

Manager Alpha: Does Active Management Add Value?

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The purpose of this paper is to measure and analyze the historical outperformance of actively managed funds compared to market benchmarks. This topic has been discussed before in numerous platforms and contexts, but this paper aims to clear as much bias as possible to create an accurate historical and quantitative picture of outperformance over time.

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We found that the median manager in more than half of the observed asset classes outperformed their benchmark before fees. However, even in these cases, the outperformance was insufficient to overcome the median fee for that asset class. This is consistent with finance theory and with past versions of our research. Our research continues to find that US small cap and emerging market equities have exhibited the largest positive median manager alpha. Still, our analysis indicates that there does not appear to be an asset class or style where it is particularly easy for active managers to add value, net of fees.

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. 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 been declining. 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.

Aside from the possible value of investing in an actively managed fund, this paper aims to ascertain whether a manager will likely outperform the market, and if it does, whether that benefit will go back to the investor after fees are applied. This paper will also endeavor to answer whether the odds of outperformance are high, low, or purely random, and whether the amount of value added from active management varies across asset classes, styles, and time.

To differentiate this paper from other research on the same topic, we will take the time to filter the data to clear it of as much bias as possible, including double counting and survivorship bias. This way, we can develop more reasonable expectations regarding the reality of investing in an actively managed fund.

Data

The two main data sources used for the paper are Morningstar Direct and eVestment.¹ Morningstar Direct allows us to sort through both 'living' (active) and 'dead' (inactive) funds. This should clear the data analysis from *survivorship bias*, or bias that comes from only viewing the funds that are still alive. 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 (see appendix).

¹ eVestment will only be used for fund fee calculations.

The second bias we consider is selection bias. In Morningstar Direct, all managers that are part of the database must report their returns (as opposed to databases such as eVestment, which allows managers to report different vehicles at their own discretion). This keeps managers from starting multiple vehicles, picking those that outperform, reporting them, and then omitting the vehicles that did not perform to satisfaction, thus skewing the data unrealistically. While selection bias is difficult to eliminate fully, one can at least work from a database with a better guarantee to root out selection bias. Morningstar also organizes its managed funds on the basis of return, benchmark, and structure, as opposed to allowing managers to self-report their fund asset class, even if the fund does not necessarily match the class in which it is included.

Morningstar also uses its own standardized benchmarks for each asset class, an approach that should prevent any potential artificial out- or underperformance due to non-standardized benchmarking. 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. Morningstar allocates funds to a standardized asset class independent of what a firm might market their fund to be, which allows us to better trust that the funds are actually aligned with their benchmark and minimizes the noise that comes from benchmark mismatching.

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 from duplicate funds to maintain uniformity.

To maintain 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 deleted was small enough as to not warrant an extraordinary amount of concern (see the Appendix for the exact numbers for each asset class).

For our analysis, we decided to assess six asset classes: US Core Bonds, US High Yield Bonds, US Large Cap Equity, US Small Cap Equity, Foreign Large Cap Equity, and Emerging Market Equity. We chose these asset classes because they represent a broad collection of the public markets and have a long enough history to provide a comprehensive and robust picture of outperformance in their respective markets.

When comparing active and passive management, it is important that investors consider the fees they would likely bear.

The available data goes as far back as 1979, depending on the asset class. Using as long a historical period as possible should produce the most comprehensive results, as it includes multiple and different types of market cycles and environments. It should also minimize the impact of any possible *endpoint* or *recency bias*. Since we will be using the Morningstar-preferred benchmark, and some benchmarks started later than 1979, some asset classes will not have as long of a time window as others.²

² See the appendix for further explanation of our methodology regarding benchmark and timetable selection.

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*. 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 preferred benchmark performance over a rolling 12-month period.³

Asset Class	Median Outperformance (Annualized)	Inception
US Core Bonds	18 bp	Jan. 1976
US High Yield Bonds	5 bp	Sep. 1986
US Large Cap	-40 bp	Jan. 1979
US Small Cap	49 bp	Jan. 1979
Foreign Large Cap	-11 bp	Jan. 2001
Emerging Markets	24 bp	Jan. 1999

As the table illustrates, the median active manager outperformed in four asset classes and underperformed in two of them. The highest outperforming median was US Small Cap, and the lowest was US Large Cap. For Foreign Large Cap, Core Bonds, and High Yield Bonds, the median was relatively close to zero.

Fees are a necessary part of evaluating the value of investing in an active manager. The following table displays the median fees for \$10 million and \$100 million mandates.⁴ Depending on the situation and size of the mandate, the investor can often negotiate a much lower fee than those listed below.

Asset Class	Median Fee on \$10 mm	Median Fee on \$100 mm
Core Bonds	35 bp	28 bp
High Yield	55 bp	50 bp
US Large Cap	68 bp	55 bp
US Small Cap	98 bp	89 bp
Foreign Large Cap	75 bp	65 bp
Emerging Markets	95 bp	90 bp

³ For each asset class, the medians were concatenated and evaluated, as opposed to the prior paper, which took a weighted average of the medians in each preferred benchmark.

TABLE 1
Median Outperformance, Gross of Fees (From Inception Through September 2019)

⁴ Data pulled from eVestment Alliance as of June 2019

TABLE 2
Median Fund Fee

When comparing the median performance to the median fee for each asset class, the gross performance of the median manager has not justified the historical median fee. In other words, performance would have to be much greater than median in order to justify the median level of fees. Two of the asset classes' median fund returns were negative already, so the fees would pull the loss amount even higher.⁵ On the other hand, the positive alpha asset classes' median fees would have nullified any of the positive alpha generated for the investor. The fees tended to be highest in those asset classes that many investors consider to be the least efficient (e.g., small cap stocks and emerging markets).

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

Literature review

Our analysis appears to align well with other existing papers on the subject. Fama and French suggested in a 2009 essay⁶ 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 Vanguard⁷ found that the majority of active managers do not always outperform in bear or bull markets.⁸ 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,⁹ 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.

⁶ Source: "Why Active Investing Is a Negative Sum Game" Fama and French, 2009.

⁷ Source: "Myth: Active Management Performs Better in Bear Markets" Vanguard 2018.

⁸ 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.

⁹ Source: "The Illusion of Active Fixed Income Alpha" AQR 2018.

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.

The following chart illustrates interquartile spread for each asset class.

