

## In Search of Manager Alpha: Outperformance and Dispersion

WHITEPAPER

AUGUST 2023

The purpose of this paper is to measure and analyze the historical performance of actively managed strategies compared to market benchmarks. This topic has been discussed before in numerous platforms and contexts, but this paper aims to objectively create an accurate historical and quantitative picture of relative performance over time.

We found that the median manager in the majority of asset classes outperformed their benchmark before fees. However, the level of outperformance varied considerably, and it was not always sufficient to overcome the median fee for the respective asset classes. We also found that US small cap equity, EAFE equity, and emerging market debt (hard currency) have exhibited the largest positive median manager alpha net of fees.

The level of dispersion among managers also varies by asset class. This implies that skilled (or lucky) active management can add more value in certain asset classes than others. These tend to be more volatile asset classes, such as equities. We also note that there seems to be a connection between a temporary widening of interquartile spreads and extreme market events.

Manager alpha has also been cyclical, exhibiting long periods of median out- and under performance relative to the benchmark. Across most asset classes, the interquartile spread has declined and levelled off since the 1980s and 1990s. This implies that either markets have become more efficient over time or managers have structured their portfolios in a manner such that they more closely resemble each other.

### Introduction

Whether active management adds value has been a common question for decades. For many active investors, their goal is to outperform their target market (or *benchmark*) or to at least do better than their peers. The question, then, is whether these are practical goals, and if they are, whether they can be achieved consistently.

This paper aims to ascertain in which asset classes active managers are more likely to outperform the market, and if they do, how much of that benefit will go back to the investor after fees are applied. This paper will also endeavor to answer whether the amount of value added from active management varies across asset classes and time, as well as how much value can potentially be added for different asset classes.

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## Data and methodology

In this analysis, we focus on public markets. We use data from two well-known vendors, eVestment Alliance and Morningstar. For most asset classes, Morningstar tends to have a larger number of funds. The universe is composed primarily of mutual funds, hence it tends to have a retail bias. eVestment is a more traditional haven for institutional investment managers. It is self-reporting, so there might be some selection bias in the data.<sup>1</sup> Our analysis includes “dead” funds for the periods where they reported returns. This mitigates most survivorship bias.<sup>2</sup> Likewise, we include new funds for the periods when they reported returns.

For our analysis, we reviewed thirteen asset classes: US core (i.e., investment grade) bonds, US high yield bonds, US bank loans, emerging market debt (hard currency), emerging market debt (local currency), US large cap equity, US small cap equity, global equity, EAFE equity, foreign equity, emerging market equity, China A shares, and China all shares. We chose these asset classes because they represent a broad collection of the public markets and have a long enough history to supply a comprehensive and robust picture of outperformance in their respective markets.

The available data starts as far back as 1979 and up to 2007, depending on the asset class. Using as long a historical period as possible should produce the most comprehensive results, as it includes multiple and distinct types of market cycles and environments. It should also minimize the impact of any possible *endpoint* or *recency bias*.<sup>3</sup>

We want to make sure that we are using a group of managers that fairly represents the universe we are trying to assess. Put differently, we want to make sure we are analyzing primarily what an institutional investor would consider to be the proper opportunity set for each respective asset class (i.e., only those funds that are truly representative of the universe being evaluated). This way, we can develop more reasonable expectations about the reality of investing in an actively managed fund in each asset class.

This process starts at the filtering level, where we clear the data of as much bias as possible. For example, to prevent double counting, we opted to only consider a single share class of each fund. Share classes differ by fee structures but not by portfolio composition. To not incur selection bias and because we calculate performance before fees, we chose the oldest share class available. As our focus is for institutional investors, we exclude all tax-managed funds and closed-end funds.

To support the most accurate calculation methods, we removed any funds with less than twelve months of return history. While this decision does slightly increase the risk of survivorship bias and add a bias against new funds, the amount of funds cut was small enough as to not warrant an extraordinary amount of concern.

In each asset class, we start with the asset class designation provided by the vendor. However, because funds can be miscategorized, we then conduct more filtering that is designed to ensure we are only including the funds that an institutional investor would generally consider to be part of the opportunity set.

<sup>1</sup> Selection bias refers to a distortion in a measure due to the universe being analyzed not accurately reflect the target opportunity set. For this analysis, it could occur when a fund chooses not to report its results.

<sup>2</sup> Survivorship bias refers to the bias in the output that comes from only viewing the funds that still exist at the end of the period while ignoring those that do not.

<sup>3</sup> Endpoint or recency bias refers to the possibility that even long-term results may be temporarily skewed due to recent phenomena.

- We set a threshold correlation to the primary benchmark for the asset class. For example, if a fund in the emerging markets equity category has a historical correlation with the MSCI Emerging Markets index of less than 0.7, we exclude it.
- We compare the correlation to related but different benchmarks. For example, if a fund in the emerging markets equity category is more highly correlated with the MSCI Frontier Markets index than the MSCI Emerging Markets index, we exclude it.
- We compare the correlations of funds offered by the same firm to check for double counting. For example, if a fund has a correlation of at least .998 to another fund of the same firm, we exclude one.
- For fixed income classes, duration and credit quality are also filtered. For example, in the investment grade bond category, we cut funds with an average duration of below 3.5 or above 8.5, as well as any funds with an average credit quality below BBB.

The effects of such filtering are illustrated in Figure 1.

Filtering Step	Description	Morningstar Count	Difference	eVestment Count	Difference
Original Pull	Oldest share class, pull inactive funds, no tax efficient funds	611		222	
Duration Check	Average Modified Duration must be between 3.5 – 8.5 years	580	-31	218	-4
Credit Quality Check	Credit Quality must be BBB or higher	570	-10	217	-1
Bloomberg US Aggregate Check	Correlation to the Bloomberg US Aggregate must be .70 or higher	436	-134	211	-6
Bloomberg US Credit Check	If the fund's correlation to the Bloomberg US Credit Index is higher than that of the Bloomberg US Aggregate, cut the fund	310	-126	187	-24
Double Count Check	If there is a fund of the same firm that has above a .998 correlation with another fund, then cut one of them	305	-5	179	-8

**FIGURE 1**  
Asset Class Filter Example:  
Investment Grade Bonds

Source: Data from eVestment Alliance and Morningstar as of December 31, 2022.

After we finish cleaning up the data, we run the analysis as follows. First, we find the monthly one-year excess returns for each manager.<sup>4</sup> Next, we calculate a monthly median excess return among managers. Finally, we take the geometric average of that median to get the outperformance.

<sup>4</sup> All returns (unless otherwise noted) are gross of fees and in US Dollars.

We seek to measure over the longest time period possible. We only start analyzing the data once there are at least ten funds in that universe to prevent the statistics from being driven by a small handful of managers.

## Fees and expenses

Expenses, fees, and trading costs can be a high hurdle for managers to overcome. All of the results in this paper are shown before fees unless otherwise noted. The decision to compare gross of fee returns was made so that the benchmark index could be used directly for comparison. Furthermore, fees will vary for different investors. For example, institutions investing larger mandates will likely be able to negotiate lower fees than those available to smaller institutions.

When comparing active and passive management, it is important that investors consider the fees they would likely bear. Note that even index investing requires investors to bear some costs, albeit at a much lower level.

## Manager alpha

### Calculations and results

The table below shows the median manager outperformance by broad asset class before fees. The comparison period goes as far back as each benchmark and asset class can. Outperformance is defined as the geometric mean of the manager performance minus the benchmark performance over a rolling 12-month period.

