

Table of Contents



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Introduction	;
Asset class environments	(
Appendix: Supplementary universe charts	2:

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/2019/02/Active-Management-Environment-Supporting-Material.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.

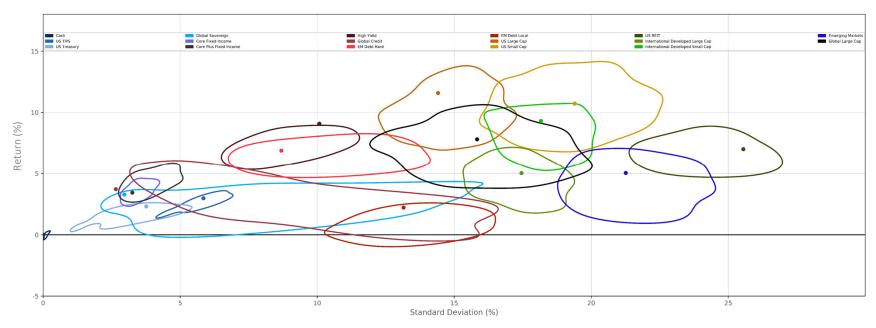
Using median product (median manager) performance to decide whether active management is beneficial can be misleading. This new tool can help investors make more informed decisions.



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 1% and 13% return and between 2% and 28% 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

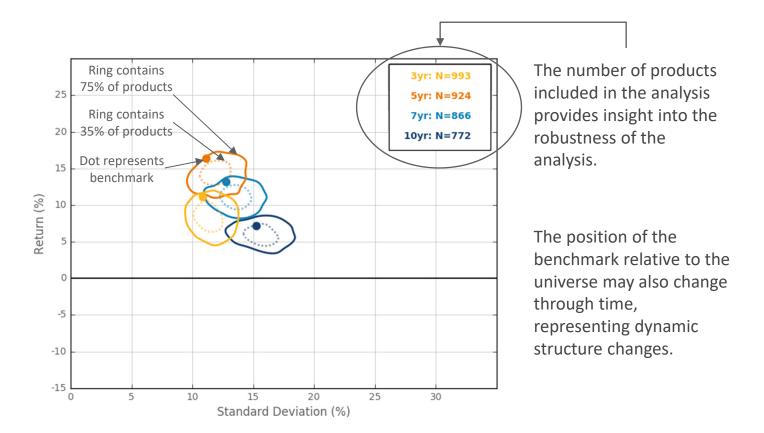


This represents 10-year product performance data and 75% contour areas. Source: eVestment, as of 9/30/18. Universe returns have been adjusted for fees and survivorship bias.



How to read a universe chart

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



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

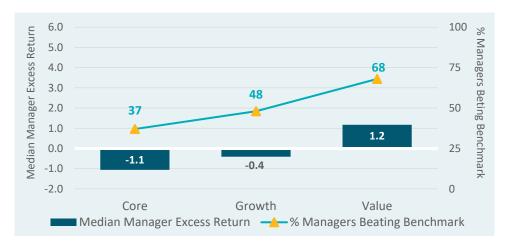
Note: Universes are defined at the broadest level. Products vary in terms of style and/or treatment of currency exposure. Equity universe include both value and growth styles. International universes may include both products that hedge currency exposure and products that do not hedge currency exposure.



Equities – U.S. large cap

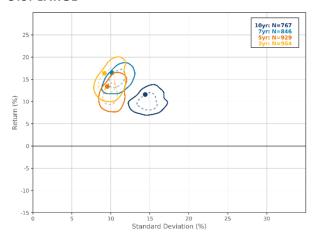
- The evidence suggests that U.S. large cap equity has been a fairly efficient asset class over the trailing 3-, 5-, 7- and 10-year time periods. The benchmark tends to exhibit less volatility than the universe. Some products have been able to produce better returns even at this lower level of volatility, but most active products have simply increased volatility exposure. There seems to be a weak relationship between additional volatility and achieving additional return.
- Through the first three quarters of 2018, the median large cap value product stood out, generating a meaningfully positive excess return. Meanwhile, the median large cap core and large cap growth products lagged their respective benchmarks.
- Relative to last year, the large cap environment has generally been less favorable to active managers with 37% of core, 48% of growth, and 68% of value products outperforming their respective benchmarks (through September 30th), gross of fees. Last year, 46% of core, 47% of growth and 83% of value products produced positive excess returns.