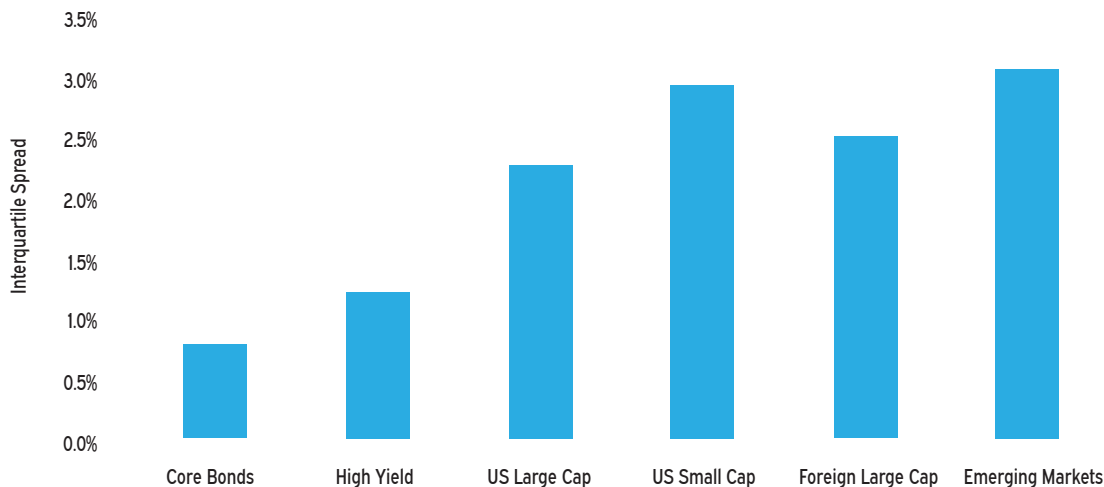


CHART 1
Interquartile Spreads¹⁰
(From Inception Through
September 2019)

¹⁰ The interquartile spreads are evaluated by taking the historical medians of each firm's returns and taking the interquartile spread as far back as we can go.

As the chart illustrates, there is a relatively large difference in interquartile spreads among asset classes, reaching up to 3.1% for emerging market funds. There was much more divergence 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. Emerging Market equity managers exhibited the most divergence from each other historically, followed by US Small Cap managers. On the other hand, US High Yield Bond and US Core Bond managers had the lowest levels of historical divergence.

Style

In active equity management, managers may opt to invest from a value, growth, or core (blend) strategy. The following table illustrates the median outperformance of equities based on strategy.¹¹

¹¹ Each asset strategy was benchmarked against its value or growth counterpart i.e. Small Cap Growth equities were benchmarked against the Russell 2000 Growth, while Small Cap Core equities were benchmarked against the Russell 2000 standard.

Asset Class/Style	Median Outperformance (Annualized)	Inception
US Large Cap Core	-58 bp	Jan. 1979
US Large Cap Growth	-25 bp	Jan. 1979
US Large Cap Value	-27 bp	Jan. 1979
US Small Cap Core	+34 bp	Jan. 1979
US Small Cap Growth	+73 bp	Jan. 1979
US Small Cap Value	+30 bp	Jan. 1979
Foreign Large Cap Core	-49 bp	Jan. 2001
Foreign Large Cap Growth	+67 bp	Jan. 2001
Foreign Large Cap Value	-34 bp	Jan. 2001

TABLE 3
Median Outperformance,
Gross of Fees
(From Inception Through
May 2019)

Roughly half of the styles underperformed their benchmarks, regardless of cap size or whether they were domestic or overseas. The median growth-oriented manager tended to fare relatively well, especially in the US Small Cap and the Foreign Large Cap universes. Overall, the growth style outperformed its benchmark the most often, and it had a higher alpha than either the core or value style of the same asset class.

In this comparison, it is important to note that performance is being measured specifically against the style benchmark. Hence it is not measuring how well one style performs relative to another, but how well an actively managed style fund does against its own style peers.

Cyclicality

Up to this point, this paper has only shown snapshot estimates of outperformance using all available data. 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 the following charts indicate, this is not the case. For US large and small cap managers, periods of over- and under-performances are highly cyclical and can be rather long lived.

