Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

Meeting Date
08/28/19
Agenda Item
#4a.

PERIOD ENDING: JUNE 30, 2019

Investment Performance Review for

Contra Costa County Employees' Retirement Association

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Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

3RD QUARTER 2019

Investment Landscape

Recent Verus research

Visit: https://www.verusinvestments.com/insights/

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 %)

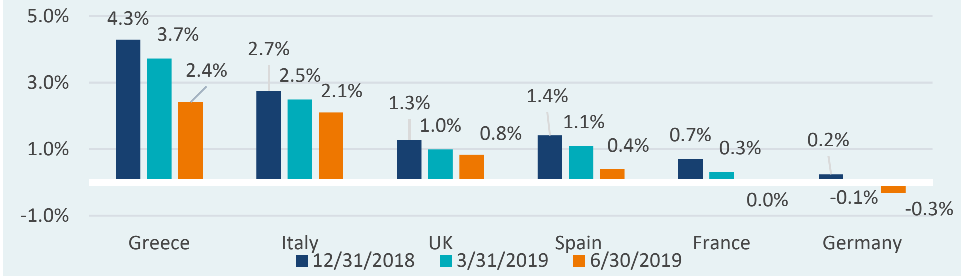
Jan	Feb	Mar	Apr	May	Jun
1.4	1.5	1.4	1.7	1.2	1.3

Article Source: Bloomberg, June 18th, 2019

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

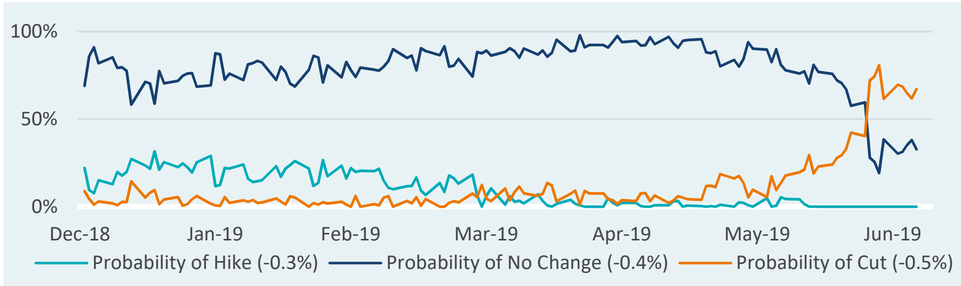
Source: Bloomberg, as of 6/30/19

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*

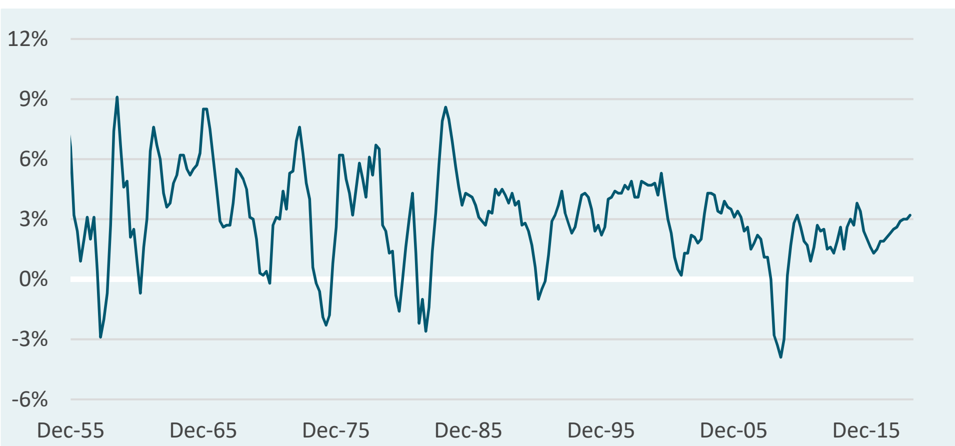
GDP growth

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.

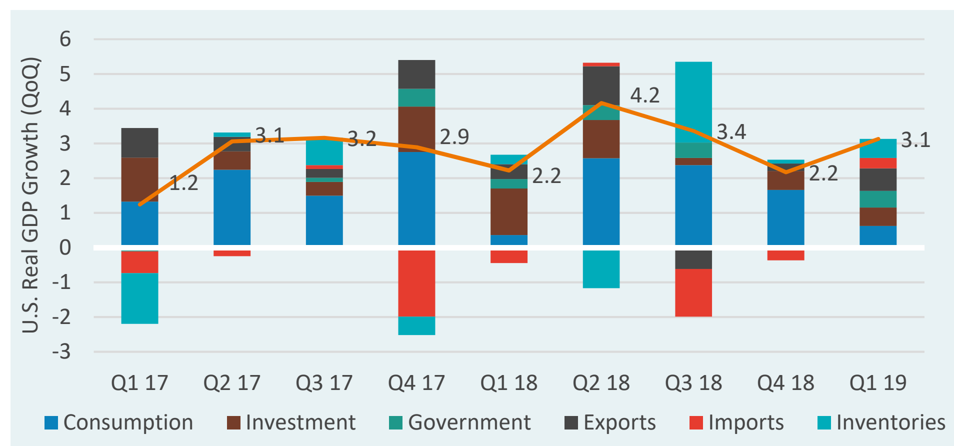
The U.S. economy is expected to slow to 2.1% in 2020, near the growth rate of the developed world

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

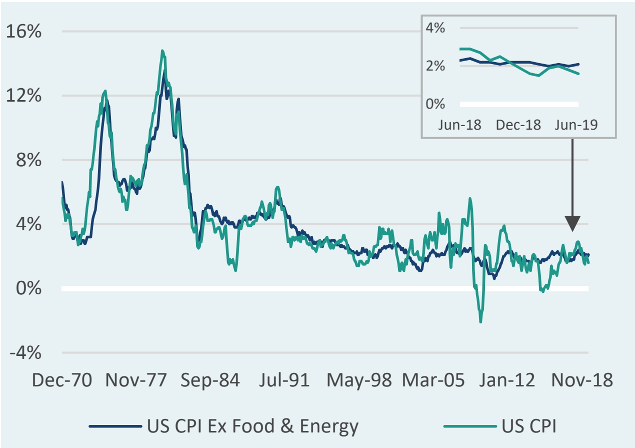
Inflation

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%).

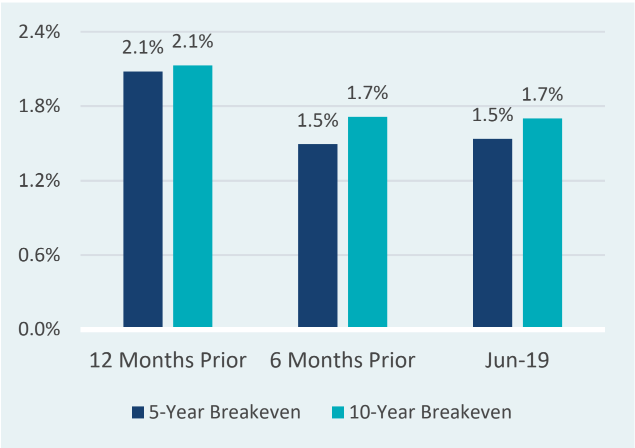
We believe subdued inflation of around 2% has been, and will be, a key influence on Federal Reserve policy. Lower inflation provides the Fed with more legroom for easier positioning to support economic growth and strong employment. If the inflation trend were to shift in either direction, this may put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

U.S. CPI (YOY)



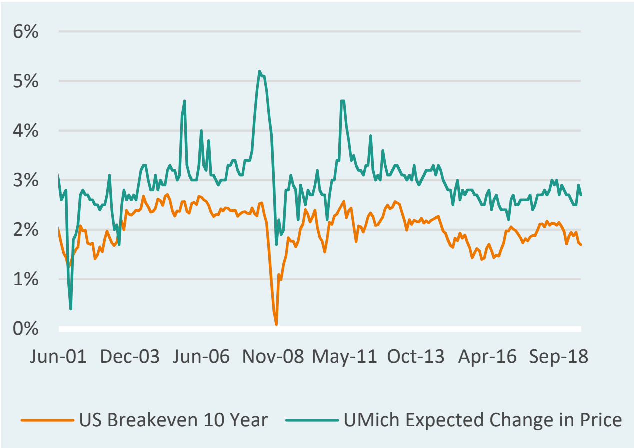
Source: Bloomberg, as of 6/30/19

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.

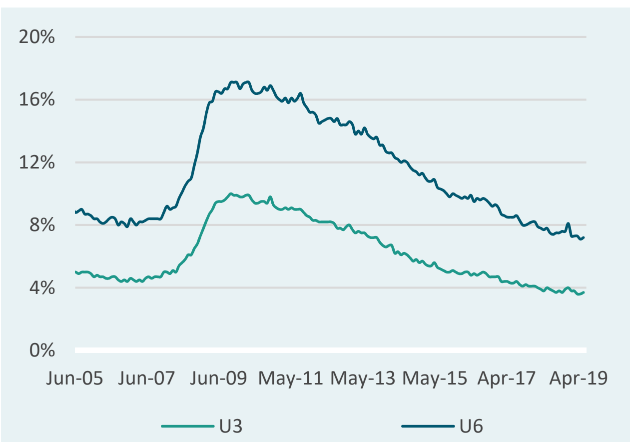
The U.S. unemployment rate was 3.7% in June, according to the narrower U-3 measure which only encompasses those workers seeking a job. The broader U-6 unemployment rate was 7.2%, which also includes discouraged and part-time workers who seek full-time employment.

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.

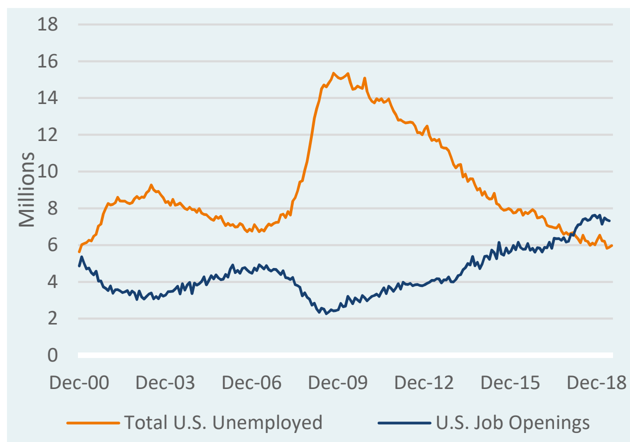
U.S. labor market remains strong, though further upside may be limited

U.S. UNEMPLOYMENT



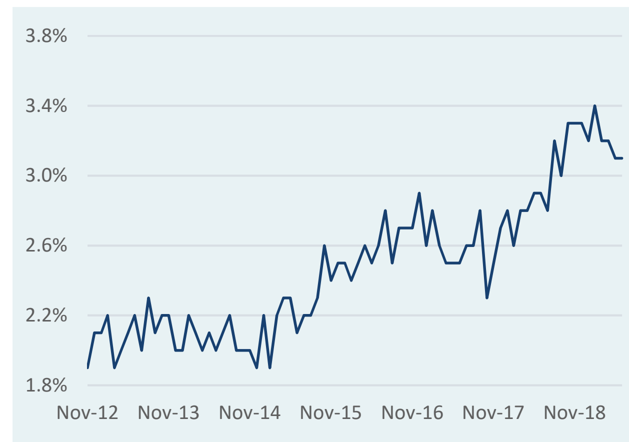
Source: FRED, as of 6/30/19

U.S. JOB OPENINGS VS. UNEMPLOYED



Source: Bloomberg, as 6/30/19

U.S. WAGE GROWTH



Source: FRED, as of 6/30/19

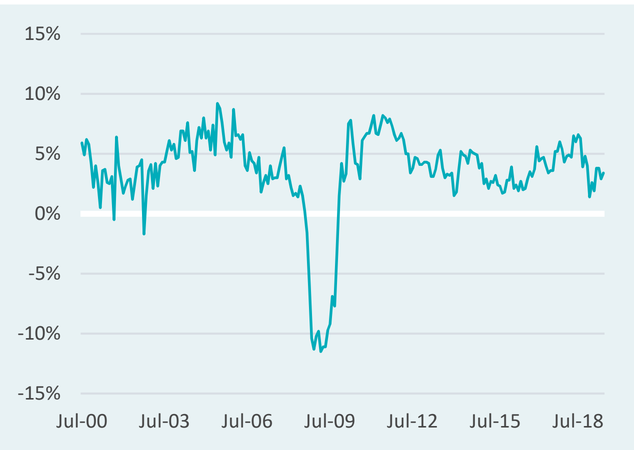
The consumer

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.

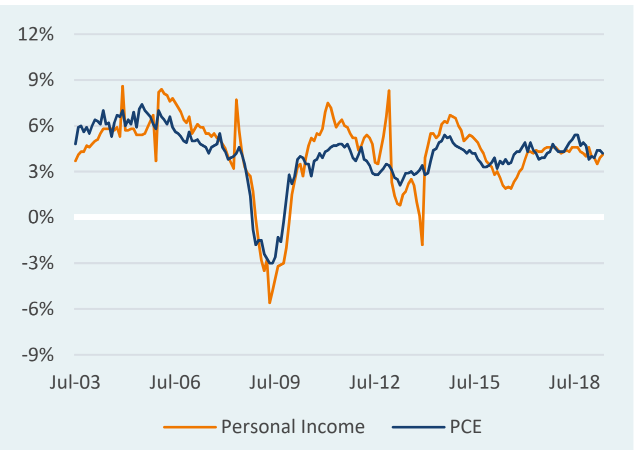
Consumer credit growth has remained tempered over the expansion, but the composition of that credit has shifted. Over the past ten years, student loans have increased their share while mortgage debt has decreased its share.

REAL RETAIL SALES GROWTH (YOY)



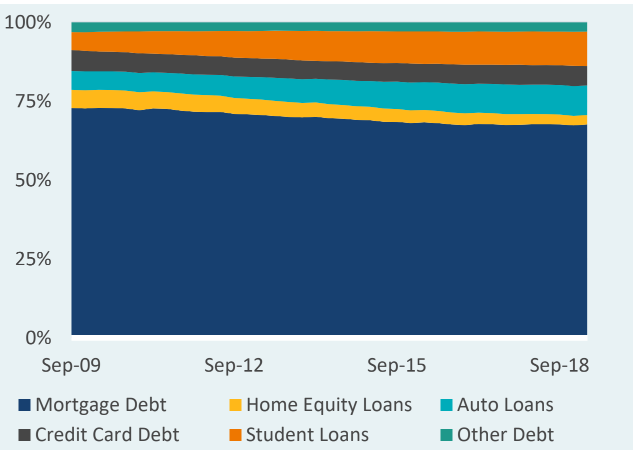
Source: Bloomberg, as of 6/30/19

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

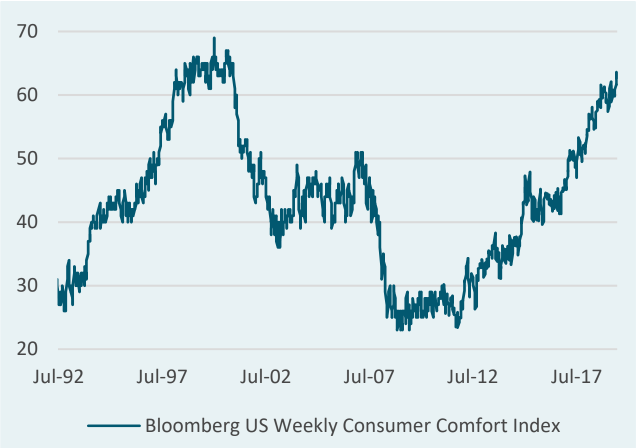
Sentiment

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.

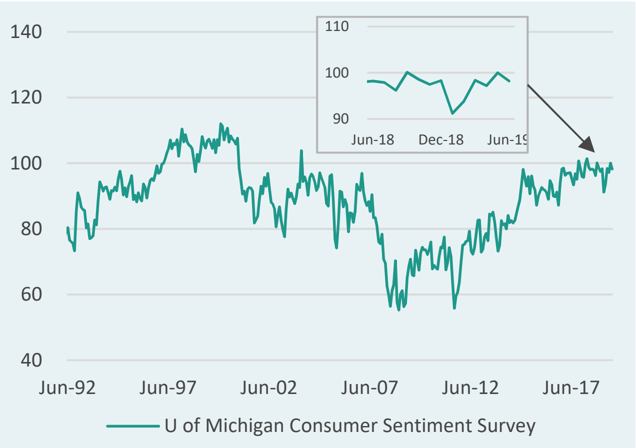
The Conference Board's Consumer Confidence Index advanced in April and May before falling at quarter-end. In June, the indicator fell from 131.3 to 121.5, below expectations for a slight dip to 131.0. While the index remained at a high level, consumers were less optimistic about the current economic 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



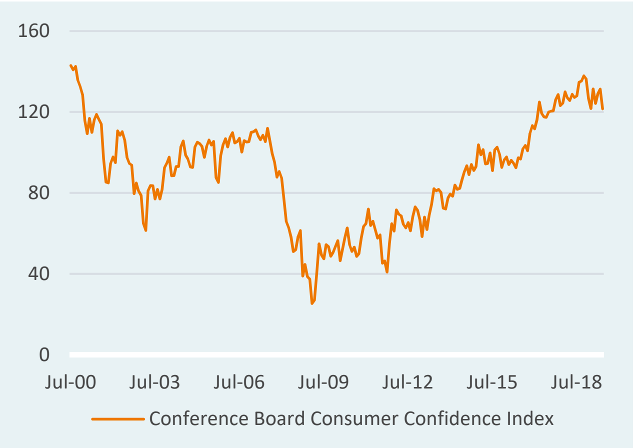
Source: Bloomberg, as of 6/30/19 (see Appendix)

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)

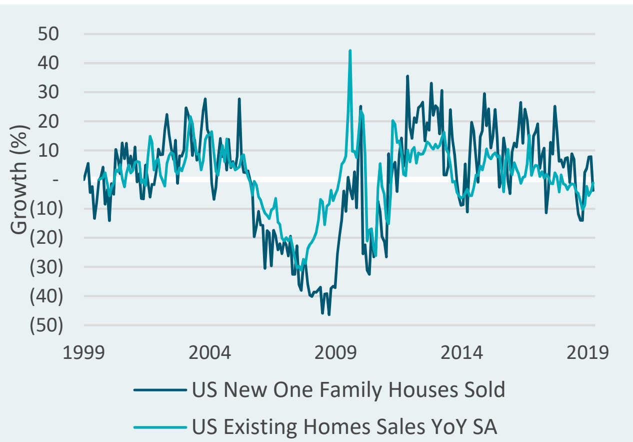
Housing

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.

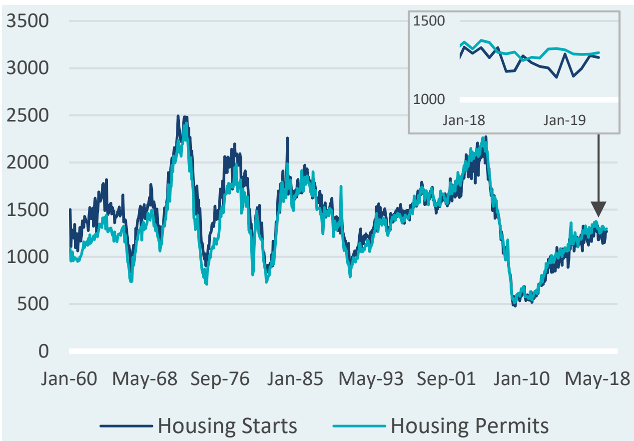
Home prices have fallen slightly. The median U.S. home sale price was down -3% year-over-year as of May. Home price trends can vary significantly by location, which means national statistics are sometimes difficult to interpret at a local level.

U.S. HOME SALES (YOY)



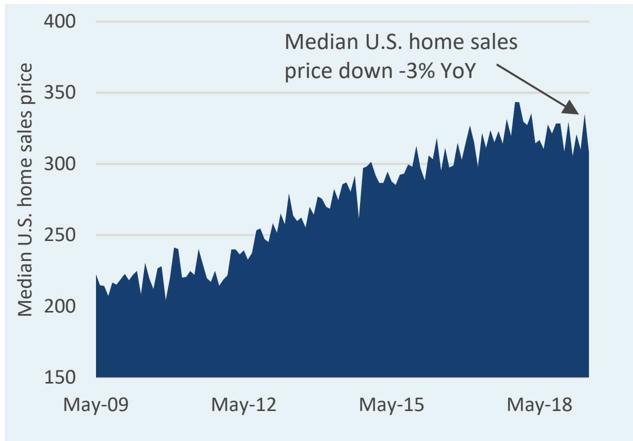
Source: FRED, as of 5/31/19

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% *3/31/19*	1.6% *6/30/19*	3.7% *6/30/19*
Eurozone	1.2% *3/31/19*	1.1% *5/31/19*	7.5% *5/31/19*
Japan	0.9% *3/31/19*	0.7% *5/31/19*	2.4% *5/31/19*
BRICS Nations	5.2% *3/31/19*	2.4% *3/31/19*	5.2% *3/31/19*
Brazil	1.4% *3/31/19*	3.4% *6/30/19*	12.4% *6/30/19*
Russia	2.7% *12/31/18*	4.7% *6/30/19*	4.5% *5/31/19*
India	7.2% *12/31/18*	3.2% *6/30/19*	8.5% *12/31/17*
China	6.4% *3/31/19*	2.7% *6/30/19*	3.7% *3/31/19*

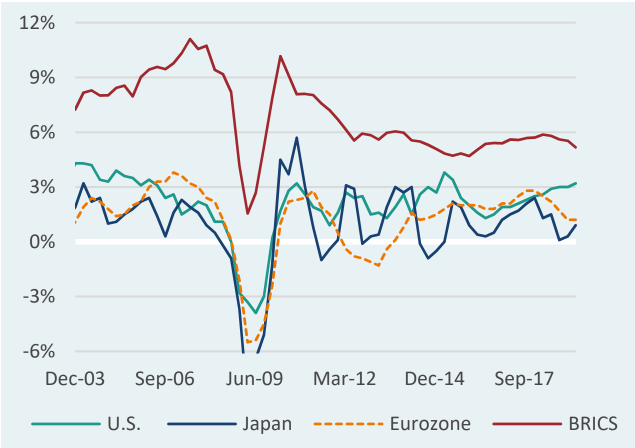
International economics

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.

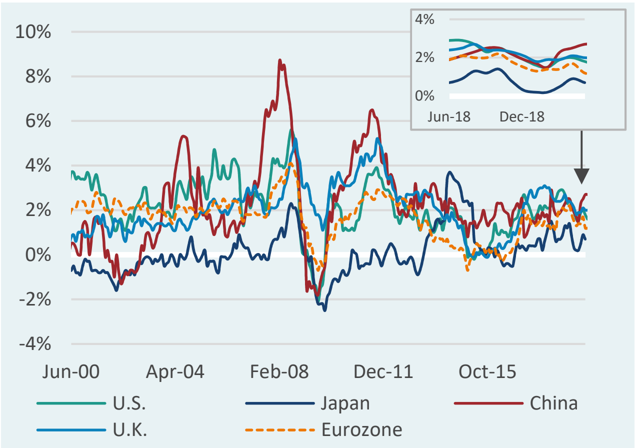
The U.K. Prime Minister Theresa May announced her resignation effective June 7th. In July, Boris Johnson defeated Jeremy Hunt and will replace Theresa May as Britain's next prime minister. Mr. Johnson has taken a harder line on Brexit than Mr. Hunt, and his election likely increases the probability that the U.K. exits the E.U. without a deal.

REAL GDP GROWTH (YOY)



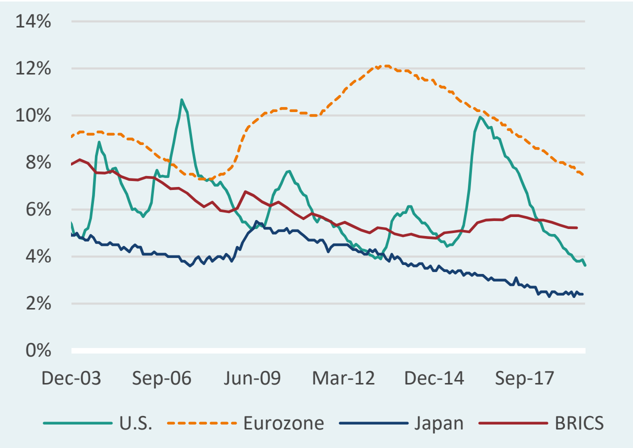
Source: Bloomberg, as of 3/31/19

INFLATION (CPI YOY)



Source: Bloomberg, as of 6/30/19

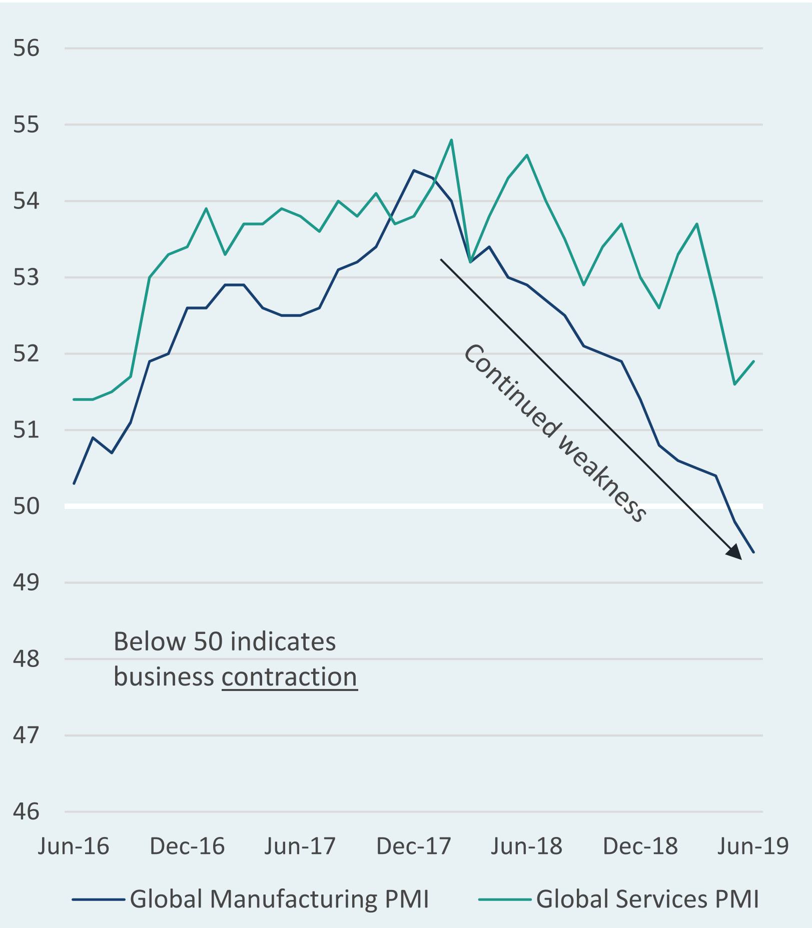
UNEMPLOYMENT RATE



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

Dec. 18-19, 2018
Fed meeting

Hiked fed funds range 0.25% to 2.25 – 2.50%
Forecast for additional 2019 0.25% rate hikes: ~~three~~ two

Jan. 29-30, 2019
Fed meeting

On rate hikes:
"~~further gradual increases~~"
"patient approach"

March 19-20, 2019
Fed Meeting

"No more hikes this year"
"Balance sheet unwind concluding in September"
Balance sheet unwind easing from $30b to $15b by May

April 25, 2019
BoJ release

Dovish shift on rates guidance held since 7/2018
Rates will remain low "~~for an extended period~~" "at least through around Spring 2020"

4/30/19 – 5/1/19
Fed meeting

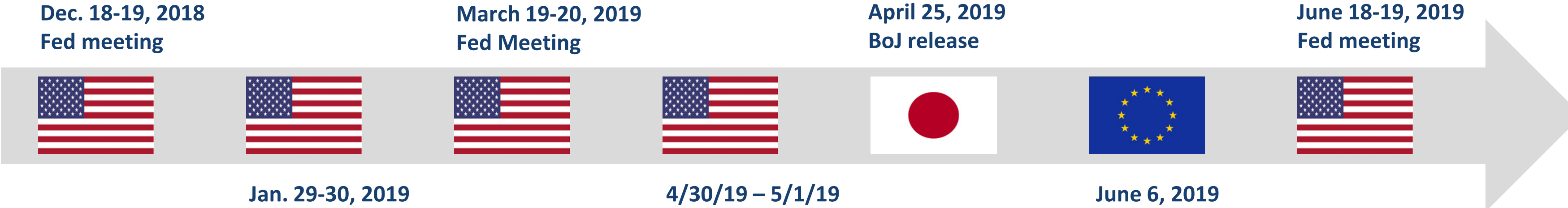
"Low inflation due to transitory factors"

June 6, 2019
ECB Press Conference

Policy makers are "determined" to act if needed amid a "prolonged persistence of uncertainties" and the "rising threat of protectionism"
Rates will remain at present levels through at least "~~the end of 2019~~" "the first half of 2020"

June 18-19, 2019
Fed meeting

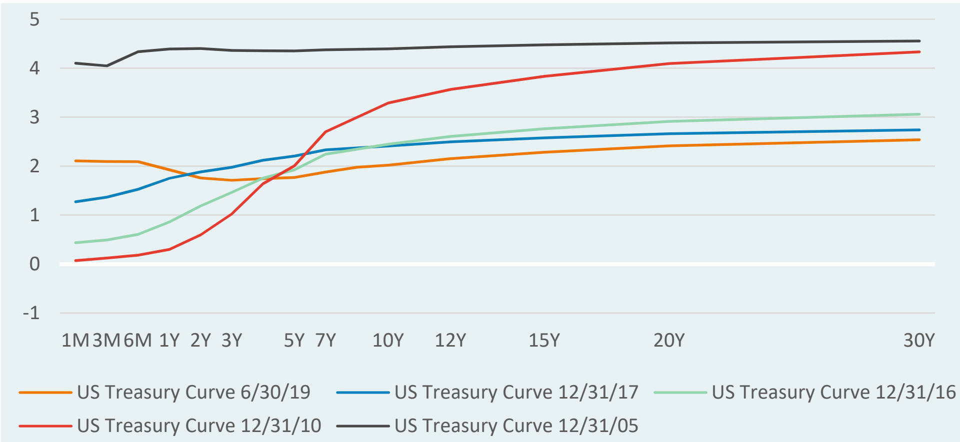
[We will] "act as appropriate to sustain the expansion"



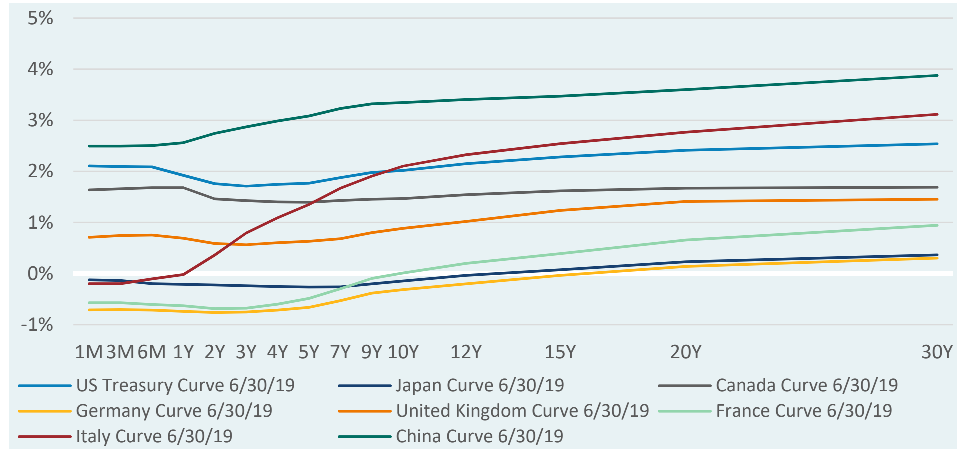
Source: Wikimedia Commons

Yield environment

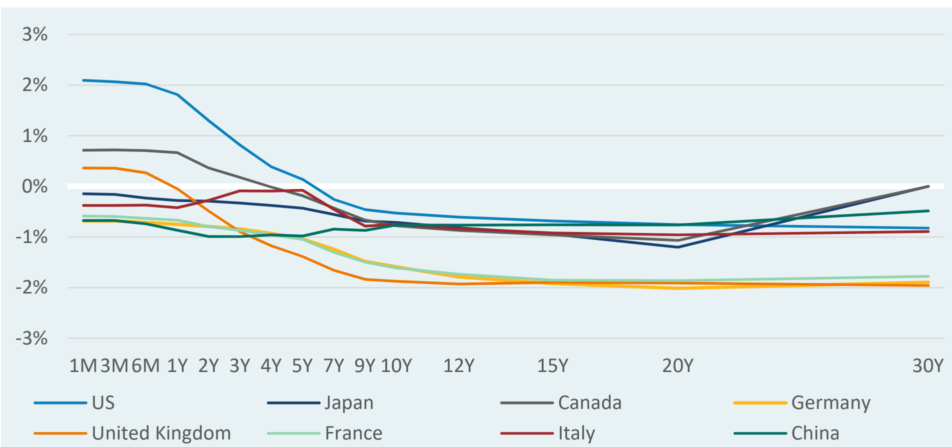
U.S. YIELD CURVE



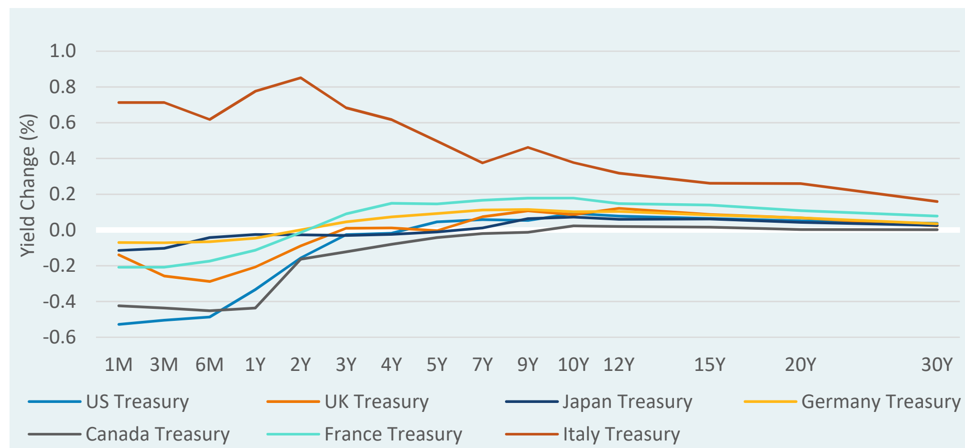
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



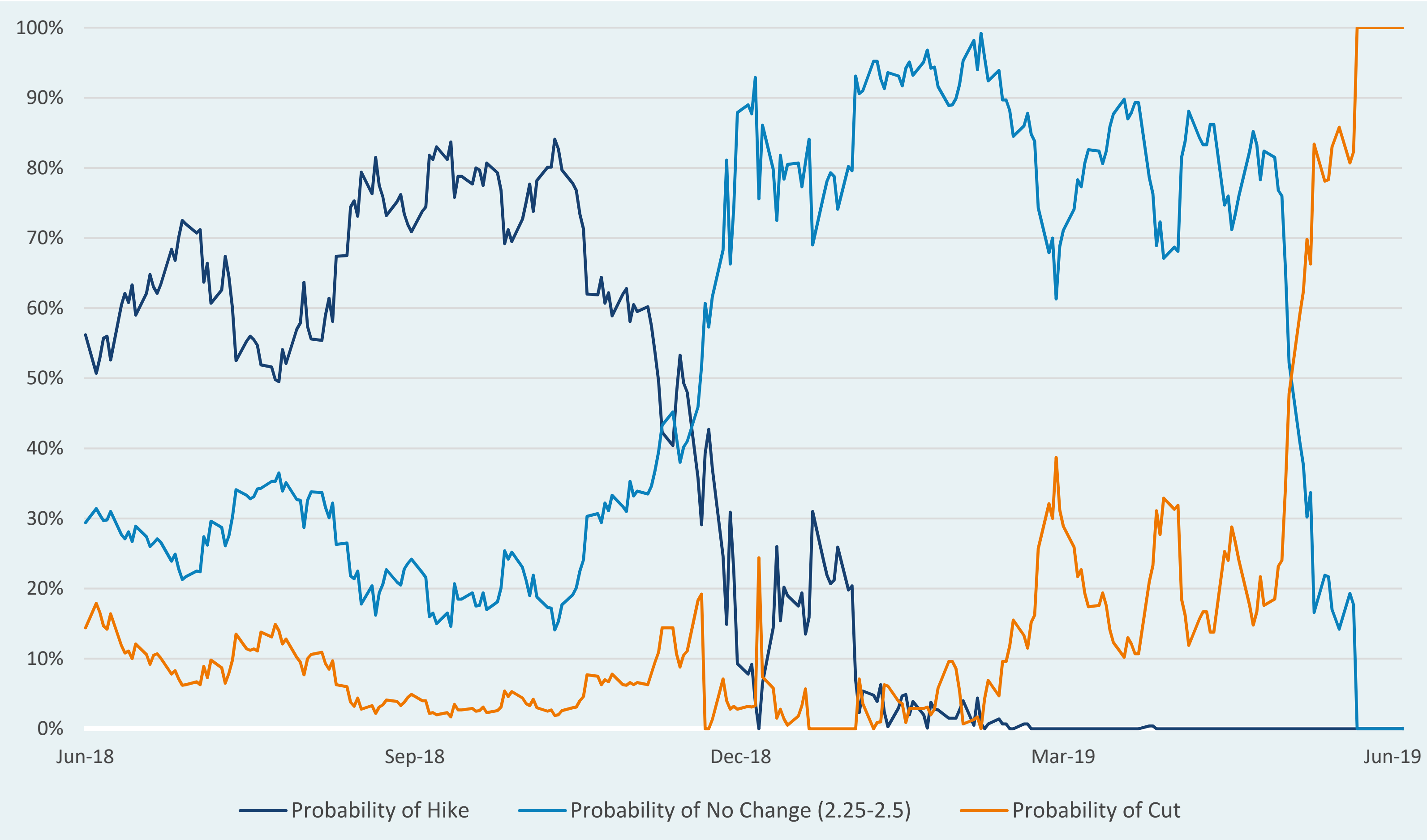
IMPLIED CHANGES OVER NEXT YEAR



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

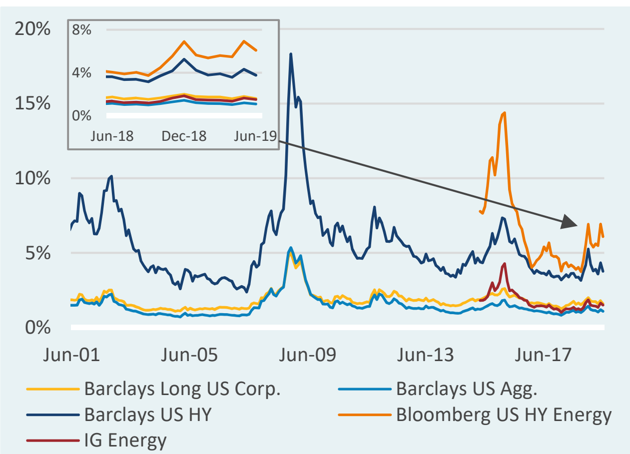
Credit environment

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.

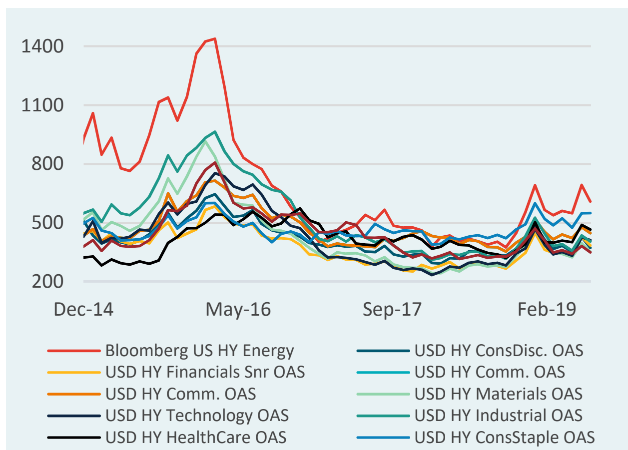
Based on concerns over late-cycle behavior in credit markets, we do not believe investors are being adequately compensated for credit risk. Late-cycle volatility tends to coincide with a jump in credit spreads and steep credit losses. An underweight to U.S. investment grade, high yield credit, and bank 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

	Credit Spread (OAS)	
Market	**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)*

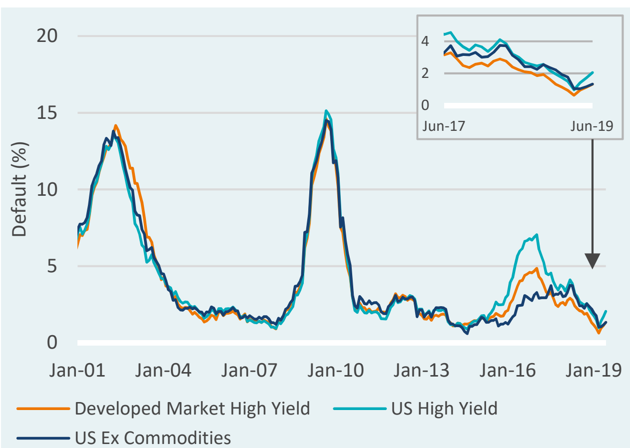
Default & issuance

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.

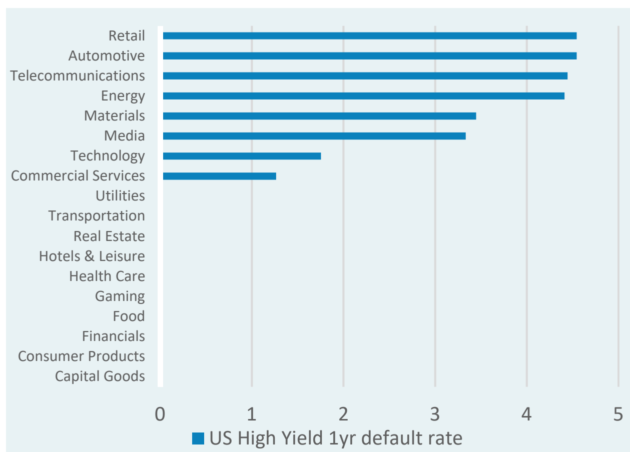
Gross high yield issue activity increased in June as investors took advantage of a dip in yields. Loan market issuance is significantly behind last year's pace, likely influenced by lower demand for floating rate securities now that the Federal Reserve has paused monetary tightening.

HY DEFAULT RATE (ROLLING 1-YEAR)



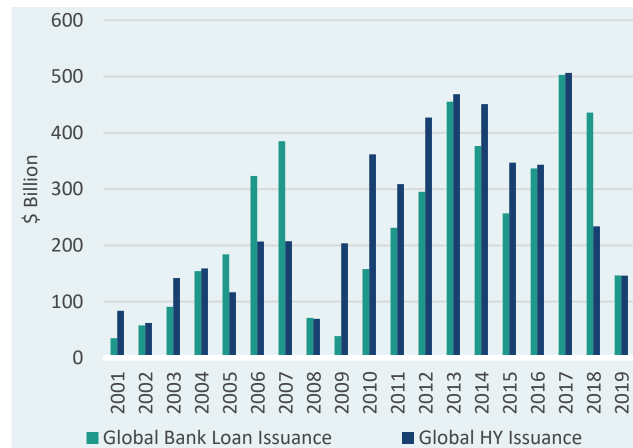
Source: BofA Merrill Lynch, as of 6/30/19

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

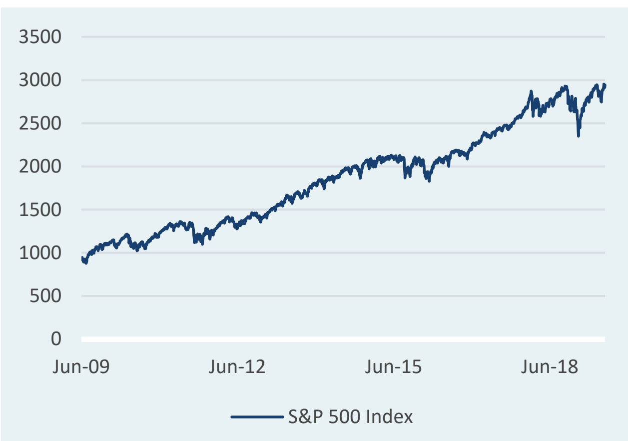
Domestic equity

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

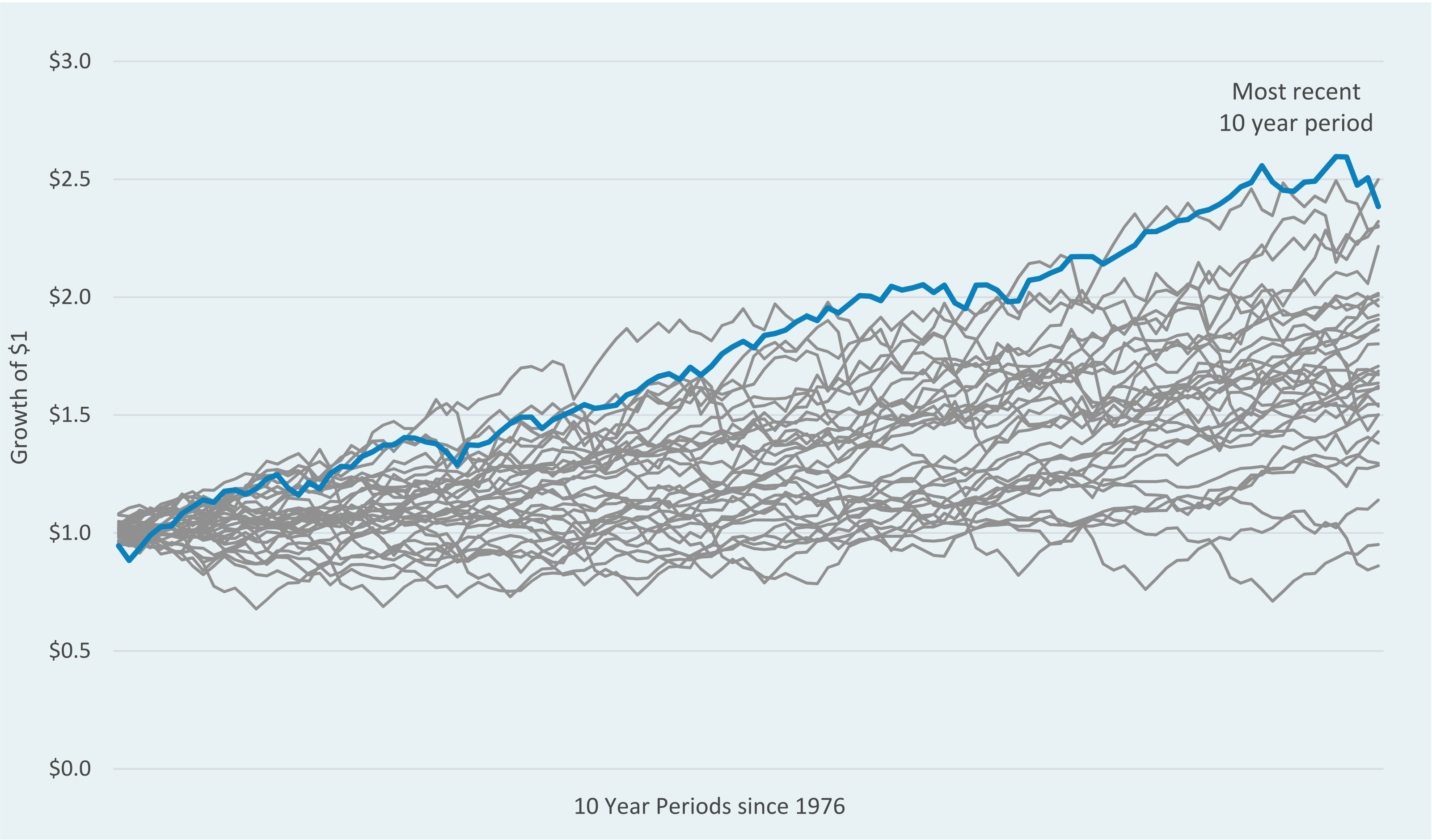
U.S. RELATIVE PERFORMANCE - HISTORICAL

	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

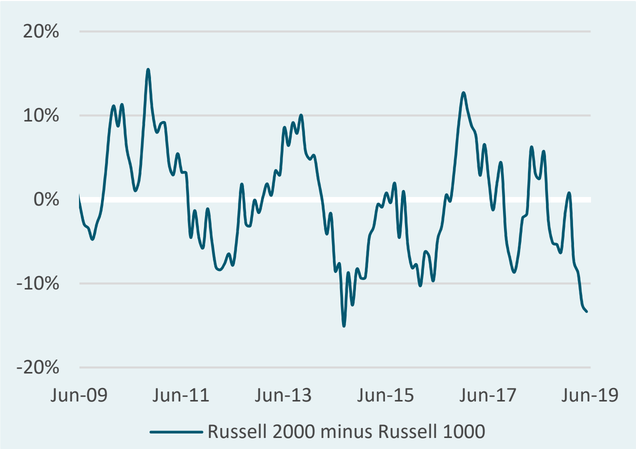
Domestic equity size & style

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.

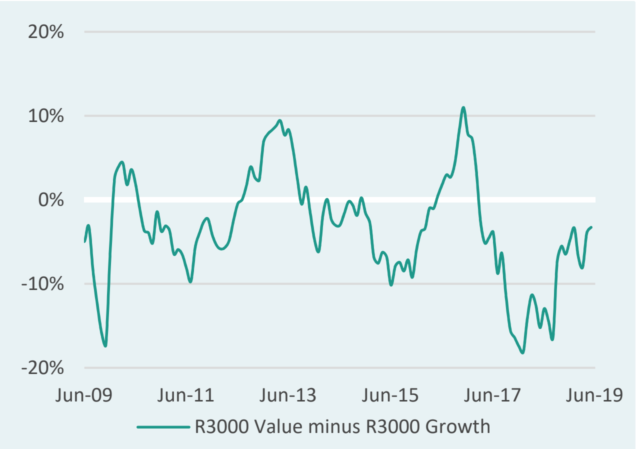
Both small cap and value premia have exhibited underperformance for an extended period of time. Longer periods of underperformance do not necessarily indicate an investment opportunity if value stocks and small cap stocks remain fairly-priced. This appears to be the case today, as neither value stocks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

SMALL CAP VS LARGE CAP (YOY)



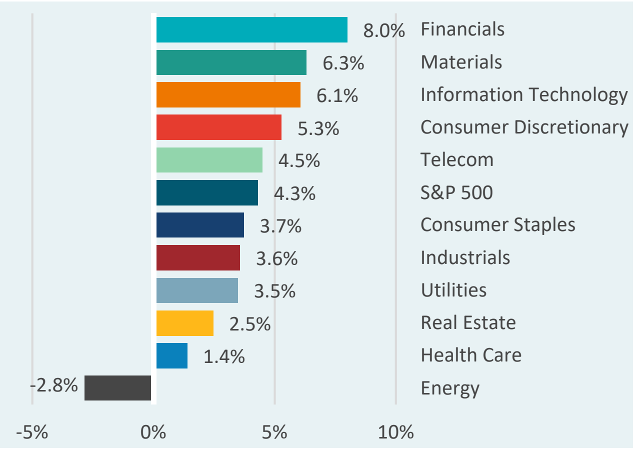
Source: FTSE, as of 6/30/19

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

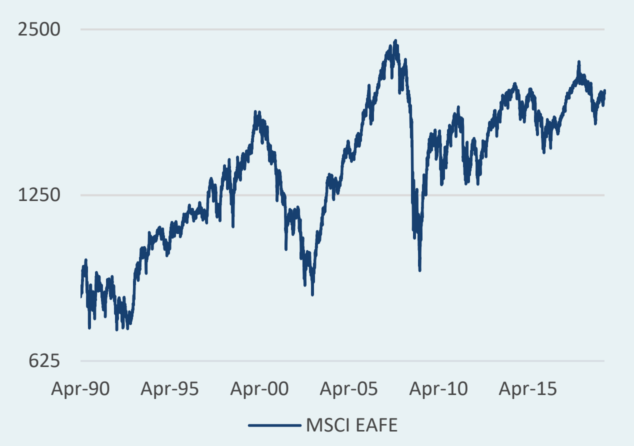
International developed equities posted a second consecutive quarter of solid performance. The MSCI EAFE Index returned +3.9% for the quarter (+14.5% YTD). On a currency hedged basis, the MSCI EAFE Index returned +3.5% for the quarter (+15.2% YTD), indicating that unhedged U.S. investors in EAFE equities 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.

