



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: DECEMBER 31, 2018

Investment Performance Review for

San Mateo County Employees' Retirement Association

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THE ECONOMIC CLIMATE

- U.S. real GDP growth reached 3.0% in Q3, supported by fiscal stimulus which is more or less expected to fade in 2019. Growth is forecast to moderate in the U.S., in-line with the rest of the developed world.
- The U.S. and China ended their most recent round of trade negotiations during the first week of January. China indicated willingness to purchase more American agricultural goods, energy, and other manufactured goods, but little progress is evident overall.

PORTFOLIO IMPACTS

- The Federal Reserve raised the fed funds rate by 0.25% to a range of 2.25%-2.50%. Market expectations for future rate hikes changed dramatically in December. As of year-end, the fed funds futures market is pricing in zero hikes for 2019, and a rate cut for 2020.
- Emerging markets were the top equity performer in Q4, as these markets (MSCI EM -7.5%) experienced much less pain than developed markets (S&P 500 -13.5%, MSCI EAFE -12.5%) during the equity sell-off. Currencies stabilized in Q4 (JPMorgan EM Currency Index +0.2%) and emerging market crises concerns faded from the news headlines.

THE INVESTMENT CLIMATE

- The U.S. equity market experienced a fairly significant peak-to-trough drawdown in Q4 (S&P 500 -19.8%, Russell 1000 -20.1%), along with global equity markets. Equity corrections of this size have historically occurred roughly once per cycle.
- After reaching a cyclical high of 3.2% in November, the 10-year U.S. Treasury yield fell sharply to end the year at 2.7%. Much of this drop was due to falling inflation expectations as energy prices trended down.
- The House of Commons in British Parliament overwhelmingly rejected Theresa May's Brexit deal that had been approved by the European Union. The details surrounding the terms of Great Britain's exit remain uncertain ahead of the March 30th deadline.

ASSET ALLOCATION ISSUES

- Diversification has been particularly painful in recent years as most asset classes failed to keep up with a domestic 60/40 portfolio. U.S. performance exceptionalism reversed in Q4 as U.S. equities underperformed.
- Economic conditions around the world have weakened. This trend has been broad-based, from industrial production, to business sentiment, to corporate earnings expectations.

Economic conditions displayed a weaker trend in Q4

A neutral risk stance may be appropriate in today's environment

U.S. economics summary

- Real GDP growth reached 3.0% YoY (3.4% quarterly annualized rate) in the third quarter, the fastest pace of growth in more than three years. Consumers drove growth after bouncing back from a spending slowdown in Q1.
- The U.S. and China ended the recent round of trade negotiations during the first week of January. The U.S. noted China’s willingness to purchase more American agricultural goods, energy, and other manufactured goods, but little progress is evident overall.
- U.S. inflation remained near the Federal Reserve’s 2.0% target. Headline U.S. inflation fell from 2.3% to 1.9% over the quarter, driven by lower oil prices. U.S. core CPI remained at 2.2%. Moderate inflation has likely contributed to the willingness of the Fed to keep on course with rate hikes.
- The labor market remained a bright spot in the U.S. economy. On average, nonfarm payrolls increased by 254,000 per month during the quarter, well above the expansion average of 201,000.
- The headline U-3 unemployment rate rose from 3.7% to 3.9%, in part due to an increase in labor force participation.
- Fiscal stimulus continued to support growth, although the impacts will likely subside in the first half of 2019. Stimulus may be masking a slowdown in the economy, which would be directionally in line with the rest of the developed world.
- The Federal Reserve hiked the target range for its benchmark interest rate by 25 basis points to a new range of 2.25% - 2.50%. Consistent with expectations for a “dovish hike”, central bank officials re-rated hike expectations in 2019 from three to two.

	Most Recent	12 Months Prior
GDP (YoY)	3.0% <i>9/30/18</i>	2.3% <i>9/30/17</i>
Inflation (CPI YoY, Core)	2.2% <i>12/31/18</i>	1.8% <i>12/31/17</i>
Expected Inflation (5yr-5yr forward)	1.8% <i>12/31/18</i>	2.0% <i>12/31/17</i>
Fed Funds Target Range	2.25 – 2.50% <i>12/31/18</i>	1.25 – 1.50% <i>12/31/17</i>
10 Year Rate	2.7% <i>12/31/18</i>	2.4% <i>12/31/17</i>
U-3 Unemployment	3.9% <i>12/31/18</i>	4.1% <i>12/31/17</i>
U-6 Unemployment	7.6% <i>12/31/18</i>	8.1% <i>12/31/17</i>

International economics summary

- Outside of the U.S., economic growth has slowed in recent quarters, most notably in Europe and Japan. Developed real GDP growth is expected to slow from 2.2% in 2018 to 2.0% in 2019, according to the World Bank.
- The U.S. and China ended the recent round of trade negotiations during the first week of January. Officials continue to work towards an agreement, though little progress is been demonstrated thus far. On March 2nd, U.S. tariffs are scheduled to increase from 10% to 25% on \$200 billion of Chinese imports.
- China's Purchasing Managers' Index (PMI) fell to 49.7 in December. An index reading of 50 indicates economic expansion while a reading below 50 indicates contraction. This reading is in line with a string of weak economic data coming out of China.
- The House of Commons in British Parliament overwhelmingly rejected Theresa May's Brexit deal that had been approved by the European Union. The details surrounding the terms of Great Britain's exit remain uncertain ahead of the March 30th deadline. Potential resolutions include renegotiating a deal with the EU, leaving without a deal, or delaying the exit deadline.
- The U.S. dollar appreciated by 1.9% during the quarter on a trade-weighted basis. A slowing U.S. economy would likely put downside pressure on the dollar, which has been boosted recently by U.S. economic exceptionalism.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	3.0% <i>9/30/18</i>	2.2% <i>11/30/18</i>	3.9% <i>12/31/18</i>
Eurozone	1.6% <i>9/30/18</i>	1.8% <i>11/30/18</i>	8.1% <i>10/31/18</i>
Japan	0.0% <i>9/30/18</i>	0.8% <i>11/30/18</i>	2.5% <i>11/30/18</i>
BRICS Nations	5.6% <i>9/30/18</i>	2.4% <i>12/31/18</i>	5.4% <i>9/30/18</i>
Brazil	1.3% <i>9/30/18</i>	4.1% <i>11/30/18</i>	11.7% <i>12/31/18</i>
Russia	1.5% <i>9/30/18</i>	4.3% <i>12/31/18</i>	4.8% <i>11/30/18</i>
India	7.1% <i>9/30/18</i>	2.3% <i>11/30/18</i>	8.8% <i>12/31/17</i>
China	6.5% <i>9/30/18</i>	2.2% <i>11/30/18</i>	3.8% <i>9/30/18</i>

Equity environment

- U.S. equities experienced their worst quarter since 2008 – the S&P 500 Index returned -13.5%. The sell-off was due in part to concerns over a slowdown in global growth, and was exacerbated by low liquidity toward the end of the year.
- The drawdown from peak on the S&P 500 Index stopped just shy of 20% before equities rebounded during the last week of the year. Historically, equity drawdowns of more than 20% have been associated with an economic recession.
- Although absolute performance was also poor, international equities outperformed U.S. equities, particularly in emerging markets.
- Global equities saw a sharp drop in valuations as price declines overwhelmed small downward adjustments to earnings expectations. The 12-month forward P/E multiple for the MSCI ACWI fell by 12.1% during the quarter, falling from 14.8x to 13.0x.
- The risk-off environment hit small cap equities especially hard. The Russell 2000 Index posted a -20.2% return in the fourth quarter, compared to a decline of 13.8% on the Russell 1000 Index.
- Value equities outperformed growth equities over the quarter for the time since Q4 2016. The Russell 1000 Value Index and Russell 1000 Growth Index returned -11.7% and -15.9%, respectively.
- Equity volatility surged in what may be the beginning of a transition to a higher volatility regime. The VIX Index averaged 21 in Q4, and hit a high of 36 on December 24th.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	(13.8%)		(4.8%)	
US Small Cap (Russell 2000)	(20.2%)		(11.0%)	
US Large Value (Russell 1000 Value)	(11.7%)		(8.3%)	
US Large Growth (Russell 1000 Growth)	(15.9%)		(1.5%)	
International Large (MSCI EAFE)	(12.5%)	(11.6%)	(13.8%)	(9.0%)
Eurozone (Euro Stoxx 50)	(14.1%)	(10.7%)	(16.2%)	(9.3%)
U.K. (FTSE 100)	(11.7%)	(9.1%)	(14.0%)	(7.3%)
Japan (NIKKEI 225)	(14.6%)	(16.6%)	(8.6%)	(9.6%)
Emerging Markets (MSCI Emerging Markets)	(7.5%)	(7.4%)	(14.6%)	(10.3%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 12/31/18

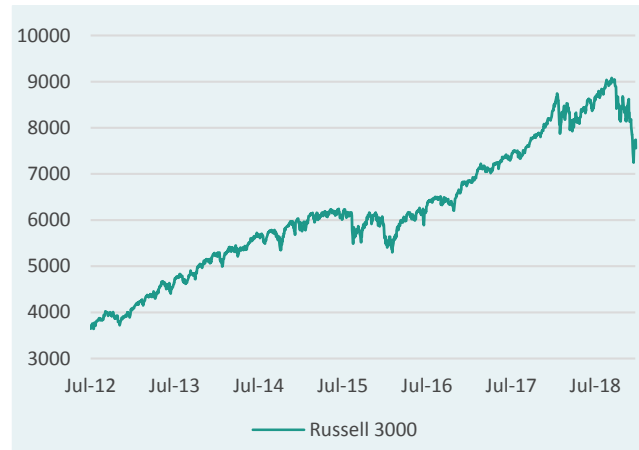
Domestic equity

U.S. equities experienced their worst quarter since 2008 as the S&P 500 Index returned -13.5%. For much of 2018, strong realized and expected earnings growth more than offset rising risk premiums (i.e. February sell-off) and discount rates as shown below in the middle chart. However, when cracks appeared in the growth story, influenced by poor economic data as well as profit warnings from companies, this support quickly vanished. The sharp drawdown, particularly in December, was also influenced by pockets of illiquidity in the market that exacerbated the move lower.

The question for investors now becomes whether the recent drawdown was a healthy reset of the pricing of earnings and risk premia, or whether it was a more urgent warning signal of a deterioration in the growth and profit cycle. We believe it to be more of the former rather than the latter, and that the market priced in an overly pessimistic view of macro conditions. However, we also recognize the growing headwinds to equities, including slowing global growth, further potential monetary tightening, and high debt levels. These conditions will likely result in sustained higher volatility, consistent with previous late cycle experiences.

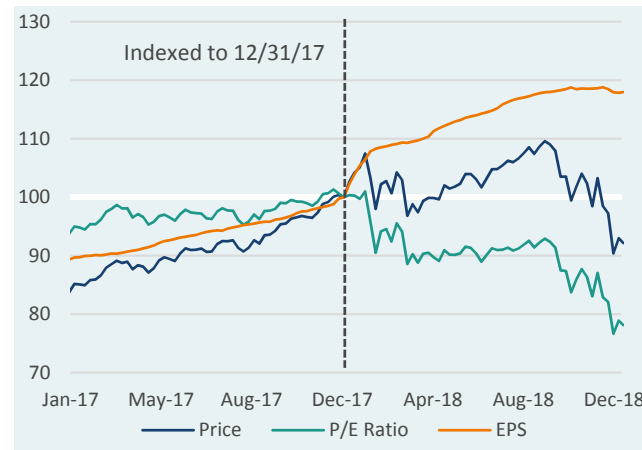
We maintain a neutral view on U.S. equities

U.S. EQUITIES



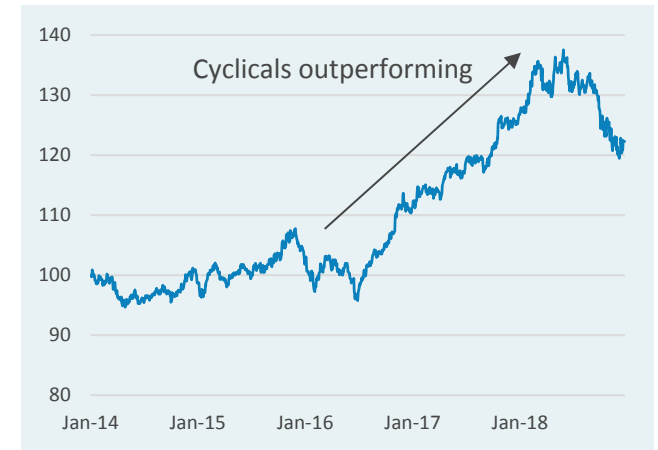
Source: Russell Investments, as of 12/31/18

S&P 500 PRICE MOVEMENT ATTRIBUTION



Source: Bloomberg, as of 12/31/18

CYCLICALS-DEFENSIVES RETURN SPREAD



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

Domestic equity size & style

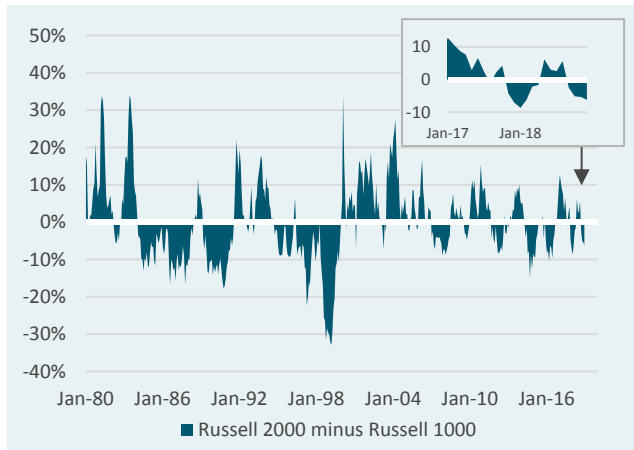
Large cap equities (Russell 1000 -13.8%) significantly outperformed small cap equities (Russell 2000 -20.2%) during the quarter. It may not be surprising that small cap equities underperformed, given the broad risk-off moves during this period. Growth stocks underperformed value stocks during the quarter (Russell 1000 Growth -15.9% vs. Russell 1000 Value -11.7%) for the first time since Q4 2016.

The sector weights in large-cap style benchmarks explain most of the recent value underperformance. Over the past

year, Energy, Materials, and Financials returned -18.1%, -14.7%, and -13.0%, respectively. These sectors are heavily weighted with value stocks, which resulted in a large drag to value. Information technology was an outperforming sector with a return of -0.3% during the period.

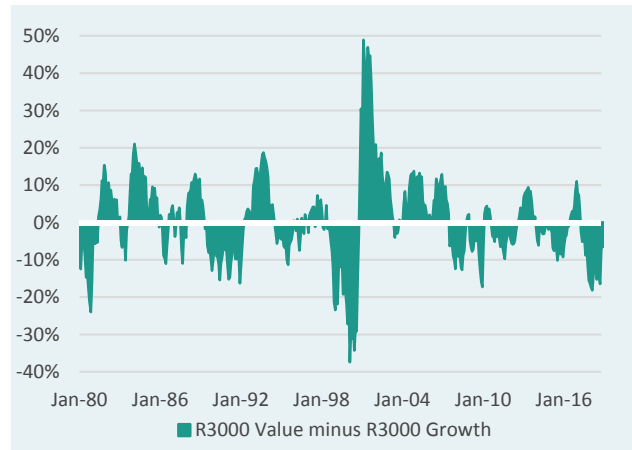
Long spans of style (size, value) underperformance is, and will always be, discouraging for investors. Similar to an investment in the broader equity market, we should expect to see rough patches of performance through time.

SMALL CAP VS LARGE CAP (YOY)



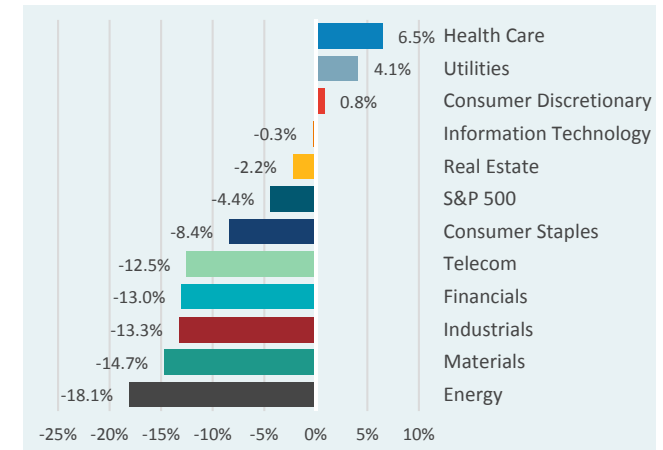
Source: FTSE, as of 12/31/18

VALUE VS GROWTH (YOY)



Source: FTSE, as of 12/31/18

1-YEAR S&P 500 SECTOR RETURNS



Source: Morningstar, as of 12/31/18

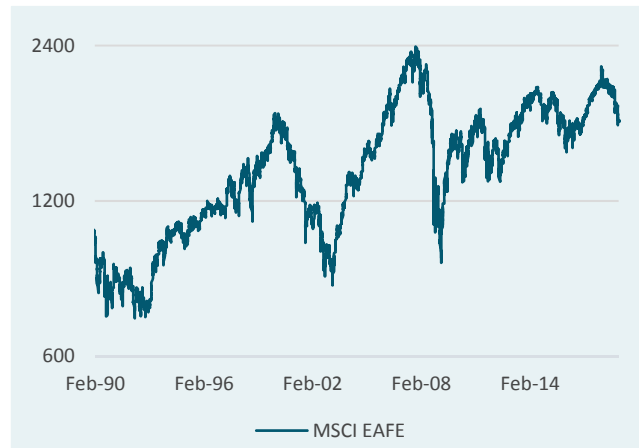
International developed equity

International developed equities sold off alongside U.S. equities. On an unhedged basis, the MSCI EAFE Index returned -12.5% in Q4 (-11.6% on a currency hedged basis). The three major equity markets in the EAFE Index – Japan, the Eurozone, and the UK – were all down more than 10%. The key factors that may have driven U.S. equities lower, most notably concerns over slowing global growth and central bank tightening, likely played an important role in non-U.S. developed markets. These concerns were particularly acute in the Eurozone where economic data routinely missed expectations, while the ECB officially

announced the end to its asset purchase program in December.

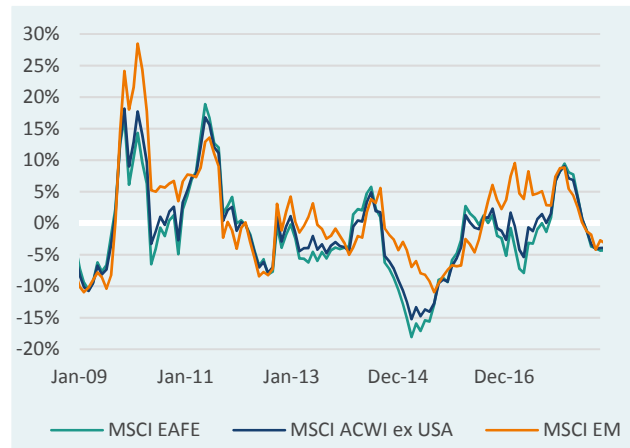
International developed equity markets are still cheap on both an absolute and relative basis at 11.9x forward earnings, but we believe there are good reasons for this pricing in certain markets. Within equity allocations, we are pessimistic on EAFE equities due to a negative view on the Eurozone. We believe slowing economic growth at the same time political risks are increasing and the ECB is unable to meaningfully ease policy present material headwinds to equity performance.

INTERNATIONAL DEVELOPED EQUITIES



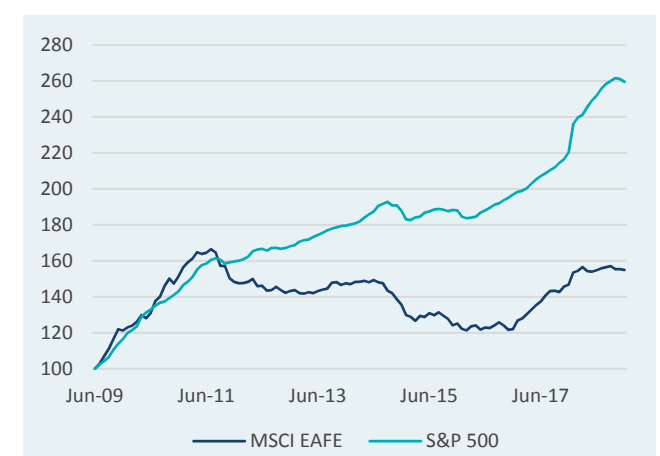
Source: MSCI, as of 12/31/18

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 12/31/18

EARNINGS PER SHARE



Source: Bloomberg, as of 12/31/18, indexed to earnings trough

Emerging market equity

Emerging market equities were the top performer in Q4, as these markets (MSCI EM -7.5%) experienced much less pain than developed (S&P 500 -13.5%, MSCI EAFE -12.5%) during the equity sell-off. Currency depreciation stabilized in Q4 (JP Morgan EM Currency Index +0.2%) and emerging market crises concerns faded from the news headlines.

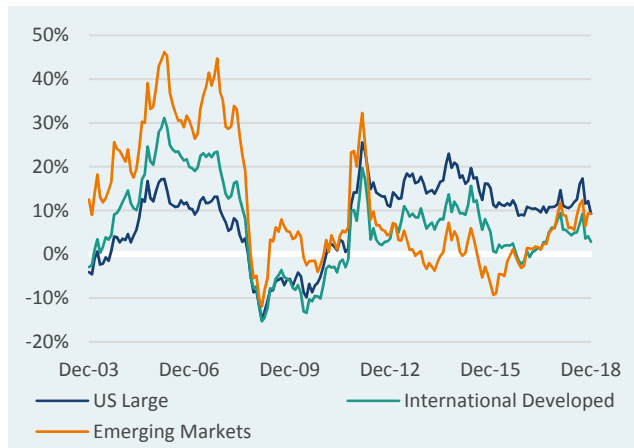
Valuations are near their long-term average, but remain much cheaper than developed market equities. Sentiment around emerging markets seems to be improving as the extreme negativity of 2018 dissipates, which creates possible

upside surprise if investors decide these fears were overblown. Very depressed currencies may also provide a performance tailwind in the event of mean reversion. Overall, we maintain our preference for the asset class.

Decelerating global growth and rising probability of recession do present unique risks to emerging markets, however, as these market typically exhibit a higher beta during market downside and upside moves. We will be watching global developments closely and will update our emerging market views as appropriate.

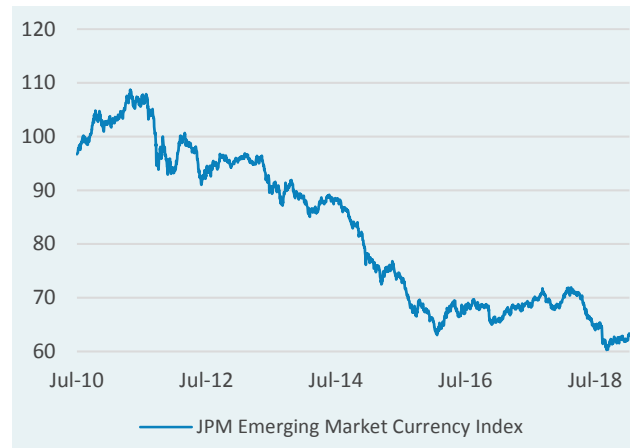
EM equities were the top performer in Q4

EQUITY PERFORMANCE (3-YR ROLLING)



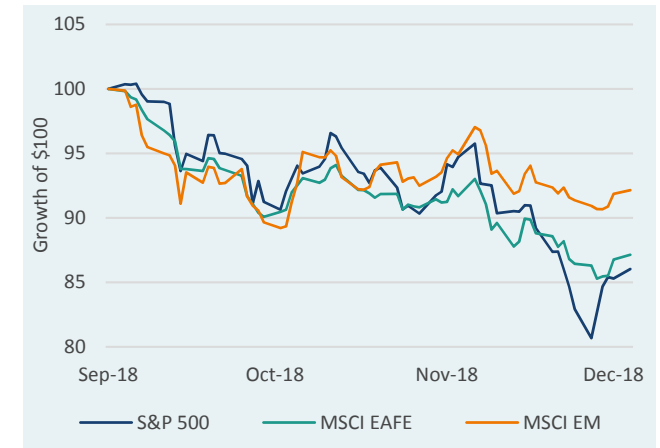
Source: Standard & Poor's, MSCI, as of 12/31/18

EMERGING MARKET CURRENCY MOVEMENT



Source: JP Morgan, as of 12/31/18

Q4 CUMULATIVE PERFORMANCE



Source: Standard & Poor's, MSCI, as of 12/31/18

Interest rate environment

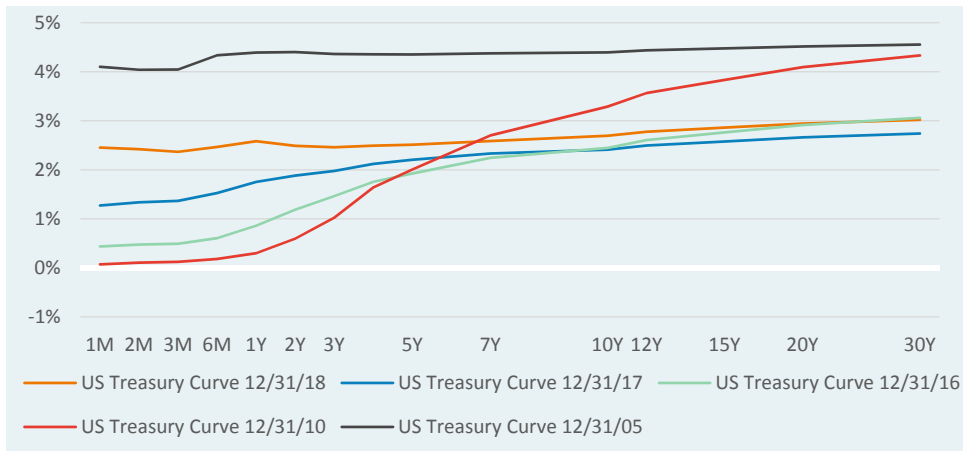
- The Federal Reserve raised the target for the fed funds rate by 0.25% in December, to a range of 2.25%-2.50%. Despite the hike, Fed officials indicated a more patient approach to future tightening, and lowered expectations for hikes in 2019 from three to two.
- The market's expectation for future rate hikes changed dramatically in December. As of year-end, the fed fund futures market is pricing zero hikes in 2019 and a rate cut priced in 2020.
- After reaching a cycle high of 3.2% in November, the 10-year Treasury yield fell sharply to end the year at 2.7%. Much of this drop was due to falling breakeven inflation as oil prices plunged. The 10-year breakeven inflation rate fell from 2.1% to 1.7% over the quarter.
- Although certain parts of the U.S. Treasury yield curve have inverted, there remains a 15 bps gap between the 10- and 2-year yields, which is the most widely cited measure of yield curve shape.
- Developed sovereign yields fell alongside U.S. Treasuries. The 10-year German bund yield was cut in half over the quarter to 0.24%.
- As expected, the European Central Bank officially announced the end of its asset purchase program. Beginning in January of 2019, monthly purchases will fall from €30 billion to €0. Central bank officials have said that they will fully reinvest maturing securities for the foreseeable future and keep interest rates unchanged until at least the second half of 2019.

Area	Short Term (3M)	10-Year
United States	2.36%	2.69%
Germany	(0.77%)	0.24%
France	(0.86%)	0.71%
Spain	(0.42%)	1.42%
Italy	(0.06%)	2.74%
Greece	1.30%	4.40%
U.K.	0.73%	1.28%
Japan	(0.15%)	0.00%
Australia	2.01%	2.32%
China	2.83%	3.31%
Brazil	6.48%	9.24%
Russia	7.12%	8.78%

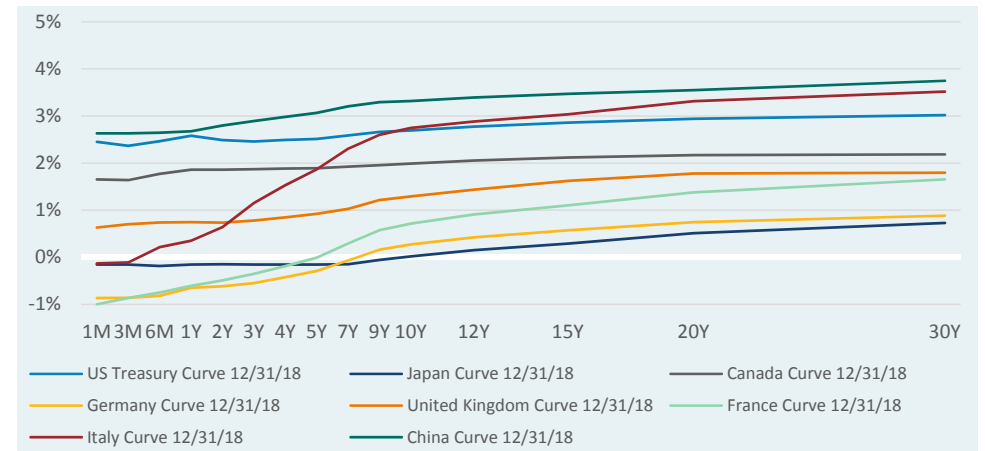
Source: Bloomberg, as of 12/31/18

Yield environment

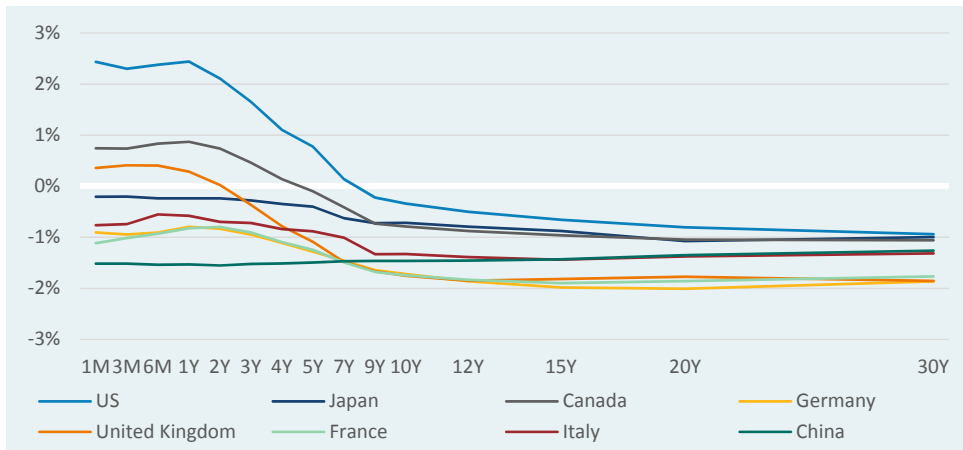
U.S. YIELD CURVE



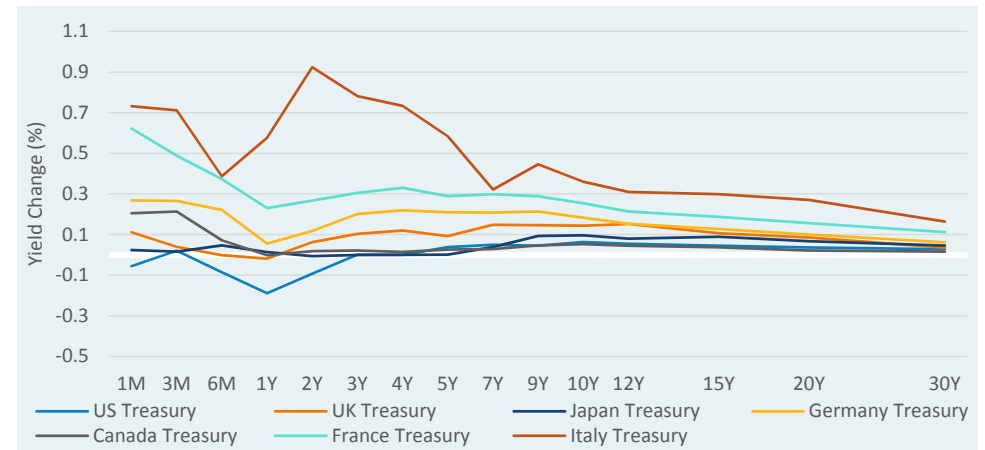
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 12/31/18

Currency

The U.S. dollar appreciated by 1.8% during the quarter, and 7.2% in 2018 based on the Broad Trade Weighted Dollar Index. The strong appreciation of the dollar last year was influenced by a number of factors, including stronger relative U.S. economic growth, higher relative interest rates, and weakness in other currencies such as the euro and British pound. The recent dollar strength in Q4 was due in part to safe haven demand amid equity market turbulence as these moves came despite the market pricing considerably less tightening from the Fed.

Emerging market currencies stabilized over the quarter, and recovered slightly from the recent drawdown in Q3. The JPMorgan Emerging Market Currency Index appreciated by 0.2% in Q4.

The U.S. dollar appreciated to a cycle high

From a value perspective (based on purchasing power parity), the U.S. dollar remains expensive, particularly versus the euro, yen, and British pound.

U.S. DOLLAR TRADE WEIGHTED INDEX



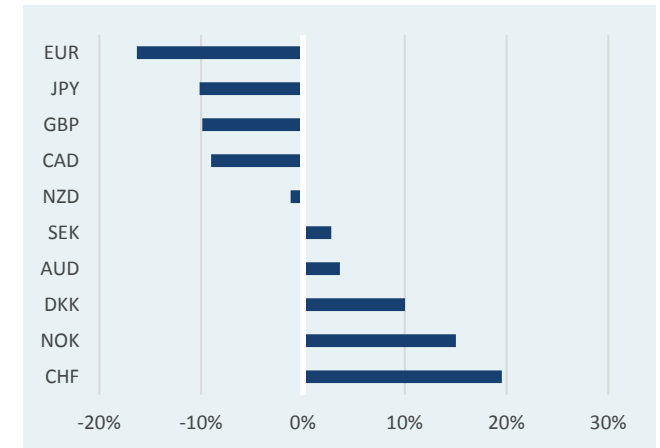
Source: Federal Reserve, as of 12/26/18

JPM EMERGING MARKET CURRENCY INDEX



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

U.S. DOLLAR VALUE (PPP)



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

- The Total Fund, net of manager fees, returned -6.2% in the fourth quarter of 2018 and in the ranked 32nd percentile among other public plans greater than \$1 billion (median of -6.9%). It lagged the policy index return of -5.9%. The Total Fund ex Overlay returned -6.3% for the quarter. The Total Fund one-year return of -4.3% lagged the policy index return of -3.5% and ranked in the 63rd percentile of its peer universe. The three-year return of 5.9% (63rd percentile) lagged the median large public plan (6.0%) and the policy index (6.7%).

- Fourth quarter results were enhanced by the following factors:
 1. Mondrian lost -8.9% beating the MSCI ACWI ex US value (-10.6%) and ranked in the top decile of its peers. The portfolio benefited from stock selection in Spain, Italy, and Japan. The portfolio also benefited from weak equity markets where defensive sectors delivered stronger returns.
 2. PanAgora Risk Parity lost -4.1% beating its index by 3.4%. Exposure to commodities and equities detracted from performance, while the investments in high grade sovereign debt had significant gains during the quarter.
 3. Parametric Core equity beat the MSCI EM index (-5.9% vs -7.4%.) The portfolio's underweight to China contributed to performance as Chinese markets fell due to signs of economic slowdown.

- Fourth quarter results were hindered by the following factors:
 1. Baillie Gifford lost -15.3% for the quarter trailing the MSCI ACWI ex US (-11.4%.) The majority of underperformance came from an overweight in the consumer discretionary, information technology and industrial sectors. These sectors were the worst three performing sectors aside from energy with -14.1%, -14.6%, and -13.6% losses respectively.

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2018

	3 Mo (%)	Rank*	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Total Fund**	-6.2	32	-4.4	40	-4.3	63	4.7	72	5.9	63	4.8	36	8.5	36
<i>Policy Index¹</i>	-5.9	25	-3.6	21	-3.5	36	5.6	31	6.7	23	5.1	20	9.1	23
<i>InvestorForce Public DB > \$1B Net Median</i>	-6.9		-4.8		-4.0		5.2		6.0		4.6		8.2	
Total Fund ex Overlay	-6.3	32	-4.4	39	-4.3	63	4.7	75	5.8	65	4.7	40	8.4	36
<i>Policy Index¹</i>	-5.9	25	-3.6	21	-3.5	36	5.6	31	6.7	23	5.1	20	9.1	23
<i>InvestorForce Public DB > \$1B Net Median</i>	-6.9		-4.8		-4.0		5.2		6.0		4.6		8.2	
Public Equity	-13.1	34	-9.7	45	-9.4	70	5.8	44	6.5	72	4.8	61	10.1	70
<i>Blended Public Equity Index¹</i>	-13.1	35	-9.7	46	-9.6	72	6.0	38	7.2	36	5.0	54	10.9	43
<i>InvestorForce All DB Total Eq Net Median</i>	-13.6		-9.9		-9.0		5.7		7.0		5.1		10.7	
US Equity	-14.6	45	-8.7	36	-5.6	37	6.9	32	8.3	54	7.1	49	12.7	49
<i>Blended US Equity Index¹</i>	-14.3	35	-8.2	26	-5.2	30	7.1	24	9.0	20	7.6	26	13.1	25
<i>Russell 3000</i>	-14.3	35	-8.2	26	-5.2	30	7.1	24	9.0	24	7.9	14	13.2	22
<i>InvestorForce All DB US Eq Net Median</i>	-14.7		-9.2		-6.1		6.4		8.4		7.1		12.6	
Large Cap Equity	-13.3	39	-7.0	36	-4.2	36	9.0	30	9.5	22	8.5	24	12.9	38
<i>Russell 1000</i>	-13.8	46	-7.4	41	-4.8	42	7.6	39	9.1	28	8.2	30	13.3	30
<i>eV US Large Cap Equity Net Median</i>	-14.2		-8.3		-5.8		6.7		7.8		7.1		12.3	
<i>Acadian US MGD V***</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<i>BlackRock Russell 1000</i>	-13.8	51	-7.4	46	-4.8	37	--	--	--	--	--	--	--	--
<i>DE Shaw</i>	-14.1	59	-8.0	56	-4.7	34	9.0	12	10.6	6	9.4	6	--	--
<i>PanAgora Defuseq***</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<i>Russell 1000</i>	-13.8	52	-7.4	47	-4.8	38	7.6	29	9.1	21	8.2	22	13.3	17
<i>eV US Large Cap Core Equity Net Median</i>	-13.8		-7.7		-5.8		6.7		7.8		7.3		12.2	

* Total Fund and asset class aggregates are ranked in InvestorForce universes. Managers are ranked in eVest (eA) manager universes.

** Includes Parametric Minneapolis manager funded in August 2013.

*** Funded December 2018.

1. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2018

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Small Cap Equity	-20.5	61	-17.8	63	-12.9	60	-1.0	59	4.7	76	2.1	84	12.2	65
<i>Russell 2000</i>	-20.2	57	-17.3	60	-11.0	50	1.0	47	7.4	47	4.4	47	12.0	69
<i>eV US Small Cap Equity Net Median</i>	-19.9		-16.5		-11.1		0.6		7.1		4.3		12.8	
QMA US Small Cap	-20.5	58	-17.8	63	-12.9	65	-1.0	68	--	--	--	--	--	--
<i>Russell 2000</i>	-20.2	53	-17.3	59	-11.0	51	1.0	44	7.4	46	4.4	50	12.0	70
<i>eV US Small Cap Core Equity Net Median</i>	-19.9		-16.7		-11.0		0.7		7.0		4.4		12.3	
International Equity	-11.4	25	-11.0	25	-13.8	21	4.6	38	4.1	51	1.3	27	5.3	81
<i>MSCI ACWI ex US IMI¹</i>	-11.9	46	-11.5	39	-14.8	44	4.6	38	4.7	28	1.2	28	7.1	32
<i>MSCI EAFE Gross</i>	-12.5	62	-11.3	33	-13.4	16	4.3	51	3.4	69	1.0	38	6.8	40
<i>InvestorForce All DB ex-US Eq Net Median</i>	-12.1		-11.9		-15.1		4.3		4.2		0.8		6.6	
Developed Markets	-12.2	54	-11.8	50	-14.1	44	4.4	51	3.7	44	1.4	41	5.5	80
<i>MSCI ACWI ex USA Gross</i>	-11.4	17	-10.7	19	-13.8	32	5.0	38	5.0	26	1.1	45	7.1	30
<i>InvestorForce All DB Dev Mkt ex-US Eq Net Median</i>	-12.1		-11.9		-14.4		4.4		3.4		1.0		6.5	
Baillie Gifford	-15.3	41	-16.4	52	-16.7	57	4.7	79	3.3	64	1.8	59	--	--
<i>MSCI ACWI ex US¹</i>	-11.4	5	-10.7	6	-13.8	37	5.0	75	5.0	33	1.1	70	--	--
<i>MSCI ACWI ex US Growth¹</i>	-12.2	10	-12.3	16	-14.1	44	6.7	42	4.6	41	2.1	55	--	--
<i>eV ACWI ex-US Growth Equity Net Median</i>	-15.7		-16.3		-16.1		6.4		3.9		2.2		9.1	
BlackRock EAFE Index	-12.5	21	-11.3	25	-13.5	32	4.2	42	3.3	38	0.9	62	--	--
<i>MSCI EAFE</i>	-12.5	21	-11.4	25	-13.8	36	3.8	48	2.9	46	0.5	75	6.3	80
<i>MSCI EAFE Gross</i>	-12.5	21	-11.3	25	-13.4	31	4.3	40	3.4	35	1.0	58	6.8	67
<i>eV EAFE Core Equity Net Median</i>	-14.2		-13.6		-15.9		3.6		2.4		1.2		7.2	
Mondrian	-8.9	6	-7.6	1	-12.0	8	4.0	19	4.2	43	1.1	37	5.8	57
<i>MSCI ACWI ex USA Value Gross</i>	-10.6	16	-9.0	5	-13.4	12	3.3	32	5.4	30	0.2	60	6.6	54
<i>MSCI ACWI ex USA Gross</i>	-11.4	34	-10.7	34	-13.8	15	5.0	9	5.0	36	1.1	35	7.1	51
<i>eV ACWI ex-US Value Equity Net Median</i>	-12.9		-12.1		-15.9		1.8		2.7		0.6		7.2	

1. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2018

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Emerging Markets	-5.9	29	-6.1	17	-13.8	22	5.1	67	7.7	55	0.1	77	--	--
<i>MSCI Emerging Markets Gross</i>	-7.4	66	-8.3	44	-14.2	28	8.7	7	9.7	17	2.0	13	8.4	32
<i>InvestorForce All DB Emg Mkt Eq Net Median</i>	-7.0		-8.5		-15.7		5.9		7.8		1.0		7.5	
Parametric Core	-5.9	22	-6.1	19	-13.8	24	5.1	82	7.7	51	--	--	--	--
<i>MSCI Emerging Markets Gross</i>	-7.4	44	-8.3	30	-14.2	27	8.7	24	9.7	21	2.0	34	8.4	54
<i>eV Emg Mkts Equity Net Median</i>	-7.7		-10.7		-16.2		7.0		7.8		1.4		8.8	
<i>Parametric Currency Overlay¹</i>	12.5	--	--	--	--	--	--	--	--	--	--	--	--	--
Fixed Income	0.3	62	1.0	43	0.3	25	2.9	14	4.6	9	3.4	22	6.3	15
<i>Blended Fixed Income Index¹</i>	0.2	64	1.0	43	-0.6	55	2.1	57	3.2	49	2.7	40	3.7	81
<i>InvestorForce All DB Total Fix Inc Net Median</i>	0.6		0.8		-0.4		2.2		3.1		2.5		4.7	
Core Fixed	1.4	--	1.4	--	-0.2	--	2.1	--	3.0	--	3.1	--	5.6	--
<i>BBgBarc US Aggregate TR</i>	1.6	--	1.7	--	0.0	--	1.8	--	2.1	--	2.5	--	3.5	--
BlackRock Intermediate Govt	2.2	21	2.2	1	1.6	1	--	--	--	--	--	--	--	--
<i>BBgBarc US Govt Int TR</i>	2.2	28	2.1	1	1.4	1	1.3	73	1.2	73	1.5	78	1.8	85
<i>eV US Government Fixed Inc Net Median</i>	2.1		1.8		1.0		1.6		1.5		2.0		2.5	
FIAM Bond	1.0	75	1.2	77	-0.2	52	1.9	29	2.8	12	2.9	20	5.2	16
<i>BBgBarc US Aggregate TR</i>	1.6	16	1.7	21	0.0	38	1.8	52	2.1	61	2.5	57	3.5	82
Western TRU	0.7	87	0.8	94	-3.1	99	2.7	6	3.6	5	--	--	--	--
<i>3-Month Libor Total Return USD</i>	0.7	87	1.3	68	2.4	2	1.8	36	1.5	97	1.0	99	0.7	99
<i>BBgBarc US Aggregate TR</i>	1.6	16	1.7	21	0.0	38	1.8	52	2.1	61	2.5	57	3.5	82
<i>eV US Core Fixed Inc Net Median</i>	1.3		1.4		-0.2		1.8		2.2		2.6		4.1	
Opportunistic Credit	-1.9	--	0.0	--	1.5	--	5.0	--	8.2	--	5.6	--	--	--
<i>BBgBarc BA Intermediate HY¹</i>	-2.7	--	-0.5	--	-1.9	--	2.1	--	5.2	--	3.9	--	--	--
<i>Angelo Gordon Opportunistic**</i>	0.5	--	5.4	--	21.4	--	19.4	--	15.2	--	--	--	--	--
<i>Angelo Gordon STAR**</i>	2.5	--	9.3	--	21.9	--	20.3	--	15.4	--	13.1	--	--	--
<i>BBgBarc US Aggregate TR</i>	1.6	--	1.7	--	0.0	--	1.8	--	2.1	--	2.5	--	3.5	--

* Funded September 2018.

** Preliminary return as of 12/31/2018.

1. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2018

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Beach Point Select	-4.0	41	-2.3	57	0.8	14	4.6	5	8.3	7	--	--	--	--
BBgBarc BA Intermediate HY ¹	-2.7	18	-0.5	10	-1.9	43	2.1	63	5.2	74	3.9	24	--	--
eV US High Yield Fixed Inc Net Median	-4.1		-2.1		-2.2		2.2		6.0		3.3		9.6	
Brigade Capital	-5.6	88	-3.4	86	-0.9	28	3.2	14	9.4	3	3.2	57	--	--
BBgBarc BA Intermediate HY ¹	-2.7	18	-0.5	10	-1.9	43	2.1	63	5.2	74	3.9	24	--	--
50% Barclays HY/ 50% Bank Loan	-3.8	37	-1.7	33	-0.5	21	2.6	27	6.1	43	3.6	38	--	--
eV US High Yield Fixed Inc Net Median	-4.1		-2.1		-2.2		2.2		6.0		3.3		9.6	
PIMCO Diversified	-1.3	5	0.4	1	-1.0	28	--	--	--	--	--	--	--	--
Blended PIMCO Diversified Index ¹	-1.5	7	0.2	5	-2.2	50	2.4	39	4.8	81	4.0	19	7.9	96
BBgBarc BA Intermediate HY	-2.7	18	-0.5	10	-1.9	43	2.1	63	5.2	74	3.9	24	--	--
eV US High Yield Fixed Inc Net Median	-4.1		-2.1		-2.2		2.2		6.0		3.3		9.6	
Franklin Templeton	2.1	4	2.5	1	0.0	21	2.1	62	3.9	38	1.5	64	--	--
BBgBarc Multiverse TR	1.0	18	0.2	31	-1.4	33	3.1	28	3.0	61	1.2	75	2.8	85
eV All Global Fixed Inc Net Median	-0.8		-0.5		-2.2		2.4		3.4		2.1		4.9	
Private Credit	1.9	--	4.2	--	8.5	--	7.5	--	--	--	--	--	--	--
Cliffwater Direct Lending Index*	2.4	--	4.8	--	9.7	--	9.2	--	9.9	--	8.9	--	11.0	--
TCP Direct Lending VIII ¹	1.8	1	4.2	1	7.1	1	7.2	1	--	--	--	--	--	--
White Oak Yield*	2.0	1	4.3	1	10.1	1	--	--	--	--	--	--	--	--
Cliffwater Direct Lending Index	2.4	1	4.8	1	9.7	1	9.2	1	9.9	2	8.9	1	11.0	11
eV US High Yield Fixed Inc Net Median	-4.1		-2.1		-2.2		2.2		6.0		3.3		9.6	
Risk Parity	-4.8	--	-5.7	--	-7.2	--	3.2	--	6.1	--	4.5	--	--	--
Blended Risk Parity Index ¹	-7.5	--	-4.8	--	-4.4	--	4.5	--	5.9	--	5.7	--	--	--
AQR GRP, 10% Volatility	-5.4	--	-5.2	--	-6.7	--	4.1	--	6.2	--	3.2	--	--	--
PanAgora	-4.1	--	-6.1	--	-7.6	--	2.5	--	6.0	--	--	--	--	--
Blended Risk Parity Index ¹	-7.5	--	-4.8	--	-4.4	--	4.5	--	5.9	--	5.7	--	--	--
Blended RP Secondary Index ¹	-8.0	--	-4.1	--	-2.9	--	5.1	--	5.5	--	4.5	--	--	--

* Preliminary return as of 12/31/2018.

1. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2018

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Alternatives	0.8	--	2.9	--	2.4	--	5.9	--	7.0	--	6.5	--	--	--
<i>Blended Alternatives Index¹</i>	4.8	--	7.8	--	9.6	--	12.3	--	11.8	--	7.6	--	--	--
Private Equity**	4.7	14	9.9	8	17.7	27	15.6	42	15.3	20	16.4	16	--	--
<i>Blended Private Equity Index¹</i>	8.1	1	12.4	3	12.9	58	18.4	18	17.5	11	14.2	33	17.9	1
<i>InvestorForce All DB Private Eq Net Median</i>	1.7		5.1		15.6		14.7		13.1		12.2		10.9	
Hedge Fund/Absolute Return	-3.5	38	-4.5	67	-11.7	95	-3.7	95	-2.2	94	2.5	37	--	--
<i>Libor 1 month +4%</i>	1.6	2	3.2	1	6.1	3	5.6	3	5.2	8	4.8	4	--	--
<i>InvestorForce All DB Hedge Funds Net Median</i>	-4.7		-3.7		-2.2		2.3		2.4		2.0		4.4	
AQR DELTA XN	-4.3	61	-6.2	75	-15.3	87	-5.4	92	-3.1	89	2.0	67	--	--
Aberdeen Standard GARS	-2.2	43	-1.7	44	-5.7	62	-1.1	75	-1.4	81	--	--	--	--
<i>Libor 1 month +4%</i>	1.6	12	3.2	13	6.1	16	5.6	29	5.2	35	4.8	32	--	--
<i>eV Alt All Multi-Strategy Median</i>	-3.3		-2.4		-2.7		1.9		3.4		3.0		6.8	
Inflation Hedge	-3.4	--	-2.9	--	-1.4	--	3.3	--	--	--	--	--	--	--
<i>Blended Inflation Hedge Index¹</i>	-2.5	--	-1.7	--	-0.8	--	4.0	--	--	--	--	--	--	--
Real Estate	2.1	1	4.5	1	8.6	2	8.4	5	8.5	3	10.5	3	6.3	23
NCREIF ODCE	1.8	4	3.9	4	8.3	6	8.0	10	8.2	11	10.4	3	7.0	10
<i>InvestorForce All DB Real Estate Pub Net Median</i>	1.2		3.1		6.8		6.6		6.8		8.9		5.8	
Invesco	2.1	--	4.6	--	8.9	--	8.5	--	8.6	--	10.4	--	6.3	--
NCREIF ODCE	1.8	--	3.9	--	8.3	--	8.0	--	8.2	--	10.4	--	7.0	--
Invesco US Val IV	4.0	--	6.9	--	11.3	--	11.6	--	9.9	--	--	--	--	--
NCREIF ODCE	1.8	--	3.9	--	8.3	--	8.0	--	8.2	--	10.4	--	7.0	--
NCREIF CEVA 1Q Lag - NET	3.0	--	6.0	--	11.9	--	11.0	--	11.7	--	13.5	--	--	--
PGIM RE US Debt Fund	1.6	--	3.6	--	5.9	--	--	--	--	--	--	--	--	--
NCREIF ODCE	1.8	--	3.9	--	8.3	--	8.0	--	8.2	--	10.4	--	7.0	--

* Excludes EnCap Energy Capital Fund and Sheridan Production Partners.

** Returns are one-quarter lag.

1. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2018

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Private Real Asset**	4.2	--	4.8	--	4.5	--	0.8	--	13.7	--	--	--	--	--
<i>Blended Private Real Asset Index¹</i>	-0.1	--	4.3	--	-3.1	--	4.4	--	5.1	--	5.1	--	--	--
<i>Blended Secondary CA Private RA Index¹</i>	2.1	--	4.4	--	10.1	--	11.8	--	9.8	--	--	--	--	--
Public Real Assets	-11.2	--	-12.6	--	-12.8	--	-0.3	--	--	--	--	--	--	--
<i>Blended Public Real Asset Index¹</i>	-9.4	--	-10.8	--	-11.5	--	-0.2	--	2.0	--	3.3	--	--	--
Cushing MLP Alpha TR***	-17.8	--	--	--	--	--	--	--	--	--	--	--	--	--
<i>50% BBgBarc US TIPS/ 50% Blended PRA Index¹</i>	-5.0	--	-6.1	--	--	--	--	--	--	--	--	--	--	--
<i>Alerian MLP TR USD</i>	-17.3	--	-11.9	--	-12.4	--	-9.5	--	-1.1	--	-7.3	--	9.6	--
SSgA Custom Real Asset	-9.2	--	-10.1	--	-10.3	--	1.1	--	--	--	--	--	--	--
<i>Blended Public Real Asset Index¹</i>	-9.4	--	-10.8	--	-11.5	--	-0.2	--	2.0	--	3.3	--	--	--
TIPS	-0.8	--	-1.1	--	-0.7	--	0.9	--	2.2	--	1.3	--	--	--
<i>BBgBarc US TIPS TR</i>	-0.4	--	-1.2	--	-1.3	--	0.8	--	2.1	--	1.7	--	3.6	--
Brown Brothers Harriman	-0.8	62	-1.1	28	-0.7	19	0.9	25	2.2	30	1.3	64	--	--
<i>BBgBarc US TIPS TR</i>	-0.4	31	-1.2	35	-1.3	39	0.8	34	2.1	38	1.7	28	3.6	43
<i>eV US TIPS / Inflation Fixed Inc Net Median</i>	-0.5	--	-1.3	--	-1.4	--	0.8	--	2.0	--	1.5	--	3.4	--
Cash	0.5	--	0.6	--	1.1	--	1.0	--	1.0	--	0.9	--	0.9	--
<i>91 Day T-Bills</i>	0.5	--	1.0	--	1.9	--	1.4	--	1.0	--	0.6	--	0.4	--
General Account	2.5	--	3.3	--	4.9	--	3.3	--	2.6	--	2.0	--	1.1	--
Treasury & LAIF	0.8	--	2.1	--	4.8	--	3.0	--	2.3	--	1.7	--	1.3	--
<i>91 Day T-Bills</i>	0.5	--	1.0	--	1.9	--	1.4	--	1.0	--	0.6	--	0.4	--

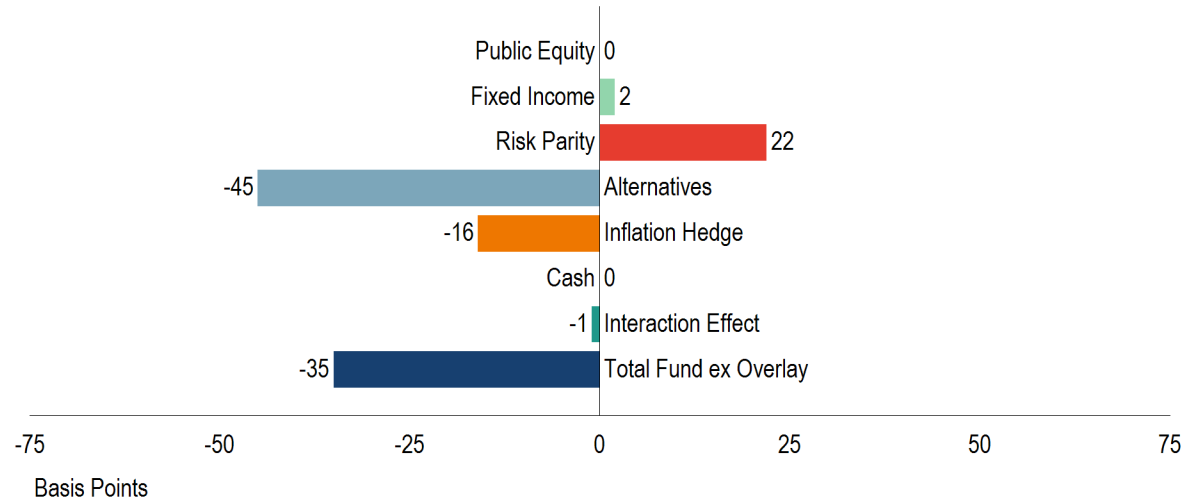
** Returns are one-quarter lag.

*** Funded July 2018

1. See Appendix for Benchmark History.

Total Fund ex Overlay
Performance Attribution

Period Ending: December 31, 2018

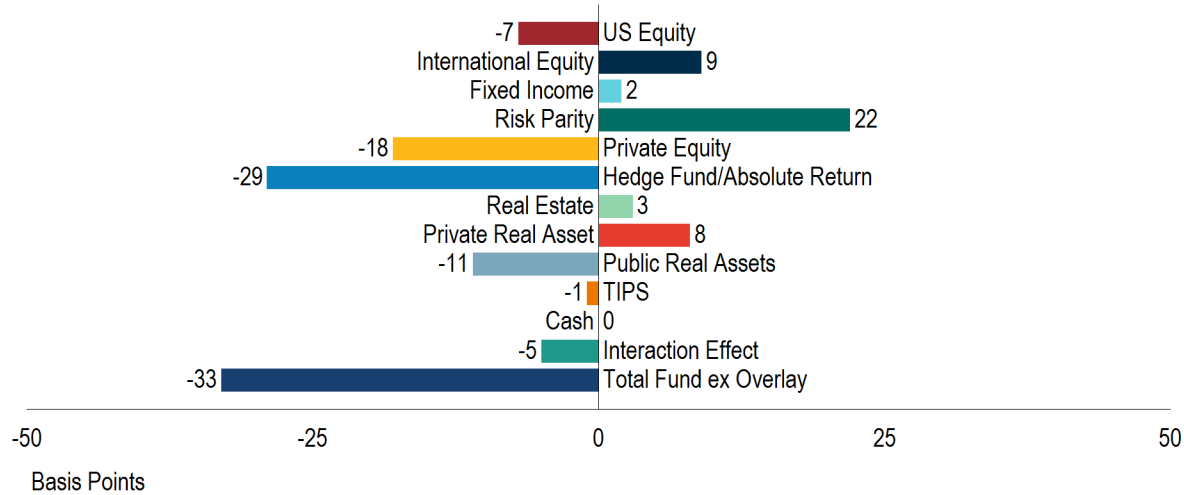


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction*	Total Effects
Public Equity	-13.12%	-13.13%	0.01%	0.00%	0.00%	0.00%	0.00%
Fixed Income	0.31%	0.19%	0.11%	0.02%	-0.02%	0.00%	0.00%
Risk Parity	-4.78%	-7.49%	2.70%	0.22%	0.00%	-0.01%	0.21%
Alternatives	0.82%	4.84%	-4.02%	-0.45%	-0.02%	0.00%	-0.47%
Inflation Hedge	-3.37%	-2.48%	-0.89%	-0.16%	-0.01%	0.00%	-0.17%
Cash	0.50%	0.55%	-0.05%	0.00%	0.07%	0.00%	0.07%
Total	-6.26%	-5.91%	-0.35%	-0.37%	0.03%	-0.01%	-0.35%

Attribution does not include the impact of the Parametric Minneapolis strategy.
* Interaction Effects include Residual Effects.

Total Fund ex Overlay
Performance Attribution

Period Ending: December 31, 2018

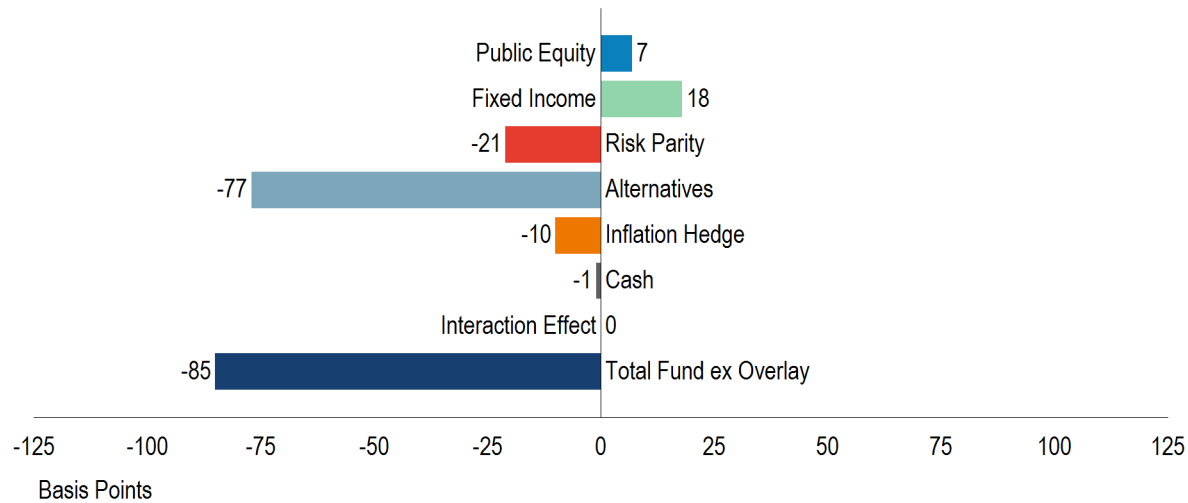


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction* Effects	Total Effects
US Equity	-14.59%	-14.30%	-0.29%	-0.07%	-0.03%	0.00%	-0.10%
International Equity	-11.39%	-11.88%	0.49%	0.09%	0.02%	0.00%	0.12%
Fixed Income	0.31%	0.19%	0.11%	0.02%	-0.02%	0.00%	0.00%
Risk Parity	-4.78%	-7.49%	2.70%	0.22%	0.00%	-0.01%	0.21%
Private Equity	4.74%	8.15%	-3.41%	-0.18%	0.04%	-0.03%	-0.16%
Hedge Fund/Absolute Return	-3.52%	1.59%	-5.11%	-0.29%	-0.04%	0.03%	-0.30%
Real Estate	2.11%	1.76%	0.35%	0.03%	0.01%	0.00%	0.04%
Private Real Asset	4.16%	-0.13%	4.29%	0.08%	-0.03%	-0.02%	0.02%
Public Real Assets	-11.23%	-9.41%	-1.83%	-0.11%	-0.04%	-0.02%	-0.17%
TIPS	-0.80%	-0.42%	-0.38%	-0.01%	-0.05%	0.00%	-0.05%
Cash	0.50%	0.55%	-0.05%	0.00%	0.07%	0.00%	0.07%
Total	-6.26%	-5.92%	-0.33%	-0.22%	-0.06%	-0.05%	-0.33%

Attribution does not include the impact of the Parametric Minneapolis strategy.
* Interaction Effects include Residual Effects.

Total Fund ex Overlay
Performance Attribution (1 Year)

Period Ending: December 31, 2018

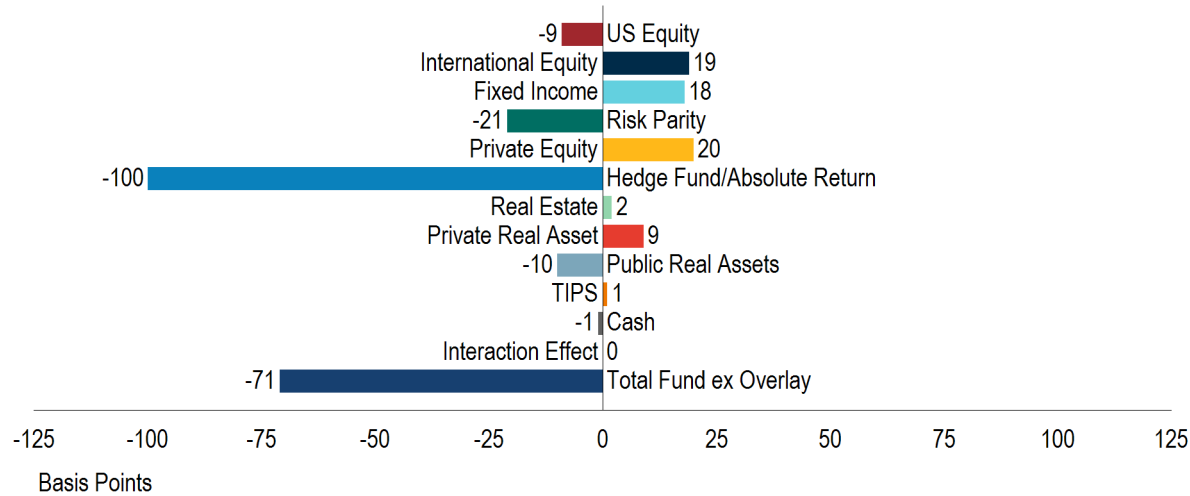


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction*	Total Effects
Public Equity	-9.44%	-9.61%	0.17%	0.07%	0.00%	0.00%	0.07%
Fixed Income	0.31%	-0.61%	0.92%	0.18%	0.00%	0.00%	0.18%
Risk Parity	-7.20%	-4.41%	-2.79%	-0.21%	0.00%	0.00%	-0.21%
Alternatives	2.39%	9.57%	-7.17%	-0.77%	0.00%	0.00%	-0.77%
Inflation Hedge	-1.40%	-0.83%	-0.57%	-0.10%	0.00%	0.00%	-0.10%
Cash	1.15%	1.89%	-0.75%	-0.01%	0.00%	0.00%	-0.01%
Total	-4.24%	-3.39%	-0.85%	-0.85%	0.00%	0.00%	-0.85%

Attribution does not include the impact of the Parametric Minneapolis strategy.
* Interaction Effects include Residual Effects.

Total Fund ex Overlay
Performance Attribution (1 Year)

Period Ending: December 31, 2018



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction*	Total Effects
US Equity	-5.63%	-5.24%	-0.38%	-0.09%	0.00%	0.00%	-0.09%
International Equity	-13.82%	-14.76%	0.94%	0.19%	0.00%	0.00%	0.19%
Fixed Income	0.31%	-0.61%	0.92%	0.18%	0.00%	0.00%	0.18%
Risk Parity	-7.20%	-4.41%	-2.79%	-0.21%	0.00%	0.00%	-0.21%
Private Equity	17.67%	12.87%	4.80%	0.20%	0.00%	0.00%	0.20%
Hedge Fund/Absolute Return	-11.74%	6.08%	-17.82%	-1.00%	0.00%	0.00%	-1.00%
Real Estate	8.58%	8.35%	0.23%	0.02%	0.00%	0.00%	0.02%
Private Real Asset	4.46%	-3.13%	7.59%	0.09%	0.00%	0.00%	0.09%
Public Real Assets	-12.78%	-11.51%	-1.26%	-0.10%	0.00%	0.00%	-0.10%
TIPS	-0.68%	-1.26%	0.58%	0.01%	0.00%	0.00%	0.01%
Cash	1.15%	1.89%	-0.75%	-0.01%	0.00%	0.00%	-0.01%
Total	-4.24%	-3.53%	-0.71%	-0.71%	0.00%	0.00%	-0.71%

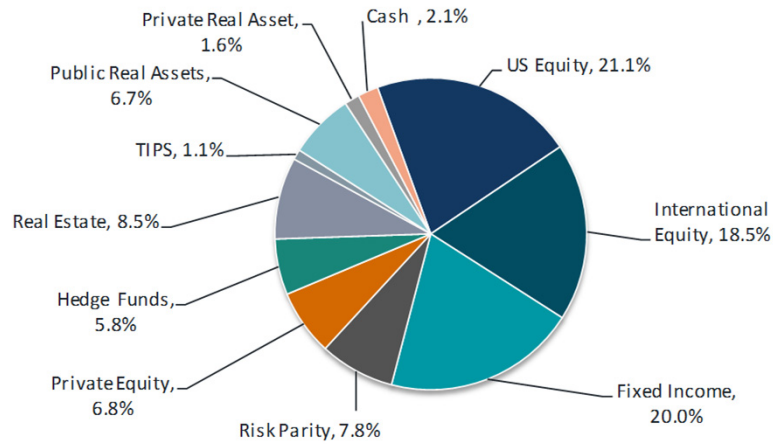
Attribution does not include the impact of the Parametric Minneapolis strategy.
* Interaction Effects include Residual Effects.

