



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: SEPTEMBER 30, 2018

Investment Performance Review for

Western States Office and Professional Employees' International Union Pension Plan

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Investment Landscape

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Investment Performance
Review

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**PERSPECTIVES
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ENTERPRISE
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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

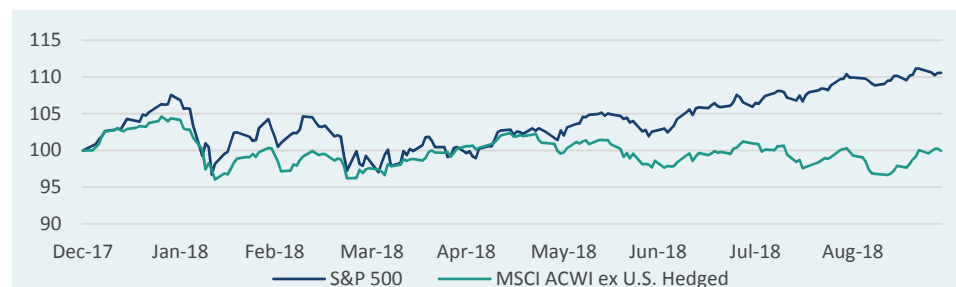
“No breakthrough in U.S.-China trade talks as new tariffs kick in”

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

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

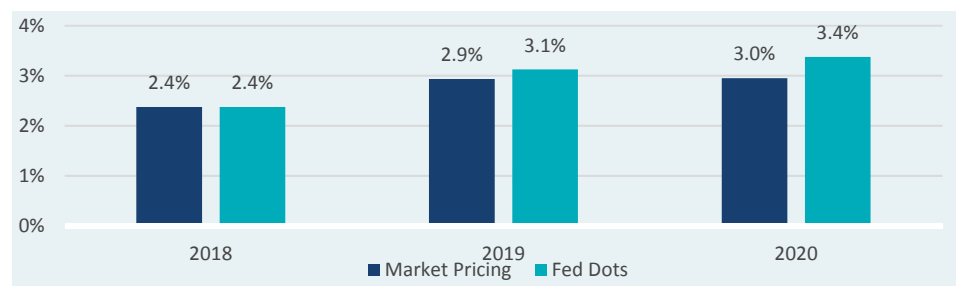
Article Source: CNBC, August 23rd, 2018

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



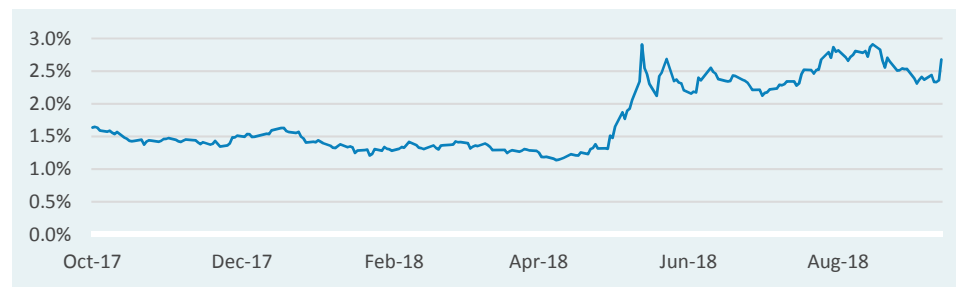
Source: Bloomberg, as of 9/30/18

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.

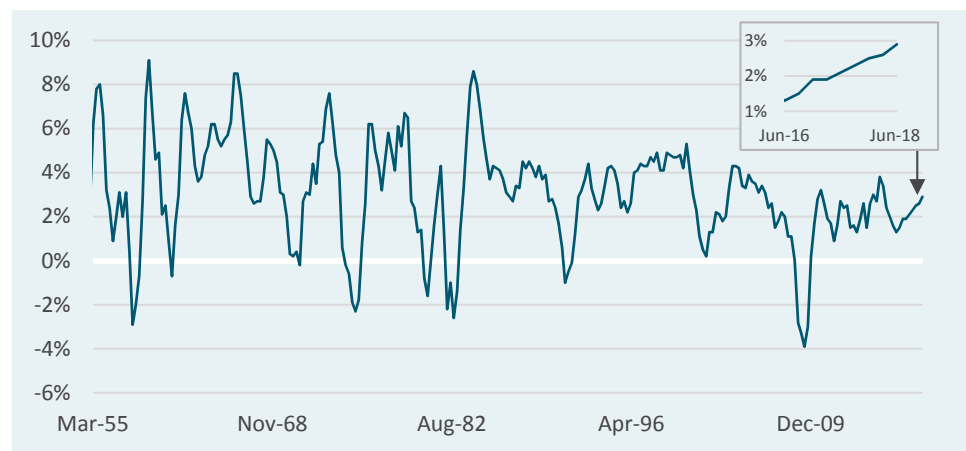
The consumer was once again the biggest contributor to growth after a slowdown in the previous quarter. Consumer spending added 2.6% to the quarterly growth rate. Exports and business investment also boosted growth – each contributed 1.1% to GDP growth. However, some of the increase in exports may have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

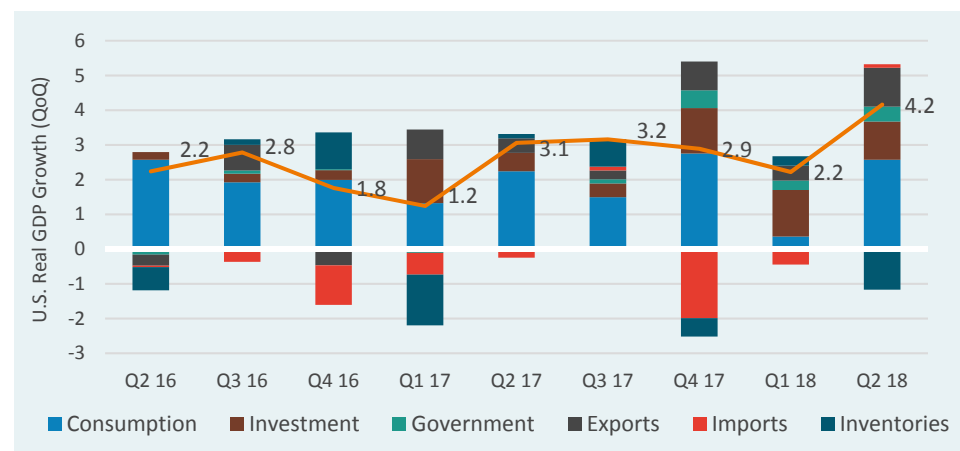
GDP growth was the highest since Q3 2014

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

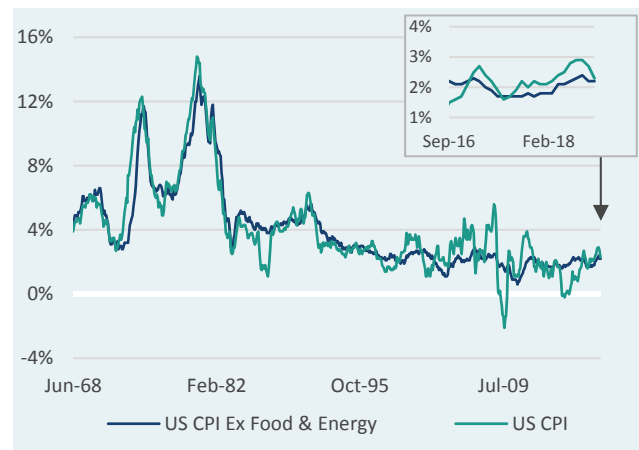
Inflation has remained relatively muted throughout the current economic cycle. Headline and core CPI rose 2.2% and 2.3%, respectively over the 12 months ending in September.

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.

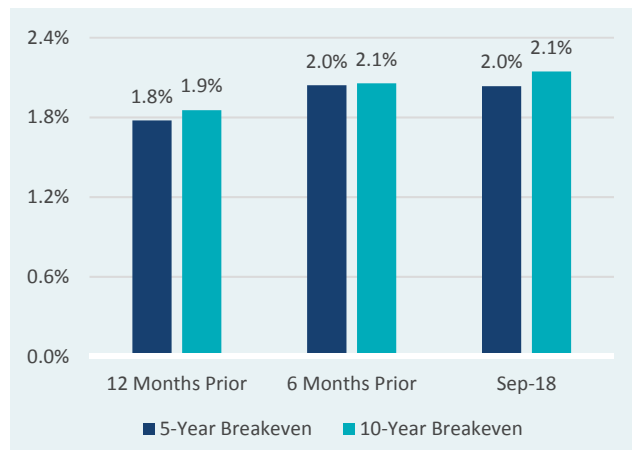
The potential impact of tariffs on inflation has been widely scrutinized, but it is important to note that the flow-through from import prices to consumer prices is ambiguous. The flow-through will depend on numerous factors including substitution effects and the price elasticity of demand. At this point,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

U.S. CPI (YOY)



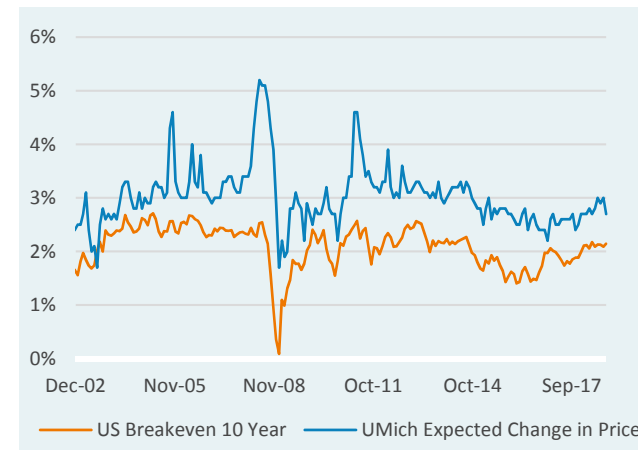
Source: Bloomberg, as of 9/30/18

BREAKEVEN INFLATION RATES



Source: Bloomberg, as of 9/30/18

INFLATION EXPECTATIONS



Source: Bloomberg, as of 9/30/18

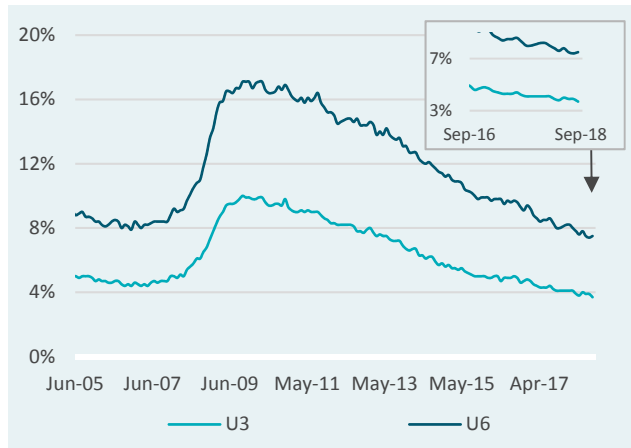
Labor market

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.

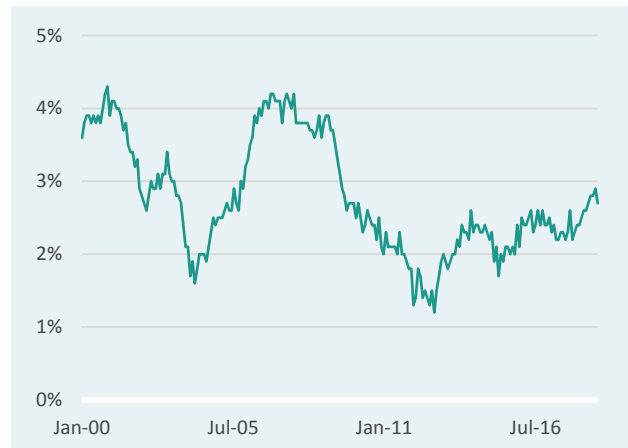
Surging job openings, along with business survey responses, suggest companies are having a difficult time finding qualified workers. As of August, there were 7.1 million job openings compared to only 6.2 million people classified as unemployed.

UNEMPLOYMENT RATE



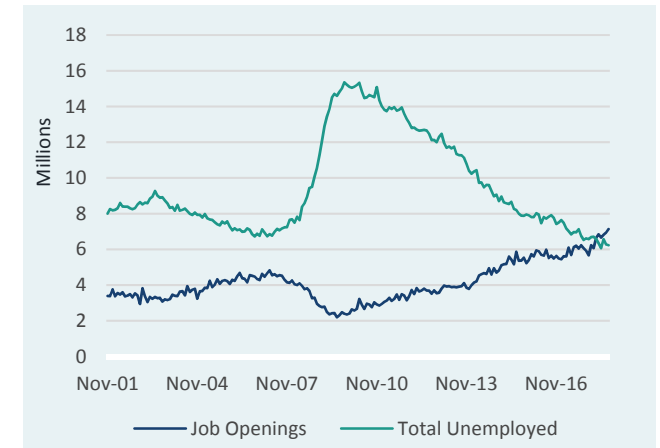
Source: FRED, as of 9/30/18

AVERAGE HOURLY EARNINGS (YOY)



Source: Bloomberg, as 9/30/18

JOB OPENINGS VS TOTAL UNEMPLOYED



Source: Bloomberg, as of 8/31/18

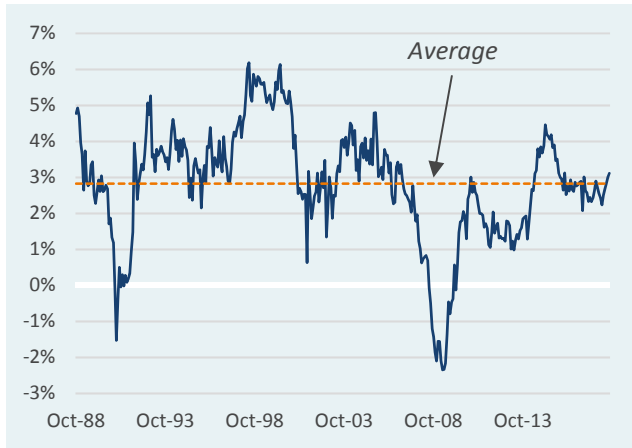
The consumer

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

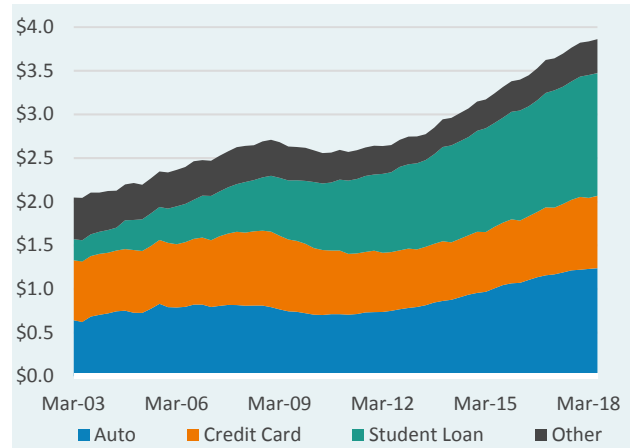
cost of living. However, a rise in market interest rates will impact various types of debt in different ways. For example, nearly all U.S. mortgage debt issued since the global financial crisis has been with fixed interest rates. Higher mortgage rates will have a greater impact on new home buyers, rather 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)



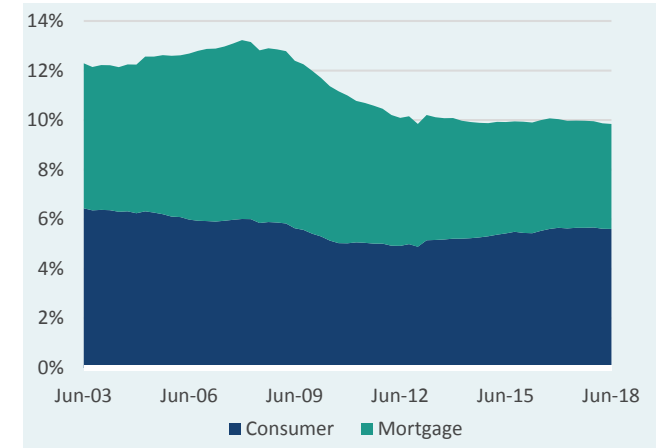
Source: Bloomberg, as of 8/31/18

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.

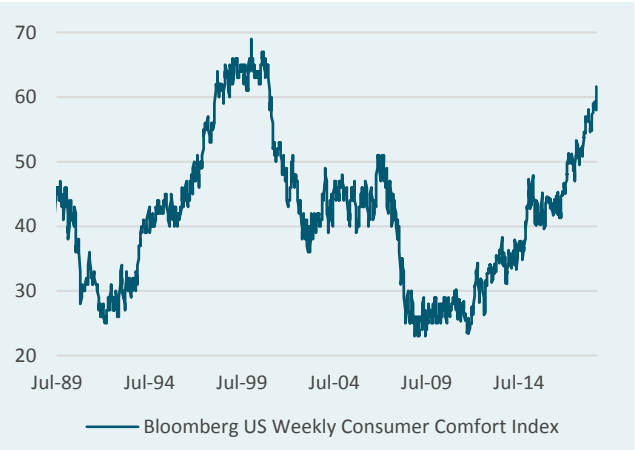
The Bloomberg U.S. Weekly Consumer Confidence Index has surpassed its 17-year high of 59.3, reflecting a rosy outlook

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.

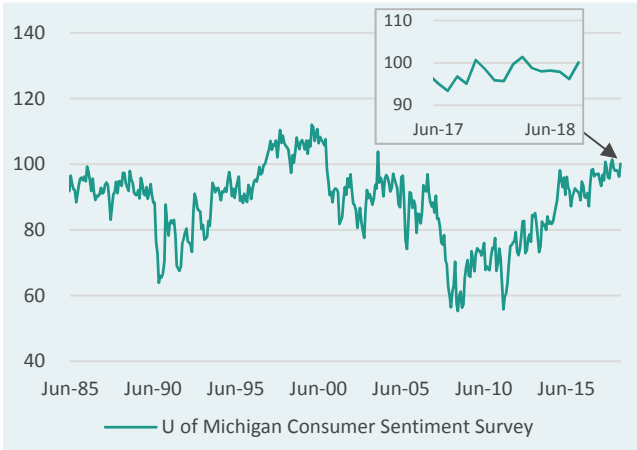
Consumers and business are confident about the future

CONSUMER COMFORT INDEX



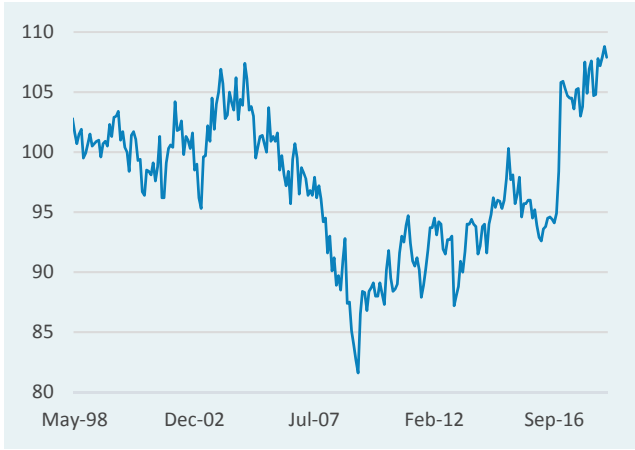
Source: Bloomberg, as of 9/30/18 (see Appendix)

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

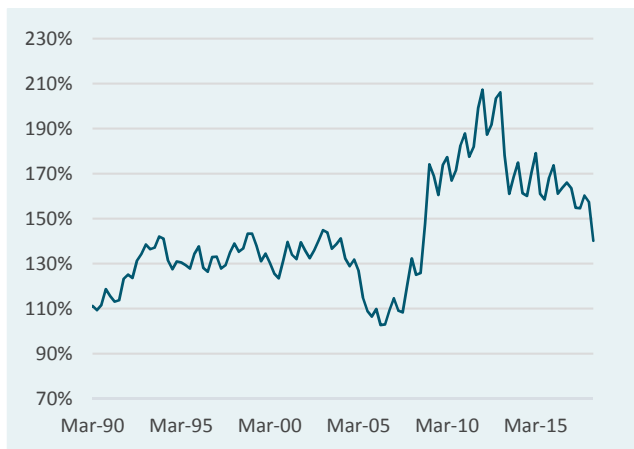
Single-family home prices appreciated at a strong pace. As of July, the Case-Shiller National Home Price Index was up 4.7% year-to-date. Over the past 5 years home prices have risen 5.3% per annum, outpacing wage growth and likely creating difficulties for those planning new purchases.

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



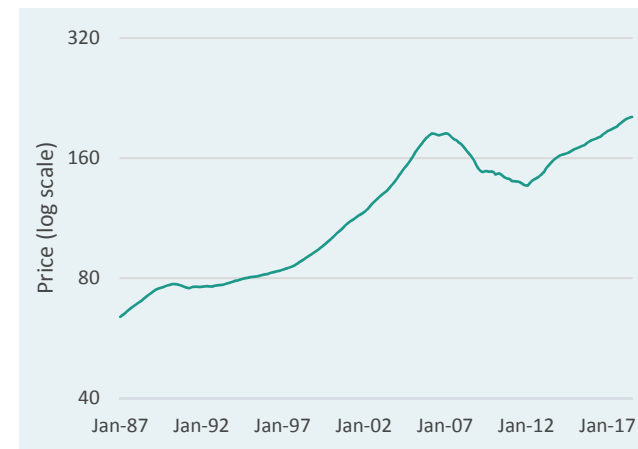
Source: Bloomberg, as of 6/30/18

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

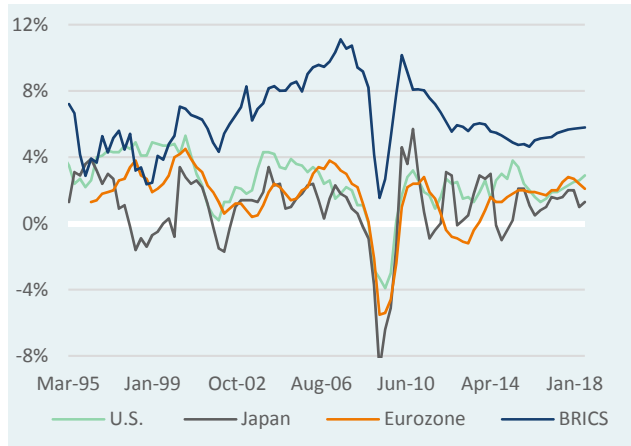
While U.S. economic growth improved, international growth remained moderate. In the Eurozone, real GDP rose 2.1% YoY in Q2, down from 2.4% in Q1. In addition to slowing growth, political uncertainty in Italy and less stimulus from the European Central Bank has clouded the economic outlook. The political 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.

