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San Luis Obispo County Pension Trust *SLOOPT*

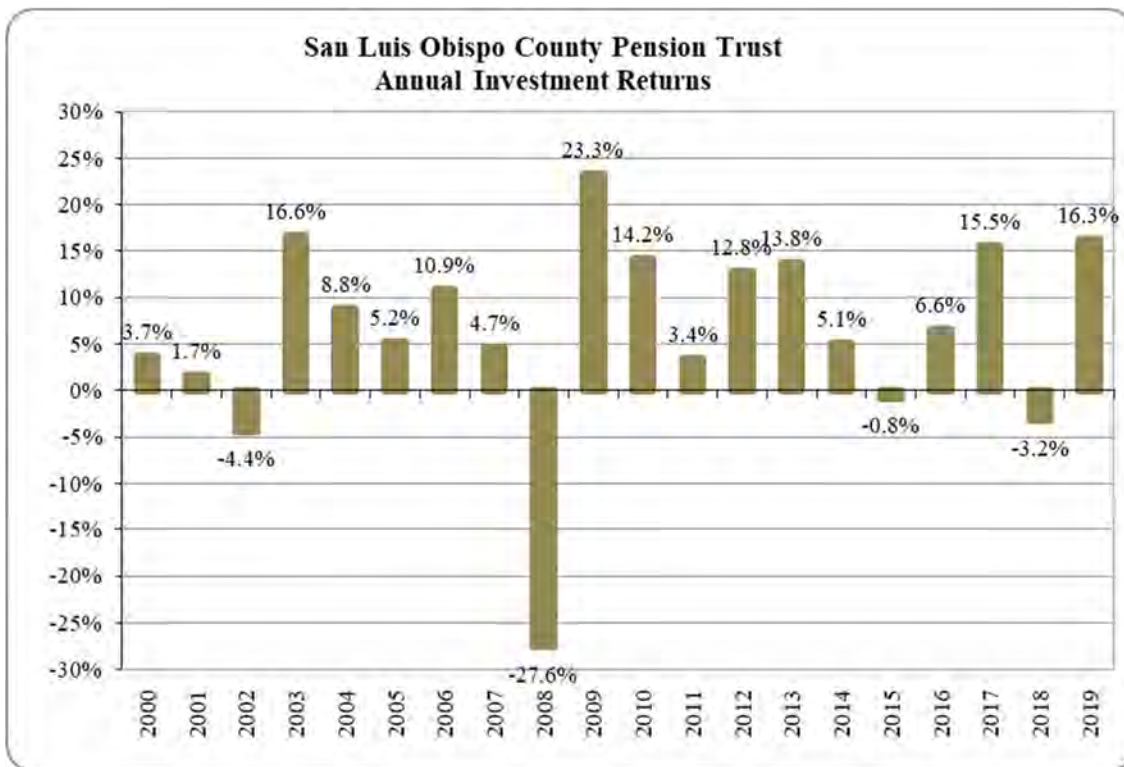
Date: February 24, 2020

To: Board of Trustees

From: Carl Nelson – Executive Secretary
Amy Burke – Deputy Executive Secretary

Agenda Item 7: Quarterly Investment Report for the 4th Quarter of 2019

Attached to this memo is the 4Q19 quarterly investment report prepared by the Trust's investment consultant Verus. Scott Whalen of Verus will make a detailed presentation and discuss the quarterly report. The 20 year history of the rates of return gross of fees of the Pension Trust are shown below as an extension of the data in the Verus report.



Respectfully submitted,

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**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: DECEMBER 31, 2019

Investment Performance Review for

San Luis Obispo County Pension Trust

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[VERUSINVESTMENTS.COM](https://www.verusinvestments.com)

SEATTLE 206-622-3700

LOS ANGELES 300-297-1777

SAN FRANCISCO 415-362-3484

Investment Landscape

TAB I

Investment Performance
Review

TAB II



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

1ST QUARTER 2020
Investment Landscape

Recent Verus research

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

Annual outlooks

CAPITAL MARKET ASSUMPTIONS

Some important developments occurred in the last year. During our 2020 Capital Market Assumptions webinar, we discussed:

- Market movements of 2019 and how these shifts have affected our long-term outlook
- The impact of falling interest rates on fixed income expectations
- Why it is important to differentiate between shorter-term and longer-term forecasting exercises

Topics of interests

WHY BENCHMARKS MATTER

In this Topics of Interest paper, we seek to outline the importance of benchmark selection within the investment process. The white paper addresses the following points:

- Benchmarks which appear similar can behave very differently, even over long periods of time
- Unconsidered benchmark selection can introduce uncompensated tracking error
- Tools available to investors to assist in determining appropriate benchmark indexes

RISK IN MANAGER SELECTION

In our latest Topics of Interest paper, we provide a framework for assessing the candidacy of a manager for portfolio inclusion and consider the implications of one manager versus alternatives. It addresses the following questions:

- Does the manager add a desired exposure?
- Does the manager exhibit skill?
- What does the manager add to the broader portfolio relative to other candidates?

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4th quarter summary

THE ECONOMIC CLIMATE

- Real GDP grew at a 2.1% rate year-over-year in the third quarter (2.1% quarterly annualized rate). Falling imports and weak fixed investment (-0.2% contribution) acted as a drag on growth, while personal consumption continued to be the greatest driver of growth. **p. 7**
- U.S. and Chinese negotiators signed the “phase one” trade agreement, and Boris Johnson’s Conservative Party in the U.K. won a decisive victory. These events appear to have removed some uncertainty from the geopolitical landscape over the short- to intermediate-term. **p. 15**

PORTFOLIO IMPACTS

- Global equity markets exhibited strong performance through Q4, and U.S. equity performance was in-line (MSCI ACWI +9.0%, S&P 500 +9.1%). Emerging markets were the top performing asset class (+11.8%). **p. 40**
- U.S. headline inflation increased 2.3% YoY in December, alongside the core inflation growth figure, and up from 1.7% in September. Although this was a notable jump in the inflation rate, investors appear more concerned about global deflationary forces, as indicated by the 10yr U.S. TIPS Breakeven Inflation Rate of 1.73%. Cyclical price pressures remain surprisingly absent from the current environment. **p. 9**

THE INVESTMENT CLIMATE

- In October, the Federal Open Market Committee cut interest rates by 0.25% to a new range of 1.50 – 1.75%. This marked the third consecutive rate cut by the committee. **p. 18**
- Global sovereign bond yields picked up modestly in Q4, on higher inflation and growth prospects. The dollar value of negative-yielding outstanding debt fell from nearly \$15 trillion to just above \$11 trillion. Central bankers appealed for fiscal action, citing the limited capacity of monetary policy to sustain further economic expansion. **p. 18**

ASSET ALLOCATION ISSUES

- Most risk assets provided sizable gains in Q4. Global equities delivered +9.0%, U.S. high yield increased +2.6%, and Emerging Market Local Debt rose +5.2%. Longer duration fixed income saw losses as interest rates rebounded. **p. 40**
- The U.S. dollar weakened -0.5% against both developed and emerging currencies in Q4, reversing moves of the prior quarter. Dollar volatility remains low relative to the big swings that occurred throughout 2014-2018. **p. 35**
- Although risk assets appear to have rocketed higher in 2019, which may create concerns over valuations, it is important to note that much of this performance was due to assets recovering from a sharp fall in late-2018. **p. 25**

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

What drove the market in Q4?

“U.S. trade deficit falls 7.6% in October to 16-month low on decline in Chinese imports”

U.S. FEDERAL TRADE DEFICIT (\$BILLIONS)

Jun	Jul	Aug	Sep	Oct	Nov
53.7	52.7	53.5	51.1	46.9	43.1

Article Source: MarketWatch, December 5th, 2019

“As markets climb higher, are stocks becoming overvalued?”

BLENDED FORWARD 12-MONTH P/E RATIO OF THE S&P 500 INDEX

Jul	Aug	Sep	Oct	Nov	Dec
17.0x	16.6x	16.9x	17.3x	17.8x	18.3x

Article Source: CNBC, December 30th, 2019

“Fed ‘prepared to adjust’ balance sheet to prevent repo market flare-up”

MONTHLY CHANGE IN THE SIZE OF THE FED BALANCE SHEET (\$BILLIONS)

Jul	Aug	Sep	Oct	Nov	Dec
-47.7	-19.2	97.8	162.1	33.1	112.7

Article Source: Yahoo Canada Finance, December 11th, 2019

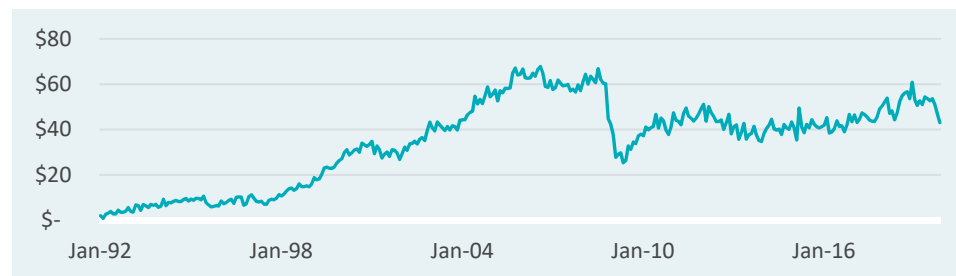
“China’s pork price jumps 110 per cent, sending consumer inflation rocketing to eight-year high”

CHINA CPI INFLATION (YoY % CHANGE)

Jul	Aug	Sep	Oct	Nov	Dec
2.8	2.8	3.0	3.8	4.5	4.5

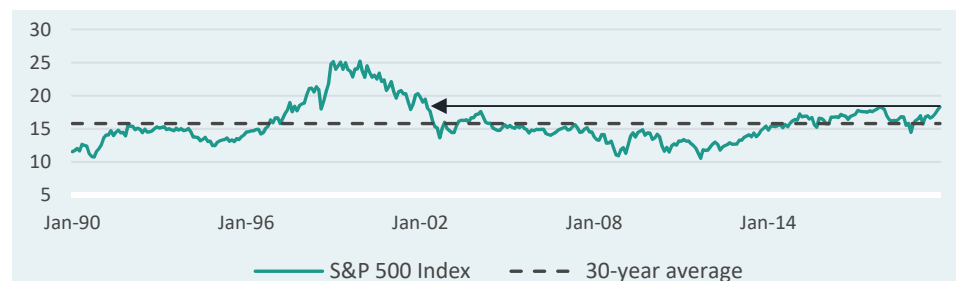
Article Source: South China Morning Post, December 10th, 2019

U.S. MONTHLY TRADE DEFICIT (BILLIONS)



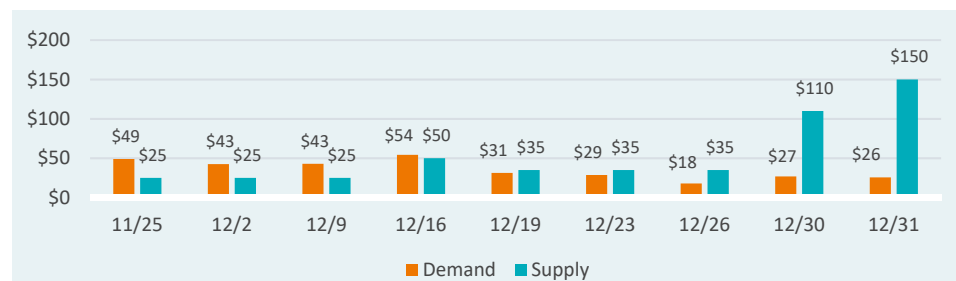
Source: Bloomberg, as of 11/30/19

FORWARD PRICE/EARNINGS RATIO (BLENDED 12-MONTH EARNINGS)



Source: Bloomberg, as of 12/31/19.

YEAR-END LIQUIDITY OFFERED UP BY THE NEW YORK FED (BILLIONS)



Source: New York Fed, as of 12/31/19.

Economic environment

U.S. economics summary

- Real GDP grew at a 2.1% rate year-over-year in the third quarter (2.0% quarterly annualized rate). Falling imports and weak fixed investment (-0.2% contribution) acted as a drag on growth, while personal consumption continued to be the greatest driver of growth.
- U.S. headline inflation came in at 2.3% YoY in December, in line with the core inflation growth figure. Despite more than 10 years of economic expansion, cyclical price pressures seem surprisingly absent from the current environment. Investors appear more concerned about global deflationary forces.
- The U.S. labor market showed further strength in the fourth quarter and unemployment remained at 50-year lows of 3.5%.
- Consumer sentiment indicators remain near all-time-highs and improved slightly over the quarter.
- American households are in a

strong financial position, with balance sheets that appear increasingly robust. At the end of Q3, U.S. household debt outstanding was equal to about 74% of GDP, the healthiest level since Q4 2001.

- U.S. and Chinese negotiators signed the “phase one” agreement on trade, and Boris Johnson’s Conservative Party won a decisive victory in the U.K. These developments may ease some of the economic uncertainty across the global economy, providing a tailwind to future growth.
- Existing home sales grew +2.7% YoY in November. New home sales, a far smaller portion of the overall market, grew at a stronger rate of +16.9% YoY, as construction activity further accelerated. Rising homebuilder activity in recent years may ease some of the low inventory pressures in the current market environment.

	Most Recent	12 Months Prior
GDP (YoY)	2.1% <i>9/30/19</i>	3.1% <i>9/30/18</i>
Inflation (CPI YoY, Core)	2.3% <i>12/31/19</i>	2.2% <i>12/31/18</i>
Expected Inflation (5yr-5yr forward)	1.8% <i>12/31/19</i>	1.8% <i>12/31/18</i>
Fed Funds Target Range	1.50 – 1.75% <i>12/31/19</i>	2.25 – 2.50% <i>12/31/18</i>
10 Year Rate	1.9% <i>12/31/19</i>	2.7% <i>12/31/18</i>
U-3 Unemployment	3.5% <i>12/31/19</i>	3.9% <i>12/31/18</i>
U-6 Unemployment	6.7% <i>12/31/19</i>	7.6% <i>12/31/18</i>

GDP growth

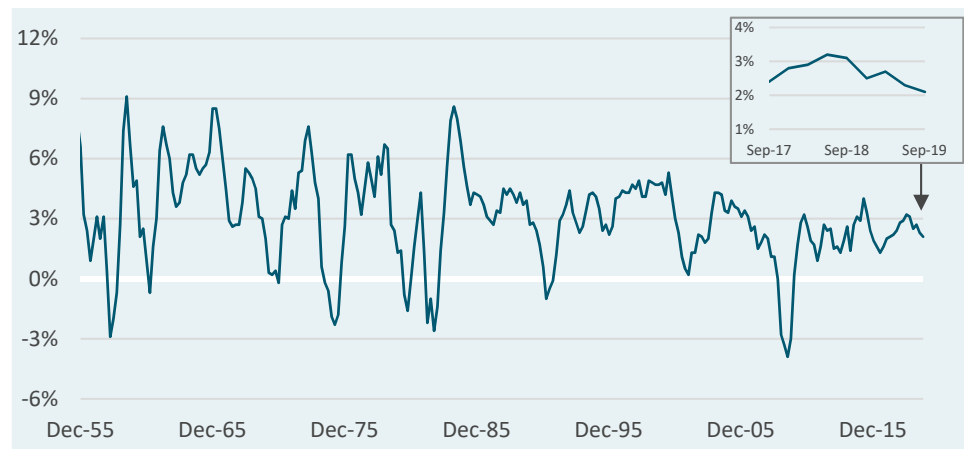
Real GDP grew at a 2.1% rate year-over-year in the third quarter (2.1% quarterly annualized rate). Falling imports detracted -0.3% from the overall GDP print, along with weak fixed investment (-0.2% contribution). Personal consumption, the largest component of gross domestic product, continued to drive the economy forward. The U.S. economy is pacing near the 2.0% rate that economists generally expect for full year 2020.

While trade policies and conflict likely resulted in a mild drag on economic growth in 2019, the U.S. and China have signed

the “phase one” trade deal. A partial trade resolution, or at least an indication that negotiations are headed in a more positive direction, could provide a lift to the economy and markets.

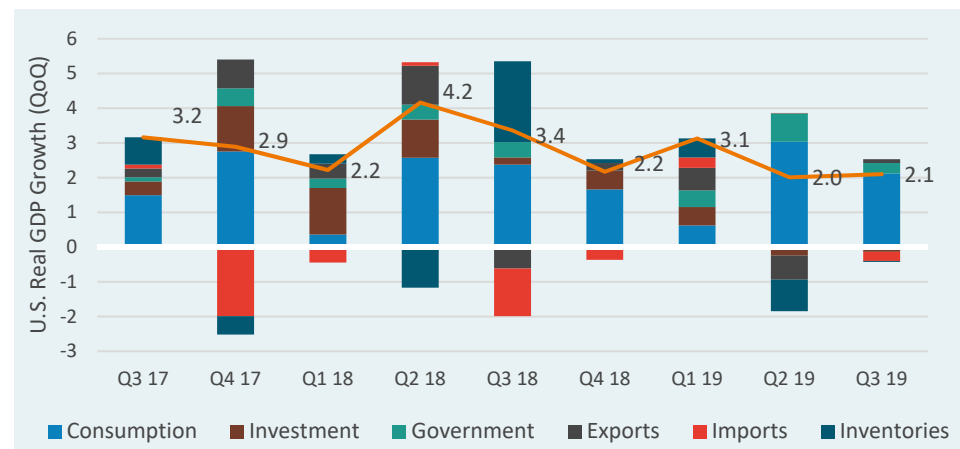
On January 17th, the Federal Reserve Bank of Atlanta GDPNow forecast indicated GDP growth of 1.8% in the fourth quarter. This forecast dipped recently due to weak personal consumption expenditures.

U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 9/30/19

U.S. GDP GROWTH ATTRIBUTION



Source: BEA, annualized quarterly rate, as of 9/30/19

Inflation

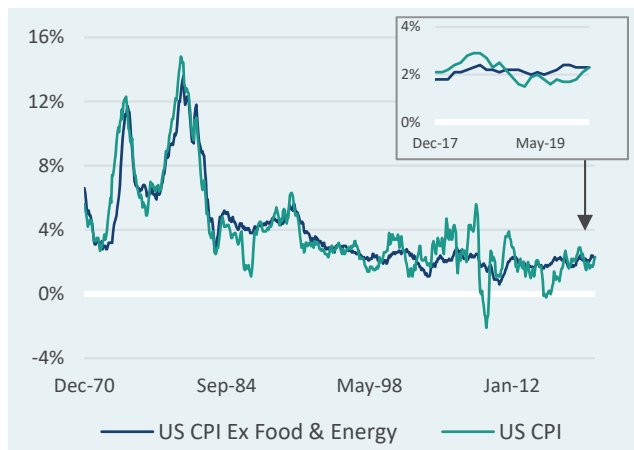
U.S. headline inflation increased 2.3% YoY in December, in line with the core inflation growth figure, and up from 1.7% in September. Although this is a notable jump in the inflation rate, investors appear more concerned about global deflationary forces. Cyclical price pressures remain surprisingly absent from the current environment.

During the quarter, the market's pricing of inflation increased from a low of 1.48% to 1.73%. While the breakeven rate has risen materially from its cycle low of 1.18% achieved in February 2016, it remains depressed by historical standards.

Consumer expectations moved in the opposite direction, falling from 2.7% at the beginning of the year to 2.3% in December.

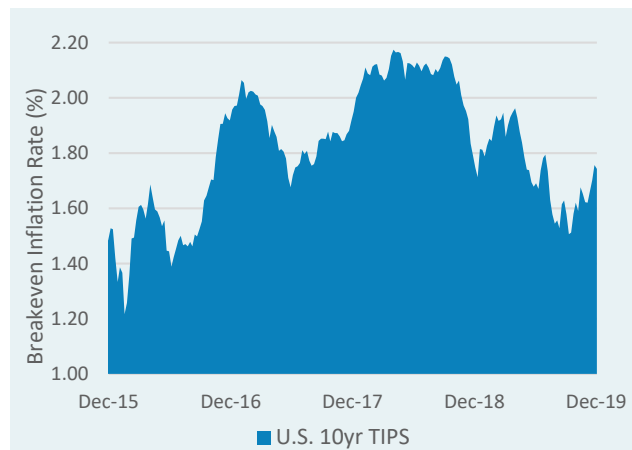
We believe it is likely that inflation will remain subdued. But it is also worth noting that if inflation or inflation fears returned to the markets, this might place central banks in a perilous position. It is doubtful that central banks could hike interest rates for any sustained period of time without risking recession.

U.S. CPI (YOY)



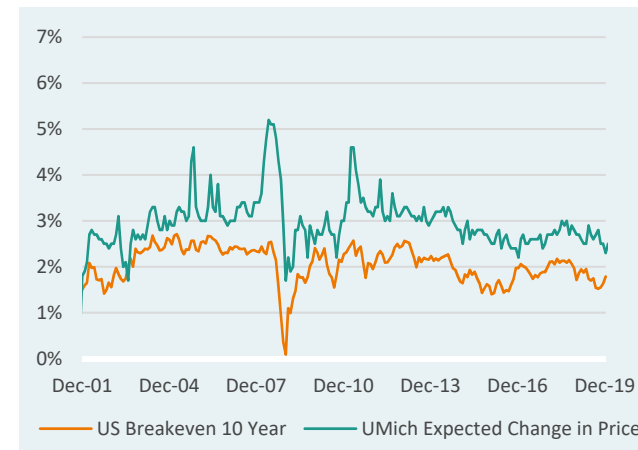
Source: Bloomberg, as of 12/31/19

U.S. BREAKEVEN INFLATION RATE



Source: FRED, as of 12/31/19

INFLATION EXPECTATIONS



Source: Bloomberg, as of 12/31/19

Labor market

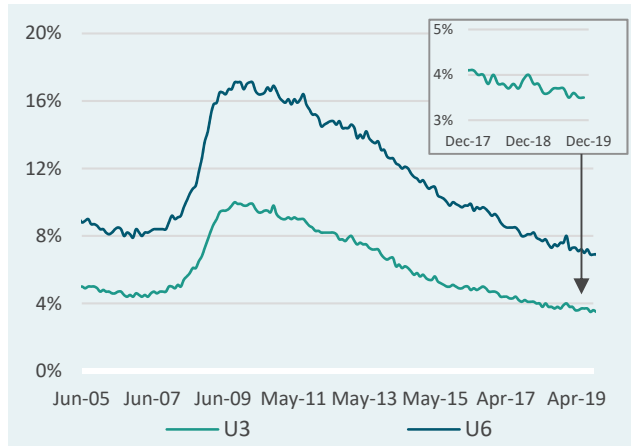
The U.S. labor market continued to show strength in Q4 and unemployment remained at 50-year lows of 3.5%. Year-over-year growth in non-farm payroll additions slowed to its lowest level since September 2017 at 1.4%. Nearly 1.24 jobs are now available per unemployed worker in the labor force, which suggests there is a limited remaining supply of workers to meet business hiring demands.

Average hourly earnings for production and nonsupervisory employees grew 3.0% year-over-year in December, outpacing inflation (2.3%). Sustained real wage growth would support sentiment, which is near cycle highs.

One plausible case for strong consumption to continue hinges on the fact that several key unemployment rates are near historic lows. The unemployment rate for workers who are at least 25 years old and lack high school diplomas (5.3%) is at an at all-time-low level since the data was first recorded in the year 2000. Typically, workers with less education earn less in nominal terms, but have a higher marginal propensity to consume per each dollar earned. These recent increases in employment for those workers who are more likely to spend may lead to outsized positive impacts on economic growth.

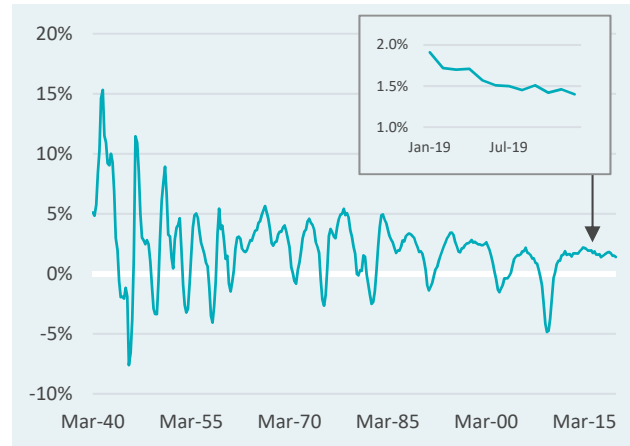
U.S. labor market remains strong, though further upside may be limited

U.S. UNEMPLOYMENT



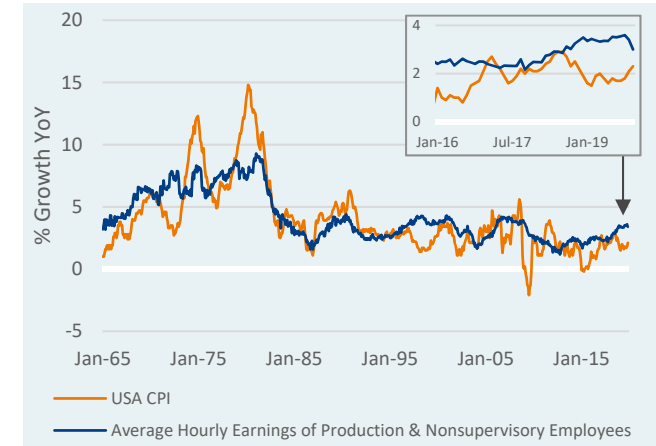
Source: FRED, as of 12/31/19

NON-FARM PAYROLL GROWTH (YOY)



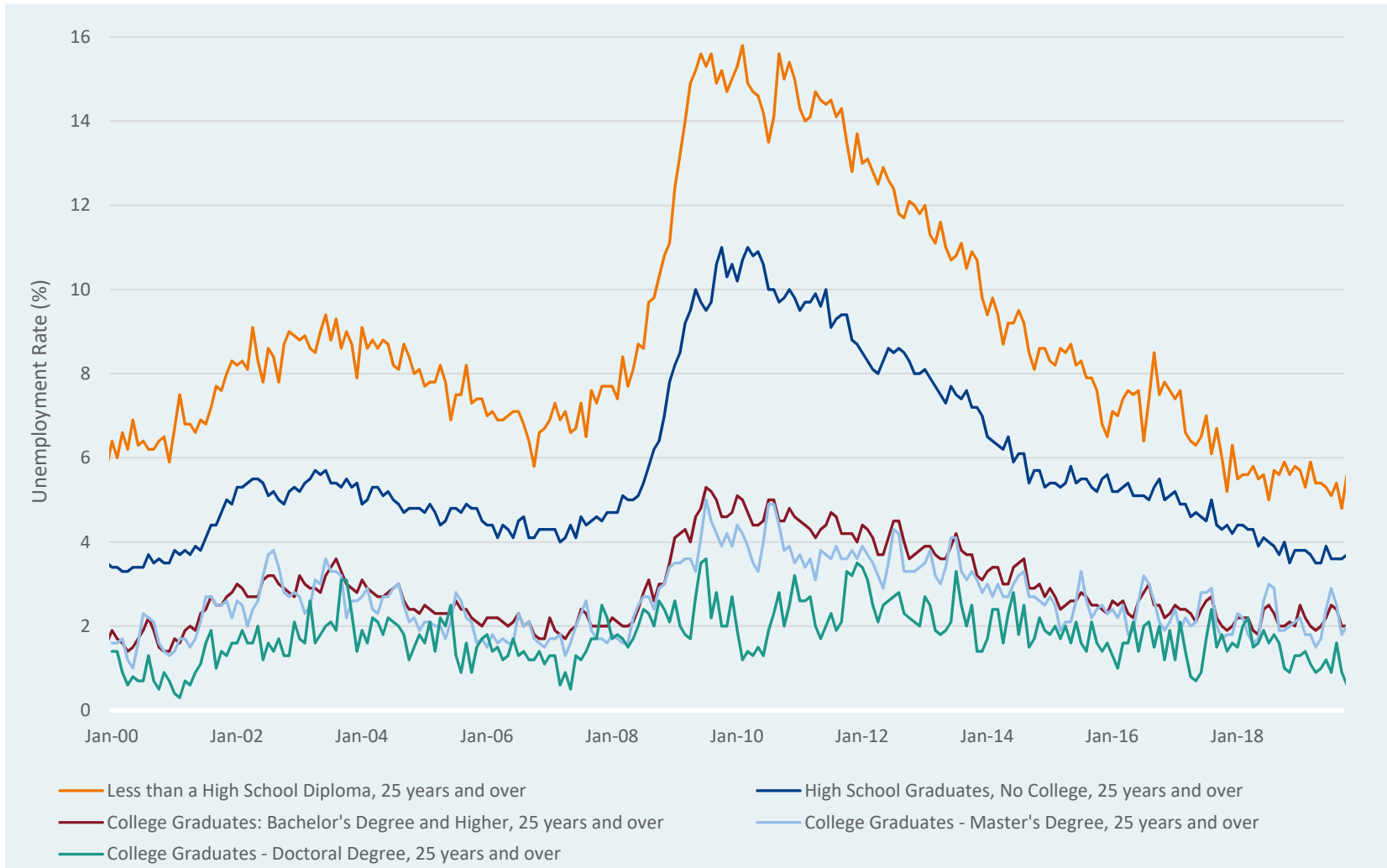
Source: BLS, as 12/31/19

U.S. WAGE GROWTH



Source: FRED, as of 11/30/19

U.S. unemployment



The U.S. job market is very strong, for all levels of education

Source: FRED, as of 11/30/19

The consumer

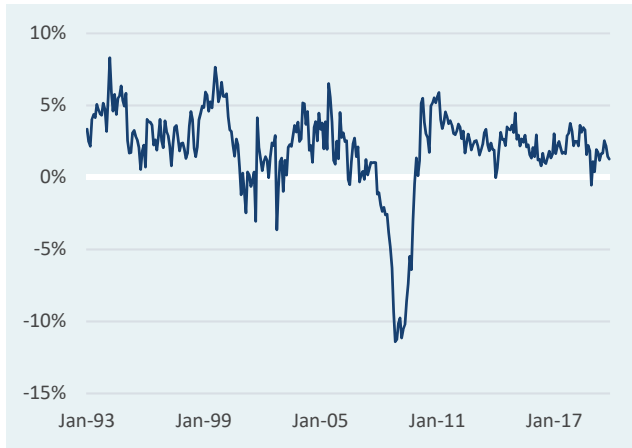
The U.S. consumer continued to push the U.S. economy forward, supported by low unemployment, solid wage gains, and high sentiment. American households are in a strong financial position, with balance sheets that appear robust. At the end of Q3, U.S. household debt outstanding was equal to about 74% of GDP, the healthiest level since Q4 2001.

Retail sales growth slid a bit in real terms, but much of this move was due to a pickup in inflation. The price of a barrel of WTI crude oil rose from \$53 to \$61, helping to propel year-over-year growth in headline inflation from 1.7% to 2.3%. Overall, retail sales growth remains solid, and has been boosted

recently by a surge in e-commerce sales. Cyber Monday sales grew nearly 20% this year, hitting a record \$9.4 billion U.S. dollars according to data from Adobe Analytics. Shoppers' carts were also about 6% larger at checkout than they were last year, perhaps hinting at a more optimistic consumer outlook.

Credit conditions remain benign. Credit-card borrowing ticked down slightly and was offset by faster growth in auto and student loans. Some might consider credit-card debt "worse debt" and auto and student loan debt "better debt" in that prudent investments in transportation and human capital are likely higher-returning than ultra-short-term consumption.

REAL RETAIL SALES GROWTH (YOY)



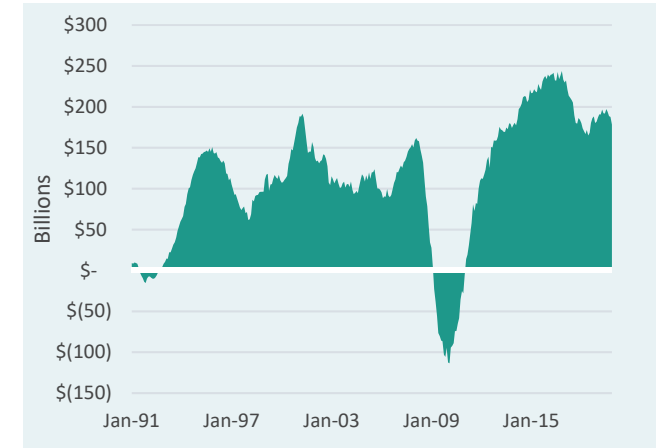
Source: FRED, as of 11/30/19

E-COMMERCE SALES GROWTH (QUARTERLY YOY)



Source: U.S. Census Bureau, Bloomberg, as of 9/30/19

12-MONTH GROWTH IN CONSUMER CREDIT



Source: Federal Reserve, Bloomberg, as of 11/30/19

Sentiment

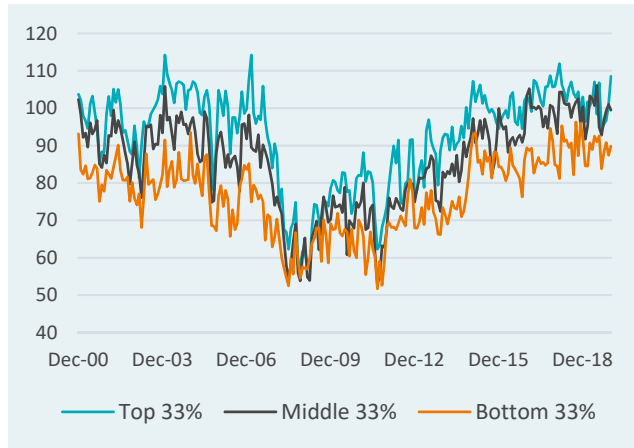
Consumer sentiment indicators remain near all-time-highs and improved slightly as a number of closely-followed geopolitical storylines appeared to move closer to resolution. The U.S. and China “phase one” trade deal, and the victory of Boris Johnson’s Conservative Party in the U.K. appears to have at least removed some uncertainty from the geopolitical landscape over the short- to intermediate-term.

Over the quarter, the difference between the sentiment reading for the top third of income earners and the bottom

third of income earners moved from the 10th percentile to the 65th percentile of monthly periods since 2001, indicating a widening in the gap between the “haves” and “have-nots”.

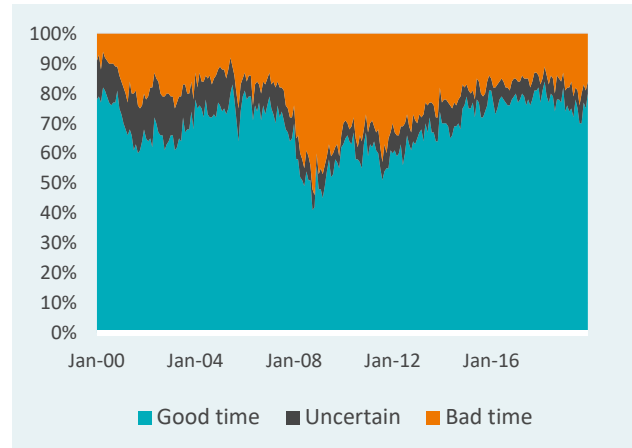
Consumers view the economic conditions for buying big-ticket household items such as furniture, refrigerators and televisions as close to as favorable as they have been over the course of the expansion. This belief appears to be rooted in dual expectations for job security and real wage gains.

CONSUMER SENTIMENT BY INCOME BRACKET



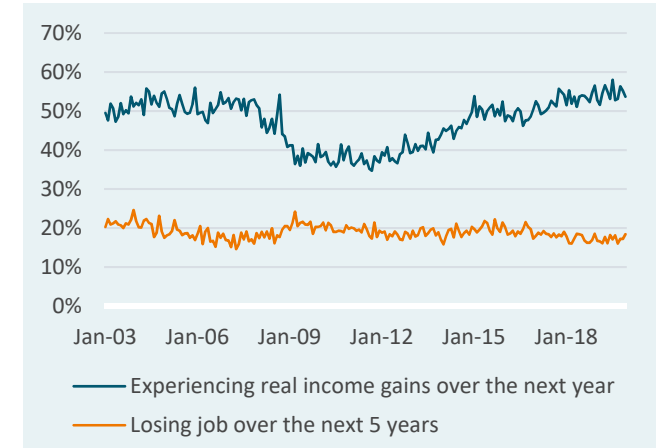
Source: University of Michigan, as of 12/31/19

CONDITIONS FOR BUYING BIG-TICKET ITEMS (%)



Source: University of Michigan, as of 12/31/19

CONSUMER FEAR GAUGE



Source: University of Michigan, as of 12/31/19

Housing

In the first half of 2019 the housing market appeared to be cooling off, coming down from a strong boom throughout the recent economic expansion. The average home sales price is down -8% from the highs of late-2017, although other variables such as the types and location of homes sold can impact these numbers. Homebuilding activity ticked up in the second half of the year as homebuilder sentiment jolted higher in 2019.

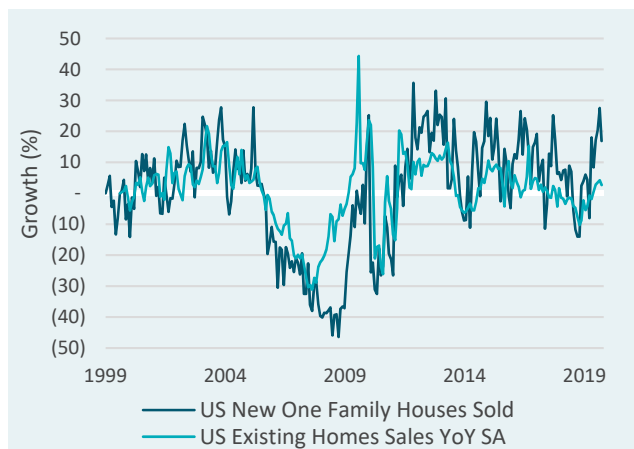
Existing home sales grew +2.7% YoY in November. New home sales, a far smaller portion of the overall market, grew at a stronger rate of +16.9% YoY, as construction activity further accelerated. Rising homebuilder activity in recent years may

ease some of the low inventory pressures in the current market environment.

The housing boom has contributed to a rebound in the U.S. homeownership rate. A decade-long trend away from buying and towards renting appears to have reversed in mid-2016. Since that time, the rate of homeownership has risen to 64.7% from a low of 63.1%.

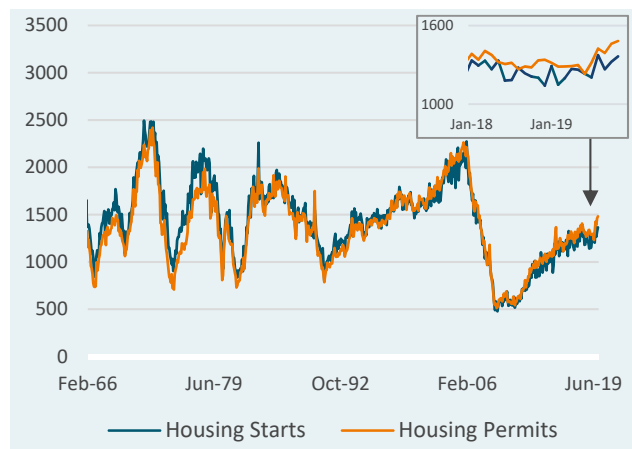
It is always helpful to remember that home price trends can vary meaningfully by location, which means national statistics are sometimes difficult to interpret at a local level.

U.S. HOME SALES (YOY)



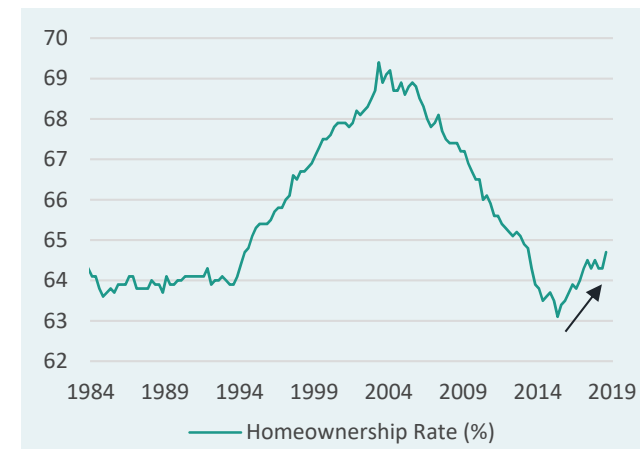
Source: FRED, as of 11/30/19

HOUSING STARTS & PERMITS



Source: Bloomberg, NAHB, as of 11/30/19 (see appendix)

HOMEOWNERSHIP RATE



Source: FRED, as of 9/30/19

International economics summary

- The growth of international developed economies remains in a range of 0.5% to 2.0%, near the 2.1% growth rate of the slowing U.S. economy.
- In January, the IMF forecasted 2.9% global growth in 2019 and an acceleration to 3.3% in 2020. These growth expectations were 0.1% lower than the previous quarter's report, and were mostly a result of downward adjustments to emerging markets expectations.
- Inflation continues to be muted across international developed markets, keeping more options on the table for central banks to step in as needed with accommodative policy.
- The U.K. general election in December resulted in a landslide victory for Boris Johnson. The election, through a consolidation of Tory party power, effectively guarantees that Brexit will ultimately be carried out.
- While the global economy has exhibited mild growth, labor markets continue to tighten across the board. By traditional unemployment measures, job markets are now stronger than pre-2008 levels in most major economies.
- U.S. and Chinese negotiators signed the “phase one” agreement on trade, and the decisive victory of Boris Johnson's Conservative Party in the U.K. appears to have at least removed some uncertainty from the geopolitical landscape over the short- to intermediate-term.
- China has experienced a significant jump in inflation to 4.5% as an outbreak of African swine fever resulted in a doubling of pork prices. This compares to a 5-year average inflation rate of 1.9%. An acceleration of inflation may create issues for Chinese leadership in an already-slowing economy.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.1% <i>9/30/19</i>	2.3% <i>12/31/19</i>	3.5% <i>12/31/19</i>
Eurozone	1.2% <i>9/30/19</i>	1.3% <i>12/31/19</i>	7.5% <i>11/30/19</i>
Japan	1.7% <i>9/30/19</i>	0.9% <i>12/31/19</i>	2.2% <i>11/30/19</i>
BRICS Nations	4.9% <i>9/30/19</i>	4.4% <i>12/31/19</i>	5.1% <i>9/30/19</i>
Brazil	1.2% <i>9/30/19</i>	4.3% <i>12/31/19</i>	11.2% <i>11/30/19</i>
Russia	1.7% <i>9/30/19</i>	3.1% <i>12/31/19</i>	4.6% <i>11/30/19</i>
India	4.5% <i>9/30/19</i>	7.4% <i>12/31/19</i>	8.5% <i>12/31/17</i>
China	6.0% <i>9/30/19</i>	4.5% <i>12/31/19</i>	3.6% <i>9/30/19</i>

International economics

The United States grew at a pace of 2.1% year-over-year in the third quarter, moving more closely in line with other developed nations which have posted growth of 1.0%-2.0%.

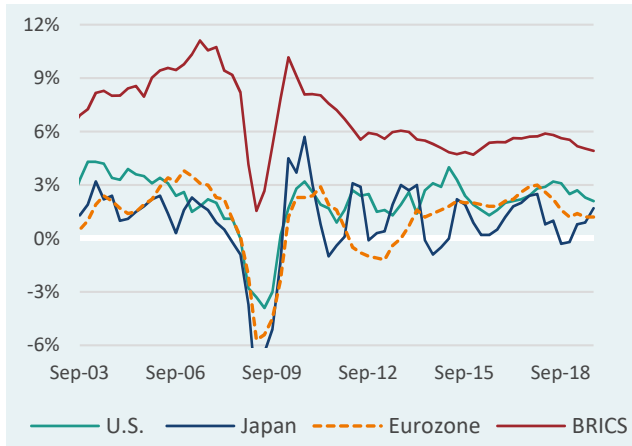
While the global economy has exhibited mild growth, labor markets continue to tighten across the board. By traditional unemployment measures, job markets are now stronger than pre-2008 levels in most major economies.