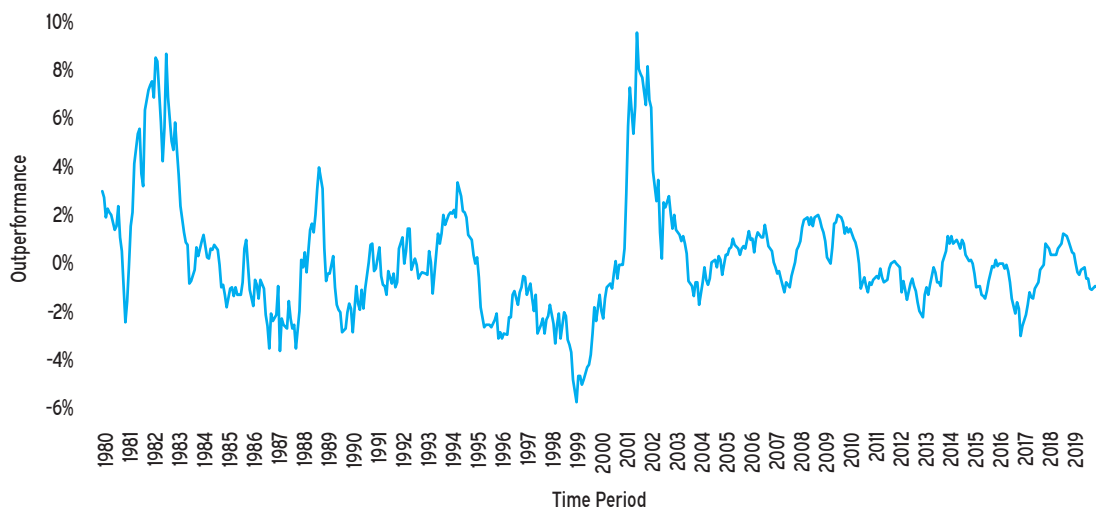


CHART 2
Rolling Median
Outperformance
US Large Cap

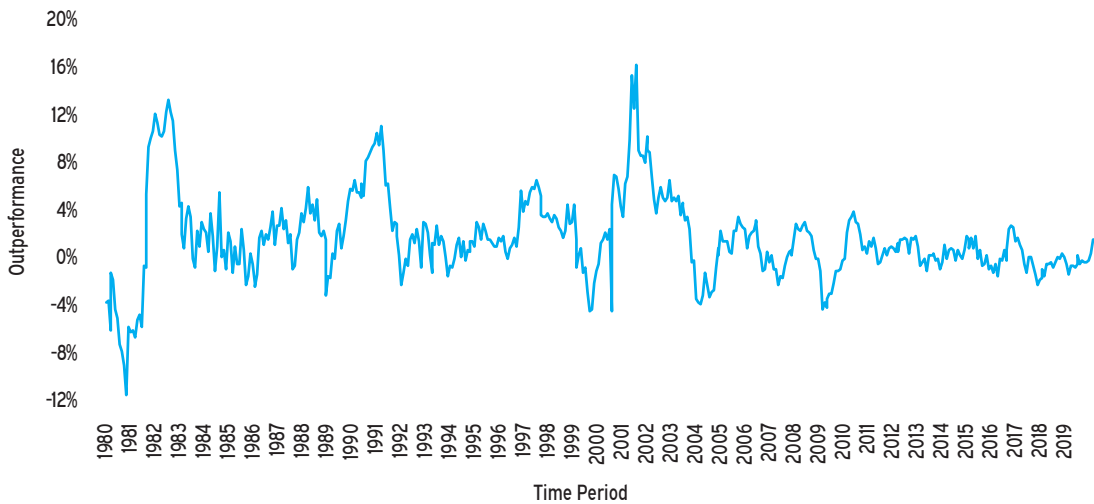


CHART 3
Rolling Median
Outperformance
US Small Cap

As the above graphs illustrate, 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. The other asset classes produce similar cycles (their respective graphs can be found in the appendix).

One very interesting aspect of both charts is that outperformance tended to occur during bear markets.¹² For example, during the bursting of the technology bubble from 2000 to 2002, there was a large amount of persistent manager outperformance. This implies that managers