Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

FEBRUARY 2020

Active Management Environment

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The active management environment

Our work on active management addresses some shortfalls of the traditional analysis, which uses the median product to describe the active management universe as a whole.

These improvements and insights have allowed us to better understand product behavior and may allow for more informed selection in the future. For first time readers, an introduction to our active management research and methodological details can be accessed by visiting http://www.verusinvestments.com/wp-content/uploads/2018/01/Active-Management-Supplemental.pdf. For those familiar with the new approach, please read on.

— Even without skilled selection there are many cases where active management may help investors achieve better portfolio outcomes in risk and return terms.

— Those better portfolio outcomes may come from additional return or lower risk. Not all investors have the same definition of better outcomes, and the risk/return trade-offs vary by universe.

— Adding skilled selection to the process may add additional value in portfolio construction.

— Fees remain an important part of the active management conversation. Fees and survivorship bias should be taken into account when analyzing active universes.

Using median product (median manager) performance to decide whether active management is beneficial can be misleading. This new tool can help investors make more informed decisions.

What changed for 2020?

— As the Global Financial Crisis of 2008-2009 fell out of the 10-year performance window, many active management universe shapes now look similar for 3-year, 5-year, 7-year, and 10-year periods. This effect is expected, since many time windows now capture a similar environment of upward asset price movement with strong economic progress.

— In some fixed income asset classes, active managers have shown less dispersion in volatility characteristics across the universe.

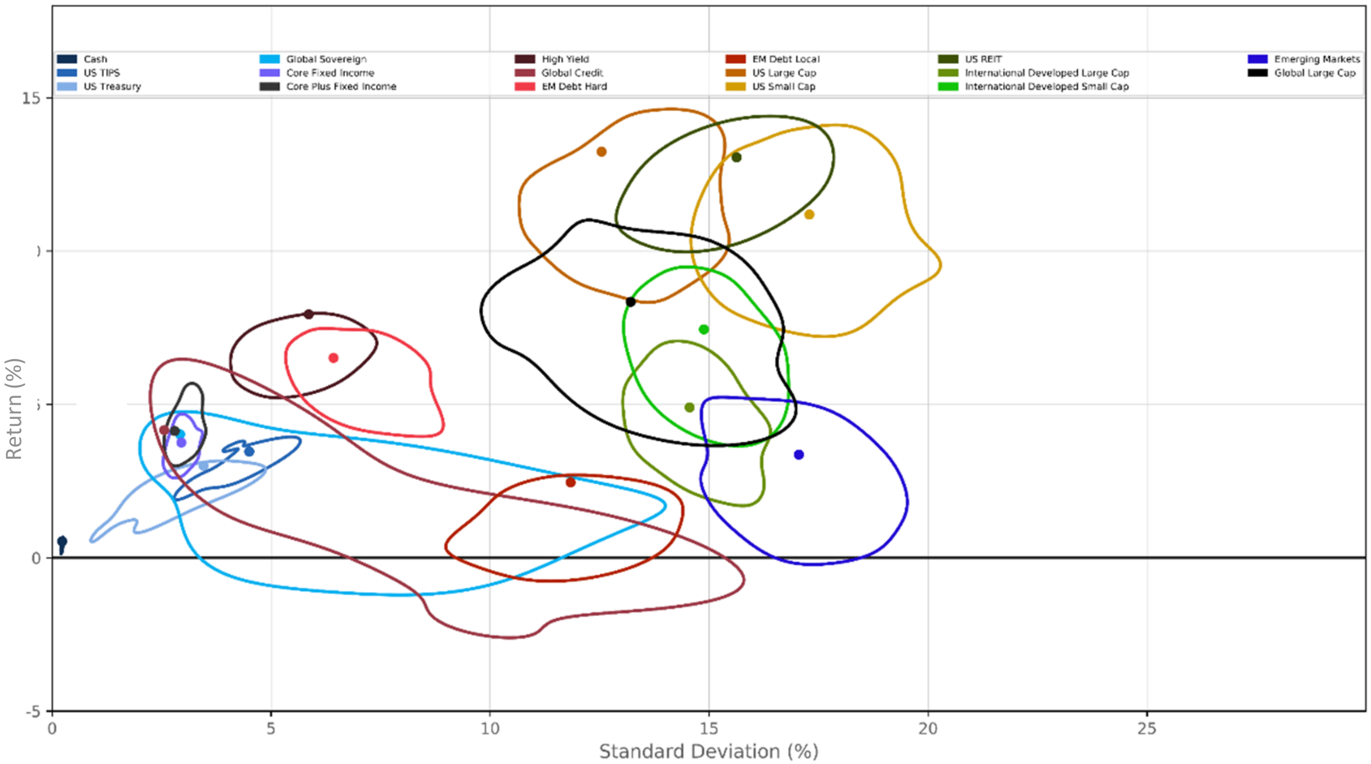
— Active management in certain fixed income asset classes appears to offer little differentiation. Investors with limited tracking error budgets may choose to place more focus on asset classes with greater active management dispersion and alpha potential.

— Although U.S. equity markets are often believed to be more efficient than international markets, U.S. small cap continues to appear relatively attractive as an active management hunting ground.

The true investment opportunity set

Investors often think of the investment opportunity set as a risk-return chart, in the form of single-point (dot) benchmark risk and return, and possibly single-point median product to represent active management. However, active management universes in each asset class often have wide distributions and this traditional analysis misses the true universe characteristics. Much of the risk-return surface between -3% and 15% return and between 1% and 21% volatility is covered by various asset class options, and many parts of this space are covered by multiple active management universes.

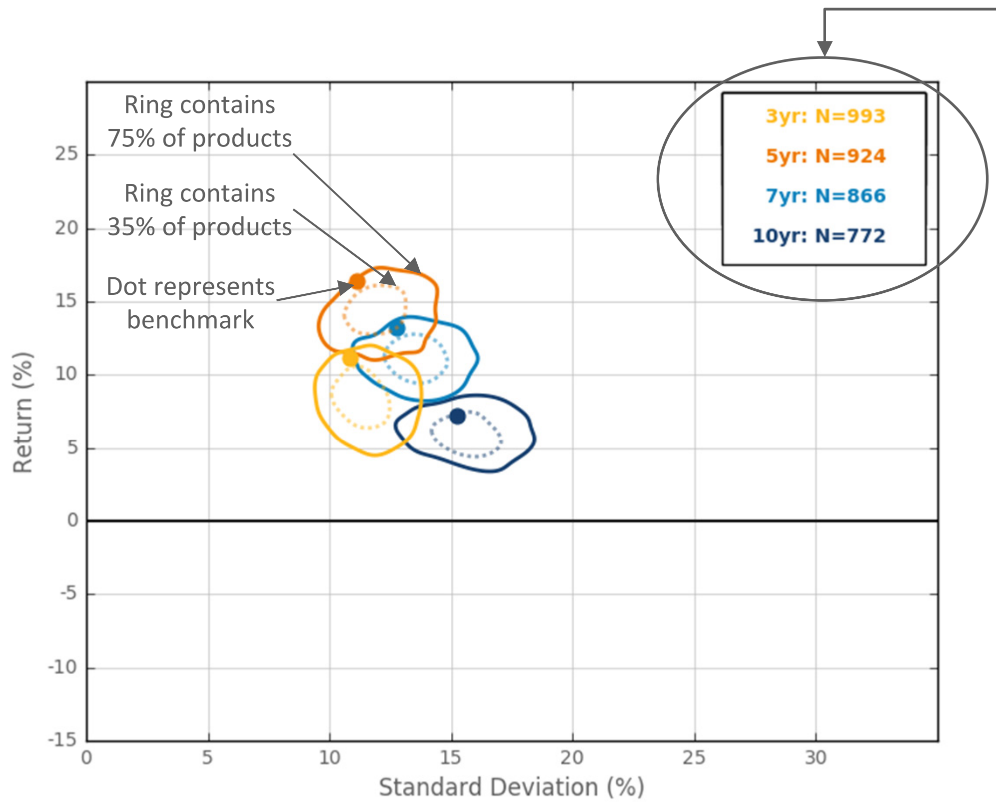
RISK-RETURN REGIONS ACROSS ASSET CLASSES: 10-YEAR RESULTS



This represents 10-year product performance data and 75% contour areas.
Source: eVestment, Verus, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias.

How to read a universe chart

The movement of the universe, the change in shape and of size all provide information about product behavior.



The number of products included in the analysis provides insight into the robustness of the analysis.

The position of the benchmark relative to the universe may also change through time, representing dynamic structure changes.

Throughout this report each asset class universe chart is placed at the same position on the page, at the same size and with the scales of the axes identical. This allows for easy comparison between universes.

Asset class environments

Note: *Universes are defined at the broadest level. Products vary in terms of style and/or treatment of currency exposure. Equity universe include both value and growth styles. International universes may include both products that hedge currency exposure and products that do not hedge currency exposure.*

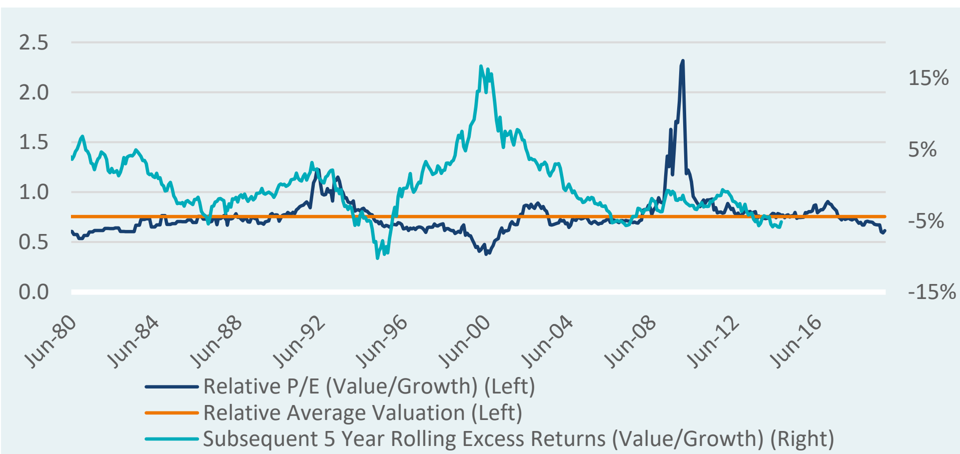
Equities – U.S. large cap

— The data suggest that U.S. large cap equity has been a reasonably efficient asset class, especially over longer time periods. The benchmark tends to exhibit less volatility than the manager universe.

— Over more recent time periods, there is evidence that some managers have been able to produce superior returns at a below-benchmark level of volatility; however, most active products have simply increased volatility exposure. Over longer time periods, there seems to be a weak relationship between additional volatility and achieving additional return.

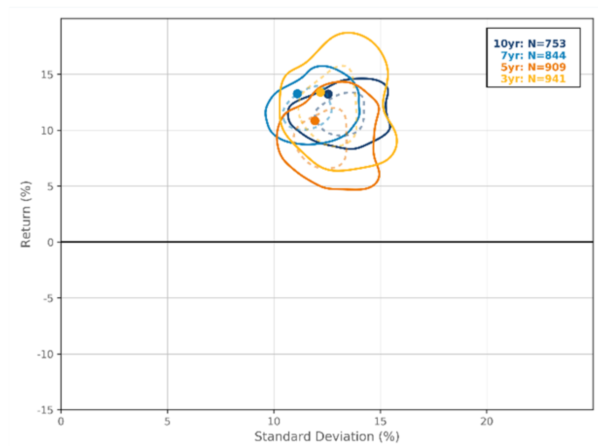
— In terms of style, growth has reigned over value for most of the past decade. In our view, for the first time in the current cycle, there are indications that value is becoming unusually cheap relative to growth, which could portend a building tailwind for value-oriented managers.

