



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: SEPTEMBER 30, 2016**

Investment Performance Review for

**Contra Costa County Employees' Retirement Association**

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Investment Landscape **TAB I**

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**PERSPECTIVES**  
**THAT DRIVE**  
**ENTERPRISE**  
**SUCCESS**

4<sup>TH</sup> QUARTER 2016  
Investment Landscape

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# 3<sup>rd</sup> quarter summary

## THE ECONOMIC CLIMATE

- The U.S. labor market continues to improve but at a slower pace. Real wage growth has risen but not as quickly as other periods of similar labor market tightness. Consumer expenditures remain the primary positive contributor to GDP growth. *p. 8, 9*
- U.S. inflation has risen steadily with Core CPI at 2.3% YoY as of August. Energy and gasoline prices continue to weigh on the Headline CPI figure of 1.1% YoY. *p. 13*
- The presidential election approaches. There has historically been a weak relationship between election outcomes and market performance. This election appears to have unique characteristics and may cause more unpredictable effects. *p. 18*

## MARKET PORTFOLIO IMPACTS

- Central bank discussions indicate we may be nearing fiscal expansion as a next form of policy accommodation. As fiscal policies are typically less analyzed and less understood by investors, markets may be more prone to surprise in this environment. *p. 20*

## THE INVESTMENT CLIMATE

- U.S. corporate earnings are expected to decline by -2.1%, which would be the sixth consecutive quarter of YoY decline. Almost all of this decline is attributable to energy sector weakness. *p. 30*
- Low inflation and low bond yields may help to explain higher than usual equity valuations. However, this does not negate the fact that higher equity valuations historically have materially reduced subsequent returns. *p. 35*

## ASSET ALLOCATION ISSUES

- We continue to remain underweight risk and believe that downside market potential outweighs upside market potential. *p. 29*
- Emerging market earnings per share growth turned positive in 2016, reversing a 5-year downward trend. Valuations remain below average on a relative basis and upside potential seems attractive. Investors may consider moving to an overweight in emerging market equities, though risks should be carefully considered. *p. 33*

We remain underweight to risk

Investors should be watchful of corporate earnings, and U.S. inflation trends

# What drove the market in Q3?

**“FED STANDS PAT, BUT SAYS CASE FOR RATE INCREASE HAS STRENGTHENED”**

## December Rate Hike Expectations

| Apr 29th | May 31st | June 30th | July 29th | Aug 31st | Sep 30th |
|----------|----------|-----------|-----------|----------|----------|
| 41%      | 42%      | 9%        | 31%       | 45%      | 51%      |

Source: WSJ, September 22<sup>nd</sup> 2016

**“U.S. GOVERNMENT BONDS RALLY AS CENTRAL BANKS CALM INVESTORS”**

## 10-Year Treasury Yield

| Aug 26th | Sep 2nd | Sep 9th | Sep 16th | Sep 23rd | Sep 30 <sup>th</sup> |
|----------|---------|---------|----------|----------|----------------------|
| 1.63%    | 1.60%   | 1.67%   | 1.69%    | 1.62%    | 1.59%                |

Source: WSJ, September 22<sup>nd</sup> 2016

**“ELECTION UNCERTAINTY WEIGHS ON MARKETS”**

## U.S. Presidential Election Polls

| March 31st |         | June 30th |         | September 30th |         |
|------------|---------|-----------|---------|----------------|---------|
| Trump      | Clinton | Trump     | Clinton | Trump          | Clinton |
| 39.1%      | 49.7%   | 39.8%     | 44.6%   | 44.4%          | 47.5%   |

Source: CNBC, September 27<sup>th</sup> 2016

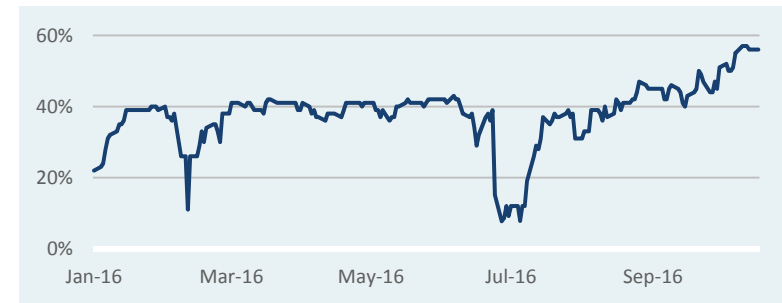
**“POUND STERLING FALLS BELOW \$1.31 HITTING NEW 31-YEAR LOW”**

## GBP/USD

| Apr 29th | May 31st | June 30th | July 29th | Aug 31st | Sep 30th |
|----------|----------|-----------|-----------|----------|----------|
| \$1.46   | \$1.45   | \$1.32    | \$1.33    | \$1.31   | \$1.30   |

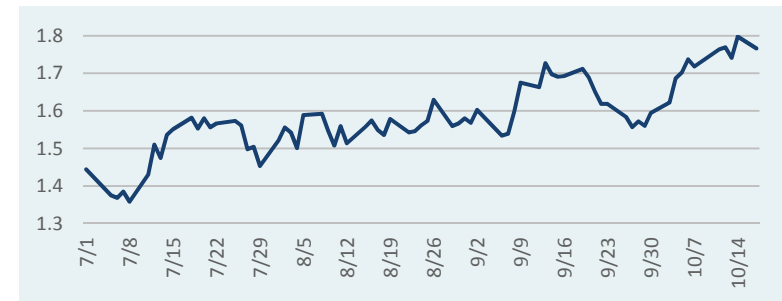
Source: The Independent, July 5<sup>th</sup> 2016

## DECEMBER RATE HIKE EXPECTATIONS



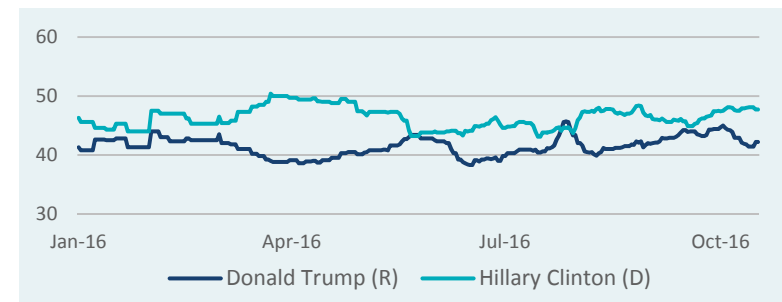
Source: Bloomberg, as of 10/17/16

## U.S. 10-YEAR TREASURY YIELD



Source: Federal Reserve, as of 10/17/16

## U.S. PRESIDENTIAL ELECTION POLLS



Source: Bloomberg, Real Clear Politics, as of 10/17/16

# Economic environment

# U.S. economics summary

- U.S. real GDP grew 1.4% YoY in Q2, up from 0.8% in Q1. This positive growth reflects contributions from greater consumer expenditures, exports, and non-residential fixed investments. These were partially offset by a decrease in private inventory investment.
- Headline inflation (CPI) rose 1.1% as of August YoY while core CPI rose 2.3%. Lower energy prices, and gasoline in particular (-17.8%), have weighed heavily on the headline inflation figure. Medical care services (+4.9%) and shelter (+3.4%) contributed to higher prices.
- If the U.S. economy continues to move closer to full employment and higher inflation, the market has expected the Fed to want to push harder for rate

“normalization”. However, the fear of disrupting financial markets and raising rates too early, too quickly, remains.

- Over the last few quarters we have continued to see the slow and steady return to the workforce of discouraged workers. This may help explain why productivity growth and wage inflation are lower than might be expected at this level of unemployment.
- Additions to nonfarm payrolls averaged slightly under 200,000 in the third quarter as the overall labor market continued to show strength. The unemployment rate increased slightly to 5.0% as more people entered the labor force.

|  | Most Recent      | 12 Months Prior  |
|--|------------------|------------------|
| GDP ( <i>annual YoY</i> )                        | 1.4%<br>6/30/16  | 3.9%<br>6/30/15  |
| Inflation<br>( <i>CPI YoY, Headline</i> )        | 1.1%<br>8/31/16  | 0.2%<br>8/31/15  |
| Expected Inflation<br>( <i>5yr-5yr forward</i> ) | 1.8%<br>9/30/16  | 1.8%<br>9/30/15  |
| Fed Funds Rate                                   | 0.25%<br>9/30/16 | 0.12%<br>9/30/15 |
| 10 Year Rate                                     | 1.6%<br>9/30/16  | 2.0%<br>9/30/15  |
| U-3 Unemployment                                 | 5.0%<br>9/30/16  | 5.1%<br>9/30/15  |
| U-6 Unemployment                                 | 9.7%<br>9/30/16  | 10.0%<br>9/30/15 |



# U.S. economics – GDP growth

U.S. real GDP grew 1.4% YoY in the second quarter, up from 0.8% in the first quarter. This positive growth reflects contributions from personal consumption expenditures, exports, and non-residential fixed investment. These were partially offset by a decrease in private inventory investment.

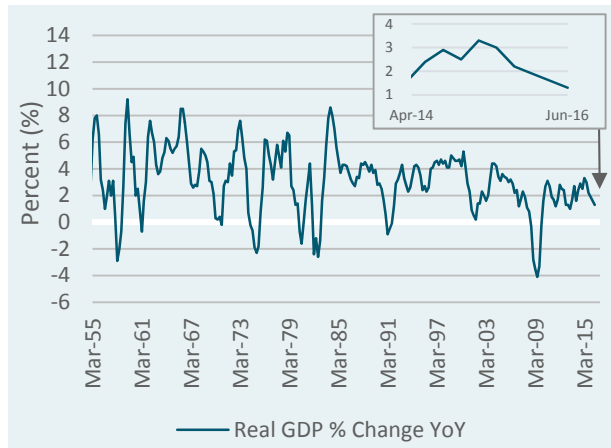
Domestic exports of goods and services grew 1.8% YoY in the second quarter while imports grew 0.2%. A stronger U.S. dollar and weaker demand from China have likely detracted somewhat from export growth.

The manufacturing sector continues to show weakness as durable goods orders have declined during three of the past four months. Additionally, shipments of manufactured durable goods also fell in August, down -0.4%.

The IMF cut U.S. growth expectations to 1.6% for 2016, down from 2.6% in 2015 and down 0.6% from three months prior. Lower business investment has been a primary headwind to growth, with investment decreasing for three consecutive quarters.

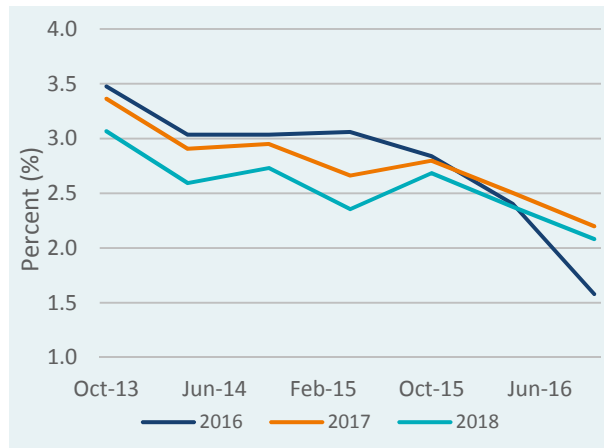
**Consumer spending continues to drive growth**

**U.S. REAL GDP GROWTH**



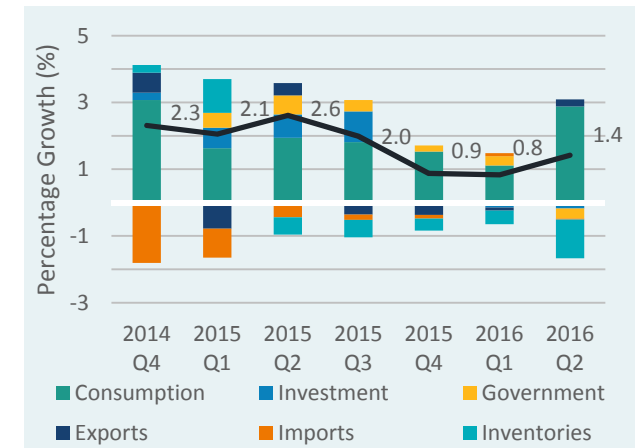
Source: FRED, as of 6/30/16

**IMF U.S. GROWTH EXPECTATIONS**



Source: IMF, as of 10/4/16

**U.S. GDP COMPONENTS**



Source: FRED

# U.S. economics – Unemployment

U.S. unemployment has fluctuated between 4.7% and 5.0% over the past year, and currently sits at a rate of 5.0%. The back-and-forth pull between unemployment rate and participation rate continues as workers rejoin the workforce (higher participation) which then adds to the employment candidate pool (higher unemployment).

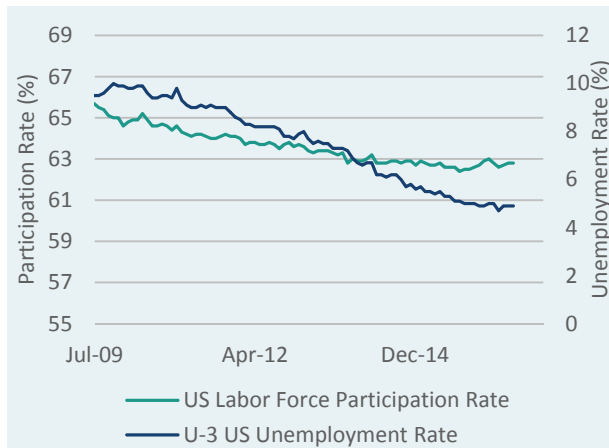
Average length of unemployment has trended downward to 27.6 weeks in August relative to 28.3

weeks one year prior. This is still substantially higher than the long-term median of 14 weeks (since 1948).

In August 151,000 nonfarm jobs were added, below the trailing 12 month average of 204,000.

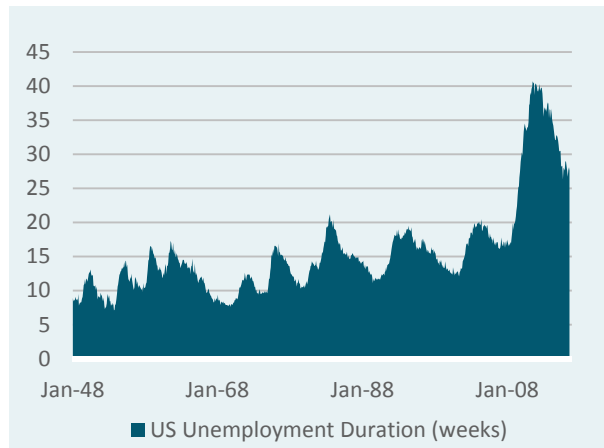
Over the past year, real average hourly earnings have risen by 1.3%. Positive upward pressure in average hourly earnings may help sustain economic growth and may also add to inflation pressures.

**U.S. UNEMPLOYMENT & PARTICIPATION**



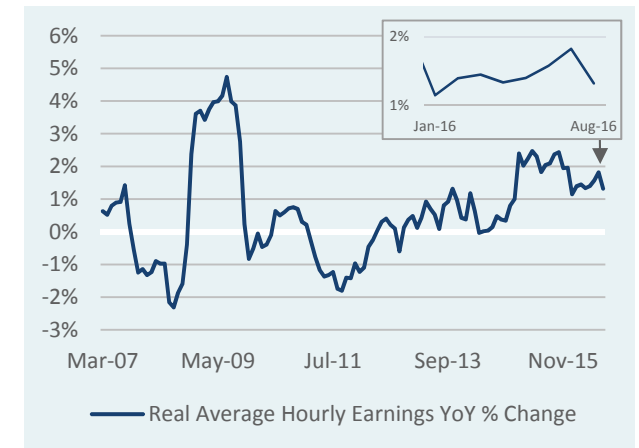
Source: FRED, as of 8/31/16

**UNEMPLOYMENT DURATION**



Source: FRED, as of 8/31/16

**REAL AVERAGE HOURLY EARNINGS**



Source: FRED, as of 8/31/16

# U.S. economics – The consumer

While corporates and governments seem to be at a later stage in terms of their credit cycles, consumer credit expansion has not been as pronounced. A healthy deleveraging has occurred across households since the global financial crisis, with credit expansion only picking up in recent years. It may make sense that the U.S. consumer has been a major contributor to economic growth.

Relatively strong gains in spending have been accompanied by modest increases in real wages and disposable income. Consumer lending growth accelerated

during the quarter, in part due to low borrowing costs and higher consumer confidence. Consumer loans at commercial banks rose 8.8% year-over-year in August. While this growth rate is higher than what we have seen during the current economic expansion, it is within a normal range with regard to historical experience.

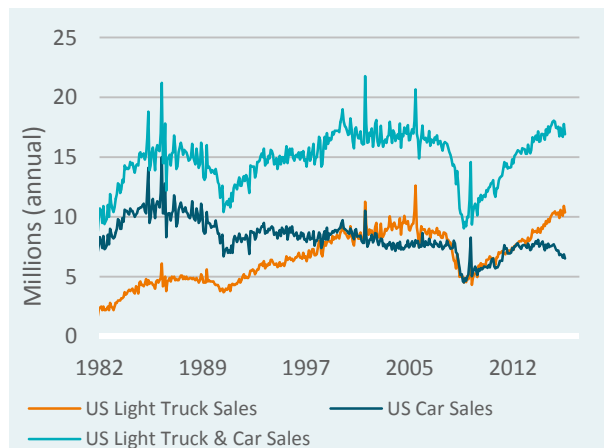
Auto sales have also been robust this year, a good indicator of consumer strength, though sales growth has flattened somewhat and automakers have increased per-vehicle incentive spending to all time highs.

**CONSUMER LOAN GROWTH**



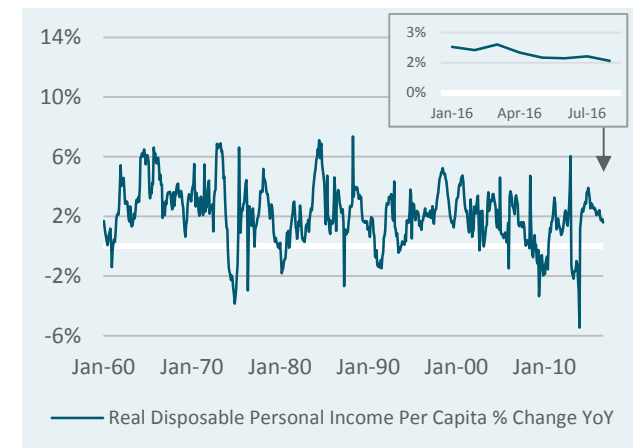
Source: FRED, as of 8/31/16

**AUTO SALES**



Source: FRED, as of 8/31/16

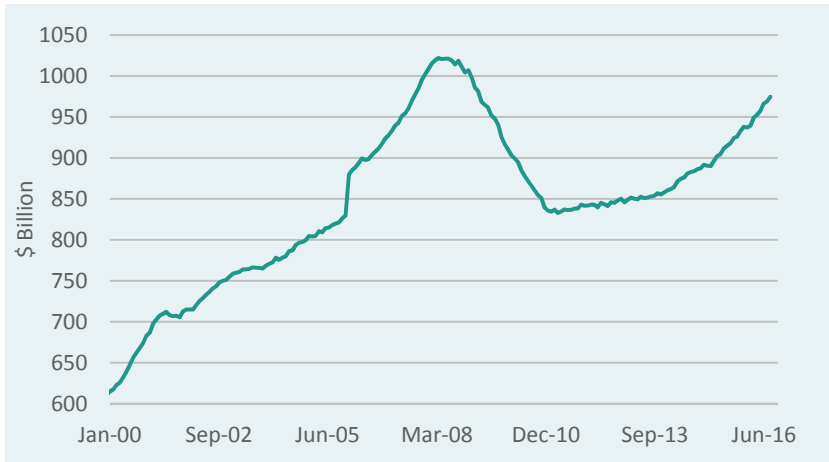
**GROWTH OF DISPOSABLE INCOME**



Source: FRED, as of 8/31/16

# U.S. economics – The consumer

US REVOLVING OUTSTANDING CONSUMER CREDIT



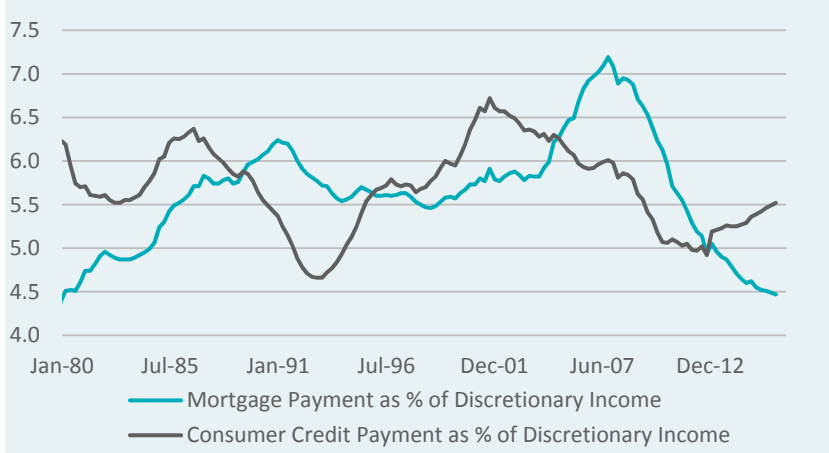
US HOUSEHOLD DEBT AS % OF DISPOSABLE INCOME



Consumer credit expansion has not been as robust as previous recoveries

Debt service ratios remain low

HOUSEHOLD DEBT SERVICE RATIO %



HOUSING STARTS



Source: FRED, as of 8/31/16

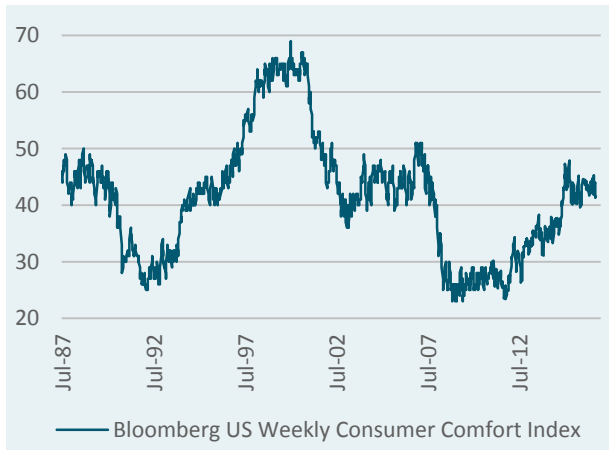
# U.S. economics – Sentiment

Consumer sentiment weakened slightly over the quarter. The University of Michigan Sentiment Index ended the quarter lower. Those surveyed indicated that current conditions worsened while expectations for future conditions brightened. The Bloomberg Consumer Comfort Index also declined, falling to its lowest level since mid-December.

zero for 18 consecutive months. However, following July the indicator slipped back into slightly negative territory.

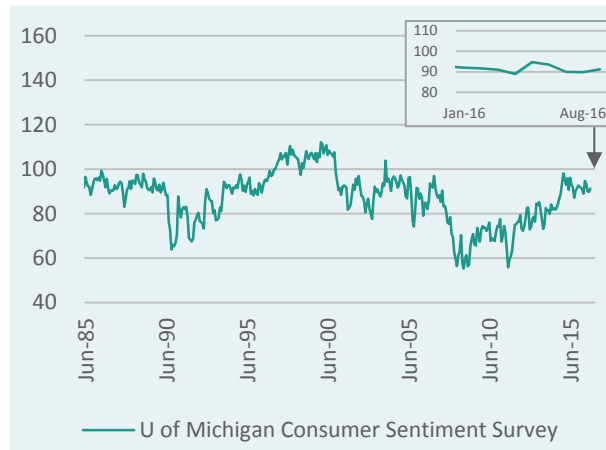
The Citigroup Economic Surprise Index unexpectedly jumped into positive territory in July after staying below

**CONSUMER COMFORT INDEX**



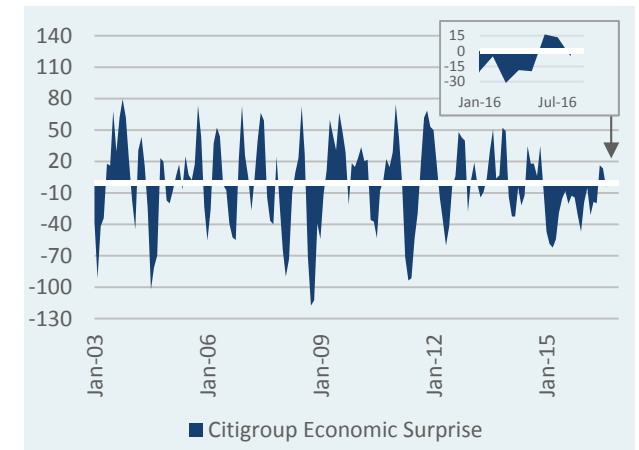
Source: Bloomberg, as of 9/25/16 (see Appendix)

**CONSUMER SENTIMENT**



Source: University of Michigan, as of 9/30/16 (see Appendix)

**ECONOMIC SURPRISE**



Source: Bloomberg, as of 9/30/16 (see Appendix)

# U.S. economics – Housing

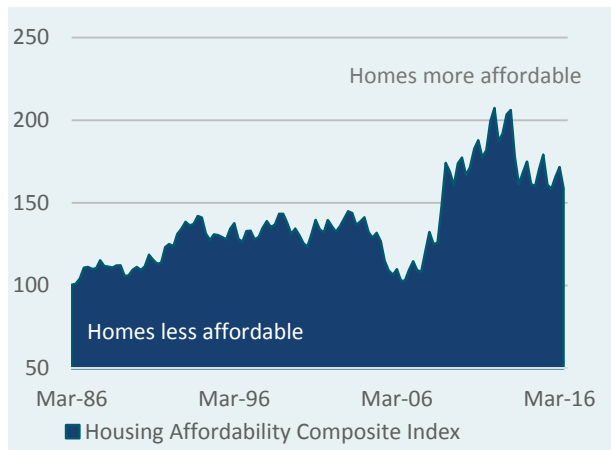
U.S. housing inventories are near historic lows across single and multifamily markets. Limited supply may help to put upward pressure on new construction activity, which has been below average.

Vacancy rates are near all-time lows in the rental space while homeownership rates continue to fall. Demand for rental properties has increased and multifamily housing starts continue to ramp up; however, multifamily homes are thought to contribute

substantially less to economic growth than that of single-family homes. This may factor into future economic growth.

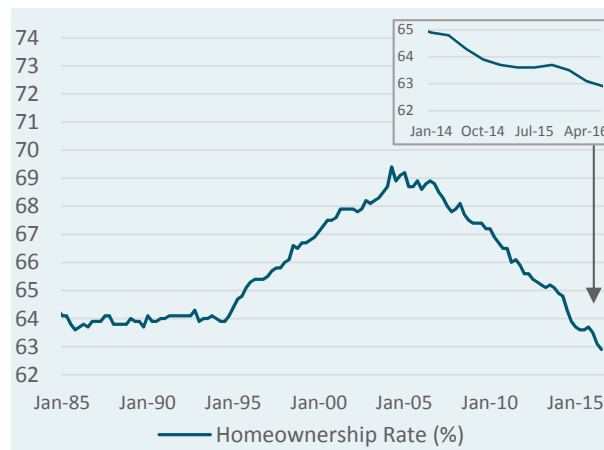
Lower mortgage rates and moderate wage growth have helped to suppress household debt burdens through greater discretionary income. These forces have contributed to a stronger consumer which may bolster future home purchase and ownership trends, especially as home affordability remains high.

## HOME AFFORDABILITY



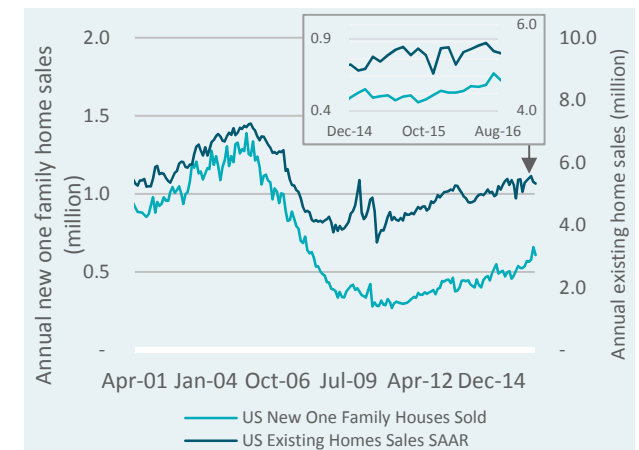
Source: National Association of Realtors, as of 6/30/16

## HOMEOWNERSHIP RATE



Source: FRED, as of 7/1/2016

## NEW & EXISTING HOME SALES



Source: Bloomberg, as of 8/31/16

# U.S. economics – Inflation

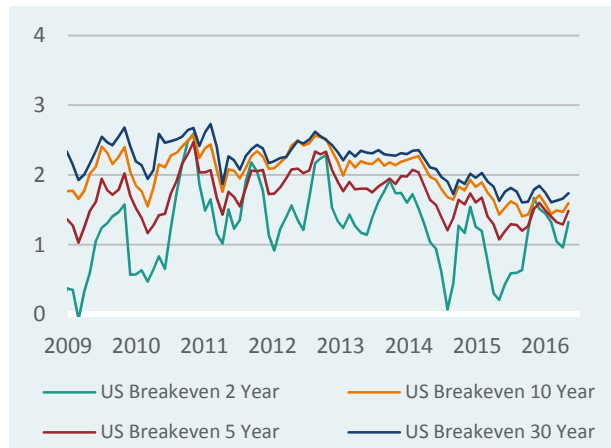
Inflation expectations were mixed during the quarter. The University of Michigan Inflation Expectations Survey reflected lower expected inflation, while the U.S. 10yr TIPS Breakeven indicated higher expectations.

Headline inflation rose 1.1% YoY while core inflation rose 2.3% YoY. Energy and gasoline continue to weigh on prices, while medical care services and shelter (housing costs) put upward pressure on overall prices.

Inflation surveys and inflation-sensitive instruments are inherently different and we might therefore expect discrepancies across these indicators.

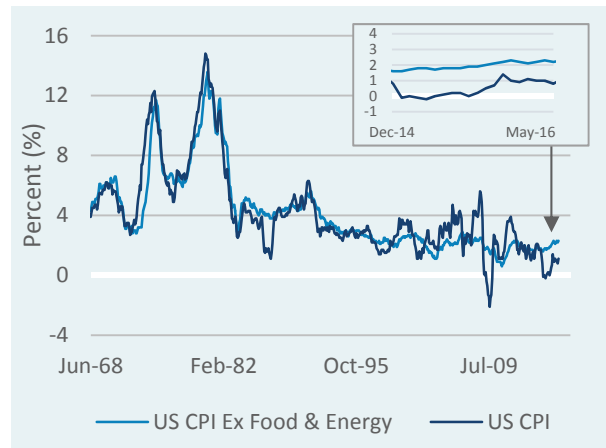
Public fear of inflation remains very low, and the Federal Reserve is hesitant to raise rates. We believe investors should be watchful of inflation trends. An inflation overshoot remains a potential danger, given less worry over inflation and less ability and/or willingness of the Fed to raise rates.

**U.S. TIPS BREAKEVEN INFLATION**



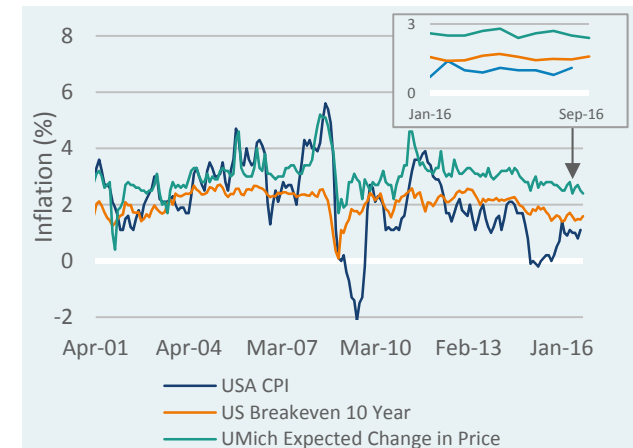
Source: FRED, as of 8/31/16

**U.S. CPI (YOY)**



Source: FRED, as of 7/31/16

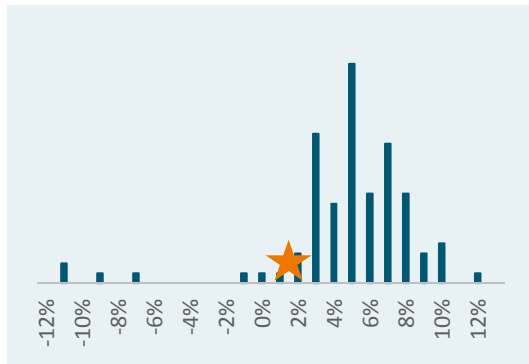
**MARKET EXPECTATIONS OF INFLATION**



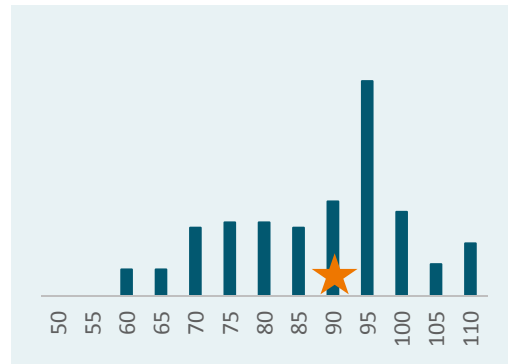
Source: Bloomberg, as of 9/30/16

# Where are we now?

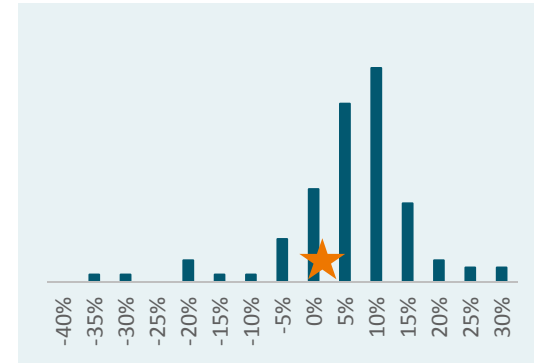
RETAIL SALES, YOY (SINCE 1993)



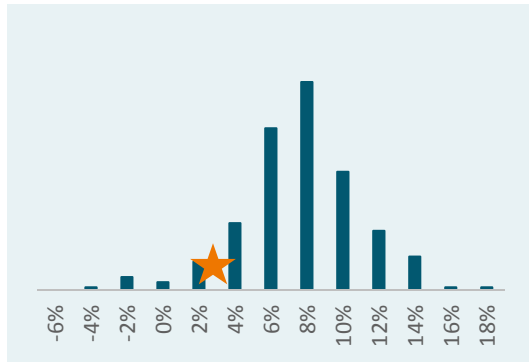
U OF MICH. CONFIDENCE (SINCE 1978)



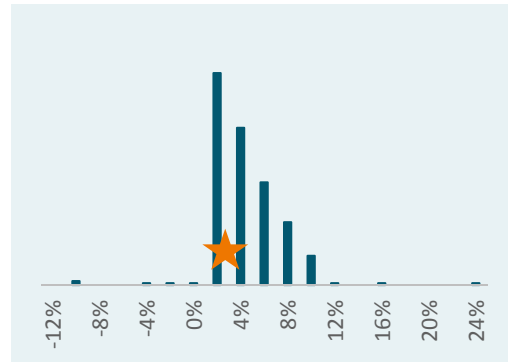
DURABLE GOODS ORDERS, YOY (SINCE 1992)



PERSONAL INCOME, YOY (1948)



PERSONAL CONSUMPTION, YOY (SINCE 1947)



CITI SURPRISE INDEX (SINCE 2003)



While these metrics clearly do not fall at the top end of their historical distribution, they are not outside normal ranges

Source: Bloomberg, as of 9/30/16



# International economics summary

- Developed economies continued to experience slow growth and low inflation. While inflation ticked up slightly in the Eurozone to 0.4%, it remains materially under the ECB’s target of “below, but close to, 2%”.
- The ECB left monetary policy unchanged at its September meeting, and cut economic growth expectations for the next three years.
- The BOJ shook up its monetary policy after completing a “comprehensive assessment of its current easing programs”. The central bank stated it will intentionally overshoot its inflation target of 2% and introduced a 0% target for the 10-year yield.
- Britain elected new prime minister Theresa May, who will be responsible for implementing Brexit. Increased uncertainty surrounding the timing and nature of the political change will continue. The potential impact of this uncertainty led to the first rate cut by the BOE since 2009.
- The IMF once again downgraded global growth forecasts for 2016 and 2017, this time to just above 3%. It now warns against economic stagnation and states that countries have found themselves in the position of relying on monetary and fiscal policy to lift growth prospects, and that this may be unsustainable.

| Area           | GDP<br>(Real, YoY)       | Inflation<br>(CPI, YoY)  | Unemployment            |
|----------------|--------------------------|--------------------------|-------------------------|
| United States  | 1.4%<br><i>6/30/16</i>   | 1.1%<br><i>8/31/16</i>   | 5.0%<br><i>9/30/16</i>  |
| Western Europe | 1.8%<br><i>6/30/16</i>   | 0.4%<br><i>9/30/16</i>   | 8.5%<br><i>6/30/16</i>  |
| Japan          | 0.8%<br><i>6/30/16</i>   | (0.5%)<br><i>8/31/16</i> | 3.2%<br><i>6/30/16</i>  |
| BRIC Nations   | 5.1%<br><i>6/30/16</i>   | 3.8%<br><i>6/30/16</i>   | 5.5%<br><i>6/30/16</i>  |
| Brazil         | (3.8%)<br><i>6/30/16</i> | 9.0%<br><i>8/31/16</i>   | 11.7%<br><i>9/30/16</i> |
| Russia         | (0.6%)<br><i>6/30/16</i> | 6.9%<br><i>8/31/16</i>   | 5.6%<br><i>6/30/16</i>  |
| India          | 7.1%<br><i>6/30/16</i>   | 5.1%<br><i>8/31/16</i>   | 7.1%<br><i>12/31/15</i> |
| China          | 6.7%<br><i>6/30/16</i>   | 1.3%<br><i>8/31/16</i>   | 4.1%<br><i>6/30/16</i>  |

# International economics

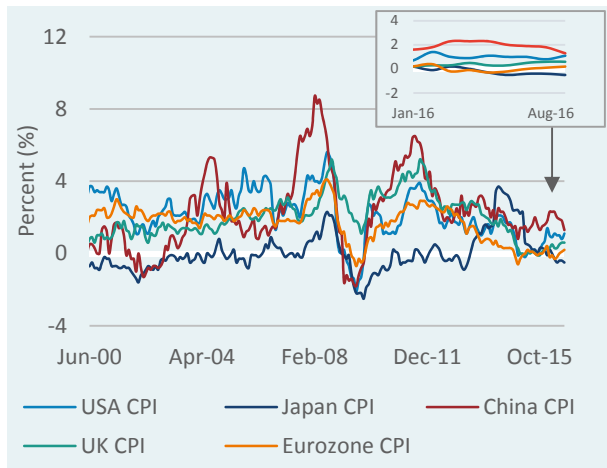
Further downward revisions and lackluster growth in Europe and Japan have encouraged central banks to maintain stimulus measures. Japan implemented a policy initiative which will target a 0% yield for the 10-year government bond. Japan continues to struggle with deflation as headline CPI fell to -0.5% YoY in August.

While economic data released in the U.K. post-Brexit has significantly beaten expectations, uncertainty remains regarding the specific details of the country's exit from the European Union. In its latest report, the BOE lowered the

2017 growth forecast to 0.8% from 2.3%. The central bank also expects inflation to hit 2.4% in 2018 and 2019, citing the fall of the pound sterling.

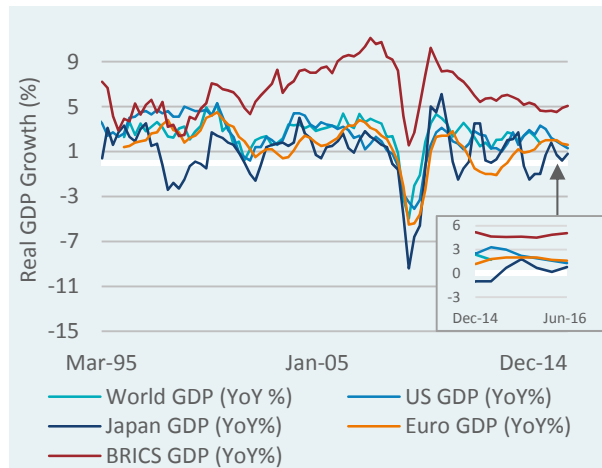
Emerging market economic growth picked up slightly at 4.6% YoY in the second quarter. After a drop off in growth following the global financial crisis, the outlook for emerging economies has improved. With slow growth expectations for developed markets, an opportunity may exist in both emerging market equities and fixed income.

## INTERNATIONAL INFLATION



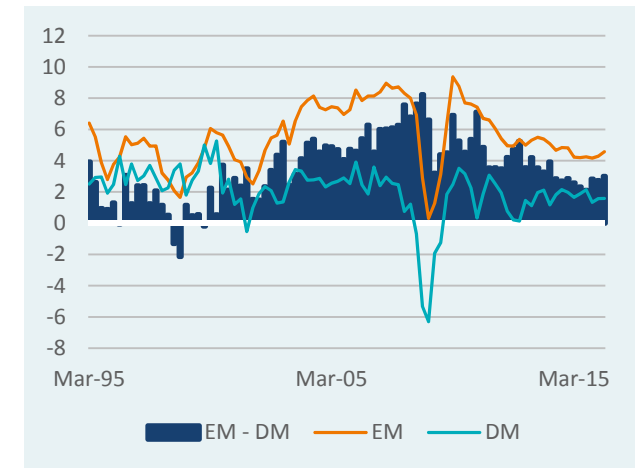
Source: Bloomberg, as of 8/31/16

## REAL GDP GROWTH



Source: Bloomberg, as of 6/30/16

## EM VS. DM REAL GDP GROWTH



Source: Bloomberg, as of 6/30/16

# Post-Brexit

There have been significant changes in U.K. and European political behavior following the Brexit vote. Rear guard actions in both Parliament and the courts in the U.K. have begun to attempt to slow or stop the implementation of Brexit. The Prime Minister has said that Article 50 will be triggered in March 2017.

One of the key elements of the discussion has been debate over whether Brexit should be a 'hard' Brexit (full withdrawal from the Single Market) or a 'soft' Brexit (with continuing participation in the Single Market for a fee, and with continuing free movement of people). Pro-Brexit

campaigners point out that this issue was extensively discussed during the campaign, while Remainers claim that the U.K. population was ill-informed during the run-up to the vote, although their hand is weakened by the fact that their predictions of economic chaos were a Brexit vote to win have so far failed to materialize.

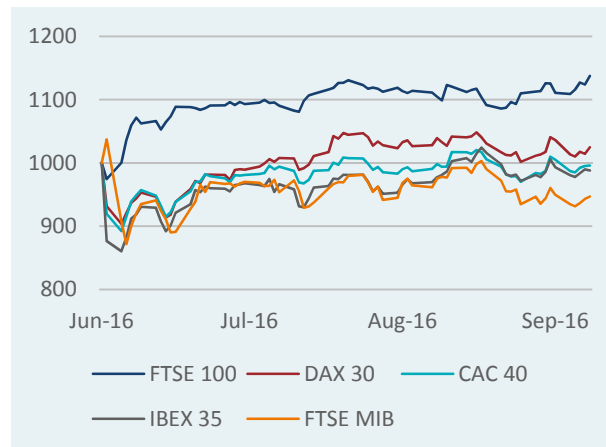
The remaining EU members remain unsure how to proceed, with hard-line negotiators appointed by the EU but strong financial interests in many countries in close ongoing trading links with the U.K.

**GBP/USD**



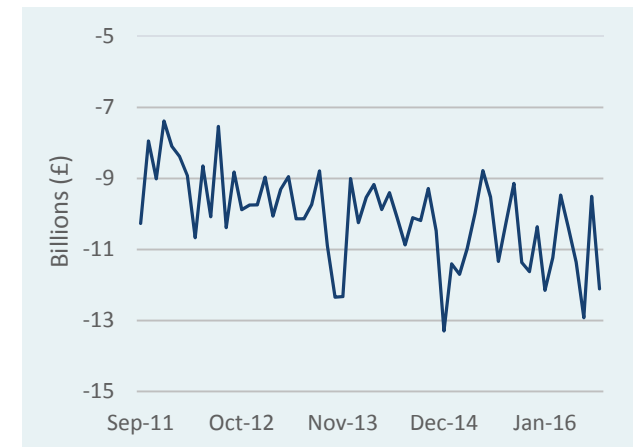
Source: FRED, as of 10/19/16

**EUROPEAN EQUITY MOVEMENT**



Source: Bloomberg, 6/23-9/30/16 – shown in local currency terms

**U.K. BALANCE OF TRADE**



Source: Bloomberg, as of 9/30/16

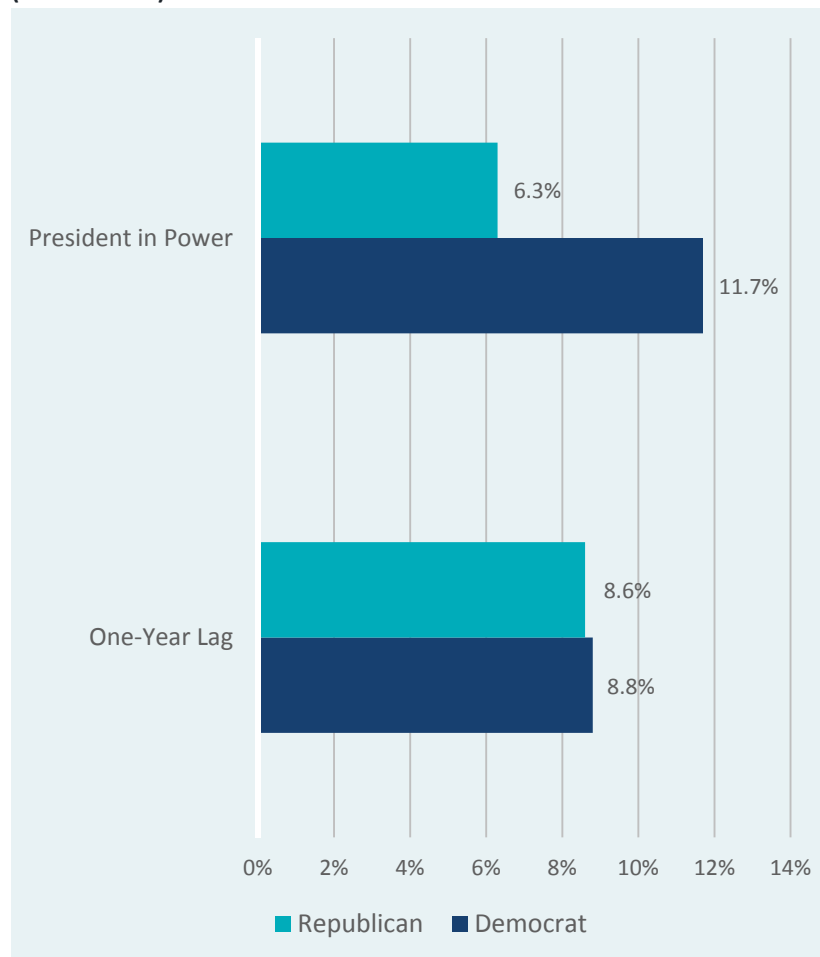
# U.S. presidential election

Correlation between election results and long-term market performance has generally been weak, and the outcome depends on how the data is sliced. The S&P 500 has experienced greater price appreciation with a Democrat in power, but the results are less clear when a one-year policy lag is introduced; research results depend on how the relationship is defined.

It appears that a Clinton win would most likely result in little change from the current macroeconomic policy. However, strong congressional pressure would be likely on trade issues, and there would be continuing challenges to the long term sustainability of the Affordable Care Act. Both candidates have supported increased spending on infrastructure, which would provide support for the materials and construction sectors.

A Trump win might bring greater uncertainty because his economic policy plans are less known/understood. Trump's impact may also be felt more quickly through his use of executive orders to reshape the regulatory environment, and some policies enacted by Obama may be undone, through the same means.

**AVERAGE CALENDAR YEAR S&P 500 PRICE RETURN  
(1951-2015)**



The relationship between election results and market performance is weak

*Note: Top chart = annualized return during time in office, Lower chart = annualized return during time in office but with 1-year lag*

# Fixed income rates & credit

# Interest rate environment

- The U.S. Treasury curve continued to flatten, influenced by increased expectations of an interest rate hike by the end of the year.
- Global interest rates remain near all time lows, although volatility picked up. Continued easing by central banks in addition to low inflation and expectations for slowing growth contribute to an environment of secularly low yields.
- When thinking about bond yields today, it may be useful not only to consider nominal yields, which are at historic lows, but also *real* yields, which paint a much more reasonable picture. Current levels of inflation and future expectations may help put things into context. Furthermore, investors may see markets drive yields higher if inflation expectations were to rise.
- Negative yielding sovereign and corporate debt was \$11.6 trillion at quarter end, mostly from Japan and the Eurozone. We remain concerned about Japanese and European rates as negative yields and low liquidity detract from the attractiveness of these assets.
- Yields on Japanese Treasuries increased sharply in late July after the BOJ chose to keep stimulus measures on hold. The 10-year JGB yield briefly traded around 0% before falling back into negative territory at the end of September.
- European sovereign bonds sold off during the beginning of September over concerns that central banks may begin cutting back on monetary easing measures.

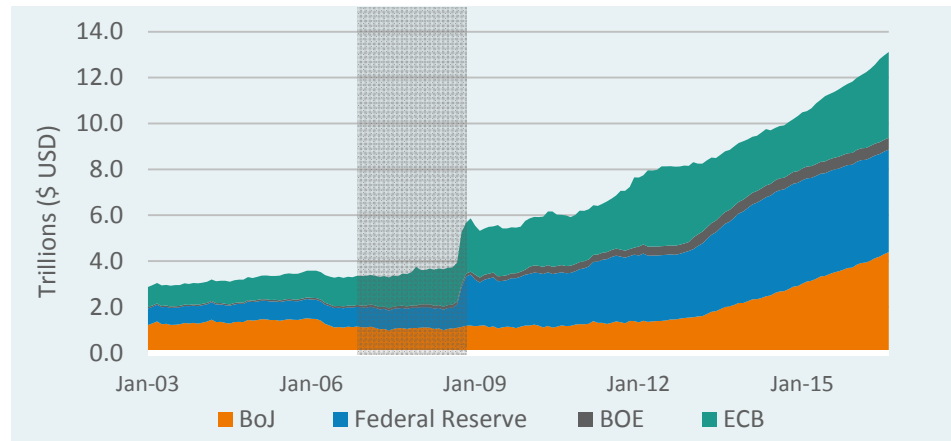
| Area          | Short Term (3M) | 10 Year |
|---------------|-----------------|---------|
| United States | 0.27%           | 1.59%   |
| Germany       | (0.76%)         | (0.12%) |
| France        | (0.67%)         | 0.19%   |
| Spain         | (0.60%)         | 0.88%   |
| Italy         | (0.39%)         | 1.19%   |
| Greece        | 3.34%           | 8.28%   |
| U.K.          | 0.32%           | 0.75%   |
| Japan         | (0.33%)         | (0.09%) |
| Australia     | 1.75%           | 1.91%   |
| China         | 2.23%           | 2.74%   |
| Brazil        | 13.73%          | 11.60%  |
| Russia        | 9.80%           | 8.17%   |

Source: Bloomberg, as of 9/30/16

# Unwinding QE

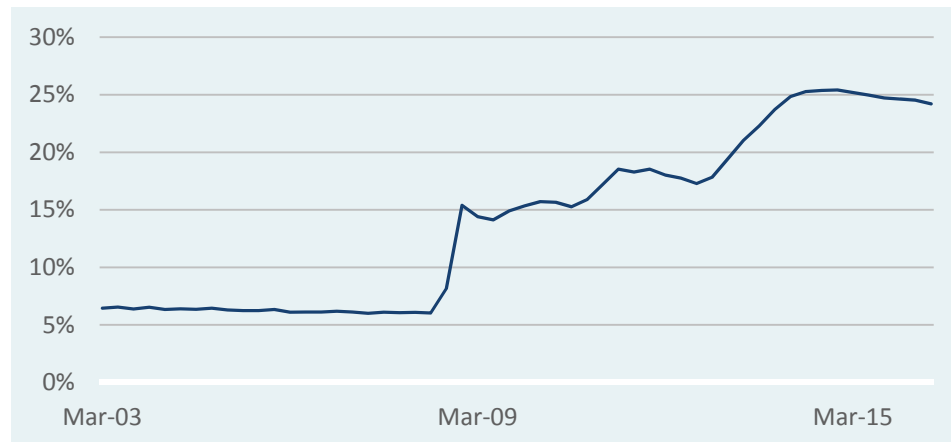
- It appears that we may be nearing the end stage of monetary policy expansion, with over \$7 trillion added to central bank balance sheets. The way in which central banks choose to unwind asset purchases, or how they manage them, could have a significant impact on financial markets.
- Balance sheets may be slowly trimmed through gradual asset sales, or by allowing existing bonds to mature. Shrinking the balance sheet in this manner naturally has a tightening effect, which places downward pressure on asset prices.
- Balance sheet sizes may also be maintained for some time or possibly indefinitely. Were the velocity of money to begin to pick up this balance sheet expansion might lead to inflationary pressure.
- Balance sheets might also be monetized by writing off assets, allowing governments to “walk away” from their debt. With few historical comparisons, forecasting the effects of such write offs is exceptionally difficult. In addition to inflation concerns, this strategy could undermine the independence of central banks and public confidence in them.

**CENTRAL BANKS BALANCE SHEETS**



Source: FRED, Federal Reserve, BOE, ECB, Verus, as of 8/1/16

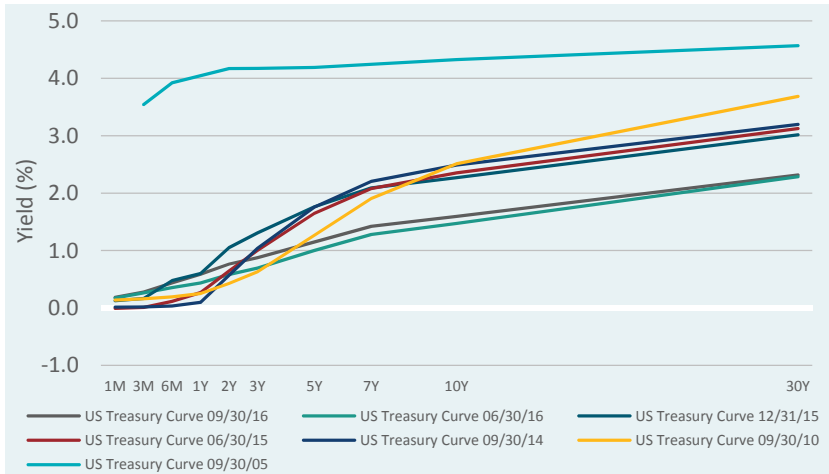
**FEDERAL RESERVE ASSETS TO GDP**



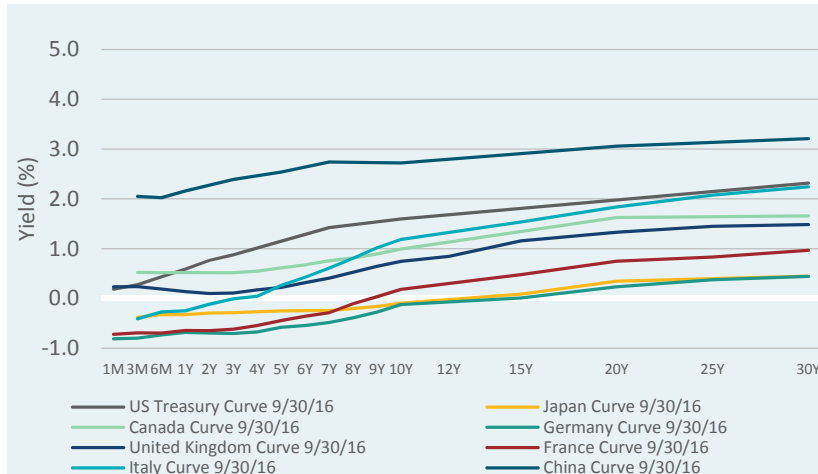
Source: FRED, as of 6/30/16

# Yield environment

U.S. YIELD CURVE

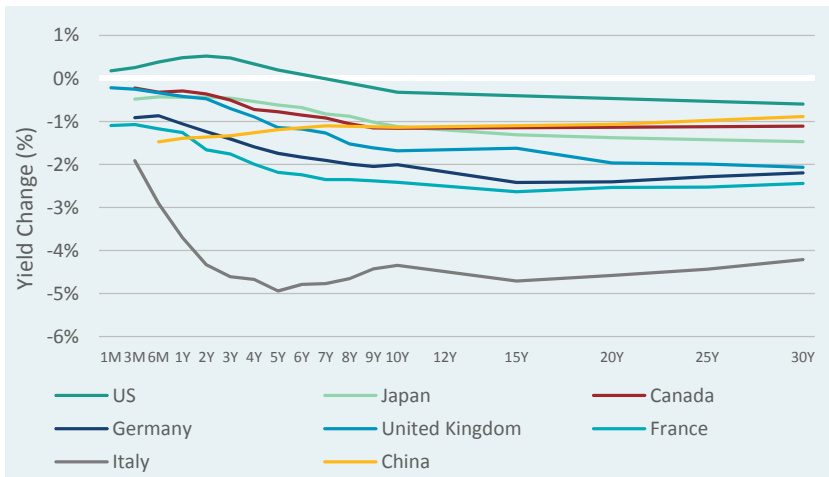


GLOBAL GOVERNMENT YIELD CURVES

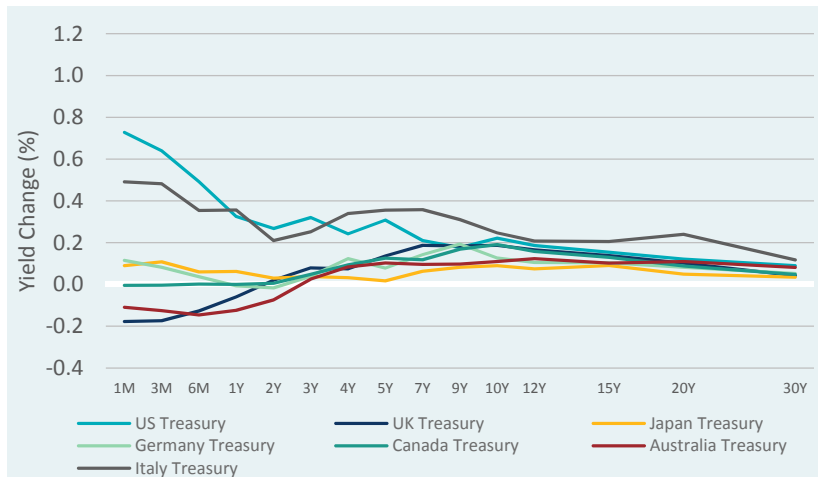


Global investors continue to prefer U.S. Treasuries due to higher relative yields

YIELD CURVE CHANGES OVER LAST FIVE YEARS



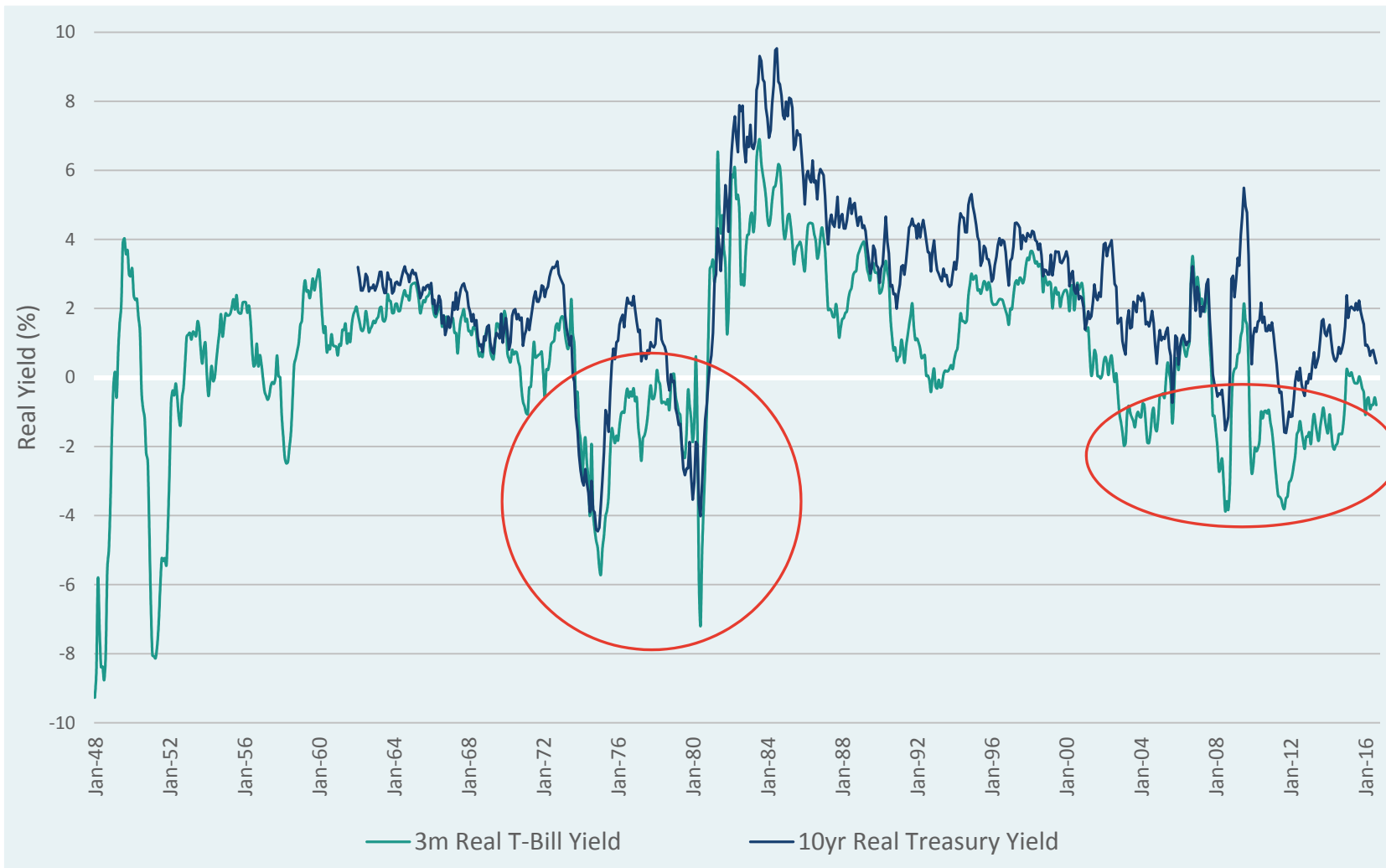
IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/16



# Yield environment



Negative real yields are not a new phenomenon

Yield levels should be viewed in context of the inflation environment

Source: Verus, as of 8/31/16

# Credit environment

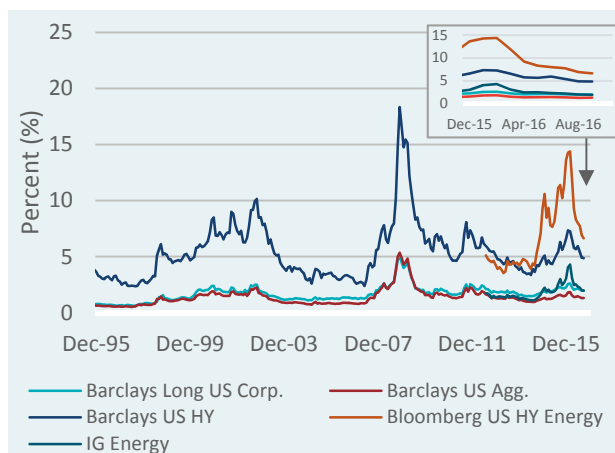
High yield returns across all sectors - energy and metals and mining in particular - have been strong since the trough in Q1. As evidence of this performance, high yield spreads have compressed to below 5.1% as of September from a high of 8.9% earlier in the year.

U.S. credit markets have broadly normalized following increased volatility in Q1. While below the long-term trend, U.S. GDP growth has remained positive, which has been a tailwind to credit markets in general. In addition, foreign demand for U.S. credit issuance has

remained positive as low developed market yields have been supportive of the “carry trade”, where investors buy relatively higher yielding assets.

LIBOR rates have increased meaningfully as investors prepared for the pending regulatory changes to money market funds. Prime funds will now report a floating NAV. This change has prompted some investors to redeem their exposures, thereby reducing their demand for commercial paper and LIBOR-based loans causing the rate to increase.

## CREDIT SPREADS



Source: Barclays Capital Indices, Bloomberg, as of 9/30/16

## 3 MONTH LIBOR



Source: Bloomberg, as of 9/30/16

## SPREADS

| Market               | Credit Spread (9/30/16) | Credit Spread (1 Year Ago) |
|----------------------|-------------------------|----------------------------|
| Long US Corporate    | 1.8%                    | 2.1%                       |
| US Aggregate         | 0.9%                    | 1.2%                       |
| US High Yield        | 5.1%                    | 6.8%                       |
| US High Yield Energy | 6.6%                    | 11.4%                      |
| US Bank Loans        | 3.9%                    | 3.9%                       |

Source: Barclays, Credit Suisse, Bloomberg, as of 9/30/16

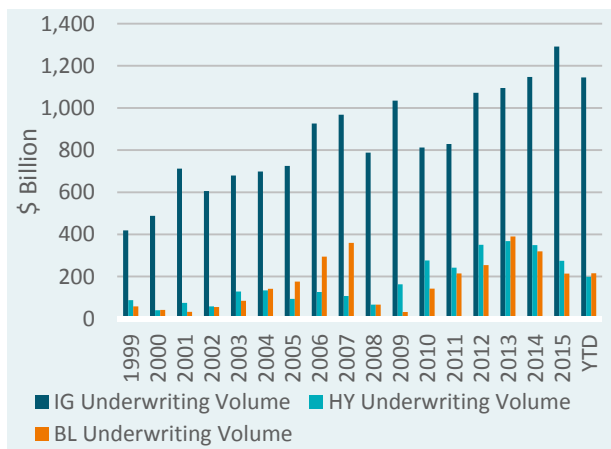
# Issuance and default

Defaults have trended higher in recent months, particularly in the high yield debt space. Default rates have risen well above the trailing 20-year average and are at the highest levels since the global financial crisis; however, much of this activity has been driven specifically by energy issuers. Overall issuance is on track for a year-over-year decline.

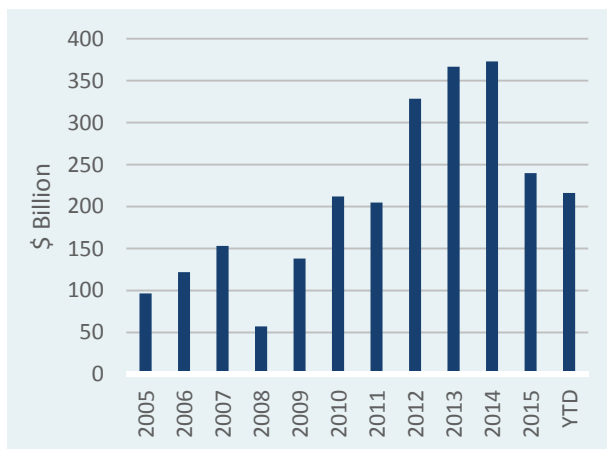
New bond issuance in emerging markets, especially corporates, has continued at a relatively strong pace. Many of these issuers can only borrow in U.S. dollars. As such, eventual rises in U.S. interest rates would increase borrowing costs. Investors' appetites for emerging market debt remains strong based on relative value compared to developed market bonds.

The recent increase in LIBOR rates has been a headwind for bank loan borrowers, as reflected in flattening issuance.

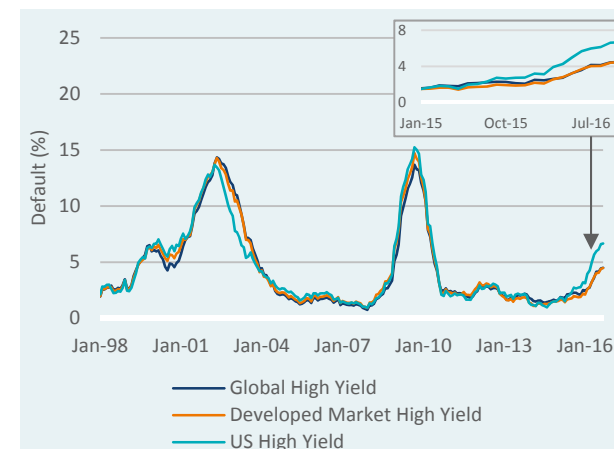
## U.S. DEBT ISSUANCE



## EM DEBT ISSUANCE



## HY DEFAULT TRENDS (ROLLING 1 YEAR)

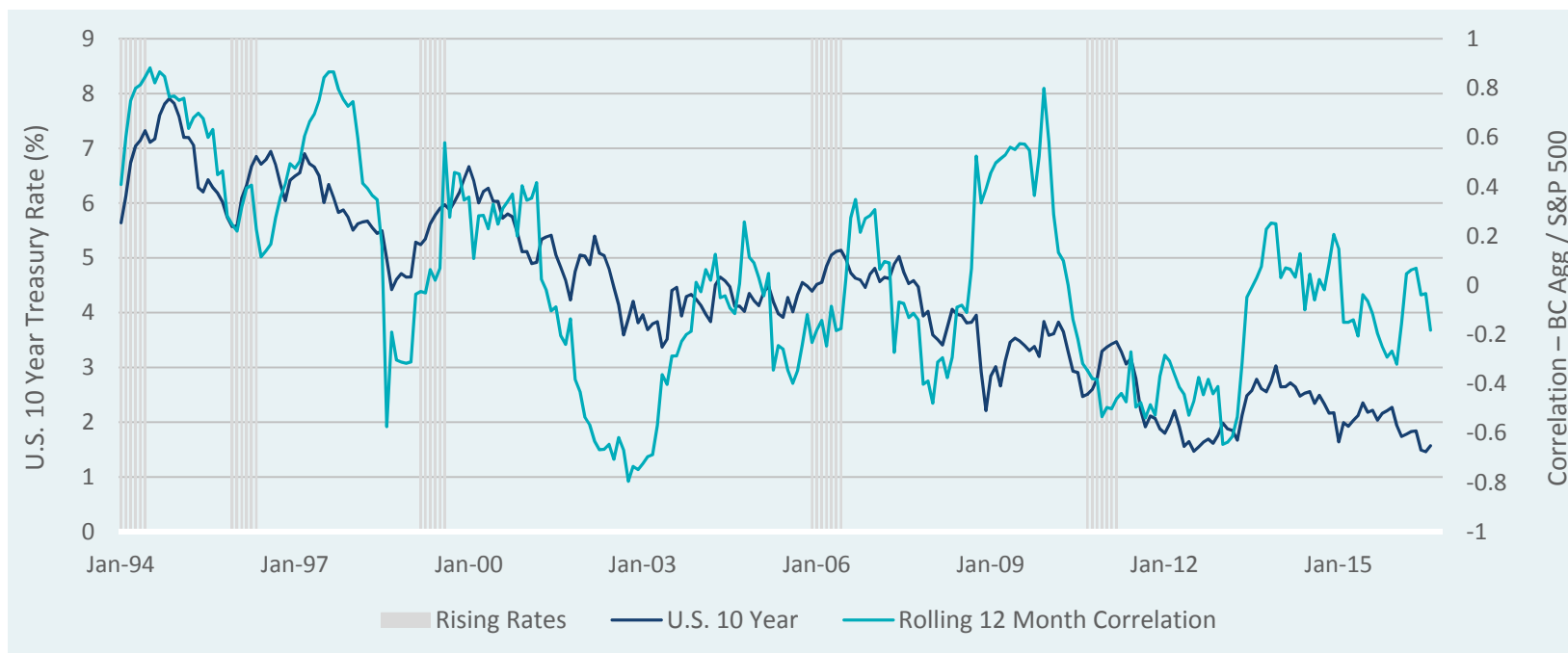


Source: Bloomberg, BofA Merrill Lynch, as of 9/30/16

Source: JP Morgan, as of 9/30/16

Source: Credit Suisse, BofA, as of 9/30/16

# Fixed income – rising yields



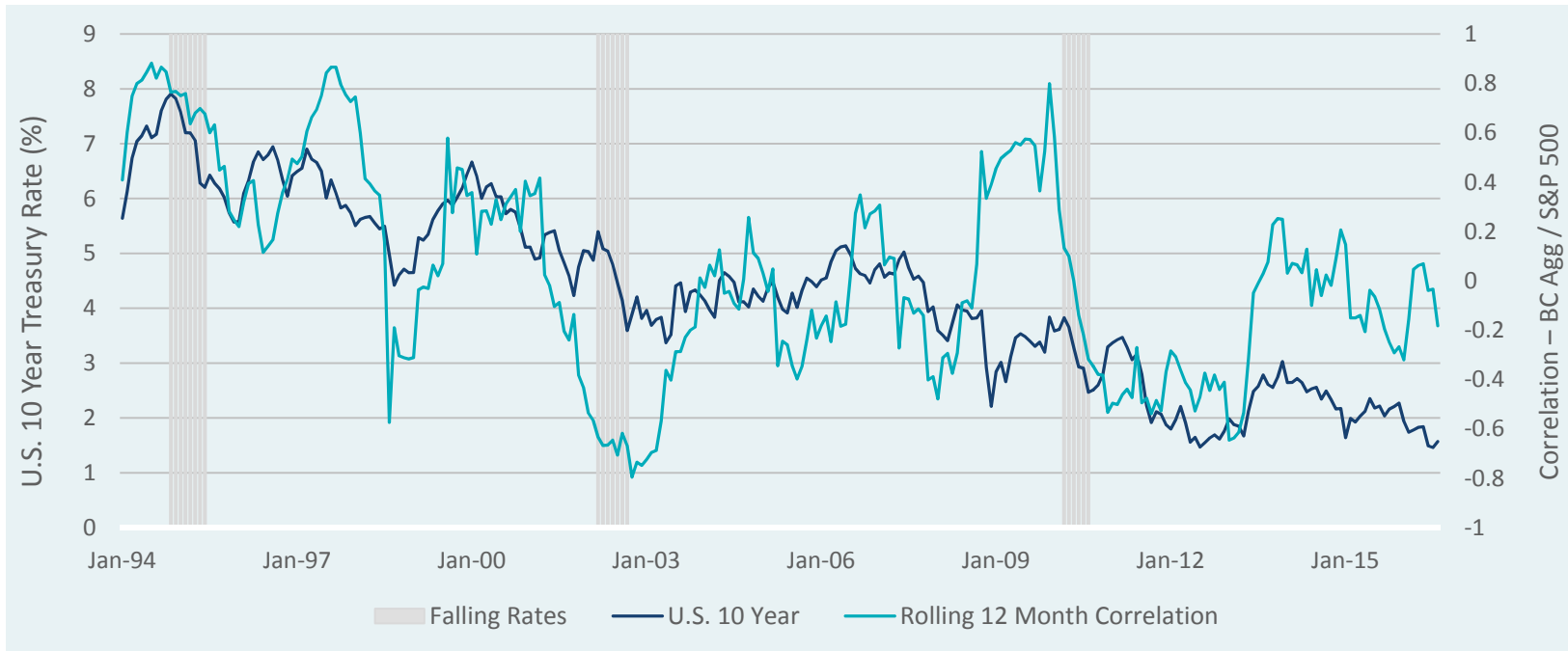
During rising yield environments (6 months of consecutive rising yields) BC Agg and S&P 500 returns have shown very different correlation

We are currently in a negative correlation environment

| Date               | Months | Yield increase | Average return correlation* |
|--------------------|--------|----------------|-----------------------------|
| Jan 1994-Jun 1994  | 6      | 1.68           | 0.70                        |
| Dec 1995-May 1996  | 6      | 1.28           | 0.30                        |
| Mar 1999-Aug 1999  | 6      | 0.73           | 0.11                        |
| Dec 2005-June 2006 | 7      | 0.75           | -0.18                       |
| Sep 2010-Mar 2011  | 7      | 0.96           | -0.44                       |

\*Rolling 12 Month correlation between Barclays US Aggregate and S&P 500. "Rising yield environment" is defined as 6 months of consecutive yield increases  
Source: Bloomberg, MPI, as of 8/31/16

# Fixed income – decreasing yields



Correlations have varied during decreasing yield environments (6 months of falling yields), from -0.66 to 0.71

Diversification benefits have not been clearly linked to the rate environment

| Date               | Months | Yield decrease | Average return correlation* |
|--------------------|--------|----------------|-----------------------------|
| Nov 1994-June 1995 | 8      | 1.70           | 0.71                        |
| Mar 2002-Sep 2002  | 7      | 1.80           | -0.66                       |
| Mar 2010-Aug 2010  | 6      | 1.36           | -0.07                       |

\*Rolling 12 Month correlation between Barclays US Aggregate and S&P 500. "Decreasing yield environment" is defined as 6 months of consecutive yield decreases.

Source: Bloomberg, MPI, as of 8/31/16

# Equity

# Equity environment

- Equity market risks continue to appear asymmetrical to the downside - the U.S. equity market in particular.
- U.S. equities rallied to start the quarter as central banks communicated to the markets that further monetary easing would be available if necessary, in response to the Brexit vote. In the final two months of the quarter, the U.S. equity markets stayed relatively flat and volatility was below average.
- A sixth consecutive quarter of year-over-year earnings decline is expected for the S&P. FactSet has forecast a -2.1% earnings decline for Q3.
- Information technology (12.9%) was the best performing sector in the S&P 500 by a large margin on the back of higher earnings expectations. Utilities (-5.9%) and telecom services (-5.6%) were the worst performing sectors in the index.
- The FTSE 100 (hedged) returned 7.1% over the third quarter after concerns over the impact of Brexit somewhat subsided.
- The U.S. dollar fell 0.7% in Q3 on a trade-weighted basis. Recent dollar stabilization may be disrupted if the Fed goes ahead with further rate hikes. As most developed economies remain in easing mode, further U.S. hikes would likely add to dollar strength.

|  | QTD TOTAL RETURN |          | YTD TOTAL RETURN |          | 1 YEAR TOTAL RETURN |          |
|--|------------------|----------|------------------|----------|---------------------|----------|
|  | (unhedged)       | (hedged) | (unhedged)       | (hedged) | (unhedged)          | (hedged) |
| US Large Cap (Russell 1000)              | 4.0%             |          | 7.9%             |          | 14.9%               |          |
| US Small Cap (Russell 2000)              | 9.0%             |          | 11.5%            |          | 15.5%               |          |
| US Large Value (Russell 1000 Value)      | 3.5%             |          | 10.0%            |          | 16.2%               |          |
| US Large Growth (Russell 1000 Growth)    | 4.6%             |          | 6.0%             |          | 13.8%               |          |
| International Large (MSCI EAFE)          | 6.4%             | 6.3%     | 1.7%             | (1.0%)   | 6.5%                | 5.3%     |
| Eurozone (Euro Stoxx 50)                 | 6.3%             | 4.8%     | (2.4%)           | (4.1%)   | 0.4%                | 0.5%     |
| U.K. (FTSE 100)                          | 4.0%             | 7.1%     | 0.6%             | 14.1%    | 1.5%                | 18.4%    |
| Japan (NIKKEI 225)                       | 8.2%             | 5.9%     | 4.4%             | (14.3%)  | 13.6%               | (6.2%)   |
| Emerging Markets (MSCI Emerging Markets) | 9.0%             | 6.3%     | 16.0%            | 9.7%     | 16.8%               | 10.7%    |

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/16

# Domestic equity

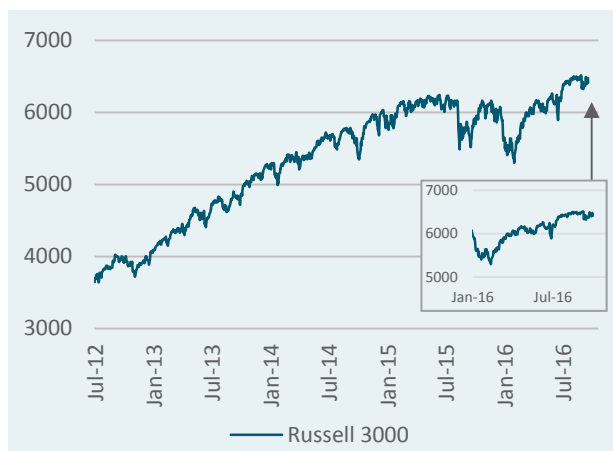
After minimal reaction to Brexit, domestic equities continued higher in July, then delivered two quiet months to finish the quarter. The S&P 500 returned 3.9% in Q3. The market appears to be taking a wait-and-see approach with important oncoming events such as elections and Federal Reserve meetings.

With higher equity prices and lower overall earnings, valuations have expanded. The forward earnings multiple for the S&P 500 was 18.5 at quarter end,

relative to its 25-year average of 16.6 (in the 81<sup>st</sup> percentile). Year-over-year earnings growth is expected to be negative for the sixth consecutive quarter, heavily influenced by the energy sector and lower oil prices. As the effects of monetary stimulus on U.S. financial markets wanes, earnings will play an important role for future equity returns.