Inflation has remained subdued across international developed markets, and many pundits have viewed the mild inflation data as a cue for central banks to step in and

attempt to bolster economic growth through more accommodative policy. Inflation remains muted in emerging economies, and most economies are experiencing CPI below the 5-year average.

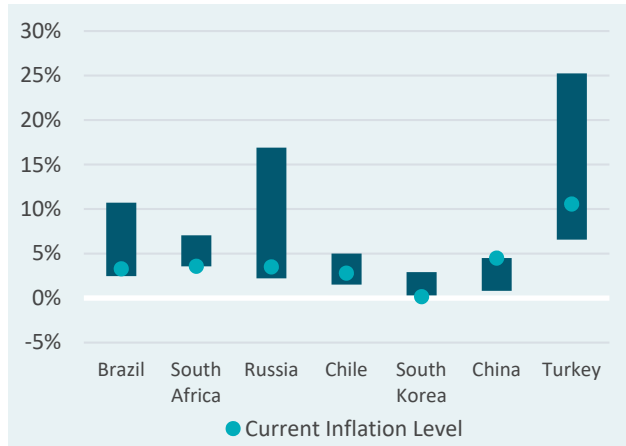
China's inflation rate has become an outlier, jumping to 4.5% as an outbreak of African swine fever resulted in a doubling of pork prices in the country during the year. This compares to a 5-year average inflation rate of 1.9%. Prices of other meats in China have also increased on heightened demand for pork substitutes. An acceleration of inflation may create issues for Chinese leadership in an already-slowing economy.

REAL GDP GROWTH (YOY)



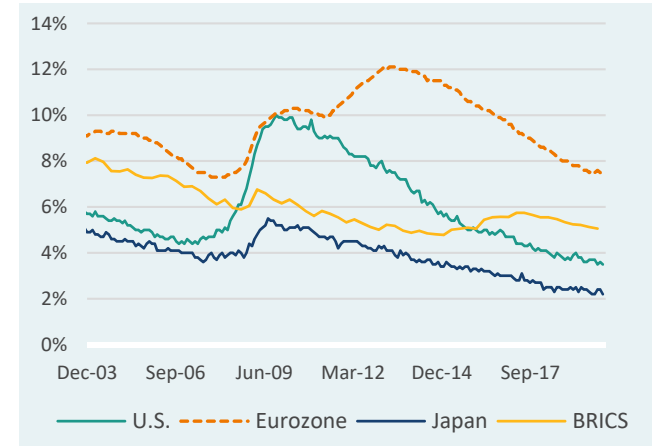
Source: Bloomberg, as of 9/30/19

INFLATION (CPI YOY)



Source: Bloomberg, inflation range of past 5 years, as of 11/30/19

UNEMPLOYMENT RATE



Source: Bloomberg, as of 11/30/19 or most recent release

Fixed income rates & credit

Interest rate environment

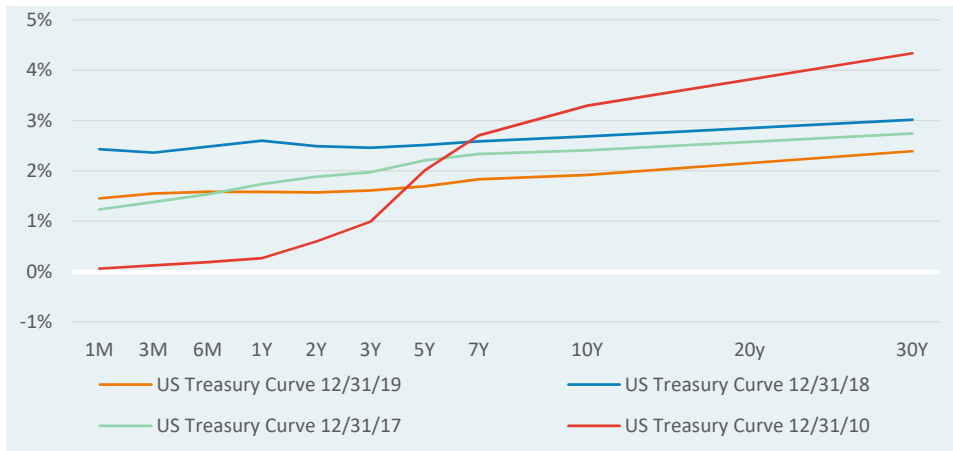
- The global sovereign bond rally lost steam in Q4 as inflation and growth prospects mildly reflat. Central bankers at the European Central Bank and the Federal Reserve signaled that policy would likely remain on hold in the absence of significant economic developments.
- Global ten-year sovereign bond yields picked up moderately, most significantly in Europe. Over the quarter, the U.S.-dollar value of global outstanding negative-yielding debt fell from nearly \$15 trillion to just above \$11 trillion.
- In October, the Federal Open Market Committee cut the range for its benchmark interest rate by 0.25% to a new range of 1.50 to 1.75%.
- Diversity of opinion among FOMC participants about the path of interest rates has faded. Most members now expect rates to remain flat in 2020, and move back toward 2.50% over the longer term.
- The New York Fed conducted a series of term repurchase operations aimed at providing sufficient liquidity for firms to get through the year-end turn when demand for cash typically surges. The Fed balance sheet grew by \$300B in Q4, and analysts continue to debate whether the Fed’s involvement in repo markets should be considered “technical” or “stimulative” in nature.
- The Governing Council of the ECB decided to leave key interest rates unchanged and confirmed that net asset purchases to the tune of €20 billion per month had begun in November.
- In Christine Lagarde’s first major move as President, she announced the ECB’s first Strategic Policy review since 2003, which will begin in January and will address a wide range of topics, including: low inflation, the price-stability goal, climate change, and cryptocurrency.

Area	Short Term (3M)	10-Year
United States	1.54%	1.92%
Germany	(0.78%)	(0.19%)
France	(0.65%)	0.12%
Spain	(0.61%)	0.47%
Italy	(0.34%)	1.41%
Greece	0.26%	1.47%
U.K.	0.69%	0.82%
Japan	(0.10%)	(0.01%)
Australia	0.94%	1.37%
China	2.43%	3.14%
Brazil	4.30%	6.79%
Russia	4.95%	6.36%

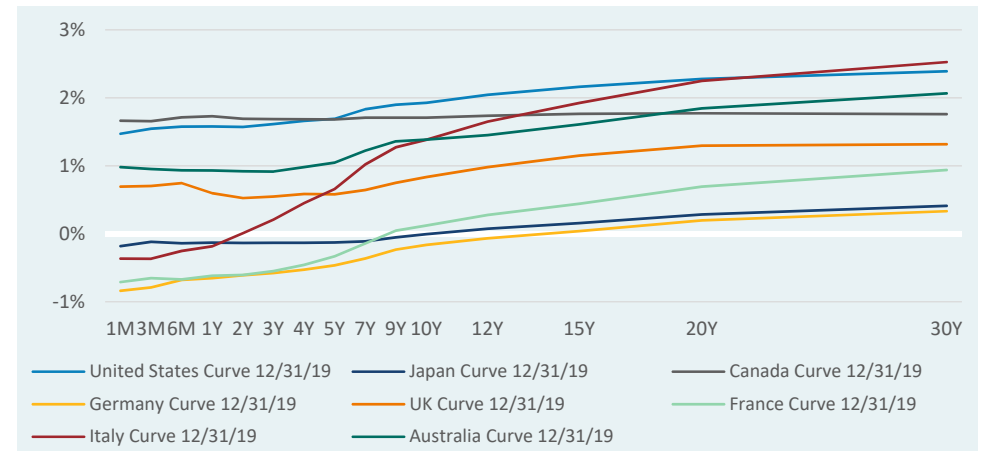
Source: Bloomberg, as of 12/31/19

Yield environment

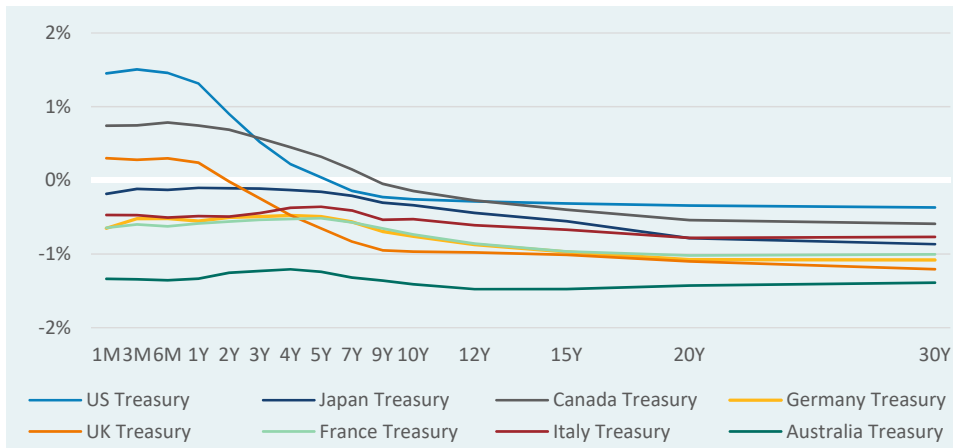
U.S. YIELD CURVE



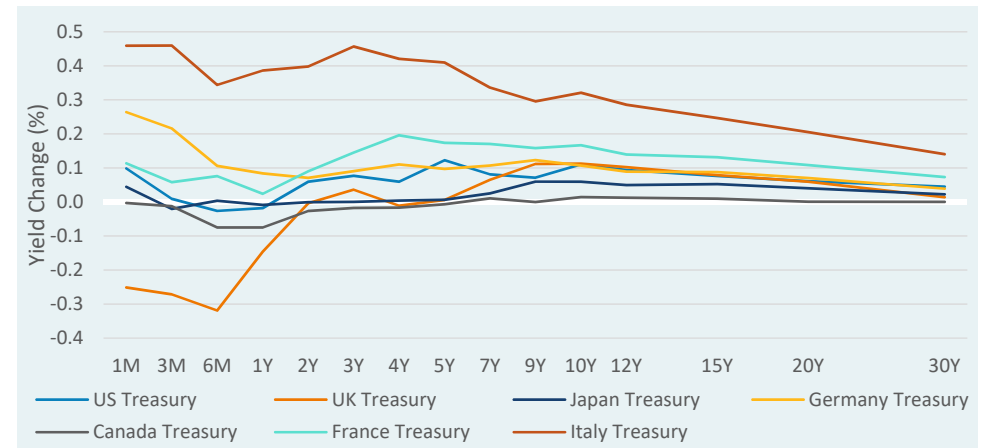
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 12/31/19

Credit environment

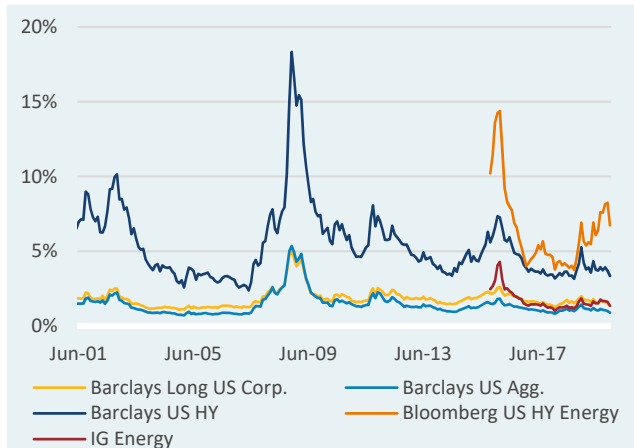
Credit enjoyed a positive 2019 driven by tightening spreads. Both investment grade and below-investment grade assets remained somewhat stable over the period. In high yield, CCCs and energy-related bonds were the best performers during Q4. High yield spreads tightened meaningfully over the year and the quarter (190 bps and 37 bps, respectively). Investment grade bonds also enjoyed positive performance fueled by this year's rate rally, attractive profit margins, and continued demand from investors for higher quality credit.

In the fourth quarter, high yield bonds have returned +3.4%, materially outperforming bank loans (+1.7%) and investment grade credit (+1.1%). In 2019, high yield bonds have returned +14.4%, materially outperforming bank loans (+8.6%) and slightly

outperforming investment grade credit (+13.8%). Bank loans have experienced outflows for much of the year driven by lessening demand for the asset class.

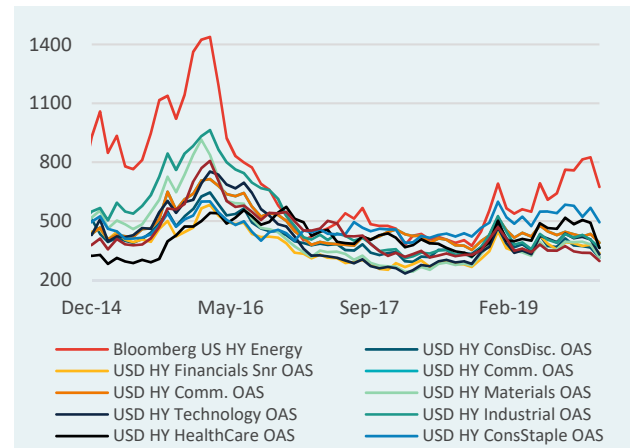
Based on concerns over late-cycle behavior in credit markets, we do not believe investors are being adequately compensated for credit risk. Late-cycle volatility tends to coincide with widening credit spreads and higher propensity for default activity. An underweight to U.S. investment grade, high yield credit, and bank loans may be warranted, with an overweight to emerging market debt which appears to offer more attractive value. This positioning should result in an overall neutral credit risk stance. Within U.S. markets, higher quality and more liquid assets appear most attractive.

SPREADS



Source: Barclays, Bloomberg, as of 12/31/19

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 12/31/19

Market	Credit Spread (OAS)	
	12/31/19	12/31/18
Long U.S. Corp	1.4%	2.0%
U.S. Inv Grade Corp	0.9%	1.5%
U.S. High Yield	3.4%	5.3%
U.S. Bank Loans*	4.4%	5.1%

Source: Barclays, Credit Suisse, Bloomberg, as of 12/31/19

*Discount margin (4-year life)

High yield – what’s in it?

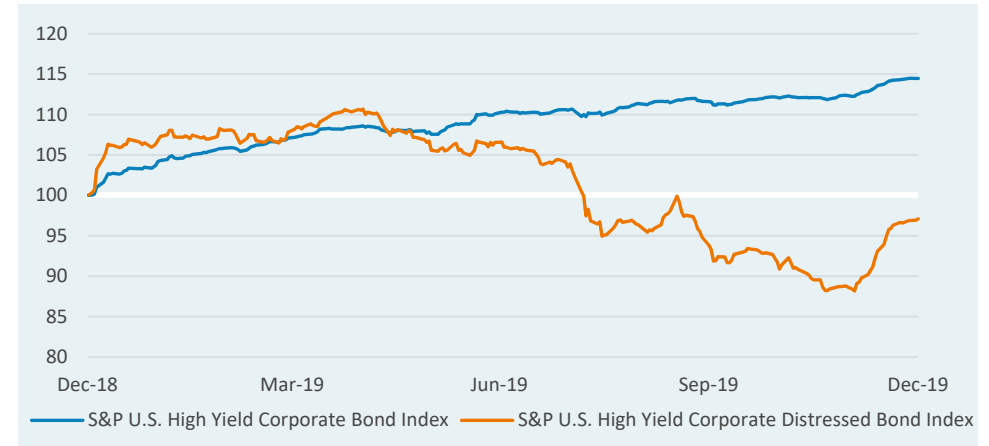
The high yield market rallied in 2019 to provide double digit positive returns for only the fourth time since the 2008-2009 global financial crisis. However, the market was characterized by significant divergences as investors rotated into upper-tier credits relative to lower-tier credits due to volatility and geopolitical uncertainty picking up during the year. This was evidenced by the ratio of CCC/BB credit spread levels, which climbed to levels last seen two decades ago. Investors generally see CCC credits as a proxy for less liquid and/or more complex situations and risks, especially relative to the BB segment.

The distressed market was negatively impacted by investor distaste for less liquid risk during the year. This was particularly true in the energy sector, and in certain retail and healthcare industries. Selling pressures peaked in November as the riskiest segment of the high yield market suffered losses in excess of those experienced during the 2018 year-end drawdown. Market participants pulled money from the space, which resulted in significant redemptions amongst distressed-focused hedge funds and even closures of hedge funds that had previously successfully navigated the global financial crisis.

CCC/BB SPREAD RATIO



HIGH YIELD VS. HIGH YIELD DISTRESSED (INDEXED 12/31/2018=100)



Source: Standard & Poor’s, J.P. Morgan, Wall Street Journal, as of 12/31/19

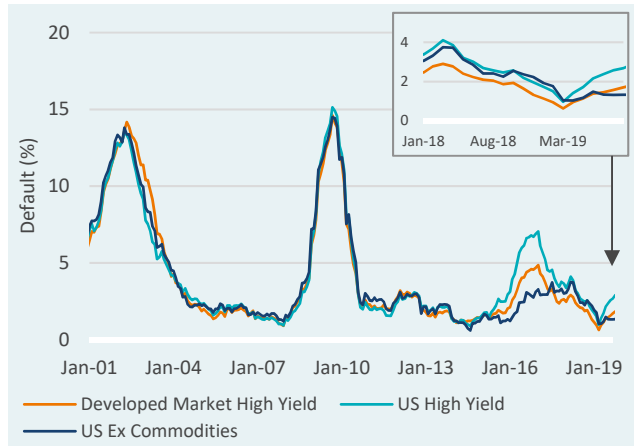
Default & issuance

Default activity for 2019 was slightly higher than 2018 by roughly 0.8%. This was mainly due to elevated defaults in commodity-related industries such as energy and metals/mining. The par-weighted default rate for high yield ended the year at 2.6% and remained below its long-term average range of 3.0-3.5%.

For loans, the par-weighted default rate for 2019 was 1.6% and remained below the long-term average of 3.1%, according to data from J.P. Morgan. Notably, defaults in commodity-related sectors accounted for essentially half of the year's default/distressed activity.

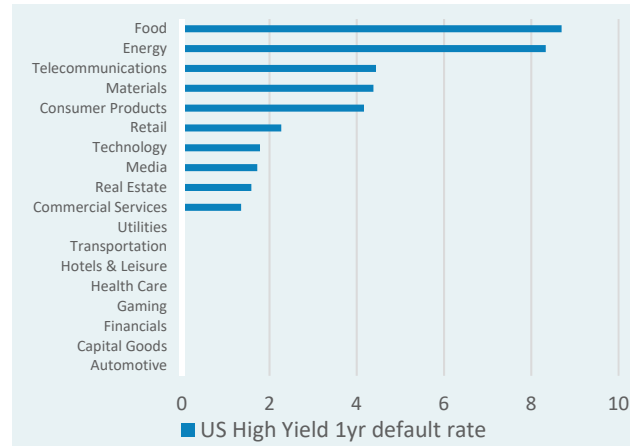
Gross high yield issue activity for 2019 was \$287 billion which was up 52% from a year ago. Loan market issuance is significantly behind last year's pace, likely influenced by lower demand for floating rate securities now that the Federal Reserve has paused monetary tightening. Gross loan issuance is essentially down 44% from a year ago although there was an increase in issuance at the end of December.

HY DEFAULT RATE (ROLLING 1-YEAR)



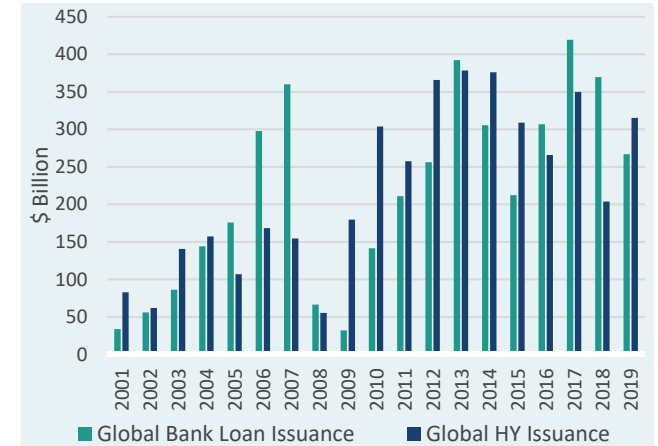
Source: BofA Merrill Lynch, as of 12/31/19

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



Source: BofA Merrill Lynch, as of 12/31/19 – par weighted

GLOBAL ISSUANCE (\$ BILLIONS)



Source: Bloomberg, BofA Merrill Lynch, as of 12/31/19

Equity

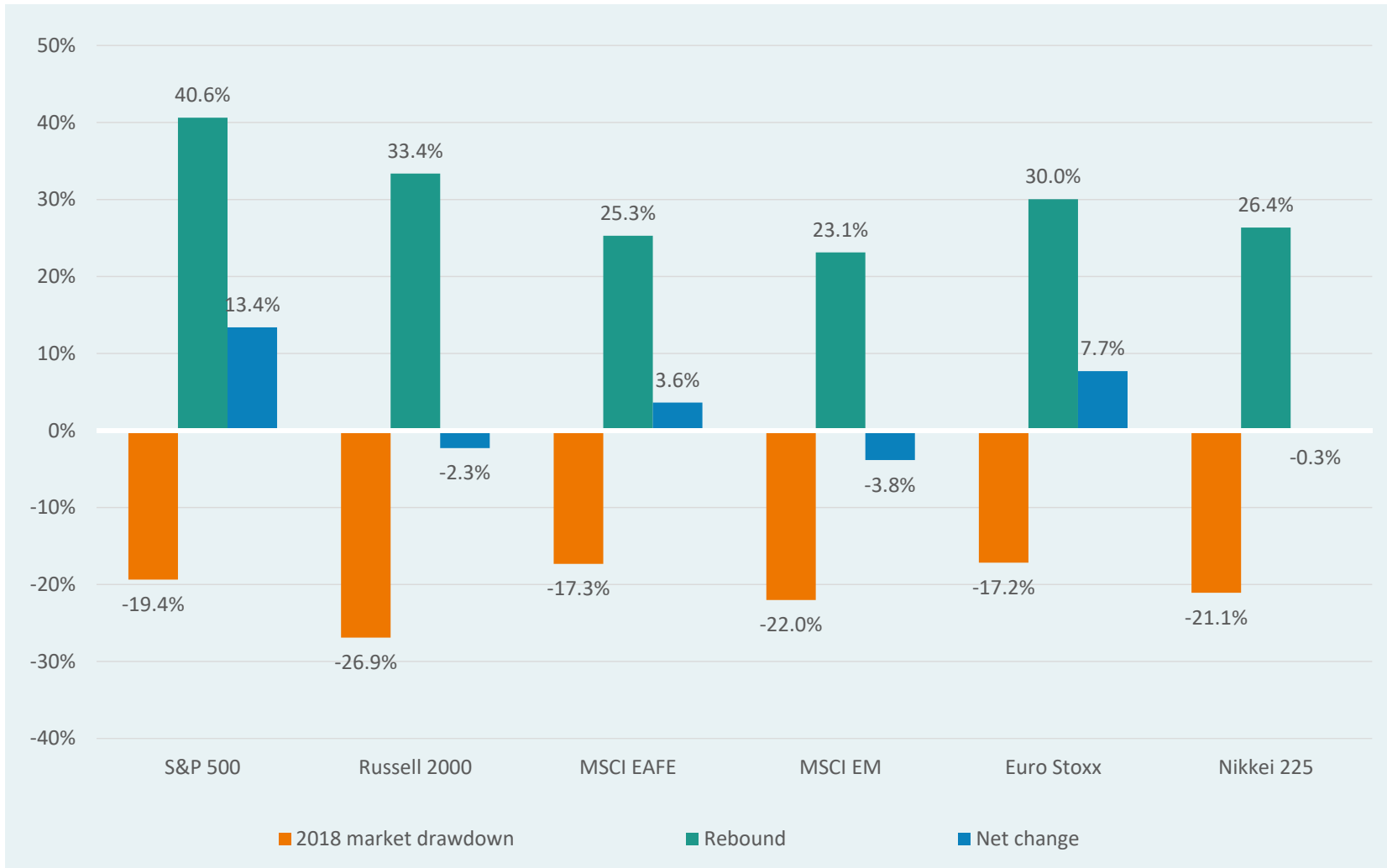
Equity environment

- Global equity markets exhibited strong performance through Q4, and U.S. equity performance was in-line (MSCI ACWI +9.0%, S&P 500 +9.1%). Emerging markets were the top performing asset class (+11.8%).
- Global currency volatility has been muted over the last few years, which has made ignoring currency exposure less consequential. Expecting low currency volatility to persist may be an assumption that gets investors into trouble.
- Unhedged U.S. investors in U.K. equities outperformed their hedged peers by 7.8% in Q4, as a stronger pound sterling dominated the U.K. equity return narrative.
- Based on price-to-forward earnings ratios international equity valuations appear elevated, but unlike in the U.S., they do not yet appear stretched.
- The outlook for monetary policy remains supportive of global equity price movement in 2020. Of the five major global central banks (Federal Reserve, European Central Bank, Bank of England, Bank of Japan, People's Bank of China), four out of five are providing accommodation through their respective balance sheets. Futures imply better than 50/50 odds that the Bank of England cuts its main rate 0.25% at the end of January and China has continued to cut its benchmark lending rate.
- Inflation remains muted in emerging economies, and most economies are experiencing CPI below the 5-year average. Central bank policy has remained accommodative in many major countries within the universe such as China, South Korea, Brazil, and South Africa. This accommodation could provide a boost for equity market pricing as we move further into 2020.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	9.1%		31.5%	
US Small Cap (Russell 2000)	9.9%		25.5%	
US Large Value (Russell 1000 Value)	7.4%		26.5%	
US Large Growth (Russell 1000 Growth)	10.6%		36.4%	
International Large (MSCI EAFE)	8.2%	5.8%	22.0%	24.6%
Eurozone (Euro Stoxx 50)	8.3%	5.9%	25.9%	32.1%
U.K. (FTSE 100)	10.8%	3.0%	22.1%	19.5%
Japan (NIKKEI 225)	8.2%	9.6%	21.9%	23.5%
Emerging Markets (MSCI Emerging Markets)	11.8%	9.5%	18.4%	17.7%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 12/31/19

A different look at 2019 performance



Most of the high returns of 2019 were due to markets recovering from the 2018 drop

Adjusting for this effect shows us that 2019 was a fairly average year

Source: Standard & Poor's, MSCI, Verus, as of 12/31/19 – "Drawdown" defined as the total market fall in 2018, "Rebound" defined as the total % return from the low point of the fall to the end of 2019. "Net Change" defined as the % market return from the 2018 high point to the end of 2019.

Domestic equity

U.S. equities outpaced international in the third quarter (S&P 500 +9.1%, MSCI EAFE +8.2%) as domestic markets continued to lead.

Falling interest rates in 2019 have supported stock prices, as fixed income becomes less attractive on a relative basis, and cheaper borrowing should bolster future corporate earnings. As the dividend yield of U.S. stocks is once again higher than U.S. Treasury yields, investors may feel pressure to maintain greater exposure to equities in order to meet return objectives.

The S&P 500 delivered a 31.5% total return in calendar year

2019, while underlying corporate profits are expected to be flat at +0.3%. This of course means that performance has been driven by higher stock multiples rather than fundamentals. It is worth noting that a significant portion of 2019 performance was a recovery from the late-2018 sell-off of nearly -20%.

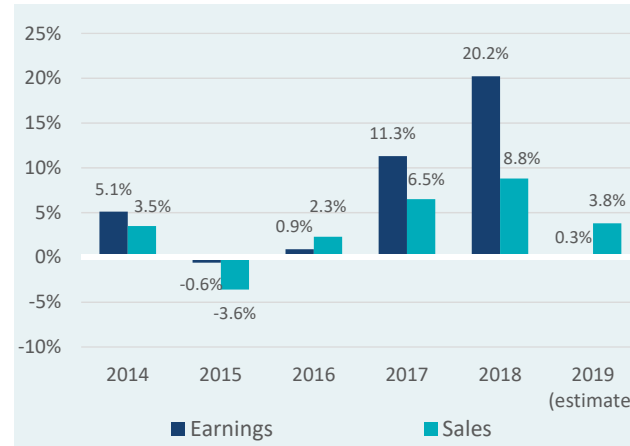
U.S. markets may continue to outperform over the shorter-term due to relative economic and market strength, and prices may certainly rise further. But history suggests that a widening gap between U.S. and international stock valuations will constrain U.S. performance over the longer-term.

U.S. EQUITIES



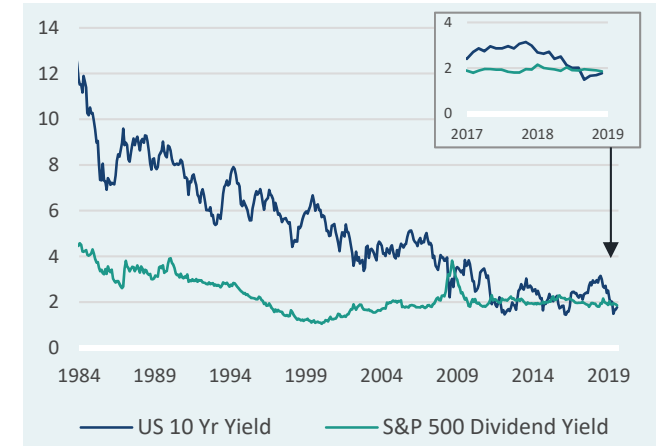
Source: Standard & Poor's, as of 9/30/19

EARNINGS



Source: FactSet, as of 12/20/19

RELATIVE YIELDS



Source: Standard & Poor's, as of 11/30/19

Domestic equity size & style

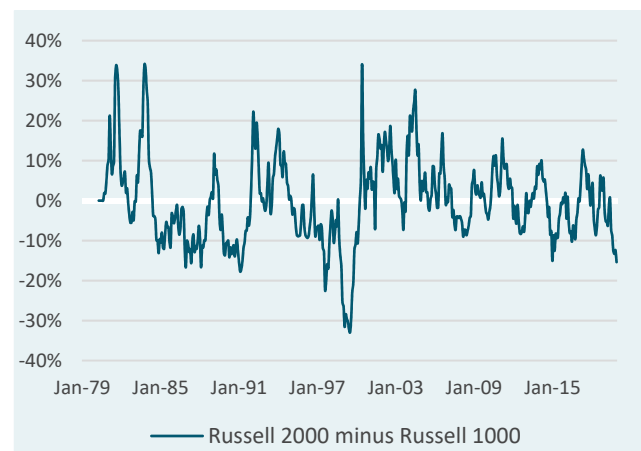
Value stocks lagged growth stocks during the fourth quarter (Russell 1000 Growth +10.6%, Russell 1000 Value +7.4%) while small cap stocks outperformed large stocks (Russell 2000 +9.9%, Russell 1000 +9.0%). During calendar year 2019, both size and value factors significantly underperformed (Russell 1000 +31.4%, Russell 2000 +25.5%; Russell 3000 Growth +35.8%, Russell 3000 Value +26.2%).

The impact of sector performance on the value premium was significant, once again, in 2019. Information Technology delivered very high returns (+50.3%) – a sector which tends to contain more growth stocks. Energy (+11.8%) and Materials (+24.6%) – industries which traditionally contain more value stocks – lagged

the overall index (S&P 500 +31.5%).

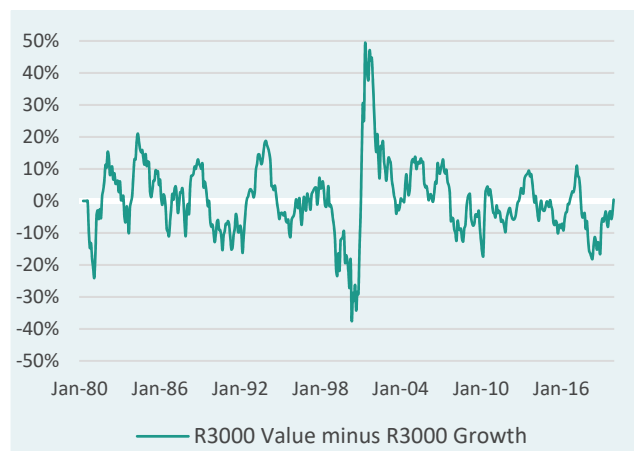
In mid-2016 we argued that there were clear and economic reasons for long-term value factor underperformance, and that a tactical overweight to the value factor did not appear warranted. This view has continued to be correct, as those who bought into value anytime of the past three years would have underperformed. While value continues to be historically cheap, price itself is not a catalyst for outperformance. We remain watchful of value stocks, but do not yet see clear signs of opportunity. As always, attempting to time factors is extremely difficult. We believe this should be done only rarely, if at all, and only when market conditions are particularly compelling.

SMALL CAP VS LARGE CAP (YOY)



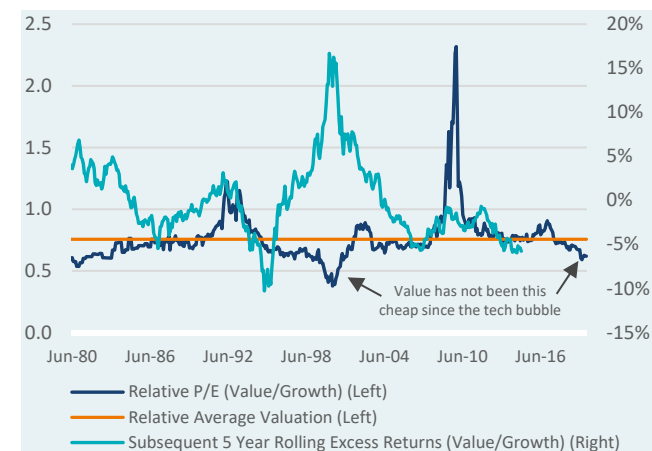
Source: FTSE, as of 12/31/19

VALUE VS GROWTH (YOY)



Source: FTSE, as of 12/31/19

VALUE CONTINUES TO LOOK CHEAP



Source: Russell, Bloomberg, as of 12/31/19

International developed equity

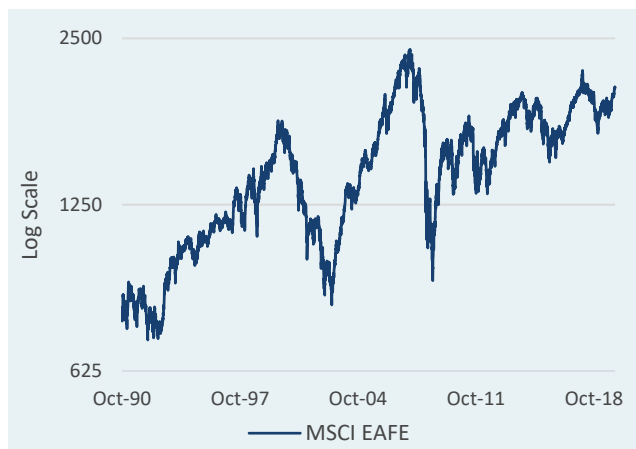
Equities in Europe and Japan posted strong performance for the quarter but failed to keep up with stocks in the U.S. and emerging markets. The U.S. dollar appreciated slightly against the yen, providing headwinds (-1.4%) for unhedged U.S. investors in Japanese stocks. Conversely, a slightly weaker U.S. dollar against the euro put some additional wind in the sails (+2.4%) of U.S. investors in European equities.

When investing in international equities, the “which currency should my assets be denominated?” question has been nearly equally as important as the “what assets should I hold?” question. Over the last three years however, global

currency volatility has been muted, which has made it much easier for investors to avoid thinking about their various currency exposures. Verus’ view remains that currency risk is not compensated, and that it tends to result in increased risk without necessarily adding to return.

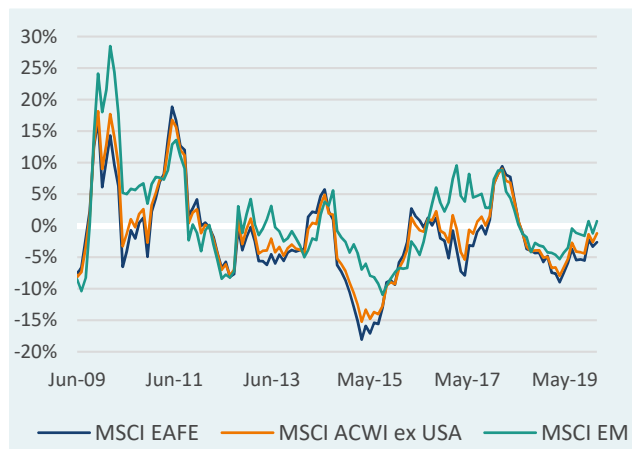
International equity valuations remain elevated, but unlike in the U.S., they do not yet appear stretched. Forward price-to-earnings ratios for the MSCI U.K. and Italy indices rank in the 59th and 52nd percentiles respectively, relative to the monthly expansion average. Valuations are a bit richer in the rest of the EAFE complex, but they may still have room to run.

INTERNATIONAL DEVELOPED EQUITIES



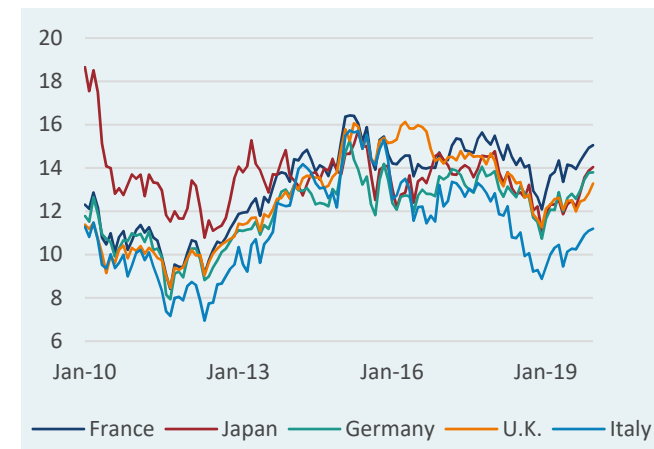
Source: MSCI, as of 12/31/19

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 12/31/19

BLENDED FORWARD 12-MONTH P/E RATIOS



Source: MSCI, Bloomberg, as of 12/31/19

Emerging market equity

Emerging market equities (+11.8%) outperformed both U.S. (+9.1%) and international developed equities (+8.2%) over the quarter, but still lagged over the full calendar year. In 2019, emerging market equities delivered a total return of 18.4%, and trailed the total return of international developed equities by 3.6%. Regionally, the Asian segment (+12.5%) of the emerging market complex performed better than the Latin American (+10.5%) segment in both Q4 and in 2019.

Emerging market equities saw multiple expansion in Q4: the forward P/E of the MSCI EM Index expanded from a level in

line with the 5-year average to a bit higher than average levels. We do not yet view pricing in this space as rich and see there being more room for multiple expansion.

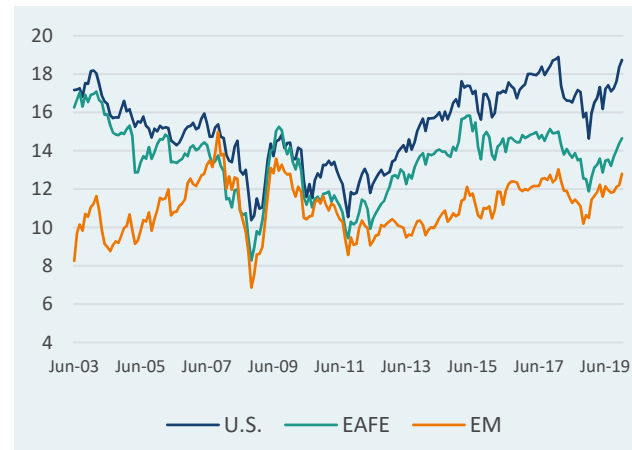
Inflation remains muted in emerging economies, and most economies are experiencing CPI below the 5-year average. Central bank policy has remained accommodative in many major countries within the universe such as China, South Korea, Brazil, and South Africa. This accommodation could provide a boost for equity market pricing as we move further into 2020.

EMERGING MARKET EQUITY



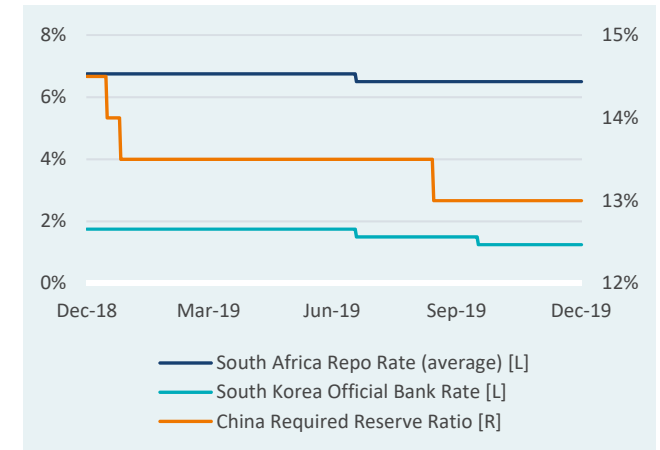
Source: MSCI, as of 12/31/19

FORWARD P/E



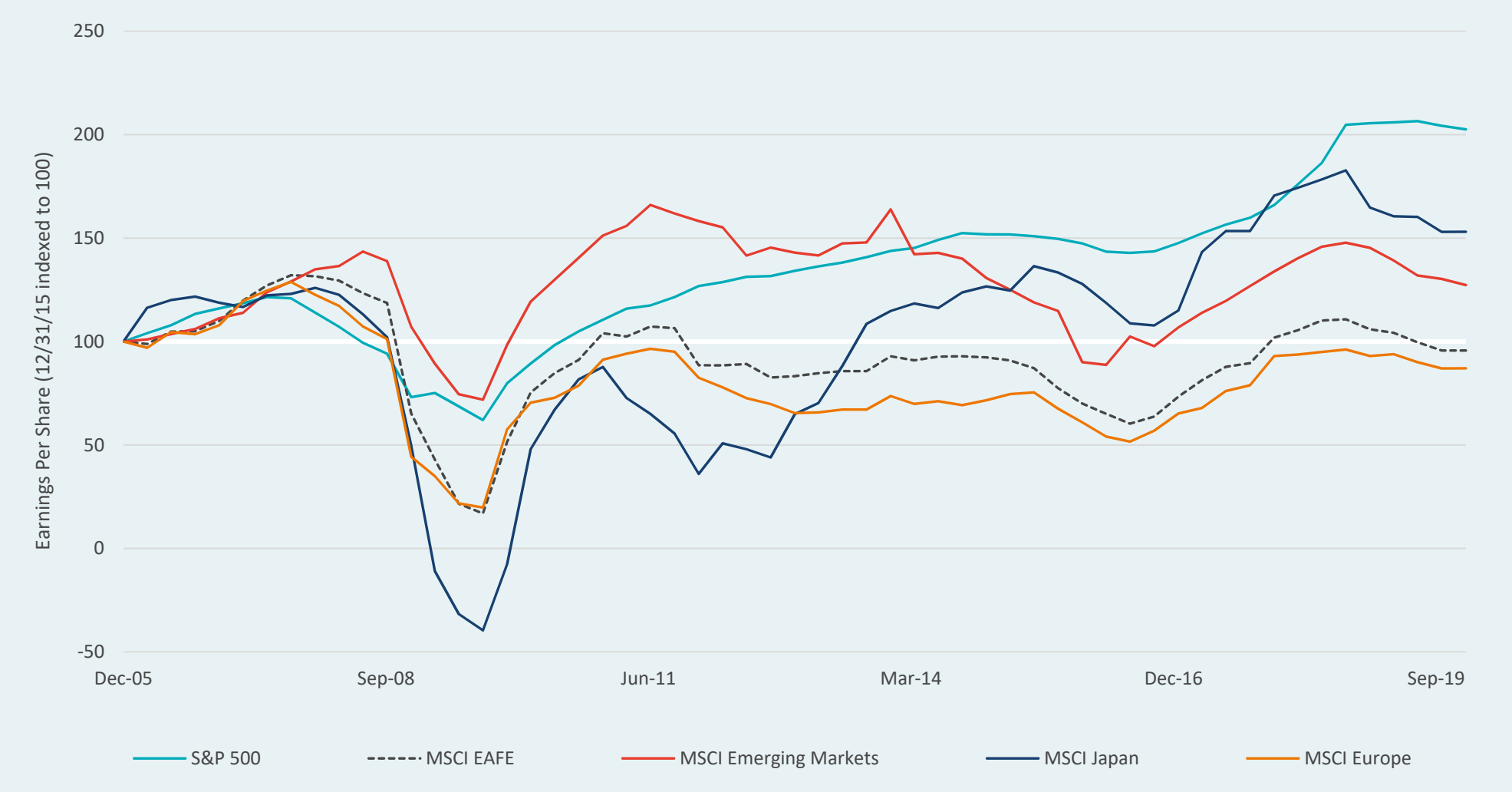
Source: MSCI, as of 12/31/19

CENTRAL BANK ACCOMODATION



Source: MSCI, as of 12/31/19

Equity earnings growth



Source: Bloomberg, as of 12/31/19

Equity valuations

Equity valuations expanded materially in 2019 as prices recovered from their year-end 2018 fall and then continued climbing through the fourth quarter. U.S. equities are expensive relative to their long-run average and prices may become more difficult to justify in an environment of flat earnings growth. International and emerging equity valuations are near average levels. We remain watchful of earnings trends in 2020, which may have important implications for the future path of equities.

