



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: SEPTEMBER 30, 2018

Investment Performance Review for

Contra Costa County Employees' Retirement Association

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Investment Landscape

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Investment Performance
Review

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**PERSPECTIVES
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SUCCESS**

4TH QUARTER 2018
Investment Landscape

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3rd quarter summary

THE ECONOMIC CLIMATE

- The U.S., Mexico, and Canada reached a new trade agreement. The new deal, USMCA, involves few changes to NAFTA, but may create mildly more favorable terms for U.S. businesses. [p. 13](#)
- The U.S. continued to outshine other developed economies in Q2 with its strongest quarterly growth since 2014. A few smaller emerging market economies experienced idiosyncratic weakness that led to concerns of economic contagion, but fundamentals in most countries still appear strong. [p. 14, 16](#)

PORTFOLIO IMPACTS

- Emerging market equities delivered slight losses in Q3, but seem to have stabilized as currency depreciation recently subsided (MSCI Emerging Markets Index -1.1%, JP Morgan EM Currency Index -1.6%). We maintain a positive outlook on emerging market equities. [p. 30](#)
- The Fed raised the target range for the fed funds rate by 0.25% to a range of 2.00%-2.25%. The probability of a December rate hike was 78%, as of October 8th. [p. 20, 22](#)
- U.S. trade discussions have narrowed in on China. Negotiations between the two countries in recent months do not appear to have produced tangible results. [p. 17](#)

THE INVESTMENT CLIMATE

- Another strong quarter of U.S. corporate earnings is expected in Q3 on both an absolute and relative basis. S&P 500 earnings and revenue growth are forecast to be 19.3% and 6.9% YoY, respectively. [p. 27](#)
- Fixed income yields around the world rose slightly. The U.S. Treasury yield hit a 7-year high of 3.23%, reigniting investor concerns over rising interest rates. [p. 20](#)
- The Italian coalition government sparred with the European Commission over its fiscal spending plans. Fading ECB stimulus will likely lift interest rates on European bonds, which is creating doubts around the sustainability of Italy's debt. [p. 14, 15](#)

ASSET ALLOCATION ISSUES

- Capital market returns have been largely flat-to-negative in 2018, with U.S. equities being the exception. Diversification remains important, but has been painful for investors in this environment. [p. 26](#)
- Trade conflicts between the U.S. and its trading partners appear to be mostly resolved. All eyes are on negotiations between U.S. and Chinese representatives, though it increasingly appears that these negotiations are broader in nature than trade alone. [p. 17](#)

A neutral to mild risk overweight may be warranted in today's environment

What drove the market in Q3?

“Bullish U.S. stocks leave the rest of the world trailing”

S&P 500 VS. MSCI ACWI EX U.S. RELATIVE MONTHLY PERFORMANCE

Apr	May	Jun	Jul	Aug	Sep
-3.1%	3.2%	1.4%	1.4%	4.6%	-0.1%

Article Source: Financial Times, September 13th, 2018

“Traders take Fed’s cues, pile on bets on U.S. rate hikes”

YEAR-END 2020 MARKET IMPLIED FED FUNDS RATE

Apr	May	Jun	Jul	Aug	Sep
2.70%	2.55%	2.65%	2.72%	2.62%	2.82%

Article Source: Reuters, September 17th, 2018

“Fitch cuts Italy’s credit outlook on debt and governance concerns”

10-YEAR ITALIAN-GERMAN YIELD SPREAD

Apr	May	Jun	Jul	Aug	Sep
123	245	238	228	291	268

Article Source: Financial Times, August 31st, 2018

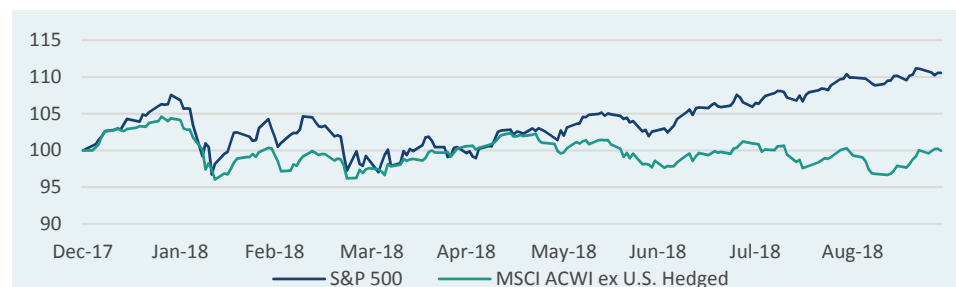
“No breakthrough in U.S.-China trade talks as new tariffs kick in”

U.S. IMPORTS SUBJECT TO RECENTLY ENACTED TARIFFS (\$ BILLIONS)

Apr	May	Jun	Jul	Aug	Sep
33	33	56	90	106	306

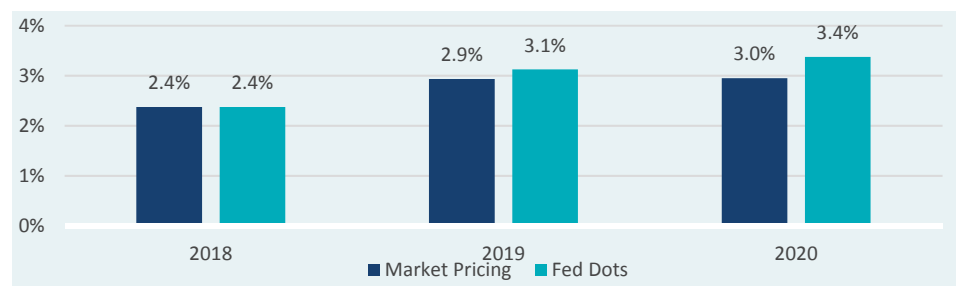
Article Source: CNBC, August 23rd, 2018

U.S. VS. NON-U.S. EQUITY YTD PERFORMANCE



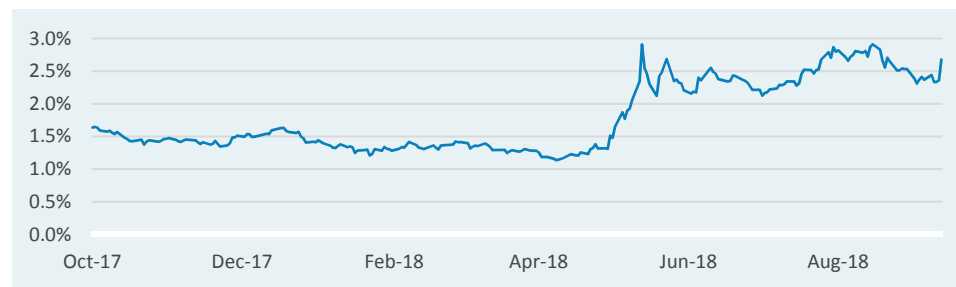
Source: Bloomberg, as of 9/30/18

MARKET IMPLIED FED FUNDS PRICING VS. FED DOTS (YEAR-END)



Source: Bloomberg, Federal Reserve, as of 10/8/18

10-YEAR ITALIAN-GERMAN SOVEREIGN YIELD SPREAD



Source: Bloomberg, as of 9/30/18

Economic environment

U.S. economics summary

- Real GDP growth was 2.9% year-over-year in the second quarter. Expectations for third quarter growth have risen alongside recently strengthening U.S. economic data.
- U.S. inflation fell slightly to 2.3% YoY, moving closer to the U.S. Core CPI rate of 2.2% YoY.
- Non-farm payrolls added 134,000 jobs in September, missing the consensus estimate of 185,000. Hurricane Florence likely contributed to the miss, as leisure and hospitality employment fell by 17,000, the largest drop in a year.
- The U3 unemployment rate fell from 3.9% to 3.7% in September, the lowest rate since 1969. The U6 unemployment increased from 7.4% to 7.5%.
- The United States, Mexico, and Canada reached an agreement on a new trade deal to replace NAFTA.

The new deal, USMCA, included provisions aimed towards protecting the business interests of North American auto manufacturers as well as workers' wages. The deal also partially opened the Canadian dairy market to U.S. farmers.

- The U.S. imposed 10% tariffs on \$200 billion of Chinese goods on September 24th. The White House claimed that the tariff rate will advance from 10% to 25% at year-end if no progress is made through negotiations in the meantime. China retaliated with tariffs of 10% on \$60 billion of U.S. imports.
- As expected, the Federal Open Market Committee raised the target range for the fed funds rate by 0.25%, moving the new range to 2.00%-2.25%. The market implied odds for an additional December rate hike were 78%, as of October 8th.

	Most Recent	12 Months Prior
GDP (YoY)	2.9% <i>6/30/18</i>	2.1% <i>6/30/17</i>
Inflation (CPI YoY, Core)	2.2% <i>9/30/18</i>	1.7% <i>9/30/17</i>
Expected Inflation (5yr-5yr forward)	2.2% <i>9/30/18</i>	2.0% <i>9/30/17</i>
Fed Funds Target Range	2.00 – 2.25% <i>9/30/18</i>	1.00 – 1.25% <i>9/30/17</i>
10 Year Rate	3.1% <i>9/30/18</i>	2.3% <i>9/30/17</i>
U-3 Unemployment	3.7% <i>9/30/18</i>	4.2% <i>9/30/17</i>
U-6 Unemployment	7.5% <i>9/30/18</i>	8.3% <i>9/30/17</i>

GDP growth

Real GDP growth accelerated to 2.9% YoY (4.2% quarterly annualized rate) in the second quarter, driven in part by fiscal stimulus. This quarterly growth rate marked the fastest pace of expansion since the third quarter of 2014.

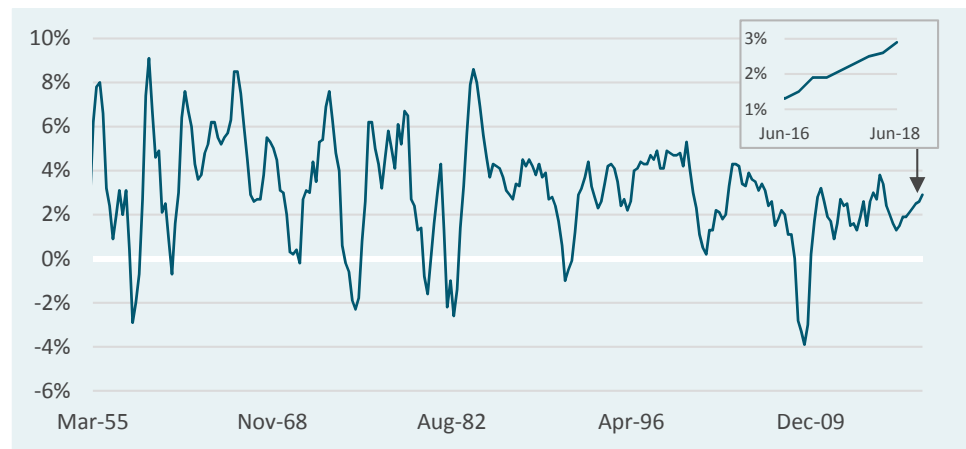
The consumer was once again the biggest contributor to growth after a slowdown in the previous quarter. Consumer spending added 2.6% to the quarterly growth rate. Exports and business investment also boosted growth – each contributed 1.1% to GDP growth. However, some of the increase in exports may have been a result of businesses

attempting to ship goods ahead of pending tariffs, pulling future growth into the current quarter.

Although the current expansion is near the longest on record, it still appears the economy is on solid footing without many typical signs of late-cycle overheating. While we are cautious about a potential prolonged economic war between the U.S. and China, we do not believe the tariffs that have been implemented thus far will in themselves create a material drag on the domestic economy. We remain watchful for any indirect effects on consumer and business confidence that could lead to a slowdown in activity.

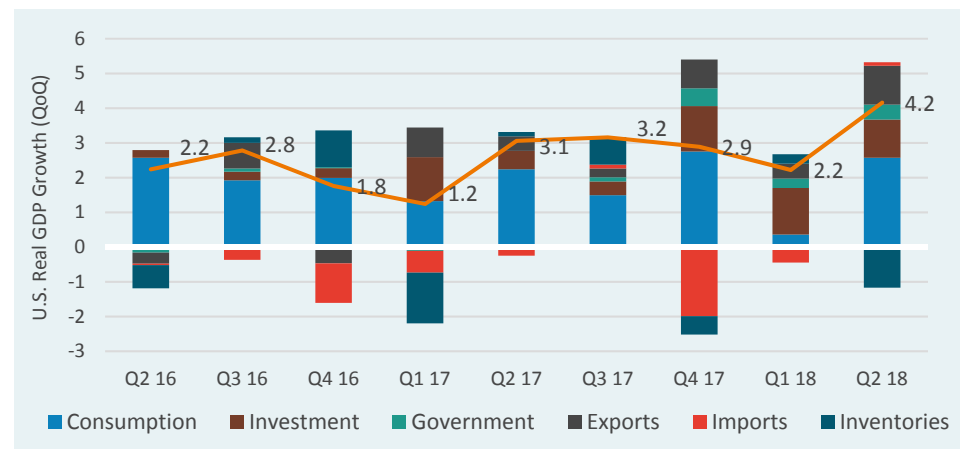
GDP growth was the highest since Q3 2014

U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 6/30/18

U.S. GDP COMPONENTS



Source: BEA, annualized quarterly rate, as of 6/30/18

Inflation

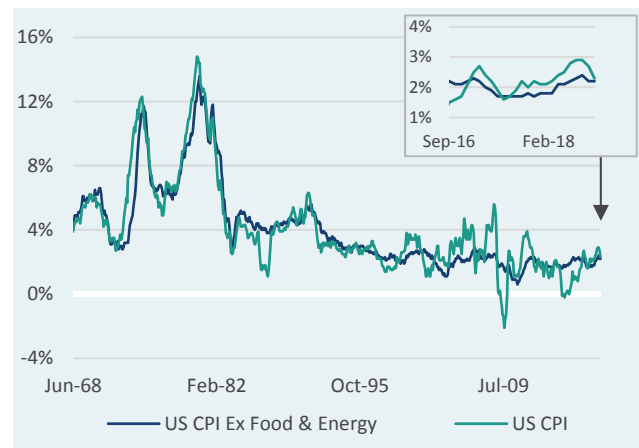
Inflation has remained relatively muted throughout the current economic cycle. Headline and core CPI rose 2.2% and 2.3%, respectively over the 12 months ending in September.

Although there has been some occasional concern in the market over a potential spike in inflation, we have yet to see any sustained pressure on consumer prices. This effect has not been confined to the current cycle. In fact, secular disinflation caused in part by automation and

globalization has contributed to stable core inflation of around 1-3% per annum since the early 1990s.

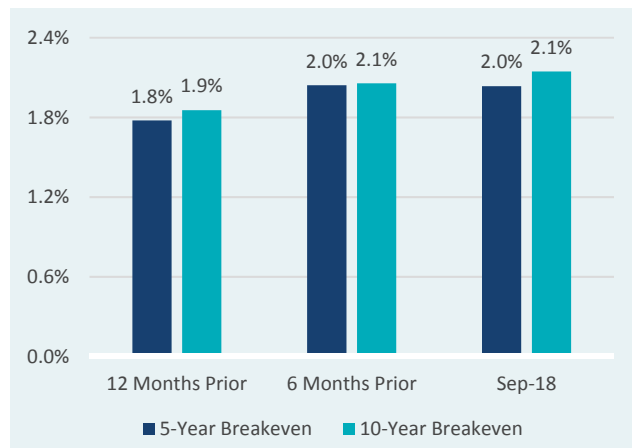
The potential impact of tariffs on inflation has been widely scrutinized, but it is important to note that the flow-through from import prices to consumer prices is ambiguous. The flow-through will depend on numerous factors including substitution effects and the price elasticity of demand. At this point, we do not expect a material increase in inflation due to tariffs.

U.S. CPI (YOY)



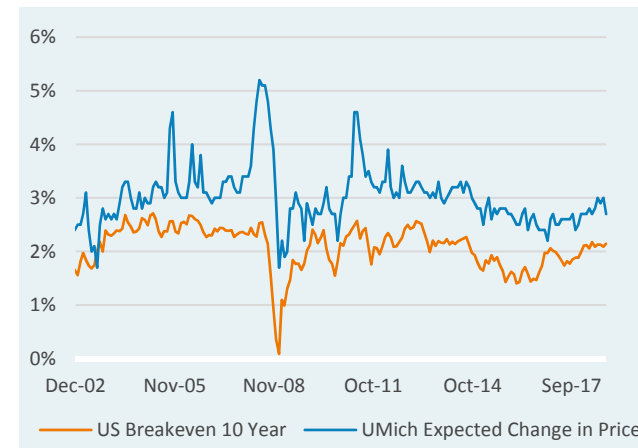
Source: Bloomberg, as of 9/30/18

BREAKEVEN INFLATION RATES



Source: Bloomberg, as of 9/30/18

INFLATION EXPECTATIONS



Source: Bloomberg, as of 9/30/18

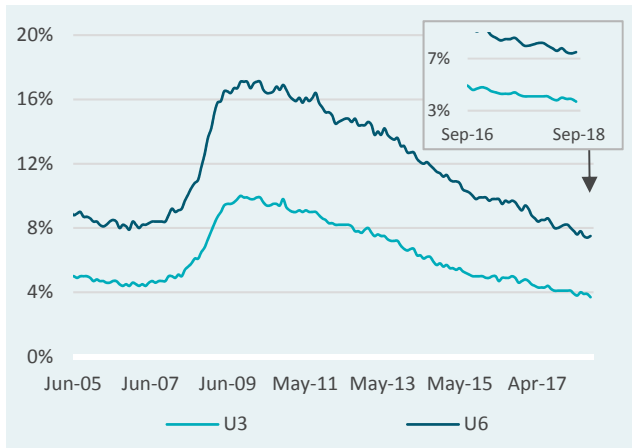
Labor market

Labor market trends were largely unchanged over the quarter. The economy continued to add jobs at a fairly steady pace and the U-3 unemployment rate fell further from 4.0% to 3.7% in September. The broader U-6 unemployment rate also tightened, dropping from 7.8% to 7.5%. This measure has finally recovered to below its pre-global financial crisis level, indicating that there may be fewer pockets of labor market slack as potential workers increasingly search for and find employment. However, looking at the broadest measure of employment – the percentage of Americans currently employed, we are currently at 60%, compared to 63% prior in 2006. This seems to suggest that labor slack remains.

Wage growth remained moderate as average hourly earnings for private workers rose 2.7% from the previous year in September. On a real basis, however, wages rose 0.7% YoY, in-line with the long-term average since 1970.

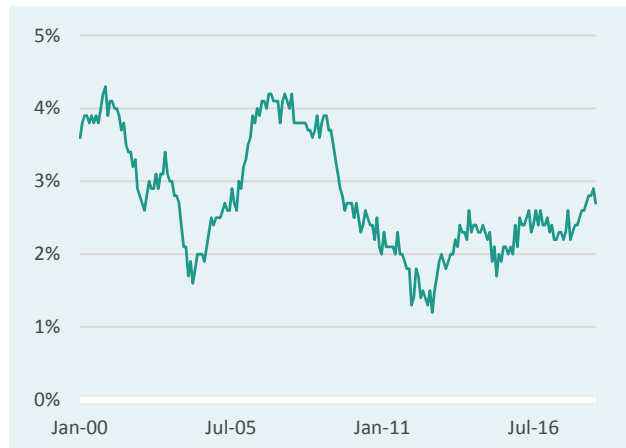
Surging job openings, along with business survey responses, suggest companies are having a difficult time finding qualified workers. As of August, there were 7.1 million job openings compared to only 6.2 million people classified as unemployed.

UNEMPLOYMENT RATE



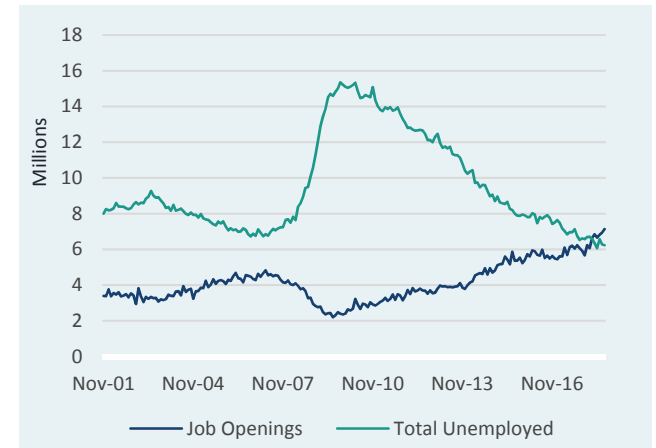
Source: FRED, as of 9/30/18

AVERAGE HOURLY EARNINGS (YOY)



Source: Bloomberg, as 9/30/18

JOB OPENINGS VS TOTAL UNEMPLOYED



Source: Bloomberg, as of 8/31/18

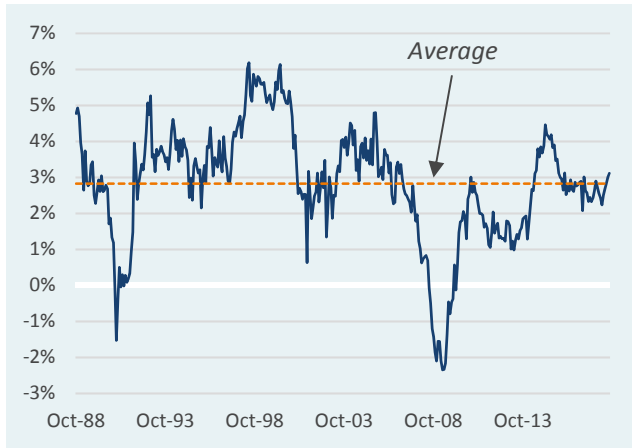
The consumer

Real consumer spending rose 3.1% from the previous year in August, in-line with the long-term average over the past 30 years. Conditions facing consumers, including moderate income gains, a tight labor market, and low interest rates are still supportive of spending. Despite some evidence that the U.S. is moving into the later stages of the economic cycle, we have yet to see big increases in consumer spending, which is often indicative of overconfidence.

With the 30-year mortgage rate nearing 5%, there have been increasing concerns over the impact of rising rates on the

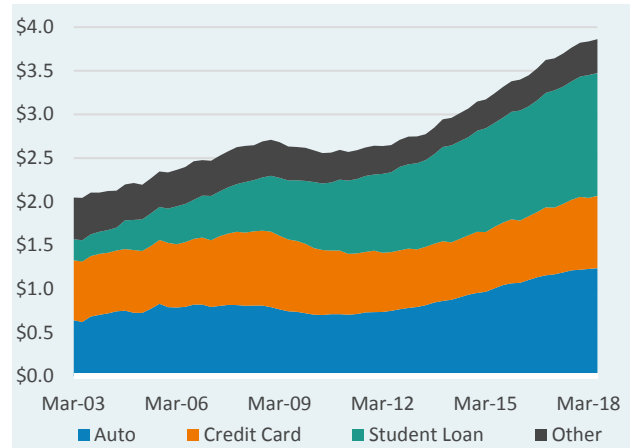
cost of living. However, a rise in market interest rates will impact various types of debt in different ways. For example, nearly all U.S. mortgage debt issued since the global financial crisis has been with fixed interest rates. Higher mortgage rates will have a greater impact on new home buyers, rather than all homeowners. In fact, household mortgage debt service fell to a cycle low of 4.2% of disposable income in the second quarter. On the other hand, interest rates on shorter-term debt, such as auto and credit card loans, will be much quicker to reflect changes in market rates.

REAL CONSUMER SPENDING (YOY)



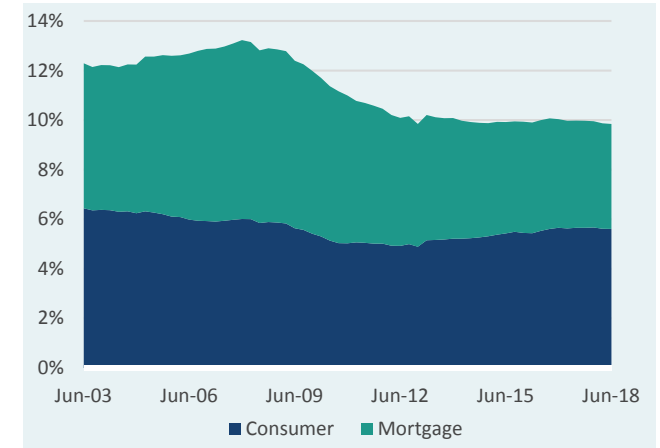
Source: Bloomberg, as of 8/31/18

NON-HOUSING DEBT BALANCE (TRILLIONS)



Source: FRBNY, as of 6/30/18

DEBT SERVICE AS % OF DISPOSABLE INCOME



Source: Federal Reserve, as of 6/30/18

Sentiment

Sentiment readings from both households and businesses are incredibly strong. Americans across all income subgroups expressed optimism for the future, according to the University of Michigan Consumer Sentiment survey. The most often cited concern was U.S. tariffs, which were mentioned by one third of respondents. Those surveyed were optimistic about their personal financial situation, continued economic growth, and low inflation.

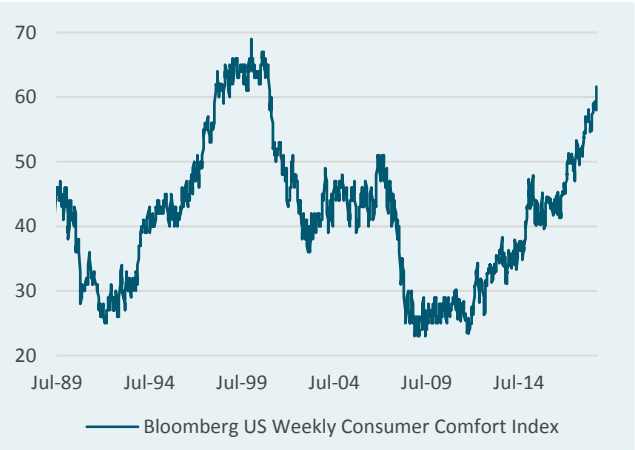
The Bloomberg U.S. Weekly Consumer Confidence Index has surpassed its 17-year high of 59.3, reflecting a rosy outlook

for personal finances, wages, and the economy.

The NFIB Small Business Optimism Index reached 107.9 in September – the third strongest reading in the 45-year history of the index. NFIB commented, “In the small business half of the economy, 2018 has produced 45-year record high measures of job openings, hiring plans, actual job creation, compensation increases (actual and planned), profit growth, and inventory investment.” The positive outlook of small business owners is likely supportive of continued economic growth.

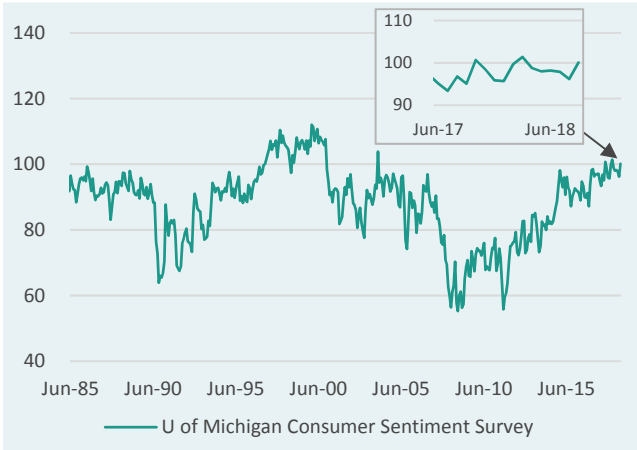
Consumers and business are confident about the future

CONSUMER COMFORT INDEX



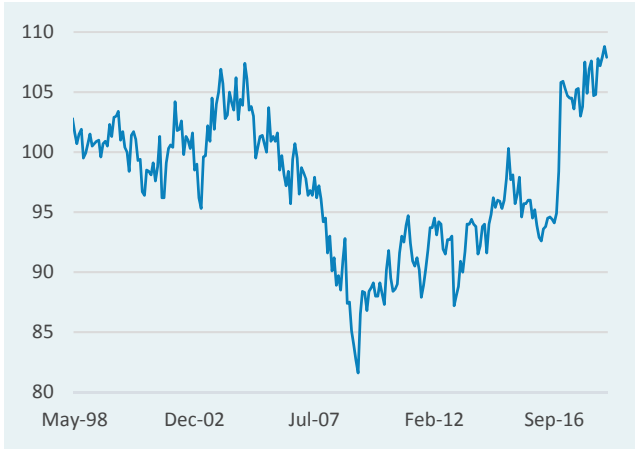
Source: Bloomberg, as of 9/30/18 (see Appendix)

CONSUMER SENTIMENT



Source: University of Michigan, as of 9/30/18 (see Appendix)

NFIB SMALL BUSINESS OPTIMISM INDEX



Source: NFIB, as of 9/30/18 (see Appendix)

Housing

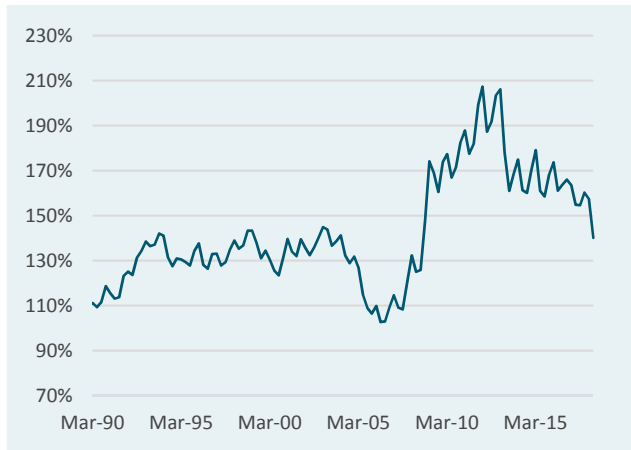
Single-family home prices appreciated at a strong pace. As of July, the Case-Shiller National Home Price Index was up 4.7% year-to-date. Over the past 5 years home prices have risen 5.3% per annum, outpacing wage growth and likely creating difficulties for those planning new purchases.

Nationwide home prices are now 11% above the previous high reached in mid-2006. Lower interest rates have partially offset rising prices, though this effect is fading as

borrowing rates have moved back towards pre-2008 levels.

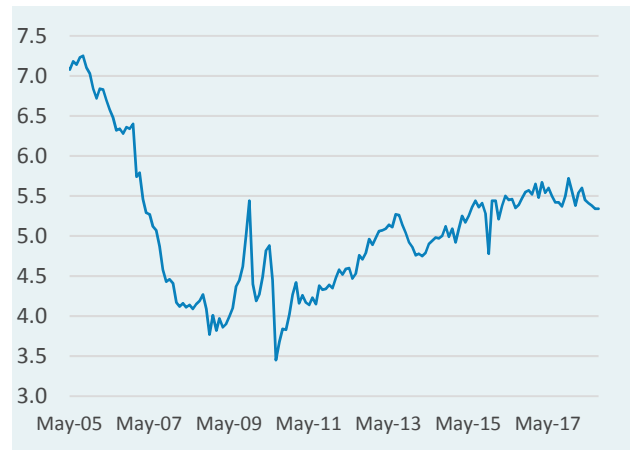
U.S. home affordability has dropped materially in 2018 and is now back to a level not seen since late 2008. The 30-year fixed mortgage interest rate rose from 4.0% in January to more than 4.7% through the end of September. Home sales have recently slowed - perhaps a result of less buyer-friendly conditions.

HOUSING AFFORDABILITY INDEX



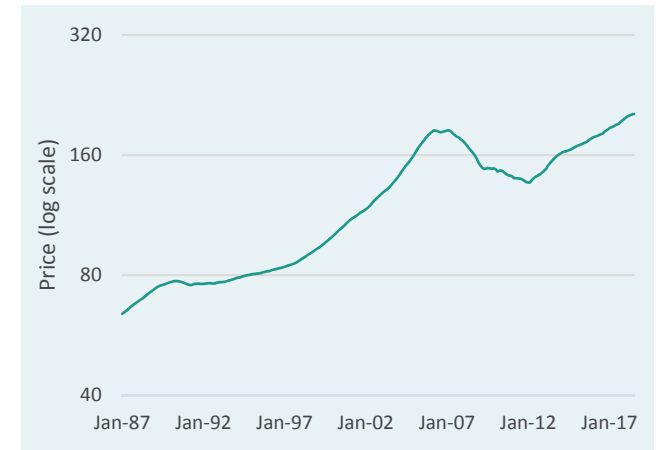
Source: Bloomberg, as of 6/30/18

EXISTING HOME SALES (MILLIONS)



Source: Bloomberg, SAAR, as of 8/31/18

U.S. HOME PRICE INDEX



Source: Case-Shiller National Home Price Index, as of 7/31/18

International economics summary

- The U.S., Mexico, and Canada reached an agreement on a trade deal to replace NAFTA. The new U.S.-Mexico-Canada Agreement (USMCA) involves few material changes to NAFTA, but the terms appear mildly more favorable for U.S. businesses.
- U.S. negotiations with China, its largest trading partner, continued with little apparent progress. The U.S. imposed 10% tariffs on \$200 billion of Chinese goods on September 24th. The White House claimed that the tariff rate will advance from 10% to 25% at year-end if no progress is made in the meantime. China responded with retaliatory tariffs of 10% on \$60 billion of U.S. imports.
- Trade negotiations with other trading partners appear to be mostly resolved, easing concerns of a global trade war.
- Developed market economies are expected to grow less quickly in the coming years, while emerging economy growth rates are expected to rise.
- PMI readings around the globe have weakened during 2018, led by the Eurozone. U.S. PMIs remain very high, indicating expansion in the manufacturing and services sectors.
- The Italian coalition government sparred with the European Commission over its fiscal spending plans. Fading ECB stimulus will likely lift interest rates on European bonds, creating doubts around the sustainability of Italy's debt.
- The U.S. dollar appreciated by 1% during the quarter. A stable dollar would help dampen the volatility of unhedged equity investments, particularly in emerging markets where currency moves have been larger.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.9% <i>6/30/18</i>	2.7% <i>8/31/18</i>	3.8% <i>9/30/18</i>
Eurozone	2.1% <i>6/30/18</i>	2.1% <i>9/30/18</i>	8.3% <i>6/30/18</i>
Japan	1.3% <i>6/30/18</i>	1.3% <i>8/31/18</i>	2.4% <i>6/30/18</i>
BRICS Nations	5.8% <i>6/30/18</i>	2.5% <i>6/30/18</i>	5.5% <i>6/30/18</i>
Brazil	1.0% <i>6/30/18</i>	4.5% <i>9/30/18</i>	12.2% <i>9/30/18</i>
Russia	1.9% <i>6/30/18</i>	3.4% <i>9/30/18</i>	4.6% <i>8/31/18</i>
India	8.2% <i>6/30/18</i>	3.7% <i>8/31/18</i>	8.8% <i>12/31/17</i>
China	6.7% <i>6/30/18</i>	2.3% <i>8/31/18</i>	3.8% <i>6/30/18</i>

International economics

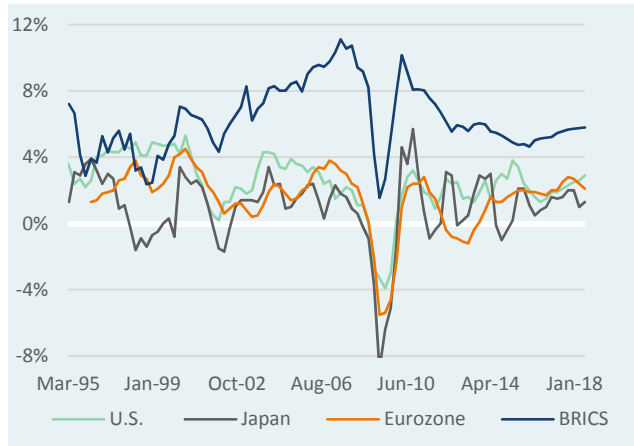
While U.S. economic growth improved, international growth remained moderate. In the Eurozone, real GDP rose 2.1% YoY in Q2, down from 2.4% in Q1. In addition to slowing growth, political uncertainty in Italy and less stimulus from the European Central Bank has clouded the economic outlook. The political situation in Italy highlights the problems caused by an uneven recovery across the Eurozone. While the French and German economies may be in a position to withstand monetary tightening, it does not appear that this is the case in places such as Italy, Spain, and Portugal.

Political issues have also created much uncertainty in the United Kingdom with the March 2019 deadline for a Brexit deal fast approaching. Theresa May's initial plan was rejected by the European Union, and it appears both sides have at least considered how to move forward without a deal.

Synchronized global growth has moderated

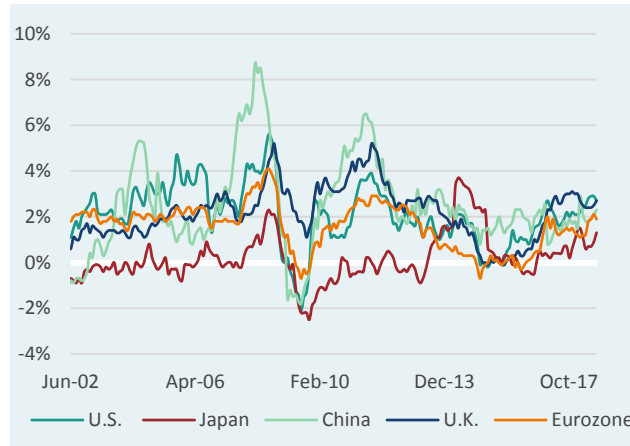
Developed international inflation remains well below central bank targets, which may provide greater flexibility for management of these economic imbalances.

REAL GDP GROWTH (YOY)



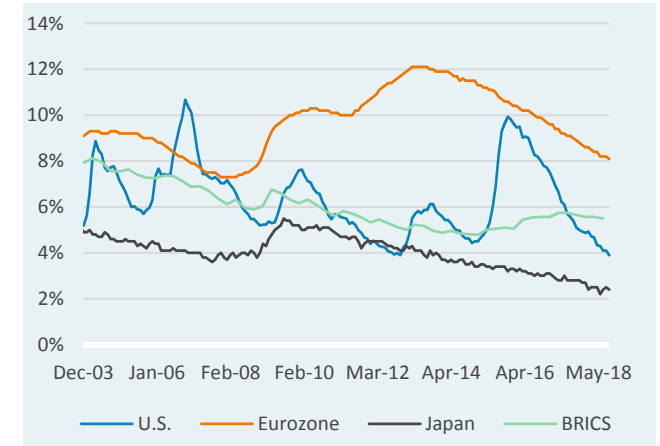
Source: Bloomberg, as of 6/30/18

INFLATION (CPI YOY)



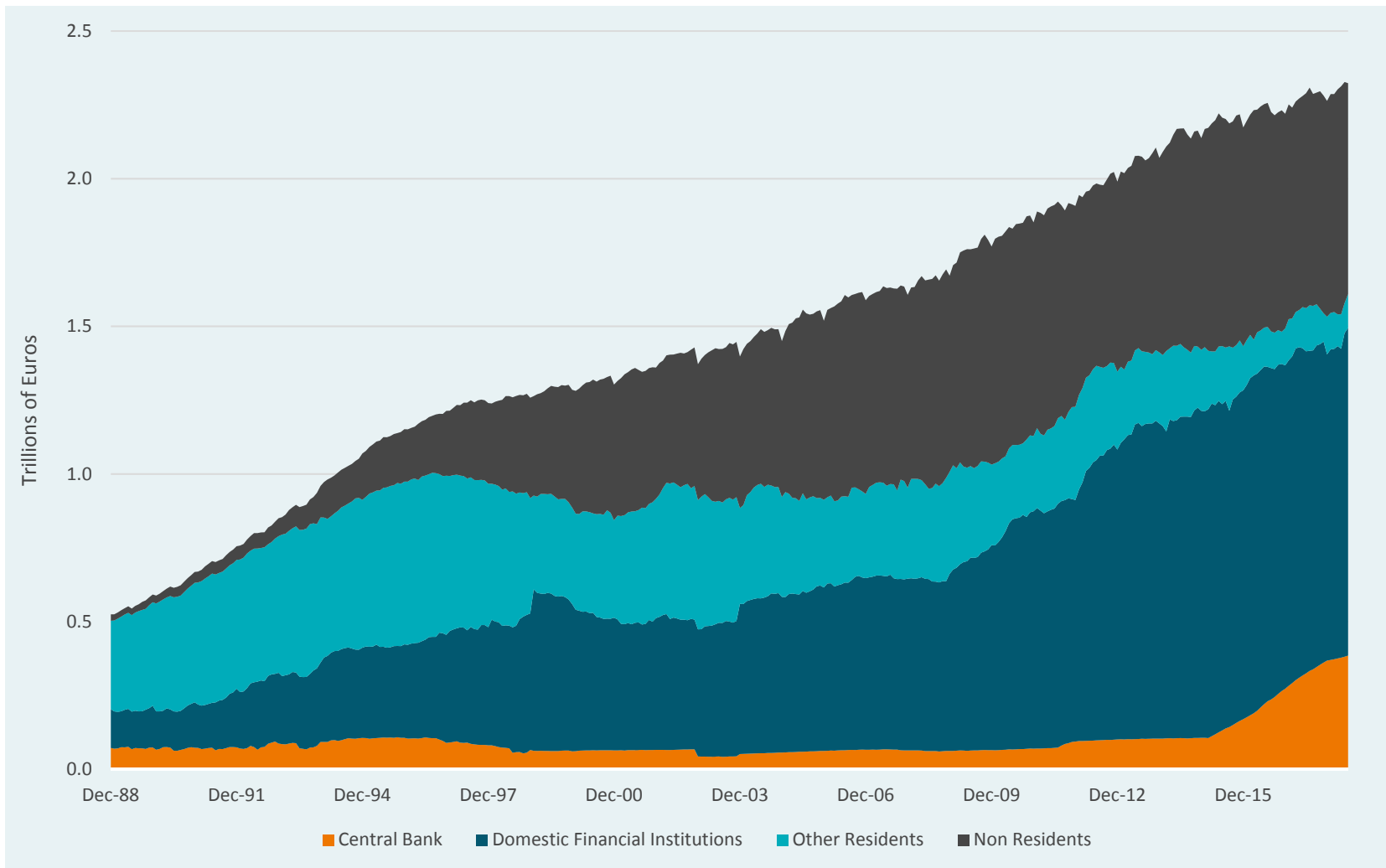
Source: Bloomberg, as of 8/31/18

UNEMPLOYMENT RATE



Source: Bloomberg, as of 8/31/18 or most recent release

Italian debt ownership



European banks have helped suppress Italian bond yields

This support may be dwindling as central bank stimulus ends

Source: Bank of Italy, as of 6/30/18

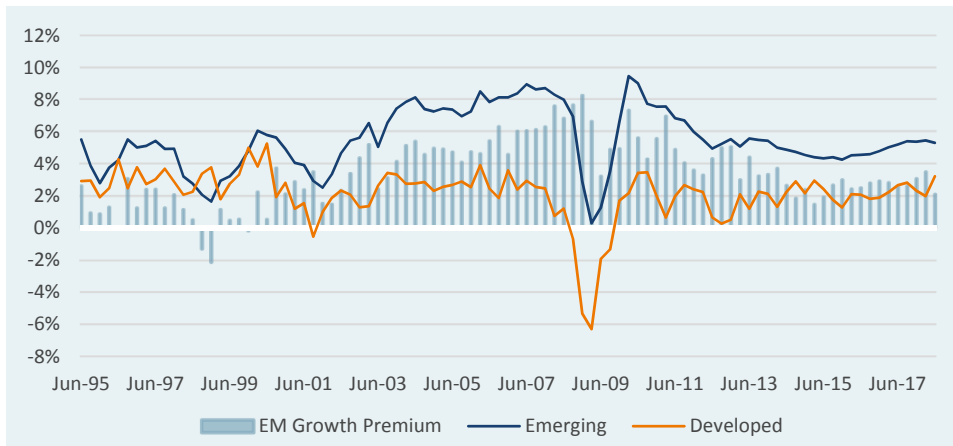
Emerging economies

Several events over the quarter helped lead to broad weakness in emerging markets assets and to investor concerns about contagion, including a 25% plunge in the Turkish lira in August and Argentina securing a \$50 billion bailout from the IMF. Contagion events in EM economies, such as the Asian financial crisis in the 1990s, have been characterized by a trigger event that caused mass capital outflows, currency depreciation, rising domestic interest rates, and eventually recession. These economies have withstood multiple recent shocks, but the last serious emerging market contagion occurred nearly 20 years ago. This likely reflects material changes in these economies that have made them more resilient to exogenous events.

First, the development of local savings institutions has created a marginal buyer of debt when foreign investors sell that has helped combat interest rate shocks. Second, more emerging economies have moved to flexible exchange rate systems and accumulated significant FX reserves, which gives them more control to slow currency depreciation. Third, many emerging markets have trimmed their reliance on foreign capital, particularly in terms of hard currency debt. Overall, we believe emerging economies remain on solid footing, and provide investors with opportunities in both the short- and long-term.

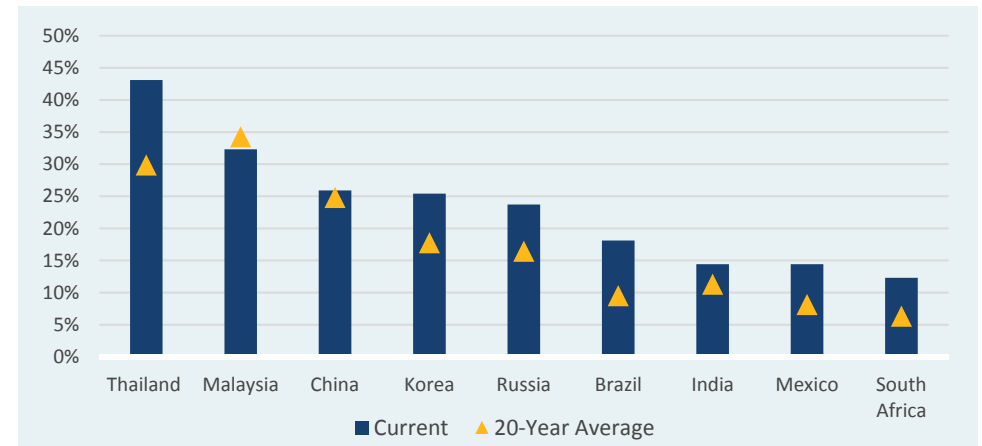
Economic contagion fears seem overblown

EMERGING VS. DEVELOPED ECONOMY REAL GDP GROWTH (YOY)



Source: IMF, as of 6/30/18

FX RESERVES (% OF GDP)



Source: IMF, GDP as of 6/30/18, FX reserves as of 8/31/18

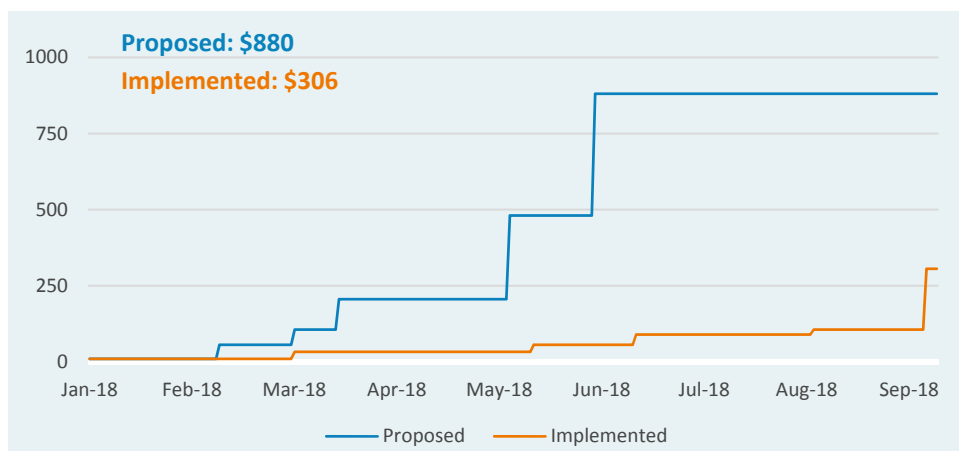
U.S.-China trade

Following the successful renegotiation of NAFTA, the Trump Administration has clearly focused in on U.S. and China trade terms. The U.S. implemented 10% tariffs on an additional \$200 billion of Chinese imports that may rise to a 25% rate at the beginning of next year if no progress is made in the meantime. China responded with retaliatory tariffs of 5-10% on \$60 billion of U.S. imports. Based on equity market reactions to this point, and the growing divide between U.S. and China market performance, it appears investors may be more concerned with the impact of trade on China. Chinese equities are down more than 30% from their recent peak in January, while U.S. equities have moved steadily higher.

As the conflict between the two side continues to drag on, it appears that this may be more than just a trade war. Recent developments, including U.S. sanctions on Chinese military leaders and naval run-ins in the South China Sea, point towards a much broader struggle centered around global hegemony. U.S. policy focused on confronting China's rise as a world power would represent a marked break from the past and widen the potential outcomes. If this is the case, the chances of a trade deal may be lower, and even the conclusion of a successful trade deal may not be a safe indicator of a return to stable relations between the two countries.

The U.S.-China conflict appears to be about more than just trade

U.S. IMPORTS SUBJECT TO TARIFFS (\$ BILLIONS)



Source: Verus, as of 9/30/18, only includes recently proposed or implemented tariffs

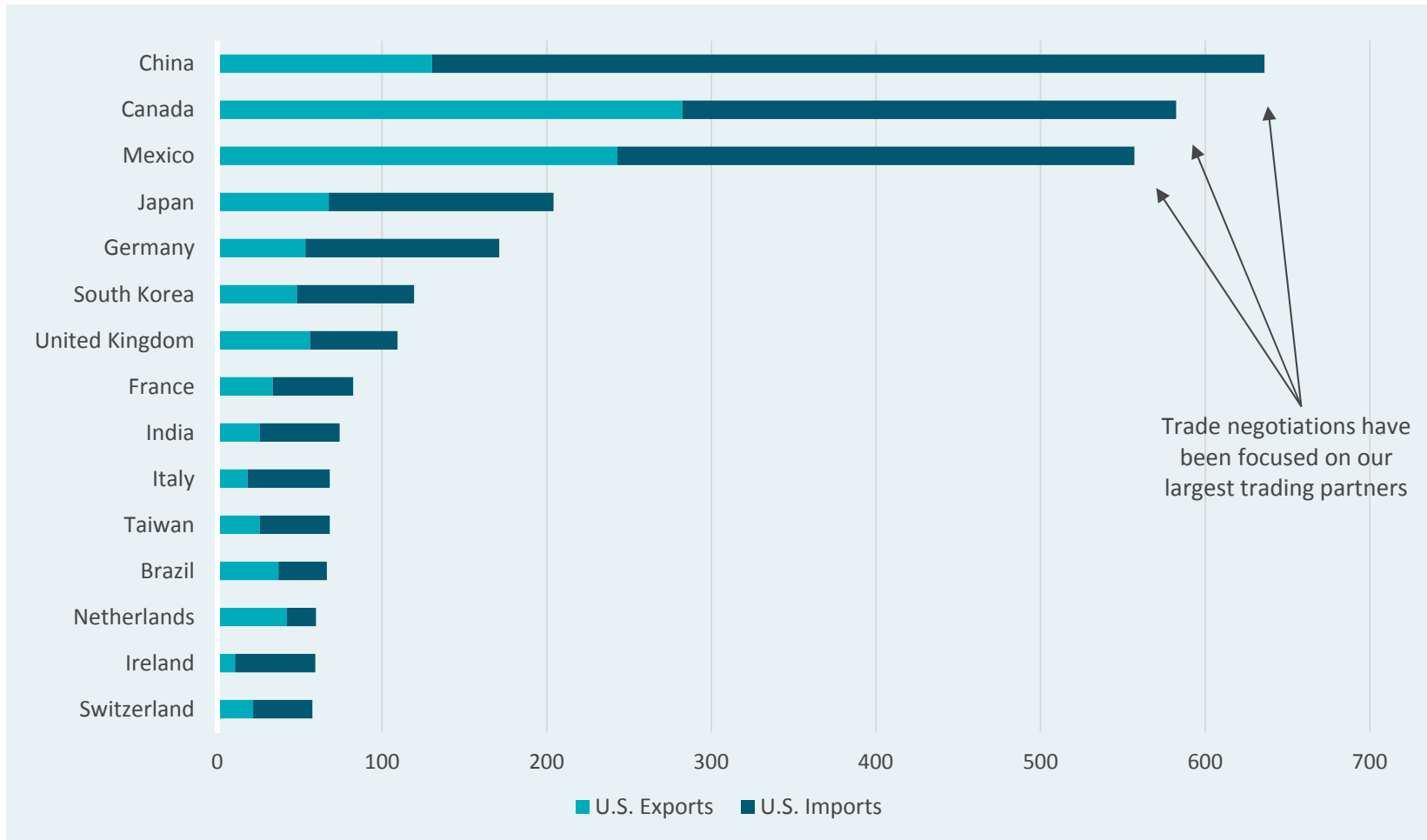
1-YEAR EQUITY PRICE MOVEMENT (INDEXED TO 100)



Source: Bloomberg, as of 9/30/18, China A shares are represented by the CSI 300 Index

U.S. trade

U.S. TRADING PARTNERS (\$BILLIONS)



U.S. negotiations have focused on our largest trade partners

NAFTA will be replaced by the U.S.-Mexico-Canada Agreement (USMCA)

Trade negotiations have been focused on our largest trading partners

Source: U.S. Census Bureau, year 2017

Fixed income rates & credit

Interest rate environment

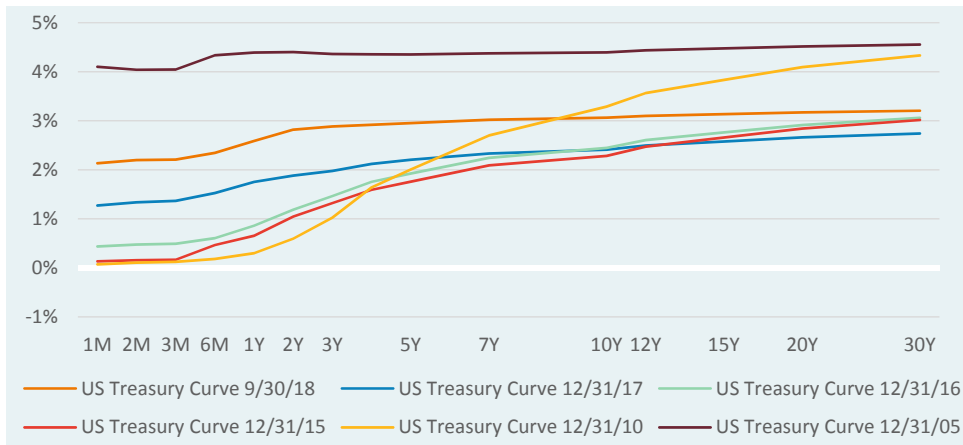
- The Federal Reserve raised the target range for the fed funds rate by 0.25%, to a range of 2.00%-2.25%. The odds for a December rate hike were 78%, as of October 8th.
- Fixed income yields around the world moved slightly higher during the quarter. The U.S. Treasury yield rose to a 7-year high of 3.23%, reigniting investor concerns over rising interest rates. The spread between 2- and 10-year yields has remained steady at around 30 bps.
- In September, the European Central Bank left interest rates unchanged, and confirmed its intent to leave rates at current levels “at least through the summer of 2019, and in any case for as long as necessary to ensure the continued sustained convergence of inflation to levels that are below, but close to, 2% over the medium term.” The ECB also stated that bond purchases of \$30 billion euros per month would be cut in half beginning in October, and would stop altogether at the end of the year.
- The yield spread between Italian and German 10-year bonds has exhibited significant volatility following Italy’s political shakeup in the second quarter. Discussions around compliance with European Union budget rules, and the general fear that Italy may push either for structural monetary policy changes, or to leave the Eurozone, contributed to a tumultuous quarter.
- Emerging market local and hard yields were rangebound in Q3, but remained elevated due to continued idiosyncratic risks in countries such as Turkey and Argentina.