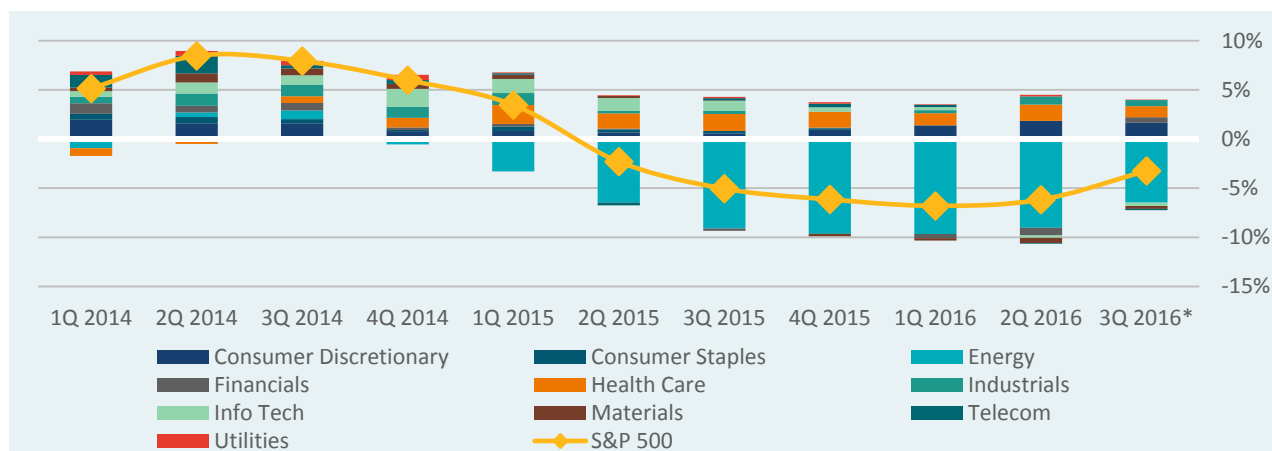
U.S. earnings results will likely dictate the path of equities

## U.S. EQUITIES



Source: Russell Investments, as of 9/26/16

## SECTOR IMPACT ON S&P 500 EARNINGS GROWTH



Source: Bloomberg, as of 9/30/16



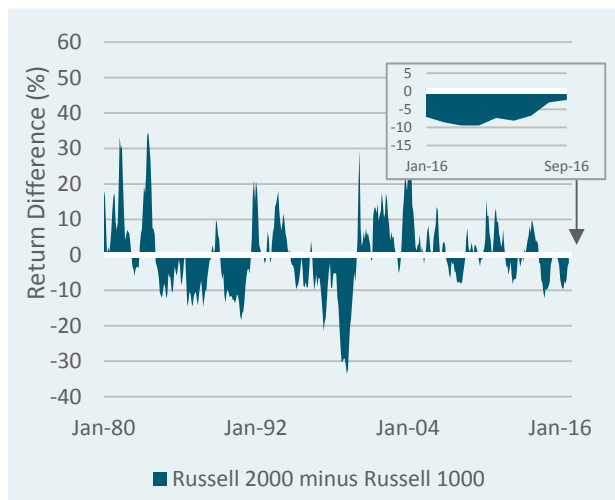
# Domestic equity size and style

Growth stocks outperformed value during the third quarter as the Russell 1000 Growth Index and Russell 1000 Value Index returned 4.6% and 3.5%, respectively. However, value has outperformed growth by 4.0% year-to-date.

3.5% year-to-date, reversing a recent trend of large cap outperformance. The relative P/E ratio of small to large cap equities at the end of September was 2.07 - well above its long-term average of 1.39 - suggesting that small cap stocks may be relatively overvalued.

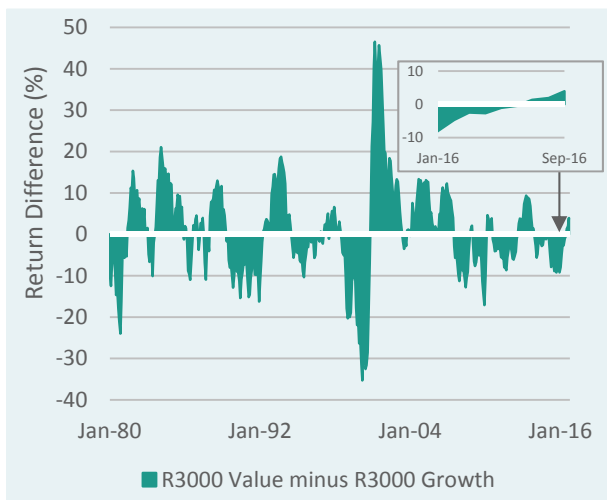
In the third quarter, the Russell 2000 Index returned 9.0% and the Russell 1000 Index returned 4.0%. Small cap equities have also beaten large cap equities by

**SMALL CAP VS LARGE CAP (YOY)**



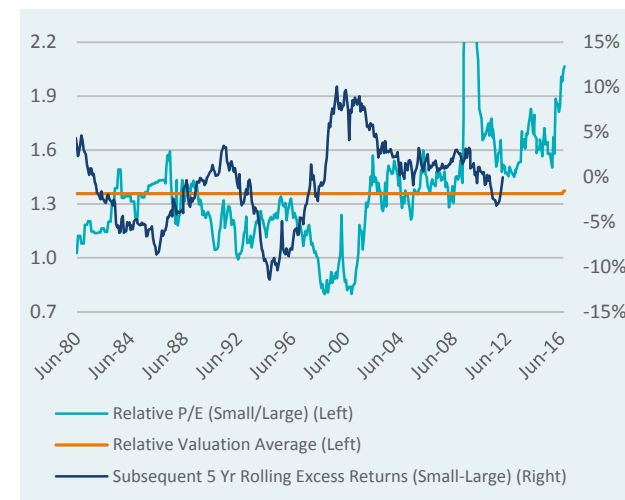
Source: Russell Investments, as of 9/30/16

**VALUE VS GROWTH (YOY)**



Source: Russell Investments, as of 9/30/16

**RELATIVE P/E RATIO (SMALL VS LARGE)**



Source: Russell, Bloomberg, as of 9/30/16

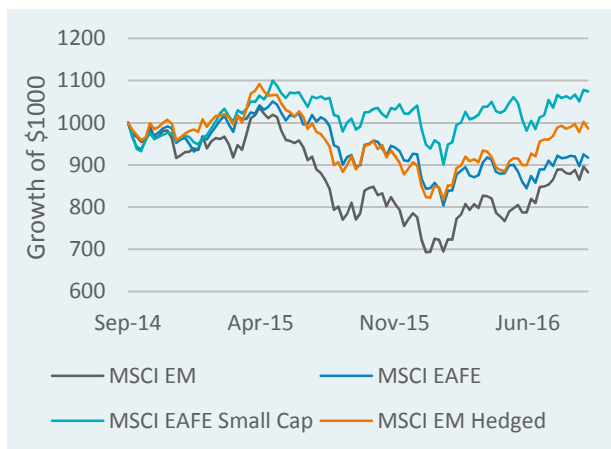
# International equity

Central banks remained accommodative in Q3, helping to generate a rally in international equities. Low and negative yields in Japan and the Eurozone helped maintain the relative attractiveness of equities in these markets.

On a hedged basis, international developed equities outperformed domestic equities with the MSCI EAFE returning 6.3%, and the S&P 500 returning only 3.9% during the quarter.

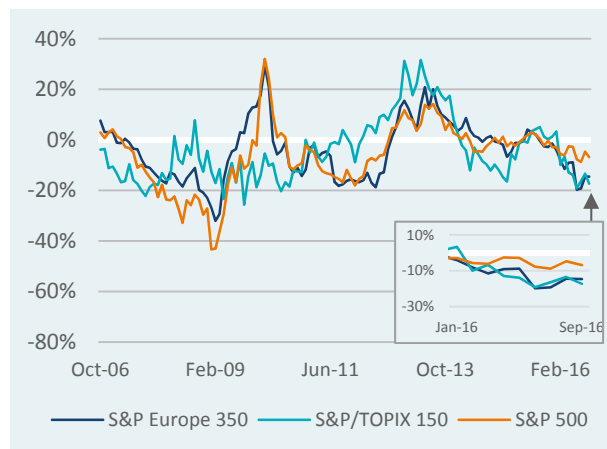
Financial stocks continue to lag, though the third quarter saw more healthy returns. Banks in Japan and the Eurozone were given a boost when the BOJ and ECB chose not to increase stimulus measures. Significant headwinds remain, however, as negative interest rates continue to hurt bank profitability.

**GLOBAL EQUITY PERFORMANCE**



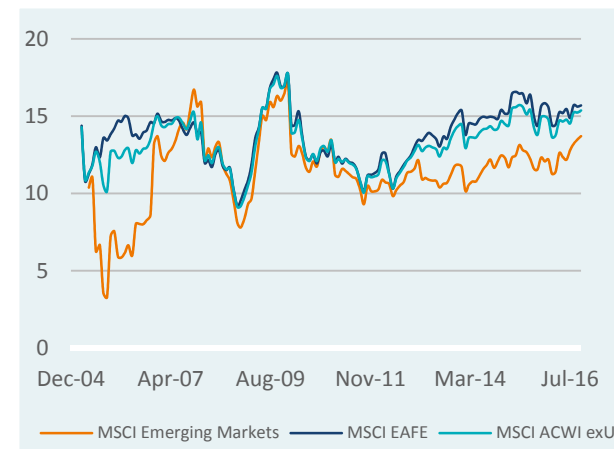
Source: Bloomberg, as of 9/30/16

**12-MONTH ROLLING RELATIVE FINANCIAL SECTOR RETURNS**



Source: MPI, as of 9/30/16, in local currency terms

**INTERNATIONAL FORWARD P/E RATIOS**



Source: MSCI, as of 9/30/16

# Emerging market equity

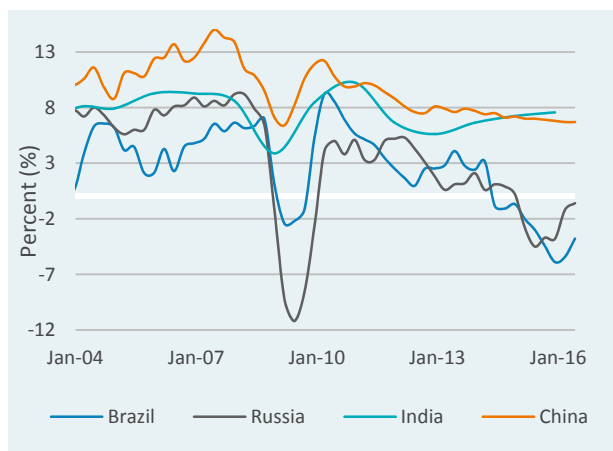
Emerging market equities experienced a rebound during Q3, returning 6.3% on a hedged basis and 9% unhedged. Emerging market earnings per share growth turned positive in 2016, reversing a 5-year downward trend. Valuations remain below average and materially more attractive than those of developed markets.

Moderating commodity prices, continued developed central bank accommodation, less U.S. dollar strengthening, and stability in China, have helped to bolster investor risk appetites and the emerging market

outlook, fueling fund flows into these markets.

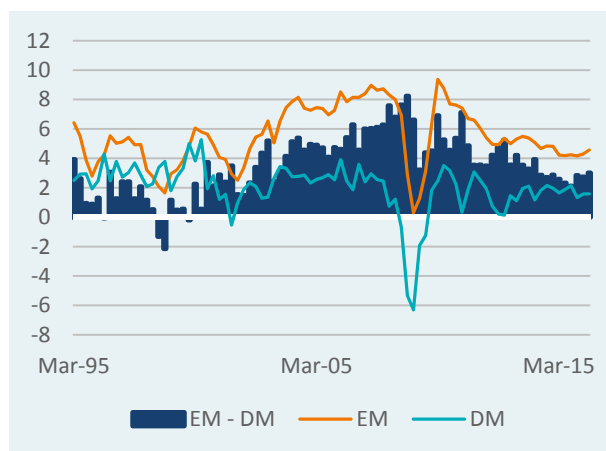
Many emerging market economies experienced a rough readjustment period following the commodity supercycle reversal and saw severe currency depreciation. However, many economies such as Russia have allowed currency devaluation to work as an effective economic shock absorber to mitigate current account problems which these economies often experience during commodity (export) price choppiness.

**ECONOMIC GROWTH (REAL GDP YOY)**



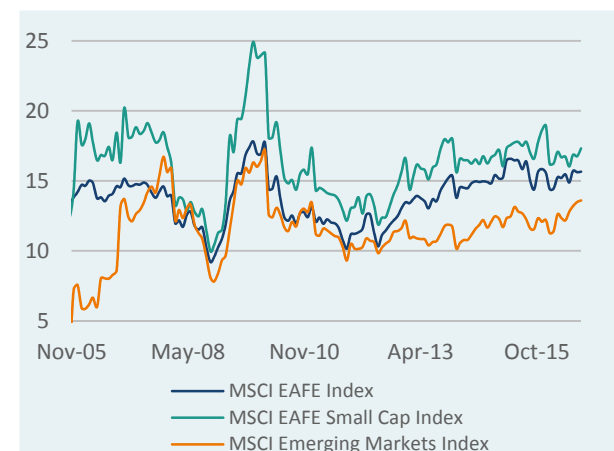
Source: Bloomberg, as of 6/30/16

**EM VS. DM REAL GDP GROWTH**



Source: Bloomberg, as of 6/30/16

**FORWARD P/E**



Source: MSCI, as of 9/30/16

# Equity valuations

Domestic large cap equity valuations remain above average. The forward earnings multiple for the S&P 500 was 18.5 at quarter end, relative to its 25-year average of 16.6. This places the forward P/E in the 81<sup>st</sup> percentile of the past 25 years.

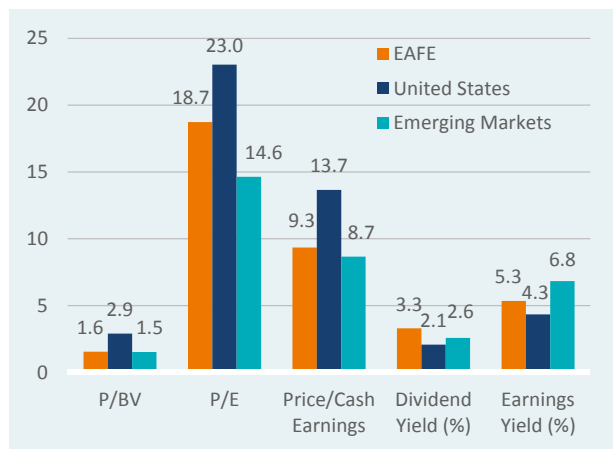
Large cap equity valuations are also slightly above average based on the Shiller P/E ratio.

Small cap equity valuations are above long-term

averages, suggesting that small caps are currently overvalued. The forward P/E ratio for the Russell 2000 as of September 30<sup>th</sup> was 28.1, compared to the long-term average of 25.3.

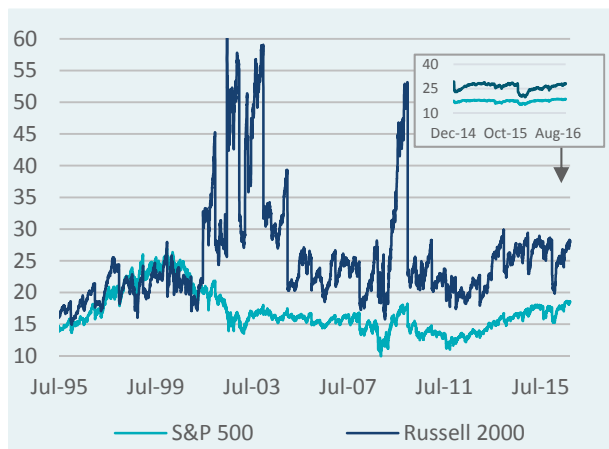
Historically, low interest rate and low inflationary environments have coincided with above-average valuations (see slide 35). This makes it difficult to tell whether equities are truly overvalued or if current valuations simply reflect the economic environment.

## MSCI VALUATION METRICS (3 MONTH AVERAGE)



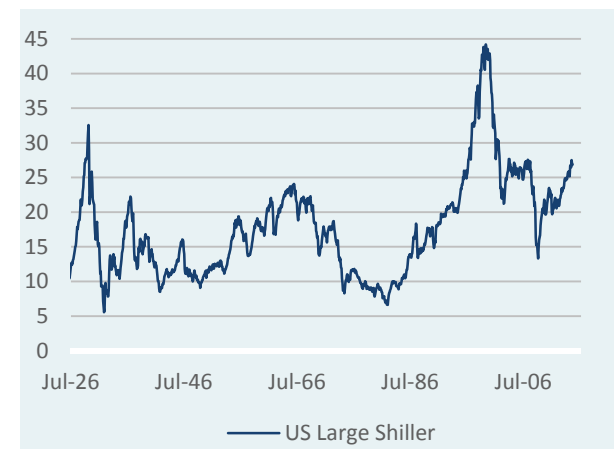
Source: MSCI, as of 9/30/16

## FORWARD P/E



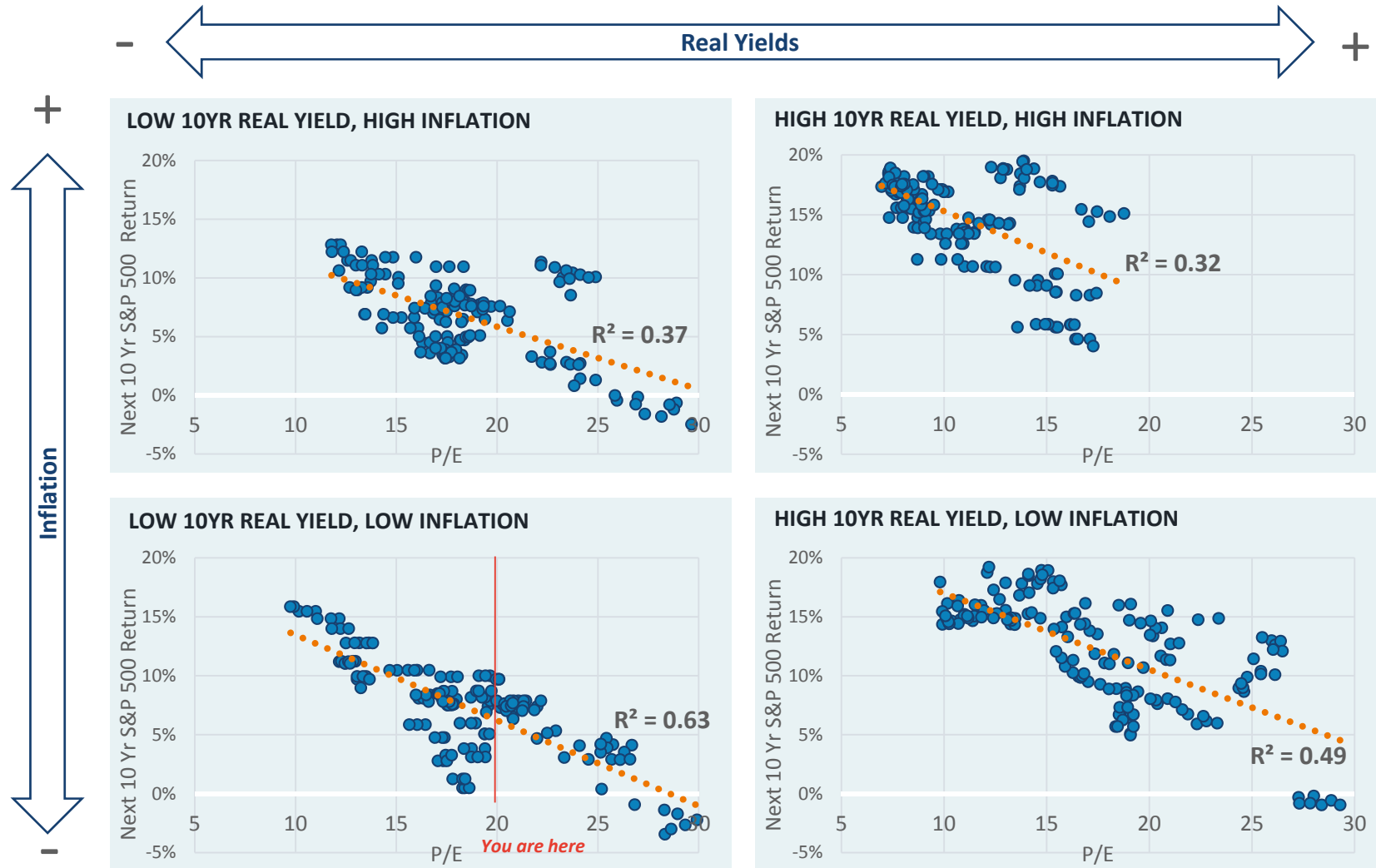
Source: Yale/Shiller, Verus as of 9/30/16

## S&P 500 SHILLER P/E RATIO



Source: Yale/Shiller, as of 9/30/16

# Putting valuations into context



P/E tends to be higher during low yield, low inflation environments

Just because environment may justify higher P/E, higher valuations still bode poorly for future returns

Using data since 1954, sorted the economic environment into the above 4 market environments: low 10yr Treasury real yield & high inflation, high 10yr Treasury real yield & high inflation, low 10yr Treasury real yield & low inflation, and high 10yr real yield & low inflation. Within each quadrant, plotted each point-in-time P/E level for the S&P 500 (the x-axis) and the subsequent 10 year equity return (y-axis).

# Equity volatility

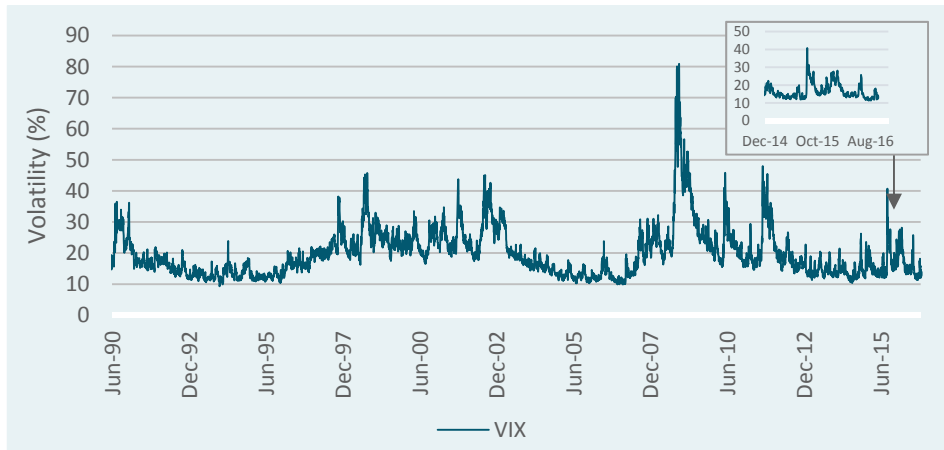
Following a substantial spike in volatility during the Brexit vote announcement, equity volatility fell and remained subdued. The VIX index has averaged around a level of 20 during the past 25 years. More recently investors have seen VIX levels below this average which is typical during equity bull markets.

Volatility expectations, as indicated by VIX, continue to be low, though we might expect rising levels given

political uncertainty leading up to the U.S. presidential election.

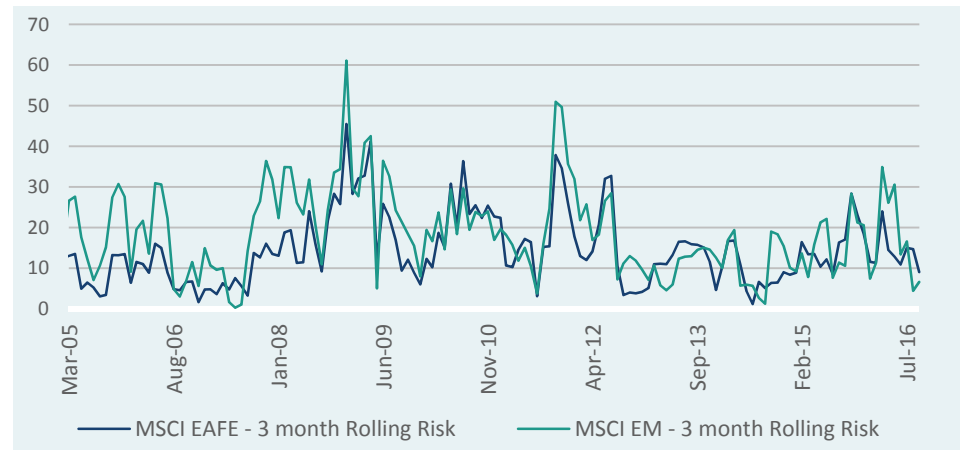
International equity market volatility has remained in a normal range, following choppiness during news surrounding and following the Brexit referendum. Unhedged currency exposure has also added to variation in investors' experienced equity returns – and much more so in recent years.

## U.S. EQUITY VOLATILITY



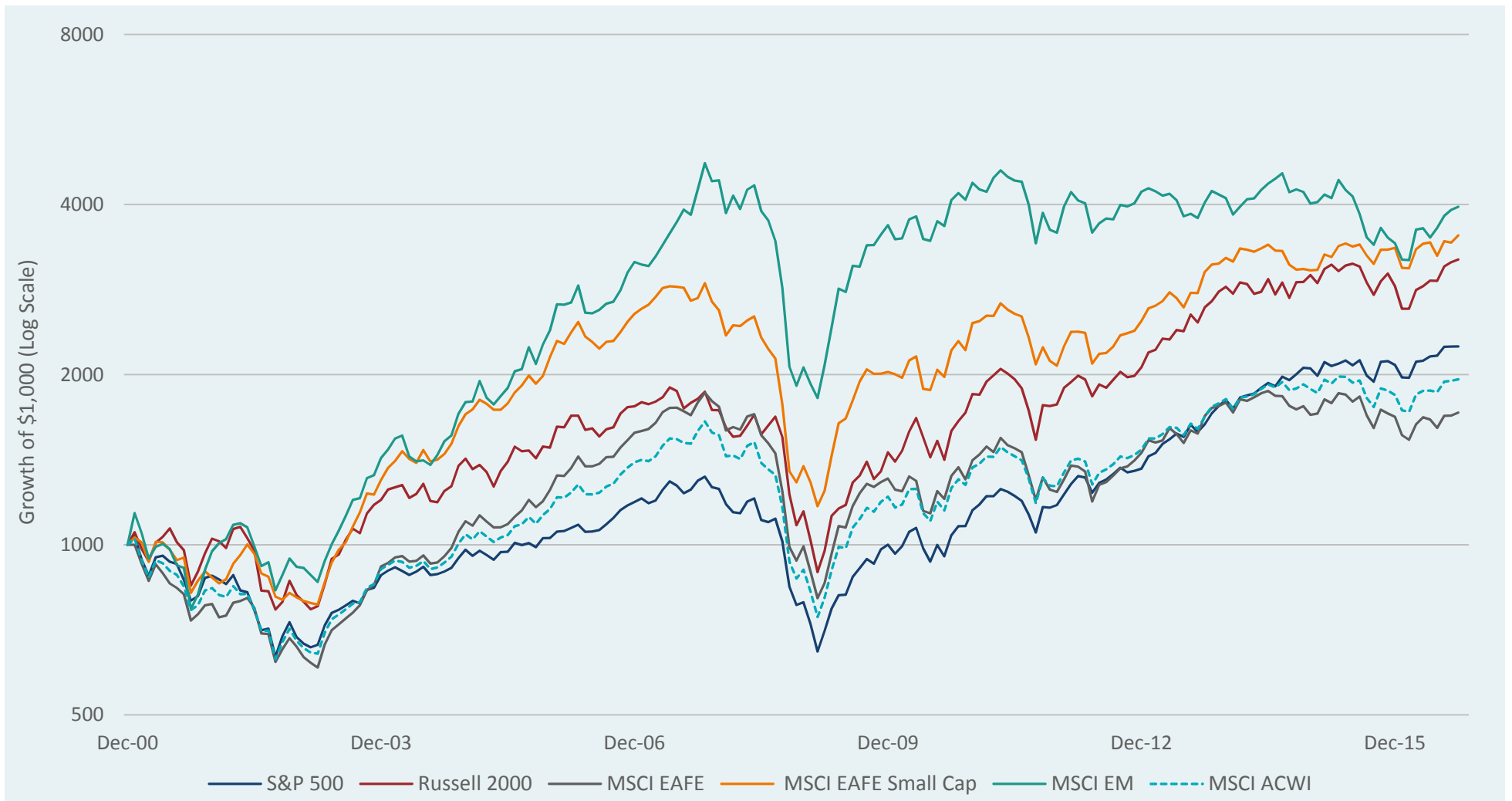
Source: CBOE, as of 9/22/16

## INTERNATIONAL EQUITY VOLATILITY



Source: MSCI, as of 9/30/16

# Long-term equity performance



Source: MPI, as of 9/30/16

# Other assets



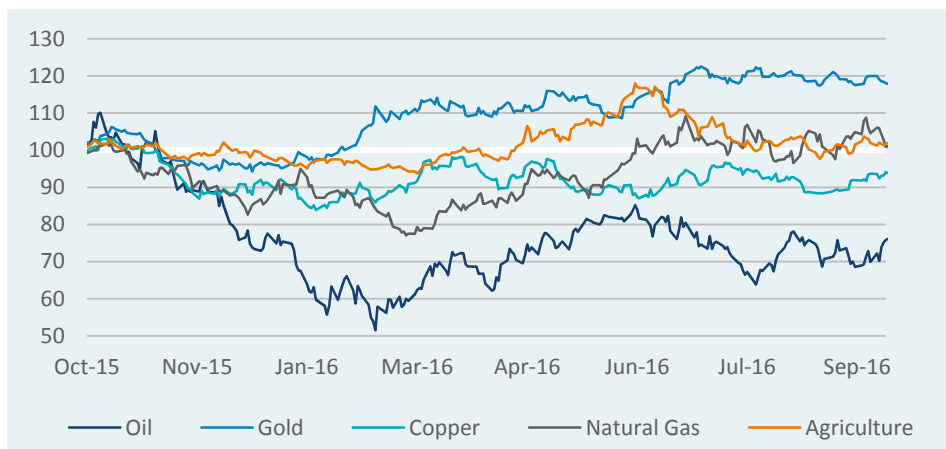
# Commodities

Commodity prices, and oil in particular, continue to fill the news headlines. Though short-term price movements are not particularly relevant to portfolio decision-making, effects of the commodity supercycle reversal are important.

Declining profits in the energy sector have pushed U.S. equity earnings into negative territory for the past 1.5 years. Many commodity exporting nations have

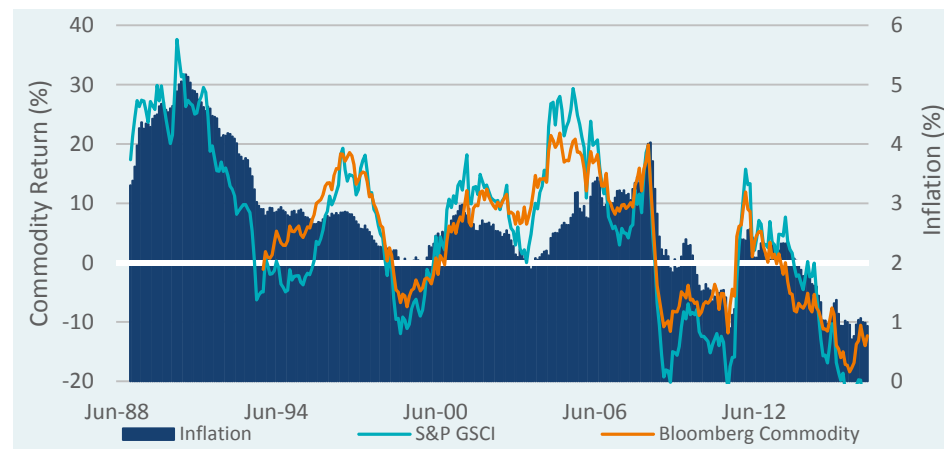
realized extreme currency devaluation which has harshly impacted the unhedged returns of foreign investors. Here at home energy-related debt defaults are accelerating and fueling worries that a prolonged energy slump could have a serious fallout effects for the U.S. energy sector. OPEC members and non-members alike continue discussions regarding production cut strategies and agreements, though it is debatable whether these agreements will be upheld.

## COMMODITY PERFORMANCE



Source: Bloomberg, as of 9/30/16

## INFLATION BETA



Source: Standard & Poor's, Bloomberg, as of 9/30/16

# Currency

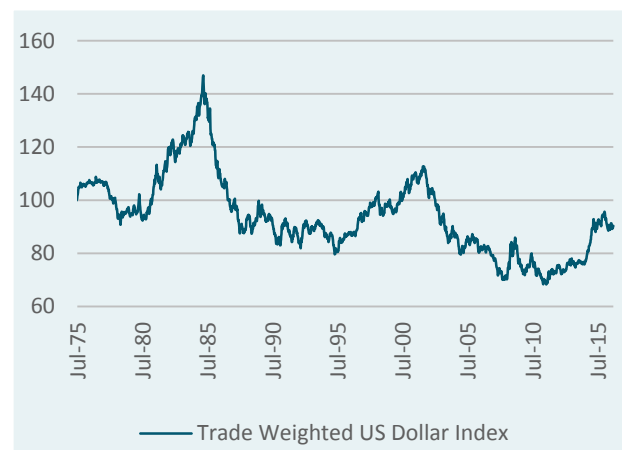
The U.S. dollar, weighted by major trading partners, fell 0.7% in the third quarter, benefitting investors with unhedged equity exposure. The pound sterling has had the opposite effect for U.S. investors, as new multi-decade lows were reached during the quarter, following a significant market flash crash (but recovery).

After a recent period of appreciation, the dollar has stabilized so far this year. Moderation of the USD would have a positive impact on earnings of U.S. companies with significant international exposure.

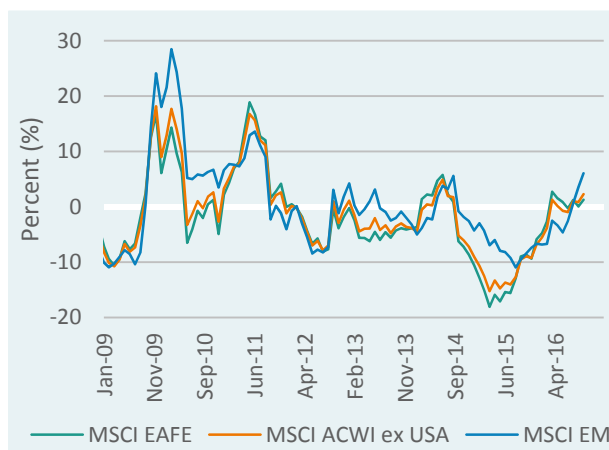
However, with the Fed expected to continue increasing interest rates while other central banks are still in easing mode, there may be upward pressure on the dollar as interest rate differentials increase.

The pound sterling fell to a 31-year low against the U.S. dollar, influenced by uncertainty surrounding the details of the U.K.'s exit from the European Union. Theresa May announced that she would invoke Article 50 by March 2017.

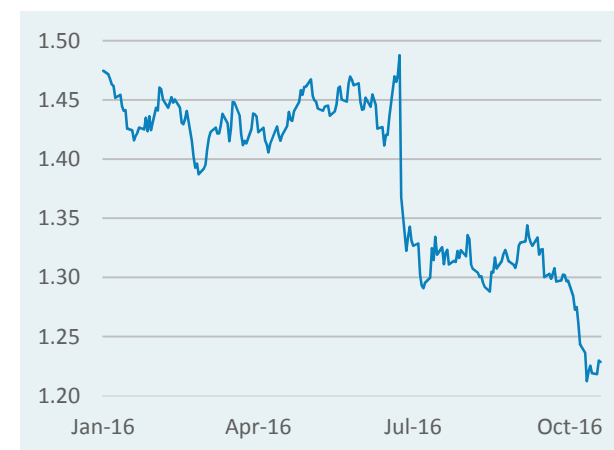
**LONG-TERM TRADE WEIGHTED USD**



**EFFECT OF CURRENCY (1YR ROLLING)**



**GBP/USD**



Source: FRED, as of 9/30/16

Source: MSCI, as of 9/30/16

Source: FRED, as of 10/19/16

# Appendix

# Periodic table of returns – September 2016

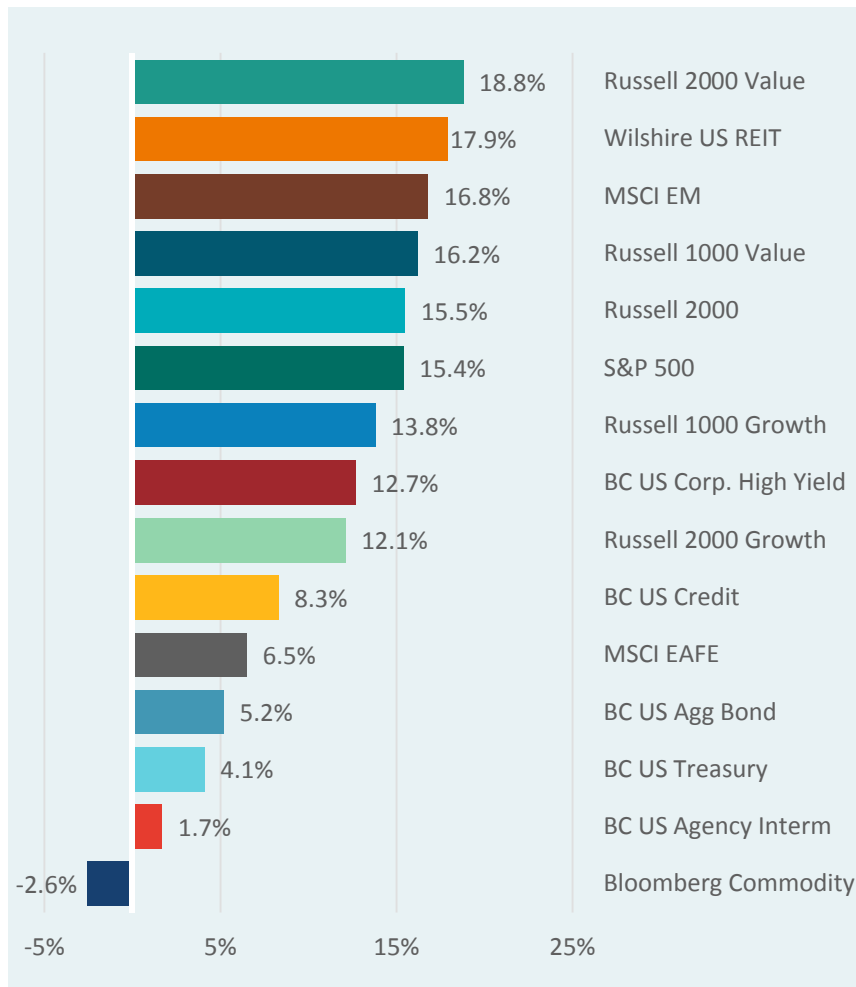
|                         | 1993 | 1994 | 1995 | 1996 | 1997  | 1998  | 1999 | 2000  | 2001  | 2002  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008  | 2009  | 2010 | 2011  | 2012 | 2013 | 2014  | 2015  | YTD  | 5-Year | 10-Year |
|-------------------------|------|------|------|------|-------|-------|------|-------|-------|-------|------|------|------|------|------|-------|-------|------|-------|------|------|-------|-------|------|--------|---------|
| Small Cap Value         | 74.8 | 16.6 | 38.4 | 23.2 | 35.2  | 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  | 10.1  | 16.0 | 16.6   | 8.8     |
| Emerging Markets Equity | 32.9 | 8.1  | 37.8 | 23.1 | 32.9  | 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   | 15.5 | 16.4   | 8.3     |
| Small Cap Equity        | 26.3 | 6.4  | 37.2 | 22.4 | 31.8  | 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   | 11.5 | 16.2   | 7.4     |
| Large Cap Value         | 23.8 | 4.4  | 31.0 | 21.6 | 30.5  | 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   | 10.0 | 16.1   | 7.4     |
| Large Cap Equity        | 19.3 | 3.2  | 28.5 | 21.4 | 22.4  | 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   | 8.9  | 15.8   | 7.1     |
| 60/40 Global Portfolio  | 18.9 | 2.6  | 25.7 | 16.5 | 16.2  | 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  | 8.0  | 15.4   | 5.9     |
| Small Cap Growth        | 18.1 | 0.4  | 19.6 | 14.4 | 13.9  | 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  | 7.9  | 11.5   | 5.8     |
| US Bonds                | 13.4 | -1.5 | 18.5 | 11.3 | 12.9  | 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  | 7.5  | 7.4    | 4.8     |
| Large Cap Growth        | 10.2 | -1.8 | 15.2 | 10.3 | 10.6  | 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  | 6.0  | 7.2    | 4.6     |
| Commodities             | 9.7  | -2.0 | 11.6 | 9.9  | 9.7   | -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  | 5.8  | 3.2    | 3.9     |
| Real Estate             | 3.1  | -2.4 | 11.1 | 6.4  | 5.2   | -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  | 4.3  | 3.1    | 1.8     |
| International Equity    | 2.9  | -2.9 | 7.5  | 6.0  | 2.1   | -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  | 1.7  | 3.0    | 1.8     |
| Cash                    | 1.4  | -3.5 | 5.7  | 5.1  | -3.4  | -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 | 0.2  | 0.1    | 0.8     |
| Hedge Funds of Funds    | -1.1 | -7.3 | -5.2 | 3.6  | -11.6 | -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 | -0.1 | -9.4   | -5.3    |

- 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% BC Global Bond
- Small Cap Equity
- Cash

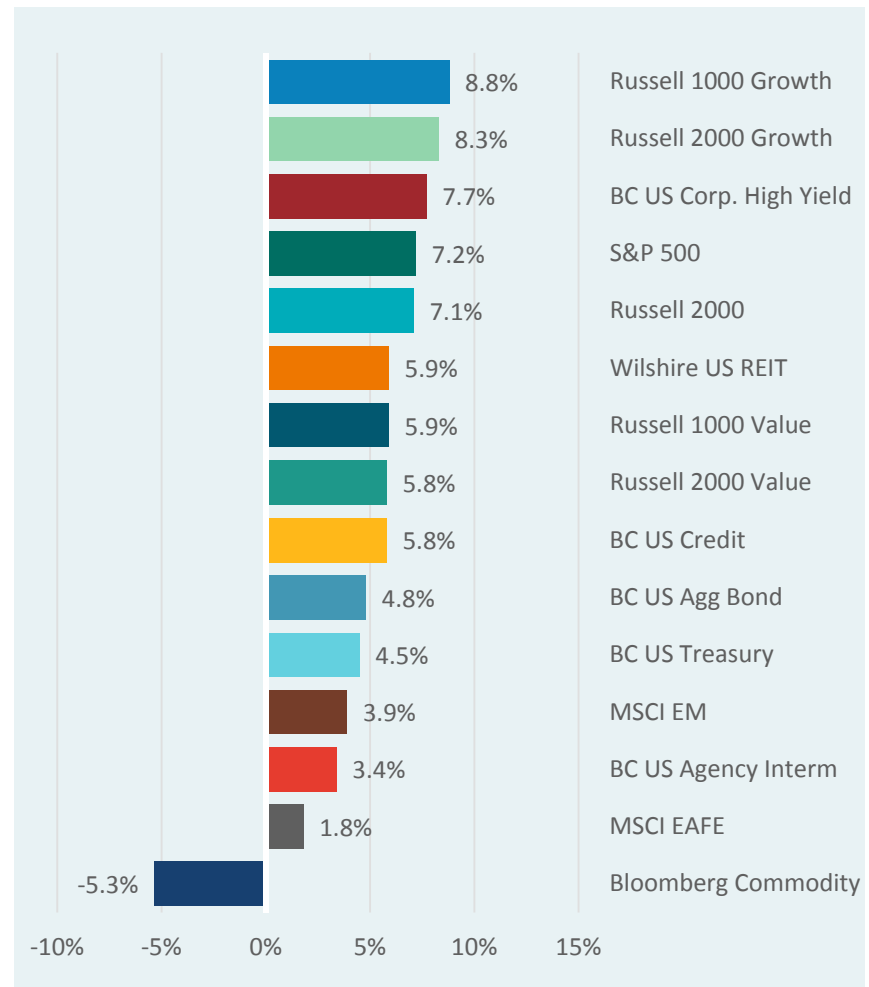
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BC Agg, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BC Global Bond. NCREIF Property performance data as of 6/30/16.

# Major asset class returns

ONE YEAR ENDING SEPTEMBER



TEN YEARS ENDING SEPTEMBER

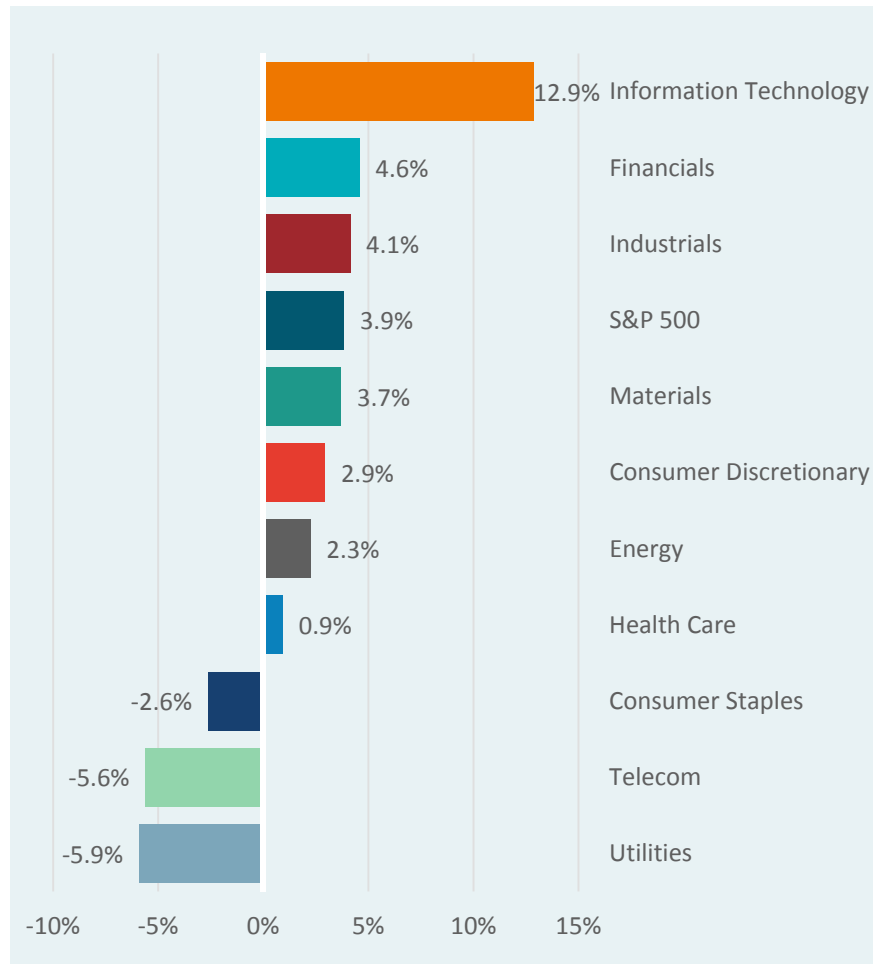


Source: Morningstar, as of 9/30/16

Source: Morningstar, as of 9/30/16

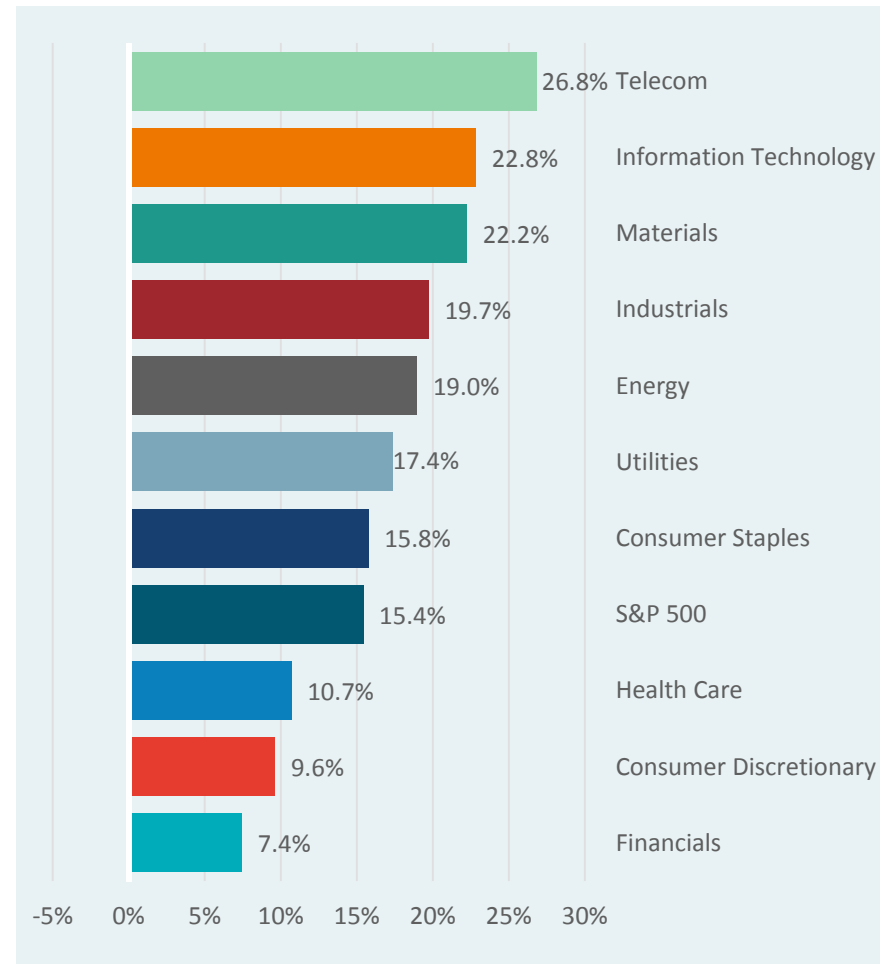
# S&P 500 and S&P 500 sector returns

QTD



Source: Morningstar, as of 6/30/16

ONE YEAR ENDING SEPTEMBER



Source: Morningstar, as of 6/30/16

# Detailed index returns

## DOMESTIC EQUITY

|                        | Month | QTD | YTD  | 1 Year | 3 Year | 5 Year | 10 Year |
|------------------------|-------|-----|------|--------|--------|--------|---------|
| <b>Core Index</b>      |       |     |      |        |        |        |         |
| S&P 500                | 0.0   | 3.9 | 7.8  | 15.4   | 11.2   | 16.4   | 7.2     |
| S&P 500 Equal Weighted | 0.1   | 4.5 | 10.6 | 16.1   | 10.8   | 17.4   | 8.8     |
| DJ Industrial Average  | (0.4) | 2.8 | 7.2  | 15.5   | 9.2    | 13.8   | 7.4     |
| Russell Top 200        | 0.0   | 3.8 | 7.0  | 15.2   | 11.3   | 16.3   | 7.0     |
| Russell 1000           | 0.1   | 4.0 | 7.9  | 14.9   | 10.8   | 16.4   | 7.4     |
| Russell 2000           | 1.1   | 9.0 | 11.5 | 15.5   | 6.7    | 15.8   | 7.1     |
| Russell 3000           | 0.2   | 4.4 | 8.2  | 15.0   | 10.4   | 16.4   | 7.4     |
| Russell Mid Cap        | 0.2   | 4.5 | 10.3 | 14.2   | 9.7    | 16.7   | 8.3     |
| <b>Style Index</b>     |       |     |      |        |        |        |         |
| Russell 1000 Growth    | 0.4   | 4.6 | 6.0  | 13.8   | 11.8   | 16.6   | 8.8     |
| Russell 1000 Value     | (0.2) | 3.5 | 10.0 | 16.2   | 9.7    | 16.2   | 5.9     |
| Russell 2000 Growth    | 1.4   | 9.2 | 7.5  | 12.1   | 6.6    | 16.1   | 8.3     |
| Russell 2000 Value     | 0.8   | 8.9 | 15.5 | 18.8   | 6.8    | 15.4   | 5.8     |

## INTERNATIONAL EQUITY

|                        | Month | QTD  | YTD   | 1 Year | 3 Year | 5 Year | 10 Year |
|------------------------|-------|------|-------|--------|--------|--------|---------|
| <b>Broad Index</b>     |       |      |       |        |        |        |         |
| MSCI ACWI              | 0.6   | 5.3  | 6.6   | 12.0   | 5.2    | 10.6   | 4.3     |
| MSCI ACWI ex US        | 1.2   | 6.9  | 5.8   | 9.3    | 0.2    | 6.0    | 2.2     |
| MSCI EAFE              | 1.2   | 6.4  | 1.7   | 6.5    | 0.5    | 7.4    | 1.8     |
| MSCI EM                | 1.3   | 9.0  | 16.0  | 16.8   | (0.6)  | 3.0    | 3.9     |
| MSCI EAFE Small Cap    | 3.0   | 8.6  | 5.2   | 12.3   | 5.1    | 11.1   | 4.4     |
| <b>Style Index</b>     |       |      |       |        |        |        |         |
| MSCI EAFE Growth       | 1.5   | 5.0  | 2.6   | 9.5    | 2.4    | 8.7    | 3.1     |
| MSCI EAFE Value        | 1.0   | 8.0  | 0.8   | 3.5    | (1.5)  | 6.0    | 0.4     |
| <b>Regional Index</b>  |       |      |       |        |        |        |         |
| MSCI UK                | 1.0   | 4.0  | 0.8   | 1.5    | (1.8)  | 6.0    | 1.4     |
| MSCI Japan             | 1.6   | 8.6  | 2.5   | 12.1   | 3.3    | 7.4    | 1.0     |
| MSCI Euro              | 0.7   | 7.3  | (0.6) | 2.8    | (0.9)  | 7.3    | 0.2     |
| MSCI EM Asia           | 1.3   | 10.5 | 13.0  | 16.9   | 3.5    | 6.3    | 5.6     |
| MSCI EM Latin American | (0.8) | 5.4  | 32.2  | 28.6   | (7.9)  | (3.9)  | 2.4     |

## FIXED INCOME

|                        | Month | QTD   | YTD  | 1 Year | 3 Year | 5 Year | 10 Year |
|------------------------|-------|-------|------|--------|--------|--------|---------|
| <b>Broad Index</b>     |       |       |      |        |        |        |         |
| BC US Treasury US TIPS | 0.5   | 1.0   | 7.3  | 6.6    | 2.4    | 1.9    | 4.5     |
| BC US Treasury Bills   | 0.0   | 0.1   | 0.3  | 0.3    | 0.2    | 0.1    | 1.0     |
| BC US Agg Bond         | (0.1) | 0.5   | 5.8  | 5.2    | 4.0    | 3.1    | 4.8     |
| <b>Duration</b>        |       |       |      |        |        |        |         |
| BC US Treasury 1-3 Yr  | 0.1   | (0.1) | 1.3  | 0.9    | 0.9    | 0.7    | 2.3     |
| BC US Treasury Long    | (1.6) | (0.4) | 14.7 | 13.1   | 11.2   | 5.5    | 8.1     |
| BC US Treasury         | (0.1) | (0.3) | 5.1  | 4.1    | 3.4    | 2.2    | 4.5     |
| <b>Issuer</b>          |       |       |      |        |        |        |         |
| BC US MBS              | 0.3   | 0.6   | 3.7  | 3.6    | 3.6    | 2.6    | 4.7     |
| BC US Corp. High Yield | 0.7   | 5.6   | 15.1 | 12.7   | 5.3    | 8.3    | 7.7     |
| BC US Agency Interm    | 0.2   | (0.0) | 2.3  | 1.7    | 1.8    | 1.4    | 3.4     |
| BC US Credit           | (0.3) | 1.2   | 8.9  | 8.3    | 5.4    | 4.8    | 5.8     |

## OTHER

|                        | Month | QTD   | YTD    | 1 Year | 3 Year | 5 Year | 10 Year |
|------------------------|-------|-------|--------|--------|--------|--------|---------|
| <b>Index</b>           |       |       |        |        |        |        |         |
| Bloomberg Commodity    | 3.1   | (3.9) | 8.9    | (2.6)  | (12.3) | (9.4)  | (5.3)   |
| Wilshire US REIT       | (2.1) | (1.2) | 9.7    | 17.9   | 14.3   | 15.8   | 5.9     |
| <b>Regional Index</b>  |       |       |        |        |        |        |         |
| JPM EMBI Global Div    | 0.4   | 4.0   | 14.8   | 16.2   | 8.2    | 7.8    | 7.7     |
| JPM GBI-EM Global Div  | 2.0   | 2.7   | 17.1   | 17.1   | (2.6)  | 0.1    | 5.5     |
| <b>Currency (Spot)</b> |       |       |        |        |        |        |         |
| Euro                   | 0.9   | 1.2   | 3.5    | 0.7    | (6.0)  | (3.5)  | (1.2)   |
| Pound                  | (0.8) | (2.8) | (11.9) | (14.2) | (7.1)  | (3.6)  | (3.6)   |
| Yen                    | 2.1   | 1.3   | 18.8   | 18.3   | (1.0)  | (5.3)  | 1.5     |

Source: Morningstar, as of 9/30/16

# Definitions

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

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

**Citi Economic Surprise Index** - objective and quantitative measures of economic news. Defined as weighted historical standard deviations of data surprises (actual releases vs Bloomberg survey median). A positive reading of the Economic Surprise Index suggests that economic releases have on balance been beating consensus. The indices are calculated daily in a rolling three-month window. The weights of economic indicators are derived from relative high-frequency spot FX impacts of 1 standard deviation data surprises. The indices also employ a time decay function to replicate the limited memory of markets. ([www.Bloomberg.com](http://www.Bloomberg.com))

**Merrill Lynch Option Volatility Estimate (MOVE) Index** – a yield curve weighted index comprised of a weighted set of 1-month Treasury options, including 2.5.10 and 30 year tenor contracts. This index is an indicator of the expected (implied) future volatility in the rate markets.

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# Executive Summary

**To:** Contra Costa County Employees' Retirement Association

**From:** Verus

**Date:** November 22, 2016

**Re:** Quarterly Review – Period Ending September 30, 2016

- 
- The CCCERA Total Fund returned 3.7% (gross) for the third quarter, slightly below the 3.8% return of the median public fund, and above the 1.2% return of CPI +4% and the 3.4% return of the policy index. On a year-to-date and one-year trailing basis, CCCERA's Total Fund performance exceeds CPI +4%, is slightly below the universe median, and trails the policy index. Longer term performance is strong, with Total Fund performance ranking in the top decile over trailing three, five, and ten year periods.
  - CCCERA's domestic equities returned 5.5% for the quarter, ahead of the 4.4% return of the Russell 3000 Index, ranking in the 43<sup>rd</sup> percentile of all cap domestic equity portfolios.
  - CCCERA's international equities returned 4.9% for the quarter, trailing the 6.5% return of the MSCI EAFE index and the 7.0% return of the MSCI ACWI ex-US index, ranking in the 85<sup>th</sup> percentile of MSCI ACWI ex-US portfolios.
  - CCCERA's global equities returned 7.0% for the quarter, above the 5.3% return of the MSCI ACWI while ranking in the 23<sup>rd</sup> percentile of global equity portfolios.
  - CCCERA's domestic fixed income, excluding the Allianz high yield portfolio, returned 1.3% for the quarter, outpacing both the 1.0% return of the Barclays U.S. Universal and the 0.5% return of the Barclays US Aggregate while ranking in the 9<sup>th</sup> percentile of domestic core fixed income portfolios.
  - The Allianz high yield portfolio returned 5.4% for the quarter, slightly trailing the 5.5% return of the ML High Yield index while ranking in the 27<sup>th</sup> percentile of domestic high yield fixed income portfolios.
  - CCCERA's global fixed income returned 1.7% for the quarter, ahead of the 0.8% return of the Barclays Global Aggregate Index, ranking in the 62<sup>nd</sup> percentile of global fixed income portfolios.
  - CCCERA's inflation hedging investments returned 3.7% for the quarter, ahead of the 1.2% return of the CPI+4% benchmark.
  - CCCERA's real estate returned 1.4% for the quarter, outperforming the 0.9% return of the Real Estate Benchmark.
  - The total equity allocation stood at 46.6% at the end of the third quarter, in line with the current target of 46.6%. Total global fixed income stood at 22.7%, slightly below the 23.6% target. High yield fixed income stood at 5.1% and inflation hedging assets stood at 5.2%, both slightly above their respective 5.0% targets. Real estate stood at 10.4%, below the target of 12.5%. Alternative investments stood at 7.8%, above the target 6.0%. Opportunistic stood at 0.5%, below the target of 0.8%. Cash stood at 1.7%, above the target of 0.5%.

# Contra Costa County Employees' Retirement Association

Investment Performance Review

Period Ending: September 30, 2016



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[VERUSINVESTMENTS.COM](http://VERUSINVESTMENTS.COM)

SEATTLE 206-622-3700

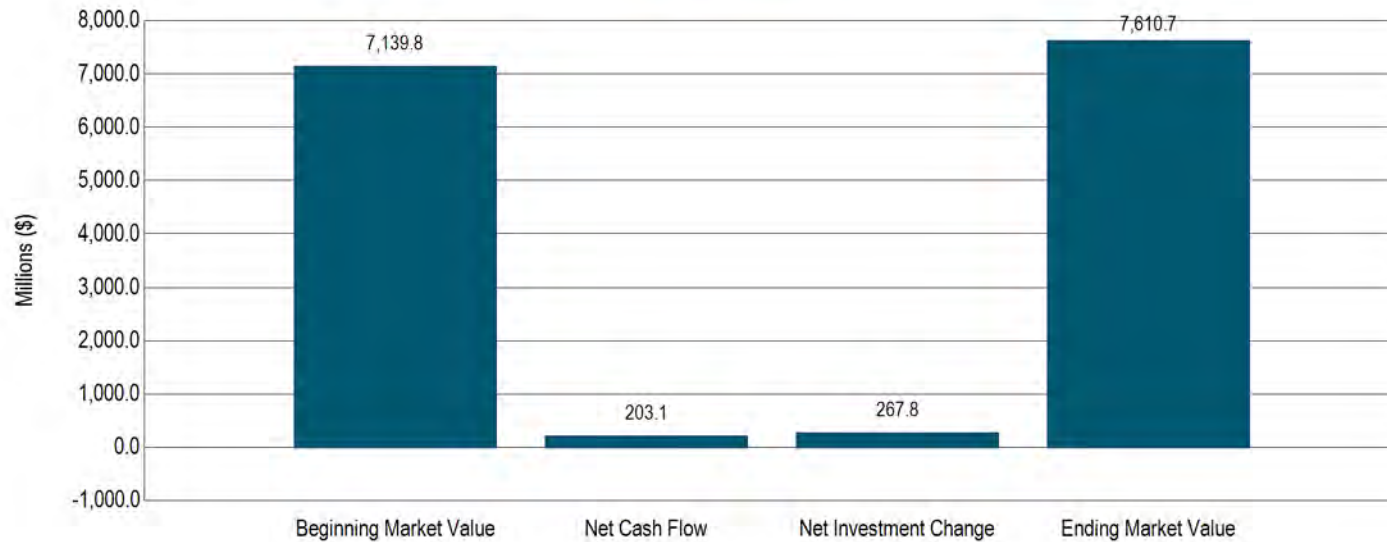
LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

**Portfolio Reconciliation**

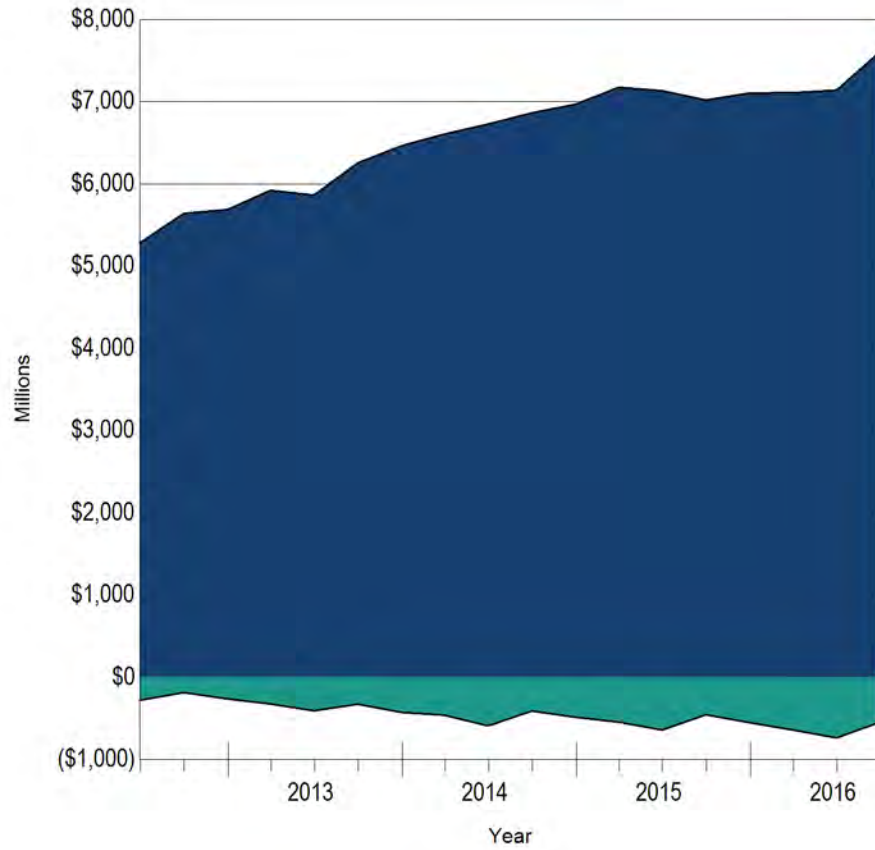
|                        | Last Three Months | Year-To-Date    |
|------------------------|-------------------|-----------------|
| Beginning Market Value | \$7,139,804,873   | \$7,104,853,428 |
| Net Cash Flow          | \$203,149,869     | \$34,705,066    |
| Net Investment Change  | \$267,751,760     | \$471,148,007   |
| Ending Market Value    | \$7,610,706,502   | \$7,610,706,502 |

**Change in Market Value  
Last Three Months**



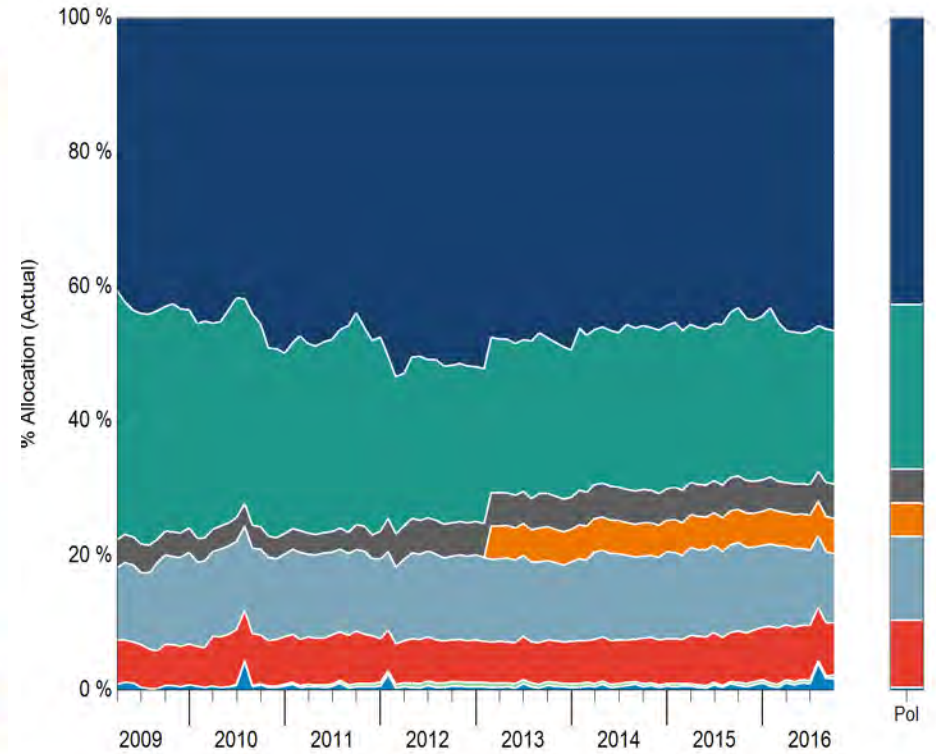
Contributions and withdrawals may include intra-account transfers between managers/funds.

Market Value History  
Cumulative Cash Flows



Market Value Net Cash Flow

Asset Allocation History

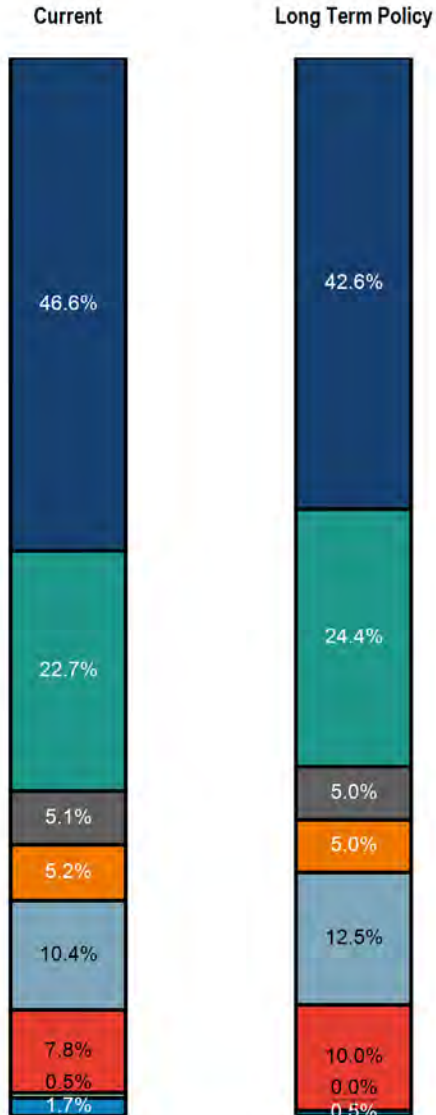


Global Equity Global Fixed Income High Yield Fixed Income Inflation Hedge/Real Assets Real Estate Alternative Investments Opportunistic Cash

Total Fund

Asset Allocation vs. Long Term Target Policy

Period Ending: September 30, 2016



Allocation vs. Long Term Target

|                             | Current Balance        | Current Allocation | Long Term Target | Difference     | Long Term Target Range | Within IPS Range? |
|-----------------------------|------------------------|--------------------|------------------|----------------|------------------------|-------------------|
| Global Equity               | \$3,545,129,150        | 46.6%              | 42.6%            | \$302,968,180  | 40.0% - 55.0%          | Yes               |
| Global Fixed Income         | \$1,729,337,880        | 22.7%              | 24.4%            | -\$127,674,506 | 20.0% - 30.0%          | Yes               |
| High Yield Fixed Income     | \$387,668,528          | 5.1%               | 5.0%             | \$7,133,203    | 2.0% - 9.0%            | Yes               |
| Inflation Hedge/Real Assets | \$398,160,469          | 5.2%               | 5.0%             | \$17,625,144   | 0.0% - 10.0%           | Yes               |
| Real Estate                 | \$789,662,366          | 10.4%              | 12.5%            | -\$161,675,947 | 10.0% - 16.0%          | Yes               |
| Alternative Investments     | \$595,092,854          | 7.8%               | 10.0%            | -\$165,977,796 | 5.0% - 12.0%           | Yes               |
| Opportunistic               | \$36,461,764           | 0.5%               | 0.0%             | \$36,461,764   | 0.0% - 5.0%            | Yes               |
| Cash                        | \$129,193,489          | 1.7%               | 0.5%             | \$91,139,957   | 0.0% - 1.0%            | No                |
| <b>Total</b>                | <b>\$7,610,706,502</b> | <b>100.0%</b>      | <b>100.0%</b>    |                |                        |                   |

Allocation vs. Current Targets

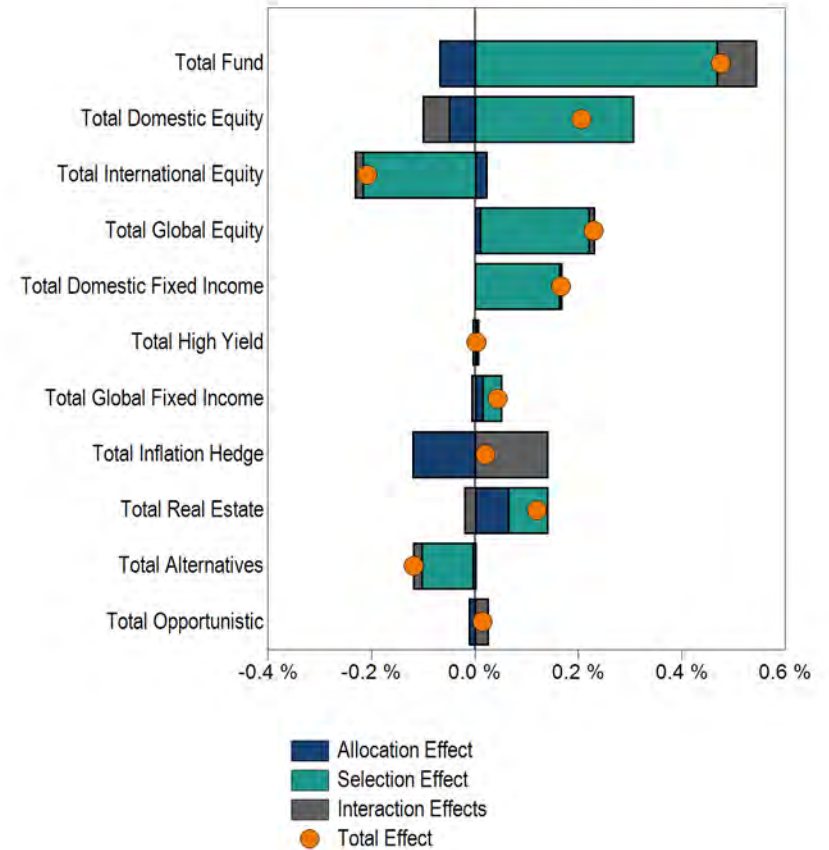
|                             | Current Balance        | Current Allocation | Current Target | Difference     |
|-----------------------------|------------------------|--------------------|----------------|----------------|
| Global Equity               | \$3,545,129,150        | 46.6%              | 46.6%          | -\$1,460,080   |
| Global Fixed Income         | \$1,729,337,880        | 22.7%              | 23.6%          | -\$66,788,854  |
| High Yield Fixed Income     | \$387,668,528          | 5.1%               | 5.0%           | \$7,133,203    |
| Inflation Hedge/Real Assets | \$398,160,469          | 5.2%               | 5.0%           | \$17,625,144   |
| Real Estate                 | \$789,662,366          | 10.4%              | 12.5%          | -\$161,675,947 |
| Alternative Investments     | \$595,092,854          | 7.8%               | 6.0%           | \$138,450,464  |
| Opportunistic               | \$36,461,764           | 0.5%               | 0.8%           | -\$24,423,888  |
| Cash                        | \$129,193,489          | 1.7%               | 0.5%           | \$91,139,957   |
| <b>Total</b>                | <b>\$7,610,706,502</b> | <b>100.0%</b>      | <b>100.0%</b>  |                |

# Total Fund Executive Summary (Gross of Fees)

Period Ending: September 30, 2016

|   | QTD        | YTD         | 1 Yr        | 3 Yrs       | 5 Yrs       | 10 Yrs     |
|---|------------|-------------|-------------|-------------|-------------|------------|
| <b>Total Fund</b>                         | <b>3.7</b> | <b>6.9</b>  | <b>9.6</b>  | <b>7.7</b>  | <b>10.9</b> | <b>6.5</b> |
| Policy Index                              | 3.4        | 8.3         | 11.2        | 7.6         | 10.8        | --         |
| CPI + 4%                                  | 1.2        | 5.1         | 5.5         | 5.1         | 5.3         | 5.8        |
| InvestorForce Public DB > \$1B Gross Rank | 53         | 52          | 57          | 1           | 5           | 7          |
| <b>Total Domestic Equity</b>              | <b>5.5</b> | <b>7.8</b>  | <b>12.9</b> | <b>10.1</b> | <b>17.1</b> | <b>8.0</b> |
| Russell 3000                              | 4.4        | 8.2         | 15.0        | 10.4        | 16.4        | 7.4        |
| eA US All Cap Equity Gross Rank           | 43         | 43          | 47          | 31          | 26          | 47         |
| <b>Total International Equity</b>         | <b>4.9</b> | <b>4.8</b>  | <b>9.5</b>  | <b>3.5</b>  | <b>8.5</b>  | <b>1.9</b> |
| MSCI ACWI ex USA Gross                    | 7.0        | 6.3         | 9.8         | 0.6         | 6.5         | 2.6        |
| MSCI EAFE Gross                           | 6.5        | 2.2         | 7.1         | 0.9         | 7.9         | 2.3        |
| eA All ACWI ex-US Equity Gross Rank       | 85         | 55          | 57          | 36          | 61          | 96         |
| <b>Total Global Equity</b>                | <b>7.0</b> | <b>8.9</b>  | <b>15.6</b> | <b>7.7</b>  | <b>11.2</b> | <b>--</b>  |
| MSCI ACWI                                 | 5.3        | 6.6         | 12.0        | 5.2         | 10.6        | --         |
| eA All Global Equity Gross Rank           | 23         | 29          | 21          | 33          | 71          | --         |
| <b>Total Domestic Fixed Income</b>        | <b>1.3</b> | <b>6.3</b>  | <b>6.4</b>  | <b>5.4</b>  | <b>5.7</b>  | <b>6.1</b> |
| Barclays U.S. Universal                   | 1.0        | 6.7         | 6.1         | 4.3         | 3.6         | 5.0        |
| Barclays Aggregate                        | 0.5        | 5.8         | 5.2         | 4.0         | 3.1         | 4.8        |
| eA US Core Fixed Inc Gross Rank           | 9          | 39          | 19          | 5           | 3           | 8          |
| <b>Total High Yield</b>                   | <b>5.4</b> | <b>12.1</b> | <b>10.3</b> | <b>4.1</b>  | <b>7.7</b>  | <b>7.8</b> |
| BofA ML High Yield Master II              | 5.5        | 15.3        | 12.8        | 5.3         | 8.2         | 7.6        |
| eA US High Yield Fixed Inc Gross Rank     | 27         | 47          | 52          | 77          | 66          | 39         |
| <b>Total Global Fixed Income</b>          | <b>1.7</b> | <b>9.4</b>  | <b>8.5</b>  | <b>2.2</b>  | <b>1.9</b>  | <b>3.8</b> |
| Barclays Global Aggregate                 | 0.8        | 9.9         | 8.8         | 2.1         | 1.7         | 4.3        |
| eA All Global Fixed Inc Gross Rank        | 62         | 44          | 49          | 69          | 80          | 92         |

Attribution Effects  
3 Months Ending September 30, 2016



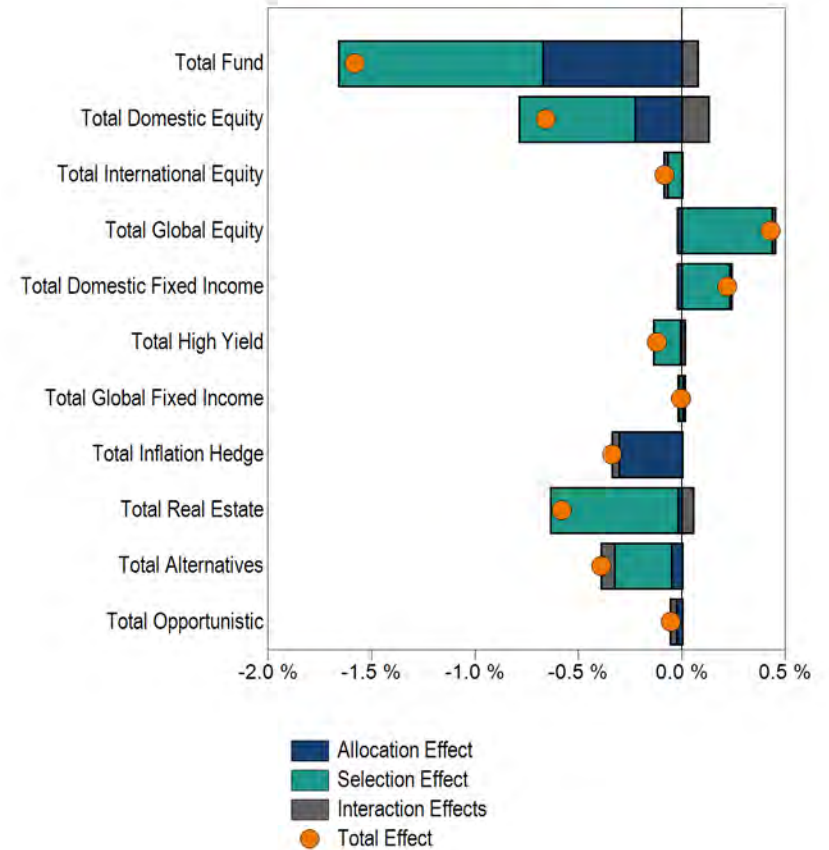
Policy Index (as of 4/1/2012): 27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% Barclays U.S. Aggregate, 5% Bank of America High Yield Master II, 4% Barclays Global Aggregate, 13.5% Real Estate Benchmark, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills. Real Estate Benchmark: 40% Wilshire REIT, 50% NCREIF Property Index, 10% FTSE/EPRA NAREIT Developed ex-USA.

# Total Fund Executive Summary (Gross of Fees)

Period Ending: September 30, 2016

|                              | QTD        | YTD        | 1 Yr       | 3 Yrs       | 5 Yrs       | 10 Yrs      |
|------------------------------|------------|------------|------------|-------------|-------------|-------------|
| <b>Total Inflation Hedge</b> | <b>3.7</b> | <b>5.3</b> | <b>4.9</b> | <b>0.1</b>  | <b>--</b>   | <b>--</b>   |
| CPI + 4%                     | 1.2        | 5.1        | 5.5        | 5.1         | --          | --          |
| <b>Total Real Estate</b>     | <b>1.4</b> | <b>4.8</b> | <b>8.7</b> | <b>13.4</b> | <b>15.1</b> | <b>5.5</b>  |
| Real Estate Benchmark        | 0.9        | 8.2        | 13.2       | 12.0        | 12.5        | 7.7         |
| NCREIF-ODCE                  | 2.1        | 6.5        | 10.1       | 12.4        | 12.4        | 6.0         |
| NCREIF Property Index        | 1.8        | 6.1        | 9.2        | 11.3        | 11.2        | 7.2         |
| <b>Total Alternatives</b>    | <b>2.0</b> | <b>4.6</b> | <b>4.9</b> | <b>13.0</b> | <b>11.0</b> | <b>11.5</b> |
| S&P 500 Index +4% (Lagged)   | 3.5        | 14.4       | 8.1        | 16.1        | 16.5        | 11.7        |
| <b>Total Opportunistic</b>   | <b>6.4</b> | <b>6.2</b> | <b>0.9</b> | <b>1.1</b>  | <b>4.7</b>  | <b>--</b>   |
| CPI + 4%                     | 1.2        | 5.1        | 5.5        | 5.1         | 5.3         | --          |

Attribution Effects  
1 Year Ending September 30, 2016

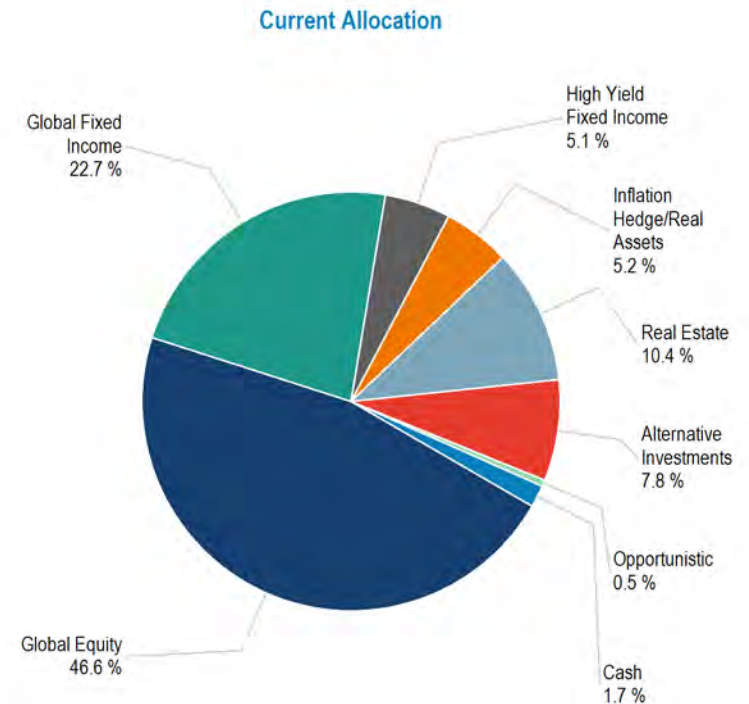


Policy Index (as of 4/1/2012): 27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% Barclays U.S. Aggregate, 5% Bank of America High Yield Master II, 4% Barclays Global Aggregate, 13.5% Real Estate Benchmark, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills. Real Estate Benchmark: 40% Wilshire REIT, 50% NCREIF Property Index, 10% FTSE/EPRA NAREIT Developed ex-USA.