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

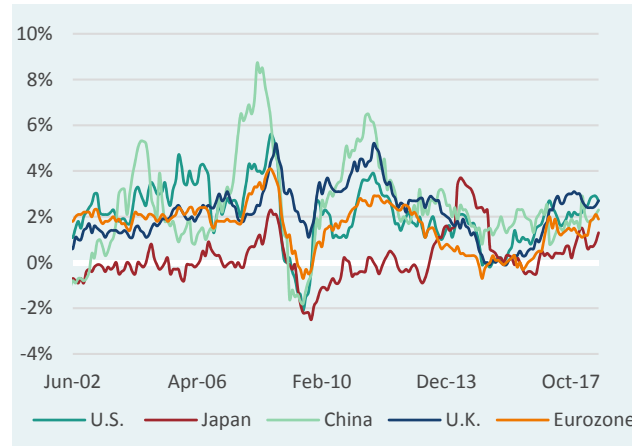
Synchronized global growth has moderated

REAL GDP GROWTH (YOY)



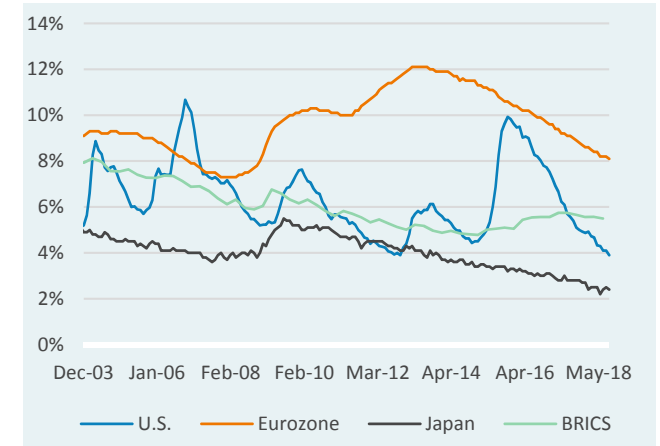
Source: Bloomberg, as of 6/30/18

INFLATION (CPI YOY)



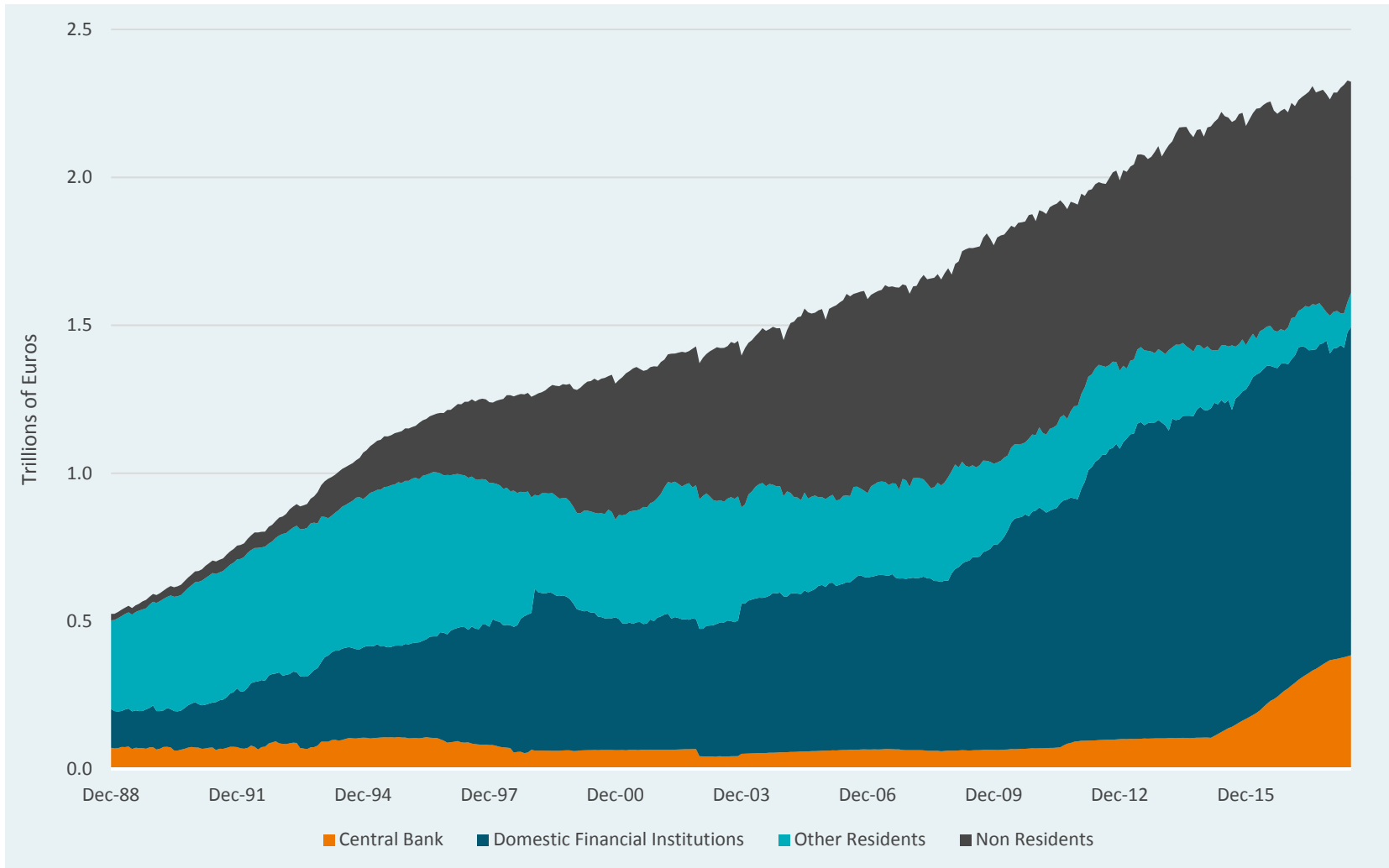
Source: Bloomberg, as of 8/31/18

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

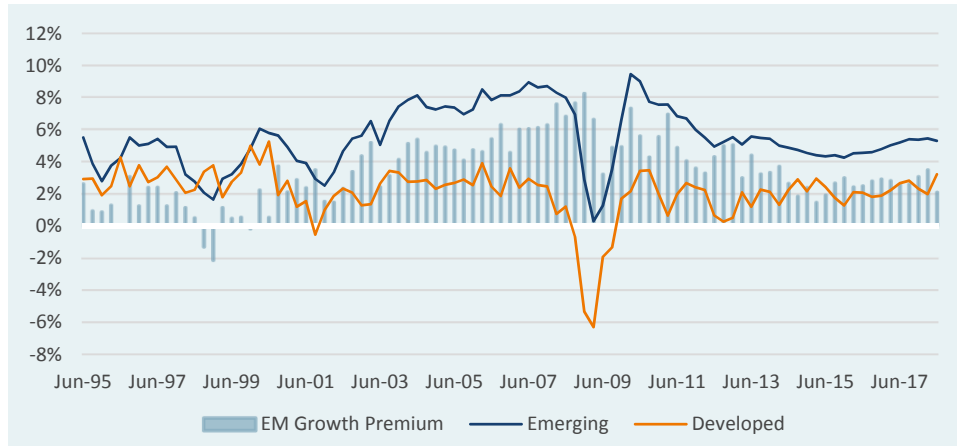
Emerging economies

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.

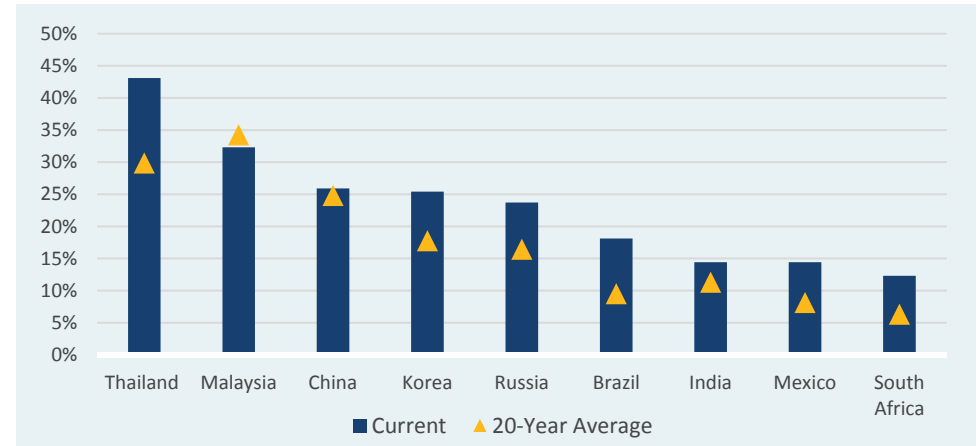
Economic contagion fears seem overblown

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

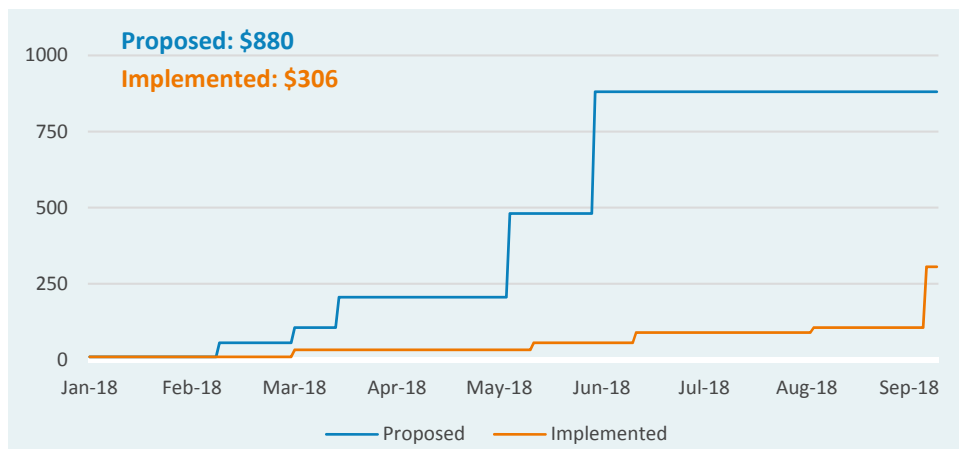
U.S.-China trade

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 sides 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

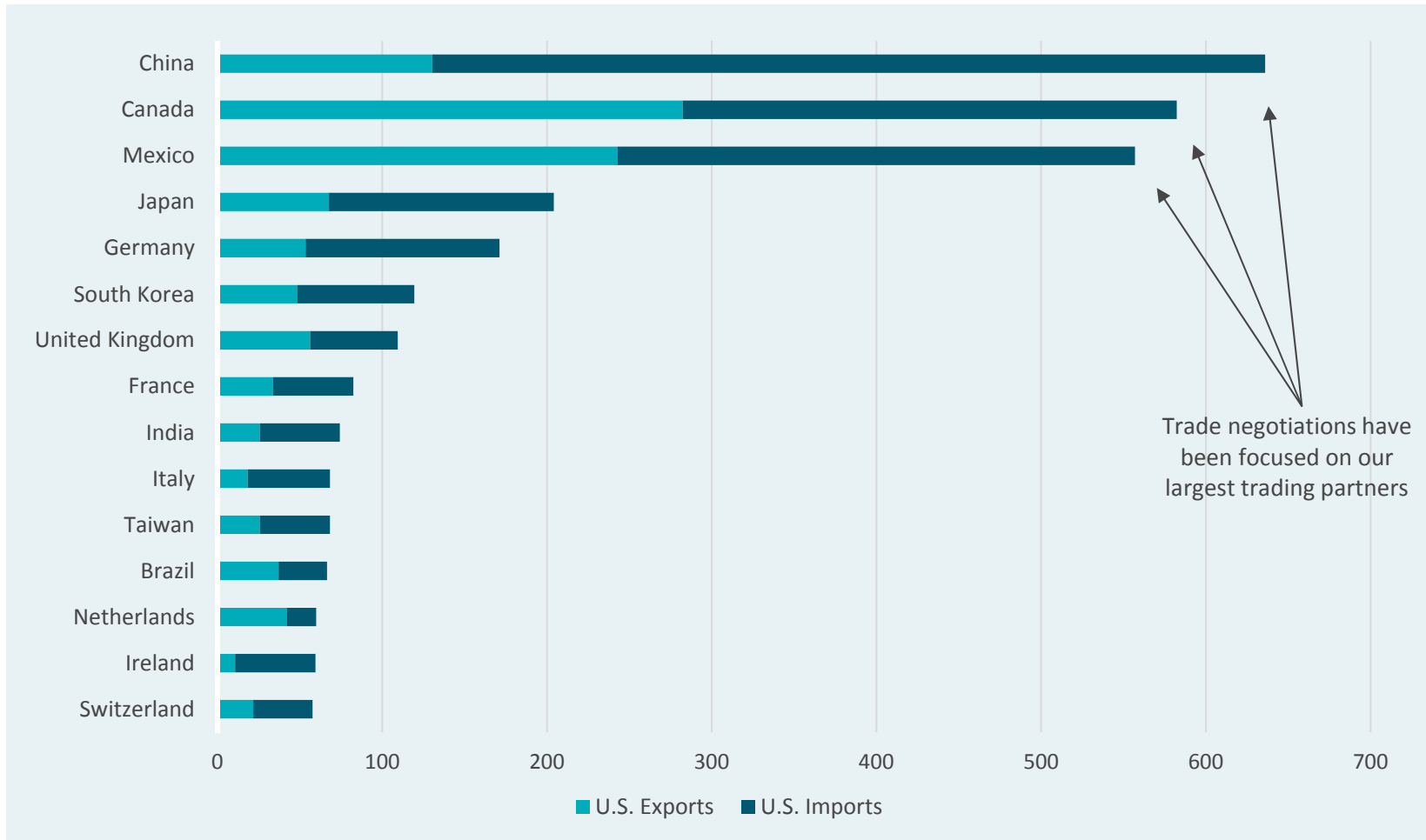
1-YEAR EQUITY PRICE MOVEMENT (INDEXED TO 100)



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

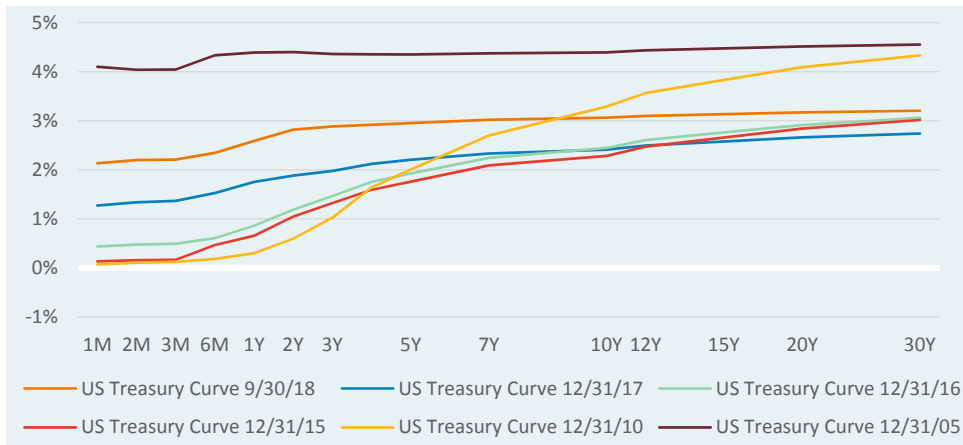
- The Federal Reserve raised the target range for the fed funds rate by 0.25%, to a range of 2.00%-2.25%. The odds for a December rate hike were 78%, as of October 8th.
- Fixed income yields around the world moved slightly higher during the quarter. The U.S. Treasury yield rose to a 7-year high of 3.23%, 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%

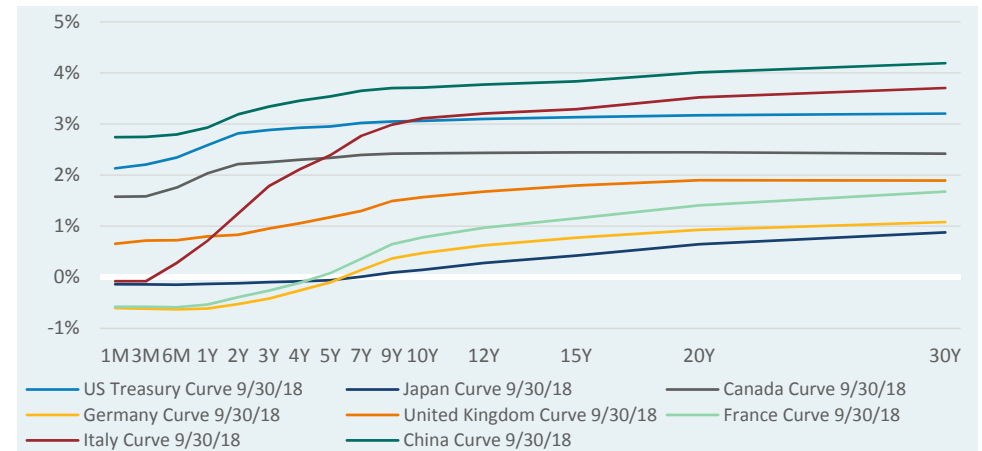
Source: Bloomberg, as of 9/30/18

Yield environment

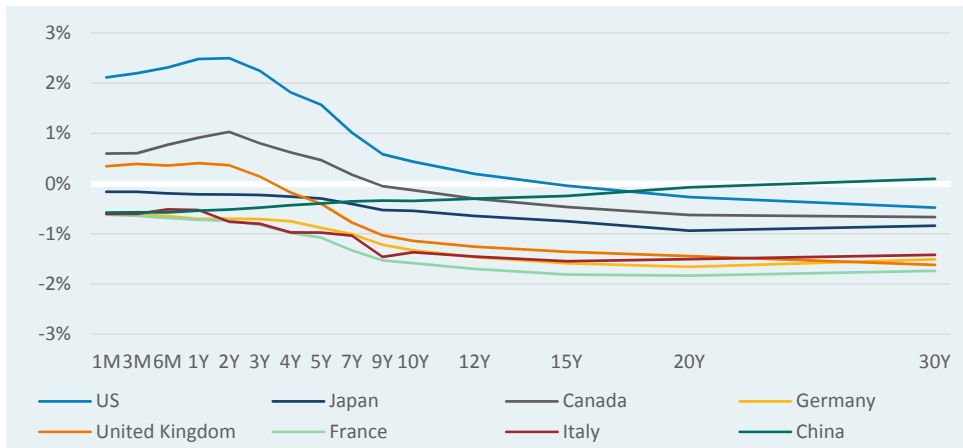
U.S. YIELD CURVE



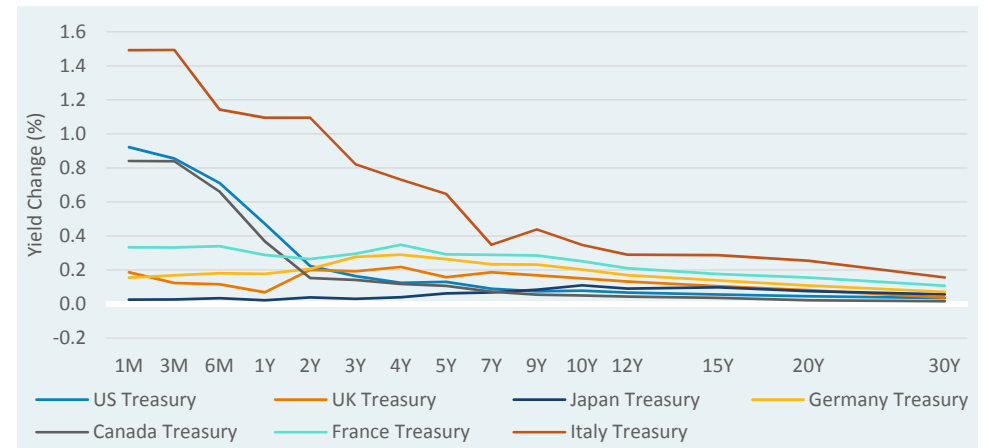
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/18

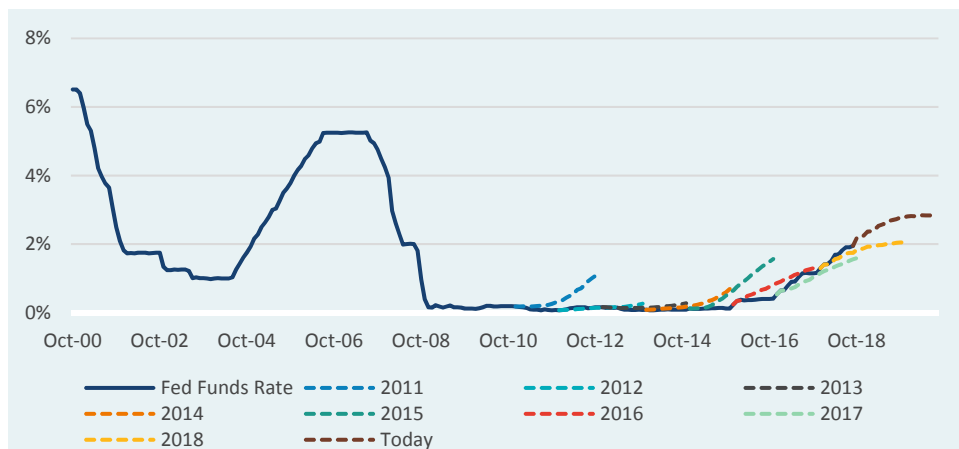
Fed tightening vs. expectations

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

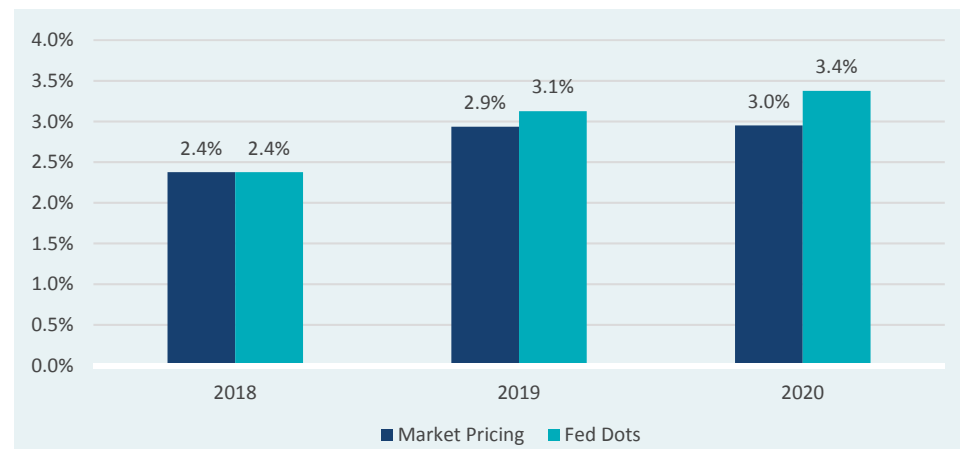
expectations. From 2010 to 2015, the market consistently overestimated when and by how much the Fed would hike rates. However, beginning in 2016 the Fed has been more aggressive than the market expected. Given the current differences between market pricing and Fed expectations, this trend has the potential 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

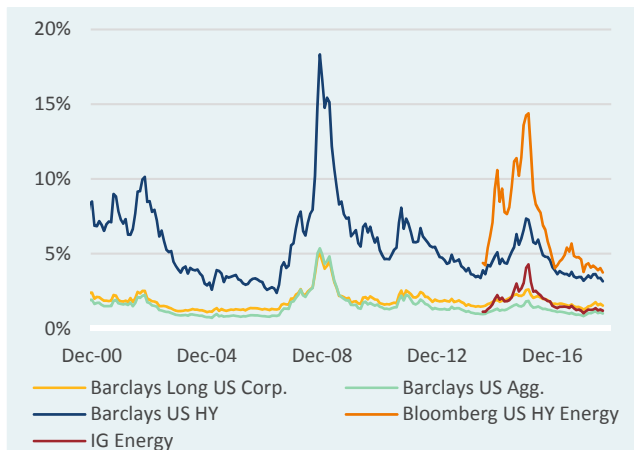
Spreads in both bank loans and high yield credit are well below their historical averages. Loans are outperforming high yield bonds for only the second time in the last 13 years. Bank loans have limited duration risk due to their floating-rate nature, which is a quality that some investors have seen 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.

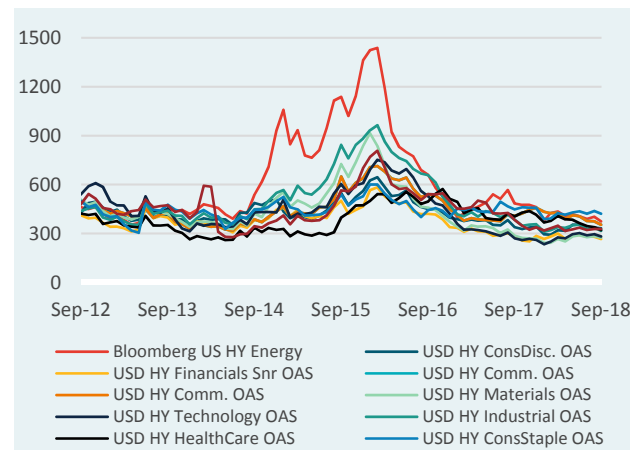
Credit spreads are tight across the capital structure

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

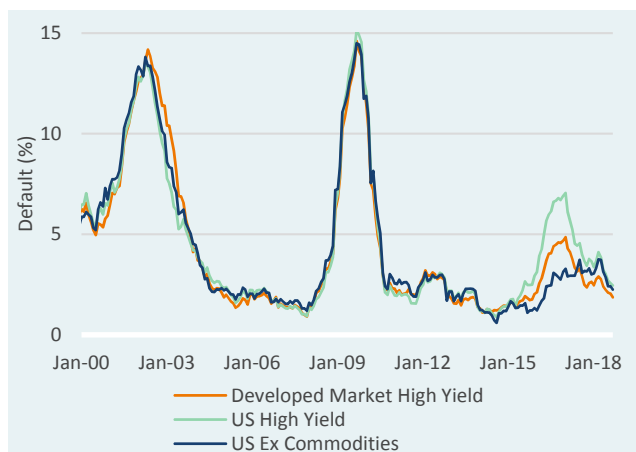
Default activity has been low and stable in the U.S. credit market. The par-weighted default rate remains below its long-term average of 3.0-3.5%, currently at 2.0% for high yield bonds. Total default activity in the last six months encompassed five defaults and \$3.8 billion in affected bonds and loans,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

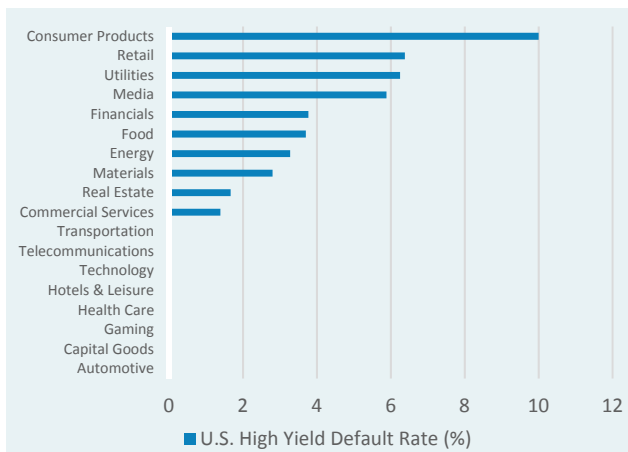
High yield new issue activity has totaled \$175 billion so far this year, which is down 35% over the same period a year ago. Meanwhile, issuance in leveraged loans totaled \$611 billion year-to-date. Notably, repricing activity represents 38% of total volume. New issue spreads continue to compress with 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.

