports respectively.

Under the new approach it would be reported as:

Reporting Firm	Buyer	Seller	Trading Capacity
Firm X	John Smith	Firm Y	Agent
Firm Y	Firm Y	Venue/CCP	Principal
Firm Y	Firm X	Firm Y	Principal

From which it is clear that Firm Y bought from the venue/CCP and sold to Firm X which in turn is acting as agent for John Smith.

Scenario 4 - Investment Firm X trading on behalf of client John Smith buys shares from investment Firm Y which in turn buys the shares from a venue to fill the order. Investment Firm X meets the conditions for transmission

Assumption: For simplicity, Firm X trades as agent and Firm Y trades as principal.

Since Firm X is meeting the conditions for transmission it passes the client details to Firm Y for Firm Y to report and Firm X will not report.

This would be reported currently as:

Buy/Sell Indicator	Reporting Firm	Counterparty	Client	Trading Capacity
B	Firm Y	Venue/CCP		Principal
S	Firm Y	John Smith		Principal

Under the new approach it would be reported as:

Reporting Firm	Buyer	Seller	Trading Capacity	Buyer transmitting the order identification code
Firm Y	Firm Y	Venue/CCP	Principal	
Firm Y	John Smith	Firm Y	Principal	Firm X

As a result of the simplified approach being proposed, the buy/sell indicator and client fields have been replaced by Buyer and Seller fields and counterparty fields have been replaced by Decision maker for the buyer and Decision maker for the seller fields in the Table of Fields in Annex 1 of the RTS.

Q217. Do you agree with ESMA's proposed approach to simplify transaction reporting? Please provide details of your reasons.

Table of fields

57. Respondents to the Discussion paper requested further clarity and details of what was expected to be populated in the fields in terms of content and format and stressed the importance of as much alignment with EMIR as possible.

58. The substantial part the feedback focused on issues related to the introduced new fields, in particular
- i. The client designations and additional information fields;
 - ii. Trader ID;
 - iii. Option exercise;
 - iv. Repo flag;
 - v. Report matching number.

The detailed analysis of the specific feedback on these issues is included in the relevant sections of this paper.

59. The fields, their content and format that are currently proposed to be populated for a transaction report are set out in Annex 1 of the draft RTS.
60. ESMA has aligned the fields with EMIR where possible given the different purposes of EMIR and transaction reporting and has sought to clarify the purpose for and content of the fields. Information has also been added on the format for each individual field.
61. A number of respondents queried whether all the fields relating to reference data for instruments (fields numbers 53-62 in Table 1 of Annex 1) will have to be populated for financial instruments where instrument reference data would be provided to competent authorities under Article 27 of MiFIR. ESMA confirms that the current intention is to require all of the fields to be reported regardless of whether or not reference data on a certain financial instrument would be available. This is because for instruments admitted to trading or traded on non-EEA venues the reference data will not be provided to the competent authorities by the venues and also to accommodate for instances where there may be an inadvertent delay in the reference data being provided to the competent authorities.
62. ESMA is still considering whether fields which are not applicable should be left blank or populated by a code such as 'N/A'.
63. It should be noted that ESMA is still considering the details of the content of the fields and welcomes industry's feedback.

Q218. We invite your comments on the proposed fields and population of the fields. Please provide specific references to the fields which you are discussing in your response.

Trading Capacity

The trading capacities flags

64. The Discussion paper referred in the table of fields to the following notions of principal and agency capacity to be reported in transaction reports. This information was also proposed to be maintained by trading venues under Article 25(2) of MiFIR for the member or participant that transmitted the order to the trading venue:

- i. Principal capacity: dealing on own account either on own behalf or on behalf of a client.
- ii. Agency capacity: dealing on the account and on behalf of a client.

Analysis of feedback from stakeholders

65. Respondents to the Discussion paper pointed out that the term “acting on behalf” can be translated in different ways, each meaning a different legal structure. Considering the lack of a common understanding respondent suggested that legal certainty could be reached by introducing a detailed clarification of the Principal and Agent concepts for the purpose of Article 25(2) and 26 only. At least the information provided under MiFIR would be more reliable in this regard.

Proposal

66. In light of the industry feedback, ESMA proposes three flags for the trading capacity to be used in transaction reports and maintained by trading venues:

- i. M – Matched principal capacity means dealing on own account according to Article 4(1)(6) of MiFID as a facilitator by interposing between the buyer and the seller to the transaction in a way whereby never being exposed to market risk throughout the execution of the transaction, with both sides executed simultaneously, and where the transaction is concluded at a price where the facilitator makes no profit or loss, other than a previously disclosed commission, fee or charge for the transaction.
- ii. P - Principal capacity means all other instances of dealing on own account that do fall under the definition of matched principal according to Article 4(1) (6) of MiFID.
- iii. A – Agent capacity means not dealing on own account according to Article 4(1) (6) of MiFID.

As noted in section 2.3 it is proposed that the trading capacity field is retained in transaction reports but that the determination of who is buying and selling will be done independently of the trading capacity.

Q219. Do you agree with the proposed approach to flag trading capacities?

Client Identification

Legal requirements and background

67. According to Article 26(3) transaction reports submitted by investment firms should include a “designation to identify the clients on whose behalf the investment firm has executed that transaction”. Particularly regarding legal persons, Article 26(6) states that “in reporting the designation to identify the clients as required under paragraphs 3 and 4, investment firms should use a legal entity identifier established to identify clients that are legal persons”.
68. ESMA’s mandate in Article 26(9)(c) of MiFIR to develop draft RTS, requires specifying ‘details of the identity of the client’ and ‘a designation to identify the clients on whose behalf the investment firm has executed the transaction’.

Method of assigning client designations for natural persons

69. In the feedback to the Discussion Paper , respondents raised concerns regarding the assignment of a client designation and the additional data that would be gathered by CAs. In particular, respondents raised concerns on data protection laws, excessive data gathering and their ability to deliver the data requested. Some found the procedure to determine the client identification designation ambiguous, and requested a clearer approach. Others called for reporting parties to be able to choose an identifier themselves, or use a similar method to the identification method of bankrupt persons, to identify clients.
70. ESMA recognises that no single harmonised client identifier can be applied across the EEA in order to uniquely identify natural persons who trade financial instruments. Consequently, different identifiers will have to be applied in each Member State and , therefore, an identifier for a particular natural person will depend on the person’s nationality. Suggestions that the reporting parties should be given a choice regarding which client identifier to use, or to allow a firm-specific code to be applied, are not acceptable, since this will not provide for a sufficiently unified and robust identification of natural persons, neither will this ensure the desired uniqueness of natural persons’ identification. However as suggested by the respondents to the Discussion Paper, a variant of the "bankruptcy code" has been incorporated as a fallback option⁶⁶ to identify natural persons.
71. Respondent's feedback to the Discussion Paper indicates that there was lack of clarity regarding exactly what identifier to use and when. In order to improve this, ESMA proposes a new simplified procedure in order to obtain a unique, persistent and consistent identifier. Due to the diverse selection of identifiers in the EEA, the procedure relies on lookup in a table (which will be specified in the Annex 1 to the draft RTS) by

⁶⁶ The use of this fallback option is subject to certain conditions specified in paragraphs 8.2.71.ii and 8.2.72.

nationality to determine the relevant identifier for a particular client. The following procedure will be applied in order to determine what identifier should be used for a given natural persons:

- i. The natural person's nationality should be relied upon to determine which row of the table applies. Where multiple EEA nationalities are available for a given person, the first nationality when sorted alphabetically by its ISO 3166-1 alpha 2 (2 letter country code) should be applied. For natural persons with non-EEA nationality, the line "All other countries" applies.
 - ii. The identifiers and the priorities for the identifiers specified for each nationality are those that have been determined by each individual CA according to the uniqueness, robustness and persistency criteria. By default, the 1st priority identifier in the Table must always be applied by the investment firm as the first choice. If the 1st priority identifier is not obtainable, the 2nd priority identifier must be selected. If the 2nd priority identifier is not obtainable, the 3rd priority identifier must be selected.
72. To minimise the risk of identifiers colliding, the designation must be preceded by the ISO 3166-1 alpha 2 (2 letter country code) of the person's nationality.
73. Where the Table refers to "CONCAT", the client must be identified using a concatenated code generated by the investment firm itself. This code's structure is as follows: " BIRTHDATE + FIRSTNAME + SURNAME", where:
- i. BIRTHDATE, is the birth date of the person in the following format YYYYMMDD.
 - ii. FIRSTNAME, is the 5 first letters of the first name.
 - iii. SURNAME, is the 5 first letters of the surname.
74. No apostrophes, hyphens or punctuation marks shall be used. Common prefixes to names and titles should be excluded.
75. First names and surnames shorter than 5 characters should be appended by # until they are 5 characters.
76. All characters in the CONCAT should be written in upper case format
77. .E.g. Dan Johnson, born 16-08-1977, with UK nationality, should be encoded as "19770816DAN##JOHNS".
78. Examples of outcome based on the three tier approach:
- i. Norwegian citizen living in Norway and trading => 11 digit personal numbers.
 - ii. Non-EEA living in Norway and trading => non-EEA passport number

- iii. Non-EEA living in Norway and trading, but does not possess a Norwegian passport => CONCAT
 - iv. US citizen living in UK and trading => US passport number
 - v. Spanish national living in Sweden and trading => Spanish tax number
 - vi. Person with both Malta and Luxemburg nationality, living in France and trading => Passport number of Luxembourg passport (Due to "LU" preceding "MT" when sorted alphabetically).#
79. This approach gives the same designation for all clients regardless of which investment firm in the EEA the client chooses to open an account at. However, it will not stay persistent if a person changes nationality. ESMA is aware of this limitation, but believes the benefit of resolving these issues, given that persons do not change nationality frequently are not justified by the added complexity it would entail.

Additional information regarding the identity of the client

80. The majority of the respondents provided feedback on the additional client information as a block, without distinguishing among all the fields proposed. The general comment has been negative to providing this data, arguing that it is difficult to gather, burdensome to keep, excessive to process by regulators, unnecessary since there is a code, increases complexity in the systems and will have an impact on the 'Know Your Client' management process. In addition, there were some concerns pointed out specifically regarding date of birth, address, post code and country, due to the lack of consistency in the spelling according to the different characters currently existing in the EEA (e.g. ñ, ç, æ, ø, å) and shortening of names (such as Boulevard/Blvd, Avenue/Av, Saint/St...), lack of persistency through time and not being considered within current market practice.
81. On the other hand, there were some respondents that did not reject the proposal as such. A few respondents highlighted particular data protection concerns around transmitting non-EEA client details (banking secrecy rules) as well as concerns around retaining, transferring or disclosing client details (i.e. when a transmission of an order takes place).
82. Some respondents questioned the reason for ESMA requesting this set of details misinterpreting the specific requirement in Article 26(3) of MiFIR. ESMA hereby emphasizes that the mandate given to it in Article 26(9)(c) MiFIR, is to specify not only the designation to identify the client but also the information and details of the identity of the client.
83. ESMA acknowledges that this set of additional information does place a burden on the reporting entities, in terms of collection, recording and transmission, but ESMA's view is that the information is required in order for CAs to be able to conduct effective pro-active

monitoring for market abuse. The additional information is also especially important in the absence of a sufficiently robust identification of clients at the European level. Moreover, these details will enable CAs to validate consistency of the identification codes as well as to establish links between clients potentially acting in collusion. However, the field for the detailed "address" is now being removed from transaction reporting to reduce complexity and accommodate industry concerns. This leaves the following fields to be populated by investment firms: first name(s), surname(s), date of birth, post code and country of residence.

Legal entities

84. A large majority of the respondents agreed with ESMA's proposal of using the LEI code for legal persons. However, many respondents requested the substitution of the term "legal person" for "legal entity" to encompass entities without a separate legal personality but that are eligible to obtain an LEI.
85. Several respondents complained about the burden imposed on investment firms to determine whether a legal person is or is not eligible to obtain a LEI. The impact on business of requiring of LEI in order to trade financial instruments was also highlighted.
86. The annual maintenance of LEI reference data and the period of time while the client was applying for the LEI were some of the other concerns pointed out by the respondents, as well as the need to validate the code by the reporting firms.
87. Further guidance was sought from respondents on the possibility provided for in the Discussion Paper to use a BIC. Taking into account the fact that an entity not eligible to obtain an LEI would also not be able to obtain a BIC code, the option of using this code to identify clients has been removed. Moreover, according to MiFIR Article 26(6), the use of a legal entity identifier for legal persons appears to be the only possible way to identify a client.
88. ESMA acknowledges that the requirement of LEI, together with all the other fields of transaction reporting will be challenging to firms. LEI ensures a persistent, consistent and unique means of client identification for legal entities. Its implementation across the EEA is also increasing day by day due to the already applicable obligations under EMIR and is being increasingly utilised as a means of identifying legal entities. By the time MiFIR transaction reporting becomes applicable, LEI will be widespread and used by legal entities. Thus, time should not be a constraint for the implementation and use of the code.
89. In response to feedback received from respondents, ESMA wishes to clarify that the LEI applies to "legal entities" rather than "legal persons". ESMA intends to require all legal entities to be identified with a LEI in a transaction report. ESMA will no longer proceed with its original proposal to allow BICs or national identifiers to be used for the identification of legal entities.

Other issues

90. There were no responses to the Discussion Paper on how to identify joint accounts, power of attorney and accounts held on behalf of minors. All these accounts involve more than one “relevant“ client as ESMA explained when seeking the industry’s feedback. ESMA re-iterates that NCAs need to receive information about both the decision maker and the beneficiary. Therefore, ESMA’s proposal envisages the obligation to provide the designation and the details of the identity to apply to both the beneficiary of the trade account and the decision maker for a given trade account.
91. Respondents to the Discussion Paper sought further clarification about what was meant by ESMA by the decision maker and the beneficiary for a transaction. There were questions concerning how an investment firm would know who was the actual decision maker for a transaction and how entities such as trusts should be dealt with.
92. ESMA clarifies that the concept of ‘beneficiary’ applies to the person that acquires or disposes of the legal title to the financial instrument, i.e. the investment firm is not expected to seek to obtain information beyond the legal identity of its clients in such instances as trusts. Usually the decision maker will be the same as the person that acquires or disposes of the legal title to the financial instrument. In the absence of a formal arrangement such as a power of attorney or a discretionary mandate that the reporting firm is aware of, the reporting firm can assume that this is the case.
93. Therefore, where an investment firm is acting under a discretionary mandate, it is making the investment decision and this must be reflected in the firm’s transaction reports. In this case the report should identify the investment firm’s client in the buyer/seller field, and the decision maker (in the decision maker for the buyer/seller field) as the investment firm acting under a discretionary mandate. The investment firm should be identified with its LEI. This differs from the population of the trader ID for investment decision field. Where an investment firm acting under a discretionary mandate executes a transaction that results in the obligation to submit a transaction report it will identify itself with its LEI in the decision maker for the buyer/seller field and will identify the individual fund manager in the Trader identification code (investment decision) field. Conversely, entities providing advice to clients who rely on it to make their investment decisions are not foreseen by ESMA to be identified in the decision maker field, since the client is the one that makes the final decision to trade.
94. Where an investment firm receives instructions from another investment firm or individual acting with power of attorney for a client the report should identify the client in the buyer/seller field and the decision maker for the buyer/seller should be the entity with the power of attorney.
95. Regarding joint accounts, regardless of the number of people in possession of a given joint account, ESMA is proposing to collect all the relevant information pertaining to all

the holders of legal title of the joint account as well as all decision makers for this account, if different, in the relevant fields.

96. It should be noted that while currently there are independent client and counterparty fields in a transaction report where client information is populated, under the simplified approach being proposed the client designation and additional details of client's identity will be populated in the buyer/seller fields.

Confidentiality requirements and data protection

97. Most of the responses mention this issue as a concern. Some consider that the costs do not outweigh the benefits and even mention compatibility with the data protection law and the bank secrecy law. In addition, collecting data for non-EEA members might violate third country law and further clarification is requested in these instances.
98. ESMA acknowledges these concerns and will ensure full compliance with the data protection law for the transaction reporting obligations set out in the RTS. Regarding client data coming from non-EEA firms, this clarification should be provided by the European Commission since it pertains to the MiFIR text, and not to the mandate.