# Total Fund Executive Summary (Net of Fees)

Period Ending: September 30, 2016

|                                    | QTD        | YTD         | 1 Yr        | 3 Yrs       | 5 Yrs       | 10 Yrs     |
|------------------------------------|------------|-------------|-------------|-------------|-------------|------------|
| <b>Total Fund</b>                  | <b>3.6</b> | <b>6.5</b>  | <b>9.0</b>  | <b>7.0</b>  | <b>10.2</b> | <b>5.9</b> |
| Policy Index                       | 3.4        | 8.3         | 11.2        | 7.6         | 10.8        | --         |
| CPI + 4%                           | 1.2        | 5.1         | 5.5         | 5.1         | 5.3         | 5.8        |
| <b>Total Domestic Equity</b>       | <b>5.4</b> | <b>7.5</b>  | <b>12.4</b> | <b>9.7</b>  | <b>16.7</b> | <b>7.6</b> |
| Russell 3000                       | 4.4        | 8.2         | 15.0        | 10.4        | 16.4        | 7.4        |
| <b>Total International Equity</b>  | <b>4.8</b> | <b>4.5</b>  | <b>9.0</b>  | <b>3.1</b>  | <b>8.1</b>  | <b>1.5</b> |
| MSCI ACWI ex USA Gross             | 7.0        | 6.3         | 9.8         | 0.6         | 6.5         | 2.6        |
| MSCI EAFE Gross                    | 6.5        | 2.2         | 7.1         | 0.9         | 7.9         | 2.3        |
| <b>Total Global Equity</b>         | <b>6.9</b> | <b>8.4</b>  | <b>14.9</b> | <b>7.0</b>  | <b>10.6</b> | <b>--</b>  |
| MSCI ACWI                          | 5.3        | 6.6         | 12.0        | 5.2         | 10.6        | --         |
| <b>Total Domestic Fixed Income</b> | <b>1.2</b> | <b>6.0</b>  | <b>6.0</b>  | <b>5.0</b>  | <b>5.3</b>  | <b>5.6</b> |
| Barclays U.S. Universal            | 1.0        | 6.7         | 6.1         | 4.3         | 3.6         | 5.0        |
| Barclays Aggregate                 | 0.5        | 5.8         | 5.2         | 4.0         | 3.1         | 4.8        |
| <b>Total High Yield</b>            | <b>5.3</b> | <b>11.7</b> | <b>9.9</b>  | <b>3.7</b>  | <b>7.3</b>  | <b>7.6</b> |
| BofA ML High Yield Master II       | 5.5        | 15.3        | 12.8        | 5.3         | 8.2         | 7.6        |
| <b>Total Global Fixed Income</b>   | <b>1.6</b> | <b>9.2</b>  | <b>8.2</b>  | <b>1.9</b>  | <b>1.6</b>  | <b>3.5</b> |
| Barclays Global Aggregate          | 0.8        | 9.9         | 8.8         | 2.1         | 1.7         | 4.3        |
| <b>Total Inflation Hedge</b>       | <b>3.5</b> | <b>4.5</b>  | <b>4.0</b>  | <b>-0.8</b> | <b>--</b>   | <b>--</b>  |
| CPI + 4%                           | 1.2        | 5.1         | 5.5         | 5.1         | --          | --         |



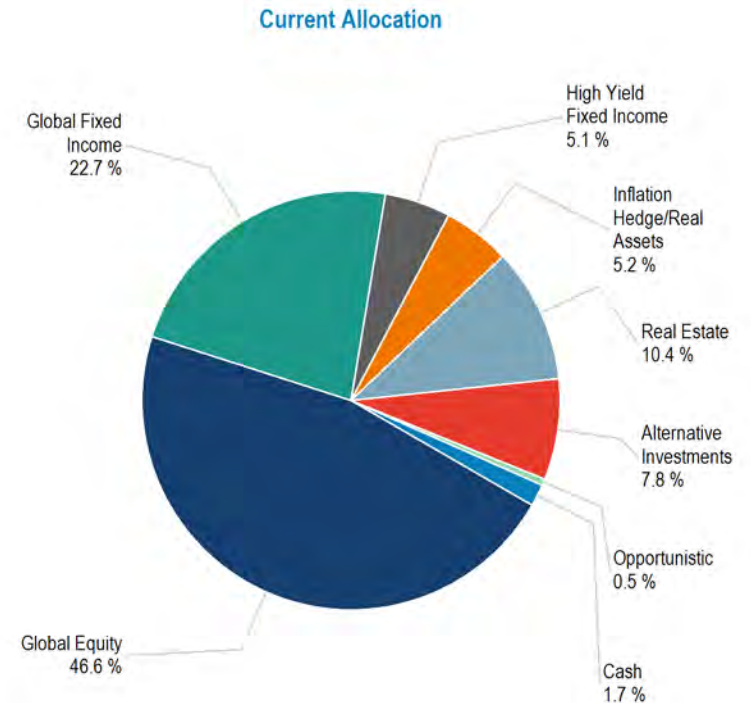
Policy Index (as of 4/1/2012): 27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% Barclays U.S. Aggregate, 5% Bank of America High Yield Master II, 4% Barclays Global Aggregate, 13.5% Real Estate Benchmark, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills. Real Estate Benchmark: 40% Wilshire REIT, 50% NCREIF Property Index, 10% FTSE/EPRA NAREIT Developed ex-USA.



Total Fund  
Executive Summary (Net of Fees)

Period Ending: September 30, 2016

|                            | QTD        | YTD        | 1 Yr       | 3 Yrs       | 5 Yrs       | 10 Yrs     |
|----------------------------|------------|------------|------------|-------------|-------------|------------|
| <b>Total Real Estate</b>   | <b>1.2</b> | <b>4.1</b> | <b>7.8</b> | <b>12.1</b> | <b>13.8</b> | <b>4.4</b> |
| Real Estate Benchmark      | 0.9        | 8.2        | 13.2       | 12.0        | 12.5        | 7.7        |
| NCREIF-ODCE                | 2.1        | 6.5        | 10.1       | 12.4        | 12.4        | 6.0        |
| NCREIF Property Index      | 1.8        | 6.1        | 9.2        | 11.3        | 11.2        | 7.2        |
| <b>Total Alternatives</b>  | <b>1.7</b> | <b>4.2</b> | <b>4.2</b> | <b>11.5</b> | <b>9.2</b>  | <b>9.1</b> |
| S&P 500 Index +4% (Lagged) | 3.5        | 14.4       | 8.1        | 16.1        | 16.5        | 11.7       |
| <b>Total Opportunistic</b> | <b>6.0</b> | <b>5.7</b> | <b>0.3</b> | <b>0.9</b>  | <b>4.5</b>  | <b>--</b>  |
| CPI + 4%                   | 1.2        | 5.1        | 5.5        | 5.1         | 5.3         | --         |



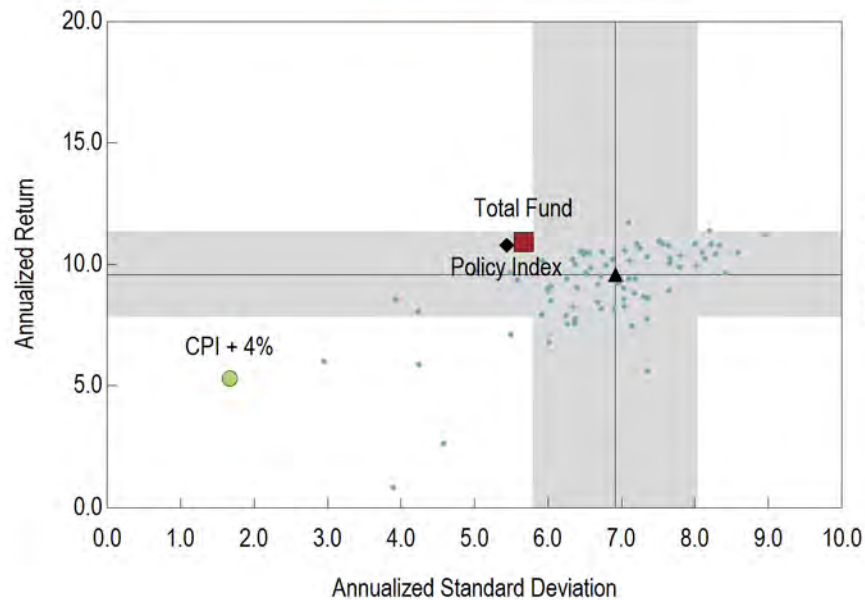
Policy Index (as of 4/1/2012): 27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% Barclays U.S. Aggregate, 5% Bank of America High Yield Master II, 4% Barclays Global Aggregate, 13.5% Real Estate Benchmark, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills. Real Estate Benchmark: 40% Wilshire REIT, 50% NCREIF Property Index, 10% FTSE/EPRA NAREIT Developed ex-USA.

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

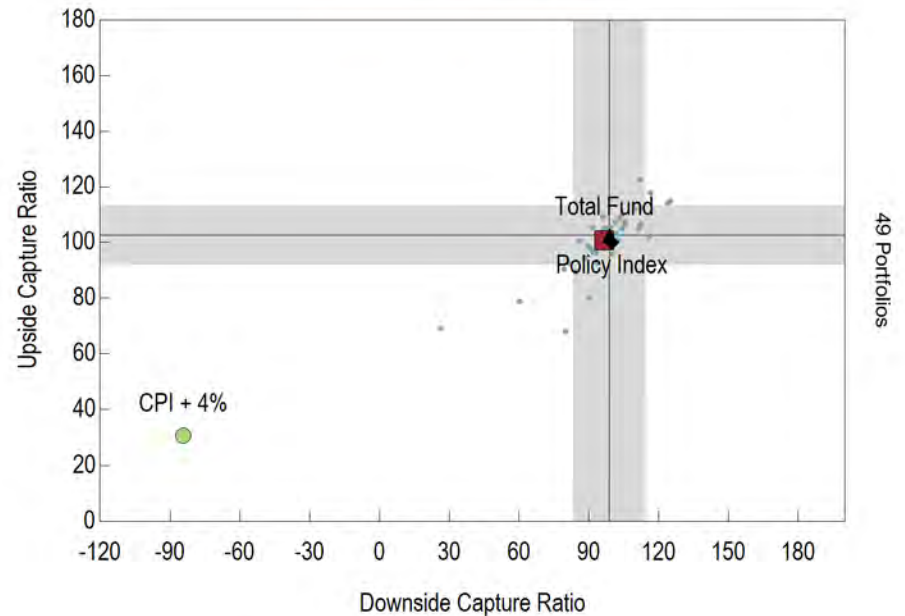
Period Ending: September 30, 2016

|            | 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 | 10.90%    | 0.12%                | 5.67%         | -0.09%      | 1.02 | 1.17%          | 0.96      | 1.91         | 0.10       | 100.80%          | 96.59%             |

Risk vs. Return



Up Markets vs. Down Markets



- Total Fund
- ◆ Policy Index
- CPI + 4%
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB > \$1B Gross

- Total Fund
- ◆ Policy Index
- CPI + 4%
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB > \$1B Gross

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: September 30, 2016

|   | Market Value         | % of Portfolio | 3 Mo       | YTD        | 1 Yr        | 3 Yrs       | 5 Yrs       | 10 Yrs     | 2015        | 2014        | 2013        | 2012        | 2011         |
|---|----------------------|----------------|------------|------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|--------------|
| <b>Total Fund</b>                                   | <b>7,610,706,502</b> | <b>100.0</b>   | <b>3.7</b> | <b>6.9</b> | <b>9.6</b>  | <b>7.7</b>  | <b>10.9</b> | <b>6.5</b> | <b>2.7</b>  | <b>8.4</b>  | <b>16.4</b> | <b>14.3</b> | <b>2.7</b>   |
| <i>Policy Index</i>                                 |                      |                | 3.4        | 8.3        | 11.2        | 7.6         | 10.8        | --         | 0.6         | 9.0         | 15.6        | 14.6        | 2.8          |
| <i>CPI + 4%</i>                                     |                      |                | 1.2        | 5.1        | 5.5         | 5.1         | 5.3         | 5.8        | 4.8         | 4.8         | 5.6         | 5.8         | 7.1          |
| <i>InvestorForce Public DB &gt; \$1B Gross Rank</i> |                      |                | 53         | 52         | 57          | 1           | 5           | 7          | 5           | 6           | 33          | 13          | 9            |
| <b>Total Domestic Equity</b>                        | <b>1,740,964,976</b> | <b>22.9</b>    | <b>5.5</b> | <b>7.8</b> | <b>12.9</b> | <b>10.1</b> | <b>17.1</b> | <b>8.0</b> | <b>1.1</b>  | <b>11.4</b> | <b>36.2</b> | <b>18.2</b> | <b>1.1</b>   |
| <i>Russell 3000</i>                                 |                      |                | 4.4        | 8.2        | 15.0        | 10.4        | 16.4        | 7.4        | 0.5         | 12.6        | 33.6        | 16.4        | 1.0          |
| <i>eA US All Cap Equity Gross Rank</i>              |                      |                | 43         | 43         | 47          | 31          | 26          | 47         | 36          | 36          | 41          | 24          | 34           |
| <i>Intech Large Cap Core</i>                        | 290,780,759          | 3.8            | 1.4        | 6.5        | 12.5        | 12.1        | 16.8        | --         | 3.8         | 14.7        | 32.7        | 15.3        | 3.6          |
| <i>S&amp;P 500</i>                                  |                      |                | 3.9        | 7.8        | 15.4        | 11.2        | 16.4        | --         | 1.4         | 13.7        | 32.4        | 16.0        | 2.1          |
| <i>eA US Large Cap Core Equity Gross Rank</i>       |                      |                | 87         | 50         | 54          | 12          | 27          | --         | 16          | 31          | 54          | 54          | 25           |
| <i>PIMCO Stocks+ Absolute Return</i>                | 333,527,240          | 4.4            | 4.8        | 10.0       | 18.4        | 10.8        | 17.0        | 7.5        | -1.2        | 13.6        | 31.4        | 20.6        | 2.3          |
| <i>S&amp;P 500</i>                                  |                      |                | 3.9        | 7.8        | 15.4        | 11.2        | 16.4        | 7.2        | 1.4         | 13.7        | 32.4        | 16.0        | 2.1          |
| <i>eA US Large Cap Core Equity Gross Rank</i>       |                      |                | 29         | 9          | 6           | 41          | 22          | 54         | 73          | 45          | 68          | 4           | 36           |
| <i>Jackson Square Partners</i>                      | 326,298,051          | 4.3            | 7.4        | -0.4       | 8.5         | 10.2        | 16.3        | 9.0        | 6.1         | 13.9        | 35.4        | 16.9        | 8.9          |
| <i>Russell 1000 Growth</i>                          |                      |                | 4.6        | 6.0        | 13.8        | 11.8        | 16.6        | 8.8        | 5.7         | 13.0        | 33.5        | 15.3        | 2.6          |
| <i>eA US Large Cap Growth Equity Gross Rank</i>     |                      |                | 18         | 95         | 79          | 64          | 46          | 43         | 37          | 31          | 40          | 37          | 3            |
| <i>Robeco Boston Partners</i>                       | 318,268,874          | 4.2            | 4.6        | 6.2        | 11.3        | 8.2         | 16.8        | 7.7        | -3.9        | 12.0        | 37.4        | 21.6        | 0.9          |
| <i>Russell 1000 Value</i>                           |                      |                | 3.5        | 10.0       | 16.2        | 9.7         | 16.2        | 5.9        | -3.8        | 13.5        | 32.5        | 17.5        | 0.4          |
| <i>eA US Large Cap Value Equity Gross Rank</i>      |                      |                | 39         | 71         | 69          | 68          | 22          | 26         | 65          | 55          | 24          | 5           | 46           |
| <i>Emerald Advisers</i>                             | 242,298,604          | 3.2            | 10.2       | 5.8        | 4.8         | 7.9         | 19.3        | 9.7        | 4.1         | 7.3         | 50.3        | 18.5        | -0.6         |
| <i>Russell 2000 Growth</i>                          |                      |                | 9.2        | 7.5        | 12.1        | 6.6         | 16.1        | 8.3        | -1.4        | 5.6         | 43.3        | 14.6        | -2.9         |
| <i>eA US Small Cap Growth Equity Gross Rank</i>     |                      |                | 28         | 65         | 85          | 32          | 11          | 37         | 19          | 21          | 27          | 22          | 42           |
| <i>Ceredex</i>                                      | 229,791,449          | 3.0            | 5.9        | 21.8       | 21.3        | 9.7         | --          | --         | -4.4        | 3.3         | 36.5        | 19.0        | --           |
| <i>Russell 2000 Value</i>                           |                      |                | 8.9        | 15.5       | 18.8        | 6.8         | --          | --         | -7.5        | 4.2         | 34.5        | 18.1        | --           |
| <i>eA US Small Cap Value Equity Gross Rank</i>      |                      |                | 82         | 6          | 13          | 16          | --          | --         | 52          | 74          | 66          | 38          | --           |
| <b>Total International Equity</b>                   | <b>837,210,111</b>   | <b>11.0</b>    | <b>4.9</b> | <b>4.8</b> | <b>9.5</b>  | <b>3.5</b>  | <b>8.5</b>  | <b>1.9</b> | <b>-1.2</b> | <b>0.3</b>  | <b>17.8</b> | <b>18.5</b> | <b>-11.5</b> |
| <i>MSCI ACWI ex USA Gross</i>                       |                      |                | 7.0        | 6.3        | 9.8         | 0.6         | 6.5         | 2.6        | -5.3        | -3.4        | 15.8        | 17.4        | -13.3        |
| <i>MSCI EAFE Gross</i>                              |                      |                | 6.5        | 2.2        | 7.1         | 0.9         | 7.9         | 2.3        | -0.4        | -4.5        | 23.3        | 17.9        | -11.7        |
| <i>eA All ACWI ex-US Equity Gross Rank</i>          |                      |                | 85         | 55         | 57          | 36          | 61          | 96         | 61          | 17          | 69          | 63          | 43           |
| <i>Pyrford</i>                                      | 416,695,850          | 5.5            | 3.5        | 6.7        | 10.8        | --          | --          | --         | -2.9        | --          | --          | --          | --           |
| <i>MSCI ACWI ex USA Value</i>                       |                      |                | 7.8        | 5.5        | 7.0         | --          | --          | --         | -10.1       | --          | --          | --          | --           |
| <i>eA ACWI ex-US Value Equity Gross Rank</i>        |                      |                | 94         | 43         | 43          | --          | --          | --         | 59          | --          | --          | --          | --           |
| <i>William Blair</i>                                | 419,979,055          | 5.5            | 6.4        | 2.6        | 7.7         | 3.1         | 9.8         | --         | 0.5         | -1.2        | 20.9        | 24.3        | -13.2        |
| <i>MSCI ACWI ex USA Growth</i>                      |                      |                | 6.1        | 6.2        | 11.5        | 2.2         | 7.4         | --         | -1.3        | -2.6        | 15.5        | 16.7        | -14.2        |
| <i>eA ACWI ex-US Growth Equity Gross Rank</i>       |                      |                | 65         | 76         | 81          | 57          | 51          | --         | 69          | 37          | 44          | 6           | 55           |

Individual closed end funds are not shown in performance summary table.

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: September 30, 2016

|                                      | Market Value         | % of Portfolio | 3 Mo       | YTD        | 1 Yr        | 3 Yrs      | 5 Yrs       | 10 Yrs     | 2015       | 2014       | 2013        | 2012        | 2011        |
|--------------------------------------|----------------------|----------------|------------|------------|-------------|------------|-------------|------------|------------|------------|-------------|-------------|-------------|
| International Equity Transition      | 535,207              | 0.0            |            |            |             |            |             |            |            |            |             |             |             |
| <b>Total Global Equity</b>           | <b>966,954,063</b>   | <b>12.7</b>    | <b>7.0</b> | <b>8.9</b> | <b>15.6</b> | <b>7.7</b> | <b>11.2</b> | <b>--</b>  | <b>2.2</b> | <b>5.2</b> | <b>23.7</b> | <b>11.1</b> | <b>-5.6</b> |
| MSCI ACWI                            |                      |                | 5.3        | 6.6        | 12.0        | 5.2        | 10.6        | --         | -2.4       | 4.2        | 22.8        | 16.1        | -7.3        |
| eA All Global Equity Gross Rank      |                      |                | 23         | 29         | 21          | 33         | 71          | --         | 31         | 44         | 64          | 90          | 40          |
| Artisan Partners                     | 340,366,101          | 4.5            | 11.0       | 11.7       | 20.5        | 10.4       | --          | --         | 9.2        | 3.9        | 26.1        | --          | --          |
| MSCI ACWI                            |                      |                | 5.3        | 6.6        | 12.0        | 5.2        | --          | --         | -2.4       | 4.2        | 22.8        | --          | --          |
| eA All Global Equity Gross Rank      |                      |                | 4          | 14         | 9           | 10         | --          | --         | 4          | 56         | 51          | --          | --          |
| First Eagle                          | 324,823,862          | 4.3            | 4.4        | 11.5       | 16.9        | 7.2        | 10.6        | --         | 0.2        | 4.5        | 17.9        | 13.9        | --          |
| MSCI ACWI                            |                      |                | 5.3        | 6.6        | 12.0        | 5.2        | 10.6        | --         | -2.4       | 4.2        | 22.8        | 16.1        | --          |
| eA All Global Equity Gross Rank      |                      |                | 64         | 14         | 15          | 40         | 78          | --         | 49         | 51         | 80          | 78          | --          |
| Intech Global Low Vol                | 23,958,644           | 0.3            | -0.3       | 9.4        | 14.3        | 9.8        | --          | --         | 4.1        | 11.2       | 24.2        | --          | --          |
| MSCI ACWI                            |                      |                | 5.3        | 6.6        | 12.0        | 5.2        | --          | --         | -2.4       | 4.2        | 22.8        | --          | --          |
| eA All Global Equity Gross Rank      |                      |                | 98         | 26         | 30          | 13         | --          | --         | 18         | 14         | 62          | --          | --          |
| JP Morgan Global Opportunities       | 277,805,457          | 3.7            | 6.1        | 2.8        | 8.8         | 4.9        | 11.8        | --         | -2.9       | 6.7        | 26.9        | 19.2        | -9.0        |
| MSCI ACWI                            |                      |                | 5.3        | 6.6        | 12.0        | 5.2        | 10.6        | --         | -2.4       | 4.2        | 22.8        | 16.1        | -7.3        |
| eA All Global Equity Gross Rank      |                      |                | 36         | 85         | 78          | 74         | 62          | --         | 75         | 30         | 46          | 32          | 63          |
| <b>Total Domestic Fixed Income</b>   | <b>1,484,588,324</b> | <b>19.5</b>    | <b>1.3</b> | <b>6.3</b> | <b>6.4</b>  | <b>5.4</b> | <b>5.7</b>  | <b>6.1</b> | <b>1.7</b> | <b>7.3</b> | <b>1.3</b>  | <b>9.7</b>  | <b>7.2</b>  |
| Barclays U.S. Universal              |                      |                | 1.0        | 6.7        | 6.1         | 4.3        | 3.6         | 5.0        | 0.4        | 5.6        | -1.3        | 5.5         | 7.4         |
| Barclays Aggregate                   |                      |                | 0.5        | 5.8        | 5.2         | 4.0        | 3.1         | 4.8        | 0.6        | 6.0        | -2.0        | 4.2         | 7.8         |
| eA US Core Fixed Inc Gross Rank      |                      |                | 9          | 39         | 19          | 5          | 3           | 8          | 8          | 8          | 2           | 5           | 71          |
| AFL-CIO                              | 245,403,667          | 3.2            | 0.7        | 5.4        | 4.8         | 4.6        | 3.6         | 5.2        | 1.6        | 6.6        | -1.9        | 4.7         | 8.3         |
| Barclays Aggregate                   |                      |                | 0.5        | 5.8        | 5.2         | 4.0        | 3.1         | 4.8        | 0.6        | 6.0        | -2.0        | 4.2         | 7.8         |
| eA US Core Fixed Inc Gross Rank      |                      |                | 52         | 84         | 88          | 36         | 63          | 67         | 15         | 25         | 78          | 80          | 23          |
| Goldman Sachs Core Plus              | 328,836,838          | 4.3            | 1.0        | 6.1        | 5.6         | 4.5        | 4.3         | --         | 0.8        | 6.0        | -0.4        | 7.9         | 7.6         |
| Barclays Aggregate                   |                      |                | 0.5        | 5.8        | 5.2         | 4.0        | 3.1         | --         | 0.6        | 6.0        | -2.0        | 4.2         | 7.8         |
| eA US Core Plus Fixed Inc Gross Rank |                      |                | 83         | 85         | 89          | 64         | 76          | --         | 36         | 47         | 49          | 59          | 43          |
| GSAM Workout Portfolio               | 4,078                | 0.0            |            |            |             |            |             |            |            |            |             |             |             |
| Lord Abbett                          | 333,047,536          | 4.4            | 1.4        | 7.5        | 6.9         | 4.9        | 4.7         | --         | 0.0        | 6.7        | -0.6        | 8.6         | 8.2         |
| Barclays Aggregate                   |                      |                | 0.5        | 5.8        | 5.2         | 4.0        | 3.1         | --         | 0.6        | 6.0        | -2.0        | 4.2         | 7.8         |
| eA US Core Fixed Inc Gross Rank      |                      |                | 6          | 7          | 8           | 17         | 9           | --         | 94         | 18         | 18          | 8           | 27          |
| PIMCO Fixed Income                   | 442,289,365          | 5.8            | 0.9        | 6.0        | 6.0         | 4.2        | 4.2         | 5.9        | 0.5        | 6.3        | -1.6        | 8.5         | 5.0         |
| Barclays Aggregate                   |                      |                | 0.5        | 5.8        | 5.2         | 4.0        | 3.1         | 4.8        | 0.6        | 6.0        | -2.0        | 4.2         | 7.8         |
| eA US Core Fixed Inc Gross Rank      |                      |                | 28         | 62         | 33          | 67         | 23          | 14         | 75         | 34         | 61          | 8           | 97          |

Individual closed end funds are not shown in performance summary table.

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: September 30, 2016

|  | Market Value       | % of Portfolio | 3 Mo       | YTD         | 1 Yr        | 3 Yrs       | 5 Yrs       | 10 Yrs     | 2015        | 2014        | 2013        | 2012        | 2011        |
|--|--------------------|----------------|------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|
| <b>Total High Yield</b>                      | <b>387,668,528</b> | <b>5.1</b>     | <b>5.4</b> | <b>12.1</b> | <b>10.3</b> | <b>4.1</b>  | <b>7.7</b>  | <b>7.8</b> | <b>-3.5</b> | <b>1.2</b>  | <b>8.8</b>  | <b>14.1</b> | <b>6.4</b>  |
| <i>BofA ML High Yield Master II</i>          |                    |                | 5.5        | 15.3        | 12.8        | 5.3         | 8.2         | 7.6        | -4.6        | 2.5         | 7.4         | 15.6        | 4.4         |
| <i>eA US High Yield Fixed Inc Gross Rank</i> |                    |                | 27         | 47          | 52          | 77          | 66          | 39         | 68          | 83          | 28          | 73          | 19          |
| Allianz Global Investors                     | 387,668,528        | 5.1            | 5.4        | 12.1        | 10.3        | 4.1         | 7.7         | 7.8        | -3.5        | 1.2         | 8.8         | 14.1        | 6.4         |
| <i>BofA ML High Yield Master II</i>          |                    |                | 5.5        | 15.3        | 12.8        | 5.3         | 8.2         | 7.6        | -4.6        | 2.5         | 7.4         | 15.6        | 4.4         |
| <i>eA US High Yield Fixed Inc Gross Rank</i> |                    |                | 27         | 47          | 52          | 77          | 66          | 39         | 68          | 83          | 28          | 73          | 21          |
| <b>Total Global Fixed Income</b>             | <b>244,749,556</b> | <b>3.2</b>     | <b>1.7</b> | <b>9.4</b>  | <b>8.5</b>  | <b>2.2</b>  | <b>1.9</b>  | <b>3.8</b> | <b>-3.0</b> | <b>0.4</b>  | <b>-3.5</b> | <b>6.7</b>  | <b>5.6</b>  |
| <i>Barclays Global Aggregate</i>             |                    |                | 0.8        | 9.9         | 8.8         | 2.1         | 1.7         | 4.3        | -3.2        | 0.6         | -2.6        | 4.3         | 5.6         |
| <i>eA All Global Fixed Inc Gross Rank</i>    |                    |                | 62         | 44          | 49          | 69          | 80          | 92         | 59          | 77          | 83          | 68          | 40          |
| Lazard                                       | 244,749,556        | 3.2            | 1.7        | 9.4         | 8.5         | 2.2         | 1.9         | --         | -3.0        | 0.4         | -3.5        | 6.7         | 5.6         |
| <i>Barclays Global Aggregate</i>             |                    |                | 0.8        | 9.9         | 8.8         | 2.1         | 1.7         | --         | -3.2        | 0.6         | -2.6        | 4.3         | 5.6         |
| <i>eA All Global Fixed Inc Gross Rank</i>    |                    |                | 61         | 44          | 49          | 69          | 80          | --         | 59          | 77          | 83          | 68          | 40          |
| <b>Total Inflation Hedge</b>                 | <b>398,160,469</b> | <b>5.2</b>     | <b>3.7</b> | <b>5.3</b>  | <b>4.9</b>  | <b>0.1</b>  | <b>--</b>   | <b>--</b>  | <b>-4.9</b> | <b>-0.6</b> | <b>1.3</b>  | <b>--</b>   | <b>--</b>   |
| <i>CPI + 4%</i>                              |                    |                | 1.2        | 5.1         | 5.5         | 5.1         | --          | --         | 4.8         | 4.8         | 5.6         | --          | --          |
| PIMCO All Asset Fund                         | 128,756,259        | 1.7            | 4.1        | 14.4        | 14.6        | 2.8         | --          | --         | -8.0        | 1.7         | --          | --          | --          |
| <i>CPI + 4%</i>                              |                    |                | 1.2        | 5.1         | 5.5         | 5.1         | --          | --         | 4.8         | 4.8         | --          | --          | --          |
| Wellington Real Total Return                 | 188,115,660        | 2.5            | 3.9        | 0.0         | -2.0        | -2.3        | --          | --         | -4.9        | -2.5        | --          | --          | --          |
| <i>CPI + 4%</i>                              |                    |                | 1.2        | 5.1         | 5.5         | 5.1         | --          | --         | 4.8         | 4.8         | --          | --          | --          |
| <b>Total Real Estate</b>                     | <b>789,662,366</b> | <b>10.4</b>    | <b>1.4</b> | <b>4.8</b>  | <b>8.7</b>  | <b>13.4</b> | <b>15.1</b> | <b>5.5</b> | <b>13.5</b> | <b>20.6</b> | <b>10.5</b> | <b>16.7</b> | <b>10.4</b> |
| <i>Real Estate Benchmark</i>                 |                    |                | 0.9        | 8.2         | 13.2        | 12.0        | 12.5        | 7.7        | 8.2         | 18.8        | 7.1         | 13.6        | 13.6        |
| <i>NCREIF-ODCE</i>                           |                    |                | 2.1        | 6.5         | 10.1        | 12.4        | 12.4        | 6.0        | 15.0        | 12.5        | 13.9        | 10.9        | 16.0        |
| <i>NCREIF Property Index</i>                 |                    |                | 1.8        | 6.1         | 9.2         | 11.3        | 11.2        | 7.2        | 13.3        | 11.8        | 11.0        | 10.5        | 14.3        |
| Adelante                                     | 96,424,083         | 1.3            | -0.9       | 6.9         | 13.3        | 14.5        | 16.0        | 5.5        | 5.1         | 33.4        | 3.6         | 17.7        | 9.2         |
| <i>Wilshire REIT</i>                         |                    |                | -1.2       | 9.7         | 17.9        | 14.3        | 15.8        | 5.9        | 4.2         | 31.8        | 1.9         | 17.6        | 9.2         |
| INVESCO International REIT                   | 58,911,920         | 0.8            | 3.6        | 7.8         | 7.8         | 2.5         | 10.6        | --         | -2.9        | 2.8         | 5.4         | 42.3        | -16.5       |
| <i>FTSE EPRA/NAREIT Developed ex-USA</i>     |                    |                | 4.3        | 10.4        | 11.7        | 3.2         | 10.4        | --         | -3.2        | 3.2         | 6.1         | 38.6        | -15.3       |

Individual closed end funds are not shown in performance summary table.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: September 30, 2016

|                                   | Market Value         | % of Portfolio | 3 Mo       | YTD        | 1 Yr        | 3 Yrs      | 5 Yrs       | 10 Yrs     | 2015        | 2014        | 2013        | 2012        | 2011         |
|-----------------------------------|----------------------|----------------|------------|------------|-------------|------------|-------------|------------|-------------|-------------|-------------|-------------|--------------|
| <b>Total Fund</b>                 | <b>7,610,706,502</b> | <b>100.0</b>   | <b>3.6</b> | <b>6.5</b> | <b>9.0</b>  | <b>7.0</b> | <b>10.2</b> | <b>5.9</b> | <b>2.1</b>  | <b>7.7</b>  | <b>15.6</b> | <b>13.6</b> | <b>2.1</b>   |
| <i>Policy Index</i>               |                      |                | 3.4        | 8.3        | 11.2        | 7.6        | 10.8        | --         | 0.6         | 9.0         | 15.6        | 14.6        | 2.8          |
| <i>CPI + 4%</i>                   |                      |                | 1.2        | 5.1        | 5.5         | 5.1        | 5.3         | 5.8        | 4.8         | 4.8         | 5.6         | 5.8         | 7.1          |
| <b>Total Domestic Equity</b>      | <b>1,740,964,976</b> | <b>22.9</b>    | <b>5.4</b> | <b>7.5</b> | <b>12.4</b> | <b>9.7</b> | <b>16.7</b> | <b>7.6</b> | <b>0.6</b>  | <b>11.0</b> | <b>35.7</b> | <b>17.8</b> | <b>0.8</b>   |
| <i>Russell 3000</i>               |                      |                | 4.4        | 8.2        | 15.0        | 10.4       | 16.4        | 7.4        | 0.5         | 12.6        | 33.6        | 16.4        | 1.0          |
| Intech Large Cap Core             | 290,780,759          | 3.8            | 1.2        | 6.1        | 12.0        | 11.6       | 16.4        | --         | 3.3         | 14.2        | 32.2        | 14.8        | 3.3          |
| <i>S&amp;P 500</i>                |                      |                | 3.9        | 7.8        | 15.4        | 11.2       | 16.4        | --         | 1.4         | 13.7        | 32.4        | 16.0        | 2.1          |
| PIMCO Stocks+ Absolute Return     | 333,527,240          | 4.4            | 4.8        | 9.9        | 18.3        | 10.6       | 16.7        | 7.2        | -1.4        | 13.2        | 31.0        | 20.3        | 2.0          |
| <i>S&amp;P 500</i>                |                      |                | 3.9        | 7.8        | 15.4        | 11.2       | 16.4        | 7.2        | 1.4         | 13.7        | 32.4        | 16.0        | 2.1          |
| Jackson Square Partners           | 326,298,051          | 4.3            | 7.2        | -0.7       | 8.0         | 9.7        | 15.9        | 8.6        | 5.6         | 13.4        | 35.0        | 16.4        | 8.4          |
| <i>Russell 1000 Growth</i>        |                      |                | 4.6        | 6.0        | 13.8        | 11.8       | 16.6        | 8.8        | 5.7         | 13.0        | 33.5        | 15.3        | 2.6          |
| Robeco Boston Partners            | 318,268,874          | 4.2            | 4.5        | 6.0        | 11.0        | 7.9        | 16.5        | 7.4        | -4.2        | 11.6        | 37.0        | 21.2        | 0.6          |
| <i>Russell 1000 Value</i>         |                      |                | 3.5        | 10.0       | 16.2        | 9.7        | 16.2        | 5.9        | -3.8        | 13.5        | 32.5        | 17.5        | 0.4          |
| Emerald Advisers                  | 242,298,604          | 3.2            | 10.0       | 5.4        | 4.2         | 7.2        | 18.6        | 9.0        | 3.5         | 6.6         | 49.4        | 17.8        | -1.2         |
| <i>Russell 2000 Growth</i>        |                      |                | 9.2        | 7.5        | 12.1        | 6.6        | 16.1        | 8.3        | -1.4        | 5.6         | 43.3        | 14.6        | -2.9         |
| Ceredex                           | 229,791,449          | 3.0            | 5.7        | 21.3       | 20.6        | 9.1        | --          | --         | -5.0        | 2.7         | 35.8        | 18.6        | --           |
| <i>Russell 2000 Value</i>         |                      |                | 8.9        | 15.5       | 18.8        | 6.8        | --          | --         | -7.5        | 4.2         | 34.5        | 18.1        | --           |
| <b>Total International Equity</b> | <b>837,210,111</b>   | <b>11.0</b>    | <b>4.8</b> | <b>4.5</b> | <b>9.0</b>  | <b>3.1</b> | <b>8.1</b>  | <b>1.5</b> | <b>-1.6</b> | <b>0.0</b>  | <b>17.4</b> | <b>17.9</b> | <b>-12.0</b> |
| <i>MSCI ACWI ex USA Gross</i>     |                      |                | 7.0        | 6.3        | 9.8         | 0.6        | 6.5         | 2.6        | -5.3        | -3.4        | 15.8        | 17.4        | -13.3        |
| <i>MSCI EAFE Gross</i>            |                      |                | 6.5        | 2.2        | 7.1         | 0.9        | 7.9         | 2.3        | -0.4        | -4.5        | 23.3        | 17.9        | -11.7        |
| Pyrford                           | 416,695,850          | 5.5            | 3.4        | 6.4        | 10.3        | --         | --          | --         | -3.3        | --          | --          | --          | --           |
| <i>MSCI ACWI ex USA Value</i>     |                      |                | 7.8        | 5.5        | 7.0         | --         | --          | --         | -10.1       | --          | --          | --          | --           |
| William Blair                     | 419,979,055          | 5.5            | 6.3        | 2.3        | 7.3         | 2.6        | 9.3         | --         | 0.0         | -1.7        | 20.4        | 23.7        | -13.7        |
| <i>MSCI ACWI ex USA Growth</i>    |                      |                | 6.1        | 6.2        | 11.5        | 2.2        | 7.4         | --         | -1.3        | -2.6        | 15.5        | 16.7        | -14.2        |
| International Equity Transition   | 535,207              | 0.0            |            |            |             |            |             |            |             |             |             |             |              |
| <b>Total Global Equity</b>        | <b>966,954,063</b>   | <b>12.7</b>    | <b>6.9</b> | <b>8.4</b> | <b>14.9</b> | <b>7.0</b> | <b>10.6</b> | <b>--</b>  | <b>1.6</b>  | <b>4.5</b>  | <b>22.9</b> | <b>10.6</b> | <b>-6.1</b>  |
| <i>MSCI ACWI</i>                  |                      |                | 5.3        | 6.6        | 12.0        | 5.2        | 10.6        | --         | -2.4        | 4.2         | 22.8        | 16.1        | -7.3         |
| Artisan Partners                  | 340,366,101          | 4.5            | 10.8       | 11.1       | 19.6        | 9.6        | --          | --         | 8.4         | 3.1         | 25.2        | --          | --           |
| <i>MSCI ACWI</i>                  |                      |                | 5.3        | 6.6        | 12.0        | 5.2        | --          | --         | -2.4        | 4.2         | 22.8        | --          | --           |
| First Eagle                       | 324,823,862          | 4.3            | 4.2        | 10.9       | 16.0        | 6.4        | 9.8         | --         | -0.6        | 3.7         | 17.1        | 13.1        | --           |
| <i>MSCI ACWI</i>                  |                      |                | 5.3        | 6.6        | 12.0        | 5.2        | 10.6        | --         | -2.4        | 4.2         | 22.8        | 16.1        | --           |
| Intech Global Low Vol             | 23,958,644           | 0.3            | -0.3       | 9.2        | 14.0        | 9.5        | --          | --         | 3.9         | 10.8        | 23.8        | --          | --           |
| <i>MSCI ACWI</i>                  |                      |                | 5.3        | 6.6        | 12.0        | 5.2        | --          | --         | -2.4        | 4.2         | 22.8        | --          | --           |
| JP Morgan Global Opportunities    | 277,805,457          | 3.7            | 6.0        | 2.5        | 8.4         | 4.5        | 11.3        | --         | -3.3        | 6.2         | 26.4        | 18.7        | -9.4         |
| <i>MSCI ACWI</i>                  |                      |                | 5.3        | 6.6        | 12.0        | 5.2        | 10.6        | --         | -2.4        | 4.2         | 22.8        | 16.1        | -7.3         |

Individual closed end funds are not shown in performance summary.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: September 30, 2016

|                                     | Market Value         | % of Portfolio | 3 Mo       | YTD         | 1 Yr       | 3 Yrs       | 5 Yrs       | 10 Yrs     | 2015        | 2014        | 2013        | 2012        | 2011       |
|-------------------------------------|----------------------|----------------|------------|-------------|------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|------------|
| <b>Total Domestic Fixed Income</b>  | <b>1,484,588,324</b> | <b>19.5</b>    | <b>1.2</b> | <b>6.0</b>  | <b>6.0</b> | <b>5.0</b>  | <b>5.3</b>  | <b>5.6</b> | <b>1.4</b>  | <b>6.7</b>  | <b>0.9</b>  | <b>9.2</b>  | <b>6.8</b> |
| <i>Barclays U.S. Universal</i>      |                      |                | 1.0        | 6.7         | 6.1        | 4.3         | 3.6         | 5.0        | 0.4         | 5.6         | -1.3        | 5.5         | 7.4        |
| <i>Barclays Aggregate</i>           |                      |                | 0.5        | 5.8         | 5.2        | 4.0         | 3.1         | 4.8        | 0.6         | 6.0         | -2.0        | 4.2         | 7.8        |
| AFL-CIO                             | 245,403,667          | 3.2            | 0.5        | 5.1         | 4.4        | 4.1         | 3.1         | 4.7        | 1.1         | 6.1         | -2.4        | 4.3         | 7.9        |
| <i>Barclays Aggregate</i>           |                      |                | 0.5        | 5.8         | 5.2        | 4.0         | 3.1         | 4.8        | 0.6         | 6.0         | -2.0        | 4.2         | 7.8        |
| Goldman Sachs Core Plus             | 328,836,838          | 4.3            | 0.9        | 6.0         | 5.5        | 4.3         | 4.1         | --         | 0.6         | 5.8         | -0.6        | 7.7         | 7.3        |
| <i>Barclays Aggregate</i>           |                      |                | 0.5        | 5.8         | 5.2        | 4.0         | 3.1         | --         | 0.6         | 6.0         | -2.0        | 4.2         | 7.8        |
| GSAM Workout Portfolio              | 4,078                | 0.0            |            |             |            |             |             |            |             |             |             |             |            |
| Lord Abbett                         | 333,047,536          | 4.4            | 1.3        | 7.3         | 6.7        | 4.7         | 4.5         | --         | -0.2        | 6.5         | -0.8        | 8.4         | 8.0        |
| <i>Barclays Aggregate</i>           |                      |                | 0.5        | 5.8         | 5.2        | 4.0         | 3.1         | --         | 0.6         | 6.0         | -2.0        | 4.2         | 7.8        |
| PIMCO Fixed Income                  | 442,289,365          | 5.8            | 0.8        | 5.8         | 5.7        | 3.9         | 3.9         | 5.6        | 0.3         | 6.0         | -1.9        | 8.2         | 4.7        |
| <i>Barclays Aggregate</i>           |                      |                | 0.5        | 5.8         | 5.2        | 4.0         | 3.1         | 4.8        | 0.6         | 6.0         | -2.0        | 4.2         | 7.8        |
| <b>Total High Yield</b>             | <b>387,668,528</b>   | <b>5.1</b>     | <b>5.3</b> | <b>11.7</b> | <b>9.9</b> | <b>3.7</b>  | <b>7.3</b>  | <b>7.6</b> | <b>-3.9</b> | <b>0.8</b>  | <b>8.4</b>  | <b>13.7</b> | <b>6.4</b> |
| <i>BofA ML High Yield Master II</i> |                      |                | 5.5        | 15.3        | 12.8       | 5.3         | 8.2         | 7.6        | -4.6        | 2.5         | 7.4         | 15.6        | 4.4        |
| Allianz Global Investors            | 387,668,528          | 5.1            | 5.3        | 11.7        | 9.9        | 3.7         | 7.3         | 7.3        | -3.9        | 0.8         | 8.4         | 13.6        | 6.0        |
| <i>BofA ML High Yield Master II</i> |                      |                | 5.5        | 15.3        | 12.8       | 5.3         | 8.2         | 7.6        | -4.6        | 2.5         | 7.4         | 15.6        | 4.4        |
| <b>Total Global Fixed Income</b>    | <b>244,749,556</b>   | <b>3.2</b>     | <b>1.6</b> | <b>9.2</b>  | <b>8.2</b> | <b>1.9</b>  | <b>1.6</b>  | <b>3.5</b> | <b>-3.3</b> | <b>0.1</b>  | <b>-3.8</b> | <b>6.4</b>  | <b>5.3</b> |
| <i>Barclays Global Aggregate</i>    |                      |                | 0.8        | 9.9         | 8.8        | 2.1         | 1.7         | 4.3        | -3.2        | 0.6         | -2.6        | 4.3         | 5.6        |
| Lazard                              | 244,749,556          | 3.2            | 1.6        | 9.2         | 8.2        | 1.9         | 1.6         | --         | -3.3        | 0.1         | -3.8        | 6.4         | 5.3        |
| <i>Barclays Global Aggregate</i>    |                      |                | 0.8        | 9.9         | 8.8        | 2.1         | 1.7         | --         | -3.2        | 0.6         | -2.6        | 4.3         | 5.6        |
| <b>Total Inflation Hedge</b>        | <b>398,160,469</b>   | <b>5.2</b>     | <b>3.5</b> | <b>4.5</b>  | <b>4.0</b> | <b>-0.8</b> | <b>--</b>   | <b>--</b>  | <b>-5.8</b> | <b>-1.5</b> | <b>0.3</b>  | <b>--</b>   | <b>--</b>  |
| CPI + 4%                            |                      |                | 1.2        | 5.1         | 5.5        | 5.1         | --          | --         | 4.8         | 4.8         | 5.6         | --          | --         |
| PIMCO All Asset Fund                | 128,756,259          | 1.7            | 3.9        | 13.7        | 13.6       | 1.9         | --          | --         | -8.8        | 0.8         | --          | --          | --         |
| CPI + 4%                            |                      |                | 1.2        | 5.1         | 5.5        | 5.1         | --          | --         | 4.8         | 4.8         | --          | --          | --         |
| Wellington Real Total Return        | 188,115,660          | 2.5            | 3.8        | -0.4        | -2.5       | -2.8        | --          | --         | -5.4        | -3.1        | --          | --          | --         |
| CPI + 4%                            |                      |                | 1.2        | 5.1         | 5.5        | 5.1         | --          | --         | 4.8         | 4.8         | --          | --          | --         |
| <b>Total Real Estate</b>            | <b>789,662,366</b>   | <b>10.4</b>    | <b>1.2</b> | <b>4.1</b>  | <b>7.8</b> | <b>12.1</b> | <b>13.8</b> | <b>4.4</b> | <b>12.4</b> | <b>19.1</b> | <b>8.9</b>  | <b>15.7</b> | <b>9.4</b> |
| Real Estate Benchmark               |                      |                | 0.9        | 8.2         | 13.2       | 12.0        | 12.5        | 7.7        | 8.2         | 18.8        | 7.1         | 13.6        | 13.6       |
| NCREIF-ODCE                         |                      |                | 2.1        | 6.5         | 10.1       | 12.4        | 12.4        | 6.0        | 15.0        | 12.5        | 13.9        | 10.9        | 16.0       |
| NCREIF Property Index               |                      |                | 1.8        | 6.1         | 9.2        | 11.3        | 11.2        | 7.2        | 13.3        | 11.8        | 11.0        | 10.5        | 14.3       |
| Adelante                            | 96,424,083           | 1.3            | -1.0       | 6.6         | 12.8       | 14.0        | 15.4        | 5.0        | 4.6         | 32.7        | 3.0         | 17.2        | 8.6        |
| <i>Wilshire REIT</i>                |                      |                | -1.2       | 9.7         | 17.9       | 14.3        | 15.8        | 5.9        | 4.2         | 31.8        | 1.9         | 17.6        | 9.2        |
| INVESCO International REIT          | 58,911,920           | 0.8            | 3.4        | 7.3         | 7.1        | 1.8         | 9.9         | --         | -3.5        | 2.2         | 4.7         | 41.3        | -17.0      |
| FTSE EPRA/NAREIT Developed ex-USA   |                      |                | 4.3        | 10.4        | 11.7       | 3.2         | 10.4        | --         | -3.2        | 3.2         | 6.1         | 38.6        | -15.3      |

Individual closed end funds are not shown in performance summary.

Total Fund  
Closed End Funds - Investment Summary

Period Ending: September 30, 2016

| Verus Internal Analysis       |                                  |   |                  |          |                |                             |                            |                                  |                      |                                     |  |                  |
|-------------------------------|----------------------------------|---|------------------|----------|----------------|-----------------------------|----------------------------|----------------------------------|----------------------|-------------------------------------|--|------------------|
| Inception Date                | Manager Name/Fund Name           | Estimated Market Value as of 9/30/16 <sup>3</sup> | Total Commitment | % Called | Capital Called | Current Qtr. Capital Called | Current Qtr. Distributions | Total Distributions <sup>4</sup> | Remaining Commitment | Distrib./Paid-In (DPI) <sup>1</sup> | Tot. Value/Paid-In (TVPI) <sup>2</sup> | Latest Valuation |
| <b>Fixed Income</b>           |                                  |   |                  |          |                |                             |                            |                                  |                      |                                     |  |                  |
| 07/01/2006                    | Torchlight II                    | \$45,721,637                                      | \$128,000,000    | 100%     | \$128,000,000  | \$0                         | \$3,875,799                | \$158,211,379                    | \$0                  | 1.24                                | 1.59                                   | 09/30/2016       |
| 12/12/2008                    | Torchlight III                   | \$10,575,367                                      | \$75,000,000     | 100%     | \$75,000,000   | \$0                         | \$587,812                  | \$99,100,375                     | \$0                  | 1.32                                | 1.46                                   | 09/30/2016       |
| 08/01/2012                    | Torchlight IV                    | \$62,592,665                                      | \$60,000,000     | 100%     | \$60,000,000   | \$0                         | \$905,184                  | \$36,123,640                     | \$0                  | 0.60                                | 1.65                                   | 09/30/2016       |
| 03/12/2015                    | Torchlight V                     | \$16,117,171                                      | \$75,000,000     | 20%      | \$14,999,912   | \$3,749,912                 | \$0                        | \$0                              | \$60,000,088         | 0.00                                | 1.07                                   | 09/30/2016       |
| <b>Total Fixed Income</b>     |                                  | <b>\$135,006,840</b>                              |                  |          |                |                             |                            |                                  |                      |                                     |  |                  |
| % of Portfolio (Market Value) |                                  | 1.8%  |                  |          |                |                             |                            |                                  |                      |                                     |  |                  |
| <b>Inflation Hedge</b>        |                                  |   |                  |          |                |                             |                            |                                  |                      |                                     |  |                  |
| 11/27/2013                    | Aether Real Assets III           | \$14,906,385                                      | \$25,000,000     | 55%      | \$13,813,212   | \$1,883,865                 | \$125,387                  | \$250,999                        | \$11,427,975         | 0.02                                | 1.10                                   | 06/30/2016       |
| 11/27/2013                    | Aether Real Assets III Surplus   | \$35,677,651                                      | \$50,000,000     | 66%      | \$33,219,816   | \$4,663,272                 | \$420                      | \$225,604                        | \$16,957,296         | 0.01                                | 1.08                                   | 06/30/2016       |
| 03/16/2016                    | Aether Real Assets IV            | \$4,343,085                                       | \$50,000,000     | 10%      | \$4,756,067    | \$4,256,067                 | \$0                        | \$0                              | \$45,243,933         | 0.00                                | 0.91                                   | 06/30/2016       |
| 06/28/2013                    | Commonfund                       | \$26,361,429                                      | \$50,000,000     | 57%      | \$28,375,000   | \$1,250,000                 | \$0                        | \$0                              | \$21,625,000         | 0.00                                | 0.93                                   | 06/30/2016       |
| <b>Total Inflation Hedge</b>  |                                  | <b>\$81,288,550</b>                               |                  |          |                |                             |                            |                                  |                      |                                     |  |                  |
| % of Portfolio (Market Value) |                                  | 1.1%  |                  |          |                |                             |                            |                                  |                      |                                     |  |                  |
| <b>Opportunistic</b>          |                                  |   |                  |          |                |                             |                            |                                  |                      |                                     |  |                  |
| 02/18/2010                    | Oaktree PIF 2009 <sup>3</sup>    | \$17,578,149                                      | \$40,000,000     | 87%      | \$34,800,000   | \$0                         | \$0                        | \$28,118,579                     | \$6,308,960          | 0.81                                | 1.31                                   | 09/30/2016       |
| 09/24/2015                    | Angelo Gordon Energy Credit Opp. | \$16,020,066                                      | \$75,000,000     | 20%      | \$15,000,000   | \$0                         | \$0                        | \$0                              | \$60,000,000         | 0.00                                | 1.07                                   | 06/30/2016       |
| 12/08/2015                    | Wastewater Opportunity Fund      | \$2,988,326                                       | \$25,000,000     | 15%      | \$3,824,981    | \$1,804,183                 | \$0                        | \$0                              | \$21,299,790         | 0.00                                | 0.78                                   | 09/30/2016       |
| <b>Total Opportunistic</b>    |                                  | <b>\$36,586,541</b>                               |                  |          |                |                             |                            |                                  |                      |                                     |  |                  |
| % of Portfolio (Market Value) |                                  | 0.5%  |                  |          |                |                             |                            |                                  |                      |                                     |  |                  |

<sup>1</sup>(DPI) is equal to (capital returned / capital called)

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

<sup>3</sup>Latest valuation + capital calls - distributions

<sup>4</sup>Total distributions may contain callable capital



Total Fund  
Closed End Funds - Investment Summary

Period Ending: September 30, 2016

| Verus Internal Analysis              |                                |   |                        |                |                      |                             |                            |                                  |                      |                                     |  |                  |
|--------------------------------------|--------------------------------|---|------------------------|----------------|----------------------|-----------------------------|----------------------------|----------------------------------|----------------------|-------------------------------------|--|------------------|
| Inception Date                       | Manager Name/Fund Name         | Estimated Market Value as of 9/30/16 <sup>3</sup> | Total Commitment       | Total % Called | Capital Called       | Current Qtr. Capital Called | Current Qtr. Distributions | Total Distributions <sup>7</sup> | Remaining Commitment | Distrib./Paid-In (DPI) <sup>1</sup> | Tot. Value/Paid-In (TVPI) <sup>2</sup> | Latest Valuation |
| <b>Real Estate</b>                   |                                |   |                        |                |                      |                             |                            |                                  |                      |                                     |  |                  |
| 01/23/2012                           | Angelo Gordon Realty Fund VIII | \$53,098,179                                      | \$80,000,000           | 94%            | \$75,401,855         | \$0                         | \$0                        | \$61,552,397                     | \$12,334,302         | 0.82                                | 1.52                                   | 06/30/2016       |
| 12/08/2014                           | Angelo Gordon Realty Fund IX   | \$25,404,743                                      | \$65,000,000           | 35%            | \$22,750,000         | \$11,212,500                | \$0                        | \$0                              | \$42,250,000         | 0.00                                | 1.12                                   | 06/30/2016       |
| 06/23/2005                           | DLJ RECP III                   | \$33,109,491                                      | \$75,000,000           | 95%            | \$70,968,662         | \$0                         | \$9,456,191                | \$67,876,642                     | \$4,031,338          | 0.96                                | 1.42                                   | 06/30/2016       |
| 02/11/2008                           | DLJ RECP IV                    | \$81,371,515                                      | \$100,000,000          | 91%            | \$90,943,569         | \$3,089,475                 | \$3,910,190                | \$56,595,635                     | \$9,056,431          | 0.62                                | 1.52                                   | 06/30/2016       |
| 07/01/2014                           | DLJ RECP V                     | \$40,493,957                                      | \$75,000,000           | 67%            | \$50,552,862         | \$0                         | \$0                        | \$21,472,837                     | \$41,185,826         | 0.42                                | 1.23                                   | 06/30/2016       |
| 06/17/1998                           | Hearthstone II <sup>4</sup>    | \$9,137   | \$25,000,000           | 80%            | \$19,925,048         | \$0                         | \$0                        | \$19,952,734                     | \$2,527,686          | 1.00                                | 1.00                                   | 06/30/2016       |
| 02/01/2005                           | Invesco Real Estate I          | \$122,614   | \$50,000,000           | 92%            | \$46,241,947         | \$0                         | \$1,893,086                | \$50,000,907                     | \$3,758,053          | 1.08                                | 1.08                                   | 09/30/2016       |
| 11/26/2007                           | Invesco Real Estate II         | \$8,578,900                                       | \$85,000,000           | 92%            | \$78,202,813         | \$0                         | \$5,100,000                | \$92,422,650                     | \$6,797,187          | 1.18                                | 1.29                                   | 09/30/2016       |
| 06/30/2013                           | Invesco Real Estate III        | \$20,913,763                                      | \$35,000,000           | 88%            | \$30,685,961         | \$0                         | \$0                        | \$22,527,850                     | \$4,314,039          | 0.73                                | 1.42                                   | 09/30/2016       |
| 06/30/2014                           | Invesco Real Estate IV         | \$11,618,071                                      | \$35,000,000           | 29%            | \$10,088,760         | \$1,601,034                 | \$0                        | \$13,317,018                     | \$24,911,240         | 1.32                                | 2.47                                   | 09/30/2016       |
| 07/16/2013                           | LaSalle Income & Growth VI     | \$70,417,238                                      | \$75,000,000           | 95%            | \$71,428,571         | \$0                         | \$10,668,957               | \$29,149,110                     | \$3,571,429          | 0.41                                | 1.39                                   | 09/30/2016       |
| 03/30/2007                           | Long Wharf Fund III            | \$8,977,892                                       | \$75,000,000           | 89%            | \$66,940,230         | \$0                         | \$2,997,640                | \$80,722,264                     | \$8,059,770          | 1.21                                | 1.34                                   | 09/30/2016       |
| 07/03/2013                           | Long Wharf Fund IV             | \$24,652,427                                      | \$25,000,000           | 100%           | \$25,000,000         | \$0                         | \$591,833                  | \$7,062,537                      | \$0                  | 0.28                                | 1.27                                   | 09/30/2016       |
| 09/30/2016                           | Long Wharf Fund V              | \$11,569,441                                      | \$50,000,000           | 23%            | \$11,653,147         | \$11,653,147                | \$0                        | \$0                              | \$38,346,853         | 0.00                                | 0.99                                   | 09/30/2016       |
| 12/31/2011                           | Oaktree REOF V                 | \$23,265,021                                      | \$50,000,000           | 100%           | \$50,000,000         | \$0                         | \$3,000,000                | \$57,500,000                     | \$25,750,000         | 1.15                                | 1.62                                   | 09/30/2016       |
| 09/30/2013                           | Oaktree REOF VI <sup>5</sup>   | \$76,491,604                                      | \$80,000,000           | 100%           | \$80,000,000         | \$0                         | \$9,200,000                | \$33,200,000                     | \$0                  | 0.42                                | 1.37                                   | 09/30/2016       |
| 04/01/2015                           | Oaktree REOF VII               | \$0   | \$65,000,000           | 0%             | \$0                  | \$0                         | \$0                        | \$0                              | \$65,000,000         | -                                   | -                                      | -                |
| 11/10/2013                           | Paulson Real Estate Fund II    | \$21,554,656                                      | \$20,000,000           | 77%            | \$15,307,123         | \$0                         | \$0                        | \$0                              | \$4,692,877          | 0.00                                | 1.41                                   | 06/30/2016       |
| 01/25/2012                           | Siguler Guff DREOF             | \$58,942,245                                      | \$75,000,000           | 93%            | \$69,375,000         | \$750,000                   | \$4,727,416                | \$45,407,153                     | \$5,625,000          | 0.65                                | 1.50                                   | 06/30/2016       |
| 08/31/2013                           | Siguler Guff DREOF II          | \$51,706,069                                      | \$70,000,000           | 72%            | \$50,400,000         | \$3,850,000                 | \$2,098,066                | \$2,779,189                      | \$19,600,000         | 0.06                                | 1.08                                   | 06/30/2016       |
| 01/27/2016                           | Siguler Guff DREOF II Co-Inv   | \$12,029,401                                      | \$25,000,000           | 51%            | \$12,625,362         | \$2,625,000                 | \$0                        | \$0                              | \$12,374,638         | 0.00                                | 0.95                                   | 06/30/2016       |
| <b>Total Closed End Real Estate</b>  |                                | <b>\$634,326,363</b>                              | <b>\$1,235,000,000</b> | <b>77%</b>     | <b>\$948,490,911</b> | <b>\$34,781,156</b>         | <b>\$53,643,378</b>        | <b>\$661,538,924</b>             | <b>\$334,186,668</b> | <b>0.35</b>                         | <b>1.02</b>                            |                  |
| <b>% of Portfolio (Market Value)</b> |                                | <b>8.3%</b>                                       |                        |                |                      |                             |                            |                                  |                      |                                     |  |                  |

<sup>1</sup>(DPI) is equal to (capital returned / capital called)

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

<sup>3</sup>Latest valuation + capital calls - distributions

<sup>4</sup>No further capital to be called

<sup>5</sup>Actual capital called is \$85,600,000 which includes recallable distributions

<sup>6</sup>Fund paid out it's final distribution during the quarter

<sup>7</sup>Total distributions may include recallable distributions

Total Fund  
Closed End Funds - Investment Summary

Period Ending: September 30, 2016

| Verus Internal Analysis                         |                                   |   |                        |                |                      |                             |                            |                      |                      |                                     |  |                  |
|---|-----------------------------------|---|------------------------|----------------|----------------------|-----------------------------|----------------------------|----------------------|----------------------|-------------------------------------|--|------------------|
| Inception Date                                  | Manager Name/Fund Name            | Estimated Market Value as of 9/30/16 <sup>3</sup> | Total Commitment       | Total % Called | Capital Called       | Current Qtr. Capital Called | Current Qtr. Distributions | Total Distributions  | Remaining Commitment | Distrib./Paid-In (DPI) <sup>1</sup> | Tot. Value/Paid-In (TVPI) <sup>2</sup> | Latest Valuation |
| <b>Private Equity &amp; Venture Capital</b>     |                                   |   |                        |                |                      |                             |                            |                      |                      |                                     |  |                  |
| 03/18/1996                                      | Adams Street Partners             | \$121,106,446                                     | \$210,000,000          | 72%            | \$151,366,125        | \$4,181,500                 | \$5,709,846                | \$84,104,449         | \$58,633,875         | 0.56                                | 1.36                                   | 06/30/2016       |
| 01/16/2009                                      | Adams Street Partners II          | \$15,438,061                                      | \$30,000,000           | 95%            | \$28,365,000         | \$0                         | \$0                        | \$29,629,996         | \$1,635,000          | 1.04                                | 1.59                                   | 06/30/2016       |
| 09/21/2012                                      | Adams Street Partners - Fund 5    | \$16,706,760                                      | \$40,000,000           | 61%            | \$24,508,000         | \$0                         | \$761,410                  | \$7,474,771          | \$15,492,000         | 0.30                                | 0.99                                   | 06/30/2016       |
| 01/18/1996                                      | Adams Street Partners - BPF       | \$4,965,435                                       | \$59,565,614           | 97%            | \$57,517,409         | \$0                         | \$204,025                  | \$98,918,838         | \$2,048,205          | 1.72                                | 1.81                                   | 06/30/2016       |
| 06/14/2004                                      | Bay Area Equity Fund              | \$4,119,335                                       | \$10,000,000           | 100%           | \$10,000,000         | \$0                         | \$0                        | \$35,310,439         | \$0                  | 3.53                                | 3.94                                   | 06/30/2016       |
| 12/07/2009                                      | Bay Area Equity Fund II           | \$9,461,683                                       | \$10,000,000           | 100%           | \$10,000,000         | \$63,000                    | \$0                        | \$1,015,352          | \$0                  | 0.10                                | 1.05                                   | 06/30/2016       |
| 11/26/2003                                      | EIF US Power Fund I               | \$804,386   | \$30,000,000           | 100%           | \$30,000,000         | \$0                         | \$0                        | \$64,168,646         | \$0                  | 2.14                                | 2.17                                   | 06/30/2016       |
| 08/16/2005                                      | EIF US Power Fund II              | \$42,779,248                                      | \$50,000,000           | 100%           | \$50,000,000         | \$0                         | \$0                        | \$43,145,140         | \$0                  | 0.86                                | 1.72                                   | 06/30/2016       |
| 05/30/2007                                      | EIF US Power Fund III             | \$59,896,483                                      | \$65,000,000           | 93%            | \$60,390,715         | \$0                         | \$1,197,098                | \$29,138,303         | \$5,196,860          | 0.48                                | 1.47                                   | 06/30/2016       |
| 11/28/2011                                      | EIF US Power Fund IV              | \$41,511,680                                      | \$50,000,000           | 94%            | \$46,882,483         | \$0                         | \$296,279                  | \$17,192,209         | \$15,196,801         | 0.37                                | 1.25                                   | 06/30/2016       |
| 05/24/2011                                      | Pathway 6                         | \$29,958,677                                      | \$40,000,000           | 72%            | \$28,717,662         | \$1,005,498                 | \$452,964                  | \$3,949,277          | \$11,282,338         | 0.14                                | 1.18                                   | 06/30/2016       |
| 02/07/2013                                      | Pathway 7                         | \$32,520,379                                      | \$70,000,000           | 50%            | \$34,732,769         | \$4,058,457                 | \$483,771                  | \$2,241,392          | \$35,267,231         | 0.06                                | 1.00                                   | 06/30/2016       |
| 11/23/2015                                      | Pathway 8                         | \$9,386,049                                       | \$50,000,000           | 19%            | \$9,595,729          | \$3,627,846                 | \$53,779                   | \$53,779             | \$40,404,271         | 0.01                                | 0.98                                   | 06/30/2016       |
| 11/09/1998                                      | Pathway                           | \$37,108,858                                      | \$125,000,000          | 97%            | \$121,646,074        | \$174,240                   | \$3,424,435                | \$140,818,424        | \$3,353,926          | 1.16                                | 1.46                                   | 06/30/2016       |
| 12/26/2008                                      | Pathway 2008                      | \$23,426,849                                      | \$30,000,000           | 82%            | \$24,649,705         | \$0                         | \$944,198                  | \$9,660,689          | \$5,350,295          | 0.39                                | 1.34                                   | 06/30/2016       |
| 01/31/2008                                      | Carpenter Bancfund                | \$28,175,398                                      | \$30,000,000           | 97%            | \$29,020,926         | \$0                         | \$0                        | \$17,137,847         | \$979,074            | 0.59                                | 1.56                                   | 06/30/2016       |
| 02/15/2004                                      | Nogales                           | \$78,436  | \$15,000,000           | 99%            | \$14,805,103         | \$0                         | \$235,027                  | \$12,314,799         | \$111,251            | 0.83                                | 0.84                                   | 06/30/2016       |
| 11/30/2007                                      | Paladin III                       | \$25,348,180                                      | \$25,000,000           | 98%            | \$24,384,152         | \$0                         | \$0                        | \$14,504,615         | \$1,059,071          | 0.59                                | 1.63                                   | 06/30/2016       |
| 06/11/2014                                      | Ocean Avenue Fund II              | \$17,465,829                                      | \$30,000,000           | 60%            | \$18,000,000         | \$0                         | \$0                        | \$589,938            | \$12,000,000         | 0.03                                | 1.00                                   | 09/30/2016       |
| 04/15/2016                                      | Ocean Avenue Fund III             | \$4,718,177                                       | \$50,000,000           | 10%            | \$5,000,000          | \$0                         | \$0                        | \$0                  | \$45,000,000         | 0.00                                | 0.94                                   | 09/30/2016       |
| 06/03/2014                                      | Siguler Guff CCCERA Opportunities | \$70,116,503                                      | \$200,000,000          | 32%            | \$64,392,500         | \$3,000,000                 | \$0                        | \$4,589,491          | \$135,607,500        | 0.07                                | 1.16                                   | 06/30/2016       |
| <b>Total Private Equity and Venture Capital</b> |                                   | <b>\$595,092,854</b>                              | <b>\$1,219,565,614</b> | <b>69%</b>     | <b>\$843,974,352</b> | <b>\$16,110,541</b>         | <b>\$13,762,830</b>        | <b>\$615,958,393</b> | <b>\$388,617,698</b> | <b>0.73</b>                         | <b>1.43</b>                            |                  |
| % of Portfolio (Market Value)                   |                                   | 7.8%  |                        |                |                      |                             |                            |                      |                      |                                     |  |                  |

<sup>1</sup>(DPI) is equal to (capital returned / capital called)

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

<sup>3</sup>Latest valuation + capital calls - distributions

Total Fund  
Closed End Funds - IRR Summary

Period Ending: September 30, 2016

| Fixed Income                                | Inception  | Fund Level (G) | CCCERA (G) | Fund Level (N) | CCCERA (N) | IRR Date   |
|---|------------|----------------|------------|----------------|------------|------------|
| Torchlight II                               | 07/01/2006 | -0.1%          | 0.2%       | -1.4%          | -1.2%      | 09/30/2016 |
| Torchlight III                              | 12/12/2008 | 18.0%          | 18.1%      | 13.7%          | 13.8%      | 09/30/2016 |
| Torchlight IV                               | 08/01/2012 | 11.2%          | 12.1%      | 9.0%           | 10.3%      | 09/30/2016 |
| Torchlight V                                | 03/12/2015 | 24.7%          | 24.1%      | 9.0%           | 9.6%       | 09/30/2016 |
| Inflation Hedge                             | Inception  | Fund Level (G) | CCCERA (G) | Fund Level (N) | CCCERA (N) | IRR Date   |
| Aether Real Assets III <sup>4</sup>         | 11/27/2013 | 15.0%          | 15.0%      | 8.3%           | 8.3%       | 06/30/2016 |
| Aether Real Assets III Surplus <sup>4</sup> | 11/27/2013 | 12.0%          | 12.0%      | 8.8%           | 8.8%       | 06/30/2016 |
| Aether Real Assets IV <sup>1</sup>          | 01/01/2016 | -              | -          | -              | -          | -          |
| CommonFund <sup>4</sup>                     | 06/28/2013 | -2.1%          | -          | -5.1%          | -5.2%      | 06/30/2016 |
| Wastewater Opportunity Fund <sup>1</sup>    | 12/08/2015 | -7.7%          | -8.2%      | -63.5%         | -65.3%     | 09/30/2016 |
| Opportunistic                               | Inception  | Fund Level (G) | CCCERA (G) | Fund Level (N) | CCCERA (N) | IRR Date   |
| Oaktree PIF                                 | 02/18/2010 | 7.0%           | -          | 6.8%           | -          | 09/30/2016 |
| Angelo Gordon Energy Cred Opp. <sup>1</sup> | 09/24/2015 | -              | -          | -              | -          | -          |
| Real Estate                                 | Inception  | Fund Level (G) | CCCERA (G) | Fund Level (N) | CCCERA (N) | IRR Date   |
| Angelo Gordon VIII                          | 01/23/2012 | 21.9%          | 23.0%      | 17.5%          | 18.8%      | 06/30/2016 |
| Angelo Gordon IX <sup>1</sup>               | 12/08/2014 | -              | -          | -              | -          | -          |
| DLJ RECP III                                | 06/23/2005 | 2.0%           | -          | -              | -          | 06/30/2016 |
| DLJ RECP IV                                 | 02/11/2008 | 6.0%           | -          | -              | 3.0%       | 06/30/2016 |
| DLJ RECP V <sup>1</sup>                     | 07/01/2014 | -              | -          | -              | -          | -          |
| Hearthstone II                              | 06/17/1998 | -              | 30.1%      | -              | 30.1%      | 06/30/2016 |
| Invesco Fund I                              | 02/01/2005 | 2.6%           | 2.6%       | 1.6%           | 1.6%       | 06/30/2016 |
| Invesco Fund II                             | 11/26/2007 | 8.4%           | 7.5%       | 6.9%           | 6.7%       | 06/30/2016 |
| Invesco Fund III                            | 06/30/2013 | 21.8%          | 23.2%      | 20.4%          | 17.0%      | 06/30/2016 |
| Invesco Fund IV                             | 06/30/2014 | 32.4%          | 32.4%      | 22.8%          | 22.2%      | 06/30/2016 |
| LaSalle Income & Growth                     | 07/16/2013 | 18.3%          | 18.3%      | 14.9%          | 15.0%      | 09/30/2016 |
| Long Wharf III                              | 03/30/2007 | 9.7%           | 9.6%       | 7.6%           | 7.4%       | 09/30/2016 |
| Long Wharf IV                               | 07/03/2013 | 20.6%          | 21.0%      | 14.3%          | 14.4%      | 09/30/2016 |
| Long Wharf V <sup>1</sup>                   | 09/30/2016 | 12.5%          | -          | -1.2%          | -          | 09/30/2016 |
| Oaktree REOF V                              | 12/31/2011 | 17.6%          | -          | 13.0%          | -          | 09/30/2016 |
| Oaktree REOF VI                             | 09/30/2013 | 17.9%          | -          | 12.0%          | -          | 09/30/2016 |
| Oaktree REOF VII <sup>1</sup>               | 04/01/2015 | -              | -          | -              | -          | -          |
| Paulson <sup>1</sup>                        | 11/10/2013 | -              | -          | -              | -          | -          |
| Siguler Guff I                              | 01/25/2012 | 15.4%          | 16.5%      | 13.2%          | 14.4%      | 06/30/2016 |
| Siguler Guff II                             | 08/31/2013 | 8.6%           | 7.4%       | 5.9%           | 5.2%       | 06/30/2016 |
| Siguler Guff DREOF II Co-Inv <sup>1</sup>   | 01/27/2016 | -              | -          | -              | -          | -          |

<sup>1</sup>Manager has yet to report IRR figure due to no capital invested or meaningful distributions.

<sup>2</sup>Fund level data includes CCCERA and all other fund investors.

<sup>3</sup>Net IRR calculated after deductions of management fees and carried interest to the General Partner.

<sup>4</sup>Manager has reported IRR figures, but does not consider them to be meaningful, due to the age of the fund.

Total Fund  
Closed End Funds - IRR Summary

Period Ending: September 30, 2016

| Private Equity & Venture Capital  | Inception  | Fund Level (G) | CCCERA (G) | Fund Level (N) | CCCERA (N) | IRR Date   |
|-----------------------------------|------------|----------------|------------|----------------|------------|------------|
| Adams Street Partners             | 03/18/1996 | -              | 11.7%      | -              | 8.7%       | 03/31/2016 |
| Adams Street Partners II          | 01/16/2009 | -              | 18.7%      | -              | 16.0%      | 03/31/2016 |
| Adams Street Partners - Fund 5    | 09/21/2012 | -              | 2.3%       | -              | -1.6%      | 12/31/2015 |
| Adams Street Partners - BPF       | 01/18/1996 | -              | 14.3%      | -              | 11.6%      | 03/31/2016 |
| Bay Area Equity Fund I            | 06/14/2004 | 31.9%          | 32.4%      | 24.0%          | 24.4%      | 09/30/2015 |
| Bay Area Equity Fund II           | 12/07/2009 | 12.0%          | 11.3%      | 5.1%           | 4.9%       | 09/30/2015 |
| Energy Investor Fund              | 11/26/2003 | 33.6%          | 34.7%      | 28.6%          | 28.4%      | 06/30/2016 |
| Energy Investor Fund II           | 08/16/2005 | 8.4%           | 7.9%       | 5.7%           | 5.2%       | 06/30/2016 |
| Energy Investor Fund III          | 05/30/2007 | 8.3%           | 8.3%       | 5.7%           | 5.7%       | 06/30/2016 |
| Energy Investor Fund IV           | 11/28/2011 | 18.4%          | 18.9%      | 11.8%          | 11.5%      | 06/30/2016 |
| Pathway 6                         | 05/24/2011 | 13.2%          | 13.2%      | 9.0%           | 9.0%       | 06/30/2016 |
| Benchmark <sup>4</sup>            |            | 8.3%           | -          | -              | -          | 06/30/2016 |
| Pathway 7 <sup>1</sup>            | 02/07/2013 | 5.9%           | 5.9%       | 0.1%           | 0.1%       | 06/30/2016 |
| Pathway 8 <sup>1</sup>            | 11/06/2015 | -              | -          | -              | -          | -          |
| Pathway Private Equity Fund       | 11/09/1998 | 10.1%          | 10.1%      | 8.3%           | 8.3%       | 06/30/2016 |
| Benchmark <sup>2</sup>            |            | 8.3%           | -          | -              | -          | 06/30/2016 |
| Pathway Private Equity Fund 2008  | 12/26/2008 | 12.6%          | 12.6%      | 9.3%           | 9.3%       | 06/30/2016 |
| Benchmark <sup>5</sup>            |            | 9.2%           | -          | -              | -          | 06/30/2016 |
| Carpenter Bancfund                | 01/31/2008 | 9.5%           | 9.4%       | 8.1%           | 8.0%       | 06/30/2016 |
| Nogales                           | 02/15/2004 | -              | -4.5%      | -8.6%          | -8.8%      | 03/31/2015 |
| Paladin III                       | 11/30/2007 | 16.5%          | -          | 8.0%           | 7.9%       | 06/30/2016 |
| Ocean Avenue II                   | 06/11/2014 | -              | -          | 1.7%           | -          | 06/30/2016 |
| Ocean Avenue III                  | 04/15/2016 | -              | -          | -              | -          | 03/31/2016 |
| Siguler Guff CCCERA Opportunities | 06/03/2014 | -              | 26.7%      | -              | 19.3%      | 06/30/2016 |

<sup>1</sup>Manager has yet to report IRR figure due to no capital invested or meaningful distributions.

<sup>2</sup>Fund level data includes CCCERA and all other fund investors.

<sup>3</sup>Net IRR calculated after deductions of management fees and carried interest to the General Partner.

<sup>4</sup>Private iQ global all private equity median pooled return for vintage years 2011-2014, as of March 31, 2015.

<sup>5</sup>Private iQ global all private equity median pooled return for vintage years 1999-2011, as of March 31, 2015.

<sup>6</sup>Private iQ global all private equity median pooled return for vintage years 2008-2014, as of March 31, 2015.

