



-April 2022-

## Issues and solutions to build optimal portfolios

**Marlene Hassine Konqui**

Portfolio construction expert - member of the SFAF ETF commission,  
Associate Director General BSD Investing

### KEY TAKEAWAYS

For investors, the decision to allocate to active or passive funds is critical in the context of broad portfolio construction considerations. It’s not an easy choice to make but financial research has proven that, ultimately, allocating efficiently between the two is crucial for portfolio performance. Current widely used approaches in the market to select between those management styles suggest that active managers cannot outperform over long periods of time. As a result, investors often adopt a dogmatic view on the topic. However, those approaches are based on methodological simplifications and errors that fail to arrive at a fair performance comparison between active and passive funds. How can investors build optimal portfolios in that context? It is time to move away from broad-brush statements and use a new methodology to arrive at a fair view and build optimal portfolios. In this paper, we will discuss in detail the issues surrounding existing relative performance comparison calculations, explain the solutions that are needed to correct and improve the process, and demonstrate the contribution of this innovative approach and the need to use it to build optimal portfolios.

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## I. EXECUTIVE SUMMARY

The objective of this paper is to discuss in detail the issues surrounding existing relative performance comparison calculations, to explain the solutions that are needed to correct and improve the process, as well as to demonstrate the contribution of this innovative approach to change common belief. To do so, we are comparing active vs passive funds' performances among various equity and fixed income universes and during different phases of the cycle over the past 20 years.

### What are the issues surrounding existing relative performance comparison calculations?

The assumptions that are made when comparing active vs passive funds' performances by often-used studies impact the relative performance results to an extent which is underestimated by investors.

The main issues that will be highlighted in the document, together with their impact on the results, include:

- The choice of the benchmark which significantly impacts the calculations
- The use of indices and not funds which assumes that investors bear no costs
- The adjustment for survivorship bias which relies on a wrong assumption
- The "single date" performance analysis that does not give a complete and reliable insight into portfolio performance

### What are the solutions to fix those errors and eliminate the biases to arrive at a fair comparison between active and passive funds?

A new methodology should be used to fix those errors and eliminate the biases in order to arrive at a fair comparison between active and passive funds. This methodology, detailed below in the document, allow investors to:

**Access a new database.** To be reliable, the selection between active funds and passive funds should be based on a database that carefully restates fund information (share class selection, restatements of errors or missing data, fees' inclusion...).

**Use the official fund index instead of a broad index.** An optimal selection can only be done by using a database that compares funds to their own index.

**Comparing active funds with passive funds and not with indices.** This is fundamental to avoid errors and be able to make comparisons between all active funds and passive funds that follow the same index and not just between active funds and indices.

**Capturing all the investment opportunities available to investors.** To have an accurate view of what is really outperforming, it is critical to look beyond the percentage of active managers outperforming between two fixed dates. For example, all the funds present over an entire period, such as expired funds or new funds, should be considered as they have a real impact on performance results.

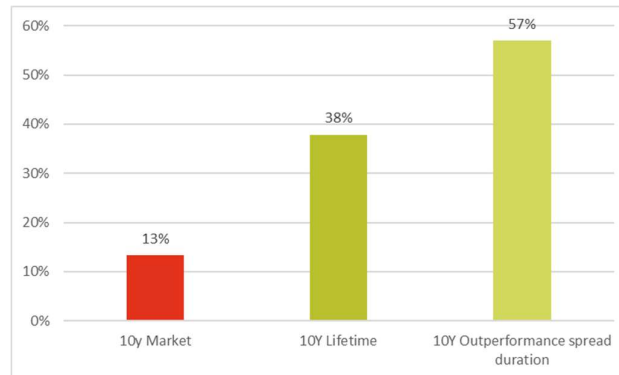
## Why reality is different than common belief?

Based on this innovative methodology and looking at non institutional share classes only, a broad view of performances across asset classes and categories over the past 10 years shows that active/passive funds results are decidedly more mixed than common belief.

### Both active and passive managements can add value to build optimal portfolios

- ✓ On average, among the 31 universes studied over the past 10 years, 38% of active managers outperformed their passive counterparts during their lifetime. This figure is materially different from the 13% calculated based on standard market assumptions.

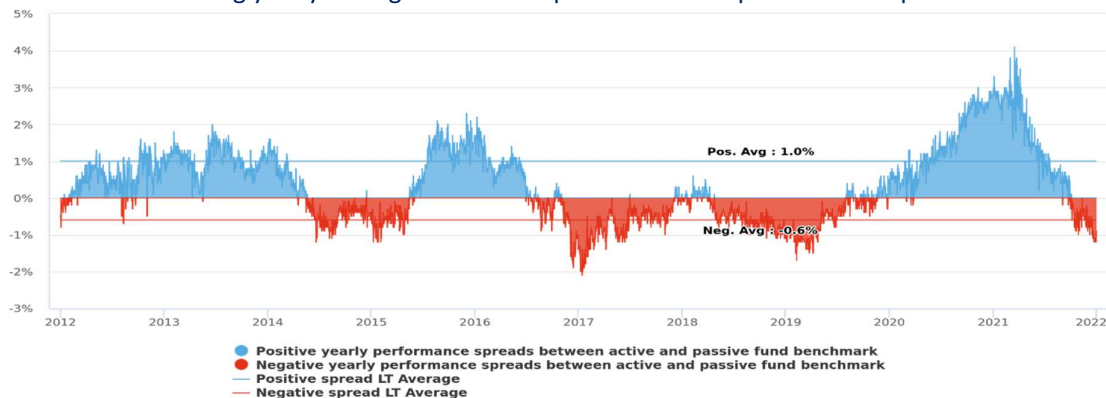
% of active funds outperforming passive funds over 10 years



See note on methodology p. 12 for indicators' definitions. Sources: Morningstar and BSD Investing. AuM weighted average data of all selected European domiciled equity and fixed income active & passive fund universes in EUR from 31/12/11 to 31/12/21. Past performance is no guarantee of future results.

- ✓ Additionally, our analysis found that 57% of the time, active funds outperformed their passive counterparts over the same period on a rolling basis as detailed in blue below. In red, active funds underperformed passive funds 43% of the time. This implies that staying invested 100% in passive funds would have been suboptimal as the upside potential is lost 57% of the time. Moreover, staying 100% in active funds would have been suboptimal as the upside potential is lost 43% of the time.

Rolling yearly average of active vs passive fund outperformance spread



See note on methodology p. 12 for indicators' definitions. Sources: Rolling annual performances BSD Investing between 31/12/11 and 31/12/21, AuM weighted average data of all active and passive funds from the 31 restated universes. Past performance is no guarantee of future results.

## Why a mix of active and passive funds leads to more optimal portfolios?

Finally, active fund managers' performance also depends on market cycles. The market often questions this idea, preferring a broader and more simplistic assessment. However, with the right tools, looking at the most recent bear market during the Covid-19 crisis and at the average over 20 years, gives interesting insights and demonstrates the ability of active management to outperform during bear markets. This highlights the need to combine active and passive funds to build all weather portfolios.