VALUE HAS BECOME CHEAPER



Source: Russell, Bloomberg, as of 9/30/19

U.S. LARGE



Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the S&P 500

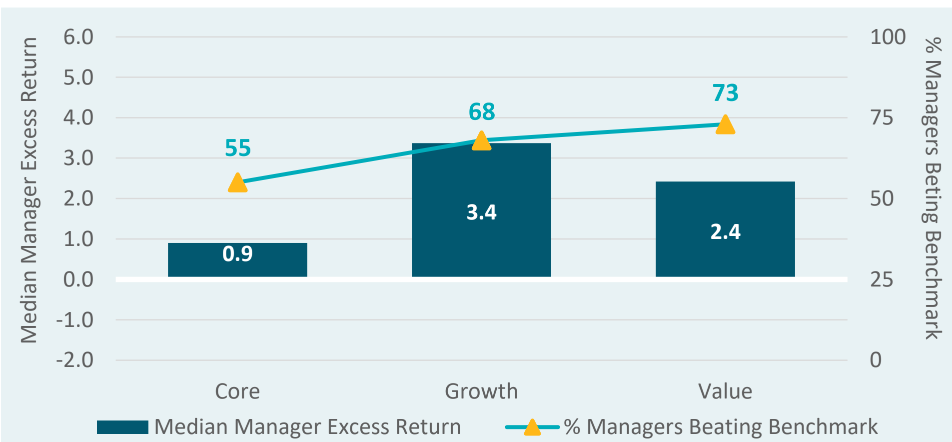
Equities – U.S. small cap

— When compared to their larger cap counterparts, there appears to be some evidence that U.S. small cap products have been able to produce excess return over most time periods. These managers also appear to have done so more efficiently than in the U.S. large cap space.

— Year-to-date through September 30, 2019, regardless of style, a majority of active managers have outperformed their respective benchmarks. In particular, the median small cap growth and small cap value products significantly outperformed, with the Russell 2000 Growth and Russell 2000 Value indices ranking in the third quartile against their respective manager universes.

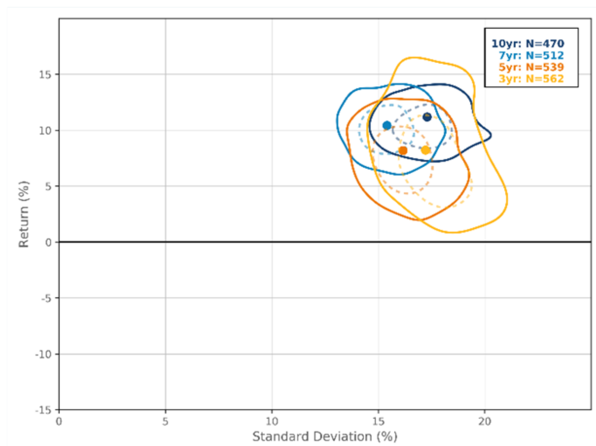
— In contrast to last year, the small cap environment has generally been more favorable to active managers with 55% of core, 68% of growth, and 73% of value products surpassing their respective benchmarks (versus 42%, 77% and 34%, respectively, last year), gross of fees. In particular, small cap value managers showed the greatest year-over-year improvement.

ACTIVE PRODUCT PERFORMANCE YTD



Source: eVestment, as of 9/30/19, gross of fees

U.S. SMALL



Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the Russell 2000

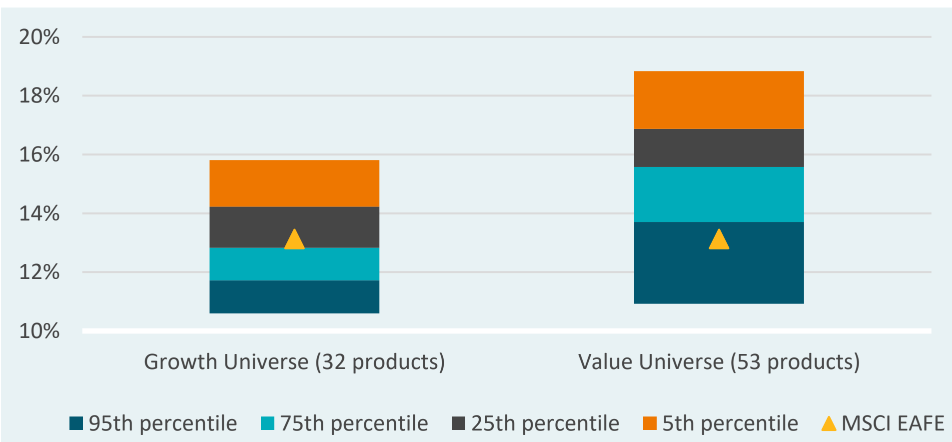
Equities – International developed

— During shorter and longer periods, active managers have demonstrated an ability to add value in non-U.S. developed markets. Some periods have been more challenging than others with a greater proportion of managers failing to beat the benchmark over the most recent three-year period.

— The relationship between risk and return appears almost negligible in this segment of the market. The 10-year period exhibits a slight propensity among managers who took on more risk to have underperformed the benchmark. Focusing on the latest three years, we see a large segment of the universe exhibiting higher standard deviation than the benchmark.

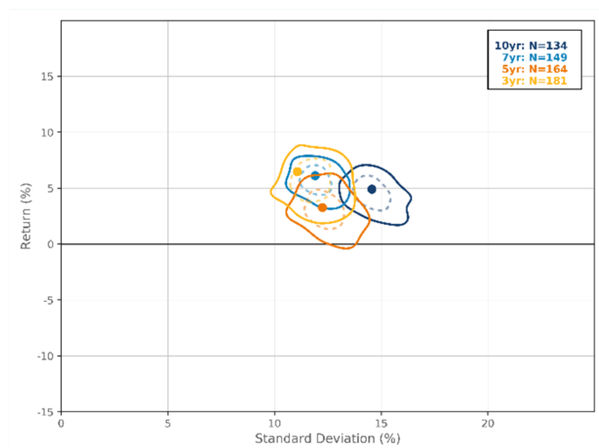
— During the latest three years, both growth-oriented and value-oriented products have exhibited significantly higher volatility than the benchmark. During the first nine months of 2019 we can see that value-oriented products have exhibited considerably greater volatility than growth-oriented products.

YTD STANDARD DEVIATION



Source: MSCI, eVestment as of 9/30/19

INTERNATIONAL LARGE



Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the MSCI EAFE

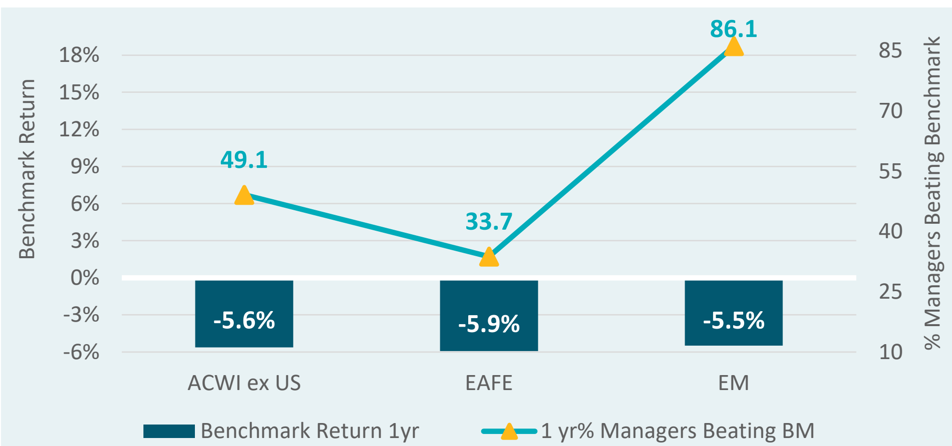
Equities – International developed small cap

— During short and long time periods, international developed small cap has been a challenging segment of the market for active management to add value. Over the past three-year and five-year periods active manager performance deteriorated, relative to seven-year and ten-year periods.

— During the latest ten years, there has been a negligible relationship between risk and return for international developed small cap managers. On the other hand, during shorter periods we observe a negative relationship; managers taking greater risk than the benchmark tended to underperform.

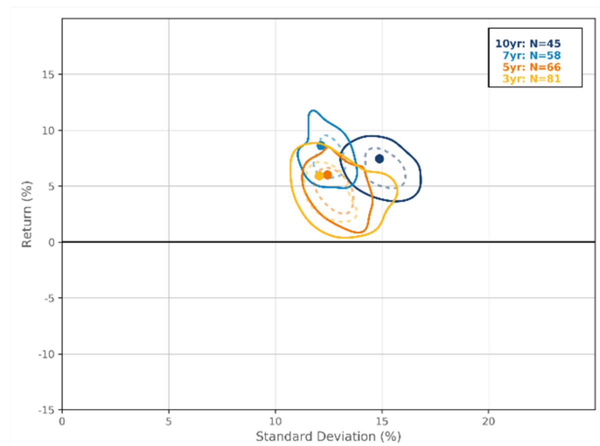
— The observations above focus on developed markets where only 34% of managers exceeded the benchmark. Expanding the analysis to include emerging markets small cap, nearly half of the universe outperformed the ACWI ex US small cap benchmark. The emerging markets segment of the small cap universe appears much less efficient than the developed market segment, offering managers more opportunity to add value.

DEVELOPED AND EMERGING MARKETS – 1-YEAR RETURNS



Source: MSCI, eVestment, as of 9/30/19, gross of fees

INTERNATIONAL SMALL



Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the MSCI EAFE Small

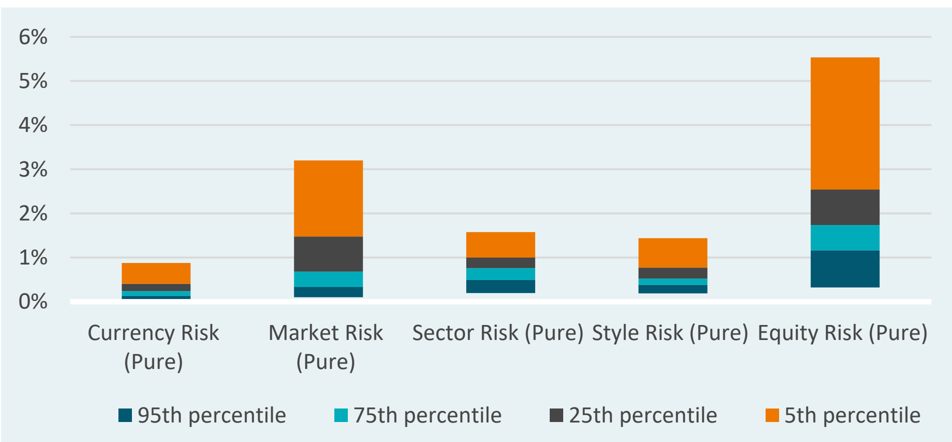
Equities – Emerging markets

— Emerging market performance recovered somewhat after a challenging year in 2018. These markets continue to provide opportunities for active management to add value.