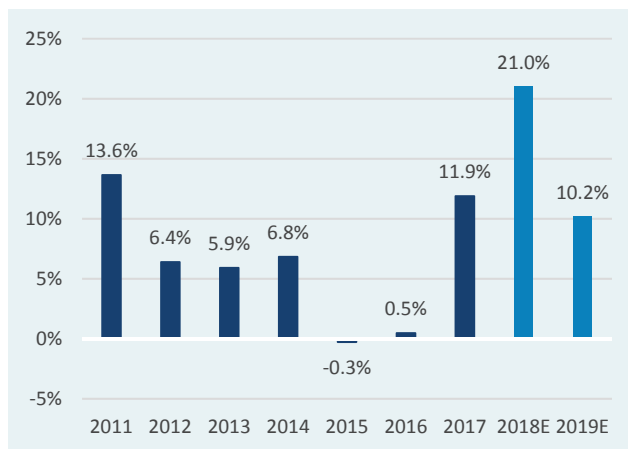
U.S. equities have risen with earnings growth and strong fundamentals, despite trade concerns

U.S. EQUITIES



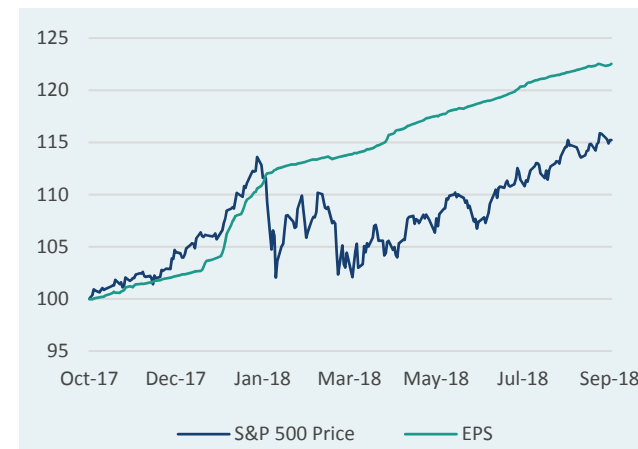
Source: Russell Investments, as of 9/30/18

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.

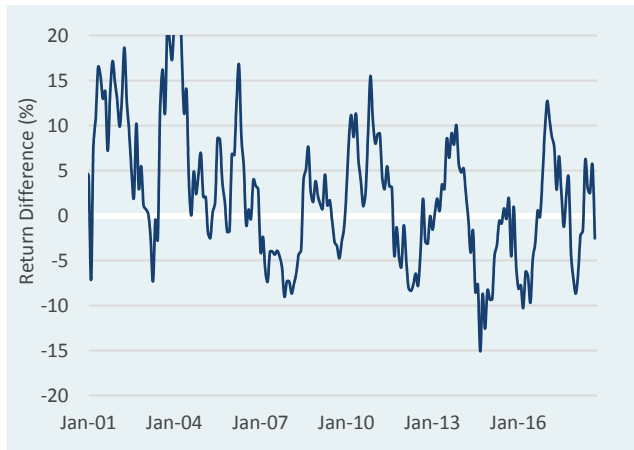
Growth stocks outpaced value stocks by a similar margin (Russell 1000 Growth 9.2% vs. Russell 1000 Value 5.7%).

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.

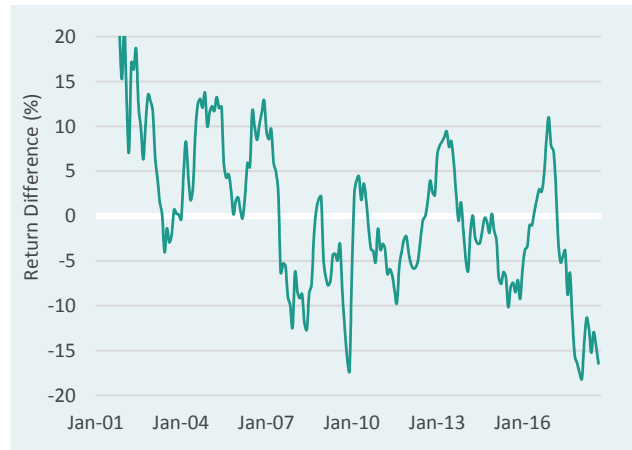
Size and value factor performance continues to frustrate investors. While the extent of underperformance is not anomalous, it may be testament to the long-term nature of factor investing. Unless an investor believes that these risk premia no longer exist, maintaining exposure and avoiding capitulation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

SMALL CAP VS LARGE CAP (YOY)



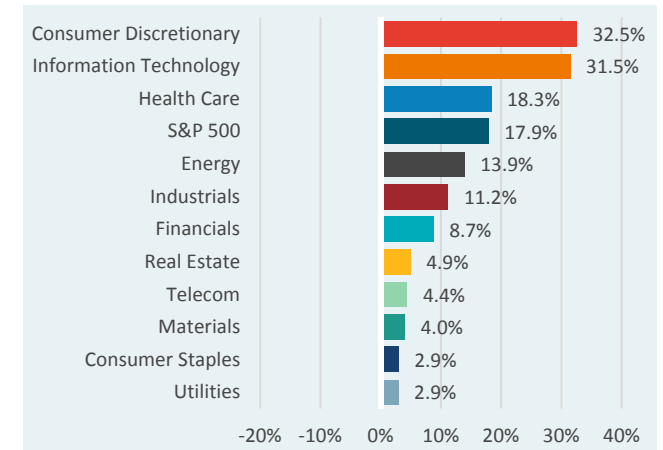
Source: FTSE, as of 9/30/18

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

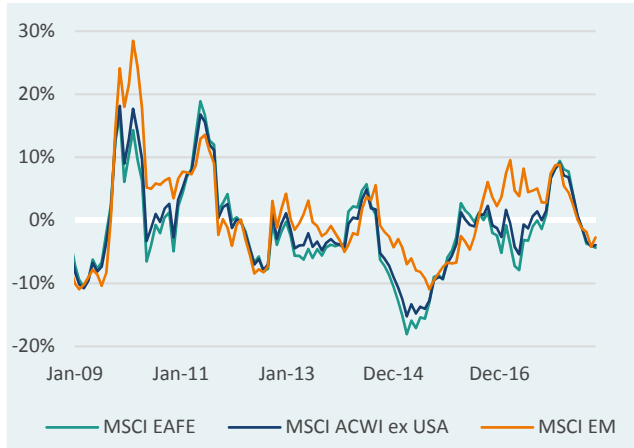
Unhedged international equities underperformed U.S. equities during Q3 (MSCI EAFE +1.4% vs. S&P 500 +7.7%). On a currency hedged basis, international equities delivered returns of 2.9%.

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.

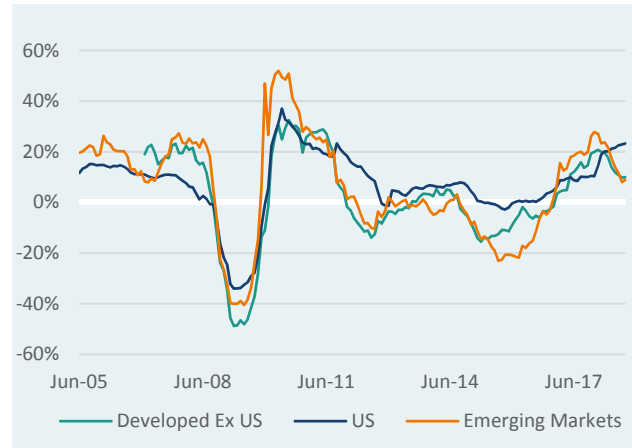
Differences in forward P/E multiples between U.S. and non-U.S. equities remained high. At quarter-end, this valuation gap relative to international developed equity ranked in the 96th percentile since 2005. The U.S.-EM valuation gap ranked in the 89th percentile over the same period.

EFFECT OF CURRENCY (1-YEAR ROLLING)



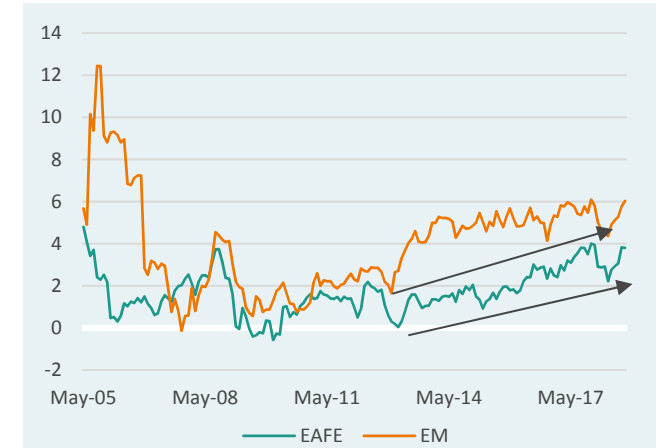
Source: MSCI, as of 9/30/18

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.

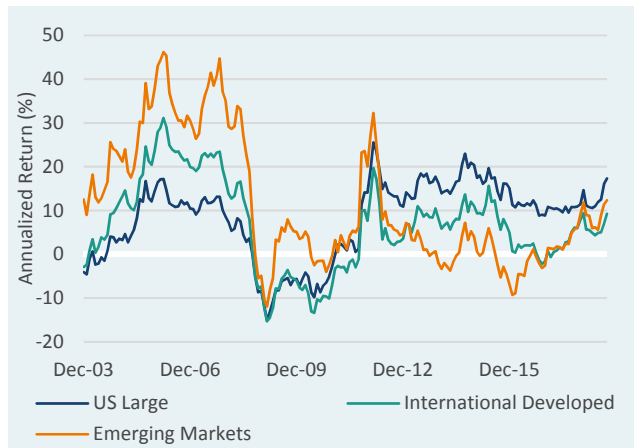
Developed markets are expected to grow less quickly in the coming years while emerging economic growth is expected to rise. A positive growth premium of emerging economies relative to developed economies has

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.

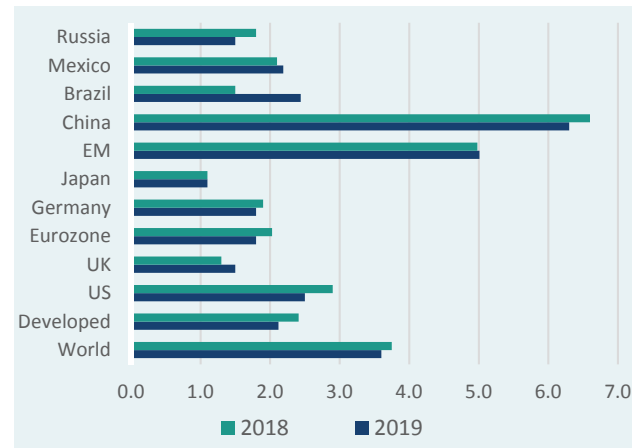
Conditions remain positive for medium-term EM equity performance, though volatility may persist

EQUITY PERFORMANCE (3YR ROLLING)



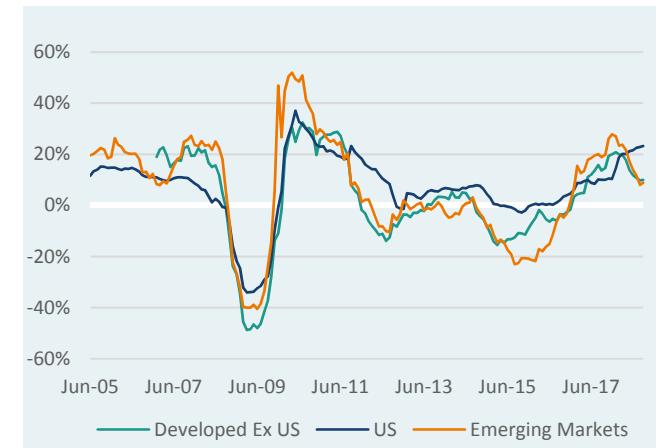
Source: Standard & Poor's, MSCI, as of 9/30/18

GDP GROWTH EXPECTATIONS (%)



Source: Bloomberg, as of 9/30/18

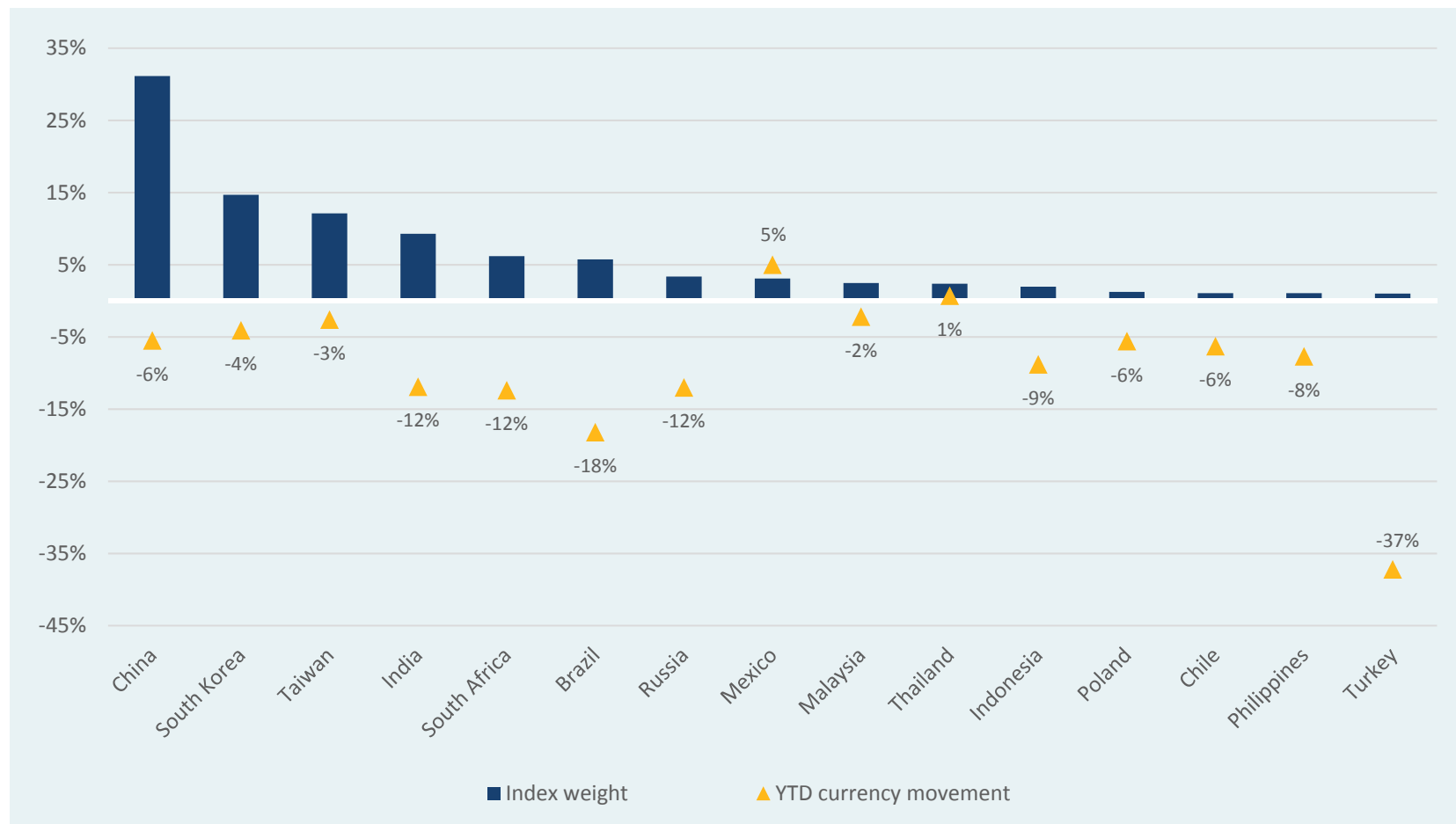
EARNINGS GROWTH (YOY)



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

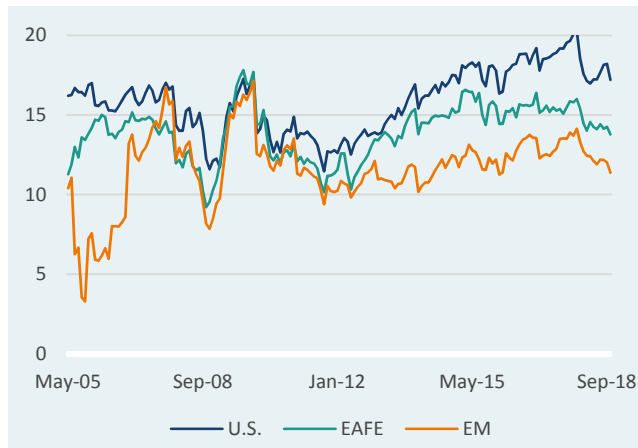
Source: MSCI, Bloomberg, as of 9/30/18

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.

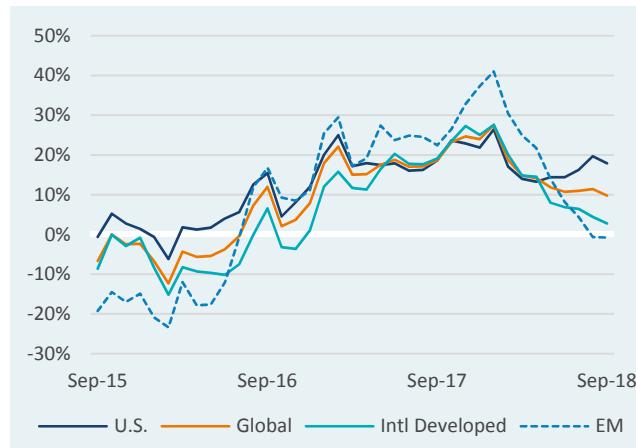
Looking at markets through our *carry, value, trend, and macro* lens, carry and value have improved through lower prices and higher underlying earnings. Trend has flattened out in international markets as equity performance has been rangebound year-to-date. The macro environment has weakened outside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

FORWARD P/E RATIOS



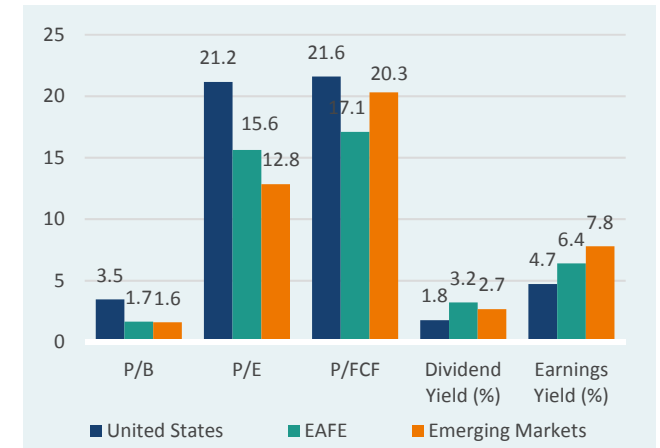
Source: MSCI, as of 9/30/18

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

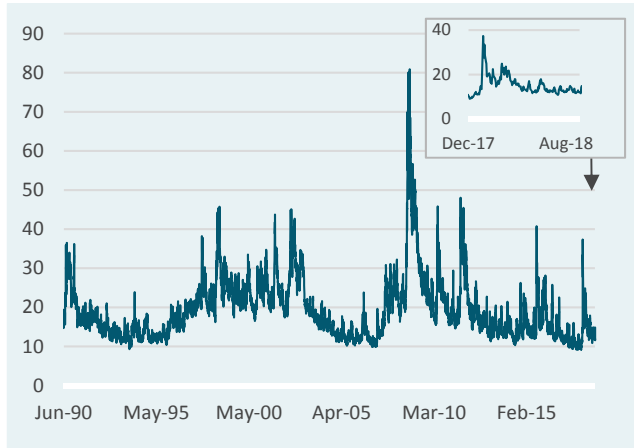
U.S. equity volatility remains muted. The VIX index ranged from 11 to 16 for the entirety of the quarter. Despite such an extended period of below-average volatility, it may be helpful to remember that the VIX Index has averaged 19.3 since 1990. Volatility has remain depressed or elevated for extended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

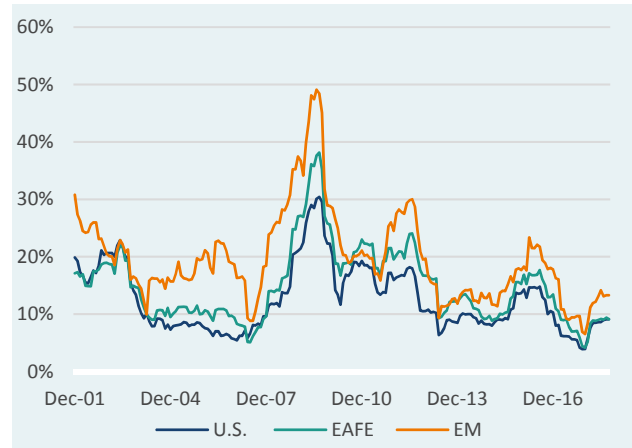
Global equity volatility remained below average

U.S. IMPLIED VOLATILITY (VIX)



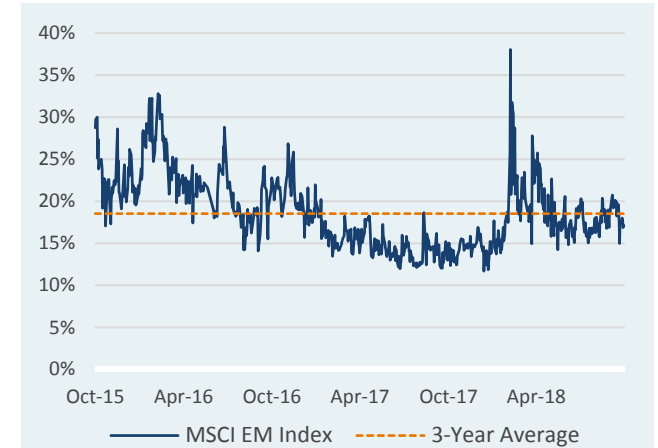
Source: CBOE, as of 9/30/18

REALIZED 1-YEAR ROLLING VOLATILITY



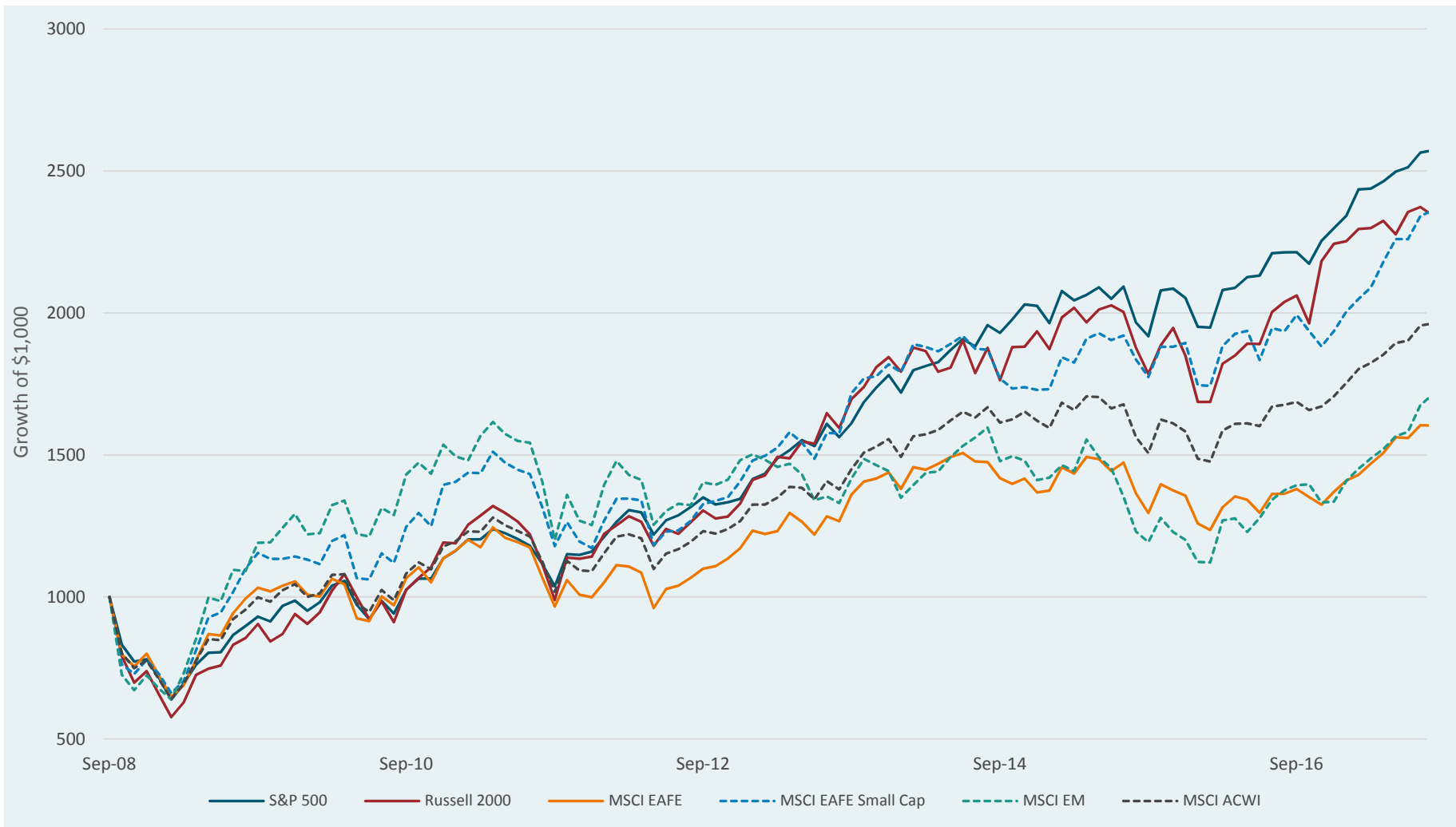
Source: Bloomberg, as of 9/30/18

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.