Area	Short Term (3M)	10 Year
United States	2.19%	3.06%
Germany	(0.56%)	0.47%
France	(0.56%)	0.80%
Spain	(0.39%)	1.50%
Italy	0.01%	3.15%
Greece	1.12%	4.18%
U.K.	0.77%	1.57%
Japan	(0.13%)	0.13%
Australia	1.89%	2.67%
China	2.97%	3.63%
Brazil	6.58%	11.76%
Russia	7.02%	8.69%

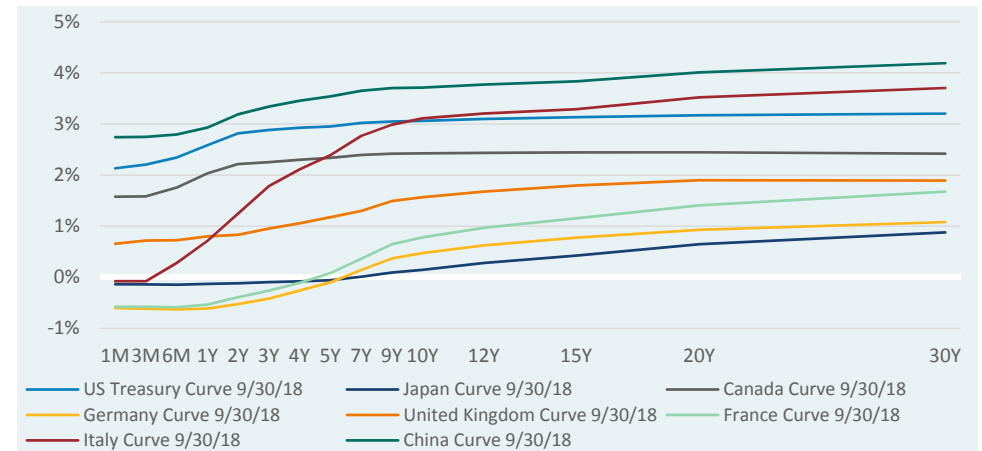
Source: Bloomberg, as of 9/30/18

Yield environment

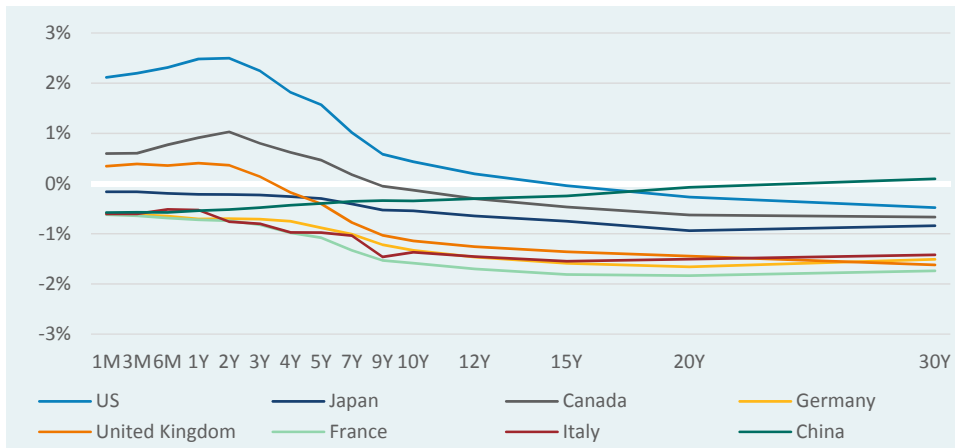
U.S. YIELD CURVE



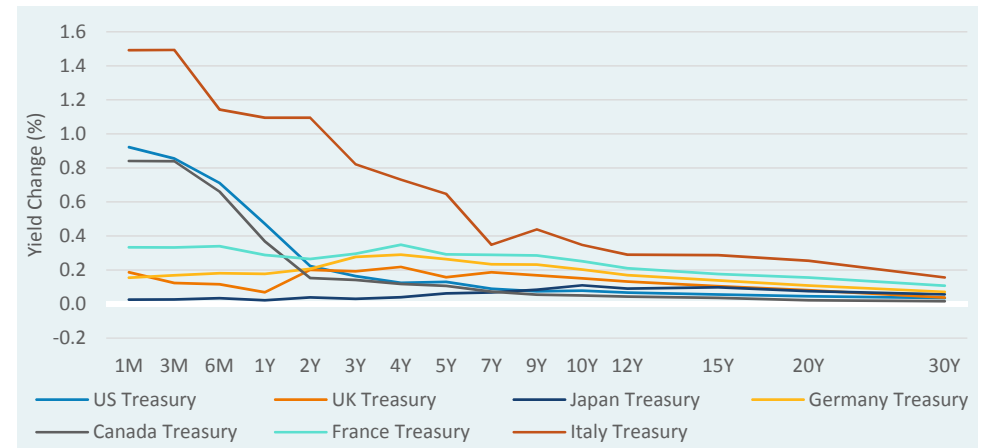
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/18

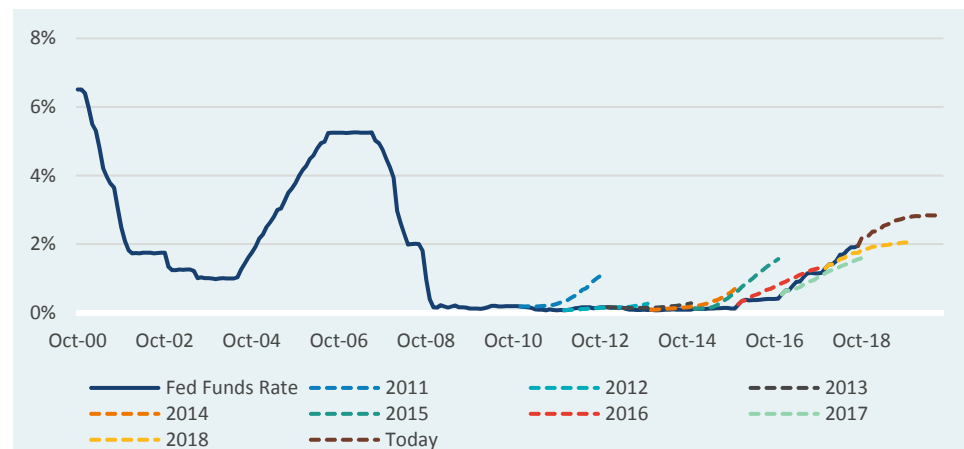
Fed tightening vs. expectations

The market raised its expectations for further Fed tightening during the quarter. Investors are now pricing in a fourth rate hike in December, but only two more through the end of 2020, which would bring the fed funds rate to near 3%. Meanwhile, Fed officials have communicated a slightly more aggressive path of tightening with expectations to increase the benchmark interest rate to 3.4% by the end of 2020.

Over the past few years, there has been an interesting shift in how Fed policy has come in relative to market

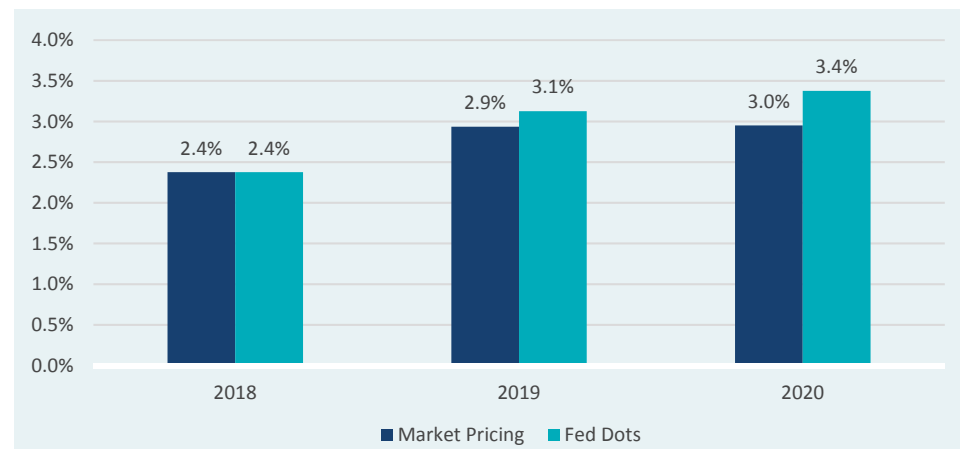
expectations. From 2010 to 2015, the market consistently overestimated when and by how much the Fed would hike rates. However, beginning in 2016 the Fed has been more aggressive than the market expected. Given the current differences between market pricing and Fed expectations, this trend has the potential to continue, which would likely act as a headwind to financial asset prices. However, it is important to remember that official guidance from the Fed dot plot assumes that economic conditions unfold as expected. Based on the uncertain future state of the economy, the Fed may be cautious relative its current expectations.

FED FUNDS RATE VS. MARKET EXPECTATIONS



Source: Bloomberg, as of 9/30/18, dotted lines are forward pricing at the start of the year

FED FUNDS EXPECTATIONS AT YEAR-END



Source: Bloomberg, Federal Reserve, as of 10/8/18

Credit environment

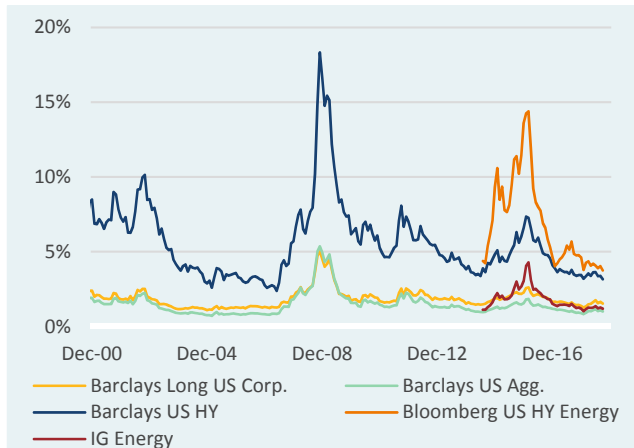
Spreads in both bank loans and high yield credit are well below their historical averages. Loans are outperforming high yield bonds for only the second time in the last 13 years. Bank loans have limited duration risk due to their floating-rate nature, which is a quality that some investors have seen as attractive due to the rising rate story. However, credit quality in bank loans has deteriorated throughout the cycle as covenant-lite loans have dominated new issuance. While bank loans offer interest rate protection and a small spread premium over high yield, investors may be paying for this by taking greater downside risk.

U.S. high yield option-adjusted spreads tightened to a decade low in September, despite concerns over a global growth slowdown, rising U.S. Treasury yields, and a volatile landscape in emerging markets. The asset class generated a 2.4% total return over the quarter.

Based on low interest rates and tight spreads, we do not believe investors are being properly compensated for credit risk and recommend an underweight to U.S. investment and high yield credit.

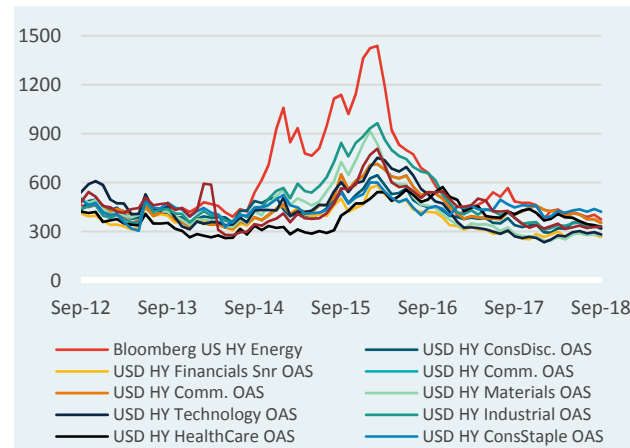
Credit spreads are tight across the capital structure

SPREADS



Source: Barclays, Bloomberg, as of 9/30/18

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 9/30/18

Market	Credit Spread (OAS 9/30/18)	Credit Spread (1 Year Ago)
Long US Corporate	1.5%	1.5%
US Aggregate	1.0%	1.0%
US High Yield	3.2%	3.5%
US Bank Loans*	3.7%	4.2%

Source: Barclays, Credit Suisse, Bloomberg, as of 9/30/18

*Discount margin 4-year life

Issuance and default

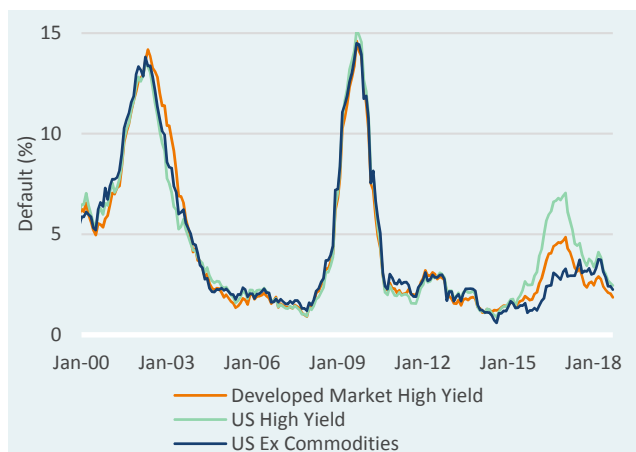
Default activity has been low and stable in the U.S. credit market. The par-weighted default rate remains below its long-term average of 3.0-3.5%, currently at 2.0% for high yield bonds. Total default activity in the last six months encompassed five defaults and \$3.8 billion in affected bonds and loans, the lightest volume over a six-month period since June 2011.

Senior loan and high yield markets have essentially recovered from a wave of defaults seen in 2015-2016, generated from the energy and metals/mining sectors.

Recovery rates for high yield bonds have vastly improved since that time.

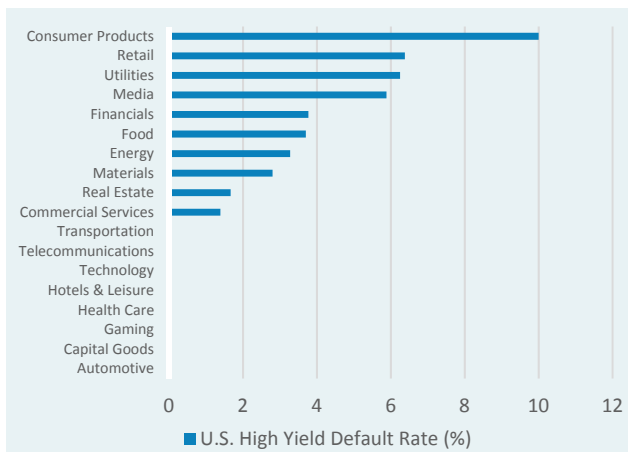
High yield new issue activity has totaled \$175 billion so far this year, which is down 35% over the same period a year ago. Meanwhile, issuance in leveraged loans totaled \$611 billion year-to-date. Notably, repricing activity represents 38% of total volume. New issue spreads continue to compress with strong demand supported by significant retail and institutional inflows into both high yield and senior loan asset classes, as well as CLO formation.

HY DEFAULT TRENDS (ROLLING 1 YEAR)



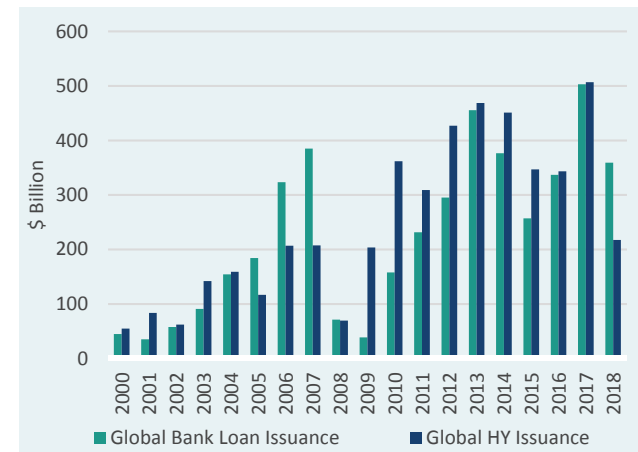
Source: BofA Merrill Lynch, as of 9/30/18

HY SECTOR DEFAULTS (LAST 12 MONTHS)



Source: BofA Merrill Lynch, as of 9/30/18 – par weighted

GLOBAL ISSUANCE (BILLIONS)



Source: Bloomberg, BofA Merrill Lynch, as of 9/30/18

Equity

Equity environment

- U.S. equities delivered strong returns during the quarter (S&P 500 +7.7%), and have outperformed year-to-date. We remain concerned about the large valuation difference between U.S. and international equities, though the relatively positive outlook for the domestic economy should justify some of the valuation difference.
- Emerging market equities delivered slight losses in Q3, but seem to have stabilized as currency depreciation subsided (MSCI Emerging Markets Index -1.1%, JP Morgan EM Currency Index -1.6%). Many emerging market currencies have rebounded from their lows. We maintain a positive outlook on emerging market equities.
- Developed non-U.S. equities have remained range bound following the selloff in the first quarter. International equity performance outside of emerging markets has been flat (MSCI EAFE +1.4% unhedged, +2.9% hedged).
- Another strong quarter of U.S. corporate earnings is expected in Q3 on both an absolute and relative basis. S&P 500 earnings and revenue growth is expected to be 19.3% and 6.9% YoY, respectively. Earnings growth in 2019 is expected to be 10.2% YoY.
- Large cap equities (Russell 1000 7.4%) outperformed small cap (Russell 2000 3.6%) during the quarter. Value stocks lagged growth by a similar margin (Russell 1000 Value 5.7% vs. Russell 1000 Growth 9.2%).
- The performance gap between growth and value equities widened further in Q3. The differential continued to be driven by strong returns generated by large names in the tech sector.

	QTD TOTAL RETURN		YTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	7.4%		10.5%		17.8%	
US Small Cap (Russell 2000)	3.6%		11.5%		15.2%	
US Large Value (Russell 1000 Value)	5.7%		3.9%		9.5%	
US Large Growth (Russell 1000 Growth)	9.2%		17.1%		26.3%	
International Large (MSCI EAFE)	1.4%	2.9%	0.1%	2.9%	2.7%	7.1%
Eurozone (Euro Stoxx 50)	(0.2%)	1.2%	(2.5%)	1.6%	(4.6%)	(0.3%)
U.K. (FTSE 100)	(1.8%)	(0.2%)	(2.7%)	2.0%	3.2%	7.4%
Japan (NIKKEI 225)	6.2%	8.7%	6.8%	7.4%	19.7%	20.7%
Emerging Markets (MSCI Emerging Markets)	(1.1%)	(0.2%)	(7.7%)	(3.8%)	(0.8%)	1.9%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/18

Domestic equity

U.S. equities delivered strong returns during the quarter (S&P 500 +7.7%), and have outperformed year-to-date. Fears of trade conflict crowded the headlines, with the focus nearly all on China as the U.S. successfully concluded negotiations with other trading partners. Equity markets on both sides have generally rallied on news of potential resolution, though the performance gap between U.S. and Chinese equities has trended wider. Trade frictions will likely remain a headwind to performance.

Another strong quarter of U.S. corporate earnings is expected in Q3 on both an absolute and relative basis. S&P 500 earnings and revenue growth are expected to be 19.3% and 6.9% YoY, respectively. Earnings growth in 2019 is expected to be 10.2% YoY. If analyst forecasts are as overly optimistic as they typically are, this would put 2019 earnings growth at a more average rate of 5-6%. While average earnings growth can be conducive to moderate positive equity returns, current relatively high valuations could case concerns once growth rates decelerate.

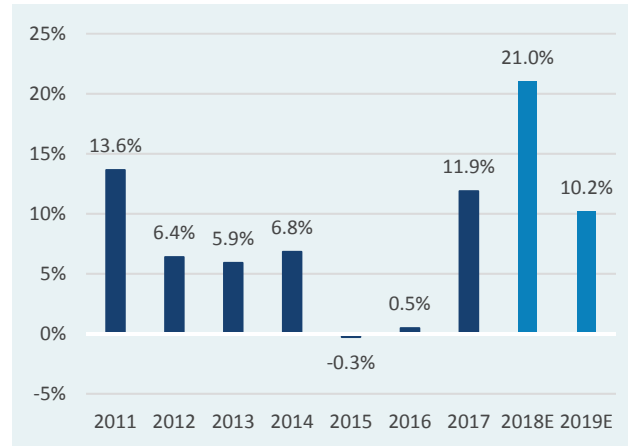
U.S. equities have risen with earnings growth and strong fundamentals, despite trade concerns

U.S. EQUITIES



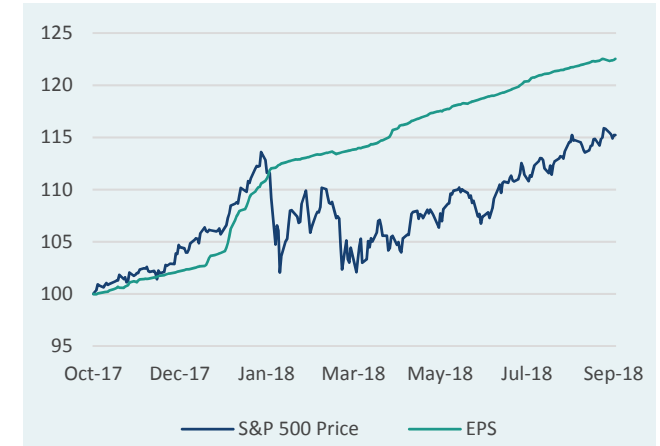
Source: Russell Investments, as of 9/30/18

CALENDAR YEAR EARNINGS GROWTH



Source: FactSet, as of 10/12/18

S&P 500 PRICE & EARNINGS



Source: Bloomberg, as of 9/30/18

Domestic equity size & style

Large cap equities (Russell 1000 7.4%) outperformed small cap equities (Russell 2000 3.6%) during the quarter.

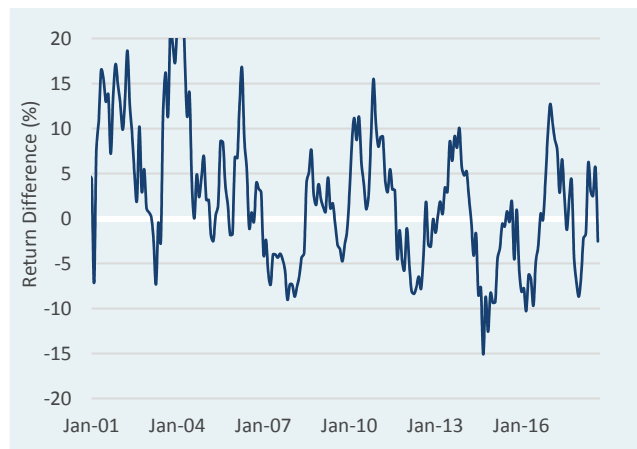
Growth stocks outpaced value stocks by a similar margin (Russell 1000 Growth 9.2% vs. Russell 1000 Value 5.7%).

Differences between sector composition in large-cap style benchmarks have explained much of the recent growth outperformance. Nearly 50% of the Russell 1000 Growth Index is in the more cyclical Information Technology and Consumer Discretionary sectors, which have been by far

and away the best performing sectors over the past year.

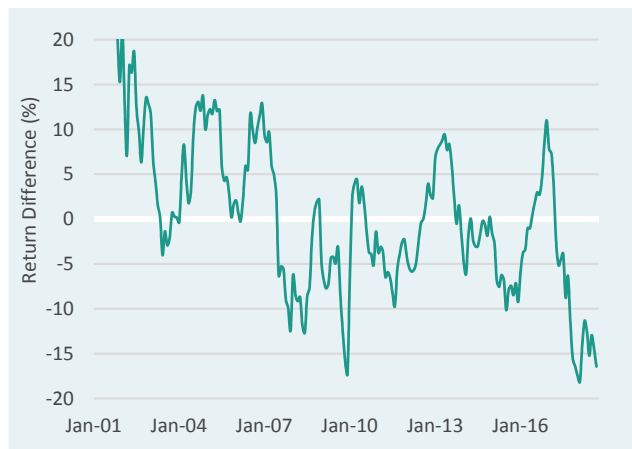
Size and value factor performance continues to frustrate investors. While the extent of underperformance is not anomalous, it may be testament to the long-term nature of factor investing. Unless an investor believes that these risk premia no longer exist, maintaining exposure and avoiding capitulation should be the primary goal.

SMALL CAP VS LARGE CAP (YOY)



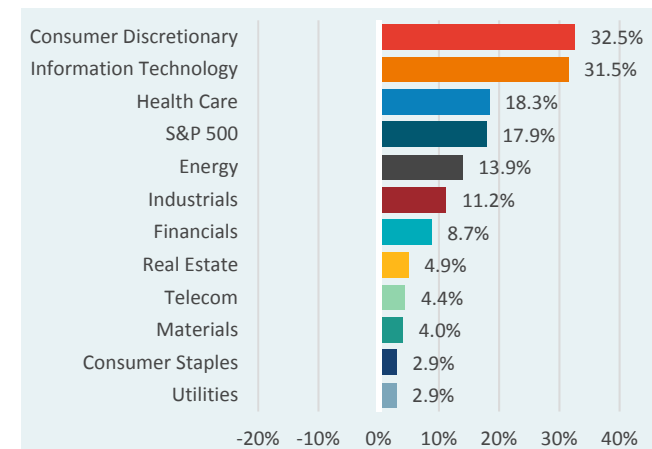
Source: FTSE, as of 9/30/18

VALUE VS GROWTH (YOY)



Source: FTSE, as of 9/30/18

1-YEAR S&P 500 SECTOR RETURNS



Source: Morningstar, as of 9/30/18

International developed equity

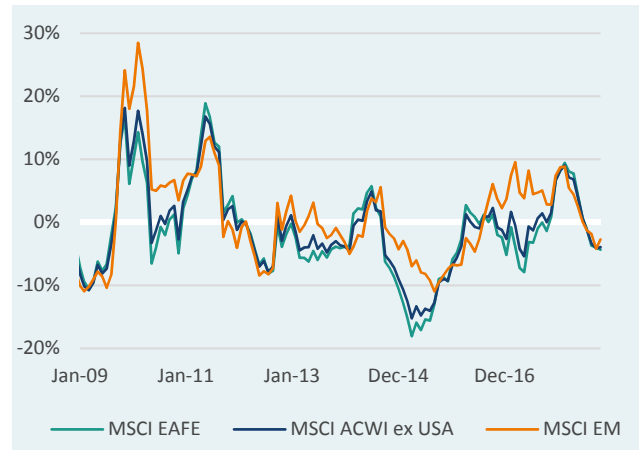
Unhedged international equities underperformed U.S. equities during Q3 (MSCI EAFE +1.4% vs. S&P 500 +7.7%). On a currency hedged basis, international equities delivered returns of 2.9%.

Currency movement continued to create losses for unhedged equity investors. U.S. investors that hedged their international equity exposure outperformed their unhedged peers by approximately 5% year-to-date (MSCI EAFE Index).

Regional divergence in earnings remained a story in Q3. Year-over-year growth in forward earnings reached 23% for U.S. equities, while estimates fell from 14% to 9% in emerging markets and from 12% to 10% in international developed markets, according to MSCI estimates.

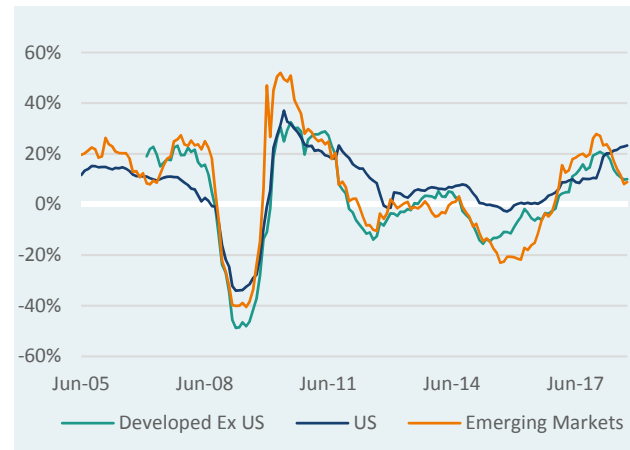
Differences in forward P/E multiples between U.S. and non-U.S. equities remained high. At quarter-end, this valuation gap relative to international developed equity ranked in the 96th percentile since 2005. The U.S.-EM valuation gap ranked in the 89th percentile over the same period.

EFFECT OF CURRENCY (1-YEAR ROLLING)



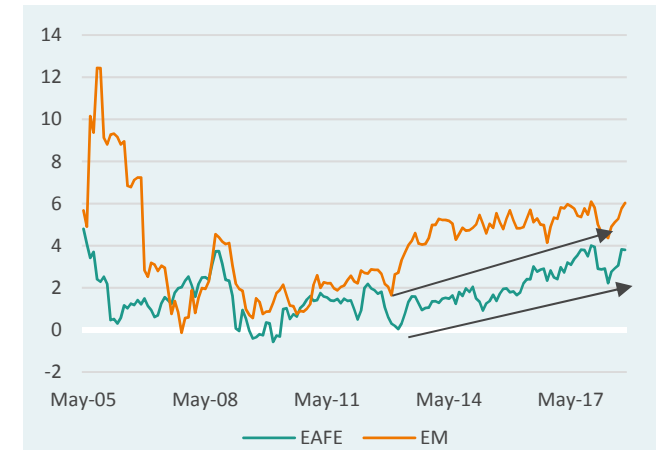
Source: MSCI, as of 9/30/18

EARNINGS GROWTH (YOY)



Source: MSCI, as of 9/30/18 – YoY growth in forward earnings

FORWARD P/E SPREADS RELATIVE TO U.S.



Source: MSCI, as of 9/30/18

Emerging market equity

Emerging market equities delivered a slight loss in Q3 but seem to have stabilized as currency depreciation subsided (MSCI Emerging Markets Index -1.1%, JP Morgan EM Currency Index -1.6%). Many of these currencies have rebounded from their lows.

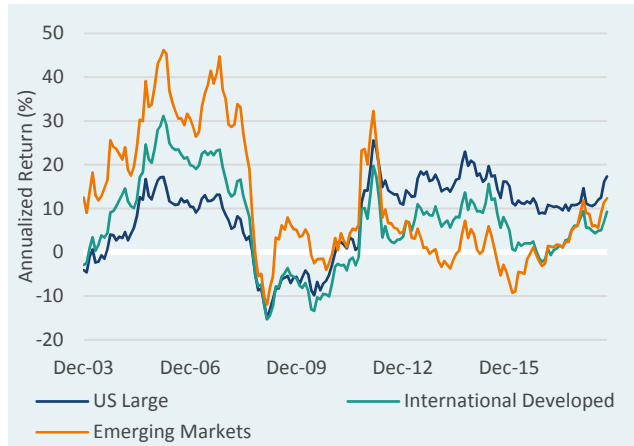
Developed markets are expected to grow less quickly in the coming years while emerging economic growth is expected to rise. A positive growth premium of emerging economies relative to developed economies has

historically acted as a tailwind for EM outperformance.

We believe positive emerging economy growth trends, attractive valuations, a strong earnings environment, and depressed currencies should provide an environment of strong relative equity performance across these markets.

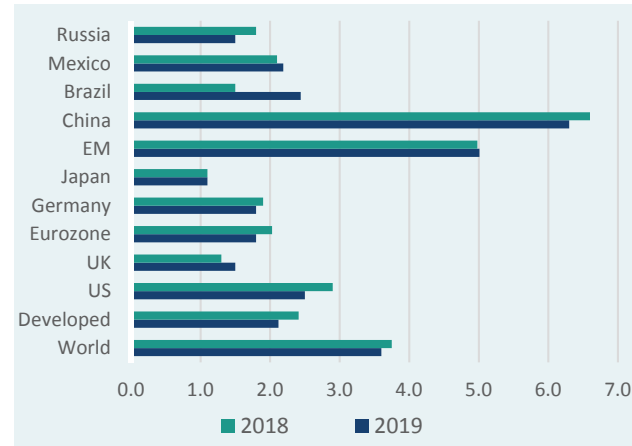
Conditions remain positive for medium-term EM equity performance, though volatility may persist

EQUITY PERFORMANCE (3YR ROLLING)



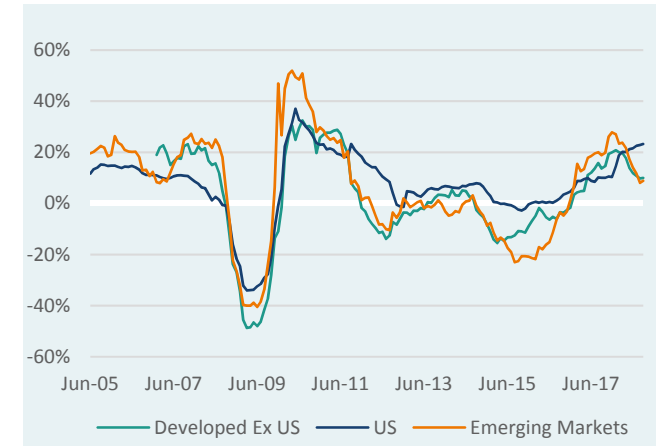
Source: Standard & Poor's, MSCI, as of 9/30/18

GDP GROWTH EXPECTATIONS (%)



Source: Bloomberg, as of 9/30/18

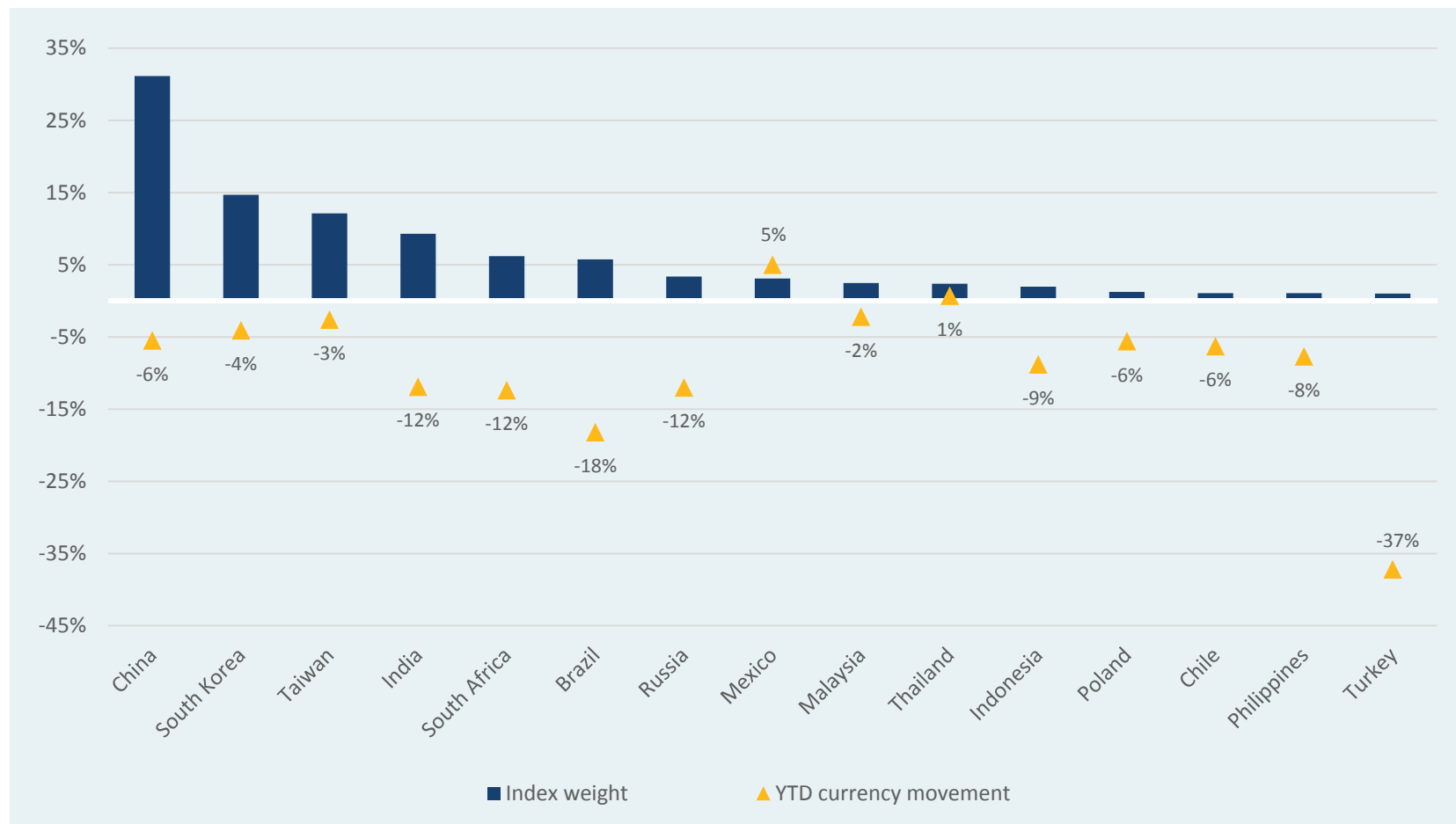
EARNINGS GROWTH (YOY)



Source: MSCI, as of 9/30/18 – YoY growth in forward earnings

Emerging market currency movement

Currency moves across most of EM are in-line with DM (~5% depreciation)



South Africa, Brazil, and Russia are causing greater currency pain in EM

Many of these currencies have recovered some of their losses

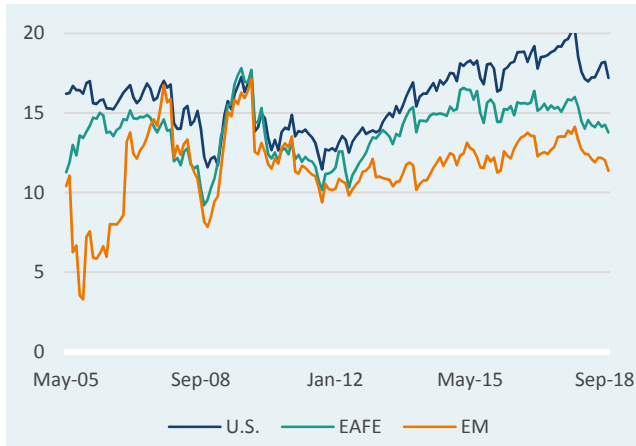
Source: MSCI, Bloomberg, as of 9/30/18

Equity valuations

Forward equity P/E multiples moved lower during the quarter and year-to-date as strong earnings growth expectations came to fruition. We remain concerned about the large valuation difference between U.S. and international equities, though the relatively positive domestic economic outlook and strong expected earnings growth through year-end should justify some of the valuation difference. However, because a significant portion of U.S. earnings outperformance has been due to a one-time tax cut, it may become more difficult to justify the valuation disparity beyond 2018.

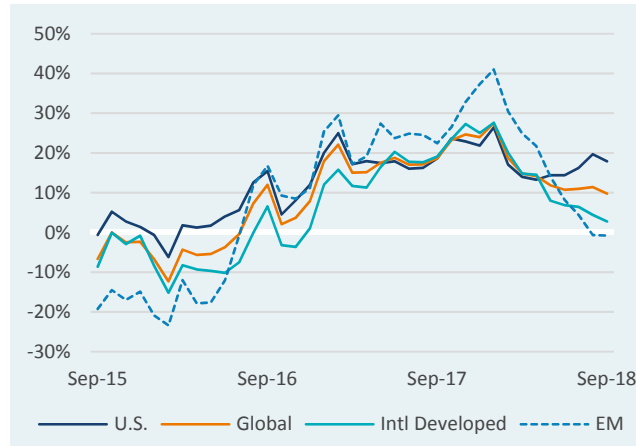
Looking at markets through our *carry, value, trend, and macro* lens, carry and value have improved through lower prices and higher underlying earnings. Trend has flattened out in international markets as equity performance has been rangebound year-to-date. The macro environment has weakened outside the U.S., with economic data indicating a more average backdrop.

FORWARD P/E RATIOS



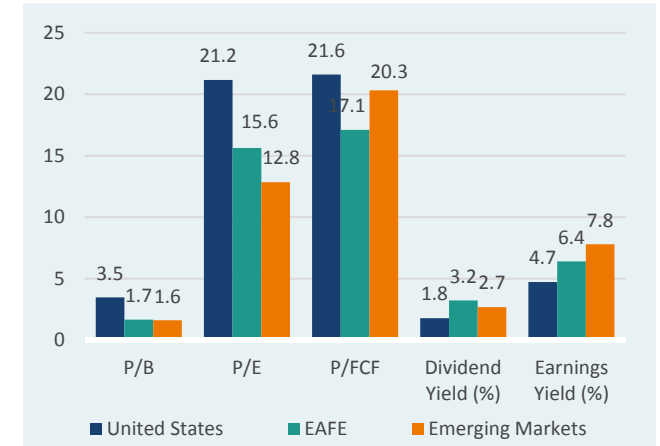
Source: MSCI, as of 9/30/18

MOMENTUM (1YR)



Source: Standard & Poor's, MSCI, as of 9/30/18

VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, as of 9/30/18 - trailing P/E

Equity volatility

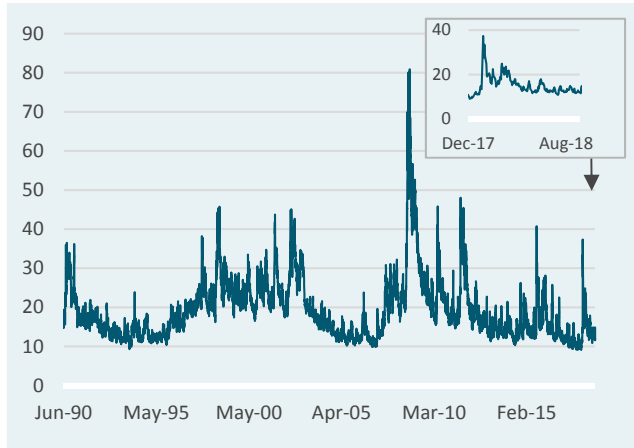
U.S. equity volatility remains muted. The VIX index ranged from 11 to 16 for the entirety of the quarter. Despite such an extended period of below-average volatility, it may be helpful to remember that the VIX Index has averaged 19.3 since 1990. Volatility has remain depressed or elevated for extended periods of time.

Realized volatility of the S&P 500 was below average at 9.1%. International equities have also exhibited muted volatility (MSCI EAFE 9.1%, MSCI Emerging Markets 13.3%).

Stories of idiosyncratic emerging market crises dominated news headlines over the quarter. However, emerging market equity volatility is at an average level (MSCI EM). At the end of the third quarter, the one-month implied volatility of the index was 17.1%, slightly below its three-year average of 18.5%. In Q3, the MSCI EM Index fell 1.1%, bringing the year-to-date decline to 7.7%.

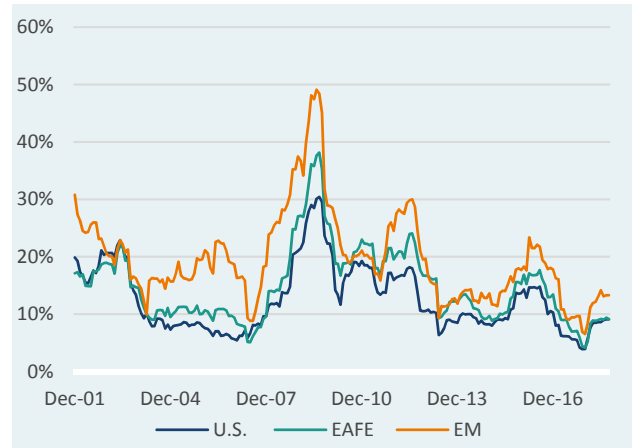
Global equity volatility remained below average

U.S. IMPLIED VOLATILITY (VIX)



Source: CBOE, as of 9/30/18

REALIZED 1-YEAR ROLLING VOLATILITY



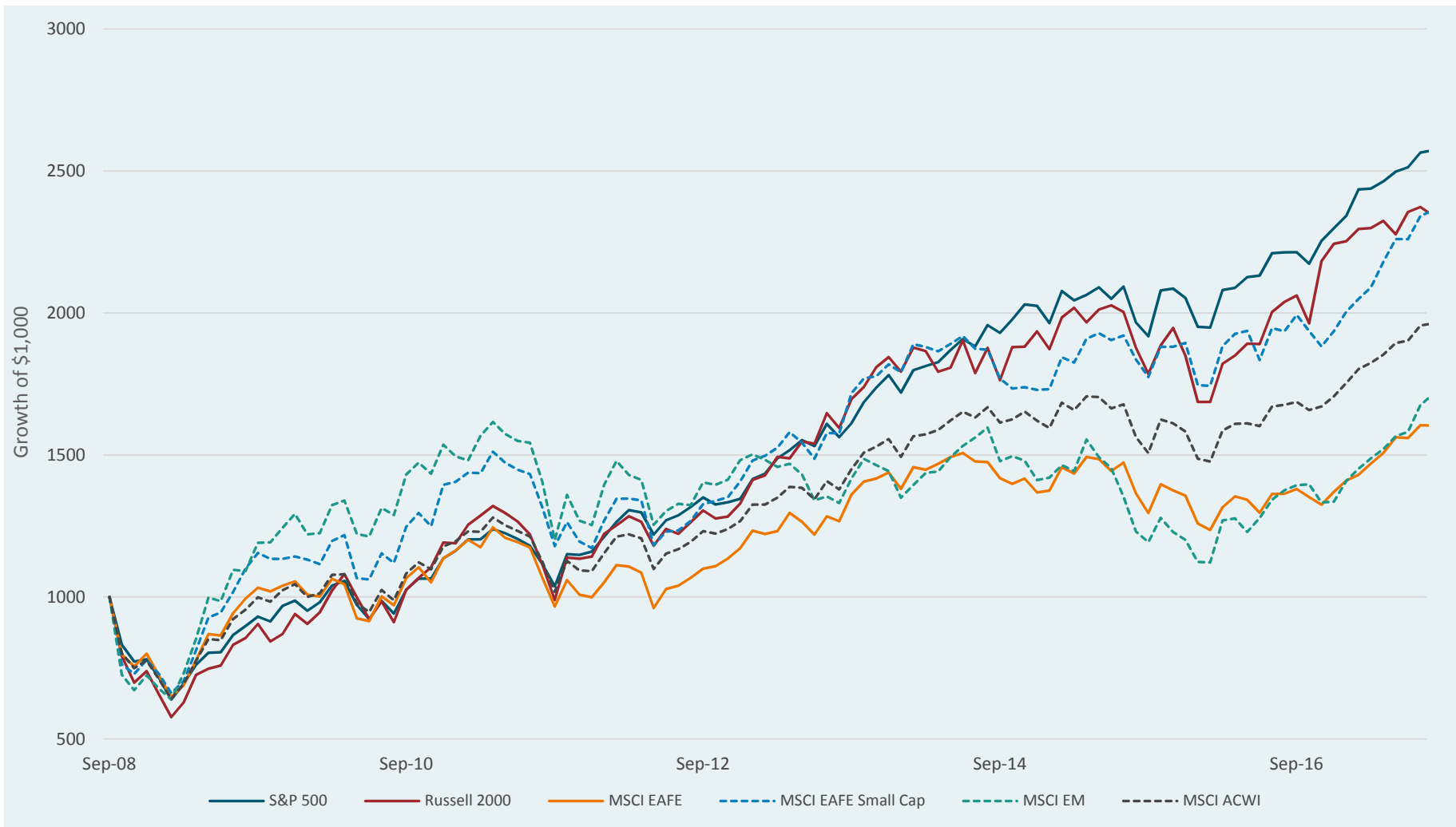
Source: Bloomberg, as of 9/30/18

MSCI EM INDEX 1-MONTH IMPLIED VOLATILITY



Source: Bloomberg, as of 9/30/18

Long-term equity performance



Source: Morningstar, as of 9/30/18

Other assets

Currency

The U.S. dollar appreciated 1% during the quarter on a trade-weighted dollar basis. A stable dollar going forward would help dampen the volatility of unhedged equity investments, particularly in emerging markets where currency moves have been larger. Some of the worst performing emerging market currencies have partially recovered from 2nd quarter losses.

Major currencies have fluctuated widely relative to the U.S. dollar in 2018. Most currencies strengthened through the first quarter, but this trend reversed when international economic growth began to show weakness, which helped

push up the value of the dollar. Because foreign currencies have been positively correlated with equity markets, these movements have added to total volatility.

Wide short-term interest rate differentials between the U.S. and the rest of the world have created a tailwind for those hedging U.S. dollar exposures. For example, based on current FX forward pricing, an investor would lock in an annualized gain of 3.3% when hedging the euro, which is typically the biggest foreign currency exposure in portfolios.

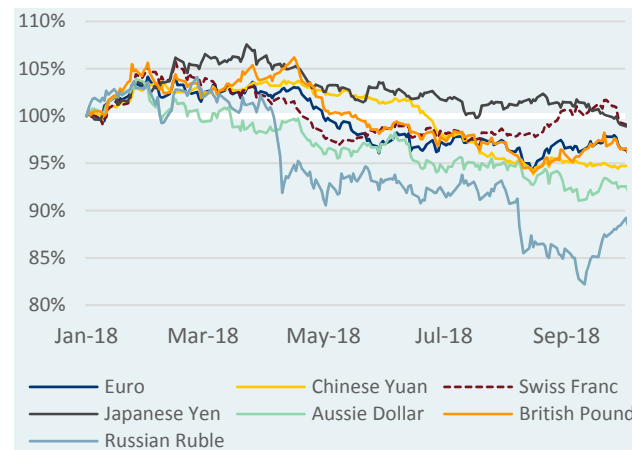
The U.S. dollar materially appreciated, reversing a multi-year downtrend

U.S. DOLLAR TRADE WEIGHTED INDEX



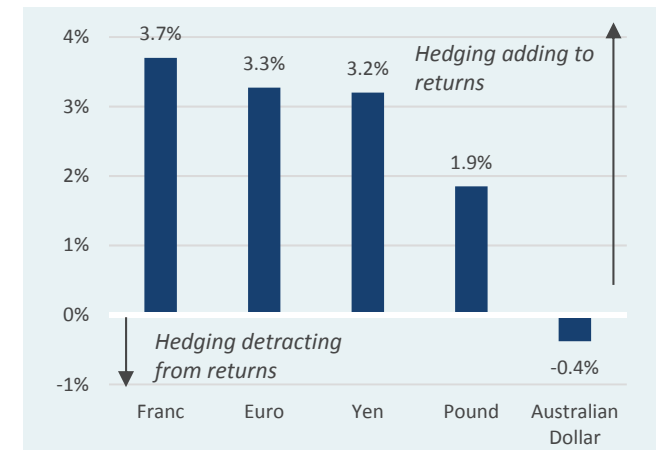
Source: Federal Reserve, as of 9/30/18

USD MOVES VS MAJOR CURRENCIES



Source: Verus, Bloomberg, as of 9/30/18

ANNUALIZED FX HEDGING COSTS (GAINS)



Source: Bloomberg, as of 9/30/18, based on 3-month FX forwards

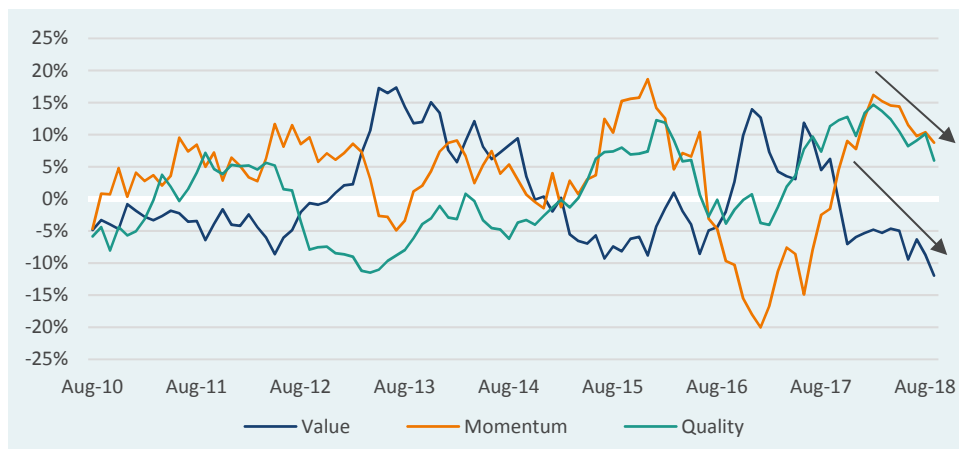
Alternative beta

Alternative beta strategies have suffered sharp losses so far this year, near a two standard deviation downside event for many strategies based on historical returns and volatility. Returns from managers we follow were better in the third quarter, but most strategies are still digging out of a hole created in the first two quarters of the year. Factor exposure, in particular equity value, can help explain some of the poor performance. The long drawdown in the value factor has come at a time when other factors that are often relied on in alt beta strategies, including trend-following and short volatility, have also experienced losses. The magnitude of the

drawdown in the value factor is within normal bounds based on history, but it has been the longest on record. Momentum in U.S. equities has performed well, but this has not been enough to offset negative value returns.

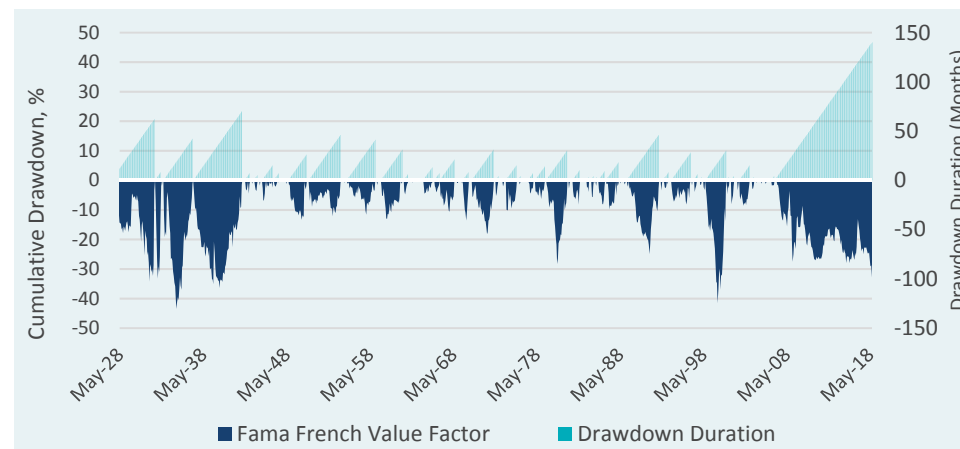
We reiterate our belief that alternative beta strategies are not “broken” per se, but instead have reflected extreme drawdowns in some factors and muted returns in others. We will continue to closely monitor these strategies and engage in frequent discussions with managers.