In the United States, stocks within the Information Technology

(22.7x) and Communication Services (19.5x) sectors have retained forward P/E ratios elevated well above their respective 5- and 10-year averages. Last year, growing concerns over data privacy, support for anti-trust regulation, and several idiosyncratic scandals weighed on the tech sector. Over the course of this election year, we expect the issue of mega-cap tech regulation to remain beneath the microscope.

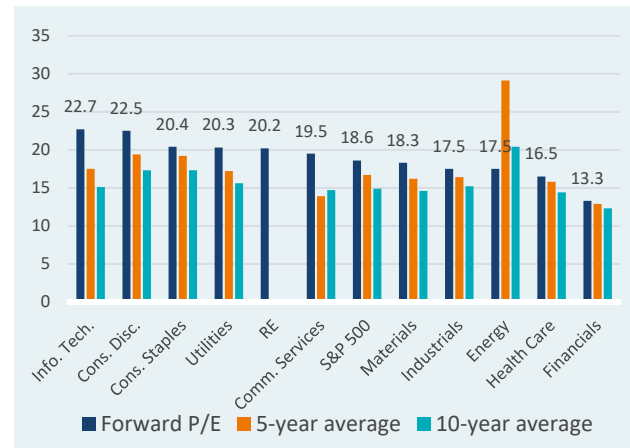
Compared to U.S. and EM equities, international developed equities offer the greatest yield at present, offering a three-month average trailing dividend yield of 3.4%.

FORWARD P/E RATIOS



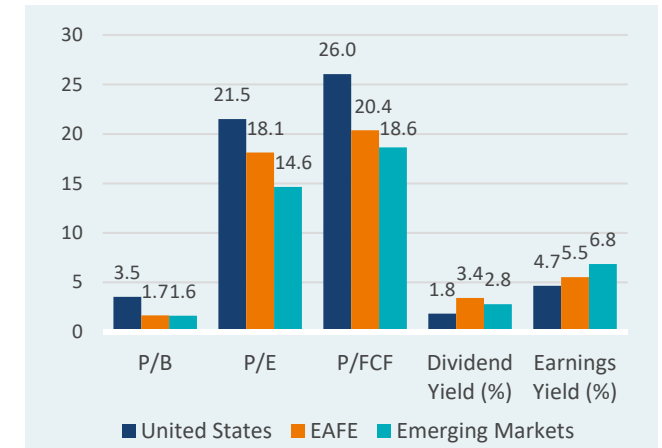
Source: MSCI, 12m forward P/E, as of 12/31/19

S&P 500 INDEX FORWARD SECTOR P/E RATIOS



Source: Standard & Poor's, FactSet, as of 1/17/20

VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 12/31/19 - trailing P/E

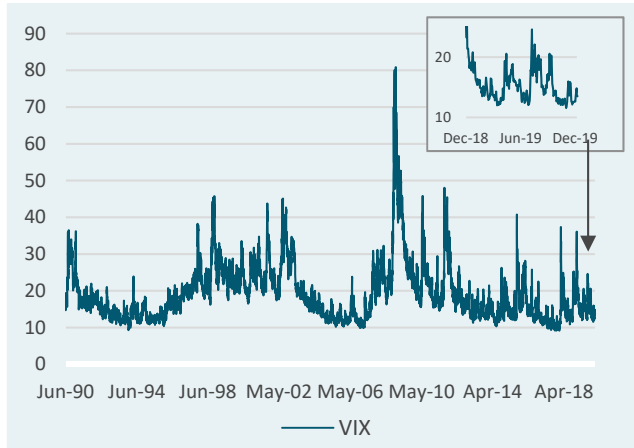
Equity volatility

The implied volatility of large-cap U.S. stocks returned to a subdued level. The CBOE VIX Index, which calculates the market's expectation for volatility implied by S&P 500 Index options, declined from 16.2 to 13.8, a reading which lies in the 15th percentile of weekly readings over the last thirty years. Net non-commercial short VIX positioning reached new all-time-highs in the 4th quarter, meaning that many people are betting on volatility to remain low and push lower. Some investors view this assumption as concerning, and as a signal that the market may be ready for a correction.

U.S. large-cap and emerging market stocks have experienced a higher degree of volatility than international developed stocks over the last several years. Some of the divergence may be attributable to the impacts of the ever-changing U.S.-China trade narrative which has held the full attention of market participants for much of the prior two years.

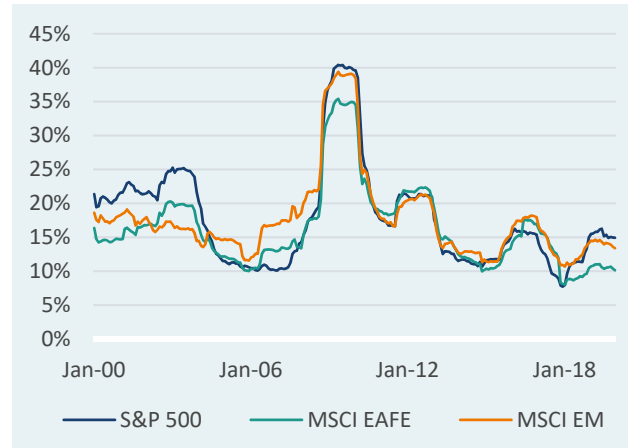
The MSCI EM Index touched new all-time highs in April and did not eclipse that level for another 174 days. In 2019, the S&P 500 and MSCI EAFE indices spent a maximum of 65 and 82 trading days between fresh all-time highs, respectively.

U.S. IMPLIED VOLATILITY (VIX)



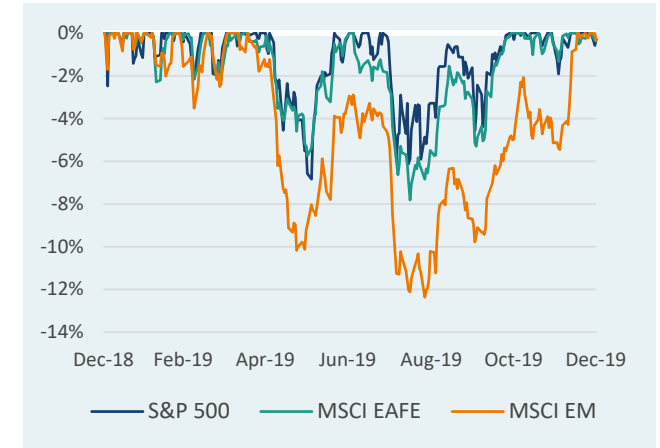
Source: CBOE, as of 12/31/19

ROLLING 1-YEAR REALIZED VOLATILITY



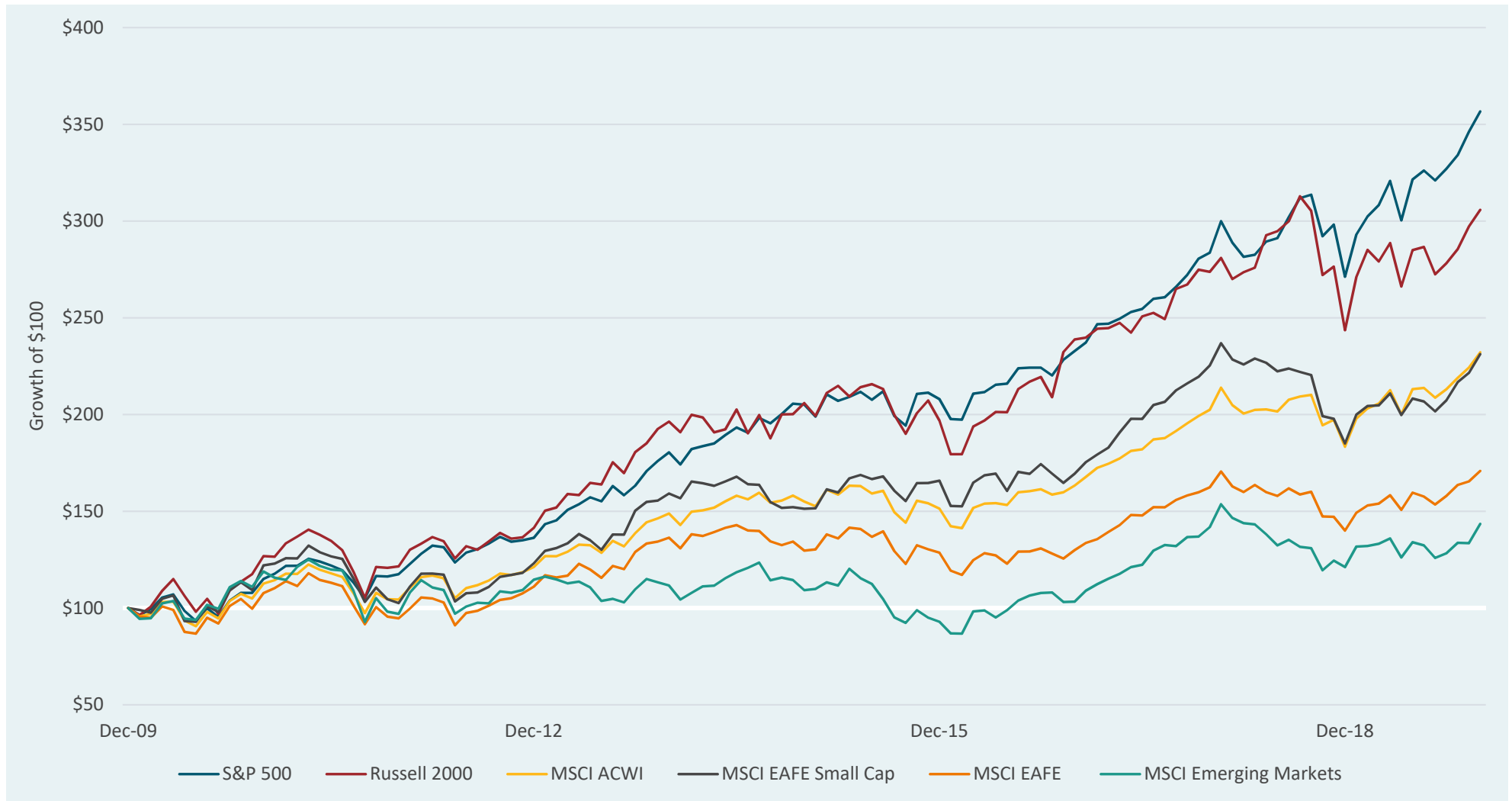
Source: Standard & Poor's, MSCI, Bloomberg, as of 12/31/19

2019 MAX DRAWDOWNS FROM PREVIOUS ALL-TIME-HIGH INDEX LEVELS



Source: Standard & Poor's, MSCI, Bloomberg, as of 12/31/19

Long-term equity performance



Source: Standard & Poor's, Russell, MSCI, Bloomberg, as of 12/31/19

Other assets

Currency

The U.S. dollar weakened versus both developed and emerging market currency baskets in the 4th quarter, fading some of the strong relative performance it had experienced back in Q3 2019. An index tracking the weighted average of the foreign exchange value of the U.S. dollar against major currencies fell 0.5%.

J.P. Morgan’s Emerging Market Currency Index fell -1.4% in 2019. Many analysts have argued that global disinflationary pressures have eased some long-standing concerns over the risk of capital flight within the emerging market complex. So

long as inflationary risks are muted, then higher nominal interest rates in the emerging market complex should afford emerging market central bankers’ further room to cut rates than their developed market peers. If implemented, the relative accommodation supplied may fuel both growth and currency depreciation.

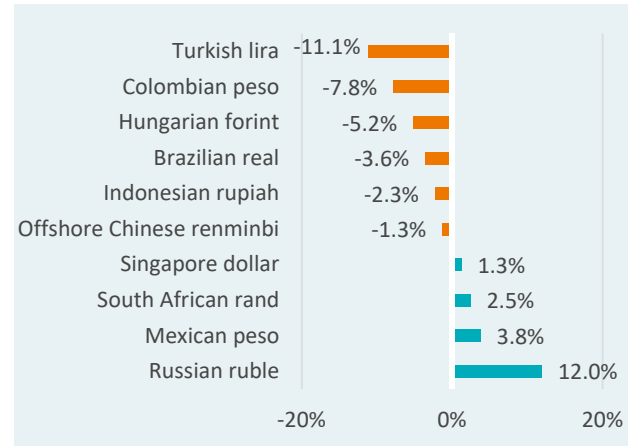
The British pound sterling bounced back sharply in Q4, rising from \$1.23 to \$1.33. Prime Minister Boris Johnson’s Conservative Party secured a firm majority in Parliament, lifting the shroud of “Brexit” from the geopolitical landscape.

U.S. DOLLAR TRADE WEIGHTED INDEX



Source: Federal Reserve, Verus, as of 12/31/19

JP MORGAN EMCI CONSTITUENT 2019 RETURNS



Source: J.P. Morgan, Bloomberg, as of 12/31/19

GBP/USD



Source: Bloomberg, as of 12/31/19

Appendix

Periodic table of returns

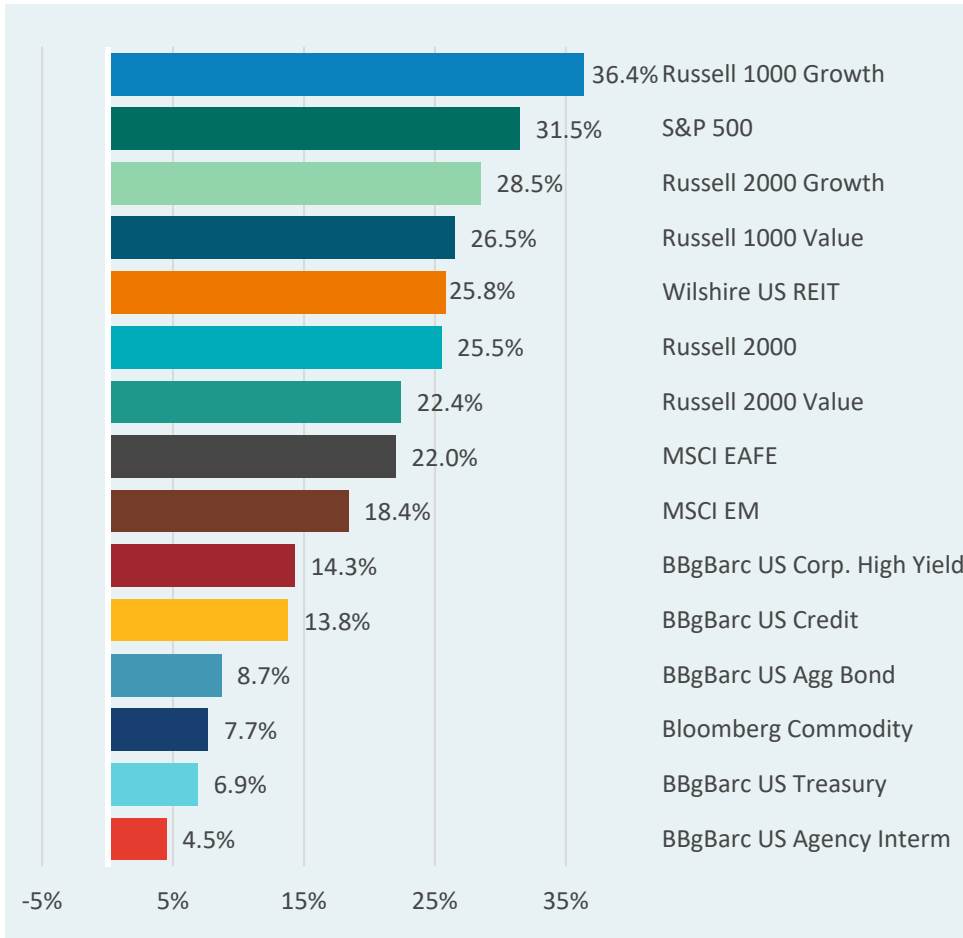
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	5-Year	10-Year
Large Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	14.6	15.2
Large Cap Equity	27.0	43.1	22.8	8.4	10.3	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	31.4	11.5	13.5
Small Cap Growth	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	28.5	9.3	13.0
Large Cap Value	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	26.5	8.6	11.8
Small Cap Equity	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	25.5	8.3	11.8
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	22.4	8.2	10.6
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	22.0	7.0	9.8
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	18.6	6.1	6.4
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	18.4	5.7	5.5
US Bonds	-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	8.7	5.6	3.7
Hedge Funds of Funds	-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	7.8	3.0	3.7
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	7.7	2.2	2.8
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	4.8	1.1	0.6
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	2.1	-3.9	-4.7

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

Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 9/30/19.

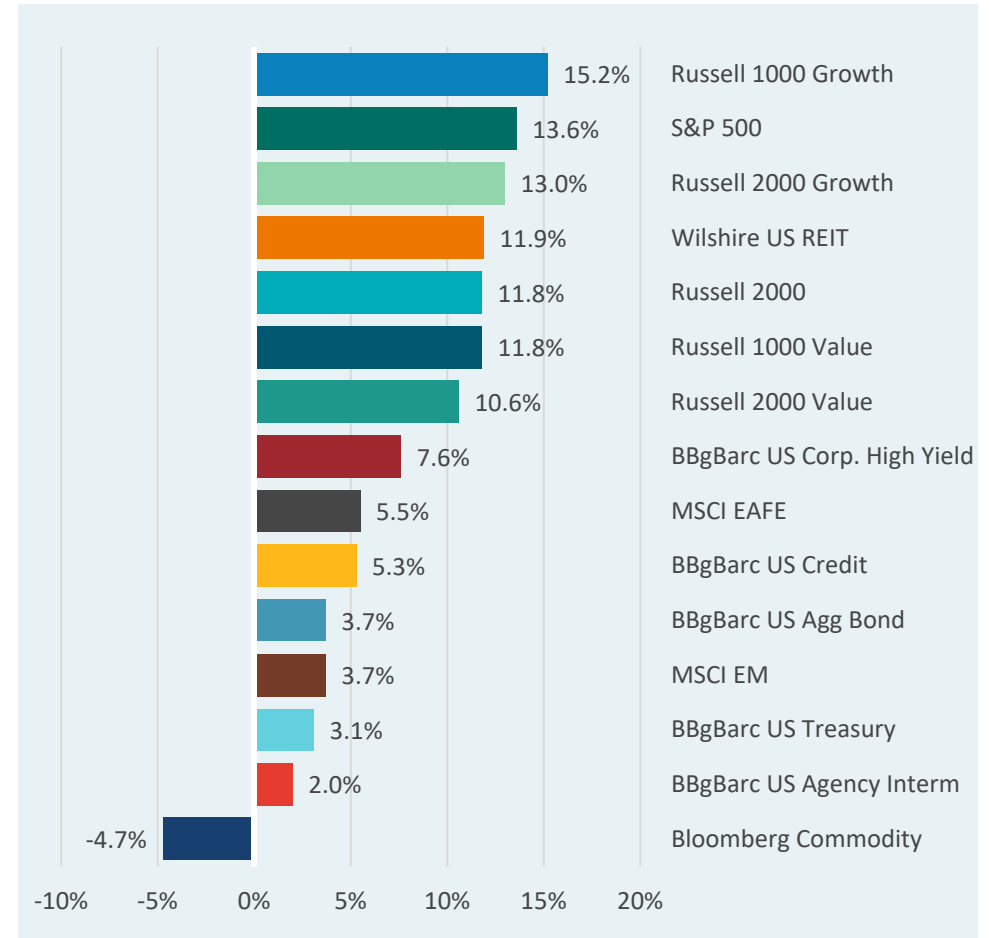
Major asset class returns

ONE YEAR ENDING DECEMBER



Source: Morningstar, as of 12/31/19

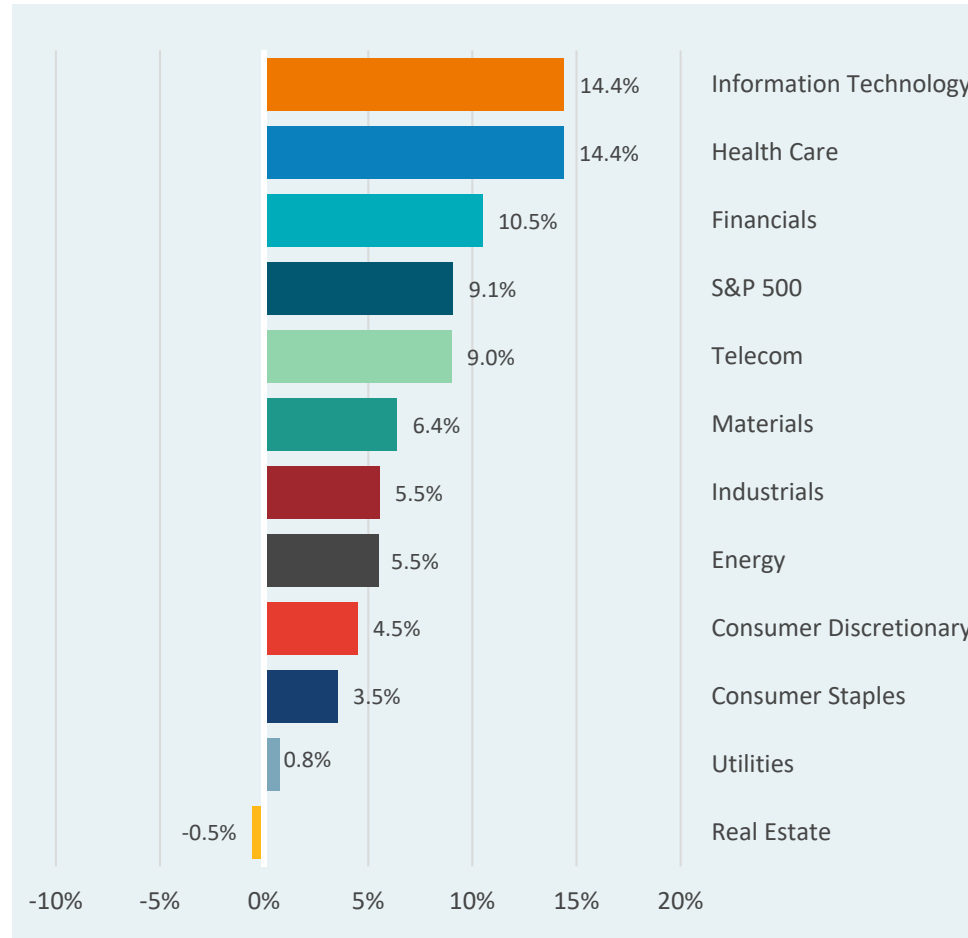
TEN YEARS ENDING DECEMBER



Source: Morningstar, as of 12/31/19

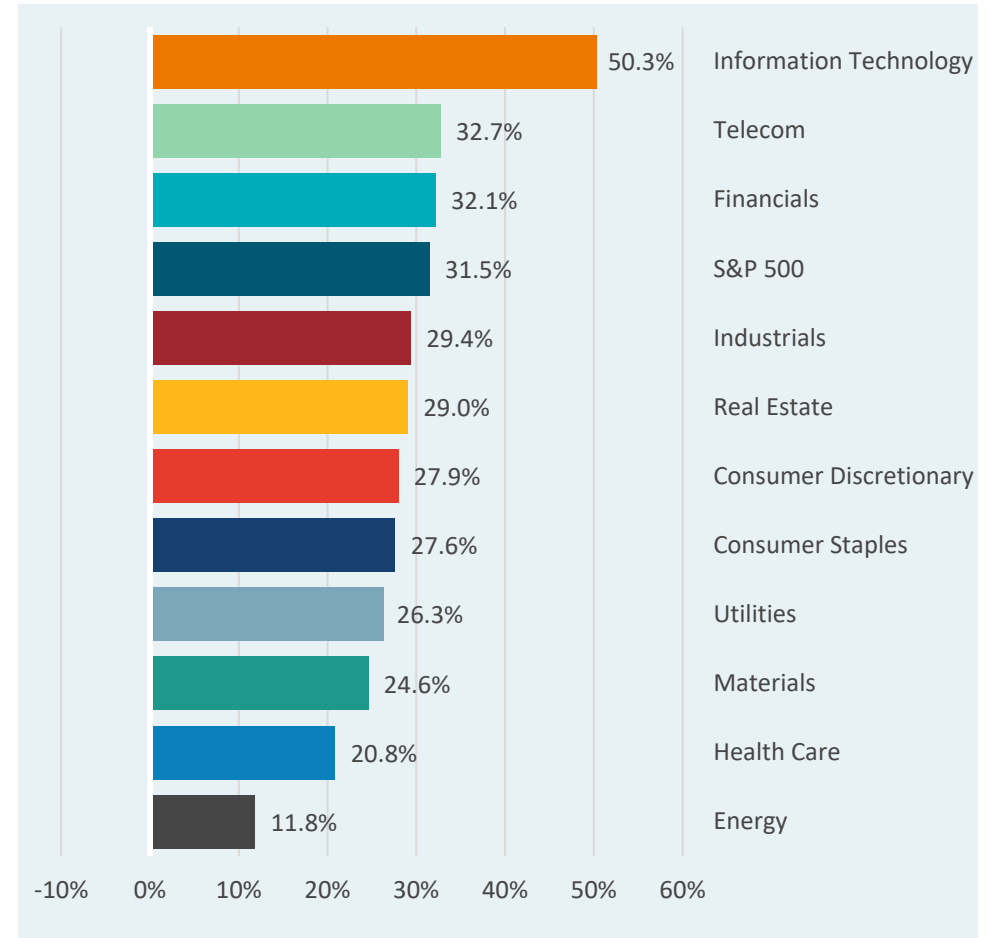
S&P 500 sector returns

Q4 2019



Source: Morningstar, as of 12/31/19

ONE YEAR ENDING DECEMBER



Source: Morningstar, as of 12/31/19

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	3.0	9.1	31.5	31.5	15.3	11.7	13.6
S&P 500 Equal Weighted	2.8	7.6	29.2	29.2	12.4	9.8	13.5
DJ Industrial Average	1.9	6.7	25.3	25.3	15.7	12.6	13.4
Russell Top 200	3.1	9.8	31.8	31.8	16.2	12.3	13.7
Russell 1000	2.9	9.0	31.4	31.4	15.0	11.5	13.5
Russell 2000	2.9	9.9	25.5	25.5	8.6	8.2	11.8
Russell 3000	2.9	9.1	31.0	31.0	14.6	11.2	13.4
Russell Mid Cap	2.3	7.1	30.5	30.5	12.1	9.3	13.2
Style Index							
Russell 1000 Growth	3.0	10.6	36.4	36.4	20.5	14.6	15.2
Russell 1000 Value	2.8	7.4	26.5	26.5	9.7	8.3	11.8
Russell 2000 Growth	2.3	11.4	28.5	28.5	12.5	9.3	13.0
Russell 2000 Value	3.5	8.5	22.4	22.4	4.8	7.0	10.6

INTERNATIONAL EQUITY

Broad Index							
MSCI ACWI	3.5	9.0	26.6	26.6	12.4	8.4	8.8
MSCI ACWI ex US	4.3	8.9	21.5	21.5	9.9	5.5	5.0
MSCI EAFE	3.2	8.2	22.0	22.0	9.6	5.7	5.5
MSCI EM	7.5	11.8	18.4	18.4	11.6	5.6	3.7
MSCI EAFE Small Cap	4.4	11.5	25.0	25.0	10.9	8.9	8.7
Style Index							
MSCI EAFE Growth	2.9	8.4	27.9	27.9	12.8	7.7	6.9
MSCI EAFE Value	3.7	7.8	16.1	16.1	6.3	3.5	4.0
Regional Index							
MSCI UK	5.2	10.0	21.0	21.0	8.3	3.3	5.0
MSCI Japan	2.1	7.6	19.6	19.6	8.9	7.7	6.6
MSCI Euro	2.9	7.9	22.9	22.9	9.1	5.1	3.7
MSCI EM Asia	7.1	12.5	19.2	19.2	12.9	6.6	5.8
MSCI EM Latin American	10.3	10.5	17.5	17.5	10.7	4.2	(0.6)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	0.4	0.8	8.4	8.4	3.3	2.6	3.4
BBgBarc US Treasury Bills	0.1	0.5	2.3	2.3	1.7	1.1	0.6
BBgBarc US Agg Bond	(0.1)	0.2	8.7	8.7	4.0	3.0	3.7
Duration							
BBgBarc US Treasury 1-3 Yr	0.2	0.5	3.6	3.6	1.9	1.4	1.2
BBgBarc US Treasury Long	(2.8)	(4.1)	14.8	14.8	6.9	4.1	7.0
BBgBarc US Treasury	(0.6)	(0.8)	6.9	6.9	3.3	2.4	3.1
Issuer							
BBgBarc US MBS	0.3	0.7	6.4	6.4	3.2	2.6	3.2
BBgBarc US Corp. High Yield	2.0	2.6	14.3	14.3	6.4	6.1	7.6
BBgBarc US Agency Interm	0.1	0.3	4.5	4.5	2.4	1.9	2.0
BBgBarc US Credit	0.3	1.1	13.8	13.8	5.8	4.4	5.3

OTHER

Index							
Bloomberg Commodity	5.0	4.4	7.7	7.7	(0.9)	(3.9)	(4.7)
Wilshire US REIT	(0.7)	(1.1)	25.8	25.8	7.6	6.9	11.9
CS Leveraged Loans	1.6	1.7	8.2	8.2	4.5	4.5	5.2
Alerian MLP	8.9	(4.6)	6.7	6.7	(5.0)	(7.0)	4.8
Regional Index							
JPM EMBI Global Div	2.0	1.8	15.0	15.0	6.7	6.2	6.9
JPM GBI-EM Global Div	4.1	5.2	13.5	13.5	7.0	2.8	2.7
Hedge Funds							
HFRI Composite	1.8	3.5	10.4	10.4	4.5	3.5	4.0
HFRI FOF Composite	1.3	2.5	7.8	7.8	3.7	2.2	2.8
Currency (Spot)							
Euro	1.8	3.0	(1.8)	(1.8)	2.1	(1.5)	(2.4)
Pound	2.4	7.5	4.0	4.0	2.3	(3.2)	(2.0)
Yen	0.8	(0.6)	1.0	1.0	2.4	2.0	(1.5)

Source: Morningstar, HFR, as of 12/31/19

Definitions

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

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

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

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

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San Luis Obispo County Pension Trust

Investment Performance Review
Period Ending: December 31, 2019



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SEATTLE 206-622-3700

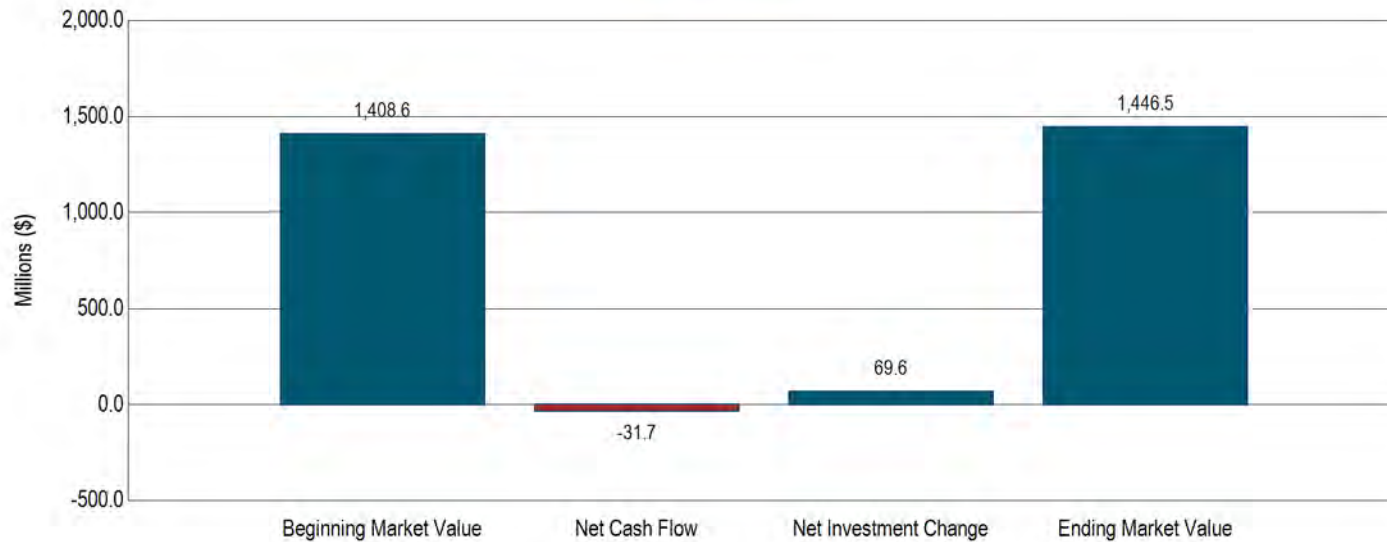
LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

Portfolio Reconciliation

	Last Three Months	One Year
Beginning Market Value	\$1,408,635,998	\$1,286,051,260
Net Cash Flow	-\$31,727,540	-\$42,477,747
Net Investment Change	\$69,590,044	\$202,924,989
Ending Market Value	\$1,446,498,502	\$1,446,498,502

Change in Market Value
Last Three Months



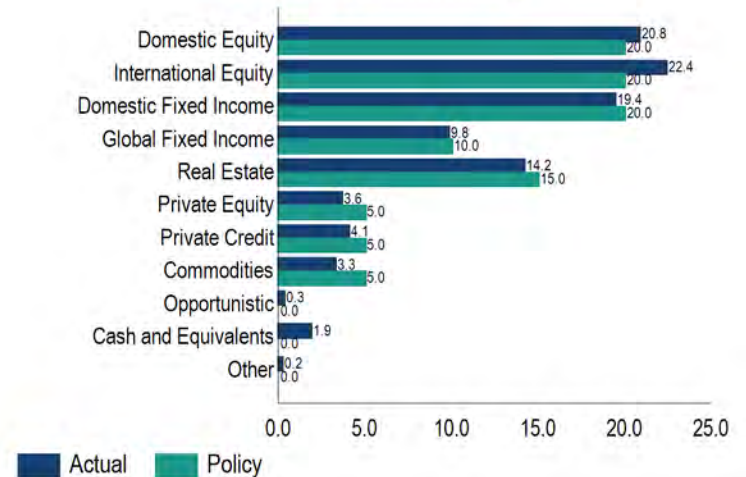
Contributions and withdrawals may include intra-account transfers between managers/funds.

Total Fund Executive Summary (Gross of Fees)

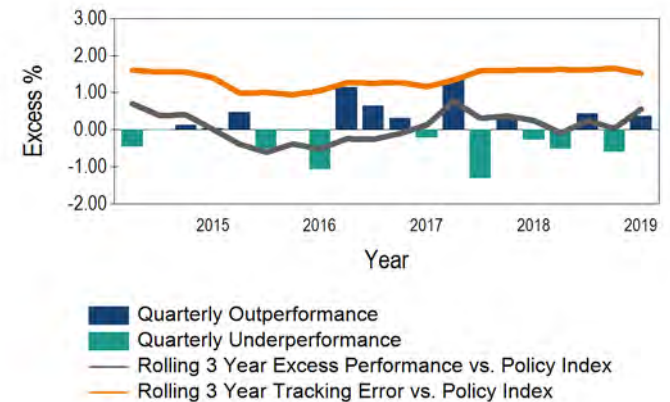
Period Ending: December 31, 2019

	QTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank
Total Fund	5.0	60	16.3	83	9.2	58	6.6	72
<i>Policy Index</i>	4.7	77	16.6	78	8.6	75	6.6	73
Total Domestic Equity	7.8	71	29.4	66	15.3	12	11.9	8
<i>Russell 3000</i>	9.1	16	31.0	19	14.6	21	11.2	25
Total International Equity	10.3	24	30.2	1	13.1	4	7.2	19
<i>MSCI ACWI ex USA Gross</i>	9.0	76	22.1	58	10.4	42	6.0	53
Total Domestic Fixed Income	0.9	15	9.9	9	4.8	17	4.0	14
<i>BBgBarc US Aggregate TR</i>	0.2	60	8.7	29	4.0	40	3.0	42
Total Global Fixed	4.0	--	7.8	--	4.8	--	1.5	--
<i>FTSE World Govt Bond Index</i>	-0.4	--	5.9	--	4.1	--	2.0	--
Total Real Estate	2.0	--	4.3	--	6.5	--	9.0	--
<i>NCREIF Property Index</i>	1.6	--	6.4	--	6.7	--	8.2	--
Total Commodities	5.5	--	8.7	--	0.4	--	-3.2	--
<i>Bloomberg Commodity Index TR USD</i>	4.4	--	7.7	--	-0.9	--	-3.9	--
Total Private Equity	2.1	--	7.2	--	15.0	--	16.0	--
<i>Russell 3000 + 3%</i>	9.9	--	34.9	--	18.0	--	14.6	--
Total Private Credit	1.6	--	6.7	--	6.4	--	--	--
<i>BBgBarc High Yield +2% (Lagged)</i>	1.8	--	8.5	--	8.2	--	--	--
Total Cash	0.7	--	2.2	--	1.6	--	1.1	--
<i>91 Day T-Bills</i>	0.4	--	2.1	--	1.6	--	1.1	--
Total Opportunistic	1.2	--	-2.9	--	9.0	--	7.1	--
<i>Russell 3000 + 3%</i>	9.9	--	34.9	--	18.0	--	14.6	--

Actual vs Target Allocation (%)



Rolling Annualized Excess Performance and Tracking Error
Total Fund vs. Policy Index



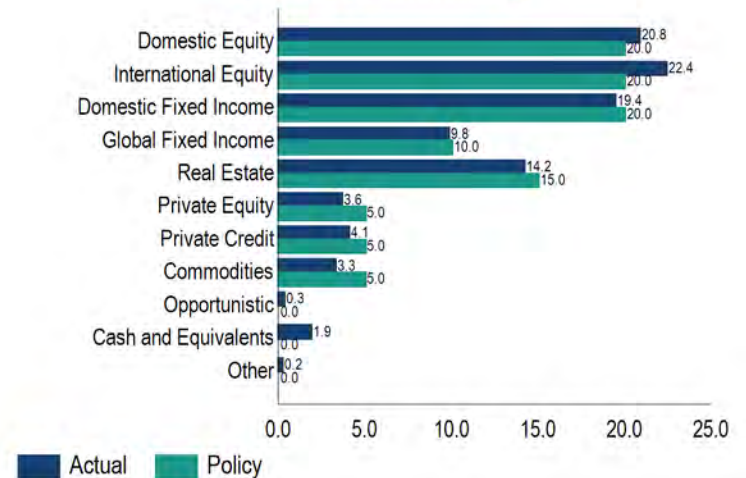
New Policy Index as of 10/1/2016: 20% Russell 3000, 20% MSCI ACWI ex. US, 30% BBgBarc Aggregate, 15% NCREIF Property, 5% Bloomberg Commodity Index, 5% Russell 3000 +3%, 5% BBgBarc High Yield +2% (Lagged). Private Equity, Private Credit and Opportunistic composite returns are lagged by one quarter. Stone Harbor funded 7/9/13. Gresham TAP funded 8/30/13. Pacific Asset Corporate Loan funded 9/1/2014. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. All returns are (G) Gross of fees. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

Total Fund Executive Summary (Net of Fees)

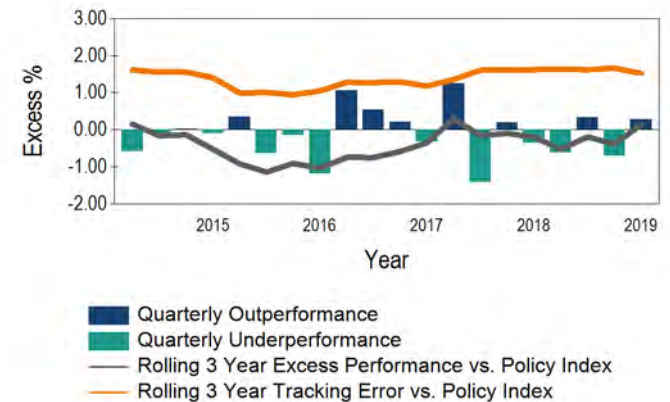
Period Ending: December 31, 2019

	QTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank
Total Fund	5.0	66	15.8	86	8.7	72	6.1	85
<i>Policy Index</i>	4.7	77	16.6	78	8.6	75	6.6	73
Total Domestic Equity	7.6	76	28.7	77	14.8	18	11.4	21
<i>Russell 3000</i>	9.1	16	31.0	19	14.6	21	11.2	25
Total International Equity	10.2	29	29.3	3	12.4	7	6.5	37
<i>MSCI ACWI ex USA Gross</i>	9.0	76	22.1	58	10.4	42	6.0	53
Total Domestic Fixed Income	0.8	16	9.5	13	4.4	25	3.7	22
<i>BBgBarc US Aggregate TR</i>	0.2	60	8.7	29	4.0	40	3.0	42
Total Global Fixed	3.9	--	7.2	--	4.2	--	0.8	--
<i>FTSE World Govt Bond Index</i>	-0.4	--	5.9	--	4.1	--	2.0	--
Total Real Estate	2.0	--	4.3	--	6.5	--	8.6	--
<i>NCREIF Property Index</i>	1.6	--	6.4	--	6.7	--	8.2	--
Total Commodities	5.5	--	8.7	--	0.4	--	-3.5	--
<i>Bloomberg Commodity Index TR USD</i>	4.4	--	7.7	--	-0.9	--	-3.9	--
Total Private Equity	2.1	--	7.2	--	15.0	--	15.2	--
<i>Russell 3000 + 3%</i>	9.9	--	34.9	--	18.0	--	14.6	--
Total Private Credit	1.6	--	6.7	--	6.4	--	--	--
<i>BBgBarc High Yield +2% (Lagged)</i>	1.8	--	8.5	--	8.2	--	--	--
Total Cash	0.7	--	2.2	--	1.6	--	1.1	--
<i>91 Day T-Bills</i>	0.4	--	2.1	--	1.6	--	1.1	--
Total Opportunistic	1.2	--	-2.9	--	9.0	--	6.8	--
<i>Russell 3000 + 3%</i>	9.9	--	34.9	--	18.0	--	14.6	--

Actual vs Target Allocation (%)



Rolling Annualized Excess Performance and Tracking Error
Total Fund vs. Policy Index



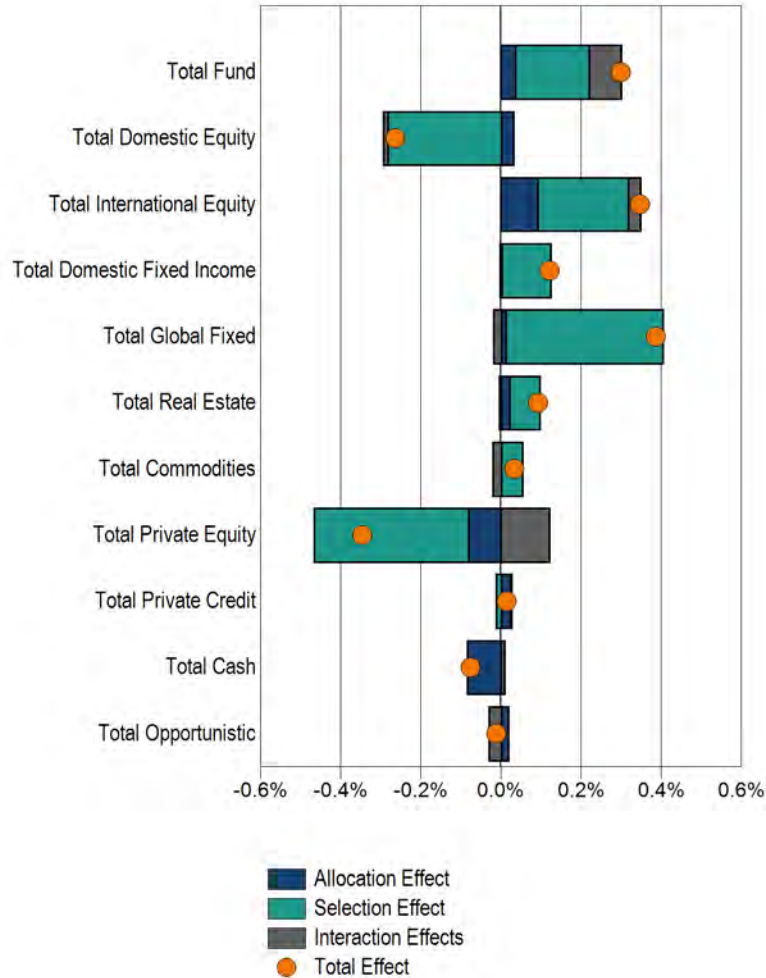
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Total Fund
Attribution (Net of Fees)

Period Ending: December 31, 2019

Performance Attribution

Attribution Effects
3 Months Ending December 31, 2019



	Last 3 Mo.
Wtd. Actual Return	4.97%
Wtd. Index Return *	4.67%
Excess Return	0.30%
Selection Effect	0.18%
Allocation Effect	0.04%
Interaction Effect	0.08%

*Calculated from policy benchmark returns and policy weightings of each component of the policy benchmark.

