



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: JUNE 30, 2019

Investment Performance Review for

San Mateo County Employees' Retirement Association

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THE ECONOMIC CLIMATE

- U.S. real GDP expanded 3.2% YoY in Q1 (3.1% quarterly annualized rate). Year-over-year growth was the strongest since the second quarter of 2015. The U.S. Congressional Budget Office expects the U.S. economy to slow to a 2.1% pace in 2020, near the growth rate of other developed markets.
- Effective May 10th, U.S. tariff rates on \$200 billion in Chinese imports were hiked from 10% to 25%, and the Chinese responded with commensurate tariff rate hikes. In June, Presidents Trump and Xi met on the sidelines of the G20 summit in Osaka. The meeting yielded a “trade truce” in which both countries agreed to pause any additional tariffs.

PORTFOLIO IMPACTS

- Equity performance in Q2 appears to have been largely driven by higher prices, rather than improved earnings expectations. Estimated Q2 S&P 500 earnings worsened from -0.5% to -2.6% during this time.
- U.S. inflation remained stable at 2.1% YoY in June, excluding food & energy. Headline inflation rose 1.6% YoY, dragged down by falling energy prices. Core inflation has been range-bound over the past five years, fluctuating between 1.7% and 2.3%. Investors and consumers expect this trend to continue.

THE INVESTMENT CLIMATE

- The Federal Open Market Committee left the range for its benchmark interest rate unchanged at 2.25%-2.50% and reiterated that it would continue to act appropriately to sustain the expansion. Markets interpreted the press conference as confirmation of a 0.25% rate cut in July.
- European Central Bank President Mario Draghi issued dovish forward guidance, announcing that “additional stimulus” was on the table should the economic backdrop worsen, and inflation remain subdued. European and international developed sovereign yields have fallen along with U.S. yields. German 10-year bunds closed the month at new lows of -0.33%.

ASSET ALLOCATION ISSUES

- Risk assets delivered strong returns over the quarter. Global Equities gained +3.6% and U.S. high yield gained +2.5%. Longer duration exposures generally outperformed as interest rates fell.
- U.S. equity prices have continued to rise on expectations of nearly three interest rate cuts in 2019 and perhaps an assumption that U.S. earnings exceptionalism will extend into the future. If domestic conditions converge with other developed economies and these expectations turn out to be overly optimistic, we believe U.S. equities may possess greater downside risk.

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

U.S. economics summary

- U.S. real GDP expanded 3.2% YoY in Q1 (3.1% quarterly annualized rate). Year-over-year growth was the strongest since the second quarter of 2015.
- The U.S. economy is expected to slow to a 2.1% pace in 2020, near the growth rate of other developed markets, as indicated by the U.S. Congressional Budget Office.
- U.S.-China trade remained central to headlines over the quarter. Effective May 10th, U.S. tariff rates on \$200 billion in Chinese imports were hiked from 10% to 25%, and the Chinese responded with commensurate tariff increases. In June, Presidents Trump and Xi met on the sidelines of the G20 summit in Osaka. The meeting yielded a “trade truce” in which both countries agreed to pause any additional tariff rate hikes.
- Headline CPI inflation fell from a YoY rate of 1.9% in March to 1.6% in June. PCE inflation, the Fed’s preferred inflation gauge, ticked up from a YoY rate of 1.5% at the end of the 1st quarter to 1.6% in May.
- Average hourly earnings grew 3.1% YoY in June, below expectations of 3.2%. The average non-farm private workweek fell slightly from 34.5 hours per week to 34.4.
- The labor market continued to show strength in Q2. The U-3 unemployment rate touched 50-year lows at 3.6% in May and ended the quarter in June at 3.7%.
- The Federal Open Market Committee messaged that it would continue to “act as appropriate to sustain the expansion”, which markets viewed as dovish. Over the quarter, expectations for additional 2019 rate cuts moved from a 64% chance of a 0.25% cut to a 61% chance of 0.75% in cuts.

	Most Recent	12 Months Prior
GDP (YoY)	3.2% 3/31/19	2.6% 3/31/18
Inflation (CPI YoY, Core)	2.1% 6/30/19	2.2% 6/30/18
Expected Inflation (5yr-5yr forward)	1.9% 6/30/19	2.2% 6/30/18
Fed Funds Target Range	2.25 – 2.50% 6/30/19	1.75 – 2.00% 6/30/18
10 Year Rate	2.0% 6/30/19	2.9% 6/30/18
U-3 Unemployment	3.7% 6/30/19	4.0% 6/30/18
U-6 Unemployment	7.2% 6/30/19	7.8% 6/30/18

International economics summary

- U.S.-China trade remained central to headlines over the quarter. Effective May 10th, U.S. tariff rates on \$200 billion in Chinese imports were hiked from 10% to 25%, and the Chinese responded with commensurate tariff rate hikes. In June, Presidents Trump and Xi met on the sidelines of the G20 summit in Osaka. The meeting yielded a “trade truce” in which both countries agreed to pause any additional tariff rate hikes.
- The U.K. Prime Minister Theresa May announced her resignation effective June 7th. In July, Boris Johnson defeated Jeremy Hunt and will replace Theresa May as Britain’s next prime minister. Mr. Johnson has taken a harder line on Brexit than Mr. Hunt, and his election likely increases the probability that the U.K. exits the E.U. without a deal.
- President Trump called off prospective 5% tariffs on Mexican imports after the two countries signed an immigration deal aimed at reducing illegal border crossings. The deal expanded the Migrant Protection Protocols program, which requires asylum-seekers to wait on the Mexican side of the border while their cases are reviewed.
- Chinese GDP growth slowed 0.2% to 6.2% YoY in the second quarter, its slowest rate in 27 years. On a brighter note, YoY growth in industrial production and retail sales both surprised to the upside, supporting the view that Beijing’s countercyclical easing measures have proven effective.
- The Citi Global Economic Surprise Index fell from -18.8 to -27.7 in June, registering its 15th consecutive month in negative territory.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	3.2% <i>3/31/19</i>	1.6% <i>6/30/19</i>	3.7% <i>6/30/19</i>
Eurozone	1.2% <i>3/31/19</i>	1.1% <i>5/31/19</i>	7.5% <i>5/31/19</i>
Japan	0.9% <i>3/31/19</i>	0.7% <i>5/31/19</i>	2.4% <i>5/31/19</i>
BRICS Nations	5.2% <i>3/31/19</i>	2.4% <i>3/31/19</i>	5.2% <i>3/31/19</i>
Brazil	1.4% <i>3/31/19</i>	3.4% <i>6/30/19</i>	12.4% <i>6/30/19</i>
Russia	2.7% <i>12/31/18</i>	4.7% <i>6/30/19</i>	4.5% <i>5/31/19</i>
India	7.2% <i>12/31/18</i>	3.2% <i>6/30/19</i>	8.5% <i>12/31/17</i>
China	6.4% <i>3/31/19</i>	2.7% <i>6/30/19</i>	3.7% <i>3/31/19</i>

Equity environment

- The Russell 1000 Index slightly outperformed international developed equities in Q2, gaining +4.2% while the MSCI EAFE Index gained +3.7%. Perceptions of an accommodative Federal Reserve and views that U.S.-China relations are on a productive track likely impacted price movement.
- Equity performance in Q2 appears to have been largely driven by higher prices, rather than improved earnings expectations. The valuation expansion of equity markets (U.S., international developed, emerging markets) aligned with performance over the quarter.
- According to FactSet, estimated Q2 S&P 500 YoY earnings worsened from -0.5% to -2.6% in Q2. Nine of eleven sectors saw downward revisions to EPS estimates. Further negative revisions will likely act as a headwind to equity performance.
- Currency movement had a material positive impact on unhedged exposure to the U.K. (+3.1%) and Japan (+2.3%) over the quarter, though currency movement had a negligible impact on overall international equity performance (MSCI EAFE). Unhedged currency movement on a 1-year basis has had a substantially negative effect on investors' performance.
- The J.P. Morgan Emerging Market Currency Index gained +0.5% in the second quarter, stabilizing after a downward trend since 2018.
- Size and value factors continued to underperform. Small-cap equities lagged large-cap by -2.1% during the quarter and -13.3% over the past year (Russell 2000 vs. Russell 1000). Value equities underperformed growth by -0.8% over the quarter and by -3.1% over the past year (Russell 1000 Value vs Russell 1000 Growth).

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	4.2%		10.0%	
US Small Cap (Russell 2000)	2.1%		(3.3%)	
US Large Value (Russell 1000 Value)	3.8%		8.5%	
US Large Growth (Russell 1000 Growth)	4.6%		11.6%	
International Large (MSCI EAFE)	3.7%	3.5%	1.1%	4.8%
Eurozone (Euro Stoxx 50)	6.2%	6.4%	0.4%	8.6%
U.K. (FTSE 100)	4.0%	0.9%	(2.3%)	3.7%
Japan (NIKKEI 225)	3.1%	0.8%	0.1%	(2.6%)
Emerging Markets (MSCI Emerging Markets)	0.6%	0.1%	1.2%	1.7%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 6/30/19

Domestic equity

U.S. equities outperformed in the second quarter following a strong rebound in the first quarter. The S&P 500 Index delivered a total return of 4.3%, bringing its first-half return to 18.5%. Perceptions of an accommodative Federal Reserve and views that U.S-China relations were on a productive track likely impacted price movement.

Over the last decade, U.S. equities have led global equity indices, which is not typically the case. In prior periods, U.S. equities have ranked from slightly below average to slightly above average among regional indices. Furthermore, a

portion of U.S. equity outperformance has been due to a move towards high prices, which will most likely negatively impact future performance.

A number of secular trends have helped create a supportive environment for U.S. stocks. Technological advances, falling interest rates and therefore costs of corporate borrowing, and lower corporate tax rates have all helped to boost profit margins to all-time-highs. As expectations moderate, these margins may be increasingly scrutinized by investors.

U.S. EQUITIES



Source: Standard & Poors, as of 6/30/19

SECULAR TRENDS SUPPORTING MARGINS



Source: FRED, BLS, Bloomberg, Verus, as of 6/30/19

U.S. RELATIVE PERFORMANCE - HISTORICAL

	2014-2019	2009-2014	2004-2009	1999-2004	1994-1999
Best ↑	United States	United States	China	Australia	Sweden
	Australia	Sweden	India	India	Spain
	France	Japan	Spain	Canada	France
	India	Germany	Australia	United States	United States
	UK	Switzerland	Sweden	Spain	Germany
	Italy	India	Canada	Switzerland	Switzerland
	Japan	Australia	Germany	UK	UK
	Sweden	UK	UK	Italy	Canada
	Canada	Canada	Switzerland	France	Australia
	Switzerland	France	France	Sweden	India
	Germany	Spain	United States	Japan	Japan
	China	China	Japan	Germany	
Worst ↓	Spain	Italy	Italy		

Source: Verus, as of 6/30/19

Domestic equity size & style

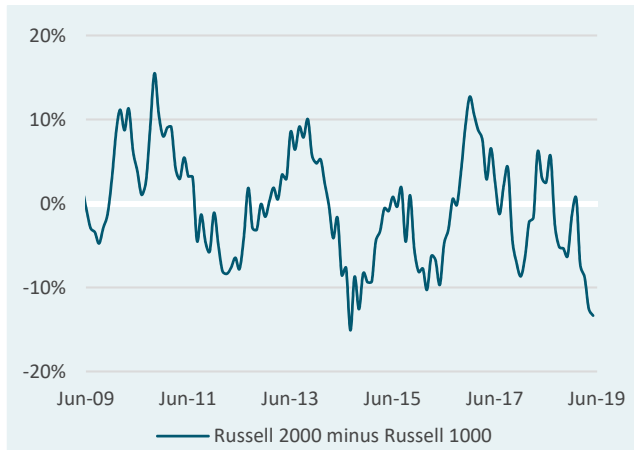
Size and value factors continued to underperform. Small-cap equities lagged large-cap by -2.1% during the quarter and -13.3% over the past year (Russell 2000 vs. Russell 1000). Value equities underperformed growth by -0.8% over the quarter and by -3.1% over the past year (Russell 1000 Value vs Russell 1000 Growth).

Similar to Q1, the impact of sector performance on the value premium was more nuanced in the second quarter. Financials (+8.0%) and Materials (+6.3%) outperformed the overall index (S&P 500 +13.6%), but Energy (-2.8%)

underperformed. Information Technology performed better than the overall index (+6.1%) which acted as a headwind for value stocks.

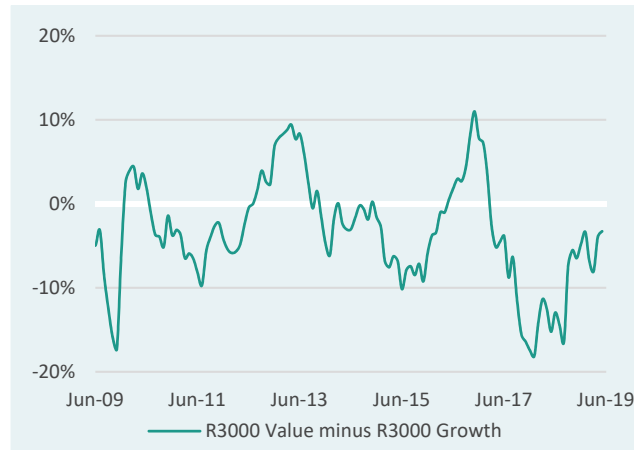
Both small cap and value premia have exhibited underperformance for an extended period of time. Longer periods of underperformance do not necessarily indicate an investment opportunity if value stocks and small cap stocks remain fairly-priced. This appears to be the case today, as neither value stocks nor small cap stocks are particularly cheap by traditional measures.

SMALL CAP VS LARGE CAP (YOY)



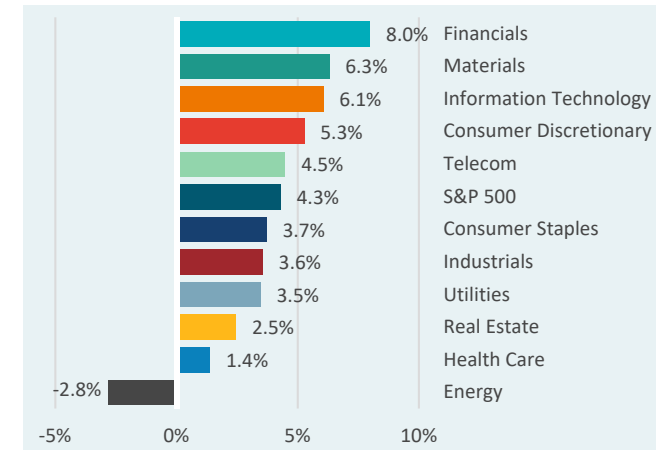
Source: FTSE, as of 6/30/19

VALUE VS GROWTH (YOY)



Source: FTSE, as of 6/30/19

Q2 S&P 500 SECTOR RETURNS



Source: Morningstar, as of 6/30/19

International developed equity

International developed equities posted a second consecutive quarter of solid performance. The MSCI EAFE Index returned +3.9% for the quarter (+14.5% YTD). On a currency hedged basis, the MSCI EAFE Index returned +3.5% for the quarter (+15.2% YTD), indicating that unhedged U.S. investors in EAFE equities benefited from non-dollar exposure over the quarter, but not in the year-to-date.

Japanese equities, which represent about 24% of the MSCI EAFE Index, underperformed, and gained only +0.5% in Q2. Japan's exposure China's economy, which in Q2 grew at its slowest pace in 27 years, likely weighed on performance.

U.K. equities underperformed the international developed equities on an unhedged basis, with the FTSE 100 Index delivering a +3.3% return for the quarter. In U.S. dollar terms, the FTSE 100 Index returned +4.0% in Q2, indicating that the weakness in the British Pound relative to the dollar presented headwinds for unhedged U.S. investors.

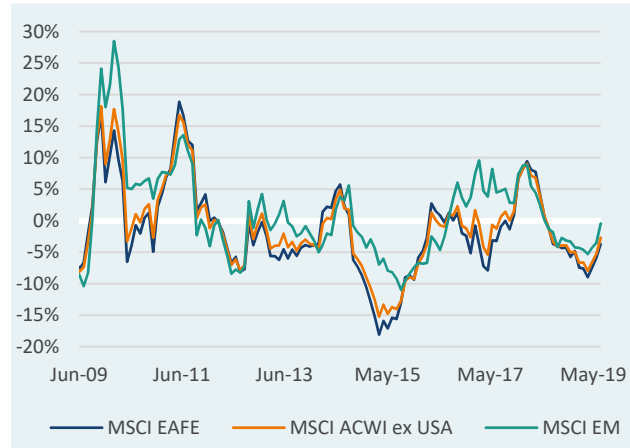
Wage gains and employment have been strong in the U.K., which would typically prompt higher rates and a stronger currency, but the uncertainty surrounding Brexit has likely had a significant impact on the British Pound.

INTERNATIONAL DEVELOPED EQUITIES



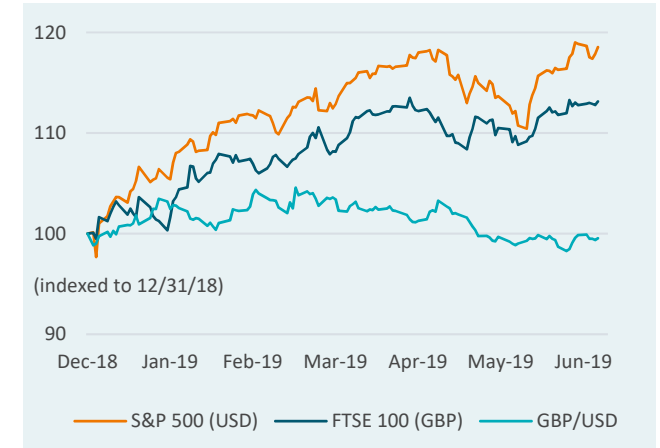
Source: MSCI, as of 6/30/19

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 6/30/19

YTD CUMULATIVE PERFORMANCE (U.S. VS. U.K.)



Source: Bloomberg, as of 6/30/19

Emerging market equity

Emerging market equity performance (MSCI Emerging Markets +0.6%) lagged developed markets (MSCI EAFE +3.7%) over the quarter, while U.S. equities outperformed (Russell 1000 +4.2%). Economists expect emerging market economies to accelerate modestly in 2020 and expect developed economies to slow. This divergence may provide a tailwind to emerging market equity performance. Recent central bank dovishness may also boost returns, as easing conditions have often had an outsized positive impact on the emerging markets.

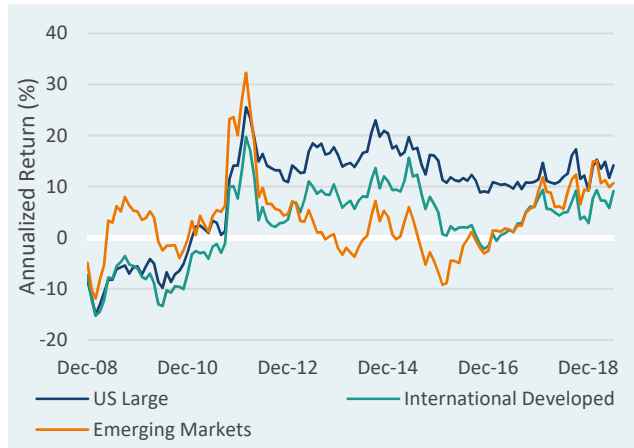
kept near their long-term average - the U.S. being an exception. The divide between U.S. equity valuations and the rest of the world remains wide.

Decelerating global growth and a rising probability of recession presents unique risks to emerging markets, as these markets typically exhibit a higher beta during market downside and upside moves. However, a recession does not appear to be on the immediate horizon, and we believe recent central bank easing may lead to emerging market outperformance in the interim.

Moderate growth and central bank easing may boost emerging market equities

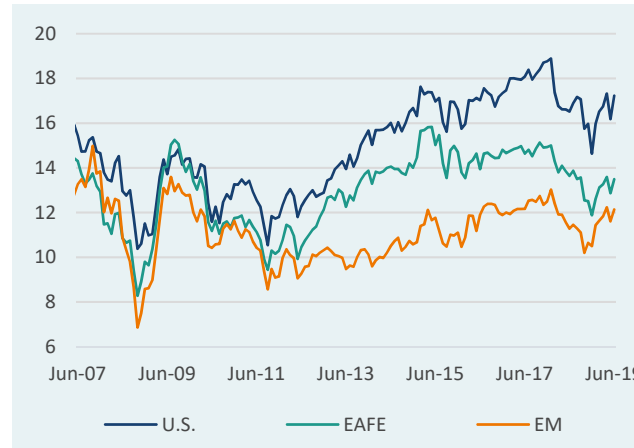
Equity multiples expanded in the second quarter but have

EQUITY PERFORMANCE (3-YR ROLLING)



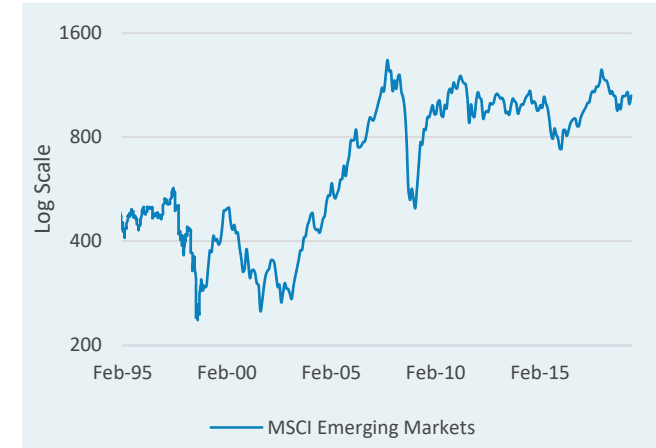
Source: Standard & Poor's, MSCI, as of 6/30/19

FORWARD P/E



Source: MSCI, as of 6/30/19

EMERGING MARKET PERFORMANCE



Source: MSCI, as of 6/30/19

Interest rate environment

— The Federal Open Market Committee left the range for its benchmark interest rate unchanged at 2.25%-2.50% and reiterated that it would continue to act appropriately to sustain the expansion. Markets viewed the Fed’s press conference as successful in setting expectations for a 0.25% rate cut in July.

— The fed funds futures market now implies 2 or even 3 rate cuts (0.50% to 0.75% total cuts) as likely by the end of 2019. The market’s expectation of three rate cuts seems aggressive, and we worry about possible downside to risk markets if the Fed does not deliver on these expectations.

— U.S. Treasury yields continued to push lower following the messaging from the Federal Reserve. The 10-year U.S. Treasury yield finished the quarter at 2.00%, down from 3.14% in Q4 2018.

— European Central Bank President

Mario Draghi announced “additional stimulus” was on the table should the economic backdrop worsen and inflation remain subdued. Over the month, the likelihood that the ECB would cut its main deposit rate from -0.40% to -0.50% by its September meeting rose from 18% to 67%, as indicated by market pricing.

— European and international developed sovereign yields have fallen along with U.S. yields. German 10-year bunds closed the month at new lows of -0.33%.

— High yield bond spreads tightened alongside equities as the asset class was positively impacted by Federal Reserve dovishness. Anticipation of easier interest rate policies, which could potentially lengthen the credit cycle, has strengthened sentiment for risk assets.

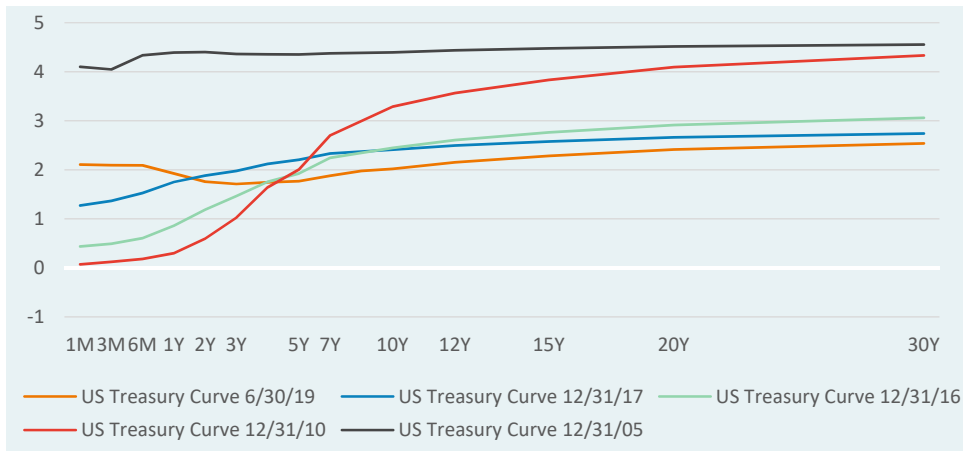
— Emerging market bonds delivered outsized returns in Q2. The JPM GBI-EM Index returned +5.6% and the JPM EMBI Index returned +4.1%.

Area	Short Term (3M)	10-Year
United States	2.09%	2.00%
Germany	(0.57%)	(0.33%)
France	(0.55%)	(0.01%)
Spain	(0.47%)	0.39%
Italy	(0.14%)	2.10%
Greece	0.99%	2.41%
U.K.	0.78%	0.83%
Japan	(0.08%)	(0.17%)
Australia	1.43%	1.32%
China	2.25%	3.21%
Brazil	6.24%	7.44%
Russia	8.03%	8.26%

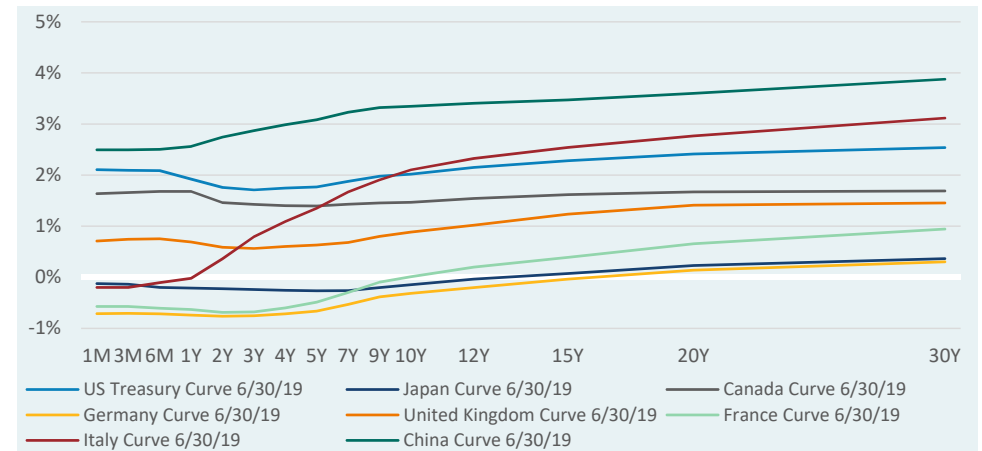
Source: Bloomberg, as of 6/30/19

Yield environment

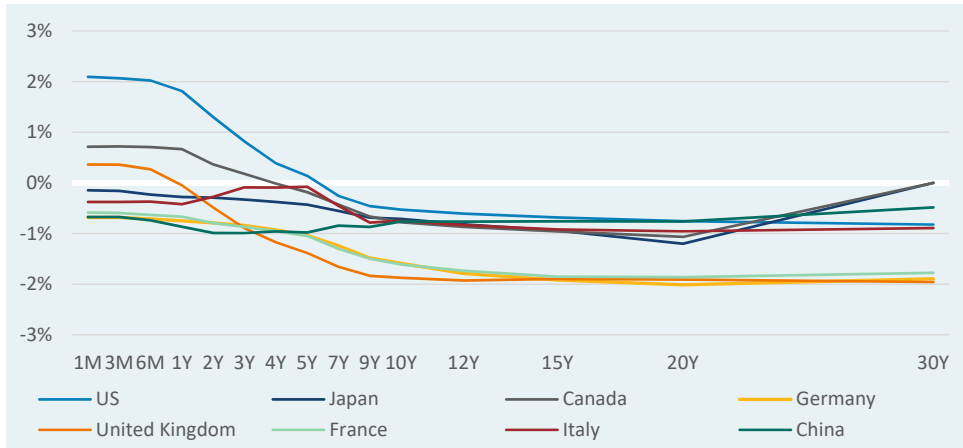
U.S. YIELD CURVE



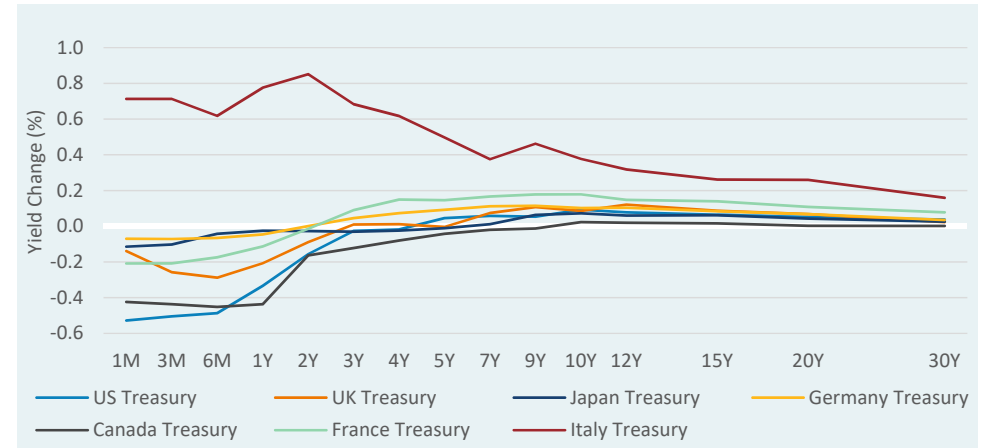
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 6/30/19

Currency

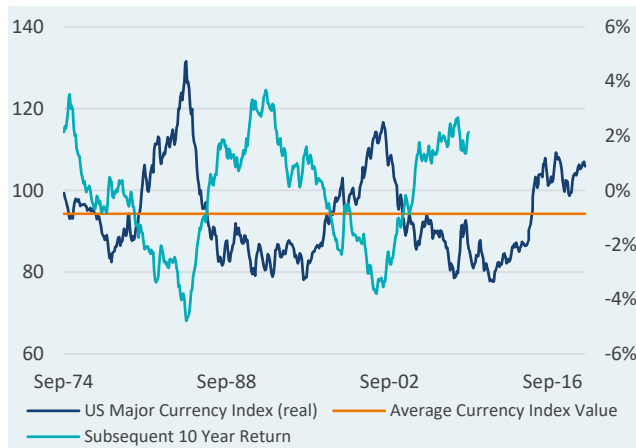
The U.S. dollar depreciated -0.2% in Q2 relative to a trade-weighted basket of currencies. After a period of strength in April and May, the dollar weakened significantly vs. developed currency pairs in June as the Federal Reserve issued dovish guidance. By the end of the quarter, markets were pricing between 0.50% and 0.75% in cuts to the federal funds range in 2019. In Europe, investors were pricing between 0.1% and 0.2% in cuts to the ECB's main deposit rate, which was already in negative territory at -0.40%.

Some analysts attributed the dollar's weakness relative to the euro as a byproduct of converging interest rate differentials driven by the Fed's ability to cut rates more significantly than the ECB.

Emerging market currencies rose in the second quarter, with the JPM Emerging Markets Currency Index gaining 0.5%. The South African Rand led the complex higher.

Surprise central bank dovishness has likely contributed to currency movement

U.S. DOLLAR TRADE WEIGHTED INDEX



Source: Federal Reserve, Verus, as of 6/30/19

EUR/USD



Source: Bloomberg, as of 6/30/19

JPM EMERGING MARKET CURRENCY INDEX



Source: Bloomberg, JPMorgan, as of 6/30/19

- The Total Fund, net of manager fees, returned 2.9% in the second quarter of 2019 and ranked in the 51st percentile among other public plans greater than \$1 billion (median of 2.9%). The plan lagged the policy index return of 3.9%. The total one-year return of 5.4% lagged the policy index return of 6.7% and ranked in the 52nd percentile of its peer universe (median of 5.4%). The three-year return of 8.2% (79th percentile) lagged the median large public plan (8.7%) and the policy index (9.0%).

- Second Quarter results (net) were enhanced by the following factors:
 1. PanAgora Defuseq (5.5%) outperformed the Russell 1000 (4.2%) for the quarter. Security selection helped bolster performance in Materials, Industrial and Health Care despite slight drawdowns in Consumer Staples and Information Technology relative to the benchmark.
 2. Ballie Gifford (5.9%) beat the MSCI ACWI ex US (3.2%). Security selection within the Health Care sector led most outperformance. Materials, Consumer Staples and Information Technology all contributed significantly relative to the benchmark. Geographically, Developed Markets (73% of portfolio by weight) can be attributed to all outperformance.
 3. Parametric Core beat the MSCI Emerging Markets Gross (2.1% vs. 0.7%). Consumer Discretionary and Communication Services led performance despite modest drawdowns from other sectors. Asia/Pacific stocks performed particularly well as a result of an underweight relative to the benchmark and strong security selection.

- Second Quarter results (net) were hindered by the following factors:
 1. QMA US Small Cap gained 0.4% for the quarter but lagged the Russell 2000 (2.1%). Underperformance can be attributed to security selection, detracting -1.6% compared to the benchmark. Eight of the 12 detracted relative to the benchmark.
 2. Western TRU (2.2%) lagged the BBgBarc US Aggregate TR (3.1%) during the quarter. Yield curve performance was a detractor to performance as the back end of the curve steepened. Investment-Grade Corporate, High-Yield, Bank Loans, and Structured products all contributed positively as spreads tightened. TIPS exposure had a negative impact on performance as breakeven inflation rates declined.

Total Fund
Performance Summary (Net of Fees)

Period Ending: June 30, 2019

	3 Mo (%)	Rank *	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Total Fund**	2.9	51	10.2	55	5.4	52	6.0	86	8.2	79	5.7	48	9.3	40
<i>Policy Index¹</i>	3.9	5	10.6	43	6.7	18	7.3	32	9.0	37	6.1	33	9.7	22
<i>InvMetrics Public DB > \$1B Net Median</i>	2.9		10.3		5.4		6.9		8.7		5.6		9.0	
Total Fund ex Overlay	2.9	52	9.9	67	5.1	62	5.9	94	8.1	87	5.6	56	9.2	41
<i>Policy Index¹</i>	3.9	5	10.6	43	6.7	18	7.3	32	9.0	37	6.1	33	9.7	22
<i>InvMetrics Public DB > \$1B Net Median</i>	2.9		10.3		5.4		6.9		8.7		5.6		9.0	
Public Equity	3.6	53	16.1	79	4.8	58	7.8	73	11.3	76	6.8	64	11.3	64
<i>Blended Public Equity Index¹</i>	3.4	67	16.2	75	5.0	56	8.3	57	12.0	45	6.9	63	11.8	56
<i>InvMetrics All DB Total Eq Net Median</i>	3.7		16.7		5.5		8.4		11.9		7.2		11.9	
US Equity	3.9	68	17.7	80	7.5	58	11.2	54	13.5	59	9.5	50	14.0	54
<i>Blended US Equity Index¹</i>	4.1	48	18.7	49	9.0	30	11.8	28	14.1	29	10.0	31	14.7	18
<i>Russell 3000</i>	4.1	48	18.7	49	9.0	30	11.8	28	14.0	36	10.2	21	14.7	18
<i>InvMetrics All DB US Eq Net Median</i>	4.1		18.7		7.9		11.3		13.7		9.5		14.1	
Large Cap Equity	4.3	48	18.2	45	10.0	40	12.5	36	14.8	31	11.0	26	14.4	34
<i>Russell 1000</i>	4.2	48	18.8	40	10.0	39	12.3	37	14.1	36	10.5	31	14.8	26
<i>eV US Large Cap Equity Net Median</i>	4.1		17.5		8.2		10.7		12.7		9.1		13.8	
<i>Acadian US MGD V***</i>	4.7	37	15.9	69	--	--	--	--	--	--	--	--	--	--
<i>BlackRock Russell 1000</i>	4.2	45	18.8	33	10.0	39	12.3	28	--	--	--	--	--	--
<i>DE Shaw</i>	2.7	78	15.6	73	6.3	67	11.9	33	14.4	20	11.3	12	--	--
<i>PanAgora Defuseq***</i>	5.5	17	21.3	11	--	--	--	--	--	--	--	--	--	--
<i>Russell 1000</i>	4.2	44	18.8	33	10.0	39	12.3	28	14.1	25	10.5	22	14.8	14
<i>eV US Large Cap Core Equity Net Median</i>	4.1		17.3		8.3		10.9		12.9		9.3		13.9	

* Total Fund and asset class aggregates are ranked in InvMetrics 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: June 30, 2019

	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Small Cap Equity	0.4	86	12.7	85	-7.4	78	3.0	72	8.9	71	4.0	84	12.6	72
<i>Russell 2000</i>	2.1	62	17.0	50	-3.3	54	6.6	48	12.3	42	7.1	47	13.4	55
<i>eV US Small Cap Equity Net Median</i>	2.9		16.8		-2.7		6.1		11.3		6.8		13.7	
QMA US Small Cap	0.4	86	12.7	87	-7.4	81	3.0	79	--	--	--	--	--	--
<i>Russell 2000</i>	2.1	58	17.0	47	-3.3	51	6.6	51	12.3	37	7.1	54	13.4	50
<i>eV US Small Cap Core Equity Net Median</i>	2.5		16.6		-3.2		6.6		11.4		7.1		13.4	
International Equity	3.3	31	14.2	41	1.7	23	4.0	34	8.6	66	2.7	34	6.4	73
<i>Blended International Equity Index¹</i>	2.6	66	13.4	61	0.4	46	4.1	33	9.4	36	2.6	40	7.0	50
<i>MSCI EAFE Gross</i>	4.0	12	14.5	35	1.6	24	4.4	26	9.6	30	2.7	33	7.4	33
<i>InvMetrics All DB ex-US Eq Net Median</i>	2.9		13.8		0.2		3.3		9.1		2.4		7.0	
Developed Markets	3.7	29	14.9	43	1.3	39	4.0	48	8.6	60	2.9	51	6.7	65
<i>MSCI ACWI ex USA Gross</i>	3.2	49	14.0	54	1.8	34	4.8	39	9.9	35	2.6	61	7.0	51
<i>InvMetrics All DB Dev Mkt ex-US Eq Net Median</i>	3.1		14.2		0.3		4.0		9.3		2.9		7.0	
Baillie Gifford	5.9	30	20.0	40	0.3	49	4.9	80	9.8	64	4.5	58	--	--
<i>MSCI ACWI ex US¹</i>	3.2	86	14.0	95	1.8	37	4.8	81	9.9	63	2.6	96	--	--
<i>MSCI ACWI ex US Growth</i>	4.5	60	17.5	70	3.0	30	6.6	54	10.2	59	4.4	60	--	--
<i>eV ACWI ex-US Growth Equity Net Median</i>	5.0		19.2		0.2		6.9		10.6		5.1		9.3	
BlackRock EAFE Index	3.9	27	14.4	34	1.4	27	4.3	32	9.5	31	2.6	62	--	--
<i>MSCI EAFE</i>	3.7	32	14.0	40	1.1	27	3.9	35	9.1	37	2.2	67	6.9	80
<i>MSCI EAFE Gross</i>	4.0	26	14.5	32	1.6	25	4.4	32	9.6	27	2.7	58	7.4	66
<i>eV EAFE Core Equity Net Median</i>	2.8		13.1		-2.2		2.9		8.5		3.0		8.1	
Mondrian	1.4	54	10.6	42	2.2	10	3.0	17	7.1	50	1.3	36	6.3	51
<i>MSCI ACWI ex USA Value Gross</i>	1.9	34	10.5	43	0.6	19	2.9	18	9.6	23	0.9	52	6.0	54
<i>MSCI ACWI ex USA Gross</i>	3.2	19	14.0	14	1.8	11	4.8	5	9.9	19	2.6	22	7.0	40
<i>eV ACWI ex-US Value Equity Net Median</i>	1.4		9.8		-4.3		0.7		7.0		1.0		6.4	

1. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: June 30, 2019

	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Emerging Markets	2.1	33	9.9	69	3.2	23	3.2	57	7.5	75	0.7	81	--	--
MSCI Emerging Markets Gross	0.7	62	10.8	48	1.6	53	5.0	16	11.1	21	2.9	19	6.2	24
InvMetrics All DB Emg Mkt Eq Net Median	1.0		10.6		1.8		3.6		8.9		1.9		5.3	
Parametric Core	2.1	33	9.9	74	3.2	27	3.2	64	7.5	80	--	--	--	--
MSCI Emerging Markets Gross	0.7	65	10.8	59	1.6	45	5.0	34	11.1	32	2.9	42	6.2	65
eV Emg Mkts Equity Net Median	1.4		12.0		0.9		4.0		9.9		2.5		6.7	
Parametric Currency Overlay*	-3.0	--	10.6	--	--	--	--	--	--	--	--	--	--	--
Fixed Income	2.5	70	5.7	67	6.7	63	3.8	41	4.9	9	3.6	27	6.1	19
Blended Fixed Income Index ¹	3.0	35	7.4	23	8.5	20	4.1	30	3.5	46	3.3	37	4.2	72
InvMetrics All DB Total Fix Inc Net Median	2.7		6.1		7.0		3.7		3.5		3.0		4.8	
Core Fixed	2.7	--	5.4	--	6.9	--	3.3	--	3.2	--	3.2	--	5.3	--
BBgBarc US Aggregate TR	3.1	--	6.1	--	7.9	--	3.7	--	2.3	--	2.9	--	3.9	--
BlackRock Intermediate Govt	2.4	67	4.0	72	6.3	58	2.8	61	--	--	--	--	--	--
BBgBarc US Govt Int TR	2.3	70	4.0	73	6.2	60	2.7	65	1.3	69	1.9	75	2.4	79
eV US Government Fixed Inc Net Median	2.5		4.7		6.5		3.1		1.6		2.4		3.1	
FIAM Bond	3.1	48	6.7	33	7.9	49	4.0	26	3.0	17	3.4	18	5.0	19
BBgBarc US Aggregate TR	3.1	56	6.1	69	7.9	49	3.7	53	2.3	64	2.9	57	3.9	73
Western TRU	2.2	97	5.2	92	6.0	96	2.6	98	4.7	1	--	--	--	--
3-Month Libor Total Return USD	0.6	99	1.3	99	2.6	99	2.2	99	1.8	93	1.2	99	0.8	99
BBgBarc US Aggregate TR	3.1	56	6.1	69	7.9	49	3.7	53	2.3	64	2.9	57	3.9	73
eV US Core Fixed Inc Net Median	3.1		6.4		7.9		3.7		2.5		3.0		4.3	
Opportunistic Credit	2.3	--	6.4	--	6.3	--	5.2	--	8.3	--	5.4	--	--	--
BBgBarc BA Intermediate HY ¹	2.9	--	10.1	--	9.6	--	4.9	--	6.3	--	4.8	--	--	--
Angelo Gordon Opportunistic**	5.4	--	6.4	--	12.0	--	18.2	--	17.6	--	9.8	--	--	--
Angelo Gordon STAR**	6.2	--	12.0	--	22.3	--	21.2	--	19.8	--	13.4	--	--	--
BBgBarc US Aggregate TR	3.1	--	6.1	--	7.9	--	3.7	--	2.3	--	2.9	--	3.9	--

* Funded September 2018.

** Preliminary return as of 06/30/2019.

1. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: June 30, 2019

	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Beach Point Select	3.0	15	7.6	78	5.2	82	6.2	3	8.7	4	--	--	--	--
BBgBarc BA Intermediate HY ¹	2.9	25	10.1	35	9.6	3	4.9	35	6.3	69	4.8	20	--	--
eV US High Yield Fixed Inc Net Median	2.5		9.4		6.7		4.6		6.8		4.1		8.5	
Brigade Capital	1.9	82	6.3	86	2.6	98	3.5	89	7.5	22	3.4	82	--	--
BBgBarc BA Intermediate HY ¹	2.9	25	10.1	35	9.6	3	4.9	35	6.3	69	4.8	20	--	--
50% Barclays HY/ 50% Bank Loan	2.0	72	7.7	77	5.8	71	4.7	45	6.5	63	4.3	43	--	--
eV US High Yield Fixed Inc Net Median	2.5		9.4		6.7		4.6		6.8		4.1		8.5	
PIMCO Diversified	3.6	4	9.6	47	10.0	1	--	--	--	--	--	--	--	--
Blended PIMCO Diversified Index	3.5	4	9.7	46	9.8	1	4.9	35	5.4	93	4.6	27	7.4	91
BBgBarc BA Intermediate HY	2.9	25	10.1	35	9.6	3	4.9	35	6.3	69	4.8	20	--	--
eV US High Yield Fixed Inc Net Median	2.5		9.4		6.7		4.6		6.8		4.1		8.5	
Franklin Templeton	1.5	90	3.2	94	5.7	61	1.6	92	4.6	45	1.5	70	--	--
BBgBarc Multiverse TR	3.3	38	5.8	71	6.0	57	3.7	59	1.9	82	1.3	72	3.1	84
eV All Global Fixed Inc Net Median	3.0		6.9		6.4		3.8		4.0		2.7		4.8	
Private Credit	0.7	--	3.0	--	6.6	--	6.7	--	--	--	--	--	--	--
Cliffwater Direct Lending Index**	2.8	--	5.6	--	9.1	--	9.0	--	9.5	--	8.6	--	10.9	--
PIMCO Private Income*	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BBgBarc BA Intermediate HY	2.9	25	10.1	35	9.6	3	4.9	35	6.3	69	4.8	20	--	--
Cliffwater Direct Lending Index	2.8	31	5.6	93	9.1	5	9.0	1	9.5	2	8.6	1	10.9	4
eV US High Yield Fixed Inc Net Median	2.5		9.4		6.7		4.6		6.8		4.1		8.5	
TCP Direct Lending VIII**	1.7	85	4.1	99	8.4	15	7.3	2	--	--	--	--	--	--
White Oak Yield**	0.0	99	2.2	99	5.3	80	5.3	17	--	--	--	--	--	--
Cliffwater Direct Lending Index	2.8	31	5.6	93	9.1	5	9.0	1	9.5	2	8.6	1	10.9	4
eV US High Yield Fixed Inc Net Median	2.5		9.4		6.7		4.6		6.8		4.1		8.5	

* Funded April 2019.

** Preliminary return as of 06/30/2019.

1. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: June 30, 2019

	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Risk Parity	5.6	--	17.5	--	10.8	--	8.7	--	7.1	--	5.1	--	--	--
<i>Blended Risk Parity Index¹</i>	3.7	--	12.6	--	7.3	--	7.3	--	8.6	--	7.0	--	--	--
AQR GRP, 10% Volatility	5.7	--	17.5	--	11.4	--	9.5	--	8.3	--	3.8	--	--	--
PanAgora	5.4	--	17.5	--	10.3	--	8.0	--	6.2	--	--	--	--	--
<i>Blended Risk Parity Index¹</i>	3.7	--	12.6	--	7.3	--	7.3	--	8.6	--	7.0	--	--	--
S&P Risk Parity 10% Target Volatility Index TR USD	4.3	--	12.7	--	8.3	--	7.1	--	5.4	--	3.5	--	6.6	--
Alternatives	2.0	--	1.6	--	4.6	--	3.6	--	7.9	--	6.1	--	--	--
<i>Blended Alternatives Index¹</i>	8.0	--	1.6	--	9.5	--	9.7	--	11.2	--	6.7	--	--	--
Private Equity**	5.6	14	4.3	34	14.6	26	11.9	50	17.4	11	16.1	8	--	--
<i>Blended Private Equity Index¹</i>	14.6	1	-0.5	89	11.8	35	12.7	40	15.5	20	12.3	27	17.2	1
<i>InvMetrics All DB Private Eq Net Median</i>	2.4		3.3		9.4		11.8		11.4		10.1		10.5	
Hedge Fund/Absolute Return	-2.1	97	-1.4	95	-5.9	93	-4.7	97	-1.8	96	2.2	58	--	--
<i>Libor 1 month +4%</i>	1.6	49	3.2	78	6.4	6	6.0	10	5.6	37	5.1	7	--	--
<i>InvMetrics All DB Hedge Funds Net Median</i>	1.6		5.4		1.4		3.4		4.9		2.4		4.8	
AQR DELTA XN	-4.4	95	-6.3	96	-12.1	93	-8.5	94	-4.4	93	0.6	84	--	--
Aberdeen Standard GARS	1.4	55	6.1	45	4.3	45	1.1	74	2.0	75	--	--	--	--
<i>Libor 1 month +4%</i>	1.6	51	3.2	70	6.4	28	6.0	34	5.6	48	5.1	42	--	--
<i>eV Alt All Multi-Strategy Median</i>	1.7		5.4		3.5		4.2		5.3		4.2		6.7	
Inflation Hedge	1.2	--	5.6	--	2.5	--	4.6	--	5.0	--	--	--	--	--
<i>Blended Inflation Hedge Index¹</i>	2.8	--	6.4	--	4.8	--	6.0	--	5.4	--	--	--	--	--
Real Estate	1.1	56	2.4	83	7.0	21	7.4	21	7.7	19	10.0	5	9.6	12
NCREIF ODCE	1.0	75	2.4	83	6.4	47	7.4	20	7.6	21	9.8	9	9.9	12
<i>InvMetrics All DB Real Estate Pub Net Median</i>	1.2		2.9		6.4		6.8		6.6		8.4		8.6	
Invesco	1.0	--	2.0	--	6.7	--	7.3	--	7.6	--	9.8	--	9.5	--
NCREIF ODCE	1.0	--	2.4	--	6.4	--	7.4	--	7.6	--	9.8	--	9.9	--

* 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: June 30, 2019

	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Invesco US Val IV	1.0	--	5.0	--	12.2	--	12.0	--	11.0	--	--	--	--	--
NCREIF ODCE	1.0	--	2.4	--	6.4	--	7.4	--	7.6	--	9.8	--	9.9	--
NCREIF CEVA 1Q Lag - NET	3.0	--	6.0	--	12.3	--	12.0	--	11.0	--	13.5	--	--	--
Invesco US Val V***	5.4	--	--	--	--	--	--	--	--	--	--	--	--	--
NCREIF ODCE	1.0	--	2.4	--	6.4	--	7.4	--	7.6	--	9.8	--	9.9	--
NCREIF CEVA 1Q Lag - NET	3.0	--	6.0	--	12.3	--	12.0	--	11.0	--	13.5	--	--	--
PGIM RE US Debt Fund	1.4	--	3.1	--	6.8	--	--	--	--	--	--	--	--	--
NCREIF ODCE	1.0	--	2.4	--	6.4	--	7.4	--	7.6	--	9.8	--	9.9	--
Private Real Asset**	1.7	--	-10.3	--	-6.0	--	-5.9	--	-3.1	--	--	--	--	--
Blended Private Real Asset Index ¹	13.0	--	3.2	--	7.6	--	4.7	--	4.8	--	5.0	--	--	--
Blended Secondary CA Private RA Index ¹	2.6	--	-0.1	--	4.3	--	7.5	--	10.2	--	--	--	--	--
Public Real Assets	1.0	--	13.3	--	-0.9	--	4.5	--	--	--	--	--	--	--
Blended Public Real Asset Index ¹	1.7	--	12.4	--	1.1	--	5.5	--	6.0	--	5.7	--	--	--
Cushing MLP Alpha TR****	-1.2	--	16.2	--	--	--	--	--	--	--	--	--	--	--
50% BBgBarc US TIPS/ 50% Blended PRA Index	2.3	--	9.4	--	3.1	--	--	--	--	--	--	--	--	--
Alerian MLP TR USD	0.1	--	17.0	--	3.1	--	-0.8	--	-0.4	--	-7.2	--	8.2	--
SSgA Custom Real Asset	1.7	--	12.5	--	1.1	--	5.5	--	--	--	--	--	--	--
SSgA Custom Real Asset Index ¹	1.7	--	12.4	--	1.1	--	5.5	--	--	--	--	--	--	--
TIPS	2.6	--	5.5	--	4.3	--	3.4	--	2.6	--	1.6	--	--	--
BBgBarc US TIPS TR	2.9	--	6.2	--	4.8	--	3.5	--	2.1	--	1.8	--	3.6	--
Brown Brothers Harriman	2.6	69	5.5	72	4.3	76	3.4	48	2.6	30	1.6	37	--	--
BBgBarc US TIPS TR	2.9	39	6.2	58	4.8	27	3.5	38	2.1	51	1.8	19	3.6	46
eV US TIPS / Inflation Fixed Inc Net Median	2.8	--	6.2	--	4.6	--	3.3	--	2.1	--	1.5	--	3.5	--

** Returns are one-quarter lag.

*** Funded February 2019.

****Funded July 2018.

1. See Appendix for Benchmark History.

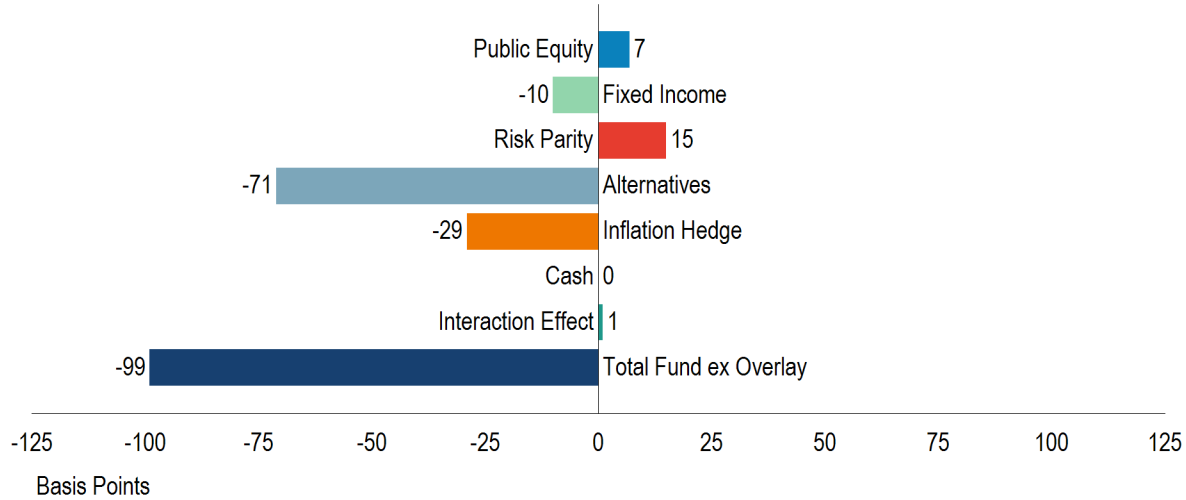
Total Fund
Performance Summary (Net of Fees)

Period Ending: June 30, 2019

	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Cash	0.4	--	0.6	--	1.3	--	1.1	--	1.0	--	1.0	--	0.8	--
91 Day T-Bills	0.6	--	1.2	--	2.3	--	1.8	--	1.4	--	0.9	--	0.5	--
General Account	1.1	--	2.0	--	5.3	--	4.0	--	3.0	--	2.4	--	1.3	--
Treasury & LAIF	0.9	--	1.6	--	3.7	--	3.4	--	2.5	--	1.9	--	1.4	--
91 Day T-Bills	0.6	--	1.2	--	2.3	--	1.8	--	1.4	--	0.9	--	0.5	--

Total Fund ex Overlay
Performance Attribution

Period Ending: June 30, 2019

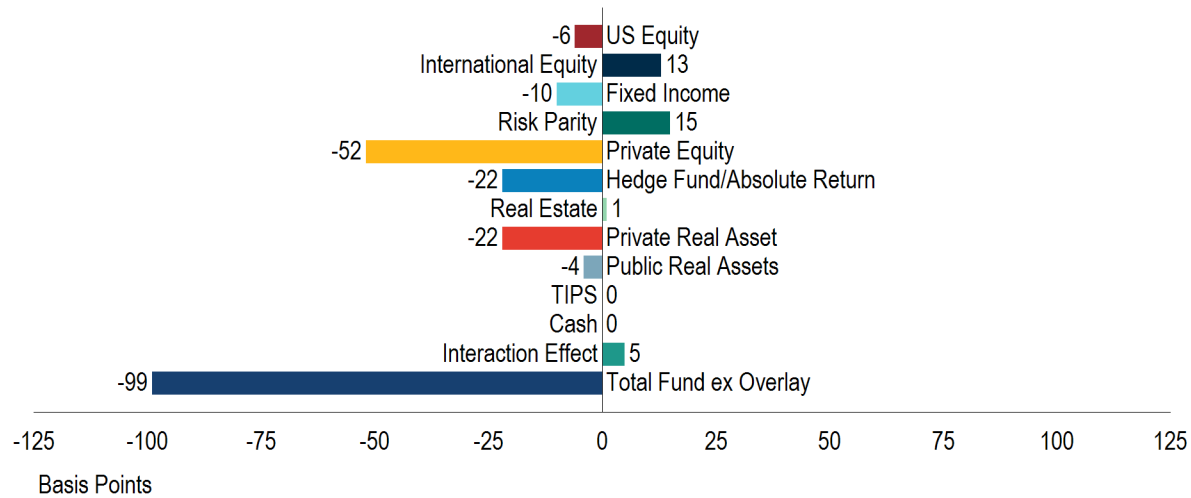


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction*	Total Effects
Public Equity	3.63%	3.42%	0.21%	0.07%	-0.05%	0.00%	0.03%
Fixed Income	2.54%	3.02%	-0.48%	-0.10%	-0.02%	0.00%	-0.12%
Risk Parity	5.57%	3.68%	1.89%	0.15%	0.00%	0.00%	0.15%
Alternatives	2.00%	8.00%	-6.00%	-0.71%	0.00%	0.01%	-0.70%
Inflation Hedge	1.20%	2.80%	-1.60%	-0.29%	0.00%	0.01%	-0.28%
Cash	0.35%	0.57%	-0.22%	0.00%	-0.06%	0.00%	-0.06%
Total	2.88%	3.87%	-0.99%	-0.88%	-0.13%	0.01%	-0.99%

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

Total Fund ex Overlay
Performance Attribution

Period Ending: June 30, 2019

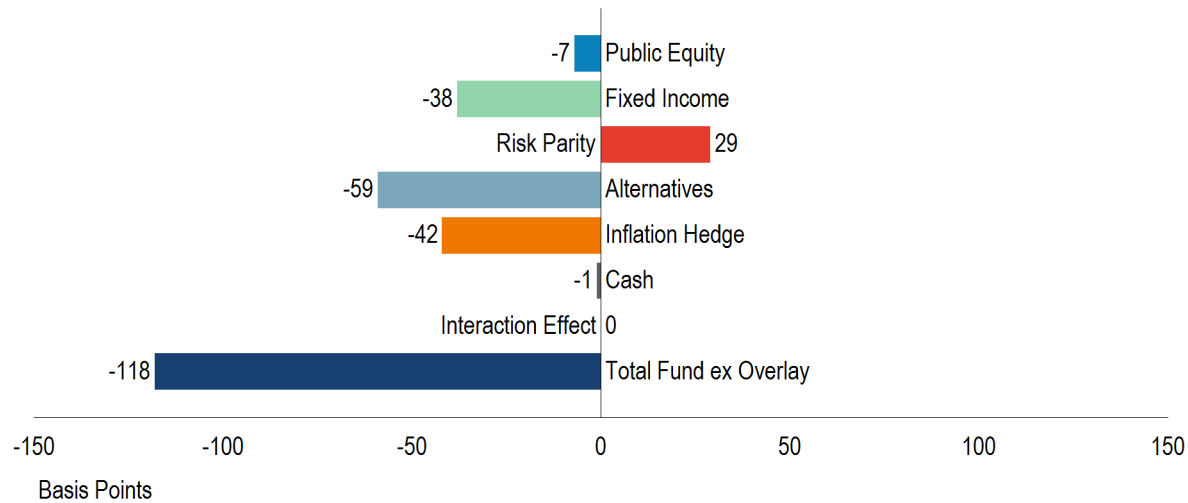


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction * Effects	Total Effects
US Equity	3.91%	4.10%	-0.19%	-0.06%	-0.04%	0.01%	-0.09%
International Equity	3.33%	2.63%	0.69%	0.13%	-0.01%	0.00%	0.12%
Fixed Income	2.54%	3.02%	-0.48%	-0.10%	-0.02%	0.00%	-0.12%
Risk Parity	5.57%	3.68%	1.89%	0.15%	0.00%	0.00%	0.15%
Private Equity	5.61%	14.58%	-8.97%	-0.52%	0.04%	-0.03%	-0.51%
Hedge Fund/Absolute Return	-2.06%	1.62%	-3.68%	-0.22%	0.01%	0.02%	-0.19%
Real Estate	1.14%	0.99%	0.15%	0.01%	-0.01%	0.00%	0.00%
Private Real Asset	1.67%	13.03%	-11.36%	-0.22%	-0.06%	0.07%	-0.21%
Public Real Assets	1.02%	1.69%	-0.67%	-0.04%	-0.03%	-0.01%	-0.08%
TIPS	2.63%	2.87%	-0.23%	0.00%	0.01%	0.00%	0.01%
Cash	0.35%	0.57%	-0.22%	0.00%	-0.06%	0.00%	-0.06%
Total	2.89%	3.87%	-0.99%	-0.88%	-0.17%	0.05%	-0.99%

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: June 30, 2019

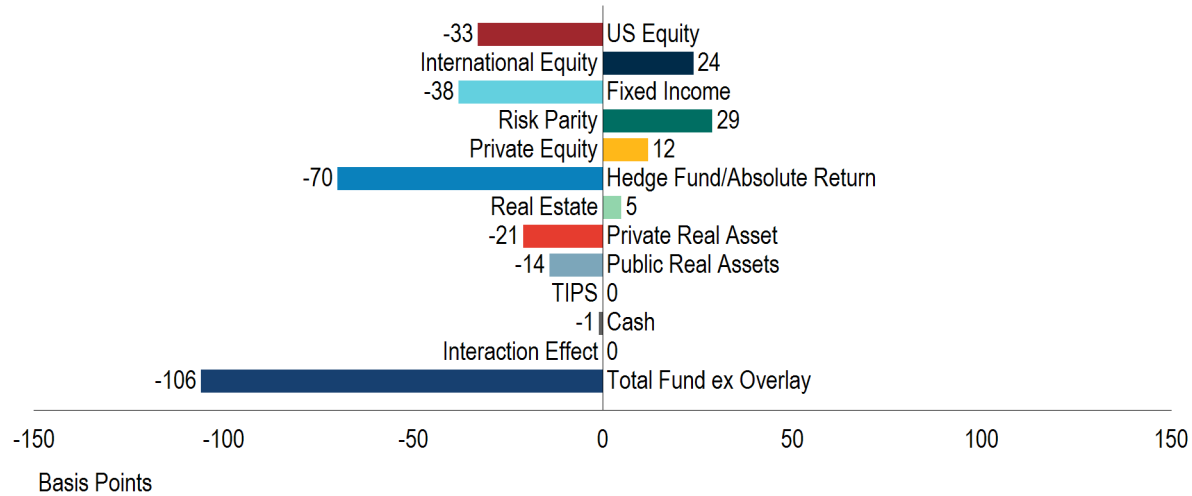


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction *	Total Effects
Public Equity	4.84%	4.97%	-0.13%	-0.07%	0.00%	0.00%	-0.07%
Fixed Income	6.70%	8.47%	-1.77%	-0.38%	0.00%	0.00%	-0.38%
Risk Parity	10.81%	7.29%	3.51%	0.29%	0.00%	0.00%	0.29%
Alternatives	4.59%	9.50%	-4.91%	-0.59%	0.00%	0.00%	-0.59%
Inflation Hedge	2.47%	4.83%	-2.36%	-0.42%	0.00%	0.00%	-0.42%
Cash	1.29%	2.27%	-0.98%	-0.01%	0.00%	0.00%	-0.01%
Total	5.12%	6.30%	-1.18%	-1.18%	0.00%	0.00%	-1.18%

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: June 30, 2019



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction*	Total Effects
US Equity	7.52%	8.98%	-1.46%	-0.33%	0.00%	0.00%	-0.33%
International Equity	1.66%	0.40%	1.26%	0.24%	0.00%	0.00%	0.24%
Fixed Income	6.70%	8.47%	-1.77%	-0.38%	0.00%	0.00%	-0.38%
Risk Parity	10.81%	7.29%	3.51%	0.29%	0.00%	0.00%	0.29%
Private Equity	14.60%	11.77%	2.84%	0.12%	0.00%	0.00%	0.12%
Hedge Fund/Absolute Return	-5.85%	6.43%	-12.28%	-0.70%	0.00%	0.00%	-0.70%
Real Estate	7.05%	6.41%	0.64%	0.05%	0.00%	0.00%	0.05%
Private Real Asset	-6.02%	7.57%	-13.60%	-0.21%	0.00%	0.00%	-0.21%
Public Real Assets	-0.91%	1.05%	-1.96%	-0.14%	0.00%	0.00%	-0.14%
TIPS	4.30%	4.84%	-0.53%	0.00%	0.00%	0.00%	0.00%
Cash	1.29%	2.27%	-0.98%	-0.01%	0.00%	0.00%	-0.01%
Total	5.13%	6.19%	-1.06%	-1.06%	0.00%	0.00%	-1.06%

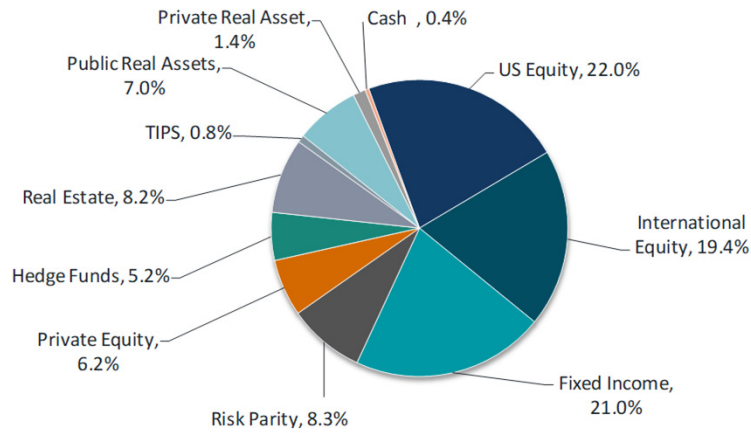
Attribution does not include the impact of the Parametric Minneapolis strategy.
* Interaction Effects include Residual Effects.