Total Fund  
Performance Analysis - 3 Years (Net of Fees)

Period Ending: September 30, 2016

|                                | 3 Years   |                         |                  |             |      |                   |           |              |            |                     |                       |
|--------------------------------|-----------|-------------------------|------------------|-------------|------|-------------------|-----------|--------------|------------|---------------------|-----------------------|
|                                | Anlzd Ret | Ann Excess<br>BM Return | Anlzd Std<br>Dev | Anlzd Alpha | Beta | Tracking<br>Error | R-Squared | Sharpe Ratio | Info Ratio | Up Mkt Cap<br>Ratio | Down Mkt<br>Cap Ratio |
| Intech Large Cap Core          | 11.63%    | 0.47%                   | 8.20%            | 1.96%       | 0.87 | 4.06%             | 0.77      | 1.41         | 0.12       | 95.25%              | 58.84%                |
| PIMCO Stocks+ Absolute Return  | 10.61%    | -0.55%                  | 10.09%           | -2.63%      | 1.19 | 2.61%             | 0.96      | 1.04         | -0.21      | 108.32%             | 158.51%               |
| Jackson Square Partners        | 9.72%     | -2.10%                  | 11.42%           | -5.68%      | 1.30 | 5.12%             | 0.84      | 0.84         | -0.41      | 88.88%              | 136.22%               |
| Robeco Boston Partners         | 7.90%     | -1.81%                  | 9.33%            | -1.61%      | 0.98 | 2.78%             | 0.91      | 0.84         | -0.65      | 82.37%              | 93.29%                |
| Emerald Advisers               | 7.20%     | 0.61%                   | 14.31%           | 1.05%       | 0.93 | 6.31%             | 0.81      | 0.50         | 0.10       | 97.50%              | 90.70%                |
| Ceredex                        | 9.11%     | 2.34%                   | 12.72%           | 2.95%       | 0.91 | 5.42%             | 0.83      | 0.71         | 0.43       | 108.35%             | 84.26%                |
| William Blair                  | 2.63%     | 0.40%                   | 10.02%           | 0.45%       | 0.98 | 2.74%             | 0.93      | 0.25         | 0.15       | 102.40%             | 96.96%                |
| Artisan Partners               | 9.57%     | 4.40%                   | 10.12%           | 4.27%       | 1.03 | 4.60%             | 0.79      | 0.94         | 0.96       | 142.43%             | 79.67%                |
| First Eagle                    | 6.35%     | 1.18%                   | 7.12%            | 2.48%       | 0.75 | 3.48%             | 0.86      | 0.88         | 0.34       | 105.74%             | 84.70%                |
| Intech Global Low Vol          | 9.47%     | 4.30%                   | 6.08%            | 7.43%       | 0.39 | 7.30%             | 0.33      | 1.54         | 0.59       | 119.04%             | 39.79%                |
| JP Morgan Global Opportunities | 4.47%     | -0.70%                  | 10.16%           | -1.27%      | 1.11 | 2.98%             | 0.92      | 0.43         | -0.24      | 90.46%              | 97.66%                |
| AFL-CIO                        | 4.12%     | 0.09%                   | 2.46%            | 0.55%       | 0.89 | 0.55%             | 0.97      | 1.64         | 0.17       | 97.41%              | 74.64%                |
| Goldman Sachs Core Plus        | 4.34%     | 0.32%                   | 2.62%            | 1.18%       | 0.79 | 1.62%             | 0.67      | 1.62         | 0.20       | 92.99%              | 23.17%                |
| Lord Abbett                    | 4.71%     | 0.69%                   | 2.84%            | 0.89%       | 0.95 | 1.18%             | 0.83      | 1.63         | 0.58       | 106.68%             | 55.03%                |
| PIMCO Fixed Income             | 3.95%     | -0.08%                  | 2.59%            | 0.21%       | 0.93 | 0.58%             | 0.95      | 1.49         | -0.13      | 95.01%              | 81.80%                |
| Allianz Global Investors       | 3.74%     | -1.54%                  | 6.02%            | -0.96%      | 0.89 | 1.31%             | 0.97      | 0.61         | -1.18      | 80.62%              | 99.25%                |
| Lazard                         | 1.92%     | -0.21%                  | 4.79%            | -0.04%      | 0.92 | 1.33%             | 0.93      | 0.38         | -0.16      | 87.57%              | 87.62%                |
| PIMCO All Asset Fund           | 1.92%     | -3.14%                  | 7.91%            | -11.27%     | 2.60 | 7.10%             | 0.31      | 0.23         | -0.44      | 55.02%              | 771.76%               |
| Wellington Real Total Return   | -2.80%    | -7.87%                  | 7.91%            | -13.03%     | 2.02 | 7.34%             | 0.19      | -0.37        | -1.07      | -20.94%             | 1,307.20%             |
| Adelante                       | 13.96%    | -0.38%                  | 12.45%           | 0.63%       | 0.93 | 2.10%             | 0.98      | 1.11         | -0.18      | 91.68%              | 84.28%                |
| INVESCO International REIT     | 1.79%     | -1.42%                  | 7.74%            | -1.10%      | 0.90 | 1.55%             | 0.97      | 0.22         | -0.91      | 78.27%              | 95.60%                |

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

Total Fund  
Performance Analysis - 5 Years (Net of Fees)

Period Ending: September 30, 2016

|                                | 5 Years   |                         |                  |             |      |                   |           |              |            |                     |                       |
|--------------------------------|-----------|-------------------------|------------------|-------------|------|-------------------|-----------|--------------|------------|---------------------|-----------------------|
|                                | Anlzd Ret | Ann Excess<br>BM Return | Anlzd Std<br>Dev | Anlzd Alpha | Beta | Tracking<br>Error | R-Squared | Sharpe Ratio | Info Ratio | Up Mkt Cap<br>Ratio | Down Mkt<br>Cap Ratio |
| Intech Large Cap Core          | 16.37%    | -0.01%                  | 9.35%            | 1.74%       | 0.89 | 3.35%             | 0.88      | 1.74         | 0.00       | 93.58%              | 63.19%                |
| PIMCO Stocks+ Absolute Return  | 16.74%    | 0.36%                   | 11.13%           | -1.49%      | 1.11 | 2.27%             | 0.97      | 1.50         | 0.16       | 108.36%             | 129.98%               |
| Jackson Square Partners        | 15.87%    | -0.73%                  | 12.94%           | -4.20%      | 1.21 | 4.29%             | 0.92      | 1.22         | -0.17      | 98.97%              | 121.74%               |
| Robeco Boston Partners         | 16.46%    | 0.31%                   | 11.62%           | -0.93%      | 1.08 | 3.31%             | 0.92      | 1.41         | 0.09       | 103.88%             | 107.12%               |
| Emerald Advisers               | 18.64%    | 2.49%                   | 17.53%           | 0.69%       | 1.11 | 6.58%             | 0.87      | 1.06         | 0.38       | 119.63%             | 103.91%               |
| William Blair                  | 9.33%     | 1.88%                   | 11.42%           | 1.89%       | 1.00 | 2.53%             | 0.95      | 0.81         | 0.74       | 109.75%             | 88.07%                |
| First Eagle                    | 9.76%     | -0.87%                  | 7.54%            | 2.09%       | 0.72 | 3.52%             | 0.92      | 1.28         | -0.25      | 84.42%              | 79.03%                |
| JP Morgan Global Opportunities | 11.27%    | 0.64%                   | 11.16%           | -0.29%      | 1.09 | 2.60%             | 0.95      | 1.00         | 0.25       | 102.27%             | 91.13%                |
| AFL-CIO                        | 3.10%     | 0.02%                   | 2.66%            | 0.12%       | 0.97 | 0.53%             | 0.96      | 1.14         | 0.04       | 98.18%              | 91.10%                |
| Goldman Sachs Core Plus        | 4.09%     | 1.01%                   | 2.74%            | 1.36%       | 0.89 | 1.39%             | 0.75      | 1.46         | 0.73       | 114.60%             | 54.33%                |
| Lord Abbett                    | 4.52%     | 1.44%                   | 2.95%            | 1.50%       | 0.98 | 1.30%             | 0.80      | 1.51         | 1.11       | 130.35%             | 68.13%                |
| PIMCO Fixed Income             | 3.93%     | 0.85%                   | 3.00%            | 0.76%       | 1.03 | 1.15%             | 0.85      | 1.29         | 0.73       | 120.81%             | 92.46%                |
| Allianz Global Investors       | 7.28%     | -0.96%                  | 5.74%            | -0.37%      | 0.93 | 1.21%             | 0.96      | 1.26         | -0.79      | 87.55%              | 94.55%                |
| Lazard                         | 1.61%     | -0.12%                  | 4.72%            | -0.10%      | 0.98 | 1.26%             | 0.93      | 0.33         | -0.10      | 95.58%              | 98.03%                |
| Adelante                       | 15.44%    | -0.37%                  | 11.86%           | 0.88%       | 0.92 | 2.07%             | 0.98      | 1.30         | -0.18      | 89.98%              | 78.70%                |
| INVECO International REIT      | 9.87%     | -0.56%                  | 11.12%           | -0.50%      | 0.99 | 1.79%             | 0.97      | 0.88         | -0.31      | 94.63%              | 99.00%                |

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

# Total Fund Investment Fund Fee Analysis

Period Ending: September 30, 2016

| Name                           | Asset Class         | Fee Schedule   | Market Value  | Estimated Fee Value | Estimated Fee |
|--------------------------------|---------------------|--|---------------|---------------------|---------------|
| Intech Large Cap Core          | Global Equity       | 0.50% of First \$100.0 Mil,<br>0.45% of Next \$100.0 Mil,<br>0.35% of Next \$100.0 Mil,<br>0.30% of Next \$200.0 Mil,<br>0.25% Thereafter                          | \$290,780,759 | \$1,262,733         | 0.43%         |
| PIMCO Stocks+ Absolute Return  | Global Equity       | 0.15% of Assets  | \$333,527,240 | \$500,291           | 0.15%         |
| Jackson Square Partners        | Global Equity       | 0.50% of First \$100.0 Mil,<br>0.40% of Next \$150.0 Mil,<br>0.35% Thereafter  | \$326,298,051 | \$1,367,043         | 0.42%         |
| Robeco Boston Partners         | Global Equity       | 0.50% of First \$25.0 Mil,<br>0.30% Thereafter   | \$318,268,874 | \$1,004,807         | 0.32%         |
| Emerald Advisers               | Global Equity       | 0.75% of First \$10.0 Mil,<br>0.60% Thereafter   | \$242,298,604 | \$1,468,792         | 0.61%         |
| Ceredex                        | Global Equity       | 0.85% of First \$10.0 Mil,<br>0.68% of Next \$40.0 Mil,<br>0.51% Thereafter  | \$229,791,449 | \$1,273,936         | 0.55%         |
| Pyrford                        | Global Equity       | 0.70% of First \$50.0 Mil,<br>0.50% of Next \$50.0 Mil,<br>0.35% Thereafter  | \$416,695,850 | \$1,708,435         | 0.41%         |
| William Blair                  | Global Equity       | 0.80% of First \$20.0 Mil,<br>0.60% of Next \$30.0 Mil,<br>0.50% of Next \$50.0 Mil,<br>0.45% of Next \$50.0 Mil,<br>0.40% of Next \$50.0 Mil,<br>0.30% Thereafter | \$419,979,055 | \$1,674,937         | 0.40%         |
| Artisan Partners               | Global Equity       | 0.75% of Assets  | \$340,366,101 | \$2,552,746         | 0.75%         |
| First Eagle                    | Global Equity       | 0.75% of Assets  | \$324,823,862 | \$2,436,179         | 0.75%         |
| Intech Global Low Vol          | Global Equity       | 0.25% of First \$100.0 Mil,<br>0.21% of Next \$100.0 Mil,<br>0.18% of Next \$100.0 Mil,<br>0.16% of Next \$200.0 Mil,<br>0.14% Thereafter                          | \$23,958,644  | \$58,699            | 0.25%         |
| JP Morgan Global Opportunities | Global Equity       | 0.50% of First \$100.0 Mil,<br>0.40% Thereafter  | \$277,805,457 | \$1,211,222         | 0.44%         |
| AFL-CIO                        | Global Fixed Income | 0.43% of Assets  | \$245,403,667 | \$1,055,236         | 0.43%         |

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

Total Fund  
Investment Fund Fee Analysis

Period Ending: September 30, 2016

| Name                         | Asset Class                 | Fee Schedule  | Market Value  | Estimated Fee Value | Estimated Fee |
|------------------------------|-----------------------------|---|---------------|---------------------|---------------|
| Goldman Sachs Core Plus      | Global Fixed Income         | 0.18% of First \$500.0 Mil,<br>0.16% Thereafter                               | \$328,836,838 | \$575,464           | 0.18%         |
| GSAM Workout Portfolio       | Global Fixed Income         |   | \$4,078       |                     |               |
| Lord Abbett                  | Global Fixed Income         | 0.20% of First \$250.0 Mil,<br>0.15% of Next \$250.0 Mil,<br>0.13% Thereafter | \$333,047,536 | \$624,571           | 0.19%         |
| PIMCO Fixed Income           | Global Fixed Income         | 0.25% of First \$600.0 Mil,<br>0.15% Thereafter                               | \$442,289,365 | \$1,105,723         | 0.25%         |
| Allianz Global Investors     | High Yield Fixed Income     | 0.50% of First \$50.0 Mil,<br>0.40% of Next \$50.0 Mil,<br>0.35% Thereafter   | \$387,668,528 | \$1,456,840         | 0.38%         |
| Lazard                       | Global Fixed Income         | 0.40% of First \$25.0 Mil,<br>0.30% of Next \$25.0 Mil,<br>0.25% Thereafter   | \$244,749,556 | \$661,874           | 0.27%         |
| PIMCO All Asset Fund         | Inflation Hedge/Real Assets | 0.88% of Assets   | \$128,756,259 | \$1,133,055         | 0.88%         |
| Wellington Real Total Return | Inflation Hedge/Real Assets | 0.55% of Assets   | \$188,115,660 | \$1,034,636         | 0.55%         |

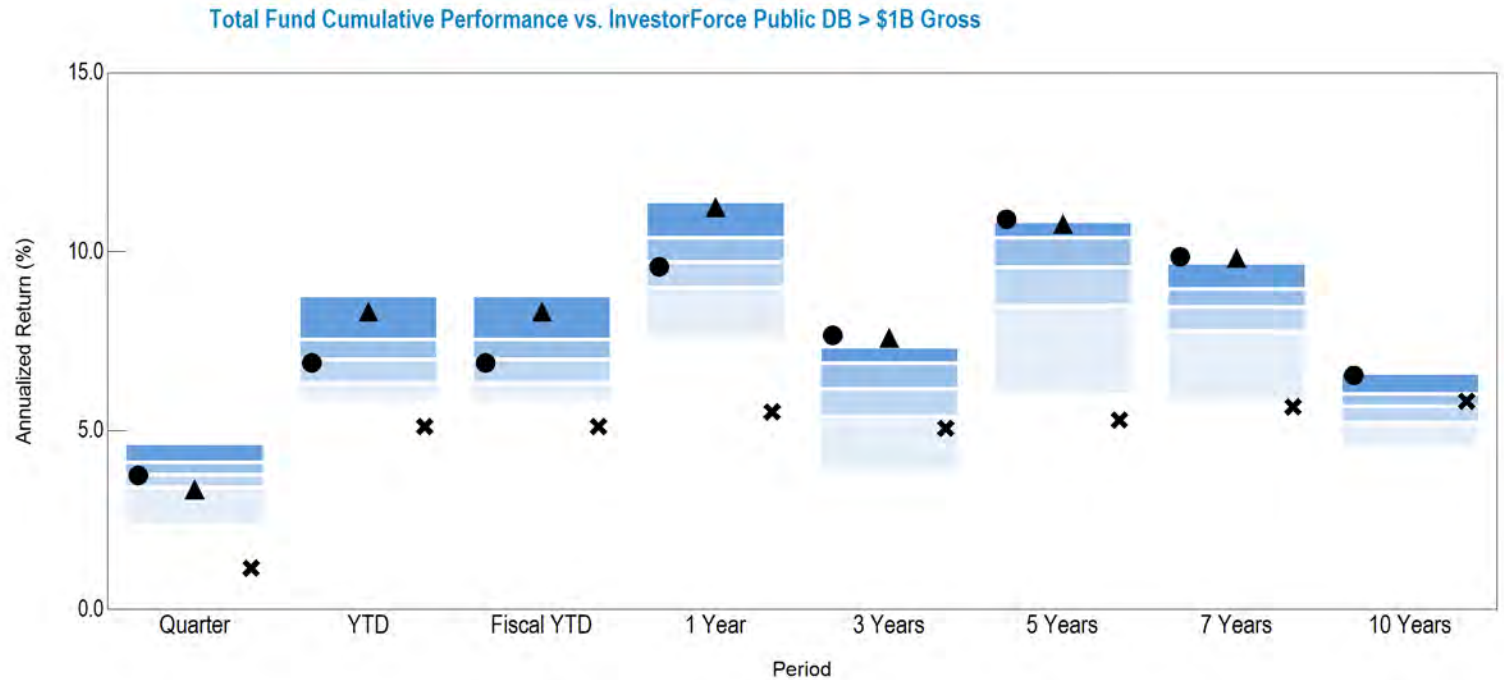
Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus.



Total Fund

Peer Universe Comparison: Cumulative Performance (Gross of Fees)

Period Ending: September 30, 2016



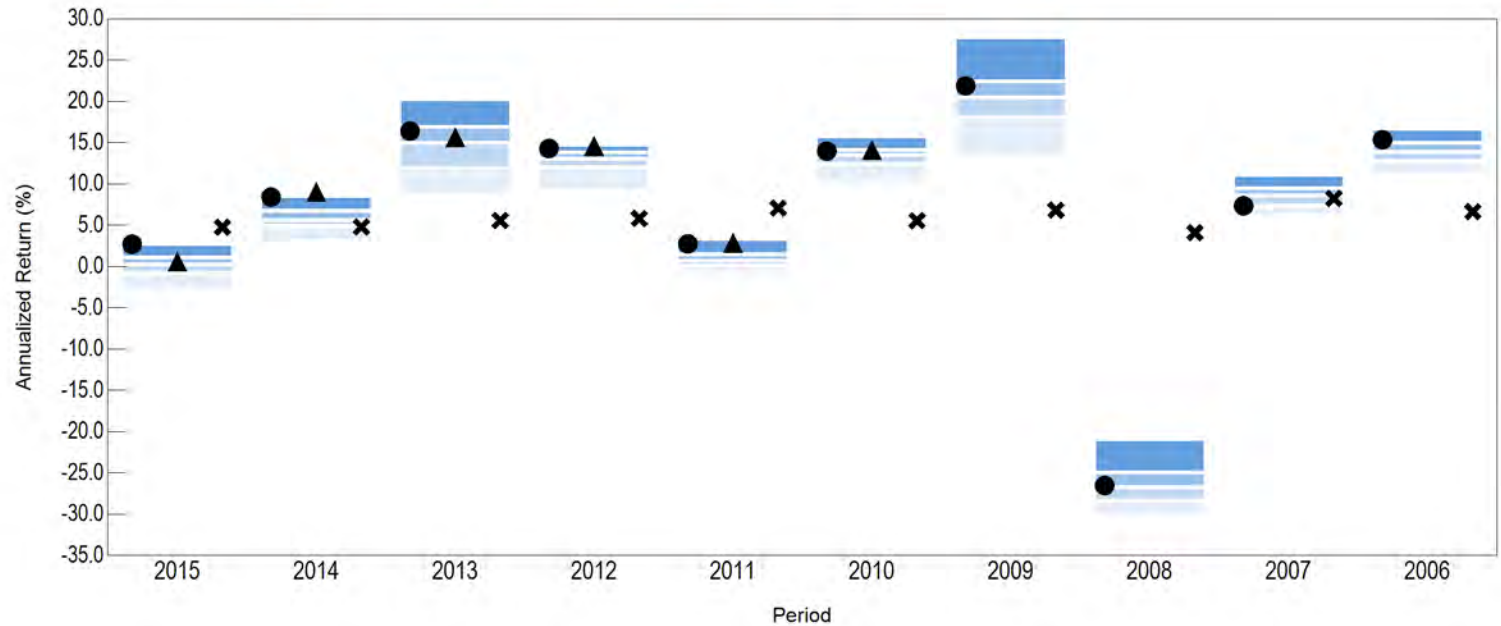
|                 | Return (Rank) |          |            |          |          |           |          |          |
|-----------------|---------------|----------|------------|----------|----------|-----------|----------|----------|
|                 | Quarter       | YTD      | Fiscal YTD | 1 Year   | 3 Years  | 5 Years   | 7 Years  | 10 Years |
| 5th Percentile  | 4.6           | 8.8      | 8.8        | 11.4     | 7.3      | 10.9      | 9.7      | 6.6      |
| 25th Percentile | 4.1           | 7.6      | 7.6        | 10.4     | 6.9      | 10.4      | 9.0      | 6.0      |
| Median          | 3.8           | 7.0      | 7.0        | 9.7      | 6.2      | 9.6       | 8.5      | 5.7      |
| 75th Percentile | 3.4           | 6.3      | 6.3        | 9.0      | 5.4      | 8.5       | 7.8      | 5.2      |
| 95th Percentile | 2.4           | 5.8      | 5.8        | 7.6      | 3.8      | 6.0       | 5.8      | 4.5      |
| # of Portfolios | 105           | 94       | 94         | 94       | 84       | 82        | 73       | 69       |
| ● Total Fund    | 3.7 (53)      | 6.9 (52) | 6.9 (52)   | 9.6 (57) | 7.7 (1)  | 10.9 (5)  | 9.9 (2)  | 6.5 (7)  |
| ▲ Policy Index  | 3.4 (79)      | 8.3 (8)  | 8.3 (8)    | 11.2 (6) | 7.6 (2)  | 10.8 (12) | 9.8 (2)  | -- (-)   |
| ✕ CPI + 4%      | 1.2 (99)      | 5.1 (98) | 5.1 (98)   | 5.5 (99) | 5.1 (82) | 5.3 (98)  | 5.7 (96) | 5.8 (43) |

Total Fund

Peer Universe Comparison: Consecutive Periods (Gross of Fees)

Period Ending: September 30, 2016

Total Fund Consecutive Periods vs. InvestorForce Public DB > \$1B Gross



|                        | 2015     | 2014     | 2013      | 2012      | 2011    | 2010      | 2009      | 2008       | 2007     | 2006      |
|------------------------|----------|----------|-----------|-----------|---------|-----------|-----------|------------|----------|-----------|
| <b>5th Percentile</b>  | 2.7      | 8.5      | 20.2      | 14.7      | 3.3     | 15.7      | 27.7      | -21.0      | 11.0     | 16.6      |
| <b>25th Percentile</b> | 1.1      | 6.8      | 17.0      | 13.9      | 1.6     | 14.2      | 22.5      | -24.9      | 9.5      | 15.0      |
| <b>Median</b>          | 0.3      | 5.7      | 15.0      | 13.0      | 0.8     | 13.5      | 20.5      | -26.7      | 8.6      | 13.9      |
| <b>75th Percentile</b> | -0.7     | 4.9      | 12.0      | 12.1      | 0.1     | 12.5      | 18.1      | -28.3      | 7.4      | 12.9      |
| <b>95th Percentile</b> | -2.8     | 3.1      | 8.7       | 9.2       | -0.9    | 10.2      | 13.4      | -30.2      | 6.2      | 11.2      |
| <b># of Portfolios</b> | 98       | 79       | 67        | 74        | 68      | 66        | 66        | 65         | 64       | 64        |
| <b>● Total Fund</b>    | 2.7 (5)  | 8.4 (6)  | 16.4 (33) | 14.3 (13) | 2.7 (9) | 14.0 (29) | 21.9 (34) | -26.5 (48) | 7.3 (78) | 15.4 (19) |
| <b>▲ Policy Index</b>  | 0.6 (40) | 9.0 (2)  | 15.6 (43) | 14.6 (8)  | 2.8 (9) | 14.1 (27) | -- (--)   | -- (--)    | -- (--)  | -- (--)   |
| <b>✕ CPI + 4%</b>      | 4.8 (1)  | 4.8 (80) | 5.6 (99)  | 5.8 (99)  | 7.1 (1) | 5.6 (99)  | 6.8 (99)  | 4.1 (1)    | 8.2 (53) | 6.6 (99)  |

## Domestic Equity Managers

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# Intech Large Cap Core Manager Portfolio Overview

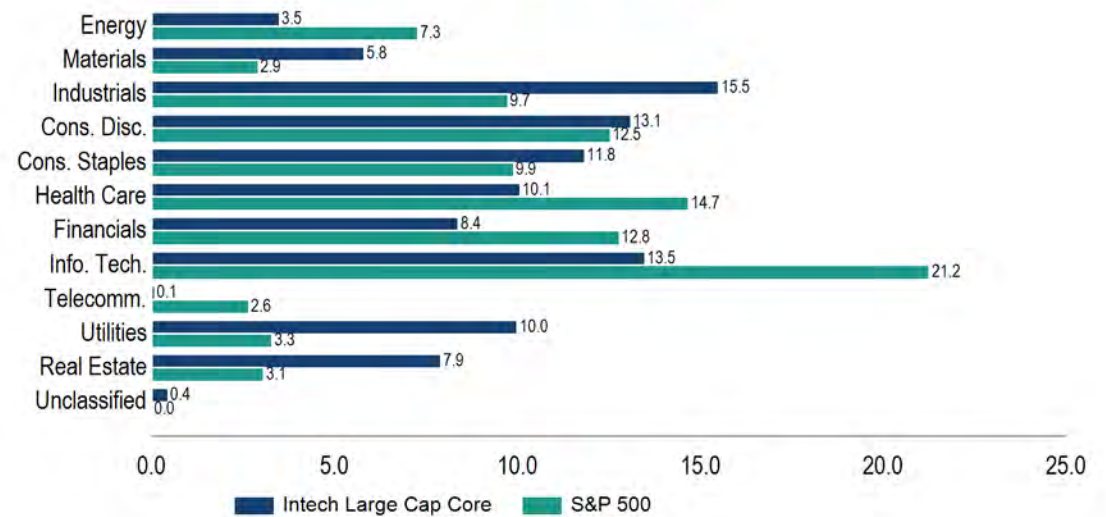
Period Ending: September 30, 2016

Domestic equity large cap core portfolio with high correlation exposure to a broad universe seeking enhanced returns. Primary personnel include Adrian Banner, Vassilios Papanthakos, Joseph Runnels, and Phillip Whitman.

## Characteristics

|                                 | Portfolio | S&P 500 |
|---------------------------------|-----------|---------|
| Number of Holdings              | 295       | 505     |
| Weighted Avg. Market Cap. (\$B) | 32.67     | 134.71  |
| Median Market Cap. (\$B)        | 17.53     | 18.90   |
| Price To Earnings               | 26.29     | 22.71   |
| Price To Book                   | 5.33      | 4.51    |
| Price To Sales                  | 3.21      | 3.06    |
| Return on Equity (%)            | 19.47     | 18.79   |
| Yield (%)                       | 1.88      | 2.11    |
| Beta                            | 0.87      | 1.00    |

## Sector Allocation (%) vs S&P 500



## Largest Holdings

|                          | End Weight | Return |
|--------------------------|------------|--------|
| CONSTELLATION BRANDS 'A' | 1.61       | 0.91   |
| NORTHROP GRUMMAN         | 1.51       | -3.34  |
| LOCKHEED MARTIN          | 1.45       | -2.74  |
| NVIDIA                   | 1.27       | 46.02  |
| FISERV                   | 1.26       | -8.52  |
| O REILLY AUTOMOTIVE      | 1.18       | 3.32   |
| EDWARDS LIFESCIENCES     | 1.03       | 20.89  |
| RAYTHEON 'B'             | 0.99       | 0.68   |
| DR PEPPER SNAPPLE GROUP  | 0.97       | -4.95  |
| TYSON FOODS 'A'          | 0.96       | 12.02  |

## Top Contributors

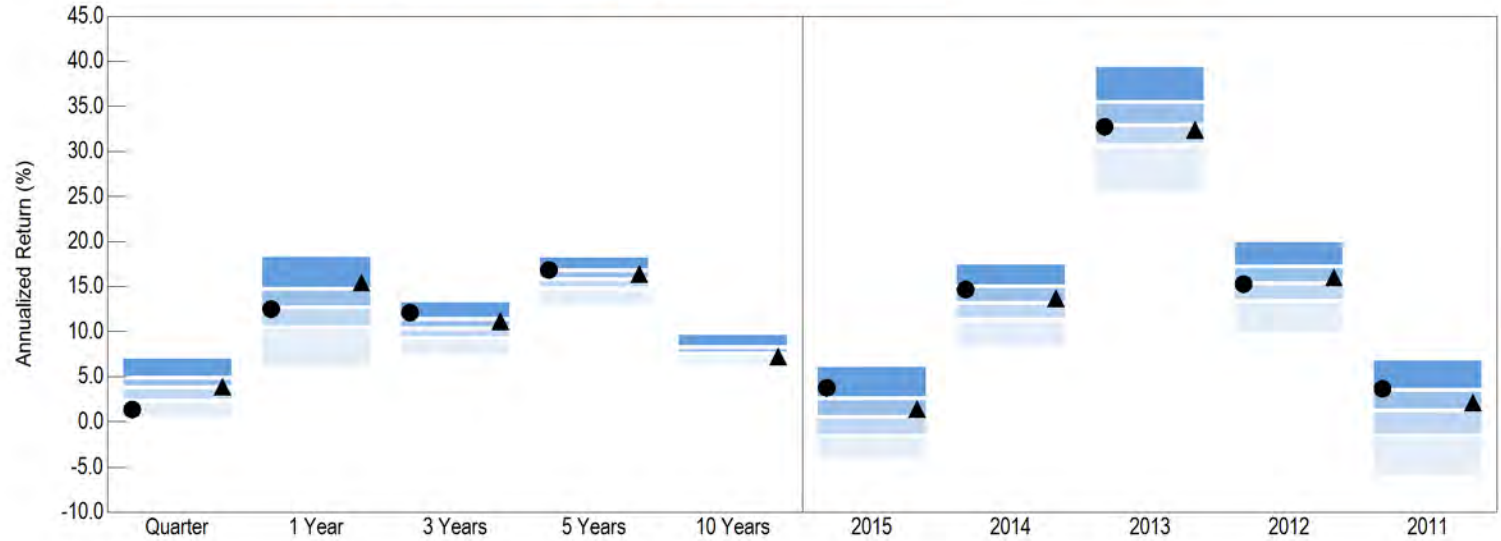
|                      | Avg Wgt | Return | Contribution |
|----------------------|---------|--------|--------------|
| NVIDIA               | 1.03    | 46.02  | 0.47         |
| EDWARDS LIFESCIENCES | 0.93    | 20.89  | 0.20         |
| TYSON FOODS 'A'      | 1.05    | 12.02  | 0.13         |
| ACTIVISION BLIZZARD  | 1.07    | 11.78  | 0.13         |
| GOODYEAR TIRE & RUB. | 0.41    | 26.18  | 0.11         |
| APPLE                | 0.57    | 18.89  | 0.11         |
| ELECTRONIC ARTS      | 0.79    | 12.72  | 0.10         |
| AVAGO TECHNOLOGIES   | 0.85    | 11.34  | 0.10         |
| GENERAL DYNAMICS     | 0.77    | 11.43  | 0.09         |
| CINTAS               | 0.55    | 14.75  | 0.08         |

## Bottom Contributors

|                   | Avg Wgt | Return | Contribution |
|-------------------|---------|--------|--------------|
| KROGER            | 0.91    | -19.03 | -0.17        |
| FISERV            | 1.34    | -8.52  | -0.11        |
| CAMPBELL SOUP     | 0.64    | -17.40 | -0.11        |
| PUBLIC STORAGE    | 0.87    | -11.98 | -0.10        |
| CLOROX            | 0.96    | -9.01  | -0.09        |
| TRACTOR SUPPLY    | 0.29    | -25.93 | -0.07        |
| EXTRA SPACE STRG. | 0.51    | -13.31 | -0.07        |
| CVS HEALTH        | 0.90    | -6.64  | -0.06        |
| EQUINIX           | 0.88    | -6.64  | -0.06        |
| KIMBERLY-CLARK    | 0.77    | -7.58  | -0.06        |

Unclassified sector allocation includes cash allocations.

Intech Large Cap Core vs. eA US Large Cap Core Equity Gross Universe

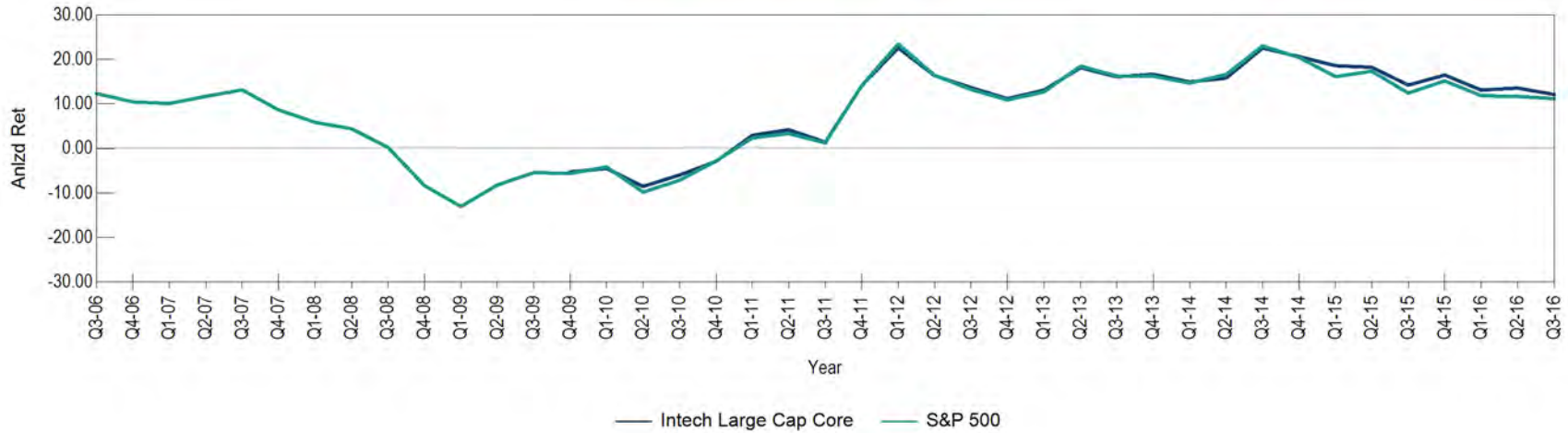


|                                | Quarter  | 1 Year    | 3 Years   | 5 Years   | 10 Years | 2015     | 2014      | 2013      | 2012      | 2011     |
|--------------------------------|----------|-----------|-----------|-----------|----------|----------|-----------|-----------|-----------|----------|
| <b>5th Percentile</b>          | 7.2      | 18.5      | 13.4      | 18.4      | 9.8      | 6.3      | 17.7      | 39.6      | 20.1      | 7.0      |
| <b>25th Percentile</b>         | 4.9      | 14.8      | 11.5      | 16.9      | 8.3      | 2.7      | 15.1      | 35.5      | 17.2      | 3.6      |
| <b>Median</b>                  | 3.8      | 12.7      | 10.4      | 15.9      | 7.6      | 0.6      | 13.3      | 32.9      | 15.4      | 1.3      |
| <b>75th Percentile</b>         | 2.3      | 10.5      | 9.4       | 14.9      | 7.1      | -1.6     | 11.4      | 30.8      | 13.4      | -1.5     |
| <b>95th Percentile</b>         | 0.3      | 5.9       | 7.3       | 12.8      | 6.2      | -4.1     | 8.2       | 25.4      | 9.8       | -5.9     |
| <b># of Portfolios</b>         | 263      | 262       | 256       | 235       | 193      | 267      | 267       | 261       | 254       | 259      |
| <b>● Intech Large Cap Core</b> | 1.4 (87) | 12.5 (54) | 12.1 (12) | 16.8 (27) | -- (--)  | 3.8 (16) | 14.7 (31) | 32.7 (54) | 15.3 (54) | 3.6 (25) |
| <b>▲ S&amp;P 500</b>           | 3.9 (49) | 15.4 (17) | 11.2 (31) | 16.4 (37) | 7.2 (69) | 1.4 (42) | 13.7 (42) | 32.4 (58) | 16.0 (41) | 2.1 (40) |

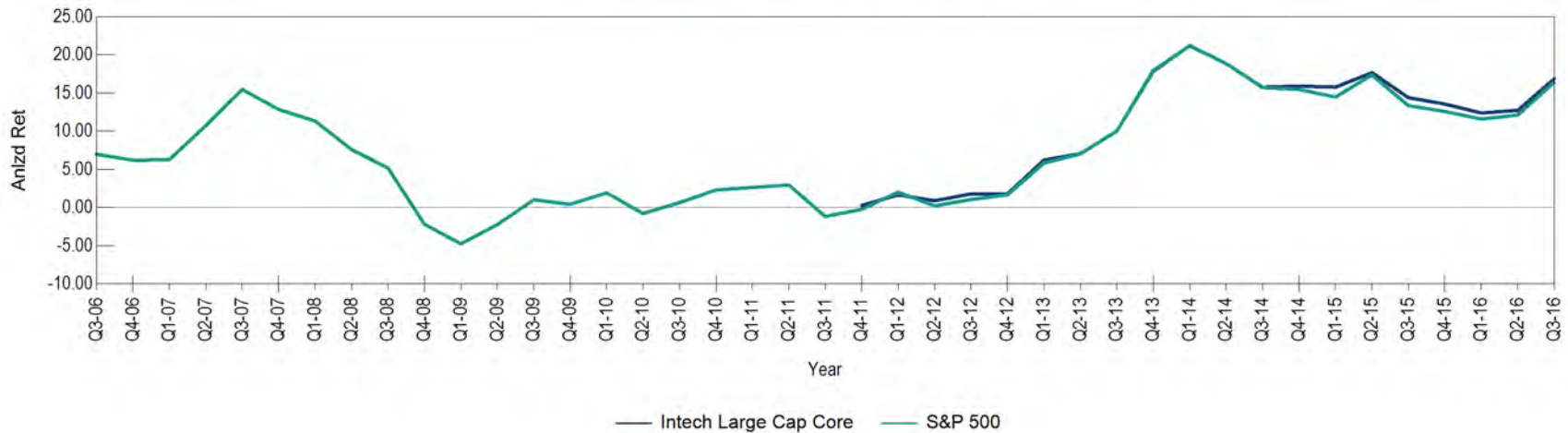
Intech Large Cap Core  
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2016

Rolling 3 Year Annualized Return (%)



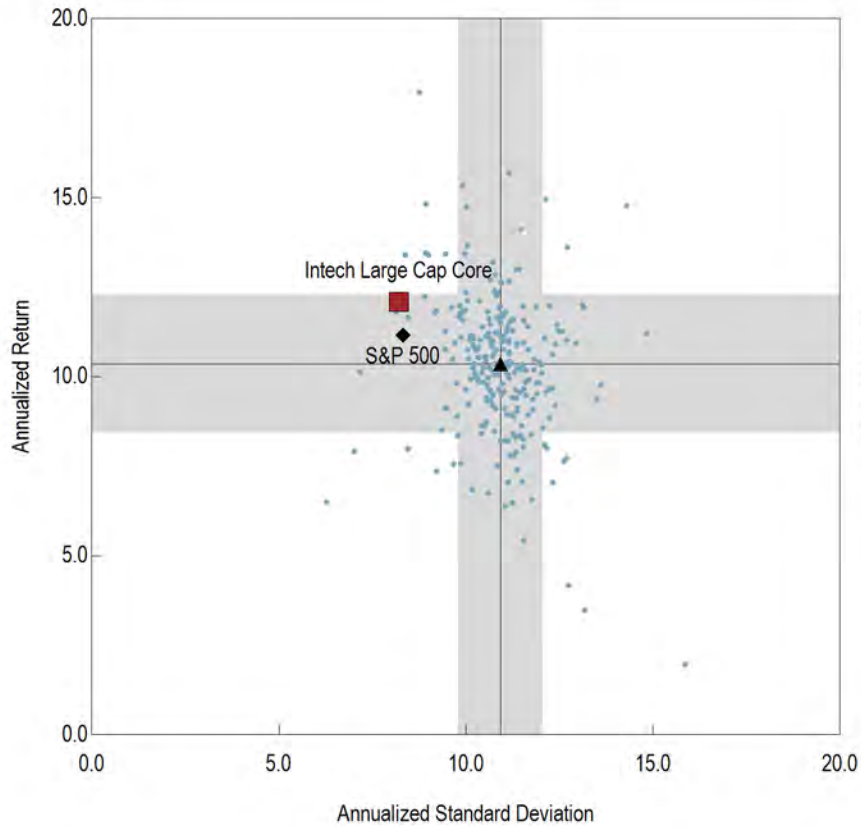
Rolling 5 Year Annualized Return (%)



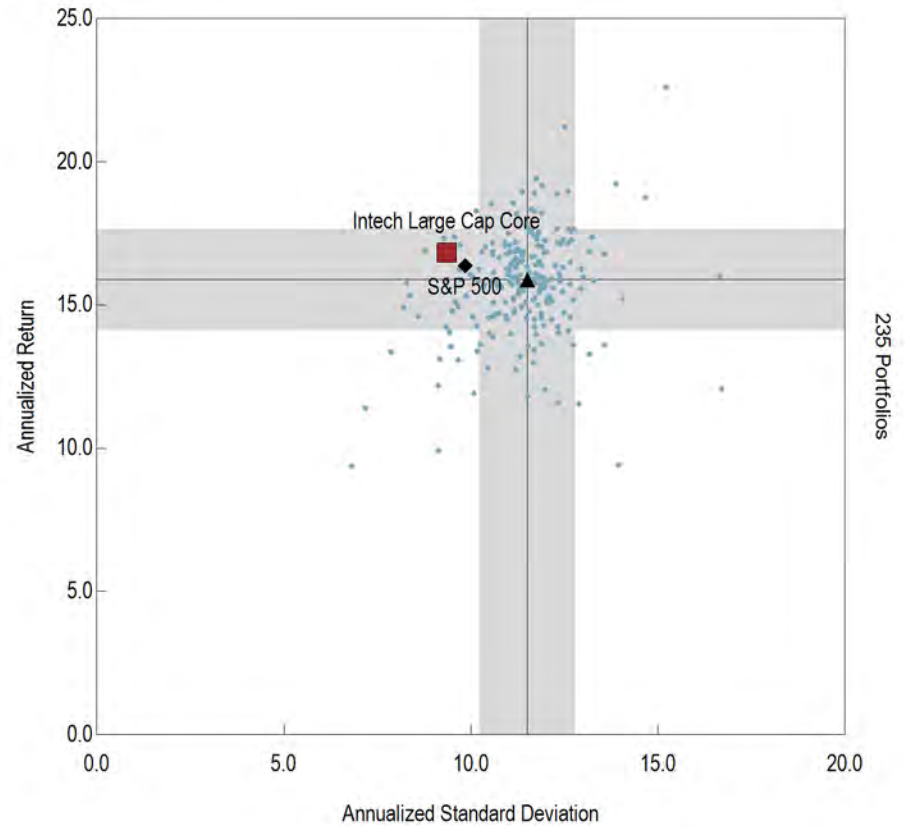
Intech Large Cap Core  
 Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2016

3 Years



5 Years



3 Years

|  | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|--|--------------|--------------------------|--------------|
| Intech Large Cap Core                    | 12.1%        | 8.2%                     | 1.5          |
| S&P 500                                  | 11.2%        | 8.3%                     | 1.3          |
| eA US Large Cap Core Equity Gross Median | 10.4%        | 10.9%                    | 0.9          |

5 Years

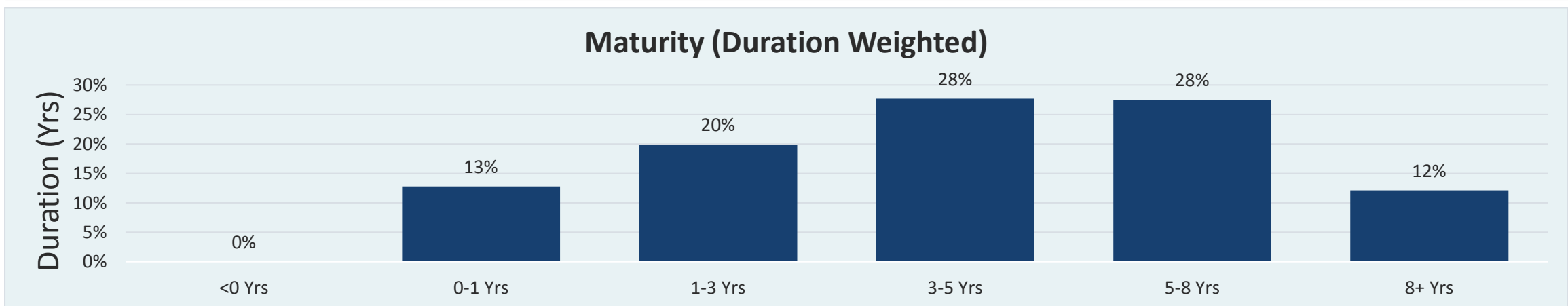
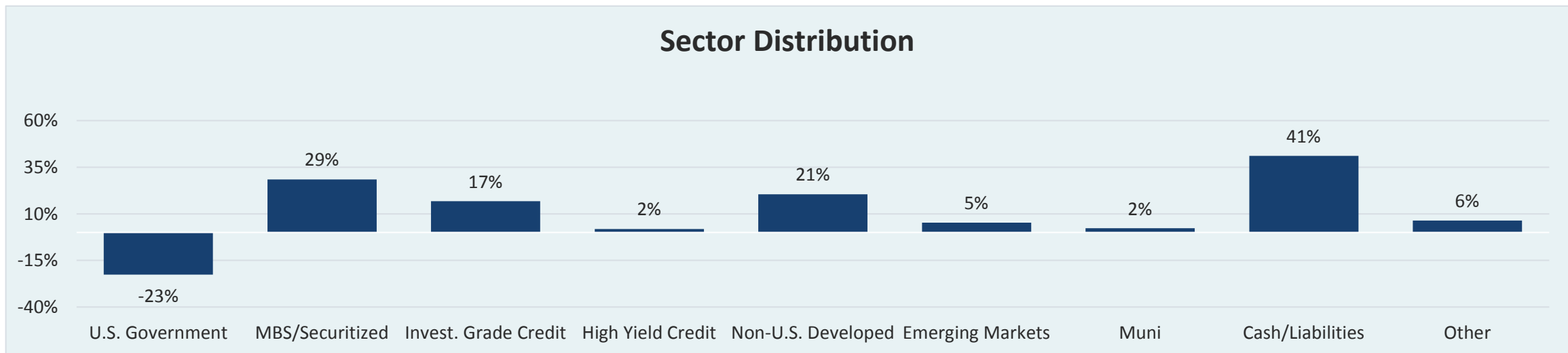
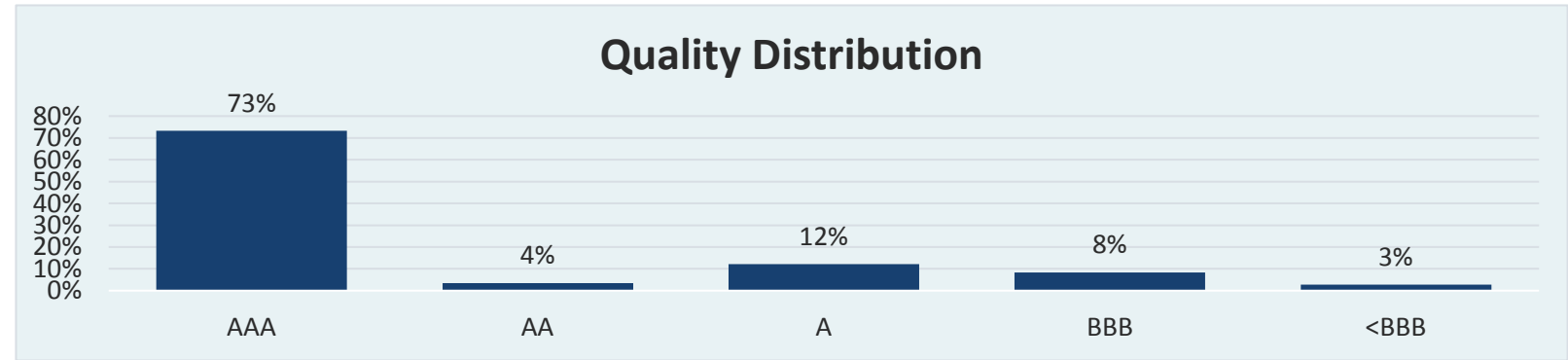
|  | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|--|--------------|--------------------------|--------------|
| Intech Large Cap Core                    | 16.8%        | 9.3%                     | 1.8          |
| S&P 500                                  | 16.4%        | 9.8%                     | 1.7          |
| eA US Large Cap Core Equity Gross Median | 15.9%        | 11.5%                    | 1.4          |

# PIMCO Stocks+ Absolute Return Manager Portfolio Overview

Period Ending: September 30, 2016

Domestic equity large cap core portfolio with high correlation exposure to a broad universe seeking enhanced returns. Primary personnel include Mohsen Fahmi and Scott Mather.

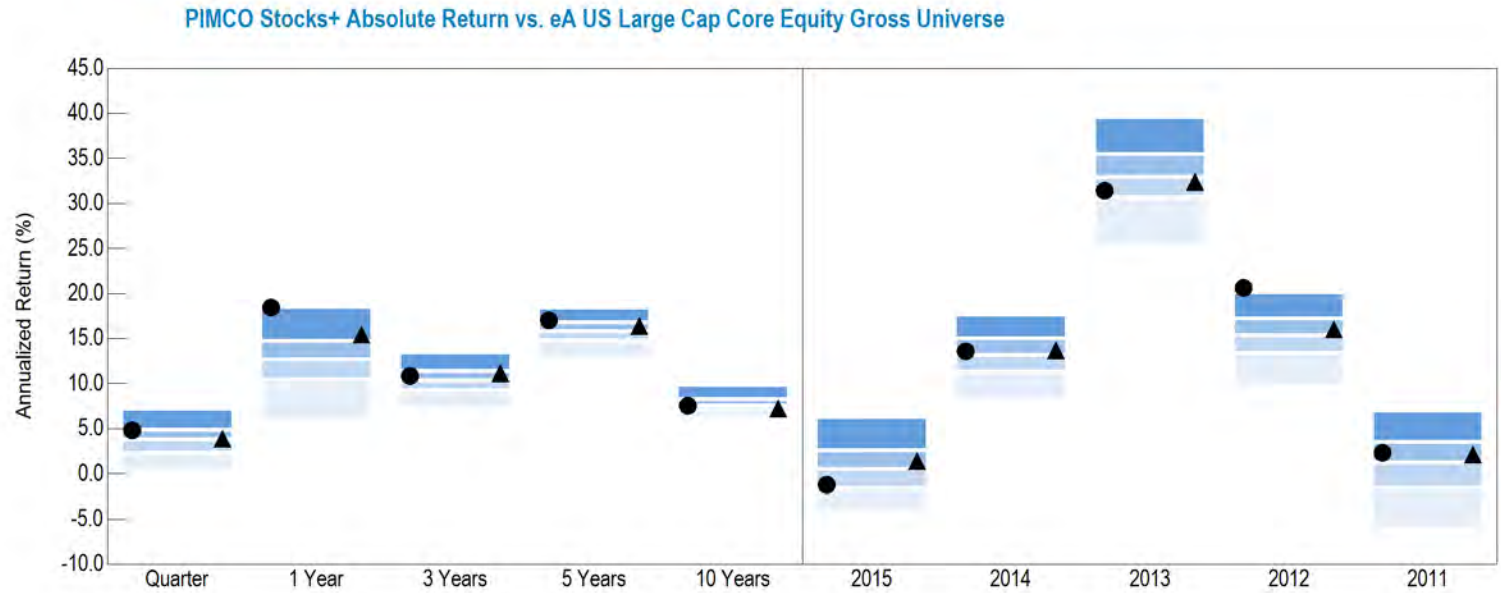
|                           | PIMCO<br>Stocks+ |
|---------------------------|------------------|
| Effective Duration        | 0.22             |
| Futures Adjusted Duration | 0.14             |
| Yield to Maturity         | 2.43             |
| Average Quality           | AA-              |





PIMCO Stocks+ Absolute Return  
 Manager Performance Comparisons (Gross of Fees)

Period Ending: September 30, 2016

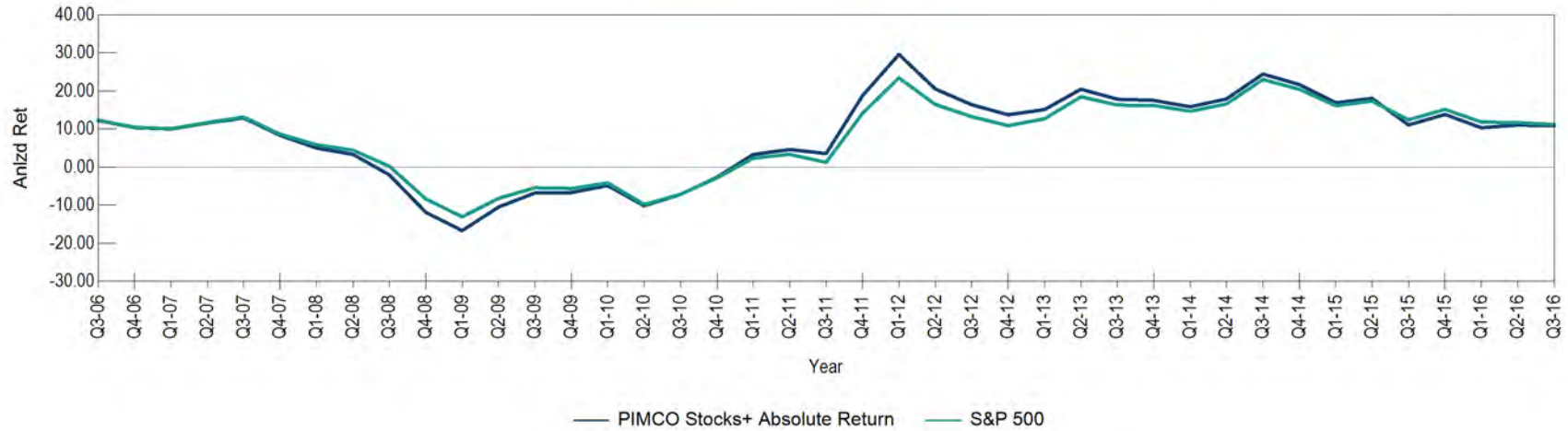


|                                 | Return (Rank) |           |           |           |          |           |           |           |           |          |
|---------------------------------|---------------|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|----------|
|                                 | Quarter       | 1 Year    | 3 Years   | 5 Years   | 10 Years | 2015      | 2014      | 2013      | 2012      | 2011     |
| 5th Percentile                  | 7.2           | 18.5      | 13.4      | 18.4      | 9.8      | 6.3       | 17.7      | 39.6      | 20.1      | 7.0      |
| 25th Percentile                 | 4.9           | 14.8      | 11.5      | 16.9      | 8.3      | 2.7       | 15.1      | 35.5      | 17.2      | 3.6      |
| Median                          | 3.8           | 12.7      | 10.4      | 15.9      | 7.6      | 0.6       | 13.3      | 32.9      | 15.4      | 1.3      |
| 75th Percentile                 | 2.3           | 10.5      | 9.4       | 14.9      | 7.1      | -1.6      | 11.4      | 30.8      | 13.4      | -1.5     |
| 95th Percentile                 | 0.3           | 5.9       | 7.3       | 12.8      | 6.2      | -4.1      | 8.2       | 25.4      | 9.8       | -5.9     |
| # of Portfolios                 | 263           | 262       | 256       | 235       | 193      | 267       | 267       | 261       | 254       | 259      |
| ● PIMCO Stocks+ Absolute Return | 4.8 (29)      | 18.4 (6)  | 10.8 (41) | 17.0 (22) | 7.5 (54) | -1.2 (73) | 13.6 (45) | 31.4 (68) | 20.6 (4)  | 2.3 (36) |
| ▲ S&P 500                       | 3.9 (49)      | 15.4 (17) | 11.2 (31) | 16.4 (37) | 7.2 (69) | 1.4 (42)  | 13.7 (42) | 32.4 (58) | 16.0 (41) | 2.1 (40) |

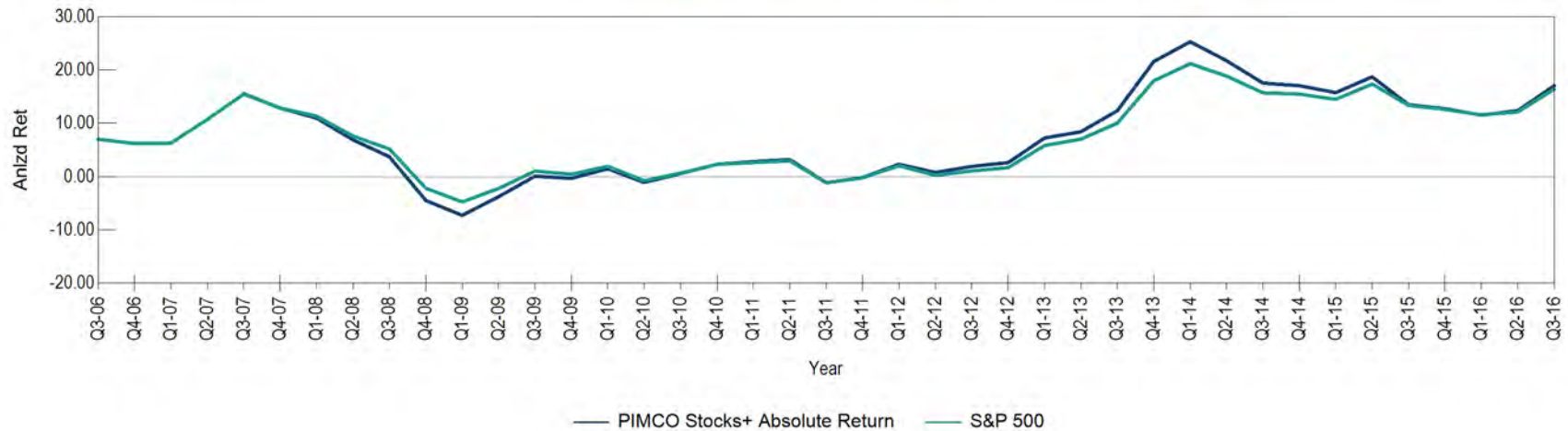
PIMCO Stocks+ Absolute Return  
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2016

Rolling 3 Year Annualized Return (%)



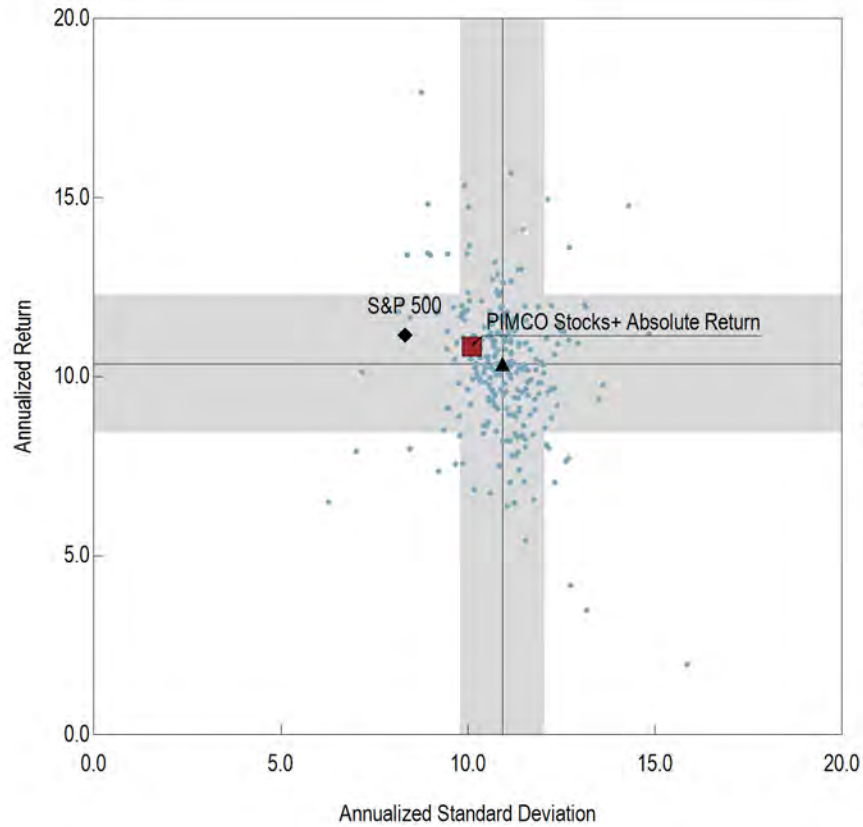
Rolling 5 Year Annualized Return (%)



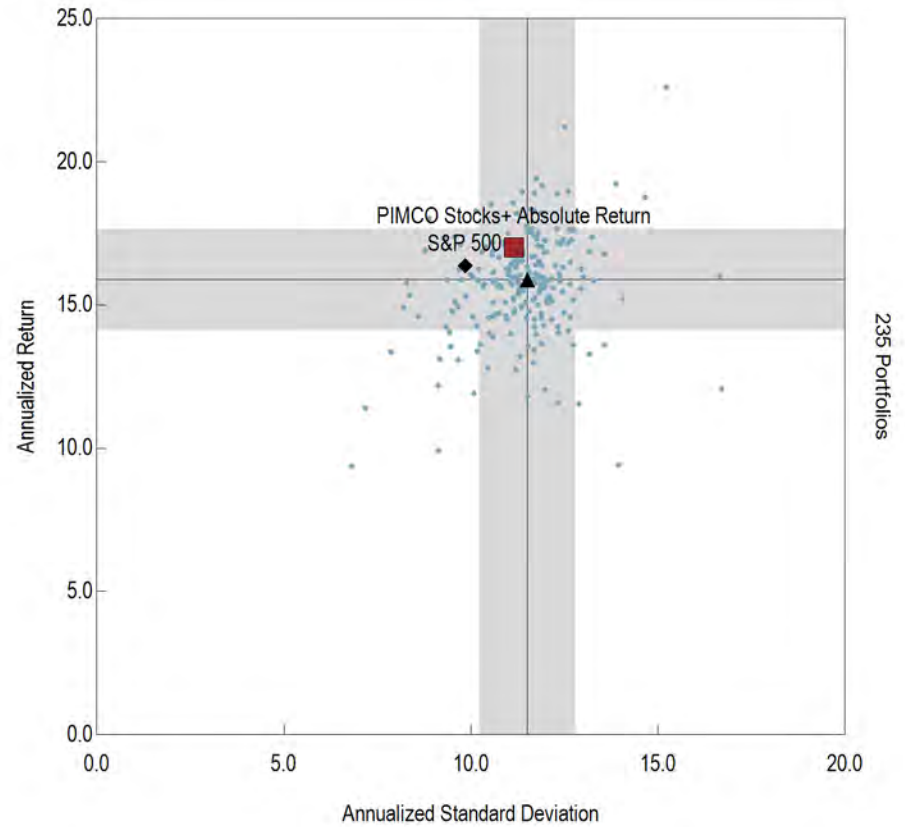
PIMCO Stocks+ Absolute Return  
 Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2016

3 Years



5 Years



3 Years

|  | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|--|--------------|--------------------------|--------------|
| PIMCO Stocks+ Absolute Return            | 10.8%        | 10.1%                    | 1.1          |
| S&P 500                                  | 11.2%        | 8.3%                     | 1.3          |
| eA US Large Cap Core Equity Gross Median | 10.4%        | 10.9%                    | 0.9          |

5 Years

|  | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|--|--------------|--------------------------|--------------|
| PIMCO Stocks+ Absolute Return            | 17.0%        | 11.2%                    | 1.5          |
| S&P 500                                  | 16.4%        | 9.8%                     | 1.7          |
| eA US Large Cap Core Equity Gross Median | 15.9%        | 11.5%                    | 1.4          |

# Jackson Square Partners Manager Portfolio Overview

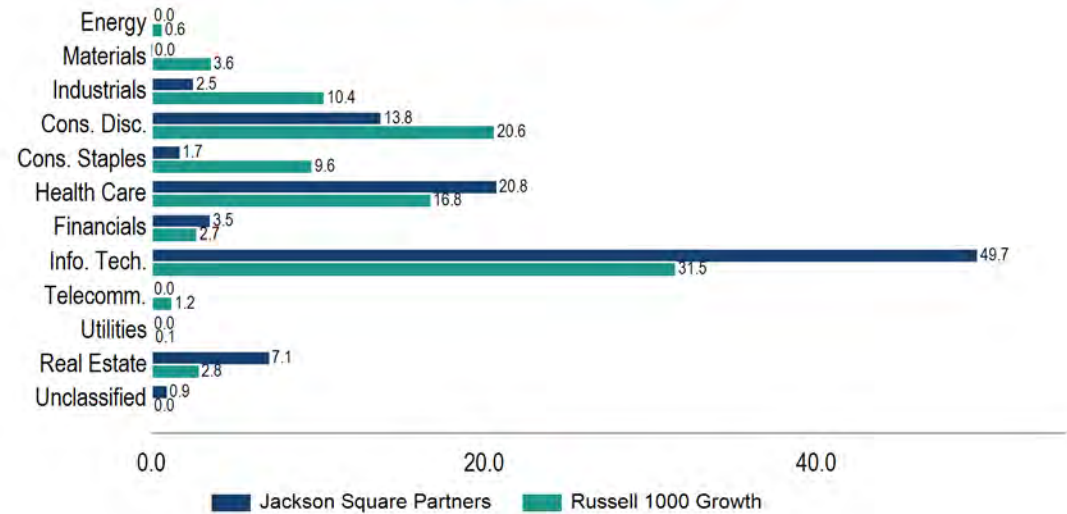
Period Ending: September 30, 2016

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

## Characteristics

|                                 | Portfolio | Russell 1000 Growth |
|---------------------------------|-----------|---------------------|
| Number of Holdings              | 32        | 599                 |
| Weighted Avg. Market Cap. (\$B) | 97.74     | 135.66              |
| Median Market Cap. (\$B)        | 32.10     | 8.86                |
| Price To Earnings               | 33.23     | 26.31               |
| Price To Book                   | 6.67      | 6.76                |
| Price To Sales                  | 6.60      | 3.99                |
| Return on Equity (%)            | 21.50     | 24.49               |
| Yield (%)                       | 0.94      | 1.53                |
| Beta                            | 1.30      | 1.00                |

## Sector Allocation (%) vs Russell 1000 Growth



## Largest Holdings

|                    | End Weight | Return |
|--------------------|------------|--------|
| VISA 'A'           | 5.86       | 11.69  |
| PAYPAL HOLDINGS    | 5.44       | 12.22  |
| QUALCOMM           | 5.19       | 28.95  |
| CELGENE            | 4.96       | 5.98   |
| MICROSOFT          | 4.83       | 13.27  |
| CROWN CASTLE INTL. | 4.77       | -6.22  |
| ALLERGAN           | 4.47       | -0.34  |
| MASTERCARD         | 4.45       | 15.82  |
| FACEBOOK CLASS A   | 4.21       | 12.24  |
| EBAY               | 4.20       | 40.54  |

## Top Contributors

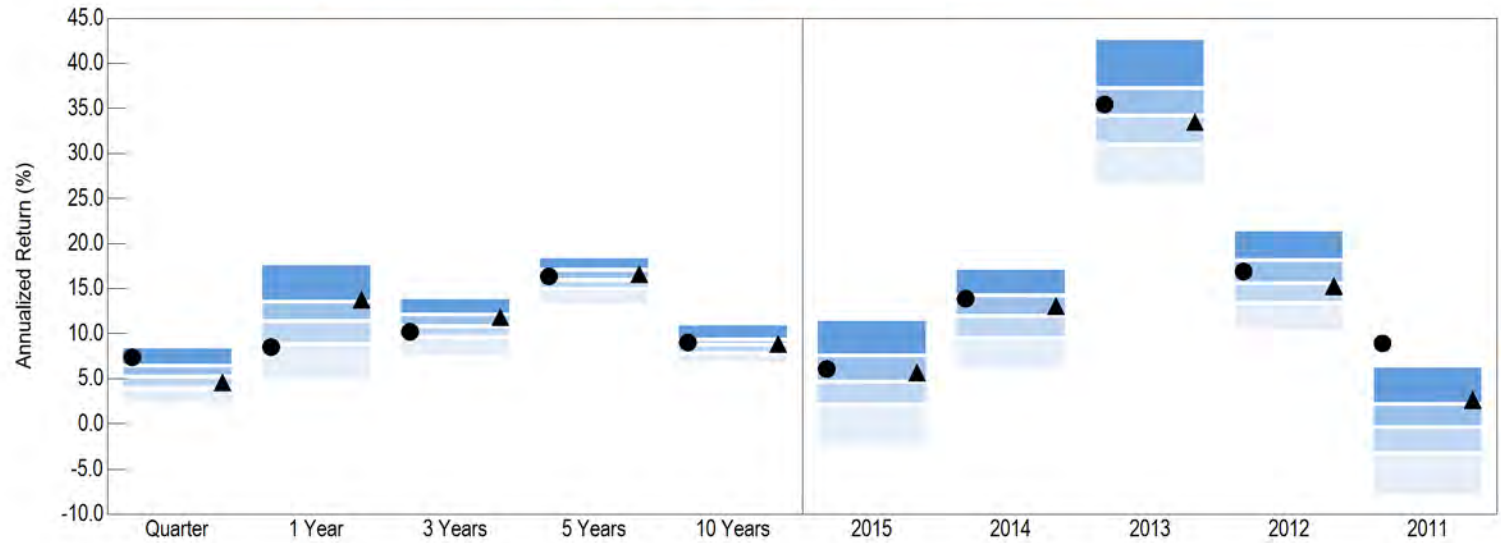
|                  | Avg Wgt | Return | Contribution |
|------------------|---------|--------|--------------|
| EBAY             | 3.65    | 40.54  | 1.48         |
| QUALCOMM         | 5.03    | 28.95  | 1.45         |
| BIOGEN           | 3.86    | 29.45  | 1.14         |
| MASTERCARD       | 4.28    | 15.82  | 0.68         |
| VISA 'A'         | 5.76    | 11.69  | 0.67         |
| MICROSOFT        | 4.71    | 13.27  | 0.63         |
| PAYPAL HOLDINGS  | 4.83    | 12.22  | 0.59         |
| ELECTRONIC ARTS  | 4.53    | 12.72  | 0.58         |
| ALPHABET 'A'     | 3.73    | 14.29  | 0.53         |
| FACEBOOK CLASS A | 4.07    | 12.24  | 0.50         |

## Bottom Contributors

|                              | Avg Wgt | Return | Contribution |
|------------------------------|---------|--------|--------------|
| LIBERTY INTACT.QVC GROUP 'A' | 4.40    | -21.13 | -0.93        |
| NOVO NORDISK 'B' ADR 1:1     | 2.52    | -21.91 | -0.55        |
| CROWN CASTLE INTL.           | 5.04    | -6.22  | -0.31        |
| EQUINIX                      | 2.68    | -6.64  | -0.18        |
| WALGREENS BOOTS ALLIANCE     | 4.18    | -2.74  | -0.11        |
| DENTSPLY INTL.               | 2.37    | -4.08  | -0.10        |
| TRIPADVISOR 'A'              | 3.00    | -1.74  | -0.05        |
| INTUIT                       | 2.20    | -1.18  | -0.03        |
| ALLERGAN                     | 4.75    | -0.34  | -0.02        |
| LIBERTY GLOBAL LILAC CLASS C | 0.10    | -13.67 | -0.01        |

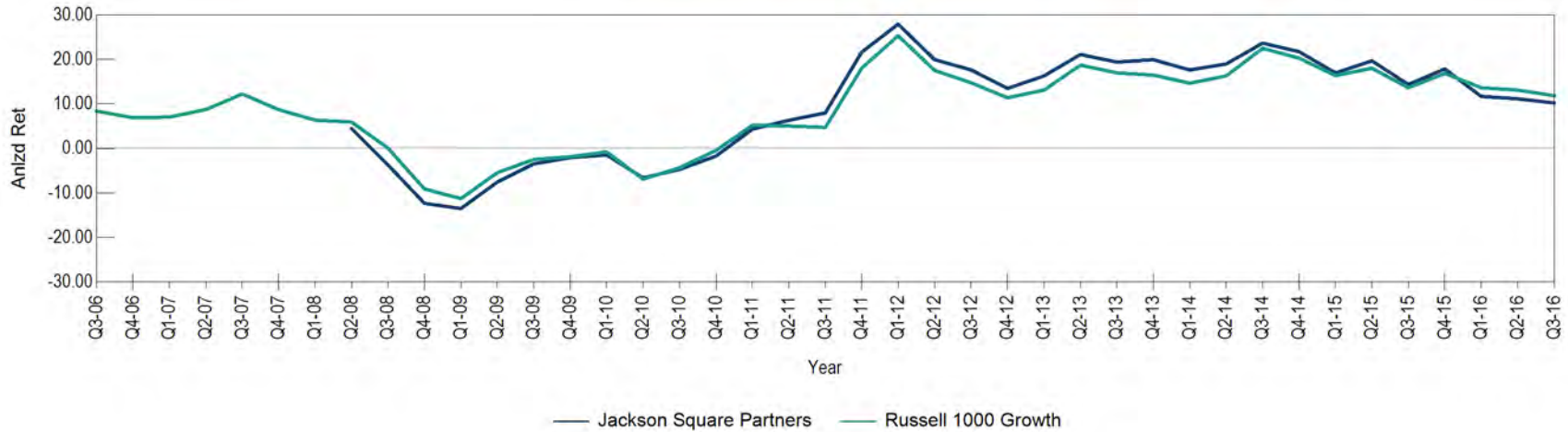
Unclassified sector allocation includes cash allocations.

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

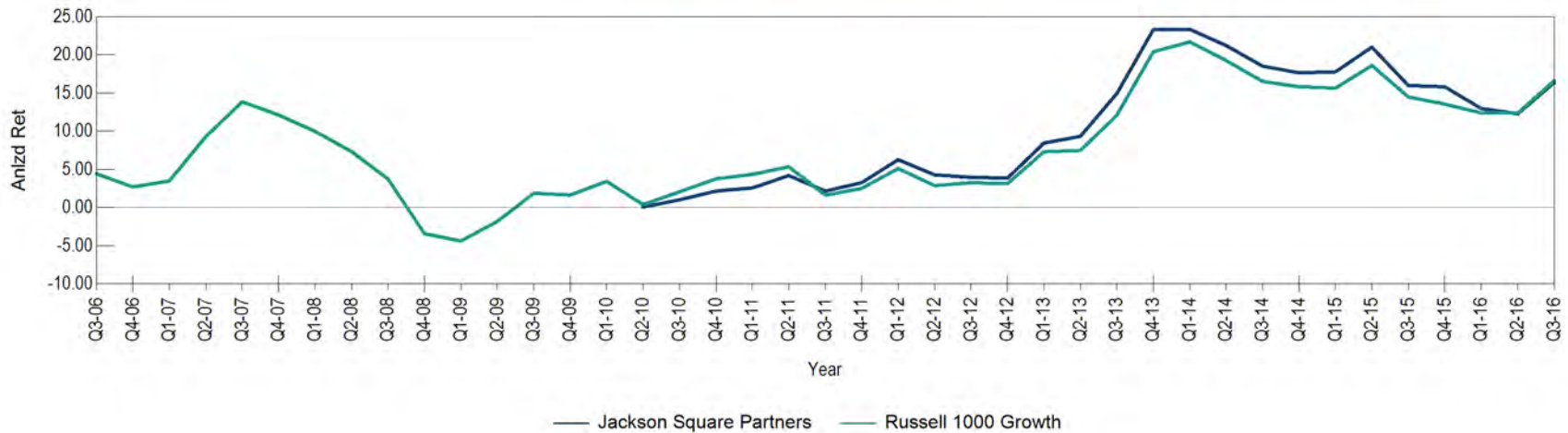


|                           | Return (Rank) |           |           |           |          |          |           |           |           |          |
|---------------------------|---------------|-----------|-----------|-----------|----------|----------|-----------|-----------|-----------|----------|
|                           | Quarter       | 1 Year    | 3 Years   | 5 Years   | 10 Years | 2015     | 2014      | 2013      | 2012      | 2011     |
| 5th Percentile            | 8.6           | 17.8      | 14.0      | 18.5      | 11.1     | 11.6     | 17.3      | 42.8      | 21.6      | 6.4      |
| 25th Percentile           | 6.5           | 13.6      | 12.2      | 17.2      | 9.4      | 7.6      | 14.3      | 37.3      | 18.2      | 2.2      |
| Median                    | 5.3           | 11.5      | 10.9      | 16.0      | 8.9      | 4.7      | 12.0      | 34.3      | 15.7      | -0.3     |
| 75th Percentile           | 4.0           | 8.9       | 9.7       | 15.0      | 7.8      | 2.1      | 9.5       | 31.0      | 13.4      | -3.2     |
| 95th Percentile           | 2.1           | 4.9       | 7.4       | 13.3      | 6.7      | -2.4     | 5.8       | 26.6      | 10.2      | -8.0     |
| # of Portfolios           | 260           | 260       | 256       | 240       | 204      | 270      | 291       | 274       | 274       | 294      |
| ● Jackson Square Partners | 7.4 (18)      | 8.5 (79)  | 10.2 (64) | 16.3 (46) | 9.0 (43) | 6.1 (37) | 13.9 (31) | 35.4 (40) | 16.9 (37) | 8.9 (3)  |
| ▲ Russell 1000 Growth     | 4.6 (63)      | 13.8 (23) | 11.8 (33) | 16.6 (39) | 8.8 (51) | 5.7 (42) | 13.0 (38) | 33.5 (56) | 15.3 (55) | 2.6 (22) |

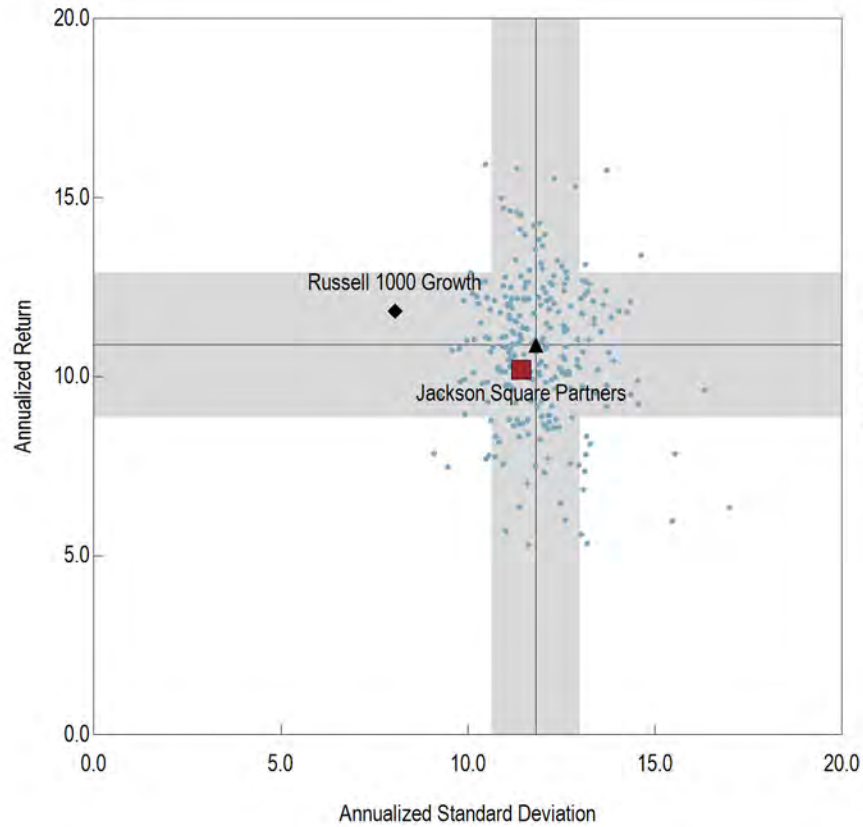
Rolling 3 Year Annualized Return (%)



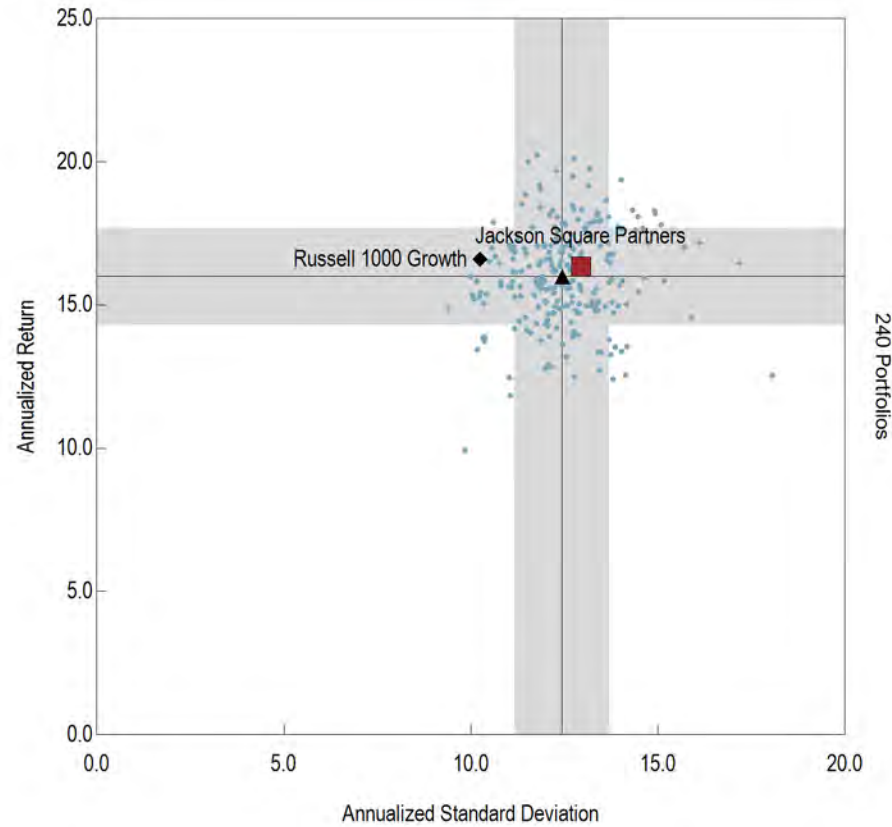
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

|  | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|--|--------------|--------------------------|--------------|
| Jackson Square Partners                    | 10.2%        | 11.4%                    | 0.9          |
| Russell 1000 Growth                        | 11.8%        | 8.1%                     | 1.5          |
| eA US Large Cap Growth Equity Gross Median | 10.9%        | 11.8%                    | 0.9          |

5 Years

|  | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|--|--------------|--------------------------|--------------|
| Jackson Square Partners                    | 16.3%        | 12.9%                    | 1.3          |
| Russell 1000 Growth                        | 16.6%        | 10.3%                    | 1.6          |
| eA US Large Cap Growth Equity Gross Median | 16.0%        | 12.4%                    | 1.3          |

# Robeco Boston Partners Manager Portfolio Overview

Period Ending: September 30, 2016

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

## Characteristics

|                                 | Portfolio | Russell 1000 Value |
|---------------------------------|-----------|--------------------|
| Number of Holdings              | 91        | 687                |
| Weighted Avg. Market Cap. (\$B) | 99.08     | 106.99             |
| Median Market Cap. (\$B)        | 28.07     | 7.52               |
| Price To Earnings               | 16.49     | 19.32              |
| Price To Book                   | 3.37      | 2.40               |
| Price To Sales                  | 2.25      | 2.57               |
| Return on Equity (%)            | 16.20     | 12.00              |
| Yield (%)                       | 2.00      | 2.57               |
| Beta                            | 0.98      | 1.00               |

## Sector Allocation (%) vs Russell 1000 Value



## Largest Holdings

|                         | End Weight | Return |
|-------------------------|------------|--------|
| JOHNSON & JOHNSON       | 4.50       | -1.96  |
| JP MORGAN CHASE & CO.   | 4.27       | 8.00   |
| BERKSHIRE HATHAWAY 'B'  | 3.56       | -0.22  |
| MERCK & COMPANY         | 2.69       | 9.14   |
| BANK OF AMERICA         | 2.69       | 18.48  |
| CHEVRON                 | 2.55       | -0.79  |
| DISCOVER FINANCIAL SVS. | 2.05       | 6.09   |
| RAYTHEON 'B'            | 2.00       | 0.68   |
| GENERAL DYNAMICS        | 1.89       | 11.43  |
| MCKESSON                | 1.84       | -10.52 |

## Top Contributors

|                        | Avg Wgt | Return | Contribution |
|------------------------|---------|--------|--------------|
| EBAY                   | 1.23    | 40.54  | 0.50         |
| BANK OF AMERICA        | 2.45    | 18.48  | 0.45         |
| JP MORGAN CHASE & CO.  | 4.25    | 8.00   | 0.34         |
| EOG RES.               | 1.69    | 16.16  | 0.27         |
| HEWLETT PACKARD ENTER. | 1.10    | 24.52  | 0.27         |
| MERCK & COMPANY        | 2.60    | 9.14   | 0.24         |
| ALPHABET 'A'           | 1.54    | 14.29  | 0.22         |
| GENERAL DYNAMICS       | 1.79    | 11.43  | 0.21         |
| CITIGROUP              | 1.67    | 11.82  | 0.20         |
| FLEXTRONICS INTL.      | 1.17    | 15.42  | 0.18         |

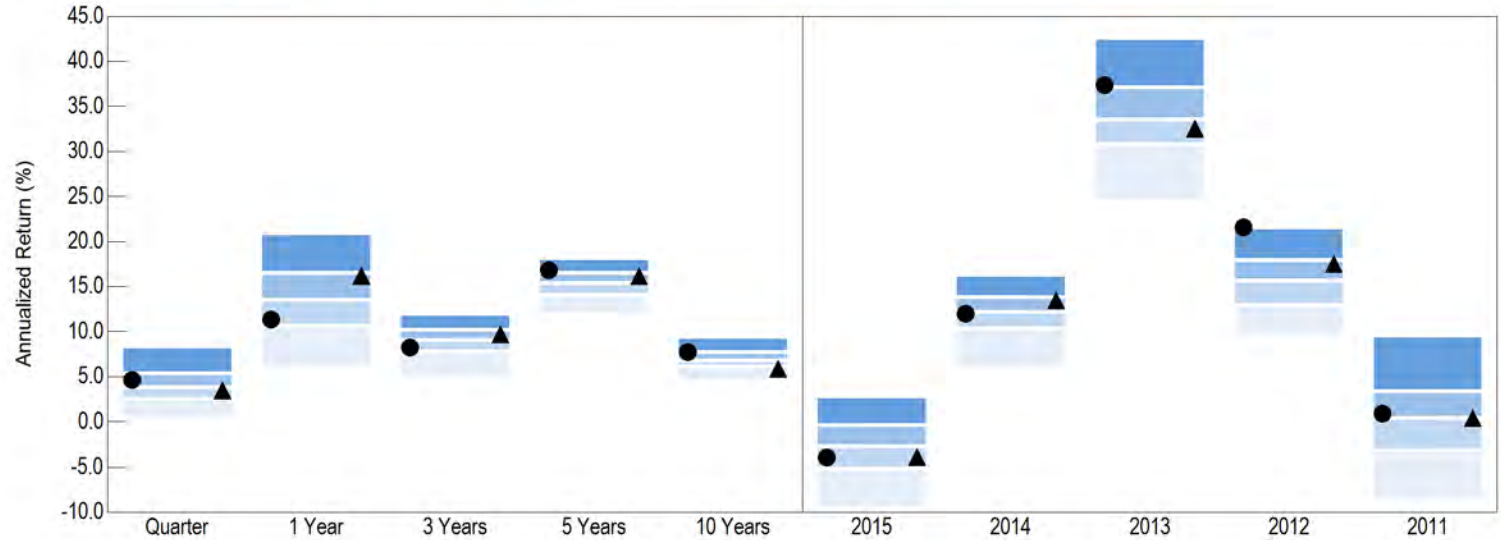
## Bottom Contributors

|                              | Avg Wgt | Return | Contribution |
|------------------------------|---------|--------|--------------|
| MCKESSON                     | 2.12    | -10.52 | -0.22        |
| VERIZON COMMUNICATIONS       | 2.18    | -5.98  | -0.13        |
| BARRICK GOLD (NYS)           | 0.71    | -16.91 | -0.12        |
| JOHNSON & JOHNSON            | 4.73    | -1.96  | -0.09        |
| EXPRESS SCRIPTS HOLDING      | 1.30    | -6.95  | -0.09        |
| LIBERTY GLOBAL LILAC CLASS C | 0.53    | -13.67 | -0.07        |
| SANOFI ADR 2:1               | 0.76    | -8.75  | -0.07        |
| GILEAD SCIENCES              | 1.41    | -4.58  | -0.06        |
| OCCIDENTAL PTL.              | 2.31    | -2.54  | -0.06        |
| ACE                          | 1.65    | -3.34  | -0.06        |

Unclassified sector allocation includes cash allocations.