### Active vs passive funds' performances during the Covid-19 crisis

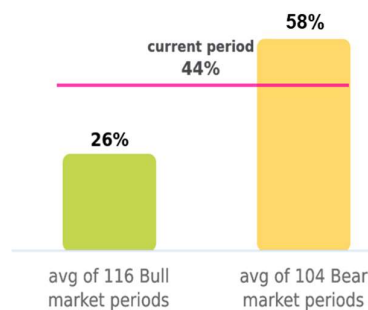
Active managers demonstrated their resilience during this phase of the market: nearly a third of the equity universes experienced a downturn as defined by our methodology (p. 18). Among those universes, on average, 67% of active managers outperformed passive funds during the Covid-19 market downturn.

In conclusion, after a decade of bull market, the Covid-19 crisis has brought to the fore the differentiating role of each investment style. Both active and passive management styles have a role to play in optimizing portfolio performance.

### Active fund performances during bull & bear markets over the past 20 years

The analysis of active vs passive funds' performance during bull and bear markets over the past 20 years in both equity and fixed income universes, shows that 58% of active managers have succeeded in outperforming passive management in bear markets over the past 20 years; only 26% did it during bull markets.

% of active funds outperforming passive funds during bull & bear market periods over 20 years



*See note on methodology p18 for bull & bear market definitions. Sources: Morningstar and BSD Investing AuM weighted average data of all selected European domiciled equity and fixed income active & passive fund universes in EUR from 4/01/01 to 31/12/21. Past performance is no guarantee of future results.*



## II. Issues preventing from building optimal portfolios

### A. Current market practices when comparing active vs passive funds' performances

There are currently two widely used approaches in the market for comparing active and passive performances: SPIVA ('S&P Indices Versus Active') and Morningstar. Those frequently cited scorecards arrive at the conclusion that most active managers do not outperform passive funds over the long term.

Here, we question the methodology of those often-used studies on active vs passive funds' performances comparisons. Their results are closely linked to the assumptions that are made when comparing funds' performances such as the choice of the benchmark, the use of benchmarks and not passive funds, the selection of the share class, the treatment of survivorship etc. Those assumptions impact the relative performance results to an extent which is underestimated by investors.

Methodological choices are made on the following elements:

1. The choice of the benchmark: using broad or prospectus benchmark
2. The treatment of fees, comparing funds vs indexes or vs passive funds
3. The choice of the fund classification
4. The fund's share class selection
5. The treatment of the survivorship bias
6. The treatment of new funds
7. The use of a single indicator between two fixed dates

### B. Reviewing the pitfalls of existing approaches

1. The choice of the benchmark: using a broad benchmark vs the prospectus benchmark

The SPIVA active/passive funds' scorecard compare funds vs an index. Under this approach, active funds are compared with a broad benchmark selected by S&P and not vs the official benchmark of the funds.

**Example:** Looking at Eurozone Large-Cap equity funds, most of those included in the Morningstar category officially follow the EURO STOXX 50 index, however in SPIVA reports, the active funds' performances are compared to that of the S&P Eurozone BMI index. Yet, the performance difference between those two indices is significant: over 10 years (ending 31/12/2021) the EURO STOXX 50 is up 142% vs +196% for the S&P Eurozone BMI. This can only highlight the critical aspect of benchmark selection when assessing relative performances.

The Morningstar active/passive barometer compares active funds against the passive funds of the same category. Yet, this could include funds on very different benchmarks such as smart beta funds.



**Example:** When comparing the performances of all active funds of the Morningstar Europe Large-Cap category vs all passive funds of the same category, active funds underperformed passive funds: 154% vs 156%. However, when comparing the active funds of the same category following the MSCI Europe vs the passive funds on the same index, active funds outperformed passive funds: 157% vs 152%. Therefore, comparing active funds with one or the other category of funds can lead to different investment conclusions in both cases, making it difficult for investors to arrive at a fair comparison.

## 2. The treatment of fees, comparing active funds vs indexes or vs passive funds

SPIVA, which publishes its results semi-annually, measures the performance of actively managed funds against that of an underlying index and not vs passive funds.

This method ignores the management fees and costs incurred by passive funds. It is wrongly assumed that the performance of passive funds equals the one of the underlying indices (i.e., no cost assumed). This may seem negligible over a short period of time, yet the longer the period studied, the higher the bias introduced when comparing funds.

**Example:** Emerging markets Large-Cap equity passive funds are up 82% over the past 10 years, whereas the MSCI Emerging markets index is up 95%. Therefore, it is obvious that a smaller number of active managers were able to outperform the benchmark, compared to those that have in fact outperformed the passive funds.

## 3. The choice of funds' classification

Morningstar and SPIVA have different methods of categorising funds, so the funds included in a category may differ between the two scorecards. Morningstar uses its own categories. SPIVA uses a less granular approach and consolidates different Morningstar categories inside the SPIVA categories. In addition, the active funds of those aggregated categories are compared with a single benchmark that is different from the investment objective of the funds.

**Example:** SPIVA US equity category includes 5 Morningstar categories: US Flex-Cap Equity, US Large-Cap Blend Equity, US Large-Cap Growth Equity, US Large-Cap Value Equity, US Mid-Cap Fund & US Small-Cap Equity. All the active funds of those categories are compared with the S&P 500, i.e. a Large-Cap index.

## 4. The funds' share class selection

Again, there are different approaches when measuring the performance of funds with multiple share classes: SPIVA only uses the share class with the largest assets, whereas Morningstar takes an asset-weighted approach and includes all share classes. SPIVA's approach allows the exclusion of the smallest share classes with limited price reliability, or of share classes with limited number of historical prices. Yet, it takes into account only the biggest share class in terms of assets but not the longest in terms of historical price data which can also make a significant difference.

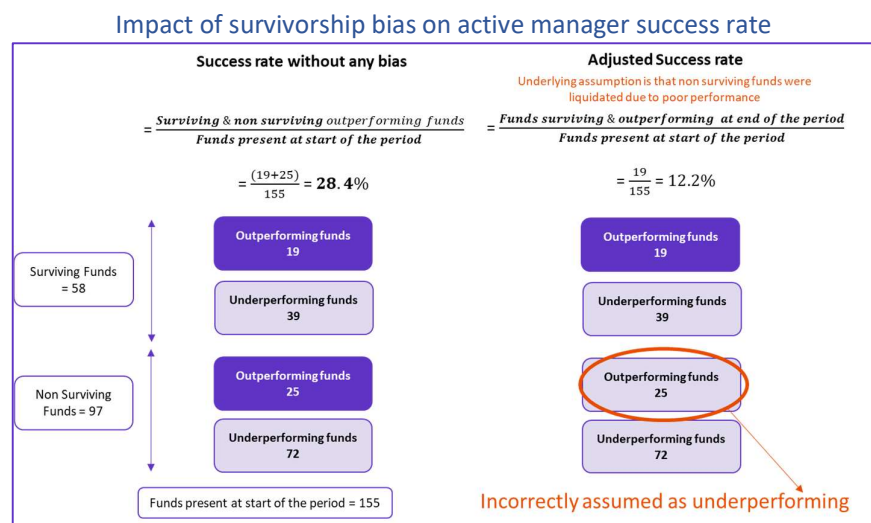


**Example:** Let's consider the case of a share class of a fund in the US Large-Cap equity category. The share class exists since 2007 and has assets of €800M in 2013, when a new share class is introduced. At the end of 2013, the new share class has more assets than the first one and remains to date the biggest one. Every year until 2024, taking the share class with the most assets to calculate the 10-year percentage of outperformers as per the SPIVA methodology, leads to exclude the fund from the universe yet it has been running for already 10 years.