ACTIVE PRODUCT PERFORMANCE YTD



Source: eVestment, as of 9/30/18, gross of fees

U.S. LARGE



Source: eVestment. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the S&P 500



Equities – U.S. small cap

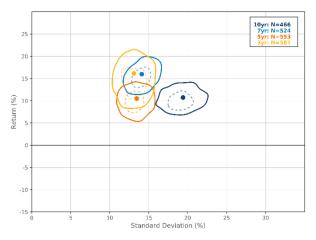
- Over longer time periods, when compared to their larger cap counterparts, fewer U.S. small cap products assumed greater risk relative to the benchmark. Simultaneously, there appears to be some evidence that U.S. small cap products have been able to produce excess return over most time periods, and to be able to do so more efficiently than in the U.S. large cap space.
- Through the first three quarters of 2018, the median small cap growth product significantly outperformed the benchmark. Meanwhile, the median small cap core and small cap value products lagged their respective benchmarks.
- Relative to last year, the small cap environment has generally been mixed for active managers with 42% of core, 77% of growth and 34% of value products outperforming their respective benchmarks (versus 42%, 59% and 65%, respectively, last year), gross of fees.

ACTIVE PRODUCT PERFORMANCE YTD



Source: eVestment, as of 9/30/18, gross of fees

U.S. SMALL



Source: eVestment. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the Russell 2000



Equities – International developed

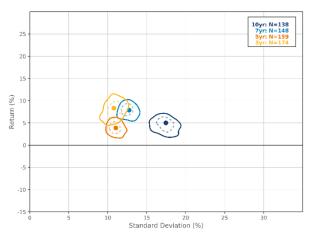
- With the exception of the longer period including the global financial crisis, actively managed international developed equity products were as likely to outperform the benchmark as to underperform. We observe a negligible relationship between risk and return in this asset class.
- During the latest year, emerging markets were generally a drag on performance, and the MSCI EAFE benchmark fared better than MSCI ACWI ex-US.
- The disparity between value and growth is apparent in developed international markets with value products struggling to add value over the benchmark. For both MSCI ACWI ex-US and MSCI EAFE universes, only 29% of active value strategies beat the benchmark during the last year. This contrasts with growth oriented strategies where 86% of MSCI ACWI ex-US strategies beat the benchmark and 70% of MSCI EAFE strategies beat the benchmark.

1-YEAR RETURNS



Source: MSCI, eVestment as of 9/30/18

INTERNATIONAL LARGE



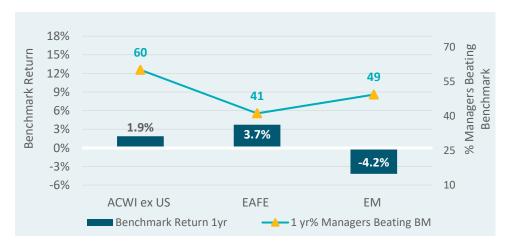
Source: eVestment. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the MSCI EAFE



Equities – International developed small cap

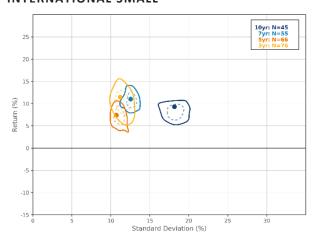
- During longer time periods that exclude the global financial crisis, active international small cap managers were as likely to add value over the benchmark as to underperform. During the recent 3-year period, managers were more challenged with a greater proportion falling short of the benchmark. During all periods, there appears to be a negligible relationship between return and the level of excess risk taken.
- During the past year, active management appears to have been most successful when a manager is given the broadest remit possible with 60% of products beating an MSCI ACWI ex-US benchmark.
- Despite a volatile environment in emerging markets, nearly half of emerging markets small cap managers were able to add value over the MSCI Emerging Markets Small Cap Index.

DEVELOPED AND EMERGING MARKETS - 1-YEAR RETURNS



Source: MSCI, eVestment, as of 9/30/18

INTERNATIONAL SMALL



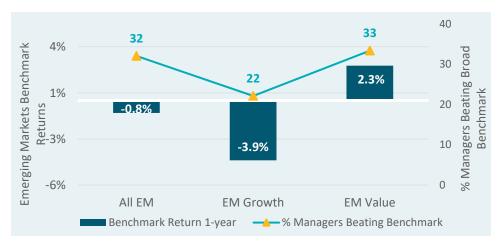
Source: eVestment. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the MSCI EAFE Small



Equities – Emerging markets

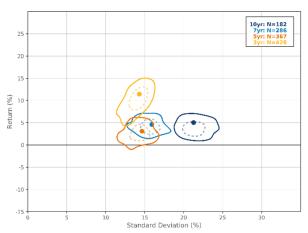
- The many disparate forces at play in emerging markets have made it a challenging place for active managers to add value over shorter and longer periods. After enjoying strong performance in 2016 and 2017, the benchmark posted a negative return in 2018.
- The 3-year return chart suggests that managers taking more risk than the benchmark were about equally likely to outperform as underperform. Managers taking less risk than the benchmark didn't fare as well, with a large portion underperforming. This is a recent phenomenon and is quite different to longer term data which show a much weaker relationship between risk and return.
- Emerging markets performance during the latest year reflects outperformance of the value style over growth although value has underperformed over longer periods. Quality oriented products, which tend to exhibit lower standard deviation, have struggled during the latest three years as products exhibiting greater risk were rewarded.