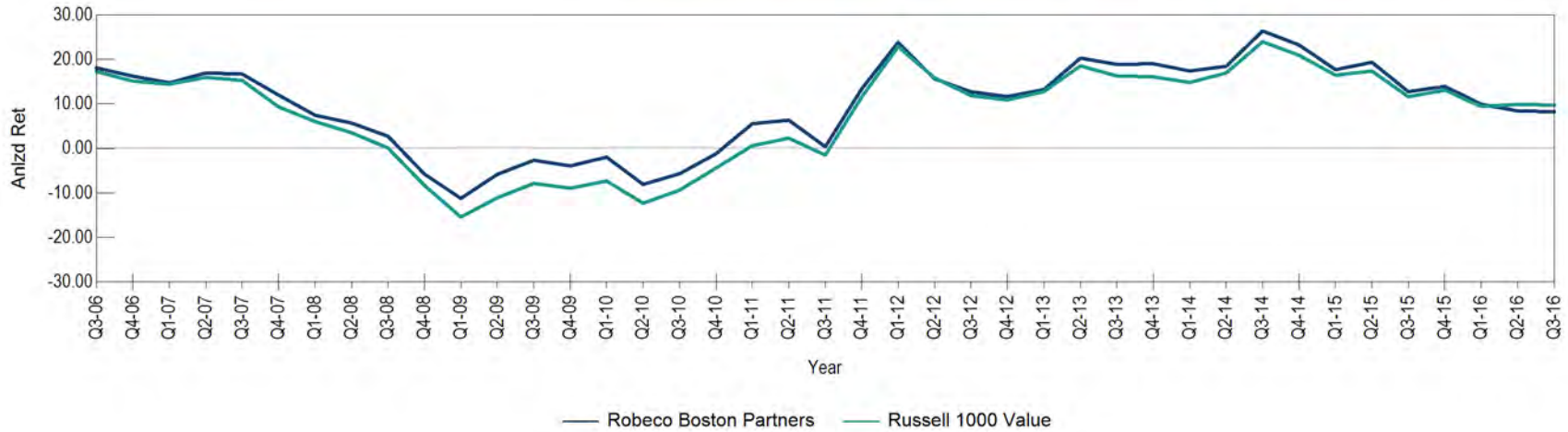


Robeco Boston Partners vs. eA US Large Cap Value Equity Gross Universe

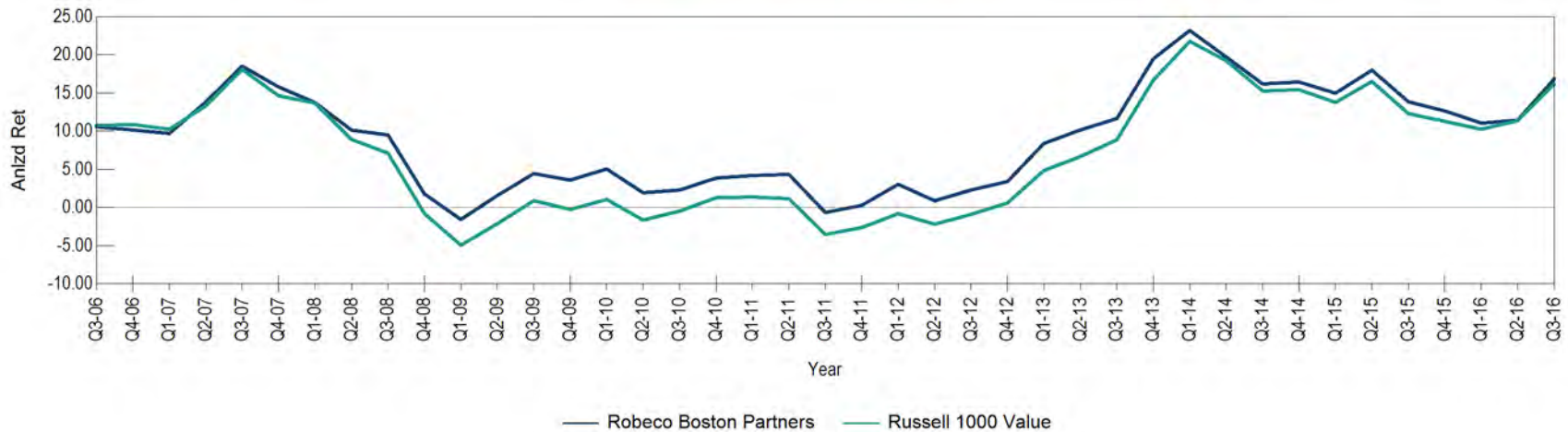


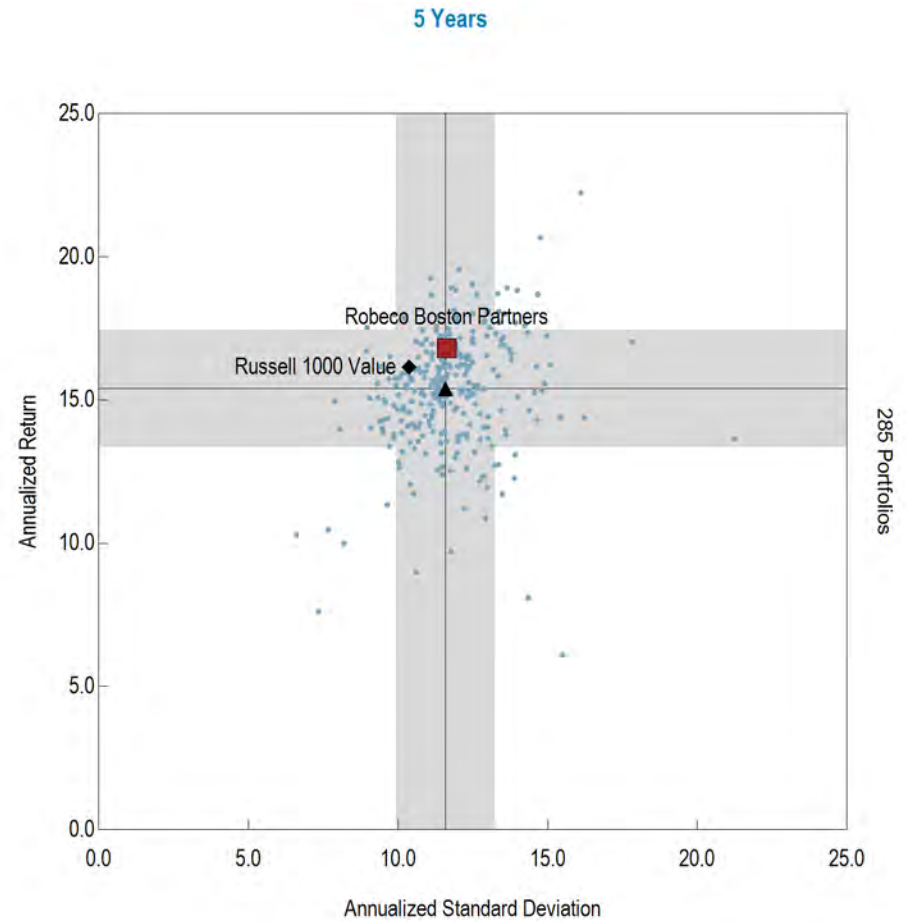
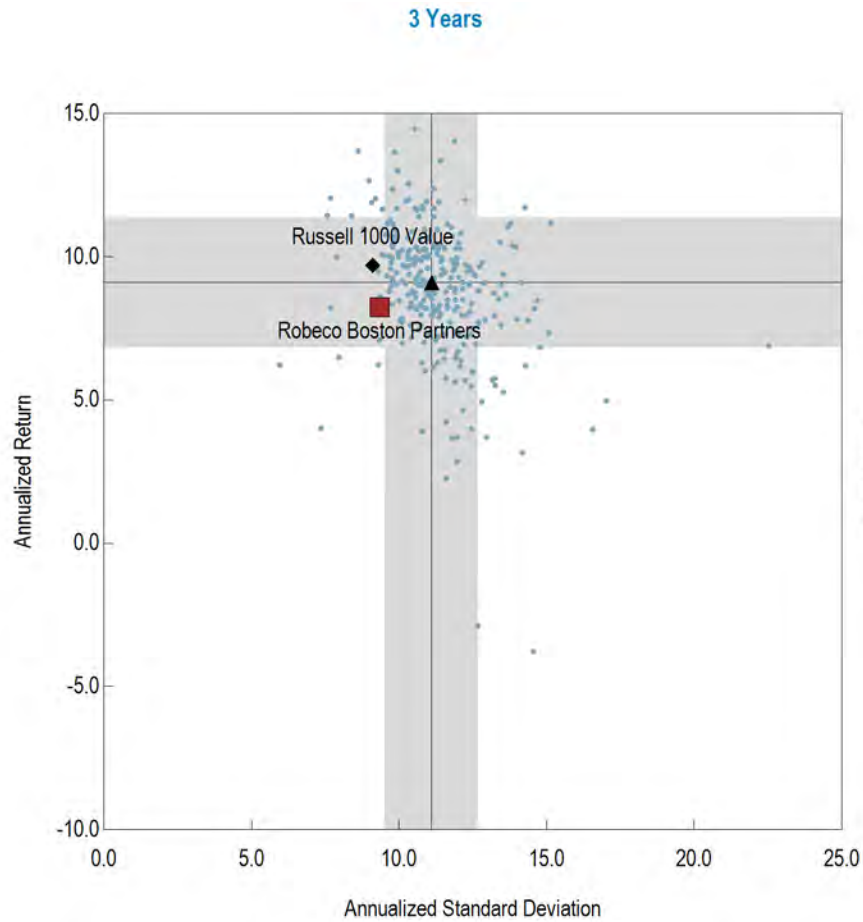
|                                 | Quarter  | 1 Year    | 3 Years  | 5 Years   | 10 Years | 2015      | 2014      | 2013      | 2012      | 2011     |
|---------------------------------|----------|-----------|----------|-----------|----------|-----------|-----------|-----------|-----------|----------|
| <b>5th Percentile</b>           | 8.3      | 20.9      | 11.9     | 18.1      | 9.4      | 2.8       | 16.3      | 42.5      | 21.5      | 9.5      |
| <b>25th Percentile</b>          | 5.4      | 16.6      | 10.2     | 16.6      | 7.7      | -0.4      | 13.9      | 37.2      | 18.0      | 3.4      |
| <b>Median</b>                   | 3.8      | 13.6      | 9.1      | 15.4      | 6.8      | -2.6      | 12.2      | 33.6      | 15.7      | 0.5      |
| <b>75th Percentile</b>          | 2.6      | 10.6      | 7.8      | 14.1      | 6.2      | -5.1      | 10.4      | 30.8      | 13.0      | -3.1     |
| <b>95th Percentile</b>          | 0.5      | 6.0       | 4.9      | 12.0      | 4.5      | -9.4      | 5.9       | 24.6      | 9.6       | -8.6     |
| <b># of Portfolios</b>          | 311      | 311       | 303      | 285       | 240      | 312       | 307       | 310       | 303       | 310      |
| <b>● Robeco Boston Partners</b> | 4.6 (39) | 11.3 (69) | 8.2 (68) | 16.8 (22) | 7.7 (26) | -3.9 (65) | 12.0 (55) | 37.4 (24) | 21.6 (5)  | 0.9 (46) |
| <b>▲ Russell 1000 Value</b>     | 3.5 (58) | 16.2 (29) | 9.7 (38) | 16.2 (35) | 5.9 (83) | -3.8 (64) | 13.5 (33) | 32.5 (60) | 17.5 (30) | 0.4 (51) |

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





|   | <b>3 Years</b> |                          |              | <b>5 Years</b>                            |                          |              |     |
|---|----------------|--------------------------|--------------|---|--------------------------|--------------|-----|
|   | Anlzd Return   | Anlzd Standard Deviation | Sharpe Ratio | Anlzd Return                              | Anlzd Standard Deviation | Sharpe Ratio |     |
| Robeco Boston Partners                    | 8.2%           | 9.3%                     | 0.9          | Robeco Boston Partners                    | 16.8%                    | 11.6%        | 1.4 |
| Russell 1000 Value                        | 9.7%           | 9.1%                     | 1.1          | Russell 1000 Value                        | 16.2%                    | 10.4%        | 1.5 |
| eA US Large Cap Value Equity Gross Median | 9.1%           | 11.1%                    | 0.8          | eA US Large Cap Value Equity Gross Median | 15.4%                    | 11.6%        | 1.3 |

# Emerald Advisers Manager Portfolio Overview

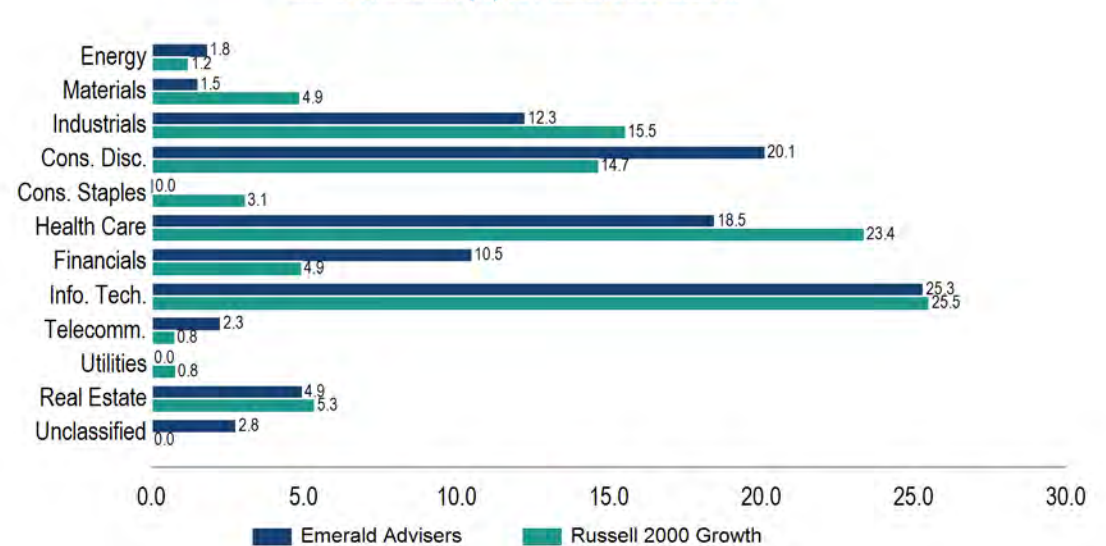
Period Ending: September 30, 2016

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

## Characteristics

|                                 | Portfolio | Russell 2000 Growth |
|---------------------------------|-----------|---------------------|
| Number of Holdings              | 121       | 1,154               |
| Weighted Avg. Market Cap. (\$B) | 2.14      | 1.98                |
| Median Market Cap. (\$B)        | 1.42      | 0.84                |
| Price To Earnings               | 26.56     | 28.66               |
| Price To Book                   | 4.94      | 4.74                |
| Price To Sales                  | 3.81      | 3.18                |
| Return on Equity (%)            | 15.65     | 14.80               |
| Yield (%)                       | 0.44      | 0.63                |
| Beta                            | 0.93      | 1.00                |

## Sector Allocation (%) vs Russell 2000 Growth



## Largest Holdings

|                       | End Weight | Return |
|-----------------------|------------|--------|
| VEEVA SYSTEMS CL.A    | 2.59       | 20.98  |
| 8X8                   | 1.82       | 5.61   |
| BURLINGTON STORES     | 1.69       | 21.45  |
| VONAGE HOLDINGS       | 1.69       | 8.36   |
| MICROSEMI             | 1.65       | 28.46  |
| LENDINGTREE           | 1.63       | 9.71   |
| BANK OF THE OZARKS    | 1.60       | 2.75   |
| OPUS BANK             | 1.56       | 5.30   |
| QTS REALTY TRUST CL.A | 1.52       | -4.95  |
| MICROSTRATEGY         | 1.50       | -4.33  |

## Top Contributors

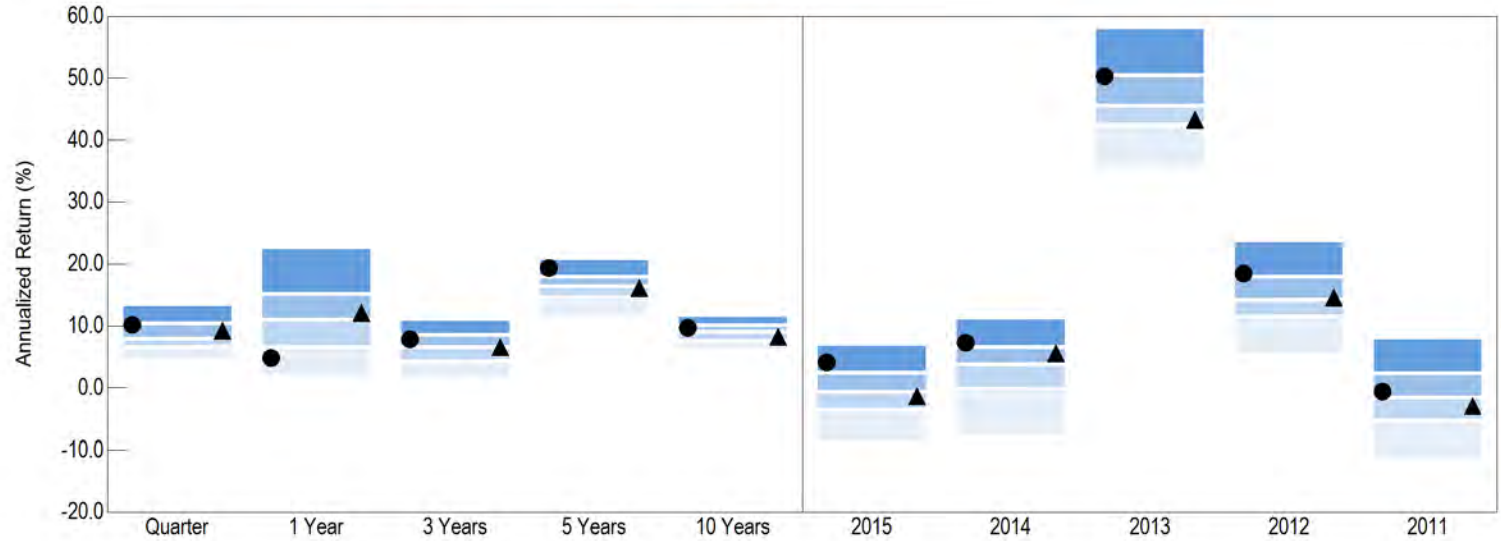
|                      | Avg Wgt | Return | Contribution |
|----------------------|---------|--------|--------------|
| SAREPTA THERAPEUTICS | 0.35    | 222.02 | 0.77         |
| CEPHEID              | 0.87    | 71.35  | 0.62         |
| VEEVA SYSTEMS CL.A   | 2.41    | 20.98  | 0.51         |
| CAVIUM               | 0.91    | 50.78  | 0.46         |
| TREX                 | 1.46    | 30.72  | 0.45         |
| LUMENTUM HOLDINGS    | 0.60    | 72.60  | 0.44         |
| GIGAMON              | 0.91    | 46.56  | 0.42         |
| MICROSEMI            | 1.38    | 28.46  | 0.39         |
| BLUEBIRD BIO         | 0.68    | 56.57  | 0.39         |
| BURLINGTON STORES    | 1.60    | 21.45  | 0.34         |

## Bottom Contributors

|                       | Avg Wgt | Return | Contribution |
|-----------------------|---------|--------|--------------|
| FIVE BELOW            | 1.59    | -13.19 | -0.21        |
| CHUY'S HOLDINGS       | 1.00    | -19.27 | -0.19        |
| DAVE & BUSTER'S ENTM. | 1.07    | -16.26 | -0.17        |
| GREATBATCH            | 0.57    | -29.87 | -0.17        |
| CYRUSONE              | 1.22    | -13.86 | -0.17        |
| TILE SHOP HOLDINGS    | 0.76    | -16.75 | -0.13        |
| VIRTU FINANCIAL CL.A  | 0.74    | -15.64 | -0.12        |
| TUTOR PERINI          | 1.28    | -8.83  | -0.11        |
| MODEL N               | 0.58    | -16.78 | -0.10        |
| KATE SPADE & COMPANY  | 0.52    | -16.89 | -0.09        |

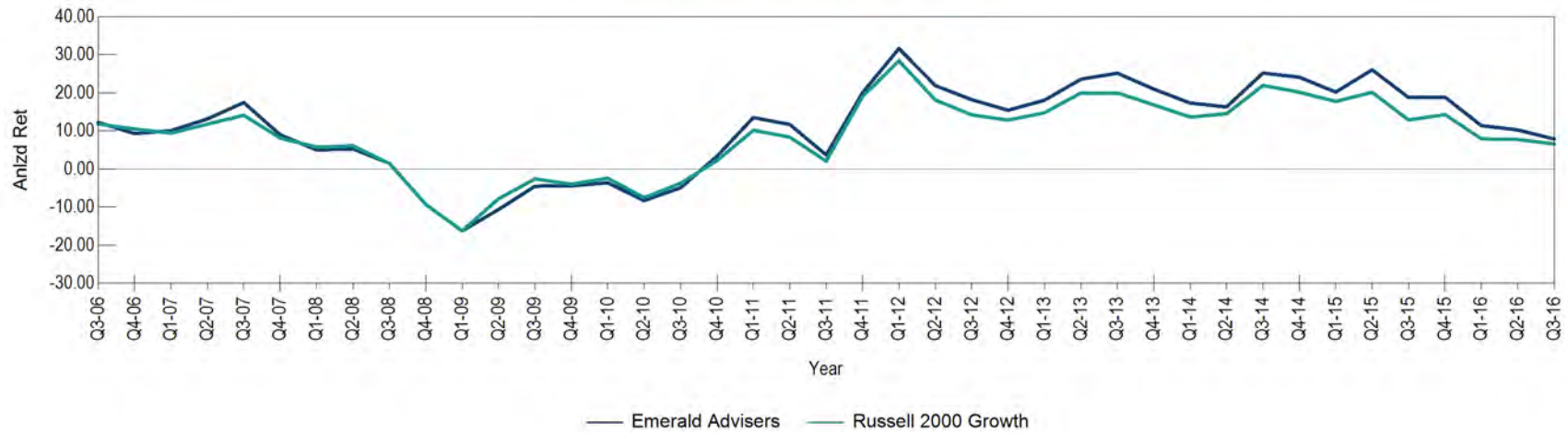
Unclassified sector allocation includes cash allocations.

Emerald Advisers vs. eA US Small Cap Growth Equity Gross Universe

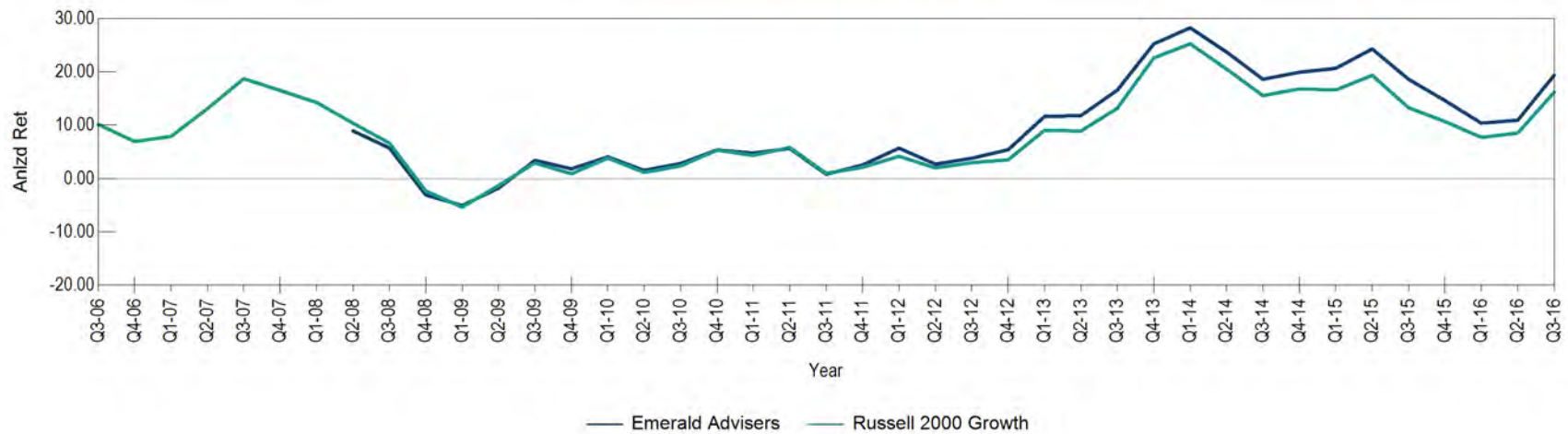


|                       | Return (Rank) |           |          |           |          |           |          |           |           |           |
|-----------------------|---------------|-----------|----------|-----------|----------|-----------|----------|-----------|-----------|-----------|
| 5th Percentile        | 13.5          | 22.6      | 11.1     | 20.9      | 11.7     | 7.1       | 11.3     | 58.2      | 23.8      | 8.1       |
| 25th Percentile       | 10.5          | 15.2      | 8.6      | 18.0      | 10.1     | 2.5       | 6.7      | 50.6      | 18.0      | 2.4       |
| Median                | 8.0           | 11.1      | 6.6      | 16.5      | 9.1      | -0.6      | 3.9      | 45.6      | 14.3      | -1.5      |
| 75th Percentile       | 6.6           | 6.7       | 4.4      | 14.7      | 7.6      | -3.5      | -0.1     | 42.6      | 11.6      | -5.2      |
| 95th Percentile       | 4.4           | 1.9       | 1.5      | 11.4      | 6.0      | -8.7      | -7.6     | 35.6      | 5.4       | -11.5     |
| # of Portfolios       | 152           | 152       | 146      | 139       | 115      | 154       | 161      | 160       | 162       | 166       |
| ● Emerald Advisers    | 10.2 (28)     | 4.8 (85)  | 7.9 (32) | 19.3 (11) | 9.7 (37) | 4.1 (19)  | 7.3 (21) | 50.3 (27) | 18.5 (22) | -0.6 (42) |
| ▲ Russell 2000 Growth | 9.2 (38)      | 12.1 (43) | 6.6 (52) | 16.1 (56) | 8.3 (61) | -1.4 (59) | 5.6 (32) | 43.3 (70) | 14.6 (48) | -2.9 (60) |

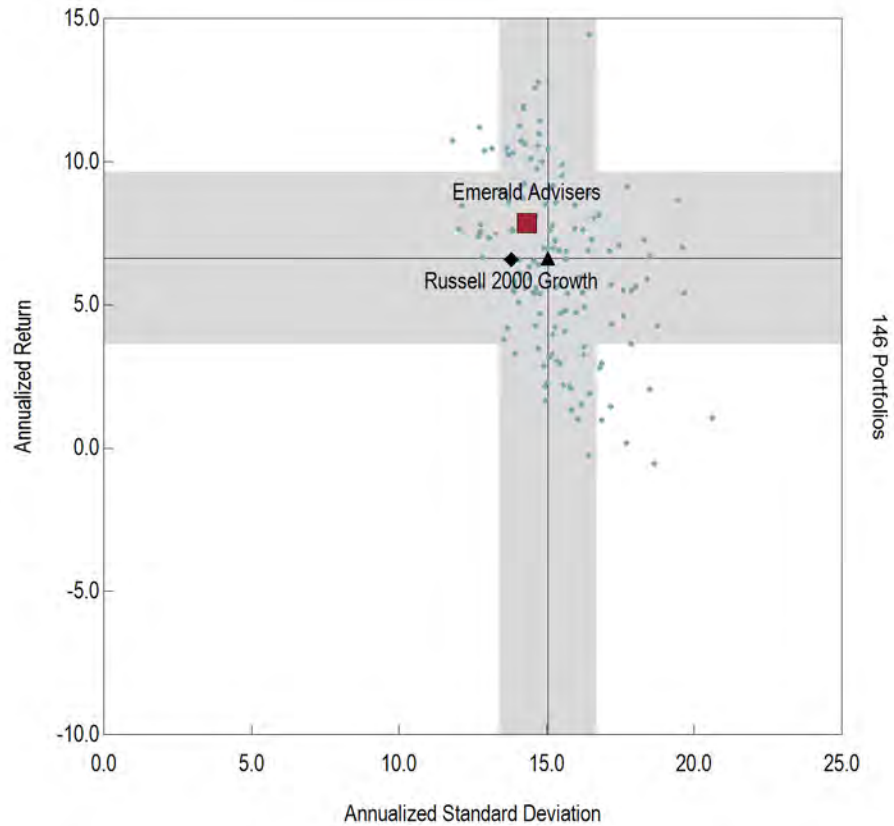
Rolling 3 Year Annualized Return (%)



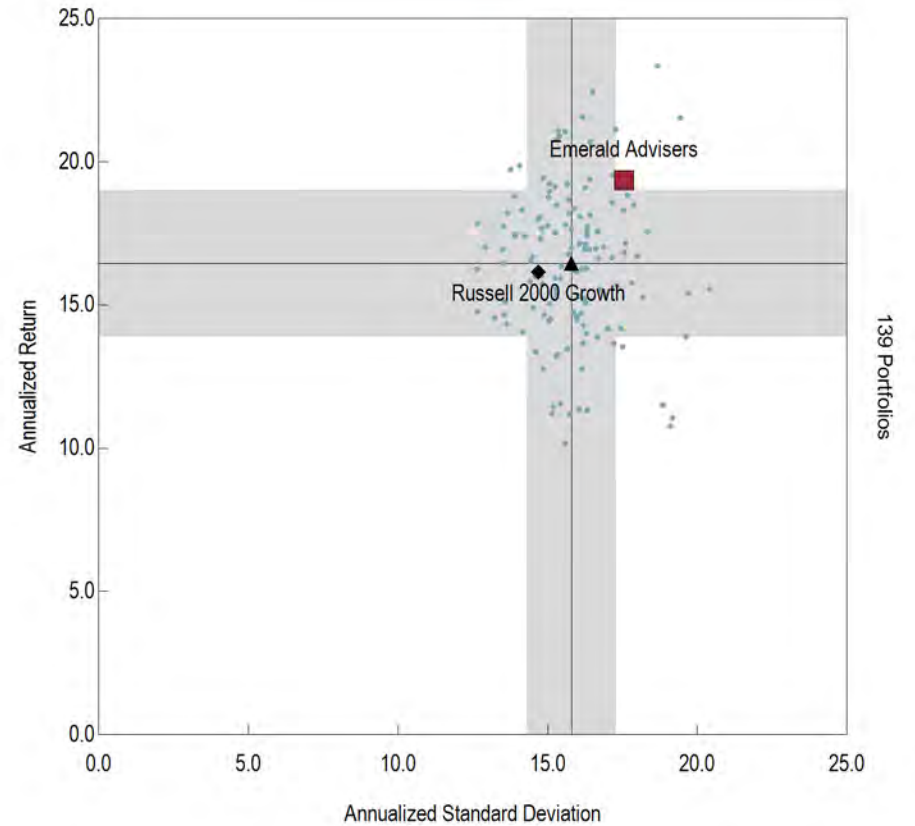
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

|  | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|--|--------------|--------------------------|--------------|
| Emerald Advisers                           | 7.9%         | 14.3%                    | 0.5          |
| Russell 2000 Growth                        | 6.6%         | 13.8%                    | 0.5          |
| eA US Small Cap Growth Equity Gross Median | 6.6%         | 15.0%                    | 0.4          |

5 Years

|  | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|--|--------------|--------------------------|--------------|
| Emerald Advisers                           | 19.3%        | 17.6%                    | 1.1          |
| Russell 2000 Growth                        | 16.1%        | 14.7%                    | 1.1          |
| eA US Small Cap Growth Equity Gross Median | 16.5%        | 15.8%                    | 1.0          |

# Ceredex Manager Portfolio Overview

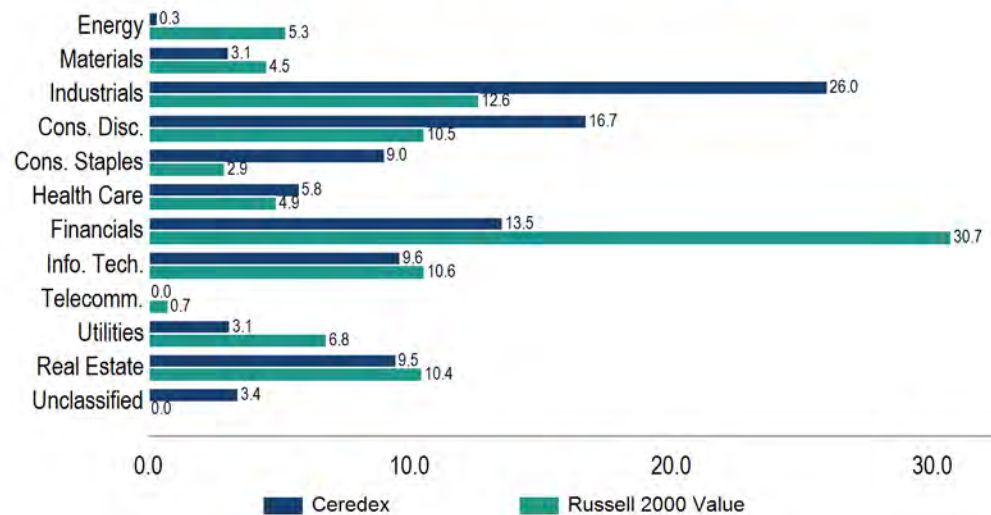
Period Ending: September 30, 2016

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

## Characteristics

|                                 | Portfolio | Russell 2000 Value |
|---------------------------------|-----------|--------------------|
| Number of Holdings              | 86        | 1,338              |
| Weighted Avg. Market Cap. (\$B) | 2.37      | 1.71               |
| Median Market Cap. (\$B)        | 1.90      | 0.61               |
| Price To Earnings               | 28.03     | 17.86              |
| Price To Book                   | 3.72      | 1.64               |
| Price To Sales                  | 1.87      | 2.25               |
| Return on Equity (%)            | 14.31     | 7.05               |
| Yield (%)                       | 2.20      | 1.89               |
| Beta                            | 0.91      | 1.00               |

## Sector Allocation (%) vs Russell 2000 Value



## Largest Holdings

|                             | End Weight | Return |
|-----------------------------|------------|--------|
| FAIR ISAAC                  | 5.28       | 10.26  |
| ENERGIZER HOLDINGS          | 3.68       | -2.48  |
| B & G FOODS                 | 3.07       | 2.90   |
| HILL-ROM HOLDINGS           | 3.05       | 23.21  |
| AMC ENTERTAINMENT HDG. CL.A | 2.81       | 13.34  |
| MEDICAL PROPS.TRUST         | 2.79       | -1.27  |
| HANOVER INSURANCE GROUP     | 2.47       | -10.33 |
| PLANTRONICS                 | 2.47       | 18.45  |
| THOR INDUSTRIES             | 2.47       | 30.83  |
| MUELLER WATER PRODUCTS      | 2.21       | 10.17  |

## Top Contributors

|                             | Avg Wgt | Return | Contribution |
|-----------------------------|---------|--------|--------------|
| THOR INDUSTRIES             | 2.15    | 30.83  | 0.66         |
| HILL-ROM HOLDINGS           | 2.74    | 23.21  | 0.63         |
| FAIR ISAAC                  | 5.05    | 10.26  | 0.52         |
| PHIBRO ANIMAL HLTH.CL.A     | 1.06    | 46.22  | 0.49         |
| PLANTRONICS                 | 2.32    | 18.45  | 0.43         |
| AMC ENTERTAINMENT HDG. CL.A | 2.68    | 13.34  | 0.36         |
| EMCOR GROUP                 | 1.64    | 21.22  | 0.35         |
| EVERCORE PARTNERS 'A'       | 1.81    | 17.27  | 0.31         |
| PAPA JOHNS INTL.            | 1.92    | 16.26  | 0.31         |
| AAR                         | 0.73    | 34.61  | 0.25         |

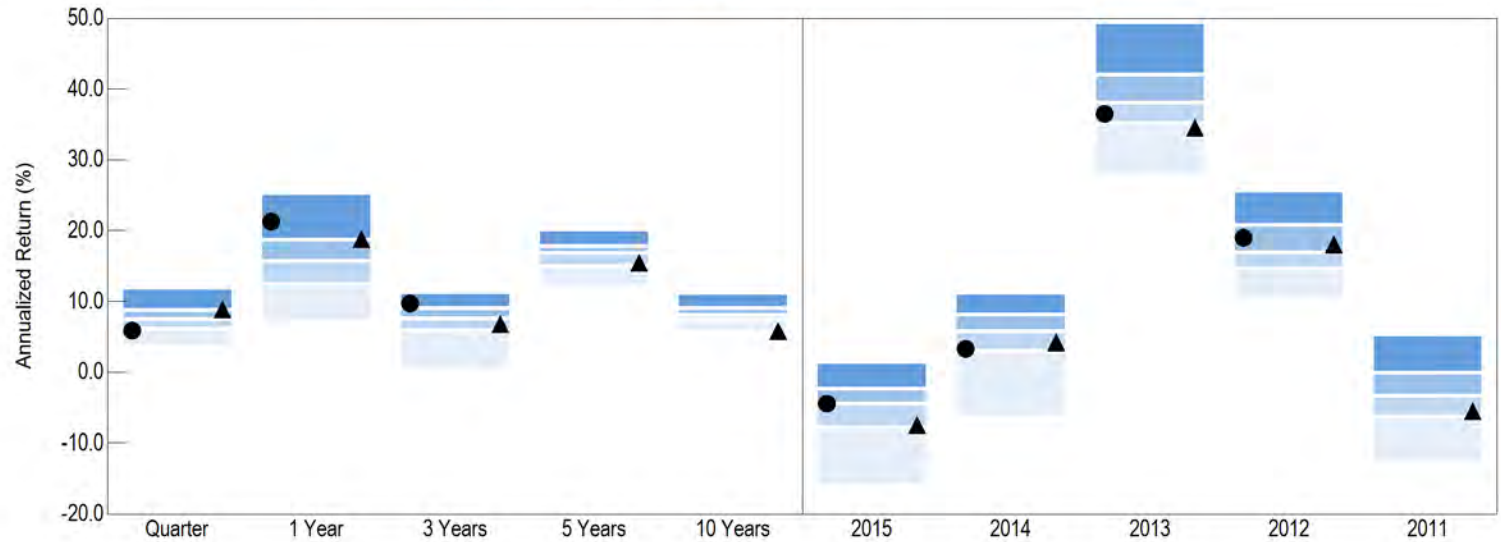
## Bottom Contributors

|                         | Avg Wgt | Return | Contribution |
|-------------------------|---------|--------|--------------|
| HSN                     | 2.32    | -17.99 | -0.42        |
| HANOVER INSURANCE GROUP | 2.72    | -10.33 | -0.28        |
| MDC PARTNERS 'A' (NAS)  | 0.40    | -40.49 | -0.16        |
| PRIMERICA               | 2.21    | -7.05  | -0.16        |
| BADGER METER            | 1.33    | -7.91  | -0.11        |
| ENERGIZER HOLDINGS      | 3.82    | -2.48  | -0.09        |
| COVANTA HOLDING         | 1.84    | -4.91  | -0.09        |
| CAL.WATER SER.          | 1.17    | -7.64  | -0.09        |
| HERMAN MILLER           | 2.23    | -3.86  | -0.09        |
| ALLETE                  | 1.18    | -6.97  | -0.08        |

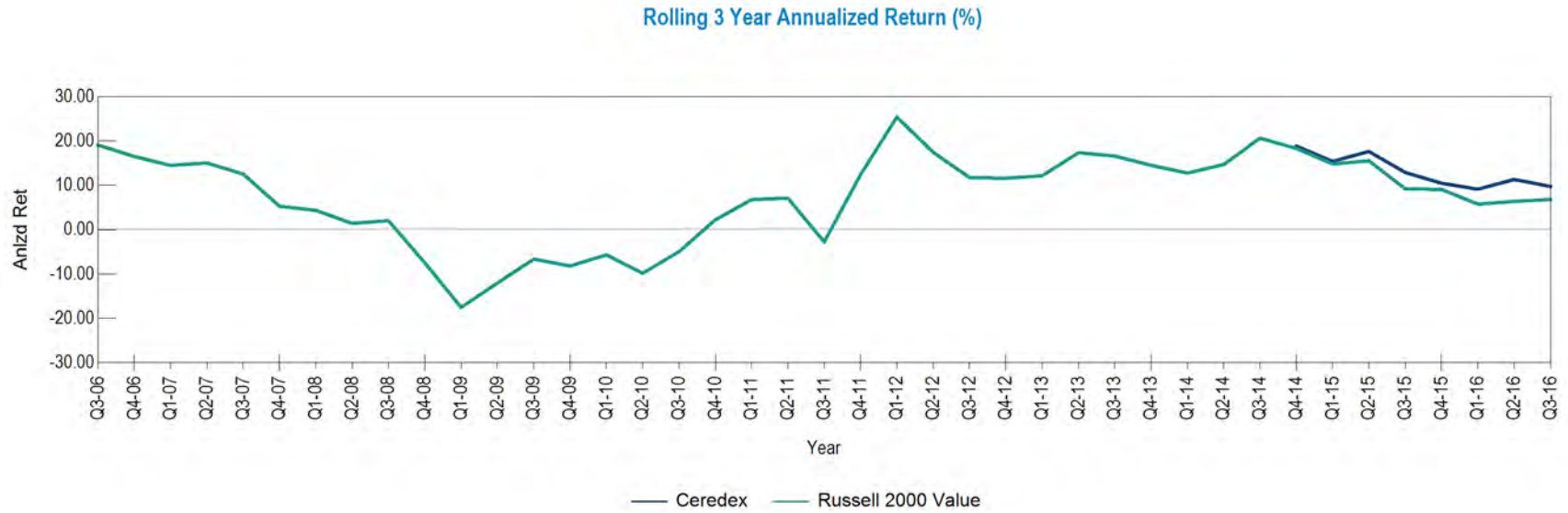
Unclassified sector allocation includes cash allocations.

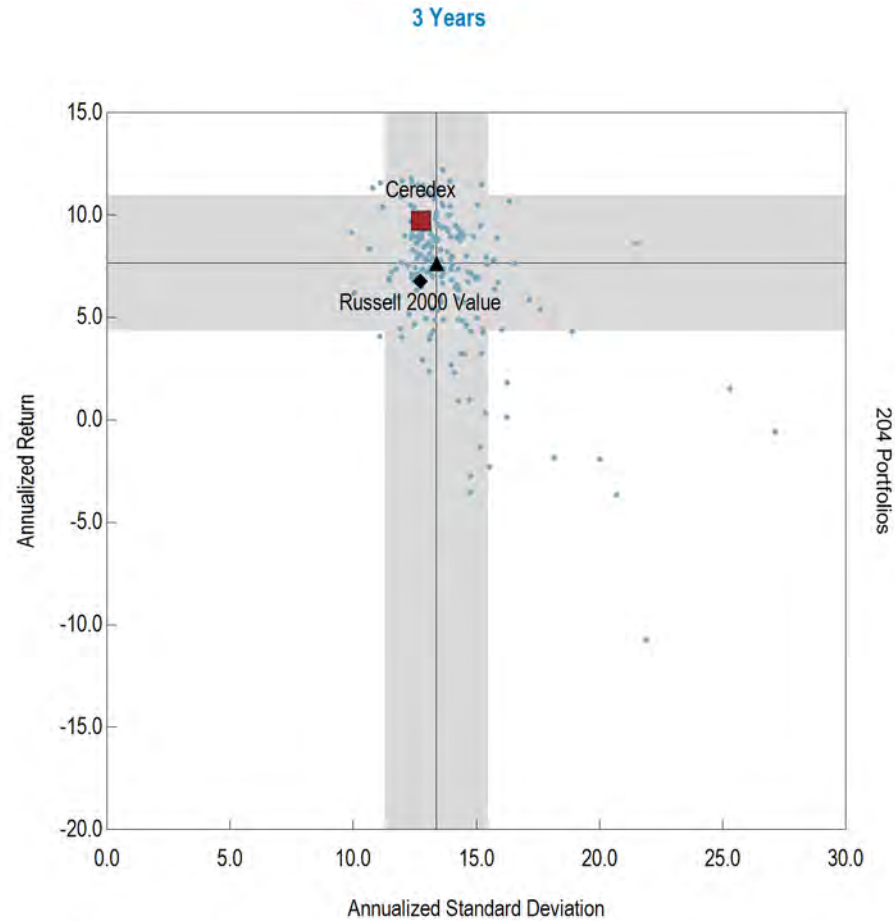


Ceredex vs. eA US Small Cap Value Equity Gross Universe



|                             | Quarter  | 1 Year    | 3 Years  | 5 Years   | 10 Years | 2015      | 2014     | 2013      | 2012      | 2011      |
|-----------------------------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|-----------|-----------|
| <b>5th Percentile</b>       | 11.9     | 25.3      | 11.3     | 20.1      | 11.2     | 1.5       | 11.2     | 49.4      | 25.7      | 5.3       |
| <b>25th Percentile</b>      | 8.8      | 18.8      | 9.1      | 17.9      | 9.1      | -2.2      | 8.2      | 42.1      | 20.8      | 0.0       |
| <b>Median</b>               | 7.6      | 15.8      | 7.7      | 16.9      | 8.1      | -4.3      | 5.8      | 38.1      | 16.9      | -3.3      |
| <b>75th Percentile</b>      | 6.2      | 12.5      | 5.9      | 15.1      | 7.4      | -7.7      | 3.1      | 35.2      | 14.7      | -6.2      |
| <b>95th Percentile</b>      | 3.7      | 7.2       | 0.4      | 12.1      | 5.8      | -15.8     | -6.3     | 27.8      | 10.3      | -12.6     |
| <b># of Portfolios</b>      | 210      | 209       | 204      | 194       | 155      | 212       | 206      | 199       | 187       | 177       |
| <b>● Ceredex</b>            | 5.9 (82) | 21.3 (13) | 9.7 (16) | -- (--)   | -- (--)  | -4.4 (52) | 3.3 (74) | 36.5 (66) | 19.0 (38) | -- (--)   |
| <b>▲ Russell 2000 Value</b> | 8.9 (25) | 18.8 (25) | 6.8 (69) | 15.4 (71) | 5.8 (96) | -7.5 (74) | 4.2 (68) | 34.5 (78) | 18.1 (43) | -5.5 (69) |





3 Years

|   | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|---|--------------|--------------------------|--------------|
| Ceredex                                   | 9.7%         | 12.7%                    | 0.8          |
| Russell 2000 Value                        | 6.8%         | 12.7%                    | 0.5          |
| eA US Small Cap Value Equity Gross Median | 7.7%         | 13.4%                    | 0.6          |

# International Equity Managers

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# Pyrford Manager Portfolio Overview

Period Ending: September 30, 2016

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

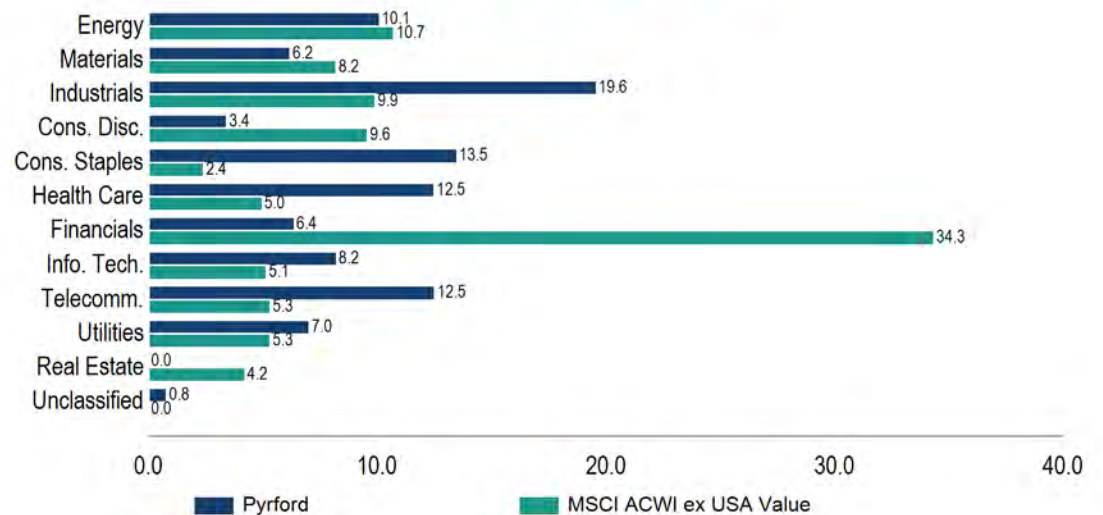
## Characteristics

|                                 | MSCI ACWI<br>Portfolio | MSCI ACWI<br>ex USA<br>Value |
|---------------------------------|------------------------|------------------------------|
| Number of Holdings              | 74                     | 1,036                        |
| Weighted Avg. Market Cap. (\$B) | 56.99                  | 46.37                        |
| Median Market Cap. (\$B)        | 18.82                  | 6.59                         |
| Price To Earnings               | 22.17                  | 14.45                        |
| Price To Book                   | 3.61                   | 1.38                         |
| Price To Sales                  | 2.18                   | 1.50                         |
| Return on Equity (%)            | 16.20                  | 9.19                         |
| Yield (%)                       | 3.60                   | 4.00                         |
| Beta                            |                        | 1.00                         |

## Country Allocation

|                                       | Manager<br>Ending Allocation<br>(USD) | Index<br>Ending Allocation<br>(USD) |
|---------------------------------------|---------------------------------------|-------------------------------------|
| <b>Totals</b>                         |                                       |                                     |
| Developed                             | 92.4%                                 | 76.9%                               |
| Emerging*                             | 7.6%                                  | 23.1%                               |
| <b>Top 10 Largest Countries</b>       |                                       |                                     |
| Switzerland                           | 14.7%                                 | 3.2%                                |
| United Kingdom                        | 14.6%                                 | 15.9%                               |
| Australia                             | 10.4%                                 | 5.3%                                |
| Japan                                 | 9.1%                                  | 16.8%                               |
| France                                | 7.6%                                  | 8.0%                                |
| Germany                               | 7.2%                                  | 5.8%                                |
| Hong Kong                             | 6.7%                                  | 2.5%                                |
| Netherlands                           | 6.3%                                  | 1.1%                                |
| Singapore                             | 4.8%                                  | 0.9%                                |
| Sweden                                | 4.5%                                  | 2.0%                                |
| <b>Total-Top 10 Largest Countries</b> | <b>86.0%</b>                          | <b>61.4%</b>                        |

## Sector Allocation (%) vs MSCI ACWI ex USA Value



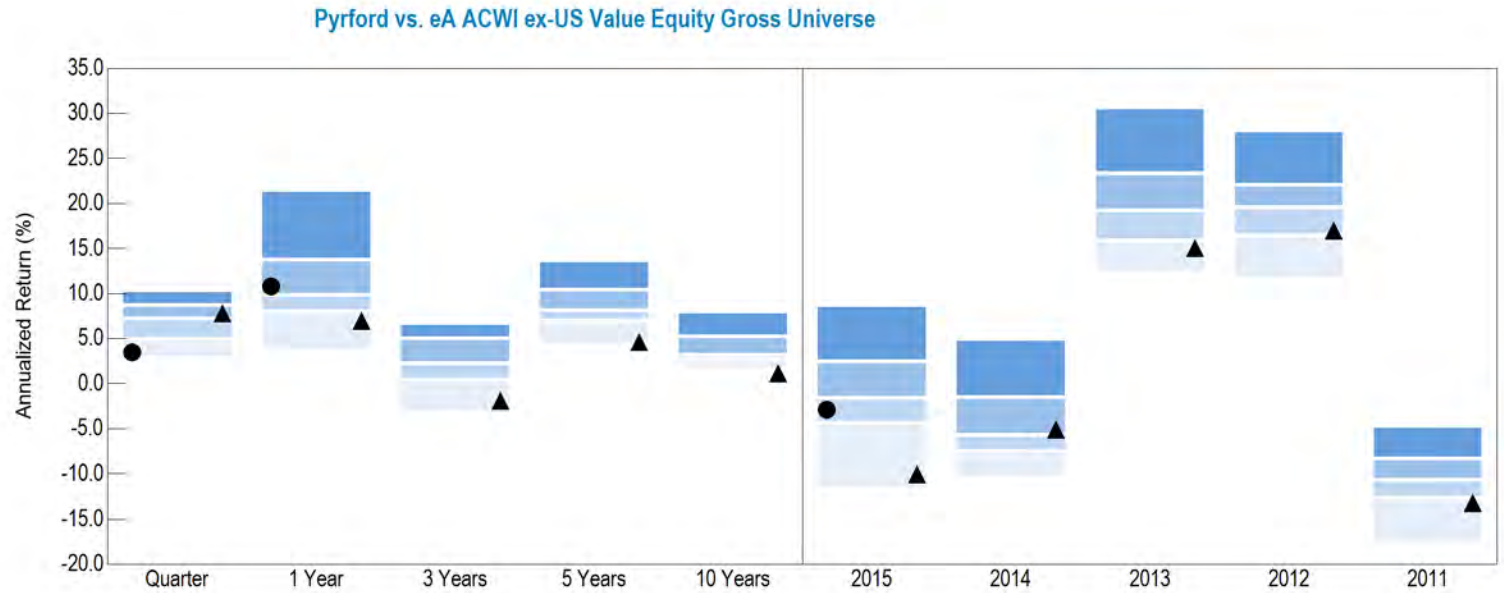
## Top Contributors

|                      | Avg Wgt | Return | Contribution |
|----------------------|---------|--------|--------------|
| META FINANCIAL GROUP | 3.16    | 19.19  | 0.61         |
| ATLAS COPCO 'A'      | 1.74    | 17.55  | 0.31         |
| WOOLWORTHS           | 1.67    | 16.11  | 0.27         |
| SAP                  | 1.23    | 21.55  | 0.27         |
| FUCHS PETROLUB PREF. | 1.58    | 16.43  | 0.26         |
| COMPUTERSHARE        | 1.34    | 17.65  | 0.24         |
| RUBIS                | 1.10    | 19.75  | 0.22         |
| DEUTSCHE POST        | 1.78    | 11.73  | 0.21         |
| ASM PACIFIC TECH.    | 1.20    | 16.79  | 0.20         |
| WOODSIDE PETROLEUM   | 1.70    | 11.30  | 0.19         |

## Bottom Contributors

|                        | Avg Wgt | Return | Contribution |
|------------------------|---------|--------|--------------|
| SANOFI                 | 2.20    | -8.68  | -0.19        |
| ROCHE HOLDING          | 3.25    | -5.43  | -0.18        |
| NIHON KOHDEN           | 1.26    | -13.12 | -0.16        |
| AXIATA GROUP           | 1.56    | -9.61  | -0.15        |
| NOVARTIS 'R'           | 3.02    | -4.21  | -0.13        |
| ROYAL DUTCH SHELL A    | 1.68    | -7.40  | -0.12        |
| SCA 'B'                | 1.75    | -6.33  | -0.11        |
| MALAYAN BANKING        | 1.17    | -7.84  | -0.09        |
| UNITED UTILITIES GROUP | 1.44    | -5.83  | -0.08        |
| VODAFONE GROUP         | 1.55    | -5.35  | -0.08        |

Unclassified sector allocation includes cash allocations.



|                          | Return (Rank) |           |           |          |          |            |           |           |           |            |  |  |  |  |  |  |
|--------------------------|---------------|-----------|-----------|----------|----------|------------|-----------|-----------|-----------|------------|--|--|--|--|--|--|
| 5th Percentile           | 10.4          | 21.4      | 6.7       | 13.6     | 8.0      | 8.7        | 4.9       | 30.7      | 28.1      | -4.7       |  |  |  |  |  |  |
| 25th Percentile          | 8.8           | 13.8      | 5.1       | 10.4     | 5.3      | 2.5        | -1.4      | 23.4      | 22.1      | -8.2       |  |  |  |  |  |  |
| Median                   | 7.3           | 9.9       | 2.3       | 8.2      | 3.2      | -1.6       | -5.7      | 19.3      | 19.6      | -10.7      |  |  |  |  |  |  |
| 75th Percentile          | 5.0           | 8.0       | 0.4       | 7.0      | 2.7      | -4.3       | -7.4      | 15.9      | 16.5      | -12.6      |  |  |  |  |  |  |
| 95th Percentile          | 2.9           | 3.6       | -3.1      | 4.4      | 1.7      | -11.6      | -10.4     | 12.4      | 11.7      | -17.7      |  |  |  |  |  |  |
| # of Portfolios          | 50            | 50        | 44        | 39       | 26       | 45         | 37        | 34        | 32        | 26         |  |  |  |  |  |  |
| ● Pyrford                | 3.5 (94)      | 10.8 (43) | -- (--)   | -- (--)  | -- (--)  | -2.9 (59)  | -- (--)   | -- (--)   | -- (--)   | -- (--)    |  |  |  |  |  |  |
| ▲ MSCI ACWI ex USA Value | 7.8 (40)      | 7.0 (87)  | -1.9 (94) | 4.6 (95) | 1.1 (98) | -10.1 (93) | -5.1 (49) | 15.0 (83) | 17.0 (74) | -13.2 (81) |  |  |  |  |  |  |

# William Blair Manager Portfolio Overview

Period Ending: September 30, 2016

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

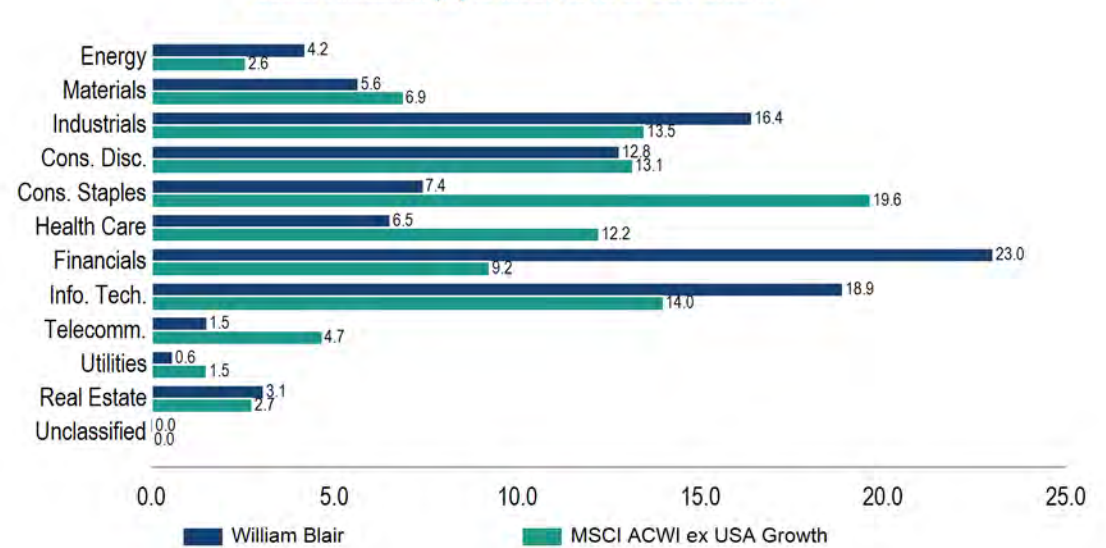
## Characteristics

|                                 | Portfolio | MSCI ACWI ex USA Growth |
|---------------------------------|-----------|-------------------------|
| Number of Holdings              | 216       | 1,055                   |
| Weighted Avg. Market Cap. (\$B) | 39.69     | 55.88                   |
| Median Market Cap. (\$B)        | 8.32      | 6.95                    |
| Price To Earnings               | 23.47     | 24.36                   |
| Price To Book                   | 4.69      | 3.91                    |
| Price To Sales                  | 3.30      | 3.16                    |
| Return on Equity (%)            | 21.24     | 17.72                   |
| Yield (%)                       | 2.25      | 2.10                    |
| Beta                            | 0.98      | 1.00                    |

## Country Allocation

|                                       | Manager Ending Allocation (USD) | Index Ending Allocation (USD) |
|---------------------------------------|---------------------------------|-------------------------------|
| <b>Totals</b>                         |                                 |                               |
| Developed                             | 81.3%                           | 76.5%                         |
| Emerging*                             | 18.7%                           | 23.5%                         |
| <b>Top 10 Largest Countries</b>       |                                 |                               |
| Japan                                 | 12.9%                           | 16.8%                         |
| United Kingdom                        | 12.7%                           | 10.6%                         |
| France                                | 12.0%                           | 5.5%                          |
| Canada                                | 7.0%                            | 6.6%                          |
| Hong Kong                             | 5.7%                            | 2.5%                          |
| Germany                               | 4.3%                            | 6.6%                          |
| Sweden                                | 4.3%                            | 1.9%                          |
| China*                                | 3.9%                            | 6.5%                          |
| India*                                | 3.8%                            | 1.9%                          |
| Australia                             | 3.7%                            | 5.0%                          |
| <b>Total-Top 10 Largest Countries</b> | <b>70.3%</b>                    | <b>64.0%</b>                  |

## Sector Allocation (%) vs MSCI ACWI ex USA Growth



## Top Contributors

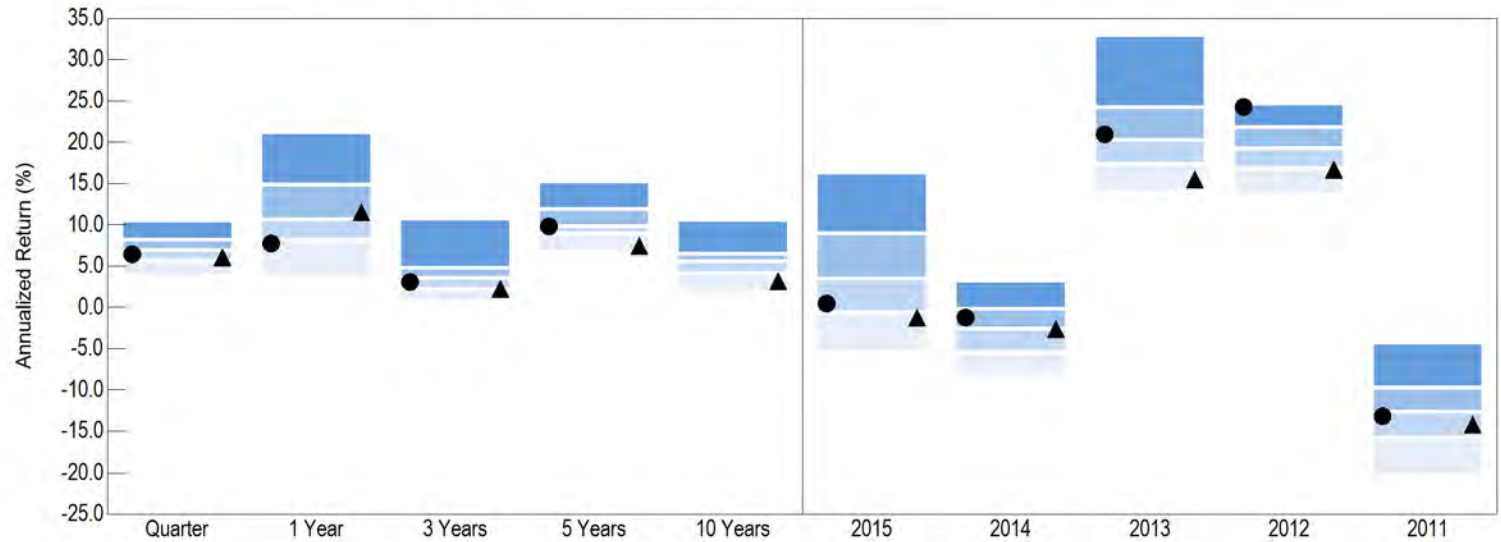
|                            | Avg Wgt | Return | Contribution |
|----------------------------|---------|--------|--------------|
| SAMSUNG ELECTRONICS        | 1.79    | 17.28  | 0.31         |
| VALEO                      | 0.95    | 30.90  | 0.29         |
| NXP SEMICONDUCTORS         | 0.87    | 30.21  | 0.26         |
| TENCENT HOLDINGS           | 1.19    | 20.98  | 0.25         |
| PARTNERS GROUP HOLDING     | 1.27    | 18.16  | 0.23         |
| TAIWAN SEMICON.SPN.ADR 1:5 | 1.36    | 16.62  | 0.23         |
| ORIX                       | 1.23    | 16.22  | 0.20         |
| NETEASE ADR 1:25           | 0.78    | 25.07  | 0.19         |
| SAP                        | 0.88    | 21.55  | 0.19         |
| LARGAN PRECISION           | 0.53    | 34.39  | 0.18         |

## Bottom Contributors

|                         | Avg Wgt | Return | Contribution |
|-------------------------|---------|--------|--------------|
| NOVO NORDISK 'B'        | 0.88    | -21.51 | -0.19        |
| ROYAL DUTCH SHELL A     | 1.75    | -7.40  | -0.13        |
| RECKITT BENCKISER GROUP | 1.51    | -5.01  | -0.08        |
| PANDORA                 | 0.66    | -10.74 | -0.07        |
| ARCA CONTINENTAL        | 0.37    | -16.08 | -0.06        |
| SHIONOGI                | 0.93    | -5.65  | -0.05        |
| TEVA PHARM.INDS.ADR 1:1 | 0.63    | -7.81  | -0.05        |
| TAISEI                  | 0.62    | -7.77  | -0.05        |
| DAIWA HOUSE INDUSTRY    | 0.96    | -5.03  | -0.05        |
| KAO                     | 1.19    | -2.76  | -0.03        |

Unclassified sector allocation includes cash allocations.

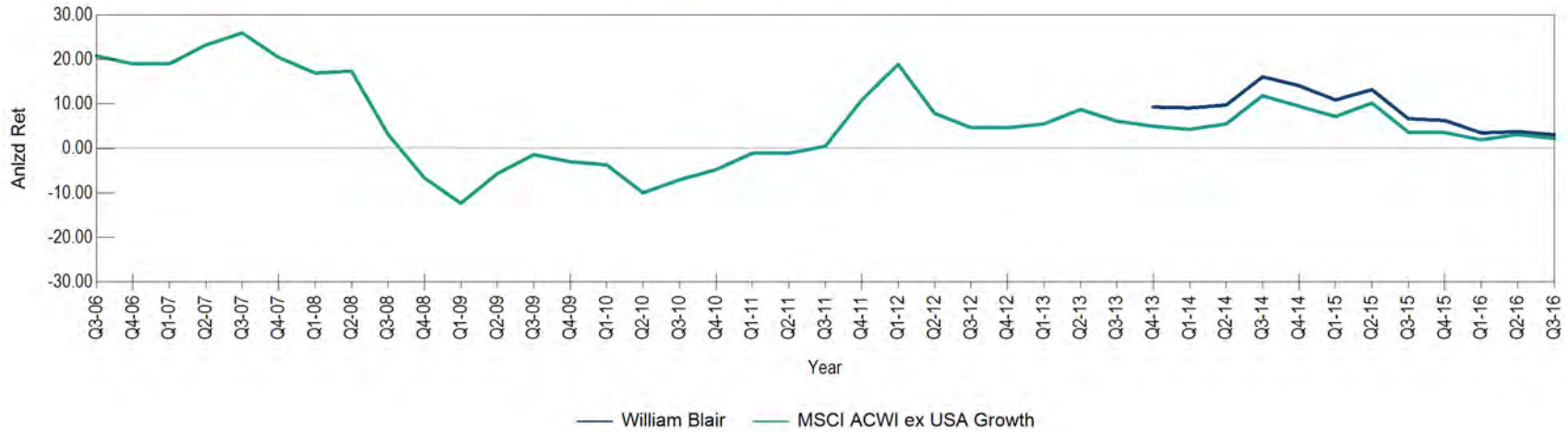
William Blair vs. eA ACWI ex-US Growth Equity Gross Universe



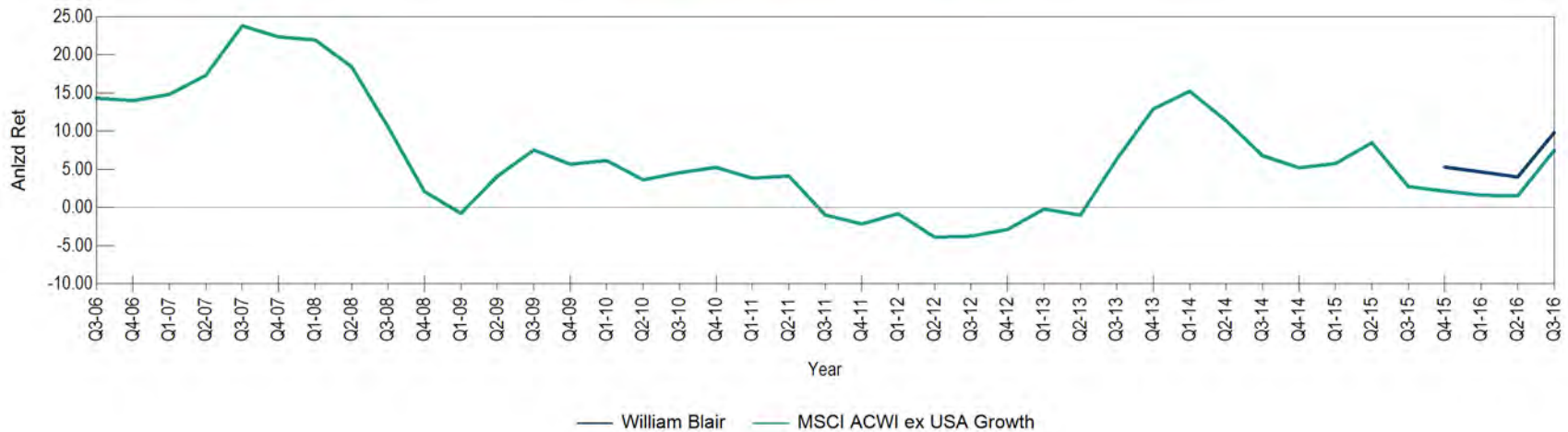
|                                  | Quarter  | 1 Year    | 3 Years  | 5 Years  | 10 Years | 2015      | 2014      | 2013      | 2012      | 2011       |
|----------------------------------|----------|-----------|----------|----------|----------|-----------|-----------|-----------|-----------|------------|
| <b>5th Percentile</b>            | 10.5     | 21.2      | 10.7     | 15.2     | 10.6     | 16.3      | 3.2       | 33.0      | 24.6      | -4.3       |
| <b>25th Percentile</b>           | 8.2      | 14.9      | 4.8      | 11.9     | 6.6      | 9.0       | -0.1      | 24.3      | 21.9      | -9.7       |
| <b>Median</b>                    | 7.0      | 10.7      | 3.6      | 9.9      | 5.6      | 3.5       | -2.5      | 20.3      | 19.3      | -12.6      |
| <b>75th Percentile</b>           | 5.8      | 8.2       | 2.3      | 9.0      | 4.2      | -0.5      | -5.3      | 17.5      | 16.9      | -15.7      |
| <b>95th Percentile</b>           | 3.8      | 3.7       | 0.7      | 6.6      | 1.8      | -5.4      | -8.2      | 14.0      | 13.7      | -20.3      |
| <b># of Portfolios</b>           | 68       | 68        | 62       | 58       | 42       | 70        | 50        | 46        | 51        | 51         |
| <b>● William Blair</b>           | 6.4 (65) | 7.7 (81)  | 3.1 (57) | 9.8 (51) | -- (--)  | 0.5 (69)  | -1.2 (37) | 20.9 (44) | 24.3 (6)  | -13.2 (55) |
| <b>▲ MSCI ACWI ex USA Growth</b> | 6.1 (70) | 11.5 (43) | 2.2 (76) | 7.4 (91) | 3.1 (88) | -1.3 (83) | -2.6 (53) | 15.5 (87) | 16.7 (78) | -14.2 (62) |

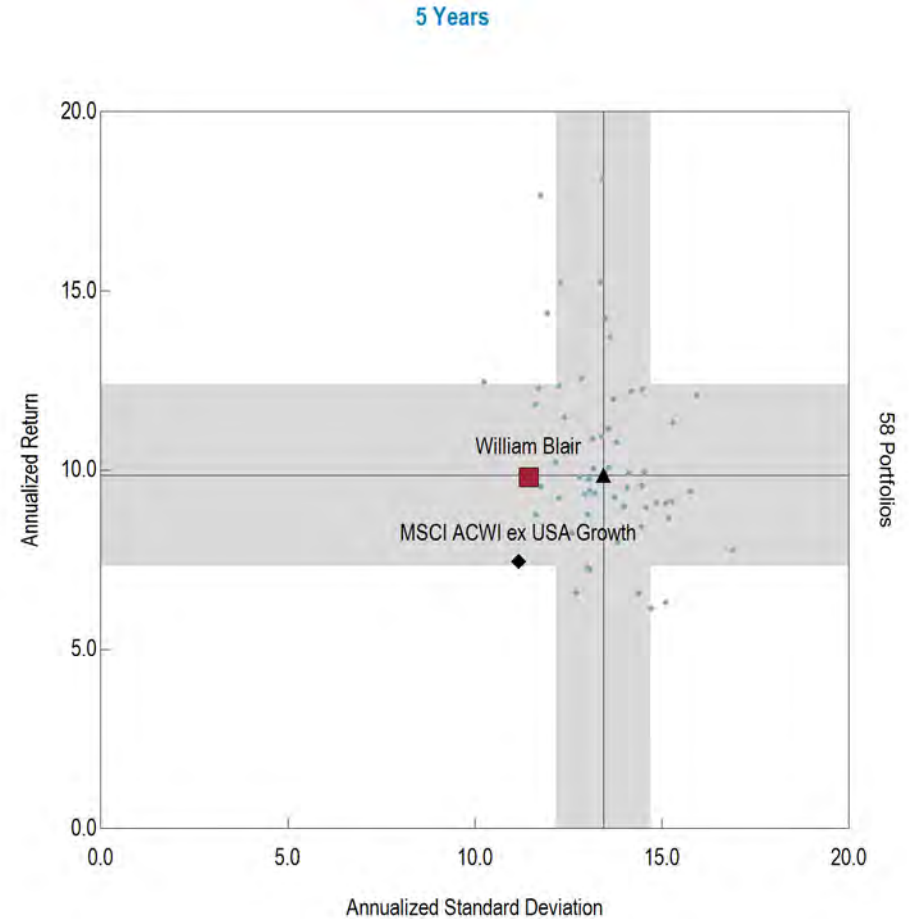
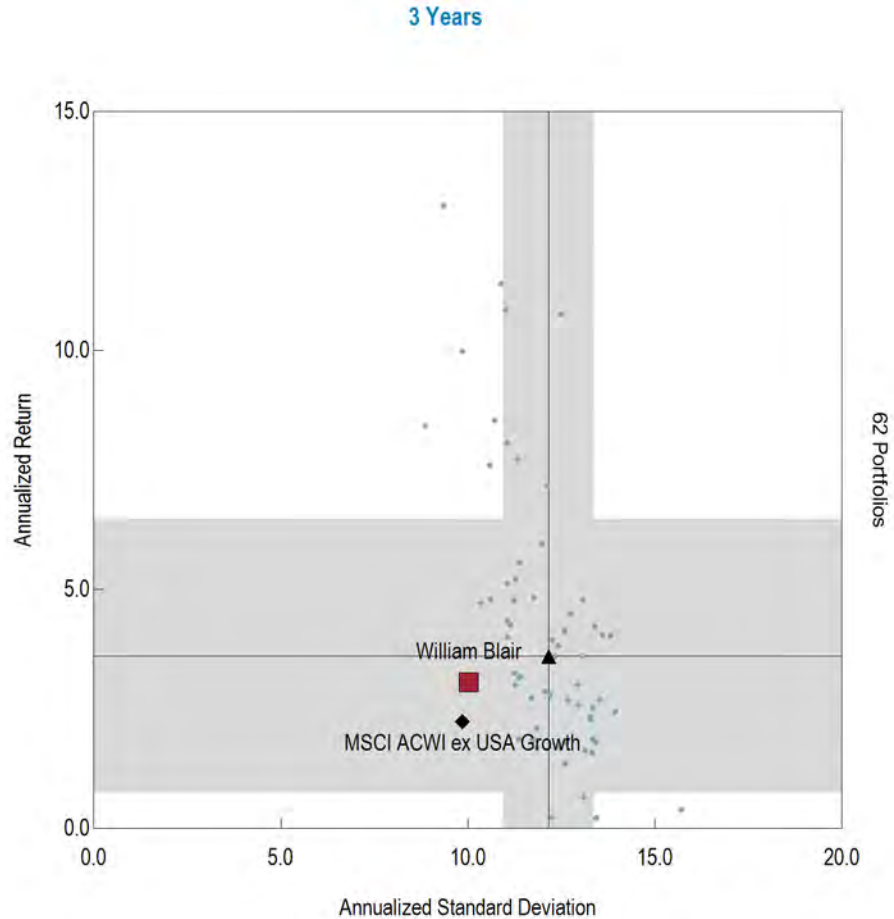


Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





|  | 3 Years      |                          |              |  | 5 Years      |                          |              |
|--|--------------|--------------------------|--------------|--|--------------|--------------------------|--------------|
|  | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |  | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
| William Blair                            | 3.1%         | 10.0%                    | 0.3          | William Blair                            | 9.8%         | 11.4%                    | 0.8          |
| MSCI ACWI ex USA Growth                  | 2.2%         | 9.9%                     | 0.2          | MSCI ACWI ex USA Growth                  | 7.4%         | 11.2%                    | 0.7          |
| eA ACWI ex-US Growth Equity Gross Median | 3.6%         | 12.2%                    | 0.3          | eA ACWI ex-US Growth Equity Gross Median | 9.9%         | 13.4%                    | 0.7          |

## Global Equity Managers

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# Artisan Partners Manager Portfolio Overview