U.S. MARKET NEUTRAL FACTOR PERFORMANCE (12-MONTH ROLLING)



Source: S&P Dow Jones, Thematic Market Neutral Indices, as of 9/30/18

VALUE FACTOR DRAWDOWN MAGNITUDE AND DURATION



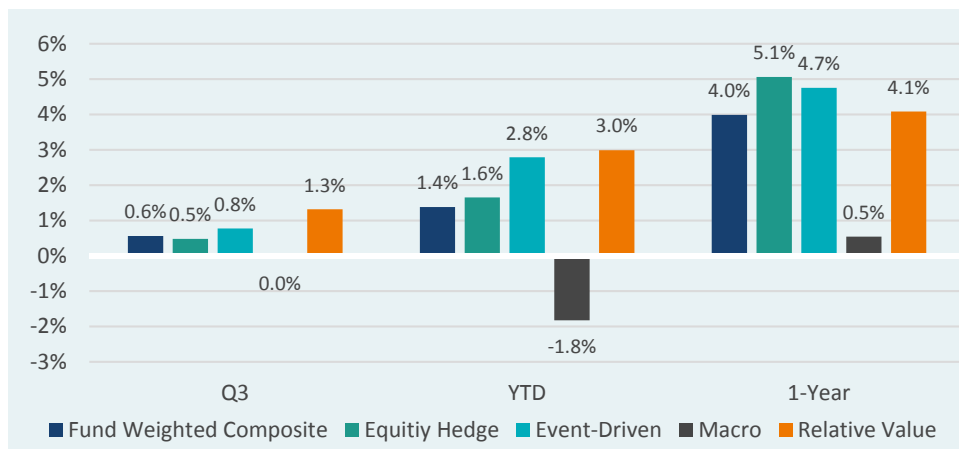
Source: Kenneth French Data Library, as of 8/31/18

Hedge funds

Hedge funds delivered modestly positive results across strategies in Q3 (HFRI Fund Weighted Composite +0.6%). Equity-focused managers had mixed results. Funds specializing in health care (+5.0%) stood out as strong performers. At the beginning of the quarter, growth-oriented managers had enjoyed a run of favorable results relative to value-oriented peers dating back to Q4 2017. Growth manager results relative to peers suffered as a narrow set of high growth equity names sold off in the quarter. Many other equity-focused managers were marginally positive or flat. Emerging market fund results ranged from small losses in Latin America to significant losses in China and India.

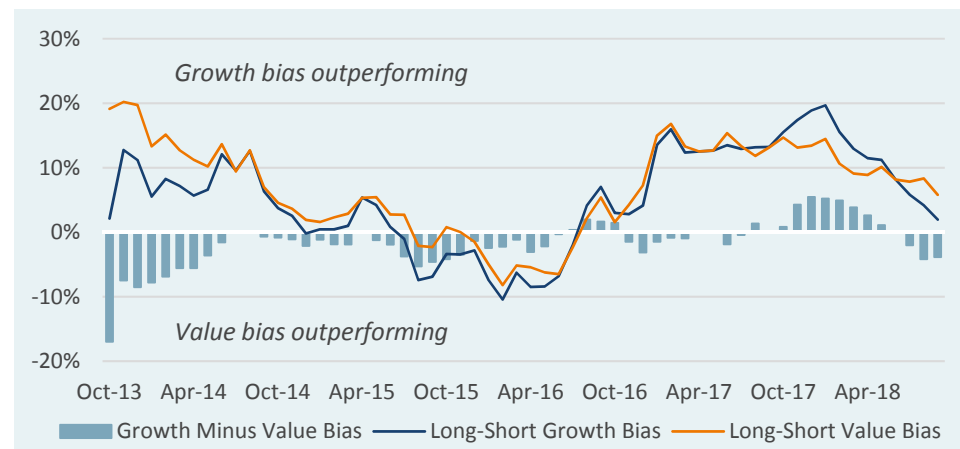
Within the fixed income markets, managers that focused on the credit and asset-backed securities sectors, in aggregate, were up about +1.5% for the quarter. Most other fixed income focused investment styles were modestly positive to flat for the period. Due to the relatively tight credit spreads, many credit-oriented managers are now carefully allocating capital to idiosyncratic long positions to protect against downside losses from a potential increase in spreads.

HFRI HEDGE FUND STYLE PERFORMANCE



Source: HFRI, as of 9/30/18

GROWTH VS VALUE BIAS IN LONG-SHORT EQUITY MANAGERS (1-YR ROLLING PERFORMANCE)



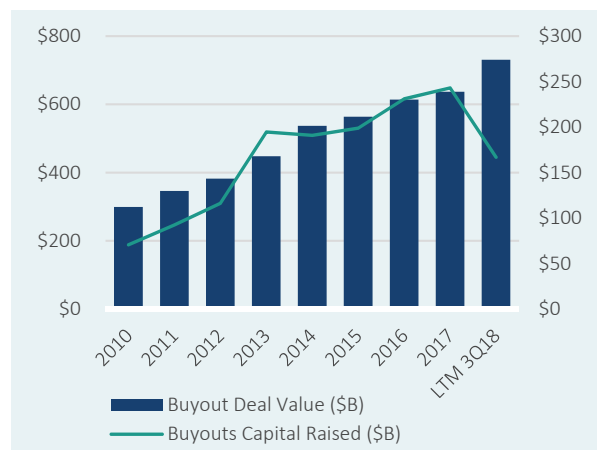
Source: HFRI, as of 9/30/18

Private markets

Deals increased in buyouts and venture; multiples are steady; buyout fundraising has slowed

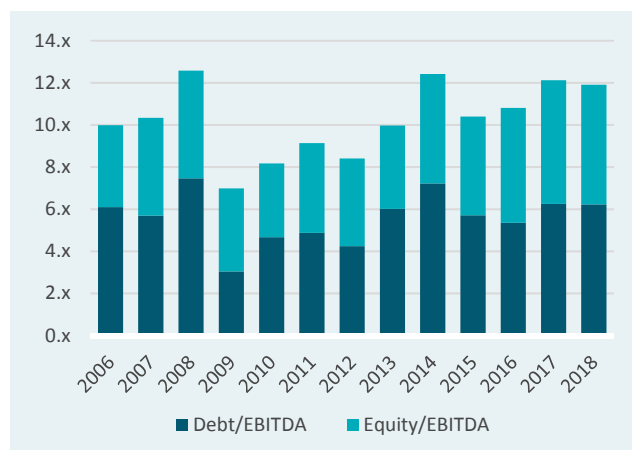
- Buyout activity has continued to increase in 2018. Through the third quarter buyouts are up 25% and 24% when measured by dollar value and number of transactions, respectively. The size of the average buyout is virtually unchanged from 2017 (\$142 million). Unlike deal flow, fund capital raising has slowed from the peaks of 2017. Only 143 buyout funds representing \$121 billion closed so far this year, down from 184 funds representing \$178 billion through the same period last year. Trailing-twelve-month funds raised is down 25% from a record \$224 billion in 2017.
- Buyout multiples are largely unchanged from 2017. Average EV/EBITDA is 11.9x through September 30, 2018 (down from 12.1x in 2017) with debt multiples averaging 5.7x through the third quarter. Debt as a percentage of transaction value remains at 50%, which is down from 60% in 2013.
- Venture capital fundraising and deal volumes continue to set records. \$32 billion of venture capital has been raised in the U.S. through the first 9 months of 2018, an increase of 33% over the same period last year. Similarly, venture deals are up 37%. In fact, year-to-date venture deal volume (\$84 billion) exceeds the record of \$82 billion that was set in 2017.
- Balancing high deal multiples and a growing number of deals against a slowdown in fundraising, we advocate selectivity in fund investments.

BUYOUTS DEAL VOLUME & CAPITAL RAISED



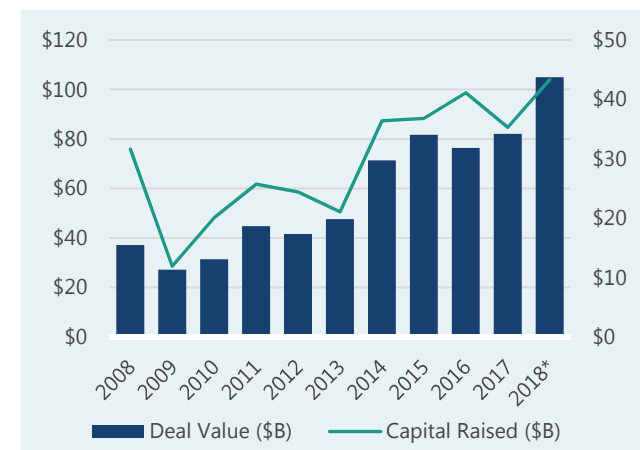
Source: PitchBook

TRANSACTION MULTIPLES



Source: PitchBook

VENTURE DEAL VOLUME & FUNDRAISING



Source: PitchBook

Appendix

Periodic table of returns

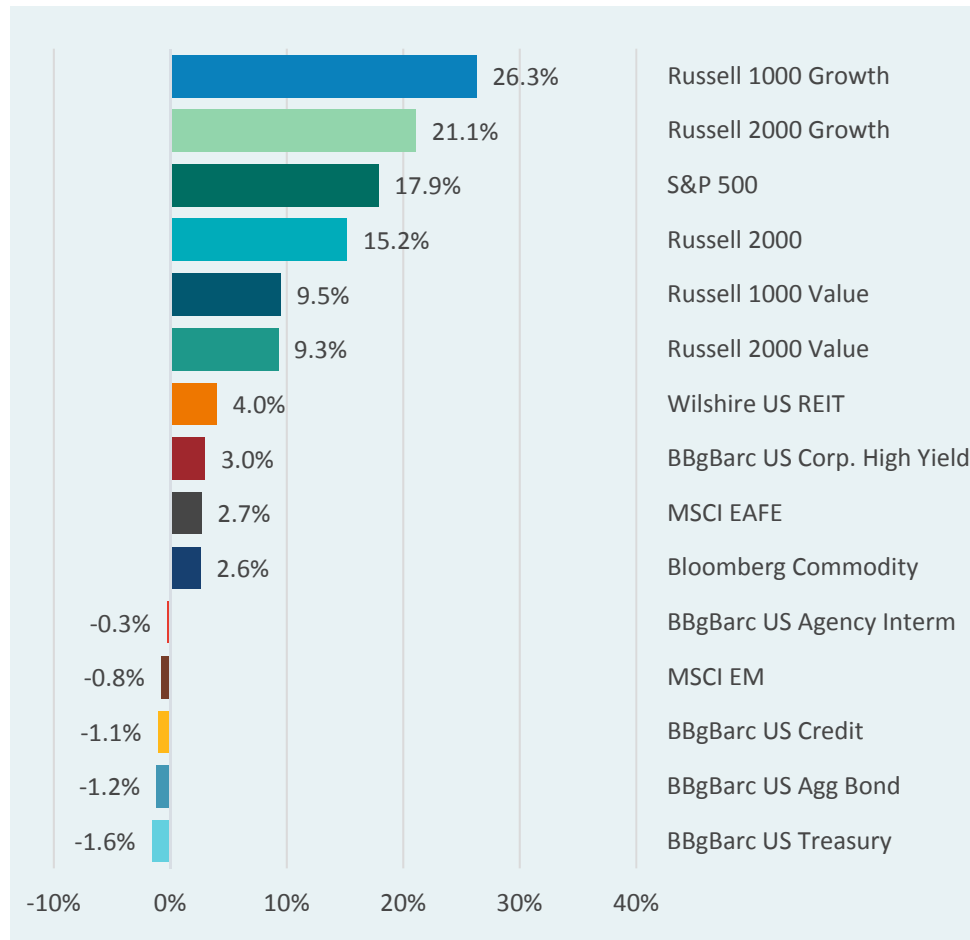
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	YTD	5-Year	10-Year
Large Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	17.1	16.6	14.3
Small Cap Growth	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	15.8	13.7	12.7
Small Cap Equity	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	11.5	12.1	12.1
Large Cap Equity	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	10.5	11.1	11.1
Small Cap Value	16.2	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	7.1	10.7	9.8
Large Cap Value	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	3.9	9.9	9.5
Real Estate	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	3.5	9.2	6.3
60/40 Global Portfolio	4.9	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	1.4	5.6	6.2
Cash	1.2	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	1.3	4.4	5.4
Hedge Funds of Funds	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	1.2	3.6	5.4
International Equity	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	5.1	-1.4	3.2	3.8
US Bonds	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-1.6	2.2	2.6
Commodities	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-2.0	0.5	0.3
Emerging Markets Equity	-27.0	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-7.7	-7.2	-6.2



Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 6/30/18.

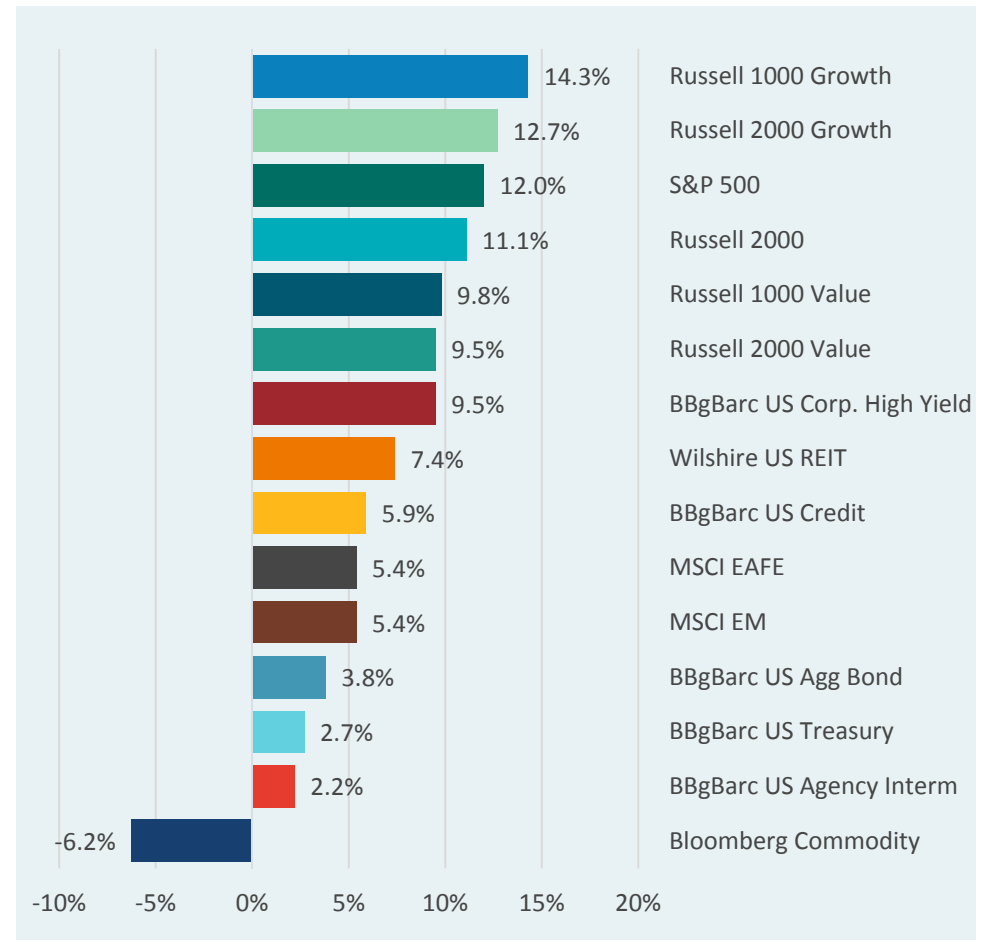
Major asset class returns

ONE YEAR ENDING SEPTEMBER



Source: Morningstar, as of 9/30/18

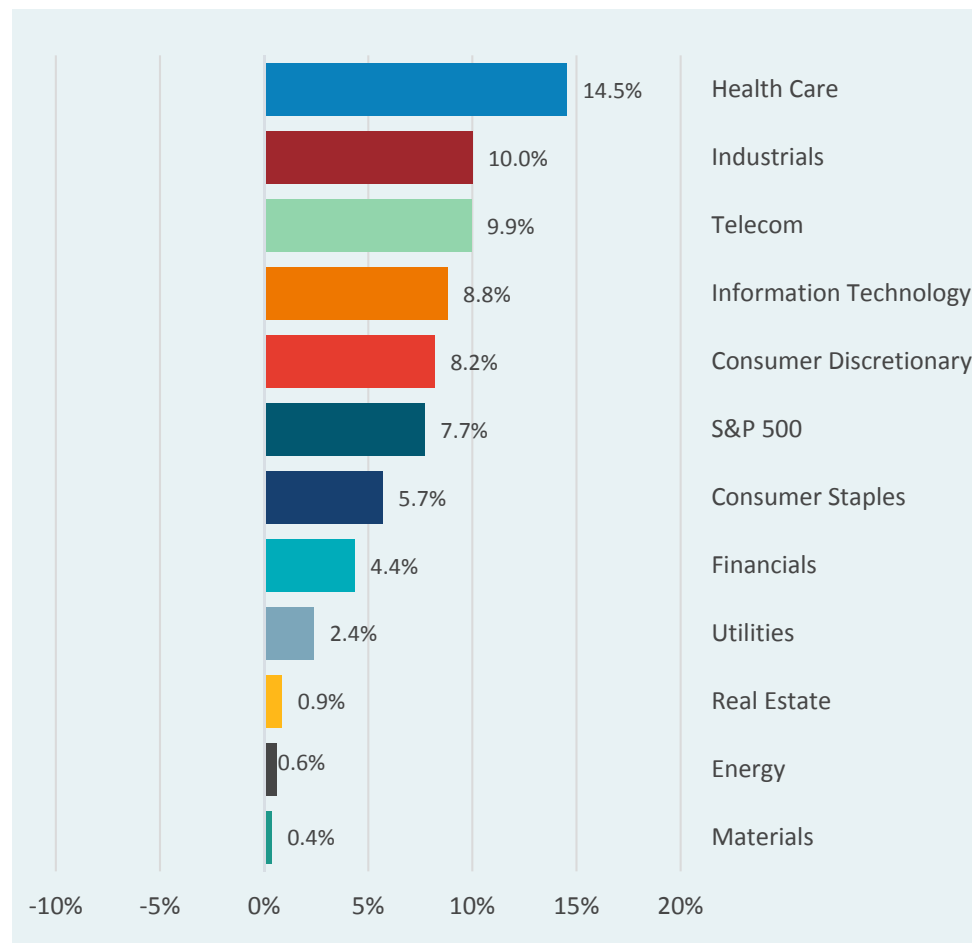
TEN YEARS ENDING SEPTEMBER



Source: Morningstar, as of 9/30/18

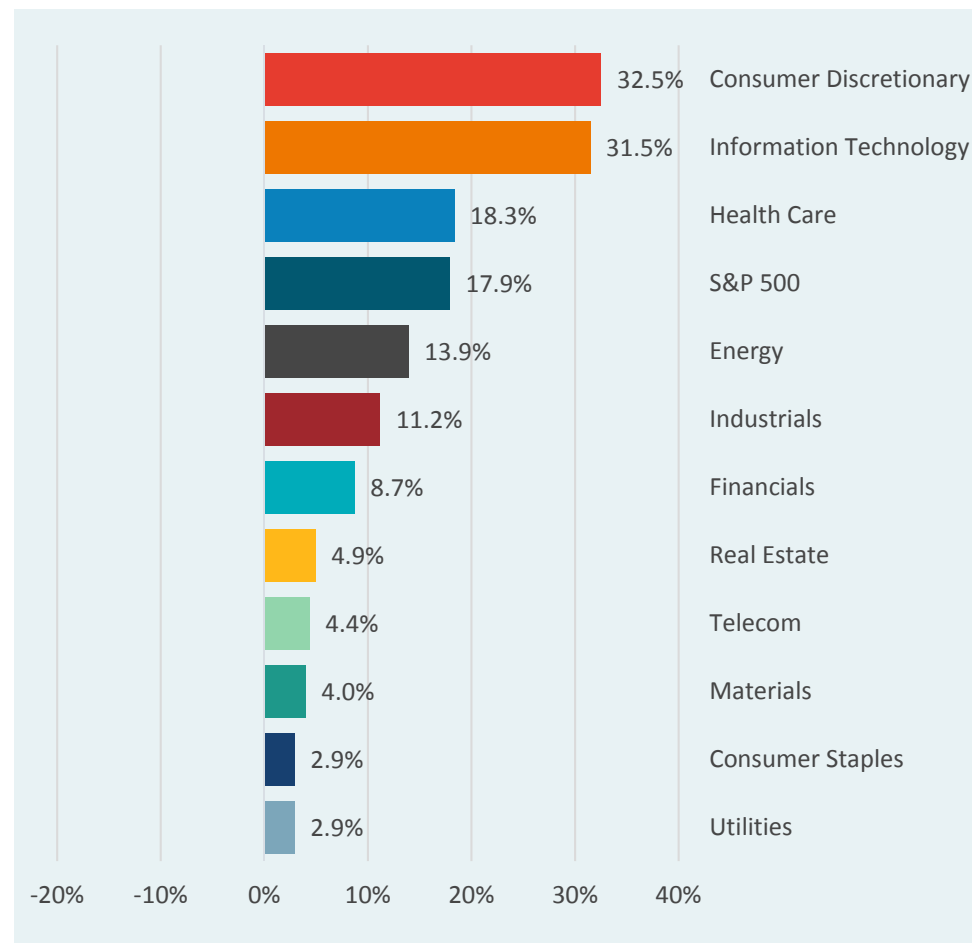
S&P 500 sector returns

THIRD QUARTER



Source: Morningstar, as of 9/30/18

ONE YEAR ENDING SEPTEMBER



Source: Morningstar, as of 9/30/18

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	0.6	7.7	10.6	17.9	17.3	13.9	12.0
S&P 500 Equal Weighted	0.1	5.4	7.3	13.9	15.4	12.5	13.1
DJ Industrial Average	2.0	9.6	8.8	20.8	20.5	14.6	12.2
Russell Top 200	0.8	8.4	11.7	19.3	18.1	14.5	12.0
Russell 1000	0.4	7.4	10.5	17.8	17.1	13.7	12.1
Russell 2000	(2.4)	3.6	11.5	15.2	17.1	11.1	11.1
Russell 3000	0.2	7.1	10.6	17.6	17.1	13.5	12.0
Russell Mid Cap	(0.6)	5.0	7.5	14.0	14.5	11.7	12.3
Style Index							
Russell 1000 Growth	0.6	9.2	17.1	26.3	20.6	16.6	14.3
Russell 1000 Value	0.2	5.7	3.9	9.5	13.6	10.7	9.8
Russell 2000 Growth	(2.3)	5.5	15.8	21.1	18.0	12.1	12.7
Russell 2000 Value	(2.5)	1.6	7.1	9.3	16.1	9.9	9.5

INTERNATIONAL EQUITY

Broad Index							
MSCI ACWI	0.4	4.3	3.8	9.8	13.4	8.7	8.2
MSCI ACWI ex US	0.5	0.7	(3.1)	1.8	10.0	4.1	5.2
MSCI EAFE	0.9	1.4	(1.4)	2.7	9.2	4.4	5.4
MSCI EM	(0.5)	(1.1)	(7.7)	(0.8)	12.4	3.6	5.4
MSCI EAFE Small Cap	(0.7)	(0.9)	(2.2)	3.7	12.4	8.0	9.7
Style Index							
MSCI EAFE Growth	(0.2)	1.5	0.6	5.8	10.3	5.6	6.2
MSCI EAFE Value	2.1	1.2	(3.5)	(0.4)	8.1	3.1	4.5
Regional Index							
MSCI UK	1.8	(1.7)	(2.7)	2.9	6.2	2.2	4.9
MSCI Japan	3.0	3.7	1.6	10.2	12.1	6.8	6.0
MSCI Euro	(0.1)	(0.4)	(3.6)	(3.2)	8.5	3.9	3.4
MSCI EM Asia	(1.7)	(1.8)	(6.8)	1.0	13.5	6.7	8.2
MSCI EM Latin American	4.7	4.8	(6.9)	(9.1)	13.7	(2.3)	0.7

Source: Morningstar, HFR, as of 9/30/18

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	(1.1)	(0.8)	(0.8)	0.4	2.0	1.4	3.3
BBgBarc US Treasury Bills	0.2	0.5	1.3	1.5	0.8	0.5	0.4
BBgBarc US Agg Bond	(0.6)	0.0	(1.6)	(1.2)	1.3	2.2	3.8
Duration							
BBgBarc US Treasury 1-3 Yr	(0.1)	0.2	0.2	(0.0)	0.4	0.6	1.1
BBgBarc US Treasury Long	(3.0)	(2.9)	(5.8)	(3.6)	0.7	4.4	5.5
BBgBarc US Treasury	(0.9)	(0.6)	(1.7)	(1.6)	0.2	1.3	2.7
Issuer							
BBgBarc US MBS	(0.6)	(0.1)	(1.1)	(0.9)	1.0	2.0	3.3
BBgBarc US Corp. High Yield	0.6	2.4	2.6	3.0	8.1	5.5	9.5
BBgBarc US Agency Interm	(0.2)	0.2	0.0	(0.3)	0.6	1.1	2.2
BBgBarc US Credit	(0.3)	0.9	(2.1)	(1.1)	3.0	3.4	5.9

OTHER

Index							
Bloomberg Commodity	1.9	(2.0)	(2.0)	2.6	(0.1)	(7.2)	(6.2)
Wilshire US REIT	(2.8)	(5.4)	2.2	4.0	7.1	9.2	7.4
CS Leveraged Loans	0.7	4.4	4.4	5.6	5.4	4.4	5.8
Alerian MLP	(2.0)	7.0	5.2	3.3	3.9	(2.8)	10.0
Regional Index							
JPM EMBI Global Div	1.5	2.3	(3.0)	(1.9)	6.0	5.4	7.5
JPM GBI-EM Global Div	2.6	(1.8)	(8.1)	(7.4)	5.2	(1.7)	2.7
Hedge Funds							
HFRI Composite	(0.2)	0.6	1.5	4.1	5.4	4.1	4.6
HFRI FOF Composite	(0.0)	0.4	1.2	3.3	3.4	3.2	2.6
Currency (Spot)							
Euro	(0.2)	(0.5)	(3.3)	(1.8)	1.3	(3.0)	(1.9)
Pound	0.3	(1.2)	(3.6)	(2.8)	(4.9)	(4.2)	(3.1)
Yen	(2.4)	(2.5)	(0.8)	(0.9)	1.8	(2.9)	(0.7)

Definitions

Bloomberg US Weekly Consumer Comfort Index - tracks the public's economic attitudes each week, providing a high-frequency read on consumer sentiment. The index, based on cell and landline telephone interviews with a random, representative national sample of U.S. adults, tracks Americans' ratings of the national economy, their personal finances and the buying climate on a weekly basis, with views of the economy's direction measured separately each month. (www.lanqerresearch.com)

University of Michigan Consumer Sentiment Index - A survey of consumer attitudes concerning both the present situation as well as expectations regarding economic conditions conducted by the University of Michigan. For the preliminary release approximately three hundred consumers are surveyed while five hundred are interviewed for the final figure. The level of consumer sentiment is related to the strength of consumer spending. (www.Bloomberg.com)

NFIB Small Business Outlook - Small Business Economic Trends (SBET) is a monthly assessment of the U.S. small-business economy and its near-term prospects. Its data are collected through mail surveys to random samples of the National Federal of Independent Business (NFIB) membership. The survey contains three broad question types: recent performance, near-term forecasts, and demographics. The topics addressed include: outlook, sales, earnings, employment, employee compensation, investment, inventories, credit conditions, and single most important problem. (<http://www.nfib-sbet.org/about/>)

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Contra Costa County Employees' Retirement Association

Investment Performance Review

Period Ending: September 30, 2018



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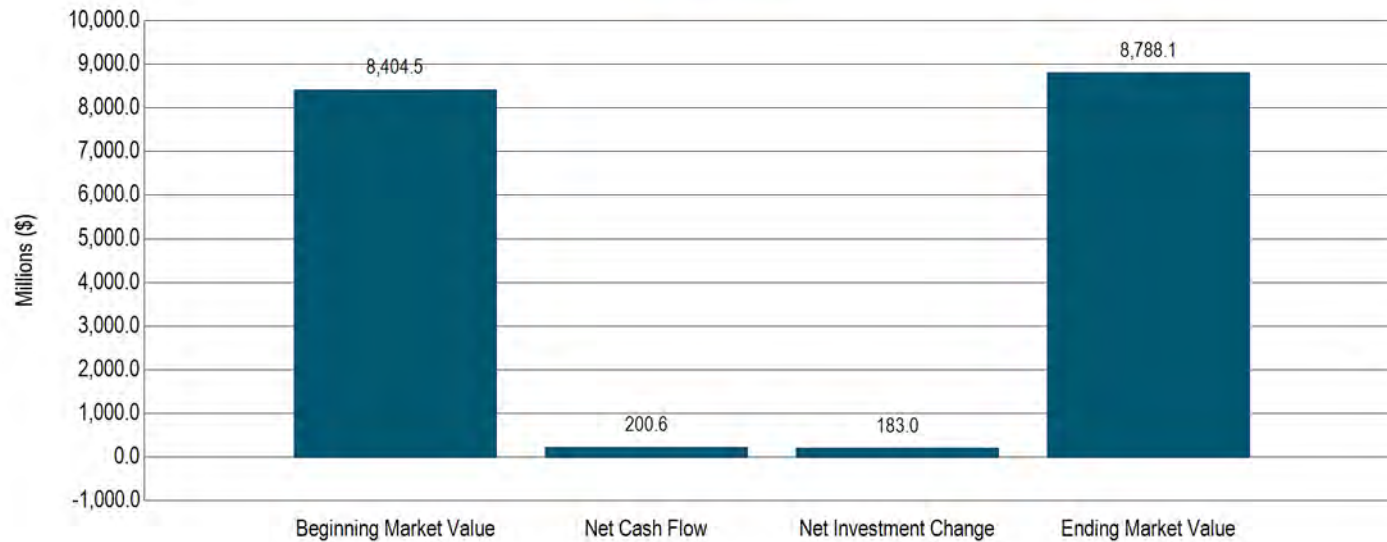
LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

Portfolio Reconciliation

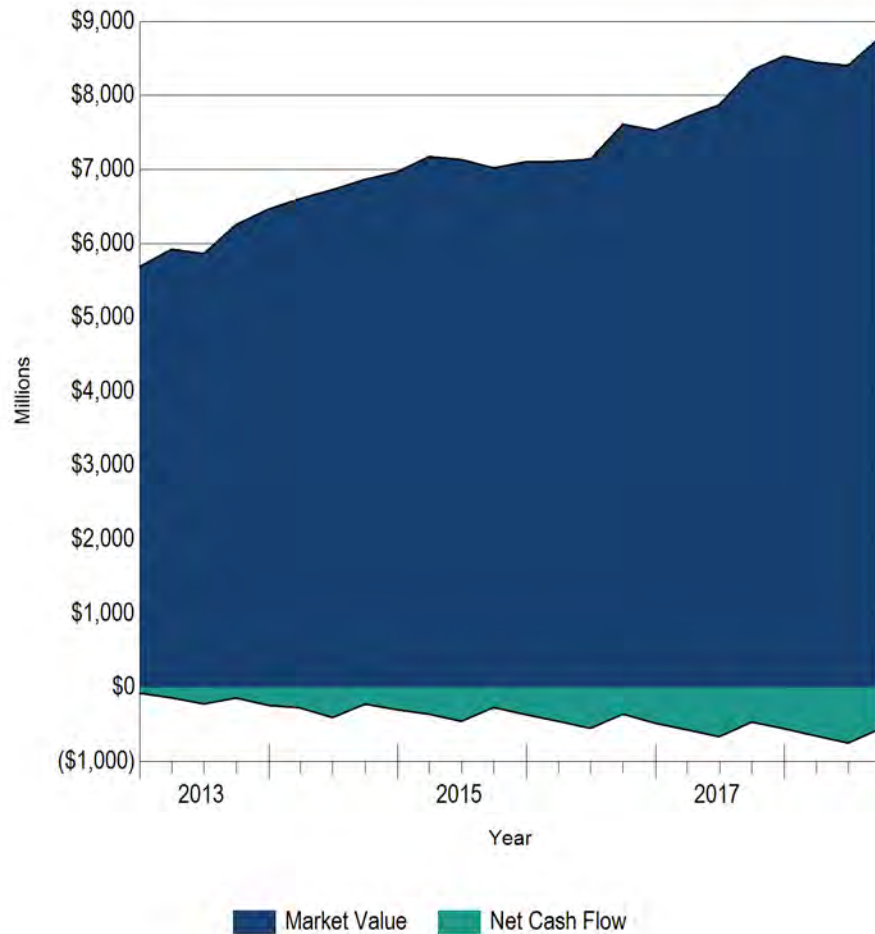
	Last Three Months	Year-To-Date
Beginning Market Value	\$8,404,526,351	\$8,532,697,023
Net Cash Flow	\$200,608,538	\$18,859,189
Net Investment Change	\$183,005,675	\$236,584,353
Ending Market Value	\$8,788,140,564	\$8,788,140,564

**Change in Market Value
Last Three Months**

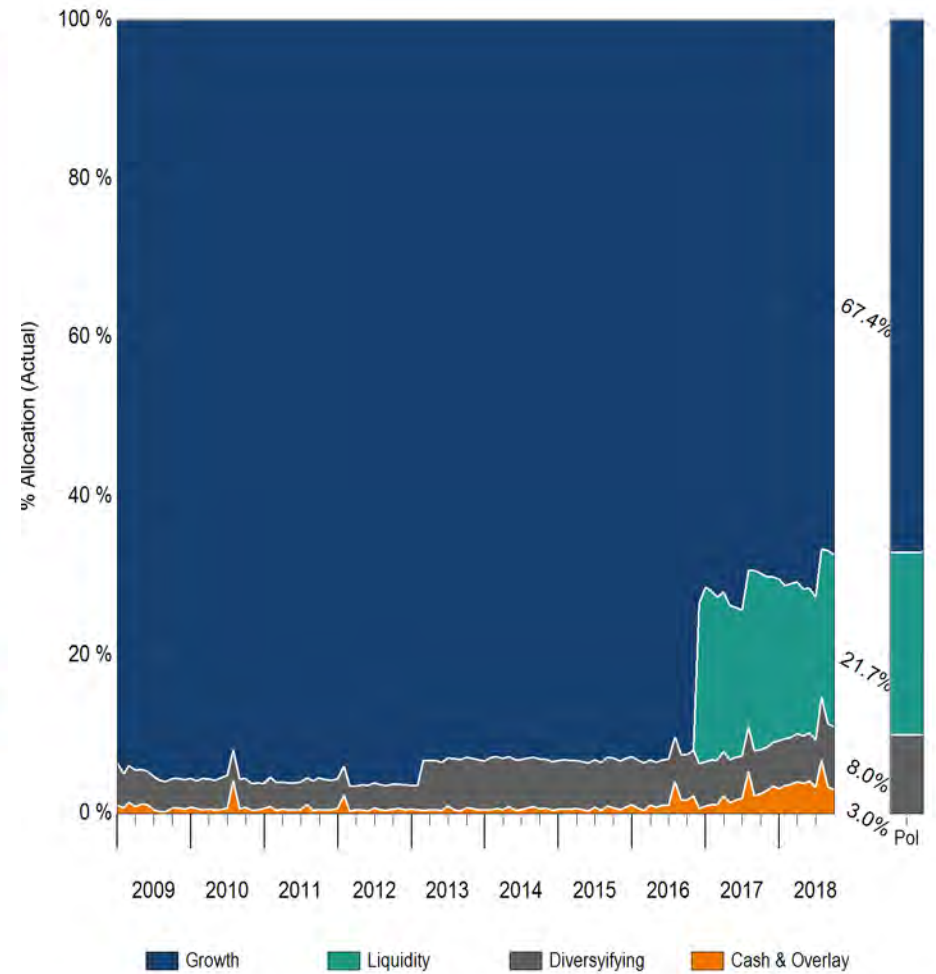


Contributions and withdrawals may include intra-account transfers between managers/funds.

Market Value History
Cumulative Cash Flows



Asset Allocation History

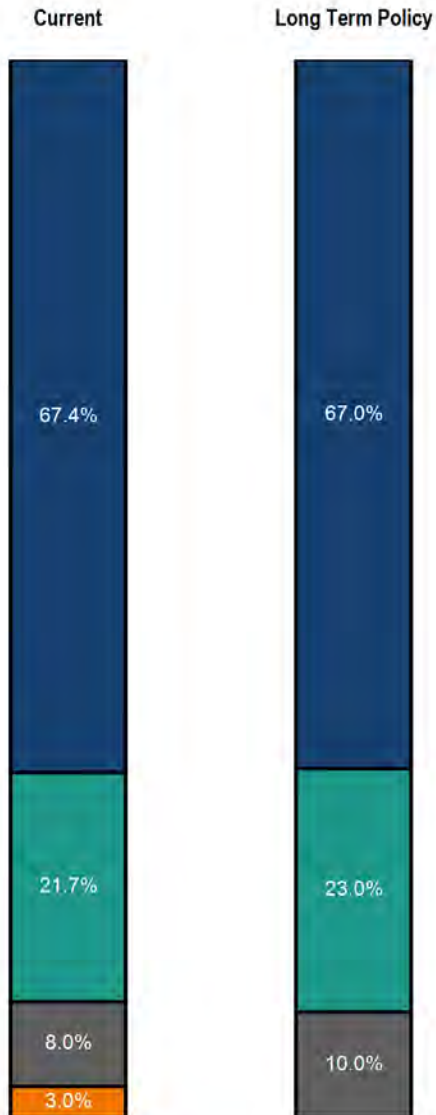


Policy reflects FFP 4-Yr allocations approved in March 2018.

Total Fund

Asset Allocation vs. Long Term Target Policy

Period Ending: September 30, 2018



Allocation vs. Long Term Target

	Current Balance	Current Allocation	Long Term Target	Difference
Growth	\$5,920,464,157	67.4%	67.0%	\$32,409,979
Liquidity	\$1,904,373,694	21.7%	23.0%	-\$116,898,636
Diversifying	\$702,519,927	8.0%	10.0%	-\$176,294,129
Cash & Overlay	\$260,782,785	3.0%	--	\$260,782,785
Total	\$8,788,140,564	100.0%	100.0%	

Allocation vs. Current Targets

	Current Balance	Current Allocation	Current Target	Difference
Growth	\$5,920,464,157	67.4%	69.0%	-\$143,352,832
Liquidity	\$1,904,373,694	21.7%	23.0%	-\$116,898,636
Diversifying	\$702,519,927	8.0%	8.0%	-\$531,318
Cash & Overlay	\$260,782,785	3.0%	--	\$260,782,785
Total	\$8,788,140,564	100.0%	100.0%	

Long Term Targets reflect FFP 4-Yr allocations approved in March 2018.
 Current Targets reflect Phase 3 Targets approved in June 2018.

Total Fund
Executive Summary (Net of Fees)

Period Ending: September 30, 2018

	% of Portfolio	QTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
Total Fund	100.0	2.1	2.6	5.9	8.5	7.5	7.8	13.9	6.9	2.1	7.7	15.6
<i>Policy Index</i>		1.8	2.1	5.5	9.1	7.8	--	13.8	8.8	0.6	9.0	15.6
Growth	67.4	2.7	3.8	8.5	10.8	9.0	--	18.7	7.6	2.3	8.1	16.7
<i>Custom Growth Benchmark</i>		2.6	3.0	7.9	11.6	9.2	--	20.0	10.1	0.3	8.4	15.9
Diversifying	8.0	0.0	-1.4	-1.1	0.2	0.4	2.8	2.6	0.8	-1.8	1.7	-1.9
<i>Custom Diversifying Benchmark</i>		-0.1	0.1	0.7	2.9	3.4	4.4	4.7	4.1	2.5	5.4	-1.6
Liquidity	21.7	0.5	0.5	0.4	--	--	--	1.4	--	--	--	--
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>		0.3	0.4	0.2	--	--	--	0.8	--	--	--	--

*Correlation between the Growth and Diversifying composites is -.15, .02 and .26 over the previous 1, 3 and 5 year periods respectively.

Policy Index (4/1/2018 - Present): 5% S&P 500, 13% MSCI EAFE, 11% MSCI Emerging Markets, 11% Cambridge US Private Equity (Lagged), 12% S&P Leverage Loan Index +2%, 5% NCREIF Property Index +2%, 4% NCREIF Property Index +4%, 1% Wilshire REIT, 3% MSCI ACWI, 2% BBgBarc US Aggregate, 23% BBgBarc 1-3 Yr Gov/Credit, 3% BBgBarc Treasury 7-10 Yr, 7% HFRI Fund of Funds.
Policy Index (12/1/2016 -3/31/2018): 22.9% Russell 3000, 11% MSCI ACWI ex-US (Gross), 10.9% MSCI ACWI (Net), 22.4% BBgBarc 1-3 Yr Gov/Credit, 3.2% BBgBarc US Aggregate, 1.7% ICE BofAML High Yield Master II +2%, 5.1% ICE BofAML High Yield Master II, 1% Wilshire REIT, 1.7% NCREIF Property Index, 6.8% NCREIF ODCE Index, 3.6% CPI +4%, 8.1% S&P 500 +4%, 1.6% 90-day T-Bills.
Policy Index (4/1/2012-11/30/16): 27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% BBgBarc U.S. Aggregate, 5% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 5.4% Wilshire REIT, 6.75% NCREIF Property Index, 1.35% FTSE/EPRA NAREIT Developed exUS, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills. Policy Index (4/1/2011-3/31/2012): 31% Russell 3000, 10.4% MSCI EAFE (Gross), 9.6% MSCI ACWI (Net), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% Wilshire REIT, 3.1% NCREIF Property Index, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills. Policy Index (4/1/2010-3/31/2011): 35.6% Russell 3000, 10.4% MSCI EAFE (Gross), 5% MSCI ACWI (Net), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% Wilshire REIT, 3.1% NCREIF Property Index, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills. Policy Index (7/1/2009-3/31/2010): 40.6% Russell 3000, 10.4% MSCI EAFE (Gross), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% Wilshire REIT, 3.1% NCREIF Property Index, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.

Total Fund

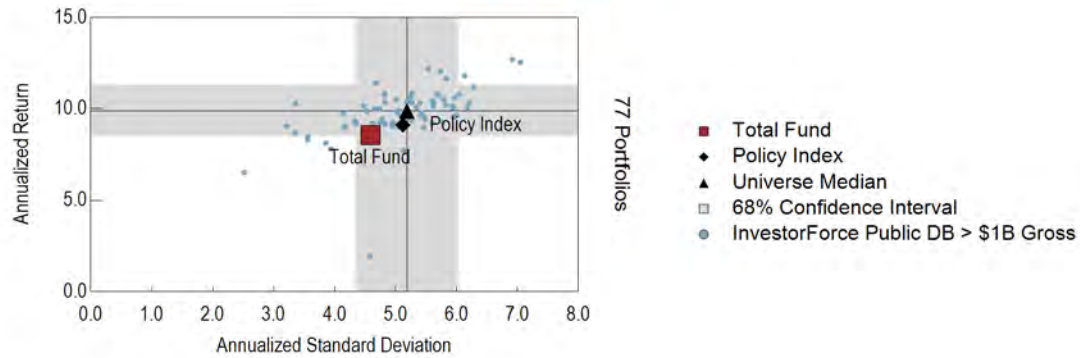
Executive Summary (Net of Fees)

Period Ending: September 30, 2018

3 Years

	Anlzd Return	Ann Excess BM Return	Anlzd Standard Deviation	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Total Fund	8.55%	-0.54%	4.59%	0.92%	0.84	1.81%	0.88	1.67	-0.30	91.12%	87.02%

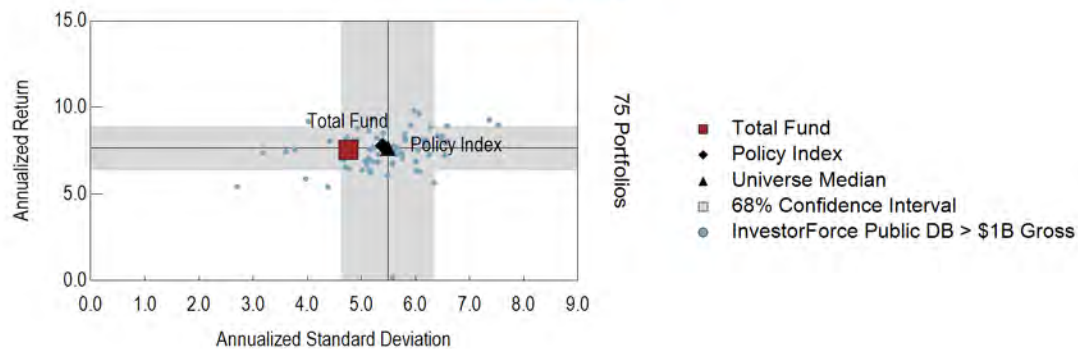
Risk vs. Return



5 Years

	Anlzd Return	Ann Excess BM Return	Anlzd Standard Deviation	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Total Fund	7.53%	-0.24%	4.76%	1.04%	0.84	1.78%	0.89	1.47	-0.13	88.44%	80.97%

Risk vs. Return



Total Fund
Performance Summary (Gross of Fees)

Period Ending: September 30, 2018

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
Total Fund	8,788,140,564	100.0	2.1	2.8	6.2	8.9	8.0	8.4	14.2	7.4	2.7	8.4	16.4
Policy Index			1.8	2.1	5.5	9.1	7.8	--	13.8	8.8	0.6	9.0	15.6
InvestorForce Public DB > \$1B Gross Rank			64	68	77	89	37	26	83	74	5	6	33
Total Fund ex Overlay & Cash	8,527,357,779	97.0	2.2	3.0	6.4	9.0	8.1	8.4	14.1	7.4	2.7	8.4	16.4
Policy Index			1.8	2.1	5.5	9.1	7.8	--	13.8	8.8	0.6	9.0	15.6
InvestorForce Public DB > \$1B Gross Rank			58	62	72	85	32	26	84	74	5	6	33
Growth	5,920,464,157	67.4	2.8	4.1	8.8	11.2	9.6	--	19.1	8.1	3.0	8.8	17.5
Custom Growth Benchmark			2.6	3.0	7.9	11.6	9.2	--	20.0	10.1	0.3	8.4	15.9
Total Domestic Equity	1,240,863,302	14.1	6.4	10.4	17.3	16.9	13.6	12.8	23.9	11.5	1.1	11.4	36.2
Russell 3000			7.1	10.6	17.6	17.1	13.5	12.0	21.1	12.7	0.5	12.6	33.6
InvestorForce Public DB US Eq Gross Rank			64	44	43	42	14	8	6	77	21	50	19
BlackRock Russell 1000 Index	132,550,519	1.5	7.4	10.5	17.7	--	--	--	--	--	--	--	--
Russell 1000			7.4	10.5	17.8	--	--	--	--	--	--	--	--
eV US Large Cap Equity Gross Rank			40	40	41	--	--	--	--	--	--	--	--
Jackson Square Partners	341,398,816	3.9	7.3	13.6	17.4	15.2	13.5	14.2	29.3	-4.4	6.1	13.9	35.4
Russell 1000 Growth			9.2	17.1	26.3	20.6	16.6	14.3	30.2	7.1	5.7	13.0	33.5
eV US Large Cap Growth Equity Gross Rank			68	74	89	90	84	35	47	98	37	31	40
Robeco Boston Partners	309,138,715	3.5	7.6	5.9	13.5	15.3	11.8	11.7	20.1	15.1	-3.9	12.0	37.4
Russell 1000 Value			5.7	3.9	9.5	13.6	10.7	9.8	13.7	17.3	-3.8	13.5	32.5
eV US Large Cap Value Equity Gross Rank			13	39	35	36	41	25	23	50	65	55	24
Emerald Advisers	250,301,015	2.8	7.3	15.6	24.7	17.5	14.2	15.4	28.8	10.1	4.1	7.3	50.3
Russell 2000 Growth			5.5	15.8	21.1	18.0	12.1	12.7	22.2	11.3	-1.4	5.6	43.3
eV US Small Cap Growth Equity Gross Rank			59	79	62	77	37	36	26	54	19	21	27
Ceredex	207,467,922	2.4	1.6	6.4	14.1	15.2	10.8	--	11.4	29.8	-4.4	3.3	36.5
Russell 2000 Value			1.6	7.1	9.3	16.1	9.9	--	7.8	31.7	-7.5	4.2	34.5
eV US Small Cap Value Equity Gross Rank			49	42	17	48	49	--	48	32	52	74	66

Individual closed end funds are not shown in performance summary table. Transition account has \$294,333.78 of residual cash. Goldman Sachs has \$17,786 of residual cash. JPM Global has \$161,514 of residual cash. Lazard has \$39,796 of residual cash. Intech Large Cap has \$6,315 of residual cash. Intech Global Low Vol has \$22,737 of residual cash. Parametric Defensive Equity funded 7/23/2018. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Total Fund
Performance Summary (Gross of Fees)

Period Ending: September 30, 2018

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
Total International Equity	1,609,065,488	18.3	0.5	-4.5	1.3	8.2	5.1	4.8	25.5	1.2	-1.2	0.3	17.8
MSCI ACWI ex USA Gross			0.8	-2.7	2.3	10.5	4.6	5.7	27.8	5.0	-5.3	-3.4	15.8
MSCI EAFE Gross			1.4	-1.0	3.2	9.8	4.9	5.9	25.6	1.5	-0.4	-4.5	23.3
InvestorForce Public DB ex-US Eq Gross Rank			42	79	62	99	49	83	90	89	28	5	50
International Equity	949,263,440	10.8	1.7	-0.9	3.4	9.5	5.8	5.2	25.3	1.2	-1.2	0.3	17.8
MSCI ACWI ex USA Gross			0.8	-2.7	2.3	10.5	4.6	5.7	27.8	5.0	-5.3	-3.4	15.8
InvestorForce Public DB ex-US Eq Gross Rank			8	11	17	80	23	75	93	89	28	5	50
Pyrford	459,027,031	5.2	3.6	-0.7	3.0	8.5	--	--	19.8	3.4	-2.9	--	--
MSCI ACWI ex USA Value			1.7	-3.7	0.4	9.3	--	--	22.7	8.9	-10.1	--	--
eV ACWI ex-US Value Equity Gross Rank			1	4	17	61	--	--	84	74	59	--	--
William Blair	490,236,409	5.6	-0.1	-1.0	3.8	10.3	6.4	--	30.9	-1.4	0.5	-1.2	20.9
MSCI ACWI ex USA Growth			-0.3	-2.5	3.1	10.6	5.3	--	32.0	0.1	-1.3	-2.6	15.5
eV ACWI ex-US Growth Equity Gross Rank			52	67	74	82	75	--	81	55	69	37	44
Emerging Markets Equity	659,802,048	7.5	-1.1	-9.2	-1.5	--	--	--	--	--	--	--	--
MSCI Emerging Markets			-1.1	-7.7	-0.8	--	--	--	--	--	--	--	--
InvestorForce Public DB Emg Mkt Eq Gross Rank			41	51	29	--	--	--	--	--	--	--	--
PIMCO RAE Emerging Markets	348,136,428	4.0	1.1	-5.8	0.7	--	--	--	--	--	--	--	--
MSCI Emerging Markets			-1.1	-7.7	-0.8	--	--	--	--	--	--	--	--
eV Emg Mkts Equity Gross Rank			13	19	24	--	--	--	--	--	--	--	--
TT Emerging Markets	311,665,621	3.5	-3.5	-12.8	-3.9	--	--	--	--	--	--	--	--
MSCI Emerging Markets			-1.1	-7.7	-0.8	--	--	--	--	--	--	--	--
eV Emg Mkts Equity Gross Rank			67	89	69	--	--	--	--	--	--	--	--
Total Global Equity	775,623,703	8.8	2.7	4.6	9.2	13.9	9.8	6.6	23.7	7.6	2.2	5.2	23.7
MSCI ACWI			4.3	3.8	9.8	13.4	8.7	8.2	24.0	7.9	-2.4	4.2	22.8
InvestorForce Public DB Gbl Eq Gross Rank			80	58	69	30	50	15	79	40	16	41	64
Artisan Partners	411,145,313	4.7	3.7	8.6	13.7	18.0	12.9	--	32.9	5.6	9.2	3.9	26.1
MSCI ACWI			4.3	3.8	9.8	13.4	8.7	--	24.0	7.9	-2.4	4.2	22.8
eV All Global Equity Gross Rank			52	16	20	8	9	--	11	61	4	56	51
First Eagle	364,295,113	4.1	1.5	0.5	4.5	10.7	7.4	--	15.1	11.7	0.2	4.5	17.9
MSCI ACWI			4.3	3.8	9.8	13.4	8.7	--	24.0	7.9	-2.4	4.2	22.8
eV All Global Equity Gross Rank			80	81	86	83	79	--	89	19	49	51	80

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Total Fund
Performance Summary (Gross of Fees)

Period Ending: September 30, 2018

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
Private Credit	264,270,349	3.0	1.9	4.3	6.9	8.8	11.2	8.3	10.4	8.2	12.9	15.4	17.2
ICE BofAML High Yield Master II +2%			2.9	4.0	5.0	10.3	7.6	11.6	9.6	19.8	-2.7	4.5	9.6
Total High Yield	349,380,629	4.0	2.3	1.7	1.9	6.8	4.5	8.7	6.5	14.3	-3.5	1.2	8.8
ICE BofAML High Yield Master II			2.4	2.5	2.9	8.2	5.5	9.4	7.5	17.5	-4.6	2.5	7.4
eV US High Yield Fixed Inc Gross Rank			54	81	87	68	85	56	74	47	68	83	28
Allianz Global Investors	349,380,629	4.0	2.3	1.7	1.9	6.8	4.5	8.7	6.5	14.3	-3.5	1.2	8.8
ICE BofAML High Yield Master II			2.4	2.5	2.9	8.2	5.5	9.4	7.5	17.5	-4.6	2.5	7.4
eV US High Yield Fixed Inc Gross Rank			54	81	87	68	85	56	74	47	68	83	28
Total Real Estate	722,607,083	8.2	1.6	6.9	9.6	9.1	11.8	7.2	11.1	5.5	13.5	20.6	10.5
Real Estate Benchmark			1.9	5.9	8.0	8.2	9.5	7.4	7.1	6.7	8.3	18.8	7.1
NCREIF-ODCE			2.1	6.5	8.7	8.8	10.7	5.6	7.6	8.8	15.0	12.5	13.9
NCREIF Property Index			1.7	5.3	7.2	7.8	9.6	6.4	7.0	8.0	13.3	11.8	11.0
Adelante	67,577,089	0.8	0.8	1.3	3.7	6.4	9.8	7.8	7.8	4.1	5.1	33.4	3.6
Wilshire REIT			0.7	2.2	4.0	7.1	9.2	7.4	4.2	7.2	4.2	31.8	1.9
Private Equity	958,301,688	10.9	3.8	9.7	13.2	10.5	12.8	10.4	11.9	9.4	11.6	17.3	15.0
S&P 500 Index +4% (Lagged)			4.4	12.7	18.9	16.4	17.9	14.5	23.3	20.0	3.4	24.5	24.0
Diversifying	702,519,927	8.0	0.0	-1.2	-0.8	0.5	0.8	3.1	2.8	1.3	-1.4	2.2	-1.5
Custom Diversifying Benchmark			-0.1	0.1	0.7	2.9	3.4	4.4	4.7	4.1	2.5	5.4	-1.6
Diversifying Fixed Income	499,629,930	5.7	-0.3	-1.5	-1.2	1.1	2.4	3.9	2.8	2.8	1.6	6.6	-1.9
eV US Core Fixed Inc Gross Rank			99	77	88	96	64	90	96	72	15	25	78
AFL-CIO	314,654,516	3.6	-0.1	-1.4	-1.1	1.3	2.5	4.0	3.6	2.4	1.6	6.6	-1.9
BBgBarc US Aggregate TR			0.0	-1.6	-1.2	1.3	2.2	3.8	3.5	2.6	0.6	6.0	-2.0
eV US Core Fixed Inc Gross Rank			92	67	81	90	55	86	76	87	15	25	78
Wellington Real Total Return	184,975,415	2.1	-0.7	-1.7	-1.3	-0.6	-1.3	--	1.9	-0.1	-4.9	-2.5	--
CPI + 4%			1.2	5.4	6.4	6.1	5.6	--	6.2	6.2	4.8	4.8	--
Diversifying Equity	202,889,997	2.3	--	--	--	--	--	--	--	--	--	--	--
Parametric Defensive Equity	202,889,997	2.3	--	--	--	--	--	--	--	--	--	--	--
91 Day T-Bill +4%			--	--	--	--	--	--	--	--	--	--	--