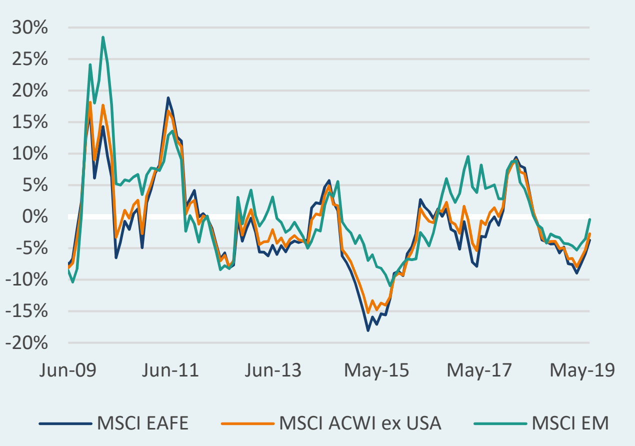
Wage gains and employment have been strong in the U.K., which would typically prompt higher rates and a stronger currency, but the uncertainty surrounding Brexit has likely had a significant impact on the British Pound.

INTERNATIONAL DEVELOPED EQUITIES



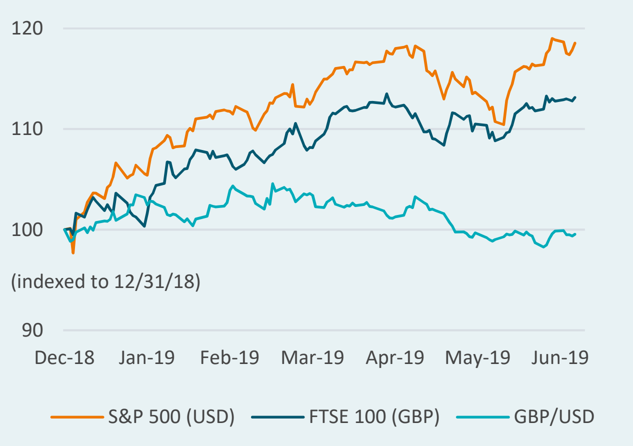
Source: MSCI, as of 6/30/19

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

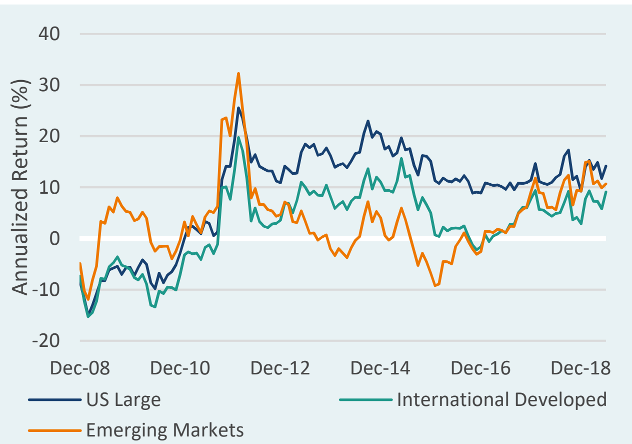
Emerging market equity performance (MSCI Emerging Markets +0.6%) lagged developed markets (MSCI EAFE +3.7%) over the quarter, while U.S. equities outperformed (Russell 1000 +4.2%). Economists expect emerging market economies to accelerate modestly in 2020 and expect developed economies to slow. This 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.

Equity multiples expanded in the second quarter but have 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.

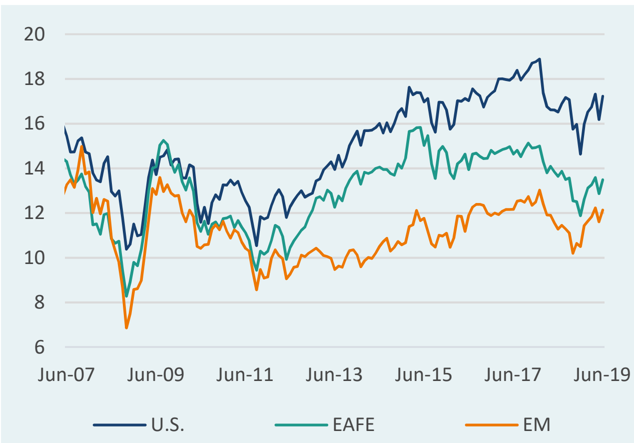
Moderate growth and central bank easing may boost emerging market equities

EQUITY 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

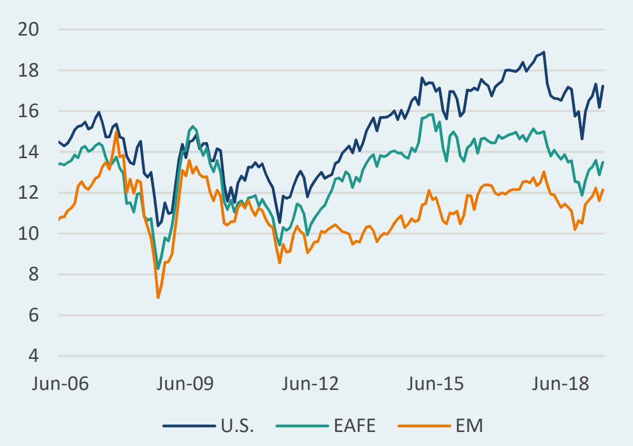
Equity valuations

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

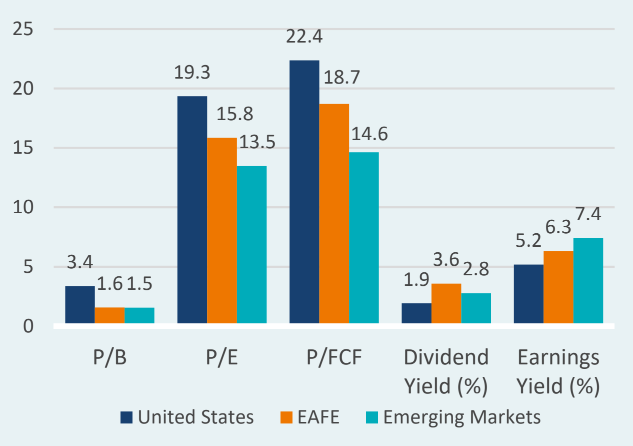


Source: MSCI, as of 6/30/19

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

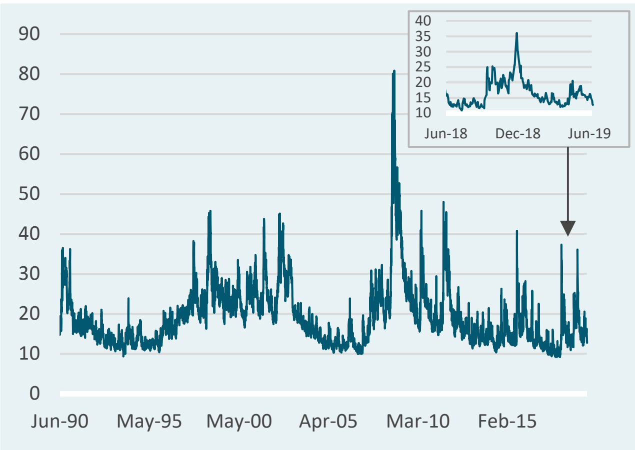
Equity volatility

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)

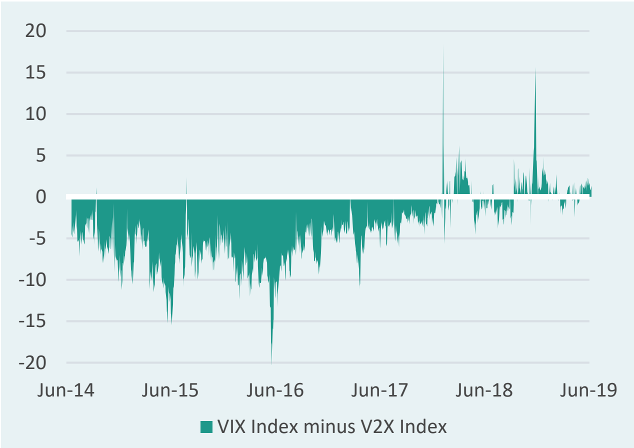


Source: CBOE, as of 6/30/19

REALIZED 90-DAY VOLATILITY

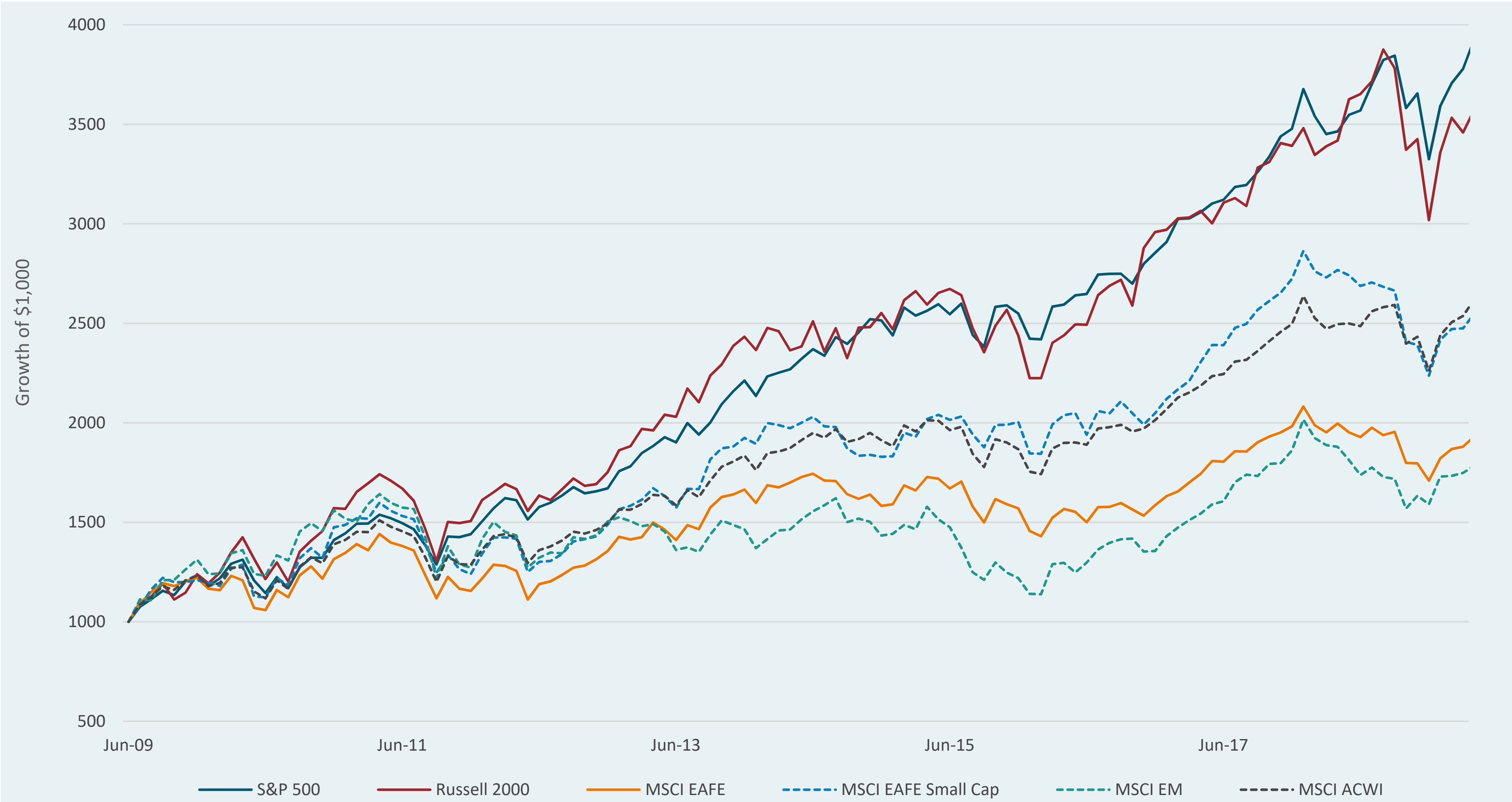
Source: Bloomberg, as of 6/30/19

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

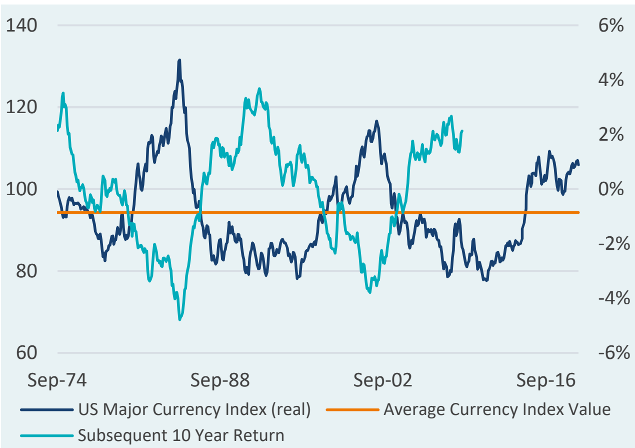
The U.S. dollar depreciated -0.2% in Q2 relative to a trade-weighted basket of currencies. After a period of strength in April and May, the dollar weakened significantly vs. developed currency pairs in June as the Federal Reserve issued dovish guidance. By the end of the quarter, markets were pricing 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.

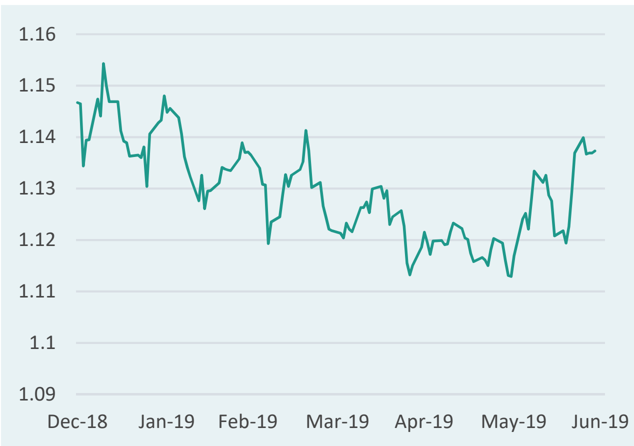
Surprise central bank dovishness has likely contributed to currency movement

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

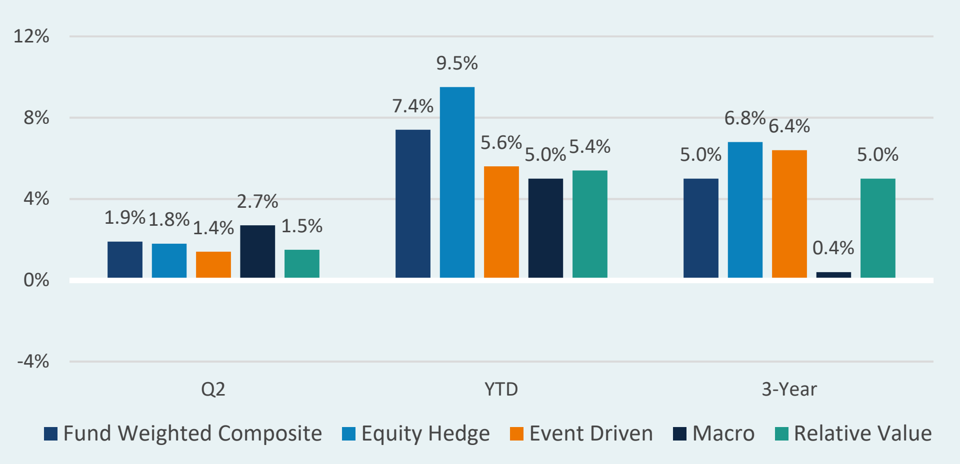
Hedge funds

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.

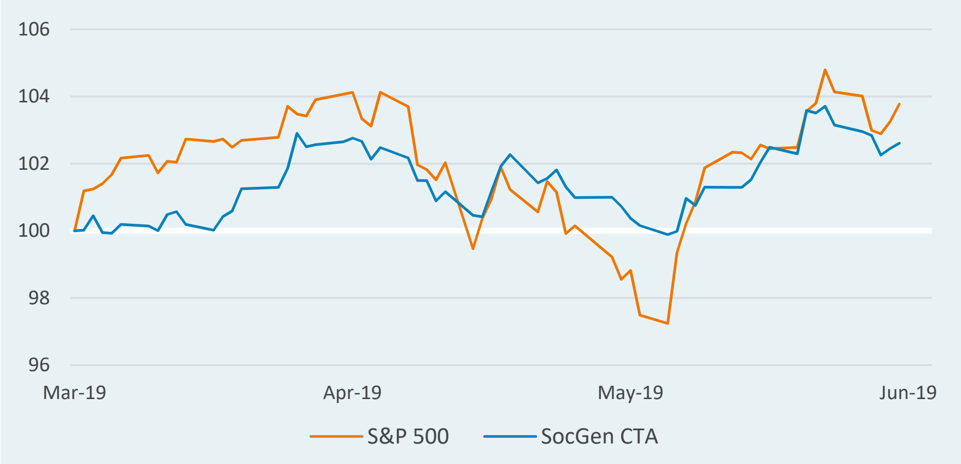
Within the fixed income-oriented strategy set, managers trading corporate bonds (+2.5%) and credit arbitrage (+2.2%) strategies were the best performers during the quarter. Managers trading convertibles (+1.7%), asset backed (+1.4%) and distress (+1.3%) posted more muted gains.

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

BEST ↑ ↓ WORST

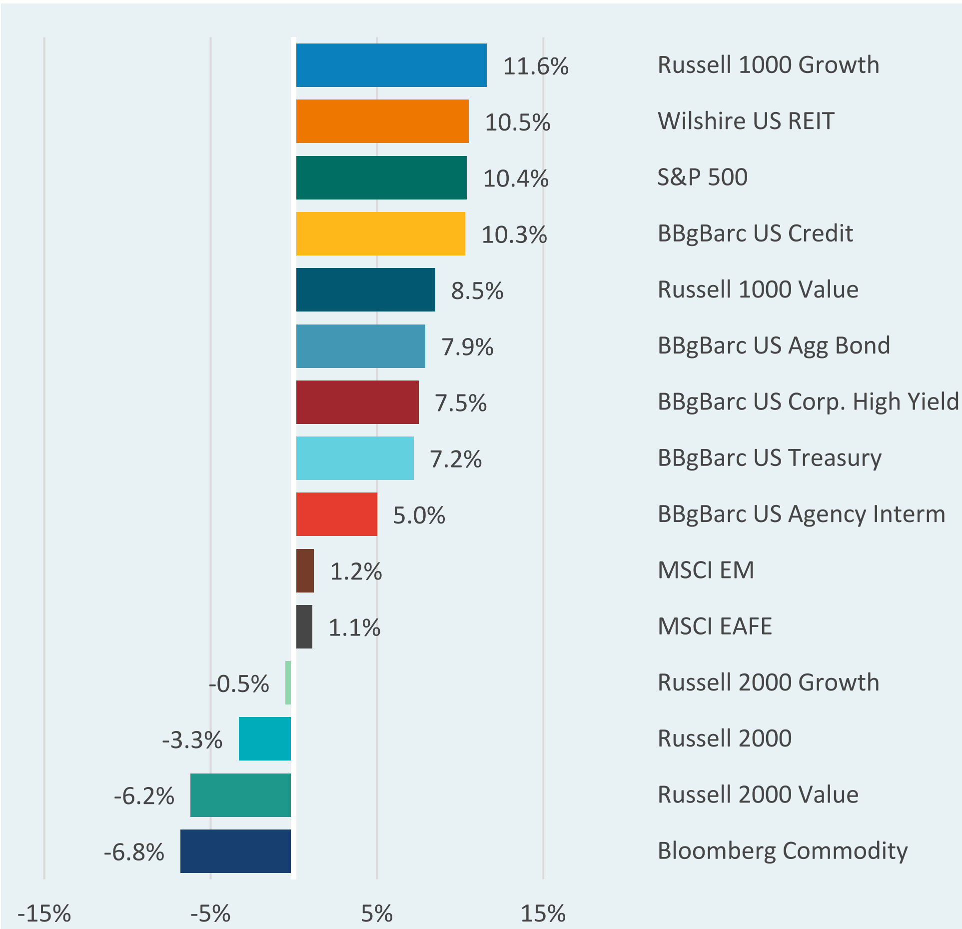
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	YTD	5-Year	10-Year
Large Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	21.5	13.4	16.3
Small Cap Growth	27.0	43.1	22.8	8.4	10.3	48.5	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

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

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.

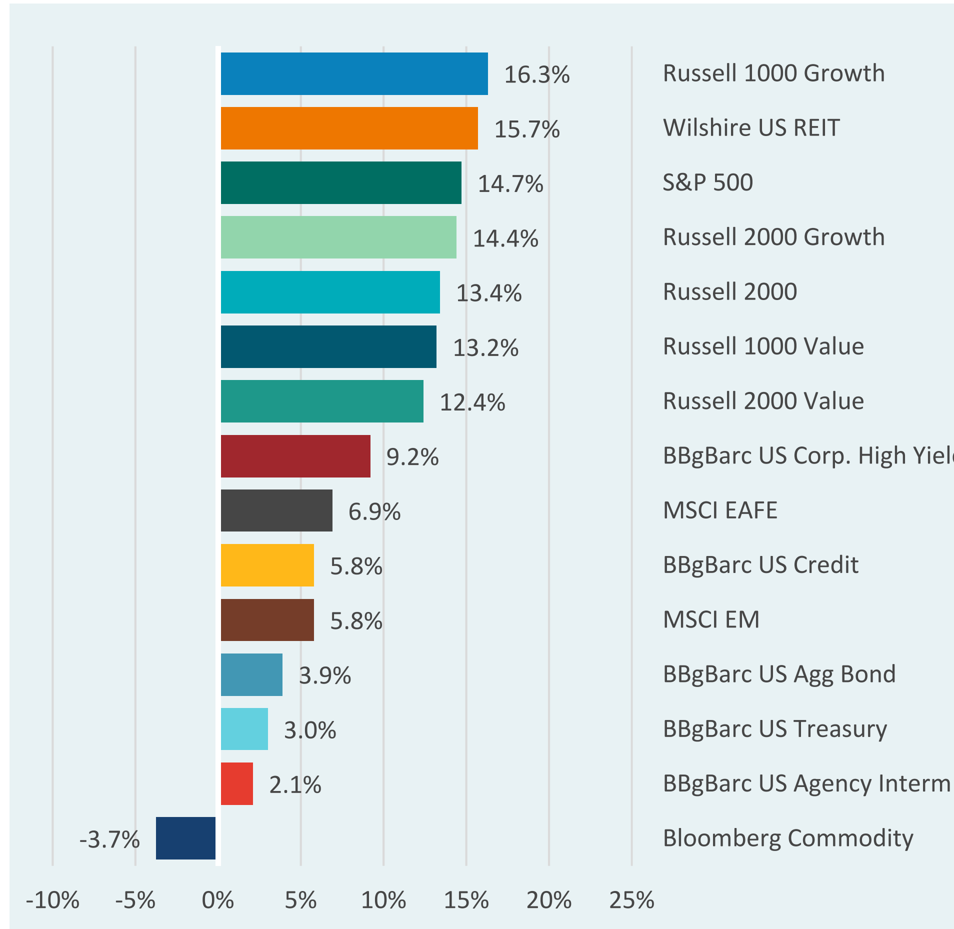
Major asset class returns

ONE YEAR ENDING JUNE



Source: Morningstar, as of 6/30/19

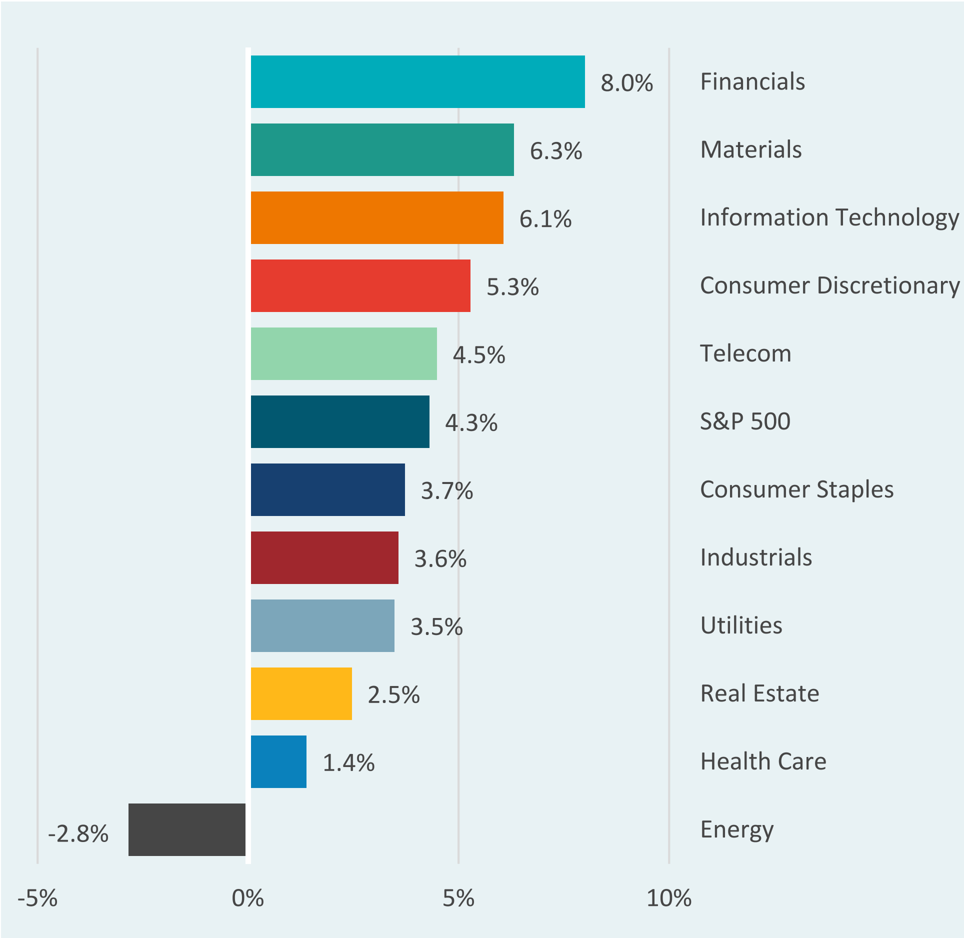
TEN YEARS ENDING JUNE



Source: Morningstar, as of 6/30/19

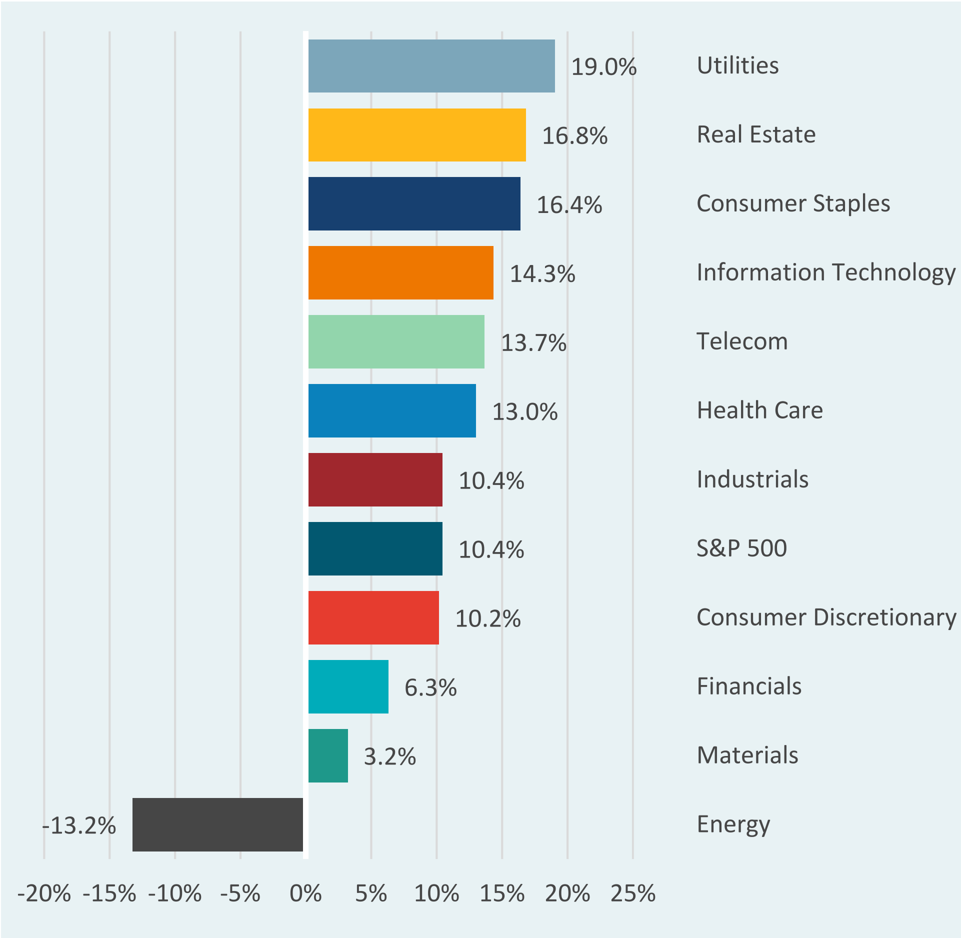
S&P 500 sector returns

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.langerresearch.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 induces 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 "(Good-Poor + 100)/2" to the present and future sales series and "(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.*

Notices & disclosures

Contra Costa County Employees' Retirement Association

Investment Performance Review

Period Ending: June 30, 2019

Verus

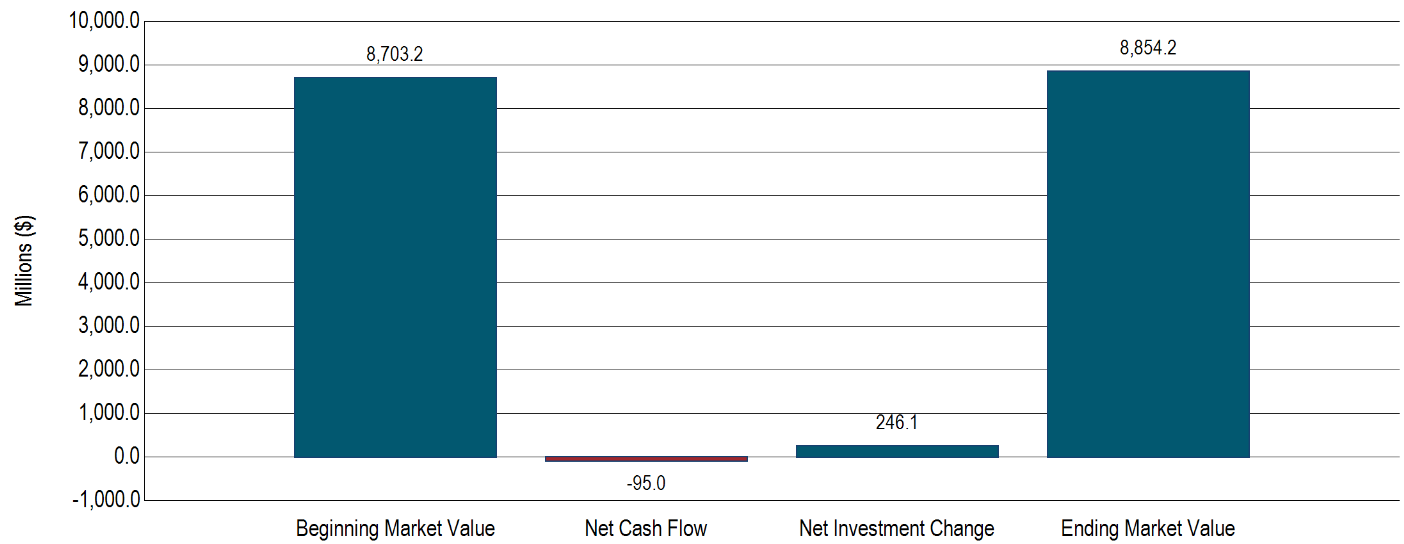
VERUSINVESTMENTS.COM

SEATTLE 206-622-3700
LOS ANGELES 310-297-1777
SAN FRANCISCO 415-362-3484

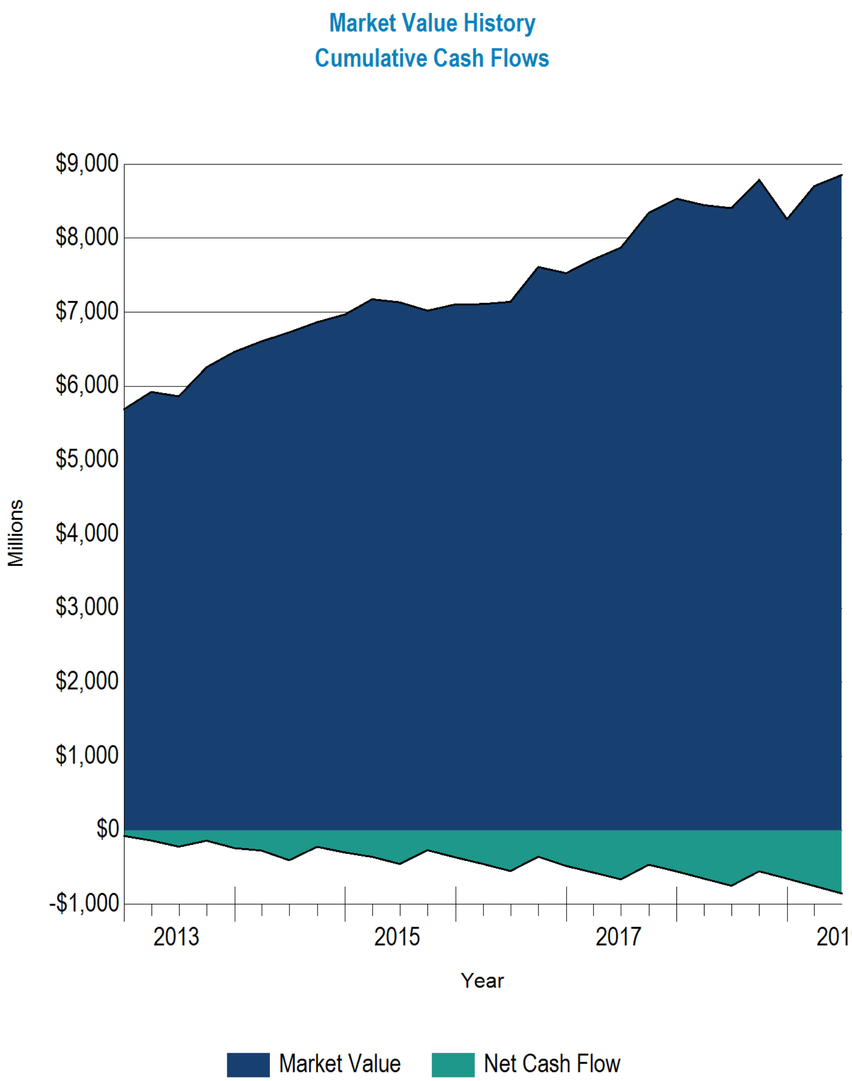
Portfolio Reconciliation

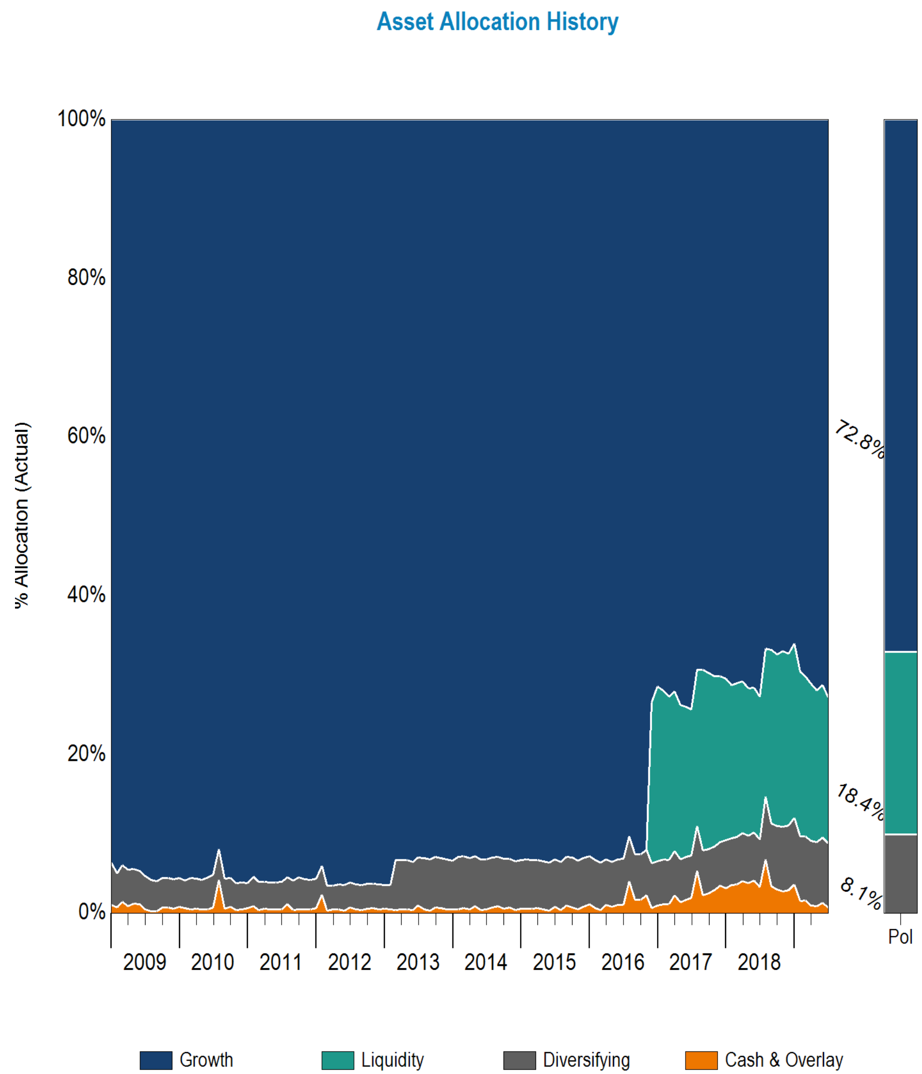
	Last Three Months	Year-To-Date
Beginning Market Value	$8,703,150,580	$8,255,873,307
Net Cash Flow	-$95,031,888	-$189,460,657
Net Investment Change	$246,069,218	$787,775,260
Ending Market Value	$8,854,187,910	$8,854,187,910

Change in Market Value
Last Three Months

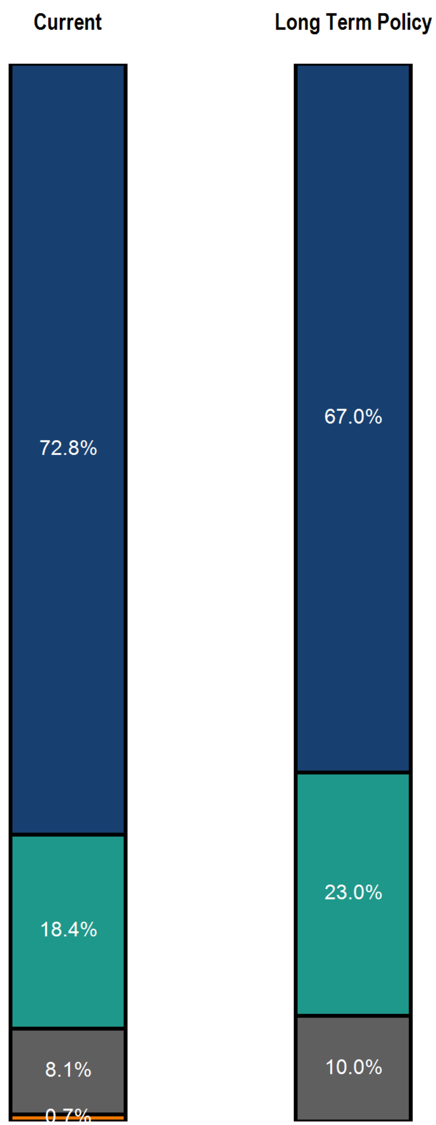


Contributions and withdrawals may include intra-account transfers between managers/funds.





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



Allocation vs. Long Term Target

	Current Balance	Current Allocation	Long Term Target	Difference
Growth	$6,448,786,419	72.8%	67.0%	$516,480,519
Liquidity	$1,627,648,500	18.4%	23.0%	-$408,814,720
Diversifying	$717,754,720	8.1%	10.0%	-$167,664,071
Cash & Overlay	$59,998,272	0.7%	--	$59,998,272
Total	**$8,854,187,910**	**100.0%**	**100.0%**	

Allocation vs. Current Targets

	Current Balance	Current Allocation	Current Target	Difference
Growth	$6,448,786,419	72.8%	69.0%	$339,396,761
Liquidity	$1,627,648,500	18.4%	23.0%	-$408,814,720
Diversifying	$717,754,720	8.1%	8.0%	$9,419,687
Cash & Overlay	$59,998,272	0.7%	--	$59,998,272
Total	**$8,854,187,910**	**100.0%**	**100.0%**	

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

	% of Portfolio	QTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Fund	100.0	2.8	9.5	6.0	8.1	6.1	9.7	-2.7	13.9	6.9	2.1	7.7
Policy Index		3.8	8.8	6.5	8.4	6.4	10.5	-0.9	13.7	8.9	0.6	9.0
Growth	72.8	3.3	11.9	6.4	10.1	7.4	--	-3.9	18.7	7.6	2.3	8.1
Custom Growth Benchmark		4.8	11.3	7.3	10.9	7.8	--	-2.1	19.3	10.1	0.3	8.4
Diversifying	8.1	1.9	4.4	3.4	1.6	0.2	2.4	-2.3	2.6	0.8	-1.8	1.7
Custom Diversifying Benchmark		1.8	4.1	4.7	3.2	3.6	4.3	1.4	4.7	4.1	2.5	5.4
Liquidity	18.4	1.6	3.4	5.1	--	--	--	1.7	1.4	--	--	--
BBgBarc US Govt/Credit 1-3 Yr. TR		1.5	2.7	4.3	--	--	--	1.6	0.8	--	--	--

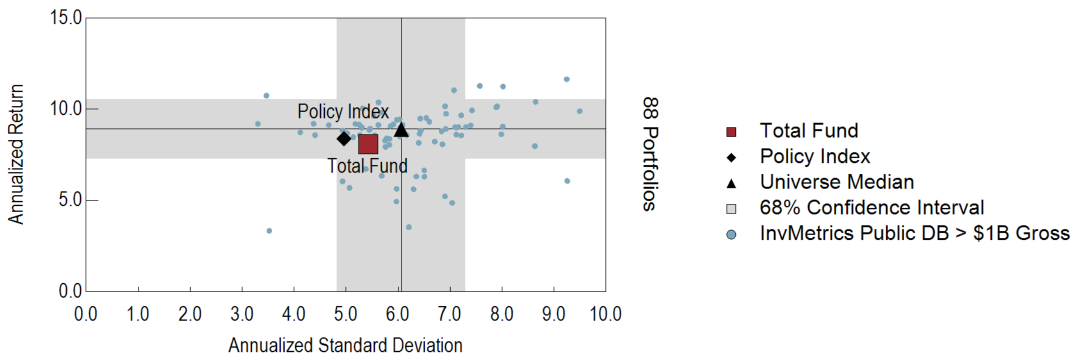
**Correlation between the Growth and Diversifying composites is .57, .38 and .32 over the previous 1, 3 and 5 year periods respectively.*

Policy Index (7/1/2018-Present): 11% Russell 3000, 19% MSCI ACWI ex-US (Gross), 11% MSCI ACWI (Net), 23% BBgBarc 1-3 Yr Gov/Credit, 3.5% BBgBarc US Aggregate, 2% BBgBarc Global Aggregate, 4% ICE BofAML High Yield Master II +2%, 2% ICE BofAML High Yield Master II, 1% Wilshire REIT, 1.8% NCREIF Property Index, 7.2% NCREIF ODCE Index, 2.0% CPI +4%, 10% S&P 500 +4%(Lagged), 2.5% HFRI EH Equity Market Neutral. Policy Index (10/1/2017-6/30/2018): 16.3% Russell 3000, 18.8% MSCI ACWI ex-US (Gross), 8.6% MSCI ACWI (Net), 25% BBgBarc 1-3 Yr Gov/Credit, 3.5% BBgBarc US Aggregate, 1.9% ICE BofAML High Yield Master II +2%, 4.3% ICE BofAML High Yield Master II, 1% Wilshire REIT, 1.6% NCREIF Property Index, 6.4% NCREIF ODCE Index, 2.5% CPI +4%, 10.1% S&P 500 +4%(Lagged). Policy Index (1/1/2017-9/30/2017): 22.9% Russell 3000, 11% MSCI ACWI ex-US (Gross), 10.9% MSCI ACWI (Net), 22.4% BBgBarc 1-3 Yr Gov/Credit, 3.2% BBgBarc US Aggregate, 1.7% ICE BofAML High Yield Master II +2%, 5.1% ICE BofAML High Yield Master II, 1% Wilshire REIT, 1.7% NCREIF Property Index, 6.8% NCREIF ODCE Index, 3.6% CPI +4%, 8.1% S&P 500 +4%(Lagged), 1.6% 90-day T-Bills. Policy Index (4/1/2012-12/31/16): 27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% BBgBarc U.S. Aggregate, 5% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 5.4% Wilshire REIT, 6.75% NCREIF Property Index, 1.35% FTSE/EPRA NAREIT Developed exUS, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills. Policy Index (4/1/2011-3/31/2012): 31% Russell 3000, 10.4% MSCI EAFE (Gross), 9.6% MSCI ACWI (Net), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% Wilshire REIT, 3.1% NCREIF Property Index, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills. Policy Index (4/1/2010-3/31/2011): 35.6% Russell 3000, 10.4% MSCI EAFE (Gross), 5% MSCI ACWI (Net), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% Wilshire REIT, 3.1% NCREIF Property Index, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills. Policy Index (7/1/2009-3/31/2010): 40.6% Russell 3000, 10.4% MSCI EAFE (Gross), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% Wilshire REIT, 3.1% NCREIF Property Index, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.