were more conservatively positioned and/or benefited from holding cash during these periods. However, this trend was less noticeable during the Global Financial Crisis (“GFC”).

¹² Please see our 2018 paper on Cycles in Active Management for a more detailed discussion of the topic.

In general, the domestic large and small cap medians follow a similar trend, in that their performance, both over and under the benchmark, has been trending closer to zero over time. However, high yield exhibits a different kind of behavior.

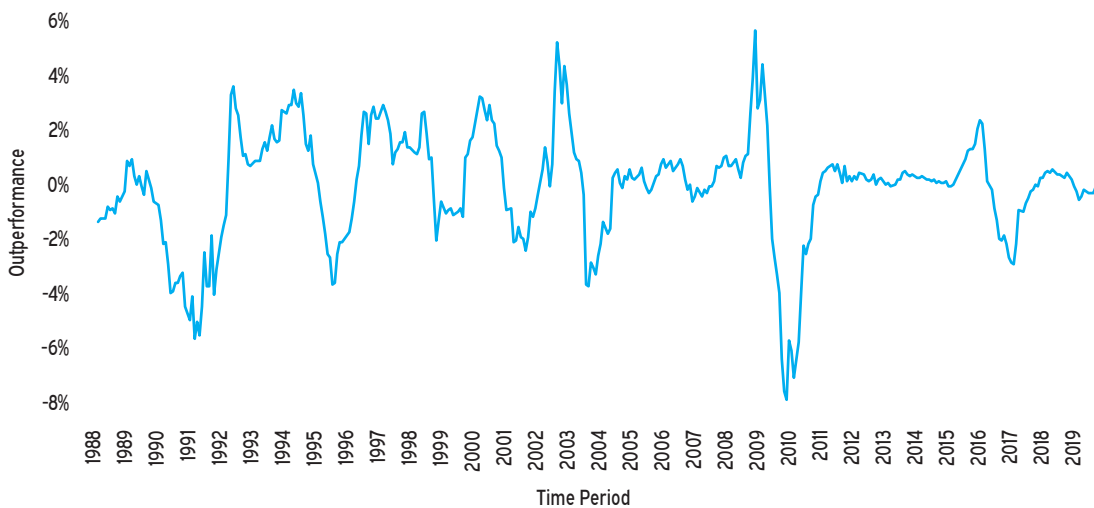
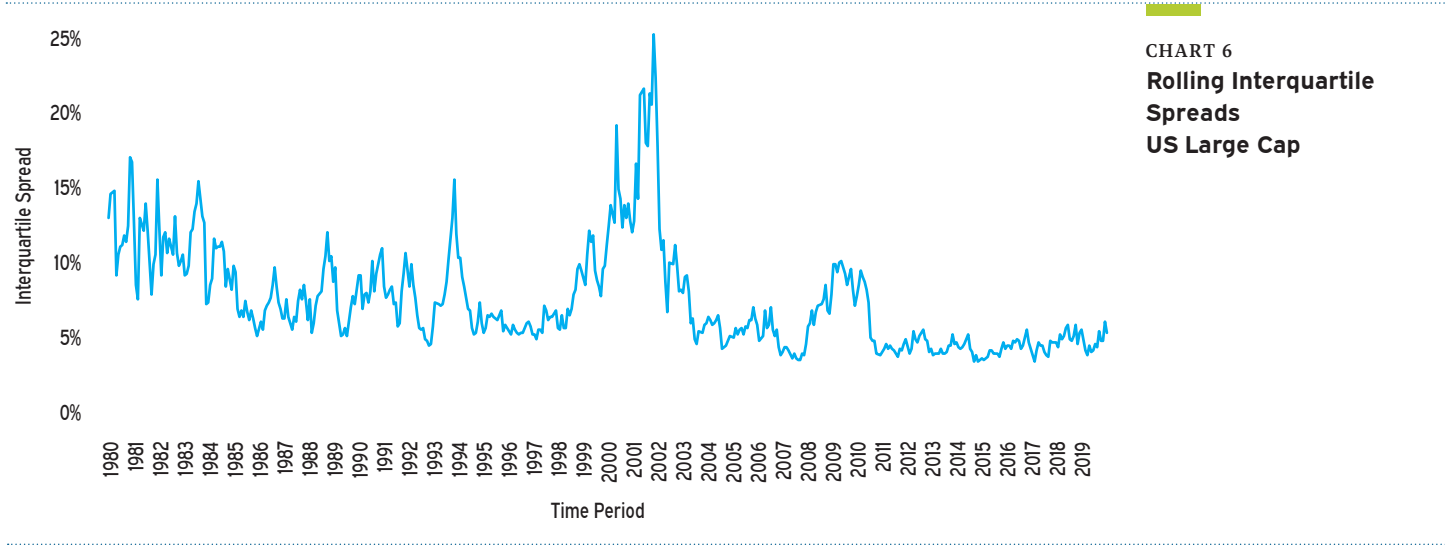
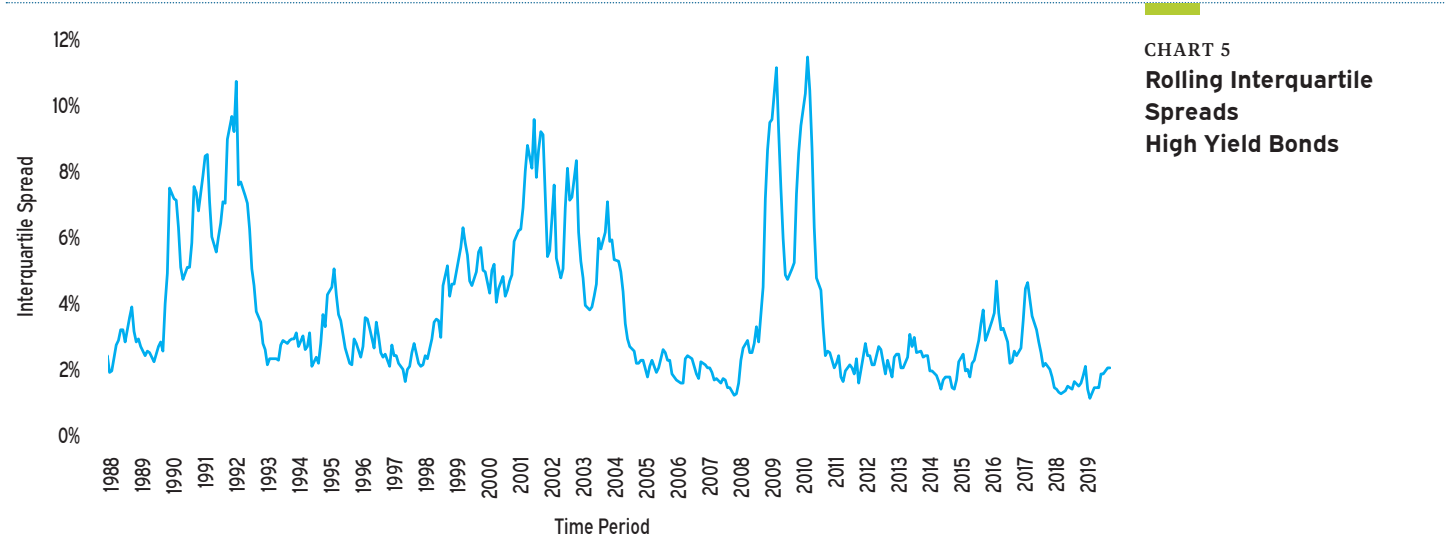