GROWTH AND VALUE 1-YEAR RETURNS



Source: MSCI, eVestment as of 9/30/18

EMERGING MARKETS



Source: eVestment. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the MSCI EM



Fixed income – U.S. TIPS

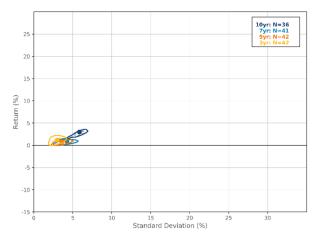
- Over each time period examined, the U.S. TIPS asset class has been highly efficient, with active products producing minimal added value relative to the benchmark. The active universe has experienced a tight distribution of outcomes relative to the benchmark. In most time periods there appears to be a modest upward tilt to the universe, suggesting a small amount of compensation for products that take extra risk relative to the benchmark. Over the past three-years, active management in TIPS has been able to add return. TIPS strategy performance is oftentimes broadly homogenous with little differentiation.
- Although TIPS are considered a "real return" instrument, these securities possess a high duration, making them sensitive to interest rate
 movement.
- Rising inflation expectations should lead to increased investor demand for TIPS and other inflation sensitive assets.
- While active management in TIPS has provided little excess return relative to the benchmark, TIPS exposure may still provide some diversification and risk management benefits.

U.S. BREAKEVEN INFLATION RATES



Source: Bloomberg, as of 11/30/18

U.S. TIPS



Source: eVestment. 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

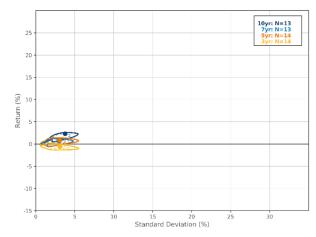
- While the active management universe for U.S. Treasuries demonstrated less dispersion relative to U.S. TIPS, the risk-reward tradeoff remains mostly consistent across time periods examined. Active product returns are highly correlated to volatility. Active products typically produce lower returns than the benchmark but with less volatility, and there appears to be a positive relationship between volatility and return.
- The universe for actively managed strategies is low compared to other asset classes (only 13-14 strategies over the time periods shown).
- In the U.S., the Fed continued hiking rates, but lowered its forecast for rate hikes in 2019 from three to two. The market is pricing in a pause to tightening in 2019 and then rate cuts in 2020.
- Active management in this space is directly related to the risk environment. The very clear relationship between risk and return over multiple time periods, unlike most other asset classes, leaves the investor with a relatively clear risk management payoff decision to make.

U.S. YIELD CURVE



Source: FRED, as of 12/31/18

U.S. TREASURY



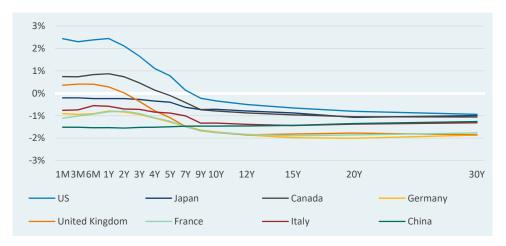
Source: eVestment. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the BBqBarc U.S. Treasury 7-10 Year



Fixed income – Global sovereign

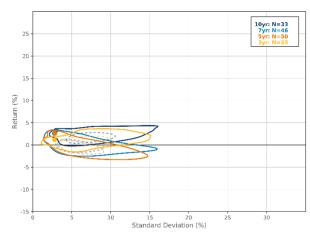
- Dispersion of global sovereign active products has been wide, possibly due to rising idiosyncratic risks, divergent global central bank policies, and increased currency volatility. Active products were able to add volatility, but rarely were able to generate compensation for that volatility. Over more recent periods (3-year) these products have produced higher excess returns while taking more risk than the benchmark in 5- and 7-year periods.
- Global bonds have historically provided interest rate diversification benefits within fixed income portfolios. Developed market yields have remained low over the past few years due to the continuation of easy monetary policy. Global rates are expected to rise as central banks shift towards normalization.
- Many products use off-benchmark securities, such as credit and currency, in an attempt to add value relative to a sovereign-only benchmark.
 It remains unclear whether the results of these exposures should truly be attributed to benchmark-relative performance, or should be thought of differently.