Asset Class	Median Excess Annualized Return (bp)	Average Number of Funds	Inception
Large Cap US Equity	-23	217	December 1979
Small Cap US Equity	138	108	December 1988
Global Equity	88	78	December 2001
EAFE Equity	102	61	May 1992
Foreign (ex-US) Equity	56	81	December 1999
Emerging Market Equity	124	105	November 1994
China A Shares	430	54	November 2009
China All Shares	-25	17	July 2004
Investment Grade Bonds	22	94	February 1985
High Yield Bonds	15	121	January 1996
Bank Loans	16	34	August 2001
Emerging Market Debt (Hard)	114	36	July 1998
Emerging Market Debt (Local)	63	24	November 2009

**FIGURE 2**  
**Median Outperformance, Gross of Fees**

Source: Morningstar. This table represents manager returns over one year minus the benchmark return for the period where data is available. Inception date starts when there are at least 10 funds to evaluate and goes through December 2022. China A Shares source, eInvestment Alliance. Morningstar possessed only three years of usable data.

Note: Inception is defined by the start of the data stream where there are a sufficient number of plans in the universe that have been reporting data for at least 12 months. We note that the differences in the results may be in some part attributable to the different inception dates (and length of history).

As Figure 2 illustrates, the median active manager outperformed in all but two asset classes, before fees. The asset classes with the highest median outperformance were China A shares, small cap US equity, emerging market equity, and emerging market debt (hard currency). The highest outperforming asset classes are among those considered to be less efficient, though they often tend to be associated with higher fees.

Fees are a necessary part of evaluating the value of investing in an active manager since they act as a drag on net performance. Figure 3 displays the median fees for a \$100 million mandate. Depending on the situation and size of the mandate, an investor can often negotiate a much lower fee than those listed below.

Asset Class	Median Fee on \$100 M	Median Net Excess Return (bp)
US Large Cap Equity	50	-73
US Small Cap Equity	78	60
Global Equity	60	28
EAFE Equity	60	42
ACWI ex-US Equity	62	-6
Emerging Market Equity	80	44
China A Shares	90	340
China All Shares	78	-103
Investment Grade Bonds	28	-6
High Yield Bonds	50	-35
Bank Loans	50	-34
Emerging Market Debt (Hard)	55	59
Emerging Market Debt (Local)	60	3

**FIGURE 3**  
**Median Fund Fee and Net Alpha**

Source: eVestment Alliance. Median sliding fee for all product types as of June 2023. Backdated fee information is unavailable.

In some cases, the median fee for an asset class wholly mitigates the gross outperformance, driving the median excess return below zero. In only seven of the thirteen asset classes measured is the median net excess return positive, at least when using the “rack rate” fees listed above. In these asset classes, performance would have to be greater than the median to justify the median level of fees.<sup>5</sup> The fees tended to be highest in those asset classes that many investors consider to be among the least efficient in public markets (e.g., small cap stocks and China/emerging market equities).

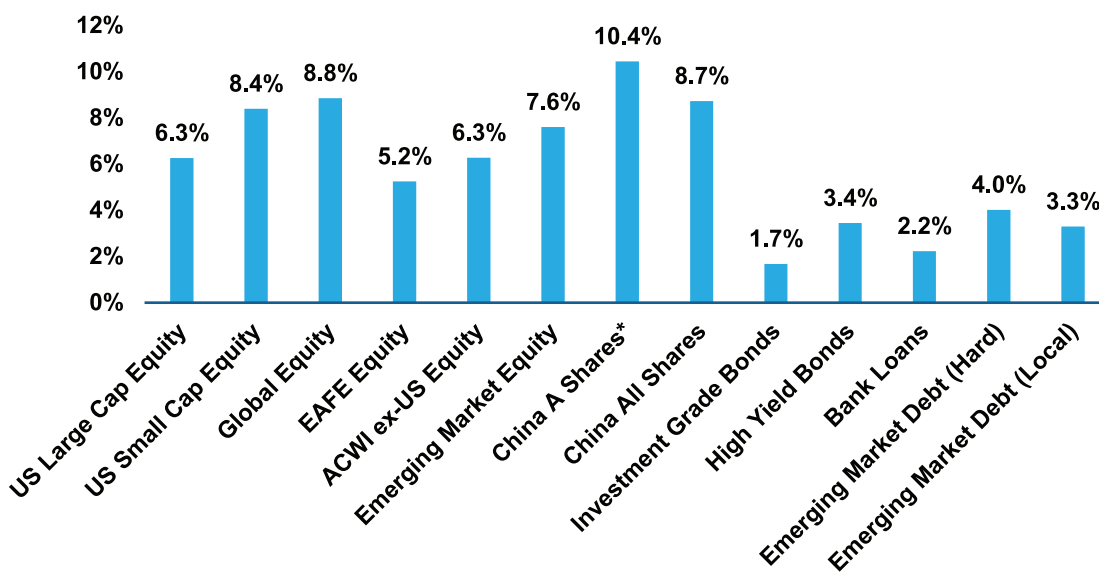
<sup>5</sup> Traditionally, active management fees are often much higher than passive management fees, so an active manager would have to outperform the benchmark by its higher fee for the investor to break even.

## Literature review

Much of the existing literature on the subject implies that the average active manager is just that – average. Fama and French suggested in a 2009 essay<sup>6</sup> that actively managed funds, in aggregate, are equal to the sum of the market, making active management a zero-sum game, before trading costs and fees are applied. This implies that in aggregate, active managers will underperform the market by an amount equal to fees and expenses. A 2018 research note by Vanguard<sup>7</sup> found that the majority of active managers do not always outperform in bear or bull markets.<sup>8</sup> The note refers to the market as a ‘zero-sum game’ that turns into a negative-sum game once an investor factors in management fees. In another 2018 paper by AQR Management,<sup>9</sup> researchers assessed actively managed fixed income funds and found that, after adjusting for risk premiums, there was very little significant alpha on average even before fees.

## Interquartile spreads

Another important metric to consider is the dispersion of manager performance. We measure this dispersion by interquartile spreads, which is the top quartile subtracted by the bottom quartile. For example, if 100 managers were ranked by performance, and 1 was the highest rank, the interquartile spread would be the 25th manager minus the 75th. The size of this spread is a good indicator of how much value a “skilled” (or lucky) manager can add relative to an “unskilled” (or unlucky) manager. Another way to interpret these results is to think of the size of the spread as an indicator of how much potential value lies in selecting a superior active manager within these asset classes. Figure 4 shows the interquartile spread for each asset class.



<sup>6</sup> Source: “Why Active Investing Is a Negative Sum Game,” Fama and French, 2009.

<sup>7</sup> Source: “Myth: Active Management Performs Better in Bear Markets,” Vanguard 2018.

<sup>8</sup> Vanguard’s note does not cover in detail the methodology, benchmarking, or asset classes of their study, even though all of these factors have the ability to affect the final results.

<sup>9</sup> Source: “The Illusion of Active Fixed Income Alpha,” AQR 2018.