CHART 4
Rolling Median
Outperformance
High Yield Bonds

For high yield, the outperformance runs in an oscillating pattern, with the highest amplitudes being in the 2000s, coinciding with the Dot Com Bubble and the Global Financial Crisis. While the most recent spike and decline were not as drastic as prior cycles, there does not seem to be a trend towards zero.

Another way to look at cyclicalty is through the lens of manager dispersion. Below are the interquartile spreads for US High Yield bonds and US Large Cap Equities.



The interquartile spread greatly increases during periods of market stress, even if the median outperformance does not go above zero. For instance, during the 1989 High Yield Bond Crash, the spread increased, yet the outperformance remained negative. In the Large Cap case, the spread during the 2000s Dot Com Bubble Burst was large enough such that the top quartile outperformed well beyond its benchmark, while the lowest quarter performed below it.

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 immediate recovery thereafter).¹³

¹³ While there does seem to be a correlation visible for these asset classes, there are times where this is not always true, such as the early 1990s recession for US Large Cap or the 1994 bond market crash.

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 on the market side is that when the investors learn about new information regarding a certain asset, the information is already incorporated into the current price of the asset, hence limiting the ability to find undervalued securities for arbitrage. On the peer group side, once a profitable, new investment strategy becomes known, then 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 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.

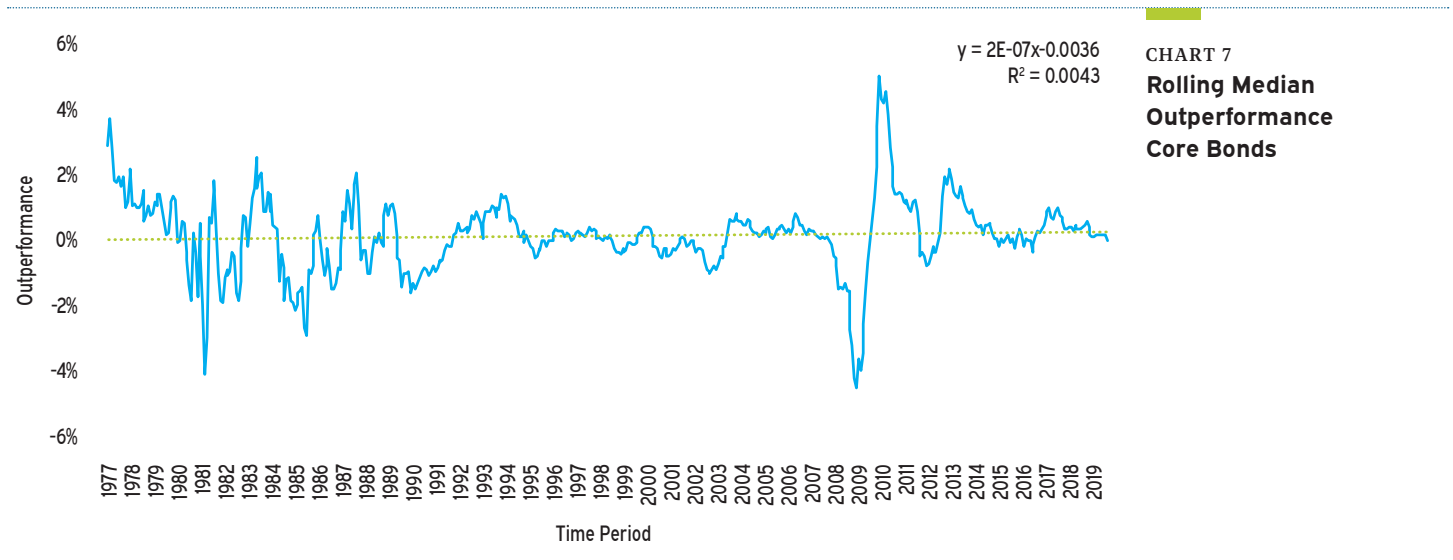


CHART 7
Rolling Median
Outperformance
Core Bonds

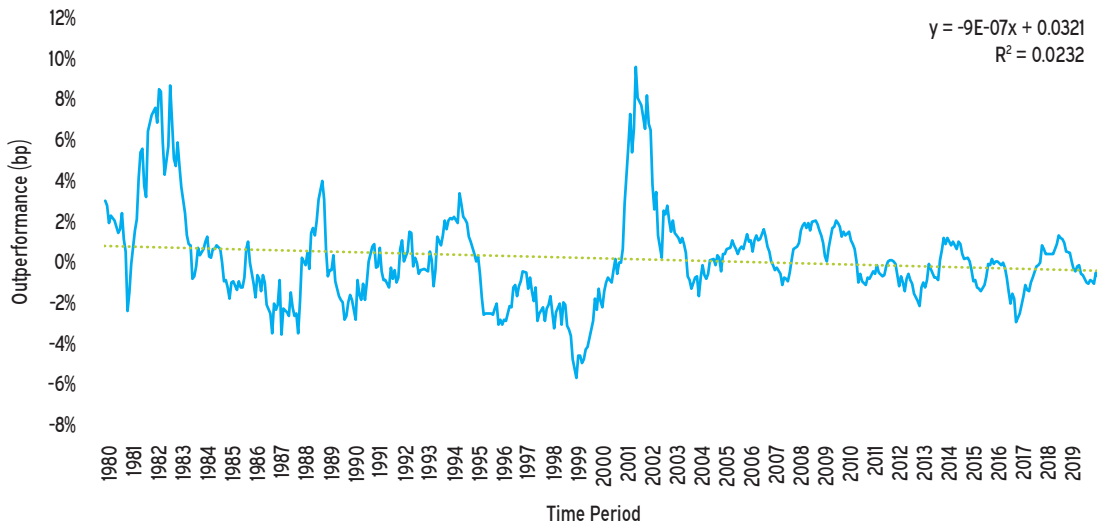


CHART 8
**Rolling Median
Outperformance
US Large Cap**

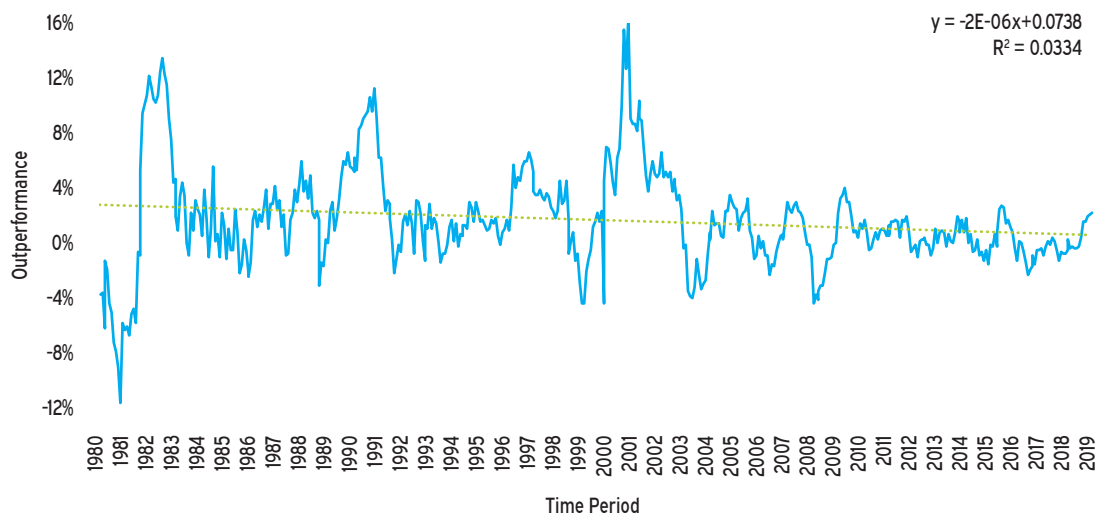


CHART 9
**Rolling Median
Outperformance
US Small Cap**

Each chart shows a “best fit” line that denotes the trend in median manager alpha. In most cases, the trend is down and approaching zero, implying greater market efficiency over time. However, these calculations should be taken with a large grain of salt, as the R2 value—the value that describes the relationship between the regression line and the actual data—is exceedingly low and close to zero, implying there is a very low correlation between the linear line and the actual data.

The next question to answer is whether the markets have become more efficient by the peer metric. The following charts illustrate the historical interquartile spread for US Large Cap and Core Bonds, as well as a linear best-fit line for each.