YIELD CURVE CHANGES OVER LAST FIVE YEARS



Source: Bloomberg, as of 10/31/18

GLOBAL SOVEREIGN



Source: eVestment. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the BBqBarc Global Treasury ex U.S.



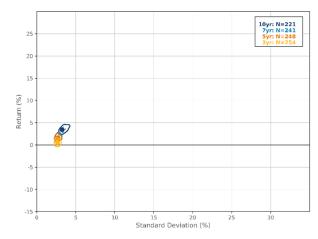
Fixed income – U.S. core

- 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.
- Core bond strategies are composed of a diversified mix of U.S.-dollar-denominated investment-grade fixed income securities. Active core fixed income managers seek to add value by managing various risk exposures including duration, yield curve, sector allocation, and security selection. Option-adjusted spreads across most fixed income sub-sectors have remained relatively tight to their historic averages over the year before widening in the third and fourth quarter of 2018. Most core strategies continue to maintain exposures to off-benchmark sectors (i.e. high yield, municipal bonds, esoteric ABS, and non-agency MBS) with the goal of increasing yield while maintaining a quality bias.
- The chart below shows us that despite active management, return dispersion remains tight, suggesting there is little differentiation in outcomes within the universe. However, we believe that an active approach to core fixed income helps investors effectively navigate risk in difficult market environments, manage liquidity more prudently and fundamentally analyze credit from the bottom-up, avoiding idiosyncratic risks.

SECTOR SPREADS



U.S. CORE



Source: eVestment. Universe returns have been adjusted for fees and survivorship bias.

Benchmark displayed is the BBgBarc U.S. Aggregate Bond

Source: Barclays, as of 12/31/18



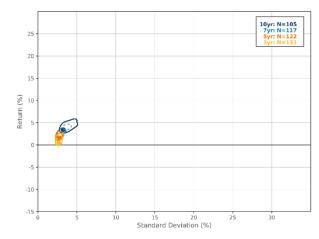
Fixed income – U.S. core plus

- Over the time periods shown, the core plus fixed income universe has demonstrated higher dispersion than the core bond universe. More recently, as developed market interest rates have declined, dispersion has decreased due to the lack of volatility in fixed income markets. Traditionally, core plus products are underweight U.S. Treasury and government bonds relative to the benchmark and have overweight exposures to both IG credit and lower quality non-U.S. dollar-denominated bonds. This trend has shifted more heavily during 2018 as spreads across plus sectors tightened substantially and investment managers prepare for late credit cycle behavior.
- Over the long-term, there seems to be a positive trade-off between risk and return within the space.
- More recently, as market volatility has increased, core plus strategies with exposures to higher beta assets have reallocated to higher quality securities
 due to diminishing compensation for higher risk securities.
- Based on the chart below, the role of active management in the core plus fixed income space, while generally limited, is predicated on the belief that products can add value through security selection and sector rotation while minimizing volatility. Although dispersions in the space remain tight, we value active management for the ability to avoid idiosyncratic risk and prudently manage liquidity in various market environments.

IG SECTOR SPREADS

2018	2017	2016	2015	2014	2013	2012
Bank Loans	EMD Local	High Yield	EMD Hard	US Credit	High Yield	EMD Hard
0.44	15.21	17.13	1.18	7.53	7.44	17.44
Core 0.01	EMD Hard 10.26	Bank Loans 10.16	Core 0.55	EMD Hard 7.43	Bank Loans 5.29	EMD Local 16.76
Global Sovereign	High Yield	EMD Hard	Bank Loans	Core	US Credit	High Yield
-0.84	7.50	10.15	-0.69	5.97	-2.01	15.81
High Yield	Global Sovereigr	EMD Local	US Credit	High Yield	Core	Bank Loans
-2.08	7.49	9.94	-0.77	2.45	-2.02	9.66
US Credit	US Credit	US Credit	Global Sovereigr	Bank Loans	Global Sovereign	US Credit
-2.11	6.18	5.63	-3.57	1.60	-4.00	9.37
EMD Hard	Bank Loans	Core 2.65	High Yield	Global Sovereigr	EMD Hard	Core
-4.26	4.12		-4.47	-0.48	-5.25	4.22
EMD Local	Core	Global Sovereigr	EMD Local	EMD Local	EMD Local	Global Sovereigr
-6.21	3.54	1.60	-14.92	-5.72	-8.98	1.65

CORE PLUS



Source: eVestment. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the BBgBarc U.S. Corporate IG