3 Years

	Anlzd Return	Ann Excess BM Return	Anlzd Standard Deviation	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Total Fund	8.08%	-0.30%	5.42%	-0.77%	1.06	1.47%	0.93	1.23	-0.21	101.58%	111.20%

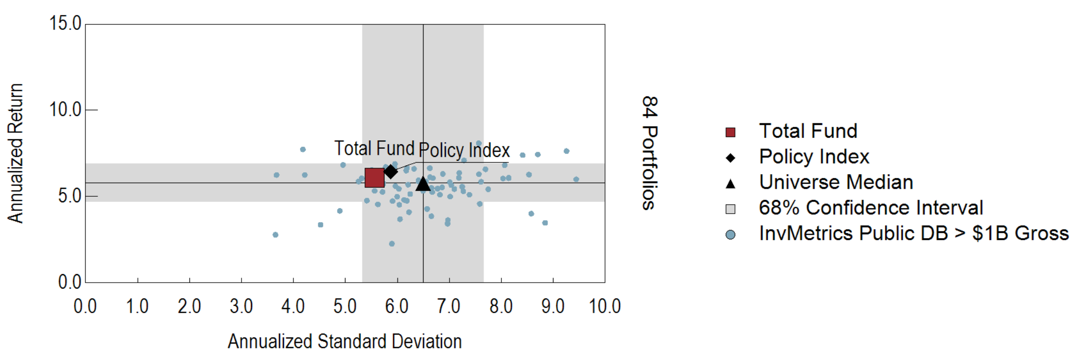
Risk vs. Return



5 Years

	Anlzd Return	Ann Excess BM Return	Anlzd Standard Deviation	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Total Fund	6.09%	-0.36%	5.56%	0.26%	0.91	1.74%	0.91	0.94	-0.20	89.91%	90.27%

Risk vs. Return



Performance Summary (Gross of Fees)

Period Ending: June 30, 2019

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Fund	**8,854,213,078**	**100.0**	**2.9**	**9.7**	**6.3**	**8.4**	**6.5**	**10.3**	**-2.5**	**14.2**	**7.4**	**2.7**	**8.4**
Policy Index			*3.8*	*8.8*	*6.5*	*8.4*	*6.4*	*10.5*	*-0.9*	*13.7*	*8.9*	*0.6*	*9.0*
InvMetrics Public DB > $1B Gross Rank			*58*	*74*	*23*	*72*	*20*	*10*	*25*	*83*	*74*	*5*	*6*
Total Fund ex Overlay & Cash	**8,794,214,807**	**99.3**	**2.9**	**9.5**	**6.4**	**8.5**	**6.6**	**10.3**	**-2.1**	**14.1**	**7.4**	**2.7**	**8.4**
Policy Index			*3.8*	*8.8*	*6.5*	*8.4*	*6.4*	*10.5*	*-0.9*	*13.7*	*8.9*	*0.6*	*9.0*
InvMetrics Public DB > $1B Gross Rank			*60*	*76*	*21*	*69*	*19*	*10*	*20*	*84*	*74*	*5*	*6*
Growth	**6,448,811,587**	**72.8**	**3.3**	**12.0**	**6.7**	**10.4**	**7.9**	**--**	**-3.6**	**19.1**	**8.1**	**3.0**	**8.8**
Custom Growth Benchmark			*4.8*	*11.3*	*7.3*	*10.9*	*7.8*	*--*	*-2.1*	*19.3*	*10.1*	*0.3*	*8.4*
Total Domestic Equity	**1,088,152,791**	**12.3**	**4.5**	**18.3**	**5.8**	**14.1**	**10.1**	**15.0**	**-7.2**	**23.9**	**11.5**	**1.1**	**11.4**
Russell 3000			*4.1*	*18.7*	*9.0*	*14.0*	*10.2*	*14.7*	*-5.2*	*21.1*	*12.7*	*0.5*	*12.6*
InvMetrics Public DB US Eq Gross Rank			*33*	*68*	*84*	*32*	*32*	*19*	*78*	*6*	*77*	*21*	*50*
BlackRock Russell 1000 Index	135,787,891	1.5	4.2	18.9	10.0	--	--	--	-4.8	--	--	--	--
Russell 1000			*4.2*	*18.8*	*10.0*	*--*	*--*	*--*	*-4.8*	*--*	*--*	*--*	*--*
eV US Large Cap Equity Gross Rank			*50*	*42*	*43*	*--*	*--*	*--*	*47*	*--*	*--*	*--*	*--*
Jackson Square Partners	288,330,354	3.3	7.9	20.8	11.8	16.4	10.8	15.9	-2.0	29.3	-4.4	6.1	13.9
Russell 1000 Growth			*4.6*	*21.5*	*11.6*	*18.1*	*13.4*	*16.3*	*-1.5*	*30.2*	*7.1*	*5.7*	*13.0*
eV US Large Cap Growth Equity Gross Rank			*2*	*63*	*51*	*71*	*84*	*49*	*59*	*47*	*98*	*37*	*31*
Boston Partners	267,319,996	3.0	3.1	13.0	4.9	12.0	7.8	13.6	-8.7	20.1	15.1	-3.9	12.0
Russell 1000 Value			*3.8*	*16.2*	*8.5*	*10.2*	*7.5*	*13.2*	*-8.3*	*13.7*	*17.3*	*-3.8*	*13.5*
eV US Large Cap Value Equity Gross Rank			*65*	*87*	*66*	*35*	*54*	*43*	*55*	*23*	*50*	*65*	*55*
Emerald Advisers	222,647,710	2.5	3.7	25.8	4.9	18.6	12.2	17.8	-10.1	28.8	10.1	4.1	7.3
Russell 2000 Growth			*2.7*	*20.4*	*-0.5*	*14.7*	*8.6*	*14.4*	*-9.3*	*22.2*	*11.3*	*-1.4*	*5.6*
eV US Small Cap Growth Equity Gross Rank			*62*	*39*	*55*	*46*	*32*	*23*	*85*	*26*	*54*	*19*	*21*
Ceredex	174,066,839	2.0	2.3	14.0	-3.5	8.3	6.6	--	-11.3	11.4	29.8	-4.4	3.3
Russell 2000 Value			*1.4*	*13.5*	*-6.2*	*9.8*	*5.4*	*--*	*-12.9*	*7.8*	*31.7*	*-7.5*	*4.2*
eV US Small Cap Value Equity Gross Rank			*47*	*64*	*39*	*76*	*35*	*--*	*25*	*48*	*32*	*52*	*74*

Individual closed end funds are not shown in performance summary table. AQR Global Risk Premium funded 1/18/2019. PanAgora Risk Parity funded 3/15/2019. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total International Equity	**1,654,950,552**	**18.7**	**3.5**	**14.9**	**3.5**	**7.8**	**3.2**	**7.1**	**-14.3**	**25.5**	**1.2**	**-1.2**	**0.3**
MSCI ACWI ex USA Gross			*3.2*	*14.0*	*1.8*	*9.9*	*2.6*	*7.0*	*-13.8*	*27.8*	*5.0*	*-5.3*	*-3.4*
MSCI EAFE Gross			*4.0*	*14.5*	*1.6*	*9.6*	*2.7*	*7.4*	*-13.4*	*25.6*	*1.5*	*-0.4*	*-4.5*
InvMetrics Public DB ex-US Eq Gross Rank			*21*	*23*	*9*	*79*	*36*	*65*	*44*	*90*	*89*	*28*	*5*
International Equity	**967,475,714**	**10.9**	**4.7**	**16.9**	**3.6**	**8.6**	**3.7**	**7.4**	**-13.6**	**25.3**	**1.2**	**-1.2**	**0.3**
MSCI ACWI ex USA Gross			*3.2*	*14.0*	*1.8*	*9.9*	*2.6*	*7.0*	*-13.8*	*27.8*	*5.0*	*-5.3*	*-3.4*
InvMetrics Public DB ex-US Eq Gross Rank			*7*	*5*	*9*	*63*	*23*	*54*	*21*	*93*	*89*	*28*	*5*
Pyrford	472,477,417	5.3	3.9	13.7	6.6	7.1	3.1	--	-10.1	19.8	3.4	-2.9	--
MSCI ACWI ex USA Value			*1.6*	*10.0*	*-0.1*	*8.9*	*0.3*	*--*	*-14.0*	*22.7*	*8.9*	*-10.1*	*--*
eV ACWI ex-US Value Equity Gross Rank			*13*	*20*	*1*	*63*	*23*	*--*	*5*	*84*	*74*	*59*	*--*
William Blair	494,998,297	5.6	5.4	20.1	0.9	10.2	4.3	--	-16.8	30.9	-1.4	0.5	-1.2
MSCI ACWI ex USA Growth			*4.4*	*17.2*	*2.6*	*9.8*	*4.0*	*--*	*-14.4*	*32.0*	*0.1*	*-1.3*	*-2.6*
eV ACWI ex-US Growth Equity Gross Rank			*46*	*47*	*53*	*73*	*81*	*--*	*69*	*81*	*55*	*69*	*37*
Emerging Markets Equity	**687,474,838**	**7.8**	**2.0**	**12.1**	**3.5**	**--**	**--**	**--**	**-15.3**	**--**	**--**	**--**	**--**
MSCI Emerging Markets			*0.6*	*10.6*	*1.2*	*--*	*--*	*--*	*-14.6*	*--*	*--*	*--*	*--*
InvMetrics Public DB Emg Mkt Eq Gross Rank			*40*	*31*	*33*	*--*	*--*	*--*	*51*	*--*	*--*	*--*	*--*
PIMCO RAE Emerging Markets	353,821,590	4.0	3.0	9.5	3.1	--	--	--	-12.3	--	--	--	--
MSCI Emerging Markets			*0.6*	*10.6*	*1.2*	*--*	*--*	*--*	*-14.6*	*--*	*--*	*--*	*--*
eV Emg Mkts Equity Gross Rank			*19*	*80*	*39*	*--*	*--*	*--*	*19*	*--*	*--*	*--*	*--*
TT Emerging Markets	333,653,248	3.8	0.8	15.0	3.8	--	--	--	-18.4	--	--	--	--
MSCI Emerging Markets			*0.6*	*10.6*	*1.2*	*--*	*--*	*--*	*-14.6*	*--*	*--*	*--*	*--*
eV Emg Mkts Equity Gross Rank			*69*	*22*	*32*	*--*	*--*	*--*	*83*	*--*	*--*	*--*	*--*
Total Global Equity	**764,932,035**	**8.6**	**5.1**	**19.1**	**7.8**	**12.8**	**8.2**	**9.5**	**-7.8**	**23.7**	**7.6**	**2.2**	**5.2**
MSCI ACWI			*3.6*	*16.2*	*5.7*	*11.6*	*6.2*	*10.1*	*-9.4*	*24.0*	*7.9*	*-2.4*	*4.2*
InvMetrics Public DB Glbl Eq Gross Rank			*1*	*1*	*25*	*24*	*31*	*15*	*60*	*79*	*40*	*16*	*41*
Artisan Partners	386,747,648	4.4	6.4	24.0	9.1	16.8	11.6	--	-7.9	32.9	5.6	9.2	3.9
MSCI ACWI			*3.6*	*16.2*	*5.7*	*11.6*	*6.2*	*--*	*-9.4*	*24.0*	*7.9*	*-2.4*	*4.2*
eV All Global Equity Gross Rank			*11*	*7*	*29*	*11*	*7*	*--*	*40*	*11*	*61*	*4*	*56*
First Eagle	378,018,808	4.3	3.8	14.1	6.5	8.3	5.8	--	-7.6	15.1	11.7	0.2	4.5
MSCI ACWI			*3.6*	*16.2*	*5.7*	*11.6*	*6.2*	*--*	*-9.4*	*24.0*	*7.9*	*-2.4*	*4.2*
eV All Global Equity Gross Rank			*45*	*71*	*46*	*81*	*67*	*--*	*38*	*89*	*19*	*49*	*51*

Individual closed end funds are not shown in performance summary table. AQR Global Risk Premium funded 1/18/2019. PanAgora Risk Parity funded 3/15/2019. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Private Credit	**427,925,306**	**4.8**	**3.6**	**3.2**	**9.2**	**9.4**	**9.4**	**15.4**	**8.3**	**10.4**	**8.2**	**12.9**	**15.4**
ICE BofAML High Yield Master II +2%			*3.1*	*11.2*	*9.8*	*9.7*	*6.8*	*11.4*	*-0.3*	*9.6*	*19.8*	*-2.7*	*4.5*
Total High Yield	**318,978,341**	**3.6**	**2.4**	**11.1**	**8.1**	**7.2**	**4.0**	**8.7**	**-3.2**	**6.5**	**14.3**	**-3.5**	**1.2**
ICE BofAML High Yield Master II			*2.6*	*10.2*	*7.6*	*7.5*	*4.7*	*9.2*	*-2.3*	*7.5*	*17.5*	*-4.6*	*2.5*
eV US High Yield Fixed Inc Gross Rank			*62*	*15*	*36*	*56*	*78*	*66*	*88*	*74*	*47*	*68*	*83*
Allianz Global Investors	318,978,341	3.6	2.4	11.1	8.1	7.2	4.0	8.7	-3.2	6.5	14.3	-3.5	1.2
ICE BofAML High Yield Master II			*2.6*	*10.2*	*7.6*	*7.5*	*4.7*	*9.2*	*-2.3*	*7.5*	*17.5*	*-4.6*	*2.5*
eV US High Yield Fixed Inc Gross Rank			*62*	*15*	*36*	*56*	*78*	*66*	*88*	*74*	*47*	*68*	*83*
Total Real Estate	**767,595,866**	**8.7**	**0.9**	**5.3**	**7.5**	**8.7**	**10.1**	**14.0**	**7.4**	**11.1**	**5.5**	**13.5**	**20.6**
Real Estate Benchmark			*1.2*	*4.3*	*7.0*	*5.8*	*8.1*	*11.0*	*6.7*	*7.1*	*6.7*	*8.3*	*18.8*
NCREIF-ODCE			*1.0*	*2.4*	*6.4*	*7.6*	*9.8*	*9.9*	*8.3*	*7.6*	*8.8*	*15.0*	*12.5*
NCREIF Property Index			*1.5*	*3.3*	*6.5*	*6.9*	*8.8*	*9.2*	*6.7*	*7.0*	*8.0*	*13.3*	*11.8*
Adelante	74,996,736	0.8	2.0	19.9	13.2	5.8	8.6	16.1	-5.0	7.8	4.1	5.1	33.4
Wilshire REIT			*1.6*	*17.9*	*10.5*	*4.1*	*7.8*	*15.7*	*-4.8*	*4.2*	*7.2*	*4.2*	*31.8*
Private Equity	**987,137,914**	**11.1**	**2.0**	**3.6**	**9.8**	**11.6**	**11.0**	**12.0**	**12.1**	**11.9**	**9.4**	**11.6**	**17.3**
S&P 500 Index +4% (Lagged)			*14.7*	*0.2*	*13.8*	*18.0*	*15.3*	*20.5*	*22.6*	*23.3*	*20.0*	*3.4*	*24.5*
Risk Parity	**439,120,430**	**5.0**	**5.2**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			*3.6*	--	--	--	--	--	--	--	--	--	--
AQR Global Risk Premium-EL	224,426,901	2.5	5.1	--	--	--	--	--	--	--	--	--	--
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			*3.6*	--	--	--	--	--	--	--	--	--	--
PanAgora Risk Parity Multi Asset	214,693,529	2.4	5.4	--	--	--	--	--	--	--	--	--	--
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			*3.6*	--	--	--	--	--	--	--	--	--	--

Individual closed end funds are not shown in performance summary table. AQR Global Risk Premium funded 1/18/2019. PanAgora Risk Parity funded 3/15/2019. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Diversifying	**717,754,720**	**8.1**	**1.9**	**4.5**	**3.6**	**1.8**	**0.6**	**2.8**	**-2.0**	**2.8**	**1.3**	**-1.4**	**2.2**
Custom Diversifying Benchmark			*1.8*	*4.1*	*4.7*	*3.2*	*3.6*	*4.3*	*1.4*	*4.7*	*4.1*	*2.5*	*5.4*
Diversifying Fixed Income	**517,968,820**	**5.8**	**2.7**	**6.0**	**5.5**	**1.7**	**2.7**	**3.8**	**-1.7**	**2.8**	**2.8**	**1.6**	**6.6**
eV US Core Fixed Inc Gross Rank			*94*	*83*	*99*	*99*	*99*	*95*	*99*	*96*	*72*	*15*	*25*
AFL-CIO	332,843,870	3.8	3.4	6.3	8.4	2.7	3.3	4.1	0.6	3.6	2.4	1.6	6.6
BBgBarc US Aggregate TR			*3.1*	*6.1*	*7.9*	*2.3*	*2.9*	*3.9*	*0.0*	*3.5*	*2.6*	*0.6*	*6.0*
eV US Core Fixed Inc Gross Rank			*19*	*69*	*32*	*56*	*50*	*80*	*16*	*76*	*87*	*15*	*25*
Wellington Real Total Return	185,124,950	2.1	1.4	5.5	0.6	1.8	-2.0	--	-5.6	1.9	-0.1	-4.9	-2.5
CPI + 4%			*1.8*	*4.0*	*5.7*	*6.1*	*5.5*	--	*6.0*	*6.2*	*6.2*	*4.8*	*4.8*
Diversifying Equity	**199,785,900**	**2.3**	**0.1**	**0.8**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Parametric Defensive Equity	199,785,900	2.3	0.1	0.8	--	--	--	--	--	--	--	--	--
91 Day T-Bill +4%			*1.5*	*3.2*	--	--	--	--	--	--	--	--	--
Liquidity	**1,627,648,500**	**18.4**	**1.6**	**3.4**	**5.2**	**--**	**--**	**--**	**1.8**	**1.5**	**--**	**--**	**--**
BBgBarc US Govt/Credit 1-3 Yr. TR			*1.5*	*2.7*	*4.3*	--	--	--	*1.6*	*0.8*	--	--	--
eV US Short Duration Fixed Inc Gross Rank			*38*	*31*	*20*	--	--	--	*24*	*50*	--	--	--
DFA Short Credit	339,795,727	3.8	1.6	3.6	5.4	--	--	--	1.2	1.9	--	--	--
ICE BofAML 1-5 Yrs US Corp & Govt TR			*1.9*	*3.6*	*5.4*	--	--	--	*1.4*	*1.3*	--	--	--
eV US Short Duration Fixed Inc Gross Rank			*45*	*22*	*17*	--	--	--	*93*	*26*	--	--	--
Insight Short Duration	744,843,442	8.4	1.3	2.8	4.2	--	--	--	1.7	1.5	--	--	--
BBgBarc US Govt/Credit 1-3 Yr. TR			*1.5*	*2.7*	*4.3*	--	--	--	*1.6*	*0.8*	--	--	--
eV US Short Duration Fixed Inc Gross Rank			*89*	*73*	*80*	--	--	--	*38*	*50*	--	--	--
Sit Short Duration	543,009,330	6.1	2.2	4.2	6.8	--	--	--	2.5	1.3	--	--	--
BBgBarc US Govt 1-3 Yr TR			*1.5*	*2.5*	*4.0*	--	--	--	*1.6*	*0.4*	--	--	--
eV US Short Duration Fixed Inc Gross Rank			*3*	*7*	*1*	--	--	--	*1*	*68*	--	--	--
Total Cash	**37,166,639**	**0.4**	**1.0**	**1.7**	**2.7**	**1.7**	**1.1**	**3.2**	**1.7**	**0.9**	**0.9**	**0.1**	**-3.0**
91 Day T-Bills			*0.6*	*1.2*	*2.3*	*1.4*	*0.9*	*0.5*	*1.9*	*0.9*	*0.3*	*0.0*	*0.0*
Cash	36,351,488	0.4	1.1	1.7	2.7	1.7	1.1	3.0	1.7	0.9	0.9	0.1	1.4
State Street Cash/Tax Reclaims	445,319	0.0	0.0	--	--	--	--	--	--	--	--	--	--
Northern Trust Transition	369,833	0.0	0.8	--	--	--	--	--	--	--	--	--	--

Individual closed end funds are not shown in performance summary table. AQR Global Risk Premium funded 1/18/2019. PanAgora Risk Parity funded 3/15/2019. Effective 3/1/2019 the custodian of record switched from State Street to Northern Trust. State Street Cash/Tax Reclaims reflects $159,939 in cash and $285,380 in potential tax reclaims at State Street after assets were transferred to Northern Trust. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Fund	**8,854,213,078**	**100.0**	**2.8**	**9.5**	**6.0**	**8.1**	**6.1**	**9.7**	**-2.7**	**13.9**	**6.9**	**2.1**	**7.7**
Policy Index			*3.8*	*8.8*	*6.5*	*8.4*	*6.4*	*10.5*	*-0.9*	*13.7*	*8.9*	*0.6*	*9.0*
Total Fund ex Overlay & Cash	**8,794,214,807**	**99.3**	**2.8**	**9.4**	**6.1**	**8.1**	**6.1**	**9.7**	**-2.4**	**13.8**	**6.9**	**2.1**	**7.7**
Policy Index			*3.8*	*8.8*	*6.5*	*8.4*	*6.4*	*10.5*	*-0.9*	*13.7*	*8.9*	*0.6*	*9.0*
Growth	**6,448,811,587**	**72.8**	**3.3**	**11.9**	**6.4**	**10.1**	**7.4**	**--**	**-3.9**	**18.7**	**7.6**	**2.3**	**8.1**
Custom Growth Benchmark			*4.8*	*11.3*	*7.3*	*10.9*	*7.8*	*--*	*-2.1*	*19.3*	*10.1*	*0.3*	*8.4*
Total Domestic Equity	**1,088,152,791**	**12.3**	**4.4**	**18.0**	**5.4**	**13.6**	**9.7**	**14.5**	**-7.6**	**23.5**	**11.1**	**0.6**	**11.0**
Russell 3000			*4.1*	*18.7*	*9.0*	*14.0*	*10.2*	*14.7*	*-5.2*	*21.1*	*12.7*	*0.5*	*12.6*
BlackRock Russell 1000 Index	135,787,891	1.5	4.2	18.8	10.0	--	--	--	-4.8	--	--	--	--
Russell 1000			*4.2*	*18.8*	*10.0*	*--*	*--*	*--*	*-4.8*	*--*	*--*	*--*	*--*
Jackson Square Partners	288,330,354	3.3	7.8	20.5	11.4	15.9	10.3	15.4	-2.4	28.7	-4.8	5.6	13.4
Russell 1000 Growth			*4.6*	*21.5*	*11.6*	*18.1*	*13.4*	*16.3*	*-1.5*	*30.2*	*7.1*	*5.7*	*13.0*
Boston Partners	267,319,996	3.0	3.0	12.8	4.5	11.6	7.4	13.2	-8.9	19.7	14.7	-4.2	11.6
Russell 1000 Value			*3.8*	*16.2*	*8.5*	*10.2*	*7.5*	*13.2*	*-8.3*	*13.7*	*17.3*	*-3.8*	*13.5*
Emerald Advisers	222,647,710	2.5	3.5	25.4	4.3	17.9	11.6	17.1	-10.7	28.0	9.4	3.5	6.6
Russell 2000 Growth			*2.7*	*20.4*	*-0.5*	*14.7*	*8.6*	*14.4*	*-9.3*	*22.2*	*11.3*	*-1.4*	*5.6*
Ceredex	174,066,839	2.0	2.2	13.6	-4.0	7.7	6.0	--	-11.8	10.7	29.1	-5.0	2.7
Russell 2000 Value			*1.4*	*13.5*	*-6.2*	*9.8*	*5.4*	*--*	*-12.9*	*7.8*	*31.7*	*-7.5*	*4.2*
Total International Equity	**1,654,950,552**	**18.7**	**3.4**	**14.6**	**3.1**	**7.3**	**2.8**	**6.6**	**-14.7**	**25.0**	**0.8**	**-1.6**	**0.0**
MSCI ACWI ex USA Gross			*3.2*	*14.0*	*1.8*	*9.9*	*2.6*	*7.0*	*-13.8*	*27.8*	*5.0*	*-5.3*	*-3.4*
MSCI EAFE Gross			*4.0*	*14.5*	*1.6*	*9.6*	*2.7*	*7.4*	*-13.4*	*25.6*	*1.5*	*-0.4*	*-4.5*
International Equity	**967,475,714**	**10.9**	**4.6**	**16.7**	**3.2**	**8.2**	**3.3**	**7.0**	**-13.9**	**24.8**	**0.8**	**-1.6**	**0.0**
MSCI ACWI ex USA Gross			*3.2*	*14.0*	*1.8*	*9.9*	*2.6*	*7.0*	*-13.8*	*27.8*	*5.0*	*-5.3*	*-3.4*
Pyrford	472,477,417	5.3	3.8	13.5	6.2	6.6	2.6	--	-10.5	19.3	3.0	-3.3	--
MSCI ACWI ex USA Value			*1.6*	*10.0*	*-0.1*	*8.9*	*0.3*	*--*	*-14.0*	*22.7*	*8.9*	*-10.1*	*--*
William Blair	494,998,297	5.6	5.3	19.9	0.5	9.8	3.9	--	-17.1	30.4	-1.8	0.0	-1.7
MSCI ACWI ex USA Growth			*4.4*	*17.2*	*2.6*	*9.8*	*4.0*	*--*	*-14.4*	*32.0*	*0.1*	*-1.3*	*-2.6*
Emerging Markets Equity	**687,474,838**	**7.8**	**1.8**	**11.8**	**2.9**	**--**	**--**	**--**	**-15.7**	**--**	**--**	**--**	**--**
MSCI Emerging Markets			*0.6*	*10.6*	*1.2*	*--*	*--*	*--*	*-14.6*	*--*	*--*	*--*	*--*
PIMCO RAE Emerging Markets	353,821,590	4.0	2.9	9.2	2.6	--	--	--	-12.6	--	--	--	--
MSCI Emerging Markets			*0.6*	*10.6*	*1.2*	*--*	*--*	*--*	*-14.6*	*--*	*--*	*--*	*--*
TT Emerging Markets	333,653,248	3.8	0.7	14.6	3.1	--	--	--	-18.9	--	--	--	--
MSCI Emerging Markets			*0.6*	*10.6*	*1.2*	*--*	*--*	*--*	*-14.6*	*--*	*--*	*--*	*--*

Individual closed end funds are not shown in performance summary table. AQR Global Risk Premium funded 1/18/2019. PanAgora Risk Parity funded 3/15/2019. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Total Fund
Performance Summary (Net of Fees)

Period Ending: June 30, 2019

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Global Equity	**764,932,035**	**8.6**	**4.9**	**18.6**	**6.9**	**12.0**	**7.5**	**8.9**	**-8.5**	**22.8**	**6.9**	**1.6**	**4.5**
MSCI ACWI			*3.6*	*16.2*	*5.7*	*11.6*	*6.2*	*10.1*	*-9.4*	*24.0*	*7.9*	*-2.4*	*4.2*
Artisan Partners	386,747,648	4.4	6.2	23.6	8.3	15.9	10.8	--	-8.6	31.9	4.8	8.4	3.1
MSCI ACWI			*3.6*	*16.2*	*5.7*	*11.6*	*6.2*	--	*-9.4*	*24.0*	*7.9*	*-2.4*	*4.2*
First Eagle	378,018,808	4.3	3.6	13.7	5.7	7.5	5.0	--	-8.3	14.3	10.9	-0.6	3.7
MSCI ACWI			*3.6*	*16.2*	*5.7*	*11.6*	*6.2*	--	*-9.4*	*24.0*	*7.9*	*-2.4*	*4.2*
Private Credit	**427,925,306**	**4.8**	**3.6**	**3.2**	**9.2**	**9.1**	**8.8**	**13.4**	**8.3**	**10.4**	**6.9**	**11.6**	**12.3**
ICE BofAML High Yield Master II +2%			*3.1*	*11.2*	*9.8*	*9.7*	*6.8*	*11.4*	*-0.3*	*9.6*	*19.8*	*-2.7*	*4.5*
Total High Yield	**318,978,341**	**3.6**	**2.3**	**10.9**	**7.7**	**6.8**	**3.6**	**8.4**	**-3.6**	**6.1**	**13.9**	**-3.9**	**0.8**
ICE BofAML High Yield Master II			*2.6*	*10.2*	*7.6*	*7.5*	*4.7*	*9.2*	*-2.3*	*7.5*	*17.5*	*-4.6*	*2.5*
Allianz Global Investors	318,978,341	3.6	2.3	10.9	7.7	6.8	3.6	8.3	-3.6	6.1	13.9	-3.9	0.8
ICE BofAML High Yield Master II			*2.6*	*10.2*	*7.6*	*7.5*	*4.7*	*9.2*	*-2.3*	*7.5*	*17.5*	*-4.6*	*2.5*
Total Real Estate	**767,595,866**	**8.7**	**0.9**	**5.3**	**7.5**	**8.5**	**9.6**	**13.2**	**7.4**	**11.0**	**4.8**	**12.4**	**19.1**
Real Estate Benchmark			*1.2*	*4.3*	*7.0*	*5.8*	*8.1*	*11.0*	*6.7*	*7.1*	*6.7*	*8.3*	*18.8*
NCREIF-ODCE			*1.0*	*2.4*	*6.4*	*7.6*	*9.8*	*9.9*	*8.3*	*7.6*	*8.8*	*15.0*	*12.5*
NCREIF Property Index			*1.5*	*3.3*	*6.5*	*6.9*	*8.8*	*9.2*	*6.7*	*7.0*	*8.0*	*13.3*	*11.8*
Adelante	74,996,736	0.8	1.9	19.6	12.6	5.3	8.1	15.5	-5.5	7.2	3.6	4.6	32.7
Wilshire REIT			*1.6*	*17.9*	*10.5*	*4.1*	*7.8*	*15.7*	*-4.8*	*4.2*	*7.2*	*4.2*	*31.8*
Private Equity	**987,137,914**	**11.1**	**2.0**	**3.6**	**9.8**	**11.4**	**10.3**	**10.4**	**12.1**	**11.9**	**8.9**	**9.9**	**15.2**
S&P 500 Index +4% (Lagged)			*14.7*	*0.2*	*13.8*	*18.0*	*15.3*	*20.5*	*22.6*	*23.3*	*20.0*	*3.4*	*24.5*
Risk Parity	**439,120,430**	**5.0**	**5.2**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			*3.6*	--	--	--	--	--	--	--	--	--	--
AQR Global Risk Premium-EL	224,426,901	2.5	5.1	--	--	--	--	--	--	--	--	--	--
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			*3.6*	--	--	--	--	--	--	--	--	--	--
PanAgora Risk Parity Multi Asset	214,693,529	2.4	5.4	--	--	--	--	--	--	--	--	--	--
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			*3.6*	--	--	--	--	--	--	--	--	--	--

Individual closed end funds are not shown in performance summary table. AQR Global Risk Premium funded 1/18/2019. PanAgora Risk Parity funded 3/15/2019. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Diversifying	717,754,720	8.1	1.9	4.4	3.4	1.6	0.2	2.4	-2.3	2.6	0.8	-1.8	1.7
Custom Diversifying Benchmark			*1.8*	*4.1*	*4.7*	*3.2*	*3.6*	*4.3*	*1.4*	*4.7*	*4.1*	*2.5*	*5.4*
Diversifying Fixed Income	**517,968,820**	**5.8**	**2.6**	**5.8**	**5.2**	**1.4**	**2.3**	**3.4**	**-2.0**	**2.6**	**2.3**	**1.1**	**6.1**
AFL-CIO	332,843,870	3.8	3.3	6.0	7.9	2.2	2.8	3.7	0.2	3.2	1.9	1.1	6.1
BBgBarc US Aggregate TR			*3.1*	*6.1*	*7.9*	*2.3*	*2.9*	*3.9*	*0.0*	*3.5*	*2.6*	*0.6*	*6.0*
Wellington Real Total Return	185,124,950	2.1	1.4	5.5	0.6	1.7	-2.3	--	-5.6	1.9	-0.6	-5.4	-3.1
CPI + 4%			*1.8*	*4.0*	*5.7*	*6.1*	*5.5*	--	*6.0*	*6.2*	*6.2*	*4.8*	*4.8*
Diversifying Equity	**199,785,900**	**2.3**	**0.0**	**0.7**	--	--	--	--	--	--	--	--	--
Parametric Defensive Equity	199,785,900	2.3	0.0	0.7	--	--	--	--	--	--	--	--	--
91 Day T-Bill +4%			*1.5*	*3.2*	--	--	--	--	--	--	--	--	--
Liquidity	1,627,648,500	18.4	1.6	3.4	5.1	--	--	--	1.7	1.4	--	--	--
BBgBarc US Govt/Credit 1-3 Yr. TR			*1.5*	*2.7*	*4.3*	--	--	--	*1.6*	*0.8*	--	--	--
DFA Short Credit	339,795,727	3.8	1.6	3.6	5.2	--	--	--	1.1	1.8	--	--	--
ICE BofAML 1-5 Yrs US Corp & Govt TR			*1.9*	*3.6*	*5.4*	--	--	--	*1.4*	*1.3*	--	--	--
Insight Short Duration	744,843,442	8.4	1.3	2.8	4.1	--	--	--	1.7	1.5	--	--	--
BBgBarc US Govt/Credit 1-3 Yr. TR			*1.5*	*2.7*	*4.3*	--	--	--	*1.6*	*0.8*	--	--	--
Sit Short Duration	543,009,330	6.1	2.2	4.1	6.6	--	--	--	2.3	1.1	--	--	--
BBgBarc US Govt 1-3 Yr TR			*1.5*	*2.5*	*4.0*	--	--	--	*1.6*	*0.4*	--	--	--
Total Cash	37,166,639	0.4	1.0	1.7	2.7	1.7	1.1	3.2	1.7	0.9	0.9	0.1	-3.0
91 Day T-Bills			*0.6*	*1.2*	*2.3*	*1.4*	*0.9*	*0.5*	*1.9*	*0.9*	*0.3*	*0.0*	*0.0*
Cash	36,351,488	0.4	1.1	1.7	2.7	1.7	1.1	3.0	1.7	0.9	0.9	0.1	1.4
State Street Cash/Tax Reclaims	445,319	0.0	0.0	--	--	--	--	--	--	--	--	--	--
Northern Trust Transition	369,833	0.0	0.8	--	--	--	--	--	--	--	--	--	--

Individual closed end funds are not shown in performance summary table. AQR Global Risk Premium funded 1/18/2019. PanAgora Risk Parity funded 3/15/2019. Effective 3/1/2019 the custodian of record switched from State Street to Northern Trust. State Street Cash/Tax Reclaims reflects $159,939 in cash and $285,380 in potential tax reclaims at State Street after assets were transferred to Northern Trust. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Closing Date	Manager Name/Fund Name	Estimated Market Value as of 6/30/19[1]	Total Commitment	% Called	Contributed Capital	Current Qtr. Change in Contributed Capital	Current Qtr. Change in Distributed Capital	Total Distributions	Remaining Commitment	Distrib./ Paid-In (DPI)[2]	Tot. Value/ Paid-In (TVPI)[3]	Latest Valuation
			StepStone Group Analysis (*)									
Private Credit												
8/31/2015	Angelo Gordon Energy Credit Opp.	$4,337,752	$16,500,000	114%	$18,750,000	$0	$0	$18,829,566	$2,319,783	*1.00*	*1.24*	*3/31/2019*
12/18/2017	Stepstone CC Opportunities Fund	$337,925,380	$770,000,000	43%	$328,521,676	$78,845,579	$8,202	$3,940,538	$445,403,225	*0.01*	*1.04*	*3/31/2019*
7/1/2006	Torchlight II	$1,145,418	$128,000,000	171%	$218,263,562	$0	$0	$207,716,693	$0	*0.95*	*0.96*	*3/31/2019*
12/12/2008	Torchlight III	$0	$75,000,000	112%	$83,825,058	$0	$0	$124,835,174	$0	*1.49*	*1.49*	*12/31/2018*
8/1/2012	Torchlight IV	$18,576,277	$60,000,000	141%	$84,640,541	$61,853	$2,677,684	$96,288,144	$0	*1.14*	*1.36*	*6/30/2019*
3/12/2015	Torchlight V	$65,940,479	$75,000,000	80%	$60,000,000	$7,500,000	$0	$7,486,557	$15,000,000	*0.12*	*1.22*	*3/31/2019*
	Total Private Credit	**$427,925,306**										
	% of Portfolio (Market Value)	*4.8%*										

*All Data provided by StepStone Group
[1]Latest valuation + capital calls - distributions
[2](DPI) is equal to (capital returned / capital called)
[3](TVPI) is equal to (market value + capital returned) / capital called

			Verus Internal Analysis									
Inception Date	Manager Name/Fund Name	Estimated Market Value as of 6/30/2019[3]	Total Commitment	Total % Called	Capital Called	Current Qtr. Capital Called	Current Qtr. Distributions	Total Distributions[5]	Remaining Commitment	Distrib./ Paid-In (DPI)[1]	Tot. Value/ Paid-In (TVPI)[2]	Latest Valuation
Real Estate												
1/23/2012	Angelo Gordon Realty Fund VIII	$23,410,841	$80,000,000	94%	$75,401,855	$0	$1,400,000	$97,567,757	$12,334,302	1.29	1.60	3/31/2019
12/8/2014	Angelo Gordon Realty Fund IX	$61,419,696	$65,000,000	86%	$55,575,000	$0	$0	$8,775,000	$12,122,500	0.16	1.26	3/31/2019
6/23/2005	DLJ RECP III	$21,327,120	$75,000,000	95%	$70,968,662	$0	$0	$72,565,242	$4,031,338	1.02	1.32	3/31/2019
2/11/2008	DLJ RECP IV	$83,562,901	$100,000,000	96%	$95,713,945	$652,323	$11,599,192	$79,228,902	$4,286,055	0.83	1.70	3/31/2019
7/1/2014	DLJ RECP V	$62,369,546	$75,000,000	119%	$89,111,208	$0	$0	$50,780,984	$15,764,044	0.57	1.27	3/31/2019
3/19/2019	DLJ RECP VI	$29,349,636	$50,000,000	59%	$29,613,001	$13,408,351	$0	$0	$20,386,999	0.00	0.99	3/31/2019
6/17/1998	Hearthstone II[4]	-$585	$25,000,000	80%	$19,932,386	$0	$0	$19,952,734	$0	1.00	1.00	3/31/2019
11/26/2007	Invesco Real Estate II	$419,677	$85,000,000	92%	$78,202,813	$0	$0	$100,620,489	$6,797,187	1.29	1.29	6/30/2019
6/30/2013	Invesco Real Estate III	$8,360,221	$35,000,000	93%	$32,386,423	$0	$0	$36,041,941	$2,613,577	1.11	1.37	6/30/2019
6/30/2014	Invesco Real Estate IV	$22,246,509	$35,000,000	85%	$29,808,739	$0	$2,996,753	$15,184,792	$5,191,261	0.51	1.26	6/30/2019
6/30/2013	Invesco Real Estate V	$18,474,809	$75,000,000	24%	$18,018,734	$7,384,020	$0	$0	$56,981,266	0.00	1.03	6/30/2019
7/16/2013	LaSalle Income & Growth VI	$28,455,215	$75,000,000	95%	$71,428,571	$0	$0	$78,359,290	$3,571,429	1.10	1.50	3/31/2019
2/28/2017	LaSalle Income & Growth VII	$49,416,390	$75,000,000	87%	$64,959,341	$7,635,483	$15,866,036	$27,979,894	$20,836,646	0.43	1.19	3/31/2019
7/3/2013	Long Wharf Fund IV	$7,333,823	$25,000,000	100%	$25,000,000	$0	$4,044,190	$29,108,305	$0	1.16	1.46	6/30/2019
9/30/2016	Long Wharf Fund V	$43,311,169	$50,000,000	100%	$50,000,000	$0	$8,454,244	$15,994,516	$0	0.32	1.19	6/30/2019
12/31/2011	Oaktree REOF V	$4,713,271	$50,000,000	100%	$50,000,000	$0	$360,000	$75,028,955	$25,750,000 [6]	1.50	1.59	3/31/2019
9/30/2013	Oaktree REOF VI	$32,672,167	$80,000,000	100%	$80,000,000	$0	$3,467,330	$80,609,408	$18,400,000 [6]	1.01	1.42	3/31/2019
4/1/2015	Oaktree REOF VII	$62,123,691	$65,000,000	86%	$56,095,000	$25,350,000	$0	$4,615,000	$13,520,000 [6]	0.08	1.19	3/31/2019
11/10/2013	Paulson Real Estate Fund II	$25,548,028	$20,000,000	97%	$19,345,623	$0	$0	$5,783,386	$654,377	0.30	1.62	3/31/2019
1/25/2012	Siguler Guff DREOF	$33,468,179	$75,000,000	93%	$69,375,000	$0	$1,213,363	$89,592,711	$5,625,000	1.29	1.77	3/31/2019
8/31/2013	Siguler Guff DREOF II	$49,395,194	$70,000,000	86%	$60,410,000	$0	$2,315,000	$34,063,107	$9,590,000	0.56	1.38	3/31/2019
1/27/2016	Siguler Guff DREOF II Co-Inv	$25,221,632	$25,000,000	82%	$20,537,862	$0	$662,500	$1,634,801	$4,462,138	0.08	1.31	3/31/2019
	Total Closed End Real Estate	**$692,599,130**	$1,310,000,000	89%	$1,161,884,164	$54,430,177	$52,378,609	$923,487,215	$242,918,118	0.79	1.39	
	% of Portfolio (Market Value)	7.8%										

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

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

[3]Latest valuation + capital calls - distributions

[4]No further capital to be called

[5]Total distributions may include recallable distributions

[6]Remianing commitment includes recallable distributions

			StepStone Group Analysis (*)									
Closing Date	Manager Name/Fund Name	Estimated Market Value as of 6/30/19[1]	Total Commitment	Total % Called	Contributed Capital	Current Qtr. Change in Contributed Capital	Current Qtr. Change in Distributed Capital	Total Distributions	Remaining Commitment	Distrib./ Paid-In (DPI)[2]	Tot. Value/ Paid-In (TVPI)[3]	Latest Valuation
Private Equity & Venture Capital												
2/11/2004	Adams Street Partners	$148,604,651	$210,000,000	88%	$185,023,125	$1,740,000	$6,142,677	$142,904,125	$24,976,875	0.77	1.58	3/31/2019
12/31/2008	Adams Street Partners II	$8,785,571	$30,000,000	95%	$28,365,000	$0	$0	$39,234,007	$1,635,000	1.38	1.69	3/31/2019
12/31/2008	Adams Street Partners - Fund 5	$21,660,433	$40,000,000	77%	$30,611,900	$0	$1,359,929	$15,544,651	$9,388,100	0.51	1.22	3/31/2019
1/18/1996	Adams Street Partners - BPF	$1,996,163	$59,565,614	97%	$57,517,409	$0	$0	$102,566,990	$2,048,205	1.78	1.82	3/31/2019
3/31/2016	Adams Street Venture Innovation	$37,607,512	$75,000,000	46%	$34,162,500	$5,250,000	$0	$0	$40,837,500	0.00	1.10	3/31/2019
5/18/2018	AE Industrial Partners Fund II, LP	$2,140,809	$35,000,000	8%	$2,642,467	$2,642,467	$0	$0	$32,357,533	0.00	0.81	3/31/2019
11/27/2013	Aether Real Assets III	$20,369,595	$25,000,000	89%	$22,137,883	$900,210	$95,724	$3,417,486	$4,741,809	0.15	1.07	3/31/2019
11/30/2013	Aether Real Assets III Surplus	$49,397,061	$50,000,000	97%	$48,417,391	$1,165,097	$395,202	$8,149,599	$4,355,671	0.17	1.19	3/31/2019
1/30/2016	Aether Real Assets IV	$35,307,194	$50,000,000	63%	$31,628,317	$4,598,108	$194,371	$1,881,849	$20,240,874	0.06	1.18	3/31/2019
11/26/2003	Bay Area Equity Fund I	$2,412,102	$10,000,000	100%	$10,000,000	$0	$0	$37,018,019	$0	3.70	3.94	3/31/2019
11/26/2003	Bay Area Equity Fund II	$11,244,921	$10,000,000	100%	$10,000,000	$0	$0	$2,026,313	$0	0.20	1.33	3/31/2019
1/16/2008	Carpenter Bancfund	$0	$30,000,000	98%	$29,314,657	$0	$0	$49,128,304	$0	1.68	1.68	9/30/2018
6/30/2013	Commonfund	$45,952,245	$50,000,000	87%	$43,324,995	$0	$1,775,214	$8,882,790	$6,675,005	0.21	1.27	3/31/2019
11/26/2003	EIF US Power Fund I	$0	$30,000,000	130%	$38,960,280	$0	$0	$64,468,378	$0	1.65	1.65	12/27/2018
7/15/2005	EIF US Power Fund II	$8,089,512	$50,000,000	130%	$65,029,556	$0	$372,975	$72,183,801	$0	1.11	1.23	3/31/2019
5/31/2007	EIF US Power Fund III	$18,524,452	$65,000,000	110%	$71,409,097	$0	$168,074	$72,760,158	$0	1.02	1.28	3/31/2019
8/31/2010	EIF US Power Fund IV	$47,225,035	$50,000,000	124%	$61,960,263	$0	$296,279	$25,522,135	$1,786,029	0.41	1.17	3/31/2019
11/28/2016	EIF US Power Fund V	$41,099,631	$50,000,000	89%	$44,311,703	$0	$12,500	$6,057,213	$9,878,568	0.14	1.06	3/31/2019
2/21/2019	Genstar Capital Partners IX, L.P.	$0	$50,000,000	0%	$0	$0	$0	$0	$50,000,000	-	-	-
2/12/2004	Nogales	$0	$15,000,000	120%	$18,026,408	$0	$0	$13,856,249	$0	0.77	0.77	12/22/2017
2/28/2010	Oaktree PIF 2009	$6,955,501	$40,000,000	87%	$34,816,108	$0	$0	$40,787,270	$6,308,961	1.17	1.37	3/31/2019
8/15/2013	Ocean Avenue Fund II	$29,881,940	$30,000,000	87%	$26,100,000	$0	$0	$10,940,744	$3,900,000	0.42	1.56	3/31/2019
4/15/2016	Ocean Avenue Fund III	$48,986,047	$50,000,000	78%	$39,000,000	$6,000,000	$0	$6,000,000	$11,000,000	0.15	1.41	3/31/2019
11/30/2007	Paladin III	$29,196,629	$25,000,000	133%	$33,190,113	$131,245	$307,796	$23,902,748	$523,382	0.72	1.60	3/31/2019
8/22/2011	Pathway 6	$36,842,746	$40,000,000	94%	$37,637,493	$305,695	$1,563,398	$21,252,810	$4,508,356	0.56	1.54	3/31/2019
7/10/2013	Pathway 7	$70,256,174	$70,000,000	91%	$63,944,537	$1,431,282	$1,536,217	$18,106,535	$8,765,254	0.28	1.38	3/31/2019
11/23/2015	Pathway 8	$42,821,144	$50,000,000	70%	$35,037,876	$1,179,895	$536,344	$4,498,717	$16,446,392	0.13	1.35	3/31/2019
1/19/1999	Pathway	$17,154,026	$125,000,000	100%	$124,729,942	$145,490	$3,136,335	$171,523,084	$10,995,187	1.38	1.51	3/31/2019
7/31/2009	Pathway 2008	$19,806,523	$30,000,000	96%	$28,832,985	$74,551	$1,479,163	$27,129,692	$3,471,535	0.94	1.63	3/31/2019
6/3/2014	Siguler Guff CCCERA Opportunities	$163,795,020	$200,000,000	73%	$146,355,741	$4,950,000	$5,592,214	$47,497,495	$61,224,772	0.32	1.44	3/31/2019
8/31/2013	Siguler Guff Secondary Opportunities	$344,196	$50,000,000	60%	$29,999,802	$0	$0	$42,638,494	$49,356,046	1.42	1.43	12/31/2018
5/18/2018	Siris Partners IV, L.P.	$4,943,092	$35,000,000	15%	$5,340,331	$0	$0	$0	$29,659,669	0.00	0.93	3/31/2019
6/28/2019	TPG Healthcare Partners, L.P.	$0	$24,000,000	0%	$0	$0	$0	$0	$24,000,000	-	-	-
5/24/2019	Trident VIII, L.P.	$0	$40,000,000	0%	$0	$0	$0	$0	$40,000,000	-	-	-
12/8/2015	Wastewater Opportunity Fund	$15,737,989	$25,000,000	73%	$18,184,010	$0	$0	$2,031,922	$6,838,217	0.11	0.98	3/31/2019
	Total Private Equity and Venture Capital	**$987,137,914**	$1,818,565,614	80%	$1,456,011,889	$30,514,041	$24,964,412	$1,081,911,580	$485,918,939	0.74	1.42	
	% of Portfolio (Market Value)	11.1%										

* All Data provided by StepStone Group
[1]Latest valuation + capital calls - distributions
[2](DPI) is equal to (capital returned / capital called)
[3](TVPI) is equal to (market value + capital returned) / capital called

Private Credit	Inception	Fund Level (G)	CCCERA (G)	Fund Level (N)	CCCERA (N)	IRR Date
Angelo Gordon Energy Cred Opp.	09/24/2015	-	-	-	10.4%	*03/31/2019*
Stepstone CC Opportunities Fund[1]	02/02/2018	-	-	-	-	-
Torchlight II	07/01/2006	0.0%	0.2%	-1.2%	-1.0%	*06/30/2019*
Torchlight III	12/12/2008	18.3%	16.3%	13.7%	13.8%	*06/30/2018*
Torchlight IV	08/01/2012	13.7%	13.3%	11.1%	10.4%	*06/30/2019*
Torchlight V	03/12/2015	19.4%	19.4%	12.6%	12.5%	*03/31/2019*

Real Estate	Inception	Fund Level (G)	CCCERA (G)	Fund Level (N)	CCCERA (N)	IRR Date
Angelo Gordon VIII	01/23/2012	-	-	-	15.4%	*03/31/2019*
Angelo Gordon IX	12/08/2014	-	-	-	12.2%	*03/31/2019*
DLJ RECP III	06/23/2005	0.0%	0.0%	-2.0%	-2.0%	*03/31/2019*
DLJ RECP IV	02/11/2008	7.0%	7.0%	4.0%	4.0%	*03/31/2019*
DLJ RECP V	07/01/2014	23.0%	23.0%	13.0%	13.0%	*03/31/2019*
DLJ RECP VI[1]	03/19/2019	-	-	-	-	-
Hearthstone II	06/17/1998	-	30.1%	-	30.1%	*03/31/2019*
Invesco Fund III	06/30/2013	16.1%	-	12.6%	-	*03/31/2019*
Invesco Fund IV	06/30/2014	18.2%	-	13.4%	-	*03/31/2019*
Invesco Fund V[1]	02/20/2019	-	-	-	-	-
LaSalle Income & Growth VI	07/16/2013	15.1%	15.1%	12.5%	12.5%	*03/31/2019*
LaSalle Income & Growth VII	02/28/2017	14.5%	14.9%	11.7%	11.9%	*03/31/2019*
Long Wharf IV	07/03/2013	17.3%	17.4%	12.6%	12.6%	*06/30/2019*
Long Wharf V	09/30/2016	16.5%	18.1%	10.8%	11.7%	*06/30/2019*
Oaktree REOF V	12/31/2011	16.9%	-	12.5%	-	*06/30/2019*
Oaktree REOF VI	09/30/2013	14.5%	-	9.7%	-	*06/30/2019*
Oaktree REOF VII	04/01/2015	54.5%	-	31.0%	-	*06/30/2019*
Paulson	11/10/2013	14.6%	-	13.1%	-	12/31/2018
Siguler Guff I	01/25/2012	14.4%	17.1%	12.8%	14.0%	03/31/2019
Siguler Guff II	08/31/2013	13.1%	12.9%	11.7%	10.6%	03/31/2019
Siguler Guff DREOF II Co-Inv	01/27/2016	15.1%	15.3%	14.0%	11.9%	03/31/2019

[1]Manager has yet to report IRR figure due to no capital invested or meaningful distributions.
[2]Fund level data includes CCCERA and all other fund investors.
[3]Net IRR calculated after deductions of management fees and carried interest to the General Partner.

Private Equity & Venture Capital	Closing Date	Fund Level (G)	CCCERA (G)	Fund Level (N)	CCCERA (N)	IRR Date
Adams Street Partners	2/11/2004	-	12.8%	-	10.3%	*3/31/2019*
Adams Street Partners II	12/31/2008	-	17.1%	-	14.5%	*3/31/2019*
Adams Street Partners - Fund 5	12/31/2008	-	8.9%	-	6.6%	*3/31/2019*
Adams Street Partners Venture	1/18/1996	-	23.6%	-	15.3%	*3/31/2019*
Adams Street Partners - BPF	3/31/2016	-	14.3%	-	11.6%	*3/31/2019*
AE Industrial Partners Fund II, LP[1]	5/18/2018	-	-	-	-	-
Aether Real Assets III	11/27/2013	5.3%	-	2.8%	2.8%	*3/31/2019*
Aether Real Assets III Surplus	11/30/2013	7.4%	-	5.9%	5.9%	*3/31/2019*
Aether Real Assets IV	1/30/2016	17.7%	-	12.9%	1.8%	*3/31/2019*
Bay Area Equity Fund I	11/26/2003	25.8%	25.8%	23.2%	23.2%	*3/31/2019*
Bay Area Equity Fund II	11/26/2003	5.7%	5.7%	4.7%	4.7%	*3/31/2019*
CommonFund	6/30/2013	-	-	-	10.0%	*3/31/2019*
Energy Investor Fund	11/26/2003	33.5%	34.7%	28.5%	28.3%	*3/31/2019*
Energy Investor Fund II	7/15/2005	6.5%	6.0%	3.8%	3.4%	*3/31/2019*
Energy Investor Fund III	5/31/2007	6.7%	6.7%	4.2%	4.2%	*3/31/2019*
Energy Investor Fund IV	8/31/2010	9.9%	10.0%	5.9%	5.7%	*3/31/2019*
Energy Investor Fund V	11/28/2016	15.5%	14.2%	8.1%	7.2%	*3/31/2019*
Genstar Capital Partners IX, L.P.[1]	2/21/2019	-	-	-	-	-
Oaktree PIF 2009	2/28/2010	7.1%	-	6.9%	-	*6/30/2019*
Ocean Avenue II	8/15/2013	-	-	15.6%	-	*3/31/2019*
Ocean Avenue III	4/15/2016	-	-	35.6%	-	*3/31/2019*
Paladin III	11/30/2007	17.3%	-	9.6%	-	*3/31/2019*
Pathway 6	8/22/2011	16.0%	16.0%	13.4%	13.4%	*3/31/2019*
Benchmark[4]		14.3%	-	-	-	*3/31/2019*
Pathway 7	7/10/2013	15.9%	15.9%	13.1%	13.1%	*3/31/2019*
Benchmark[5]		14.1%	-	-	-	*3/31/2019*
Pathway 8	11/23/2015	21.5%	22.1%	19.3%	20.1%	*3/31/2019*
Benchmark[6]		13.7%	-	-	-	*3/31/2019*
Pathway Private Equity Fund	1/19/1999	10.3%	10.3%	8.4%	8.4%	*3/31/2019*
Benchmark[7]		10.4%	-	-	-	*3/31/2019*
Pathway Private Equity Fund 2008	7/31/2009	14.7%	14.7%	12.1%	12.1%	*3/31/2019*
Benchmark[8]		13.2%	-	-	-	*3/31/2019*
Siguler Guff CCCERA Opportunities	6/3/2014	19.5%	20.6%	18.9%	17.4%	*3/31/2019*
Siguler Guff Secondary Opportunities	8/31/2013	55.7%	413.2%	50.0%	202.6%	*12/31/2018*
Siris Partners IV, L.P.[1]	5/18/2018	-	-	-	-	-
TPG Healthcare Partners, L.P.[1]	6/28/2019	-	-	-	-	-
Trident VIII, L.P.[1]	5/24/2019	-	-	-	-	-
Wastewater Opportunity Fund	12/8/2015	8.7%	-	-1.5%	-	*12/31/2018*

[1]Manager has yet to report IRR figure due to no capital invested or meaningful distributions.
[2]Fund level data includes CCCERA and all other fund investors.
[3]Net IRR calculated after deductions of management fees and carried interest to the General Partner.
[4]Private iQ global all private equity median pooled return for vintage years 2011-2014, as of March 31, 2019.
[5]Private iQ global all private equity median pooled return for vintage years 2012-2016, as of March 31, 2019.
[6]Private iQ global all private equity median pooled return for vintage years 2015-2018, as of March 31, 2019.
[7]Private iQ global all private equity median pooled return for vintage years 1999-2011, as of March 31, 2019.
[8]Private iQ global all private equity median pooled return for vintage years 2008-2014, as of March 31, 2019.