Attribution Summary
3 Months Ending December 31, 2019

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Domestic Equity	7.64%	9.10%	-1.46%	-0.28%	0.03%	-0.01%	-0.26%
Total International Equity	10.17%	8.99%	1.18%	0.23%	0.09%	0.03%	0.35%
Total Domestic Fixed Income	0.76%	0.18%	0.58%	0.12%	0.00%	0.00%	0.12%
Total Global Fixed	3.94%	0.18%	3.76%	0.39%	0.01%	-0.02%	0.39%
Total Real Estate	2.04%	1.55%	0.49%	0.07%	0.02%	0.00%	0.09%
Total Commodities	5.49%	4.42%	1.07%	0.05%	0.00%	-0.02%	0.03%
Total Private Equity	2.11%	9.88%	-7.77%	-0.38%	-0.08%	0.12%	-0.35%
Total Private Credit	1.61%	1.83%	-0.22%	-0.01%	0.02%	0.00%	0.01%
Total Cash	0.75%	0.39%	0.36%	0.00%	-0.08%	0.01%	-0.08%
Total Opportunistic	1.22%	9.88%	-8.66%	0.00%	0.02%	-0.03%	-0.01%
Total	4.97%	4.67%	0.30%	0.18%	0.04%	0.08%	0.30%

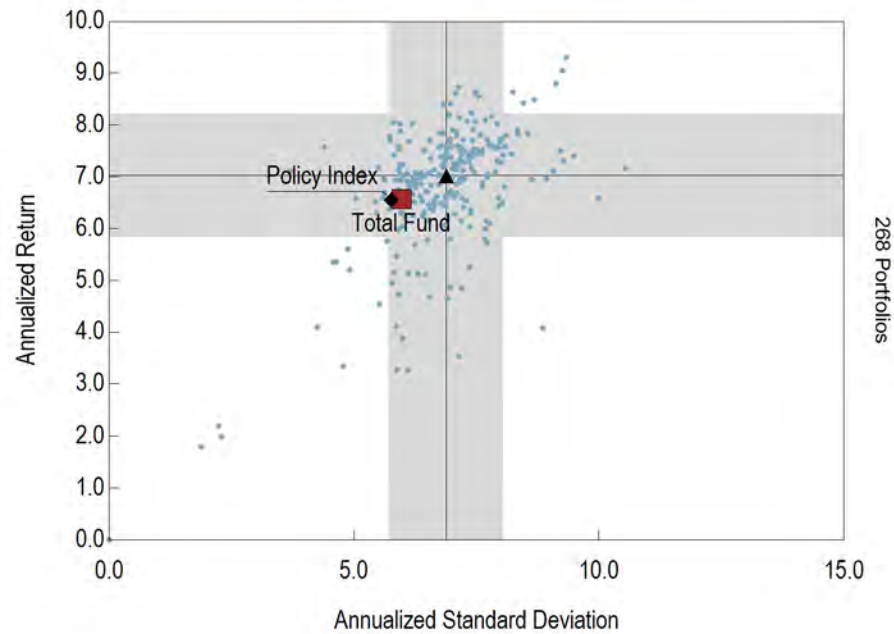
Attribution does not account for effects of overlay program. Weighted returns shown in attribution analysis may differ from actual returns. Wtd. Actual Return is the sum of the products of each group's return and its respective weight at the beginning of the period.

Total Fund
Risk Analysis - 5 Years (Gross of Fees)

Period Ending: December 31, 2019

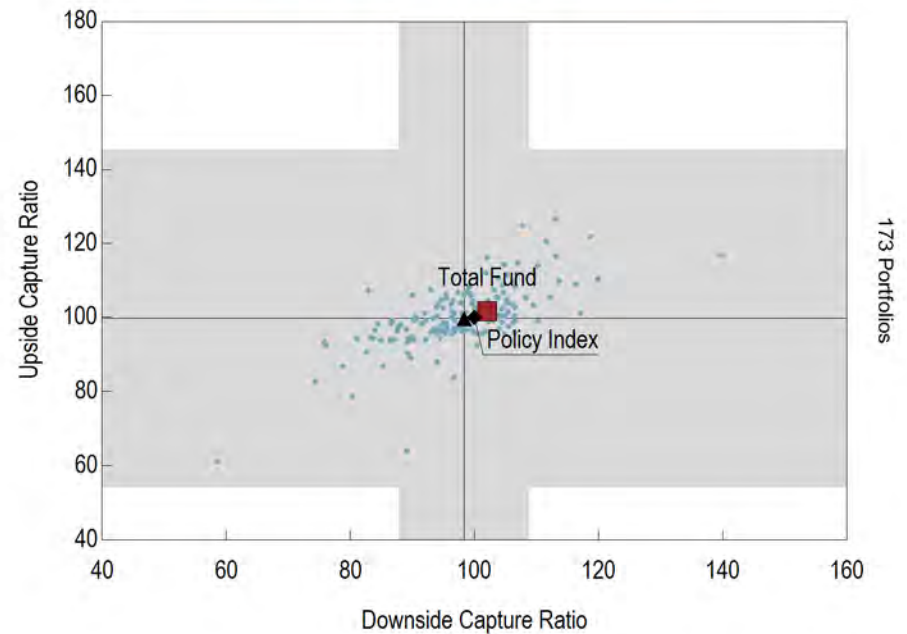
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Total Fund	6.57%	0.02%	5.96%	-0.07%	1.01	1.24%	0.96	0.93	0.02	101.57%	102.08%

Annualized Return vs. Annualized Standard Deviation



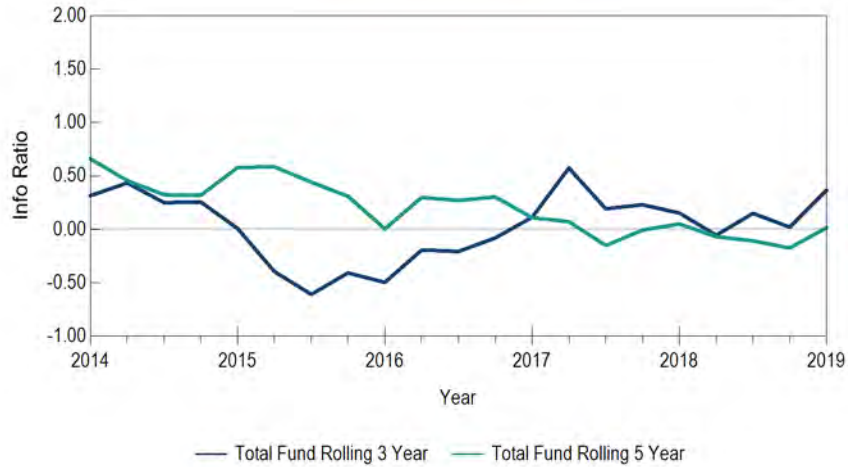
- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB Gross

Upside Capture Ratio vs. Downside Capture Ratio

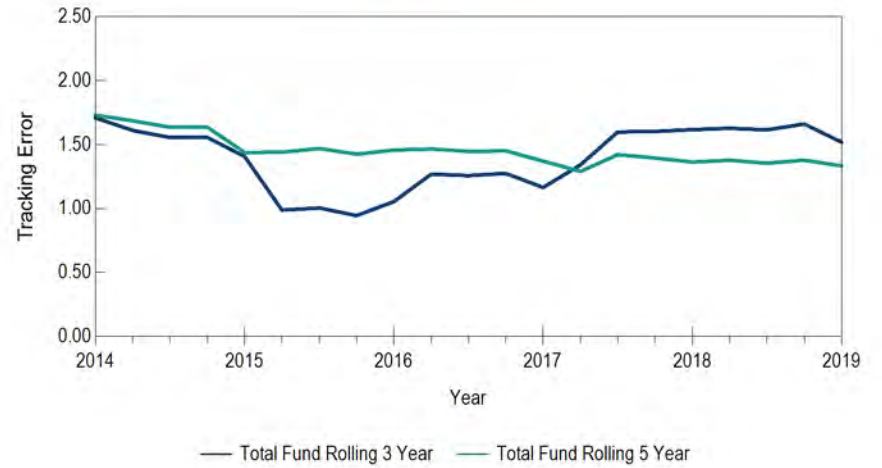


- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB Gross

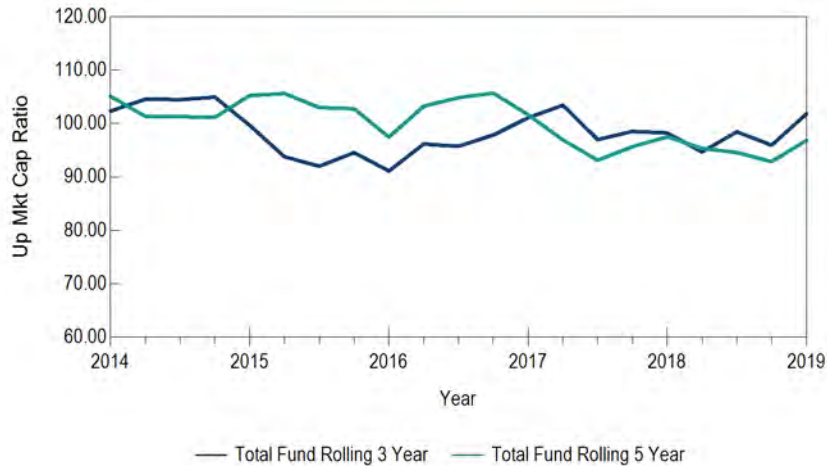
Rolling Information Ratio



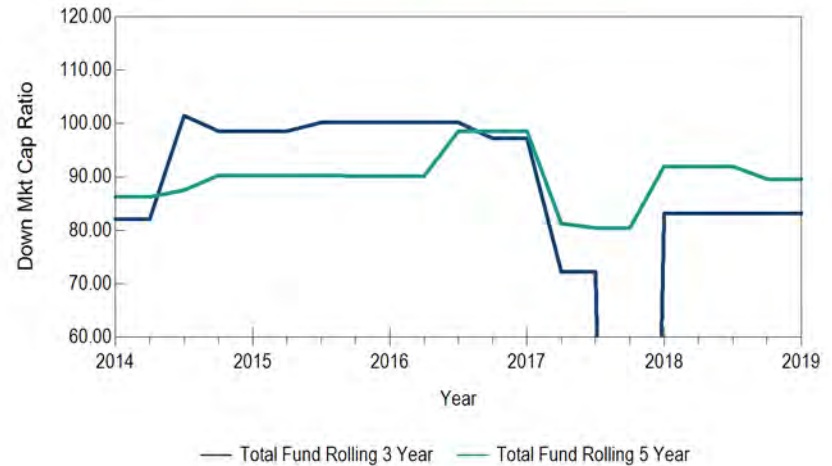
Rolling Tracking Error



Rolling Up Market Capture Ratio (%)



Rolling Down Market Capture Ratio (%)



Total Fund Performance Summary (Gross of Fees)

Period Ending: December 31, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Total Fund	1,446,498,502	100.0	5.0	16.3	9.2	6.6	8.2	16.3	-3.1	15.5	6.6	-0.8		
Policy Index			4.7	16.6	8.6	6.6	7.6	16.6	-3.2	13.4	7.8	-0.5		
InvMetrics Public DB Gross Rank			60	83	58	72	48	83	25	47	84	74		
Total Domestic Equity	301,350,674	20.8	7.8	29.4	15.3	11.9	14.2	29.4	-5.2	25.1	13.0	1.2		
Russell 3000			9.1	31.0	14.6	11.2	13.4	31.0	-5.2	21.1	12.7	0.5		
InvMetrics Public DB US Eq Gross Rank			71	66	12	8	5	66	36	4	48	18		
PIMCO RAE Fundamental PLUS Instl	62,373,766	4.3	8.3	25.5	11.1	9.1	12.9	25.5	-6.6	17.0	15.9	-2.7	8.4	Nov-07
S&P 500			9.1	31.5	15.3	11.7	13.6	31.5	-4.4	21.8	12.0	1.4	9.0	Nov-07
eV US Large Cap Core Equity Gross Rank			48	82	91	86	68	82	72	89	6	86	80	Nov-07
Loomis Sayles Large Cap Growth	88,586,884	6.1	10.0	32.7	20.5	--	--	32.7	-1.7	34.1	--	--	20.5	Dec-16
Russell 1000 Growth			10.6	36.4	20.5	--	--	36.4	-1.5	30.2	--	--	20.5	Dec-16
eV US Large Cap Growth Equity Gross Rank			43	67	44	--	--	67	58	16	--	--	44	Dec-16
Boston Partners Large Cap Value	86,394,748	6.0	8.2	24.3	--	--	--	24.3	-8.5	--	--	--	10.9	Jan-17
Russell 1000 Value			7.4	26.5	--	--	--	26.5	-8.3	--	--	--	9.7	Jan-17
eV US Large Cap Value Equity Gross Rank			41	77	--	--	--	77	54	--	--	--	43	Jan-17
Atlanta Capital Mgmt	63,995,277	4.4	3.8	35.1	17.8	15.2	--	35.1	-4.5	26.6	12.6	10.4	18.1	Aug-10
Russell 2500			8.5	27.8	10.3	8.9	--	27.8	-10.0	16.8	17.6	-2.9	13.7	Aug-10
eV US Small-Mid Cap Equity Gross Rank			98	15	16	3	--	15	25	15	62	1	1	Aug-10
Total International Equity	323,758,246	22.4	10.3	30.2	13.1	7.2	8.1	30.2	-12.2	26.6	2.2	-4.3		
MSCI ACWI ex USA Gross			9.0	22.1	10.4	6.0	5.4	22.1	-13.8	27.8	5.0	-5.3		
InvMetrics Public DB ex-US Eq Gross Rank			24	1	4	19	4	1	9	81	82	68		
Dodge & Cox Intl Stock	153,763,831	10.6	10.8	23.6	8.4	4.3	6.4	23.6	-17.5	24.7	9.0	-10.8	3.1	Dec-07
MSCI EAFE Gross			8.2	22.7	10.1	6.2	6.0	22.7	-13.4	25.6	1.5	-0.4	2.4	Dec-07
eV All EAFE Equity Gross Rank			26	47	80	95	71	47	73	74	3	99	64	Dec-07
WCM International Growth	169,994,415	11.8	10.0	36.7	--	--	--	36.7	-6.7	--	--	--	17.5	Feb-17
MSCI ACWI ex USA Gross			9.0	22.1	--	--	--	22.1	-13.8	--	--	--	9.1	Feb-17
eV ACWI ex-US All Cap Growth Eq Gross Rank			67	12	--	--	--	12	1	--	--	--	9	Feb-17

Since Inception ranking is from the beginning of the first complete month of performance. Research Affiliates converted to PIMCO RAE Fundamental Plus Instl on 6/5/15 (performance prior to this date represents previously held Research Affiliates Equity US Large, L.P.). ARA American funded 6/22/2016. Fidelity Real Estate Growth II liquidated 12/31/2015. Loomis Sayles Large Cap Growth funded 12/31/2016. Boston Partners funded 1/31/2017. Vontobel liquidated 2/15/2017. WCM International funded 2/15/2017. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core and Dodge & Cox Income funded 1/19/2017. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Fidelity Real Estate Growth III liquidated 12/29/2017. SSGA S&P 500 Flagship liquidated 1/3/2018. SSGA TIPS liquidated 1/17/2018. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidated as of 12/19/2019.

Total Fund

Performance Summary (Gross of Fees)

Period Ending: December 31, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Total Domestic Fixed Income	280,963,382	19.4	0.9	9.9	4.8	4.0	4.6	9.9	0.4	4.3	4.5	1.1		
BBgBarc US Aggregate TR			0.2	8.7	4.0	3.0	3.7	8.7	0.0	3.5	2.6	0.6		
InvMetrics Public DB US Fix Inc Gross Rank			15	9	17	14	32	9	55	50	49	17		
BlackRock Core Bond	103,266,090	7.1	0.3	10.2	--	--	--	10.2	0.3	--	--	--	4.6	Jan-17
BBgBarc US Aggregate TR			0.2	8.7	--	--	--	8.7	0.0	--	--	--	4.1	Jan-17
eV US Core Fixed Inc Gross Rank			45	10	--	--	--	10	27	--	--	--	31	Jan-17
Dodge & Cox Income Fund	107,319,716	7.4	1.0	10.2	--	--	--	10.2	0.1	--	--	--	5.0	Jan-17
BBgBarc US Aggregate TR			0.2	8.7	--	--	--	8.7	0.0	--	--	--	4.1	Jan-17
eV US Core Fixed Inc Gross Rank			3	10	--	--	--	10	43	--	--	--	7	Jan-17
Pacific Asset Corporate Loan	70,377,576	4.9	1.6	9.1	4.9	5.3	--	9.1	1.0	4.9	9.2	2.5	4.7	Sep-14
S&P/LSTA Leveraged Loan Index			1.7	8.6	4.3	4.4	--	8.6	0.4	4.1	10.2	-0.7	3.9	Sep-14
eV US Float-Rate Bank Loan Fixed Inc Gross Rank			67	35	13	10	--	35	29	26	51	9	29	Sep-14
Total Global Fixed	142,118,607	9.8	4.0	7.8	4.8	1.5	2.7	7.8	-6.6	14.4	5.8	-11.8		
FTSE World Govt Bond Index			-0.4	5.9	4.1	2.0	1.8	5.9	-0.8	7.5	1.6	-3.6		
InvMetrics Public DB Gbl Fix Inc Gross Rank			--	--	--	--	--	--	99	29	67	95		
Brandywine Global Fixed Income	68,864,863	4.8	5.0	6.2	4.6	1.2	3.3	6.2	-4.1	12.5	2.2	-9.3	3.8	Nov-07
FTSE WGBI ex US TR			-0.1	5.3	4.5	1.9	1.4	5.3	-1.8	10.3	1.8	-5.5	2.2	Nov-07
eV All Global Fixed Inc Gross Rank			8	85	67	92	65	85	80	14	75	92	60	Nov-07
Ashmore EM Blended Debt Fund	73,253,744	5.1	3.2	--	--	--	--	--	--	--	--	--	5.1	Mar-19
50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+			3.1	--	--	--	--	--	--	--	--	--	7.3	Mar-19
eV All Emg Mkts Fixed Inc Gross Rank			55	--	--	--	--	--	--	--	--	--	90	Mar-19
Total Real Estate	204,950,512	14.2	2.0	4.3	6.5	9.0	9.0	4.3	7.5	7.8	7.8	18.0		
NCREIF Property Index			1.6	6.4	6.7	8.2	10.2	6.4	6.7	7.0	8.0	13.3		
JP Morgan Core Real Estate	170,439,620	11.8	2.1	3.4	5.5	8.0	10.9	3.4	7.0	6.1	8.4	15.2	5.5	Mar-08
NCREIF-ODCE			1.5	5.4	7.1	9.0	11.4	5.4	8.3	7.6	8.8	15.0	5.4	Mar-08
NCREIF Property Index			1.6	6.4	6.7	8.2	10.2	6.4	6.7	7.0	8.0	13.3	6.3	Mar-08
ARA American Strategic Value Realty	34,510,892	2.4	1.8	7.3	7.9	--	--	7.3	9.1	7.4	--	--	8.4	Jun-16
NCREIF-ODCE			1.5	5.4	7.1	--	--	5.4	8.3	7.6	--	--	7.3	Jun-16
NCREIF Property Index			1.6	6.4	6.7	--	--	6.4	6.7	7.0	--	--	6.8	Jun-16

Since Inception ranking is from the beginning of the first complete month of performance. Research Affiliates converted to PIMCO RAE Fundamental Plus Instl on 6/5/15 (performance prior to this date represents previously held Research Affiliates Equity US Large, L.P.). ARA American funded 6/22/2016. Fidelity Real Estate Growth II liquidated 12/31/2015. Loomis Sayles Large Cap Growth funded 12/31/2016. Boston Partners funded 1/31/2017. Vontobel liquidated 2/15/2017. WCM International funded 2/15/2017. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core and Dodge & Cox Income funded 1/19/2017. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Fidelity Real Estate Growth III liquidated 12/29/2017. SSGA S&P 500 Flagship liquidated 1/3/2018. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidated as of 12/19/2019.

Total Fund
Performance Summary (Gross of Fees)

Period Ending: December 31, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Total Commodities	47,369,955	3.3	5.5	8.7	0.4	-3.2	-4.2	8.7	-12.4	6.2	12.6	-25.2		
<i>Bloomberg Commodity Index TR USD</i>			4.4	7.7	-0.9	-3.9	-4.7	7.7	-11.2	1.7	11.8	-24.7		
Gresham MTAP Commodity Builder	47,369,955	3.3	5.5	8.7	0.4	-3.2	--	8.7	-12.4	6.2	12.6	-25.2	-5.6	Aug-13
<i>Bloomberg Commodity Index TR USD</i>			4.4	7.7	-0.9	-3.9	--	7.7	-11.2	1.7	11.8	-24.7	-6.5	Aug-13
Total Private Equity	52,730,496	3.6												
Harbourvest Partners IX Buyout Fund L.P.	14,788,326	1.0												
Pathway Private Equity Fund Investors 9 L.P.	32,992,378	2.3												
Harbourvest 2018 Global Fund L.P.	4,949,792	0.3												
Total Private Credit	58,624,382	4.1												
TPG Diversified Credit Program	58,624,382	4.1												
Total Cash	26,982,942	1.9	0.7	2.2	1.6	1.1	0.8	2.2	1.5	1.0	0.5	0.4		
<i>91 Day T-Bills</i>			0.4	2.1	1.6	1.1	0.6	2.1	1.9	0.9	0.3	0.0		
Cash Account	26,982,942	1.9	0.7	2.2	1.6	1.1	0.8	2.2	1.5	1.0	0.5	0.4		
<i>91 Day T-Bills</i>			0.4	2.1	1.6	1.1	0.6	2.1	1.9	0.9	0.3	0.0		
Total Opportunistic	4,797,458	0.3												
Kohlberg Kravis Roberts & Co. Mezzanine Partners I	4,695,289	0.3												
PIMCO Distressed Credit Fund	102,169	0.0												

Since Inception ranking is from the beginning of the first complete month of performance. Research Affiliates converted to PIMCO RAE Fundamental Plus Instl on 6/5/15 (performance prior to this date represents previously held Research Affiliates Equity US Large, L.P.). ARA American funded 6/22/2016. Fidelity Real Estate Growth II liquidated 12/31/2015. Loomis Sayles Large Cap Growth funded 12/31/2016. Boston Partners funded 1/31/2017. Vontobel liquidated 2/15/2017. WCM International funded 2/15/2017. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core and Dodge & Cox Income funded 1/19/2017. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Fidelity Real Estate Growth III liquidated 12/29/2017. SSGA S&P 500 Flagship liquidated 1/3/2018. SSGA TIPS liquidated 1/17/2018. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidated as of 12/19/2019.

Total Fund Performance Summary (Net of Fees)

Period Ending: December 31, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Fund	1,446,498,502	100.0	5.0	15.8	8.7	6.1	7.7	15.8	-3.5	15.0	6.0	-1.3
<i>Policy Index</i>			4.7	16.6	8.6	6.6	7.6	16.6	-3.2	13.4	7.8	-0.5
Total Domestic Equity	301,350,674	20.8	7.6	28.7	14.8	11.4	13.7	28.7	-5.7	24.5	12.7	0.8
<i>Russell 3000</i>			9.1	31.0	14.6	11.2	13.4	31.0	-5.2	21.1	12.7	0.5
PIMCO RAE Fundamental PLUS Instl	62,373,766	4.3	8.2	25.0	10.7	8.6	12.5	25.0	-7.0	16.5	15.4	-3.2
<i>S&P 500</i>			9.1	31.5	15.3	11.7	13.6	31.5	-4.4	21.8	12.0	1.4
Loomis Sayles Large Cap Growth	88,586,884	6.1	9.8	32.1	20.0	--	--	32.1	-2.1	33.5	--	--
<i>Russell 1000 Growth</i>			10.6	36.4	20.5	--	--	36.4	-1.5	30.2	--	--
Boston Partners Large Cap Value	86,394,748	6.0	8.1	23.8	--	--	--	23.8	-8.9	--	--	--
<i>Russell 1000 Value</i>			7.4	26.5	--	--	--	26.5	-8.3	--	--	--
Atlanta Capital Mgmt	63,995,277	4.4	3.6	34.1	16.8	14.3	--	34.1	-5.3	25.6	11.7	9.6
<i>Russell 2500</i>			8.5	27.8	10.3	8.9	--	27.8	-10.0	16.8	17.6	-2.9
Total International Equity	323,758,246	22.4	10.2	29.3	12.4	6.5	7.4	29.3	-12.8	25.8	1.6	-4.9
<i>MSCI ACWI ex USA Gross</i>			9.0	22.1	10.4	6.0	5.4	22.1	-13.8	27.8	5.0	-5.3
Dodge & Cox Intl Stock	153,763,831	10.6	10.6	22.8	7.7	3.7	5.8	22.8	-18.0	23.9	8.3	-11.4
<i>MSCI EAFE Gross</i>			8.2	22.7	10.1	6.2	6.0	22.7	-13.4	25.6	1.5	-0.4
WCM International Growth	169,994,415	11.8	9.8	35.8	--	--	--	35.8	-7.4	--	--	--
<i>MSCI ACWI ex USA Gross</i>			9.0	22.1	--	--	--	22.1	-13.8	--	--	--
Total Domestic Fixed Income	280,963,382	19.4	0.8	9.5	4.4	3.7	4.3	9.5	0.0	3.9	4.2	0.9
<i>BBgBarc US Aggregate TR</i>			0.2	8.7	4.0	3.0	3.7	8.7	0.0	3.5	2.6	0.6
BlackRock Core Bond	103,266,090	7.1	0.2	9.9	--	--	--	9.9	0.1	--	--	--
<i>BBgBarc US Aggregate TR</i>			0.2	8.7	--	--	--	8.7	0.0	--	--	--
Dodge & Cox Income Fund	107,319,716	7.4	0.8	9.7	--	--	--	9.7	-0.3	--	--	--
<i>BBgBarc US Aggregate TR</i>			0.2	8.7	--	--	--	8.7	0.0	--	--	--
Pacific Asset Corporate Loan	70,377,576	4.9	1.5	8.7	4.6	4.9	--	8.7	0.7	4.6	8.8	2.1
<i>S&P/LSTA Leveraged Loan Index</i>			1.7	8.6	4.3	4.4	--	8.6	0.4	4.1	10.2	-0.7
Total Global Fixed	142,118,607	9.8	3.9	7.2	4.2	0.8	2.0	7.2	-7.2	13.7	5.1	-12.4
<i>FTSE World Govt Bond Index</i>			-0.4	5.9	4.1	2.0	1.8	5.9	-0.8	7.5	1.6	-3.6
Brandywine Global Fixed Income	68,864,863	4.8	4.9	5.7	4.2	0.8	2.8	5.7	-4.5	12.0	1.7	-9.7
<i>FTSE WGBI ex US TR</i>			-0.1	5.3	4.5	1.9	1.4	5.3	-1.8	10.3	1.8	-5.5

Research Affiliates converted to PIMCO RAE Fundamental Plus Instl on 6/5/15 (performance prior to this date represents previously held Research Affiliates Equity US Large, L.P.). ARA American funded 6/22/2016. Fidelity Real Estate Growth II liquidated 12/31/2015. Loomis Sayles Large Cap Growth funded 12/31/2016. Boston Partners funded 1/31/2017. Vontobel liquidated 2/15/2017. WCM International funded 2/15/2017. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core and Dodge & Cox Income funded 1/19/2017. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Fidelity Real Estate Growth III liquidated 12/29/2017. SSGA S&P 500 Flagship liquidated 1/3/2018. SSGA TIPS liquidated 1/17/2018. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidatrf as of 12/19/2019.

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Ashmore EM Blended Debt Fund	73,253,744	5.1	3.1	--	--	--	--	--	--	--	--	--
50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+			3.1	--	--	--	--	--	--	--	--	--
Total Real Estate	204,950,512	14.2	2.0	4.3	6.5	8.6	8.5	4.3	7.5	7.8	6.8	16.9
NCREIF Property Index			1.6	6.4	6.7	8.2	10.2	6.4	6.7	7.0	8.0	13.3
JP Morgan Core Real Estate	170,439,620	11.8	2.1	3.4	5.5	7.5	10.1	3.4	7.0	6.1	7.3	14.1
NCREIF-ODCE			1.5	5.4	7.1	9.0	11.4	5.4	8.3	7.6	8.8	15.0
NCREIF Property Index			1.6	6.4	6.7	8.2	10.2	6.4	6.7	7.0	8.0	13.3
ARA American Strategic Value Realty	34,510,892	2.4	1.8	7.3	7.9	--	--	7.3	9.1	7.4	--	--
NCREIF-ODCE			1.5	5.4	7.1	--	--	5.4	8.3	7.6	--	--
NCREIF Property Index			1.6	6.4	6.7	--	--	6.4	6.7	7.0	--	--
Total Commodities	47,369,955	3.3	5.5	8.7	0.4	-3.5	-4.5	8.7	-12.4	6.2	11.8	-25.8
Bloomberg Commodity Index TR USD			4.4	7.7	-0.9	-3.9	-4.7	7.7	-11.2	1.7	11.8	-24.7
Gresham MTAP Commodity Builder	47,369,955	3.3	5.5	8.7	0.4	-3.5	--	8.7	-12.4	6.2	11.8	-25.8
Bloomberg Commodity Index TR USD			4.4	7.7	-0.9	-3.9	--	7.7	-11.2	1.7	11.8	-24.7
Total Private Equity	52,730,496	3.6										
Harbourvest Partners IX Buyout Fund L.P.	14,788,326	1.0										
Pathway Private Equity Fund Investors 9 L.P.	32,992,378	2.3										
Harbourvest 2018 Global Fund L.P.	4,949,792	0.3										
Total Private Credit	58,624,382	4.1										
TPG Diversified Credit Program	58,624,382	4.1										
Total Cash	26,982,942	1.9	0.7	2.2	1.6	1.1	0.8	2.2	1.5	1.0	0.5	0.4
91 Day T-Bills			0.4	2.1	1.6	1.1	0.6	2.1	1.9	0.9	0.3	0.0
Cash Account	26,982,942	1.9	0.7	2.2	1.6	1.1	0.8	2.2	1.5	1.0	0.5	0.4
91 Day T-Bills			0.4	2.1	1.6	1.1	0.6	2.1	1.9	0.9	0.3	0.0
Total Opportunistic	4,797,458	0.3										
Kohlberg Kravis Roberts & Co. Mezzanine Partners I	4,695,289	0.3										
PIMCO Distressed Credit Fund	102,169	0.0										

Research Affiliates converted to PIMCO RAE Fundamental Plus Instl on 6/5/15 (performance prior to this date represents previously held Research Affiliates Equity US Large, L.P.). ARA American funded 6/22/2016. Fidelity Real Estate Growth II liquidated 12/31/2015. Loomis Sayles Large Cap Growth funded 12/31/2016. Boston Partners funded 1/31/2017. Vontobel liquidated 2/15/2017. WCM International funded 2/15/2017. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core and Dodge & Cox Income funded 1/19/2017. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Fidelity Real Estate Growth III liquidated 12/29/2017. SSGA S&P 500 Flagship liquidated 1/3/2018. SSGA TIPS liquidated 1/17/2018. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidated as of 12/19/2019.

Investment Manager
Performance Analysis - 3 & 5 Years (Net of Fees)

Period Ending: December 31, 2019

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
PIMCO RAE Fundamental PLUS Instl	10.65%	-4.62%	12.70%	-4.89%	1.02	3.10%	0.94	0.71	-1.49	83.76%	109.23%
Loomis Sayles Large Cap Growth	19.95%	-0.54%	13.98%	-0.90%	1.02	3.65%	0.93	1.31	-0.15	100.63%	104.59%
Atlanta Capital Mgmt	16.84%	6.51%	13.23%	8.36%	0.82	5.90%	0.84	1.15	1.10	103.20%	68.06%
Dodge & Cox Intl Stock	7.67%	-2.44%	13.96%	-4.60%	1.21	4.86%	0.91	0.43	-0.50	115.76%	132.08%
Pacific Asset Corporate Loan	4.61%	0.27%	2.63%	0.63%	0.92	0.57%	0.96	1.13	0.47	100.98%	87.36%
Brandywine Global Fixed Income	4.17%	-0.32%	7.27%	0.00%	0.93	5.16%	0.50	0.35	-0.06	95.74%	98.83%
JP Morgan Core Real Estate	5.49%	-1.61%	0.96%	4.87%	0.09	2.85%	0.07	3.98	-0.57	27.83%	--
ARA American Strategic Value Realty	7.93%	0.83%	3.51%	10.31%	-0.33	5.18%	0.08	1.79	0.16	12.02%	--
Gresham MTAP Commodity Builder	0.36%	1.30%	9.54%	1.33%	1.03	3.70%	0.85	-0.13	0.35	121.07%	104.19%

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
PIMCO RAE Fundamental PLUS Instl	8.64%	-3.06%	12.23%	-2.97%	0.99	2.89%	0.94	0.62	-1.06	85.21%	104.67%
Atlanta Capital Mgmt	14.32%	5.39%	12.79%	7.11%	0.81	5.74%	0.85	1.04	0.94	94.31%	70.56%
Dodge & Cox Intl Stock	3.68%	-2.50%	14.96%	-3.42%	1.15	5.42%	0.88	0.18	-0.46	110.29%	115.96%
Pacific Asset Corporate Loan	4.93%	0.49%	2.48%	1.42%	0.79	0.96%	0.92	1.57	0.51	92.25%	55.74%
Brandywine Global Fixed Income	0.76%	-1.11%	7.65%	-0.79%	0.83	5.14%	0.57	-0.04	-0.22	70.11%	85.56%
JP Morgan Core Real Estate	7.52%	-1.45%	1.30%	6.58%	0.11	3.70%	0.10	5.00	-0.39	27.03%	--
Gresham MTAP Commodity Builder	-3.46%	0.46%	11.90%	0.49%	1.01	3.20%	0.93	-0.38	0.15	110.87%	101.95%

Private Markets
Non Marketable Securities Overview

Period Ending: December 31, 2019

Vintage	Manager & Fund Name	Estimated 12/31 Market Value ³	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib./ Paid-In (DPI) ¹	Tot. Value/ Paid-In (TVPI) ²	Net IRR Since Inception ⁵	IRR Date
2011	HarbourVest Partners IX-Buyout Fund L.P.	\$14,788,326	\$20,000,000	\$16,550,000	83%	\$3,450,000	\$12,917,312	\$15,743,685	78.1%	167.4%	17.9%	9/30/19
2018	HarbourVest Partners 2018 Global Fund L.P.	\$4,949,792	\$20,000,000	\$4,800,000	23%	\$15,400,000	-	-	-	-	-	-
2010	KKR Mezzanine Partners I L.P. ⁶	\$4,695,289	\$20,000,000	\$20,000,000	100%	\$0	\$29,566,840	\$4,558,758	147.8%	171.3%	8.2%	9/30/19
2010	PIMCO Distressed Credit Fund ⁴	\$102,169	\$20,000,000	\$20,000,000	100%	\$0	\$27,950,093	\$102,169	139.8%	140.3%	12.3%	9/30/19
2016	TPG Diversified Credit Program	\$58,624,382	\$75,000,000	\$55,421,508	74%	\$19,578,492	\$5,530,296	\$59,157,445	10.0%	115.8%	9.3%	9/30/19
2017	Pathway Private Equity Fund Investors 9 L.P.	\$32,992,378	\$65,000,000	\$32,479,829	50%	\$32,520,171	\$243,611	-	0.8%	102.3%	-	-

Total Alternative Illiquids \$116,152,336 \$220,000,000 \$149,051,337 68% \$70,948,663 \$76,208,152 \$79,562,057 53.4% 104.5%

% of Portfolio (Market Value) 8.0%

	Management Fee	Admin Fee	Interest Expense	Other Expense	Total Expense ⁷
HarbourVest Partners IX-Buyout Fund L.P.	\$49,806	\$0	\$0	\$11,474	\$61,280
HarbourVest Partners 2018 Global Fund L.P.	\$32,665	\$0	\$0	\$36,277	\$68,942
KKR Mezzanine Partners I L.P.	\$15,683	\$0	\$0	\$7,680	\$23,363
PIMCO Distressed Credit Fund ⁴	\$0	\$0	\$0	\$332	\$332
TPG Diversified Credit Program	\$0	\$0	\$0	\$245,522	\$245,522
Pathway Private Equity Fund Investors 9 L.P.	\$98,283	\$0	\$0	\$0	\$98,283
	\$196,437	\$0	\$0	\$301,285	\$497,722

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

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

³Last known market value + capital calls - distributions

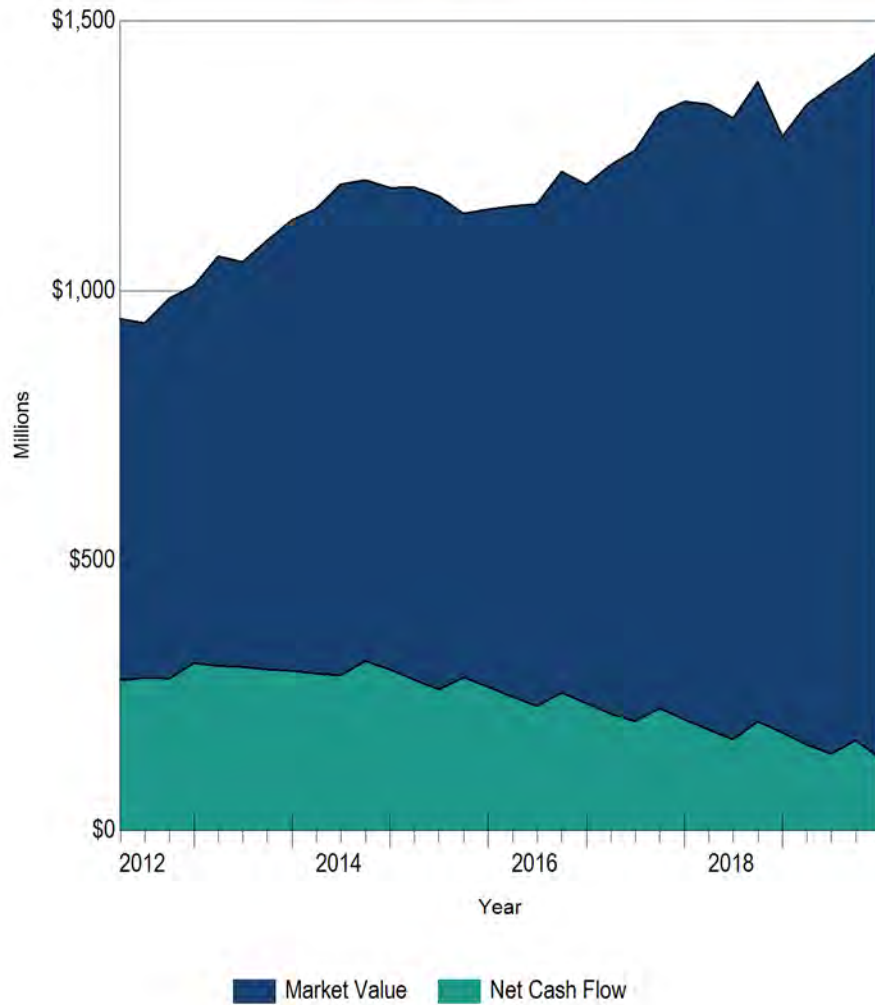
⁴Investment period ended, no further capital to be called.

⁵Net IRR is calculated on the cash flows of the underlying investments of the fund and is net of the underlying fund fees and carried interest.