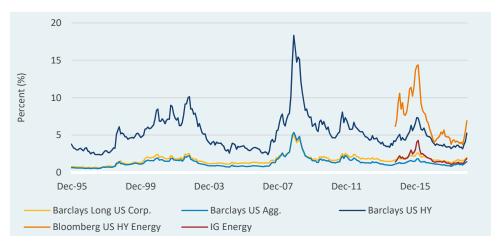
Source: eVestment, as of 12/31/18



Fixed income – U.S. high yield

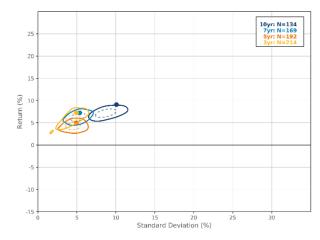
- Over most periods examined, active products in the high yield space have demonstrated greater dispersion around the benchmark compared to core and core plus products. Over longer periods, greater volatility appears to be associated with slightly higher returns. However, it should be noted that over longer time periods little of the universe remains above the benchmark return level and the amount of compensation for risk taken has been minimal.
- High yield bond spreads have recently widened after a prolonged period of tight spreads in 2017 due to what can be characterized as a risk-off trade driven by slowing global growth indicators. U.S. corporate balance sheets are generally healthy (slight uptick in leverage) and default activity is expected to remain below average in the coming year.
- High yield bond market volatility is highly correlated to the economic business cycle. Avoiding idiosyncratic risks resulting from ratings downgrades or defaults is an important consideration for active management.

SPREADS



Source: Barclays, Bloomberg, as of 12/31/18

U.S. HIGH YIELD



Source: eVestment. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the BBqBarc U.S. Corporate High Yield



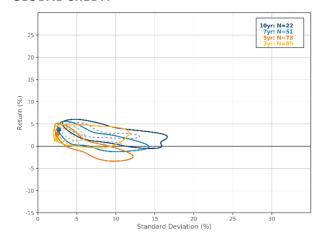
Fixed income - Global credit

- Over all time periods examined, the global credit active product universe has demonstrated a high degree of dispersion relative to the benchmark. Over longer periods, few products have provided excess returns with lower volatility than the benchmark. More recently, as volatility has increased, there has been a negative correlation between additional risk taken and excess returns generated.
- Over longer time periods, there appears to be little to no relationship between risk and return.
- Interest rates in developed markets remain below their long-term historical average as global central bank monetary policies remain accommodative. In an effort to provide excess returns, active products continue to take off-benchmark exposures.
- During periods of heightened market volatility and 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 CREDIT



GLOBAL CREDIT



Source: eVestment. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the BBaBarc Global Credit

Source: eVestment, as of 9/30/18



Fixed income – Emerging market debt (hard)

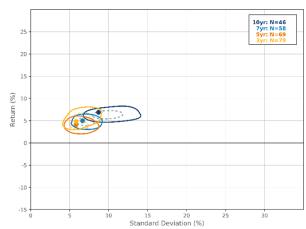
- Products in the emerging market debt (EMD) hard currency universe have shown mixed results in terms of delivering excess returns relative to the benchmark. Over short time periods, there has been a slightly positive relationship between risk and return, but over longer periods, this relationship has flattened out. There does not appear to be a largely positive relationship between the returns generated and the risk taken.
- Products in the universe have historically included off-benchmark exposures to quasi-sovereign, local currency debt, FX and hard currency corporate credits in an effort to increase returns.
- EMD hard currency volatility peaked in mid-2018 due to idiosyncratic country-specific issues (namely Turkey, Argentina, among others). The asset class has stabilized for the most part since second quarter 2018. While concerns over geopolitical and idiosyncratic risks remain, the primary source of EM debt volatility continues to be the Federal Reserve and U.S. dollar movement.

EMD CALENDAR YEAR RETURNS

2013	2014	2015	2016	2017	2018
Corporate	External	Corporate	Blend	Local	Corporate
-0.60	7.43	1.30	10.16	15.21	-1.65
External	Corporate	External	External	Blend	External
-5.25	4.96	1.18	10.15	12.74	-4.26
Blend	Blend	Blend	Local	External	Blend
-7.10	0.71	-7.14	9.94	10.26	-5.15
Local	Local	Local	Corporate	Corporate	Local
-8.98	-5.72	-14.92	9.65	7.96	-6.21

Source: JPMorgan, eVestment, as of 12/31/18

EMERGING MARKET DEBT (HARD)



Source: eVestment. 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)