— The three-year return chart reflects a generally positive relationship between risk and return, and managers taking more risk than the benchmark were just as likely to outperform as underperform. Managers taking less risk than the benchmark didn't fare as well, with a greater proportion underperforming. Longer periods show a weaker relationship between risk and return.

— The universe of emerging markets products shows distinct differences between managers' portfolios in terms of the amount of active risk contributed by market, sector, style or individual stock positions. We observe the largest variation between products in the degree to which stock selection contributes to overall tracking variance versus benchmark. This is followed by differing degrees of country risk taken from one manager to another.

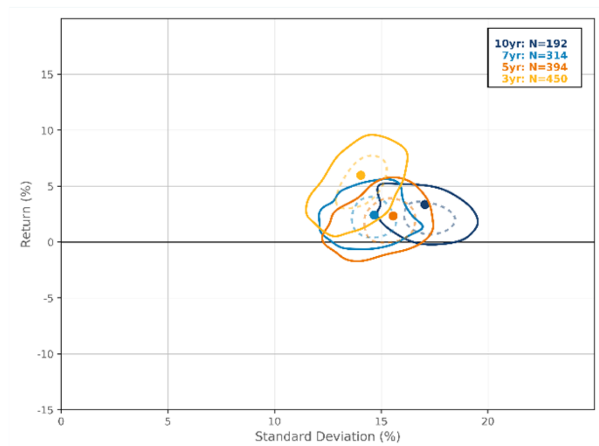
COMPONENTS OF EM ACTIVE TRACKING VARIANCE



**Universe includes 410 portfolios*

Source: Style Analytics, eVestment as of 9/30/19

EMERGING MARKETS



Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the MSCI EM

Fixed income – U.S. TIPS

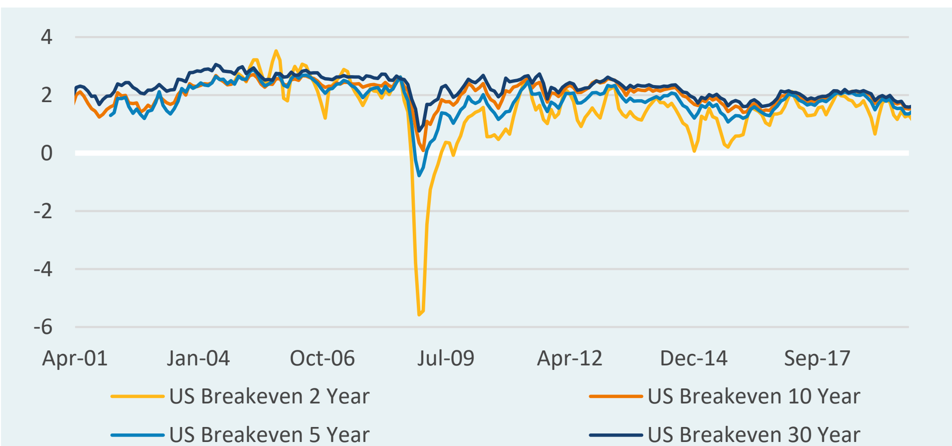
— The U.S. TIPS asset class has been highly efficient across all time periods examined. Given the limited scope of the universe of TIPS, active products have produced minimal added value relative to the benchmark. During most time periods, however, there appears to be a modest upward tilt to the universe, suggesting a small amount of compensation for products that take extra risk relative to the benchmark.

— While TIPS are often used for their “real return” properties, they also possess high sensitivity to interest rates.

— Environments characterized by rising inflation expectations typically see increased investor appetite for TIPS.

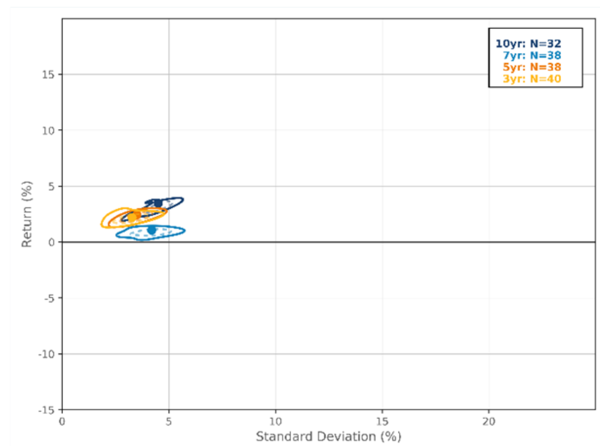
— While active management in TIPS has provided minimal alpha, TIPS exposure may still provide valuable diversification and risk management benefits, particularly for those looking for inflation protection.

U.S. BREAKEVEN INFLATION RATES



Source: Bloomberg, as of 9/30/19

U.S. TIPS



Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias
Benchmark displayed is the BBgBarc U.S. TIPS 5-10

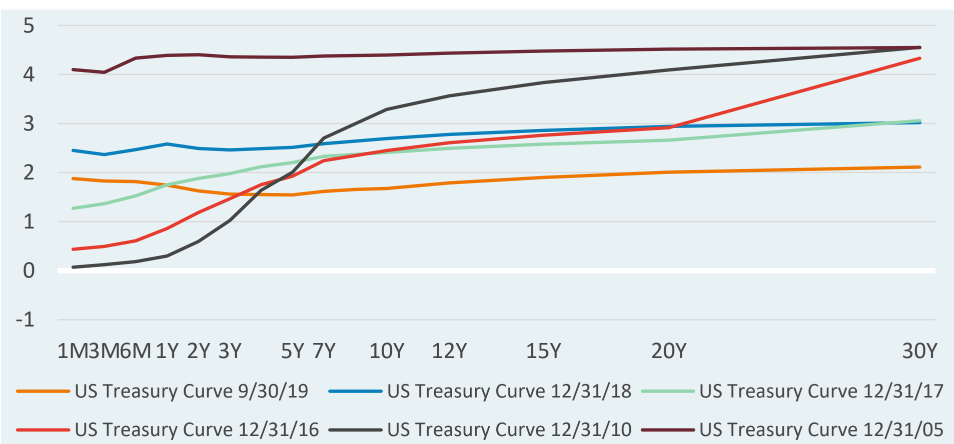
Fixed income – U.S. treasury

— U.S. treasuries remain an efficient asset class characterized by a very consistent risk-reward tradeoff across all time periods examined. The active universe of products shows that there is a wider variety of volatility profiles in constituent products relative to return profiles, and there appears to be a mildly positive relationship between volatility and return.

— The universe for actively managed government-related strategies is small compared to other asset classes (only 15-17 total strategies were identified over the time periods shown).

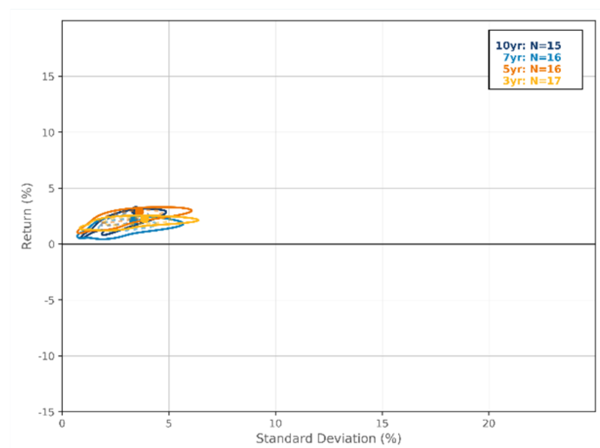
— Following elevated market volatility in late 2018, the Federal Reserve reversed its tightening policy and cut its benchmark rate three times to a range of 1.50-1.75%, which drove strong year-to-date returns for the asset class.

U.S. YIELD CURVE



Source: FRED, as of 9/30/19

U.S. TREASURY



Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the BBgBarc U.S. Government Index, which includes agency debt.

Fixed income – Global sovereign

— Dispersion of global sovereign active products has been wide, possibly due to rising idiosyncratic risks, increased trade tensions, and currency volatility. In the chart below, active products often had higher risk than the benchmark but were rarely compensated for that increased volatility as shown by the negative relationship between risk and return.

— Global bonds have historically provided interest rate diversification benefits within fixed income portfolios. In 2019, global yields continued to fall, leading to a peak of around $17 trillion in negative yielding debt at the end of August. While that amount has receded from its high, easy monetary policy persists.

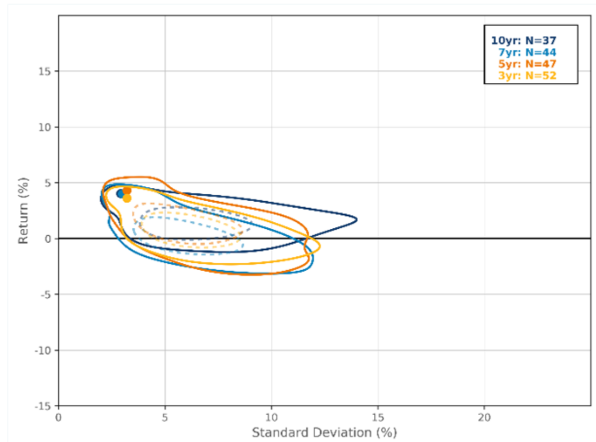
— Many products use off-benchmark securities such as credit and currency in attempts to add value relative to a sovereign-only benchmark. These off-benchmark exposures pose challenges for estimating the true risk/return profile of many global fixed income products.

GLOBAL NEGATIVE-YIELDING DEBT REACHES $17 TRILLION

Country	3 Month	2 Year	5 Year	10 Year	30 Year
Switzerland	-0.76	-0.91	-0.91	-0.79	-0.39
Germany	-0.60	-0.77	-0.78	-0.57	-0.07
France	-0.59	-0.70	-0.64	-0.28	0.54
Japan	-0.38	-0.32	-0.36	-0.22	0.36
Italy	-0.30	-0.26	0.21	0.82	1.90
UK	0.64	0.36	0.28	0.48	0.97
US	1.82	1.65	1.57	1.67	2.11

Source: Bloomberg, as of 9/30/19

GLOBAL SOVEREIGN



Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias
Benchmark displayed is the BBgBarc Global Treasury ex U.S.

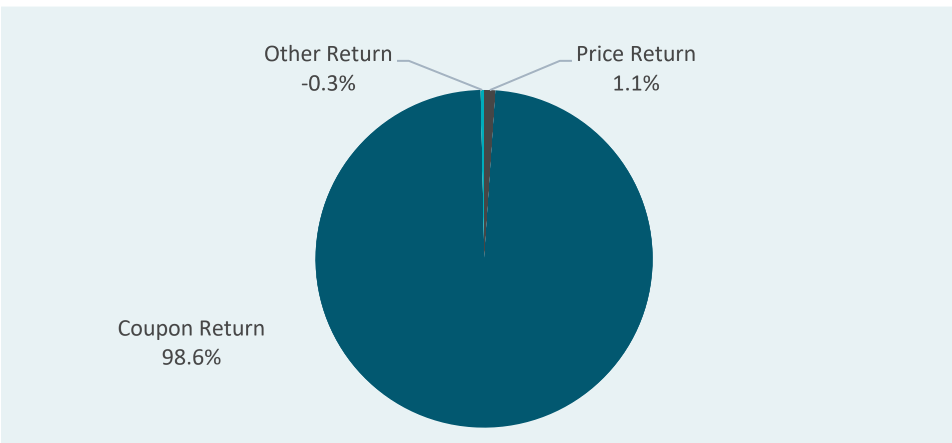
Fixed income – U.S. core

— Core bond strategies tend to allocate to government-related, investment grade corporate and securitized sectors of the U.S. bond market (these are represented in the Bloomberg Barclays US Aggregate Index). Active core fixed income managers seek to add value by managing various risk exposures including duration, yield curve, sector allocation, and security selection. Year-to-date, the Barclays Aggregate Bond Index has posted strong positive returns (+11.5% as of October 31st), fueled by this year's rate rally and strong performance in investment grade credit.