Performance Analysis - 3 Years (Net of Fees)

	3 Years										
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Jackson Square Partners	15.90%	-2.17%	13.59%	-1.37%	0.96	4.57%	0.89	1.07	-0.47	88.36%	96.84%
Boston Partners	11.62%	1.43%	13.12%	0.85%	1.06	2.92%	0.95	0.78	0.49	108.06%	99.47%
Emerald Advisers	17.87%	3.19%	18.14%	3.08%	1.01	4.51%	0.94	0.91	0.71	102.98%	89.06%
Ceredex	7.67%	-2.14%	16.45%	-1.10%	0.89	5.83%	0.89	0.38	-0.37	84.80%	95.75%
Pyrford	6.63%	-2.31%	9.62%	-0.08%	0.75	5.29%	0.78	0.54	-0.44	65.05%	72.73%
William Blair	9.78%	-0.03%	12.54%	-0.14%	1.01	2.66%	0.95	0.67	-0.01	96.71%	96.66%
Artisan Partners	15.91%	4.28%	13.32%	3.32%	1.08	5.31%	0.85	1.09	0.81	126.91%	101.55%
First Eagle	7.46%	-4.16%	8.49%	-1.00%	0.73	3.71%	0.94	0.71	-1.12	59.91%	72.00%
Allianz Global Investors	6.79%	-0.75%	4.70%	-1.00%	1.03	0.93%	0.96	1.15	-0.81	95.23%	109.50%
Adelante	5.27%	1.15%	12.69%	1.34%	0.95	1.71%	0.98	0.30	0.67	94.73%	89.76%
AFL-CIO	2.23%	-0.08%	2.84%	0.13%	0.91	0.76%	0.94	0.29	-0.11	87.18%	81.92%
Wellington Real Total Return	1.67%	-4.46%	4.30%	-0.50%	0.35	4.32%	0.00	0.06	-1.03	35.66%	23,204.41%

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

	5 Years										
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Jackson Square Partners	10.34%	-3.05%	13.33%	-2.38%	0.95	5.00%	0.86	0.71	-0.61	86.99%	104.85%
Boston Partners	7.41%	-0.05%	13.02%	-0.55%	1.07	2.90%	0.95	0.50	-0.02	104.73%	103.66%
Emerald Advisers	11.55%	2.93%	18.02%	2.94%	1.00	4.88%	0.93	0.59	0.60	108.62%	95.53%
Ceredex	6.05%	0.66%	15.57%	1.26%	0.89	5.72%	0.88	0.33	0.12	89.12%	92.77%
Pyrford	2.64%	2.34%	10.31%	2.43%	0.72	5.60%	0.83	0.17	0.42	64.31%	70.71%
William Blair	3.86%	-0.14%	12.32%	0.01%	0.96	2.70%	0.95	0.24	-0.05	91.35%	95.62%
Artisan Partners	10.78%	4.62%	13.22%	4.39%	1.04	5.04%	0.86	0.75	0.92	126.09%	92.19%
First Eagle	4.98%	-1.18%	8.70%	0.67%	0.70	4.51%	0.90	0.47	-0.26	57.39%	68.77%
Allianz Global Investors	3.62%	-1.07%	5.46%	-0.84%	0.95	1.20%	0.95	0.50	-0.90	88.83%	101.91%
Adelante	8.08%	0.24%	13.96%	0.65%	0.95	1.81%	0.99	0.52	0.13	91.20%	93.64%
AFL-CIO	2.84%	-0.11%	2.69%	0.22%	0.89	0.75%	0.94	0.73	-0.15	87.21%	81.08%
Wellington Real Total Return	-2.32%	-7.82%	5.63%	-9.58%	1.32	5.48%	0.06	-0.57	-1.43	-14.93%	1,080.85%

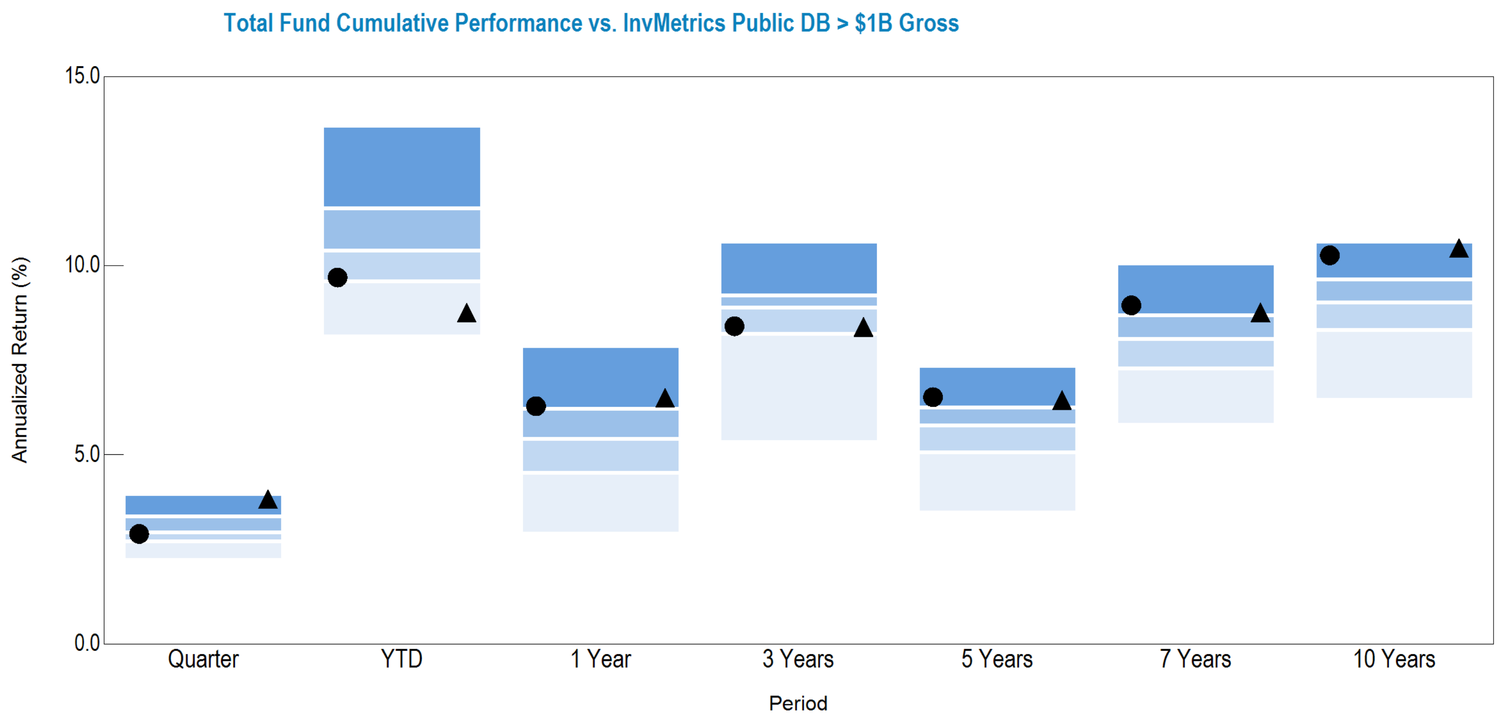
Performance Analysis excludes closed end funds and those funds without 5 years of performance.

Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
BlackRock Russell 1000 Index	Growth	0.03% of Assets	$135,787,891	$40,736	0.03%
Jackson Square Partners	Growth	0.50% of First 100.0 Mil, 0.40% of Next 150.0 Mil, 0.35% Thereafter	$288,330,354	$1,234,156	0.43%
Boston Partners	Growth	0.50% of First 25.0 Mil, 0.30% Thereafter	$267,319,996	$851,960	0.32%
Emerald Advisers	Growth	0.75% of First 10.0 Mil, 0.60% Thereafter	$222,647,710	$1,350,886	0.61%
Ceredex	Growth	0.85% of First 10.0 Mil, 0.68% of Next 40.0 Mil, 0.51% Thereafter	$174,066,839	$989,741	0.57%
Pyrford	Growth	0.70% of First 50.0 Mil, 0.50% of Next 50.0 Mil, 0.35% Thereafter	$472,477,417	$1,903,671	0.40%
William Blair	Growth	0.80% of First 20.0 Mil, 0.60% of Next 30.0 Mil, 0.50% of Next 50.0 Mil, 0.45% of Next 50.0 Mil, 0.40% of Next 50.0 Mil, 0.30% Thereafter	$494,998,297	$1,899,995	0.38%
PIMCO RAE Emerging Markets	Growth	0.75% of First 50.0 Mil, 0.68% of Next 50.0 Mil, 0.50% of Next 100.0 Mil, 0.45% Thereafter	$353,821,590	$1,904,697	0.54%
TT Emerging Markets	Growth	0.70% of First 100.0 Mil, 0.65% of Next 100.0 Mil, 0.60% Thereafter	$333,653,248	$2,151,919	0.64%
Artisan Partners	Growth	0.75% of Assets	$386,747,648	$2,900,607	0.75%
First Eagle	Growth	0.75% of Assets	$378,018,808	$2,835,141	0.75%
Allianz Global Investors	Growth	0.50% of First 50.0 Mil, 0.40% of Next 50.0 Mil, 0.35% Thereafter	$318,978,341	$1,216,424	0.38%
AQR Global Risk Premium-EL	Growth	0.38% of Assets	$224,426,901	$852,822	0.38%

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

Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
PanAgora Risk Parity Multi Asset	Growth	0.35% of Assets	$214,693,529	$751,427	0.35%
AFL-CIO	Diversifying	0.43% of Assets	$332,843,870	$1,431,229	0.43%
Wellington Real Total Return	Diversifying	0.35% of Assets	$185,124,950	$647,937	0.35%
Parametric Defensive Equity	Diversifying	0.42% of First 200.0 Mil, 0.39% Thereafter	$199,785,900	$839,101	0.42%
DFA Short Credit	Liquidity	0.20% of First 25.0 Mil, 0.10% Thereafter	$339,795,727	$364,796	0.11%
Insight Short Duration	Liquidity	0.06% of First 500.0 Mil, 0.05% of Next 500.0 Mil, 0.04% Thereafter	$744,843,442	$422,422	0.06%
Sit Short Duration	Liquidity	0.15% of Assets	$543,009,330	$814,514	0.15%

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

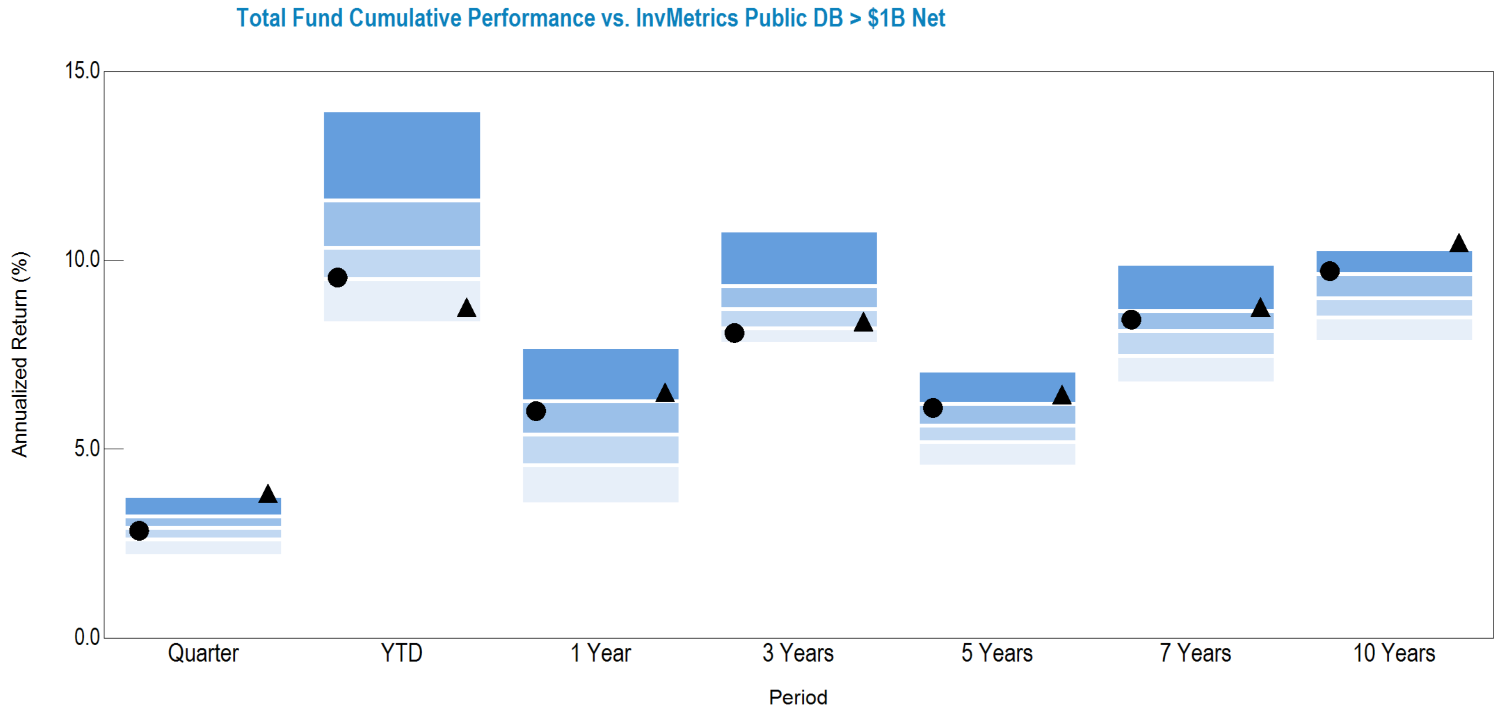


	Return (Rank)													
5th Percentile	4.0		13.7		7.9		10.6		7.3		10.1		10.6	
25th Percentile	3.4		11.5		6.2		9.2		6.3		8.7		9.6	
Median	3.0		10.4		5.4		8.9		5.8		8.1		9.0	
75th Percentile	2.7		9.6		4.5		8.2		5.1		7.3		8.3	
95th Percentile	2.2		8.1		2.9		5.4		3.5		5.8		6.5	
# of Portfolios	88		88		88		88		84		82		77	
● Total Fund	2.9	(58)	9.7	(74)	6.3	(23)	8.4	(72)	6.5	(20)	8.9	(18)	10.3	(10)
▲ Policy Index	3.8	(10)	8.8	(92)	6.5	(21)	8.4	(73)	6.4	(21)	8.8	(21)	10.5	(8)

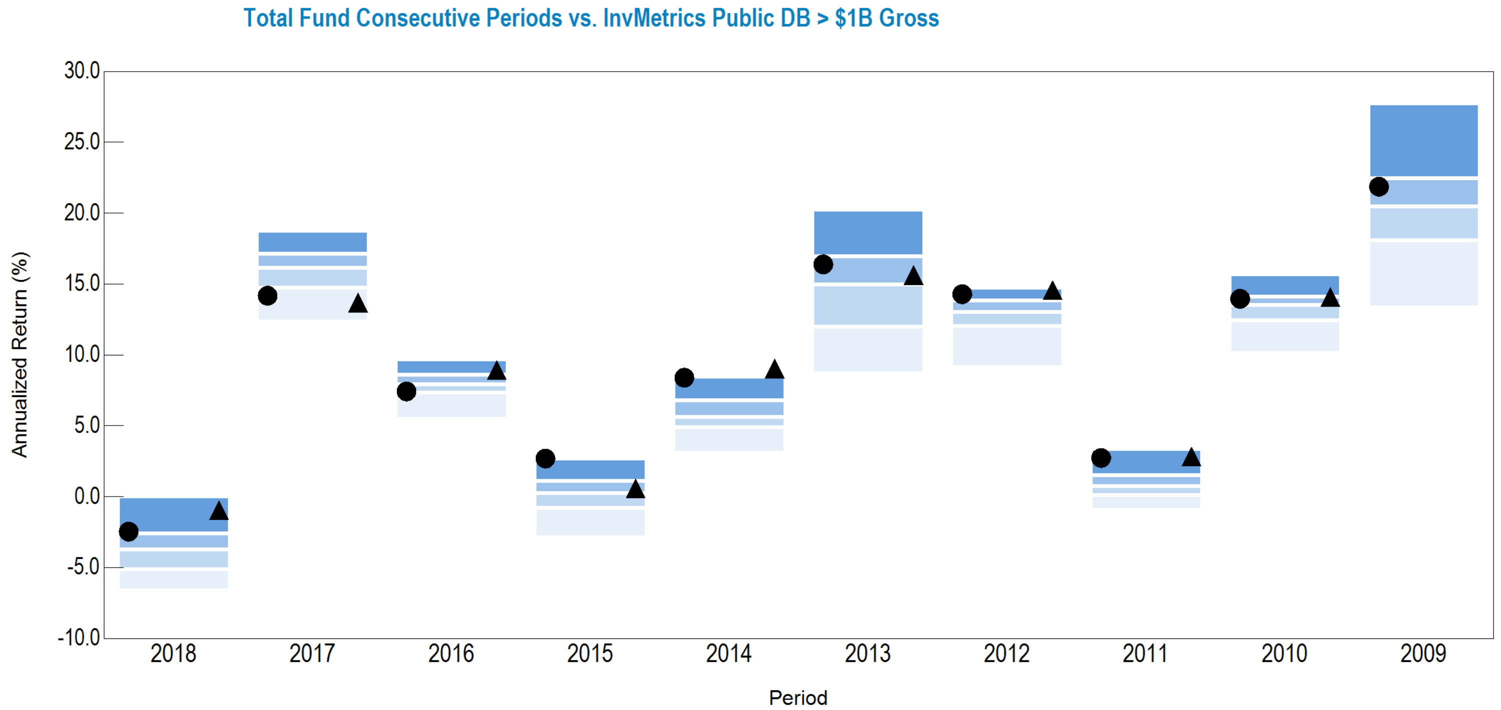
Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

Peer Universe Comparison: Cumulative Performance (Net of Fees)

Period Ending: June 30, 2019

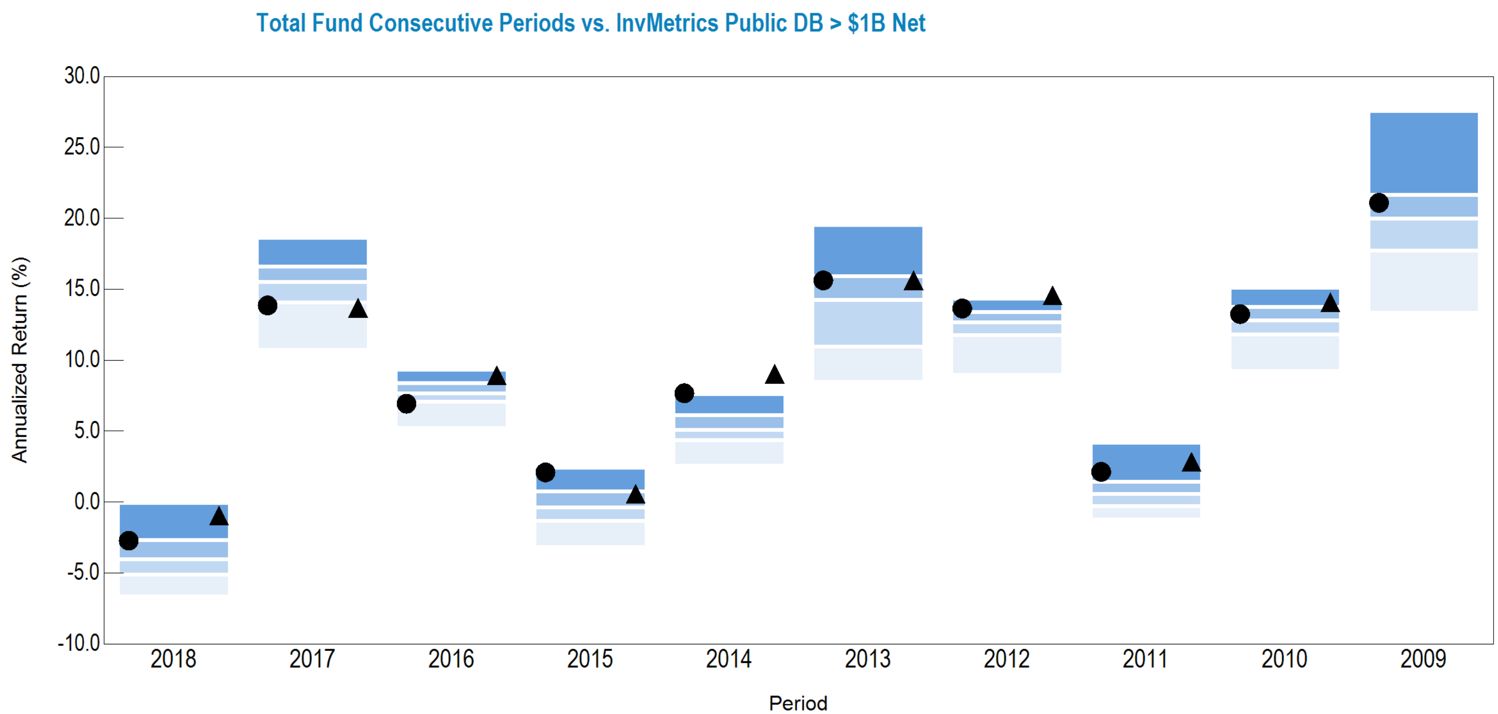


	Return (Rank)													
5th Percentile	3.8		14.0		7.7		10.8		7.1		9.9		10.3	
25th Percentile	3.2		11.6		6.3		9.3		6.2		8.7		9.6	
Median	2.9		10.3		5.4		8.7		5.6		8.1		9.0	
75th Percentile	2.6		9.5		4.6		8.2		5.2		7.5		8.5	
95th Percentile	2.2		8.3		3.5		7.8		4.5		6.7		7.9	
# of Portfolios	78		78		77		77		73		71		65	
● Total Fund	2.8	(57)	9.5	(74)	6.0	(32)	8.1	(89)	6.1	(32)	8.4	(32)	9.7	(22)
▲ Policy Index	3.8	(5)	8.8	(91)	6.5	(22)	8.4	(64)	6.4	(17)	8.8	(23)	10.5	(3)



Return (Rank)	2018		2017		2016		2015		2014		2013		2012		2011		2010		2009	
5th Percentile	0.0		18.8		9.7		2.7		8.5		20.2		14.7		3.3		15.7		27.7	
25th Percentile	-2.6		17.2		8.6		1.1		6.8		17.0		13.9		1.6		14.2		22.5	
Median	-3.7		16.2		8.0		0.3		5.7		15.0		13.0		0.8		13.5		20.5	
75th Percentile	-5.1		14.8		7.4		-0.7		4.9		12.0		12.1		0.1		12.5		18.1	
95th Percentile	-6.6		12.4		5.5		-2.8		3.1		8.7		9.2		-0.9		10.2		13.4	
# of Portfolios	71		98		92		98		79		67		74		68		66		66	
● **Total Fund**	-2.5	(25)	14.2	(83)	7.4	(74)	2.7	(5)	8.4	(6)	16.4	(33)	14.3	(13)	2.7	(9)	14.0	(29)	21.9	(34)
▲ **Policy Index**	-0.9	(8)	13.7	(89)	8.9	(15)	0.6	(40)	9.0	(2)	15.6	(43)	14.6	(8)	2.8	(9)	14.1	(27)	--	(--)

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

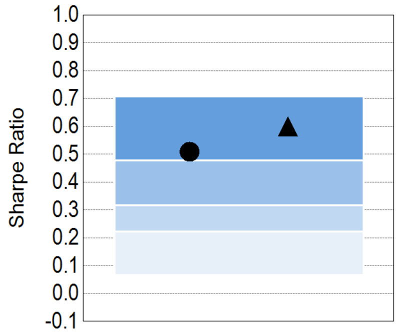


Return (Rank)	2018		2017		2016		2015		2014		2013		2012		2011		2010		2009	
5th Percentile	-0.1		18.6		9.3		2.4		7.6		19.5		14.3		4.2		15.1		27.5	
25th Percentile	-2.7		16.6		8.4		0.8		6.1		16.0		13.4		1.5		13.8		21.7	
Median	-4.0		15.6		7.7		-0.4		5.1		14.3		12.7		0.6		12.8		20.0	
75th Percentile	-5.1		14.1		7.1		-1.3		4.4		11.0		11.8		-0.3		11.8		17.7	
95th Percentile	-6.6		10.7		5.3		-3.2		2.6		8.5		9.0		-1.2		9.3		13.4	
# of Portfolios	63		61		62		57		55		48		44		42		41		40	
● Total Fund	-2.7	(27)	13.9	(81)	6.9	(78)	2.1	(12)	7.7	(5)	15.6	(33)	13.6	(21)	2.1	(12)	13.3	(34)	21.1	(33)
▲ Policy Index	-0.9	(8)	13.7	(85)	8.9	(13)	0.6	(29)	9.0	(2)	15.6	(33)	14.6	(1)	2.8	(11)	14.1	(15)	--	(--)

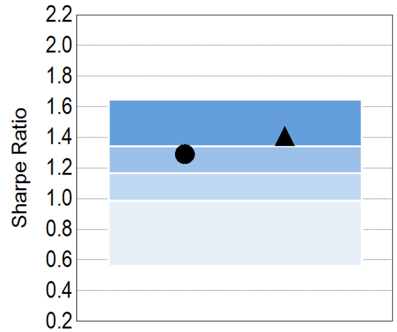
Total Fund
Sharpe Ratio Ranking (Gross of Fees)

Period Ending: June 30, 2019

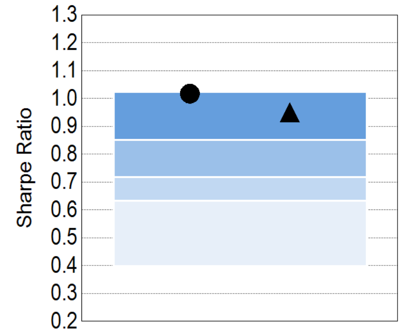
Sharpe Ratio
1 Year



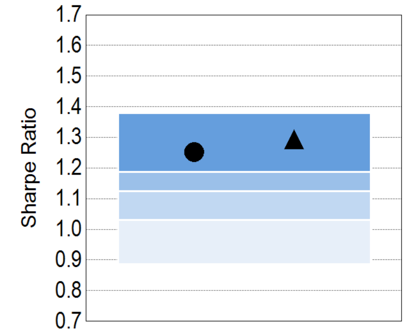
Sharpe Ratio
3 Year



Sharpe Ratio
5 Year



Sharpe Ratio
10 Year



	1 Year	3 Year	5 Year	10 Year
● Total Fund				
Value	0.5	1.3	1.0	1.3
Rank	21	33	6	15
▲ Policy Index				
Value	0.6	1.4	0.9	1.3
Rank	12	18	15	13
Universe				
5th %tile	0.7	1.6	1.0	1.4
25th %tile	0.5	1.3	0.9	1.2
Median	0.3	1.2	0.7	1.1
75th %tile	0.2	1.0	0.6	1.0
95th %tile	0.1	0.6	0.4	0.9

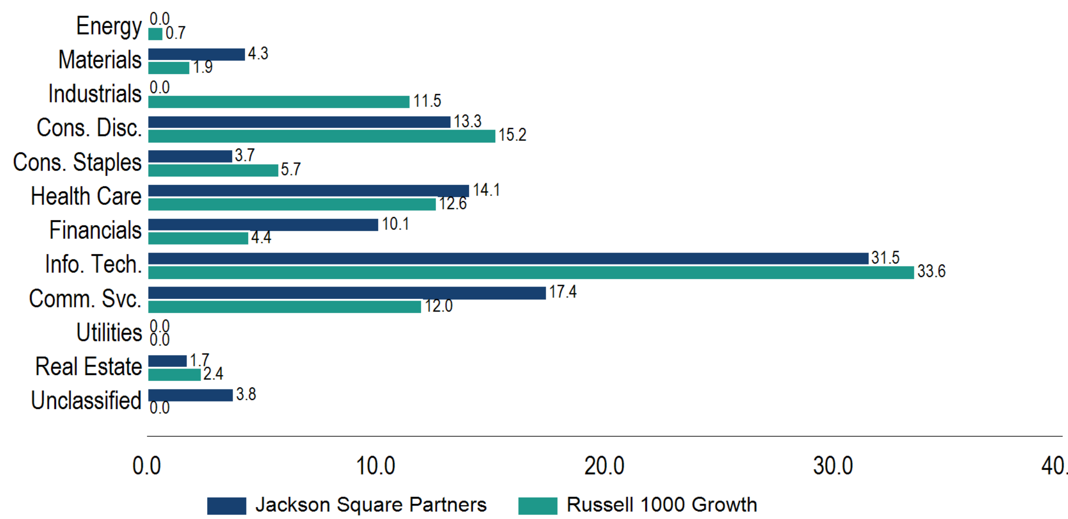
Domestic Equity Managers

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

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	29	546
Weighted Avg. Market Cap. ($B)	179.89	283.38
Median Market Cap. ($B)	43.69	12.11
Price To Earnings	26.86	24.92
Price To Book	5.07	7.20
Price To Sales	2.85	2.87
Return on Equity (%)	22.10	37.58
Yield (%)	0.80	1.26
Beta	0.84	1.00

Sector Allocation (%) vs Russell 1000 Growth



Largest Holdings

	End Weight	Return
MICROSOFT	9.69	14.00
IQVIA HOLDINGS	6.13	11.85
DOLLAR TREE	5.35	2.24
KKR AND A	4.85	8.13
BALL	4.30	21.26
CHARTER COMMS.CL.A	4.23	13.91
HASBRO	4.22	25.13
PAYPAL HOLDINGS	4.06	10.23
MASTERCARD	4.03	12.51
VISA 'A'	3.89	11.28

Top Contributors

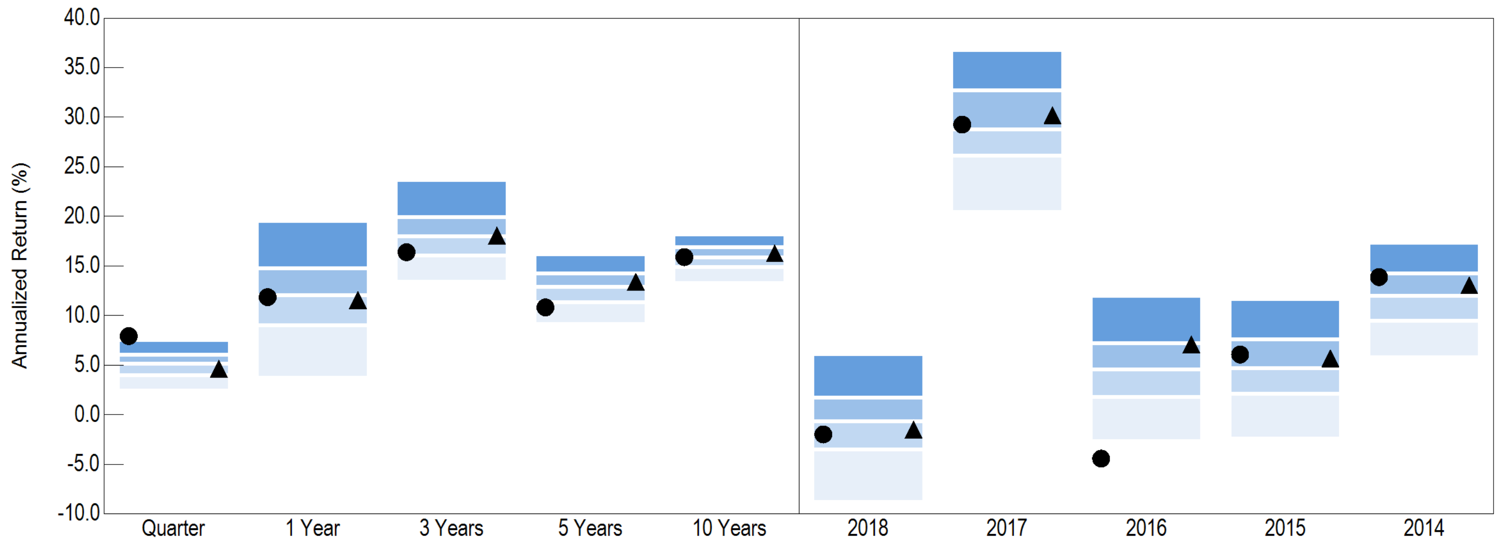
	Avg Wgt	Return	Contribution
MICROSOFT	3.31	14.00	0.46
HASBRO	1.38	25.13	0.35
IQVIA HOLDINGS	2.05	11.85	0.24
TAKE TWO INTACT.SFTW.	1.16	20.30	0.23
DOLLAR GENERAL	1.46	13.59	0.20
MASTERCARD	1.36	12.51	0.17
CHARTER COMMS.CL.A	1.19	13.91	0.17
APPLIED MATS.	1.15	13.82	0.16
ILLUMINA	0.84	18.49	0.15
VISA 'A'	1.32	11.28	0.15

Bottom Contributors

	Avg Wgt	Return	Contribution
ARISTA NETWORKS	1.27	-17.44	-0.22
TRIPADVISOR 'A'	1.02	-10.03	-0.10
ALPHABET A	0.95	-7.99	-0.08
CHARLES SCHWAB	1.05	-5.65	-0.06
ALIBABA GROUP HOLDING ADR 1:8	0.61	-7.13	-0.04
ALPHABET 'C'	0.25	-7.88	-0.02
UNITEDHEALTH GROUP	1.26	-0.88	-0.01
BIOGEN	0.74	-1.06	-0.01
UNITED TECHNOLOGIES	0.96	1.57	0.01
LIBERTY GLOBAL CL.A	0.22	8.31	0.02

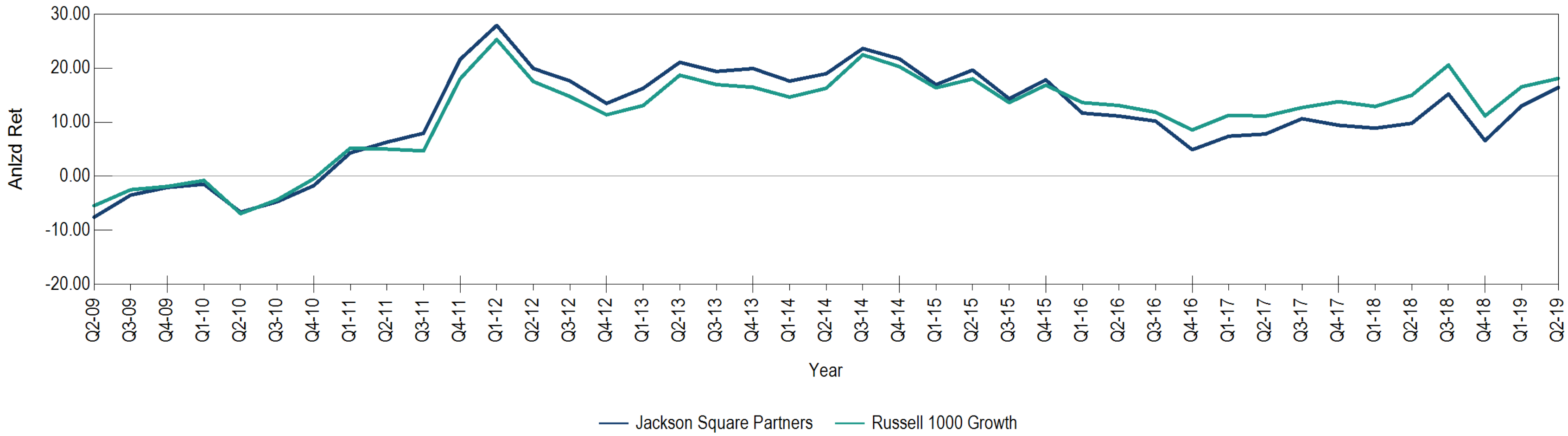
Unclassified sector allocation includes cash allocations.

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

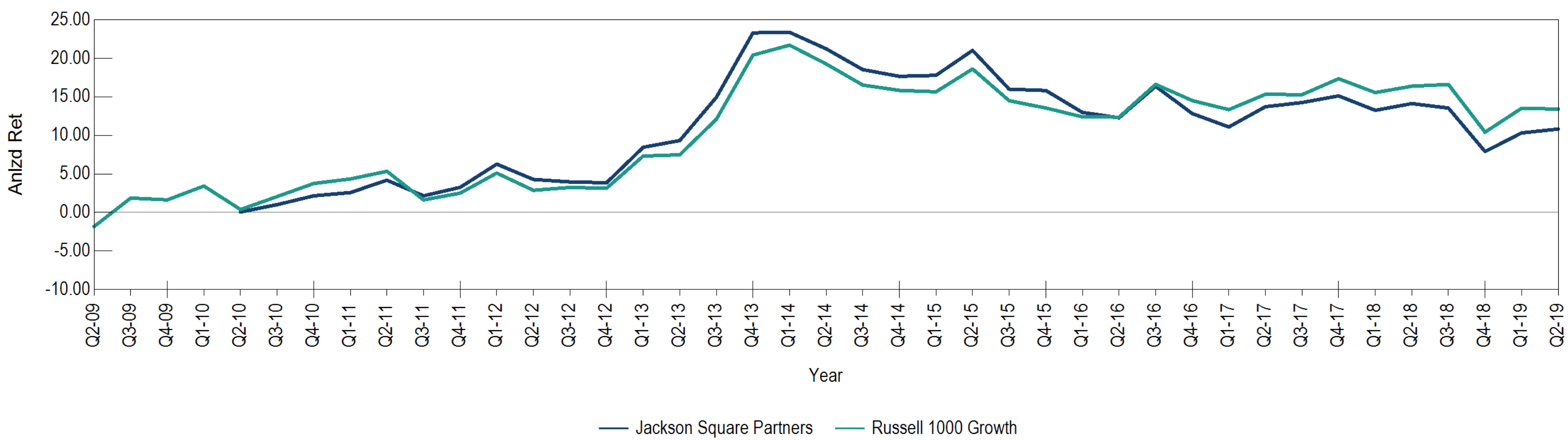


	Return (Rank)																			
5th Percentile	7.5		19.5		23.6		16.2		18.1		6.1		36.7		12.0		11.6		17.3	
25th Percentile	6.1		14.8		20.0		14.3		16.9		1.7		32.7		7.3		7.6		14.3	
Median	5.2		12.1		18.0		12.9		15.9		-0.6		28.8		4.6		4.7		12.0	
75th Percentile	4.0		9.0		16.1		11.4		15.0		-3.5		26.2		1.8		2.1		9.5	
95th Percentile	2.5		3.7		13.4		9.2		13.3		-8.8		20.5		-2.7		-2.4		5.8	
# of Portfolios	249		249		242		237		213		255		265		282		270		291	
● Jackson Square Partners	7.9	(2)	11.8	(52)	16.4	(71)	10.8	(84)	15.9	(50)	-2.0	(59)	29.3	(47)	-4.4	(98)	6.1	(37)	13.9	(31)
▲ Russell 1000 Growth	4.6	(62)	11.6	(55)	18.1	(49)	13.4	(41)	16.3	(39)	-1.5	(57)	30.2	(42)	7.1	(26)	5.7	(42)	13.0	(38)

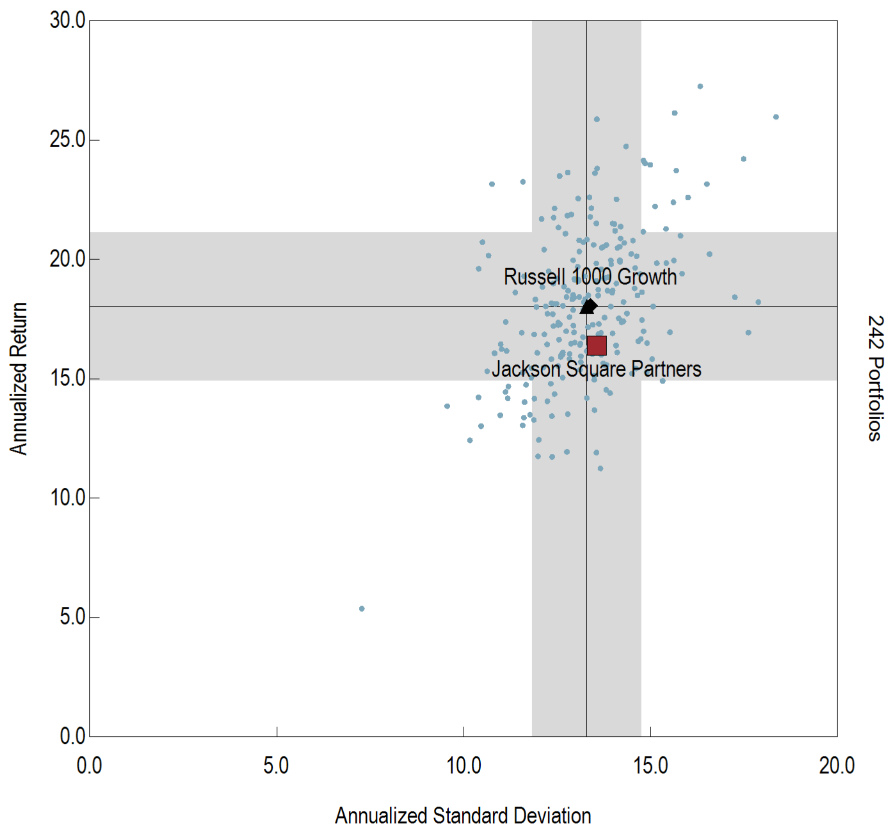
Rolling 3 Year Annualized Return (%)



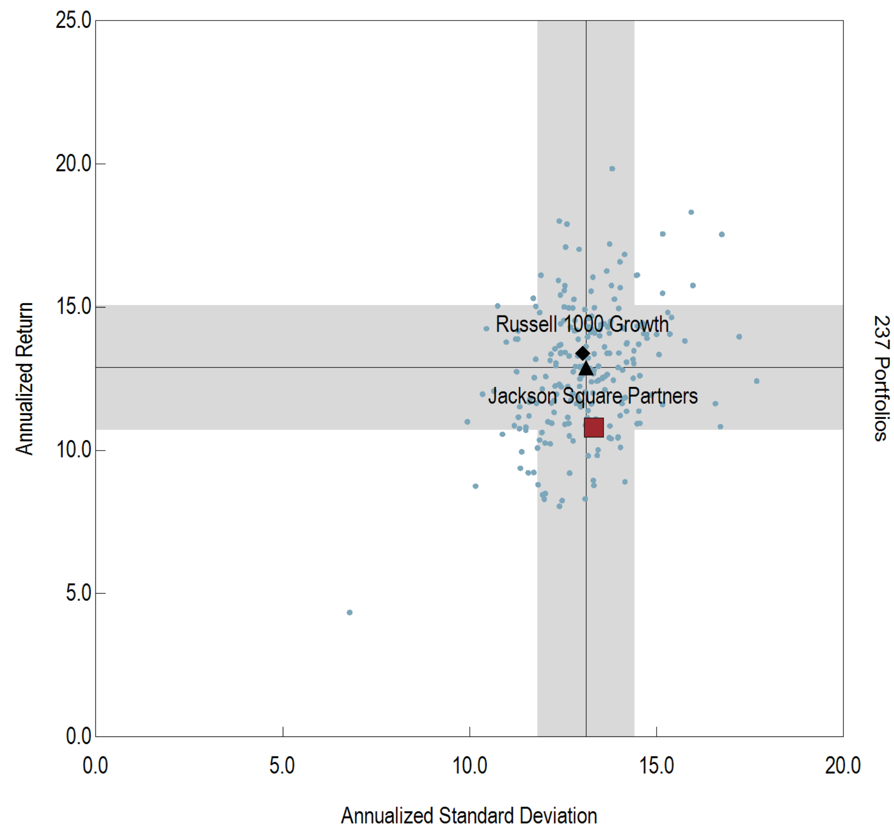
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Jackson Square Partners	16.4%	13.6%	1.1
Russell 1000 Growth	18.1%	13.4%	1.2
eV US Large Cap Growth Equity Gross Median	18.0%	13.3%	1.3

5 Years

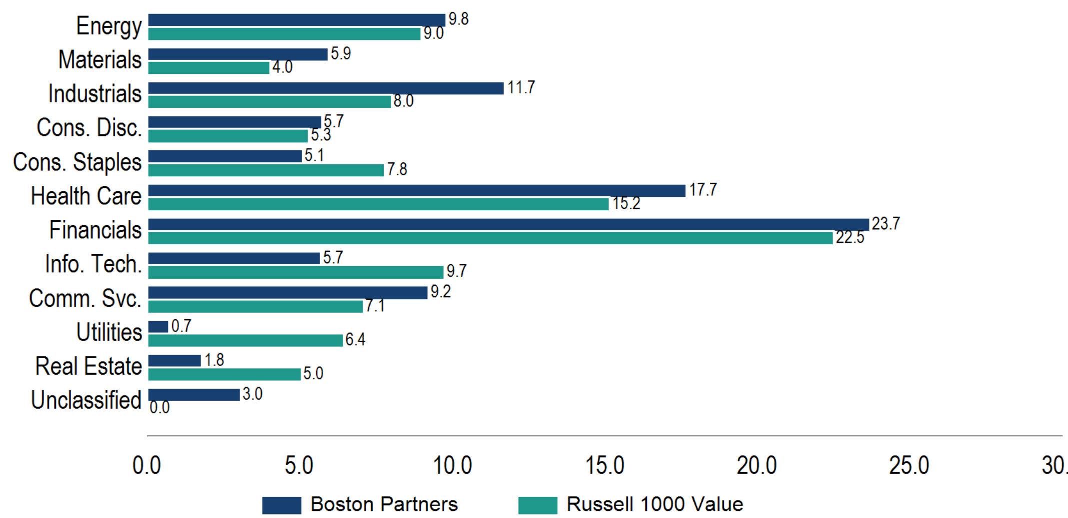
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Jackson Square Partners	10.8%	13.3%	0.7
Russell 1000 Growth	13.4%	13.0%	1.0
eV US Large Cap Growth Equity Gross Median	12.9%	13.1%	0.9

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

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	84	722
Weighted Avg. Market Cap. ($B)	132.08	123.11
Median Market Cap. ($B)	37.03	9.18
Price To Earnings	16.76	17.41
Price To Book	2.31	2.28
Price To Sales	1.51	1.54
Return on Equity (%)	16.40	14.42
Yield (%)	2.17	2.58
Beta	1.05	1.00

Sector Allocation (%) vs Russell 1000 Value



Largest Holdings

	End Weight	Return
BERKSHIRE HATHAWAY 'B'	4.61	6.11
BANK OF AMERICA	3.43	5.68
JOHNSON & JOHNSON	3.43	0.32
COMCAST A	2.92	6.31
PROCTER & GAMBLE	2.40	6.12
VERIZON COMMUNICATIONS	2.38	-2.39
CITIGROUP	2.28	13.27
CHEVRON	2.23	2.02
PFIZER	2.21	2.90
CISCO SYSTEMS	2.20	2.01

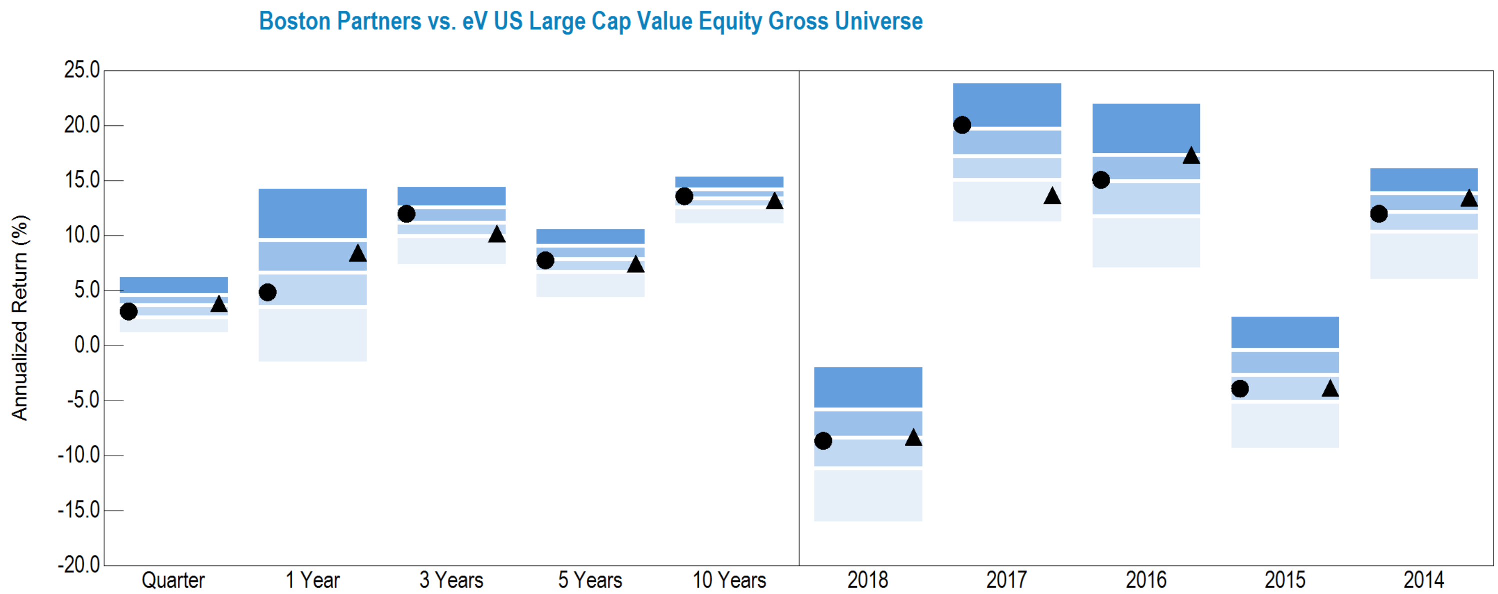
Top Contributors

	Avg Wgt	Return	Contribution
AMERICAN INTL.GP.	0.55	24.48	0.13
CITIGROUP	0.92	13.27	0.12
JP MORGAN CHASE & CO.	1.03	11.28	0.12
BERKSHIRE HATHAWAY 'B'	1.42	6.11	0.09
COMCAST A	1.16	6.31	0.07
BANK OF AMERICA	1.16	5.68	0.07
PROCTER & GAMBLE	1.02	6.12	0.06
ALLSTATE ORD SHS	0.66	8.54	0.06
KEYCORP	0.39	13.85	0.05
DELTA AIR LINES	0.50	10.55	0.05

Bottom Contributors

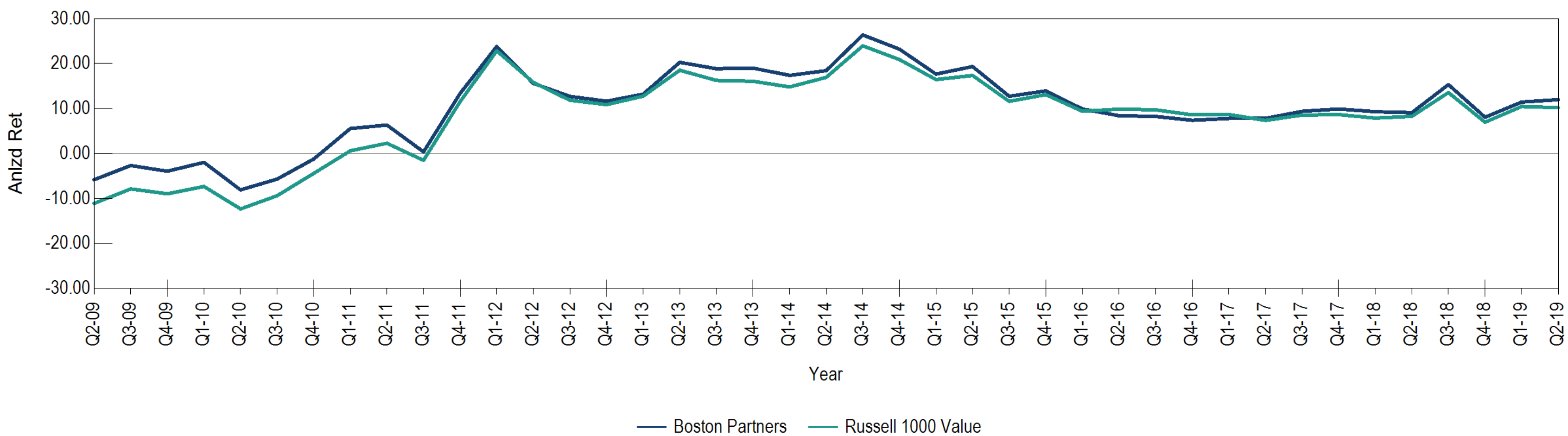
	Avg Wgt	Return	Contribution
DOW ORD SHS	30.59	-2.73	-0.83
DXC TECHNOLOGY	0.54	-13.87	-0.07
CONOCOPHILLIPS	0.51	-8.15	-0.04
ALPHABET A	0.45	-7.99	-0.04
WALGREENS BOOTS ALLIANCE	0.27	-12.87	-0.04
SL GREEN REALTY	0.34	-9.67	-0.03
BOEING	0.80	-4.01	-0.03
NOBLE ENERGY	0.32	-8.99	-0.03
CIMAREX EN.	0.17	-14.87	-0.02
APERGY	0.12	-18.31	-0.02

Unclassified sector allocation includes cash allocations.