Total Fund

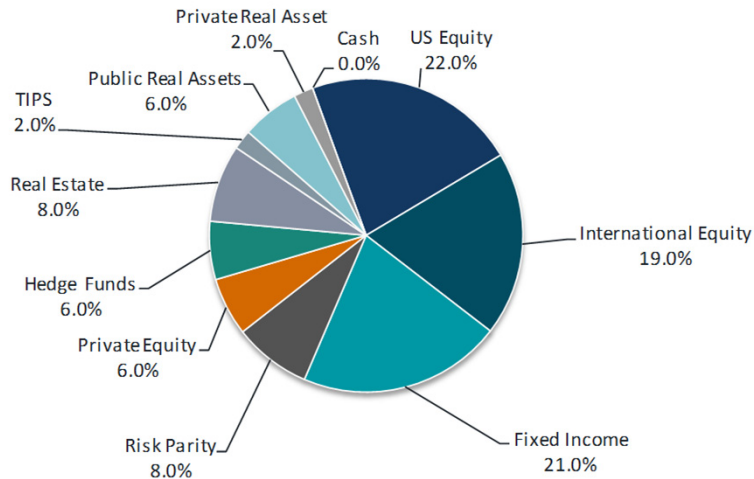
Asset Allocation Analysis

Period Ending: December 31, 2018

Current w/Overlay



Target



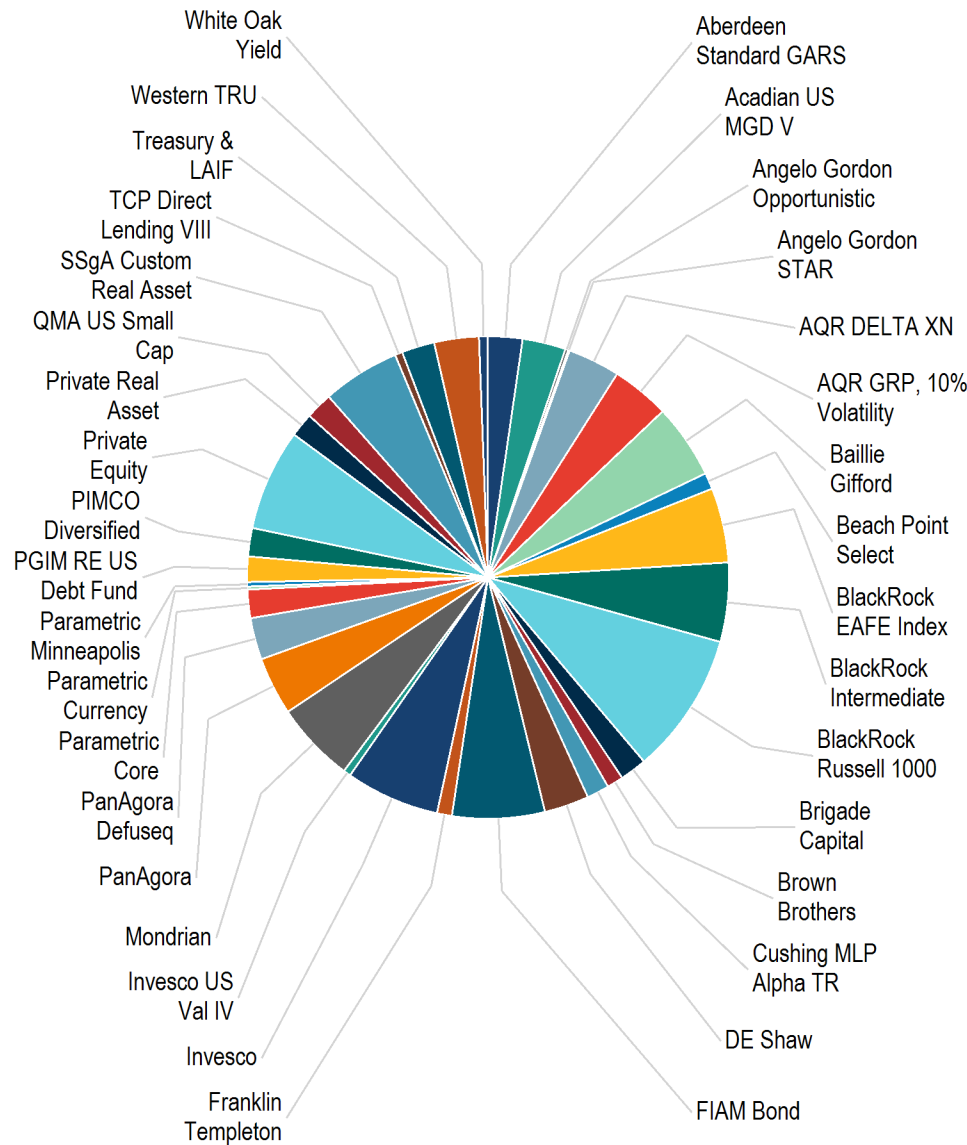
MARKET VALUE

ASSET ALLOCATION	W/OVERLAY	W/OVERLAY	W/O OVERLAY
US Equity	898,861,491	21.1%	20.0%
International Equity	785,690,659	18.5%	17.5%
Fixed Income	851,475,694	20.0%	21.6%
Risk Parity	331,159,429	7.8%	7.8%
Private Equity	290,757,410	6.8%	6.8%
Hedge Funds	246,587,523	5.8%	5.8%
Real Estate	361,205,384	8.5%	8.5%
TIPS	45,255,188	1.1%	1.1%
Public Real Assets	287,076,739	6.7%	6.7%
Private Real Asset	66,415,429	1.6%	1.6%
Cash	89,651,377	2.1%	2.6%
TOTAL	4,254,136,323	100.0%	100.0%

ASSET ALLOCATION	W/OVERLAY	TARGET	DIFF
US Equity	21.1%	22.0%	-0.9%
International Equity	18.5%	19.0%	-0.5%
Fixed Income	20.0%	21.0%	-1.0%
Risk Parity	7.8%	8.0%	-0.2%
Private Equity	6.8%	6.0%	0.8%
Hedge Funds	5.8%	6.0%	-0.2%
Real Estate	8.5%	8.0%	0.5%
TIPS	1.1%	2.0%	-0.9%
Public Real Assets	6.7%	6.0%	0.7%
Private Real Asset	1.6%	2.0%	-0.4%
Cash	2.1%	0.0%	2.1%
TOTAL	100.0%	100.0%	0.0%

Total Fund Manager Allocation Analysis

Period Ending: December 31, 2018



	Actual	Actual
Aberdeen Standard GARS	\$96,556,718	2%
Acadian US MGD V	\$121,771,078	3%
Angelo Gordon Opportunistic	\$6,456,000	0%
Angelo Gordon STAR	\$5,795,000	0%
AQR DELTA XN	\$150,030,805	4%
AQR GRP, 10% Volatility	\$167,213,070	4%
Baillie Gifford	\$213,761,751	5%
Beach Point Select	\$48,825,225	1%
BlackRock EAFE Index	\$214,588,077	5%
BlackRock Intermediate Govt	\$224,623,998	5%
BlackRock Russell 1000	\$405,600,329	10%
Brigade Capital	\$74,678,157	2%
Brown Brothers Harriman	\$45,255,188	1%
Cushing MLP Alpha TR	\$63,941,127	2%
DE Shaw	\$125,653,854	3%
FIAM Bond	\$263,327,350	6%
Franklin Templeton	\$41,040,245	1%
General Account	\$2,028,884	0%
Invesco	\$267,997,671	6%
Invesco US Val IV	\$23,012,456	1%
Mondrian	\$227,739,257	5%
PanAgora	\$163,946,359	4%
PanAgora Defuseq	\$121,010,273	3%
Parametric Core	\$82,916,150	2%
Parametric Currency Overlay	\$7,327,487	0%
Parametric Minneapolis Overlay	\$13,061,769	0%
PGIM RE US Debt Fund	\$70,195,257	2%
PIMCO Diversified	\$80,085,677	2%
Private Equity	\$290,757,410	7%
Private Real Asset	\$66,415,429	2%
QMA US Small Cap	\$75,330,005	2%
SSgA Custom Real Asset	\$223,135,612	5%
TCP Direct Lending VIII	\$20,301,532	0%
Transition 3	\$97,066	0%
Treasury & LAIF	\$94,976,959	2%
Western TRU	\$129,670,356	3%
White Oak Yield	\$25,012,741	1%
Total	\$4,254,136,323	100%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	5.9%	63	5.7%	45	0.9	49	-0.7	98	1.1%	50
Policy Index	6.7%	23	6.1%	60	0.9	38	--	--	0.0%	1
InvestorForce Public DB > \$1B Net Median	6.0%	--	5.8%	--	0.8	--	-0.1	--	1.1%	--

Statistics Summary

5 Years

	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	4.8%	36	6.1%	60	0.7	46	-0.3	70	1.0%	32
Policy Index	5.1%	20	6.5%	74	0.7	42	--	--	0.0%	1
InvestorForce Public DB > \$1B Net Median	4.6%	--	5.9%	--	0.7	--	0.0	--	1.2%	--

Statistics Summary

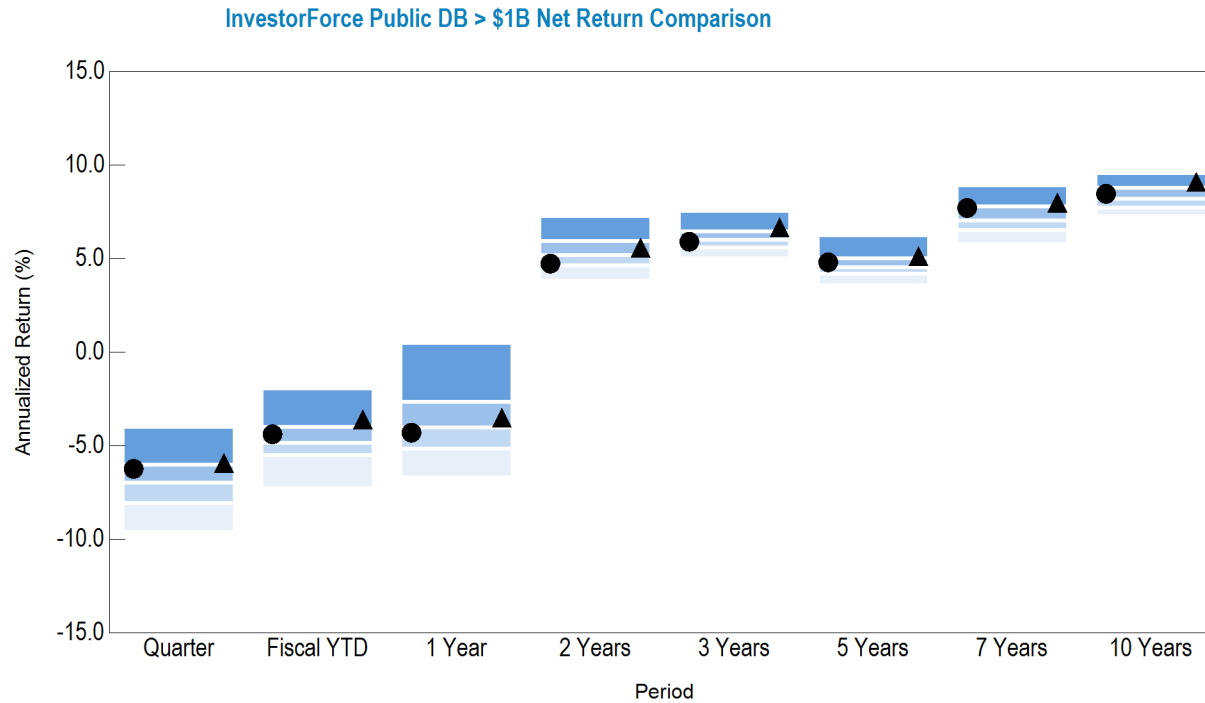
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Cash	1.0%	0.2%	-0.5	-0.4	0.2%
91 Day T-Bills	1.0%	0.2%	0.0	--	0.0%
General Account	2.6%	1.0%	1.6	1.7	0.9%
91 Day T-Bills	1.0%	0.2%	0.0	--	0.0%
Treasury & LAIF	2.3%	1.0%	1.2	1.3	1.0%
91 Day T-Bills	1.0%	0.2%	0.0	--	0.0%

Statistics Summary

5 Years

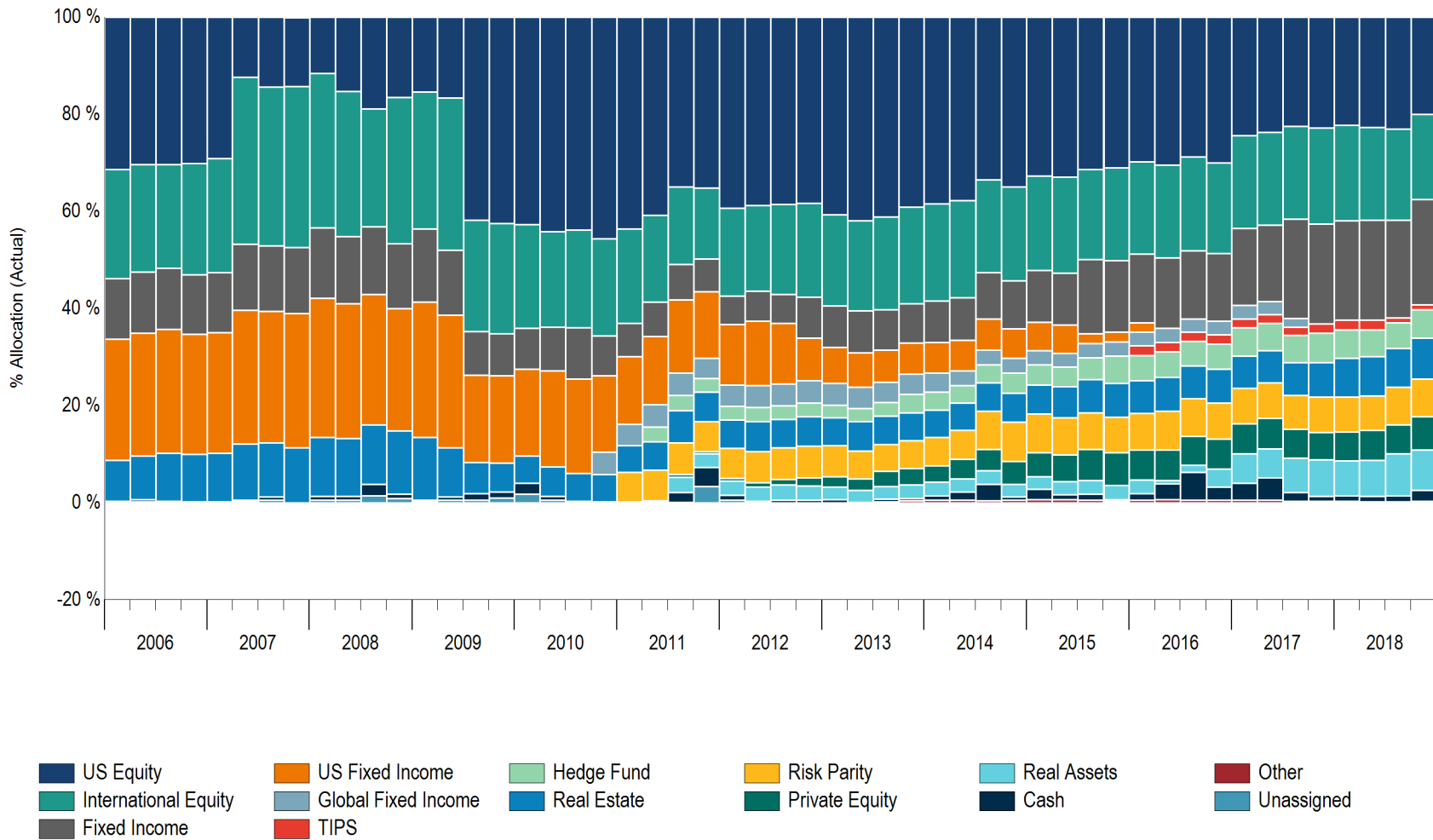
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Cash	0.9%	0.3%	0.9	0.8	0.4%
91 Day T-Bills	0.6%	0.2%	0.0	--	0.0%
General Account	2.0%	0.9%	1.6	1.7	0.8%
91 Day T-Bills	0.6%	0.2%	0.0	--	0.0%
Treasury & LAIF	1.7%	0.9%	1.2	1.3	0.8%
91 Day T-Bills	0.6%	0.2%	0.0	--	0.0%

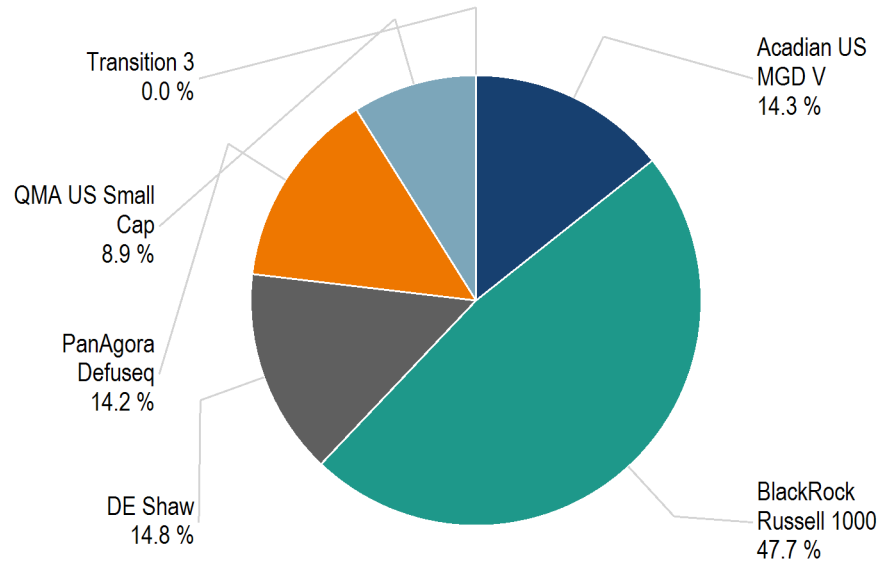


	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
Return (Rank)								
5th Percentile	-4.0	-1.9	0.5	7.3	7.5	6.2	8.9	9.5
25th Percentile	-6.0	-4.0	-2.6	6.0	6.5	5.0	7.8	8.8
Median	-6.9	-4.8	-4.0	5.2	6.0	4.6	7.1	8.2
75th Percentile	-8.1	-5.5	-5.1	4.7	5.6	4.2	6.6	7.7
95th Percentile	-9.6	-7.3	-6.7	3.9	5.0	3.6	5.8	7.3
# of Portfolios	46	46	46	46	46	45	45	42
● Total Fund	-6.2 (32)	-4.4 (40)	-4.3 (63)	4.7 (72)	5.9 (63)	4.8 (36)	7.7 (27)	8.5 (36)
▲ Policy Index	-5.9 (25)	-3.6 (21)	-3.5 (36)	5.6 (31)	6.7 (23)	5.1 (20)	8.0 (22)	9.1 (23)

Total Fund
Asset Allocation History

Period Ending: December 31, 2018





	Actual \$	Actual %	Manager Contribution to Excess Return %
Acadian US MGD V	\$121,771,078	14.3%	0.0%
BlackRock Russell 1000	\$405,600,329	47.7%	0.0%
DE Shaw	\$125,653,854	14.8%	-0.1%
PanAgora Defuseq	\$121,010,273	14.2%	0.0%
QMA US Small Cap	\$75,330,005	8.9%	0.0%
Transition Account	\$97,066	0.0%	0.0%
Actual vs. Policy Weight Difference			-0.2%
Total	\$849,462,604	100.0%	-0.3%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	8.3%	11.3%	0.6	-1.0	0.7%
Blended US Equity Index	9.0%	11.4%	0.7	--	0.0%
Russell 3000	9.0%	11.3%	0.7	-0.3	0.2%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	9.5%	10.9%	0.8	0.4	1.2%
Russell 1000	9.1%	11.1%	0.7	--	0.0%
DE Shaw	10.6%	11.0%	0.9	0.6	2.4%
Russell 1000	9.1%	11.1%	0.7	--	0.0%
Small Cap Equity	4.7%	15.5%	0.2	-0.9	2.8%
Russell 2000	7.4%	16.0%	0.4	--	0.0%

Statistics Summary

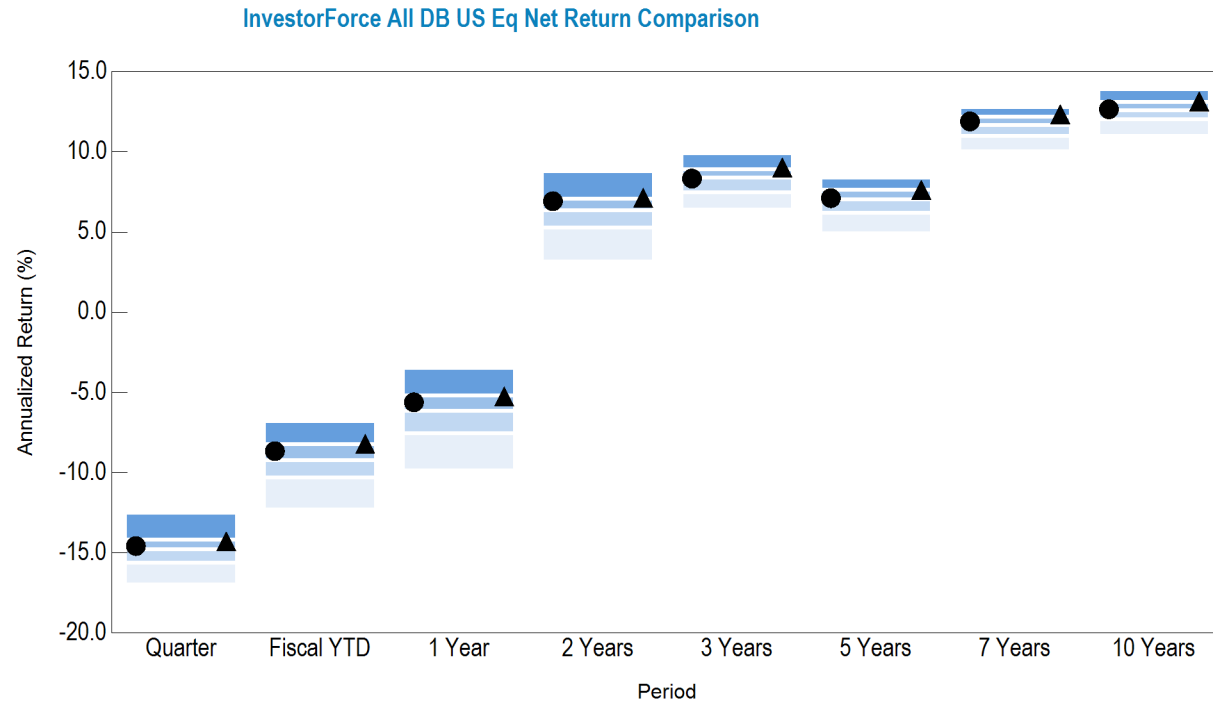
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	7.1%	11.1%	0.6	-0.7	0.7%
Blended US Equity Index	7.6%	11.3%	0.6	--	0.0%
Russell 3000	7.9%	11.2%	0.7	0.4	0.7%

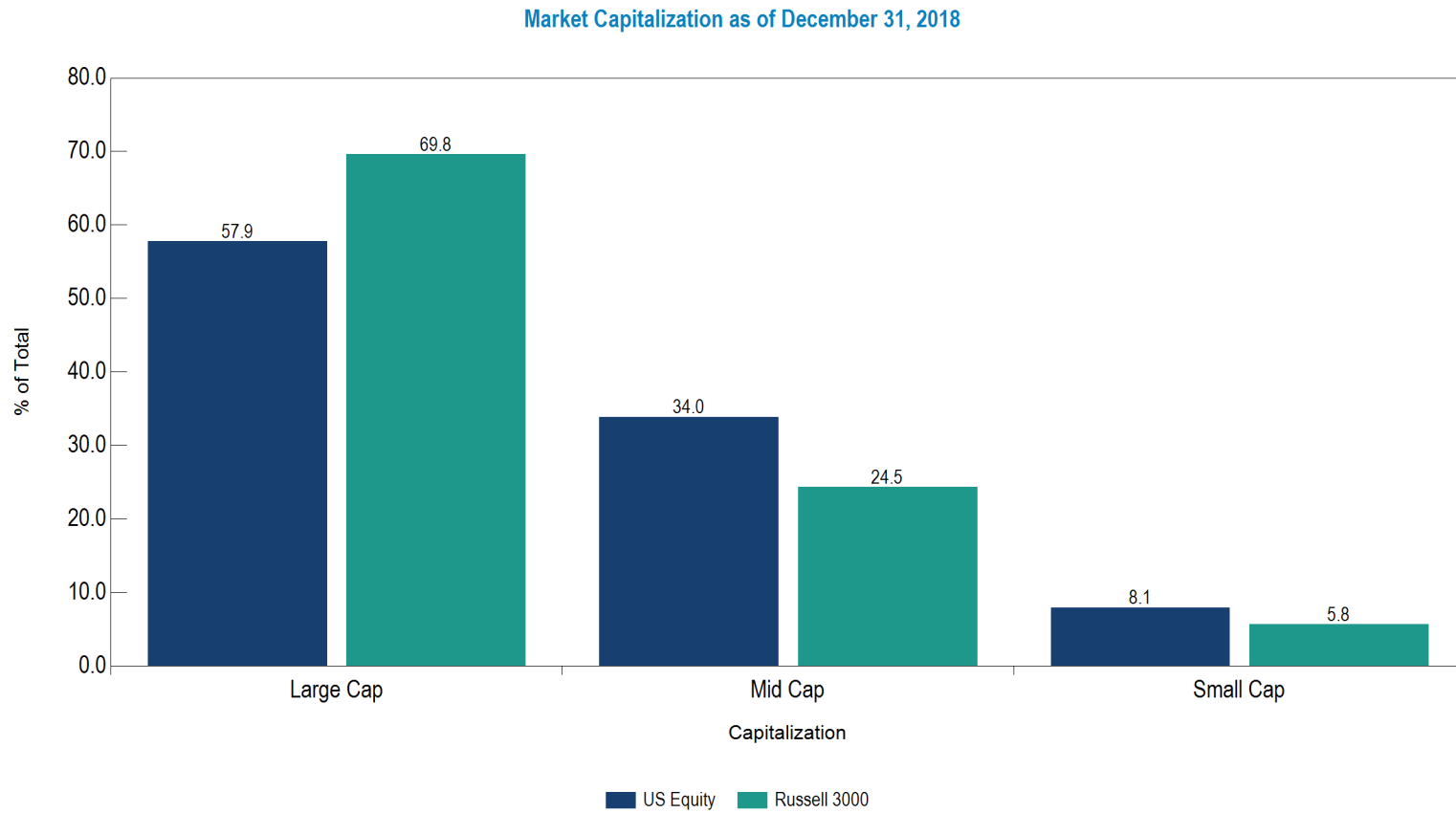
Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	8.5%	10.9%	0.7	0.3	1.1%
Russell 1000	8.2%	11.0%	0.7	--	0.0%
DE Shaw	9.4%	11.1%	0.8	0.5	2.3%
Russell 1000	8.2%	11.0%	0.7	--	0.0%
Small Cap Equity	2.1%	14.7%	0.1	-0.9	2.6%
Russell 2000	4.4%	15.4%	0.2	--	0.0%



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-12.5	-6.8	-3.5	8.8	9.9	8.4	12.8	13.9
25th Percentile	-14.2	-8.2	-5.2	7.1	9.0	7.6	12.2	13.1
Median	-14.7	-9.2	-6.1	6.4	8.4	7.1	11.7	12.6
75th Percentile	-15.6	-10.3	-7.5	5.3	7.5	6.2	11.0	12.1
95th Percentile	-17.0	-12.3	-9.8	3.2	6.4	4.9	10.0	11.0
# of Portfolios	533	533	532	521	510	480	409	310
● US Equity	-14.6 (45)	-8.7 (36)	-5.6 (37)	6.9 (32)	8.3 (54)	7.1 (49)	11.9 (41)	12.7 (49)
▲ Blended US Equity Index	-14.3 (35)	-8.2 (26)	-5.2 (30)	7.1 (24)	9.0 (20)	7.6 (26)	12.3 (19)	13.1 (25)



See appendix for the market capitalization breakpoints.

Characteristics

	Portfolio	Russell 3000
Number of Holdings	2,788	3,015
Weighted Avg. Market Cap. (\$B)	112.8	154.7
Median Market Cap. (\$B)	2.7	1.4
Price To Earnings	21.2	22.3
Price To Book	5.0	4.2
Price To Sales	3.8	4.1
Return on Equity (%)	23.9	21.0
Yield (%)	2.2	2.1
Beta (holdings; domestic)	1.0	1.0

Top Holdings

APPLE	2.3%
MICROSOFT	2.0%
AMAZON.COM	1.3%
JOHNSON & JOHNSON	1.1%
ALPHABET A	1.0%
VERIZON COMMUNICATIONS	0.9%
PROCTER & GAMBLE	0.8%
BERKSHIRE HATHAWAY 'B'	0.8%
MERCK & COMPANY	0.8%
JP MORGAN CHASE & CO.	0.8%

Best Performers

	Return %
VTV THERAPEUTICS A (VTVT)	244.2%
TESARO (TSRO)	90.3%
ELECTRO SCIEN.INDS. (ESIO)	71.7%
AMERICAN SUPERCONDUCTOR (AMSC)	60.4%
MITEK SYSTEMS (MITK)	53.3%
ARSANIS (ASNS)	43.2%
K12 (LRN)	40.1%
INVESTMENT TECH.GROUP (ITG)	39.9%
SSR MINING (TSX) (C:SSRM)	39.1%
EIDOS THERAPEUTICS (EIDX)	37.9%

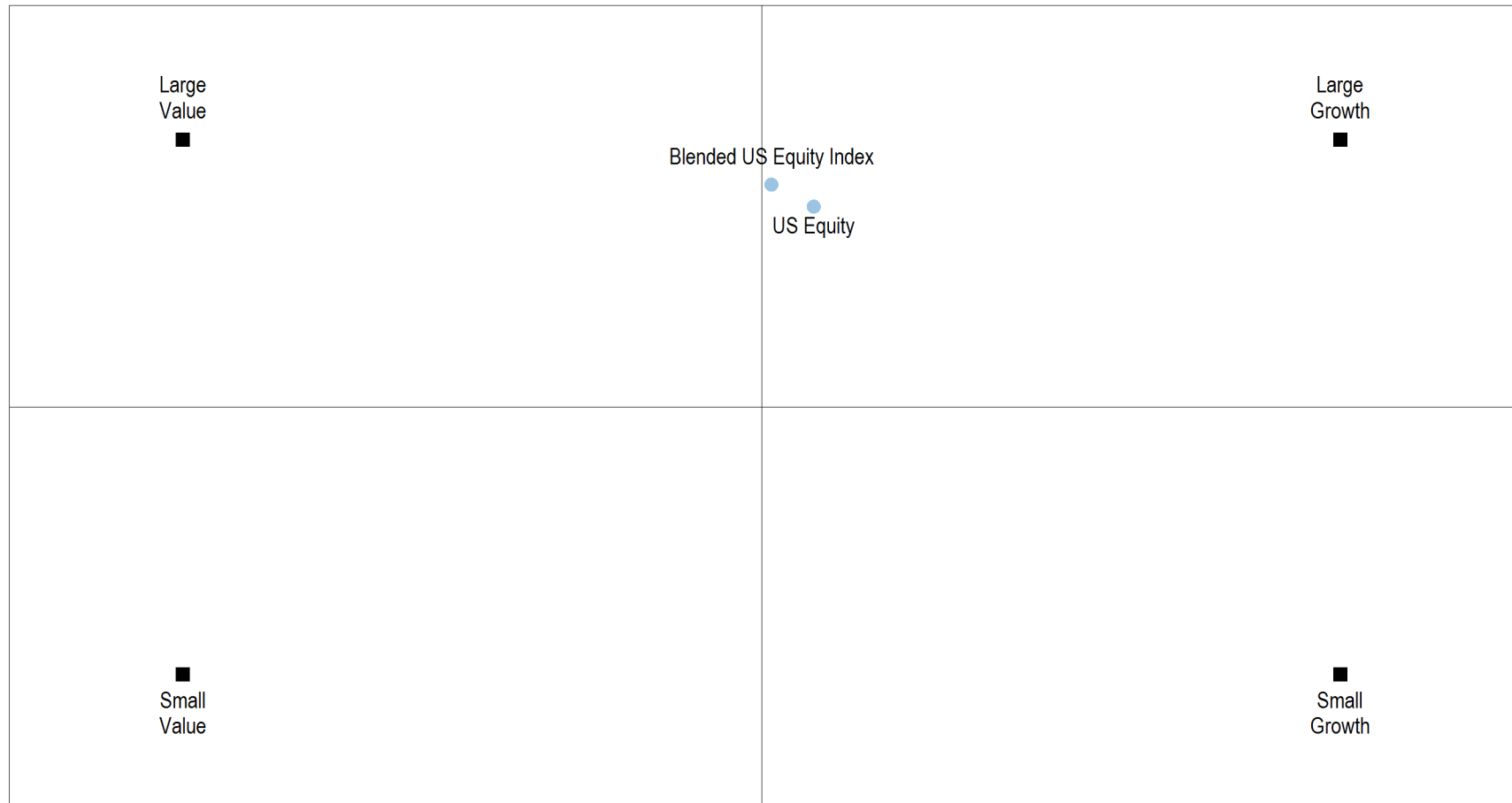
Worst Performers

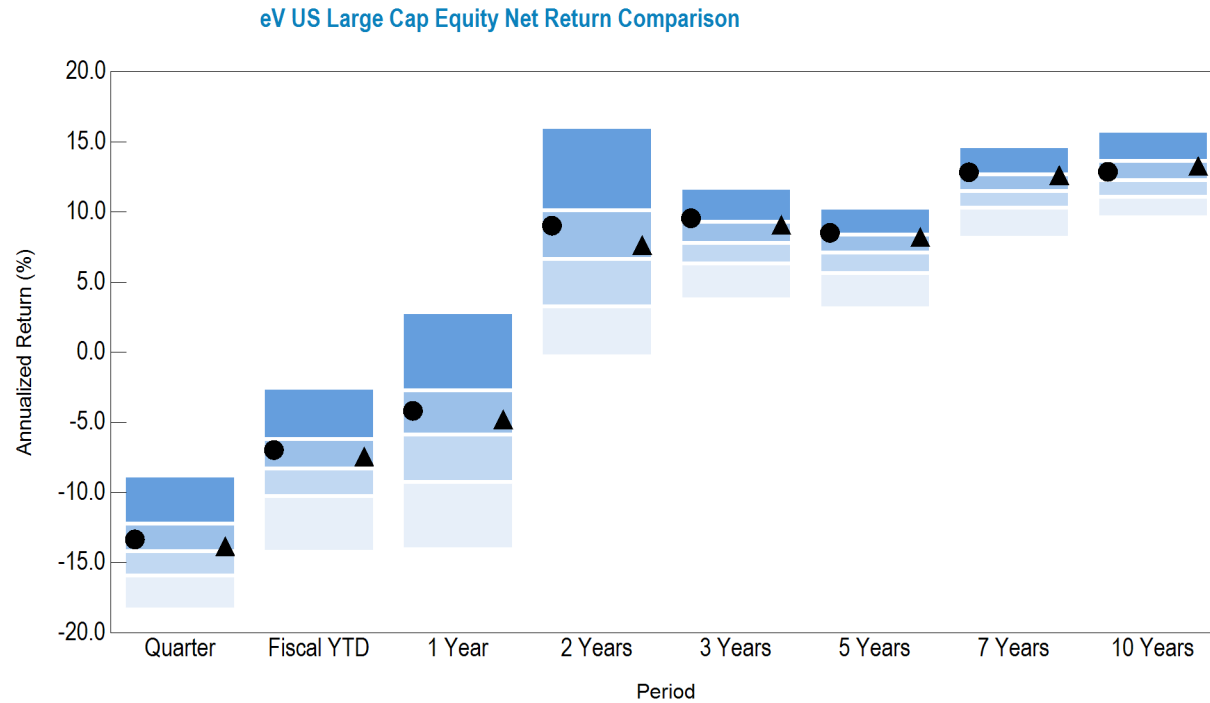
	Return %
AEGEAN MARINE PETROLEUM NETWORK (ANWWQ)	-98.0%
PARKER DRILLING (XSC) (PKDSQ)	-88.6%
REVOLUTION LTG.TECHS. (RVLT)	-85.8%
SIENNA BIOPH. (SNNA)	-84.3%
CLOUD PEAK ENERGY (CLD)	-84.1%
SELECTA BIOSCIENCES (SELB)	-82.9%
CLEARSIDE BIOMEDICAL (CLSD)	-82.6%
AAC HOLDINGS (AAC)	-81.7%
FERROGLOBE (GSM)	-80.5%
PHI NON-VOTING (PHIHK)	-80.2%

US Equity Performance Attribution vs. Russell 3000

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.0%	0.0%	0.0%	0.0%	-26.2%	-25.9%	5.8%	5.7%			
Materials	0.0%	0.0%	0.0%	0.0%	-16.2%	-15.6%	2.7%	2.7%			
Industrials	-0.1%	-0.1%	0.0%	0.0%	-18.9%	-18.2%	10.7%	10.4%			
Consumer Discretionary	-0.1%	-0.1%	0.0%	0.0%	-17.2%	-16.4%	11.5%	10.6%			
Consumer Staples	0.0%	0.0%	0.0%	0.0%	-5.6%	-5.5%	5.9%	6.1%			
Health Care	-0.1%	0.0%	0.0%	0.0%	-11.4%	-11.1%	14.2%	14.4%			
Financials	0.0%	0.0%	0.0%	0.0%	-13.8%	-13.5%	13.5%	13.9%			
Information Technology	-0.2%	-0.1%	0.0%	0.0%	-17.9%	-17.4%	21.6%	20.9%			
Communication Services	0.0%	0.0%	0.0%	0.0%	-13.8%	-13.3%	8.0%	9.0%			
Utilities	0.0%	0.0%	0.0%	0.0%	1.5%	0.8%	2.5%	2.8%			
Real Estate	0.0%	0.0%	0.0%	0.0%	-7.0%	-6.4%	3.5%	3.6%			
Cash	0.0%	--	--	--	--	--	0.0%	0.0%			
Unclassified	0.0%	0.0%	0.0%	0.0%	-13.5%	--	0.1%	0.0%			
Portfolio	-0.6%	=	-0.4%	+	-0.1%	+	0.0%	-15.0%	-14.4%	100.0%	100.0%

U.S. Effective Style Map





	Return (Rank)							
5th Percentile	-8.8	-2.6	2.8	16.0	11.7	10.3	14.7	15.8
25th Percentile	-12.2	-6.2	-2.7	10.1	9.3	8.4	12.7	13.7
Median	-14.2	-8.3	-5.8	6.7	7.8	7.1	11.5	12.3
75th Percentile	-15.9	-10.2	-9.2	3.3	6.3	5.7	10.3	11.1
95th Percentile	-18.3	-14.2	-14.0	-0.3	3.8	3.2	8.2	9.6
# of Portfolios	574	574	573	566	555	532	479	428
● Large Cap Equity	-13.3 (39)	-7.0 (36)	-4.2 (36)	9.0 (30)	9.5 (22)	8.5 (24)	12.8 (24)	12.9 (38)
▲ Russell 1000	-13.8 (46)	-7.4 (41)	-4.8 (42)	7.6 (39)	9.1 (28)	8.2 (30)	12.6 (28)	13.3 (30)

Characteristics

	Portfolio	Russell 1000
Number of Holdings	2,736	983
Weighted Avg. Market Cap. (\$B)	123.4	166.3
Median Market Cap. (\$B)	3.1	8.8
Price To Earnings	21.3	20.7
Price To Book	5.2	4.6
Price To Sales	3.9	4.3
Return on Equity (%)	24.7	22.3
Yield (%)	2.2	2.1
Beta (holdings; domestic)	0.9	1.0

Top Holdings

APPLE	2.6%
MICROSOFT	2.2%
AMAZON.COM	1.4%
JOHNSON & JOHNSON	1.2%
ALPHABET A	1.1%
VERIZON COMMUNICATIONS	1.0%
PROCTER & GAMBLE	0.9%
BERKSHIRE HATHAWAY 'B'	0.9%
MERCK & COMPANY	0.9%
JP MORGAN CHASE & CO.	0.9%

Best Performers

	Return %
VTV THERAPEUTICS A (VTVT)	244.2%
TESARO (TSRO)	90.3%
ELECTRO SCIEN.INDS. (ESIO)	71.7%
AMERICAN SUPERCONDUCTOR (AMSC)	60.4%
MITEK SYSTEMS (MITK)	53.3%
ARSANIS (ASNS)	43.2%
K12 (LRN)	40.1%
INVESTMENT TECH.GROUP (ITG)	39.9%
SSR MINING (TSX) (C:SSRM)	39.1%
EIDOS THERAPEUTICS (EIDX)	37.9%

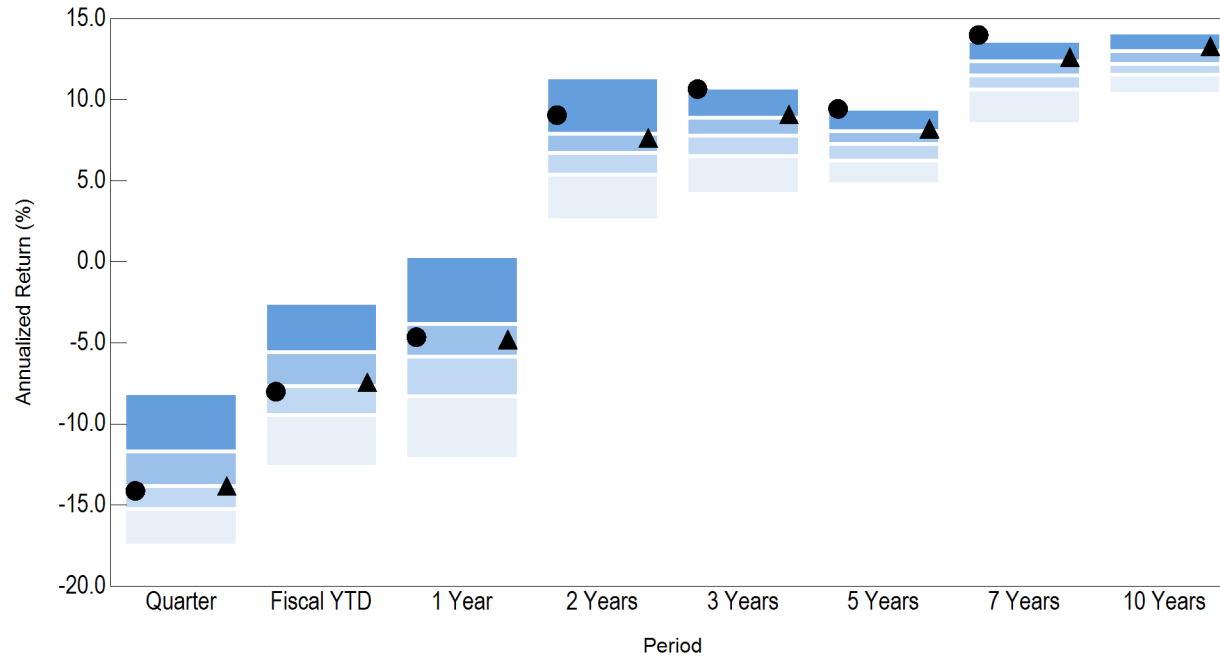
Worst Performers

	Return %
AEGEAN MARINE PETROLEUM NETWORK (ANWWQ)	-98.0%
PARKER DRILLING (XSC) (PKDSQ)	-88.6%
REVOLUTION LTG.TECHS. (RVLT)	-85.8%
SIENNA BIOPH. (SNNA)	-84.3%
CLOUD PEAK ENERGY (CLD)	-84.1%
SELECTA BIOSCIENCES (SELB)	-82.9%
CLEARSIDE BIOMEDICAL (CLSD)	-82.6%
AAC HOLDINGS (AAC)	-81.7%
FERROGLOBE (GSM)	-80.5%
PHI NON-VOTING (PHIHK)	-80.2%

Large Cap Equity Performance Attribution vs. Russell 1000

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.1%	0.0%	0.0%	0.0%	-25.4%	-24.8%	5.9%	5.7%			
Materials	0.0%	0.0%	0.0%	0.0%	-15.0%	-14.2%	2.6%	2.6%			
Industrials	0.0%	0.0%	0.0%	0.0%	-18.2%	-17.7%	10.1%	10.1%			
Consumer Discretionary	-0.1%	0.0%	0.0%	0.0%	-16.5%	-16.0%	11.4%	10.5%			
Consumer Staples	0.0%	0.0%	0.0%	0.0%	-5.3%	-5.2%	6.3%	6.3%			
Health Care	-0.1%	-0.1%	0.0%	0.0%	-10.5%	-9.7%	14.0%	14.2%			
Financials	0.0%	0.0%	0.0%	0.0%	-13.4%	-13.2%	13.1%	13.6%			
Information Technology	-0.2%	-0.2%	0.0%	0.0%	-18.2%	-17.4%	22.3%	21.4%			
Communication Services	-0.1%	0.0%	0.0%	0.0%	-13.7%	-13.2%	8.4%	9.5%			
Utilities	0.0%	0.0%	0.0%	0.0%	1.8%	1.1%	2.5%	2.8%			
Real Estate	0.0%	0.0%	0.0%	0.0%	-5.0%	-5.1%	3.2%	3.3%			
Cash	0.0%	0.0%	0.0%	0.0%	0.5%	--	0.0%	0.0%			
Unclassified	0.0%	0.0%	0.0%	0.0%	-13.5%	--	0.1%	0.0%			
Portfolio	-0.6%	=	-0.5%	+	-0.1%	+	0.0%	-14.5%	-13.9%	100.0%	100.0%

eV US Large Cap Core Equity Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-8.1	-2.5	0.3	11.4	10.7	9.4	13.6	14.1
25th Percentile	-11.7	-5.6	-3.8	7.9	8.9	8.1	12.4	13.0
Median	-13.8	-7.7	-5.8	6.7	7.8	7.3	11.5	12.2
75th Percentile	-15.2	-9.4	-8.3	5.4	6.6	6.3	10.6	11.5
95th Percentile	-17.5	-12.6	-12.2	2.6	4.2	4.8	8.5	10.3
# of Portfolios	179	179	179	176	173	164	144	121
● DE Shaw	-14.1 (59)	-8.0 (56)	-4.7 (34)	9.0 (12)	10.6 (6)	9.4 (6)	14.0 (3)	-- (--)
▲ Russell 1000	-13.8 (52)	-7.4 (47)	-4.8 (38)	7.6 (29)	9.1 (21)	8.2 (22)	12.6 (20)	13.3 (17)

Characteristics

	Portfolio	Russell 1000
Number of Holdings	982	983
Weighted Avg. Market Cap. (\$B)	166.6	166.3
Median Market Cap. (\$B)	8.8	8.8
Price To Earnings	22.6	20.7
Price To Book	5.8	4.6
Price To Sales	4.3	4.3
Return on Equity (%)	24.7	22.3
Yield (%)	2.2	2.1
Beta (holdings; domestic)	1.0	1.0

Top Holdings

MICROSOFT	3.3%
APPLE	3.2%
AMAZON.COM	2.6%
BERKSHIRE HATHAWAY 'B'	1.7%
JOHNSON & JOHNSON	1.5%
JP MORGAN CHASE & CO.	1.4%
ALPHABET 'C'	1.4%
ALPHABET A	1.3%
FACEBOOK CLASS A	1.3%
EXXON MOBIL	1.2%

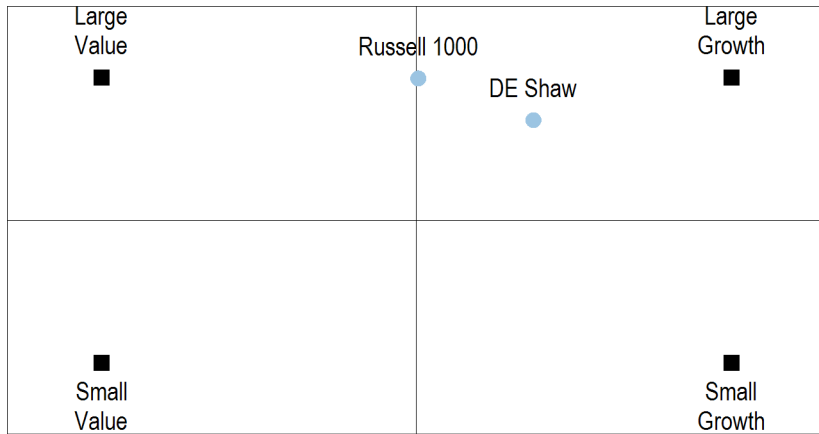
Best Performers

	Return %
TESARO (TSRO)	90.3%
RED HAT (RHT)	28.9%
VIRTU FINANCIAL CL.A (VIRT)	27.1%
TESLA (TSLA)	25.7%
SCANA (SCG)	23.2%
TRIBUNE MEDIA CL.A (TRCO)	18.9%
MARKETAXESS HOLDINGS (MKTX)	18.6%
ARRIS INTERNATIONAL (ARRS)	17.6%
UNITED STATES CELLULAR (USM)	16.1%
NEWMONT MINING (NEM)	15.2%

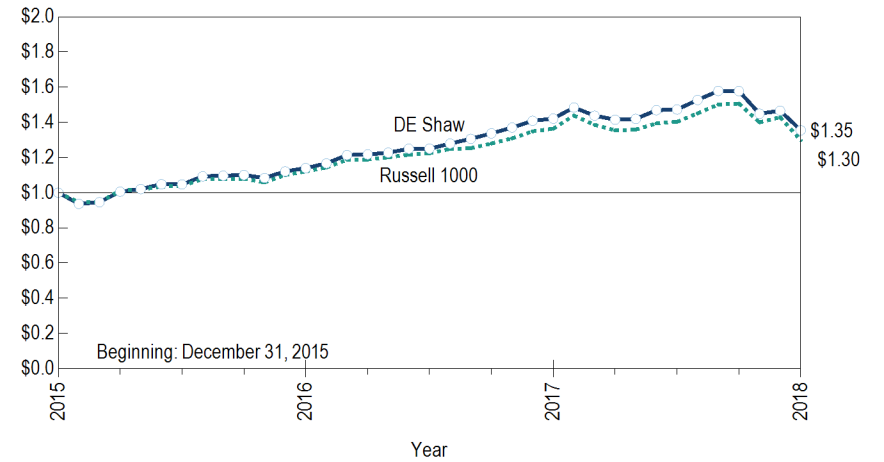
Worst Performers

	Return %
WEATHERFORD INTL. (WFT)	-79.4%
NABORS INDUSTRIES (NBR)	-66.8%
EXTRACTION OIL & GAS (XOG)	-62.0%
ADIANT (ADNT)	-61.4%
WHITING PETROLEUM (WLL)	-57.2%
KOSMOS ENERGY (KOS)	-56.5%
CHESAPEAKE ENERGY (CHK)	-53.2%
CONDUENT (CNDT)	-52.8%
NVIDIA (NVDA)	-52.4%
SM ENERGY (SM)	-50.8%

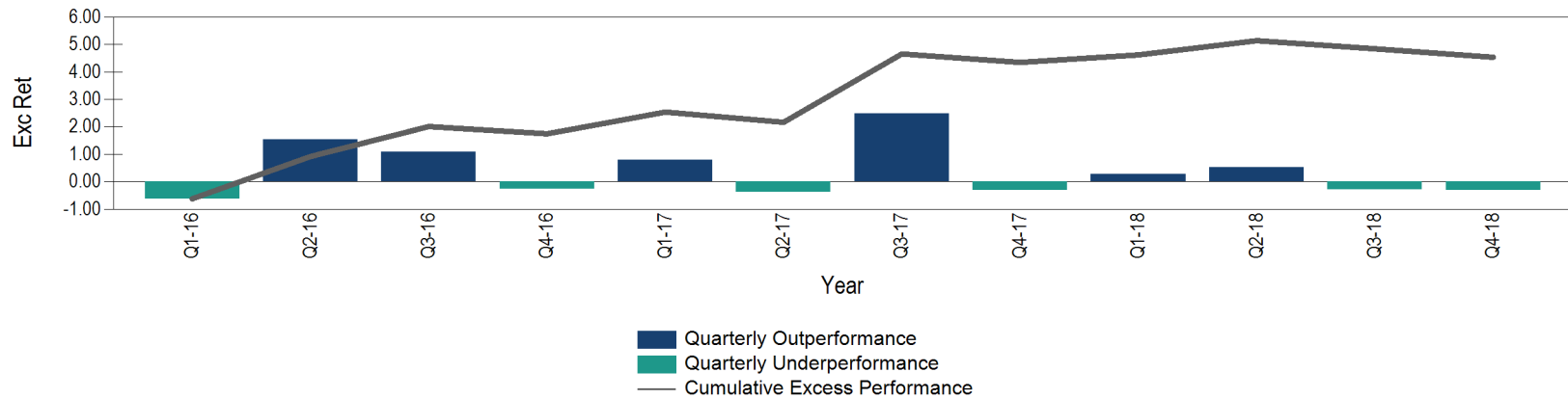
U.S. Effective Style Map



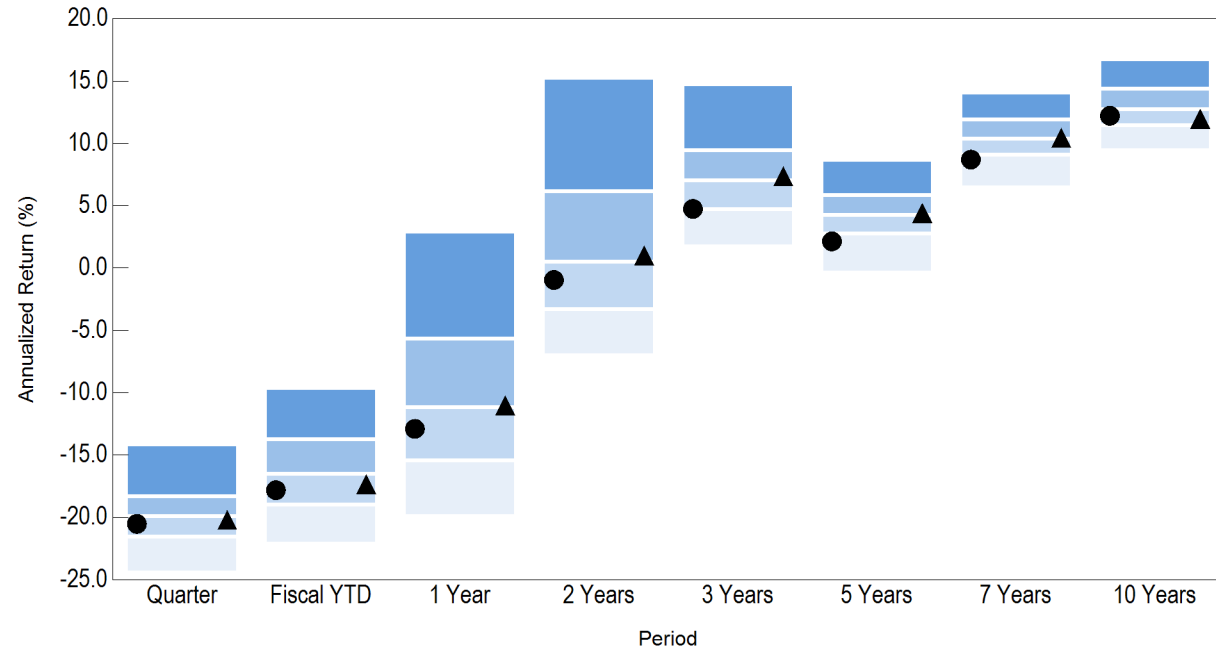
Growth of a Dollar



Quarterly and Cumulative Excess Performance



eV US Small Cap Equity Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-14.2	-9.6	2.9	15.2	14.7	8.7	14.0	16.7
25th Percentile	-18.3	-13.7	-5.6	6.2	9.5	5.9	11.9	14.4
Median	-19.9	-16.5	-11.1	0.6	7.1	4.3	10.4	12.8
75th Percentile	-21.5	-19.0	-15.4	-3.3	4.8	2.8	9.1	11.5
95th Percentile	-24.4	-22.1	-19.9	-7.0	1.8	-0.3	6.5	9.5
# of Portfolios	392	392	392	385	376	354	324	292
● Small Cap Equity	-20.5 (61)	-17.8 (63)	-12.9 (60)	-1.0 (59)	4.7 (76)	2.1 (84)	8.7 (82)	12.2 (65)
▲ Russell 2000	-20.2 (57)	-17.3 (60)	-11.0 (50)	1.0 (47)	7.4 (47)	4.4 (47)	10.4 (50)	12.0 (69)

Characteristics

	Portfolio	Russell 2000
Number of Holdings	345	2,032
Weighted Avg. Market Cap. (\$B)	1.9	2.0
Median Market Cap. (\$B)	1.0	0.7
Price To Earnings	19.7	14.3
Price To Book	2.7	2.6
Price To Sales	2.1	3.1
Return on Equity (%)	15.8	8.8
Yield (%)	1.7	1.4
Beta (holdings; domestic)	1.2	1.2

Top Holdings

HAEMONETICS	1.1%
HORIZON PHARMA	1.0%
SOUTHWEST GAS HOLDINGS	1.0%
PORTLAND GEN.ELEC.	0.9%
VANDA PHARMACEUTICALS	0.9%
MAXIMUS	0.9%
INSPERITY	0.9%
INTEGER HOLDINGS	0.9%
SPS COMMERCE	0.9%
FIRST BANCORP PRICO.	0.8%

Best Performers

	Return %
ESTERLINE TECHS. (ESL)	33.5%
VERACYTE (VCYT)	31.7%
CALIX NETWORKS (CALX)	20.4%
NUTRISYSTEM (NTRI)	19.2%
TRIBUNE MEDIA CL.A (TRCO)	18.9%
SHENANDOAH TELECOM. (SHEN)	14.9%
TECH DATA (TECD)	14.3%
VANDA PHARMACEUTICALS (VNDA)	13.9%
GENWORTH FINANCIAL CL.A (GNW)	11.8%
TTEC HOLDINGS (TTEC)	11.5%

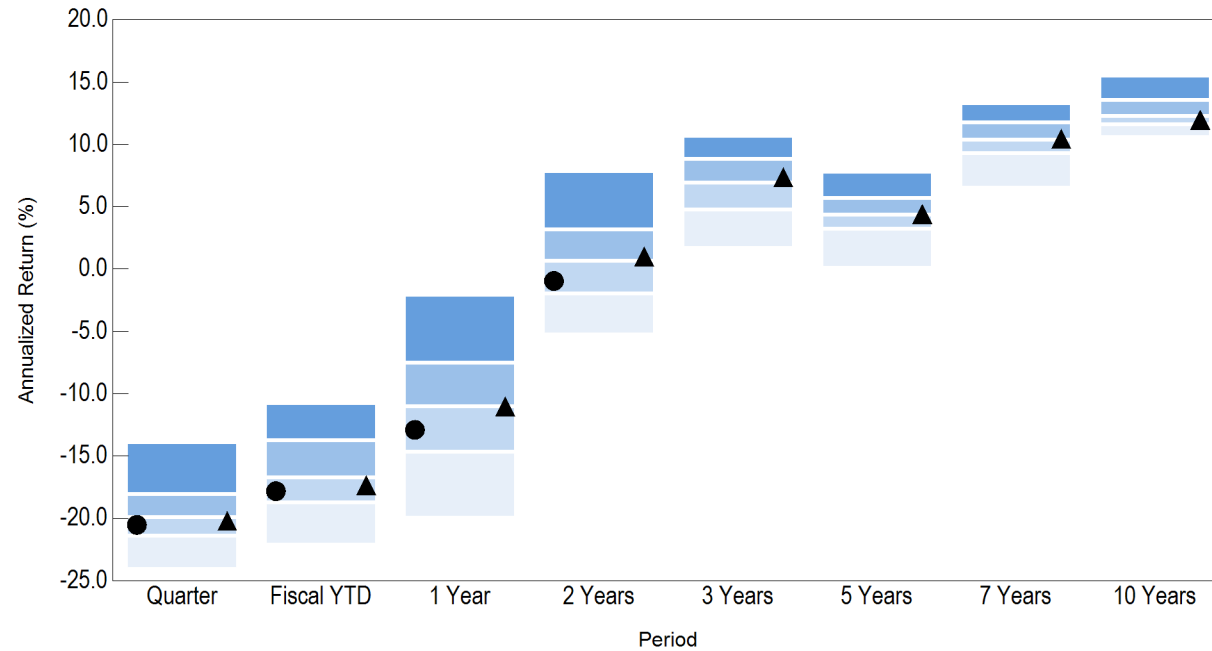
Worst Performers

	Return %
BRISTOW GROUP (BRS)	-80.0%
SUPERIOR INDS.INT. (SUP)	-71.6%
SUPERIOR ENERGY SVS. (SPN)	-65.6%
CONTAINER STORE GROUP (TCS)	-57.0%
LAREDO PETROLEUM (LPI)	-55.7%
NCI BUILDING SYS. (NCS)	-52.1%
LIGAND PHARMS.'B' (LGND)	-50.6%
TALOS ENERGY (TALO)	-50.3%
CATALYST PHARMACEUTICAL PARTNERS (CPRX)	-49.2%
INOGEN (INGN)	-49.1%

Small Cap Equity Performance Attribution vs. Russell 2000

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.3%	0.3%	-0.1%	0.0%	-35.6%	-42.0%	4.9%	4.7%			
Materials	0.1%	0.1%	0.0%	0.0%	-25.4%	-27.1%	3.5%	4.1%			
Industrials	-0.3%	-0.2%	0.0%	0.0%	-22.9%	-21.5%	16.6%	15.2%			
Consumer Discretionary	-0.4%	-0.4%	0.0%	0.0%	-23.5%	-20.3%	12.3%	12.3%			
Consumer Staples	-0.2%	-0.2%	0.0%	0.0%	-19.1%	-13.3%	2.0%	2.6%			
Health Care	0.9%	0.9%	0.0%	0.0%	-20.4%	-26.1%	16.4%	16.5%			
Financials	-0.2%	-0.2%	0.0%	0.0%	-17.4%	-16.5%	16.9%	17.6%			
Information Technology	0.3%	0.3%	0.0%	0.0%	-14.7%	-16.9%	14.5%	13.9%			
Communication Services	0.2%	0.1%	0.0%	0.0%	-15.1%	-18.9%	3.7%	3.3%			
Utilities	0.0%	0.0%	-0.1%	0.0%	-1.0%	-2.0%	2.8%	3.2%			
Real Estate	-0.2%	-0.2%	0.0%	0.0%	-16.9%	-14.0%	6.5%	6.7%			
Cash	0.0%	--	--	--	--	--	0.0%	0.0%			
Portfolio	0.6%	=	0.7%	+	-0.1%	+	0.1%	-19.8%	-20.3%	100.0%	100.0%

eV US Small Cap Core Equity Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-13.9	-10.8	-2.1	7.8	10.7	7.8	13.3	15.5
25th Percentile	-18.0	-13.7	-7.5	3.2	8.9	5.7	11.8	13.6
Median	-19.9	-16.7	-11.0	0.7	7.0	4.4	10.4	12.3
75th Percentile	-21.3	-18.7	-14.6	-1.9	4.8	3.3	9.3	11.6
95th Percentile	-24.0	-22.1	-19.9	-5.2	1.7	0.2	6.6	10.6
# of Portfolios	109	109	109	104	101	98	90	76
● QMA US Small Cap	-20.5 (58)	-17.8 (63)	-12.9 (65)	-1.0 (68)	-- (--)	-- (--)	-- (--)	-- (--)
▲ Russell 2000	-20.2 (53)	-17.3 (59)	-11.0 (51)	1.0 (44)	7.4 (46)	4.4 (50)	10.4 (50)	12.0 (70)

Characteristics

	Portfolio	Russell 2000
Number of Holdings	345	2,032
Weighted Avg. Market Cap. (\$B)	1.9	2.0
Median Market Cap. (\$B)	1.0	0.7
Price To Earnings	19.7	14.3
Price To Book	2.7	2.6
Price To Sales	2.1	3.1
Return on Equity (%)	15.8	8.8
Yield (%)	1.7	1.4
Beta (holdings; domestic)	1.2	1.2

Top Holdings

HAEMONETICS	1.1%
HORIZON PHARMA	1.0%
SOUTHWEST GAS HOLDINGS	1.0%
PORTLAND GEN.ELEC.	0.9%
VANDA PHARMACEUTICALS	0.9%
MAXIMUS	0.9%
INSPERITY	0.9%
INTEGER HOLDINGS	0.9%
SPS COMMERCE	0.9%
FIRST BANCORP PRICO.	0.8%

Best Performers

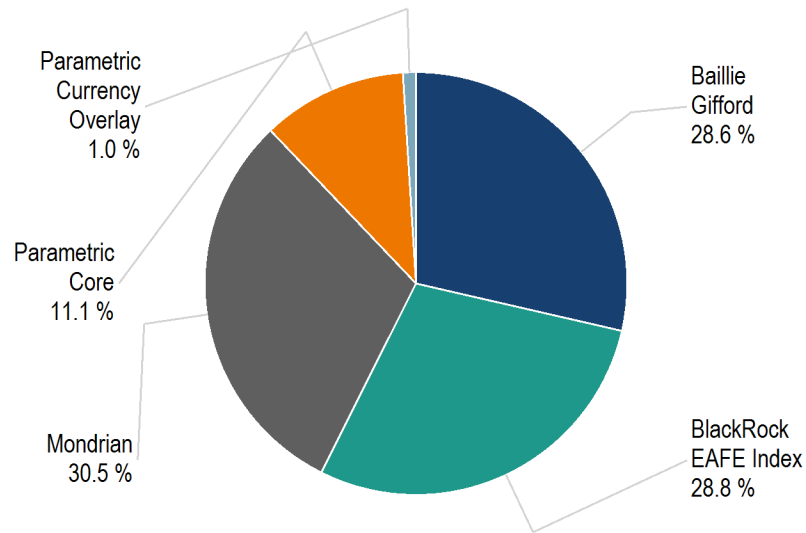
	Return %
ESTERLINE TECHS. (ESL)	33.5%
VERACYTE (VCYT)	31.7%
CALIX NETWORKS (CALX)	20.4%
NUTRISYSTEM (NTRI)	19.2%
TRIBUNE MEDIA CL.A (TRCO)	18.9%
SHENANDOAH TELECOM. (SHEN)	14.9%
TECH DATA (TECD)	14.3%
VANDA PHARMACEUTICALS (VNDA)	13.9%
GENWORTH FINANCIAL CL.A (GNW)	11.8%
TTEC HOLDINGS (TTEC)	11.5%

Worst Performers

	Return %
BRISTOW GROUP (BRS)	-80.0%
SUPERIOR INDS.INT. (SUP)	-71.6%
SUPERIOR ENERGY SVS. (SPN)	-65.6%
CONTAINER STORE GROUP (TCS)	-57.0%
LAREDO PETROLEUM (LPI)	-55.7%
NCI BUILDING SYS. (NCS)	-52.1%
LIGAND PHARMS 'B' (LGND)	-50.6%
TALOS ENERGY (TALO)	-50.3%
CATALYST PHARMACEUTICAL PARTNERS (CPRX)	-49.2%
INOGEN (INGN)	-49.1%

QMA US Small Cap Performance Attribution vs. Russell 2000

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.3%	0.3%	-0.1%	0.0%	-35.6%	-42.0%	4.9%	4.7%			
Materials	0.1%	0.1%	0.0%	0.0%	-25.4%	-27.1%	3.5%	4.1%			
Industrials	-0.3%	-0.2%	0.0%	0.0%	-22.9%	-21.5%	16.6%	15.2%			
Consumer Discretionary	-0.4%	-0.4%	0.0%	0.0%	-23.5%	-20.3%	12.3%	12.3%			
Consumer Staples	-0.2%	-0.2%	0.0%	0.0%	-19.1%	-13.3%	2.0%	2.6%			
Health Care	0.9%	0.9%	0.0%	0.0%	-20.4%	-26.1%	16.4%	16.5%			
Financials	-0.2%	-0.2%	0.0%	0.0%	-17.4%	-16.5%	16.9%	17.6%			
Information Technology	0.3%	0.3%	0.0%	0.0%	-14.7%	-16.9%	14.5%	13.9%			
Communication Services	0.2%	0.1%	0.0%	0.0%	-15.1%	-18.9%	3.7%	3.3%			
Utilities	0.0%	0.0%	-0.1%	0.0%	-1.0%	-2.0%	2.8%	3.2%			
Real Estate	-0.2%	-0.2%	0.0%	0.0%	-16.9%	-14.0%	6.5%	6.7%			
Cash	0.0%	--	--	--	--	--	0.0%	0.0%			
Portfolio	0.6%	=	0.7%	+	-0.1%	+	0.1%	-19.8%	-20.3%	100.0%	100.0%



	Actual \$	Actual %	Manager Contribution to Excess Return %
Baillie Gifford	\$213,761,751	28.6%	-1.2%
BlackRock EAFE Index	\$214,588,077	28.8%	0.0%
Mondrian	\$227,739,257	30.5%	0.5%
Parametric Core	\$82,916,150	11.1%	0.2%
Parametric Currency Overlay	\$7,327,487	1.0%	0.0%
Actual vs. Policy Weight Difference			0.8%
Total	\$746,332,722	100.0%	0.3%

Statistics Summary

3 Years

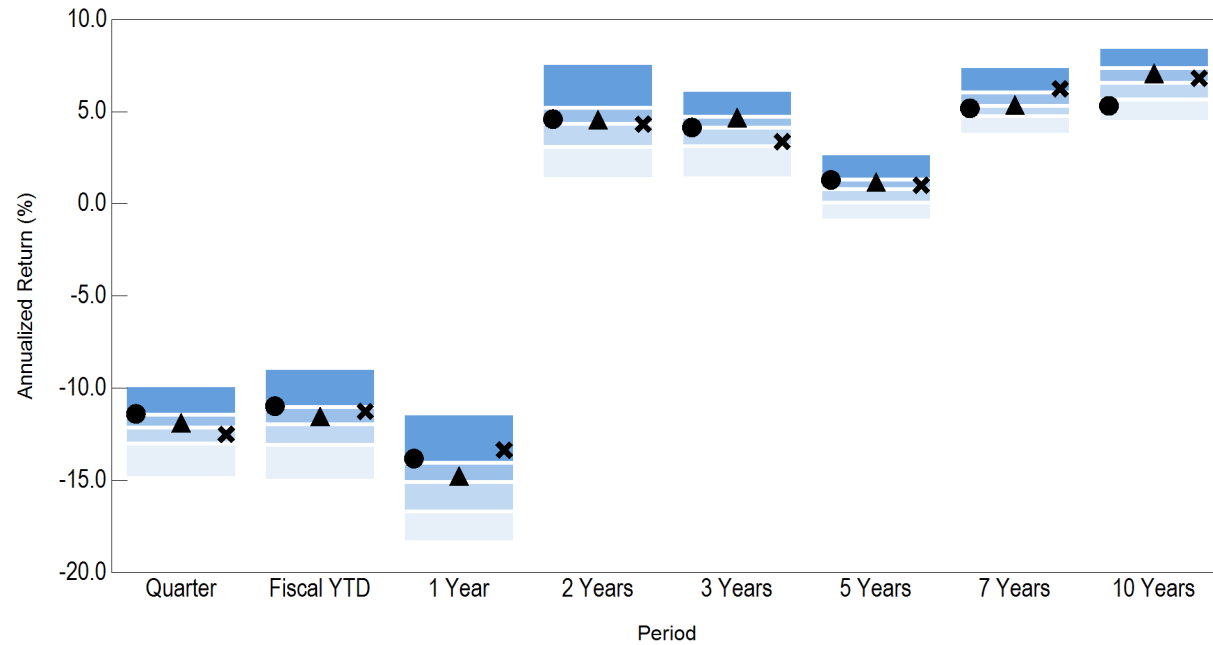
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	4.1%	11.3%	0.3	-0.3	1.6%
MSCI ACWI ex US IMI	4.7%	11.7%	0.3	--	0.0%
Developed Markets	3.7%	11.4%	0.2	-0.7	2.0%
MSCI ACWI ex USA Gross	5.0%	11.6%	0.3	--	0.0%
Baillie Gifford	3.3%	13.3%	0.2	-0.3	4.7%
MSCI ACWI ex US	5.0%	11.6%	0.3	--	0.0%
BlackRock EAFE Index	3.3%	11.5%	0.2	1.8	0.2%
MSCI EAFE	2.9%	11.4%	0.2	--	0.0%
Mondrian	4.2%	10.5%	0.3	-0.2	4.7%
MSCI ACWI ex USA Value Gross	5.4%	12.1%	0.4	--	0.0%
Emerging Markets	7.7%	13.7%	0.5	-0.5	4.0%
MSCI Emerging Markets Gross	9.7%	14.8%	0.6	--	0.0%
Parametric Core	7.7%	13.7%	0.5	-0.5	4.0%
MSCI Emerging Markets Gross	9.7%	14.8%	0.6	--	0.0%

Statistics Summary

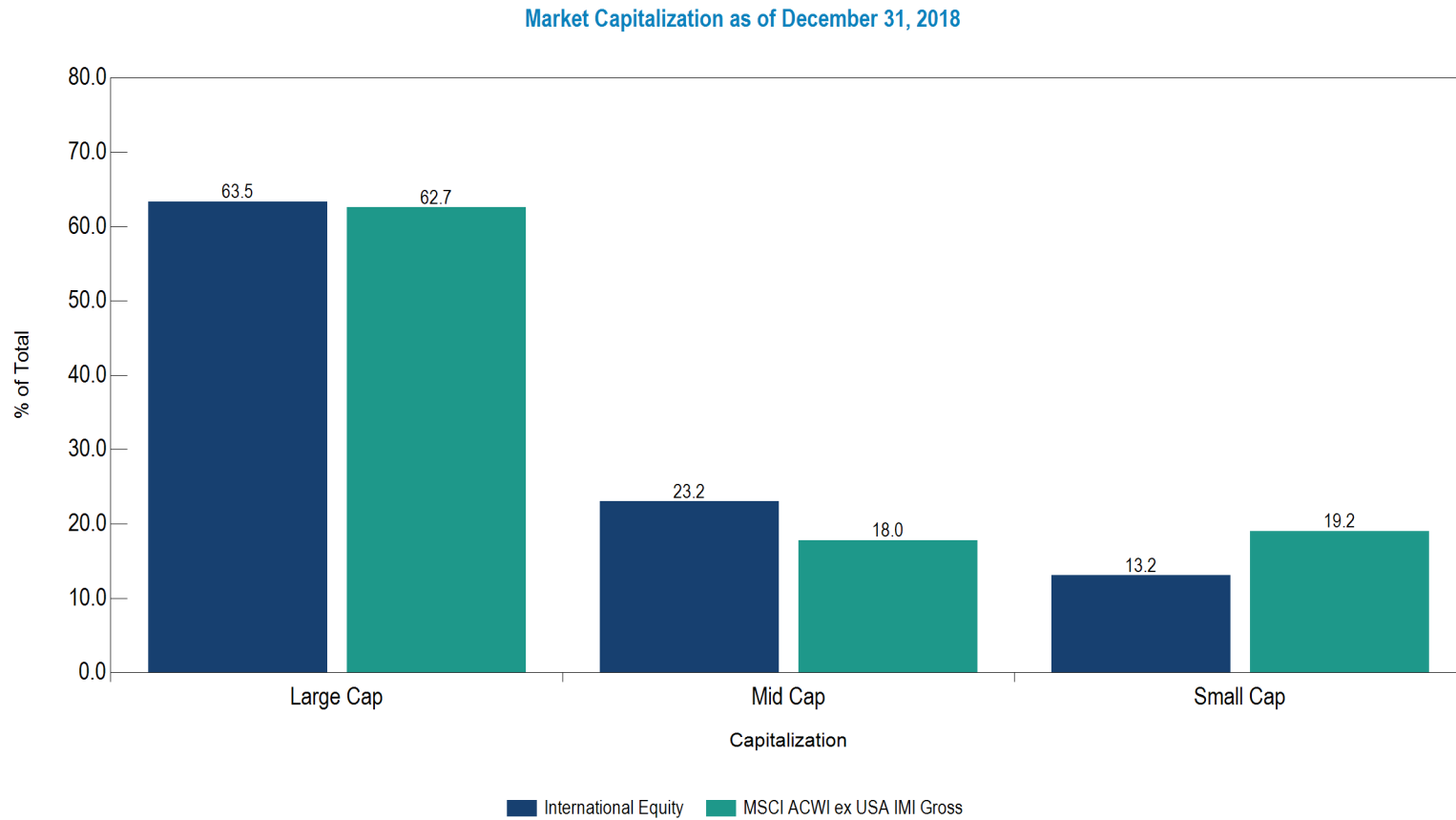
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	1.3%	11.7%	0.1	0.1	1.6%
MSCI ACWI ex US IMI	1.2%	11.9%	0.0	--	0.0%
Developed Markets	1.4%	11.8%	0.1	0.1	2.0%
MSCI ACWI ex USA Gross	1.1%	11.9%	0.0	--	0.0%
Baillie Gifford	1.8%	13.4%	0.1	0.2	4.4%
MSCI ACWI ex US	1.1%	11.9%	0.0	--	0.0%
BlackRock EAFE Index	0.9%	11.8%	0.0	1.8	0.2%
MSCI EAFE	0.5%	11.8%	0.0	--	0.0%
Mondrian	1.1%	11.3%	0.0	0.2	4.4%
MSCI ACWI ex USA Value Gross	0.2%	12.6%	0.0	--	0.0%
Emerging Markets	0.1%	13.7%	0.0	-0.5	4.0%
MSCI Emerging Markets Gross	2.0%	15.2%	0.1	--	0.0%

InvestorForce All DB ex-US Eq Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-9.9	-8.9	-11.4	7.6	6.2	2.7	7.5	8.5
25th Percentile	-11.4	-11.0	-14.0	5.2	4.8	1.4	6.1	7.4
Median	-12.1	-11.9	-15.1	4.3	4.2	0.8	5.3	6.6
75th Percentile	-13.0	-13.1	-16.7	3.1	3.2	0.1	4.8	5.7
95th Percentile	-14.9	-15.0	-18.3	1.4	1.4	-0.9	3.8	4.5
# of Portfolios	361	361	354	344	340	321	267	211
● International Equity	-11.4 (25)	-11.0 (25)	-13.8 (21)	4.6 (38)	4.1 (51)	1.3 (27)	5.2 (58)	5.3 (81)
▲ MSCI ACWI ex US IMI	-11.9 (46)	-11.5 (39)	-14.8 (44)	4.6 (38)	4.7 (28)	1.2 (28)	5.4 (49)	7.1 (32)
✕ MSCI EAFE Gross	-12.5 (62)	-11.3 (33)	-13.4 (16)	4.3 (51)	3.4 (69)	1.0 (38)	6.2 (21)	6.8 (40)



See appendix for the market capitalization breakpoints.