“Trader ID”

99. Recital 34 of MiFIR specifies that the identification of the persons responsible for the investment decision and trade execution enhances the role of transaction reports as a market monitoring tool. The relevant Article 26(3) therefore explicates it including “a designation to identify the persons and the computer algorithms within the investment firm responsible for the investment decision and the execution of the transaction” within the set of data that needs to be submitted to the CA in the transaction report.
100. As the provision in MiFIR states that the person within the investment firm responsible for the investment decision and for the execution of that transaction should be identified it is necessary to split this information into two separate fields, as they are not necessarily identical.
101. In the feedback given to the Discussion Paper respondents raised concerns regarding the assignment of trader IDs and the additional data proposed to be gathered by CAs. In particular, respondents raised concerns on data protection laws, and excessive data gathering and proposed that firms should be able to use their own internal identifiers.
102. Respondents found the proposals, in particular the scenarios in the table on pages 450 – 451 of the Discussion Paper, confusing and too complex and requested a more principles based approach. They also requested clarification on how to treat informal committees and a situation where a chain of traders were involved in the execution of a transaction.

103. For the same reasons as for client designation, ESMA believes that an internal firm code is not an acceptable solution, since it will not fulfill the requirement of a sufficiently unified and robust identifier and ESMA proposes to continue with the approach set out in the Discussion Paper applying the same method as used for clients that are natural persons according to the principles set out in the section 2.6 of this Consultation Paper.
104. However, following the feedback received on the Discussion Paper ESMA intends to limit the information reported to identify persons within firms to just the identifier of the relevant trader as specified in paragraph 70 of this Consultation Paper. The provisions of the draft RTS do not require including the full name or any other details in a transaction report. While these details of a trader identity would be valuable additional information, the availability of a common identifier between the client identifier and trader identifier is key. The fields for the names for the trader have therefore been removed from the Table of fields in Annex 1 of the RTS.

Investment decision

105. Where a trader within the reporting firm makes the decision to acquire, dispose of or modify the reportable financial instrument that is the subject of the transaction report, that trader should be identified in the 'Trader identification code (investment decision)' field.
106. For committee decisions, ESMA proposes that investment firms should assign a separate trader ID designation for each committee, which starts with the prefix 'COM', for example 'COM1234'. This will enable NCAs to distinguish between investment decisions made by a particular committee and decisions made by an individual trader. In addition, investment firms should not use a generic committee designation to identify all committee decisions. This means that individual committees should be separately identified (e.g. 'COM1234' and 'COM5678') and should not be simply classified broadly as being a committee decision under a general code (e.g. 'COMMITTEE').
107. A change in the composition of the committee (e.g. individual committee members joining or leaving) should not cause a change in the committee's trader ID designation.
108. Investment firms will have responsibility for assigning the committee code and will be required to comply with the same key principles in line with assigning individual trader IDs and algorithm identifiers, meaning that the designation for each committee must be unique, consistent and persistent. While investment firms will have flexibility in how they assign the committee trader ID designations, they must keep adequate records regarding changes to the composition of the committee.
109. Informal committees or ones formed ad-hoc should not be considered as established committees where the investment firm would be able to deliver records of the composition on request by a NCA. Such informal or ad-hoc formed groups should be reported with the trader id for the trader taking the primary responsibility for that

investment decision. If such a person cannot be defined the one sending the instructions for that trade should be considered as the person responsible for the investment decision.

Execution

110. As a general principle whenever an individual trader executes a trade, rather than algorithms or automated processes triggering an event, they should be identified in the transaction report. In the case of an algorithm the relevant data fields should be populated.
111. The trader who is regarded as executing is the trader who initiated the execution e.g. who submits the order to the order management systems or instructs another investment firm.
112. ESMA proposes that where there is a chain of traders the last trader in the chain should be identified.
113. As, according to Article 26 (5) MiFIR, trading venues are also obliged to report “details of transactions in financial instruments traded on its platform which are executed through its systems by a firm which is not subject to this Regulation in accordance with paragraph 1 and 3” ESMA expects operators of trading venues to have in place agreements which enables them to provide the information as requested in the draft RTS.
114. Trades performed through Direct Electronic Access (DEA) should be considered as common trades and reported accordingly. ESMA considers that the introduction of a specific flag for DEA is not necessary and would create an additional burden that can be avoided.

“Algo ID”

Designation to identify the algorithm responsible for the investment decision and execution of the transaction

115. In the Discussion Paper ESMA stated that the identification of the computer algorithms responsible for the decision making and execution of transaction enhances the role of transaction reports as a market monitoring tool. CAs will have immediate visibility of the algorithm(s) involved in the transaction without having to gather this type of information from the investment firms on an ad-hoc basis.
116. Moreover, ESMA explained in the Discussion Paper that capturing the above information in transaction reports enables CAs to more efficiently detect instances where certain algorithms are used in potential market abuse or disorderly trading activities.

117. ESMA identified in the Discussion Paper that some other issues may need further consideration such as where there might be inter-relationships among algorithms. For example, there may be chains of algorithms involved where one algorithm feeds into another algorithm. In other situations, several algorithms may be running simultaneously on the same order. In these situations, ESMA considers that the investment firm should be permitted to decide how to identify the relevant algorithm or chain of algorithms.

118. Since the computer algorithms responsible for the investment decision might not necessarily be those executing the transaction, these two sets of information will have to be displayed separately and therefore two fields are required in transaction reports: Algorithm identification code (investment decision) and Algorithm identification code (execution). In some cases, the investment decision may have been made outside of the investment firm such as where the investment decision was made by the client (who then instructed the investment firm). In such instances, the field for the algorithm responsible for the investment decision would not be applicable.

Therefore ESMA proposed in the Discussion Paper two general scenarios:

Scenario	Algorithm responsible for the investment decision	Algorithm responsible for the execution
An order worked manually <i>i.e. where a trader receives an order and employs an algorithm to execute the order</i>	This field would not be applicable	Identity of the algorithm
'Automatic' trade <i>E.g. The algorithm is used to search and take advantage of market inefficiencies but is not acting in response to a particular order</i>	Identity of the algorithm	Identity of the algorithm

Identifier for the algorithm

119. ESMA identified in the Discussion Paper that the industry already seems to use some form of identification for its algorithms which ESMA believes could also be used to identify their algorithms for the purposes of transaction reporting.

120. ESMA identified further that an important characteristic of algorithms is that they may change very frequently. This may mean that there may be uncertainty about whether a variation to the characteristics of an existing algorithm is considered to be a new algorithm or whether it is simply a new version of an existing algorithm. There is also a related issue of how firms should identify updates to an algorithm.

121. ESMA expressed in the Discussion Paper its view that as a result, a pragmatic solution should be adopted for identification of algorithms. The investment firm will have responsibility and discretion over how it identifies its algorithms throughout the lifecycle of the algorithm, provided that the identifier meets the criteria defined below.

122. In addition, investment firms will have to retain adequate records under Article 17 of MiFID about the algorithms which it uses, including a description of the nature of its algorithm and the trading strategy or strategies that it has been deployed to undertake. Under Article 25(1) of MiFIR, investment firms must keep adequate records in relation to orders and transactions. These records must be adequate to enable the investment firm to answer requests for information from CAs in relation to matters such as which algorithm(s) was responsible for a particular transaction, the particular characteristics of the relevant algorithm(s) at the time of the transaction and what role the algorithm(s) played in the investment decision or execution for that transaction.
123. ESMA stated in the Discussion Paper that it believes this approach will provide firms with flexibility when managing variations to the algorithm and assigning identifiers for each of its algorithms while still allowing NCAs to receive meaningful information to assist in detecting and investigating market abuse and disorderly trading.
124. When determining identifiers for its algorithms an investment firm should ensure that these identifiers are unique, consistent and persistent. This means:
- i. an exclusive designation must be given to each unique set of code that constitutes an algorithm. A firm must not use a general algorithm designation to identify all its algorithms;
 - ii. once an identifier has been assigned to an algorithm, the same designation should always be used when referring to the algorithm or version of the algorithm;
 - iii. the same algorithm identifier should apply for a specific algorithm code regardless of the products or markets that the algorithm applies to. Where a firm has assigned an algorithm identifier for other purposes, then for consistency, it should also use the same identifier to identify that algorithm in transaction reports. For example, if a firm identifies an algorithm as 'Algo 1' when marking an order on a trading venue, then the same algorithm should also be identified as 'Algo 1' in transaction reports. This will enable CAs to compare data more easily and provide them with a fuller understanding of how the algorithm operates; and
 - iv. an algorithm's designation must be unique over time. This means that where an algorithm is retired, the firm must not assign that algorithm's designation to any other algorithms in the future. This will assist NCAs in detecting and analysing a particular algorithm's behaviour pattern over a period of time.

Analysis of the feedback

125. The proposal of ESMA was broadly supported. The main arguments presented against were that an exact format should be defined for the identification of the algorithm (number of characters) or at least the maximum size of this ID should be specified. This would be necessary to avoid the risk of having very different formats used by different

participants, which would prevent reporting actors from transmitting harmonised data for the purpose of reporting requirements. Moreover, identifying each set of codes with a different ID will lead to an almost infinite number of codes, because the set of codes of an algorithm changes on a very frequent basis. Storing of the relevant data would slow down market performance.

126. As an alternative proposal some respondents to the Discussion Paper recommended a method for aggregating algorithm ID chains into a single identifier to the market and for purposes of transaction reporting, which has already been adopted by some market participants in order to comply with German algorithm flagging requirements under the national HFT law.
127. Several respondents to the Discussion Paper were in favour of limiting the Algo ID to just one field, identifying the algorithm that was used for “the trade”, which would actually reflect the rules under the German algorithm flagging requirements under the national HFT law.
128. In its Discussion Paper ESMA referred to “each unique set of code that constitutes an algorithm“. Some respondents proposed to change this logic towards a strategy based approach, which would mean that the software or logic would have to be identified as a separate algorithm that generated trading actions based on a trading model. Under this proposed new definition, in the case of several algorithms acting in a chain, the logic behind that chain would need to be identified and not the first or the last algorithm in that row of decision steps.

Proposal

129. ESMA has decided to retain the approach of separately identifying both the investment decision algorithm and the execution algorithm, since this approach reflects the requirements in Article 26(3) of MiFIR.
130. With regard to the feedback requesting more concrete specifications of the identification of a new algorithm and naming conventions, ESMA is of the opinion that such strict requirements would put an additional unnecessary burden on the industry. ESMA therefore intends to retain the approach outlined in the Discussion Paper.
131. ESMA believes that a more pragmatic approach should be chosen as it will give more flexibility to market participants. Investment firms will have discretion for determining how to define an algorithm (for example, based on “unique set of code“ or a “unique trading strategy“), and will be entitled to exercise their own judgements as to when to classify a variation to an algorithm as a new algorithm provided they maintain adequate records of the changes to their algorithms.
132. For this reason, the naming of the algorithm should also be chosen by the investment firm. ESMA has no intention of imposing any naming conventions under the condition

that the identifier chosen by the investment firm fulfils the requirements elaborated by ESMA on page 454 of the Discussion Paper. According to this the identifier has to be unique, consistent and persistent.

A designation to identify the applicable waiver

Summary of Discussion Paper proposal

133. According to MiFIR Article 26(3) transaction reports to CAs should include, inter alia, “<...> a designation to identify the applicable waiver under which the trade has taken place, <...>”⁶⁷.
134. In this regard, MiFIR Article 26(9) requires ESMA to develop draft regulatory technical standards to specify how to report a designation to identify the applicable waiver under which the trade has taken place.
135. MiFIR Articles 4 and 9 describe several situations under which pre transparency obligations may be waived, on equity and non-equity instruments respectively. In particular, the following pre-trade transparency waivers are considered:

Equity instruments (Article 4 (1) (a-c)):

- i. Article 4(1)(a), reference price waiver: transactions executed under the reference price waiver and which are subject to the volume cap mechanism;
- ii. Article 4(1)(b), negotiated transactions:
 - a. volume weighted spread or market makers quotes (liquid financial instruments),
 - b. illiquid financial instruments,
 - c. conditioned;
- iii. Article 4(1)(c), orders that are large in scale compared with normal market size.

Non-equity instruments (Article 9 (1) (a-c)):

- i. Article 9(1)(a), orders that are large in scale compared with normal market size;
- ii. Article 9(1)(b), actionable indications of interest in request-for-quote and voice trading systems that are above a size specific to the financial instrument;

⁶⁷ For clarification, the ‘waivers under which the trade has taken place’ refer only to waivers in relation to pre-trade transparency requirements and not to deferred publication of trade reports (post trade transparency).

- iii. Article 9(1)(c), transactions executed under the waiver for instruments for which there is not a liquid market.

136. In the DP ESMA therefore proposed to identify each type of waiver with a relevant flag.

Feedback statement

137. Although ESMA’s proposal was supported by the majority of the respondents, the following two topics were raised:

- i. A request for a standardised method on how to report waivers, and
- ii. Concerns regarding the information provided to investment firms by EEA trading venues.

Standardised method on how to report waivers

138. Several respondents invited ESMA to provide a standardised method for the reporting of waivers.

In this respect, ESMA believes that each waiver flag should be populated using the same naming convention used for “transparency purposes”, as stated in this CP paragraph 132 and in the Table 1 of Annex I of the RTS, in relation to equity and non-equity instruments respectively.

139. Therefore, as mandated under MiFIR 26(3), the table below lists the proposed flags to identify the applicable waiver under which the trade has taken place:

Flag identifier	Name of trade flag	MiFIR waiver reference	Definition
'R'	Reference price transaction (equity)	MiFIR art. 4(1)(a)	Transactions executed under systems operating in accordance with Article 4(1)(a) of Regulation (EU) 600/2014.
'N'	Negotiated transactions in equity liquid financial instruments	MiFIR art. 4(1)(b)(i)	Transactions executed in accordance with Article 4(1)(b)(i) of Regulation (EU) 600/2014.
'O'	Negotiated transactions in equity illiquid financial instruments	MiFIR art. 4(1)(b)(ii)	Transactions executed in accordance with Article 4(1)(b)(ii) of Regulation (EU) 600/2014.

'P'	Negotiated transactions subject to conditions other than the current market price of that equity financial instrument.	MiFIR art. 4(1)(b)(iii)	Transactions in accordance with Article 4(1)(b)(iii) of Regulation (EU) 600/2014.
'L'	Large in scale (equity and non-equity financial instruments)	MiFIR art. 4(1)(c) + MiFIR art. 9(1)(a)	Transactions executed under a pre-trade transparency waiver in accordance with Article 4(1)(c) or Article 9(1)(a) of Regulation (EU) 600/2014. .
'S'	Above specific size transaction	MiFIR art. 9(1)(b)	Transactions executed in accordance with Article 9(1)(b) of Regulation (EU) 600/2014.
'I'	Illiquid instrument transaction	MiFIR art. 9(1)(c)	Transactions executed in accordance with Article 9(1)(c) of Regulation (EU) 600/2014.

Information provided to investment firms by EEA trading venues

140. Some respondents stressed that market participants may need to rely on EEA trading venues to provide them with the information on any applicable waivers in order to include the appropriate waiver flag in their transaction reports.

141. Firstly, ESMA clarifies the fact that since waivers from pre-trade transparency only apply to direct executions on the trading venue, the waiver flag will only be required to be populated for transaction reports for these executions, i.e. so called market facing ones.

142. Secondly, it is expected that the trading venue will provide its members with information on any of the waivers that were applicable to an execution in the confirmation of the execution. Investment firms should therefore be able to populate the applicable waiver information in their transaction reports for market facing transactions.

Q220. Do you foresee any problem with identifying the specific waiver(s) under which the trade took place in a transaction report? If so, please provide details

A designation to identify short sales of shares and sovereign debt

Analysis of feedback from stakeholders

143. In its Discussion Paper (ESMA sought the stakeholders' feedback on two main proposals. The first proposal related to treatment of partial short sales and the second one related to the flagging of aggregated transactions (block vs. allocated trades).