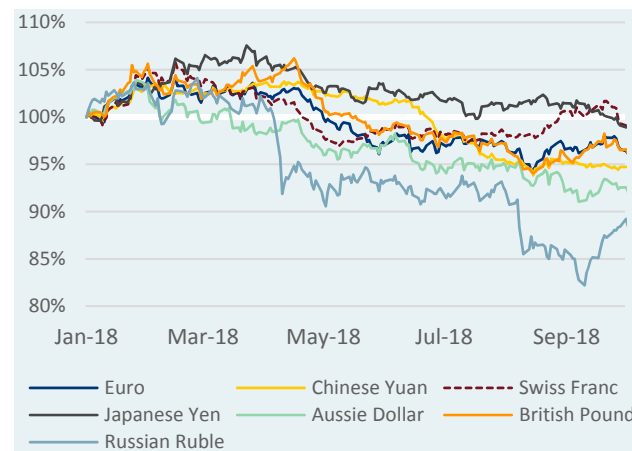
The U.S. dollar materially appreciated, reversing a multi-year downtrend

U.S. DOLLAR TRADE WEIGHTED INDEX



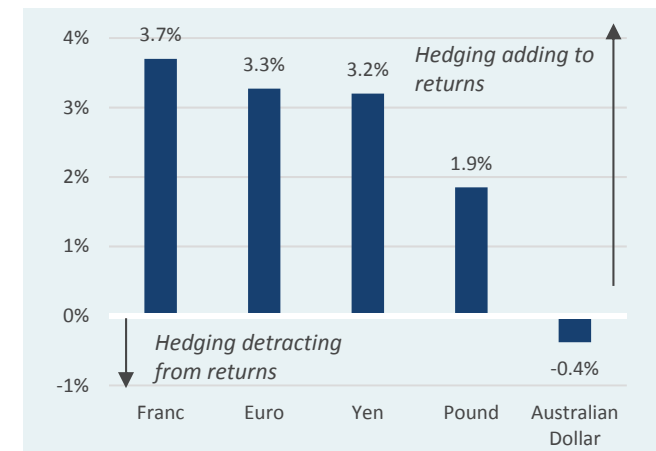
Source: Federal Reserve, as of 9/30/18

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

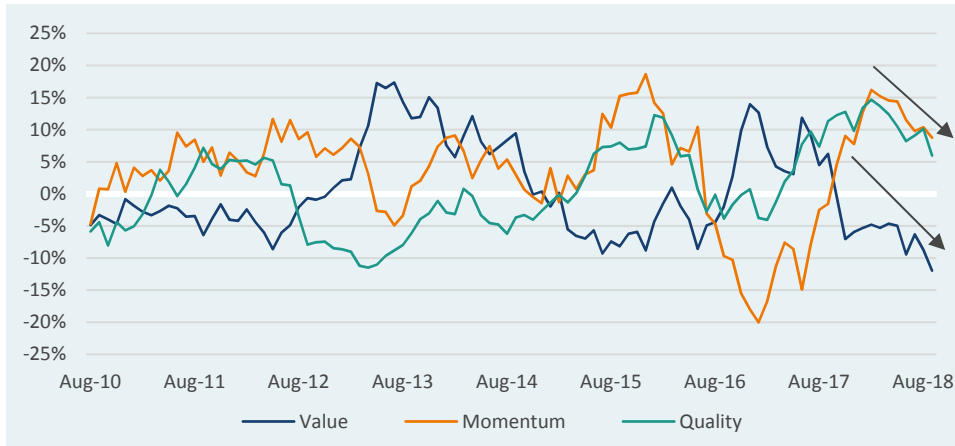
Alternative beta

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.

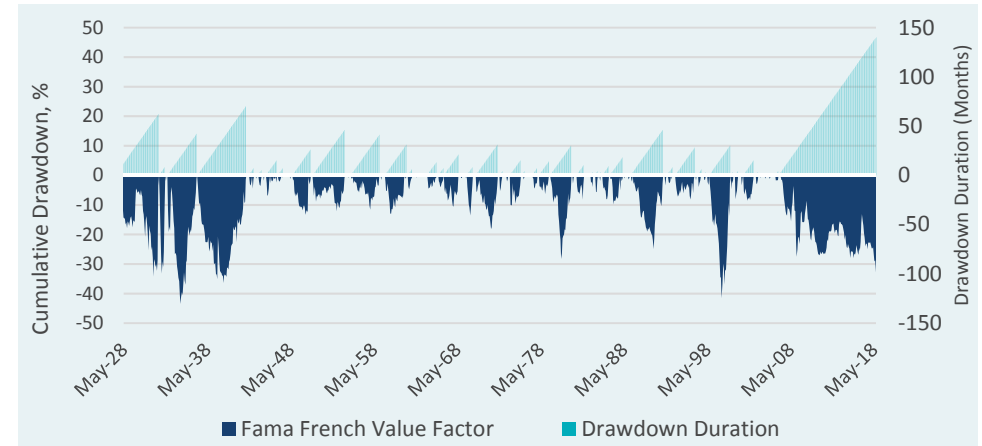
We reiterate our belief that alternative beta strategies are not “broken” per se, but instead have reflected extreme drawdowns in some factors and muted returns in others. We will continue to closely monitor these strategies and engage in frequent discussions with managers.

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



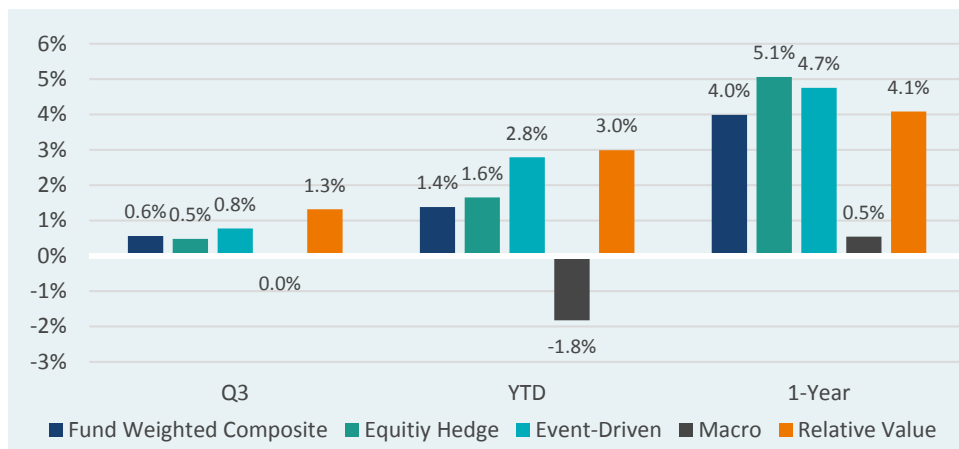
Source: Kenneth French Data Library, as of 8/31/18

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.

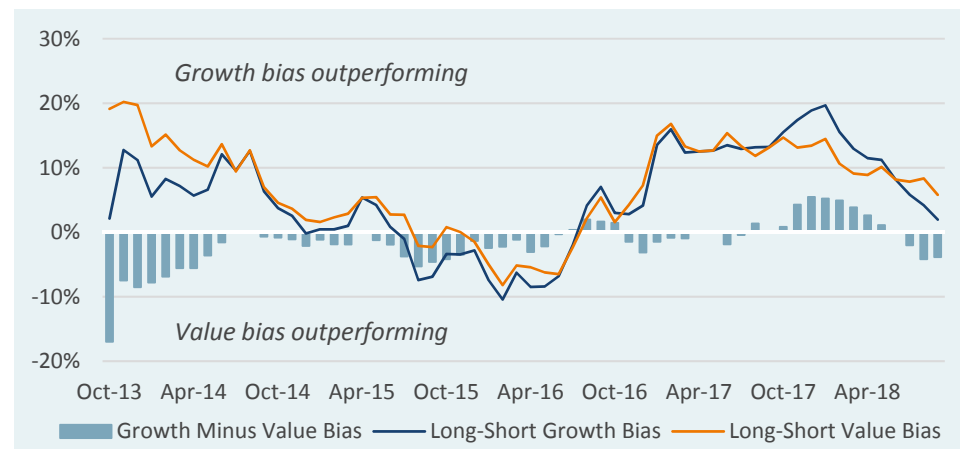
Within the fixed income markets, managers that focused on the credit and asset-backed securities sectors, in aggregate, were up about +1.5% for the quarter. Most other fixed income focused investment styles were modestly positive to flat for the period. Due to the relatively tight credit spreads, many 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)



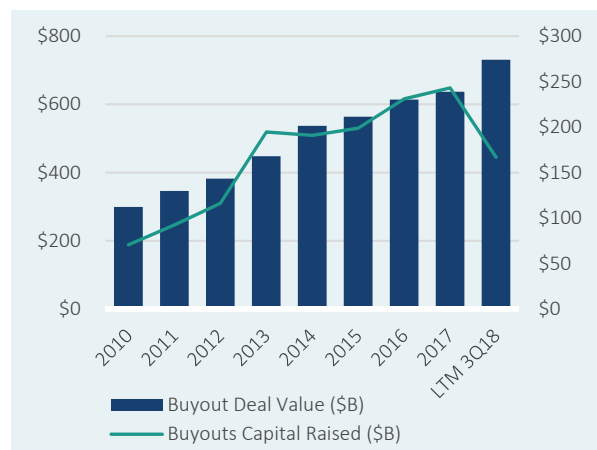
Source: HFRI, as of 9/30/18

Private markets

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

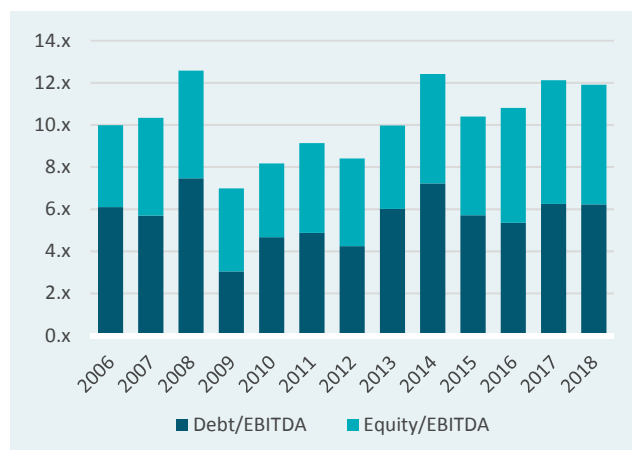
- Buyout activity has continued to increase in 2018. Through the third quarter buyouts are up 25% and 24% when measured by dollar value and number of transactions, respectively. The size of the average buyout is virtually unchanged from 2017 (\$142 million). Unlike deal flow, fund capital raising has 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



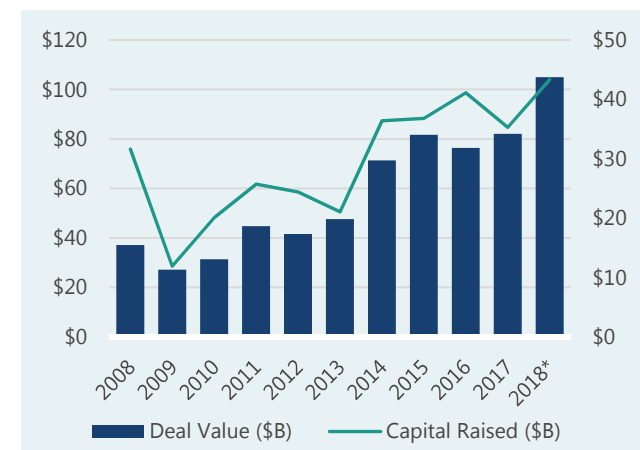
Source: PitchBook

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

WORST

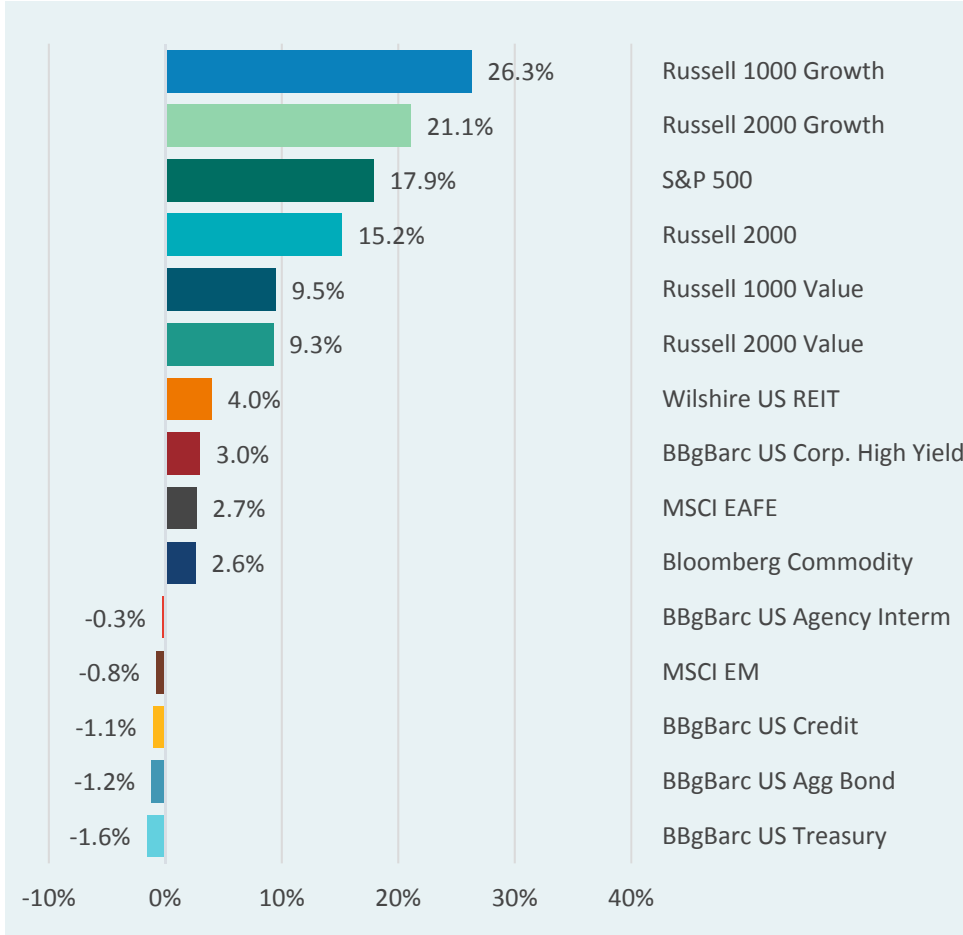
BEST

 Large Cap Equity	 Small Cap Growth	 Commodities
 Large Cap Value	 International Equity	 Real Estate
 Large Cap Growth	 Emerging Markets Equity	 Hedge Funds of Funds
 Small Cap Equity	 US Bonds	 60% MSCI ACWI/40% BBgBarc Global Bond
 Small Cap Value	 Cash	

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.

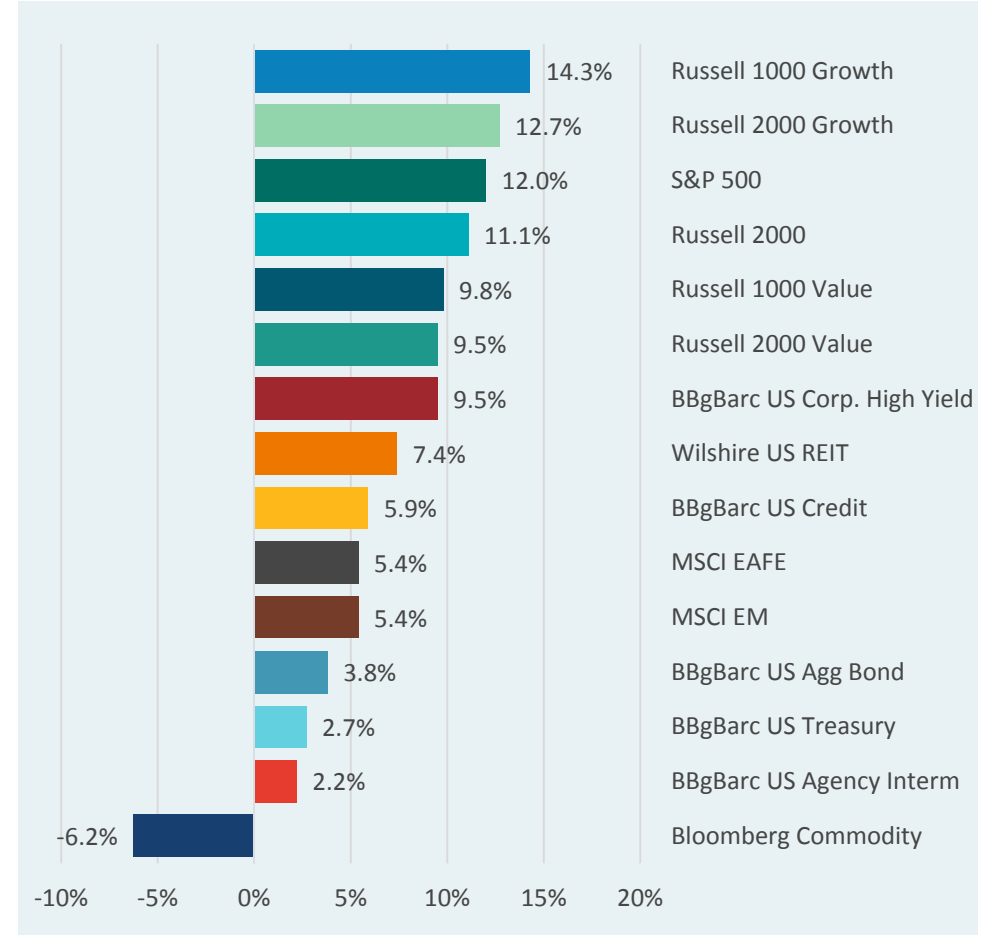
Major asset class returns

ONE YEAR ENDING SEPTEMBER



Source: Morningstar, as of 9/30/18

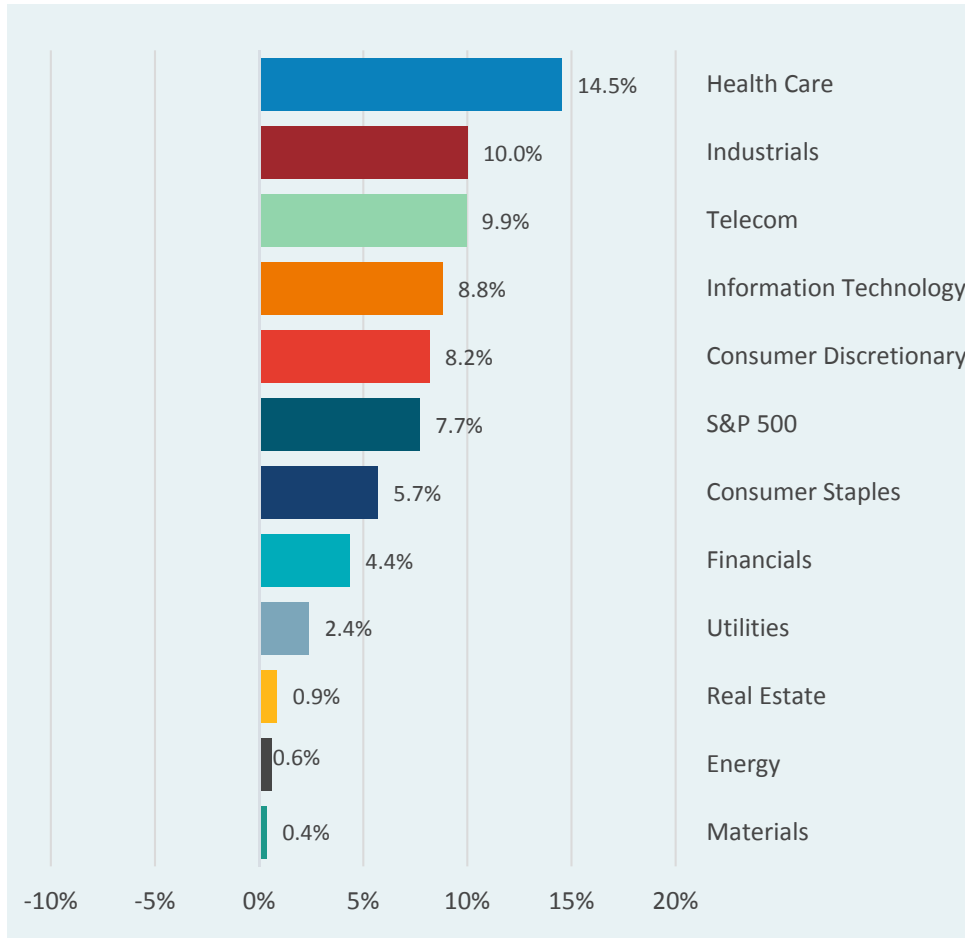
TEN YEARS ENDING SEPTEMBER



Source: Morningstar, as of 9/30/18

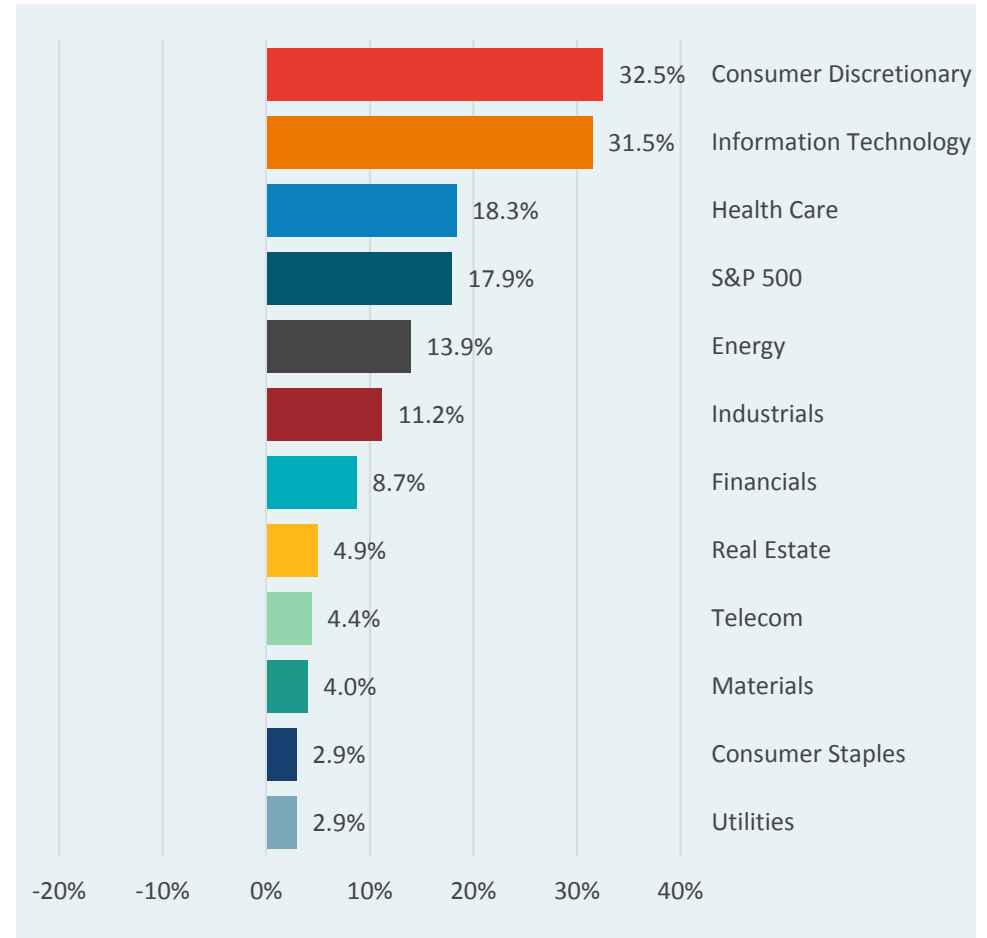
S&P 500 sector returns

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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Western States Office & Professional Employees Pension Fund

Investment Performance Review
Period Ending: September 30, 2018



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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.
- 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.