Characteristics

	Portfolio	MSCI ACWI ex USA IMI Gross
Number of Holdings	2,134	6,284
Weighted Avg. Market Cap. (\$B)	42.6	48.8
Median Market Cap. (\$B)	6.2	1.4
Price To Earnings	17.9	16.4
Price To Book	3.2	2.3
Price To Sales	3.2	2.4
Return on Equity (%)	17.9	15.2
Yield (%)	3.4	3.4
Beta (holdings; global)	1.0	1.0

Top Holdings

UNITED OVERSEAS BANK	1.4%
ENEL	1.0%
NOVARTIS 'R'	0.9%
SANOFI	0.9%
BP	0.9%
GLAXOSMITHKLINE	0.9%
IBERDROLA	0.9%
NASPERS	0.9%
HARGREAVES LANSDOWN	0.9%
AIA GROUP	0.8%

Best Performers

	Return %
ADANI POWER (IN:ANW)	122.3%
LINX ON (BR:LIX)	105.4%
CIA ENERGETICA DE MINAS GERAIS PN (BR:GP4)	101.6%
HERING TEXTIL ON (BR:3HG)	71.3%
BANCO DO BRASIL ON (BR:IO3)	64.7%
NATURA COSMETICOS ON (BR:NAT)	63.4%
CTI.ELETR BRAS- ELETROBRAS SR.B PN (BR:EL6)	55.9%
CYRELA BRAZIL REALTY ON (BR:3CY)	54.4%
MAGAZINE LUIZA ON (BR:MGZ)	52.3%
CIA PARANAENSE DE ENERGIA COPEL PN (BR:CP6)	52.2%

Worst Performers

	Return %
DISTRIBUIDORA INTNAC.DE ALIMENTACION (E:DIA)	-77.3%
BUMI ARMADA (L:ARMO)	-70.7%
CHINA SHANSHUI CMT.GROUP (K:CSCG)	-66.5%
CT ENVIRONMENTAL GROUP (K:CTEN)	-65.4%
ASOS (UKIR:ASC)	-61.4%
NAVIOS MARITIME HDG. (NM)	-61.3%
VS INDUSTRY (L:VSIN)	-57.6%
BANK OF PIRAEUS (G:PEIR)	-56.0%
NAVIOS MARITIME ACQ. (NNA)	-55.7%
BRILLIANCE CHINA AUTOMOTIVE HOLDINGS (K:CBA)	-53.5%

International Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.0%	-0.1%	0.0%	0.1%	-17.9%	-17.2%	6.3%	7.1%			
Materials	0.1%	0.0%	0.0%	0.1%	-13.1%	-13.9%	6.1%	8.3%			
Industrials	0.1%	0.1%	0.0%	0.0%	-13.2%	-14.3%	13.7%	13.1%			
Consumer Discretionary	-0.4%	-0.3%	0.0%	0.0%	-16.5%	-13.8%	12.6%	10.9%			
Consumer Staples	-0.3%	-0.3%	0.0%	0.0%	-11.0%	-7.6%	9.7%	9.0%			
Health Care	0.1%	0.1%	0.0%	0.0%	-10.2%	-11.5%	9.1%	8.4%			
Financials	0.2%	0.1%	0.0%	0.1%	-9.8%	-11.1%	18.3%	20.6%			
Information Technology	0.1%	0.0%	0.1%	0.0%	-16.0%	-16.4%	7.3%	8.7%			
Communication Services	-0.1%	-0.1%	0.1%	0.0%	-9.9%	-8.7%	9.1%	6.9%			
Utilities	0.2%	0.1%	0.1%	0.0%	3.6%	0.3%	3.7%	3.0%			
Real Estate	-0.1%	0.1%	-0.1%	0.0%	-3.2%	-3.7%	2.3%	3.9%			
Cash	0.1%	0.0%	0.1%	0.0%	0.5%	--	1.2%	0.0%			
Unclassified	0.1%	0.0%	0.1%	0.0%	4.0%	--	0.7%	0.0%			
Portfolio	0.3%	=	-0.3%	+	0.4%	+	0.2%	-11.5%	-11.9%	100.0%	100.0%

Int'l Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	-22.0%	-19.5%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Belgium	-18.4%	-16.5%	0.3%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Czech Republic*	-8.2%	-9.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Denmark	-14.6%	-11.4%	1.9%	1.2%	0.0%	0.0%	0.0%	0.0%	-0.1%
Finland	-12.7%	-14.6%	0.7%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
France	-14.5%	-15.3%	5.1%	7.0%	0.1%	0.0%	0.0%	0.0%	0.1%
Germany	-15.9%	-16.3%	6.7%	6.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Greece*	-12.1%	-14.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Hungary*	4.7%	5.7%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Ireland	-10.5%	-16.3%	0.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Italy	-5.0%	-12.8%	2.1%	1.8%	0.1%	0.0%	0.0%	0.0%	0.2%
Luxembourg	-16.1%	-11.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	-9.2%	-11.7%	2.7%	2.3%	0.1%	0.0%	0.0%	0.0%	0.1%
Norway	-17.9%	-20.1%	0.2%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	-3.3%	-2.8%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Portugal	-19.2%	-13.4%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Russia*	-7.3%	-9.3%	1.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Spain	-4.5%	-9.8%	2.9%	2.1%	0.1%	0.0%	0.0%	0.0%	0.2%
Sweden	-9.3%	-14.1%	3.1%	2.2%	0.1%	0.0%	0.0%	0.0%	0.1%
Switzerland	-12.5%	-10.0%	5.0%	5.4%	-0.1%	0.0%	0.0%	0.0%	-0.1%
United Kingdom	-16.4%	-12.7%	14.3%	12.2%	-0.5%	0.0%	0.0%	-0.1%	-0.6%

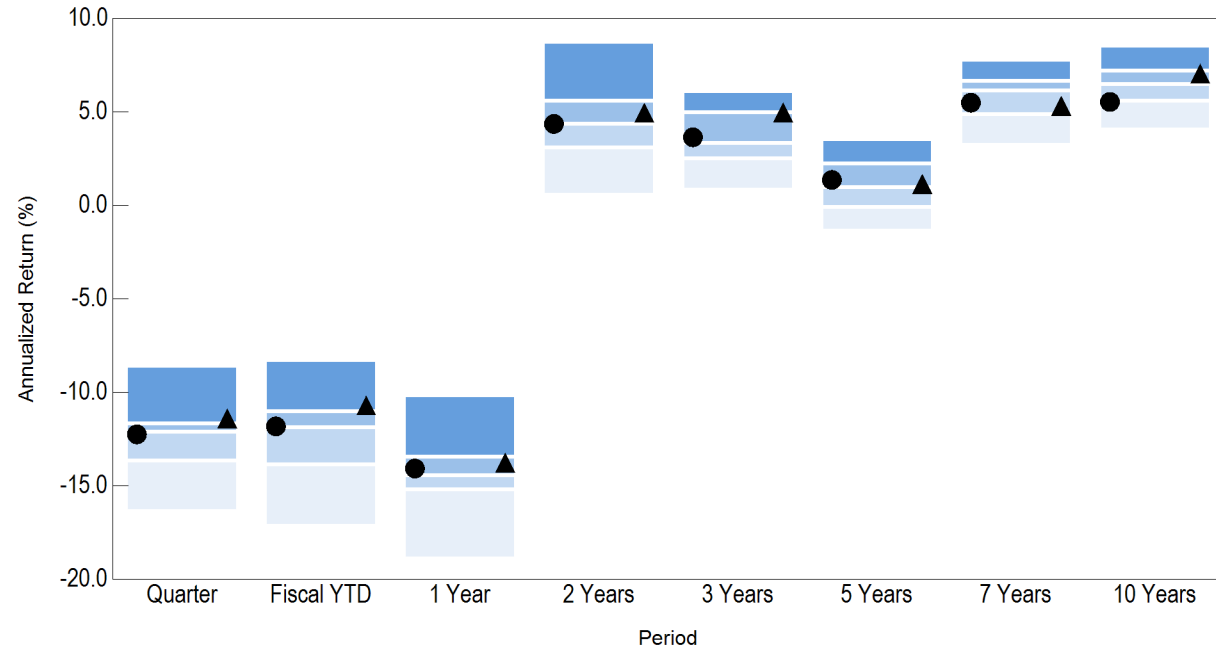
Int'l Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

	Returns and Weights				Attribution Effects				Total Effects	
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect		
AsiaPacific										
Australia	-12.9%	-10.5%	3.7%	4.7%	-0.1%	0.0%	0.0%	0.0%	-0.1%	
China*	-16.8%	-10.5%	3.9%	6.9%	-0.4%	0.0%	0.0%	0.2%	-0.3%	
Hong Kong	-8.0%	-4.9%	4.1%	2.3%	-0.1%	0.1%	0.0%	-0.1%	0.0%	
India*	5.0%	3.2%	2.8%	2.2%	0.1%	0.1%	0.0%	0.0%	0.1%	
Indonesia*	8.1%	8.3%	0.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	
Japan	-14.2%	-14.3%	16.8%	17.6%	0.0%	0.1%	0.0%	0.0%	0.0%	
Korea*	-10.7%	-14.2%	2.8%	3.7%	0.1%	0.0%	0.0%	0.0%	0.1%	
Malaysia*	-8.5%	-6.9%	0.9%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	
New Zealand	-6.5%	-4.1%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
Pakistan*	-21.6%	-20.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Philippines*	0.3%	5.5%	0.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
Singapore	-6.0%	-6.3%	2.8%	0.9%	0.0%	0.1%	0.0%	0.0%	0.1%	
Taiwan*	-15.5%	-12.9%	2.6%	3.1%	-0.1%	0.0%	0.0%	0.0%	-0.1%	
Thailand*	-7.3%	-11.9%	0.5%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	
Americas										
Brazil*	5.0%	14.5%	1.8%	1.5%	-0.1%	0.1%	0.0%	0.0%	-0.1%	
Canada	-12.1%	-15.4%	1.0%	6.7%	0.1%	0.0%	0.3%	-0.1%	0.3%	
Chile*	-8.7%	-8.0%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
Colombia*	-19.2%	-19.6%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
Mexico*	-17.4%	-19.0%	1.1%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	
Peru*	2.9%	-3.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
United States	-20.9%	-13.8%	1.3%	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%	

Int'l Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	-8.2%	-9.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Israel	-15.4%	-13.8%	0.1%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Kuwait**	-2.8%	-0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	5.1%	7.5%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Romania**	-11.3%	-15.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Africa*	-3.1%	-3.7%	1.8%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Turkey*	6.2%	3.3%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%
United Arab Emirates*	-3.5%	-6.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals									
Americas	-9.2%	-10.7%	6.0%	9.4%	-0.1%	-0.1%	0.3%	0.0%	0.1%
Europe	-13.1%	-13.3%	47.5%	44.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Asia/Pacific	-11.2%	-11.1%	42.1%	43.7%	-0.1%	0.0%	0.0%	0.0%	0.0%
Other	-1.7%	-4.5%	3.1%	2.5%	0.0%	0.0%	0.0%	0.0%	0.1%
Cash	0.5%	--	1.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%
Total	-11.5%	-11.9%	100.0%	100.0%	-0.1%	0.1%	0.3%	0.0%	0.3%
Totals									
Developed	-13.1%	-13.3%	75.8%	76.0%	-0.1%	0.0%	0.3%	0.0%	0.1%
Emerging*	-7.1%	-7.5%	22.9%	24.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Frontier**	-5.6%	--	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.5%	--	1.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%

InvestorForce All DB Dev Mkt ex-US Eq Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-8.6	-8.3	-10.2	8.8	6.1	3.6	7.8	8.5
25th Percentile	-11.7	-11.0	-13.4	5.6	5.0	2.3	6.7	7.3
Median	-12.1	-11.9	-14.4	4.4	3.4	1.0	6.2	6.5
75th Percentile	-13.6	-13.8	-15.2	3.1	2.5	-0.1	4.9	5.6
95th Percentile	-16.3	-17.1	-18.9	0.6	0.9	-1.3	3.3	4.1
# of Portfolios	145	145	144	141	135	120	102	65
● Developed Markets	-12.2 (54)	-11.8 (50)	-14.1 (44)	4.4 (51)	3.7 (44)	1.4 (41)	5.5 (62)	5.5 (80)
▲ MSCI ACWI ex USA Gross	-11.4 (17)	-10.7 (19)	-13.8 (32)	5.0 (38)	5.0 (26)	1.1 (45)	5.3 (65)	7.1 (30)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	1,039	2,136
Weighted Avg. Market Cap. (\$B)	45.4	56.1
Median Market Cap. (\$B)	9.8	7.0
Price To Earnings	17.9	16.4
Price To Book	3.2	2.4
Price To Sales	3.2	2.4
Return on Equity (%)	18.1	15.5
Yield (%)	3.3	3.4
Beta (holdings; global)	1.0	1.0

Top Holdings

UNITED OVERSEAS BANK	1.5%
ENEL	1.1%
NOVARTIS 'R'	1.1%
SANOFI	1.0%
BP	1.0%
GLAXOSMITHKLINE	1.0%
IBERDROLA	1.0%
HARGREAVES LANSDOWN	1.0%
AIA GROUP	0.9%
TELIA COMPANY	0.9%

Best Performers

	Return %
CMPH.COCS. RODOVIARIAS ON (BR:CCR)	41.7%
SUMITOMO DAINIPPON PHA. (J:DPPH)	38.7%
UNITED SPIRITS (IN:MLC)	28.4%
COLRUYT (B:COL)	25.7%
ITAU UNIBANCO BANCO HLDG.ADR 1:1 (ITUB)	25.0%
ITAUSA INVESTIMENTOS ITAU PN (BR:IS4)	23.5%
PAN PACIFIC INTERNATIONAL HOLDINGS (J:DONQ)	22.9%
FAMILYMART UNY HOLDINGS (J:FAMA)	21.7%
MEIJI HOLDINGS (J:MEJH)	21.6%
TOKYO ELECTRIC POWER CO. HDG. (J:TE@N)	21.2%

Worst Performers

	Return %
DISTRIBUIDORA INTNAC.DE ALIMENTACION (E:DIA)	-77.3%
ASOS (UKIR:ASC)	-61.4%
BRILLIANCE CHINA AUTOMOTIVE HOLDINGS (K:CBA)	-53.5%
SHARP (J:SH@N)	-50.6%
U-BLOX HOLDING (S:BHOL)	-44.4%
SHOWA DENKO KK (J:SW@N)	-44.3%
SYSMEX (J:TOAF)	-44.2%
CYBERDYNE (J:DYNE)	-44.0%
ROYAL MAIL (UKIR:RMG)	-42.8%
WORLEYPARSONS (A:WORX)	-42.6%

Developed Markets Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.1%	-0.3%	0.1%	0.1%	-19.2%	-16.2%	5.8%	7.7%			
Materials	0.1%	0.0%	0.0%	0.1%	-13.8%	-13.9%	5.5%	7.9%			
Industrials	-0.1%	-0.1%	-0.1%	0.0%	-13.9%	-13.5%	14.1%	12.0%			
Consumer Discretionary	-0.5%	-0.4%	-0.1%	-0.1%	-17.2%	-13.8%	13.2%	10.6%			
Consumer Staples	-0.4%	-0.5%	0.0%	0.0%	-11.6%	-7.3%	9.7%	9.3%			
Health Care	0.0%	0.0%	0.0%	0.0%	-10.3%	-10.8%	9.6%	8.5%			
Financials	0.1%	-0.1%	0.0%	0.2%	-10.3%	-10.8%	18.7%	22.2%			
Information Technology	0.0%	0.0%	0.0%	0.0%	-16.2%	-16.1%	7.6%	8.5%			
Communication Services	-0.2%	-0.2%	0.0%	0.0%	-10.6%	-8.3%	8.7%	7.4%			
Utilities	0.2%	0.1%	0.0%	0.0%	3.6%	0.5%	3.4%	3.0%			
Real Estate	-0.1%	0.0%	-0.1%	0.0%	-3.9%	-2.8%	1.8%	2.9%			
Cash	0.2%	0.0%	0.2%	0.0%	0.5%	--	1.4%	0.0%			
Unclassified	0.1%	0.0%	0.1%	0.0%	4.2%	--	0.7%	0.0%			
Portfolio	-0.7%	=	-1.3%	+	0.3%	+	0.3%	-12.2%	-11.5%	100.0%	100.0%

Developed Markets Performance Attribution vs. MSCI ACWI ex USA Gross

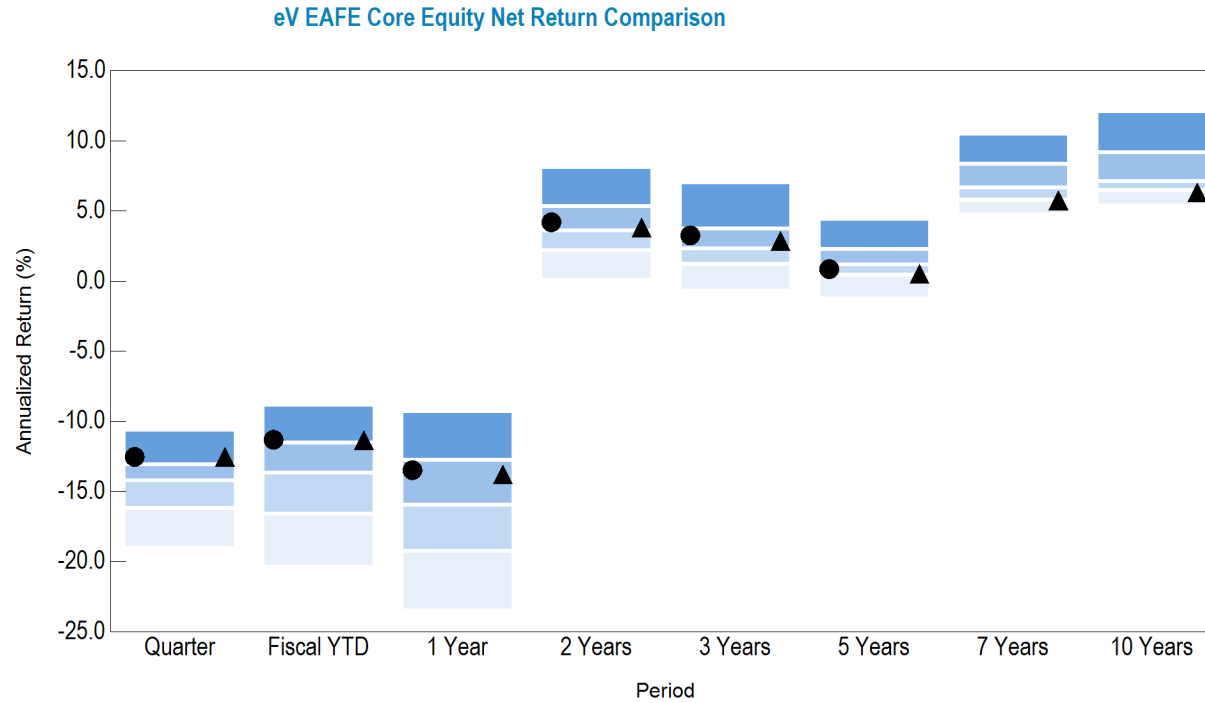
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	-22.0%	-21.9%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Belgium	-18.4%	-18.3%	0.3%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Czech Republic*	--	-8.6%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Denmark	-14.6%	-9.7%	2.1%	1.2%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Finland	-12.7%	-14.6%	0.8%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
France	-14.5%	-14.9%	5.7%	7.7%	0.0%	0.1%	0.0%	0.0%	0.1%
Germany	-15.9%	-16.0%	7.4%	6.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Greece*	--	-15.2%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Hungary*	--	5.8%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Ireland	-10.5%	-18.1%	0.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Italy	-5.0%	-11.6%	2.4%	1.6%	0.1%	0.0%	0.0%	0.0%	0.2%
Luxembourg	-16.7%	-11.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	-9.2%	-11.0%	3.0%	2.3%	0.0%	0.0%	0.0%	0.0%	0.1%
Norway	-17.9%	-17.8%	0.3%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	--	-2.7%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Portugal	-19.2%	-14.2%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Russia*	-4.0%	-9.2%	0.4%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Spain	-4.5%	-8.7%	3.2%	2.1%	0.1%	0.0%	0.0%	0.0%	0.2%
Sweden	-9.3%	-14.1%	3.4%	1.9%	0.1%	-0.1%	0.0%	0.1%	0.1%
Switzerland	-12.5%	-9.0%	5.5%	5.7%	-0.2%	0.0%	0.0%	0.0%	-0.2%
United Kingdom	-16.4%	-11.8%	15.8%	12.0%	-0.6%	0.0%	-0.1%	-0.2%	-0.8%

Developed Markets Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	-12.9%	-9.8%	4.1%	4.6%	-0.2%	0.0%	0.0%	0.0%	-0.1%
China*	-17.7%	-10.6%	3.6%	7.6%	-0.5%	0.0%	0.0%	0.3%	-0.3%
Hong Kong	-8.1%	-4.5%	3.9%	2.4%	-0.1%	0.1%	0.0%	-0.1%	0.0%
India*	5.6%	2.5%	2.3%	2.1%	0.1%	0.0%	0.0%	0.0%	0.1%
Indonesia*	20.4%	9.8%	0.1%	0.5%	0.0%	-0.1%	0.0%	0.0%	-0.1%
Japan	-14.2%	-14.2%	18.6%	16.8%	0.0%	-0.1%	0.1%	0.0%	-0.1%
Korea*	-10.2%	-14.2%	2.2%	3.7%	0.1%	0.0%	0.0%	-0.1%	0.1%
Malaysia*	-8.0%	-5.8%	0.7%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
New Zealand	-6.5%	-6.4%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Pakistan*	--	-22.8%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Philippines*	-6.7%	5.2%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	-6.0%	-6.7%	3.1%	0.9%	0.0%	0.1%	0.0%	0.0%	0.1%
Taiwan*	-17.3%	-13.6%	2.1%	3.0%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Thailand*	-13.5%	-10.3%	0.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Americas									
Brazil*	-0.2%	13.6%	1.3%	1.5%	-0.2%	0.0%	0.0%	0.0%	-0.2%
Canada	-12.1%	-14.9%	1.2%	6.6%	0.1%	0.0%	0.3%	-0.1%	0.3%
Chile*	--	-8.3%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Colombia*	--	-18.9%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Mexico*	-14.9%	-18.7%	0.4%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Peru*	-0.6%	-2.9%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
United States	-20.4%	-13.8%	1.3%	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%

Developed Markets Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	-8.6%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Israel	-15.4%	-14.8%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	5.2%	8.5%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Romania**	-11.3%	-15.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Africa*	-3.3%	-3.5%	1.3%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Turkey*	17.6%	4.7%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
United Arab Emirates*	-0.7%	-6.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals									
Americas	-10.8%	-10.3%	4.2%	9.5%	-0.3%	-0.2%	0.3%	0.2%	-0.1%
Europe	-13.3%	-12.6%	51.3%	44.9%	-0.4%	0.0%	0.0%	-0.1%	-0.5%
Asia/Pacific	-11.8%	-11.0%	41.3%	43.2%	-0.5%	0.0%	0.1%	0.0%	-0.3%
Other	-2.1%	-3.8%	1.8%	2.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.5%	--	1.4%	0.0%	0.0%	0.2%	0.0%	0.0%	0.2%
Total	-12.2%	-11.5%	100.0%	100.0%	-1.1%	-0.1%	0.3%	0.1%	-0.7%
Totals									
Developed	-13.1%	-12.8%	83.4%	75.3%	-0.6%	-0.1%	0.3%	-0.1%	-0.4%
Emerging*	-8.3%	-7.5%	15.2%	24.7%	-0.3%	-0.3%	0.1%	0.1%	-0.4%
Frontier**	-11.3%	--	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.5%	--	1.4%	0.0%	0.0%	0.2%	0.0%	0.0%	0.2%



	Quarter		Fiscal YTD		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	-10.6	-8.8	-9.3	8.1	7.0	4.4	10.5	12.1								
25th Percentile	-13.0	-11.5	-12.7	5.4	3.8	2.3	8.4	9.2								
Median	-14.2	-13.6	-15.9	3.6	2.4	1.2	6.7	7.2								
75th Percentile	-16.2	-16.6	-19.2	2.2	1.3	0.5	5.8	6.5								
95th Percentile	-19.0	-20.4	-23.5	0.1	-0.6	-1.2	4.8	5.4								
# of Portfolios	138	138	138	136	132	114	94	78								
● BlackRock EAFE Index	-12.5 (21)	-11.3 (25)	-13.5 (32)	4.2 (42)	3.3 (38)	0.9 (62)	-- (-)	-- (-)								
▲ MSCI EAFE	-12.5 (21)	-11.4 (25)	-13.8 (36)	3.8 (48)	2.9 (46)	0.5 (75)	5.8 (76)	6.3 (80)								

Characteristics

	Portfolio	MSCI EAFE
Number of Holdings	923	920
Weighted Avg. Market Cap. (\$B)	52.6	52.6
Median Market Cap. (\$B)	9.1	9.1
Price To Earnings	17.0	16.7
Price To Book	2.7	2.3
Price To Sales	2.6	2.4
Return on Equity (%)	16.5	14.7
Yield (%)	3.6	3.6
Beta (holdings: global)	1.0	1.0

Top Holdings

NESTLE 'R'	2.0%
NOVARTIS 'R'	1.5%
ROCHE HOLDING	1.4%
HSBC HOLDINGS	1.3%
ROYAL DUTCH SHELL A	1.1%
TOYOTA MOTOR	1.1%
TOTAL	1.0%
BP	1.0%
ROYAL DUTCH SHELL B	0.9%
AIA GROUP	0.8%

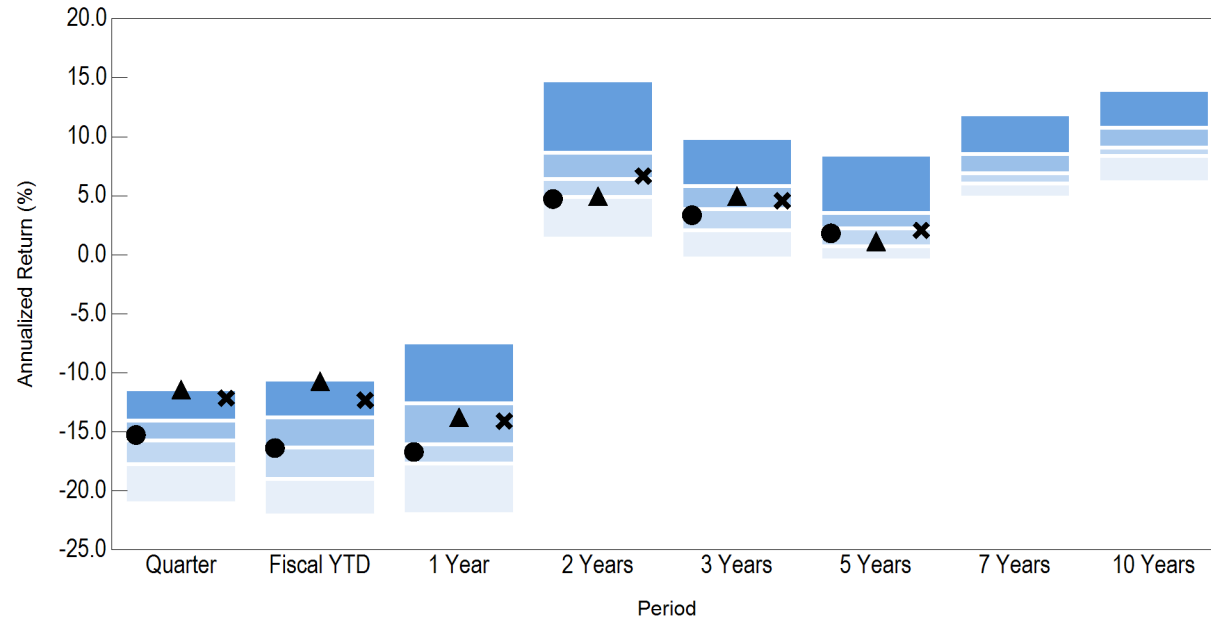
Best Performers

	Return %
SUMITOMO DAINIPPON PHA. (J:DPPH)	38.7%
COLRUYT (B:COL)	25.7%
PAN PACIFIC INTERNATIONAL HOLDINGS (J:DONQ)	22.9%
FAMILYMART UNY HOLDINGS (J:FAMA)	21.7%
MEIJI HOLDINGS (J:MEJH)	21.6%
TOKYO ELECTRIC POWER CO. HDG. (J:TE@N)	21.2%
RANDGOLD RESOURCES SUSP - SUSP 31/12/18 (UKIR:RRS)	17.3%
TOHO (J:TOHO)	15.6%
BANDAI NAMCO HDG. (J:N@MB)	15.5%
YUE YUEN INDL.HDG. (K:YUEN)	15.1%

Worst Performers

	Return %
SHARP (J:SH@N)	-50.6%
SHOWA DENKO KK (J:SW@N)	-44.3%
SYSMEX (J:TOAF)	-44.2%
CYBERDYNE (J:DYNE)	-44.0%
ROYAL MAIL (UKIR:RMG)	-42.8%
WORLEYPARSONS (A:WORX)	-42.6%
LENLEASE GROUP STAPLED UNITS (A:LLCX)	-42.4%
CONVATEC GROUP (UKIR:CTEC)	-41.6%
M3 (J:SNET)	-40.8%
HOSHIZAKI ELECTRIC (J:HSZK)	-40.5%

eV ACWI ex-US Growth Equity Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-11.4	-10.6	-7.4	14.8	9.9	8.5	11.9	14.0
25th Percentile	-14.0	-13.8	-12.5	8.7	5.9	3.6	8.5	10.8
Median	-15.7	-16.3	-16.1	6.4	3.9	2.2	6.9	9.1
75th Percentile	-17.7	-19.0	-17.7	4.9	2.1	0.7	6.1	8.4
95th Percentile	-21.0	-22.1	-22.0	1.4	-0.3	-0.5	4.9	6.2
# of Portfolios	66	66	66	66	66	55	48	40
● Baillie Gifford	-15.3 (41)	-16.4 (52)	-16.7 (57)	4.7 (79)	3.3 (64)	1.8 (59)	-- (--)	-- (--)
▲ MSCI ACWI ex US	-11.4 (5)	-10.7 (6)	-13.8 (37)	5.0 (75)	5.0 (33)	1.1 (70)	-- (--)	-- (--)
✕ MSCI ACWI ex US Growth	-12.2 (10)	-12.3 (16)	-14.1 (44)	6.7 (42)	4.6 (41)	2.1 (55)	-- (--)	-- (--)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	85	2,136
Weighted Avg. Market Cap. (\$B)	36.2	56.1
Median Market Cap. (\$B)	13.2	7.0
Price To Earnings	25.8	16.4
Price To Book	5.7	2.4
Price To Sales	5.1	2.4
Return on Equity (%)	26.0	15.5
Yield (%)	1.8	3.4
Beta (holdings: global)	1.1	1.0

Top Holdings

HARGREAVES LANSDOWN	2.9%
NASPERS	2.7%
TAIWAN SEMICON.SPN.ADR 1:5	2.7%
ALIBABA GROUP HLDG.SPN. ADR 1:1	2.4%
SHISEIDO	2.4%
COCHLEAR	2.3%
AIA GROUP	2.1%
NOVOZYMES B	2.0%
UNITED OVERSEAS BANK	2.0%
MS&AD INSURANCE GP.HDG.	2.0%

Best Performers

	Return %
UNITED SPIRITS (IN:MLC)	28.4%
HOUSING DEVELOPMENT FINANCE CORPORATION (IN:HDF)	16.5%
JARDINE MATHESON HDG. (T:JMST)	10.9%
ASIAN PAINTS (IN:API)	10.5%
CLICKS GROUP (R:CLSJ)	7.6%
JARDINE STRATEGIC HDG. (T:JSTG)	1.1%
AUTO TRADER GROUP (UKIR:AUTO)	-0.5%
PUBLIC BANK (L:PBOM)	-0.8%
PUREGOLD PRICE CLUB (PH:PUR)	-1.8%
ADVANTEST (J:AB@N)	-2.9%

Worst Performers

	Return %
DISTRIBUIDORA INTNAC.DE ALIMENTACION (E:DIA)	-77.3%
ASOS (UKIR:ASC)	-61.4%
U-BLOX HOLDING (S:BHOL)	-44.4%
SPOTIFY TECHNOLOGY (SPOT)	-37.2%
WOOD GROUP (JOHN) (UKIR:WG.)	-35.9%
ZALANDO (D:ZAL)	-34.1%
SOFTBANK GROUP (J:SFTB)	-34.1%
BAIDU 'A' ADR 10:1 (BIDU)	-30.6%
HON HAI PRECISION INDUSTRIES DRC (UKIR:HHPD)	-29.2%
JUPITER FUND MANAGEMENT (UKIR:JUP)	-28.9%

Baillie Gifford Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.1%	-1.6%	0.2%	1.5%	-35.9%	-16.1%	1.1%	7.6%			
Materials	0.2%	0.1%	0.1%	0.1%	-11.4%	-13.4%	4.8%	8.1%			
Industrials	-0.2%	0.0%	-0.1%	-0.1%	-14.1%	-13.6%	15.4%	11.9%			
Consumer Discretionary	-1.3%	-0.6%	-0.2%	-0.5%	-20.1%	-13.8%	17.0%	10.4%			
Consumer Staples	-1.0%	-0.9%	0.2%	-0.2%	-15.6%	-7.4%	13.7%	9.5%			
Health Care	-0.3%	-0.3%	0.0%	0.0%	-14.7%	-10.8%	7.4%	8.4%			
Financials	0.0%	-0.2%	-0.1%	0.3%	-10.5%	-10.6%	16.9%	22.1%			
Information Technology	-0.1%	0.0%	-0.1%	0.0%	-15.8%	-16.1%	10.4%	8.4%			
Communication Services	-0.9%	-0.7%	0.1%	-0.4%	-17.1%	-8.3%	12.0%	7.4%			
Utilities	-0.3%	--	-0.4%	--	--	0.5%	0.0%	3.0%			
Real Estate	-0.2%	--	-0.2%	--	--	-3.4%	0.0%	3.1%			
Cash	0.2%	0.0%	0.2%	0.0%	0.5%	--	1.3%	0.0%			
Portfolio	-3.8%	=	-4.2%	+	-0.3%	+	0.7%	-15.2%	-11.4%	100.0%	100.0%

Baillie Gifford Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	--	-21.9%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Belgium	--	-18.3%	0.0%	0.7%	--	0.0%	0.0%	--	0.1%
Czech Republic*	--	-8.6%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Denmark	-14.0%	-9.8%	3.0%	1.2%	0.0%	0.0%	0.0%	-0.1%	-0.1%
Finland	-10.9%	-14.6%	1.2%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
France	-22.7%	-14.6%	1.5%	7.8%	-0.7%	0.2%	0.1%	0.5%	0.1%
Germany	-20.3%	-15.7%	6.3%	6.5%	-0.3%	0.0%	0.0%	0.0%	-0.3%
Greece*	--	-15.0%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Hungary*	--	5.9%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Ireland	-8.4%	-18.1%	1.0%	0.4%	0.0%	0.0%	0.0%	0.1%	0.1%
Italy	--	-11.6%	0.0%	1.6%	--	0.0%	0.0%	--	0.0%
Netherlands	-16.1%	-11.0%	1.5%	2.3%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Norway	--	-17.9%	0.0%	0.5%	--	0.0%	0.0%	--	0.0%
Poland*	--	-2.7%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Portugal	-19.8%	-14.2%	1.1%	0.1%	0.0%	0.0%	0.0%	-0.1%	-0.1%
Russia*	--	-9.1%	0.0%	0.9%	--	-0.1%	0.0%	--	0.0%
Spain	-17.7%	-8.7%	2.0%	2.1%	-0.2%	0.0%	0.0%	0.0%	-0.2%
Sweden	-12.9%	-14.1%	5.4%	1.9%	0.0%	-0.1%	0.0%	0.0%	-0.1%
Switzerland	-23.7%	-8.9%	3.7%	5.7%	-0.9%	0.0%	0.0%	0.3%	-0.6%
United Kingdom	-20.1%	-11.7%	14.2%	12.1%	-1.0%	0.0%	0.0%	-0.2%	-1.2%

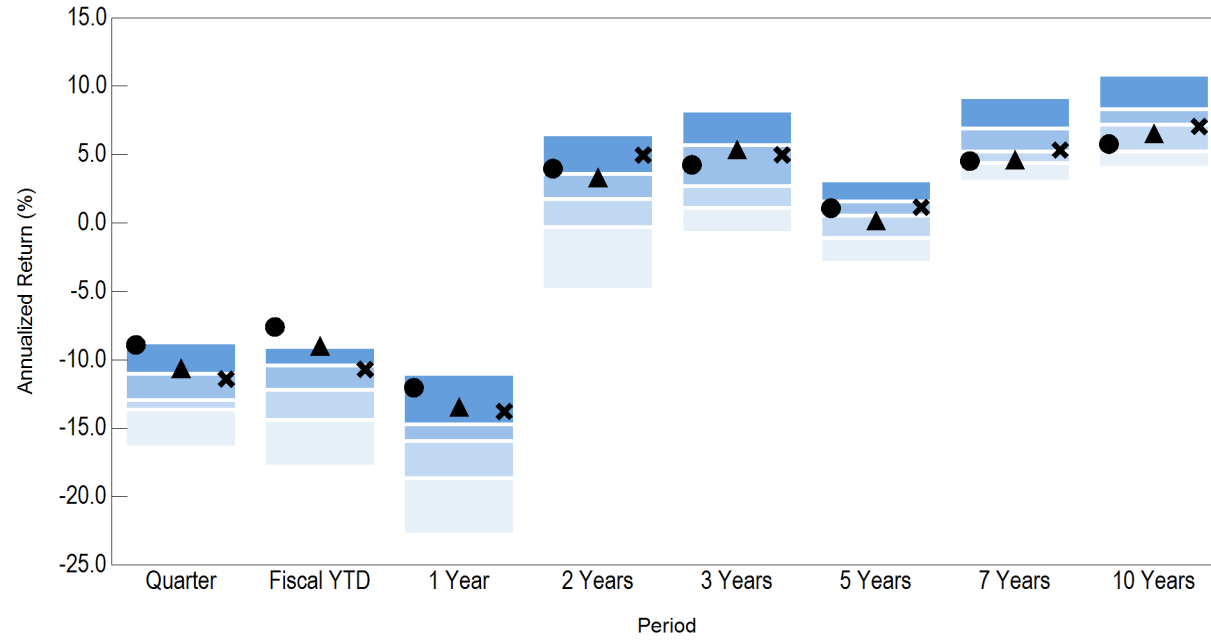
Baillie Gifford Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	-17.5%	-9.8%	4.7%	4.6%	-0.4%	0.0%	0.0%	0.0%	-0.4%
China*	-21.3%	-10.6%	7.4%	7.6%	-0.9%	0.0%	0.0%	0.0%	-0.8%
Hong Kong	-7.1%	-4.5%	1.9%	2.4%	0.0%	0.0%	0.0%	0.0%	-0.1%
India*	7.0%	2.6%	3.6%	2.1%	0.1%	0.2%	0.0%	0.1%	0.4%
Indonesia*	--	9.8%	0.0%	0.5%	--	-0.1%	0.0%	--	-0.1%
Japan	-16.0%	-14.2%	17.2%	16.7%	-0.3%	0.0%	0.0%	0.0%	-0.3%
Korea*	-9.0%	-14.2%	2.8%	3.7%	0.2%	0.0%	0.0%	0.0%	0.1%
Malaysia*	-0.8%	-5.8%	1.1%	0.6%	0.0%	0.0%	0.0%	0.0%	0.1%
New Zealand	--	-6.4%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Pakistan*	--	-22.9%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Philippines*	-1.8%	5.2%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	-4.9%	-6.7%	3.6%	0.9%	0.0%	0.1%	0.0%	0.1%	0.2%
Taiwan*	-19.1%	-13.6%	3.8%	3.0%	-0.2%	0.0%	0.0%	0.0%	-0.2%
Thailand*	--	-10.3%	0.0%	0.6%	--	0.0%	0.0%	--	0.0%
Americas									
Brazil*	-18.5%	13.8%	1.2%	1.5%	-0.5%	-0.1%	0.0%	0.1%	-0.5%
Canada	-17.2%	-14.9%	2.4%	6.6%	-0.3%	0.0%	0.3%	0.2%	0.1%
Chile*	--	-8.3%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Colombia*	--	-19.0%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Mexico*	-15.7%	-18.6%	0.7%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Peru*	--	-2.8%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
United States	-21.0%	-13.8%	3.4%	0.0%	0.0%	-0.1%	0.0%	-0.2%	-0.3%

Baillie Gifford Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	-8.7%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Israel	--	-14.7%	0.0%	0.4%	--	0.0%	0.0%	--	0.0%
Qatar*	--	8.5%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
South Africa*	-1.9%	-3.5%	3.7%	1.5%	0.0%	0.2%	0.0%	0.0%	0.2%
Turkey*	--	4.9%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
United Arab Emirates*	--	-6.0%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Totals									
Americas	-19.0%	-10.2%	7.7%	9.4%	-1.1%	-0.1%	0.3%	0.2%	-0.7%
Europe	-18.3%	-12.5%	40.9%	45.1%	-2.8%	0.0%	0.2%	0.3%	-2.4%
Asia/Pacific	-13.4%	-11.0%	46.4%	43.0%	-1.0%	0.0%	0.1%	-0.1%	-1.1%
Other	-1.9%	-3.7%	3.7%	2.5%	0.1%	0.1%	0.0%	0.0%	0.2%
Cash	0.5%	--	1.3%	0.0%	0.0%	0.2%	0.0%	0.0%	0.2%
Total	-15.2%	-11.4%	100.0%	100.0%	-4.8%	0.1%	0.5%	0.4%	-3.8%
Totals									
Developed	-16.8%	-12.7%	74.1%	75.4%	-3.6%	0.0%	0.4%	0.1%	-3.1%
Emerging*	-11.0%	-7.5%	24.5%	24.6%	-0.9%	0.0%	0.1%	0.0%	-0.9%
Cash	0.5%	--	1.3%	0.0%	0.0%	0.2%	0.0%	0.0%	0.2%

eV ACWI ex-US Value Equity Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-8.7	-9.1	-11.0	6.5	8.2	3.1	9.2	10.8
25th Percentile	-11.0	-10.4	-14.7	3.6	5.7	1.6	6.9	8.4
Median	-12.9	-12.1	-15.9	1.8	2.7	0.6	5.2	7.2
75th Percentile	-13.6	-14.4	-18.6	-0.3	1.1	-1.1	4.4	5.2
95th Percentile	-16.4	-17.8	-22.8	-4.9	-0.7	-2.9	3.1	4.1
# of Portfolios	34	34	34	34	31	28	21	15
● Mondrian	-8.9 (6)	-7.6 (1)	-12.0 (8)	4.0 (19)	4.2 (43)	1.1 (37)	4.5 (73)	5.8 (57)
▲ MSCI ACWI ex USA Value Gross	-10.6 (16)	-9.0 (5)	-13.4 (12)	3.3 (32)	5.4 (30)	0.2 (60)	4.6 (71)	6.6 (54)
✕ MSCI ACWI ex USA Gross	-11.4 (34)	-10.7 (34)	-13.8 (15)	5.0 (9)	5.0 (36)	1.1 (35)	5.3 (49)	7.1 (51)

Characteristics

	Portfolio	MSCI ACWI ex USA Value Gross
Number of Holdings	134	1,277
Weighted Avg. Market Cap. (\$B)	47.4	47.7
Median Market Cap. (\$B)	17.7	6.4
Price To Earnings	11.3	11.8
Price To Book	1.6	1.4
Price To Sales	1.7	1.7
Return on Equity (%)	12.3	12.0
Yield (%)	4.5	4.7
Beta (holdings: global)	0.9	0.9

Top Holdings

ENEL	2.8%
IBERDROLA	2.5%
TELIA COMPANY	2.5%
UNITED OVERSEAS BANK	2.4%
ENI	2.3%
SANOFI	2.2%
LLOYDS BANKING GROUP	2.2%
GLAXOSMITHKLINE	2.2%
CK HUTCHISON HOLDINGS	2.2%
HONDA MOTOR	2.1%

Best Performers

	Return %
CMPH.COCS. RODOVIARIAS ON (BR:CCR)	41.7%
ITAU UNIBANCO BANCO HLDG.ADR 1:1 (ITUB)	25.0%
ITAUSA INVESTIMENTOS ITAU PN (BR:IS4)	23.5%
BANK RAKYAT INDONESIA (ID:BRI)	20.4%
TURKIYE HALK BANKASI (TK:HLB)	18.5%
LARSEN & TOUBRO (IN:LST)	17.3%
TKI.GARANTI BKSI. (TK:GAR)	16.6%
HOUSING DEVELOPMENT FINANCE CORPORATION (IN:HDF)	16.5%
EMBRAER SPNS ADR 1:4 (ERJ)	13.0%
COCA-COLA BOTTLERS JAPAN HOLDINGS (J:KITK)	12.7%

Worst Performers

	Return %
BRILLIANCE CHINA AUTOMOTIVE HOLDINGS (K:CBA)	-53.5%
GENTING MALAYSIA (L:RESO)	-39.4%
WOOD GROUP (JOHN) (UKIR:WG.)	-35.9%
CHINA MED.SY.HDG.(DI) (K:CHM)	-33.1%
GPO FINANCE BANORTE (MX:GTB)	-32.8%
TONGDA GROUP HOLDINGS (K:TGDA)	-32.2%
EVONIK INDUSTRIES (D:EVK)	-29.9%
TINGYI CYMN.ISLE.HLDG. (K:CAYM)	-27.3%
SOCIETE GENERALE (F:SGE)	-25.9%
WPP (UKIR:WPP)	-25.0%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Value Gross

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.2%	-0.5%	0.1%	0.1%	-18.4%	-14.9%	10.1%	12.5%			
Materials	0.1%	-0.1%	0.1%	0.2%	-12.6%	-13.0%	4.0%	7.8%			
Industrials	-0.3%	-0.1%	-0.1%	-0.1%	-13.0%	-10.6%	12.7%	7.7%			
Consumer Discretionary	-0.4%	-0.2%	-0.1%	-0.1%	-15.1%	-12.1%	11.5%	7.1%			
Consumer Staples	0.2%	0.2%	0.0%	0.0%	-7.9%	-13.1%	4.3%	4.0%			
Health Care	0.2%	0.1%	0.1%	0.1%	-7.2%	-9.0%	10.2%	6.8%			
Financials	1.1%	1.2%	0.1%	-0.2%	-6.8%	-11.5%	19.5%	34.3%			
Information Technology	-0.2%	-0.1%	-0.1%	0.0%	-15.2%	-12.6%	6.1%	4.4%			
Communication Services	0.3%	0.2%	0.1%	0.0%	-2.1%	-4.5%	8.8%	6.3%			
Utilities	0.6%	0.3%	0.2%	0.0%	5.3%	0.5%	7.0%	4.9%			
Real Estate	-0.1%	0.1%	-0.1%	-0.1%	-3.6%	-3.7%	2.3%	4.2%			
Cash	0.2%	0.0%	0.2%	0.0%	0.5%	--	1.8%	0.0%			
Unclassified	0.3%	0.0%	0.0%	0.3%	6.8%	-10.6%	1.7%	0.0%			
Portfolio	1.8%	=	1.1%	+	0.5%	+	0.2%	-8.8%	-10.6%	100.0%	100.0%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Value Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	--	-25.5%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Belgium	--	-11.8%	0.0%	0.4%	--	0.0%	0.0%	--	0.0%
Czech Republic*	--	-8.3%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Denmark	-20.8%	-16.3%	1.6%	0.3%	0.0%	-0.1%	0.0%	-0.1%	-0.2%
Finland	--	-10.0%	0.0%	0.8%	--	0.0%	0.0%	--	0.0%
France	-11.9%	-15.2%	5.0%	7.0%	0.2%	0.1%	0.0%	-0.1%	0.3%
Germany	-11.6%	-12.3%	7.0%	5.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Greece*	--	-17.0%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Hungary*	--	2.5%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Ireland	--	-24.1%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Italy	-2.3%	-7.5%	4.9%	2.1%	0.1%	0.1%	0.0%	0.1%	0.3%
Netherlands	-1.6%	-17.8%	3.2%	1.2%	0.2%	-0.1%	0.0%	0.3%	0.4%
Norway	--	-21.7%	0.0%	0.6%	--	0.0%	0.0%	--	0.1%
Poland*	--	3.0%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Portugal	--	-9.5%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Russia*	-4.0%	-9.3%	1.1%	0.9%	0.0%	0.0%	0.0%	0.0%	0.1%
Spain	3.6%	-6.6%	4.8%	2.9%	0.3%	0.1%	0.0%	0.2%	0.5%
Sweden	6.1%	-12.8%	2.2%	1.4%	0.3%	0.0%	0.0%	0.1%	0.4%
Switzerland	-9.6%	-6.6%	4.9%	4.9%	-0.1%	0.0%	0.0%	0.0%	-0.1%
United Kingdom	-16.8%	-12.4%	18.1%	15.8%	-0.7%	0.0%	0.0%	-0.1%	-0.9%

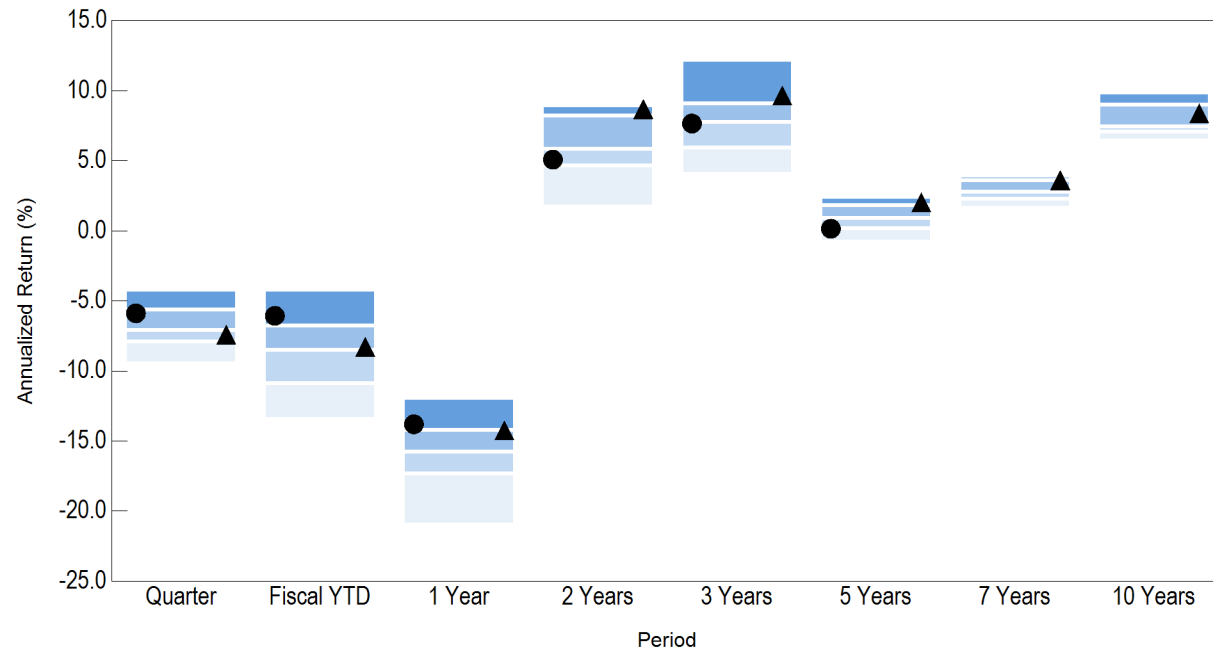
Mondrian Performance Attribution vs. MSCI ACWI ex USA Value Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	-11.6%	-7.6%	1.0%	4.5%	-0.2%	-0.2%	0.1%	0.1%	-0.1%
China*	-9.5%	-8.3%	3.3%	8.1%	-0.1%	-0.1%	0.0%	0.1%	-0.1%
Hong Kong	-11.0%	-5.7%	5.4%	2.5%	-0.1%	0.1%	0.0%	-0.2%	-0.2%
India*	2.9%	-1.8%	3.2%	2.3%	0.1%	0.0%	0.0%	0.0%	0.2%
Indonesia*	20.4%	11.9%	0.3%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Japan	-12.0%	-12.8%	14.3%	16.7%	0.1%	0.1%	-0.1%	0.0%	0.2%
Korea*	-9.5%	-12.8%	3.9%	3.7%	0.1%	0.0%	0.0%	0.0%	0.1%
Malaysia*	-17.3%	-6.3%	0.9%	0.6%	-0.1%	0.0%	0.0%	0.0%	-0.1%
New Zealand	--	-3.4%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Pakistan*	--	-22.3%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Philippines*	-14.4%	7.4%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	-7.3%	-6.2%	4.2%	0.9%	0.0%	0.1%	0.0%	0.0%	0.1%
Taiwan*	-14.5%	-13.2%	2.4%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Thailand*	-13.5%	-12.2%	0.5%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Americas									
Brazil*	7.4%	15.6%	2.8%	1.6%	-0.1%	0.3%	0.0%	-0.1%	0.1%
Canada	0.0%	-15.0%	1.0%	6.7%	1.1%	0.0%	0.3%	-0.9%	0.4%
Chile*	--	-10.2%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Colombia*	--	-12.7%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Mexico*	-13.7%	-20.6%	0.5%	0.8%	0.1%	0.0%	0.0%	0.0%	0.1%
Peru*	-0.6%	4.6%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Value Gross

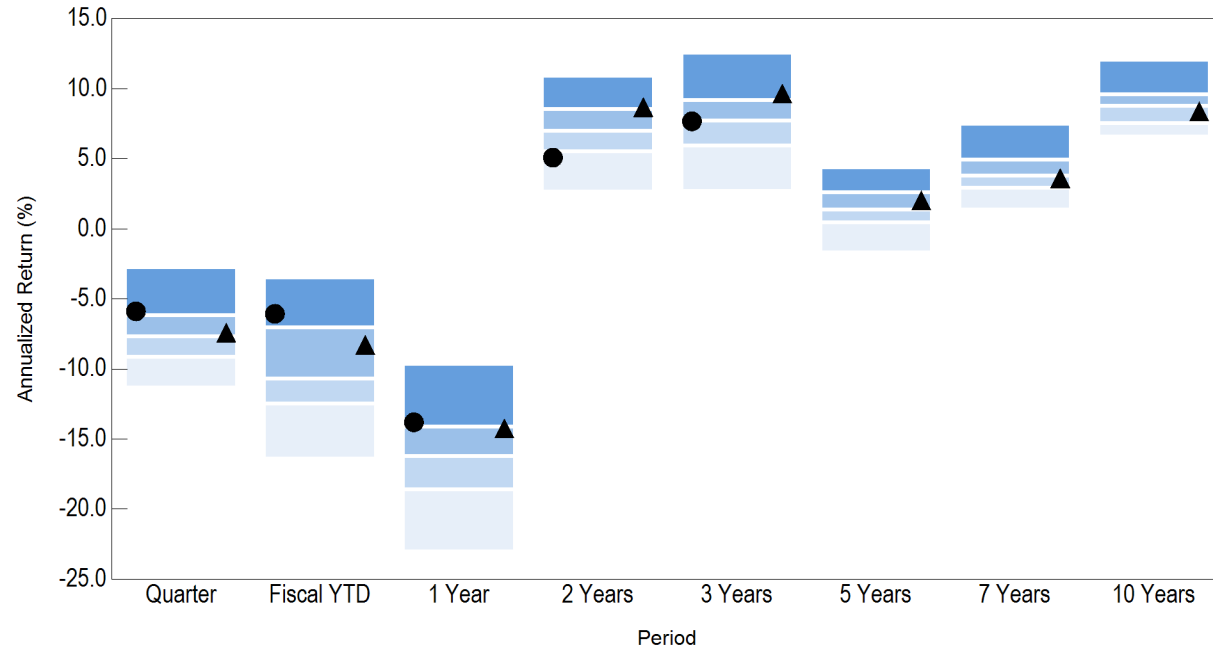
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	-9.2%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Israel	--	-19.7%	0.0%	0.4%	--	0.0%	0.0%	--	0.0%
Qatar*	5.2%	7.5%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Romania**	-11.3%	-10.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Africa*	-23.6%	-3.9%	0.2%	1.6%	-0.3%	-0.1%	0.0%	0.3%	-0.1%
Turkey*	17.6%	10.8%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%
United Arab Emirates*	-0.7%	-7.1%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals									
Americas	3.1%	-10.0%	4.6%	9.5%	1.0%	-0.2%	0.3%	-0.5%	0.6%
Europe	-9.8%	-11.7%	52.7%	44.2%	0.8%	0.0%	-0.1%	0.2%	0.9%
Asia/Pacific	-9.7%	-9.8%	39.7%	43.7%	-0.1%	0.0%	0.1%	0.0%	0.0%
Other	1.6%	-4.8%	1.2%	2.5%	0.1%	-0.1%	0.1%	0.0%	0.0%
Cash	0.5%	--	1.8%	0.0%	0.0%	0.2%	0.0%	0.0%	0.2%
Total	-8.8%	-10.6%	100.0%	100.0%	1.8%	0.0%	0.4%	-0.4%	1.7%
Totals									
Developed	-10.1%	-11.9%	77.4%	74.6%	1.1%	0.0%	0.2%	0.0%	1.3%
Emerging*	-4.9%	-6.8%	20.7%	25.4%	0.3%	-0.2%	0.2%	0.0%	0.2%
Frontier**	-11.3%	--	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.5%	--	1.8%	0.0%	0.0%	0.2%	0.0%	0.0%	0.2%

InvestorForce All DB Emg Mkt Eq Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-4.2	-4.2	-12.0	8.9	12.2	2.4	3.9	9.9
25th Percentile	-5.6	-6.7	-14.2	8.3	9.1	1.8	3.7	9.1
Median	-7.0	-8.5	-15.7	5.9	7.8	1.0	2.8	7.5
75th Percentile	-7.9	-10.8	-17.3	4.7	6.0	0.2	2.3	7.1
95th Percentile	-9.4	-13.4	-20.9	1.8	4.1	-0.7	1.7	6.5
# of Portfolios	76	76	76	73	72	61	46	15
● Emerging Markets	-5.9 (29)	-6.1 (17)	-13.8 (22)	5.1 (67)	7.7 (55)	0.1 (77)	-- (--)	-- (--)
▲ MSCI Emerging Markets Gross	-7.4 (66)	-8.3 (44)	-14.2 (28)	8.7 (7)	9.7 (17)	2.0 (13)	3.6 (27)	8.4 (32)

eV Emg Mkts Equity Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-2.7	-3.5	-9.7	10.9	12.6	4.4	7.5	12.0
25th Percentile	-6.1	-7.0	-14.1	8.6	9.2	2.6	5.0	9.6
Median	-7.7	-10.7	-16.2	7.0	7.8	1.4	3.8	8.8
75th Percentile	-9.1	-12.5	-18.6	5.6	6.0	0.5	3.0	7.6
95th Percentile	-11.3	-16.4	-23.0	2.7	2.7	-1.7	1.4	6.6
# of Portfolios	197	196	194	186	179	150	113	69
● Parametric Core	-5.9 (22)	-6.1 (19)	-13.8 (24)	5.1 (82)	7.7 (51)	-- (--)	-- (--)	-- (--)
▲ MSCI Emerging Markets Gross	-7.4 (44)	-8.3 (30)	-14.2 (27)	8.7 (24)	9.7 (21)	2.0 (34)	3.6 (58)	8.4 (54)

Characteristics

	Portfolio	MSCI Emerging Markets Gross
Number of Holdings	1,161	1,125
Weighted Avg. Market Cap. (\$B)	19.5	70.0
Median Market Cap. (\$B)	3.2	4.9
Price To Earnings	18.1	16.6
Price To Book	2.7	2.9
Price To Sales	2.9	2.6
Return on Equity (%)	17.1	17.5
Yield (%)	3.5	2.9
Beta (holdings; global)	0.8	1.0

Top Holdings

CREDICORP	0.9%
SBERBANK OF RUSSIA	0.8%
LUKOIL OAO SPN.ADR 1:1	0.7%
NASPERS	0.7%
AMERICA MOVIL SAB DE CV SPN.ADR 'L' 1:20	0.7%
PJSC GAZPROM ADR (OTC) CDI 1:2	0.6%
MTN GROUP	0.6%
GPO FINANCE BANORTE	0.6%
SAMSUNG ELECTRONICS	0.5%
FOM.ECO.MEXNO.SAB DE CV SPN.ADR 1:10	0.5%

Best Performers

	Return %
ADANI POWER (IN:ANW)	122.3%
LINX ON (BR:LIX)	105.4%
CIA ENERGETICA DE MINAS GERAIS PN (BR:GP4)	101.6%
HERING TEXTIL ON (BR:3HG)	71.3%
BANCO DO BRASIL ON (BR:IO3)	64.7%
NATURA COSMETICOS ON (BR:NAT)	63.4%
CTI.ELETR BRAS- ELETROBRAS SR.B PN (BR:EL6)	55.9%
CYRELA BRAZIL REALTY ON (BR:3CY)	54.4%
MAGAZINE LUIZA ON (BR:MGZ)	52.3%
CIA PARANAENSE DE ENERGIA COPEL PN (BR:CP6)	52.2%

Worst Performers

	Return %
BUMI ARMADA (L:ARMO)	-70.7%
CHINA SHANSHUI CMT.GROUP (K:CSCG)	-66.5%
CT ENVIRONMENTAL GROUP (K:CTEN)	-65.4%
NAVIOS MARITIME HDG. (NM)	-61.3%
VS INDUSTRY (L:VSIN)	-57.6%
BANK OF PIRAEUS (G:PEIR)	-56.0%
NAVIOS MARITIME ACQ. (NNA)	-55.7%
BRILLIANCE CHINA AUTOMOTIVE HOLDINGS (K:CBA)	-53.5%
FULLSHARE HOLDINGS (K:WARD)	-52.2%
KNM GROUP (L:KNMG)	-51.5%