### 5. SPIVA and Morningstar use a standard method to adjust for survivorship bias

The standard methodology for measuring success or failure of active managers is to include all the funds at the beginning of the considered period. However, this leads to biased results, as they are based on the strong assumption that all funds no longer in existence were liquidated due to poor performance. And yet, in many cases, funds are liquidated for non-performance reasons such as funds' mergers, strategy overlap, manager retirement, lack of scale or share classes consolidation.

**Example from the European equity Large-Cap funds' universe:** According to studies published in the market by Morningstar and SPIVA, over a 10-year period ending 31/12/2020, out of 155 funds which were active at the start of the period, 58 survived and 19 outperformed passive funds. The percentage of funds that outperformed is thus 12% (19/155). This assumes that the 97 funds that no longer exist have underperformed. This is incorrect, as our analysis shows that, of the funds that disappeared over the period (see table below), 25 outperformed. So, in total, it was not 19 but 45 funds (19 + 25) that outperformed passive funds, or 28% (44/155) vs 12% in Morningstar & SPIVA studies.



Source: Morningstar and BSD Investing data for Europe Large-Cap from 31/12/10 to 31/12/20

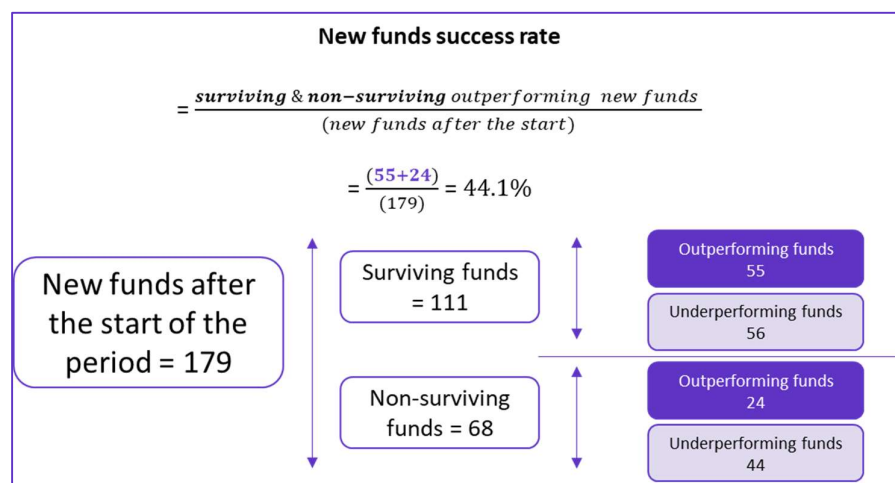
### 6. The treatment of new funds

As seen above, existing scorecards do not solve the problems surrounding the fair treatment of non-existing funds, as they rely on the assumption that funds that no longer exist underperformed. In addition, neither of those scorecards solves the problem of the treatment of funds created or added to the category during the studied period. And yet, those funds

represent real investment opportunities for investors that are, de facto, not taken into account because calculations are done between two fixed dates, ignoring what happens in between.

**Example from the European equity Large-cap funds’ universe:** Looking at this universe again, many funds have been added over the past 10 years. During this period, 179 funds were added, none of which were included in the universe used for calculating relative performances. 44% of those new funds have outperformed passive funds during their respective lifetime. They represent real investment opportunities for investors, yet they are not taken into account in any of the frequently used approaches.

#### New funds in the last 10 years active manager success rate



Source: Morningstar and BSD Investing data for Europe equity Large-Cap funds from 31/12/10 to 31/12/20

#### 7. The use of a single indicator between two fixed dates

The prevalent “single date” performance analysis leads to assessing that many active funds do not outperform their benchmarks. This type of analysis does not give a complete and reliable insight into portfolio performance. The annual point to point return calculation method ignores the performance of funds throughout the year and is easily biased by abnormal events or unrefined data.

**Example:** Between the 31/12/2020 and the 31/12/2021, Global bond Euro hedged active funds underperformed passive funds by 0.6% (non-institutional share classes only). Yet, looking at the data on a rolling basis, during the year, 88% of the time active managers outperformed their passive counterparts (on a yearly basis). And the average positive outperformance spread over 1 year was 2 %.





## III. Solutions to build optimal portfolios

### A. An innovative methodology in 4 steps

A new methodology should be used to fix those errors and eliminate the biases in order to arrive at a fair comparison between active and passive funds.

This methodology is based on the following steps:

1. Accessing a new database
2. Using the official fund index instead of a broad index
3. Comparing active funds with passive funds and not with indices
4. Capturing all investment opportunities

### B. Understanding the 4 steps

1. Accessing a new database

**To be reliable, the selection between active funds and passive funds should be based on a database that carefully restates fund information.**

As described in the first part of the document, data refinement is key to delivering reliable results.

To be optimal, the selection between active funds and passive funds should be based on a database that carefully restates fund information.

This database must ensure that:

1. The most representative fund share class is chosen.
2. Historic data contain no errors or missing data.
3. The funds are all following the selected corresponding index.
4. The performance considered is net of costs.

2. Using the official fund index instead of a broad index

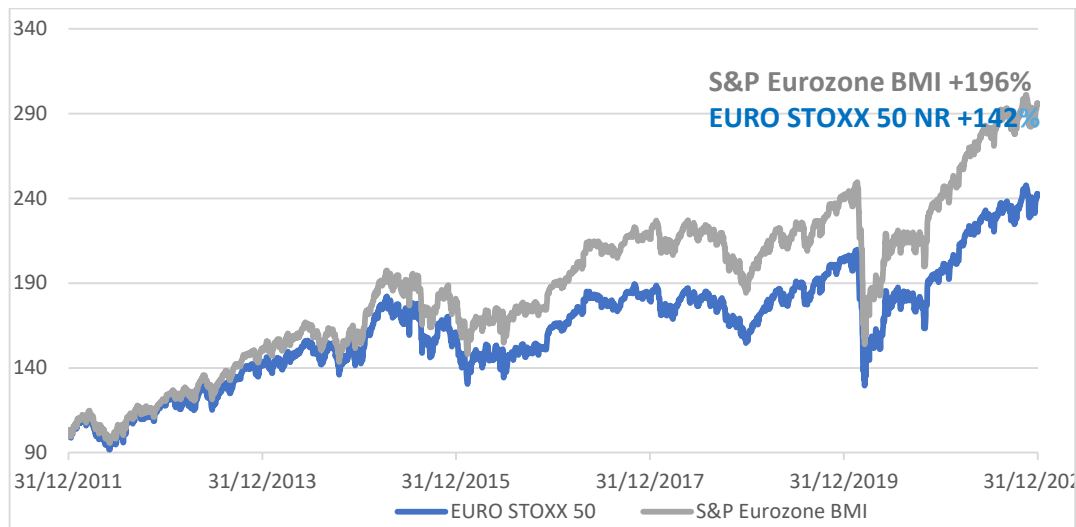
**An optimal selection can only be done by using a database that compares funds according to their own index.**

Selecting the right benchmark is a key parameter when assessing the performance of active funds vs passive funds. Comparing funds with their official benchmark allows to focus on the skills of the manager by eliminating the luck factor that comes from being compared to a broad index. The choice of benchmark makes a significant difference, yet investors are hardly aware of the impact of this choice on the relative performance of their portfolio and on their investment decision.