Total Fund

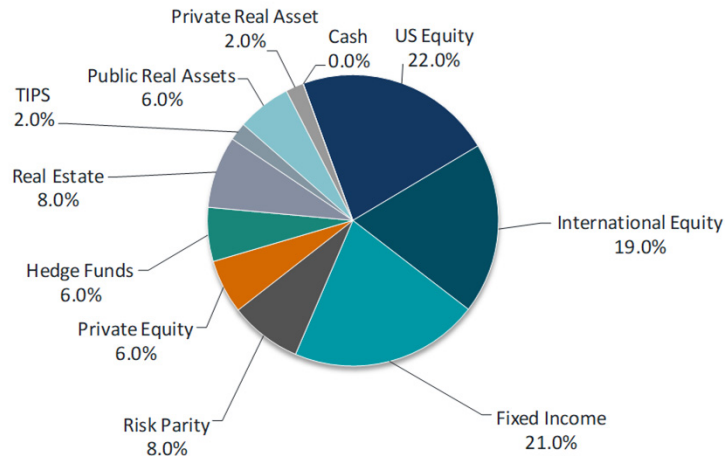
Asset Allocation Analysis

Period Ending: June 30, 2019

Current w/Overlay



Target

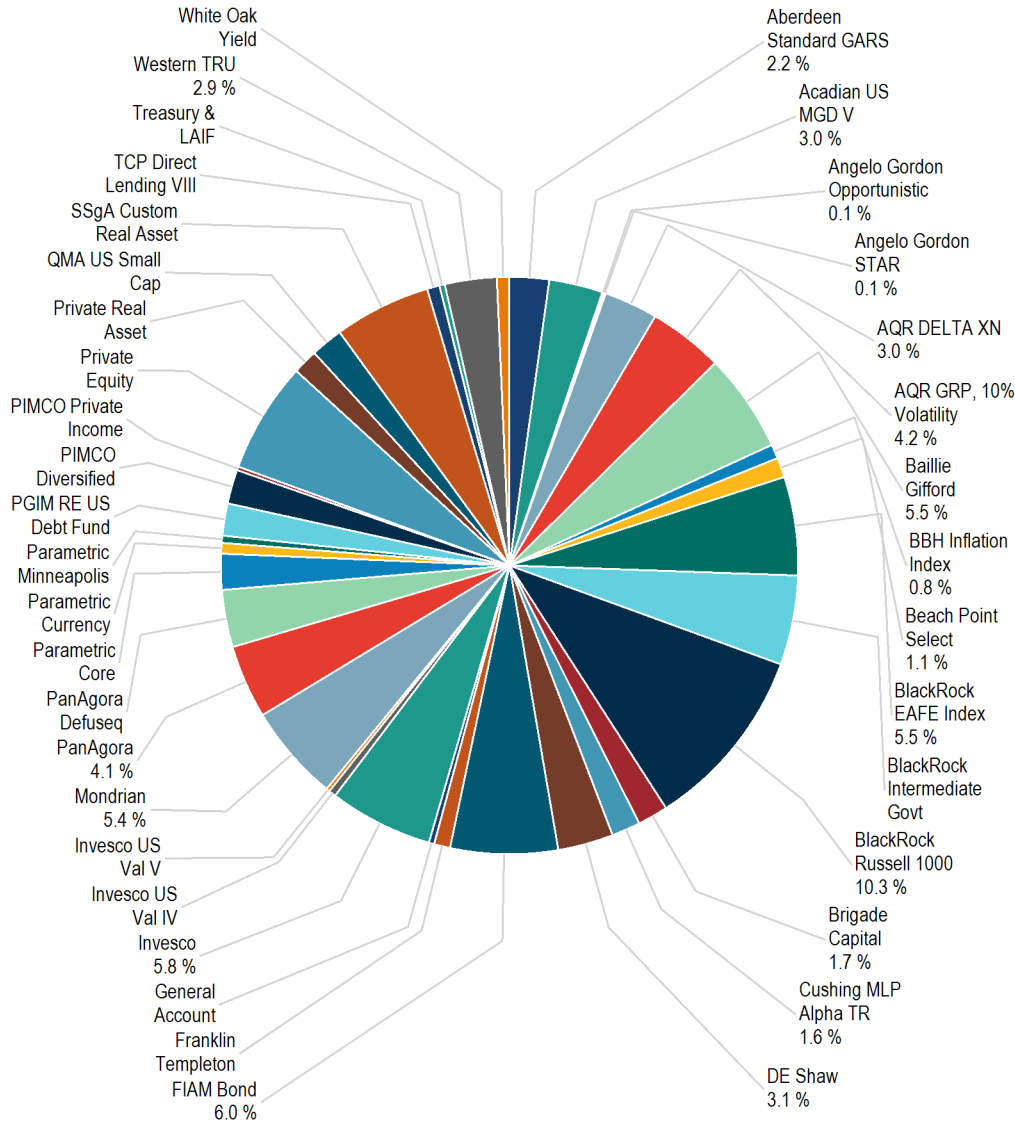


ASSET ALLOCATION	MARKET VALUE	W/OVERLAY	W/O OVERLAY
US Equity	1,026,896,560	22.0%	21.5%
International Equity	904,284,310	19.4%	19.0%
Fixed Income	980,195,710	21.0%	21.4%
Risk Parity	389,039,098	8.3%	8.3%
Private Equity	289,677,403	6.2%	6.2%
Hedge Funds	243,015,696	5.2%	5.2%
Real Estate	380,727,065	8.2%	8.2%
TIPS	37,067,410	0.8%	0.8%
Public Real Assets	325,804,292	7.0%	7.0%
Private Real Asset	64,121,953	1.4%	1.4%
Cash	19,088,820	0.4%	1.0%
TOTAL	4,659,918,318	100.0%	100.0%

ASSET ALLOCATION	W/OVERLAY	TARGET	DIFF
US Equity	22.0%	22.0%	0.0%
International Equity	19.4%	19.0%	0.4%
Fixed Income	21.0%	21.0%	0.0%
Risk Parity	8.3%	8.0%	0.3%
Private Equity	6.2%	6.0%	0.2%
Hedge Funds	5.2%	6.0%	-0.8%
Real Estate	8.2%	8.0%	0.2%
TIPS	0.8%	2.0%	-1.2%
Public Real Assets	7.0%	6.0%	1.0%
Private Real Asset	1.4%	2.0%	-0.6%
Cash	0.4%	0.0%	0.4%
TOTAL	100.0%	100.0%	0.0%

Total Fund Manager Allocation Analysis

Period Ending: June 30, 2019



	Actual	Actual
Aberdeen Standard GARS	\$102,433,534	2%
Acadian US MGD V	\$141,156,247	3%
Angelo Gordon Opportunistic	\$5,906,000	0%
Angelo Gordon STAR	\$4,762,300	0%
AQR DELTA XN	\$140,582,162	3%
AQR GRP, 10% Volatility	\$196,422,334	4%
Baillie Gifford	\$257,008,271	6%
BBH Inflation Index	\$37,067,405	1%
Beach Point Select	\$52,539,185	1%
BlackRock EAFE Index	\$255,711,316	5%
BlackRock Intermediate Govt	\$233,698,006	5%
BlackRock Russell 1000	\$481,876,704	10%
Brigade Capital	\$79,340,937	2%
Brown Brothers Harriman	\$5	0%
Cushing MLP Alpha TR	\$74,573,782	2%
DE Shaw	\$145,207,692	3%
FIAM Bond	\$281,072,703	6%
Franklin Templeton	\$42,351,913	1%
General Account	\$14,386,269	0%
Invesco	\$269,030,019	6%
Invesco US Val IV	\$19,000,969	0%
Invesco US Val V	\$7,397,449	0%
Mondrian	\$252,340,656	5%
PanAgora	\$192,616,764	4%
PanAgora Defuseq	\$146,896,369	3%
Parametric Core	\$91,229,837	2%
Parametric Currency Overlay	\$27,910,151	1%
Parametric Minneapolis Overlay	\$19,655,618	0%
PGIM RE US Debt Fund	\$85,208,628	2%
PIMCO Diversified	\$87,782,790	2%
PIMCO Private Income	\$9,240,000	0%
Private Equity	\$289,677,403	6%
Private Real Asset	\$64,121,953	1%
QMA US Small Cap	\$84,864,694	2%
SSgA Custom Real Asset	\$251,230,510	5%
TCP Direct Lending VIII	\$32,003,070	1%
Transition 3	\$15	0%
Treasury & LAIF	\$13,493,848	0%
Western TRU	\$136,575,689	3%
White Oak Yield	\$33,455,120	1%
Total	\$4,659,918,318	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	8.2%	79	5.9%	46	1.1	58	-0.8	93	1.0%	46
Policy Index	9.0%	37	6.0%	47	1.3	37	--	--	0.0%	1
InvMetrics Public DB > \$1B Net Median	8.7%	--	6.0%	--	1.2	--	-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	5.7%	48	6.5%	49	0.7	43	-0.4	65	1.1%	38
Policy Index	6.1%	33	6.8%	61	0.8	39	--	--	0.0%	1
InvMetrics Public DB > \$1B Net Median	5.6%	--	6.6%	--	0.7	--	-0.1	--	1.2%	--

Statistics Summary

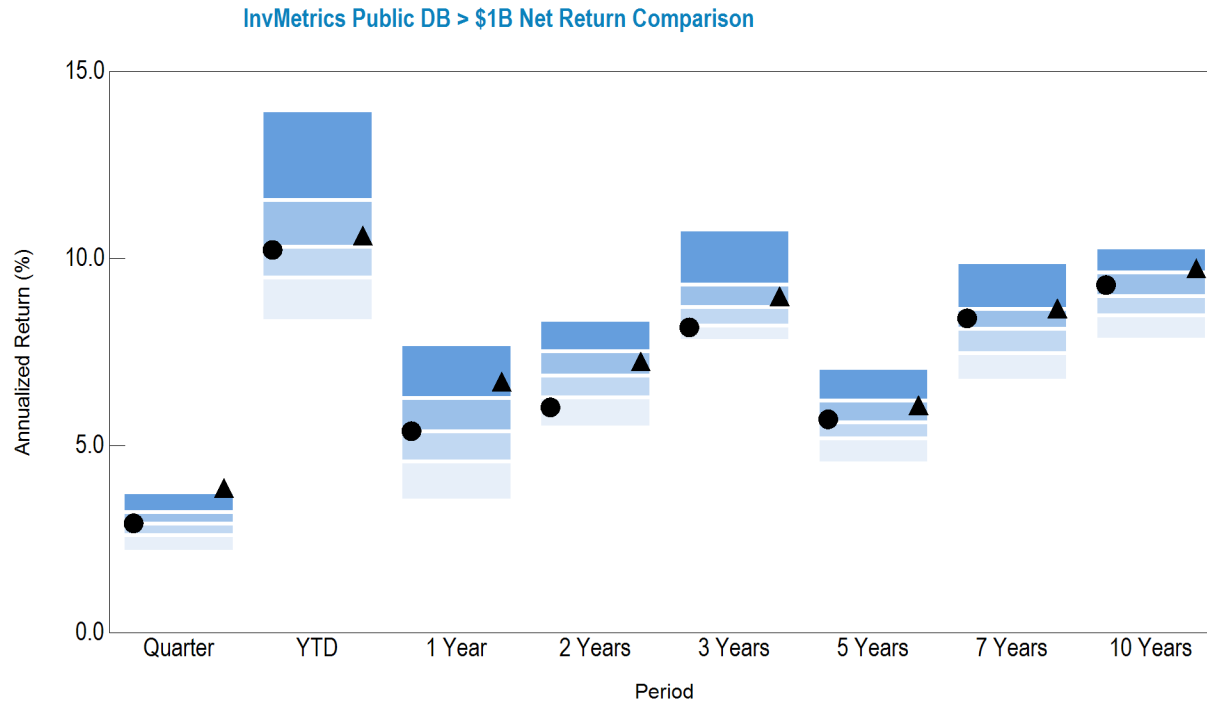
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Cash	1.0%	0.2%	-2.3	-1.8	0.2%
91 Day T-Bills	1.4%	0.2%	0.0	--	0.0%
General Account	3.0%	1.0%	1.7	1.9	0.9%
91 Day T-Bills	1.4%	0.2%	0.0	--	0.0%
Treasury & LAIF	2.5%	1.0%	1.0	1.1	0.9%
91 Day T-Bills	1.4%	0.2%	0.0	--	0.0%

Statistics Summary

5 Years

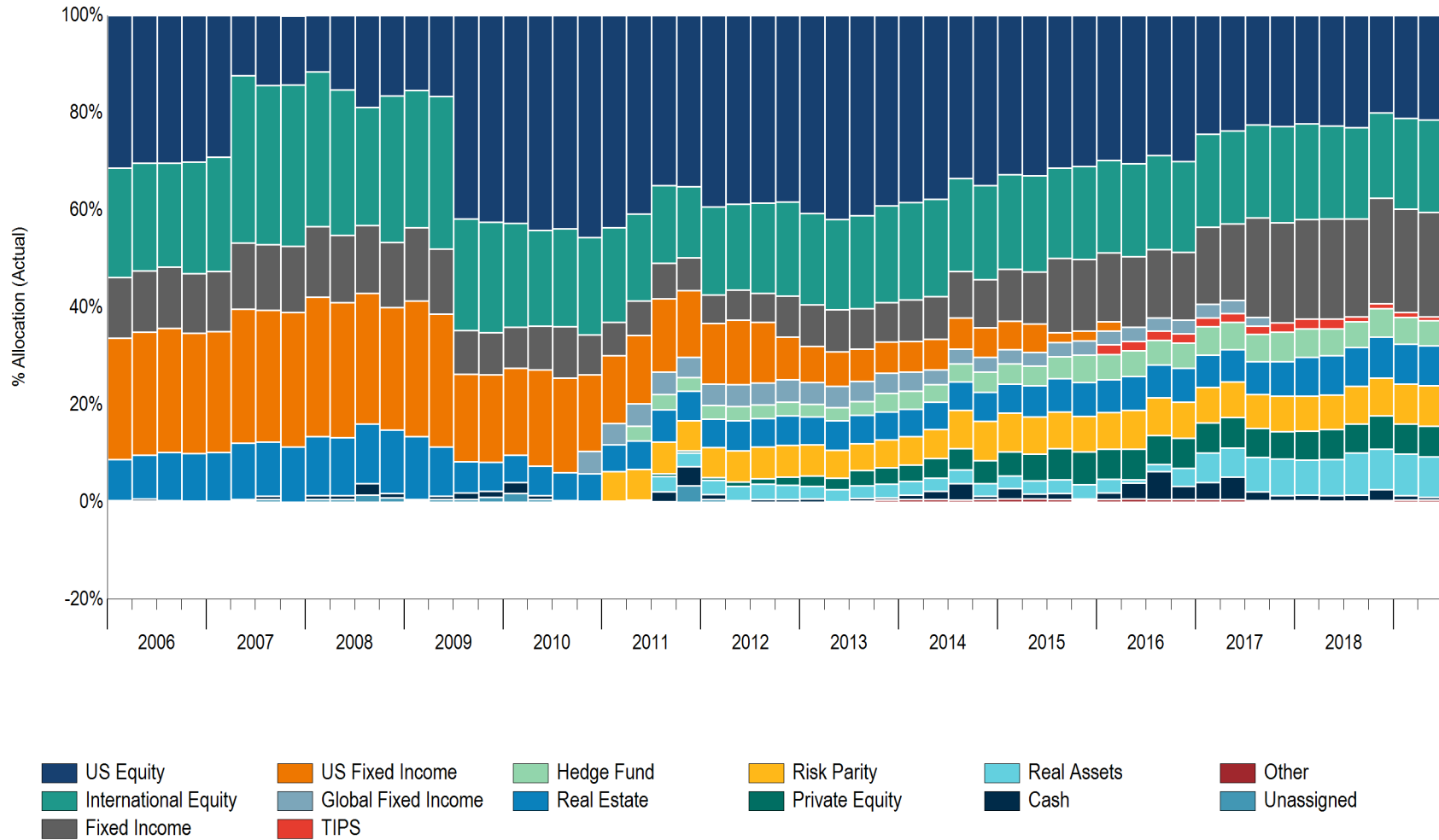
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Cash	1.0%	0.3%	0.5	0.4	0.4%
91 Day T-Bills	0.9%	0.3%	0.0	--	0.0%
General Account	2.4%	0.9%	1.7	1.9	0.8%
91 Day T-Bills	0.9%	0.3%	0.0	--	0.0%
Treasury & LAIF	1.9%	0.9%	1.1	1.2	0.8%
91 Day T-Bills	0.9%	0.3%	0.0	--	0.0%



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.8	14.0	7.7	8.4	10.8	7.1	9.9	10.3
25th Percentile	3.2	11.6	6.3	7.5	9.3	6.2	8.7	9.6
Median	2.9	10.3	5.4	6.9	8.7	5.6	8.1	9.0
75th Percentile	2.6	9.5	4.6	6.3	8.2	5.2	7.5	8.5
95th Percentile	2.2	8.3	3.5	5.5	7.8	4.5	6.7	7.9
# of Portfolios	78	78	77	77	77	73	71	65
● Total Fund	2.9 (51)	10.2 (55)	5.4 (52)	6.0 (86)	8.2 (79)	5.7 (48)	8.4 (36)	9.3 (40)
▲ Policy Index	3.9 (5)	10.6 (43)	6.7 (18)	7.3 (32)	9.0 (37)	6.1 (33)	8.7 (25)	9.7 (22)

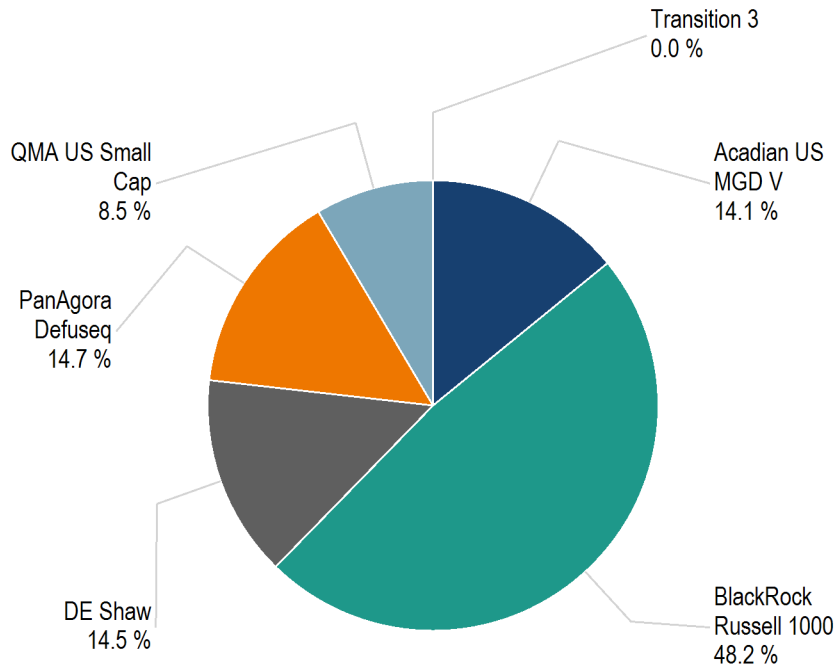
Total Fund
Asset Allocation History

Period Ending: June 30, 2019



US Equity
 Manager Allocation Analysis

Period Ending: June 30, 2019



	Actual \$	Actual %	Manager Contribution to Excess Return %
Acadian US MGD V	\$141,156,247	14.1%	0.1%
BlackRock Russell 1000	\$481,876,704	48.2%	0.0%
DE Shaw	\$145,207,692	14.5%	-0.2%
PanAgora Defuseq	\$146,896,369	14.7%	0.2%
QMA US Small Cap	\$84,864,694	8.5%	-0.2%
Transition Account	\$15	0.0%	0.0%
Actual vs. Policy Weight Difference			0.0%
Total	\$1,000,001,721	100.0%	-0.2%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	13.5%	12.1%	1.0	-0.8	0.8%
Blended US Equity Index	14.1%	12.5%	1.0	--	0.0%
Russell 3000	14.0%	12.5%	1.0	-0.9	0.1%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	14.8%	11.7%	1.1	0.5	1.4%
Russell 1000	14.1%	12.3%	1.0	--	0.0%
DE Shaw	14.4%	11.9%	1.1	0.1	2.3%
Russell 1000	14.1%	12.3%	1.0	--	0.0%
Small Cap Equity	8.9%	17.1%	0.4	-1.2	2.7%
Russell 2000	12.3%	17.1%	0.6	--	0.0%

Statistics Summary

5 Years

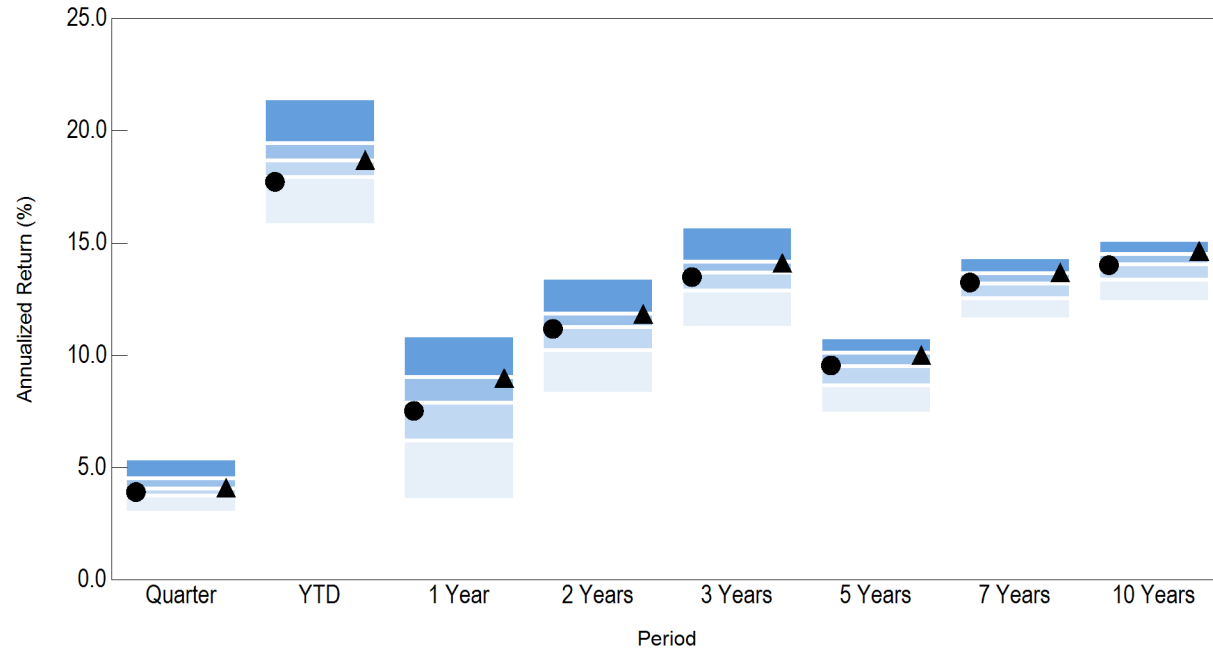
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	9.5%	12.1%	0.7	-0.5	0.8%
Blended US Equity Index	10.0%	12.4%	0.7	--	0.0%
Russell 3000	10.2%	12.3%	0.8	0.3	0.7%

Statistics Summary

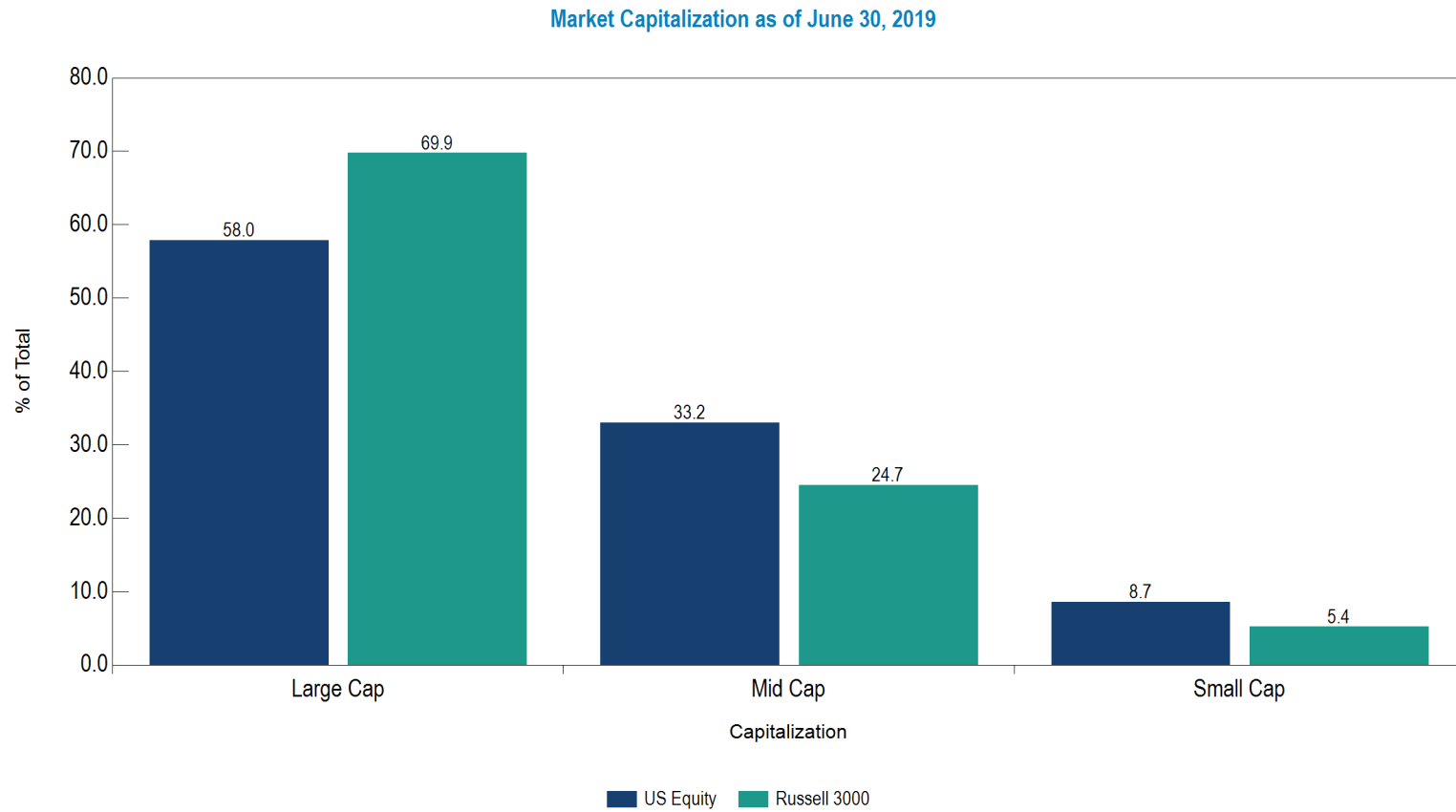
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	11.0%	11.8%	0.9	0.4	1.2%
Russell 1000	10.5%	12.1%	0.8	--	0.0%
DE Shaw	11.3%	12.1%	0.9	0.4	2.3%
Russell 1000	10.5%	12.1%	0.8	--	0.0%
Small Cap Equity	4.0%	16.2%	0.2	-1.1	2.8%
Russell 2000	7.1%	16.6%	0.4	--	0.0%

InvMetrics All DB US Eq Net Return Comparison



	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
Return (Rank)								
5th Percentile	5.4	21.4	10.9	13.4	15.7	10.8	14.4	15.1
25th Percentile	4.5	19.5	9.0	11.9	14.2	10.1	13.7	14.5
Median	4.1	18.7	7.9	11.3	13.7	9.5	13.2	14.1
75th Percentile	3.8	18.0	6.2	10.3	12.9	8.7	12.6	13.4
95th Percentile	3.0	15.8	3.6	8.3	11.2	7.4	11.6	12.4
# of Portfolios	605	604	603	590	574	548	462	356
● US Equity	3.9 (68)	17.7 (80)	7.5 (58)	11.2 (54)	13.5 (59)	9.5 (50)	13.2 (49)	14.0 (54)
▲ Blended US Equity Index	4.1 (48)	18.7 (49)	9.0 (30)	11.8 (28)	14.1 (29)	10.0 (31)	13.7 (25)	14.7 (18)



See appendix for the market capitalization breakpoints.

Characteristics

	Portfolio	Russell 3000
Number of Holdings	2,825	2,954
Weighted Avg. Market Cap. (\$B)	142.5	190.7
Median Market Cap. (\$B)	3.2	1.6
Price To Earnings	20.1	20.5
Price To Book	3.2	3.4
Price To Sales	1.7	1.9
Return on Equity (%)	22.6	21.8
Yield (%)	2.0	1.9
Beta (holdings; domestic)	1.0	1.0

Top Holdings

MICROSOFT	2.3%
AMAZON.COM	2.0%
APPLE	2.0%
JOHNSON & JOHNSON	1.2%
AT&T	1.1%
VISA 'A'	1.0%
FACEBOOK CLASS A	0.9%
ALPHABET A	0.9%
VERIZON COMMUNICATIONS	0.9%
CHEVRON	0.9%

Best Performers

	Return %
IOVANCE BIOTHERAPEUTICS (IOVA)	157.8%
ARQULE (ARQL)	129.9%
RAFAEL HOLDINGS B (RFL)	127.3%
ADVERUM BIOTCHS. (ADVM)	126.9%
CHIMERIX (CMRX)	105.7%
ZYNEX (ZYXI)	99.8%
ENPHASE ENERGY (ENPH)	97.5%
MAXAR TECHNOLOGIES (C:MAXR)	95.3%
ARRAY BIOPHARMA (ARRAY)	90.0%
MELINTA THERAPEUTICS (MLNT)	87.3%

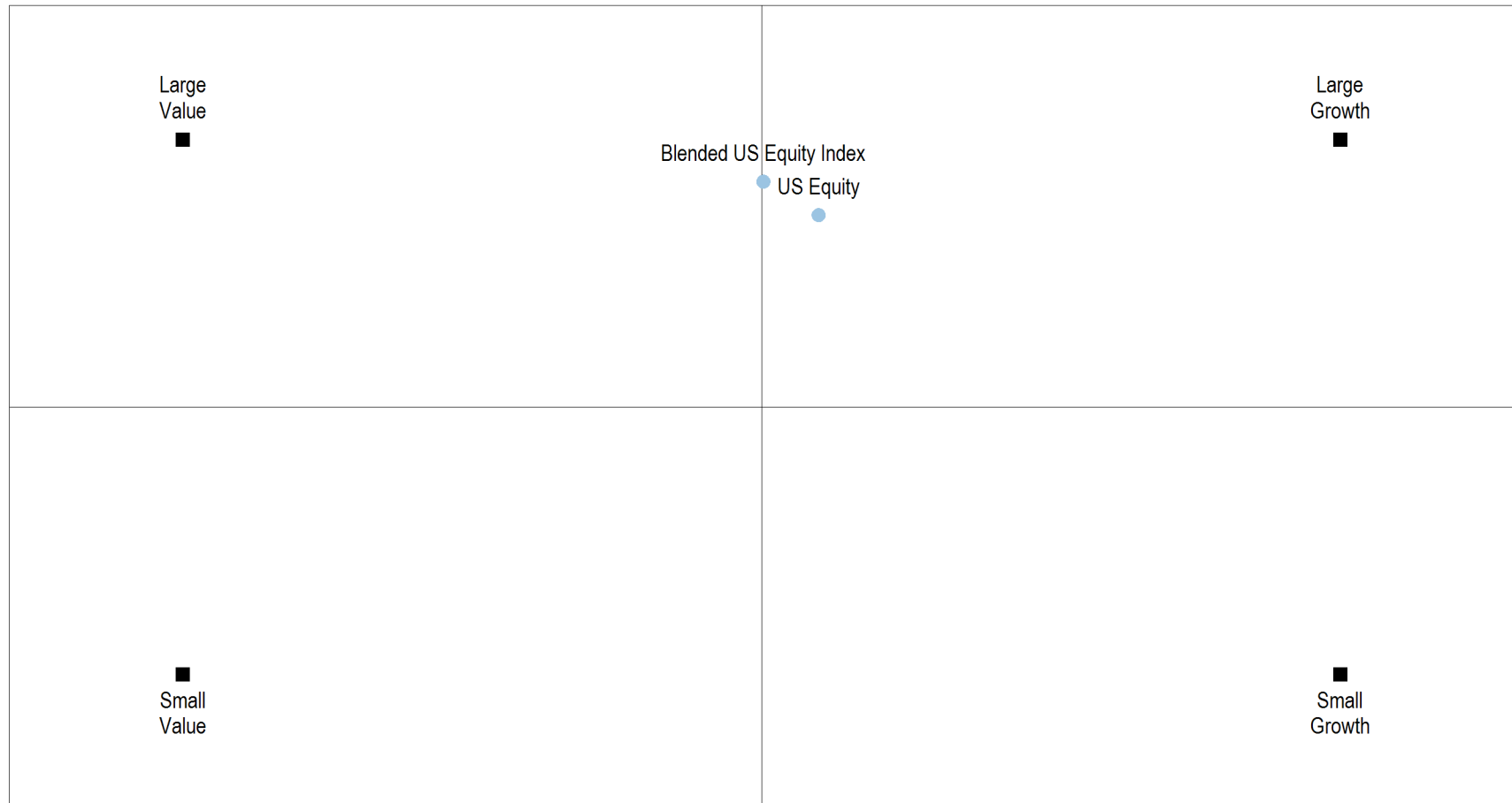
Worst Performers

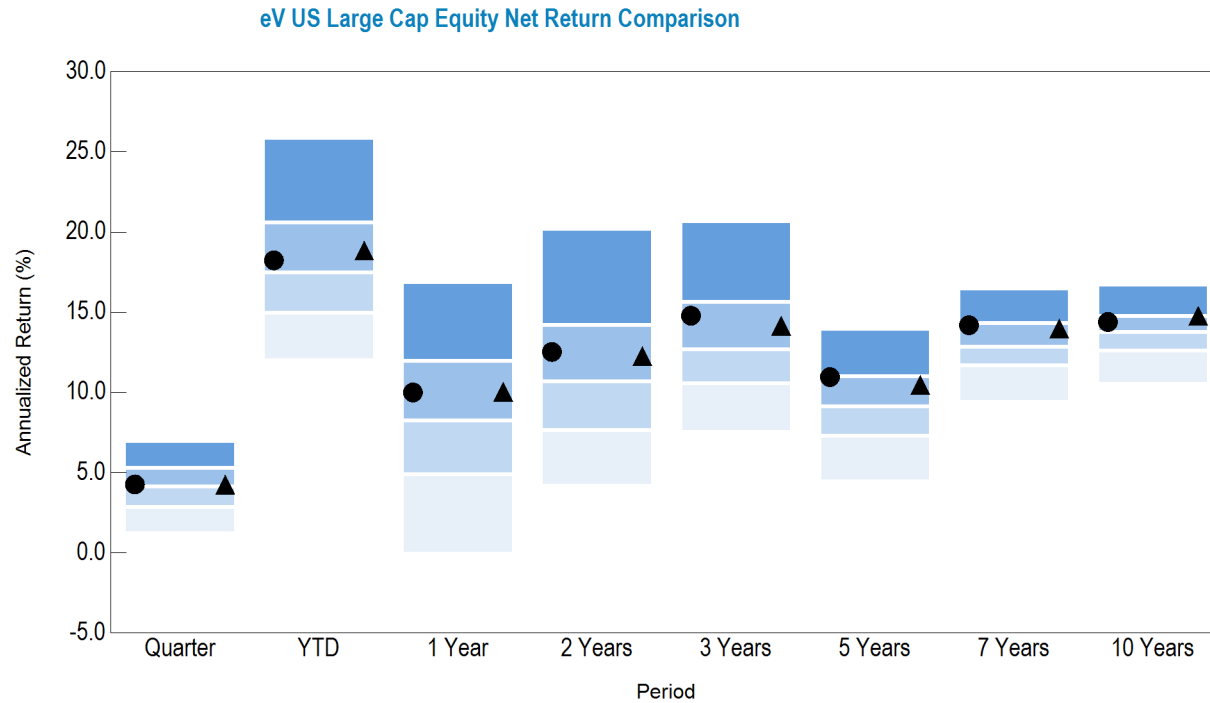
	Return %
FUSION CONNECT (FSNNQ)	-96.2%
INSYS THERAPEUTICS (INSYQ)	-93.5%
FTD COMPANIES (FTDCQ)	-93.1%
WEATHERFORD INTL. (WFTIQ)	-92.8%
BRISTOW GROUP (BRWSQ)	-91.4%
HALCON RESOURCES (HKRSQ)	-86.9%
PIONEER ENERGY SERVICES (PESX)	-85.7%
EROS INTERNATIONAL CL.A (EROS)	-85.2%
ACER THERAPEUTICS (ACER)	-84.0%
FRED'S 'A' (FRED)	-80.1%

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	0.1%	0.0%	0.1%	0.0%	-3.0%	-3.8%	4.3%	5.1%			
Materials	0.1%	0.1%	0.0%	0.0%	7.0%	5.0%	3.0%	2.9%			
Industrials	0.1%	0.2%	0.0%	0.0%	6.2%	4.6%	9.4%	10.1%			
Consumer Discretionary	-0.1%	-0.1%	0.0%	0.0%	3.9%	4.6%	12.3%	10.4%			
Consumer Staples	0.0%	0.0%	0.0%	0.0%	3.0%	3.3%	7.5%	6.5%			
Health Care	0.0%	0.0%	0.0%	0.0%	1.6%	1.5%	15.5%	14.4%			
Financials	0.0%	0.0%	-0.1%	0.0%	7.7%	7.6%	11.7%	13.2%			
Information Technology	-0.2%	-0.2%	0.0%	0.0%	4.7%	5.7%	18.3%	21.1%			
Communication Services	-0.1%	-0.1%	0.0%	0.0%	3.6%	4.4%	7.7%	9.1%			
Utilities	0.0%	0.0%	0.0%	0.0%	3.3%	3.6%	6.1%	3.2%			
Real Estate	0.0%	0.0%	0.0%	0.0%	1.2%	1.7%	3.9%	4.0%			
Cash	0.0%	0.0%	0.0%	0.0%	0.6%	--	0.1%	0.0%			
Unclassified	0.0%	0.0%	0.0%	0.0%	4.0%	--	0.1%	0.0%			
Portfolio	-0.2%	=	-0.1%	+	-0.1%	+	0.0%	3.9%	4.1%	100.0%	100.0%

U.S. Effective Style Map





	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
Return (Rank)								
5th Percentile	7.0	25.9	16.9	20.2	20.6	14.0	16.5	16.7
25th Percentile	5.3	20.6	12.0	14.2	15.7	11.0	14.4	14.8
Median	4.1	17.5	8.2	10.7	12.7	9.1	12.8	13.8
75th Percentile	2.9	15.0	4.9	7.7	10.6	7.3	11.7	12.6
95th Percentile	1.2	12.0	-0.1	4.2	7.6	4.5	9.4	10.6
# of Portfolios	633	632	621	613	599	566	516	455
● Large Cap Equity	4.3 (48)	18.2 (45)	10.0 (40)	12.5 (36)	14.8 (31)	11.0 (26)	14.2 (28)	14.4 (34)
▲ Russell 1000	4.2 (48)	18.8 (40)	10.0 (39)	12.3 (37)	14.1 (36)	10.5 (31)	14.0 (31)	14.8 (26)

Characteristics

	Portfolio	Russell 1000
Number of Holdings	2,781	977
Weighted Avg. Market Cap. (\$B)	155.5	204.6
Median Market Cap. (\$B)	3.7	10.3
Price To Earnings	20.6	20.6
Price To Book	3.4	3.5
Price To Sales	1.9	2.0
Return on Equity (%)	23.5	24.9
Yield (%)	2.0	1.9
Beta (holdings; domestic)	0.9	1.0

Top Holdings

MICROSOFT	2.6%
AMAZON.COM	2.2%
APPLE	2.1%
JOHNSON & JOHNSON	1.3%
AT&T	1.2%
VISA 'A'	1.1%
FACEBOOK CLASS A	1.0%
ALPHABET A	1.0%
VERIZON COMMUNICATIONS	1.0%
CHEVRON	0.9%

Best Performers

	Return %
IOVANCE BIOTHERAPEUTICS (IOVA)	157.8%
ARQLE (ARQL)	129.9%
RAFAEL HOLDINGS B (RFL)	127.3%
ADVERUM BIOTCHS. (ADVM)	126.9%
CHIMERIX (CMRX)	105.7%
ZYNEX (ZYXI)	99.8%
ENPHASE ENERGY (ENPH)	97.5%
MAXAR TECHNOLOGIES (C:MAXR)	95.3%
ARRAY BIOPHARMA (ARRY)	90.0%
MELINTA THERAPEUTICS (MLNT)	87.3%

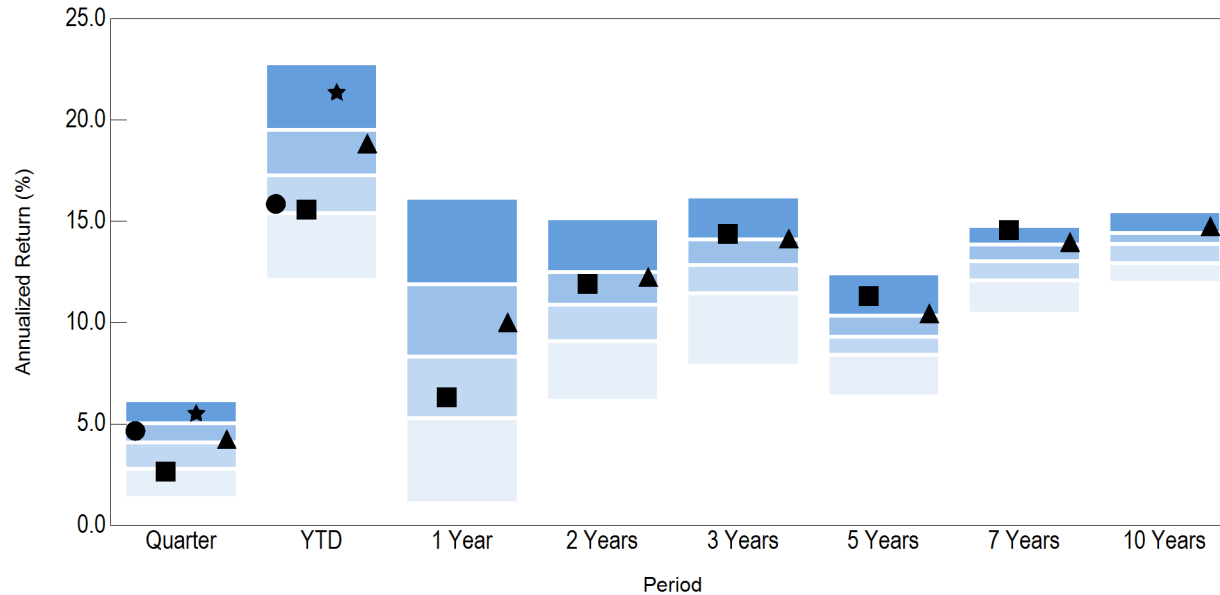
Worst Performers

	Return %
FUSION CONNECT (FSNNQ)	-96.2%
INSYS THERAPEUTICS (INSYQ)	-93.5%
FTD COMPANIES (FTDCQ)	-93.1%
WEATHERFORD INTL. (WFTIQ)	-92.8%
BRISTOW GROUP (BRWSQ)	-91.4%
HALCON RESOURCES (HKRSQ)	-86.9%
PIONEER ENERGY SERVICES (PESX)	-85.7%
EROS INTERNATIONAL CL.A (EROS)	-85.2%
ACER THERAPEUTICS (ACER)	-84.0%
FRED'S 'A' (FRED)	-80.1%

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%	0.1%	0.1%	0.0%	-2.4%	-3.6%	4.3%	5.2%			
Materials	0.1%	0.1%	0.0%	0.0%	8.1%	5.6%	3.0%	2.9%			
Industrials	0.1%	0.1%	0.0%	0.0%	5.5%	4.2%	8.8%	9.8%			
Consumer Discretionary	0.0%	0.0%	0.0%	0.0%	4.6%	5.0%	12.3%	10.3%			
Consumer Staples	0.0%	0.0%	0.0%	0.0%	3.4%	3.5%	8.0%	6.8%			
Health Care	0.0%	0.0%	0.0%	0.0%	1.8%	1.6%	15.5%	14.2%			
Financials	0.0%	0.0%	-0.1%	0.0%	8.2%	7.9%	11.3%	12.9%			
Information Technology	-0.1%	-0.1%	0.0%	0.0%	5.3%	5.9%	18.5%	21.5%			
Communication Services	-0.1%	-0.1%	0.0%	0.0%	3.9%	4.6%	8.1%	9.5%			
Utilities	0.0%	0.0%	0.0%	0.0%	3.3%	3.4%	6.4%	3.2%			
Real Estate	0.0%	0.0%	0.0%	0.0%	1.1%	1.8%	3.6%	3.8%			
Cash	0.0%	0.0%	0.0%	0.0%	0.6%	--	0.1%	0.0%			
Unclassified	0.0%	0.0%	0.0%	0.0%	4.0%	--	0.1%	0.0%			
Portfolio	0.0%	=	0.1%	+	-0.1%	+	0.0%	4.2%	4.3%	100.0%	100.0%

eV US Large Cap Core Equity Net Return Comparison



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	6.2	22.8	16.1	15.1	16.2	12.4	14.7	15.5
25th Percentile	5.1	19.5	11.9	12.5	14.1	10.4	13.9	14.4
Median	4.1	17.3	8.3	10.9	12.9	9.3	13.1	13.9
75th Percentile	2.8	15.4	5.3	9.1	11.5	8.4	12.1	13.0
95th Percentile	1.4	12.1	1.1	6.1	7.9	6.4	10.4	12.0
# of Portfolios	199	198	195	191	186	174	152	129
● Acadian US MGD V	4.7 (37)	15.9 (69)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
■ DE Shaw	2.7 (78)	15.6 (73)	6.3 (67)	11.9 (33)	14.4 (20)	11.3 (12)	14.6 (8)	-- (--)
★ PanAgora Defuseq	5.5 (17)	21.3 (11)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
▲ Russell 1000	4.2 (44)	18.8 (33)	10.0 (39)	12.3 (28)	14.1 (25)	10.5 (22)	14.0 (21)	14.8 (14)

Characteristics

	Portfolio	Russell 1000
Number of Holdings	138	977
Weighted Avg. Market Cap. (\$B)	70.5	204.6
Median Market Cap. (\$B)	18.6	10.3
Price To Earnings	19.2	20.6
Price To Book	2.9	3.5
Price To Sales	1.9	2.0
Return on Equity (%)	24.5	24.9
Yield (%)	2.0	1.9
Beta (holdings; domestic)	0.8	1.0

Top Holdings

DANAHER	1.3%
ESTEE LAUDER COS.'A'	1.3%
BRIGHT HORIZONS FAMILY SOLUTIONS	1.2%
ZOETIS	1.2%
STARBUCKS	1.2%
COSTCO WHOLESALE	1.2%
HONEYWELL INTL.	1.2%
METTLER TOLEDO INTL.	1.2%
MONDELEZ INTERNATIONAL CL.A	1.2%
NEWS 'A'	1.2%

Best Performers

	Return %
ARCO PLATFORM A (ARCE)	35.6%
ARENA PHARMS. (ARNA)	30.8%
BRUKER (BRKR)	30.1%
HASBRO (HAS)	25.1%
H&R BLOCK (HRB)	23.5%
WASHINGTON FEDERAL (WAFD)	21.7%
MOTOROLA SOLUTIONS (MSI)	19.2%
BRIGHT HORIZONS FAMILY SOLUTIONS (BFAM)	18.7%
HERSHEY (HSY)	17.4%
SERVICE CORP.INTL. (SCI)	17.0%

Worst Performers

	Return %
UNITED THERAPEUTICS (UTHR)	-33.5%
HERBALIFE NUTRITION (HLF)	-19.3%
MARCUS (MCS)	-17.3%
GENOMIC HEALTH (GHDX)	-17.0%
SCHOLASTIC (SCHL)	-16.1%
WATERS (WAT)	-14.5%
ELI LILLY (LLY)	-14.1%
DELL TECHNOLOGIES C (DELL)	-13.4%
ROBERT HALF INTL. (RHI)	-12.0%
K12 (LRN)	-10.9%

Acadian US MGD V Performance Attribution vs. Russell 1000

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.3%	0.2%	0.2%	-0.1%	-0.5%	-3.6%	3.0%	5.2%			
Materials	0.1%	0.2%	0.0%	-0.1%	12.2%	5.6%	1.8%	2.9%			
Industrials	0.0%	-0.1%	0.0%	0.1%	3.0%	4.2%	1.9%	9.8%			
Consumer Discretionary	0.2%	0.2%	0.0%	0.0%	6.5%	5.0%	13.3%	10.3%			
Consumer Staples	0.1%	0.1%	0.0%	0.1%	5.2%	3.5%	10.1%	6.8%			
Health Care	0.1%	0.2%	-0.2%	0.1%	3.0%	1.6%	21.8%	14.2%			
Financials	0.0%	0.0%	0.0%	0.0%	7.6%	7.9%	13.7%	12.9%			
Information Technology	-0.3%	-0.2%	-0.2%	0.1%	4.7%	5.9%	8.5%	21.5%			
Communication Services	-0.3%	-0.3%	0.0%	0.0%	1.9%	4.6%	9.3%	9.5%			
Utilities	0.0%	0.0%	-0.1%	0.0%	3.8%	3.4%	15.5%	3.2%			
Real Estate	0.1%	-0.1%	0.1%	0.1%	-0.5%	1.8%	0.6%	3.8%			
Cash	0.0%	0.0%	0.0%	0.0%	0.6%	--	0.4%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
Portfolio	0.3%	=	0.1%	+	-0.3%	+	0.4%	4.5%	4.3%	100.0%	100.0%

Characteristics

	Portfolio	Russell 1000
Number of Holdings	1,002	977
Weighted Avg. Market Cap. (\$B)	202.7	204.6
Median Market Cap. (\$B)	9.8	10.3
Price To Earnings	20.8	20.6
Price To Book	3.6	3.5
Price To Sales	2.1	2.0
Return on Equity (%)	24.7	24.9
Yield (%)	1.9	1.9
Beta (holdings; domestic)	1.0	1.0

Top Holdings

MICROSOFT	3.7%
APPLE	3.3%
AMAZON.COM	2.9%
FACEBOOK CLASS A	1.7%
BERKSHIRE HATHAWAY 'B'	1.5%
JOHNSON & JOHNSON	1.4%
JP MORGAN CHASE & CO.	1.3%
ALPHABET 'C'	1.2%
EXXON MOBIL	1.2%
ALPHABET A	1.2%

Best Performers

	Return %
ADIENT (ADNT)	87.3%
ANADARKO PETROLEUM (APC)	55.8%
CYPRESS SEMICON. (CY)	49.8%
OKTA CL.A (OKTA)	49.3%
ERIE INDEMNITY 'A' (ERIE)	43.2%
HEICO (HEI)	41.1%
ROKU (ROKU)	40.4%
SINCLAIR BROADCAST 'A' (SBGI)	39.9%
LEGG MASON (LM)	39.9%
COUPA SOFTWARE (COUP)	39.2%

Worst Performers

	Return %
WEATHERFORD INTL. (WFTIQ)	-92.8%
2U (TWOU)	-46.9%
ALKERMES (ALKS)	-38.2%
RANGE RES. (RRC)	-37.7%
ANTERO RESOURCES (AR)	-37.4%
CHESAPEAKE ENERGY (CHK)	-37.1%
RPC (RES)	-36.5%
REALOGY HOLDINGS (RLGY)	-35.8%
CHEMOURS (CC)	-34.7%
UNITED THERAPEUTICS (UTHR)	-33.5%

Characteristics

	Portfolio	Russell 1000
Number of Holdings	112	977
Weighted Avg. Market Cap. (\$B)	57.1	204.6
Median Market Cap. (\$B)	14.7	10.3
Price To Earnings	22.7	20.6
Price To Book	3.1	3.5
Price To Sales	2.2	2.0
Return on Equity (%)	21.0	24.9
Yield (%)	2.7	1.9
Beta (holdings; domestic)	0.7	1.0

Top Holdings

AT&T	3.4%
CHEVRON	3.1%
REPUBLIC SVS.'A'	2.8%
APTARGROUP	2.5%
AIR PRDS.& CHEMS.	2.3%
WASTE MANAGEMENT	2.2%

Best Performers

	Return %
ERIE INDEMNITY 'A' (ERIE)	43.2%
KAR AUCTION SERVICES (KAR)	29.6%
RENAISSANCERE HDG. (RNR)	24.3%
CINCINNATI FINL. (CINF)	21.3%
NORTHROP GRUMMAN (NOC)	20.4%