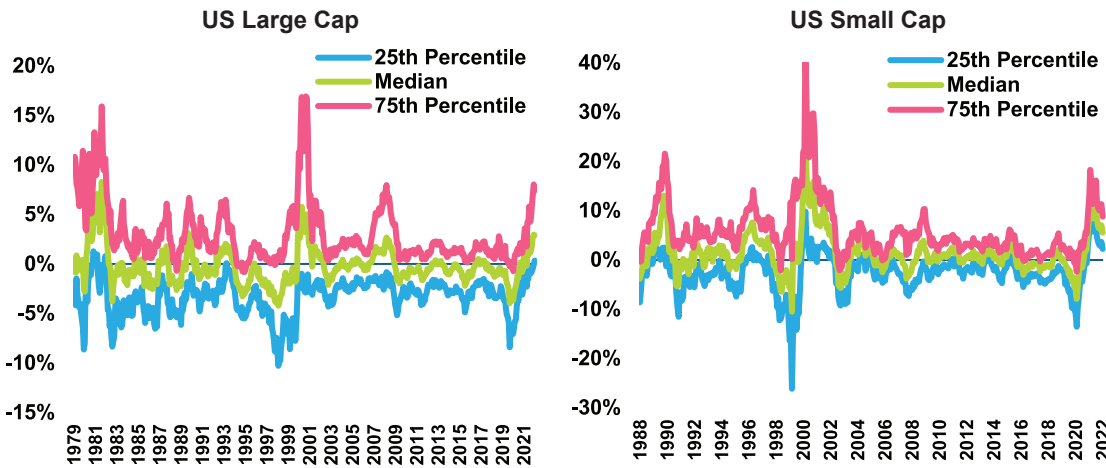
**FIGURE 4**  
**Average Interquartile Spreads**

Source: Morningstar. Data as of December 31, 2022. Gross of fees. Inception date starts when there are at least 10 funds to evaluate. The interquartile spreads are evaluated by taking the difference between the geometric average of the 75th percentile return and the 25th percentile over a rolling 12-month period. All interquartile spreads presented in this document are gross of fees. We note that the differences in the results may be in some part attributable to the different inception dates (and length of history).

As Figure 4 illustrates, there is a relatively large difference in interquartile spreads among asset classes, reaching up to 10.4% for China A Share funds, followed by global equity and US small cap managers. There was much more dispersion in the returns of equity managers than there was for bond managers, perhaps reflecting the difference in volatility of the underlying asset classes, or perhaps revealing the amount of heterogeneity in the securities held by managers in these sectors. Bank loans and investment grade bond managers had the lowest levels of historical dispersion.

## Cyclicality

Up to this point, this paper has only shown snapshot estimates of outperformance (and dispersion). Using this method gives the most robust estimates due to the high number of data points, but it may be misleading because it implies a static level of outperformance. As Figure 5 indicates, this is not the case. For US large and small cap managers, periods of out- and under-performance are highly cyclical and can be rather long lived.



**FIGURE 5**  
**Rolling Median**  
**Outperformance**

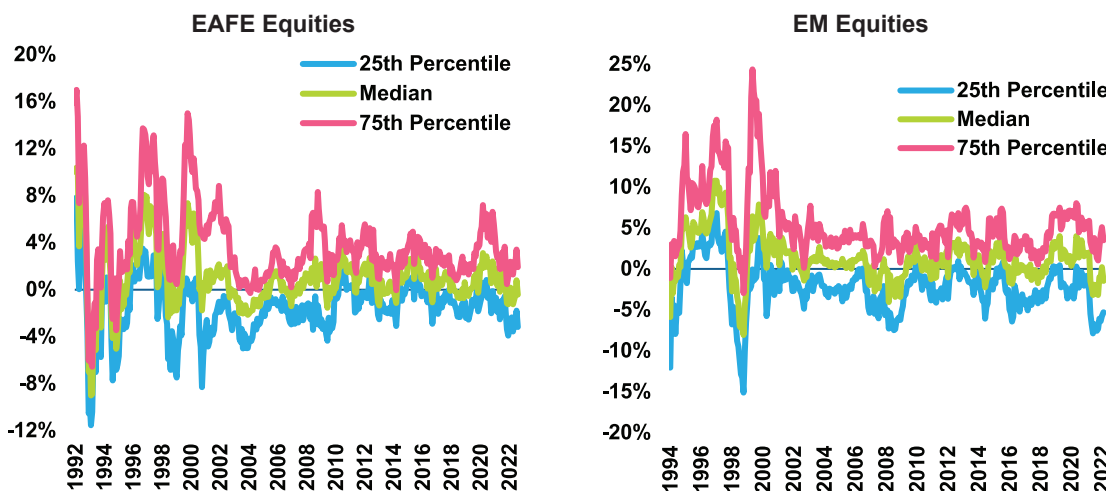
Source: Morningstar. Data as of December 31, 2022. Gross of fees. Due to the small number of funds at inception, some of the asset classes' early year relative returns may be skewed.

As Figure 5 illustrates, the median outperformance for US small and large cap equities fluctuates, with cycles of positive and negative outperformance lasting for multiple years at a time. One interesting aspect of both charts is that outperformance tended to coincide with extreme market events.<sup>10</sup> For example, during the bursting of the Dot-Com Bubble from 2000 to 2002, the median manager outperformance was quite large. This implies that, on average, managers were more conservatively positioned and/or benefited from holding cash during these periods.<sup>11</sup> This trend occurred again (though less noticeably) during the Global Financial Crisis (“GFC”) and more recently during the COVID-19 pandemic.

<sup>10</sup> Please see our 2018 paper on “Cycles in Active Management” for a more detailed discussion of the topic.

<sup>11</sup> There was a large gap in performance between growth and value during this period that may also partly explain this dispersion.

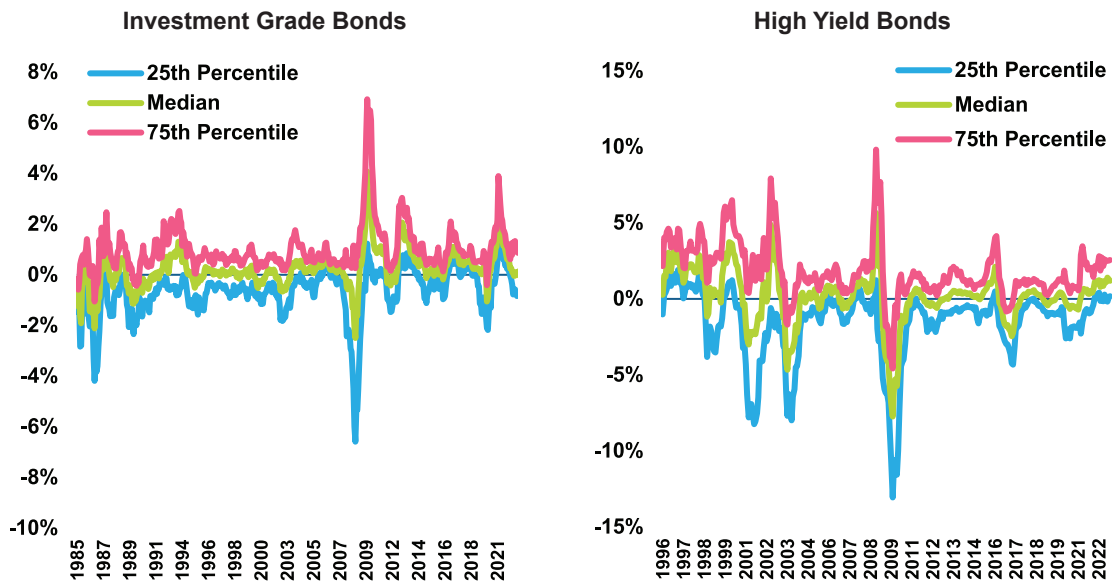
We likewise see cyclicality in outperformance for non-US equities. However, the pattern does not appear to be tied quite as cleanly to the same market events, especially for emerging market equities.