**Example:** An investor looking to invest in the Eurozone Large-Cap equities can choose amongst almost 350 funds, which follow 50 different indices. The performances between those different indices can widely vary (actually from + 44% to + 346% over 10 years!). For example,

the EURO STOXX 50 index increased by + 142% and the S&P Eurozone BMI + 196% from 31/12/11 to 31/12/21. It is clear that comparing active fund performances with one or the other indices will deeply impact the results. The choice of the index is essential to be able to select the right fund.

EURO STOXX 50 vs S&P Eurozone BMI over 10 years



Source: Morningstar, S&P, BSD Investing data from 31/12/11 to 31/12/21. Past performance is no guarantee of future results.

### 3. Comparing active funds with passive funds and not with indices

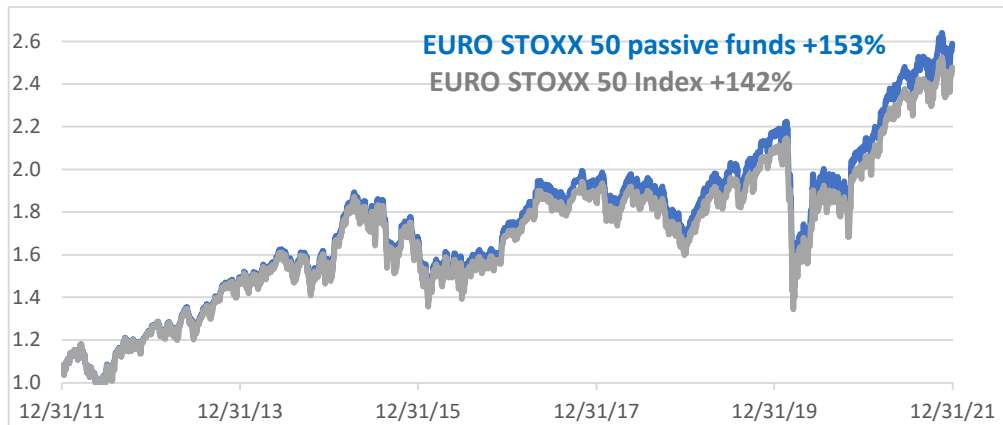
Whilst selecting the most suitable index in which to invest is already a key decision, one must also know how to choose amongst all the active funds and passive funds that follow this index.

Too often, investors will tend to choose an active fund or a passive fund without having a comprehensive view of the existing fund offering in the market. This leads them to make poorer choices.

It is fundamental to avoid these errors and to be able to make comparisons between all active funds and passive funds and not just between active funds and indices. To do so, investors need access to a database that provides for it.

**Example:** The EURO STOXX 50 index over 10 years increased by +142% whereas the passive funds on average increased by +153% over the same period. The difference mainly comes from dividend optimisations. In this case, comparing the performances of active funds vs passive funds or vs the index will not give the same results. Those differences are significant and can lead to very different conclusions.

EURO STOXX passive funds vs index over 10 years



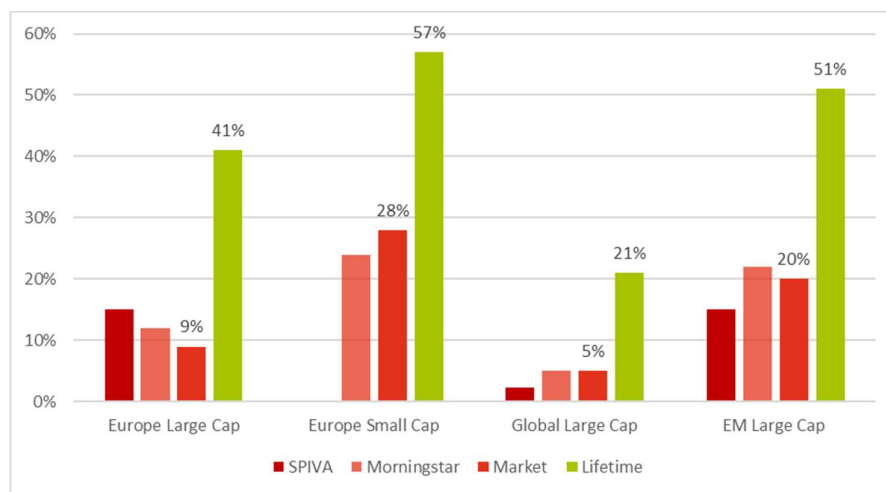
Source: Morningstar, STOXX, BSD Investing data from 31/12/11 to 31/12/21. Past performance is no guarantee of future results.

#### 4. Capturing all the investment opportunities available to investors

##### Using indicators that provide an accurate picture of what has really outperformed.

It is common market belief that 15% of European equity active funds have outperformed over 10 years. This figure is calculated using a single indicator, the percentage of active managers who outperform between two fixed dates. As we have discussed earlier, this figure is inaccurate as it does not take into account all the funds present over the entire period, such as expired funds or new funds. And yet, these funds have every legitimacy to be included because they have a real impact on performance results. When taking them into account, it is not 15% but 41% of active funds that outperformed.

% of active funds outperforming passive funds over 10 years according to different methodologies



Source: latest available reports from SPIVA & Morningstar with BSD Investing data from 30/06/11 to 30/06/21 for all share class types. 10y Market is calculated based on standard market retreatment to have a comparable and up to date basis for all calculations. See p. 9 note on methodology for definition of Market and Lifetime. Past performance is no guarantee of future results.

## IV. Why reality is different than common belief?

### A note on methodology

Calculations have been made on 31 universes of both active and passive funds in which data has been reprocessed according to the new methodology described above to compare active and passive funds. The 31 universes are on equity and fixed income asset classes ranging from global to emerging and developed markets including specific countries and strategies. The funds are selected from more than 11,000 European domiciled mutual funds with assets under management of EUR4 trillion. The most representative non-institutional share classes in terms of assets and historical data have been taken into account.

Passive funds are defined as mutual funds and can be either ETFs or index funds.

