

PRACTICAL GUIDE
TO LIQUIDITY RISK
MANAGEMENT COMPLIANCE

September 2020

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Practical guide to liquidity risk management compliance

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INTRODUCTION

This guide is intended as a practical aid for setting up or updating a comprehensive liquidity risk control framework within an asset management company. This guide is not intended to be exhaustive and the implementation of the approaches and concepts it presents is not sufficient to comply with the new ESMA guidelines published on 2 September 2019 on liquidity stress testing in UCITS and AIFs and coming into application¹ on 30 September 2020, which alone represent the authoritative text against which to assess full compliance of the risk management framework.

Above all, it is intended to be pragmatic by providing the basis for setting up a framework that complies with the regulatory requirements and is as easy to implement as possible. Therefore, it is limited to general principles and is not intended to detail all possible approaches to managing liquidity risk. Management companies wishing to have an in-depth review of liquidity risk measures may refer, for example, to the document published by ESMA: “*Economic Report – Stress simulation for investment funds*” in September 2019.

This guide can be seen as a complement to previous AFG publications such as the “*AFG code of practice on liquidity risk management in undertakings for collective investment (UCIs)*” published in January 2016 or the brochure on “*Liquidity risk management tools in open-ended funds*” updated in March 2020.

¹ Subject to notification by the national competent authority (the AMF in this case) that it wishes to comply with these guidelines within two months of their translation into all EU languages.

REGULATORY CONTEXT

Below are some regulatory references regarding liquidity stress testing (LST) in funds:

- AIFM Directive (Directive 2011/61/EU on Alternative Investment Fund Managers)
Article 16(1) of the Level 1 Directive, Articles 47 and 48 of the Level 2 Directive
- UCITS Directive (Directive 2014/91/EU)
Article 51 of the Level 1 Directive, Article 40(3) of the Level 2 Directive
- Regulation (EU) 2017/1131 of the European Parliament and of the Council of 14 June 2017 on money market funds – known as the “MMFR”.
Article 28 of the Regulation
AMF Guide
- The AMF Instructive Guide for asset management companies published in February 2017 on the Use of stress tests as part of risk management
Section 2.2 Liquidity risk
- ESMA guidelines
ESMA guidelines issued on 2 September 2019 on Liquidity stress testing in UCITS and AIFs (ESMA34-39-882)

LIQUIDITY RISK MANAGEMENT POLICY

The liquidity risk management policy document is a central element of the system deployed by the asset management company.

Its purpose is to present in a summary document the complete framework put in place to prevent this risk. It is an integral part of the management company’s risk management policy.

This policy may address a variety of topics, all of which are related to liquidity risk management. Typically, if the management company has set up systems such as swing pricing mechanisms and/or gates, it will describe the logic underlying the deployment and functioning of this procedure, possibly referring to other internal documents (such as the swing pricing policy).

Likewise, if the management company has specific pre-trade controls related to liquidity, it will detail them in this document.

In this respect, the management company monitors portfolios’ liquidity throughout the various phases of a product’s life with:

- Upon creation, determination of the valuation frequency and integration of liquidity tools (swing pricing, ADL, gates etc.);
- During the product’s life:
 - Integration of liquidity criteria into the management process when selecting securities, such as the issuer concentration ratio, traded volumes, etc. This concerns primarily the High-Yield and Small-Cap asset classes;
 - Analysis of the impact on liquidity of any new type of instrument.

Finally, this document details all the operational and methodological aspects of measuring this risk, providing the necessary details on governance, the *ad-hoc* escalation process, the funds or even the group of funds concerned, and the frequency of controls (ESMA states in point 25 of its guidelines² that the frequency should be at least annual, but that it recommends these analyses to be carried out on a quarterly basis or more frequently. The determination of a higher or lower frequency should depend on the funds’ characteristics and be explicit in the liquidity risk management policy) with the associated limits and the definition of the scenarios used to analyse risk under normal and “stressed” conditions³.

This document will be reviewed regularly and approved by the management company’s governing bodies.