**FIGURE 6**  
**Rolling Median**  
**Outperformance**

Source: Morningstar. Data as of December 31, 2022. Gross of fees.

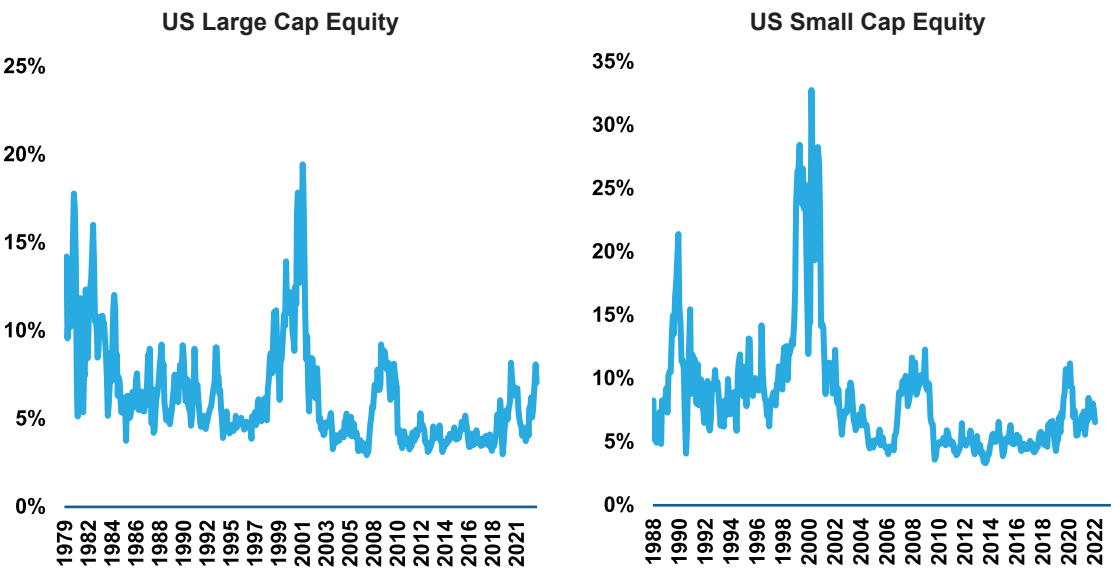
Fixed income asset classes likewise display cyclical in outperformance, though the patterns vary. For investment grade bonds, major credit events as well as other factors (e.g., interest rate movements) seem to be driving relative returns, with the largest oscillations occurring around the GFC. For high yield managers, the highest amplitudes were in the 2000s, coinciding with the Dot-Com Bubble and the GFC.



**FIGURE 7**  
**Rolling Median**  
**Outperformance**

Source: Morningstar. Data as of December 31, 2022. Gross of fees.

Another way to look at cyclical in outperformance is through the lens of manager dispersion. Below are the interquartile spreads for US large cap and small cap equities.

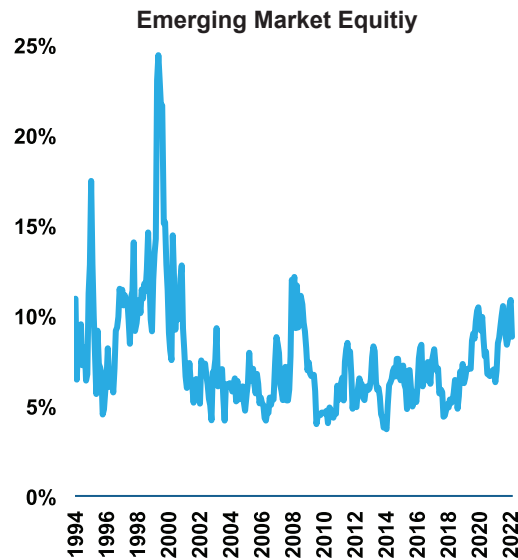
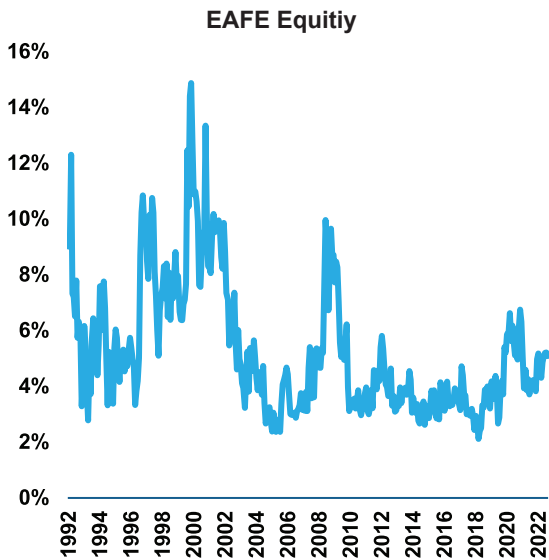


**FIGURE 8**  
**Rolling Interquartile**  
**Spreads**

Source: Morningstar. Data as of December 31, 2022. Gross of fees.

The interquartile spread greatly increases during periods of market stress. For instance, the spread during the Dot-Com Bubble reached nearly 20% for large cap equities and over 30% for small cap equities. Hence it appears - and seems intuitive - that active managers have a greater ability to add (or detract) value during periods of market stress and the recovery thereafter.

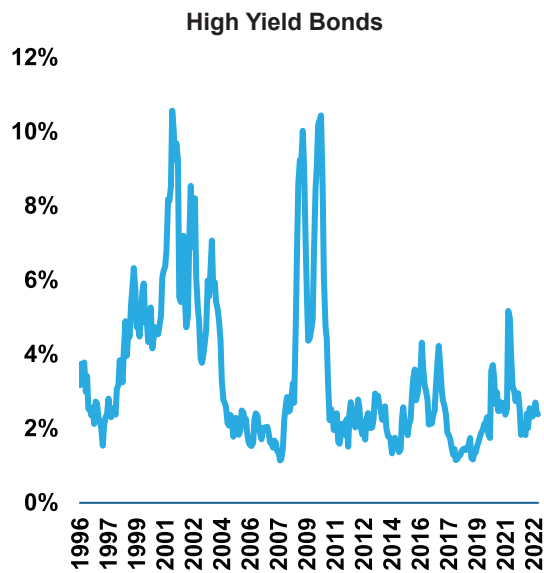
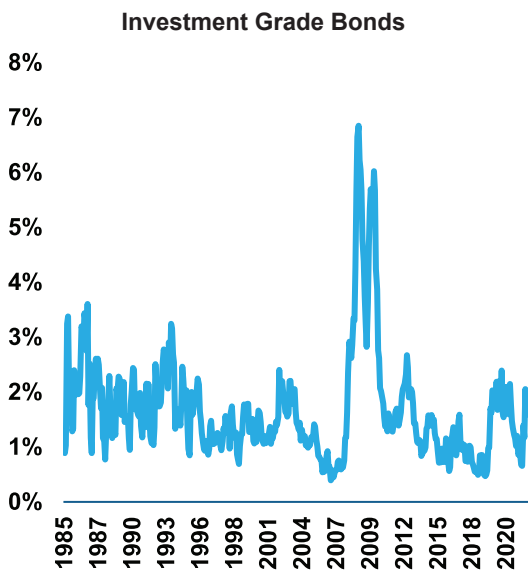




**FIGURE 9**  
Rolling Interquartile  
Spreads

Source: Morningstar. Data as of December 31, 2022. Gross of fees.