Parametric Core Performance Attribution vs. MSCI Emerging Markets Gross

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.2%	-0.1%	-0.1%	-0.1%	-11.8%	-10.5%	11.1%	8.1%			
Materials	0.0%	0.1%	-0.1%	0.0%	-10.1%	-10.9%	11.5%	7.9%			
Industrials	0.2%	0.0%	0.2%	0.0%	-2.9%	-3.1%	9.7%	5.5%			
Consumer Discretionary	0.6%	0.7%	0.1%	-0.2%	-5.0%	-11.6%	7.5%	10.5%			
Consumer Staples	0.0%	0.0%	0.1%	0.0%	-5.2%	-4.7%	9.8%	6.5%			
Health Care	0.2%	0.2%	-0.2%	0.2%	-9.2%	-16.0%	5.4%	3.1%			
Financials	-0.9%	-0.4%	-0.5%	0.0%	-3.7%	-1.0%	14.9%	23.1%			
Information Technology	1.0%	0.2%	0.9%	-0.2%	-13.8%	-15.7%	4.6%	15.9%			
Communication Services	0.3%	0.2%	0.0%	0.0%	-5.0%	-7.2%	11.9%	14.0%			
Utilities	0.5%	0.0%	0.5%	0.0%	3.4%	3.6%	6.7%	2.4%			
Real Estate	0.1%	-0.1%	0.3%	-0.1%	-1.5%	1.5%	6.2%	2.9%			
Cash	0.0%	--	--	--	--	--	0.0%	0.0%			
Unclassified	0.1%	0.0%	0.1%	0.0%	1.6%	--	0.6%	0.0%			
Portfolio	1.7%	=	0.9%	+	1.2%	+	-0.4%	-5.8%	-7.5%	100.0%	100.0%

Parametric Core Performance Attribution vs. MSCI Emerging Markets Gross

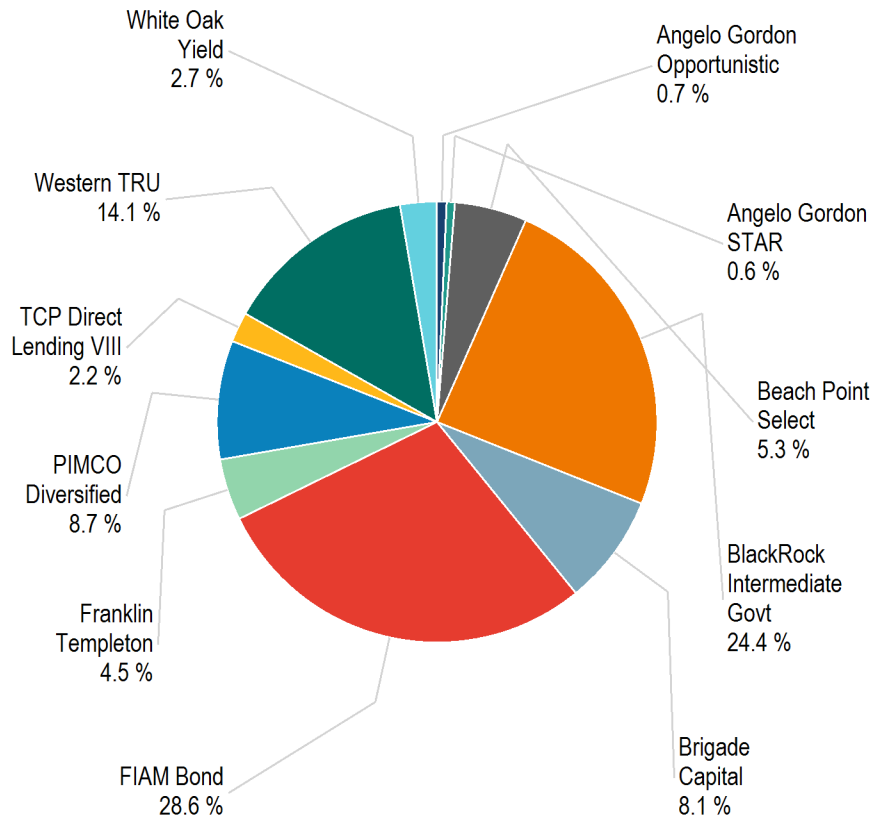
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Czech Republic*	-8.2%	-8.6%	0.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Greece*	-12.1%	-15.2%	1.5%	0.3%	0.0%	-0.1%	0.0%	0.0%	0.0%
Hungary*	4.7%	5.8%	0.9%	0.3%	0.0%	0.1%	0.0%	0.0%	0.1%
Luxembourg	-12.3%	-7.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	-19.3%	-11.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	-3.3%	-2.7%	3.3%	1.2%	0.0%	0.1%	0.0%	0.0%	0.1%
Russia*	-9.0%	-9.2%	6.2%	3.6%	-0.1%	0.1%	0.0%	0.0%	0.0%
United Kingdom	-5.4%	-11.8%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AsiaPacific									
China*	-12.1%	-10.6%	6.6%	30.9%	-0.5%	0.7%	0.0%	0.4%	0.6%
Hong Kong	-7.6%	-4.5%	5.7%	0.0%	0.0%	0.2%	0.0%	-0.2%	0.0%
India*	3.4%	2.5%	7.0%	8.6%	0.1%	-0.1%	-0.1%	0.0%	-0.1%
Indonesia*	4.9%	9.9%	3.7%	1.9%	-0.1%	0.2%	0.1%	-0.1%	0.1%
Korea*	-12.1%	-14.2%	7.4%	14.9%	0.3%	0.5%	0.0%	-0.2%	0.7%
Malaysia*	-9.3%	-5.8%	3.6%	2.4%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Pakistan*	-21.6%	-22.8%	1.8%	0.1%	0.0%	-0.1%	-0.2%	0.0%	-0.2%
Philippines*	3.7%	5.2%	3.5%	1.0%	0.0%	0.3%	0.1%	0.0%	0.3%
Singapore	-5.6%	-6.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Taiwan*	-10.7%	-13.6%	7.4%	12.3%	0.4%	0.3%	0.0%	-0.1%	0.5%
Thailand*	-4.6%	-10.3%	3.4%	2.5%	0.1%	0.0%	0.0%	0.1%	0.2%
Americas									
Brazil*	15.0%	13.6%	6.2%	6.2%	0.1%	0.0%	0.0%	0.0%	0.1%
Chile*	-8.7%	-8.3%	3.6%	1.1%	0.0%	0.1%	-0.1%	0.0%	0.0%
Colombia*	-19.2%	-18.9%	1.8%	0.5%	0.0%	0.0%	-0.1%	0.0%	-0.2%
Mexico*	-18.6%	-18.7%	7.3%	3.2%	0.0%	-0.3%	-0.1%	-0.1%	-0.5%
Peru*	4.8%	-2.9%	1.4%	0.4%	0.0%	0.0%	0.0%	0.1%	0.2%
United States	-24.2%	-13.8%	1.6%	0.0%	0.0%	-0.1%	0.0%	-0.2%	-0.3%

Parametric Core Performance Attribution vs. MSCI Emerging Markets Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	-8.2%	-8.6%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Kuwait**	-2.8%	-0.9%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	5.1%	8.5%	1.9%	0.9%	0.0%	0.2%	0.0%	0.0%	0.1%
South Africa*	-2.8%	-3.5%	6.5%	6.2%	0.0%	0.0%	0.0%	0.0%	0.1%
Turkey*	2.3%	4.7%	3.2%	0.6%	0.0%	0.0%	0.3%	-0.1%	0.2%
United Arab Emirates*	-5.1%	-6.0%	1.7%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals									
Americas	-6.5%	0.6%	22.0%	11.4%	-0.7%	0.9%	-0.3%	-0.6%	-0.7%
Europe	-6.9%	-7.3%	13.3%	5.6%	-0.1%	0.3%	-0.1%	-0.1%	0.1%
Asia/Pacific	-6.5%	-9.4%	50.2%	74.5%	2.2%	0.5%	-0.1%	-0.7%	1.9%
Other	-1.2%	-1.9%	14.5%	8.5%	-0.1%	0.4%	0.3%	-0.1%	0.4%
Total	-5.8%	-7.5%	100.0%	100.0%	1.3%	2.1%	-0.1%	-1.5%	1.7%
Totals									
Developed	-11.0%	--	8.0%	0.0%	0.0%	0.0%	0.0%	-0.3%	-0.3%
Emerging*	-5.3%	-7.5%	91.6%	100.0%	2.3%	0.0%	-0.1%	-0.2%	2.0%
Frontier**	-2.8%	--	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Fixed Income
 Manager Allocation Analysis

Period Ending: December 31, 2018



	Actual \$	Actual %	Manager Contribution to Excess Return %
Angelo Gordon Opportunistic	\$6,456,000	0.7%	0.0%
Angelo Gordon STAR	\$5,795,000	0.6%	0.0%
Beach Point Select	\$48,825,225	5.3%	-0.1%
BlackRock Intermediate Govt	\$224,623,998	24.4%	0.0%
Brigade Capital	\$74,678,157	8.1%	-0.3%
FIAM Bond	\$263,327,350	28.6%	-0.2%
Franklin Templeton	\$41,040,245	4.5%	0.0%
PIMCO Diversified	\$80,085,677	8.7%	0.0%
TCP Direct Lending VIII	\$20,301,532	2.2%	0.0%
Western Asset TRU	\$129,670,356	14.1%	0.0%
White Oak Yield	\$25,012,741	2.7%	0.0%
Actual vs. Policy Weight Difference			0.6%
Total	\$919,816,282	100.0%	0.1%

Statistics Summary

3 Years

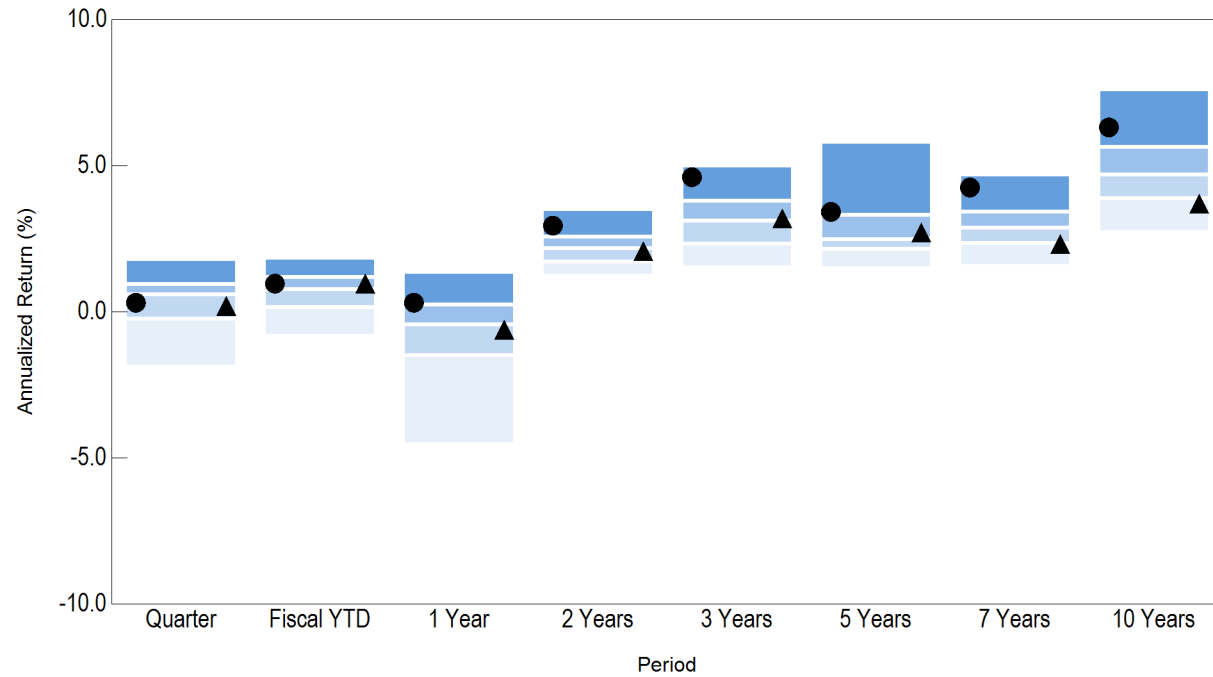
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	4.6%	2.4%	1.5	0.7	2.0%
Blended Fixed Income Index	3.2%	2.7%	0.8	--	0.0%
Core Fixed	3.0%	2.7%	0.7	0.5	1.7%
BBgBarc US Aggregate TR	2.1%	2.9%	0.4	--	0.0%
FIAM Bond	2.8%	2.9%	0.6	0.9	0.8%
BBgBarc US Aggregate TR	2.1%	2.9%	0.4	--	0.0%
Western TRU	3.6%	4.2%	0.6	0.5	4.3%
3-Month Libor Total Return USD	1.5%	0.2%	2.1	--	0.0%
Opportunistic Credit	8.2%	3.3%	2.2	1.3	2.4%
BBgBarc BA Intermediate HY	5.2%	3.3%	1.3	--	0.0%
Angelo Gordon Opportunistic	15.2%	8.9%	1.6	1.4	9.4%
BBgBarc US Aggregate TR	2.1%	2.9%	0.4	--	0.0%
Angelo Gordon STAR	15.4%	7.7%	1.9	1.6	8.3%
BBgBarc US Aggregate TR	2.1%	2.9%	0.4	--	0.0%
Beach Point Select	8.3%	3.8%	1.9	1.3	2.4%
BBgBarc BA Intermediate HY	5.2%	3.3%	1.3	--	0.0%
Brigade Capital	9.4%	6.0%	1.4	1.1	3.7%
BBgBarc BA Intermediate HY	5.2%	3.3%	1.3	--	0.0%
Franklin Templeton	3.9%	6.6%	0.4	0.1	8.5%
BBgBarc Multiverse TR	3.0%	4.9%	0.4	--	0.0%

Statistics Summary

5 Years

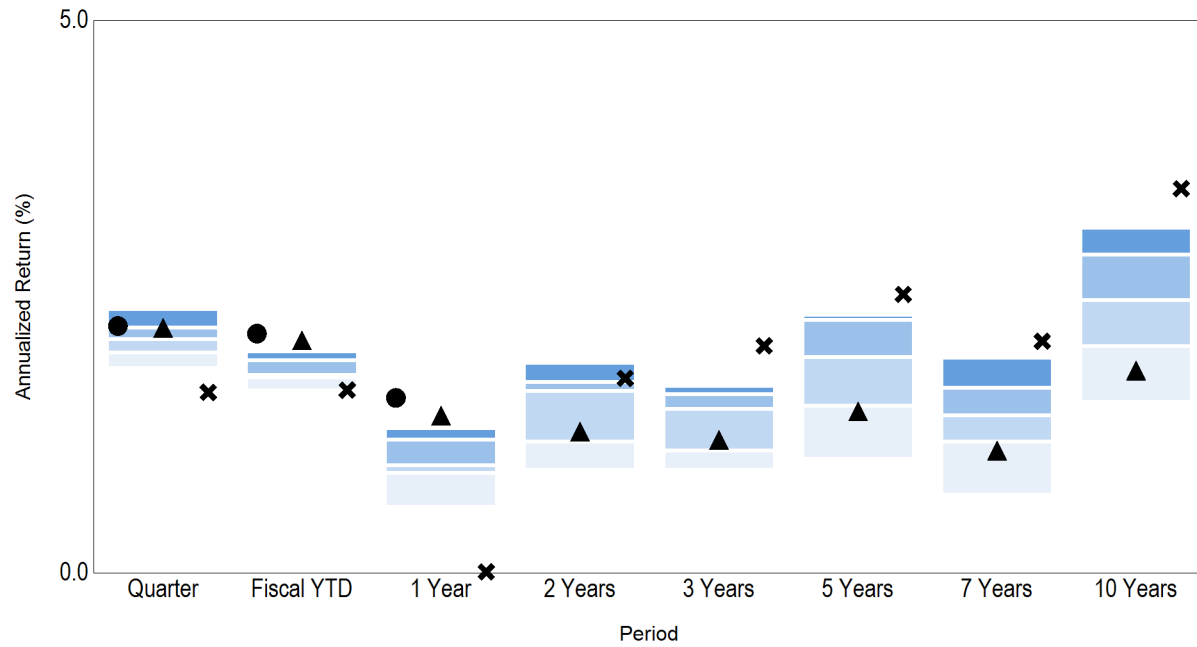
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	3.4%	2.5%	1.1	0.4	1.8%
Blended Fixed Income Index	2.7%	2.7%	0.8	--	0.0%
Core Fixed	3.1%	2.7%	0.9	0.4	1.4%
BBgBarc US Aggregate TR	2.5%	2.8%	0.7	--	0.0%
FIAM Bond	2.9%	2.9%	0.8	0.6	0.8%
BBgBarc US Aggregate TR	2.5%	2.8%	0.7	--	0.0%
Opportunistic Credit	5.6%	3.5%	1.4	0.5	3.3%
BBgBarc BA Intermediate HY	3.9%	4.1%	0.8	--	0.0%
Angelo Gordon STAR	13.1%	6.9%	1.8	1.4	7.7%
BBgBarc US Aggregate TR	2.5%	2.8%	0.7	--	0.0%
Brigade Capital	3.2%	6.2%	0.4	-0.2	4.0%
BBgBarc BA Intermediate HY	3.9%	4.1%	0.8	--	0.0%
Franklin Templeton	1.5%	6.4%	0.1	0.0	7.7%
BBgBarc Multiverse TR	1.2%	4.4%	0.1	--	0.0%

InvestorForce All DB Total Fix Inc Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.8	1.8	1.4	3.5	5.0	5.8	4.7	7.6
25th Percentile	1.0	1.2	0.3	2.6	3.8	3.3	3.4	5.6
Median	0.6	0.8	-0.4	2.2	3.1	2.5	2.9	4.7
75th Percentile	-0.2	0.2	-1.5	1.7	2.4	2.2	2.4	3.9
95th Percentile	-1.9	-0.8	-4.5	1.3	1.5	1.5	1.6	2.7
# of Portfolios	309	306	305	294	286	268	241	189
● Fixed Income	0.3 (62)	1.0 (43)	0.3 (25)	2.9 (14)	4.6 (9)	3.4 (22)	4.2 (12)	6.3 (15)
▲ Blended Fixed Income Index	0.2 (64)	1.0 (43)	-0.6 (55)	2.1 (57)	3.2 (49)	2.7 (40)	2.3 (76)	3.7 (81)

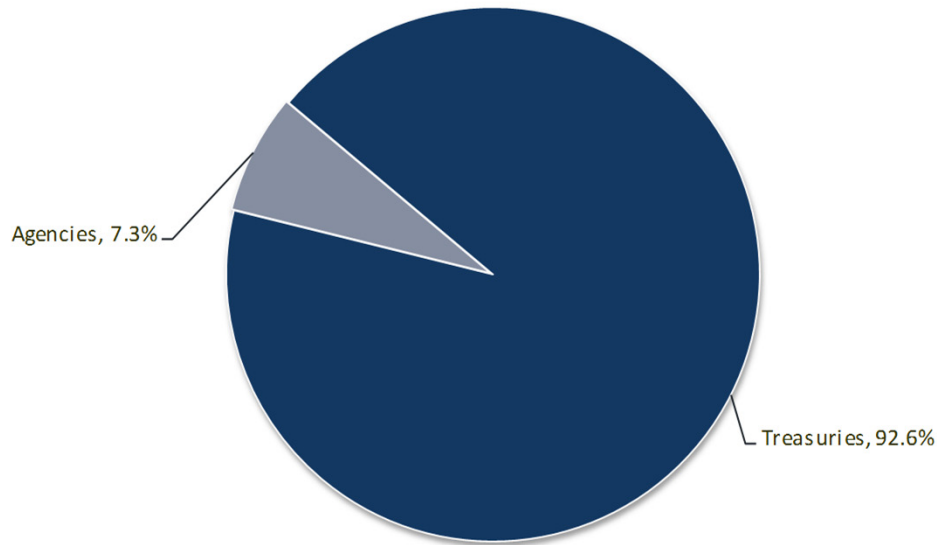
eV US Government Fixed Inc Net Return Comparison



	Return (Rank)															
	Quarter		Fiscal YTD		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	2.4	2.0	1.3	1.9	1.7	1.7	2.3	1.9	3.1							
25th Percentile	2.2	1.9	1.2	1.7	1.6	1.6	2.3	1.7	2.9							
Median	2.1	1.8	1.0	1.6	1.5	2.0	1.4	2.5								
75th Percentile	2.0	1.8	0.9	1.2	1.1	1.5	1.2	2.1								
95th Percentile	1.9	1.7	0.6	0.9	0.9	1.0	0.7	1.6								
# of Portfolios	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
● BlackRock Intermediate Govt	2.2 (21)	2.2 (1)	1.6 (1)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)								
▲ BBgBarc US Govt Int TR	2.2 (28)	2.1 (1)	1.4 (1)	1.3 (73)	1.2 (73)	1.5 (78)	1.1 (80)	1.8 (85)								
✕ BBgBarc US Aggregate TR	1.6 (99)	1.7 (96)	0.0 (99)	1.8 (18)	2.1 (1)	2.5 (1)	2.1 (1)	3.5 (1)								

BlackRock Intermediate Govt Market Duration Pool
 Bond Sector Allocation

Period Ending: December 31, 2018



Sector	Account Weight	BBgBarc Intermediate	
		Govt Weight	Difference
Treasuries	92.6%	96.6%	-4.0%
Agencies	7.3%	3.4%	3.8%
Corporates	0.0%	0.0%	0.0%
Utilities	0.0%	0.0%	0.0%
Foreign	0.0%	0.0%	0.0%
MBS	0.0%	0.0%	0.0%
CMO	0.0%	0.0%	0.0%
ABS	0.0%	0.0%	0.0%
Municipals	0.0%	0.0%	0.0%
Others/Cash	0.1%	0.0%	0.1%
TOTAL	100.0%	100.0%	0.0%

BlackRock Intermediate Govt Market Duration Pool
Bond Summary Statistics

Period Ending: December 31, 2018

Portfolio Characteristics		Portfolio
Total Number of Securities		284
Total Market Value	\$	224,623,998
Current Coupon		2.28
Yield to Maturity		2.55
Average Life		4.01
Duration		3.72
Quality		AA+

BBgBarc Intermediate Govt	
Current Coupon	2.21
Yield to Maturity	2.54
Average Life	4.05
Duration	3.75
Quality	AA+

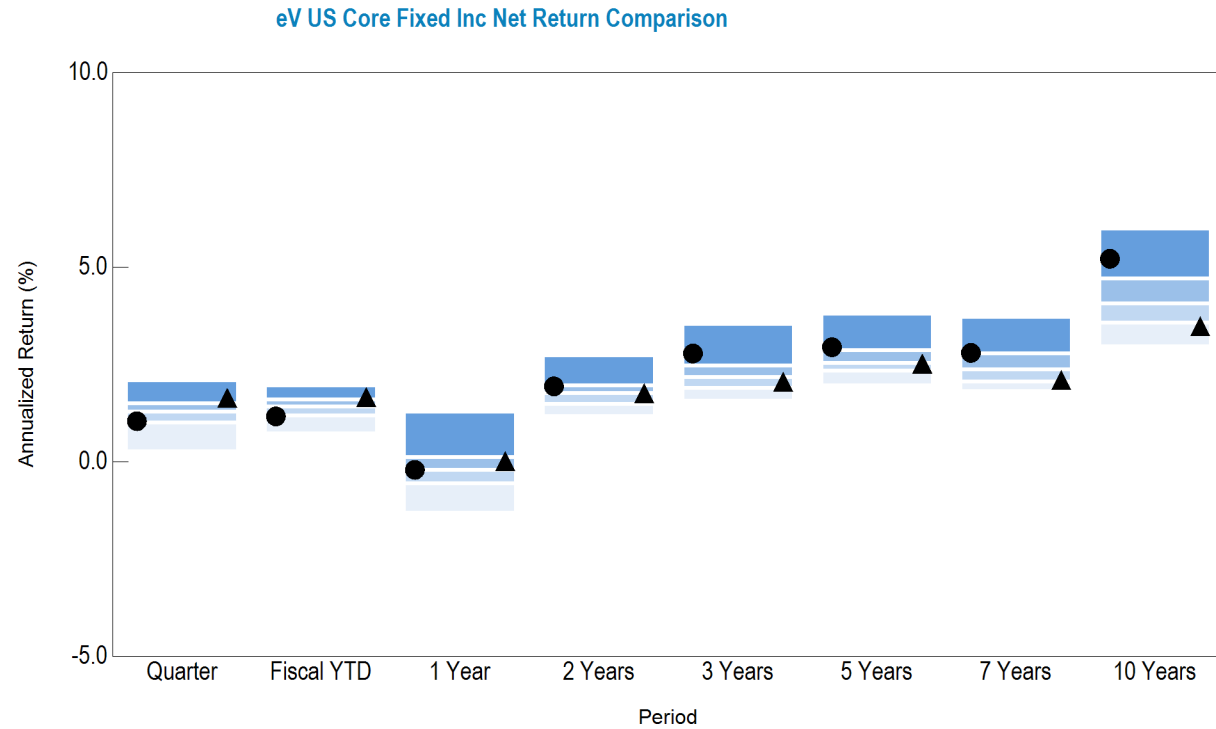
Yield to Maturity	
Range	% Held
0.0 - 5.0	100.0
5.0 - 7.0	0.0
7.0 - 9.0	0.0
9.0 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	0.0
Unclassified	0.0

Average Life	
Range	% Held
0.0 - 1.0	n/a
1.0 - 3.0	n/a
3.0 - 5.0	n/a
5.0 - 10.0	n/a
10.0 - 20.0	n/a
20.0+	n/a
Unclassified	n/a

Duration	
Range	% Held
0.0 - 2.0	22.0
2.0 - 4.0	38.7
4.0 - 6.0	21.5
6.0 - 8.0	16.2
8.0+	1.6
Unclassified	0.0

Quality	
Range	% Held
Govt (10)	0.0
Aaa (10)	97.9
Aa (9)	2.1
A (8)	0.0
Baa (7)	0.0
Below Baa (6-1)	0.0
Other	0.0

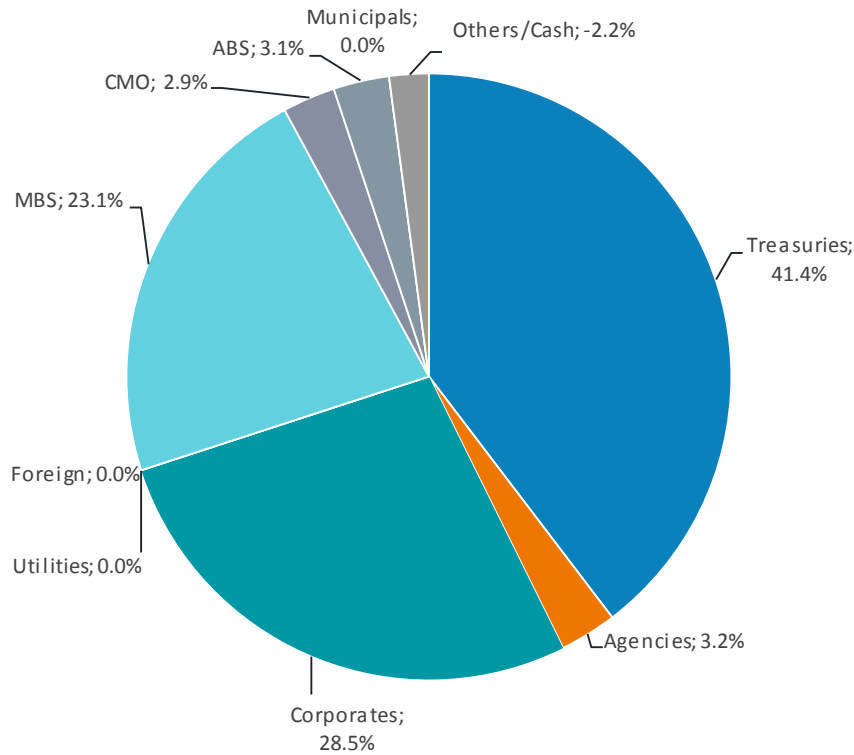
Coupon	
Range	% Held
0.0 - 5.0	100.0
5.0 - 7.0	0.0
7.0 - 9.0	0.0
9.0 - 10.0	0.0
10.0+	0.0
Unclassified	0.0



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	2.1	2.0	1.3	2.7	3.5	3.8	3.7	6.0
25th Percentile	1.5	1.6	0.1	2.0	2.5	2.9	2.8	4.7
Median	1.3	1.4	-0.2	1.8	2.2	2.6	2.4	4.1
75th Percentile	1.0	1.2	-0.5	1.5	1.9	2.3	2.1	3.6
95th Percentile	0.3	0.7	-1.3	1.2	1.6	2.0	1.8	3.0
# of Portfolios	144	144	143	143	140	136	131	119
● FIAM Bond	1.0 (75)	1.2 (77)	-0.2 (52)	1.9 (29)	2.8 (12)	2.9 (20)	2.8 (25)	5.2 (16)
▲ BBgBarc US Aggregate TR	1.6 (16)	1.7 (21)	0.0 (38)	1.8 (52)	2.1 (61)	2.5 (57)	2.1 (73)	3.5 (82)

FIAM Bond Market Duration Pool
Bond Sector Allocation

Period Ending: December 31, 2018



Sector	Account Weight	BBgBarc Aggregate	
		Weight	Difference
Treasuries	41.4%	38.3%	3.1%
Agencies	3.2%	6.2%	-3.0%
Corporates	28.5%	24.9%	3.7%
Utilities	0.0%	0.0%	0.0%
Foreign	0.0%	0.0%	0.0%
MBS	23.1%	28.1%	-5.0%
CMO	2.9%	0.0%	2.9%
ABS	3.1%	2.5%	0.7%
Municipals	0.0%	0.0%	0.0%
Others/Cash	-2.2%	0.0%	-2.2%
TOTAL	100.0%	100.0%	0.0%

FIAM Bond Market Duration Pool
Bond Summary Statistics

Period Ending: December 31, 2018

Portfolio Characteristics	
	Portfolio
Total Number of Securities	860
Total Market Value	\$ 263,327,350
Current Coupon	3.17
Yield to Maturity	3.45
Average Life	8.58
Duration	5.85
Quality	AA

BBgBarc Aggregate	
	3.23
	3.27
	8.05
	5.82
	AA+

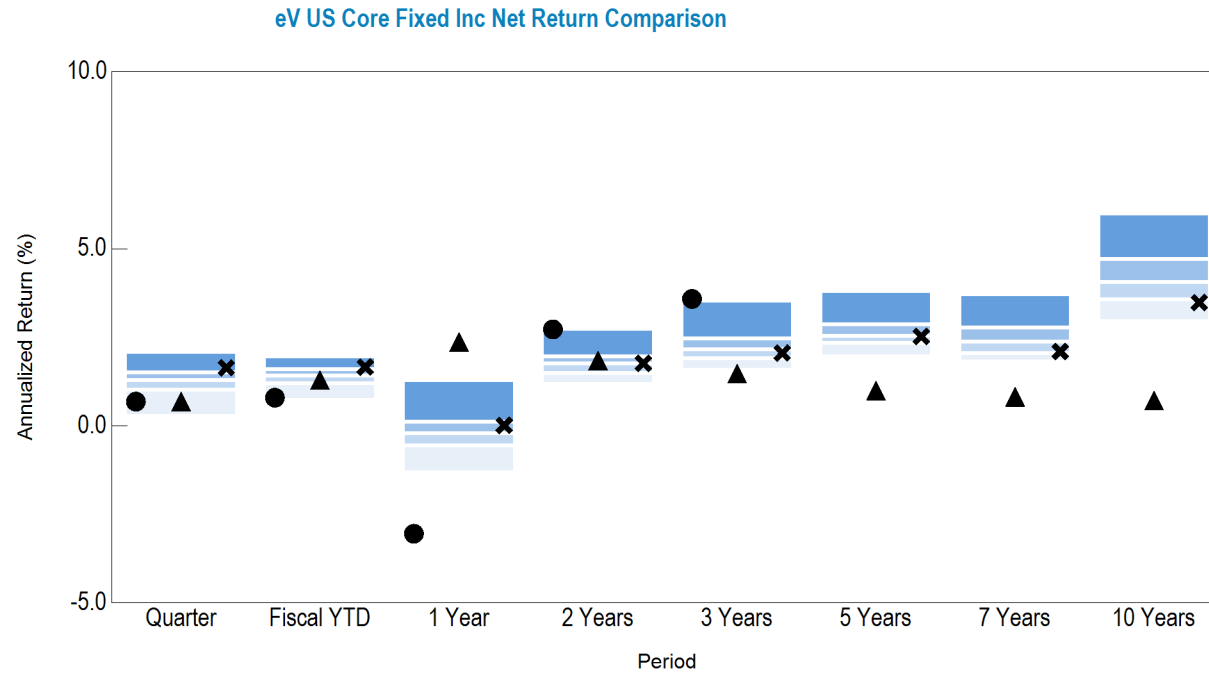
Yield to Maturity	
Range	% Held
0.0 - 5.0	92.5
5.0 - 7.0	8.8
7.0 - 9.0	1.2
9.0 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	-2.5
Unclassified	0.0

Average Life	
Range	% Held
0.0 - 1.0	0.7
1.0 - 3.0	11.1
3.0 - 5.0	28.6
5.0 - 10.0	45.7
10.0 - 20.0	3.5
20.0+	10.5
Unclassified	0.0

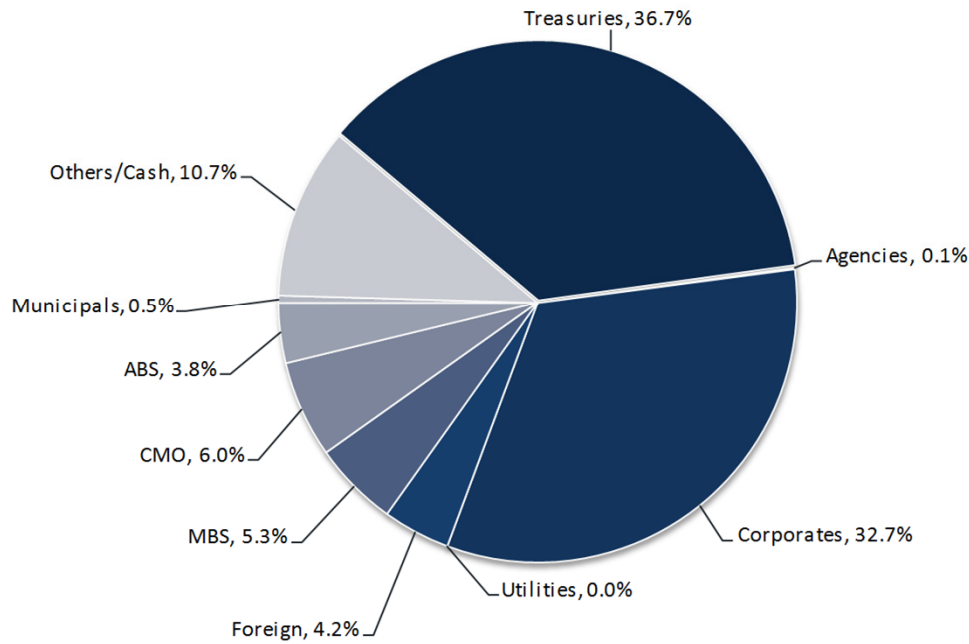
Duration	
Range	% Held
0.0 - 1.0	1.4
1.0 - 3.0	18.6
3.0 - 5.0	34.3
5.0 - 7.0	26.9
7.0 - 10.0	6.2
10.0+	12.7
Unclassified	0.0

Quality	
Range	% Held
Govt (10)	69.1
Aaa (10)	1.3
Aa (9)	1.6
A (8)	12.8
Baa (7)	16.6
Below Baa (6-1)	0.8
Other	-2.2

Coupon	
Range	% Held
0.0 - 5.0	86.2
5.0 - 7.0	7.7
7.0 - 9.0	1.3
9.0 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	4.9
Unclassified	0.0



	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
Return (Rank)								
5th Percentile	2.1	2.0	1.3	2.7	3.5	3.8	3.7	6.0
25th Percentile	1.5	1.6	0.1	2.0	2.5	2.9	2.8	4.7
Median	1.3	1.4	-0.2	1.8	2.2	2.6	2.4	4.1
75th Percentile	1.0	1.2	-0.5	1.5	1.9	2.3	2.1	3.6
95th Percentile	0.3	0.7	-1.3	1.2	1.6	2.0	1.8	3.0
# of Portfolios	144	144	143	143	140	136	131	119
● Western TRU	0.7 (87)	0.8 (94)	-3.1 (99)	2.7 (6)	3.6 (5)	-- (--)	-- (--)	-- (--)
▲ 3-Month Libor Total Return USD	0.7 (87)	1.3 (68)	2.4 (2)	1.8 (36)	1.5 (97)	1.0 (99)	0.8 (99)	0.7 (99)
✕ BBgBarc US Aggregate TR	1.6 (16)	1.7 (21)	0.0 (38)	1.8 (52)	2.1 (61)	2.5 (57)	2.1 (73)	3.5 (82)



Sector	Account Weight	BBgBarc Aggregate	
		Weight	Difference
Treasuries	36.7%	38.3%	-1.6%
Agencies	0.1%	6.2%	-6.1%
Corporates	32.7%	24.9%	7.9%
Utilities	0.0%	0.0%	0.0%
Foreign	4.2%	0.0%	4.2%
MBS	5.3%	28.1%	-22.9%
CMO	6.0%	0.0%	6.0%
ABS	3.8%	2.5%	1.3%
Municipals	0.5%	0.0%	0.5%
Others/Cash	10.7%	0.0%	10.6%
TOTAL	100.0%	100.0%	-0.1%

Portfolio Characteristics		Portfolio
Total Number of Securities		5,139
Total Market Value	\$	129,670,356
Current Coupon		4.22
Yield to Maturity		5.01
Average Life		6.64
Duration		3.30
Quality		A

BBgBarc Aggregate
3.23
3.27
8.05
5.82
AA+

Yield to Maturity	
Range	% Held
0.0 - 5.0	58.1
5.0 - 7.0	26.4
7.0 - 9.0	16.1
9.0 - 11.0	2.4
11.0 - 13.0	0.9
13.0+	3.4
Unclassified	-7.3

Average Life	
Range	% Held
0.0 - 1.0	14.6
1.0 - 3.0	13.2
3.0 - 5.0	18.6
5.0 - 10.0	20.5
10.0 - 20.0	14.5
20.0+	18.7
Unclassified	0.0

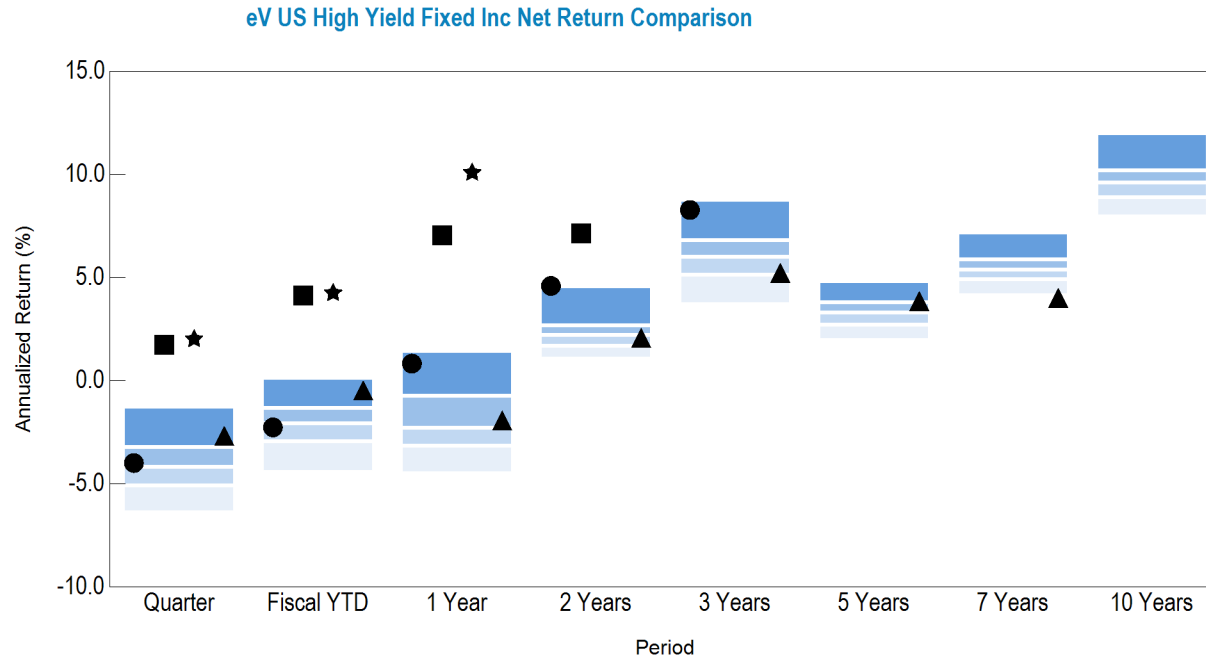
Duration	
Range	% Held
< 1.0	25.4
1.0 - 3.0	15.2
3.0 - 5.0	16.9
5.0 - 7.0	20.2
7.0 - 10.0	8.2
10.0+	14.1
Unclassified	0.0

*Unclassified includes negative YTM

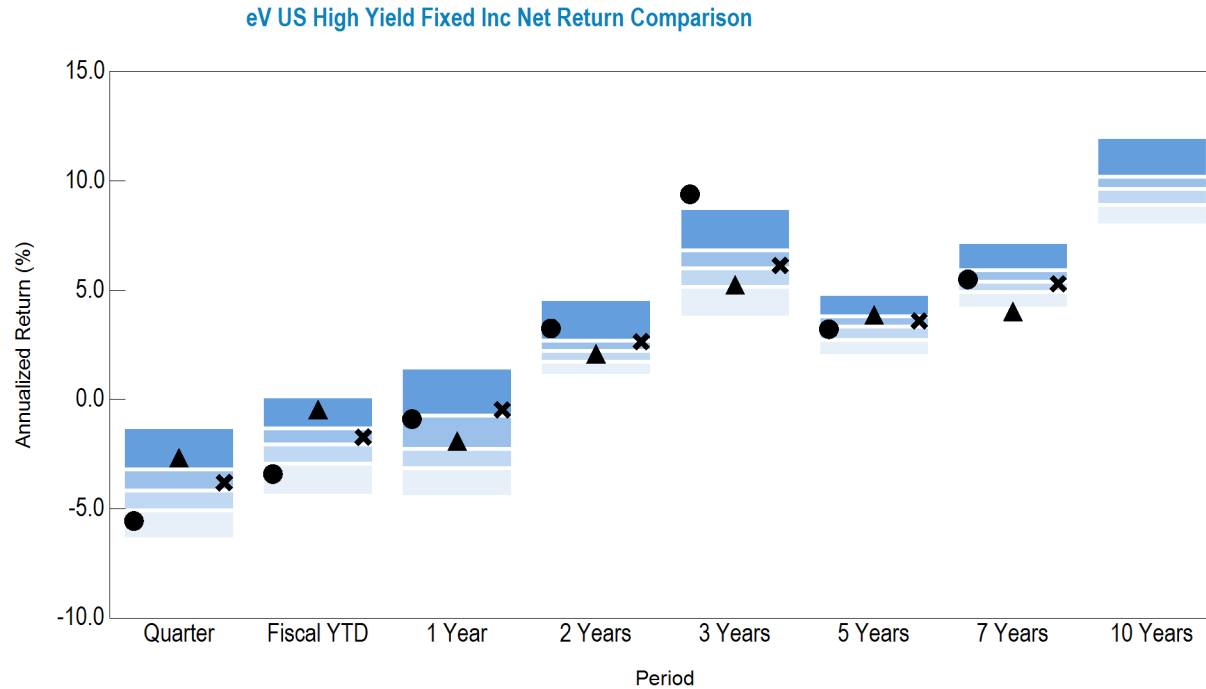
Quality	
Range	% Held
Govt* (10)	17.3
Aaa (10)	16.0
Aa (9)	2.0
A (8)	19.2
Baa (7)	24.8
Below Baa (6-1)	20.7
Other	0.0

Coupon	
Range	% Held
0.0 - 5.0	60.1
5.0 - 7.0	24.4
7.0 - 9.0	11.5
9.0 - 10.0	1.0
10.0+	3.0
Unclassified	0.0

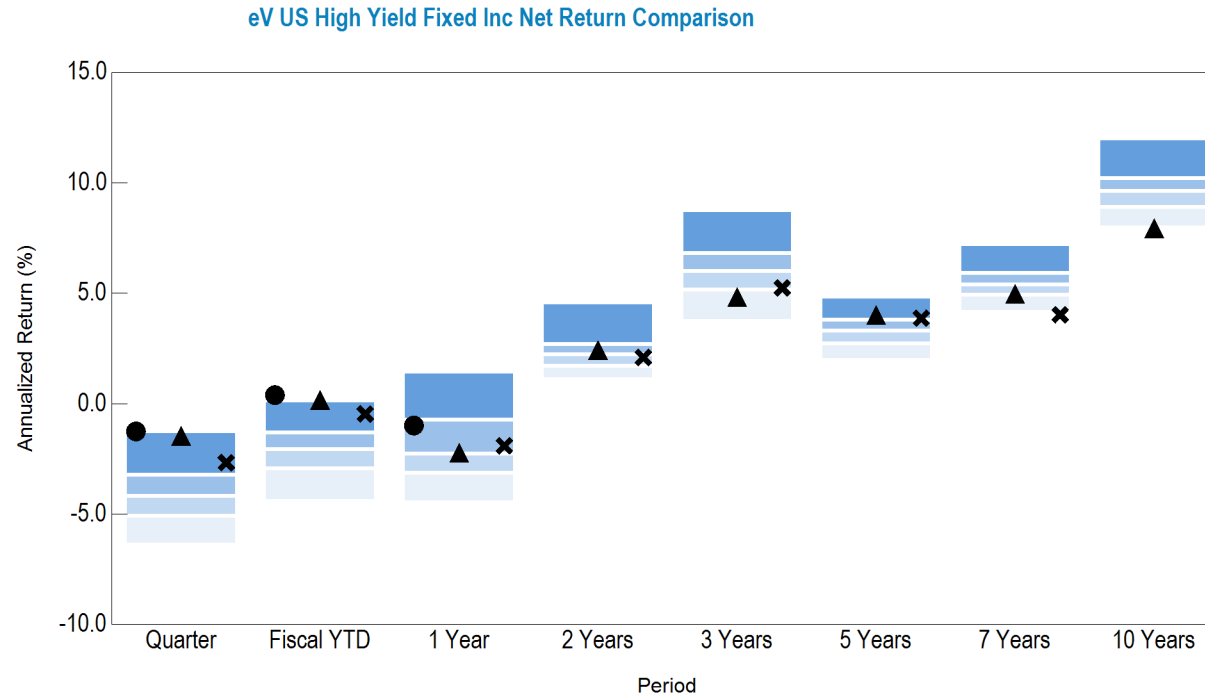
*Govt is specifically U.S Govt securities



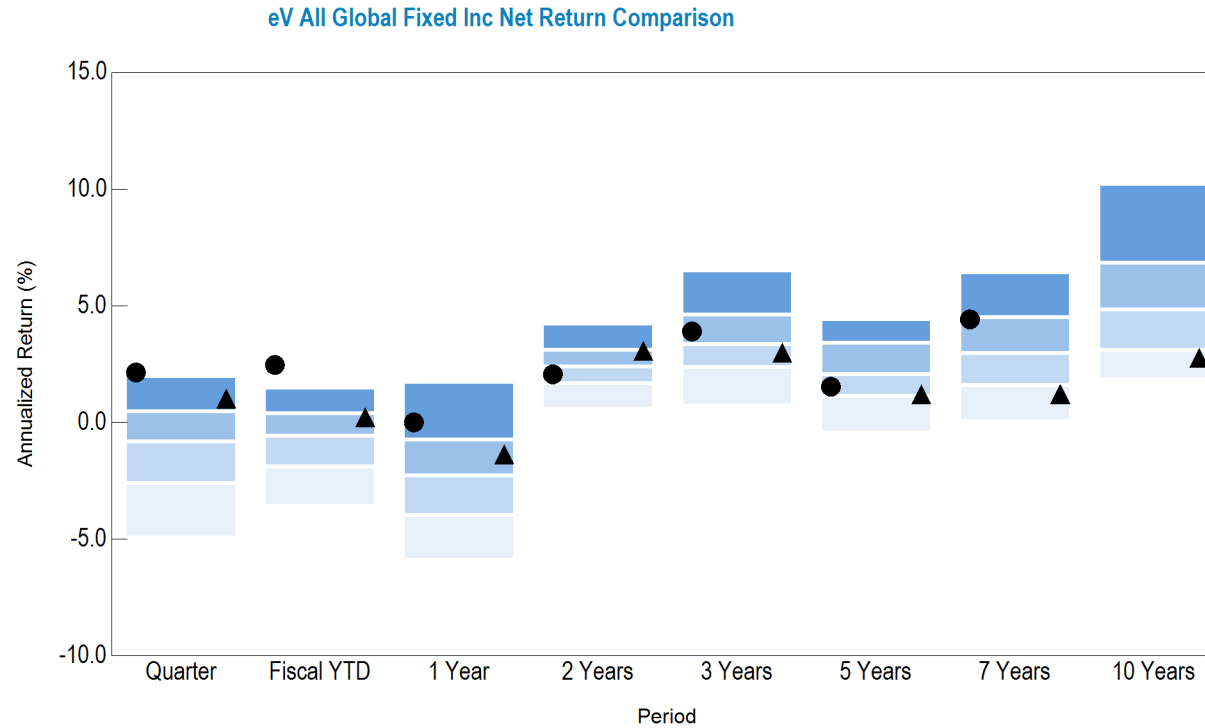
	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-1.3	0.1	1.4	4.6	8.8	4.8	7.2	12.0
25th Percentile	-3.2	-1.3	-0.7	2.7	6.8	3.8	5.9	10.2
Median	-4.1	-2.1	-2.2	2.2	6.0	3.3	5.4	9.6
75th Percentile	-5.0	-2.9	-3.1	1.7	5.2	2.7	4.9	8.9
95th Percentile	-6.4	-4.4	-4.5	1.1	3.8	2.0	4.2	8.0
# of Portfolios	132	132	131	128	122	104	89	67
● Beach Point Select	-4.0 (41)	-2.3 (57)	0.8 (14)	4.6 (5)	8.3 (7)	-- (--)	-- (--)	-- (--)
■ TCP Direct Lending VIII	1.8 (1)	4.2 (1)	7.1 (1)	7.2 (1)	-- (--)	-- (--)	-- (--)	-- (--)
★ White Oak Yield	2.0 (1)	4.3 (1)	10.1 (1)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
▲ BBgBarc BA Intermediate HY	-2.7 (18)	-0.5 (10)	-1.9 (43)	2.1 (63)	5.2 (74)	3.9 (24)	4.0 (96)	-- (--)



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-1.3	0.1	1.4	4.6	8.8	4.8	7.2	12.0
25th Percentile	-3.2	-1.3	-0.7	2.7	6.8	3.8	5.9	10.2
Median	-4.1	-2.1	-2.2	2.2	6.0	3.3	5.4	9.6
75th Percentile	-5.0	-2.9	-3.1	1.7	5.2	2.7	4.9	8.9
95th Percentile	-6.4	-4.4	-4.5	1.1	3.8	2.0	4.2	8.0
# of Portfolios	132	132	131	128	122	104	89	67
● Brigade Capital	-5.6 (88)	-3.4 (86)	-0.9 (28)	3.2 (14)	9.4 (3)	3.2 (57)	5.5 (45)	-- (--)
▲ BBgBarc BA Intermediate HY	-2.7 (18)	-0.5 (10)	-1.9 (43)	2.1 (63)	5.2 (74)	3.9 (24)	4.0 (96)	-- (--)
✕ 50% Barclays HY/ 50% Bank Loan	-3.8 (37)	-1.7 (33)	-0.5 (21)	2.6 (27)	6.1 (43)	3.6 (38)	5.3 (56)	-- (--)



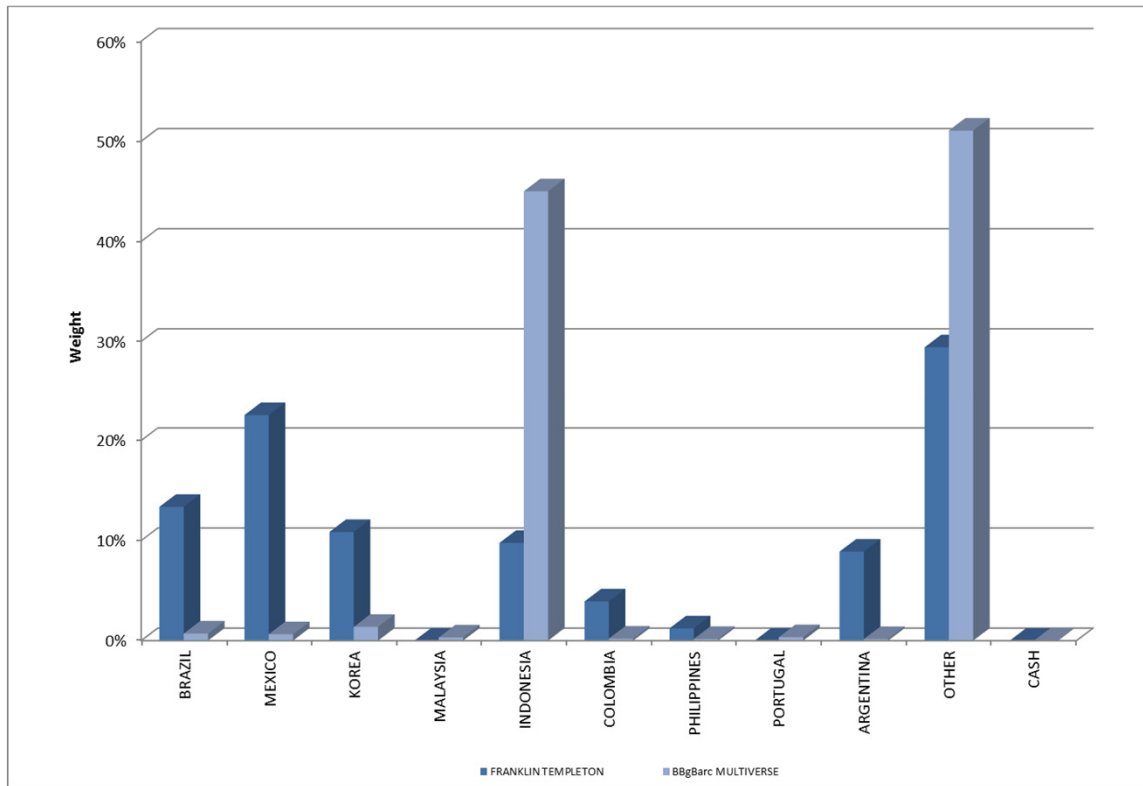
	Return (Rank)															
5th Percentile	-1.3	0.1	1.4	4.6	8.8	4.8	7.2	12.0								
25th Percentile	-3.2	-1.3	-0.7	2.7	6.8	3.8	5.9	10.2								
Median	-4.1	-2.1	-2.2	2.2	6.0	3.3	5.4	9.6								
75th Percentile	-5.0	-2.9	-3.1	1.7	5.2	2.7	4.9	8.9								
95th Percentile	-6.4	-4.4	-4.5	1.1	3.8	2.0	4.2	8.0								
# of Portfolios	132	132	131	128	122	104	89	67								
● PIMCO Diversified	-1.3	(5)	0.4	(1)	-1.0	(28)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ Blended PIMCO Diversified Index	-1.5	(7)	0.2	(5)	-2.2	(50)	2.4	(39)	4.8	(81)	4.0	(19)	5.0	(73)	7.9	(96)
✕ BBgBarc BA Intermediate HY	-2.7	(18)	-0.5	(10)	-1.9	(43)	2.1	(63)	5.2	(74)	3.9	(24)	4.0	(96)	--	(--)



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	2.0	1.5	1.7	4.2	6.5	4.4	6.4	10.2
25th Percentile	0.5	0.4	-0.7	3.1	4.6	3.4	4.5	6.9
Median	-0.8	-0.5	-2.2	2.4	3.4	2.1	3.0	4.9
75th Percentile	-2.6	-1.9	-4.0	1.7	2.4	1.1	1.6	3.1
95th Percentile	-4.9	-3.6	-5.9	0.6	0.8	-0.4	0.1	1.9
# of Portfolios	219	216	213	208	203	183	151	102
● Franklin Templeton	2.1 (4)	2.5 (1)	0.0 (21)	2.1 (62)	3.9 (38)	1.5 (64)	4.4 (27)	-- (--)
▲ BBgBarc Multiverse TR	1.0 (18)	0.2 (31)	-1.4 (33)	3.1 (28)	3.0 (61)	1.2 (75)	1.2 (81)	2.8 (85)

Franklin Templeton
Portfolio Country Weights

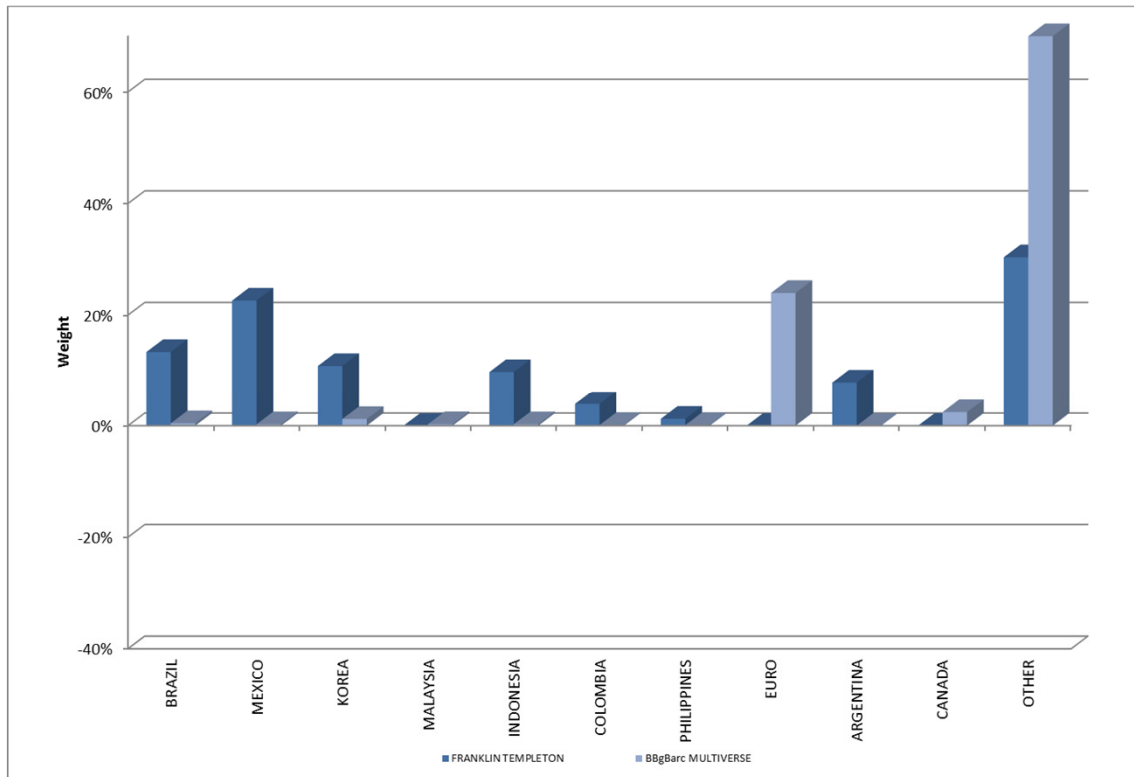
Period Ending: December 31, 2018



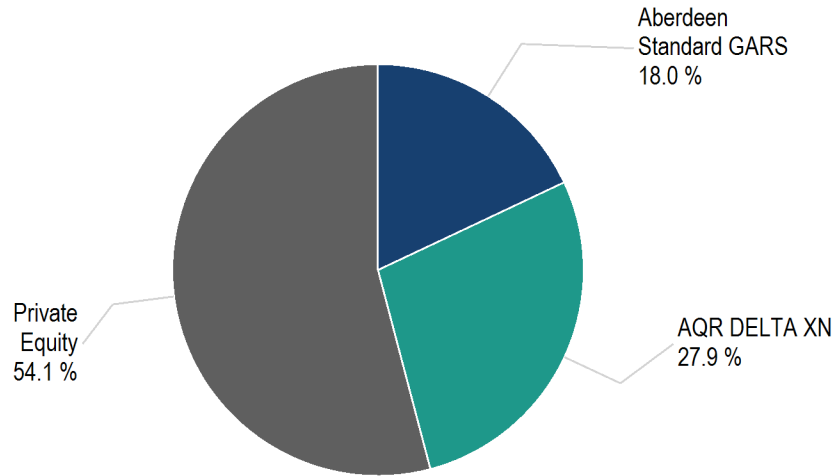
COUNTRY	MARKET VALUE	FRANKLIN TEMPLETON	BBgBarc MULTIVERSE	DIFF
BRAZIL	\$ 5,487	13.4%	0.7%	+12.7%
MEXICO	\$ 9,250	22.5%	0.6%	+21.9%
KOREA	\$ 4,457	10.9%	1.4%	+9.5%
MALAYSIA	\$ -	0.0%	0.3%	-0.3%
INDONESIA	\$ 4,010	9.8%	45.0%	-35.2%
COLOMBIA	\$ 1,609	3.9%	0.2%	+3.7%
PHILIPPINES	\$ 505	1.2%	0.2%	+1.1%
PORTUGAL	\$ -	0.0%	0.4%	-0.4%
ARGENTINA	\$ 3,653	8.9%	0.2%	+8.7%
OTHER	\$ 12,070	29.4%	51.1%	-21.7%
CASH	\$ -	0.0%	0.0%	0.0%
	\$ 41,040	100.0%	100.0%	0.0%

Franklin Templeton
Portfolio Currency Exposures

Period Ending: December 31, 2018



CURRENCY	MARKET VALUE	FRANKLIN TEMPLETON	BBgBarc MULTIVERSE	DIFF
BRAZIL	\$ 5,487	13.4%	0.4%	+12.9%
MEXICO	\$ 9,275	22.6%	0.3%	+22.4%
KOREA	\$ 4,457	10.9%	1.2%	+9.7%
MALAYSIA	\$ -	0.0%	0.3%	-0.3%
INDONESIA	\$ 4,010	9.8%	0.3%	+9.5%
COLOMBIA	\$ 1,609	3.9%	0.1%	+3.8%
PHILIPPINES	\$ 505	1.2%	0.1%	+1.1%
EURO	\$ -	0.0%	24.0%	-24.0%
ARGENTINA	\$ 3,238	7.9%	0.0%	+7.9%
CANADA	\$ -	0.0%	2.4%	-2.4%
OTHER	\$ 12,460	30.4%	71.0%	-40.6%
	\$ 41,040	100.0%	100.0%	0.0%



	Actual \$	Actual %	Manager Contribution to Excess Return %
Aberdeen Standard GARS	\$96,556,718	18.0%	-0.7%
AQR DELTA XN	\$150,030,805	27.9%	-1.7%
Private Equity	\$290,757,410	54.1%	-1.8%
Actual vs. Policy Weight Difference			0.2%
Total	\$537,344,933	100.0%	-4.0%

Statistics Summary

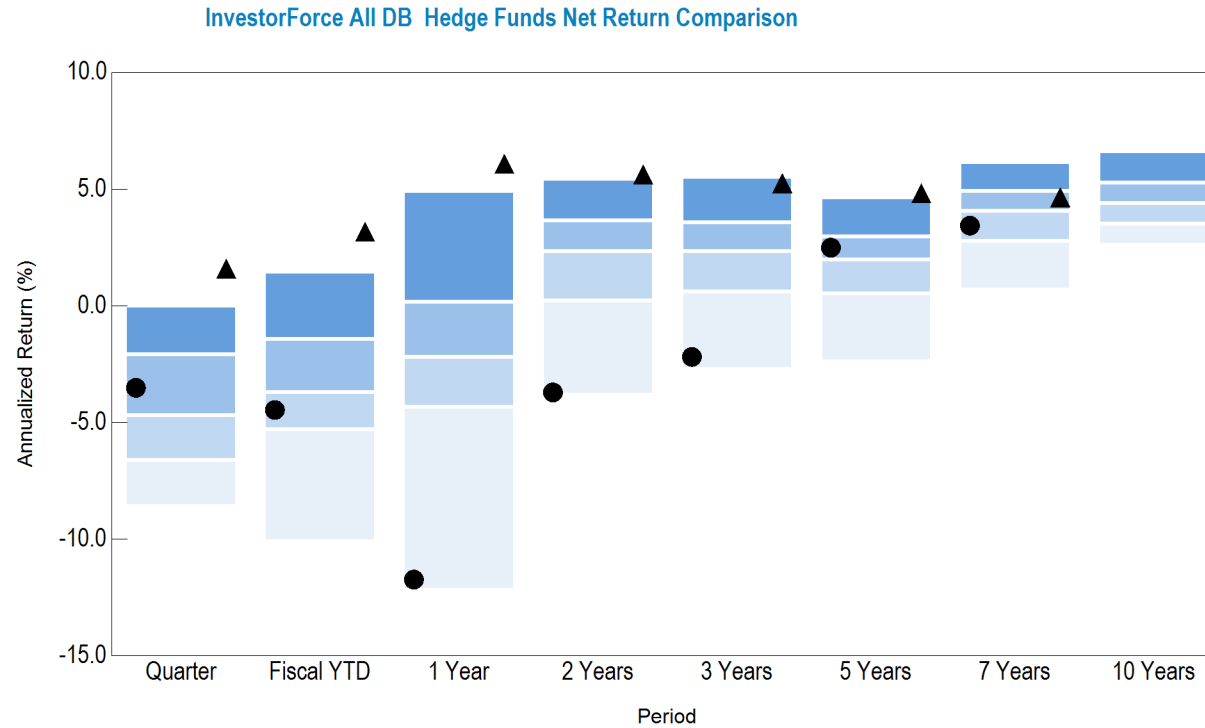
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	7.0%	5.3%	1.1	-0.9	5.6%
Blended Alternatives Index	11.8%	4.8%	2.2	--	0.0%
Private Equity	15.3%	8.8%	1.6	-0.2	11.0%
Blended Private Equity Index	17.5%	9.0%	1.8	--	0.0%
Hedge Fund/Absolute Return	-2.2%	4.4%	-0.7	-1.7	4.5%
Libor 1 month +4%	5.2%	0.2%	18.7	--	0.0%
AQR DELTA XN	-3.1%	5.7%	-0.7	-1.4	5.8%
Libor 1 month +4%	5.2%	0.2%	18.7	--	0.0%

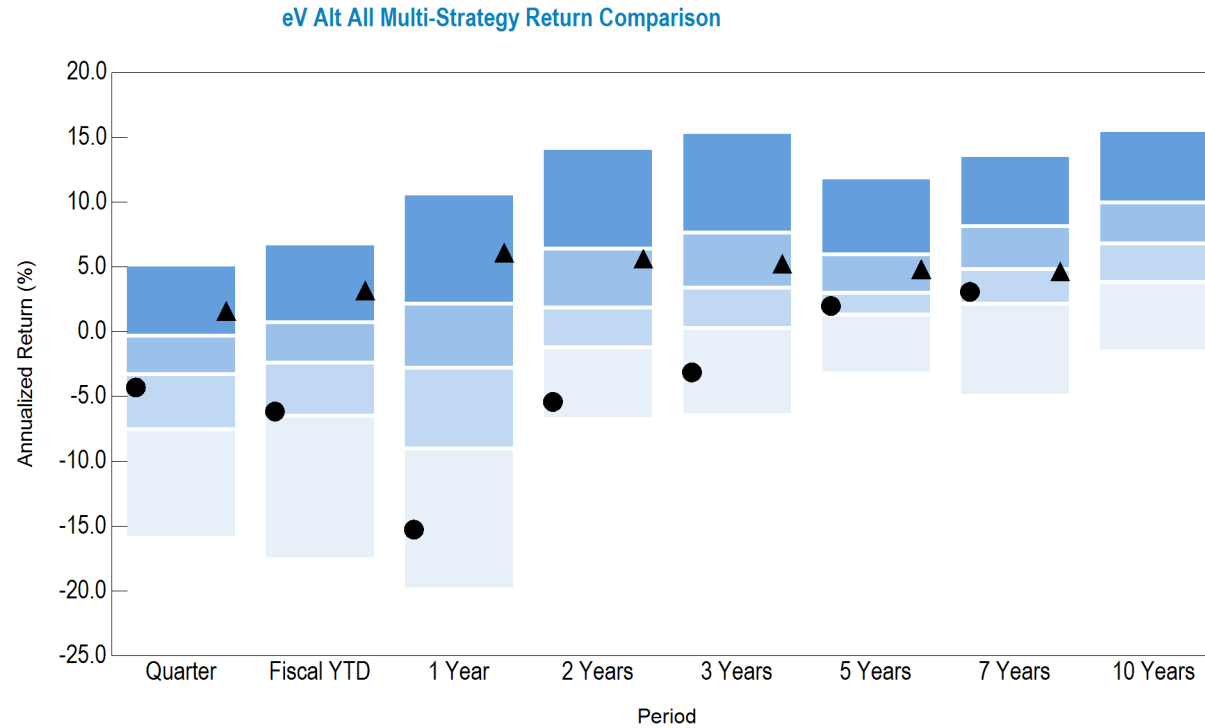
Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	6.5%	4.8%	1.2	-0.2	6.1%
Blended Alternatives Index	7.6%	5.5%	1.3	--	0.0%
Private Equity	16.4%	8.6%	1.8	0.2	12.6%
Blended Private Equity Index	14.2%	9.8%	1.4	--	0.0%
Hedge Fund/Absolute Return	2.5%	5.2%	0.4	-0.4	5.2%
Libor 1 month +4%	4.8%	0.2%	18.0	--	0.0%
AQR DELTA XN	2.0%	5.9%	0.2	-0.5	6.0%
Libor 1 month +4%	4.8%	0.2%	18.0	--	0.0%