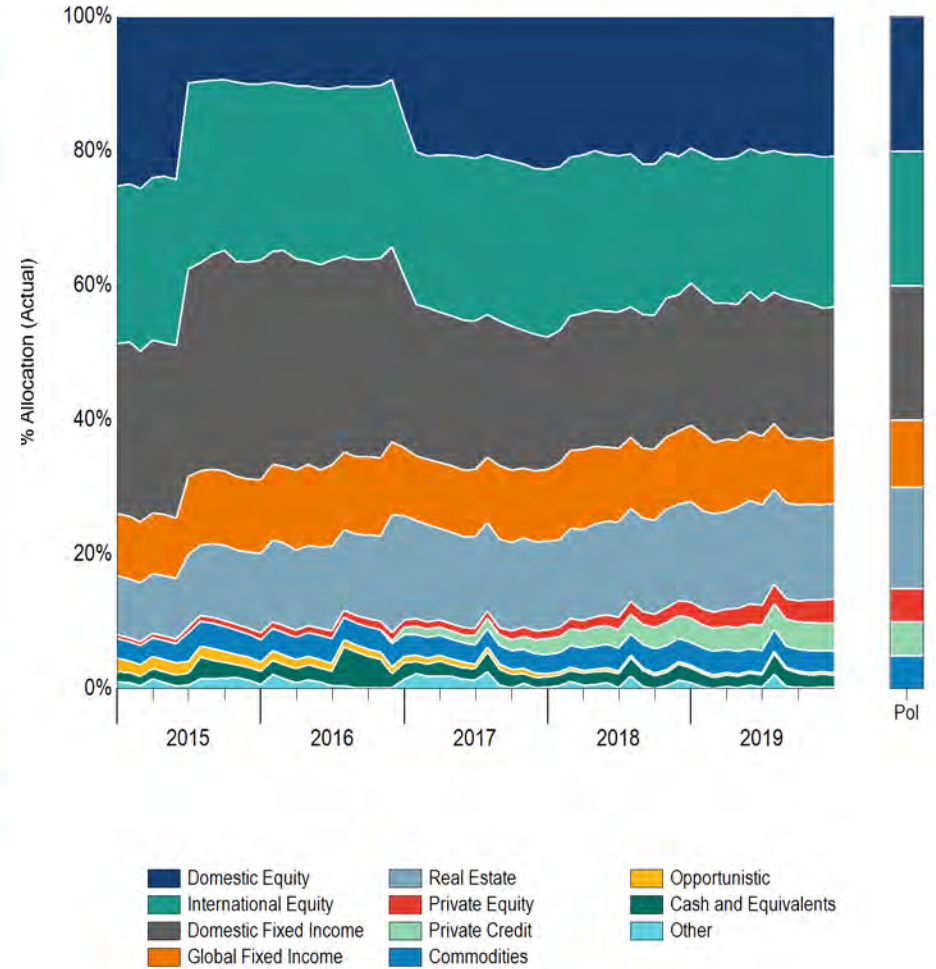
⁶KKR: As of 3Q2019, total capital called is \$23,593,570, which includes recycled distributions. Unused capital commitment is \$2,109,437 after including distribution proceeds available for reinvestment

⁷All fees and expenses are for 3Q 2019, except for Pathway, for which 2Q19 fees are shown.

Market Value History



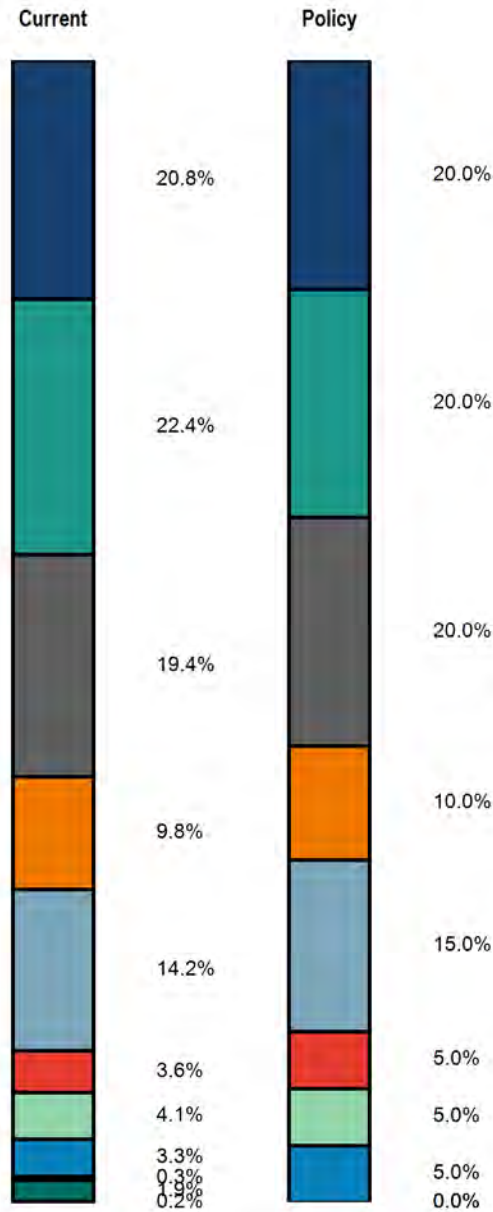
Asset Allocation History



*Other balance represents Clifton Group

Total Fund
Asset Allocation vs. Policy

Period Ending: December 31, 2019



	Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?
Domestic Equity	\$301,350,674	20.8%	20.0%	\$12,050,974	15.0% - 30.0%	Yes
International Equity	\$323,758,246	22.4%	20.0%	\$34,458,545	15.0% - 30.0%	Yes
Domestic Fixed Income	\$280,963,382	19.4%	20.0%	-\$8,336,318	10.0% - 30.0%	Yes
Global Fixed Income	\$142,118,607	9.8%	10.0%	-\$2,531,243	0.0% - 20.0%	Yes
Real Estate	\$204,950,512	14.2%	15.0%	-\$12,024,264	5.0% - 20.0%	Yes
Private Equity	\$52,730,496	3.6%	5.0%	-\$19,594,429	0.0% - 10.0%	Yes
Private Credit	\$58,624,382	4.1%	5.0%	-\$13,700,543	0.0% - 10.0%	Yes
Commodities	\$47,369,955	3.3%	5.0%	-\$24,954,970	0.0% - 10.0%	Yes
Opportunistic	\$4,797,458	0.3%	0.0%	\$4,797,458	0.0% - 10.0%	Yes
Cash and Equivalents	\$26,982,942	1.9%	0.0%	\$26,982,942	0.0% - 5.0%	Yes
Other	\$2,851,849	0.2%	--	\$2,851,849	--	No
Total	\$1,446,498,502	100.0%	100.0%			

*Other balance represents Clifton Group

Total Fund Investment Fund Fee Analysis

Period Ending: December 31, 2019

Account	Fee Schedule	Market Value As of 12/31/2019	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
ARA American Strategic Value Realty	1.25% of First 10.0 Mil, 1.20% of Next 15.0 Mil, 1.10% of Next 25.0 Mil, 1.00% Thereafter	\$34,510,892	2.4%	\$409,620	1.19%
Ashmore EM Blended Debt Fund	1.00% of Assets	\$73,253,744	5.1%	\$732,537	1.00%
Atlanta Capital Mgmt	0.80% of First 50.0 Mil, 0.70% of Next 100.0 Mil, 0.60% Thereafter	\$63,995,277	4.4%	\$497,967	0.78%
BlackRock Core Bond	0.28% of First 100.0 Mil, 0.26% Thereafter	\$103,266,090	7.1%	\$288,492	0.28%
Boston Partners Large Cap Value	0.40% of Assets	\$86,394,748	6.0%	\$345,579	0.40%
Brandywine Global Fixed Income	0.45% of First 50.0 Mil, 0.40% of Next 50.0 Mil, 0.35% Thereafter	\$68,864,863	4.8%	\$300,459	0.44%
Cash Account	No Fee	\$26,982,942	1.9%	--	--
Dodge & Cox Income Fund	0.42% of Assets	\$107,319,716	7.4%	\$450,743	0.42%
Dodge & Cox Intl Stock	0.64% of Assets	\$153,763,831	10.6%	\$984,089	0.64%
Gresham MTAP Commodity Builder	0.75% of First 50.0 Mil, 0.50% Thereafter	\$47,369,955	3.3%	\$355,275	0.75%
Harbourvest 2018 Global Fund L.P.	282,000 Annually	\$4,949,792	0.3%	\$282,000	5.70%
Harbourvest Partners IX Buyout Fund L.P.	200,000 Annually	\$14,788,326	1.0%	\$200,000	1.35%
JP Morgan Core Real Estate	0.92% of First 100.0 Mil, 0.80% of Next 150.0 Mil, 0.70% of Next 250.0 Mil, 0.50% Thereafter	\$170,439,620	11.8%	\$1,483,517	0.87%
Kohlberg Kravis Roberts & Co. Mezzanine Partners I	300,000 Annually	\$4,695,289	0.3%	\$300,000	6.39%
Loomis Sayles Large Cap Growth	0.45% of First 100.0 Mil, 0.40% Thereafter	\$88,586,884	6.1%	\$398,641	0.45%
Pacific Asset Corporate Loan	0.37% of Assets	\$70,377,576	4.9%	\$260,397	0.37%
Pathway Private Equity Fund Investors 9 L.P.	Please see footnote	\$32,992,378	2.3%	--	--
PIMCO Distressed Credit Fund	150,000 Annually	\$102,169	0.0%	\$150,000	146.82%
PIMCO RAE Fundamental PLUS Instl	0.40% of Assets	\$62,373,766	4.3%	\$249,495	0.40%
The Clifton Group	50,000 Annually	\$2,851,849	0.2%	\$50,000	1.75%
TPG Diversified Credit Program	Please see footnote	\$58,624,382	4.1%	--	--
WCM International Growth	0.70% of Assets	\$169,994,415	11.8%	\$1,189,961	0.70%
Investment Management Fee		\$1,446,498,502	100.0%	\$8,928,771	0.62%

*HarbourVest, KKR and PIMCO Distressed Credit fees are estimated gross management fees only and do not include incentive allocations or offsetting cash flows received by the fund. Pathway fee steps up and down over time, with an effective average of 0.71% up to \$25m, 0.67% up to \$50m, 0.63% up to \$75m, and 0.40% above \$75m.

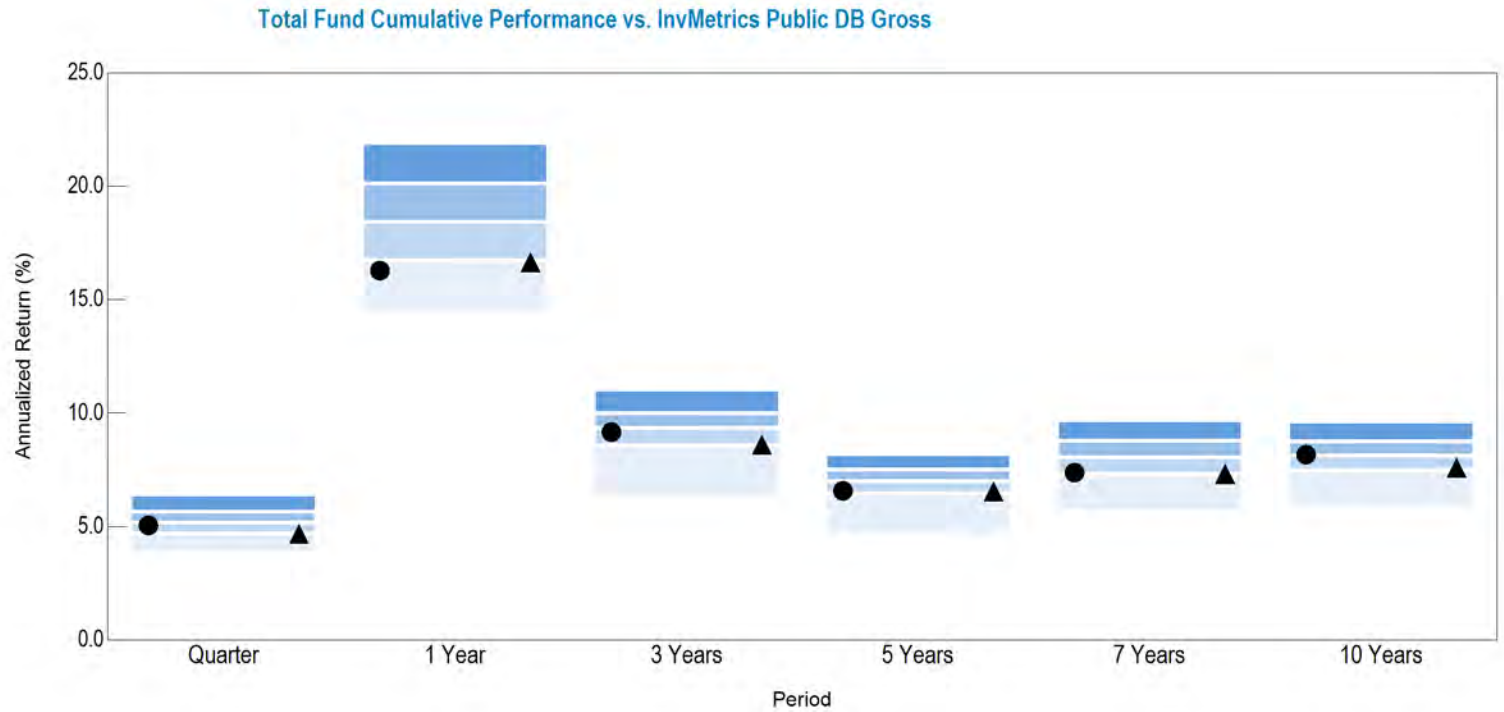
*Clifton Group fee schedule represents contractual minimum fee. Actual fee charged is \$1,500 per month through at least 6/30/2015.

*TPG: No management fee at SMA level. Subject to the annual fees of each of the underlying TSSP funds. (1) TAO 65bps on unfunded commitments and 1.35% on remaining capital contributions (long-term designation) (2) TSLE 1.5% on commitments, 1.25% on remaining capital contributions post commitment period (3) TICP 30bps on remaining capital contributions.

Total Fund

Peer Universe Comparison: Cumulative Performance (Gross of Fees)

Period Ending: December 31, 2019

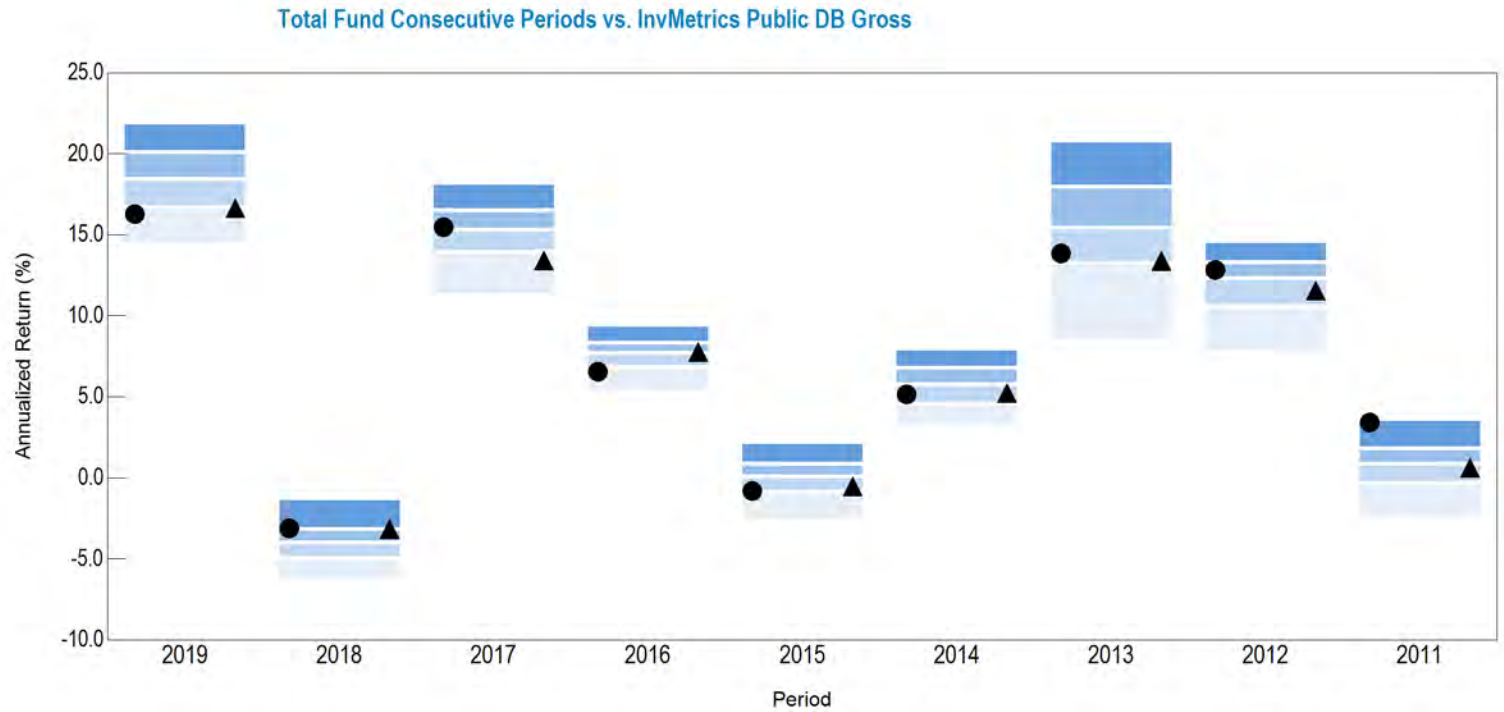


	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	6.4		21.9		11.0		8.2		9.7		9.6	
25th Percentile	5.7		20.1		10.0		7.5		8.8		8.8	
Median	5.2		18.5		9.4		7.0		8.1		8.1	
75th Percentile	4.7		16.8		8.6		6.5		7.3		7.5	
95th Percentile	3.9		14.4		6.3		4.7		5.7		5.9	
# of Portfolios	293		289		281		268		254		228	
● Total Fund	5.0	(60)	16.3	(83)	9.2	(58)	6.6	(72)	7.4	(74)	8.2	(48)
▲ Policy Index	4.7	(77)	16.6	(78)	8.6	(75)	6.6	(73)	7.3	(76)	7.6	(72)

Total Fund

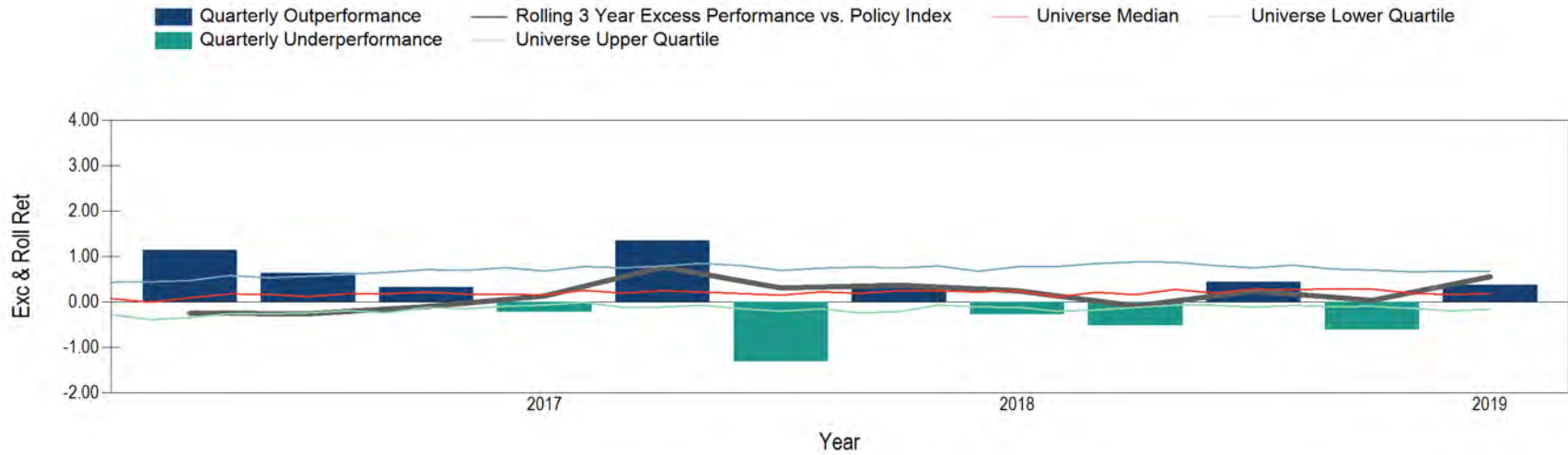
Peer Universe Comparison: Consecutive Periods (Gross of Fees)

Period Ending: December 31, 2019

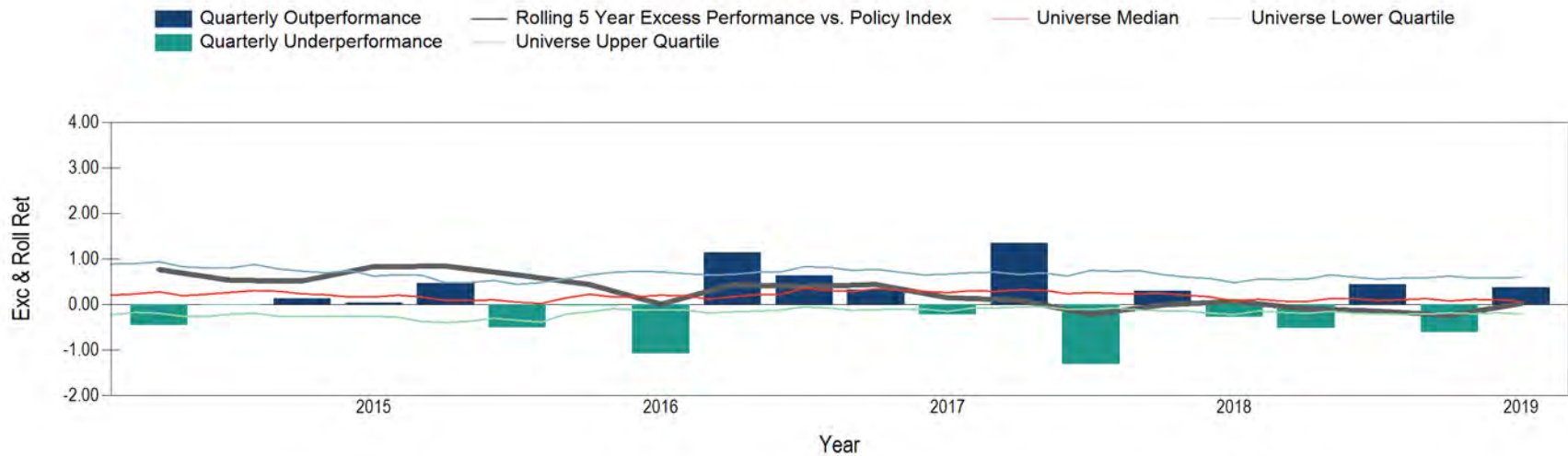


	2019	2018	2017	2016	2015	2014	2013	2012	2011
5th Percentile	21.9	-1.3	18.2	9.4	2.2	8.0	20.8	14.6	3.6
25th Percentile	20.1	-3.1	16.5	8.4	0.9	6.8	18.0	13.4	1.9
Median	18.5	-4.0	15.3	7.7	0.1	5.8	15.5	12.4	0.9
75th Percentile	16.8	-4.9	14.0	6.9	-0.9	4.6	13.3	10.7	-0.3
95th Percentile	14.4	-6.3	11.3	5.3	-2.6	3.2	8.5	7.8	-2.5
# of Portfolios	289	319	304	305	316	248	231	236	206
● Total Fund	16.3 (83)	-3.1 (25)	15.5 (47)	6.6 (84)	-0.8 (74)	5.1 (66)	13.8 (71)	12.8 (40)	3.4 (6)
▲ Policy Index	16.6 (78)	-3.2 (26)	13.4 (86)	7.8 (49)	-0.5 (67)	5.2 (64)	13.4 (74)	11.6 (69)	0.6 (60)

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



Total Domestic Equity
Asset Class Overview (Gross of Fees)

Period Ending: December 31, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Domestic Equity	301,350,674	7.8	29.4	15.3	11.9	14.2	29.4	-5.2	25.1	13.0	1.2
<i>Russell 3000</i>		9.1	31.0	14.6	11.2	13.4	31.0	-5.2	21.1	12.7	0.5
<i>InvMetrics Public DB US Eq Gross Rank</i>		71	66	12	8	5	66	36	4	48	18
PIMCO RAE Fundamental PLUS Instl	62,373,766	8.3	25.5	11.1	9.1	12.9	25.5	-6.6	17.0	15.9	-2.7
<i>S&P 500</i>		9.1	31.5	15.3	11.7	13.6	31.5	-4.4	21.8	12.0	1.4
<i>eV US Large Cap Core Equity Gross Rank</i>		48	82	91	86	68	82	72	89	6	86
Loomis Sayles Large Cap Growth	88,586,884	10.0	32.7	20.5	--	--	32.7	-1.7	34.1	--	--
<i>Russell 1000 Growth</i>		10.6	36.4	20.5	--	--	36.4	-1.5	30.2	--	--
<i>eV US Large Cap Growth Equity Gross Rank</i>		43	67	44	--	--	67	58	16	--	--
Boston Partners Large Cap Value	86,394,748	8.2	24.3	--	--	--	24.3	-8.5	--	--	--
<i>Russell 1000 Value</i>		7.4	26.5	--	--	--	26.5	-8.3	--	--	--
<i>eV US Large Cap Value Equity Gross Rank</i>		41	77	--	--	--	77	54	--	--	--
Atlanta Capital Mgmt	63,995,277	3.8	35.1	17.8	15.2	--	35.1	-4.5	26.6	12.6	10.4
<i>Russell 2500</i>		8.5	27.8	10.3	8.9	--	27.8	-10.0	16.8	17.6	-2.9
<i>eV US Small-Mid Cap Equity Gross Rank</i>		98	15	16	3	--	15	25	15	62	1

U.S. Effective Style Map
3 Years Ending December 31, 2019



U.S. Effective Style Map
5 Years Ending December 31, 2019



Total Domestic Equity
Asset Class Overview (Net of Fees)

Period Ending: December 31, 2019

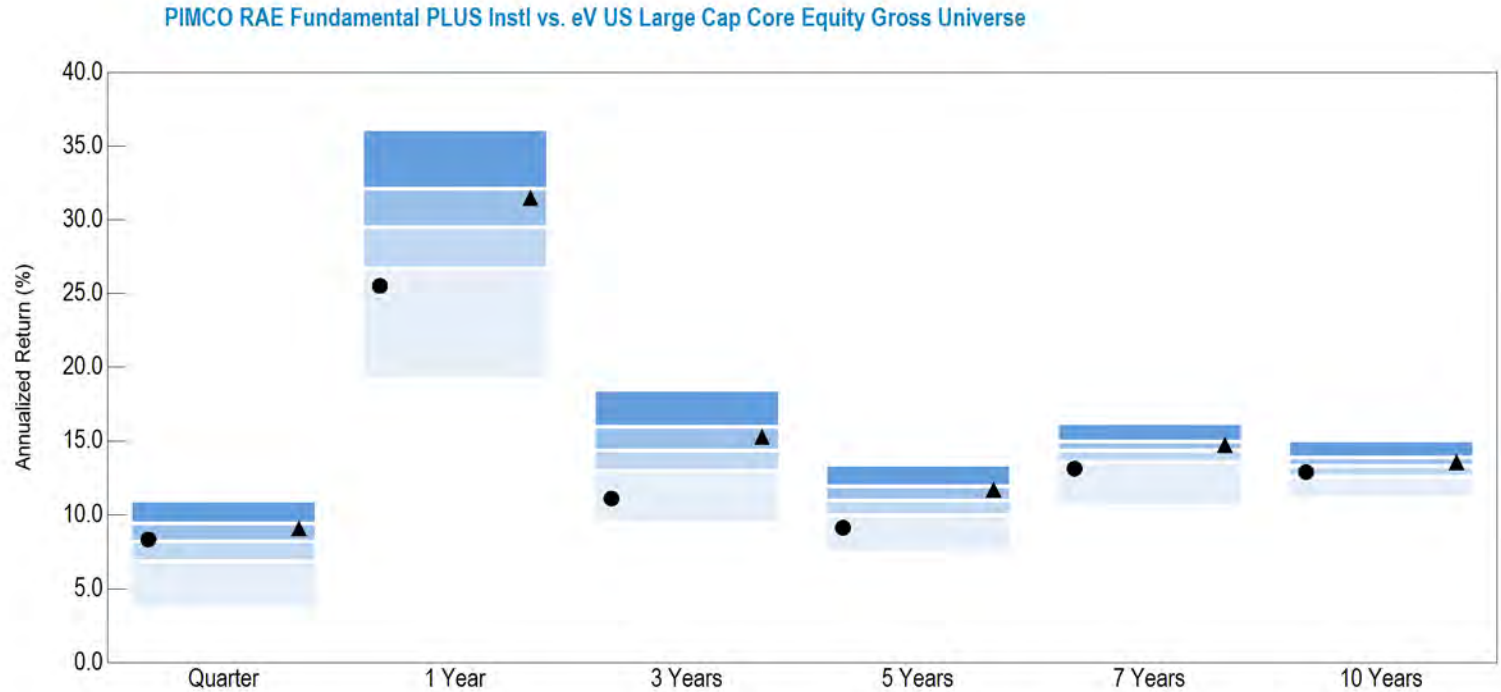
	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Domestic Equity	301,350,674	7.6	28.7	14.8	11.4	13.7	28.7	-5.7	24.5	12.7	0.8
<i>Russell 3000</i>		9.1	31.0	14.6	11.2	13.4	31.0	-5.2	21.1	12.7	0.5
PIMCO RAE Fundamental PLUS Instl	62,373,766	8.2	25.0	10.7	8.6	12.5	25.0	-7.0	16.5	15.4	-3.2
<i>S&P 500</i>		9.1	31.5	15.3	11.7	13.6	31.5	-4.4	21.8	12.0	1.4
Loomis Sayles Large Cap Growth	88,586,884	9.8	32.1	20.0	--	--	32.1	-2.1	33.5	--	--
<i>Russell 1000 Growth</i>		10.6	36.4	20.5	--	--	36.4	-1.5	30.2	--	--
Boston Partners Large Cap Value	86,394,748	8.1	23.8	--	--	--	23.8	-8.9	--	--	--
<i>Russell 1000 Value</i>		7.4	26.5	--	--	--	26.5	-8.3	--	--	--
Atlanta Capital Mgmt	63,995,277	3.6	34.1	16.8	14.3	--	34.1	-5.3	25.6	11.7	9.6
<i>Russell 2500</i>		8.5	27.8	10.3	8.9	--	27.8	-10.0	16.8	17.6	-2.9

Correlation Matrix
 Last 1 Year

	Total Domestic Equity	PIMCO RAE Fundamental PLUS Instl	Loomis Sayles Large Cap Growth	Boston Partners Large Cap Value	Russell 3000
Total Domestic Equity	1.00	--	--	--	--
PIMCO RAE Fundamental PLUS Instl	0.95	1.00	--	--	--
Loomis Sayles Large Cap Growth	0.99	0.95	1.00	--	--
Boston Partners Large Cap Value	0.93	0.99	0.95	1.00	--
Russell 3000	0.99	0.98	0.99	0.97	1.00

PIMCO RAE Fundamental PLUS Instl
 Cumulative Performance Comparison (Gross of Fees)

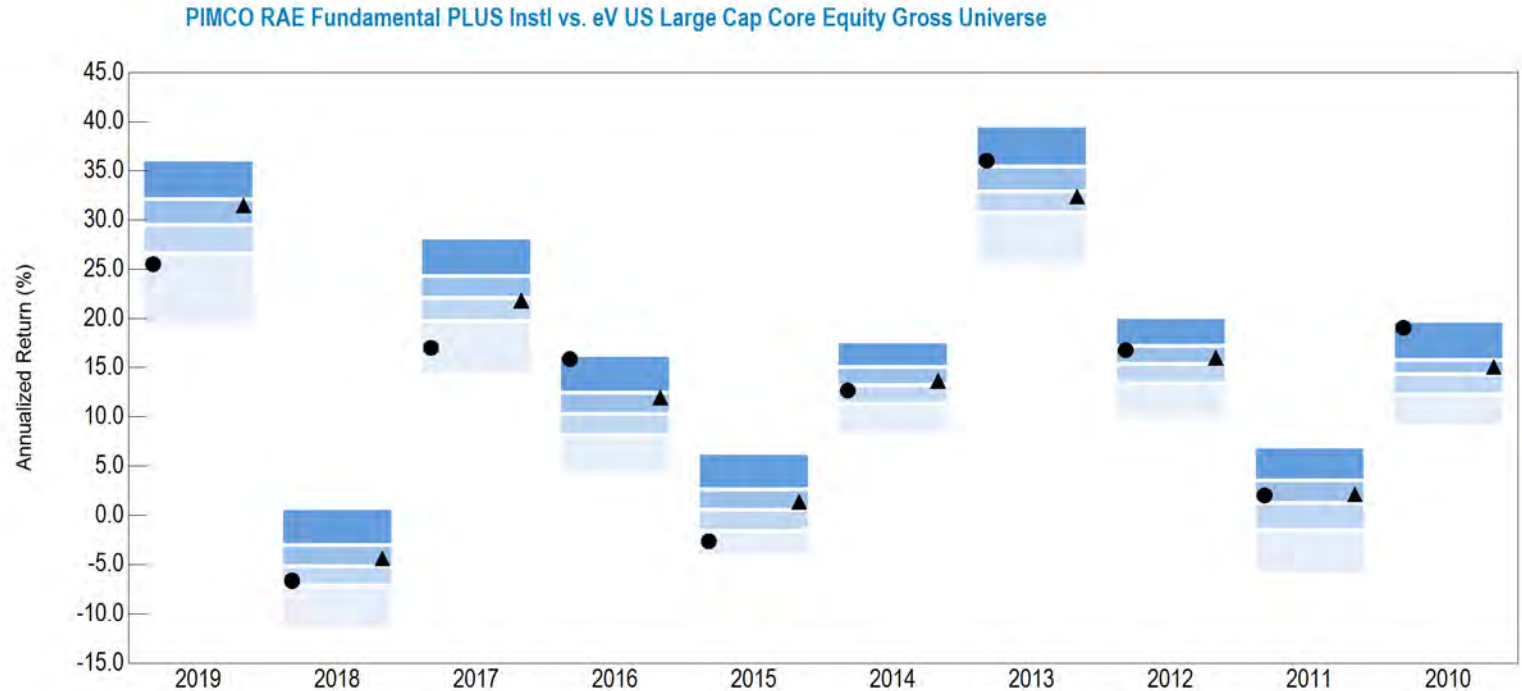
Period Ending: December 31, 2019



	Return (Rank)					
	Quarter	1 Year	3 Years	5 Years	7 Years	10 Years
5th Percentile	10.9	36.1	18.5	13.4	16.2	15.0
25th Percentile	9.4	32.1	16.0	11.9	15.0	13.9
Median	8.2	29.5	14.4	11.0	14.4	13.3
75th Percentile	6.9	26.7	13.0	10.0	13.6	12.6
95th Percentile	3.8	19.3	9.5	7.5	10.6	11.2
# of Portfolios	300	300	287	270	248	210
● PIMCO RAE Fundamental PLUS Instl	8.3 (48)	25.5 (82)	11.1 (91)	9.1 (86)	13.1 (83)	12.9 (68)
▲ S&P 500	9.1 (34)	31.5 (31)	15.3 (36)	11.7 (31)	14.7 (38)	13.6 (39)

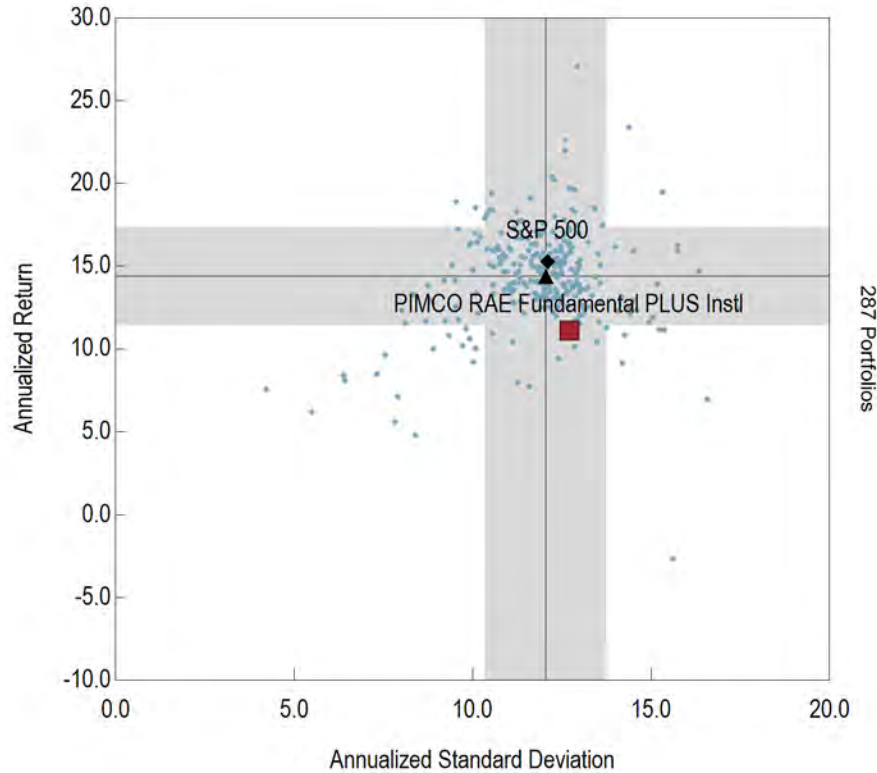
PIMCO RAE Fundamental PLUS Instl
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: December 31, 2019



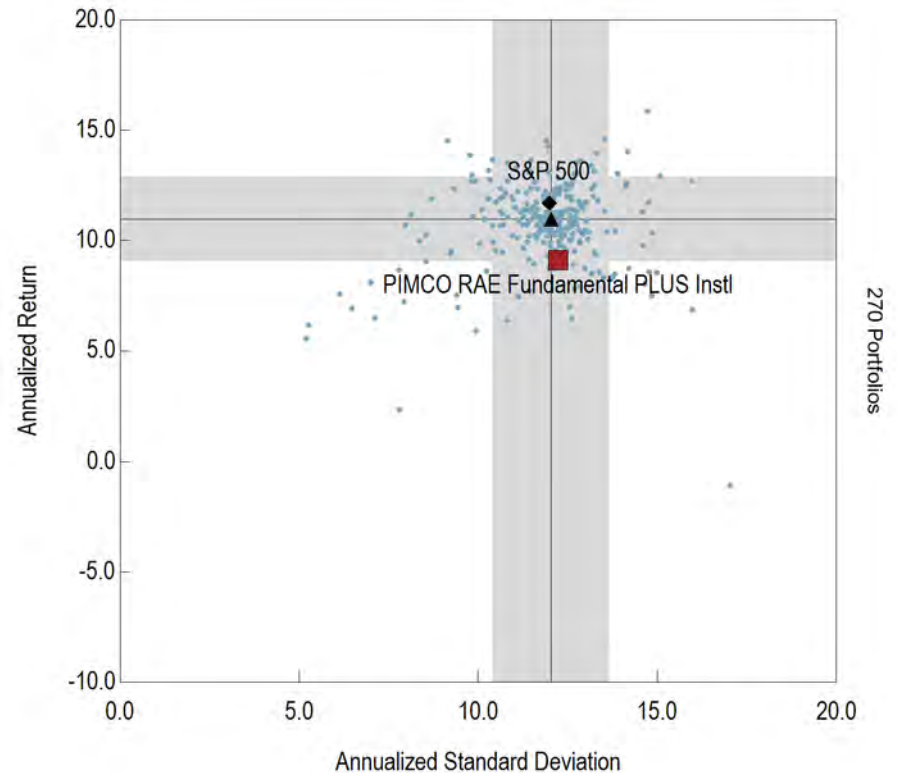
	Return (Rank)									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
5th Percentile	36.1	0.7	28.2	16.3	6.3	17.7	39.6	20.1	7.0	19.7
25th Percentile	32.1	-3.0	24.3	12.5	2.7	15.1	35.5	17.2	3.6	15.8
Median	29.5	-5.1	22.1	10.4	0.6	13.3	32.9	15.4	1.3	14.4
75th Percentile	26.7	-7.1	19.8	8.2	-1.6	11.4	30.8	13.4	-1.5	12.3
95th Percentile	19.3	-11.4	14.4	4.3	-4.1	8.2	25.4	9.8	-5.9	9.1
# of Portfolios	300	316	318	308	267	267	261	254	259	254
● PIMCO RAE Fundamental PLUS Instl	25.5 (82)	-6.6 (72)	17.0 (89)	15.9 (6)	-2.7 (86)	12.7 (58)	36.0 (22)	16.8 (29)	2.0 (41)	19.0 (7)
▲ S&P 500	31.5 (31)	-4.4 (40)	21.8 (53)	12.0 (31)	1.4 (42)	13.7 (42)	32.4 (58)	16.0 (41)	2.1 (40)	15.1 (37)

Annualized Return vs. Annualized Standard Deviation
 3 Years Ending December 31, 2019

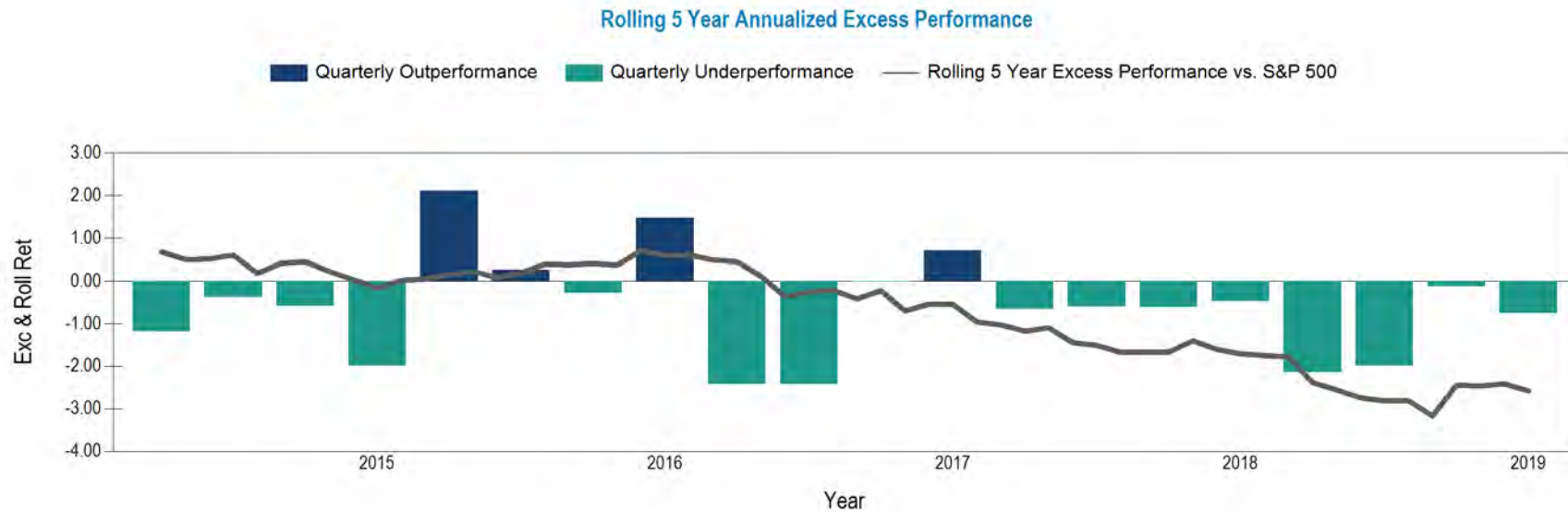


- PIMCO RAE Fundamental PLUS Instl
- ◆ S&P 500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Large Cap Core Equity Gross