For non-US equities, there is likewise a pattern of cyclicity in dispersion. The pattern for EAFE equities closely resembles that for US equities, while dispersion for emerging market equities appears to be slightly more idiosyncratic.



**FIGURE 10**  
Rolling Interquartile  
Spreads

Source: Morningstar. Data as of December 31, 2022. Gross of fees.

Finally, dispersion for fixed income managers also displays cyclicity and appears to be linked with extreme market events. For investment grade bonds, by far the biggest spike was associated with the GFC. For high yield bonds, both the GFC and the Dot Com Bubble are associated with spikes in dispersion.

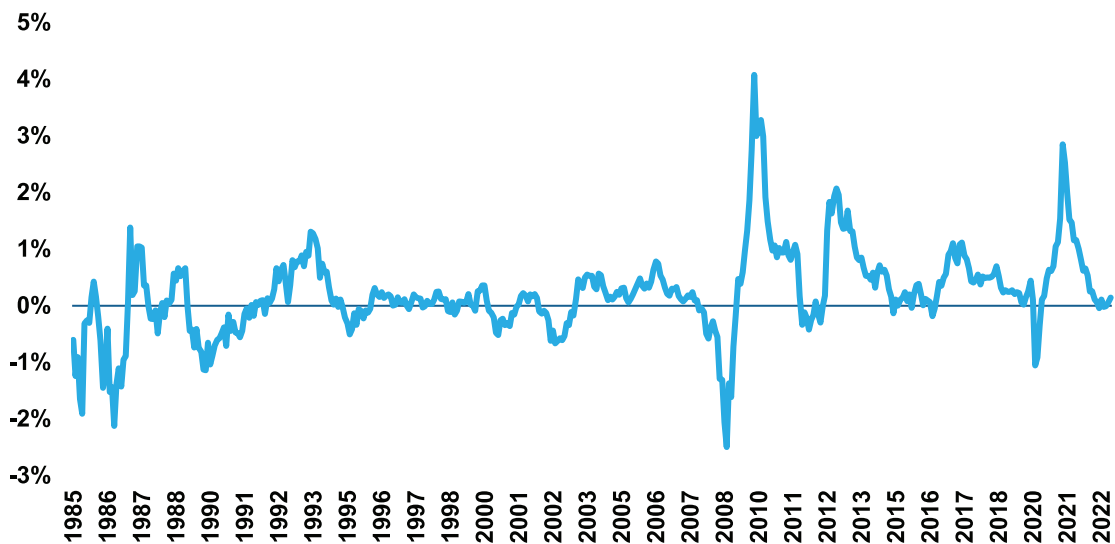
### Market efficiency

To evaluate market efficiency based on outperformance, we must define market efficiency and understand the implications of the given data sets. For our purposes, we will define an efficient market as a market in which it is difficult for active managers

to consistently outperform the market (as proxied by an appropriate benchmark) and their peers. The idea is that when investors learn new information regarding a certain asset, the information is already (to some extent) incorporated into the current price of the asset, hence limiting the ability to find undervalued securities. On the peer group side, once a profitable, new investment strategy becomes known, other managers will seek to replicate the strategy, and as other managers utilize it, the information is reflected in the market price, thus reducing the potential return of the previously profitable investment strategy.

Outperformance trends over time provide information on market efficiency. If the overall median outperformance trends down from positive outperformance, then it typically means that the median manager is not as readily able to find undervalued assets in the market in order to produce excess returns. In contrast, the interquartile spreads provide a better description of market efficiency on the peer level. If the interquartile spread trends down, then it means that the difference in potential value between the top quartile and the bottom quartile is shrinking, meaning the additive value of a successful actively managed strategy is declining.

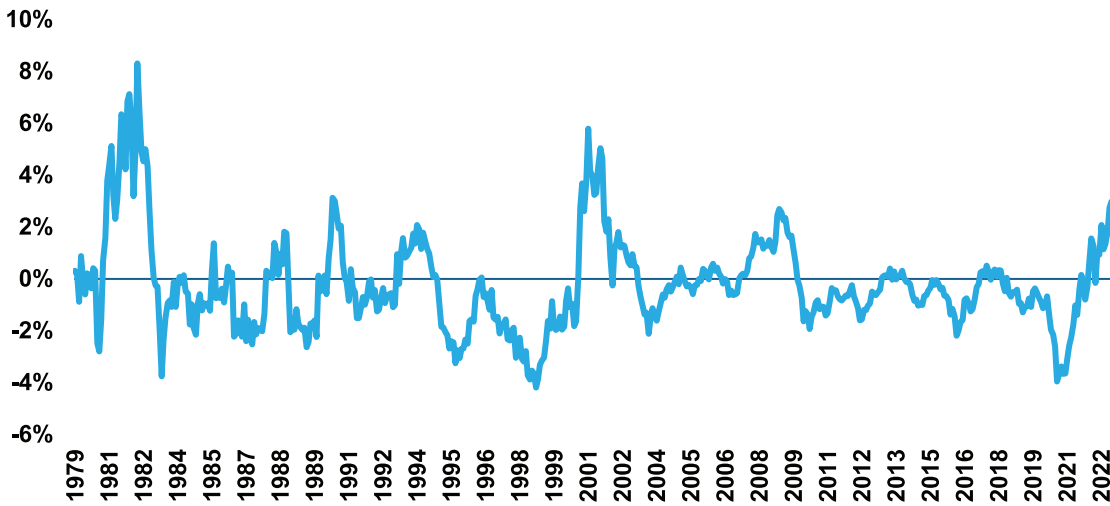
Figure 11 illustrates some of the different trends. For example, the outperformance of the median core investment grade bond manager has visibly increased since the GFC. It is outside the scope of this paper to investigate the cause (e.g., additional risk taking), but the trend is clear and worth noting as it runs counter to the assumption of long-term market efficiency.



**FIGURE 11**  
**Rolling Median**  
**Outperformance:**  
**Investment Grade Bonds**

Source: Morningstar. Data as of December 31, 2022. Gross of fees.

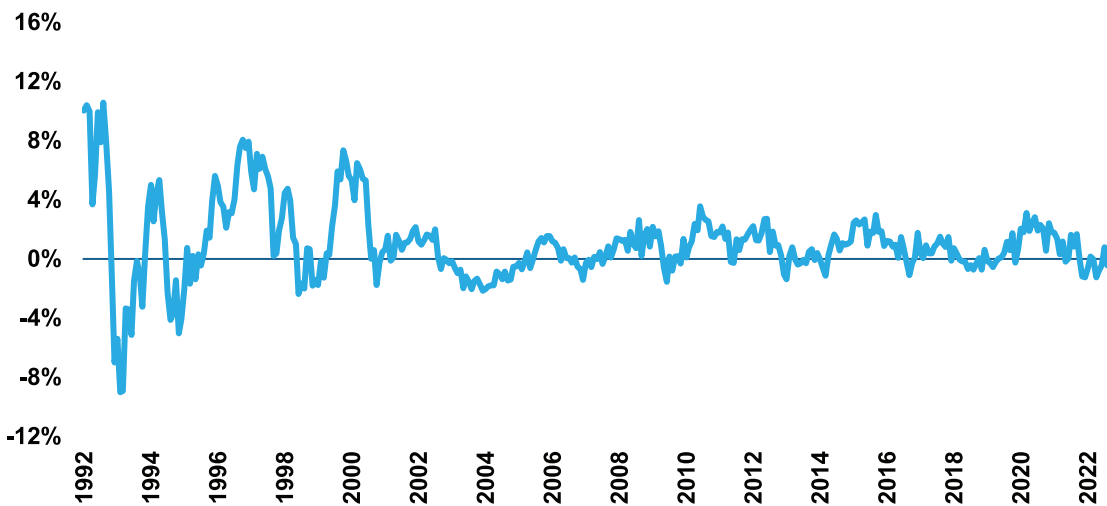
The large cap equity peer universe paints a different picture – namely, one that implies long-term efficiency (see Figure 12). The median level of alpha has been very close to zero for a long time, with a subtle downward trend over time. Again, however, there could be other factors at play (e.g., market concentration).