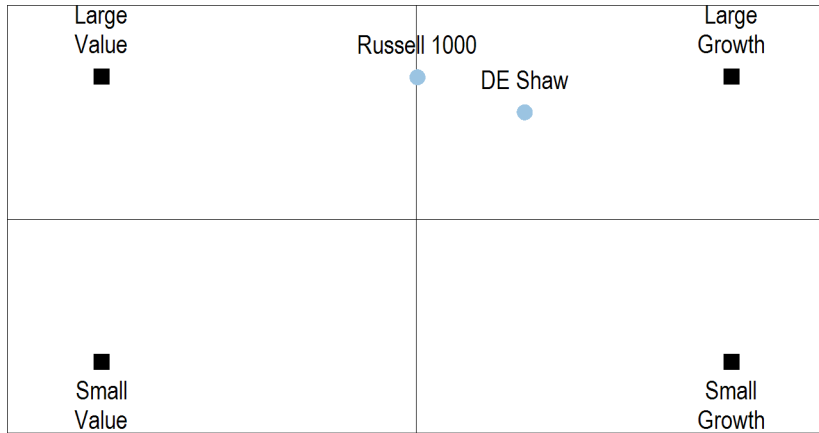
Worst Performers

	Return %
CDK GLOBAL (CDK)	-15.7%
WATERS (WAT)	-14.5%
ROLLINS (ROL)	-13.6%
INGREDION (INGR)	-12.2%
HIGHWOODS PROPERTIES (HIW)	-10.8%

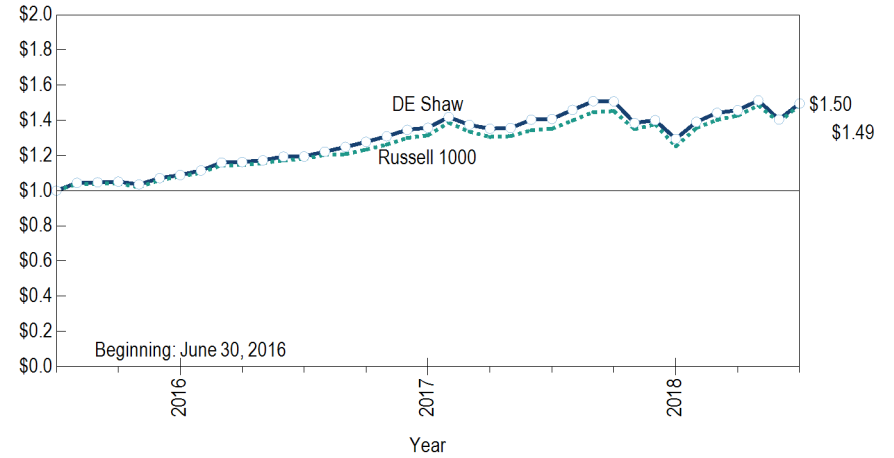
PanAgora Defuseq Performance Attribution vs. Russell 1000

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.4%	0.3%	0.3%	-0.2%	2.0%	-3.6%	1.9%	5.2%			
Materials	0.7%	0.3%	0.0%	0.4%	15.5%	5.6%	6.4%	2.9%			
Industrials	0.5%	0.5%	0.0%	0.1%	8.9%	4.2%	11.6%	9.8%			
Consumer Discretionary	0.2%	0.1%	0.0%	0.0%	6.5%	5.0%	12.4%	10.3%			
Consumer Staples	-0.3%	-0.2%	0.0%	-0.1%	1.3%	3.5%	13.3%	6.8%			
Health Care	0.5%	0.5%	0.1%	-0.1%	5.3%	1.6%	11.2%	14.2%			
Financials	0.1%	0.7%	-0.2%	-0.4%	13.2%	7.9%	6.0%	12.9%			
Information Technology	-0.3%	-0.2%	-0.2%	0.1%	4.9%	5.9%	10.7%	21.5%			
Communication Services	0.0%	0.1%	0.0%	-0.1%	5.7%	4.6%	4.3%	9.5%			
Utilities	0.0%	0.0%	-0.1%	0.0%	3.8%	3.4%	14.5%	3.2%			
Real Estate	-0.2%	-0.1%	-0.1%	-0.1%	0.0%	1.8%	7.5%	3.8%			
Cash	0.0%	0.0%	0.0%	0.0%	0.6%	--	0.1%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
Portfolio	1.5%	=	2.1%	+	-0.3%	+	-0.3%	5.7%	4.3%	100.0%	100.0%

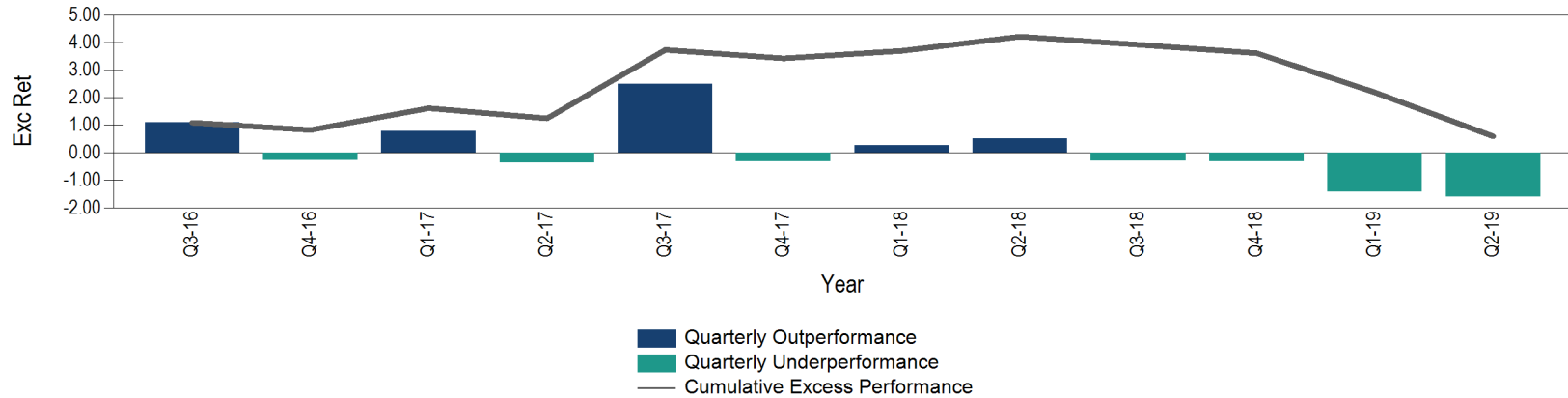
U.S. Effective Style Map



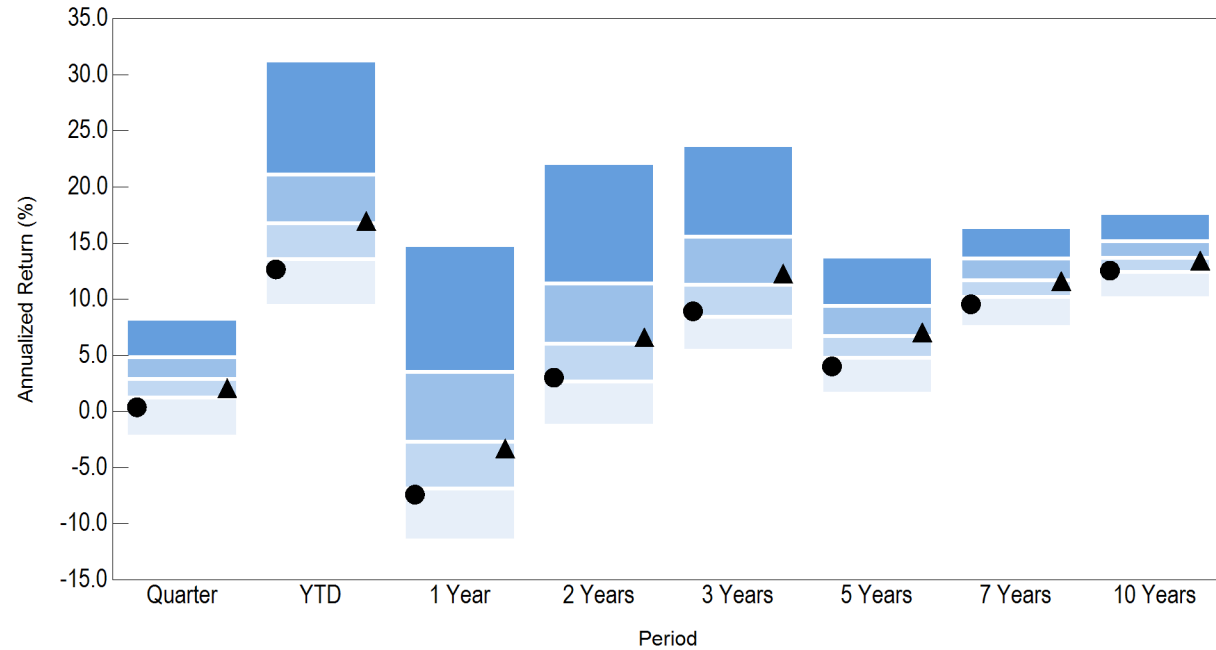
Growth of a Dollar



Quarterly and Cumulative Excess Performance



eV US Small Cap Equity Net Return Comparison



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	8.2	31.2	14.8	22.1	23.7	13.8	16.4	17.7
25th Percentile	4.9	21.1	3.6	11.5	15.6	9.5	13.7	15.2
Median	2.9	16.8	-2.7	6.1	11.3	6.8	11.7	13.7
75th Percentile	1.3	13.6	-6.9	2.7	8.5	4.8	10.2	12.4
95th Percentile	-2.2	9.4	-11.4	-1.3	5.5	1.6	7.6	10.1
# of Portfolios	410	410	404	399	388	368	341	310
● Small Cap Equity	0.4 (86)	12.7 (85)	-7.4 (78)	3.0 (72)	8.9 (71)	4.0 (84)	9.5 (84)	12.6 (72)
▲ Russell 2000	2.1 (62)	17.0 (50)	-3.3 (54)	6.6 (48)	12.3 (42)	7.1 (47)	11.6 (52)	13.4 (55)

Characteristics

	Portfolio	Russell 2000
Number of Holdings	344	1,977
Weighted Avg. Market Cap. (\$B)	2.3	2.6
Median Market Cap. (\$B)	1.4	0.8
Price To Earnings	15.7	19.2
Price To Book	2.2	2.5
Price To Sales	0.7	1.2
Return on Equity (%)	13.4	2.9
Yield (%)	1.5	1.4
Beta (holdings; domestic)	1.3	1.2

Top Holdings

HAEMONETICS	1.1%
EMCOR GROUP	1.0%
PORTLAND GEN.ELEC.	1.0%
RADIAN GP.	1.0%
WORLD FUEL SVS.	0.9%
TEGNA	0.9%
INTEGER HOLDINGS	0.9%
MGIC INVESTMENT	0.8%
RYMAN HOSPITALITY PROPS.	0.8%
PROGRESS SOFTWARE	0.8%

Best Performers

	Return %
ARRAY BIOPHARMA (ARRY)	90.0%
SONIC AUTOMOTIVE 'A' (SAH)	58.3%
VECTRUS (VEC)	52.5%
SCORPIO TANKERS (STNG)	49.4%
GMS (GMS)	45.5%
REPLIGEN (RGEN)	45.5%
META FINANCIAL GROUP (CASH)	42.8%
SINCLAIR BROADCAST 'A' (SBGI)	39.9%
HAEMONETICS (HAE)	37.6%
NACCO INDUSTRIES 'A' (NC)	36.4%

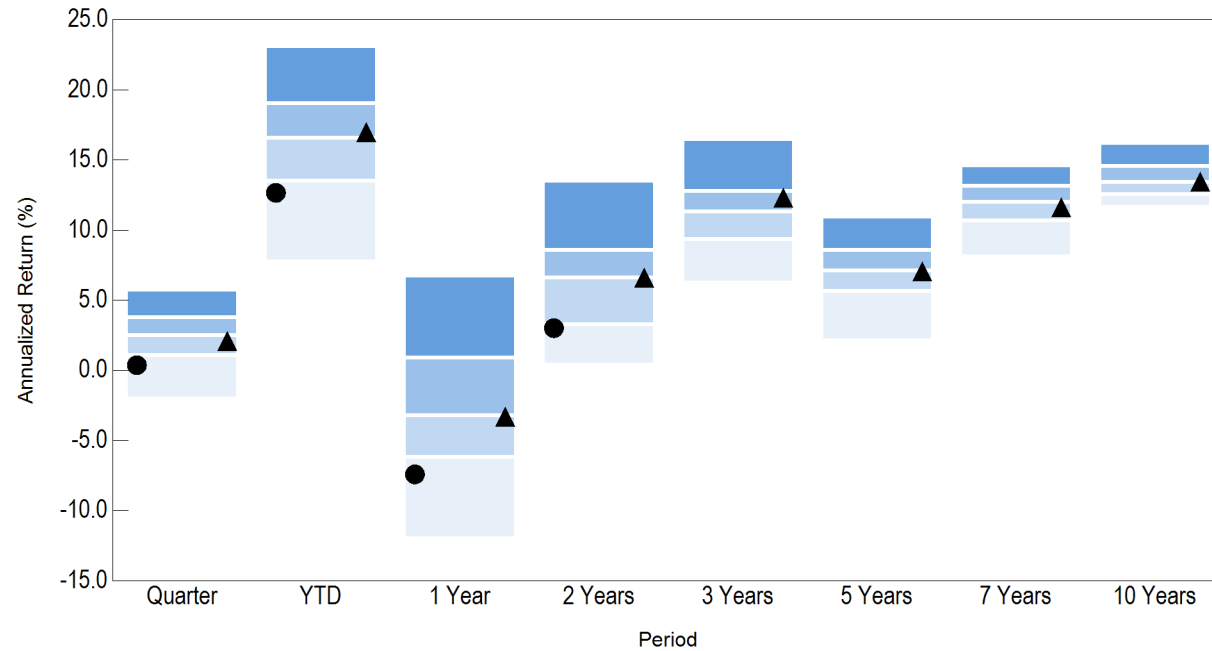
Worst Performers

	Return %
SUPERIOR ENERGY SVS. (SPN)	-72.2%
J JILL (JILL)	-63.8%
MAMMOTH ENERGY SERVICES (TUSK)	-58.3%
R R DONNELLEY & SONS (RRD)	-57.9%
MALLINCKRODT (MNK)	-57.8%
RAYONIER ADV.D.MATERIALS (RYAM)	-51.6%
TENNECO A (TEN)	-50.0%
ENDO INTERNATIONAL (ENDP)	-48.7%
CARE.COM (CRCM)	-44.4%
OFFICE DEPOT (ODP)	-42.5%

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	-0.1%	0.0%	-0.1%	0.0%	-9.2%	-8.4%	4.4%	3.6%			
Materials	-0.1%	-0.1%	0.0%	0.0%	-4.0%	-0.7%	3.1%	3.9%			
Industrials	0.3%	0.3%	0.0%	0.0%	10.5%	8.5%	15.0%	14.4%			
Consumer Discretionary	-0.3%	-0.3%	0.0%	0.0%	-3.1%	-0.6%	12.6%	12.1%			
Consumer Staples	-0.2%	-0.4%	0.0%	0.1%	-15.9%	-3.3%	2.0%	2.8%			
Health Care	0.1%	0.1%	0.0%	0.0%	0.6%	-0.1%	15.1%	16.2%			
Financials	-0.3%	-0.3%	0.0%	0.0%	3.5%	5.2%	16.7%	17.2%			
Information Technology	-1.0%	-0.9%	0.0%	-0.1%	-3.2%	2.9%	16.7%	15.2%			
Communication Services	-0.1%	0.0%	-0.1%	0.0%	-6.3%	-5.9%	4.0%	3.3%			
Utilities	-0.1%	0.0%	0.0%	0.0%	4.2%	5.2%	3.3%	3.8%			
Real Estate	0.0%	0.0%	0.0%	0.0%	1.7%	1.1%	7.2%	7.5%			
Cash	0.0%	0.0%	0.0%	0.0%	0.6%	--	0.0%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
Portfolio	-1.6%	=	-1.6%	+	0.0%	+	0.0%	0.5%	2.1%	100.0%	100.0%

eV US Small Cap Core Equity Net Return Comparison



	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	5.7	23.1	6.7	13.5	16.5	11.0	14.6	16.2
25th Percentile	3.8	19.1	0.9	8.6	12.8	8.6	13.2	14.6
Median	2.5	16.6	-3.2	6.6	11.4	7.1	12.1	13.4
75th Percentile	1.1	13.5	-6.1	3.3	9.4	5.7	10.7	12.6
95th Percentile	-2.0	7.8	-12.0	0.4	6.3	2.2	8.2	11.7
# of Portfolios	109	109	108	104	100	98	88	77
● QMA US Small Cap	0.4 (86)	12.7 (87)	-7.4 (81)	3.0 (79)	-- (--)	-- (--)	-- (--)	-- (--)
▲ Russell 2000	2.1 (58)	17.0 (47)	-3.3 (51)	6.6 (51)	12.3 (37)	7.1 (54)	11.6 (57)	13.4 (50)

Characteristics

	Portfolio	Russell 2000
Number of Holdings	344	1,977
Weighted Avg. Market Cap. (\$B)	2.3	2.6
Median Market Cap. (\$B)	1.4	0.8
Price To Earnings	15.7	19.2
Price To Book	2.2	2.5
Price To Sales	0.7	1.2
Return on Equity (%)	13.4	2.9
Yield (%)	1.5	1.4
Beta (holdings; domestic)	1.3	1.2

Top Holdings

HAEMONETICS	1.1%
EMCOR GROUP	1.0%
PORTLAND GEN.ELEC.	1.0%
RADIAN GP.	1.0%
WORLD FUEL SVS.	0.9%
TEGNA	0.9%
INTEGER HOLDINGS	0.9%
MGIC INVESTMENT	0.8%
RYMAN HOSPITALITY PROPS.	0.8%
PROGRESS SOFTWARE	0.8%

Best Performers

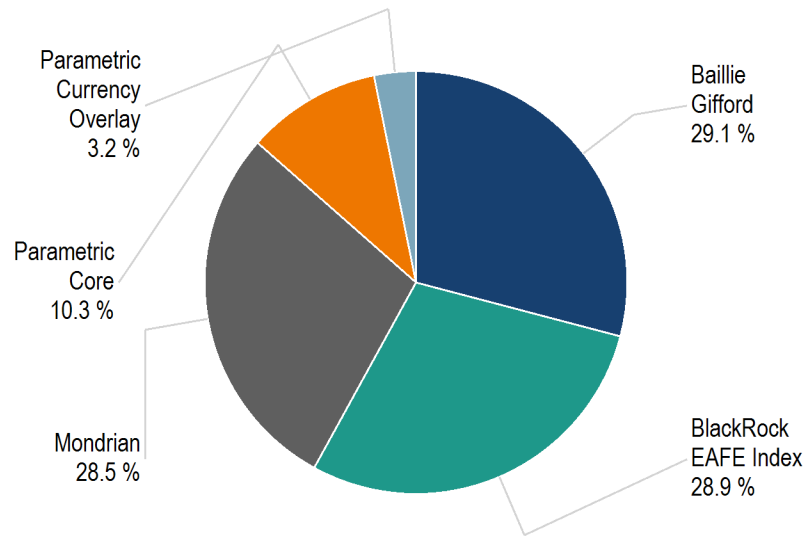
	Return %
ARRAY BIOPHARMA (ARRY)	90.0%
SONIC AUTOMOTIVE 'A' (SAH)	58.3%
VECTRUS (VEC)	52.5%
SCORPIO TANKERS (STNG)	49.4%
GMS (GMS)	45.5%
REPLIGEN (RGEN)	45.5%
META FINANCIAL GROUP (CASH)	42.8%
SINCLAIR BROADCAST 'A' (SBGI)	39.9%
HAEMONETICS (HAE)	37.6%
NACCO INDUSTRIES 'A' (NC)	36.4%

Worst Performers

	Return %
SUPERIOR ENERGY SVS. (SPN)	-72.2%
J JILL (JILL)	-63.8%
MAMMOTH ENERGY SERVICES (TUSK)	-58.3%
R R DONNELLEY & SONS (RRD)	-57.9%
MALLINCKRODT (MNK)	-57.8%
RAYONIER ADV.D.MATERIALS (RYAM)	-51.6%
TENNECO A (TEN)	-50.0%
ENDO INTERNATIONAL (ENDP)	-48.7%
CARE.COM (CRCM)	-44.4%
OFFICE DEPOT (ODP)	-42.5%

QMA US Small Cap Performance Attribution vs. Russell 2000

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.1%	0.0%	-0.1%	0.0%	-9.2%	-8.4%	4.4%	3.6%			
Materials	-0.1%	-0.1%	0.0%	0.0%	-4.0%	-0.7%	3.1%	3.9%			
Industrials	0.3%	0.3%	0.0%	0.0%	10.5%	8.5%	15.0%	14.4%			
Consumer Discretionary	-0.3%	-0.3%	0.0%	0.0%	-3.1%	-0.6%	12.6%	12.1%			
Consumer Staples	-0.2%	-0.4%	0.0%	0.1%	-15.9%	-3.3%	2.0%	2.8%			
Health Care	0.1%	0.1%	0.0%	0.0%	0.6%	-0.1%	15.1%	16.2%			
Financials	-0.3%	-0.3%	0.0%	0.0%	3.5%	5.2%	16.7%	17.2%			
Information Technology	-1.0%	-0.9%	0.0%	-0.1%	-3.2%	2.9%	16.7%	15.2%			
Communication Services	-0.1%	0.0%	-0.1%	0.0%	-6.3%	-5.9%	4.0%	3.3%			
Utilities	-0.1%	0.0%	0.0%	0.0%	4.2%	5.2%	3.3%	3.8%			
Real Estate	0.0%	0.0%	0.0%	0.0%	1.7%	1.1%	7.2%	7.5%			
Cash	0.0%	0.0%	0.0%	0.0%	0.6%	--	0.0%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
Portfolio	-1.6%	=	-1.6%	+	0.0%	+	0.0%	0.5%	2.1%	100.0%	100.0%



	Actual \$	Actual %	Manager Contribution to Excess Return %
Baillie Gifford	\$257,008,271	29.1%	0.8%
BlackRock EAFE Index	\$255,711,316	28.9%	0.1%
Mondrian	\$252,340,656	28.5%	-0.1%
Parametric Core	\$91,229,837	10.3%	0.1%
Parametric Currency Overlay	\$27,910,151	3.2%	0.0%
Actual vs. Policy Weight Difference			-0.1%
Total	\$884,200,231	100.0%	0.7%

Statistics Summary

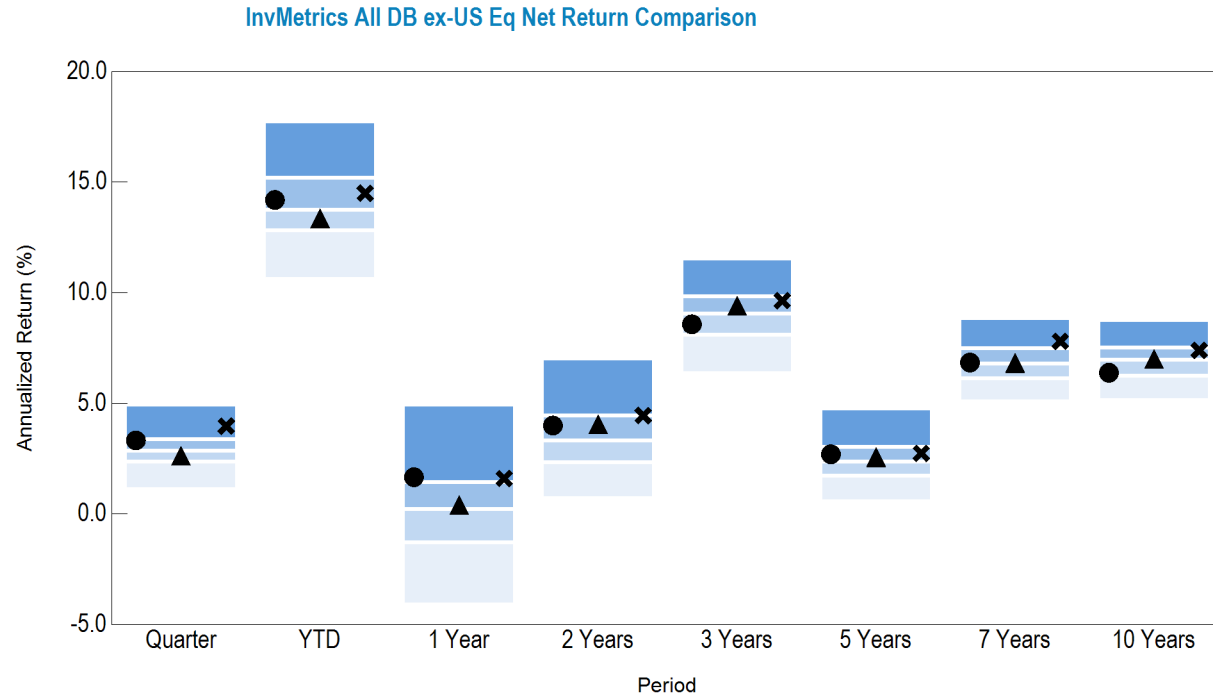
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	8.6%	11.3%	0.6	-0.6	1.5%
Blended International Equity Index	9.4%	11.3%	0.7	--	0.0%
Developed Markets	8.6%	11.6%	0.6	-0.7	1.9%
MSCI ACWI ex USA Gross	9.9%	11.4%	0.7	--	0.0%
Baillie Gifford	9.8%	13.6%	0.6	0.0	5.2%
MSCI ACWI ex US	9.9%	11.4%	0.7	--	0.0%
BlackRock EAFE Index	9.5%	11.1%	0.7	1.9	0.2%
MSCI EAFE	9.1%	11.1%	0.7	--	0.0%
Mondrian	7.1%	11.3%	0.5	-0.7	3.7%
MSCI ACWI ex USA Value Gross	9.6%	11.3%	0.7	--	0.0%
Emerging Markets	7.5%	12.2%	0.5	-0.9	4.0%
MSCI Emerging Markets Gross	11.1%	13.9%	0.7	--	0.0%
Parametric Core	7.5%	12.2%	0.5	-0.9	4.0%
MSCI Emerging Markets Gross	11.1%	13.9%	0.7	--	0.0%

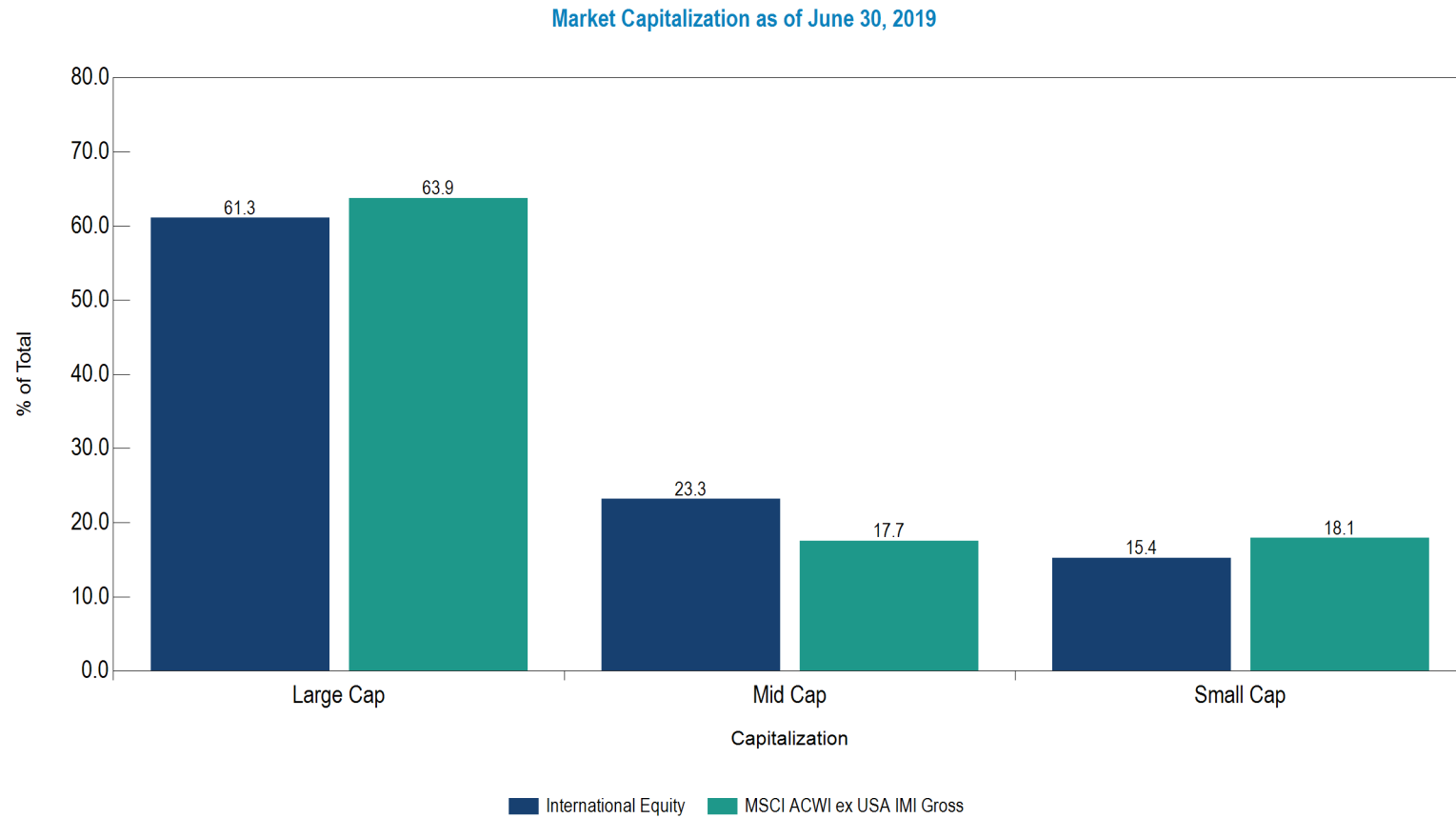
Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	2.7%	12.2%	0.1	0.1	1.6%
Blended International Equity Index	2.6%	12.4%	0.1	--	0.0%
Developed Markets	2.9%	12.3%	0.2	0.1	2.1%
MSCI ACWI ex USA Gross	2.6%	12.6%	0.1	--	0.0%
Baillie Gifford	4.5%	13.9%	0.3	0.4	4.6%
MSCI ACWI ex US	2.6%	12.6%	0.1	--	0.0%
BlackRock EAFE Index	2.6%	12.3%	0.1	1.9	0.2%
MSCI EAFE	2.2%	12.3%	0.1	--	0.0%
Mondrian	1.3%	11.9%	0.0	0.1	4.4%
MSCI ACWI ex USA Value Gross	0.9%	13.1%	0.0	--	0.0%
Emerging Markets	0.7%	14.1%	0.0	-0.5	4.2%
MSCI Emerging Markets Gross	2.9%	15.8%	0.1	--	0.0%



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	4.9	17.7	4.9	7.0	11.5	4.8	8.8	8.7
25th Percentile	3.4	15.2	1.5	4.5	9.9	3.1	7.5	7.5
Median	2.9	13.8	0.2	3.3	9.1	2.4	6.8	7.0
75th Percentile	2.4	12.8	-1.3	2.4	8.1	1.7	6.1	6.3
95th Percentile	1.1	10.6	-4.1	0.7	6.4	0.6	5.1	5.2
# of Portfolios	418	418	416	407	396	375	308	239
● International Equity	3.3 (31)	14.2 (41)	1.7 (23)	4.0 (34)	8.6 (66)	2.7 (34)	6.8 (49)	6.4 (73)
▲ Blended International Equity Index	2.6 (66)	13.4 (61)	0.4 (46)	4.1 (33)	9.4 (36)	2.6 (40)	6.8 (51)	7.0 (50)
✕ MSCI EAFE Gross	4.0 (12)	14.5 (35)	1.6 (24)	4.4 (26)	9.6 (30)	2.7 (33)	7.8 (18)	7.4 (33)



See appendix for the market capitalization breakpoints.

Characteristics

	Portfolio	MSCI ACWI ex USA IMI Gross
Number of Holdings	2,139	6,381
Weighted Avg. Market Cap. (\$B)	49.5	57.1
Median Market Cap. (\$B)	6.7	1.6
Price To Earnings	16.1	14.9
Price To Book	2.3	2.3
Price To Sales	1.1	1.1
Return on Equity (%)	15.5	14.8
Yield (%)	3.1	3.1
Beta (holdings; global)	1.0	0.9

Top Holdings

UNITED OVERSEAS BANK	1.3%
AIA GROUP	1.0%
ALIBABA GROUP HOLDING ADR 1:8	1.0%
NOVARTIS 'R'	0.9%
NASPERS	0.9%
ALLIANZ	0.9%
ENEL	0.8%
GLAXOSMITHKLINE	0.8%
BP	0.8%
SANOFI	0.8%

Best Performers

	Return %
IMPERIAL PAC.INTL.HDG. (K:FNAT)	260.3%
BANK OF PIRAEUS (G:PEIR)	155.1%
VGI FB (Q:VGIF)	96.1%
EOH (R:EOHJ)	92.4%
NAVIOS MARITIME HDG. (NM)	88.2%
WHA FB (Q:WHAF)	76.3%
PJSC GAZPROM ADR (OTC) CDI 1:2 (OGZPY)	61.9%
NATIONAL BK.OF GREECE (G:ETE)	57.1%
QUALICORP ON (BR:QUA)	54.5%
PLAY COMMUNICATIONS (PO:PLY)	49.5%

Worst Performers

	Return %
HLB (KO:KPI)	-56.6%
FULLSHARE HOLDINGS (K:WARD)	-53.6%
SIAM CITY CEMENT FB (Q:SCCF)	-49.2%
THE SEARLE COMPANY (PK:SEA)	-45.5%
D G KHAN CEMENT COMPANY (PK:DEG)	-41.7%
TEVA PHARM.INDS.ADR 1:1 (TEVA)	-41.1%
INSCOBEE (KO:ENK)	-40.7%
VIROMED (KO:VIR)	-39.6%
NISHAT MILLS (PK:NMI)	-38.9%
TRG PAKISTAN (PK:TRG)	-37.5%

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	0.1%	0.1%	0.0%	-0.1%	0.8%	0.3%	5.0%	6.9%			
Materials	-0.2%	-0.2%	0.0%	0.0%	-0.1%	3.1%	6.1%	7.9%			
Industrials	0.2%	0.2%	0.0%	0.0%	6.4%	4.8%	13.6%	12.8%			
Consumer Discretionary	-0.1%	-0.1%	0.0%	0.0%	2.5%	3.2%	13.4%	11.3%			
Consumer Staples	0.2%	0.1%	0.0%	0.0%	3.7%	2.0%	9.6%	9.5%			
Health Care	0.2%	0.2%	0.0%	0.0%	3.7%	1.1%	9.1%	8.3%			
Financials	-0.3%	-0.2%	0.0%	-0.1%	3.3%	4.5%	18.0%	20.2%			
Information Technology	0.1%	0.1%	0.0%	0.0%	6.2%	4.2%	7.7%	8.6%			
Communication Services	0.1%	0.2%	0.0%	0.0%	2.8%	1.1%	7.0%	6.7%			
Utilities	0.0%	0.0%	0.0%	0.0%	3.7%	2.6%	4.1%	3.3%			
Real Estate	0.1%	0.1%	0.1%	0.0%	1.5%	0.0%	2.4%	4.5%			
Cash	-0.1%	0.0%	-0.1%	0.0%	0.6%	--	4.1%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
Portfolio	0.4%	=	0.6%	+	0.0%	+	-0.2%	3.4%	3.0%	100.0%	100.0%

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

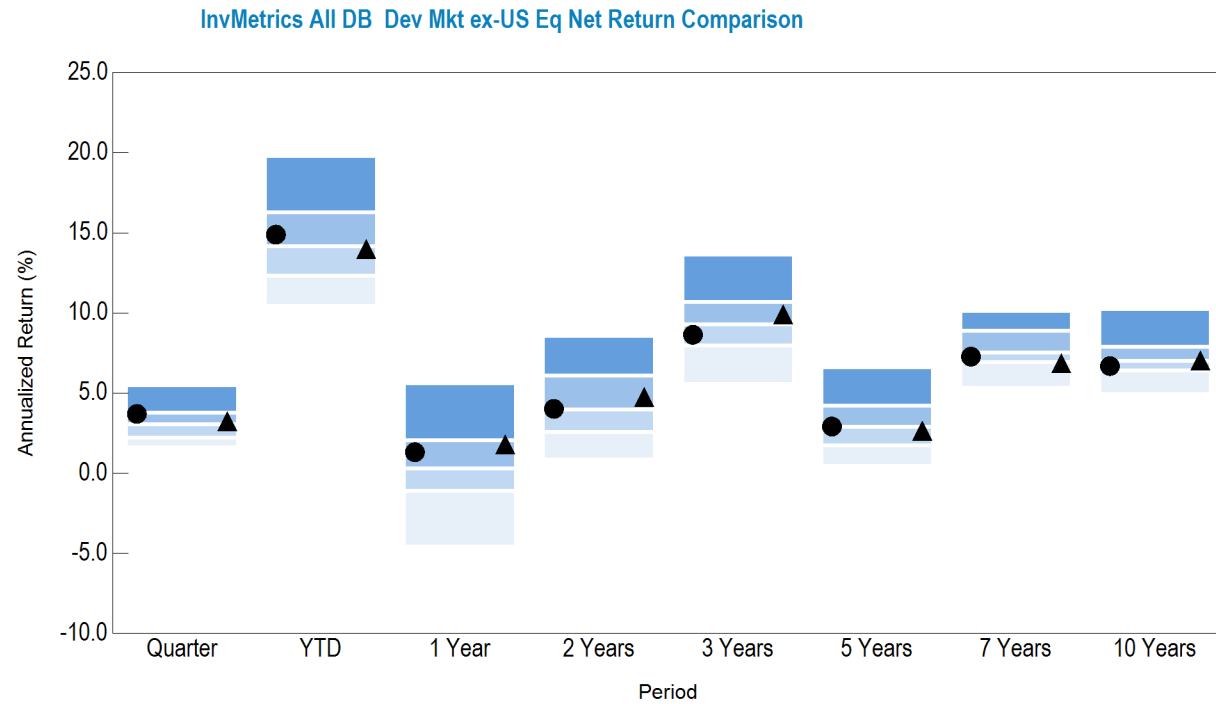
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	1.3%	3.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Belgium	1.2%	2.1%	0.3%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Czech Republic*	1.5%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Denmark	2.0%	1.4%	1.4%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Finland	9.6%	1.6%	0.6%	0.7%	0.1%	0.0%	0.0%	0.0%	0.1%
France	7.0%	7.3%	5.1%	6.9%	0.0%	-0.1%	0.0%	0.0%	-0.1%
Germany	10.1%	7.5%	6.6%	5.5%	0.1%	0.0%	0.0%	0.0%	0.2%
Greece*	19.7%	23.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Hungary*	-2.1%	-4.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Ireland	14.3%	3.7%	0.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Italy	3.4%	3.2%	2.1%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Luxembourg	-6.1%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	4.9%	6.3%	2.4%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Norway	2.9%	1.6%	0.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	6.8%	4.0%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Portugal	10.9%	3.3%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Russia*	22.2%	16.6%	0.5%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%
Spain	4.7%	2.6%	2.7%	2.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Sweden	5.3%	5.6%	2.9%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Switzerland	9.9%	8.9%	4.8%	5.6%	0.1%	0.0%	0.0%	0.0%	0.0%
United Kingdom	0.2%	0.8%	13.7%	11.8%	-0.1%	0.0%	0.0%	0.0%	-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		
AsiaPacific										
Australia	8.2%	6.8%	3.5%	4.8%	0.1%	-0.1%	0.0%	0.0%	0.0%	
China*	-1.8%	-3.8%	4.2%	7.7%	0.2%	0.2%	0.0%	-0.1%	0.3%	
Hong Kong	2.0%	0.6%	4.4%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	
India*	-3.0%	-0.2%	2.8%	2.5%	-0.1%	0.0%	0.0%	0.0%	-0.1%	
Indonesia*	6.9%	3.2%	0.5%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	
Japan	0.2%	0.7%	16.7%	17.0%	-0.1%	0.0%	0.0%	0.0%	-0.1%	
Korea*	-4.7%	-2.3%	2.6%	3.4%	-0.1%	0.0%	0.0%	0.0%	0.0%	
Malaysia*	-0.3%	1.5%	0.9%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	
New Zealand	4.0%	4.5%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
Pakistan*	-19.3%	-21.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Philippines*	3.0%	4.5%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
Singapore	6.5%	6.6%	2.8%	0.9%	0.0%	0.1%	0.0%	0.0%	0.1%	
Taiwan*	0.5%	0.9%	2.6%	3.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
Thailand*	9.9%	10.1%	0.9%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	
Americas										
Brazil*	7.2%	7.6%	1.7%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	
Canada	22.1%	4.8%	1.1%	6.8%	1.2%	0.0%	-0.1%	-1.0%	0.0%	
Chile*	-2.3%	-3.8%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
Colombia*	2.0%	-1.7%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
Mexico*	1.1%	1.5%	0.8%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	
Peru*	-2.5%	-2.4%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
United States	7.9%	4.2%	1.4%	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*	-5.2%	3.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Israel	-3.8%	1.0%	0.1%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Kuwait**	7.5%	3.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	1.4%	2.3%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Romania**	12.5%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Africa*	5.2%	6.3%	2.1%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Turkey*	4.7%	3.0%	0.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
United Arab Emirates*	-2.7%	-2.1%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals									
Americas	8.9%	4.7%	5.5%	9.7%	0.5%	0.0%	-0.1%	-0.2%	0.1%
Europe	5.3%	4.9%	44.7%	43.4%	0.2%	0.0%	-0.1%	0.0%	0.2%
Asia/Pacific	1.0%	0.6%	42.4%	44.4%	0.1%	0.0%	0.0%	0.0%	0.2%
Other	3.9%	4.1%	3.4%	2.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.6%	--	4.1%	0.0%	0.0%	-0.1%	0.0%	0.0%	-0.1%
Total	3.4%	3.0%	100.0%	100.0%	0.9%	0.0%	-0.2%	-0.2%	0.4%
Totals									
Developed	4.3%	3.8%	73.7%	74.8%	0.5%	0.0%	-0.2%	0.0%	0.4%
Emerging*	1.0%	0.6%	22.1%	25.2%	0.1%	0.1%	0.0%	0.0%	0.1%
Frontier**	8.6%	--	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.6%	--	4.1%	0.0%	0.0%	-0.1%	0.0%	0.0%	-0.1%



	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
Return (Rank)								
5th Percentile	5.4	19.8	5.6	8.6	13.6	6.6	10.1	10.2
25th Percentile	3.8	16.3	2.1	6.1	10.7	4.2	8.9	7.9
Median	3.1	14.2	0.3	4.0	9.3	2.9	7.6	7.0
75th Percentile	2.2	12.3	-1.1	2.6	8.0	1.7	6.9	6.4
95th Percentile	1.6	10.5	-4.6	0.9	5.6	0.5	5.4	4.9
# of Portfolios	155	155	154	148	140	130	110	71
● Developed Markets	3.7 (29)	14.9 (43)	1.3 (39)	4.0 (48)	8.6 (60)	2.9 (51)	7.3 (57)	6.7 (65)
▲ MSCI ACWI ex USA Gross	3.2 (49)	14.0 (54)	1.8 (34)	4.8 (39)	9.9 (35)	2.6 (61)	6.9 (77)	7.0 (51)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	1,037	2,204
Weighted Avg. Market Cap. (\$B)	52.5	65.4
Median Market Cap. (\$B)	10.7	7.6
Price To Earnings	16.6	15.0
Price To Book	2.3	2.3
Price To Sales	1.1	1.2
Return on Equity (%)	15.3	15.3
Yield (%)	3.0	3.2
Beta (holdings; global)	1.0	5.4

Top Holdings

UNITED OVERSEAS BANK	1.5%
AIA GROUP	1.1%
ALIBABA GROUP HOLDING ADR 1:8	1.0%
NOVARTIS 'R'	1.0%
ALLIANZ	1.0%
ENEL	0.9%
GLAXOSMITHKLINE	0.9%
BP	0.9%
NASPERS	0.9%
SANOFI	0.9%

Best Performers

	Return %
PJSC GAZPROM ADR (OTC) CDI 1:2 (OGZPY)	61.9%
SHOPIFY 'A' (NYS) (SHOP)	45.3%
PERSOL HOLDINGS (J:TMHD)	45.1%
AXEL SPRINGER (D:SPR)	43.3%
TAIYO NIPPON SANSO (J:TNSC)	39.4%
TSINGTAO BREWERY 'H' (K:TSIN)	35.1%
WIRECARD (D:WDI)	34.4%
FORTESCUE METALS GP. (A:FMGX)	34.4%
MERLIN ENTERTAINMENTS (UKIR:MERL)	29.8%
FAST RETAILING (J:RETA)	28.6%

Worst Performers

	Return %
TEVA PHARM.INDS.ADR 1:1 (TEVA)	-41.1%
IMPERIAL BRANDS (UKIR:IMB)	-30.2%
BAIDU 'A' ADR 10:1 (BIDU)	-28.8%
RYOHIN KEIKAKU (J:YOHN)	-28.7%
INDIABULLS HOUSING FIN (IN:IEZ)	-27.9%
SUZANO ON (BR:SUZ)	-27.6%
UMICORE (B:UMI)	-27.2%
PANDORA (DK:PND)	-24.0%
SUMITOMO DAINIPPON PHA. (J:DPPH)	-23.3%
BLUESCOPE STEEL (OTC) (BLSFF)	-22.5%

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	0.0%	0.1%	0.0%	-0.1%	0.8%	0.7%	5.1%	7.4%			
Materials	-0.2%	-0.2%	0.0%	0.0%	0.5%	3.1%	5.6%	7.6%			
Industrials	0.3%	0.2%	0.0%	0.0%	7.0%	5.4%	14.1%	11.8%			
Consumer Discretionary	-0.2%	-0.2%	0.0%	0.0%	2.0%	4.0%	14.3%	11.0%			
Consumer Staples	0.2%	0.1%	0.0%	0.0%	4.0%	2.4%	9.9%	9.9%			
Health Care	0.3%	0.2%	0.0%	0.0%	4.1%	1.3%	9.6%	8.4%			
Financials	-0.3%	-0.2%	0.0%	-0.1%	3.2%	4.7%	18.8%	21.7%			
Information Technology	0.2%	0.2%	0.0%	0.0%	6.5%	4.1%	8.0%	8.4%			
Communication Services	0.1%	0.1%	0.0%	0.0%	2.3%	1.0%	7.2%	7.0%			
Utilities	0.1%	0.1%	0.0%	0.0%	3.8%	2.3%	3.8%	3.4%			
Real Estate	0.1%	0.1%	0.1%	0.0%	0.2%	-1.6%	2.1%	3.4%			
Cash	0.0%	0.0%	0.0%	0.0%	0.6%	--	1.5%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
Portfolio	0.4%	=	0.5%	+	0.1%	+	-0.1%	3.6%	3.2%	100.0%	100.0%

Developed Markets Performance Attribution vs. MSCI ACWI ex USA Gross

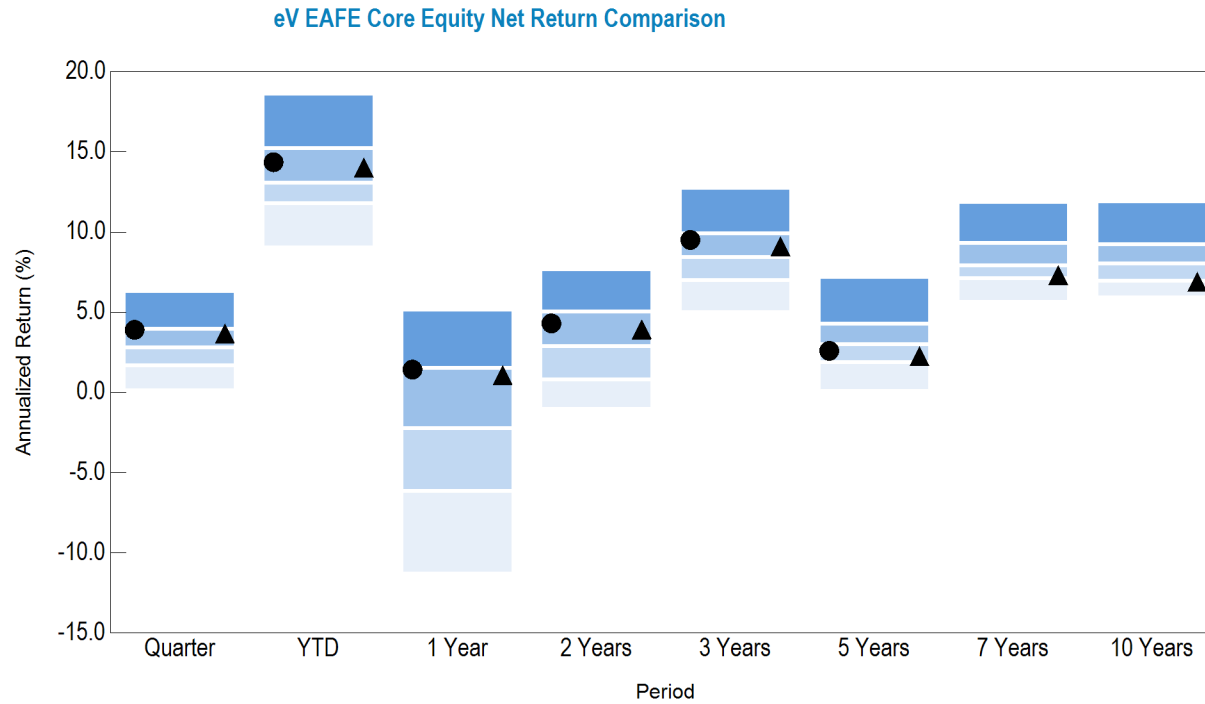
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	1.3%	1.2%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Belgium	1.2%	1.1%	0.3%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Czech Republic*	--	3.9%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Denmark	2.0%	1.9%	1.6%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Finland	9.6%	1.0%	0.7%	0.7%	0.1%	0.0%	0.0%	0.0%	0.1%
France	7.0%	7.3%	5.8%	7.5%	0.0%	-0.1%	0.0%	0.0%	-0.1%
Germany	10.1%	7.8%	7.5%	5.7%	0.1%	0.1%	0.0%	0.0%	0.3%
Greece*	--	16.9%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Hungary*	--	-4.2%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Ireland	14.3%	4.7%	0.5%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Italy	3.4%	3.5%	2.4%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Luxembourg	-1.8%	3.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	4.8%	6.0%	2.7%	2.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Norway	2.9%	2.9%	0.2%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	--	3.6%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Portugal	10.9%	2.6%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Russia*	36.1%	16.7%	0.3%	1.0%	0.2%	-0.1%	0.0%	-0.2%	-0.1%
Spain	4.7%	2.5%	3.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Sweden	5.3%	5.4%	3.3%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Switzerland	9.9%	8.9%	5.5%	6.0%	0.1%	0.0%	0.0%	0.0%	0.0%
United Kingdom	0.2%	0.9%	15.6%	11.5%	-0.1%	0.0%	-0.1%	0.0%	-0.2%

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	8.2%	7.4%	4.0%	4.7%	0.0%	0.0%	0.0%	0.0%	0.0%
China*	-1.1%	-3.8%	4.0%	8.5%	0.3%	0.3%	0.0%	-0.1%	0.4%
Hong Kong	1.1%	1.0%	4.3%	2.8%	0.0%	0.0%	0.0%	0.0%	0.0%
India*	-3.3%	0.5%	2.9%	2.4%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Indonesia*	10.3%	3.7%	0.1%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Japan	0.2%	1.0%	19.0%	16.1%	-0.1%	-0.1%	0.1%	0.0%	-0.2%
Korea*	-3.3%	-1.2%	1.8%	3.4%	-0.1%	0.0%	0.0%	0.0%	0.0%
Malaysia*	-1.8%	1.3%	0.6%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
New Zealand	4.0%	4.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Pakistan*	--	-20.5%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Philippines*	18.7%	4.6%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	6.6%	6.9%	3.2%	0.9%	0.0%	0.1%	0.0%	0.0%	0.1%
Taiwan*	-0.6%	1.1%	1.9%	3.0%	-0.1%	0.0%	0.0%	0.0%	0.0%
Thailand*	4.9%	9.8%	0.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Americas									
Brazil*	6.9%	7.2%	1.3%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Canada	22.1%	5.0%	1.3%	6.8%	1.2%	0.0%	-0.1%	-1.0%	0.1%
Chile*	--	-4.7%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Colombia*	--	-2.3%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Mexico*	3.1%	1.4%	0.5%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Peru*	-2.1%	-2.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
United States	8.2%	4.2%	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*	--	7.3%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Israel	-3.8%	-3.4%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	-3.3%	1.7%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Romania**	12.5%	3.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Africa*	4.7%	6.8%	1.4%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Turkey*	-2.5%	2.9%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
United Arab Emirates*	-2.9%	-1.9%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals									
Americas	11.1%	4.7%	4.5%	9.8%	0.7%	0.0%	-0.2%	-0.4%	0.2%
Europe	5.2%	5.1%	50.1%	43.7%	0.2%	0.1%	-0.1%	0.0%	0.2%
Asia/Pacific	1.0%	0.9%	42.1%	44.0%	0.0%	0.0%	0.1%	0.0%	0.1%
Other	3.2%	3.9%	1.8%	2.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.6%	--	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	3.6%	3.2%	100.0%	100.0%	0.8%	0.1%	-0.2%	-0.4%	0.4%
Totals									
Developed	4.2%	4.0%	83.1%	74.0%	0.3%	0.1%	-0.1%	0.0%	0.3%
Emerging*	0.5%	0.8%	15.4%	26.0%	0.0%	0.2%	-0.1%	0.0%	0.1%
Frontier**	12.5%	--	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.6%	--	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	6.3	18.6	5.1	7.6	12.7	7.2	11.9	11.9
25th Percentile	4.0	15.2	1.5	5.1	9.9	4.3	9.4	9.2
Median	2.8	13.1	-2.2	2.9	8.5	3.0	7.9	8.1
75th Percentile	1.7	11.8	-6.1	0.8	7.0	1.9	7.2	7.0
95th Percentile	0.1	9.1	-11.3	-1.0	5.0	0.1	5.7	5.9
# of Portfolios	151	151	150	149	146	128	107	89
● BlackRock EAFE Index	3.9 (27)	14.4 (34)	1.4 (27)	4.3 (32)	9.5 (31)	2.6 (62)	-- (--)	-- (--)
▲ MSCI EAFE	3.7 (32)	14.0 (40)	1.1 (27)	3.9 (35)	9.1 (37)	2.2 (67)	7.3 (70)	6.9 (80)

Characteristics

	Portfolio	MSCI EAFE
Number of Holdings	926	922
Weighted Avg. Market Cap. (\$B)	61.1	61.2
Median Market Cap. (\$B)	10.1	10.1
Price To Earnings	15.5	15.5
Price To Book	2.2	2.3
Price To Sales	1.1	1.1
Return on Equity (%)	14.6	14.6
Yield (%)	3.3	3.4
Beta (holdings; global)	0.9	7.7

Top Holdings

NESTLE 'R'	2.2%
NOVARTIS 'R'	1.4%
ROCHE HOLDING	1.4%
HSBC HOLDINGS	1.2%
ROYAL DUTCH SHELL A	1.0%
TOYOTA MOTOR	1.0%
BP	1.0%
TOTAL	1.0%
SAP	0.9%
AIA GROUP	0.9%

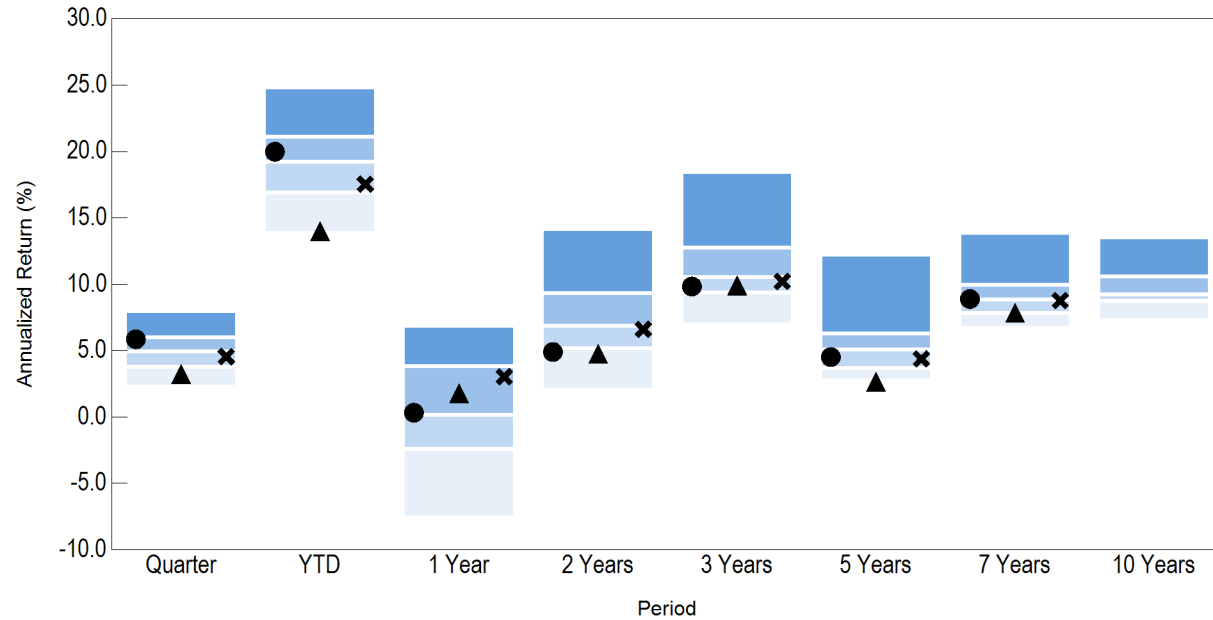
Best Performers

	Return %
PERSOL HOLDINGS (J:TMHD)	45.1%
AXEL SPRINGER (D:SPR)	43.3%
TAIYO NIPPON SANSO (J:TNSC)	39.4%
WIRECARD (D:WDI)	34.4%
FORTESCUE METALS GP. (A:FMGX)	34.4%
MERLIN ENTERTAINMENTS (UKIR:MERL)	29.8%
FAST RETAILING (J:RETA)	28.6%
NINTENDO (J:NNDO)	28.5%
ADIDAS (D:ADS)	28.1%
SONY FINANCIAL HOLDINGS (J:SFH)	27.3%