2) ESMA34-39-882

3) Deteriorated market situation.

MEASURING LIQUIDITY ON THE ASSET SIDE

The purpose of measuring liquidity on the asset side is to have information allowing to assess a fund's ability to generate liquidity through the sale of assets within a given time frame while protecting the investors' interests .

Investors' interests is generally understood as preserving the fund's assets' value and risk profile. Indeed, the sale of assets should not have a high cost for the fund or significantly distort its initial positioning. By the same logic, assets should not, as far as possible, be sold at very sharp discounts that would penalise the remaining investors.

It is therefore necessary to adopt as balanced of an approach as possible between the speed and type of sale of asset positions and the preservation of long-term investors' interests.

Two types of approach are commonly used: one is based on estimating transferable volumes assuming no significant impact on price, the other, more advanced, aims to estimate transferable volumes under cost constraints. The latter approach provides a more detailed picture of the fund's disposal capacity based on the cost linked to transaction volumes. On the other hand, it requires a large amount of data to produce high-quality estimates and the models used are often complex. Its implementation generally requires recourse to external solutions.

In the remainder of this document, we will detail the method based on the estimate of transferable volumes under assumptions of negligible impact on prices.

The idea is to calibrate, according to a granularity deemed relevant (the finest granularity being a position-by-position analysis), the transferable volumes under normal market conditions and under "stressed" conditions. For the equity market, it is generally permissible to carry out analyses per security by calibrating volumes on a daily average observed over the last 3 months. It is often assumed that the management company will hold 20% of this volume; however, this assumption is at the discretion of the management company, which must justify its choice and relevance. For the bond market, access to trading volumes is unfortunately not as easy. It is therefore generally decided to use an external data provider or to adopt an "expert opinion" approach by using a volume matrix based on rating, sector, size of the stock, currency, etc.

It should be noted that this estimate is specific to each management company insofar as access to the bond market is not the same between management companies. These assumptions must therefore be substantiated and reviewed regularly.

Once these assumptions have been established, it is then possible to estimate the liquidity at fund level under the constraint of respecting the risk profile and following an operational implementation deemed to be realistic⁴. One way of taking these constraints into account is, for example, to ensure that the structure of a significant portion of the fund remains identical. For example, a maximum percentage of non-proportionality could be defined in the liquidation scenario to only marginally distort the fund's risk profile.

This approach, deployed for different time horizons and according to normal and "stressed" market assumptions, makes it possible to obtain liquidity profiles that will be compared with the analyses carried out on the fund's liabilities in order to assess any potential risk (see the section entitled "Estimation of liquidity risk").

Alert thresholds or limits on the minimum expected outflow from a portfolio over a given time horizon (e.g. 1 day, 1 week or 1 month) can then be set up, depending on the asset class and the investment strategy. Any exceeding of this limit should result in a specific analysis by the risk manager in accordance with the governance defined within the liquidity risk management policy.

These liquidity curves are generally supplemented by other constraints or indicators that also make it possible to monitor liquidity on the asset side. These include, among others:

- asset dispersion constraints
- constraints on control/concentration at the underlying asset level (debt, external funds, etc.)
- percentage of non-transferable assets within a given horizon (e.g. 1 month)
- level of the average bid/ask range of the portfolio and its evolution over time

To complete the analysis of the assets' liquidity, particular attention must also be paid to funds that may make significant use of derivatives. Indeed, in the event of significant market movements, margin calls may have a greater impact on the portfolio's liquidity. This point must therefore be taken

⁴) A "perfect slicing" assumption aimed at proportionally reducing all the lines of the fund is not always realistic. It must be possible for the management company to implement the liquidation assumptions adopted in operational terms.

into account both during the portfolio construction phase (e.g. setting up a liquidity “buffer”) but also during the fund’s life with the implementation of specific stress scenarios to assess the fund’s ability to meet any future margin calls.