**FIGURE 12**  
**Rolling Median**  
**Outperformance: US Large**  
**Cap**

Source: Morningstar. Data as of December 31, 2022. Gross of fees.

The EAFE equity peer universe also depicts a downward trend over time (see Figure 13). However, median manager outperformance remains positive. The volatility of outperformance was very high in 1990s, and has since declined to much lower levels, again implying a trend toward greater market efficiency. Still, this trend could also be due to idiosyncratic factors (e.g., a decline in the impact of the Japanese stock market on overall returns).

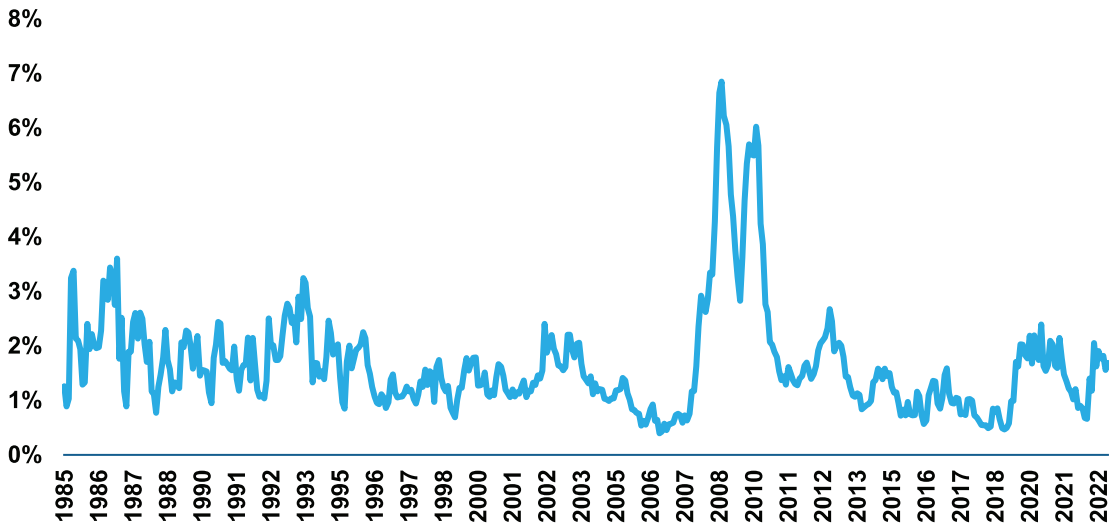


**FIGURE 13**  
**Rolling Median**  
**Outperformance: EAFE**  
**Equity**

Source: Morningstar. Data as of December 31, 2022. Gross of fees.

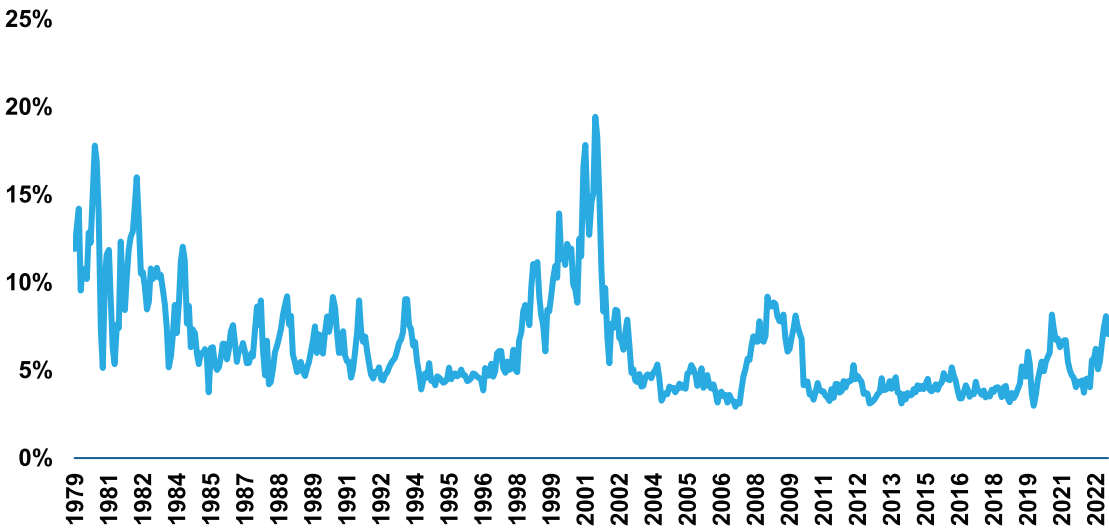
The next question to answer is whether the markets have become more efficient by the peer metric. Figures 14 through 17 illustrate the historical interquartile spread for core investment grade bonds, US large cap equity, EAFE equity, and emerging market equity. Unlike Figures 11 through 13, the trend is the same for all of the asset groups we analyzed. There is a general downward trend, which implies greater efficiency over time.

Again, while outside the scope of this paper, it is also possible that the proliferation of managers over time is diminishing the impact of outliers on dispersion (i.e., the law of large numbers as applied to asset management).



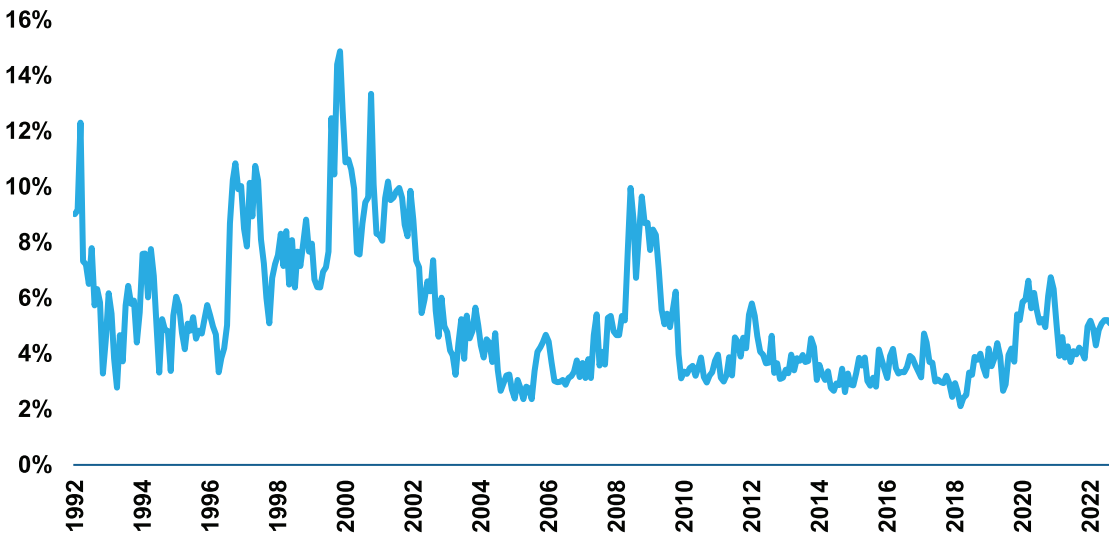
**FIGURE 14**  
**Rolling Interquartile**  
**Spread: Investment Grade**  
**Bonds**

Source: Morningstar. Data as of December 31, 2022. Gross of fees.