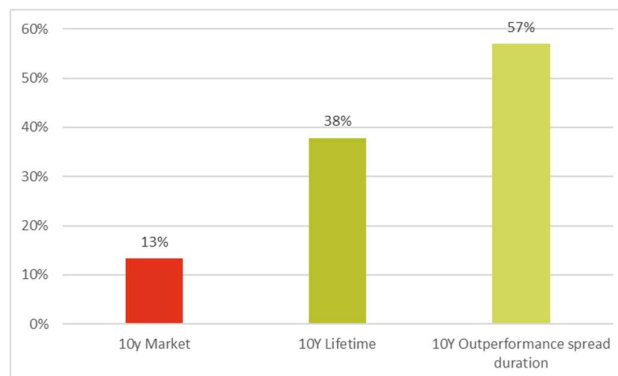
We also use proprietary indicators, including:

- ✓ **10y Lifetime:** The percentage of active funds outperforming passive funds following the same benchmark during their respective lifetime over 10 years.
- ✓ **10y Market:** The percentage of active funds outperforming a benchmark over 10 years using standard market adjustment for survivorship.
- ✓ **10y Outperformance spread duration:** The percentage of time active vs. passive funds' outperformance spread was positive over 10 years.

### A. Performance comparisons between active and passive funds over 10 years are more mixed than current market belief

Based on this innovative methodology, a broad view of performances across asset classes and categories shows that active/passive funds results are decidedly mixed. On average, among the 31 universes studied over the past 10 years, 38% of active managers outperformed their passive counterparts during their lifetime. This figure is materially different from the 13% calculated based on standard market assumptions.

% of active funds outperforming passive funds over 10 years



See note on methodology p. 12 for indicators' definitions. Sources: Morningstar and BSD Investing. AuM weighted average data of all selected European domiciled equity and fixed income active & passive fund universes fund universes in EUR from 31/12/11 to 31/12/21. Past performance is no guarantee of future results.

## B. There are material differences depending on the periods of time

Adding to what has been discussed above, our study confirms that active funds managers' performance also depends on time frames.

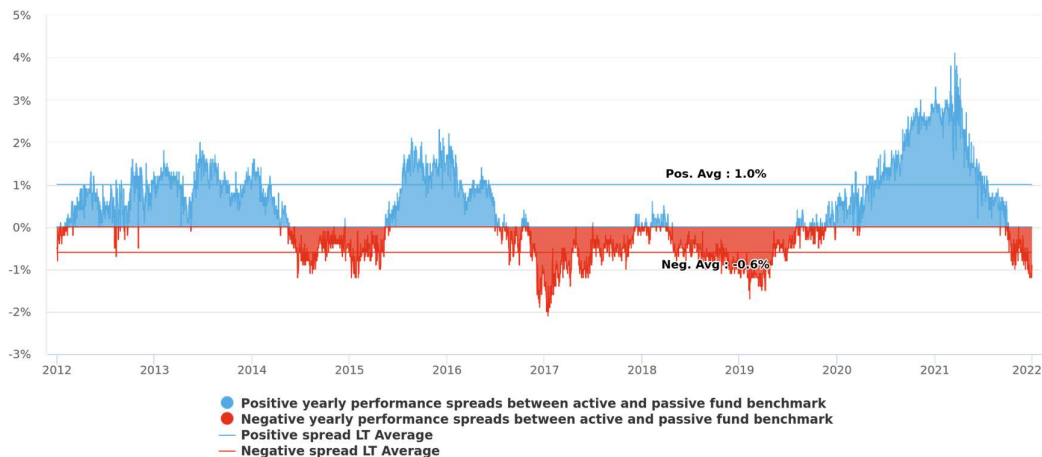
Looking at rolling data and not only at point-to-point data of managers' performance during different time periods gives a much more refined view of the relative performance landscape and provides additional insights.

Our analysis found that 57% of the time, active funds outperformed their passive counterparts over the same period. The aggregated view of all asset classes based on those rolling data reinforces the idea that diversification between management styles is key to capture the upside potential. On average, among the 31 restated universes over 10 years, the active portfolios outperformed their respective passive funds 57% of the time, as detailed in the blue areas of the graph below. In red, active funds underperformed passive funds 43% of the time.

This implies that staying invested 100% in passive funds over the 10-year period would have been suboptimal as the upside potential is lost 57% of the time. Moreover, staying 100% in active funds would have been suboptimal as the upside potential is lost 43% of the time.

This underlines the fact that using reliable data and fair indicators leads to a more balanced conclusion on management styles. Both active and passive managements can add value to build optimal portfolios.

Rolling yearly average of active vs passive fund outperformance spread



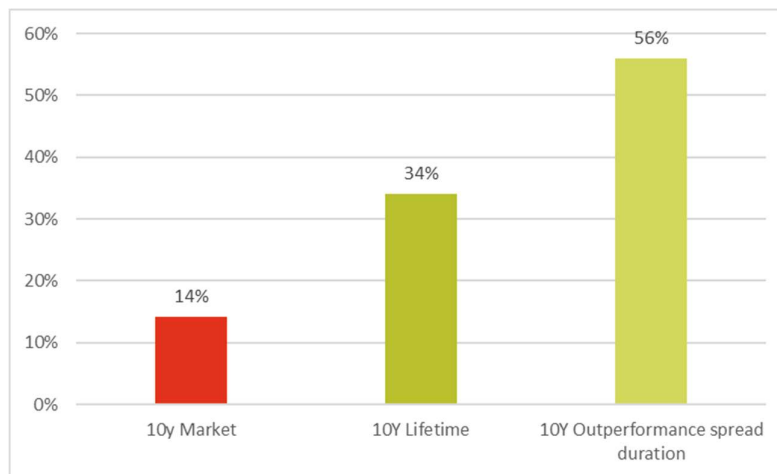
See note on methodology p. 12 for indicators' definitions. Sources: Rolling annual performances [BSD Investing](#) between 31/12/11 and 31/12/21 on aggregated data of all active and passive funds from the 31 restated universes. Past performance is no guarantee of future results.

### C. There are differences between asset classes

1. Equity active funds outperformed at least twice better than what market research is saying

Looking at aggregated data over the equity asset class leads again to a more balanced view. More than a third of active managers succeeded in outperforming passive funds over the past 10 years. More than half of the time during those 10 years, they were able to generate a positive outperformance. On average, over the past 10 years over the 19 restated equity universes, 34% of active equity managers outperformed their passive counterparts during their lifetime. This is above the 14% that is calculated based on market standard adjustments.

% of equity active funds outperforming passive funds over 10 years

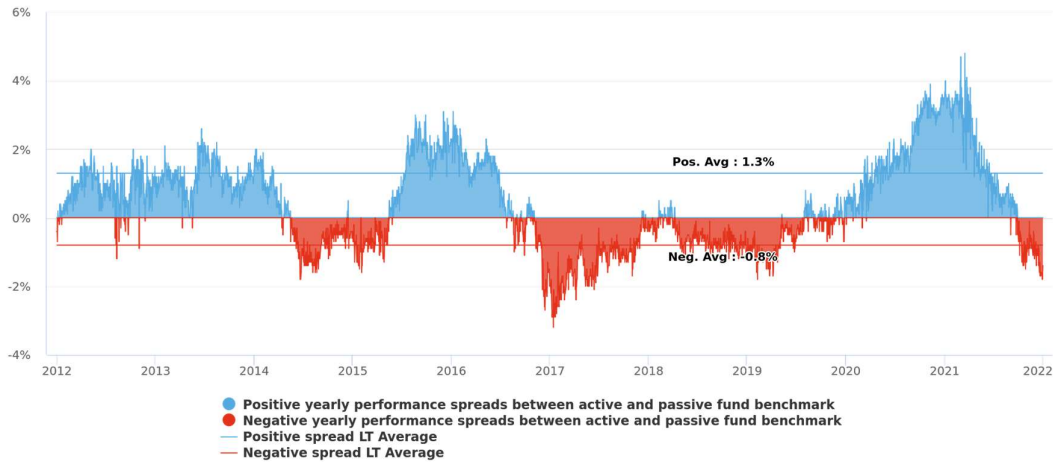


*See note on methodology p12 for indicators' definitions. Sources: Morningstar and BSD Investing. AuM weighted average data of all selected equity fund universes in EUR from 31/12/11 to 31/12/21. Past performance is no guarantee of future results.*