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Total Fund
Performance Summary (Gross of Fees)

Period Ending: September 30, 2018

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
Liquidity	1,904,373,694	21.7	0.5	0.5	0.5	--	--	--	1.5	--	--	--	--
BBgBarc US Govt/Credit 1-3 Yr. TR			0.3	0.4	0.2	--	--	--	0.8	--	--	--	--
eV US Short Duration Fixed Inc Gross Rank			47	62	60	--	--	--	50	--	--	--	--
DFA Short Credit	442,518,917	5.0	0.5	0.0	-0.2	--	--	--	1.9	--	--	--	--
ICE BofAML 1-5 Yrs US Corp & Govt TR			0.3	0.0	-0.3	--	--	--	1.3	--	--	--	--
eV US Short Duration Fixed Inc Gross Rank			50	96	98	--	--	--	26	--	--	--	--
Insight Short Duration	940,109,107	10.7	0.5	0.9	1.0	--	--	--	1.5	--	--	--	--
BBgBarc US Govt/Credit 1-3 Yr. TR			0.3	0.4	0.2	--	--	--	0.8	--	--	--	--
eV US Short Duration Fixed Inc Gross Rank			35	24	28	--	--	--	50	--	--	--	--
Sit Short Duration	521,745,670	5.9	0.5	0.4	0.3	--	--	--	1.3	--	--	--	--
BBgBarc US Govt 1-3 Yr TR			0.2	0.3	0.0	--	--	--	0.4	--	--	--	--
eV US Short Duration Fixed Inc Gross Rank			53	72	76	--	--	--	68	--	--	--	--
Total Cash	213,487,749	2.4	0.4	1.1	1.4	1.0	0.2	--	0.9	0.9	0.1	-3.0	8.8
91 Day T-Bills			0.5	1.3	1.6	0.9	0.5	--	0.9	0.3	0.0	0.0	0.0
Cash	213,487,749	2.4	0.4	1.1	1.4	1.0	1.1	3.2	0.9	0.9	0.1	1.4	4.5

Individual closed end funds are not shown in performance summary table. Transition account has \$294,333.78 of residual cash. Goldman Sachs has \$17,786 of residual cash. JPM Global has \$161,514 of residual cash. Lazard has \$39,796 of residual cash. Intech Large Cap has \$6,315 of residual cash. Intech Global Low Vol has \$22,737 of residual cash. Parametric Defensive Equity funded 7/23/2018. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Total Fund Performance Summary (Net of Fees)

Period Ending: September 30, 2018

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
Total Fund	8,788,140,564	100.0	2.1	2.6	5.9	8.5	7.5	7.8	13.9	6.9	2.1	7.7	15.6
<i>Policy Index</i>			1.8	2.1	5.5	9.1	7.8	--	13.8	8.8	0.6	9.0	15.6
Total Fund ex Overlay & Cash	8,527,357,779	97.0	2.1	2.8	6.1	8.6	7.6	7.8	13.8	6.9	2.1	7.7	15.6
<i>Policy Index</i>			1.8	2.1	5.5	9.1	7.8	--	13.8	8.8	0.6	9.0	15.6
Growth	5,920,464,157	67.4	2.7	3.8	8.5	10.8	9.0	--	18.7	7.6	2.3	8.1	16.7
<i>Custom Growth Benchmark</i>			2.6	3.0	7.9	11.6	9.2	--	20.0	10.1	0.3	8.4	15.9
Total Domestic Equity	1,240,863,302	14.1	6.3	10.1	16.8	16.4	13.1	12.4	23.5	11.1	0.6	11.0	35.7
<i>Russell 3000</i>			7.1	10.6	17.6	17.1	13.5	12.0	21.1	12.7	0.5	12.6	33.6
BlackRock Russell 1000 Index	132,550,519	1.5	7.4	10.4	17.7	--	--	--	--	--	--	--	--
<i>Russell 1000</i>			7.4	10.5	17.8	--	--	--	--	--	--	--	--
Jackson Square Partners	341,398,816	3.9	7.2	13.3	17.0	14.7	13.0	13.7	28.7	-4.8	5.6	13.4	35.0
<i>Russell 1000 Growth</i>			9.2	17.1	26.3	20.6	16.6	14.3	30.2	7.1	5.7	13.0	33.5
Robeco Boston Partners	309,138,715	3.5	7.5	5.7	13.2	15.0	11.4	11.4	19.7	14.7	-4.2	11.6	37.0
<i>Russell 1000 Value</i>			5.7	3.9	9.5	13.6	10.7	9.8	13.7	17.3	-3.8	13.5	32.5
Emerald Advisers	250,301,015	2.8	7.2	15.1	24.0	16.8	13.5	14.7	28.0	9.4	3.5	6.6	49.4
<i>Russell 2000 Growth</i>			5.5	15.8	21.1	18.0	12.1	12.7	22.2	11.3	-1.4	5.6	43.3
Ceredex	207,467,922	2.4	1.5	5.9	13.5	14.6	10.1	--	10.7	29.1	-5.0	2.7	35.8
<i>Russell 2000 Value</i>			1.6	7.1	9.3	16.1	9.9	--	7.8	31.7	-7.5	4.2	34.5
Total International Equity	1,609,065,488	18.3	0.4	-4.8	0.9	7.7	4.7	4.4	25.0	0.8	-1.6	0.0	17.4
<i>MSCI ACWI ex USA Gross</i>			0.8	-2.7	2.3	10.5	4.6	5.7	27.8	5.0	-5.3	-3.4	15.8
<i>MSCI EAFE Gross</i>			1.4	-1.0	3.2	9.8	4.9	5.9	25.6	1.5	-0.4	-4.5	23.3
International Equity	949,263,440	10.8	1.6	-1.2	3.0	9.0	5.4	4.8	24.8	0.8	-1.6	0.0	17.4
<i>MSCI ACWI ex USA Gross</i>			0.8	-2.7	2.3	10.5	4.6	5.7	27.8	5.0	-5.3	-3.4	15.8
Pyrford	459,027,031	5.2	3.5	-1.0	2.6	8.0	--	--	19.3	3.0	-3.3	--	--
<i>MSCI ACWI ex USA Value</i>			1.7	-3.7	0.4	9.3	--	--	22.7	8.9	-10.1	--	--
William Blair	490,236,409	5.6	-0.2	-1.3	3.4	9.9	6.0	--	30.4	-1.8	0.0	-1.7	20.4
<i>MSCI ACWI ex USA Growth</i>			-0.3	-2.5	3.1	10.6	5.3	--	32.0	0.1	-1.3	-2.6	15.5
Emerging Markets Equity	659,802,048	7.5	-1.3	-9.6	-2.0	--	--	--	--	--	--	--	--
<i>MSCI Emerging Markets</i>			-1.1	-7.7	-0.8	--	--	--	--	--	--	--	--
PIMCO RAE Emerging Markets	348,136,428	4.0	1.0	-6.0	0.3	--	--	--	--	--	--	--	--
<i>MSCI Emerging Markets</i>			-1.1	-7.7	-0.8	--	--	--	--	--	--	--	--
TT Emerging Markets	311,665,621	3.5	-3.7	-13.2	-4.5	--	--	--	--	--	--	--	--
<i>MSCI Emerging Markets</i>			-1.1	-7.7	-0.8	--	--	--	--	--	--	--	--

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Total Fund
Performance Summary (Net of Fees)

Period Ending: September 30, 2018

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
Total Global Equity	775,623,703	8.8	2.5	4.0	8.3	13.1	9.1	6.1	22.8	6.9	1.6	4.5	22.9
<i>MSCI ACWI</i>			4.3	3.8	9.8	13.4	8.7	8.2	24.0	7.9	-2.4	4.2	22.8
Artisan Partners	411,145,313	4.7	3.5	8.0	12.8	17.1	12.1	--	31.9	4.8	8.4	3.1	25.2
<i>MSCI ACWI</i>			4.3	3.8	9.8	13.4	8.7	--	24.0	7.9	-2.4	4.2	22.8
First Eagle	364,295,113	4.1	1.4	0.0	3.7	9.8	6.6	--	14.3	10.9	-0.6	3.7	17.1
<i>MSCI ACWI</i>			4.3	3.8	9.8	13.4	8.7	--	24.0	7.9	-2.4	4.2	22.8
Private Credit	264,270,349	3.0	1.9	4.3	6.9	8.2	10.0	5.9	10.4	6.9	11.6	12.3	15.7
<i>ICE BofAML High Yield Master II +2%</i>			2.9	4.0	5.0	10.3	7.6	11.6	9.6	19.8	-2.7	4.5	9.6
Total High Yield	349,380,629	4.0	2.2	1.4	1.5	6.4	4.1	8.4	6.1	13.9	-3.9	0.8	8.4
<i>ICE BofAML High Yield Master II</i>			2.4	2.5	2.9	8.2	5.5	9.4	7.5	17.5	-4.6	2.5	7.4
Allianz Global Investors	349,380,629	4.0	2.2	1.4	1.5	6.4	4.1	8.3	6.1	13.9	-3.9	0.8	8.4
<i>ICE BofAML High Yield Master II</i>			2.4	2.5	2.9	8.2	5.5	9.4	7.5	17.5	-4.6	2.5	7.4
Total Real Estate	722,607,083	8.2	1.6	6.8	9.5	8.8	11.0	6.2	11.0	4.8	12.4	19.1	8.9
<i>Real Estate Benchmark</i>			1.9	5.9	8.0	8.2	9.5	7.4	7.1	6.7	8.3	18.8	7.1
<i>NCREIF-ODCE</i>			2.1	6.5	8.7	8.8	10.7	5.6	7.6	8.8	15.0	12.5	13.9
<i>NCREIF Property Index</i>			1.7	5.3	7.2	7.8	9.6	6.4	7.0	8.0	13.3	11.8	11.0
Adelante	67,577,089	0.8	0.6	0.9	3.1	5.9	9.3	7.2	7.2	3.6	4.6	32.7	3.0
<i>Wilshire REIT</i>			0.7	2.2	4.0	7.1	9.2	7.4	4.2	7.2	4.2	31.8	1.9
Private Equity	958,301,688	10.9	3.8	9.7	13.2	10.2	11.8	8.6	11.9	8.9	9.9	15.2	12.7
<i>S&P 500 Index +4% (Lagged)</i>			4.4	12.7	18.9	16.4	17.9	14.5	23.3	20.0	3.4	24.5	24.0
Diversifying	702,519,927	8.0	0.0	-1.4	-1.1	0.2	0.4	2.8	2.6	0.8	-1.8	1.7	-1.9
<i>Custom Diversifying Benchmark</i>			-0.1	0.1	0.7	2.9	3.4	4.4	4.7	4.1	2.5	5.4	-1.6
Diversifying Fixed Income	499,629,930	5.7	-0.4	-1.7	-1.4	0.8	2.1	3.6	2.6	2.3	1.1	6.1	-2.4
AFL-CIO	314,654,516	3.6	-0.2	-1.8	-1.5	0.9	2.1	3.6	3.2	1.9	1.1	6.1	-2.4
<i>BBgBarc US Aggregate TR</i>			0.0	-1.6	-1.2	1.3	2.2	3.8	3.5	2.6	0.6	6.0	-2.0
Wellington Real Total Return	184,975,415	2.1	-0.7	-1.7	-1.3	-0.9	-1.7	--	1.9	-0.6	-5.4	-3.1	--
<i>CPI + 4%</i>			1.2	5.4	6.4	6.1	5.6	--	6.2	6.2	4.8	4.8	--

Individual closed end funds are not shown in performance summary table. Transition account has \$294,333.78 of residual cash. Goldman Sachs has \$17,786 of residual cash. JPM Global has \$161,514 of residual cash. Lazard has \$39,796 of residual cash. Intech Large Cap has \$6,315 of residual cash. Intech Global Low Vol has \$22,737 of residual cash. Parametric Defensive Equity funded 7/23/2018. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Total Fund
Performance Summary (Net of Fees)

Period Ending: September 30, 2018

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
Diversifying Equity	202,889,997	2.3	--	--	--	--	--	--	--	--	--	--	--
Parametric Defensive Equity	202,889,997	2.3	--	--	--	--	--	--	--	--	--	--	--
91 Day T-Bill +4%			--	--	--	--	--	--	--	--	--	--	--
Liquidity	1,904,373,694	21.7	0.5	0.5	0.4	--	--	--	1.4	--	--	--	--
BBgBarc US Govt/Credit 1-3 Yr. TR			0.3	0.4	0.2	--	--	--	0.8	--	--	--	--
DFA Short Credit	442,518,917	5.0	0.4	-0.1	-0.3	--	--	--	1.8	--	--	--	--
ICE BofAML 1-5 Yrs US Corp & Govt TR			0.3	0.0	-0.3	--	--	--	1.3	--	--	--	--
Insight Short Duration	940,109,107	10.7	0.5	0.9	0.9	--	--	--	1.5	--	--	--	--
BBgBarc US Govt/Credit 1-3 Yr. TR			0.3	0.4	0.2	--	--	--	0.8	--	--	--	--
Sit Short Duration	521,745,670	5.9	0.4	0.3	0.1	--	--	--	1.1	--	--	--	--
BBgBarc US Govt 1-3 Yr TR			0.2	0.3	0.0	--	--	--	0.4	--	--	--	--
Total Cash	213,487,749	2.4	0.4	1.1	1.4	1.0	0.2	--	0.9	0.9	0.1	-3.0	8.8
91 Day T-Bills			0.5	1.3	1.6	0.9	0.5	--	0.9	0.3	0.0	0.0	0.0
Cash	213,487,749	2.4	0.4	1.1	1.4	1.0	1.1	2.8	0.9	0.9	0.1	1.4	4.5

Individual closed end funds are not shown in performance summary table. Transition account has \$294,333.78 of residual cash. Goldman Sachs has \$17,786 of residual cash. JPM Global has \$161,514 of residual cash. Lazard has \$39,796 of residual cash. Intech Large Cap has \$6,315 of residual cash. Intech Global Low Vol has \$22,737 of residual cash. Parametric Defensive Equity funded 7/23/2018. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Total Fund
Closed End Funds - Investment Summary

Period Ending: September 30, 2018

StepStone Group Analysis (*)												
Closing Date	Manager Name/Fund Name	Estimated Market Value as of 9/30/18 ¹	Total Commitment	% Called	Contributed Capital	Current Qtr. Change in Contributed Capital	Current Qtr. Change in Distributed Capital	Total Distributions	Remaining Commitment	Distrib./ Paid-In (DPI)	Tot. Value/ Paid-In (TVPI)	Latest Valuation
Private Credit												
8/31/2015	Angelo Gordon Energy Credit Opp.	\$8,885,518	\$16,500,000	114%	\$18,750,000	\$0	\$1,650,000	\$15,900,816	\$2,319,783	0.85	1.32	6/30/2018
12/18/2017	Stepstone CC Opportunities Fund	\$163,821,339	\$850,000,000	22%	\$187,214,257	\$62,745,866	\$22,145,620	\$21,999,146	\$662,785,743	0.12	0.99	6/30/2018
7/1/2006	Torchlight II	\$14,268,286	\$128,000,000	170%	\$218,143,853	\$0	\$0	\$190,915,176	\$0	0.88	0.94	9/30/2018
12/12/2008	Torchlight III	\$495,635	\$75,000,000	112%	\$83,788,637	\$0	\$0	\$124,323,016	\$0	1.48	1.49	9/30/2018
8/1/2012	Torchlight IV	\$24,712,199	\$60,000,000	141%	\$84,424,263	\$189,699	\$13,327,471	\$88,348,615	\$0	1.05	1.34	6/30/2018
3/12/2015	Torchlight V	\$52,087,372	\$75,000,000	60%	\$45,000,000	\$0	\$1,419,737	\$3,967,135	\$30,000,000	0.09	1.25	6/30/2018
Total Private Credit		\$264,270,349										
% of Portfolio (Market Value)		3.0%										

*All Data provided by StepStone Group

¹Latest valuation + capital calls - distributions

Total Fund
Closed End Funds - Investment Summary

Period Ending: September 30, 2018

Verus Internal Analysis												
Inception Date	Manager Name/Fund Name	Estimated Market Value as of 9/30/2018 ³	Total Commitment	Total % Called	Capital Called	Current Qtr. Capital Called	Current Qtr. Distributions	Total Distributions ⁵	Remaining Commitment	Distrib./Paid-In (DPI) ¹	Tot. Value/Paid-In (TVPI) ²	Latest Valuation
Real Estate												
1/23/2012	Angelo Gordon Realty Fund VIII	\$28,329,814	\$80,000,000	94%	\$75,401,855	\$0	\$4,046,129	\$91,824,630	\$12,334,302	1.22	1.59	6/30/2018
12/8/2014	Angelo Gordon Realty Fund IX	\$55,893,997	\$65,000,000	78%	\$50,700,000	\$3,900,000	\$0	\$5,200,000	\$20,897,500	0.10	1.21	6/30/2018
6/23/2005	DLJ RECP III	\$23,160,899	\$75,000,000	95%	\$70,968,662	\$0	\$0	\$72,565,242	\$4,031,338	1.02	1.35	6/30/2018
2/11/2008	DLJ RECP IV	\$91,523,074	\$100,000,000	95%	\$95,460,264	\$1,368,066	\$4,320,522	\$67,629,710	\$4,539,736	0.71	1.67	6/30/2018
7/1/2014	DLJ RECP V	\$41,114,961	\$75,000,000	96%	\$72,221,782	\$0	\$0	\$50,780,984	\$32,513,179	0.70	1.27	6/30/2018
6/17/1998	Hearthstone II ⁴	-\$3,265	\$25,000,000	80%	\$19,932,386	\$0	\$0	\$19,952,734	\$2,520,348	1.00	1.00	6/30/2018
11/26/2007	Invesco Real Estate II	\$426,040	\$85,000,000	92%	\$78,202,813	\$0	\$0	\$100,620,489	\$6,797,187	1.29	1.29	9/30/2018
6/30/2013	Invesco Real Estate III	\$13,631,891	\$35,000,000	93%	\$32,386,423	\$0	\$0	\$32,987,218	\$2,613,577	1.02	1.44	9/30/2018
6/30/2014	Invesco Real Estate IV	\$25,180,530	\$35,000,000	78%	\$27,360,622	\$1,987,078	\$0	\$7,578,475	\$7,639,378	0.28	1.20	9/30/2018
7/16/2013	LaSalle Income & Growth VI	\$36,535,272	\$75,000,000	95%	\$71,428,571	\$0	\$0	\$70,239,356	\$3,571,429	0.98	1.49	6/30/2018
2/28/2017	LaSalle Income & Growth VII	\$55,915,879	\$75,000,000	62%	\$46,589,379	\$0	\$0	\$0	\$28,410,621	0.00	1.20	6/30/2018
7/3/2013	Long Wharf Fund IV	\$13,626,014	\$25,000,000	100%	\$25,000,000	\$0	\$937,068	\$21,858,355	\$0	0.87	1.42	9/30/2018
9/30/2016	Long Wharf Fund V	\$44,483,242	\$50,000,000	88%	\$43,784,988	\$5,026,848	\$1,599,452	\$4,341,369	\$6,215,012	0.10	1.12	9/30/2018
12/31/2011	Oaktree REOF V	\$5,899,329	\$50,000,000	100%	\$50,000,000	\$0	\$1,040,000	\$79,716,587	\$25,750,000	1.59	1.71	9/30/2018
9/30/2013	Oaktree REOF VI	\$43,041,789	\$80,000,000	100%	\$80,000,000	\$0	\$6,595,795	\$63,193,907	\$18,400,000	0.79	1.33	9/30/2018
4/1/2015	Oaktree REOF VII	\$25,931,467	\$65,000,000	37%	\$24,245,000	\$11,245,000	\$0	\$4,615,000	\$45,370,000	0.19	1.26	9/30/2018
11/10/2013	Paulson Real Estate Fund II	\$24,790,291	\$20,000,000	98%	\$19,524,008	\$178,385	\$178,385	\$4,773,381	\$475,992	0.24	1.51	6/30/2018
1/25/2012	Siguler Guff DREOF	\$45,445,343	\$75,000,000	93%	\$69,375,000	\$0	\$6,288,046	\$74,007,949	\$5,625,000	1.07	1.72	6/30/2018
8/31/2013	Siguler Guff DREOF II	\$56,787,637	\$70,000,000	82%	\$57,120,000	\$1,400,000	\$2,735,000	\$21,683,632	\$12,880,000	0.38	1.37	6/30/2018
1/27/2016	Siguler Guff DREOF II Co-Inv	\$23,315,790	\$25,000,000	79%	\$19,850,362	\$0	\$0	\$0	\$5,149,638	0.00	1.17	6/30/2018
Total Closed End Real Estate		\$655,029,994	\$1,185,000,000	87%	\$1,029,552,116	\$25,105,377	\$27,740,397	\$793,569,019	\$245,734,236	0.77	1.41	
% of Portfolio (Market Value)		7.5%										

¹(DPI) is equal to (capital returned / capital called)

²(TVPI) is equal to (market value + capital returned) / capital called

³Latest valuation + capital calls - distributions

⁴No further capital to be called

⁵Total distributions may include recallable distributions

Total Fund
Closed End Funds - Investment Summary

Period Ending: September 30, 2018

StepStone Group Analysis (*)													
Closing Date	Manager Name/Fund Name	Estimated Market Value as of 9/30/18 ¹	Total Commitment	Total % Called	Contributed Capital	Current Qtr. Change in Contributed Capital	Current Qtr. Change in Distributed Capital	Total Distributions	Remaining Commitment	Distrib./ Paid-In (DPI)	Tot. Value/ Paid-In (TVPI)	Latest Valuation	
Private Equity & Venture Capital													
2/11/2004	Adams Street Partners	\$143,194,231	\$210,000,000	84%	\$175,403,125	\$0	\$6,178,231	\$123,295,416	\$34,596,875	0.69	1.53	6/30/2018	
12/31/2008	Adams Street Partners II	\$10,379,369	\$30,000,000	95%	\$28,365,000	\$0	\$1,132,020	\$37,724,287	\$1,635,000	1.33	1.70	6/30/2018	
12/31/2008	Adams Street Partners - Fund 5	\$23,119,628	\$40,000,000	77%	\$30,611,900	\$0	\$2,569,395	\$13,182,572	\$9,388,100	0.43	1.19	6/30/2018	
1/18/1996	Adams Street Partners - BPF	\$2,571,949	\$59,565,614	108%	\$64,307,595	\$0	\$166,442	\$101,879,771	\$2,048,205	1.58	1.62	6/30/2018	
3/31/2016	Adams Street Venture Innovation	\$18,825,407	\$75,000,000	27%	\$19,912,500	\$9,000,000	\$0	\$0	\$55,087,500	0.00	0.95	6/30/2018	
11/27/2013	Aether Real Assets III	\$23,158,113	\$25,000,000	82%	\$20,541,923	\$1,406,790	\$1,013,847	\$1,944,589	\$6,161,242	0.09	1.22	6/30/2018	
11/30/2013	Aether Real Assets III Surplus	\$57,390,660	\$50,000,000	91%	\$45,266,354	\$0	\$0	\$2,812,143	\$6,579,486	0.06	1.33	6/30/2018	
1/30/2016	Aether Real Assets IV	\$26,461,976	\$50,000,000	48%	\$24,208,157	\$1,440,312	\$210,653	\$842,005	\$26,621,075	0.03	1.13	6/30/2018	
11/26/2003	Bay Area Equity Fund	\$2,892,127	\$10,000,000	100%	\$10,000,000	\$0	\$0	\$36,331,243	\$0	3.63	3.92	6/30/2018	
11/26/2003	Bay Area Equity Fund II	\$11,260,076	\$10,000,000	100%	\$10,000,000	\$0	\$0	\$2,026,313	\$0	0.20	1.33	6/30/2018	
1/16/2008	Carpenter Bancfund	\$0	\$30,000,000	98%	\$29,314,657	\$0	\$5,076,648	\$49,128,304	\$904,309	1.68	1.68	9/30/2018	
6/30/2013	Commonfund	\$48,489,393	\$50,000,000	85%	\$42,696,848	\$1,874,999	\$1,711,201	\$5,988,698	\$7,600,003	0.14	1.28	6/30/2018	
11/26/2003	EIF US Power Fund I	\$55,209	\$30,000,000	130%	\$38,960,280	\$0	\$0	\$64,404,030	\$0	1.65	1.65	6/30/2018	
7/15/2005	EIF US Power Fund II	\$18,861,259	\$50,000,000	130%	\$65,029,556	\$0	\$1,732,692	\$64,099,634	\$1	0.99	1.28	3/31/2018	
5/31/2007	EIF US Power Fund III	\$22,927,430	\$65,000,000	110%	\$71,409,097	\$26,089	\$266,830	\$71,755,741	-\$26,089	1.00	1.33	6/30/2018	
8/31/2010	EIF US Power Fund IV	\$44,860,695	\$50,000,000	119%	\$59,625,588	\$2,471,374	\$3,407,206	\$25,225,856	\$4,120,704	0.42	1.18	6/30/2018	
11/28/2016	EIF US Power Fund V	\$31,308,892	\$50,000,000	75%	\$37,429,905	\$9,979,207	\$2,810,167	\$6,163,454	\$16,747,866	0.16	1.00	6/30/2018	
2/12/2004	Nogales	\$42,964	\$15,000,000	120%	\$18,026,408	\$0	\$0	\$13,844,471	\$1,291,060	0.77	0.77	9/30/2017	
2/28/2010	Oaktree PIF 2009	\$9,436,522	\$40,000,000	87%	\$34,812,448	\$118	\$800,000	\$39,187,764	\$6,308,961	1.13	1.40	9/30/2018	
8/15/2013	Ocean Avenue Fund II	\$27,335,083	\$30,000,000	76%	\$22,800,000	\$0	\$1,500,000	\$6,290,744	\$7,200,000	0.28	1.47	6/30/2018	
4/15/2016	Ocean Avenue Fund III	\$32,142,680	\$50,000,000	56%	\$28,000,000	\$4,500,000	\$2,000,000	\$3,000,000	\$22,000,000	0.11	1.26	6/30/2018	
11/30/2007	Paladin III	\$23,044,678	\$25,000,000	131%	\$32,807,435	\$242,327	\$78,505	\$23,614,995	\$600,715	0.72	1.42	6/30/2018	
8/22/2011	Pathway 6	\$39,078,079	\$40,000,000	90%	\$36,062,931	\$374,936	\$984,950	\$14,231,658	\$5,818,466	0.39	1.48	6/30/2018	
7/10/2013	Pathway 7	\$63,485,135	\$70,000,000	83%	\$58,033,910	\$1,812,734	\$2,185,303	\$11,222,606	\$14,330,811	0.19	1.29	6/30/2018	
11/23/2015	Pathway 8	\$32,551,240	\$50,000,000	57%	\$28,668,564	\$1,928,610	\$0	\$2,891,512	\$23,030,046	0.10	1.24	6/30/2018	
1/19/1999	Pathway	\$23,861,705	\$125,000,000	100%	\$124,442,501	\$200,574	\$1,833,144	\$164,610,799	\$11,185,659	1.32	1.51	6/30/2018	
7/31/2009	Pathway 2008	\$23,720,246	\$30,000,000	95%	\$28,436,080	\$54,000	\$1,123,578	\$21,983,356	\$3,790,501	0.77	1.61	6/30/2018	
6/3/2014	Siguler Guff CCCERA Opportunities	\$159,723,586	\$200,000,000	68%	\$135,702,500	\$4,200,000	\$0	\$19,422,898	\$68,950,546	0.14	1.32	6/30/2018	
8/31/2013	Siguler Guff Secondary Opportunities	\$26,700,320	\$50,000,000	44%	\$22,056,740	\$0	\$1,226,938	\$12,536,850	\$36,770,272	0.57	1.91	6/30/2018	
12/8/2015	Wastewater Opportunity Fund	\$11,423,036	\$25,000,000	54%	\$13,438,065	\$3,720,246	\$0	\$14,872	\$11,584,161	0.00	0.85	6/30/2018	
Total Private Equity and Venture Capital		\$958,301,688	\$1,634,565,614	83%	\$1,356,370,067	\$43,232,316	\$38,007,749	\$939,656,582	\$384,325,475	0.70	1.40		
% of Portfolio (Market Value)		10.9%											

* All Data provided by StepStone Group
¹ Latest valuation + capital calls - distributions

Total Fund

Closed End Funds - IRR Summary

Period Ending: September 30, 2018

Private Credit	Inception	Fund Level (G)	CCCERA (G)	Fund Level (N)	CCCERA (N)	IRR Date
Angelo Gordon Energy Cred Opp.	09/24/2015	-	-	16.9%	15.0%	06/30/2018
Stepstone CC Opportunities Fund ¹	02/02/2018	-	-	-	-	-
Torchlight II	07/01/2006	-0.4%	-0.2%	-1.6%	-1.4%	09/30/2018
Torchlight III	12/12/2008	18.3%	16.3%	13.7%	13.8%	06/30/2018
Torchlight IV	08/01/2012	14.1%	14.4%	10.8%	11.4%	09/30/2018
Torchlight V	03/12/2015	24.3%	24.1%	15.6%	15.4%	06/30/2018

Real Estate	Inception	Fund Level (G)	CCCERA (G)	Fund Level (N)	CCCERA (N)	IRR Date
Angelo Gordon VIII	01/23/2012	-	-	-	15.9%	06/30/2018
Angelo Gordon IX	12/08/2014	-	-	-	13.1%	06/30/2018
DLJ RECP III	06/23/2005	1.0%	1.0%	-2.0%	-2.0%	06/30/2018
DLJ RECP IV	02/11/2008	7.0%	7.0%	4.0%	5.0%	06/30/2018
DLJ RECP V	07/01/2014	26.0%	26.0%	14.0%	14.0%	06/30/2018
Hearthstone II	06/17/1998	-	30.1%	-	30.1%	06/30/2018
Invesco Fund III	06/30/2013	20.3%	-	14.6%	-	06/30/2018
Invesco Fund IV	06/30/2014	18.3%	-	12.8%	-	06/30/2018
LaSalle Income & Growth VI	07/16/2013	16.3%	16.3%	13.5%	13.5%	09/30/2018
LaSalle Income & Growth VII	02/28/2017	15.8%	16.4%	13.7%	14.1%	09/30/2018
Long Wharf IV	07/03/2013	17.5%	17.6%	12.7%	12.7%	09/30/2018
Long Wharf V	09/30/2016	15.6%	18.2%	9.8%	11.2%	09/30/2018
Oaktree REOF V	12/31/2011	17.2%	-	12.7%	-	09/30/2018
Oaktree REOF VI	09/30/2013	15.2%	-	10.2%	-	09/30/2018
Oaktree REOF VII	04/01/2015	88.8%	-	45.5%	-	09/30/2018
Paulson	11/10/2013	-	-	14.9%	-	12/31/2017
Siguler Guff I	01/25/2012	14.7%	17.2%	13.2%	14.1%	06/30/2018
Siguler Guff II	08/31/2013	14.4%	14.0%	13.0%	11.6%	06/30/2018
Siguler Guff DREOF II Co-Inv	01/27/2016	13.0%	13.1%	11.8%	9.9%	06/30/2018

¹ Manager has yet to report IRR figure due to no capital invested or meaningful distributions.

² Fund level data includes CCCERA and all other fund investors.

³ Net IRR calculated after deductions of management fees and carried interest to the General Partner.

Total Fund
Closed End Funds - IRR Summary

Period Ending: September 30, 2018

Private Equity & Venture Capital	Inception	Fund Level (G)	CCCERA (G)	Fund Level (N)	CCCERA (N)	IRR Date
Adams Street Partners	3/18/1996	11.6%	12.6%	-	10.1%	6/30/2018
Adams Street Partners II	1/16/2009	17.2%	17.5%	-	15.0%	6/30/2018
Adams Street Partners - Fund 5	9/21/2012	9.4%	9.3%	-	6.8%	6/30/2018
Adams Street Partners Venture	4/28/2017	-3.1%	-3.1%	-	-18.5%	6/30/2018
Adams Street Partners - BPF	1/18/1996	14.3%	14.3%	-	11.6%	6/30/2018
Aether Real Assets III	11/27/2013	-	-	9.7%	-	6/30/2018
Aether Real Assets III Surplus	11/27/2013	-	-	11.9%	-	6/30/2018
Aether Real Assets IV	1/1/2016	-	-	14.0%	-	6/30/2018
Bay Area Equity Fund I	6/14/2004	25.9%	28.9%	23.2%	23.2%	6/30/2018
Bay Area Equity Fund II	12/7/2009	6.4%	6.4%	5.3%	5.3%	6/30/2018
Carpenter Bancfund	1/31/2008	-	-	-	10.1%	6/30/2018
CommonFund ⁴	6/28/2013	-	11.4%	-	10.1%	6/30/2018
Energy Investor Fund	11/26/2003	33.5%	34.7%	28.5%	28.3%	6/30/2018
Energy Investor Fund II	8/16/2005	6.6%	6.1%	3.9%	3.5%	6/30/2018
Energy Investor Fund III	5/30/2007	8.2%	8.2%	5.8%	5.8%	6/30/2018
Energy Investor Fund IV	11/28/2011	11.6%	11.2%	6.7%	6.5%	6/30/2018
Energy Investor Fund V ¹	11/26/2016	-	-	-	-	-
Nogales	2/15/2004	-	-4.5%	-8.6%	-8.8%	3/31/2017
Oaktree PIF 2009	2/18/2010	7.5%	-	7.3%	-	9/30/2018
Ocean Avenue II	6/11/2014	-	-	14.8%	-	6/30/2018
Ocean Avenue III	4/15/2016	-	-	32.7%	-	6/30/2018
Paladin III	11/30/2007	16.0%	-	8.0%	-	6/30/2018
Pathway 6	5/24/2011	16.8%	16.8%	13.9%	13.9%	6/30/2018
Benchmark ⁴		15.0%	-	-	-	6/30/2018
Pathway 7	2/7/2013	15.4%	15.4%	12.2%	12.2%	6/30/2018
Benchmark ⁵		14.6%	-	-	-	6/30/2018
Pathway 8 ¹	11/6/2015	20.5%	21.3%	17.9%	19.1%	6/30/2018
Benchmark ⁶		15.0%	-	-	-	6/30/2018
Pathway Private Equity Fund	11/9/1998	10.4%	10.4%	8.6%	8.6%	6/30/2018
Benchmark ⁷		10.5%	-	-	-	6/30/2018
Pathway Private Equity Fund 2008	12/26/2008	15.4%	15.4%	12.7%	12.7%	6/30/2018
Benchmark ⁸		13.5%	-	-	-	6/30/2018
Siguler Guff CCCERA Opportunities	6/3/2014	19.5%	20.1%	18.9%	16.7%	6/30/2018
Siguler Guff Secondary Opportunities ⁸	11/30/2016	81.1%	522.1%	75.2%	281.3%	6/30/2018
Wastewater Opportunity Fund	12/8/2015	-1.5%	-	-17.1%	-	6/30/2018

¹Manager has yet to report IRR figure due to no capital invested or meaningful distributions.

²Fund level data includes CCCERA and all other fund investors.

³Net IRR calculated after deductions of management fees and carried interest to the General Partner.

⁴Private iQ global all private equity median pooled return for vintage years 2011-2014, as of June 30, 2018.

⁵Private iQ global all private equity median pooled return for vintage years 2012-2016, as of June 30, 2018.

⁶Private iQ global all private equity median pooled return for vintage years 2015-2018, as of June 30, 2018.

⁷Private iQ global all private equity median pooled return for vintage years 1999-2011, as of June 30, 2018.

⁸Private iQ global all private equity median pooled return for vintage years 2008-2014, as of June 30, 2018.

Total Fund
Performance Analysis - 3 Years (Net of Fees)

Period Ending: September 30, 2018

3 Years

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Jackson Square Partners	14.72%	-5.83%	10.66%	-3.74%	0.90	5.60%	0.73	1.30	-1.04	79.64%	119.38%
Robeco Boston Partners	14.95%	1.40%	10.53%	0.32%	1.08	3.07%	0.92	1.34	0.46	106.94%	96.35%
Emerald Advisers	16.81%	-1.17%	14.03%	-0.97%	0.99	4.65%	0.89	1.14	-0.25	91.55%	94.96%
Ceredex	14.61%	-1.51%	11.81%	2.09%	0.78	6.13%	0.80	1.16	-0.25	82.76%	84.11%
Pyrford	8.03%	-1.26%	9.08%	1.85%	0.67	5.95%	0.76	0.79	-0.21	60.49%	58.67%
William Blair	9.86%	-0.74%	10.49%	-0.31%	0.96	2.61%	0.94	0.86	-0.28	93.32%	96.93%
Artisan Partners	17.13%	3.73%	11.38%	2.80%	1.07	5.44%	0.77	1.43	0.69	124.54%	101.79%
First Eagle	9.84%	-3.56%	7.07%	0.51%	0.70	3.95%	0.85	1.27	-0.90	60.77%	54.63%
Allianz Global Investors	6.43%	-1.76%	4.55%	-0.84%	0.89	1.26%	0.94	1.22	-1.40	83.10%	101.29%
Adelante	5.87%	-1.21%	11.82%	-0.66%	0.92	1.92%	0.98	0.42	-0.63	84.82%	92.30%
AFL-CIO	0.86%	-0.46%	2.36%	-0.26%	0.85	0.80%	0.92	0.00	-0.57	76.48%	83.84%
Wellington Real Total Return	-0.85%	-6.91%	4.79%	-4.12%	0.54	4.79%	0.01	-0.36	-1.44	4.69%	23,772.75%

Performance Analysis excludes closed end funds and those funds without 3 years of performance.

Total Fund
Performance Analysis - 5 Years (Net of Fees)

Period Ending: September 30, 2018

	5 Years										
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Jackson Square Partners	13.05%	-3.54%	11.22%	-3.18%	0.98	4.86%	0.81	1.12	-0.73	88.93%	115.52%
Robeco Boston Partners	11.45%	0.73%	10.66%	0.03%	1.07	3.04%	0.92	1.02	0.24	105.99%	100.53%
Emerald Advisers	13.51%	1.37%	15.43%	1.17%	1.02	5.64%	0.87	0.84	0.24	105.40%	97.81%
Ceredex	10.14%	0.23%	12.58%	1.71%	0.85	5.49%	0.84	0.76	0.04	88.76%	90.51%
William Blair	5.96%	0.64%	10.25%	1.06%	0.92	2.66%	0.94	0.53	0.24	92.49%	90.57%
Artisan Partners	12.07%	3.41%	11.21%	3.45%	0.99	5.55%	0.75	1.03	0.61	111.20%	83.62%
First Eagle	6.55%	-2.11%	7.09%	0.74%	0.67	4.20%	0.86	0.85	-0.50	56.99%	63.94%
Allianz Global Investors	4.13%	-1.41%	4.60%	-0.88%	0.90	1.07%	0.96	0.78	-1.32	83.01%	99.82%
Adelante	9.27%	0.02%	12.73%	0.65%	0.93	1.80%	0.99	0.69	0.01	89.35%	92.46%
AFL-CIO	2.10%	-0.06%	2.46%	0.21%	0.88	0.73%	0.93	0.64	-0.08	87.63%	82.89%
Wellington Real Total Return	-1.70%	-7.27%	5.21%	-8.70%	1.26	5.06%	0.06	-0.43	-1.44	-10.62%	820.26%

Performance Analysis excludes closed end funds and those funds without 5 years of performance.

Total Fund Investment Fund Fee Analysis

Period Ending: September 30, 2018

Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
BlackRock Russell 1000 Index	Growth	0.03% of Assets	\$132,550,519	\$39,765	0.03%
Jackson Square Partners	Growth	0.50% of First 100.0 Mil, 0.40% of Next 150.0 Mil, 0.35% Thereafter	\$341,398,816	\$1,419,896	0.42%
Robeco Boston Partners	Growth	0.50% of First 25.0 Mil, 0.30% Thereafter	\$309,138,715	\$977,416	0.32%
Emerald Advisers	Growth	0.75% of First 10.0 Mil, 0.60% Thereafter	\$250,301,015	\$1,516,806	0.61%
Ceredex	Growth	0.85% of First 10.0 Mil, 0.68% of Next 40.0 Mil, 0.51% Thereafter	\$207,467,922	\$1,160,086	0.56%
Pyrford	Growth	0.70% of First 50.0 Mil, 0.50% of Next 50.0 Mil, 0.35% Thereafter	\$459,027,031	\$1,856,595	0.40%
William Blair	Growth	0.80% of First 20.0 Mil, 0.60% of Next 30.0 Mil, 0.50% of Next 50.0 Mil, 0.45% of Next 50.0 Mil, 0.40% of Next 50.0 Mil, 0.30% Thereafter	\$490,236,409	\$1,885,709	0.38%
PIMCO RAE Emerging Markets	Growth	0.75% of First 50.0 Mil, 0.68% of Next 50.0 Mil, 0.50% of Next 100.0 Mil, 0.45% Thereafter	\$348,136,428	\$1,879,114	0.54%
TT Emerging Markets	Growth	0.70% of First 100.0 Mil, 0.65% of Next 100.0 Mil, 0.60% Thereafter	\$311,665,621	\$2,019,994	0.65%
Artisan Partners	Growth	0.75% of Assets	\$411,145,313	\$3,083,590	0.75%
First Eagle	Growth	0.75% of Assets	\$364,295,113	\$2,732,213	0.75%
Allianz Global Investors	Growth	0.50% of First 50.0 Mil, 0.40% of Next 50.0 Mil, 0.35% Thereafter	\$349,380,629	\$1,322,832	0.38%
AFL-CIO	Diversifying	0.43% of Assets	\$314,654,516	\$1,353,014	0.43%

Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus.

Total Fund
Investment Fund Fee Analysis

Period Ending: September 30, 2018

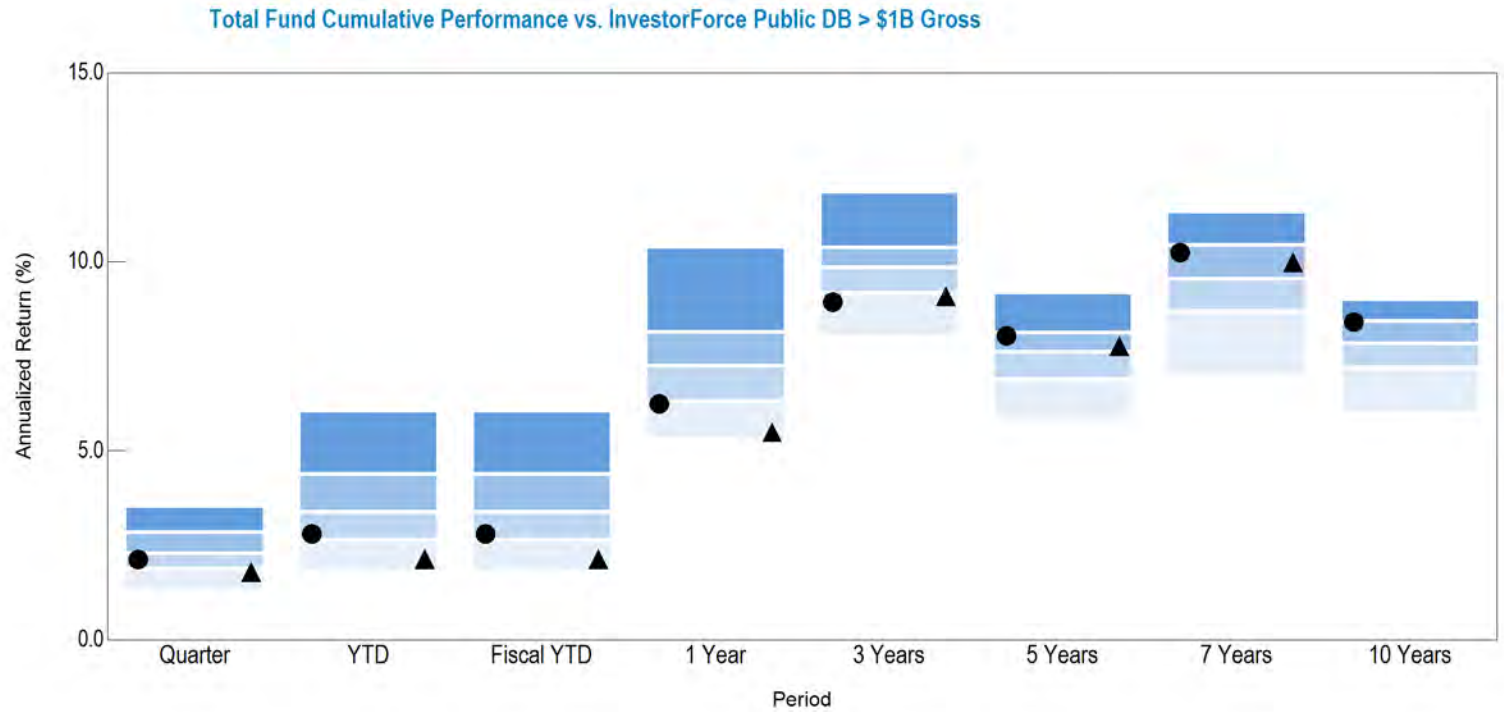
Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Wellington Real Total Return	Diversifying	0.35% of Assets	\$184,975,415	\$647,414	0.35%
Parametric Defensive Equity	Diversifying	0.42% of First 200.0 Mil, 0.39% Thereafter	\$202,889,997	\$851,271	0.42%
DFA Short Credit	Liquidity	0.20% of First 25.0 Mil, 0.10% Thereafter	\$442,518,917	\$467,519	0.11%
Insight Short Duration	Liquidity	0.06% of First 500.0 Mil, 0.05% of Next 500.0 Mil, 0.04% Thereafter	\$940,109,107	\$520,055	0.06%
Sit Short Duration	Liquidity	0.15% of Assets	\$521,745,670	\$782,619	0.15%

Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus.

Total Fund

Peer Universe Comparison: Cumulative Performance (Gross of Fees)

Period Ending: September 30, 2018



	Quarter		YTD		Fiscal YTD		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	3.5	6.1	6.1	10.4	11.8	9.2	11.3	9.0								
25th Percentile	2.9	4.4	4.4	8.2	10.4	8.1	10.5	8.4								
Median	2.3	3.4	3.4	7.3	9.9	7.6	9.6	7.8								
75th Percentile	1.9	2.7	2.7	6.3	9.2	6.9	8.7	7.2								
95th Percentile	1.3	1.8	1.8	5.3	8.0	5.8	7.0	6.0								
# of Portfolios	78	77	77	77	77	75	74	71								
● Total Fund	2.1 (64)	2.8 (68)	2.8 (68)	6.2 (77)	8.9 (89)	8.0 (37)	10.2 (29)	8.4 (26)								
▲ Policy Index	1.8 (80)	2.1 (88)	2.1 (88)	5.5 (91)	9.1 (82)	7.8 (46)	10.0 (34)	-- (--)								

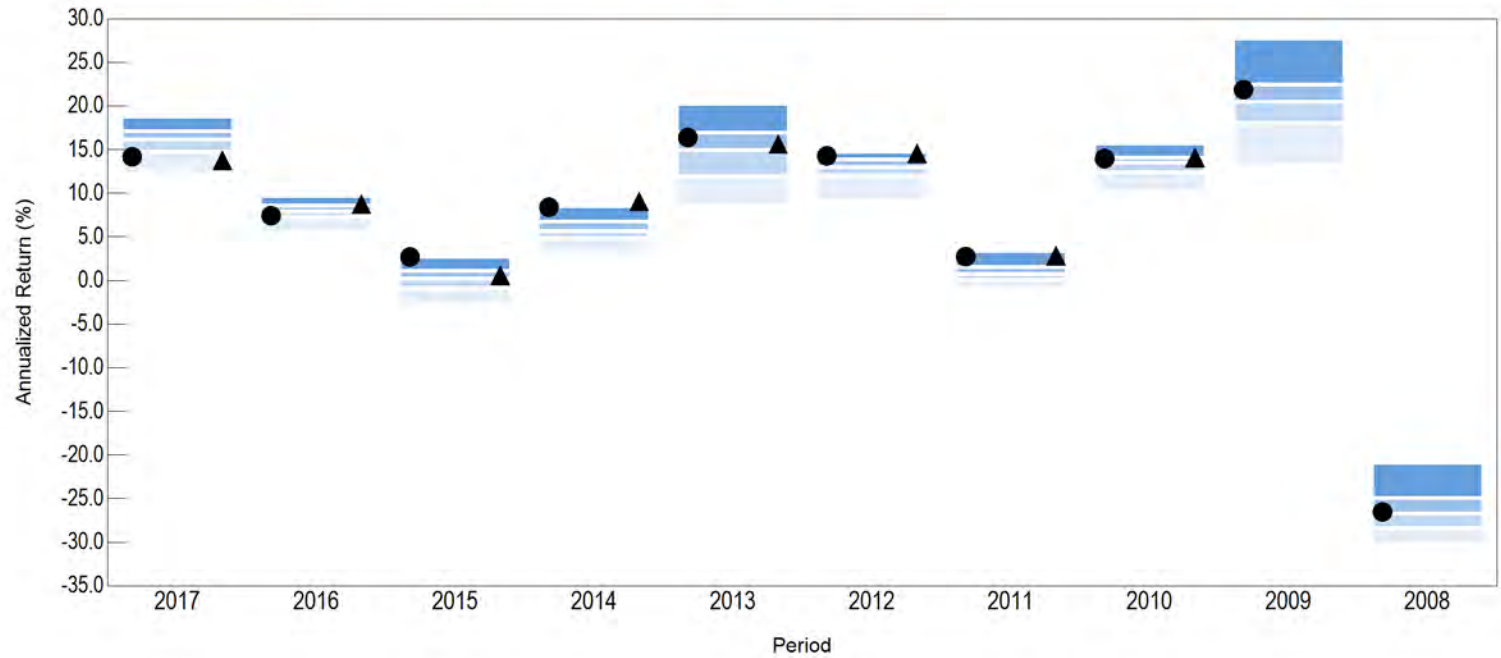
Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

Total Fund

Peer Universe Comparison: Consecutive Periods (Gross of Fees)

Period Ending: September 30, 2018

Total Fund Consecutive Periods vs. InvestorForce Public DB > \$1B Gross



	Return (Rank)									
5th Percentile	18.8	9.7	2.7	8.5	20.2	14.7	3.3	15.7	27.7	-21.0
25th Percentile	17.2	8.6	1.1	6.8	17.0	13.9	1.6	14.2	22.5	-24.9
Median	16.2	8.0	0.3	5.7	15.0	13.0	0.8	13.5	20.5	-26.7
75th Percentile	14.8	7.4	-0.7	4.9	12.0	12.1	0.1	12.5	18.1	-28.3
95th Percentile	12.4	5.5	-2.8	3.1	8.7	9.2	-0.9	10.2	13.4	-30.2
# of Portfolios	98	92	98	79	67	74	68	66	66	65
● Total Fund	14.2 (83)	7.4 (74)	2.7 (5)	8.4 (6)	16.4 (33)	14.3 (13)	2.7 (9)	14.0 (29)	21.9 (34)	-26.5 (48)
▲ Policy Index	13.8 (89)	8.8 (17)	0.6 (40)	9.0 (2)	15.6 (43)	14.6 (8)	2.8 (9)	14.1 (27)	-- (--)	-- (--)

Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

Total Fund

Peer Universe Comparison: Consecutive Periods (Net of Fees)

Period Ending: September 30, 2018

Total Fund Consecutive Periods vs. InvestorForce Public DB > \$1B Net

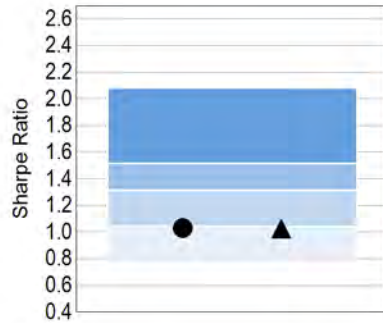


	Return (Rank)									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
5th Percentile	18.6	9.3	2.4	7.6	19.5	14.3	4.2	15.1	27.5	-20.9
25th Percentile	16.6	8.4	0.8	6.1	16.0	13.4	1.5	13.8	21.7	-25.7
Median	15.6	7.7	-0.4	5.1	14.3	12.7	0.6	12.8	20.0	-26.9
75th Percentile	14.1	7.1	-1.3	4.4	11.0	11.8	-0.3	11.8	17.7	-28.3
95th Percentile	10.7	5.3	-3.2	2.6	8.5	9.0	-1.2	9.3	13.4	-30.5
# of Portfolios	61	62	57	55	48	44	42	41	40	39
● Total Fund	13.9 (81)	6.9 (78)	2.1 (12)	7.7 (5)	15.6 (33)	13.6 (21)	2.1 (12)	13.3 (34)	21.1 (33)	-26.9 (51)
▲ Policy Index	13.8 (84)	8.8 (14)	0.6 (29)	9.0 (2)	15.6 (33)	14.6 (1)	2.8 (11)	14.1 (15)	-- (--)	-- (--)

Total Fund
 Sharpe Ratio Ranking (Gross of Fees)

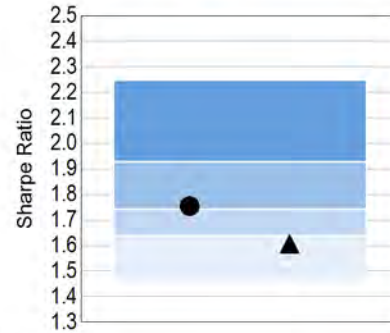
Period Ending: September 30, 2018

Sharpe Ratio
 1 Year



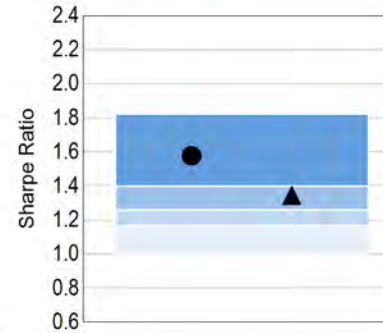
● Total Fund	
Value	1.0
Rank	78
▲ Policy Index	
Value	1.0
Rank	79
Universe	
5th %tile	2.1
25th %tile	1.5
Median	1.3
75th %tile	1.0
95th %tile	0.8

Sharpe Ratio
 3 Year



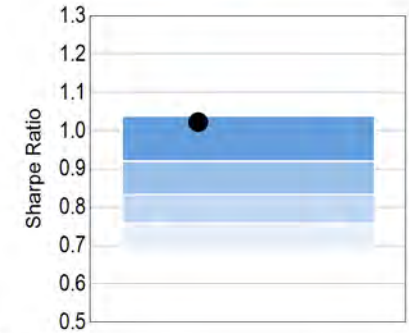
● Total Fund	
Value	1.8
Rank	48
▲ Policy Index	
Value	1.6
Rank	81
Universe	
5th %tile	2.2
25th %tile	1.9
Median	1.7
75th %tile	1.6
95th %tile	1.5

Sharpe Ratio
 5 Year



● Total Fund	
Value	1.6
Rank	14
▲ Policy Index	
Value	1.3
Rank	36
Universe	
5th %tile	1.8
25th %tile	1.4
Median	1.3
75th %tile	1.2
95th %tile	1.0

Sharpe Ratio
 10 Year



● Total Fund	
Value	1.0
Rank	7
▲ Policy Index	
Value	--
Rank	--
Universe	
5th %tile	1.0
25th %tile	0.9
Median	0.8
75th %tile	0.8
95th %tile	0.7

Domestic Equity Managers

Jackson Square Partners Manager Portfolio Overview

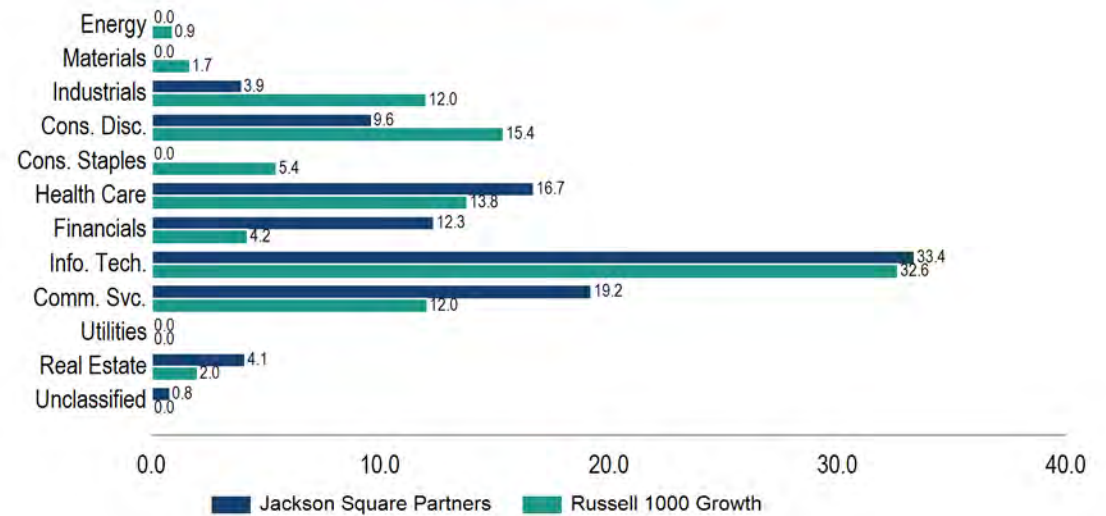
Period Ending: September 30, 2018

Domestic equity large cap growth portfolio concentrated in companies with sustainable long-term growth characteristics. Primary personnel include Jeffrey Van Harte, Christopher Bonavico, Christopher Ericksen, and Daniel Prislín.