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.
- 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.
- 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.

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.
- 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.
- 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.

ASSET ALLOCATION ISSUES

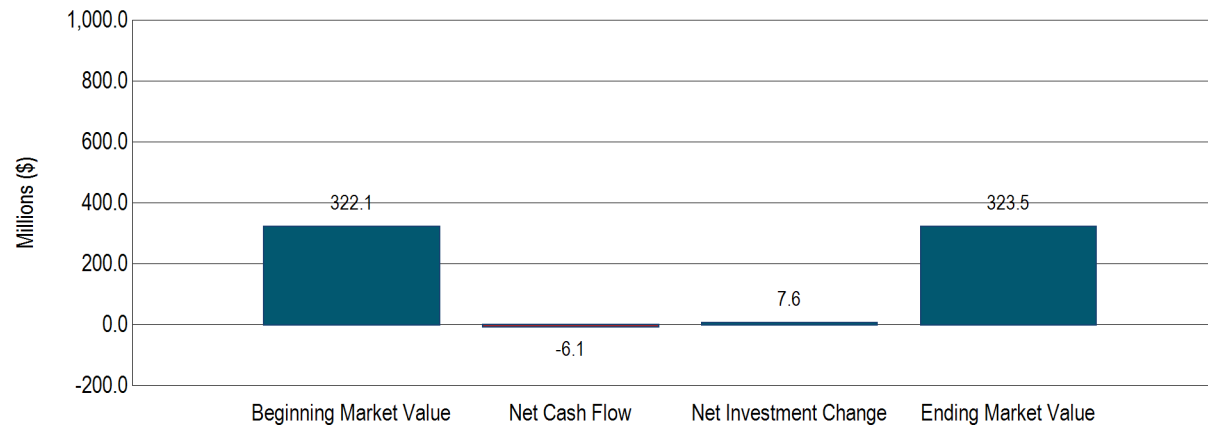
- Capital market returns have been largely flat-to-negative in 2018, with U.S. equities being the exception. Diversification remains important, but has been painful for investors in this environment.
- Trade conflicts between the U.S. and its trading partners appear to be mostly resolved. All eyes are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

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

Portfolio Reconciliation

	Last Three Months	Year-To-Date
Beginning Market Value	\$322,052,089	\$334,267,781
Net Cash Flow	-\$6,068,263	-\$23,773,498
Net Investment Change	\$7,551,032	\$13,040,576
Ending Market Value	\$323,534,859	\$323,534,859

Change in Market Value
Last Three Months



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

Total Fund

Cash Flow by Manager - Last Three Months

Period Ending: September 30, 2018

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
BlackRock Equity Index NL	\$33,510,780	\$0	\$0	\$0	\$2,583,160	\$36,093,940
INTECH US Adaptive Volatility	\$0	\$31,158,830	\$0	\$31,158,830	\$778,363	\$31,937,193
PanAgora US Small Cap Core Stock Selector	\$21,098,333	\$0	-\$2,300,000	-\$2,300,000	\$670,039	\$19,468,372
INTECH US Managed Volatility LLC	\$30,291,072	\$0	-\$31,153,780	-\$31,153,780	\$862,708	\$0
WCM Focused International Growth Fund, L.P.	\$29,169,064	\$0	\$0	\$0	\$891,685	\$30,060,749
Causeway International Value Ins	\$25,117,900	\$0	-\$3,000,000	-\$3,000,000	\$309,439	\$22,427,340
Brandes International Small Cap Equity	\$6,525,528	\$0	\$0	\$0	-\$138,646	\$6,386,882
Loomis Sayles Core Plus	\$65,304,175	\$0	\$0	\$0	\$358,568	\$65,662,742
ASB Allegiance Real Estate	\$30,988,101	\$0	-\$76,500	-\$76,500	\$607,417	\$31,519,018
Invesco Real Estate II	\$44,613	\$0	\$0	\$0	-\$1,526	\$43,087
JPMorgan Special Situation Property	\$13,741,355	\$18,392	-\$52,934	-\$34,542	\$352,348	\$14,059,161
IFM Global Infrastructure (US) LP	\$10,321,868	\$0	-\$896,945	-\$896,945	\$612,571	\$10,037,494
JPMorgan IIF ERISA LP	\$8,519,428	\$0	\$0	\$0	\$0	\$8,519,428
Invesco Balanced-Risk Allocation	\$43,187,563	\$0	\$0	\$0	-\$335,093	\$42,852,470
US Bank Checking Account	\$1,032,919	\$11,002,417	-\$10,122,517	\$879,901	\$0	\$1,912,819
US Bank Clearing Account	\$3,199,390	\$8,791,980	-\$9,437,207	-\$645,227	\$0	\$2,554,164
Total	\$322,052,089	\$50,971,620	-\$57,039,882	-\$6,068,263	\$7,551,032	\$323,534,859

Loomis Sayles Full Discretion liquidated 3/21/2017. Loomis Sayles Core Plus funded 3/21/2017. Parametric liquidated 4/21/2017. Mellon Dynamic liquidated 5/5/2017. Grosvenor Institutional liquidated 4/30/2018. INTECH US Adaptive Volatility replaced INTECH US Managed Volatility on 8/3/2018. JP Morgan IIF ERISA market value as of 6/30/2018.

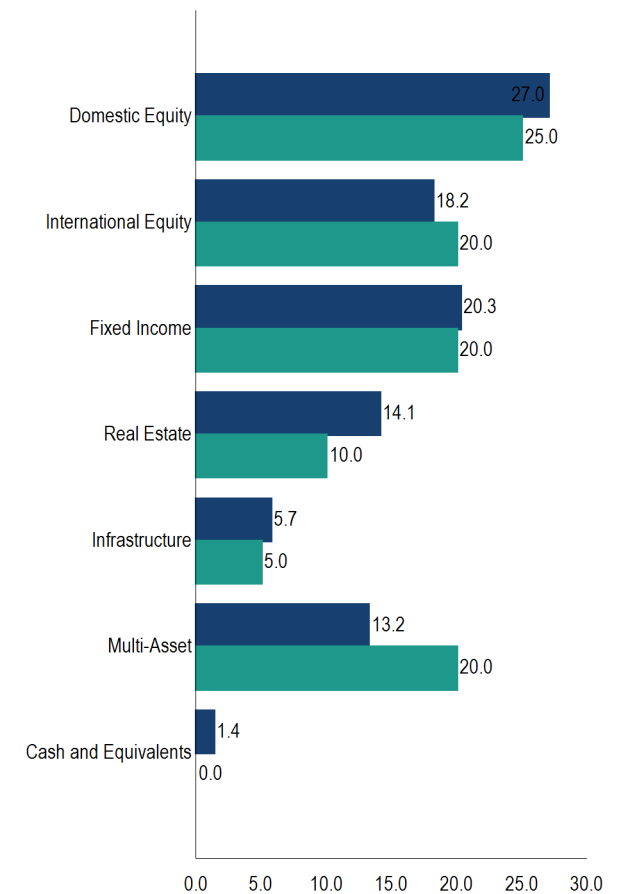
Total Fund

Executive Summary (Net of Fees)

Period Ending: September 30, 2018

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Fund	323,534,859	100.0	2.3	4.0	7.4	8.8	6.8	6.6
<i>Total Fund Policy Index</i>			2.8	2.7	6.0	8.3	6.4	6.3
<i>Target Asset Allocation Policy Index</i>			3.2	4.3	8.0	9.4	7.6	7.4
<i>InvestorForce Tft-Hrtly DB \$250mm-\$1B Net Rank</i>			79	61	70	84	85	91
Total Domestic Equity	87,499,504	27.0	5.5	11.0	16.4	15.9	13.0	11.5
<i>Dow Jones U.S. Total Stock Market</i>			7.1	10.6	17.6	17.0	13.4	12.0
<i>InvestorForce Tft-Hrtly DB US Eq Net Rank</i>			85	24	59	61	29	42
Total International Equity	58,874,971	18.2	1.8	-0.1	4.6	9.7	4.2	3.9
<i>Total Public Int'l Equity Benchmark (MSCI ACWI ex US IMI)</i>			0.4	-3.3	1.8	10.1	4.4	4.8
<i>InvestorForce Tft-Hrtly DB ex-US Eq Net Rank</i>			5	5	6	36	61	91
Total Fixed Income	65,662,742	20.3	0.5	-0.5	0.3	3.9	3.5	6.4
<i>Total Fixed Income Benchmark (BBgBarc Aggregate)</i>			0.0	-1.6	-1.2	1.3	2.2	3.8
<i>InvestorForce Tft-Hrtly DB US Fix Inc Net Rank</i>			50	54	40	15	17	11
Total Real Estate	45,621,265	14.1	2.1	6.2	8.0	7.1	9.4	5.2
<i>NCREIF-ODCE</i>			2.1	6.5	8.7	8.8	10.7	5.6
Total Infrastructure	18,556,922	5.7	3.4	8.1	12.2	9.9	6.8	--
<i>CPI + 5%</i>			1.4	6.2	7.4	7.1	6.6	--
Total Multi-Asset	42,852,470	13.2	-0.8	-0.7	4.3	6.3	5.0	7.1
<i>60% MSCI ACWI Net/40% FTSE WGBI</i>			1.9	1.3	5.2	8.7	5.3	6.0
<i>eV Global Balanced Net Rank</i>			99	82	33	99	99	40
Total Cash	4,466,983	1.4	0.0	0.0	0.0	3.1	-2.2	--

Actual vs Target Allocation (%)



Actual Policy

Policy Index: 45% MSCI World, 25% BBgBarc Aggregate, 10% NCREIF-ODCE, 20%(60% MSCI ACWI Net/40% CITI WGBI). Target Asset Allocation Policy Index: 25% Dow Jones US Total Stock, 20% MSCI ACWI ex US IMI, 20% BBgBarc Aggregate, 10% NCREIF-ODCE, 5% CPI + 5%, and 20% (60% MSCI ACWI Net/40% CITI WGBI). Data prior to 3Q 2015 is from previous consultant.

Total Fund

Risk Analysis - 3 & 5 Year (Net of Fees)

Period Ending: September 30, 2018

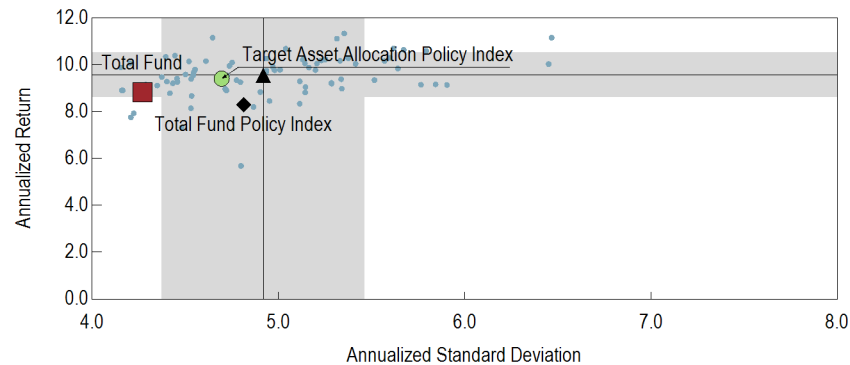
3 Year

	Anlzd Standard Deviation	Ann Excess BM Return	Anlzd Alpha	Beta	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio	Information Ratio	Tracking Error	Sharpe Ratio
Total Fund	4.27%	0.54%	1.70%	0.86	0.94	96.73%	72.91%	0.43	1.24%	1.87
Total Fund Policy Index	4.81%	0.00%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	1.54
Target Asset Allocation Policy Index	4.70%	1.11%	1.42%	0.96	0.97	105.63%	82.89%	1.43	0.78%	1.82

5 Year

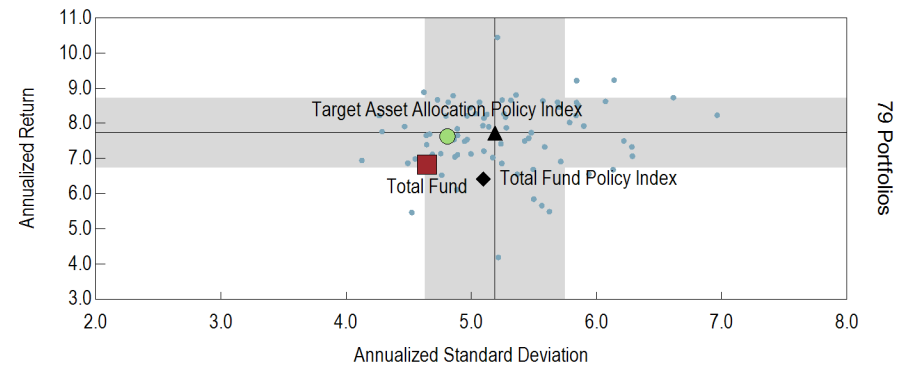
	Anlzd Standard Deviation	Ann Excess BM Return	Anlzd Alpha	Beta	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio	Information Ratio	Tracking Error	Sharpe Ratio
Total Fund	4.65%	0.41%	1.13%	0.89	0.95	94.63%	82.02%	0.33	1.23%	1.35
Total Fund Policy Index	5.10%	0.00%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	1.15
Target Asset Allocation Policy Index	4.81%	1.21%	1.67%	0.93	0.97	103.84%	81.97%	1.35	0.90%	1.48

3 Year



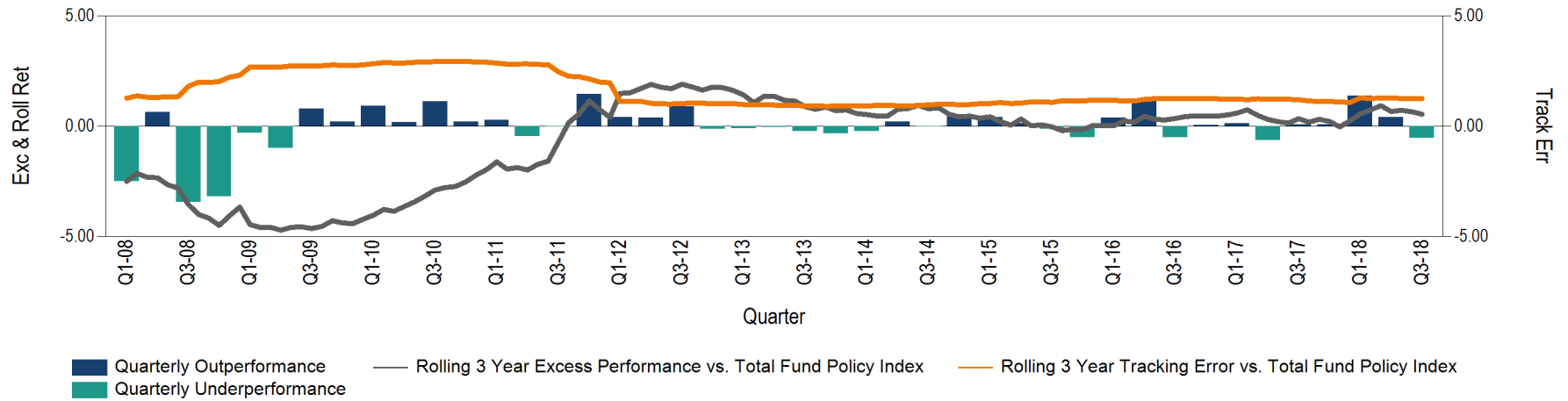
- Total Fund
- ◆ Total Fund Policy Index
- Target Asset Allocation Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Tft-Hrtly DB \$250mm-\$1B Net

5 Year

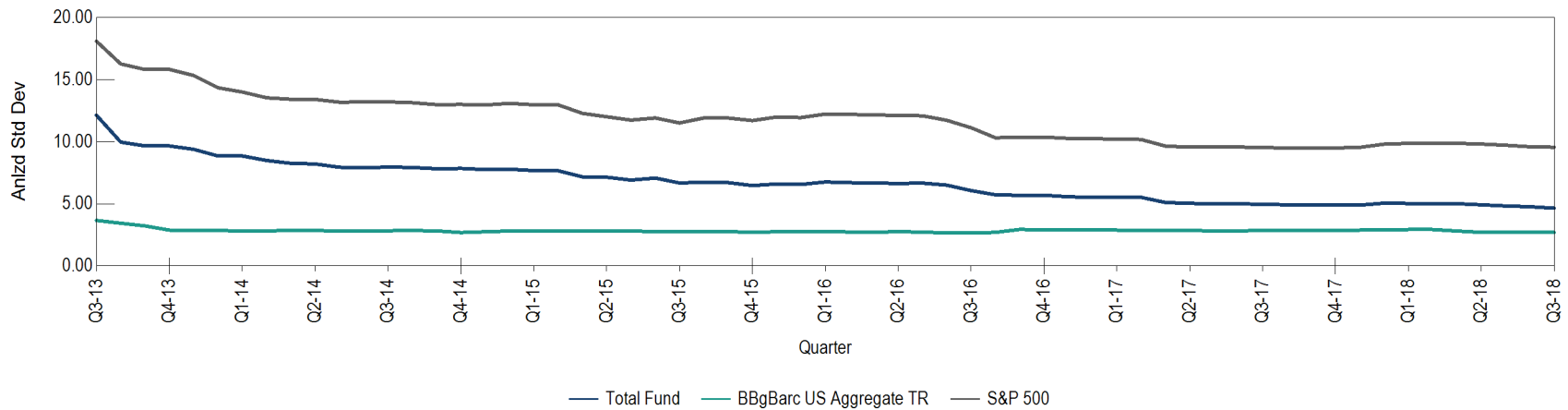


- Total Fund
- ◆ Total Fund Policy Index
- Target Asset Allocation Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Tft-Hrtly DB \$250mm-\$1B Net

Rolling Annualized Excess Performance and Tracking Error



Rolling 5 Year Annualized Standard Deviation



Total Fund
Executive 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	323,534,859	100.0	2.3	4.0	7.4	8.8	6.8	6.6	13.0	6.9	0.9	5.1	13.5
<i>Total Fund Policy Index</i>			2.8	2.7	6.0	8.3	6.4	6.3	13.5	5.8	1.1	4.7	14.3
<i>Target Asset Allocation Policy Index</i>			3.2	4.3	8.0	9.4	7.6	7.4	13.7	7.2	1.3	7.1	14.6
<i>InvestorForce Tft-Hrtly DB \$250mm-\$1B Net Rank</i>			79	61	70	84	85	91	64	80	39	70	79
Domestic Equity	87,499,504	27.0											
BlackRock Equity Index NL	36,093,940	11.2	7.7	10.5	17.9	17.3	13.9	--	21.8	11.9	1.3	13.8	32.4
S&P 500			7.7	10.6	17.9	17.3	13.9	--	21.8	12.0	1.4	13.7	32.4
<i>eV US Large Cap Core Equity Net Rank</i>			29	24	29	15	16	--	46	21	37	33	43
INTECH US Adaptive Volatility	31,937,193	9.9	4.9	7.9	12.4	13.1	--	--	21.4	5.7	3.2	15.5	--
Russell 1000			7.4	10.5	17.8	17.1	--	--	21.7	12.1	0.9	13.2	--
<i>eV US Large Cap Core Equity Net Rank</i>			88	61	82	85	--	--	51	84	18	14	--
PanAgora US Small Cap Core Stock Selector	19,468,372	6.0	2.9	16.7	19.6	17.0	--	--	10.8	20.3	--	--	--
Russell 2000			3.6	11.5	15.2	17.1	--	--	14.6	21.3	--	--	--
<i>eV US Small Cap Core Equity Net Rank</i>			68	14	23	38	--	--	83	41	--	--	--
International Equity	58,874,971	18.2											
WCM Focused International Growth Fund, L.P.	30,060,749	9.3	3.1	5.6	11.3	--	--	--	31.1	--	--	--	--
MSCI ACWI ex USA			0.7	-3.1	1.8	--	--	--	27.2	--	--	--	--
<i>eV ACWI ex-US All Cap Growth Eq Net Rank</i>			1	8	7	--	--	--	71	--	--	--	--
Causeway International Value Ins	22,427,340	6.9	1.2	-4.6	0.3	--	--	--	27.2	--	--	--	--
MSCI EAFE			1.4	-1.4	2.7	--	--	--	25.0	--	--	--	--
<i>Foreign Large Value MStar MF Rank</i>			41	67	41	--	--	--	14	--	--	--	--
Brandes International Small Cap Equity	6,386,882	2.0	-2.1	-8.1	-6.9	--	--	--	11.6	--	--	--	--
S&P Developed Ex-U.S. SmallCap			-0.3	-2.2	3.9	--	--	--	32.4	--	--	--	--
<i>eV ACWI ex-US Small Cap Equity Net Rank</i>			66	91	94	--	--	--	99	--	--	--	--
Fixed Income	65,662,742	20.3											
Loomis Sayles Core Plus	65,662,742	20.3	0.5	-0.5	0.3	--	--	--	--	--	--	--	--
BBgBarc US Aggregate TR			0.0	-1.6	-1.2	--	--	--	--	--	--	--	--
<i>eV US Core Plus Fixed Inc Net Rank</i>			34	14	10	--	--	--	--	--	--	--	--

Policy Index: 45% MSCI World, 25% BBgBarc Aggregate, 10% NCREIF-ODCE, 20%(60% MSCI ACWI Net/40% CITI WGBI). Target Asset Allocation Policy Index: 25% Dow Jones US Total Stock, 20% MSCI ACWI ex US IMI, 20% BBgBarc Aggregate, 10% NCREIF-ODCE, 5% CPI + 5%, and 20% (60% MSCI ACWI Net/40% CITI WGBI). Loomis Sayles Core Plus replaced Loomis Sayles Full Discretion 3/21/2017. Parametric liquidated 4/21/2017. Mellon Dynamic liquidated 5/5/2017. Grosvenor Institutional liquidated 4/30/2018. INTECH US Adaptive Volatility replaced INTECH US Managed Volatility on 8/3/2018. Data prior to 3Q 2015 is from previous consultant.