— Based on the chart, over all time periods examined the core fixed income asset class appears to be highly efficient and shows little dispersion between active products and the benchmark.

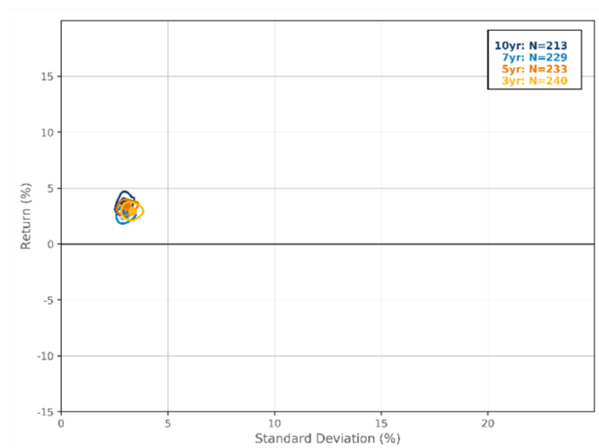
— Dispersion of returns among the universe of active U.S. Core strategies remained tight over all time periods observed. That said, quality active U.S. Core strategies may be well-equipped to effectively manage liquidity and avoid idiosyncratic risks throughout various market environments.

BARCLAYS AGGREGATE INDEX DECOMPOSITION: 1990-YTD 2019



Source: Barclays, as of 11/20/19

U.S. CORE



Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the BBgBarc U.S. Aggregate Bond

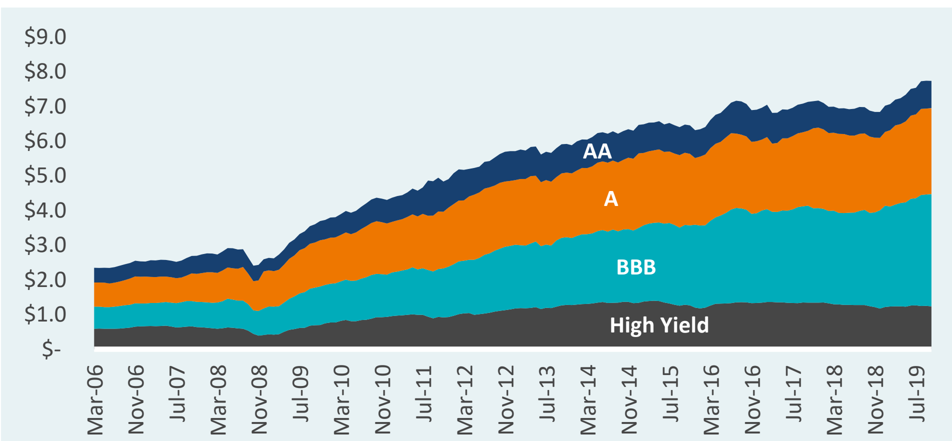
Fixed income – U.S. core plus

— Throughout the past year, many managers in the core plus space have pivoted to higher credit quality bonds as credit continued to edge closer to the end of its cycle. Investment grade corporate bonds and high yield had positive returns this year (+13.3% and +11.7%, respectively, as of October 31st). Much of the outperformance can be attributed to the interest rate rally experienced in 2019. The U.S. investment grade credit benchmark has a much higher duration than that of the Bloomberg Barclays High Yield Index (7.63 years versus 3.11 years).

— Over the time periods shown, the core plus fixed income universe has demonstrated similar dispersion to the core bond universe. Traditionally, core plus products tend to underweight U.S. government-related bonds relative to the benchmark and tend to overweight spread products, such as securitized sectors, high yield, emerging markets debt and non-USD debt. This has especially been the case during risk-on rallies and markets characterized by higher volatility.

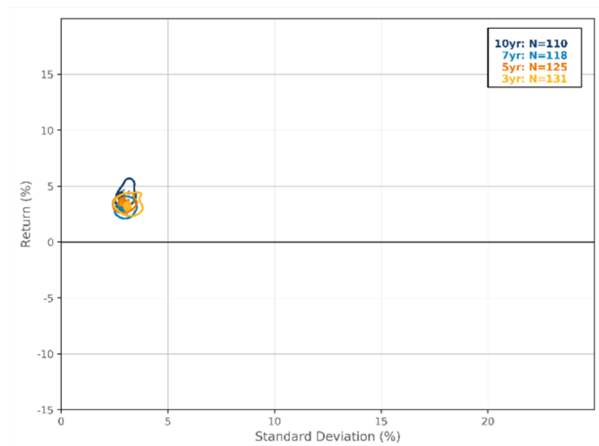
— While dispersions among U.S. Core Plus strategies remain tight, like the U.S. Core space, we continue to believe quality active Core Plus strategies may be well-equipped to effectively manage liquidity and avoid idiosyncratic risks throughout various market environments through the implementation of diligent security selection and sector rotation.

LOWER RATED DEBT HAS GROWN



Source: Barclays Live, IR+M, as of 10/31/19

CORE PLUS



Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the BBgBarc U.S. Aggregate Bond

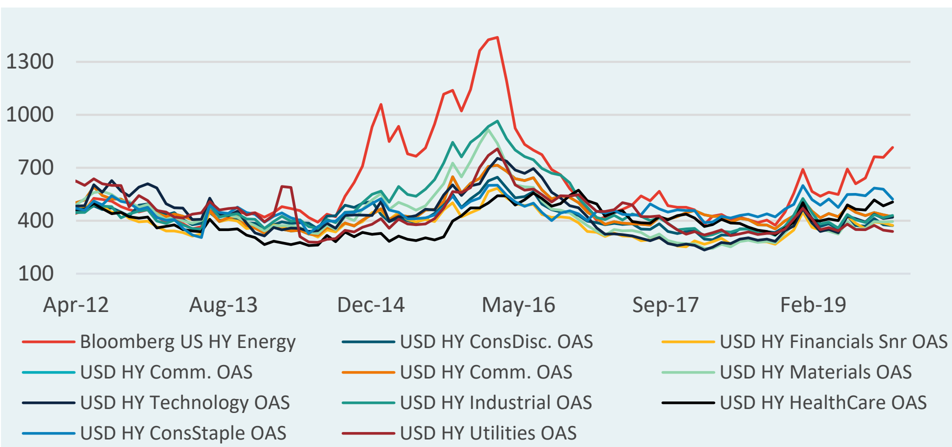
Fixed income – U.S. high yield

— Over most periods examined, active strategies in the high yield space have had a tough time beating the benchmark, especially over the 10-year trailing period. Additionally, over longer periods, greater volatility appears to be associated with slightly higher returns as demonstrated by the positive risk/return relationship.

— The high yield market has seen a bifurcation in performance between higher quality (BB-rated) and lower quality (CCC-rated) over the past year. In general, higher credit quality bonds have had better performance. Managers have been pivoting towards higher quality bonds as we get closer to the end of the credit cycle. High yield spreads have tightened significantly this year after widening in the fourth quarter of 2018. Default activity remains below the historical average, although there has been some weakness in certain industries (ex: energy and pharma).

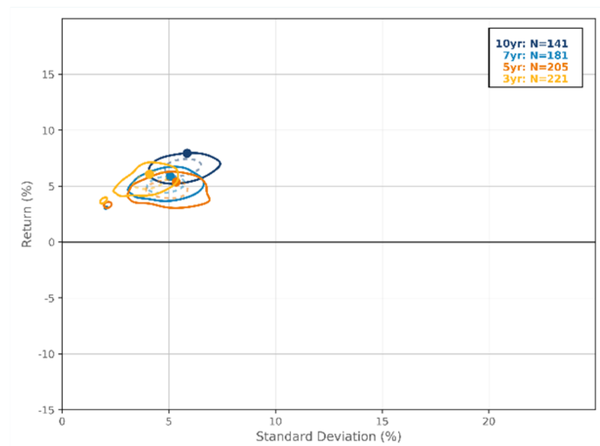
— There are various rationales for choosing active management in high yield: skilled managers are able to identify credits with attractive valuations and positive fundamentals, thus avoiding idiosyncratic risk resulting from ratings downgrades or defaults. Additionally, the wide dispersion of returns in the high yield market creates an opportunity for active managers.

SPREADS



Source: Barclays, Bloomberg, as of 10/31/19

U.S. HIGH YIELD



Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the BBgBarc U.S. Corporate High Yield

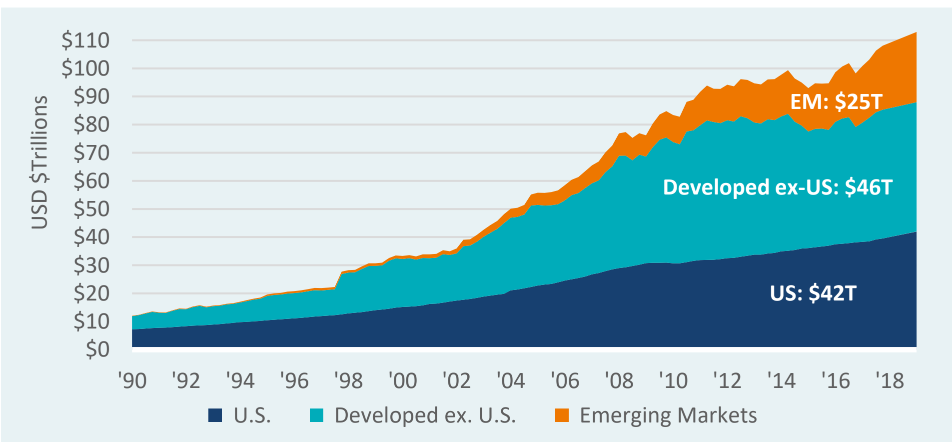
Fixed income – Global credit

— Throughout all time periods observed, there has been a negative correlation between risk and return for the asset class, coupled with a high dispersion of outcomes relative to the benchmark. For all time periods, managers that have increased their risk have not been compensated with higher return. Additionally, few products have consistently provided positive excess returns with lower volatility than the benchmark.

— One of the major risks in global bond portfolios is unhedged foreign currency exposure, which is accompanied by foreign currency risk. Currency movements often outweigh the performance of the underlying security selection. We therefore believe unhedged global bond managers must be evaluated on their currency management skill in addition to their skill in managing bonds.

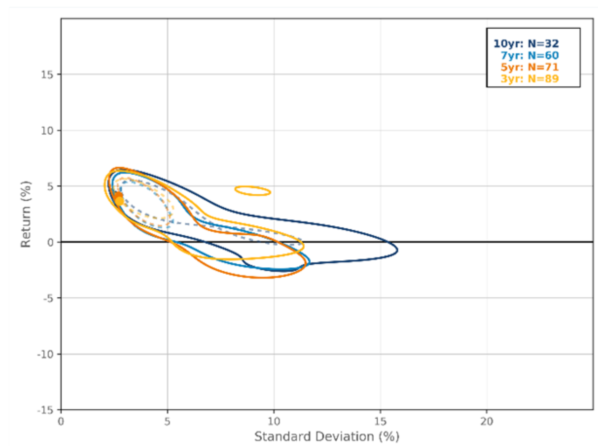
— The global credit universe is relatively heterogenous regarding credit quality and the use of EM corporate debt. During periods of heightened market volatility, wider spreads, products with flexible investment mandates often take on exposure to lower quality bonds to provide liquidity to the market with the goal of benefiting from spread normalization.