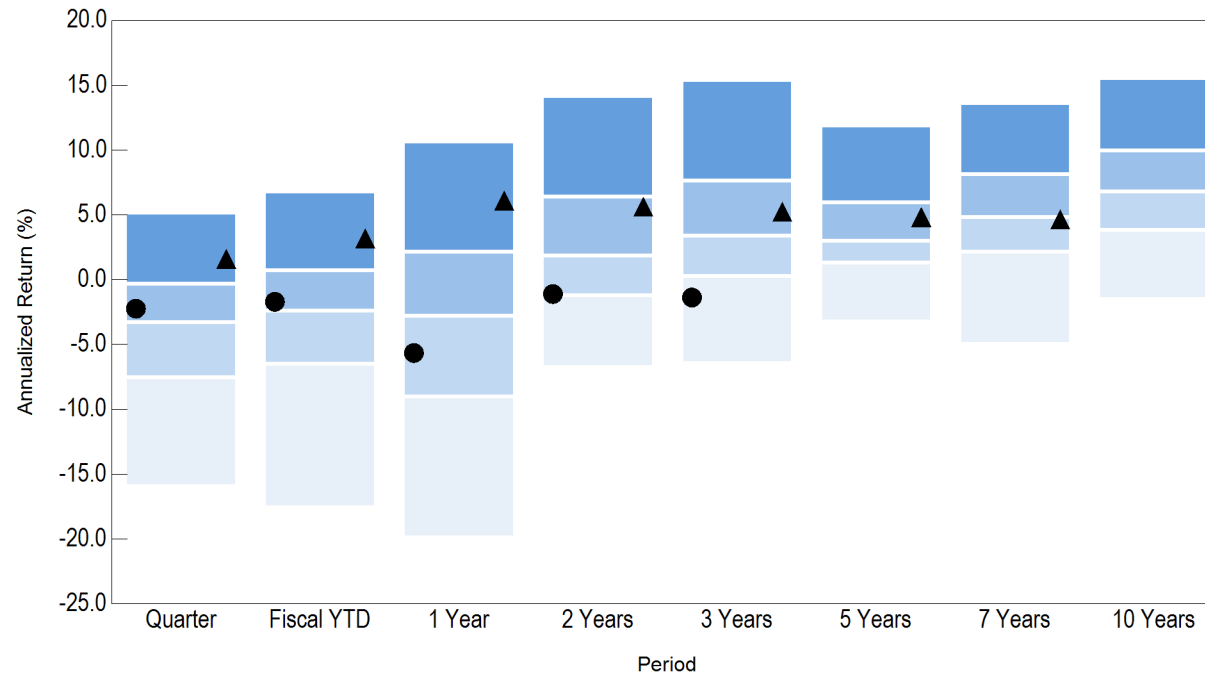


	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	0.0	1.4	4.9	5.4	5.5	4.6	6.1	6.6
25th Percentile	-2.1	-1.4	0.2	3.7	3.6	3.0	4.9	5.3
Median	-4.7	-3.7	-2.2	2.3	2.4	2.0	4.1	4.4
75th Percentile	-6.6	-5.3	-4.3	0.2	0.6	0.6	2.8	3.5
95th Percentile	-8.6	-10.1	-12.2	-3.8	-2.7	-2.4	0.7	2.6
# of Portfolios	196	196	194	192	183	178	152	95
● Hedge Fund/Absolute Return	-3.5 (38)	-4.5 (67)	-11.7 (95)	-3.7 (95)	-2.2 (94)	2.5 (37)	3.4 (63)	-- (--)
▲ Libor 1 month +4%	1.6 (2)	3.2 (1)	6.1 (3)	5.6 (3)	5.2 (8)	4.8 (4)	4.6 (37)	-- (--)

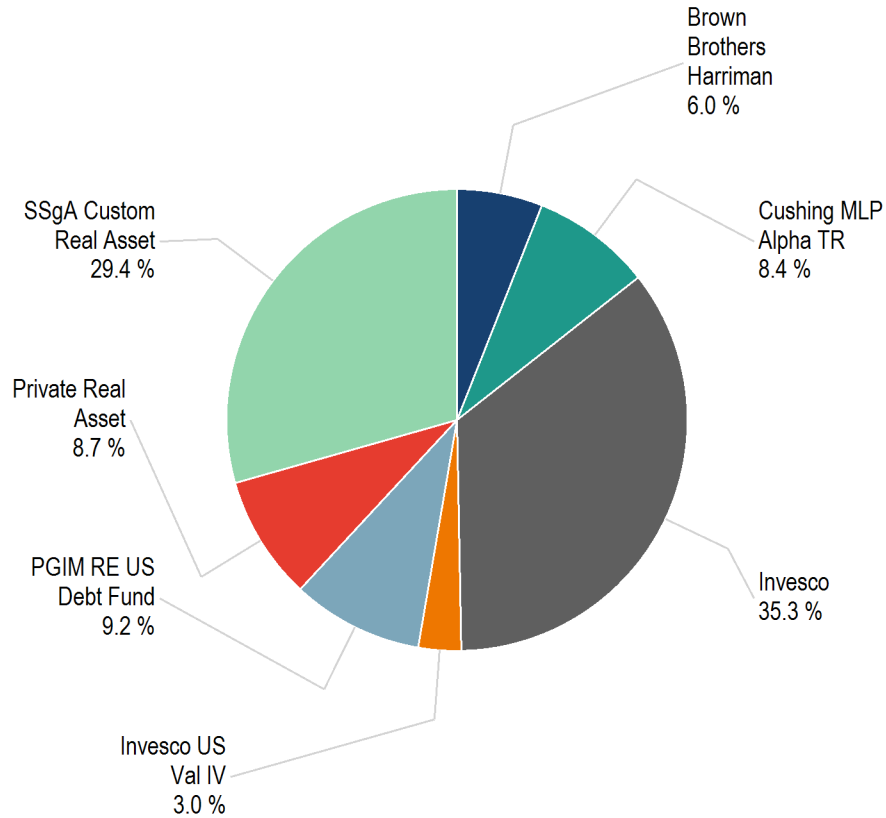


	Return (Rank)							
5th Percentile	5.1	6.8	10.6	14.1	15.4	11.9	13.6	15.5
25th Percentile	-0.3	0.8	2.2	6.4	7.7	6.0	8.2	10.0
Median	-3.3	-2.4	-2.7	1.9	3.4	3.0	4.8	6.8
75th Percentile	-7.5	-6.5	-9.0	-1.2	0.3	1.3	2.2	3.9
95th Percentile	-15.9	-17.5	-19.8	-6.7	-6.4	-3.2	-4.9	-1.5
# of Portfolios	246	246	242	223	207	170	135	95
● AQR DELTA XN	-4.3 (61)	-6.2 (75)	-15.3 (87)	-5.4 (92)	-3.1 (89)	2.0 (67)	3.1 (66)	-- (--)
▲ Libor 1 month +4%	1.6 (12)	3.2 (13)	6.1 (16)	5.6 (29)	5.2 (35)	4.8 (32)	4.6 (52)	-- (--)

eV Alt All Multi-Strategy Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	5.1	6.8	10.6	14.1	15.4	11.9	13.6	15.5
25th Percentile	-0.3	0.8	2.2	6.4	7.7	6.0	8.2	10.0
Median	-3.3	-2.4	-2.7	1.9	3.4	3.0	4.8	6.8
75th Percentile	-7.5	-6.5	-9.0	-1.2	0.3	1.3	2.2	3.9
95th Percentile	-15.9	-17.5	-19.8	-6.7	-6.4	-3.2	-4.9	-1.5
# of Portfolios	246	246	242	223	207	170	135	95
● Aberdeen Standard GARS	-2.2 (43)	-1.7 (44)	-5.7 (62)	-1.1 (75)	-1.4 (81)	-- (--)	-- (--)	-- (--)
▲ Libor 1 month +4%	1.6 (12)	3.2 (13)	6.1 (16)	5.6 (29)	5.2 (35)	4.8 (32)	4.6 (52)	-- (--)



	Actual \$	Actual %	Manager Contribution to Excess Return %
Brown Brother Harriman	\$45,255,188	6.0%	0.0%
Cushing MLP Alpha TR	\$63,941,127	8.4%	-1.3%
Invesco	\$267,997,671	35.3%	0.1%
Invesco US Val IV	\$23,012,456	3.0%	0.1%
PGIM RE US Debt Fund	\$70,195,257	9.2%	0.0%
Private Real Asset	\$66,415,429	8.7%	0.3%
SSgA Custom Real Asset	\$223,135,612	29.4%	0.1%
Actual vs. Policy Weight Difference			-0.2%
Total	\$759,952,741	100.0%	-0.9%

Statistics Summary

3 Years

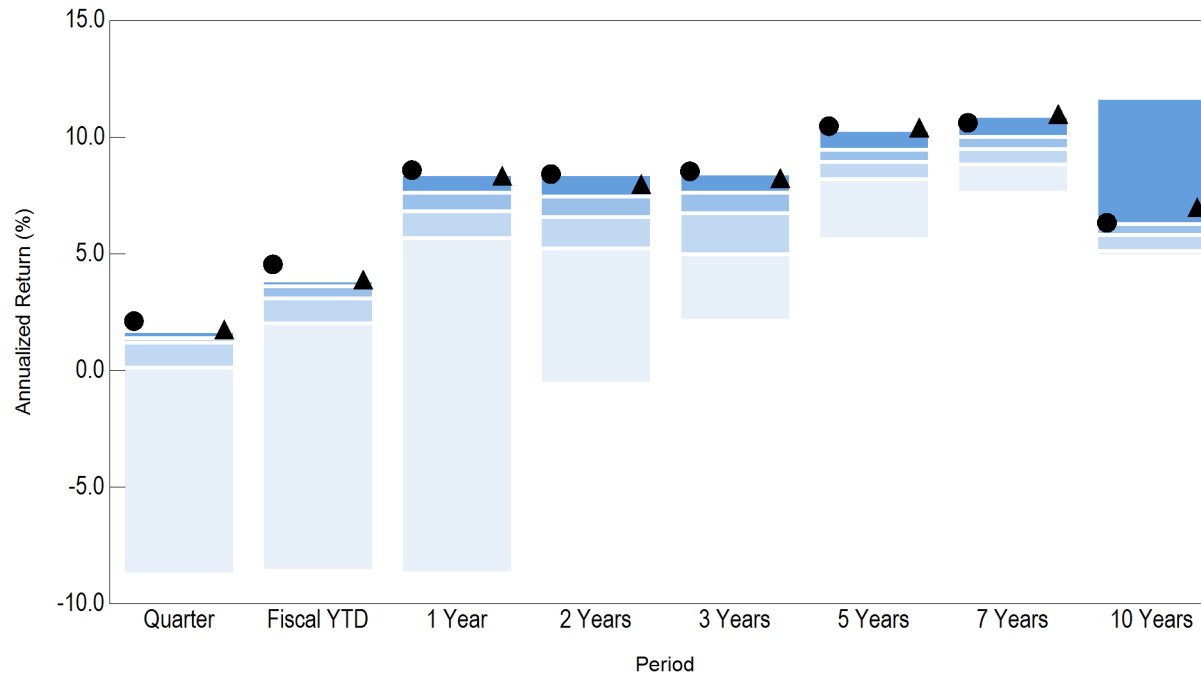
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Real Estate	8.53%	3.61%	2.07	0.26	1.12%
NCREIF ODCE	8.24%	3.33%	2.16	--	0.00%
Invesco	8.64%	3.67%	2.07	0.35	1.14%
NCREIF ODCE	8.24%	3.33%	2.16	--	0.00%
Private Real Asset	13.65%	26.75%	0.47	0.31	27.37%
Blended Private Real Asset Index	5.08%	6.97%	0.58	--	0.00%
TIPS	2.19%	2.20%	0.52	0.06	1.23%
BBgBarc US TIPS TR	2.11%	3.10%	0.35	--	0.00%
Brown Brothers Harriman	2.19%	2.20%	0.52	0.06	1.23%
BBgBarc US TIPS TR	2.11%	3.10%	0.35	--	0.00%

Statistics Summary

5 Years

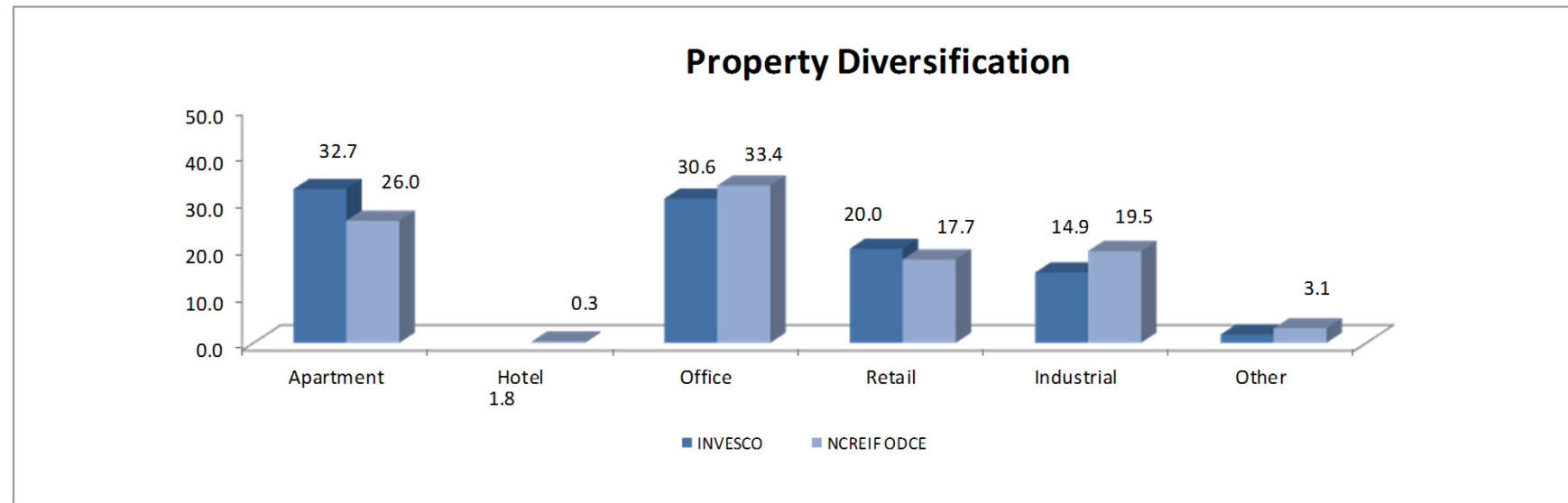
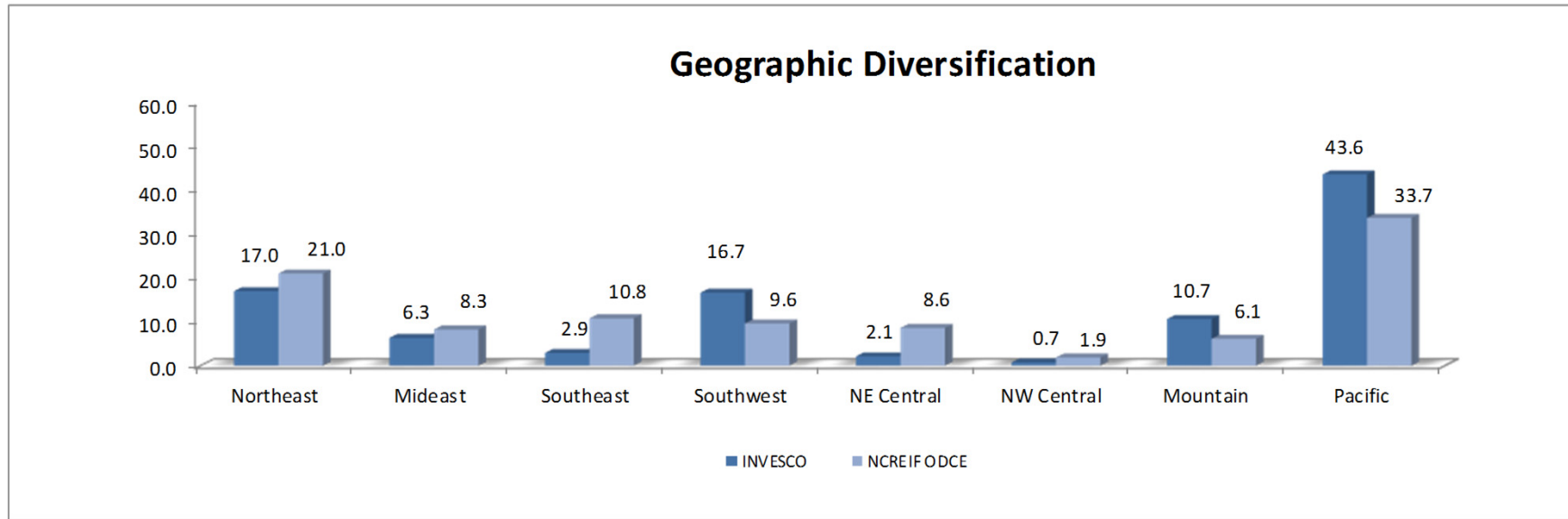
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error Rank
Real Estate	10.47%	4.55%	2.16	0.05	28
NCREIF ODCE	10.41%	4.35%	2.25	--	1
Invesco	10.44%	4.54%	2.16	0.02	--
NCREIF ODCE	10.41%	4.35%	2.25	--	--
TIPS	1.30%	2.63%	0.26	-0.29	--
BBgBarc US TIPS TR	1.69%	3.57%	0.30	--	--
Brown Brothers Harriman	1.30%	2.63%	0.26	-0.29	69
BBgBarc US TIPS TR	1.69%	3.57%	0.30	--	1

InvestorForce All DB Real Estate Pub Net Return Comparison



Return (Rank)

5th Percentile	1.7	3.8	8.4	8.4	8.4	10.3	10.9	11.7
25th Percentile	1.4	3.6	7.6	7.5	7.6	9.5	10.0	6.3
Median	1.2	3.1	6.8	6.6	6.8	8.9	9.5	5.8
75th Percentile	0.1	2.0	5.7	5.2	5.0	8.2	8.8	5.1
95th Percentile	-8.7	-8.6	-8.7	-0.6	2.1	5.6	7.6	4.9
# of Portfolios	80	80	80	76	76	70	60	41
● Real Estate	2.1 (1)	4.5 (1)	8.6 (2)	8.4 (5)	8.5 (3)	10.5 (3)	10.6 (10)	6.3 (23)
▲ NCREIF ODCE	1.8 (4)	3.9 (4)	8.3 (6)	8.0 (10)	8.2 (11)	10.4 (3)	11.0 (2)	7.0 (10)



INVESCO Core Real Estate
Real Estate Valuation Analysis

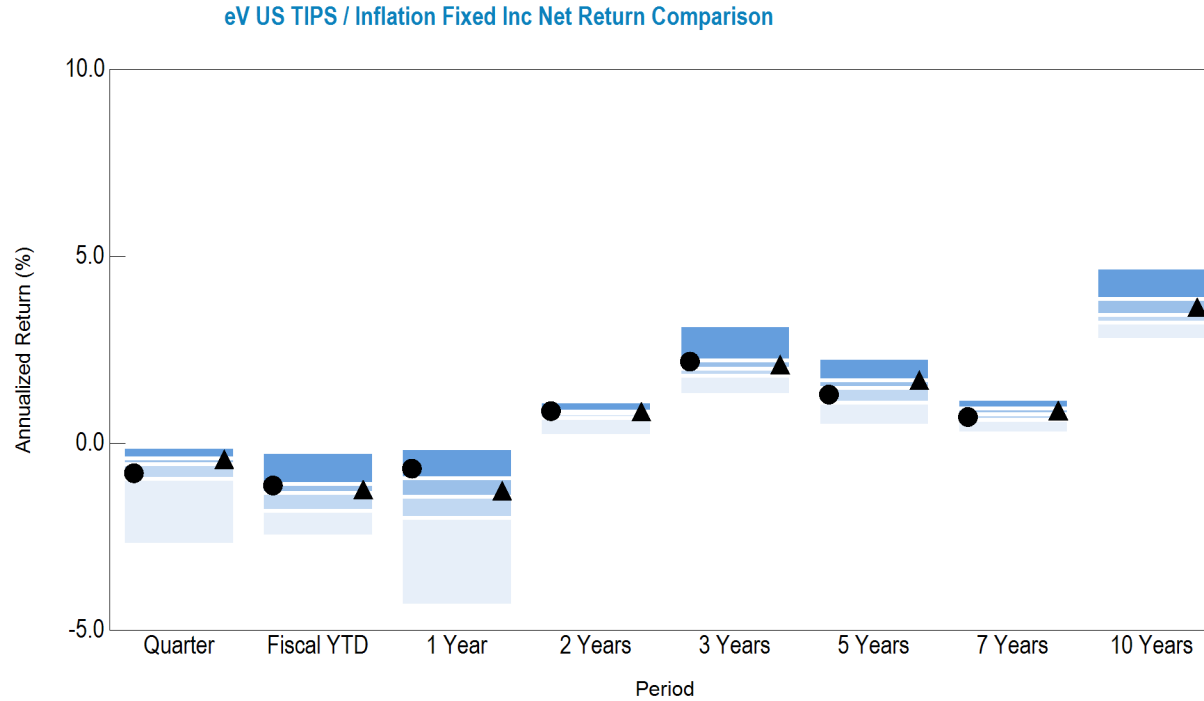
Period Ending: December 31, 2018

Property Name	MSA	Prior Quarter Carry Value	Current Quarter Carry Value	Net Market Value	Date Added to Fund	Last Valuation Date	SamCERA ownership as of 12/31/2018 2.69%
APARTMENTS							
Stoneridge Apartments	Pleasanton, CA	\$242,000,000	\$243,000,000	\$243,000,000	4Q06	December-18	\$6,533,726
Instrata Pentagon City	Arlington, VA	\$152,000,000	\$155,000,000	\$155,000,000	3Q10	December-18	\$4,167,603
Ladd Tower	Portland, OR	\$131,000,000	\$130,000,000	\$73,661,099	4Q10	December-18	\$1,980,582
Legacy Fountain Plaza	San Jose, CA	\$161,974,462	\$163,000,000	\$163,000,000	1Q11	December-18	\$4,382,705
Instrata Gramercy (fka The Elektra)	New York, NY	\$172,000,000	\$171,000,000	\$99,258,585	1Q11	December-18	\$2,668,841
Instrata Brooklyn Heights (fka 75 Clinton Street)	Brooklyn, NY	\$68,400,000	\$66,800,000	\$66,800,000	1Q12	December-18	\$1,796,102
The Artisan Laguna Beach	Orange County, CA	\$164,000,000	\$163,000,000	\$102,029,664	3Q12	December-18	\$2,743,349
The GoodWynn	Atlanta, GA	\$99,100,000	\$96,600,000	\$96,600,000	4Q12	December-18	\$2,597,358
Instrata Hell's Kitchen	New York, NY	\$194,000,000	\$184,000,000	\$184,000,000	1Q13	December-18	\$4,947,348
Sunset Vine Tower	Los Angeles, CA	\$103,000,000	\$103,000,000	\$103,000,000	2Q13	December-18	\$2,769,439
Instrata Ashton Uptown	Dallas, TX	\$123,000,000	\$121,000,000	\$64,362,777	4Q13	December-18	\$1,730,571
206 Bell	Seattle, WA	\$48,900,000	\$48,900,000	\$48,900,000	4Q13	December-18	\$1,314,812
Cadence Union Station	Denver, CO	\$92,600,000	\$94,400,000	\$57,628,499	1Q14	December-18	\$1,549,501
Joseph Arnold Lofts	Seattle, WA	\$71,400,000	\$71,700,000	\$37,781,891	2Q14	December-18	\$1,015,870
Verve	Denver, CO	\$108,000,000	\$108,000,000	\$108,000,000	3Q14	December-18	\$2,903,878
Broadstone Little Italy	San Diego CA	\$121,000,000	\$121,000,000	\$68,304,404	3Q14	December-18	\$1,836,553
33 Tehama	San Francisco, CA	\$301,179,684	\$300,708,571	\$174,015,439	3Q14	December-18	\$4,678,886
The Parker	Portland, OR	\$63,700,000	\$63,700,000	\$32,904,828	1Q15	December-18	\$884,737
Legacy West Apartments	Plano, TX	\$107,784,632	\$146,000,000	\$71,632,298	1Q15	December-18	\$1,926,032
The Royce	Irvine, CA	\$203,211,701	\$207,636,274	\$110,708,069	2Q15	December-18	\$2,976,692
Wheaton 121	Wheaton, IL	\$72,000,000	\$0	\$0	2Q15	December-18	\$0
Jefferson Marketplace	Washington, DC	\$159,000,000	\$159,000,000	\$89,253,255	4Q15	December-18	\$2,399,820
Retreat at Park Meadows	Littleton, CO	\$158,000,000	\$162,000,000	\$162,000,000	4Q15	December-18	\$4,355,817
North Water Apartments	Chicago, IL	\$265,000,000	\$266,000,000	\$266,000,000	1Q16	December-18	\$7,152,145
2270 Broadway	Oakland, CA	\$28,157,728	\$28,161,583	\$28,161,583	1Q16	December-18	\$757,202
Runway at Playa Vista Apartments	Playa Vista, CA	\$166,420,000	\$168,540,000	\$105,329,042	1Q16	December-18	\$2,832,062
Clayton Lane Apartments	Denver, CO	\$38,522,588	\$38,900,894	\$38,900,894	1Q16	December-18	\$1,045,958
Biscayne 27	Miami, FL	\$75,857,121	\$85,506,440	\$52,115,259	2Q16	December-18	\$1,401,263
Flats 8300	Washington DC	\$245,000,000	\$245,000,000	\$245,000,000	2Q16	December-18	\$6,587,502
407 1st Ave	New York, NY	\$199,000,000	\$200,000,000	\$200,000,000	4Q16	December-18	\$5,377,552
5250 Park	Miami, FL	\$34,995,368	\$38,919,500	\$26,288,633	2Q17	December-18	\$706,842
The Mason	Pleasanton, CA	\$101,000,000	\$103,000,000	\$103,000,000	3Q17	December-18	\$2,769,439
The Arnold	Austin, TX	\$0	\$102,499,500	\$102,499,500	4Q18	Acq 4Q18	\$2,755,982
		\$4,271,203,284	\$4,355,972,761	\$3,479,135,717			\$93,546,173
INDUSTRIAL							
Arjons Industrial Park	San Diego CA	\$45,600,000	\$46,500,000	\$46,500,000	2Q04	December-18	\$1,250,281
Gateway Business Park	Dallas TX	\$14,400,000	\$14,400,000	\$14,400,000	2Q04	December-18	\$387,184
Hayward Industrial	Oakland CA	\$206,900,000	\$216,900,000	\$216,900,000	3Q04-3Q07	December-18	\$5,831,956
Oakesdale Commerce Center	Seattle - Belle - Eve WA	\$62,300,000	\$65,700,000	\$65,700,000	1Q06	December-18	\$1,766,526
South Bay Industrial	Los Angeles, CA	\$60,600,000	\$60,700,000	\$60,700,000	4Q06	December-18	\$1,632,087
Steeplechase Portfolio	Capitol Heights, MD	\$106,400,000	\$107,700,000	\$107,700,000	1Q11	December-18	\$2,895,812
Airport Trade Center Portfolio	Dallas, TX	\$142,000,000	\$143,700,000	\$143,700,000	1Q11	December-18	\$3,863,771
IE Logistics	San Bernardino, CA	\$152,100,000	\$153,600,000	\$153,600,000	3Q11	December-18	\$4,129,960
Railhead Industrial	Dallas, TX	\$66,400,000	\$67,000,000	\$67,000,000	4Q11	December-18	\$1,801,480
Empire Gateway aka Chino South Logistics Center	Chino, CA	\$292,000,000	\$302,000,000	\$302,000,000	4Q12	December-18	\$8,120,104
SFO Logistics Center	San Francisco, CA	\$163,000,000	\$164,000,000	\$164,000,000	4Q13	December-18	\$4,409,593
Miami Industrial Portfolio	Various, FL	\$86,021,228	\$86,115,820	\$59,536,844	1Q16	December-18	\$1,600,812
Miami Industrial Portfolio - Fedex	Hollywood, FL	\$45,000,000	\$46,200,000	\$32,125,977	1Q16	December-18	\$863,796
OMP Burbank	Los Angeles, CA	\$71,898,228	\$102,487,311	\$102,487,311	2Q16	December-18	\$2,755,654
Pacific Commons	Freemont, CA	\$173,937,156	\$196,351,700	\$178,501,316	1Q17	December-18	\$4,799,501
Gateway 80 Business Park	Fairfield, CA	\$106,500,000	\$107,100,000	\$107,100,000	1Q18	December-18	\$2,879,679
Meridian Distribution Center II	Riverside, CA	\$52,370,000	\$52,600,000	\$52,600,000	3Q18	December-18	\$1,414,296
Bayport North Industrial Building II and III	Riverside, CA	\$0	\$58,689,024	\$58,689,024	4Q18	Acq 4Q18	\$1,578,016
		\$1,847,426,611	\$1,991,743,855	\$1,933,240,472			\$51,980,510

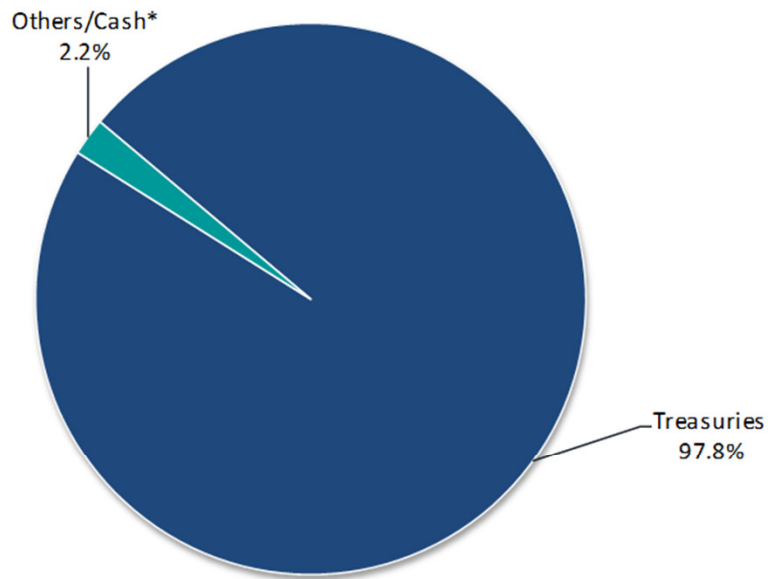
INVESCO Core Real Estate
Real Estate Valuation Analysis

Period Ending: December 31, 2018

OFFICE							
55 Cambridge Parkway	Boston MA - NH	\$346,000,000	\$356,000,000	\$356,000,000	4Q06	December-18	\$9,572,043
1111 Pennsylvania Avenue	Washington, D.C.	\$345,000,000	\$0	\$0	4Q10	December-18	\$0
1800 Larimer	Denver, CO	\$331,000,000	\$337,000,000	\$337,000,000	1Q11	December-18	\$9,061,176
Hillview Office	San Jose, CA	\$75,600,000	\$73,900,000	\$73,900,000	3Q12	December-18	\$1,987,006
Williams Tower	Houston, TX	\$602,000,000	\$611,000,000	\$428,658,987	1Q13	December-18	\$11,525,681
Westlake Park Place	Westlake Village, CA	\$109,000,000	\$109,000,000	\$109,000,000	4Q13	December-18	\$2,930,766
101 Second	San Francisco, CA	\$434,000,000	\$464,000,000	\$464,000,000	1Q14	December-18	\$12,475,922
Energy Crossing II	Houston, TX	\$104,000,000	\$104,000,000	\$104,000,000	2Q14	December-18	\$2,796,327
1776 Wilson Blvd.	Arlington, VA	\$88,300,000	\$87,700,000	\$87,700,000	3Q14	December-18	\$2,358,057
631 Howard	San Francisco, CA	\$98,100,000	\$107,000,000	\$107,000,000	3Q14	December-18	\$2,876,991
Barton Oaks	Austin, TX	\$95,000,000	\$96,000,000	\$96,000,000	3Q14	December-18	\$2,581,225
Hercules East and South Campus	Los Angeles, CA	\$184,931,042	\$185,045,739	\$185,045,739	3Q14	December-18	\$4,975,466
The Reserve	Playa Vista, CA	\$384,030,283	\$392,257,407	\$392,257,407	1Q15	December-18	\$10,546,924
Fort Point Portfolio	Boston, MA	\$259,208,664	\$271,080,816	\$271,080,816	2Q15	December-18	\$7,288,756
Summit IV	Aliso Viejo, CA	\$113,000,000	\$113,000,000	\$113,000,000	2Q15	December-18	\$3,038,317
1101 Westlake	Seattle, WA	\$137,000,000	\$145,000,000	\$145,000,000	3Q15	December-18	\$3,898,725
PearlWest	Boulder, CO	\$131,000,000	\$132,000,000	\$132,000,000	4Q16	December-18	\$3,549,185
The Mark 302	Santa Monica, CA	\$50,991,394	\$53,286,564	\$53,286,564	1Q18	December-18	\$1,432,756
430 West 15th Street	New York NY	\$160,000,000	\$162,000,000	\$162,000,000	2Q18	December-18	\$4,355,817
Ten Fawcett	Cambridge, MA	\$58,755,250	\$59,849,000	\$30,749,000	3Q18	December-18	\$826,772
Press Blocks	Portland, OR	\$4,234,440	\$10,824,106	\$10,824,106	3Q18	December-18	\$291,036
Union Tower West	Denver, CO	\$0	\$69,300,000	\$69,300,000	4Q18	Acq 4Q18	\$1,863,322
		\$4,215,982,701	\$4,084,243,632	\$3,798,669,171			\$102,137,712
RETAIL							
Chandler Pavilion	Phoenix - Mesa AZ	\$26,700,000	\$26,400,000	\$26,400,000	2Q04	December-18	\$709,837
Cityline at Tenley	Washington, D.C.	\$63,400,000	\$63,400,000	\$63,400,000	4Q05	December-18	\$1,704,684
Ridgehaven Shopping Center	Minnetonka, MN	\$42,500,000	\$42,500,000	\$42,500,000	4Q05	December-18	\$1,142,730
The Beacon Garage (units)	San Francisco, CA	\$36,526,099	\$36,905,860	\$36,905,860	1Q06	December-18	\$992,316
The Beacon Office (210 King)	San Francisco, CA	\$28,700,000	\$29,200,000	\$29,200,000	1Q15	December-18	\$785,123
Hawthorne Plaza	Overland Park, KS	\$53,150,000	\$53,000,000	\$53,000,000	4Q07	December-18	\$1,425,051
The Loop	Boston MA - NH	\$83,000,000	\$78,500,000	\$78,500,000	1Q08	December-18	\$2,110,689
Westbank Market	Austin, TX	\$63,900,000	\$64,000,000	\$64,000,000	3Q10	December-18	\$1,720,817
910 Lincoln Road	Miami, FL	\$35,200,000	\$35,200,000	\$35,200,000	4Q10	December-18	\$1,720,817
Lake Pointe Village	Houston, TX	\$87,350,000	\$87,350,000	\$87,350,000	4Q11	December-18	\$946,449
Safeway Kapahulu	Hawaii	\$94,800,000	\$95,000,000	\$59,102,715	4Q11	December-18	\$1,589,140
Safeway Burlingame	San Francisco, CA	\$58,900,000	\$59,100,000	\$36,589,792	4Q11	December-18	\$983,818
Shamrock Plaza	Oakland, CA	\$40,800,000	\$40,800,000	\$24,685,700	4Q11	December-18	\$663,743
Pavilions Marketplace	West Hollywood, CA	\$70,600,000	\$70,800,000	\$46,334,793	1Q12	December-18	\$1,245,839
130 Prince	New York, NY	\$220,000,000	\$221,000,000	\$221,000,000	2Q12	December-18	\$5,942,195
Safeway Pleasanton	Pleasanton, CA	\$82,500,000	\$86,500,000	\$86,500,000	4Q12	December-18	\$2,325,791
Liberty Wharf	Boston, MA	\$97,400,000	\$96,900,000	\$96,900,000	4Q12	December-18	\$2,605,424
Shops at Legacy	Plano, TX	\$117,547,410	\$125,000,000	\$125,000,000	3Q13	December-18	\$3,360,970
Pasadena Commons	Pasadena, CA	\$63,400,000	\$63,200,000	\$63,200,000	4Q14	December-18	\$1,699,307
Rush Street Retail	Chicago, IL	\$16,900,000	\$16,900,000	\$16,900,000	4Q14	December-18	\$454,403
Legacy West Retail	Plano, TX	\$198,589,494	\$279,000,000	\$179,608,809	1Q15	December-18	\$4,829,279
Legacy West Land	Plano, TX	\$3,955,230	\$0	\$0	2Q17	December-18	\$0
131-137 Spring Street	New York, NY	\$212,000,000	\$208,000,000	\$95,200,000	3Q15	December-18	\$2,559,715
Runway at Playa Vista - Retail	Playa Vista, CA	\$127,730,000	\$127,730,000	\$65,574,758	1Q16	December-18	\$1,763,158
139 Spring	New York, NY	\$118,992,000	\$111,059,200	\$111,059,200	1Q16	December-18	\$2,986,133
Clayton Lane	Denver, CO	\$148,760,560	\$150,961,342	\$105,602,758	1Q16	December-18	\$2,839,422
4th & Colorado	Santa Monica, CA	\$13,280,000	\$13,280,000	\$13,280,000	1Q16	December-18	\$357,069
Legacy West - Block H	Plano, TX	\$7,098,996	\$11,230,095	\$11,230,095	4Q17	December-18	\$301,952
Shops at Crystals	Las Vegas, NV	\$298,750,000	\$300,500,000	\$164,581,999	2Q16	December-18	\$4,425,242
		\$2,581,703,691	\$2,663,410,636	\$2,108,800,617			\$56,073,100
Other							
Baranof - Walden Park	San Marcos, TX	\$9,650,448	\$9,446,179	\$9,446,179	1Q18	December-18	\$253,987
Baranof - Ranch Road 620	San Marcos, TX	\$8,915,176	\$8,890,521	\$8,890,521	1Q18	December-18	\$239,046
Baranof - Glenwood Avenue	Raleigh, NC	\$9,282,812	\$9,353,569	\$9,353,569	1Q18	December-18	\$251,497
Baranof - 1-84 & 60th	Vancouver, WA	\$21,506,712	\$22,133,694	\$22,133,694	1Q18	December-18	\$595,125
Baranof - Fishers Landing Vancouver	Vancouver, WA	\$15,900,262	\$16,021,461	\$16,021,461	1Q18	December-18	\$430,781
US Storage	Compton, CA	\$10,276,649	\$13,810,156	\$11,836,125	4Q17	December-18	\$318,247
The Quad	New York NY	\$65,016,212	\$76,284,911	\$43,659,200	2Q18	December-18	\$1,173,898
Baranof - 622 Capital	Raleigh, NC	\$18,611,578	\$18,799,749	\$18,799,749	3Q18	December-18	\$505,483
51st Street Self Storage	Austin, TX	\$12,000,000	\$12,000,000	\$12,000,000	3Q18	December-18	\$322,653
Campbell Self Storage	Campbell, CA	\$17,800,000	\$17,800,000	\$17,800,000	3Q18	December-18	\$478,602
Baranof - Belmont and 7th	Portland, OR	\$0	\$17,711,586	\$17,711,586	4Q18	Acq 4Q18	\$476,225
Boston Lane Self Storage	Austin, TX	\$0	\$15,800,000	\$15,800,000	4Q18	Acq 4Q18	\$424,827
		\$188,959,848	\$238,051,825	\$203,452,084			\$5,470,371
Portfolio Total		\$13,105,276,135	\$13,333,422,710	\$11,523,298,061			\$309,207,866



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-0.1	-0.2	-0.1	1.1	3.1	2.3	1.2	4.7
25th Percentile	-0.4	-1.1	-0.9	0.9	2.2	1.7	0.9	3.9
Median	-0.5	-1.3	-1.4	0.8	2.0	1.5	0.8	3.4
75th Percentile	-0.9	-1.8	-2.0	0.7	1.8	1.1	0.6	3.2
95th Percentile	-2.7	-2.5	-4.3	0.2	1.3	0.5	0.3	2.8
# of Portfolios	22	22	21	21	21	19	17	14
● Brown Brothers Harriman	-0.8 (62)	-1.1 (28)	-0.7 (19)	0.9 (25)	2.2 (30)	1.3 (64)	0.7 (60)	-- (--)
▲ BBgBarc US TIPS TR	-0.4 (31)	-1.2 (35)	-1.3 (39)	0.8 (34)	2.1 (38)	1.7 (28)	0.9 (37)	3.6 (43)



Sector	Account Weight	BBgBarc TIPS	
		Index	Difference
Treasuries	97.8%	100.0%	-2.2%
Agencies	0.0%	0.0%	0.0%
Corporates	0.0%	0.0%	0.0%
Utilities	0.0%	0.0%	0.0%
Foreign	0.0%	0.0%	0.0%
MBS	0.0%	0.0%	0.0%
CMO	0.0%	0.0%	0.0%
ABS	0.0%	0.0%	0.0%
Municipals	0.0%	0.0%	0.0%
Others/Cash*	2.2%	0.0%	2.2%
TOTAL	100.0%	100.0%	0.0%

* May include Derivatives, Futures, Swaps, Credit Default Swaps, Total Return Swaps or Currency Contracts.

Portfolio Characteristics		Portfolio
Total Number of Securities		12
Total Market Value	\$	45,255,188
Current Coupon		1.18
Yield to Maturity		0.98
Average Life		
Duration		6.17
Quality		AAA

BBgBarc TIPS	
Total Number of Securities	39
Total Market Value	N/A
Current Coupon	0.71
Yield to Maturity	1.11
Average Life	
Duration	7.27
Quality	AAA

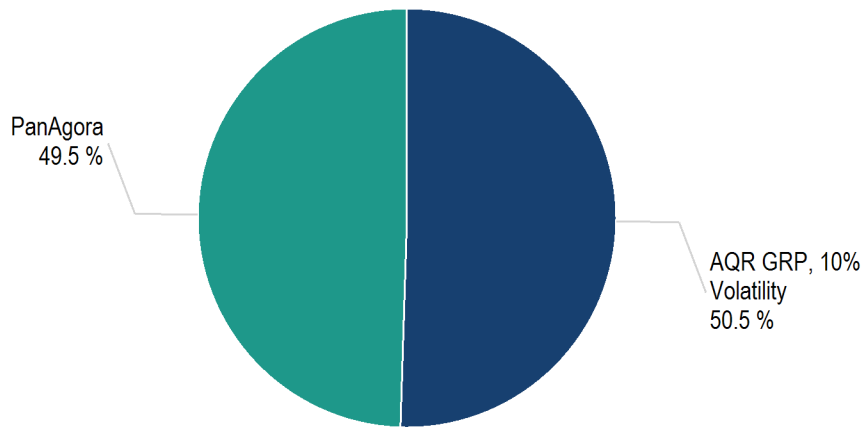
Yield to Maturity	
Range	% Held
0.0 - 5.0	100.0
5.0 - 7.0	0.0
7.0 - 9.0	0.0
9.0 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	0.0
Unclassified	0.0

Average Life	
Range	% Held
0.0 - 3.0	5.5
3.0 - 5.0	27.0
5.0 - 10.0	48.5
10.0- 15.0	8.0
15.0+	11.1
Unclassified	0.0

Duration	
Range	% Held
0.0 - 3.0	5.5
3.0 - 5.0	27.0
5.0 - 10.0	48.5
10.0- 15.0	8.0
15.0+	11.1
Unclassified	0.0

Quality	
Range	% Held
Govt (10)	100.0
Aaa (10)	0.0
Aa (9)	0.0
A (8)	0.0
Baa (7)	0.0
Below Baa (6-1)	0.0
Other	0.0

Coupon	
Range	% Held
0.0 - 5.0	100.0
5.0 - 7.0	0.0
7.0 - 9.0	0.0
9.0 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	0.0
Unclassified	0.0



	Actual \$	Actual %	Manager Contribution to Excess Return %
AQR GRP, 10% Volatility	\$167,213,070	50.5%	1.0%
PanAgora	\$163,946,359	49.5%	1.7%
Actual vs. Policy Weight Difference			0.0%
Total	\$331,159,429	100.0%	2.7%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Risk Parity	6.1%	6.9%	0.7	0.0	6.0%
Blended Risk Parity Index	5.9%	6.2%	0.8	--	0.0%
AQR GRP, 10% Volatility	6.2%	6.4%	0.8	0.0	5.3%
Blended Risk Parity Index	5.9%	6.2%	0.8	--	0.0%
PanAgora	6.0%	7.7%	0.6	0.0	7.0%
Blended Risk Parity Index	5.9%	6.2%	0.8	--	0.0%

Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Risk Parity	4.5%	7.9%	0.5	-0.2	6.0%
Blended Risk Parity Index	5.7%	6.4%	0.8	--	0.0%
AQR GRP, 10% Volatility	3.2%	7.8%	0.3	-0.4	5.9%
Blended Risk Parity Index	5.7%	6.4%	0.8	--	0.0%

Total Fund
Performance Summary (Gross of Fees)

Period Ending: December 31, 2018

	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Total Fund	-6.2	-4.3	-4.1	4.9	6.1	5.1	8.8
<i>Policy Index</i>	-5.9	-3.6	-3.5	5.6	6.7	5.1	9.1
Total Fund ex Overlay	-6.2	-4.3	-4.1	4.9	6.1	5.0	8.7
<i>Policy Index</i>	-5.9	-3.6	-3.5	5.6	6.7	5.1	9.1
Public Equity	-13.1	-9.6	-9.2	6.1	6.8	5.1	10.5
<i>Blended Public Equity Index</i>	-13.1	-9.7	-9.6	6.0	7.2	5.0	10.9
US Equity	-14.6	-8.6	-5.5	7.1	8.6	7.4	13.0
<i>Blended US Equity Index</i>	-14.3	-8.2	-5.2	7.1	9.0	7.6	13.1
<i>Russell 3000</i>	-14.3	-8.2	-5.2	7.1	9.0	7.9	13.2
Large Cap Equity	-13.3	-6.9	-4.1	9.2	9.8	8.7	13.1
<i>Russell 1000</i>	-13.8	-7.4	-4.8	7.6	9.1	8.2	13.3
Acadian US MGD V	--	--	--	--	--	--	--
BlackRock Russell 1000	-13.8	-7.4	-4.7	--	--	--	--
DE Shaw	-14.0	-7.8	-4.2	9.9	11.5	10.2	--
PanAgora Defuseq	--	--	--	--	--	--	--
<i>Russell 1000</i>	-13.8	-7.4	-4.8	7.6	9.1	8.2	13.3
Small Cap Equity	-20.5	-17.6	-12.3	-0.4	5.5	2.8	13.0
<i>Russell 2000</i>	-20.2	-17.3	-11.0	1.0	7.4	4.4	12.0
QMA US Small Cap	-20.5	-17.6	-12.3	-0.4	--	--	--
<i>Russell 2000</i>	-20.2	-17.3	-11.0	1.0	7.4	4.4	12.0
International Equity	-11.3	-10.8	-13.6	4.9	4.5	1.7	5.7
<i>MSCI ACWI ex US IMI</i>	-11.9	-11.5	-14.8	4.6	4.7	1.2	7.1
<i>MSCI EAFE Gross</i>	-12.5	-11.3	-13.4	4.3	3.4	1.0	6.8
Developed Markets	-12.2	-11.7	-13.8	4.7	4.0	1.7	5.9
<i>MSCI ACWI ex USA Gross</i>	-11.4	-10.7	-13.8	5.0	5.0	1.1	7.1
Baillie Gifford	-15.2	-16.2	-16.3	5.2	3.8	2.2	--
<i>MSCI ACWI ex US</i>	-11.4	-10.7	-13.8	5.0	5.0	1.1	--
<i>MSCI ACWI ex US Growth</i>	-12.2	-12.3	-14.1	6.7	4.6	2.1	--
BlackRock EAFE Index	-12.5	-11.3	-13.4	4.2	3.3	0.9	--
<i>MSCI EAFE</i>	-12.5	-11.4	-13.8	3.8	2.9	0.5	6.3
<i>MSCI EAFE Gross</i>	-12.5	-11.3	-13.4	4.3	3.4	1.0	6.8

Total Fund
Performance Summary (Gross of Fees)

Period Ending: December 31, 2018

	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Mondrian	-8.8	-7.4	-11.7	4.4	4.6	1.4	6.1
<i>MSCI ACWI ex USA Value Gross</i>	-10.6	-9.0	-13.4	3.3	5.4	0.2	6.6
<i>MSCI ACWI ex USA Gross</i>	-11.4	-10.7	-13.8	5.0	5.0	1.1	7.1
Emerging Markets	-5.8	-5.9	-13.5	5.4	8.0	0.6	--
<i>MSCI Emerging Markets Gross</i>	-7.4	-8.3	-14.2	8.7	9.7	2.0	8.4
Parametric Core	-5.8	-5.9	-13.5	5.4	8.0	--	--
<i>MSCI Emerging Markets Gross</i>	-7.4	-8.3	-14.2	8.7	9.7	2.0	8.4
Parametric Currency Overlay	12.6	--	--	--	--	--	--
Fixed Income	0.3	1.0	0.4	3.1	4.8	3.7	6.6
<i>Blended Fixed Income Index</i>	0.2	1.0	-0.6	2.1	3.2	2.7	3.7
Core Fixed	1.4	1.5	0.0	2.3	3.2	3.3	5.8
<i>BBgBarc US Aggregate TR</i>	1.6	1.7	0.0	1.8	2.1	2.5	3.5
BlackRock Intermediate Govt	2.2	2.2	1.6	--	--	--	--
<i>BBgBarc US Govt Int TR</i>	2.2	2.1	1.4	1.3	1.2	1.5	1.8
FIAM Bond	1.1	1.2	-0.1	2.1	2.9	3.1	5.4
<i>BBgBarc US Aggregate TR</i>	1.6	1.7	0.0	1.8	2.1	2.5	3.5
Western TRU	0.7	0.9	-2.7	3.3	4.2	--	--
<i>3-Month Libor Total Return USD</i>	0.7	1.3	2.4	1.8	1.5	1.0	0.7
<i>BBgBarc US Aggregate TR</i>	1.6	1.7	0.0	1.8	2.1	2.5	3.5
Opportunistic Credit	-1.9	0.0	1.5	5.0	8.6	6.2	--
<i>BBgBarc BA Intermediate HY</i>	-2.7	-0.5	-1.9	2.1	5.2	3.9	--
Angelo Gordon Opportunistic	0.5	5.4	21.4	19.4	15.6	--	--
Angelo Gordon STAR	2.5	9.3	21.9	20.3	16.0	14.1	--
<i>BBgBarc US Aggregate TR</i>	1.6	1.7	0.0	1.8	2.1	2.5	3.5
Beach Point Select	-4.0	-2.3	0.8	4.6	8.6	--	--
<i>BBgBarc BA Intermediate HY</i>	-2.7	-0.5	-1.9	2.1	5.2	3.9	--
Brigade Capital	-5.6	-3.4	-0.9	3.2	9.7	3.7	--
<i>BBgBarc BA Intermediate HY</i>	-2.7	-0.5	-1.9	2.1	5.2	3.9	--
50% Barclays HY/ 50% Bank Loan	-3.8	-1.7	-0.5	2.6	6.1	3.6	--

Total Fund
Performance Summary (Gross of Fees)

Period Ending: December 31, 2018

	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
PIMCO Diversified	-1.3	0.4	-1.0	--	--	--	--
<i>Blended PIMCO Diversified Index</i>	-1.5	0.2	-2.2	2.4	4.8	4.0	7.9
<i>BBgBarc BA Intermediate HY</i>	-2.7	-0.5	-1.9	2.1	5.2	3.9	--
Franklin Templeton	2.1	2.5	0.0	2.1	3.9	1.6	--
<i>BBgBarc Multiverse TR</i>	1.0	0.2	-1.4	3.1	3.0	1.2	2.8
Private Credit	1.9	4.2	8.5	7.5	--	--	--
<i>Cliffwater Direct Lending Index</i>	2.4	4.8	9.7	9.2	9.9	8.9	11.0
TCP Direct Lending VIII	1.8	4.2	7.1	7.2	--	--	--
White Oak Yield	2.0	4.3	10.1	--	--	--	--
<i>Cliffwater Direct Lending Index</i>	2.4	4.8	9.7	9.2	9.9	8.9	11.0
Risk Parity	-4.8	-5.7	-7.2	3.2	6.1	4.5	--
<i>Blended Risk Parity Index</i>	-7.5	-4.8	-4.4	4.5	5.9	5.7	--
AQR GRP, 10% Volatility	-5.4	-5.2	-6.7	4.1	6.2	3.2	--
PanAgora	-4.1	-6.1	-7.6	2.5	6.0	--	--
<i>Blended Risk Parity Index</i>	-7.5	-4.8	-4.4	4.5	5.9	5.7	--
<i>Blended RP Secondary Index</i>	-8.0	-4.1	-2.9	5.1	5.5	4.5	--
Alternatives	0.8	2.9	2.4	5.9	7.0	6.6	--
<i>Blended Alternatives Index</i>	4.8	7.8	9.6	12.3	11.8	7.6	--
Private Equity	4.7	9.9	17.7	15.6	15.3	16.4	--
<i>Blended Private Equity Index</i>	8.1	12.4	12.9	18.4	17.5	14.2	17.9
Hedge Fund/Absolute Return	-3.5	-4.5	-11.7	-3.7	-2.2	2.5	--
<i>Libor 1 month +4%</i>	1.6	3.2	6.1	5.6	5.2	4.8	--
AQR DELTA XN	-4.3	-6.2	-15.3	-5.4	-3.1	2.0	--
Aberdeen Standard GARS	-2.2	-1.7	-5.7	-1.1	-1.4	--	--
<i>Libor 1 month +4%</i>	1.6	3.2	6.1	5.6	5.2	4.8	--
Inflation Hedge	-3.3	-2.8	-1.1	3.6	--	--	--
<i>Blended Inflation Hedge Index</i>	-2.5	-1.7	-0.8	4.0	--	--	--

Total Fund
Performance Summary (Gross of Fees)

Period Ending: December 31, 2018

	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Real Estate	2.2	4.8	9.1	8.9	9.0	10.9	6.8
<i>NCREIF ODCE</i>	1.8	3.9	8.3	8.0	8.2	10.4	7.0
Invesco	2.2	4.8	9.3	8.9	9.0	10.8	6.7
<i>NCREIF ODCE</i>	1.8	3.9	8.3	8.0	8.2	10.4	7.0
Invesco US Val IV	4.2	7.4	12.4	12.7	11.1	--	--
<i>NCREIF ODCE</i>	1.8	3.9	8.3	8.0	8.2	10.4	7.0
<i>NCREIF CEVA 1Q Lag - NET</i>	3.0	6.0	11.9	11.0	11.7	13.5	--
PGIM RE US Debt Fund	1.8	4.0	6.6	--	--	--	--
<i>NCREIF ODCE</i>	1.8	3.9	8.3	8.0	8.2	10.4	7.0
Private Real Asset	4.2	4.8	4.5	0.8	13.7	--	--
<i>Blended Private Real Asset Index</i>	-0.1	4.3	-3.1	4.4	5.1	5.1	--
<i>Blended Secondary CA Private RA Index</i>	2.1	4.4	10.1	11.8	9.8	--	--
Public Real Assets	-11.2	-12.5	-12.6	-0.1	--	--	--
<i>Blended Public Real Asset Index</i>	-9.4	-10.8	-11.5	-0.2	2.0	3.3	--
Cushing MLP Alpha TR	-17.6	--	--	--	--	--	--
<i>50% BBgBarc US TIPS/ 50% Blended PRA Index</i>	-5.0	-6.1	--	--	--	--	--
<i>Alerian MLP TR USD</i>	-17.3	-11.9	-12.4	-9.5	-1.1	-7.3	9.6
SSgA Custom Real Asset	-9.1	-10.0	-10.2	1.3	--	--	--
<i>Blended Public Real Asset Index</i>	-9.4	-10.8	-11.5	-0.2	2.0	3.3	--
TIPS	-0.7	-1.0	-0.5	1.0	2.3	1.5	--
<i>BBgBarc US TIPS TR</i>	-0.4	-1.2	-1.3	0.8	2.1	1.7	3.6
Brown Brothers Harriman	-0.7	-1.0	-0.5	1.0	2.3	1.5	--
<i>BBgBarc US TIPS TR</i>	-0.4	-1.2	-1.3	0.8	2.1	1.7	3.6
Cash	0.5	0.6	1.1	1.0	1.0	0.9	0.9
91 Day T-Bills	0.5	1.0	1.9	1.4	1.0	0.6	0.4
General Account	2.5	3.3	4.9	3.3	2.6	2.0	1.1
Treasury & LAIF	0.8	2.1	4.8	3.0	2.3	1.7	1.3
91 Day T-Bills	0.5	1.0	1.9	1.4	1.0	0.6	0.4

Acadian Asset Management – Acadian U.S. Managed Volatility

Acadian attempts to take advantage of the mispricing of risk by building low-risk equity portfolios that hold predominantly low-risk stocks, and then also adding information on the correlation structure of equities to help further reduce risk through diversification.

Angelo, Gordon & Co. – AG STAR Fund

The STAR Fund will focus on CMBS and non-Agency RMBS priced between 25-75% of par, which AG believes are even today mispriced due to their complex nature and a dearth of natural buyers capable of accurately valuing these assets. In addition, AG will target securities that are well-positioned to benefit from home and commercial property price stabilization and recovery, and/or borrower credit quality improvement. In this regard the STAR Fund will be more aggressive than the PPIP Fund since it will target securities that are more geared to a recovery of the commercial and residential real estate markets. The Fund will utilize a moderate amount of leverage (1x to 1.5x) and is targeting a base-case 15% net IRR with a downside return in the mid/high single digits and an upside projection of 25%+ returns.

Angelo, Gordon & Co. – AG Opportunistic Whole Loan Fund

As bank balance sheets have strengthened since the crisis, Angelo Gordon expects approximately \$40 billion of re-performing loans and non-performing loans will trade hands each year in the near term. By acquiring these loans at a discounted price and replacing original servicers with better-focused special servicers, Angelo Gordon believes it can improve operational efficiency and generate attractive returns. To take advantage of this opportunity, Angelo Gordon established this Opportunistic Whole Loan Fund to make investments primarily in a portfolio of non-performing loans and re-performing, but will also include investments in new residential mortgage loans and excess mortgage servicing rights. Opportunistic investments in commercial mortgage loans and other mortgage related investments may also be included in the Fund's portfolio. Angelo Gordon has been an active participant in the residential and consumer debt market since 2008. The Partnership's investment approach to residential mortgage loans and securities is guided by an analytically based investment process anchored by distressed asset valuation and cash flow modeling. Angelo Gordon's analysis of re-performing and non-performing loans begins with its loan due diligence process. This process will include a review of substantially all of the properties in the pool, as well as a review of the loan files backing the loan pool. In addition, a macro overlay is embedded in the investment process which incorporates general economic trends, along with specific views on interest rates, unemployment, collateral appreciation or depreciation, governmental intervention in creditors' rights and liquidation timelines.

AQR Capital Management - AQR Delta

The AQR DELTA Fund aims to deliver efficient exposure to a well-diversified portfolio of hedge fund strategies, including Convertible Arbitrage, Event Driven, Fixed Income Relative Value, Equity Market Neutral, Long/Short Equity, Dedicated Short Bias, Global Macro, Managed Futures, and Emerging Markets. The Delta Fund's approach is to capture and deliver the "hedge fund risk premiums" that explain much of the returns of each of these strategies by building bottom-up positions in each strategy. AQR's research has demonstrated that many hedge funds use similar strategies to generate returns. These strategies are often well-known, widely understood and share common exposures. AQR's experience and research suggests much of the insight underlying these strategies - as well as a meaningful portion of their returns - can be captured using a dynamic, disciplined investment approach. Just as the equity risk premium can explain a large portion of the returns from equity investing, hedge fund risk premiums can explain the returns from hedge fund investing. Importantly, while compensation for equity risk is dependent on economic growth, hedge fund risk premiums are largely unrelated to economic activity, and thus provide attractive diversification properties.

AQR – Risk Parity

The objective of Global Risk Parity (GRP) is to generate excess returns from a risk diversified portfolio of asset exposures. AQR believes that its approach maximizes the diversification benefit across a broad range of economic environments. For many institutional portfolios, equity risk has historically been the predominant risk and the source of most return expectations since equities offer higher expected returns to compensate for their high risk. Investor preference for and concentration in equities has been driven by their expected return needs, which cannot be satisfied in a well-diversified un-levered portfolio. GRP is a diversified portfolio that can be scaled to similar levels of risk as a portfolio concentrated in equities, but with a higher expected return resulting from diversification across asset class risk. The approach helps do away with the compromise of concentrating in high risk assets to meet high return needs. Consistent with portfolio theory, the GRP strategy is designed to maximize diversification across a broad spectrum of liquid global risk premia to create a portfolio with higher expected risk-adjusted returns. Research shows that risk-adjusted returns across asset classes are similar over the long-term. Since realized risk-adjusted returns across asset classes are similar, AQR expects a portfolio that is diversified equally by risk to perform better. The Global Risk Premium strategy aims to deliver efficient market exposure across four broad asset classes in a risk balanced fashion.

Baillie Gifford – ACWI ex US Focus Equities

ACWI ex US Focus is a fundamental growth strategy. Research is organized primarily by regional teams, with each member of the ACWI ex US Focus Portfolio Construction Group representing a regional team. Four global sector groups also contribute research. Baillie Gifford conducts approximately 2000 company meetings annually both in Edinburgh and onsite. Companies are evaluated on their growth opportunity relative to the average company, their ability to execute on that opportunity, and the degree to which probability of future success is already valued by the market. Baillie Gifford's basic philosophy is that share prices ultimately follow earnings. They believe that the stock market has a recurring tendency to under-appreciate the value of long-term compound growth. The process seeks to add value through use of proprietary fundamental research to identify companies exhibiting some combination of sustained above average growth, and attractive financial characteristics. The portfolio generally holds 80-120 stocks, with country and sector weights +/-6% relative to the index and industry weights +/- 5% relative to the index.

Beach Point Capital Management, L.P. - Beach Point Select Fund

Beach Point Select Fund is a commingled fund vehicle within the firm's Opportunistic Credit strategy. This fund focuses on off-the-run, complex, and less-liquid securities. It is a best ideas portfolio of distressed debt, special situations, private/direct loans, catalyst-driven high yield bonds and bank loans, and credit-informed equities with a North American and European focus. The Select Fund differs from other funds and accounts in the Opportunistic Credit strategy by pursuing a more concentrated portfolio and emphasizing a higher percentage of less-liquid/private investments. Beach Point invests up and down the entire capital structure and it constructs portfolios with a bottom-up, research-driven approach that also takes into account top-down macro considerations. Its investment process includes idea generation, detailed credit analysis, relative value decision making and investment selection, portfolio construction and on-going monitoring. The ultimate goal of its investment process is to produce a well-diversified investment portfolio with limited downside risk and substantial upside potential.

BlackRock – EAFE Index

The EAFE Index Fund seeks to replicate the return of the MSCI EAFE Index. This index represents the developed equity markets outside of North America: Europe, Austral, Asia and the Far East.

BlackRock – Intermediate Government Index

The Intermediate Government Index Fund seeks to track the results of an index composed of U.S. dollar-denominated government, government related, and investment grade U.S. corporate bonds with maturities between 1 and 10 years.

BlackRock – Russell 1000 Index

The Russell 1000 Index Fund tracks large U.S. companies and achieve broad diversification with low costs by fully replicating the Russell 1000 Index.

Brigade – Opportunistic Credit

Opportunistic Credit is a fundamental, bottom-up strategy focused on high yield corporate bonds and bank loans with tactical allocations to structured securities, convertibles and other sectors of the bond markets as they become attractive on a relative value basis. While performing credits represent the majority, Brigade will invest up to 35% of the portfolio in distressed securities and restructuring situations if these types of opportunities are attractive on a risk-adjusted basis and the timing is right with respect to the credit cycle. The portfolio is comprised of mostly North American issuers, but they are not restricted geographically and expect to have a moderate allocation to Europe over time. Although the portfolio is generally long-only, Brigade has the ability to implement a limited amount of tactical macro hedges.

Brown Brothers Harriman – Inflation Indexed Securities

BBH manages TIPS using three main types of strategies: Fundamental, Technical and Opportunistic. The Fundamental bucket has two sub-strategies, real yield duration and real yield curve slope vs. nominal yield curve slope. The Technical strategies consist of yield curve roll-down, auction cycle trading, seasonal vs. non-seasonal CPI and security selection/option value analysis. Finally, nominal Treasuries vs. TIPS, sector relative value (i.e., corporate or Agency inflation-linked bonds) and non-Dollar inflation-linked bonds make up the Opportunistic group. Real yield duration is held to +/- 1 year vs. the benchmark and the portfolio has a limited allocation to non-index securities, typically 5-10% with a maximum of 20% (including nominal Treasuries).

Cushing MLP Alpha TR

A strategy focusing on bottom-up research of company and sectors that will allow them to identify superior distribution growth opportunities in public MLPs.

DE Shaw – DE Shaw US Broad Market Core Alpha Extension Fund

The D. E. Shaw group believes that there exist some market inefficiencies that may be identified through quantitative analysis, advanced technology, and the insight of practitioners. Identifying these inefficiencies involves a process of hypothesis formulation, testing, and validation. Importantly, to avoid data-mining, the hypothesis formulation precedes the analysis of the historical data. D.E. Shaw's Structured Equity strategies rely largely on quantitative and computational investment techniques developed by the D. E. Shaw over the last 19 years in the course of research conducted for purposes of managing the firm's hedge funds. In addition to its beta one strategies, D.E. Shaw manages substantial assets in its hedge fund strategies. D.E. Shaw's investment process involves a suite of quantitative models, each designed to capitalize on a distinct and uncorrelated set of market inefficiencies. Some of these models are technical in nature and involve price and volume inputs. Other models rely on fundamental data, such as figures gleaned from corporate balance sheets or income statements. Still others, again quantitative, anticipate or react to a particular corporate event or set of events. These models typically operate with forecast horizons of a few weeks to many months. The ability to trade on shorter-term signals distinguishes D.E. Shaw from many of its long only and 130/30 peers. Portfolio construction involves the use of a proprietary optimizer which runs dynamically throughout the trading day. The portfolio is broadly diversified with several hundred long and short positions. Over- and under-weighting of sectors and industries relative to the benchmark will be quite modest, with the intention that most of the alpha be generated by security selection. The US Broad Market Core Alpha Extension Fund is a 130/30 strategy which maintains a beta that is approximately neutral to the Russell 1000 Index.

Eaton Vance/Parametric – Structured Emerging Markets Core Equity

Parametric utilizes a structured, rules-based approach, which they believe is capable of generating enhanced returns with lower volatility compared to both traditional active management and passive capitalization weighted indices. The basic idea is to structure the portfolio with more balanced country weights than the market cap weighted indices, and also to capture a rebalancing premium. This provides more diversification and greater exposure to smaller countries than is provided by the market cap weighted indices. The approach is to divide emerging markets countries into three tiers, and to equally weight the countries within each tier. Tier 1 countries are the largest eight countries that dominate the cap weighted index. Each successive tier is comprised of smaller countries, each of which is given a smaller target weighting in the model portfolio. In aggregate, the eight Tier 1 countries are given a much lower weighting than in the capitalization weighted index, but they nevertheless comprise more than 50% of the portfolio. The Core SEM strategy targets excess return of 3% over a market cycle with 2.5%-4.5% tracking error. It is designed to generate a level of volatility 90%-100% of the MSCI EM index. The strategy invests in 44 countries and will typically hold 700-1,000 securities. Turnover is expected to be in the range of 5%-15%.

Franklin Templeton Investments – Global Fixed Income

Franklin Templeton manages the global bond mandate in an unconstrained fashion using a top-down, fundamental framework. In the short term and on a country-by-country basis there are often inefficiencies in global bond and currency markets, however, over the longer term the market will generally price to fundamentals. Thus, FT focuses on fundamental research to identify long-term opportunities and uses short-term market inefficiencies to build positions in such investments. The investment and portfolio construction process begins with the determination of the Fund's or institutional client's investment objectives, resulting in a set of risk-return parameters and exposure limits within which the portfolio is managed. Next the firm's global economic outlook for the industrialized countries is developed, with a focus on interest rate and exchange rate forecasts. The portfolio's interest rate outlook is a function of global general equilibrium macroeconomic analysis as well as country-specific research. Macroeconomic conditions in the G-3 economies are analyzed first, primarily with respect to how current and projected growth and inflation dynamics are expected to influence monetary policy. This analysis is then extended out to the rest of the industrialized countries (G-13) as well as emerging markets, which results in broad targets for cash, duration, currencies and the developed/emerging market mix. Using the firm's interest rate and exchange rate outlook, probability-weighted horizon returns for bonds of various countries are then calculated. This analysis is used to establish specific country weights and duration targets based on risk-adjusted expected total return measured in the portfolio's base currency. Analysis of emerging markets includes sovereign credit analysis along with greater emphasis on capital flows, inter-market dynamics and trends in the level of risk aversion in the market.

INVESCO Realty Advisors – INVESCO Core Equity, LLC

SamCERA is a founding member of INVESCO's open-end Core Equity real estate fund and rolled its separate account properties into the fund. INVESCO Core Equity, LLC (the "Fund") is a perpetual life, open-end vehicle which invests in a diversified portfolio of institutional quality office, retail, industrial and multifamily residential real estate assets. The Fund buys core properties that are located within the United States, typically requiring an investment of \$10 million or more. The portfolio cannot be more than 30% leveraged.