Annualized Return vs. Annualized Standard Deviation
 5 Years Ending December 31, 2019

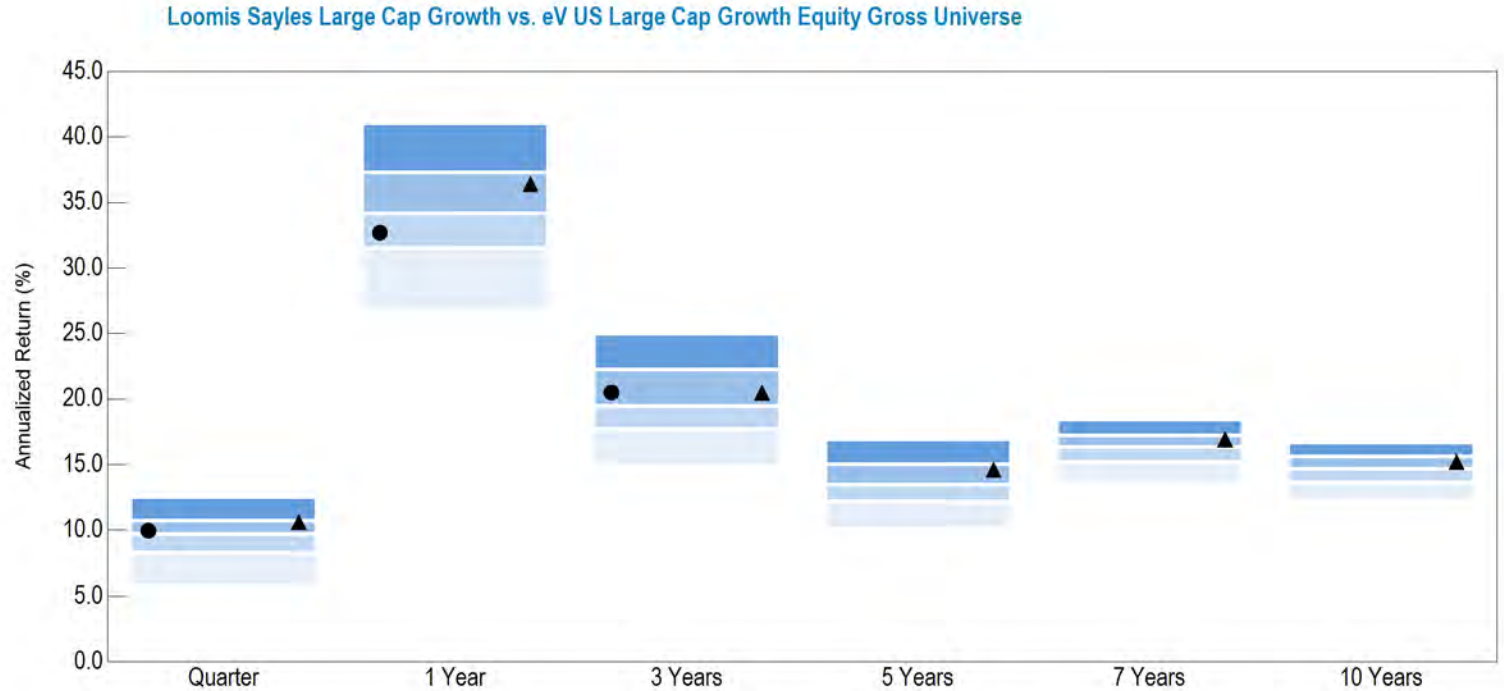


- PIMCO RAE Fundamental PLUS Instl
- ◆ S&P 500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Large Cap Core Equity Gross



Loomis Sayles Large Cap Growth
 Cumulative Performance Comparison (Gross of Fees)

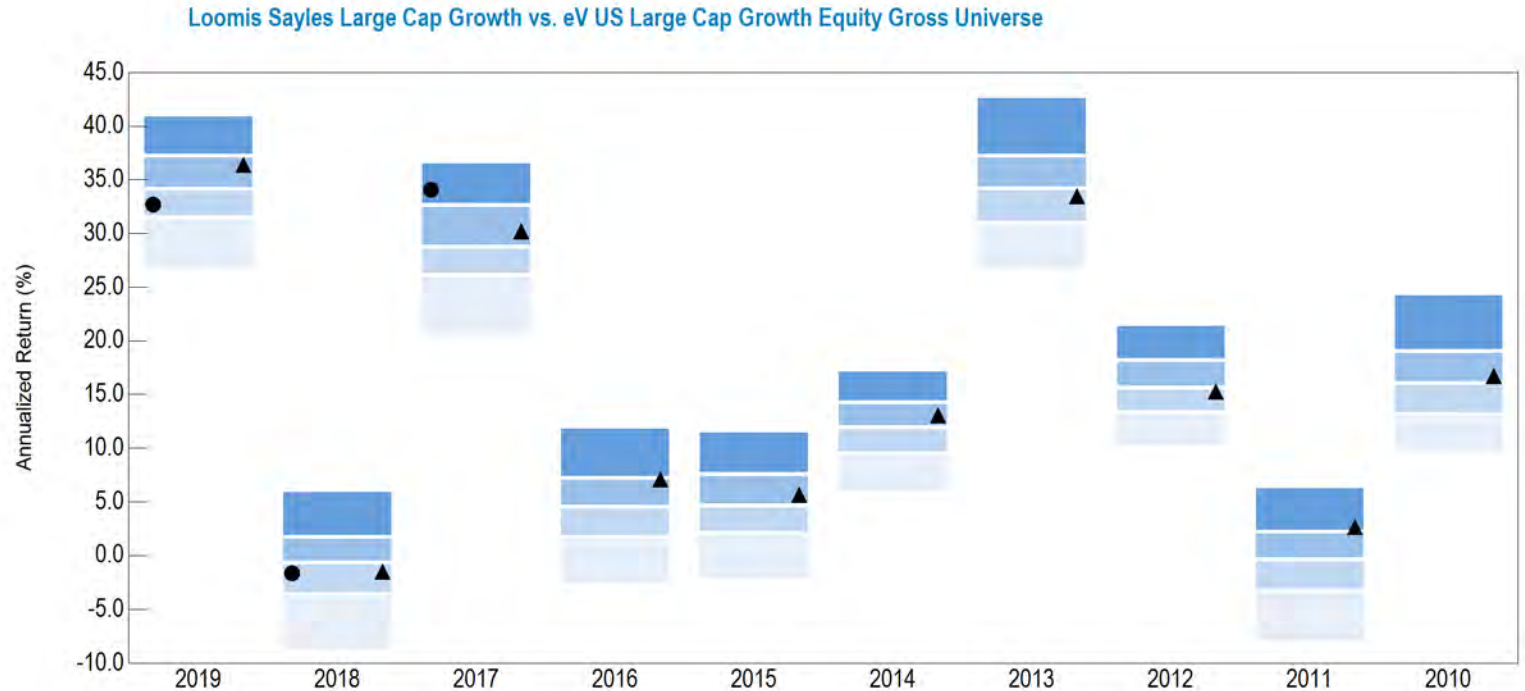
Period Ending: December 31, 2019



	Return (Rank)											
	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	12.5		41.0		25.0		16.9		18.4		16.7	
25th Percentile	10.7		37.3		22.3		15.0		17.3		15.6	
Median	9.7		34.2		19.5		13.5		16.3		14.7	
75th Percentile	8.3		31.6		17.7		12.2		15.3		13.7	
95th Percentile	5.8		26.7		15.0		10.1		13.6		12.3	
# of Portfolios	236		236		230		225		215		199	
● Loomis Sayles Large Cap Growth	10.0	(43)	32.7	(67)	20.5	(44)	--	(--)	--	(--)	--	(--)
▲ Russell 1000 Growth	10.6	(27)	36.4	(31)	20.5	(44)	14.6	(31)	16.9	(32)	15.2	(33)

Loomis Sayles Large Cap Growth
 Consecutive Performance Comparison (Gross of Fees)

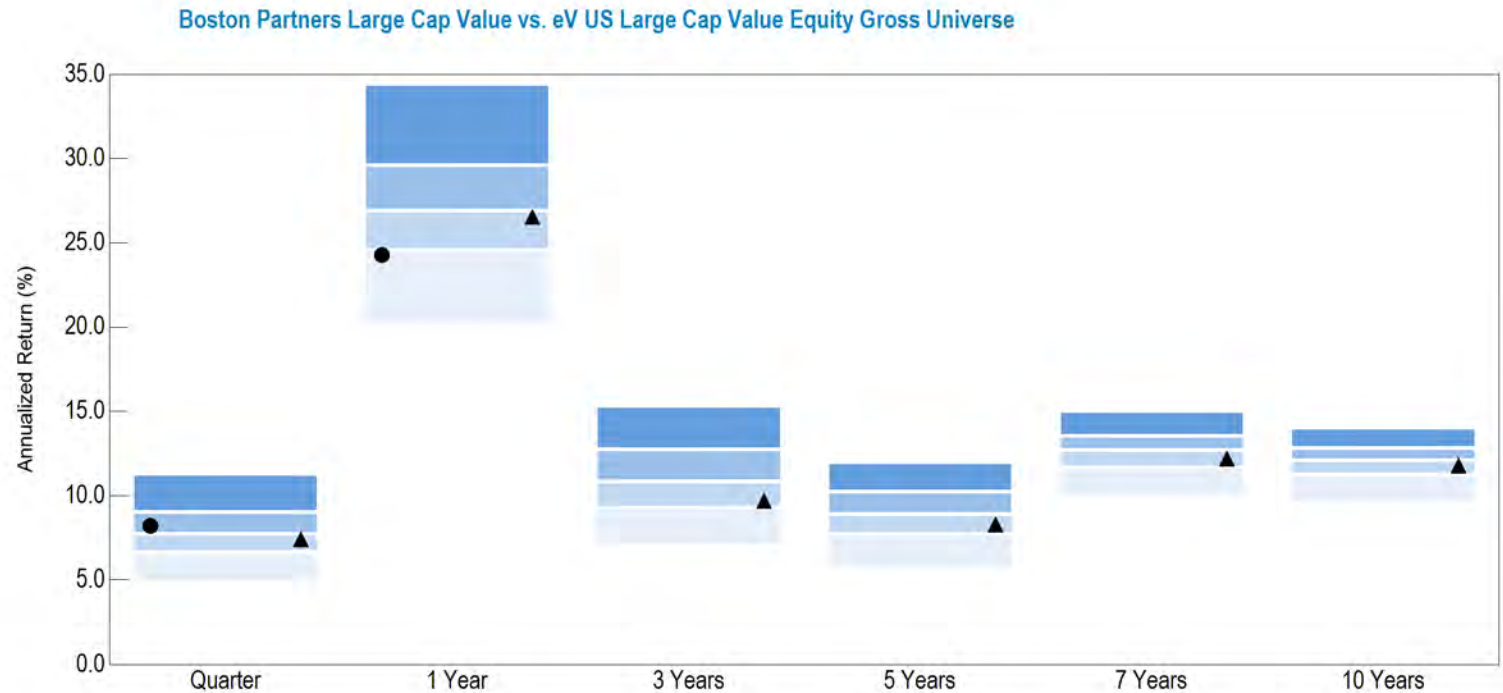
Period Ending: December 31, 2019



	Return (Rank)									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
5th Percentile	41.0	6.1	36.7	12.0	11.6	17.3	42.8	21.6	6.4	24.4
25th Percentile	37.3	1.7	32.7	7.3	7.6	14.3	37.3	18.2	2.2	19.1
Median	34.2	-0.6	28.8	4.6	4.7	12.0	34.3	15.7	-0.3	16.1
75th Percentile	31.6	-3.5	26.2	1.8	2.1	9.5	31.0	13.4	-3.2	13.2
95th Percentile	26.7	-8.8	20.5	-2.7	-2.4	5.8	26.6	10.2	-8.0	9.6
# of Portfolios	236	255	265	282	270	291	274	274	294	304
● Loomis Sayles Large Cap Growth	32.7 (67)	-1.7 (58)	34.1 (16)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
▲ Russell 1000 Growth	36.4 (31)	-1.5 (57)	30.2 (42)	7.1 (26)	5.7 (42)	13.0 (38)	33.5 (56)	15.3 (55)	2.6 (22)	16.7 (46)

Boston Partners Large Cap Value
 Cumulative Performance Comparison (Gross of Fees)

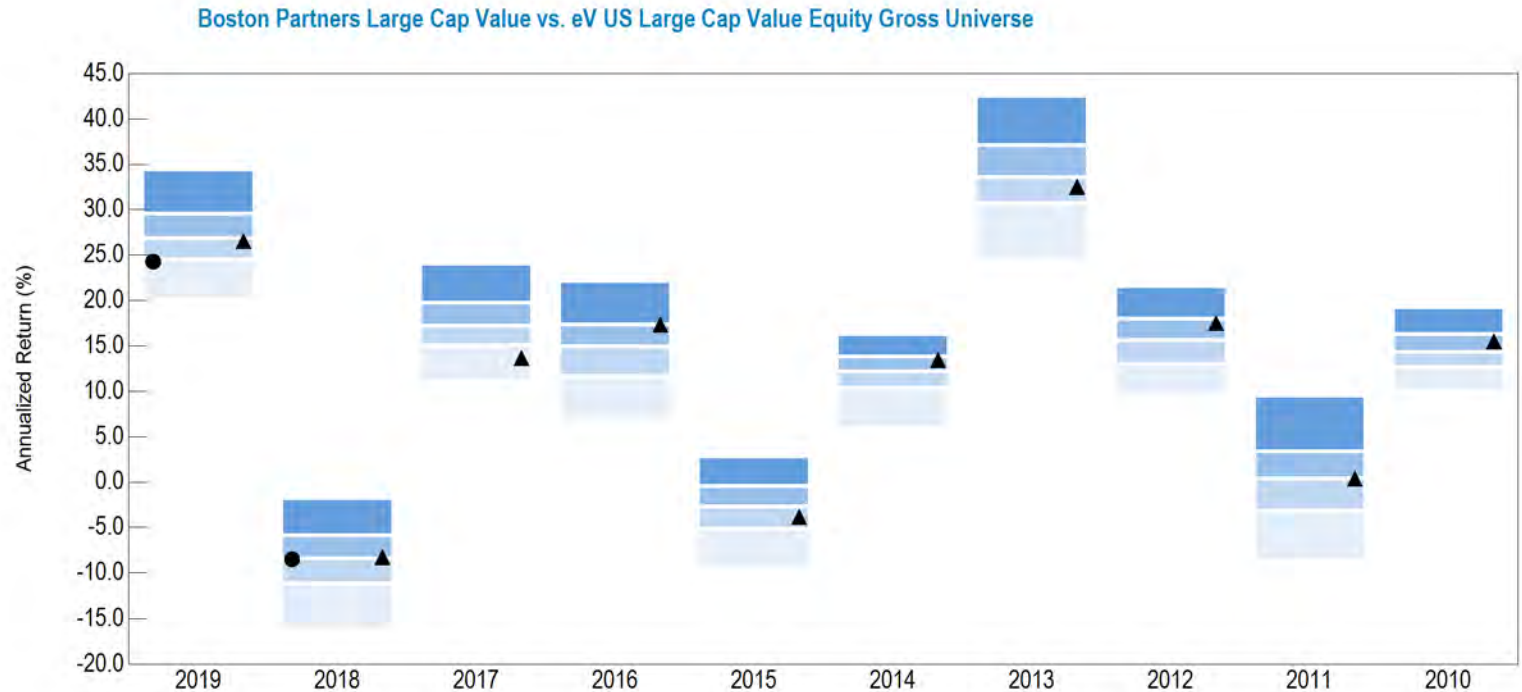
Period Ending: December 31, 2019



	Return (Rank)											
	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	11.3		34.4		15.3		12.0		15.0		14.0	
25th Percentile	9.0		29.6		12.8		10.3		13.6		12.8	
Median	7.7		26.9		10.9		8.9		12.7		12.1	
75th Percentile	6.7		24.6		9.3		7.8		11.7		11.3	
95th Percentile	4.8		20.2		7.1		5.7		10.0		9.6	
# of Portfolios	310		310		305		295		283		250	
● Boston Partners Large Cap Value	8.2	(41)	24.3	(77)	--	(--)	--	(--)	--	(--)	--	(--)
▲ Russell 1000 Value	7.4	(60)	26.5	(55)	9.7	(70)	8.3	(65)	12.2	(67)	11.8	(62)

Boston Partners Large Cap Value
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: December 31, 2019

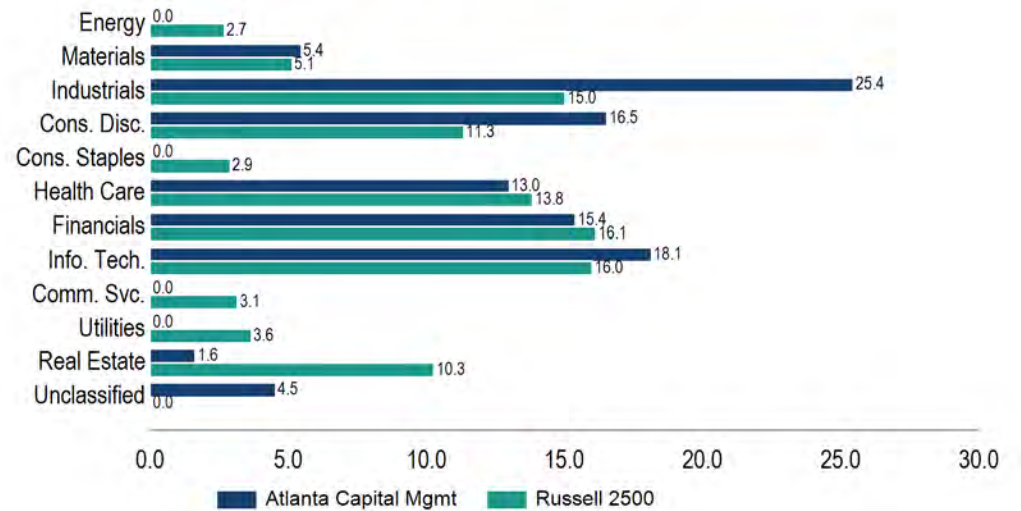


	Return (Rank)															
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010						
5th Percentile	34.4	-1.8	24.0	22.1	2.8	16.3	42.5	21.5	9.5	19.2						
25th Percentile	29.6	-5.8	19.8	17.4	-0.4	13.9	37.2	18.0	3.4	16.3						
Median	26.9	-8.3	17.2	15.0	-2.6	12.2	33.6	15.7	0.5	14.3						
75th Percentile	24.6	-11.1	15.1	11.8	-5.1	10.4	30.8	13.0	-3.1	12.7						
95th Percentile	20.2	-16.1	11.2	7.0	-9.4	5.9	24.6	9.6	-8.6	10.1						
# of Portfolios	310	336	342	346	312	307	310	303	310	323						
● Boston Partners Large Cap Value	24.3 (77)	-8.5 (54)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	
▲ Russell 1000 Value	26.5 (55)	-8.3 (50)	13.7 (87)	17.3 (26)	-3.8 (64)	13.5 (33)	32.5 (60)	17.5 (30)	0.4 (51)	15.5 (35)						

Characteristics

	Portfolio	Russell 2500
Number of Holdings	52	2,499
Weighted Avg. Market Cap. (\$B)	9.66	5.58
Median Market Cap. (\$B)	8.67	1.19
Price To Earnings	28.47	20.76
Price To Book	4.17	2.79
Price To Sales	1.78	1.34
Return on Equity (%)	20.57	6.51
Yield (%)	0.79	1.60
Beta	0.88	1.00

Sector Allocation (%) vs Russell 2500



*Unclassified includes Cash

Top Holdings
 Ending Period Weight

ARAMARK	4.69%
W R BERKLEY	4.64%
JPMORGAN FEDERAL MMKT - AGENCY SHR FUND 355 MONTHLY VARIABLE 12312049	4.52%
TRANSUNION	4.39%
TELEFLEX	4.18%
WEX	3.10%
SERVICEMASTER GLB.HDG.	3.10%
HUNT JB TRANSPORT SVS.	2.96%
CARLISLE COS.	2.73%
APTARGROUP	2.69%
Total	37.02%

Top Contributors

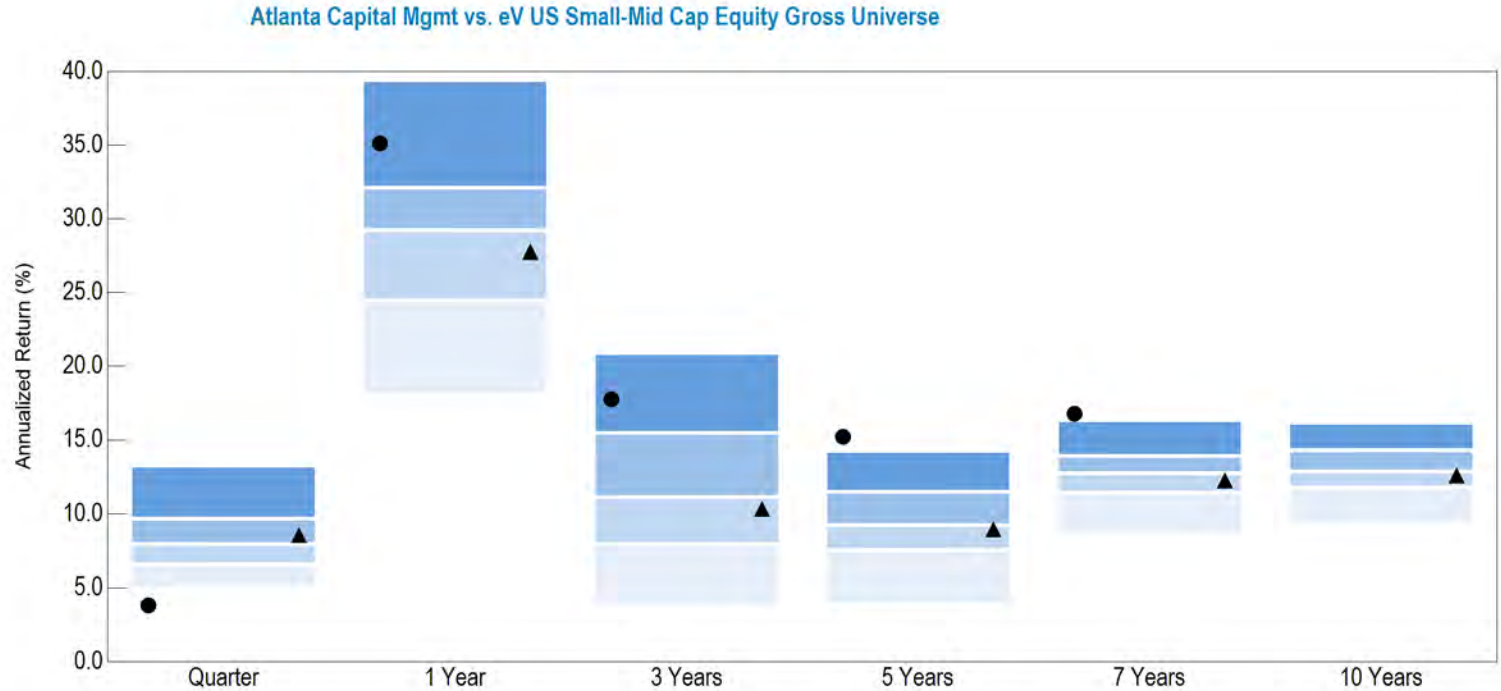
	Avg Wgt	Return	Contribution
TELEFLEX	3.97	10.91	0.43
CDW	2.56	16.23	0.41
FAIR ISAAC	1.71	23.44	0.40
JONES LANG LASALLE	1.27	25.52	0.32
CHOICE HOTELS INTL.	1.82	16.80	0.31
CARLISLE COS.	2.52	11.54	0.29
TRANSUNION	4.27	5.64	0.24
SALLY BEAUTY HOLDINGS	1.04	22.57	0.24
SEI INVESTMENTS	2.01	11.09	0.22
ANSYS	1.32	16.29	0.22

Bottom Contributors

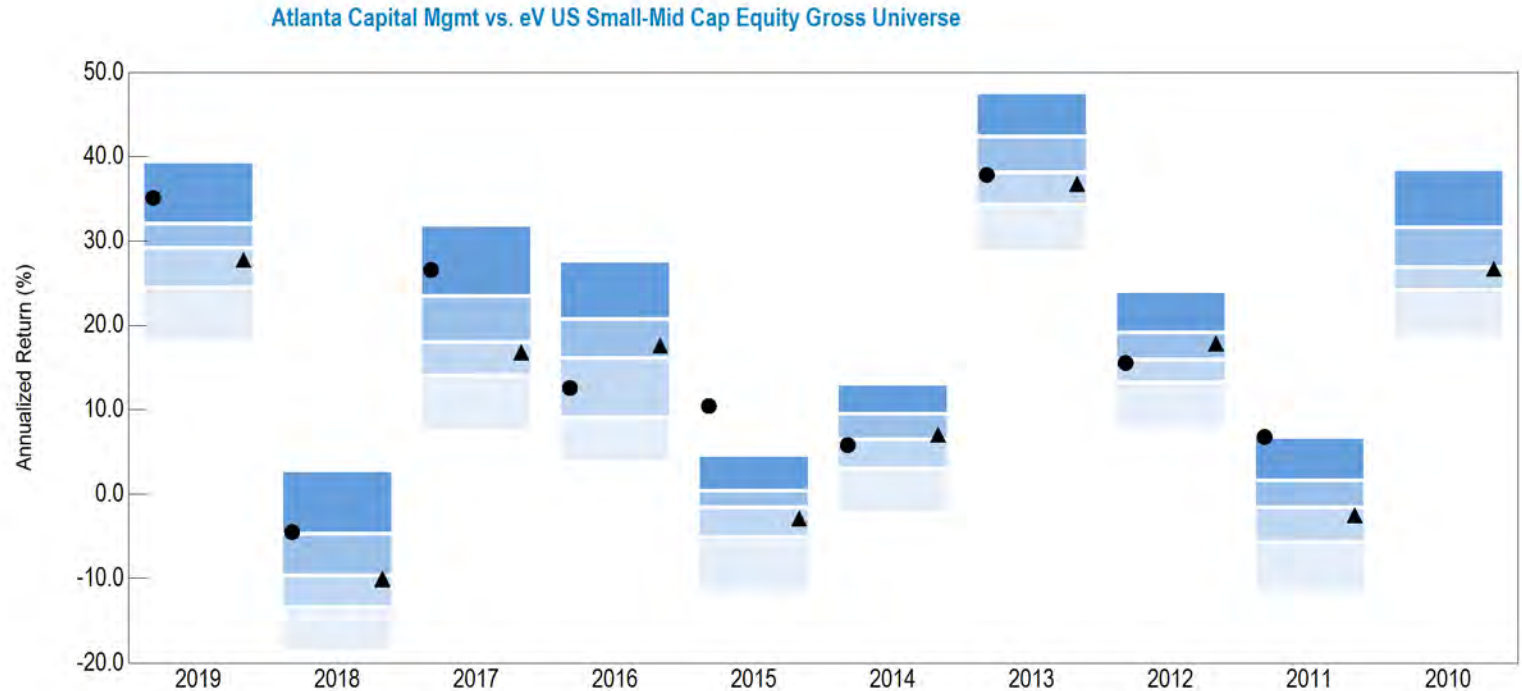
	Avg Wgt	Return	Contribution
SERVICEMASTER GLB.HDG.	3.99	-30.84	-1.23
BLACKBAUD	2.19	-11.76	-0.26
W R BERKLEY	4.81	-3.12	-0.15
HEXCEL	1.04	-10.54	-0.11
MARKEL	1.84	-3.28	-0.06
APTARGROUP	2.73	-2.09	-0.06
SENSIENT TECHS.	1.25	-3.14	-0.04
SERVICE CORP.INTL.	1.12	-3.34	-0.04
FRONTDOOR	1.41	-2.37	-0.03
MANHATTAN ASSOCS.	2.67	-1.14	-0.03

Atlanta Capital Mgmt
 Cumulative Performance Comparison (Gross of Fees)

Period Ending: December 31, 2019

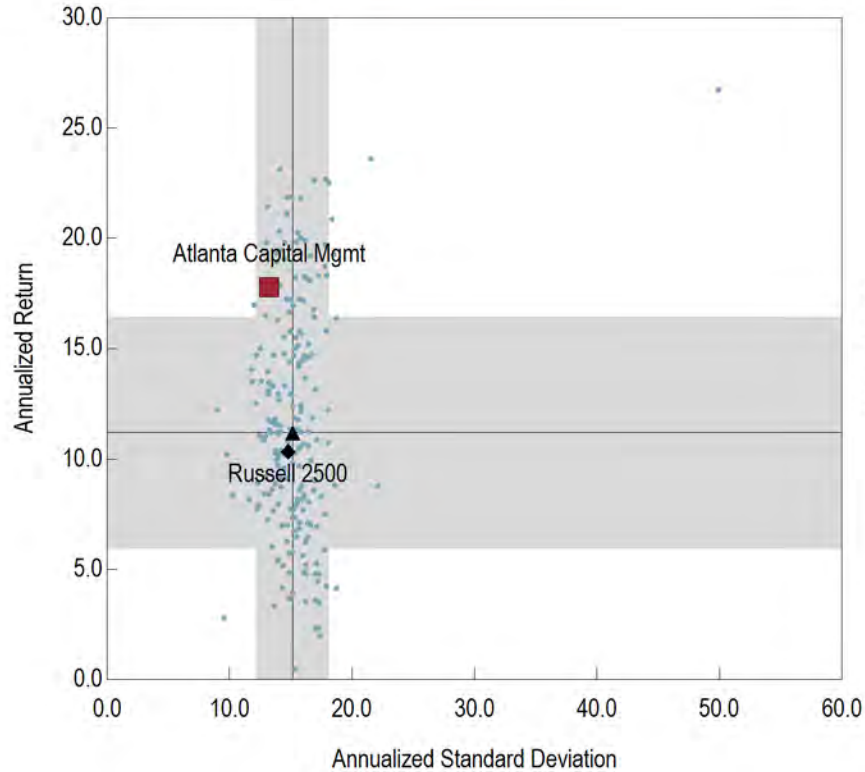


	Return (Rank)											
	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	13.2		39.4		20.9		14.2		16.3		16.2	
25th Percentile	9.7		32.1		15.5		11.5		13.9		14.3	
Median	8.0		29.3		11.2		9.3		12.8		12.9	
75th Percentile	6.6		24.5		7.9		7.5		11.4		11.8	
95th Percentile	5.0		18.1		3.9		3.9		8.6		9.4	
# of Portfolios	228		227		217		192		172		140	
● Atlanta Capital Mgmt	3.8	(98)	35.1	(15)	17.8	(16)	15.2	(3)	16.8	(3)	--	(--)
▲ Russell 2500	8.5	(40)	27.8	(59)	10.3	(57)	8.9	(57)	12.3	(63)	12.6	(59)



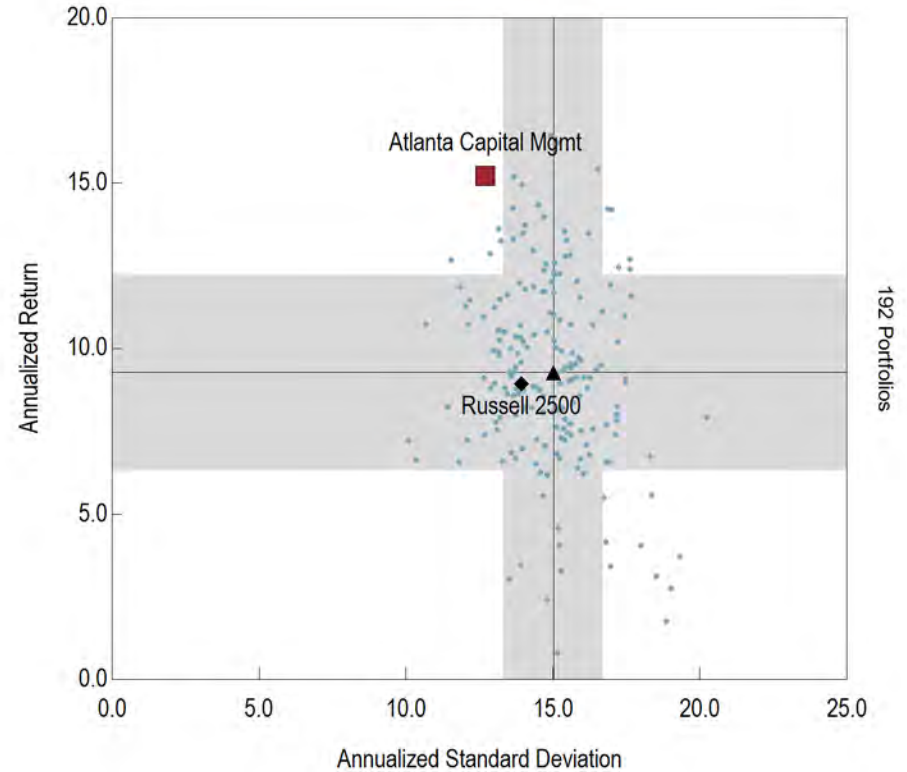
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Return (Rank)										
5th Percentile	39.4	2.8	31.9	27.6	4.6	13.0	47.6	24.1	6.8	38.5
25th Percentile	32.1	-4.6	23.5	20.8	0.4	9.6	42.5	19.2	1.7	31.7
Median	29.3	-9.6	18.1	16.1	-1.5	6.5	38.2	16.0	-1.5	26.9
75th Percentile	24.5	-13.3	14.1	9.2	-5.0	3.1	34.4	13.3	-5.6	24.3
95th Percentile	18.1	-18.5	7.5	3.8	-11.6	-2.3	28.7	7.8	-11.6	18.7
# of Portfolios	227	236	233	238	215	210	210	216	211	210
● Atlanta Capital Mgmt	35.1 (15)	-4.5 (25)	26.6 (15)	12.6 (62)	10.4 (1)	5.8 (56)	37.8 (52)	15.5 (55)	6.8 (5)	-- (--)
▲ Russell 2500	27.8 (59)	-10.0 (53)	16.8 (61)	17.6 (38)	-2.9 (64)	7.1 (46)	36.8 (58)	17.9 (36)	-2.5 (56)	26.7 (52)

Annualized Return vs. Annualized Standard Deviation
 3 Years Ending December 31, 2019

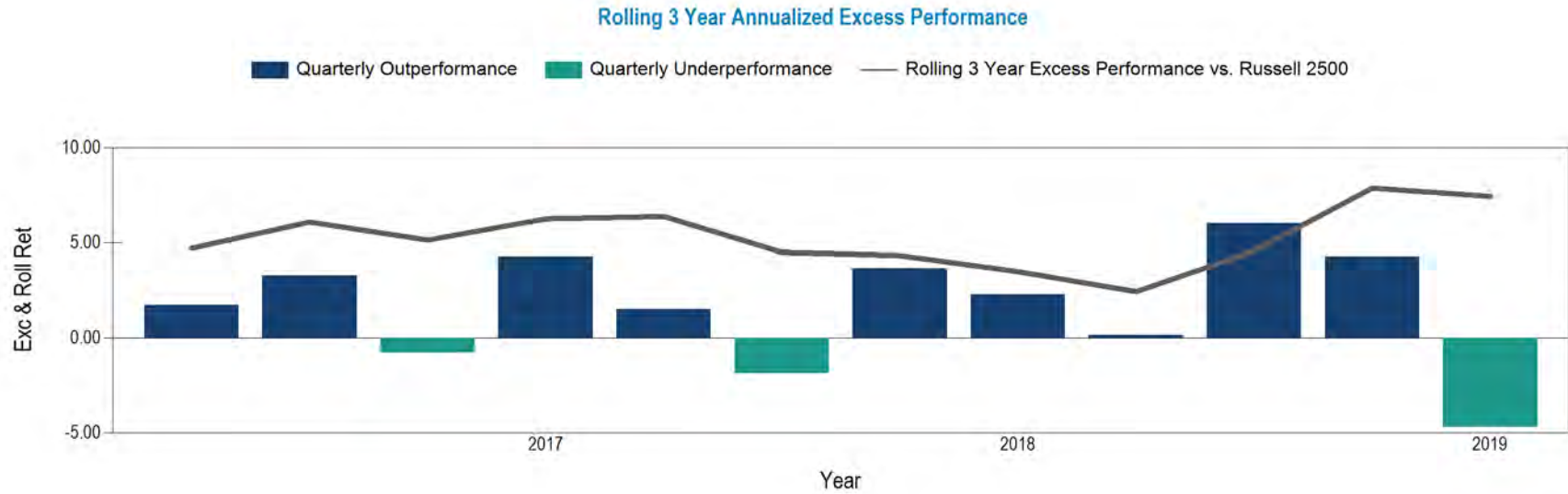


- Atlanta Capital Mgmt
- ◆ Russell 2500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Small-Mid Cap Equity Gross

Annualized Return vs. Annualized Standard Deviation
 5 Years Ending December 31, 2019



- Atlanta Capital Mgmt
- ◆ Russell 2500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Small-Mid Cap Equity Gross



Total International Equity
Asset Class Overview (Gross of Fees)

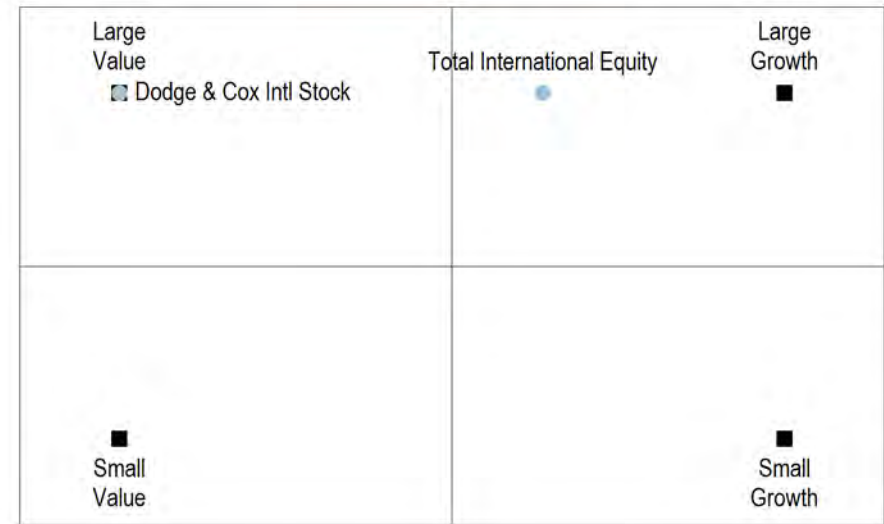
Period Ending: December 31, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total International Equity	323,758,246	10.3	30.2	13.1	7.2	8.1	30.2	-12.2	26.6	2.2	-4.3
MSCI ACWI ex USA Gross		9.0	22.1	10.4	6.0	5.4	22.1	-13.8	27.8	5.0	-5.3
InvMetrics Public DB ex-US Eq Gross Rank		24	1	4	19	4	1	9	81	82	68
Dodge & Cox Intl Stock	153,763,831	10.8	23.6	8.4	4.3	6.4	23.6	-17.5	24.7	9.0	-10.8
MSCI EAFE Gross		8.2	22.7	10.1	6.2	6.0	22.7	-13.4	25.6	1.5	-0.4
eV All EAFE Equity Gross Rank		26	47	80	95	71	47	73	74	3	99
WCM International Growth	169,994,415	10.0	36.7	--	--	--	36.7	-6.7	--	--	--
MSCI ACWI ex USA Gross		9.0	22.1	--	--	--	22.1	-13.8	--	--	--
eV ACWI ex-US All Cap Growth Eq Gross Rank		67	12	--	--	--	12	1	--	--	--

EAFE Effective Style Map
3 Years Ending December 31, 2019



EAFE Effective Style Map
5 Years Ending December 31, 2019



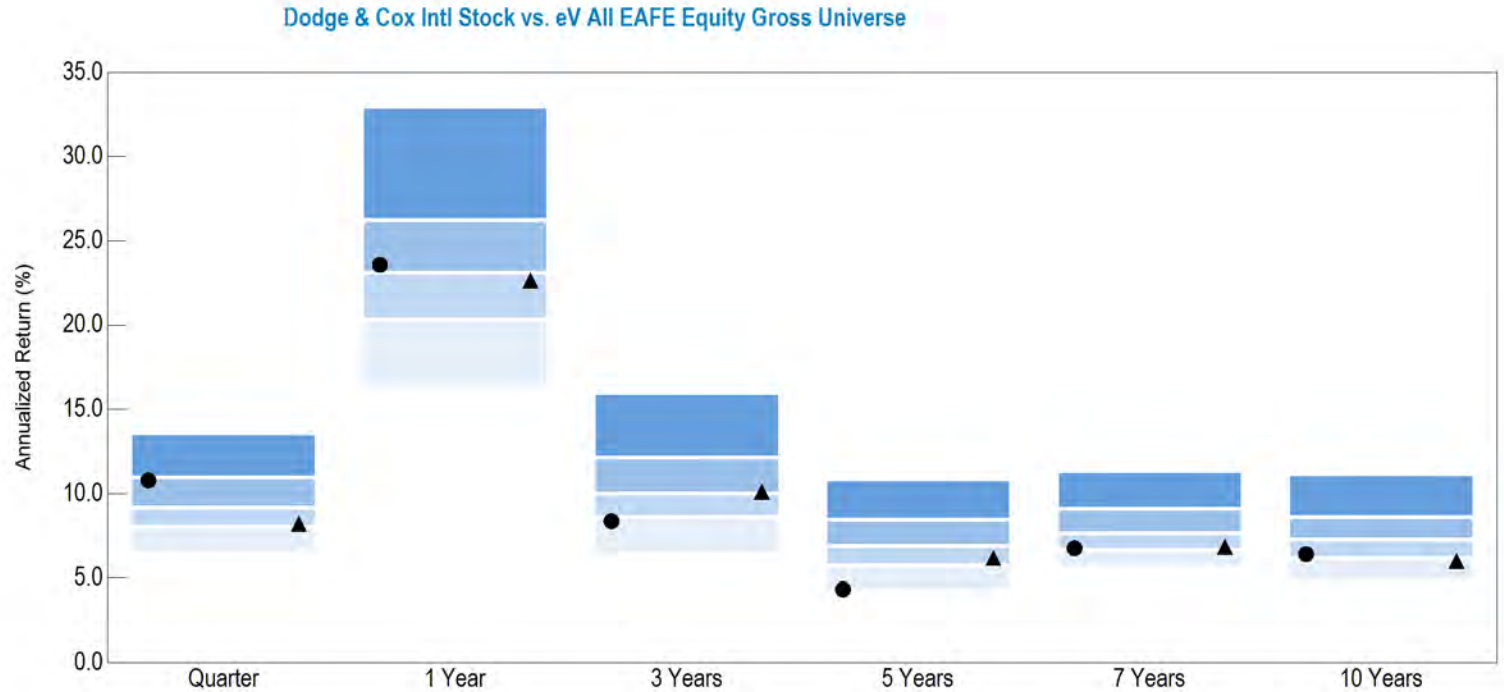
Total International Equity
 Asset Class Overview (Net of Fees)