GLOBAL BOND MARKET



Source: JPMorgan, as of 3/31/19

GLOBAL CREDIT



Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the BBgBarc Global Credit

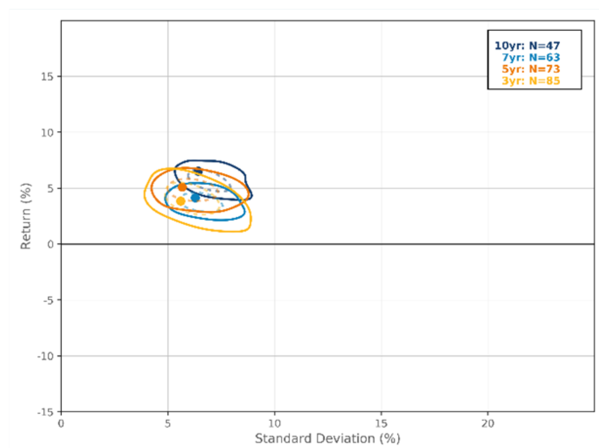
Fixed income – Emerging market debt (hard)

- Investors in EMD hard currency seek exposure to external sovereign bonds without the added volatility of the underlying EM currencies. It is common for hard currency EMD strategies to have “off-benchmark” allocations to other EM-related sectors, such as quasi-sovereign, local currency debt, EM currency, and corporate credit in an effort to bolster the risk/return profile. Hard currency strategies tend to have a smoother return profile versus local currency strategies given the absence of unhedged EM currency volatility.
- Most of the risk in this asset class is attributed to credit and rates exposure. Spreads in this asset class have continued to narrow. Since 2010, spreads have ranged between 237 and 507 bps (328 bps as of October 31st). Additionally, external sovereign issuance has been slowing as EM countries have issued more debt in local rates markets.
- Managers who took more risk than the benchmark were generally not rewarded with higher returns; this is visible in the negative relationship between risk and return. The proportion of managers that were able to outperform the benchmark increased in the 3- and 5-year periods.

EMBI SPREADS (HARD CURRENCY)

Source: JPMorgan, Bloomberg, as of 11/8/19

EMERGING MARKET DEBT (HARD)



Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the JP Morgan EMBI Global Diversified

Fixed income – Emerging market debt (local)

— Although volatile, EM local currency bonds present investors with a unique opportunity to invest in an asset class that may provide enhanced returns compared to other credit markets that do not have a currency component. EM local currency bonds also offer a diversification benefit through unhedged EM currency exposure. Local currency emerging markets debt is often subject to heightened volatility, often caused by changes in investor sentiment, risk-on/risk-off investor behavior, geopolitical factors, idiosyncratic country stories and other global macroeconomic factors.

— While many investors have remained cautious given the trade tensions between the U.S. and China, performance for the asset class has been positive YTD 2019 given the positive backdrop for risk assets. Additionally, the relatively widespread rate cuts across EM central banks also contributed. Spreads across various EMD subsectors have experienced tightening YTD.

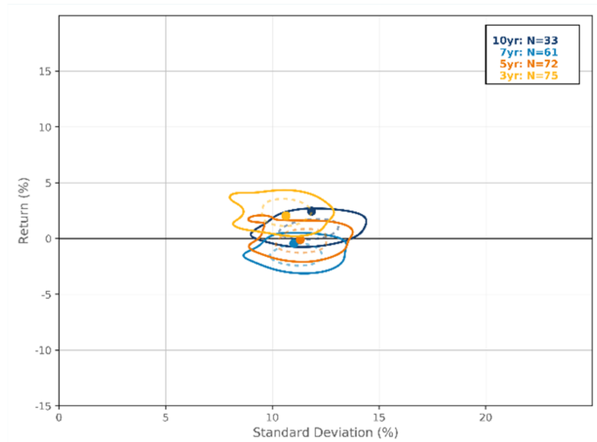
— Risk-taking throughout recent time periods has been somewhat uniform across managers in the universe. Oftentimes, large exposures to off-benchmark allocations can negatively impact performance as spreads widen in other EMD subsectors. Recently, more managers have been able to outperform the benchmark. Over the long-term there has been a slightly positive relationship between risk and return, although this has leveled off more recently.

INDEX COMPONENT RETURNS

	YTD	Spread		Yield	
	Return	Current Level	YTD Change	Current Level	YTD Change
JPM EMBI GD	**13.30%**	**328 bps**	**-86 bps**	**5.09%**	**-1.77%**
Investment Grade	15.59%	163 bps	-60 bps	3.52%	-1.49%
High Yield	10.95%	549 bps	-87 bps	7.22%	-1.80%
JPM GBI EM GD	**10.98%**	-	-	**5.13%**	**-1.33%**
Local FX	3.49%	-	-	-	-
JPM CEMBI BD	**11.58%**	**298 bps**	**-54 bps**	**4.64%**	**-1.50%**
Investment Grade	11.92%	175 bps	-52 bps	3.47%	-1.45%
High Yield	11.08%	540 bps	-10 bps	6.99%	-1.09%

Source: JPMorgan, as of 10/31/19

EMERGING MARKET DEBT (LOCAL)



Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the JP Morgan GBI-EM Global Diversified

U.S. REITs

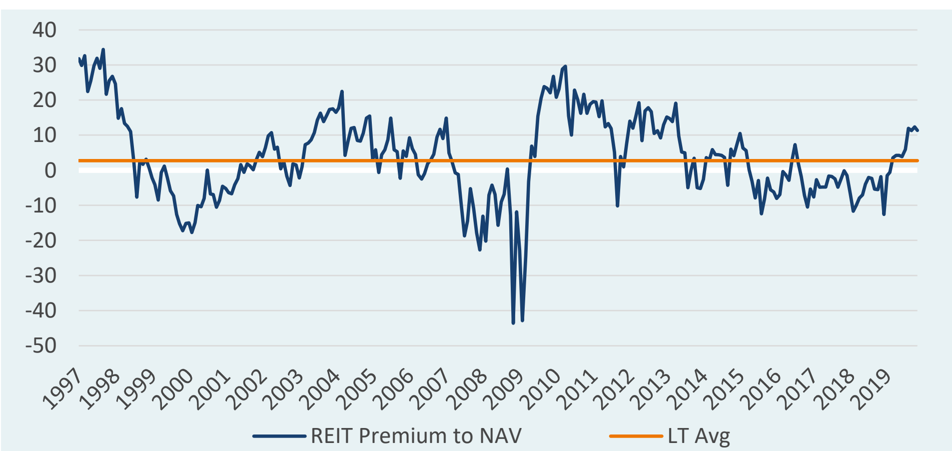
— Over long time periods, more active products have added value through the reduction of volatility rather than through excess returns. In recent years however, active management has provided both increased returns and a reduction in volatility relative to the index.

— In 2019, REITs exhibited strong performance, up nearly 27% through November, matching the S&P 500 and outperforming small cap & non-U.S. stocks as well as other yield-oriented securities and other real assets.

— U.S. REITs trade on average at a slight premium to net asset value (NAV). In 2019, REITs moved from a discount of approximately 12% to a premium of 11%. Swings of this magnitude are not uncommon over short periods. REITs will often trade on sentiment and along with the broader equity markets rather than purely on fundamentals.

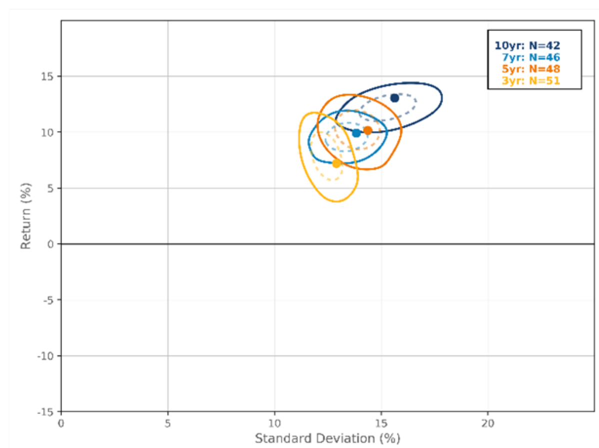
— Real estate market fundamentals remain mostly healthy, although some weaknesses are showing in the retail sector. Valuations appear stretched from a historical perspective, although cap rate spreads to Treasuries remain moderate as Treasury rates have trended lower while real estate cap rates remained relatively flat.

REIT VALUATIONS (PREMIUM TO NAV)



Source: JPMorgan, as of 11/27/19

U.S. REITS

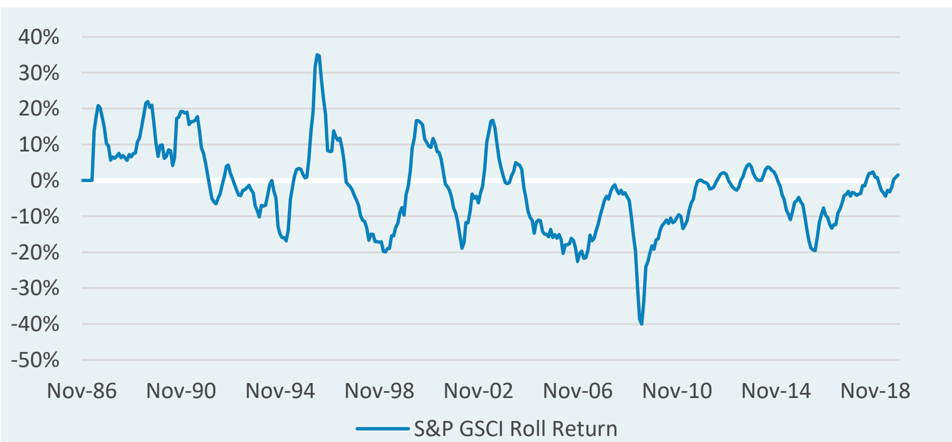


Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the Wilshire REIT

Commodities

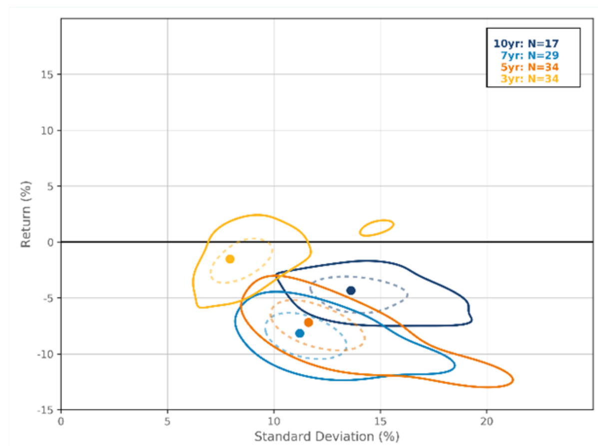
- Commodities have underperformed other major asset classes again in 2019 as inflation trends and fears of future inflation have been relatively muted. Concerns over a global slowdown in growth have weighed on demand projections as well.
- Active management within commodity space tends to exhibit a high dispersion of results as there are a wide variety of strategy types available. Strategies that look to mitigate negative roll yields and contango through term structure management have continued to add value over standard indexes.
- The roll yield environment has been modestly negative to flat over the last couple of years, a slight improvement over the steep contango experienced in years past.