Worst Performers

	Return %
TEVA PHARM.INDS.ADR 1:1 (TEVA)	-41.1%
IMPERIAL BRANDS (UKIR:IMB)	-30.2%
RYOHIN KEIKAKU (J:YOHN)	-28.7%
UMICORE (B:UMI)	-27.2%
PANDORA (DK:PND)	-24.0%
SUMITOMO DAINIPPON PHA. (J:DPPH)	-23.3%
BLUESCOPE STEEL (OTC) (BLSFF)	-22.5%
DEUTSCHE WOHNEN BR.SHS. (D:DWNI)	-22.4%
KANSAI ELECTRIC PWR. (J:KE@N)	-22.3%
TAISEI (J:TC@N)	-21.8%

eV ACWI ex-US Growth Equity Net Return Comparison



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	8.0	24.8	6.9	14.1	18.4	12.2	13.9	13.5
25th Percentile	6.0	21.1	3.8	9.4	12.8	6.3	10.0	10.6
Median	5.0	19.2	0.2	6.9	10.6	5.1	8.9	9.3
75th Percentile	3.8	16.9	-2.4	5.2	9.4	3.7	7.8	8.8
95th Percentile	2.3	13.9	-7.5	2.1	7.0	2.8	6.7	7.3
# of Portfolios	71	71	71	71	70	61	53	43
● Baillie Gifford	5.9 (30)	20.0 (40)	0.3 (49)	4.9 (80)	9.8 (64)	4.5 (58)	8.9 (50)	-- (--)
▲ MSCI ACWI ex US	3.2 (86)	14.0 (95)	1.8 (37)	4.8 (81)	9.9 (63)	2.6 (96)	7.8 (76)	-- (--)
✕ MSCI ACWI ex US Growth	4.5 (60)	17.5 (70)	3.0 (30)	6.6 (54)	10.2 (59)	4.4 (60)	8.8 (53)	-- (--)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	88	2,204
Weighted Avg. Market Cap. (\$B)	43.1	65.4
Median Market Cap. (\$B)	14.6	7.6
Price To Earnings	25.7	15.0
Price To Book	3.8	2.3
Price To Sales	2.0	1.2
Return on Equity (%)	22.5	15.3
Yield (%)	1.6	3.2
Beta (holdings; global)	1.1	5.4

Top Holdings

NASPERS	2.7%
HARGREAVES LANSDOWN	2.5%
ALIBABA GROUP HOLDING ADR 1:8	2.5%
TAIWAN SEMICON.SPN.ADR 1:5	2.4%
SHISEIDO	2.4%
AIA GROUP	2.3%
COCHLEAR	2.2%
HOUSING DEVELOPMENT FINANCE CORPORATION	2.1%
METTLER TOLEDO INTL.	2.0%
SHOPIFY 'A' (NYS)	2.0%

Best Performers

	Return %
SHOPIFY 'A' (NYS) (SHOP)	45.3%
TSINGTAO BREWERY 'H' (K:TSIN)	35.1%
ADIDAS (D:ADS)	28.1%
BECHTLE (D:BC8)	24.4%
SEEK (A:SEXX)	19.2%
SARTORIUS SHS.PREF. (D:SRT3)	19.0%
RAIA DROGASIL ON (BR:DR3)	18.6%
KINGSPAN GROUP (LON) (UKIR:KGP)	18.0%
COCHLEAR (A:COHX)	17.9%
KINGSPAN GROUP (UKIR:KRX)	17.4%

Worst Performers

	Return %
BAIDU 'A' ADR 10:1 (BIDU)	-28.8%
ASOS (UKIR:ASC)	-22.2%
CTRP.COM INTL.ADR 8:1 (CTRP)	-15.5%
SAMSUNG FIRE & MAR.IN. (KO:AFM)	-12.5%
INFINEON TECHNOLOGIES (D:IFX)	-10.2%
MAKEMYTRIP (MMYT)	-10.1%
WOOD GROUP (JOHN) (UKIR:WG.)	-9.9%
MURATA MANUFACTURING (J:SM@N)	-9.8%
NAVER (KO:NHN)	-9.6%
ASIAN PAINTS (IN:API)	-8.2%

Baillie Gifford Performance Attribution vs. MSCI ACWI ex USA Gross

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.0%	-0.4%	0.2%	0.3%	-9.9%	0.7%	0.8%	7.4%			
Materials	-0.2%	-0.3%	0.0%	0.1%	-1.0%	3.0%	4.8%	7.6%			
Industrials	0.8%	0.6%	0.1%	0.2%	9.8%	5.4%	15.5%	11.7%			
Consumer Discretionary	-0.1%	-0.2%	0.1%	0.0%	2.5%	4.0%	19.9%	11.1%			
Consumer Staples	0.8%	0.6%	0.0%	0.2%	8.1%	2.4%	12.8%	9.9%			
Health Care	1.0%	1.0%	0.0%	-0.1%	13.8%	1.1%	8.0%	8.4%			
Financials	-0.1%	0.3%	-0.1%	-0.3%	5.1%	4.8%	16.7%	21.7%			
Information Technology	0.6%	0.4%	0.0%	0.2%	9.4%	4.1%	10.6%	8.4%			
Communication Services	-0.4%	-0.2%	0.0%	-0.2%	-2.9%	0.9%	9.1%	7.0%			
Utilities	0.0%	--	0.0%	--	--	2.5%	0.0%	3.4%			
Real Estate	0.1%	--	0.2%	--	--	-1.5%	0.0%	3.4%			
Cash	0.0%	0.0%	0.0%	0.0%	0.6%	--	1.9%	0.0%			
Portfolio	2.5%	=	1.8%	+	0.4%	+	0.3%	5.7%	3.2%	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	--	1.3%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Belgium	--	1.2%	0.0%	0.7%	--	0.0%	0.0%	--	0.0%
Czech Republic*	--	3.9%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Denmark	1.5%	1.7%	1.8%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Finland	17.1%	0.9%	1.2%	0.7%	0.1%	0.0%	0.0%	0.1%	0.2%
France	11.8%	7.3%	1.4%	7.5%	0.4%	-0.2%	-0.1%	-0.3%	-0.3%
Germany	16.2%	7.8%	7.3%	5.7%	0.5%	0.1%	0.0%	0.1%	0.7%
Greece*	--	15.8%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Hungary*	--	-4.0%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Ireland	17.4%	4.5%	1.1%	0.4%	0.0%	0.0%	0.0%	0.1%	0.2%
Italy	--	3.6%	0.0%	1.6%	--	0.0%	0.0%	--	0.0%
Netherlands	12.7%	6.1%	1.5%	2.4%	0.2%	0.0%	0.0%	-0.1%	0.1%
Norway	--	2.8%	0.0%	0.5%	--	0.0%	0.0%	--	0.0%
Poland*	--	3.6%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Portugal	11.8%	2.6%	1.2%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%
Russia*	--	16.8%	0.0%	1.0%	--	-0.1%	0.0%	--	-0.1%
Spain	3.8%	2.5%	1.9%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sweden	6.7%	5.4%	5.2%	1.8%	0.0%	0.1%	0.0%	0.1%	0.2%
Switzerland	12.3%	8.7%	3.2%	6.0%	0.2%	-0.1%	-0.1%	-0.1%	-0.1%
United Kingdom	2.0%	0.9%	13.7%	11.5%	0.2%	0.0%	-0.1%	0.0%	0.1%

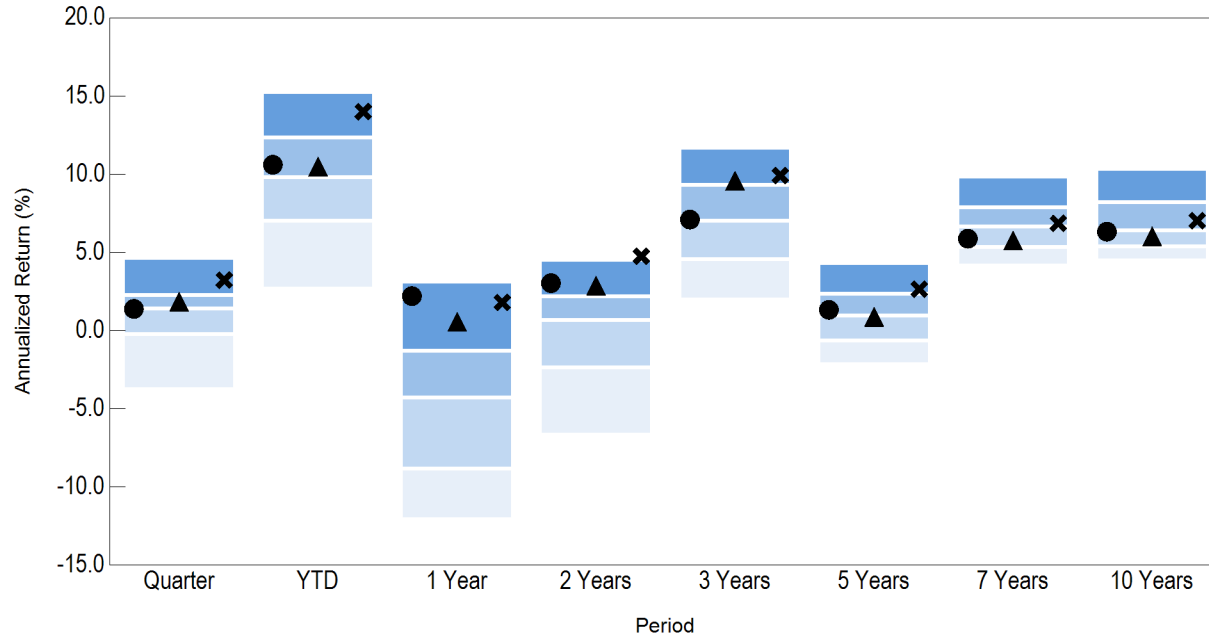
Baillie Gifford Performance Attribution vs. MSCI ACWI ex USA Gross

	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	13.1%	7.4%	4.1%	4.7%	0.3%	0.0%	0.0%	0.0%	0.2%
China*	-3.7%	-3.7%	7.7%	8.5%	0.1%	0.1%	0.0%	0.0%	0.2%
Hong Kong	10.4%	1.0%	2.2%	2.8%	0.3%	0.0%	0.0%	0.0%	0.3%
India*	0.8%	0.5%	4.7%	2.4%	0.0%	-0.1%	0.0%	0.0%	0.0%
Indonesia*	--	3.7%	0.0%	0.6%	--	0.0%	0.0%	--	0.0%
Japan	1.1%	1.0%	18.0%	16.1%	0.0%	-0.1%	0.1%	0.0%	0.0%
Korea*	-6.4%	-1.2%	1.9%	3.4%	-0.2%	0.1%	0.0%	0.1%	0.0%
Malaysia*	-1.9%	1.2%	1.1%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
New Zealand	--	4.0%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Pakistan*	--	-20.5%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Philippines*	--	4.6%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Singapore	3.6%	6.9%	3.8%	0.9%	0.0%	0.1%	0.0%	-0.1%	0.0%
Taiwan*	-0.7%	1.1%	3.2%	2.9%	-0.1%	0.0%	0.0%	0.0%	0.0%
Thailand*	--	9.6%	0.0%	0.6%	--	0.0%	0.0%	--	-0.1%
Americas									
Brazil*	18.6%	7.1%	1.1%	1.8%	0.2%	0.0%	0.0%	-0.1%	0.1%
Canada	31.3%	5.0%	2.7%	6.8%	1.8%	0.0%	-0.1%	-1.0%	0.6%
Chile*	--	-4.8%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Colombia*	--	-2.2%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Mexico*	3.1%	1.4%	0.7%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Peru*	--	-2.0%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
United States	8.7%	4.2%	3.5%	0.0%	0.0%	0.1%	0.0%	0.2%	0.2%

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	
Other									
Egypt*	--	7.3%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Israel	--	-4.2%	0.0%	0.4%	--	0.0%	0.0%	--	0.0%
Qatar*	--	2.0%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
South Africa*	6.1%	6.7%	3.9%	1.5%	0.0%	0.1%	0.0%	0.0%	0.1%
Turkey*	--	3.0%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
United Arab Emirates*	--	-2.3%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Totals									
Americas	17.3%	4.9%	8.0%	9.9%	1.3%	0.0%	-0.2%	-0.2%	0.9%
Europe	8.2%	5.1%	39.4%	43.7%	1.6%	-0.1%	-0.3%	-0.2%	1.1%
Asia/Pacific	1.8%	0.9%	46.8%	43.9%	0.4%	-0.1%	0.0%	0.0%	0.4%
Other	6.1%	3.4%	3.9%	2.5%	0.1%	0.0%	0.0%	0.0%	0.1%
Cash	0.6%	--	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	5.7%	3.2%	100.0%	100.0%	3.4%	-0.1%	-0.3%	-0.4%	2.5%
Totals									
Developed	7.4%	4.0%	73.8%	74.1%	2.8%	0.0%	-0.3%	0.0%	2.5%
Emerging*	0.5%	0.8%	24.3%	25.9%	0.0%	0.0%	-0.1%	0.0%	0.0%
Cash	0.6%	--	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

eV ACWI ex-US Value Equity Net Return Comparison



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	4.6	15.2	3.1	4.5	11.7	4.3	9.8	10.3
25th Percentile	2.3	12.4	-1.3	2.2	9.3	2.4	7.9	8.2
Median	1.4	9.8	-4.3	0.7	7.0	1.0	6.7	6.4
75th Percentile	-0.2	7.1	-8.8	-2.3	4.6	-0.6	5.4	5.4
95th Percentile	-3.7	2.7	-12.0	-6.6	2.0	-2.1	4.2	4.5
# of Portfolios	39	39	39	37	37	34	27	18
● Mondrian	1.4 (54)	10.6 (42)	2.2 (10)	3.0 (17)	7.1 (50)	1.3 (36)	5.9 (67)	6.3 (51)
▲ MSCI ACWI ex USA Value Gross	1.9 (34)	10.5 (43)	0.6 (19)	2.9 (18)	9.6 (23)	0.9 (52)	5.8 (67)	6.0 (54)
✕ MSCI ACWI ex USA Gross	3.2 (19)	14.0 (14)	1.8 (11)	4.8 (5)	9.9 (19)	2.6 (22)	6.9 (42)	7.0 (40)

Characteristics

	Portfolio	MSCI ACWI ex USA Value Gross
Number of Holdings	130	1,314
Weighted Avg. Market Cap. (\$B)	53.3	50.8
Median Market Cap. (\$B)	18.7	7.0
Price To Earnings	13.2	11.6
Price To Book	1.6	1.7
Price To Sales	0.8	0.9
Return on Equity (%)	11.9	11.9
Yield (%)	4.3	4.5
Beta (holdings: global)	0.9	10.2

Top Holdings

UNITED OVERSEAS BANK	2.5%
ENEL	2.4%
SAINT GOBAIN	2.2%
LLOYDS BANKING GROUP	2.2%
ENI	2.2%
ALLIANZ	2.2%
TELIA COMPANY	2.2%
FUJIFILM HOLDINGS	2.1%
GLAXOSMITHKLINE	2.1%
BANCO SANTANDER	2.1%

Best Performers

	Return %
PJSC GAZPROM ADR (OTC) CDI 1:2 (OGZPY)	61.9%
WPP (UKIR:WPP)	23.9%
CMPH.COCS. RODOVIARIAS ON (BR:CCR)	21.0%
HYPERMARCAS ON (BR:HYP)	18.8%
PLDT (PH:PLD)	18.7%
SINGAPORE TELECOM (T:TELC)	16.0%
G4S (UKIR:GFS)	13.8%
IBERDROLA (E:IBE)	13.6%
ALLIANZ (D:ALV)	12.7%
LARSEN & TOUBRO (IN:LST)	12.5%

Worst Performers

	Return %
INDIABULLS HOUSING FIN (IN:IEZ)	-27.9%
SUZANO ON (BR:SUZ)	-27.6%
SASOL (R:SOLJ)	-20.4%
OTSUKA HOLDINGS (J:OTHD)	-15.8%
HENGAN INTL.GP. (K:HENG)	-14.2%
ISUZU MOTORS (J:IM@N)	-13.3%
TAKEDA PHARMACEUTICAL (J:TA@N)	-13.1%
KONINKLIJKE AHOLD DELHAIZE (H:AD)	-12.8%
SAMSUNG FIRE & MAR.IN. (KO:AFM)	-12.5%
TURKIYE HALK BANKASI (TK:HLB)	-12.1%

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%	-0.1%	0.0%	-0.1%	-0.8%	1.1%	8.8%	11.9%			
Materials	-0.1%	0.0%	-0.1%	-0.1%	1.4%	0.8%	4.7%	8.4%			
Industrials	0.2%	0.2%	-0.1%	0.1%	4.0%	2.2%	12.7%	7.9%			
Consumer Discretionary	-0.6%	-0.5%	0.0%	-0.2%	-4.1%	1.9%	12.1%	7.7%			
Consumer Staples	0.1%	0.2%	-0.2%	0.1%	-2.8%	-8.0%	5.3%	3.1%			
Health Care	-0.1%	0.0%	-0.1%	0.0%	-1.6%	-0.9%	9.8%	5.7%			
Financials	-1.1%	-1.3%	-0.2%	0.5%	0.2%	3.9%	21.0%	33.9%			
Information Technology	0.3%	0.2%	0.0%	0.2%	6.8%	0.8%	7.2%	4.1%			
Communication Services	0.5%	0.4%	0.1%	0.1%	8.7%	3.1%	7.2%	6.7%			
Utilities	0.3%	0.2%	0.1%	0.1%	4.3%	2.2%	7.6%	5.5%			
Real Estate	0.3%	0.4%	0.1%	-0.2%	6.7%	-2.0%	2.5%	5.1%			
Cash	0.0%	0.0%	0.0%	0.0%	0.6%	--	1.1%	0.0%			
Unclassified	0.0%	0.0%	0.0%	0.0%	7.4%	--	0.0%	0.0%			
Portfolio	-0.2%	=	-0.4%	+	-0.3%	+	0.5%	1.6%	1.8%	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	--	0.7%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Belgium	--	1.5%	0.0%	0.4%	--	0.0%	0.0%	--	0.0%
Czech Republic*	--	4.8%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Denmark	2.9%	5.6%	1.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Finland	--	-1.3%	0.0%	0.7%	--	0.0%	0.0%	--	0.0%
France	4.8%	4.3%	5.1%	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Germany	6.9%	6.0%	7.0%	5.6%	0.1%	0.0%	0.0%	0.0%	0.1%
Greece*	--	19.6%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Hungary*	--	-2.6%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Ireland	--	-5.7%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Italy	3.3%	1.7%	4.9%	2.5%	0.0%	0.0%	0.0%	0.0%	0.1%
Netherlands	-1.2%	3.7%	2.3%	1.2%	-0.1%	0.0%	0.0%	-0.1%	-0.1%
Norway	--	-1.7%	0.0%	0.5%	--	0.0%	0.0%	--	0.0%
Poland*	--	3.4%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Portugal	--	1.6%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Russia*	36.1%	17.4%	0.8%	1.1%	0.2%	0.0%	0.0%	-0.1%	0.1%
Spain	6.7%	2.1%	4.2%	3.0%	0.1%	0.0%	0.0%	0.1%	0.2%
Sweden	1.1%	2.7%	2.1%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Switzerland	10.0%	8.0%	4.8%	3.2%	0.1%	0.1%	0.0%	0.0%	0.2%
United Kingdom	-1.2%	-0.9%	18.2%	15.6%	-0.1%	0.0%	-0.1%	0.0%	-0.1%

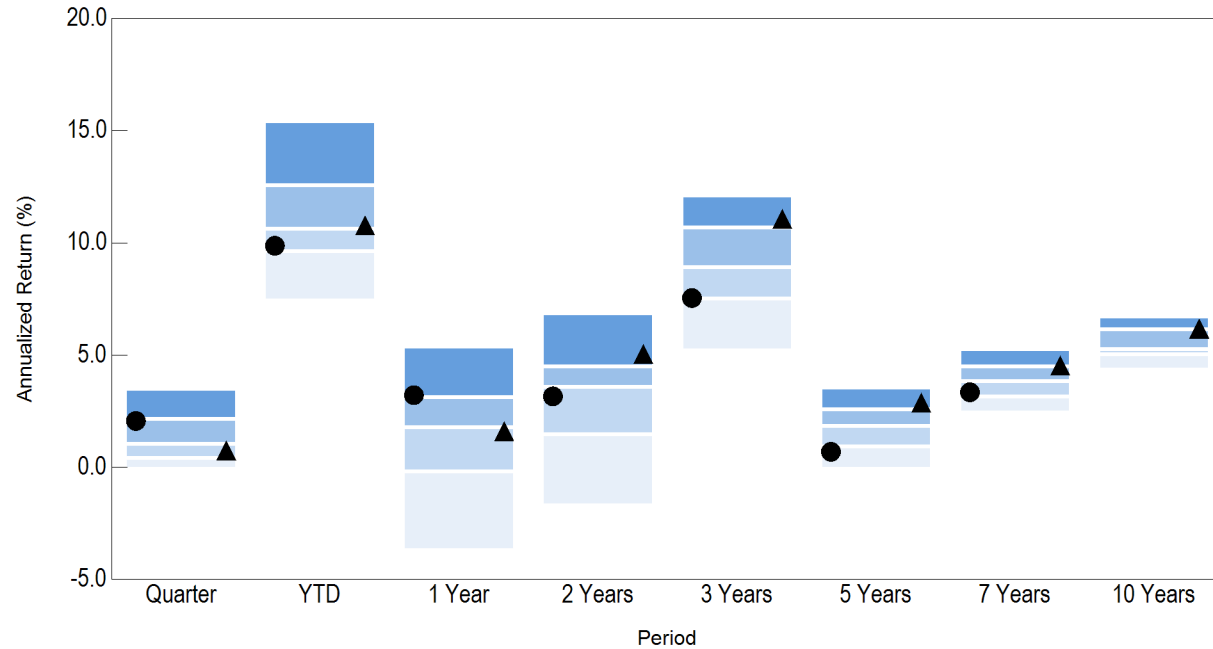
Mondrian Performance Attribution vs. MSCI ACWI ex USA Value Gross

	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	-5.1%	8.2%	1.1%	4.8%	-0.6%	-0.3%	0.1%	0.5%	-0.4%
China*	3.3%	-2.8%	4.2%	8.6%	0.6%	0.2%	0.0%	-0.3%	0.4%
Hong Kong	-2.7%	-3.0%	5.8%	2.7%	0.0%	-0.1%	0.0%	0.0%	-0.1%
India*	-7.0%	-0.8%	3.7%	2.5%	-0.2%	0.0%	0.0%	-0.1%	-0.3%
Indonesia*	10.3%	2.6%	0.4%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Japan	-2.0%	-0.3%	15.6%	16.2%	-0.3%	0.0%	0.0%	0.0%	-0.2%
Korea*	1.3%	0.3%	3.4%	3.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Malaysia*	-1.7%	1.7%	0.8%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
New Zealand	--	7.0%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Pakistan*	--	-19.5%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Philippines*	18.7%	4.7%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	9.7%	8.6%	4.1%	0.9%	0.0%	0.2%	0.0%	0.0%	0.3%
Taiwan*	-0.4%	2.1%	2.3%	2.9%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Thailand*	4.9%	5.2%	0.6%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Americas									
Brazil*	2.2%	5.8%	2.7%	1.8%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Canada	1.2%	3.9%	1.2%	6.8%	-0.2%	0.0%	-0.1%	0.1%	-0.2%
Chile*	--	-0.9%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Colombia*	--	0.1%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Mexico*	3.1%	1.1%	0.8%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Peru*	-2.1%	-2.3%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

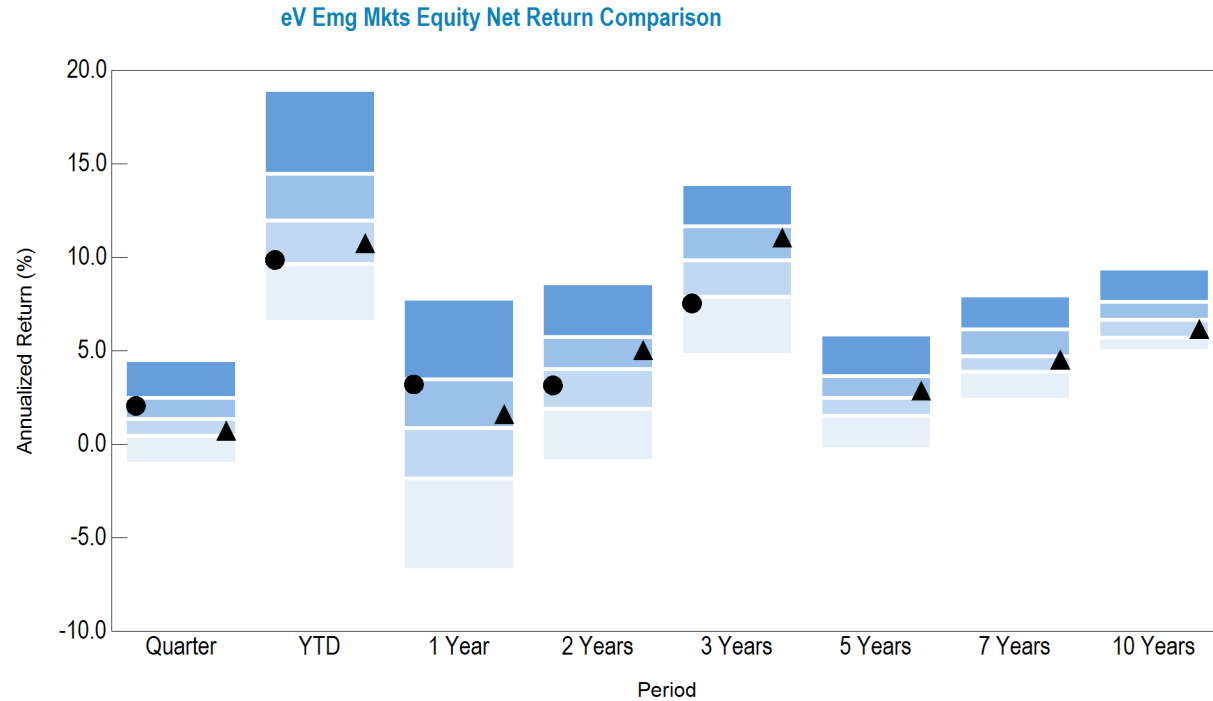
Mondrian Performance Attribution vs. MSCI ACWI ex USA Value Gross

	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*	--	2.7%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Israel	--	-14.1%	0.0%	0.3%	--	0.1%	0.0%	--	0.0%
Qatar*	-3.3%	3.6%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Romania**	12.5%	1.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Africa*	-20.4%	7.6%	0.5%	1.5%	-0.4%	0.0%	0.0%	0.3%	-0.2%
Turkey*	-2.5%	2.1%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
United Arab Emirates*	-2.9%	-0.8%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals									
Americas	1.9%	3.8%	4.9%	9.9%	-0.1%	0.0%	-0.1%	0.1%	-0.2%
Europe	3.4%	2.7%	50.8%	43.5%	0.4%	0.1%	0.0%	0.1%	0.5%
Asia/Pacific	-0.3%	0.5%	42.1%	44.3%	-0.4%	0.0%	0.0%	0.0%	-0.3%
Other	-10.3%	3.2%	1.1%	2.4%	-0.3%	0.0%	0.0%	0.2%	-0.2%
Cash	0.6%	--	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	1.6%	1.8%	100.0%	100.0%	-0.4%	0.1%	-0.2%	0.3%	-0.2%
Totals									
Developed	1.7%	2.1%	77.7%	73.9%	-0.1%	0.0%	-0.1%	0.0%	-0.2%
Emerging*	1.1%	1.2%	21.1%	26.1%	0.1%	0.0%	-0.1%	0.0%	0.0%
Frontier**	12.5%	--	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.6%	--	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

InvMetrics All DB Emg Mkt Eq Net Return Comparison



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.5	15.4	5.4	6.9	12.1	3.5	5.3	6.7
25th Percentile	2.2	12.6	3.1	4.5	10.7	2.6	4.5	6.2
Median	1.0	10.6	1.8	3.6	8.9	1.9	3.8	5.3
75th Percentile	0.4	9.6	-0.2	1.5	7.5	0.9	3.2	5.1
95th Percentile	-0.1	7.5	-3.7	-1.7	5.2	-0.1	2.5	4.4
# of Portfolios	86	86	86	82	79	73	56	16
● Emerging Markets	2.1 (33)	9.9 (69)	3.2 (23)	3.2 (57)	7.5 (75)	0.7 (81)	3.3 (70)	-- (--)
▲ MSCI Emerging Markets Gross	0.7 (62)	10.8 (48)	1.6 (53)	5.0 (16)	11.1 (21)	2.9 (19)	4.5 (25)	6.2 (24)



	Quarter		YTD		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
Return (Rank)																
5th Percentile	4.5	19.0	7.8	8.6	13.9	5.9	7.9	9.4	4.5	19.0	7.8	8.6	13.9	5.9	7.9	9.4
25th Percentile	2.5	14.5	3.5	5.8	11.7	3.7	6.2	7.6	2.5	14.5	3.5	5.8	11.7	3.7	6.2	7.6
Median	1.4	12.0	0.9	4.0	9.9	2.5	4.7	6.7	1.4	12.0	0.9	4.0	9.9	2.5	4.7	6.7
75th Percentile	0.5	9.7	-1.8	1.9	7.9	1.5	3.9	5.7	0.5	9.7	-1.8	1.9	7.9	1.5	3.9	5.7
95th Percentile	-1.0	6.6	-6.7	-0.9	4.8	-0.2	2.4	5.0	-1.0	6.6	-6.7	-0.9	4.8	-0.2	2.4	5.0
# of Portfolios	214	213	206	201	191	165	130	74	214	213	206	201	191	165	130	74
● Parametric Core	2.1 (33)	9.9 (74)	3.2 (27)	3.2 (64)	7.5 (80)	-- (--)	-- (--)	-- (--)	2.1 (33)	9.9 (74)	3.2 (27)	3.2 (64)	7.5 (80)	-- (--)	-- (--)	-- (--)
▲ MSCI Emerging Markets Gross	0.7 (65)	10.8 (59)	1.6 (45)	5.0 (34)	11.1 (32)	2.9 (42)	4.5 (60)	6.2 (65)	0.7 (65)	10.8 (59)	1.6 (45)	5.0 (34)	11.1 (32)	2.9 (42)	4.5 (60)	6.2 (65)

Characteristics

	Portfolio	MSCI Emerging Markets Gross
Number of Holdings	1,167	1,193
Weighted Avg. Market Cap. (\$B)	23.0	81.7
Median Market Cap. (\$B)	3.4	5.6
Price To Earnings	13.4	14.1
Price To Book	2.2	2.4
Price To Sales	1.0	1.2
Return on Equity (%)	15.4	17.0
Yield (%)	3.4	2.8
Beta (holdings; global)	0.7	0.9

Top Holdings

SBERBANK OF RUSSIA	1.1%
PJSC GAZPROM ADR (OTC) CDI 1:2	1.0%
CREDICORP	0.8%
LUKOIL OAO SPN.ADR 1:1	0.8%
NASPERS	0.8%
AMERICA MOVIL SAB DE CV SPN.ADR 'L' 1:20	0.7%
MTN GROUP	0.7%
GPO FINANCE BANORTE	0.6%
SAMSUNG ELECTRONICS	0.6%
PETROLEO BRASILEIRO ADR 1:2	0.6%

Best Performers

	Return %
IMPERIAL PAC.INTL.HDG. (K:FNAT)	260.3%
BANK OF PIRAEUS (G:PEIR)	155.1%
VGI FB (Q:VGIF)	96.1%
EOH (R:EOHJ)	92.4%
NAVIOS MARITIME HDG. (NM)	88.2%
WHA FB (Q:WHAF)	76.3%
PJSC GAZPROM ADR (OTC) CDI 1:2 (OGZPY)	61.9%
NATIONAL BK.OF GREECE (G:ETE)	57.1%
QUALICORP ON (BR:QUA)	54.5%
PLAY COMMUNICATIONS (PO:PLY)	49.5%

Worst Performers

	Return %
HLB (KO:KPI)	-56.6%
FULLSHARE HOLDINGS (K:WARD)	-53.6%
SIAM CITY CEMENT FB (Q:SCCF)	-49.2%
THE SEARLE COMPANY (PK:SEA)	-45.5%
D G KHAN CEMENT COMPANY (PK:DEG)	-41.7%
INSCOBEE (KO:ENK)	-40.7%
VIROMED (KO:VIR)	-39.6%
NISHAT MILLS (PK:NMI)	-38.9%
TRG PAKISTAN (PK:TRG)	-37.5%
TONGAAT-HULETT (R:TONJ)	-37.3%

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	-0.1%	0.0%	0.0%	-0.1%	0.3%	1.3%	5.2%	8.1%			
Materials	-0.3%	-0.1%	-0.1%	-0.1%	-2.3%	-0.7%	12.6%	7.4%			
Industrials	0.0%	0.0%	0.0%	0.0%	0.1%	0.3%	12.2%	5.6%			
Consumer Discretionary	1.1%	1.5%	0.1%	-0.6%	10.3%	-1.1%	8.8%	13.3%			
Consumer Staples	-0.1%	-0.1%	0.1%	-0.1%	0.7%	2.9%	9.8%	6.4%			
Health Care	0.0%	0.1%	-0.3%	0.2%	-2.3%	-6.8%	6.7%	2.6%			
Financials	-0.4%	0.1%	-0.3%	-0.2%	4.2%	4.4%	15.7%	24.3%			
Information Technology	0.3%	0.3%	0.0%	0.0%	3.2%	0.0%	7.4%	14.6%			
Communication Services	0.8%	1.1%	0.2%	-0.4%	7.1%	-2.6%	6.9%	12.1%			
Utilities	0.2%	0.0%	0.1%	0.1%	3.0%	2.7%	8.4%	2.6%			
Real Estate	0.3%	0.2%	0.0%	0.2%	5.2%	-0.2%	6.2%	3.1%			
Cash	0.0%	0.0%	0.0%	0.0%	0.6%	--	0.0%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
Portfolio	1.8%	=	3.2%	+	-0.3%	+	-1.1%	2.5%	0.8%	100.0%	100.0%

Parametric Core Performance Attribution vs. MSCI Emerging Markets Gross

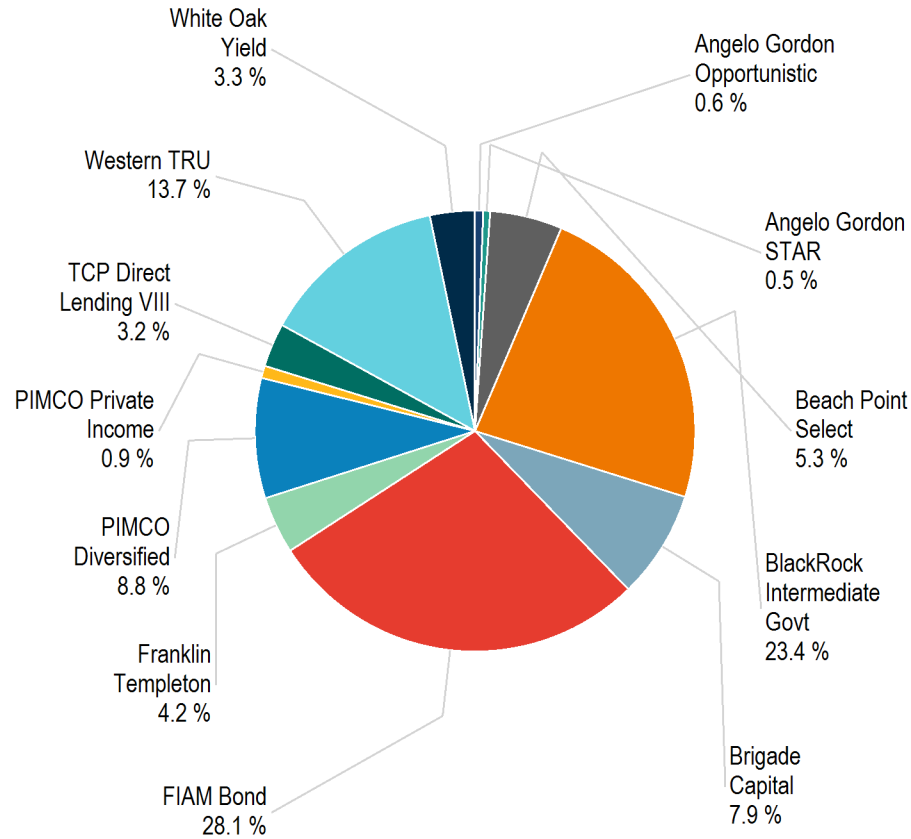
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Czech Republic*	1.5%	3.9%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Greece*	19.7%	16.9%	1.4%	0.2%	0.0%	0.2%	0.0%	0.0%	0.2%
Hungary*	-2.1%	-4.2%	0.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Luxembourg	-17.2%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	34.0%	6.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	6.8%	3.6%	1.9%	1.2%	0.0%	0.0%	0.0%	0.0%	0.1%
Russia*	12.0%	16.7%	3.3%	3.8%	-0.1%	-0.1%	-0.1%	0.0%	-0.2%
United Kingdom	7.6%	0.9%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AsiaPacific									
China*	-5.3%	-3.8%	6.9%	32.8%	-0.5%	1.2%	-0.1%	0.4%	1.0%
Hong Kong	8.9%	1.0%	5.8%	0.0%	0.0%	0.0%	0.0%	0.5%	0.5%
India*	-0.4%	0.5%	3.2%	9.2%	-0.1%	0.0%	0.0%	0.0%	0.0%
Indonesia*	5.6%	3.7%	3.5%	2.2%	0.0%	0.0%	0.0%	0.0%	0.1%
Korea*	-6.9%	-1.2%	10.4%	13.1%	-0.8%	0.0%	0.1%	0.2%	-0.5%
Malaysia*	1.6%	1.3%	4.3%	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Pakistan*	-19.3%	-20.5%	2.5%	0.0%	0.0%	-0.3%	-0.3%	0.0%	-0.5%
Philippines*	0.5%	4.6%	2.9%	1.1%	0.0%	0.0%	0.0%	-0.1%	0.0%
Singapore	1.2%	6.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Taiwan*	2.4%	1.1%	9.9%	11.4%	0.1%	0.0%	0.0%	0.0%	0.1%
Thailand*	11.1%	9.8%	7.6%	2.4%	0.0%	0.3%	0.2%	0.1%	0.6%
Americas									
Brazil*	7.9%	7.2%	6.1%	7.1%	0.1%	-0.1%	0.0%	0.0%	0.0%
Chile*	-2.3%	-4.7%	1.9%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Colombia*	2.0%	-2.3%	1.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Mexico*	-1.2%	1.4%	4.0%	2.7%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Peru*	-3.4%	-2.1%	0.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
United States	6.5%	4.2%	2.2%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%

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*	-5.2%	7.3%	0.8%	0.1%	0.0%	0.0%	0.0%	-0.1%	-0.1%
Kuwait**	7.5%	0.8%	0.8%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Qatar*	2.4%	1.7%	1.6%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%
South Africa*	5.8%	6.8%	9.2%	5.8%	-0.1%	0.1%	0.1%	0.0%	0.1%
Turkey*	5.6%	2.9%	5.1%	0.6%	0.0%	0.2%	-0.1%	0.1%	0.3%
United Arab Emirates*	-2.6%	-1.9%	1.5%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals									
Americas	3.5%	4.1%	16.0%	11.7%	0.0%	0.1%	0.0%	0.0%	0.1%
Europe	10.1%	12.5%	8.0%	5.7%	0.0%	0.2%	-0.1%	0.0%	0.1%
Asia/Pacific	0.5%	-1.1%	57.0%	74.5%	1.3%	0.2%	0.0%	-0.3%	1.2%
Other	4.4%	5.2%	18.9%	8.2%	0.0%	0.3%	0.0%	0.0%	0.4%
Cash	0.6%	--	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	2.5%	0.8%	100.0%	100.0%	1.3%	0.9%	-0.1%	-0.3%	1.7%
Totals									
Developed	7.9%	--	8.6%	0.0%	0.0%	0.0%	0.0%	0.6%	0.7%
Emerging*	1.9%	0.8%	90.6%	100.0%	1.3%	0.0%	-0.1%	-0.1%	1.0%
Frontier**	7.5%	--	0.8%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Cash	0.6%	--	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Fixed Income
 Manager Allocation Analysis

Period Ending: June 30, 2019



	Actual \$	Actual %	Manager Contribution to Excess Return %
Angelo Gordon Opportunistic	\$5,906,000	0.6%	0.0%
Angelo Gordon STAR	\$4,762,300	0.5%	0.0%
Beach Point Select	\$52,539,185	5.3%	0.0%
BlackRock Intermediate Govt	\$233,698,006	23.4%	0.0%
Brigade Capital	\$79,340,937	7.9%	-0.1%
FIAM Bond	\$281,072,703	28.1%	0.0%
Franklin Templeton	\$42,351,913	4.2%	-0.1%
PIMCO Diversified	\$87,782,790	8.8%	0.0%
PIMCO Private Income	\$9,240,000	0.9%	0.0%
TCP Direct Lending VIII	\$32,003,070	3.2%	0.0%
Western TRU	\$136,575,689	13.7%	0.2%
White Oak Yield	\$33,455,120	3.3%	-0.1%
Actual vs. Policy Weight Difference			-0.5%
Total	\$998,727,713	100.0%	-0.5%

Statistics Summary

3 Years

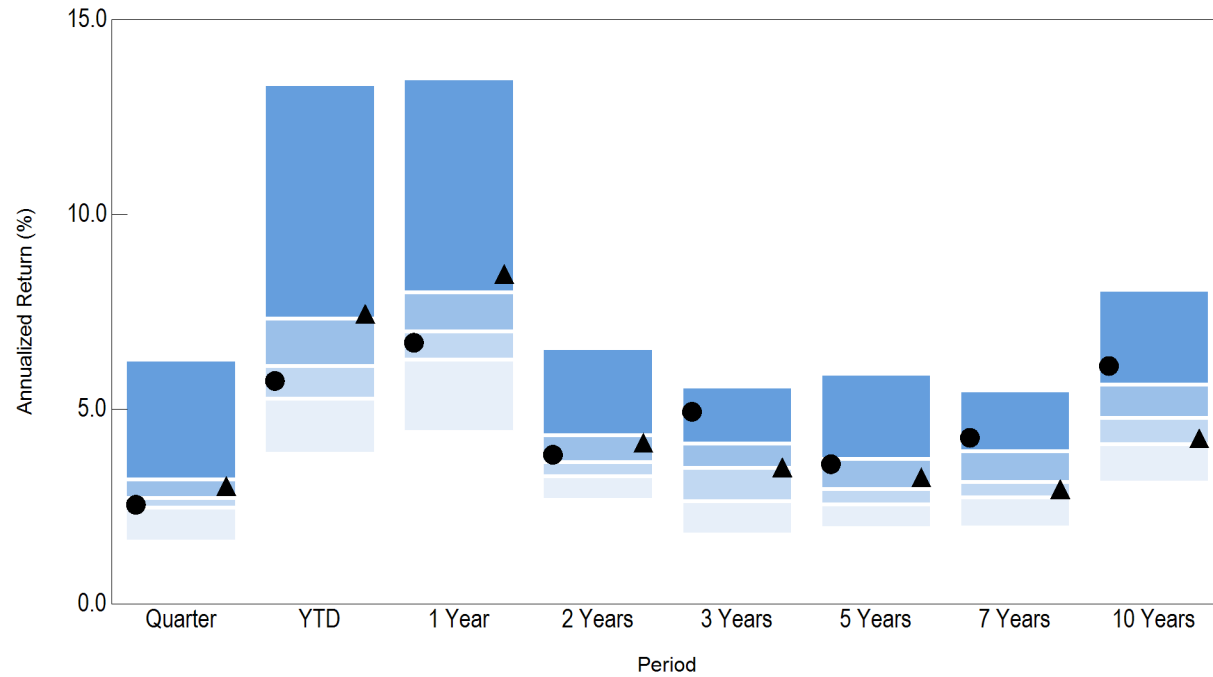
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	4.9%	2.0%	1.8	0.9	1.7%
Blended Fixed Income Index	3.5%	2.8%	0.8	--	0.0%
Core Fixed	3.2%	2.5%	0.7	0.8	1.0%
BBgBarc US Aggregate TR	2.3%	3.0%	0.3	--	0.0%
FIAM Bond	3.0%	3.0%	0.5	1.2	0.6%
BBgBarc US Aggregate TR	2.3%	3.0%	0.3	--	0.0%
Western TRU	4.7%	3.3%	1.0	0.9	3.3%
3-Month Libor Total Return USD	1.8%	0.2%	2.1	--	0.0%
Opportunistic Credit	8.3%	2.8%	2.4	0.8	2.7%
BBgBarc BA Intermediate HY	6.3%	3.7%	1.3	--	0.0%
Angelo Gordon Opportunistic	17.6%	9.1%	1.8	1.6	9.5%
BBgBarc US Aggregate TR	2.3%	3.0%	0.3	--	0.0%
Angelo Gordon STAR	19.8%	8.3%	2.2	2.1	8.4%
BBgBarc US Aggregate TR	2.3%	3.0%	0.3	--	0.0%
Beach Point Select	8.7%	3.2%	2.3	0.9	2.5%
BBgBarc BA Intermediate HY	6.3%	3.7%	1.3	--	0.0%
Brigade Capital	7.5%	4.3%	1.4	0.4	3.1%
BBgBarc BA Intermediate HY	6.3%	3.7%	1.3	--	0.0%
Franklin Templeton	4.6%	6.4%	0.5	0.3	8.2%
BBgBarc Multiverse TR	1.9%	4.4%	0.1	--	0.0%

Statistics Summary

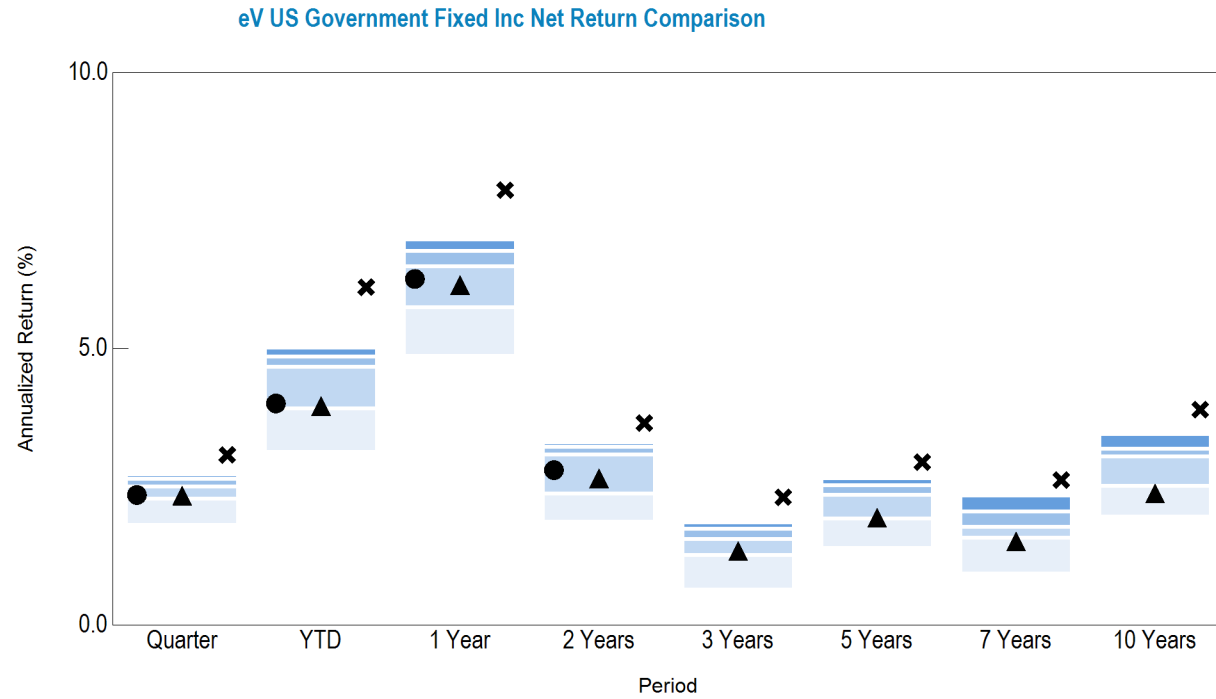
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	3.6%	2.6%	1.0	0.2	1.8%
Blended Fixed Income Index	3.3%	2.9%	0.8	--	0.0%
Core Fixed	3.2%	2.8%	0.8	0.2	1.5%
BBgBarc US Aggregate TR	2.9%	2.9%	0.7	--	0.0%
FIAM Bond	3.4%	3.0%	0.8	0.6	0.8%
BBgBarc US Aggregate TR	2.9%	2.9%	0.7	--	0.0%
Opportunistic Credit	5.4%	3.5%	1.3	0.2	3.2%
BBgBarc BA Intermediate HY	4.8%	4.6%	0.9	--	0.0%
Angelo Gordon Opportunistic	9.8%	7.6%	1.2	0.8	8.2%
BBgBarc US Aggregate TR	2.9%	2.9%	0.7	--	0.0%
Angelo Gordon STAR	13.4%	7.1%	1.8	1.4	7.5%
BBgBarc US Aggregate TR	2.9%	2.9%	0.7	--	0.0%
Brigade Capital	3.4%	6.3%	0.4	-0.3	4.2%
BBgBarc BA Intermediate HY	4.8%	4.6%	0.9	--	0.0%
Franklin Templeton	1.5%	6.5%	0.1	0.0	7.8%
BBgBarc Multiverse TR	1.3%	4.6%	0.1	--	0.0%

InvMetrics All DB Total Fix Inc Net Return Comparison



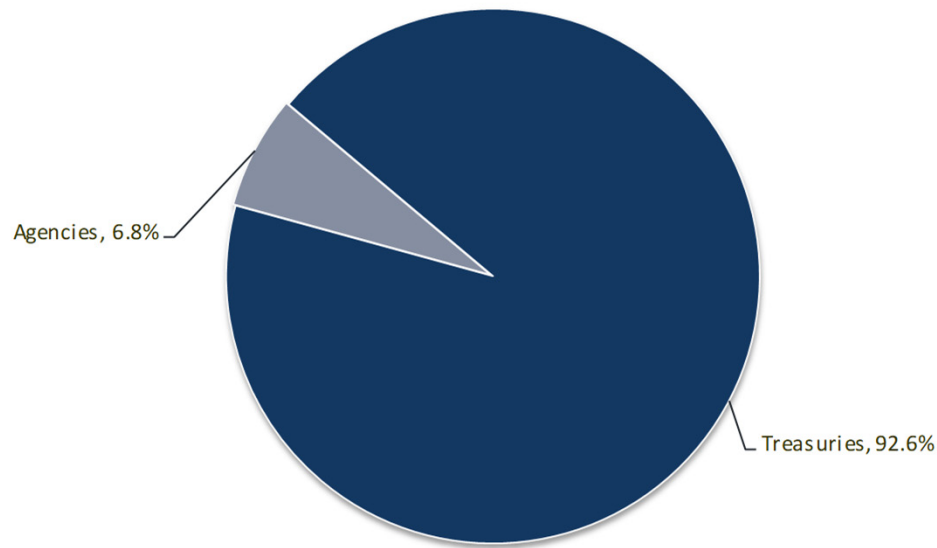
	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	6.3	13.3	13.5	6.6	5.6	5.9	5.5	8.1
25th Percentile	3.2	7.3	8.0	4.3	4.1	3.7	3.9	5.6
Median	2.7	6.1	7.0	3.7	3.5	3.0	3.1	4.8
75th Percentile	2.5	5.3	6.3	3.3	2.6	2.6	2.7	4.1
95th Percentile	1.6	3.9	4.4	2.7	1.8	2.0	2.0	3.1
# of Portfolios	330	330	328	318	308	291	264	209
● Fixed Income	2.5 (70)	5.7 (67)	6.7 (63)	3.8 (41)	4.9 (9)	3.6 (27)	4.3 (20)	6.1 (19)
▲ Blended Fixed Income Index	3.0 (35)	7.4 (23)	8.5 (20)	4.1 (30)	3.5 (46)	3.3 (37)	2.9 (66)	4.2 (72)



	Quarter		YTD		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
Return (Rank)																
5th Percentile	2.7		5.0		7.0		3.3		1.9		2.6		2.3		3.4	
25th Percentile	2.6		4.9		6.8		3.2		1.7		2.5		2.1		3.2	
Median	2.5		4.7		6.5		3.1		1.6		2.4		1.8		3.1	
75th Percentile	2.3		3.9		5.8		2.4		1.3		1.9		1.6		2.5	
95th Percentile	1.8		3.1		4.9		1.9		0.6		1.4		0.9		2.0	
# of Portfolios	12		12		12		12		11		11		11		11	
● BlackRock Intermediate Govt	2.4 (67)		4.0 (72)		6.3 (58)		2.8 (61)		-- (--)		-- (--)		-- (--)		-- (--)	
▲ BBgBarc US Govt Int TR	2.3 (70)		4.0 (73)		6.2 (60)		2.7 (65)		1.3 (69)		1.9 (75)		1.5 (78)		2.4 (79)	
✕ BBgBarc US Aggregate TR	3.1 (1)		6.1 (1)		7.9 (1)		3.7 (1)		2.3 (1)		2.9 (1)		2.6 (1)		3.9 (1)	

BlackRock Intermediate Govt Market Duration Pool
 Bond Sector Allocation

Period Ending: June 30, 2019



Sector	Account Weight	BBgBarc Intermediate	
		Govt Weight	Difference
Treasuries	92.6%	96.9%	-4.3%
Agencies	6.8%	3.1%	3.7%
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	0.6%	0.0%	0.6%
TOTAL	100.0%	100.0%	0.0%

BlackRock Intermediate Govt Market Duration Pool
 Bond Summary Statistics

Period Ending: June 30, 2019

Portfolio Characteristics		Portfolio	BBgBarc Intermediate Govt
Total Number of Securities		269	
Total Market Value	\$	233,698,006	
Current Coupon		2.61	2.25
Yield to Maturity		1.83	1.81
Average Life		4.05	4.06
Duration		3.74	3.77
Quality		AA+	AA+

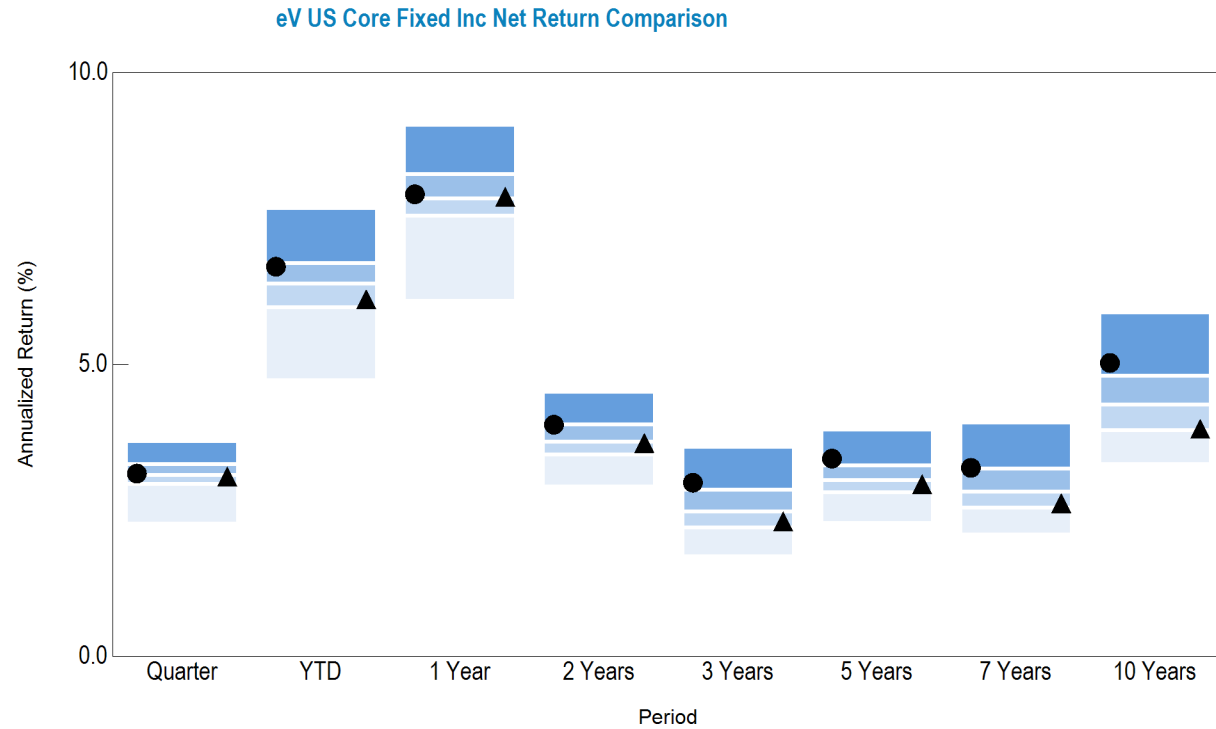
Yield to Maturity	
Range	% Held
0.0 - 5.0	100.0
5.0 - 7.0	0.0
7.0 - 9.0	0.0
9.0 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	0.0
Unclassified	0.0

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	23.0
2.0 - 4.0	36.4
4.0 - 6.0	23.9
6.0 - 8.0	15.8
8.0+	0.8
Unclassified	0.0

Quality	
Range	% Held
Govt (10)	0.0
Aaa (10)	98.1
Aa (9)	1.9
A (8)	0.0
Baa (7)	0.0
Below Baa (6-1)	0.0
Other	0.0

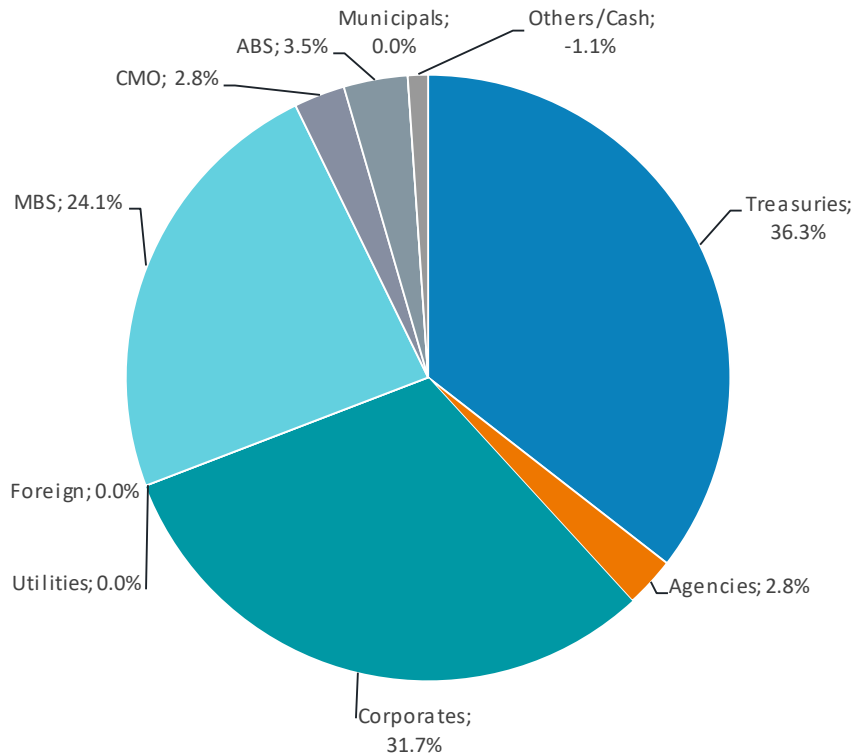
Coupon	
Range	% Held
0.0 - 5.0	100.0
5.0 - 7.0	0.0
7.0 - 9.0	0.0
9.0 - 10.0	0.0
10.0+	0.0
Unclassified	0.0