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	30	542
Weighted Avg. Market Cap. (\$B)	172.43	291.64
Median Market Cap. (\$B)	42.94	12.71
Price To Earnings	38.25	28.60
Price To Book	8.99	9.17
Price To Sales	7.04	5.45
Return on Equity (%)	17.25	32.14
Yield (%)	0.79	1.17
Beta	1.28	1.00

Sector Allocation (%) vs Russell 1000 Growth



Largest Holdings

	End Weight	Return
MICROSOFT	8.84	16.43
VISA 'A'	6.18	13.49
MASTERCARD	5.72	13.42
BIOGEN	5.04	21.73
IQVIA HOLDINGS	4.89	29.97
PAYPAL HOLDINGS	4.52	5.49
KKR AND A	3.99	10.43
FEDEX	3.92	6.33
TAKE TWO INTACT.SFTW.	3.88	16.59
ALPHABET A	3.65	6.90

Top Contributors

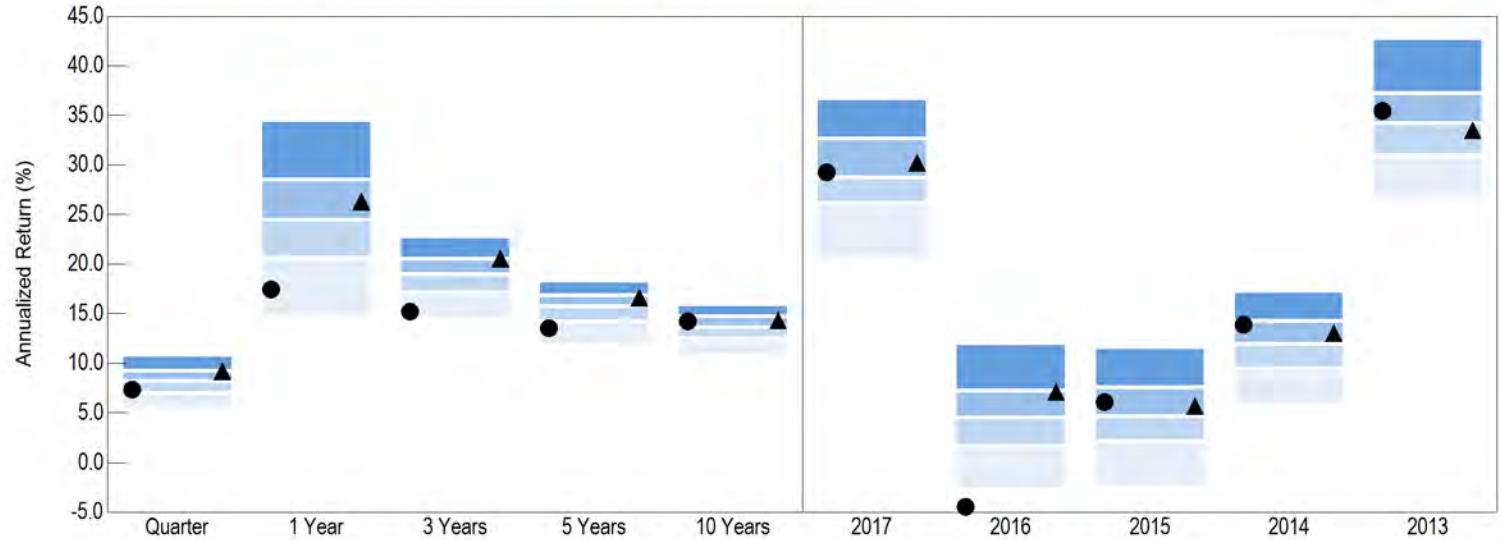
	Avg Wgt	Return	Contribution
MICROSOFT	8.63	16.43	1.42
IQVIA HOLDINGS	4.13	29.97	1.24
BIOGEN	4.57	21.73	0.99
VISA 'A'	6.24	13.49	0.84
ILLUMINA	2.54	31.43	0.80
MASTERCARD	5.72	13.42	0.77
TAKE TWO INTACT.SFTW.	3.59	16.59	0.60
AUTODESK	2.95	19.09	0.56
DOLLAR GENERAL	3.20	11.18	0.36
HASBRO	2.30	14.60	0.34

Bottom Contributors

	Avg Wgt	Return	Contribution
ELECTRONIC ARTS	3.06	-14.56	-0.45
APPLIED MATS.	2.45	-15.93	-0.39
TRIPADVISOR 'A'	3.21	-8.33	-0.27
EBAY	2.64	-8.94	-0.24
DENTSPLY SIRONA	1.49	-13.58	-0.20
ALIBABA GROUP HLDG.SPN. ADR 1:1	1.77	-11.19	-0.20
CHARLES SCHWAB	2.91	-3.57	-0.10
ASML HLDG.ADR 1:1	0.57	-5.03	-0.03
EQUINIX REIT	1.58	1.23	0.02
DOMINO'S PIZZA	0.50	4.68	0.02

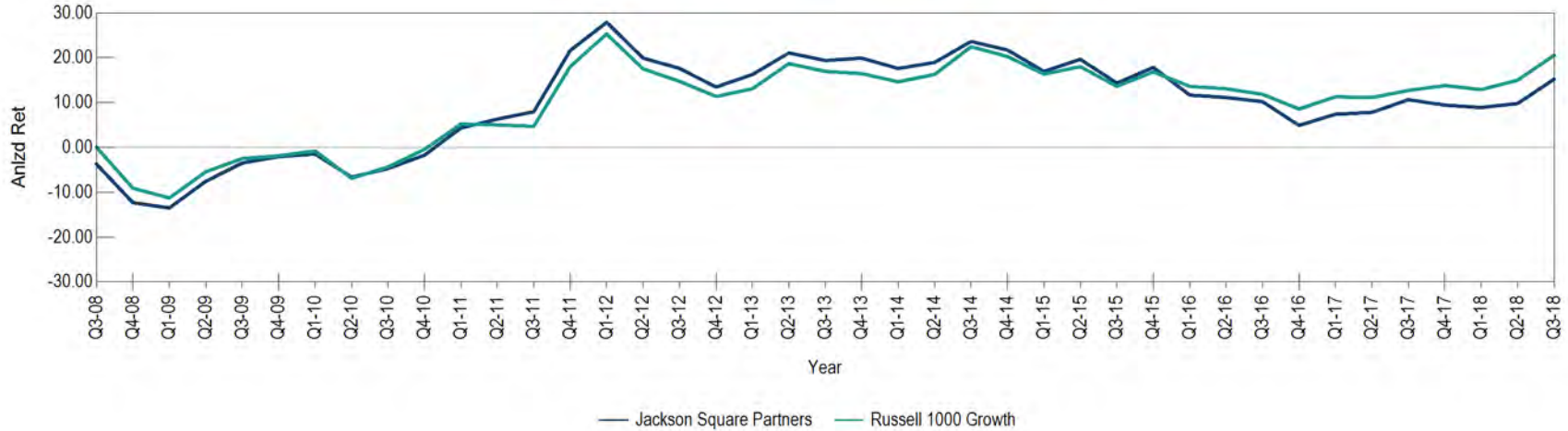
Unclassified sector allocation includes cash allocations.

Jackson Square Partners vs. eV US Large Cap Growth Equity Gross Universe

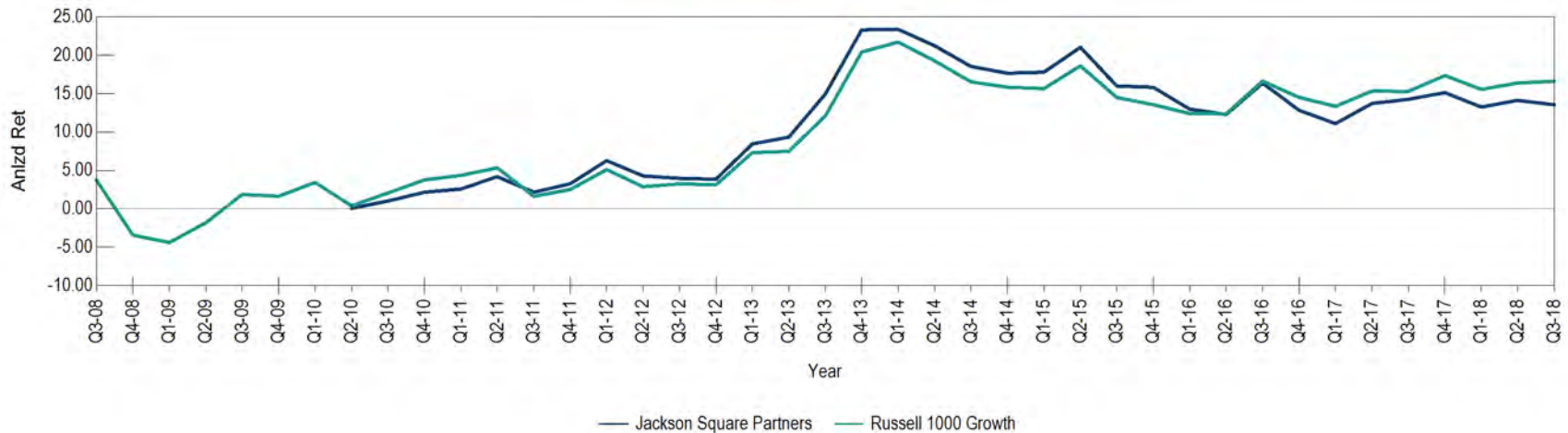


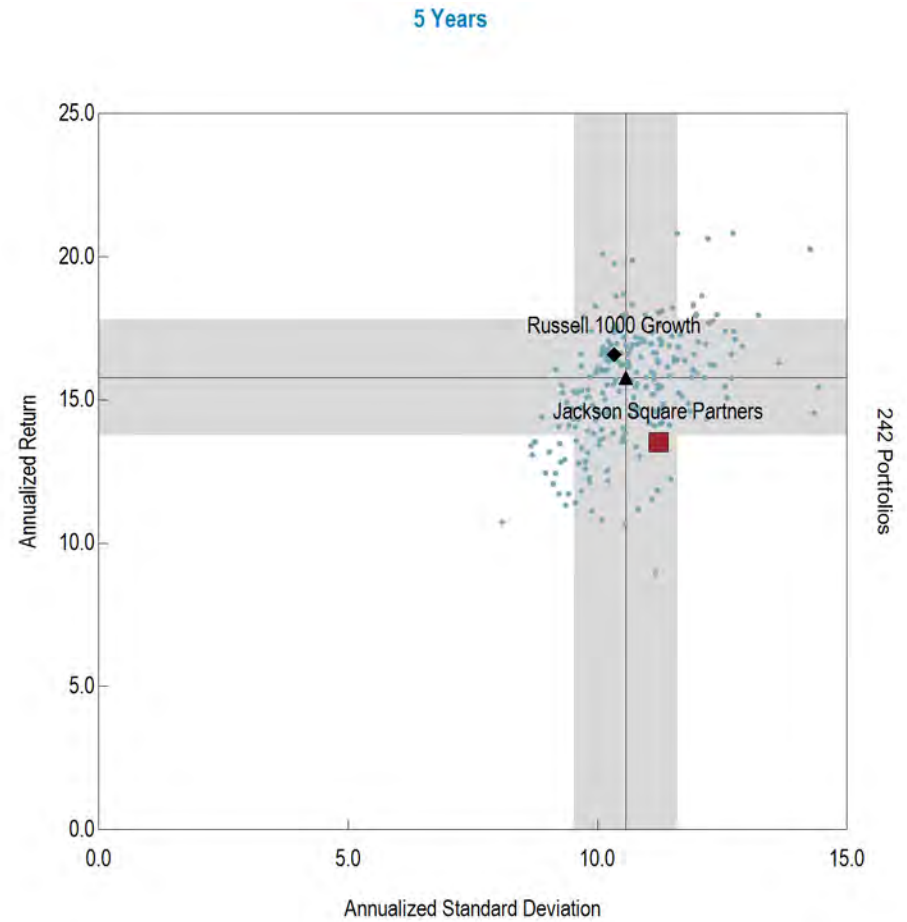
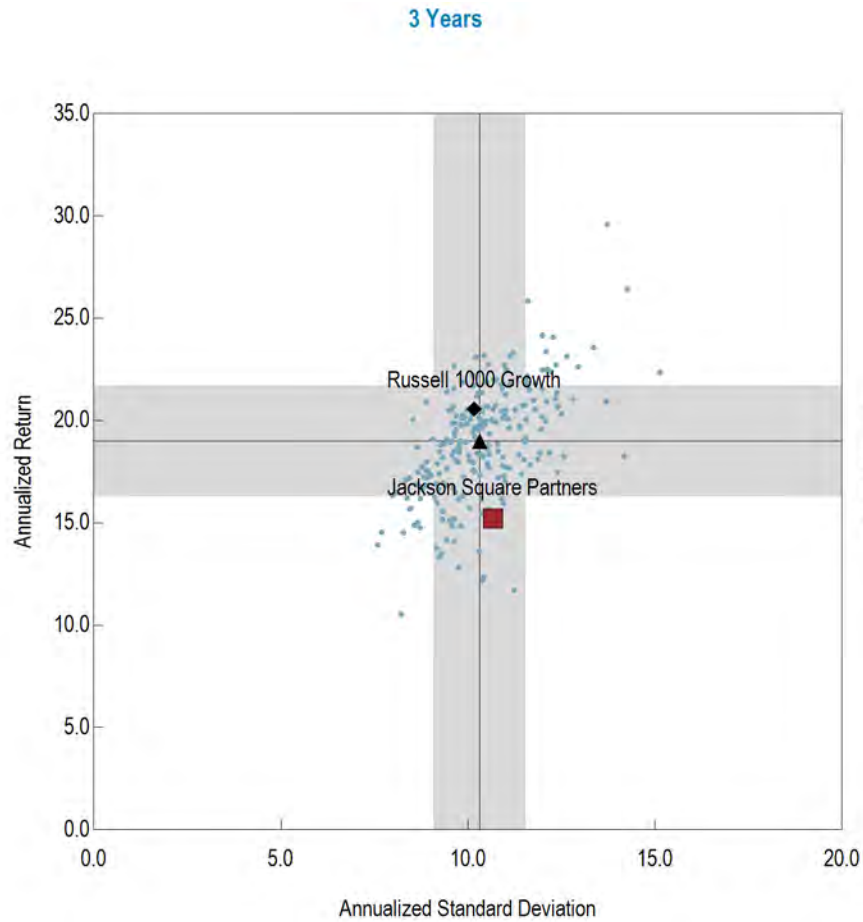
	Quarter	1 Year	3 Years	5 Years	10 Years	2017	2016	2015	2014	2013
5th Percentile	10.8	34.5	22.8	18.3	15.9	36.7	12.0	11.6	17.3	42.8
25th Percentile	9.2	28.5	20.5	16.9	14.7	32.7	7.3	7.6	14.3	37.3
Median	8.3	24.5	19.0	15.8	13.7	28.8	4.6	4.7	12.0	34.3
75th Percentile	7.0	20.7	17.2	14.2	12.6	26.2	1.8	2.1	9.5	31.0
95th Percentile	5.3	14.8	14.5	11.9	10.7	20.5	-2.7	-2.4	5.8	26.6
# of Portfolios	253	253	246	242	216	265	282	270	291	274
● Jackson Square Partners	7.3 (68)	17.4 (89)	15.2 (90)	13.5 (84)	14.2 (35)	29.3 (47)	-4.4 (98)	6.1 (37)	13.9 (31)	35.4 (40)
▲ Russell 1000 Growth	9.2 (27)	26.3 (39)	20.6 (25)	16.6 (34)	14.3 (34)	30.2 (42)	7.1 (26)	5.7 (42)	13.0 (38)	33.5 (56)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





	3 Years			5 Years			
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio		Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Jackson Square Partners	15.2%	10.7%	1.3	Jackson Square Partners	13.5%	11.2%	1.2
Russell 1000 Growth	20.6%	10.2%	1.9	Russell 1000 Growth	16.6%	10.3%	1.6
eV US Large Cap Growth Equity Gross Median	19.0%	10.3%	1.8	eV US Large Cap Growth Equity Gross Median	15.8%	10.6%	1.4

Robeco Boston Partners Manager Portfolio Overview

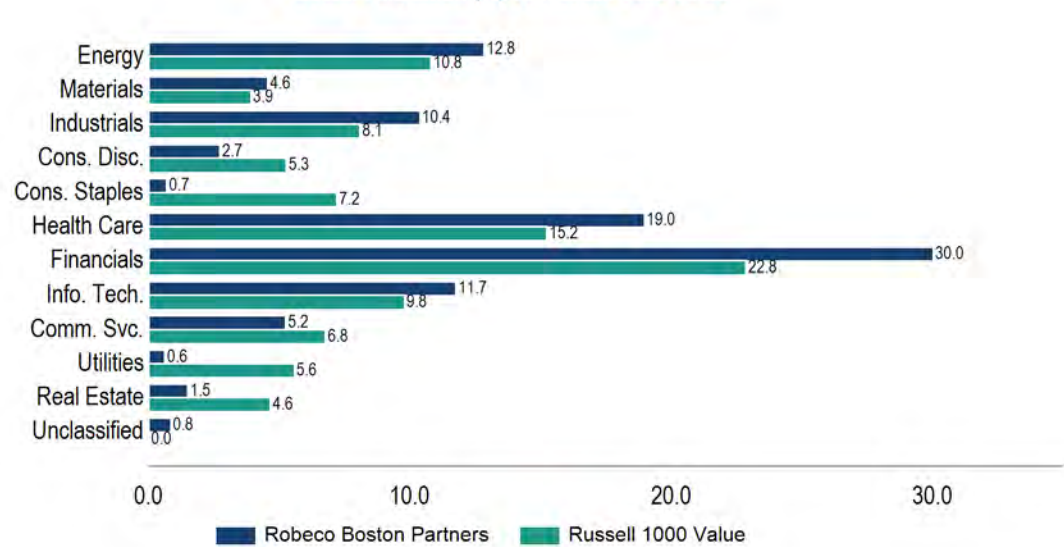
Period Ending: September 30, 2018

Domestic equity large cap value portfolio exhibiting low turnover in companies with low valuations relative to intrinsic value. Primary personnel include Mark Donovan and David Pyle.

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	78	727
Weighted Avg. Market Cap. (\$B)	152.74	119.71
Median Market Cap. (\$B)	36.82	9.69
Price To Earnings	20.95	20.58
Price To Book	2.96	2.85
Price To Sales	2.62	2.99
Return on Equity (%)	15.64	12.85
Yield (%)	2.25	2.47
Beta	1.04	1.00

Sector Allocation (%) vs Russell 1000 Value



Largest Holdings

	End Weight	Return
BANK OF AMERICA	4.24	5.01
JOHNSON & JOHNSON	4.19	14.63
BERKSHIRE HATHAWAY 'B'	4.15	14.71
JP MORGAN CHASE & CO.	3.89	8.88
CITIGROUP	3.62	7.87
CISCO SYSTEMS	3.39	13.94
WELLS FARGO & CO	3.07	-4.50
PFIZER	2.85	22.51
COMCAST A	2.74	8.54
CHEVRON	2.61	-2.36

Top Contributors

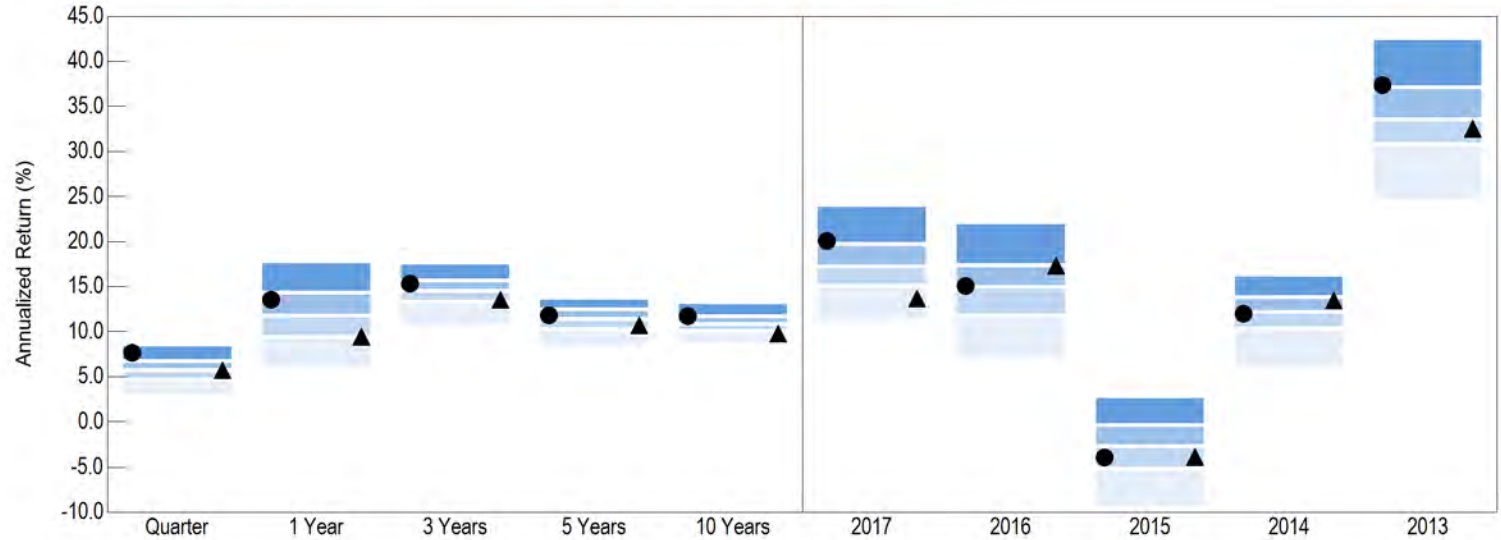
	Avg Wgt	Return	Contribution
BERKSHIRE HATHAWAY 'B'	4.04	14.71	0.59
JOHNSON & JOHNSON	4.04	14.63	0.59
PFIZER	2.62	22.51	0.59
CISCO SYSTEMS	3.21	13.94	0.45
CVS HEALTH	1.67	23.26	0.39
JP MORGAN CHASE & CO.	4.01	8.88	0.36
ORACLE	2.02	17.48	0.35
MERCK & COMPANY	1.97	17.67	0.35
ANDEAVOR	1.91	16.92	0.32
CITIGROUP	3.62	7.87	0.28

Bottom Contributors

	Avg Wgt	Return	Contribution
WELLS FARGO & CO	3.14	-4.50	-0.14
EQT	0.69	-19.80	-0.14
OWENS CORNING	0.51	-14.08	-0.07
EBAY	0.75	-8.94	-0.07
CHEVRON	2.77	-2.36	-0.07
CIMAREX EN.	0.64	-8.48	-0.05
WESTROCK	0.83	-5.55	-0.05
CRH ADR 1:1	0.59	-6.80	-0.04
LLOYDS BANKING	0.51	-7.03	-0.04
GP.SP.N. ADR 1:4	0.51	-7.03	-0.04
LABORATORY CORP.OF AM. HDG.	0.96	-3.26	-0.03

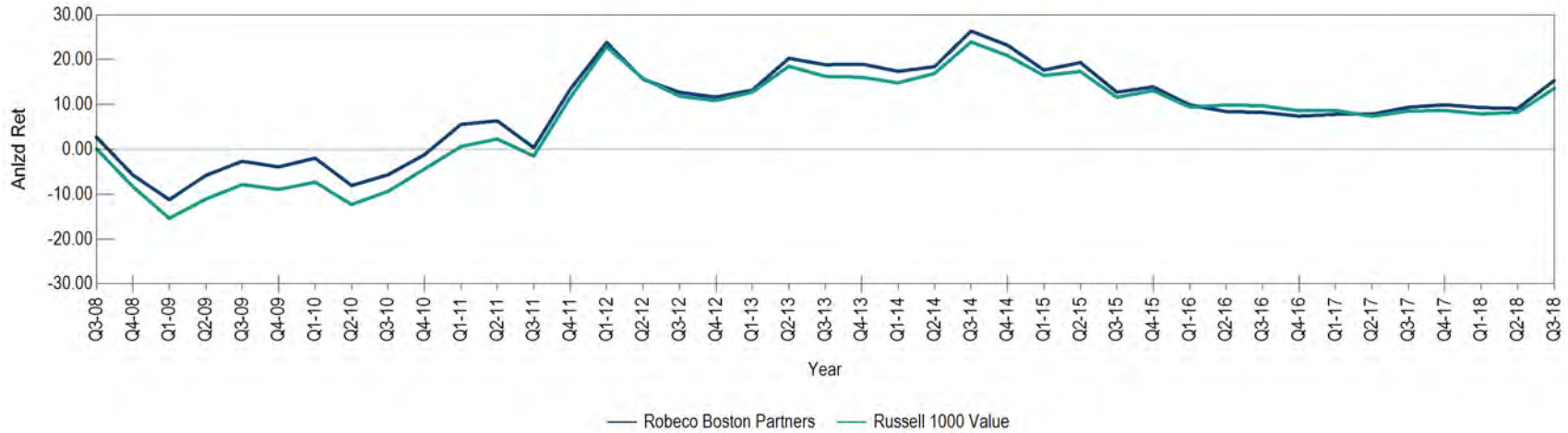
Unclassified sector allocation includes cash allocations.

Robeco Boston Partners vs. eV US Large Cap Value Equity Gross Universe

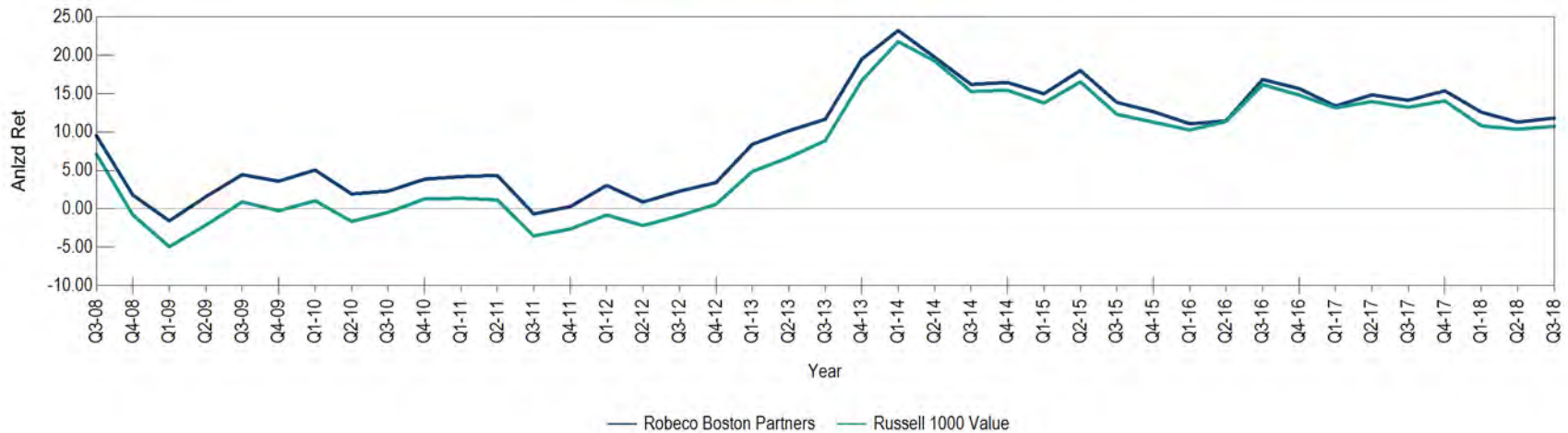


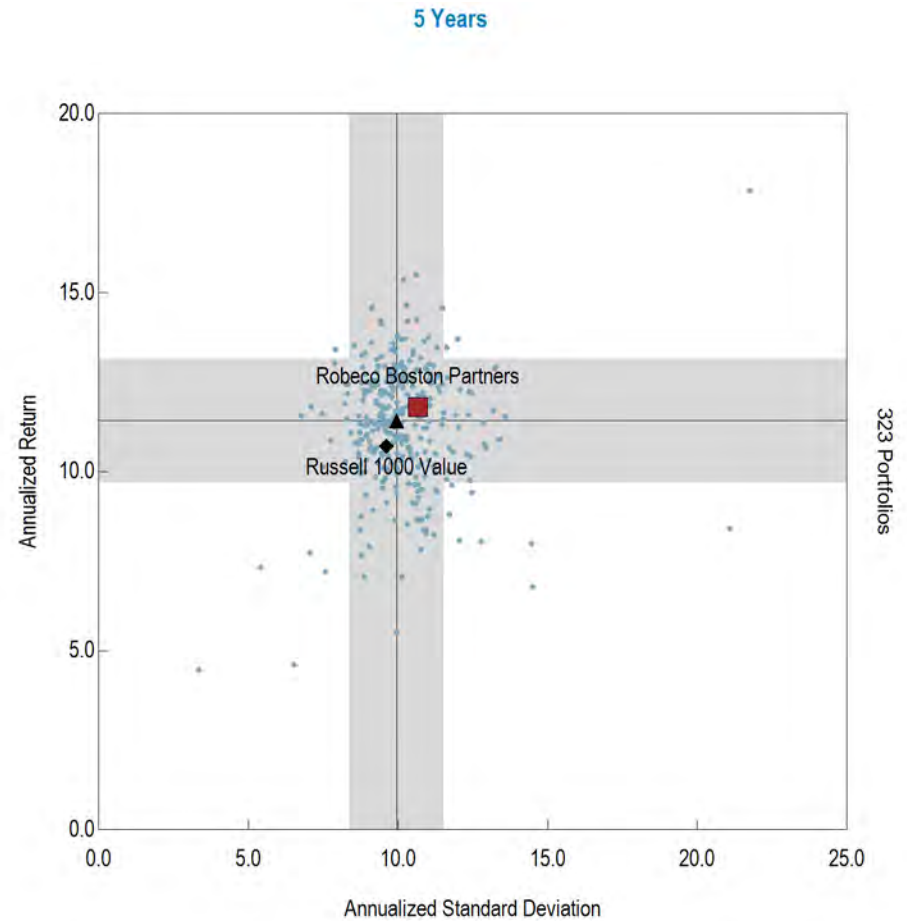
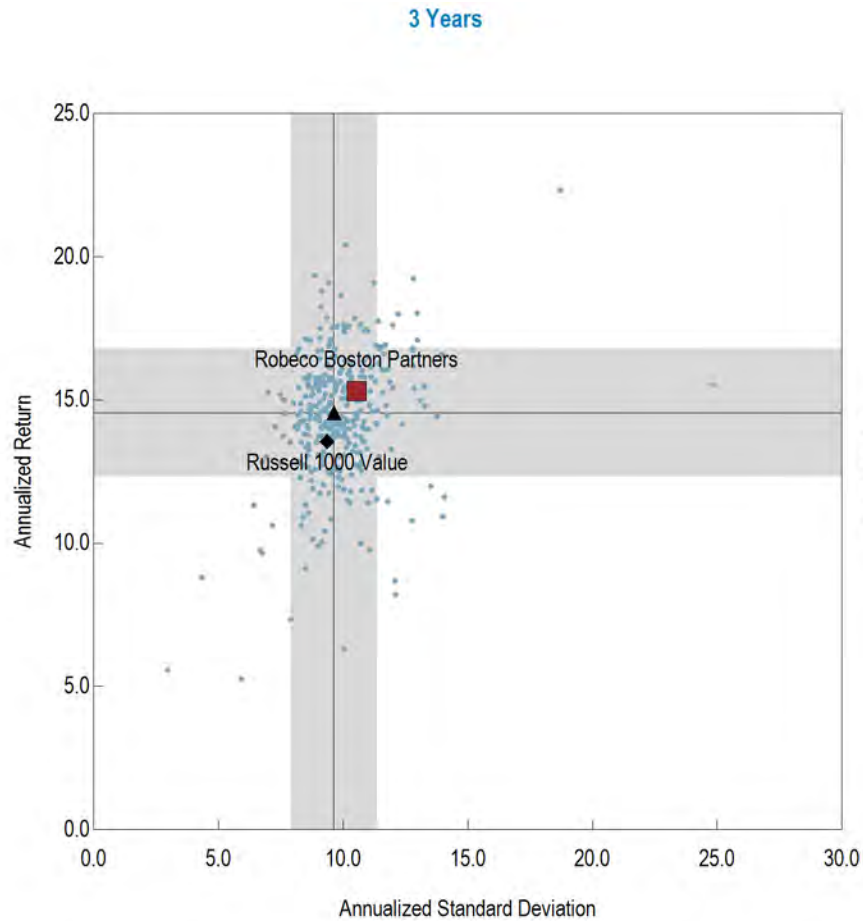
	Quarter	1 Year	3 Years	5 Years	10 Years	2017	2016	2015	2014	2013
5th Percentile	8.5	17.8	17.6	13.7	13.2	24.0	22.1	2.8	16.3	42.5
25th Percentile	6.8	14.3	15.7	12.5	11.7	19.8	17.4	-0.4	13.9	37.2
Median	5.8	11.8	14.6	11.4	10.8	17.2	15.0	-2.6	12.2	33.6
75th Percentile	4.7	9.5	13.3	10.3	10.1	15.1	11.8	-5.1	10.4	30.8
95th Percentile	2.9	5.9	10.5	8.2	8.7	11.2	7.0	-9.4	5.9	24.6
# of Portfolios	334	334	332	323	267	342	346	312	307	310
● Robeco Boston Partners	7.6 (13)	13.5 (35)	15.3 (36)	11.8 (41)	11.7 (25)	20.1 (23)	15.1 (50)	-3.9 (65)	12.0 (55)	37.4 (24)
▲ Russell 1000 Value	5.7 (53)	9.5 (76)	13.6 (73)	10.7 (68)	9.8 (82)	13.7 (87)	17.3 (26)	-3.8 (64)	13.5 (33)	32.5 (60)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





	3 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Robeco Boston Partners	15.3%	10.5%	1.4
Russell 1000 Value	13.6%	9.4%	1.4
eV US Large Cap Value Equity Gross Median	14.6%	9.6%	1.4

	5 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Robeco Boston Partners	11.8%	10.7%	1.1
Russell 1000 Value	10.7%	9.6%	1.1
eV US Large Cap Value Equity Gross Median	11.4%	10.0%	1.1

Emerald Advisers Manager Portfolio Overview

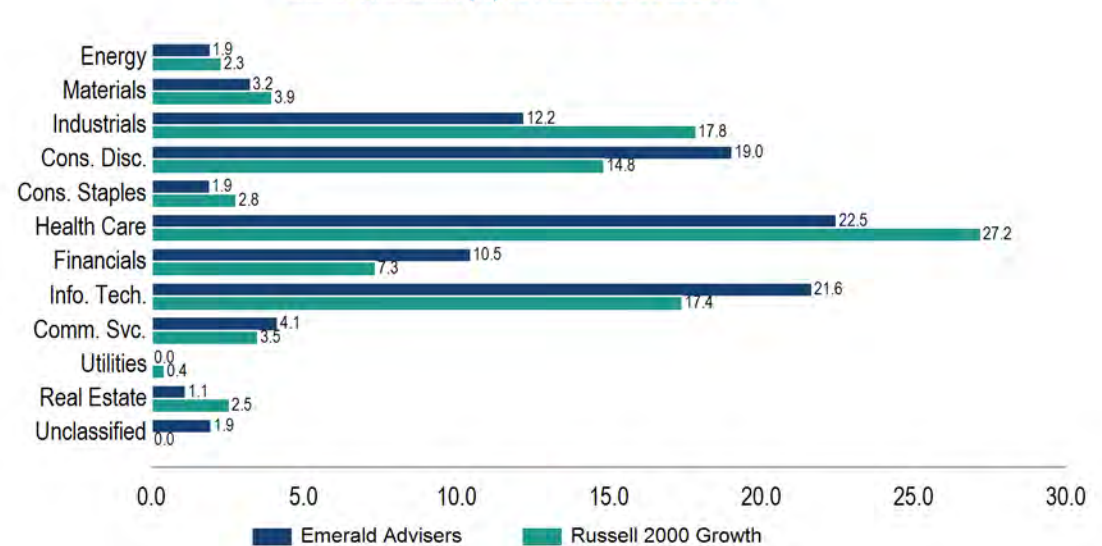
Period Ending: September 30, 2018

Domestic equity small cap growth portfolio of companies with significantly high growth rates. Primary personnel include Kenneth Mertz, Joseph Garner, and Stacey Sears.

Characteristics

	Portfolio	Russell 2000 Growth
Number of Holdings	119	1,253
Weighted Avg. Market Cap. (\$B)	2.90	2.65
Median Market Cap. (\$B)	2.02	1.04
Price To Earnings	-8.55	18.97
Price To Book	7.11	5.86
Price To Sales	4.14	3.66
Return on Equity (%)	-0.59	6.90
Yield (%)	0.43	0.46
Beta	1.29	1.00

Sector Allocation (%) vs Russell 2000 Growth



Largest Holdings

	End Weight	Return
CHEGG	2.53	2.30
VONAGE HOLDINGS	2.24	9.85
FIVE BELOW	2.00	33.11
EPAM SYSTEMS	1.87	10.75
VARONIS SYSTEMS	1.84	-1.68
CADENCE BANCORP.'A'	1.83	-9.04
TREX	1.75	22.99
CIENA	1.58	17.84
AMER.EAG.OUTFITTERS	1.54	7.43
REATA PHARMS.CL.A	1.50	133.80

Top Contributors

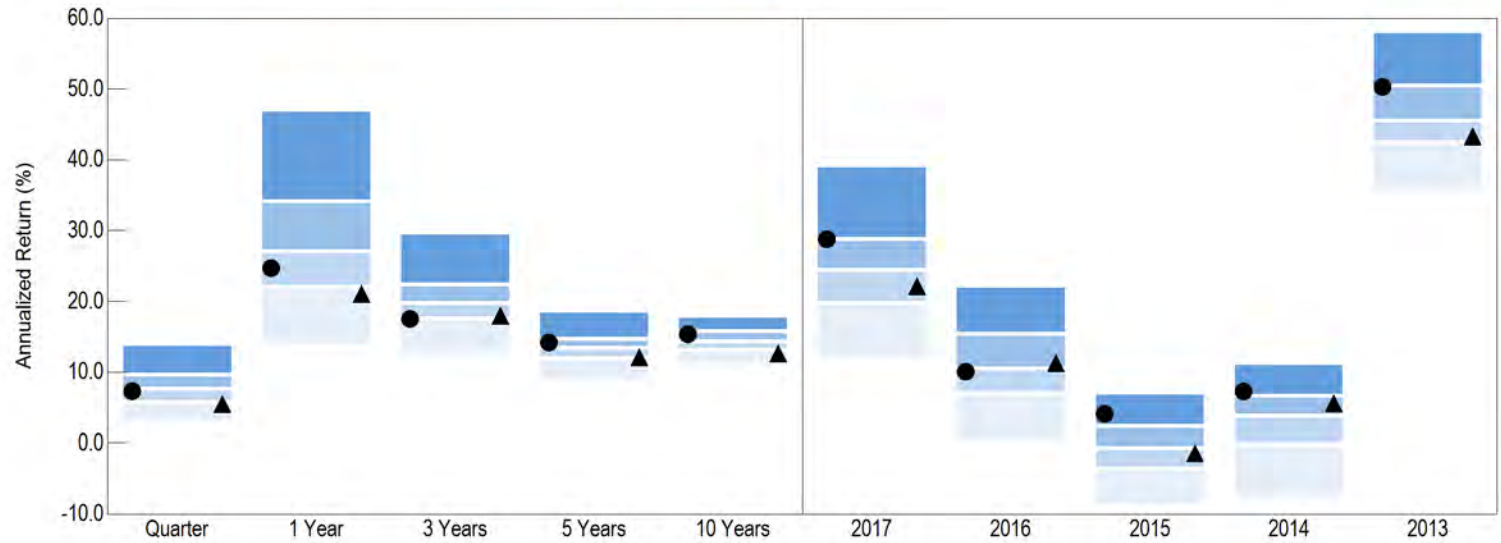
	Avg Wgt	Return	Contribution
REATA PHARMS.CL.A	1.20	133.80	1.61
TANDEM DIABETES CARE	0.87	94.55	0.82
TELADOC HEALTH	1.23	48.75	0.60
FIVE BELOW	1.67	33.11	0.55
AVROBIO	0.50	81.62	0.41
TREX	1.73	22.99	0.40
OLLIES BARGAIN OUTLET HLDG.	1.16	32.55	0.38
SEAWORLD ENTERTAINMENT	0.82	44.04	0.36
ALARMCOM HOLDINGS	0.78	42.15	0.33
MERCURY SYSTEMS	0.72	45.35	0.33

Bottom Contributors

	Avg Wgt	Return	Contribution
FCB FINANCIAL HDG.CL.A	2.07	-19.39	-0.40
USA TECHNOLOGIES	0.81	-48.57	-0.39
CLOVIS ONCOLOGY	0.54	-35.41	-0.19
CADENCE BANCORP.'A'	2.00	-9.04	-0.18
EXTRACTION OIL & GAS	0.75	-23.14	-0.17
INSTRUCTURE	0.91	-16.80	-0.15
ADAMAS PHARMACEUTICALS	0.64	-22.49	-0.14
PUMA BIOTECHNOLOGY	0.60	-22.49	-0.14
PROOFPOINT	1.66	-7.79	-0.13
TOPBUILD	0.45	-27.47	-0.12

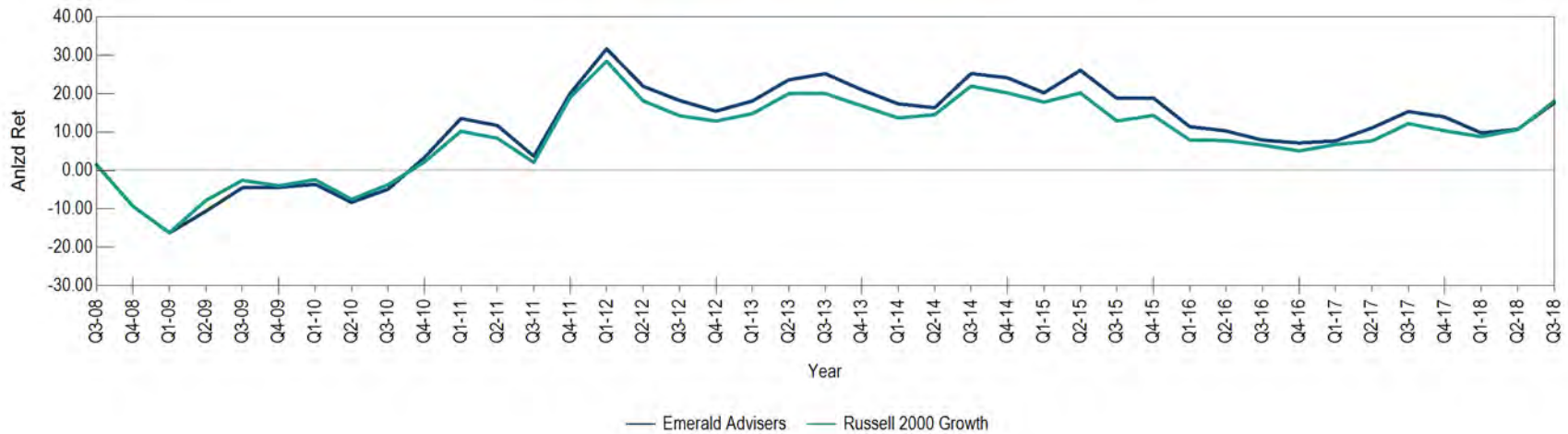
Unclassified sector allocation includes cash allocations.

Emerald Advisers vs. eV US Small Cap Growth Equity Gross Universe

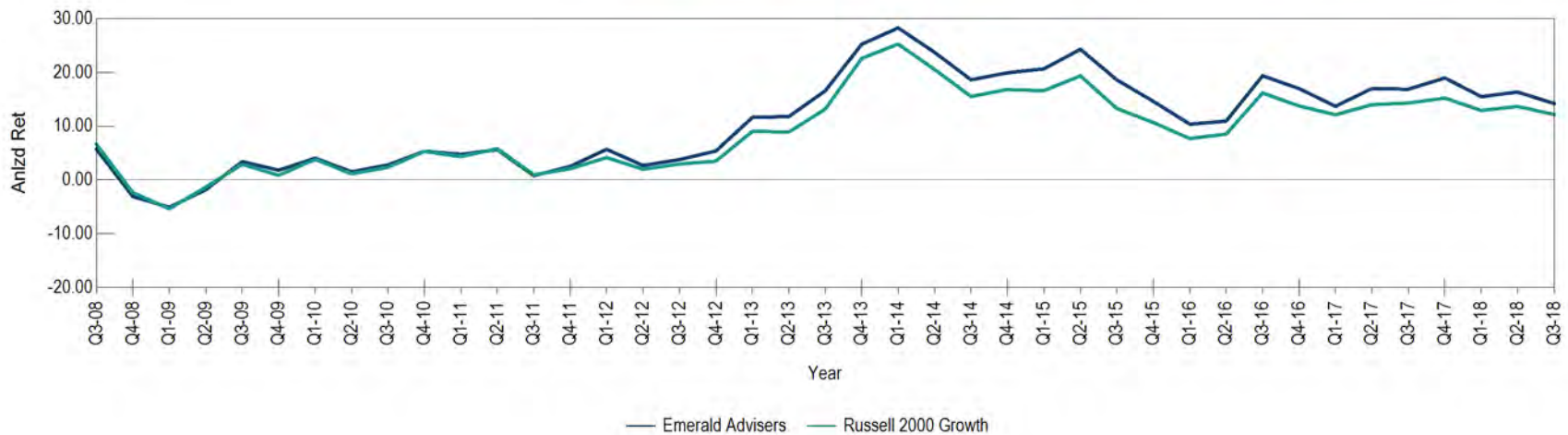


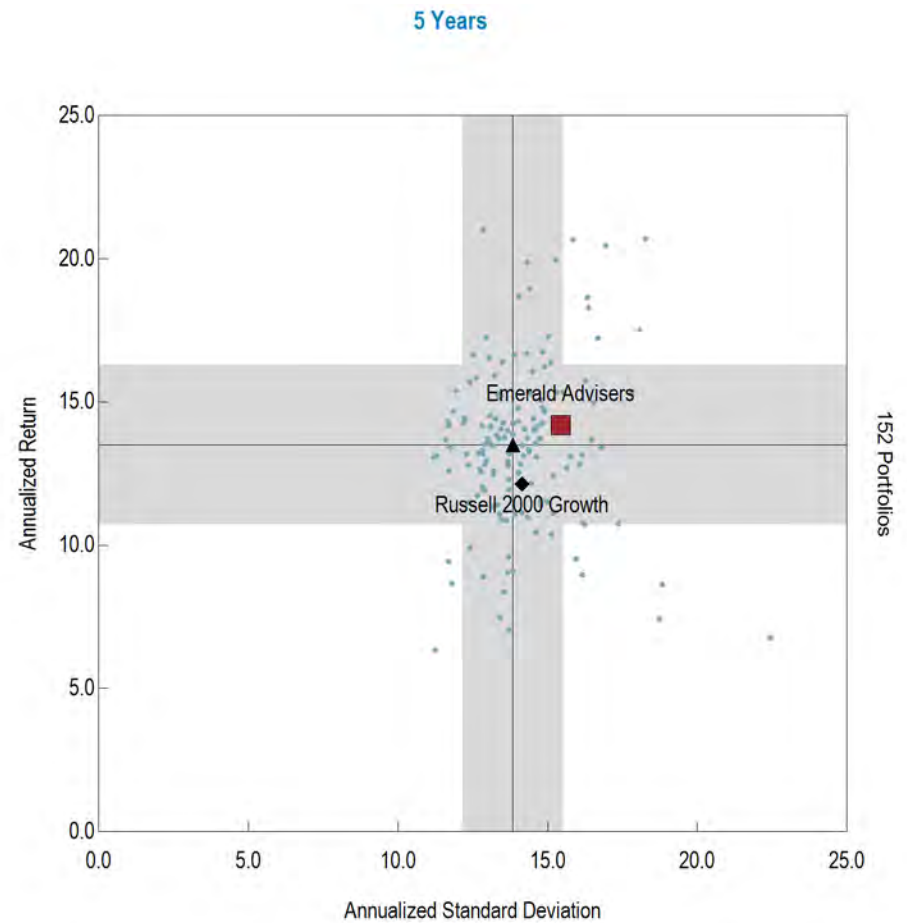
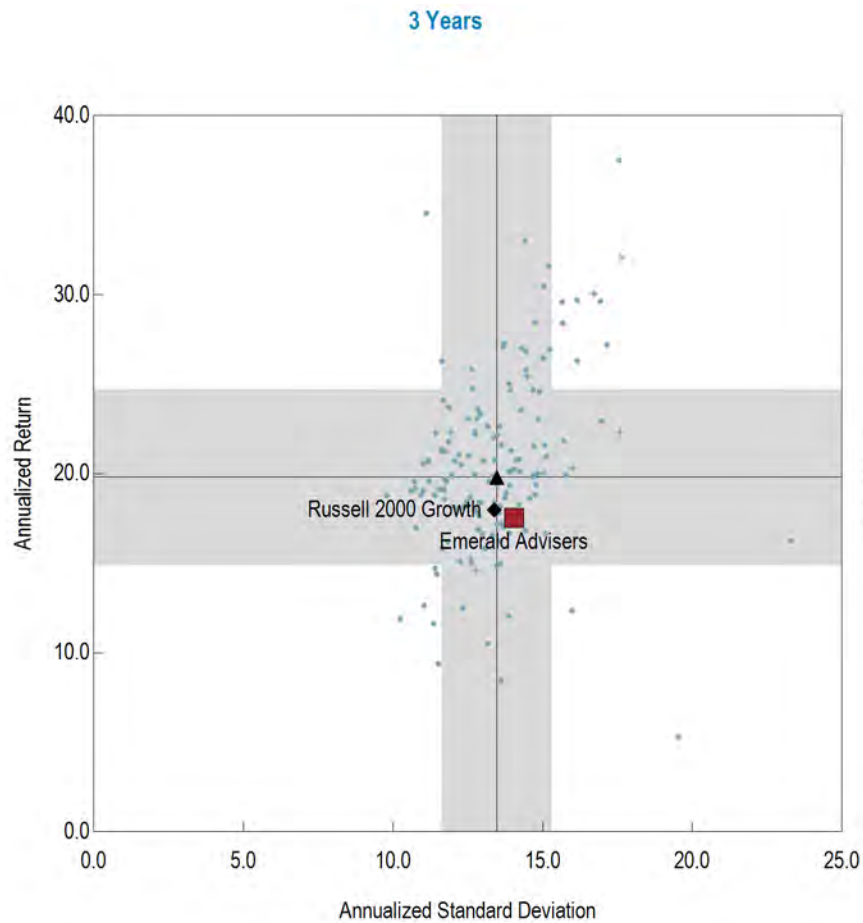
	Return (Rank)									
5th Percentile	14.0	47.0	29.6	18.7	17.9	39.2	22.2	7.1	11.3	58.2
25th Percentile	9.7	34.2	22.5	14.8	15.8	28.9	15.5	2.5	6.7	50.6
Median	7.8	27.1	19.8	13.5	14.4	24.6	10.6	-0.6	3.9	45.6
75th Percentile	5.8	22.1	17.7	12.0	13.2	19.8	7.1	-3.5	-0.1	42.6
95th Percentile	3.0	13.9	12.5	8.8	11.1	12.1	0.2	-8.7	-7.6	35.6
# of Portfolios	165	165	159	152	135	174	170	154	161	160
● Emerald Advisers	7.3 (59)	24.7 (62)	17.5 (77)	14.2 (37)	15.4 (36)	28.8 (26)	10.1 (54)	4.1 (19)	7.3 (21)	50.3 (27)
▲ Russell 2000 Growth	5.5 (77)	21.1 (79)	18.0 (73)	12.1 (75)	12.7 (83)	22.2 (62)	11.3 (49)	-1.4 (59)	5.6 (32)	43.3 (70)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





	3 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	17.5%	14.0%	1.2
Russell 2000 Growth	18.0%	13.4%	1.3
eV US Small Cap Growth Equity Gross Median	19.8%	13.5%	1.4

	5 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	14.2%	15.4%	0.9
Russell 2000 Growth	12.1%	14.1%	0.8
eV US Small Cap Growth Equity Gross Median	13.5%	13.8%	0.9

Ceredex Manager Portfolio Overview

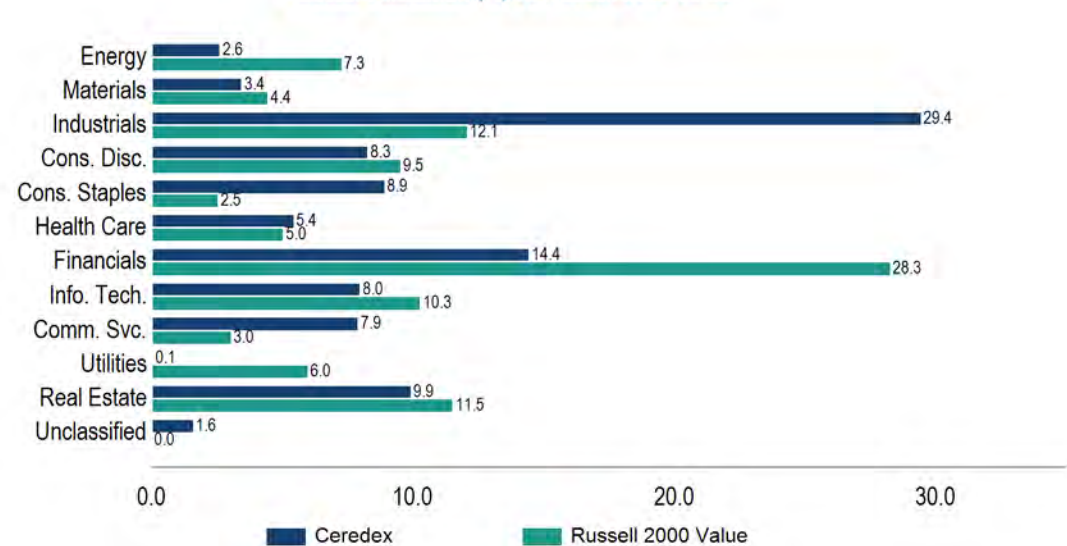
Period Ending: September 30, 2018

Domestic equity small cap value portfolio of companies with dividend yields and low valuations. Primary personnel include Brett Barner and David Maynard.