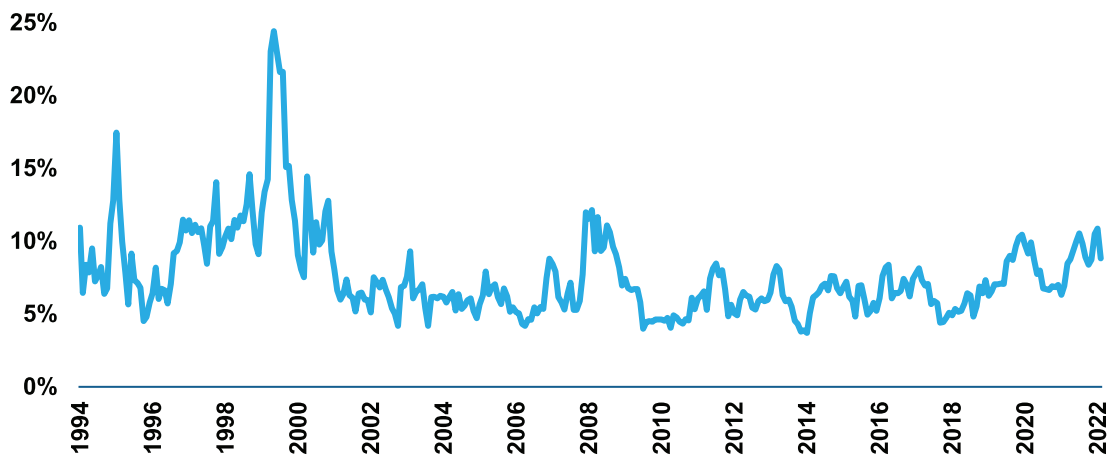
**FIGURE 15**  
**Rolling Interquartile**  
**Spread: US Large Cap**

Source: Morningstar. Data as of December 31, 2022. Gross of fees.



**FIGURE 16**  
**Rolling Interquartile**  
**Spread: EAFE Equity**

Source: Morningstar. Data as of December 31, 2022. Gross of fees.



**FIGURE 17**  
**Rolling Interquartile Spread: Emerging Market Equity**

Source: Morningstar. Data as of December 31, 2022. Gross of fees.

To get a better idea of the change in spread over time, we conducted a comparison between the average interquartile spread before and after 2001.

Asset Class	Avg. IQ Spread Pre-2001 (%)	IQ Spread 2001-2022 (%)	Difference (%)
Core Bonds	1.7	1.6	-0.1
High Yield	3.8	3.3	-0.5
US Large Cap	7.3	5.2	-2.1
US Small Cap	10.8	7.0	-3.8
EAFE Equity	7.0	4.6	-2.4
EM Equity	10.6	6.8	-3.8

**FIGURE 18**  
**Interquartile Spreads Before and Since 2001**

Source: Morningstar. Data as of December 31, 2022. Gross of fees.

Note: 2001 was chosen as a cutoff because of the likely impact of the internet and Regulation FD (see subsequent footnote). As we wanted to ensure this was a long enough period prior to this date, we were limited to evaluating the asset classes shown in this table. These measurements were statistically significant on a 95% confidence interval.

For all asset classes, there has been a decrease in the average interquartile spread since 2001. US small cap and EM equities experienced the largest decrease at -3.8%. Still, US small cap and EM equities had the highest pre-2001 and post-2001 interquartile spreads of this group.

The supporting argument for the thesis that markets are becoming more efficient is that, as time passes, successful investment strategies become more widely known. As more managers adopt and execute the strategy, the informational advantages of the strategy decrease as more information is reflected in market prices, thus reducing arbitrage opportunities and mispricings.

While we cannot know for sure why this has happened, several possible theories stand out. First, the advent of the internet and the adoption of Regulation FD<sup>12</sup> made security analysis more of a commodity than it was in the 1980s and 1990s. This development likely reduced the information advantage that some managers possessed. Although correlation does not suggest or imply causation, the fact that the reduction in the magnitude of outperformance occurred at roughly the same time as these events lends some credence to this theory. In addition, as mentioned earlier, the strategies used by managers have become more widely known and adopted, resulting in portfolios more closely resembling each other (and the market) than they did in the 1980s and 1990s.

<sup>12</sup> On August 15, 2000, the SEC adopted Regulation FD (for Fair Disclosure) to address the selective disclosure of information by publicly traded companies and other issuers. Regulation FD provides that when an issuer discloses material nonpublic information to certain individuals or entities—generally, securities market professionals, such as stock analysts, or holders of the issuer’s securities who may well trade on the basis of the information—the issuer must make public disclosure of that information.

## Conclusion

The results of our analysis show that the median excess return of active managers has been positive for most public markets asset classes, before fees. However, the added value can be severely reduced by management fees. Median outperformance was insufficient to overcome the median fee (and thus turned negative) for approximately half of the asset classes we evaluated.

This reflects an improvement in relative performance compared to past versions of our research. We note that the median outperformance has increased in many asset classes over the past two to four years, and this trend – whether temporary or not – could be pulling up the longer-term data. Alternatively, the difference could be related to our updated (and we believe, more accurate) methodology. Our research continues to find that there is significant cyclical behavior in the median excess return, as every asset class exhibits long periods of median positive and negative relative performance. Hence a snapshot at any given point should be taken with a grain of salt.

The asset classes with the highest median outperformance were small cap US equity, EM equity, and emerging market debt (hard currency). Higher than all of them was China A shares, a new addition to our analysis. Conversely, large cap US equity was at the bottom, continuing to exhibit negative median outperformance.

The level of dispersion, like outperformance, also displays cyclical behavior. However, across most asset classes, the interquartile spread has continued to decline. This implies that either markets have become more efficient over time or that managers have structured their portfolios in a manner such that they more closely resemble each other.

That said, the level of dispersion among managers varies by asset class. This implies that skilled (or lucky) active management can add more value in certain asset classes than others. These tend to be more volatile asset classes, such as equities. In addition, there seems to be a connection between a temporary widening of interquartile spreads and extreme market events.

Historically, investors have used active managers in an attempt to outperform the market and their peers. Doing so has never been an easy task. Active management fees and trading costs heighten the hurdle for success. Ultimately, some active managers are going to outperform. Our analysis shows that both the odds of outperforming and the potential reward for doing so will vary by the asset class and by the market environment.

## Appendix A: Data filtering results

Figure 19 shows the results of our filtering process for each asset class we evaluated.