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.7	7.7	9.1	4.5	3.6	3.9	4.0	5.9
25th Percentile	3.3	6.7	8.3	4.0	2.9	3.3	3.2	4.8
Median	3.1	6.4	7.9	3.7	2.5	3.0	2.8	4.3
75th Percentile	3.0	6.0	7.6	3.5	2.2	2.8	2.6	3.9
95th Percentile	2.3	4.7	6.1	2.9	1.7	2.3	2.1	3.3
# of Portfolios	144	144	143	142	139	135	134	121
● FIAM Bond	3.1 (48)	6.7 (33)	7.9 (49)	4.0 (26)	3.0 (17)	3.4 (18)	3.2 (24)	5.0 (19)
▲ BBgBarc US Aggregate TR	3.1 (56)	6.1 (69)	7.9 (49)	3.7 (53)	2.3 (64)	2.9 (57)	2.6 (69)	3.9 (73)

FIAM Bond Market Duration Pool
Bond Sector Allocation

Period Ending: June 30, 2019



Sector	Account Weight	BBgBarc Aggregate	
		Weight	Difference
Treasuries	36.3%	39.2%	-2.9%
Agencies	2.8%	5.9%	-3.1%
Corporates	31.7%	24.8%	6.9%
Utilities	0.0%	0.0%	0.0%
Foreign	0.0%	0.0%	0.0%
MBS	24.1%	27.6%	-3.5%
CMO	2.8%	0.0%	2.8%
ABS	3.5%	2.5%	1.0%
Municipals	0.0%	0.0%	0.0%
Others/Cash	-1.1%	0.0%	-1.1%
TOTAL	100.0%	100.0%	0.0%

FIAM Bond Market Duration Pool
Bond Summary Statistics

Period Ending: June 30, 2019

Portfolio Characteristics		
	Portfolio	
Total Number of Securities	904	
Total Market Value	\$	281,072,703
Current Coupon	3.36	
Yield to Maturity	2.73	
Average Life	7.98	
Duration	5.41	
Quality	AA	

BBgBarc Aggregate	
Current Coupon	3.29
Yield to Maturity	2.50
Average Life	7.86
Duration	5.57
Quality	AA

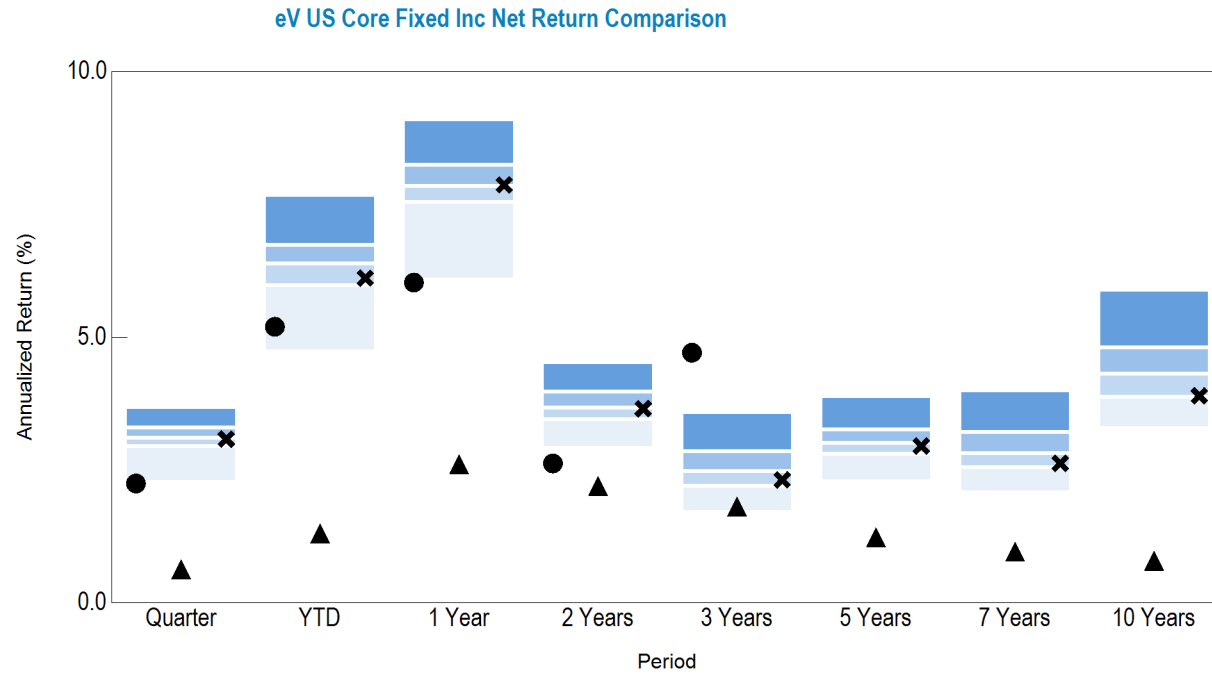
Yield to Maturity		
Range	% Held	
0.0 - 5.0	94.7	
5.0 - 7.0	3.2	
7.0 - 9.0	0.8	
9.0 - 11.0	0.0	
11.0 - 13.0	0.0	
13.0+	1.3	
Unclassified	0.0	

Average Life		
Range	% Held	
0.0 - 1.0	0.8	
1.0 - 3.0	15.1	
3.0 - 5.0	30.7	
5.0 - 10.0	39.1	
10.0 - 20.0	3.4	
20.0+	10.8	
Unclassified	0.0	

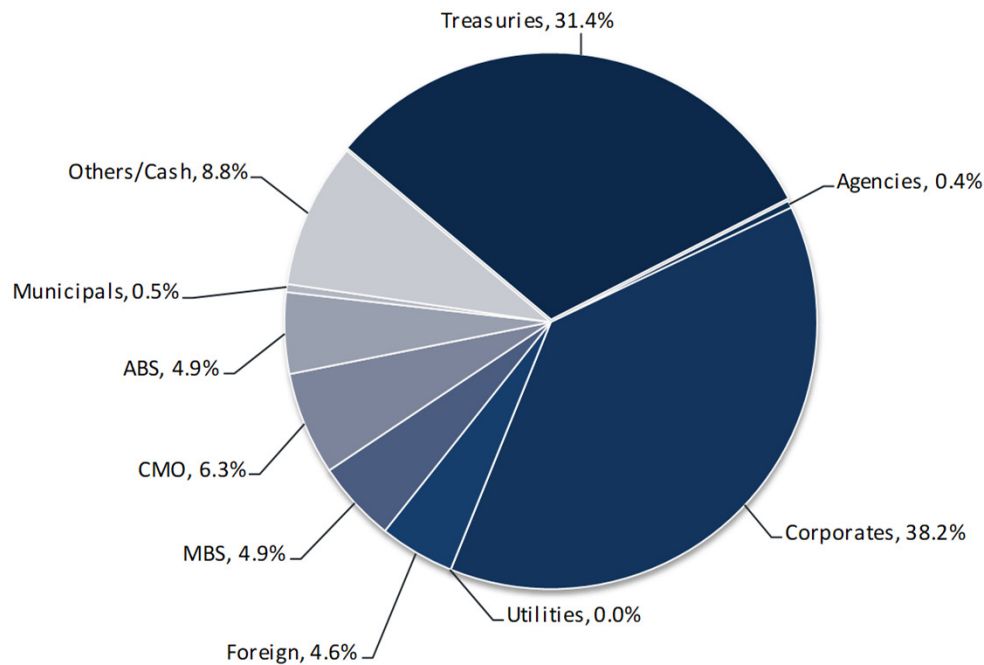
Duration		
Range	% Held	
0.0 - 1.0	1.5	
1.0 - 3.0	31.1	
3.0 - 5.0	31.6	
5.0 - 7.0	14.0	
7.0 - 10.0	6.3	
10.0+	15.5	
Unclassified	0.0	

Quality		
Range	% Held	
Govt (10)	62.8	
Aaa (10)	1.7	
Aa (9)	2.0	
A (8)	14.5	
Baa (7)	19.0	
Below Baa (6-1)	0.8	
Other	-0.6	

Coupon		
Range	% Held	
0.0 - 5.0	88.0	
5.0 - 7.0	9.3	
7.0 - 9.0	1.0	
9.0 - 11.0	0.0	
11.0 - 13.0	0.0	
13.0+	1.7	
Unclassified	0.0	



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.7	7.7	9.1	4.5	3.6	3.9	4.0	5.9
25th Percentile	3.3	6.7	8.3	4.0	2.9	3.3	3.2	4.8
Median	3.1	6.4	7.9	3.7	2.5	3.0	2.8	4.3
75th Percentile	3.0	6.0	7.6	3.5	2.2	2.8	2.6	3.9
95th Percentile	2.3	4.7	6.1	2.9	1.7	2.3	2.1	3.3
# of Portfolios	144	144	143	142	139	135	134	121
● Western TRU	2.2 (97)	5.2 (92)	6.0 (96)	2.6 (98)	4.7 (1)	-- (--)	-- (--)	-- (--)
▲ 3-Month Libor Total Return USD	0.6 (99)	1.3 (99)	2.6 (99)	2.2 (99)	1.8 (93)	1.2 (99)	1.0 (99)	0.8 (99)
✕ BBgBarc US Aggregate TR	3.1 (56)	6.1 (69)	7.9 (49)	3.7 (53)	2.3 (64)	2.9 (57)	2.6 (69)	3.9 (73)



Sector	Account Weight	BBgBarc Aggregate	
		Weight	Difference
Treasuries	31.4%	39.2%	-7.8%
Agencies	0.4%	5.9%	-5.5%
Corporates	38.2%	24.8%	13.4%
Utilities	0.0%	0.0%	0.0%
Foreign	4.6%	0.0%	4.6%
MBS	4.9%	27.6%	-22.8%
CMO	6.3%	0.0%	6.3%
ABS	4.9%	2.5%	2.4%
Municipals	0.5%	0.0%	0.5%
Others/Cash	8.8%	0.0%	8.8%
TOTAL	100.0%	100.0%	-0.1%

Portfolio Characteristics		
	Portfolio	
Total Number of Securities		4,969
Total Market Value	\$	136,575,689
Current Coupon		4.72
Yield to Maturity		4.37
Average Life		7.14
Duration		1.43
Quality		A

BBgBarc Aggregate	
	3.29
	2.50
	7.86
	5.57
	AA

Yield to Maturity		
Range	% Held	
0.0 - 5.0	65.7	
5.0 - 7.0	25.2	
7.0 - 9.0	9.4	
9.0 - 11.0	1.6	
11.0 - 13.0	0.6	
13.0+	1.7	
Unclassified	-4.1	

Average Life		
Range	% Held	
0.0 - 1.0	14.3	
1.0 - 3.0	17.9	
3.0 - 5.0	16.3	
5.0 - 10.0	17.6	
10.0 - 20.0	13.5	
20.0+	20.4	
Unclassified	0.0	

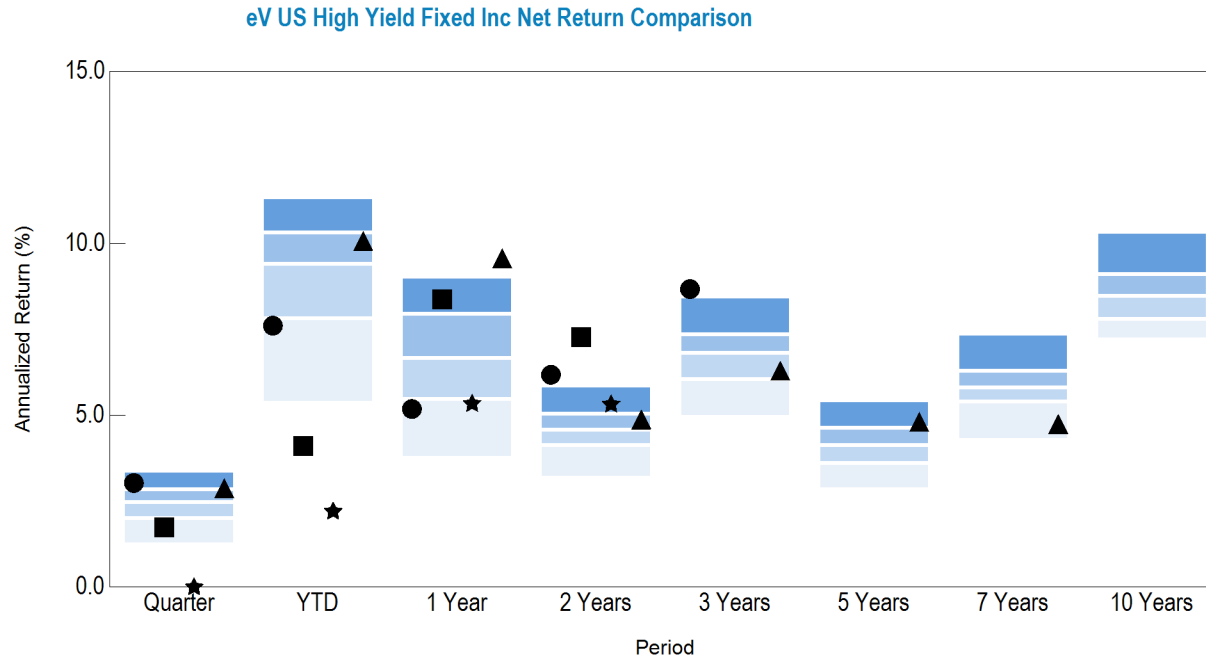
Duration		
Range	% Held	
< 1.0	26.5	
1.0 - 3.0	16.3	
3.0 - 5.0	16.2	
5.0 - 7.0	18.4	
7.0 - 10.0	5.2	
10.0+	17.5	
Unclassified	0.0	

*Unclassified includes negative YTM

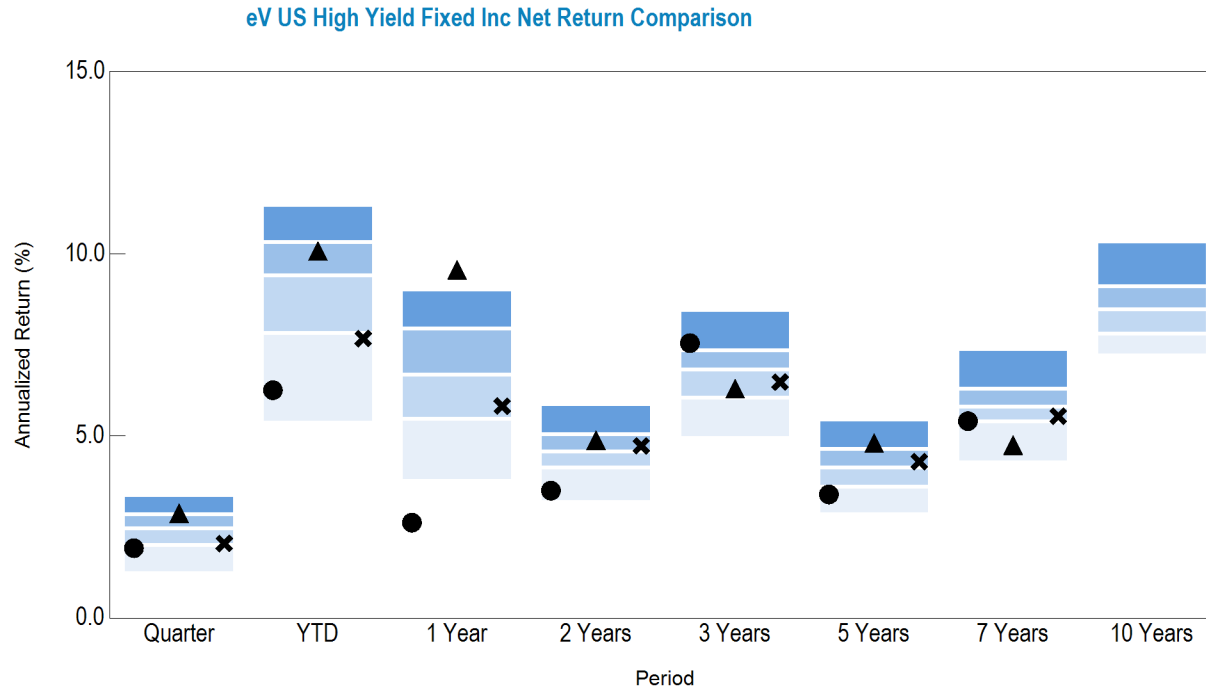
Quality		
Range	% Held	
Govt* (10)	9.1	
Aaa (10)	14.2	
Aa (9)	2.1	
A (8)	21.5	
Baa (7)	26.6	
Below Baa (6-1)	26.7	
Other	-0.2	

Coupon		
Range	% Held	
0.0 - 5.0	50.1	
5.0 - 7.0	29.1	
7.0 - 9.0	14.2	
9.0 - 10.0	0.9	
10.0+	5.8	
Unclassified	0.0	

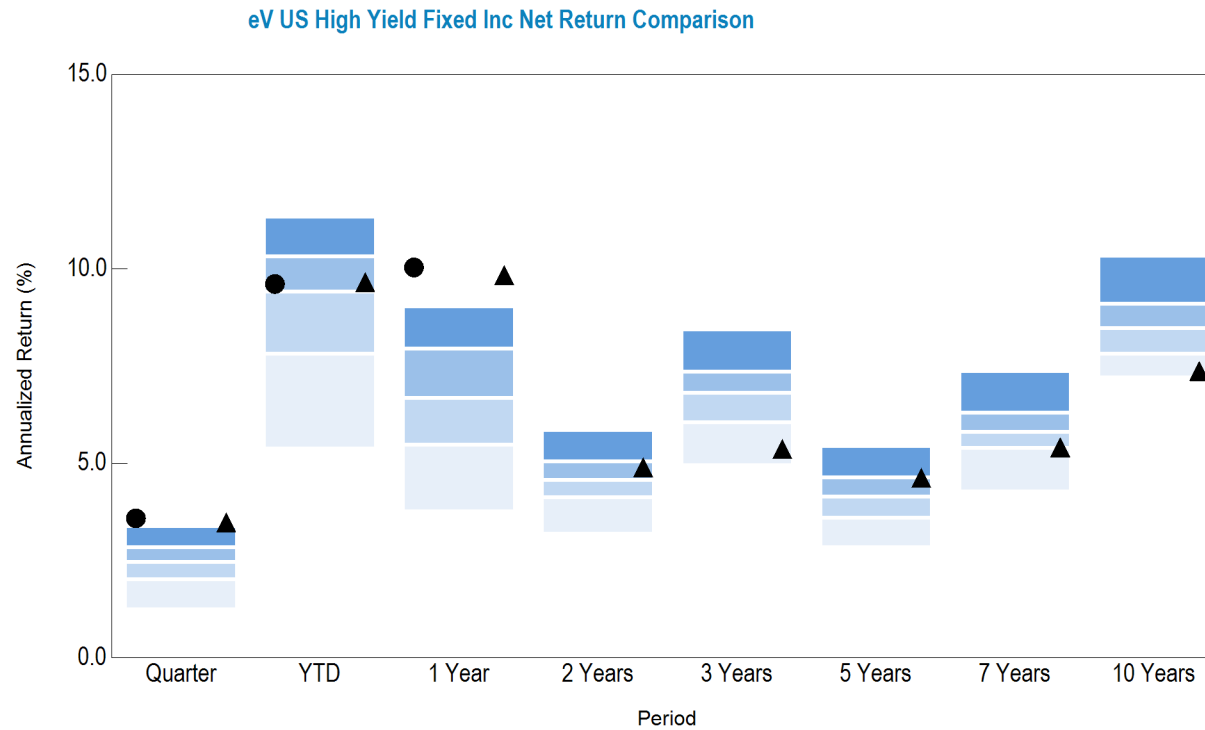
*Govt is specifically U.S Govt securities



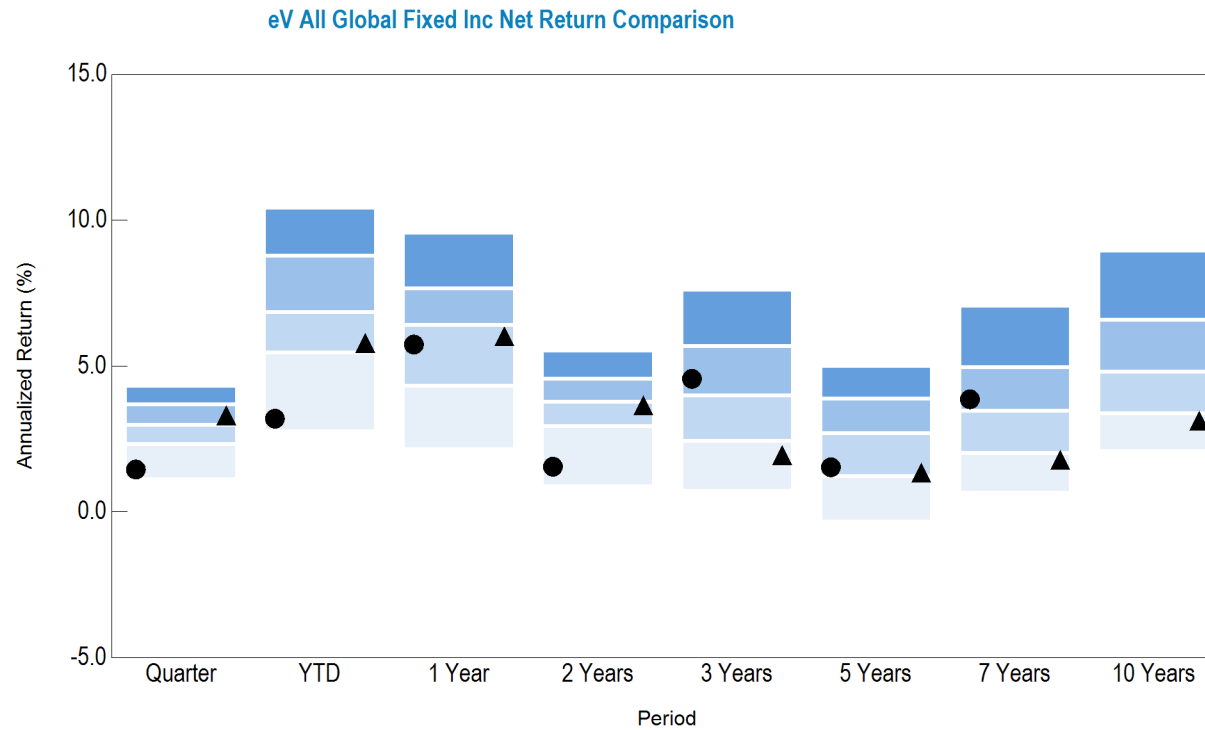
	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.4	11.3	9.0	5.9	8.4	5.4	7.4	10.3
25th Percentile	2.9	10.3	8.0	5.1	7.4	4.6	6.3	9.1
Median	2.5	9.4	6.7	4.6	6.8	4.1	5.8	8.5
75th Percentile	2.0	7.8	5.5	4.1	6.1	3.6	5.4	7.8
95th Percentile	1.2	5.4	3.8	3.2	5.0	2.9	4.3	7.2
# of Portfolios	133	133	133	131	129	117	98	78
● Beach Point Select	3.0 (15)	7.6 (78)	5.2 (82)	6.2 (3)	8.7 (4)	-- (--)	-- (--)	-- (--)
■ TCP Direct Lending VIII	1.7 (85)	4.1 (99)	8.4 (15)	7.3 (2)	-- (--)	-- (--)	-- (--)	-- (--)
★ White Oak Yield	0.0 (99)	2.2 (99)	5.3 (80)	5.3 (17)	-- (--)	-- (--)	-- (--)	-- (--)
▲ BBgBarc BA Intermediate HY	2.9 (25)	10.1 (35)	9.6 (3)	4.9 (35)	6.3 (69)	4.8 (20)	4.7 (93)	-- (--)



	Return (Rank)							
5th Percentile	3.4	11.3	9.0	5.9	8.4	5.4	7.4	10.3
25th Percentile	2.9	10.3	8.0	5.1	7.4	4.6	6.3	9.1
Median	2.5	9.4	6.7	4.6	6.8	4.1	5.8	8.5
75th Percentile	2.0	7.8	5.5	4.1	6.1	3.6	5.4	7.8
95th Percentile	1.2	5.4	3.8	3.2	5.0	2.9	4.3	7.2
# of Portfolios	133	133	133	131	129	117	98	78
● Brigade Capital	1.9 (82)	6.3 (86)	2.6 (98)	3.5 (89)	7.5 (22)	3.4 (82)	5.4 (76)	-- (--)
▲ BBgBarc BA Intermediate HY	2.9 (25)	10.1 (35)	9.6 (3)	4.9 (35)	6.3 (69)	4.8 (20)	4.7 (93)	-- (--)
✕ 50% Barclays HY/ 50% Bank Loan	2.0 (72)	7.7 (77)	5.8 (71)	4.7 (45)	6.5 (63)	4.3 (43)	5.5 (69)	-- (--)



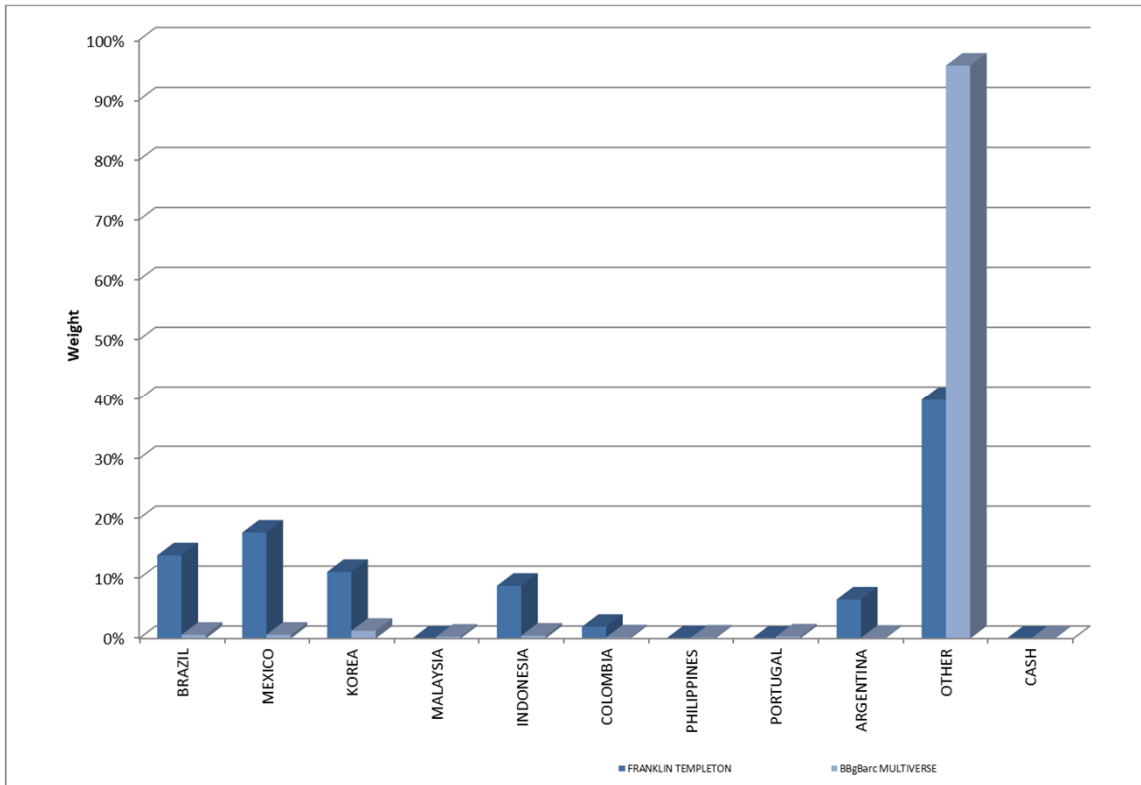
	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.4	11.3	9.0	5.9	8.4	5.4	7.4	10.3
25th Percentile	2.9	10.3	8.0	5.1	7.4	4.6	6.3	9.1
Median	2.5	9.4	6.7	4.6	6.8	4.1	5.8	8.5
75th Percentile	2.0	7.8	5.5	4.1	6.1	3.6	5.4	7.8
95th Percentile	1.2	5.4	3.8	3.2	5.0	2.9	4.3	7.2
# of Portfolios	133	133	133	131	129	117	98	78
● PIMCO Diversified	3.6 (4)	9.6 (47)	10.0 (1)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
▲ Blended PIMCO Diversified Index	3.5 (4)	9.7 (46)	9.8 (1)	4.9 (35)	5.4 (93)	4.6 (27)	5.4 (75)	7.4 (91)



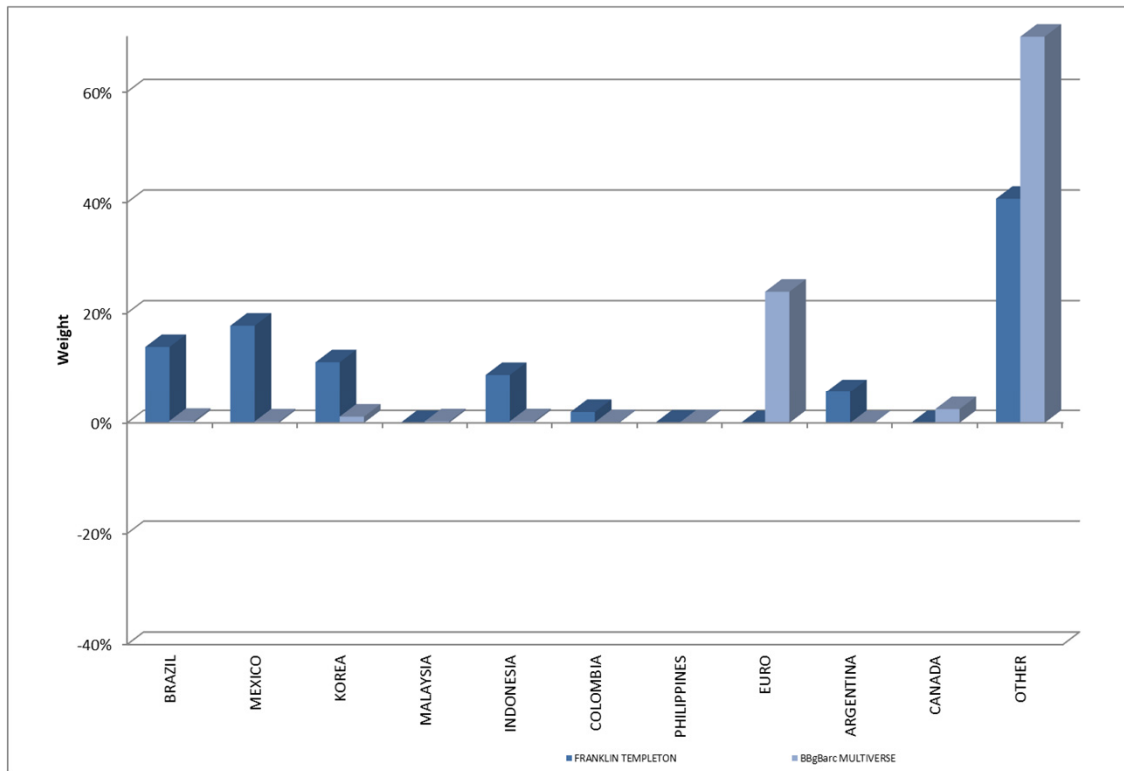
	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	4.3	10.4	9.6	5.5	7.6	5.0	7.1	8.9
25th Percentile	3.7	8.8	7.7	4.6	5.7	3.9	5.0	6.6
Median	3.0	6.9	6.4	3.8	4.0	2.7	3.5	4.8
75th Percentile	2.3	5.5	4.3	3.0	2.5	1.3	2.0	3.4
95th Percentile	1.1	2.8	2.2	0.9	0.7	-0.3	0.7	2.1
# of Portfolios	234	234	224	220	214	190	166	114
● Franklin Templeton	1.5 (90)	3.2 (94)	5.7 (61)	1.6 (92)	4.6 (45)	1.5 (70)	3.9 (44)	-- (--)
▲ BBgBarc Multiverse TR	3.3 (38)	5.8 (71)	6.0 (57)	3.7 (59)	1.9 (82)	1.3 (72)	1.8 (81)	3.1 (84)

Franklin Templeton
Portfolio Country Weights

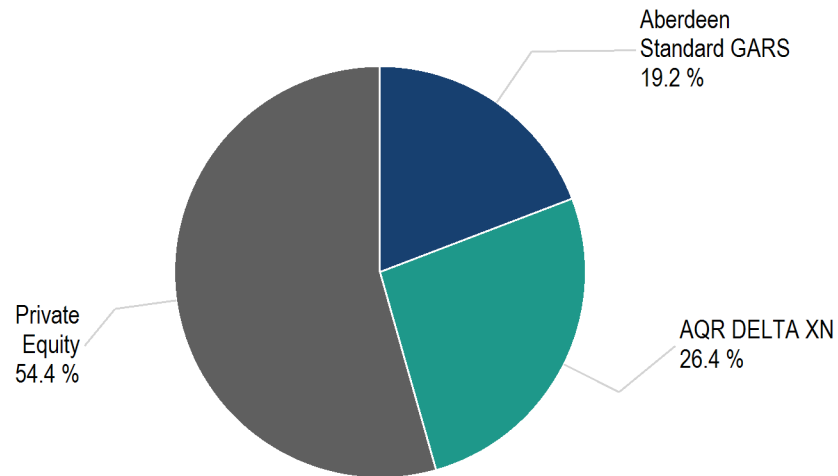
Period Ending: June 30, 2019



COUNTRY	MARKET VALUE	FRANKLIN TEMPLETON	BbgBarc MULTIVERSE	DIFF
BRAZIL	\$ 5,882	13.9%	0.6%	+13.3%
MEXICO	\$ 7,488	17.7%	0.6%	+17.0%
KOREA	\$ 4,709	11.1%	1.3%	+9.8%
MALAYSIA	\$ -	0.0%	0.3%	-0.3%
INDONESIA	\$ 3,734	8.8%	0.5%	+8.3%
COLOMBIA	\$ 833	2.0%	0.2%	+1.8%
PHILIPPINES	\$ 37	0.1%	0.2%	-0.1%
PORTUGAL	\$ -	0.0%	0.4%	-0.4%
ARGENTINA	\$ 2,764	6.5%	0.1%	+6.4%
OTHER	\$ 16,905	39.9%	95.7%	-55.8%
CASH	\$ -	0.0%	0.0%	0.0%
	\$ 42,352	100.0%	100.0%	0.0%



CURRENCY	MARKET VALUE	FRANKLIN TEMPLETON	BBgBarc MULTIVERSE	DIFF
BRAZIL	\$ 5,882	13.9%	0.4%	+13.5%
MEXICO	\$ 7,510	17.7%	0.3%	+17.5%
KOREA	\$ 4,709	11.1%	1.1%	+10.0%
MALAYSIA	\$ -	0.0%	0.3%	-0.3%
INDONESIA	\$ 3,734	8.8%	0.3%	+8.5%
COLOMBIA	\$ 833	2.0%	0.1%	+1.8%
PHILIPPINES	\$ 37	0.1%	0.1%	-0.0%
EURO	\$ -	0.0%	23.9%	-23.9%
ARGENTINA	\$ 2,410	5.7%	0.0%	+5.7%
CANADA	\$ -	0.0%	2.5%	-2.5%
OTHER	\$ 17,236	40.7%	71.1%	-30.4%
	\$ 42,352	100.0%	100.0%	0.0%



	Actual \$	Actual %	Manager Contribution to Excess Return %
Aberdeen Standard GARS	\$102,433,534	19.2%	0.0%
AQR DELTA XN	\$140,582,162	26.4%	-1.7%
Private Equity	\$289,677,403	54.4%	-4.8%
Actual vs. Policy Weight Difference			0.5%
Total	\$532,693,099	100.0%	-6.0%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	7.9%	5.4%	1.2	-0.5	6.5%
Blended Alternatives Index	11.2%	6.0%	1.6	--	0.0%
Private Equity	17.4%	9.1%	1.8	0.2	11.9%
Blended Private Equity Index	15.5%	11.5%	1.2	--	0.0%
Hedge Fund/Absolute Return	-1.8%	4.5%	-0.7	-1.6	4.6%
Libor 1 month +4%	5.6%	0.2%	19.8	--	0.0%
AQR DELTA XN	-4.4%	5.9%	-1.0	-1.7	5.9%
Libor 1 month +4%	5.6%	0.2%	19.8	--	0.0%
Aberdeen Standard GARS	2.0%	3.6%	0.2	-1.0	3.6%
Libor 1 month +4%	5.6%	0.2%	19.8	--	0.0%

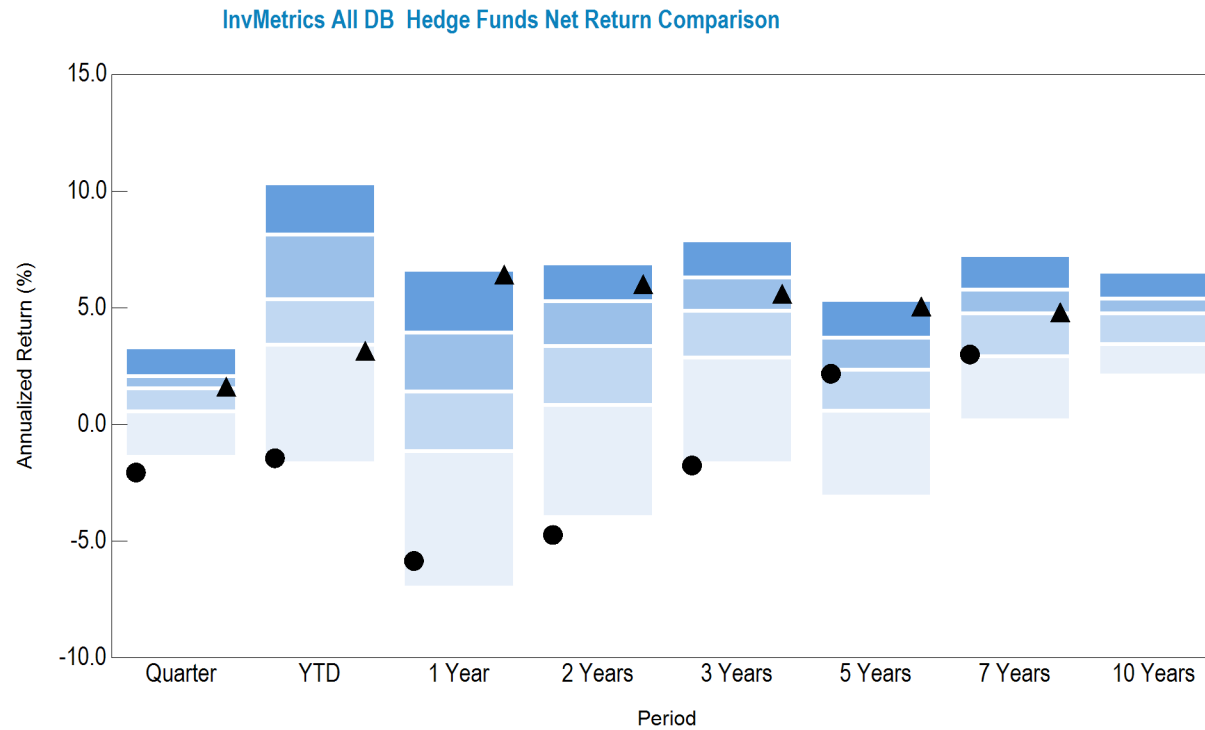
Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	6.1%	4.9%	1.1	-0.1	6.7%
Blended Alternatives Index	6.7%	6.2%	0.9	--	0.0%
Private Equity	16.1%	8.9%	1.7	0.3	13.0%
Blended Private Equity Index	12.3%	11.6%	1.0	--	0.0%
Hedge Fund/Absolute Return	2.2%	5.2%	0.2	-0.5	5.3%
Libor 1 month +4%	5.1%	0.3%	16.5	--	0.0%
AQR DELTA XN	0.6%	6.1%	0.0	-0.7	6.3%
Libor 1 month +4%	5.1%	0.3%	16.5	--	0.0%

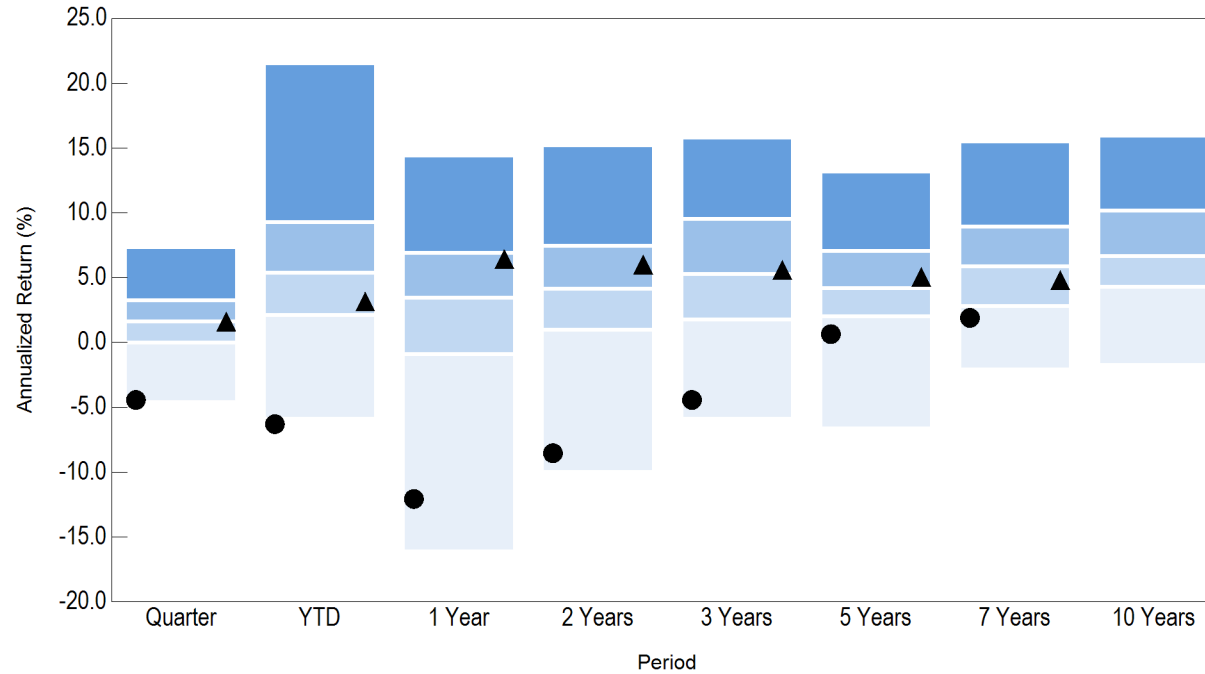
Hedge Fund/Absolute Return
Peer Universe Comparison

Period Ending: June 30, 2019

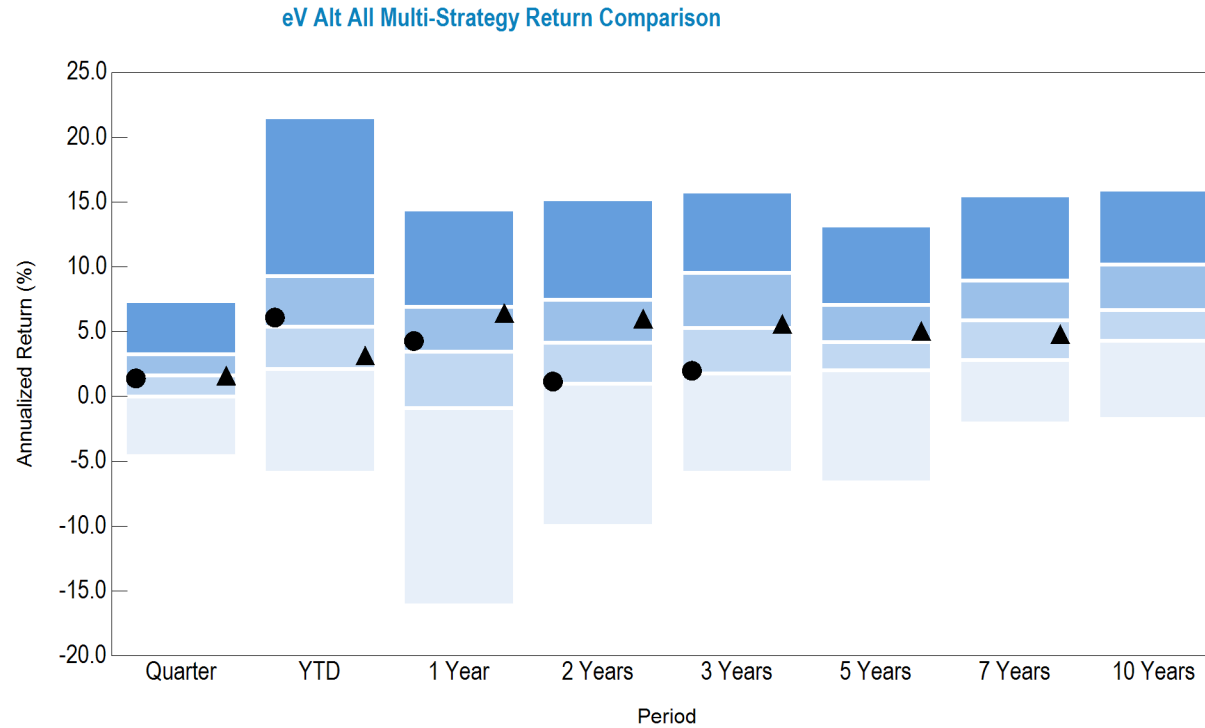


	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.3	10.3	6.6	6.9	7.9	5.3	7.3	6.5
25th Percentile	2.1	8.1	3.9	5.3	6.3	3.7	5.8	5.4
Median	1.6	5.4	1.4	3.4	4.9	2.4	4.8	4.8
75th Percentile	0.6	3.4	-1.1	0.9	2.9	0.6	2.9	3.5
95th Percentile	-1.4	-1.7	-7.0	-3.9	-1.6	-3.1	0.2	2.1
# of Portfolios	219	219	215	211	204	192	169	105
● Hedge Fund/Absolute Return	-2.1 (97)	-1.4 (95)	-5.9 (93)	-4.7 (97)	-1.8 (96)	2.2 (58)	3.0 (73)	-- (--)
▲ Libor 1 month +4%	1.6 (49)	3.2 (78)	6.4 (6)	6.0 (10)	5.6 (37)	5.1 (7)	4.8 (46)	-- (--)

eV Alt All Multi-Strategy Return Comparison



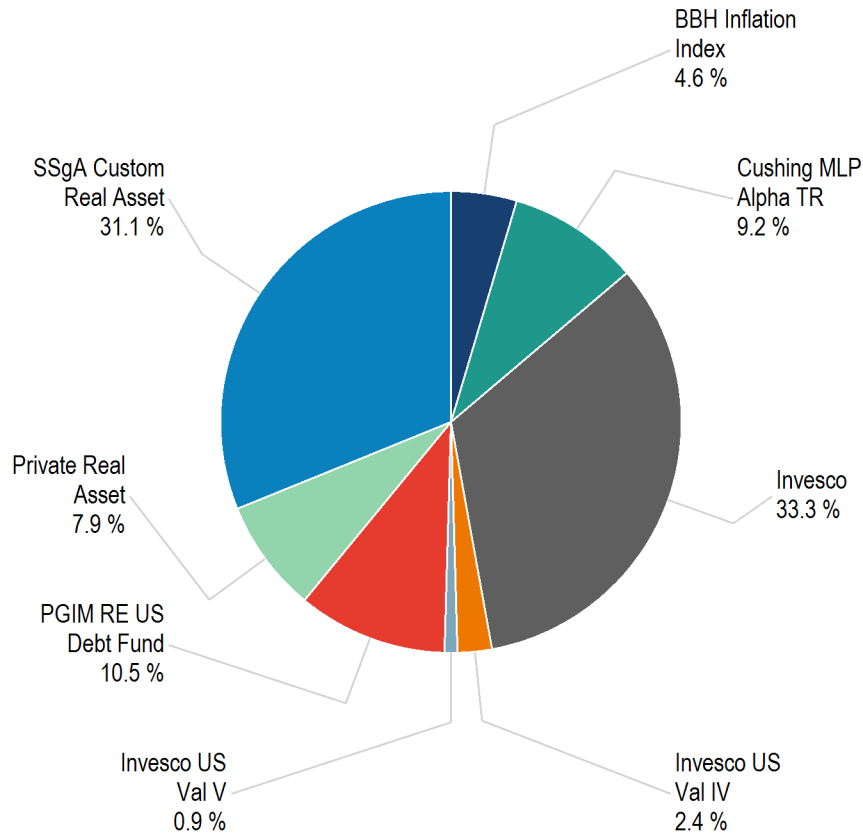
	Return (Rank)							
5th Percentile	7.3	21.5	14.4	15.2	15.8	13.2	15.5	15.9
25th Percentile	3.3	9.3	6.9	7.5	9.5	7.1	9.0	10.2
Median	1.7	5.4	3.5	4.2	5.3	4.2	5.9	6.7
75th Percentile	0.0	2.2	-0.9	1.0	1.8	2.0	2.8	4.3
95th Percentile	-4.6	-5.9	-16.1	-10.0	-5.9	-6.6	-2.1	-1.7
# of Portfolios	289	284	279	263	243	213	173	131
● AQR DELTA XN	-4.4 (95)	-6.3 (96)	-12.1 (93)	-8.5 (94)	-4.4 (93)	0.6 (84)	1.9 (87)	-- (--)
▲ Libor 1 month +4%	1.6 (51)	3.2 (70)	6.4 (28)	6.0 (34)	5.6 (48)	5.1 (42)	4.8 (60)	-- (--)



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	7.3	21.5	14.4	15.2	15.8	13.2	15.5	15.9
25th Percentile	3.3	9.3	6.9	7.5	9.5	7.1	9.0	10.2
Median	1.7	5.4	3.5	4.2	5.3	4.2	5.9	6.7
75th Percentile	0.0	2.2	-0.9	1.0	1.8	2.0	2.8	4.3
95th Percentile	-4.6	-5.9	-16.1	-10.0	-5.9	-6.6	-2.1	-1.7
# of Portfolios	289	284	279	263	243	213	173	131
● Aberdeen Standard GARS	1.4 (55)	6.1 (45)	4.3 (45)	1.1 (74)	2.0 (75)	-- (--)	-- (--)	-- (--)
▲ Libor 1 month +4%	1.6 (51)	3.2 (70)	6.4 (28)	6.0 (34)	5.6 (48)	5.1 (42)	4.8 (60)	-- (--)

Inflation Hedge Manager Allocation Analysis

Period Ending: June 30, 2019



	Actual \$	Actual %	Manager Contribution to Excess Return %
Brown Brother Harriman	\$37,067,410	4.6%	0.0%
Cushing MLP Alpha TR	\$74,573,782	9.2%	-0.3%
Invesco	\$269,030,019	33.3%	0.0%
Invesco US Val IV	\$19,090,969	2.4%	0.0%
Invesco US Val V	\$7,397,449	0.9%	0.0%
PGIM RE US Debt Fund	\$85,208,628	10.5%	0.0%
Private Real Asset	\$64,121,953	7.9%	-0.9%
SSgA Custom Real Asset	\$251,230,510	31.1%	0.1%
Actual vs. Policy Weight Difference			-0.4%
Total	\$807,720,721	100.0%	-1.5%

Statistics Summary

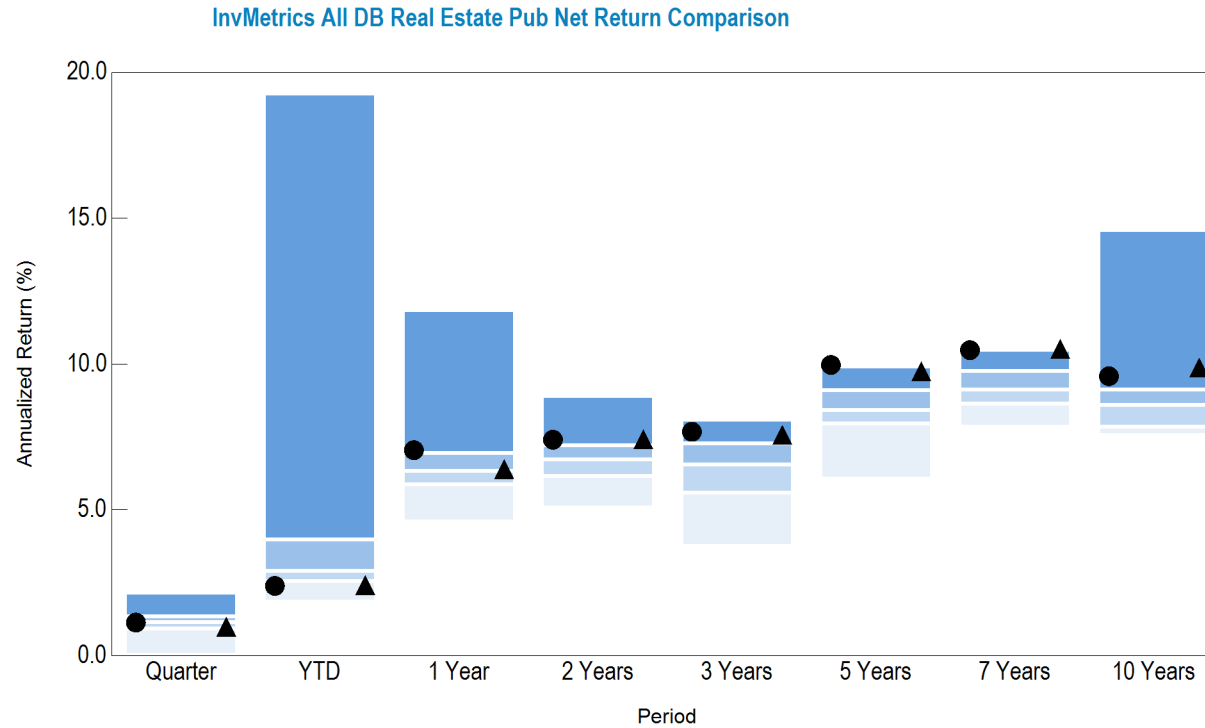
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Real Estate	7.68%	3.20%	1.96	0.17	0.64%
NCREIF ODCE	7.57%	3.12%	1.97	--	0.00%
Invesco	7.59%	3.22%	1.92	0.02	0.71%
NCREIF ODCE	7.57%	3.12%	1.97	--	0.00%
Invesco US Val IV	11.00%	5.10%	1.88	1.16	2.96%
NCREIF ODCE	7.57%	3.12%	1.97	--	0.00%
Private Real Asset	-3.07%	8.85%	-0.51	-0.76	10.33%
Blended Private Real Asset Index	4.81%	9.57%	0.36	--	0.00%
TIPS	2.59%	2.13%	0.56	0.45	1.12%
BBgBarc US TIPS TR	2.08%	2.94%	0.23	--	0.00%
Brown Brothers Harriman	2.59%	2.13%	0.56	0.45	1.12%
BBgBarc US TIPS TR	2.08%	2.94%	0.23	--	0.00%

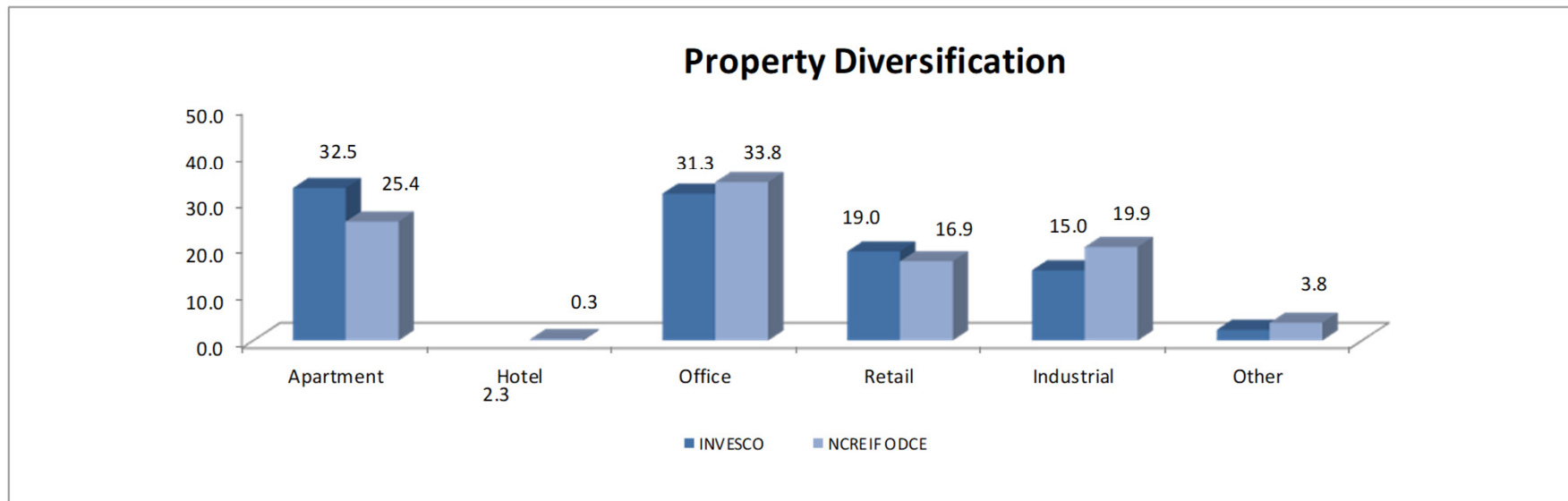
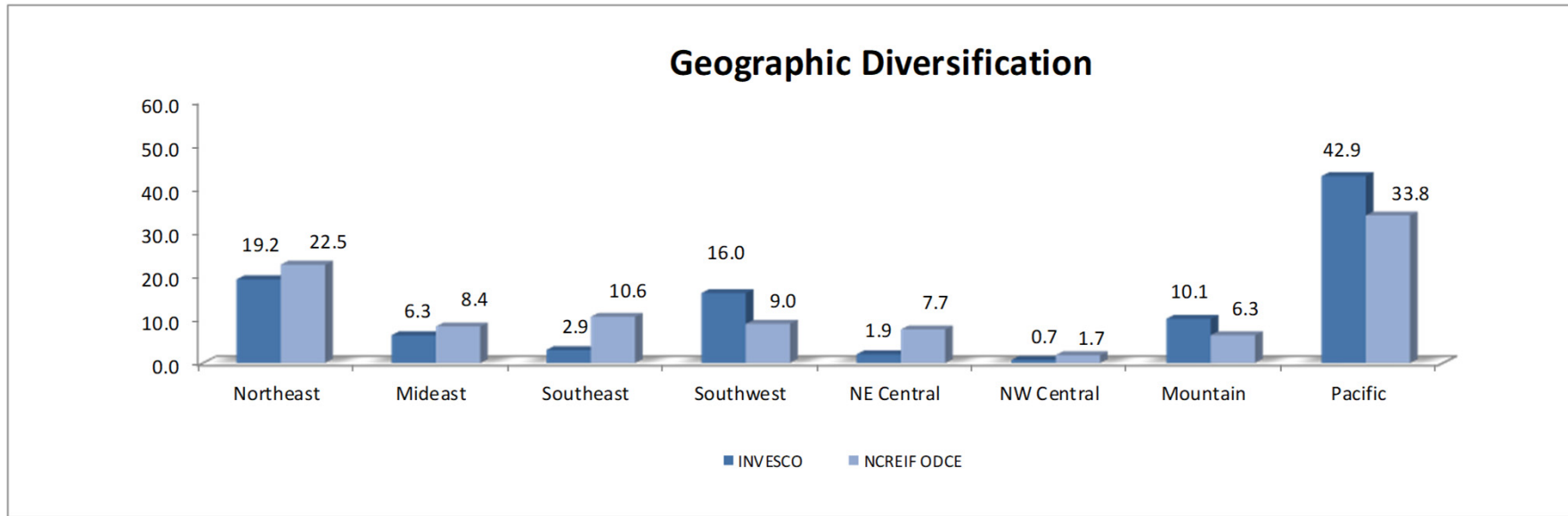
Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error Rank
Real Estate	9.97%	4.43%	2.05	0.19	31
NCREIF ODCE	9.75%	4.19%	2.12	--	1
Invesco	9.85%	4.41%	2.03	0.07	--
NCREIF ODCE	9.75%	4.19%	2.12	--	--
TIPS	1.55%	2.65%	0.26	-0.16	--
BBgBarc US TIPS TR	1.75%	3.51%	0.25	--	--
Brown Brothers Harriman	1.55%	2.65%	0.26	-0.16	64
BBgBarc US TIPS TR	1.75%	3.51%	0.25	--	1