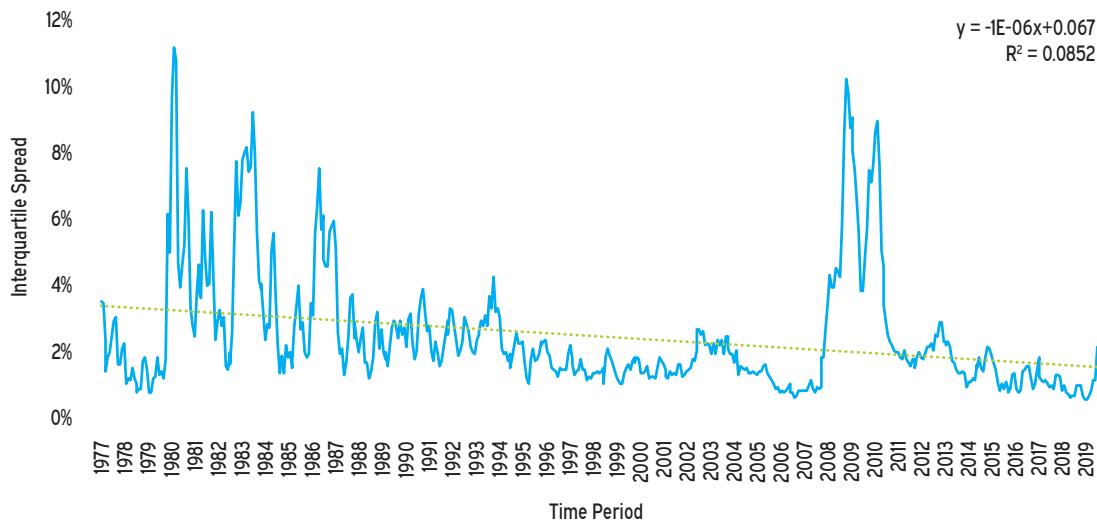


CHART 10
**Rolling Interquartile Spread
 Core Bonds**

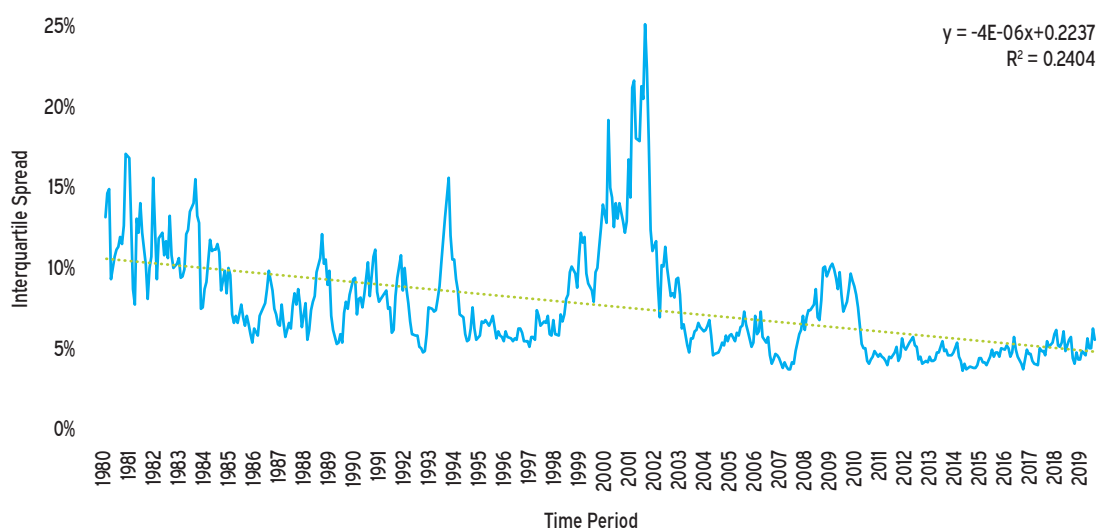


CHART 11
**Rolling Interquartile Spread
 US Large Cap**

Both of these graphs' linear best-fit lines illustrate a downward trend over time, and the magnitude of cyclicity has decreased. However, the R2 value is still low, implying again that there is little explanatory power to these trend lines.

To get a better idea of the change in spread over time, we conducted a comparison between the average interquartile spread before and after 2001.¹⁴

¹⁴ 2001 was chosen as a cutoff because of the likely impact of the internet and Reg.FD (see subsequent footnote).

Asset Class	Avg. IQ Spread Pre-2001 (%)	IQ Spread 2001 – 2019 (%)	Difference ¹⁵ (%)
Core Bonds	2.67	2.02	-0.65
High Yield	4.06	3.51	-0.55
US Large Cap	8.81	6.27	-2.54
US Small Cap	12.37	8.47	-3.90
Foreign Large Cap	10.82	5.86	-4.96
Emerging Markets	8.42	6.54	-1.88

TABLE 4

¹⁵ 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. Foreign Large Cap experienced the largest decrease with -4.96%. US Small Cap had the highest pre-2001 and post-2001 interquartile spreads.

The supporting argument for the thesis that markets are becoming more efficient is that, as time passes, successful investment strategies become more widely known.

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 FD¹⁶ 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.

¹⁶ On August 15, 2000, the SEC adopted Regulation FD 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 how difficult it is for active managers to consistently add value. We found that the median manager in more than half of the observed asset classes outperformed their benchmark before fees. However, even in these cases, the outperformance was insufficient to overcome the median fee for that asset class. This is consistent with finance theory and with past versions of our research. Our research continues to find that US small cap and emerging market equities have exhibited the largest positive median manager alpha. Still, our analysis indicates that there does not appear to be an asset class or style where it is particularly easy for active managers to add value, net of fees.

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.

Outperformance has also been cyclical, exhibiting long periods of median positive and negative relative performance. Across most asset classes, the interquartile spread has been declining. 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.

Appendix A: Data filtering

All the manager and benchmark data was gathered from MorningStar Direct's online database. We gathered data for 5,320 managers across the asset classes. From the outset, we included inactive funds (to ward off survivorship bias) and only used the oldest share class of each fund (to prevent double counting).

MorningStar Direct filters and sorts funds by asset class using their own definitions. Unlike a manager-reporting platform like eVestment, MorningStar allocates funds to their asset class using their standardized definitions of asset classes and taking into account returns and fund composition. To keep out subjectivity, we decided to use only Morningstar's definitions of asset classes and did not try to filter based on fund name (which a previous version of this paper did). The reason is that choosing a benchmark based on fund names can be subjective, and if Morningstar has already allocated the fund based on its own definition of an asset class, it would prove neither productive nor practical to make a separate judgement based on the fund's name.

We next had to make sure that we were not double counting funds that were the same but in different vehicles. To do so, if we found a pair of funds from the same firm that exhibited a correlation above 99.8%, we deleted one of the funds in the pair.

Asset Class	Original Number of Funds	Funds After Scrub	Funds After Rolling	Difference
Core Bonds	407	403	378	-29
High Yield	305	298	281	-24
US Large Cap	2,515	2,392	2,259	-256
US Small Cap	1,013	985	938	-75
Foreign Large Cap	724	684	619	-105
Emerging Markets	356	344	316	-40
Total	5,320	5,106	4,791	-529

TABLE 5

Appendix B: Bias and areas for improvement

While this data analysis takes lengths to scrub the data and processing from bias, possible skewing is inevitable. With that said, this allows for new opportunities regarding areas for further research and analysis.

We gathered our data from MorningStar Direct's database. The benchmarks used are located in another appendix. The magnitudes of the outperformance of the asset classes will inevitably be different depending on the benchmark chosen to measure outperformance, but the basic trends and spreads should be the same.

While MorningStar Direct allows us to root out selection bias as opposed to a database like eVestment, there were less available funds on MorningStar than on eVestment, thus slightly limiting the amount of data points. However, because we cannot guarantee selection bias or asset class mismatch like we can with MorningStar, we opted for using MorningStar Direct. One could possibly do a comparison of the data between the two and find out if there is any difference when assessing the two databases. If the data skews more positively in the eVestment data, it could be possible evidence of selection bias at play.