144. Specifically, the first proposal consisted in adopting a high level flag without making a distinction between partial sales and full sales. The second one envisaged the flagging of short sales only for the clients' allocations provided that the individual client is short, in other words, the investment firm should not use the short sale flag to mark the aggregated transaction.
145. The majority of the respondents broadly supported the two proposals tabled in the Discussion Paper and provisions of the draft RTS have been structured accordingly. Given the rationale of these proposals was already explained in the Discussion Paper, it has not been developed again in this Consultation Paper.
146. In addition, the Discussion Paper tabled two alternative options on the flagging of clients' short sales. The large majority of the respondents expressed a preference for the first proposed options which would require the investment firm to determine on a best efforts basis whether the client is making a short sale. This would involve the investment firm asking the client whether the sale is a short sale and the client voluntarily disclosing the information.
147. Lastly, two alternative options were also put forward on the marking of principal buys from a given client in instances where the client is short. In this regard, the industry supported the proposal not to flag principal buys in the cases where the investment firm has bought from a client who is short selling. The main reason provided was that it was counterintuitive to have a principal buy transaction marked with a short flag.
148. Several respondents also queried whether the determination of the sale being short should apply at the time of execution of a transaction or when evaluating the position at the end of the day. ESMA confirms that investment firms must report whether a sale was short as at the time of the execution of that transaction and this has been clarified in the RTS.
149. As a side issue, not pertaining to any of the questions put forward in the Discussion Paper, the large majority of respondents requested a clarification from ESMA on whether individual transactions could be flagged from the perspective of the relevant trader, desk/decision making unit within the selling entity or from the perspective of the legal entity as a whole. Participants raised concerns that it would be technically challenging/if not impossible to flag whether a specific transaction is short at the legal entity level and questioned the usefulness of the flag from such a broad perspective.

Proposal

150. ESMA believes that information on short sales by clients is required in order for CAs to fulfil their supervisory responsibilities and the simplified approach for reporting as described in Section 2.3 of this Consultation Paper addresses respondents' concerns about the counterintuitive reporting. This is because under the new approach, the

population of the short selling fields is simplified as reporting investment firms have to mark the short sale in two cases only, namely:

- i. When the seller is the reporting investment firm and is selling on own account;
- ii. When the seller is a client of the reporting investment firm.

151. Where the seller is an investment firm that has sold short it must also indicate when the short sale was undertaken under the market making or primary dealer capacity under an exemption in Article 17 of Regulation (EU) 236/2012.

152. Where the seller is not the investment firm or a client of the investment firm, the short selling indicator field will not be applicable.

153. ESMA has also taken the opportunity to combine the short selling flag field and SSR exemption field proposed in the discussion paper (fields 80 and 81) into one field named “short selling indicator” field (field 77 in Table 1 of Annex I of the draft RTS).

154. Moreover, it is ESMA’s view that the flagging of each short sale should be made from the perspective of the reporting investment firm at the legal entity level. ESMA confirms that the Short Selling Regulation (SSR) indeed obliges investment firms to calculate the short position at the legal entity level and therefore, given the direct cross-reference in Article 26(3) to the SSR, short sales should be flagged in transaction reports at the legal entity level.

Reportable instruments

155. MiFIR Art. 26 transaction reporting obligation pertains to a definite class of financial instruments. Under Art. 26(2)(c) MiFIR this perimeter includes “financial instruments where the underlying is an index or a basket composed of financial instruments traded on a trading venue”. These instruments should furthermore be identified in the transaction reports. According to Articles 26(9)(c) and 26(9)(e) MiFIR ESMA should prepare regulatory technical standards regarding the relevant categories of instruments to be reported and the references to be used for designating these financial instruments.

156. In its Discussion Paper, ESMA proposed different approaches for determining whether financial instruments based on baskets or indices are reportable or not. Taking account of the responses received, ESMA chose to adapt its approach by building a simpler criterion. This should avoid uncertainty and risk of over- or under-reporting, as well as inconsistencies between market participants.

157. Regarding indices, ESMA proposes that all instruments based on indices which include in their composition at least one component that is a financial instrument admitted to trading or traded on a trading venue should be reportable.

158. Identification of indices should rely on ISIN codes provided by numbering agencies in accordance with ISO 6166, at least when such codes are available. When no ISIN is available, reporting should be based on the official name of the index as assigned by the index provider.
159. Financial instruments based on a basket should be reportable as soon as at least one component of the basket is a financial instrument which is admitted to trading or traded on a trading venue. Identification of baskets should rely on their decomposition into underlying financial instruments. The transaction reports will therefore mention in the “underlying” field the list of financial instruments constituting the basket. This list should be limited to reportable financial instruments specified in Article 26(2) (a) only in order to avoid difficulties in referencing non-reportable financial instruments. Identification of the constituents should be based on ISINs. ESMA envisaged the possibility of the respective weights of the instruments being reported but acknowledged the technical complexity of this piece of information. Therefore only the list of components will be reportable, without any weighting.
- Q221. Do you agree with ESMA’s approach for deciding whether financial instruments based on baskets or indices are reportable?**
- Q222. Do you agree with the proposed standards for identifying these instruments in the transaction reports?**

The application of transaction reporting obligations to branches of investment firms

160. In order to monitor effectively for market abuse CAs need to have visibility of all transactions by an investment firm including any transactions conducted through its branches regardless of whether these branches are located inside or outside of the Union.
161. Under Article 35(8) of MiFID II the competent authority of the Member State in which the branch is located should assume responsibility for ensuring that the services provided by the branch within its territory comply with the obligations laid down in Articles 24, 25, 27, 28, of this Directive and Articles 14 to 26 of MiFIR and the measures adopted pursuant thereto by the host Member State where allowed in accordance with Article 24(12).
162. In order for a host competent authority to supervise this activity by the firm it needs to receive the transaction reports relating to this activity and for the type of activity to be flagged in the reports.
163. Under the existing approach for MiFID I a branch has to determine whether a transaction was carried out by itself or the home investment firm when in reality both entities may have carried out parts of the activity bringing about the transaction. The

approach under MiFID I has at times led to competent authorities receiving duplicate transaction reports or to host competent authorities not receiving transaction reports for the branch.

164. In the Discussion Paper ESMA therefore proposed changing the current transaction reporting obligation for branches. Instead of a branch reporting the transaction to its host competent authority, where the relevant service was provided within the member state where the branch is located, ESMA proposed requiring the branch to include information on activity by the branch in the transaction report via certain fields and for the investment firm to report its transaction to the home competent authority.
165. This arrangement would make it easier for the head office of an investment firm to consolidate its reporting and organize its reporting centrally, as all the reports would need to be sent to one competent authority. Although this change might mean that the head office will report all the transactions, the branch will still need to ensure that its reporting obligation is fulfilled. This approach allows for more accurate reporting where a branch conducts some activity within its territory. Under the proposed approach the investment firm can more accurately reflect which activity was carried out by the branch and which activity was carried out by the investment firm in its home Member State territory.
166. Respondents did not make any strong objections to the new approach and ESMA therefore believes that the suggested approach is an improvement for investment firms.
167. ESMA also considers that the proposed approach is much better for CAs as it provides more transparency of the activity by branches and the division of activity between a branch and the home investment firm.
168. Therefore ESMA intends to proceed with the suggested approach, which means that all transaction reports for transactions executed by an investment firm, whether through its branches or through the home office, should be sent to the Home Competent Authority of the investment firm. Flags are to be populated for all the specified relevant activity by branches (regardless of whether the branches are located inside or outside of the EEA), with the ISO 3166-1 Country Code of the branch involved, to inform the Home Competent Authority where branches were involved in specified activity for the transaction. This information will allow the Home Competent Authority for the investment firm, which receives the transaction reports, to route the transaction reports to any other relevant Competent Authority or Authorities.
169. In the Discussion Paper three fields were proposed:
 - i. the branch of the reporting firm which received the order from the client,
 - ii. the branch of the reporting firm whose trader executed the transaction; and

- iii. the branch of the reporting firm whose membership was used for executing the transaction.

and these were to be populated with the country code to identify the country where the branch was located.

170. Respondents requested further clarity on the criteria to be applied to populate the relevant transaction reporting fields related to branches. ESMA recognizes the need to provide clear criteria on which branches and investment firms can determine whether activity is conducted by the branch or the head office of the investment firm.
171. ESMA has given further consideration to the first field and believes that rather than the entity receiving the order from the client, CAs are interested in the entity that has the closest relationship to the client in terms of understanding the risk profile and trading history of the client. This is because this is the entity that CAs will want to contact to investigate any suspected market abuse by the client but also the entity that a host CA must supervise to ensure it meets its responsibilities owed to its clients under Articles 24, 25, 27 and 28 of MiFID II. ESMA therefore proposes a field to be populated for a client to indicate whether the branch had the primary relationship with the client, which should mean where the branch maintains the client relationship through ongoing engagement with the client. Since a client may be in the buyer field or seller field in the simplified approach proposed there will be two fields, one for a buyer that is a client and one for a seller that is a client.
172. The concept for the branch of the reporting firm whose trader executed the transaction and the branch of the reporting firm whose membership was used is unchanged.
173. ESMA also considers that where a trader or committee in a branch is making an investment decision this also needs to be captured in the transaction report in order for CA to supervise the branch activity effectively. Therefore ESMA is proposing an additional field: the branch for the trader or committee responsible for the investment decision.
174. ESMA recognises the need to provide a clear rule to determine when a trader is a trader for the branch and proposes that a trader will be a trader of the branch when the branch has supervisory responsibilities for the trader.
175. Where the decision is made by a committee the committee will be considered to be a committee of the branch if the branch has supervisory responsibilities for the individual trader taking the primary responsibility for the investment decision of the committee. In the case of formal committees, ESMA considers that the trader taking the primary responsibility for the investment decision would generally be the chair of the committee. ESMA also clarifies that where activity is conducted by the head office of an investment firm rather than a branch (either the home firm of an investment firm that has branches

or an investment firm that does not have branches) the fields should be populated with the country code of the home Member State of the investment firm.

176. Where more than one branch or a branch and the head office of the investment firm are involved in a transaction the transaction report(s) must reflect the consolidated activity by the branches and the investment firm for that particular transaction. There should not be any duplication of transaction reports.

177. As an example, the primary client relationship may be with the branch and a trader of the branch may be responsible for the investment decision and execution but the transaction may be executed through the membership of the head office of the investment firm. The transaction should only be reported once. The branch fields within the transaction report should be populated with the country code of the host Member State of the branch to indicate that the activity was carried out by the branch except for the field for membership of the venue which should be populated with the country code for the home Member State of the investment firm.

Q223. Do you foresee any difficulties applying the criteria to determine whether a branch is responsible for the specified activity? If so, do you have any alternative proposals?

Transaction identifiers

178. The feedback received to the Discussion Paper indicated the need for more clarity from ESMA as regards identification of transactions and reports. In particular, respondents raised several issues with the Report Matching Number regarding how it would apply to chains and how it would work for OTC transactions. Following this feedback and ESMA's further consideration, ESMA has concluded that although the report matching number would in theory be useful information for competent authorities, there are many practical difficulties for its implementation. ESMA is therefore proposing to restrict its initial proposal by only requiring a matching number for two reports for transactions executed on a trading venue (i.e. market facing transactions) and specifying this requirement as a particular case for assigning the Transaction Reference Number for market facing transactions.

179. The Transaction Reference Number (TRN)⁶⁸ is used under current MiFID by the reporting entity to cancel or amend transaction reports. It is also used by CAs when requesting additional information related to the transaction report. It is required to be consistent and persistent only at the level of a reporting entity, no matching being required with other entities.

⁶⁸ See field n°22 of table 1 in annex 1 of Implementing Regulation N°1287/2006.

180. ESMA proposes that the Transaction Reference Number (see field 80 in the table of fields in Annex I of the draft RTS) should be retained and amended to comply with the following requirements:

- i. It uniquely identifies every transaction report sent to the CA at the investment firm level;
- ii. It is a unique, persistent and consistent code at the level of the investment firm; and
- iii. In the particular case of a transaction report pertaining to direct execution on a trading venue, it shall be the same as generated and disseminated by the trading venue to both the buying and the selling parties when confirming the execution.

Conditions to develop, attribute, maintain and use legal entity identifiers

Legal requirements and background

181. Article 26 of MiFIR requires ESMA to draft regulatory technical standards to specify the conditions under which investment firms should use the legal entity identifiers for the purpose of client identification in the transaction reports.

182. Global Legal Entity Identifier (LEI) system, recommended by the Financial Stability Board and subsequently endorsed by the G20 group, has become a commonly acceptable method to identify parties to financial transactions that are legal entities. The use of LEI is already required or recommended under a number of regulations such as: European Markets Infrastructure Regulation (EMIR), Capital Requirements Regulation (CRR), and Central Securities Depositories Regulation (CSDR).

183. It should also be emphasised that the global LEI database maintained by the Central Operating Unit of the Global LEI System will be available and fully operative before the obligation to report transactions under MiFIR starts. Due to this fact the requirement to report a valid LEI of the client should not bring about any significant difficulties as the market participants will be able to verify easily an LEI provided by a client.

Proposed approach

184. Investment firms should have appropriate arrangements in place in order to collect and verify the LEI provided by the client prior to the provision of the relevant investment service resulting in the investment firms obligation to submit a transaction report under Article 26 of MiFIR and to ensure that the client can execute transactions only upon disclosure and authentication of the LEI.

185. Verification should comprise validation of the format and the content of the identifier provided by the client. The format validation refers to the length and construction of the

code. Content validation against global LEI database maintained by the Central Operating Unit will ensure that the identifier is an authentic LEI code and it pertains to the actual client.

Q224. Do you anticipate any significant difficulties related to the implementation of LEI validation?

Methods and Arrangements to report financial transactions

186. The Discussion Paper contained a section on the methods and arrangements that were required by investment firms and trading venues to ensure the security and confidentiality of the data and to identify and correct inaccurate data in transaction reports and also to identify where transaction reports had not been made that should have been made. There was no specific question for this section but respondents did provide some feedback relating to over reporting. There was strong criticism by respondents of the absence of a golden source of financial instruments and the fact that firms were expected to cancel transaction reports in non-reportable instruments when without a golden source they were unable to determine what was reportable with certainty. Several firms advised that they thought over reporting was better for the CA than under reporting. There were similar concerns raised about the requirement for firms to cancel over reported activity that is specified to be non-reportable. ESMA is of the view that the clarification it is providing on the definition of transaction and the activity that results in the transaction that is reportable should allow firms to determine with reasonable certainty the activity that is reportable and therefore it is reasonable to retain the requirement for firms to have to cancel non-reportable activity or non-reportable transaction. In relation to instruments ESMA is of the view that it is the firm's responsibility to determine which instruments are reportable and ESMA wishes to limit over reporting as far as possible.

187. ESMA has provided more detail in the RTS of the requirements that it is proposing. It is proposing to include a couple of provisions relating to consistency of the contents of transaction reports. The first is to make it explicitly clear that firms are expected to report such that related fields in an individual transaction report are reported with internally consistent values, such that the transaction report accurately reflects the details of the transaction. For example, for an equity derivative a firm must report the values in the price, quantity, price multiplier and consideration fields in a way that the consideration field reflects the monetary value in major currency determined by multiplying the values in the price, quantity and price multiplier fields. The second provision on consistency is to make it explicitly clear that transaction report(s) reported by the firm when viewed cumulatively accurately reflect the changes in position of the firm and/or its client(s) in the financial instrument at the time the changes in position took place. For example, if a firm is acquiring an instrument for a client where the firm does not have any change in position it must either report the acquisition by the firm and a subsequent transfer from the firm to the client or it must report the original acquisition from the market by the

client. It cannot report an acquisition by the firm and an acquisition by the client from the market.

Q225. Do you foresee any difficulties with the proposed requirements? Please elaborate.