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	2.2	19.3	11.8	8.9	8.1	9.9	10.5	14.6
25th Percentile	1.4	4.0	7.0	7.2	7.3	9.1	9.8	9.1
Median	1.2	2.9	6.4	6.8	6.6	8.4	9.1	8.6
75th Percentile	0.9	2.6	5.9	6.2	5.6	8.0	8.7	7.9
95th Percentile	0.0	1.9	4.6	5.1	3.8	6.1	7.9	7.6
# of Portfolios	89	89	89	84	84	81	68	51
● Real Estate	1.1 (56)	2.4 (83)	7.0 (21)	7.4 (21)	7.7 (19)	10.0 (5)	10.5 (6)	9.6 (12)
▲ NCREIF ODCE	1.0 (75)	2.4 (83)	6.4 (47)	7.4 (20)	7.6 (21)	9.8 (9)	10.5 (5)	9.9 (12)



INVESCO Core Real Estate
Real Estate Valuation Analysis

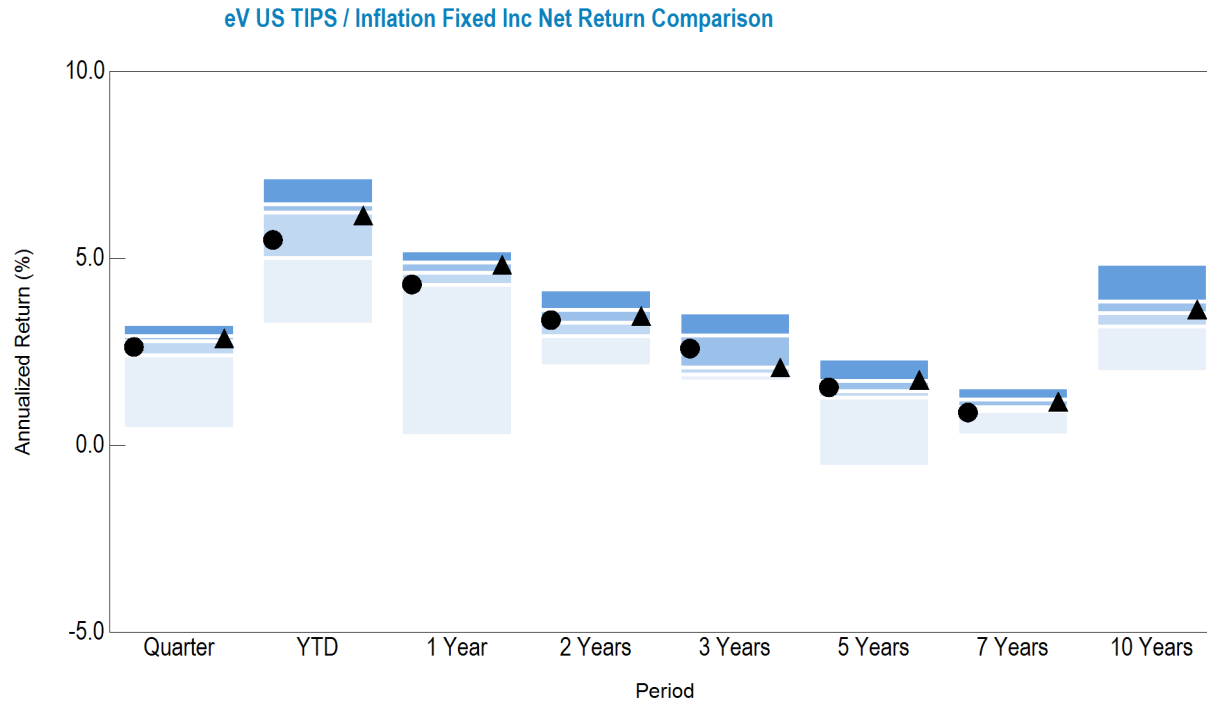
Period Ending: June 30, 2019

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 6/30/2019 2.58%
APARTMENTS							
Stoneridge Apartments	Pleasanton, CA	\$242,000,000	\$240,000,000	\$240,000,000	4Q06	June-19	\$6,201,589
Instrata Pentagon City	Arlington, VA	\$156,000,000	\$160,000,000	\$160,000,000	3Q10	June-19	\$4,134,393
Ladd Tower	Portland, OR	\$126,000,000	\$126,000,000	\$68,874,805	4Q10	June-19	\$1,779,722
Legacy Fountain Plaza	San Jose, CA	\$163,000,000	\$163,000,000	\$163,000,000	1Q11	June-19	\$4,211,913
Instrata Gramercy (fka The Elektra)	New York, NY	\$172,000,000	\$173,000,000	\$101,245,650	1Q11	June-19	\$2,616,183
Instrata Brooklyn Heights (fka 75 Clinton Street)	Brooklyn, NY	\$67,600,000	\$67,000,000	\$67,000,000	1Q12	June-19	\$1,731,277
The Artisan Laguna Beach	Orange County, CA	\$165,000,000	\$166,000,000	\$104,178,731	3Q12	June-19	\$2,691,974
The GoodWynn	Atlanta, GA	\$96,600,000	\$98,478,820	\$98,478,820	4Q12	June-19	\$2,544,688
Instrata Hell's Kitchen	New York, NY	\$185,000,000	\$185,000,000	\$185,000,000	1Q13	June-19	\$4,780,392
Sunset Vine Tower	Los Angeles, CA	\$103,000,000	\$104,000,000	\$104,000,000	2Q13	June-19	\$2,687,355
Instrata Ashton Uptown	Dallas, TX	\$121,000,000	\$115,000,000	\$57,572,319	4Q13	June-19	\$1,487,666
206 Bell	Seattle, WA	\$48,900,000	\$49,000,000	\$49,000,000	4Q13	June-19	\$1,266,158
Cadence Union Station	Denver, CO	\$94,500,000	\$94,600,000	\$57,315,297	1Q14	June-19	\$1,481,025
Joseph Arnold Lofts	Seattle, WA	\$70,800,000	\$70,400,000	\$36,008,512	2Q14	June-19	\$930,458
Verve	Denver, CO	\$108,000,000	\$107,400,000	\$107,400,000	3Q14	June-19	\$2,775,211
Broadstone Little Italy	San Diego CA	\$120,000,000	\$120,000,000	\$66,568,957	3Q14	June-19	\$1,720,139
33 Tehama	San Francisco, CA	\$301,886,940	\$304,551,162	\$166,523,588	3Q14	June-19	\$4,302,962
The Parker	Portland, OR	\$63,200,000	\$62,600,000	\$30,777,283	1Q15	June-19	\$795,284
Legacy West Apartments	Plano, TX	\$145,000,000	\$145,000,000	\$53,147,824	1Q15	June-19	\$1,373,337
The Royce	Irvine, CA	\$210,137,339	\$214,139,657	\$107,254,432	2Q15	June-19	\$2,771,450
Jefferson Marketplace	Washington, DC	\$159,000,000	\$159,000,000	\$88,072,484	4Q15	June-19	\$2,275,789
Retreat at Park Meadows	Littleton, CO	\$159,000,000	\$161,000,000	\$161,000,000	4Q15	June-19	\$4,160,233
North Water Apartments	Chicago, IL	\$256,000,000	\$256,000,000	\$256,000,000	1Q16	June-19	\$6,615,029
2270 Broadway	Oakland, CA	\$28,170,689	\$28,208,950	\$28,208,950	1Q16	June-19	\$728,918
Runway at Playa Vista Apartments	Playa Vista, CA	\$167,567,734	\$167,480,000	\$104,653,856	1Q16	June-19	\$2,704,251
Clayton Lane Apartments	Denver, CO	\$39,279,865	\$39,669,161	\$39,669,161	1Q16	June-19	\$1,025,049
Biscayne 27	Miami, FL	\$98,461,074	\$102,870,604	\$56,081,889	2Q16	June-19	\$1,449,154
Flats 8300	Washington DC	\$245,000,000	\$244,000,000	\$244,000,000	2Q16	June-19	\$6,304,949
407 1st Ave	New York, NY	\$201,700,000	\$203,000,000	\$203,000,000	4Q16	June-19	\$5,245,511
5250 Park	Miami, FL	\$42,175,876	\$45,253,423	\$28,775,291	2Q17	June-19	\$743,552
The Mason	Pleasanton, CA	\$103,000,000	\$104,000,000	\$104,000,000	3Q17	June-19	\$2,687,355
The Arnold	Austin, TX	\$103,000,000	\$103,000,000	\$103,000,000	4Q18	June-19	\$2,661,515
The Harlo	Boston, MA	\$150,383,594	\$155,000,000	\$155,000,000	1Q19	June-19	\$4,005,193
Sunset Vine Tower II	Hollywood, CA	\$0	\$19,014,857	\$19,014,857	2Q19	Acq in 2Q19	\$491,343
Legacy West - Block H - Apartment	Plano, TX	\$0	\$6,344,160	\$6,344,160	2Q19	Acq in 2Q19	\$163,933
		\$4,512,363,111	\$4,559,010,793	\$3,620,166,865			\$93,544,950
INDUSTRIAL							
Arjons Industrial Park	San Diego CA	\$47,100,000	\$49,100,000	\$49,100,000	2Q04	June-19	\$1,268,742
Gateway Business Park	Dallas TX	\$14,400,000	\$14,500,000	\$14,500,000	2Q04	June-19	\$374,679
Hayward Industrial	Oakland CA	\$217,900,000	\$218,000,000	\$218,000,000	3Q04-3Q07	June-19	\$5,633,110
Oakdale Commerce Center	Seattle - Belle - Eve WA	\$67,200,000	\$69,700,000	\$69,700,000	1Q06	June-19	\$1,801,045
South Bay Industrial	Los Angeles, CA	\$61,600,000	\$62,600,000	\$62,600,000	4Q06	June-19	\$1,617,581
Steeplechase Portfolio	Capitol Heights, MD	\$108,900,000	\$109,100,000	\$109,100,000	1Q11	June-19	\$2,819,139
Airport Trade Center Portfolio	Dallas, TX	\$144,500,000	\$148,100,000	\$148,100,000	1Q11	June-19	\$3,826,897
IE Logistics	San Bernardino, CA	\$158,000,000	\$168,000,000	\$168,000,000	3Q11	June-19	\$4,341,112
Railhead Industrial	Dallas, TX	\$66,800,000	\$66,500,000	\$66,500,000	4Q11	June-19	\$1,718,357
Empire Gateway aka Chino South Logistics Center	Chino, CA	\$302,000,000	\$311,000,000	\$311,000,000	4Q12	June-19	\$8,036,226
SFO Logistics Center	San Francisco, CA	\$164,000,000	\$164,000,000	\$164,000,000	4Q13	June-19	\$4,237,753
Miami Industrial Portfolio	Various, FL	\$86,505,280	\$86,915,006	\$60,201,415	1Q16	June-19	\$1,555,602
Miami Industrial Portfolio - Fedex	Hollywood, FL	\$46,000,000	\$47,400,000	\$33,381,085	1Q16	June-19	\$862,566
OMP Burbank	Los Angeles, CA	\$103,148,873	\$130,620,348	\$130,620,348	2Q16	June-19	\$3,375,224
Pacific Commons	Freemont, CA	\$214,029,380	\$225,613,743	\$195,321,550	1Q17	June-19	\$5,047,100
Gateway 80 Business Park	Fairfield, CA	\$107,300,000	\$107,500,000	\$107,500,000	1Q18	June-19	\$2,777,795
Meridian Distribution Center II	Riverside, CA	\$58,500,000	\$60,300,000	\$60,300,000	3Q18	June-19	\$1,558,149
Bayport North Industrial Building II and III	Riverside, CA	\$60,000,000	\$60,400,000	\$60,400,000	4Q18	June-19	\$1,560,733
		\$2,027,883,533	\$2,099,349,097	\$2,028,324,398			\$52,411,812

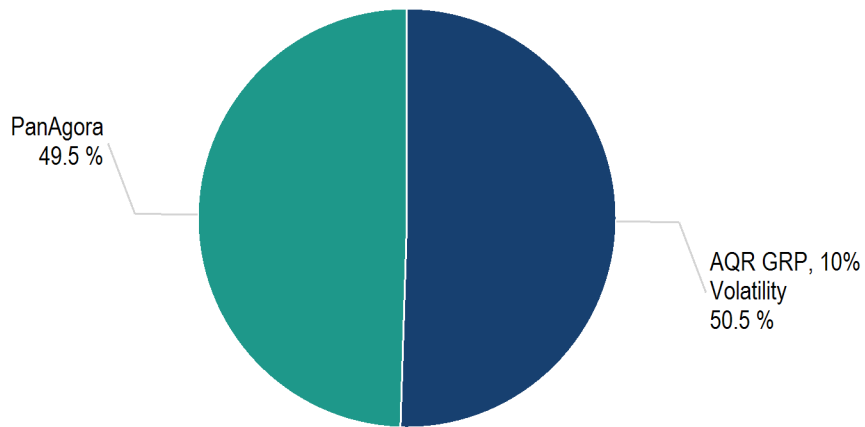
INVESCO Core Real Estate
Real Estate Valuation Analysis

Period Ending: June 30, 2019

OFFICE							
55 Cambridge Parkway	Boston MA - NH	\$362,000,000	\$367,000,000	\$367,000,000	4Q06	June-19	\$9,483,264
1800 Larimer	Denver, CO	\$339,000,000	\$339,000,000	\$339,000,000	1Q11	June-19	\$8,759,745
Hillview Office	San Jose, CA	\$74,000,000	\$70,000,000	\$70,000,000	3Q12	June-19	\$1,808,797
Williams Tower	Houston, TX	\$617,000,000	\$619,000,000	\$433,971,566	1Q13	June-19	\$11,213,806
Westlake Park Place	Westlake Village, CA	\$109,000,000	\$109,000,000	\$109,000,000	4Q13	June-19	\$2,816,555
101 Second	San Francisco, CA	\$464,000,000	\$471,000,000	\$471,000,000	1Q14	June-19	\$12,170,619
Energy Crossing II	Houston, TX	\$104,000,000	\$103,000,000	\$103,000,000	2Q14	June-19	\$2,661,515
1776 Wilson Blvd.	Arlington, VA	\$87,000,000	\$85,400,000	\$85,400,000	3Q14	June-19	\$2,206,732
631 Howard	San Francisco, CA	\$108,000,000	\$108,000,000	\$108,000,000	3Q14	June-19	\$2,790,715
Barton Oaks	Austin, TX	\$98,400,000	\$105,000,000	\$105,000,000	3Q14	June-19	\$2,713,195
Hercules East and South Campus	Los Angeles, CA	\$190,521,411	\$192,435,398	\$192,435,398	3Q14	June-19	\$4,972,522
The Reserve	Playa Vista, CA	\$396,044,682	\$399,017,940	\$399,017,940	1Q15	June-19	\$10,310,606
Fort Point Portfolio	Boston, MA	\$278,006,239	\$287,899,699	\$287,899,699	2Q15	June-19	\$7,439,315
Legacy West Office	Plano, TX	\$143,000,000	\$146,000,000	\$54,147,824	1Q15	June-19	\$1,399,177
1101 Westlake	Seattle, WA	\$146,000,000	\$149,000,000	\$149,000,000	3Q15	June-19	\$3,850,153
PearlWest	Boulder, CO	\$132,000,000	\$132,000,000	\$132,000,000	4Q16	June-19	\$3,410,874
The Mark 302	Santa Monica, CA	\$56,471,735	\$58,170,374	\$58,170,374	1Q18	June-19	\$1,503,120
430 West 15th Street	New York NY	\$164,000,000	\$164,000,000	\$164,000,000	2Q18	June-19	\$4,237,753
Ten Fawcett	Cambridge, MA	\$60,334,000	\$59,752,000	\$30,652,000	3Q18	June-19	\$792,046
Press Blocks	Portland, OR	\$14,311,531	\$19,868,763	\$19,868,763	3Q18	June-19	\$513,408
Union Tower West	Denver, CO	\$69,800,000	\$70,500,000	\$70,500,000	4Q18	June-19	\$1,821,717
Tryon South End	Denver, CO	\$24,434,141	\$33,730,259	\$33,730,259	1Q19	June-19	\$871,588
22 Boston Wharf Rd	Boston, MA	\$176,172,841	\$182,000,000	\$182,000,000	1Q19	June-19	\$4,702,872
Legacy West - Block H - Office	Plano, TX	\$0	\$7,645,526	\$7,645,526	2Q19	Acq 2Q19	\$197,560
		\$4,326,496,579	\$4,390,419,959	\$4,084,439,349			\$105,541,730
RETAIL							
Chandler Pavilion	Phoenix - Mesa AZ	\$22,500,000	\$22,500,000	\$22,500,000	2Q04	June-19	\$581,399
Cityline at Tenley	Washington, D.C.	\$65,000,000	\$64,100,000	\$64,100,000	4Q05	June-19	\$1,656,341
Ridgehaven Shopping Center	Minnetonka, MN	\$42,900,000	\$41,600,000	\$41,600,000	4Q05	June-19	\$1,074,942
The Beacon Garage (units)	San Francisco, CA	\$38,600,000	\$38,800,000	\$38,800,000	1Q06	June-19	\$1,002,590
The Beacon Office (210 King)	San Francisco, CA	\$29,400,000	\$30,400,000	\$30,400,000	1Q15	June-19	\$785,535
Hawthorne Plaza	Overland Park, KS	\$53,275,000	\$53,275,000	\$53,275,000	4Q07	June-19	\$1,376,624
The Loop	Boston MA - NH	\$76,200,000	\$75,000,000	\$75,000,000	1Q08	June-19	\$1,937,997
Westbank Market	Austin, TX	\$64,800,000	\$66,100,000	\$66,100,000	3Q10	June-19	\$1,708,021
910 Lincoln Road	Miami, FL	\$35,700,000	\$30,500,000	\$30,500,000	4Q10	June-19	\$788,119
Lake Pointe Village	Houston, TX	\$88,250,000	\$88,250,000	\$88,250,000	4Q11	June-19	\$2,280,376
Safeway Kapahulu	Hawaii	\$95,200,000	\$95,400,000	\$59,165,166	4Q11	June-19	\$1,528,825
Safeway Burlingame	San Francisco, CA	\$59,100,000	\$58,800,000	\$36,078,086	4Q11	June-19	\$932,256
Shamrock Plaza	Oakland, CA	\$40,800,000	\$40,700,000	\$24,434,383	4Q11	June-19	\$631,383
Pavilions Marketplace	West Hollywood, CA	\$71,100,000	\$71,000,000	\$46,300,953	1Q12	June-19	\$1,196,415
130 Prince	New York, NY	\$214,000,000	\$198,735,712	\$198,735,712	2Q12	June-19	\$5,135,322
Safeway Pleasanton	Pleasanton, CA	\$86,500,000	\$86,600,000	\$86,600,000	4Q12	June-19	\$2,237,740
Liberty Wharf	Boston, MA	\$91,400,000	\$92,000,000	\$92,000,000	4Q12	June-19	\$2,377,276
Shops at Legacy	Plano, TX	\$124,000,000	\$124,000,000	\$124,000,000	3Q13	June-19	\$3,204,154
Pasadena Commons	Pasadena, CA	\$63,400,000	\$63,300,000	\$63,300,000	4Q14	June-19	\$1,635,669
Rush Street Retail	Chicago, IL	\$16,900,000	\$16,900,000	\$16,900,000	4Q14	June-19	\$436,695
Legacy West Retail	Plano, TX	\$280,000,000	\$280,000,000	\$157,530,432	1Q15	June-19	\$4,070,579
131-137 Spring Street	New York, NY	\$263,000,000	\$251,000,000	\$251,000,000	3Q15	June-19	\$6,485,829
Runway at Playa Vista - Retail	Playa Vista, CA	\$128,327,189	\$133,030,000	\$71,253,144	1Q16	June-19	\$1,841,178
139 Spring	New York, NY	\$111,059,200	\$100,151,603	\$100,151,603	1Q16	June-19	\$2,587,913
Clayton Lane	Denver, CO	\$150,907,816	\$150,199,498	\$104,176,643	1Q16	June-19	\$2,691,920
4th & Colorado	Santa Monica, CA	\$13,280,000	\$13,280,000	\$13,280,000	1Q16	June-19	\$343,155
Legacy West - Block H	Plano, TX	\$11,939,122	\$2,277,391	\$2,277,391	4Q17	June-19	\$58,848
Shops at Crystals	Las Vegas, NV	\$302,000,000	\$301,500,000	\$163,899,298	2Q16	June-19	\$4,235,151
		\$2,708,488,327	\$2,662,999,204	\$2,195,207,810			\$56,724,072
Other							
Baranof - Walden Park	San Marcos, TX	\$9,260,960	\$9,724,008	\$9,724,008	1Q18	June-19	\$251,268
Baranof - Ranch Road 620	San Marcos, TX	\$8,705,302	\$9,260,960	\$9,260,960	1Q18	June-19	\$239,303
Baranof - Glenwood Avenue	Raleigh, NC	\$9,260,960	\$9,724,008	\$9,724,008	1Q18	June-19	\$251,268
Baranof - 1-84 & 60th	Vancouver, WA	\$22,226,304	\$23,337,619	\$23,337,619	1Q18	June-19	\$603,043
Baranof - Fishers Landing Vancouver	Vancouver, WA	\$16,299,289	\$17,317,995	\$17,317,995	1Q18	June-19	\$447,496
US Storage - Compton	Compton, CA	\$16,094,385	\$24,999,745	\$18,481,404	4Q17	June-19	\$477,559
The Quad	New York NY	\$82,905,795	\$108,156,649	\$69,809,289	2Q18	June-19	\$1,803,869
Baranof - 622 Capital	Raleigh, NC	\$18,892,358	\$20,466,721	\$20,466,721	3Q18	June-19	\$528,859
51st Street Self Storage	Austin, TX	\$12,100,000	\$12,200,000	\$12,200,000	3Q18	June-19	\$315,247
Campbell Self Storage	Campbell, CA	\$17,800,000	\$17,900,000	\$17,900,000	3Q18	June-19	\$462,535
Baranof - Belmont and 7th	Portland, OR	\$17,873,653	\$19,170,187	\$19,170,187	4Q18	June-19	\$495,357
Boston Lane Self Storage	Austin, TX	\$15,900,000	\$16,100,000	\$16,100,000	4Q18	June-19	\$416,023
US Storage - 4800 Valley	Los Angeles, CA	\$6,016,804	\$5,905,960	\$5,905,960	1Q19	June-19	\$152,610
Newark Self Storage	Newark, CA	\$6,190,200	\$6,722,867	\$6,722,867	1Q19	June-19	\$173,719
Norwood Extra Space	Norwood, MA	\$18,463,974	\$19,900,000	\$19,900,000	1Q19	June-19	\$514,215
		\$277,989,804	\$320,886,718	\$276,021,018			\$7,132,371
Portfolio Total		\$13,853,221,354	\$14,032,665,772	\$12,204,159,440			\$315,354,935



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.2	7.2	5.2	4.2	3.5	2.3	1.5	4.9
25th Percentile	2.9	6.5	4.9	3.6	2.9	1.7	1.2	3.9
Median	2.8	6.2	4.6	3.3	2.1	1.5	1.0	3.5
75th Percentile	2.4	5.0	4.3	2.9	1.9	1.3	0.9	3.2
95th Percentile	0.4	3.2	0.3	2.1	1.7	-0.6	0.3	2.0
# of Portfolios	20	20	19	19	19	17	16	12
● Brown Brothers Harriman	2.6 (69)	5.5 (72)	4.3 (76)	3.4 (48)	2.6 (30)	1.6 (37)	0.9 (77)	-- (--)
▲ BBgBarc US TIPS TR	2.9 (39)	6.2 (58)	4.8 (27)	3.5 (38)	2.1 (51)	1.8 (19)	1.2 (31)	3.6 (46)



	Actual \$	Actual %	Manager Contribution to Excess Return %
AQR GRP, 10% Volatility	\$196,422,334	50.5%	1.0%
PanAgora	\$192,616,764	49.5%	0.9%
Actual vs. Policy Weight Difference			0.0%
Total	\$389,039,098	100.0%	1.9%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Risk Parity	7.1%	7.8%	0.7	-0.3	5.4%
Blended Risk Parity Index	8.6%	6.8%	1.1	--	0.0%
AQR GRP, 10% Volatility	8.3%	7.9%	0.9	-0.1	5.0%
Blended Risk Parity Index	8.6%	6.8%	1.1	--	0.0%
PanAgora	6.2%	8.1%	0.6	-0.4	6.2%
Blended Risk Parity Index	8.6%	6.8%	1.1	--	0.0%

Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Risk Parity	5.1%	8.4%	0.5	-0.3	6.1%
Blended Risk Parity Index	7.0%	7.0%	0.9	--	0.0%
AQR GRP, 10% Volatility	3.8%	8.5%	0.3	-0.5	5.9%
Blended Risk Parity Index	7.0%	7.0%	0.9	--	0.0%

Total Fund
Performance Summary (Gross of Fees)

Period Ending: June 30, 2019

	3 Mo (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Total Fund	3.0	10.3	5.6	6.2	8.4	5.9	9.6
<i>Policy Index</i>	3.9	10.6	6.7	7.3	9.0	6.1	9.7
Total Fund ex Overlay	2.9	10.0	5.3	6.1	8.3	5.8	9.5
<i>Policy Index</i>	3.9	10.6	6.7	7.3	9.0	6.1	9.7
Public Equity	3.7	16.2	5.1	8.1	11.6	7.1	11.7
<i>Blended Public Equity Index</i>	3.4	16.2	5.0	8.3	12.0	6.9	11.8
US Equity	3.9	17.8	7.7	11.4	13.7	9.8	14.4
<i>Blended US Equity Index</i>	4.1	18.7	9.0	11.8	14.1	10.0	14.7
<i>Russell 3000</i>	4.1	18.7	9.0	11.8	14.0	10.2	14.7
Large Cap Equity	4.3	18.3	10.1	12.7	15.0	11.1	14.7
<i>Russell 1000</i>	4.2	18.8	10.0	12.3	14.1	10.5	14.8
Acadian US MGD V	4.7	15.9	--	--	--	--	--
BlackRock Russell 1000	4.3	18.9	10.1	12.3	--	--	--
DE Shaw	2.7	15.8	6.7	12.7	15.2	12.0	--
PanAgora Defuseq	5.5	21.3	--	--	--	--	--
<i>Russell 1000</i>	4.2	18.8	10.0	12.3	14.1	10.5	14.8
Small Cap Equity	0.4	13.0	-6.9	3.7	9.6	4.7	13.4
<i>Russell 2000</i>	2.1	17.0	-3.3	6.6	12.3	7.1	13.4
QMA US Small Cap	0.4	13.0	-6.9	3.7	--	--	--
<i>Russell 2000</i>	2.1	17.0	-3.3	6.6	12.3	7.1	13.4
International Equity	3.4	14.4	2.0	4.3	8.9	3.1	6.8
<i>Blended International Equity Index</i>	2.6	13.4	0.4	4.1	9.4	2.6	7.0
<i>MSCI EAFE Gross</i>	4.0	14.5	1.6	4.4	9.6	2.7	7.4
Developed Markets	3.8	15.1	1.6	4.3	9.0	3.2	7.1
<i>MSCI ACWI ex USA Gross</i>	3.2	14.0	1.8	4.8	9.9	2.6	7.0
Baillie Gifford	6.0	20.2	0.8	5.4	10.3	5.0	--
<i>MSCI ACWI ex US</i>	3.2	14.0	1.8	4.8	9.9	2.6	--
<i>MSCI ACWI ex US Growth</i>	4.5	17.5	3.0	6.6	10.2	4.4	--

Total Fund
Performance Summary (Gross of Fees)

Period Ending: June 30, 2019

	3 Mo (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
BlackRock EAFE Index	3.9	14.4	1.5	4.3	9.6	2.6	--
<i>MSCI EAFE</i>	3.7	14.0	1.1	3.9	9.1	2.2	6.9
<i>MSCI EAFE Gross</i>	4.0	14.5	1.6	4.4	9.6	2.7	7.4
Mondrian	1.5	10.8	2.6	3.4	7.5	1.7	6.6
<i>MSCI ACWI ex USA Value Gross</i>	1.9	10.5	0.6	2.9	9.6	0.9	6.0
<i>MSCI ACWI ex USA Gross</i>	3.2	14.0	1.8	4.8	9.9	2.6	7.0
Emerging Markets	2.1	10.0	3.5	3.5	7.9	1.1	--
<i>MSCI Emerging Markets Gross</i>	0.7	10.8	1.6	5.0	11.1	2.9	6.2
Parametric Core	2.1	10.0	3.5	3.5	7.9	--	--
<i>MSCI Emerging Markets Gross</i>	0.7	10.8	1.6	5.0	11.1	2.9	6.2
Parametric Currency Overlay	-3.0	10.7	--	--	--	--	--
Fixed Income	2.6	5.8	6.8	3.9	5.1	3.8	6.4
<i>Blended Fixed Income Index</i>	3.0	7.4	8.5	4.1	3.5	3.3	4.2
Core Fixed	2.7	5.5	7.1	3.5	3.4	3.4	5.6
<i>BBgBarc US Aggregate TR</i>	3.1	6.1	7.9	3.7	2.3	2.9	3.9
BlackRock Intermediate Govt	2.4	4.0	6.3	2.8	--	--	--
<i>BBgBarc US Govt Int TR</i>	2.3	4.0	6.2	2.7	1.3	1.9	2.4
FIAM Bond	3.2	6.7	8.1	4.1	3.1	3.5	5.2
<i>BBgBarc US Aggregate TR</i>	3.1	6.1	7.9	3.7	2.3	2.9	3.9
Western TRU	2.3	5.3	6.3	3.1	5.3	--	--
<i>3-Month Libor Total Return USD</i>	0.6	1.3	2.6	2.2	1.8	1.2	0.8
<i>BBgBarc US Aggregate TR</i>	3.1	6.1	7.9	3.7	2.3	2.9	3.9
Opportunistic Credit	2.3	6.4	6.3	5.2	8.5	5.9	--
<i>BBgBarc BA Intermediate HY</i>	2.9	10.1	9.6	4.9	6.3	4.8	--
Angelo Gordon Opportunistic	5.4	6.4	12.0	18.2	17.8	10.3	--
Angelo Gordon STAR	6.2	12.0	22.3	21.2	20.2	14.2	--
<i>BBgBarc US Aggregate TR</i>	3.1	6.1	7.9	3.7	2.3	2.9	3.9

Total Fund
Performance Summary (Gross of Fees)

Period Ending: June 30, 2019

	3 Mo (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Beach Point Select	3.0	7.6	5.2	6.2	8.8	--	--
<i>BBgBarc BA Intermediate HY</i>	2.9	10.1	9.6	4.9	6.3	4.8	--
Brigade Capital	1.9	6.3	2.6	3.5	7.7	3.8	--
<i>BBgBarc BA Intermediate HY</i>	2.9	10.1	9.6	4.9	6.3	4.8	--
<i>50% Barclays HY/ 50% Bank Loan</i>	2.0	7.7	5.8	4.7	6.5	4.3	--
PIMCO Diversified	3.6	9.6	10.0	--	--	--	--
<i>Blended PIMCO Diversified Index</i>	3.5	9.7	9.8	4.9	5.4	4.6	7.4
<i>BBgBarc BA Intermediate HY</i>	2.9	10.1	9.6	4.9	6.3	4.8	--
Franklin Templeton	1.5	3.2	5.7	1.6	4.6	1.5	--
<i>BBgBarc Multiverse TR</i>	3.3	5.8	6.0	3.7	1.9	1.3	3.1
Private Credit	0.7	3.0	6.6	6.7	--	--	--
<i>Cliffwater Direct Lending Index</i>	2.8	5.6	9.1	9.0	9.5	8.6	10.9
PIMCO Private Income	--	--	--	--	--	--	--
<i>BBgBarc BA Intermediate HY</i>	2.9	10.1	9.6	4.9	6.3	4.8	--
<i>Cliffwater Direct Lending Index</i>	2.8	5.6	9.1	9.0	9.5	8.6	10.9
TCP Direct Lending VIII	1.7	4.1	8.4	7.3	--	--	--
White Oak Yield	0.0	2.2	5.3	5.3	--	--	--
<i>Cliffwater Direct Lending Index</i>	2.8	5.6	9.1	9.0	9.5	8.6	10.9
Risk Parity	5.6	17.5	10.8	8.7	7.1	5.1	--
<i>Blended Risk Parity Index</i>	3.7	12.6	7.3	7.3	8.6	7.0	--
AQR GRP, 10% Volatility	5.7	17.5	11.4	9.5	8.3	3.8	--
PanAgora	5.4	17.5	10.3	8.0	6.2	--	--
<i>Blended Risk Parity Index</i>	3.7	12.6	7.3	7.3	8.6	7.0	--
<i>S&P Risk Parity 10% Target Volatility Index TR USD</i>	4.3	12.7	8.3	7.1	5.4	3.5	6.6
Alternatives	2.0	1.6	4.6	3.6	7.9	6.1	--
<i>Blended Alternatives Index</i>	8.0	1.6	9.5	9.7	11.2	6.7	--
Private Equity	5.6	4.3	14.6	11.9	17.4	16.1	--
<i>Blended Private Equity Index</i>	14.6	-0.5	11.8	12.7	15.5	12.3	17.2

Total Fund
Performance Summary (Gross of Fees)

Period Ending: June 30, 2019

	3 Mo (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Hedge Fund/Absolute Return	-2.1	-1.4	-5.9	-4.7	-1.8	2.2	--
<i>Libor 1 month +4%</i>	1.6	3.2	6.4	6.0	5.6	5.1	--
AQR DELTA XN	-4.4	-6.3	-12.1	-8.5	-4.4	0.6	--
Aberdeen Standard GARS	1.4	6.1	4.3	1.1	2.0	--	--
<i>Libor 1 month +4%</i>	1.6	3.2	6.4	6.0	5.6	5.1	--
Inflation Hedge	1.3	5.7	2.8	4.9	5.3	--	--
<i>Blended Inflation Hedge Index</i>	2.8	6.4	4.8	6.0	5.4	--	--
Real Estate	1.3	2.6	7.5	7.9	8.1	10.4	10.0
<i>NCREIF ODCE</i>	1.0	2.4	6.4	7.4	7.6	9.8	9.9
Invesco	1.0	2.1	7.0	7.7	8.0	10.2	9.9
<i>NCREIF ODCE</i>	1.0	2.4	6.4	7.4	7.6	9.8	9.9
Invesco US Val IV	1.2	5.4	13.2	13.0	12.1	--	--
<i>NCREIF ODCE</i>	1.0	2.4	6.4	7.4	7.6	9.8	9.9
<i>NCREIF CEVA 1Q Lag - NET</i>	3.0	6.0	12.3	12.0	11.0	13.5	--
Invesco US Val V	5.7	--	--	--	--	--	--
<i>NCREIF ODCE</i>	1.0	2.4	6.4	7.4	7.6	9.8	9.9
<i>NCREIF CEVA 1Q Lag - NET</i>	3.0	6.0	12.3	12.0	11.0	13.5	--
PGIM RE US Debt Fund	1.6	3.4	7.5	--	--	--	--
<i>NCREIF ODCE</i>	1.0	2.4	6.4	7.4	7.6	9.8	9.9
Private Real Asset	1.7	-10.3	-6.0	-5.9	-3.1	--	--
<i>Blended Private Real Asset Index</i>	13.0	3.2	7.6	4.7	4.8	5.0	--
<i>Blended Secondary CA Private RA Index</i>	2.6	-0.1	4.3	7.5	10.2	--	--
Public Real Assets	1.1	13.5	-0.7	4.7	--	--	--
<i>Blended Public Real Asset Index</i>	1.7	12.4	1.1	5.5	6.0	5.7	--
Cushing MLP Alpha TR	-1.1	16.6	--	--	--	--	--
<i>50% BBgBarc US TIPS/ 50% Blended PRA Index</i>	2.3	9.4	3.1	--	--	--	--
<i>Alerian MLP TR USD</i>	0.1	17.0	3.1	-0.8	-0.4	-7.2	8.2
SSgA Custom Real Asset	1.8	12.6	1.3	5.7	--	--	--
<i>SSgA Custom Real Asset Index</i>	1.7	12.4	1.1	5.5	--	--	--

Total Fund
Performance Summary (Gross of Fees)

Period Ending: June 30, 2019

	3 Mo (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
TIPS	2.6	5.6	4.5	3.5	2.8	1.7	--
<i>BBgBarc US TIPS TR</i>	2.9	6.2	4.8	3.5	2.1	1.8	3.6
Brown Brothers Harriman	2.6	5.6	4.5	3.5	2.8	1.7	--
<i>BBgBarc US TIPS TR</i>	2.9	6.2	4.8	3.5	2.1	1.8	3.6
Cash	0.4	0.6	1.3	1.1	1.0	1.0	0.8
<i>91 Day T-Bills</i>	0.6	1.2	2.3	1.8	1.4	0.9	0.5
General Account	1.1	2.0	5.3	4.0	3.0	2.4	1.3
Treasury & LAIF	0.9	1.6	3.7	3.4	2.5	1.9	1.4
<i>91 Day T-Bills</i>	0.6	1.2	2.3	1.8	1.4	0.9	0.5

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 begin 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.

INVESCO Realty Advisors – INVESCO US Val V

Invesco has provided SamCERA with Core Real Estate exposure since 2004 through the Invesco Core Equity Fund and through the Invesco US Value IV Fund since December 2015. The Invesco real estate team manages around \$62B in assets with investments and offices around the globe. Invesco Value Fund V will be similar to the Value Add IV and 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).

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).

PIMCO Private Income Fund

PIMCO Private Income Fund provides an attractive total return oriented global credit exposure utilizing both top-down sector relative value and bottom up security selection. The strategy invests across private residential, commercial, corporate and specialty finance 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.

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: June 30, 2019

Total Plan Policy Index	As of																				
	4/1/19	1/1/19	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%	8.0%	10.0%	10.0%
60/40 MSCI World/BBgBarc Global Aggregate (RP)	8.0%	8.0%	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%
60/40 Russell 3000/BBgBarc US Aggregate (RP)	0.0%	0.0%	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%
BBgBarc Aggregate	14.0%	14.0%	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%
BBgBarc BA Intermediate HY	7.0%	7.0%	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%	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%	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%	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%	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%	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%	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%	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%	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%	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%	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%	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 IMI 100% Hedged (Net)	5.7%	3.8%	1.9%	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%	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)	13.3%	15.2%	17.1%	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%	0.0%	0.0%	20.0%	20.0%	20.0%
NCREIF ODCE	8.0%	8.0%	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%	0.0%	0.0%	6.0%	6.0%	0.0%	0.0%	0.0%
Russell 1000	0.0%	0.0%	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%	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%	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%	22.0%	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%	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%	6.0%	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%	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%	100.0%

Policy Index and Benchmark History

Period Ending: June 30, 2019

Public Equity Benchmark	As of:														
	4/1/19	1/1/19	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%	0.0%	0.0%	34.0%	31.3%	23.1%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	13.9%	9.3%	4.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI	0.0%	0.0%	0.0%	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 ACWI ex US IMI (Net)	32.4%	37.0%	41.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
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%	32.3%	33.3%	33.3%
Russell 1000	0.0%	0.0%	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%	0.0%	0.0%	8.0%	8.4%	0.0%
Russell 2000	0.0%	0.0%	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%	53.7%	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%	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%	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:						
	4/1/19	1/1/19	10/1/18	10/1/17	1/1/14	6/1/00	1/1/96
MSCI ACWI ex US	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	30.0%	20.0%	10.0%	0.0%	0.0%	100.0%	0.0%
MSCI ACWI ex US IMI	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
MSCI ACWI ex US IMI (Net)	70.0%	80.0%	90.0%	100.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	100.0%	100.0%	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%

Policy Index and Benchmark History

Period Ending: June 30, 2019

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 TR	33.34%	0.00%
S&P Global Large-MidCap Commodity and Resources	33.33%	0.00%
S&P Global Infrastructure	33.33%	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%

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%	

SSgA Custom Real Asset	As of:	
	10/1/16	
Bloomberg Roll Select Commodity TR	33.34%	
S&P Global Large-MidCap Commodity and Resources	33.33%	
S&P Global Infrastructure	33.33%	
	100.0%	

Fee Schedule

Period Ending: June 30, 2019

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

Parametric Overlay

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	

Parametric Currency Overlay

First \$250 million:	0.05% per annum
Thereafter:	0.03% per annum

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	✓	✗	✓
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	✗	✗	✗
PIMCO Diversified	Blended PIMCO Diversified Index	--	--	--
Franklin Templeton	BBgBarc Multiverse TR	--	--	--
PIMCO Private Income	BBgBarc BA Intermediate HY	--	--	--
TCP Direct Lending VIII	Cliffwater Direct Lending Index	--	--	--
White Oak Yield	Cliffwater Direct Lending Index	--	--	--
AQR DELTA XN	Libor 1 month +4%	✗	✗	✗
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 Compliance (Gross)

Period Ending: June 30, 2019

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	--	--	--
PIMCO Private Income	BBgBarc BA Intermediate HY	--	--	--
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: June 30, 2019

	Apr	May	Jun	2nd Qtr. 2019	Difference	1st Qtr. 2019	Difference	4th Qtr. 2018	Difference	3rd Qtr. 2018	Difference	2nd Qtr. 2018	Difference
Verus	2.50%	-4.31%	6.76%	4.71%		10.70%		-13.79%		7.41%		3.59%	
Acadian US MGD V	2.50%	-4.31%	6.76%	4.71%	0.00%	10.69%	0.01%	-13.79%	0.00%	7.41%	0.00%	3.59%	0.00%
Russell 1000 Index	4.04%	-6.37%	7.02%	4.25%		14.00%		-13.82%		7.42%		3.57%	
Verus	4.04%	-6.37%	7.02%	4.25%		14.02%		-13.79%		7.41%		3.59%	
BlackRock Russell 1000	4.04%	-6.37%	7.02%	4.25%	0.00%	14.02%	0.00%	-13.79%	0.00%	7.41%	0.00%	3.59%	0.00%
Russell 1000 Index	4.04%	-6.37%	7.02%	4.25%		14.00%		-13.82%		7.42%		3.57%	
Verus	3.84%	-7.12%	6.54%	2.75%		12.68%		-14.04%		7.23%		4.31%	
D.E. Shaw	3.84%	-7.12%	6.54%	2.75%	0.00%	12.69%	-0.01%	-14.04%	0.00%	7.24%	-0.01%	4.32%	-0.01%
Russell 1000 Index	4.04%	-6.37%	7.02%	4.25%		14.00%		-13.82%		7.42%		3.57%	
Verus	2.64%	-2.60%	5.54%	5.51%		15.01%		-14.04%		7.23%		4.31%	
PanAgora Defuseq	2.64%	-2.56%	5.54%	5.55%	-0.04%	15.01%	0.00%	-14.04%	0.00%	7.24%	-0.01%	4.32%	-0.01%
Russell 1000 Index	4.04%	-6.37%	7.02%	4.25%		14.00%		-13.82%		7.42%		3.57%	
Verus	2.69%	-9.38%	7.85%	0.37%		12.59%		-20.52%		3.70%		6.98%	
QMA US Small Cap	2.69%	-9.38%	7.86%	0.38%	-0.01%	12.59%	0.00%	-20.52%	0.00%	3.70%	0.00%	6.98%	0.00%
Russell 2000 Index	3.40%	-7.78%	7.07%	2.10%		14.58%		-20.20%		3.58%		7.75%	
Verus	6.17%	-5.31%	5.41%	5.96%		13.47%		-15.28%		-1.31%		0.36%	
Baillie Gifford	6.17%	-5.35%	5.37%	5.89%	0.08%	13.41%	0.06%	-15.28%	0.00%	-1.29%	-0.01%	0.35%	0.00%
MSCI ACWI ex US	2.72%	-5.26%	6.07%	3.22%		10.44%		-11.41%		0.80%		-2.39%	
MSCI ACWI ex US Growth	3.23%	-5.06%	6.68%	4.55%		12.42%		-12.16%		-0.20%		-1.23%	
Verus	2.92%	-4.72%	5.97%	3.92%		10.08%		-12.52%		1.40%		-0.83%	
BlackRock EAFE Equity	2.92%	-4.72%	5.97%	3.92%	0.00%	10.08%	0.00%	-12.52%	0.00%	1.40%	0.00%	-0.83%	0.00%
MSCI EAFE (Net)	2.81%	-4.80%	5.93%	3.68%		9.98%		-12.54%		1.35%		-1.24%	
MSCI EAFE (Gross)	2.91%	-4.66%	5.97%	3.97%		10.13%		-12.50%		1.42%		-0.97%	
Verus	2.63%	-6.59%	5.85%	1.47%		9.19%		-8.82%		1.54%		-3.43%	
Mondrian	2.63%	-6.58%	5.85%	1.48%	-0.01%	9.18%	0.01%	-8.79%	-0.03%	1.55%	-0.01%	-3.43%	0.00%
MSCI ACWI -ex US Value Index	2.19%	-5.47%	5.44%	1.86%		8.46%		-10.63%		1.85%		-3.59%	
MSCI ACWI -ex US	2.72%	-5.26%	6.07%	3.22%		10.44%		-11.41%		0.80%		-2.39%	
Verus	1.48%	-4.20%	5.05%	2.13%		7.73%		-5.81%		-0.11%		-9.47%	
Parametric Core	1.50%	-4.19%	5.07%	2.19%	-0.06%	7.80%	-0.07%	-5.77%	-0.04%	-0.06%	-0.05%	-9.42%	-0.05%
MSCI EM Market Index	2.12%	-7.22%	6.32%	0.74%		9.97%		-7.40%		-0.95%		-7.86%	
Verus	0.05%	1.48%	0.83%	2.37%		1.63%		2.24%		-0.07%		0.12%	
BlackRock Intermediate Govt	0.05%	1.48%	0.83%	2.37%	0.00%	1.63%	0.00%	2.24%	0.00%	-0.07%	0.00%	0.12%	0.00%
BBgBarc US Govt Int Index	0.05%	1.46%	0.82%	2.34%		1.58%		2.22%		-0.11%		0.06%	

Manager Performance Comparison (Gross of Fees)

Period Ending: June 30, 2019

	Apr	May	Jun	2nd_Qtr. 2019	Difference	1st_Qtr. 2019	Difference	4th_Qtr. 2018	Difference	3rd_Qtr. 2018	Difference	2nd_Qtr. 2018	Difference
Verus	0.27%	1.59%	1.27%	3.16%		3.47%		1.07%		0.15%		0.02%	
FIAM Bond	0.27%	1.59%	1.27%	3.16%	0.00%	3.47%	0.00%	1.07%	0.00%	0.15%	0.00%	0.02%	0.00%
BBgBarc US Aggregate Index	0.03%	1.78%	1.26%	3.08%		2.94%		1.64%		0.02%		-0.16%	
Verus	0.57%	0.29%	1.44%	2.31%		2.95%		0.74%		0.17%		-2.90%	
Western TRU	0.57%	0.29%	1.44%	2.31%	0.00%	2.95%	0.00%	0.74%	0.00%	0.17%	0.00%	-2.90%	0.00%
3-Month Libor Total Return USD Index	0.21%	0.22%	0.19%	0.62%		0.67%		0.68%		0.60%		0.59%	
BBgBarc US Aggregate Index	0.03%	1.78%	1.26%	3.08%		2.94%		1.64%		0.02%		-0.16%	
Verus (Net)				5.43%		0.89%		0.45%		5.35%		9.49%	
Angelo Gordon Opportunistic				5.43%	0.00%	0.89%	0.00%	0.45%	0.00%	5.35%	0.00%	9.49%	0.00%
BBgBarc US Aggregate Index				3.08%		2.94%		1.64%		0.02%		-0.16%	
Verus (Net)				6.24%		5.44%		2.51%		6.59%		4.83%	
Angelo Gordon STAR Fund (Net)				6.24%	0.00%	5.44%	0.00%	2.51%	0.00%	6.59%	0.00%	4.83%	0.00%
BBgBarc US Aggregate Index				3.08%		2.94%		1.64%		0.02%		-0.16%	
Verus	1.60%	-0.10%	1.51%	3.03%		4.44%		-3.98%		1.80%		2.01%	
Beach Point Select (Net)	1.60%	-0.10%	1.51%	3.03%	0.00%	4.44%	0.00%	-3.98%	0.00%	1.80%	0.00%	2.01%	0.00%
BBgBarc BA Intermediate HY	1.02%	-0.70%	2.55%	2.87%		7.00%		-2.67%		2.27%		0.04%	
Verus	2.20%	-0.93%	0.66%	1.92%		4.26%		-5.56%		2.28%		1.53%	
Brigade Capital (Net)	2.20%	-0.93%	0.66%	1.92%	0.00%	4.18%	0.08%	-5.55%	-0.01%	2.21%	0.07%	1.56%	-0.03%
BBgBarc BA Intermediate HY	1.02%	-0.70%	2.55%	2.87%		7.00%		-2.67%		2.27%		0.04%	
50% BBgBarc HY/ 50% Bank Loan	1.50%	-0.71%	1.25%	2.05%		5.51%		-3.81%		2.17%		0.91%	
Verus	0.64%	0.30%	2.62%	3.59%		5.82%		-1.26%		1.66%		-0.73%	
PIMCO Diversified (Net)	0.64%	0.30%	2.62%	3.59%	0.00%	5.81%	0.01%	-1.26%	0.00%	1.66%	0.00%	-0.73%	0.00%
Blended PIMCO Diversified Index	0.67%	0.25%	2.54%	3.48%		5.97%		-1.47%		1.65%		-1.13%	
BBgBarc BA Intermediate HY	1.02%	-0.70%	2.55%	2.87%		7.00%		-2.67%		2.27%		0.04%	
Verus	1.39%	-1.57%	1.66%	1.45%		1.72%		2.14%		0.32%		-4.32%	
Franklin Templeton Investments	1.39%	-1.57%	1.66%	1.45%	0.00%	1.72%	0.00%	2.14%	0.00%	0.32%	0.00%	-4.32%	0.00%
BBgBarc Multiverse Index	-0.25%	1.25%	2.29%	3.31%		2.40%		1.02%		0.00%		-2.83%	
Verus				1.75%		2.41%		1.75%		3.41%		2.15%	
TCP Direct Lending VIII				1.75%	0.00%	2.41%	0.00%	1.75%	0.00%	3.41%	0.00%	2.15%	0.00%
Cliffwater Direct Lending Index				2.78%		0.84%		2.38%		2.44%		2.18%	
Verus				0.00%		0.00%		2.03%		0.00%		0.00%	
White Oak Yield				0.00%	0.00%	0.00%	0.00%	2.03%	0.00%	0.00%	0.00%	0.00%	0.00%
Cliffwater Direct Lending Index				2.78%		0.84%		2.38%		2.44%		2.18%	

Manager Performance Comparison (Gross of Fees)

Period Ending: June 30, 2019

	Apr	May	Jun	2nd Qtr. 2019	Difference	1st Qtr. 2019	Difference	4th Qtr. 2018	Difference	3rd Qtr. 2018	Difference	2nd Qtr. 2018	Difference
Verus	1.25%	-1.88%	6.40%	5.70%		11.14%		-5.44%		0.30%		-0.45%	
AQR GRP, 10% Volatility (Net)	1.25%	-1.88%	6.40%	5.70%	0.00%	11.14%	0.00%	-5.44%	0.00%	0.30%	0.00%	-0.45%	0.00%
60% R3000/ 40% BBgBarc Agg	2.15%	-2.89%	4.51%	3.68%		8.65%		-7.49%		2.95%		1.12%	
S&P Risk Parity 10% Target Volatility TR	0.91%	-0.59%	4.01%	4.34%		7.98%							
Verus	0.11%	0.29%	5.02%	5.44%		11.43%		-4.10%		-2.11%		0.02%	
PanAgora (Net)	0.11%	0.29%	5.02%	5.44%	0.00%	11.43%	0.00%	-4.10%	0.00%	-2.11%	0.00%	0.02%	0.00%
60% R3000/ 40% BBgBarc Agg	2.15%	-2.89%	4.51%	3.68%		8.65%		-7.49%		2.95%		1.12%	
S&P Risk Parity 10% Target Volatility TR	0.91%	-0.59%	4.01%	4.34%		7.98%		-8.05%		4.25%		2.26%	
Verus	-0.36%	-3.42%	-0.69%	-4.43%		-1.95%		-4.31%		-1.94%		-6.09%	
AQR DELTA XN (Net)	-0.36%	-3.42%	-0.69%	-4.43%	0.00%	-1.97%	0.02%	-4.31%	0.00%	-1.94%	0.00%	-6.09%	0.00%
Libor + 4%	0.54%	0.54%	0.53%	1.62%		1.52%		1.59%		1.55%		1.51%	
Verus	0.34%	-0.96%	2.03%	1.39%		4.63%		-2.24%		0.54%		-2.18%	
Aberdeen Standard GARS (Net)	0.34%	-0.96%	2.03%	1.39%	0.00%	4.63%	0.00%	-2.25%	0.01%	0.54%	0.00%	-2.18%	0.00%
Libor + 4%	0.54%	0.54%	0.53%	1.62%		1.52%		1.59%		1.55%		1.51%	
Verus				1.04%		1.09%		2.16%		2.56%		1.86%	
INVESCO Real Estate				1.04%	0.00%	1.11%	-0.02%	2.16%	0.00%	2.57%	-0.01%	1.85%	0.01%
NCREIF NFI ODCE Index				0.99%		1.42%		1.76%		2.09%		2.05%	
Verus				1.20%		4.17%		4.25%		2.98%		1.97%	
Invesco US Val IV				1.20%	0.00%	4.17%	0.00%	4.25%	0.00%	2.98%	0.00%	1.97%	0.00%
NCREIF NFI ODCE Index				0.99%		1.42%		1.76%		2.09%		2.05%	
NCREIF CEVA 1Q Lag - NET				2.95%		2.95%		2.95%		2.95%		2.13%	
Verus				5.72%									
Invesco US Val V				5.72%	0.00%								
NCREIF NFI ODCE Index				0.99%									
NCREIF CEVA 1Q Lag - NET				2.95%									
Verus (net)				1.45%		1.61%		1.64%		2.12%		1.25%	
PGIM RE US Debt Fund (net)				1.45%	0.00%	1.61%	0.00%	1.64%	0.00%	1.95%	0.17%	1.25%	0.00%
NCREIF NFI ODCE Index				0.99%		1.42%		1.76%		2.09%		2.05%	
Verus	-2.03%	-2.54%	3.61%	-1.06%		17.88%		-17.65%					
Cushing MLP Alpha TR	-2.03%	-2.54%	3.61%	-1.06%	0.00%	17.88%	0.00%	-17.65%					
50% BBgBarc US TIPS/ 50% Blended PRA	0.17%	-1.23%	3.28%	2.17%		6.62%		-4.98%					
Alerian MLP TR USD	-1.33%	-1.14%	2.64%	0.12%		16.82%		-17.30%					
Verus	0.49%	1.17%	0.96%	2.63%		2.86%		-0.69%		-0.33%		0.78%	
Brown Brothers Harriman	0.49%	1.17%	0.96%	2.63%	0.00%	2.85%	0.01%	-0.67%	-0.02%	-0.33%	0.00%	0.78%	0.00%
BBgBarc U.S Tips	0.33%	1.65%	0.86%	2.87%		3.19%		-0.42%		-0.82%		0.77%	

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
6/30/2019	17.991	11.416	5.265	3.039	0
3/31/2019	17.991	11.416	5.265	3.039	0
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
6/30/2019	17.274	8.637	6.203	3.1015	0
3/31/2019	16.204	8.102	5.928	2.964	0
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

Number in billion 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

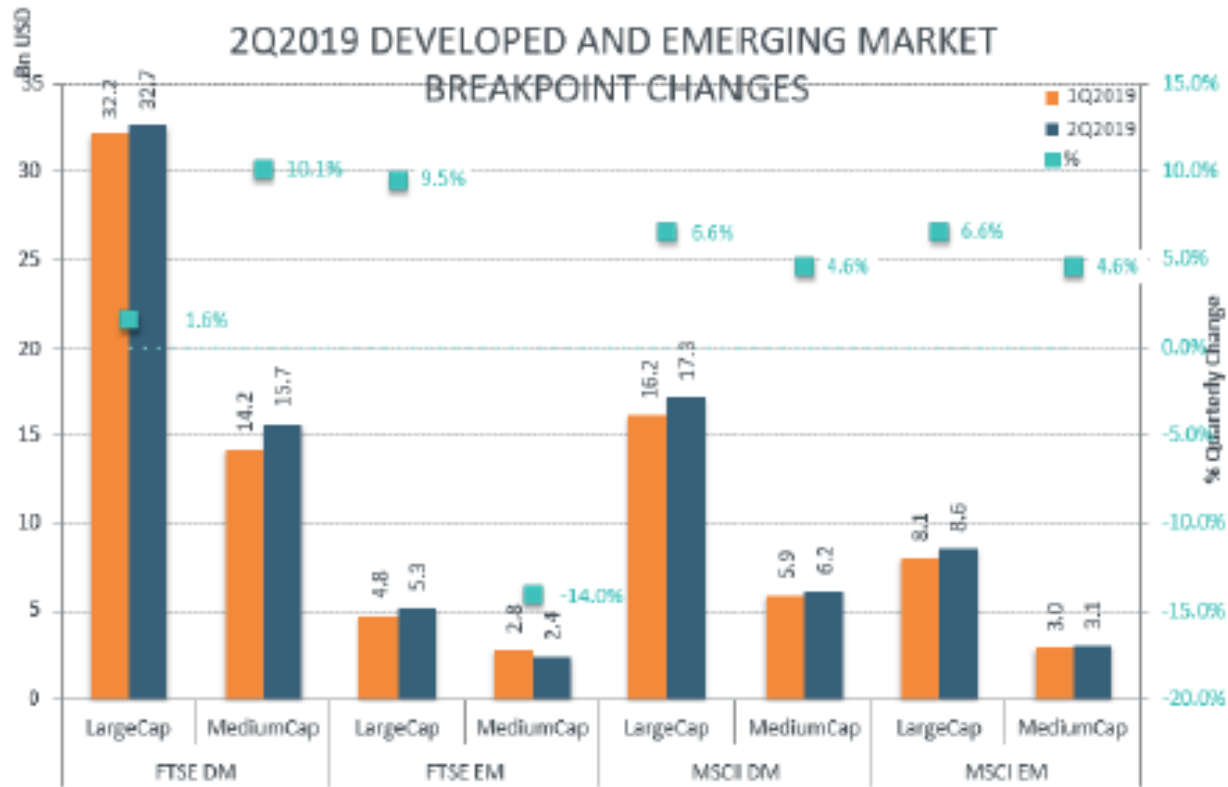
After the breakpoints are determined by the ranges above, new members are assigned on the basis of the breakpoints and existing members are reviewed to determine if they fall within a cumulative 5% market cap range around the new market capitalization breakpoints. If an existing securities market cap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

Market Capitalization Breakpoints

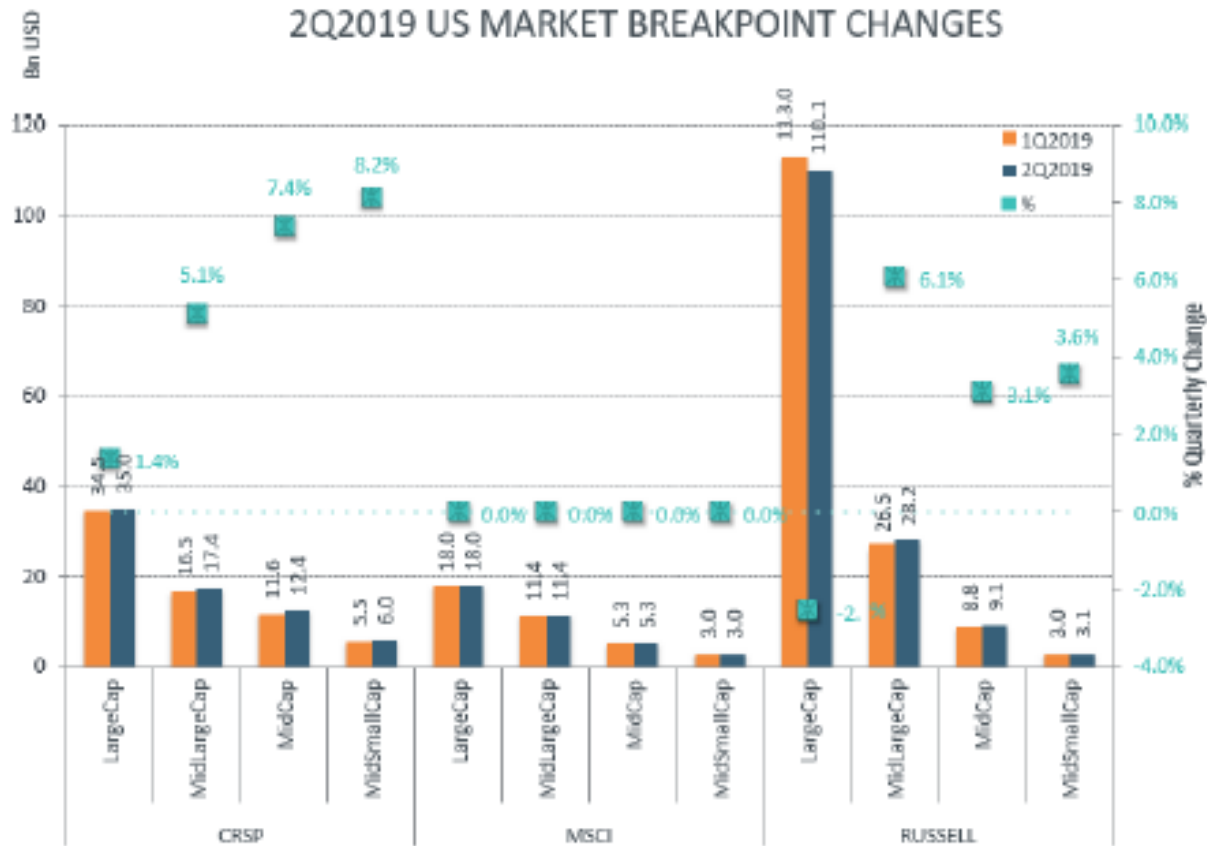
Period Ending: June 30, 2019

As Of	Large Cap	Medium Large Cap	Medium Cap	Medium Small Cap	Small Cap
6/30/2019	110.136	28.151	9.061	3.057	0
3/31/2019	113.008	26.539	8.787	2.951	0
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



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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Annual outlooks

REAL ASSETS OUTLOOK

Inflation fears have been subdued in the market over the past year. Both core CPI and headline CPI have been declining over the past nine months and came in at 2.0% and 1.9%, respectively, in March. Over the past twelve months, core CPI has ranged between 2.0 and 2.3%, near the Fed's inflation target. At this stage of the market cycle, we view the risk of deflation from an economic slowdown to be of greater concern than unanticipated inflation.