Period Ending: September 30, 2016

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

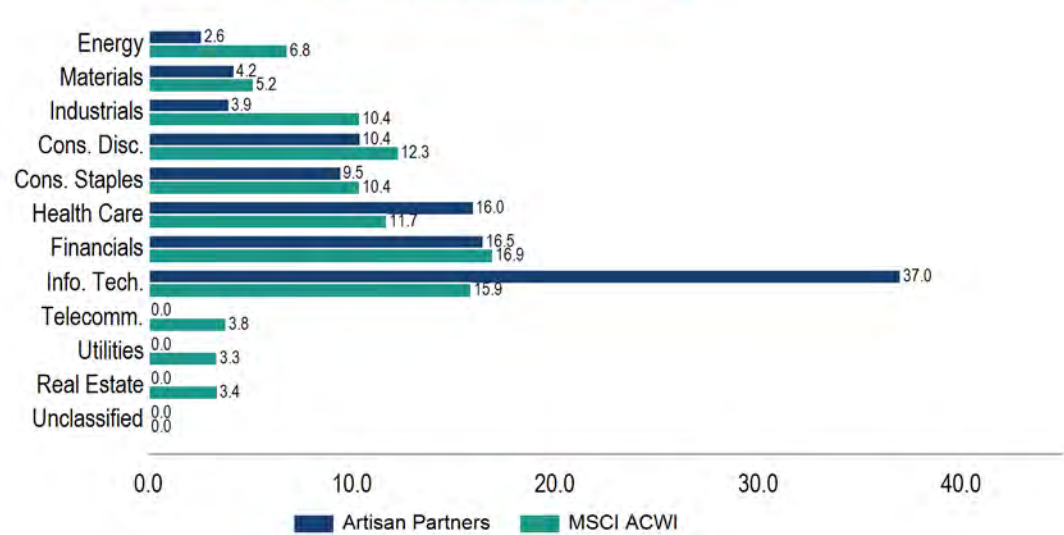
## Characteristics

|                                 | Portfolio | MSCI ACWI |
|---------------------------------|-----------|-----------|
| Number of Holdings              | 45        | 2,470     |
| Weighted Avg. Market Cap. (\$B) | 67.00     | 91.89     |
| Median Market Cap. (\$B)        | 20.65     | 8.48      |
| Price To Earnings               | 42.35     | 21.57     |
| Price To Book                   | 7.25      | 3.32      |
| Price To Sales                  | 7.88      | 2.66      |
| Return on Equity (%)            | 14.31     | 15.56     |
| Yield (%)                       | 0.67      | 2.53      |
| Beta                            | 1.03      | 1.00      |

## Country Allocation

|                                       | Manager<br>Ending Allocation<br>(USD) | Index<br>Ending Allocation<br>(USD) |
|---------------------------------------|---------------------------------------|-------------------------------------|
| <b>Totals</b>                         |                                       |                                     |
| Developed                             | 95.0%                                 | 88.9%                               |
| Emerging*                             | 5.0%                                  | 11.1%                               |
| <b>Top 10 Largest Countries</b>       |                                       |                                     |
| United States                         | 58.6%                                 | 52.4%                               |
| Japan                                 | 8.6%                                  | 8.0%                                |
| United Kingdom                        | 7.1%                                  | 6.3%                                |
| Hong Kong                             | 6.1%                                  | 1.2%                                |
| Australia                             | 4.5%                                  | 2.4%                                |
| Denmark                               | 3.3%                                  | 0.6%                                |
| France                                | 3.0%                                  | 3.2%                                |
| Germany                               | 2.1%                                  | 3.0%                                |
| Taiwan*                               | 1.5%                                  | 1.3%                                |
| Korea*                                | 1.4%                                  | 1.6%                                |
| <b>Total-Top 10 Largest Countries</b> | <b>96.1%</b>                          | <b>80.1%</b>                        |

## Sector Allocation (%) vs MSCI ACWI



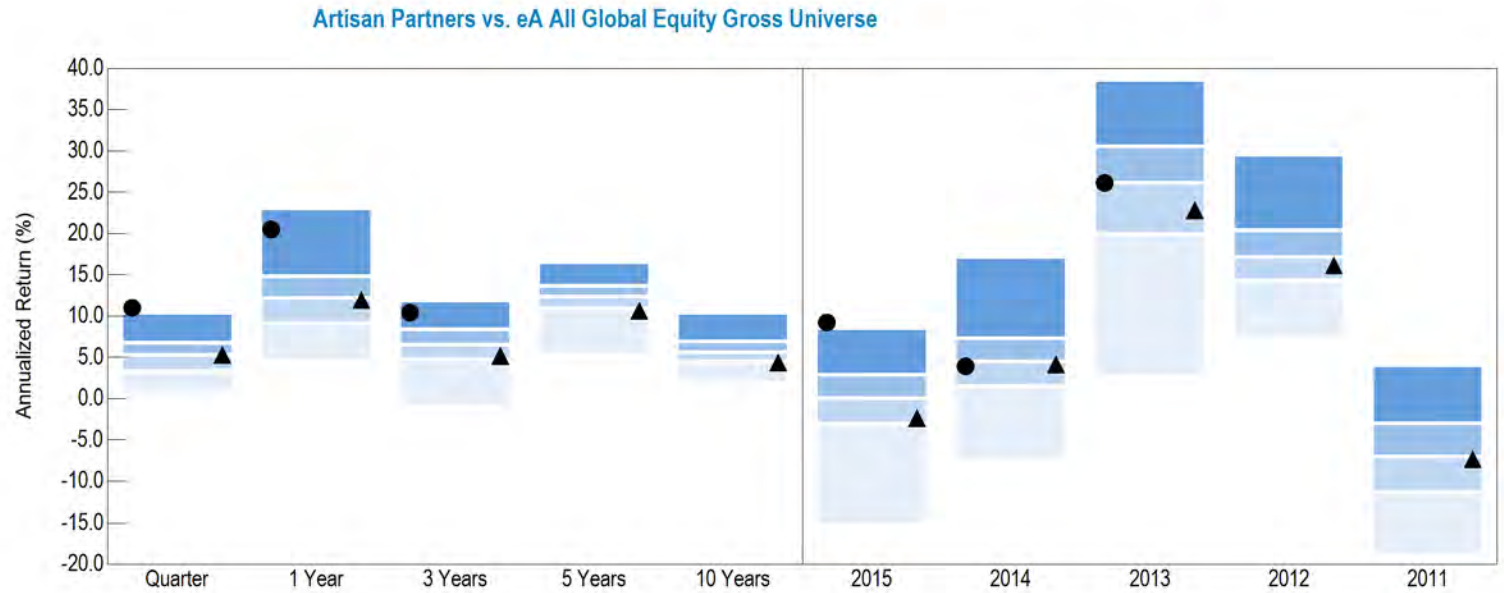
## Top Contributors

|                       | Avg Wgt | Return | Contribution |
|-----------------------|---------|--------|--------------|
| META FINANCIAL GROUP  | 10.66   | 19.19  | 2.04         |
| NINTENDO              | 1.50    | 84.80  | 1.27         |
| TENCENT HOLDINGS      | 3.78    | 20.98  | 0.79         |
| MCGRAW HILL FINANCIAL | 3.78    | 18.34  | 0.69         |
| VISA 'A'              | 5.05    | 11.69  | 0.59         |
| ALPHABET 'A'          | 3.74    | 14.29  | 0.53         |
| EUROFINS SCIENTIFIC   | 2.33    | 22.61  | 0.53         |
| MARKIT                | 3.41    | 15.18  | 0.52         |
| FACEBOOK CLASS A      | 3.84    | 12.24  | 0.47         |
| REGENERON PHARMS.     | 2.71    | 15.12  | 0.41         |

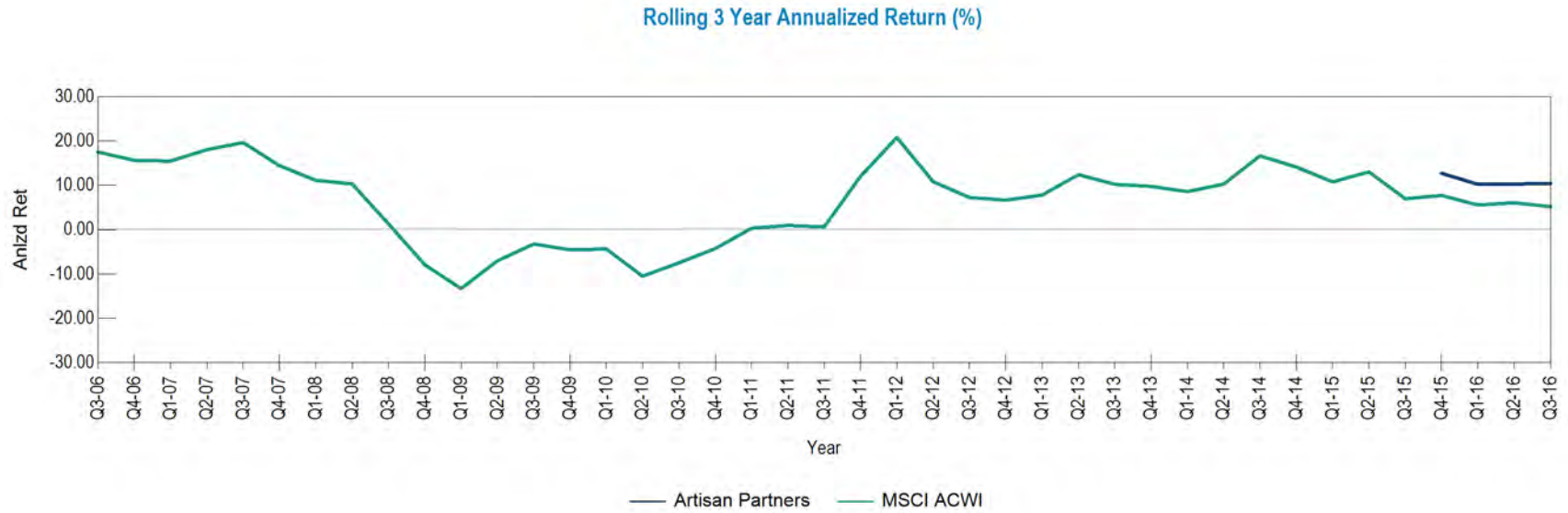
## Bottom Contributors

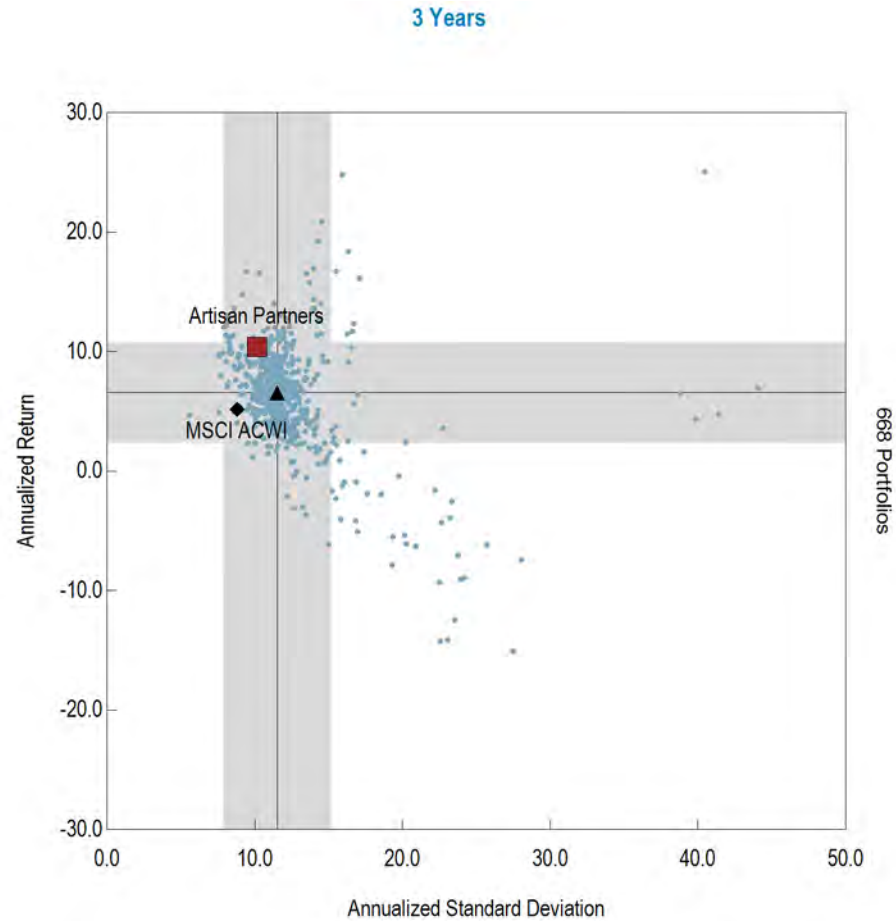
|   | Avg Wgt | Return | Contribution |
|---|---------|--------|--------------|
| GENMAB                                  | 3.51    | -5.61  | -0.20        |
| SALESFORCE.COM                          | 1.55    | -10.18 | -0.16        |
| ASSOCIATED<br>BRIT.FOODS                | 1.13    | -7.08  | -0.08        |
| AMOREPACIFIC                            | 1.39    | -5.72  | -0.08        |
| ANTHEM                                  | 1.75    | -4.10  | -0.07        |
| STARBUCKS                               | 1.36    | -4.88  | -0.07        |
| INTERTEK GROUP                          | 1.15    | -2.01  | -0.02        |
| FOM.ECO.MEXNO.SAB DE<br>CV SPN.ADR 1:10 | 0.86    | -0.49  | 0.00         |
| NOBLE ENERGY                            | 1.26    | -0.06  | 0.00         |
| SCHLUMBERGER                            | 1.24    | 0.08   | 0.00         |

Unclassified sector allocation includes cash allocations.



|                           | Quarter  | 1 Year    | 3 Years   | 5 Years   | 10 Years | 2015      | 2014     | 2013      | 2012      | 2011      |
|---------------------------|----------|-----------|-----------|-----------|----------|-----------|----------|-----------|-----------|-----------|
| <b>5th Percentile</b>     | 10.4     | 23.0      | 11.9      | 16.5      | 10.3     | 8.5       | 17.1     | 38.6      | 29.5      | 4.0       |
| <b>25th Percentile</b>    | 6.8      | 14.8      | 8.4       | 13.7      | 7.0      | 3.0       | 7.4      | 30.6      | 20.4      | -3.0      |
| <b>Median</b>             | 5.3      | 12.2      | 6.6       | 12.4      | 5.6      | 0.1       | 4.6      | 26.2      | 17.2      | -7.0      |
| <b>75th Percentile</b>    | 3.4      | 9.2       | 4.8       | 11.0      | 4.5      | -2.9      | 1.5      | 20.0      | 14.4      | -11.2     |
| <b>95th Percentile</b>    | 0.6      | 4.6       | -0.8      | 5.4       | 1.9      | -15.1     | -7.4     | 2.7       | 7.4       | -18.7     |
| <b># of Portfolios</b>    | 710      | 709       | 668       | 574       | 312      | 692       | 609      | 552       | 475       | 434       |
| <b>● Artisan Partners</b> | 11.0 (4) | 20.5 (9)  | 10.4 (10) | -- (--)   | -- (--)  | 9.2 (4)   | 3.9 (56) | 26.1 (51) | -- (--)   | -- (--)   |
| <b>▲ MSCI ACWI</b>        | 5.3 (51) | 12.0 (52) | 5.2 (70)  | 10.6 (78) | 4.3 (78) | -2.4 (73) | 4.2 (54) | 22.8 (66) | 16.1 (61) | -7.3 (53) |





3 Years

|                                   | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|-----------------------------------|--------------|--------------------------|--------------|
| Artisan Partners                  | 10.4%        | 10.1%                    | 1.0          |
| MSCI ACWI                         | 5.2%         | 8.8%                     | 0.6          |
| eA All Global Equity Gross Median | 6.6%         | 11.5%                    | 0.6          |

# First Eagle Manager Portfolio Overview

Period Ending: September 30, 2016

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

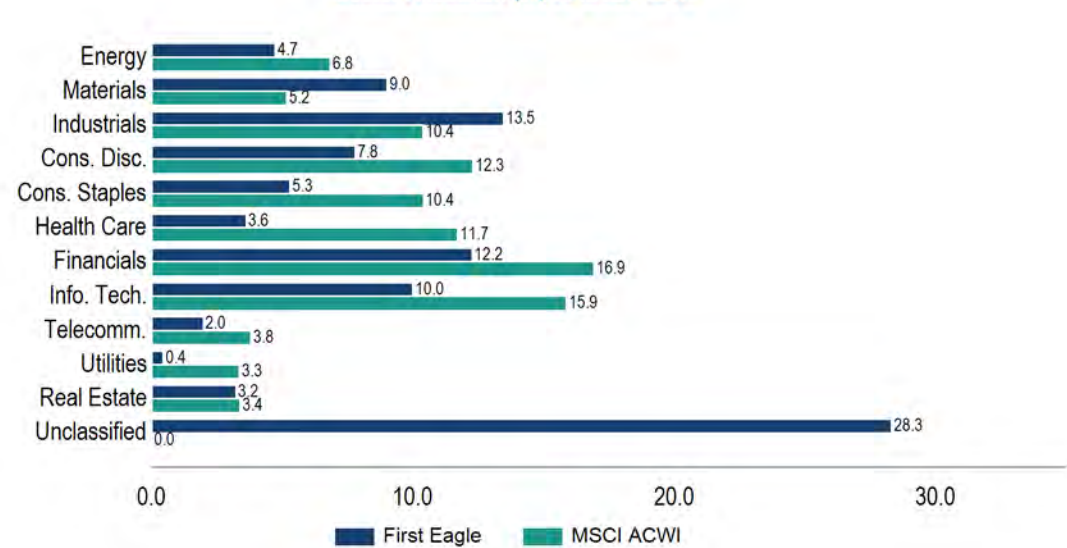
## Characteristics

|                                 | Portfolio | MSCI ACWI |
|---------------------------------|-----------|-----------|
| Number of Holdings              | 188       | 2,470     |
| Weighted Avg. Market Cap. (\$B) | 53.24     | 91.89     |
| Median Market Cap. (\$B)        | 15.80     | 8.48      |
| Price To Earnings               | 19.85     | 21.57     |
| Price To Book                   | 3.46      | 3.32      |
| Price To Sales                  | 2.76      | 2.66      |
| Return on Equity (%)            | 14.67     | 15.56     |
| Yield (%)                       | 1.99      | 2.53      |
| Beta                            | 0.75      | 1.00      |

## Country Allocation

|                                       | Manager<br>Ending Allocation<br>(USD) | Index<br>Ending Allocation<br>(USD) |
|---------------------------------------|---------------------------------------|-------------------------------------|
| <b>Totals</b>                         |                                       |                                     |
| Developed                             | 78.8%                                 | 88.9%                               |
| Emerging*                             | 3.6%                                  | 11.1%                               |
| Cash                                  | 17.6%                                 |                                     |
| <b>Top 10 Largest Countries</b>       |                                       |                                     |
| United States                         | 45.3%                                 | 52.4%                               |
| Cash                                  | 17.6%                                 | 0.0%                                |
| Japan                                 | 12.8%                                 | 8.0%                                |
| France                                | 5.2%                                  | 3.2%                                |
| Canada                                | 3.8%                                  | 3.2%                                |
| United Kingdom                        | 3.1%                                  | 6.3%                                |
| Germany                               | 1.8%                                  | 3.0%                                |
| Mexico*                               | 1.6%                                  | 0.4%                                |
| Korea*                                | 1.4%                                  | 1.6%                                |
| Switzerland                           | 1.3%                                  | 3.0%                                |
| <b>Total-Top 10 Largest Countries</b> | <b>93.9%</b>                          | <b>81.1%</b>                        |

## Sector Allocation (%) vs MSCI ACWI



## Top Contributors

|                        | Avg Wgt | Return | Contribution |
|------------------------|---------|--------|--------------|
| HEIDELBERGCEMENT       | 1.24    | 25.83  | 0.32         |
| LINEAR TECHNOLOGY      | 1.03    | 28.12  | 0.29         |
| MICROSOFT              | 1.74    | 13.27  | 0.23         |
| SMC                    | 1.10    | 17.92  | 0.20         |
| TERADATA               | 0.67    | 23.65  | 0.16         |
| XILINX                 | 0.81    | 18.55  | 0.15         |
| SOMPO JAPAN NPNK.HDG.  | 0.96    | 12.78  | 0.12         |
| SCOTTS MIRACLE-GRO     | 0.61    | 19.84  | 0.12         |
| WEYERHAEUSER           | 1.42    | 8.34   | 0.12         |
| VARIAN MEDICAL SYSTEMS | 0.55    | 21.04  | 0.12         |

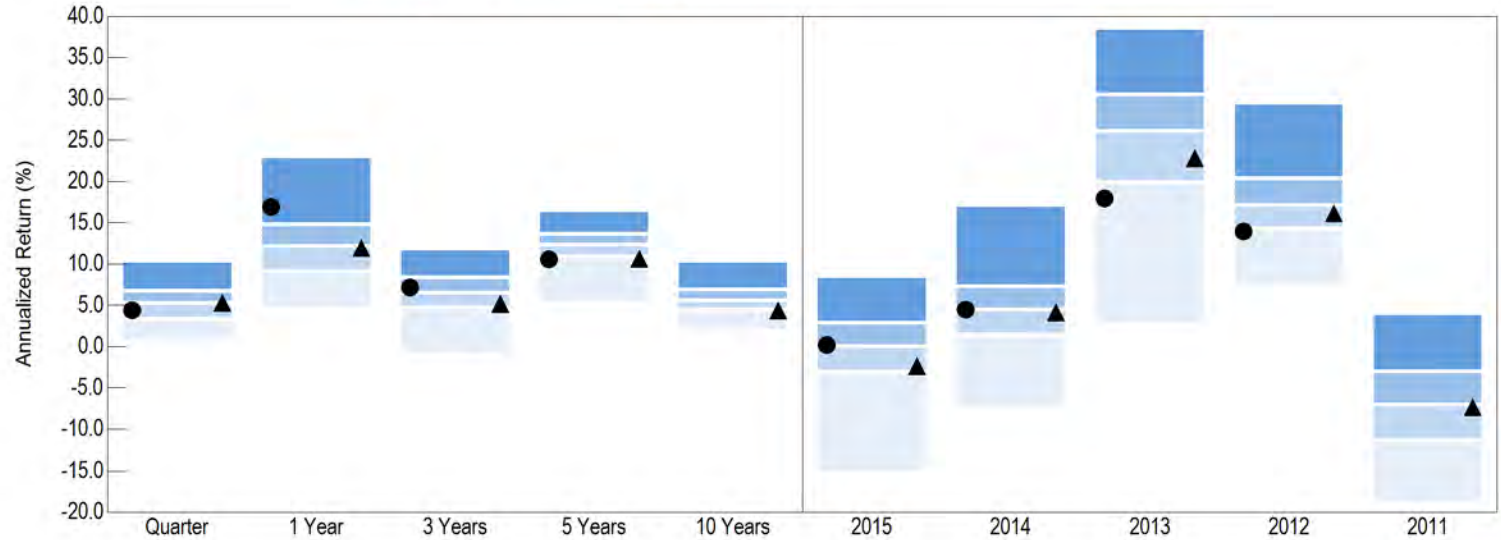
## Bottom Contributors

|                    | Avg Wgt | Return | Contribution |
|--------------------|---------|--------|--------------|
| BARRICK GOLD (NYS) | 0.84    | -16.91 | -0.14        |
| GOLDCORP (NYS)     | 0.70    | -13.53 | -0.10        |
| ORACLE             | 2.21    | -3.68  | -0.08        |
| SANOFI             | 0.68    | -8.68  | -0.06        |
| ORBITAL ATK        | 0.56    | -10.12 | -0.06        |
| VISTA OUTDOOR      | 0.31    | -16.49 | -0.05        |
| FRANCO-NEVADA      | 0.48    | -7.52  | -0.04        |
| KT & G             | 0.71    | -4.23  | -0.03        |
| ANTHEM             | 0.45    | -4.10  | -0.02        |
| W R BERKLEY        | 0.72    | -2.53  | -0.02        |

Unclassified sector allocation includes cash allocations and Gold allocations (6.5% as of 9/30/2016).



First Eagle vs. eA All Global Equity Gross Universe

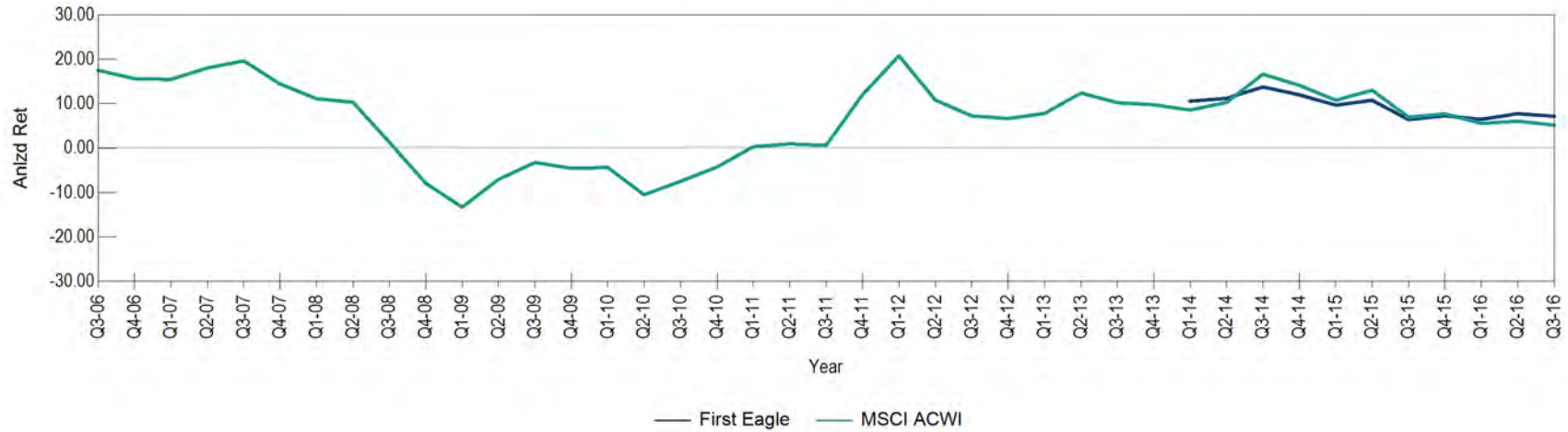


|                        | Quarter  | 1 Year    | 3 Years  | 5 Years   | 10 Years | 2015      | 2014     | 2013      | 2012      | 2011      |
|------------------------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|-----------|-----------|
| <b>5th Percentile</b>  | 10.4     | 23.0      | 11.9     | 16.5      | 10.3     | 8.5       | 17.1     | 38.6      | 29.5      | 4.0       |
| <b>25th Percentile</b> | 6.8      | 14.8      | 8.4      | 13.7      | 7.0      | 3.0       | 7.4      | 30.6      | 20.4      | -3.0      |
| <b>Median</b>          | 5.3      | 12.2      | 6.6      | 12.4      | 5.6      | 0.1       | 4.6      | 26.2      | 17.2      | -7.0      |
| <b>75th Percentile</b> | 3.4      | 9.2       | 4.8      | 11.0      | 4.5      | -2.9      | 1.5      | 20.0      | 14.4      | -11.2     |
| <b>95th Percentile</b> | 0.6      | 4.6       | -0.8     | 5.4       | 1.9      | -15.1     | -7.4     | 2.7       | 7.4       | -18.7     |
| <b># of Portfolios</b> | 710      | 709       | 668      | 574       | 312      | 692       | 609      | 552       | 475       | 434       |
| <b>● First Eagle</b>   | 4.4 (64) | 16.9 (15) | 7.2 (40) | 10.6 (78) | -- (--)  | 0.2 (49)  | 4.5 (51) | 17.9 (80) | 13.9 (78) | -- (--)   |
| <b>▲ MSCI ACWI</b>     | 5.3 (51) | 12.0 (52) | 5.2 (70) | 10.6 (78) | 4.3 (78) | -2.4 (73) | 4.2 (54) | 22.8 (66) | 16.1 (61) | -7.3 (53) |

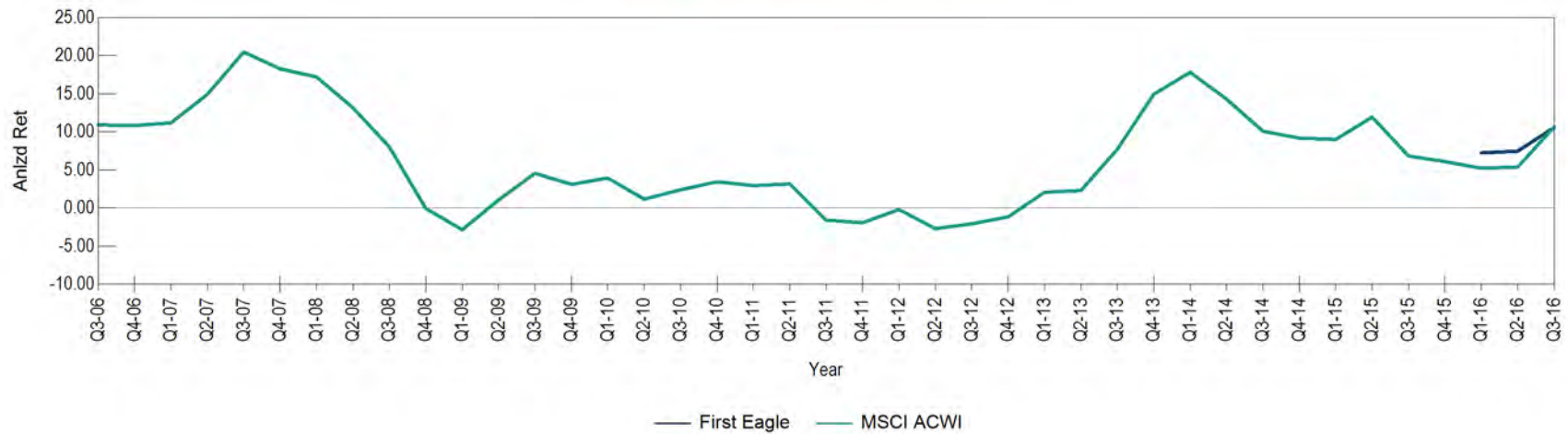
First Eagle  
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2016

Rolling 3 Year Annualized Return (%)



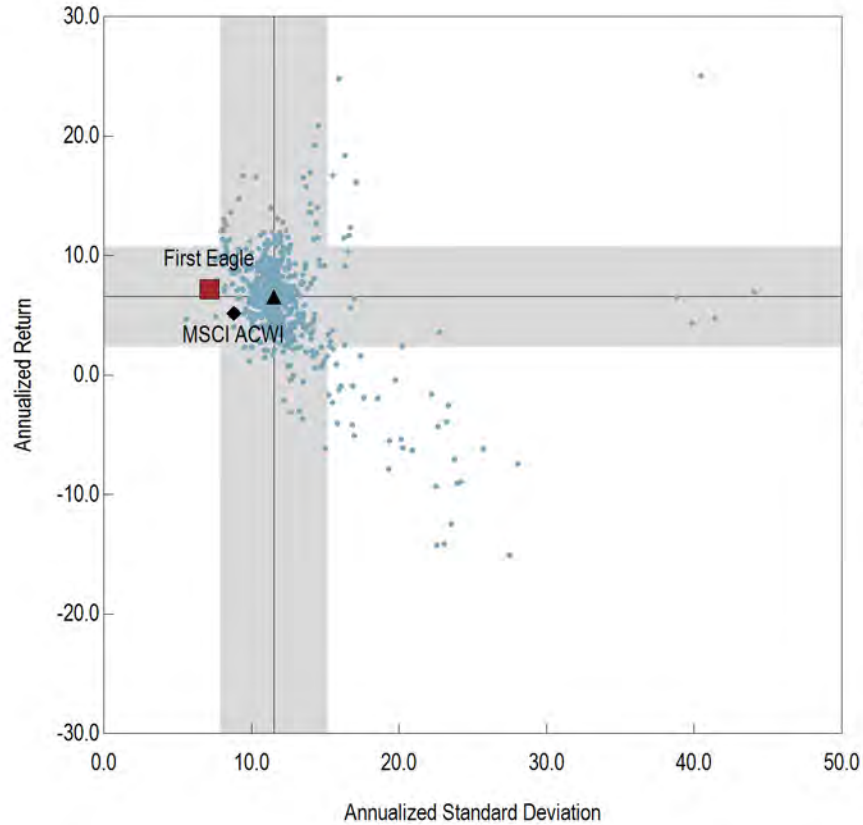
Rolling 5 Year Annualized Return (%)



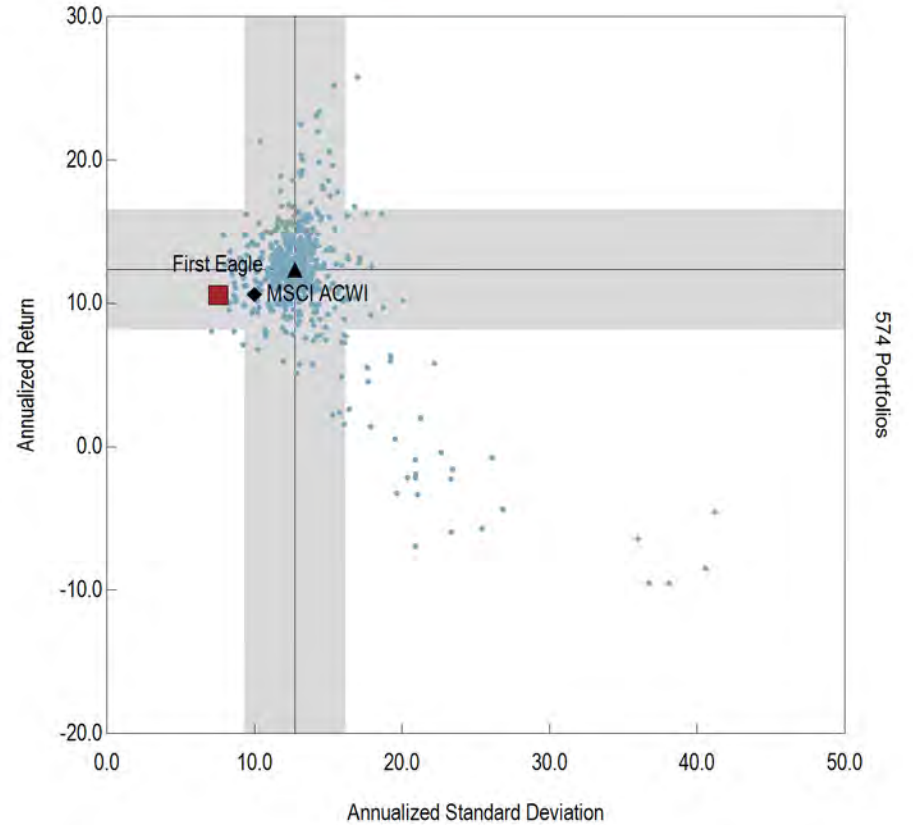
First Eagle  
Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2016

3 Years



5 Years



3 Years

|                                   | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|-----------------------------------|--------------|--------------------------|--------------|
| First Eagle                       | 7.2%         | 7.1%                     | 1.0          |
| MSCI ACWI                         | 5.2%         | 8.8%                     | 0.6          |
| eA All Global Equity Gross Median | 6.6%         | 11.5%                    | 0.6          |

5 Years

|                                   | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|-----------------------------------|--------------|--------------------------|--------------|
| First Eagle                       | 10.6%        | 7.5%                     | 1.4          |
| MSCI ACWI                         | 10.6%        | 10.0%                    | 1.1          |
| eA All Global Equity Gross Median | 12.4%        | 12.7%                    | 1.0          |

# Intech Global Low Vol Manager Portfolio Overview

Period Ending: September 30, 2016

Global equity diversified portfolio focused on maintaining volatility at or below the benchmark. Primary personnel include Adrian Banner, Vassilios Papthanakos, and Joseph Runnels.

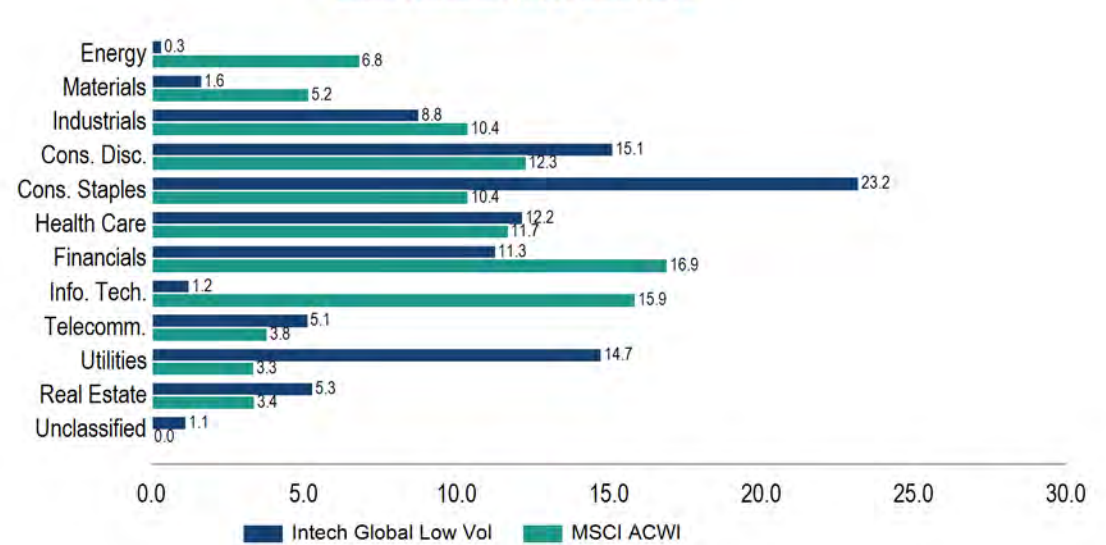
## Characteristics

|                                 | Portfolio | MSCI ACWI |
|---------------------------------|-----------|-----------|
| Number of Holdings              | 356       | 2,470     |
| Weighted Avg. Market Cap. (\$B) | 40.83     | 91.89     |
| Median Market Cap. (\$B)        | 11.68     | 8.48      |
| Price To Earnings               | 22.78     | 21.57     |
| Price To Book                   | 4.07      | 3.32      |
| Price To Sales                  | 3.10      | 2.66      |
| Return on Equity (%)            | 16.95     | 15.56     |
| Yield (%)                       | 2.62      | 2.53      |
| Beta                            | 0.40      | 1.00      |

## Country Allocation

|                                       | Manager<br>Ending Allocation<br>(USD) | Index<br>Ending Allocation<br>(USD) |
|---------------------------------------|---------------------------------------|-------------------------------------|
| <b>Totals</b>                         |                                       |                                     |
| Developed                             | 98.9%                                 | 88.9%                               |
| Cash                                  | 1.1%                                  |                                     |
| <b>Top 10 Largest Countries</b>       |                                       |                                     |
| United States                         | 57.7%                                 | 52.4%                               |
| Japan                                 | 18.0%                                 | 8.0%                                |
| Hong Kong                             | 8.0%                                  | 1.2%                                |
| Canada                                | 3.5%                                  | 3.2%                                |
| Switzerland                           | 2.4%                                  | 3.0%                                |
| Israel                                | 2.4%                                  | 0.2%                                |
| Singapore                             | 1.6%                                  | 0.4%                                |
| Cash                                  | 1.1%                                  | 0.0%                                |
| Denmark                               | 1.0%                                  | 0.6%                                |
| United Kingdom                        | 0.9%                                  | 6.3%                                |
| <b>Total-Top 10 Largest Countries</b> | <b>96.6%</b>                          | <b>75.3%</b>                        |

## Sector Allocation (%) vs MSCI ACWI



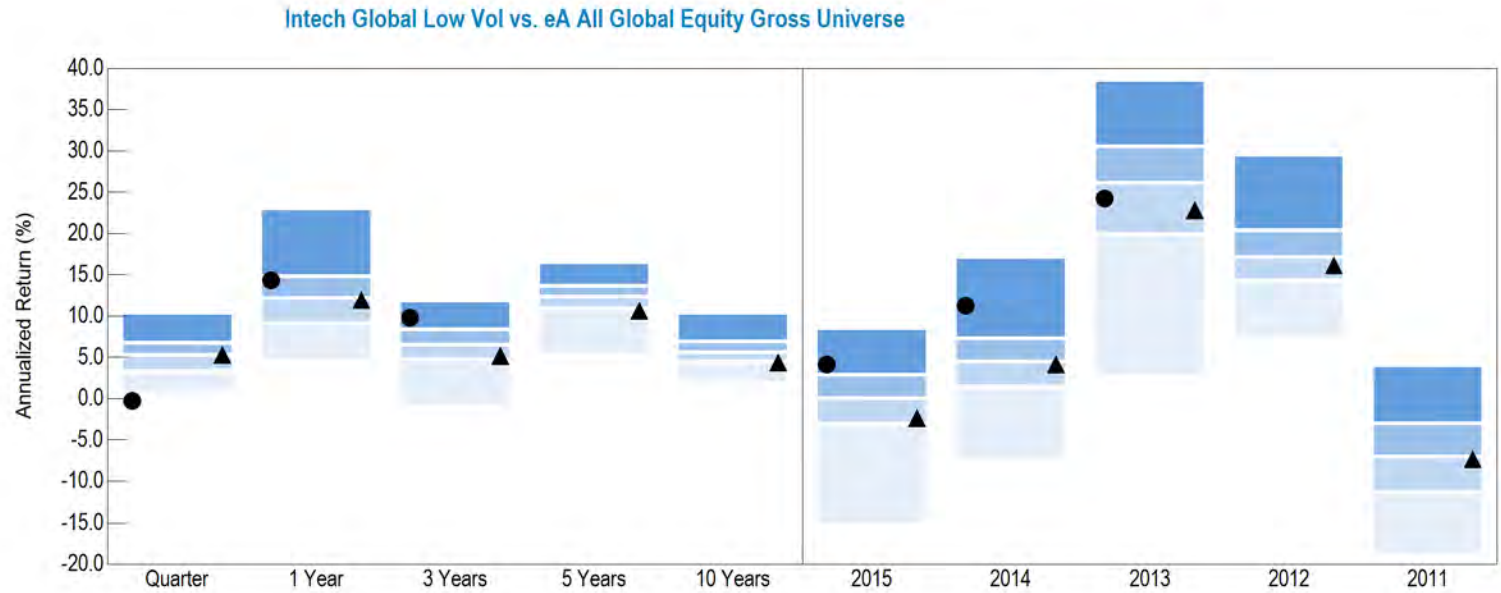
## Top Contributors

|                          | Avg Wgt | Return | Contribution |
|--------------------------|---------|--------|--------------|
| PROCTER & GAMBLE         | 2.98    | 6.83   | 0.20         |
| FAST RETAILING           | 0.65    | 20.37  | 0.13         |
| FOOT LOCKER              | 0.55    | 24.03  | 0.13         |
| ARCH CAP.GP.             | 0.98    | 10.08  | 0.10         |
| MITSUBISHI TANABE PHARMA | 0.46    | 19.76  | 0.09         |
| TDC                      | 0.39    | 20.66  | 0.08         |
| TAIHEIYO CEMENT          | 0.34    | 22.74  | 0.08         |
| ILLUMINA                 | 0.26    | 29.41  | 0.08         |
| FAIRFAX FINL.HDG.        | 0.83    | 9.17   | 0.08         |
| POWER ASSETS HOLDINGS    | 1.01    | 7.42   | 0.08         |

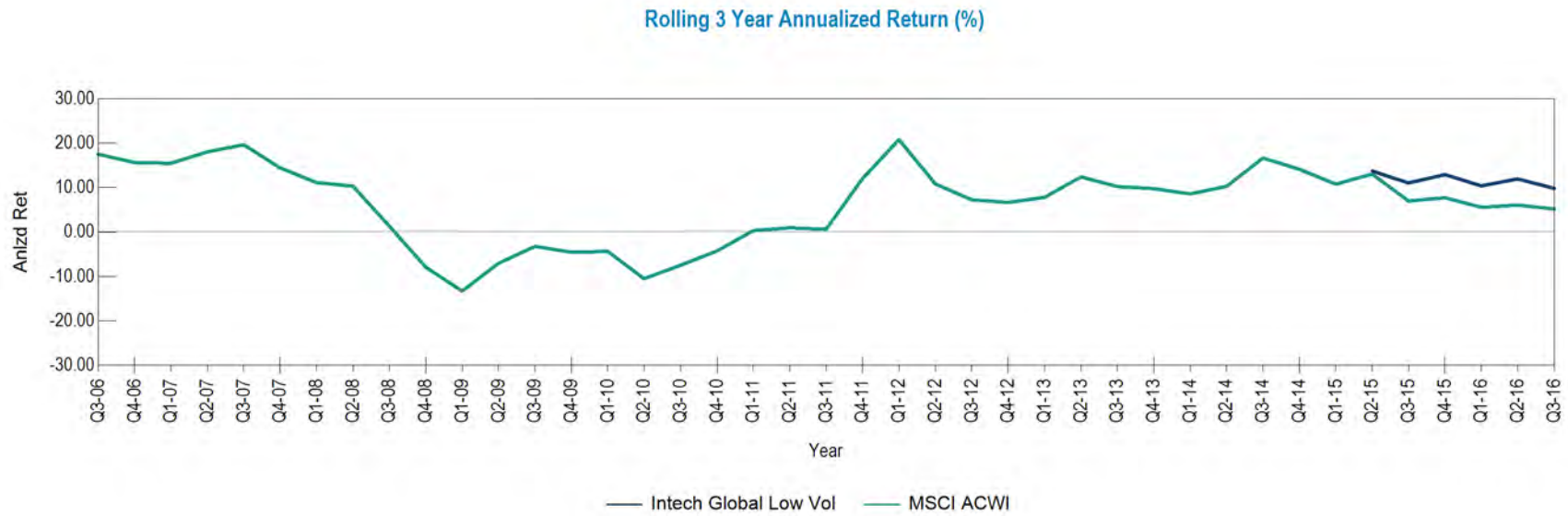
## Bottom Contributors

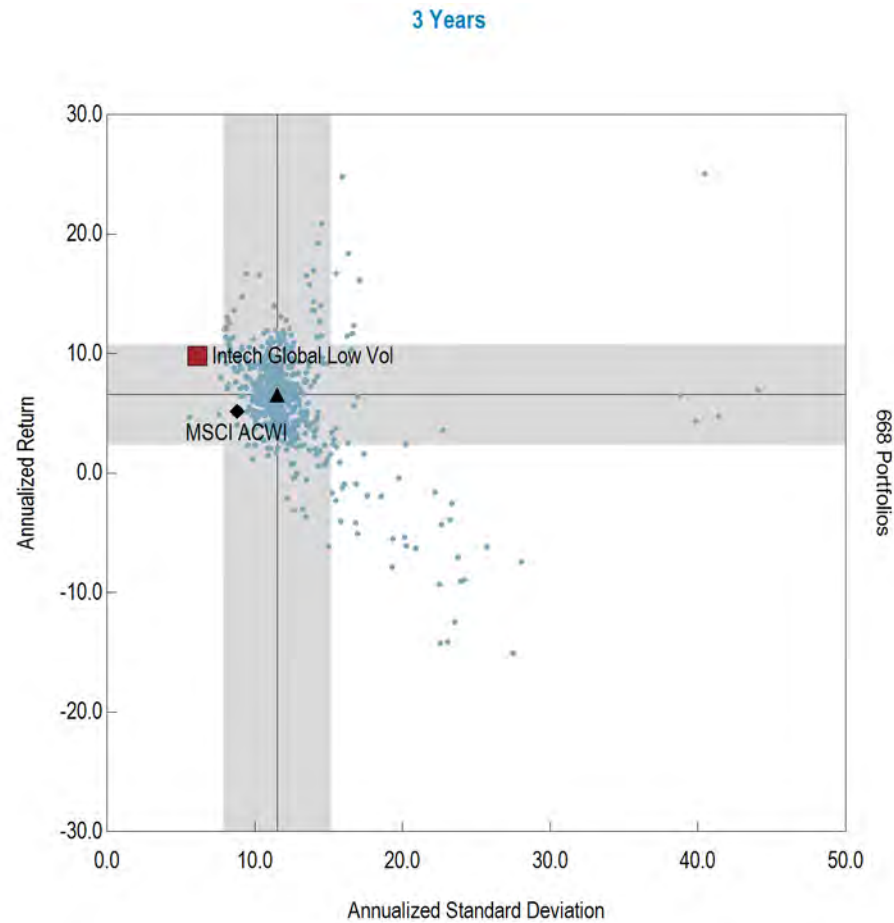
|                     | Avg Wgt | Return | Contribution |
|---------------------|---------|--------|--------------|
| GENERAL MILLS       | 4.01    | -9.83  | -0.39        |
| DOLLAR GENERAL      | 0.99    | -25.28 | -0.25        |
| HERSHEY             | 1.41    | -15.30 | -0.22        |
| KIMBERLY-CLARK      | 2.34    | -7.58  | -0.18        |
| SOUTHERN            | 5.25    | -3.32  | -0.17        |
| CLOROX              | 1.76    | -9.01  | -0.16        |
| DOLLAR TREE         | 0.88    | -16.25 | -0.14        |
| CONSOLIDATED EDISON | 1.54    | -5.57  | -0.09        |
| KELLOGG             | 1.80    | -4.52  | -0.08        |
| AUTOZONE            | 2.27    | -3.21  | -0.07        |

Unclassified sector allocation includes cash allocations.



|                         | Return (Rank) |           |          |           |          |           |           |           |           |           |
|-------------------------|---------------|-----------|----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|
|                         | Quarter       | 1 Year    | 3 Years  | 5 Years   | 10 Years | 2015      | 2014      | 2013      | 2012      | 2011      |
| 5th Percentile          | 10.4          | 23.0      | 11.9     | 16.5      | 10.3     | 8.5       | 17.1      | 38.6      | 29.5      | 4.0       |
| 25th Percentile         | 6.8           | 14.8      | 8.4      | 13.7      | 7.0      | 3.0       | 7.4       | 30.6      | 20.4      | -3.0      |
| Median                  | 5.3           | 12.2      | 6.6      | 12.4      | 5.6      | 0.1       | 4.6       | 26.2      | 17.2      | -7.0      |
| 75th Percentile         | 3.4           | 9.2       | 4.8      | 11.0      | 4.5      | -2.9      | 1.5       | 20.0      | 14.4      | -11.2     |
| 95th Percentile         | 0.6           | 4.6       | -0.8     | 5.4       | 1.9      | -15.1     | -7.4      | 2.7       | 7.4       | -18.7     |
| # of Portfolios         | 710           | 709       | 668      | 574       | 312      | 692       | 609       | 552       | 475       | 434       |
| ● Intech Global Low Vol | -0.3 (98)     | 14.3 (30) | 9.8 (13) | -- (--)   | -- (--)  | 4.1 (18)  | 11.2 (14) | 24.2 (62) | -- (--)   | -- (--)   |
| ▲ MSCI ACWI             | 5.3 (51)      | 12.0 (52) | 5.2 (70) | 10.6 (78) | 4.3 (78) | -2.4 (73) | 4.2 (54)  | 22.8 (66) | 16.1 (61) | -7.3 (53) |





3 Years

|                                   | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|-----------------------------------|--------------|--------------------------|--------------|
| Intech Global Low Vol             | 9.8%         | 6.1%                     | 1.6          |
| MSCI ACWI                         | 5.2%         | 8.8%                     | 0.6          |
| eA All Global Equity Gross Median | 6.6%         | 11.5%                    | 0.6          |

# JP Morgan Global Opportunities Manager Portfolio Overview

Period Ending: September 30, 2016

Global equity diversified portfolio focused on companies with valuations below their intrinsic value. Primary personnel include Jeroen Huysinga, Georgina Perceval-Maxwell, and Gerd Woort-Menker.

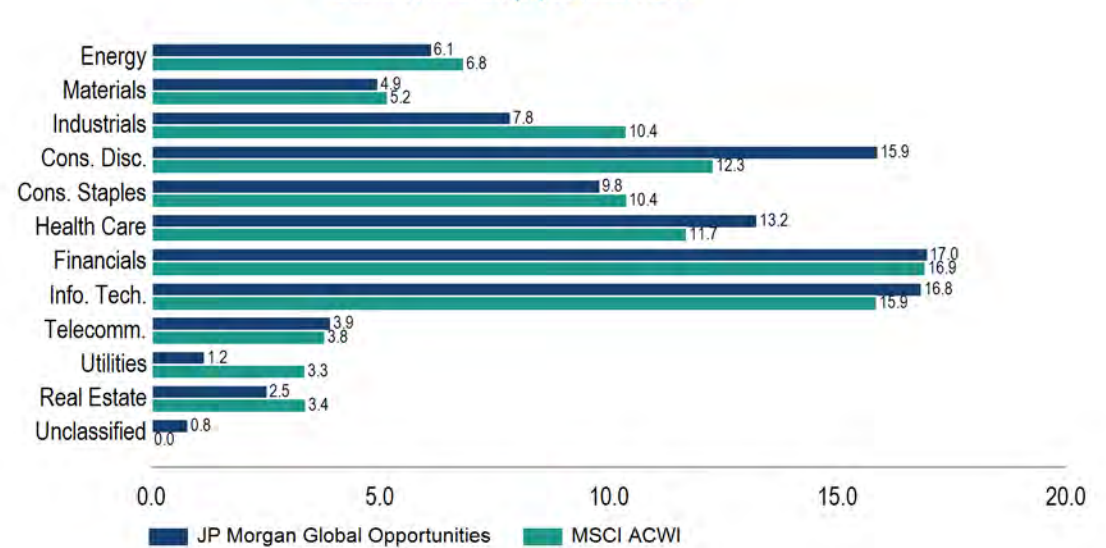
## Characteristics

|                                 | Portfolio | MSCI ACWI |
|---------------------------------|-----------|-----------|
| Number of Holdings              | 104       | 2,470     |
| Weighted Avg. Market Cap. (\$B) | 70.84     | 91.89     |
| Median Market Cap. (\$B)        | 41.77     | 8.48      |
| Price To Earnings               | 20.72     | 21.57     |
| Price To Book                   | 3.97      | 3.32      |
| Price To Sales                  | 2.94      | 2.66      |
| Return on Equity (%)            | 17.06     | 15.56     |
| Yield (%)                       | 1.96      | 2.53      |
| Beta                            | 1.11      | 1.00      |

## Country Allocation

|                                       | Manager<br>Ending Allocation<br>(USD) | Index<br>Ending Allocation<br>(USD) |
|---------------------------------------|---------------------------------------|-------------------------------------|
| <b>Totals</b>                         |                                       |                                     |
| Developed                             | 94.4%                                 | 88.9%                               |
| Emerging*                             | 5.6%                                  | 11.1%                               |
| <b>Top 10 Largest Countries</b>       |                                       |                                     |
| United States                         | 47.6%                                 | 52.4%                               |
| United Kingdom                        | 11.1%                                 | 6.3%                                |
| Japan                                 | 10.0%                                 | 8.0%                                |
| France                                | 4.8%                                  | 3.2%                                |
| Germany                               | 3.5%                                  | 3.0%                                |
| Netherlands                           | 2.9%                                  | 1.1%                                |
| Switzerland                           | 2.3%                                  | 3.0%                                |
| Hong Kong                             | 2.2%                                  | 1.2%                                |
| Sweden                                | 1.9%                                  | 0.9%                                |
| Italy                                 | 1.8%                                  | 0.6%                                |
| <b>Total-Top 10 Largest Countries</b> | <b>88.0%</b>                          | <b>79.7%</b>                        |

## Sector Allocation (%) vs MSCI ACWI



## Top Contributors

|                         | Avg Wgt | Return | Contribution |
|-------------------------|---------|--------|--------------|
| ALPHABET 'A'            | 2.69    | 14.29  | 0.38         |
| ARCELORMITTAL           | 0.97    | 34.71  | 0.34         |
| PIONEER NTRL.RES.       | 1.22    | 22.80  | 0.28         |
| MORGAN STANLEY          | 1.14    | 24.25  | 0.28         |
| INFINEON TECHNOLOGIES   | 1.16    | 22.89  | 0.26         |
| SUZUKI MOTOR            | 1.08    | 24.17  | 0.26         |
| CHARTER COMMS.CL.A      | 1.38    | 18.08  | 0.25         |
| NORSK HYDRO             | 1.29    | 18.96  | 0.24         |
| PJSC MAGNIT GDR (REG S) | 0.92    | 26.26  | 0.24         |
| NXP SEMICONDUCTORS      | 0.79    | 30.21  | 0.24         |

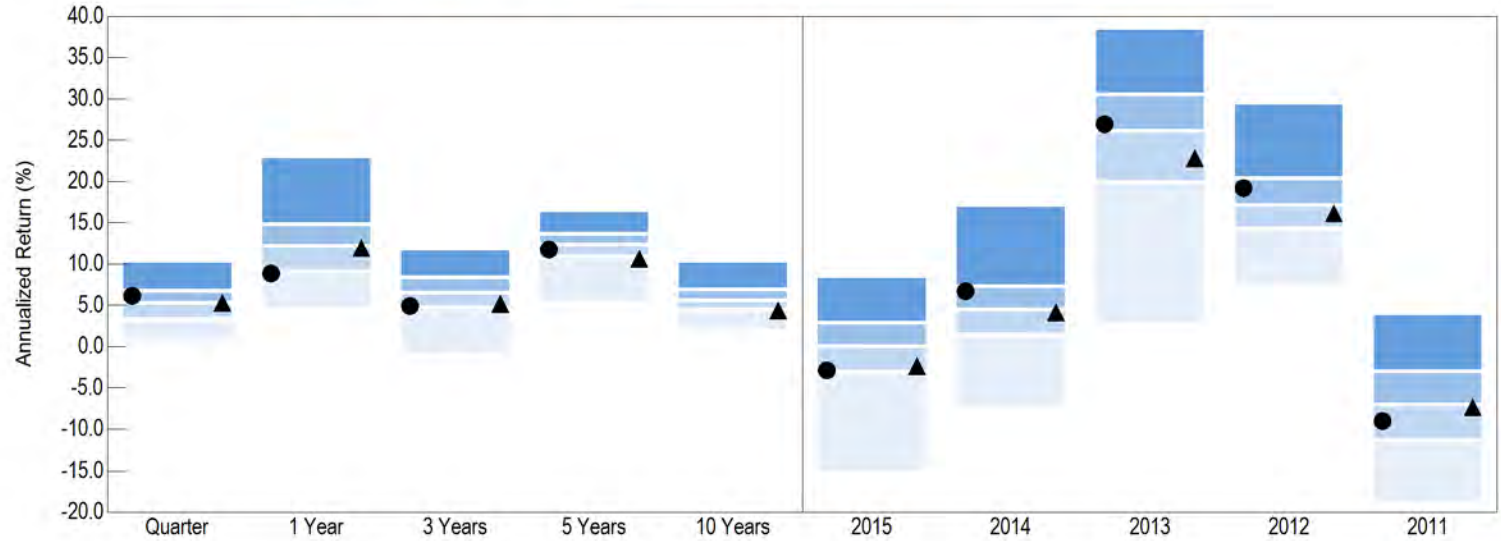
## Bottom Contributors

|                       | Avg Wgt | Return | Contribution |
|-----------------------|---------|--------|--------------|
| BRISTOL MYERS SQUIBB  | 1.00    | -26.69 | -0.27        |
| MCKESSON              | 1.72    | -10.52 | -0.18        |
| LOWE'S COMPANIES      | 1.98    | -8.40  | -0.17        |
| MITSUI FUDOSAN        | 1.61    | -6.49  | -0.10        |
| ROCHE HOLDING         | 1.89    | -5.43  | -0.10        |
| ELECTROLUX 'B'        | 1.45    | -6.90  | -0.10        |
| ASSOCIATED BRIT.FOODS | 1.40    | -7.08  | -0.10        |
| TWENTY-FIRST CENTURY  | 0.92    | -9.79  | -0.09        |
| FOX CL.A              | 0.92    | -9.79  | -0.09        |
| WELLS FARGO & CO      | 1.56    | -5.70  | -0.09        |
| VODAFONE GROUP        | 1.64    | -5.35  | -0.09        |

Unclassified sector allocation includes cash allocations.

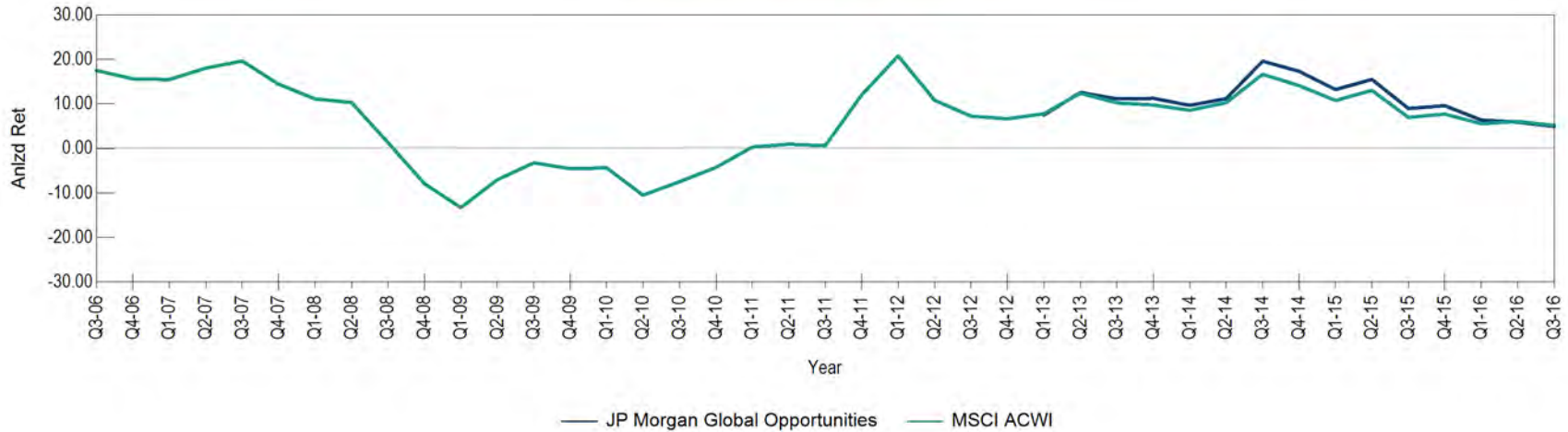


JP Morgan Global Opportunities vs. eA All Global Equity Gross Universe

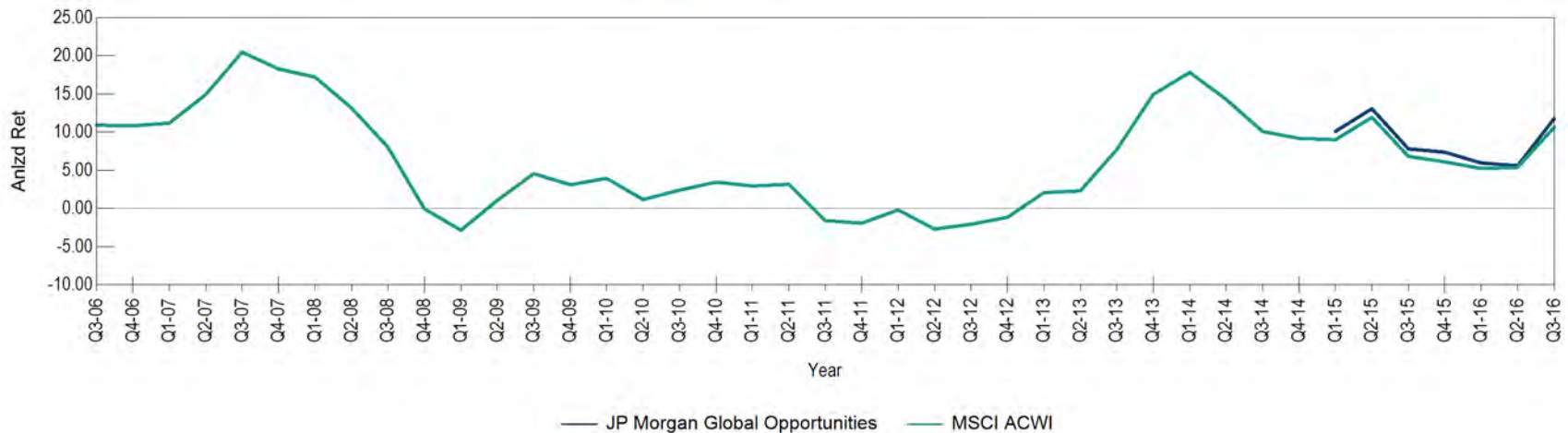


|                                  | Return (Rank) |           |          |           |          |           |          |           |           |           |
|----------------------------------|---------------|-----------|----------|-----------|----------|-----------|----------|-----------|-----------|-----------|
|                                  | Quarter       | 1 Year    | 3 Years  | 5 Years   | 10 Years | 2015      | 2014     | 2013      | 2012      | 2011      |
| 5th Percentile                   | 10.4          | 23.0      | 11.9     | 16.5      | 10.3     | 8.5       | 17.1     | 38.6      | 29.5      | 4.0       |
| 25th Percentile                  | 6.8           | 14.8      | 8.4      | 13.7      | 7.0      | 3.0       | 7.4      | 30.6      | 20.4      | -3.0      |
| Median                           | 5.3           | 12.2      | 6.6      | 12.4      | 5.6      | 0.1       | 4.6      | 26.2      | 17.2      | -7.0      |
| 75th Percentile                  | 3.4           | 9.2       | 4.8      | 11.0      | 4.5      | -2.9      | 1.5      | 20.0      | 14.4      | -11.2     |
| 95th Percentile                  | 0.6           | 4.6       | -0.8     | 5.4       | 1.9      | -15.1     | -7.4     | 2.7       | 7.4       | -18.7     |
| # of Portfolios                  | 710           | 709       | 668      | 574       | 312      | 692       | 609      | 552       | 475       | 434       |
| ● JP Morgan Global Opportunities | 6.1 (36)      | 8.8 (78)  | 4.9 (74) | 11.8 (62) | -- (--)  | -2.9 (75) | 6.7 (30) | 26.9 (46) | 19.2 (32) | -9.0 (63) |
| ▲ MSCI ACWI                      | 5.3 (51)      | 12.0 (52) | 5.2 (70) | 10.6 (78) | 4.3 (78) | -2.4 (73) | 4.2 (54) | 22.8 (66) | 16.1 (61) | -7.3 (53) |

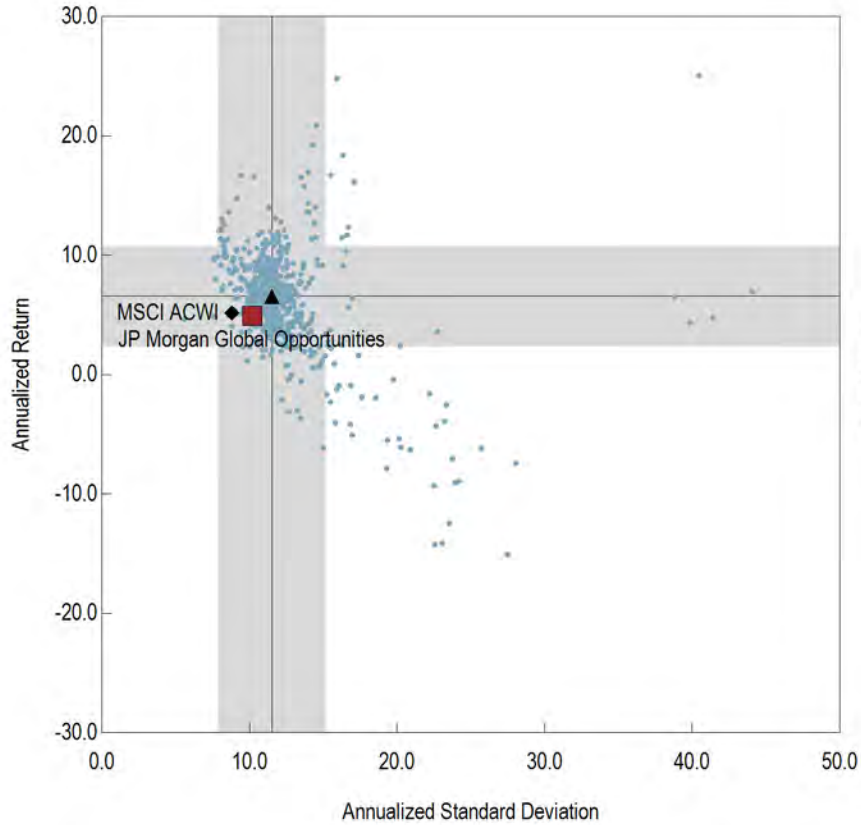
Rolling 3 Year Annualized Return (%)



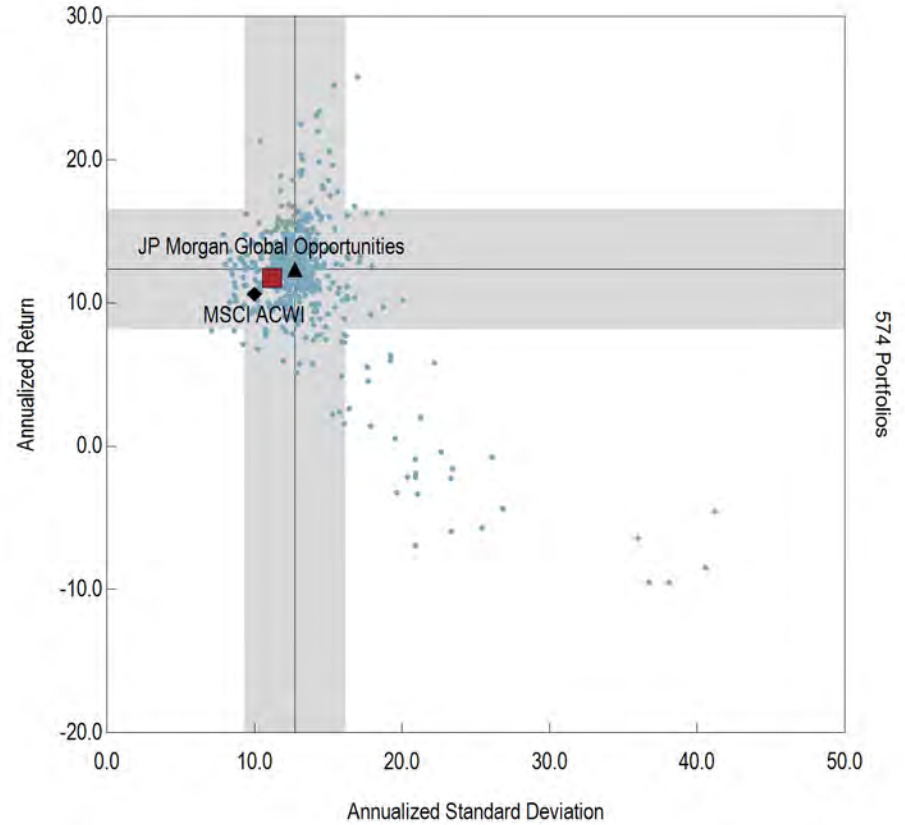
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

|                                   | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|-----------------------------------|--------------|--------------------------|--------------|
| JP Morgan Global Opportunities    | 4.9%         | 10.2%                    | 0.5          |
| MSCI ACWI                         | 5.2%         | 8.8%                     | 0.6          |
| eA All Global Equity Gross Median | 6.6%         | 11.5%                    | 0.6          |

5 Years

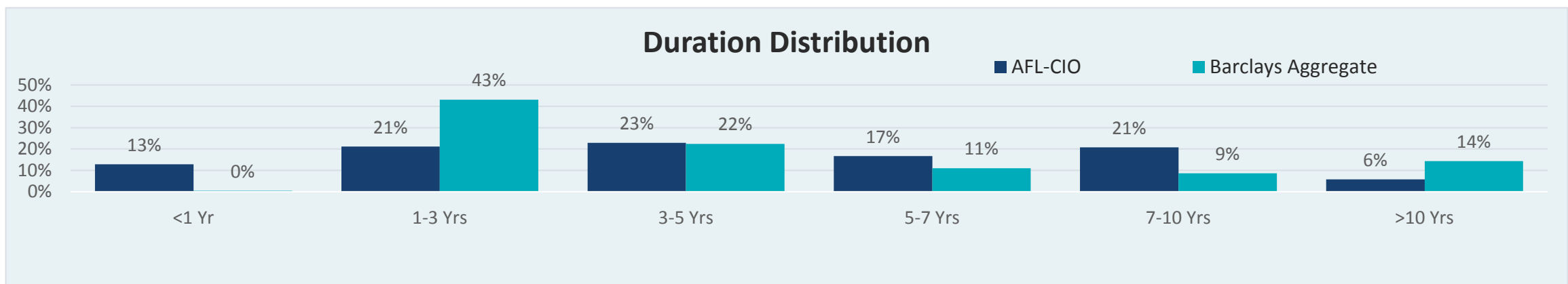
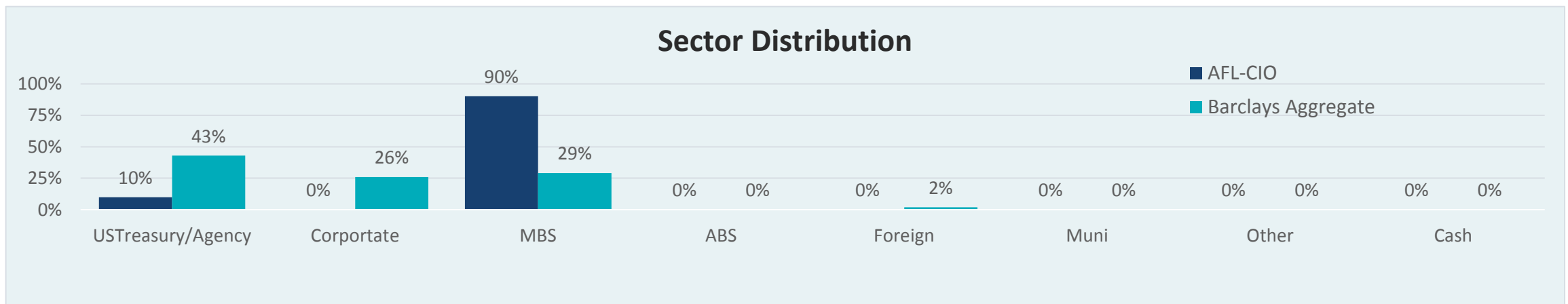
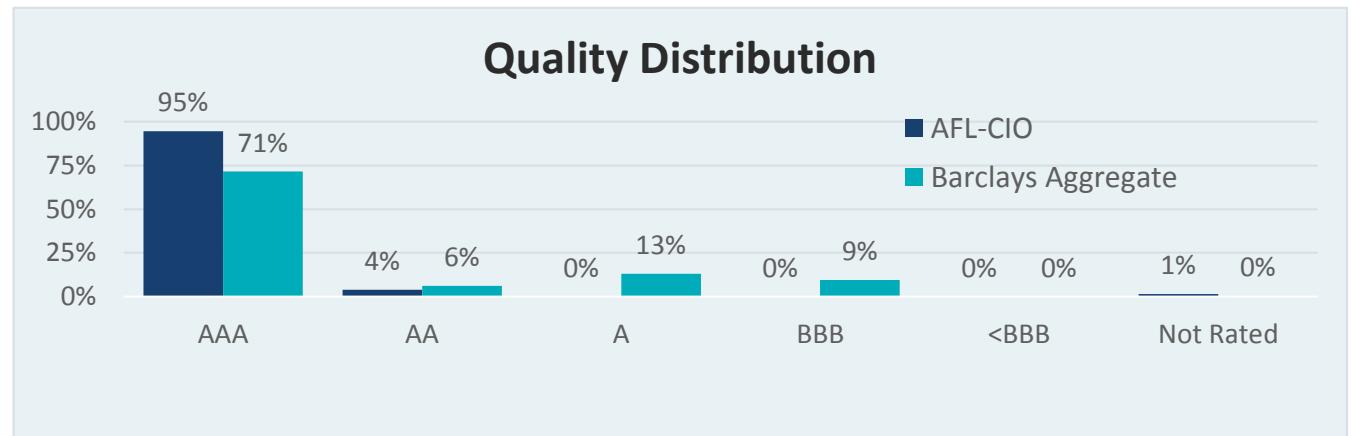
|                                   | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|-----------------------------------|--------------|--------------------------|--------------|
| JP Morgan Global Opportunities    | 11.8%        | 11.2%                    | 1.0          |
| MSCI ACWI                         | 10.6%        | 10.0%                    | 1.1          |
| eA All Global Equity Gross Median | 12.4%        | 12.7%                    | 1.0          |

## **Domestic Fixed Income Managers**

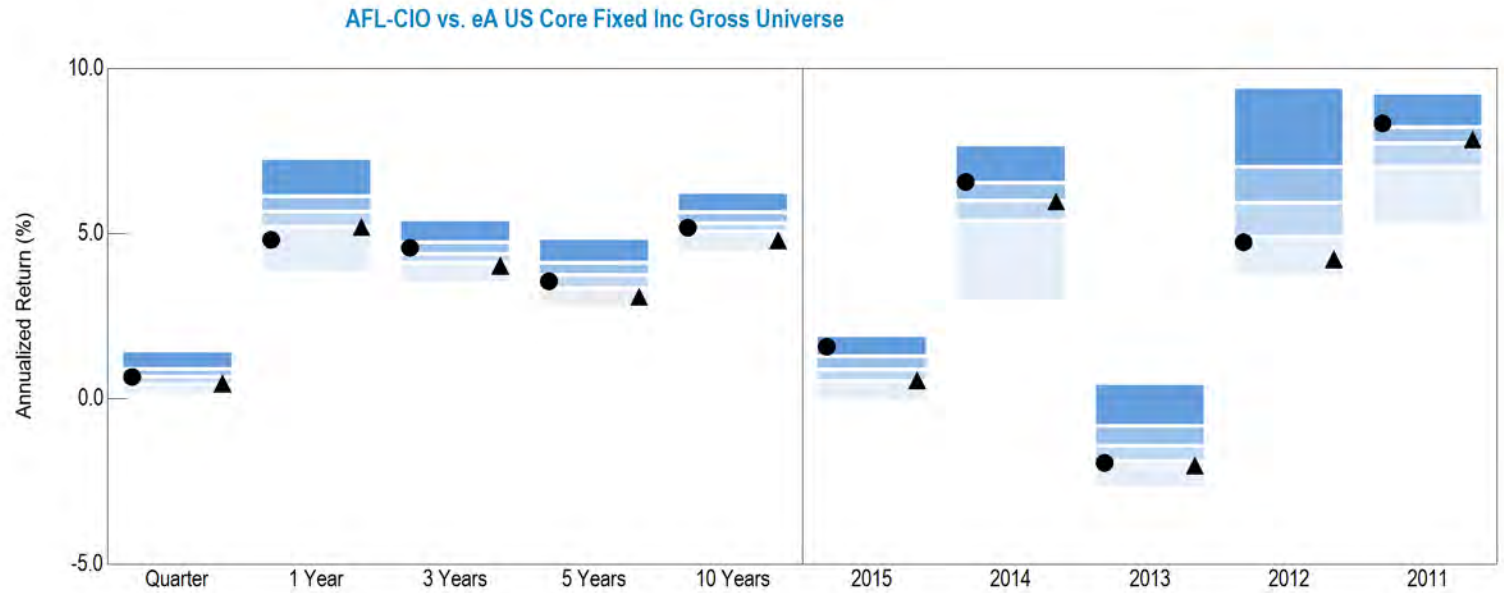
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Domestic core fixed income portfolio with an exclusive focus on mortgage-related securities. Primary personnel include Stephen Coyle and Chang Su.

|                    | AFL-CIO | Barclays Aggregate |
|--------------------|---------|--------------------|
| Effective Duration | 5.27    | 5.45               |
| Yield to Maturity  | 3.10    | 1.91               |
| Average Quality    | AAA     | AA+                |
| Average Coupon     | 3.18%   | 3.19%              |

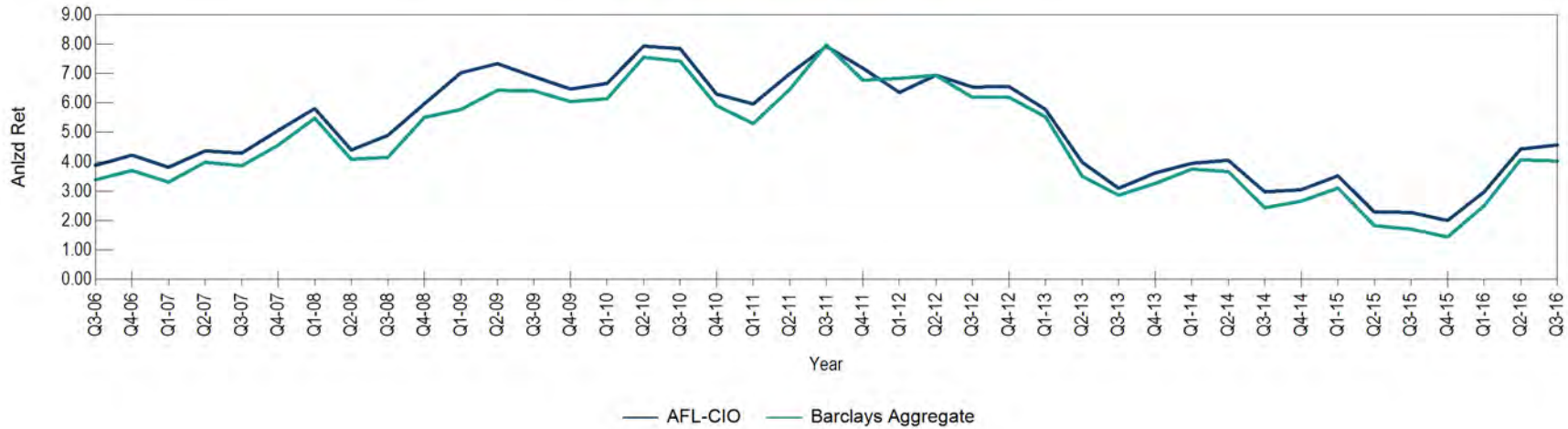


Duration and Quality distributions exclude cash.