Rules to establish the Relevant Competent Authority for a given instrument

188. In the Discussion Paper, ESMA described the rules to determine the relevant competent authority (RCA) for a given instrument under the current MiFID (Regulation 1287/2006). This information is used by National Competent Authorities (NCAs) to route the transaction reports received by their local systems to the other NCAs. It is also used by investors to establish where they need to report their short positions.
189. The rules for determining the RCA vary between equity, debt and derivatives instruments. For equity instruments, the RCA is established on the basis of the trading venue where the equity is first admitted to trading or on the basis of the trading venue with the highest turnover for that equity.
190. For debt instruments, the principle for RCA determination is broadly based on the country where the registered office of the issuer is situated or, where the instrument is issued by a subsidiary, on the country where the registered office of the parent entity is situated. For derivatives, the RCA is established based on the RCA of the underlying instrument.
191. ESMA stated in the Discussion Paper that the current set of RCA determination rules work appropriately for most financial instruments and therefore does not intend to change the existing rules and procedures.
192. Respondents broadly supported ESMA's intention to maintain the current RCA determination rules. However, some respondents requested more clarity. Other respondents suggested the RCA for listed derivatives to be the RCA for the venue where the security is listed.
193. Following from the above, ESMA proposes to maintain the approach under current MiFID Regulation 1287/2006.
194. In addition, ESMA noted in the Discussion Paper that some financial instruments are not covered by the current set of rules. Those financial instruments would comprise mainly debt instruments with a non-EEA issuer and derivatives where the ultimate underlying has no global identifier (e.g. commodities), is a basket or is a non-EEA index.

195. The majority of the respondents stated that the responsibility to determine the RCA and route the transaction reports rests solely with the NCAs or did not give an answer to the specific question.
196. Other respondents pointed out that in the case of derivatives extensive data reporting already takes place under EMIR and that it is problematic that under MiFIR some information will have to be reported to the NCAs while under EMIR other information will have to be reported to Trade Repositories.
197. Some respondents proposed new subcategories under the existing ones (equities – debt – derivatives), to include the non-EEA cases described as this would add consistency to the actual model. Other respondents proposed that the NCA of the Member State where the issuance of securities has taken place should be the RCA.
198. On debt instruments with a non-EEA issuer and derivatives where the ultimate underlying has no global identifier (e.g. commodities), the rule could be established on the basis of the country of first admittance and on the basis of the trading venue where the instrument is first admitted to trading.
199. As far as derivatives where the ultimate underlying is a basket or is a non-EEA index the rule could be established on the basis of the trading venue where the derivative is first admitted to trading or traded.
200. For the purposes of establishing the RCA and taking into account the industry responses to the Discussion Paper, ESMA proposes to set rules for four categories of instruments:
 - i. Equity and equity like instruments
 - ii. Debt instruments
 - iii. Derivatives
 - iv. All other instruments.

Equity and equity like instruments

201. The rules to determine the RCA for equity should be constructed in such a way that the CA best equipped to monitor for market abuse has an overview of all transactions in the given equity and derivatives where that equity is the underlying. Since the responsibility for the dissemination of price sensitive information is placed on the CA of the regulated markets where the instruments are admitted to trading, aligning these two rules means that the determination of the RCA for equity should rely solely on the data of all the regulated markets where the equity is admitted to trading.

202. For those instruments that are not admitted to trading on regulated markets, the determination of the RCA is based on the data provided by MTFs where the instrument is being traded.
203. To ensure consistency and efficiency, the determination of the RCA for equity will be based on the same turnovers as those used for the determination of the relevant competent authority in terms of liquidity in Article 15.
204. The rule to determine the RCA for equity instruments will become as follows:
- i. Determine the list of all the regulated markets on which the equity is admitted to trading. In case the equity is not admitted to trading on any regulated market, determine the list of all the MTF's on which the equity is traded. In case the equity is admitted to trading both on regulated markets and MTFs, consider only the regulated markets to determine the list of the trading venues.
 - ii. For each trading venue identified in step (i) calculate the turnover according to the rules set out to determine the relevant competent authority in terms of liquidity in Article 15 for the given instrument.
 - iii. The competent authority for the trading venue identified in step (i) that has the highest turnover determined in step (ii) will become the RCA for the given instrument.
205. Where the equity is admitted to trading or started trading for the first time, or where no trading history exists for that equity, the RCA is set according to the trading venue where the instrument was first admitted to trading or was first traded.

Debt instruments

206. The RCA is determined according to the country of the ultimate issuer of the debt instrument. Where the ultimate issuer is not located in the EEA, the RCA is set on the basis of the country of the issuer of the debt instrument itself. If the issuer itself is also not located within the EEA, the home competent authority of the trading venue where the debt instrument was first admitted to trading or was first traded becomes the RCA.

Derivatives

207. The determination of the RCA for derivatives should be set as:
- i. Where the ultimate underlying is an equity instrument, an equity like instrument, or a debt instrument admitted to trading on a regulated market or traded on a MTF/OTF, the RCA for the derivative should be the RCA for that ultimate underlying instrument;

- ii. Where the ultimate underlying is a basket composed of at least one equity or debt instrument admitted to trading on a regulated market or traded on a MTF/OTF, the RCA for the derivative should be the NCA of the trading venue on which the derivative is traded. However the transaction will be routed to all CA's that are the RCA for one or more components of the basket.
- iii. Where the ultimate underlying is not in (a) or (b) and where the immediate underlying of the derivative is a derivative:
 - a. where the immediate underlying derivative is admitted to trading on a regulated market or traded on a MTF/OTF, the RCA for the derivative should be the RCA for that immediate underlying derivative immediate to the ultimate underlying financial instrument; or
 - b. where the immediate underlying derivative is not admitted to trading on a regulated market nor traded on a MTF/OTF, the RCA for the derivative should be the home competent authority for the trading venue on which the derivative is traded.
- iv. For all the remaining cases, the RCA should be set to the home competent authority of the trading venue where the derivative is traded.

Other instruments

208. The RCA is set according to the trading venue where the instrument was first admitted to trading or was first traded.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 32: Draft regulatory technical standards on reporting obligations under Article 26 of MiFIR

8.3. Obligation to maintain records of orders

Background/Mandate/empowerment

1. Article 25(2) of MiFIR requires ESMA to develop technical standards in relation to the obligation for trading venues to maintain records of orders.

Article 25(3) of MiFIR

ESMA shall develop draft regulatory technical standards to specify the details of the relevant order data required to be maintained under paragraph 2 of this Article that is not referred to in Article 26.

Those draft regulatory technical standards shall include the identification code of the member or participant which transmitted the order, the identification code of the order, the date and time the order was transmitted, the characteristics of the order, including the type of order, the limit price if applicable, the validity period, any specific order instructions, details of any modification, cancellation, partial or full execution of the order, the agency or principal capacity.

Scope of ESMA mandate

2. Article 25(2) of MiFIR requires operators of trading venues to keep at the disposal of the competent authority, for at least five years, the relevant data relating to all orders in financial instruments, which are advertised through their systems. The order records shall contain the relevant data that “constitute the characteristics of the order, including those that link an order with the executed transaction(s) that stems from that order”. Regarding the requirement to keep the data at the disposal of the CA, ESMA understands Article 25(2) of MiFIR as arranging for the data to be transmitted on request to the CA⁶⁹.
3. Article 25 expressly mandates ESMA to develop draft RTS to specify “the details of the relevant order data required to be maintained under” Article 25(2) of MiFIR “that is not referred to in Article 26”. It also further specifies this particular data set as including “the identification code of the member or participant which transmitted the order, the identification code of the order, the date and time the order was transmitted, the characteristics of the order, including the type of order, the limit price if applicable, the validity period, any specific order instructions, details of any modification, cancellation, partial or full execution of the order, the agency or principal capacity”.

⁶⁹ As already indicated in its Discussion Paper, ESMA considers the ‘competent authority’ as being the home competent authority of the trading venue.

4. Pursuant to its mandate under Article 25(3) of MiFIR, ESMA considered whether the “details” to be determined only refer to a description of the elements to be maintained (i.e., the content), or also refer to the format in which this information is to be maintained. To this end, in its Discussion Paper, ESMA identified three possible approaches regarding the level of harmonisation required pursuant to its mandate under Article 25(3) of MiFIR:
 - i. an approach where the specified order data elements are to be maintained by the trading venues according to their internal rules, without imposing any requirements on the format in which the information needs to be maintained (Option 1);
 - ii. an approach where all of the specified data elements are to be maintained in a specified format (Option 2); and
 - iii. an approach where only some specified order data elements are to be maintained by the trading venues in a specified format (Option 3). This option was articulated in two alternative ways: (i) under the first methodology, the specified data elements for which a particular format is prescribed should be converted into that specific format only upon request by the NCA (the other data elements could be maintained in a format determined by the trading venue and would not be expected to be converted in the specified format upon request); (ii) under the second methodology, the specified data elements for which a particular format will be prescribed would have to be maintained in that specified format on an on-going basis (the other data elements could be maintained in a format determined by the trading venue).

Analysis of feedback from stakeholders

5. Among the different options, Options 1 and 3 received most of the attention by respondents to ESMA’s public consultation. Many respondents favoured Option 1 mainly due to its flexibility and absence of implementation costs. Respondents that supported Option 3 and, in particular methodology (i), believe that it was a balanced way of allowing national competent authorities to receive some standardised data while permitting trading venues to maintain their own internal database with relevant mapping tables and without any loss of original raw data. This raw data could then be accessed by the competent authority upon making a request to that trading venue for that information.

Proposal

6. In light of the responses received, ESMA proposes adopting Option 3 (i) as described under paragraph 4 above. Therefore, trading venues will be required to maintain all the order data elements indicated in the draft technical standards and of these elements, only some of these elements will need to be converted by the trading venues into a specified format (as specified in the draft technical standards) upon an information request by the competent authority. Examples of some details that must be converted

into a specified format upon request includes certain details which are also prescribed under Article 26 of MiFIR. Where ESMA has not prescribed a specific format for a data element in the technical standards, that information must be maintained by trading venues but CAs can be provided to the competent authority in its raw format.

7. The technical standards prepared by ESMA pursuant to Article 25(3) MiFIR shall specify the details of the relevant data that constitutes the characteristics of the order that are not referred in Article 26 MiFIR, including those that link an order with the executed transaction(s) that stems from that order. To clarify these details, Article 25(3) MiFIR provides for a non-exhaustive list of the information to be reflected in the order data. This list is described in the following sub-sections of this chapter of the CP.

Relevant parties, trading capacity and liquidity provision flag

Identification of the market member or participant which transmitted the order

8. In its Discussion paper, ESMA proposed to identify the market member or participant as per Article 25(3) of MiFIR with its Legal Entity Identifier code (LEI) considering that it is the most appropriate code to identify in a unique, consistent, persistent and robust manner over time and across jurisdictions and investment firms.

Analysis of feedback from stakeholders

9. The respondents to ESMA's public consultation globally supported the proposal to use the LEI in order to identify trading venues' members or participants. A couple of trading venues suggested to use some caution as regards the LEI considering that this code has been recently implemented and that not all investment firms have one at the moment.

Proposal

10. In light of the responses received, ESMA considers that trading venues may maintain their own internal identifiers for identifying their members or participants provided that trading venues are and remain at all times in a position to convert this information into the LEI code to identify their members or participants when such information is requested by the competent authority.

Identification of relevant parties other than the trading venues' members or participants

11. In its Discussion Paper, ESMA proposed to identify other relevant parties such as the trader, the algorithm, the client and the technical intermediary, using to the extent possible the same identification approach as provided in the Discussion Paper for transaction reporting purposes as per Article 26(3) and (9) of MiFIR.

Analysis of feedback from stakeholders

12. The respondents to ESMA's public consultation globally supported the identification of these additional parties on the basis of the transaction reporting provisions under Article 26 of MiFIR. Notably, as regards the trader ID, they highlighted that this code is already available at trading venues. However, the usefulness and relevance of the identification of the technical intermediary for order data record keeping purposes was questioned by one respondent.
13. Some members of the Consultative Working Group of ESMA Market Data Reporting Working Group (CWG) raised further concerns regarding the client ID notably in terms of feasibility, competition and confidentiality. With respect to feasibility, stakeholders pointed out that this piece of information will not be available to trading venues at the moment of order submission as allocation to individual clients only occurs at a later stage.

Proposal

14. In light of the responses received, ESMA reiterates its proposal to identify the trader, client and algorithm for order data record keeping purposes on the model used for transaction reporting purposes pursuant to Article 26 of MiFIR, notably in terms of definition and format specifications.
15. The requirement to store client ID is fully consistent with the Market Abuse Regulation objectives. Experience shows a number of market abuse cases relate to orders (e.g. manipulation of orders) and that market abusers are not exclusively investment firms (individual clients can also commit market abuse). This should increase as a result of the broadening of the MAR scope to cover not only market abuse but also attempts of market abuse. Thus the client ID constitutes a key tool in the monitoring of trading activities (from the submission of an order, its evolution via modifications and finally its execution). In particular, this data will allow CAs to confirm or, on the contrary, set aside the suspicious nature of any cases identified. Moreover, it will allow CAs to identify potential cases of cross-market and attempted market abuse.
16. With regard to the specific case of aggregated orders, ESMA has considered different alternatives:
 - i. the first option consists in requiring multiple fields when the orders come from multiple clients (one field per client);
 - ii. the second option consists in requiring a unique and persistent code for the aggregated orders that would relate to the specific group of clients included in the orders;

iii. the third option consists in specifying in the field the default reference “AGGREGATED_X”, where X is the number of clients being aggregated. This third option is without prejudice to the investment firms’ obligation to maintain the precise allocation of the orders among the clients covered in the aggregated orders. Thus, when the aggregated order is executed and flagged, the CA would expect to see the allocated trades in the relevant transaction report.

17. ESMA proposes to adopt the third option (default reference “AGGREGATED_X”) as it allows CAs to have access to straightforward and meaningful information for the purpose of their supervision whereas the first two options would risk complicating investment firms’ record-keeping tasks without increasing the quality and reliability of the information available to national competent authorities.

18. Regarding the technical intermediary, ESMA is proposing to use the term “non-executing broker”. ESMA would like to further clarify that these entities are investment firms (being members or participants of trading venues) that route orders on behalf of other trading venues’ members, using the latter’s IDs, as opposed to their own. Consequently, for all purposes, the order always pertains to the member or participant of the trading venue and not to the non-executing broker. This is particularly relevant for the commodity markets. The non-executing brokers are recognised and identified as such by the rules of those trading venues and therefore ESMA considers this is a valuable piece of information for competent authorities’ supervision. ESMA therefore proposes that the identification of the non-executing broker should be maintained by trading venues and converted into the LEI code upon a request by the competent authority.

Q226. Are there any cases other than the AGGREGATED scenario where the client ID information could not be submitted to the trading venue operator at the time of order submission? If yes, please elaborate.

The agency or principal capacity

19. The MiFID II Discussion paper referred to the following notions of principal and agency capacity:

- i. Principal capacity: dealing on own account either on own behalf or on behalf of a client.
- ii. Agency capacity: dealing on the account and on behalf of a client.

Analysis of feedback from stakeholders

20. Further to ESMA’s public consultation and the 24 July Consultative Working Group meeting, stakeholders requested for interpretative guidance from ESMA on the application of the principal and agency concepts.

21. In particular, stakeholders pointed out that the term “acting on behalf” can be translated in different ways, each meaning a different legal structure. Considering the lack of a common understanding or cross-border definition stakeholders concluded that legal certainty could be reached by introducing a detailed clarification of the Principal and Agent concepts for transaction reporting purposes. In this way, the concept of trading capacity would be consistently used for the purposes of Article 25(2) and Article 26 of MiFIR.
22. Aside from the definitional problems, most respondents did not foresee any difficulties in capturing the capacity of the member or participant which transmitted the order to the trading venue.

Proposal

23. In light of the industry feedback, ESMA reiterates its proposal that trading venues maintain this piece of information. With a view to ensure consistency with the draft regulatory technical standard on Article 26 of MiFIR, ESMA proposes to introduce the same three flags for the trading capacity that are requested to be used in transaction reports:
 - i. M – Matched principal capacity means dealing on own account according to Article 4(1)(6) of MiFID II as a facilitator by interposing between the buyer and the seller to the transaction in a way whereby never being exposed to market risk throughout the execution of the transaction, with both sides executed simultaneously, and where the transaction is concluded at a price where the facilitator makes no profit or loss, other than a previously disclosed commission, fee or charge for the transaction.
 - ii. P – Principal capacity means all other instances of dealing on own account according to Article 4(1) (6) of MiFID II that do not fall within the definition of matched principal.
 - iii. A – Agent capacity means all other instances of dealing that do not fall under the definitions in Articles 4(1)(6) and 4(1)(38) of MiFID II.