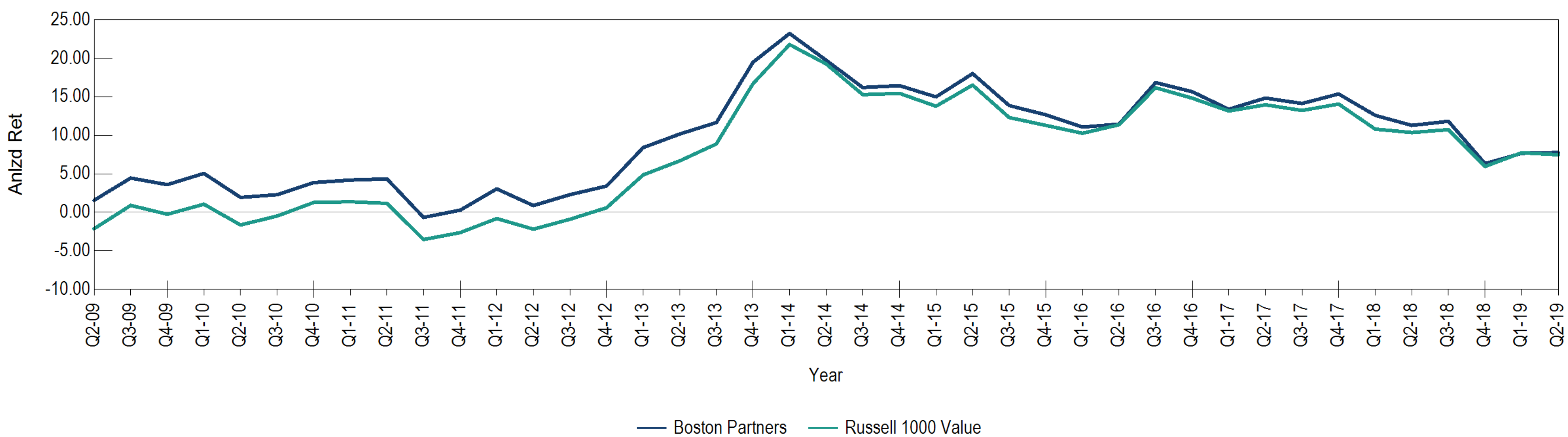


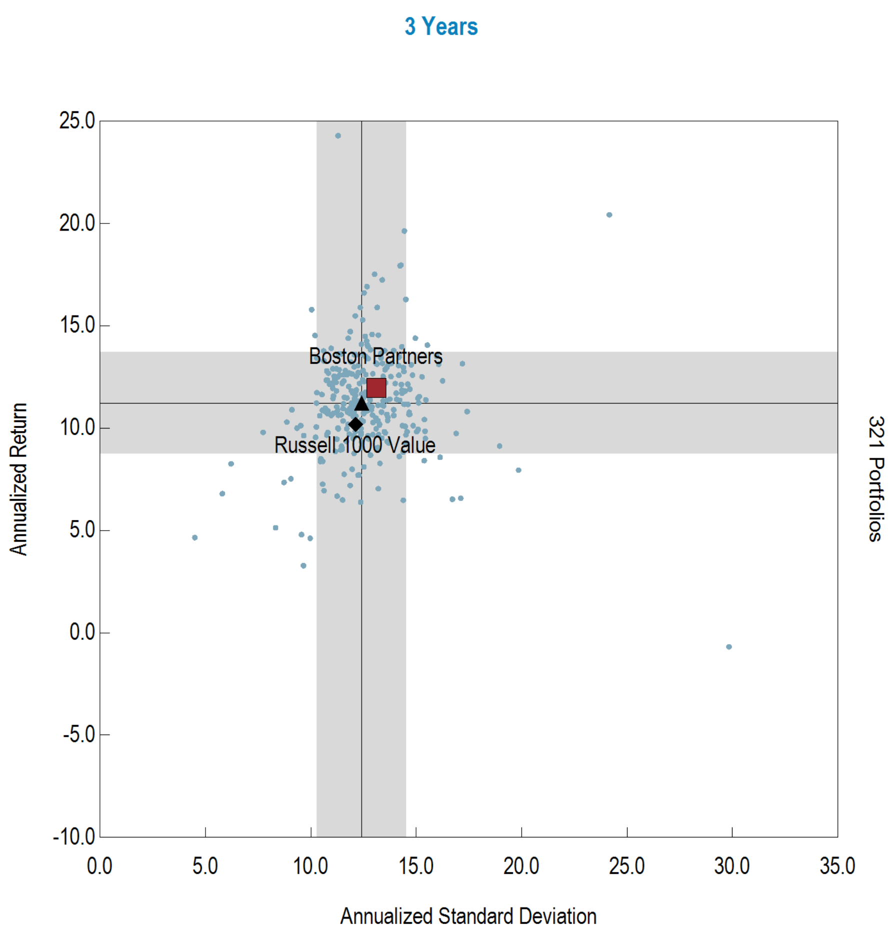
	Return (Rank)																			
5th Percentile	6.4		14.4		14.6		10.7		15.5		-1.8		24.0		22.1		2.8		16.3	
25th Percentile	4.6		9.6		12.6		9.1		14.2		-5.8		19.8		17.4		-0.4		13.9	
Median	3.7		6.7		11.2		7.9		13.4		-8.3		17.2		15.0		-2.6		12.2	
75th Percentile	2.6		3.5		10.0		6.7		12.6		-11.1		15.1		11.8		-5.1		10.4	
95th Percentile	1.1		-1.6		7.3		4.3		11.0		-16.1		11.2		7.0		-9.4		5.9	
# of Portfolios	325		325		321		314		267		336		342		346		312		307	
● Boston Partners	3.1	(65)	4.9	(66)	12.0	(34)	7.8	(55)	13.6	(44)	-8.7	(55)	20.1	(23)	15.1	(50)	-3.9	(65)	12.0	(55)
▲ Russell 1000 Value	3.8	(49)	8.5	(33)	10.2	(71)	7.5	(60)	13.2	(58)	-8.3	(50)	13.7	(87)	17.3	(26)	-3.8	(64)	13.5	(33)

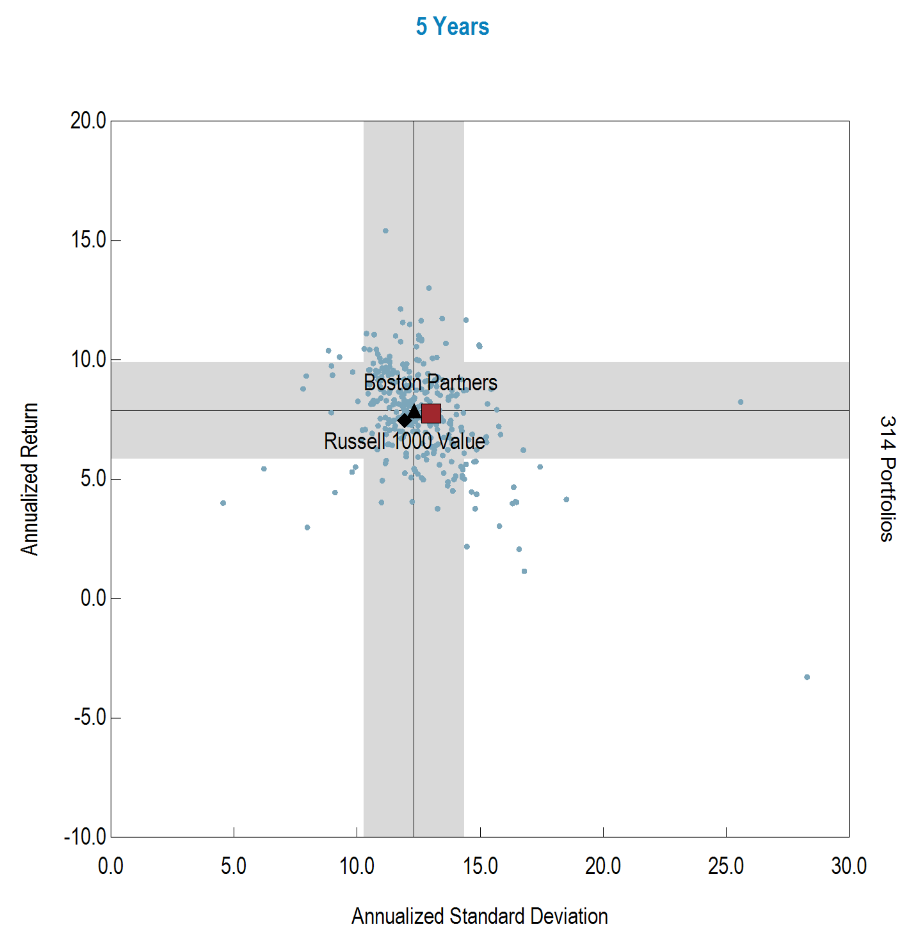
Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)







3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Boston Partners	12.0%	13.1%	0.8
Russell 1000 Value	10.2%	12.1%	0.7
eV US Large Cap Value Equity Gross Median	11.2%	12.4%	0.8

5 Years

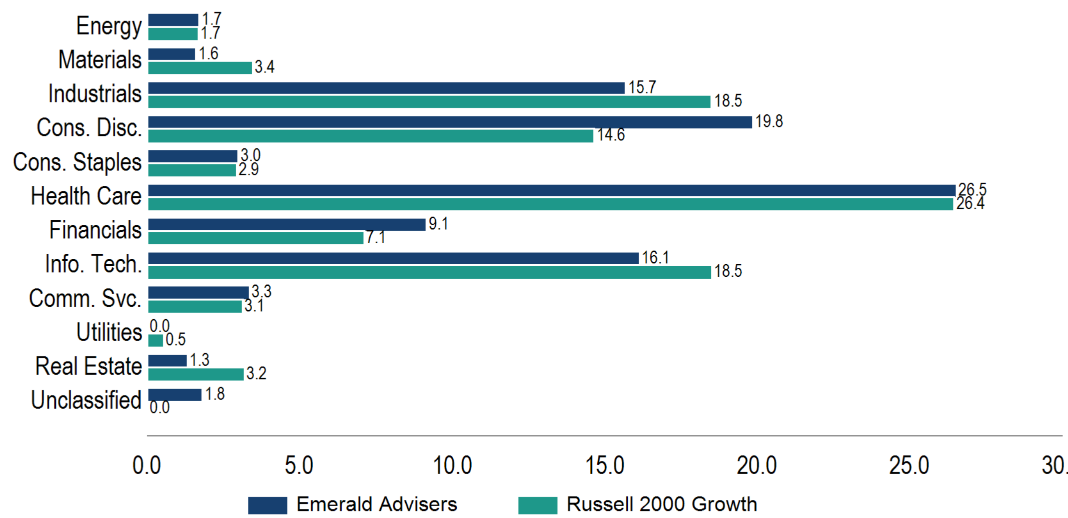
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Boston Partners	7.8%	13.0%	0.5
Russell 1000 Value	7.5%	11.9%	0.6
eV US Large Cap Value Equity Gross Median	7.9%	12.3%	0.6

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

Characteristics

	Portfolio	Russell 2000 Growth
Number of Holdings	117	1,228
Weighted Avg. Market Cap. ($B)	2.83	2.88
Median Market Cap. ($B)	2.06	0.87
Price To Earnings	25.28	23.66
Price To Book	4.21	4.09
Price To Sales	2.38	1.52
Return on Equity (%)	-10.06	-0.68
Yield (%)	0.50	0.70
Beta	1.11	1.00

Sector Allocation (%) vs Russell 2000 Growth



Largest Holdings

	End Weight	Return
CHEGG	2.88	1.23
RAPID7	2.07	14.29
TREX	2.04	16.55
PLANET FITNESS CL.A	1.98	5.41
KRATOS DEF&SCTY.SLTN.	1.89	46.45
FIVE BELOW	1.85	-3.40
CIENA	1.84	10.15
TETRA TECH	1.79	32.12
NEOGENOMICS	1.76	7.23
CADENCE BANCORP.'A'	1.74	13.14

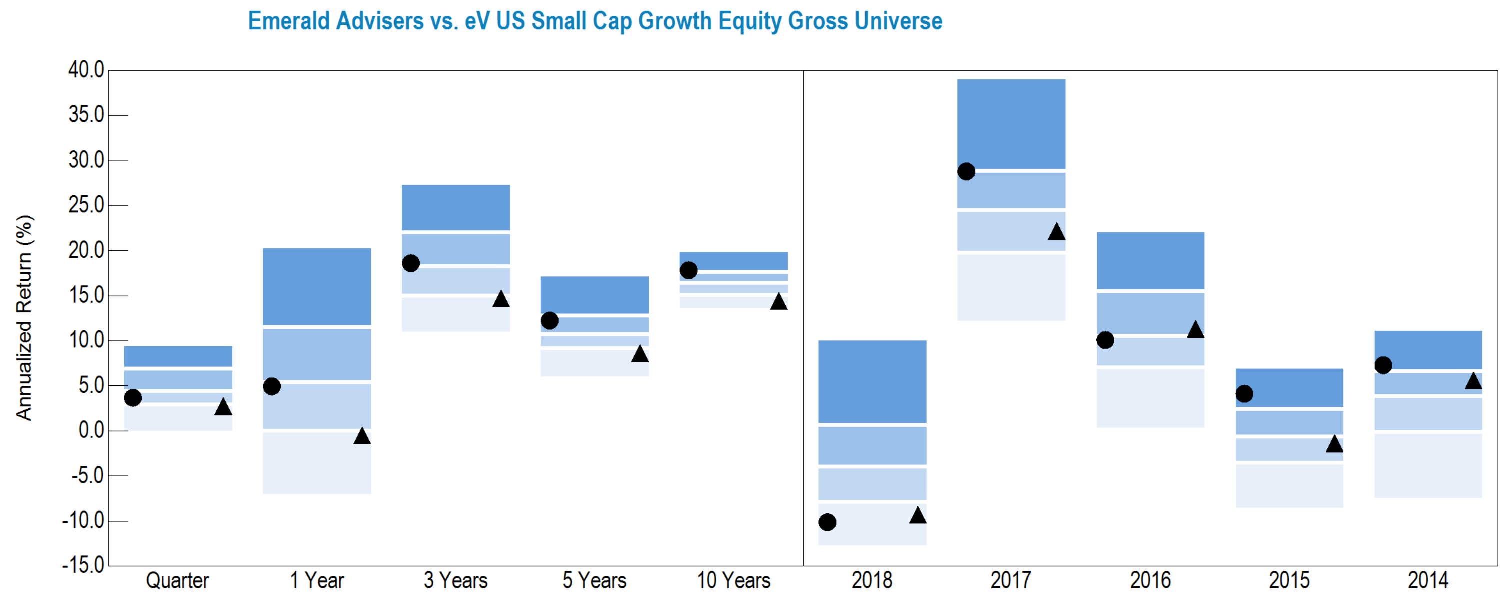
Top Contributors

	Avg Wgt	Return	Contribution
KRATOS DEF&SCTY.SLTN.	0.45	46.45	0.21
TETRA TECH	0.47	32.12	0.15
EHEALTH	0.34	38.11	0.13
LENDINGTREE	0.58	19.48	0.11
NV5 GLOBAL	0.28	37.13	0.11
TREX	0.62	16.55	0.10
CHURCHILL DOWNS	0.37	27.49	0.10
TELADOC HEALTH	0.48	19.44	0.09
RAPID7	0.64	14.29	0.09
CRAY	0.24	33.67	0.08

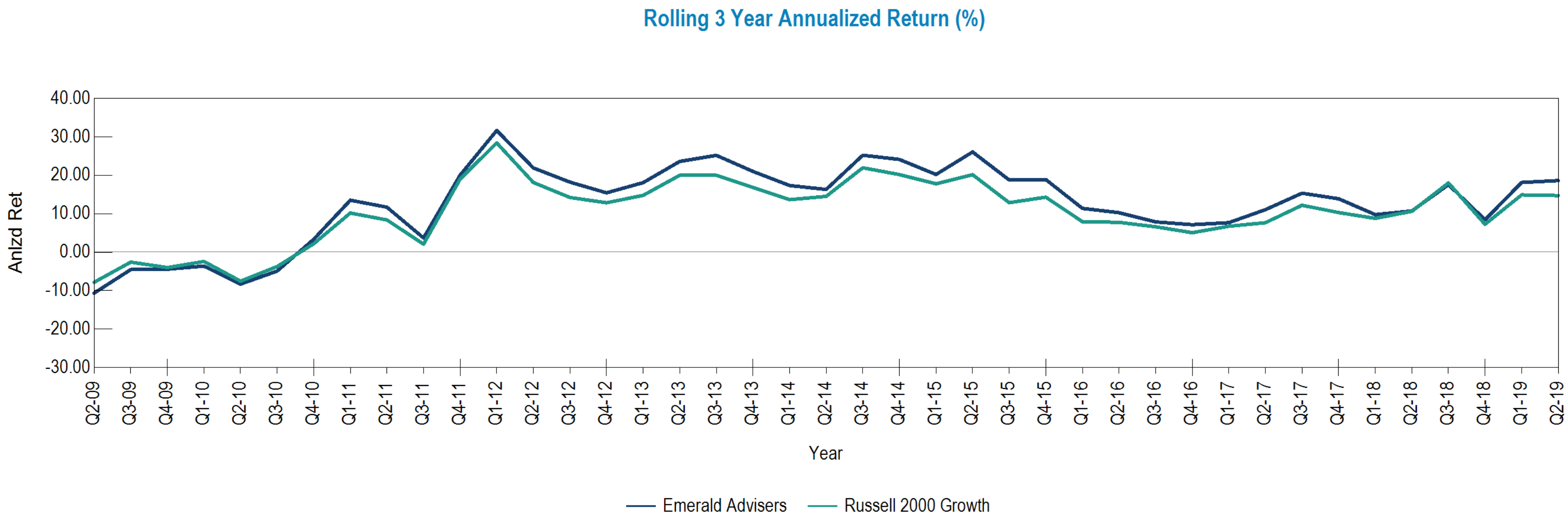
Bottom Contributors

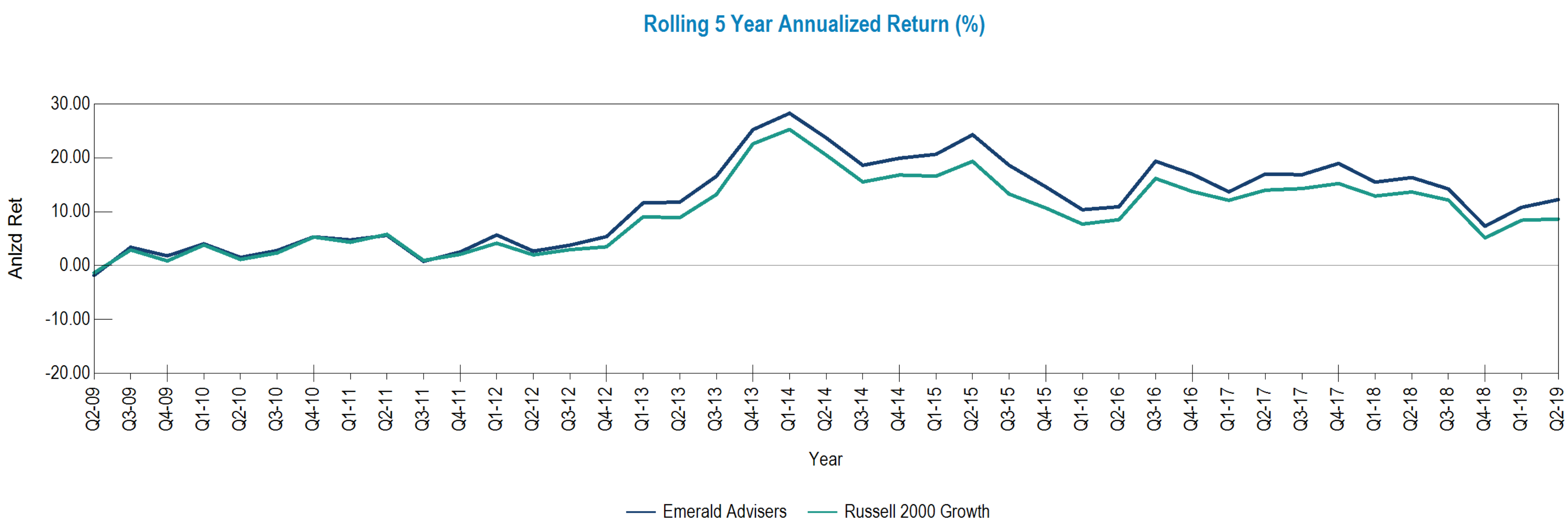
	Avg Wgt	Return	Contribution
GLU MOBILE	0.36	-34.37	-0.12
FORESCOUT TECHNOLOGIES	0.64	-19.21	-0.12
AMER.EAG.OUTFITTERS	0.42	-23.29	-0.10
SAILPOINT TECHS.HDG.	0.22	-30.22	-0.07
BIOHAVEN PHARMACEUTICAL HOLDING	0.42	-14.92	-0.06
LIVENT	0.14	-43.65	-0.06
PLAYAGS	0.31	-18.72	-0.06
GREEN DOT CLASS A	0.28	-19.37	-0.05
ALARMCOM HOLDINGS	0.30	-17.57	-0.05
CHART INDUSTRIES	0.35	-15.07	-0.05

Unclassified sector allocation includes cash allocations.

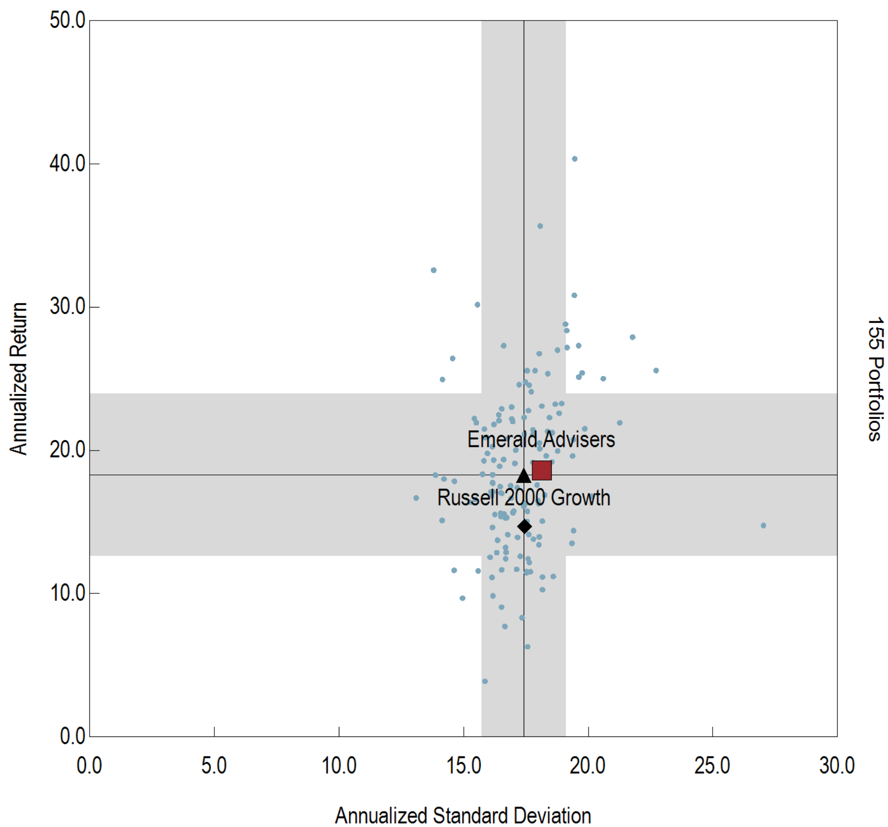


Return (Rank)	Quarter		1 Year		3 Years		5 Years		10 Years		2018		2017		2016		2015		2014	
5th Percentile	9.6		20.4		27.5		17.3		20.0		10.2		39.2		22.2		7.1		11.3	
25th Percentile	6.9		11.5		22.0		12.9		17.7		0.7		28.9		15.5		2.5		6.7	
Median	4.4		5.5		18.3		10.8		16.5		-3.9		24.6		10.6		-0.6		3.9	
75th Percentile	3.0		0.1		15.1		9.3		15.1		-7.9		19.8		7.1		-3.5		-0.1	
95th Percentile	-0.2		-7.2		10.9		5.9		13.5		-12.8		12.1		0.2		-8.7		-7.6	
# of Portfolios	159		159		155		149		135		164		174		170		154		161	
● Emerald Advisers	3.7	(62)	4.9	(55)	18.6	(46)	12.2	(33)	17.8	(24)	-10.1	(85)	28.8	(26)	10.1	(54)	4.1	(19)	7.3	(21)
▲ Russell 2000 Growth	2.7	(79)	-0.5	(80)	14.7	(77)	8.6	(81)	14.4	(86)	-9.3	(80)	22.2	(62)	11.3	(49)	-1.4	(59)	5.6	(32)

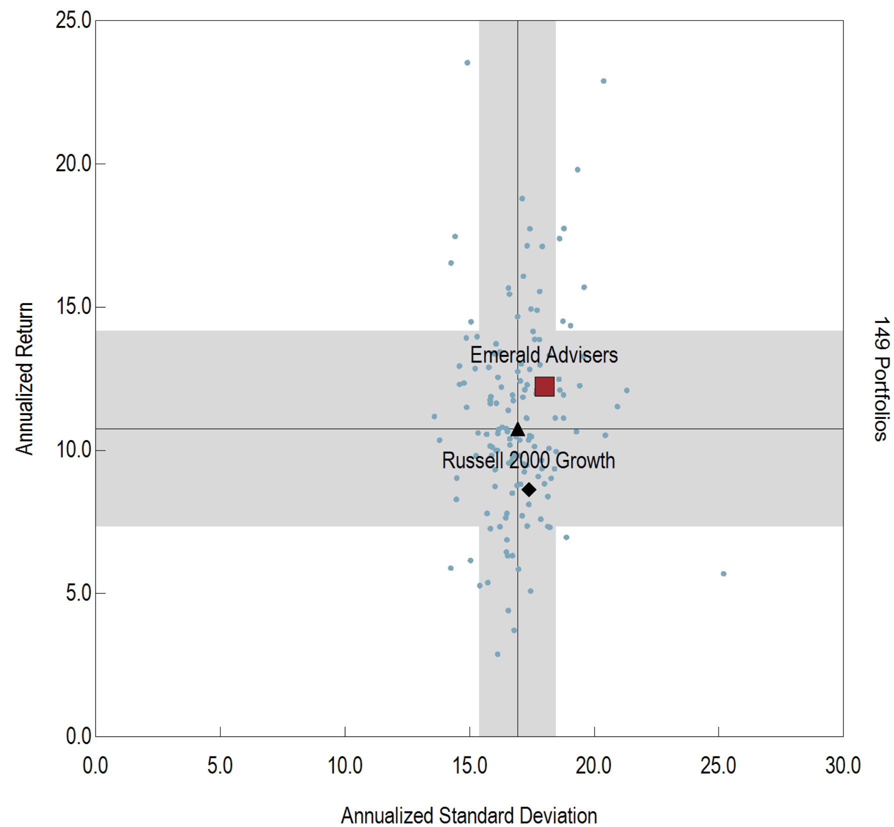

Rolling 3 Year Annualized Return (%)
Anlzd Ret
40.00
30.00
20.00
10.00
0.00
-10.00
-20.00
-30.00
Q2-09 Q3-09 Q4-09 Q1-10 Q2-10 Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19
Year
Emerald Advisers
Russell 2000 Growth


Rolling 5 Year Annualized Return (%)
Anlzd Ret
30.00
20.00
10.00
0.00
-10.00
-20.00
Q2-09 Q3-09 Q4-09 Q1-10 Q2-10 Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19
Year
Emerald Advisers
Russell 2000 Growth

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	18.6%	18.1%	0.9
Russell 2000 Growth	14.7%	17.4%	0.8
eV US Small Cap Growth Equity Gross Median	18.3%	17.4%	1.0

5 Years

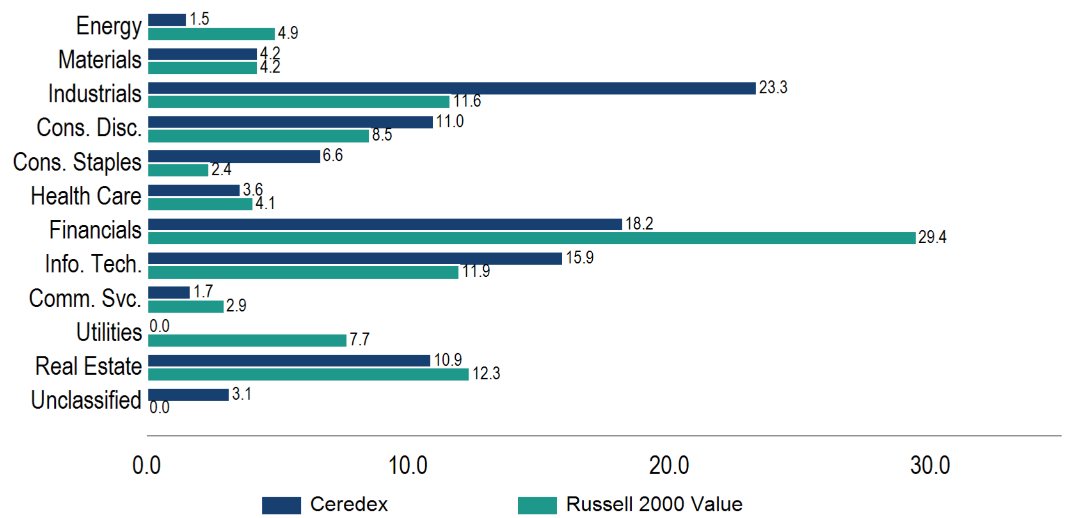
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	12.2%	18.0%	0.6
Russell 2000 Growth	8.6%	17.4%	0.4
eV US Small Cap Growth Equity Gross Median	10.8%	16.9%	0.6

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

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	82	1,347
Weighted Avg. Market Cap. ($B)	2.78	2.18
Median Market Cap. ($B)	2.01	0.67
Price To Earnings	20.38	16.21
Price To Book	2.51	1.68
Price To Sales	1.07	0.94
Return on Equity (%)	16.25	5.99
Yield (%)	2.68	2.23
Beta	0.81	1.00

Sector Allocation (%) vs Russell 2000 Value



Largest Holdings

	End Weight	Return
POWER INTEGRATIONS	5.44	14.94
KEMPER	4.61	13.65
ENERGIZER HOLDINGS	3.53	-13.43
OUTFRONT MEDIA	3.51	11.78
CHILDRENS PLACE	3.45	-0.86
PHYSICIANS REALTY TST.	3.24	-6.14
B & G FOODS	3.06	-12.88
CUBIC	2.96	14.65
SABRE	2.88	4.42
EVERCORE A	2.63	-1.95

Top Contributors

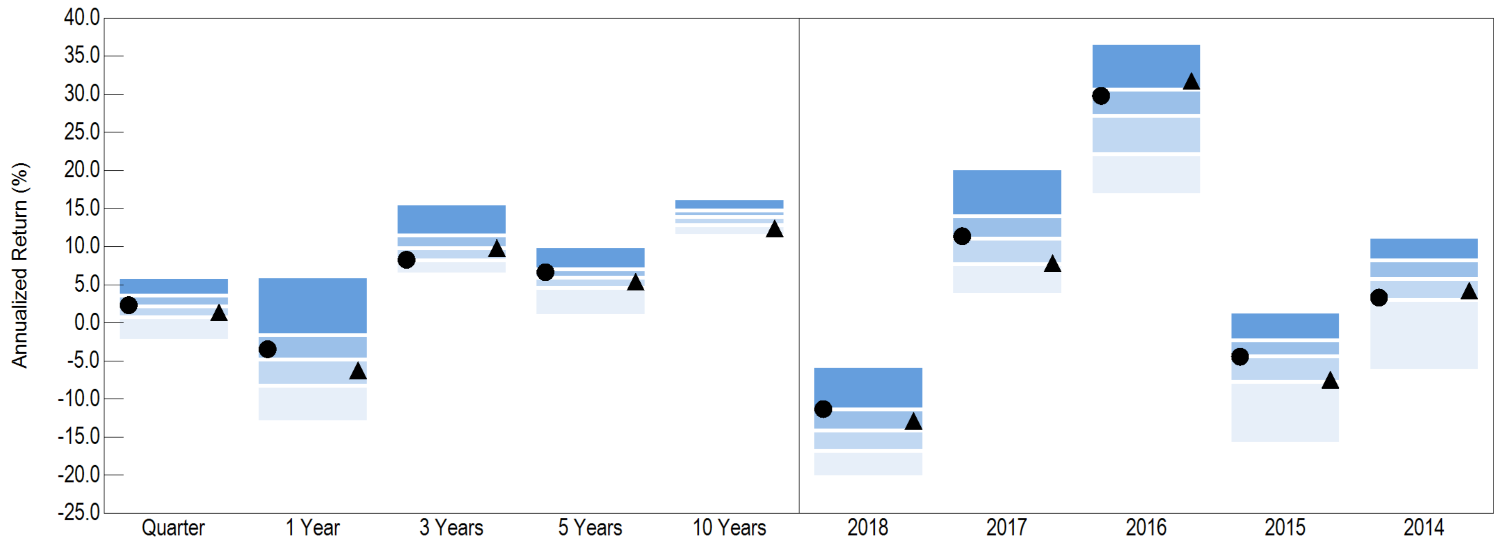
	Avg Wgt	Return	Contribution
POWER INTEGRATIONS	1.70	14.94	0.25
TETRA TECH	0.71	32.12	0.23
HERMAN MILLER	0.78	27.76	0.22
LITHIA MOTORS 'A'	0.73	28.40	0.21
KEMPER	1.42	13.65	0.19
OUTFRONT MEDIA	1.13	11.78	0.13
KNOLL	0.50	22.47	0.11
CUBIC	0.77	14.65	0.11
APOGEE ENTERPRISES	0.60	16.38	0.10
COHEN & STEERS	0.40	22.56	0.09

Bottom Contributors

	Avg Wgt	Return	Contribution
TANGER FAC.OUTLET CNTRS.	0.90	-21.25	-0.19
ENERGIZER HOLDINGS	1.42	-13.43	-0.19
AMER.EAG.OUTFITTERS	0.71	-23.29	-0.16
B & G FOODS	1.26	-12.88	-0.16
US SILICA HOLDINGS	0.48	-25.87	-0.12
PHYSICIANS REALTY TST.	1.23	-6.14	-0.08
SM ENERGY	0.26	-28.20	-0.07
MKS INSTRUMENTS	0.40	-16.07	-0.06
MOVADO GROUP	0.21	-24.74	-0.05
KORN FERRY	0.37	-10.52	-0.04

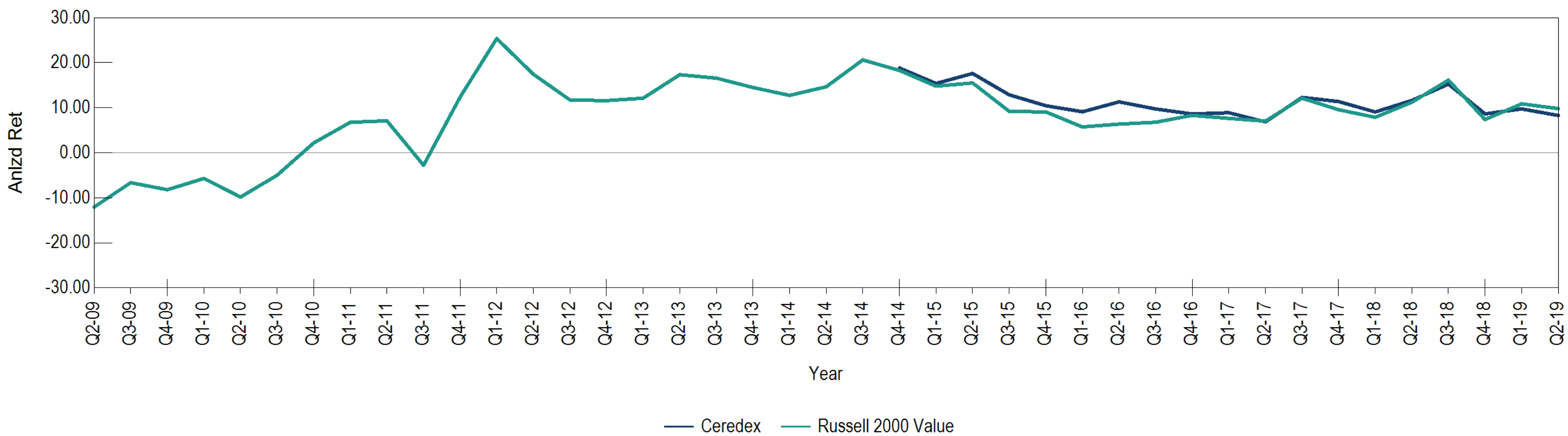
Unclassified sector allocation includes cash allocations.

Ceredex vs. eV US Small Cap Value Equity Gross Universe

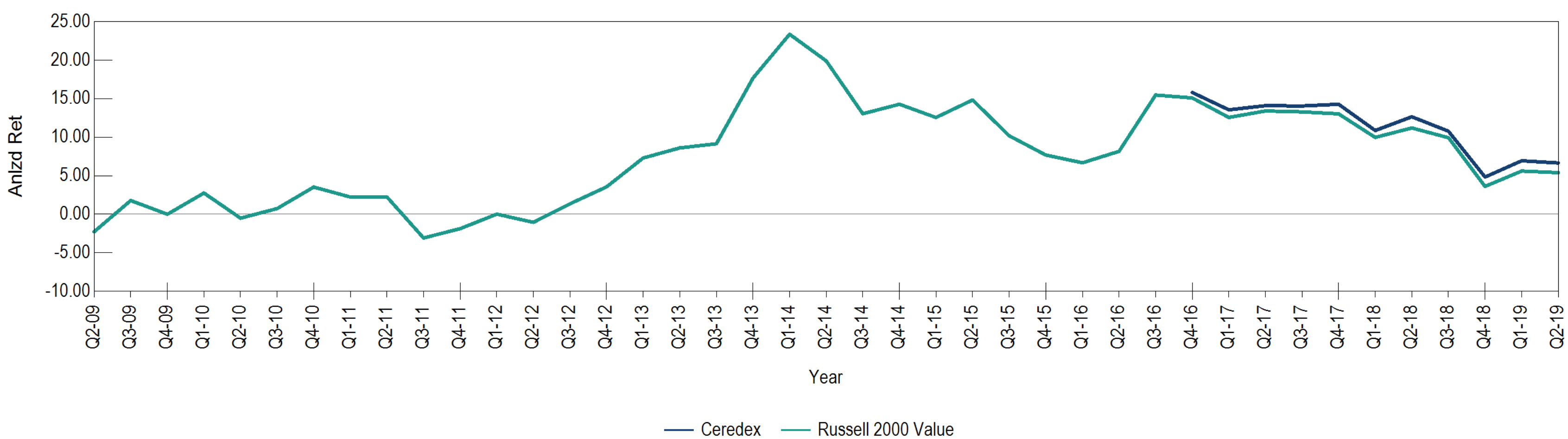


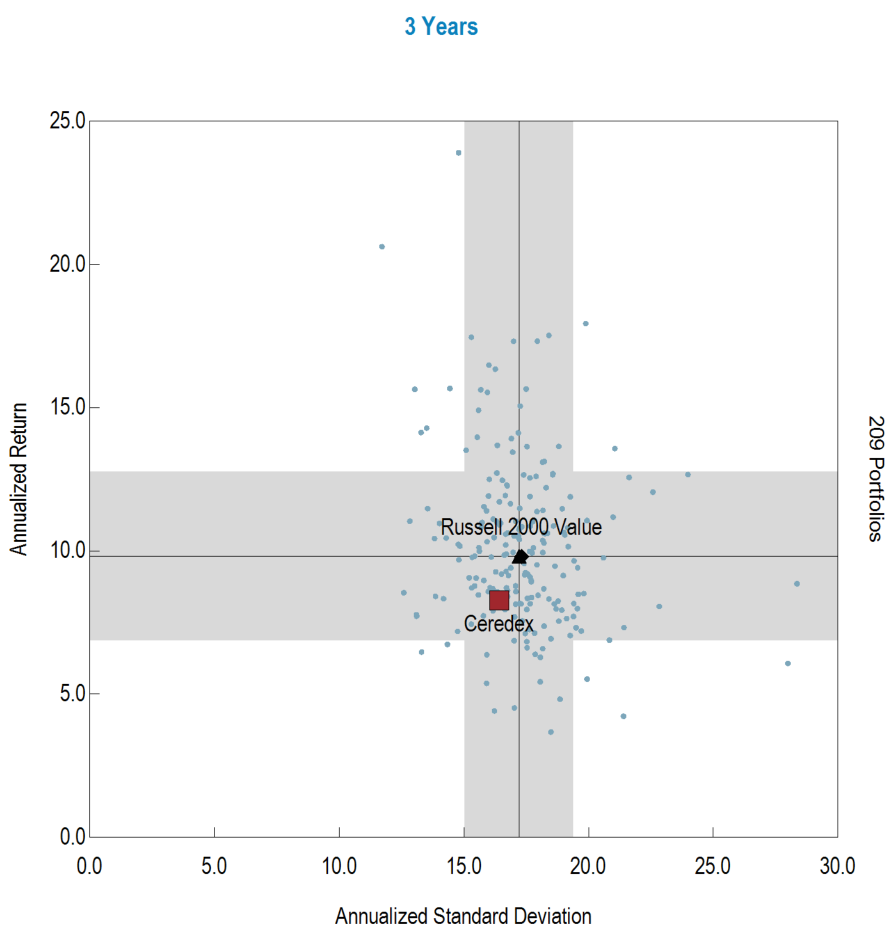
Return (Rank)	Quarter		1 Year		3 Years		5 Years		10 Years		2018		2017		2016		2015		2014	
5th Percentile	6.0		6.1		15.6		10.0		16.3		-5.7		20.2		36.7		1.5		11.2	
25th Percentile	3.6		-1.6		11.5		7.1		14.8		-11.4		14.1		30.7		-2.2		8.2	
Median	2.2		-4.8		9.8		5.9		13.9		-14.0		11.1		27.2		-4.3		5.8	
75th Percentile	0.8		-8.2		8.2		4.6		12.9		-16.7		7.8		22.2		-7.7		3.1	
95th Percentile	-2.3		-13.0		6.4		0.9		11.4		-20.2		3.7		16.8		-15.8		-6.3	
# of Portfolios	214		214		209		199		178		220		224		222		212		206	
● Ceredex	2.3	(48)	-3.5	(38)	8.3	(75)	6.6	(35)	--	(--)	-11.3	(25)	11.4	(48)	29.8	(32)	-4.4	(52)	3.3	(74)
▲ Russell 2000 Value	1.4	(68)	-6.2	(60)	9.8	(51)	5.4	(63)	12.4	(85)	-12.9	(39)	7.8	(75)	31.7	(17)	-7.5	(74)	4.2	(68)

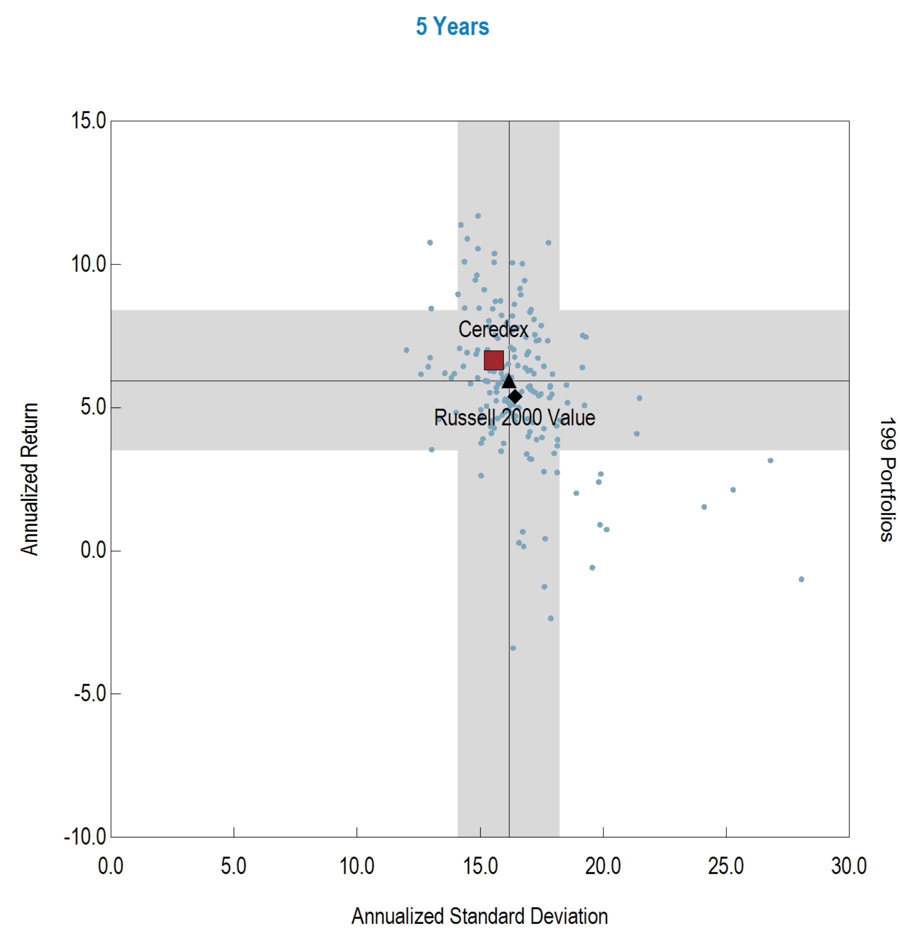
Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)







3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	8.3%	16.4%	0.4
Russell 2000 Value	9.8%	17.3%	0.5
eV US Small Cap Value Equity Gross Median	9.8%	17.2%	0.5

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	6.6%	15.6%	0.4
Russell 2000 Value	5.4%	16.4%	0.3
eV US Small Cap Value Equity Gross Median	5.9%	16.2%	0.3

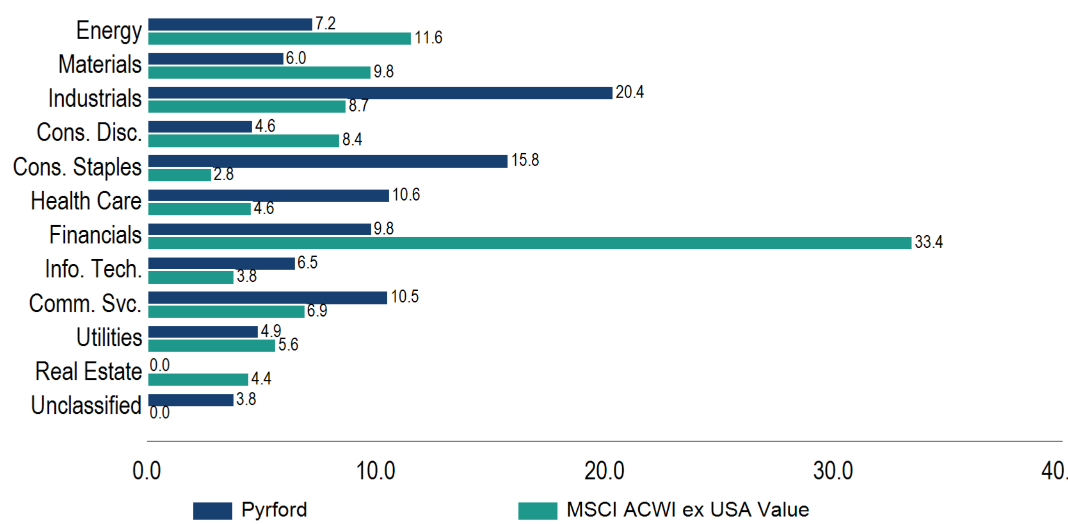
International Equity Managers

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

Characteristics

	Portfolio	MSCI ACWI ex USA Value
Number of Holdings	75	1,314
Weighted Avg. Market Cap. ($B)	65.27	50.77
Median Market Cap. ($B)	25.13	6.99
Price To Earnings	17.58	11.61
Price To Book	2.56	1.65
Price To Sales	1.54	0.86
Return on Equity (%)	17.15	11.91
Yield (%)	3.75	4.46
Beta	0.82	1.00