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	83	1,387
Weighted Avg. Market Cap. (\$B)	2.55	2.12
Median Market Cap. (\$B)	1.74	0.80
Price To Earnings	21.40	14.47
Price To Book	3.16	1.78
Price To Sales	2.22	2.56
Return on Equity (%)	16.11	7.12
Yield (%)	2.43	1.79
Beta	0.56	1.00

Sector Allocation (%) vs Russell 2000 Value



Largest Holdings

	End Weight	Return
ENERGIZER HOLDINGS	4.52	-6.41
MEREDITH	4.20	1.16
KEMPER	4.02	6.68
POWER INTEGRATIONS	4.01	-13.29
HILL-ROM HOLDINGS	3.87	8.32
B & G FOODS	3.81	-6.62
TETRA TECH	3.67	16.95
EVERCORE A	2.95	-4.20
PHYSICIANS REALTY TST.	2.86	7.34
TANGER FAC.OUTLET CNTRS.	2.55	-1.15

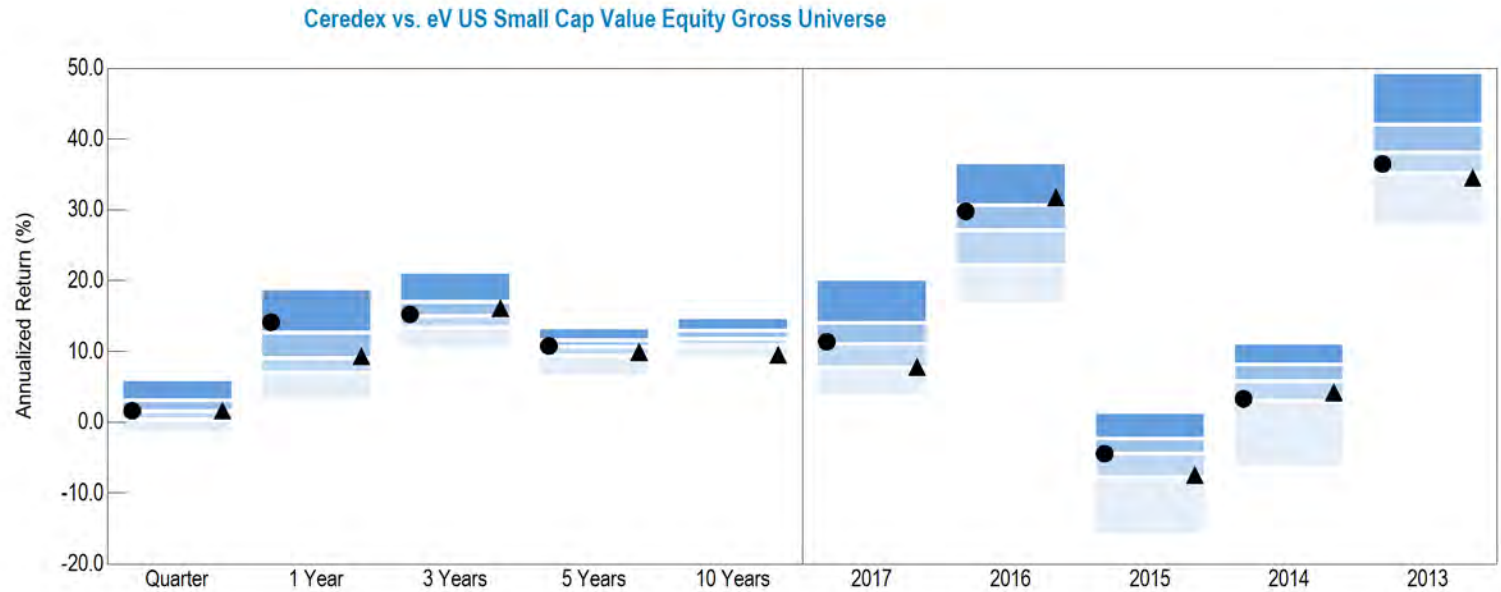
Top Contributors

	Avg Wgt	Return	Contribution
AMC ENTERTAINMENT HDG. CL.A	1.55	40.12	0.62
TETRA TECH	3.40	16.95	0.58
CUBIC	2.41	13.99	0.34
HERMAN MILLER	2.31	13.86	0.32
HILL-ROM HOLDINGS	3.77	8.32	0.31
KEMPER	3.89	6.68	0.26
SM ENERGY	1.10	22.73	0.25
KNOLL	1.52	13.42	0.20
PHYSICIANS REALTY TST.	2.78	7.34	0.20
SIMPSON MNFG.	1.06	16.92	0.18

Bottom Contributors

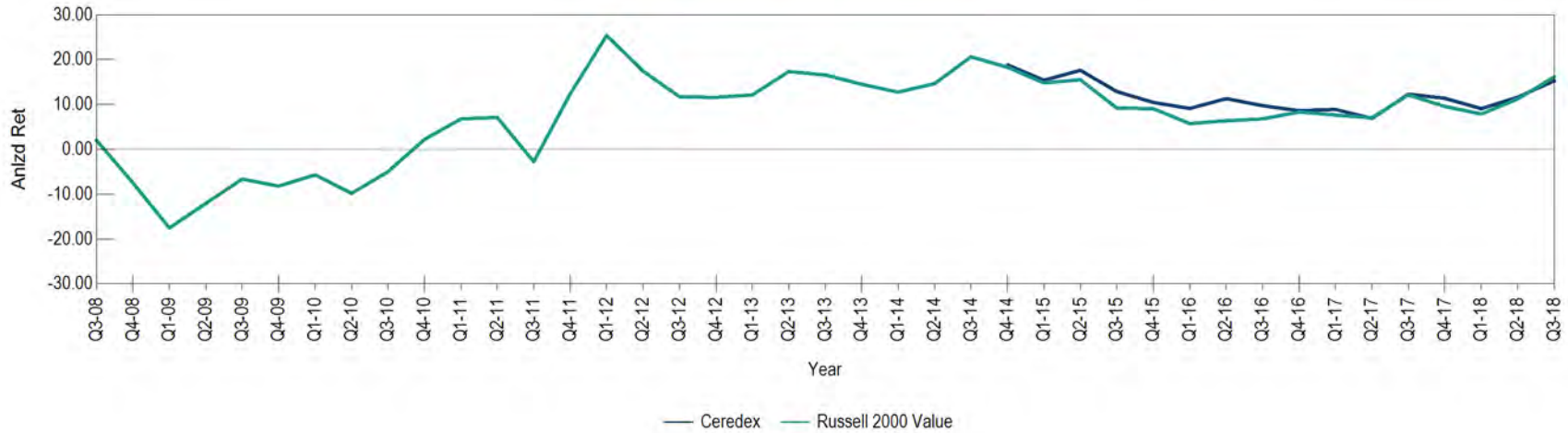
	Avg Wgt	Return	Contribution
PLANTRONICS	2.39	-20.74	-0.50
ENERGIZER HOLDINGS	4.76	-6.41	-0.31
KORN FERRY INTERNATIONAL	1.39	-20.33	-0.28
B & G FOODS	4.22	-6.62	-0.28
APOGEE ENTERPRISES	1.88	-13.95	-0.26
LITHIA MOTORS 'A'	1.88	-13.36	-0.25
HECLA MINING	0.96	-19.75	-0.19
GRANITE CON.	0.80	-17.66	-0.14
EVERCORE A	3.18	-4.20	-0.13
PHIBRO ANIMAL HLTH.CL.A	1.98	-6.65	-0.13

Unclassified sector allocation includes cash allocations.

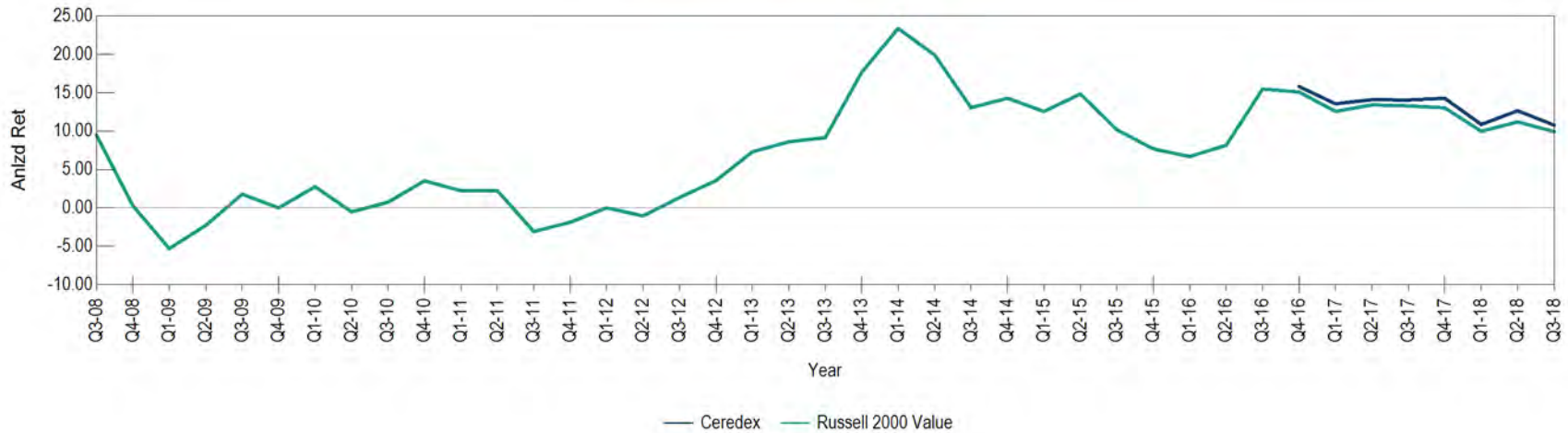


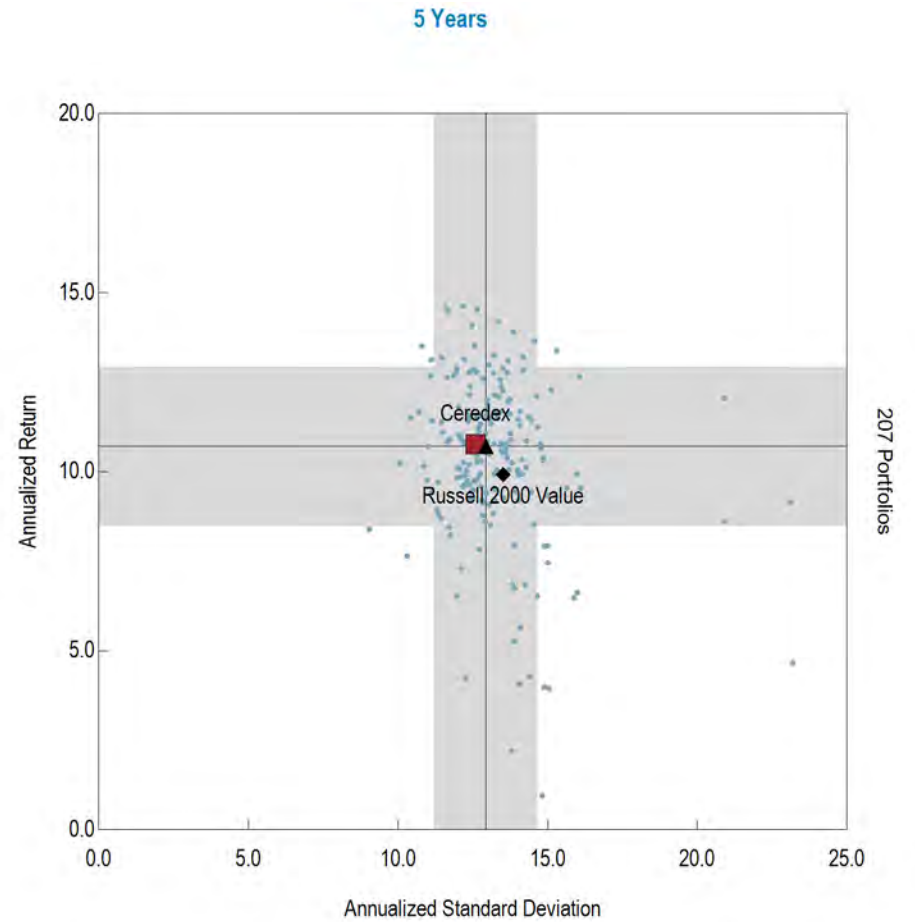
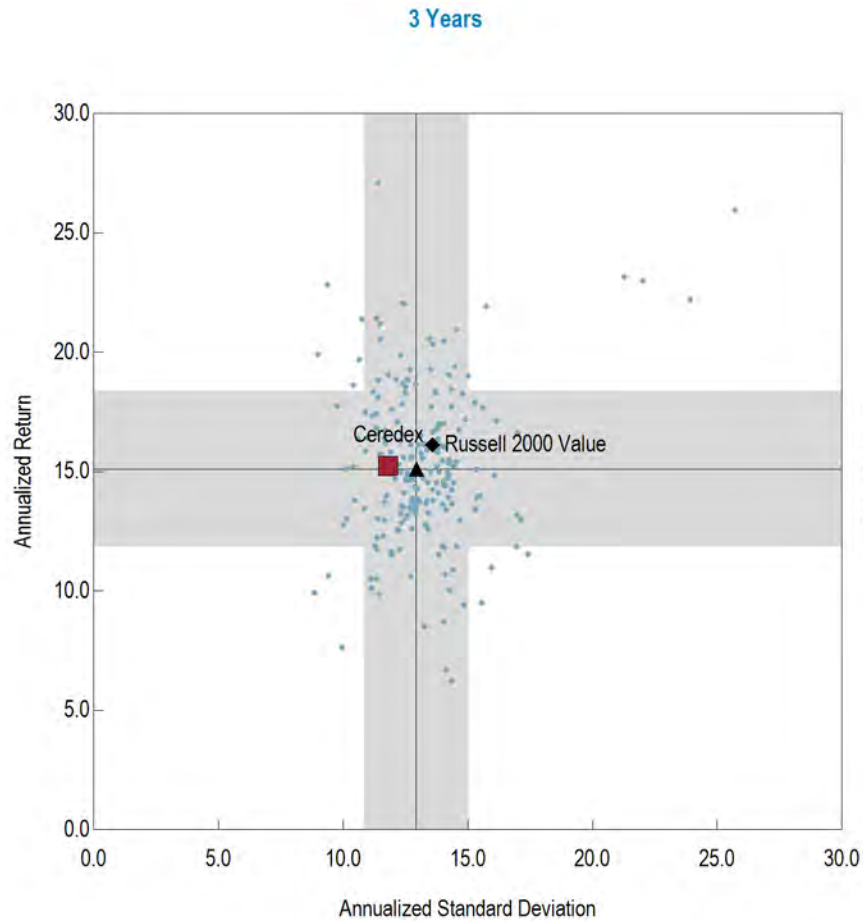
	Quarter	1 Year	3 Years	5 Years	10 Years	2017	2016	2015	2014	2013
5th Percentile	6.0	18.9	21.2	13.3	14.8	20.2	36.7	1.5	11.2	49.4
25th Percentile	3.1	12.7	17.1	11.6	13.0	14.1	30.7	-2.2	8.2	42.1
Median	1.6	9.1	15.1	10.7	11.8	11.1	27.2	-4.3	5.8	38.1
75th Percentile	0.4	7.0	13.4	9.4	10.9	7.8	22.2	-7.7	3.1	35.2
95th Percentile	-1.6	3.0	10.4	6.5	9.0	3.7	16.8	-15.8	-6.3	27.8
# of Portfolios	221	221	216	207	175	224	222	212	206	199
● Ceredex	1.6 (49)	14.1 (17)	15.2 (48)	10.8 (49)	-- (--)	11.4 (48)	29.8 (32)	-4.4 (52)	3.3 (74)	36.5 (66)
▲ Russell 2000 Value	1.6 (49)	9.3 (49)	16.1 (35)	9.9 (66)	9.5 (94)	7.8 (75)	31.7 (17)	-7.5 (74)	4.2 (68)	34.5 (78)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	15.2%	11.8%	1.2
Russell 2000 Value	16.1%	13.6%	1.1
eV US Small Cap Value Equity Gross Median	15.1%	12.9%	1.1

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	10.8%	12.6%	0.8
Russell 2000 Value	9.9%	13.5%	0.7
eV US Small Cap Value Equity Gross Median	10.7%	12.9%	0.8

International Equity Managers

Pyrford Manager Portfolio Overview

Period Ending: September 30, 2018

International equity value portfolio of non-US companies with low valuations at the country and stock level. Primary personnel include Tony Cousins, Daniel McDonagh, and Paul Simons.

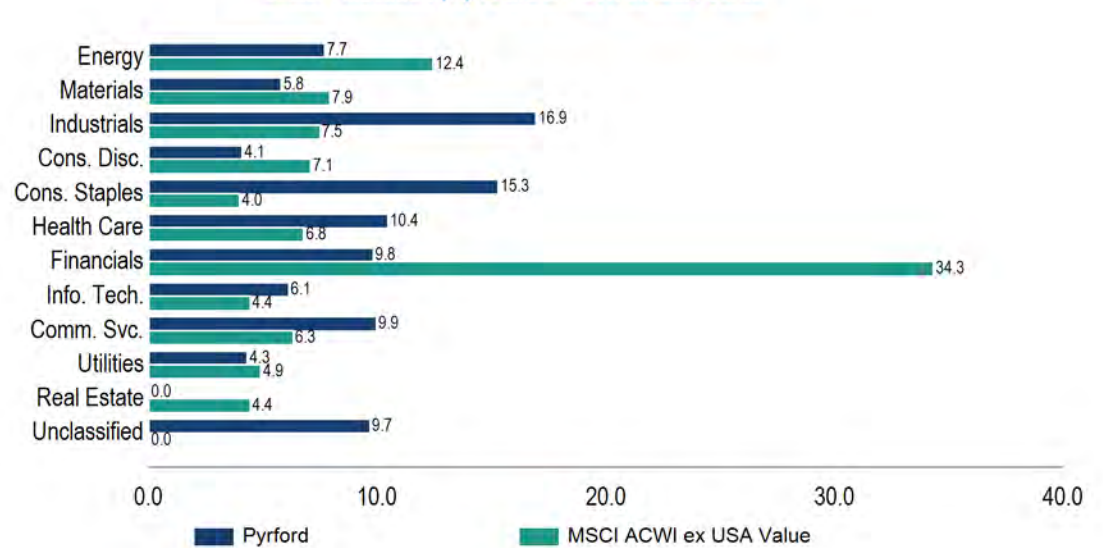
Characteristics

	MSCI ACWI Portfolio	MSCI ACWI ex USA Value
Number of Holdings	65	1,274
Weighted Avg. Market Cap. (\$B)	63.47	58.24
Median Market Cap. (\$B)	23.50	6.98
Price To Earnings	20.10	13.73
Price To Book	3.36	1.53
Price To Sales	2.39	1.70
Return on Equity (%)	17.88	11.82
Yield (%)	3.69	4.04
Beta	0.54	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	83.6%	74.7%
Emerging*	6.7%	25.3%
Cash	9.7%	
Top 10 Largest Countries		
Switzerland	13.6%	4.8%
United Kingdom	11.5%	15.7%
Australia	10.9%	4.5%
Japan	10.3%	16.6%
Cash	9.7%	0.0%
France	8.4%	7.3%
Germany	5.7%	5.2%
Netherlands	5.3%	1.2%
Singapore	4.9%	0.9%
Taiwan*	3.9%	3.0%
Total-Top 10 Largest Countries	84.0%	59.2%

Sector Allocation (%) vs MSCI ACWI ex USA Value



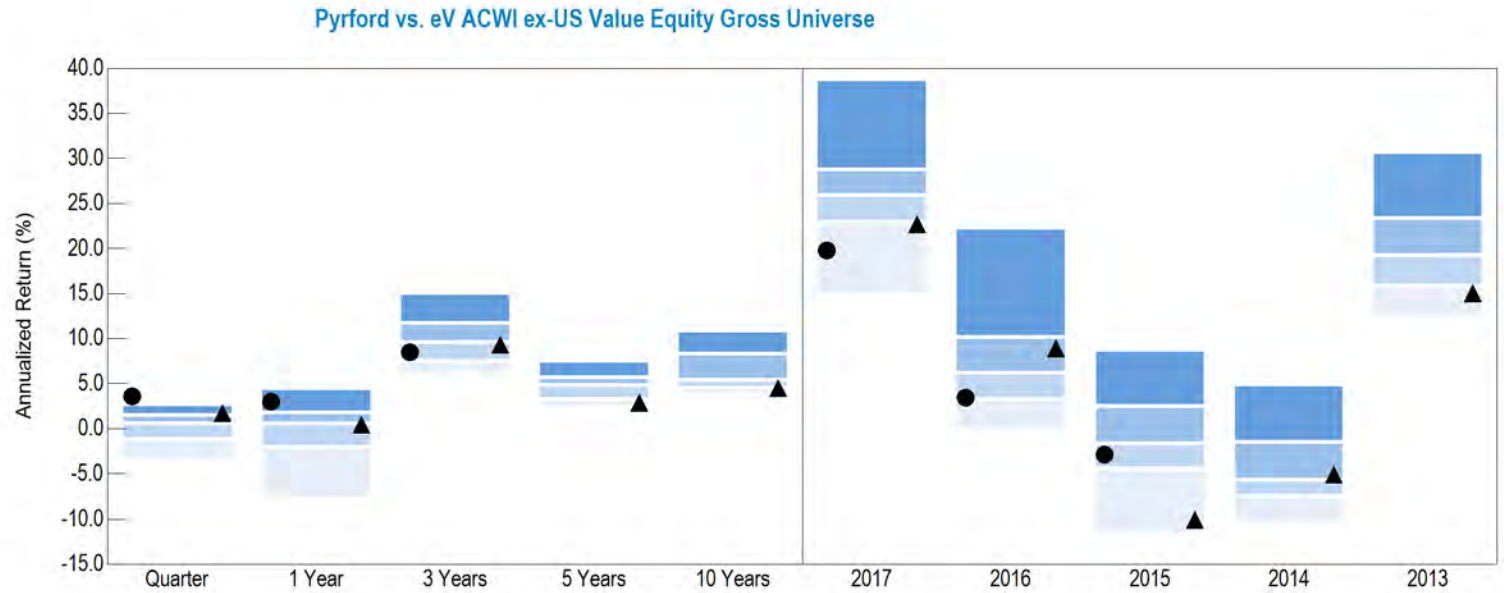
Top Contributors

	Avg Wgt	Return	Contribution
BRAMBLES	2.24	21.76	0.49
NOVARTIS 'R'	2.97	13.97	0.42
ROCHE HOLDING	3.21	9.59	0.31
TAIWAN SEMICON.MNFG.	1.44	21.07	0.30
NESTLE 'R'	3.48	8.16	0.28
NIHON KOHDEN	1.47	14.34	0.21
FUCHS PETROLUB PREF.	1.59	12.93	0.21
AXIATA GROUP	1.20	17.13	0.21
SANOFI	1.87	10.94	0.20
BRENTAG	1.72	11.87	0.20

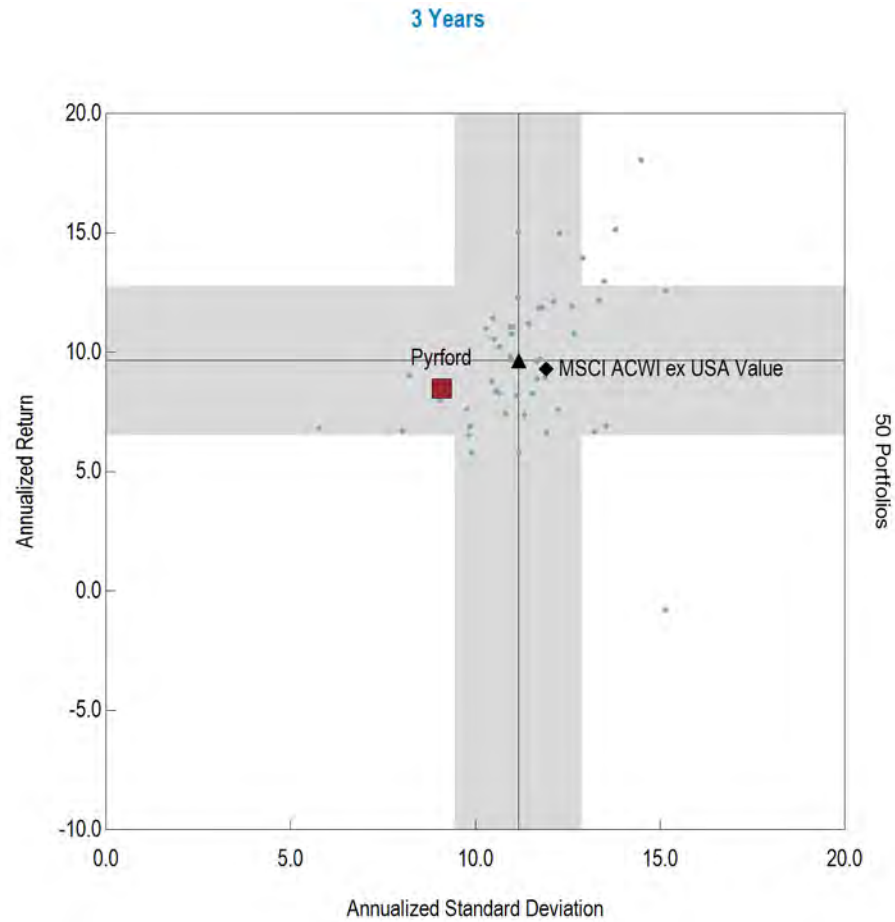
Bottom Contributors

	Avg Wgt	Return	Contribution
WOOLWORTHS GROUP	2.31	-7.93	-0.18
JAPAN TOBACCO	2.79	-6.55	-0.18
SSE	1.30	-12.07	-0.16
VODAFONE GROUP	1.22	-11.61	-0.14
NATIONAL GRID	1.95	-6.76	-0.13
BRITISH AMERICAN TOBACCO	1.69	-7.56	-0.13
RUBIS	0.91	-13.32	-0.12
NEWCREST MINING	0.92	-12.15	-0.11
ASSA ABLOY B	1.73	-5.86	-0.10
SUMITOMO RUBBER INDS.	1.43	-5.53	-0.08

Unclassified sector allocation includes cash allocations.



	Return (Rank)									
5th Percentile	2.7	4.4	15.0	7.5	10.8	38.8	22.3	8.7	4.9	30.7
25th Percentile	1.5	1.8	11.8	5.8	8.3	28.8	10.2	2.5	-1.4	23.4
Median	0.7	0.6	9.7	4.9	5.5	26.0	6.2	-1.6	-5.7	19.3
75th Percentile	-1.1	-2.0	7.6	3.3	4.6	23.0	3.3	-4.3	-7.4	15.9
95th Percentile	-3.4	-7.6	6.1	2.4	3.8	15.0	-0.1	-11.6	-10.4	12.4
# of Portfolios	54	54	50	42	27	56	55	45	37	34
● Pyrford	3.6 (1)	3.0 (17)	8.5 (61)	-- (--)	-- (--)	19.8 (84)	3.4 (74)	-2.9 (59)	-- (--)	-- (--)
▲ MSCI ACWI ex USA Value	1.7 (19)	0.4 (54)	9.3 (53)	2.9 (91)	4.5 (78)	22.7 (77)	8.9 (35)	-10.1 (93)	-5.1 (49)	15.0 (83)



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Pyrford	8.5%	9.1%	0.8
MSCI ACWI ex USA Value	9.3%	11.9%	0.7
eV ACWI ex-US Value Equity Gross Median	9.7%	11.2%	0.8

William Blair Manager Portfolio Overview

Period Ending: September 30, 2018

International equity growth portfolio of non-US companies with high growth rates constructed from the security level. Primary personnel include Simon Fennell and Jeffrey Urbina.

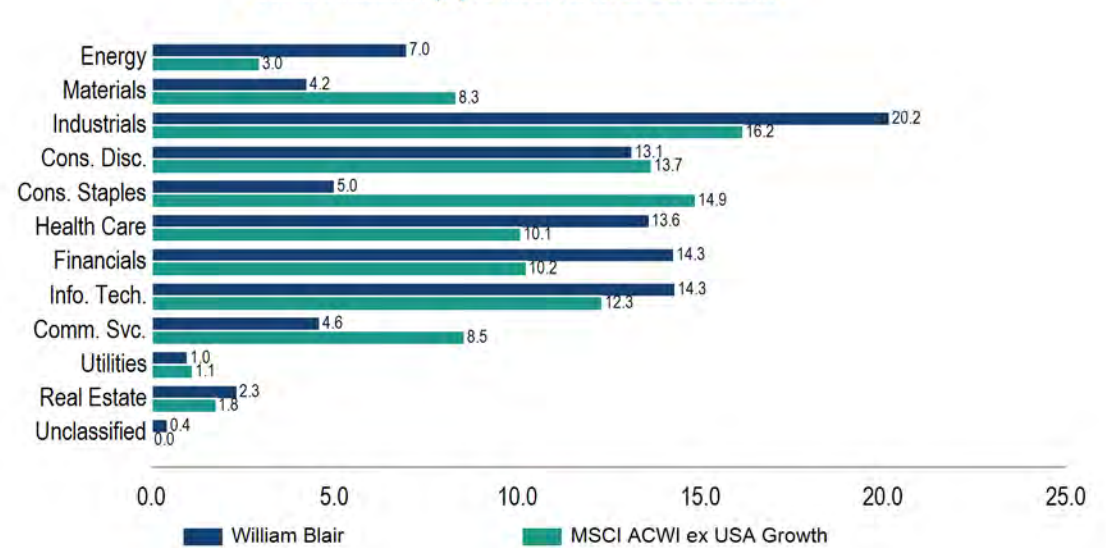
Characteristics

	Portfolio	MSCI ACWI ex USA Growth
Number of Holdings	186	1,150
Weighted Avg. Market Cap. (\$B)	51.26	66.10
Median Market Cap. (\$B)	9.28	8.36
Price To Earnings	28.82	24.31
Price To Book	5.88	4.14
Price To Sales	4.40	3.08
Return on Equity (%)	23.53	19.39
Yield (%)	1.70	1.99
Beta	0.92	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	89.3%	76.1%
Emerging*	10.3%	23.9%
Top 10 Largest Countries		
United Kingdom	15.1%	8.6%
France	13.2%	8.3%
Japan	12.7%	16.8%
Canada	7.1%	6.6%
Germany	6.3%	7.8%
Netherlands	4.8%	3.4%
Hong Kong	4.7%	2.4%
Denmark	4.3%	2.0%
Sweden	4.3%	2.4%
Switzerland	3.8%	6.5%
Total-Top 10 Largest Countries	76.3%	64.7%

Sector Allocation (%) vs MSCI ACWI ex USA Growth



Top Contributors

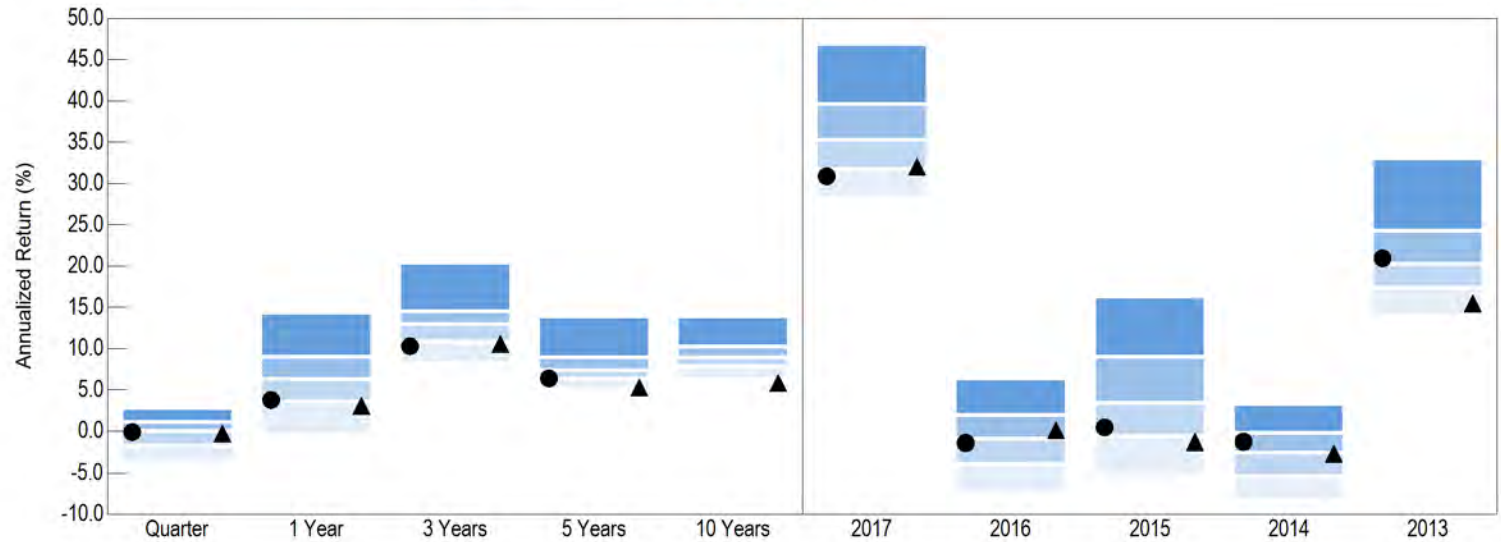
	Avg Wgt	Return	Contribution
WIRECARD	1.06	35.83	0.38
LONZA GROUP	1.23	29.24	0.36
TAIWAN SEMICON.SPN.ADR 1:5	1.31	20.79	0.27
AMADEUS IT GROUP	1.08	17.75	0.19
LULULEMON ATHLETICA	0.60	30.15	0.18
MTU AERO ENGINES HLDG.	0.93	18.29	0.17
TOTAL	2.16	7.62	0.16
DAIKIN INDUSTRIES	1.31	11.66	0.15
DSV 'B'	1.15	12.58	0.14
NINTENDO	0.99	12.62	0.12

Bottom Contributors

	Avg Wgt	Return	Contribution
TENCENT HOLDINGS	1.78	-17.71	-0.32
ALIBABA GROUP HLDG.SPN. ADR 1:1	1.94	-11.19	-0.22
GALAXY ENTERTAINMENT GP.	1.09	-17.31	-0.19
YES BANK	0.39	-48.89	-0.19
ASAHI GROUP HOLDINGS	1.11	-15.33	-0.17
CSPC PHARMACEUTICAL GP.	0.48	-29.69	-0.14
VALEO	0.55	-20.54	-0.11
MARUTI SUZUKI INDIA	0.53	-20.62	-0.11
KERING	1.65	-5.03	-0.08
DOLLARAMA	0.43	-18.68	-0.08

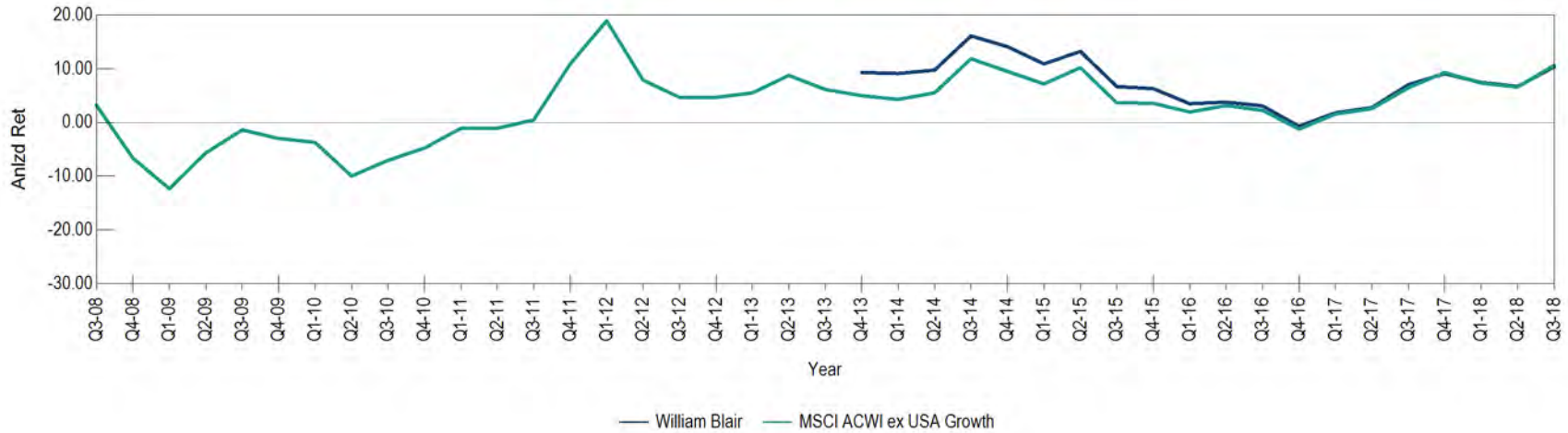
Unclassified sector allocation includes cash allocations.

William Blair vs. eV ACWI ex-US Growth Equity Gross Universe

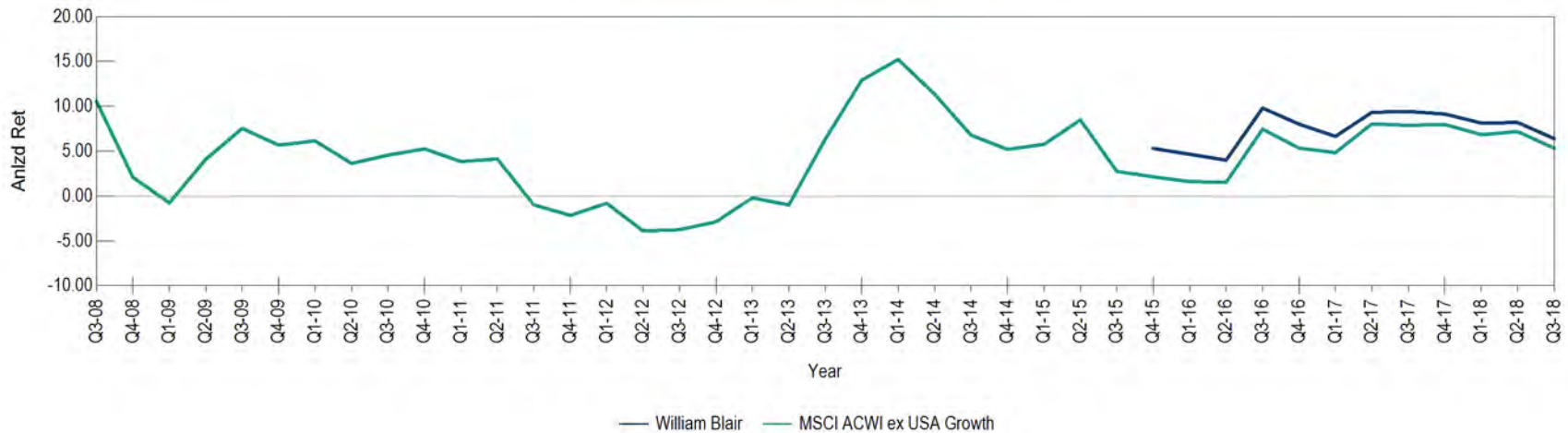


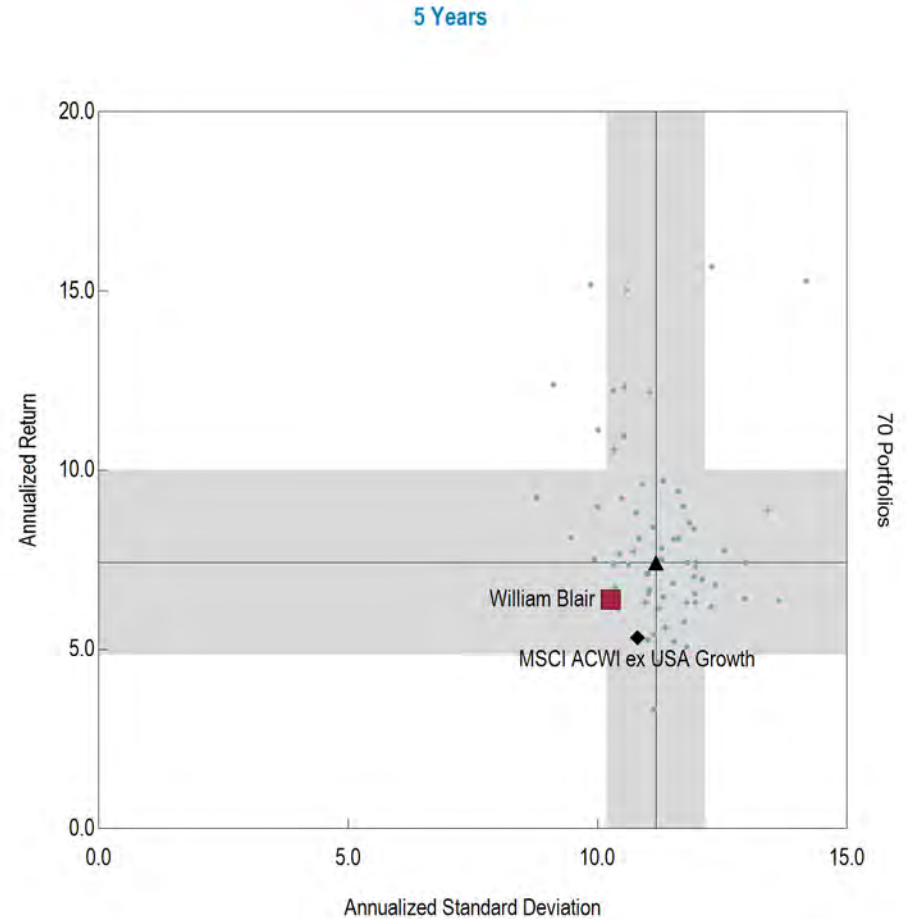
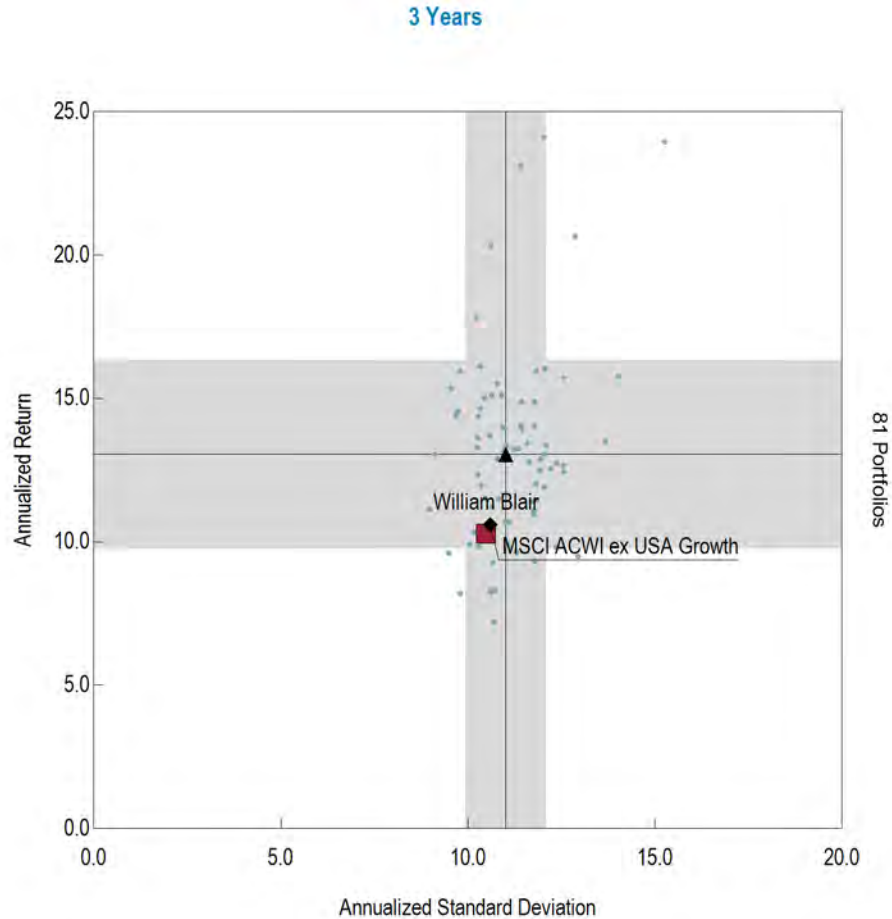
	Return (Rank)									
5th Percentile	2.8	14.3	20.3	13.8	13.9	46.8	6.3	16.3	3.2	33.0
25th Percentile	1.1	9.1	14.6	9.0	10.3	39.6	2.0	9.0	-0.1	24.3
Median	0.0	6.4	13.0	7.4	9.0	35.3	-0.9	3.5	-2.5	20.3
75th Percentile	-1.7	3.6	11.0	6.4	7.9	31.8	-3.9	-0.5	-5.3	17.5
95th Percentile	-3.8	-0.5	8.3	5.1	6.4	28.3	-7.4	-5.4	-8.2	14.0
# of Portfolios	85	85	81	70	54	94	90	70	50	46
● William Blair	-0.1 (52)	3.8 (74)	10.3 (82)	6.4 (75)	-- (--)	30.9 (81)	-1.4 (55)	0.5 (69)	-1.2 (37)	20.9 (44)
▲ MSCI ACWI ex USA Growth	-0.3 (53)	3.1 (80)	10.6 (80)	5.3 (93)	5.8 (99)	32.0 (75)	0.1 (45)	-1.3 (83)	-2.6 (53)	15.5 (87)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





	3 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	10.3%	10.5%	0.9
MSCI ACWI ex USA Growth	10.6%	10.6%	0.9
eV ACWI ex-US Growth Equity Gross Median	13.0%	11.0%	1.1

	5 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	6.4%	10.3%	0.6
MSCI ACWI ex USA Growth	5.3%	10.8%	0.4
eV ACWI ex-US Growth Equity Gross Median	7.4%	11.2%	0.6

PIMCO RAE Emerging Markets Manager Portfolio Overview

Period Ending: September 30, 2018

The PIMCO RAE Emerging Markets seeks to invest 80% of its assets in investments that are economically tied to emerging market countries. The portfolio is sub-advised by Research Affiliates, LLC.

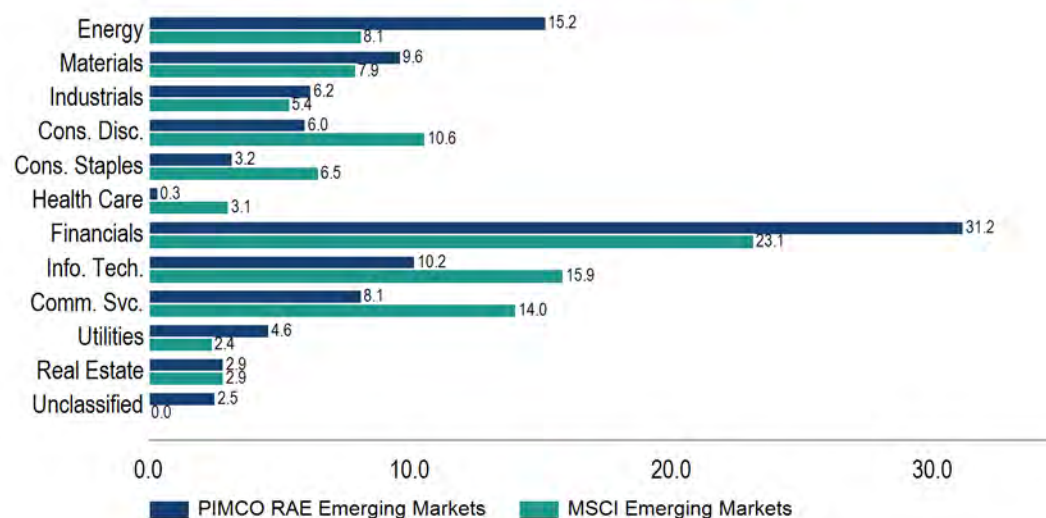
Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	602	1,151
Weighted Avg. Market Cap. (\$B)	39.80	79.27
Median Market Cap. (\$B)	3.53	5.31
Price To Earnings	9.95	18.58
Price To Book	1.28	3.09
Price To Sales	1.20	2.52
Return on Equity (%)	11.21	17.71
Yield (%)	3.86	2.65
Beta		1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	10.8%	0.0%
Emerging*	86.7%	100.0%
Top 10 Largest Countries		
Korea*	20.4%	14.9%
China*	19.1%	30.9%
Hong Kong	10.3%	0.0%
Taiwan*	10.2%	12.3%
Russia*	10.1%	3.6%
Brazil*	4.7%	6.2%
South Africa*	4.3%	6.2%
India*	4.1%	8.6%
Thailand*	3.2%	2.5%
Cash	2.5%	0.0%
Total-Top 10 Largest Countries	88.9%	85.2%

Sector Allocation (%) vs MSCI Emerging Markets



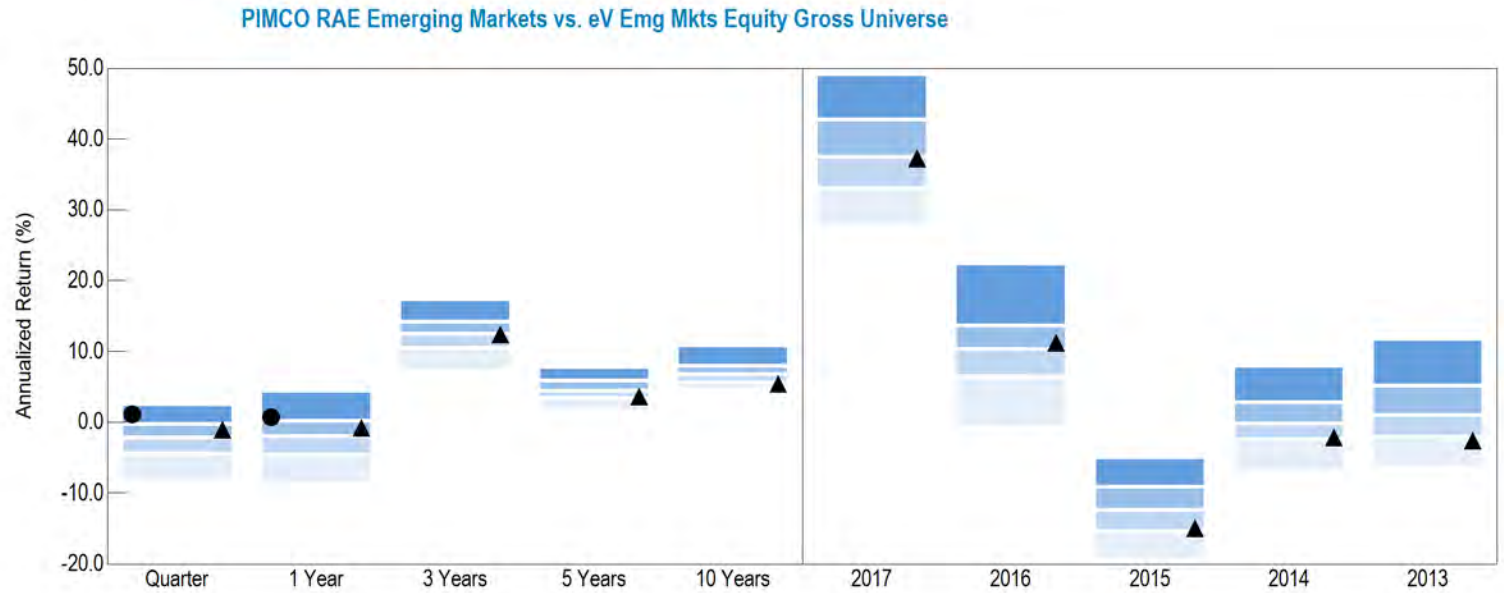
Top Contributors

	End Weight	Return	Contribution
PJSC GAZPROM ADR CDI 1:2	4.01	20.19	0.81
PJSC LUKOIL SPON (LON) ADR	1.95	15.47	0.30
CNOOC	1.72	17.34	0.30
LENOVO GROUP	0.59	41.87	0.25
CHINA MOBILE	1.33	13.74	0.18
CHINA PTL.& CHM. 'H'	1.18	14.82	0.17
LG UPLUS	0.53	31.33	0.17
TAIWAN SEMICON.SPN.ADR 1:5	0.76	20.79	0.16
VALE ON	0.69	19.49	0.14
SK TELECOM SPN.ADR 9:1	0.69	19.55	0.13

Bottom Contributors

	End Weight	Return	Contribution
BANK OF CHINA 'H'	2.06	-5.23	-0.11
MTN GROUP	0.51	-20.10	-0.10
ALPHA BANK	0.26	-35.64	-0.09
CHINA NATIONAL BUILDING MATERIAL 'H'	0.86	-10.32	-0.09
HACI OMER SABANCI HLDG.	0.24	-34.10	-0.08
LG ELECTRONICS	0.58	-14.05	-0.08
NATIONAL BK.OF GREECE	0.23	-33.81	-0.08
TURKIYE IS BANKASI 'C'	0.18	-40.86	-0.07
POSCO	0.71	-10.06	-0.07
KOREA ELECTRIC POWER	0.85	-7.85	-0.07

Unclassified sector allocation includes cash allocations.



	Return (Rank)															
5th Percentile	2.5	4.4	17.3	7.8	10.8	49.2	22.4	-5.0	8.0	11.7						
25th Percentile	-0.2	0.2	14.2	5.9	8.1	42.8	13.7	-9.0	2.9	5.2						
Median	-2.1	-1.9	12.5	4.5	6.9	37.6	10.4	-12.2	-0.1	1.0						
75th Percentile	-4.3	-4.5	10.6	3.5	5.7	33.2	6.6	-15.3	-2.4	-2.0						
95th Percentile	-8.2	-8.7	7.3	1.6	4.7	27.8	-0.6	-19.2	-7.0	-6.3						
# of Portfolios	347	346	327	285	146	343	337	273	251	198						
● PIMCO RAE Emerging Markets	1.1 (13)	0.7 (24)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)						
▲ MSCI Emerging Markets	-1.1 (38)	-0.8 (36)	12.4 (53)	3.6 (72)	5.4 (83)	37.3 (53)	11.2 (45)	-14.9 (70)	-2.2 (74)	-2.6 (80)						

TT Emerging Markets Manager Portfolio Overview

Period Ending: September 30, 2018

The Emerging Markets Unconstrained strategy aims to outperform its benchmark, MSCI Emerging Markets Index by 5% per annum over a three-year rolling period. It targets high returns and long term capital growth by investing in a focused portfolio of primarily equity and equity-related securities traded in the Emerging Markets.