The liquidity provision activity

24. In its Discussion Paper, ESMA proposed flagging orders that were either placed by markets makers or by other liquidity providers.

Analysis of feedback from stakeholders

25. The responses to ESMA’s public consultation broadly supported the proposal of flagging the orders related to market making/liquidity provision activity. However, a trading venue asked for clarification regarding the case of liquidity provision on behalf of an issuer as it believed the current wording could be confusing. Another trading venue pointed out that market making or liquidity provision schemes are static and only change on an inter-day

basis, therefore this type of information could easily be communicated separately. ESMA is also aware that not in all cases all the trading activity of a market maker or liquidity provider in relation with a security stems from this liquidity provision activity, since there could be orders placed through different trading desks (proprietary and clients'). However, ESMA considers this as a valuable piece of information to be included in the set of information to be maintained by trading venues.

Proposal

26. ESMA is of the view that the proposal of flagging the market making activity (under a market making agreement with the trading venue operator) and the liquidity provision activity on behalf of the issuer could be maintained for those orders linked to this activity, and has introduced a definition of "other liquidity providers" and accommodated the wording in the draft technical standard to avoid confusion.

Q227. Do you agree with the proposed approach to flag liquidity provision activity?

Date and time, validity period/trade restrictions, priority timestamp/size and sequence number of the events

Date and time

27. In its Discussion Paper, ESMA clarified that this field aims at specifying the exact date and time on which an event affecting the order occurs, including the date and time at which the order was transmitted. The format of both the date and time should reflect the one that has already been defined in a harmonised way in the context of the draft technical standards on clock synchronisation under Article 50 of MiFID II. ESMA's preliminary view was that due to increasing numbers of orders received by trading venues – subject to the traded financial instrument's volatility and liquidity - a time granularity of the time stamp of a microsecond maintained in UTC time should be envisaged to conduct effective cross-product and cross-trading venue monitoring.

Analysis of feedback from stakeholders

28. This approach has been broadly supported by the large European trading venues, while regional trading venues as well as some MTFs and OTFs presented alternative proposals in their responses.
29. One major proposal was to have no uniform treatment of all trading venues with respect to the time stamp accuracy. Under that proposal, the respondent suggested that the microsecond reporting requirement would be applicable to trading venues where HFT firms operate only; all other trading venues where no HFT trading takes place would be required to use their best endeavours to complete the date and time field and should apply zeros to the microsecond fields. Market participants also stated that clarification is required as to the processing point the time stamp is to be taken.

Proposal

30. After consideration of the presented arguments and in light of the discussion on the maximum divergence of business clocks (please see below) ESMA considers that the maintenance of the time stamp in UTC (Coordinated Universal Time) is still necessary.
31. However, ESMA's revised view is that a "one size fits all" time stamp granularity of a microsecond is not practical for all exchanges, platforms and systems, given the potential for future developments in respect of the order gateway-to-gateway latency time and therefore that the microsecond rule should not be uniformly implemented for all types of trading venues.
32. In light of the feedback received from the industry, ESMA considers it appropriate to request trading venues where orders are disclosed and/or tradable through an electronic trading system to generally maintain a time stamp for all order related events with an accuracy of at least a millisecond. However, trading venues operating an electronic trading system where the gateway-to-gateway latency time is measured in less than 1 millisecond will have to maintain time stamps for all order related events according to a level of granularity which is in line with the latency at which they operate. For example, a trading venue with a gateway-to-gateway latency of 125 microseconds would need to timestamp their order related events to the nearest microsecond. This is in line with the requirements proposed in the draft technical standard on Article 50 of MiFID (clock synchronisation).
33. All other systems that are not electronic trading systems, i.e. voice-trading systems will be required to have a time stamp accuracy of one second.

Q228. Do you foresee any difficulties with the proposed differentiation between electronic trading venues and voice trading venues for the purposes of time stamping? Do you believe that other criteria should be considered as a basis for differentiating between trading venues?

34. As regards the format of the relevant time stamps, ESMA envisages that all trading venues will be required to adopt a format which is sufficiently granular to meet the requirements established under Article 50 of MiFID (clock synchronisation). This will potentially vary between trading venues depending on the type of trading model of the venue and its gateway-to-gateway latency.
35. In addition, the stamping pattern of trading venues must be coordinated in practice as follows: The relevant processing point for time stamps that reflect an event affecting the order (save for rejection of the order) is the matching engine. In the case of a rejection of the order by the system of the trading venue, the order must be time stamped immediately at the time the order is rejected.

Validity period/Trade restrictions

36. In order to encompass all possible validity periods and/or trade restrictions of an order, ESMA proposed in its Discussion Paper the following possible indications: Good-For-Day, Good-Till-Cancelled, Good-Till-Time, Good-Till-Date, Good-Till-Specified Date and Time, Valid For Auction, Valid For Continuous Trading only, Immediate-Or-Cancel, Fill-Or-Kill.
37. In order to define an order's maximum lifetime more accurately and precisely, ESMA considered it appropriate in its Discussion Paper to supplement the above indications with the date and time at which the order shall automatically and ultimately be removed from the order book.

Analysis of feedback from stakeholders

38. The proposal was broadly supported by market participants, save for two respondents which argued that the template may not be appropriate for specific platforms/systems (e.g. MTF, OTF and RFQ) and that it is already too granular. On the other hand, some market participants suggested adding alternative indications to the list of validity periods.
39. The responses to ESMA's public consultation in relation to the suggested standardised default time stamp were not consistent. While some of the respondents agree that it should be feasible to introduce such default time stamps, other respondents believe that such introduction would be impractical due to their specific business models/different stamping patterns.

Proposal

40. In light of the responses received, ESMA has added additional validity periods/trading restrictions (i.e. Good After Time, Good After Date, Good After Specified Date and Time and Good For Closing Price Crossing Session) to the list of validity periods presented in its Discussion Paper. As a consequence, ESMA would like to propose that the validity period and/or trade restrictions of an order (if any) be reflected via the indications set out in the Table 1 of Annex 1 to the RTS. This list is not exhaustive and ESMA is proposing that for validity periods or trade restrictions that are not listed, these orders should be marked according to the venue's own classification.
41. Having taken the responses into consideration, ESMA is still of the opinion that a standardised default time stamp needs to accompany some of the indications in respect of validity periods and, consequently, proposes to apply standardised default time stamps for selected validity periods as listed in Table 1 of Annex 1 to the RTS.

Priority timestamp/size

42. In its Discussion Paper, ESMA underlined the aim of reflecting the priority of an order during its lifetime in the order book compared to that of all other orders in the order book. ESMA proposed that priority of orders to be maintained by trading venues as increasing

integers (e.g., 1, 2, and 3) instead of time stamps, which may sometimes not be sufficiently accurate. ESMA was therefore presenting the following options:

- i. to set the priority number for each and every limit price; or
- ii. to set the priority number for the whole order book; or
- iii. to set the priority number per side of the order book.

Analysis of feedback from stakeholders

43. The majority of the participants did not support the proposal of using a priority number to determine the position of orders on the order book. The responses indicated that current market practice is to determine this position using the time stamp and sequence number of an order for trading systems that use price visibility-time priority or by using the size for trading systems that use size priority. In addition, some of the responses were concerned that ESMA would set rules determining the order priority that venues must use.
44. As a point of clarification, ESMA will not set rules determining how venues should set the matching engine priority logic. The purpose for requiring trading venues to maintain details of the priority of orders is to enable competent authorities to reconstruct order books in the same way that a data vendor constructs an order book using real time information from trading venues.

Proposal

45. In light of the responses received, ESMA is proposing to adopt the current market practice to determine the position of orders. In particular:
 - i. for trading systems that use price visibility-time priority, where orders are displayed on an order book in time priority, the proposal will be to use the sequence number and the priority timestamp. The sequence number will be the same as that under the heading of sequence number. The priority timestamp is to be in a standardised format in UTC i.e. YYYY-MM-DDThh:mm:ss.OZ where Y is the year, M is the month, D is the day, T signifies the time section, h is the hour, m is the minute, s is the second, zero is the fraction of a second and Z signifies Zulu (UTC) time. For example, 2014-09-05T13:02:58.961Z represents 1:02:58.961pm on 5 September 2014. This will be in the same granularity as specified in the date and time section. The priority timestamp field is required in addition to the date and time of event field as certain events will not impact the order priority/position and therefore the priority timestamp would be different to the date and time of event field⁷⁰.

⁷⁰ This can be shown in the following example:

- ii. for trading systems that use size priority, where orders are displayed on an order book in size priority, the proposal will be to use the relevant size of the order in the priority size field. The relevant size of the order will be the quantity that is used to determine the order priority.
46. For trading venues that operate models where the concept of priority does not exist (e.g. a Request for Quote model where a member could respond to quotes in any sequence that they determine), ESMA is proposing that there is no requirement to maintain details of the priority timestamp/size.

The sequence number

47. In its Discussion paper, ESMA clarified that the purpose of a sequence number is to allow the national competent authority to be able to identify the true sequence of events as they were processed by the trading venue per financial instrument. This is of particular relevance when two or more events have exactly the same time stamp. ESMA considered that the sequence number should be reset at the end of each trading day.

Analysis of feedback from stakeholders

48. The majority of respondents to the discussion paper indicated support for the proposed approach for sequence numbers as it is in line with existing market practice. Some respondents queried the purpose of the sequence number. For this reason, ESMA would like to provide further clarity to the industry by confirming that the purpose of the sequence number is to determine the correct sequence of events that have exactly the same timestamp. The sequence number is not used to identify or label the order itself.

Proposal

49. ESMA is proposing that the sequence number must be a positive integer that is unique, consistent, persistent, robust for the date and in ascending order. This includes the ability for trading venues to use sequence numbers across multiple financial instruments/order books and therefore may increase by more than one integer between events in the same instrument/order book.
50. ESMA has decided that the sequence number will not need to be reset at the end of the trading day as initially proposed in the Discussion Paper since the requirements set out above will be sufficient for competent authorities to identify the correct sequence of events.

at 10:30:00.000, a limit order is entered for 500 shares at 100p
at 10:45:00.000, the number of shares for the original limit order is decreased from 500 shares to 100 shares at 100p
On some trading venues that use price, time priority, a reduction in order volume would have no impact on the order priority and therefore the priority timestamp on the second event would remain at 10:30:00.000 whilst the date and time of the modification in size would be 10:45:00.000.

Identification of the order, details of new order, order modification/cancellation and partial/full execution of the order

Identification code of the order and identification of the order book

51. In its Discussion Paper, ESMA proposed to identify each and every order from its receipt by the trading venue until its removal from the order-book (e.g., if filled or cancelled) notwithstanding any event affecting it such as a modification, rejection or the validity period. For this identification to be efficient, ESMA further proposed that the ID code should be set up to be unique, consistent across all orders processed by the trading venue and persistent and robust over time.

Analysis of feedback from stakeholders

52. The responses to ESMA's public consultation show that there is a majority in favour of ESMA's proposal. However, one respondent considered that "the approach goes far in excess of the mandate conferred in Level 1" and that the trading venues "evidently have capable and automated methods for the identification and labelling of orders". It is noteworthy that some respondents pointed out that the proposed approach did not take into account specificities of non-equity markets. They notably argued that some derivatives, FX and money market instruments might not have an ISIN code. A few respondents further raised the issue of multi-legged orders that are generated through a single submission by the trading venue's member or participant (for instance, submission of an order regarding the combination of options or futures).

Proposal

53. In light of the consultation outcome, ESMA proposes that venues need to separately maintain each of the following five elements:

- i. Denomination of the trading venue through the segment MIC code
- ii. The alphanumeric code established by the trading venue for each and every order book
- iii. The financial instrument's identification code (i.e. the ISIN code; if there is no ISIN code, then the All product code should be chosen)
- iv. The date of receipt of the order by the trading venue;
- v. Alphanumeric code assigned by the trading venue to the individual order. This code shall be unique per order.

54. CAs will then use the individual elements to form a combination of the elements to uniquely identify the order. This combination process does not need to be performed by the trading venue.

Strategy markets

55. ESMA is proposing that for trading venues that offer strategy markets without implied functionality, where the order can only execute in the strategy order book, the trading venue must maintain the order data in the relevant strategy market.

56. ESMA is proposing that for trading venues that offer strategy markets with implied functionality, where the order can execute in either the strategy order book or the outright order books, the trading venue must maintain the order data in all of the relevant order books. This includes both implied-in and implied-out functionality. Trading venues will be required to maintain all the relevant information required (e.g. buy/sell indicator, quantity etc.) as they do for other types of orders however some additional rules will apply:

- i. Orders that are implied from the other markets will be flagged with the order status being shown as 'implicit';
- ii. Each order that is part of the strategy including the order in the strategy order book will be maintained with the alphanumeric code used by the venue for identifying the relevant strategy market;
- iii. Each order that is part of the strategy including the order in the strategy order book will be maintained with a Strategy Linked Order ID that will identify all the orders (implied or otherwise) that are part of that particular strategy order.
- iv. Prices including implied in and implied out prices will need to be maintained; and
- v. Trading venues will be expected to maintain the relevant order quantities as opposed to using ratios in the quantity field.

Q229. Is the approach taken, particularly in relation to maintaining prices of implied orders, in line with industry practice? Please describe any differences?

Routed orders

57. Lastly, ESMA understands that trading venues that offer to route orders to other trading venues will use a broker in order to facilitate the smart order routing of the order. Trading venues that receive orders with a routable instruction are required to use the specific order status "Routed" for these orders to be clearly identified in the event it returns to the initial order book. The trading venue shall maintain the specific routing strategy as described by the trading venue's specification. This is relevant for where trading venues offer different routing strategies to their members or participants.

Details of new order, order modification/cancellation and partial/full execution of the order

58. This data relates to the main categories of events that can affect an order as indicated in Article 25(3) of MiFIR. In its Discussion Paper, ESMA's preliminary view was that it would be useful if the technical standards detailed the events that may be commonly found, so the Discussion Paper provided a detailed list of events, grouped by categories.

Analysis of feedback from stakeholders

59. The list of events is broadly considered comprehensive and relevant by the respondents to the ESMA's public consultation, but some believed that several new types of events should be included.

Proposal

60. ESMA considers that some of the events that have been proposed by respondents (e.g. trade break events by market operations or pending status) are already encompassed in the events proposed in the Discussion Paper. On the other hand, the proposed new event "rejection by the counterparty" has been added to the list in the modification category.

61. ESMA would like to clarify that trading venues whose trading model does not permit an order to be disclosed and/or tradable through an electronic system, such as voice trading systems and thus does not utilize any of the proposed event details, will not be required to maintain them, provided that those elements are completely irrelevant for such trading model.

Type of order, prices and specific order instructions

Type of order

62. In its Discussion Paper, ESMA clarified that this field aims at defining how the member or participant who submits an order wants the order to be handled by the trading venue's matching engine, in other words, how the order is expected to be traded throughout its lifetime in the trading venue's order-book. ESMA's preliminary view was that technical standards cannot detail in an exhaustive manner all existing order types as new order types can always be designed and released by trading venue operators. Therefore, ESMA proposed to address the variety of order types by identifying two basic order types (Limit Order and Stop Order) that would provide an initial indication to competent authorities of the order's current state.

Analysis of feedback from stakeholders

63. The majority of respondents indicated that they did not foresee any difficulties in identifying orders using two generic order types (Limit Order and Stop Order) whilst still maintaining the specific order type for that venue. However, concerns were raised as to the usefulness of the generic information for competent authorities when reconstructing order books.

Proposal

64. To reconstruct the order book, ESMA acknowledges that competent authorities will need to be aware of the attributes of each order at any given time and this information will be required to be maintained and provided in the [specific order instructions sub-section]. To supplement the 'specific order instructions', ESMA still considers that it would be useful for trading venues to classify their orders according to a simplified order type structure to assist competent authorities when analysing order data. The generic order types can be used by competent authorities with the status of orders to reconstruct an order book, whilst the more granular information contained within the specific order instructions can be used by the CAs to conduct more detailed analysis.