Total Fund
Executive Summary (Net of Fees)

Period Ending: September 30, 2018

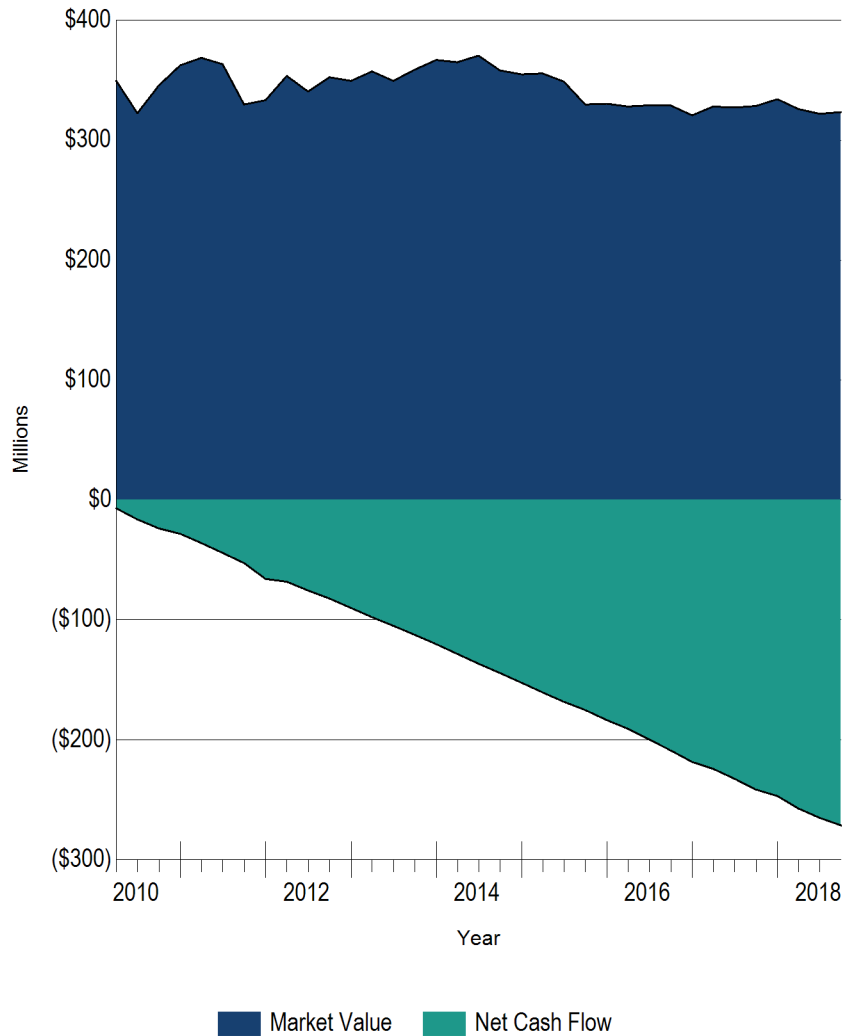
	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
Real Estate	45,621,265	14.1											
ASB Allegiance Real Estate	31,519,018	9.7	2.0	5.5	7.4	6.5	--	--	3.9	4.5	--	--	--
NCREIF-ODCE			2.1	6.5	8.7	8.8	--	--	7.6	8.8	--	--	--
Invesco Real Estate II	43,087	0.0	-3.4	-6.0	-5.2	-0.6	3.8	-5.2	4.8	1.2	6.1	11.5	23.1
NCREIF-ODCE			2.1	6.5	8.7	8.8	10.7	5.6	7.6	8.8	15.0	12.5	13.9
JPMorgan Special Situation Property	14,059,161	4.3	2.6	7.8	9.5	9.4	--	--	8.0	8.7	18.9	--	--
NCREIF-ODCE			2.1	6.5	8.7	8.8	--	--	7.6	8.8	15.0	--	--
Infrastructure	18,556,922	5.7											
IFM Global Infrastructure (US) LP	10,037,494	3.1	6.5	14.4	19.6	13.9	9.1	--	21.1	6.1	5.1	1.3	6.7
CPI + 5%			1.4	6.2	7.4	7.1	6.6	--	7.2	7.2	5.8	5.8	6.6
JPMorgan IIF ERISA LP	8,519,428	2.6	0.0	1.3	4.3	5.5	4.2	--	14.2	1.2	3.4	-1.6	6.8
CPI + 5%			1.4	6.2	7.4	7.1	6.6	--	7.2	7.2	5.8	5.8	6.6
Multi-Asset	42,852,470	13.2											
Invesco Balanced-Risk Allocation	42,852,470	13.2	-0.8	-0.7	4.3	7.2	4.9	--	10.5	12.2	-3.5	6.3	2.3
60% MSCI ACWI Net/40% FTSE WGBI			1.9	1.3	5.2	8.7	5.3	--	17.1	5.5	-2.6	2.3	11.4
FTSE 3-Month T-bill +6%			2.0	5.8	7.7	6.8	6.5	--	6.9	6.3	6.0	6.0	6.1
eV Global Balanced Net Rank			99	82	33	91	99	--	99	19	74	37	97
Cash and Equivalents	4,466,983	1.4											
US Bank Checking Account	1,912,819	0.6											
US Bank Clearing Account	2,554,164	0.8											

Policy Index: 45% MSCI World, 25% BBcBarc Aggregate, 10% NCREIF-ODCE, 20%(60% MSCI ACWI Net/40% CITI WGBI). Target Asset Allocation Policy Index: 25% Dow Jones US Total Stock, 20% MSCI ACWI ex US IMI, 20% BBcBarc Aggregate, 10% NCREIF-ODCE, 5% CPI + 5%, and 20% (60% MSCI ACWI Net/40% CITI WGBI). Loomis Sayles Core Plus replaced Loomis Sayles Full Discretion 3/21/2017. Parametric liquidated 4/21/2017. Mellon Dynamic liquidated 5/5/2017. Grosvenor Institutional liquidated 4/30/2018. INTECH US Adaptive Volatility replaced INTECH US Managed Volatility on 8/3/2018. Data prior to 3Q 2015 is from previous consultant. JP Morgan IFF ERISA market value as of 6/30/2018.

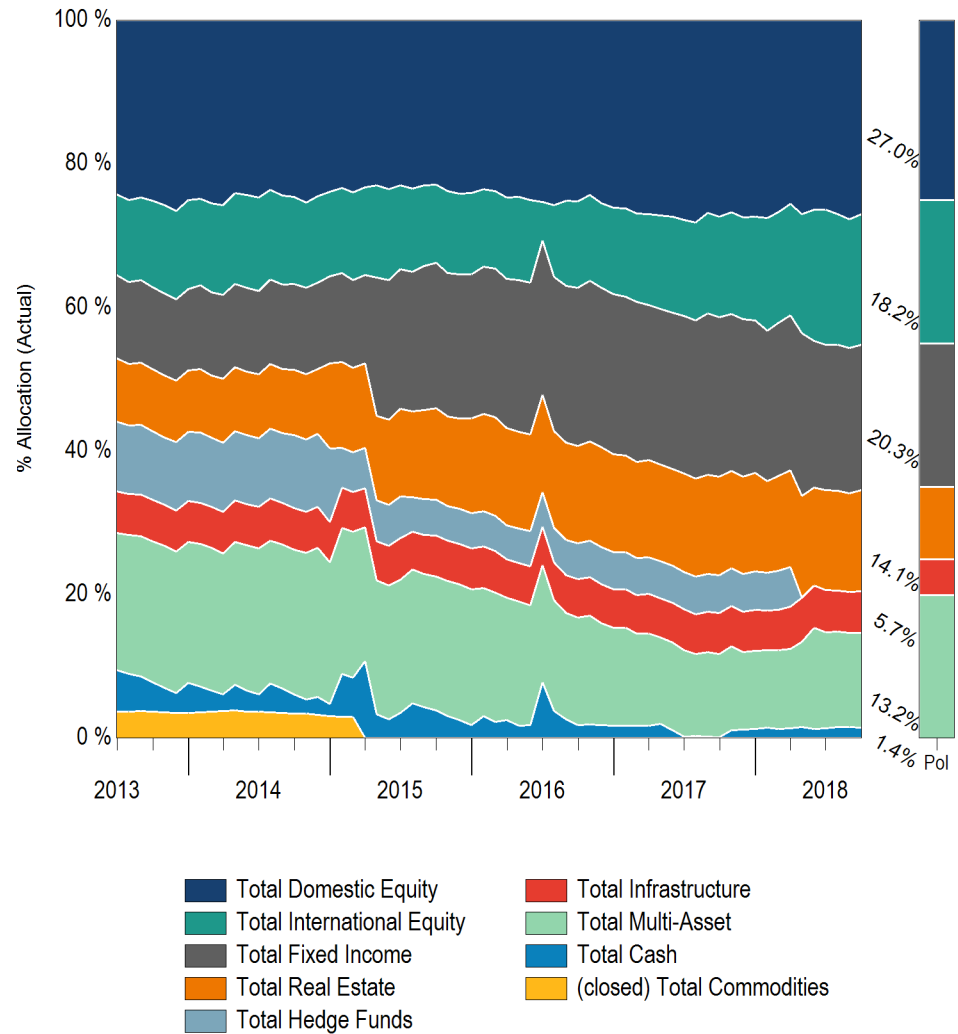
Total Fund Asset Allocation History

Period Ending: September 30, 2018

Market Value History



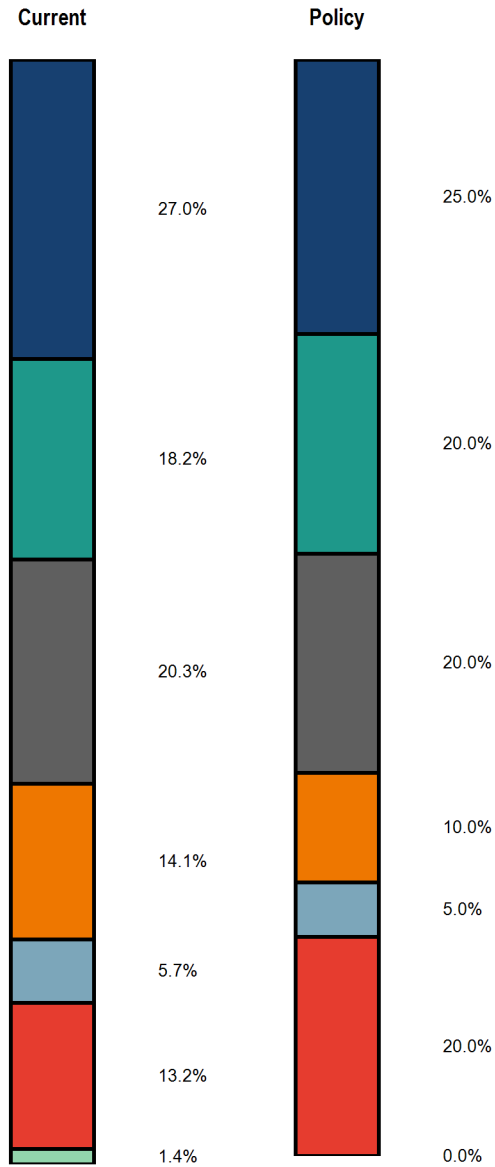
Asset Allocation History



Net cash flow is cumulative.

Total Fund
Asset Allocation vs. Policy

Period Ending: September 30, 2018



	Current	%	Policy	Difference	Policy Range	Within Range
Domestic Equity	\$87,499,504	27.0%	25.0%	\$6,615,790	20.0% - 30.0%	Yes
International Equity	\$58,874,971	18.2%	20.0%	-\$5,832,001	15.0% - 25.0%	Yes
Fixed Income	\$65,662,742	20.3%	20.0%	\$955,771	15.0% - 25.0%	Yes
Real Estate	\$45,621,265	14.1%	10.0%	\$13,267,780	7.0% - 13.0%	No
Infrastructure	\$18,556,922	5.7%	5.0%	\$2,380,179	3.0% - 7.0%	Yes
Multi-Asset	\$42,852,470	13.2%	20.0%	-\$21,854,501	10.0% - 25.0%	Yes
Cash and Equivalents	\$4,466,983	1.4%	0.0%	\$4,466,983	0.0% - 5.0%	Yes
Total	\$323,534,859	100.0%	100.0%			



Total Fund
Investment Fund Fee Analysis

Period Ending: September 30, 2018

Name	Asset Class	Fee Schedule	Market Value	% of Portfolio	Estimated Fee Value	Estimated Fee
BlackRock Equity Index NL	Domestic Equity	0.03% of Assets	\$36,093,940	11.2%	\$10,828	0.03%
INTECH US Adaptive Volatility	Domestic Equity	0.40% of Assets	\$31,937,193	9.9%	\$127,749	0.40%
PanAgora US Small Cap Core Stock Selector	Domestic Equity	0.85% of Assets	\$19,468,372	6.0%	\$165,481	0.85%
WCM Focused International Growth Fund, L.P.	International Equity	0.75% of Assets	\$30,060,749	9.3%	\$225,456	0.75%
Causeway International Value Ins	International Equity	0.90% of Assets	\$22,427,340	6.9%	\$201,846	0.90%
Brandes International Small Cap Equity	International Equity	0.90% of Assets	\$6,386,882	2.0%	\$57,482	0.90%
Loomis Sayles Core Plus	Fixed Income	0.35% of First 20.0 Mil, 0.25% Thereafter	\$65,662,742	20.3%	\$184,157	0.28%
ASB Allegiance Real Estate	Real Estate	1.25% of First 5.0 Mil, 1.00% of Next 10.0 Mil, 0.90% of Next 60.0 Mil, 0.75% Thereafter	\$31,519,018	9.7%	\$311,171	0.99%
Invesco Real Estate II	Real Estate	0.67% of Assets	\$43,087	0.0%	\$289	0.67%
JPMorgan Special Situation Property	Real Estate	1.60% of Assets	\$14,059,161	4.3%	\$224,947	1.60%
IFM Global Infrastructure (US) LP	Infrastructure	0.97% of Assets	\$10,037,494	3.1%	\$97,364	0.97%
JPMorgan IIF ERISA LP	Infrastructure	1.25% of First 50.0 Mil, 1.15% of Next 50.0 Mil, 1.05% Thereafter	\$8,519,428	2.6%	\$106,493	1.25%
Invesco Balanced-Risk Allocation	Multi-Asset	0.40% of First 100.0 Mil, 0.35% Thereafter	\$42,852,470	13.2%	\$171,410	0.40%
US Bank Checking Account	Cash and Equivalents		\$1,912,819	0.6%		
US Bank Clearing Account	Cash and Equivalents		\$2,554,164	0.8%		
Total			\$323,534,859	100.0%	\$1,884,671	0.58%

Total Fund
Watch List (Net of Fees)

Period Ending: September 30, 2018

Name	Allocation Group	Status	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5	Rule 6
BlackRock Equity Index NL	Domestic Equity	No Issues	--	--	--	--	--	✓
INTECH US Adaptive Volatility	Domestic Equity	No Issues	R	R	--	--	--	--
PanAgora US Small Cap Core Stock Selector	Domestic Equity	No Issues	R	✓	--	--	--	--
WCM Focused International Growth Fund, L.P.	International Equity	No Issues	--	--	--	--	--	--
Causeway International Value Ins	International Equity	No Issues	--	--	--	--	--	--
Brandes International Small Cap Equity	International Equity	No Issues	--	--	--	--	R	--
Loomis Sayles Core Plus	Fixed Income	No Issues	--	--	--	--	--	--
ASB Allegiance Real Estate	Real Estate	No Issues	R	--	--	--	--	--
Invesco Real Estate II	Real Estate	No Issues	R	--	R	--	--	--
JPMorgan Special Situation Property	Real Estate	No Issues	✓	--	--	--	--	--
IFM Global Infrastructure (US) LP	Infrastructure	No Issues	✓	--	✓	--	--	--
JPMorgan IIF ERISA LP	Infrastructure	No Issues	R	--	R	--	--	--
Invesco Balanced-Risk Allocation	Multi-Asset	No Issues	R	R	R	R	--	--

Rule 1 - Manager has underperformed the benchmark index for the three year period.

Rule 2 - Manager has underperformed the 50th percentile in the appropriate style universe for the three year period.

Rule 3 - Manager has underperformed the benchmark index for the five year period.

Rule 4 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period.

Rule 5 - Fund experiences non-performance related issues including personnel turnover, changes in investment philosophy or drift, excessive asset growth, change in ownership and any other reason that raises concern.

Rule 6 - Index Fund Tracking Error exceeds 0.25% of the appropriate benchmark over the one year period.

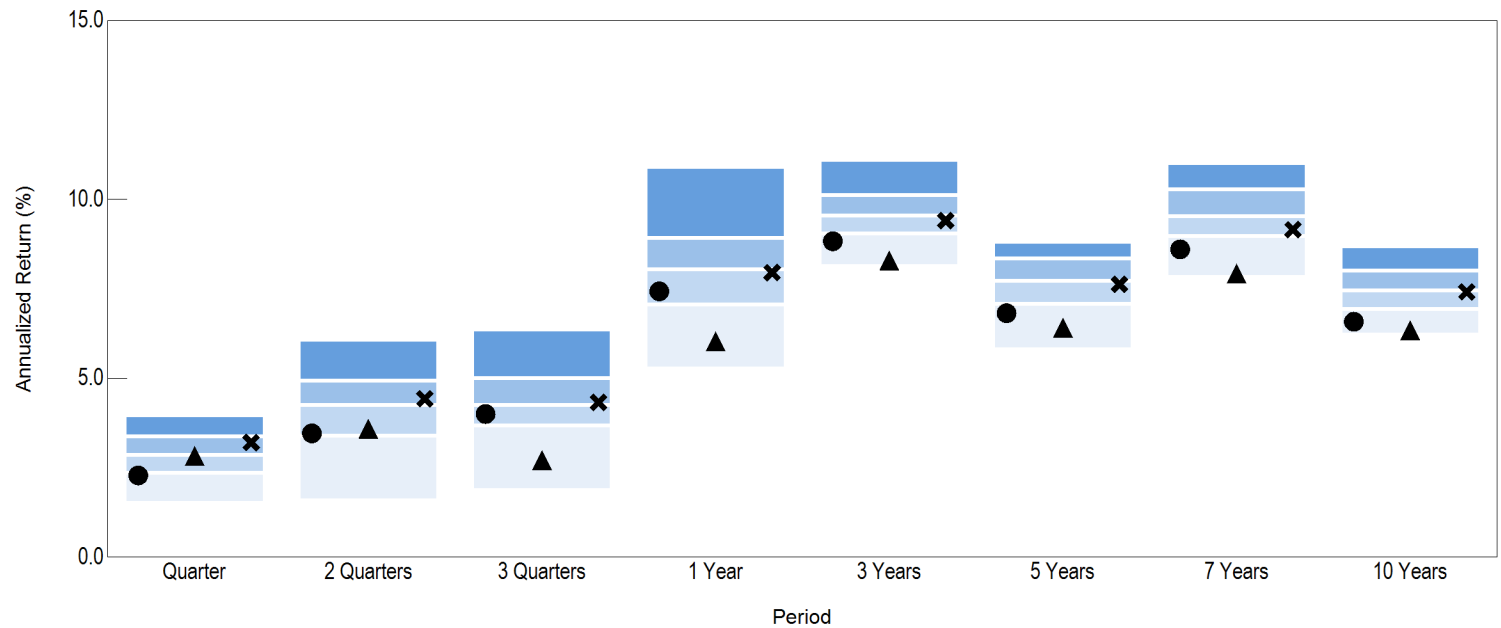
Brandes: Firm founder and significant equity holder Charles Brandes stepped down early 2018 in order to focus on personal matters.

Total Fund

Peer Universe Comparison: Cumulative Performance (Net of Fees)

Period Ending: September 30, 2018

Total Fund Cumulative Performance vs. InvestorForce Tft-Hrtly DB \$250mm-\$1B Net

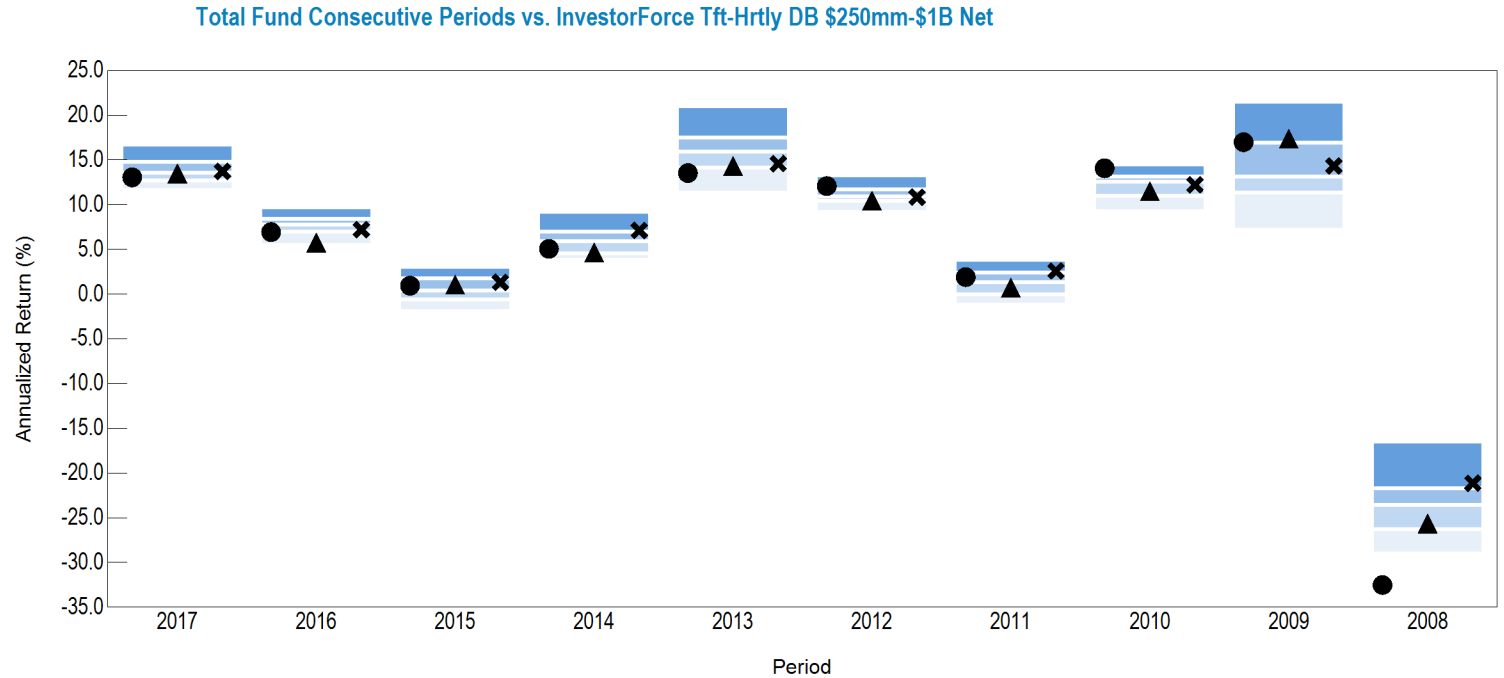


	Return (Rank)							
	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	7 Years	10 Years
5th Percentile	4.0	6.1	6.4	10.9	11.1	8.8	11.0	8.7
25th Percentile	3.4	4.9	5.0	8.9	10.1	8.4	10.3	8.0
Median	2.9	4.3	4.3	8.1	9.6	7.7	9.5	7.5
75th Percentile	2.4	3.4	3.7	7.1	9.1	7.1	9.0	7.0
95th Percentile	1.5	1.6	1.9	5.3	8.1	5.8	7.8	6.2
# of Portfolios	85	85	85	85	82	79	76	67
● Total Fund	2.3 (79)	3.5 (74)	4.0 (61)	7.4 (70)	8.8 (84)	6.8 (85)	8.6 (87)	6.6 (91)
▲ Total Fund Policy Index	2.8 (52)	3.6 (72)	2.7 (86)	6.0 (90)	8.3 (93)	6.4 (93)	7.9 (95)	6.3 (95)
✕ Target Asset Allocation Policy Index	3.2 (31)	4.4 (46)	4.3 (48)	8.0 (54)	9.4 (55)	7.6 (56)	9.2 (70)	7.4 (52)

Total Fund

Peer Universe Comparison: Consecutive Periods (Net of Fees)