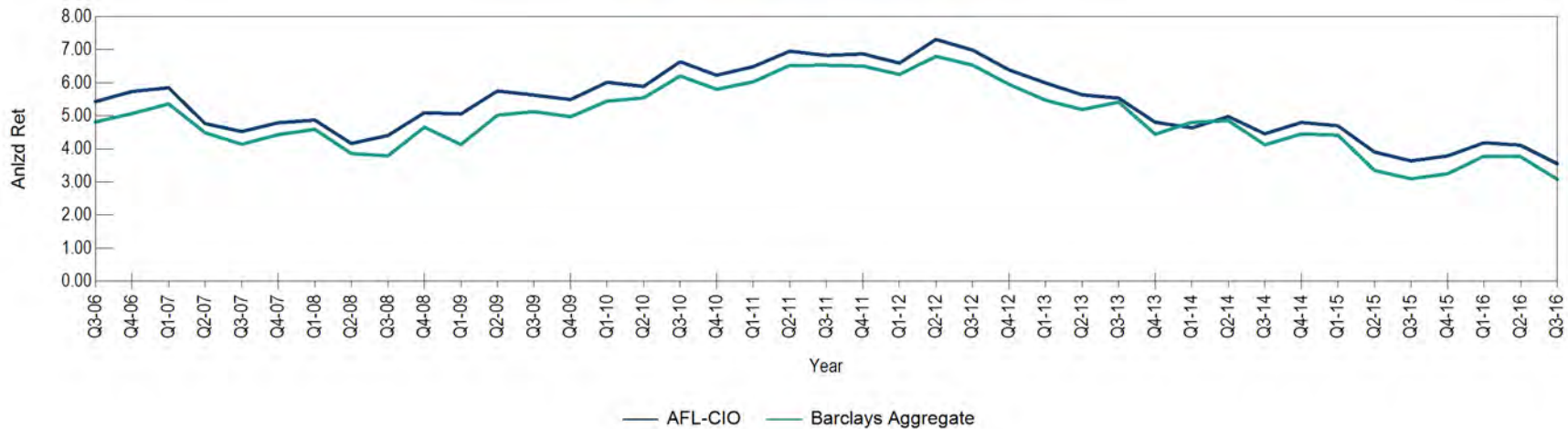


|                      | Return (Rank) |          |          |          |          |          |          |           |          |          |  |
|----------------------|---------------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|--|
| 5th Percentile       | 1.4           | 7.3      | 5.4      | 4.9      | 6.3      | 1.9      | 7.7      | 0.5       | 9.4      | 9.2      |  |
| 25th Percentile      | 0.9           | 6.1      | 4.8      | 4.1      | 5.7      | 1.3      | 6.5      | -0.8      | 7.0      | 8.2      |  |
| Median               | 0.7           | 5.7      | 4.4      | 3.8      | 5.3      | 0.9      | 6.0      | -1.4      | 5.9      | 7.7      |  |
| 75th Percentile      | 0.4           | 5.2      | 4.1      | 3.4      | 5.1      | 0.5      | 5.4      | -1.9      | 4.9      | 7.0      |  |
| 95th Percentile      | 0.1           | 3.8      | 3.5      | 2.8      | 4.5      | -0.1     | 2.9      | -2.7      | 3.7      | 5.3      |  |
| # of Portfolios      | 192           | 192      | 192      | 190      | 167      | 196      | 213      | 209       | 228      | 213      |  |
| ● AFL-CIO            | 0.7 (52)      | 4.8 (88) | 4.6 (36) | 3.6 (63) | 5.2 (67) | 1.6 (15) | 6.6 (25) | -1.9 (78) | 4.7 (80) | 8.3 (23) |  |
| ▲ Barclays Aggregate | 0.5 (73)      | 5.2 (76) | 4.0 (81) | 3.1 (90) | 4.8 (89) | 0.6 (75) | 6.0 (52) | -2.0 (82) | 4.2 (90) | 7.8 (46) |  |

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)

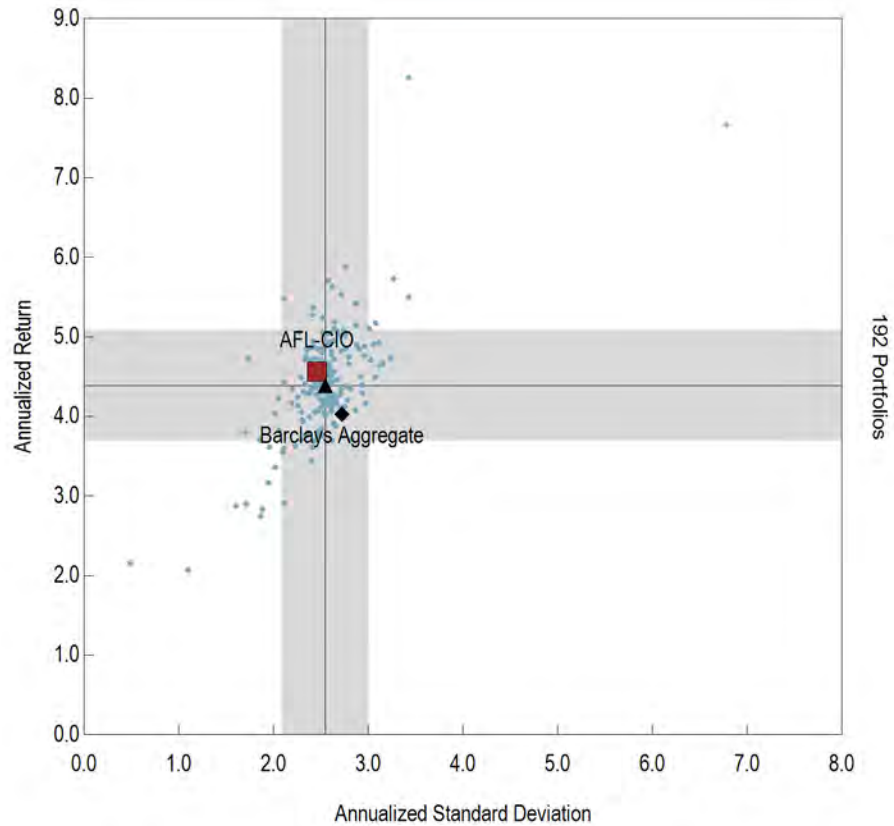


# AFL-CIO

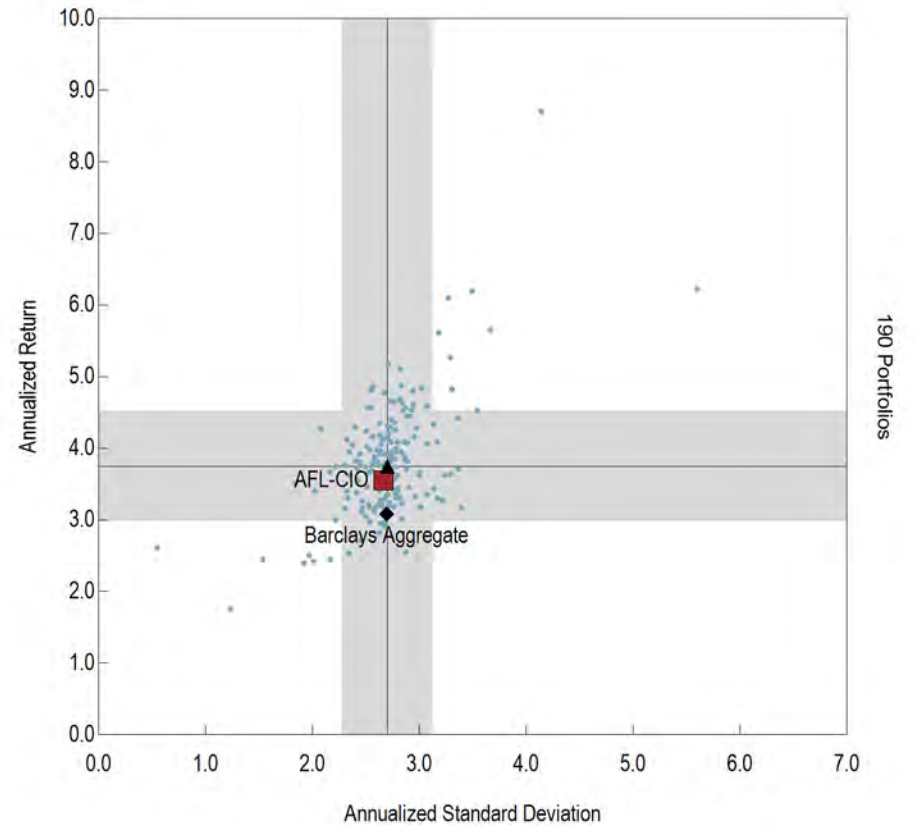
## Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2016

3 Years



5 Years



3 Years

|                                   | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|-----------------------------------|--------------|--------------------------|--------------|
| AFL-CIO                           | 4.6%         | 2.5%                     | 1.8          |
| Barclays Aggregate                | 4.0%         | 2.7%                     | 1.4          |
| eA US Core Fixed Inc Gross Median | 4.4%         | 2.5%                     | 1.7          |

5 Years

|                                   | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|-----------------------------------|--------------|--------------------------|--------------|
| AFL-CIO                           | 3.6%         | 2.7%                     | 1.3          |
| Barclays Aggregate                | 3.1%         | 2.7%                     | 1.1          |
| eA US Core Fixed Inc Gross Median | 3.8%         | 2.7%                     | 1.4          |

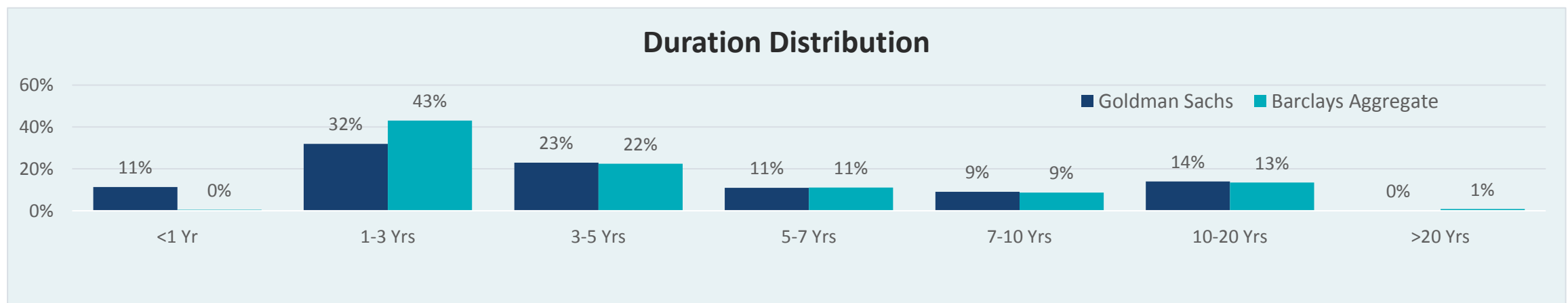
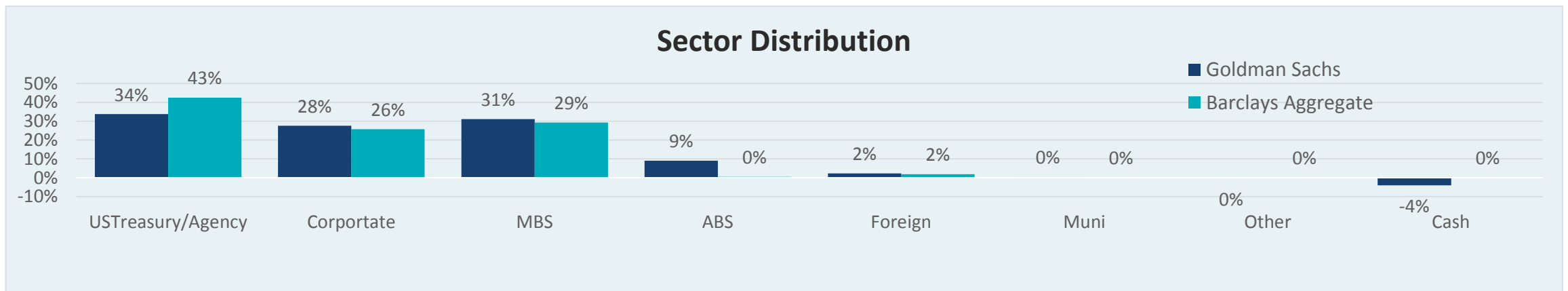
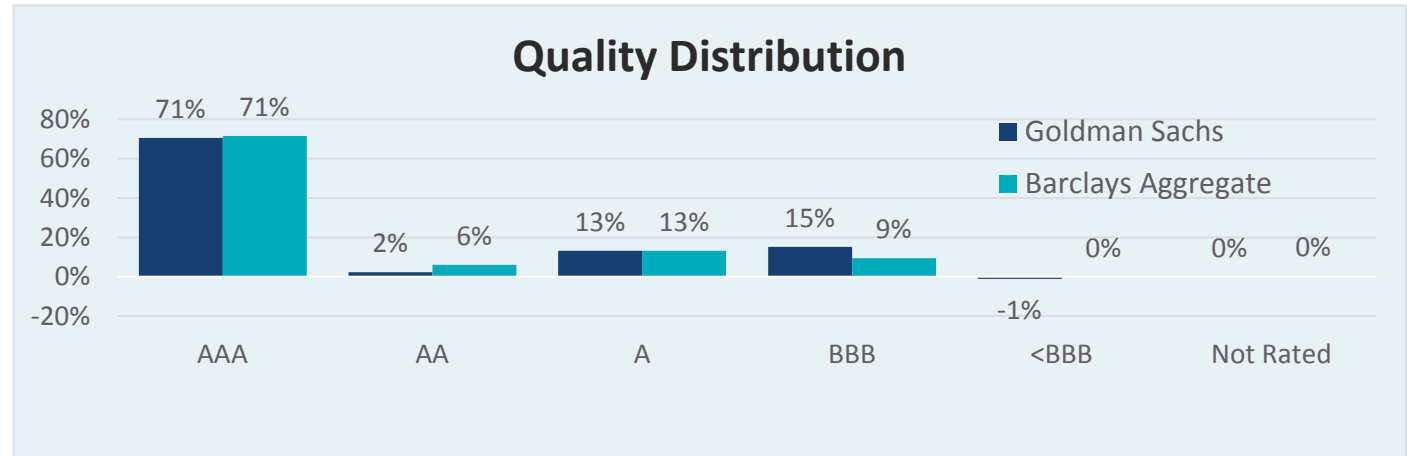


# Goldman Sachs Core Plus Manager Portfolio Overview

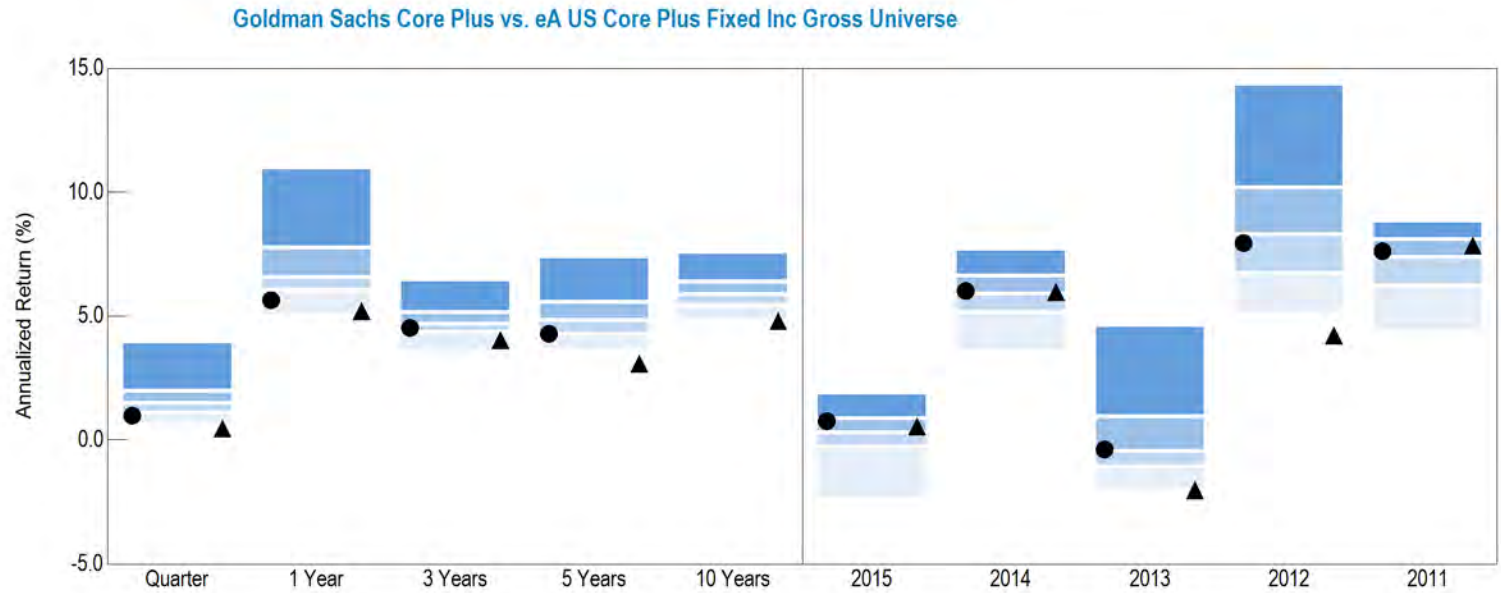
Period Ending: September 30, 2016

Domestic core plus fixed income portfolio with a focus on security selection seeking enhanced returns. Primary personnel include Jonathan Beinler.

|                          | Goldman Sachs | Barclays Aggregate |
|--------------------------|---------------|--------------------|
| Option Adjusted Duration | 5.30          | 5.42               |
| Yield to Maturity        | 2.48          | 1.91               |
| Average Quality          | AA            | AA+                |
| Average Coupon           | 3.37%         | 3.19%              |

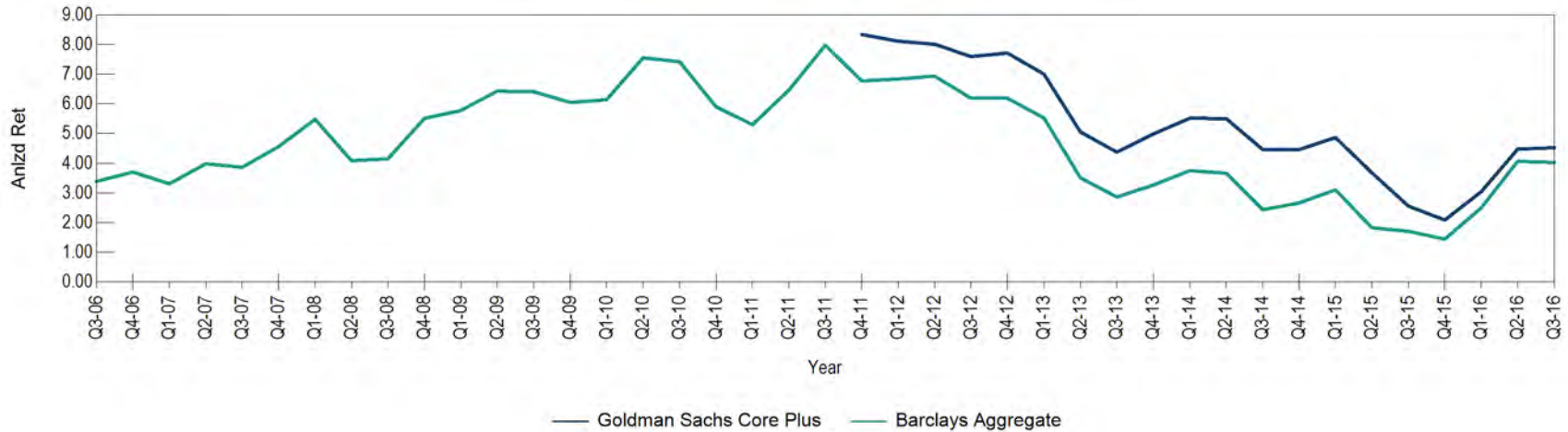


Duration and Quality distributions exclude cash.

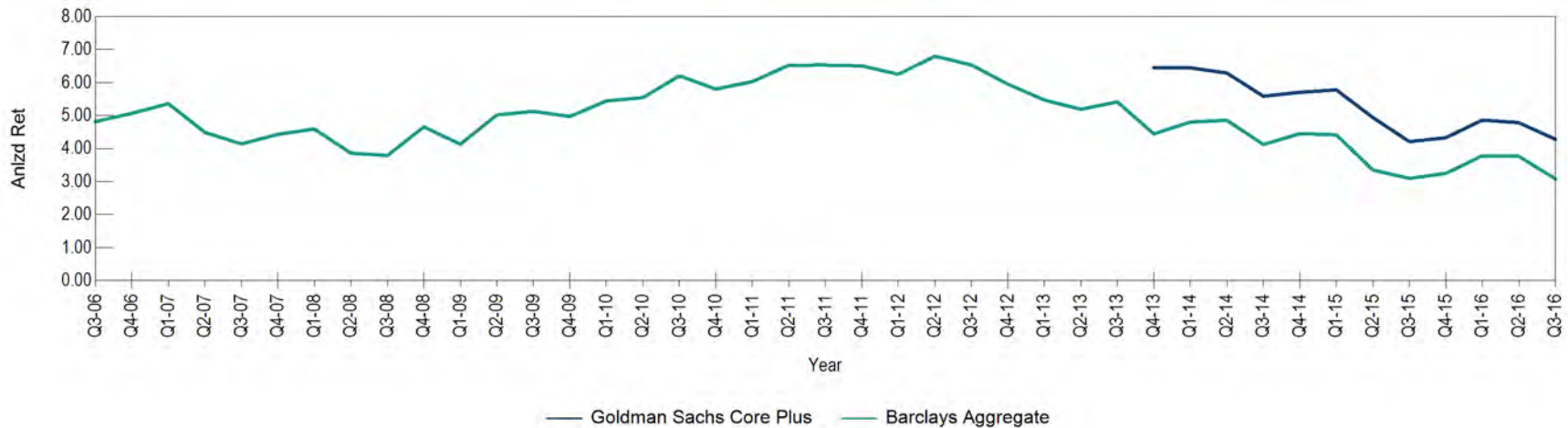


|                           | Return (Rank) |          |          |          |          |          |          |           |          |          |  |
|---------------------------|---------------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|--|
| 5th Percentile            | 4.0           | 11.0     | 6.5      | 7.4      | 7.6      | 1.9      | 7.7      | 4.6       | 14.4     | 8.8      |  |
| 25th Percentile           | 2.0           | 7.8      | 5.2      | 5.6      | 6.4      | 0.9      | 6.7      | 1.0       | 10.2     | 8.1      |  |
| Median                    | 1.5           | 6.6      | 4.7      | 4.9      | 5.9      | 0.3      | 5.9      | -0.4      | 8.3      | 7.4      |  |
| 75th Percentile           | 1.1           | 6.1      | 4.4      | 4.3      | 5.5      | -0.2     | 5.2      | -1.0      | 6.7      | 6.3      |  |
| 95th Percentile           | 0.6           | 5.0      | 3.5      | 3.6      | 4.8      | -2.4     | 3.6      | -2.0      | 5.1      | 4.4      |  |
| # of Portfolios           | 124           | 124      | 122      | 119      | 94       | 115      | 118      | 116       | 124      | 118      |  |
| ● Goldman Sachs Core Plus | 1.0 (83)      | 5.6 (89) | 4.5 (64) | 4.3 (76) | -- (--)  | 0.8 (36) | 6.0 (47) | -0.4 (49) | 7.9 (59) | 7.6 (43) |  |
| ▲ Barclays Aggregate      | 0.5 (99)      | 5.2 (94) | 4.0 (89) | 3.1 (99) | 4.8 (96) | 0.6 (42) | 6.0 (50) | -2.0 (96) | 4.2 (97) | 7.8 (37) |  |

Rolling 3 Year Annualized Return (%)

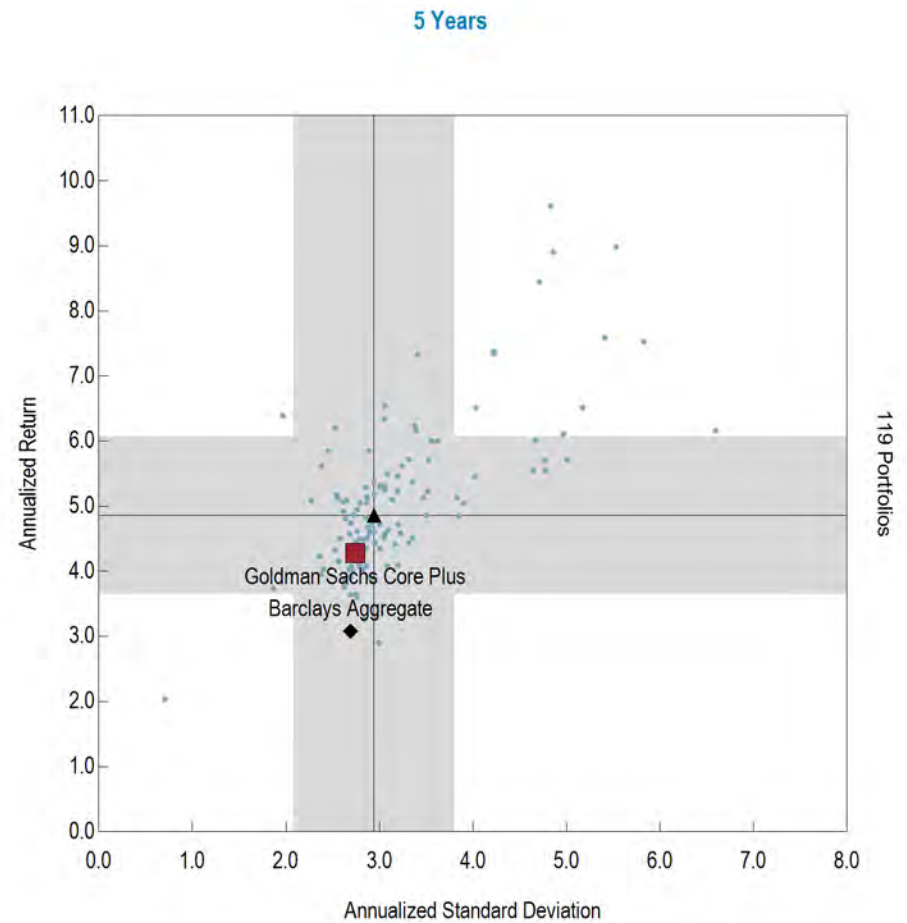
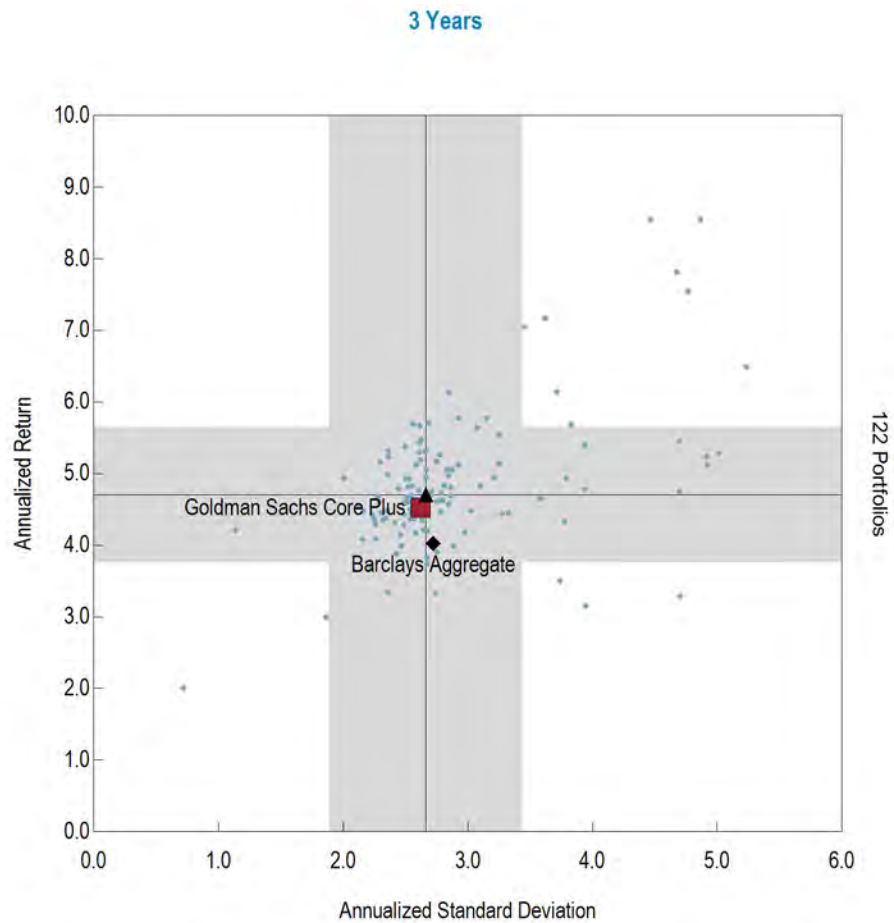


Rolling 5 Year Annualized Return (%)



Goldman Sachs Core Plus  
Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2016



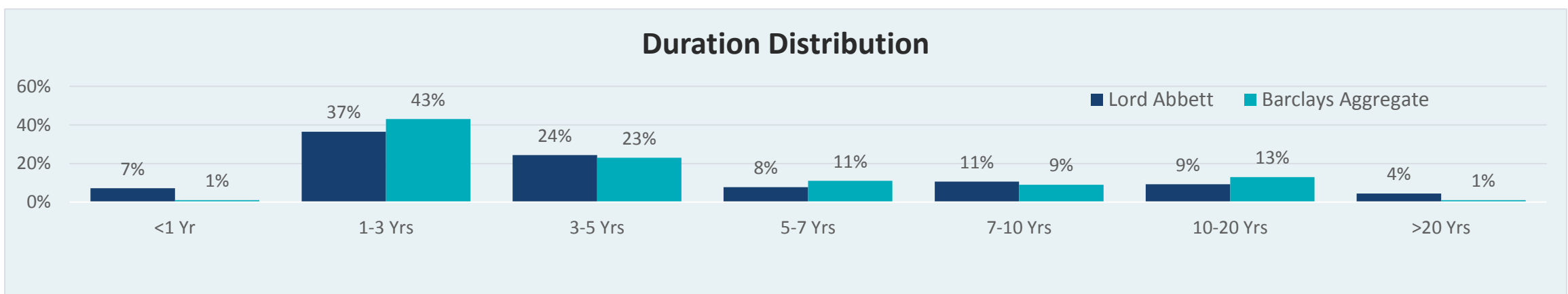
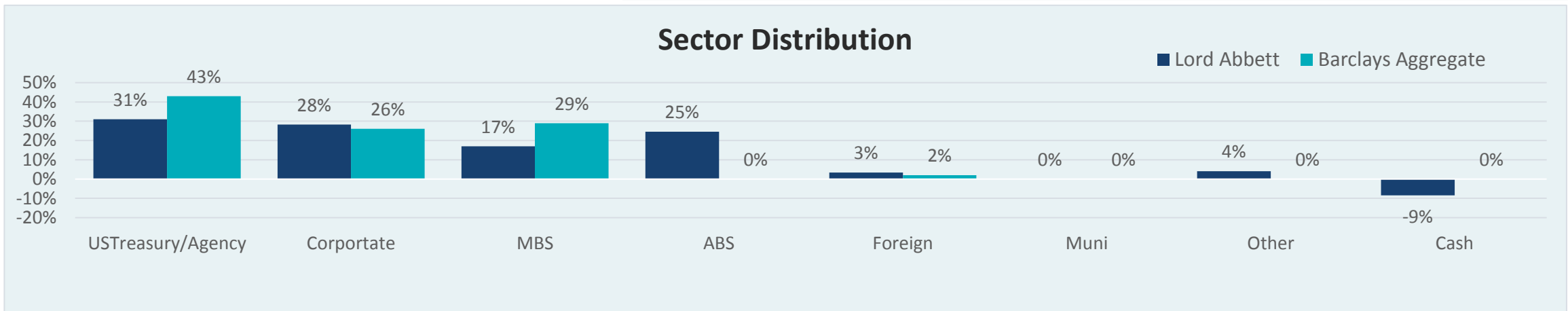
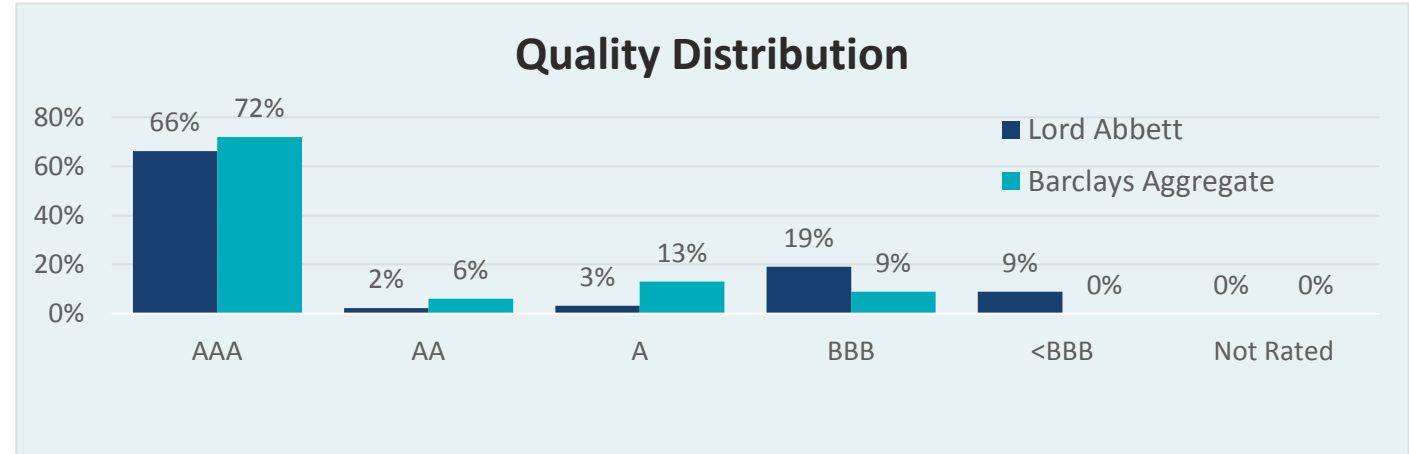
|  | <b>3 Years</b> |                          |              | <b>5 Years</b>                         |                          |              |     |
|--|----------------|--------------------------|--------------|--|--------------------------|--------------|-----|
|  | Anlzd Return   | Anlzd Standard Deviation | Sharpe Ratio | Anlzd Return                           | Anlzd Standard Deviation | Sharpe Ratio |     |
| Goldman Sachs Core Plus                | 4.5%           | 2.6%                     | 1.7          | Goldman Sachs Core Plus                | 4.3%                     | 2.7%         | 1.5 |
| Barclays Aggregate                     | 4.0%           | 2.7%                     | 1.4          | Barclays Aggregate                     | 3.1%                     | 2.7%         | 1.1 |
| eA US Core Plus Fixed Inc Gross Median | 4.7%           | 2.7%                     | 1.7          | eA US Core Plus Fixed Inc Gross Median | 4.9%                     | 2.9%         | 1.6 |

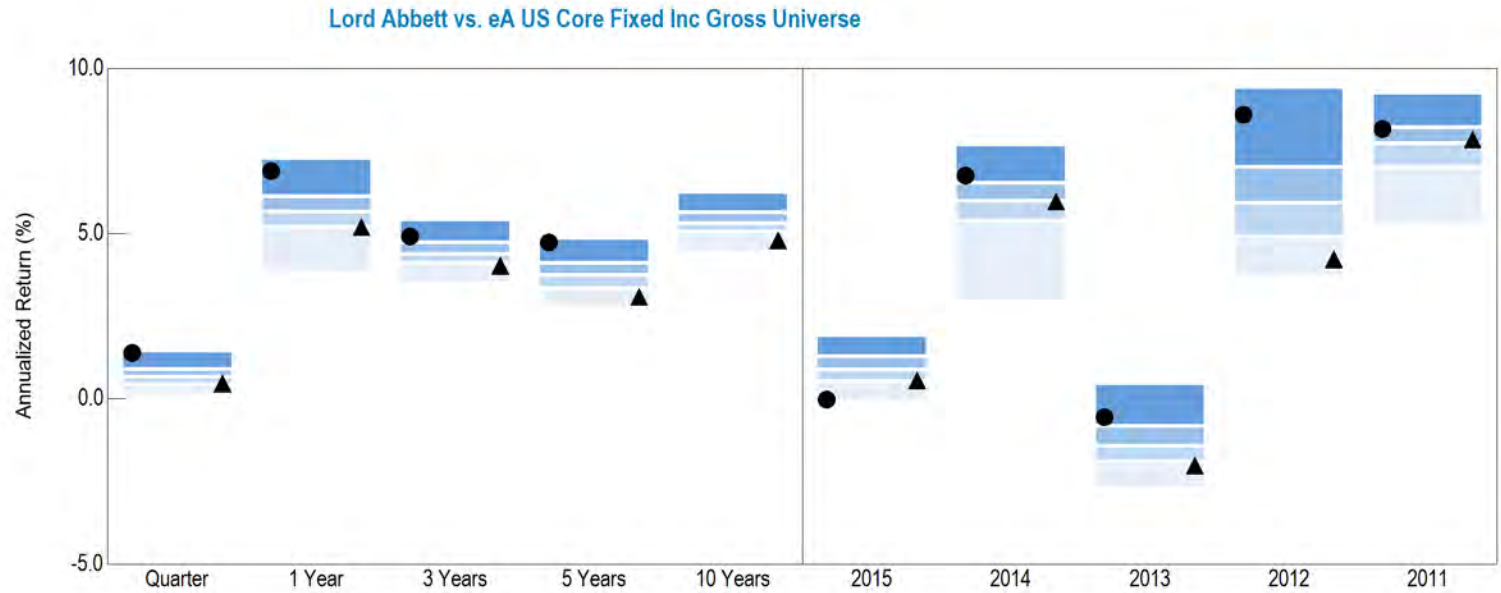
# Lord Abbett Manager Portfolio Overview

Period Ending: September 30, 2016

Domestic core plus fixed income portfolio that is duration-neutral with a focus on sector selection seeking enhanced returns. Primary personnel include Robert Lee and Robert Gerber.

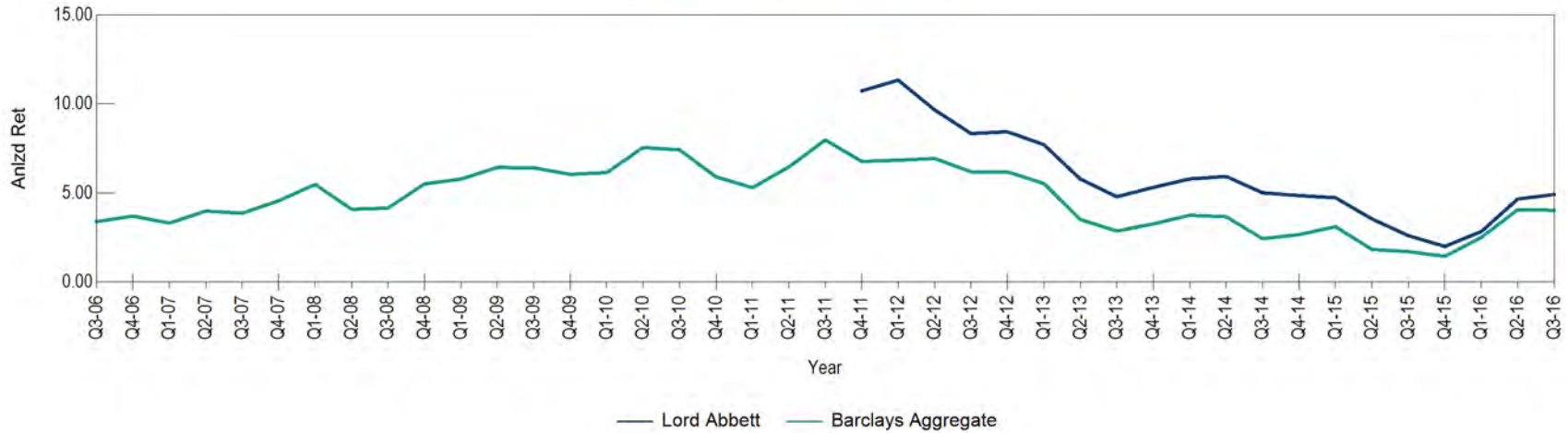
|                    | Lord Abbett | Barclays Aggregate |
|--------------------|-------------|--------------------|
| Effective Duration | 5.40        | 5.45               |
| Yield to Maturity  | 2.60        | 1.91               |
| Average Quality    | AA          | AA+                |
| Average Coupon     | 3.20%       | 3.19%              |



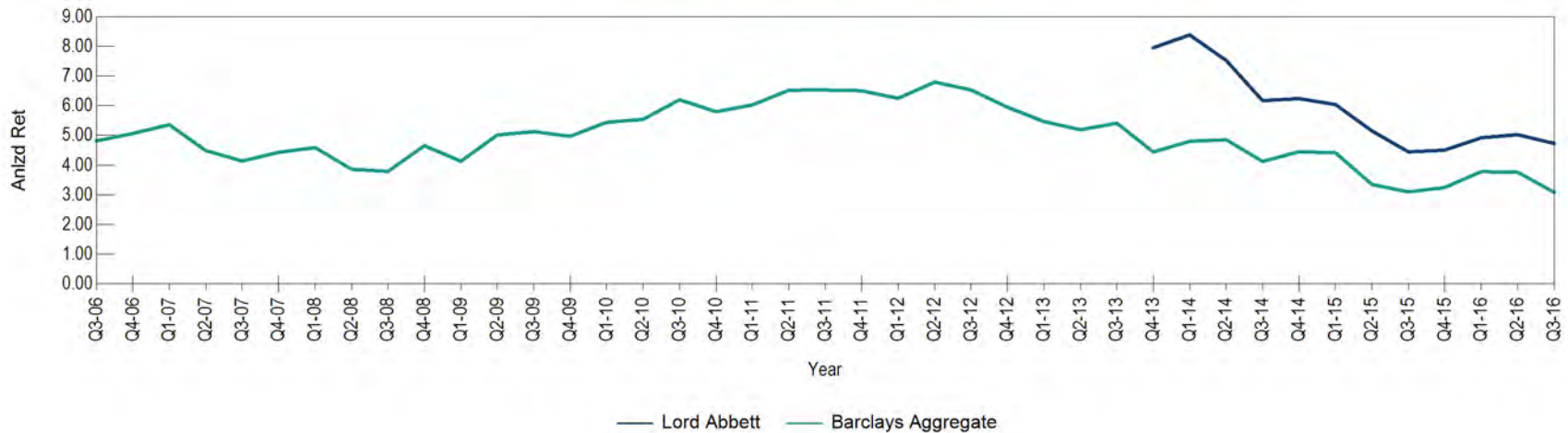


|                      | Return (Rank) |          |          |          |          |          |          |           |          |          |  |  |  |
|----------------------|---------------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|--|--|--|
| 5th Percentile       | 1.4           | 7.3      | 5.4      | 4.9      | 6.3      | 1.9      | 7.7      | 0.5       | 9.4      | 9.2      |  |  |  |
| 25th Percentile      | 0.9           | 6.1      | 4.8      | 4.1      | 5.7      | 1.3      | 6.5      | -0.8      | 7.0      | 8.2      |  |  |  |
| Median               | 0.7           | 5.7      | 4.4      | 3.8      | 5.3      | 0.9      | 6.0      | -1.4      | 5.9      | 7.7      |  |  |  |
| 75th Percentile      | 0.4           | 5.2      | 4.1      | 3.4      | 5.1      | 0.5      | 5.4      | -1.9      | 4.9      | 7.0      |  |  |  |
| 95th Percentile      | 0.1           | 3.8      | 3.5      | 2.8      | 4.5      | -0.1     | 2.9      | -2.7      | 3.7      | 5.3      |  |  |  |
| # of Portfolios      | 192           | 192      | 192      | 190      | 167      | 196      | 213      | 209       | 228      | 213      |  |  |  |
| ● Lord Abbett        | 1.4 (6)       | 6.9 (8)  | 4.9 (17) | 4.7 (9)  | -- (--)  | 0.0 (94) | 6.7 (18) | -0.6 (18) | 8.6 (8)  | 8.2 (27) |  |  |  |
| ▲ Barclays Aggregate | 0.5 (73)      | 5.2 (76) | 4.0 (81) | 3.1 (90) | 4.8 (89) | 0.6 (75) | 6.0 (52) | -2.0 (82) | 4.2 (90) | 7.8 (46) |  |  |  |

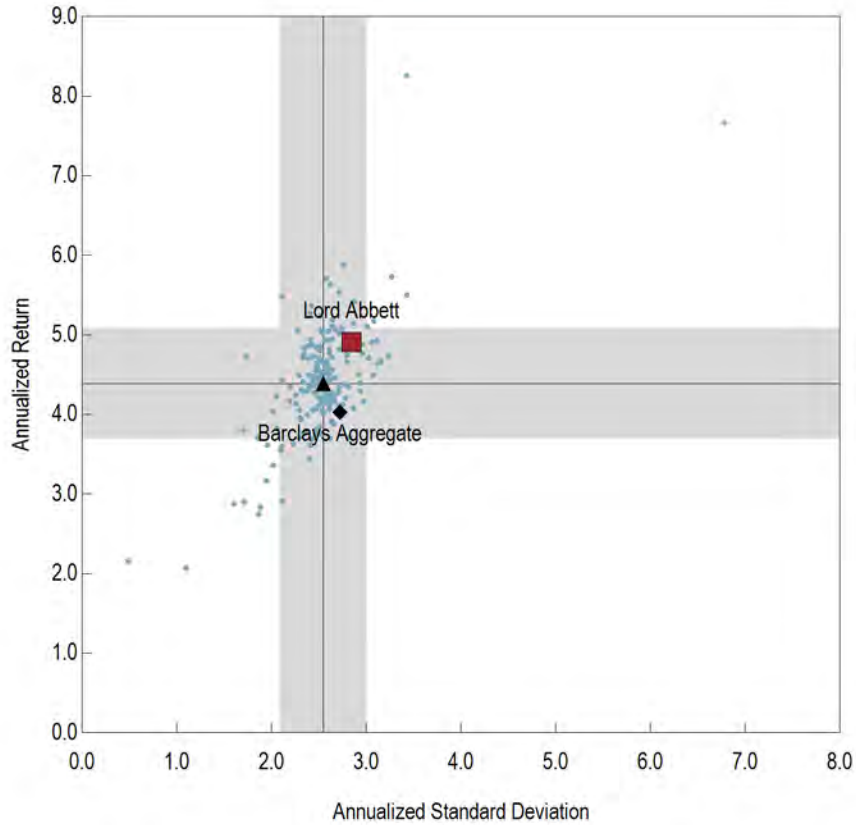
Rolling 3 Year Annualized Return (%)



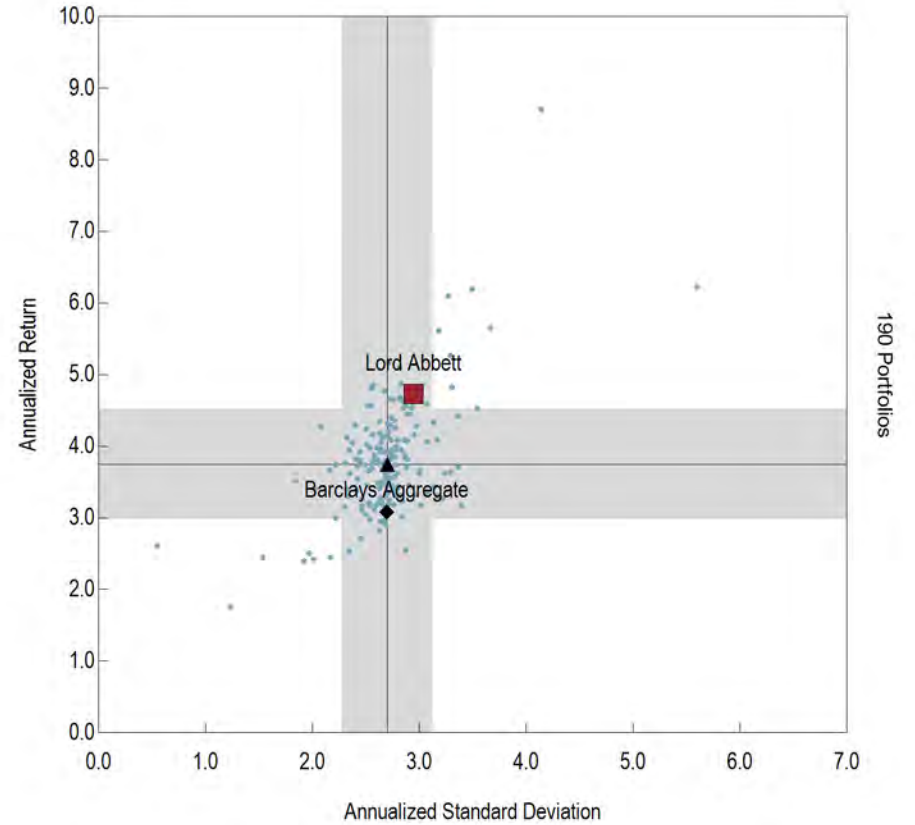
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

|                                   | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|-----------------------------------|--------------|--------------------------|--------------|
| Lord Abbett                       | 4.9%         | 2.8%                     | 1.7          |
| Barclays Aggregate                | 4.0%         | 2.7%                     | 1.4          |
| eA US Core Fixed Inc Gross Median | 4.4%         | 2.5%                     | 1.7          |

5 Years

|                                   | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|-----------------------------------|--------------|--------------------------|--------------|
| Lord Abbett                       | 4.7%         | 2.9%                     | 1.6          |
| Barclays Aggregate                | 3.1%         | 2.7%                     | 1.1          |
| eA US Core Fixed Inc Gross Median | 3.8%         | 2.7%                     | 1.4          |

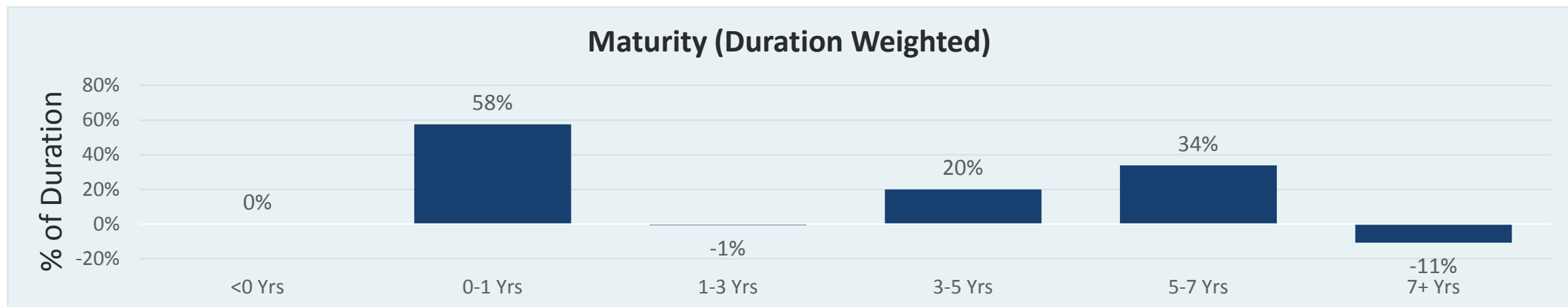
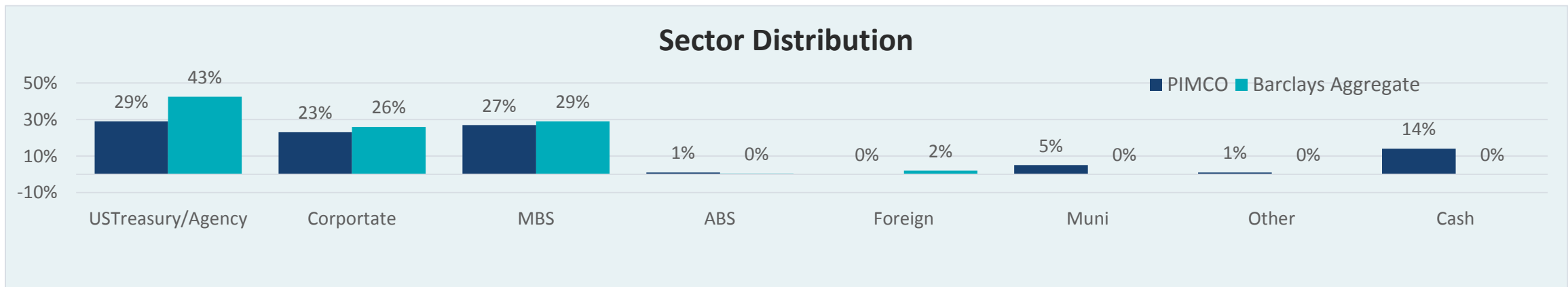
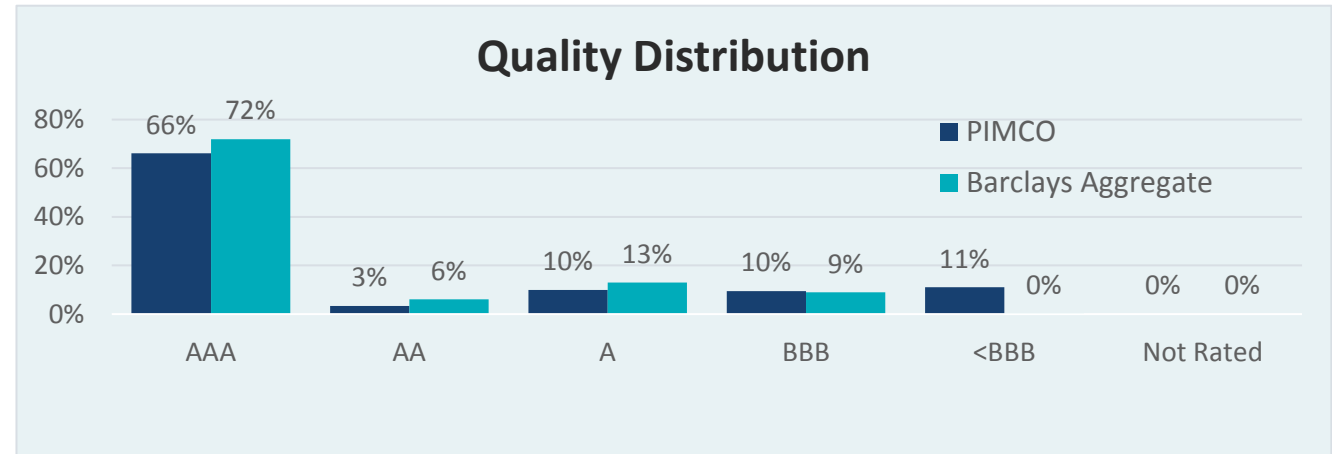


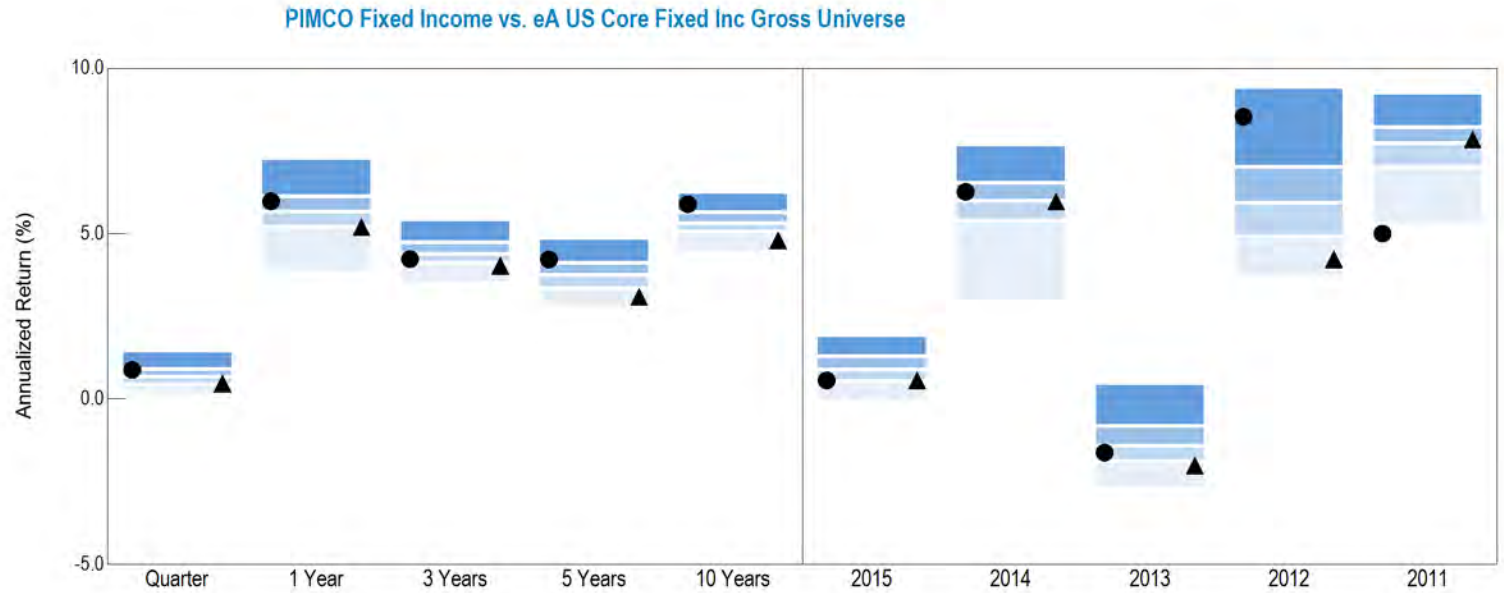
# PIMCO Fixed Income Manager Portfolio Overview

Period Ending: September 30, 2016

Domestic core plus fixed income portfolio seeking enhanced returns through sector and security selection, yield curve structure, and duration decision.

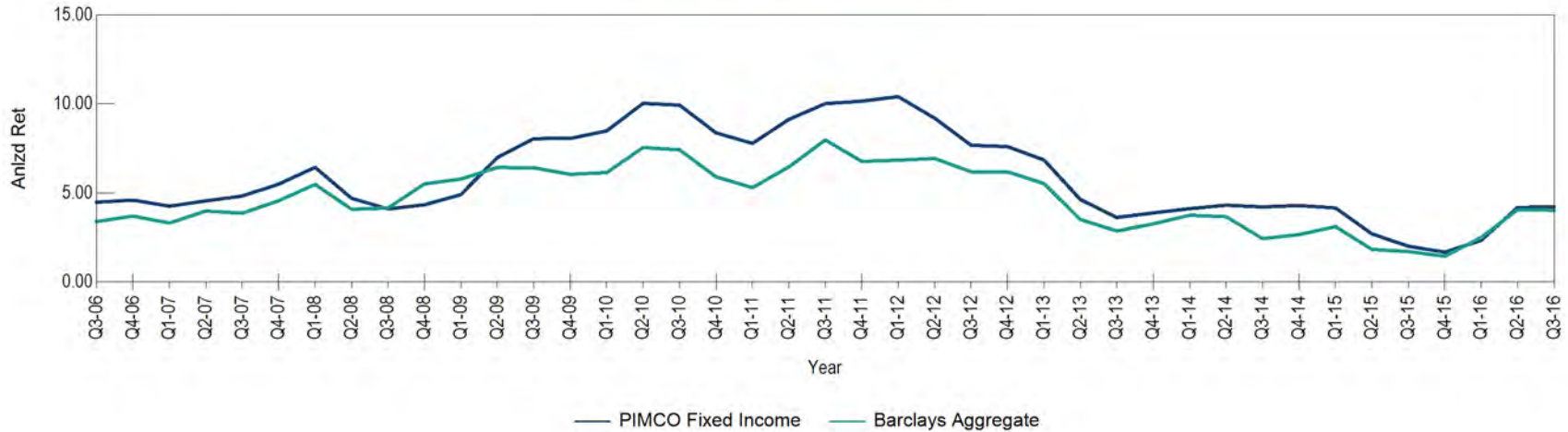
|                    | PIMCO | Barclays Aggregate |
|--------------------|-------|--------------------|
| Effective Duration | 5.29  | 5.45               |
| Yield to Maturity  | 2.21  | 1.91               |
| Average Quality    | AA    | AA+                |
| Average Coupon     | 3.15% | 3.19%              |



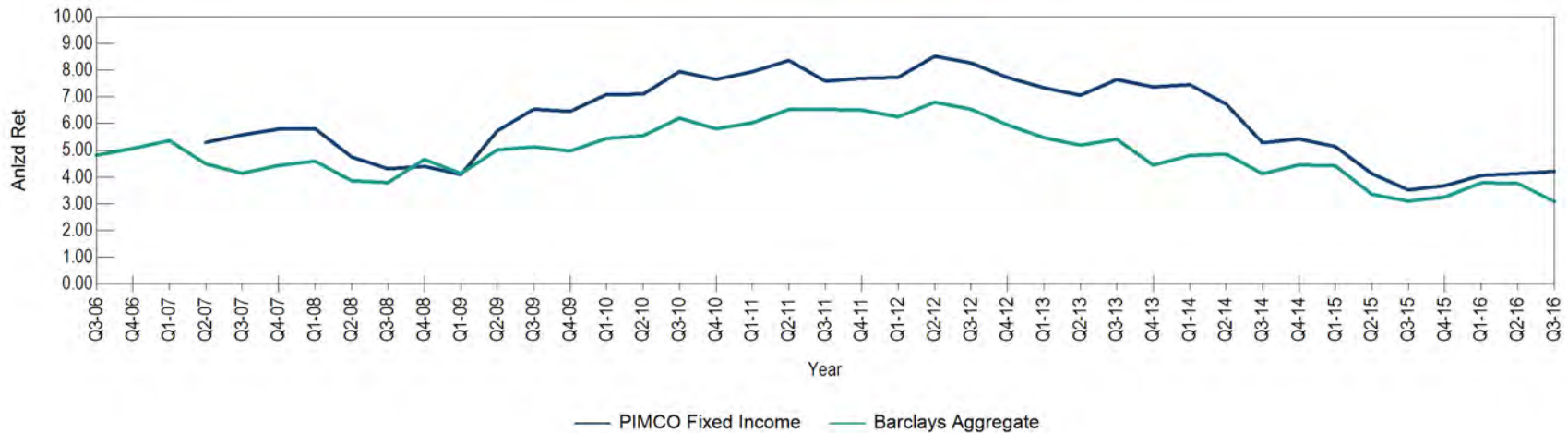


|                             | Quarter  | 1 Year   | 3 Years  | 5 Years  | 10 Years | 2015     | 2014     | 2013      | 2012     | 2011     |
|-----------------------------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|
| <b>5th Percentile</b>       | 1.4      | 7.3      | 5.4      | 4.9      | 6.3      | 1.9      | 7.7      | 0.5       | 9.4      | 9.2      |
| <b>25th Percentile</b>      | 0.9      | 6.1      | 4.8      | 4.1      | 5.7      | 1.3      | 6.5      | -0.8      | 7.0      | 8.2      |
| <b>Median</b>               | 0.7      | 5.7      | 4.4      | 3.8      | 5.3      | 0.9      | 6.0      | -1.4      | 5.9      | 7.7      |
| <b>75th Percentile</b>      | 0.4      | 5.2      | 4.1      | 3.4      | 5.1      | 0.5      | 5.4      | -1.9      | 4.9      | 7.0      |
| <b>95th Percentile</b>      | 0.1      | 3.8      | 3.5      | 2.8      | 4.5      | -0.1     | 2.9      | -2.7      | 3.7      | 5.3      |
| <b># of Portfolios</b>      | 192      | 192      | 192      | 190      | 167      | 196      | 213      | 209       | 228      | 213      |
| <b>● PIMCO Fixed Income</b> | 0.9 (28) | 6.0 (33) | 4.2 (67) | 4.2 (23) | 5.9 (14) | 0.5 (75) | 6.3 (34) | -1.6 (61) | 8.5 (8)  | 5.0 (97) |
| <b>▲ Barclays Aggregate</b> | 0.5 (73) | 5.2 (76) | 4.0 (81) | 3.1 (90) | 4.8 (89) | 0.6 (75) | 6.0 (52) | -2.0 (82) | 4.2 (90) | 7.8 (46) |

Rolling 3 Year Annualized Return (%)



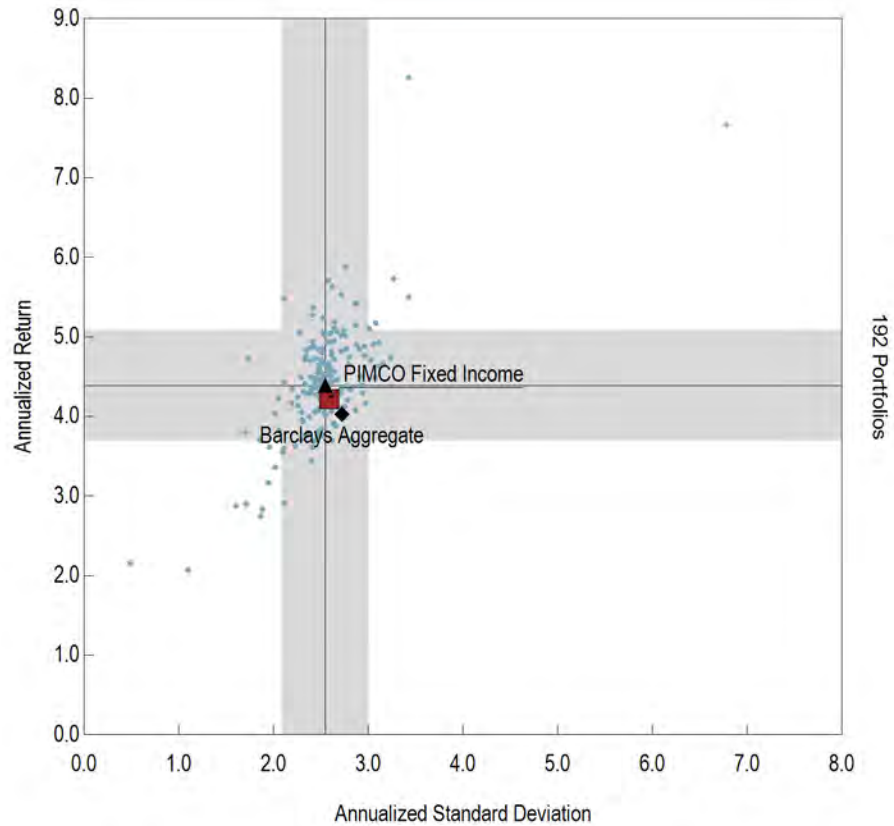
Rolling 5 Year Annualized Return (%)



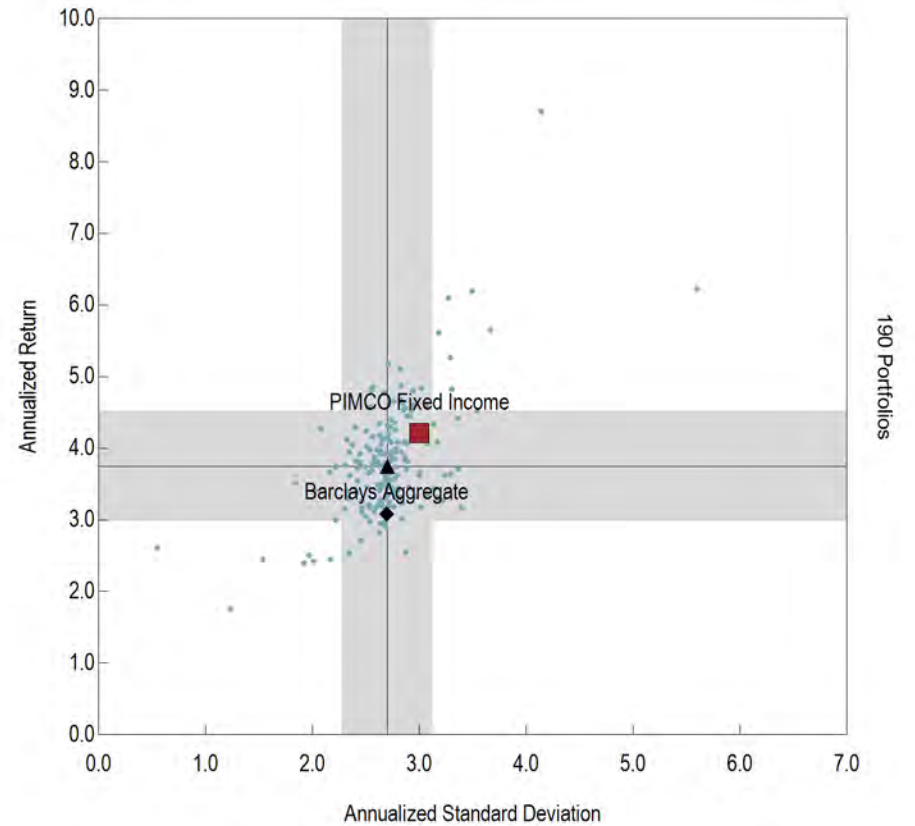
PIMCO Fixed Income  
 Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2016

3 Years



5 Years



3 Years

|                                   | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|-----------------------------------|--------------|--------------------------|--------------|
| PIMCO Fixed Income                | 4.2%         | 2.6%                     | 1.6          |
| Barclays Aggregate                | 4.0%         | 2.7%                     | 1.4          |
| eA US Core Fixed Inc Gross Median | 4.4%         | 2.5%                     | 1.7          |

5 Years

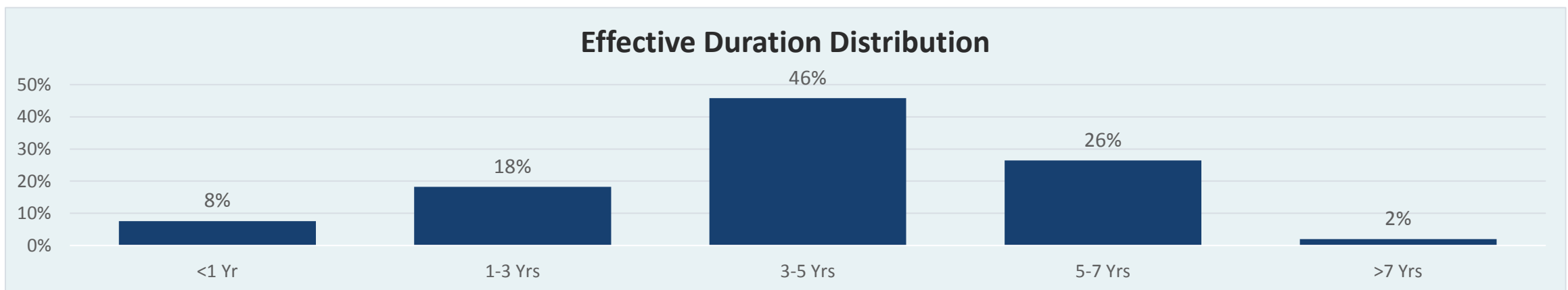
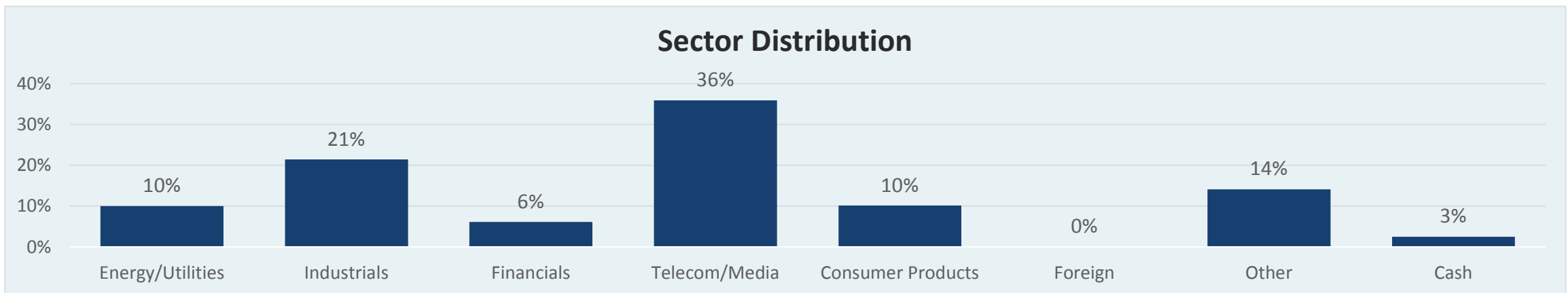
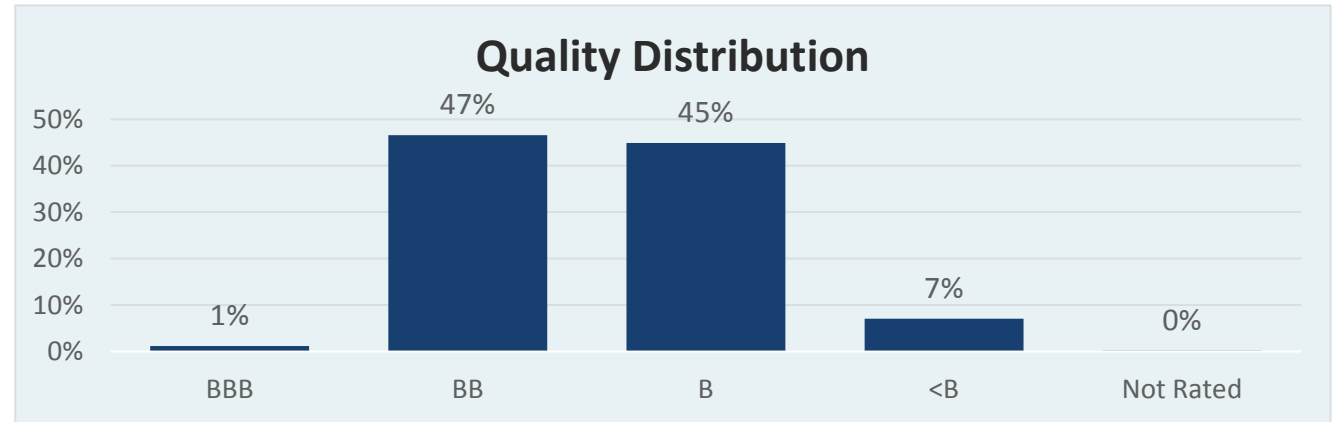
|                                   | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|-----------------------------------|--------------|--------------------------|--------------|
| PIMCO Fixed Income                | 4.2%         | 3.0%                     | 1.4          |
| Barclays Aggregate                | 3.1%         | 2.7%                     | 1.1          |
| eA US Core Fixed Inc Gross Median | 3.8%         | 2.7%                     | 1.4          |

## High Yield Managers

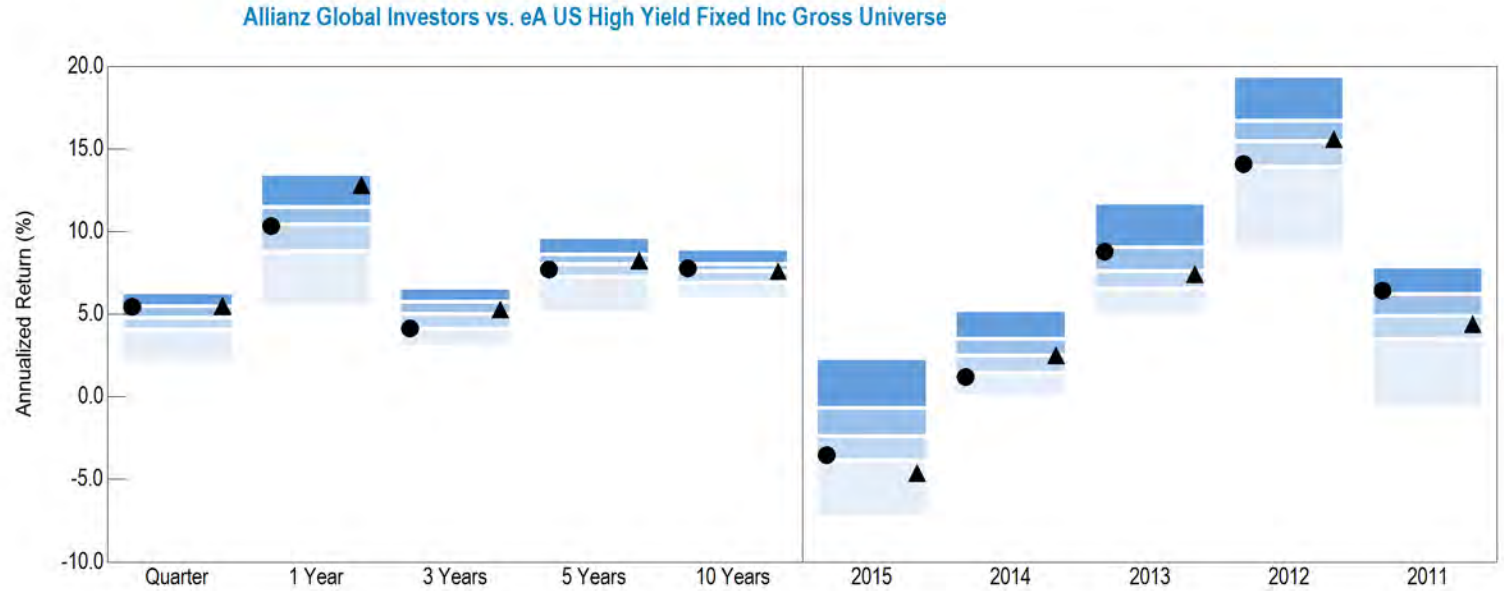
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Domestic high yield fixed income portfolio with a focus on security selection. Primary personnel include Douglas Forsyth, Justin Kass, William Stickney, and Michael Yee.

|                    | Allianz | BofA ML HY Master II |
|--------------------|---------|----------------------|
| Effective Duration | 4.0     | 4.3                  |
| Yield to Maturity  | 6.9     | 6.6                  |
| Average Quality    | B1      | B1                   |
| Average Coupon     | 6.9%    | 6.5%                 |

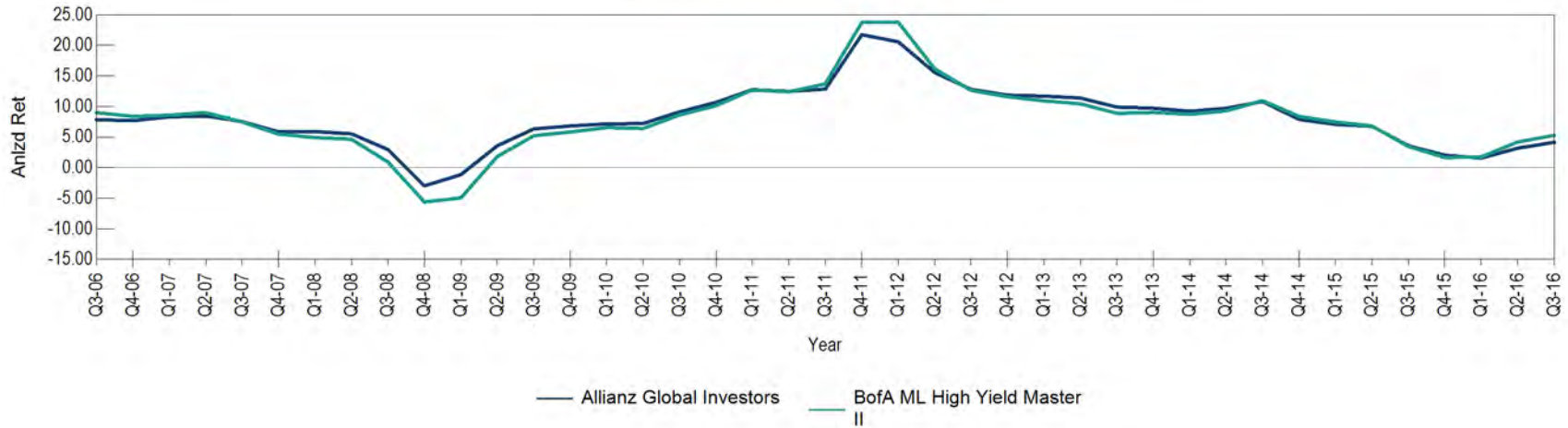


Quality distribution excludes cash.