6-MONTH ANNUALIZED ROLL YIELD



Source: Standard & Poor's, as of 10/31/19

COMMODITIES



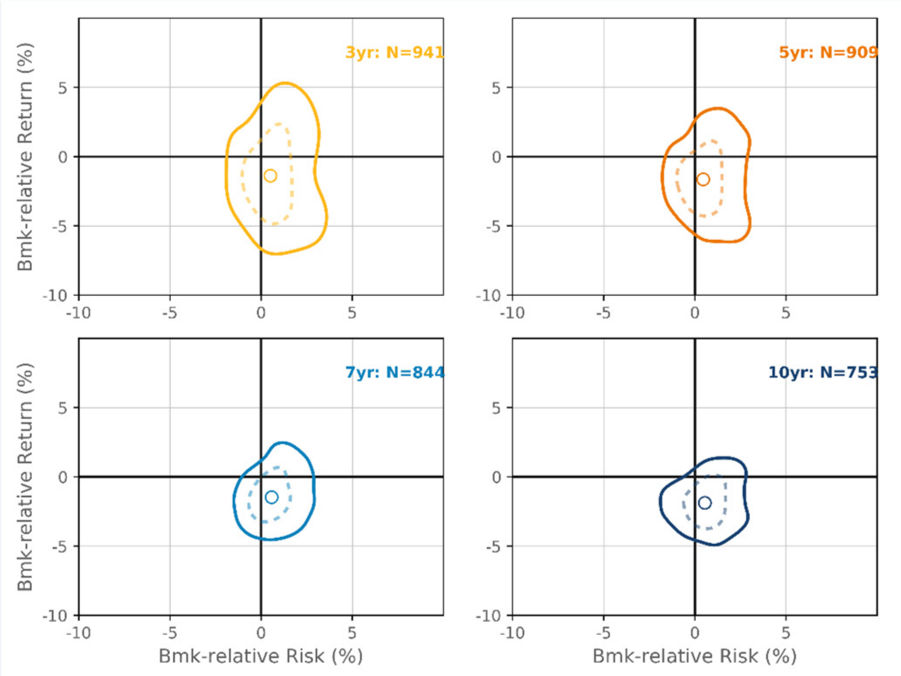
Source: eVestment, as of 9/30/19. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the Bloomberg Commodities

Appendix

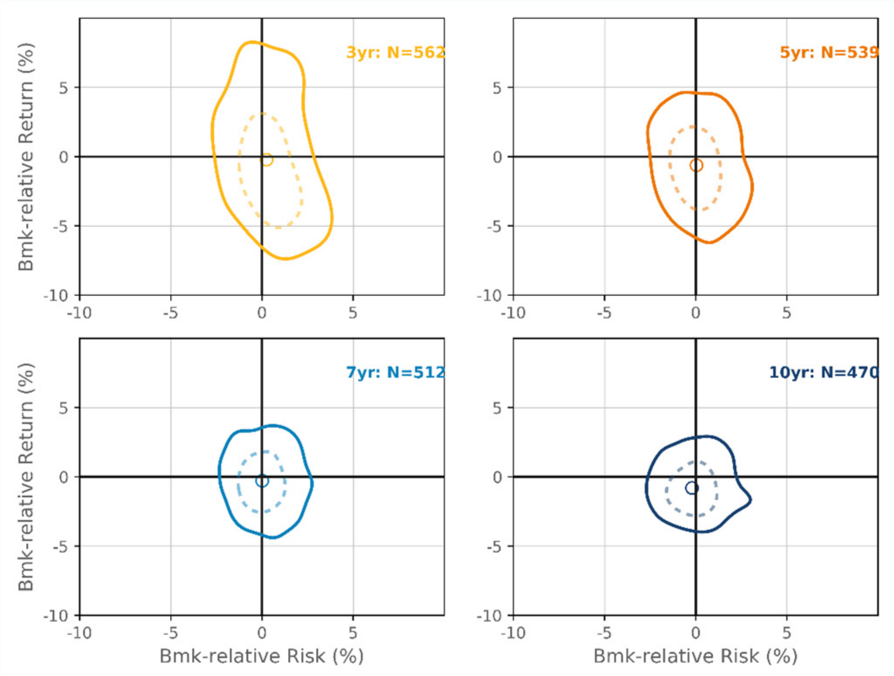
Supplementary Universe Charts

U.S. equity

U.S. LARGE CAP



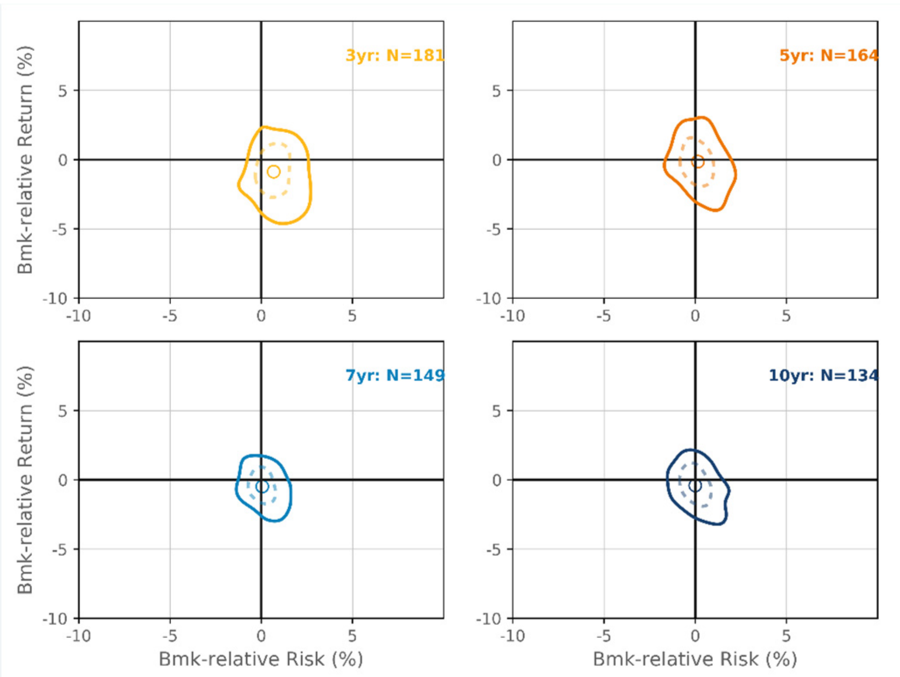
U.S. SMALL CAP



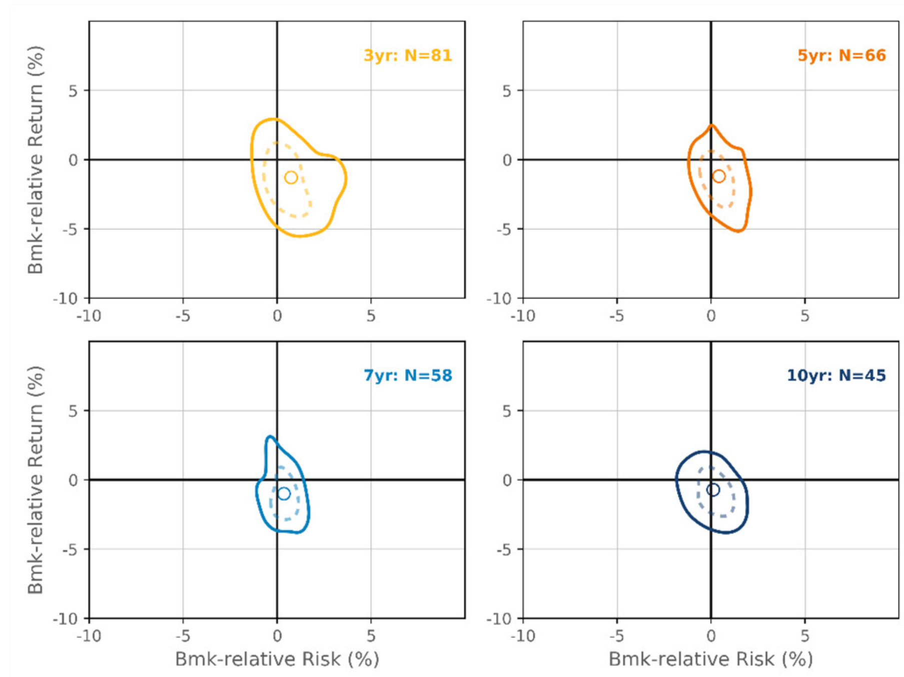
Source: eVestment, Verus, as of 9/30/19, center circle indicates median manager