Period Ending: September 30, 2018



	Return (Rank)									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
5th Percentile	16.7	9.7	3.0	9.1	21.0	13.2	3.8	14.5	21.5	-16.5
25th Percentile	14.9	8.4	1.8	7.0	17.5	11.8	2.4	13.2	16.9	-21.7
Median	13.6	7.8	0.4	6.0	15.9	11.0	1.4	12.6	13.1	-23.6
75th Percentile	12.7	7.0	-0.6	4.6	14.2	10.4	0.0	11.0	11.4	-26.3
95th Percentile	11.7	5.5	-1.9	3.9	11.4	9.3	-1.1	9.3	7.2	-28.9
# of Portfolios	69	56	58	55	49	37	34	32	31	30
● Total Fund	13.0 (64)	6.9 (80)	0.9 (39)	5.1 (70)	13.5 (79)	12.1 (20)	1.9 (40)	14.1 (10)	17.0 (25)	-32.5 (99)
▲ Total Fund Policy Index	13.5 (51)	5.8 (93)	1.1 (37)	4.7 (75)	14.3 (70)	10.4 (79)	0.7 (60)	11.5 (66)	17.4 (24)	-25.7 (71)
✕ Target Asset Allocation Policy Index	13.7 (46)	7.2 (69)	1.3 (36)	7.1 (21)	14.6 (66)	10.8 (63)	2.6 (20)	12.2 (58)	14.3 (44)	-21.2 (21)

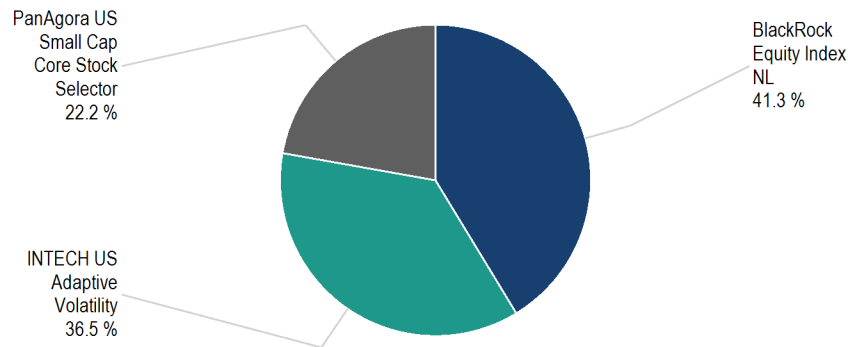
Domestic Equity

Total Domestic Equity Performance Summary (Net of Fees)

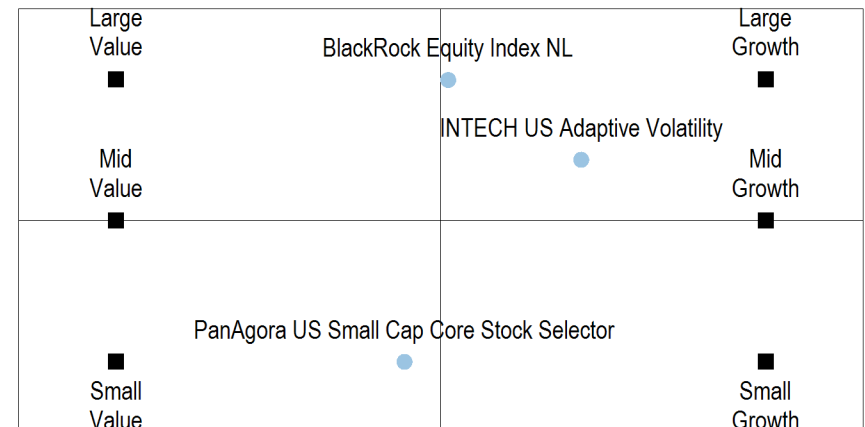
Period Ending: September 30, 2018

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
Total Domestic Equity	87,499,504	100.0	5.5	11.0	16.4	15.9	13.0	11.5	19.4	11.5	0.7	12.5	33.5
<i>Dow Jones U.S. Total Stock Market</i>			7.1	10.6	17.6	17.0	13.4	12.0	21.2	12.6	0.4	12.5	33.5
<i>InvestorForce Tft-Hrtly DB US Eq Net Rank</i>			85	24	59	61	29	42	71	61	30	10	66
Domestic Equity	87,499,504	100.0											
BlackRock Equity Index NL	36,093,940	41.3	7.7	10.5	17.9	17.3	13.9	--	21.8	11.9	1.3	13.8	32.4
<i>S&P 500</i>			7.7	10.6	17.9	17.3	13.9	--	21.8	12.0	1.4	13.7	32.4
<i>eV US Large Cap Core Equity Net Rank</i>			29	24	29	15	16	--	46	21	37	33	43
INTECH US Adaptive Volatility	31,937,193	36.5	4.9	7.9	12.4	13.1	--	--	21.4	5.7	3.2	15.5	--
<i>Russell 1000</i>			7.4	10.5	17.8	17.1	--	--	21.7	12.1	0.9	13.2	--
<i>eV US Large Cap Core Equity Net Rank</i>			88	61	82	85	--	--	51	84	18	14	--
PanAgora US Small Cap Core Stock Selector	19,468,372	22.2	2.9	16.7	19.6	17.0	--	--	10.8	20.3	--	--	--
<i>Russell 2000</i>			3.6	11.5	15.2	17.1	--	--	14.6	21.3	--	--	--
<i>eV US Small Cap Core Equity Net Rank</i>			68	14	23	38	--	--	83	41	--	--	--

Total Domestic Equity
Current Allocation

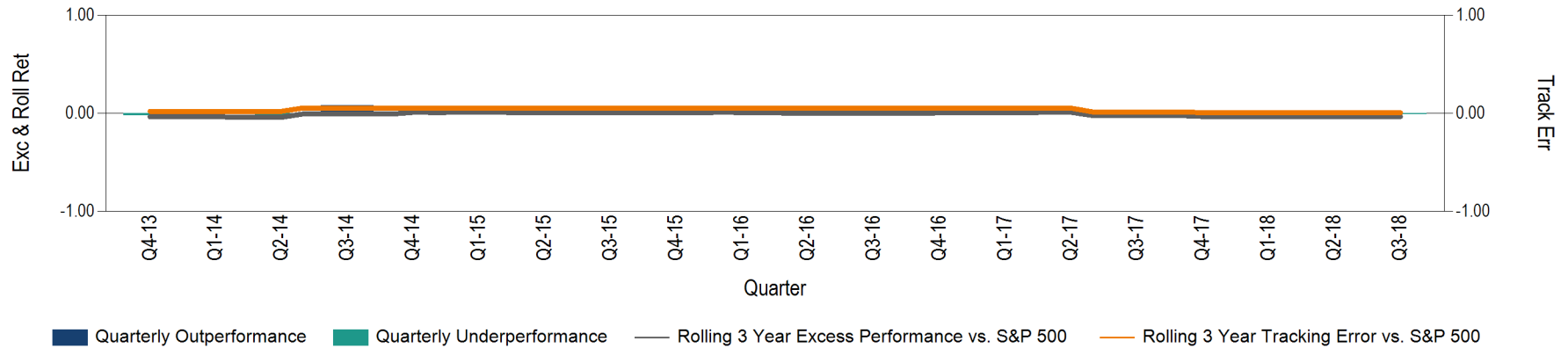


Domestic Effective Style Map
3 Years

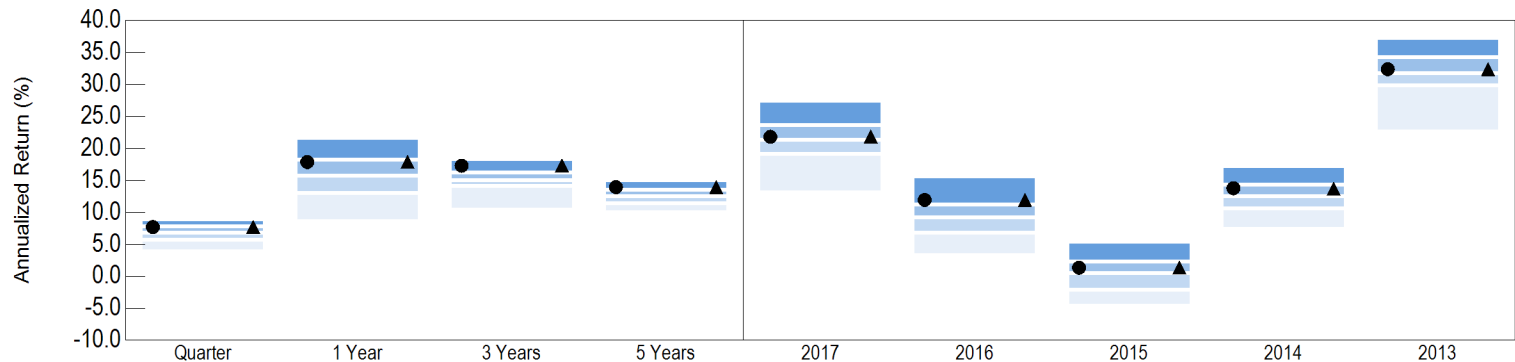


Style map requires 3 years of returns. INTECH US Adaptive Volatility replaced INTECH US Managed Volatility on 8/3/2018.

Rolling Annualized Excess Performance and Tracking Error



BlackRock Equity Index NL vs. eV US Large Cap Core Equity Net Universe

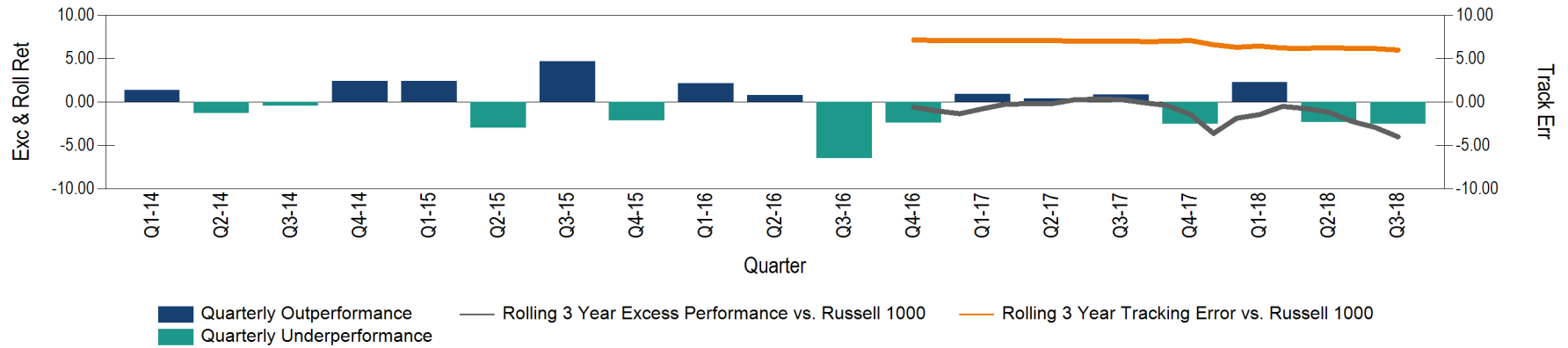


	Quarter	1 Year	3 Years	5 Years	2017	2016	2015	2014	2013
5th Percentile	8.9	21.6	18.2	15.0	27.4	15.6	5.4	17.2	37.2
25th Percentile	7.8	18.3	16.3	13.6	23.7	11.3	2.4	14.4	34.3
Median	6.9	15.7	15.1	12.5	21.4	9.3	0.6	12.5	31.8
75th Percentile	5.8	13.1	14.2	11.5	19.2	6.9	-2.0	10.6	29.9
95th Percentile	4.0	8.7	10.4	10.1	13.2	3.4	-4.6	7.5	22.7
# of Portfolios	174	174	165	157	188	177	142	140	125
● BlackRock Equity Index NL	7.7 (29)	17.9 (29)	17.3 (15)	13.9 (16)	21.8 (46)	11.9 (21)	1.3 (37)	13.8 (33)	32.4 (43)
▲ S&P 500	7.7 (29)	17.9 (28)	17.3 (15)	13.9 (15)	21.8 (46)	12.0 (21)	1.4 (37)	13.7 (33)	32.4 (43)

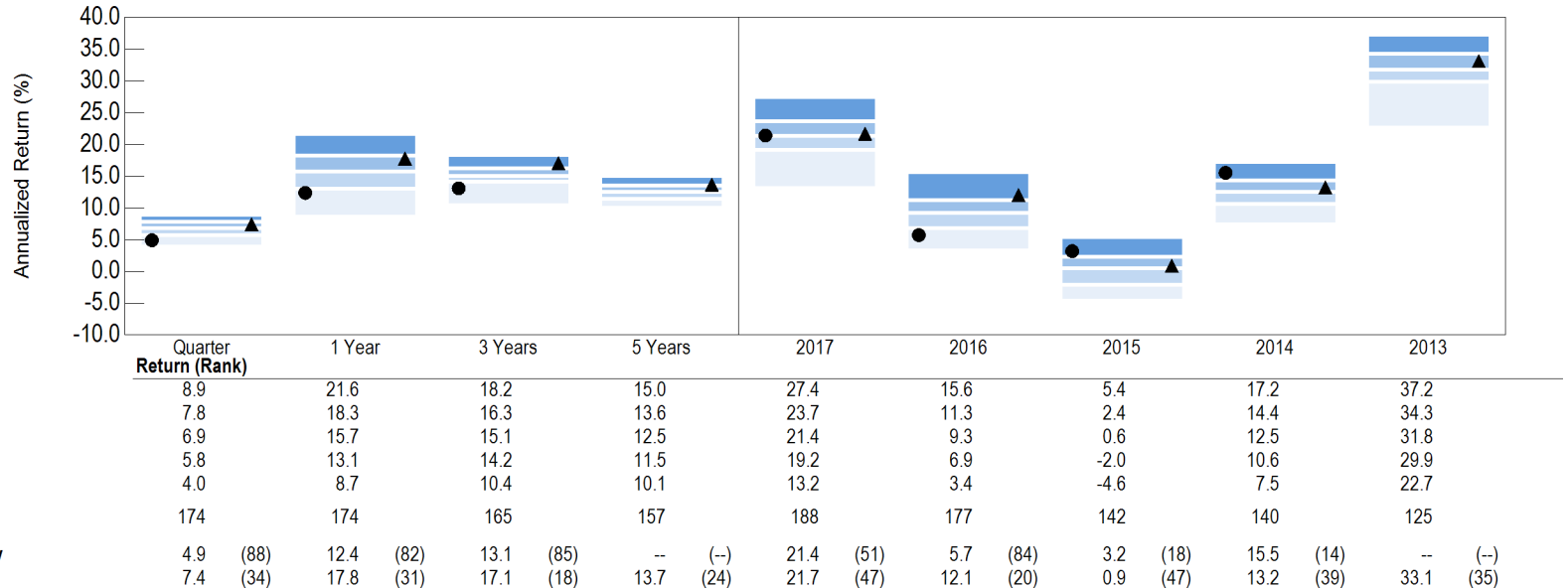
INTECH US Adaptive Volatility Performance Summary (Net of Fees)

Period Ending: September 30, 2018

Rolling Annualized Excess Performance and Tracking Error



INTECH US Adaptive Volatility vs. eV US Large Cap Core Equity Net Universe

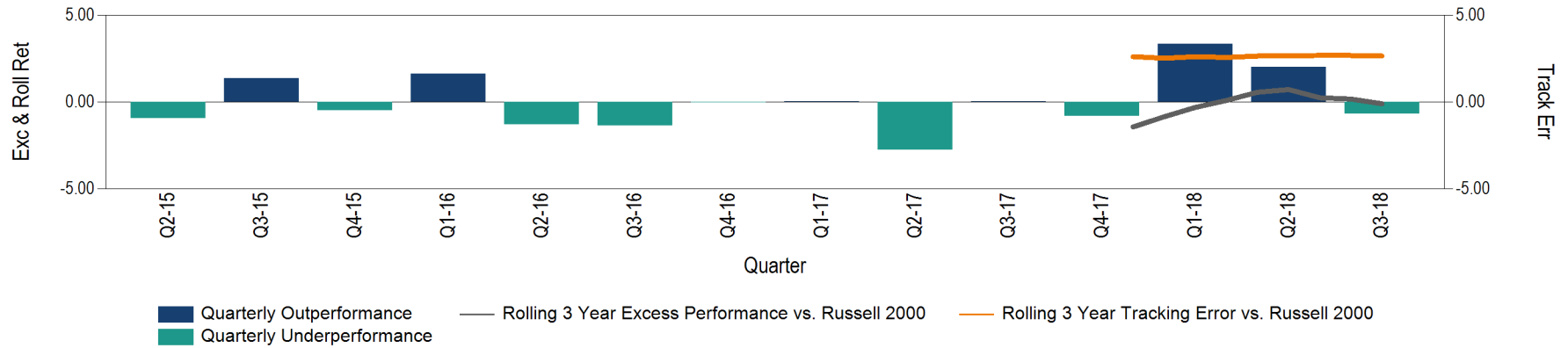


INTECH US Adaptive Volatility replaced INTECH US Managed Volatility on 8/3/2018.

PanAgora US Small Cap Core Stock Selector
Performance Summary (Net of Fees)

Period Ending: September 30, 2018

Rolling Annualized Excess Performance and Tracking Error



PanAgora US Small Cap Core Stock Selector vs. eV US Small Cap Core Equity Net Universe



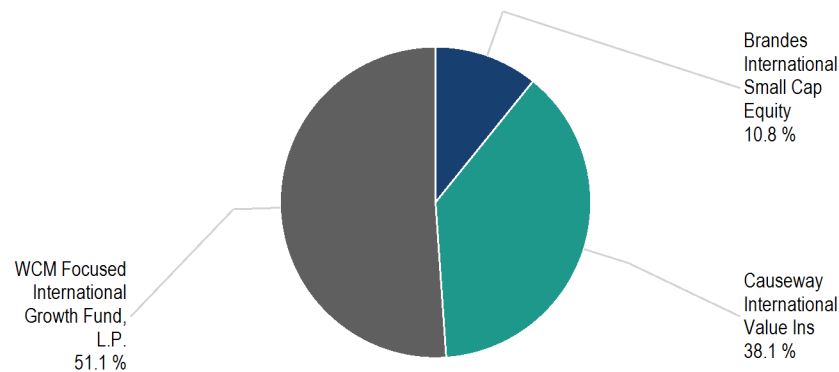
International Equity

Total International Equity 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 International Equity	58,874,971	100.0	1.8	-0.1	4.6	9.7	4.2	3.9	26.6	0.9	-4.5	-3.8	16.0
<i>Total Public Int'l Equity Benchmark (MSCI ACWI ex US IMI)</i>			0.4	-3.3	1.8	10.1	4.4	4.8	27.8	4.4	-4.6	-3.9	15.8
<i>InvestorForce Tft-Hrtly DB ex-US Eq Net Rank</i>			5	5	6	36	61	91	71	82	51	59	68
International Equity	58,874,971	100.0											
WCM Focused International Growth Fund, L.P.	30,060,749	51.1	3.1	5.6	11.3	--	--	--	31.1	--	--	--	--
<i>MSCI ACWI ex USA</i>			0.7	-3.1	1.8	--	--	--	27.2	--	--	--	--
<i>eV ACWI ex-US All Cap Growth Eq Net Rank</i>			1	8	7	--	--	--	71	--	--	--	--
Causeway International Value Ins	22,427,340	38.1	1.2	-4.6	0.3	--	--	--	27.2	--	--	--	--
<i>MSCI EAFE</i>			1.4	-1.4	2.7	--	--	--	25.0	--	--	--	--
<i>Foreign Large Value MStar MF Rank</i>			41	67	41	--	--	--	14	--	--	--	--
Brandes International Small Cap Equity	6,386,882	10.8	-2.1	-8.1	-6.9	--	--	--	11.6	--	--	--	--
<i>S&P Developed Ex-U.S. SmallCap</i>			-0.3	-2.2	3.9	--	--	--	32.4	--	--	--	--
<i>eV ACWI ex-US Small Cap Equity Net Rank</i>			66	91	94	--	--	--	99	--	--	--	--

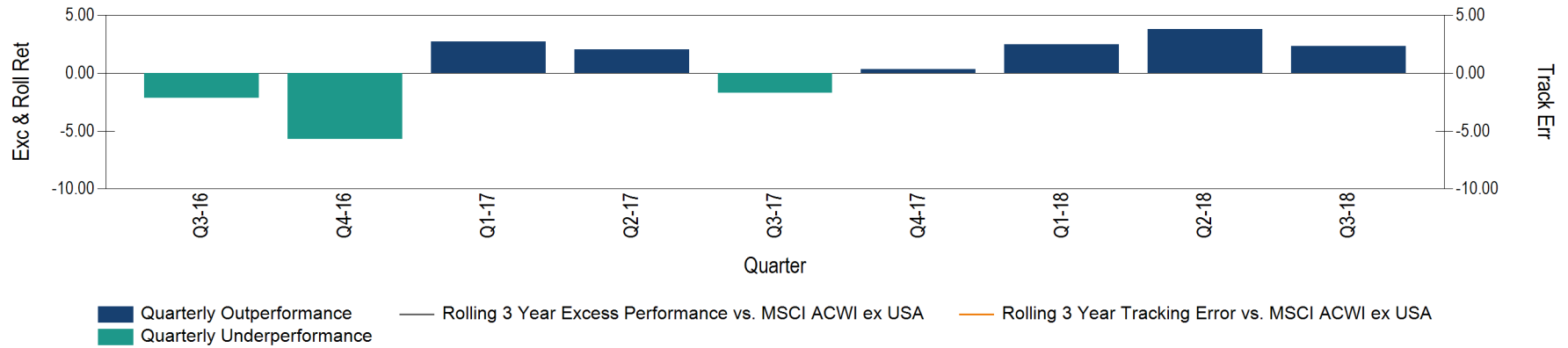
Total International Equity
Current Allocation



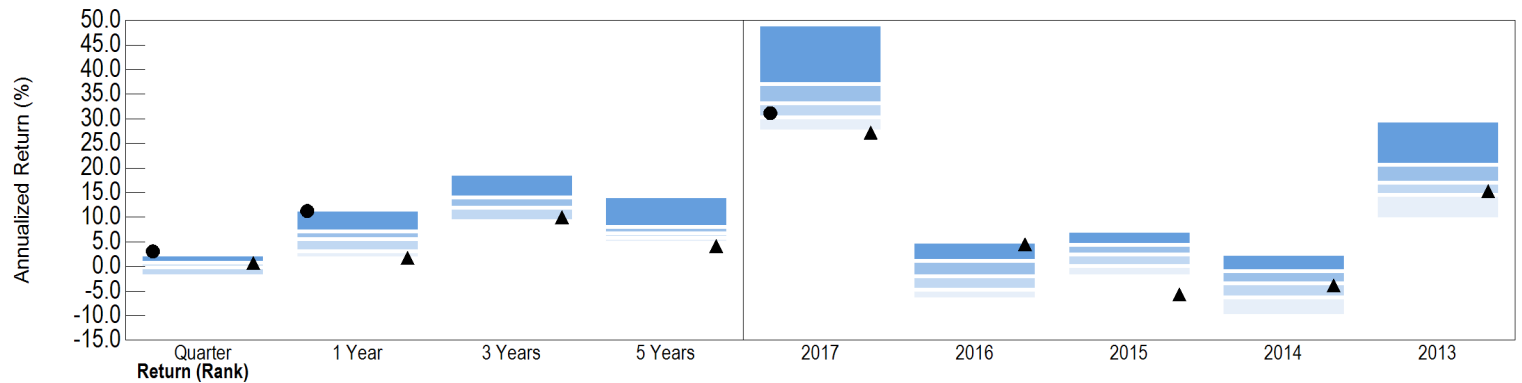
WCM Focused International Growth Fund, L.P.
Performance Summary (Net of Fees)

Period Ending: September 30, 2018

Rolling Annualized Excess Performance and Tracking Error



WCM Focused International Growth Fund, L.P. vs. eV ACWI ex-US All Cap Growth Eq Net Universe