Finally, it may be relevant to extend the study of liquidity on the asset side to a set of funds sharing the same strategy and/or underlyings,

as ESMA states in points 72 and 73 of its guidelines (ESMA34-39-882). Indeed, the occurrence of a specific crisis may be particularly detrimental for a given strategy and/or asset class; the impact on liquidity should therefore be assessed at a consolidated level. The level of consolidation, if any, remains a management company’s decision depending on its relevance.

MEASURING LIQUIDITY ON THE LIABILITY SIDE

The studies carried out on the liability side are aimed at estimating the redemption risk that the fund could be subject to, following the same logic adopted on the asset side, i.e. under normal market conditions and under “stressed” conditions.

The adopted approaches are generally of two types:

- A qualitative approach aimed at analysing the liability structure at fund level or by type of units (e.g. retail/institutional): who are the largest investors, what is the breakdown by client category, etc. By categorising clients according to redemption risk, it is then possible to have an indicator of the risk borne by the liability structure, to define hypothetical exit scenarios for the main investors, and even possibly to construct redemption curves if knowledge of the liability structure is sufficiently detailed. This approach requires a good quality of liability data.
- A quantitative approach aimed at modelling the dynamics of subscriptions/redemptions in order to calculate Value at Risk⁵ and/or Expected Shortfall⁶ over given horizons (e.g. at 7 days, there is a 99% chance that net redemptions represent less than x% of the fund’s AUM). This approach, with all the inherent limitations of modelling, nevertheless allows the construction of a “liquidity curve” for liabilities that can be directly compared to the assets’ liquidity profile.

It should be noted that management companies’ current knowledge of the liability side could be improved, which can cause difficulties when one wishes to carry out analyses at a fairly granular level. Management companies do their best to improve their knowledge of their fund’s liabilities. However, they are generally dependent on other entities, which can make it difficult to achieve the objective of a detailed and exhaustive knowledge of funds’ liabilities⁷. In this context, it seems rational to focus the liabilities’ structure analysis efforts on fund units that may cause a certain concentration of liabilities. This may be the case, for example, for institutional units with high minimum entry amounts, rather than for funds units with a retail clientele (and therefore with a high level of dispersion) for which knowledge of the granularity of liabilities per unit holder is of less interest.

Finally, in the same way as the aggregated analyses carried out on the asset side (for example, on a set of funds investing in the same underlyings), it may be relevant to have the same approach on the liability side in order to assess the consequences of significant movements linked to investor categories (e.g.: exit of a type of investor on an asset class as a consequence of the entry into force of a new regulation).

⁵ Value at Risk is a measure of risk for the maximum loss on an asset or a portfolio given a degree of confidence and a time horizon. It is estimated with a given level of probability that the risk exposure may cost more than the VaR level over the time horizon in question.

⁶ Expected shortfall is a measure of tail risk that can usefully supplement a VaR measure as a conditional expectation of losses considering a given VaR level. This is the probable loss when one is within the x% scenario tail of the loss distribution over a given time horizon. It is the average of the losses incurred during a shock, which only occurs in the x% worst cases of the distribution. The expected shortfall is always higher than the VaR.

⁷ However, one should not be mistaken about the marginal effectiveness in this area. Even if the gradual improvement of detailed knowledge of liabilities is a very useful objective and a real challenge in the coming years, an exhaustive identification at any time of each individual investor, which is difficult and costly to obtain, would not be likely to provide, in view of the costs, a surplus of information with inestimable added value for the management of liquidity risk at fund level.