Sector Allocation (%) vs MSCI ACWI ex USA Value



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	89.5%	72.9%
Emerging*	6.7%	27.1%
Cash	3.8%	
Top 10 Largest Countries		
Switzerland	14.1%	3.1%
United Kingdom	12.4%	15.2%
Australia	11.1%	5.0%
Japan	11.1%	16.1%
Germany	8.7%	5.6%
France	8.5%	6.8%
Singapore	5.1%	1.0%
Hong Kong	4.8%	2.7%
Sweden	4.7%	1.3%
Netherlands	4.3%	0.9%
Total-Top 10 Largest Countries	**84.7%**	**57.6%**

Top Contributors

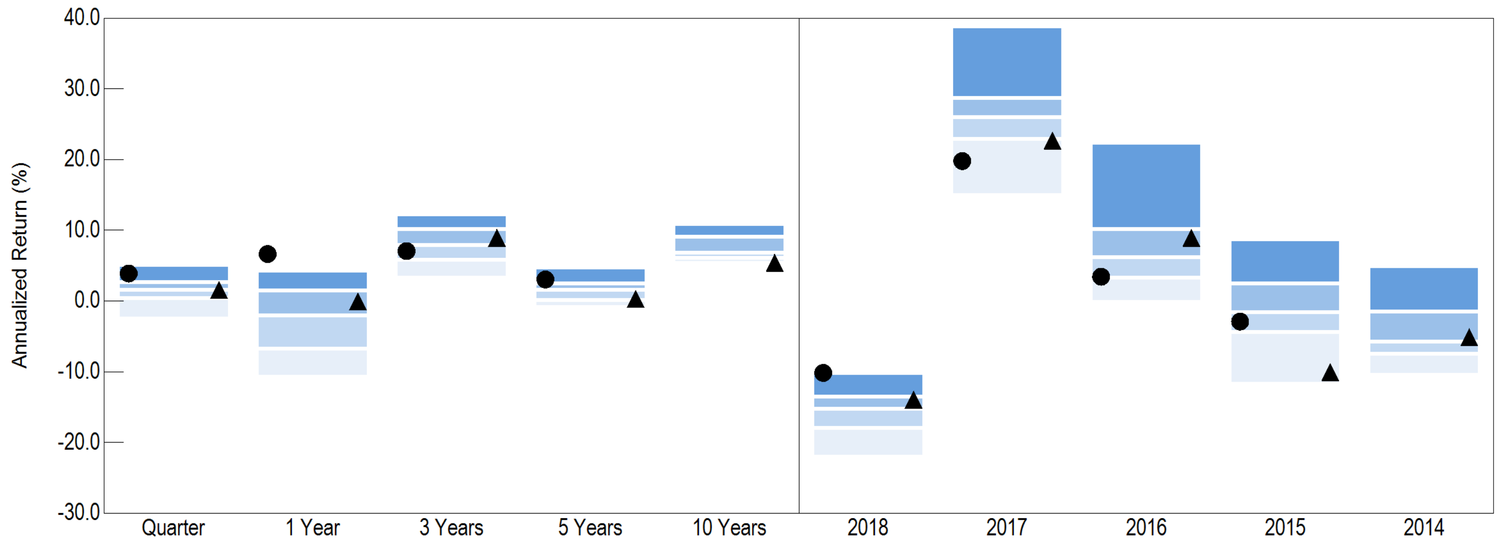
	Avg Wgt	Return	Contribution
NESTLE 'R'	3.77	11.60	0.44
KDDI	1.76	18.18	0.32
SAP	1.58	20.27	0.32
PANALPINA WELTTRANSPORT HOLDING	0.76	38.49	0.29
ATLAS COPCO A	1.40	20.12	0.28
KONE 'B'	1.48	17.08	0.25
AXIATA GROUP	1.21	19.86	0.24
NOVARTIS 'R'	3.00	7.61	0.23
AIR LIQUIDE	1.77	12.68	0.22
SINGAPORE TELECOM	1.39	16.03	0.22

Bottom Contributors

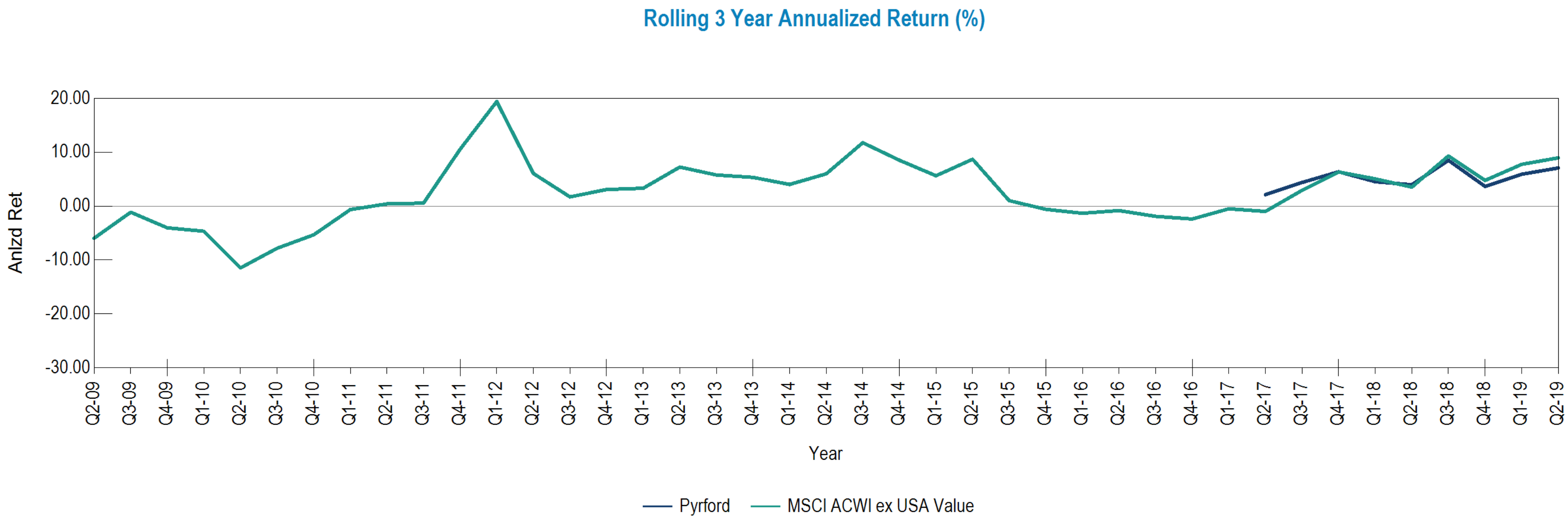
	Avg Wgt	Return	Contribution
IMPERIAL BRANDS	0.96	-30.23	-0.29
JAPAN TOBACCO	2.57	-8.12	-0.21
BRITISH AMERICAN TOBACCO	1.44	-14.39	-0.21
CHINA MOBILE	1.81	-8.90	-0.16
VTECH HOLDINGS	1.05	-12.48	-0.13
NIHON KOHDEN	1.40	-8.88	-0.12
COMPUTERSHARE	1.54	-6.24	-0.10
VODAFONE GROUP	1.24	-7.04	-0.09
QBE INSURANCE GROUP	1.47	-5.06	-0.07
SSE	0.97	-7.68	-0.07

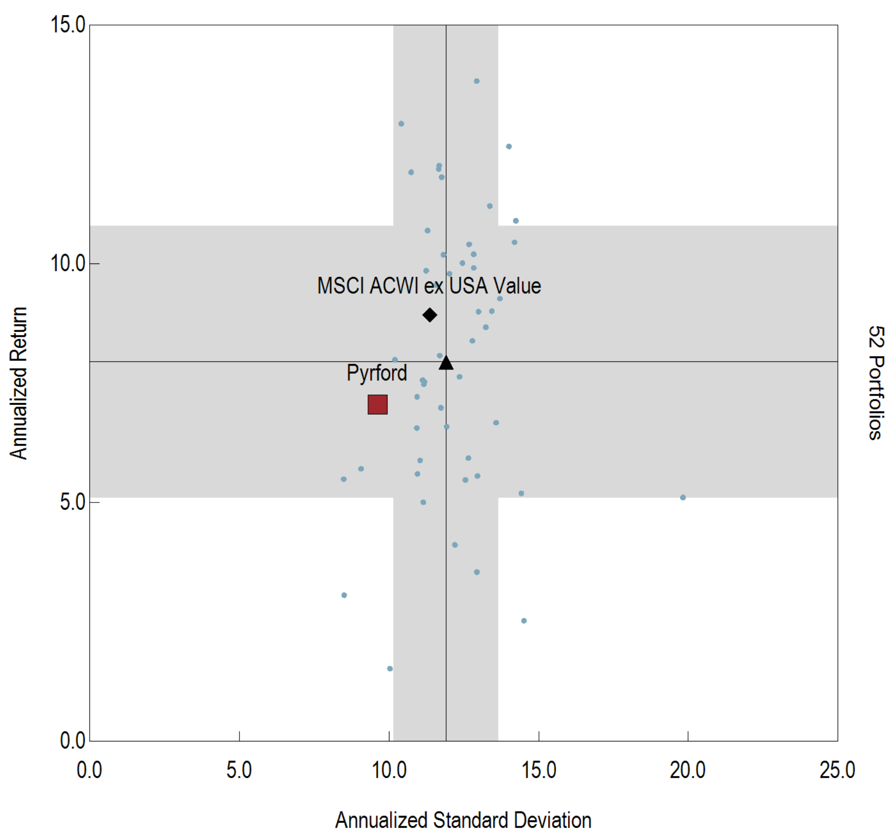
Unclassified sector allocation includes cash allocations.

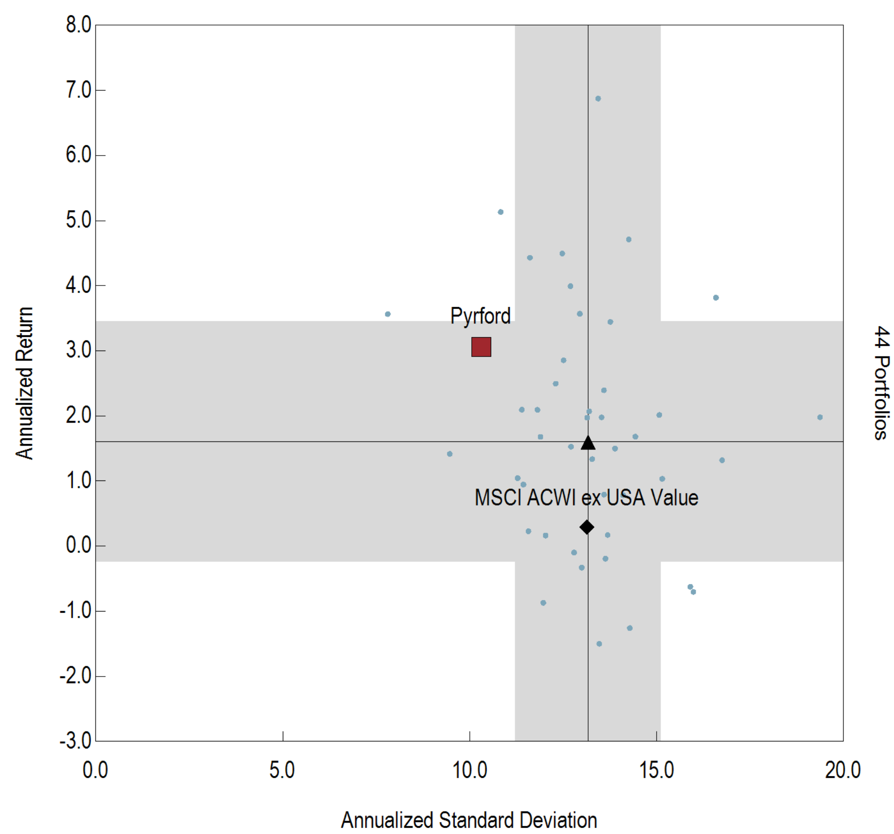
Pyrford vs. eV ACWI ex-US Value Equity Gross Universe



	Return (Rank)																			
5th Percentile	5.0		4.3		12.2		4.7		10.9		-10.2		38.8		22.3		8.7		4.9	
25th Percentile	2.7		1.6		10.2		2.6		9.1		-13.4		28.8		10.2		2.5		-1.4	
Median	1.6		-2.0		7.9		1.6		6.8		-15.2		26.0		6.2		-1.6		-5.7	
75th Percentile	0.5		-6.6		5.8		0.2		6.1		-17.9		23.0		3.3		-4.3		-7.4	
95th Percentile	-2.5		-10.6		3.3		-0.8		5.4		-21.9		15.0		-0.1		-11.6		-10.4	
# of Portfolios	54		54		52		44		26		54		56		55		45		37	
● Pyrford	3.9	(13)	6.6	(1)	7.1	(63)	3.1	(23)	--	(--)	-10.1	(5)	19.8	(84)	3.4	(74)	-2.9	(59)	--	(--)
▲ MSCI ACWI ex USA Value	1.6	(53)	-0.1	(29)	8.9	(42)	0.3	(75)	5.4	(95)	-14.0	(32)	22.7	(77)	8.9	(35)	-10.1	(93)	-5.1	(49)


Rolling 3 Year Annualized Return (%)
20.00
10.00
0.00
-10.00
-20.00
-30.00
Anlzd Ret
Q2-09 Q3-09 Q4-09 Q1-10 Q2-10 Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19
Year
Pyrford
MSCI ACWI ex USA Value





3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Pyrford	7.1%	9.6%	0.6
MSCI ACWI ex USA Value	8.9%	11.4%	0.7
eV ACWI ex-US Value Equity Gross Median	7.9%	11.9%	0.5

5 Years

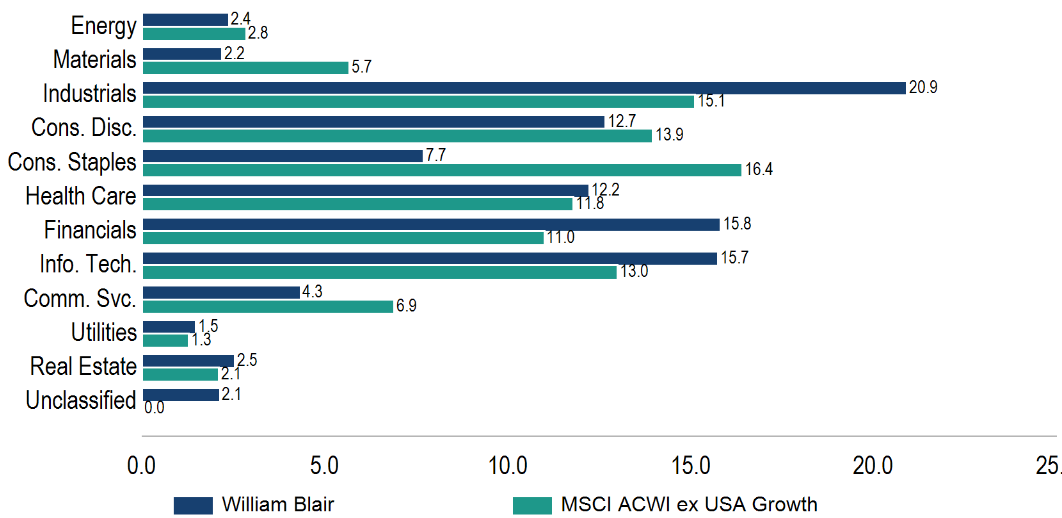
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Pyrford	3.1%	10.3%	0.2
MSCI ACWI ex USA Value	0.3%	13.1%	0.0
eV ACWI ex-US Value Equity Gross Median	1.6%	13.2%	0.1

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

Characteristics

	Portfolio	MSCI ACWI ex USA Growth
Number of Holdings	200	1,148
Weighted Avg. Market Cap. ($B)	64.00	79.36
Median Market Cap. ($B)	10.67	8.11
Price To Earnings	24.73	20.73
Price To Book	4.17	3.11
Price To Sales	2.41	1.76
Return on Equity (%)	22.62	18.80
Yield (%)	1.63	2.00
Beta	1.09	1.00

Sector Allocation (%) vs MSCI ACWI ex USA Growth



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	83.8%	74.1%
Emerging*	14.3%	25.9%
Top 10 Largest Countries		
United Kingdom	14.6%	7.4%
France	11.4%	8.3%
Japan	10.5%	15.7%
Switzerland	6.8%	9.1%
China*	6.2%	8.2%
Canada	6.2%	6.7%
Hong Kong	5.8%	2.7%
Germany	5.0%	5.9%
Netherlands	4.8%	3.8%
Denmark	3.7%	2.1%
Total-Top 10 Largest Countries	**75.2%**	**69.9%**

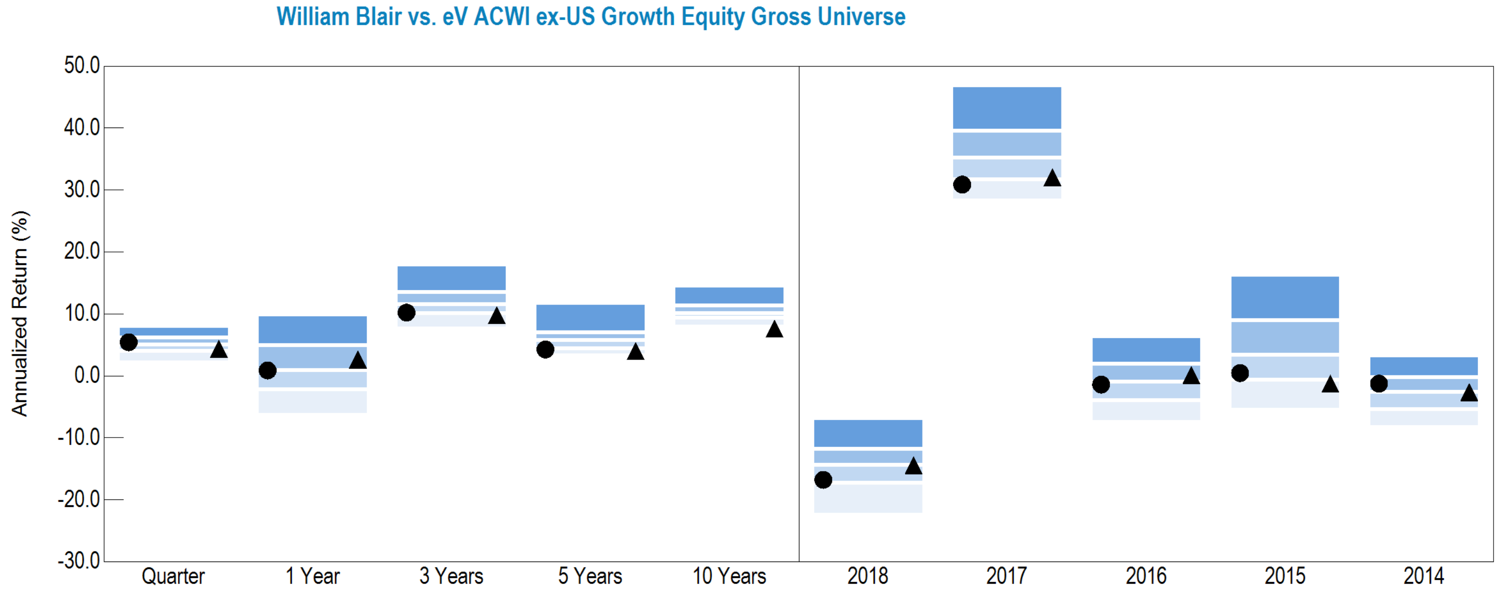
Top Contributors

	Avg Wgt	Return	Contribution
SAP	1.32	20.27	0.27
LVMH	1.31	17.11	0.22
SIKA	0.79	24.07	0.19
AIA GROUP	1.91	9.68	0.19
EXPERIAN	1.35	13.22	0.18
RELX	1.06	15.60	0.16
DSV 'B'	0.83	18.81	0.16
HOYA	0.97	16.02	0.15
LI NING	0.29	51.25	0.15
VEOLIA ENVIRON	1.06	14.02	0.15

Bottom Contributors

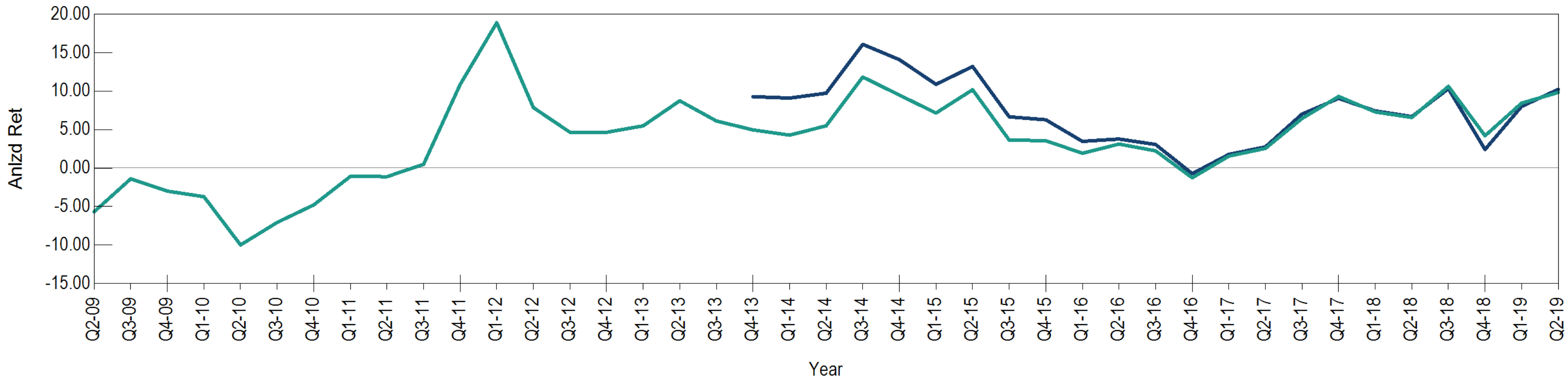
	Avg Wgt	Return	Contribution
ALIBABA GROUP HOLDING ADR 1:8	2.13	-7.13	-0.15
YAKULT HONSHA	0.56	-15.72	-0.09
CHECK POINT SFTW.TECHS.	0.83	-8.60	-0.07
FEVERTREE DRINKS	0.24	-24.76	-0.06
VONOVIA	1.06	-5.60	-0.06
SWEDISH ORPHAN BIOVITRUM	0.28	-18.02	-0.05
SHIMADZU	0.30	-15.18	-0.05
AMBU B	0.11	-38.74	-0.04
TECHNOPRO HOLDINGS	0.41	-9.81	-0.04
NESTE	0.90	-4.06	-0.04

Unclassified sector allocation includes cash allocations.

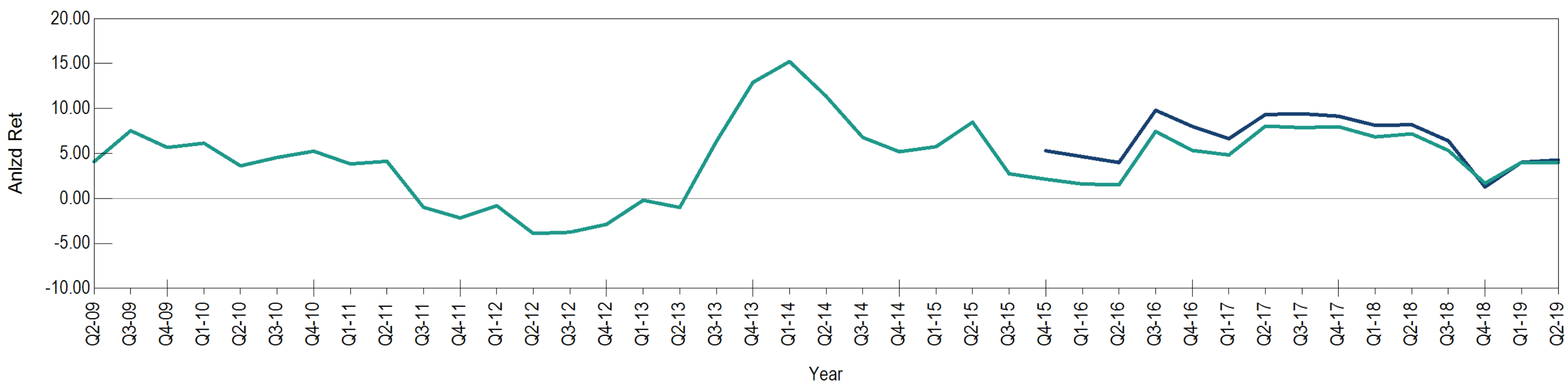


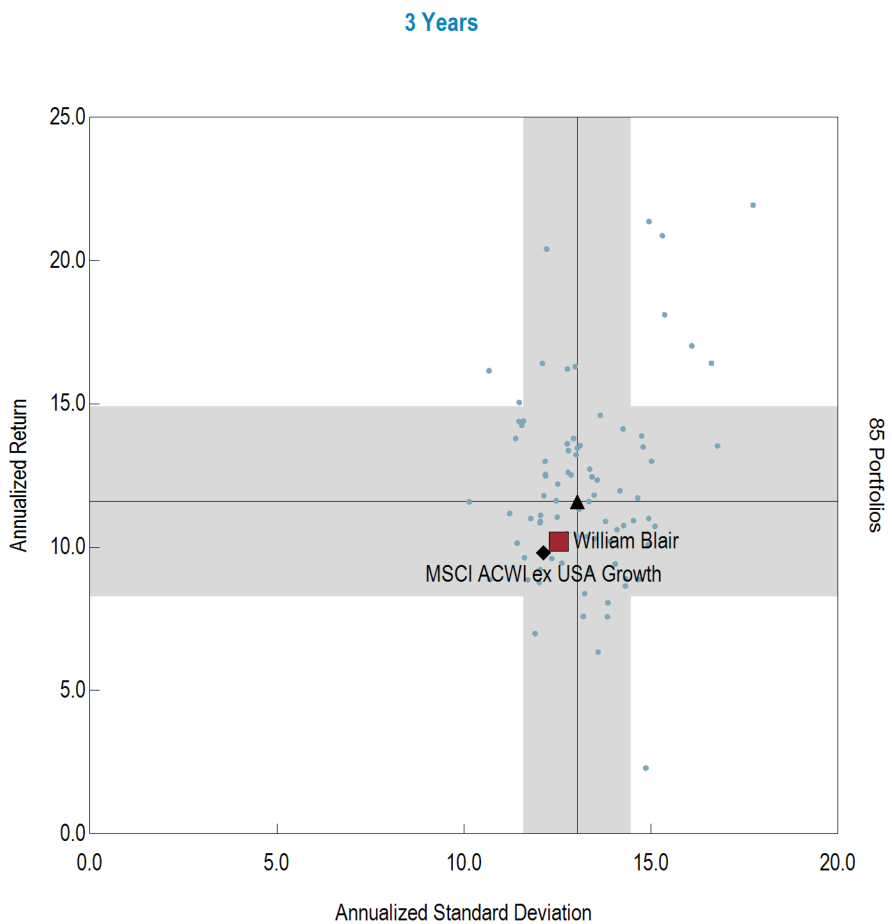
Return (Rank)	Quarter		1 Year		3 Years		5 Years		10 Years		2018		2017		2016		2015		2014	
5th Percentile	8.0		9.9		17.9		11.7		14.5		-6.8		46.8		6.3		16.3		3.2	
25th Percentile	6.3		5.0		13.5		7.1		11.4		-11.7		39.6		2.0		9.0		-0.1	
Median	5.2		1.0		11.6		5.9		10.1		-14.3		35.3		-0.9		3.5		-2.5	
75th Percentile	4.1		-2.1		10.1		4.5		9.4		-17.2		31.8		-3.9		-0.5		-5.3	
95th Percentile	2.3		-6.2		7.7		3.4		8.0		-22.3		28.3		-7.4		-5.4		-8.2	
# of Portfolios	87		87		85		76		54		82		94		90		70		50	
● William Blair	5.4	(46)	0.9	(53)	10.2	(73)	4.3	(81)	--	(--)	-16.8	(69)	30.9	(81)	-1.4	(55)	0.5	(69)	-1.2	(37)
▲ MSCI ACWI ex USA Growth	4.4	(72)	2.6	(38)	9.8	(79)	4.0	(89)	7.6	(99)	-14.4	(51)	32.0	(75)	0.1	(45)	-1.3	(83)	-2.6	(53)

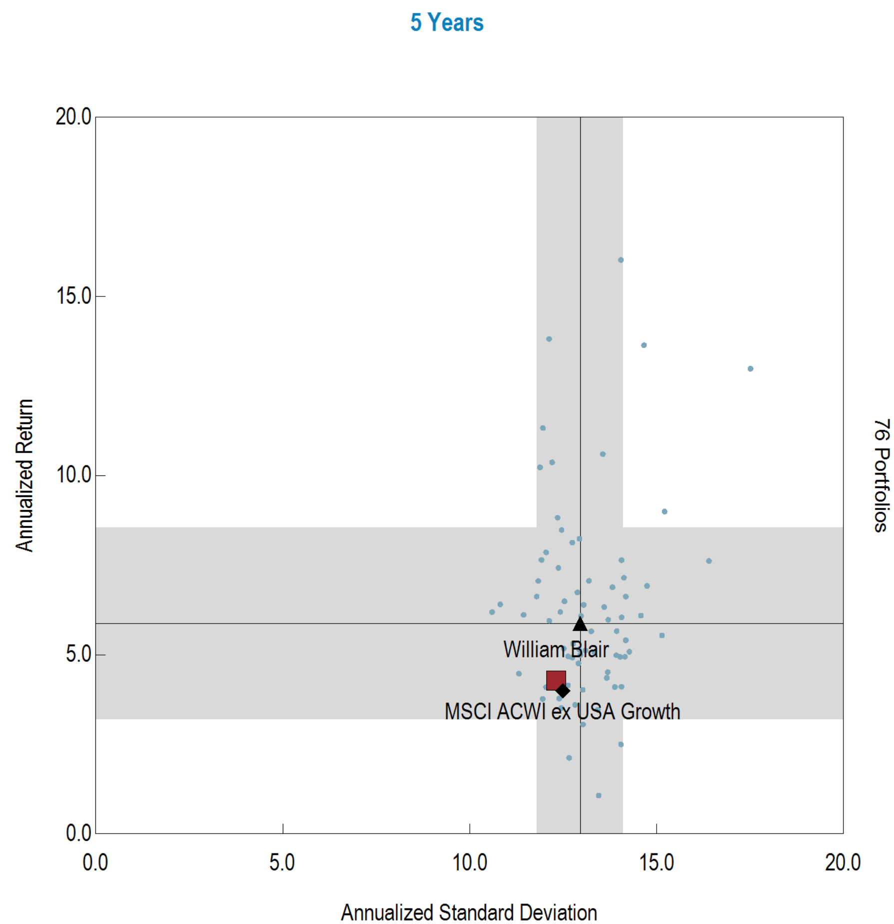
Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)







3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	10.2%	12.5%	0.7
MSCI ACWI ex USA Growth	9.8%	12.1%	0.7
eV ACWI ex-US Growth Equity Gross Median	11.6%	13.0%	0.8

5 Years

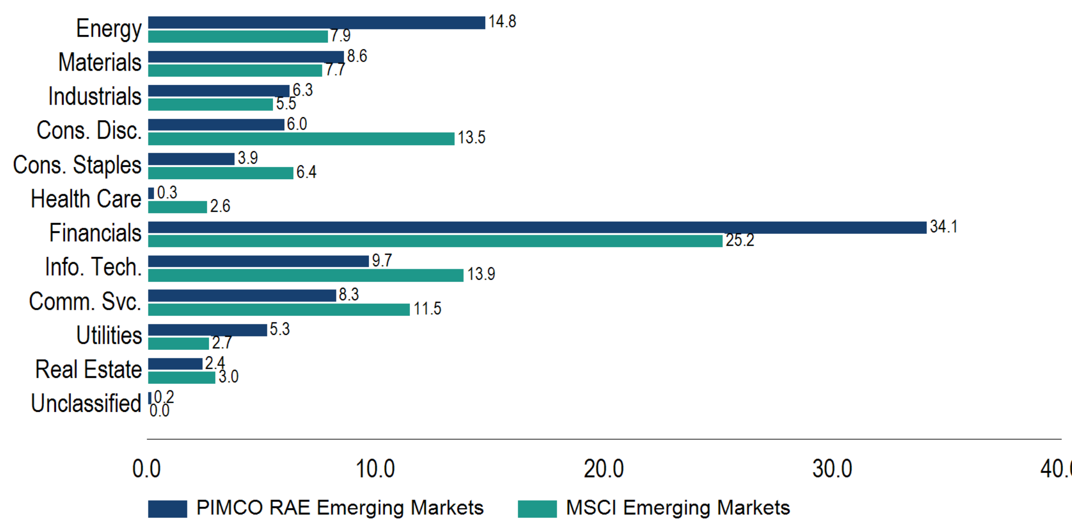
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	4.3%	12.3%	0.3
MSCI ACWI ex USA Growth	4.0%	12.5%	0.3
eV ACWI ex-US Growth Equity Gross Median	5.9%	13.0%	0.4

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

Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	614	1,193
Weighted Avg. Market Cap. ($B)	39.17	81.67
Median Market Cap. ($B)	3.86	5.56
Price To Earnings	8.85	14.07
Price To Book	1.64	2.43
Price To Sales	0.53	1.24
Return on Equity (%)	10.85	17.03
Yield (%)	4.09	2.81
Beta		1.00

Sector Allocation (%) vs MSCI Emerging Markets



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	8.8%	0.0%
Emerging*	91.0%	100.0%
Top 10 Largest Countries		
China*	18.7%	31.7%
Korea*	17.2%	12.4%
Russia*	11.9%	4.0%
Taiwan*	10.2%	10.9%
Hong Kong	8.3%	0.0%
Brazil*	7.2%	7.6%
India*	5.9%	9.0%
South Africa*	5.0%	5.9%
Turkey*	3.2%	0.5%
Thailand*	2.7%	3.0%
Total-Top 10 Largest Countries	**90.3%**	**84.9%**

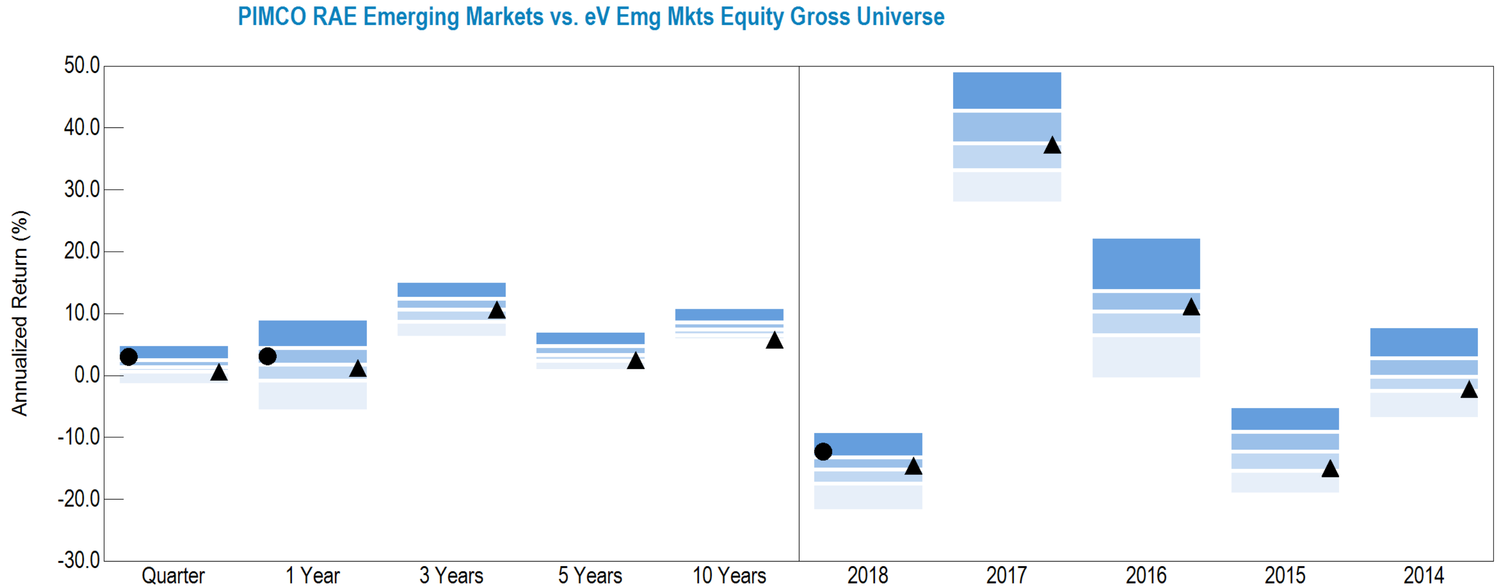
Top Contributors

	End Weight	Return	Contribution
PJSC GAZPROM ADR CDI 1:2	5.58	62.30	3.48
BANK OF PIRAEUS	0.27	155.14	0.42
KIA MOTORS	0.93	22.36	0.21
JBS ON	0.57	35.36	0.20
MTN GROUP	0.86	23.19	0.20
HYUNDAI MOTOR	1.26	15.17	0.19
GOLD FIELDS SPN.ADR 1:1	0.38	45.04	0.17
NATIONAL BK.OF GREECE	0.29	57.09	0.17
ALPHA BANK	0.34	44.65	0.15
ABSA GROUP	0.55	22.89	0.13

Bottom Contributors

	End Weight	Return	Contribution
KOREA ELECTRIC POWER	0.86	-16.00	-0.14
SASOL	0.63	-20.41	-0.13
CHINA MOBILE	1.33	-8.90	-0.12
PJSC LUKOIL SPON (LON) ADR	1.80	-5.78	-0.10
CHINA PTL.& CHM. 'H'	0.91	-8.93	-0.08
LENOVO GROUP	0.57	-13.89	-0.08
INNOLUX	0.27	-27.26	-0.07
AU OPTRONICS	0.31	-18.69	-0.06
CNOOC	0.98	-5.73	-0.06
PETROCHINA 'H'	0.42	-12.91	-0.05

Unclassified sector allocation includes cash allocations.



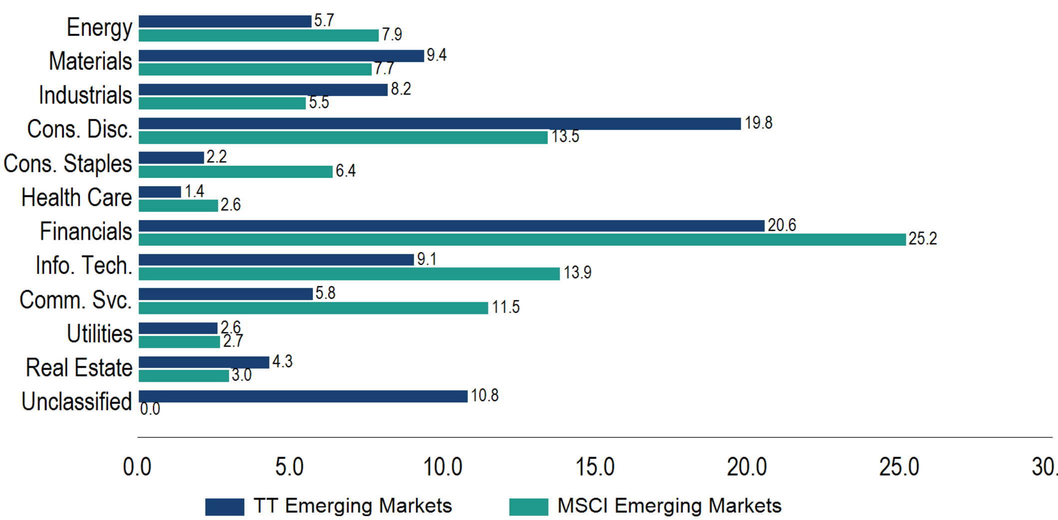
Return (Rank)	Quarter		1 Year		3 Years		5 Years		10 Years		2018		2017		2016		2015		2014	
5th Percentile	5.0		9.2		15.2		7.1		11.0		-9.0		49.2		22.4		-5.0		8.0	
25th Percentile	2.6		4.5		12.5		4.8		8.6		-13.2		42.8		13.7		-9.0		2.9	
Median	1.4		1.8		10.7		3.4		7.5		-15.2		37.6		10.4		-12.2		-0.1	
75th Percentile	0.6		-0.8		8.8		2.5		6.6		-17.4		33.2		6.6		-15.3		-2.4	
95th Percentile	-1.4		-5.7		6.2		0.8		5.7		-21.8		27.8		-0.6		-19.2		-7.0	
# of Portfolios	353		353		328		284		141		355		343		337		273		251	
● PIMCO RAE Emerging Markets	3.0	(19)	3.1	(39)	--	(--)	--	(--)	--	(--)	-12.3	(19)	--	(--)	--	(--)	--	(--)	--	(--)
▲ MSCI Emerging Markets	0.6	(76)	1.2	(59)	10.7	(52)	2.5	(74)	5.8	(95)	-14.6	(43)	37.3	(53)	11.2	(45)	-14.9	(70)	-2.2	(74)

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

Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	72	1,193
Weighted Avg. Market Cap. ($B)	76.00	81.67
Median Market Cap. ($B)	6.18	5.56
Price To Earnings	12.00	14.07
Price To Book	2.51	2.43
Price To Sales	1.08	1.24
Return on Equity (%)	15.88	17.03
Yield (%)	2.39	2.81
Beta		1.00

Sector Allocation (%) vs MSCI Emerging Markets



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	24.8%	0.0%
Emerging*	68.5%	100.0%
Frontier**	2.3%	0.0%
Top 10 Largest Countries		
China*	13.4%	31.7%
Korea*	13.3%	12.4%
India*	12.8%	9.0%
Hong Kong	9.9%	0.0%
Brazil*	8.6%	7.6%
Russia*	7.6%	4.0%
Netherlands	4.7%	0.0%
South Africa*	4.6%	5.9%
Cash	4.4%	0.0%
United States	4.2%	0.0%
Total-Top 10 Largest Countries	**83.5%**	**70.5%**

Top Contributors

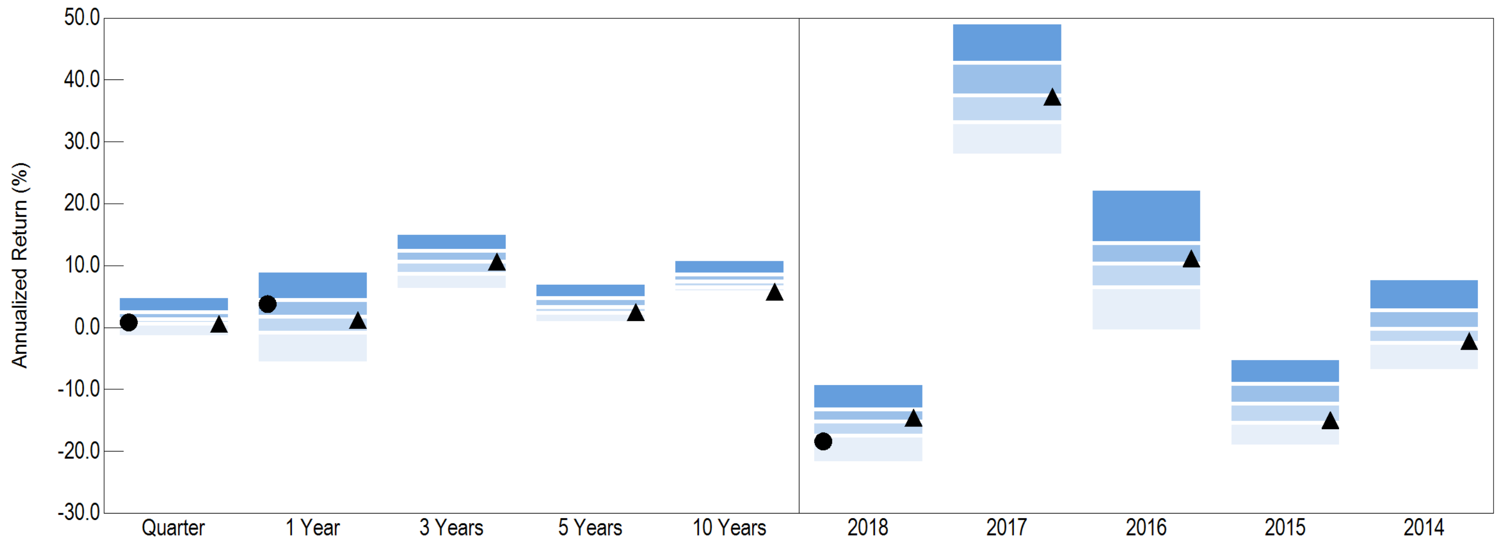
	End Weight	Return	Contribution
PJSC GAZPROM ADR (OTC) CDI 1:2	1.47	61.95	0.91
QUDIAN ADR 1:1	1.31	48.22	0.63
VEON ADR 1:1	1.46	33.97	0.50
SBERBANK RUSSIA ADR 1:4	1.40	23.58	0.33
NASPERS	4.61	4.95	0.23
ICICI BANK	2.31	9.53	0.22
PUBLIC JOINT STOCK POLYUS GDR	1.39	15.74	0.22
BB SEGURIDADE ON	0.87	23.98	0.21
MAGNIT	1.54	11.76	0.18
ESTACIO PARTICIPACOES ON	1.39	12.78	0.18

Bottom Contributors

	End Weight	Return	Contribution
ALIBABA GROUP HOLDING ADR 1:8	6.43	-7.13	-0.46
INDUSIND BANK	2.06	-20.47	-0.42
SAMSONITE INTERNATIONAL	1.46	-25.30	-0.37
FIRST QUANTUM MRLS.	0.99	-16.03	-0.16
ARVIND FASHIONS	0.41	-34.53	-0.14
CHINA EVERBRIGHT (HSC) INTERNATIONAL	1.61	-8.49	-0.14
KINGBOARD LAMINATES HDG.	1.58	-8.33	-0.13
LUKOIL OAO SPN.ADR 1:1	1.75	-6.03	-0.11
GODREJ INDUSTRIES	1.09	-9.44	-0.10
CEMEX ADR 1:10	1.33	-7.51	-0.10

Unclassified sector allocation includes cash allocations.