Asset Class	Morningstar: Original Number of Funds	Morningstar: Funds After Filtering	Morningstar: Difference	eVestment: Original Number of Funds	eVestment: Funds After Filtering	eVestment: Difference
Core Bonds	611	305	-306	222	179	-43
High Yield	353	264	-89	230	160	-70
Bank Loans	83	70	-13	102	96	-6
EM Debt (Hard)	122	94	-28	121	116	-5
EM Debt (Local)	43	41	-2	71	69	-2
US Large Cap	1077	779	-298	912	811	-101
US Small Cap	374	273	-101	362	342	-20
Global Equity	277	211	-66	504	452	-52
Foreign Equity	196	186	-10	72	70	-2
EAFE Equity	197	184	-13	117	109	-8
EM Equity	437	312	-125	106	100	-6
China A Shares	8	5	-3	110	101	-9
China All Shares	42	39	-3	38	35	-3
<b>Total</b>	<b>3820</b>	<b>2763</b>	<b>-1057</b>	<b>2967</b>	<b>2640</b>	<b>-327</b>

**FIGURE 19**  
**Results of Filter for Each**  
**Asset Class**

Source: Morningstar and eVestment Alliance. Data as of December 31, 2022. Gross of fees.

## Appendix B: Comparison to naïve data

To note the impact of the difference methodology makes, we also compared the differences in the results generated by our approach to those if a user pulled results straight from the vendor. Of note, the latter approach will likely result in fewer data points being included, as it will only include funds that reported for the full period while excluding those that existed for part of the period being measured. If one were to look only at living funds, then the results would probably be skewed toward outperformance, as the majority of funds that have dropped out of the market are likely to have underperformed (i.e., pulling data straight from the vendor may result in survivorship bias).

This may be partly offset by the inclusion of funds that fit the categorization used by the vendor but that may not be what the investor considers to be part of the opportunity set. A large amount of “noise” can result from the mismatch between funds’ strategies and their benchmarks. Often this takes the form of managers holding securities that are not included in their benchmark, or structuring their portfolio such that it is riskier than the benchmark. If a significant segment of managers in an asset class run portfolios that are meaningfully different from the benchmark, it can lead to erroneous conclusions.

In Figure 20, we show the results for our methodology versus that when pulling the data directly from eVestment. The median outperformance is (surprisingly) similar between the two approaches for most asset classes. However, the interquartile spread is dramatically different.

Asset Class	Our Median (%)	eVestment Median (%)	Our Interquartile Spread (%)	eVestment Interquartile Spread (%)	Our Fund Count	eVestment Fund Count
Large Cap US Equity	-0.44	0.06	4.64	1.12	389	257
Small Cap US Equity	1.11	1.51	6.26	1.83	186	113
Global Equity	0.93	1.04	5.92	1.51	269	159
EAFE Equity	0.97	0.69	4.18	1.30	89	78
Foreign (ex-US) Equity	1.58	1.47	4.76	1.30	54	43
Emerging Market Equity	0.86	0.90	6.87	1.02	169	66
China A-Shares	4.56	5.02	10.92	4.23	60	31
China All Shares	4.93	4.35	10.59	6.40	16	6
Investment Grade Bonds	0.46	0.47	0.89	0.37	162	181
High Yield Bonds	0.24	0.21	2.10	0.72	143	168
Bank Loans	0.14	0.14	1.55	0.67	84	73
Emerging Market Debt (Hard)	0.23	0.17	3.50	0.69	61	68
Emerging Market Debt (Local)	0.99	0.75	2.69	0.94	28	45

**FIGURE 20**  
Comparison of Trailing 10-Year Period

Source: Morningstar and eVestment Alliance. Data as of December 31, 2022. Gross of fees.

While the median values stay relatively consistent between eVestment and our analysis, eVestment reports a much lower dispersion and often has a lower fund count. The only exceptions to the fund count trend are high yield and investment grade bonds, which both experienced higher cuts from their given universe.



## Appendix C: Morningstar vs. eVestment

Throughout most of this paper, we presented data from Morningstar. This was generally due to the larger sample size available in most of the asset classes for Morningstar.

Both universes allow us to sort through 'living' (active) and 'dead' (inactive) funds. This should clear the data analysis of survivorship bias, or bias that comes from only viewing the funds that are still alive. One potential difference is that Morningstar also allows us to root out selection bias. In Morningstar, all managers that are part of the database must report their returns. In contrast, eVestment allows managers to report at their own discretion,<sup>13</sup> thus potentially skewing the data.

We have heard in the past that some institutional investors believe that the Morningstar universe is too focused on retail investors, and hence they prefer to use the eVestment universe. We believe that our filtering process accounts for most of the "issues" that institutional investors have had with the Morningstar universe. For example, we attempt to filter out funds that are not what an institutional investor would consider to truly be part of the opportunity set for the respective asset class. In addition, we believe that a greater share of institutional managers report to Morningstar than did ten or twenty years ago.<sup>14</sup>

While eVestment and Morningstar undergo the same filtering process, there are some differences in the data. eVestment tends to have a lower fund count, but the universe has less funds cut in the filtering process. Given that there will still be differences in the funds comprising each data set, we anticipate there will be differences in the results. Importantly, *the overall results and directional trends resemble each other closely*, even if the magnitude varies. This gives us a high level of confidence in the conclusions we draw from our analysis.

In the table below, we present a comparison using emerging market equities. The Morningstar data has nearly three times as many funds in it. Yet the results are quite similar. The median manager outperformance (before fees) differed by only 13 basis points over ten years and 24 basis points over five years. The interquartile spreads were similar, though they were 25-30% wider for Morningstar than for eVestment.

Time Period	Using Morningstar Data		Using eVestment Data	
	10 Years	5 Years	10 Years	5 Years
Average Fund Count	169	173	66	65
25th Percentile	-2.55%	-3.01%	-2.16%	-2.86%
Median	0.86%	0.64%	0.73%	0.40%
75th Percentile	4.32%	4.42%	3.20%	3.06%
Passive Percentile Rank	43%	45%	43%	48%
Interquartile Spread	6.87%	7.43%	5.36%	5.92%

<sup>13</sup> From eVestment: Note that reporting managers do not always provide data on all strategies. See <https://www.evestment.com/data-coverage/>

<sup>14</sup> We contacted Morningstar and, while they believe this to be true, they do not have the data to verify it.

**FIGURE 21**  
Comparison of Morningstar vs. eVestment Results for EM Equity

Source: Morningstar and eVestment Alliance. Data as of December 31, 2022. Gross of fees.

## Appendix D: Benchmarking

We selected a single benchmark for comparison for each asset class. This allows for an apples-to-apples comparison. However, using a single benchmark may slightly skew the results, as some managers may manage their portfolio to a slightly different benchmark (e.g., the S&P 500 vs. the Russell 1000).

The following table shows the benchmark we used for each asset class. We generally chose the benchmark that is most commonly used by our institutional clients and that we believe best represents the opportunity set available in each asset class.

Asset Class	Benchmark
Core Bonds	Bloomberg US Aggregate
High Yield	Bloomberg US High Yield Corporate
Bank Loans	Credit Suisse Leveraged Loan
EM Debt (Hard)	JPM EMBI Global Diversified
EM Debt (Local)	JPM GBI-EM Global Diversified
US Large Cap	Russell 1000
US Small Cap	Russell 2000
Global Equity	MSCI ACWI
Foreign Equity	MSCI ACWI ex-US
EAFE Equity	MSCI EAFE
EM Equity	MSCI Emerging Markets
China A Shares	MSCI China A
China All Shares	MSCI China

**FIGURE 22**  
**Benchmarks Used for Each**  
**Asset Class**

Source: Meketa Investment Group, 2023.

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