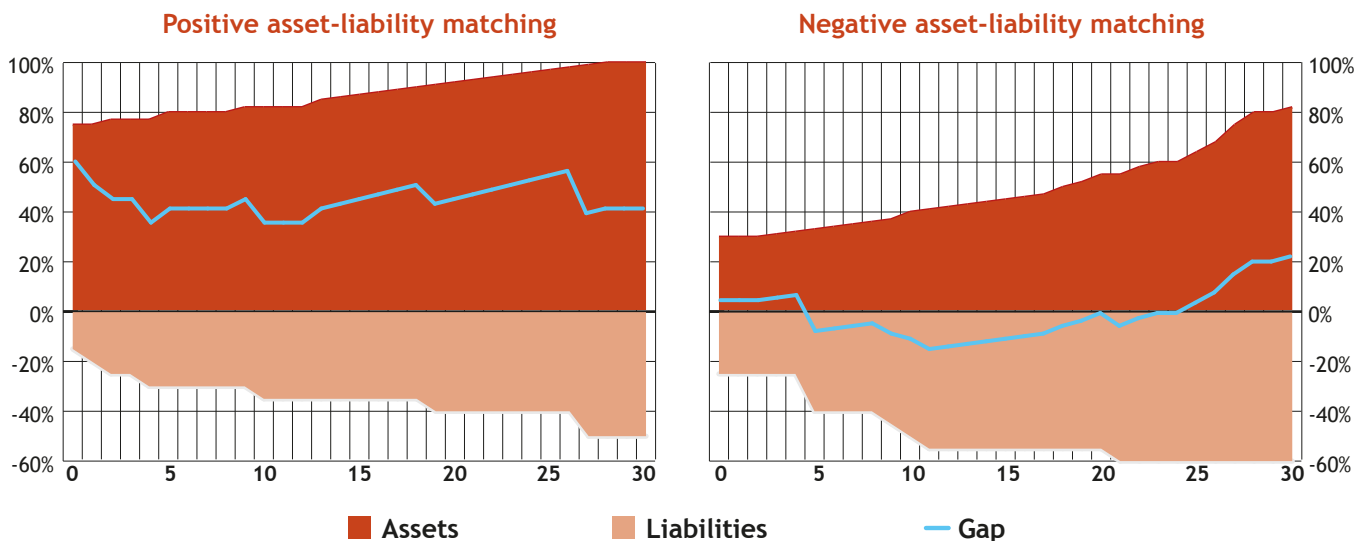
ESTIMATION OF LIQUIDITY RISK AND ASSET/LIABILITY MATCHING

Strictly speaking, liquidity risk is estimated by comparing the analyses carried out on the asset and liability sides.

Generally, three elements are considered to determine the risk. Firstly, the results of **the analysis of the liquidity of the fund's assets** (typically, its liquidity profile under normal and “stressed” conditions) and secondly, a **quantitative analysis** (by *scoring*⁸, or using historical or hypothetical scenarios) **of the liabilities**, generally supplemented by **qualitative elements describing the liability structure** (e.g. its concentration).

Where the approaches adopted aim to estimate liquidity curves for assets and liabilities, it is possible to calculate asset/liability matching by ensuring that the fund's liquidation capacity is greater than the estimated proportion of redemptions for a given time horizon. If this is not the case, an alert will be issued which may possibly lead to corrective measures. These measures may concern both the fund's assets (e.g. increase in liquidity) and its liabilities, with the implementation of specific measures such as notice periods, the swing pricing mechanism or gates (see *AFG guide on liquidity risk management tools*).

Examples of asset-liability matching indicators:



Negative matching means that the fund is not liquid enough to cope with the redemption scenario used.

To go further in the analysis of liquidity risk, it is possible to set up reverse stress tests, i.e. to try

and estimate the scenarios and circumstances (redemption movements, market assumptions, etc.) that would make the fund vulnerable and unable to honour redemptions.

8) Scoring: modelling of stability levels on the liability side based on a scale of ratings assigned according to pre-defined criteria.

FOCUS ON MONEY MARKET FUNDS

With regard to liquidity risk management, money market funds are special in that they are theoretically subject to the requirements of two regulations: the one referred to first in this guide (ESMA guidelines on liquidity stress testing in UCITS and AIFs – ESMA34-39-882) and the regulation specific to money market funds (Regulation (EU) 2017/1131 of the European Parliament and of the Council of 14 June 2017 on money market funds – known as the “MMFR”).