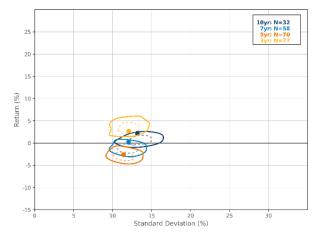
- Over longer time periods, there has been a slightly positive relationship between risk and return in the emerging market debt (EMD) local universe. Over recent periods, returns for the asset class have been higher, with more strategies outperforming the benchmark.
- EMD is a volatile asset class and performance can be driven by a variety of factors, including investor sentiment, idiosyncratic behavior, and macro
 forces. Performance has recently been lifted by synchronized global growth, healthy inflows into the asset class and a positive global macroeconomic
 backdrop.
- EMD local currency bonds have historically provided investors with compelling returns relative to other credit-related sectors. The primary source of
 excess return has been interest rates, while emerging market currency movements have dominated the directionality of the total return for the asset
 class.
- Products in the space that have benefited from taking large exposures to off-benchmark allocations have been negatively impacted as EMD spreads widen.

INDEX COMPONENT RETURNS

	Return	Spread		Yield	
	Ketuiii	Current Level	YTD Change	Current Level	YTD Change
JPM EMBI GD	-4.26%	415 bps	+130 bps	6.86%	1.59%
Investment Grade	-2.41%	226 bps	+70 bps	5.03%	0.99%
High Yield	-6.22%	636 bps	+217 bps	9.02%	2.46%
JPM GBI EM GD	-6.21%	-	-	6.46%	0.32%
Local FX	-9.10%	-	-	-	-
JPM CEMBI BD	-1.65%	352 bps	+128 bps	6.14%	1.61%
Investment Grade	-0.59%	227 bps	+63 bps	4.92%	0.93%
High Yield	-2.94%	550 bps	+212 bps	8.08%	2.50%

Source: JPMorgan, as of 12/30/18

EMERGING MARKET DEBT (LOCAL)



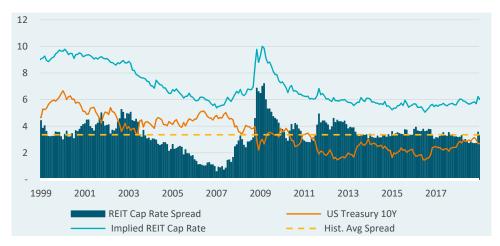
Source: eVestment. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the JP Morgan GBI-EM Global Diversified



U.S. REITs

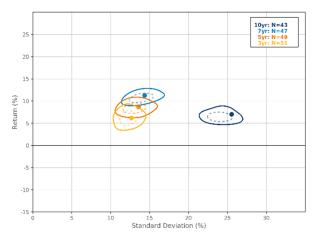
- Active products have added value over most time periods primarily through the reduction of volatility, rather than an increase in excess returns.
- In 2018, U.S. REITs slightly underperformed broader equities by -0.4% (-4.8% vs. -4.4%). Late in the year, however REITs were outperforming during the equity market pullback. During the 4th quarter, U.S. REITs were down only -6.9% vs -13.5% for the S&P 500 Index.
- Valuations, as measured by implied REIT cap rate spreads appear to be fairly valued and near the historical average.
- Real estate market fundamentals in most sectors are healthy, though valuations appear stretched. Year-over-year net operating income
 (NOI) growth remains positive, although it has moderated a bit. Oversupply issues are beginning to impact multifamily rental growth which could put downward pressure on valuations.

VALUATIONS



Source: JPMorgan, as of 12/31/18

U.S. REITS



Source: eVestment. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the Wilshire REIT



Commodities

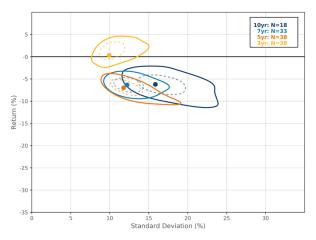
- Active management in the commodities space tends to be most effective for strategies that are looking to mitigate risk and volatility. Actively managing the term structure to minimize effects of contango and negative roll yields has added value over time.
- Commodities continued to underperform in 2018, driven by muted inflation and inventory overhang. A slowing global growth environment and specifically slowing growth in China, over the 2nd half of 2018 weighed on metals and energy.
- The roll yield environment has improved in the 2nd half of 2018 and ended the year slightly positive, which should be a lower drag on returns going forward.