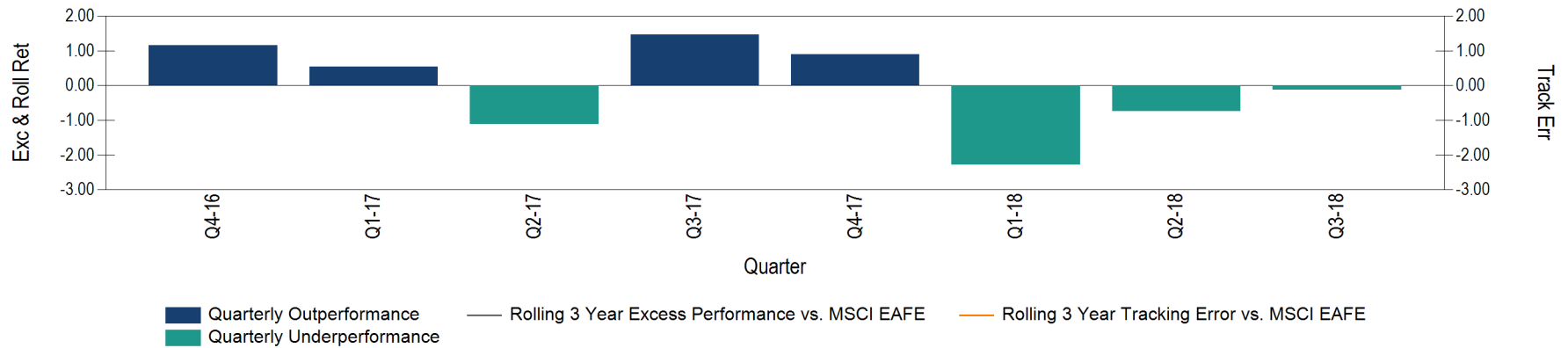


	Quarter	1 Year	3 Years	5 Years	2017	2016	2015	2014	2013
5th Percentile	2.3	11.5	18.8	14.2	49.1	5.0	7.2	2.5	29.5
25th Percentile	0.8	7.2	14.1	8.1	37.2	1.2	4.5	-0.9	20.7
Median	-0.1	5.6	12.0	6.7	33.2	-2.0	2.5	-3.4	17.1
75th Percentile	-1.9	3.2	9.3	5.9	30.4	-4.7	0.2	-6.3	14.6
95th Percentile	-2.7	1.7	8.5	4.8	27.5	-6.6	-1.9	-10.1	9.7
# of Portfolios	25	25	24	22	27	25	18	16	12
● WCM Focused International Growth Fund, L.P.	3.1 (1)	11.3 (7)	-- (--)	-- (--)	31.1 (71)	-- (--)	-- (--)	-- (--)	-- (--)
▲ MSCI ACWI ex USA	0.7 (29)	1.8 (95)	10.0 (61)	4.1 (99)	27.2 (96)	4.5 (8)	-5.7 (99)	-3.9 (57)	15.3 (66)

Causeway International Value Ins
Performance Summary (Net of Fees)

Period Ending: September 30, 2018

Rolling Annualized Excess Performance and Tracking Error



Causeway International Value Ins vs. Foreign Large Value MStar MF Universe



5th Percentile
25th Percentile
Median
75th Percentile
95th Percentile

of Portfolios

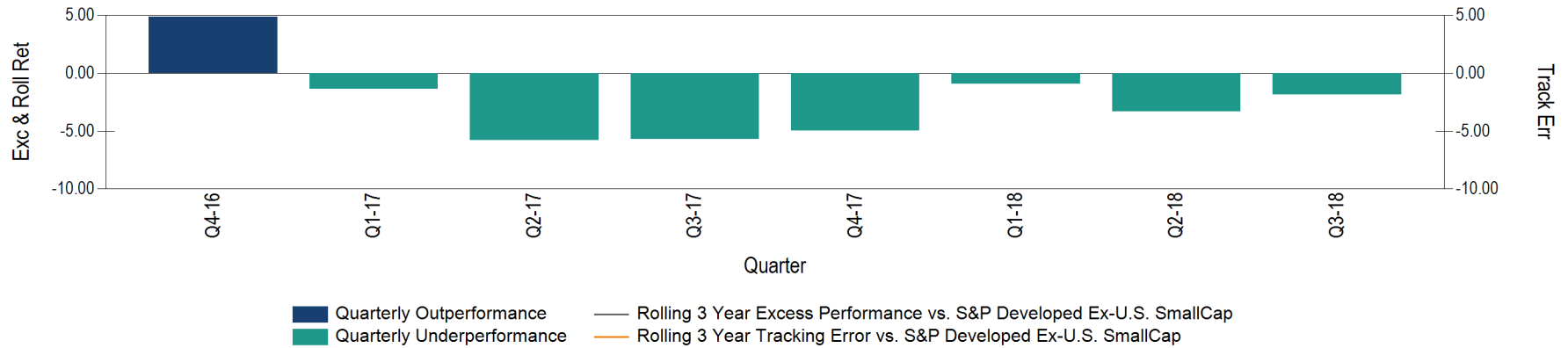
● Causeway International Value Ins
▲ MSCI EAFE

	Quarter	1 Year	3 Years	5 Years	2017	2016	2015	2014	2013
5th Percentile	2.3	2.9	12.6	6.1	28.7	14.1	4.4	-1.5	27.8
25th Percentile	1.5	1.2	10.1	4.5	25.7	7.7	1.1	-3.6	23.5
Median	0.9	-0.1	7.9	3.8	23.2	2.7	-1.8	-5.7	22.3
75th Percentile	0.0	-2.1	6.8	2.9	21.5	0.6	-5.1	-7.2	19.7
95th Percentile	-1.2	-5.1	4.7	-0.6	15.3	-1.6	-11.9	-10.3	13.0
# of Portfolios	75	75	73	64	74	78	76	73	69
● Causeway International Value Ins	1.2 (41)	0.3 (41)	-- (--)	-- (--)	27.2 (14)	-- (--)	-- (--)	-- (--)	-- (--)
▲ MSCI EAFE	1.4 (32)	2.7 (6)	9.2 (29)	4.4 (30)	25.0 (30)	1.0 (69)	-0.8 (43)	-4.9 (36)	22.8 (40)

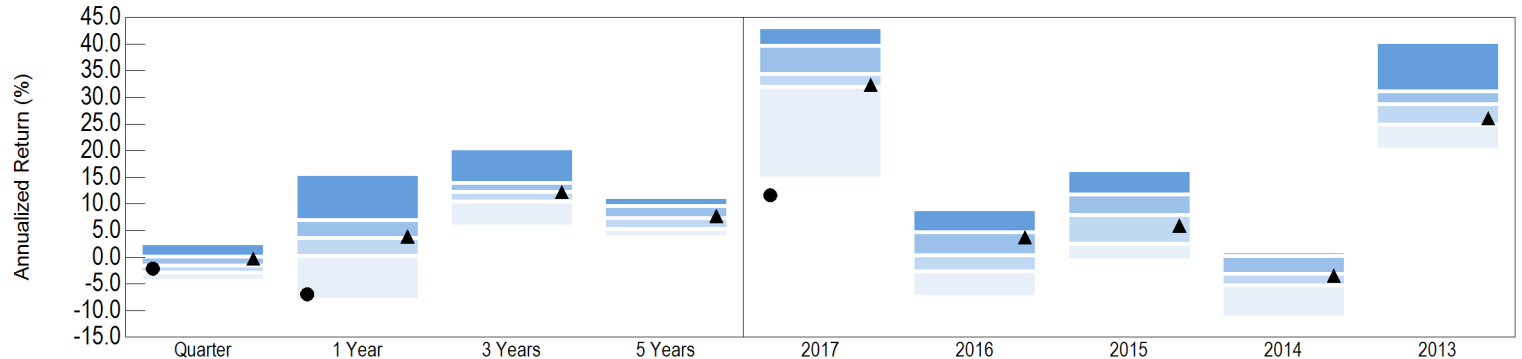
Brandes International Small Cap Equity Performance Summary (Net of Fees)

Period Ending: September 30, 2018

Rolling Annualized Excess Performance and Tracking Error



Brandes International Small Cap Equity vs. eV ACWI ex-US Small Cap Equity Net Universe



	Quarter	1 Year	3 Years	5 Years	2017	2016	2015	2014	2013
5th Percentile	2.6	15.5	20.4	11.3	43.1	9.0	16.3	1.0	40.3
25th Percentile	0.1	7.0	14.0	9.7	39.7	4.7	11.8	0.3	31.2
Median	-1.4	3.7	12.4	7.4	34.4	0.4	8.0	-3.0	28.8
75th Percentile	-2.8	0.3	10.5	5.3	32.1	-2.6	2.6	-5.2	25.0
95th Percentile	-4.4	-8.0	5.9	3.9	14.9	-7.4	-0.5	-11.2	20.3
# of Portfolios	46	46	41	26	45	42	27	16	13
● Brandes International Small Cap Equity	-2.1 (66)	-6.9 (94)	-- (--)	-- (--)	11.6 (99)	-- (--)	-- (--)	-- (--)	-- (--)
▲ S&P Developed Ex-U.S. SmallCap	-0.3 (36)	3.9 (45)	12.2 (54)	7.8 (46)	32.4 (68)	3.8 (29)	5.9 (57)	-3.4 (62)	26.1 (71)

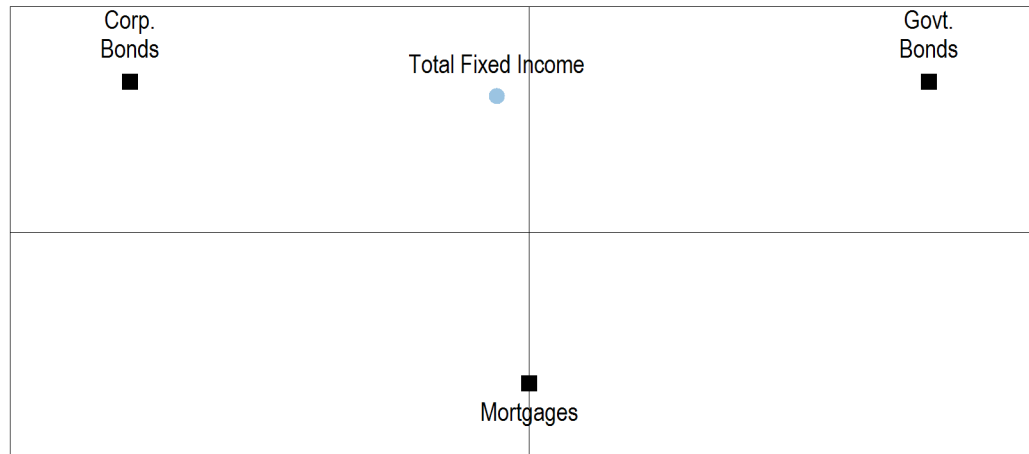
Domestic Fixed Income

Total Fixed Income
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 Fixed Income	65,662,742	100.0	0.5	-0.5	0.3	3.9	3.5	6.4	5.6	7.5	-2.1	5.9	0.2
<i>Total Fixed Income Benchmark (BBgBarc Aggregate)</i>			0.0	-1.6	-1.2	1.3	2.2	3.8	3.5	2.6	0.5	6.0	-2.0
<i>InvestorForce Tft-Hrtly DB US Fix Inc Net Rank</i>			50	54	40	15	17	11	18	9	93	10	40
Fixed Income	65,662,742	100.0											
Loomis Sayles Core Plus	65,662,742	100.0	0.5	-0.5	0.3	--	--	--	--	--	--	--	--
<i>BBgBarc US Aggregate TR</i>			0.0	-1.6	-1.2	--	--	--	--	--	--	--	--
<i>eV US Core Plus Fixed Inc Net Rank</i>			34	14	10	--	--	--	--	--	--	--	--

Fixed Income Style Map
3 Years



Loomis Sayles Core Plus replaced Loomis Sayles Full Discretion 3/21/2017.

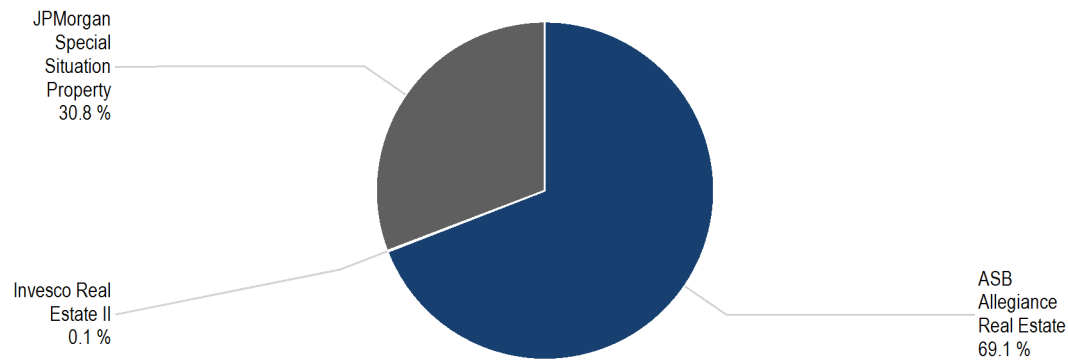
Alternatives

Total Real Estate
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 Real Estate	45,621,265	100.0	2.1	6.2	8.0	7.1	9.4	5.2	5.0	5.4	16.9	11.2	14.1
<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
Real Estate	45,621,265	100.0											
ASB Allegiance Real Estate	31,519,018	69.1	2.0	5.5	7.4	6.5	--	--	3.9	4.5	--	--	--
<i>NCREIF-ODCE</i>			2.1	6.5	8.7	8.8	--	--	7.6	8.8	--	--	--
Invesco Real Estate II	43,087	0.1	-3.4	-6.0	-5.2	-0.6	3.8	-5.2	4.8	1.2	6.1	11.5	23.1
<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
JPMorgan Special Situation Property	14,059,161	30.8	2.6	7.8	9.5	9.4	--	--	8.0	8.7	18.9	--	--
<i>NCREIF-ODCE</i>			2.1	6.5	8.7	8.8	--	--	7.6	8.8	15.0	--	--

Total Real Estate
Current Allocation

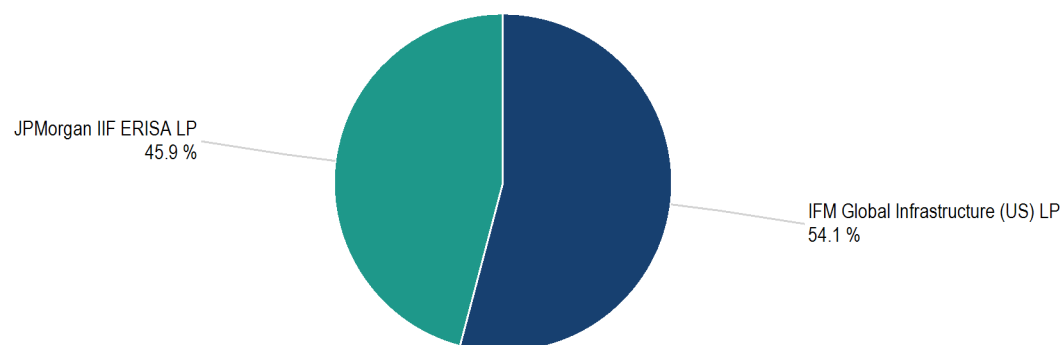


Total Infrastructure Performance Summary (Net of Fees)

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 Infrastructure	18,556,922	100.0	3.4	8.1	12.2	9.9	6.8	--	17.9	3.8	4.1	-0.3	6.7
<i>CPI + 5%</i>			1.4	6.2	7.4	7.1	6.6	--	7.2	7.2	5.8	5.8	6.6
Infrastructure	18,556,922	100.0											
IFM Global Infrastructure (US) LP	10,037,494	54.1	6.5	14.4	19.6	13.9	9.1	--	21.1	6.1	5.1	1.3	6.7
<i>CPI + 5%</i>			1.4	6.2	7.4	7.1	6.6	--	7.2	7.2	5.8	5.8	6.6
JPMorgan IIF ERISA LP	8,519,428	45.9	0.0	1.3	4.3	5.5	4.2	--	14.2	1.2	3.4	-1.6	6.8
<i>CPI + 5%</i>			1.4	6.2	7.4	7.1	6.6	--	7.2	7.2	5.8	5.8	6.6

Total Infrastructure
Current Allocation



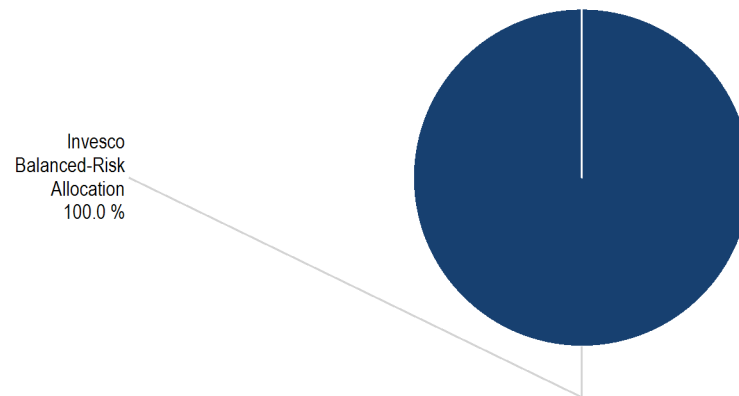
JP Morgan IIF ERISA market value as of 6/30/2018.

Total Multi-Asset
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 Multi-Asset	42,852,470	100.0	-0.8	-0.7	4.3	6.3	5.0	7.1	10.6	7.4	-1.0	6.7	7.9
60% MSCI ACWI Net/40% FTSE WGBI			1.9	1.3	5.2	8.7	5.3	6.0	17.1	5.5	-2.6	2.3	11.4
eV Global Balanced Net Rank			99	82	33	99	99	40	99	54	38	31	94
Multi-Asset	42,852,470	100.0											
Invesco Balanced-Risk Allocation	42,852,470	100.0	-0.8	-0.7	4.3	7.2	4.9	--	10.5	12.2	-3.5	6.3	2.3
60% MSCI ACWI Net/40% FTSE WGBI			1.9	1.3	5.2	8.7	5.3	--	17.1	5.5	-2.6	2.3	11.4
FTSE 3-Month T-bill +6%			2.0	5.8	7.7	6.8	6.5	--	6.9	6.3	6.0	6.0	6.1
eV Global Balanced Net Rank			99	82	33	91	99	--	99	19	74	37	97

Total Multi-Asset
Current Allocation

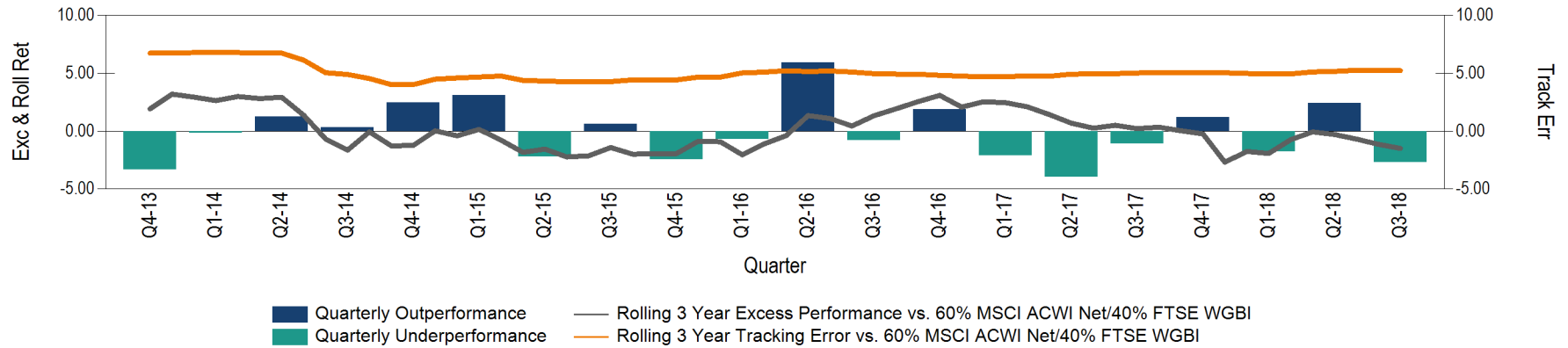


Mellon Dynamic liquidated 5/5/2017.

Invesco Balanced-Risk Allocation Performance Summary (Net of Fees)

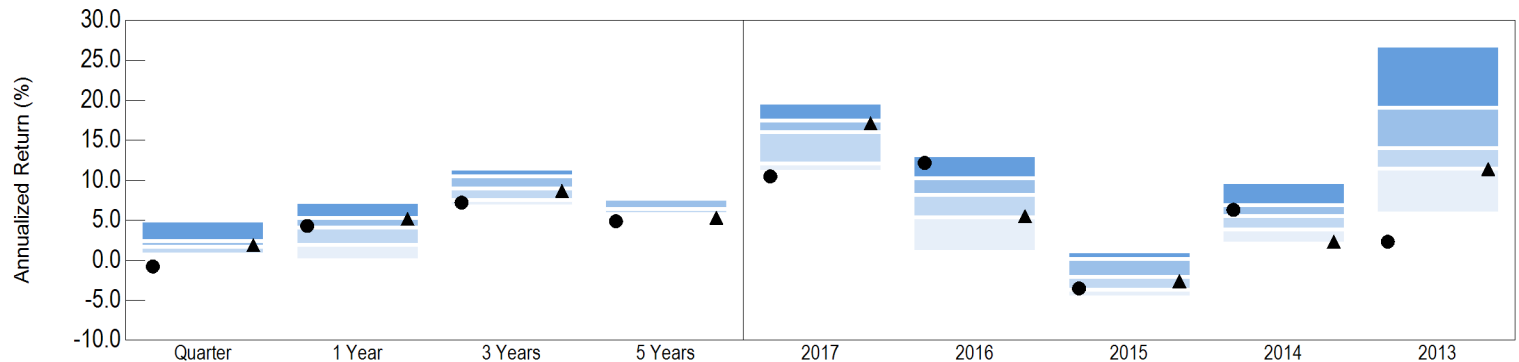
Period Ending: September 30, 2018

Rolling Annualized Excess Performance and Tracking Error



■ Quarterly Outperformance — Rolling 3 Year Excess Performance vs. 60% MSCI ACWI Net/40% FTSE WGBI
■ Quarterly Underperformance — Rolling 3 Year Tracking Error vs. 60% MSCI ACWI Net/40% FTSE WGBI

Invesco Balanced-Risk Allocation vs. eV Global Balanced Net Universe



	Quarter	1 Year	3 Years	5 Years	2017	2016	2015	2014	2013
5th Percentile	4.9	7.3	11.4	8.1	19.6	13.1	1.1	9.7	26.8
25th Percentile	2.4	5.4	10.5	7.8	17.5	10.3	0.2	7.0	19.1
Median	1.7	4.1	9.0	6.5	16.1	8.2	-2.0	5.6	14.1
75th Percentile	0.7	2.0	7.6	5.8	12.2	5.4	-3.7	3.9	11.5
95th Percentile	0.5	0.1	6.8	5.4	11.1	1.1	-4.6	2.2	5.9
# of Portfolios	10	10	10	9	9	13	13	14	14
● Invesco Balanced-Risk Allocation	-0.8 (99)	4.3 (33)	7.2 (91)	4.9 (99)	10.5 (99)	12.2 (19)	-3.5 (74)	6.3 (37)	2.3 (97)
▲ 60% MSCI ACWI Net/40% FTSE WGBI	1.9 (42)	5.2 (27)	8.7 (54)	5.3 (97)	17.1 (29)	5.5 (68)	-2.6 (64)	2.3 (94)	11.4 (78)

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

<u>Manager</u>	<u>Fund Incepted</u>	<u>Data Source</u>	<u>Manager</u>	<u>Fund Incepted</u>	<u>Data Source</u>
BlackRock Equity Index NL	4/30/2010	BlackRock	Invesco Real Estate II	6/30/2008	Invesco
INTECH US Adaptive Volatility	8/3/2018	INTECH	JPMorgan SSP	12/31/2014	JP Morgan
PanAgora US Small Cap	1/31/2015	PanAgora	Grosvenor Instl Partners LP	10/31/2009	Grosvenor
WCM Focused International Growth	7/1/2016	WCM	IFM Global Infrastructure (US) LP	1/31/2009	IFM
Causeway International Value	7/27/2016	US Bank	JPMorgan IIF ERISA LP	9/30/2010	JP Morgan
Brandes International Small Cap II	8/1/2016	Brandes	Invesco Balanced-Risk Allocation	1/31/2010	Invesco
Loomis Sayles Core Plus	3/21/2017	Loomis Sayles	US Bank Checking Account	N/A	US Bank
ASB Allegiance Real Estate	3/31/2015	ASB	US Bank Clearing Account	N/A	US Bank

Policy & Custom Index Composition

Policy Index: 45% MSCI World, 25% BBgBarc Aggregate, 10% NCREIF-ODCE, 20% (60%MSCI ACWI Net/40% CITI WGBI)

Target Asset Allocation Policy: 25% Dow Jones US Total Stock, 20% MSCI ACWI ex US IMI, 20% BBgBarc Aggregate, 10% NCREIF-ODCE, 5% CPI + 5%, and 20% (60%MSCI ACWI Net/40% CITI WGBI).

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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