Characteristics

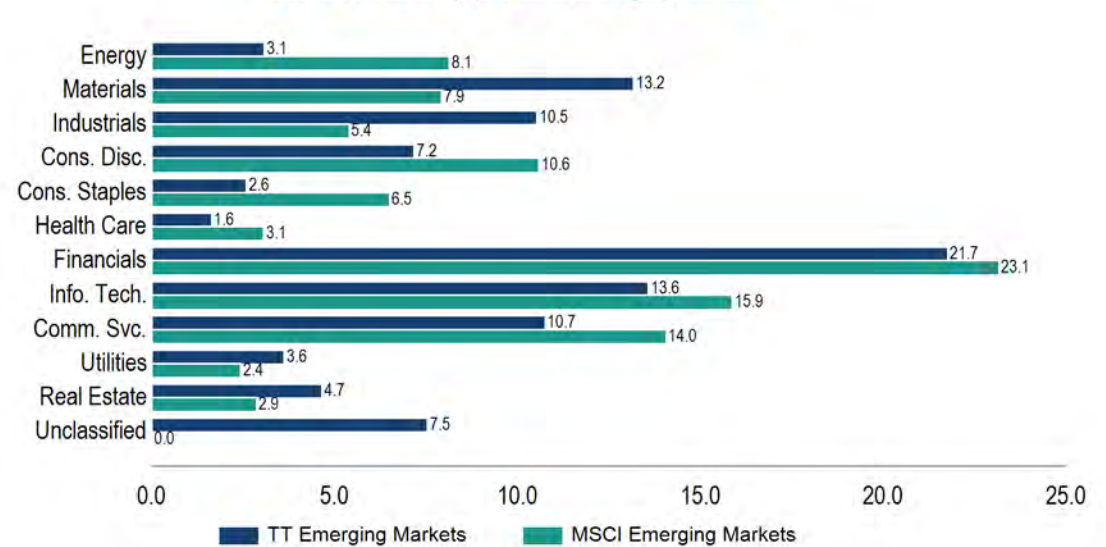
	Portfolio	MSCI Emerging Markets
Number of Holdings	63	1,151
Weighted Avg. Market Cap. (\$B)	59.15	79.27
Median Market Cap. (\$B)	7.19	5.31
Price To Earnings	18.76	18.58
Price To Book	3.12	3.09
Price To Sales	3.35	2.52
Return on Equity (%)	20.05	17.71
Yield (%)	2.05	2.65
Beta		1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	17.9%	0.0%
Emerging*	77.4%	100.0%
Frontier**	1.5%	0.0%
Top 10 Largest Countries		
China*	18.4%	30.9%
Korea*	17.0%	14.9%
India*	14.4%	8.6%
Hong Kong	8.4%	0.0%
Brazil*	7.7%	6.2%
Russia*	5.6%	3.6%
United Kingdom	5.2%	0.0%
Taiwan*	4.9%	12.3%
South Africa*	4.3%	6.2%
Cash	3.1%	0.0%
Total-Top 10 Largest Countries	88.9%	82.7%

Unclassified sector allocation includes cash allocations.

Sector Allocation (%) vs MSCI Emerging Markets



Top Contributors

	End Weight	Return	Contribution
ROSNEFT OIL CO.GDR	1.66	20.32	0.34
MAANSHAN IRON & STL.'H'	1.12	27.64	0.31
OLD MUTUAL LIMITED (LON)	2.46	11.54	0.28
HCL TECHNOLOGIES	2.31	11.23	0.26
PETROLEO BRASILEIRO ADR 1:2	0.88	20.62	0.18
HANA FINANCIAL GROUP	3.87	4.46	0.17
GPO FINANCE BANORTE	0.79	21.48	0.17
SASOL	1.94	6.91	0.13
PING AN INSURANCE (GROUP) OF CHINA 'H'	1.03	11.45	0.12
ASE INDUSTRIAL HOLDING	1.51	7.60	0.11

Bottom Contributors

	End Weight	Return	Contribution
ALIBABA GROUP HLDG.SPN. ADR 1:1	4.71	-11.19	-0.53
TENCENT HOLDINGS	2.94	-17.71	-0.52
SHAFSN.PHARM.(GROUP) 'H'	1.63	-27.31	-0.44
EDELWEISS FNSR.	0.93	-39.12	-0.36
NASPERS	2.40	-15.01	-0.36
WIZZ AIR HOLDINGS	1.52	-21.06	-0.32
WONIK IPS	1.56	-19.91	-0.31
SUNNY OPTICAL TECH.(GP.)	0.79	-37.99	-0.30
YANGTZE OPTC.FRE.& CABLE JOINT STOCK 'H'	1.27	-23.23	-0.29
ARVIND	1.20	-24.18	-0.29

Global Equity Managers

Artisan Partners Manager Portfolio Overview

Period Ending: September 30, 2018

Global equity portfolio of companies that is benchmark agnostic with accelerating profit cycles and a focus on capital allocation. Primary personnel include James Hamel, Craigh Cepukenas, and Matthew Kamm.

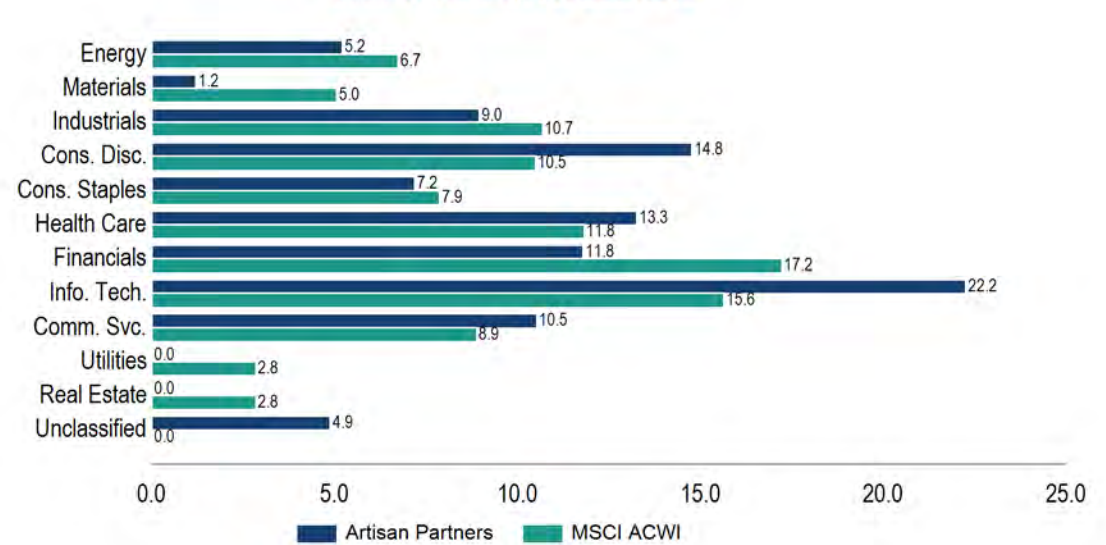
Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	46	2,791
Weighted Avg. Market Cap. (\$B)	80.72	148.68
Median Market Cap. (\$B)	32.70	9.59
Price To Earnings	42.16	21.71
Price To Book	7.61	3.84
Price To Sales	6.25	3.19
Return on Equity (%)	20.83	18.57
Yield (%)	0.97	2.37
Beta	1.37	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	93.6%	88.9%
Emerging*	2.0%	11.1%
Top 10 Largest Countries		
United States	50.3%	55.0%
Japan	8.1%	7.5%
United Kingdom	7.4%	5.4%
Hong Kong	7.2%	1.1%
Switzerland	5.3%	2.5%
Cash	4.4%	0.0%
Netherlands	3.4%	1.0%
Spain	2.6%	0.9%
Denmark	2.0%	0.5%
France	2.0%	3.5%
Total-Top 10 Largest Countries	93.2%	77.6%

Sector Allocation (%) vs MSCI ACWI



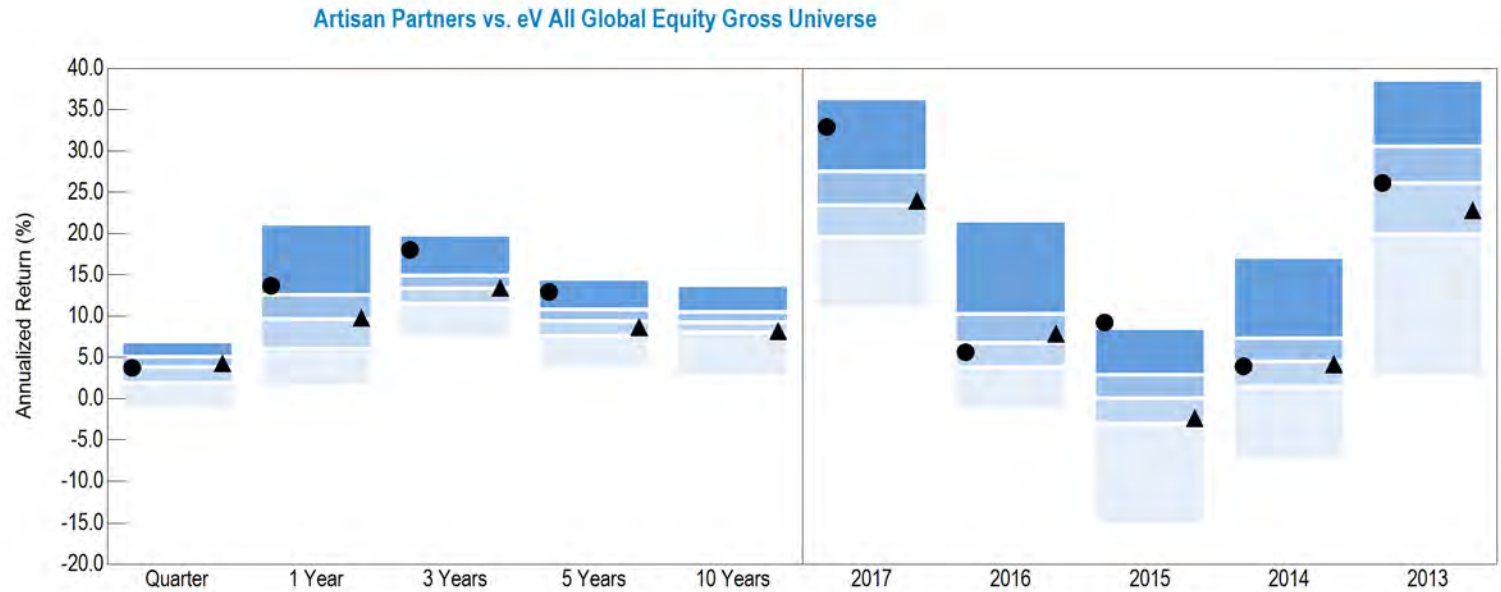
Top Contributors

	Avg Wgt	Return	Contribution
VISA 'A'	6.29	13.49	0.85
BOSTON SCIENTIFIC	2.87	17.74	0.51
LONZA GROUP	1.55	29.24	0.45
ATLASSIAN 'A'	0.78	53.77	0.42
AMADEUS IT GROUP	2.35	17.75	0.42
ANTHEM	2.57	15.45	0.40
TECHTRONIC INDS.	2.34	15.49	0.36
PROGRESSIVE OHIO	1.69	20.10	0.34
IHS MARKIT	6.65	4.59	0.31
SALESFORCE.COM	1.76	16.59	0.29

Bottom Contributors

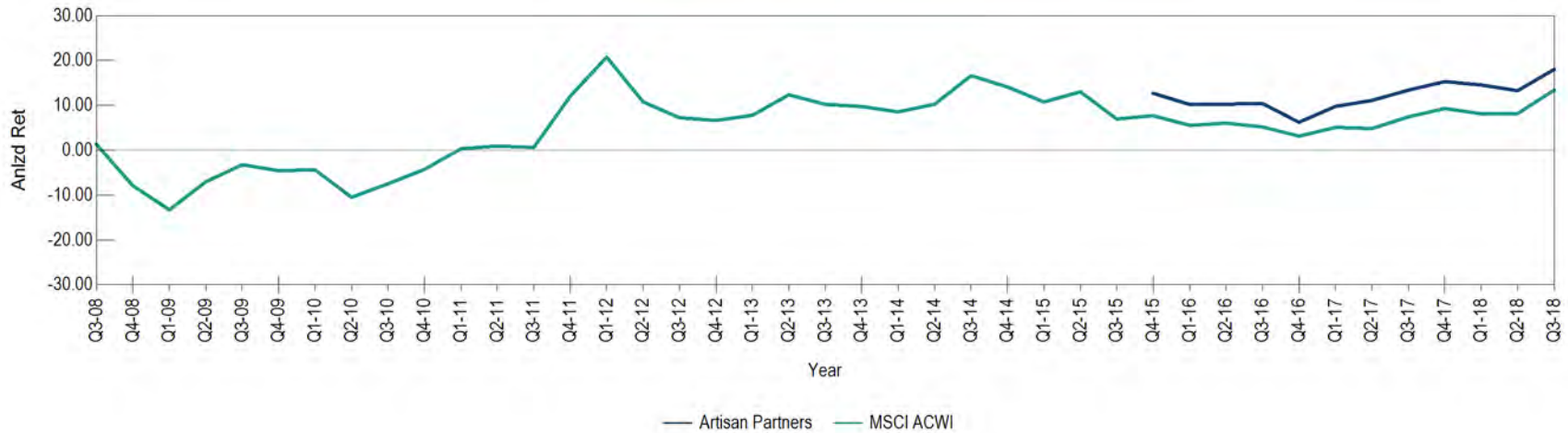
	Avg Wgt	Return	Contribution
JD.COM 'A' ADR 1:2	1.44	-33.02	-0.47
TENCENT HOLDINGS	2.40	-17.71	-0.42
NOBLE ENERGY	2.86	-11.30	-0.32
SANDS CHINA	1.93	-15.27	-0.29
STATE STREET	3.04	-9.50	-0.29
HDFC BANK ADR 1:3	2.30	-10.40	-0.24
APTIV	2.60	-8.23	-0.21
PIONEER NTRL.RES.	2.71	-7.87	-0.21
INTERTEK GROUP	1.54	-13.74	-0.21
ING GROEP	1.88	-8.05	-0.15

Unclassified sector allocation includes cash allocations.

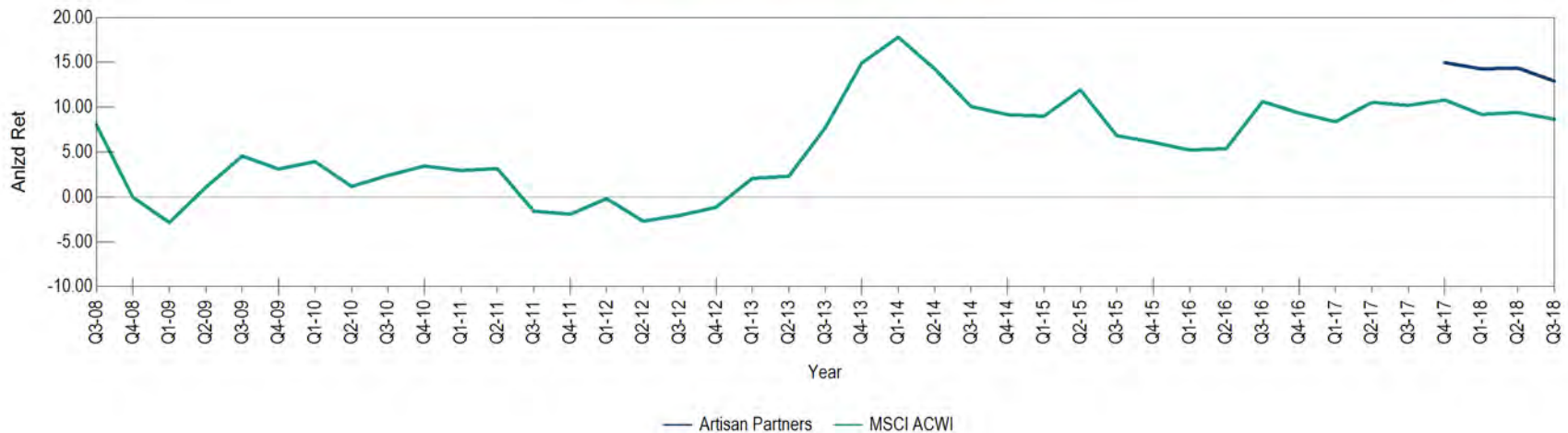


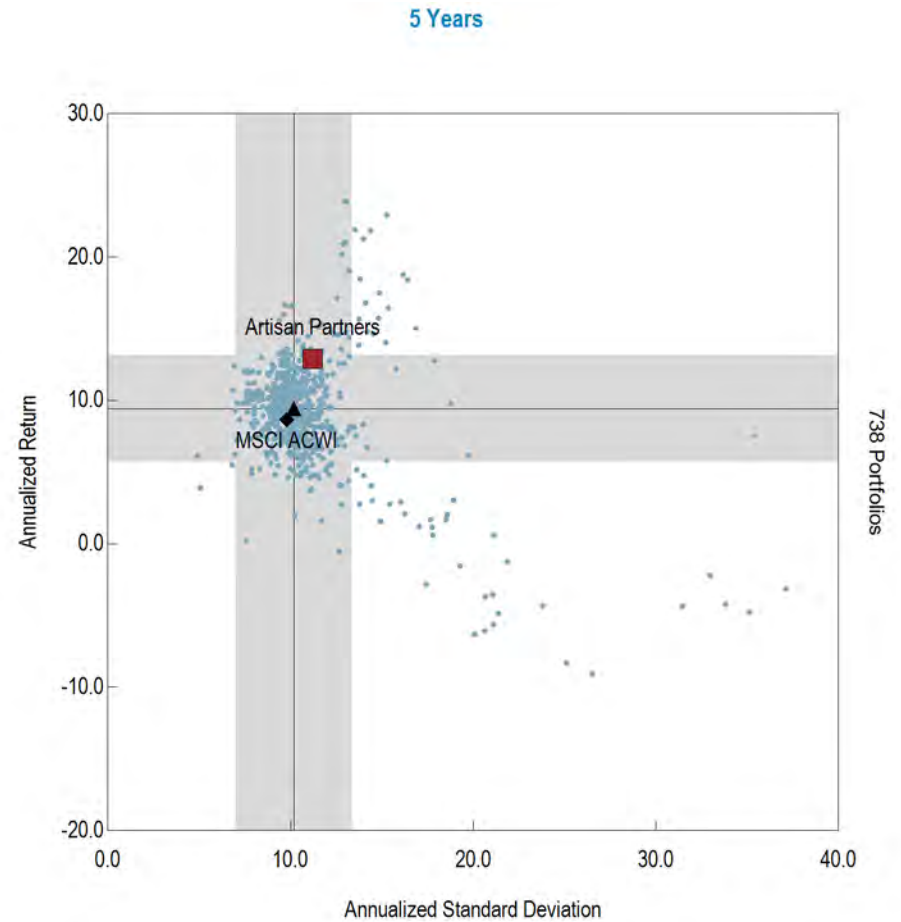
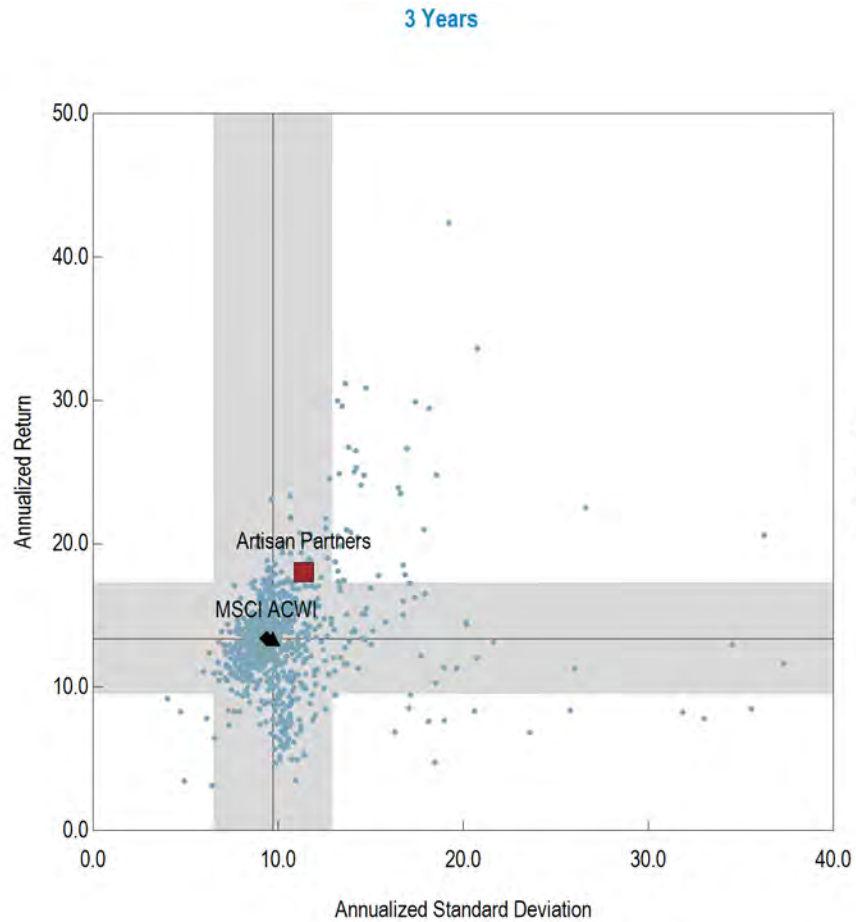
	Quarter	1 Year	3 Years	5 Years	10 Years	2017	2016	2015	2014	2013
5th Percentile	6.9	21.1	19.8	14.5	13.7	36.3	21.5	8.5	17.1	38.6
25th Percentile	5.1	12.6	14.9	10.9	10.6	27.6	10.3	3.0	7.4	30.6
Median	3.8	9.7	13.4	9.4	9.2	23.5	6.8	0.1	4.6	26.2
75th Percentile	2.0	6.1	11.5	7.6	8.1	19.6	3.9	-2.9	1.5	20.0
95th Percentile	-1.3	1.5	7.4	3.8	2.7	11.0	-1.4	-15.1	-7.4	2.7
# of Portfolios	905	904	844	738	461	880	842	692	609	552
● Artisan Partners	3.7 (52)	13.7 (20)	18.0 (8)	12.9 (9)	-- (--)	32.9 (11)	5.6 (61)	9.2 (4)	3.9 (56)	26.1 (51)
▲ MSCI ACWI	4.3 (41)	9.8 (50)	13.4 (50)	8.7 (63)	8.2 (74)	24.0 (47)	7.9 (42)	-2.4 (73)	4.2 (54)	22.8 (66)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





	3 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Artisan Partners	18.0%	11.4%	1.5
MSCI ACWI	13.4%	9.4%	1.3
eV All Global Equity Gross Median	13.4%	9.7%	1.3

	5 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Artisan Partners	12.9%	11.2%	1.1
MSCI ACWI	8.7%	9.8%	0.8
eV All Global Equity Gross Median	9.4%	10.2%	0.9

First Eagle Manager Portfolio Overview

Period Ending: September 30, 2018

Global equity portfolio that is benchmark agnostic comprised of companies with low valuations. Primary personnel include Matt McLennan and Kimball Brooker.

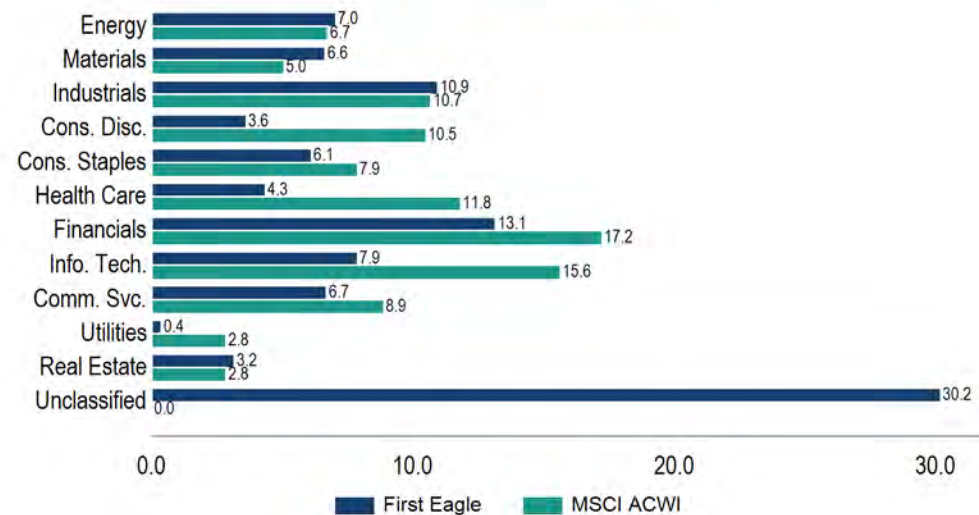
Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	165	2,791
Weighted Avg. Market Cap. (\$B)	78.70	148.68
Median Market Cap. (\$B)	19.45	9.59
Price To Earnings	17.65	21.71
Price To Book	3.15	3.84
Price To Sales	3.28	3.19
Return on Equity (%)	16.29	18.57
Yield (%)	2.36	2.37
Beta	0.58	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	78.8%	88.9%
Emerging*	3.7%	11.1%
Cash	17.4%	
Top 10 Largest Countries		
United States	47.7%	55.0%
Cash	17.4%	0.0%
Japan	11.1%	7.5%
France	5.3%	3.5%
United Kingdom	4.2%	5.4%
Canada	2.9%	3.0%
Korea*	1.7%	1.7%
Switzerland	1.5%	2.5%
Germany	1.2%	2.9%
Hong Kong	1.2%	1.1%
Total-Top 10 Largest Countries	94.0%	82.6%

Sector Allocation (%) vs MSCI ACWI



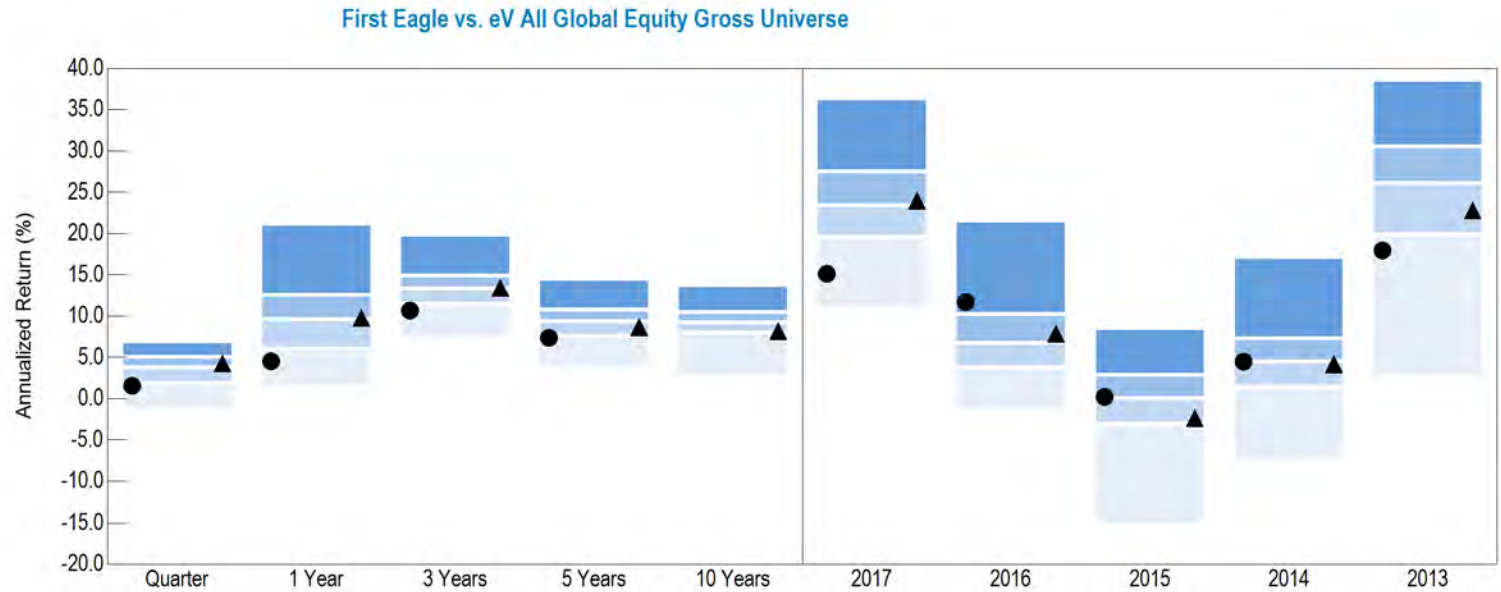
Top Contributors

	Avg Wgt	Return	Contribution
ORACLE	2.19	17.48	0.38
FLOWSERVE	0.63	35.83	0.23
MICROSOFT	1.25	16.43	0.20
UNION PACIFIC	1.03	15.54	0.16
XILINX	0.63	23.45	0.15
ANTHEM	0.79	15.45	0.12
HCA HEALTHCARE	0.32	35.95	0.12
COMCAST A	1.33	8.54	0.11
CH ROBINSON WWD.	0.62	17.60	0.11
AMERICAN EXPRESS	1.10	9.05	0.10

Bottom Contributors

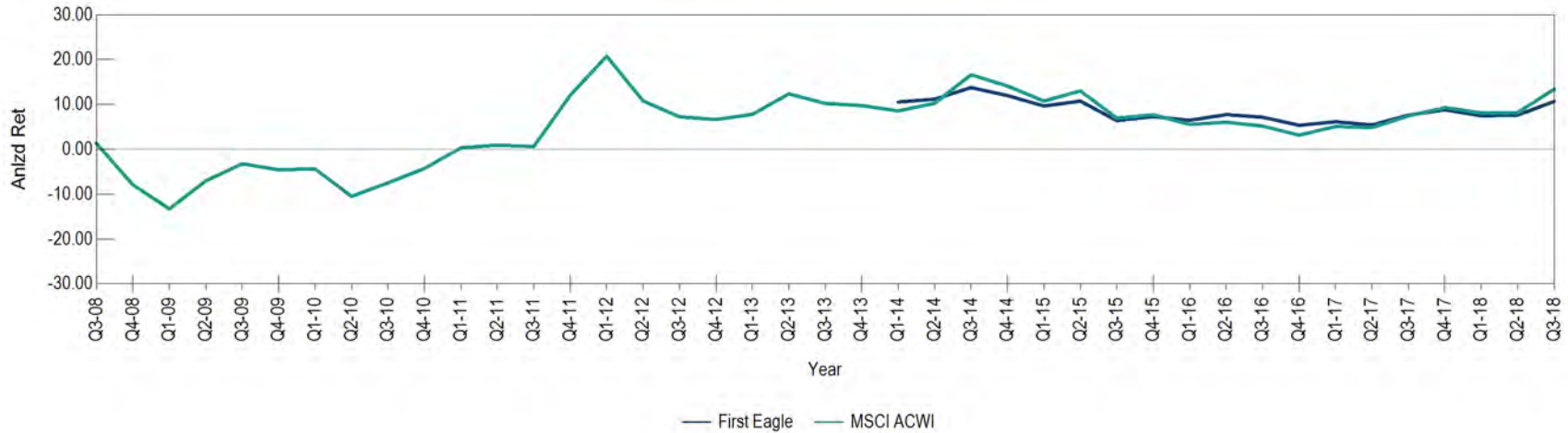
	Avg Wgt	Return	Contribution
WEYERHAEUSER	1.37	-10.62	-0.15
OMNICOM GROUP	1.23	-10.05	-0.12
SCHLUMBERGER	1.40	-8.38	-0.12
CIELO ON	0.44	-25.03	-0.11
FRESNILLO	0.39	-28.47	-0.11
GOLDCORP (NYS)	0.43	-25.46	-0.11
AGNICO EAGLE MINES	0.41	-25.27	-0.10
WHEATON PRMTL. (NYS)	0.44	-20.27	-0.09
FANUC	1.40	-5.08	-0.07
NEWCREST MINING	0.57	-12.15	-0.07

Unclassified sector allocation includes cash allocations and Gold allocations (7.7% as of 9/30/2018).

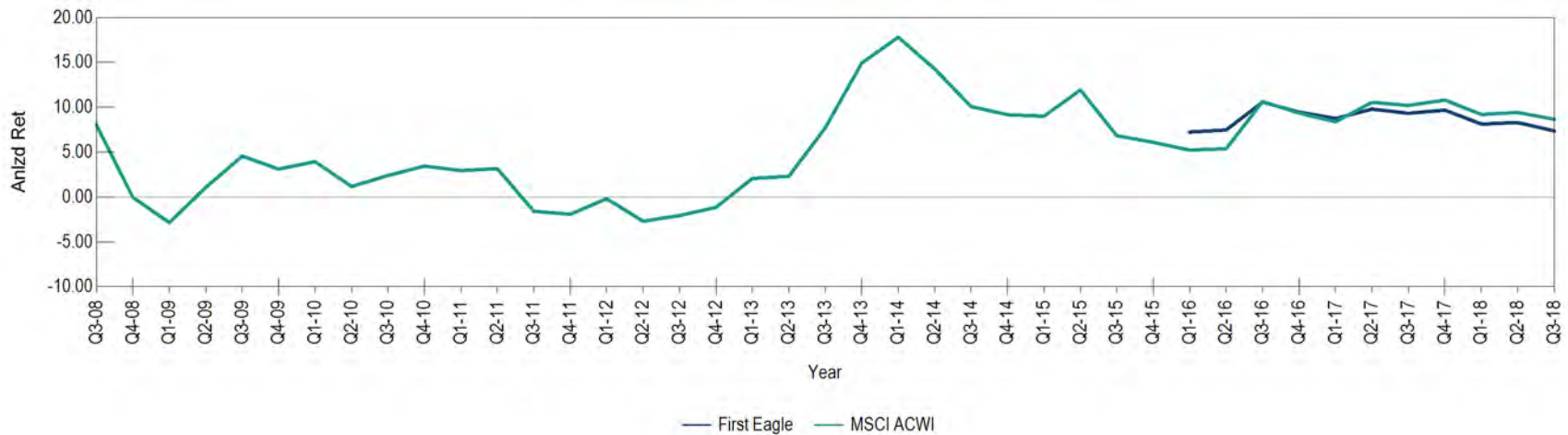


	Quarter	1 Year	3 Years	5 Years	10 Years	2017	2016	2015	2014	2013
5th Percentile	6.9	21.1	19.8	14.5	13.7	36.3	21.5	8.5	17.1	38.6
25th Percentile	5.1	12.6	14.9	10.9	10.6	27.6	10.3	3.0	7.4	30.6
Median	3.8	9.7	13.4	9.4	9.2	23.5	6.8	0.1	4.6	26.2
75th Percentile	2.0	6.1	11.5	7.6	8.1	19.6	3.9	-2.9	1.5	20.0
95th Percentile	-1.3	1.5	7.4	3.8	2.7	11.0	-1.4	-15.1	-7.4	2.7
# of Portfolios	905	904	844	738	461	880	842	692	609	552
● First Eagle	1.5 (80)	4.5 (86)	10.7 (83)	7.4 (79)	-- (--)	15.1 (89)	11.7 (19)	0.2 (49)	4.5 (51)	17.9 (80)
▲ MSCI ACWI	4.3 (41)	9.8 (50)	13.4 (50)	8.7 (63)	8.2 (74)	24.0 (47)	7.9 (42)	-2.4 (73)	4.2 (54)	22.8 (66)

Rolling 3 Year Annualized Return (%)



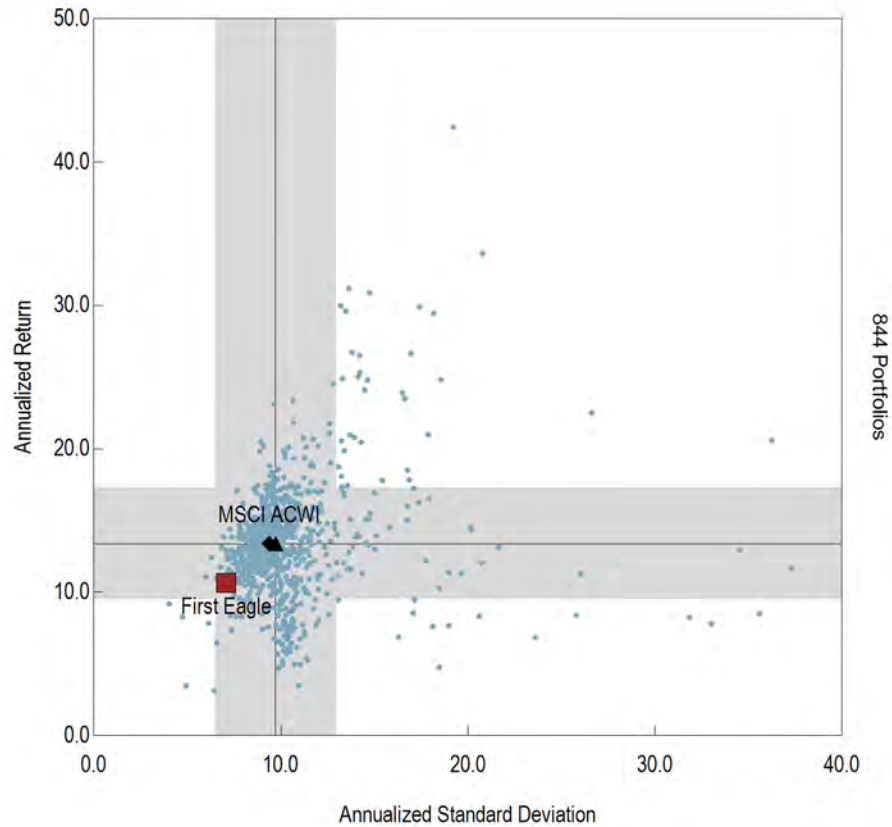
Rolling 5 Year Annualized Return (%)



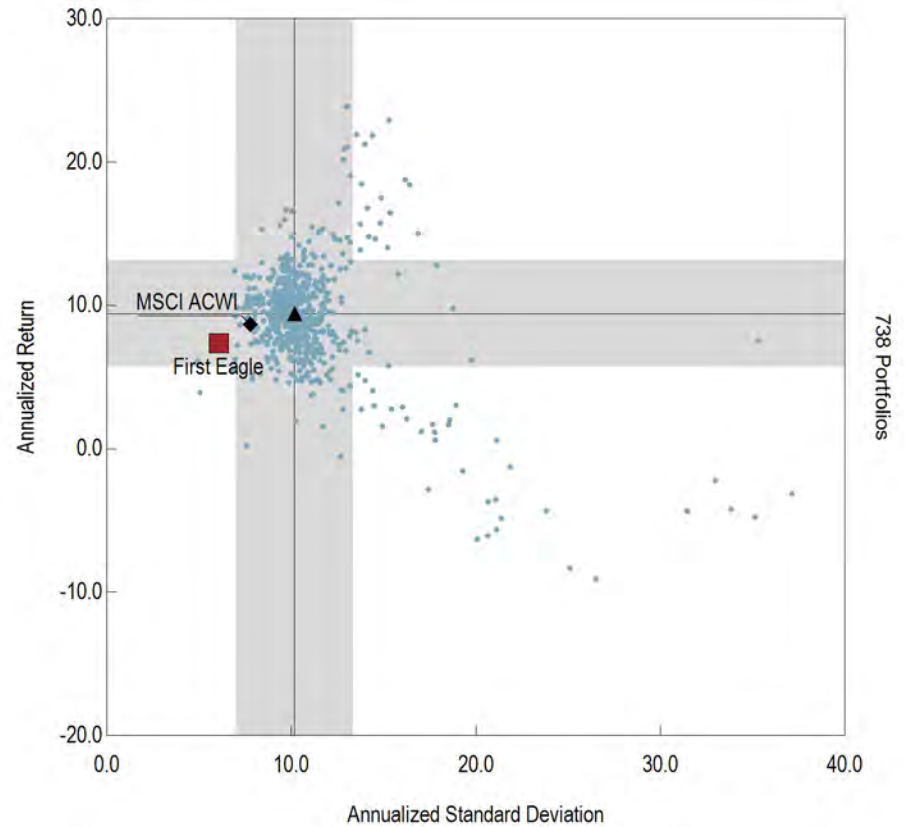
First Eagle
Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2018

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	10.7%	7.1%	1.4
MSCI ACWI	13.4%	9.4%	1.3
eV All Global Equity Gross Median	13.4%	9.7%	1.3

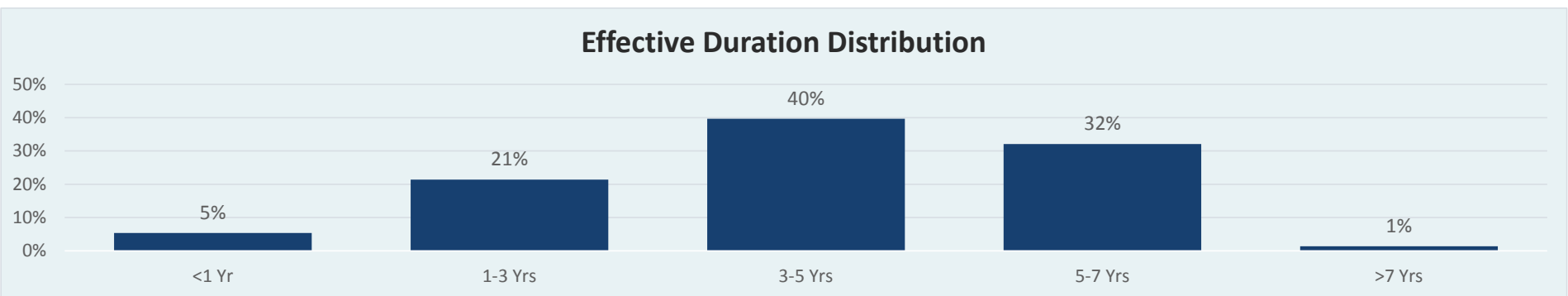
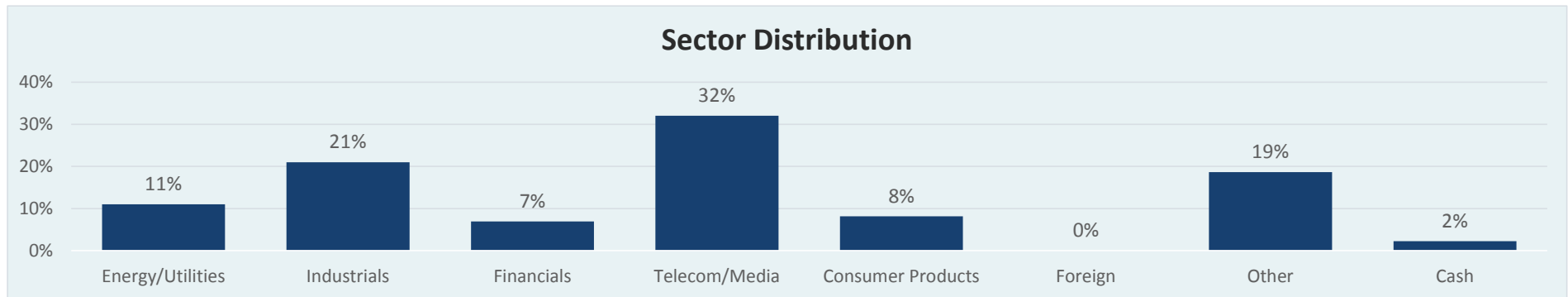
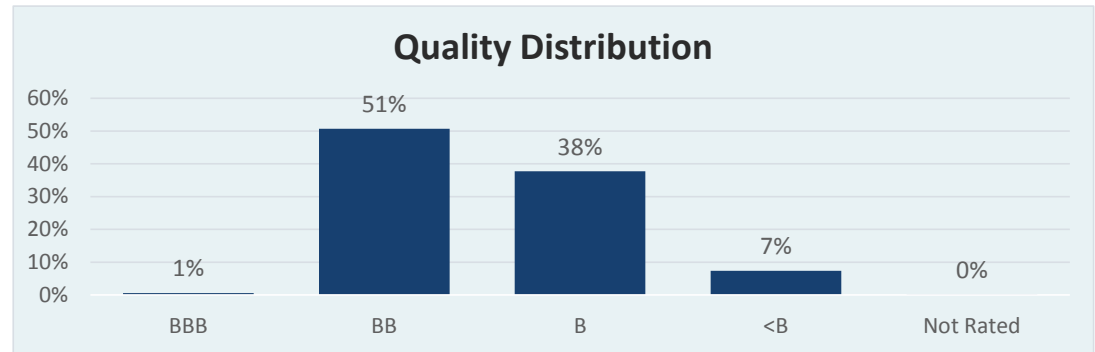
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	7.4%	7.1%	1.0
MSCI ACWI	8.7%	9.8%	0.8
eV All Global Equity Gross Median	9.4%	10.2%	0.9

High Yield Managers

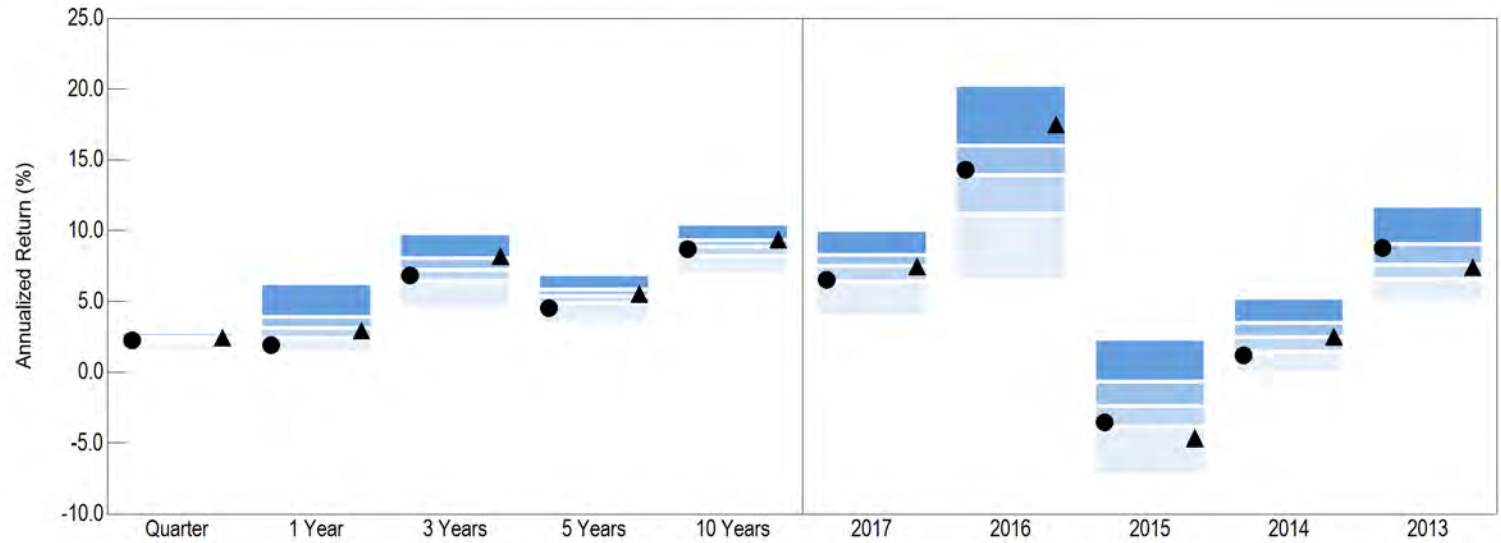
Domestic high yield fixed income portfolio with a focus on security selection. Primary personnel include Douglas Forsyth, Justin Kass, William Stickney, and Michael Yee.

	Allianz	ICE BofAML HY Master II
Effective Duration	4.10	4.00
Yield to Maturity	6.00	6.00
Average Quality	B1	B1
Average Coupon	6.3%	6.3%



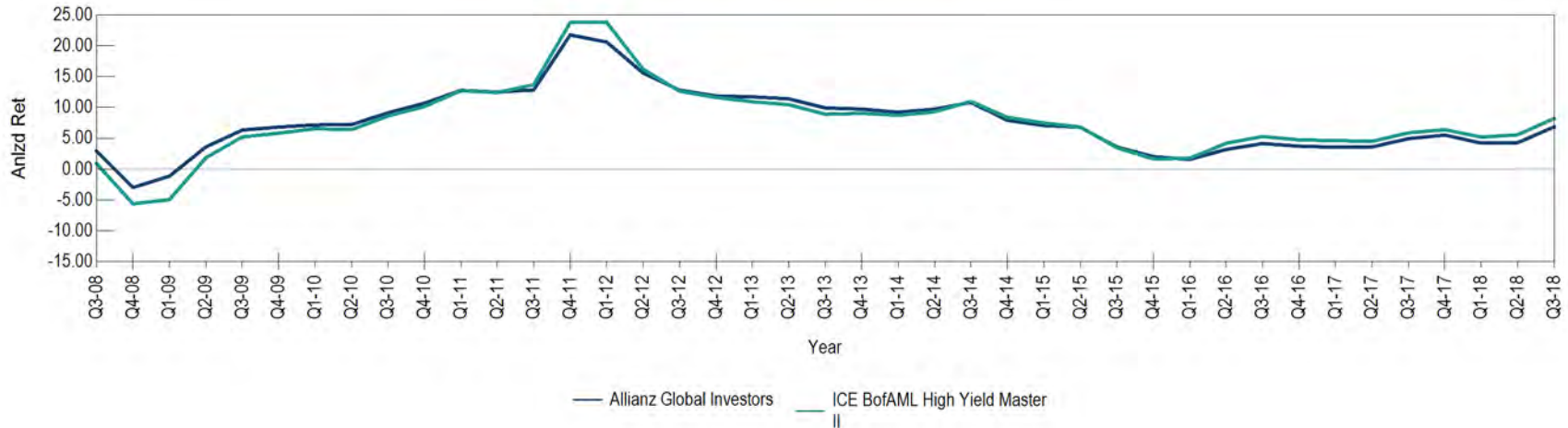
Quality distribution excludes cash.