International equity

INTERNATIONAL DEVELOPED



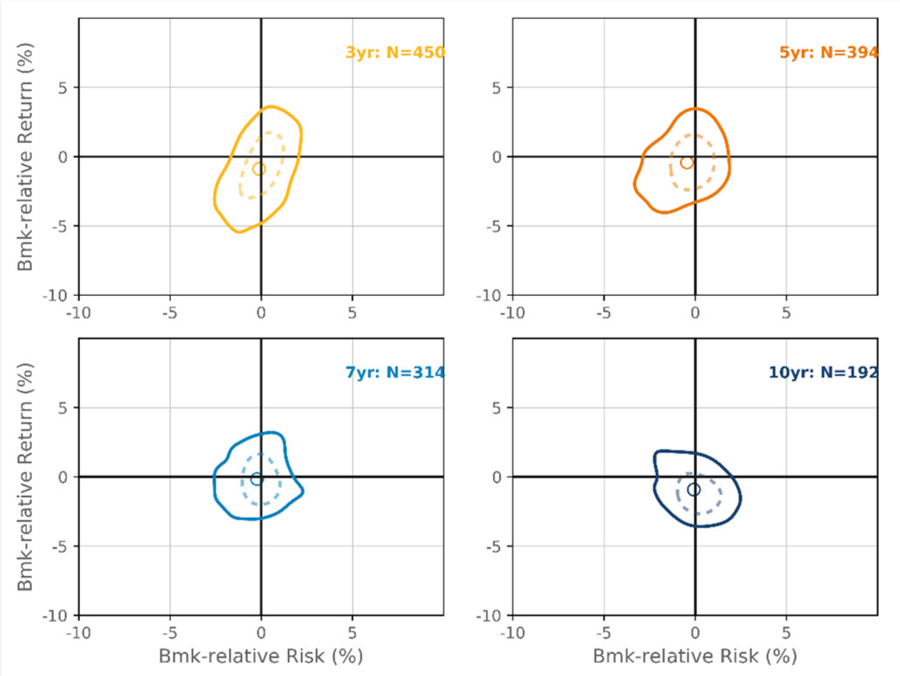
INTERNATIONAL DEVELOPED SMALL



Source: eVestment, Verus, as of 9/30/19, center circle indicates median manager

Emerging market equity

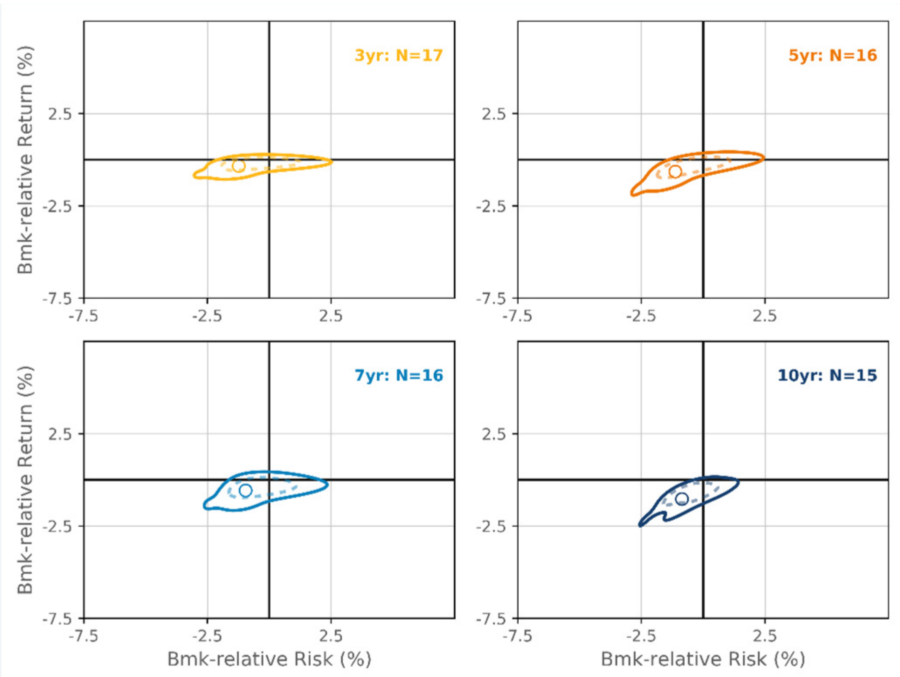
EMERGING MARKET EQUITY



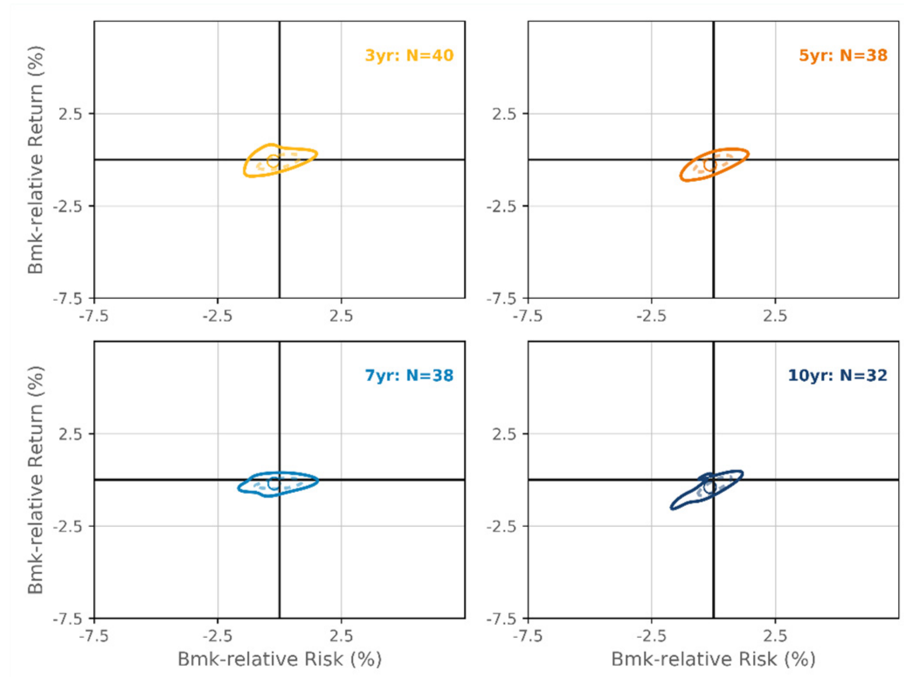
Source: eVestment, Verus, as of 9/30/19, center circle indicates median manager

U.S. rates

U.S. TREASURIES



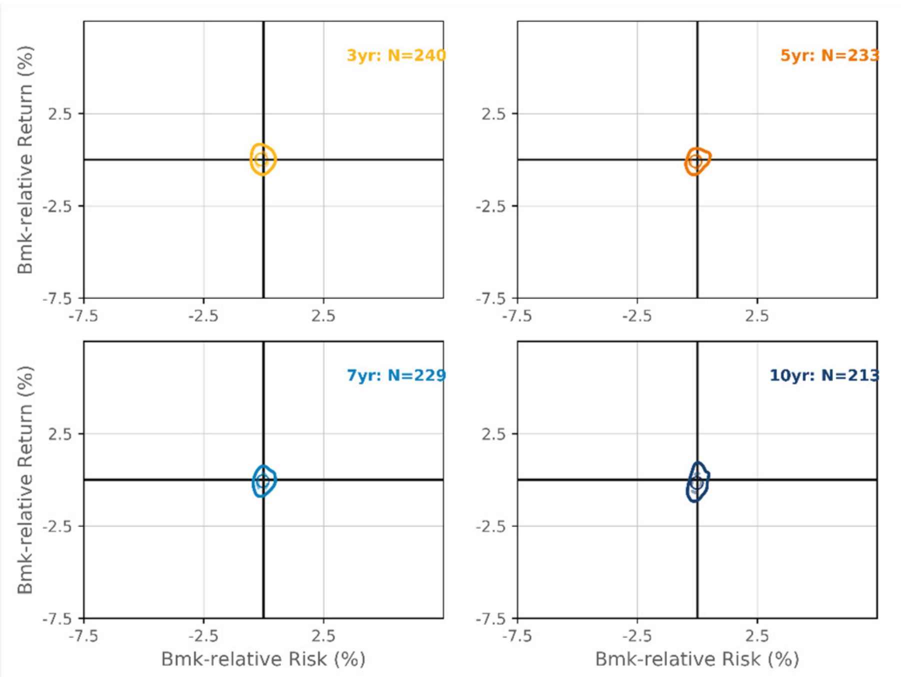
U.S. TIPS



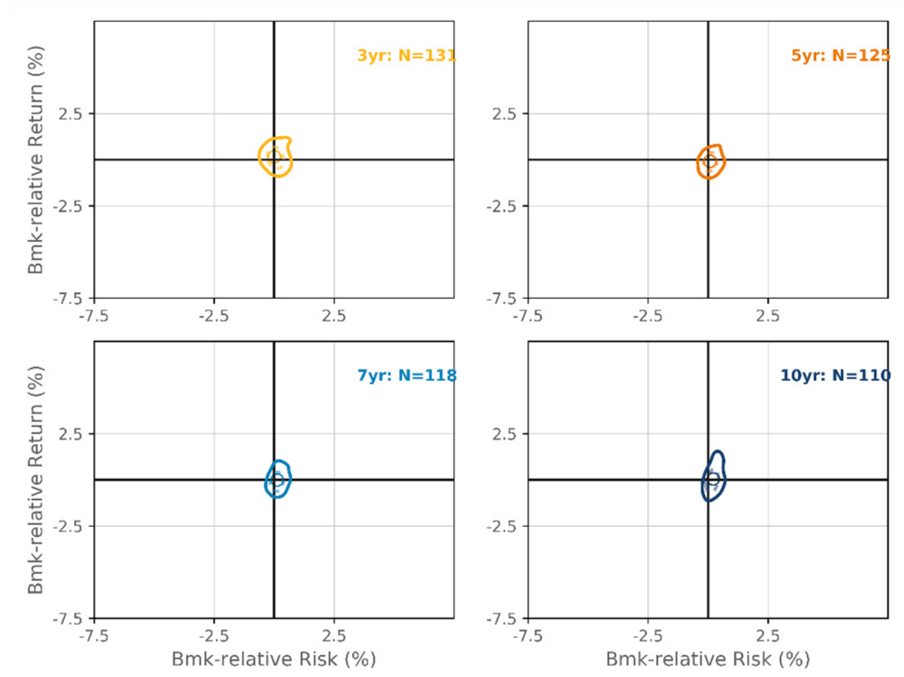
Source: eVestment, Verus, as of 9/30/19, center circle indicates median manager

U.S. fixed income

U.S. CORE



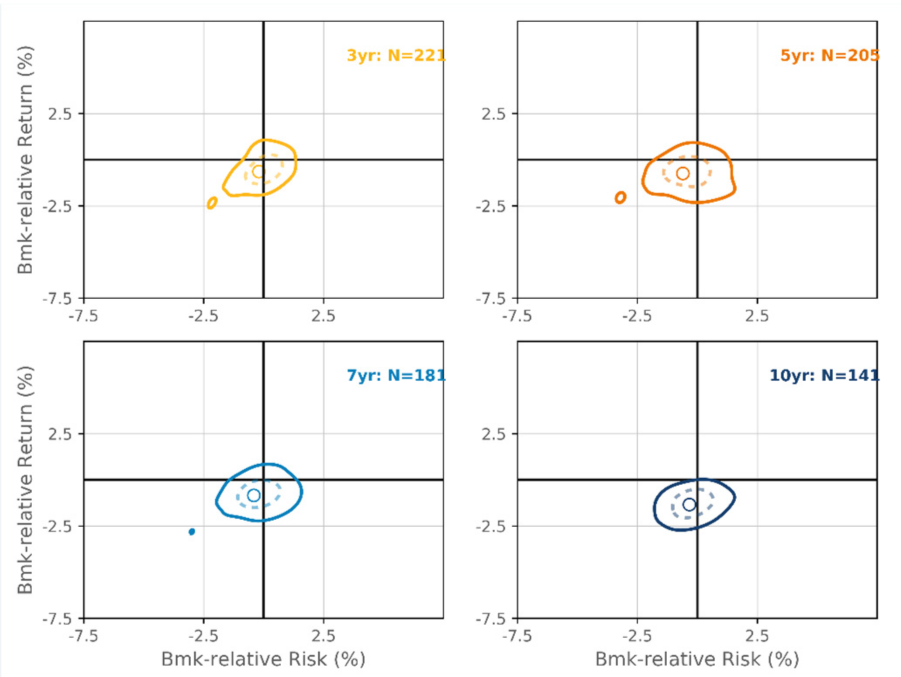
U.S. CORE PLUS



Source: eVestment, Verus, as of 9/30/19, center circle indicates median manager

U.S. fixed income (con't)