INVESCO Realty Advisors – INVESCO US Val IV

Invesco has provided SamCERA with Core Real Estate exposure since 2004 through the Invesco Core Equity Fund. The Invesco real estate team manages around \$62B in assets with investments and offices around the globe. Invesco Value Fund IV will look to acquire fundamentally sound but broken "core" assets that can be repositioned into institutional-quality, income producing properties. Investments will be limited to direct equity interests in office, multi-family, retail and industrial properties across the US. The Fund is expected to be geographically concentrated in U.S. gateway cities and top 25 Metropolitan Statistical Areas (MSA's). Invesco Value Fund IV will provide a nice compliment to the more conservative Invesco Core Fund and offer the potential of enhanced returns to the SamCERA Real Estate portfolio.

Mondrian Investment Partners – International Equity

Mondrian is a value-oriented, defensive manager whose investment philosophy is based on the principle that investments must be evaluated for their fundamental long-term value. The firm's philosophy involves three stated investment objectives: 1) provide a rate of return meaningfully greater than the client's domestic rate of inflation, 2) structure client portfolios that preserve capital during protracted international market declines, and 3) provide portfolio performance that is less volatile than benchmark indices and other international managers. Mondrian applies typical value screening criteria to a universe of 1,500 stocks, from which 500 are selected for more detailed work. Through fundamental research, and the deliberations of the Investment Committee, the universe is further reduced to a list of 150 stocks. The investment team conducts detailed fundamental analysis on the remaining stocks, a process which includes applying the firm's dividend discount model consistently across all markets and industries. Mondrian also uses a purchasing power parity model to give an accurate currency comparison of the value of the stocks under consideration. The firm will only consider buying stocks in countries with good investor protection practices and relatively simple repatriation procedures. A computer-based optimization program is employed in the portfolio construction process. Mondrian's portfolio holds 80-125 issues.

PanAgora Asset Management – Defensive U.S. Equity Low Volatility

PanAgora's Defensive Equity strategy seeks to balance risk exposures within the portfolio across multiple dimensions to achieve true diversification. The Defensive Equity approach is used to construct equity portfolios designed to achieve tailored exposure to certain factors, including low volatility, multi-factor (value, quality, and momentum), and high dividend yield while maintaining less risk concentration throughout the portfolio.

Panagora – Diversified Risk Multi Asset Fund

The Multi Asset team is headed up by Edward Qian, CIO of the group, and the founder of Panagora’s risk parity strategy. A staff of approximately thirteen works in this group on research and portfolio construction, with some people spending more time on the former and some more on the latter. Panagora implements risk parity by distinguishing between three categories of assets: equities, nominal fixed income, and inflation protection. Each of these categories corresponds to a respective economic environment: economic growth, economic contraction and inflation. Panagora’s risk allocation targets 40% each from equities and nominal fixed income, and 20% from inflation protection. In addition to applying concept of risk parity between asset classes, Panagora also applies it within each asset class. The 40/40/20 allocation to equities/nominal fixed income/inflation protection is a long term strategic allocation. In 2009 Panagora introduced what they refer to as “Dynamic Risk Allocation” or “DRA,” which involves tactically tilting the risk allocations away from the neutral targets in order to enhance returns and reduce risk.

Parametric Currency Overlay – Currency Hedge

An overlay hedge placed on half of the notional value of international equities. The portfolio uses Parametric for this overlay.

PIMCO Diversified

PIMCO Diversified Income Fund offers a broad and flexible multi-credit approach in a liquid and cost-effective format. The Diversified Income Fund seeks to produce consistent above benchmark performance using diversified sources of alpha from a universe that includes global credit as well as “non-core” credit sectors (ex., securitized, emerging markets).

PGIM RE Debt

PGIM Real Estate US Debt Fund focuses on a loan origination strategy with a mix of 20% senior long duration loans on stable assets, 60% senior short/medium duration loans on stable and transitional assets, and 20% mezzanine mid/long duration debt.

Pyramis Global Advisors – Broad Market Duration Commingled Pool

Pyramis’ Broad Market Duration (BMD) investment strategy seeks to achieve absolute and risk-adjusted returns in excess of the BC U.S. Aggregate Index, focusing its investments in US Treasuries, agencies, investment grade corporate bonds, mortgage-backed and asset-backed securities. The BMD commingled pool can also hold small, opportunistic positions in out-of-benchmark securities, such as inflation-linked bonds. The investable universe includes all US dollar denominated, investment grade debt securities. The BMD investment approach emphasizes issuer and sector valuation and individual security selection. Through the integration of fundamental and quantitative research and trading, the BMD strategy is implemented in a team environment. Risk management technology is utilized to explicitly quantify benchmark exposures on a daily basis, and Pyramis uses the same analytical framework to assess both index and portfolio risk. Tracking error should range between 40 and 60 basis points per annum over the benchmark, and stringent portfolio construction risk control rules are strictly adhered to.

Pyramis Global Advisors – Select International Small Cap

Pyramis Select International Small Cap is a core strategy. The approach is designed to leverage Pyramis/Fidelity's proprietary resources to add value exclusively via stock selection. To that end the portfolio is constructed to be regionally neutral, with only modest deviations from the benchmark's country and sector weights. The investment process involves three basic stages. The first stage is the security level research conducted by the analysts. The second stage is stock selection from within the pool of names that are highly ranked by the analysts. The third step is portfolio construction and risk management. The essential differentiating feature of this strategy is the breadth of coverage that is made possible by the large staff of analysts. Analysts actively conduct regular fundamental research on, and give a formal rating of 1-5, 1200-1300 international small cap companies. While there is no single firm-wide approach to security research, analysts are expected to establish an upside target for any given stock and assign a formal rating. The decision-making structure is quite efficient, with portfolio manager Rob Feldman making all the buy and sell decisions. His role, as he puts it, is to be an intelligent user of the analysts' research. He selects the 1- and 2- rated stocks that he thinks are compelling and additive to his portfolio, and he sells names when they are downgraded by the analysts. There are approximately 200 holdings in the portfolio. Country and sector weights are within 3 percentage points of the benchmark and position sizes are within 2 percentage points of the benchmark. Turnover tends to be in the 60%-80% range.

Quantitative Management Associates – QMA Small-Cap Core

Quantitative Management Associates (QMA) utilizes a bottom-up quantitative framework in order provide a diversified exposure to core U.S. small-cap stocks, while attempting to produce consistent outperformance versus the benchmark with moderate tracking error levels. QMA uses an adaptive, systematic investment process to exploit opportunities created by mispriced securities to consistently add value over long time periods. Bottom-up stock selection drives exposure to key sources of alpha (valuation, growth, and quality). The QMA stock selection model adapts to changes in company growth rates and market environments by putting more emphasis on valuation for slowly growing companies, and more emphasis on future growth projections for companies with higher projected growth rates.

Standard Life Aberdeen Global Absolute Return Strategy (GARS)

The Standard Life Aberdeen Global Absolute Return Strategy (GARS) was initially launched in 2005 to help address Standard Life's own pension plan's deficit problem. GARS' primary investment objective is to deliver a positive absolute return over the medium to long term with lower volatility than equities, irrespective of market conditions. It seeks returns through dynamic allocation to investment opportunities in traditional and advanced asset classes, and also separately exploits the team's security selection expertise. In the search for attractive investment positions, the team follows a rigorous research process. This includes a variety of research techniques, including broad global macro-economic, fundamental analysis, quantitative research and valuation modeling. The GARS investment process is designed to capitalize on an array of research and investment techniques and draws together the team's three-year investment insights. The team then rigorously examines and review position proposals to approve a high conviction, short list of positions that work well together. Having a cash benchmark means that GARS has a potentially unrestricted investment universe and all portfolio holdings are at the Portfolio Manager's discretion. The GARS portfolio also routinely uses a variety of conventional derivatives for investment, liquidity, efficiency and hedging purposes. The GARS strategy has experienced significant growth in its asset under management since it becomes available to external investors in 2006.

State Street Global Advisors (SSgA) Custom Real Asset

SSgA Custom Real Asset portfolio uses a portfolio of liquid real assets to proxy private real assets. The portfolio is comprised of equal weightings of the Bloomberg Commodity Index, S&P Global Natural Resources Index, and S&P Global Infrastructure Index. The portfolio is used to fund upcoming private real asset mandates.

Tennenbaum Capital Partners - TCP Direct Lending Fund VIII

TCP Direct Lending Fund VIII is a private investment fund managed by Tennenbaum Capital Partners ("TCP"). The Fund is designed to continue TCP's successful strategy of investing in privately-originated, performing senior secured debt primarily in North America-based companies with target enterprise values between \$100 million and \$1.5 billion. The Fund will include positions in 1st lien, 2nd lien and unitranche debt, with a preference for floating-rate debt, which TCP believes provides better flexibility to adapt to market conditions. TCP's direct lending strategy has generated attractive investment opportunities across market cycles, as evidenced by the Firm's prior direct lending track record. Fund VIII targets an unlevered annual yield of approximately 9-12%, with its return primarily driven by current income.

Western Asset Management – Total Return Unconstrained (TRU)

Western Asset's Total Return Unconstrained strategy (TRU) seeks to provide bond-like risk and return over the long term but does not have a benchmark. This allows for asset allocation based on value rather than using the construction of a benchmark as baseline positioning. The investment approach is active with very broad latitude on duration (-3 to +8 years) and on asset allocation across all of the eligible sectors in a core plus mandate. The portfolio must have at least 50% of its holdings in investment-grade securities. The flexibility offered by this strategy allows for defensive positioning in rising rate environments and opportunistic deployment of capital when value opportunities arise. It also allows the portfolio managers to emphasize (or deemphasize) either credit or rates when one or the other appears to offer greater (or lesser) value. um non-US exposure.

White Oak - White Oak Yield Spectrum Fund

The White Oak Yield Spectrum Fund's objective is to earn substantial current income by originating, extending, and/or investing in a diversified portfolio of primarily senior secured corporate credit and debt instruments consisting of term loans, asset-based loans and equipment leases and loans issued by small to middle-market companies located primarily in the United States and Canada. It focuses on providing self-originated deals for predominantly non-sponsored, privately-held borrowers.

Policy Index and Benchmark History

Period Ending: December 31, 2018

Total Plan Policy Index	As of																			
	10/1/18	4/1/18	10/1/17	2/1/17	1/1/17	10/1/16	9/1/16	1/1/16	7/1/14	1/1/14	2/1/13	1/1/11	10/1/10	1/1/09	5/1/07	6/1/00	3/1/99	9/1/98	7/1/96	
10 Year Treasury +2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
60/40 MSCI World/BBgBarc Global Aggregate (RP)	8.0%	8.0%	8.0%	8.0%	8.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
60/40 Russell 3000/BBgBarc US Aggregate (RP)	0.0%	0.0%	0.0%	0.0%	0.0%	8.0%	8.0%	8.0%	8.0%	8.0%	6.0%	6.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc Aggregate	14.0%	14.0%	14.0%	12.0%	10.0%	10.0%	10.0%	10.0%	10.0%	9.3%	11.0%	11.0%	12.9%	27.0%	27.0%	29.0%	25.0%	21.0%	21.0%	21.0%
BBgBarc BA Intermediate HY	7.0%	7.0%	7.0%	6.0%	6.0%	6.0%	5.0%	5.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
BBgBarc BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
BBgBarc Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
BBgBarc Multiverse	0.0%	0.0%	0.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.8%	4.4%	4.4%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
BBgBarc TIPS	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	3.1%	3.3%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Bloomberg Commodity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Citigroup non-US WGBI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	9.0%	9.0%	
CPI + 5% (RA)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	2.0%	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Blended Liquid Real Asset	6.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Blended Private Real Asset	2.0%	2.0%	8.0%	7.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Libor +4% (HF)	6.0%	6.0%	6.0%	6.0%	5.0%	5.0%	5.0%	5.0%	4.0%	4.0%	3.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
MSCI ACWI ex-US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.0%	18.0%	18.0%	21.0%	21.0%	15.0%	0.0%	0.0%	0.0%	
MSCI ACWI ex US 100% Hedged NR	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
MSCI ACWI ex-US IMI	0.0%	0.0%	0.0%	19.0%	19.0%	19.0%	20.0%	20.0%	20.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
MSCI ACWI ex-US IMI (Net)	19.0%	19.0%	19.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	20.0%	20.0%	
NCREIF ODCE	8.0%	8.0%	8.0%	7.0%	7.0%	7.0%	7.0%	7.0%	6.0%	6.0%	5.0%	5.0%	5.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
NCREIF Property	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%	6.0%	6.0%	0.0%	0.0%	
Russell 1000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	24.0%	24.0%	24.0%	28.0%	28.0%	28.0%	37.0%	37.0%	40.0%	22.0%	20.0%	20.0%	
Russell 1000 Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	5.0%	0.0%	
Russell 2000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	6.0%	6.0%	7.0%	7.0%	7.0%	9.0%	9.0%	10.0%	15.0%	15.0%	15.0%	
Russell 3000	22.0%	21.0%	21.0%	23.0%	28.0%	28.0%	28.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Russell 3000 +3% (PE)	0.0%	0.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	8.0%	8.0%	8.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Russell 3000 +3% 1Q Lag (PE)	6.0%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
S&P 500	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Policy Index and Benchmark History

Period Ending: December 31, 2018

Public Equity Benchmark	As of:												
	10/1/18	10/1/17	2/1/17	10/1/16	9/1/16	1/1/16	1/1/14	10/1/10	5/1/07	6/1/00	3/1/99	9/1/98	1/1/96
MSCI ACWI ex-US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	34.0%	31.3%	23.1%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI	46.3%	47.5%	45.2%	40.4%	41.7%	41.7%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	32.3%	33.3%	33.3%
Russell 1000	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	48.0%	52.8%	55.2%	61.5%	35.5%	33.3%	33.3%
Russell 1000 Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.0%	8.4%	0.0%
Russell 2000	0.0%	0.0%	0.0%	0.0%	0.0%	8.3%	12.0%	13.2%	13.5%	15.4%	24.2%	25.0%	25.0%
Russell 3000	53.7%	52.5%	54.8%	59.6%	58.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
S&P 500	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.4%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

US Equity Benchmark	As of:						
	9/1/16	1/1/16	6/1/00	3/1/99	9/1/98	7/1/96	1/1/95
Russell 1000	0.0%	85.7%	80.0%	52.0%	50.0%	50.0%	69.0%
Russell 1000 Value	0.0%	0.0%	0.0%	12.0%	12.5%	0.0%	0.0%
Russell 2000	0.0%	14.3%	20.0%	36.0%	37.5%	37.5%	14.0%
Russell 3000	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
S & P 500	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	17.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

International Equity Benchmark	As of:			
	10/1/17	1/1/14	6/1/00	1/1/96
MSCI ACWI ex US	0.0%	0.0%	100.0%	0.0%
MSCI ACWI ex US 100% Hedged NR	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI	0.0%	100.0%	0.0%	0.0%
MSCI ACWI ex US IMI (Net)	100.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	100.0%
	100.0%	100.0%	100.0%	100.0%

Fixed Income Benchmark	As of:											
	10/1/17	2/1/17	10/1/16	4/1/16	7/1/14	1/1/14	2/1/13	1/1/11	10/1/10	6/1/00	3/1/99	7/1/96
BBgBarc Aggregate	66.7%	57.1%	52.6%	55.5%	50.0%	46.3%	50.0%	50.0%	58.6%	100.0%	83.3%	70.0%
BBgBarc BA Intermediate HY	33.3%	28.6%	31.6%	27.8%	25.0%	25.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.3%	0.0%	0.0%	0.0%
BBgBarc Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.0%	15.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc Multiverse	0.0%	14.3%	15.8%	16.7%	15.0%	18.8%	20.0%	20.0%	20.5%	0.0%	0.0%	0.0%
BBgBarc TIPS	0.0%	0.0%	0.0%	0.0%	10.0%	10.0%	14.0%	15.0%	13.6%	0.0%	0.0%	0.0%
Citigroup non-US WGBI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.7%	30.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Opportunistic Credit Benchmark	As of:	
	1/1/14	12/1/09
BBgBarc BA Intermediate HY	100.0%	0.0%
BBgBarc Credit BAA	0.0%	100.0%
	100.0%	100.0%

Risk Parity Benchmark	As of:	
	1/1/17	10/1/10
BBgBarc Aggregate	0.0%	40.0%
BBgBarc Global Aggregate	40.0%	0.0%
MSCI World	60.0%	0.0%
Russell 3000	0.0%	60.0%
	100.0%	100.0%

RP Secondary Benchmark	As of:	
	1/1/17	10/1/10
BBgBarc Aggregate	40.0%	0.0%
BBgBarc Global Aggregate	0.0%	40.0%
MSCI World	0.0%	60.0%
Russell 3000	60.0%	0.0%
	100.0%	100.0%

Policy Index and Benchmark History

Period Ending: December 31, 2018

Alternatives Benchmark	As of:						
	10/1/18	4/1/18	2/1/17	4/1/16	1/1/16	1/1/14	1/1/11
60/40 Russell 3000/BBgBarc US Aggregate (RP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	30.0%
Bloomberg Commodity	0.0%	0.0%	0.0%	0.0%	17.7%	18.8%	15.0%
CPI + 5% (RA)	0.0%	0.0%	0.0%	0.0%	11.8%	12.5%	0.0%
Libor +4% (HF)	50.0%	46.2%	46.2%	41.7%	29.4%	25.0%	15.0%
Russell 3000 +3% (PE)	0.0%	0.0%	53.8%	58.3%	41.2%	43.8%	40.0%
Russell 3000 +3% 1Q Lag (PE)	50.0%	53.8%	0.0%	0.0%	0.0%	0.0%	0.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Private Equity Benchmark	As of:	
	4/1/18	10/1/10
Russell 3000 +3% 1Q Lag	100.0%	0.0%
Russell 3000 +3%	0.0%	100.0%
	100.0%	100.0%

Hedge Fund Benchmark	As of:	
	10/1/10	
Libor +4%	100.0%	
	100.0%	

Inflation Hedge	As of:			
	4/1/18	2/1/17	10/1/16	4/1/16
BBgBarc TIPS	11.11%	12.50%	14.3%	14.3%
Bloomberg Commodity	0.00%	0.00%	0.0%	21.4%
CPI + 5% (RA)	0.00%	0.00%	0.0%	14.3%
Blended Liquid Real Asset	33.34%	0.00%	0.0%	0.0%
Blended Private Real Asset	11.11%	43.75%	35.7%	0.0%
NCREIF ODCE	44.44%	43.75%	50.0%	50.0%
	100.0%	100.0%	100.0%	100.0%

Public Real Asset Benchmark	As of:	
	10/1/16	1/1/14
Bloomberg Roll Select Commodity	34.00%	0.00%
S&P Global Large-MidCap Commodity and Resources	33.00%	0.00%
S&P Global Infrastructure	33.00%	0.00%
CPI + 5%	0.00%	100.00%
	100.0%	100.0%

Private Real Asset Benchmark	As of:		
	4/1/18	10/1/16	1/1/14
Bloomberg Roll Select Commodity	0.00%	34.00%	0.0%
S&P Global Large-MidCap Commodity and Resources	0.00%	33.00%	0.0%
50/50 S&P Global Infra & Lrg-MidCap Com & Resources +2% 1QL	100.00%	0.00%	0.0%
S&P Global Infrastructure	0.00%	33.00%	0.0%
CPI + 5%	0.00%	0.00%	100.0%
	100.0%	100.0%	100.0%

Private RA Secondary Benchmark	As of:	
	9/1/14	
Cambridge Associates Private Natural Resources 1 Qtr Lag	50.0%	
Cambridge Associates Private Infrastructure 1 Qtr Lag	50.0%	
	100.0%	

Real Estate Benchmark	As of:		
	1/1/09	6/1/00	7/1/96
10 Year Treasury +2%	0.0%	0.0%	100.0%
NCREIF ODCE	100.0%	0.0%	0.0%
NCREIF Property	0.0%	100.0%	0.0%
	100.0%	100.0%	100.0%

Policy Index and Benchmark History

Period Ending: December 31, 2018

Baillie Gifford Benchmark	As of:	
	1/1/14	5/1/12
MSCI ACWI ex-US	100.0%	0.0%
MSCI EAFE	0.0%	100.0%
	100.0%	100.0%

Baillie Gifford Secondary Benchmark	As of:	
	1/1/14	5/1/12
MSCI ACWI ex-US Growth	100.0%	0.0%
MSCI EAFE Growth	0.0%	100.0%
	100.0%	100.0%

Brigade Secondary Benchmark	As of:	
	8/1/10	
BBgBarc High Yield	50.0%	
Credit Suisse Leveraged Loans	50.0%	
	100.0%	

AQR GRP, 10% Volatility	As of:	
	1/1/17	3/1/11
BBgBarc Aggregate	0.0%	40.0%
BBgBarc Global Aggregate	40.0%	0.0%
MSCI World	60.0%	0.0%
Russell 3000	0.0%	60.0%
	100.0%	100.0%

PanAgora	As of:	
	1/1/17	8/1/14
BBgBarc Aggregate	0.0%	40.0%
BBgBarc Global Aggregate	40.0%	0.0%
MSCI World	60.0%	0.0%
Russell 3000	0.0%	60.0%
	100.0%	100.0%

PIMCO Diversified	As of:	
	9/1/17	
JPMorgan EMBI Global	33.3%	
ICE BofAMLBB-BRatedDvlpdMktsHYHdgdUSD	33.3%	
Global Agg Credit Ex EM USD hedged	33.4%	
	100.0%	

Fee Schedule

Period Ending: December 31, 2018

Baillie Gifford

First \$25 million:	0.60% per annum
Next \$75 million:	0.50% per annum
Next \$300 million:	0.40% per annum
Thereafter:	0.30% per annum

BlackRock-EAFE Equity Index Fund

On All Assets:	0.05% per annum
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BlackRock-Russell 1000 Index Fund

First \$250 million:	0.02% per annum
Thereafter:	0.015% per annum

BlackRock-Intermediate Govt Bond Index Fund

On All Assets:	0.04% per annum
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Brown Brothers Harriman

On All Assets:	0.15% per annum
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Parametric

On All Assets:	0.30% per annum
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Acadian Asset Management

First \$50 million:	0.27% per annum
Next \$50 million:	0.225% per annum
Thereafter:	0.18% per annum

Clifton Group

First \$50 million:	0.12% per annum
Next \$100 million:	0.10% per annum
Thereafter:	0.05% per annum
Plus monthly reporting fee of \$1500	

Cushing Asset Management

First \$50 million:	0.70% per annum
Next \$50 million:	0.60% per annum
Thereafter:	0.55% per annum

Franklin Templeton Investment

First \$50 million:	0.40% per annum
Next \$50 million:	0.30% per annum
Thereafter:	0.25% per annum

FIAM Bond

First \$50 million:	0.20% per annum
Next \$50 million:	0.175% per annum
Next \$100 million:	0.10% per annum
Thereafter:	0.085% per annum

PanAgora Asset Management

First \$50 million:	0.25% per annum
Next \$50 million:	0.15% per annum
Thereafter:	0.10% per annum

PIMCO Diversified

On All Assets:	0.75% per annum
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QMA

First \$50 million:	0.55% per annum
Thereafter:	0.50% per annum

Western Asset Management

On All Assets:	0.25% per annum
Performance Fee:	20.00%

Mondrian Investment Partners

Assets Below \$190 million

First \$20 million:	1.00% per annum
Thereafter:	0.33% per annum

Assets Above \$190 million

First \$50 million:	1.00% per annum
Next \$150 million:	0.19% per annum
Thereafter:	0.33% per annum

Name	Primary Benchmark	Rule 1	Rule 2	Rule 3
Acadian US MGD V	Russell 1000	--	--	--
DE Shaw	Russell 1000	✓	✓	✓
PanAgora Defuseq	Russell 1000	--	--	--
QMA US Small Cap	Russell 2000	--	--	--
Baillie Gifford	MSCI ACWI ex US	✓	R	✓
Mondrian	MSCI ACWI ex USA Value Gross	✓	✓	✓
Parametric Core	MSCI Emerging Markets Gross	--	--	--
FIAM Bond	BBgBarc US Aggregate TR	✓	✓	✓
Western TRU	3-Month Libor Total Return USD	--	--	--
Angelo Gordon Opportunistic	BBgBarc US Aggregate TR	--	--	--
Angelo Gordon STAR	BBgBarc US Aggregate TR	✓	--	✓
Beach Point Select	BBgBarc BA Intermediate HY	--	--	--
Brigade Capital	BBgBarc BA Intermediate HY	R	R	R
PIMCO Diversified	Blended PIMCO Diversified Index	--	--	--
Franklin Templeton	BBgBarc Multiverse TR	--	--	--
TCP Direct Lending VIII	Cliffwater Direct Lending Index	--	--	--
White Oak Yield	Cliffwater Direct Lending Index	--	--	--
AQR DELTA XN	Libor 1 month +4%	R	R	R
Aberdeen Standard GARS	Libor 1 month +4%	--	--	--

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

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

Rule 3 - Excess 5 Year Sharpe Ratio vs. Benchmark is positive

Name	Primary Benchmark	Rule 1	Rule 2	Rule 3
Acadian US MGD V	Russell 1000	--	--	--
DE Shaw	Russell 1000	✓	✓	✓
PanAgora Defuseq	Russell 1000	--	--	--
QMA US Small Cap	Russell 2000	--	--	--
Baillie Gifford	MSCI ACWI ex US	✓	R	✓
Mondrian	MSCI ACWI ex USA Value Gross	✓	✓	✓
Parametric Core	MSCI Emerging Markets Gross	--	--	--
FIAM Bond	BBgBarc US Aggregate TR	✓	✓	✓
Western TRU	3-Month Libor Total Return USD	--	--	--
Angelo Gordon Opportunistic	BBgBarc US Aggregate TR	--	--	--
Angelo Gordon STAR	BBgBarc US Aggregate TR	✓	--	✓
Beach Point Select	BBgBarc BA Intermediate HY	--	--	--
Brigade Capital	BBgBarc BA Intermediate HY	R	✓	R
PIMCO Diversified	Blended PIMCO Diversified Index	--	--	--
Franklin Templeton	BBgBarc Multiverse TR	--	--	--
TCP Direct Lending VIII	Cliffwater Direct Lending Index	--	--	--
White Oak Yield	Cliffwater Direct Lending Index	--	--	--
AQR DELTA XN	Libor 1 month +4%	R	R	R
Aberdeen Standard GARS	Libor 1 month +4%	--	--	--

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

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

Rule 3 - Excess 5 Year Sharpe Ratio vs. Benchmark is positive

Manager Performance Comparison (Gross of Fees)

Period Ending: December 31, 2018

	Oct	Nov	Dec	4th Qtr. 2018	Difference	3rd Qtr. 2018	Difference	2nd Qtr. 2018	Difference	1st Qtr. 2018	Difference	4th Qtr. 2017	Difference
Verus	-7.07%	2.04%	-9.09%	-13.79%		7.41%		3.59%		-0.69%		6.58%	
BlackRock Russell 1000	-7.07%	2.04%	-9.09%	-13.79%	0.00%	7.41%	0.00%	3.59%	0.00%	-0.69%	0.00%	6.59%	0.00%
Russell 1000 Index	-7.08%	2.04%	-9.11%	-13.82%		7.42%		3.57%		-1.19%		4.90%	
Verus	-8.12%	1.19%	-7.54%	-14.04%		7.23%		4.31%		-0.32%		6.38%	
D.E. Shaw	-8.12%	1.19%	-7.54%	-14.04%	0.00%	7.24%	-0.01%	4.32%	-0.01%	-0.31%	-0.01%	6.39%	-0.01%
Russell 1000 Index	-7.08%	2.04%	-9.11%	-13.82%		7.42%		3.57%		-1.19%		4.90%	
Verus	-9.70%	-0.22%	-11.79%	-20.52%		3.70%		6.98%		-0.51%		2.34%	
QMA US Small Cap (Net)	-9.70%	-0.22%	-11.79%	-20.52%	0.00%	3.70%	0.00%	6.98%	0.00%	-0.51%	0.00%	2.34%	0.00%
Russell 2000 Index	-10.86%	1.59%	-11.88%	-20.20%		3.58%		7.75%		-0.08%		3.34%	
Verus	-11.70%	1.11%	-5.12%	-15.28%		-1.31%		0.36%		-0.75%		4.95%	
Baillie Gifford (Net)	-11.70%	1.11%	-5.12%	-15.28%	0.00%	-1.29%	-0.01%	0.35%	0.00%	-0.74%	-0.01%	4.92%	0.03%
MSCI ACWI ex US	-8.12%	0.96%	-4.49%	-11.41%		0.80%		-2.39%		-1.08%		5.06%	
MSCI ACWI ex US Growth	-9.35%	1.52%	-4.55%	-12.16%		-0.20%		-1.23%		-0.80%		5.81%	
Verus	-7.97%	-0.13%	-4.83%	-12.52%		1.40%		-0.83%		-1.59%		4.26%	
BlackRock EAFE Equity	-7.97%	-0.13%	-4.83%	-12.52%	0.00%	1.40%	0.00%	-0.83%	0.00%	-1.59%	0.00%	4.26%	0.00%
MSCI EAFE (Net)	-7.96%	-0.13%	-4.85%	-12.54%		1.35%		-1.24%		-1.53%		4.23%	
MSCI EAFE (Gross)	-7.95%	-0.11%	-4.83%	-12.50%		1.42%		-0.97%		-1.41%		4.27%	
Verus	-5.81%	0.54%	-3.72%	-8.82%		1.54%		-3.43%		-1.24%		4.06%	
Mondrian	-5.80%	0.55%	-3.70%	-8.79%	-0.03%	1.55%	-0.01%	-3.43%	0.00%	-1.22%	-0.02%	4.02%	0.04%
MSCI ACWI -ex US Value Index	-6.86%	0.40%	-4.43%	-10.63%		1.85%		-3.59%		-1.36%		4.31%	
MSCI ACWI -ex US	-8.12%	0.96%	-4.49%	-11.41%		0.80%		-2.39%		-1.08%		5.06%	
Verus	-6.55%	2.96%	-2.10%	-5.81%		-0.11%		-9.47%		1.51%		5.24%	
Parametric Core	-6.54%	2.97%	-2.09%	-5.77%	-0.04%	-0.06%	-0.05%	-9.42%	-0.05%	1.56%	-0.05%	5.30%	-0.06%
MSCI EM Market Index	-8.70%	4.13%	-2.60%	-7.40%		-0.95%		-7.86%		1.47%		7.50%	

Manager Performance Comparison (Gross of Fees)

Period Ending: December 31, 2018

	Oct	Nov	Dec	4th Qtr. 2018	Difference	3rd Qtr. 2018	Difference	2nd Qtr. 2018	Difference	1st Qtr. 2018	Difference	4th Qtr. 2017	Difference
Verus	0.05%	0.70%	1.48%	2.24%		-0.07%		0.12%		-0.67%		-0.36%	
BlackRock Intermediate Govt	0.05%	0.70%	1.48%	2.24%	0.00%	-0.07%	0.00%	0.12%	0.00%	-0.67%	0.00%	-0.35%	-0.01%
BBgBarc US Govt Int Index	0.04%	0.68%	1.49%	2.22%		-0.11%		0.06%		-0.73%		-0.41%	
Verus	-0.88%	0.42%	1.54%	1.07%		0.15%		0.02%		-1.31%		0.47%	
FIAM Bond	-0.88%	0.42%	1.54%	1.07%	0.00%	0.15%	0.00%	0.02%	0.00%	-1.31%	0.00%	0.48%	-0.01%
BBgBarc US Aggregate Index	-0.79%	0.60%	1.84%	1.64%		0.02%		-0.16%		-1.46%		0.39%	
Verus	-1.61%	0.25%	2.13%	0.74%		0.17%		-2.90%		-0.69%		1.51%	
Western TRU	-1.61%	0.25%	2.13%	0.74%	0.00%	0.17%	0.00%	-2.90%	0.00%	-0.69%	0.00%	1.51%	0.00%
3-Month Libor Total Return USD Index	0.21%	0.23%	0.24%	0.68%		0.60%		0.59%		0.46%		0.39%	
BBgBarc US Aggregate Index	-0.79%	0.60%	1.84%	1.64%		0.02%		-0.16%		-1.46%		0.39%	
Verus (Net)				0.45%		5.35%		9.49%		5.70%		11.05%	
Angelo Gordon Opportunistic				0.45%	0.00%	5.35%	0.00%	9.49%	0.00%	5.70%	0.00%	11.05%	0.00%
BBgBarc US Aggregate Index				1.64%		0.02%		-0.16%		-1.46%		0.39%	
Verus (Net)				2.51%		6.59%		4.83%		7.54%		3.13%	
Angelo Gordon STAR Fund (Net)				2.51%	0.00%	6.59%	0.00%	4.83%	0.00%	7.54%	0.00%	3.13%	0.00%
BBgBarc US Aggregate Index				1.64%		0.02%		-0.16%		-1.46%		0.39%	
Verus	-0.86%	-0.87%	-2.30%	-3.98%		1.80%		2.01%		1.14%		1.79%	
Beach Point Select (Net)	-0.86%	-0.87%	-2.30%	-3.98%	0.00%	1.80%	0.00%	2.01%	0.00%	1.14%	0.00%	1.79%	0.00%
BBgBarc BA Intermediate HY	-1.29%	-0.13%	-1.27%	-2.67%		2.27%		0.04%		-1.49%		0.15%	
Verus	-1.26%	-1.66%	-2.74%	-5.56%		2.28%		1.53%		1.05%		0.33%	
Brigade Capital (Net)	-1.26%	-1.66%	-2.73%	-5.55%	-0.01%	2.21%	0.07%	1.56%	-0.03%	1.03%	0.02%	0.28%	0.05%
BBgBarc BA Intermediate HY	-1.29%	-0.13%	-1.27%	-2.67%		2.27%		0.04%		-1.49%		0.15%	
50% BBgBarc HY/ 50% Bank Loan	-0.80%	-0.84%	-2.22%	-3.81%		2.17%		0.91%		0.36%		0.82%	
Verus	-1.02%	-0.25%	0.01%	-1.26%		1.66%		-0.73%		-0.64%		0.82%	
PIMCO Diversified	-1.02%	-0.25%	0.01%	-1.26%	0.00%	1.66%	0.00%	-0.73%	0.00%	-0.64%	0.00%	0.82%	0.00%
Blended PIMCO Diversified Index	-1.41%	-0.45%	0.39%	-1.47%		1.65%		-1.13%		-1.26%		0.75%	
BBgBarc BA Intermediate HY	-1.29%	-0.13%	-1.27%	-2.67%		2.27%		0.04%		-1.49%		0.15%	
Verus	2.01%	0.69%	-0.56%	2.14%		0.32%		-4.32%		2.01%		-1.31%	
Franklin Templeton Investments	2.01%	0.69%	-0.56%	2.14%	0.00%	0.32%	0.00%	-4.32%	0.00%	2.01%	0.00%	-1.32%	0.01%
BBgBarc Multiverse Index	-1.10%	0.25%	1.89%	1.02%		0.00%		-2.83%		1.29%		1.06%	
Verus				1.75%		3.41%		2.15%		1.46%		4.67%	
TCP Direct Lending VIII				1.75%	0.00%	3.41%	0.00%	2.15%	0.00%	1.46%	0.00%	4.67%	0.00%
Cliffwater Direct Lending Index				2.38%		2.44%		2.18%		2.02%		1.97%	

Manager Performance Comparison (Gross of Fees)

Period Ending: December 31, 2018

	Oct	Nov	Dec	4th Qtr. 2018	Difference	3rd Qtr. 2018	Difference	2nd Qtr. 2018	Difference	1st Qtr. 2018	Difference	4th Qtr. 2017	Difference
Verus				2.03%		0.00%		0.00%		2.17%		0.51%	
White Oak Yield				2.03%	0.00%	0.00%	0.00%	0.00%	0.00%	2.17%	0.00%	0.51%	0.00%
Cliffwater Direct Lending Index				2.38%		2.44%		2.18%		2.02%		1.97%	
Verus	-4.32%	0.12%	-1.29%	-5.44%		0.30%		-0.45%		-1.21%		4.72%	
AQR GRP, 10% Volatility (Net)	-4.32%	0.12%	-1.29%	-5.44%	0.00%	0.30%	0.00%	-0.45%	0.00%	-1.21%	0.00%	4.72%	0.00%
60% R3000/ 40% BBgBarc Agg	-4.48%	0.88%	-3.98%	-7.49%		2.95%		1.12%		-0.67%		3.61%	
60% MSCI World/ 40% BBgBarc Glb	-4.73%	1.44%	-4.85%	-8.05%		4.25%		2.26%		-0.91%		3.93%	
Verus	-4.60%	1.59%	-1.05%	-4.10%		-2.11%		0.02%		-1.58%		4.38%	
PanAgora (Net)	-4.60%	1.59%	-1.05%	-4.10%	0.00%	-2.11%	0.00%	0.02%	0.00%	-1.58%	0.00%	4.38%	0.00%
60% R3000/ 40% BBgBarc Agg	-4.48%	0.88%	-3.98%	-7.49%		2.95%		1.12%		-0.67%		3.61%	
60% MSCI World/ 40% BBgBarc Glb	-4.73%	1.44%	-4.85%	-8.05%		4.25%		2.26%		-0.91%		3.93%	
Verus	-4.57%	-1.19%	1.49%	-4.31%		-1.94%		-6.09%		-3.86%		1.33%	
AQR DELTA XN (Net)	-4.57%	-1.19%	1.49%	-4.31%	0.00%	-1.94%	0.00%	-6.09%	0.00%	-3.86%	0.00%	1.33%	0.00%
Libor + 4%	0.52%	0.52%	0.54%	1.59%		1.55%		1.51%		1.29%		1.46%	
Verus	-2.15%	0.89%	-0.98%	-2.24%		0.54%		-2.18%		-1.88%		1.87%	
Aberdeen Standard GARS (Net)	-2.15%	0.89%	-0.97%	-2.25%	0.01%	0.54%	0.00%	-2.18%	0.00%	-1.88%	0.00%	1.87%	0.00%
Libor + 4%	0.52%	0.52%	0.54%	1.59%		1.55%		1.51%		1.29%		1.46%	
Verus				2.16%		2.56%		1.86%		2.42%		2.29%	
INVECO Real Estate				2.16%	0.00%	2.57%	-0.01%	1.85%	0.01%	2.46%	-0.04%	2.26%	0.00%
NCREIF NFI ODCE Index				1.76%		2.09%		2.05%		2.20%		2.07%	
Verus				4.25%		2.98%		1.97%		2.67%		2.09%	
Invesco US Val IV				4.25%	0.00%	2.98%	0.00%	1.97%	0.00%	2.67%	0.00%	2.09%	0.00%
NCREIF NFI ODCE Index				1.76%		2.09%		2.05%		2.20%		2.07%	
NCREIF CEVA 1Q Lag - NET				2.95%		2.95%		2.13%		3.41%		3.00%	
Verus (net)				1.64%		2.12%		1.25%		1.09%		2.52%	
PGIM RE US Debt Fund (net)				1.64%	0.00%	1.95%	0.17%	1.25%	0.00%	1.09%	0.00%	2.52%	0.00%
NCREIF NFI ODCE Index				1.76%		2.09%		2.05%		2.20%		2.07%	
Verus	-7.50%	-2.06%	-9.10%	-17.65%									
Cushing MLP Alpha TR (Net)	-7.50%	-2.06%	-9.10%	-17.65%									
% BBgBarc US TIPS/ 50% Blended PRA	-3.03%	-0.20%	-1.82%	-4.98%									
Alerian MLP TR USD	-7.99%	-0.83%	-9.36%	-17.30%									
Verus	-1.11%	0.29%	0.13%	-0.69%		-0.33%		0.78%		-0.25%		1.25%	
Brown Brothers Harriman	-1.11%	0.28%	0.16%	-0.67%	-0.02%	-0.33%	0.00%	0.78%	0.00%	-0.27%	0.02%	1.26%	0.00%
BBgBarc U.S Tips	-1.43%	0.48%	0.55%	-0.42%		-0.82%		0.77%		-0.79%		1.26%	

1 MSCI

1.1 MSCI US MARKET BREAKPOINTS

Break Point*	Companies included
Large Cap	1-200
Medium-Large Cap	201-550
Medium Cap	551-750
Medium-Small Cap	751-2500
Small Cap	2501+

*MSCI only categorizes equities per size into large, mid and small cap. For InvestorForce Report analytics coherence regarding domestic benchmarks the buffer zones of the mid-cap category are used to determine Medium-Large and Medium-Small Cap categories.

As Of	Large Cap	Medium Large Cap	Medium Cap	Medium Small Cap	Small Cap
12/31/2018	18.559	11.536	5.547	3.012	0
09/30/2018	18.559	11.536	5.547	3.012	0
06/30/2018	17.921	10.888	5.334	3.023	0
03/31/2018	17.921	10.888	5.334	3.023	0
12/31/2017	17.679	9.979	5.011	2.793	0
9/30/2017	17.696	9.979	5.011	2.793	0
6/30/2017	15.834	9.267	4.517	2.573	0
3/31/2017	15.834	9.267	4.517	2.573	0
12/31/2016	15.239	9.375	4.416	2.520	0
9/30/2016	15.239	9.375	4.416	2.520	0
6/30/2016	15.358	9.43	4.548	2.591	0
3/31/2016	15.358	9.43	4.548	2.591	0
12/31/2015	16.507	9.968	5.069	2.917	0
9/30/2015	16.507	9.968	5.069	2.917	0
6/30/2015	15.288	9.09	4.506	2.596	0
3/31/2015	15.356	9.083	4.491	2.577	0
12/31/2014	15.356	9.083	4.491	2.577	0

Number in billion USD

InvestorForce Report reflects changes in the MSCI breakpoints once MSCI publishes new breakpoints. For months when no new breakpoints are published always the last breakpoints are applied. Changes usually but always happen around re-balancing of the indexes. Some index reviews do not contain changes to the market-cap breakpoints.

1.2 MSCI DEVELOPED AND EMERGING MARKET BREAKPOINTS

In case of MSCI Indexes to define the Size - Segment Indexes for a market, the following free float - adjusted market capitalization Market Coverage Target Ranges are applied to the Market Investable Equity Universe:

Break Point	Companies included
Large Cap Index	70% ±5%
Standard Index*	85% ±5%
Investable Market Index**	99%+1% or -0.5%

* Standard Index (Large+Mid)

** Investable Market Index (Large+Mid+Small)

MSCI Country Classification can be found here: <https://www.msci.com/market-classification>

For Emerging Markets, the Global Minimum Size Reference is set at *one-half* the corresponding level of full market capitalization used for the Developed Markets for each size-segment.

As Of	Large Cap DM	Large Cap EM	Medium Cap DM	Medium Cap EM	Small Cap
12/31/2018	16.204	8.102	5.928	2.964	0
9/30/2018	17.201	8.6005	6.374	3.187	0
6/30/2018	17.201	8.6005	6.374	3.187	0
3/31/2018	16.392	8.196	6.106	3.053	0
12/31/2017	16.392	8.196	6.106	3.053	0
9/30/2017	15.008	7.504	5.500	2.750	0
6/30/2017	15.008	7.504	5.500	2.750	0
3/31/2017	14.361	7.180	5.077	2.538	0
12/31/2016	14.361	7.180	5.077	2.538	0
9/30/2016	14.180	7.090	5.076	2.538	0
6/30/2016	14.180	7.090	5.076	2.538	0
3/31/2016	14.077	7.0385	5.046	2.523	0
12/31/2015	14.077	7.0385	5.046	2.5230	0
9/30/2015	14.883	7.4415	5.359	2.6795	0
6/30/2015	14.883	7.4415	5.359	2.6795	0
3/31/2015	13.368	6.684	4.781	2.3905	0
12/31/2014	13.368	6.684	4.781	2.3905	0

Numbers are billions USD

InvestorForce Report shows changes in the MSCI breakpoints once MSCI publishes a new one. For months when no new breakpoints are published always the last breakpoint is applied. Changes usually happen around re-balancing of the indexes.

2 RUSSELL US BREAKPOINTS

The market capitalization breakpoints that appear in the Market Capitalization Chart are defined by the Russell 3000 Index and change for each period end. Russell calculated the total market capitalization of each security for the end of the period, based on the total shares and price, to determine whether it is large enough for inclusion in one or more of the Russell Breakpoints.

Once the market capitalization for each security is determined, each security is then placed in the appropriate market capitalization breakpoint. A market capitalization breakpoint is determined by the break between the companies below.

Break Point	Companies included
Large Cap	50 Largest US Companies
Medium Large Cap	Next largest 150 US Companies
Medium Cap	Next largest 300 US Companies
Medium Small Cap	Next largest 500 US Companies
Small Cap	All US Companies below 1,000 largest

After the breakpoints are determined by the ranges above, new members are assigned on the basis of the breakpoints and existing members are reviewed to determine if they fall within a cumulative 5% market cap range around the new market capitalization breakpoints. If an existing securities market cap falls within this 5%, it will remain in its current index rather than move into a new market capitalization based index.

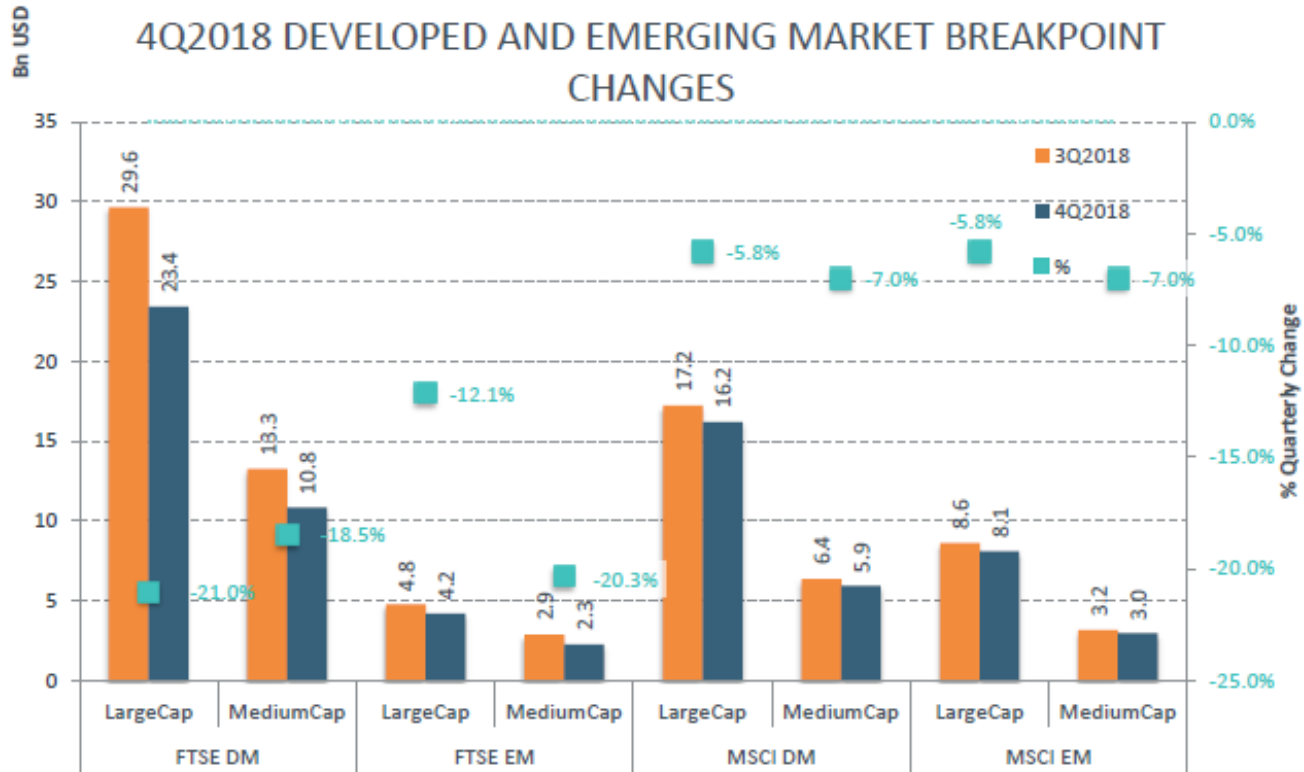
Market Capitalization Breakpoints

Period Ending: December 31, 2018

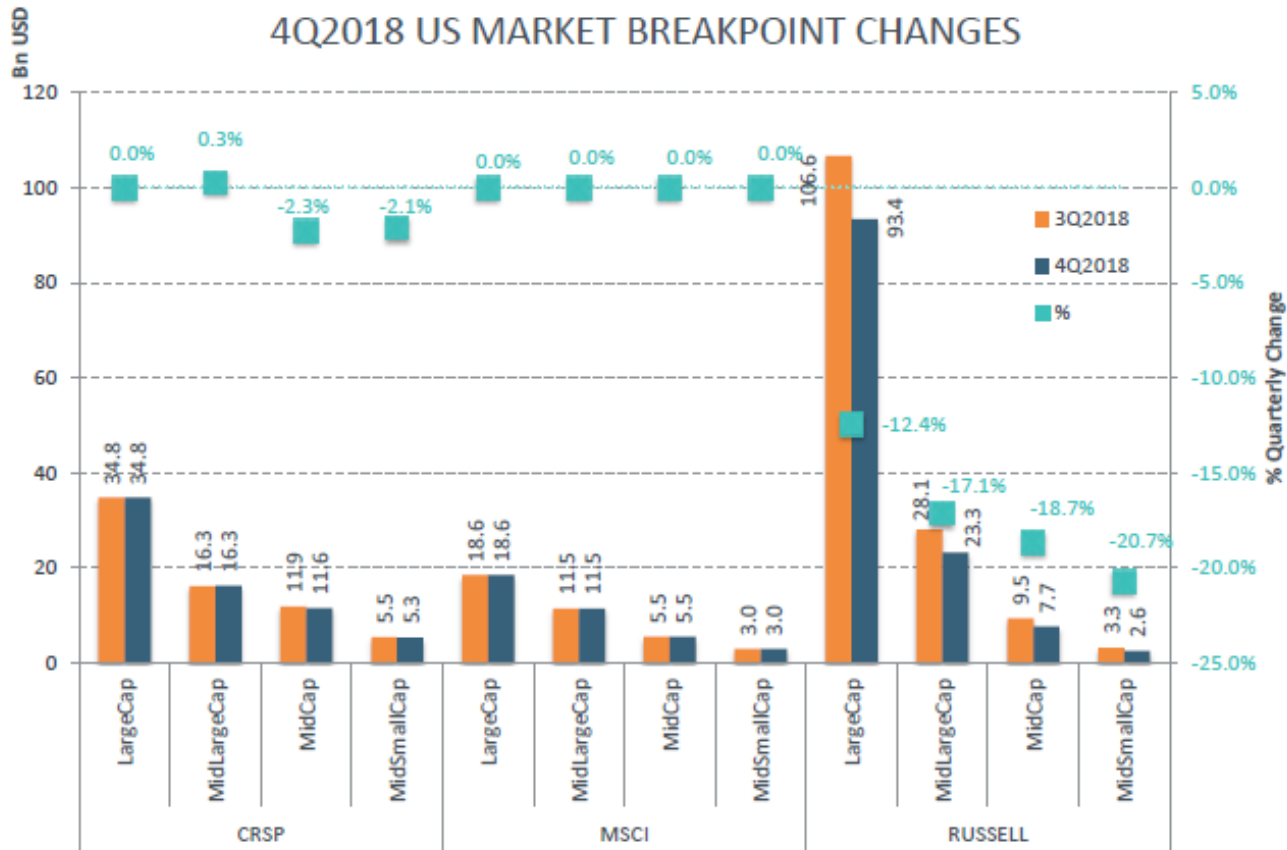
As Of	Large Cap	Medium Large Cap	Medium Cap	Medium Small Cap	Small Cap
12/31/2018	93.377	23.285	7.693	2.595	0
9/30/2018	106.633	28.088	9.457	3.273	0
6/30/2018	104.455	26.511	9.202	3.171	0
3/31/2018	101.922	26.399	8.890	2.958	0
12/31/2017	95.036	26.237	8.819	3.021	0
9/30/2017	93.539	24.882	8.344	2.935	0
6/30/2017	87.845	25.481	8.204	2.859	0
3/31/2017	89.968	25.293	8.241	2.737	0
12/31/2016	84.960	23.168	7.890	2.702	0
9/30/2016	78.745	23.385	7.394	2.533	0
6/30/2016	77.349	22.250	7.1432	2.444	0
3/31/2016	83.360	22.414	7.435	2.395	0
12/31/2015	90.075	24.308	8.141	2.936	0
9/30/2015	88.944	23.139	7.993	2.946	0
6/30/2015	92.87	25.07	8.797	3.352	0
3/31/2015	93.082	25.494	8.794	3.384	0
12/31/2014	89.92	25.19	8.51	3.29	0
9/30/2014	84.51	24.44	7.97	3.04	0
6/30/2014	80.39	23.62	8.07	3.24	0
3/31/2014	76.77	23.15	7.83	3.06	0
12/31/2013	77.11	22.27	7.65	3.03	0
9/30/2013	72.4	19.93	7.15	2.71	0
6/30/2013	68.47	19.36	6.48	2.46	0
3/31/2013	64.31	18.64	6.39	2.39	0
12/31/2012	58.45	16.8	5.75	2.13	0
9/30/2012	57.06	16.48	5.49	2.08	0
6/30/2012	55.65	16.13	5.14	1.99	0
3/31/2012	57.58	16.43	5.55	2.13	0
12/31/2011	51.97	14.66	4.93	1.93	0
9/30/2011	45.35	13.88	4.38	1.66	0
6/30/2011	54.25	15.95	5.66	2.16	0
3/31/2011	52.22	15.69	5.7	2.16	0
12/31/2010	49.54	14.8	5.16	2.04	0
9/30/2010	42.83	13.13	4.64	1.8	0
6/30/2010	39.95	11.58	4.1	1.59	0

Numbers are billions USD

BREAKPOINT TRENDS



MSCI is releasing market capitalization breakpoints less frequently than FTSE, hence the market capitalization breakpoints are longer in effect. This could result in no change.



MSCI is releasing market capitalization breakpoints less frequently than others, hence the market capitalization breakpoints are longer in effect. This could result in no change.



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Sound thinking

PRIORITIES FOR 2019

The start of the year is a good time to consider some of the likely key issues that investors may have to deal with over the next 12 months. Our CIO, Ian Toner, identifies eight topics that are likely to be important during 2019. He also outlines ways that investors might approach each of these topics, and identifies some of the ways they might impact portfolios over the year.

Topics of interest

BUILDING EFFECTIVE PRIVATE MARKET PORTFOLIOS

Institutional sponsors often invest in private asset classes to boost the return profile of their overall plan portfolios. Yet, many fall short of achieving the desired returns. We believe that effective portfolio construction is an important component of achieving attractive return targets in private markets. Drawing on our experience over the last 20 years, we highlight the key considerations for any investor seeking to build a private markets portfolio.

PRIVATE MARKETS COMMITMENT PACING AND CASH FLOW MODELING

Private markets investors are faced with the difficulty of estimating future exposures within their portfolios over a longer time horizon. An effective pacing model designed to manage investor target allocations is a key process for managing exposures accurately. We provide an overview to commitment strategies, maintaining allocations over the long-term and monitoring liquidity risk.

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4th quarter summary

THE ECONOMIC CLIMATE

- U.S. real GDP growth reached 3.0% in Q3, supported by fiscal stimulus which is more or less expected to fade in 2019. Growth is forecast to moderate in the U.S., in-line with the rest of the developed world. [p. 9](#)
- The U.S. and China ended their most recent round of trade negotiations during the first week of January. China indicated willingness to purchase more American agricultural goods, energy, and other manufactured goods, but little progress is evident overall. [p. 15](#)

PORTFOLIO IMPACTS

- The Federal Reserve raised the fed funds rate by 0.25% to a range of 2.25%-2.50%. Market expectations for future rate hikes changed dramatically in December. As of year-end, the fed funds futures market is pricing in zero hikes for 2019, and a rate cut for 2020. [p. 19](#)
- Emerging markets were the top equity performer in Q4, as these markets (MSCI EM -7.5%) experienced much less pain than developed markets (S&P 500 -13.5%, MSCI EAFE -12.5%) during the equity sell-off. Currencies stabilized in Q4 (JPMorgan EM Currency Index +0.2%) and emerging market crises concerns faded from the news headlines. [p. 34](#)

THE INVESTMENT CLIMATE

- The U.S. equity market experienced a fairly significant peak-to-trough drawdown in Q4 (S&P 500 -19.8%, Russell 1000 -20.1%), along with global equity markets. Equity corrections of this size have historically occurred roughly once per cycle. [p. 29](#)
- After reaching a cyclical high of 3.2% in November, the 10-year U.S. Treasury yield fell sharply to end the year at 2.7%. Much of this drop was due to falling inflation expectations as energy prices trended down. [p. 19](#)
- The House of Commons in British Parliament overwhelmingly rejected Theresa May's Brexit deal that had been approved by the European Union. The details surrounding the terms of Great Britain's exit remain uncertain ahead of the March 30th deadline. [p. 17](#)

ASSET ALLOCATION ISSUES

- Diversification has been particularly painful in recent years as most asset classes failed to keep up with a domestic 60/40 portfolio. U.S. performance exceptionalism reversed in Q4 as U.S. equities underperformed. [p. 6](#)
- Economic conditions around the world have weakened. This trend has been broad-based, from industrial production, to business sentiment, to corporate earnings expectations. [p. 16](#)

Economic conditions displayed a weaker trend in Q4

A neutral risk stance may be appropriate in today's environment

What drove the market in Q4?

“Stocks continue to fall on global growth concerns”

GLOBAL MANUFACTURING PMI

Q3 17	Q4 17	Q1 18	Q2 18	Q3 18	Q4 18
53.2	54.5	53.3	53.0	52.2	51.5

Article Source: Yahoo Finance, December 14th, 2018

“Fed seen slowing, or even stopping, rate hikes next year”

YEAR-END 2020 MARKET IMPLIED FED FUNDS RATE

Jul	Aug	Sep	Oct	Nov	Dec
2.72%	2.62%	2.82%	2.86%	2.71%	2.38%

Article Source: Reuters, December 10th, 2018

“The great cheapening of 2018: global stock valuations now at five-year lows”

MSCI ACWI FORWARD P/E RATIO

Jul	Aug	Sep	Oct	Nov	Dec
14.9x	14.9x	14.8x	13.7x	13.9x	13.0x

Article Source: Wall Street Journal, December 10th, 2018

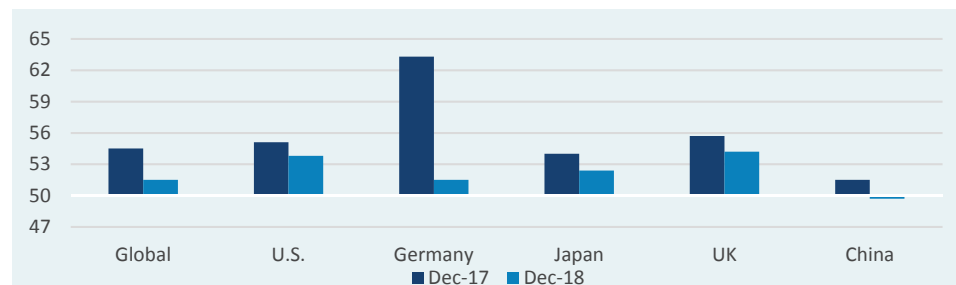
“Market volatility is surging”

DAILY AVERAGE OF S&P 500 INDEX IMPLIED VOLATILITY (VIX)

Jul	Aug	Sep	Oct	Nov	Dec
13.1	12.5	12.9	19.4	19.4	25.0

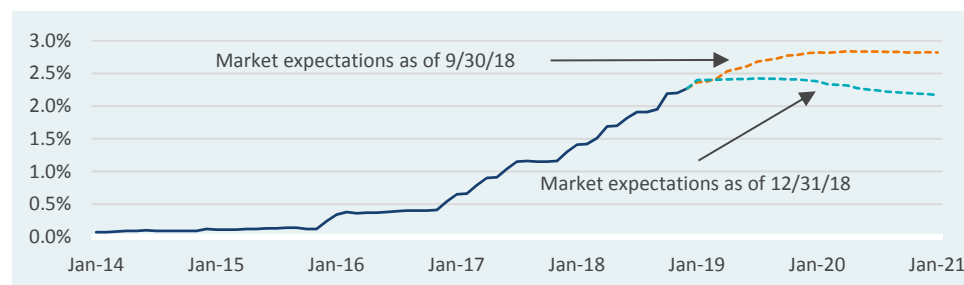
Article Source: Forbes, October 11th, 2018

GLOBAL MANUFACTURING PMIs



Source: Bloomberg, JPMorgan, Market, as of 12/31/18, 50 indicates a neutral level

MARKET PRICING OF FUTURE FED FUNDS RATE



Source: Bloomberg, as of 12/31/18

MSCI ACWI FORWARD P/E RATIO



Source: Bloomberg, as of 12/31/18, blended 12-month forward earnings

Tough years for diversification

Individual asset classes relative to a domestic 60/40

RELATIVE TO DOMESTIC 60/40	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
US Large	8.6	(7.8)	(8.0)	(12.1)	9.5	2.3	0.8	4.4	(0.5)	(14.0)	6.9	2.7	(2.4)	4.1	14.5	3.3	0.2	3.2	7.4	(1.9)
US Small	8.9	(1.7)	6.4	(10.5)	28.1	9.7	0.5	7.0	(7.6)	(10.8)	7.6	14.5	(8.7)	4.4	20.9	(5.5)	(5.6)	12.5	0.2	(8.5)
International Developed	14.6	(12.9)	(17.5)	(5.9)	19.4	11.6	9.4	14.9	5.2	(20.4)	12.2	(4.6)	(16.6)	5.4	4.9	(15.3)	(2.0)	(7.8)	10.6	(11.3)
Emerging Markets	(12.4)	1.3	1.3	3.8	36.6	17.0	29.9	20.7	33.4	(30.3)	58.9	6.5	(22.9)	6.3	(20.5)	(12.6)	(16.1)	2.4	22.9	(12.1)
US TIPS	(10.0)	14.5	11.8	26.6	(10.8)	(0.1)	(1.3)	(11.0)	5.6	20.6	(8.2)	(6.1)	9.1	(4.9)	(26.5)	(6.8)	(2.6)	(4.1)	(11.4)	1.2
US Treasury	(17.7)	16.0	10.7	24.5	(17.3)	(4.2)	(1.7)	(8.7)	4.2	41.0	(25.6)	(3.0)	11.1	(7.7)	(23.9)	(1.4)	0.4	(7.7)	(11.8)	3.4
Global Sovereign ex-US	(18.9)	(1.5)	-	31.9	(1.0)	3.5	(12.9)	(4.1)	4.9	32.4	(15.3)	(6.3)	0.7	(10.1)	(22.8)	(13.2)	(6.0)	(6.9)	(5.1)	1.6
Core Fixed Income	(13.2)	12.9	12.3	20.3	(15.1)	(4.3)	(1.7)	(7.1)	1.0	28.2	(13.7)	(5.9)	3.3	(7.7)	(19.9)	(4.4)	(0.7)	(6.2)	(10.9)	2.5
High Yield Corp. Credit	(10.0)	(4.6)	9.2	8.6	9.8	2.5	(1.4)	0.4	(4.1)	(3.2)	38.6	2.7	0.5	3.9	(10.5)	(7.9)	(5.7)	8.3	(6.9)	0.4
Bank Loans	(12.4)	1.3	3.9	10.0	(19.2)	(3.4)	1.0	(4.7)	(3.9)	(6.1)	32.0	(2.3)	(3.0)	(2.2)	(12.6)	(8.8)	(1.9)	1.4	(10.3)	3.6
Global Credit	(12.4)	1.3	7.1	23.6	(2.8)	1.4	(6.1)	(3.1)	0.6	13.5	1.4	(5.7)	(0.1)	0.2	(16.8)	(8.0)	(4.6)	(3.4)	(5.2)	(0.8)
Emerging Market Debt (Hard)	7.2	14.0	13.6	23.7	3.0	3.0	6.1	(1.5)	0.2	11.0	10.2	(0.2)	2.8	5.5	(23.2)	(3.0)	-	1.4	(4.1)	(1.8)
Emerging Market Debt (Local)	(12.4)	1.3	3.9	10.0	(19.2)	(8.6)	2.2	3.8	12.1	17.8	2.4	3.3	(6.3)	4.9	(26.9)	(16.1)	(16.1)	1.1	0.8	(3.7)
Commodities	11.9	33.1	(15.6)	35.9	4.7	0.5	17.3	(9.3)	10.2	(12.6)	(0.7)	4.4	(17.8)	(13.0)	(27.4)	(27.4)	(25.9)	3.0	(12.7)	(8.8)
Hedge Fund	14.1	5.4	6.7	11.0	(7.6)	(1.7)	3.4	(1.0)	4.3	1.6	(8.1)	(6.7)	(10.2)	(7.1)	(8.9)	(7.0)	(1.5)	(8.3)	(6.6)	(1.0)
REITs	(15.0)	32.3	16.2	13.6	17.0	24.6	9.7	24.6	(23.6)	(16.2)	9.0	16.2	4.7	5.7	(16.0)	21.4	3.0	(1.6)	(10.2)	(2.3)
Risk Parity (HFR Vol 10)	(12.4)	1.3	3.9	10.0	(19.2)	9.1	11.4	(9.1)	4.7	6.6	(3.6)	5.7	4.7	1.1	(18.4)	(2.3)	(6.3)	1.2	(0.9)	6.4
Core Real Estate (NCREIF ODCE)	0.8	15.6	9.5	15.5	(9.9)	4.5	17.3	4.9	10.0	13.0	(49.4)	4.0	11.5	(1.0)	(4.0)	2.1	13.8	-	(6.8)	7.8
Domestic 60/40 (S&P 500, BC Universal)	12.4	(1.3)	(3.9)	(10.0)	19.2	8.6	4.1	11.4	6.0	(23.0)	19.6	12.4	4.5	11.9	17.9	10.4	1.2	8.8	14.4	(2.5)
% of Assets Outperforming Domestic 60/40	39%	72%	78%	83%	44%	67%	67%	44%	72%	56%	56%	50%	50%	56%	17%	17%	22%	50%	28%	44%

Performance as of 12/31/18, NCREIF Property Index performance data as of 9/30/18

Economic environment

U.S. economics summary

- Real GDP growth reached 3.0% YoY (3.4% quarterly annualized rate) in the third quarter, the fastest pace of growth in more than three years. Consumers drove growth after bouncing back from a spending slowdown in Q1.
- The U.S. and China ended the recent round of trade negotiations during the first week of January. The U.S. noted China's willingness to purchase more American agricultural goods, energy, and other manufactured goods, but little progress is evident overall.
- U.S. inflation remained near the Federal Reserve's 2.0% target. Headline U.S. inflation fell from 2.3% to 1.9% over the quarter, driven by lower oil prices. U.S. core CPI remained at 2.2%. Moderate inflation has likely contributed to the willingness of the Fed to keep on course with rate hikes.
- The labor market remained a bright spot in the U.S. economy. On average, nonfarm payrolls increased by 254,000 per month during the quarter, well above the expansion average of 201,000.
- The headline U-3 unemployment rate rose from 3.7% to 3.9%, in part due to an increase in labor force participation.
- Fiscal stimulus continued to support growth, although the impacts will likely subside in the first half of 2019. Stimulus may be masking a slowdown in the economy, which would be directionally in line with the rest of the developed world.
- The Federal Reserve hiked the target range for its benchmark interest rate by 25 basis points to a new range of 2.25% - 2.50%. Consistent with expectations for a "dovish hike", central bank officials re-rated hike expectations in 2019 from three to two.

	Most Recent	12 Months Prior
GDP (YoY)	3.0% <i>9/30/18</i>	2.3% <i>9/30/17</i>
Inflation (CPI YoY, Core)	2.2% <i>12/31/18</i>	1.8% <i>12/31/17</i>
Expected Inflation (5yr-5yr forward)	1.8% <i>12/31/18</i>	2.0% <i>12/31/17</i>
Fed Funds Target Range	2.25 – 2.50% <i>12/31/18</i>	1.25 – 1.50% <i>12/31/17</i>
10 Year Rate	2.7% <i>12/31/18</i>	2.4% <i>12/31/17</i>
U-3 Unemployment	3.9% <i>12/31/18</i>	4.1% <i>12/31/17</i>
U-6 Unemployment	7.6% <i>12/31/18</i>	8.1% <i>12/31/17</i>

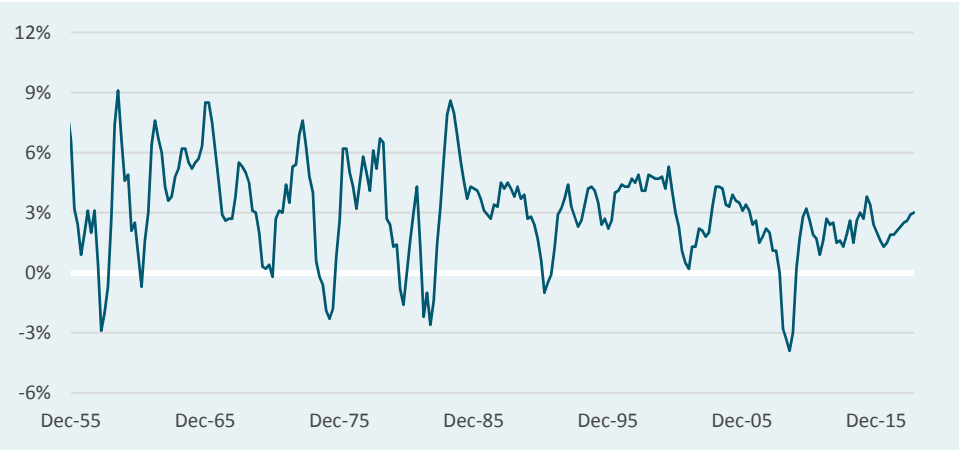
GDP growth

Real GDP growth reached 3.0% YoY (3.4% quarterly annualized rate) in the third quarter, the fastest pace in more than three years. Consumer spending was a core driver for the second straight quarter after bouncing back from a spending slowdown earlier in the year. A tight labor market, firming wage growth, and low inflation created a strong backdrop for spending, which added 2.4% to the quarterly growth rate. A build in inventories was the second biggest contributor to growth, which could be the result of pulling future growth into the current quarter as inventory builds are typically drawn down in subsequent quarters.