Topics of interest

A PRACTICAL UNDERSTANDING OF LDI

For corporate pension plans, LDI can be an effective way to reduce the range of outcomes in funded status, which has particular appeal given the asymmetric trade-off associated with a declining funded status relative to a stronger funded status.

Our Topics of Interest paper aims to provide a practical introduction into these issues to assist plan sponsors in evaluating whether LDI makes sense for their organization.

LDI GLIDE PATH CREATION

Our latest Topics of Interest paper on LDI glide path creation seeks to explain the methodology and considerations of building a glide path for a pension plan. It addresses the following points:

- How much of the plan's allocation should be deployed in an LDI strategy?
- How do we align a glide path with the plan's objectives and financial constraints?
- How does the risk of our glide path differ based on changing objectives and financial constraints?

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2nd quarter summary

THE ECONOMIC CLIMATE

- U.S. real GDP expanded 3.2% YoY in Q1 (3.1% quarterly annualized rate). Year-over-year growth was the strongest since the second quarter of 2015. The U.S. Congressional Budget Office expects the U.S. economy to slow to a 2.1% pace in 2020, near the growth rate of other developed markets. [p. 7](#)
- Effective May 10th, U.S. tariff rates on \$200 billion in Chinese imports were hiked from 10% to 25%, and the Chinese responded with commensurate tariff rate hikes. In June, Presidents Trump and Xi met on the sidelines of the G20 summit in Osaka. The meeting yielded a “trade truce” in which both countries agreed to pause any additional tariffs. [p. 14](#)

PORTFOLIO IMPACTS

- Equity performance in Q2 appears to have been largely driven by higher prices, rather than improved earnings expectations. Estimated Q2 S&P 500 earnings worsened from -0.5% to -2.6% during this time. [p. 25](#)
- U.S. inflation remained stable at 2.1% YoY in June, excluding food & energy. Headline inflation rose 1.6% YoY, dragged down by falling energy prices. Core inflation has been range-bound over the past five years, fluctuating between 1.7% and 2.3%. Investors and consumers expect this trend to continue. [p. 9](#)

THE INVESTMENT CLIMATE

- The Federal Open Market Committee left the range for its benchmark interest rate unchanged at 2.25%-2.50% and reiterated that it would continue to act appropriately to sustain the expansion. Markets interpreted the press conference as confirmation of a 0.25% rate cut in July. [p. 18 & 19](#)
- European Central Bank President Mario Draghi issued dovish forward guidance, announcing that “additional stimulus” was on the table should the economic backdrop worsen, and inflation remain subdued. European and international developed sovereign yields have fallen along with U.S. yields. German 10-year bunds closed the month at new lows of -0.33%. [p. 18 & 19](#)

ASSET ALLOCATION ISSUES

- Risk assets delivered strong returns over the quarter. Global Equities gained +3.6% and U.S. high yield gained +2.5%. Longer duration exposures generally outperformed as interest rates fell. [p. 41](#)
- U.S. equity prices have continued to rise on expectations of nearly three interest rate cuts in 2019 and perhaps an assumption that U.S. earnings exceptionalism will extend into the future. If domestic conditions converge with other developed economies and these expectations turn out to be overly optimistic, we believe U.S. equities may possess greater downside risk. [p. 26](#)

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

What drove the market in Q2?

“US-China trade truce leaves markets with big questions”

U.S. SOYBEAN EXPORTS TO CHINA (METRIC TONS) (000s)

Jan	Feb	Mar	Apr	May	Jun
133	3,217	1,256	719	1,219	1,670

Article Source: CNN, July 1st, 2019

“Bond-Yield Plunge Confounds the World’s Economy”

VALUE OF GLOBAL NEGATIVE-YIELDING DEBT (USD TRILLIONS)

Jan	Feb	Mar	Apr	May	Jun
8.85	8.81	10.40	10.03	11.27	12.92

Article Source: Wall Street Journal, June 23rd, 2019

“Fed holds rates steady, but opens the door for a rate cut in the future”

FUTURES IMPLIED PROBABILITY (%) OF CUTTING RATES BY JULY

Jan	Feb	Mar	Apr	May	Jun
7.1	5.4	23.6	31.9	47.8	100.0

Article Source: CNBC, June 19th, 2019

“Draghi Sees Prospect of More ECB Stimulus Amid Weak Inflation”

EUROZONE CONSUMER PRICE INFLATION (YoY %)

Jan	Feb	Mar	Apr	May	Jun
1.4	1.5	1.4	1.7	1.2	1.3

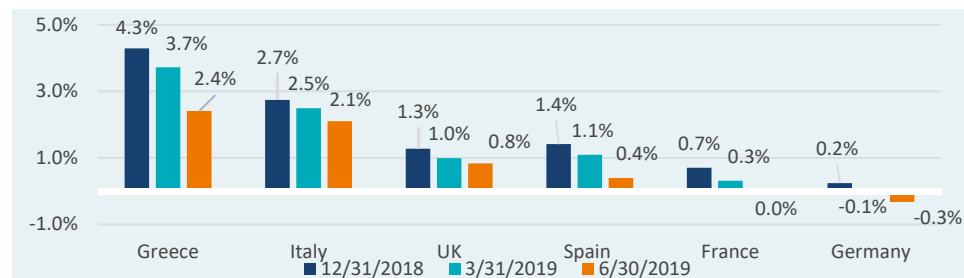
Article Source: Bloomberg, June 18th, 2019

RELATIVE EQUITY MARKET PERFORMANCE (CHINA VS. U.S.)



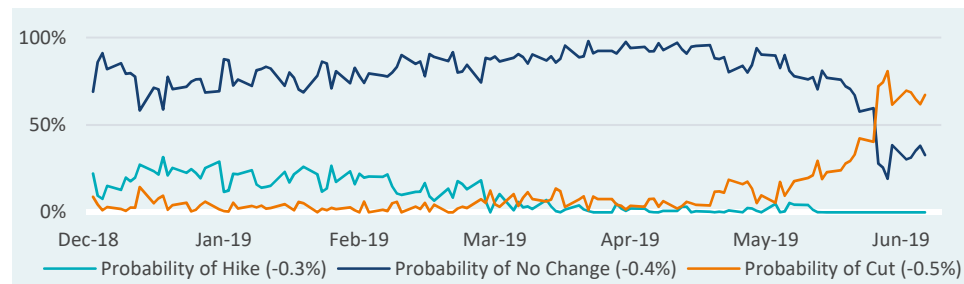
Source: Bloomberg, as of 6/30/19

TEN-YEAR EUROPEAN SOVEREIGN YIELDS



Source: Bloomberg, as of 6/30/19

PROBABILITY OF THE ECB CUTTING ITS MAIN RATE BY SEPTEMBER



Source: Bloomberg, as of 6/30/19

Economic environment

U.S. economics summary

- U.S. real GDP expanded 3.2% YoY in Q1 (3.1% quarterly annualized rate). Year-over-year growth was the strongest since the second quarter of 2015.
- The U.S. economy is expected to slow to a 2.1% pace in 2020, near the growth rate of other developed markets, as indicated by the U.S. Congressional Budget Office.
- U.S.-China trade remained central to headlines over the quarter. Effective May 10th, U.S. tariff rates on \$200 billion in Chinese imports were hiked from 10% to 25%, and the Chinese responded with commensurate tariff increases. In June, Presidents Trump and Xi met on the sidelines of the G20 summit in Osaka. The meeting yielded a “trade truce” in which both countries agreed to pause any additional tariff rate hikes.
- Headline CPI inflation fell from a YoY rate of 1.9% in March to 1.6% in June. PCE inflation, the Fed’s preferred inflation gauge, ticked up from a YoY rate of 1.5% at the end of the 1st quarter to 1.6% in May.
- Average hourly earnings grew 3.1% YoY in June, below expectations of 3.2%. The average non-farm private workweek fell slightly from 34.5 hours per week to 34.4.
- The labor market continued to show strength in Q2. The U-3 unemployment rate touched 50-year lows at 3.6% in May and ended the quarter in June at 3.7%.
- The Federal Open Market Committee messaged that it would continue to “act as appropriate to sustain the expansion”, which markets viewed as dovish. Over the quarter, expectations for additional 2019 rate cuts moved from a 64% chance of a 0.25% cut to a 61% chance of 0.75% in cuts.

	Most Recent	12 Months Prior
GDP (YoY)	3.2% 3/31/19	2.6% 3/31/18
Inflation (CPI YoY, Core)	2.1% 6/30/19	2.2% 6/30/18
Expected Inflation (5yr-5yr forward)	1.9% 6/30/19	2.2% 6/30/18
Fed Funds Target Range	2.25 – 2.50% 6/30/19	1.75 – 2.00% 6/30/18
10 Year Rate	2.0% 6/30/19	2.9% 6/30/18
U-3 Unemployment	3.7% 6/30/19	4.0% 6/30/18
U-6 Unemployment	7.2% 6/30/19	7.8% 6/30/18

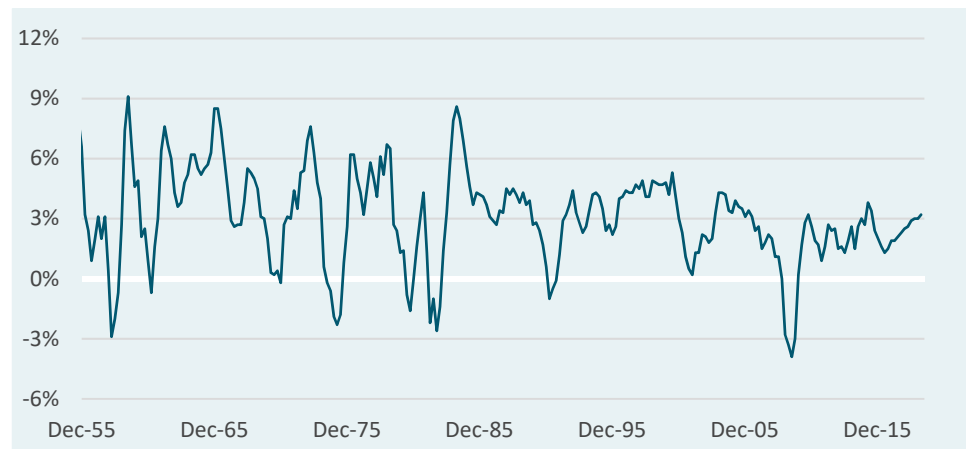
GDP growth

Real GDP grew at an annualized quarterly rate of 3.1% in the first quarter, ahead of analysts' estimates for a 2.3% expansion. Inventory builds and net exports, which tend to be more volatile components of GDP, contributed 1.7% to the print, their most significant addition since 2013. Corporate inventory builds added 0.6% to the overall 3.1% GDP print, a contribution which ranked in the 74th percentile over the past five years. Looking ahead, trade balance volatility may persist as firms around the globe adjust to evolving international trade policies.

U.S. economic growth appears to face many of the same headwinds. The lack of a definitive trade resolution between the U.S. and China, supply chain disruptions caused by new tariff impositions, and the upside limitations of an unemployment rate near 50-year lows may dampen growth prospects for the second quarter. On June 28th, the Federal Reserve Bank of Atlanta GDPNow forecast indicated annualized quarterly GDP growth of 1.5% in the second quarter. This forecast suggests consumer expenditures will provide the greatest contribution of 2.5% to overall growth.

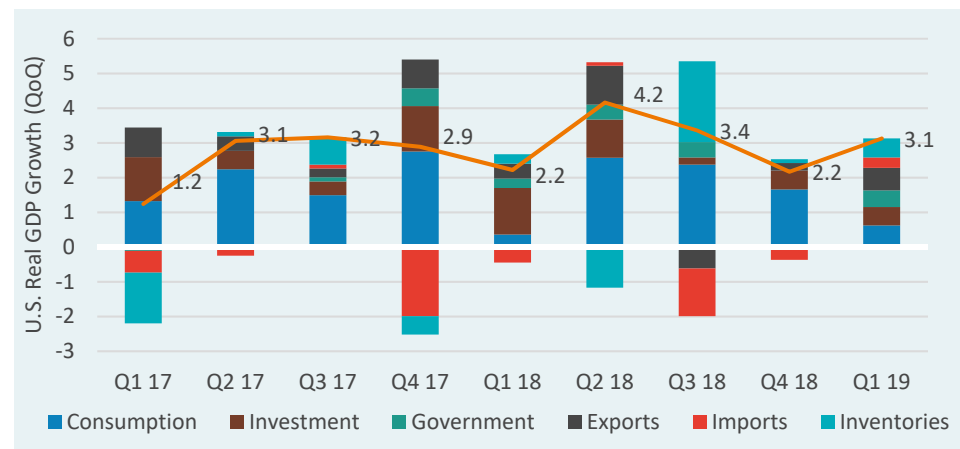
The U.S. economy is expected to slow to 2.1% in 2020, near the growth rate of the developed world

U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 3/31/19

U.S. GDP GROWTH ATTRIBUTION



Source: BEA, annualized quarterly rate, as of 3/31/19

Inflation

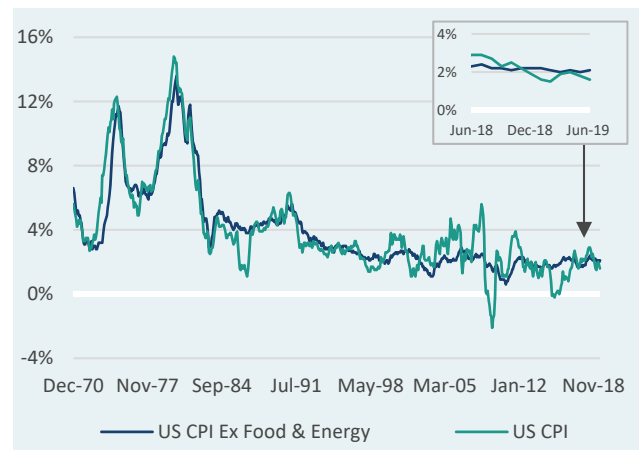
U.S. core inflation (ex-food & energy) remained stable at 2.1% YoY in June. Headline inflation rose 1.6% YoY, dragged down by falling energy prices year-over-year. Core inflation has been range-bound over the past five years, fluctuating between 1.7% and 2.3%. Investors and consumers generally expect this trend to continue, as indicated by market pricing and consumer surveys.

The market is pricing inflation to fall over the next five years (as indicated by U.S. TIPS 5-year breakeven rate of 1.5%) and

is pricing inflation to stay lower for longer (U.S. TIPS 10-year breakeven rate of 1.7%).

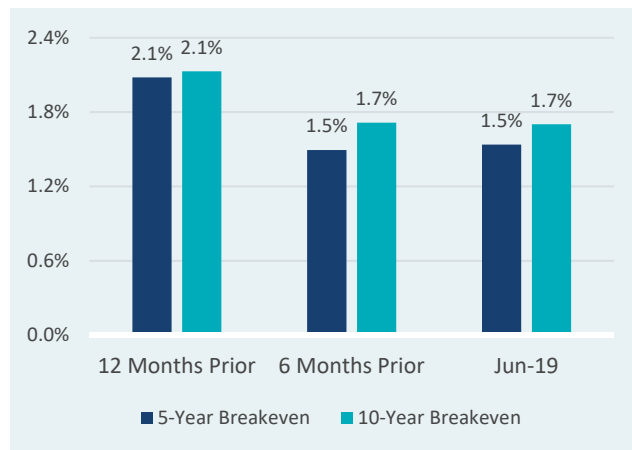
We believe subdued inflation of around 2% has been, and will be, a key influence on Federal Reserve policy. Lower inflation provides the Fed with more legroom for easier positioning to support economic growth and strong employment. If the inflation trend were to shift in either direction, this may put Fed officials in a more tenuous position. We will be watching inflation trends closely.

U.S. CPI (YOY)



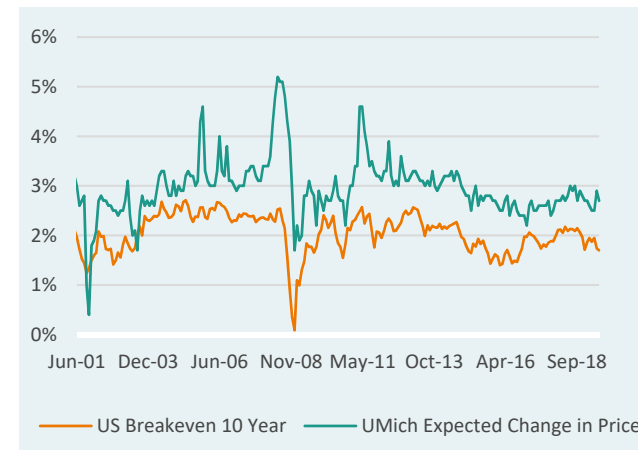
Source: Bloomberg, as of 6/30/19

U.S. BREAKEVEN INFLATION RATES



Source: FRED, as of 6/30/19

INFLATION EXPECTATIONS



Source: Bloomberg, as of 6/30/19

Labor market

The U.S. labor market remains tight. Unemployment during the quarter reached a level of strength not seen since 1969. Nonfarm payrolls expanded by 224,000 in June, well above the consensus estimate of 160,000. The number of U.S. job openings now exceed the number of jobs available.

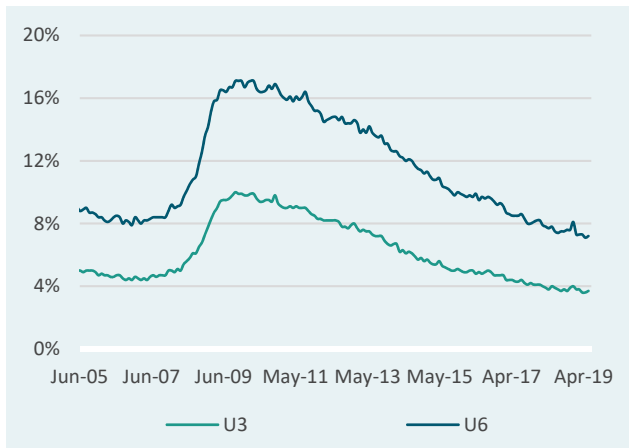
The U.S. unemployment rate was 3.7% in June, according to the narrower U-3 measure which only encompasses those workers seeking a job. The broader U-6 unemployment rate was 7.2%, which also includes discouraged and part-time workers who seek full-time employment.

Given the relatively limited number of unemployed persons and the high percentage of companies reporting that jobs are hard to fill, we believe it may be difficult for job growth to continue at its recent pace.

Wages have grown modestly but have slowed year-to-date. Weak wage growth limits the spending power of consumers, but also reduces the risk of corporate margin deterioration and may limit general price inflation. In June, average hourly earnings rose 3.1% year-over-year.

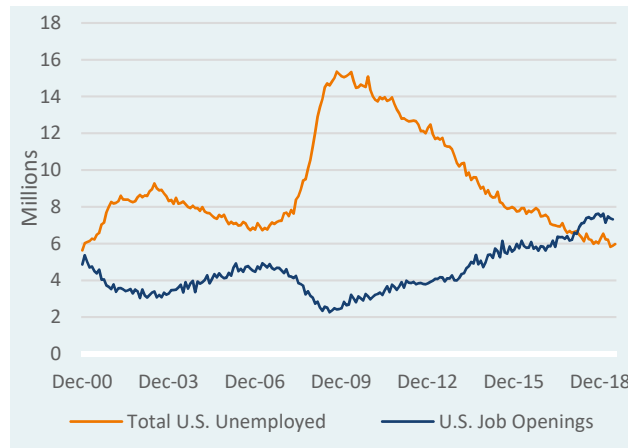
U.S. labor market remains strong, though further upside may be limited

U.S. UNEMPLOYMENT



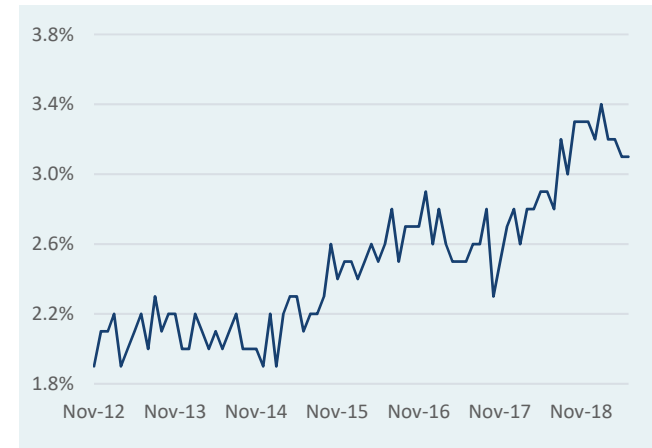
Source: FRED, as of 6/30/19

U.S. JOB OPENINGS VS. UNEMPLOYED



Source: Bloomberg, as 6/30/19

U.S. WAGE GROWTH



Source: FRED, as of 6/30/19

The consumer

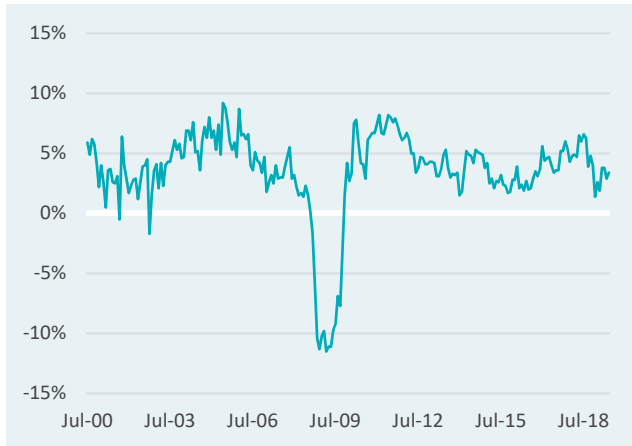
Headline retail sales grew 3.4% from the prior year in June. Core retail sales, which exclude spending on automobiles, gasoline, building materials, and food services, grew at a strong pace of 4.6% from the prior year. Typically, core retail sales correspond most closely with the consumer expenditures component of the quarterly GDP calculation.

U.S. personal incomes grew at a YoY rate of 4.1% in May, up from 3.5% at the end of the first quarter. Personal consumption expenditures grew at a YoY rate of 4.2% in May, slightly lower than the pace of 4.4% at the end of Q1. Benign

inflation, improving real wages, and consumers' perceptions of a strong labor market have all likely played a key role in the resilience of consumer spending patterns as of late.

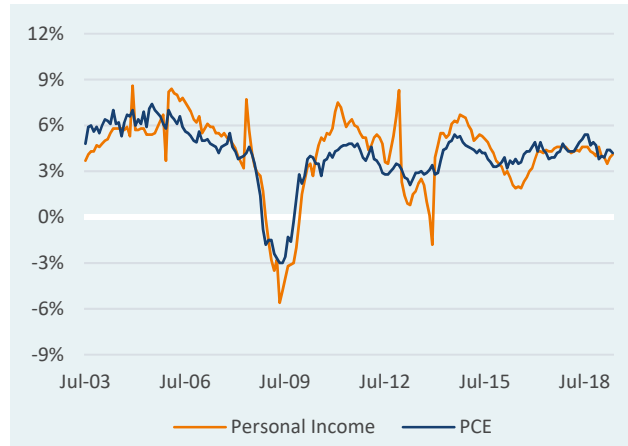
Consumer credit growth has remained tempered over the expansion, but the composition of that credit has shifted. Over the past ten years, student loans have increased their share while mortgage debt has decreased its share.

REAL RETAIL SALES GROWTH (YOY)



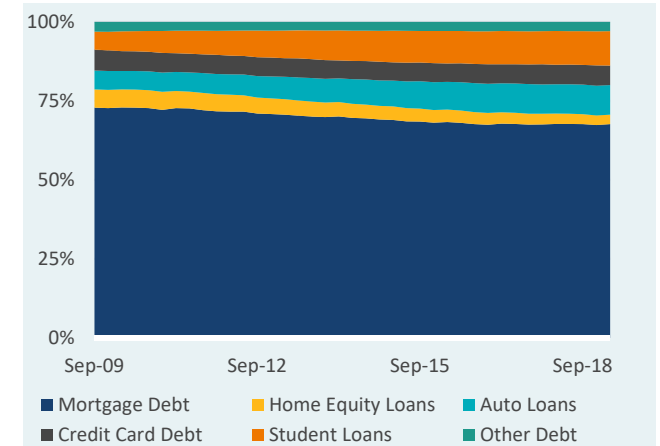
Source: Bloomberg, as of 6/30/19

PERSONAL INCOME AND NOMINAL PERSONAL CONSUMPTION EXPENDITURES (YOY)



Source: Bloomberg, as of 5/31/19

SHARE OF CONSUMER CREDIT OUTSTANDING



Source: Federal Reserve Bank of NY, Bloomberg as of 6/30/19

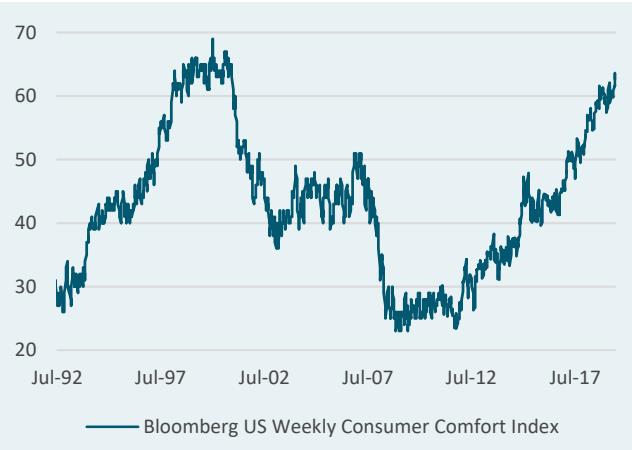
Sentiment

Consumer sentiment indicators were mixed over the quarter but remain very strong relative to history. In May, the University of Michigan Consumer Sentiment Index registered its highest reading since September 2018 at 100.0 but ended the quarter at 98.2, slightly below its March reading. According to the University of Michigan, consumers were concerned about the impact of ongoing trade tensions on the economic outlook and a moderating job market.

The Bloomberg Consumer Comfort Index rose from 58.9 to 62.6 over the quarter, remaining at cycle highs.

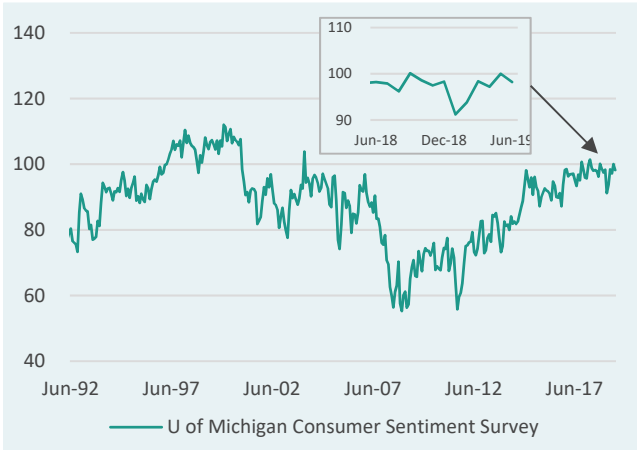
The Conference Board’s Consumer Confidence Index advanced in April and May before falling at quarter-end. In June, the indicator fell from 131.3 to 121.5, below expectations for a slight dip to 131.0. While the index remained at a high level, consumers were less optimistic about the current economic climate and the near-term future. The percentage of consumers expecting business conditions to improve in the next six months fell from 21.4% to 18.1% and the percentage expecting conditions to worsen rose from 8.8% to 13.1%.

CONSUMER COMFORT INDEX



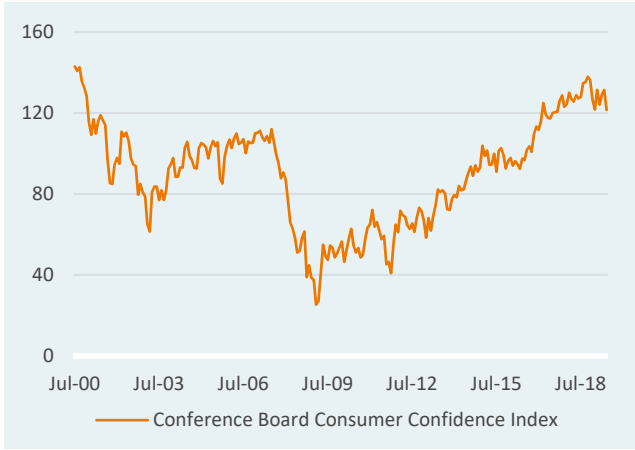
Source: Bloomberg, as of 6/30/19 (see Appendix)

CONSUMER SENTIMENT



Source: University of Michigan, as of 6/30/19 (see Appendix)

CONSUMER CONFIDENCE



Source: Conference Board, as of 6/30/19 (see Appendix)

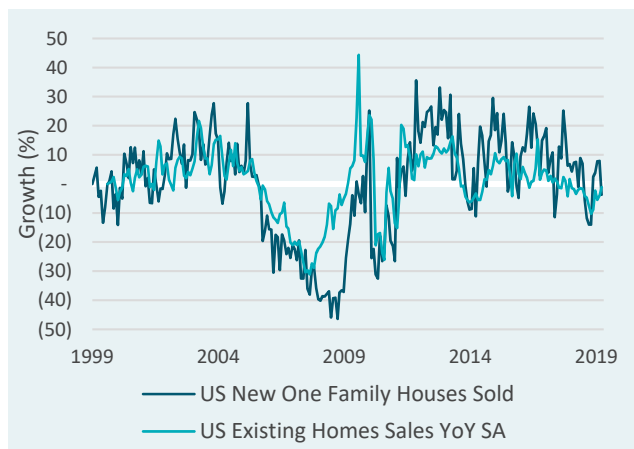
Housing

Some weakness has appeared in the U.S. housing market. U.S. home sales appear to have peaked in late 2017 and have continued to fall, declining -1.1% YoY in May. Higher prices have damaged affordability, and rising interest rates through the end of 2018 likely contributed to weaker purchase activity. On the other hand, the notable shift of the Federal Reserve from rate hikes to rate cuts, and the subsequent drop in interest rates and therefore mortgage rates, may help reignite buying activity.

Housing starts in May were down -4.7% from one year prior, while building permits fell -0.5%. Slowing home construction activity may reflect affordability issues and/or falling homebuilder optimism.

Home prices have fallen slightly. The median U.S. home sale price was down -3% year-over-year as of May. Home price trends can vary significantly by location, which means national statistics are sometimes difficult to interpret at a local level.

U.S. HOME SALES (YOY)



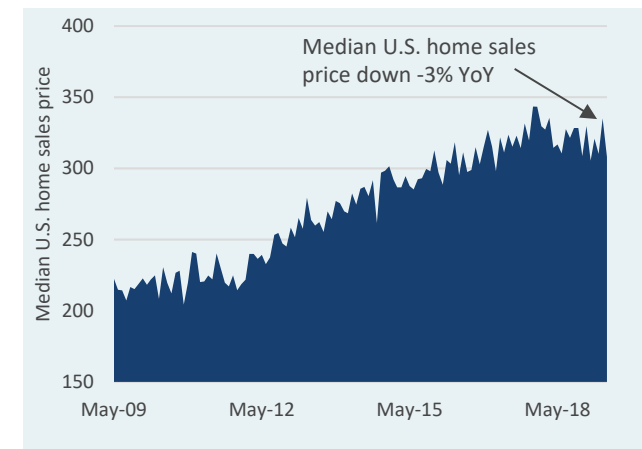
Source: FRED, as of 5/31/19

HOUSING STARTS & PERMITS



Source: Bloomberg, NAHB, as of 5/31/19 (see appendix)

MEDIAN U.S. HOME SALES PRICE



Source: FRED, as of 5/31/19

International economics summary

- U.S.-China trade remained central to headlines over the quarter. Effective May 10th, U.S. tariff rates on \$200 billion in Chinese imports were hiked from 10% to 25%, and the Chinese responded with commensurate tariff rate hikes. In June, Presidents Trump and Xi met on the sidelines of the G20 summit in Osaka. The meeting yielded a “trade truce” in which both countries agreed to pause any additional tariff rate hikes.
- The U.K. Prime Minister Theresa May announced her resignation effective June 7th. In July, Boris Johnson defeated Jeremy Hunt and will replace Theresa May as Britain’s next prime minister. Mr. Johnson has taken a harder line on Brexit than Mr. Hunt, and his election likely increases the probability that the U.K. exits the E.U. without a deal.
- President Trump called off prospective 5% tariffs on Mexican imports after the two countries signed an immigration deal aimed at reducing illegal border crossings. The deal expanded the Migrant Protection Protocols program, which requires asylum-seekers to wait on the Mexican side of the border while their cases are reviewed.
- Chinese GDP growth slowed 0.2% to 6.2% YoY in the second quarter, its slowest rate in 27 years. On a brighter note, YoY growth in industrial production and retail sales both surprised to the upside, supporting the view that Beijing’s countercyclical easing measures have proven effective.
- The Citi Global Economic Surprise Index fell from -18.8 to -27.7 in June, registering its 15th consecutive month in negative territory.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	3.2% <i>3/31/19</i>	1.6% <i>6/30/19</i>	3.7% <i>6/30/19</i>
Eurozone	1.2% <i>3/31/19</i>	1.1% <i>5/31/19</i>	7.5% <i>5/31/19</i>
Japan	0.9% <i>3/31/19</i>	0.7% <i>5/31/19</i>	2.4% <i>5/31/19</i>
BRICS Nations	5.2% <i>3/31/19</i>	2.4% <i>3/31/19</i>	5.2% <i>3/31/19</i>
Brazil	1.4% <i>3/31/19</i>	3.4% <i>6/30/19</i>	12.4% <i>6/30/19</i>
Russia	2.7% <i>12/31/18</i>	4.7% <i>6/30/19</i>	4.5% <i>5/31/19</i>
India	7.2% <i>12/31/18</i>	3.2% <i>6/30/19</i>	8.5% <i>12/31/17</i>
China	6.4% <i>3/31/19</i>	2.7% <i>6/30/19</i>	3.7% <i>3/31/19</i>

International economics

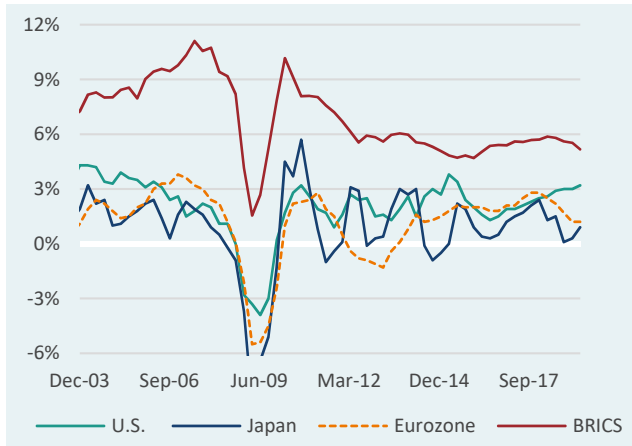
Developed countries are generally exhibiting growth rates between 1-2% YoY. The U.S. remains an exception, at a 3.2% pace, though the domestic economy is forecast to slow to around 2.1% in 2020 as government stimulus fades. Economists expect global growth of 3.3% in both 2019 and 2020, according to Bloomberg.

Inflation remains stable and subdued in developed economies, at or below 2%. Emerging economies have also exhibited lower than average inflation – a 2.4% rate across the BRICS nations. Employment continues to improve in most

markets, though the rate of job gains in some economies appears to be slowing.

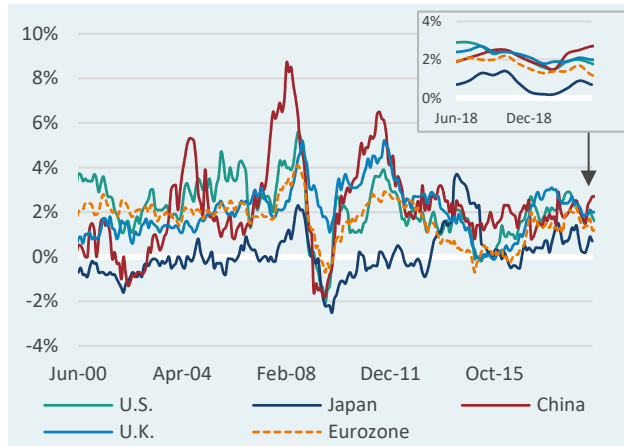
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REAL GDP GROWTH (YOY)



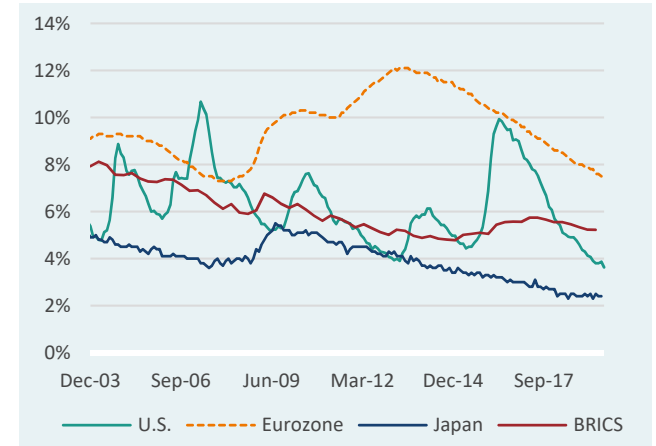
Source: Bloomberg, as of 3/31/19

INFLATION (CPI YOY)



Source: Bloomberg, as of 6/30/19

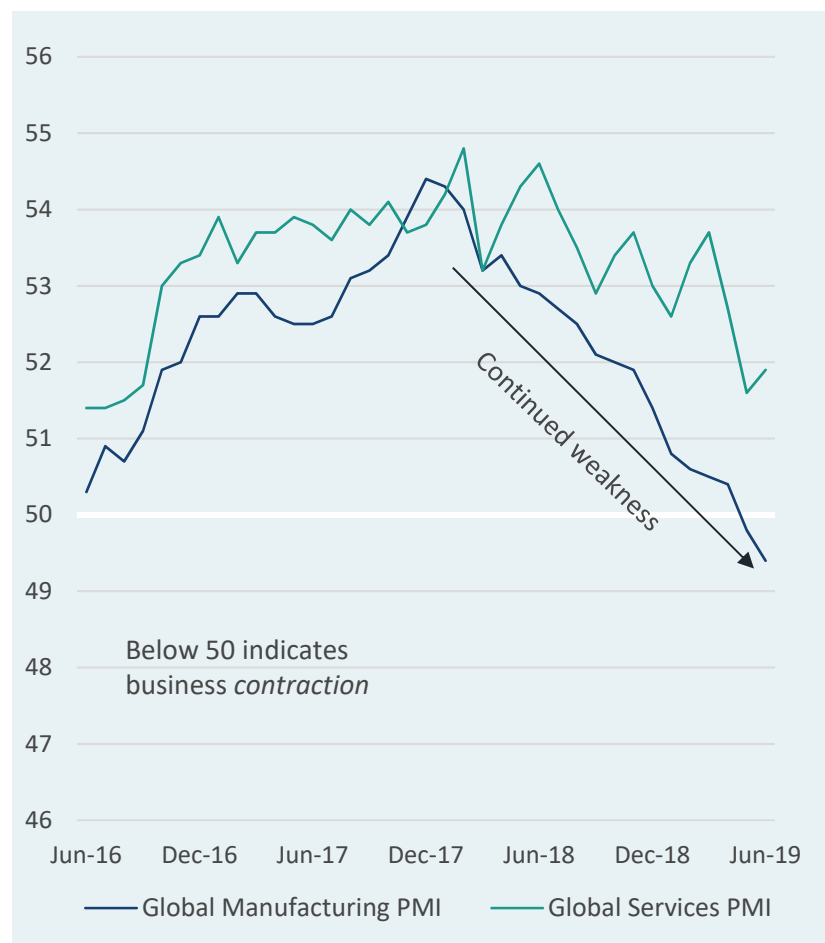
UNEMPLOYMENT RATE



Source: Bloomberg, as of 6/30/19 or most recent release

Global PMI

GLOBAL PMI



Source: JPMorgan, as of 6/30/19

- The PMI business surveys attempt to gauge business sentiment and conditions around the world.
- Surveys have indicated weakening since late 2017 and resumed their decline in the second quarter.
- The Global Manufacturing PMI fell from 50.5 in March to 49.4 in June, below the neutral level of 50.0 that separates expansion from contraction. The stickier Services PMI, which is less cyclical in nature than the Manufacturing PMI, fell from 53.7 to 51.9 over Q2.
- Developed economy Manufacturing PMI readings (48.9) have weakened materially over the past year and are now below emerging economy readings (49.9). Services PMI readings remain similar for developed and emerging economies at 52.0 and 51.5, respectively.
- Surveys remain above levels that might indicate recession.

Fixed income rates & credit

Interest rate environment

— The Federal Open Market Committee left the range for its benchmark interest rate unchanged at 2.25%-2.50% and reiterated that it would continue to act appropriately to sustain the expansion. Markets viewed the Fed's press conference as successful in setting expectations for a 0.25% rate cut in July.

— The fed funds futures market now implies 2 or even 3 rate cuts (0.50% to 0.75% total cuts) as likely by the end of 2019. The market's expectation of three rate cuts seems aggressive, and we worry about possible downside to risk markets if the Fed does not deliver on these expectations.

— U.S. Treasury yields continued to push lower following the messaging from the Federal Reserve. The 10-year U.S. Treasury yield finished the quarter at 2.00%, down from 3.14% in Q4 2018.

— European Central Bank President

Mario Draghi announced "additional stimulus" was on the table should the economic backdrop worsen and inflation remain subdued. Over the month, the likelihood that the ECB would cut its main deposit rate from -0.40% to -0.50% by its September meeting rose from 18% to 67%, as indicated by market pricing.

— European and international developed sovereign yields have fallen along with U.S. yields. German 10-year bunds closed the month at new lows of -0.33%.

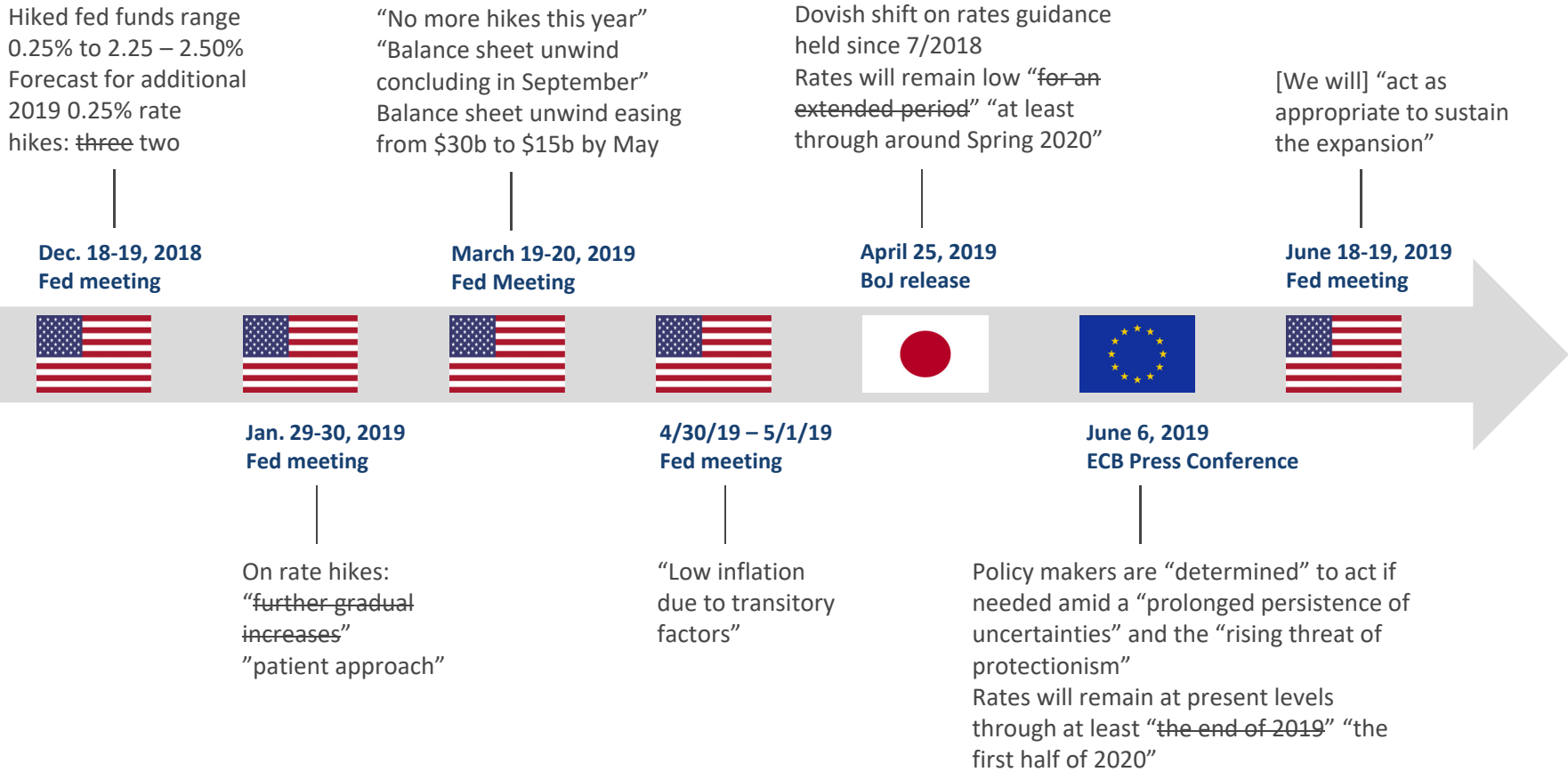
— High yield bond spreads tightened alongside equities as the asset class was positively impacted by Federal Reserve dovishness. Anticipation of easier interest rate policies, which could potentially lengthen the credit cycle, has strengthened sentiment for risk assets.

— Emerging market bonds delivered outsized returns in Q2. The JPM GBI-EM Index returned +5.6% and the JPM EMBI Index returned +4.1%.

Area	Short Term (3M)	10-Year
United States	2.09%	2.00%
Germany	(0.57%)	(0.33%)
France	(0.55%)	(0.01%)
Spain	(0.47%)	0.39%
Italy	(0.14%)	2.10%
Greece	0.99%	2.41%
U.K.	0.78%	0.83%
Japan	(0.08%)	(0.17%)
Australia	1.43%	1.32%
China	2.25%	3.21%
Brazil	6.24%	7.44%
Russia	8.03%	8.26%

Source: Bloomberg, as of 6/30/19

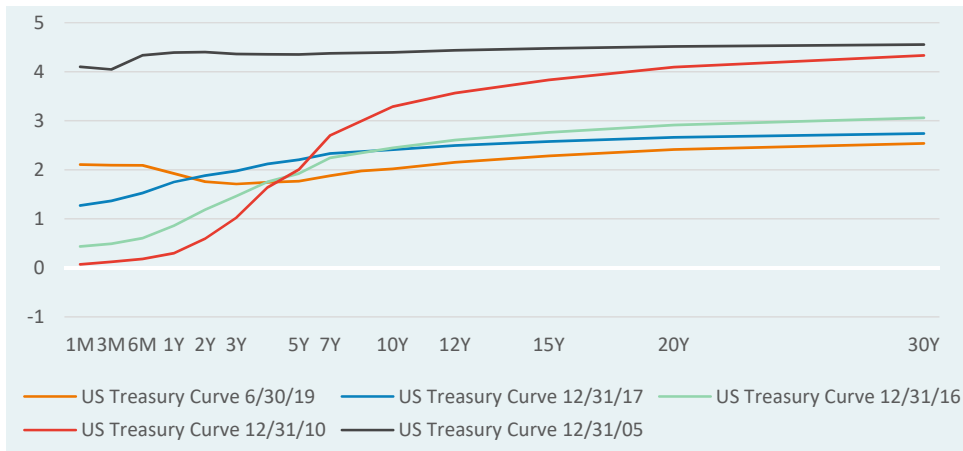
Central bank reversal



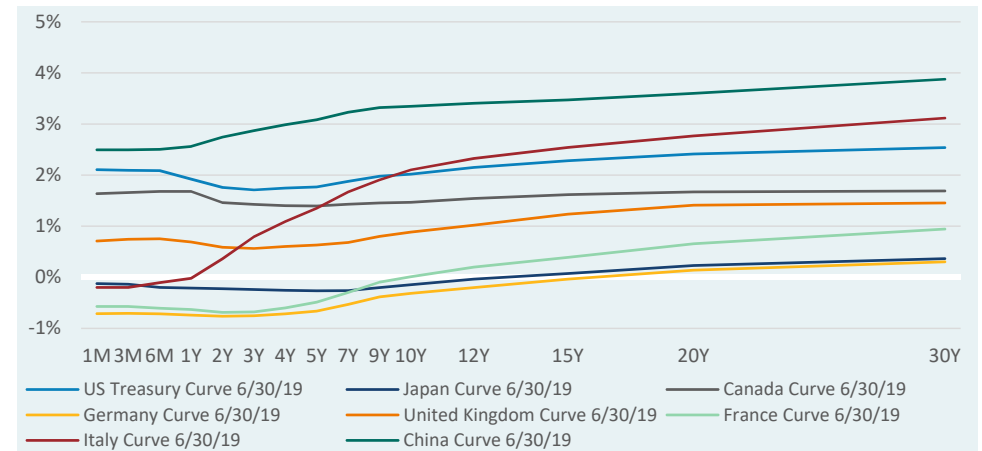
Source: Wikimedia Commons

Yield environment

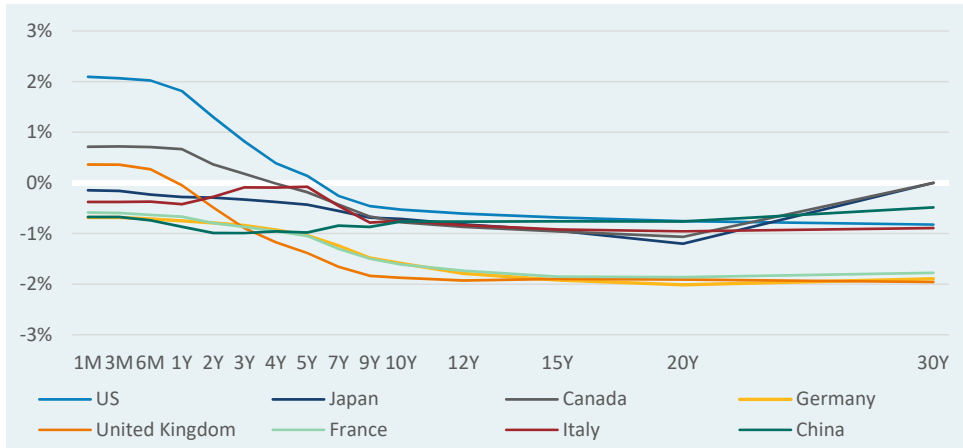
U.S. YIELD CURVE



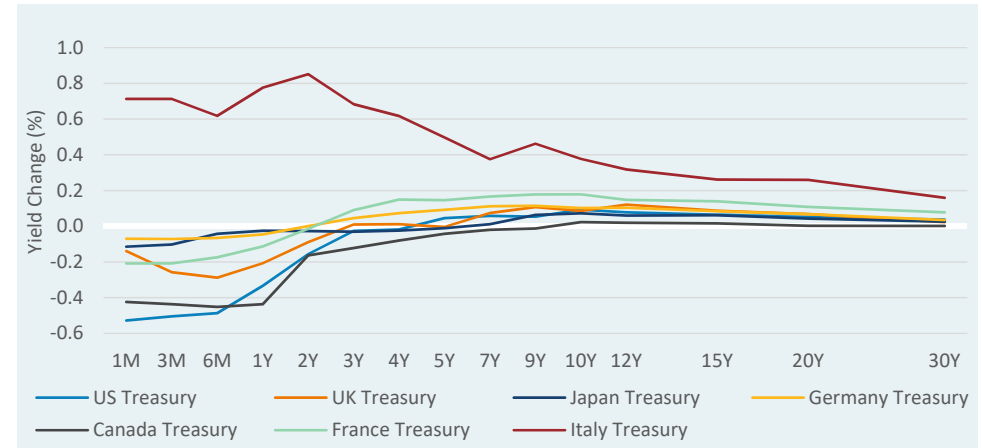
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



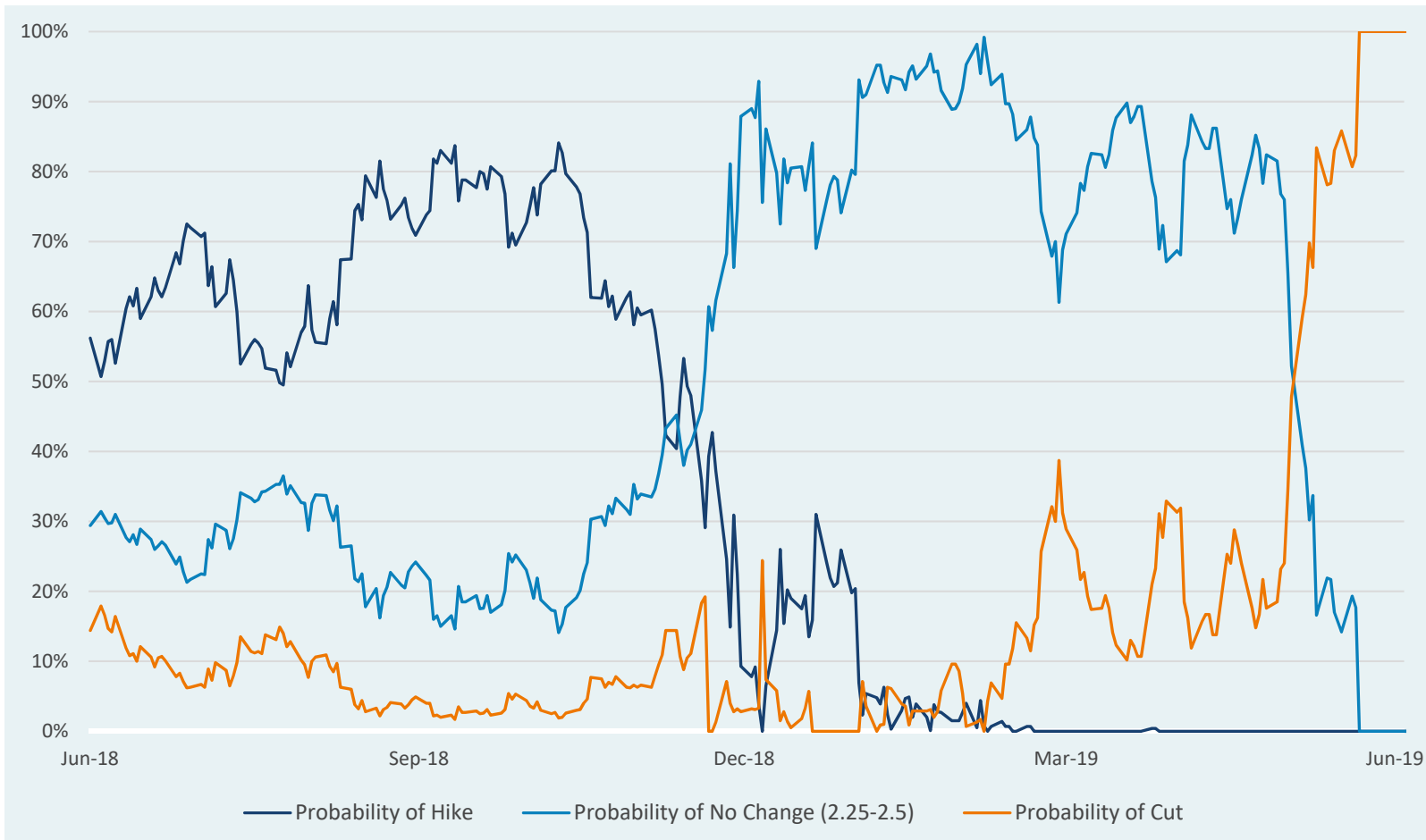
IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 6/30/19

July Fed meeting

FUTURES IMPLIED PROBABILITIES FOR JULY FED RATE DECISION



In April and May, dovish guidance from global central banks made its way into fed funds futures pricing

In June, the Fed pledged to “act appropriately to sustain the expansion” and a 0.25% cut became 100% priced in July

Source: Bloomberg, as of 6/30/19

Credit environment

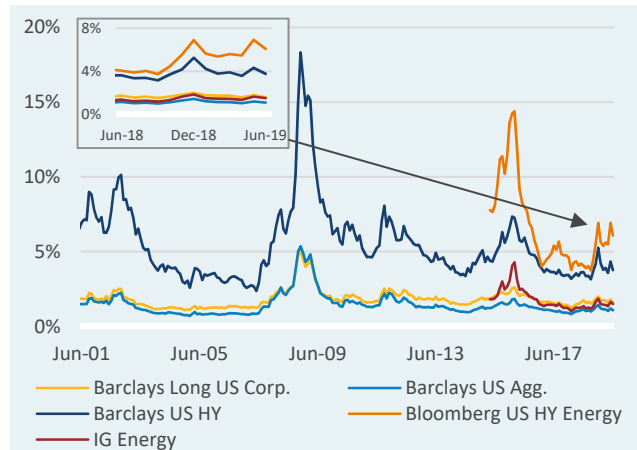
High yield bond spreads tightened alongside equities as the asset class was positively impacted by Federal Reserve dovishness. Anticipation of easier interest rate policies, which could potentially lengthen the credit cycle, has strengthened sentiment for risk assets. BB-rated bonds outperformed both CCC- and B-rated bonds in the second quarter. High yield bonds have returned +9.9% YTD, outperforming investment grade credit (+9.4%) and bank loans (+5.7%).