As a reminder, the latter imposes a strict management framework for liquidity on the asset side by introducing specific constraints:

- For funds with constant NAV or low volatility; at least 10% of the assets must mature daily or be redeemed with one day’s notice, and at least 30% of the assets must have a weekly maturity or be redeemed within 5 business days’ prior notice;
- For variable NAV funds; at least 7.5% of the assets must have a daily maturity or be redeemed with one day’s prior notice, and at least 15% of the assets must have a weekly maturity or be redeemed within 5 business days’ prior notice.

The MMFR also requires a mechanism to detect vulnerabilities in the event of potential events or future changes in economic conditions. This search for unfavourable configurations involves applying pre-defined stress tests, some designed by the regulator and others by the management company. This is because the scenarios based on reference parameters published by ESMA are common to all funds and are not necessarily adapted to each money market fund’s portfolio (see question 28 of the instructive guide for asset management companies “*Questions and Answers on money market funds*” published by the AMF in November 2018).

The result of these scenarios may lead the management company to take corrective measures to reduce liquidity risk.

In order to avoid any conflict with ESMA’s general guidelines on LST, this document states⁹ that the liquidity framework imposed by the “MMFR” takes precedence over ESMA’s more general guidelines.

As a reminder, the main elements relating to liquidity requested in the context of “MMFR” reports are as follows (*the stress test nomenclature in the “MMFR” is given in brackets*):

- **Impact on NAV of liquidity stress on fund assets (LST-01)**
The aim is to measure the impact of liquidity stress on assets simulating a change in the level of liquidity of assets whose characteristics are explicitly given by ESMA.

- **Maximum percentage transferable over one week while ensuring compliance with the fund’s constraints (RST-01)**

The objective here is to estimate the liquidity that can be generated over one week by the fund while complying with its regulatory requirements. Mathematically speaking, this amounts to an optimisation problem (we are trying to maximise weekly liquidity) under the constraint of respecting a large number of regulatory limits. This approach is particularly complex to implement. A simpler approach aims at adopting a methodology based on proportional liquidation as presented in the chapter “Measuring liquidity on the asset side”. This approach will certainly lead to a result that is lower than that theoretically obtained by an optimisation method, but it guarantees compliance with all the requirements applicable to the fund. It should be noted, however, that such a scenario may be difficult to implement; the approach adopted must be operationally realistic.

- **Ratio of transferable assets over one week and a stressed redemption amount (RST-02)**

More precisely, two ratios are calculated. As a rule of thumb (please refer to ESMA’s guidelines for precise methodological details), the numerator of the first ratio reflects the value of assets assumed to be highly liquid: mainly money market instruments issued or guaranteed by the European Union of very high credit quality and with a maturity of less than 190 days, assets that mature weekly and cash. The second ratio adds 85% of the value of high credit quality assets (not yet accounted for) to the first ratio. The denominator corresponds to the amount of a weekly redemption scenario of 25% of professional investors and 15% of retail investors.

- **Ratio of transferable assets over one week and the amount invested by the two main investors (RST-03)**

The principle is identical to RST-02, but with the denominator being the net redemptions of all the units of the two main investors.

- **Calculation identical to RST-02 after application of a market shock (MST-02)**

The calculation initially involves applying a market shock to the fund combined with a liquidity crisis modelled in a manner equivalent to the LST-01 scenario. Once these shocks have been applied to the fund, the same calculations as those corresponding to the RST-02 scenario should then be performed, with the new weights of CQS1 and 2 assets after estimation by market shocks.

⁹) Paragraph 6 in the “Scope” section of the Guidelines.

**The French asset management association
(Association Française de la Gestion Financière – AFG)**
represents and promotes the interests of third-party
portfolio management professionals.

It brings together all asset management players
from the discretionary and collective portfolio management segments.
These actors manage more than €4,000 billion worth of assets,
i.e. a quarter of continental Europe's portfolio management market.

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Adina GURAU AUDIBERT, Director of Asset Management (AFG)
coordinated this work

Published by the Asset Management division of AFG
Adina Gurau Audibert, Head of Asset Management Division | T : +33 (0) 44 94 94 31 | a.gurau.audibert@afg.asso.fr