Fiscal stimulus continued to support growth, although its impact will likely subside in the first half of 2019. This support may be masking a slowdown in the U.S. economy, which has already started to appear in other parts of the world. More current metrics of the economy, such as PMIs, are indeed indicating that activity is slowing from recent high levels, but growth remains positive. However, fading fiscal stimulus and monetary tightening (that impacts the economy with a lag) present unique challenges to the economic outlook and increase the possibility of a more significant slowdown.

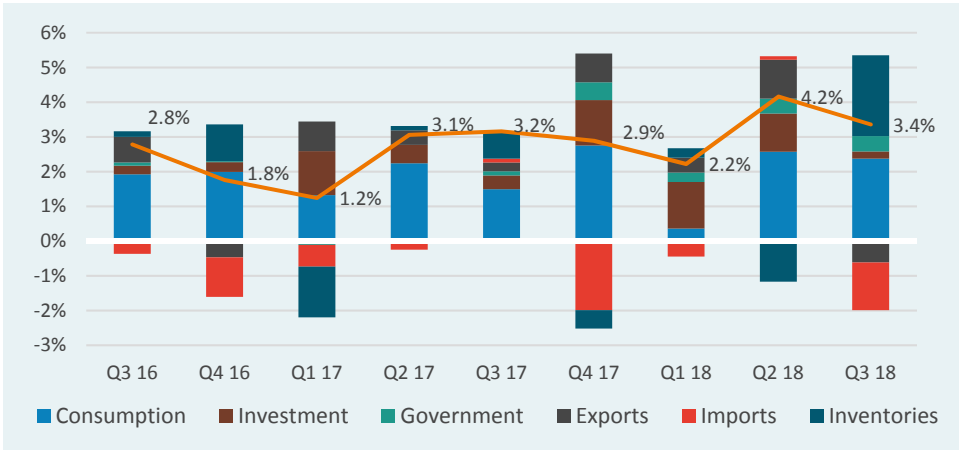
The economy appears to be slowing after a period of strong growth

U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 9/30/18

U.S. GDP GROWTH ATTRIBUTION



Source: BEA, annualized quarterly rate, as of 9/30/18

Inflation

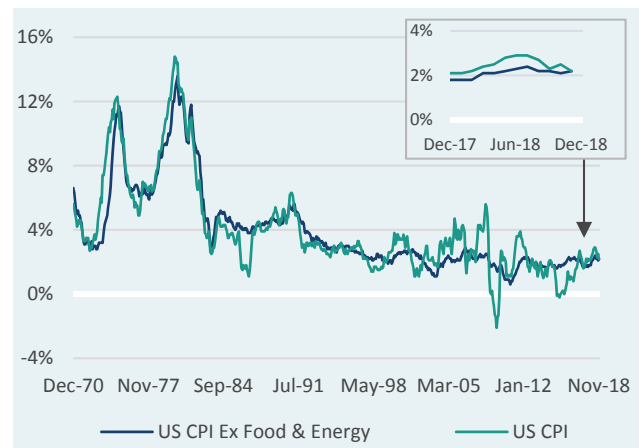
U.S. inflation remained near the Federal Reserve's 2.0% target. Headline U.S. inflation fell from 2.3% to 1.9% over the quarter, driven by lower oil prices. U.S. core CPI remained at 2.2%. Moderate inflation has likely contributed to the willingness of the Fed to keep on course with rate hikes.

Inflation fears remained muted as indicated by consumer expectations and market pricing. Breakeven inflation rates implied by U.S. 10-year Treasury pricing fell by a net 0.4% to 1.7% in the fourth quarter alongside a significant drop in

energy prices. Consumer inflation expectations moderated by a net 0.3% during that time, according to the University of Michigan consumer survey.

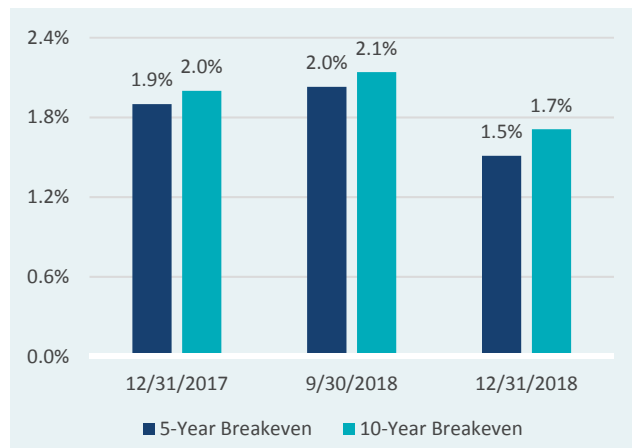
U.S.-China tariffs have recently been cited as a potential source of inflation risk. However, flow-through effects from import prices to consumer prices are complex, and the outcome may be more nuanced. We do not expect a material increase in inflation due to the tariffs that have been implemented.

U.S. CPI (YOY)



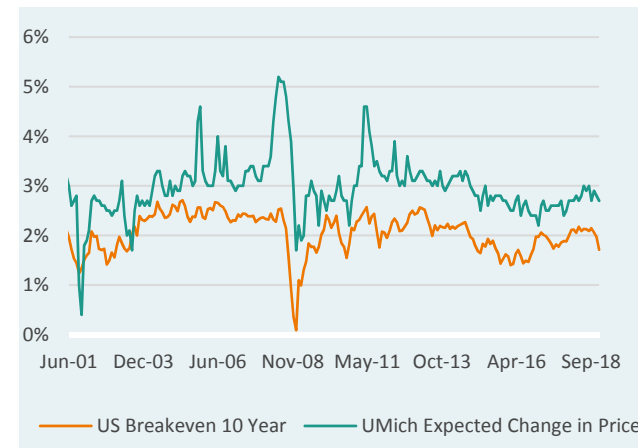
Source: Bloomberg, as of 12/31/18

BREAKEVEN INFLATION RATES



Source: FRED, as of 12/31/18

INFLATION EXPECTATIONS



Source: Bloomberg, as of 12/31/18

Labor market

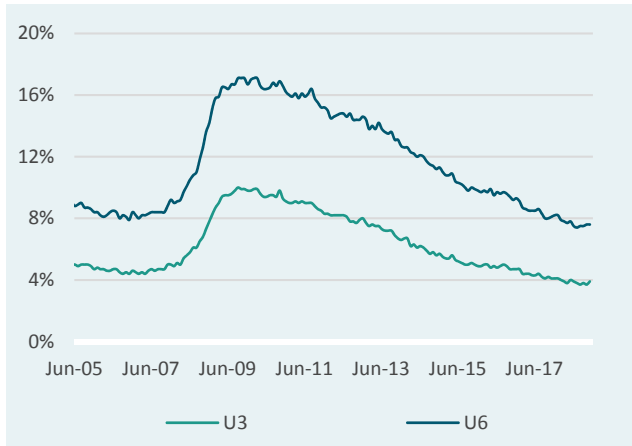
The labor market remained a bright spot in the U.S. economy, although this strength may reflect where the economy has been rather than where it is headed. Labor market conditions tend to lag the broader economy.

On average, nonfarm payrolls increased by 254,000 per month during the quarter, well above the expansion average of 201,000. The headline U-3 unemployment rate ticked up from 3.7% to 3.9%, in part due to an increase in labor force participation. Rising wages and ease of obtaining

employment may have played a role in enticing people to come back to work. Core age participation (ages 25-54) rose from 81.8% to 82.3% in the fourth quarter. This measure is up a net 1.7% (this increase roughly equates to 3.5 million more employed persons, all else equal) since hitting a secular low in late 2015.

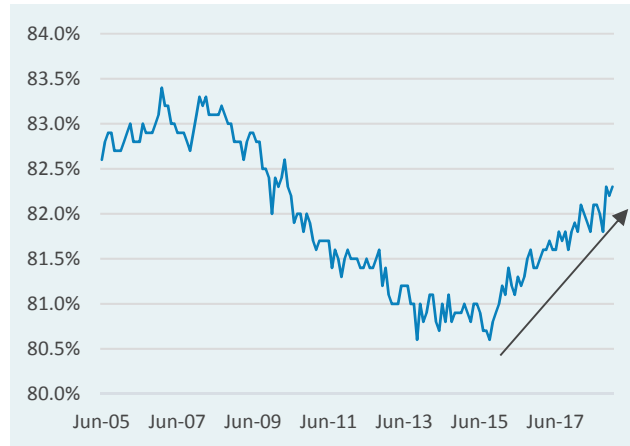
The tightness in the labor market appears to be translating to above average wage gains. In December, wage growth hit a cycle high of 3.3% from the previous year.

UNEMPLOYMENT RATE



Source: FRED, as of 12/31/18

CORE AGE PARTICIPATION RATE



Source: Bloomberg, as 12/31/18

WAGE GROWTH (YOY)



Source: Bloomberg, as of 12/31/18

The consumer

Real consumer spending rose 2.8% year-over-year, and remains a core driver of recent economic growth.

A strong job market, decent wage gains, and low interest rates have provided continued support to spending. Although conditions and sentiment are strong relative to history, U.S. consumers appear to be behaving conservatively. Overall, spending growth and debt usage has been more moderate than seen in recent expansions, perhaps partly due to memories of the 2008-2009 recession.

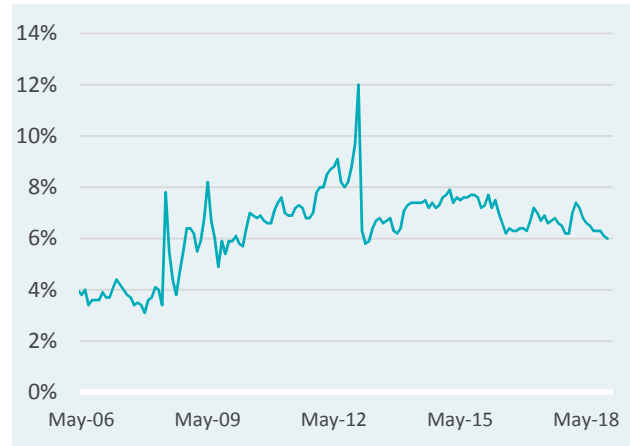
The 30-year fixed mortgage rate approached 5% towards the end of the year but tapered off as interest rates fell in December. Credit card interest rates have also risen materially. We believe further rate increases from this point will most likely be minimal, but that recent rate rises will act as a headwind to the consumer in many areas. For example, higher home values post-2009 were possible because low interest rates helped keep monthly payments within budgets. Now the reversal in interest rates, paired with additional home price appreciation, has squeezed the budget for new homeowners and contributed to a slowdown in the U.S. housing market.

REAL CONSUMER SPENDING (YOY)



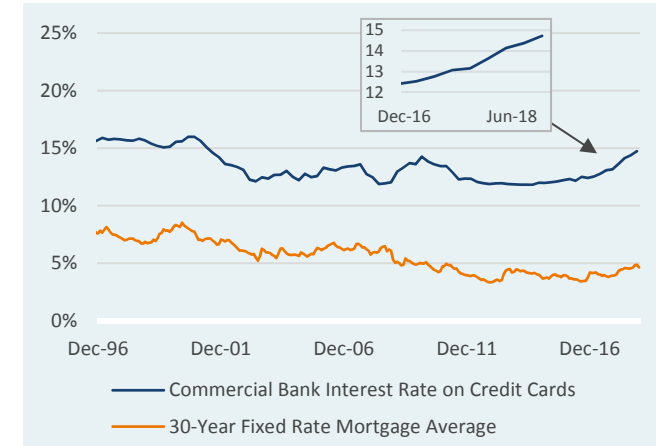
Source: Bloomberg, as of 11/30/18

PERSONAL SAVINGS RATE



Source: FRED, as of 11/30/18

CONSUMER INTEREST RATES



Source: FRED, as of 12/31/18

Sentiment

Both consumer and business sentiment indicators were resilient in the fourth quarter, holding at above average levels.

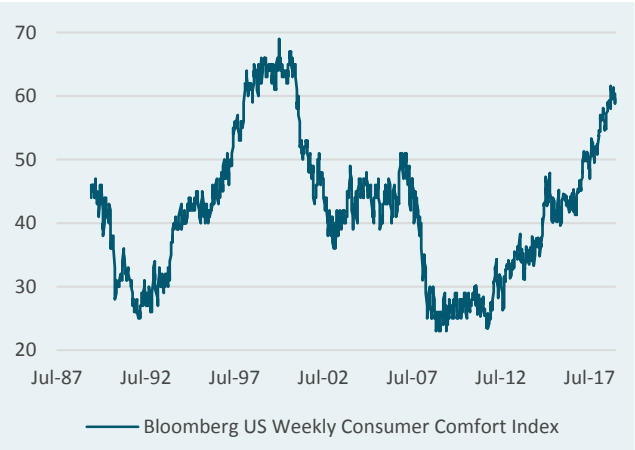
The University of Michigan Index of Consumer Sentiment fell modestly during the quarter from 100.1 to 98.3, but is still elevated relative to its own history (87th percentile since index inception in 1978). The recent plunge in stock prices was only reported by 12% of respondents as a primary economic concern. Consumers were instead

focused on positive perceptions of employment and income prospects, according to the survey administrators.

Small business sentiment drifted lower, but remained near record highs. At 104.4, the December reading for the NFIB Small Business Optimism Index was in the 92nd percentile of its own history going back to 1985.

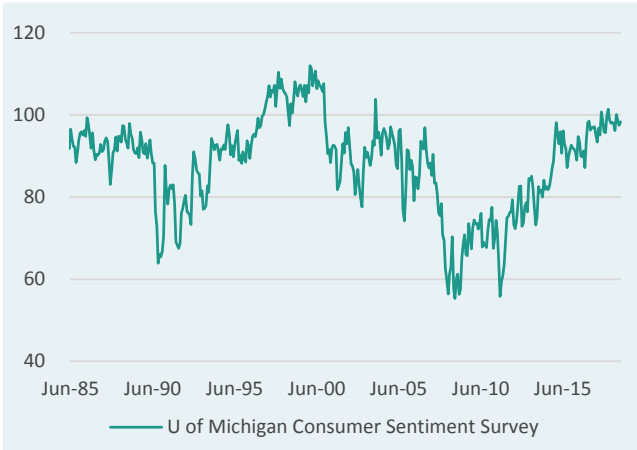
Consumers and business are confident about the future

CONSUMER COMFORT INDEX



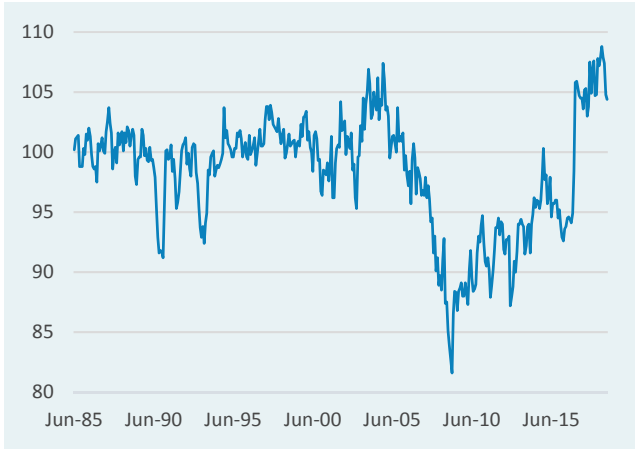
Source: Bloomberg, as of 12/31/18 (see Appendix)

CONSUMER SENTIMENT



Source: University of Michigan, as of 12/31/18 (see Appendix)

NFIB SMALL BUSINESS OPTIMISM INDEX



Source: NFIB, as of 12/31/18 (see Appendix)

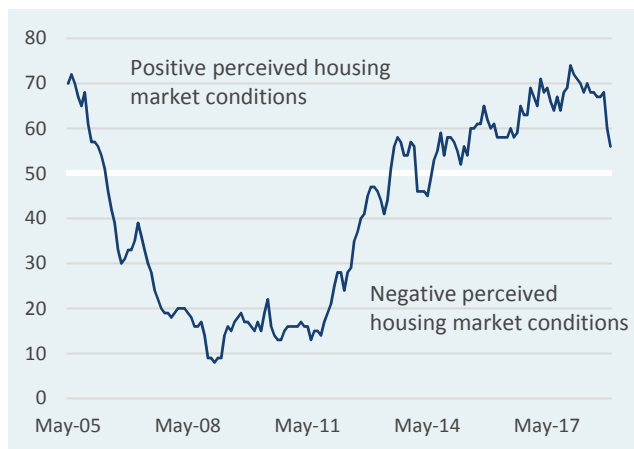
Housing

Housing market data that was released in the fourth quarter consistently came in below expectations. Monetary tightening has led to higher interest rates and likely begun to weigh on sales activity and home price appreciation. The National Association of Homebuilders (NAHB) Housing Market Index, based on a monthly survey of NAHB members designed to take the pulse of the single-family housing market, fell sharply from 67 to 56. However, the survey suggests conditions remain favorable overall, as 50 represents the neutral point for the index.

Less favorable buying conditions have flowed through to a slower pace of home sales despite a slowdown in price increases. Existing home sales, which make up the majority of national sales, fell to an annualized rate of 5.3 million in November, the slowest pace since early 2016. Home prices continue to march upward, but at a more moderate pace. In the most recent October print, the Case-Shiller National Home Price Index rose 5.5% year-over-year.

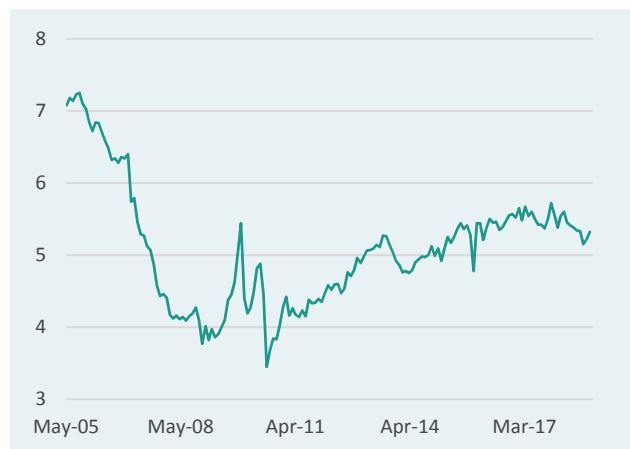
The U.S. housing market appears to be cooling off

NAHB HOUSING MARKET INDEX



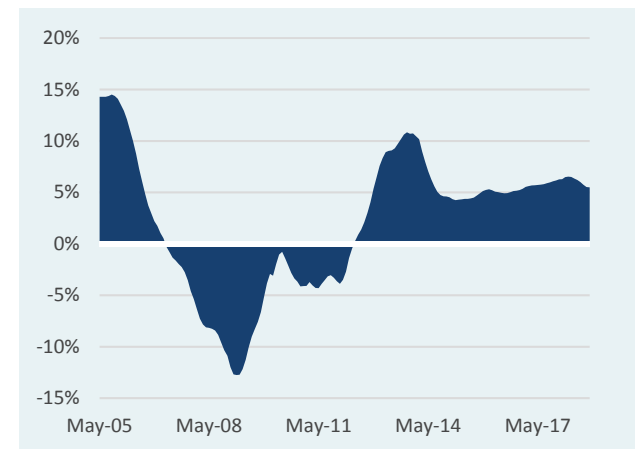
Source: Bloomberg, NAHB, as of 12/31/18 (see appendix)

EXISTING HOME SALES (MILLIONS)



Source: Bloomberg, SAAR, as of 11/30/18

NATIONAL HOME PRICE INDEX (YOY)



Source: Bloomberg, S&P/Case-Shiller, as of 10/31/18

International economics summary

- Outside of the U.S., economic growth has slowed in recent quarters, most notably in Europe and Japan. Developed real GDP growth is expected to slow from 2.2% in 2018 to 2.0% in 2019, according to the World Bank.
- The U.S. and China ended the recent round of trade negotiations during the first week of January. Officials continue to work towards an agreement, though little progress is been demonstrated thus far. On March 2nd, U.S. tariffs are scheduled to increase from 10% to 25% on \$200 billion of Chinese imports.
- China's Purchasing Managers' Index (PMI) fell to 49.7 in December. An index reading of 50 indicates economic expansion while a reading below 50 indicates contraction. This reading is in line with a string of weak economic data coming out of China.
- The House of Commons in British Parliament overwhelmingly rejected Theresa May's Brexit deal that had been approved by the European Union. The details surrounding the terms of Great Britain's exit remain uncertain ahead of the March 30th deadline. Potential resolutions include renegotiating a deal with the EU, leaving without a deal, or delaying the exit deadline.
- The U.S. dollar appreciated by 1.9% during the quarter on a trade-weighted basis. A slowing U.S. economy would likely put downside pressure on the dollar, which has been boosted recently by U.S. economic exceptionalism.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	3.0% <i>9/30/18</i>	2.2% <i>11/30/18</i>	3.9% <i>12/31/18</i>
Eurozone	1.6% <i>9/30/18</i>	1.8% <i>11/30/18</i>	8.1% <i>10/31/18</i>
Japan	0.0% <i>9/30/18</i>	0.8% <i>11/30/18</i>	2.5% <i>11/30/18</i>
BRICS Nations	5.6% <i>9/30/18</i>	2.4% <i>12/31/18</i>	5.4% <i>9/30/18</i>
Brazil	1.3% <i>9/30/18</i>	4.1% <i>11/30/18</i>	11.7% <i>12/31/18</i>
Russia	1.5% <i>9/30/18</i>	4.3% <i>12/31/18</i>	4.8% <i>11/30/18</i>
India	7.1% <i>9/30/18</i>	2.3% <i>11/30/18</i>	8.8% <i>12/31/17</i>
China	6.5% <i>9/30/18</i>	2.2% <i>11/30/18</i>	3.8% <i>9/30/18</i>

International economics

Outside of the U.S., economic growth slowed in recent quarters, most notably in Europe and Japan. Inflation turned lower in Q4 alongside falling energy prices. Low inflation provides greater flexibility for central banks to remain accommodative as needed.

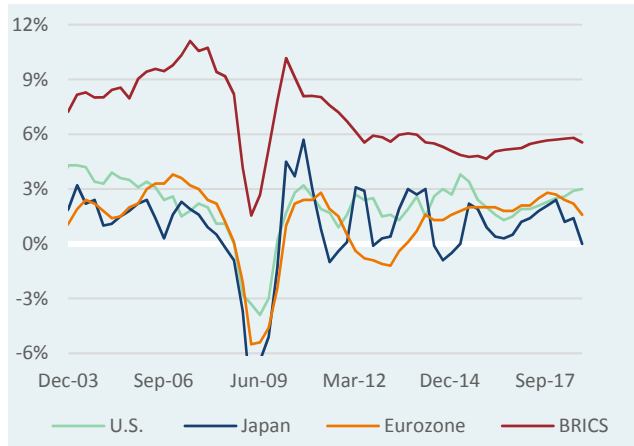
In the Eurozone, real GDP decelerated to 1.6% YoY as many economies struggled with stagnation and social unrest. European Union rules restrict the ability of member nations to fully implement fiscal and monetary stimulus to their economies, which may have contributed to Europe's uneven

economic recovery. It is possible that certain laggards of the Eurozone will eventually push for greater sovereign control of their economies if stagnation continues. This may result in standoffs such as seen recently between Italy and the EU.

The House of Commons in British Parliament overwhelmingly rejected Theresa May's Brexit deal that had been approved by the European Union. The details surrounding the terms of Great Britain's exit remain uncertain ahead of the March 30th deadline. Potential resolutions include renegotiating a deal with the EU, leaving without a deal, or delaying the exit deadline.

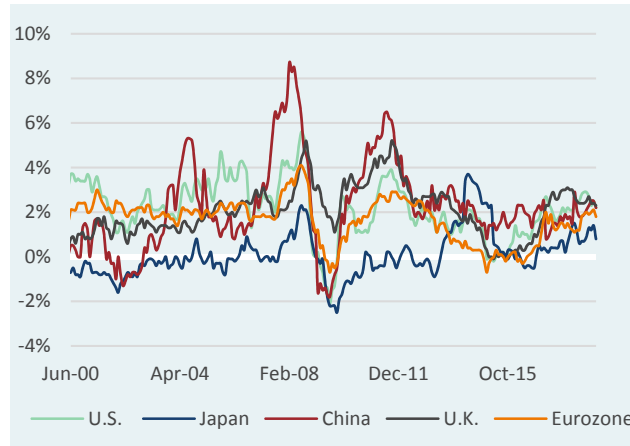
Global economic growth appears to be decelerating

REAL GDP GROWTH (YOY)



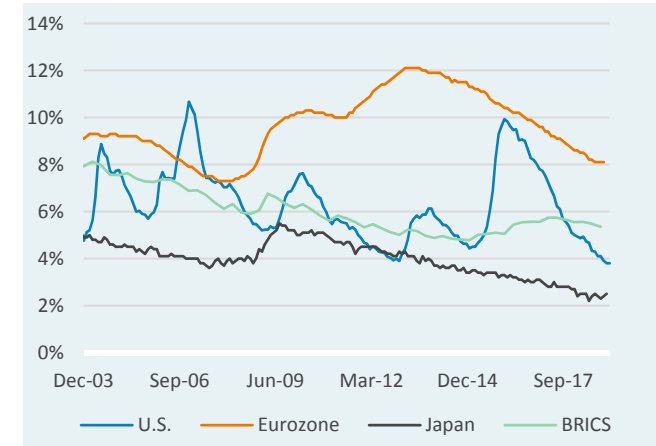
Source: Bloomberg, as of 9/30/18

INFLATION (CPI YOY)



Source: Bloomberg, as of 11/30/18

UNEMPLOYMENT RATE



Source: Bloomberg, as of 11/30/18 or most recent release

Brexit

The chaos surrounding Brexit negotiations has not yet had a large impact on markets (outside of higher volatility in the British pound), but it will likely become an increasing area of focus for global investors the closer we get to the March 2019 deadline. While most political and market commentators remain anti-Brexit, when we take a step back and think more dispassionately about the issue, a different picture emerges. Less immigration from Europe will likely be balanced by easier movement from other countries, including the U.S., India, Australia and others with historically strong links to the UK. Some businesses will likely shift to

accommodate the UK being outside of the protectionist area of the EU, but for most UK firms, much of their business is either done domestically or with non-EU countries.

There will be both gains and losses from Brexit, and yet current market pricing behavior seems to be putting little focus on the good and exaggerating the bad, which may present investment opportunity, particularly for non-consensus active managers. In the short-term, however, investors should brace for higher volatility.

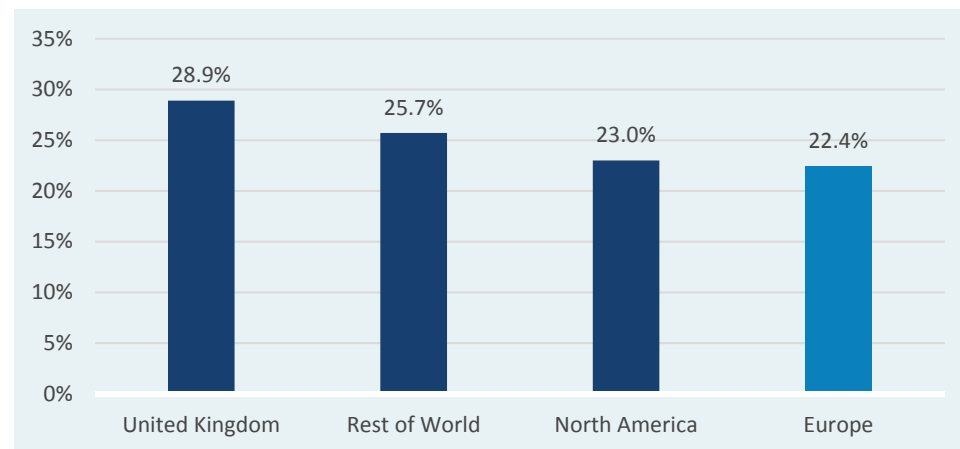
There will be both gains and losses from Brexit

3-MONTH IMPLIED VOLATILITY OF GBP/USD



Source: Bloomberg, as of 12/31/18

FTSE 100 COMPANY REVENUES BY REGION (2017)



Source: FTSE, 2017

Fixed income rates & credit

Interest rate environment

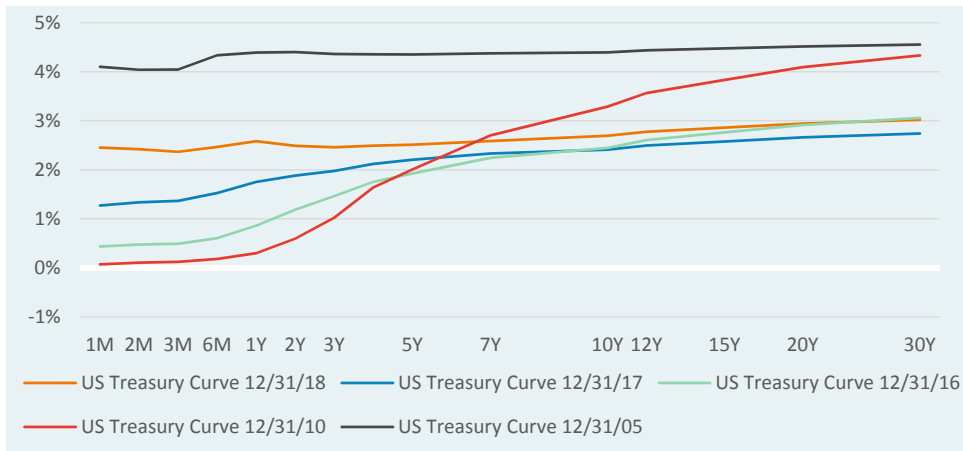
- The Federal Reserve raised the target for the fed funds rate by 0.25% in December, to a range of 2.25%-2.50%. Despite the hike, Fed officials indicated a more patient approach to future tightening, and lowered expectations for hikes in 2019 from three to two.
- The market's expectation for future rate hikes changed dramatically in December. As of year-end, the fed fund futures market is pricing zero hikes in 2019 and a rate cut priced in 2020.
- After reaching a cycle high of 3.2% in November, the 10-year Treasury yield fell sharply to end the year at 2.7%. Much of this drop was due to falling breakeven inflation as oil prices plunged. The 10-year breakeven inflation rate fell from 2.1% to 1.7% over the quarter.
- Although certain parts of the U.S. Treasury yield curve have inverted, there remains a 15 bps gap between the 10- and 2-year yields, which is the most widely cited measure of yield curve shape.
- Developed sovereign yields fell alongside U.S. Treasuries. The 10-year German bund yield was cut in half over the quarter to 0.24%.
- As expected, the European Central Bank officially announced the end of its asset purchase program. Beginning in January of 2019, monthly purchases will fall from €30 billion to €0. Central bank officials have said that they will fully reinvest maturing securities for the foreseeable future and keep interest rates unchanged until at least the second half of 2019.

Area	Short Term (3M)	10-Year
United States	2.36%	2.69%
Germany	(0.77%)	0.24%
France	(0.86%)	0.71%
Spain	(0.42%)	1.42%
Italy	(0.06%)	2.74%
Greece	1.30%	4.40%
U.K.	0.73%	1.28%
Japan	(0.15%)	0.00%
Australia	2.01%	2.32%
China	2.83%	3.31%
Brazil	6.48%	9.24%
Russia	7.12%	8.78%

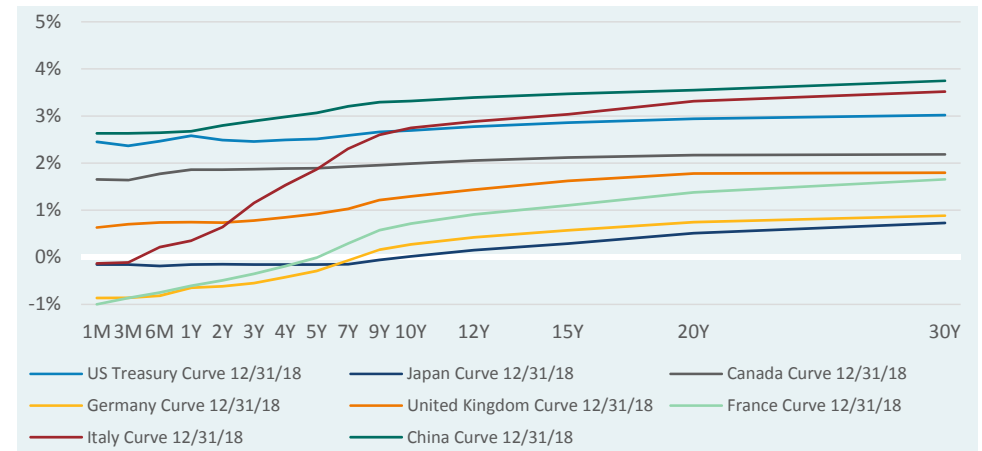
Source: Bloomberg, as of 12/31/18

Yield environment

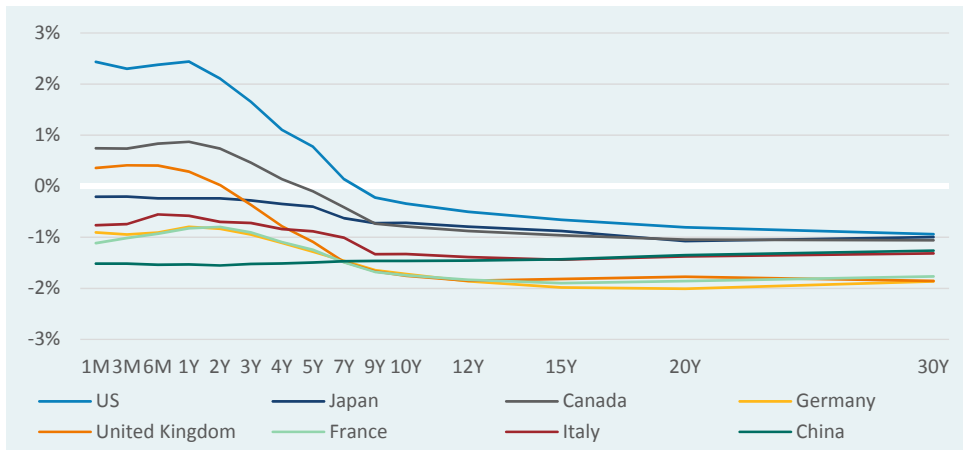
U.S. YIELD CURVE



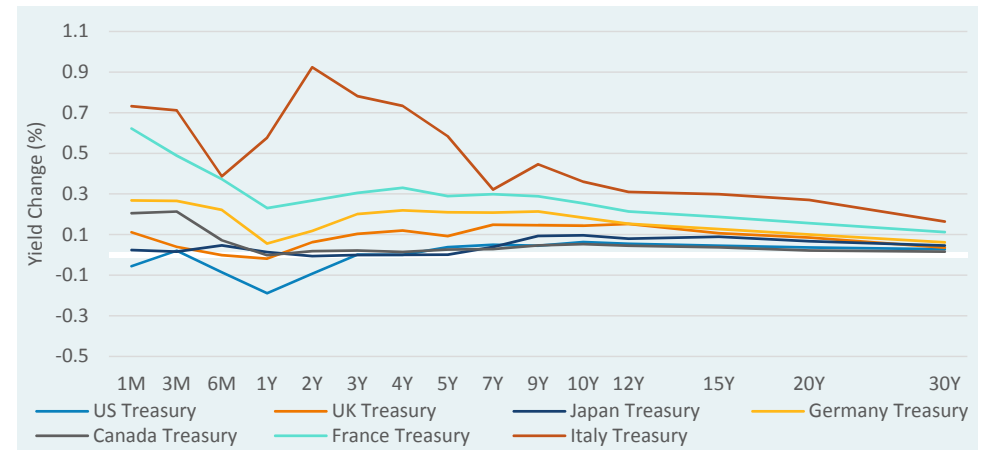
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 12/31/18

Fed pricing

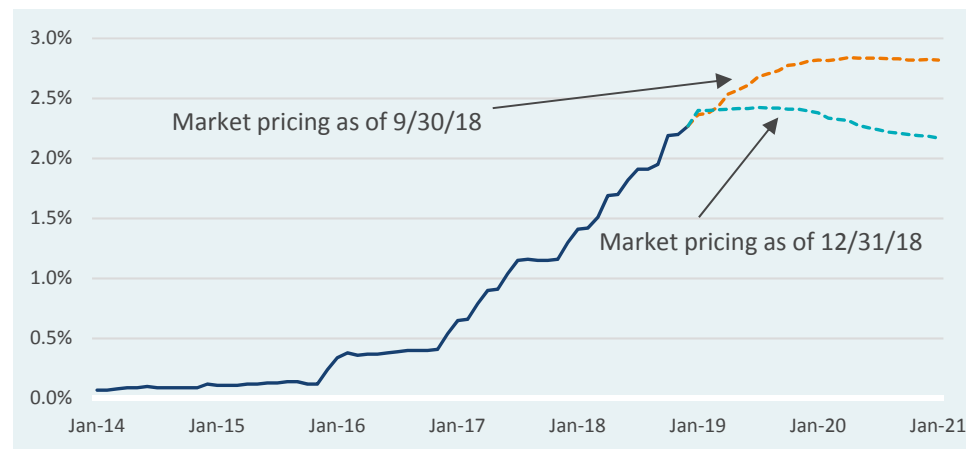
The Fed raised rates by another 25 bps in December to a target range of 2.25% to 2.50% on the fed funds rate, the fourth such hike of 2018. More important than what the Fed did, however, is what Fed officials said, and how the market reacted and adjusted its expectations for future monetary tightening. Leading up to the December meeting, Fed officials began to take a more a dovish tone amid market volatility and economic data misses, and they stressed the importance of future policy being data dependent. The Fed then acknowledged these concerns by lowering expectations for rate hikes in 2019 from three to two. Meanwhile, market expectations for future rate hikes plummeted as equity

markets sold off and volatility spiked. As of the end of the year, not only were markets priced for a Fed pause in 2019, but they were also priced for a rate cut in 2020. With such dovish market pricing, it is important to note that in order for the Fed to provide any stimulus at this point, it will likely need to cut rates or halt the balance sheet unwind.

Market pricing of future Fed policy is extremely dovish

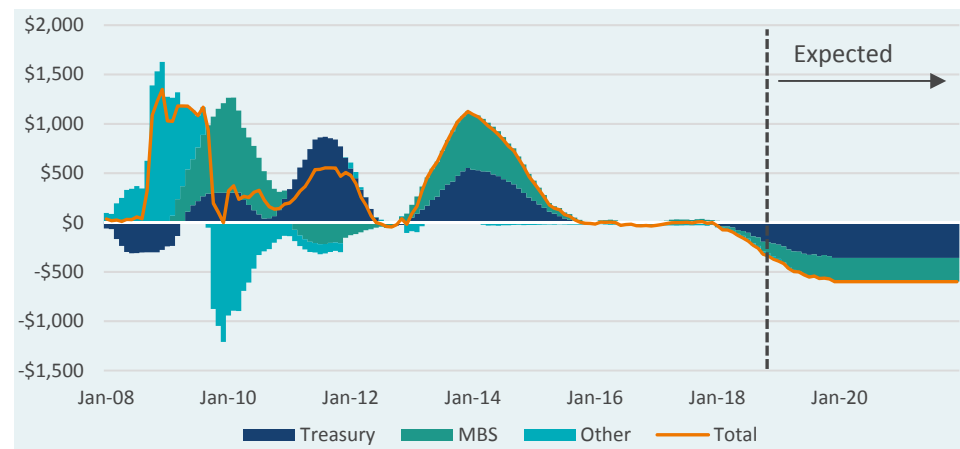
As of December, the Fed balance sheet had been reduced by around \$500 billion without any immediate issues. To this point, officials have been adamant that the balance sheet is not an active tool for tightening monetary policy, and that there are no plans to adjust the current rate of unwind.

MARKET PRICING OF THE FED FUNDS RATE



Source: Bloomberg, as of 12/31/18, dotted lines are based on futures market pricing

NET CHANGE IN FED BALANCE SHEET (YOY, \$BILLIONS)



Source: Bloomberg, Federal Reserve, as of 12/31/18

Credit environment

High yield and bank loans delivered losses during the quarter on slowing growth expectations, energy price volatility, investor outflows, and broad risk-off market sentiment (BbgBarc US Corp High Yield -4.5%, CS Leveraged Loans -3.1%).

High yield bonds returned -2.1% for 2018, which is the second lowest annual return for the asset class in the last ten years after 2015. Yields and spreads in high yield credit are at their highest since 2016, increasing to 8.0% and 526 bps, respectively.

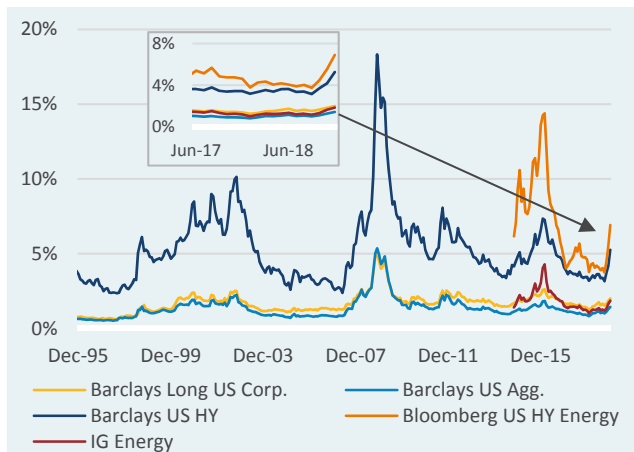
Loans were also under pressure in December as the asset class

dealt with accelerated outflows and negative press – spreads on loans increased to 505 bps from 374 bps the prior quarter. The credit quality of bank loans has deteriorated throughout the cycle as covenant-lite loans dominated new issuance.

Based on the recent behavior and heightened volatility in credit, we do not believe investors are being adequately compensated for credit risk and believe an underweight to U.S. investment grade, high yield credit, and bank loans is warranted. Within credit, we have a bias toward owning higher quality and more liquid assets.

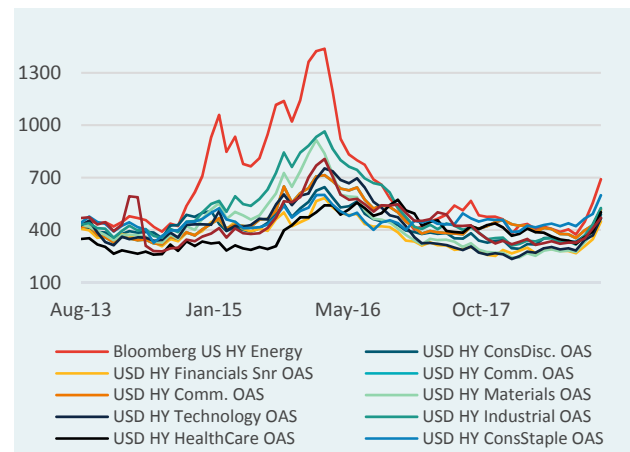
Credit spreads widened due to concerns over slowing global growth and broader risk-off behavior

SPREADS



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

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 12/31/18

Market	Credit Spread (OAS 12/31/18)	Credit Spread (1 Year Ago)
Long US Corporate	2.0%	1.4%
US Aggregate	1.4%	0.9%
US High Yield	5.3%	3.4%
US Bank Loans*	5.1%	4.0%

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

*Discount margin 4-year life

Issuance and default

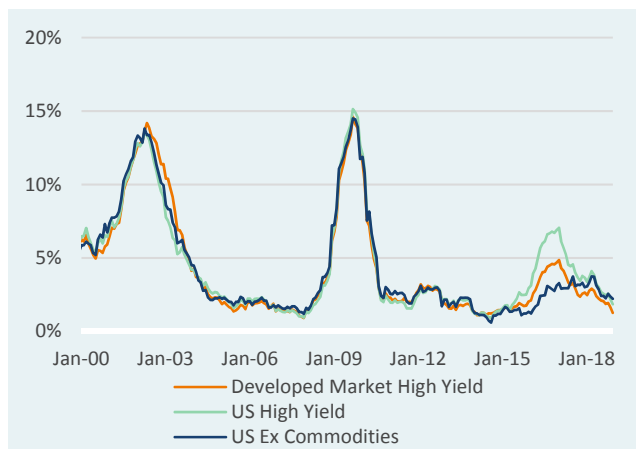
Default activity has been low and stable in the U.S. credit market, despite wider spreads. The par-weighted default rate of 1.9% remains below its long-term average of 3.0-3.5%. There were 29 defaults in 2018, affecting \$40.9 billion in bonds. iHeartRadio accounted for 40% of default volume (\$16 billion). The loan par-weighted default rate finished the year at 1.6%.

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

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

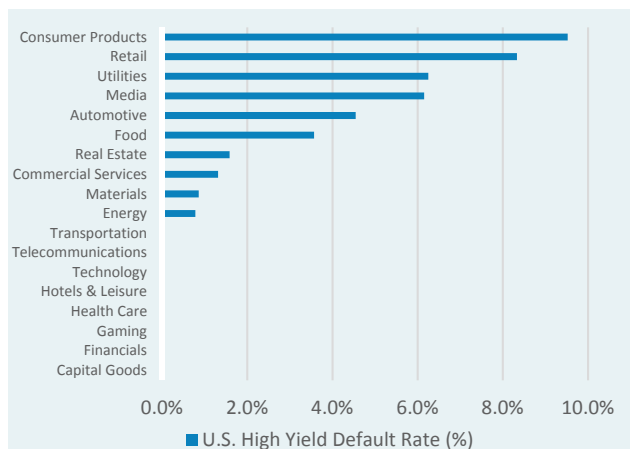
There were no high yield bonds issued in December due to market volatility – the first time this has happened since November 2008. Loan market issuance also slowed, with only \$8 billion in institutional loan volume. Gross new high yield and loan issue activity totaled \$187 billion and \$704 billion for 2018, respectively.

HY DEFAULT RATE (ROLLING 1-YEAR)



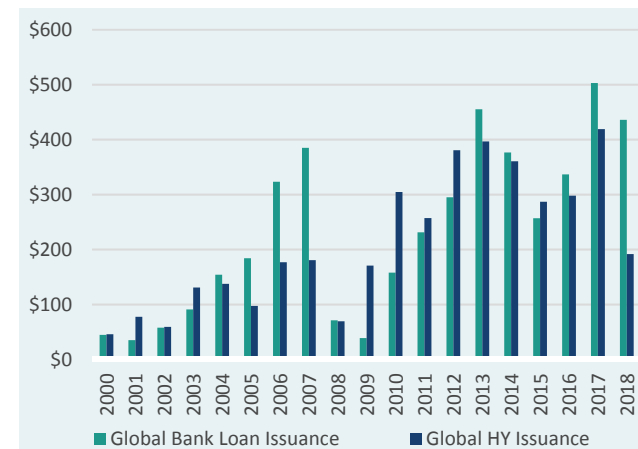
Source: BofA Merrill Lynch, as of 12/31/18

HY SECTOR DEFAULTS (LAST 12 MONTHS)



Source: BofA Merrill Lynch, as of 12/31/18 – par weighted

GLOBAL ISSUANCE (\$ BILLIONS)



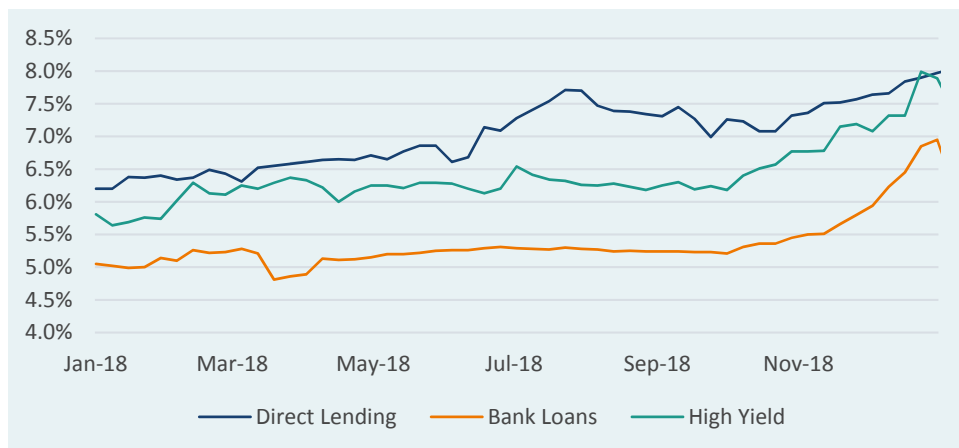
Source: Bloomberg, BofA Merrill Lynch, as of 12/31/18

Private credit

Fundraising in Private Credit slowed in 2018. 163 funds closed on \$110 billion in 2018, which was down from 189 funds and \$129 billion in 2017. Direct lending, mezzanine and distressed debt were the most active strategies raising \$45 billion, \$31 billion, and \$21 billion, respectively. Even with the slower fundraising, dry powder in private credit is at record levels. Private debt dry powder at the end of 2018 was \$280 billion, which eclipsed the 2017 record of \$246 billion.

Yields for loans made by direct lending funds finished the year above 8% (8.04%). While yields have been aided by higher LIBOR rates,

YIELDS FOR DIRECT LENDING, BANK LOANS AND HIGH YIELD

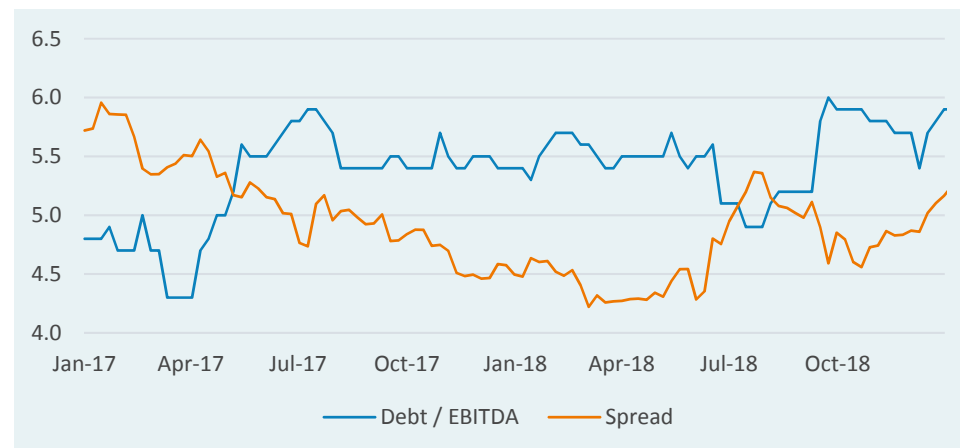


Source: The Lead Left, Middle Market, EBITDA < \$50MM; S&P LSTA US Leveraged Loan Index; ICE BofAML US High Yield Master II, as of 12/31/18

which grew from 1.7% to 2.8% during 2018, spreads increased from 4.5% to 5.35% during the year.

While credit spreads expanded in 2018, so too did the debt multiples for borrowers. Borrowers now average debt totaling 5.9x EBITDA, a 0.5x increase from January 2018-levels.

DIRECT LENDING LEVERAGE MULTIPLES (DEBT / EBITDA) & SPREAD



Source: The Lead Left, Middle Market Credit Stats, as of 12/31/18

Equity

Equity environment

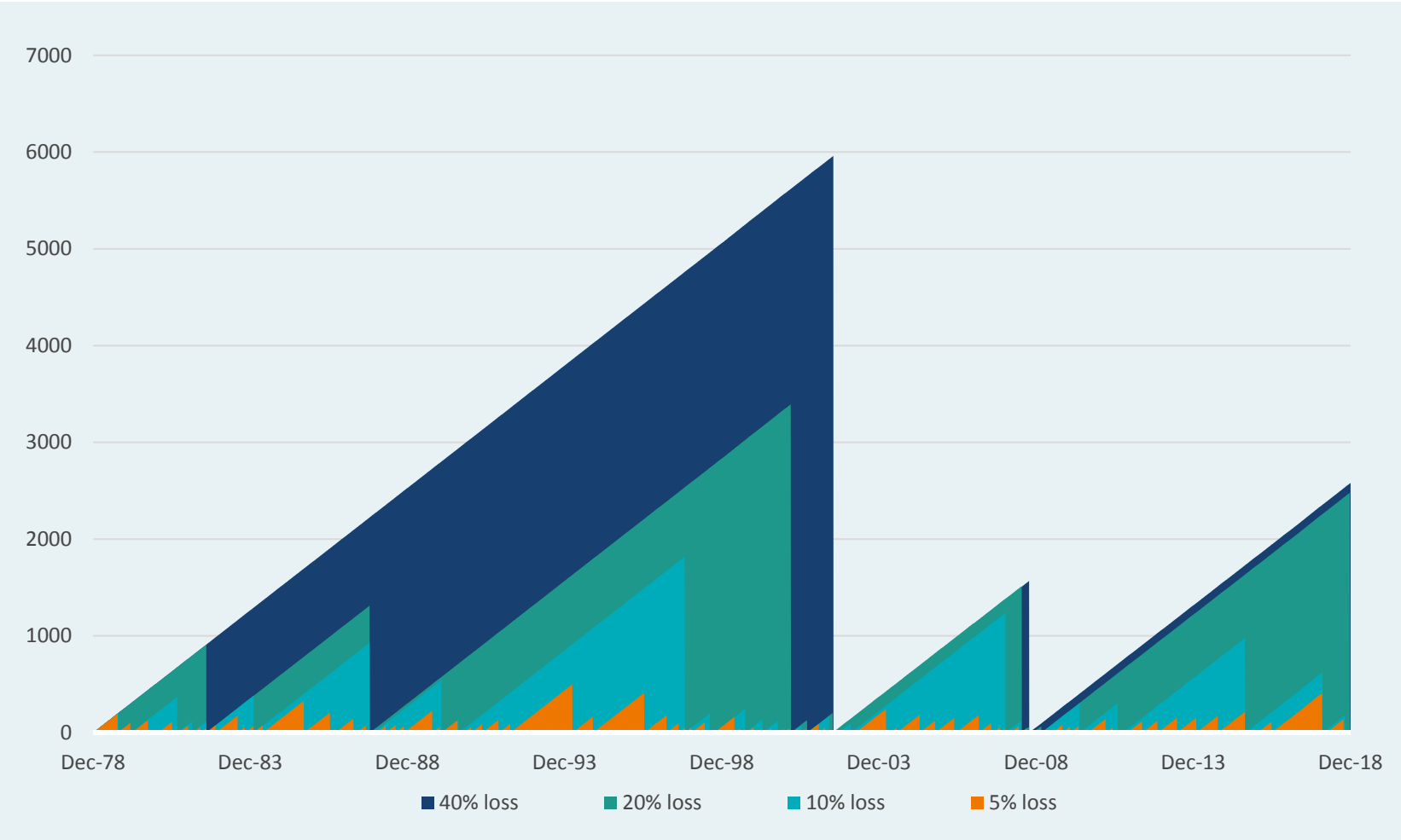
- U.S. equities experienced their worst quarter since 2008 – the S&P 500 Index returned -13.5%. The sell-off was due in part to concerns over a slowdown in global growth, and was exacerbated by low liquidity toward the end of the year.
- The drawdown from peak on the S&P 500 Index stopped just shy of 20% before equities rebounded during the last week of the year. Historically, equity drawdowns of more than 20% have been associated with an economic recession.
- Although absolute performance was also poor, international equities outperformed U.S. equities, particularly in emerging markets.
- Global equities saw a sharp drop in valuations as price declines overwhelmed small downward adjustments to earnings expectations. The 12-month forward P/E multiple for the MSCI ACWI fell by 12.1% during the quarter, falling from 14.8x to 13.0x.
- The risk-off environment hit small cap equities especially hard. The Russell 2000 Index posted a -20.2% return in the fourth quarter, compared to a decline of 13.8% on the Russell 1000 Index.
- Value equities outperformed growth equities over the quarter for the time since Q4 2016. The Russell 1000 Value Index and Russell 1000 Growth Index returned -11.7% and -15.9%, respectively.
- Equity volatility surged in what may be the beginning of a transition to a higher volatility regime. The VIX Index averaged 21 in Q4, and hit a high of 36 on December 24th.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	(13.8%)		(4.8%)	
US Small Cap (Russell 2000)	(20.2%)		(11.0%)	
US Large Value (Russell 1000 Value)	(11.7%)		(8.3%)	
US Large Growth (Russell 1000 Growth)	(15.9%)		(1.5%)	
International Large (MSCI EAFE)	(12.5%)	(11.6%)	(13.8%)	(9.0%)
Eurozone (Euro Stoxx 50)	(14.1%)	(10.7%)	(16.2%)	(9.3%)
U.K. (FTSE 100)	(11.7%)	(9.1%)	(14.0%)	(7.3%)
Japan (NIKKEI 225)	(14.6%)	(16.6%)	(8.6%)	(9.6%)
Emerging Markets (MSCI Emerging Markets)	(7.5%)	(7.4%)	(14.6%)	(10.3%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 12/31/18

Corrections are normal

RUSSELL 1000 INDEX – CUMULATIVE TRADING DAYS SINCE LOSS OF GIVEN MAGNITUDE



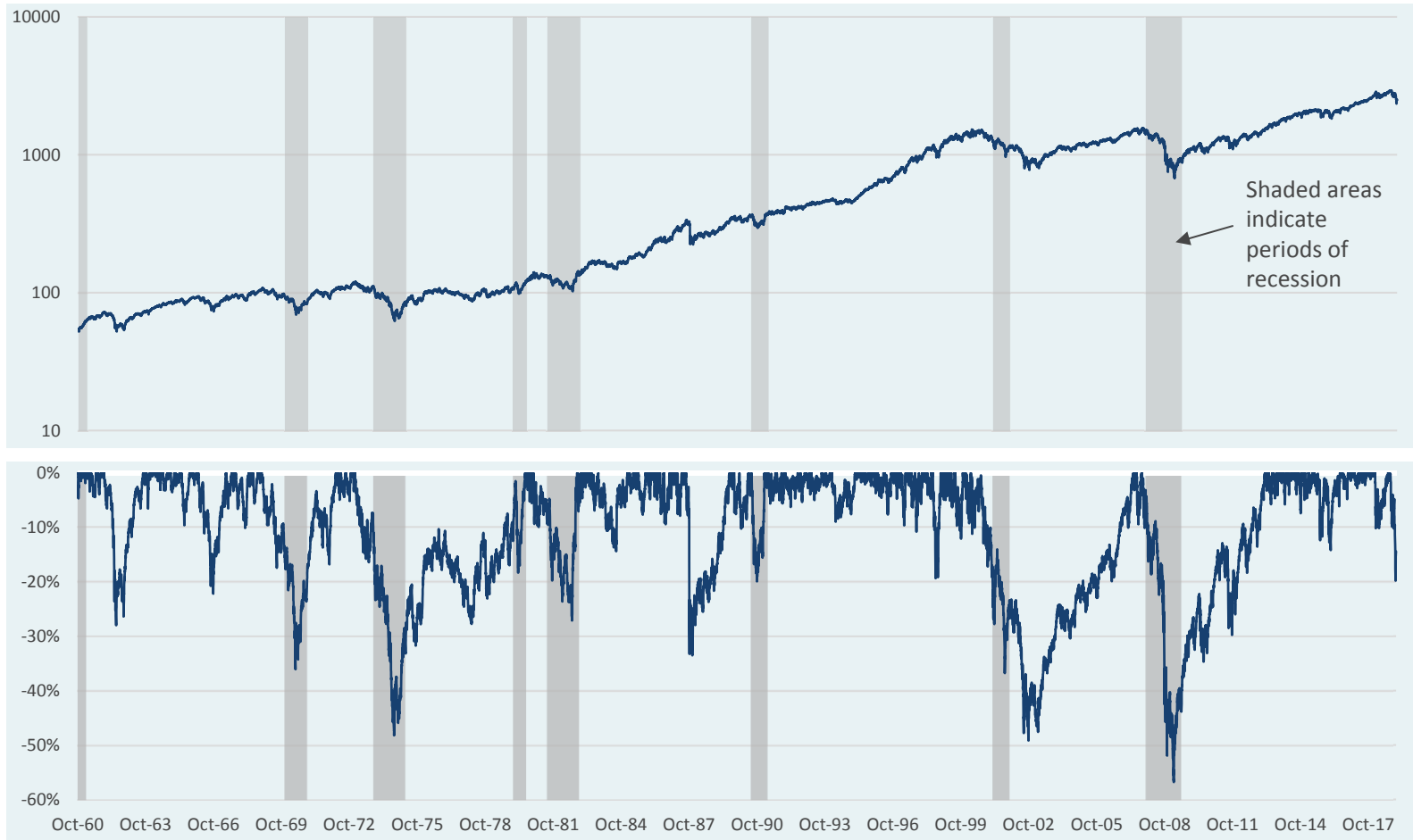
5% and 10% corrections occur regularly

The recent 20% drawdown is more notable, as equity drops of this size have happened once per cycle, on average

Source: Verus, FTSE Russell, as of 12/31/18

Drawdowns of greater than 20% occur less frequently

S&P 500 INDEX (UPPER PANEL) AND DRAWDOWN FROM PEAK (LOWER PANEL)



Drawdowns of greater than 20% have typically been associated with economic recessions

The recent drawdown appears overdone based on economic conditions

Source: Bloomberg, Verus, as of 12/31/18, recession start and end dates are from the NBER

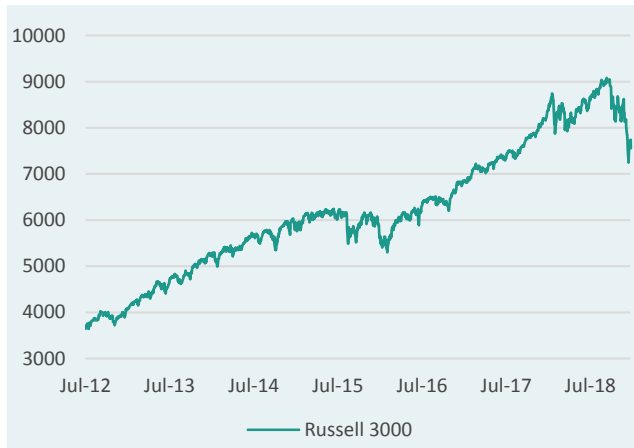
Domestic equity

U.S. equities experienced their worst quarter since 2008 as the S&P 500 Index returned -13.5%. For much of 2018, strong realized and expected earnings growth more than offset rising risk premiums (i.e. February sell-off) and discount rates as shown below in the middle chart. However, when cracks appeared in the growth story, influenced by poor economic data as well as profit warnings from companies, this support quickly vanished. The sharp drawdown, particularly in December, was also influenced by pockets of illiquidity in the market that exacerbated the move lower.

The question for investors now becomes whether the recent drawdown was a healthy reset of the pricing of earnings and risk premia, or whether it was a more urgent warning signal of a deterioration in the growth and profit cycle. We believe it to be more of the former rather than the latter, and that the market priced in an overly pessimistic view of macro conditions. However, we also recognize the growing headwinds to equities, including slowing global growth, further potential monetary tightening, and high debt levels. These conditions will likely result in sustained higher volatility, consistent with previous late cycle experiences.

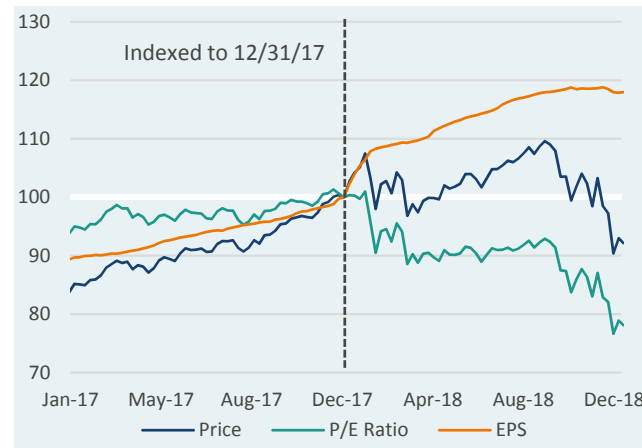
We maintain a neutral view on U.S. equities

U.S. EQUITIES



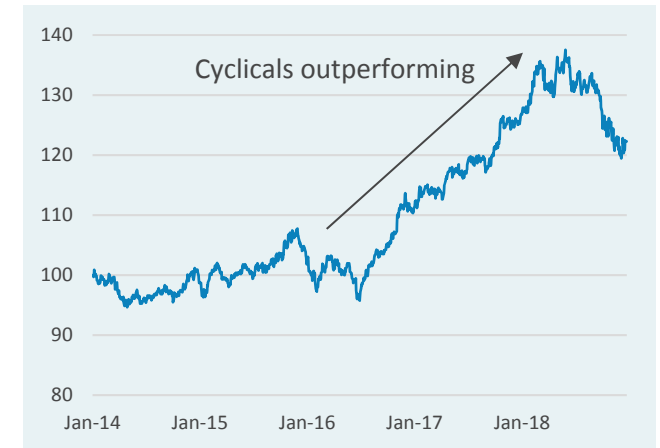
Source: Russell Investments, as of 12/31/18

S&P 500 PRICE MOVEMENT ATTRIBUTION



Source: Bloomberg, as of 12/31/18

CYCLICALS-DEFENSIVES RETURN SPREAD



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

Domestic equity size & style

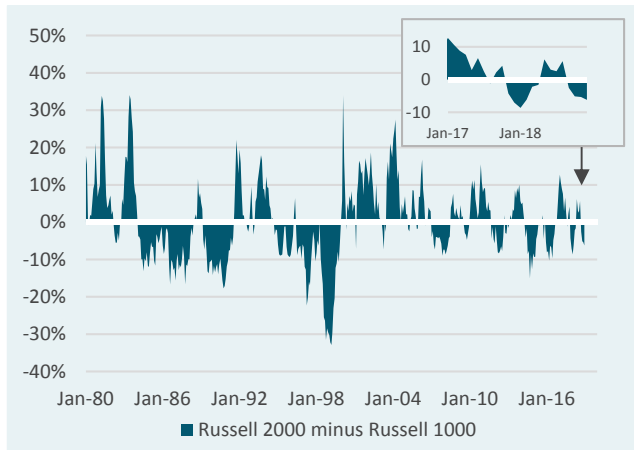
Large cap equities (Russell 1000 -13.8%) significantly outperformed small cap equities (Russell 2000 -20.2%) during the quarter. It may not be surprising that small cap equities underperformed, given the broad risk-off moves during this period. Growth stocks underperformed value stocks during the quarter (Russell 1000 Growth -15.9% vs. Russell 1000 Value -11.7%) for the first time since Q4 2016.

The sector weights in large-cap style benchmarks explain most of the recent value underperformance. Over the past

year, Energy, Materials, and Financials returned -18.1%, -14.7%, and -13.0%, respectively. These sectors are heavily weighted with value stocks, which resulted in a large drag to value. Information technology was an outperforming sector with a return of -0.3% during the period.

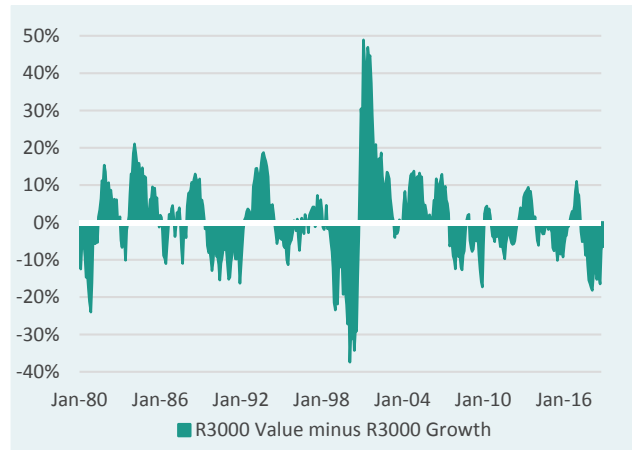
Long spans of style (size, value) underperformance is, and will always be, discouraging for investors. Similar to an investment in the broader equity market, we should expect to see rough patches of performance through time.