Moreover, looking at rolling data over 10 years in detail also helps demonstrate the need to diversify between management styles in the equity asset class in order to build optimal portfolios. On average, over the 19 BSD Investing equity universes over 10 years, the active portfolio outperformed that of passive funds 56% of the time as detailed in the blue areas of the graph below. In red, active funds underperformed passive funds 44% of the time. This implies that staying invested 100% in passive funds over the 10-year period would have been suboptimal, as the upside potential is lost 56% of the time. Moreover, staying 100% invested in active funds would have been suboptimal as the upside potential is lost 44% of the time.



### Rolling yearly average equity active vs passive fund outperforming spread



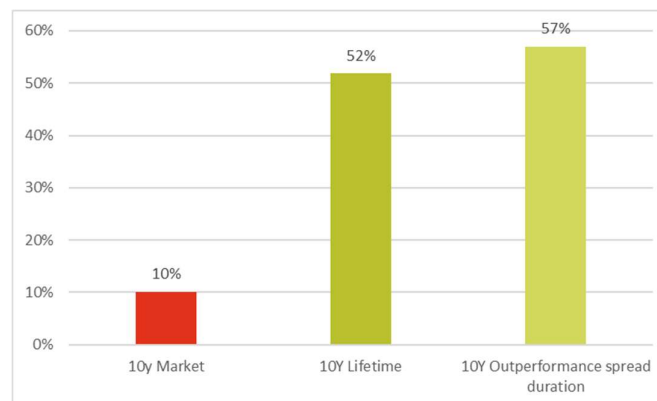
See note on methodology p. 12 for indicators' definitions. Sources: Rolling annual performances [BSD Investing](#) between 31/12/11 and 31/12/21 on aggregated data of all active and passive funds from the 19 restated equity universes. Past performance is no guarantee of future results.

## 2. Fixed income active funds outperformed consistently

Looking at aggregated data on the fixed income asset class shows compelling results for active managers. Over 10 years, more than half of active managers outperformed their passive counterparts. Those results are consistent over time, with more than half of the time active managers outperforming.

- ✓ Over the past 10 years, on average and over the 12 studied restated fixed income universes, 52% of active managers outperformed their passive counterparts during their lifetime. This should be compared with an average of 10% that is calculated based on market standard assumptions.

### % of fixed income active funds outperforming passive funds over 10 years

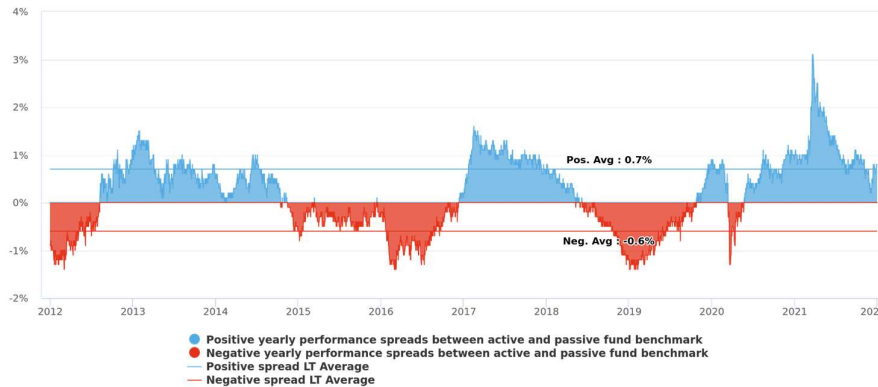


See note on methodology p. 12 for indicators' definitions. Sources: Morningstar and BSD Investing. AuM weighted average data of all fixed income fund universes in EUR from 31/12/11 to 31/12/21. Past performance is no guarantee of future results.



- ✓ Additionally, on average, among the BSD Investing fixed income universes over 10 years, 57% of the time the active funds outperformed passive funds as shown in the blue areas of the graph below. In red, 43% of the time, active underperformed passive funds. This implies that staying 100% invested in passive funds over the 10-year period would have been suboptimal, as the upside potential is lost 53% of the time. Similarly, staying 100% invested in active funds would have been suboptimal as the upside potential is lost 43% of the time.

Rolling yearly average fixed income active vs passive funds outperforming spread



See note on methodology p. 12 for indicators' definitions. Sources: Rolling annual performances [BSD Investing](#) between 31/12/11 and 31/12/21 on aggregated data from the 11 fixed income restated universes. Past performance is no guarantee of future results.

**D. Some universes have been more favorable to one or the other management style over the past 10 years**

Looking in detail at each universe, the use of different indicators like the 10-year lifetime and the 10-year average positive spread duration shows more balanced results between active and passive funds' performance. It leads to significant differences compared to the view based on standard market adjustments.

**1. Among the equity universes**

Over the past 10 years, our analysis shows that Japan Large-Cap, Germany Large-Cap and Emerging markets Large-Cap were the equity universes where the outperformance spread was positive the most times. The universes the more favorable to passive funds were Global Large-Cap, France Large-Cap and US Large-Cap over 10 years.

The indicators we are using allow for more granularity and give a more accurate view. For example, in the Eurozone Large-Cap equity active fund universe, most of the indicators are more favorable to passive funds. Yet, the outperformance spread duration is relatively high: 42% of the time over 10 years, the active vs passive spread has been positive, indicating that a few active funds have performed quite well. Being invested only in passive funds, even in this area, would have been suboptimal as the upside potential is lost 42% of the time over a 10-year period.

## BSD Investing equity universe key indicators

Equity Universes	BSD Investing Positive spread duration 10Y Average	10Y BSD Investing lifetime % of active funds outperforming	10Y Market % of active funds outperforming
Japan Large-Cap	<b>75%</b>	49%	6%
Germany Large-Cap	<b>71%</b>	25%	14%
EM Large-Cap	<b>70%</b>	47%	15%
China Large-Cap	<b>63%</b>	52%	26%
Europe Value	<b>63%</b>	64%	23%
Europe Growth	<b>58%</b>	48%	28%
Europe Small-Cap	<b>56%</b>	50%	23%
UK Large-Cap	<b>55%</b>	47%	20%
US Small-Cap	<b>55%</b>	43%	27%
Switzerland Large-Cap	<b>54%</b>	42%	16%
Spain Large-Cap	<b>52%</b>	40%	21%
Europe Large-Cap	<b>46%</b>	40%	10%
Eurozone Large-Cap	<b>42%</b>	18%	19%
Italy Large-Cap	<b>41%</b>	67%	25%
US Growth	<b>39%</b>	10%	3%
US Value	<b>31%</b>	24%	13%
Global Large-Cap	<b>29%</b>	23%	2%
France Large-Cap	<b>29%</b>	12%	8%
US Large-Cap	<b>21%</b>	12%	1%

See note on methodology p12 for indicators' definitions. Source: [BSD Investing](#) between 31/12/11 and 31/12/21 on all active and passive funds from the equity restated universes. Past performance is no guarantee of future results.