6-MONTH ANNUALIZED ROLL YIELD



Source: S&P, as of 12/31/18

COMMODITIES



Source: eVestment. Universe returns have been adjusted for fees and survivorship bias. Benchmark displayed is the Bloomberg Commodities



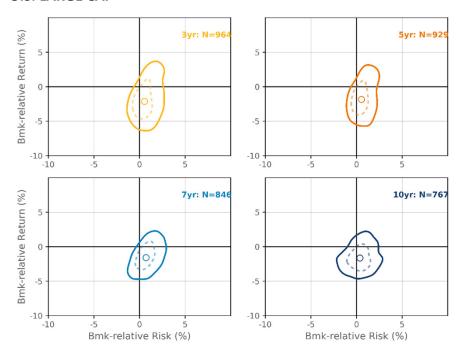
Appendix

Supplementary Universe Charts

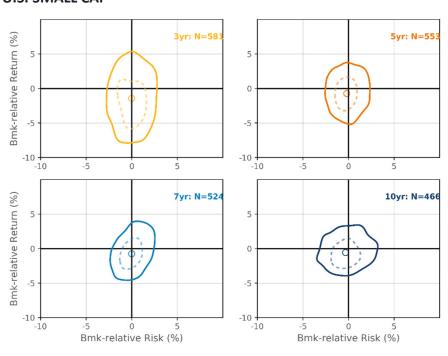


U.S. equity

U.S. LARGE CAP



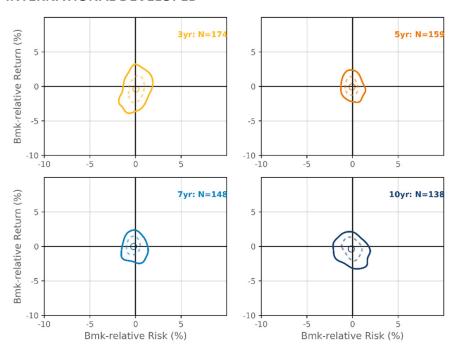
U.S. SMALL CAP



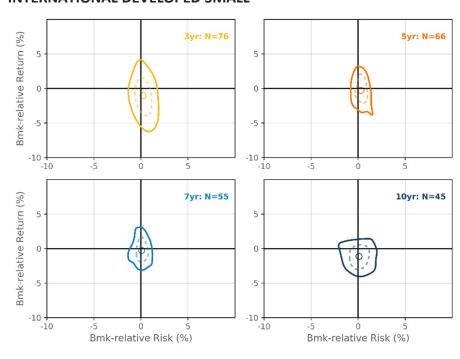


International equity

INTERNATIONAL DEVELOPED



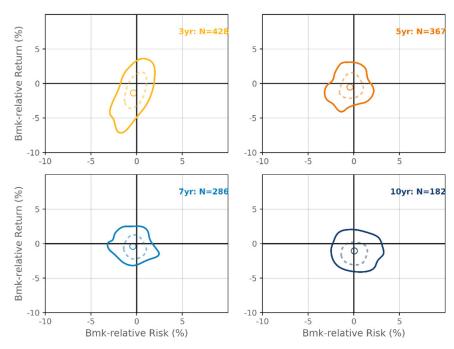
INTERNATIONAL DEVELOPED SMALL





Emerging market equity

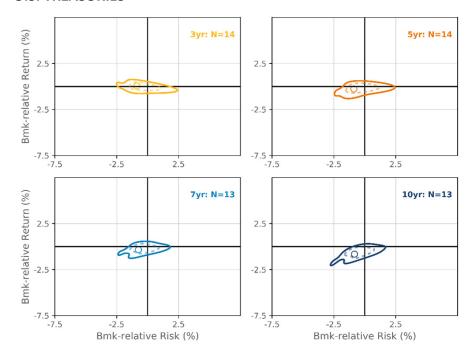
EMERGING MARKET EQUITY



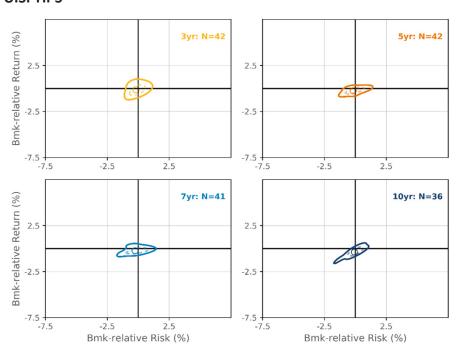


U.S. rates