Period Ending: December 31, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total International Equity	323,758,246	10.2	29.3	12.4	6.5	7.4	29.3	-12.8	25.8	1.6	-4.9
<i>MSCI ACWI ex USA Gross</i>		9.0	22.1	10.4	6.0	5.4	22.1	-13.8	27.8	5.0	-5.3
Dodge & Cox Intl Stock	153,763,831	10.6	22.8	7.7	3.7	5.8	22.8	-18.0	23.9	8.3	-11.4
<i>MSCI EAFE Gross</i>		8.2	22.7	10.1	6.2	6.0	22.7	-13.4	25.6	1.5	-0.4
WCM International Growth	169,994,415	9.8	35.8	--	--	--	35.8	-7.4	--	--	--
<i>MSCI ACWI ex USA Gross</i>		9.0	22.1	--	--	--	22.1	-13.8	--	--	--

Dodge & Cox Intl Stock
 Cumulative Performance Comparison (Gross of Fees)

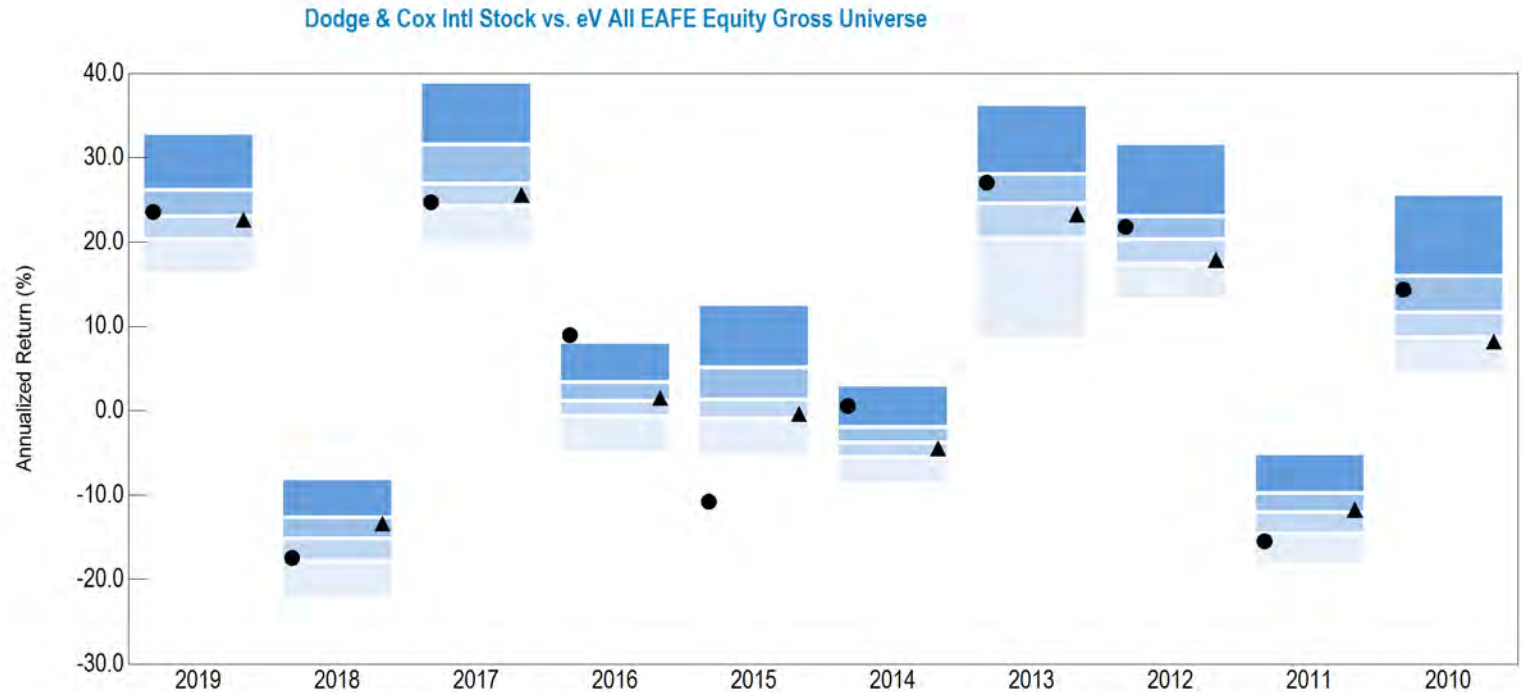
Period Ending: December 31, 2019



	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	13.6		32.9		16.0		10.8		11.3		11.1	
25th Percentile	11.0		26.3		12.2		8.5		9.1		8.6	
Median	9.2		23.2		10.0		6.9		7.7		7.3	
75th Percentile	8.1		20.4		8.6		5.8		6.7		6.2	
95th Percentile	6.5		16.3		6.5		4.3		5.7		4.8	
# of Portfolios	388		387		370		327		289		253	
● Dodge & Cox Intl Stock	10.8	(26)	23.6	(47)	8.4	(80)	4.3	(95)	6.8	(73)	6.4	(71)
▲ MSCI EAFE Gross	8.2	(71)	22.7	(54)	10.1	(49)	6.2	(62)	6.8	(71)	6.0	(79)

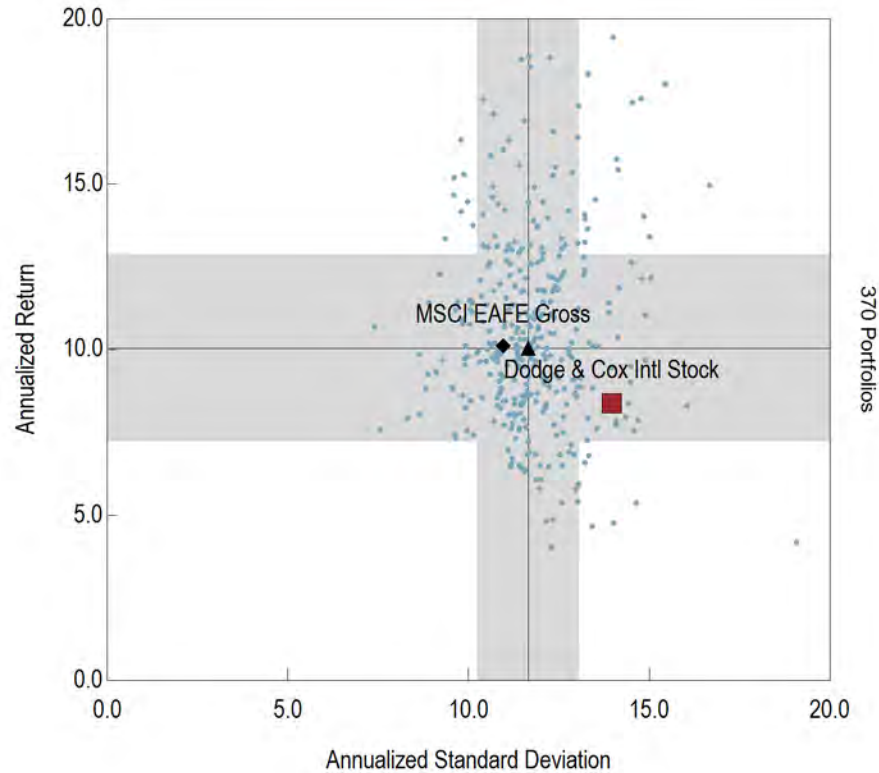
Dodge & Cox Intl Stock
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: December 31, 2019



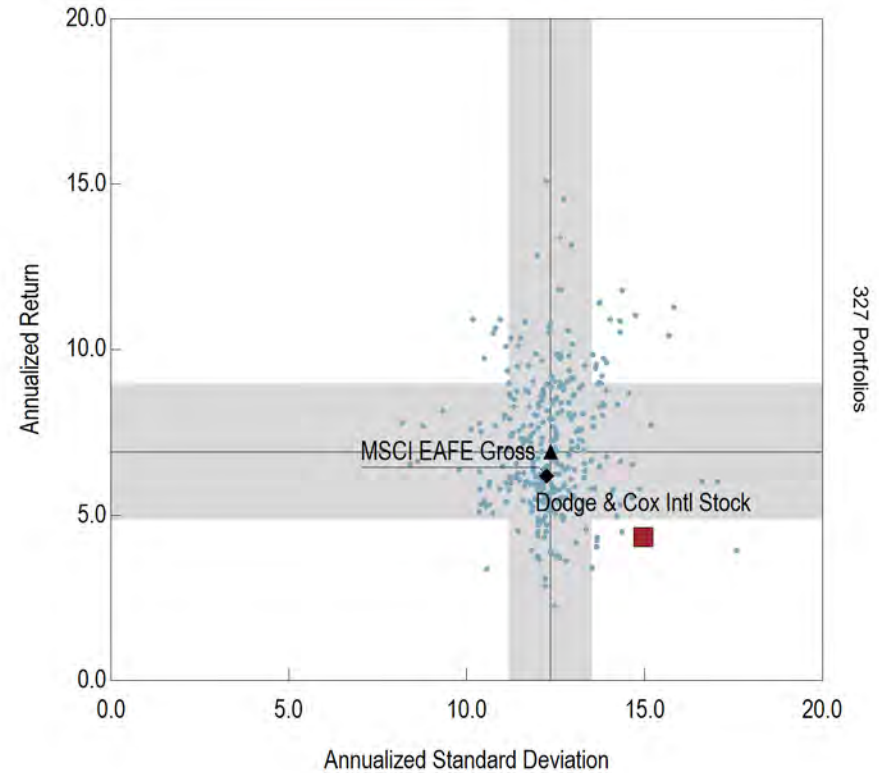
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Return (Rank)										
5th Percentile	32.9	-8.0	39.0	8.1	12.6	3.0	36.3	31.7	-5.1	25.7
25th Percentile	26.3	-12.6	31.6	3.4	5.2	-1.9	28.1	23.1	-9.7	16.1
Median	23.2	-15.1	27.0	1.3	1.4	-3.7	24.6	20.4	-12.0	11.7
75th Percentile	20.4	-17.8	24.3	-0.6	-0.9	-5.4	20.5	17.5	-14.5	8.7
95th Percentile	16.3	-22.2	19.7	-4.9	-5.4	-8.6	8.6	13.3	-18.2	4.6
# of Portfolios	387	391	370	350	325	314	284	263	278	352
● Dodge & Cox Intl Stock	23.6 (47)	-17.5 (73)	24.7 (74)	9.0 (3)	-10.8 (99)	0.6 (14)	27.1 (32)	21.8 (37)	-15.5 (82)	14.4 (36)
▲ MSCI EAFE Gross	22.7 (54)	-13.4 (35)	25.6 (63)	1.5 (47)	-0.4 (66)	-4.5 (60)	23.3 (60)	17.9 (72)	-11.7 (47)	8.2 (78)

Annualized Return vs. Annualized Standard Deviation
 3 Years Ending December 31, 2019



- Dodge & Cox Intl Stock
- ◆ MSCI EAFE Gross
- ▲ Universe Median
- 68% Confidence Interval
- eV All EAFE Equity Gross

Annualized Return vs. Annualized Standard Deviation
 5 Years Ending December 31, 2019

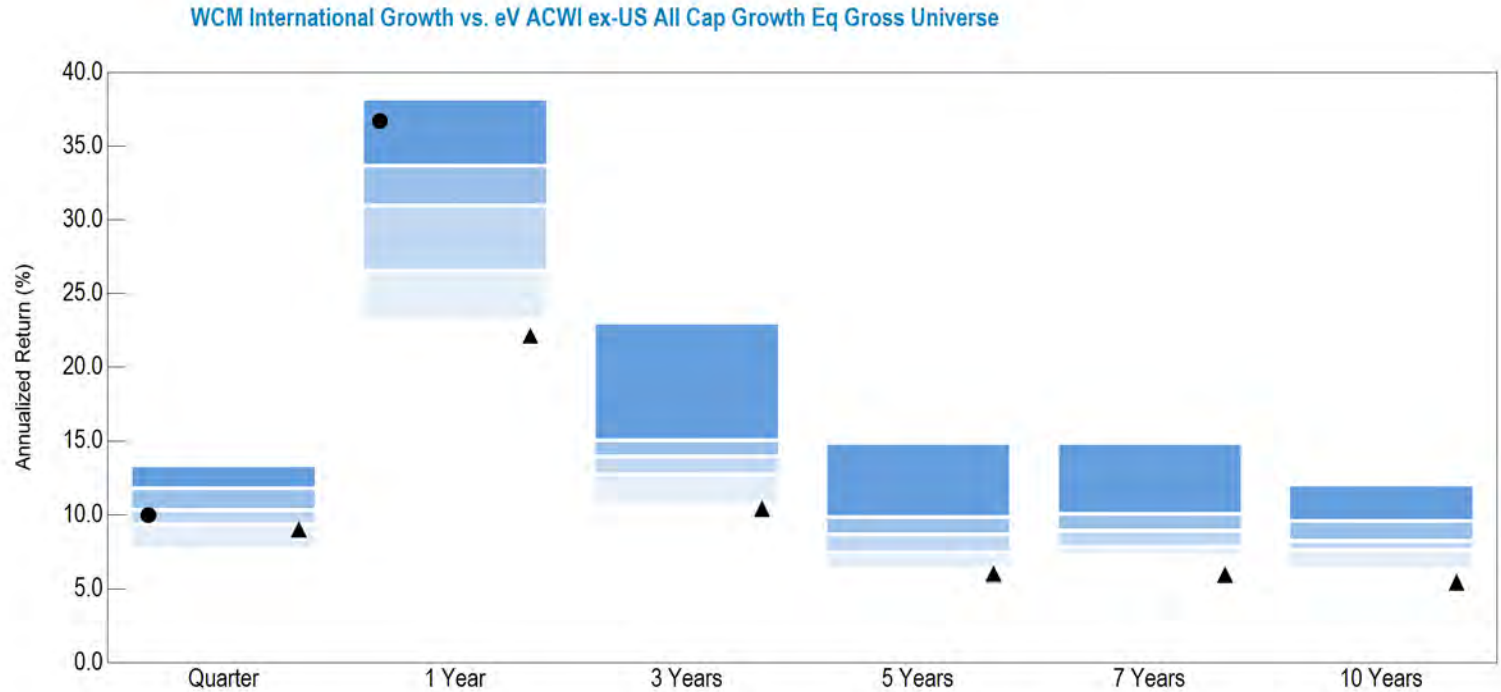


- Dodge & Cox Intl Stock
- ◆ MSCI EAFE Gross
- ▲ Universe Median
- 68% Confidence Interval
- eV All EAFE Equity Gross



WCM International Growth
 Cumulative Performance Comparison (Gross of Fees)

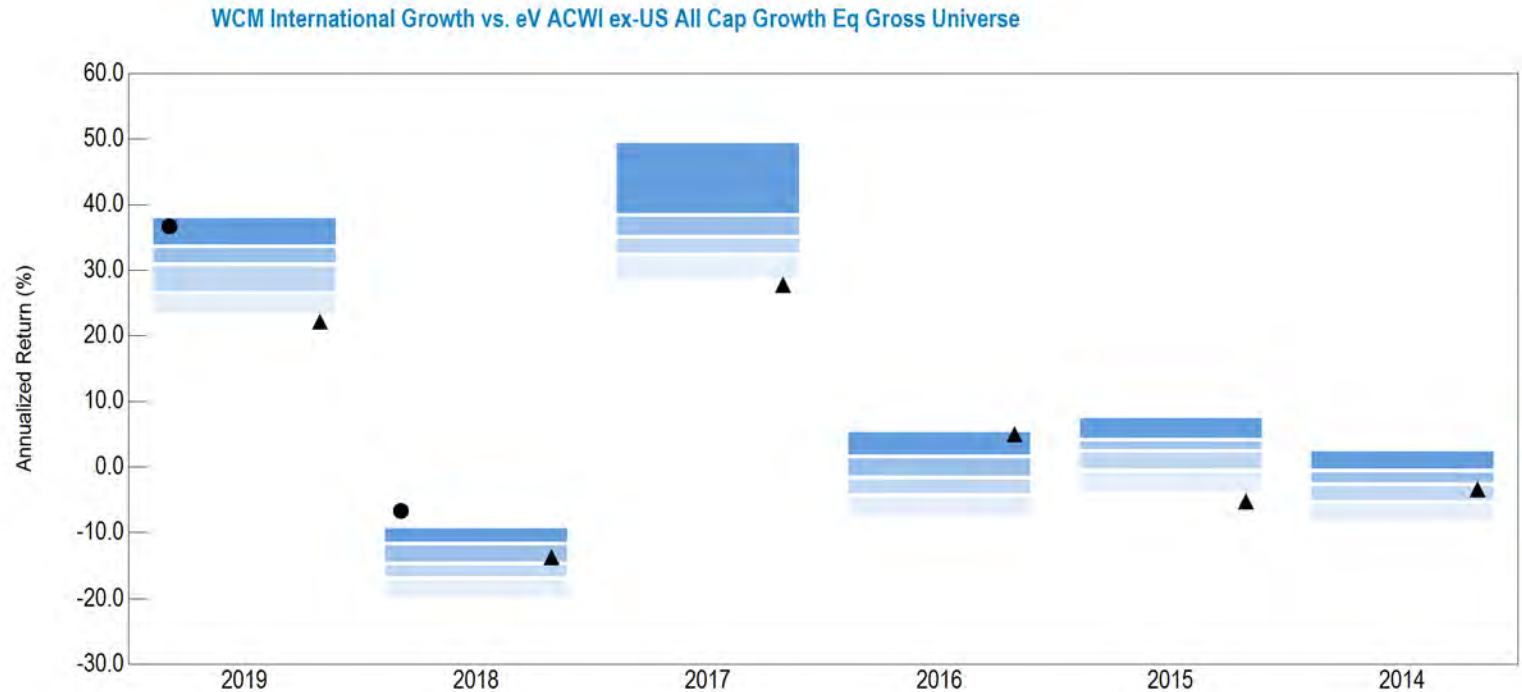
Period Ending: December 31, 2019



	Return (Rank)											
5th Percentile	13.3		38.2		23.0		14.8		14.9		12.0	
25th Percentile	11.8		33.7		15.1		9.9		10.1		9.6	
Median	10.4		31.0		14.0		8.7		8.9		8.3	
75th Percentile	9.4		26.6		12.8		7.5		7.9		7.7	
95th Percentile	7.7		23.2		10.7		6.4		7.2		6.4	
# of Portfolios	34		34		31		30		28		24	
● WCM International Growth	10.0	(67)	36.7	(12)	--	(--)	--	(--)	--	(--)	--	(--)
▲ MSCI ACWI ex USA Gross	9.0	(81)	22.1	(98)	10.4	(97)	6.0	(97)	5.9	(99)	5.4	(99)

WCM International Growth
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: December 31, 2019



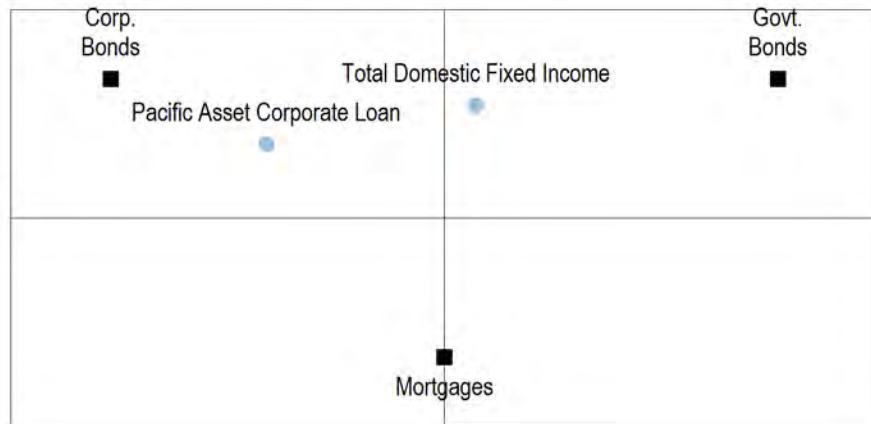
	Return (Rank)											
5th Percentile	38.2		-9.1		49.7		5.5		7.7		2.6	
25th Percentile	33.7		-11.6		38.5		1.7		4.2		-0.5	
Median	31.0		-14.6		35.2		-1.6		2.5		-2.5	
75th Percentile	26.6		-16.9		32.4		-4.2		-0.5		-5.2	
95th Percentile	23.2		-19.8		28.5		-7.7		-3.9		-8.4	
# of Portfolios	34		28		29		28		25		23	
● WCM International Growth	36.7	(12)	-6.7	(1)	--	(--)	--	(--)	--	(--)	--	(--)
▲ MSCI ACWI ex USA Gross	22.1	(98)	-13.8	(49)	27.8	(97)	5.0	(8)	-5.3	(97)	-3.4	(69)

Total Domestic Fixed Income Asset Class Overview (Gross of Fees)

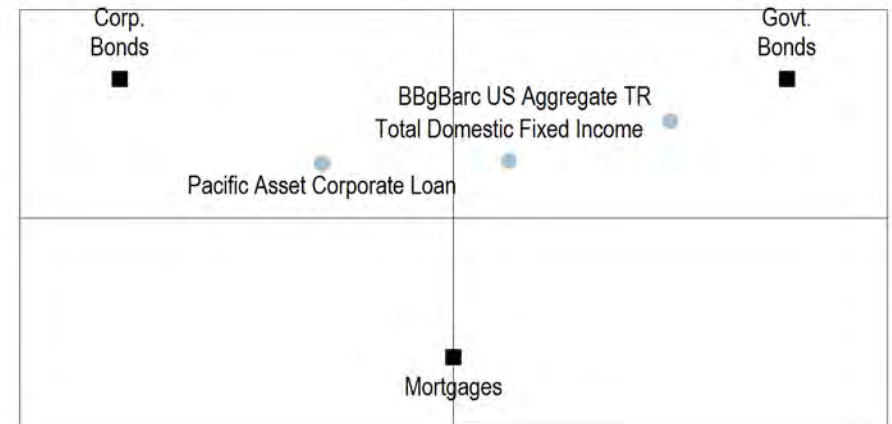
Period Ending: December 31, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Domestic Fixed Income	280,963,382	0.9	9.9	4.8	4.0	4.6	9.9	0.4	4.3	4.5	1.1
<i>BBgBarc US Aggregate TR</i>		0.2	8.7	4.0	3.0	3.7	8.7	0.0	3.5	2.6	0.6
<i>InvMetrics Public DB US Fix Inc Gross Rank</i>		15	9	17	14	32	9	55	50	49	17
BlackRock Core Bond	103,266,090	0.3	10.2	--	--	--	10.2	0.3	--	--	--
<i>BBgBarc US Aggregate TR</i>		0.2	8.7	--	--	--	8.7	0.0	--	--	--
<i>eV US Core Fixed Inc Gross Rank</i>		45	10	--	--	--	10	27	--	--	--
Dodge & Cox Income Fund	107,319,716	1.0	10.2	--	--	--	10.2	0.1	--	--	--
<i>BBgBarc US Aggregate TR</i>		0.2	8.7	--	--	--	8.7	0.0	--	--	--
<i>eV US Core Fixed Inc Gross Rank</i>		3	10	--	--	--	10	43	--	--	--
Pacific Asset Corporate Loan	70,377,576	1.6	9.1	4.9	5.3	--	9.1	1.0	4.9	9.2	2.5
<i>S&P/LSTA Leveraged Loan Index</i>		1.7	8.6	4.3	4.4	--	8.6	0.4	4.1	10.2	-0.7
<i>eV US Float-Rate Bank Loan Fixed Inc Gross Rank</i>		67	35	13	10	--	35	29	26	51	9

Fixed Income Effective Style Map
3 Years Ending December 31, 2019



Fixed Income Effective Style Map
5 Years Ending December 31, 2019



Total Domestic Fixed Income
Asset Class Overview (Net of Fees)

Period Ending: December 31, 2019

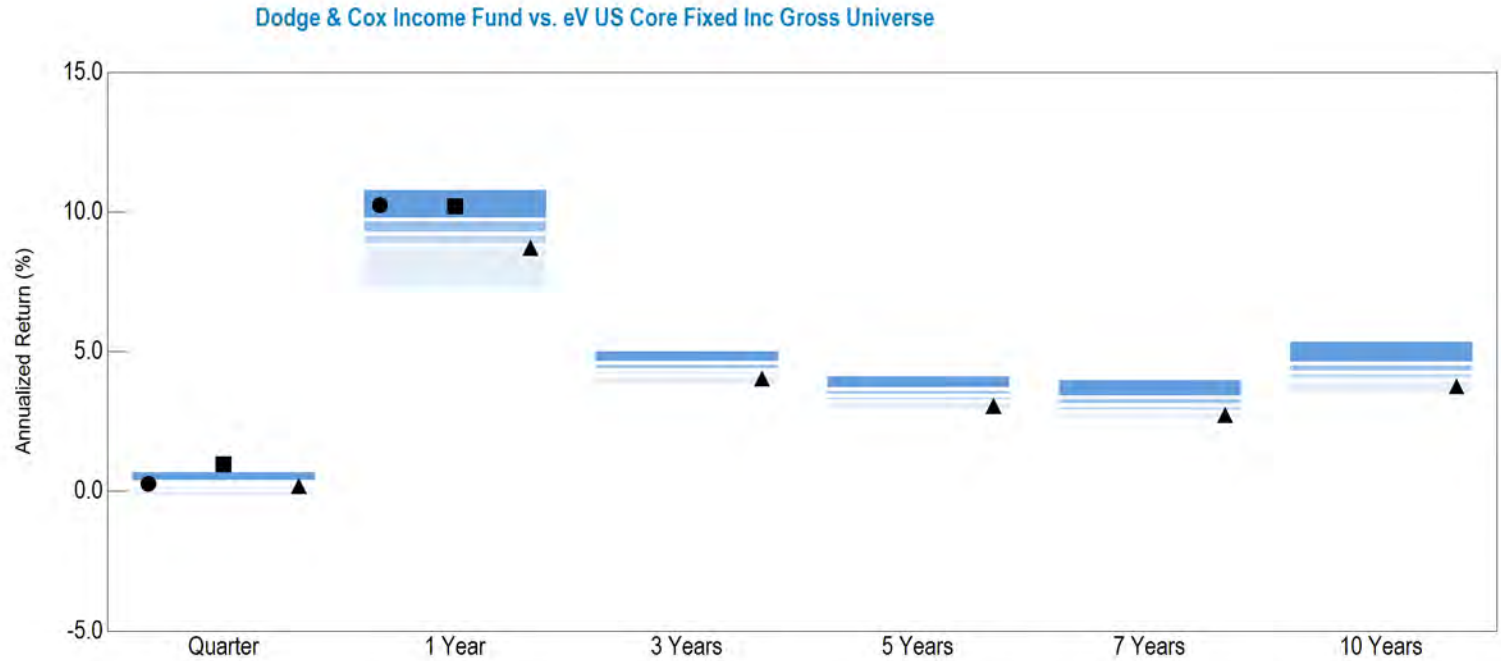
	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Domestic Fixed Income	280,963,382	0.8	9.5	4.4	3.7	4.3	9.5	0.0	3.9	4.2	0.9
<i>BBgBarc US Aggregate TR</i>		0.2	8.7	4.0	3.0	3.7	8.7	0.0	3.5	2.6	0.6
BlackRock Core Bond	103,266,090	0.2	9.9	--	--	--	9.9	0.1	--	--	--
<i>BBgBarc US Aggregate TR</i>		0.2	8.7	--	--	--	8.7	0.0	--	--	--
Dodge & Cox Income Fund	107,319,716	0.8	9.7	--	--	--	9.7	-0.3	--	--	--
<i>BBgBarc US Aggregate TR</i>		0.2	8.7	--	--	--	8.7	0.0	--	--	--
Pacific Asset Corporate Loan	70,377,576	1.5	8.7	4.6	4.9	--	8.7	0.7	4.6	8.8	2.1
<i>S&P/LSTA Leveraged Loan Index</i>		1.7	8.6	4.3	4.4	--	8.6	0.4	4.1	10.2	-0.7

Correlation Matrix
Last 1 Year

	Total Domestic Fixed Income	BlackRock Core Bond	Dodge & Cox Income Fund	Pacific Asset Corporate Loan	BBgBarc US Aggregate TR
Total Domestic Fixed Income	1.00	--	--	--	--
BlackRock Core Bond	0.96	1.00	--	--	--
Dodge & Cox Income Fund	1.00	0.97	1.00	--	--
Pacific Asset Corporate Loan	0.81	0.62	0.79	1.00	--
BBgBarc US Aggregate TR	0.90	0.98	0.91	0.47	1.00

US Core Fixed Income
 Cumulative Performance Comparison (Gross of Fees)

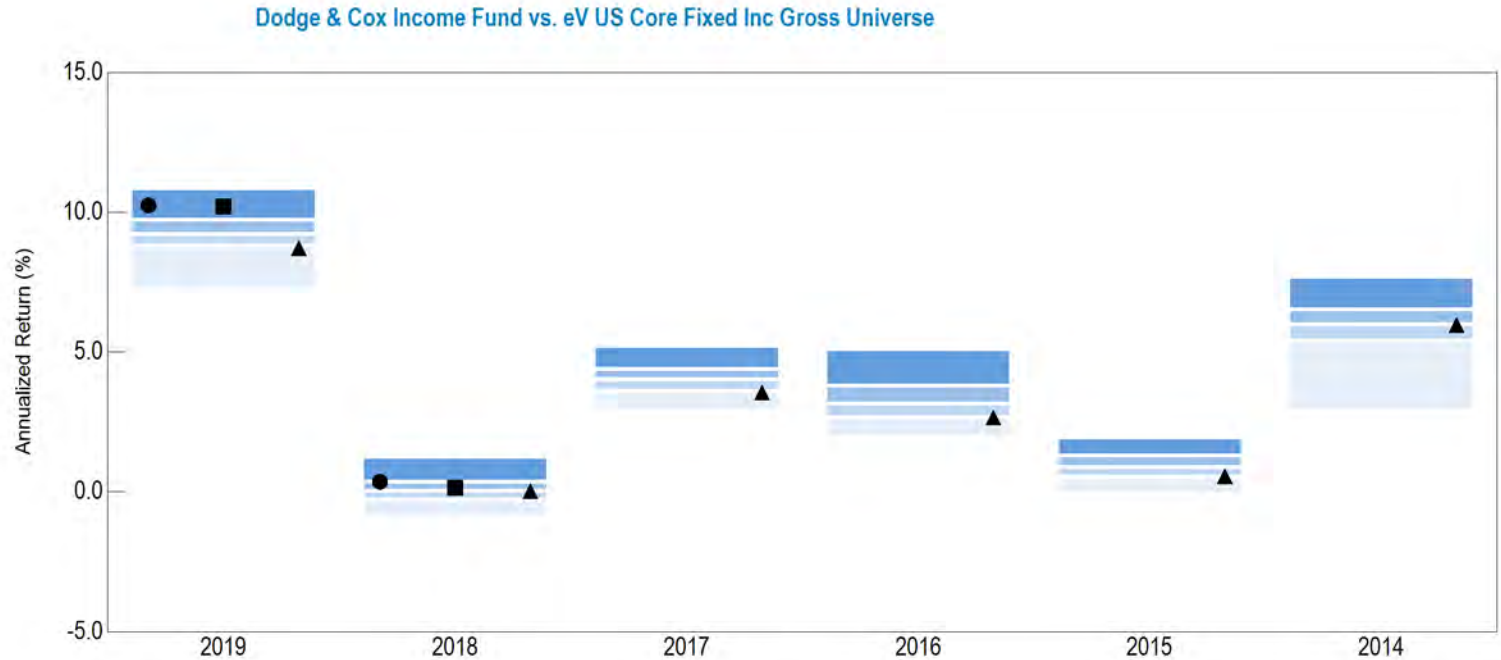
Period Ending: December 31, 2019



	Return (Rank)		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	0.7		10.9		5.1		4.2		4.0		5.4	
25th Percentile	0.3		9.8		4.6		3.7		3.4		4.6	
Median	0.2		9.2		4.4		3.4		3.1		4.3	
75th Percentile	0.1		8.8		4.2		3.2		2.9		4.0	
95th Percentile	-0.2		7.2		3.8		2.9		2.6		3.5	
# of Portfolios	216		216		214		210		208		197	
● BlackRock Core Bond	0.3	(45)	10.2	(10)	--	(--)	--	(--)	--	(--)	--	(--)
■ Dodge & Cox Income Fund	1.0	(3)	10.2	(10)	--	(--)	--	(--)	--	(--)	--	(--)
▲ BBgBarc US Aggregate TR	0.2	(58)	8.7	(78)	4.0	(85)	3.0	(90)	2.7	(88)	3.7	(91)

US Core Fixed Income
 Consecutive Performance Comparison (Gross of Fees)

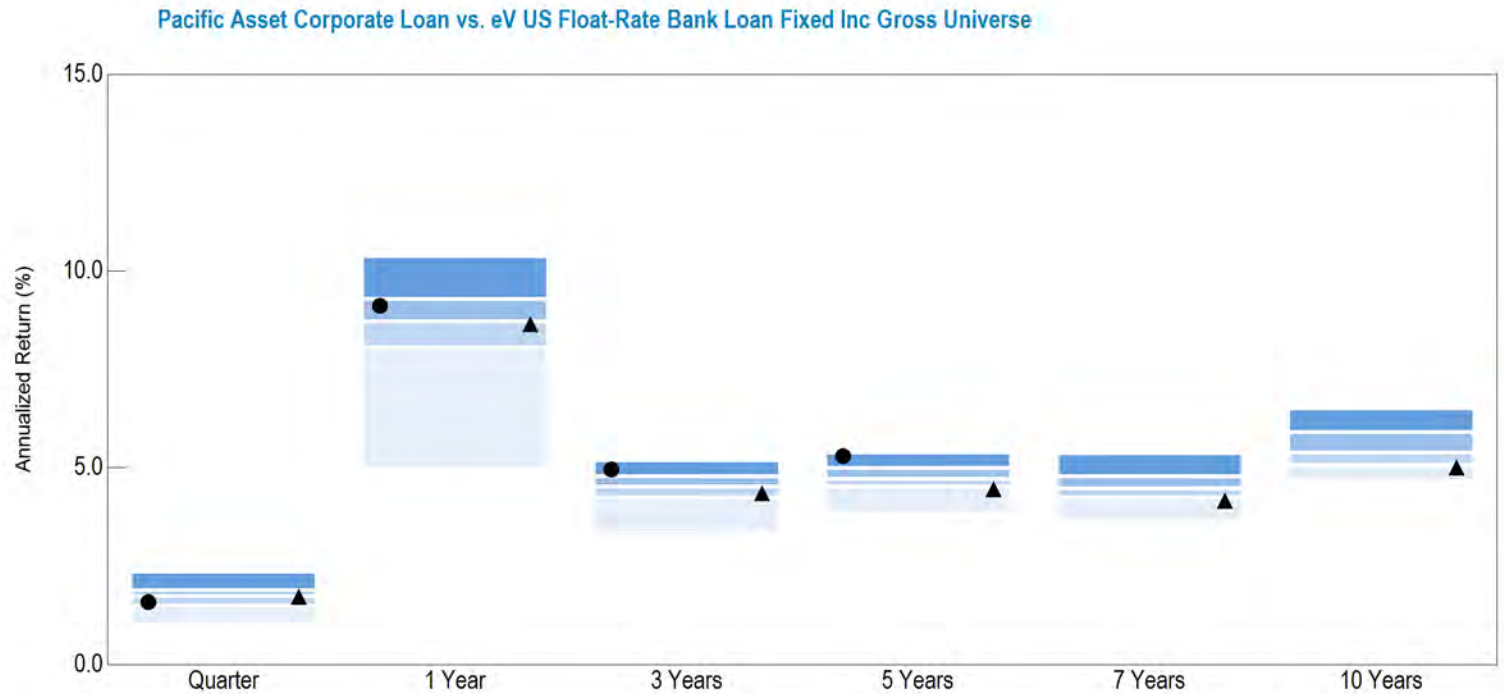
Period Ending: December 31, 2019



	2019		2018		2017		2016		2015		2014	
5th Percentile	10.9		1.2		5.2		5.1		1.9		7.7	
25th Percentile	9.8		0.4		4.4		3.8		1.3		6.5	
Median	9.2		0.0		4.0		3.2		0.9		6.0	
75th Percentile	8.8		-0.3		3.6		2.7		0.5		5.4	
95th Percentile	7.2		-0.9		2.9		2.0		-0.1		2.9	
# of Portfolios	216		240		233		223		196		213	
● BlackRock Core Bond	10.2	(10)	0.3	(27)	--	(--)	--	(--)	--	(--)	--	(--)
■ Dodge & Cox Income Fund	10.2	(10)	0.1	(43)	--	(--)	--	(--)	--	(--)	--	(--)
▲ BBgBarc US Aggregate TR	8.7	(78)	0.0	(54)	3.5	(79)	2.6	(77)	0.6	(75)	6.0	(52)

Pacific Asset Corporate Loan
 Cumulative Performance Comparison (Gross of Fees)

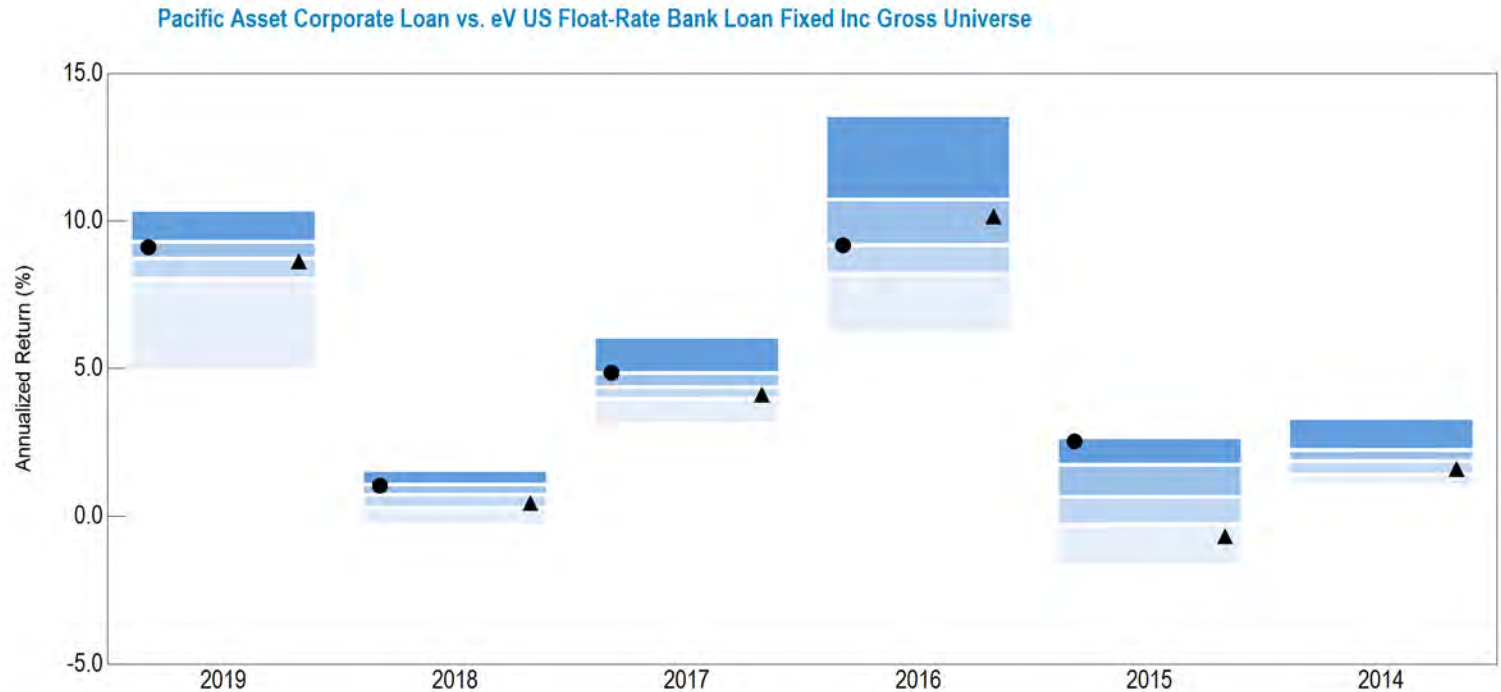
Period Ending: December 31, 2019



	Return (Rank)											
5th Percentile	2.4		10.4		5.2		5.4		5.4		6.5	
25th Percentile	1.9		9.3		4.8		5.0		4.8		5.9	
Median	1.8		8.7		4.5		4.7		4.5		5.4	
75th Percentile	1.5		8.1		4.3		4.5		4.3		5.1	
95th Percentile	1.0		5.0		3.4		3.8		3.6		4.7	
# of Portfolios	70		70		68		67		59		47	
● Pacific Asset Corporate Loan	1.6	(67)	9.1	(35)	4.9	(13)	5.3	(10)	--	(--)	--	(--)
▲ S&P/LSTA Leveraged Loan Index	1.7	(59)	8.6	(53)	4.3	(72)	4.4	(80)	4.2	(82)	5.0	(78)

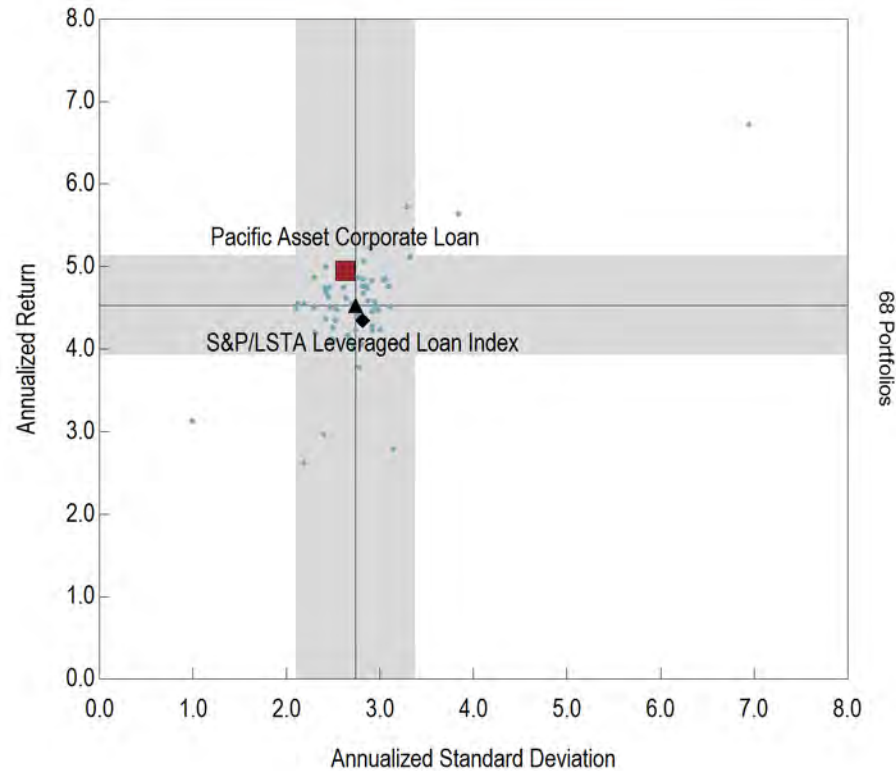
Pacific Asset Corporate Loan
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: December 31, 2019