## 2. Among the fixed income universes

On average, using the new methodology, active fixed income funds show higher outperformance spreads vs passive funds. Global bond, Global corporate bond and Euro Investment Grade Bond are the fixed income universes most favourable to active funds over the past 10 years. UK Govies, US Govies and Global IL EUR Hedge are the 3 universes most favourable to passive funds over the same period. Flexibility in terms of credit risk and duration positioning vs the indices was a key differentiating factor during the past ten years.

For example, for Euro Investment Grade bonds, when looking at the number of active funds outperforming, the results do not seem that attractive for active managers. Yet when considering the amount of outperformance (i.e., spread duration), the picture is very different: 63% of the time the outperformance spread was positive which means that some managers have succeeded in outperforming quite well in this category. Therefore, considering only the number of outperforming active managers will prevent from taking an optimal investment decision.

## BSD Investing fixed income universe key indicators

Fixed income Universes	BSD Investing Positive spread duration 10Y Average	10Y BSD Investing lifetime % of active funds outperforming	10Y Market % of active funds outperforming
Euro High-Yield	<b>73%</b>	74%	1%
US High-Yield	<b>68%</b>	81%	0%
Emerging Markets debt Local Currency	<b>67%</b>	67%	4%
Euro Investment-Grade bonds	<b>63%</b>	35%	13%
US Investment-Grade bonds	<b>57%</b>	64%	3%
Euro Govies	<b>54%</b>	34%	4%
Global Bonds EUR Hedged	<b>51%</b>	49%	18%
Global Corporate bonds EUR Hedged	<b>35%</b>	53%	24%
Euro Inflation Linked	<b>34%</b>	30%	11%
UK Govies	<b>27%</b>	21%	2%
US Govies	<b>23%</b>	11%	0%
Global Inflation-Linked EUR Hedged	<b>2%</b>	3%	0%

See note on methodology p12 for indicators' definitions. Source: [BSD Investing](#) between 31/12/11 and 31/12/21 on all active and passive funds from the fixed income restated universes. Past performance is no guarantee of future results.

## V. Why a mix of active and passive funds leads to more optimal portfolios?

### A note on methodology

Bull/Bear market periods are determined based on a market index increase/decline of +/-20% over a period superior to 90 days. Data displayed on the graphs below are calculated over the entire bull/bear period that may have started prior to the first date of the graph.

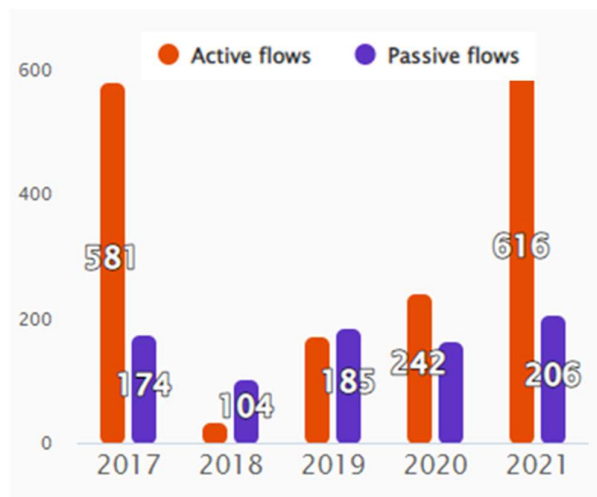
Finally, active funds managers' performance also depends on market cycles. The market often questions this idea, preferring a broader and more simplistic assessment. However, looking at the most recent bear market during the Covid-19 crisis and at the average over 20 years with the right tools gives interesting insights.

### A. Active vs passive funds during the Covid-19 crisis

#### 1. Renewal of flows towards active management

After two years, 2018 and 2019, marked by strong disaffection, active management flows rebounded in 2020 & 2021, following the Covid-19 crisis. During the two years preceding Covid-19, investors had greatly favored passive management, which reached a historical record in 2019 at € 185 billion. The appetite for active management was re-energized by the Covid-19 crisis. Indeed, active strategies allowed investors to benefit from the flexibility of managers to adapt to the changes linked to this crisis and to better navigate the markets in uncertain times. Active fund flows reached record high levels in 2020 and 2021, capturing 75% of the flows in 2021. Passive strategies nonetheless continued to attract investors who focus on costs, liquidity and innovation with passive fund flows reaching a record high in 2021 at €206bn.

Active vs passive European domiciled fund flows (€bn)



Sources: BSD Investing, Morningstar data in €bn from 31/12/16 to 31/12/21

## 2. Significant active fund outperformance

Active managers demonstrated their resilience during this phase of the market: nearly a third of the equity universes experienced a downturn as defined by our methodology (see p18). Among those universes, on average, 67% of active managers outperformed passive funds during the Covid-19 market downturn. In only one universe, the Emerging Markets Large-Cap equity, did less than 50% of active managers outperformed and on average they underperformed by 0.4%. In all the other universes, more than 50% outperformed, and the average outperformance amounted to 2.5%.

% of active funds outperforming during COVID-19 crisis

Universes	% of active fund outperforming passive funds	Outperformance spread of active vs passive funds
EM Large-Cap	37%	-0,4%
Europe Large-Cap	62%	1,3%
Europe Small-Cap	76%	6,0%
Europe Value	64%	1,2%
Eurozone Large-Cap	72%	2,6%
France Large-Cap	63%	1,1%
Italy Large-Cap	100%	3,7%
US Small-Cap	52%	3,9%
US value	77%	3,3%
Average	67%	2,5%

*See note on methodology p18 for bull & bear market definitions. Sources: Morningstar & [BSD Investing](#) data for each bear market during 2020 on the selected universes. Past performance is no guarantee of future results.*

The Covid-19 crisis has enabled both management styles to demonstrate their resilience. Active managers have confirmed their ability to seize market opportunities and to outperform passive funds in this phase of the market, while passive funds have successfully passed their first important crisis without major liquidity problems. In conclusion, after a decade of bull market, the Covid-19 crisis has brought to the fore the differentiating role of each investment style. Both active and passive management styles have a role to play in optimizing portfolio performance. Diversification is needed in order to build all weather portfolios.

### B. European active fund performances during bull & bear markets over the past 20 years

#### 1. Aggregated results

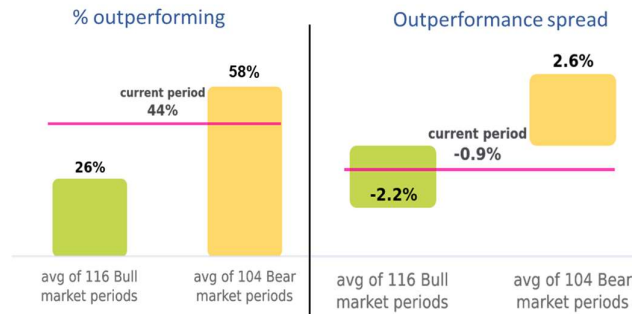
We have studied the performance of active vs passive funds during bull and bear markets over the past 20 years (see methodology p18). Our analysis is based on funds domiciled in Europe (non-institutional share classes only), looking at the 31 restated universes ranging from equity to fixed income.