TT Emerging Markets vs. eV Emg Mkts Equity Gross Universe



	Quarter		1 Year		3 Years		5 Years		10 Years		2018		2017		2016		2015		2014	
	Return (Rank)																			
5th Percentile	5.0		9.2		15.2		7.1		11.0		-9.0		49.2		22.4		-5.0		8.0	
25th Percentile	2.6		4.5		12.5		4.8		8.6		-13.2		42.8		13.7		-9.0		2.9	
Median	1.4		1.8		10.7		3.4		7.5		-15.2		37.6		10.4		-12.2		-0.1	
75th Percentile	0.6		-0.8		8.8		2.5		6.6		-17.4		33.2		6.6		-15.3		-2.4	
95th Percentile	-1.4		-5.7		6.2		0.8		5.7		-21.8		27.8		-0.6		-19.2		-7.0	
# of Portfolios	353		353		328		284		141		355		343		337		273		251	
● **TT Emerging Markets**	0.8	(69)	3.8	(31)	--	(--)	--	(--)	--	(--)	-18.4	(83)	--	(--)	--	(--)	--	(--)	--	(--)
▲ **MSCI Emerging Markets**	0.6	(76)	1.2	(59)	10.7	(52)	2.5	(74)	5.8	(95)	-14.6	(43)	37.3	(53)	11.2	(45)	-14.9	(70)	-2.2	(74)

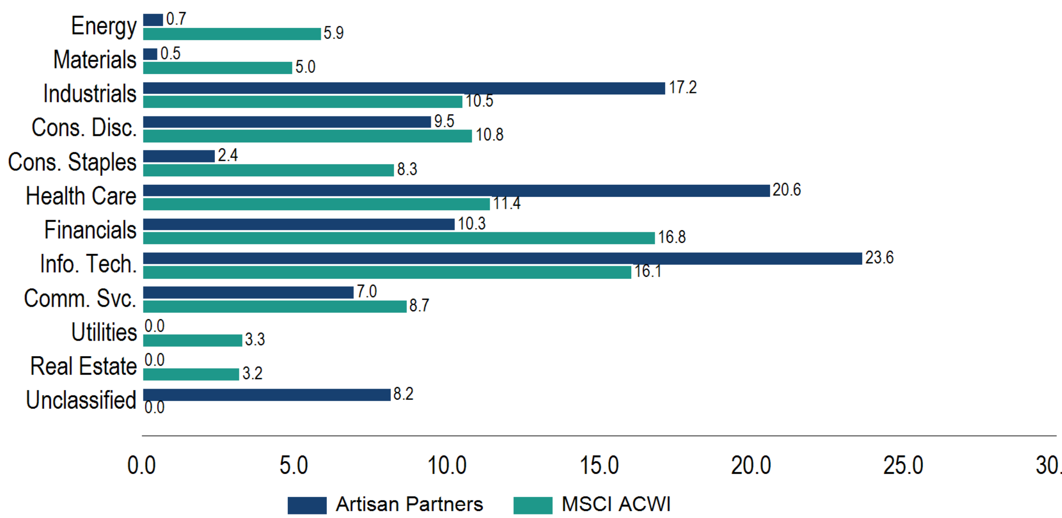
Global Equity Managers

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

Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	46	2,847
Weighted Avg. Market Cap. ($B)	120.09	147.74
Median Market Cap. ($B)	27.32	9.38
Price To Earnings	32.51	17.63
Price To Book	5.12	2.93
Price To Sales	3.09	1.53
Return on Equity (%)	21.86	19.99
Yield (%)	0.83	2.49
Beta	1.27	1.00

Sector Allocation (%) vs MSCI ACWI



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	89.6%	88.2%
Emerging*	2.2%	11.8%
Top 10 Largest Countries		
United States	56.4%	55.2%
United Kingdom	8.8%	5.0%
Cash	8.2%	0.0%
Hong Kong	6.8%	1.2%
Switzerland	5.3%	2.8%
Denmark	4.5%	0.5%
India*	2.2%	1.1%
Japan	2.0%	7.1%
Germany	2.0%	2.6%
Spain	1.4%	0.9%
Total-Top 10 Largest Countries	**97.5%**	**76.4%**

Top Contributors

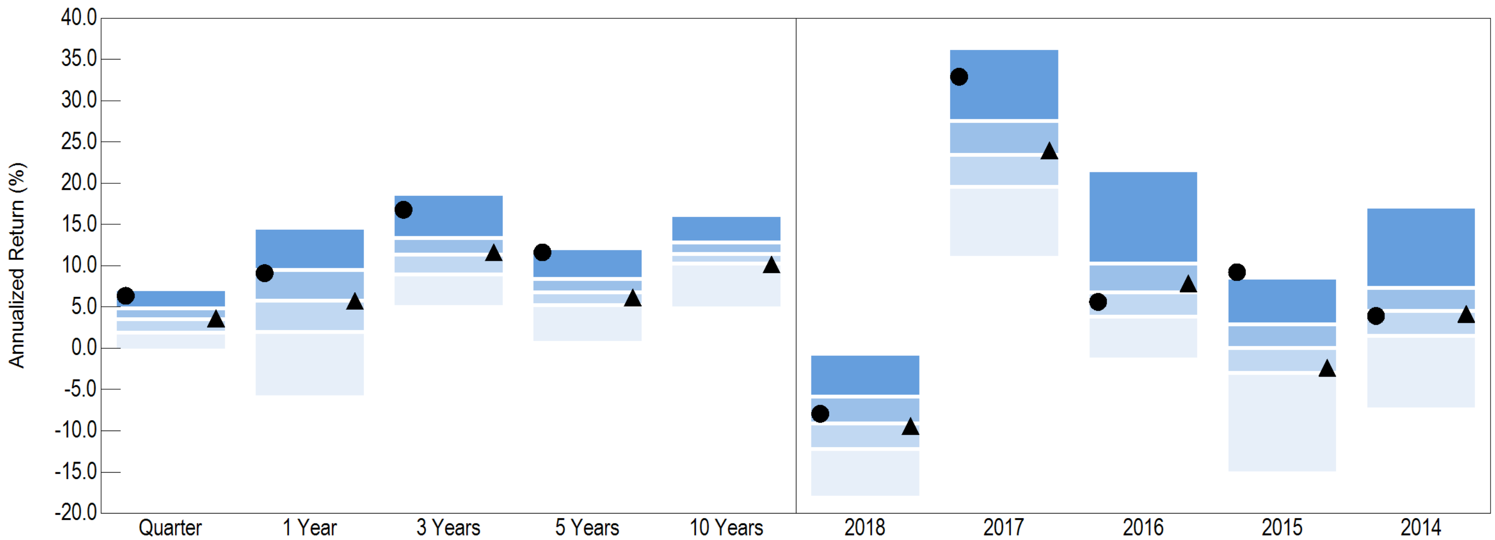
	Avg Wgt	Return	Contribution
IHS MARKIT	6.24	17.18	1.07
TECHTRONIC INDS.	3.88	15.04	0.58
TEMENOS N	2.53	22.05	0.56
VISA 'A'	4.32	11.28	0.49
ADIDAS	1.65	28.14	0.46
L3HARRIS TECHNOLOGIES	2.30	18.86	0.43
BOSTON SCIENTIFIC	3.28	11.99	0.39
NINTENDO	1.19	28.55	0.34
PAGSEGURO DIGITAL A	1.05	30.55	0.32
HDFC BANK ADR 1:3	2.47	12.76	0.32

Bottom Contributors

	Avg Wgt	Return	Contribution
FEVERTREE DRINKS	2.14	-24.76	-0.53
UMICORE	1.23	-27.16	-0.33
ALPHABET A	2.64	-7.99	-0.21
LOWE'S COMPANIES	2.42	-7.43	-0.18
AGILENT TECHS.	1.79	-6.92	-0.12
BURBERRY GROUP	1.42	-5.31	-0.08
ALEXION PHARMS.	2.02	-3.11	-0.06
TIFFANY & CO	0.54	-10.73	-0.06
VIVENDI	1.61	-3.10	-0.05
TENCENT HOLDINGS	2.79	-1.58	-0.04

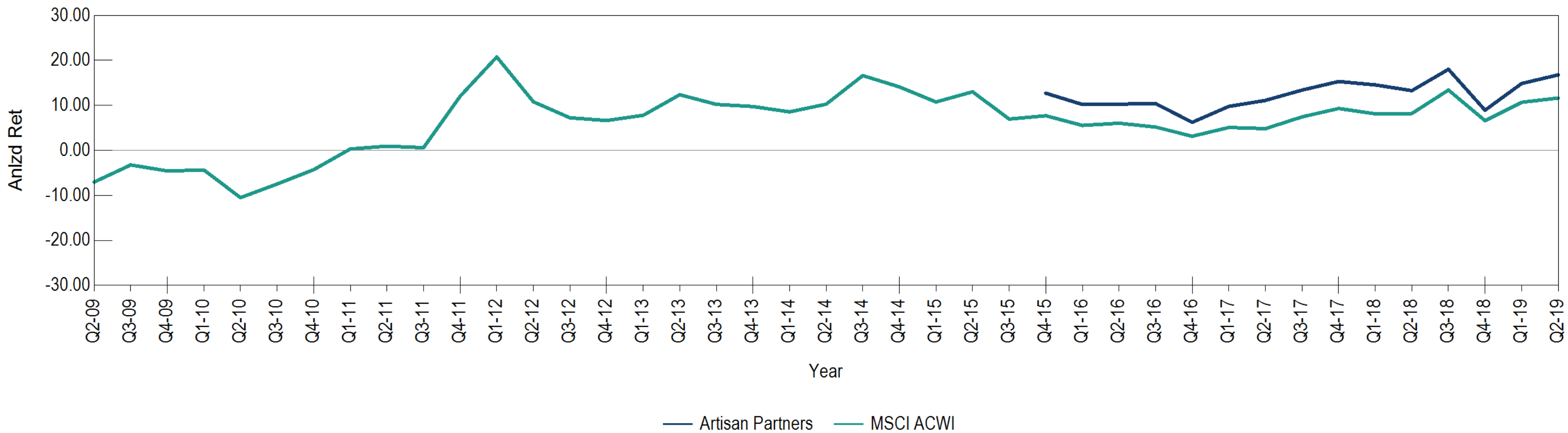
Unclassified sector allocation includes cash allocations.

Artisan Partners vs. eV All Global Equity Gross Universe

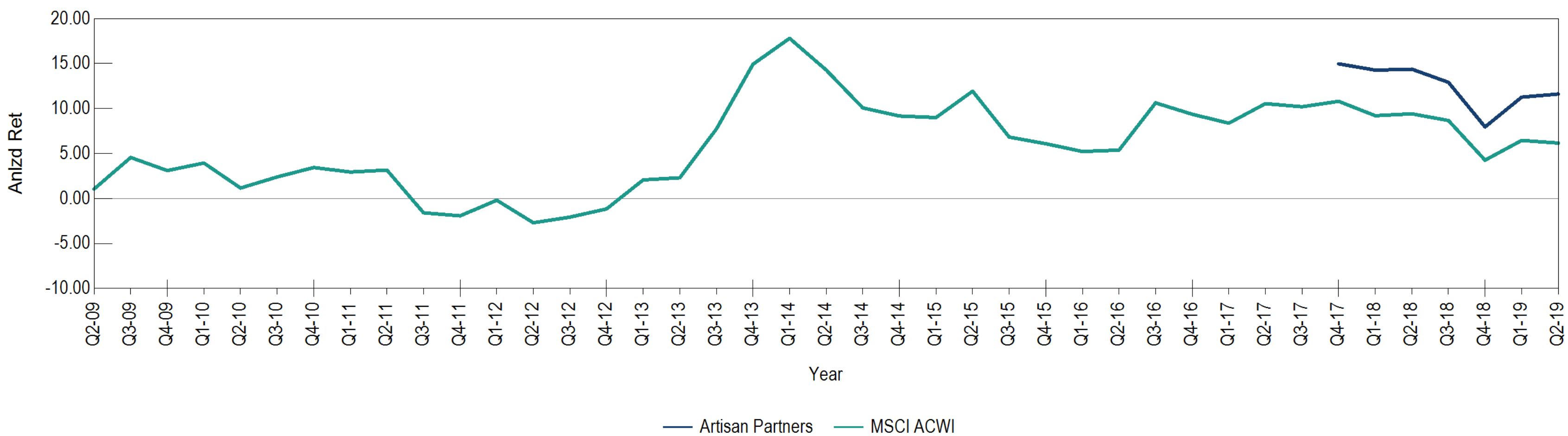


Return (Rank)	Quarter		1 Year		3 Years		5 Years		10 Years		2018		2017		2016		2015		2014	
5th Percentile	7.2		14.5		18.7		12.1		16.1		-0.7		36.3		21.5		8.5		17.1	
25th Percentile	4.9		9.5		13.4		8.5		12.8		-5.8		27.6		10.3		3.0		7.4	
Median	3.6		5.8		11.3		6.8		11.5		-9.1		23.5		6.8		0.1		4.6	
75th Percentile	2.0		2.0		9.0		5.3		10.3		-12.2		19.6		3.9		-2.9		1.5	
95th Percentile	-0.2		-5.9		5.0		0.7		4.8		-18.1		11.0		-1.4		-15.1		-7.4	
# of Portfolios	917		917		857		742		478		920		880		842		692		609	
● Artisan Partners	6.4	(11)	9.1	(29)	16.8	(11)	11.6	(7)	--	(--)	-7.9	(40)	32.9	(11)	5.6	(61)	9.2	(4)	3.9	(56)
▲ MSCI ACWI	3.6	(50)	5.7	(51)	11.6	(47)	6.2	(63)	10.1	(77)	-9.4	(53)	24.0	(47)	7.9	(42)	-2.4	(73)	4.2	(54)

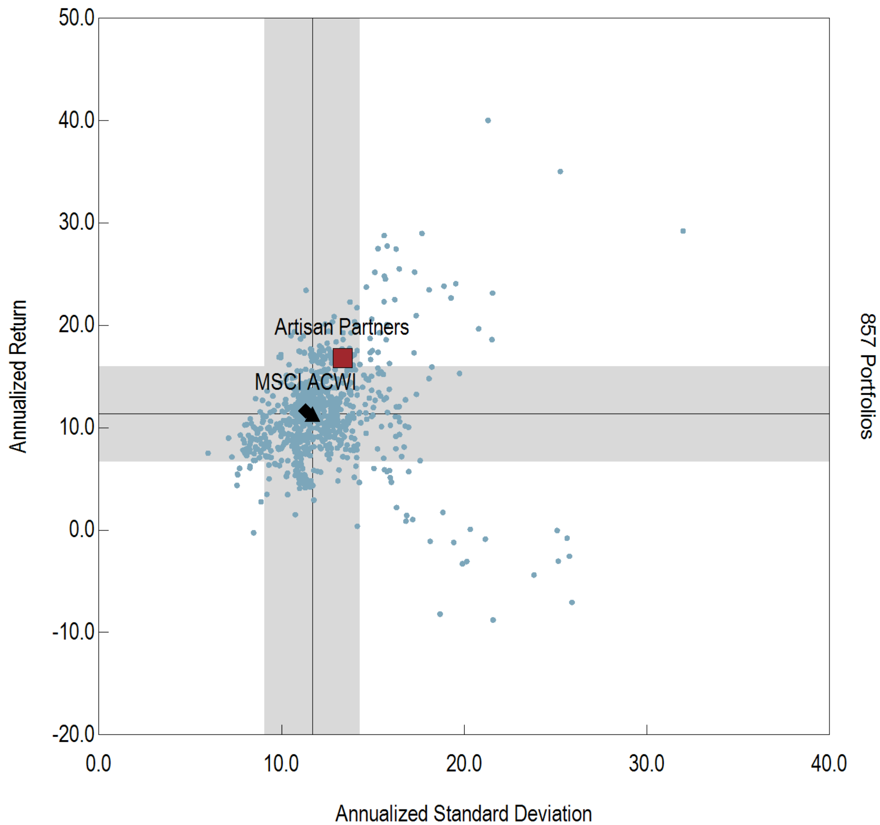
Rolling 3 Year Annualized Return (%)



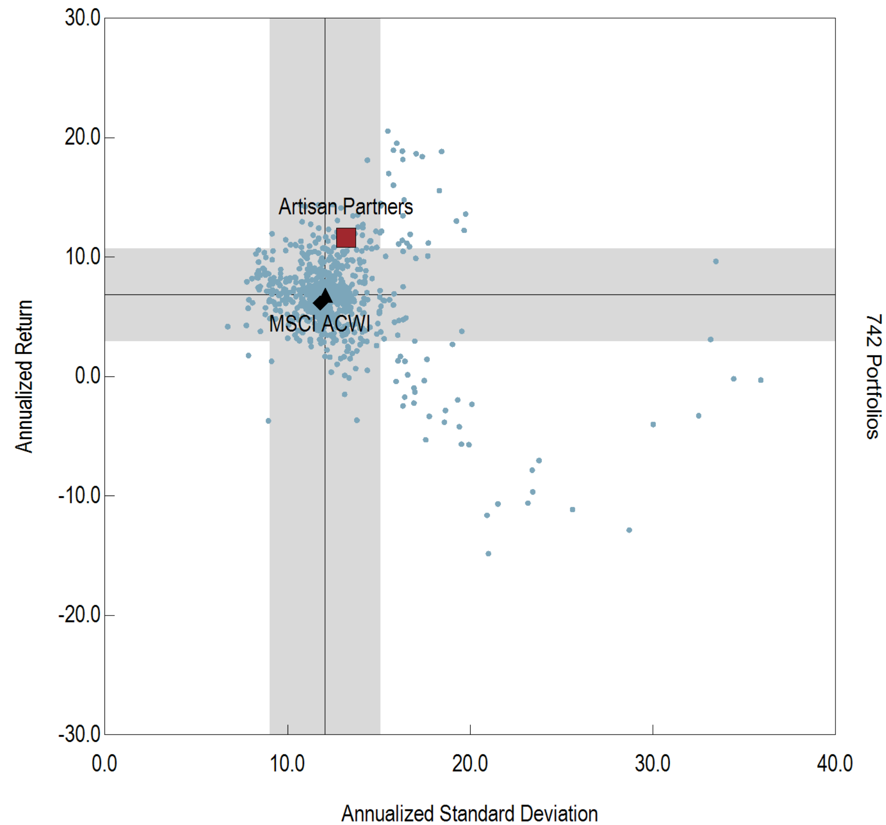
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Artisan Partners	16.8%	13.3%	1.2
MSCI ACWI	11.6%	11.3%	0.9
eV All Global Equity Gross Median	11.3%	11.7%	0.9

5 Years

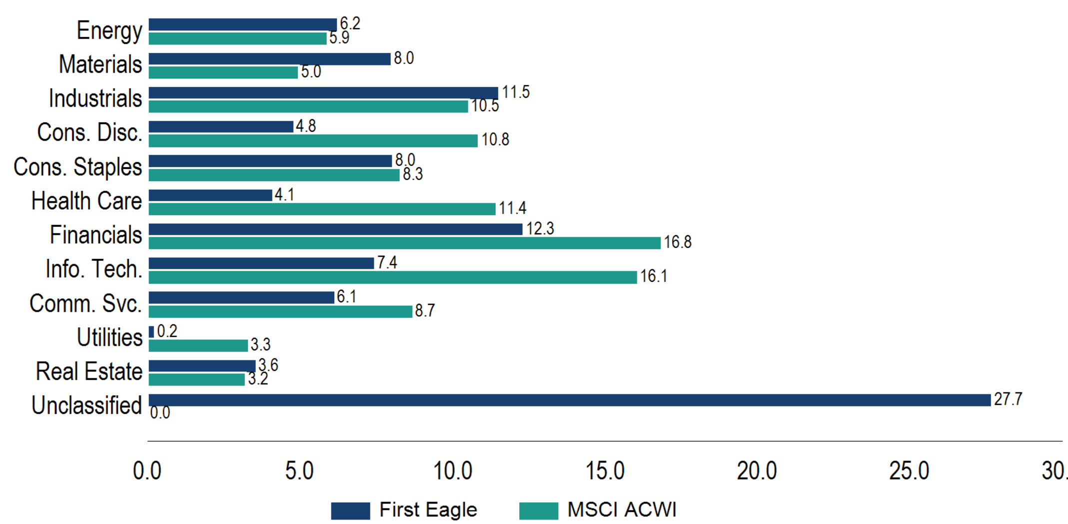
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Artisan Partners	11.6%	13.2%	0.8
MSCI ACWI	6.2%	11.8%	0.4
eV All Global Equity Gross Median	6.8%	12.1%	0.5

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

Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	130	2,847
Weighted Avg. Market Cap. ($B)	74.50	147.74
Median Market Cap. ($B)	18.97	9.38
Price To Earnings	17.23	17.63
Price To Book	2.31	2.93
Price To Sales	1.42	1.53
Return on Equity (%)	15.04	19.99
Yield (%)	2.38	2.49
Beta	0.71	1.00

Sector Allocation (%) vs MSCI ACWI



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	78.4%	88.2%
Emerging*	3.4%	11.8%
Cash	18.2%	
Top 10 Largest Countries		
United States	44.9%	55.2%
Cash	18.2%	0.0%
Japan	11.3%	7.1%
France	5.5%	3.4%
United Kingdom	5.4%	5.0%
Canada	2.7%	3.0%
Switzerland	2.3%	2.8%
Korea*	1.9%	1.5%
Singapore	1.3%	0.4%
Hong Kong	1.2%	1.2%
Total-Top 10 Largest Countries	**94.6%**	**79.6%**

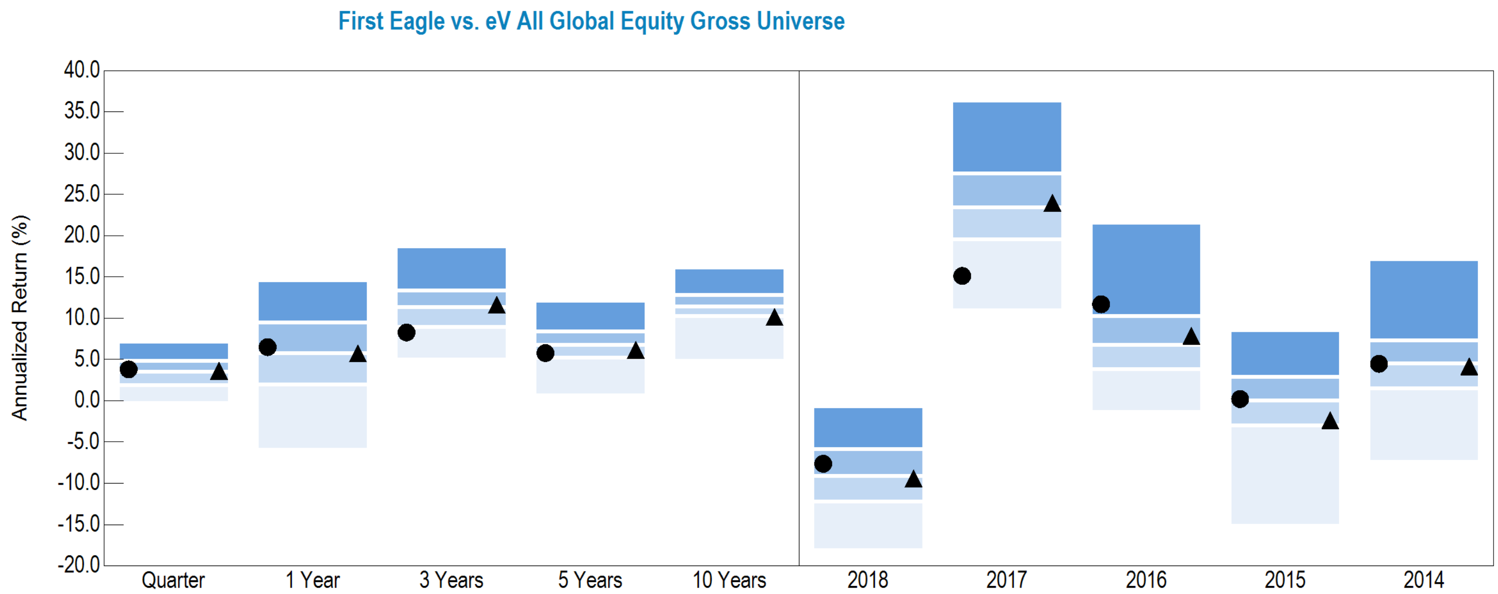
Top Contributors

	Avg Wgt	Return	Contribution
SPDR GOLD SHARES	2.85	9.17	0.26
KDDI	0.43	18.18	0.08
DANONE	0.45	13.06	0.06
W R BERKLEY	0.32	17.83	0.06
ORACLE	0.83	6.54	0.05
FANUC	0.53	8.45	0.04
NESTLE 'R'	0.38	11.60	0.04
KIA MOTORS	0.18	22.36	0.04
NEWCREST MINING	0.17	23.73	0.04
COMCAST A	0.64	6.31	0.04

Bottom Contributors

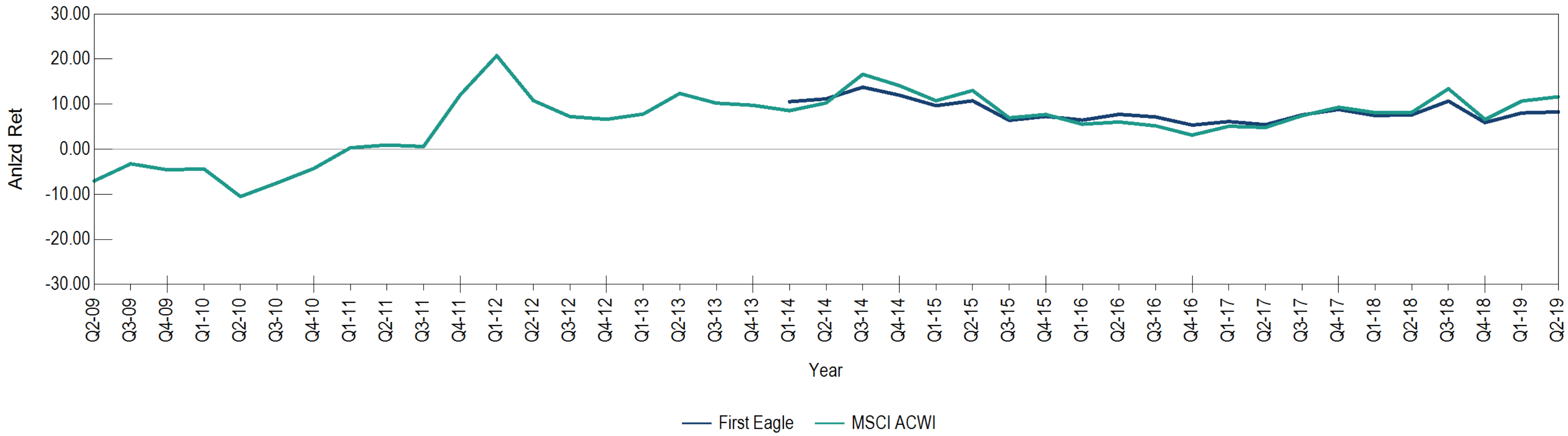
	End Weight	Return	Contribution
BRITISH AMERICAN TOBACCO	1.36	-14.39	-0.20
3M	0.92	-15.85	-0.15
TERADATA	0.79	-17.87	-0.14
BANK OF NEW YORK MELLON	1.13	-11.95	-0.14
NATIONAL OILWELL VARCO	0.75	-16.35	-0.12
SCHLUMBERGER	1.63	-7.51	-0.12
PHILIP MORRIS INTL.	1.13	-9.84	-0.11
EXXON MOBIL	1.98	-4.08	-0.08
LLOYDS BANKING GROUP	0.80	-8.01	-0.06
CIELO ON	0.22	-26.66	-0.06

Unclassified sector allocation includes cash allocations and Gold allocations (8.8% as of 6/30/2019).

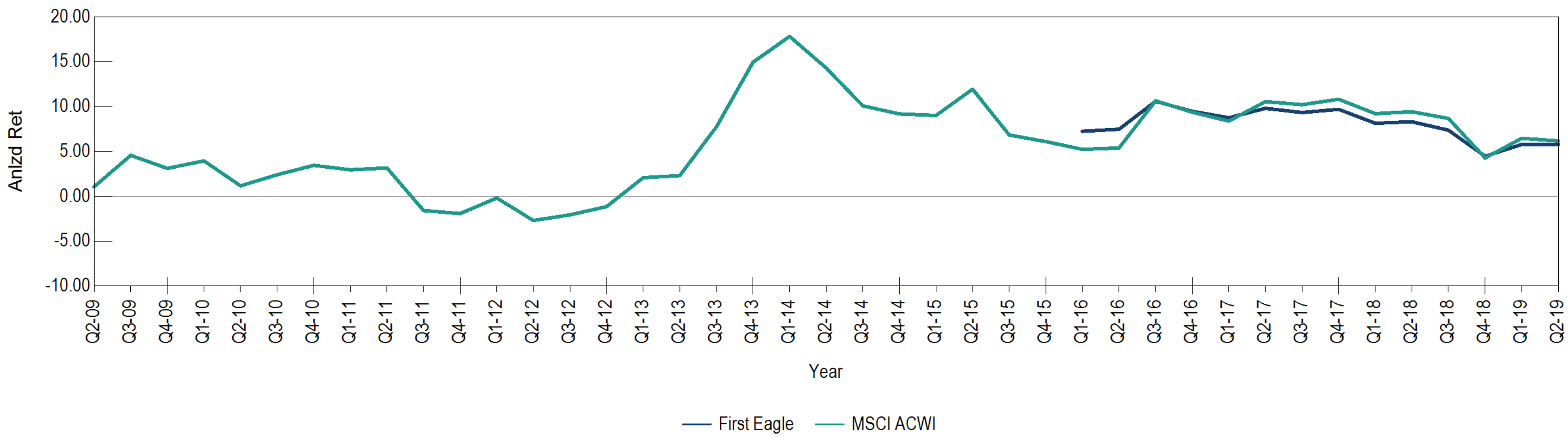


Return (Rank)	Quarter		1 Year		3 Years		5 Years		10 Years		2018		2017		2016		2015		2014	
5th Percentile	7.2		14.5		18.7		12.1		16.1		-0.7		36.3		21.5		8.5		17.1	
25th Percentile	4.9		9.5		13.4		8.5		12.8		-5.8		27.6		10.3		3.0		7.4	
Median	3.6		5.8		11.3		6.8		11.5		-9.1		23.5		6.8		0.1		4.6	
75th Percentile	2.0		2.0		9.0		5.3		10.3		-12.2		19.6		3.9		-2.9		1.5	
95th Percentile	-0.2		-5.9		5.0		0.7		4.8		-18.1		11.0		-1.4		-15.1		-7.4	
# of Portfolios	917		917		857		742		478		920		880		842		692		609	
● First Eagle	3.8	(45)	6.5	(46)	8.3	(81)	5.8	(68)	--	(--)	-7.6	(38)	15.1	(89)	11.7	(19)	0.2	(49)	4.5	(51)
▲ MSCI ACWI	3.6	(50)	5.7	(51)	11.6	(47)	6.2	(63)	10.1	(77)	-9.4	(53)	24.0	(47)	7.9	(42)	-2.4	(73)	4.2	(54)

Rolling 3 Year Annualized Return (%)

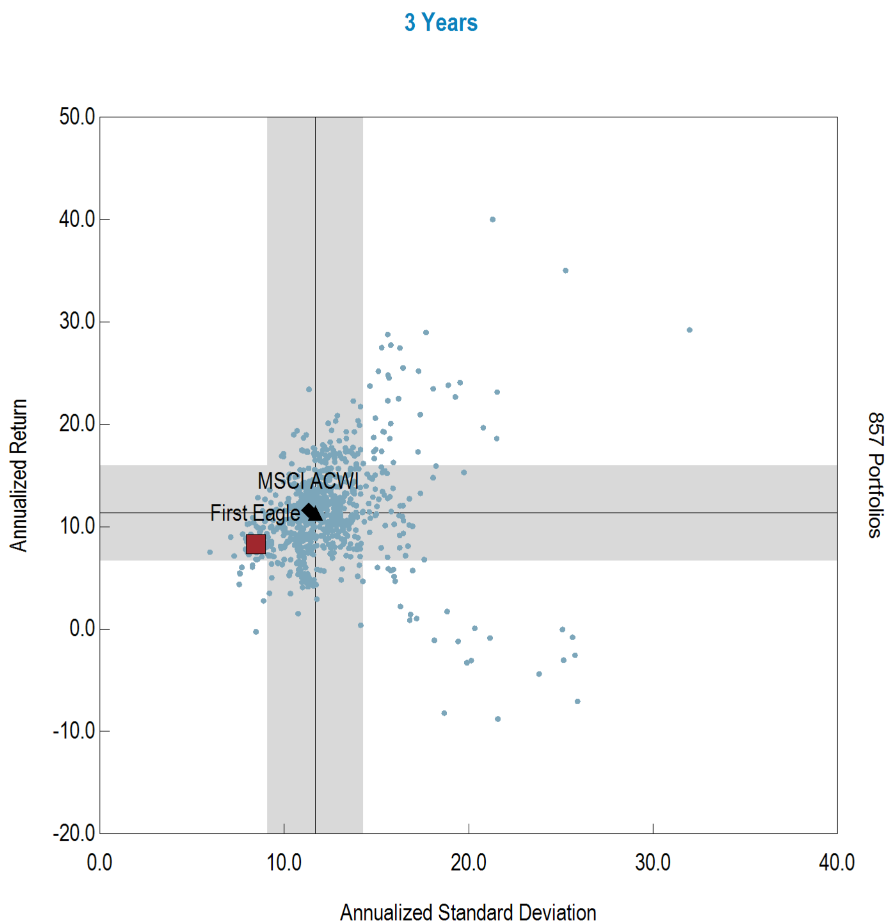


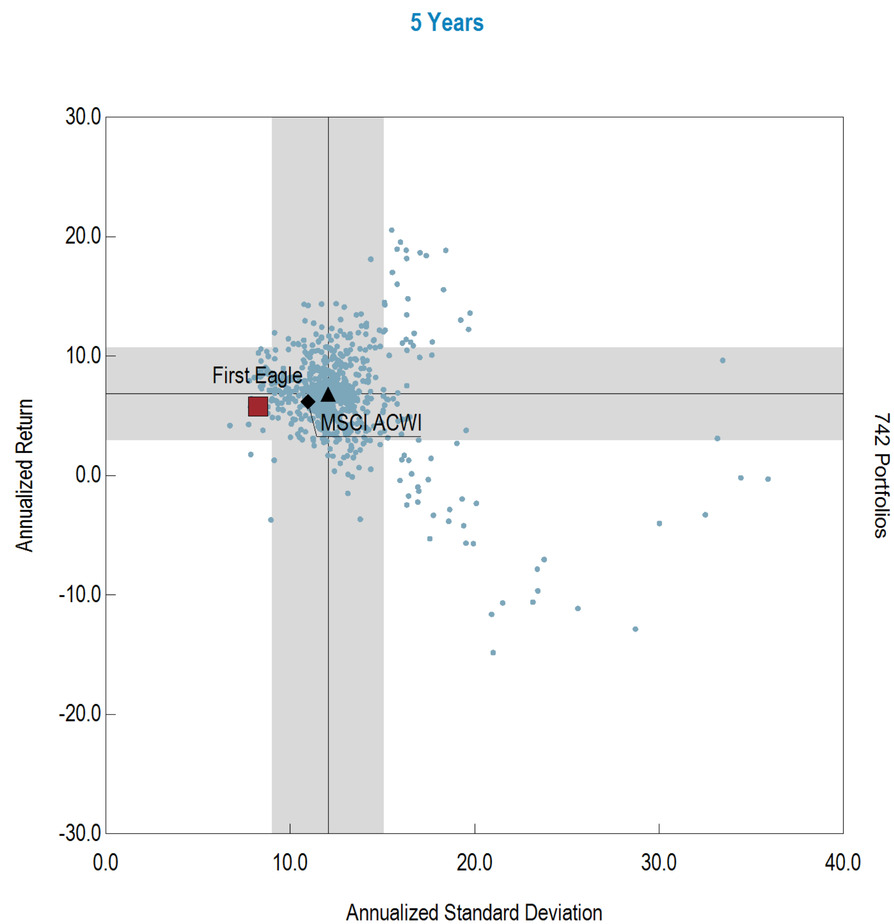
Rolling 5 Year Annualized Return (%)



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

Period Ending: June 30, 2019





3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	8.3%	8.5%	0.8
MSCI ACWI	11.6%	11.3%	0.9
eV All Global Equity Gross Median	11.3%	11.7%	0.9

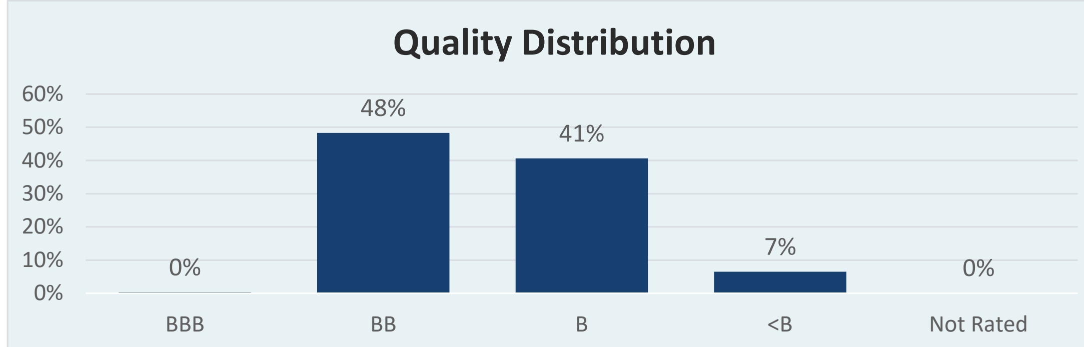
5 Years

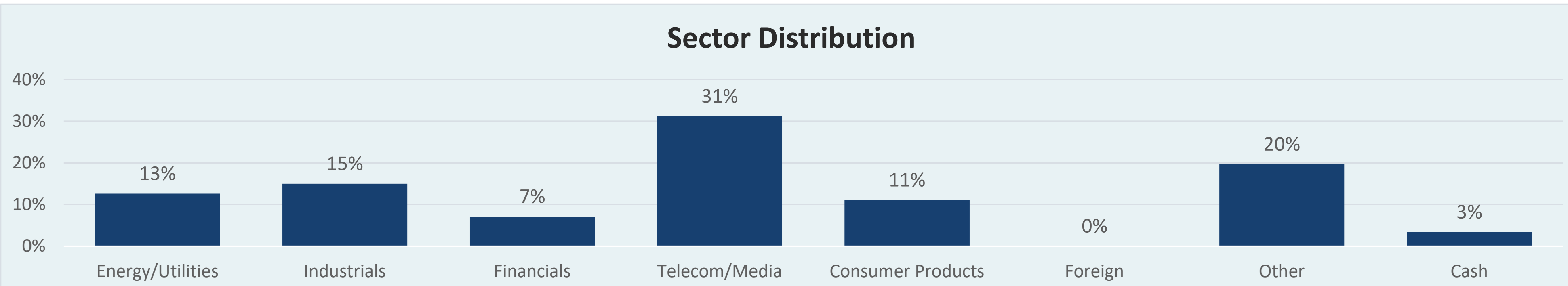
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	5.8%	8.7%	0.6
MSCI ACWI	6.2%	11.8%	0.4
eV All Global Equity Gross Median	6.8%	12.1%	0.5

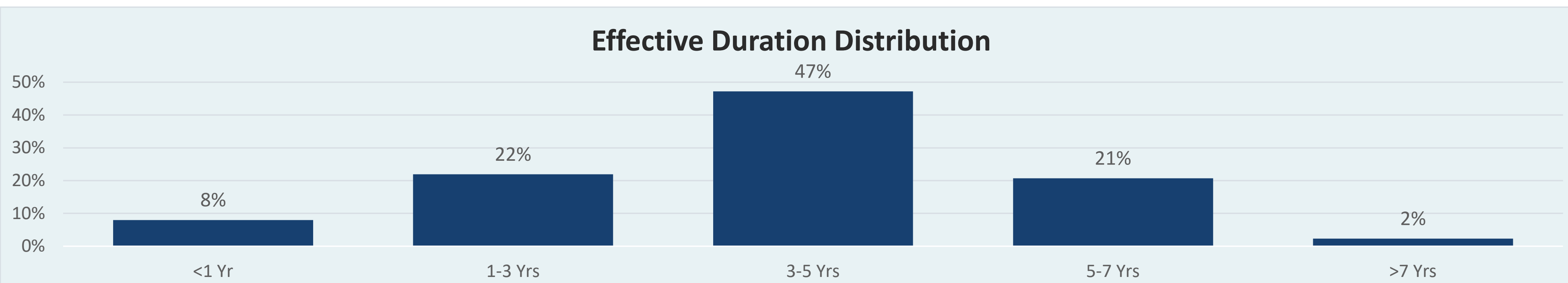
High Yield Managers

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

	Allianz	ICE BofAML HY Master II
Effective Duration	3.80	3.50
Yield to Maturity	6.20	6.50
Average Quality	B1	B1
Average Coupon	6.5%	6.4%

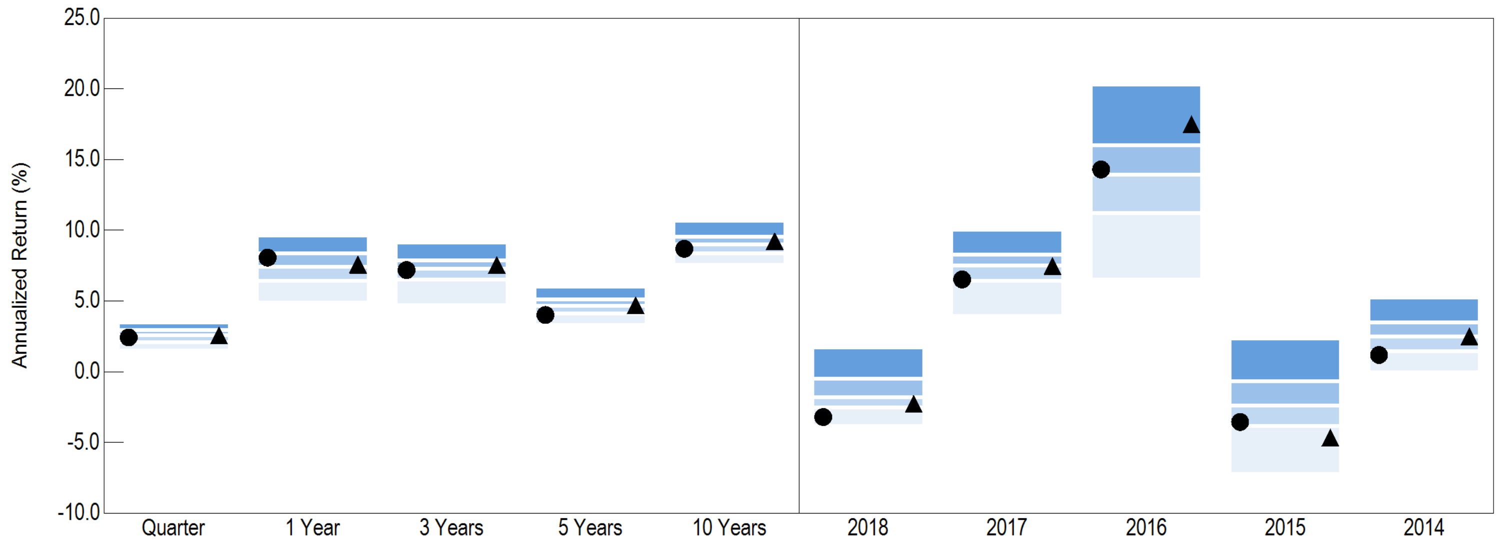






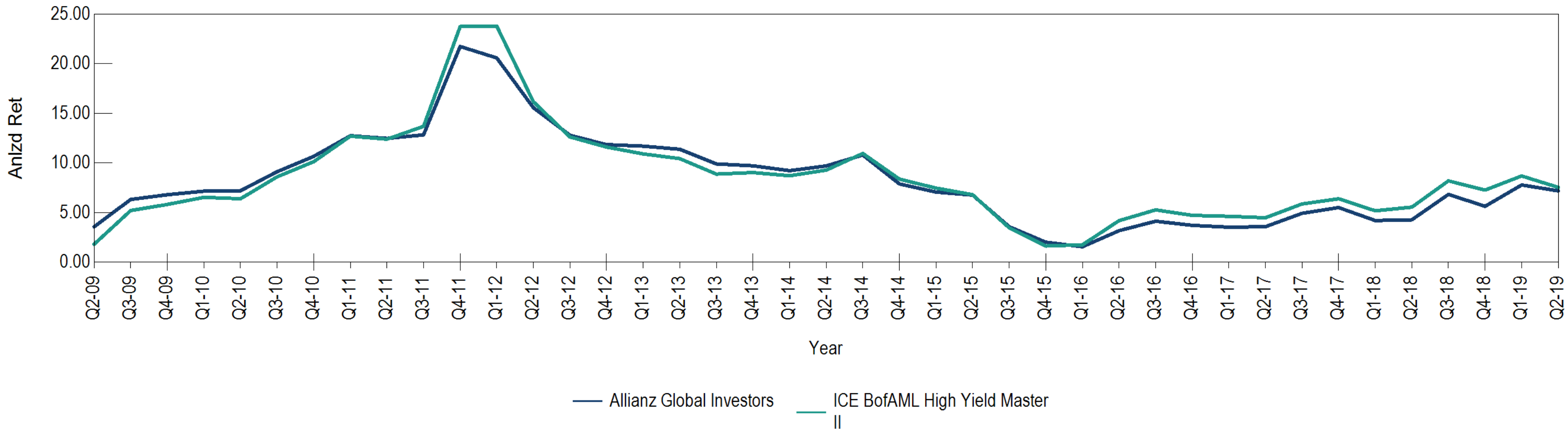
Quality distribution excludes cash.

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

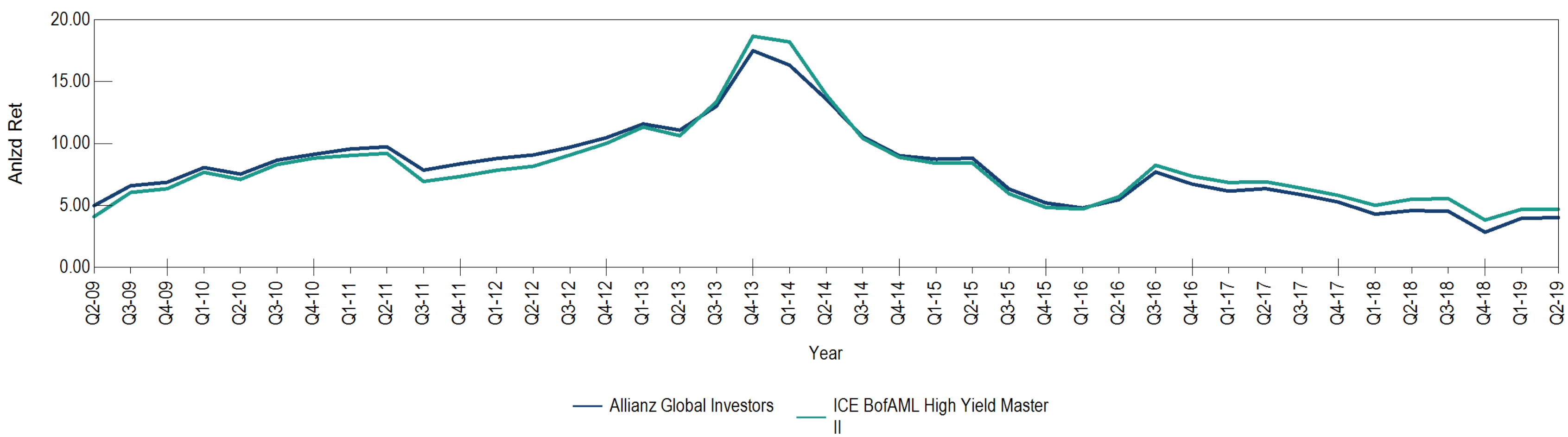


Return (Rank)	Quarter		1 Year		3 Years		5 Years		10 Years		2018		2017		2016		2015		2014	
5th Percentile	3.5		9.6		9.1		6.0		10.6		1.7		10.0		20.3		2.3		5.2	
25th Percentile	3.0		8.4		7.9		5.2		9.6		-0.5		8.3		16.0		-0.7		3.5	
Median	2.6		7.5		7.3		4.7		9.0		-1.8		7.5		14.0		-2.4		2.5	
75th Percentile	2.1		6.5		6.6		4.2		8.4		-2.5		6.5		11.3		-3.8		1.5	
95th Percentile	1.5		4.9		4.8		3.3		7.6		-3.8		4.0		6.6		-7.2		0.0	
# of Portfolios	198		198		190		178		126		210		198		183		155		141	
● Allianz Global Investors	2.4	(62)	8.1	(36)	7.2	(57)	4.0	(79)	8.7	(67)	-3.2	(88)	6.5	(74)	14.3	(47)	-3.5	(68)	1.2	(83)
▲ ICE BofAML High Yield Master II	2.6	(53)	7.6	(47)	7.5	(40)	4.7	(50)	9.2	(41)	-2.3	(69)	7.5	(53)	17.5	(14)	-4.6	(83)	2.5	(50)

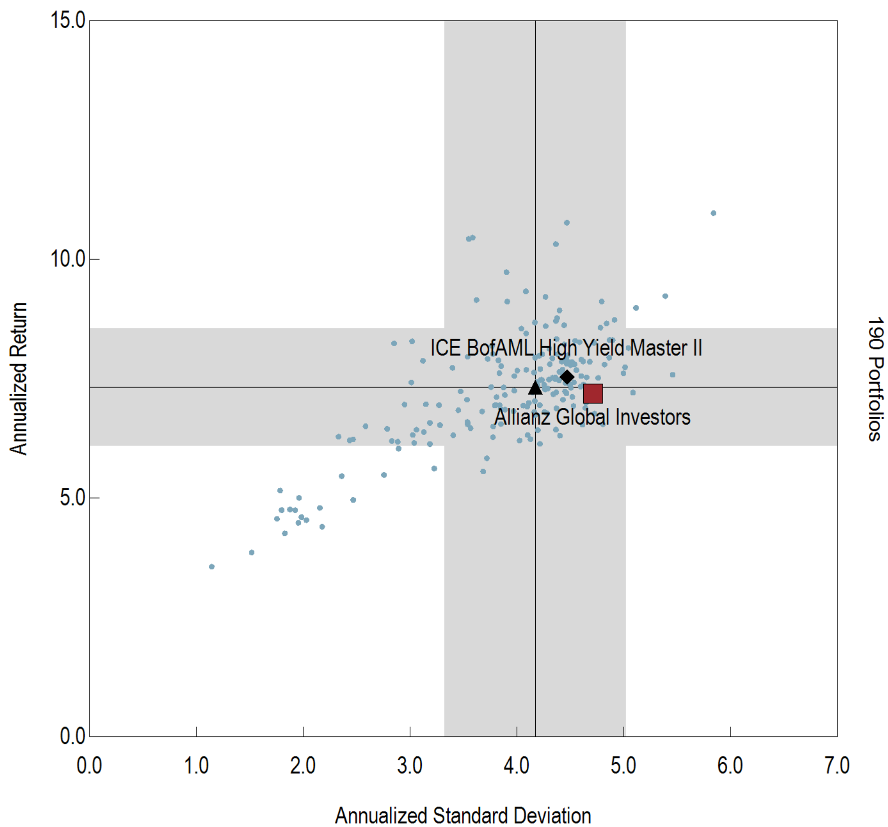
Rolling 3 Year Annualized Return (%)



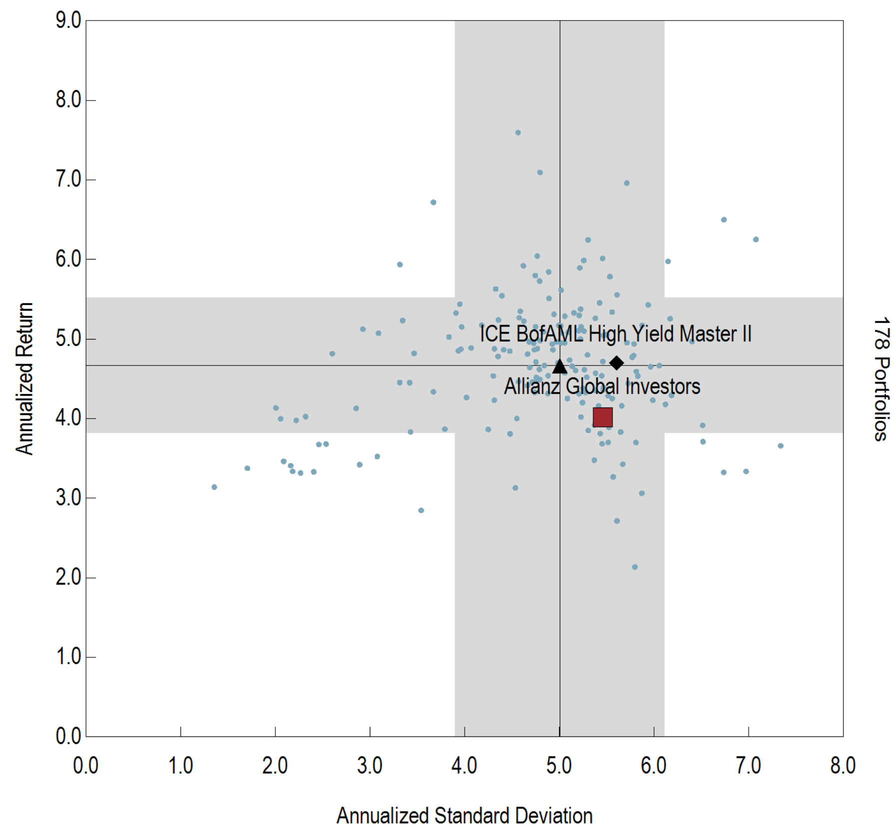
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Allianz Global Investors	7.2%	4.7%	1.2
ICE BofAML High Yield Master II	7.5%	4.5%	1.4
eV US High Yield Fixed Inc Gross Median	7.3%	4.2%	1.5

5 Years

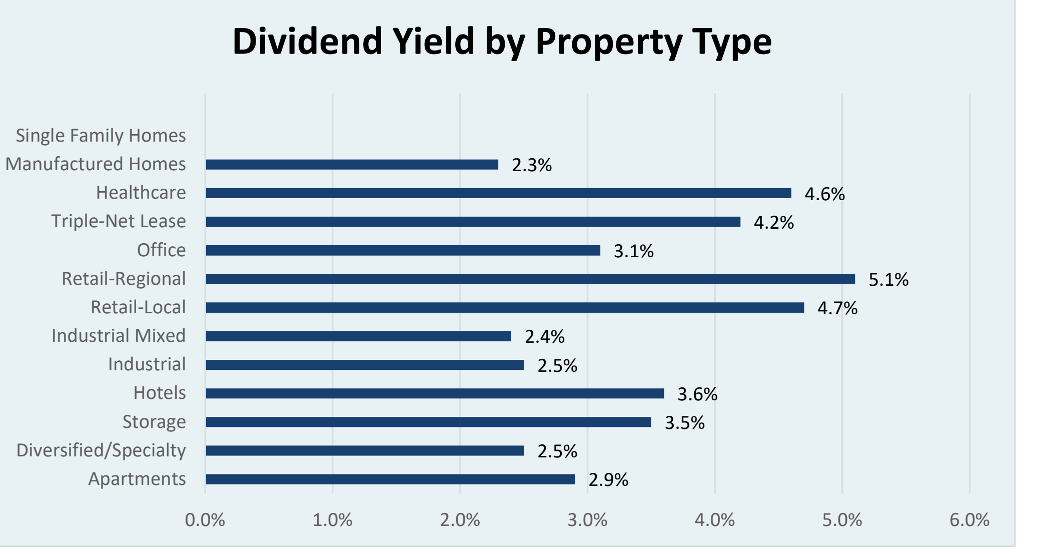
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Allianz Global Investors	4.0%	5.5%	0.6
ICE BofAML High Yield Master II	4.7%	5.6%	0.7
eV US High Yield Fixed Inc Gross Median	4.7%	5.0%	0.8

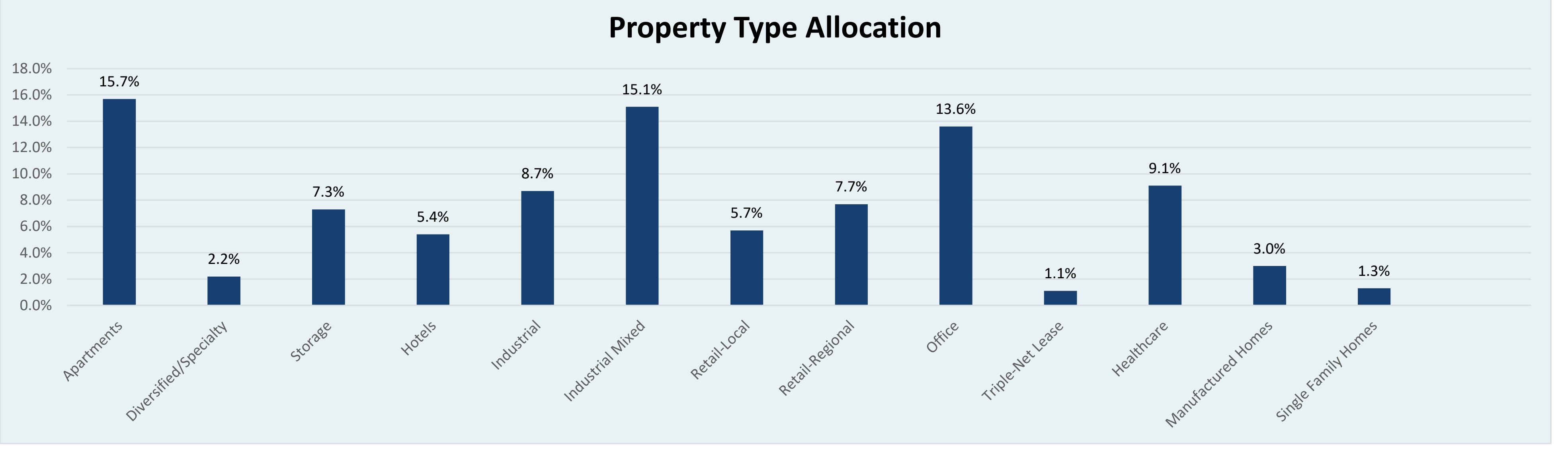
Real Estate Managers

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

Top Five Holdings

Company	Property Type	Allocation
Simon Property Group	Retail-Regional	7.7%
PoLogis Inc.	Industrial	7.2%
Equinix Inc	Industrial Mixed	6.8%
Equity Residential	Apartments	5.7%
HCP Inc.	Healthcare	4.4%



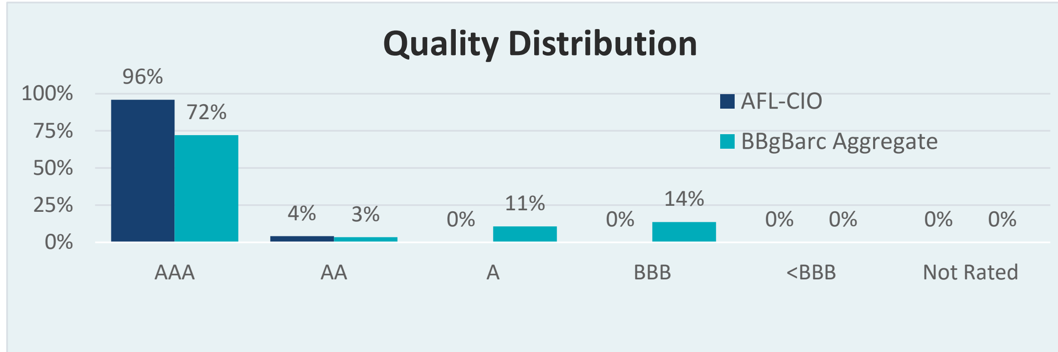


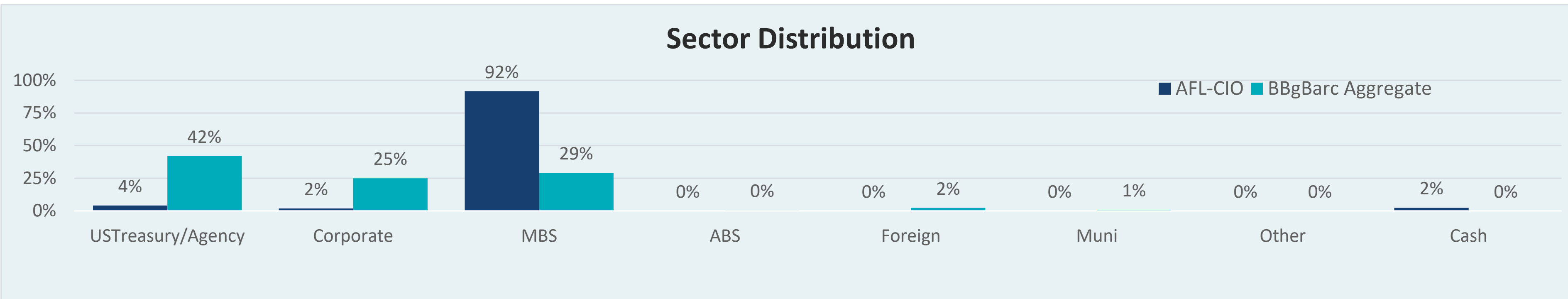
4% is allocated to Cash and Cash Equivalents.