Appendix C: Benchmarking and time periods

Morningstar Direct only provides single benchmarks per asset class at a time. The following table illustrates the benchmark we used for each asset class. The style benchmarks for US Large Cap, US Small Cap, and Foreign Large Cap have the same respective inception dates.¹⁷

Asset Class	Benchmark	Inception Date
Core Bonds	Bloomberg Barclays US Aggregate Bond	Jan. 1976
High Yield	BofAML US High Yield	Sep. 1986
US Large Cap	Russell 1000	Jan. 1979
US Small Cap	Russell 2000	Jan. 1979
Foreign Large Cap	MSCI ACWI ex-US	Jan. 1988 ¹⁸
Emerging Markets	MSCI-EM	Jan. 1988 ¹⁹

TABLE 6

¹⁷ For asset classes with certain styles (i.e., growth or value), we used the style benchmark for outperformance (such as using the Russell Value for US Value Large Cap Equity). The growth and value variants were applied to the US Large Cap, US Small Cap, and Foreign Large Cap benchmarks when necessary. Unless otherwise noted, the style benchmarks' inception dates were the same as their core counterparts.

¹⁸ The MSCI ACWI ex-US started in January 1988, but the style benchmarks started in January 1997. For uniformity and accuracy when comparing style strategies, the Foreign Large Cap funds were assessed from January 1997 on.

¹⁹ While the Emerging Market Index started in 1988, the graph for outperformance did not start until 1991, as there was not enough fund data.

Appendix D: Reasons for fund closures

Fund closures are a common yet dreaded part of the market landscape. Funds can close to new investors and become closed-ended, or they can fully close and liquidate. The primarily accepted cause of fund closures is that the fund was underperforming and/or did not have sufficient assets under management. Investors tend to not buy into a fund that is not doing well, and once the fund becomes unprofitable, a firm will likely terminate it.

Not all funds are closed due to underperformance. For example, in January 2019 the Vanguard Convertible Securities Fund shut down after 33 years. It had been returning a positive performance on average for the prior decade, but according to Vanguard, it was one of the smallest offerings and struggled to gain any broad acceptance. Funds, even if they are performing well, can close due to lack of investors. Niche market funds can also suffer from lack of investor traction and close. According to Scott Cody of Latitude Financial Group, funds can even close because they were doing so well that it cannot buy hard-to-find assets in its asset class.

Appendix E: Median outperformance graph by asset class²⁰

²⁰ Due to lack of fund data, some of the asset classes' early year relative returns may be skewed.