65. There were concerns raised as to the appropriateness of the two order types for Request for Quote (RFQ) systems, however, it should be re-iterated that the concept behind the two types of orders is to simplify the multiple different order types and thus to allow tracking each modification of the order's characteristics within the order book. ESMA is proposing that quotes will be classified as limit orders for the purposes of this field. Competent authorities will be able to identify those limit orders as quotes because that information will be maintained under the specific order instructions.

66. The table below provides some examples as to how classify specific order types into the two generic categories:

Limit	An order that may execute at prices equal to or better than its limit price	LIM
Market	An order that can execute at any price	LIM
Market to Limit	An order that will act as a market order on entry and then persist as a limit order	LIM
Iceberg / reserve	An order where only a portion of the volume is visible to the market.	LIM
Quote	A quote that may execute at prices equal to or better than its price	LIM
Pegged	An order where the price is pegged to a level e.g. mid.	LIM
Hidden	An order that is not visible but may execute at prices equal to or better than its limit price	LIM
Named order	A non-anonymous limit order.	LIM
At best	An order where the price is equal to the best price	LIM
Spread	An order where the yield is calculated as a spread to the benchmark.	LIM

Book-or-cancel/Passive only	An order that is only accepted if it is to persist on the order book.	LIM
TOP/TOP+ order	An order that is only accepted if it creates a new best bid or offer.	LIM
Strike Match Order	An order with both a maximum (could also be market) and minimum price.	LIM
Imbalance orders	An order entered during auctions dependent on the imbalance.	LIM
Sweep orders	An order that will execute on multiple venues from a single message.	LIM
Stop/Market if Touched	An order that will act as a market order when the stop price is reached.	STOP
Stop Limit/Limit if Touched	An order that will act as a limit order when the stop price is reached.	STOP
Trailing Stop	An order that will act as a market order when the stop price, which can change, is reached.	STOP
Guaranteed Stop	An order that is guaranteed to be executed at the stop price or better.	STOP

Prices

67. In its Discussion Paper, ESMA proposed three types of price fields: limit/stop price/pegged limit field. These fields would be used to specify the price at which an order was traded or triggered or triggered and halted. In addition, ESMA proposed in its Discussion Paper that the trading venues would specify the price using the same granularity already used to maintain that information.

Analysis of feedback from stakeholders

68. A number of responses raised general comments on this topic and there was a split between the respondents that clearly supported the proposal and those that did not. The respondents that were not in support raised concerns that the order price should keep within the existing rules and procedures in the trading system without venues having to make significant changes to their order matching system.

69. ESMA would like to clarify that the proposal is that venues must maintain any prices that are associated with the order and is not imposing requirements that venues must amend their matching system's logic or add new order types. Trading venues that do not offer stop orders or pegged orders would not be expected to populate these fields.

70. The responses that raised general comments indicated that other prices may be relevant that were omitted from the discussion paper such as prices for strategy orders on derivatives trading venues. ESMA is also aware that some trading venues allow participants to enter orders in certain sessions with a limit price and an additional limit price e.g. the Strike Match order type on Xetra.

Proposal

71. Based on the responses, ESMA is therefore planning to modify this proposal by including these additional fields to insert prices, if relevant for the specific order event.

Specific order instructions

72. In respect of the specific order instructions, ESMA explained in the Discussion Paper that this data aims at ensuring that competent authorities have access to relevant elements that adequately supplement those explicitly provided under Articles 25 and 26 of MiFIR for the purpose of market surveillance. In order to reach this goal, ESMA provided a list with the elements that would be both sufficient and relevant to characterise any order placed by the member or participant and to allow a useful description of how it should be handled by the trading venue.

Analysis of feedback from stakeholders

73. Most respondents broadly agreed with the provided list of fields relating to the specific order instructions. Some respondents also considered minor changes in the provided list, asking for new fields or for modification or even removal of some of the proposed fields.

Proposal

74. Having taken the previous arguments in consideration, ESMA would like to confirm that the specific order instructions listed in the Annex 1 to the RTS are not intended to be exhaustive. In addition, ESMA would like to clarify that trading venues whose trading model does not permit an order to be disclosed and/or tradable through an electronic system, such as voice broking systems, and thus does not utilise any of these elements, will not be required to maintain them, provided that those elements are completely irrelevant for such trading model.

Reference to the transaction(s) following the order in case of execution

75. ESMA's mandate includes details of relevant order data that link an order with the executed transaction and the most appropriate way to link orders and transactions would be for trading venues to maintain a transaction identification number for each execution. In its Discussion Paper, ESMA considered that for the "transaction identification code" generated by the trading venue to be efficient, it should, like any other code, satisfy the following conditions:

- i. it should begin with the segment MIC of the trading venue;
- ii. it should be unique for each transaction;

- iii. it should be consistent across all orders processed by the trading venue and transactions; and
- iv. it should be persistent and robust in time.

Analysis of feedback from stakeholders

76. Most respondents do not foresee great difficulties in generating a transaction ID code that links the order with the executed transaction that stems from that order, although some of them considered there could be some problems due to the characteristics of the trading model.

Proposal

77. Therefore ESMA considers the transaction reference code as a relevant order data required to be maintained in the order book, which will enable linking transactions with the orders that they stem from.

Elements relating to the functioning of the order book

78. In its Discussion Paper, ESMA considered requiring trading venues to maintain data elements on the functioning of the order book that are not specifically related to the characteristics of the order but determine how the order interacts within the order book. This would include records of when trading phases start and finish on the trading venue, as well as information about unscheduled trading phases like a circuit breaker auction call period. There was also consideration around maintaining the indicative prices and volumes during auction call periods.

Analysis of feedback from stakeholders

79. Most respondents did not foresee any difficulties with maintaining the elements relating to the functioning of the order book, although a trading venue's response highlighted that this information could be supplied separately, and another trading venue believed that the requirements for maintaining the records and the provision of such information needed to be further detailed.

Proposal

80. In light of the feedback and taking into account that this data is already recorded by the trading venues, ESMA proposes not to require a standardised format to maintain such information as long as a sequence number is kept and these elements are presented to the CAs in a consolidated and integrated way with the rest of the order data.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 34: Draft regulatory technical standards on obligation to maintain records of orders

8.4. Requirement to maintain records of orders for firms engaging in high-frequency algorithmic trading techniques

1. Under Article 17 of MiFID II, investment firms that engage in algorithmic trading are subject to specific and additional requirements in order to ensure that their trading systems are resilient and have sufficient capacity for the purposes of the orderly functioning and integrity of financial markets. Among other requirements, Article 17(2) of MiFID II provides that investment firms that engage in a high-frequency algorithmic trading technique (which is a specific subset of algorithmic trading) have to “store in an approved form accurate and time sequenced records of all its placed orders, including cancellations of orders, executed orders and quotations on trading venues and shall make them available to the competent authority upon request”. Pursuant to Article 17(7)(d) of MiFID II, ESMA is required to draft regulatory technical standards to specify on the one hand, the content and format of the approved form of the records that must be maintained by investment firms engaged in high-frequency algorithmic trading techniques and on the other hand, the length of time for which such records must be kept by those investment firms.
2. In the Discussion Paper put out to public consultation in May 2014, ESMA made proposals in relation to its empowerment under Article 17(7)(d) of MiFID II with a view to seeking consistency between the content, format and record-keeping period of the records specified in this Article and those required under Article 25(2) and (3) and Article 26 of MiFIR regarding respectively order data details to be maintained by trading venue operators and transaction details to be reported by investment firms executing transactions in financial instruments. ESMA’s approach is based on the assumption that the record-keeping obligations provided under Article 17(2) and (7)(d) of MiFID II supplement the general ones imposed upon each and every investment firm by Article 25(1) of MiFIR⁷¹ and Article 16(6) MiFID II. ESMA therefore considers that both record-keeping obligations pursue and share the same objective as specified in Article 16(6) of MiFID II that is, that the records should be sufficient to enable the competent authority to fulfill its supervisory tasks under MiFID II, MAD II and MAR. The merit of this approach is both to facilitate the data processing by competent authorities and to avoid imposing unnecessary burden upon market participants.
3. Moreover, in consistency with investment firms’ general record-keeping obligations under Article 25(1) of MiFIR, ESMA has proposed that the length of time during which every investment firm engaging in a high-frequency algorithmic trading technique has to maintain the specific records for the purpose of Article 17(2) and (7)(d) should be five years.

⁷¹ As mentioned in ESMA’s Discussion Paper and in reliance upon MiFID Implementing Regulation (EC) n° 1287/2006, it is deemed that the general transaction and order records to be kept by investment firms under Article 25(1) of MiFIR should encompass details such as the name and designation of the client, the name and designation of any relevant person acting on behalf of the client, the Buy/Sell indicator, the instrument identification, the unit price and price notation and the quantity and quantity notation.

4. Further to ESMA's public consultation, a majority of respondents supported ESMA's proposals both as regards the content of the records and the length of time for keeping them (i.e., 5 years). Even though they generally agreed with ESMA's proposals, many of them nonetheless objected to the nanosecond granularity, which was considered as excessive and very difficult to apply in practice in relation to each placed order's timestamp (both at the level of the investment firm placing it and at the level of the trading venue). A few respondents recognised that a "sub-microsecond" granularity could be relevant and make sense.
5. The respondents that did not support ESMA's proposals mainly argued that the specific record-keeping obligations imposed upon investment firms engaged in a high-frequency algorithmic trading technique were not useful on the ground that they reduced competition and induced an uneven level-playing field. As per its empowerment under Article 17(7)(d) of MiFID II, ESMA is not in a position to respond to such arguments as the Level 1 text of MiFID II specifically envisages that different requirements should be imposed on investment firms engaged in a high-frequency algorithmic trading technique.
6. Considering respondents' strong reluctance to the nanosecond granularity notably in terms of technical practicability and considering that the MiFID II objective could still be met if a microsecond granularity was used for the purpose of the record-keeping obligations upon investment firms engaged in a high-frequency algorithmic trading technique. ESMA proposes to adopt a similar approach to the one prescribed in the ESMA technical standard on clock synchronisation.
7. Therefore, as a general rule investment firms engaged in a high-frequency algorithmic trading technique will be required to record time at the microsecond granularity, however investment firms that are members or participants of trading venues where the gateway-to-gateway latency is measured in less than one microsecond will be required to record time at the same level of granularity as that trading venue.
8. A couple of respondents advised limiting the record-keeping requirements under Article 17(2) and (7)(d) of MiFID II to executed orders only as in their opinion, non-binding quotes cannot influence markets. In this regard, ESMA would like to recall that such a restriction would not be compliant with MiFID II which expressly provides for general record-keeping obligations upon investment firms in relation to both transactions (i.e., executed orders) and orders, and for specific obligations upon high-frequency algorithmic trading investment firms without any restriction as to the nature of the orders (whether or not executed). Limiting the latter obligations would not meet the objective of MiFID II which is to enable competent authorities to supervise and monitor each and every investment firm (irrespective of the nature of its trading activity).
9. In light of the responses to the above-mentioned public consultation, ESMA is of the view that every investment firm that engages in a high-frequency algorithmic trading technique should ensure to maintain at all times records of information relating to each and every placed order, including quotations, so as to enable the competent authority of

its home Member State to fulfill its supervisory and monitoring tasks under MiFID II, MAD II and MAR. The home Competent Authority of the investment firm should communicate such information to the national competent authority of the trading venue at which the investment firm participates as a member or participant.

10. In considering the relevant data that HFT firms should maintain, ESMA has given consideration to the feedback in the discussion paper concerning ESMA's HFT record keeping proposals. In the discussion paper, ESMA proposed that HFT firms should store details of each algorithm parameter and market data messages. ESMA has decided not to pursue these proposals further as this would create a disproportionate burden on HFT firms relative to the benefit that would be gained. The relevant information relating to each and every placed order that the investment firm that engages in a high-frequency algorithmic trading technique has to maintain as per Article 17(2) and (7)(d) of MiFID II should at least consist of the details listed in Article 3 of this technical standard.
11. As stated in its Discussion Paper, ESMA's approach is based on the assumption that the details to be recorded under Article 17(2) and (7)(d) of MiFID II include the general ones imposed upon each and every investment firm by Article 25(1) of MiFIR⁷² and Article 16(6) MiFID II.
12. The investment firm that engages in a high-frequency algorithmic trading technique should maintain the records stored under Article 17(2) and (7)(d) for five years.

Q230. Do you agree on the proposed content and format for records of orders to be maintained proposed in this Consultation Paper? Please elaborate.

Q231. In your view, are there additional key pieces of information that an investment firm that engages in a high-frequency algorithmic trading technique has to maintain to comply with its record-keeping obligations under Article 17 of MiFID II? Please elaborate.

Q232. Do you agree with the proposed record-keeping period of five years?

⁷² As mentioned in ESMA's Discussion Paper and in reliance upon MiFID Implementing Regulation (EC) n° 1287/2006, it is deemed that the general transaction and order records to be kept by investment firms under Article 25(1) of MiFIR should encompass details such as the name and designation of the client, the name and designation of any relevant person acting on behalf of the client, the Buy/Sell indicator, the instrument identification, the unit price and price notation and the quantity and quantity notation.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 35: Draft RTS on the requirement to maintain records of orders for firms engaging in high-frequency algorithmic trading techniques

8.5. Clock Synchronisation

Background/Mandate/empowerment

1. Article 50(1) of MiFID II requires Member States to oblige all trading venues and their members or participants to synchronise the business clocks that they use to record the date and time of any reportable event.

Article 50(2) of MiFID II empowerment

ESMA shall develop draft regulatory technical standards specifying the level of accuracy to which clocks are to be synchronised in accordance with international standards.

Analysis of feedback from stakeholders

2. The main issues raised in the consultation responses were the following:
 - i. Concerning the requirement to synchronise to a common reference clock, respondents raised concerns about the proposal to mandate a specific reference clock as this may create monopolistic positions; introduce barriers to entry in the market and limit the rules' flexibility to adjust to innovation and market developments. The majority of stakeholders recommended focusing the rules on the maximum divergence to UTC that would be allowed.
 - ii. Concerning the requirement to have clocks synchronised at the microsecond level, respondents raised concerns about the proposal to apply a blanket requirement to different market models. Respondents suggested that the level of accuracy required should be calibrated and adjusted for different types of market participants (e.g. HFT firms vs. other types of investment firms) and trading venues (electronic order book vs. voice trading).

Proposal

3. The purpose of this section is to describe the main proposals contained in full draft Regulatory Technical Standards. The full draft can be found in Annex IV of this Consultation Paper (CP).
4. Taking into consideration the outcome of the consultation, the draft RTS on clock synchronisation focuses on the maximum divergence permitted with respect to the reference time and proposes a calibration of the synchronisation requirement that takes into account different trading models.

Reportable events

5. Article 50 of MiFID II refers to the obligation to record using an accurate time source the date and time of any “reportable event”. Given that this concept is not defined elsewhere, ESMA provided examples of “reportable events” for the purposes of Article 50 in the Discussion Paper (DP). The rationale of this proposal was covered already in the DP for which no relevant changes have been introduced, so it is not developed again in this CP. ESMA recommends, therefore, to read this consultation together with the DP to have a complete vision of the rationale for the proposed measures.

Type of synchronisation

6. ESMA understands that there are two types of clock synchronisation which take place:
 - i. The internal synchronisation that occurs at the trading venue’s or member’s or participant’s system level (e.g. between the slave clocks attached to the relevant systems within the firm and the master clock).
 - ii. The synchronisation of venues’ or members’ or participants’ internal master clock against a common external time reference.
7. The first type of synchronisation relates to the internal distribution of time within a venue or member’s or participant’s systems. ESMA understands that there are different ways of distributing time from master clocks to slave clocks such as Network Time Protocol (NTP) and Precision Time Protocol (PTP). The second type of synchronisation involves the synchronisation of the trading venue’s or member’s or participant’s system master clock to an external reference clock.
8. ESMA envisages a requirement that would apply to all internal master and slave clocks within a trading venue or member’s or participant’s system and that would ensure that all events affecting an order are time stamped according to the same internal reference (i.e. time of transmission, rejection, cancellation etc), to enable effective cross-venue monitoring.
9. ESMA does not intend to prescribe the specific technology that must be used for clock synchronisation in order to allow venues, members and participants to choose the most appropriate technology for their entity and to accommodate future advances in technology. For example, ESMA will not specify that all venues, members and participants must use Precision Time Protocol (PTP) to distribute time. Instead, ESMA prescribes technology-neutral rules, provided that each trading venue, member or participant achieves the ultimate goal of ensuring that the time recorded by each slave and master clock within a given trading venue or member’s or participant’s system is synchronised to the common external time reference and does not diverge more than a specified unit of time (eg 1 millisecond), depending on the calibration applied, from the reference time.