The results of our analysis show that 58% of active managers have succeeded in outperforming passive management in bear markets over the past 20 years; only 26% did it during bull markets.

It demonstrates the ability of active management to outperform during bear markets.

### Active funds vs passive funds during bull & bear market periods over 20 years

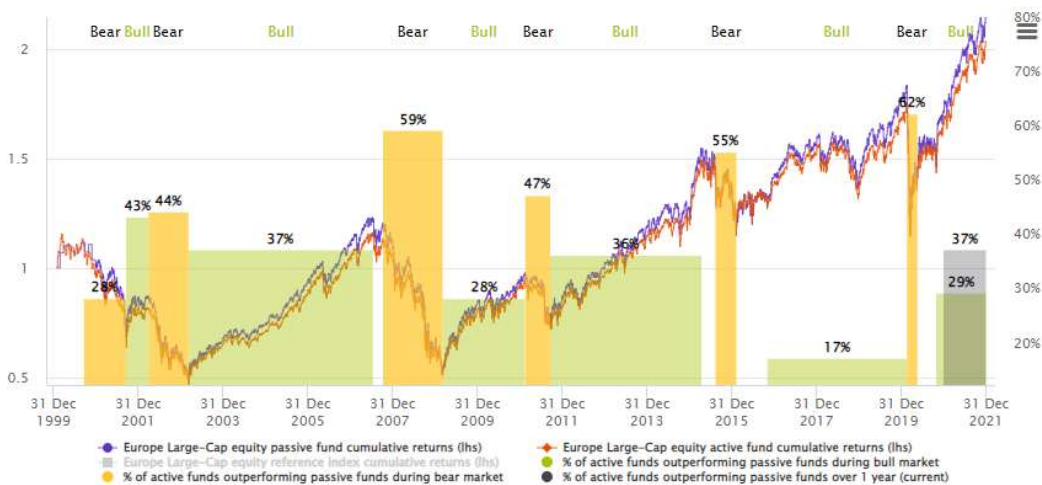


See note on methodology p18 for bull & bear market definitions. Sources: Morningstar and BSD Investing AuM weighted average data of all selected European domiciled equity and fixed income active & passive fund universes in EUR from 4/01/01 to 31/12/21. Past performance is no guarantee of future results.

## 2. Results by universe

Looking at Europe Large-Cap equity funds over 20 years, on average 49% outperformed during bear markets and 31% during bull market.

### % of European Large-Cap equity funds outperforming passive funds during bull & bear market periods over the past 20 years



See note on methodology p18 for bull & bear markets' definitions. Sources: Morningstar and BSD Investing data of European equity Large-Cap funds in EUR from 4/01/01 to 31/12/21. Past performance is no guarantee of future results.

In more than half of the studied universes, the percentage of active funds outperforming during bear markets is above 50% as shown in the table below. Italy Large-Cap, China Large-Cap and Europe Growth are the universes showing the highest percentage of active managers outperforming their passive counterparts during bear markets.

In nearly all cases (95%), the percentage of active funds outperforming passive funds during bull markets is below 50%. Japan Large-Cap equity is the only universe where more than 50% of active managers outperformed during bull markets on average.

% of active funds outperforming passive funds on average during bull and bear markets

Universes	% of active funds outperforming passive funds during bull markets	Universes	% of active funds outperforming passive funds during bear markets
Japan Large-Cap	53%	Italy Large-Cap	89%
UK Large-Cap	42%	China Large-Cap	87%
Germany Large-Cap	42%	Europe Growth	71%
EM Large-Cap	40%	US High-Yield	68%
Europe Growth	39%	Europe Value	65%
Europe Value	36%	US Small-Cap	62%
Europe Small-Cap	33%	France Large-Cap	61%
Europe Large-Cap	31%	Euro High-Yield	56%
US Small-Cap	31%	Spain Large-Cap	55%
Switzerland Large-Cap	25%	Eurozone Large-Cap	53%
Global Large-Cap	23%	EM Large-Cap	53%
US Growth	24%	Germany Large-Cap	51%
Italy Large-Cap	21%	Europe Large-Cap	49%
US Large-Cap	18%	UK Large-Cap	48%
Eurozone Large-Cap	17%	US Value	47%
Euro High-Yield	17%	Switzerland Large-Cap	47%
China Large-Cap	15%	Global Large-Cap	44%
US High-Yield	14%	Europe Small-Cap	43%
Spain Large-Cap	11%	US Large-Cap	43%
US Value	11%	US Growth	42%
France Large-Cap	7%	Japan Large-Cap	37%

*See note on methodology p18 for bull & bear market definitions. Sources: Morningstar and [BSD Investing](#) data from all selected European domiciled equity and fixed income active & passive fund universes in EUR from 4/01/01 to 31/12/21. Past performance is no guarantee of future results.*

## VI. Glossary

<b>Percentage of active funds outperforming</b>	Percentage of active funds with a superior return than that of the passive benchmark over a specific period
<b>BSD Investing Lifetime</b>	Percentage of active funds outperforming passive funds during their respective lifetime over a period (i.e. we include all the funds that existed either for the entire duration or a part of that period)
<b>Active/Passive fund portfolio</b>	The active or passive funds' portfolio is the AuM-weighted average performance of all funds under consideration. All fund performances are net of fees and dividend reinvested.
<b>Passive benchmark</b>	This is the same as the passive funds' portfolio
<b>Volatility</b>	The standard deviation of daily returns of a fund. This measure is then annualized
<b>Performance Spread</b>	Excess return of active funds' portfolio over that of the passive benchmark
<b>Rolling period</b>	Any measure calculated on a rolling basis is the measure calculated for the specified period and rolled over daily. For e.g. 'Rolling yearly % of active funds outperforming the passive fund benchmark' is calculated on a daily basis by measuring the percentage of active funds that outperformed the passive fund benchmark based on yearly spread
<b>Long term (LT) Average</b>	All Long-Term averages are calculated using the rolling period measures
<b>Spread duration</b>	% of time active vs passive funds' benchmark spread was positive
<b>BSD Investing funds</b>	All calculations are done using those funds. They are selected using BSD Investing's proprietary selection process, from the entire universe of European domiciled funds that exist in the market
<b>Selection of share class</b>	Each fund analysed may have multiple share classes. Only the more representative share classes based on size & length of historical data among the non-institutional share classes, is selected. Only non-institutional share classes are selected for the purpose of this study when specified




## Contact


Marlène HASSINE KONQUI


 +33 (0) 6 78 33 32 01

 [marlene.hassine@bsdinvesting.com](mailto:marlene.hassine@bsdinvesting.com)

 [www.bsdinvesting.com](http://www.bsdinvesting.com)

 Marlène Hassine Konqui

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