U.S. TREASURIES



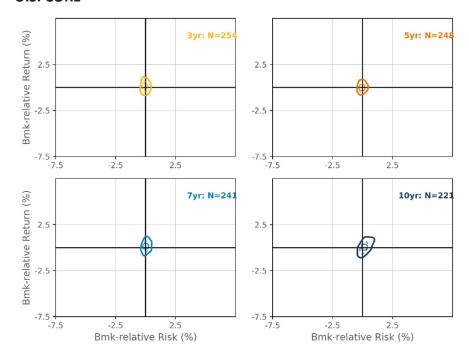
U.S. TIPS



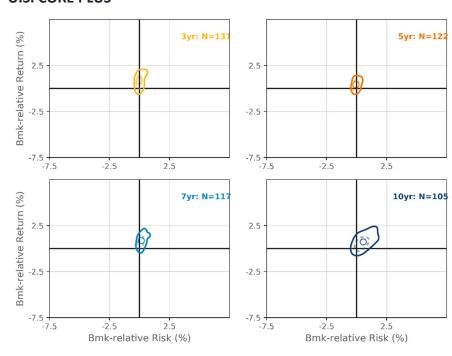


U.S. fixed income

U.S. CORE



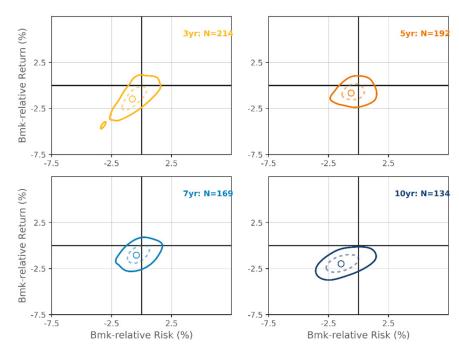
U.S. CORE PLUS





U.S. fixed income (con't)

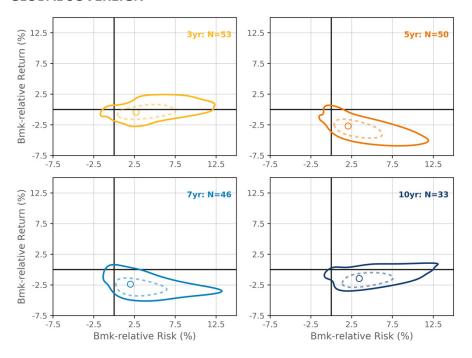
U.S. HIGH YIELD



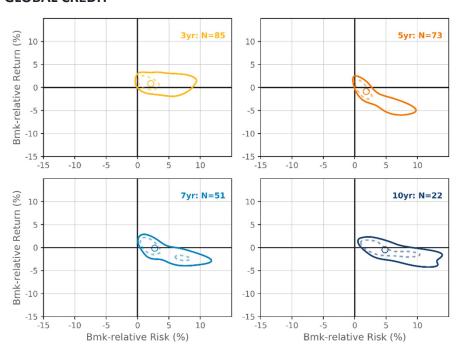


Global bonds

GLOBAL SOVEREIGN



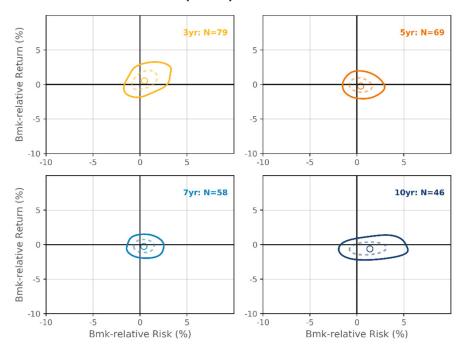
GLOBAL CREDIT



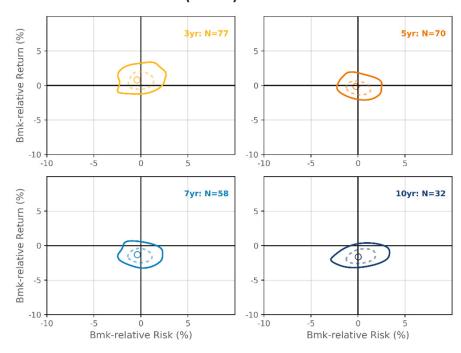


Emerging market debt

EMERGING MARKET DEBT (HARD)



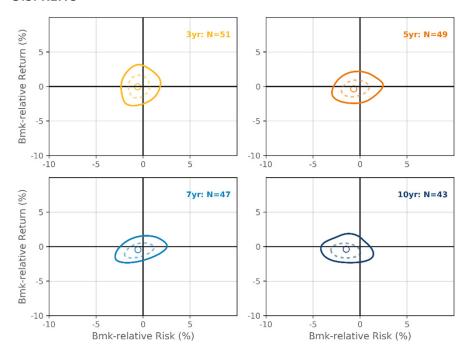
EMERGING MARKET DEBT (LOCAL)



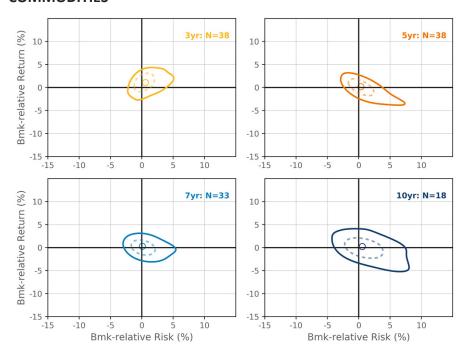


Other

U.S. REITS



COMMODITIES





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