Reference time

10. The reference time to be used by trading venues and their members or participants for the purpose of clock synchronisation should be the Coordinated Universal time (UTC) according to the UTC time issued and maintained by one of the timing centres listed in the latest Bureau International des Poids and Mesures (BIPM) Annual Report on Time Activities maintaining the local approximation of UTC.

Level of accuracy

11. Experience shows that the number of orders received by a trading venue can be very high and in any event, much higher than that of executed transactions, so that for each and every second, a trading venue may receive many orders (e.g. several thousands of orders per second depending on the trading venue and on the financial instruments' volatility and liquidity). As a result, a time granularity of one second would not be sufficient for the purposes of market manipulation surveillance.

Electronic systems

12. Therefore, as a general rule ESMA envisages a minimum requirement according to which internal clocks of trading venues operating an electronic system cannot diverge by more than one millisecond with respect to the reference time. The members or participants of a trading venue will be obliged to maintain business clocks with at least the same time accuracy applied by the most accurate trading venue of which they are a member or participant.
13. However, trading venues that operate systems where the gateway-to-gateway latency is measured in less than one millisecond will have to synchronise their clock according to the level of accuracy at which the venue operates. For example, a trading venue has a gateway-to-gateway latency time of 125 microseconds (equivalent to 1.25×10^{-4} seconds) would be expected to have a level of accuracy of one microsecond, that is a maximum divergence of +/- one microsecond from UTC.
14. To clarify, the gateway-to-gateway latency time is the time it takes for the trading venue to acknowledge an order. This is the time from when the order message is received by the trading venue until the time that the order acknowledgment leaves the trading venue which will include any processing of the order message that the venue must conduct and the creation of the order acknowledgement message. Trading venues may list multiple gateway-to-gateway latency times for different percentiles. For the purposes of clock synchronisation, ESMA considers that trading venues should use the gateway-to-gateway latency time at the 99th percentile.
15. ESMA believes that by adopting an approach based on the gateway-to-gateway latency of the venue, this will allow for differentiation between trading venues which trade at different speeds and furthermore will allow the rules to adapt to future changes in the

evolution in the speed of trading. Therefore as latency decreases, the time granularity rules will move in tandem with these latency changes. ESMA acknowledges however, that at present it may not currently be feasible to expect trading venues to synchronise their clocks or time stamp events to a granularity which is less than nanoseconds. As a result, ESMA has proposed capping the granularity and accuracy requirements at the nanosecond level.

16. The table in Annex 1 of the technical standards provides a guide as to the level of accuracy that would be required for trading venues operating electronic systems and the level of divergence with respect to the reference time.

Voice trading

17. On the other hand, trading venues that operate through voice trading only are required to have a maximum divergence from the reference clock of one second.

Members or Participants of venues

18. Members or participants of trading venues will be obliged to synchronise the clocks in the systems that they use to connect to that trading venue according to the same time accuracy applied by the trading venue. Hence, trading venues shall make public the time granularity used in their systems. ESMA recognises that such requirement might be disproportionate for participants and members that do not engage in high-frequency algorithmic trading techniques or more broadly operate at a high latency and would appreciate views from the industry on possible calibration of the requirement for investment firms operating at a high latency.
19. This means that where the trading venue makes a change to its gateway-to-gateway latency time (which could imply a change to its clock synchronisation and accuracy requirements under Article 50), the members or participants of those venues will also need to make a change to their own clocks. ESMA recognises that members and participants will need reasonable notice and a sufficient amount of time to change their own clocks. ESMA's expectation is that members and participants will make the change in a timely manner following notification of a change by the venue.

Q233. Do you agree with the proposed criteria for calibrating the level of accuracy required for the purpose of clock synchronisation? Please elaborate.

Q234. Do you foresee any difficulties related to the requirement for members or participants of trading venues to ensure that they synchronise their clocks in a timely manner according to the same time accuracy applied by their trading venue? Please elaborate and suggest alternative criteria to ensure the timely synchronisation of members or participants clocks to the accuracy applied by their trading venue as well as a possible calibration of the requirement for investment firms operating at a high latency.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 36: Draft regulatory technical standards on clock synchronisation

8.6. Obligation to supply financial instrument reference data

Background/Mandate/empowerment

1. Article 27 of MiFIR requires ESMA to develop technical standards in relation to the obligation to supply reference data.
2. It should be noted that both article 27 of MiFIR and Article 4 of MAR establish a requirement on the provision of reference data to the competent authorities. The Competent Authorities should in turn provide this data to ESMA who will make it available on its website. Such provisions are aimed at providing competent authorities with the necessary tools to fulfil their supervisory duties under MiFIR as well as under Regulation (EU) 596/2014 (MAR). Considering the common purpose of the two provisions and the common reference data elements to be provided ESMA considers it appropriate to ensure that the two requirements are fully aligned and that a single set of reference data is published on ESMA website.

Fields to be reported as instrument reference data

3. Article 11 of the Implementing Directive 2004/39/EC already requires regulated markets to submit to their home competent authority, in an electronic and standardised format, the identifying reference data on each financial instrument they admit to trading. This information is required to be submitted before trading commences in that particular financial instrument.
4. Under Regulation 600/2014 (MiFIR), the submission of identifying reference data obligation extends to financial instruments traded on a MTF or an OTF. Moreover, comparable requirements apply to systematic internalisers for financial instruments covered by Article 26(2) of MiFIR other than those admitted to trading on regulated markets or traded on MTFs or OTFs. Accordingly, the scope of financial instruments subject to identifying reference data requirements defined in MiFIR is expected to be substantially enlarged and diversified.
5. Respondents to the ESMA Discussion Paper expressed their concern with ESMA requesting information in addition to the core reference data. In their view, information beyond the basic characteristics of a listed instrument should not be published by ESMA since that information is commercialised by trading venues and vendors.
6. Financial instrument reference data plays an important role in enriching the information in transaction reports submitted by investment firms and hence supports the monitoring activity conducted by competent authorities. In addition, the financial instrument reference data facilitates the exchange of transaction reports between competent authorities. ESMA strongly believes that identifying reference data submitted by trading venues and investment firms acting as a systematic internaliser should therefore contain

enough granular information to enable competent authorities to efficiently perform their functions.

7. In the Discussion Paper, ESMA suggested a list of possible reference data fields per category of financial instruments whereby the categories were established according to the ISO 10962 (2001 version) standards (CFI classification). In view of the wide diversity of financial instruments which are currently traded on trading venues within the EEA market, ESMA appreciates it will be difficult to classify all possible categories of financial instruments. Some respondents suggested the use of alternative classifications, but ESMA is of the view that those classifications are not sufficiently robust at this stage.
8. ESMA continues to consider potential new classifications that are sufficiently broad to encompass a variety of instruments, but for the time being the proposal is to use the CFI classification. ESMA understands this classification is being reviewed and eventually extended.
9. Responses to the ESMA Discussion Paper supported the use of the Legal Entity Identifier (LEI) wherever possible. However, respondents stated that requiring further details in relation to the LEI could lead to inconsistencies in the information submitted by different entities. ESMA has reassessed the proposed fields and some of the potential redundant information has been removed.
10. There were arguments against the obligation to supply instrument reference data for grey markets as in some instances identifiers are not available. In addition, other respondents suggested that 'secondary' venues should not be required to submit reference data when the 'primary' venue has done so. The requirement to submit reference data is determined in the Level 1 text and therefore ESMA cannot take those arguments into account.

Q235. Do you agree with the proposed list of instrument reference data fields and population of the fields? Please provide specific references to the fields which you are discussing in your response.

Reasons and frequency of updates of instrument reference data

11. In the Discussion Paper ESMA proposed to request updates of instrument reference data at a frequency of twice a day. Furthermore, ESMA proposed three different approaches on how to send the updates: a full file approach, a delta file approach and a combination of these two approaches.
12. By requesting a frequency of two updates a day ESMA envisaged to capture all end of the day changes and all intraday changes, while still being able to timely publish all new instrument reference data.

13. ESMA proposed three different ways of forwarding the data in order to be able to balance between complexity, data quality, completeness and volume. All three approaches have their own advantages and disadvantages and ESMA set out three questions to get the preferences of the relevant market participants.
14. In the responses to the related questions (questions 568 to 572 in the Discussion Paper) there was a broad consensus that there is no need in providing this data more than once a day. The number of intraday updates was considered too low to justify a second round of submission.
15. However, there were less consensual views on the way to send the reference data. The full file approach got the highest support while the delta approach was a tight second; the combination of the two approaches got the lowest support. The combination was considered to be too complex to implement and the full approach was considered to be the easiest to implement. Some respondents said this approach would be burdensome for large volumes of data.
16. Moreover, many respondents mentioned the need to get more clarity, especially as to how and when information needs to be provided.
17. In light of the concerns raised by the respondents, ESMA proposes the following practical approach to the meaning of “admitted to trading on a regulated market or traded on an MTF or OTF” since this determines what the trading venues and systematic internalisers have to include in their financial instrument reference data submissions.
18. Accordingly, a distinction can be made between regulated markets or trading venues that maintain a specified list of instruments that can be traded on those markets and those trading venues that are not regulated markets nor they maintain a specified list. For the former type of venues ESMA considers that the obligation to supply reference data will be triggered from the moment of admission to trading or from the moment of the inclusion of the financial instrument in the specified list.
19. For trading venues that do not have a specified list of financial instruments, ESMA considers that reference data submissions by a given trading venue for a given financial instrument will be triggered from the moment trading commences on that financial instrument in that particular trading venue. This means that from the moment the first order/quote arrives on the venue or from the moment the first trade takes place on the market, the instrument is considered to be traded on that market and thus instrument reference data for that financial instrument should be provided. Given the more over-the-counter character of these instruments, ESMA would only expect those trading venues to submit instrument reference data for financial instruments that were actually traded on those particular trading venues.
20. In addition, ESMA proposes to set the submission frequency at one submission a day, expected to take place after the end of the trading hours, but before the end of the day.

21. Given the financial instrument reference data will be submitted only once per day, given the extra clarification provided in regards to the financial instruments in scope and given the preference expressed by the majority of respondents, ESMA proposes to request the submission of full files. For trading venues with a specified list, this would imply sending reference data for all financial instruments traded on those venues. Trading venues without a specified list have to submit reference data only for financial instruments traded on the venue.

Q236. Do you agree with ESMA's proposal to submit a single instrument reference data full file once per day? Please explain.

Q237. Do you agree that, where a specified list as defined in Article 2 [RTS on reference data] is not available for a given trading venue, instrument reference data is submitted when the first quote/order is placed or the first trade occurs on that venue? Please explain.

Organisational Requirements

22. Article 27 (2) and (3) of MiFIR empowers ESMA to draft RTS to specify technical measures necessary to ensure that NCAs and ESMA will receive correct, complete and timely instrument reference data from trading venues and systematic internalisers; to ensure correct, complete and timely delivery of this data by NCAs to ESMA; and to ensure the correct, complete and timely distribution of this data by ESMA to NCAs.

23. ESMA believes trading venues, Systemic Internalisers, NCAs and ESMA need to have robust systems, arrangements and procedures in place to ensure correct, complete and timely delivery of the data.

24. In case of a failure which prevents the timely submission of the reference data, adequate arrangements should be established to minimise the time delay in submitting the information.

25. Suitable arrangements should also be in place for monitoring the submission of the reference data and make sure that data is both complete and accurate.

Usage of Instrument Identifiers

26. A number of respondents highlighted in their responses to the ESMA Discussion Paper that the industry standard for the identification of financial instruments is the ISIN code and therefore encouraged ESMA to use the ISIN as the sole instrument identifier.

27. ESMA recognises that the ISIN is widely used for the identification of financial instruments, especially in cash markets. However, some financial markets do not use ISINs to identify financial instruments traded on those markets. Therefore, the Committee of European Securities Regulators (CESR, the former ESMA) and FESE

agreed that the Alternative Instrument Identifier (All code) would be used to identify instruments traded on derivative markets where the ISIN was not the method of identification.

28. While MiFID I scope of instruments is covered by both the ISIN and the All codes, in MiFIR the scope is increased considerably by introducing new financial instruments which are currently not identified through the abovementioned codes. This leaves ESMA in a position where many new instruments cannot be identified in the instrument reference data and transaction reporting data, leading to loss of information and reduced usefulness of the MiFIR transaction reporting data.
29. ESMA continues to explore different alternatives to identify financial instruments not currently covered by either the ISIN or the All.
30. In order for the Competent Authorities to be able to validate the data, trading venues are required to notify their Home competent authority on the instrument code type (ISIN or All) used as the method of identification for financial instruments admitted to trading or traded per segment Market Identifier Code (MIC). ESMA will receive this information and shall publish this information on its website, so investment firms will know which instrument code type they will have to use in their transaction report.
31. Where trading venues wish to use multiple instrument code types, they shall ensure a single instrument code type is used per market segment and segment MICs are applied accordingly. For example, in case a trading venue decides to use both ISIN and All codes as instruments identifiers, the trading venue shall have one segment MIC for the market segment where the ISIN is the instrument method of identification for financial instruments traded on that market segment and another segment MIC for the market segment where the All is the instrument method of identification for instruments traded on that particular market segment.

Q238. Do you agree with ESMA proposed approach to the use of instrument code types? If not, please elaborate on the possible alternative solutions for identification of new financial instruments.

Relevant annexes:

Annex A: Cost benefit analysis

Annex B: Draft RTS 33: Draft RTS on obligation to supply financial instrument reference data

9. Post-trading issues

9.1. Obligation to clear derivatives traded on regulated markets and timing of acceptance for clearing (STP)

Background/Mandate

1. MiFIR extends the scope of the clearing obligation to all derivative transactions concluded on a regulated market and requires clearing members (CM) to ensure that derivatives are submitted for clearing acceptance as quickly as technologically practicable.
2. The timely transfer of derivative transaction for CCP acceptance was already raised by stakeholders in the scope of the EMIR consultation. However, this topic was not in the scope of the mandate given to ESMA under EMIR and therefore no related RTS were developed. A mandate is now granted to ESMA for this purpose.
3. In particular, ESMA is required to draft technical standards to specify the minimum requirements for systems, procedures and arrangements taking into account the need to ensure proper management of operational or other risks, and would have on-going authority to update these requirements as industry standards evolve.

Article 29 of MiFIR

1. *The operator of a regulated market shall ensure that all transactions in derivatives that are concluded on that regulated market are cleared by a CCP.*
2. *CCPs trading venues and investment firms which act as clearing members in accordance with Article 2(14) of Regulation (EU) No 648/2012 shall have in place effective systems, procedures and arrangements in relation to cleared derivatives to ensure that transactions in cleared derivatives are submitted and accepted for clearing as quickly as technologically practicable using automated systems.*

In this paragraph, “cleared derivatives” means:

 - (a) *all derivatives which are to be cleared pursuant to the clearing obligation under paragraph 1 of this Article or pursuant to the clearing obligation under Article 4 of Regulation (EU) No 648/2012;*
 - (b) *all derivatives which are otherwise agreed by the relevant parties to be cleared.*
3. *ESMA shall develop draft regulatory technical standards to specify the minimum requirements for systems, procedures and arrangements (including the acceptance timeframes) under this Article taking into account the need to ensure proper management of*

operational or other risks, and shall have ongoing authority to update those requirements as industry standards evolve.

4. The draft technical standards would apply to CCPs, trading venues and investment firms that act as CMs (relevant parties) and would apply to all derivatives to be cleared, both OTC and ETD and whether or not subject to the clearing obligation. Following the discussion paper, stakeholders have shared their views concerning the role of the relevant parties and provided information for ESMA to specify the relevant framework.