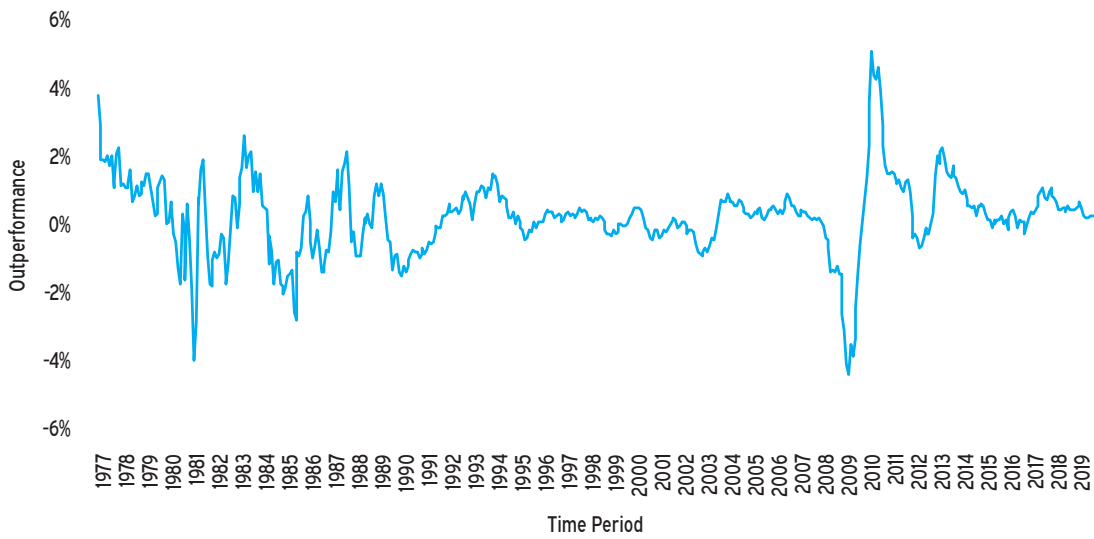


CHART 12
Core Bonds Median Outperformance



CHART 13
High Yield Median Outperformance

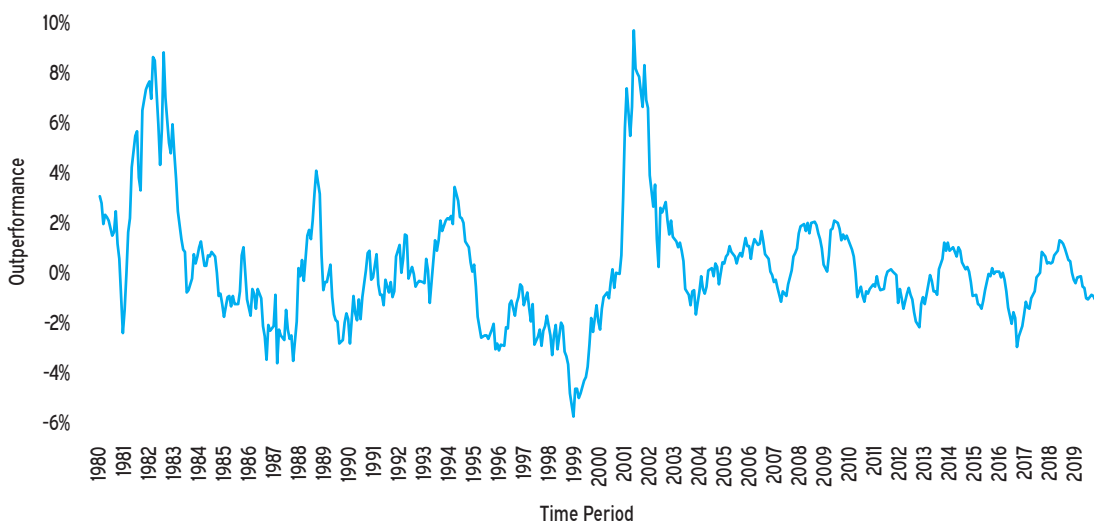


CHART 14
US Large Cap Median Outperformance

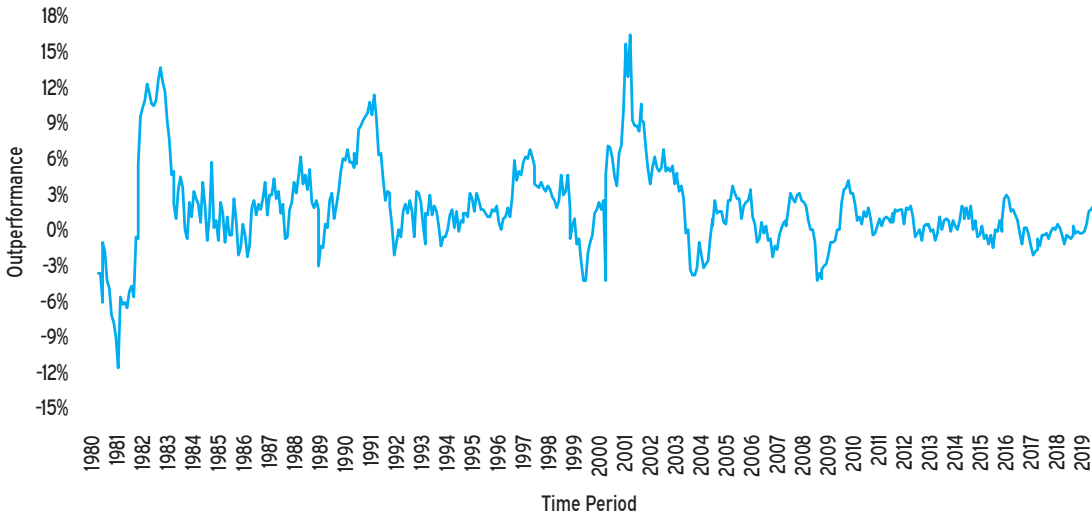


CHART 15
**US Small Cap Median
 Outperformance**

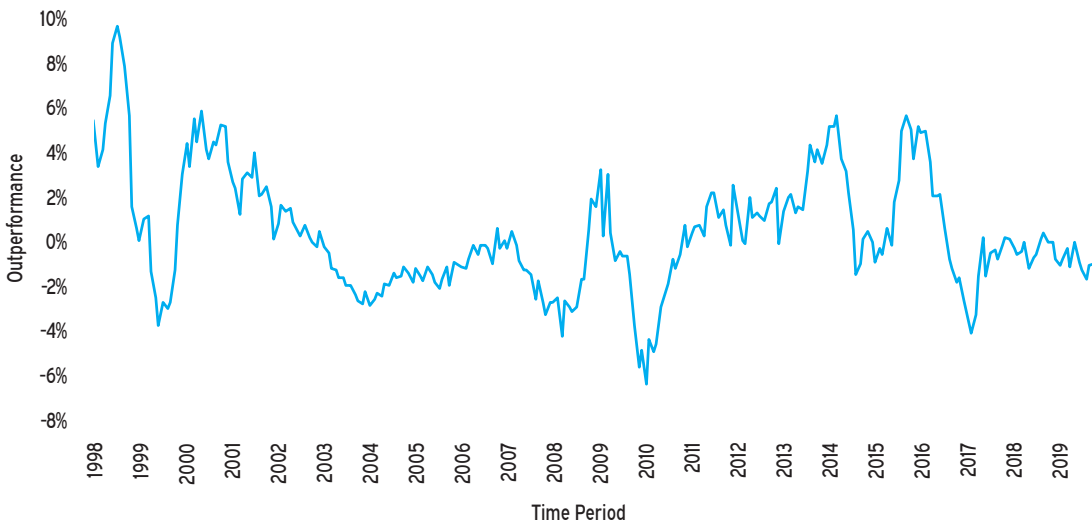


CHART 16
**Foreign Large Cap
 Outperformance**

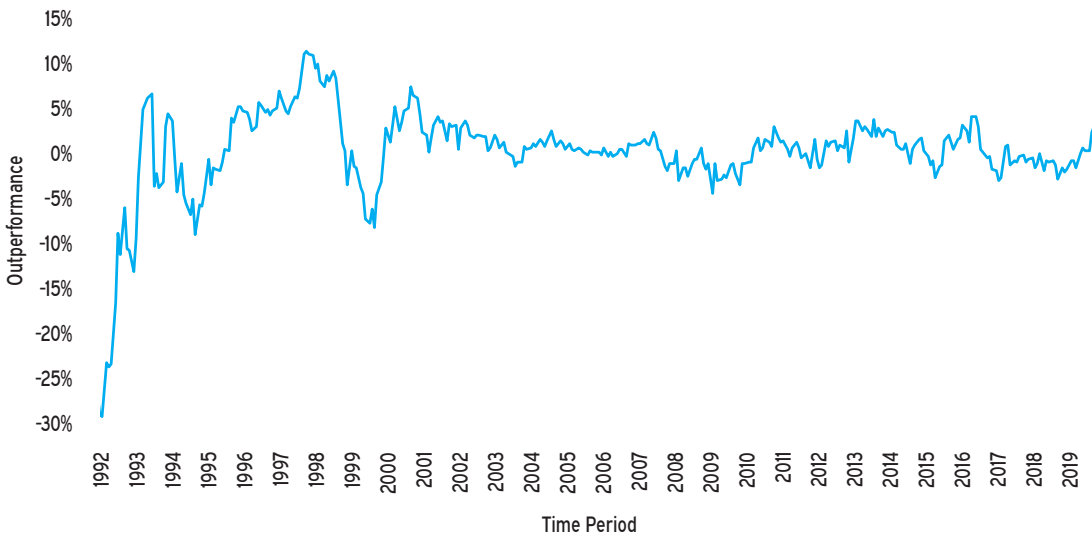


CHART 17
**Emerging Market
 Outperformance**

Appendix F: Areas for further research

While we covered a relatively wide array of asset classes and styles, there is still opportunity to analyze other asset classes such as global equities, emerging market bonds, and commodities, though some of these may be harder to benchmark or study in the same manner as the asset classes we surveyed in this paper. While this paper reviews the more commonly used public market asset classes, it may prove useful to find out if any other areas fare better in beating the market or more consistently beat the market. It may also be useful to look further into the effects of bear markets, bull markets, and recessions on active manager performance.

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