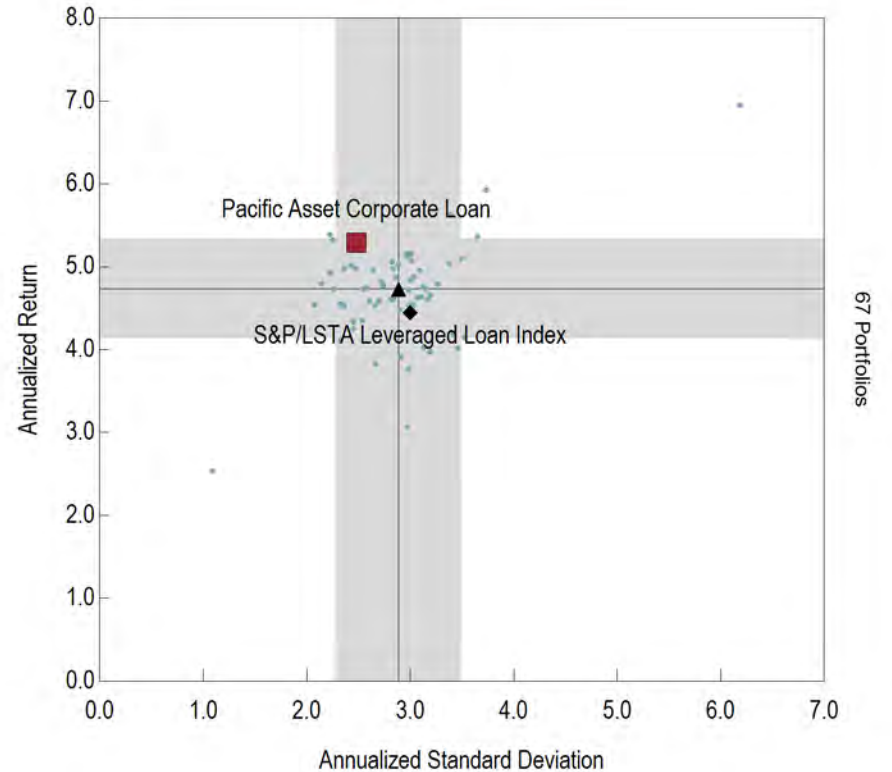
	2019		2018		2017		2016		2015		2014	
5th Percentile	10.4		1.6		6.1		13.6		2.7		3.3	
25th Percentile	9.3		1.1		4.9		10.7		1.8		2.3	
Median	8.7		0.7		4.4		9.2		0.7		1.9	
75th Percentile	8.1		0.3		4.0		8.2		-0.3		1.4	
95th Percentile	5.0		-0.3		3.1		6.2		-1.7		1.1	
# of Portfolios	70		76		75		69		54		48	
● Pacific Asset Corporate Loan	9.1	(35)	1.0	(29)	4.9	(26)	9.2	(51)	2.5	(9)	--	(--)
▲ S&P/LSTA Leveraged Loan Index	8.6	(53)	0.4	(68)	4.1	(71)	10.2	(35)	-0.7	(82)	1.6	(68)

Annualized Return vs. Annualized Standard Deviation
 3 Years Ending December 31, 2019



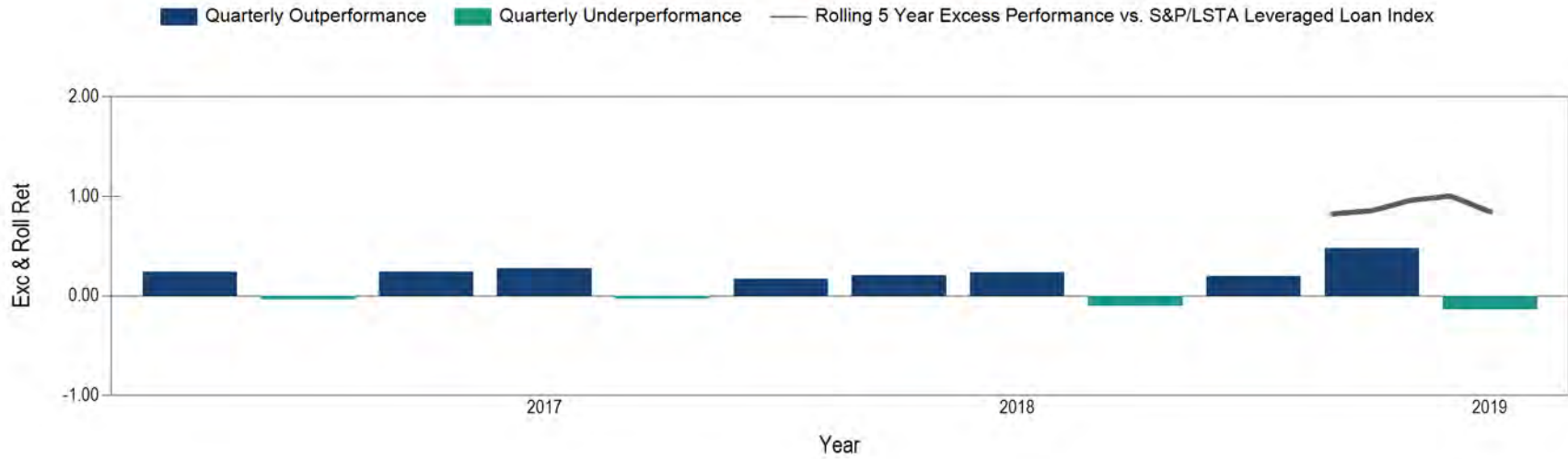
- Pacific Asset Corporate Loan
- ◆ S&P/LSTA Leveraged Loan Index
- ▲ Universe Median
- 68% Confidence Interval
- eV US Float-Rate Bank Loan Fixed Inc Gross

Annualized Return vs. Annualized Standard Deviation
 5 Years Ending December 31, 2019

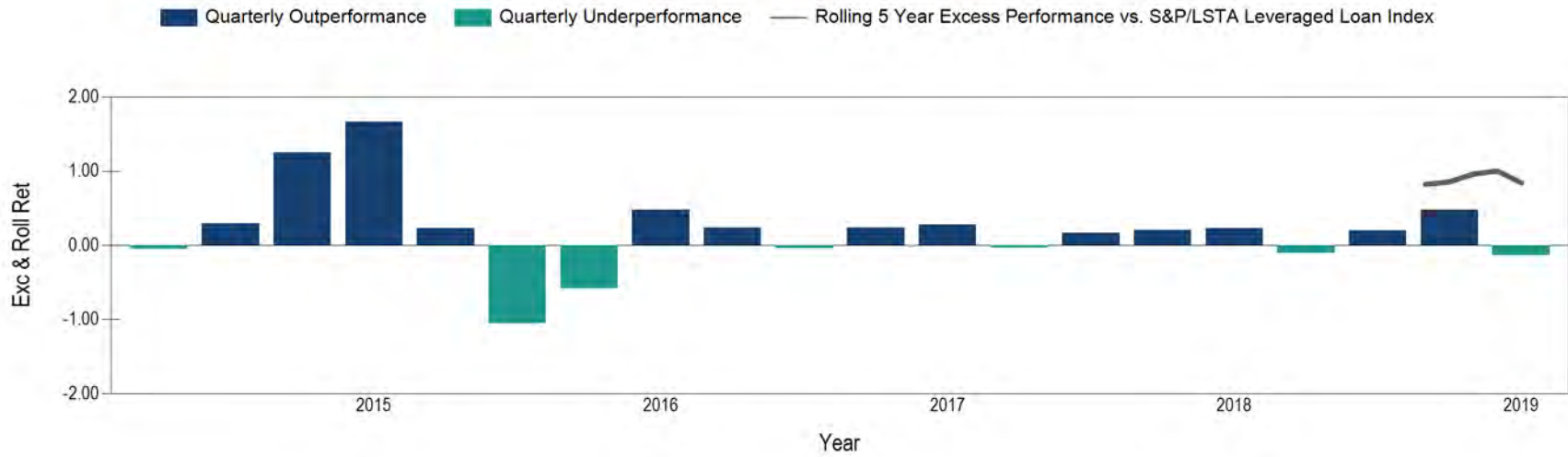


- Pacific Asset Corporate Loan
- ◆ S&P/LSTA Leveraged Loan Index
- ▲ Universe Median
- 68% Confidence Interval
- eV US Float-Rate Bank Loan Fixed Inc Gross

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



Total Global Fixed
Asset Class Overview (Gross of Fees)

Period Ending: December 31, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Global Fixed	142,118,607	4.0	7.8	4.8	1.5	2.7	7.8	-6.6	14.4	5.8	-11.8
<i>FTSE World Govt Bond Index</i>		-0.4	5.9	4.1	2.0	1.8	5.9	-0.8	7.5	1.6	-3.6
<i>InvMetrics Public DB Gbl Fix Inc Gross Rank</i>		--	--	--	--	--	--	99	29	67	95
Brandywine Global Fixed Income	68,864,863	5.0	6.2	4.6	1.2	3.3	6.2	-4.1	12.5	2.2	-9.3
<i>FTSE WGBI ex US TR</i>		-0.1	5.3	4.5	1.9	1.4	5.3	-1.8	10.3	1.8	-5.5
<i>eV All Global Fixed Inc Gross Rank</i>		8	85	67	92	65	85	80	14	75	92
Ashmore EM Blended Debt Fund	73,253,744	3.2	--	--	--	--	--	--	--	--	--
<i>50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+</i>		3.1	--	--	--	--	--	--	--	--	--
<i>eV All Emg Mkts Fixed Inc Gross Rank</i>		55	--	--	--	--	--	--	--	--	--

Total Global Fixed
Asset Class Overview (Net of Fees)

Period Ending: December 31, 2019

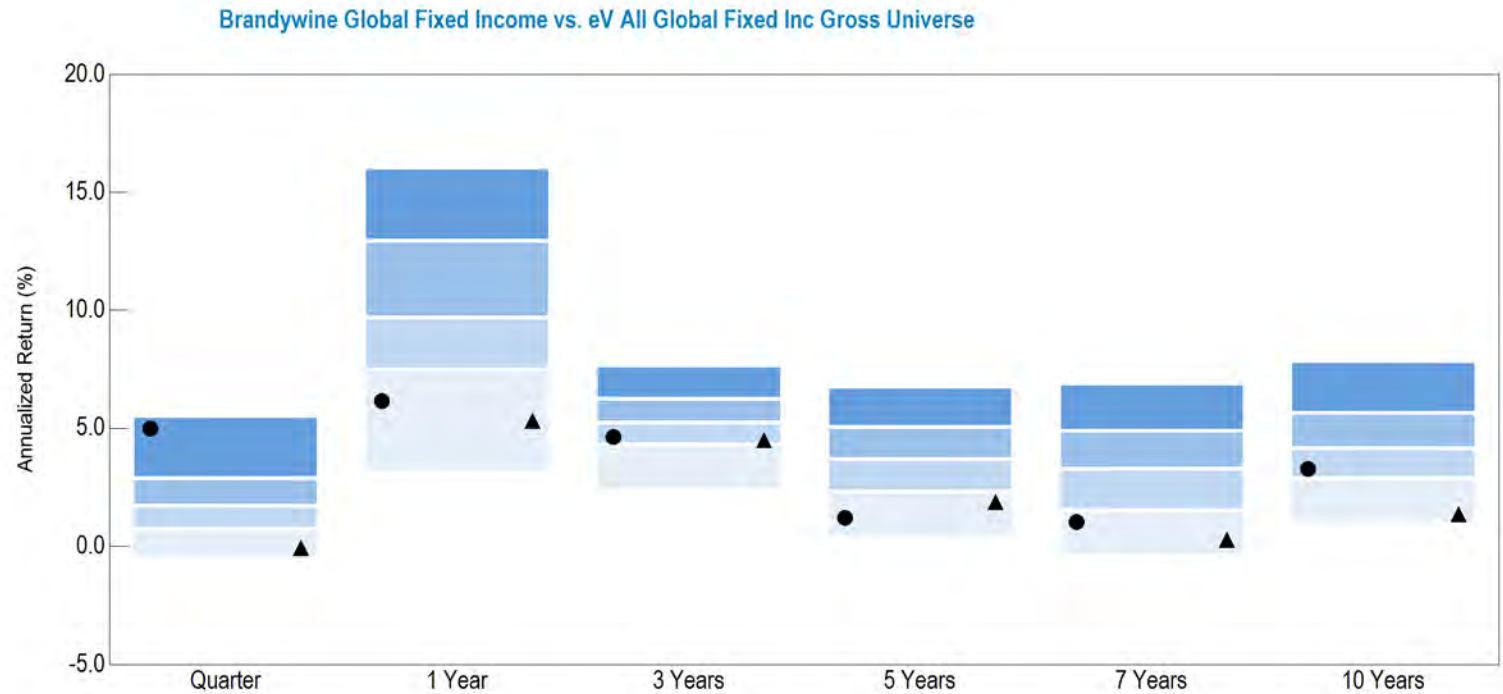
	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Global Fixed	142,118,607	3.9	7.2	4.2	0.8	2.0	7.2	-7.2	13.7	5.1	-12.4
<i>FTSE World Govt Bond Index</i>		-0.4	5.9	4.1	2.0	1.8	5.9	-0.8	7.5	1.6	-3.6
Brandywine Global Fixed Income	68,864,863	4.9	5.7	4.2	0.8	2.8	5.7	-4.5	12.0	1.7	-9.7
<i>FTSE WGBI ex US TR</i>		-0.1	5.3	4.5	1.9	1.4	5.3	-1.8	10.3	1.8	-5.5
Ashmore EM Blended Debt Fund	73,253,744	3.1	--	--	--	--	--	--	--	--	--
<i>50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+</i>		3.1	--	--	--	--	--	--	--	--	--

Correlation Matrix
Last 1 Year

	Total Global Fixed	Brandywine Global Fixed Income	Ashmore EM Blended Debt Fund	FTSE World Govt Bond Index
Total Global Fixed	1.00	--	--	--
Brandywine Global Fixed Income	0.95	1.00	--	--
Ashmore EM Blended Debt Fund	--	--	1.00	--
FTSE World Govt Bond Index	0.14	-0.16	--	1.00

Brandywine Global Fixed Income
 Cumulative Performance Comparison (Gross of Fees)

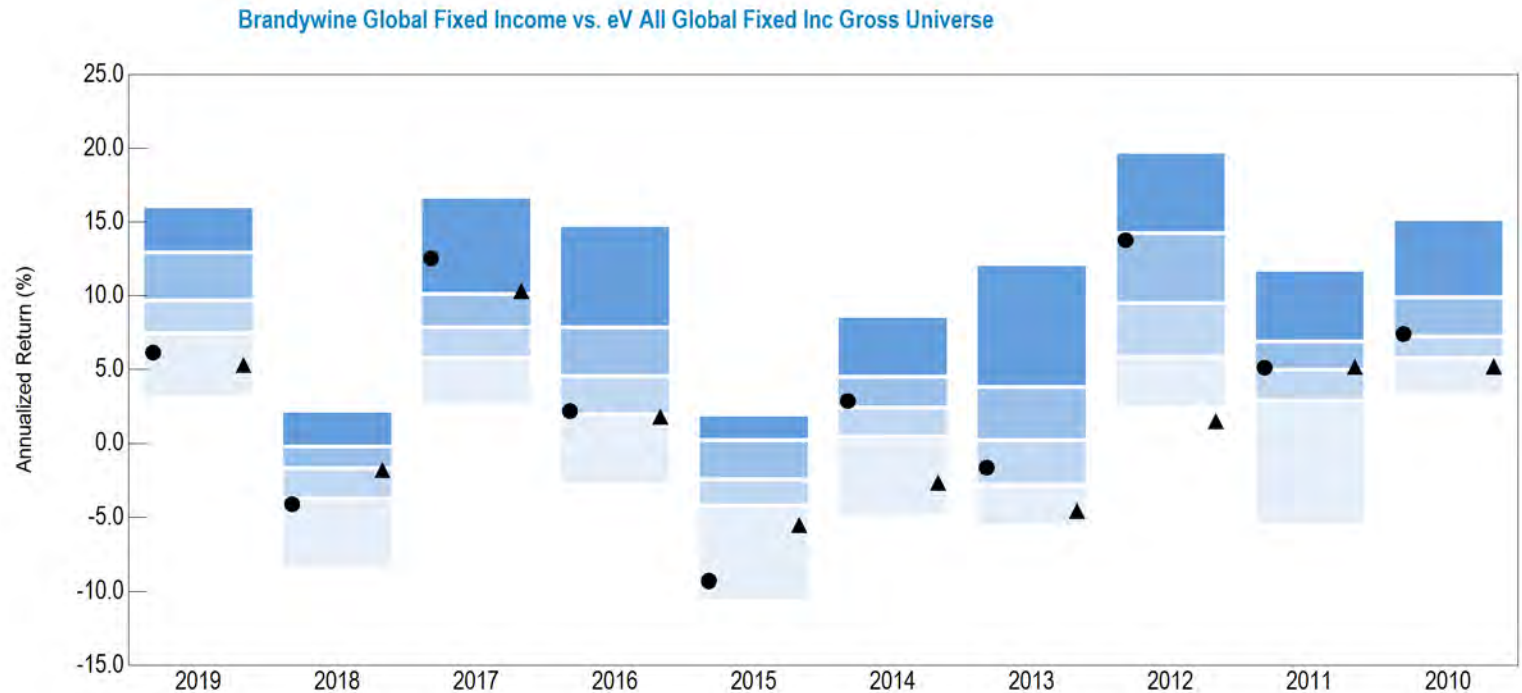
Period Ending: December 31, 2019



	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	5.5	16.0	7.6	6.7	6.9	7.8						
25th Percentile	2.9	13.0	6.3	5.1	4.9	5.7						
Median	1.7	9.7	5.3	3.7	3.3	4.2						
75th Percentile	0.7	7.5	4.3	2.3	1.6	2.9						
95th Percentile	-0.5	3.1	2.4	0.4	-0.4	1.0						
# of Portfolios	463	461	440	399	341	235						
● Brandywine Global Fixed Income	5.0 (8)	6.2 (85)	4.6 (67)	1.2 (92)	1.0 (87)	3.3 (65)						
▲ FTSE WGBI ex US TR	-0.1 (88)	5.3 (89)	4.5 (71)	1.9 (86)	0.3 (92)	1.4 (92)						

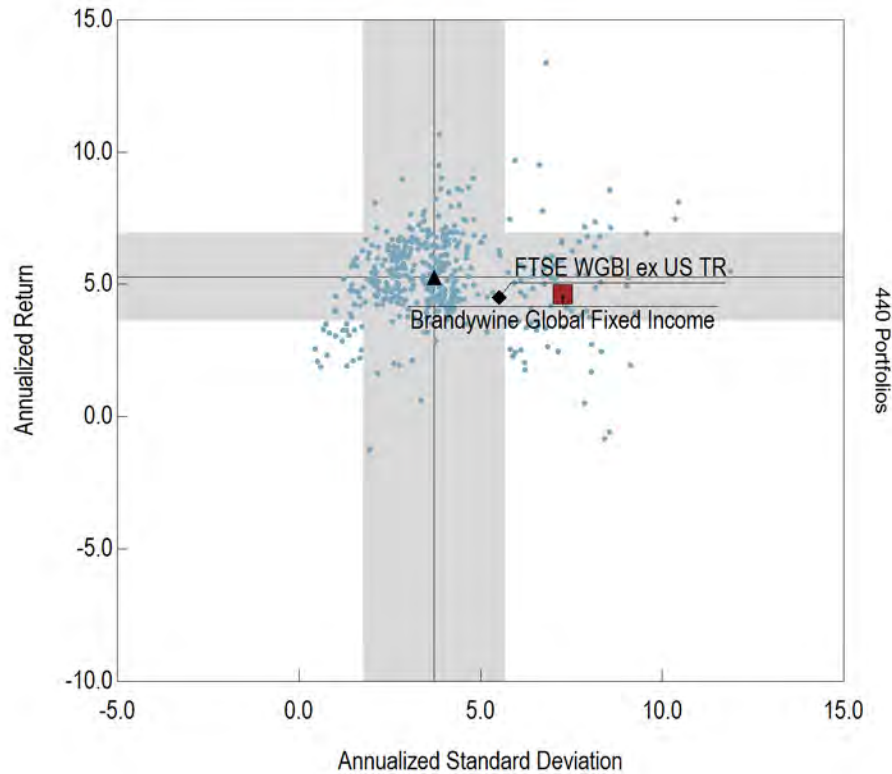
Brandywine Global Fixed Income
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: December 31, 2019

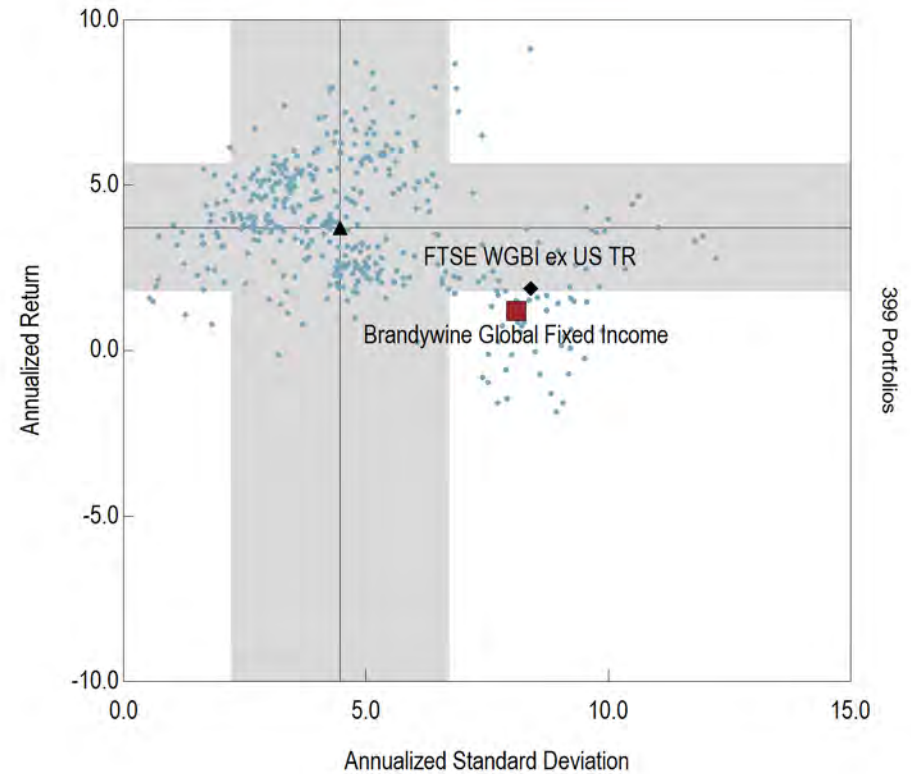


	Return (Rank)									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
5th Percentile	16.0	2.2	16.7	14.8	1.9	8.6	12.1	19.7	11.7	15.2
25th Percentile	13.0	-0.2	10.1	7.9	0.3	4.5	3.9	14.3	6.9	9.9
Median	9.7	-1.7	7.9	4.6	-2.4	2.5	0.2	9.5	5.0	7.3
75th Percentile	7.5	-3.7	5.8	2.0	-4.2	0.5	-2.8	5.9	2.9	5.8
95th Percentile	3.1	-8.4	2.6	-2.8	-10.6	-4.9	-5.6	2.5	-5.5	3.4
# of Portfolios	461	458	445	432	332	263	225	197	171	100
● Brandywine Global Fixed Income	6.2 (85)	-4.1 (80)	12.5 (14)	2.2 (75)	-9.3 (92)	2.9 (46)	-1.6 (66)	13.8 (29)	5.1 (47)	7.4 (50)
▲ FTSE WGBI ex US TR	5.3 (89)	-1.8 (53)	10.3 (23)	1.8 (77)	-5.5 (85)	-2.7 (92)	-4.6 (90)	1.5 (99)	5.2 (46)	5.2 (85)

Annualized Return vs. Annualized Standard Deviation
 3 Years Ending December 31, 2019



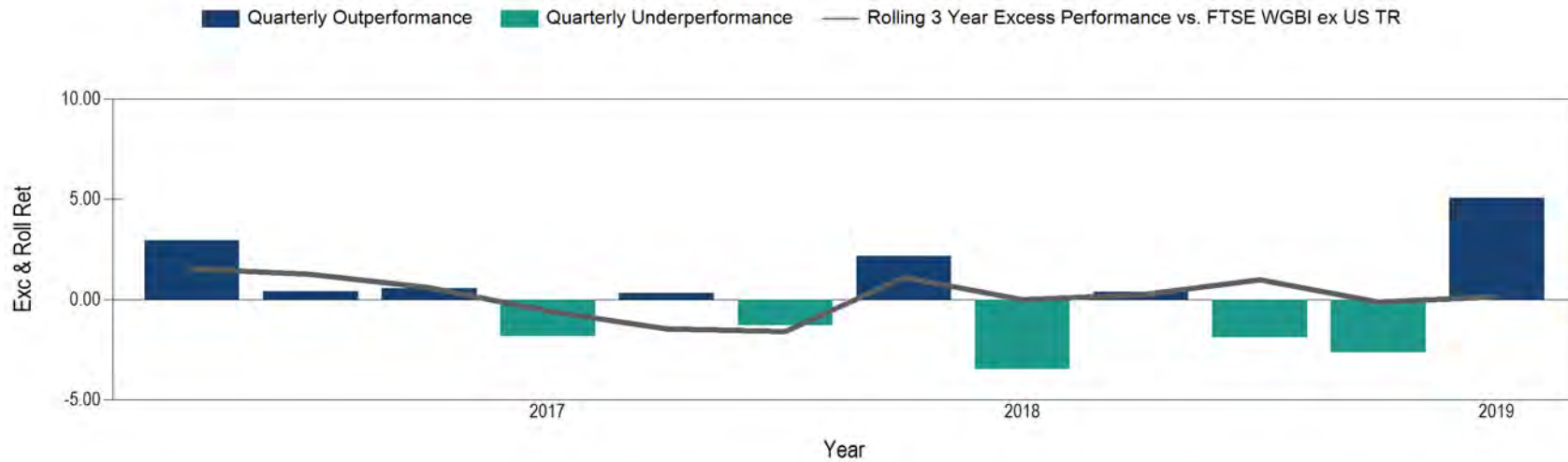
Annualized Return vs. Annualized Standard Deviation
 5 Years Ending December 31, 2019



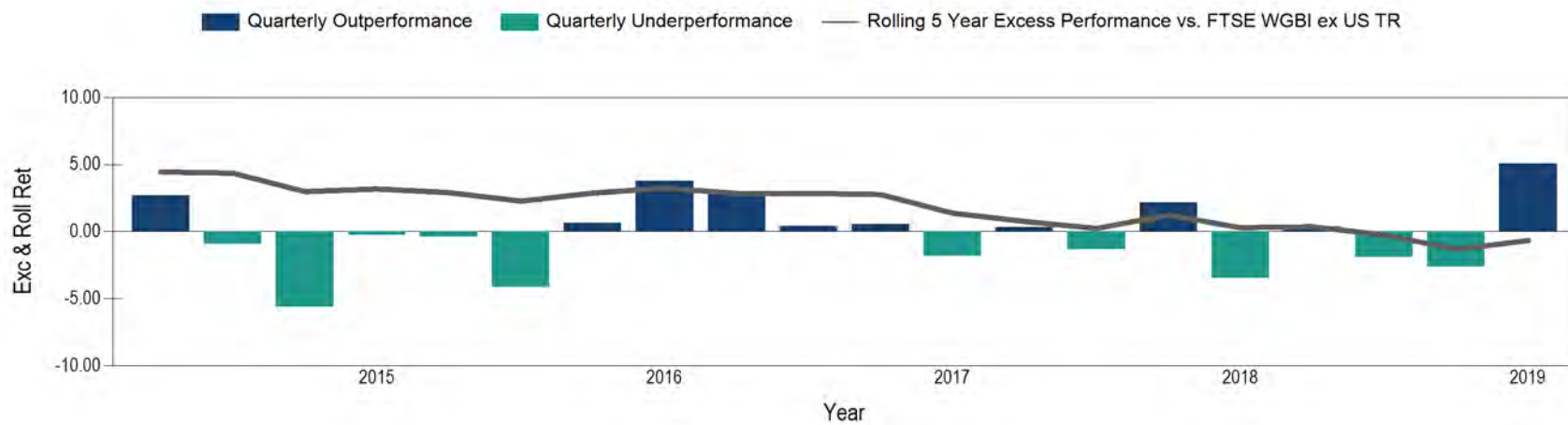
- Brandywine Global Fixed Income
- ◆ FTSE WGBI ex US TR
- ▲ Universe Median
- 68% Confidence Interval
- eV All Global Fixed Inc Gross

- Brandywine Global Fixed Income
- ◆ FTSE WGBI ex US TR
- ▲ Universe Median
- 68% Confidence Interval
- eV All Global Fixed Inc Gross

Rolling 3 Year Annualized Excess Performance

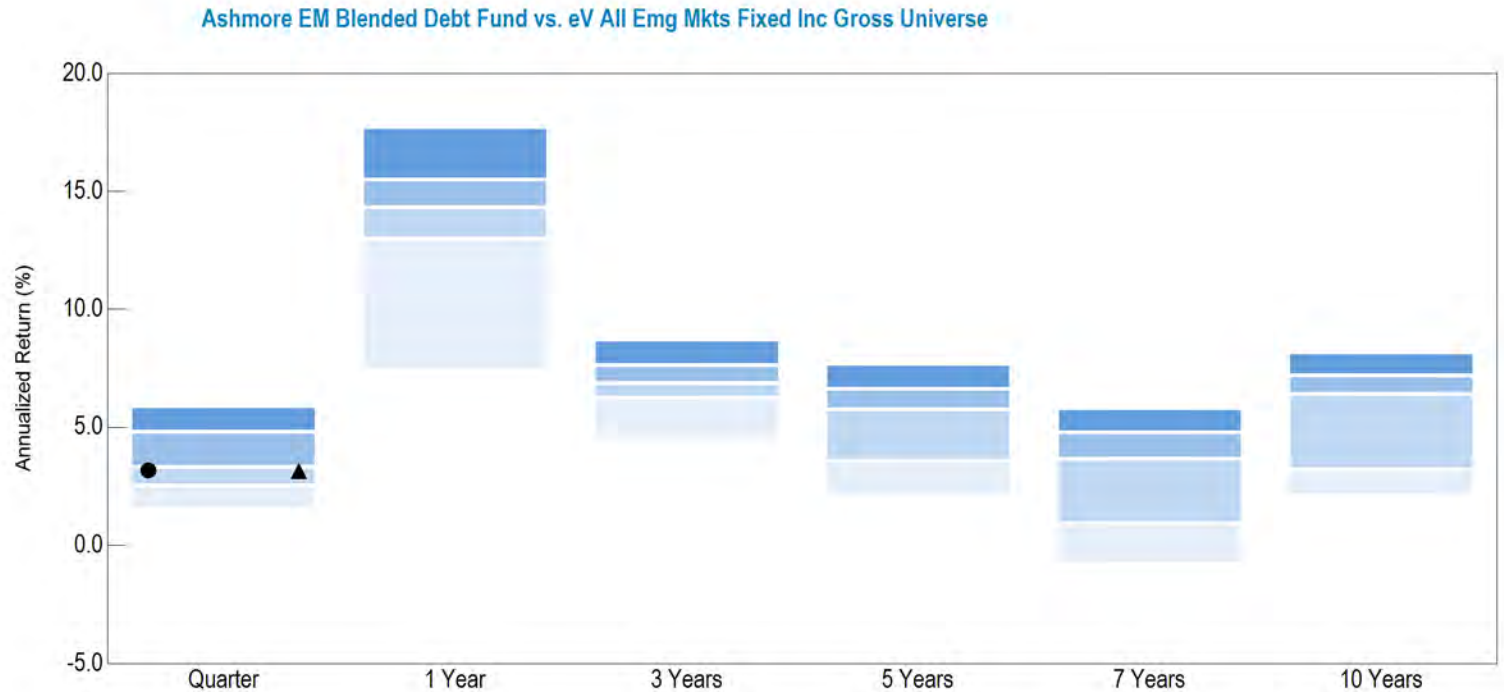


Rolling 5 Year Annualized Excess Performance



Ashmore EM Blended Debt Fund
 Cumulative Performance Comparison (Gross of Fees)

Period Ending: December 31, 2019



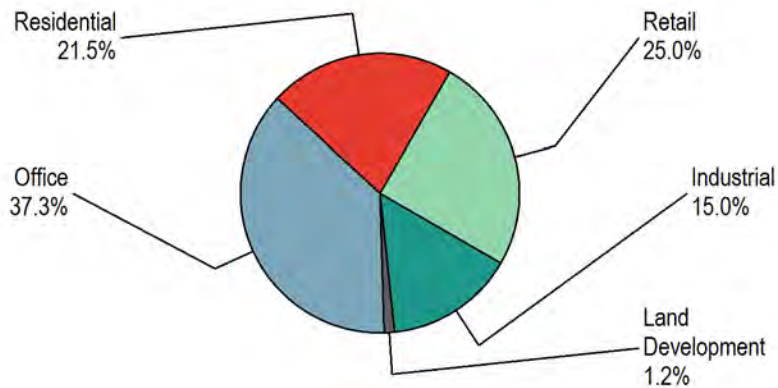
	Return (Rank)											
	Quarter	1 Year	3 Years	5 Years	7 Years	10 Years						
5th Percentile	5.9	17.7	8.7	7.7	5.8	8.2						
25th Percentile	4.8	15.5	7.6	6.6	4.8	7.2						
Median	3.3	14.3	6.9	5.8	3.7	6.4						
75th Percentile	2.6	13.0	6.3	3.6	0.9	3.2						
95th Percentile	1.6	7.4	4.5	2.1	-0.8	2.2						
# of Portfolios	267	266	255	232	181	102						
● Ashmore EM Blended Debt Fund	3.2	(55)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ 50% JPM EMBI GD/25% JPM GBI EM GD/25%	3.1	(56)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)

Total Real Estate
Asset Class Overview (Gross of Fees)

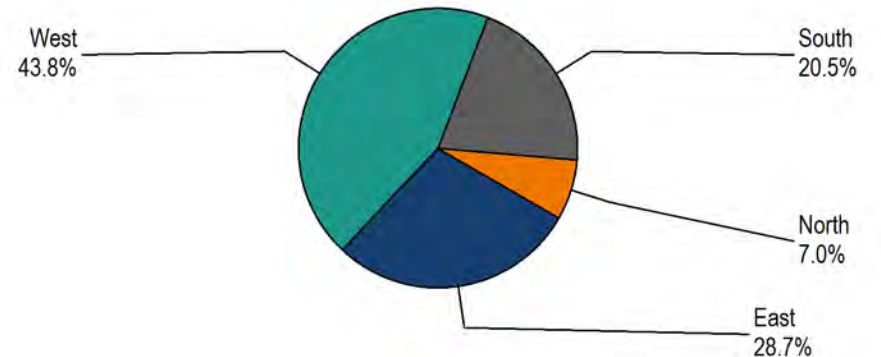
Period Ending: December 31, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Real Estate	204,950,512	2.0	4.3	6.5	9.0	9.0	4.3	7.5	7.8	7.8	18.0
<i>NCREIF Property Index</i>		1.6	6.4	6.7	8.2	10.2	6.4	6.7	7.0	8.0	13.3
JP Morgan Core Real Estate	170,439,620	2.1	3.4	5.5	8.0	10.9	3.4	7.0	6.1	8.4	15.2
<i>NCREIF-ODCE</i>		1.5	5.4	7.1	9.0	11.4	5.4	8.3	7.6	8.8	15.0
<i>NCREIF Property Index</i>		1.6	6.4	6.7	8.2	10.2	6.4	6.7	7.0	8.0	13.3
ARA American Strategic Value Realty	34,510,892	1.8	7.3	7.9	--	--	7.3	9.1	7.4	--	--
<i>NCREIF-ODCE</i>		1.5	5.4	7.1	--	--	5.4	8.3	7.6	--	--
<i>NCREIF Property Index</i>		1.6	6.4	6.7	--	--	6.4	6.7	7.0	--	--

Property Type Allocation
Allocation as of December 31, 2019



Geographic Diversification
Allocation as of December 31, 2019



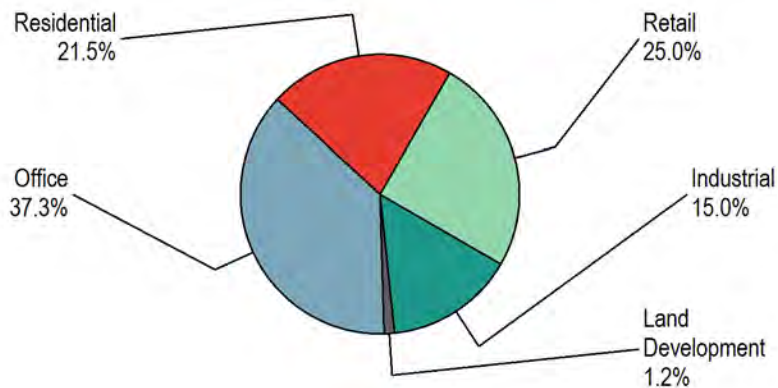
ARA American Strategic Value Realty is lagged one quarter.

Total Real Estate
Asset Class Overview (Net of Fees)

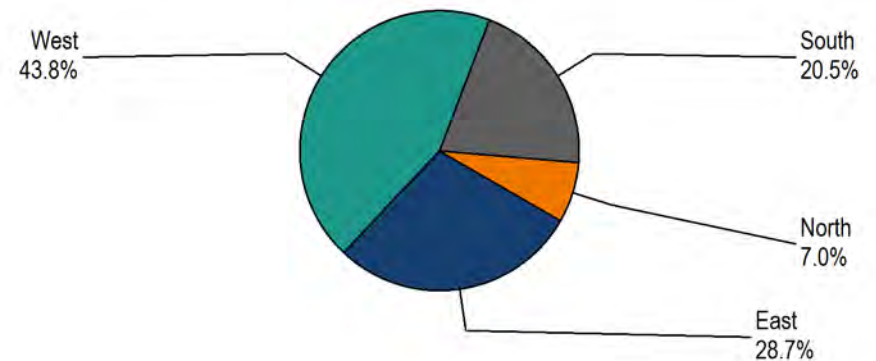
Period Ending: December 31, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Real Estate	204,950,512	2.0	4.3	6.5	8.6	8.5	4.3	7.5	7.8	6.8	16.9
<i>NCREIF Property Index</i>		1.6	6.4	6.7	8.2	10.2	6.4	6.7	7.0	8.0	13.3
JP Morgan Core Real Estate	170,439,620	2.1	3.4	5.5	7.5	10.1	3.4	7.0	6.1	7.3	14.1
<i>NCREIF-ODCE</i>		1.5	5.4	7.1	9.0	11.4	5.4	8.3	7.6	8.8	15.0
<i>NCREIF Property Index</i>		1.6	6.4	6.7	8.2	10.2	6.4	6.7	7.0	8.0	13.3
ARA American Strategic Value Realty	34,510,892	1.8	7.3	7.9	--	--	7.3	9.1	7.4	--	--
<i>NCREIF-ODCE</i>		1.5	5.4	7.1	--	--	5.4	8.3	7.6	--	--
<i>NCREIF Property Index</i>		1.6	6.4	6.7	--	--	6.4	6.7	7.0	--	--

Property Type Allocation
Allocation as of December 31, 2019



Geographic Diversification
Allocation as of December 31, 2019



ARA American Strategic Value Realty is lagged one quarter.

Total Commodities
 Asset Class Summary (Gross of Fees)

Period Ending: December 31, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Commodities	47,369,955	5.5	8.7	0.4	-3.2	-4.2	8.7	-12.4	6.2	12.6	-25.2
<i>Bloomberg Commodity Index TR USD</i>		4.4	7.7	-0.9	-3.9	-4.7	7.7	-11.2	1.7	11.8	-24.7
Gresham MTAP Commodity Builder	47,369,955	5.5	8.7	0.4	-3.2	--	8.7	-12.4	6.2	12.6	-25.2
<i>Bloomberg Commodity Index TR USD</i>		4.4	7.7	-0.9	-3.9	--	7.7	-11.2	1.7	11.8	-24.7

Total Commodities
 Asset Class Summary (Net of Fees)

Period Ending: December 31, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Commodities	47,369,955	5.5	8.7	0.4	-3.5	-4.5	8.7	-12.4	6.2	11.8	-25.8
<i>Bloomberg Commodity Index TR USD</i>		4.4	7.7	-0.9	-3.9	-4.7	7.7	-11.2	1.7	11.8	-24.7
Gresham MTAP Commodity Builder	47,369,955	5.5	8.7	0.4	-3.5	--	8.7	-12.4	6.2	11.8	-25.8
<i>Bloomberg Commodity Index TR USD</i>		4.4	7.7	-0.9	-3.9	--	7.7	-11.2	1.7	11.8	-24.7

Performance Return Calculations

Performance is calculated using Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year.

Data Source

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

Illiquid Alternatives

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

Manager Line Up

Manager	Inception Date	Data Source	Manager	Inception Date	Data Source
PIMCO RAE Fundamental PLUS	11/30/2007	J.P. Morgan	JP Morgan Core Real Estate	3/6/2008	J.P. Morgan
Loomis Sayles Large Cap Growth	12/31/2016	J.P. Morgan	Gresham MTAP Commodity	8/31/2013	BNY Mellon
Boston Partners Large Cap Value	1/31/2017	Boston Partners	Cash Account	-	SLOCPT
Atlanta Capital Management	8/31/2010	J.P. Morgan	HarbourVest Partners IX-Buyout	2011 ¹	HarbourVest
Dodge & Cox Intl Stock	12/6/2007	J.P. Morgan	HarbourVest 2018 Global Fund L.P.	-	HarbourVest
WCM International Growth	2/15/2017	WCM	KKR Mezzanine Partners	2010 ¹	KKR
BlackRock Core Bond	1/19/2017	J.P. Morgan	PIMCO Distressed Credit Fund	2010 ¹	Brown Brothers Harriman
Dodge & Cox Income	1/19/2017	Deutsche Bank	ARA American Strategic Value	6/22/2016	American Realty Adv.
Pacific Asset Corporate Loan	9/1/2014	Deutsche Bank	TPG Diversified Credit Program	2016 ¹	TPG
Brandywine Global Fixed	11/30/2007	J.P. Morgan	Pathway Private Equity Fund 9	2017 ¹	Pathway
Ashmore EM Blended Debt Fund	3/31/2019	Ashmore			

¹ Represents fund vintage year.

Policy & Custom Index Composition

Policy Index (10/1/2016-Current)	20% Russell 3000, 20% MSCI ACWI ex-US (Gross), 30% BBgBarc U.S. Aggregate, 15% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps, 5% BBgBarc High Yield +2% (lagged).
Policy Index (7/1/2014-9/30/2016)	23% Russell 3000, 22% MSCI ACWI ex-US (Gross), 35% BBgBarc U.S. Aggregate, 10% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps.
Policy Index (7/1/2013-6/30/2014)	27% Russell 3000, 23% MSCI ACWI ex-US (Gross), 30% BBgBarc U.S. Aggregate, 10% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps.
Policy Index (4/1/2011-6/30/2013)	27% Russell 3000, 23% MSCI ACWI ex-US (Gross), 20% BBgBarc U.S. Aggregate, 5% Citi World Govt Bond, 5% Barclays US TIPS, 10% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps.

Other Disclosures

Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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