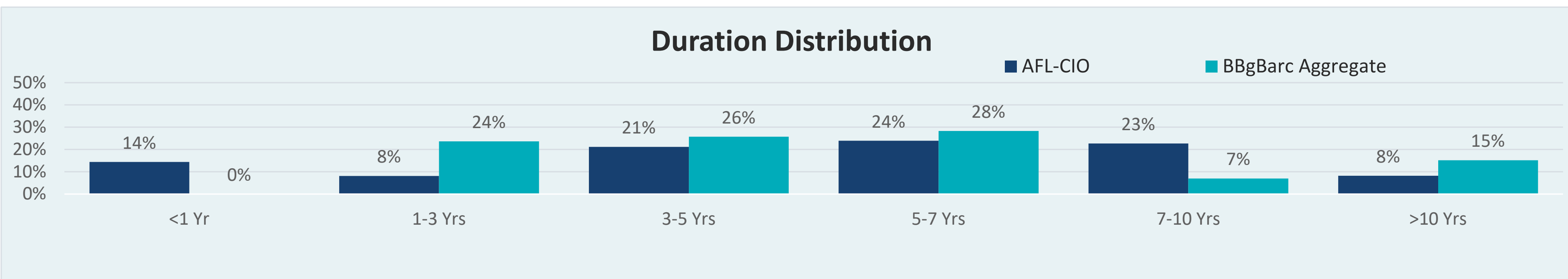
Diversifying Fixed Income Managers

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

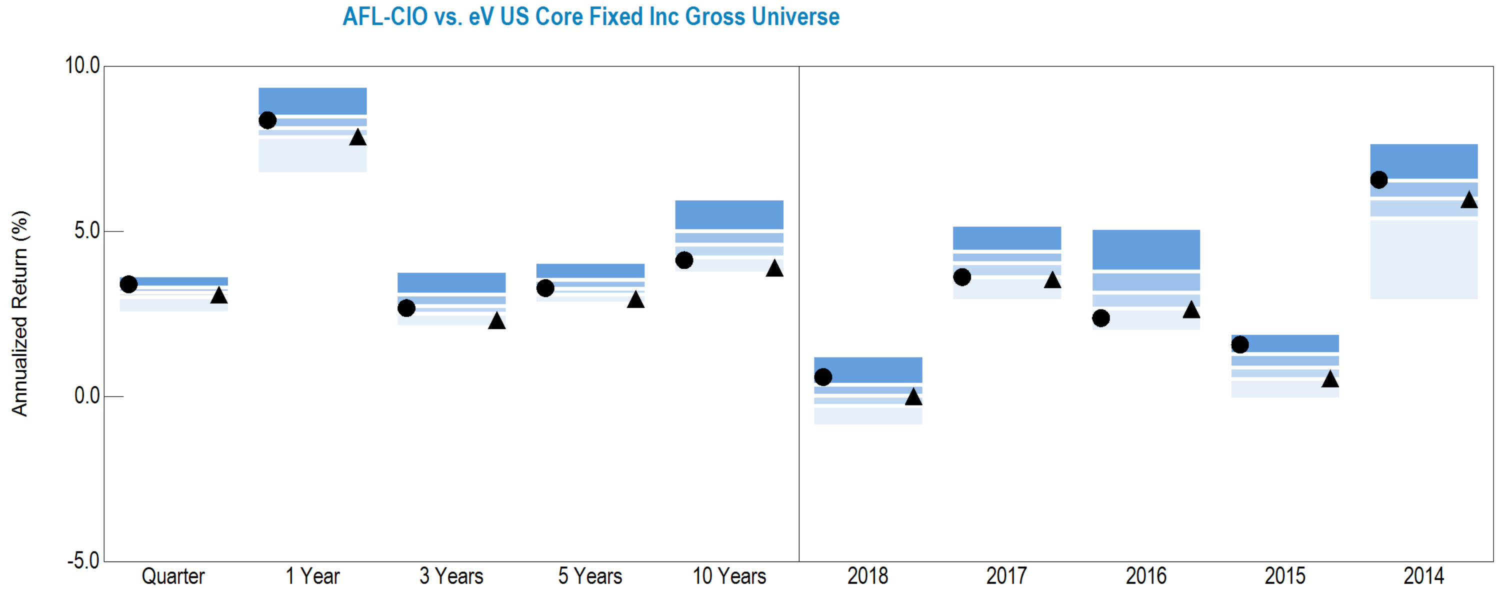
	AFL-CIO	BBgBarc Aggregate
Effective Duration	5.55	5.92
Yield to Maturity	3.23	3.08
Average Quality	AAA	AA
Average Coupon	3.3%	3.3%



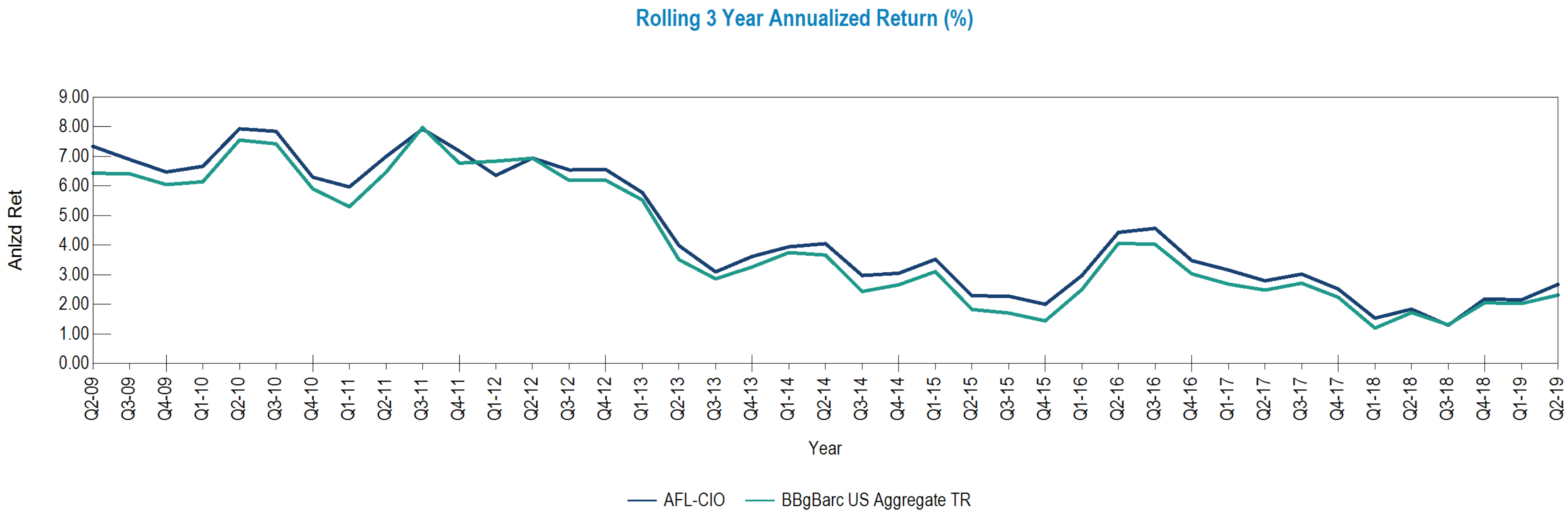


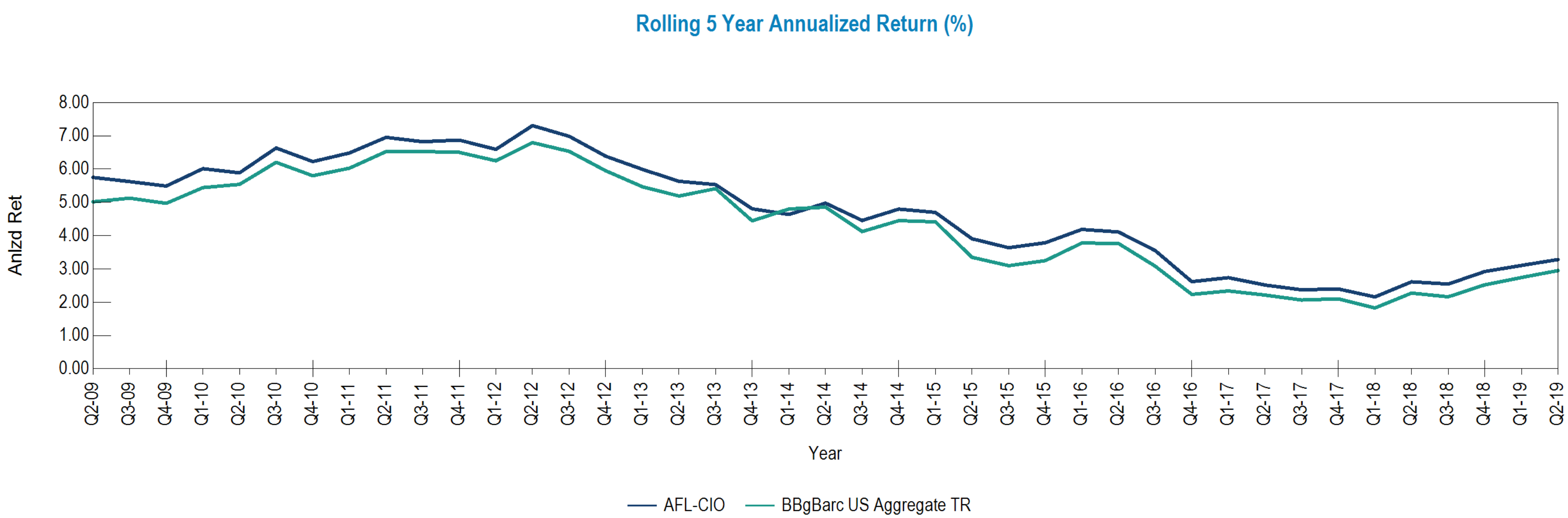


Duration and Quality distributions exclude cash.

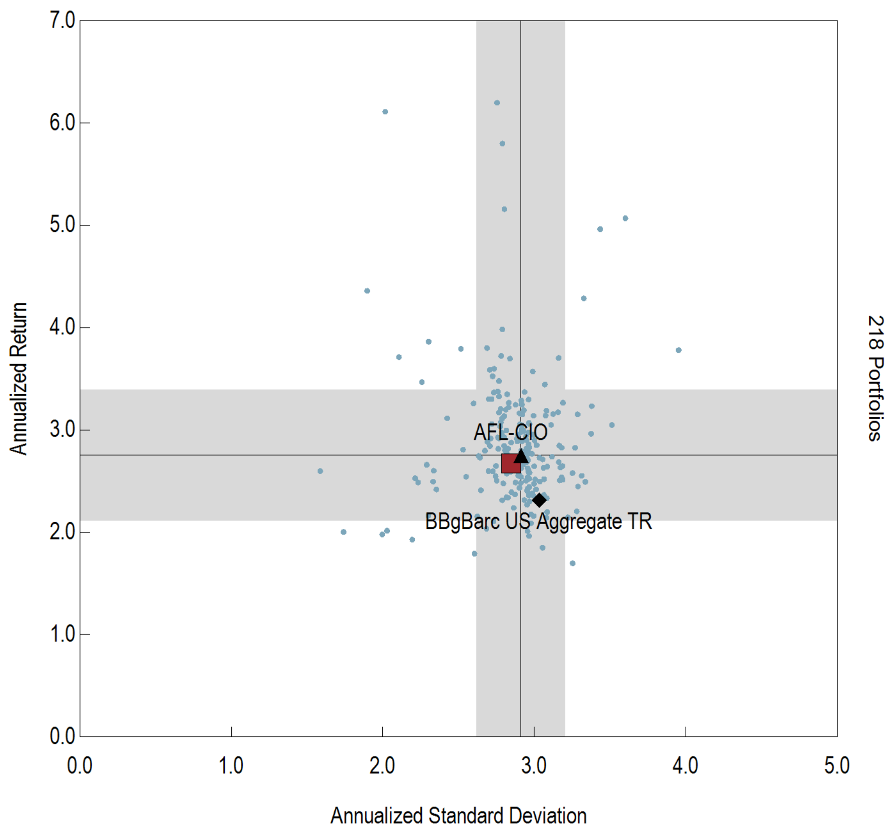


	Quarter		1 Year		3 Years		5 Years		10 Years		2018		2017		2016		2015		2014	
	Return (Rank)																			
5th Percentile	3.7		9.4		3.8		4.1		6.0		1.2		5.2		5.1		1.9		7.7	
25th Percentile	3.3		8.5		3.1		3.5		5.0		0.4		4.4		3.8		1.3		6.5	
Median	3.2		8.1		2.8		3.3		4.6		0.0		4.0		3.2		0.9		6.0	
75th Percentile	3.0		7.9		2.5		3.1		4.2		-0.3		3.6		2.7		0.5		5.4	
95th Percentile	2.5		6.7		2.1		2.8		3.7		-0.9		2.9		2.0		-0.1		2.9	
# of Portfolios	222		222		218		214		197		240		233		223		196		213	
● AFL-CIO	3.4	(19)	8.4	(33)	2.7	(57)	3.3	(50)	4.1	(81)	0.6	(16)	3.6	(76)	2.4	(87)	1.6	(15)	6.6	(25)
▲ BBgBarc US Aggregate TR	3.1	(67)	7.9	(74)	2.3	(90)	2.9	(89)	3.9	(92)	0.0	(54)	3.5	(79)	2.6	(77)	0.6	(75)	6.0	(52)

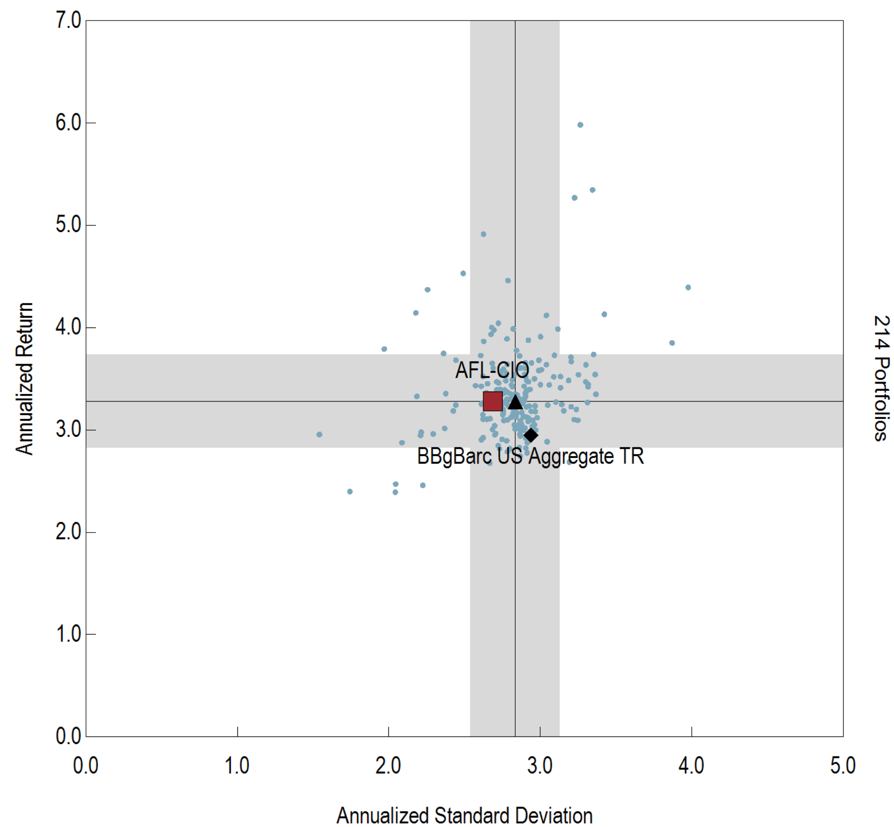

Rolling 3 Year Annualized Return (%)
Anlzd Ret
Year
AFL-CIO
BBgBarc US Aggregate TR


Rolling 5 Year Annualized Return (%)
Anlzd Ret
Year
AFL-CIO
BBgBarc US Aggregate TR

3 Years



5 Years



3 Years

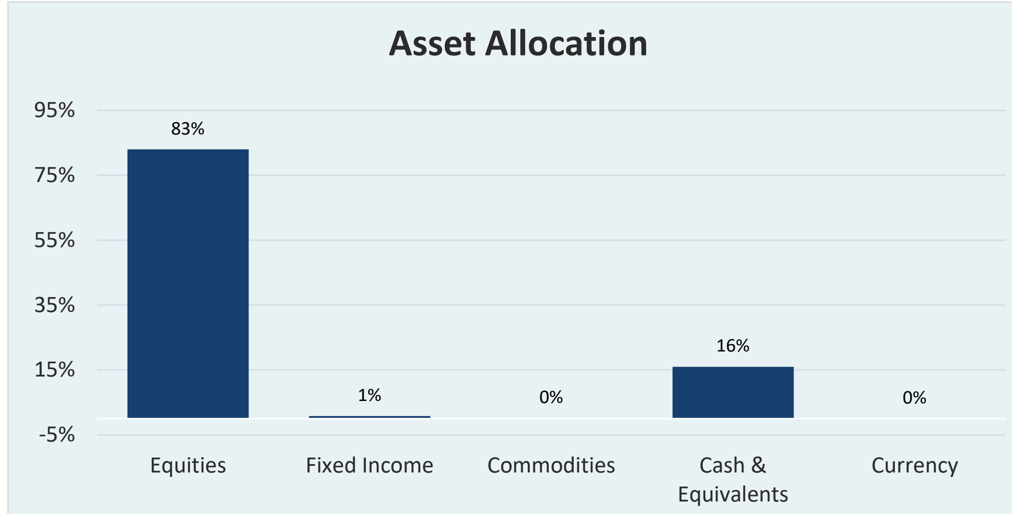
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
AFL-CIO	2.7%	2.8%	0.4
BBgBarc US Aggregate TR	2.3%	3.0%	0.3
eV US Core Fixed Inc Gross Median	2.8%	2.9%	0.5

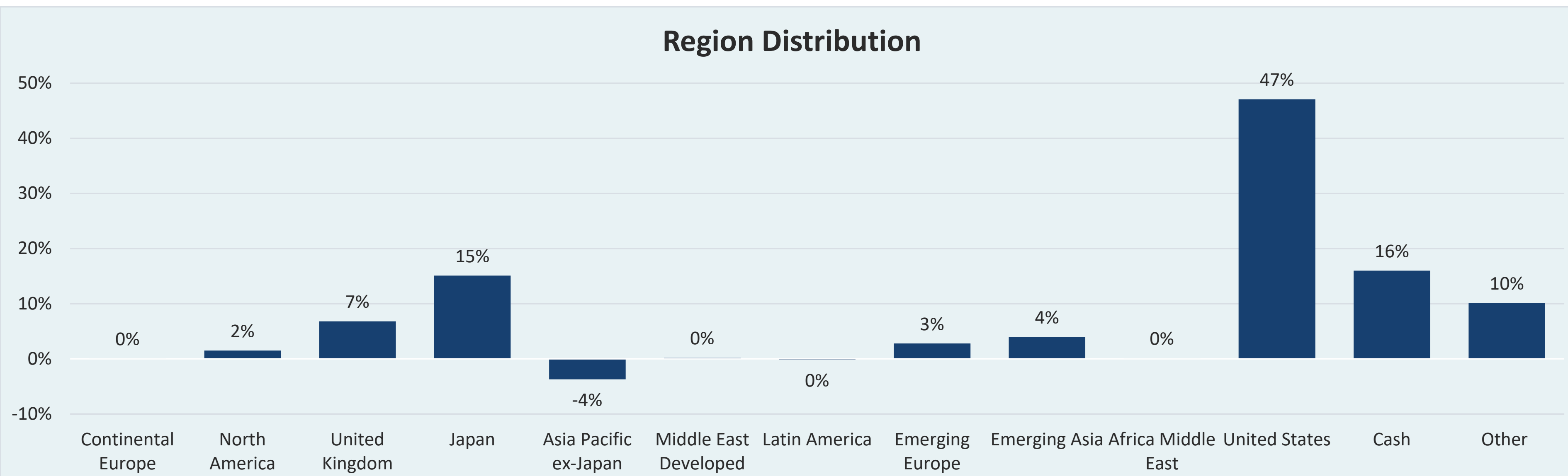
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
AFL-CIO	3.3%	2.7%	0.9
BBgBarc US Aggregate TR	2.9%	2.9%	0.7
eV US Core Fixed Inc Gross Median	3.3%	2.8%	0.9

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

	Wellington Total Return
Number of Equity Holdings	**1,052**
Number of Commodity Holdings	**122**
Effective Duration (Years)	**5.30**

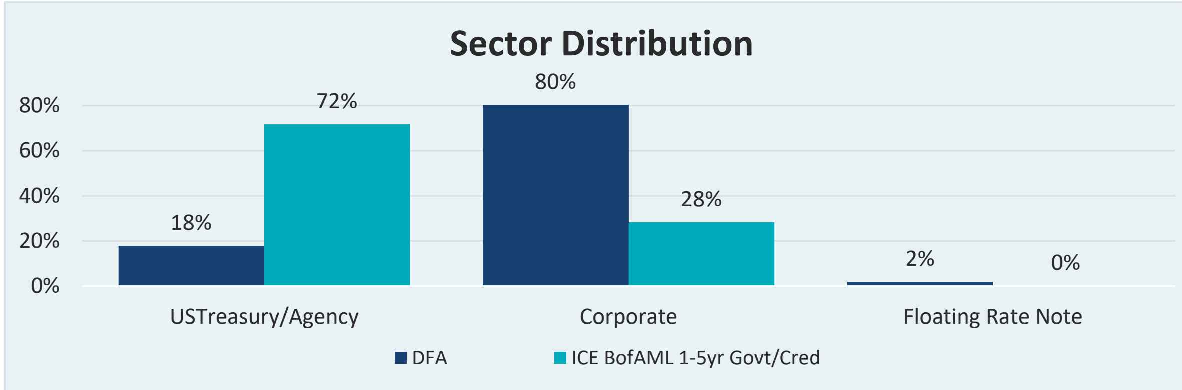


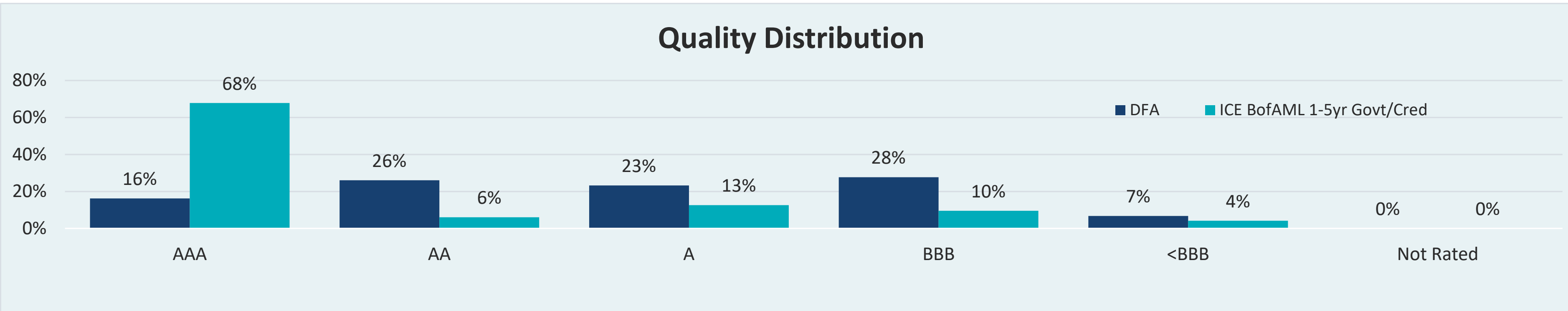


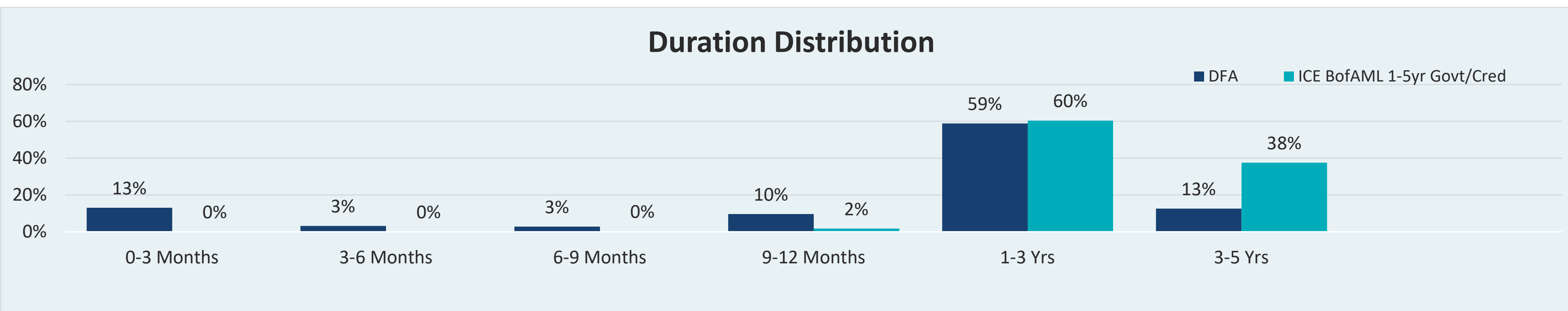
Liquidity Managers

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

	DFA	ICE BofAML 1-5yr Govt/Cred
Effective Duration	1.78	2.63
Yield to Maturity	2.35	2.04
Average Quality	A	Aa1
Average Coupon	2.82%	2.68%

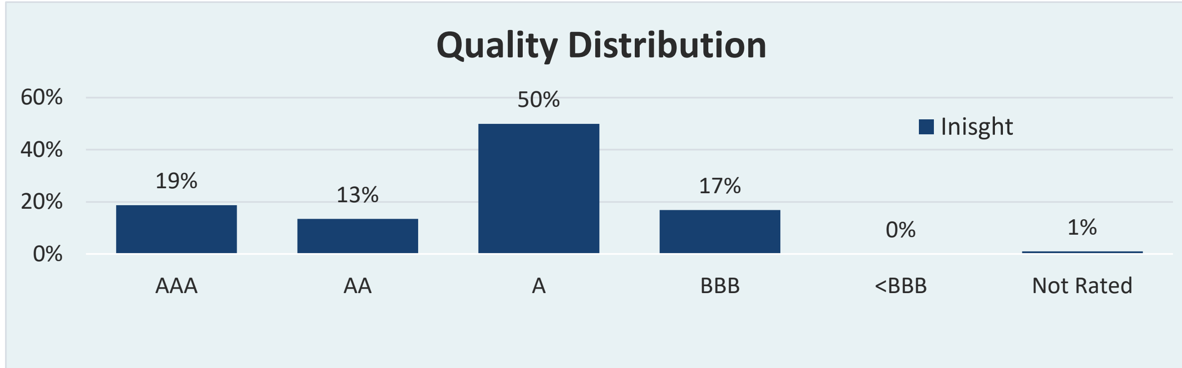


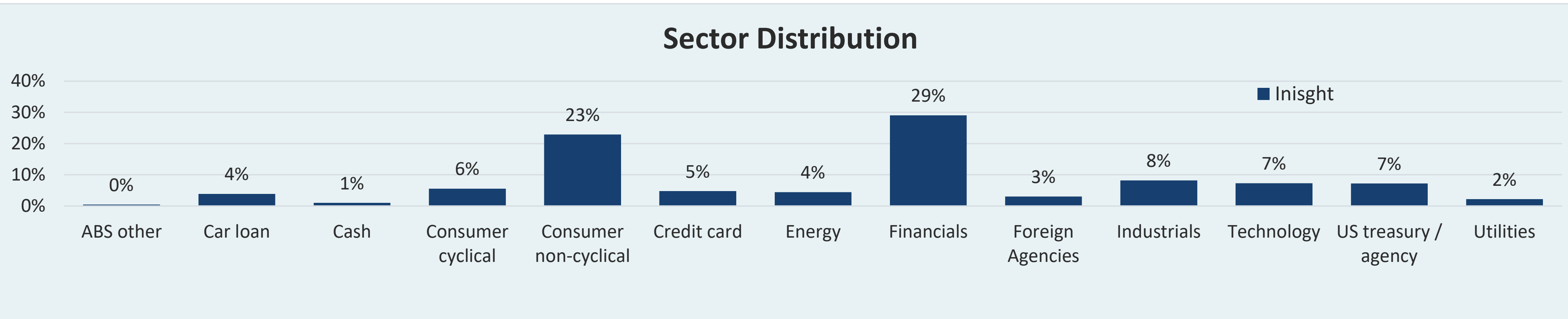


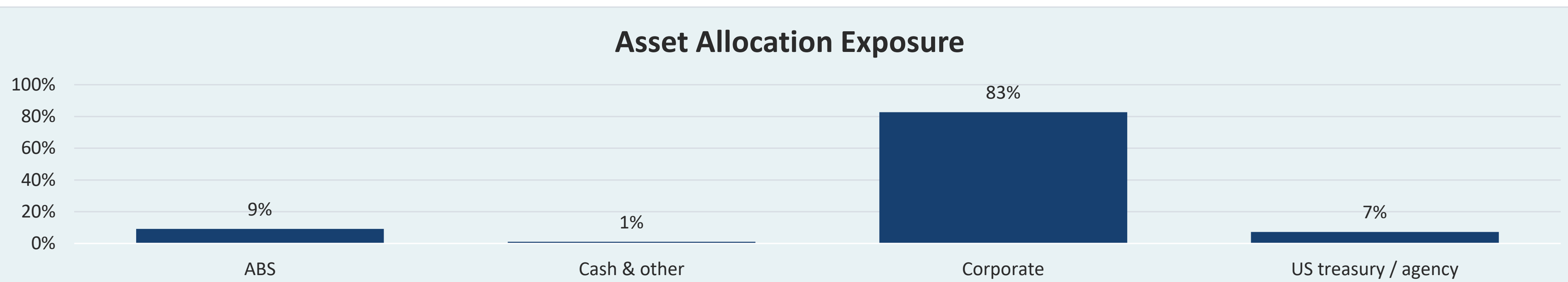


High quality, short duration multi-sector fixed income portfolio comprised of Treasuries, Agencies, investment grade corporates, and ABS designed specifically to meet CCCERA's liabilities. Key personnel include Gerard Berrigan and Jesse Fogarty.

	Inisight	BBgBarc 1-3yr Govt
Effective Duration	1.44	1.90
Yield to Maturity	2.78	1.80
Average Quality	A+	AAA
Average Coupon	2.43%	2.13%

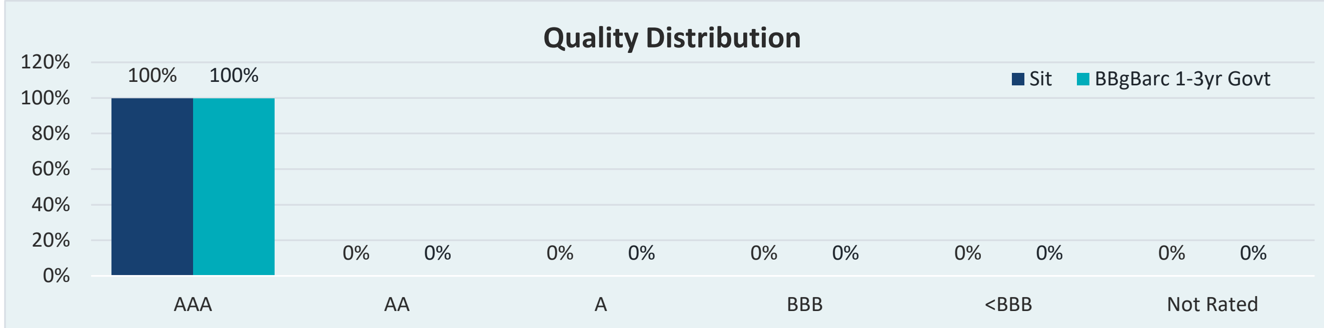


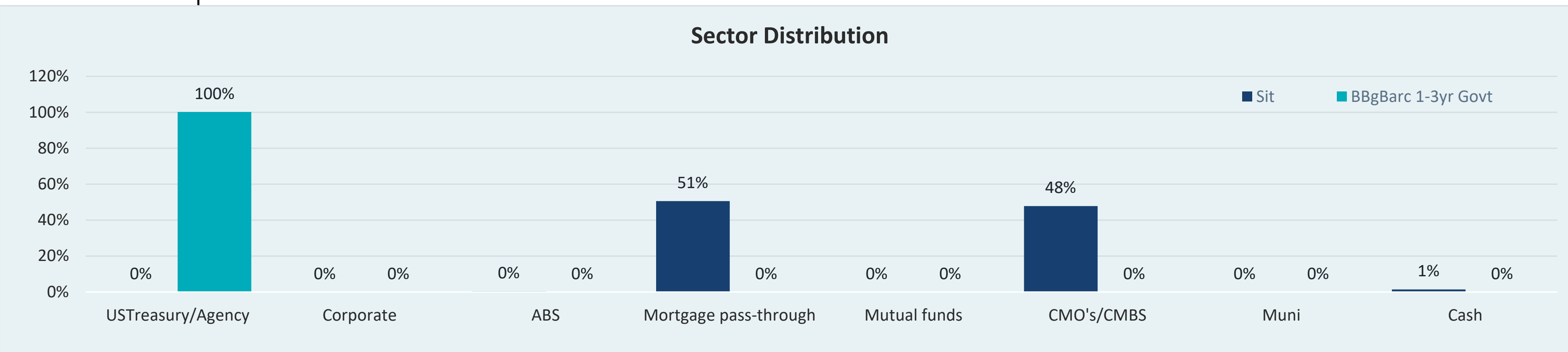


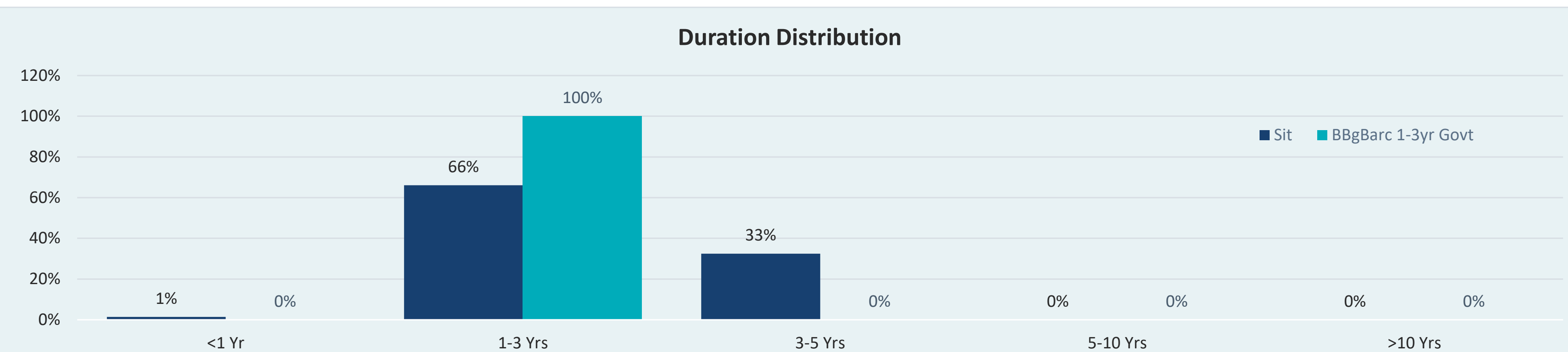


Short duration fixed income portfolio with a focus on earning high levels of interest income. Primary personnel include Bryce Doty, Paul Jungquist and Michael Brilley.

	Sit	BBgBarc 1-3yr Govt
Adjusted Duration	2.60	1.90
Yield to Maturity	2.40	1.80
Average Quality	AAA	AAA
Average Coupon	6.5%	2.1%







Performance Return Calculations

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

Data Source

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

Illiquid Alternatives

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

Policy & Custom Index Composition

Policy Index (7/1/2018 - present)	11% Russell 3000, 19% MSCI ACWI ex-US (Gross), 11% MSCI ACWI (Net), 1% Wilshire REIT, 1.8% NCREIF Property Index, 7.2% NCREIF ODCE Index, 2% CPI + 4%, 10% S&P 500 +4% (Lagged), 4% ICE BofAML High Yield Master II +2%, 2% ICE BofAML High Yield Master II, 23% BBgBarc 1-3 Yr Gov/Credit, 3.5% BBgBarc US Aggregate, 2% BBgBarc Global Aggregate, 2.5% HFRI EH Equity Market Neutral.
Policy Index (10/1/2017 - 6/30/2018)	16.3% Russell 3000, 18.8% MSCI ACWI ex-US (Gross), 8.6% MSCI ACWI (Net), 1% Wilshire REIT, 1.6% NCREIF Property Index, 6.4% NCREIF ODCE Index, 2.5% CPI + 4%, 10.1% S&P 500 +4% (Lagged), 1.9% ICE BofAML High Yield Master II +2%, 4.3% ICE BofAML High Yield Master II, 25% BBgBarc 1-3 Yr Gov/Credit, 3.5% BBgBarc US Aggregate.
Policy Index (1/1/2017 - 9/30/2017)	22.9% Russell 3000, 11% MSCI ACWI ex-US (Gross), 10.9% MSCI ACWI (Net), 1% Wilshire REIT, 1.7% NCREIF Property Index, 6.8% NCREIF ODCE Index, 3.6% CPI + 4%, 8.1% S&P 500 +4% (Lagged), 1.7% ICE BofAML High Yield Master II +2%, 5.1% ICE BofAML High Yield Master II, 22.4% BBgBarc 1-3 Yr Gov/Credit, 3.2% BBgBarc US Aggregate, 1.6% 91-Day T-Bills.
Policy Index (4/1/2012-12/31/2016)	27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% BBgBarc U.S. Aggregate, 5% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 13.5% Real Estate Benchmark, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Policy Index (4/1/2011-3/31/2012)	31% Russell 3000, 10.4% MSCI EAFE (Gross), 9.6% MSCI ACWI (Net), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% DJ Wilshire REIT, 3.1% NCREIF, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Policy Index (4/1/2010-3/31/2011)	35.6% Russell 3000, 10.4% MSCI EAFE (Gross), 5% MSCI ACWI (Net), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% DJ Wilshire REIT, 3.1% NCREIF, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Policy Index (7/1/2009-3/31/2010)	40.6% Russell 3000, 10.4% MSCI EAFE (Gross), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% DJ Wilshire REIT, 3.1% NCREIF, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Custom Growth Benchmark (7/1/2018 - present)	16.0% Russell 3000, 27.5% MSCI ACWI ex-US (Gross), 15.9% MSCI ACWI (Net), 1.5% Wilshire REIT, 2.6% NCREIF Property Index, 10.4% NCREIF ODCE Index, 14.5% S&P 500 +4% (Lagged), 5.8% ICE BofAML High Yield Master II +2%, 2.9% ICE BofAML High Yield Master II, 2.9% BBgBarc Global Bond
Custom Growth Benchmark (9/30/2017-6/30/2018)	23.6% Russell 3000, 27.2% MSCI ACWI ex-US (Gross), 12.5% MSCI ACWI (Net), 1.5% Wilshire REIT, 2.3% NCREIF Property Index, 9.3% NCREIF ODCE Index, 14.6% S&P 500 +4% (Lagged), 2.8% ICE BofAML High Yield Master II +2%, 6.2% ICE BofAML High Yield Master II
Custom Growth Benchmark (1/1/2017-9/30/2017)	32.6% Russell 3000, 15.7% MSCI ACWI ex-US (Gross), 15.5% MSCI ACWI (Net), 1.4% Wilshire REIT, 2.4% NCREIF Property Index, 9.6% NCREIF ODCE Index, 1.6% CPI +4%, 11.5% S&P 500 +4% (Lagged), 2.4% ICE BofAML High Yield Master II +2%, 7.3% ICE BofAML High Yield Master II
Custom Growth Benchmark (Prior to 1/1/2017)	Weighted-average of the benchmarks of the sub-composites that make up the composite.
Custom Diversifying Benchmark (7/1/2018 - present)	43.75% BBgBarc US Aggregate, 25% CPI + 4%, 31.25% HFRI EH Equity Market Neutral.
Custom Diversifying Benchmark (10/1/2017 - 6/30/2018)	58.33% BBgBarc US Aggregate, 41.67% CPI + 4%.
Custom Diversifying Benchmark (1/1/2017 - 9/30/2017)	56.1% BBgBarc US Aggregate, 43.9% CPI + 4%.
Custom Diversifying Benchmark (Prior to 1/1/2017)	Weighted-average of the benchmarks of the sub-composites that make up the composite.
Real Estate Benchmark (current)	11% Wilshire REIT, 18% NCREIF Property Index, 71% NCREIF ODCE Index.
Real Estate Benchmark (4/1/2012-11/30/2016)	40% Wilshire REIT, 50% NCREIF Property Index, 10% FTSE/EPRA NAREIT Developed ex-US.

Manager Line Up

Manager	Inception Date	Data Source	Manager	Inception Date	Data Source
BlackRock Russell 1000 Index	4/20/2017	BlackRock	Invesco Real Estate IV	6/30/2014	Invesco
Jackson Square Partners	5/1/2005	Northern Trust	Invesco Real Estate V	2/20/2019	Invesco
Boston Partners	6/1/1995	Northern Trust	Oaktree REOF V	12/31/2011	Oaktree
Emerald Advisors	4/7/2003	Northern Trust	Oaktree REOF VI	9/30/2013	Oaktree
Ceredex	11/6/2011	Northern Trust	Oaktree REOF VII	4/1/2015	Oaktree
Pyrford	4/25/2014	State Street	Siguler Guff DREOF	1/25/2012	Siguler Guff
William Blair	10/29/2010	William Blair	Siguler Guff DREOF II	8/31/2013	Siguler Guff
PIMCO RAE Emerging Markets	2/28/2017	State Street	Siguler Guff DREOF II Co-Inv	1/27/2016	Siguler Guff
TT Emerging Markets	7/27/2017	TT	Paulson Real Estate Fund II	11/10/2013	Paulson
Artisan Partners	10/1/2012	SEI Trust	AE Industrial Partners Fund II	4/8/2019	StepStone Group
First Eagle	1/18/2011	Northern Trust	Adams Street Partners	3/18/1996	StepStone Group
Allianz Global Investors	4/25/2000	Northern Trust	Adams Street Partners II	1/16/2009	StepStone Group
Adelante	9/30/2001	Northern Trust	Adams Street Partners Venture	4/28/2017	StepStone Group
AQR Global Risk Premium - EL	1/18/2019	AQR	Adams Street Partners - BFP	1/18/1996	StepStone Group
Panagora Risk Parity Multi Asset	3/15/2019	Panagora	Adams Street Partners - Fund 5	9/21/2012	StepStone Group
AFL-CIO	6/30/1991	AFL-CIO	Aether Real Assets IV	3/16/2016	StepStone Group
Wellington Real Total Return	2/26/2013	Northern Trust	Aether Real Assets III	11/27/2013	StepStone Group
Parametric Defensive Equity	7/23/2018	Northern Trust	Bay Area Equity Fund	6/14/2004	StepStone Group
Sit Short Duration	11/2/2016	Northern Trust	Bay Area Equity Fund II	12/7/2009	StepStone Group
DFA Short Credit	11/21/2016	Northern Trust	Carpenter Bancfund	1/31/2008	StepStone Group
Insight Short Duration	11/18/2016	Northern Trust	Commonfund	6/28/2013	StepStone Group
Parametric Overlay	3/29/2017	Northern Trust	EIF US Power Fund I	11/26/2003	StepStone Group
Cash	-	Northern Trust	EIF US Power Fund II	8/16/2005	StepStone Group
Angelo Gordon Energy Credit Opp	9/24/2015	StepStone Group	EIF US Power Fund III	5/30/2007	StepStone Group
StepStone CC Opportunities Fund	2/1/2018	StepStone Group	EIF US Power Fund IV	11/28/2011	StepStone Group
Torchlight II	9/30/2006	StepStone Group	EIF US Power Fund V	11/28/2016	StepStone Group
Torchlight III	12/31/2008	StepStone Group	Nogales	2/15/2004	StepStone Group
Torchlight IV	7/1/2012	StepStone Group	Paladin III	11/30/2007	StepStone Group
Torchlight V	7/1/2012	StepStone Group	Ocean Avenue Fund II	6/11/2014	StepStone Group
Angelo Gordon Realty Fund VIII	1/23/2012	Angelo Gordon	Ocean Avenue Fund III	4/15/2016	StepStone Group
Angelo Gordon Realty Fund IX	12/8/2014	Angelo Gordon	Pathway 6	5/24/2011	StepStone Group
DLJ RECP III	6/23/2005	DLJ	Pathway 7	2/7/2013	StepStone Group
DLJ RECP IV	2/11/2008	DLJ	Pathway	11/9/1998	StepStone Group
DLJ RECP V	7/1/2014	DLJ	Pathway 2008	12/26/2008	StepStone Group
DLJ RECP VI	3/19/2019	DLJ	Siguler Guff CCCERA Opps	6/3/2014	StepStone Group
LaSalle Income & Growth VI	7/16/2013	LaSalle	Siguler Guff Secondary Opps	11/30/2016	StepStone Group
LaSalle Income & Growth VII	2/28/2017	LaSalle	Siris Partners IV	3/15/2019	StepStone Group
Hearthstone II	6/17/1998	Hearthstone	TPG Healthcare Partners, L.P.	6/28/2019	StepStone Group
Long Wharf Fund IV	7/3/2013	Long Wharf	Trident VIII, L.P.	5/24/2019	StepStone Group
Long Wharf Fund V	9/30/2016	Long Wharf	Wastewater Opp. Fund	12/8/2015	StepStone Group
Invesco Real Estate II	11/26/2007	Invesco			
Invesco Real Estate III	6/30/2013	Invesco			

Other Disclosures

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

Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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