Allianz Global Investors vs. eV US High Yield Fixed Inc Gross Universe

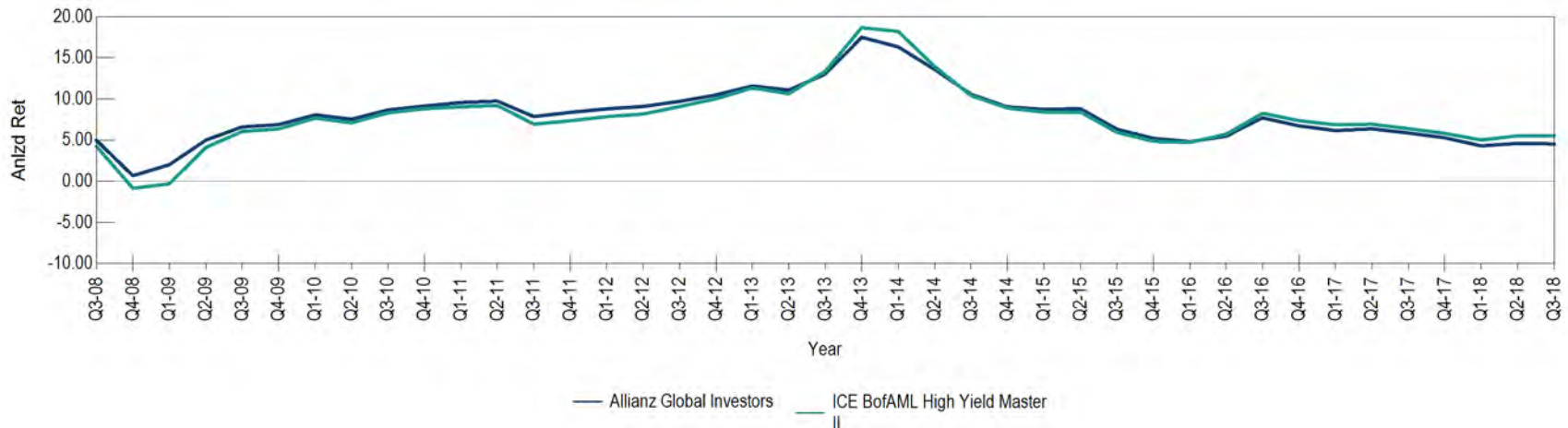


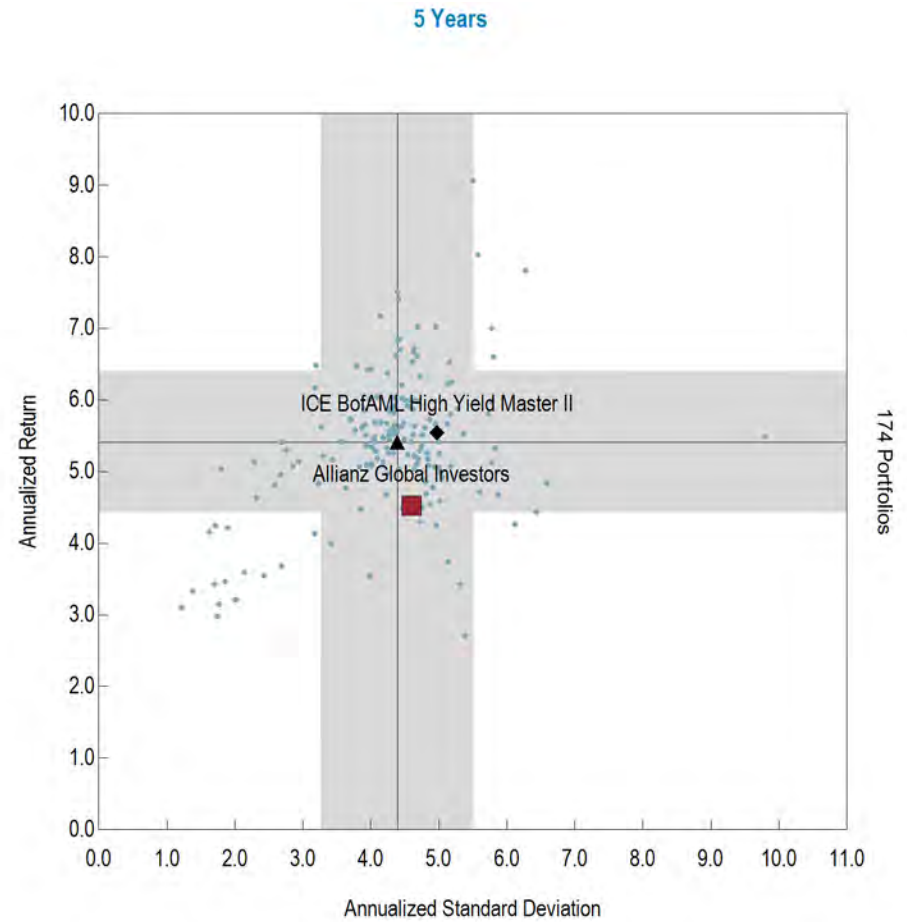
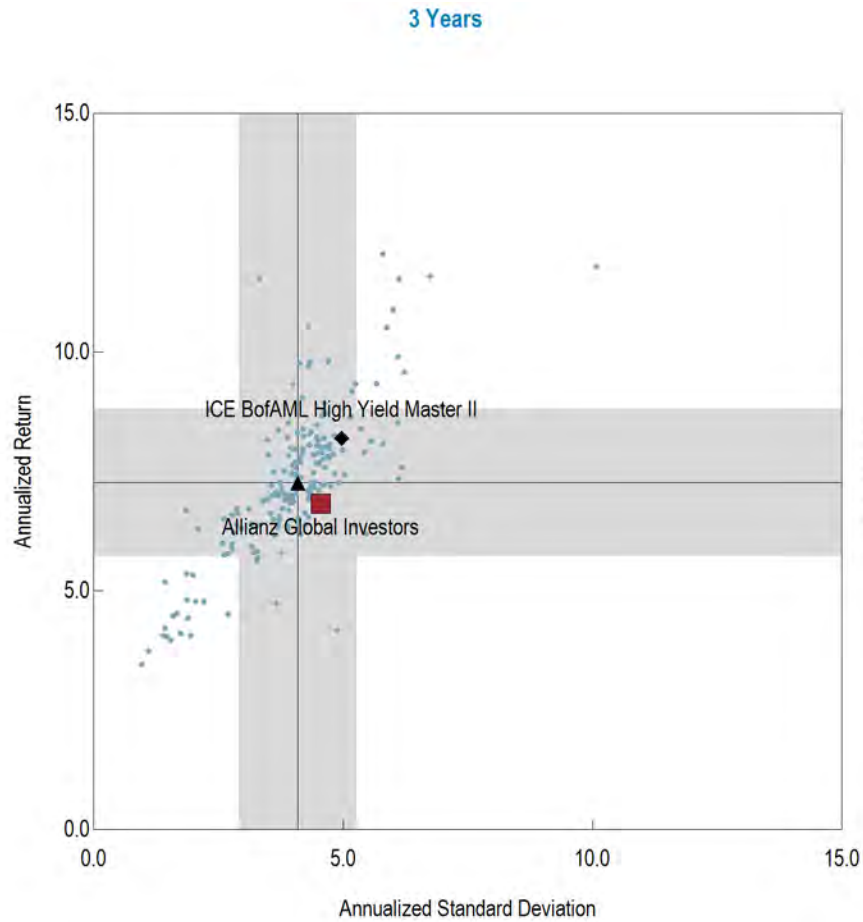
	Return (Rank)										
5th Percentile	2.8	6.3	9.8	6.9	10.5	10.0	20.3	2.3	5.2	11.7	
25th Percentile	2.5	3.9	8.1	5.9	9.3	8.3	16.0	-0.7	3.5	9.1	
Median	2.3	3.1	7.3	5.4	8.9	7.5	14.0	-2.4	2.5	7.6	
75th Percentile	2.0	2.4	6.5	4.9	8.3	6.5	11.3	-3.8	1.5	6.6	
95th Percentile	1.6	1.4	4.5	3.5	7.0	4.0	6.6	-7.2	0.0	5.0	
# of Portfolios	204	204	194	174	125	198	183	155	141	130	
● Allianz Global Investors	2.3 (54)	1.9 (87)	6.8 (68)	4.5 (85)	8.7 (56)	6.5 (74)	14.3 (47)	-3.5 (68)	1.2 (83)	8.8 (28)	
▲ ICE BofAML High Yield Master II	2.4 (34)	2.9 (57)	8.2 (22)	5.5 (41)	9.4 (23)	7.5 (53)	17.5 (14)	-4.6 (83)	2.5 (50)	7.4 (55)	

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





	3 Years			5 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Allianz Global Investors	6.8%	4.6%	1.3	Allianz Global Investors	4.5%	0.9
ICE BofAML High Yield Master II	8.2%	5.0%	1.5	ICE BofAML High Yield Master II	5.5%	1.0
eV US High Yield Fixed Inc Gross Median	7.3%	4.1%	1.6	eV US High Yield Fixed Inc Gross Median	5.4%	1.2

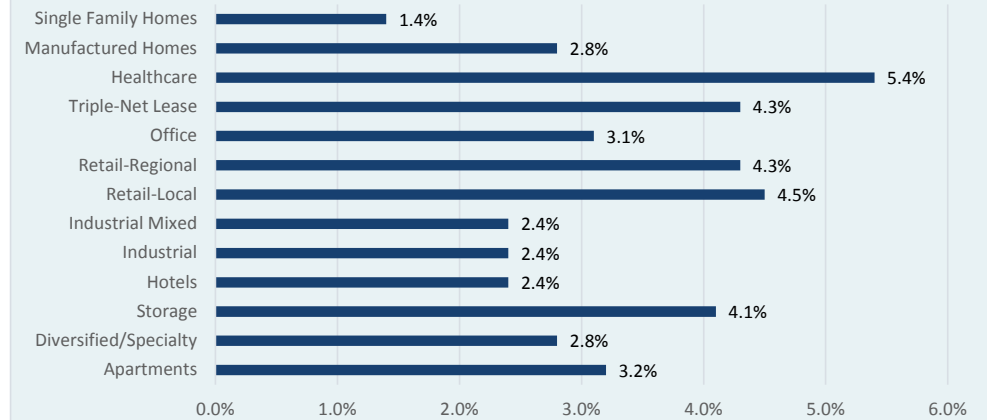
Real Estate Managers

Diversified portfolio of U.S. REITs with a focus on the underlying real estate assets

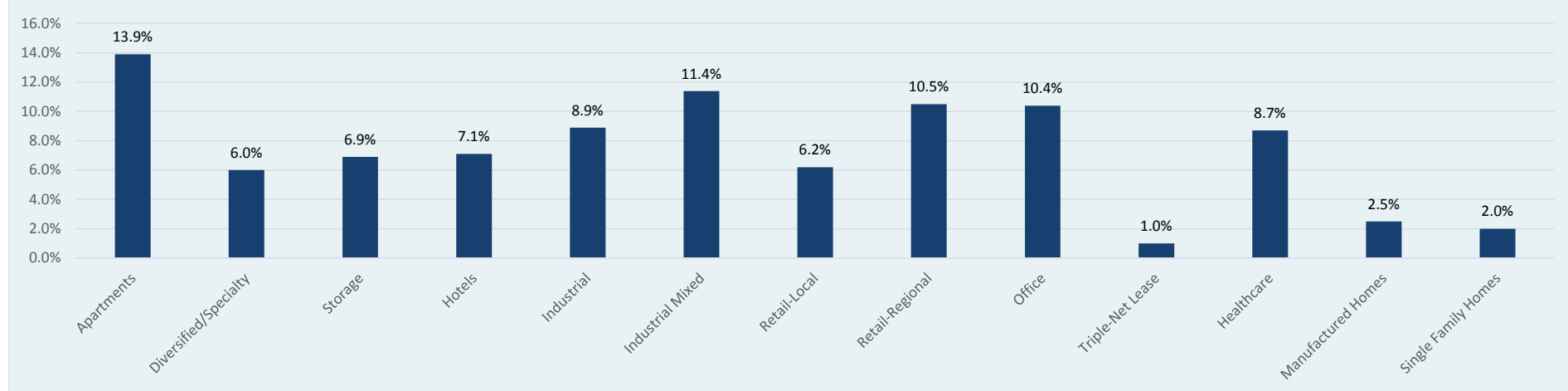
Top Five Holdings

Company	Property Type	Allocation
Simon Property Group	Retail-Regional	10.5%
ProLogis Inc.	Industrial	7.5%
Equinix Inc	Industrial Mixed	6.0%
Equity Residential	Apartments	4.7%
Alexandria RE Equities	Office	4.3%

Dividend Yield by Property Type



Property Type Allocation

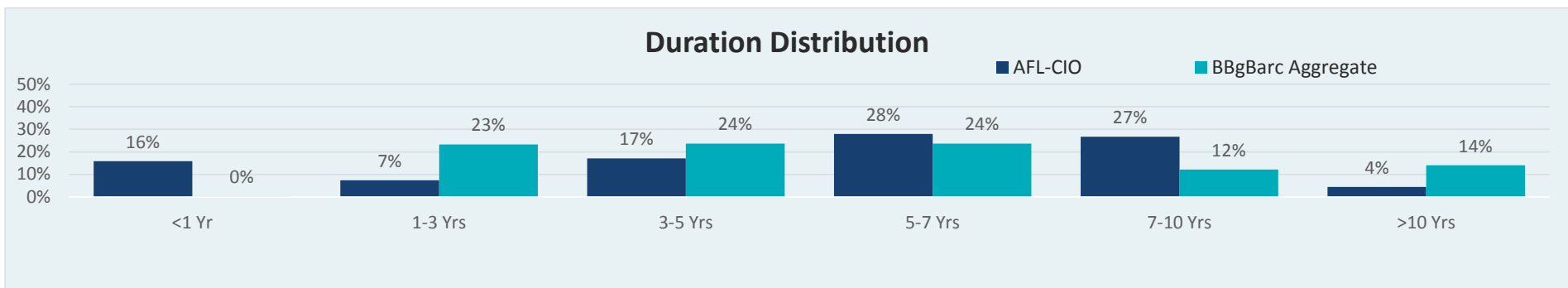
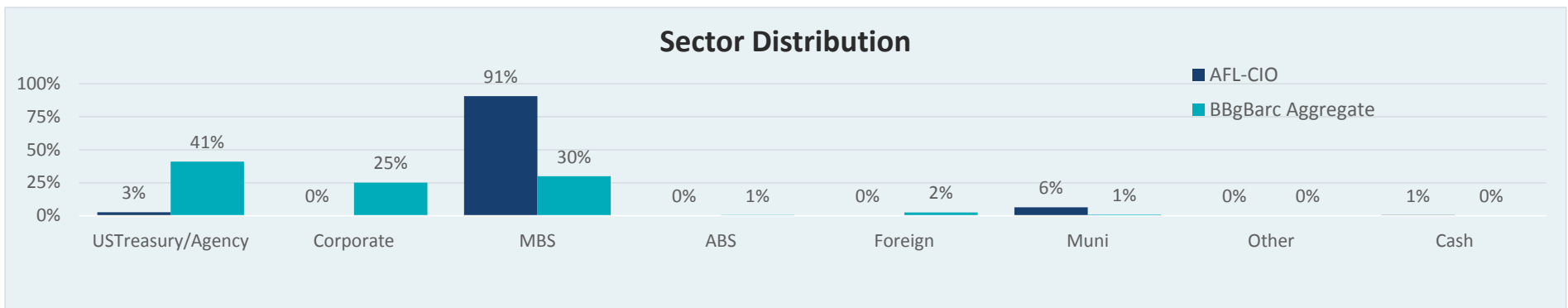
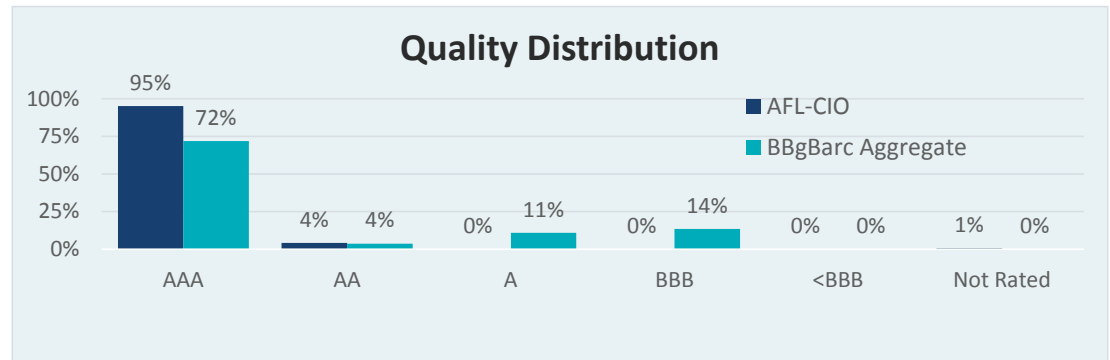


3% is allocated to Cash and Cash Equivalents.

Diversifying Fixed Income Managers

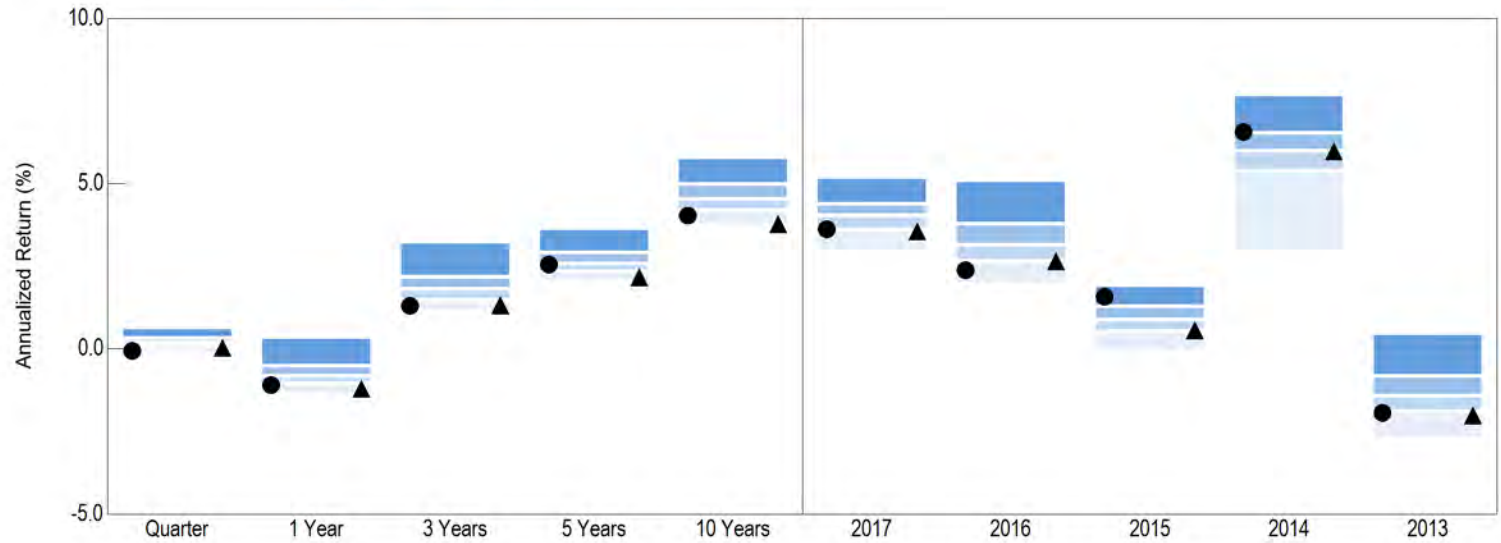
Domestic core fixed income portfolio with an exclusive focus on mortgage-related securities. Primary personnel include Stephen Coyle and Chang Su.

	AFL-CIO	BBgBarc Aggregate
Effective Duration	5.61	6.01
Yield to Maturity	3.43	3.17
Average Quality	AAA	AA
Average Coupon	3.4%	3.2%



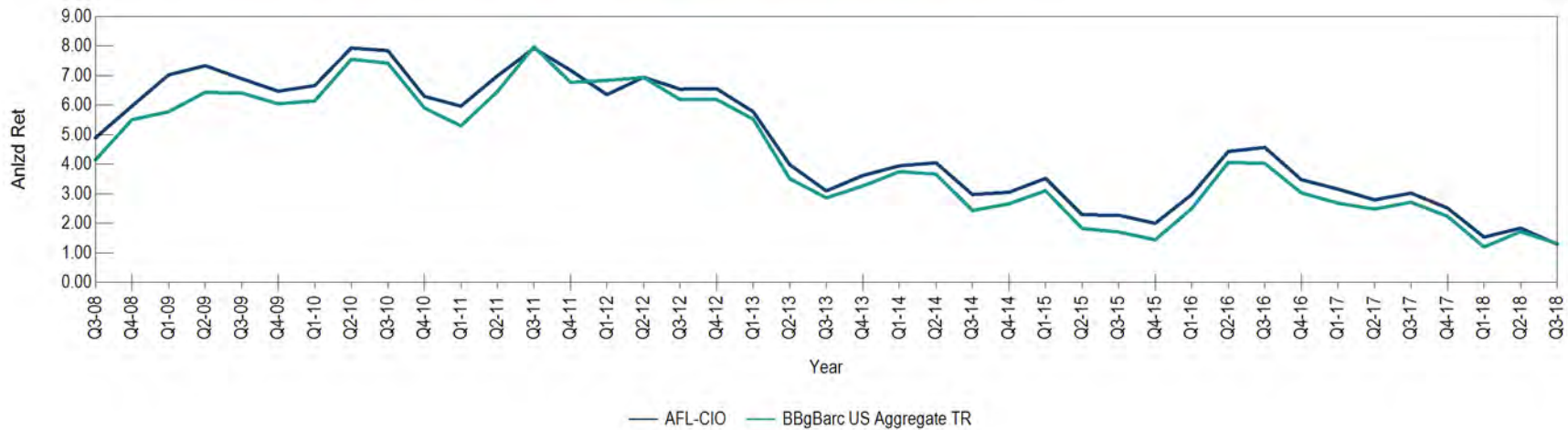
Duration and Quality distributions exclude cash.

AFL-CIO vs. eV US Core Fixed Inc Gross Universe

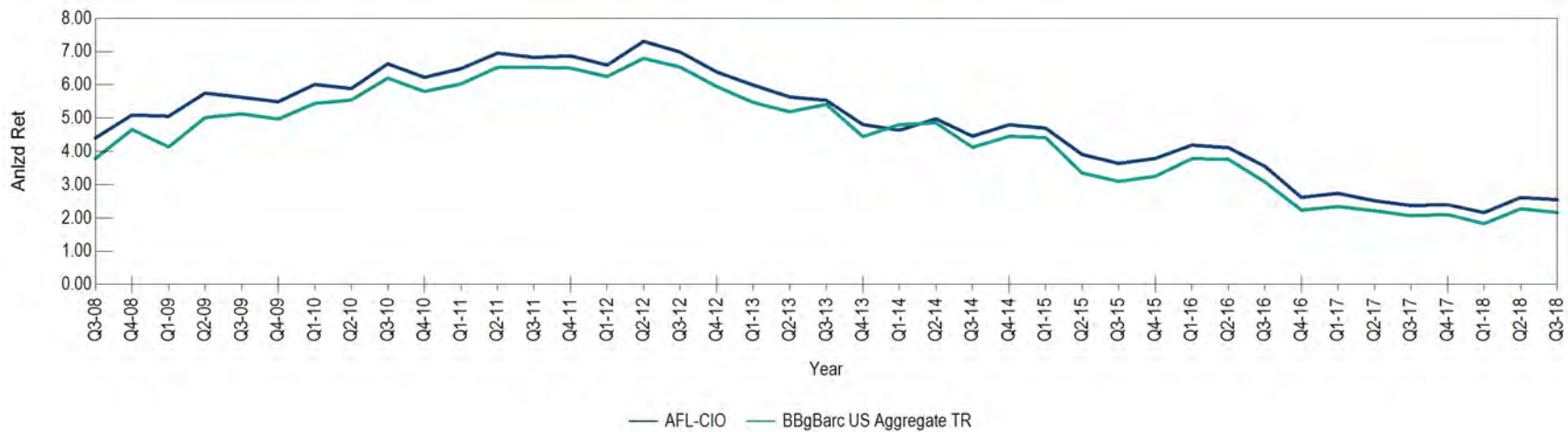


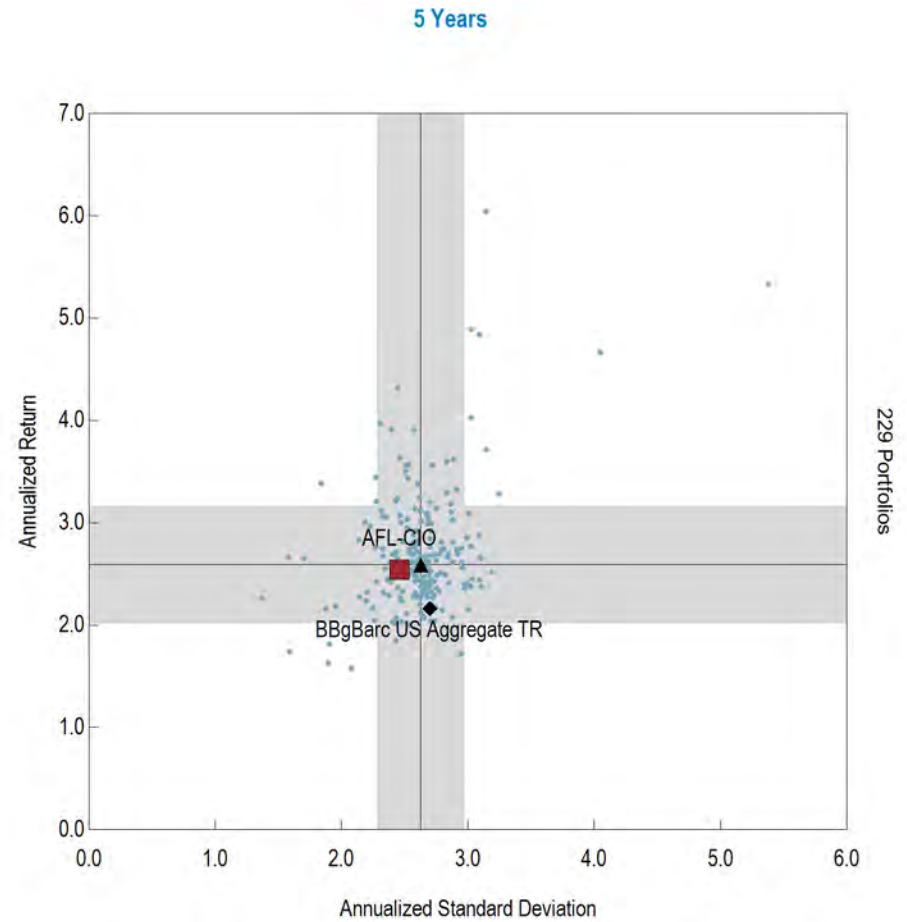
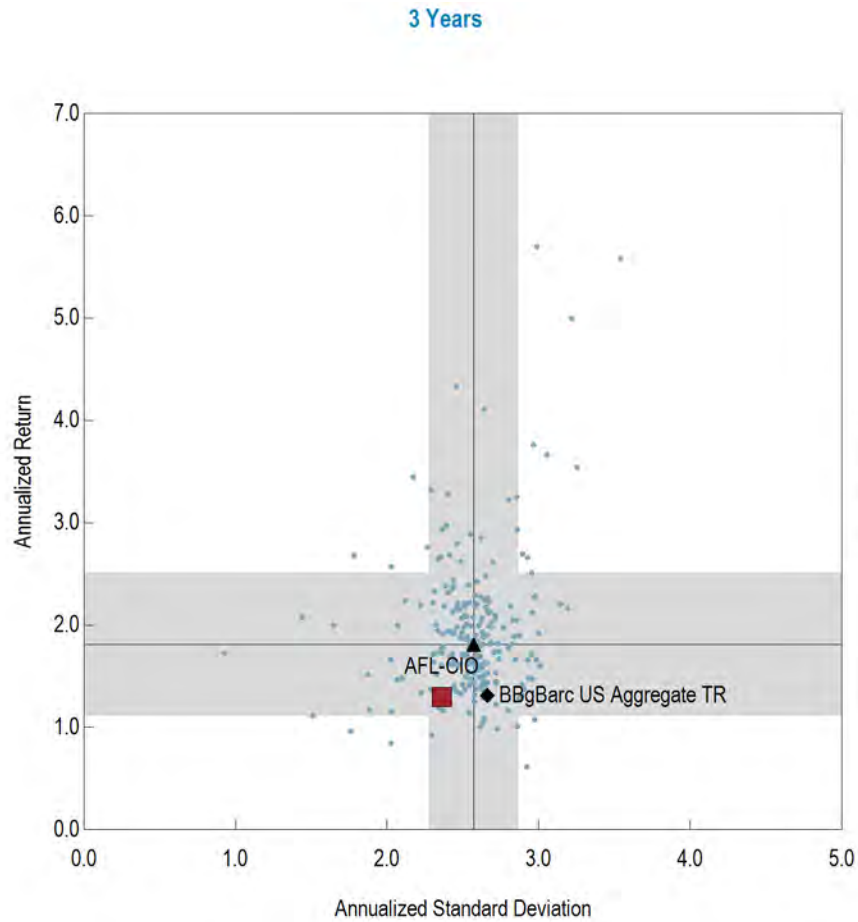
	Return (Rank)									
5th Percentile	0.6	0.4	3.2	3.6	5.8	5.2	5.1	1.9	7.7	0.5
25th Percentile	0.3	-0.5	2.2	2.9	5.0	4.4	3.8	1.3	6.5	-0.8
Median	0.2	-0.8	1.8	2.6	4.6	4.0	3.2	0.9	6.0	-1.4
75th Percentile	0.1	-1.0	1.5	2.4	4.2	3.6	2.7	0.5	5.4	-1.9
95th Percentile	-0.1	-1.4	1.1	2.0	3.8	2.9	2.0	-0.1	2.9	-2.7
# of Portfolios	235	235	232	229	207	233	223	196	213	209
● AFL-CIO	-0.1 (92)	-1.1 (81)	1.3 (90)	2.5 (55)	4.0 (86)	3.6 (76)	2.4 (87)	1.6 (15)	6.6 (25)	-1.9 (78)
▲ BBgBarc US Aggregate TR	0.0 (87)	-1.2 (89)	1.3 (90)	2.2 (91)	3.8 (95)	3.5 (79)	2.6 (77)	0.6 (75)	6.0 (52)	-2.0 (82)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





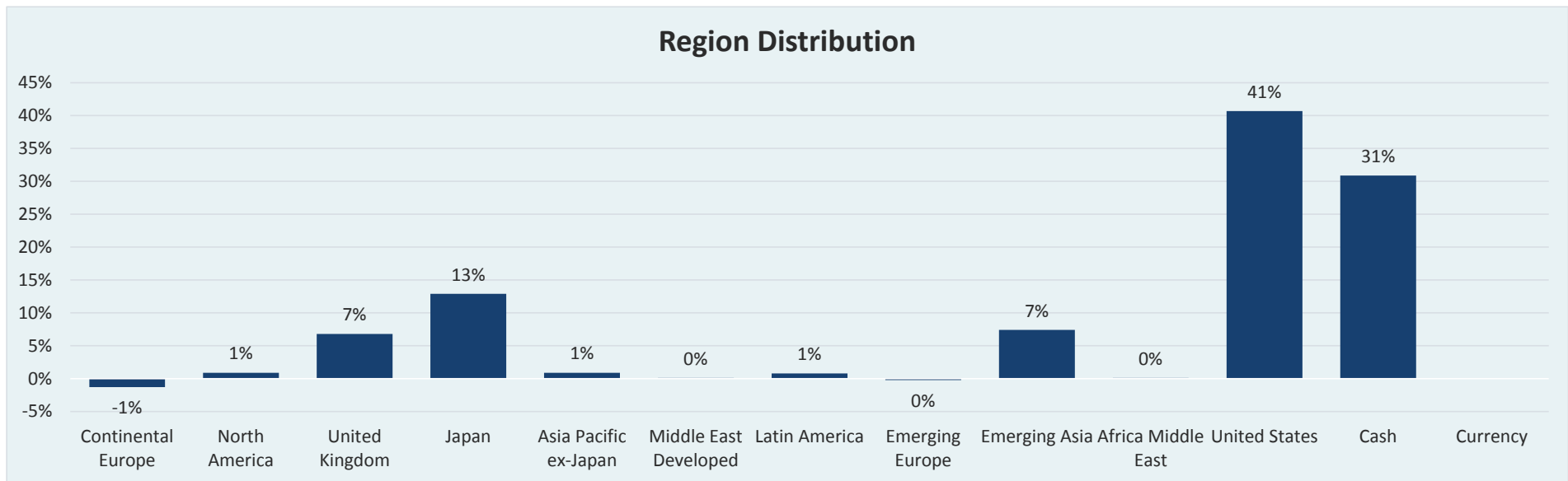
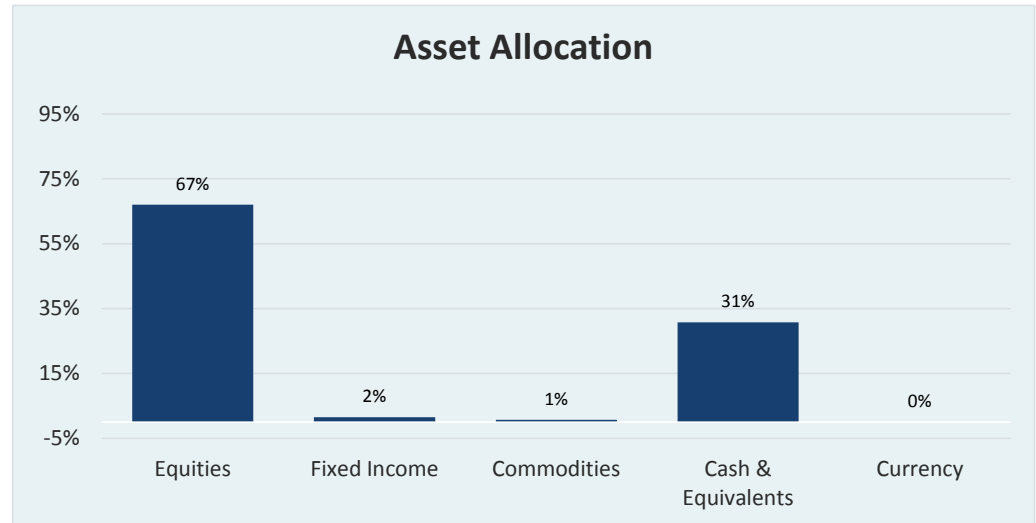
	3 Years			5 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
AFL-CIO	1.3%	2.4%	0.2	AFL-CIO	2.5%	0.8
BBgBarc US Aggregate TR	1.3%	2.7%	0.2	BBgBarc US Aggregate TR	2.2%	0.6
eV US Core Fixed Inc Gross Median	1.8%	2.6%	0.4	eV US Core Fixed Inc Gross Median	2.6%	0.8

Wellington Total Return Manager Portfolio Overview

Period Ending: September 30, 2018

Tactical multi-asset class real return strategy with a focus on managing risk of active strategies used to gain exposure to attractive assets of markets.

	Wellington Total Return
Number of Equity Holdings	959
Number of Commodity Holdings	158
Effective Duration (Years)	4.90
Average Quality	D



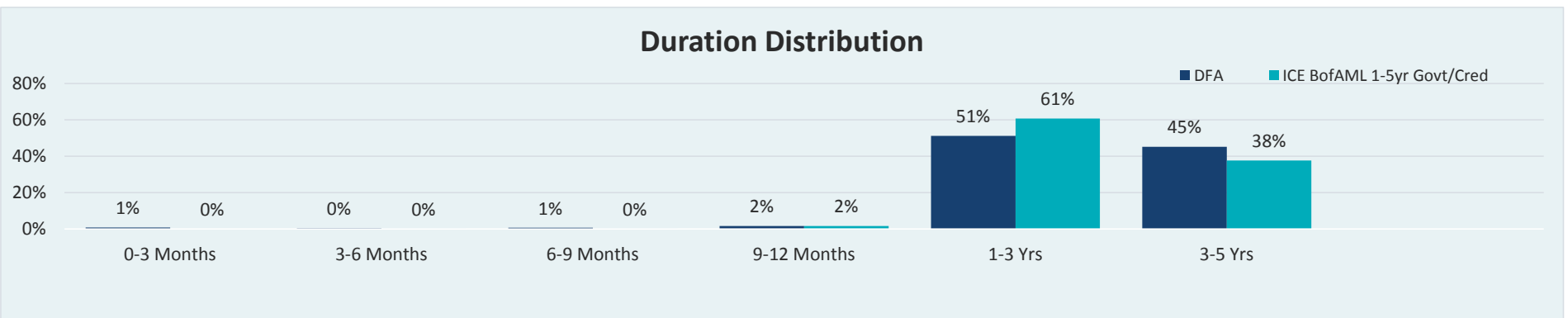
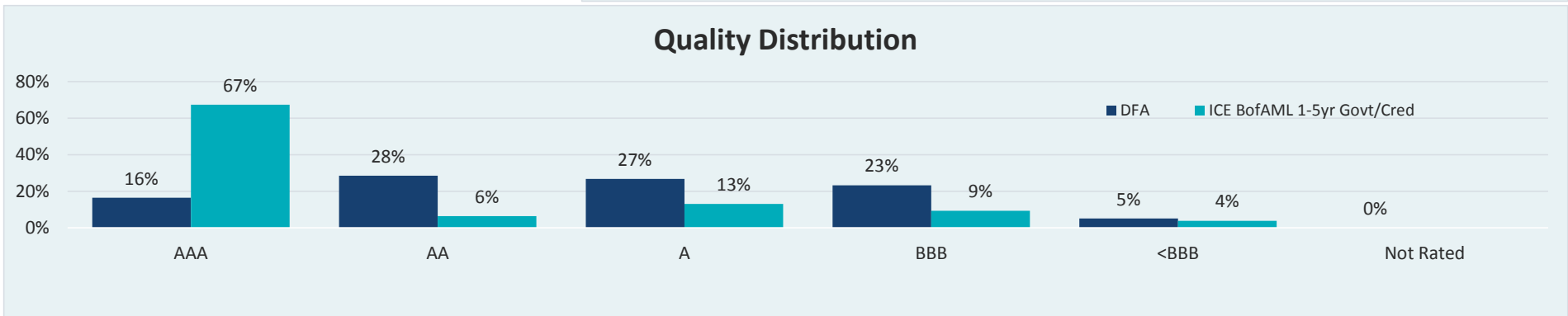
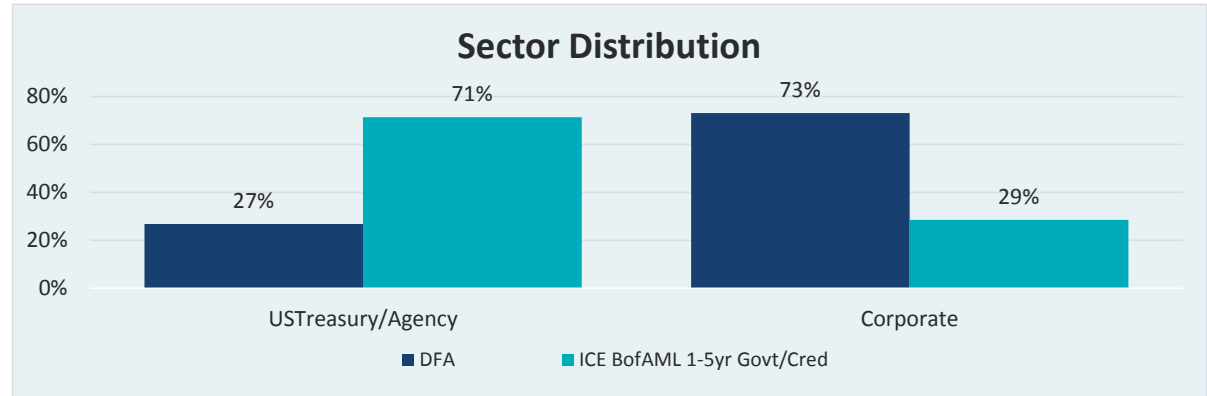
Liquidity Managers

DFA Short Credit
 Manager Portfolio Overview

Period Ending: September 30, 2018

Domestic short term US credit fixed income portfolio that maximizes total return through income and capital appreciation. Primary personnel include Dave Plecha and Joseph Kolerich.

	DFA	ICE BofAML 1-5yr Govt/Cred
Effective Duration	2.67	2.65
Yield to Maturity	3.36	3.09
Average Quality	A+	Aa1
Average Coupon	2.77%	2.57%

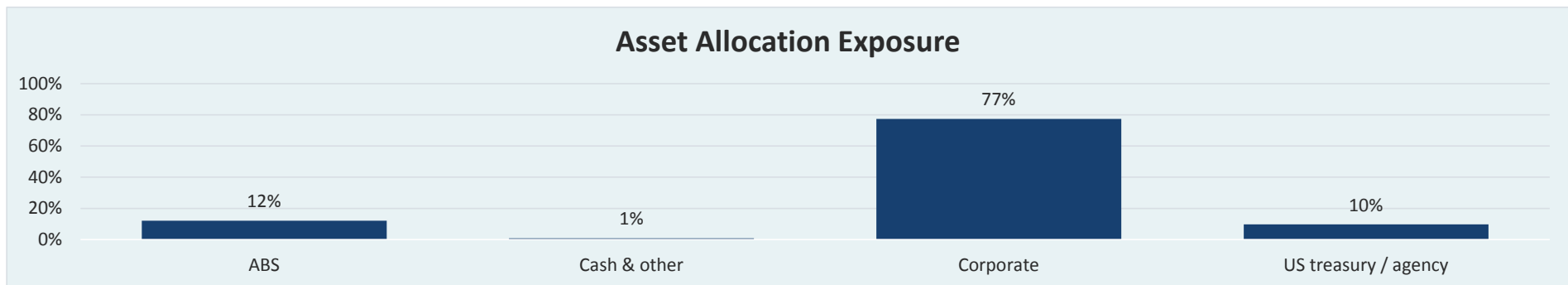
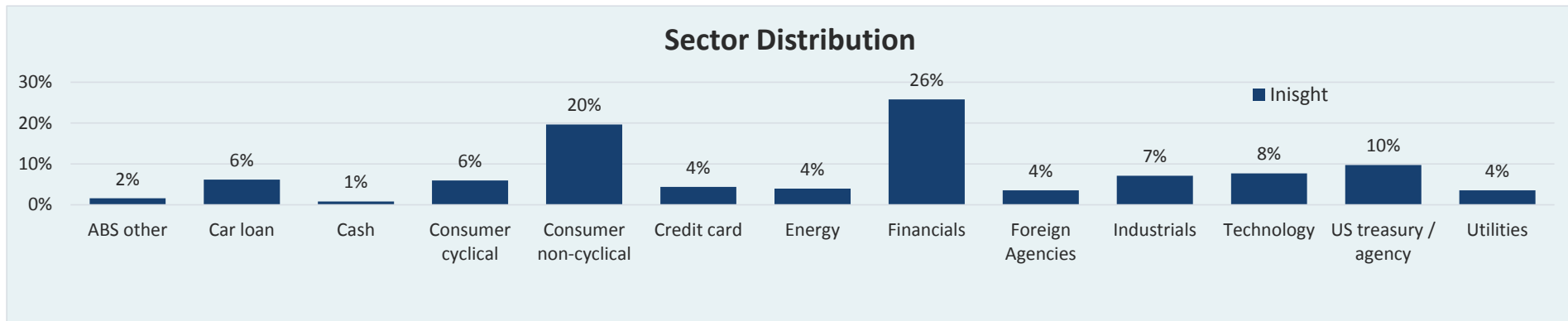
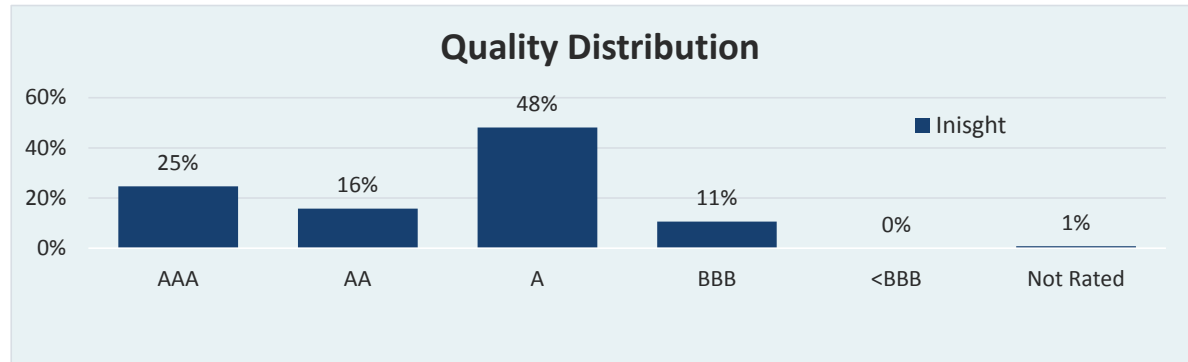


Insight Short Duration Manager Portfolio Overview

Period Ending: September 30, 2018

High quality, short duration multi-sector fixed income portfolio comprised of Treasuries, Agencies, investment grade corporates, and ABS designed specifically to meet CCCERA's liabilities. Key personnel include Gerard Berrigan and Jesse Fogarty.

	Inisight	BBgBarc 1-3yr Govt
Effective Duration	1.63	1.91
Yield to Maturity	3.05	1.98
Average Quality	A-	AAA
Average Coupon	2.4%	2.0%

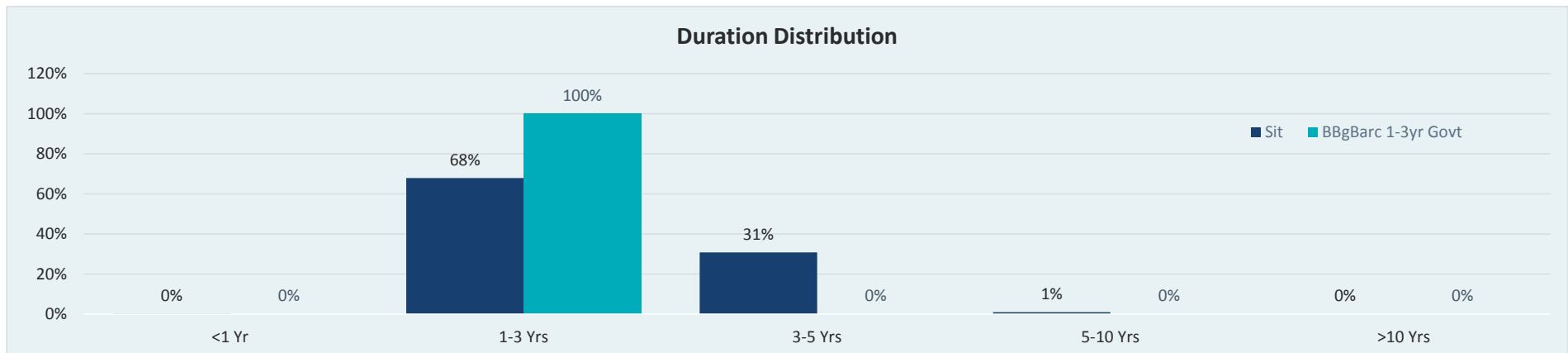
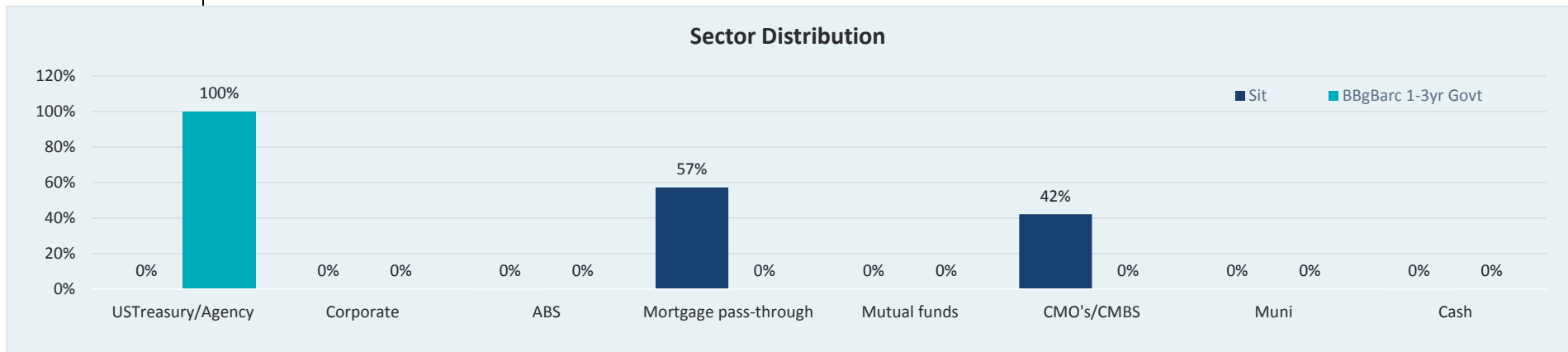
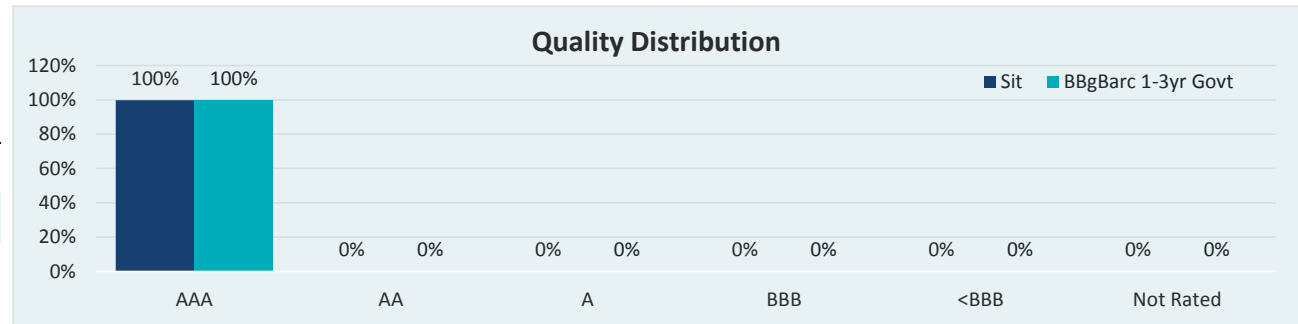


Sit Short Duration Manager Portfolio Overview

Period Ending: September 30, 2018

Short duration fixed income portfolio with a focus on earning high levels of interest income. Primary personnel include Bryce Doty, Paul Jungquist and Michael Brilley.

	Sit	BBgBarc 1-3yr Govt
Adjusted Duration	2.60	1.9
Yield to Maturity	3.20	2.8
Average Quality	AAA	AAA
Average Coupon	6.6%	2.0%



Performance Return Calculations

Performance is calculated using Modified Dietz and for time periods with large cash flow (generally greater than 10% of portfolio value), Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year.

Data Source

Verus is an independent third party consulting firm and calculates returns from best source book of record data. Returns calculated by Verus may deviate from those shown by the manager in part, but not limited to, differences in prices and market values reported by the custodian and manager, as well as significant cash flows into or out of an account. It is the responsibility of the manager and custodian to provide insight into the pricing methodologies and any difference in valuation.

Illiquid Alternatives

Due to the inability to receive final valuation prior to report production, closed end funds (including but are not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit) performance is typically reported at a one-quarter lag. Valuation is reported at a one-quarter lag, adjusted for current quarter flow (cash flows are captured real time). Closed end fund performance is calculated using a time-weighted return methodology consistent with all portfolio and total fund performance calculations. For Private Markets, performance reports also include Verus-calculated multiples based on flows and valuations (e.g. DPI and TVPI) and manager-provided IRRs.

Manager Line Up

Manager	Inception Date	Data Source	Manager	Inception Date	Data Source
BlackRock Russell 1000 Index	4/20/2017	BlackRock	Long Wharf Fund IV	7/3/2013	Long Wharf
Jackson Square Partners	5/1/2005	State Street	Long Wharf Fund V	9/30/2016	Long Wharf
Robeco Boston Partners	6/1/1995	State Street	Invesco Real Estate II	11/26/2007	Invesco
Emerald Advisors	4/7/2003	State Street	Invesco Real Estate III	6/30/2013	Invesco
Ceredex	11/6/2011	State Street	Invesco Real Estate IV	6/30/2014	Invesco
Pyrford	4/25/2014	State Street	Oaktree REOF V	12/31/2011	Oaktree
William Blair	10/29/2010	William Blair	Oaktree REOF VI	9/30/2013	Oaktree
Artisan Partners	10/1/2012	SEI Trust	Oaktree REOF VII	4/1/2015	Oaktree
First Eagle	1/18/2011	State Street	Siguler Guff DREOF	1/25/2012	Siguler Guff
PIMCO RAE Emerging Markets	2/28/2017	State Street	Siguler Guff DREOF II	8/31/2013	Siguler Guff
TT Emerging Markets	7/27/2017	TT	Siguler Guff DREOF II Co-Inv	1/27/2016	Siguler Guff
AFL-CIO	6/30/1991	AFL-CIO	Paulson Real Estate Fund II	11/10/2013	State Street
Sit Short Duration	11/2/2016	State Street	Adams Street Partners	3/18/1996	StepStone Group
DFA Short Credit	11/21/2016	State Street	Adams Street Partners II	1/16/2009	StepStone Group
Insight Short Duration	11/18/2016	State Street	Adams Street Partners Venture	4/28/2017	StepStone Group
BlackRock	4/20/2017	BlackRock	Adams Street Partners - BFP	1/18/1996	StepStone Group
Torchlight II	9/30/2006	StepStone Group	Adams Street Partners - Fund 5	9/21/2012	StepStone Group
Torchlight III	12/31/2008	StepStone Group	Bay Area Equity Fund	6/14/2004	StepStone Group
Torchlight IV	7/1/2012	StepStone Group	Bay Area Equity Fund II	12/7/2009	StepStone Group
Torchlight V	7/1/2012	StepStone Group	Carpenter Bancfund	1/31/2008	StepStone Group
Allianz Global Investors	4/25/2000	State Street	EIF US Power Fund I	11/26/2003	StepStone Group
BlackRock Transition	11/1/2016	State Street	EIF US Power Fund II	8/16/2005	StepStone Group
Wellington Real Total Return	2/26/2013	State Street	EIF US Power Fund III	5/30/2007	StepStone Group
Aether Real Assets III	11/27/2013	StepStone Group	EIF US Power Fund IV	11/28/2011	StepStone Group
Commonfund	6/28/2013	StepStone Group	EIF US Power Fund V	11/28/2016	StepStone Group
Adelante	9/30/2001	State Street	Nogales	2/15/2004	StepStone Group
Cash	-	State Street	Paladin III	11/30/2007	StepStone Group
Angelo Gordon Realty Fund VIII	1/23/2012	Angelo Gordon	Ocean Avenue Fund II	6/11/2014	StepStone Group
Angelo Gordon Realty Fund IX	12/8/2014	Angelo Gordon	Ocean Avenue Fund III	4/15/2016	StepStone Group
Angelo Gordon Energy Credit Opp	9/24/2015	StepStone Group	Pathway	11/9/1998	StepStone Group
DLJ RECP III	6/23/2005	DLJ	Pathway 2008	12/26/2008	StepStone Group
DLJ RECP IV	2/11/2008	DLJ	Pathway 6	5/24/2011	StepStone Group

DLJ RECP V	7/1/2014	DLJ	Pathway 7	2/7/2013	StepStone Group
Wastewater Opp. Fund	12/8/2015	StepStone Group	Siguler Guff CCCERA Opps	6/3/2014	StepStone Group
LaSalle Income & Growth VI	7/16/2013	LaSalle	Siguler Guff Secondary Opps	11/30/2016	StepStone Group
LaSalle Income & Growth VII	2/28/2017	LaSalle	Aether Real Assets IV	3/16/2016	StepStone Group
Hearthstone II	6/17/1998	Hearthstone	StepStone CC Opportunities Fund	2/1/2018	StepStone Group
Parametric Overlay	3/29/2017	State Street	Parametric Defensive Equity	7/23/2018	State Street

Policy & Custom Index Composition

Policy Index (4/1/2018 - present)	5% S&P 500, 13% MSCI EAFE, 11% MSCI Emerging Markets, 11% Cambridge Associates US Private Equity, 12% S&P/LSTA Leveraged Loan Index+2%, 5% NCREIF Property Index +2%, 4.0% NCREIF Property Index +4%, 1% Wilshire REIT, 3% MSCI ACWI, 2% BBgBarc US Aggrgate, 23% BBgBarc 1-3 Yr Gov/Credi, 3% BBgBarc US Treasury 7-10 Year TR, 7% HFRI Fund of Funds Composite Index
Policy Index (12/1/2016 - 3/31/2018)	22.9% Russell 3000, 11% MSCI ACWI ex-US (Gross), 10.9% MSCI ACWI (Net), 1% Wilshire REIT, 1.7% NCREIF Property Index, 6.8% NCREIF ODCE Index, 3.6% CPI +4%, 8.1% S&P 500 +4%, 1.7% ICE BofAML High Yield Master II +2%, 5.1% ICE BofAML High Yield Master II, 22.4% BBgBarc 1-3 Yr Gov/Credit, 1.6% 90-day T-Bills, 3.2% BBgBarc US Aggregate.
Policy Index (4/1/2012-11/30/2016)	27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% BBgBarc U.S. Aggregate, 5% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 13.5% Real Estate Benchmark, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Policy Index (4/1/2011-3/31/2012)	31% Russell 3000, 10.4% MSCI EAFE (Gross), 9.6% MSCI ACWI (Net), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% DJ Wilshire REIT, 3.1% NCREIF, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Policy Index (4/1/2010-3/31/2011)	35.6% Russell 3000, 10.4% MSCI EAFE (Gross), 5% MSCI ACWI (Net), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% DJ Wilshire REIT, 3.1% NCREIF, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Policy Index (7/1/2009-3/31/2010)	40.6% Russell 3000, 10.4% MSCI EAFE (Gross), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% DJ Wilshire REIT, 3.1% NCREIF, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Custom Growth Benchmark (4/1/2018-Current)	7.5% S&P 500, 19.4% MSCI EAFE, 16.4% MSCI Emerging Markets, 16.4% Cambridge Associates US Private Equity, 17.9% S&P/LSTA Leveraged Loan Index+2%, 7.5% NCREIF Property Index +2%, 6.0% NCREIF Property Index +4%, 1.5% Wilshire REIT, 4.5% MSCI ACWI, 3% BBgBarc US Aggrgate.
Custom Growth Benchmark (Prior to 4/1/2018)	Weighted-average of the benchmarks of the sub-composites that make up the composite.
Custom Diversifying Benchmark (4/1/2018-Current)	30% BBgBarc US Treasury 7-10 Year TR, 70% HFRI Fund of Funds Composite Index
Custom Diversifying Benchmark (Prior to 4/1/2018)	Weighted-average of the benchmarks of the sub-composites that make up the composite.
Real Estate Benchmark (current)	11% Wilshire REIT, 18% NCREIF Property Index, 71% NCREIF ODCE Index.
Real Estate Benchmark (4/1/2012-11/30/2016)	40% Wilshire REIT, 50% NCREIF Property Index, 10% FTSE/EPRA NAREIT Developed ex-US.

Other Disclosures

All data prior to 12/31/2014 was provided by previous consultant.
 As of 7/1/2018 all Private Equity and Private Credit data is provided by StepStone Group.

Glossary

Allocation Effect: An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

Alpha: The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as: Portfolio Return - [Risk-free Rate + Portfolio Beta x (Market Return - Risk-free Rate)].

Benchmark R-squared: Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

Beta: A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

Book-to-Market: The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

Capture Ratio: A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

Correlation: A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

Excess Return: A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

Information Ratio: A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: excess return divided by tracking error.

Interaction Effect: An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

Portfolio Turnover: The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

Price-to-Earnings Ratio (P/E): Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

R-Squared: Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

Selection Effect: An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

Sharpe Ratio: A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as: Portfolio Excess Return / Portfolio Standard Deviation.

Sortino Ratio: Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

Standard Deviation: A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

Style Analysis: A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

Style Map: A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

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