Analysis following feedback from stakeholders

5. In the performance of the analysis, ESMA has reviewed the contributions of stakeholders following the discussion paper and the approach included in the CFTC staff guidance on Swaps Straight-Through Processing of 26 September 2013 and the related no-action letters.

Certainty of clearing

6. In their answer to the DP, stakeholders noted the importance of getting certainty on clearing at an early stage and when possible before trade execution. They consider that it is a key element in order to reduce credit and counterparty risks.
7. ESMA considers that this is a reasonable approach and proposes to require the set-up of checks before the execution of trading orders placed on a trading venue in particular when the clearing obligation would apply. According to the proposed draft RTS, the clearing member would provide the credit limits of its clients to the trading venue which would check the orders placed against these limits. This check would limit situations that a transaction be entered into and then be rejected by the CCP. This process would also allow an early information on the situation and therefore corrective actions by those involved enhancing the smooth functioning of the market. However, although the cases of rejection of a transaction by the CCP at a later stage should be reduced, this pre-check would not be a guarantee that the transaction would be accepted for clearing by the CCP.
8. On the timeframe of the pre-checks, in the responses to the DP, most stakeholders make a distinction depending on whether the order is entered into electronically or not. They support a shorter period of time for those that would be concluded electronically.
9. ESMA agrees that the timeframe for the trading venue to perform pre-checks for derivative transactions subject to the clearing obligation should be different for those that would be entered into electronically and the others. A shorter timeframe should apply to the first ones. ESMA proposes that the pre-check related to the derivative transactions subject to the clearing obligation entered into electronically should be performed within 60 seconds from the receipt of the order by the trading venue. For the others, ESMA

proposes that the check should be performed within 10 minutes from the receipt of the order.

10. Because the pre-check should allow the counterparty and clearing member to take action, it is important that the information be provided in a timely fashion. ESMA proposes that the trading venue should provide the information on a real time basis for orders that would be executed electronically and within 5 minutes following the pre-check for the others.

Q239. What are your views on the pre-check to be performed by trading venues for orders related to derivative transactions subject to the clearing obligation and the proposed time frame?

Timeframe for submission to the CCP

11. In their answers, some stakeholders considered that the timeframe for the submission of the derivative transaction to the CCP could only relate to the transactions that are subject to the clearing obligation. In this context the clearing obligation should be considered both the clearing obligation under EMIR and the obligation for regulated markets to clear all their derivatives transactions with a CCP.
12. ESMA agrees with these views as indeed when a derivative contract is not subject to the clearing obligation, they may not be able to be cleared e.g. not accepted by CCP, or if they are, their submission to a CCP will be on a voluntary basis by the counterparties. The provisions related to the transfer of information related to the derivative transactions would therefore only apply to the clearing transactions that are to be cleared in application of EMIR or MIFIR.
13. Some respondents to the DP noted that the timeframe to submit a transaction to the CCP should be different depending on whether it is concluded on a trading venue or on a bilateral basis, and whether it is executed on a trading venue depending on whether it is concluded electronically or not. Some respondents stressed that in the US, the STP rules are already implemented and EU market participants that are active in the US markets have already performed the necessary adaptations. On the timeframe that should apply, different views were expressed in the responses.
14. ESMA agrees on the distinctions stressed by stakeholders and that the timeframe for the transfer of information from the trading venue to the CCP for derivative transactions subject to the clearing obligation should be different for those entered into electronically and the others. A shorter timeframe should apply to the first ones.
15. Considering stakeholders' answers and the developments that have taken place following the CFTC guidance on straight through processing, ESMA proposes that the transaction should be submitted to the CCP within 10 seconds of execution when it is concluded on a trading venue in an electronic manner, within 10 minutes of execution

when it is concluded on a trading venue in a non-electronic manner, within 30 minutes of execution when it is concluded on a bilateral basis.

Q240. What are your views on the categories of transactions and the proposed timeframe for submitting executed transactions to the CCP?

Timeframe for clearing member acceptance

16. In the discussion paper, ESMA asked the views of stakeholders on the role of each involved entities in the clearing process. In the answers, respondents stressed the importance of the risk management framework of the clearing member and noted that it should have a view on the derivative transaction before they are accepted for clearing. In most of the cases, when a bilateral derivative transaction is submitted to the CCP, the clearing member would not have reviewed it.
17. In order to allow the clearing member to perform the review, ESMA proposes that the CCP should provide the information related to the bilateral transactions that they received for clearing to the clearing member. Because the information would be received by the CCP in the format and with the content required by its rules, the information could be transferred swiftly. ESMA proposes that the clearing member should receive the information within 60 seconds from the receipt by the CCP.

Q241. What are your views on the proposal that the clearing member should receive the information related to the bilateral derivative contracts submitted for clearing and the timeframe?

Timeframe for CCP acceptance

18. On the timeframe for the CCP to accept or reject the clearing of a derivative transaction, some respondents referred to the US approach where the CFTC has determined that “as soon as technologically practicable” would mean 10 seconds. Others noted that current market practice would require much more time in particular for OTC derivative transactions.
19. Given that the CCP should provide in its rule the format and content of the information it needs in order to process the clearing request and that the rules should equally apply to all the participants of the CCP, a common timeframe would appear possible. This timeframe could be short given the automation that the CCP usually offer. This would be aligned with the CFTC approach. ESMA therefore proposes that the CCP should accept or reject a derivative transaction submitted for clearing within 10 seconds from submission or from the receipt of the clearing member acceptance.

Q242. What are your views on having a common timeframe for all categories of derivative transactions? Do you agree with the proposed timeframe?

Treatment of rejected transactions

Breakage amount

20. Stakeholders agree that clarity on the treatment of rejected transactions is of paramount importance. Different views were however expressed regarding what should be that treatment. Some considered that for transactions concluded on trading venue the rules of the trading venue should apply but should not prevent calculation of breakage amounts. Others consider that there should be no breakage amount payable. Respondents broadly supported that for bilateral derivatives, the treatment of rejected transactions should be left to the counterparties.
21. As the timeframe for acceptance or rejection of a transaction for clearing is short for transactions executed on a trading venue when they are subject to the clearing obligation, ESMA considers that the trading venue rules should provide that those transactions should be void. This approach considers that the trading venue would have performed a pre-trade check which means that the occurrence of such situations should be limited. Furthermore, the short period of time between execution and rejection time would prevent high damages for the suffering parties that would be in a position to react rapidly.
22. When the transaction is concluded on a trading venue and is not subject to the clearing obligation, such transaction should be considered as voluntarily cleared. Such a transaction can be voluntarily cleared in accordance with the rules of the trading venue. In this case, it should be the rules of the trading venue to determine how to treat such a rejection. In the case where the voluntary submission to clearing is agreed by the parties, the parties should also agree how to treat a rejection by the CCP.
23. This approach would allow getting certainty on the treatment of the rejected transaction and would provide for transparency on any compensation to the suffering party that is determinable in advance as the calculation method would be disclosed.
24. When a transaction subject to the clearing obligation is concluded bilaterally, the timeframe between the execution of the transaction and the CCP decision to accept or reject the transaction is longer than for transactions concluded on a trading venue. Therefore as for the transactions concluded on other trading venues, the potential damage suffered by the counterparty should be compensated if and as provided in the agreement between the parties.

Re-submission of a rejected trade

25. Some stakeholders support the possibility to re-submit for clearing a derivative transaction that was rejected by the CCP. They consider that they should be in a position to rectify the errors or problems and then to propose to clearing the same rectified transaction. For others, re-submission should not be possible and new transactions should be entered into, possibly with the same economic terms.

26. As explained above, ESMA proposes a process where there would be pre-checks. The trading venue would check the orders of its clients against the credit limits provided by the clearing members before trading execution. For other transactions, the clearing member would be given the opportunity to accept or reject the transaction before the CCP would process it for acceptance or rejection. ESMA therefore considers that a re-submission would not be appropriate in broad circumstances. Instead, ESMA is of the view that only limited circumstances such as technical problems could justify re-submission of the transaction once.

Q243. What are your views on the proposed treatment of rejected transactions?

Proposal

ESMA has re-considered its original proposal in line with the comments received as presented in the draft regulatory technical standards included in the Annex.

Relevant annexes:

Annex B: Draft RTS 37: Draft regulatory technical standards on obligation to clear derivatives traded on regulated markets and timing of acceptance for clearing (STP)

9.2. Indirect clearing

Background/Mandate

Article 30 of MiFIR

- 1. Indirect clearing arrangements with regard to exchange-traded derivatives are permissible provided that those arrangements do not increase counterparty risk and ensure that the assets and positions of the counterparty benefit from protection with equivalent effect to that referred to in Articles 39 and 48 of Regulation (EU) No 648/2012.*
- 2. ESMA shall develop draft regulatory technical standards to specify the types of indirect clearing service arrangements, where established, that meet the conditions referred to in paragraph 1, ensuring consistency with provisions established for OTC derivatives under Chapter II of Commission Delegated Regulation (EU) No 149/2013.*

1. Under the mandate reported above, ESMA is required to develop the requirements for the indirect clearing arrangements for exchange traded derivatives (ETD) with similar objectives as with the related EMIR Regulatory Technical Standards (RTS) on indirect clearing arrangements for OTC derivatives.
2. The provisions should ensure that (1) the indirect clearing arrangements do not increase counterparty risk and (2) the assets and positions of the counterparty benefit from protection with equivalent effect to that referred to in Articles 39 (Segregation and portability) and 48 (Default procedures) of EMIR.

Analysis following feedback from stakeholders

Lack of development of indirect clearing services and concerns linked to insolvency

3. The majority of the respondents to the discussion paper on MiFIR expressed concerns on the lack of offering of indirect clearing services for OTC derivatives.
4. Several types of issues have been generally expressed when considering why indirect clearing of OTC derivatives has not developed. These include aspects on which ESMA does not have leverage, in particular the potentially limited commercial appetite of clearing members to offer it, as well as the capital rules and leverage ratio applicable to clearers for client clearing trades under CRR/Basel III.
5. However, some of the issues that market participants claimed are preventing indirect clearing arrangements for OTC derivatives from being offered were directly attributable

to the RTS on OTC derivatives⁷³, in particular the provision that corresponds to segregation and portability obligations for clearing members.

6. Several representatives of the clearing members responding to the consultation have underlined that these two requirements create legal and operational problems for the clearing members. They indicated that the ability to honour the two requirements is dependent on the insolvency regimes from the various jurisdictions that are applicable to the various parties to the structure (clearing member, direct client and indirect client) as well as the incoming back-up direct client or clearing member in the case they do not liquidate but port the indirect client positions and assets. They highlighted the risk that the insolvency practitioner of the insolvent direct client could seek to reclaim the value of its assets and positions from the clearing member (if the clearing member were to conduct the porting of positions and assets or return the proceeds from the liquidation of these positions and assets directly to the end client). These concerns were considered even more acute in transactions involving third country entities.

Multiple layers

7. The responses to the discussion paper highlighted that the market structure for ETD is characterised by more layers of intermediaries than is the case with the indirect clearing arrangements as defined in the RTS on OTC derivatives. Indeed, sometimes the indirect client could have a client of its own and thus facilitate indirect clearing itself, then this client could also have further clients after him.
8. ESMA is of the view that the definition of indirect client and the provisions of the RTS developed under EMIR do not apply to additional clients beyond the indirect client. In the OTC derivative case, Article 4(3) of EMIR states that to comply with the clearing obligation “a counterparty shall become a clearing member, a client, or shall establish indirect clearing arrangements” and the RTS then defined an indirect client as a “client of a client of a clearing member”. Therefore, a counterparty cannot comply with the clearing obligation by being a client of an indirect client or a client further down the clearing chain with additional layers of clients in between the indirect client and this counterparty.
9. In the ETD case, a requirement similar to the one of Article 4(3) of EMIR does not exist. The mandate under MiFIR does not require ESMA to address the additional layers of clients beyond the indirect client with the draft RTS. In summary, the draft RTS for ETD applies to all clearing arrangements including an indirect client, i.e. a client of a client of a clearing member, but these requirements are not applicable to clients of indirect clients and other entities below.

Proposal

⁷³ Commission Delegated Regulation (EU) No 149/2013

10. To respond to the concerns expressed by market participants on the operational burden to deal with the segregation arrangements established by the RTS on indirect clearing developed under EMIR, the proposal included in this consultation paper considers an alternative choice between segregation models. In particular, the proposal offers an alternative choice of accounts, a choice between a net omnibus account (the same as under the EMIR RTS on OTC derivatives) and a gross omnibus account.
11. Similarly to the requirements in Article 39(5) of EMIR, the indirect clients are offered a choice between two segregation models, with two different levels of protection. The net omnibus account (first option) is the same as the one envisaged under Article 4(2)(a) of the EMIR RTS. The second type of account is a new one, a gross omnibus account. The margin for each indirect client in the account would be calculated separately. This gross calculation at the level of the clearing member would be made possible by having the client ensure that the clearing member has sufficient information to identify the positions and the amount of collateral held for the benefit of each indirect client. Enabling the clearing member to identify what amount of collateral is held for the benefit of each indirect client in the case of a gross omnibus structure would increase the protection for the indirect client in the case of the default of the client.
12. This second account type offers a more simple structure than that of individually segregated account (Article 4(2)(b) of the EMIR RTS), allowing to comingle positions and collateral for several indirect clients in a single account while ensuring an equivalent amount of collateral is distinguished between them. For the gross account, the margin would be calculated for the positions of each indirect client and the amount of collateral would be the same as if the positions were in separate accounts.
13. To compensate the possible lower protection that a limited choice offered to indirect clients compared to clients may imply, the requirements for clients, clearing members and CCP have been increased. This together with the amount of collateral available in a gross omnibus structure allows the proposed framework to guarantee to indirect clients, a protection with equivalent effect to the one envisaged for clients under EMIR.
14. In particular under the proposed draft RTS, the CCP has an increased obligation as it needs to calculate the margins of each indirect client choosing the gross model. This requirement is made possible by a requirement for the clearing member to ensure that the CCP can identify the positions for each indirect client in an individual or gross account structure.
15. This additional requirement for CCP, compared to the EMIR RTS, allows for the amount of collateral held for the benefit of each indirect client to be further segregated at the level of the CCP. First of all, the clearing member would be called gross and not net, so the amount of collateral held at the level of the CCP for the benefit of the indirect clients would be greater than under the current EMIR RTS (even for the indirect clients opting for individual segregation). This would add protections to the indirect client in the case of the default of a clearing member.

16. To deal with the concerns related to insolvency procedures two measures have been taken in the proposed draft RTS:
- i. The first one is to add a recital along the lines of Recital 64 of EMIR to remind that the requirements in a RTS, which is a Regulation directly applicable in all EU Member States prevail over conflicting national insolvency laws.
 - ii. The second one is to remove the requirement to port indirect client positions, given the practical difficulties and the lack of alternative back-up clients expressed by the respondents to the consultation.
17. In addition, the recital provides further clarity on the treatment of third country clients in case of conflicting insolvency.
18. This approach ensures a quick and more predictable outcome in case of the default of a client. The proposed RTS no longer requires porting but instead it requires that the procedure of the clearing member with respect to liquidation provides information on how and when the liquidation should be conducted, so that the indirect client can better manage the risk of their portfolio. In addition, contractual arrangements between the direct and indirect clients are required so the direct client would look to protect to the extent possible the return of the liquidation proceeds to the indirect client from its own insolvency. ESMA considers that these provisions, in addition with the provisions described above will ensure that the entire framework for the provision of indirect clearing services achieves a protection of equivalent effect for indirect clients as the one envisaged for clients under EMIR.

Q244. Do you agree with the proposed draft RTS? Do you believe it addresses the stakeholders concerns on the lack of indirect clearing services offering? If not, please provide detailed explanations on the reasons why a particular provision would limit such a development as well as possible alternatives.

Q245. Do you believe that a gross omnibus account segregation, according to which the clearing member is required to record the collateral value of the assets, rather than the assets held for the benefit of indirect clients, achieves together with other requirements included in the draft RTS a protection of equivalent effect to the indirect clients as the one envisaged for clients under EMIR?

Relevant annexes:

Annex B: Draft RTS 38: Draft regulatory technical standards on indirect clearing