SMALL CAP VS LARGE CAP (YOY)



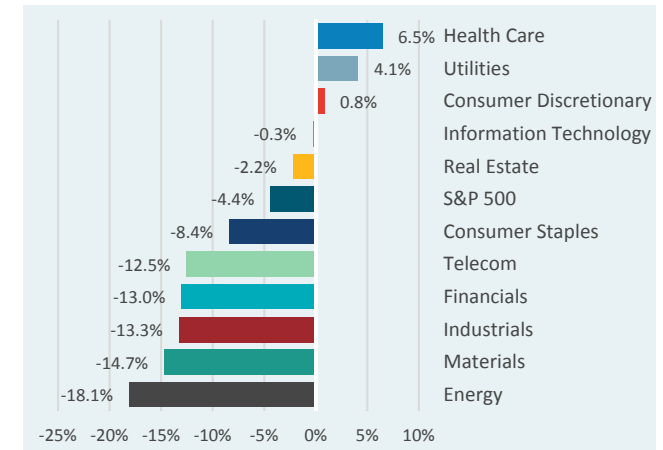
Source: FTSE, as of 12/31/18

VALUE VS GROWTH (YOY)



Source: FTSE, as of 12/31/18

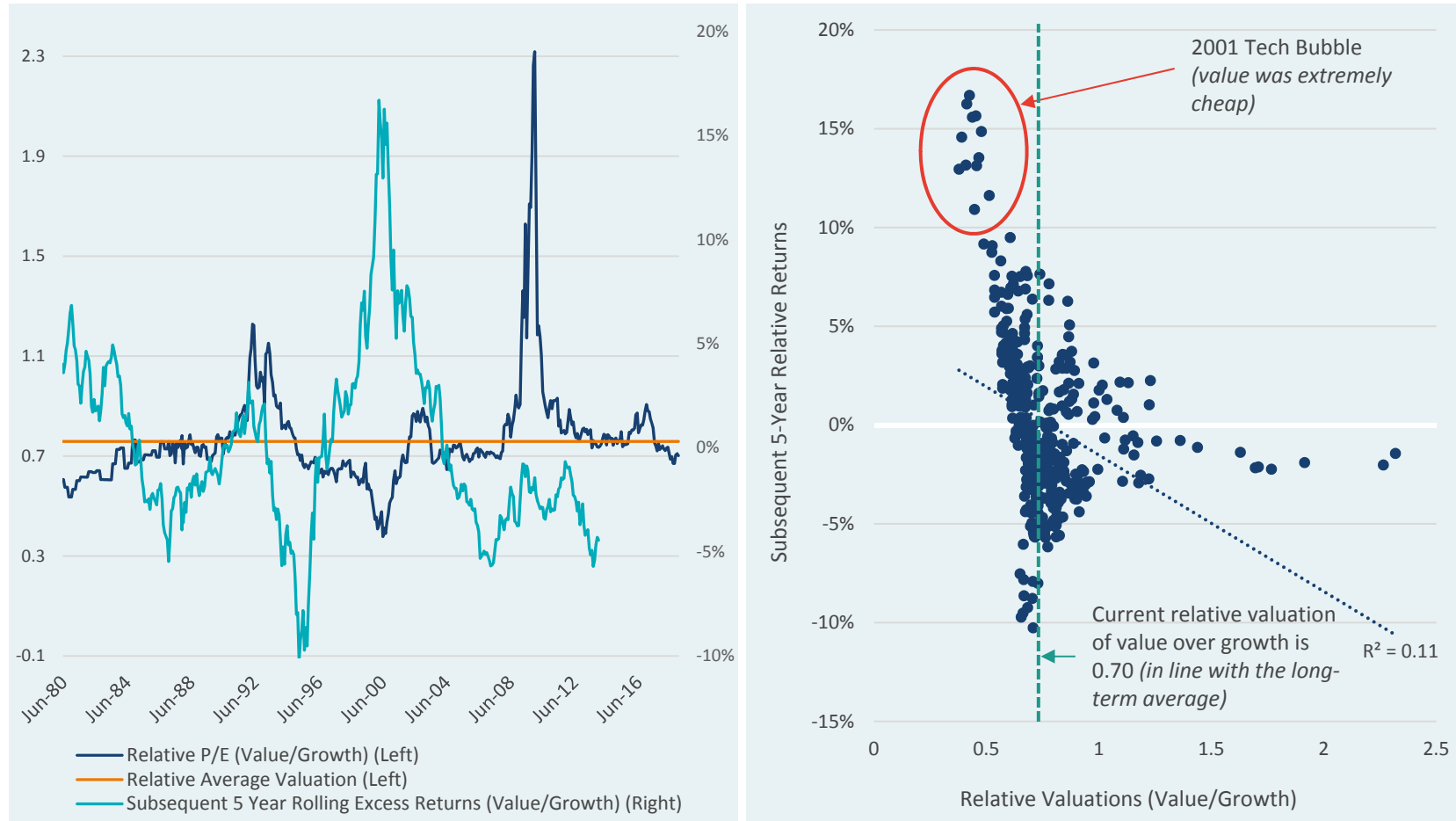
1-YEAR S&P 500 SECTOR RETURNS



Source: Morningstar, as of 12/31/18

Value – extreme prices indicate opportunity

But the price of value stocks is in-line with the long-term average



Although value has delivered an extended period of poor performance, value stocks are not cheap

Source: Verus, FTSE Russell, as of 12/31/18

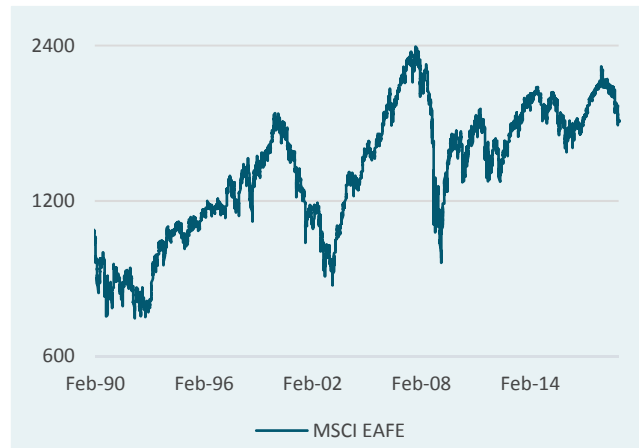
International developed equity

International developed equities sold off alongside U.S. equities. On an unhedged basis, the MSCI EAFE Index returned -12.5% in Q4 (-11.6% on a currency hedged basis). The three major equity markets in the EAFE Index – Japan, the Eurozone, and the UK – were all down more than 10%. The key factors that may have driven U.S. equities lower, most notably concerns over slowing global growth and central bank tightening, likely played an important role in non-U.S. developed markets. These concerns were particularly acute in the Eurozone where economic data routinely missed expectations, while the ECB officially

announced the end to its asset purchase program in December.

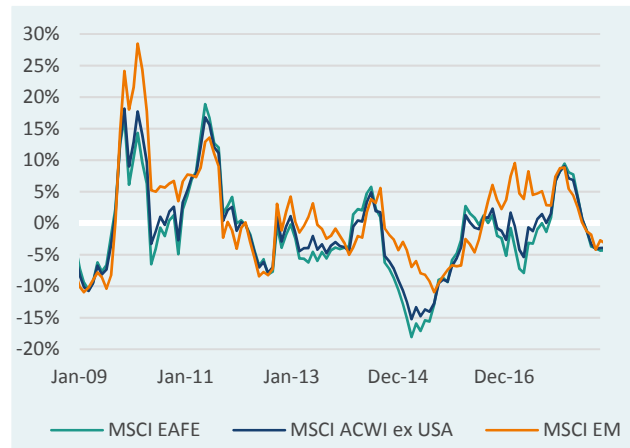
International developed equity markets are still cheap on both an absolute and relative basis at 11.9x forward earnings, but we believe there are good reasons for this pricing in certain markets. Within equity allocations, we are pessimistic on EAFE equities due to a negative view on the Eurozone. We believe slowing economic growth at the same time political risks are increasing and the ECB is unable to meaningfully ease policy present material headwinds to equity performance.

INTERNATIONAL DEVELOPED EQUITIES



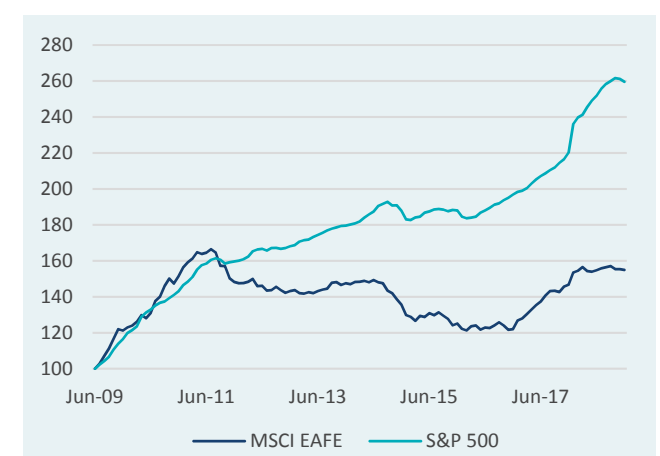
Source: MSCI, as of 12/31/18

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 12/31/18

EARNINGS PER SHARE



Source: Bloomberg, as of 12/31/18, indexed to earnings trough

Equity return behavior

U.S. (INDEXED TO START OF 2018)



EX U.S. (INDEXED TO START OF 2018)



U.S. and international equity prices failed to keep up with earnings growth during 2018

This has resulted in much cheaper equity valuations

Source: Bloomberg, as of 12/31/18, the U.S. and ex-U.S. equity markets are represented by the S&P 500 Index and MSCI ACWI ex U.S. Index, respectively

Emerging market equity

Emerging market equities were the top performer in Q4, as these markets (MSCI EM -7.5%) experienced much less pain than developed (S&P 500 -13.5%, MSCI EAFE -12.5%) during the equity sell-off. Currency depreciation stabilized in Q4 (JP Morgan EM Currency Index +0.2%) and emerging market crises concerns faded from the news headlines.

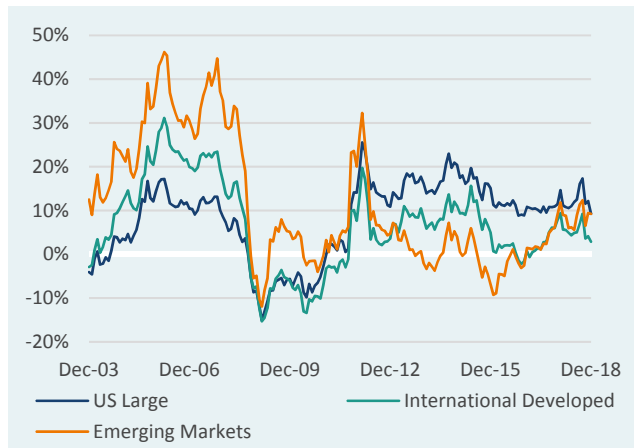
Valuations are near their long-term average, but remain much cheaper than developed market equities. Sentiment around emerging markets seems to be improving as the extreme negativity of 2018 dissipates, which creates possible

upside surprise if investors decide these fears were overblown. Very depressed currencies may also provide a performance tailwind in the event of mean reversion. Overall, we maintain our preference for the asset class.

Decelerating global growth and rising probability of recession do present unique risks to emerging markets, however, as these market typically exhibit a higher beta during market downside and upside moves. We will be watching global developments closely and will update our emerging market views as appropriate.

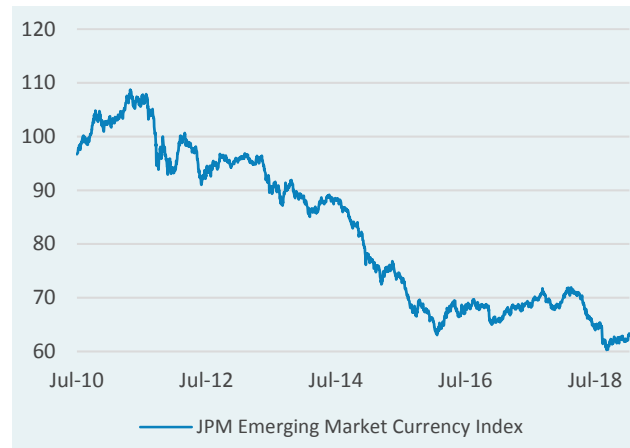
EM equities were the top performer in Q4

EQUITY PERFORMANCE (3-YR ROLLING)



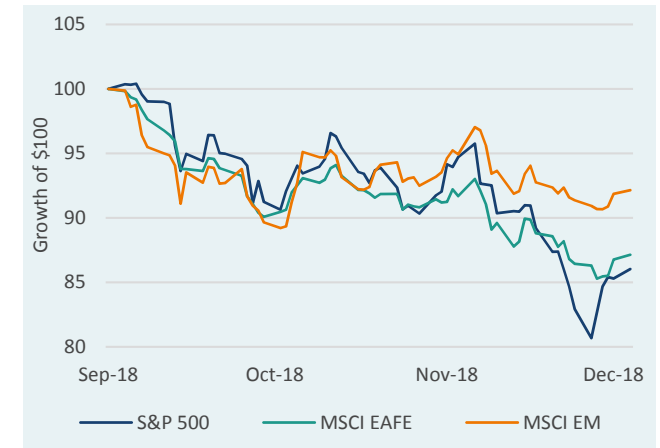
Source: Standard & Poor's, MSCI, as of 12/31/18

EMERGING MARKET CURRENCY MOVEMENT



Source: JP Morgan, as of 12/31/18

Q4 CUMULATIVE PERFORMANCE



Source: Standard & Poor's, MSCI, as of 12/31/18

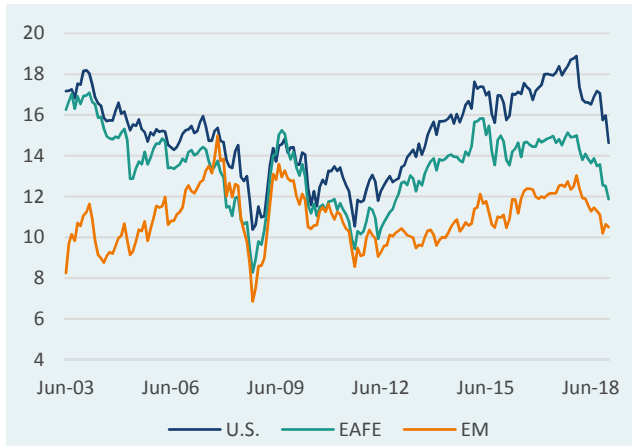
Equity valuations

The sharp drop in global equity prices overwhelmed small downward adjustments to earnings expectations, resulting in materially lower forward P/E multiples. In the U.S., EAFE, and EM regions, forward P/E ratios declined by 13.1%, 12.4%, and 5.5%, respectively in Q4. Depending on the period of analysis, many equity markets could now be considered fairly valued relative to their own history (U.S., EM) and others could be considered outright cheap (EAFE). In the U.S., the 12-month forward P/E ratio was 14.6x at the end of December, placing it below the median value of the past 15 years.

Assessing whether or not an equity market is cheap or

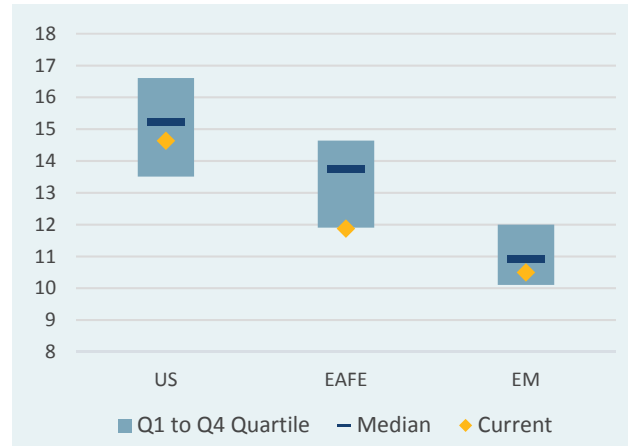
expensive is not a straightforward exercise. For one, as we have noted in the past, the broader macro environment (namely real interest rates and inflation) can strongly influence value. Higher (lower) real interest rates and inflation demand (higher) lower equity valuations, all else equal. Further, conclusions on the cheapness/richness of equities at any point in time depend on this metric. For example, trailing earnings may suffer from being backward-looking, while forward earnings are subject to forecast error and analyst bias. Particularly when looking at the forward P/E ratio, we caution against naively extrapolating recent earnings growth into the future.

FORWARD P/E RATIOS



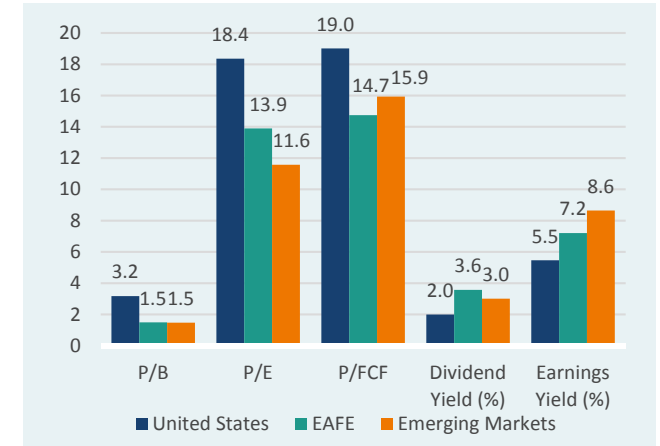
Source: MSCI, as of 12/31/18

FORWARD P/E RATIO DISTRIBUTION (15-YR)



Source: Verus, MSCI, as of 12/31/18

VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, as of 12/31/18 - trailing P/E

Equity volatility

Equity volatility jumped in October, and remained elevated throughout the rest of the year. The VIX Index of implied volatility for the S&P 500 Index averaged 21 in the fourth quarter, above its long-term average of around 18, and hit a high of 36 on December 24th. Equities also experienced frequent large intra-day swings, particularly in December, that are not captured by daily volatility measures. Extremely low liquidity during the end of the year likely exacerbated market movements and augmented volatility. The increase in volatility was more acute in the U.S. than other equity markets – the trailing

one-year volatility for the S&P 500 Index was higher than both the MSCI EAFE and EM Indices for the first time since 2008.

Equity volatility rose in Q4

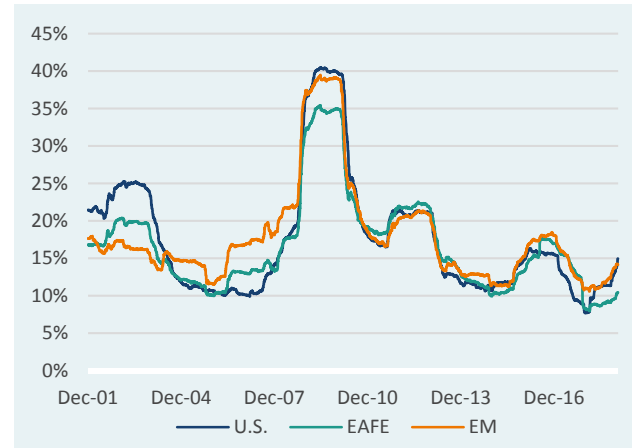
While volatility has certainly been extreme relative to the recent past, it has been much more normal when compared to a longer history. We believe investors should expect higher volatility moving forward as we continue to progress into the later stages of the cycle.

U.S. IMPLIED VOLATILITY (VIX)



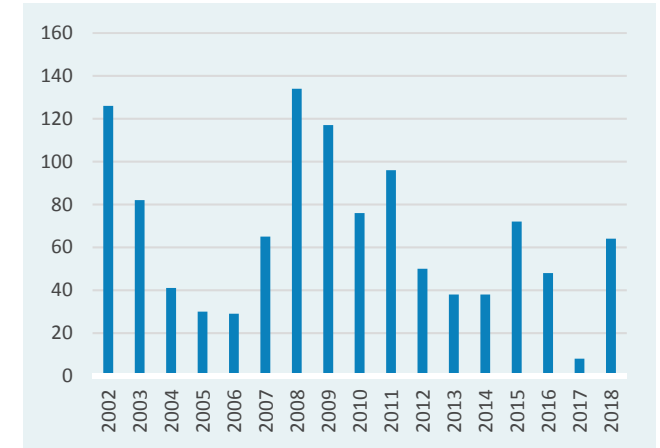
Source: CBOE, as of 12/31/18

REALIZED 1-YEAR ROLLING VOLATILITY



Source: Bloomberg, as of 12/31/18

S&P 500 – NUMBER OF >1% DAILY MOVES



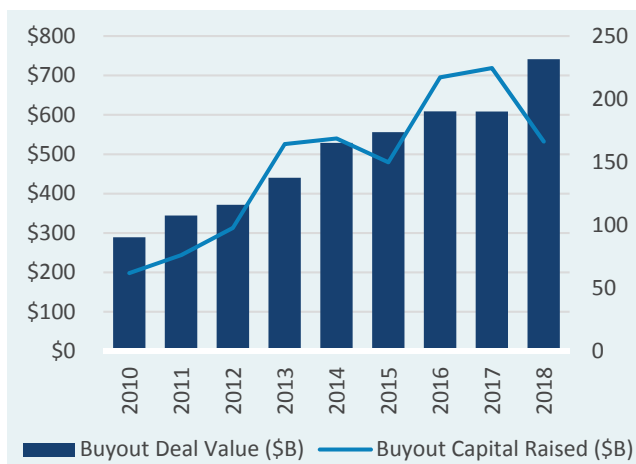
Source: Bloomberg, as of 12/31/18, includes down and up moves

Private equity

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

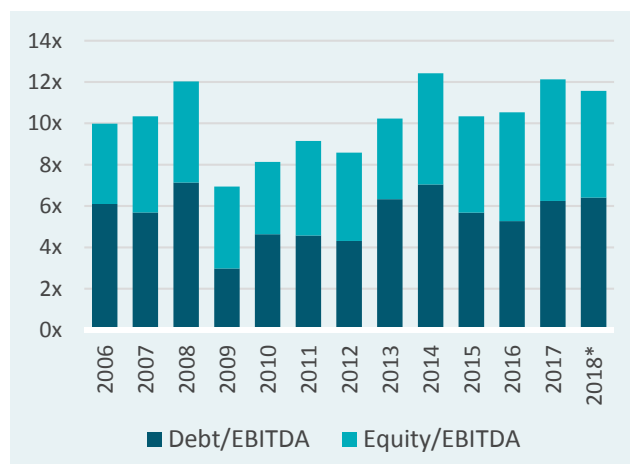
- Buyout activity has continued to increase in 2018. Through the fourth quarter buyouts are up 21.8% and 4.7% when measured by dollar value and number of transactions, respectively. The size of the average buyout, \$155.43, has increased from 2017, \$133.63. Unlike deal flow, fund capital raising has slowed from the peaks of 2017. Only 186 buyout funds representing \$166 billion closed so far this year, down from 235 funds representing a record \$225 billion in 2017.
- Buyout multiples slightly decreased from 2017. Average EV/EBITDA is 11.6x through December 31, 2018 (down from 11.9x in 2017) with debt multiples averaging 6.2x through the third quarter. Debt as a percentage of transaction value hovers around 54%.
- Venture capital fundraising and deal volumes continue to set records. \$55 billion of venture capital has been raised in the U.S. in 2018, an increase of 63% over the same period last year. Similarly, the amount of venture deals are up 57.8%. In fact, 2018 venture deal volume (\$131 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



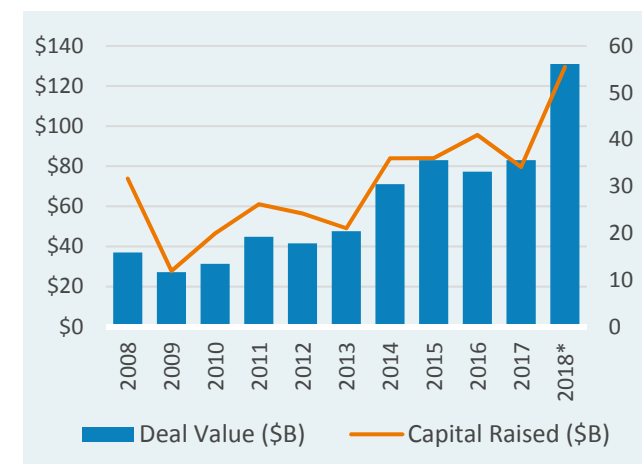
Source: PitchBook

TRANSACTION MULTIPLES



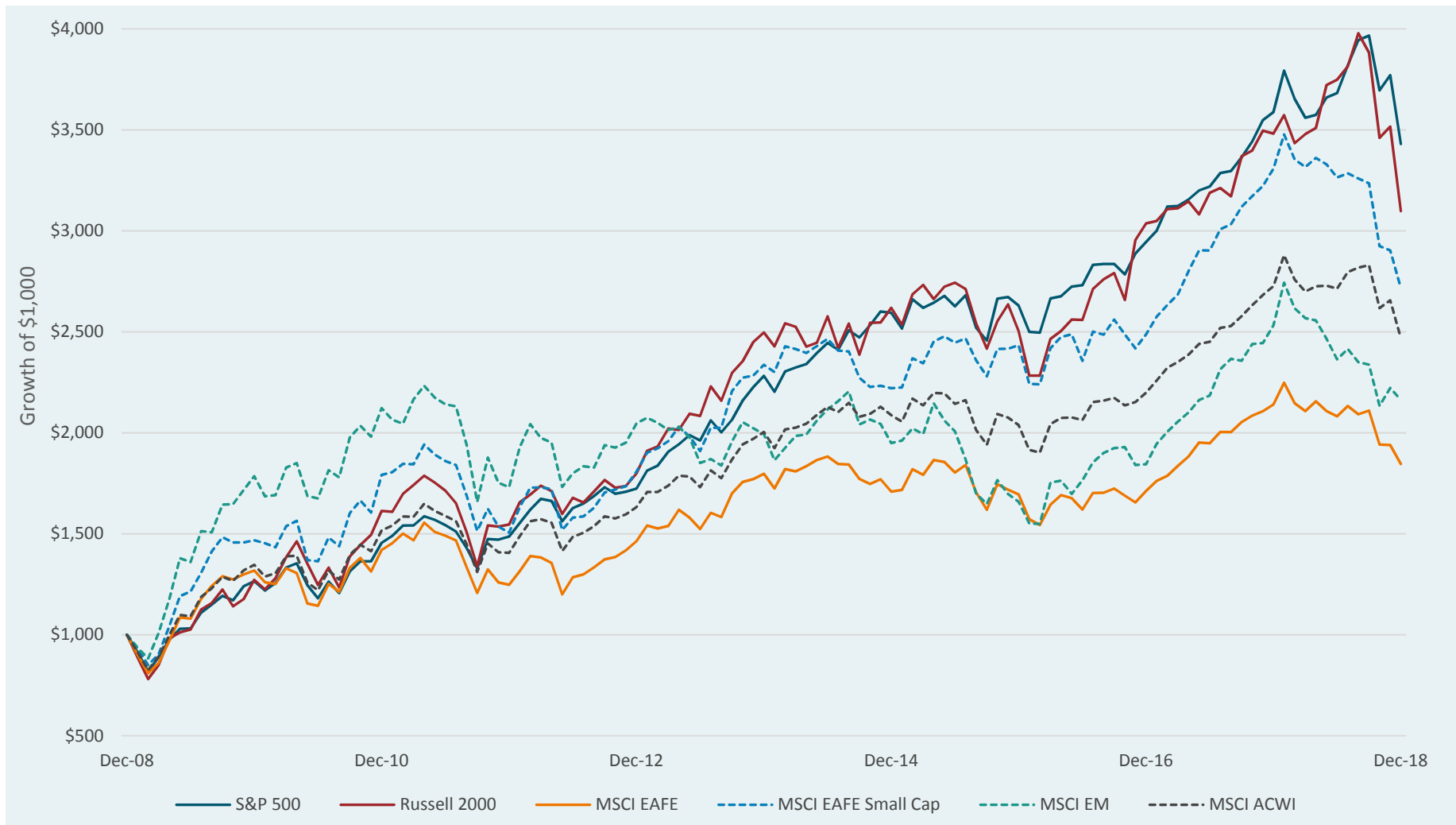
Source: PitchBook

VENTURE DEAL VOLUME & FUNDRAISING



Source: PitchBook

Long-term equity performance



Source: Morningstar, as of 12/31/18

Other assets

Currency

The U.S. dollar appreciated by 1.8% during the quarter, and 7.2% in 2018 based on the Broad Trade Weighted Dollar Index. The strong appreciation of the dollar last year was influenced by a number of factors, including stronger relative U.S. economic growth, higher relative interest rates, and weakness in other currencies such as the euro and British pound. The recent dollar strength in Q4 was due in part to safe haven demand amid equity market turbulence as these moves came despite the market pricing considerably less tightening from the Fed.

Emerging market currencies stabilized over the quarter, and recovered slightly from the recent drawdown in Q3. The JPMorgan Emerging Market Currency Index appreciated by 0.2% in Q4.

The U.S. dollar appreciated to a cycle high

From a value perspective (based on purchasing power parity), the U.S. dollar remains expensive, particularly versus the euro, yen, and British pound.

U.S. DOLLAR TRADE WEIGHTED INDEX



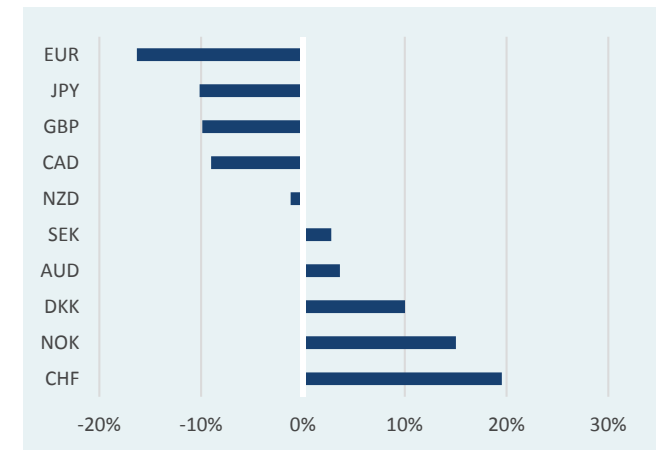
Source: Federal Reserve, as of 12/26/18

JPM EMERGING MARKET CURRENCY INDEX



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

U.S. DOLLAR VALUE (PPP)



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

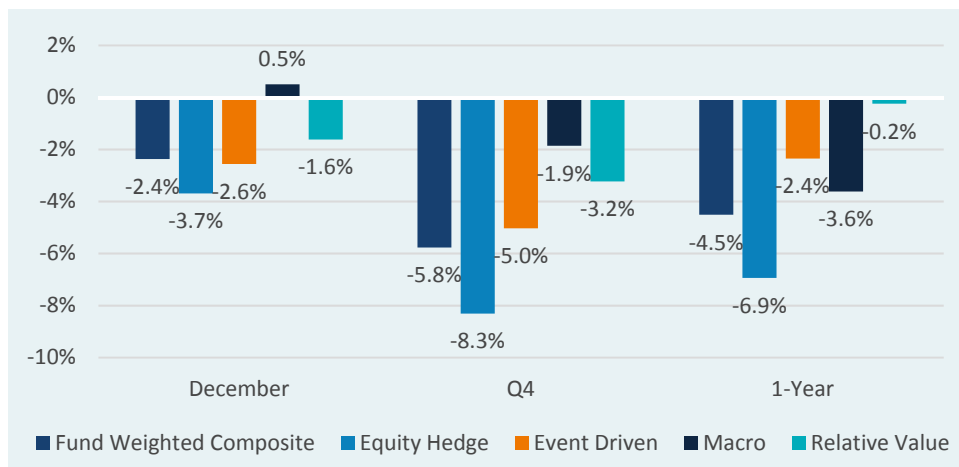
Hedge funds

Hedge funds Q4 losses pushed full-year 2018 results into negative territory (HFRI Fund Weighted Composite -5.8% in Q4; -4.5% in 2018). Most hedge funds stumbled in October as equity markets experienced a painful reversal ranging from -5% to -10%. The industry fared relatively better in December with hedge funds down -2.4% while the S&P 500 Index lost -9.0%. The approximate 6.6% performance differential was the largest observed since February 2009. As a group, macro strategies performed best in December and for the quarter. Defensively oriented discretionary macro strategies and currency strategies stood out with strong

relative performance. Equity hedge strategies lagged the universe, and products with higher beta and value exposures were hit the hardest as equity markets fell.

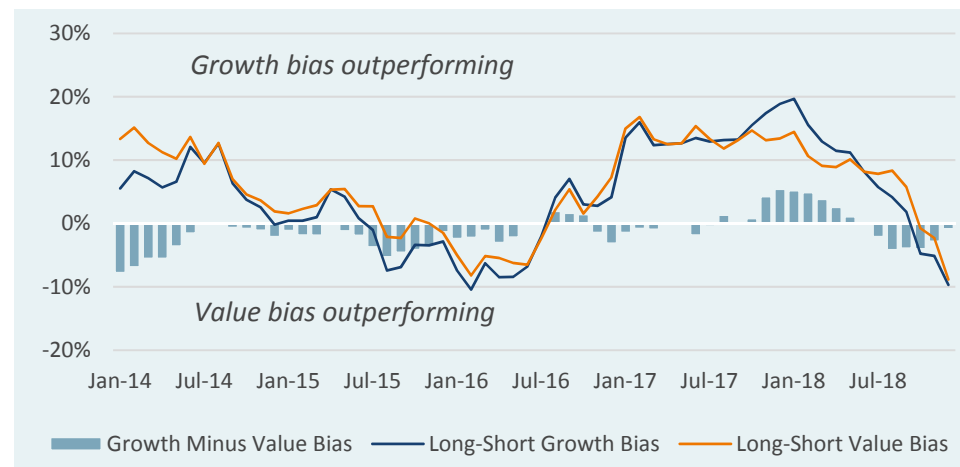
For managers trading fixed income securities, strategies focused on sovereign (-1.2%) and asset backed bonds (-1.7%) preserved capital relatively well during the market turbulence. Convertible arbitrage managers fared worse (-5.1%) due in part to greater relative sensitivity to equity market volatility.

HFRI HEDGE FUND STYLE PERFORMANCE



Source: HFRI, as of 12/31/18

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



Source: HFRI, as of 12/31/2018

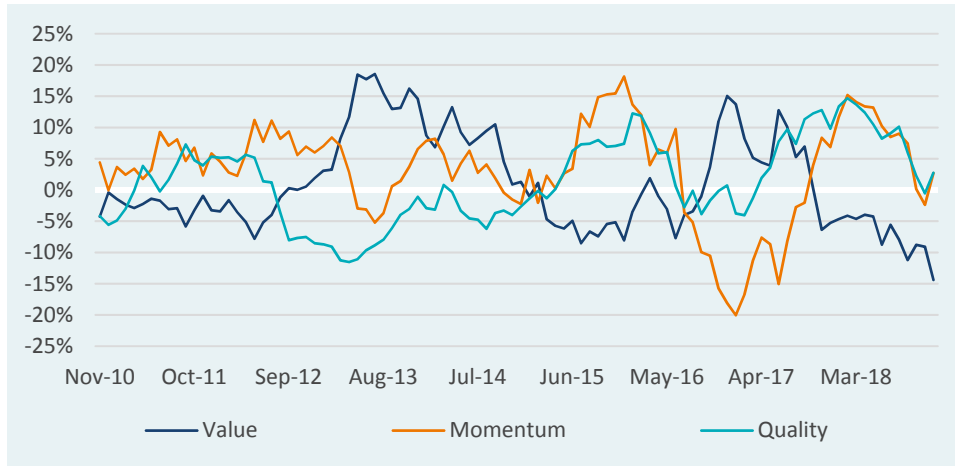
Alternative beta

Alternative beta strategy investors endured a difficult year, with many strategies performing one or two standard deviations below their historical average. While the median strategy we follow delivered negative returns during the fourth quarter, we noted dispersion across the space as a few products posted positive results. Factor exposures, particularly in the equity markets, continue to account for a meaningful portion of poor outcomes. While traditional value factors earned modestly positive results

during the quarter, this performance was offset by losses in momentum and size-related factors.

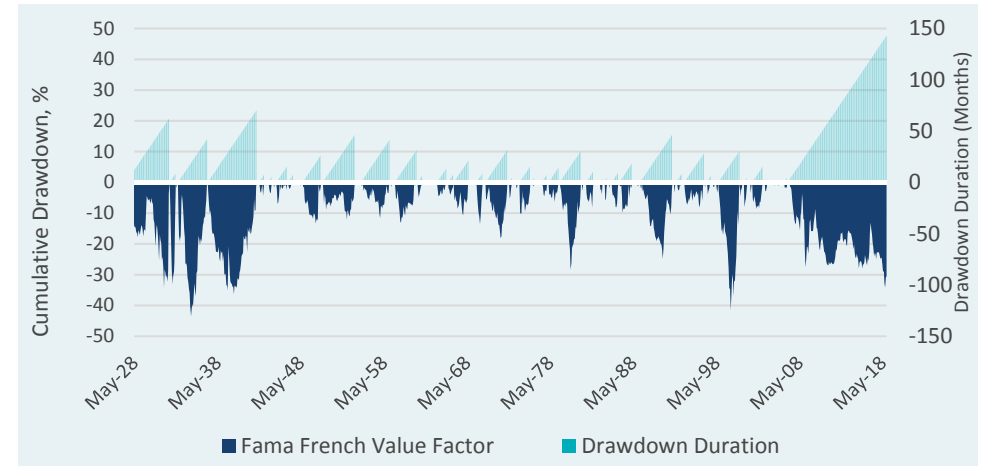
We continue to believe that alternative beta strategies are not “broken” per se, but instead have reflected extreme drawdowns in some factors and muted returns in others. We will continue to closely monitor these strategies and discuss the situation with managers in 2019.

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



Source: S&P Dow Jones, Thematic Market Neutral Indices, as of 12/31/18

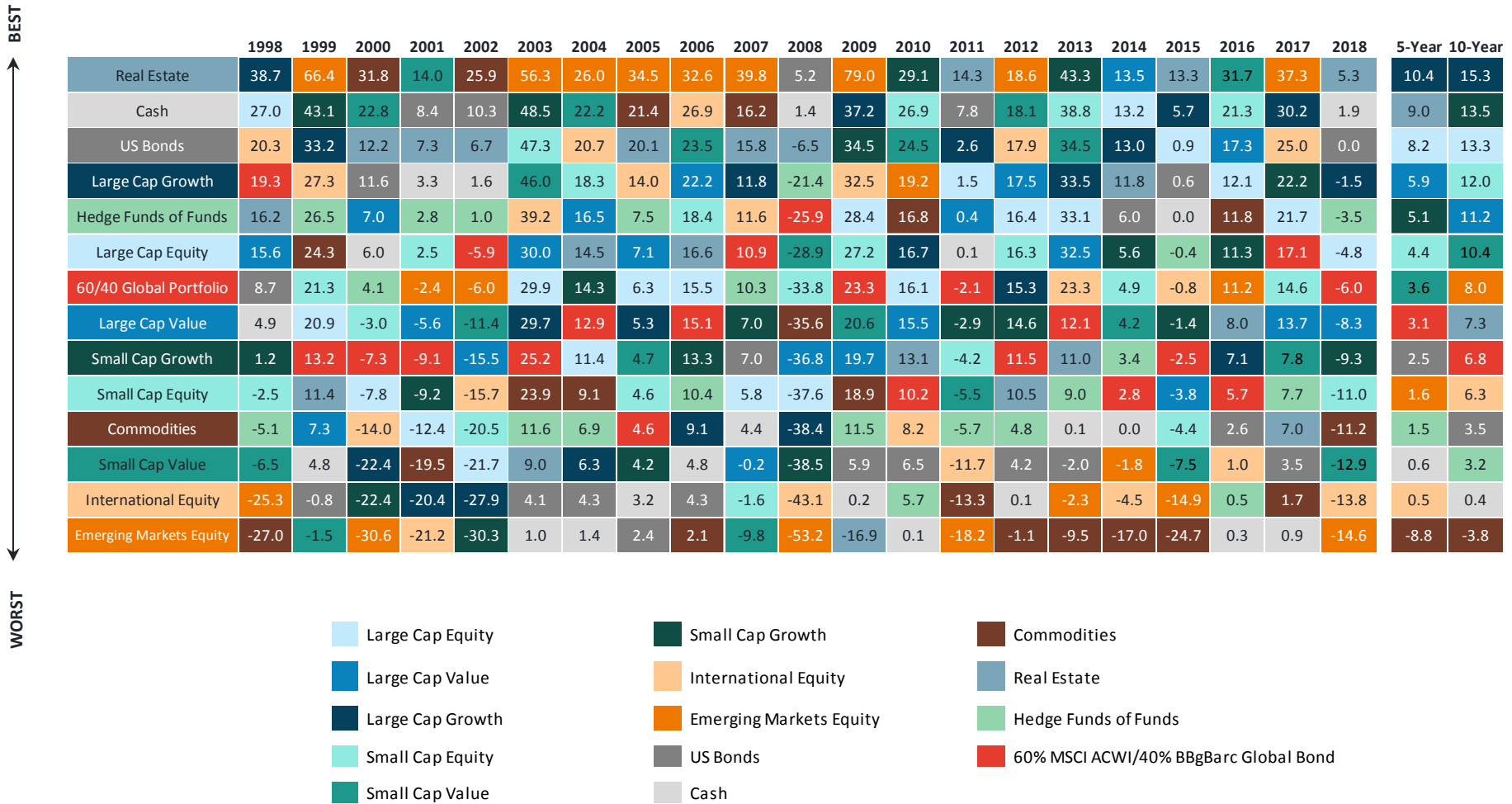
VALUE FACTOR DRAWDOWN MAGNITUDE AND DURATION



Source: Kenneth French Data Library, as of 11/30/18

Appendix

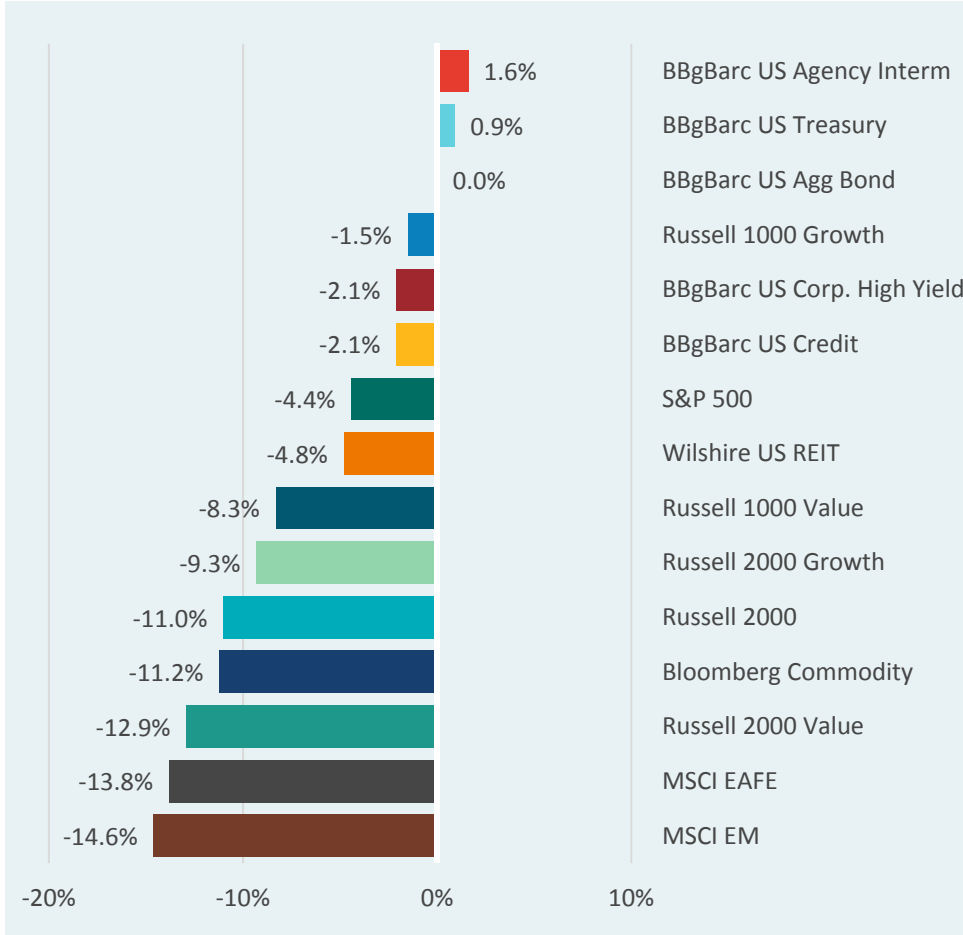
Periodic table of returns



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 9/30/18.

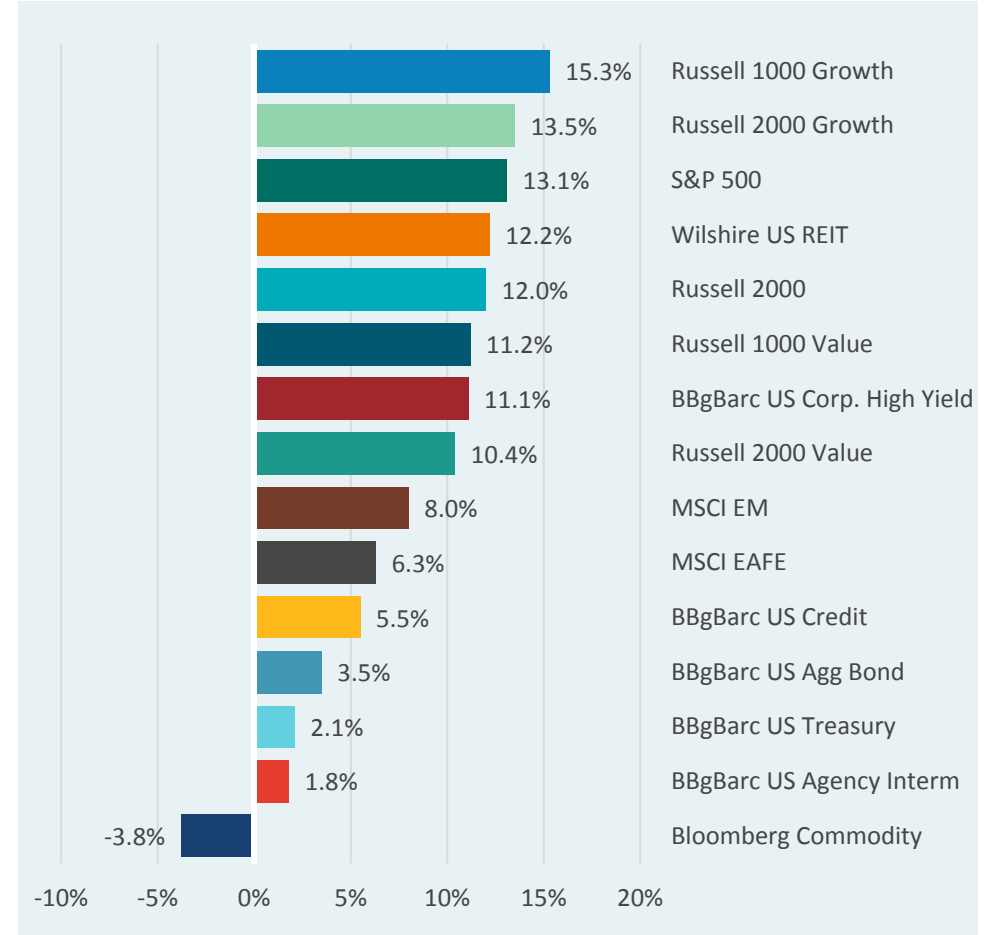
Major asset class returns

ONE YEAR ENDING DECEMBER



Source: Morningstar, as of 12/31/18

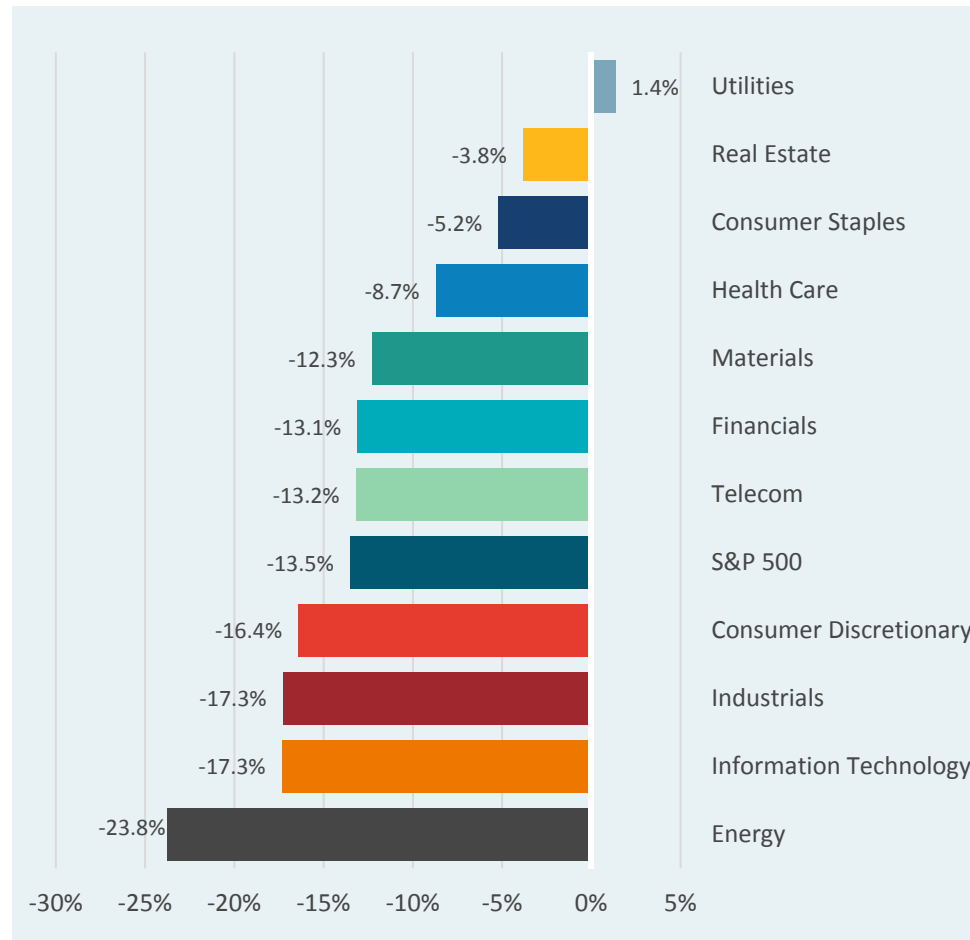
TEN YEARS ENDING DECEMBER



Source: Morningstar, as of 12/31/18

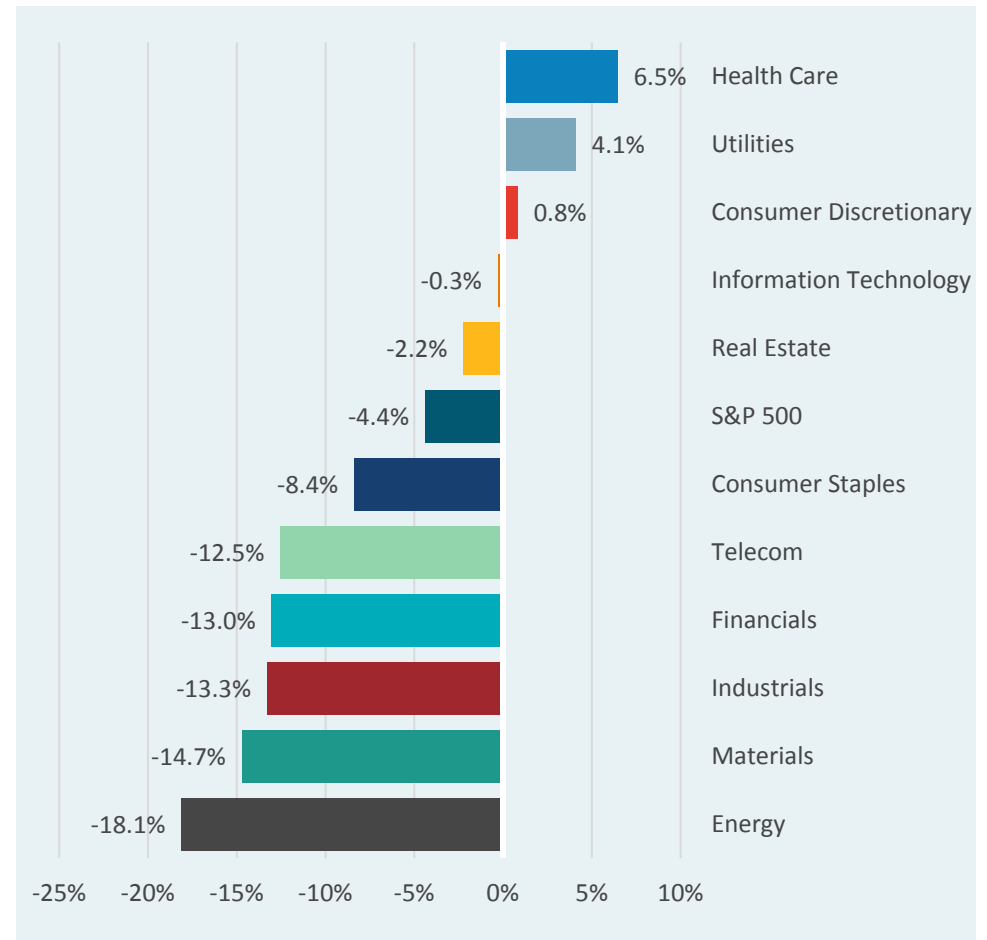
S&P 500 sector returns

Q4



Source: Morningstar, as of 12/31/18

ONE YEAR ENDING DECEMBER



Source: Morningstar, as of 12/31/18

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	(9.0)	(13.5)	(4.4)	(4.4)	9.3	8.5	13.1
S&P 500 Equal Weighted	(9.7)	(13.9)	(7.6)	(7.6)	8.0	7.1	15.0
DJ Industrial Average	(8.6)	(11.3)	(3.5)	(3.5)	12.9	9.7	13.2
Russell Top 200	(8.8)	(13.2)	(3.1)	(3.1)	9.9	9.0	13.0
Russell 1000	(9.1)	(13.8)	(4.8)	(4.8)	9.1	8.2	13.3
Russell 2000	(11.9)	(20.2)	(11.0)	(11.0)	7.4	4.4	12.0
Russell 3000	(9.3)	(14.3)	(5.2)	(5.2)	9.0	7.9	13.2
Russell Mid Cap	(9.9)	(15.4)	(9.1)	(9.1)	7.0	6.3	14.0
Style Index							
Russell 1000 Growth	(8.6)	(15.9)	(1.5)	(1.5)	11.1	10.4	15.3
Russell 1000 Value	(9.6)	(11.7)	(8.3)	(8.3)	7.0	5.9	11.2
Russell 2000 Growth	(11.7)	(21.7)	(9.3)	(9.3)	7.2	5.1	13.5
Russell 2000 Value	(12.1)	(18.7)	(12.9)	(12.9)	7.4	3.6	10.4

INTERNATIONAL EQUITY

Broad Index							
MSCI ACWI	(7.0)	(12.8)	(9.4)	(9.4)	6.6	4.3	9.5
MSCI ACWI ex US	(4.5)	(11.5)	(14.2)	(14.2)	4.5	0.7	6.6
MSCI EAFE	(4.9)	(12.5)	(13.8)	(13.8)	2.9	0.5	6.3
MSCI EM	(2.7)	(7.5)	(14.6)	(14.6)	9.2	1.6	8.0
MSCI EAFE Small Cap	(6.4)	(16.0)	(17.9)	(17.9)	3.7	3.1	10.5
Style Index							
MSCI EAFE Growth	(4.8)	(13.3)	(12.8)	(12.8)	2.9	1.6	7.1
MSCI EAFE Value	(4.9)	(11.7)	(14.8)	(14.8)	2.8	(0.6)	5.5
Regional Index							
MSCI UK	(3.8)	(11.8)	(14.2)	(14.2)	1.6	(1.7)	6.8
MSCI Japan	(6.7)	(14.2)	(12.9)	(12.9)	3.4	3.1	5.3
MSCI Euro	(4.8)	(13.2)	(16.4)	(16.4)	2.4	(0.9)	4.4
MSCI EM Asia	(3.2)	(9.3)	(15.5)	(15.5)	8.6	3.9	9.8
MSCI EM Latin American	(0.8)	0.4	(6.6)	(6.6)	14.9	(1.7)	5.0

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	0.5	(0.4)	(1.3)	(1.3)	2.1	1.7	3.6
BBgBarc US Treasury Bills	0.2	0.6	1.9	1.9	1.0	0.6	0.4
BBgBarc US Agg Bond	1.8	1.6	0.0	0.0	2.1	2.5	3.5
Duration							
BBgBarc US Treasury 1-3 Yr	0.8	1.3	1.6	1.6	0.9	0.8	1.0
BBgBarc US Treasury Long	5.5	4.2	(1.8)	(1.8)	2.6	5.9	4.1
BBgBarc US Treasury	2.2	2.6	0.9	0.9	1.4	2.0	2.1
Issuer							
BBgBarc US MBS	1.8	2.1	1.0	1.0	1.7	2.5	3.1
BBgBarc US Corp. High Yield	(2.1)	(4.5)	(2.1)	(2.1)	7.2	3.8	11.1
BBgBarc US Agency Interim	1.0	1.6	1.6	1.6	1.3	1.4	1.8
BBgBarc US Credit	1.5	0.0	(2.1)	(2.1)	3.2	3.2	5.5

OTHER

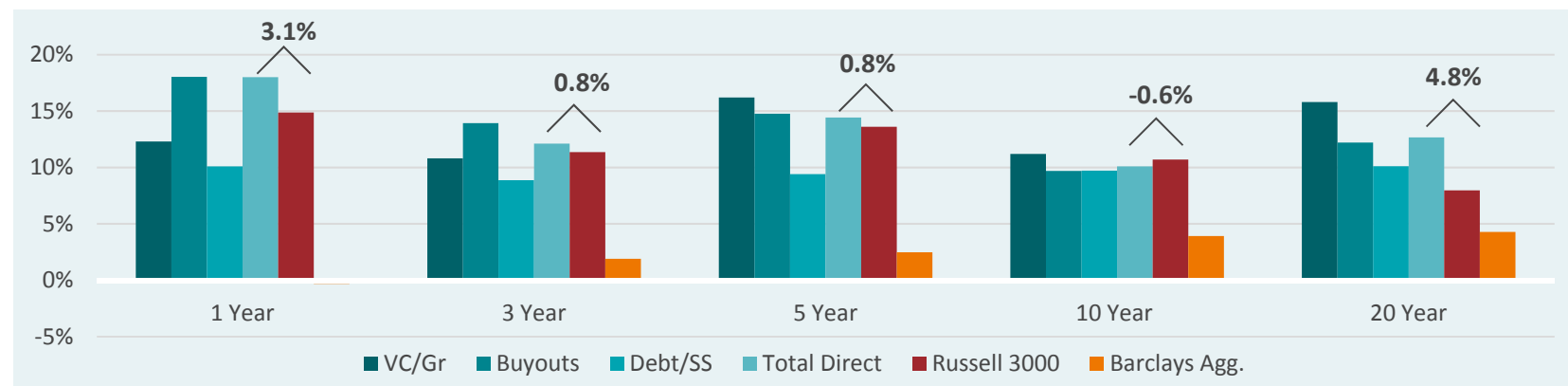
Index							
Bloomberg Commodity	(6.9)	(9.4)	(11.2)	(11.2)	0.3	(8.8)	(3.8)
Wilshire US REIT	(8.4)	(6.9)	(4.8)	(4.8)	2.1	7.9	12.2
CS Leveraged Loans	(2.3)	(3.1)	1.1	1.1	5.0	3.3	8.3
Alerian MLP	(8.3)	(16.3)	(11.9)	(11.9)	(1.6)	(6.9)	10.7
Regional Index							
JPM EMBI Global Div	1.3	(1.3)	(4.3)	(4.3)	5.2	4.8	8.2
JPM GBI-EM Global Div	1.3	2.1	(6.2)	(6.2)	5.9	(1.0)	3.5
Hedge Funds							
HFRI Composite	(2.0)	(5.4)	(4.1)	(4.1)	3.2	2.3	5.0
HFRI FOF Composite	(1.2)	(4.4)	(3.5)	(3.5)	1.5	1.5	3.2
Currency (Spot)							
Euro	1.0	(1.6)	(4.8)	(4.8)	1.7	(3.7)	(1.9)
Pound	(0.2)	(2.3)	(5.9)	(5.9)	(4.8)	(5.1)	(1.2)
Yen	3.5	3.5	2.7	2.7	3.1	(0.9)	(1.9)

Source: Morningstar, HFR, as of 12/31/18

Private vs. public performance

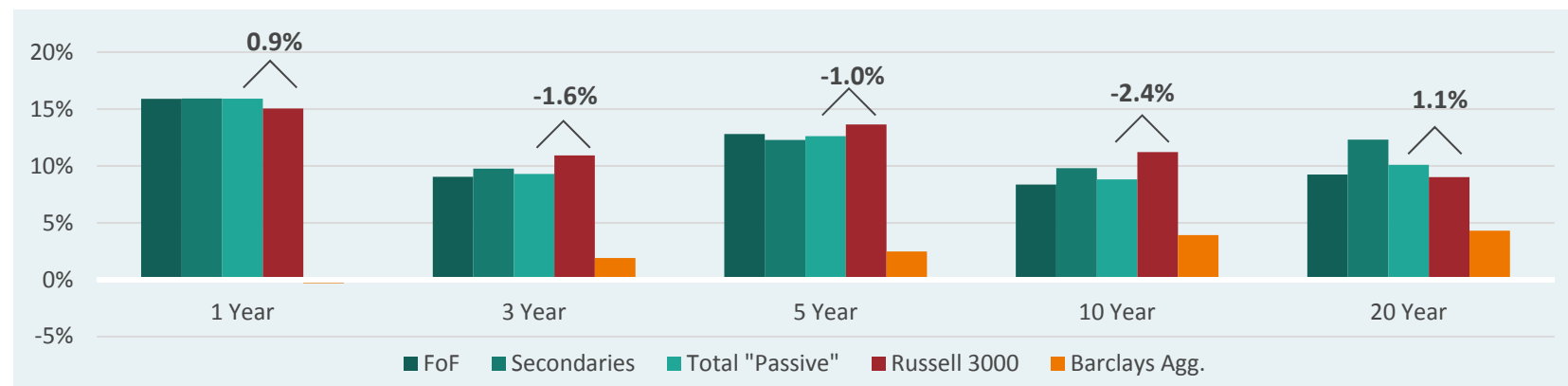
As of 6/30/2018

DIRECT PRIVATE EQUITY FUND INVESTMENTS



Direct private equity outperformed public equities across most time periods

"PASSIVE" STRATEGIES



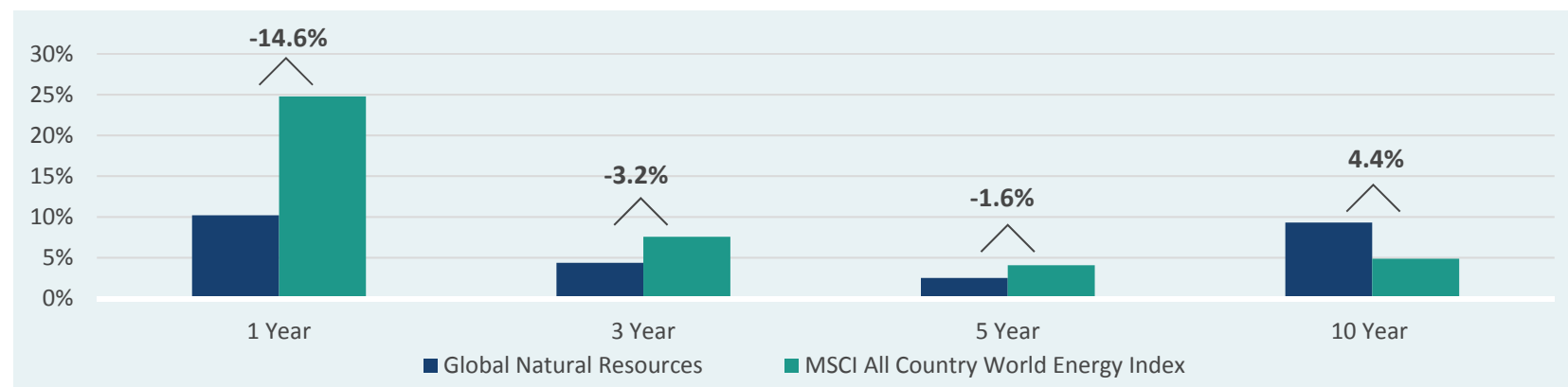
Fund-of-fund strategy performance relative to public equities has been mixed

Sources: Thomson Reuters Cambridge Universe's PME Module: U.S. Private Equity Funds sub asset classes as of June 30, 2018. Public Market Equivalent returns resulted from "Total Passive" and Total Direct's identical cash flows invested into and distributed from respective traditional asset comparable.

Private vs. liquid real assets performance

As of 6/30/2018

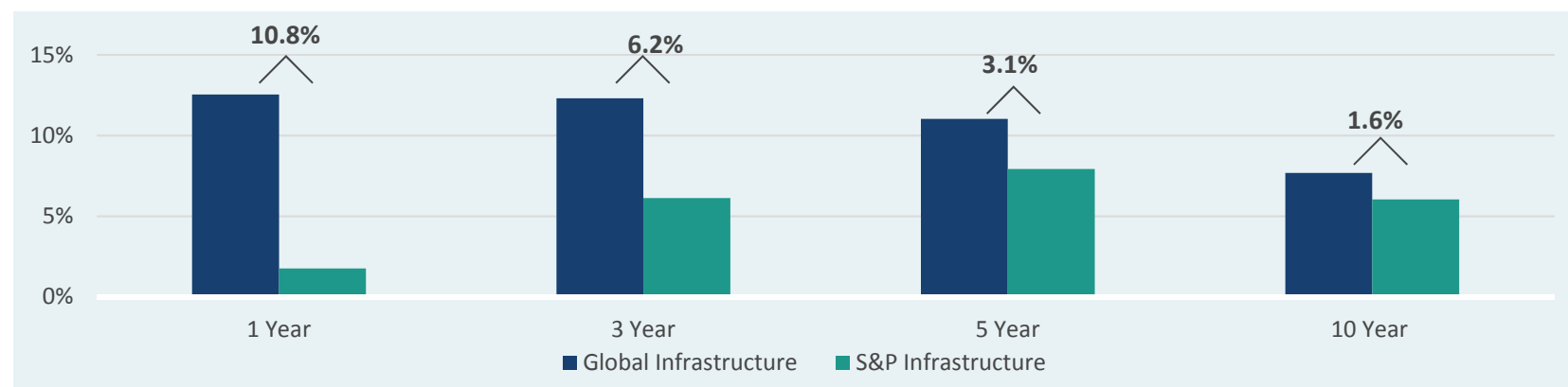
GLOBAL NATURAL RESOURCES FUNDS



Aside from the 10-year period, natural resource funds underperformed the public index

Infrastructure funds outperformed the public index across all periods

GLOBAL INFRASTRUCTURE FUNDS

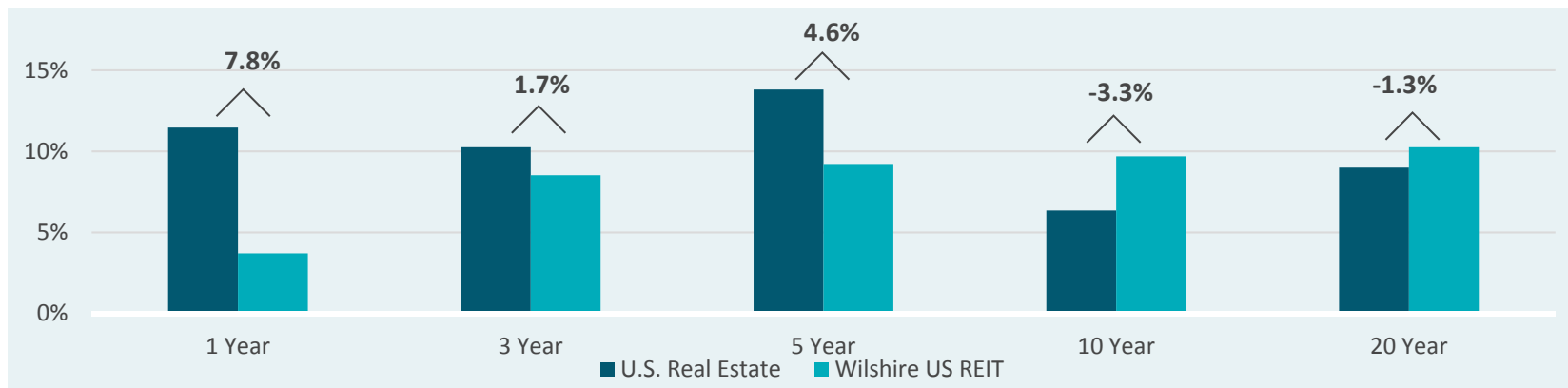


Sources: Thomson Reuters CJA PME: Global Natural Resources (vintage 2003 and later, inception of MSCI ACWI Energy benchmark) and Global Infrastructure (vintage 1996 and later, inception of S&P Infrastructure benchmark) universes as of June 30, 2018. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

Private vs. liquid & core real estate performance

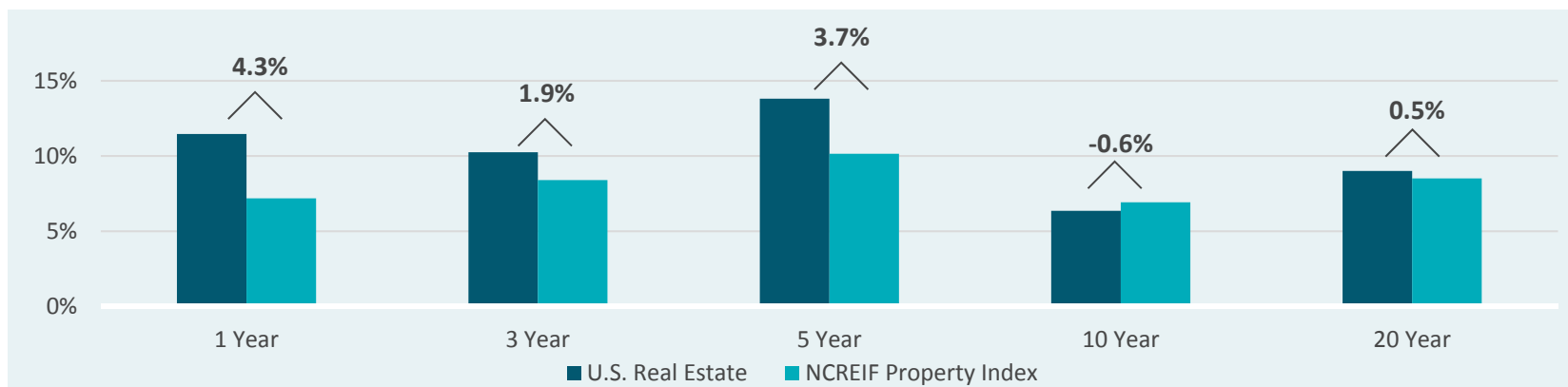
As of 6/30/2018

U.S PRIVATE REAL ESTATE FUNDS VS. LIQUID UNIVERSE



Private real estate performance relative to REITs has been mixed

U.S. PRIVATE REAL ESTATE FUNDS VS. CORE FUNDS



Private real estate funds outperformed the index during most time periods

Sources: Thomson Reuters CJA PME: Global and U.S. Real Estate universes as of June 30, 2018. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real estate universes.

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/>)

NAHB Housing Market Index - the housing market index is a weighted average of separate diffusion indices for three key single-family indices: market conditions for the sale of new homes at the present time, market conditions for the sale of new homes in the next six months, and the traffic of prospective buyers of new homes. The first two series are rated on a scale of Good, Fair, and Poor and the last is rated on a scale of High/Very High, Average, and Low/Very Low. A diffusion index is calculated for each series by applying the formula $(\text{Good-Poor} + 100)/2$ to the present and future sales series and $(\text{High/Very High-Low/Very Low} + 100)/2$ to the traffic series. Each resulting index is then seasonally adjusted and weighted to produce the HMI. Based on this calculation, the HMI can range between 0 and 100.

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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: $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$.

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: $\text{excess return} / \text{tracking error}$.

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: $\text{Portfolio Excess Return} / \text{Portfolio Standard Deviation}$.

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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