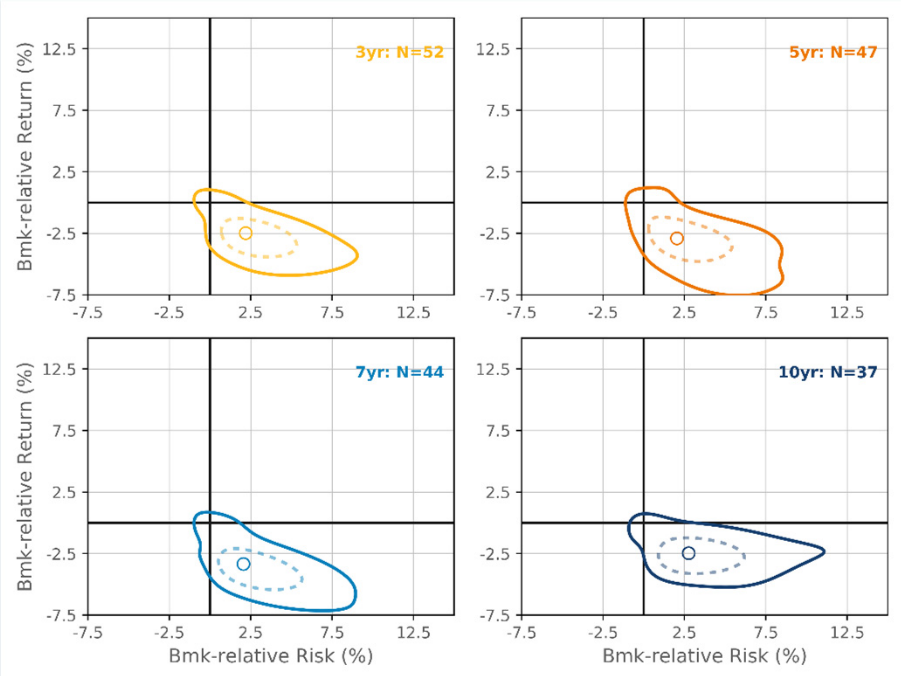
U.S. HIGH YIELD



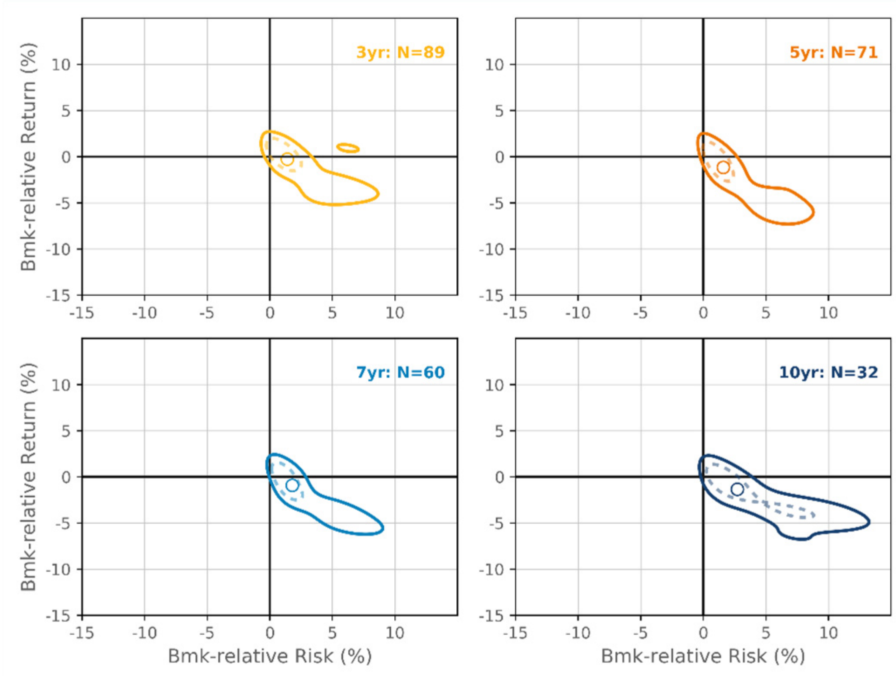
Source: eVestment, Verus, as of 9/30/19, center circle indicates median manager

Global bonds

GLOBAL SOVEREIGN



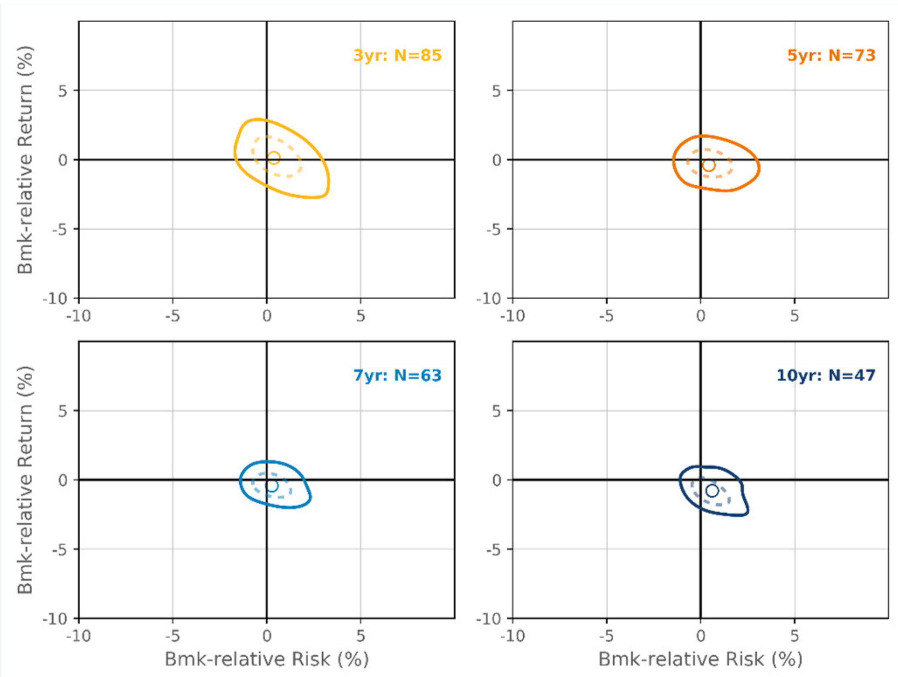
GLOBAL CREDIT



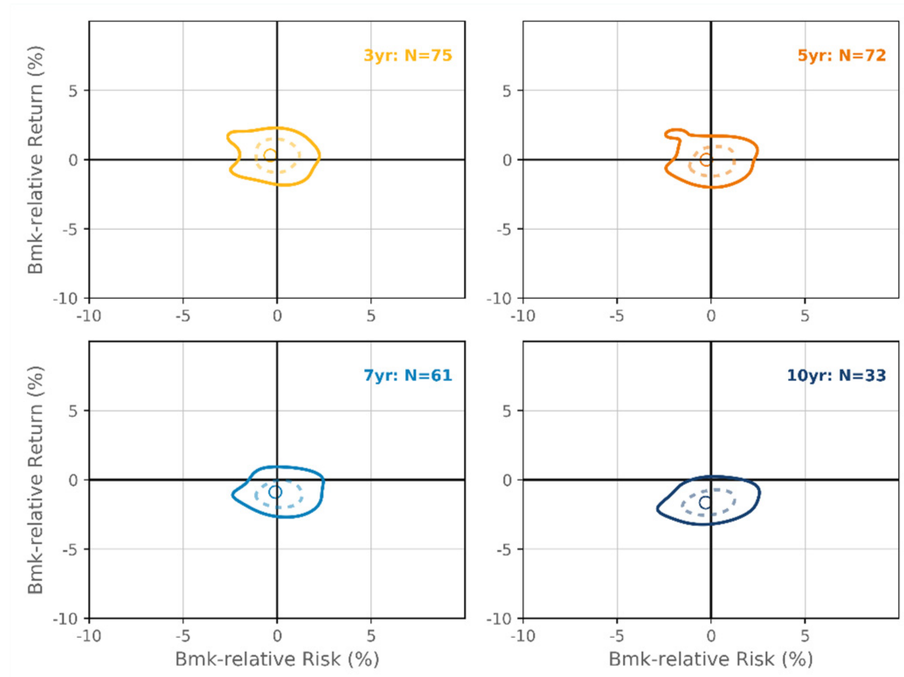
Source: eVestment, Verus, as of 9/30/19, center circle indicates median manager

Emerging market debt

EMERGING MARKET DEBT (HARD)



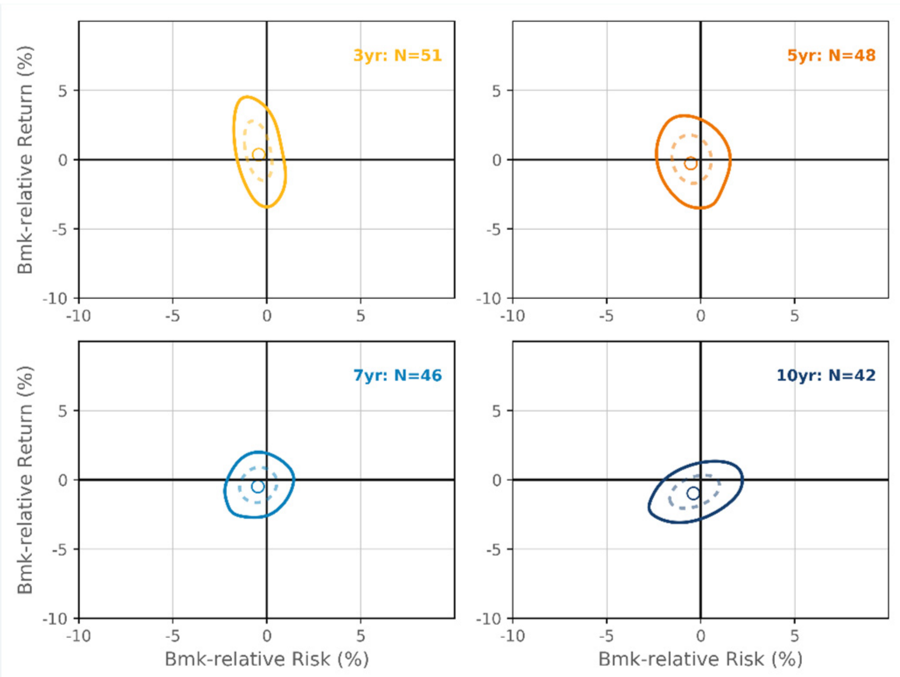
EMERGING MARKET DEBT (LOCAL)



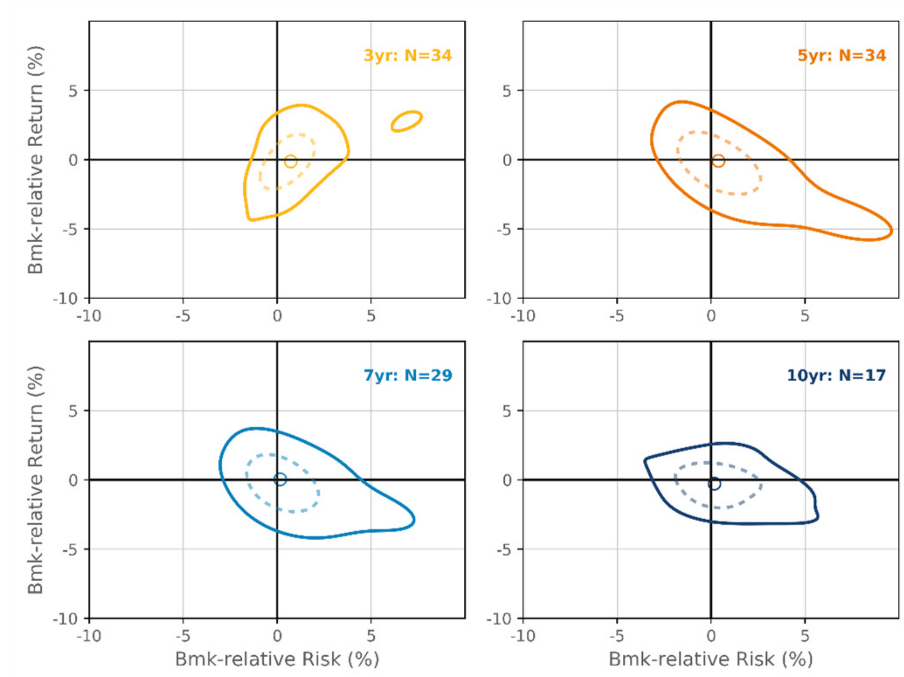
Source: eVestment, Verus, as of 9/30/19, center circle indicates median manager

Other

U.S. REITS



COMMODITIES



Source: eVestment, Verus, as of 9/30/19, center circle indicates median manager

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