Bank loan prices continued to decline as demand for the asset class was impacted by a pause in the Fed's hiking cycle and uncertainty surrounding future moves from the Fed. Loan funds

have reported their ninth consecutive monthly outflow in June, totaling over \$40 billion in total. Bank loans have returned +0.3% YTD, underperforming both high yield and investment grade bonds.

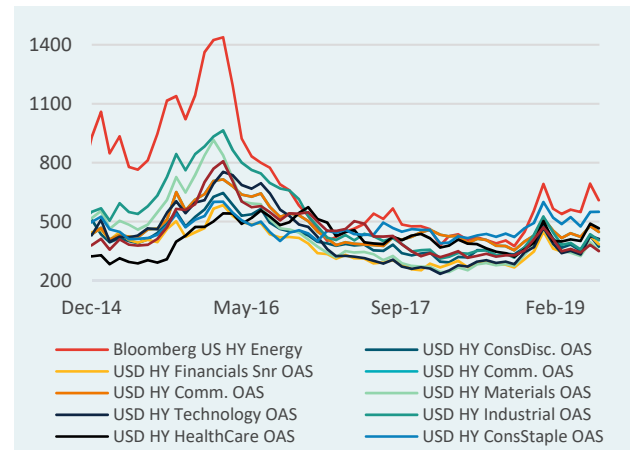
Based on concerns over late-cycle behavior in credit markets, we do not believe investors are being adequately compensated for credit risk. Late-cycle volatility tends to coincide with a jump in credit spreads and steep credit losses. An underweight to U.S. investment grade, high yield credit, and bank loans may be warranted. Within credit, higher quality and more liquid assets appear most attractive.

SPREADS



Source: Barclays, Bloomberg, as of 6/30/19

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 6/30/19

Market	Credit Spread (OAS)	
	6/30/19	6/30/18
Long U.S. Corp	1.6%	1.8%
U.S. Agg Corp	1.1%	1.2%
U.S. High Yield	3.8%	3.6%
U.S. Bank Loans*	4.4%	3.9%

Source: Barclays, Credit Suisse, Bloomberg, as of 6/30/19

*Discount margin (4-year life)

Default & issuance

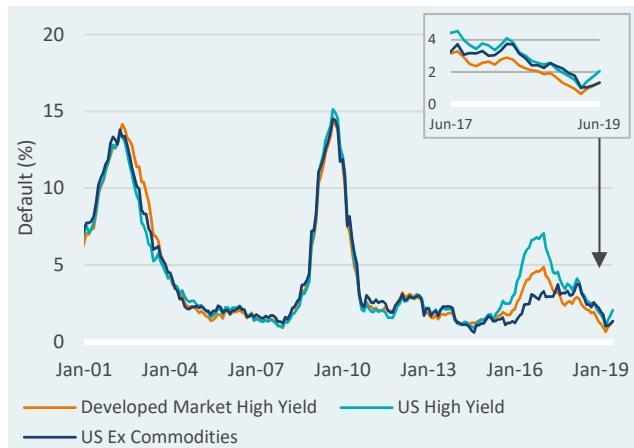
Default activity has been low and stable in the U.S. credit market, despite price volatility. The par-weighted default rate for high yield increased to 1.5% but remains below its long-term average range of 3.0-3.5%. For loans, the par-weighted default rate at the end of the second quarter was 1.3% and remains below the long-term average of 3.1%, according to data from J.P. Morgan. Consumer, retail, telecom, and utilities sectors have been more prone to defaults.

Senior loan and high yield markets have essentially recovered from a wave of defaults seen in 2015-2016 that were

generated by energy and metals/mining sectors. High yield bond recovery rates have improved significantly since that time.

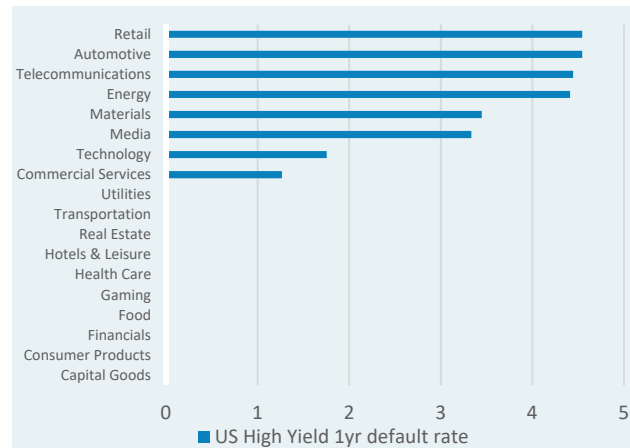
Gross high yield issue activity increased in June as investors took advantage of a dip in yields. Loan market issuance is significantly behind last year's pace, likely influenced by lower demand for floating rate securities now that the Federal Reserve has paused monetary tightening.

HY DEFAULT RATE (ROLLING 1-YEAR)



Source: BofA Merrill Lynch, as of 6/30/19

U.S. HY SECTOR DEFAULTS (LAST 12 MONTHS)



Source: BofA Merrill Lynch, as of 6/30/19 – par weighted

GLOBAL ISSUANCE (\$ BILLIONS)



Source: Bloomberg, BofA Merrill Lynch, as of 6/30/19

Equity

Equity environment

- The Russell 1000 Index slightly outperformed international developed equities in Q2, gaining +4.2% while the MSCI EAFE Index gained +3.7%. Perceptions of an accommodative Federal Reserve and views that U.S.-China relations are on a productive track likely impacted price movement.
- Equity performance in Q2 appears to have been largely driven by higher prices, rather than improved earnings expectations. The valuation expansion of equity markets (U.S., international developed, emerging markets) aligned with performance over the quarter.
- According to FactSet, estimated Q2 S&P 500 YoY earnings worsened from -0.5% to -2.6% in Q2. Nine of eleven sectors saw downward revisions to EPS estimates. Further negative revisions will likely act as a headwind to equity performance.
- Currency movement had a material positive impact on unhedged exposure to the U.K. (+3.1%) and Japan (+2.3%) over the quarter, though currency movement had a negligible impact on overall international equity performance (MSCI EAFE). Unhedged currency movement on a 1-year basis has had a substantially negative effect on investors' performance.
- The J.P. Morgan Emerging Market Currency Index gained +0.5% in the second quarter, stabilizing after a downward trend since 2018.
- Size and value factors continued to underperform. Small-cap equities lagged large-cap by -2.1% during the quarter and -13.3% over the past year (Russell 2000 vs. Russell 1000). Value equities underperformed growth by -0.8% over the quarter and by -3.1% over the past year (Russell 1000 Value vs Russell 1000 Growth).

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	4.2%		10.0%	
US Small Cap (Russell 2000)	2.1%		(3.3%)	
US Large Value (Russell 1000 Value)	3.8%		8.5%	
US Large Growth (Russell 1000 Growth)	4.6%		11.6%	
International Large (MSCI EAFE)	3.7%	3.5%	1.1%	4.8%
Eurozone (Euro Stoxx 50)	6.2%	6.4%	0.4%	8.6%
U.K. (FTSE 100)	4.0%	0.9%	(2.3%)	3.7%
Japan (NIKKEI 225)	3.1%	0.8%	0.1%	(2.6%)
Emerging Markets (MSCI Emerging Markets)	0.6%	0.1%	1.2%	1.7%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 6/30/19

Domestic equity

U.S. equities outperformed in the second quarter following a strong rebound in the first quarter. The S&P 500 Index delivered a total return of 4.3%, bringing its first-half return to 18.5%. Perceptions of an accommodative Federal Reserve and views that U.S-China relations were on a productive track likely impacted price movement.

Over the last decade, U.S. equities have led global equity indices, which is not typically the case. In prior periods, U.S. equities have ranked from slightly below average to slightly above average among regional indices. Furthermore, a

portion of U.S. equity outperformance has been due to a move towards high prices, which will most likely negatively impact future performance.

A number of secular trends have helped create a supportive environment for U.S. stocks. Technological advances, falling interest rates and therefore costs of corporate borrowing, and lower corporate tax rates have all helped to boost profit margins to all-time-highs. As expectations moderate, these margins may be increasingly scrutinized by investors.

U.S. EQUITIES



Source: Standard & Poors, as of 6/30/19

SECULAR TRENDS SUPPORTING MARGINS



Source: FRED, BLS, Bloomberg, Verus, as of 6/30/19

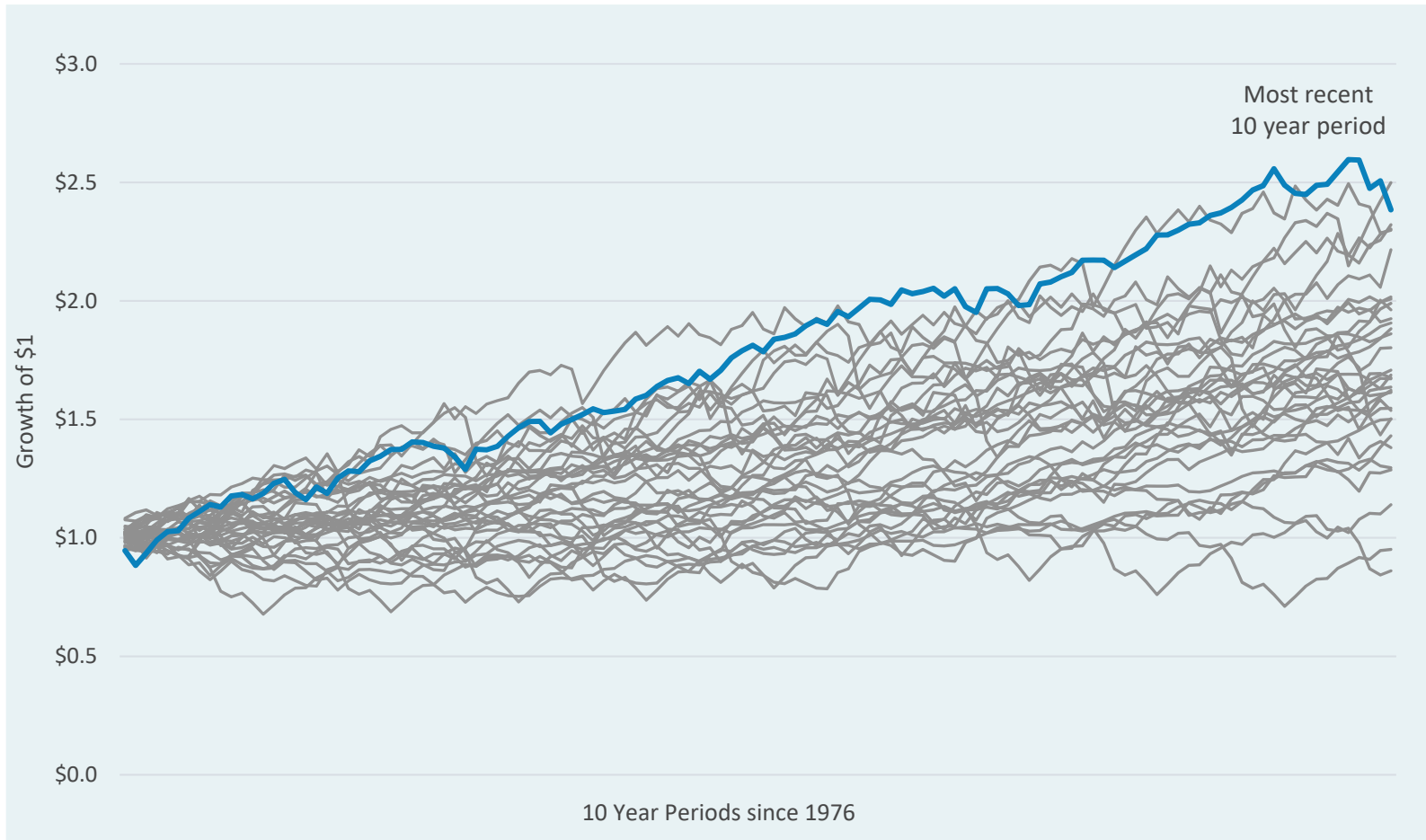
U.S. RELATIVE PERFORMANCE - HISTORICAL

	2014-2019	2009-2014	2004-2009	1999-2004	1994-1999
Best ↑	United States	United States	China	Australia	Sweden
	Australia	Sweden	India	India	Spain
	France	Japan	Spain	Canada	France
	India	Germany	Australia	United States	United States
	UK	Switzerland	Sweden	Spain	Germany
	Italy	India	Canada	Switzerland	Switzerland
	Japan	Australia	Germany	UK	UK
	Sweden	UK	UK	Italy	Canada
	Canada	Canada	Switzerland	France	Australia
	Switzerland	France	France	Sweden	India
	Germany	Spain	United States	Japan	Japan
	China	China	Japan	Germany	
Worst ↓	Spain	Italy	Italy		

Source: Verus, as of 6/30/19

Domestic equity

DOMESTIC 60/40 EXCESS RETURNS



U.S. asset performance over the past 10 years has been unusually strong

Investors should not necessarily expect U.S. outperformance to continue

Source: Verus, 60/40 (S&P 500 / BBgBarc US Aggregate Bond), excess return over T-bills since 1973

Domestic equity size & style

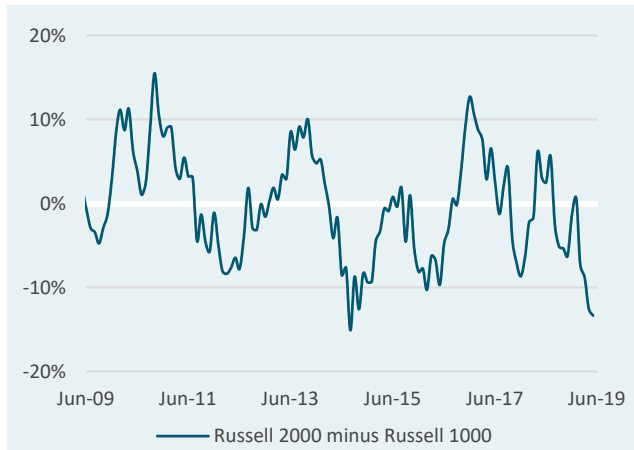
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Similar to Q1, the impact of sector performance on the value premium was more nuanced in the second quarter. Financials (+8.0%) and Materials (+6.3%) outperformed the overall index (S&P 500 +13.6%), but Energy (-2.8%)

underperformed. Information Technology performed better than the overall index (+6.1%) which acted as a headwind for value stocks.

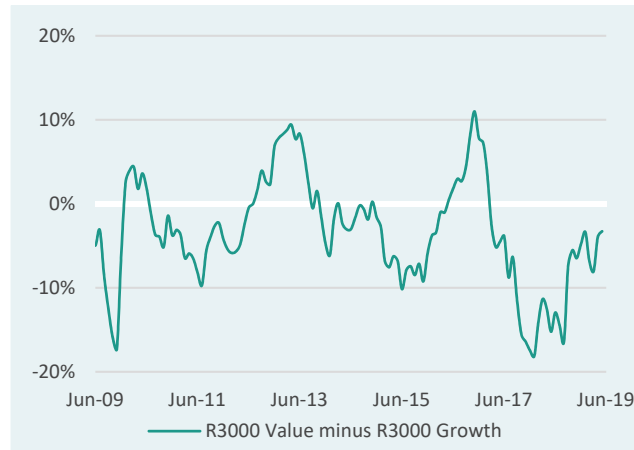
Both small cap and value premia have exhibited underperformance for an extended period of time. Longer periods of underperformance do not necessarily indicate an investment opportunity if value stocks and small cap stocks remain fairly-priced. This appears to be the case today, as neither value stocks nor small cap stocks are particularly cheap by traditional measures.

SMALL CAP VS LARGE CAP (YOY)



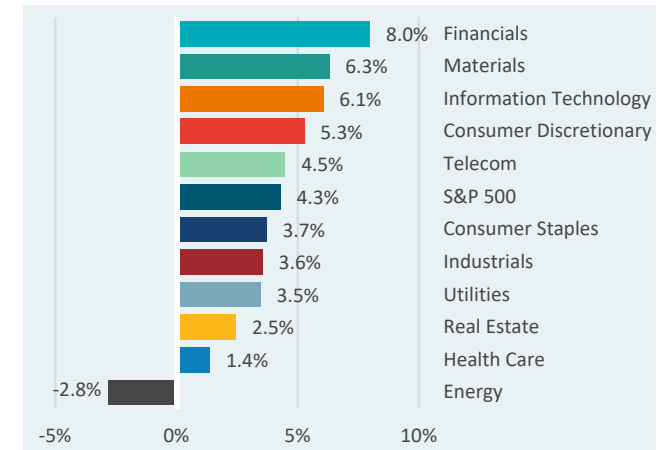
Source: FTSE, as of 6/30/19

VALUE VS GROWTH (YOY)



Source: FTSE, as of 6/30/19

Q2 S&P 500 SECTOR RETURNS



Source: Morningstar, as of 6/30/19

International developed equity

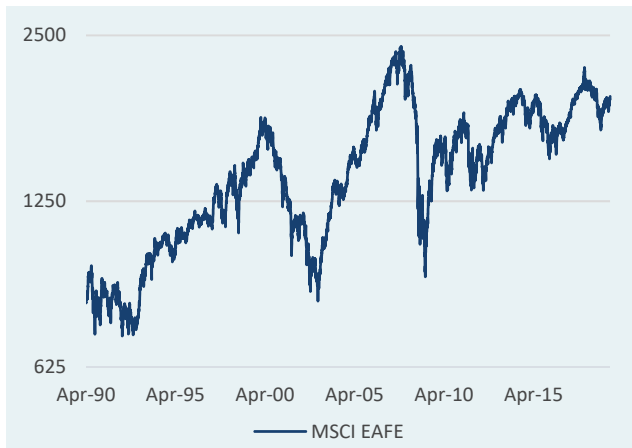
International developed equities posted a second consecutive quarter of solid performance. The MSCI EAFE Index returned +3.9% for the quarter (+14.5% YTD). On a currency hedged basis, the MSCI EAFE Index returned +3.5% for the quarter (+15.2% YTD), indicating that unhedged U.S. investors in EAFE equities benefited from non-dollar exposure over the quarter, but not in the year-to-date.

Japanese equities, which represent about 24% of the MSCI EAFE Index, underperformed, and gained only +0.5% in Q2. Japan's exposure China's economy, which in Q2 grew at its slowest pace in 27 years, likely weighed on performance.

U.K. equities underperformed the international developed equities on an unhedged basis, with the FTSE 100 Index delivering a +3.3% return for the quarter. In U.S. dollar terms, the FTSE 100 Index returned +4.0% in Q2, indicating that the weakness in the British Pound relative to the dollar presented headwinds for unhedged U.S. investors.

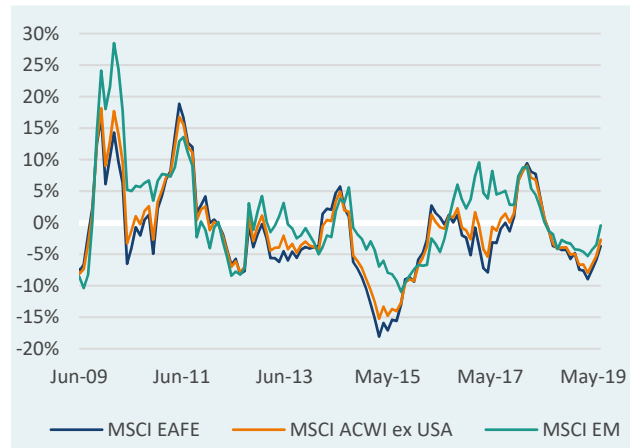
Wage gains and employment have been strong in the U.K., which would typically prompt higher rates and a stronger currency, but the uncertainty surrounding Brexit has likely had a significant impact on the British Pound.

INTERNATIONAL DEVELOPED EQUITIES



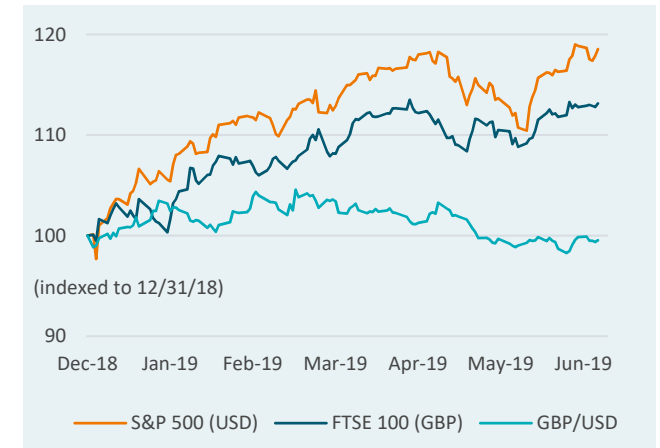
Source: MSCI, as of 6/30/19

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 6/30/19

YTD CUMULATIVE PERFORMANCE (U.S. VS. U.K.)



Source: Bloomberg, as of 6/30/19

Emerging market equity

Emerging market equity performance (MSCI Emerging Markets +0.6%) lagged developed markets (MSCI EAFE +3.7%) over the quarter, while U.S. equities outperformed (Russell 1000 +4.2%). Economists expect emerging market economies to accelerate modestly in 2020 and expect developed economies to slow. This divergence may provide a tailwind to emerging market equity performance. Recent central bank dovishness may also boost returns, as easing conditions have often had an outsized positive impact on the emerging markets.

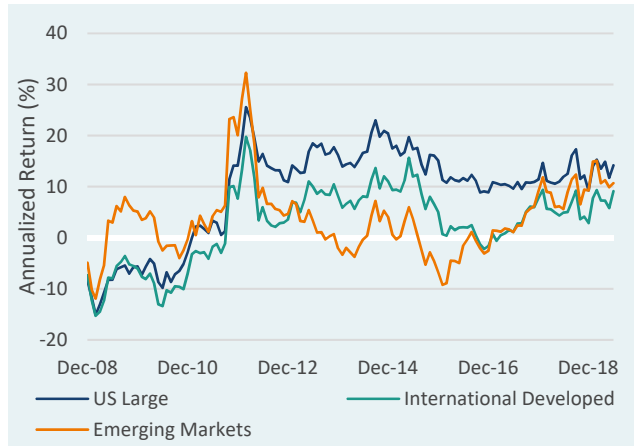
kept near their long-term average - the U.S. being an exception. The divide between U.S. equity valuations and the rest of the world remains wide.

Decelerating global growth and a rising probability of recession presents unique risks to emerging markets, as these markets typically exhibit a higher beta during market downside and upside moves. However, a recession does not appear to be on the immediate horizon, and we believe recent central bank easing may lead to emerging market outperformance in the interim.

Moderate growth and central bank easing may boost emerging market equities

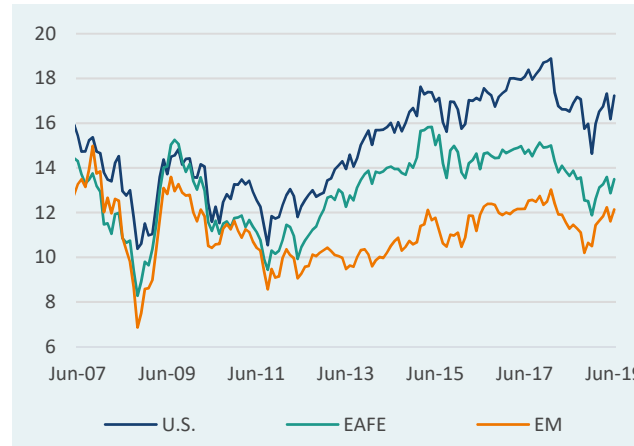
Equity multiples expanded in the second quarter but have

EQUITY PERFORMANCE (3-YR ROLLING)



Source: Standard & Poor's, MSCI, as of 6/30/19

FORWARD P/E



Source: MSCI, as of 6/30/19

EMERGING MARKET PERFORMANCE



Source: MSCI, as of 6/30/19

Equity valuations

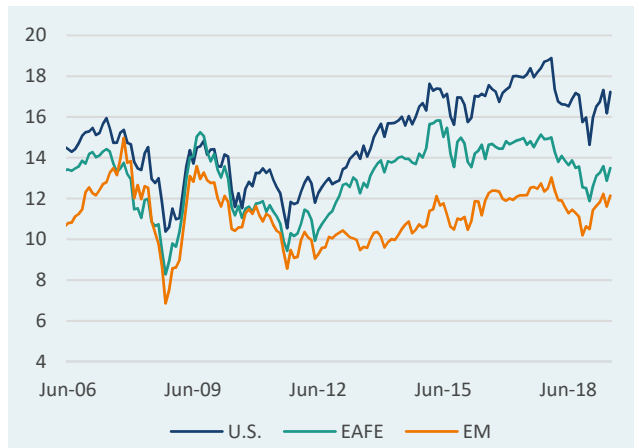
Equity performance in Q2 appears to have been largely driven by higher prices, rather than improved earnings expectations. Valuation expansion of equity markets (U.S., international developed, emerging markets) aligned with performance over the quarter.

The U.S. equity forward P/E multiple sits at 17.2x, with international equities at 13.5x and emerging markets at 12.1x. International and emerging equity valuations remain near their long-term average, while U.S. equities appear expensive relative to history. U.S. equities currently trade at a 27%

forward premium to EAFE equities, and a 42% premium over emerging.

We believe there are reasons that EAFE equity markets warrant cheap valuations, particularly in Europe, but it is difficult to know whether the current valuation gap is justified. As U.S. corporate earnings expectations, business conditions, and economic growth seem to be converging somewhat with the rest of the developed world, investors may begin to question whether such elevated U.S. valuations are appropriate.

FORWARD P/E RATIOS



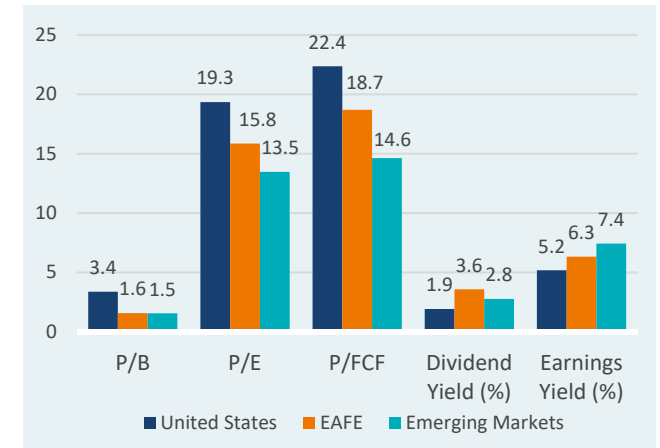
Source: MSCI, as of 6/30/19

U.S. CORPORATE EARNINGS GROWTH (YOY)



Source: Standard & Poor's, as of 6/30/19

VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 6/30/19 - trailing P/E

Equity volatility

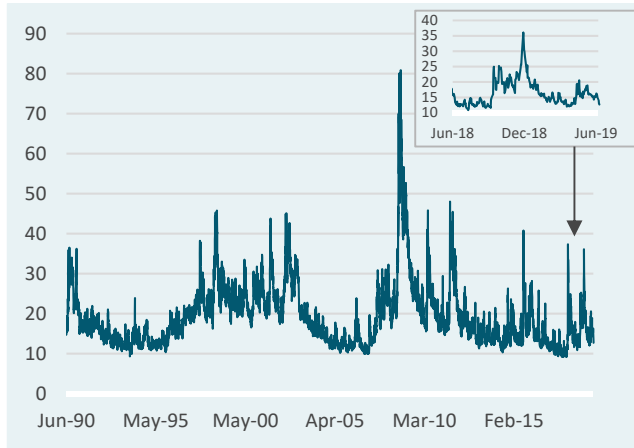
Implied volatility remained depressed over the quarter, as indicated by the VIX Index. Though the implied volatility measure reached as high as 20.6 in the days following the Trump administration’s decision to hike tariff rates on Chinese imports, the VIX Index traded mostly below its long-term average. Out of sixty-three trading days in the second quarter, the VIX Index closed above its historical daily average of 19.2 only three times.

The rolling realized 90-day volatility of the S&P 500 Index retreated from 19.5% to 11.4% over the second quarter. At

quarter-end, the 30-day forward implied volatility of the S&P 500 Index exceeded that of the Euro Stoxx 50 Index. Historically, the VIX has traded at a discount to the V2X, the proxy for expected European equity volatility.

Some pundits have expressed concerns about the low levels of realized volatility despite geopolitical and trade conflict. Other investors have argued that a healthy, less-leveraged financial system is the major driver of a low-vol environment, and that the impacts of geopolitics may be overblown.

U.S. IMPLIED VOLATILITY (VIX)



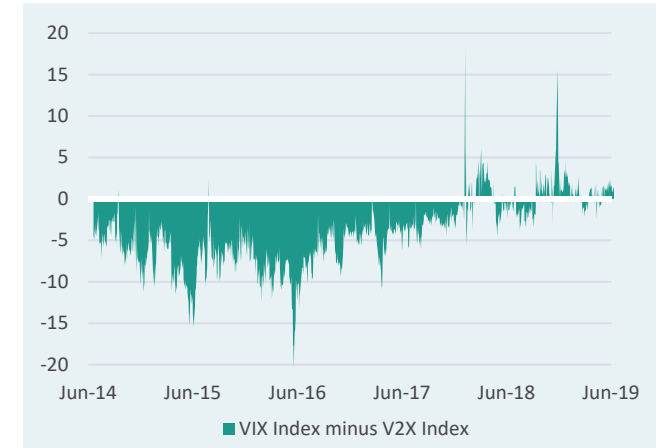
Source: CBOE, as of 6/30/19

REALIZED 90-DAY VOLATILITY



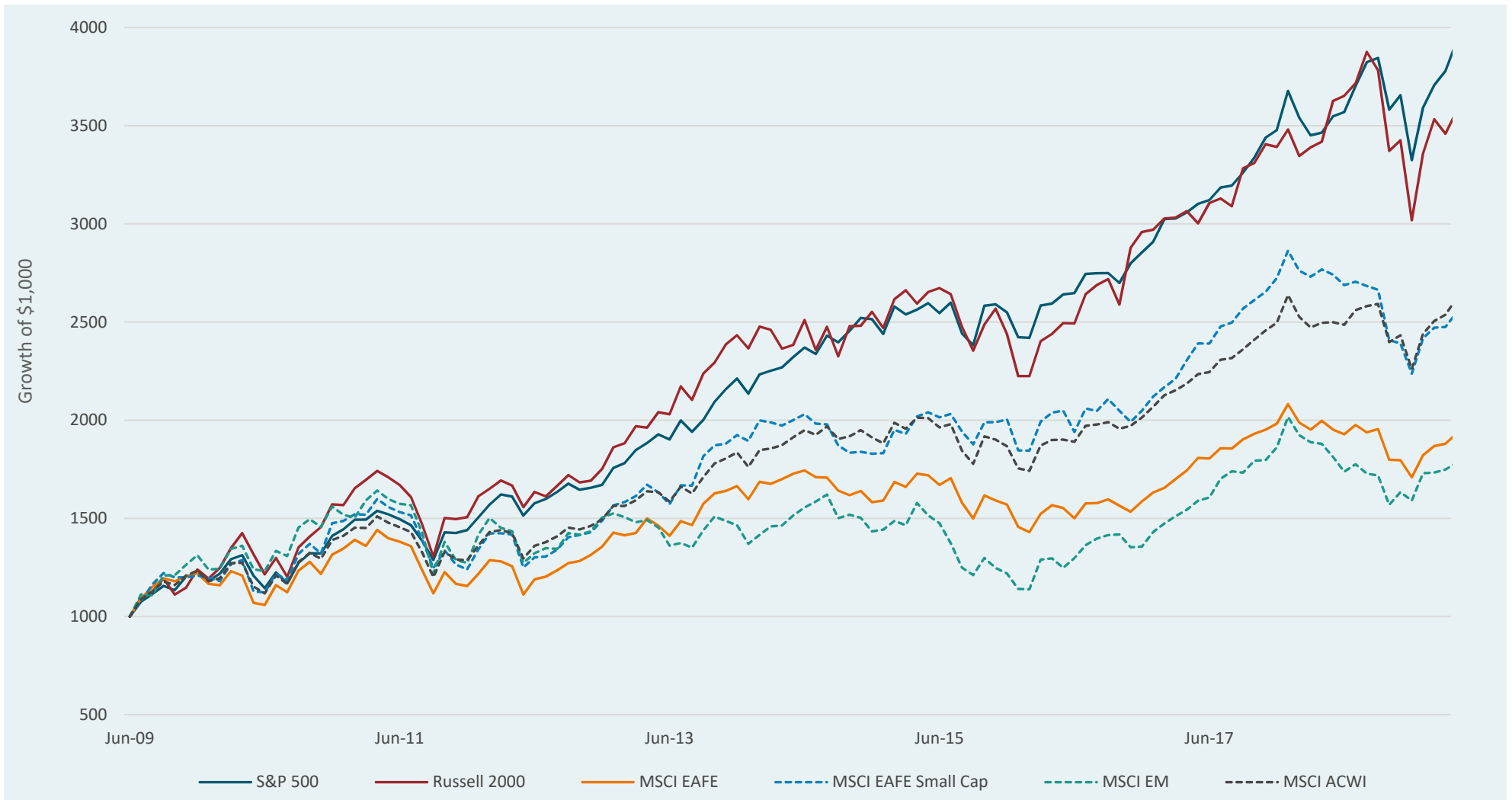
Source: Bloomberg, as of 6/30/19

U.S. IMPLIED VOLATILITY VS. EUROPEAN IMPLIED VOLATILITY



Source: Bloomberg, as of 6/30/19

Long-term equity performance



Source: Morningstar, as of 6/30/19

Other assets

Currency

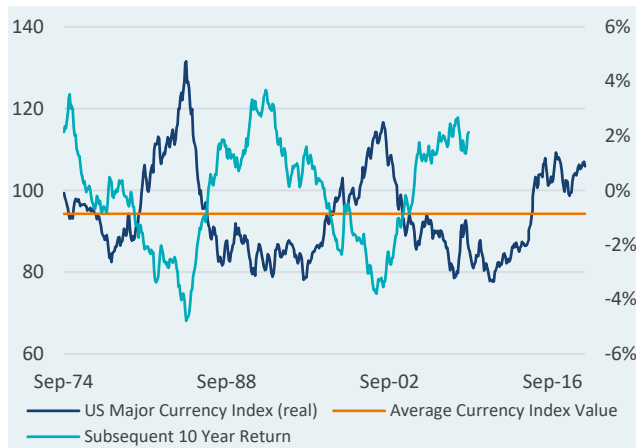
The U.S. dollar depreciated -0.2% in Q2 relative to a trade-weighted basket of currencies. After a period of strength in April and May, the dollar weakened significantly vs. developed currency pairs in June as the Federal Reserve issued dovish guidance. By the end of the quarter, markets were pricing between 0.50% and 0.75% in cuts to the federal funds range in 2019. In Europe, investors were pricing between 0.1% and 0.2% in cuts to the ECB's main deposit rate, which was already in negative territory at -0.40%.

Some analysts attributed the dollar's weakness relative to the euro as a byproduct of converging interest rate differentials driven by the Fed's ability to cut rates more significantly than the ECB.

Emerging market currencies rose in the second quarter, with the JPM Emerging Markets Currency Index gaining 0.5%. The South African Rand led the complex higher.

Surprise central bank dovishness has likely contributed to currency movement

U.S. DOLLAR TRADE WEIGHTED INDEX



Source: Federal Reserve, Verus, as of 6/30/19

EUR/USD



Source: Bloomberg, as of 6/30/19

JPM EMERGING MARKET CURRENCY INDEX



Source: Bloomberg, JPMorgan, as of 6/30/19

Hedge funds

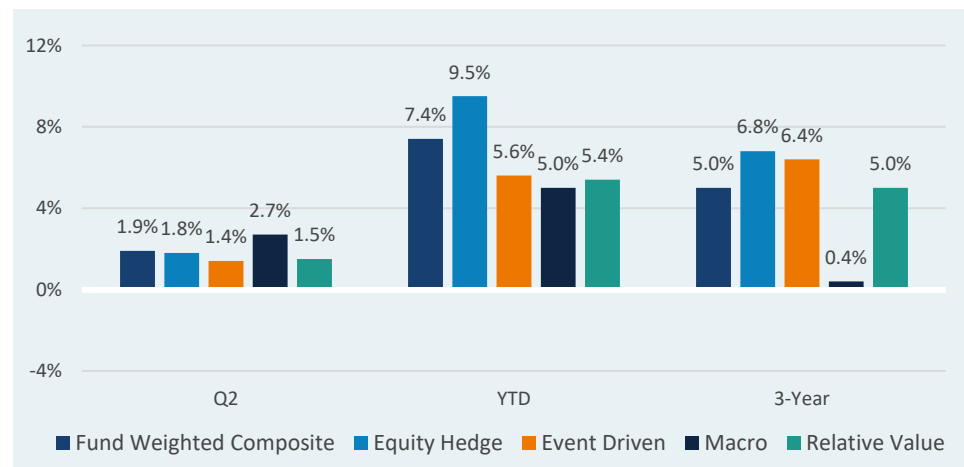
Hedge fund performance was generally positive across strategy types during the second quarter (HFRI Hedge Fund Weighted Composite +1.9% in Q2, +7.4% YTD). This marked the best first half of the year since 2009. Quantitative macro strategies, including CTAs, were the best performing sub strategy group in 2019 Q2 (+2.7%).

Within equities, technology focused funds stood out as top performers (+2.9%) for the quarter. As a group, value-oriented managers (+2.3%) outperformed growth-oriented

peers (+1.6%). Most other strategy types were modestly positive. Healthcare focused strategies (-0.1%) lagged peers due in part to fears of a changing regulatory environment.

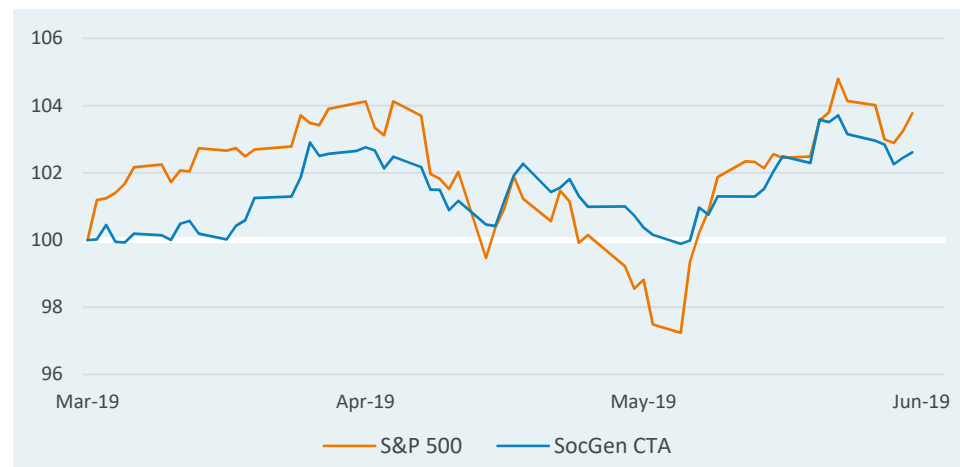
Within the fixed income-oriented strategy set, managers trading corporate bonds (+2.5%) and credit arbitrage (+2.2%) strategies were the best performers during the quarter. Managers trading convertibles (+1.7%), asset backed (+1.4%) and distress (+1.3%) posted more muted gains.

HFRI HEDGE FUND STYLE PERFORMANCE



Source: HFRI, as of 6/30/19

Q2 2019 CUMULATIVE PERFORMANCE (INDEXED TO 3/31/19)



Source: Standard & Poor's, Société Générale, as of 6/30/19

Appendix

Periodic table of returns

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	YTD	5-Year	10-Year
Large Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	21.5	13.4	16.3
Small Cap Growth	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	20.4	10.5	14.8
Large Cap Equity	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	18.8	8.6	14.4
Small Cap Equity	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	17.0	8.5	13.4
Large Cap Value	16.2	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	16.2	7.5	13.2
International Equity	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	14.0	7.1	12.4
Small Cap Value	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	13.5	5.4	9.1
60/40 Global Portfolio	4.9	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	12.0	4.3	7.4
Emerging Markets Equity	1.2	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	10.6	2.9	6.9
Hedge Funds of Funds	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	6.3	2.5	5.8
US Bonds	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	6.1	2.2	3.9
Commodities	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	5.1	2.2	3.2
Real Estate	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	1.8	0.9	0.5
Cash	-27.0	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	1.2	-9.1	-3.7

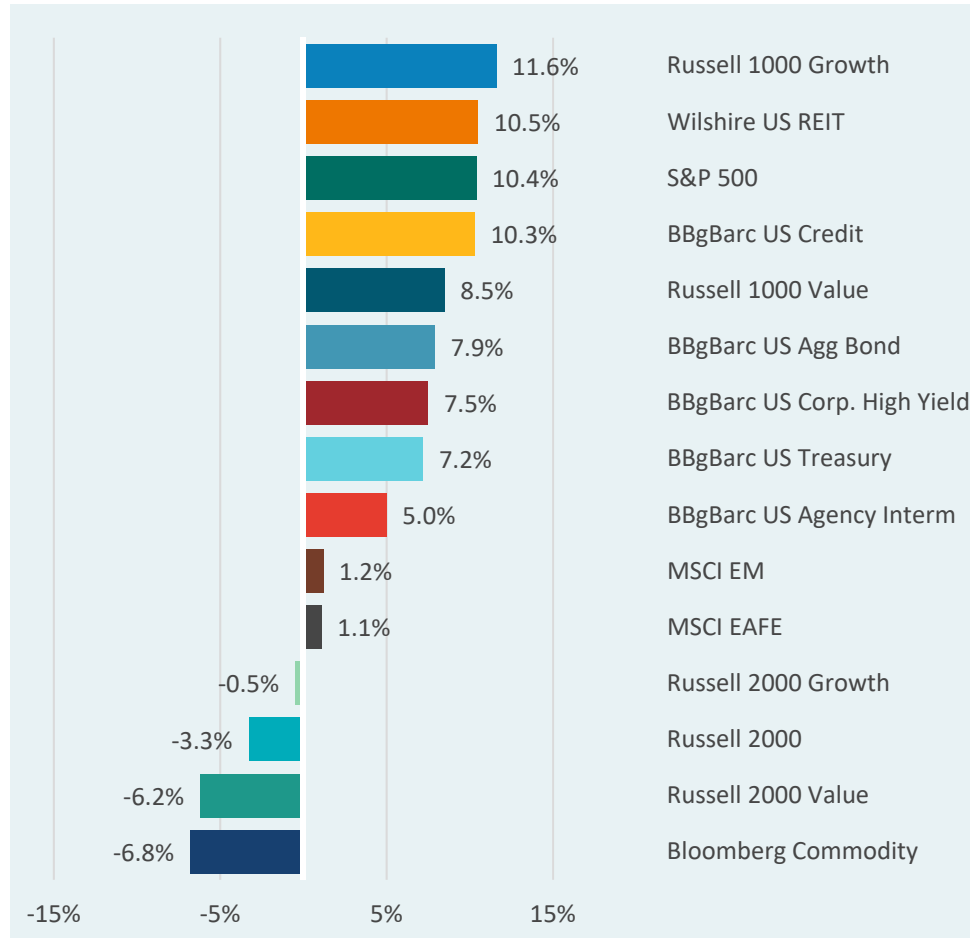
BEST
↑
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WORST

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

Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 3/31/19.

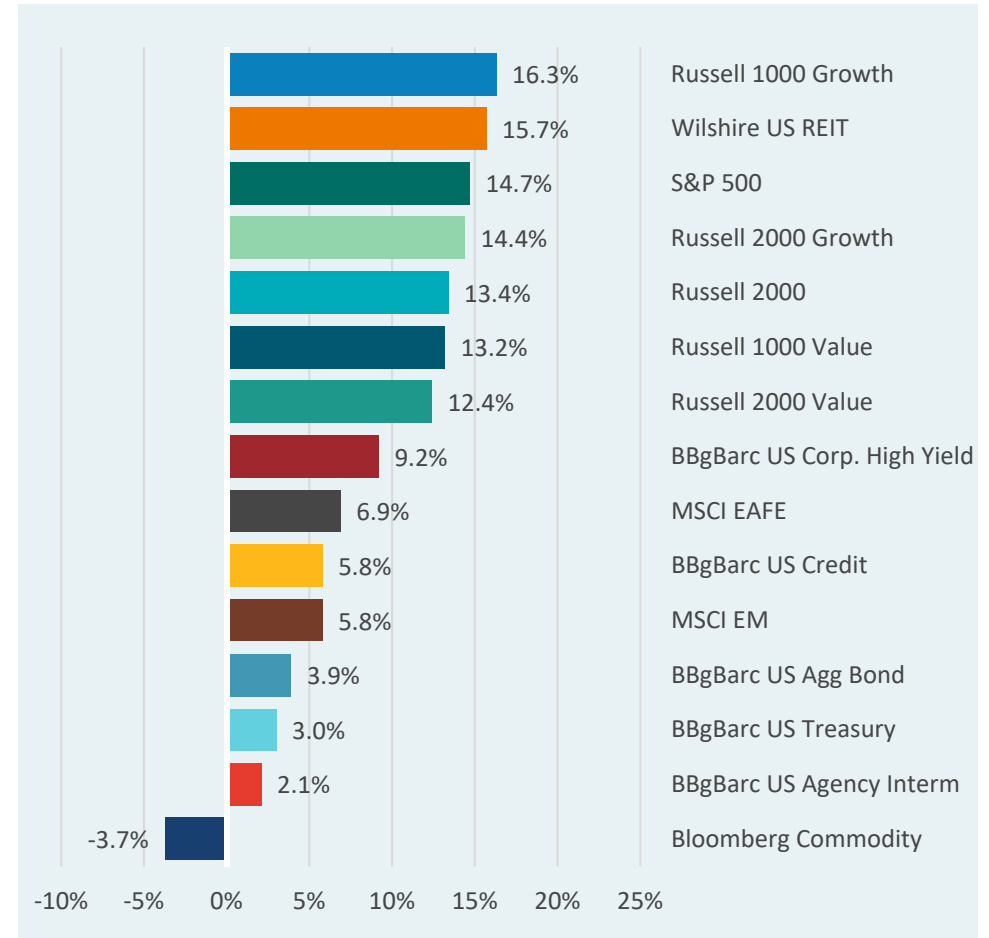
Major asset class returns

ONE YEAR ENDING JUNE



Source: Morningstar, as of 6/30/19

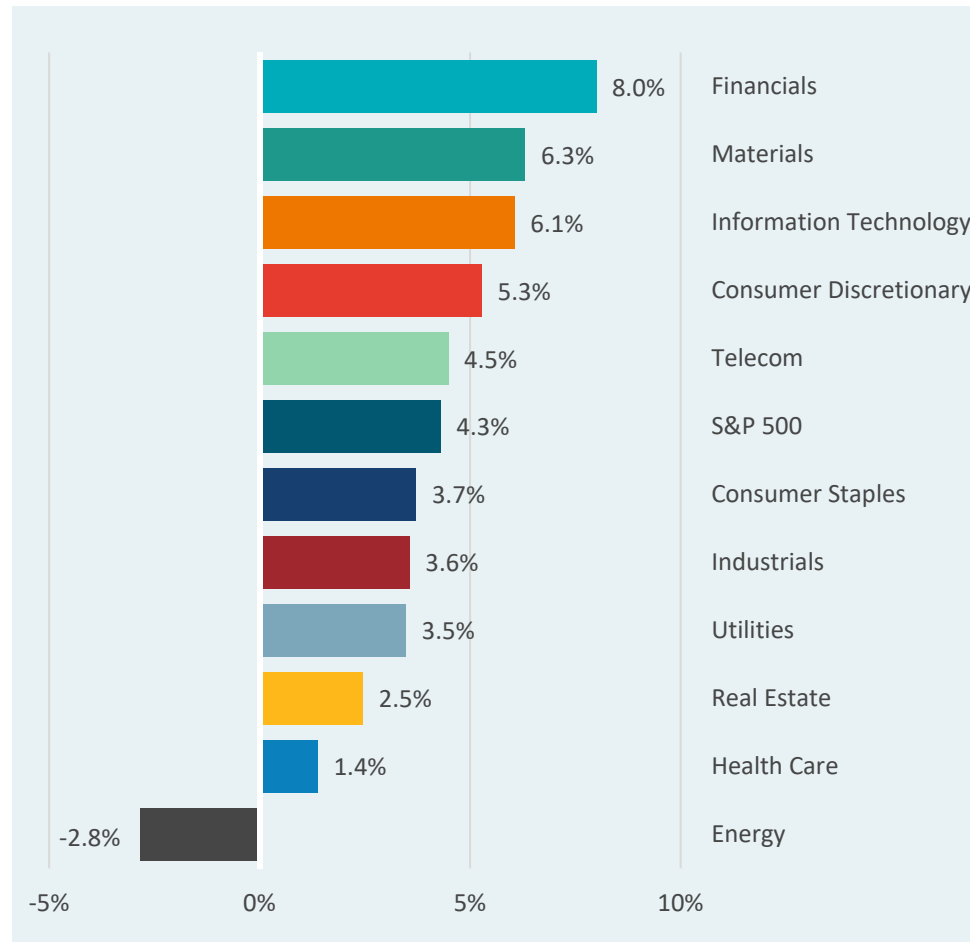
TEN YEARS ENDING JUNE



Source: Morningstar, as of 6/30/19

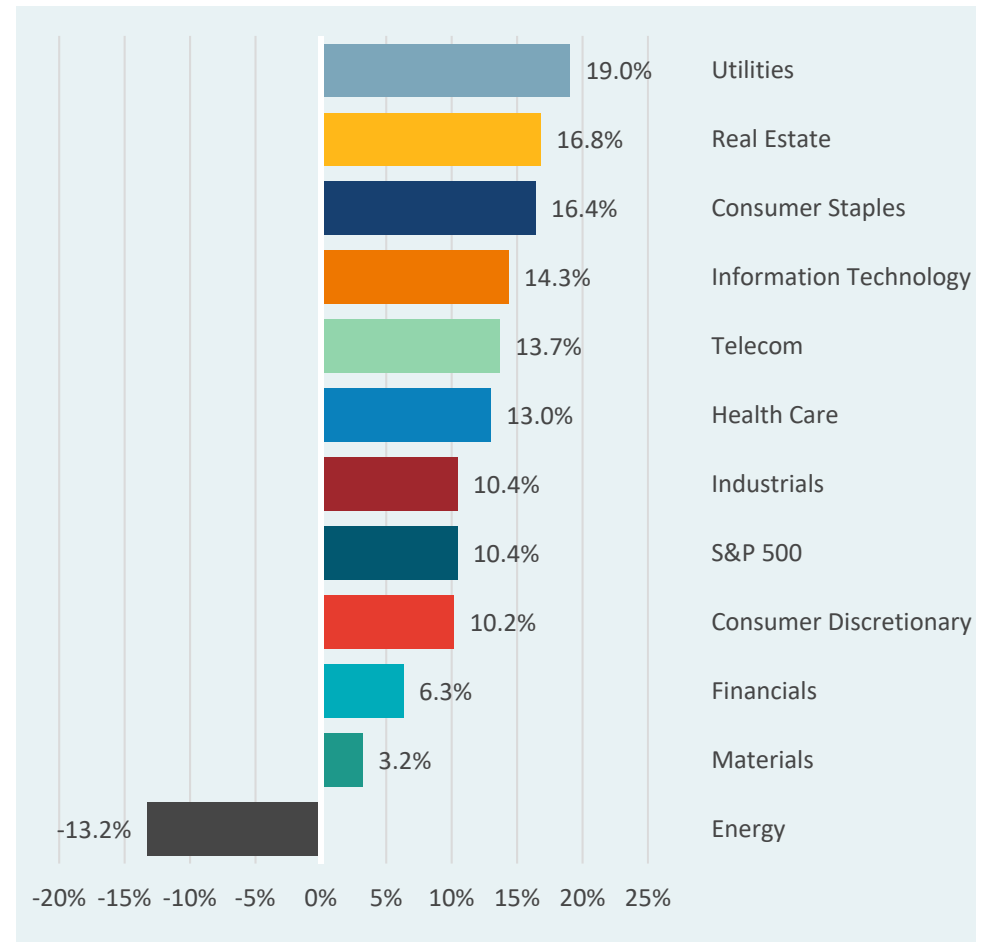
S&P 500 sector returns

Q2



Source: Morningstar, as of 6/30/19

ONE YEAR ENDING JUNE



Source: Morningstar, as of 6/30/19

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	7.0	4.3	18.5	10.4	14.2	10.7	14.7
S&P 500 Equal Weighted	7.5	3.7	19.2	8.2	12.4	9.1	15.6
DJ Industrial Average	7.3	3.2	15.4	12.2	16.8	12.3	15.0
Russell Top 200	7.1	4.3	17.9	10.9	14.9	11.2	14.6
Russell 1000	7.0	4.2	18.8	10.0	14.1	10.5	14.8
Russell 2000	7.1	2.1	17.0	(3.3)	12.3	7.1	13.4
Russell 3000	7.0	4.1	18.7	9.0	14.0	10.2	14.7
Russell Mid Cap	6.9	4.1	21.3	7.8	12.2	8.6	15.2
Style Index							
Russell 1000 Growth	6.9	4.6	21.5	11.6	18.1	13.4	16.3
Russell 1000 Value	7.2	3.8	16.2	8.5	10.2	7.5	13.2
Russell 2000 Growth	7.7	2.7	20.4	(0.5)	14.7	8.6	14.4
Russell 2000 Value	6.4	1.4	13.5	(6.2)	9.8	5.4	12.4

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	6.5	3.6	16.2	5.7	11.6	6.2	10.1
MSCI ACWI ex US	6.0	3.0	13.6	1.3	9.4	2.2	6.5
MSCI EAFE	5.9	3.7	14.0	1.1	9.1	2.2	6.9
MSCI EM	6.2	0.6	10.6	1.2	10.7	2.5	5.8
MSCI EAFE Small Cap	4.2	1.7	12.5	(6.3)	9.1	4.4	9.7
Style Index							
MSCI EAFE Growth	6.5	5.7	18.5	4.2	9.7	4.4	8.2
MSCI EAFE Value	5.3	1.5	9.6	(2.1)	8.5	0.1	5.5
Regional Index							
MSCI UK	5.0	0.9	12.9	(2.0)	6.9	(0.3)	6.8
MSCI Japan	3.7	1.0	7.7	(4.2)	8.1	4.5	5.8
MSCI Euro	7.6	5.9	16.2	0.5	10.4	1.1	5.6
MSCI EM Asia	6.4	(1.2)	9.7	(2.3)	11.2	4.5	7.5
MSCI EM Latin American	6.2	4.4	12.6	18.4	10.8	(0.8)	2.3

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	0.9	2.9	6.2	4.8	2.1	1.8	3.6
BBgBarc US Treasury Bills	0.2	0.7	1.3	2.4	1.4	0.9	0.5
BBgBarc US Agg Bond	1.3	3.1	6.1	7.9	2.3	2.9	3.9
Duration							
BBgBarc US Treasury 1-3 Yr	0.5	1.5	2.5	4.0	1.3	1.2	1.2
BBgBarc US Treasury Long	1.3	6.0	11.0	12.3	1.3	5.7	6.5
BBgBarc US Treasury	0.9	3.0	5.2	7.2	1.3	2.5	3.0
Issuer							
BBgBarc US MBS	0.7	2.0	4.2	6.2	2.1	2.6	3.2
BBgBarc US Corp. High Yield	2.3	2.5	9.9	7.5	7.5	4.7	9.2
BBgBarc US Agency Interm	0.6	1.7	3.1	5.0	1.6	1.8	2.1
BBgBarc US Credit	2.3	4.3	9.4	10.3	3.7	3.9	5.8

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	2.7	(1.2)	5.1	(6.8)	(2.2)	(9.1)	(3.7)
Wilshire US REIT	1.4	1.6	17.9	10.5	4.1	7.8	15.7
CS Leveraged Loans	0.2	1.6	5.4	4.1	5.4	3.9	6.3
Alerian MLP	2.6	0.3	17.8	5.5	(0.4)	(6.5)	9.1
Regional Index							
JPM EMBI Global Div	3.4	4.1	11.3	12.4	5.5	5.3	7.8
JPM GBI-EM Global Div	5.5	5.6	8.7	9.0	4.2	(0.5)	3.4
Hedge Funds							
HFRI Composite	2.6	2.0	7.6	1.6	5.1	3.0	4.7
HFRI FOF Composite	1.7	1.6	6.3	1.3	4.3	2.2	3.2
Currency (Spot)							
Euro	2.2	1.4	(0.4)	(2.5)	0.8	(3.6)	(2.1)
Pound	1.0	(2.3)	(0.1)	(3.6)	(1.6)	(5.7)	(2.5)
Yen	0.8	2.7	1.8	2.8	(1.6)	(1.2)	(1.1)

Source: Morningstar, HFR, as of 6/30/19

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: excess return divided by tracking error.

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

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

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

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

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

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

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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