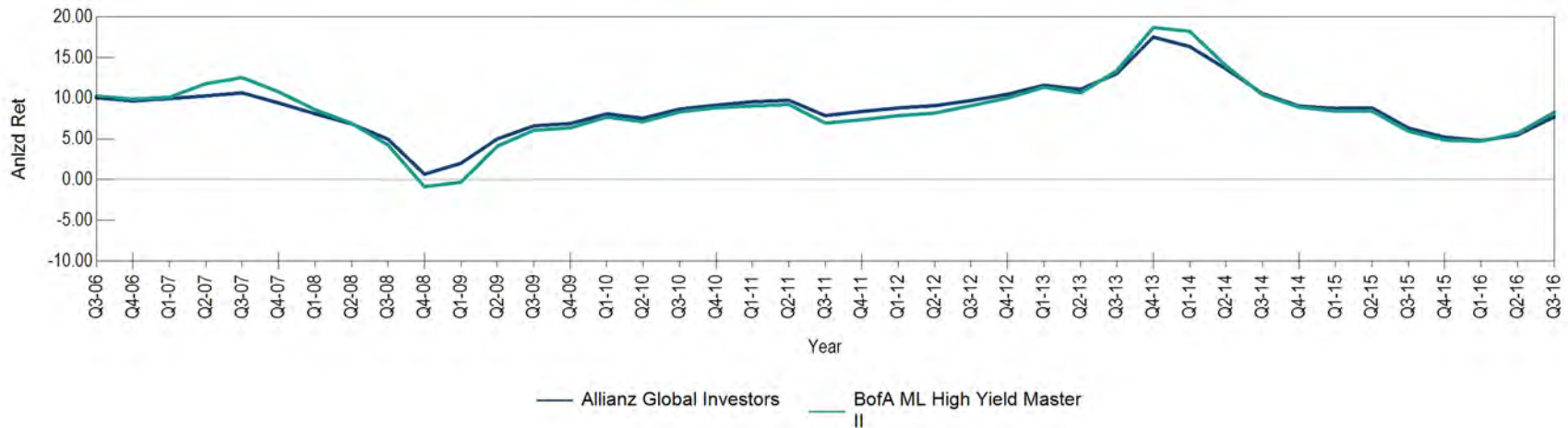


|                                       | Quarter  | 1 Year    | 3 Years  | 5 Years  | 10 Years | 2015      | 2014     | 2013     | 2012      | 2011     |
|---------------------------------------|----------|-----------|----------|----------|----------|-----------|----------|----------|-----------|----------|
| <b>5th Percentile</b>                 | 6.3      | 13.5      | 6.6      | 9.6      | 8.9      | 2.3       | 5.2      | 11.7     | 19.4      | 7.9      |
| <b>25th Percentile</b>                | 5.5      | 11.5      | 5.8      | 8.7      | 8.1      | -0.7      | 3.5      | 9.1      | 16.7      | 6.2      |
| <b>Median</b>                         | 4.8      | 10.5      | 5.0      | 8.0      | 7.6      | -2.4      | 2.5      | 7.6      | 15.5      | 4.9      |
| <b>75th Percentile</b>                | 4.1      | 8.8       | 4.2      | 7.3      | 6.9      | -3.8      | 1.5      | 6.6      | 14.0      | 3.5      |
| <b>95th Percentile</b>                | 2.1      | 5.5       | 3.0      | 5.1      | 5.9      | -7.2      | 0.0      | 5.0      | 8.9       | -0.7     |
| <b># of Portfolios</b>                | 145      | 145       | 138      | 125      | 98       | 155       | 141      | 130      | 129       | 117      |
| <b>● Allianz Global Investors</b>     | 5.4 (27) | 10.3 (52) | 4.1 (77) | 7.7 (66) | 7.8 (39) | -3.5 (68) | 1.2 (83) | 8.8 (28) | 14.1 (73) | 6.4 (21) |
| <b>▲ BofA ML High Yield Master II</b> | 5.5 (25) | 12.8 (8)  | 5.3 (40) | 8.2 (42) | 7.6 (51) | -4.6 (83) | 2.5 (50) | 7.4 (55) | 15.6 (47) | 4.4 (60) |

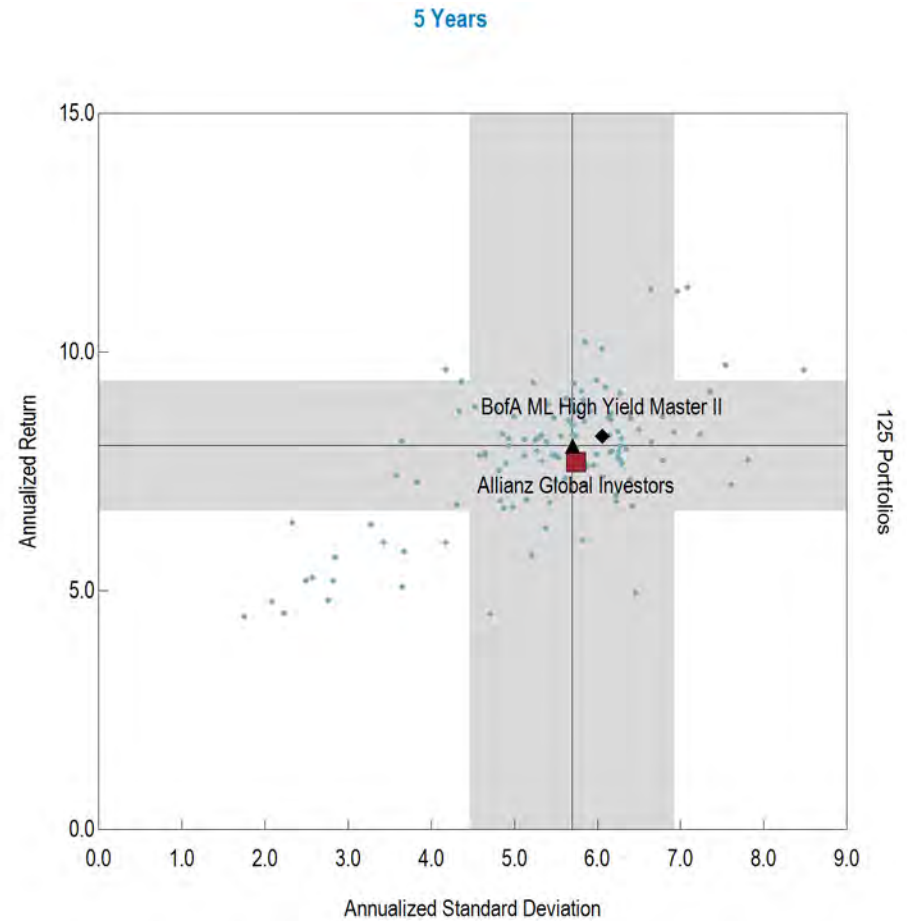
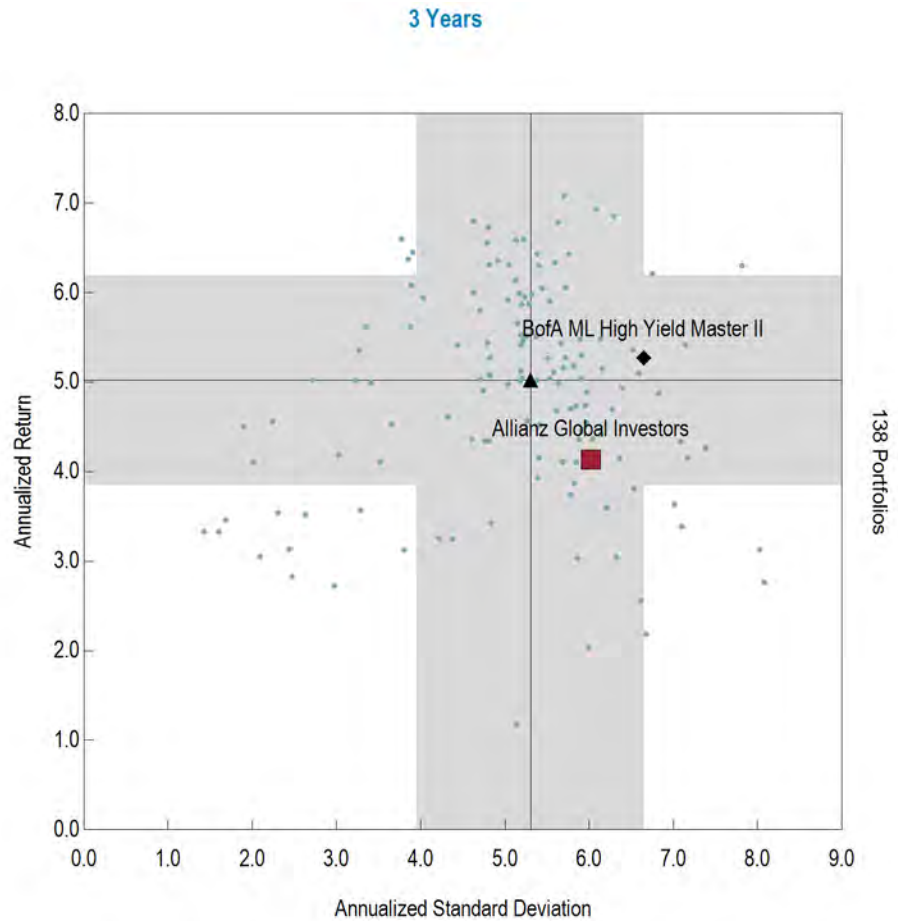
Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)







|   | <b>3 Years</b> |                          |              |
|---|----------------|--------------------------|--------------|
|   | Anlzd Return   | Anlzd Standard Deviation | Sharpe Ratio |
| Allianz Global Investors                | 4.1%           | 6.0%                     | 0.7          |
| BofA ML High Yield Master II            | 5.3%           | 6.6%                     | 0.8          |
| eA US High Yield Fixed Inc Gross Median | 5.0%           | 5.3%                     | 1.0          |

|   | <b>5 Years</b> |                          |              |
|---|----------------|--------------------------|--------------|
|   | Anlzd Return   | Anlzd Standard Deviation | Sharpe Ratio |
| Allianz Global Investors                | 7.7%           | 5.7%                     | 1.3          |
| BofA ML High Yield Master II            | 8.2%           | 6.1%                     | 1.3          |
| eA US High Yield Fixed Inc Gross Median | 8.0%           | 5.7%                     | 1.5          |

## **Global Fixed Income Managers**

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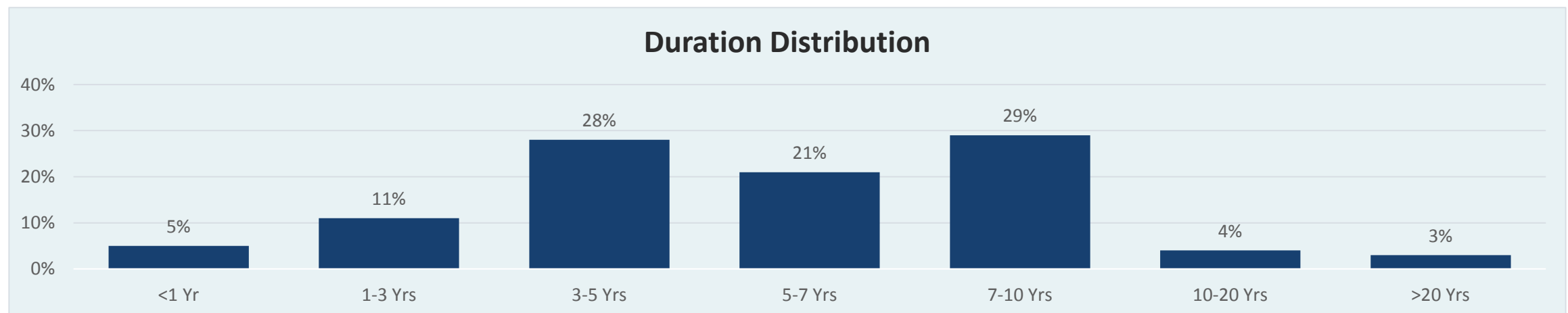
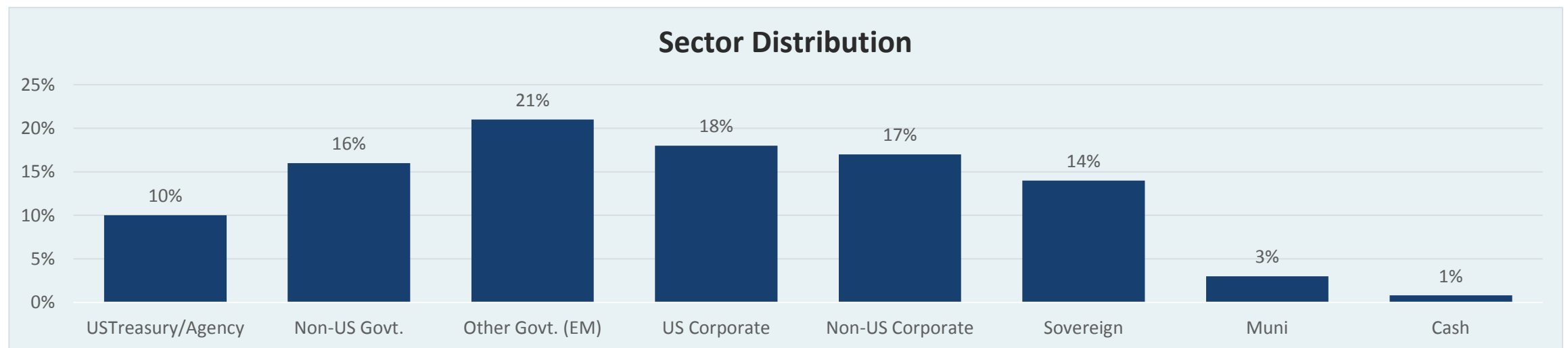
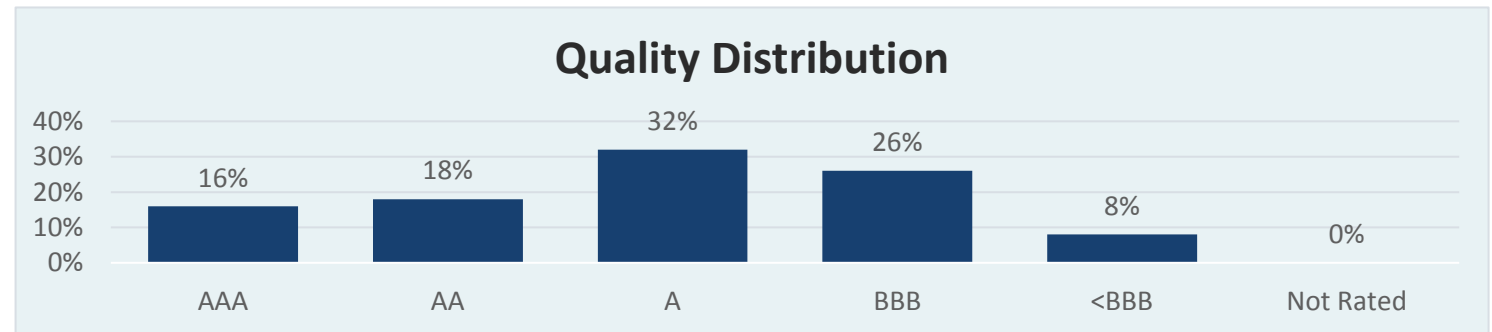
# Lazard

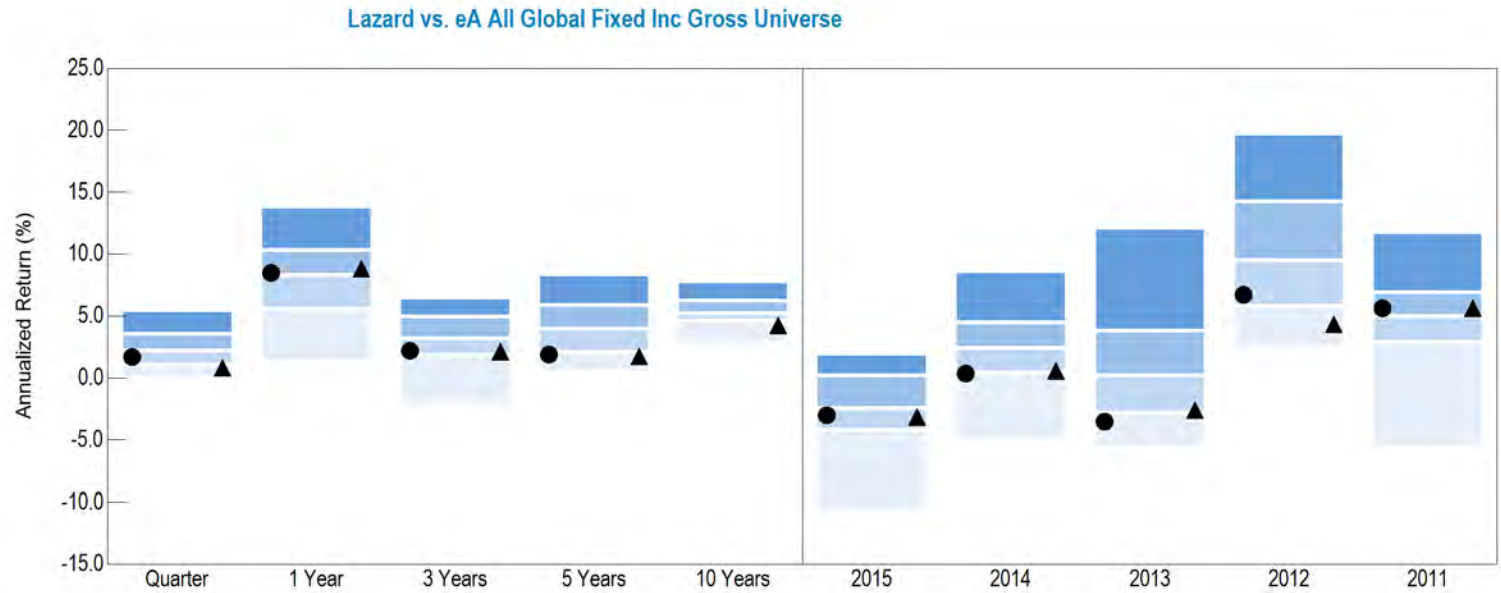
## Manager Portfolio Overview

Period Ending: September 30, 2016

Global core fixed income portfolio with a focus on country selection and currency management. Primary personnel include Yvette Klevan, Benjamin Dietrich, and Jared Daniels.

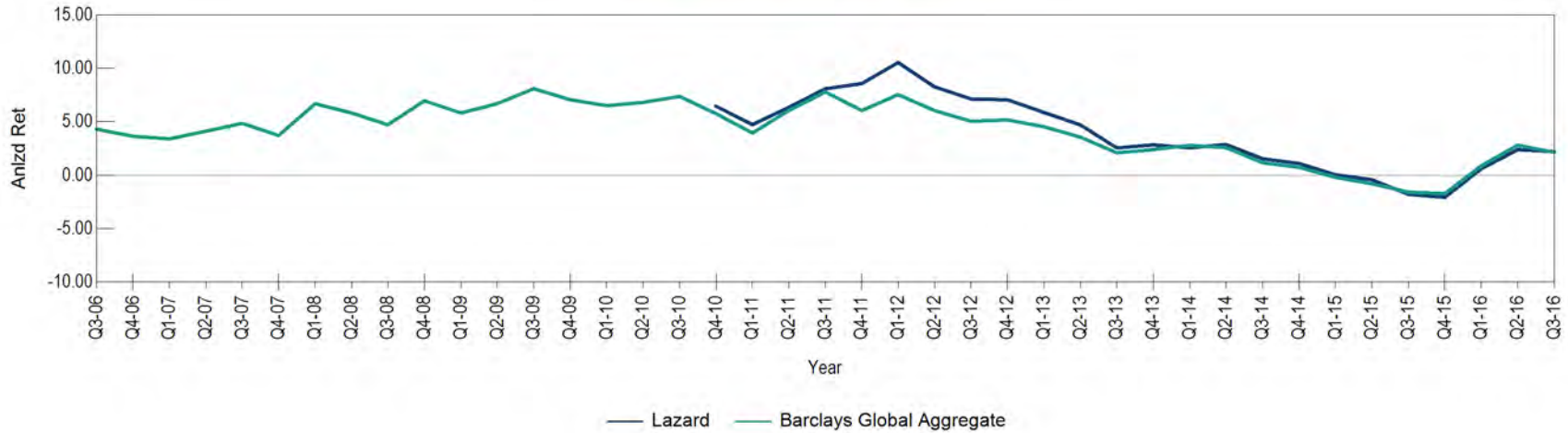
|                    | Lazard |
|--------------------|--------|
| Effective Duration | 5.00   |
| Average Maturity   | 6.4    |
| Average Quality    | A-     |



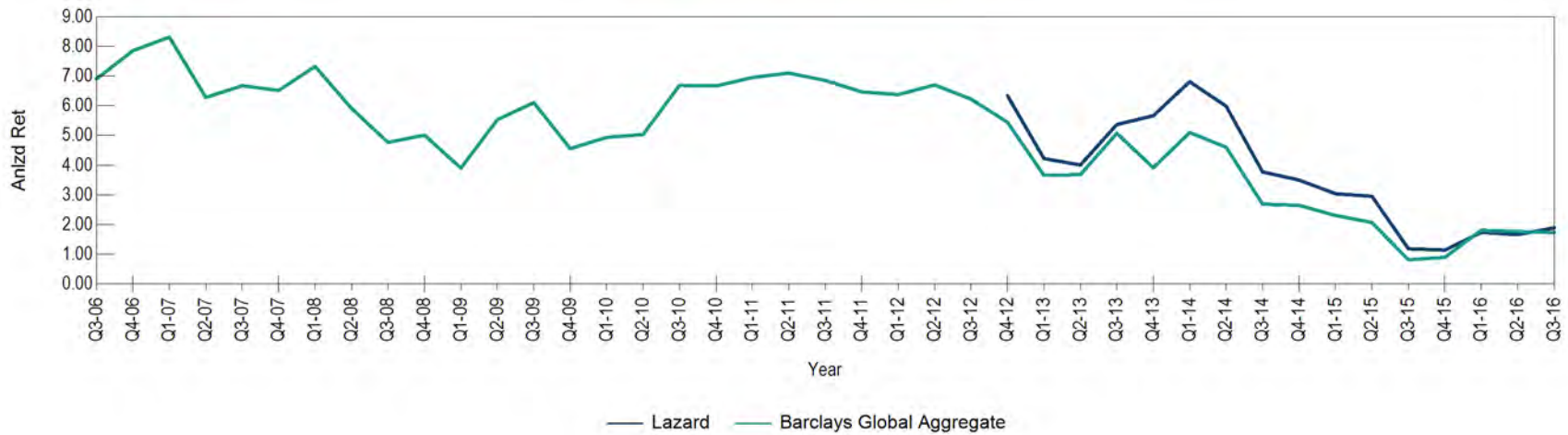


|                             | Return (Rank) |          |          |          |          |           |          |           |          |          |  |
|-----------------------------|---------------|----------|----------|----------|----------|-----------|----------|-----------|----------|----------|--|
|                             | Quarter       | 1 Year   | 3 Years  | 5 Years  | 10 Years | 2015      | 2014     | 2013      | 2012     | 2011     |  |
| 5th Percentile              | 5.5           | 13.8     | 6.5      | 8.3      | 7.8      | 1.9       | 8.6      | 12.1      | 19.7     | 11.7     |  |
| 25th Percentile             | 3.6           | 10.4     | 5.0      | 5.9      | 6.3      | 0.3       | 4.5      | 3.9       | 14.3     | 6.9      |  |
| Median                      | 2.2           | 8.3      | 3.2      | 4.0      | 5.2      | -2.4      | 2.5      | 0.2       | 9.5      | 5.0      |  |
| 75th Percentile             | 1.1           | 5.6      | 1.9      | 2.1      | 4.7      | -4.2      | 0.5      | -2.8      | 5.9      | 2.9      |  |
| 95th Percentile             | 0.1           | 1.3      | -2.1     | 0.5      | 2.8      | -10.6     | -4.9     | -5.6      | 2.5      | -5.5     |  |
| # of Portfolios             | 338           | 337      | 314      | 257      | 148      | 332       | 263      | 225       | 197      | 171      |  |
| ● Lazard                    | 1.7 (61)      | 8.5 (49) | 2.2 (69) | 1.9 (80) | -- (--)  | -3.0 (59) | 0.4 (77) | -3.5 (83) | 6.7 (68) | 5.6 (40) |  |
| ▲ Barclays Global Aggregate | 0.8 (85)      | 8.8 (44) | 2.1 (70) | 1.7 (82) | 4.3 (85) | -3.2 (61) | 0.6 (74) | -2.6 (74) | 4.3 (87) | 5.6 (39) |  |

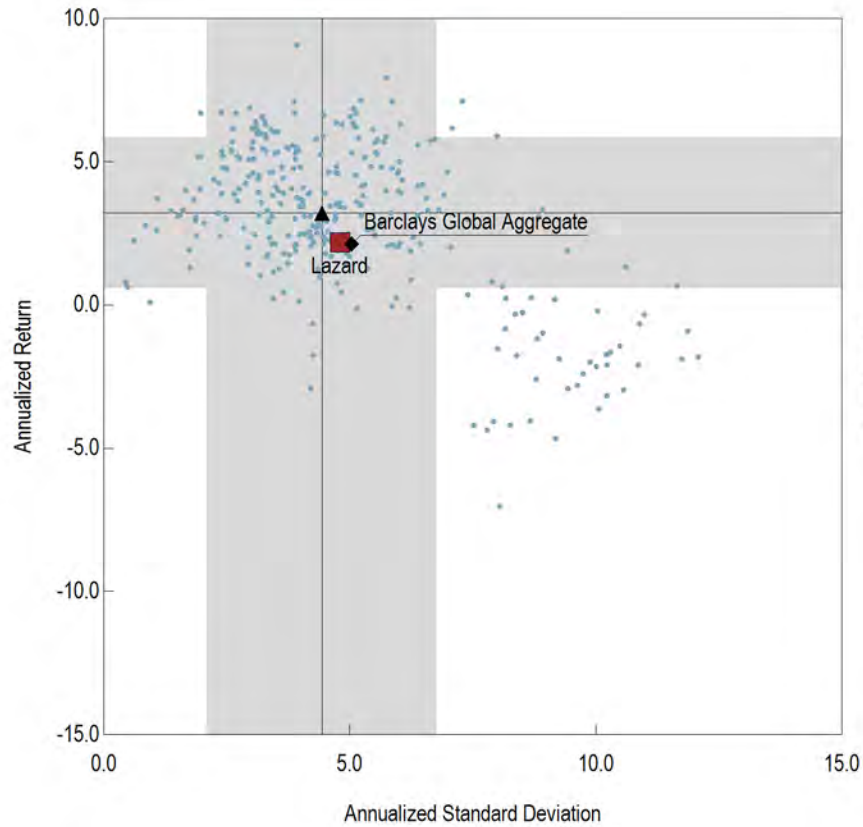
Rolling 3 Year Annualized Return (%)



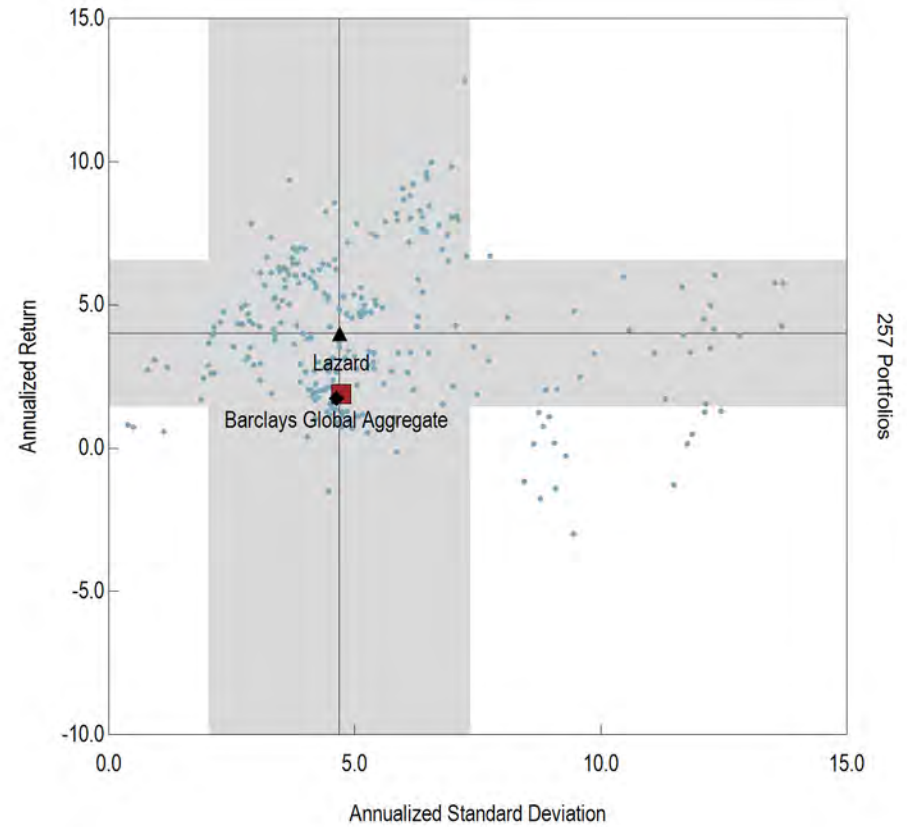
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

|                                      | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|--------------------------------------|--------------|--------------------------|--------------|
| Lazard                               | 2.2%         | 4.8%                     | 0.4          |
| Barclays Global Aggregate            | 2.1%         | 5.0%                     | 0.4          |
| eA All Global Fixed Inc Gross Median | 3.2%         | 4.4%                     | 0.7          |

5 Years

|                                      | Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio |
|--------------------------------------|--------------|--------------------------|--------------|
| Lazard                               | 1.9%         | 4.7%                     | 0.4          |
| Barclays Global Aggregate            | 1.7%         | 4.6%                     | 0.4          |
| eA All Global Fixed Inc Gross Median | 4.0%         | 4.7%                     | 0.9          |

## **Inflation Hedge Managers**

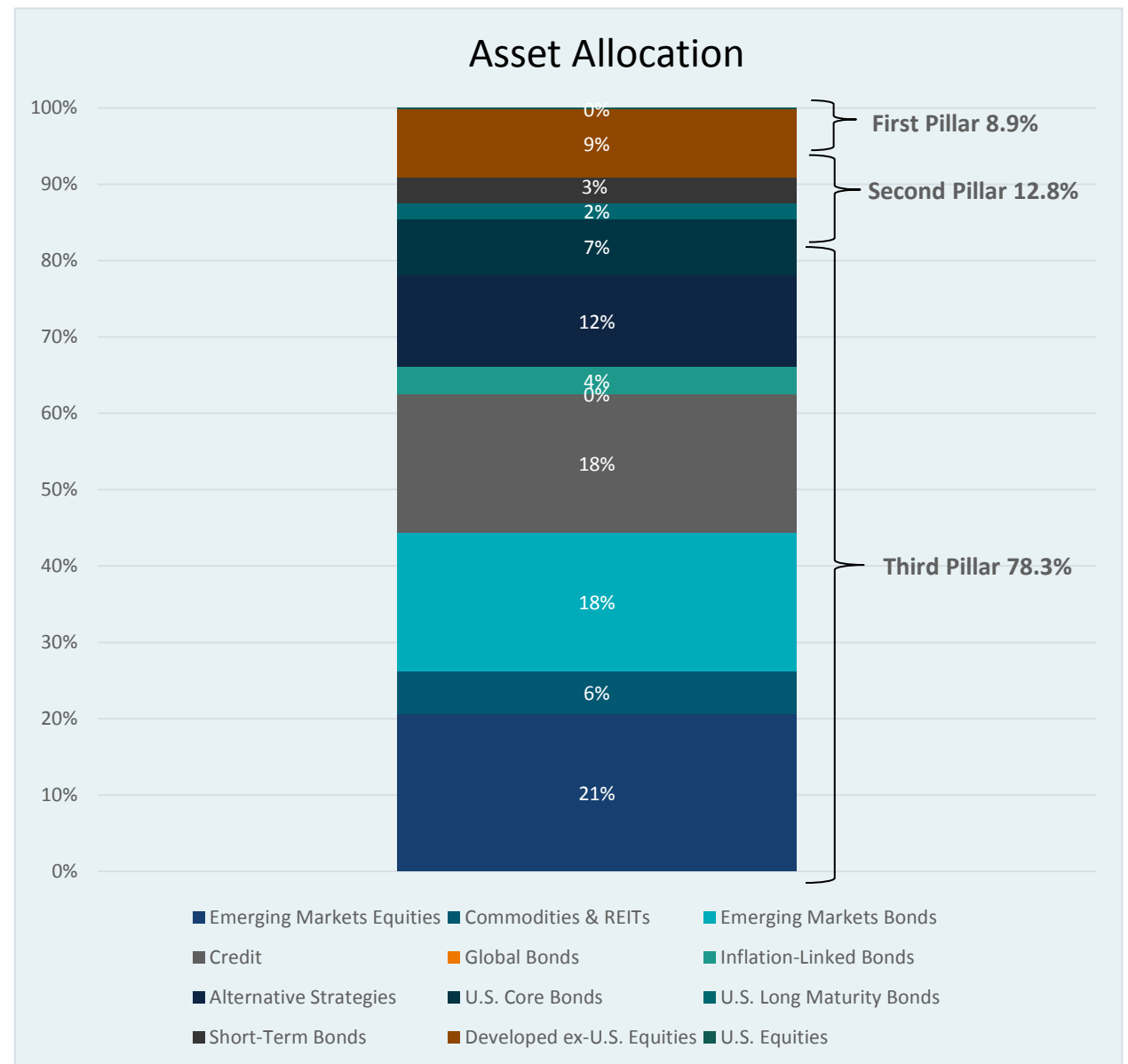
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# PIMCO All Asset Manager Portfolio Overview

Period Ending: September 30, 2016

Tactical multi-asset class real return strategy with a primary focus on inflation protection and a secondary focus on enhanced returns

|                        | PIMCO All Asset |
|------------------------|-----------------|
| Effective Duration     | 2.25            |
| Sharpe Ratio (10 year) | 0.47            |
| Volatility (10 Year)   | 9.7%            |
| Equity Beta (10 Year)  | 0.84            |



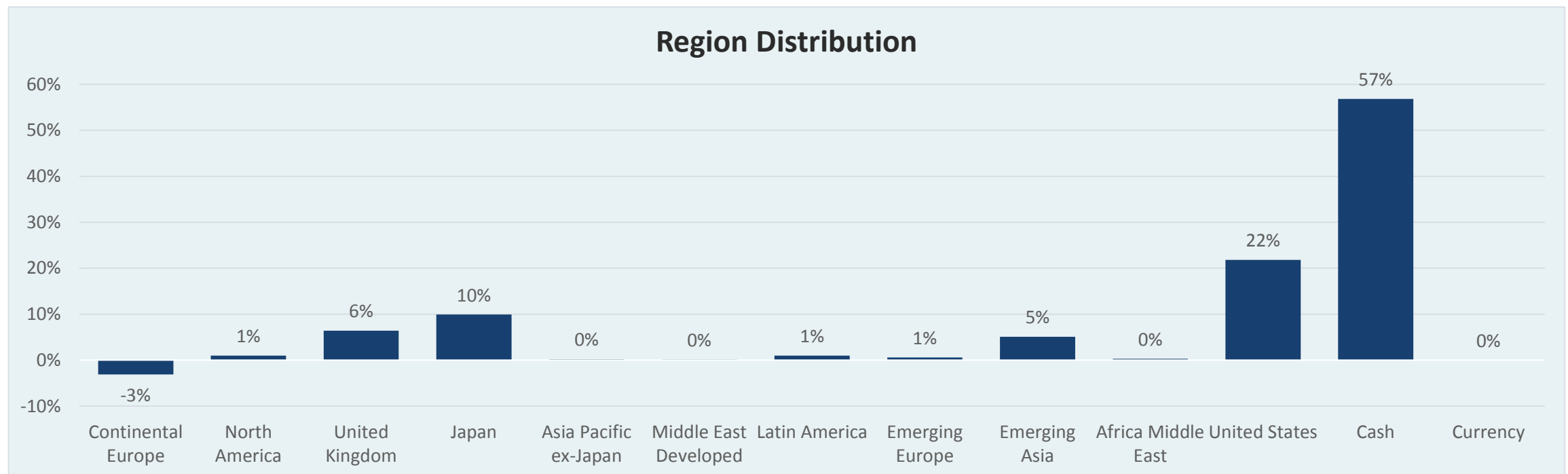
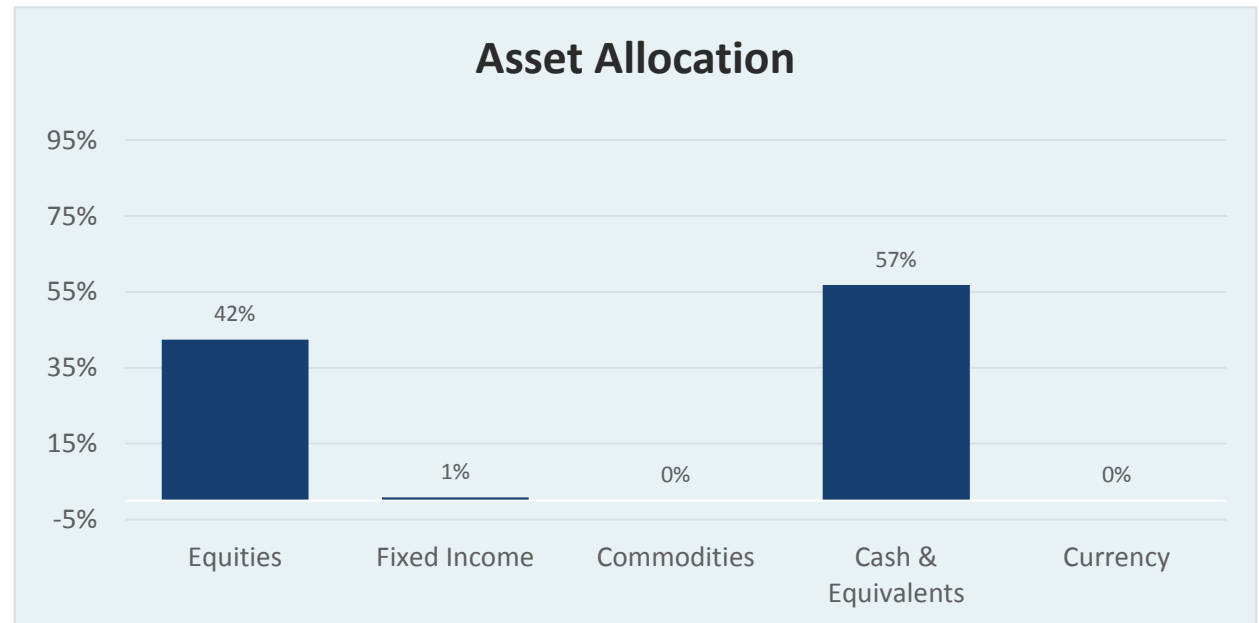


# Wellington Total Return Manager Portfolio Overview

Period Ending: September 30, 2016

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

|                              | Wellington Total Return |
|------------------------------|-------------------------|
| Number of Equity Holdings    | 428                     |
| Number of Commodity Holdings | 106                     |
| Effective Duration (Years)   | 5.60                    |
| Average Quality              | D                       |



## Real Estate Managers

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# Adelante Manager Portfolio Overview

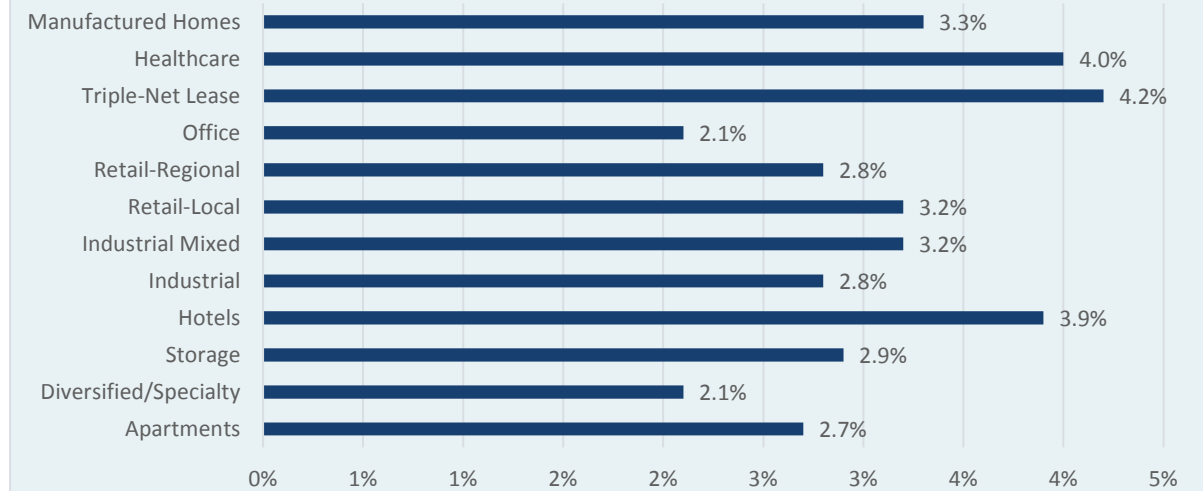
Period Ending: September 30, 2016

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

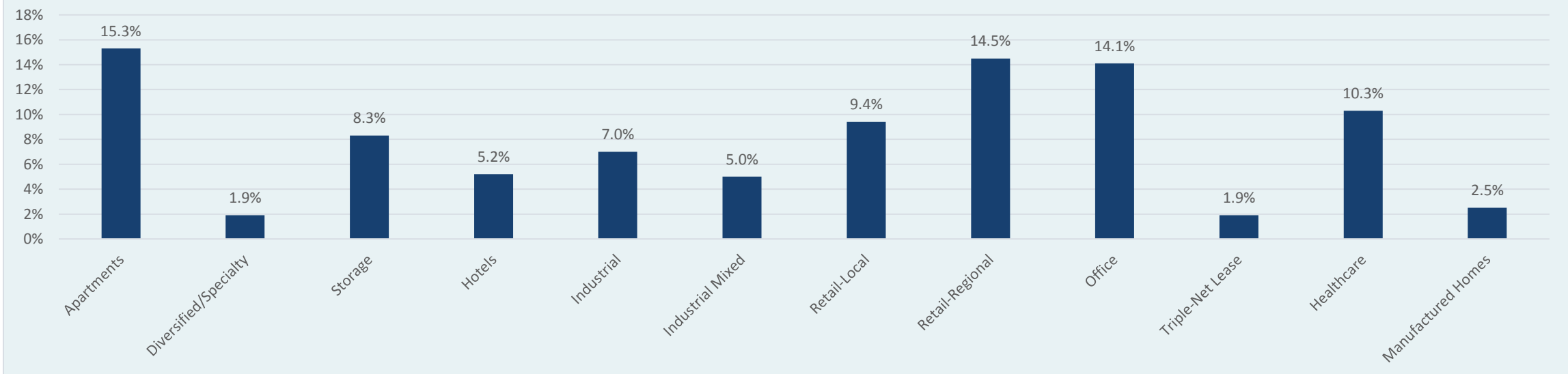
## Top Five Holdings

| Company                | Property Type   | Allocation |
|------------------------|-----------------|------------|
| Simon Property Group   | Retail-Regional | 11.8%      |
| Public Storage         | Storage         | 5.9%       |
| Welltower Inc.         | Healthcare      | 5.8%       |
| Boston Properties, Inc | Office          | 5.5%       |
| Essex Property Trust   | Apartments      | 5.2%       |

## Dividend Yield by Property Type



## Property Type Allocation



4.6% is allocated to Cash and Cash Equivalents.

# Invesco Global ex-US Real Estate Manager Portfolio Overview

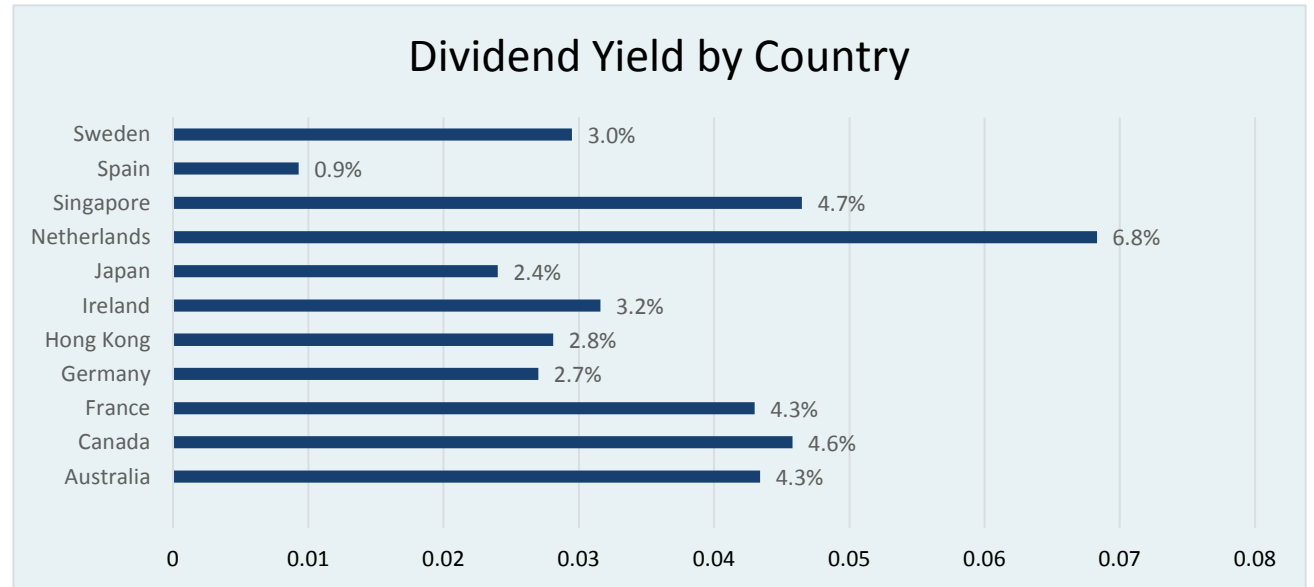
Period Ending: September 30, 2016

Diversified portfolio of non-US REITs with a focus on cash flow and dividends

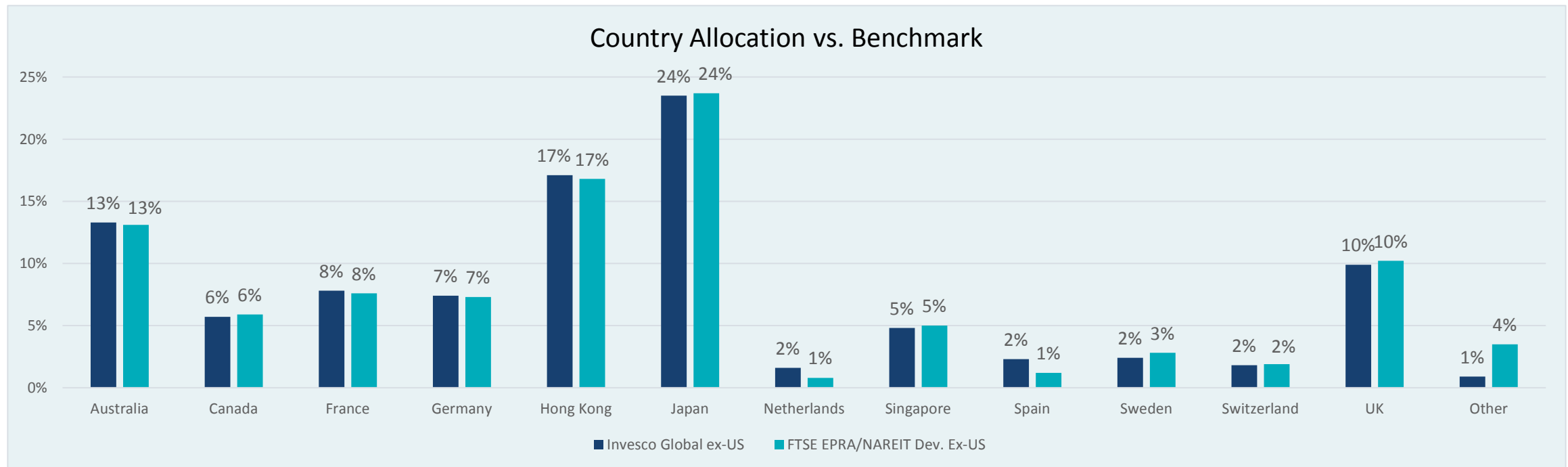
## Top Five Holdings

| Holding               | Country   | Allocation |
|-----------------------|-----------|------------|
| Mitsubishi Estate     | Japan     | 4.5%       |
| Unibail-Rodamco SE    | France    | 4.5%       |
| Sun Hung Kai Property | Hong Kong | 4.3%       |
| Mitsui Fudosan Co.    | Japan     | 4.0%       |
| Vonovia SE            | Germany   | 3.8%       |

## Dividend Yield by Country



## Country Allocation vs. Benchmark



**Performance Return Calculations**

Returns calculated in the performance summary tables are time-weighted rates of return (TWRR). TWRR are calculated from changes in monthly market values, adjusted for weighted cash flows between months. Returns are linked geometrically 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**

Closed end funds including but not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit may lag performance and market value data due to delayed reporting. Verus will show market values for closed end funds as of the most recent reported performance adjusted for capital calls and distributions. Closed end fund managers report performance using an internal rate of return (IRR), which differs from the TWRR calculation done by Verus. It is inappropriate to compare IRR and TWRR to each other. IRR figures reported in the illiquid alternative pages are provided by the respective managers, and Verus has not made any attempts to verify these returns. Until a partnership is liquidated (typically over 10-12 years), the IRR is only an interim estimated return. The actual IRR performance of any LP is not known until the final liquidation.

**Manager Line Up**

| Manager                         | Inception Date | Data Source   | Manager                        | Inception Date | Data Source        |
|---------------------------------|----------------|---------------|--------------------------------|----------------|--------------------|
| Intech Large Cap Core           | 11/10/2006     | State Street  | Long Wharf Fund III            | 03/30/2007     | Long Wharf         |
| PIMCO Stocks+ AR                | 08/31/2002     | State Street  | Long Wharf Fund IV             | 07/03/2013     | Long Wharf         |
| Jackson Square Partners         | 05/01/2005     | State Street  | Long Wharf Fund V              | 09/30/2016     | Long Wharf         |
| Robeco Boston Partners          | 06/01/1995     | State Street  | Hearthstone II                 | 06/17/1998     | Hearthstone        |
| Emerald Advisors                | 04/07/2003     | State Street  | Invesco Real Estate I          | 02/01/2005     | Invesco            |
| Ceredex                         | 11/06/2011     | State Street  | Invesco Real Estate II         | 11/26/2007     | Invesco            |
| Pyrford                         | 04/25/2014     | State Street  | Invesco Real Estate III        | 06/30/2013     | Invesco            |
| William Blair                   | 10/29/2010     | William Blair | Invesco Real Estate IV         | 06/30/2014     | Invesco            |
| Artisan Partners                | 10/01/2012     | SEI Trust     | Oaktree REOF V                 | 12/31/2011     | Oaktree            |
| First Eagle                     | 01/18/2011     | State Street  | Oaktree REOF VI                | 09/30/2013     | Oaktree            |
| Intech Global Low Vol           | 05/06/2012     | State Street  | Oaktree REOF VII               | 04/01/2015     | Oaktree            |
| JP Morgan Global Opportunities  | 01/31/2010     | JP Morgan     | Siguler Guff DREOF             | 01/25/2012     | Siguler Guff       |
| AFL-CIO                         | 06/30/1991     | AFL-CIO       | Siguler Guff DREOF II          | 08/31/2013     | Siguler Guff       |
| Goldman Sachs Core Plus         | 11/01/2008     | State Street  | Siguler Guff DREOF II Co-Inv   | 01/27/2016     | Siguler Guff       |
| Lord Abbett                     | 10/22/2008     | State Street  | Paulson Real Estate Fund II    | 11/10/2013     | State Street       |
| PIMCO Total Return              | 05/31/2002     | State Street  | Adams Street Partners          | 03/18/1996     | Adams Street       |
| Torchlight II                   | 09/30/2006     | Torchlight    | Adams Street Partners II       | 01/16/2009     | Adams Street       |
| Torchlight III                  | 12/31/2008     | Torchlight    | Adams Street Partners - BFP    | 01/18/1996     | Adams Street       |
| Torchlight IV                   | 07/01/2012     | Torchlight    | Adams Street Partners - Fund 5 | 09/21/2012     | Adams Street       |
| Torchlight V                    | 07/01/2012     | Torchlight    | Bay Area Equity Fund           | 06/14/2004     | DBL Investors      |
| Allianz Global Investors        | 04/25/2000     | State Street  | Bay Area Equity Fund II        | 12/07/2009     | DBL Investors      |
| Lazard                          | 12/31/2007     | State Street  | Carpenter Bancfund             | 01/31/2008     | Carpenter Bancfund |
| PIMCO All Asset Fund            | 02/26/2013     | State Street  | EIF US Power Fund I            | 11/26/2003     | Ares Management    |
| Wellington Real Total Return    | 02/26/2013     | State Street  | EIF US Power Fund II           | 08/16/2005     | Ares Management    |
| Aether Real Assets III          | 11/27/2013     | Aether        | EIF US Power Fund III          | 05/30/2007     | Ares Management    |
| Commonfund                      | 06/28/2013     | Commonfund    | EIF US Power Fund IV           | 11/28/2011     | Ares Management    |
| Adelante                        | 09/30/2001     | State Street  | Nogales                        | 02/15/2004     | Nogales            |
| Invesco International REIT      | 06/30/2008     | Invesco       | Paladin III                    | 11/30/2007     | Paladin            |
| Angelo Gordon Realty Fund VIII  | 01/23/2012     | Angelo Gordon | Ocean Avenue Fund II           | 06/11/2014     | Ocean Avenue       |
| Angelo Gordon Realty Fund IX    | 12/08/2014     | Angelo Gordon | Ocean Avenue Fund III          | 04/15/2016     | Ocean Avenue       |
| Angelo Gordon Energy Credit Opp | 09/24/2015     | Angelo Gordon | Pathway                        | 11/09/1998     | Pathway            |

|                            |            |            |                          |            |              |
|----------------------------|------------|------------|--------------------------|------------|--------------|
| DLJ RECP II                | 09/24/1999 | DLJ        | Pathway 2008             | 12/26/2008 | Pathway      |
| DLJ RECP III               | 06/23/2005 | DLJ        | Pathway 6                | 05/24/2011 | Pathway      |
| DLJ RECP IV                | 02/11/2008 | DLJ        | Pathway 7                | 02/07/2013 | Pathway      |
| DLJ RECP V                 | 07/01/2014 | DLJ        | Siguler Guff CCCERA Opps | 06/03/2014 | Siguler Guff |
| Wastewater Opp. Fund       | 12/08/2015 | Wastewater | Cash                     | -          | State Street |
| LaSalle Income & Growth VI | 07/16/2013 | LaSalle    | Aether Real Assets IV    | 03/16/2016 | Aether       |

**Policy & Custom Index Composition**

Policy Index (4/1/2012-Current) 27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% Barclays U.S. Aggregate, 5% Bank of America High Yield Master II, 4% Barclays Global Aggregate, 13.5% Real Estate Benchmark, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.

Real Estate Benchmark 40% Wilshire REIT, 50% NCREIF Property Index, 10% FTSE/EPRA NAREIT Developed ex-USA.

**Other Disclosures**

All data prior to 12/31/2014 was provided by previous consultant.

# Glossary

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**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.

## Disclaimer

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Verus receives universe data from InvestorForce, eVestment Alliance, and Morningstar. We believe this data to be robust and appropriate for peer comparison. Nevertheless, these universes may not be comprehensive of all peer investors/managers but rather of the investors/managers that comprise that database. The resulting universe composition is not static and will change over time. Returns are annualized when they cover more than one year. Investment managers may revise their data after report distribution. Verus will make the appropriate correction to the client account but may or may not disclose the change to the client based on the materiality of the change.



# Contra Costa County Employees' Retirement Association

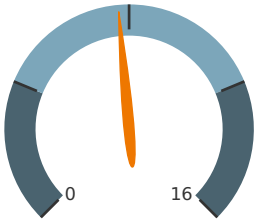
## Portfolio Risk Report

September 30, 2016

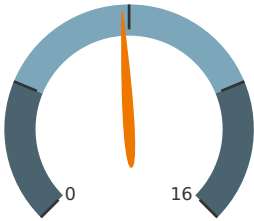
### 1 Portfolio risk



Portfolio: 8.1%



Policy: 7.7%



Average Pension: 7.8%

### 2 Portfolio equity beta



Portfolio: 0.54



Policy: 0.51



Average Pension: 0.53

### 3 Portfolio interest rate risk - Duration



Portfolio: 1.5



Policy: 1.2



Average Pension: 1.8

### 4 Portfolio credit risk - Spread duration



Portfolio: 1.0



Policy: 0.8

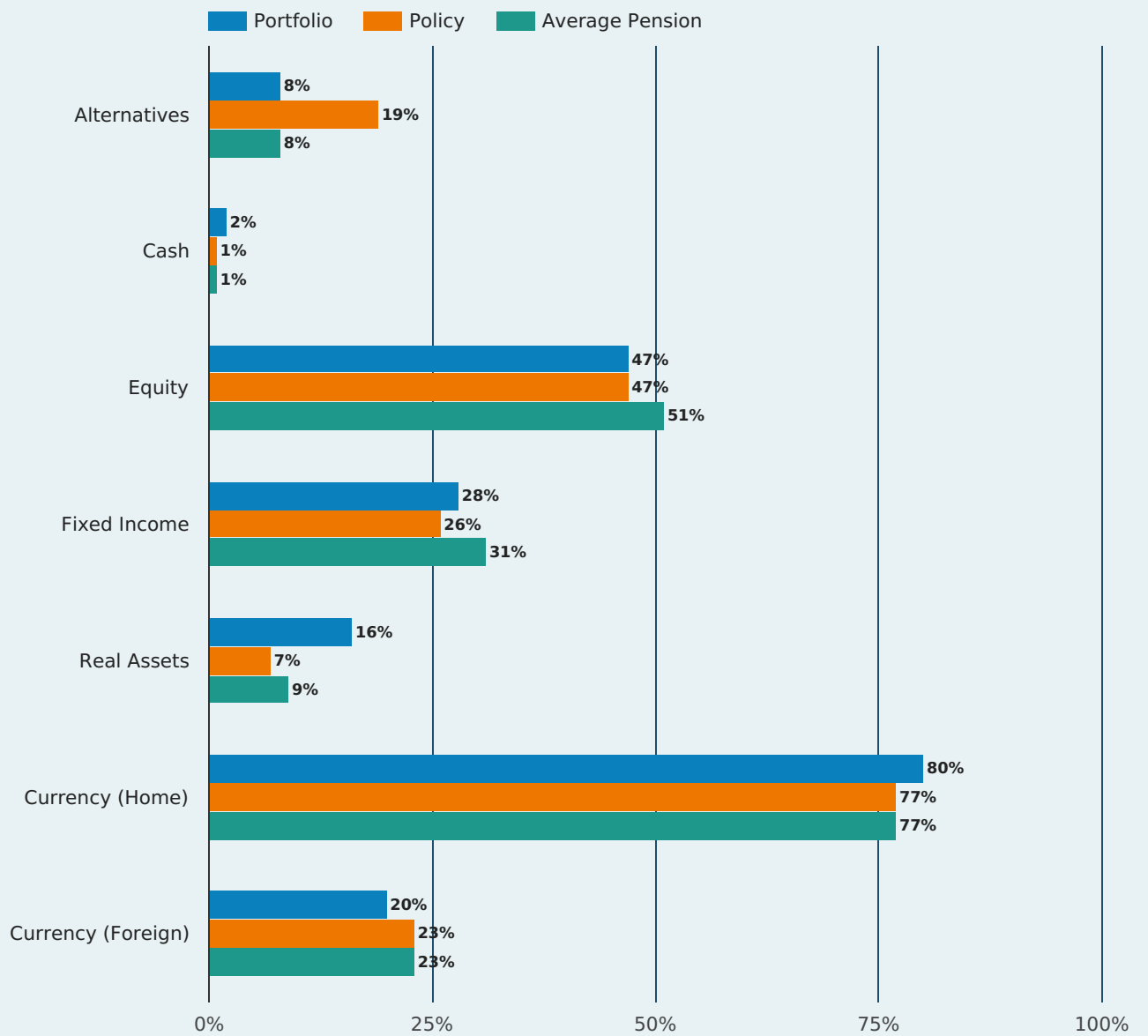


Average Pension: 1.1

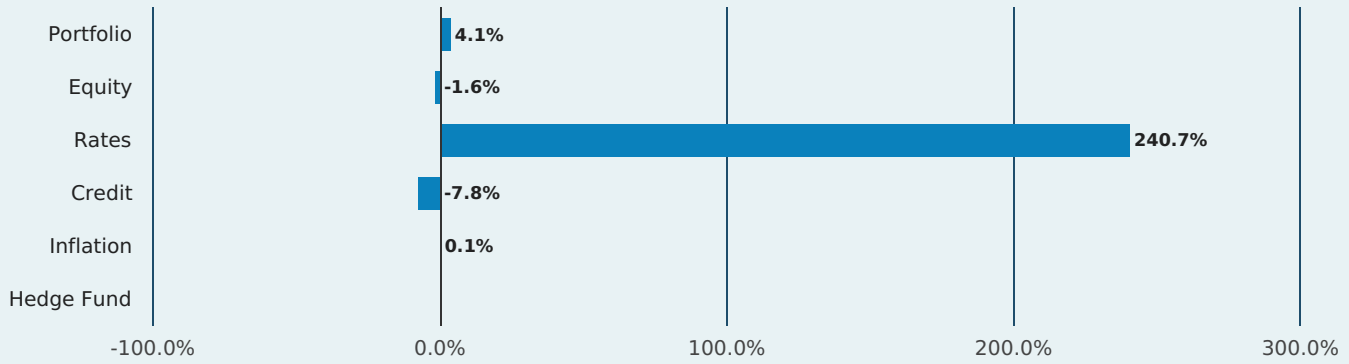
## 5 Exposure allocation by asset class

|                           |                              | Portfolio    | Policy       | Average Pension |
|---------------------------|------------------------------|--------------|--------------|-----------------|
| Alternatives              | Private Credit               | 0.0%         | 17.0%        |                 |
|                           | Opportunistic                | 0.4%         |              |                 |
|                           | Risk Diversifying Strategies | 7.8%         | 2.0%         | 8.1%            |
| <b>Alternatives Total</b> |                              | <b>8.3%</b>  | <b>19.0%</b> | <b>8.1%</b>     |
| Cash                      | Cash                         | 1.7%         | 1.0%         | 1.1%            |
| <b>Cash Total</b>         |                              | <b>1.7%</b>  | <b>1.0%</b>  | <b>1.1%</b>     |
| Equity                    | Emerging Markets             | 0.0%         | 14.0%        | 3.4%            |
|                           | Private Equity               | 0.0%         | 17.0%        | 6.0%            |
|                           | International Large          | 11.0%        | 10.0%        |                 |
|                           | Global Equity                | 12.7%        |              | 15.1%           |
|                           | Large Cap US Equity          | 22.9%        | 6.0%         | 26.1%           |
| <b>Equity Total</b>       |                              | <b>46.6%</b> | <b>47.0%</b> | <b>50.6%</b>    |
| Fixed Income              | Short-term Gov or Credit     | 0.0%         | 24.0%        | 2.4%            |
|                           | US Treasury                  | 0.0%         | 2.0%         |                 |
|                           | Global Bonds                 | 3.2%         |              | 5.8%            |
|                           | High Yield Fixed             | 5.1%         |              |                 |
|                           | US Bonds                     | 19.5%        |              | 22.5%           |
| <b>Fixed Income Total</b> |                              | <b>27.8%</b> | <b>26.0%</b> | <b>30.7%</b>    |
| Real Assets               | Commodites                   | 0.0%         |              | 1.0%            |
|                           | Real Assets                  | 5.3%         |              | 1.0%            |
|                           | Real Estate                  | 10.4%        | 7.0%         | 7.4%            |
| <b>Real Assets Total</b>  |                              | <b>15.6%</b> | <b>7.0%</b>  | <b>9.5%</b>     |
| <b>Total Portfolio</b>    |                              | <b>100%</b>  | <b>100%</b>  | <b>100%</b>     |

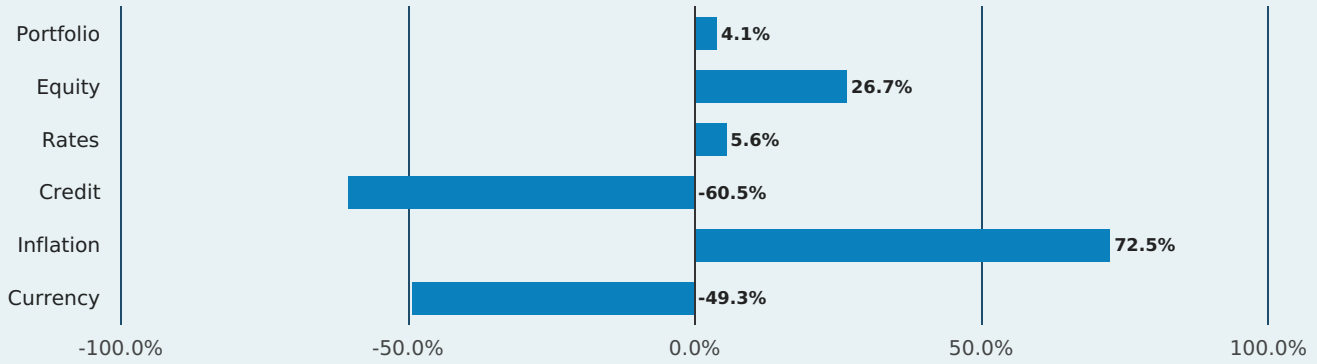
## 6 Exposure allocation



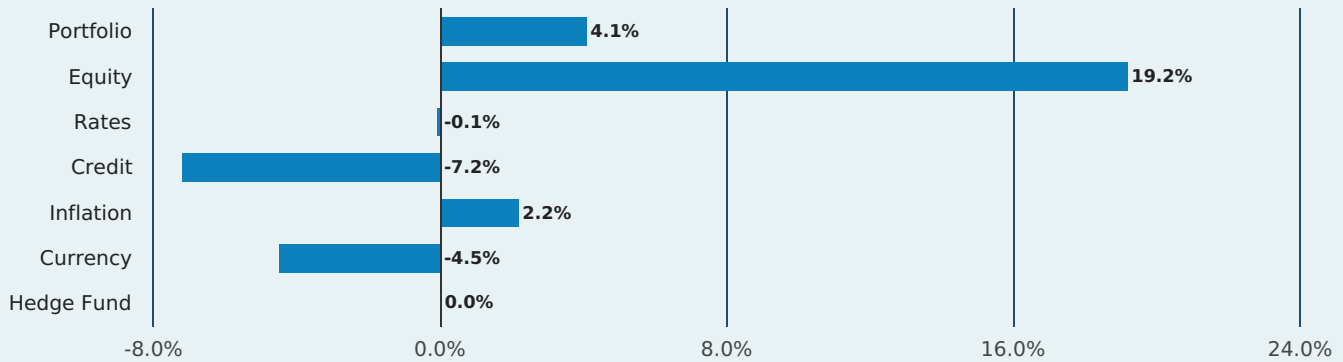
### 7 Relative risk vs target by bucket



### 8 Relative risk vs target by risk factor



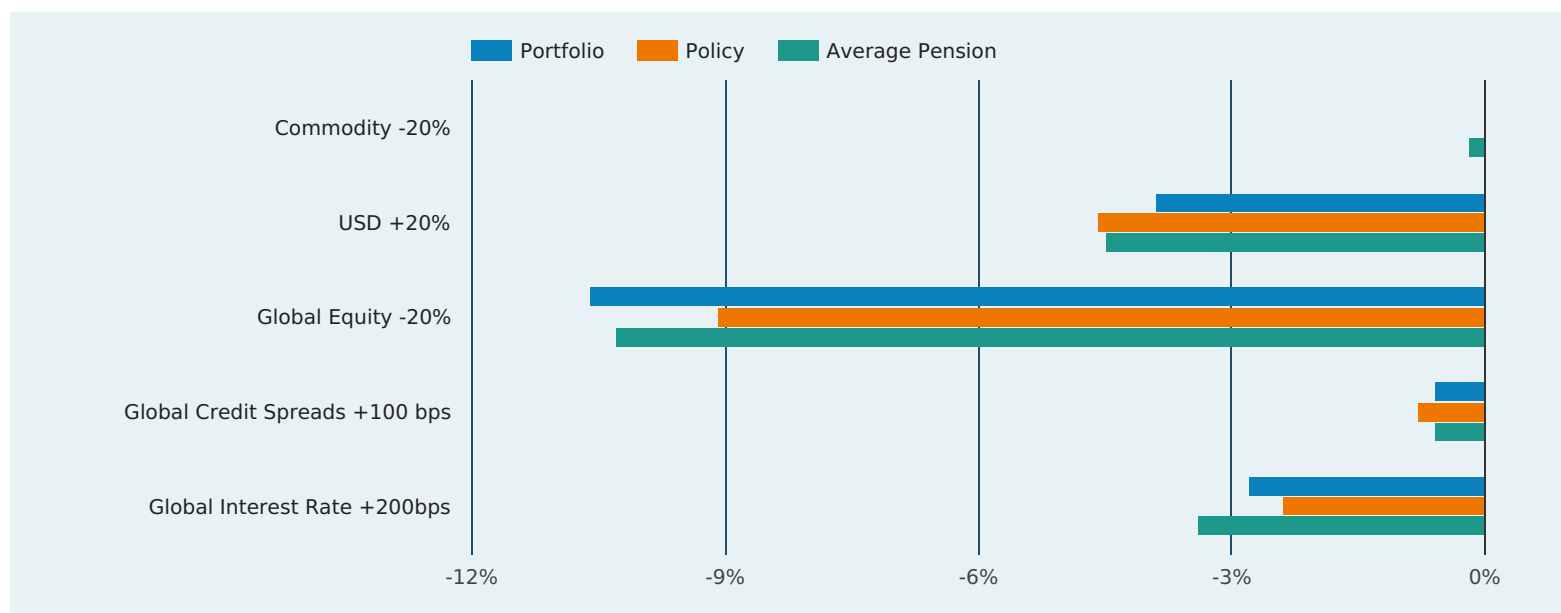
### 9 Risk factor weight relative to target



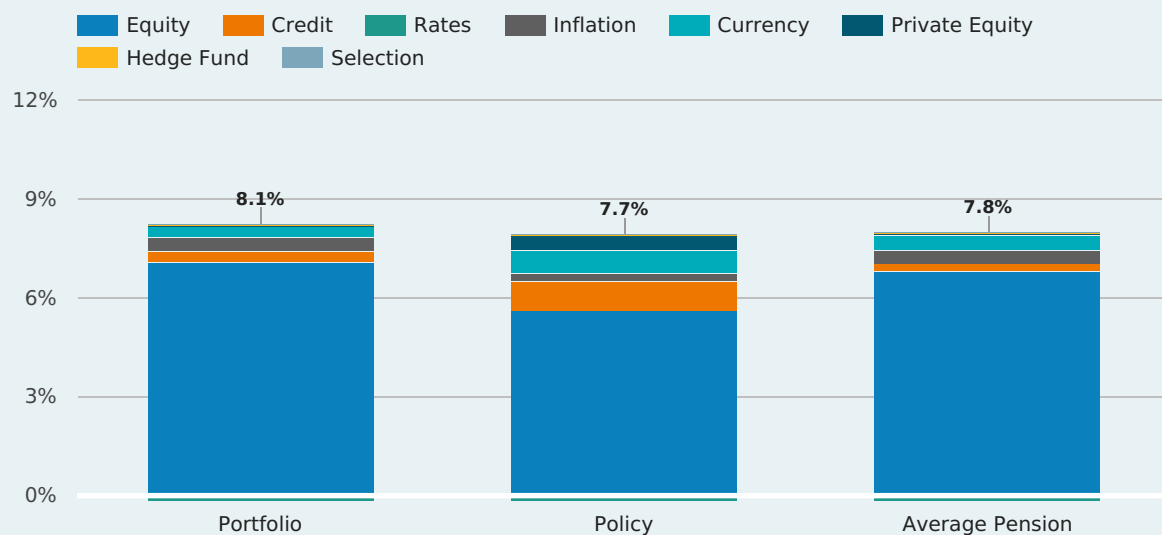
## 10 Tail risk - Scenario analysis



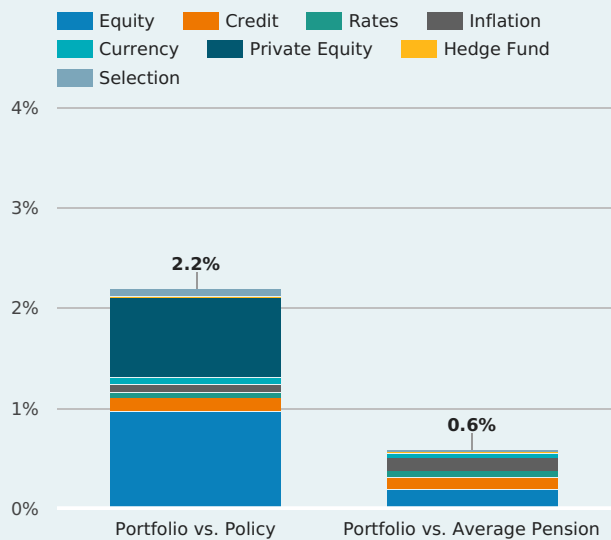
## 11 Tail risk - Stress tests



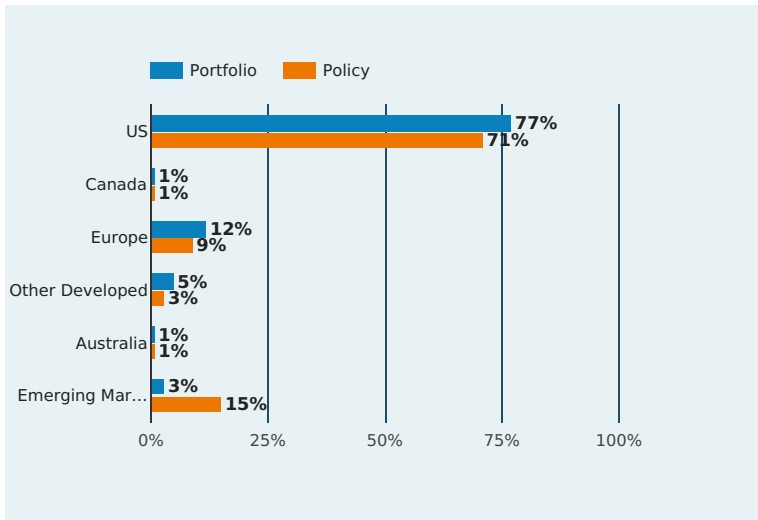
## 12 Risk contribution by risk factor



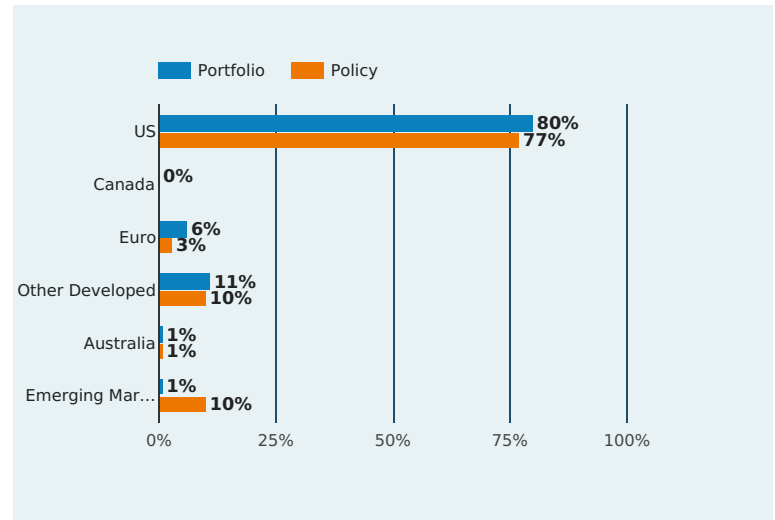
## 13 Active risk contribution by risk factor



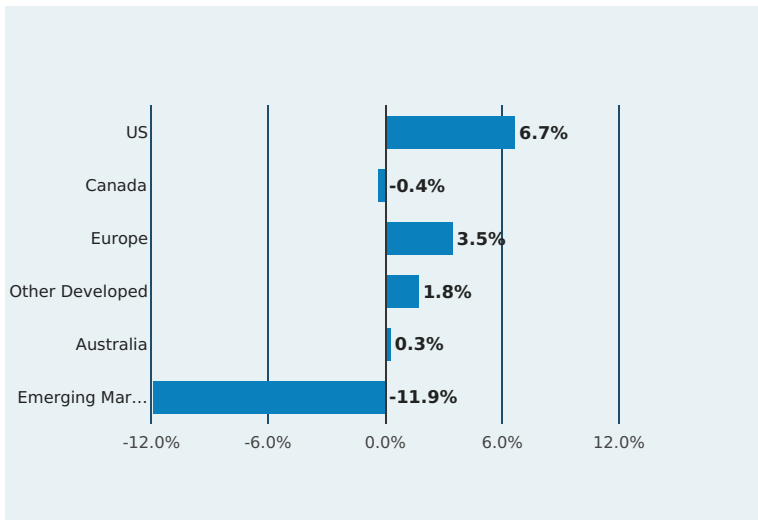
## 14 Geographic exposure



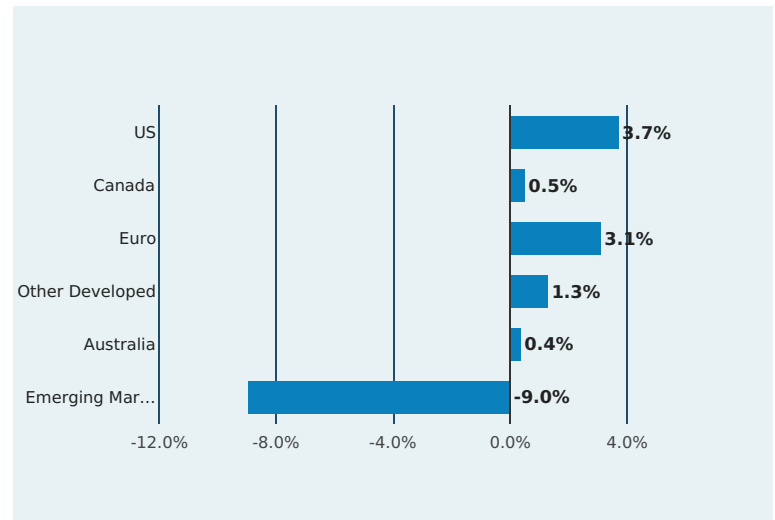
## 15 Currency exposure



## 16 Net geographic exposure



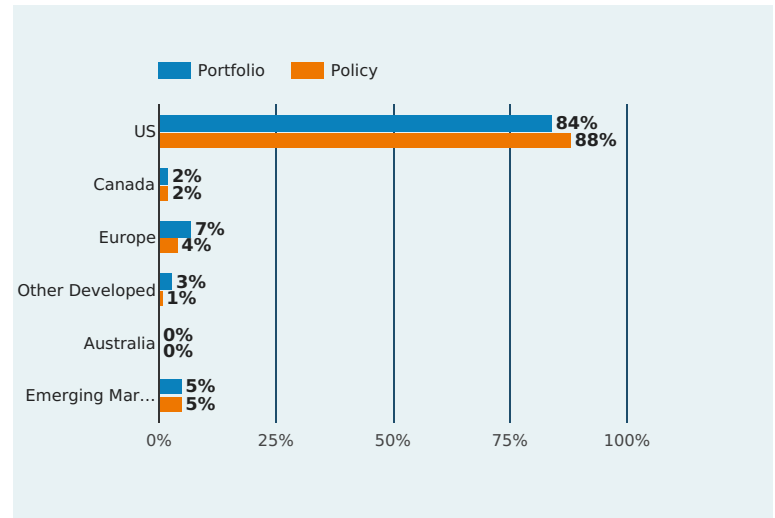
## 17 Net currency exposure



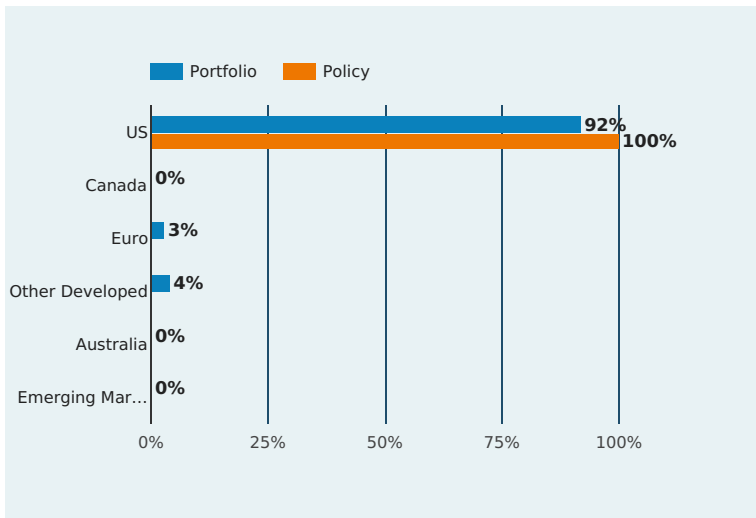
## 18 Interest rate bucket

|                   | Portfolio | Policy    | Difference |
|-------------------|-----------|-----------|------------|
| Duration          | 5.7       | 2.3       | 3.5        |
| Yield to Maturity | 2.3%      | 1.2%      | 1.1%       |
| Wt. Avg. Rating   | Aa1 / Aa2 | Aa1 / Aa2 |            |

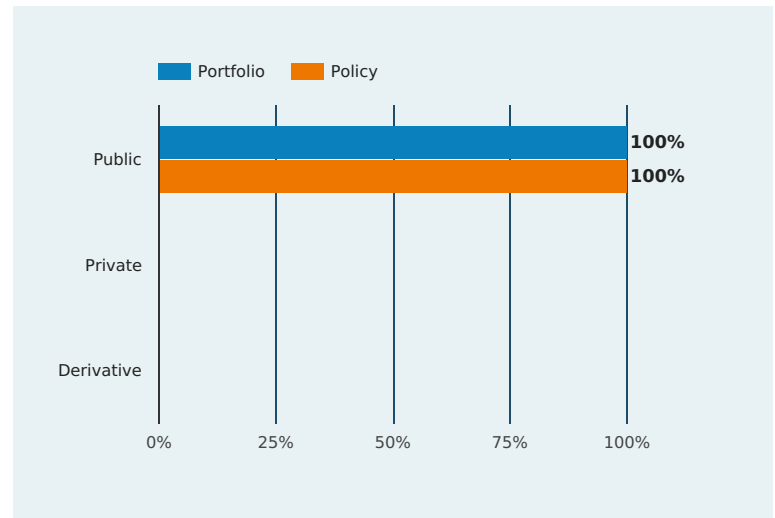
## 19 Rates bucket - Geographic exposure



## 20 Rates bucket - Currency exposure



## 21 Rates bucket - Security type

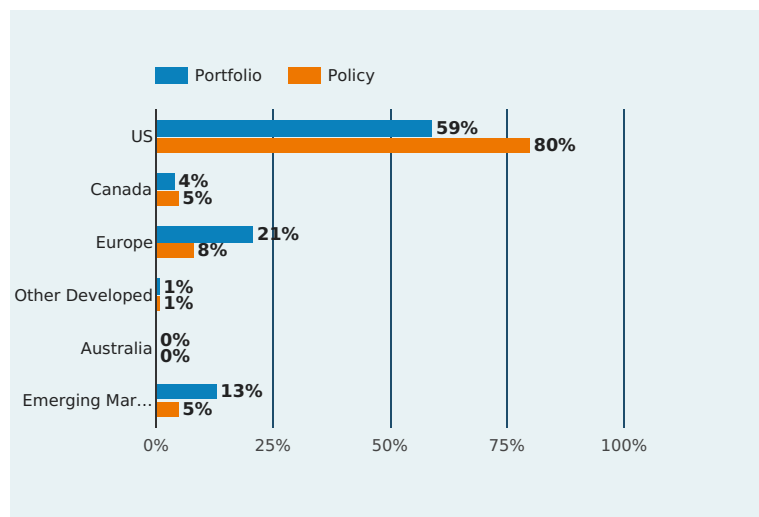




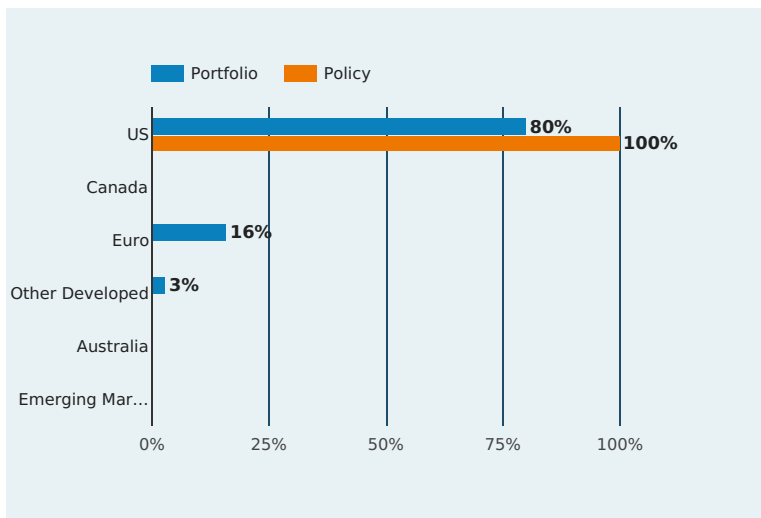
## 22 Credit bucket

|                   | Portfolio | Policy  | Difference |
|-------------------|-----------|---------|------------|
| Duration          | 3.7       | 3.7     | -0.0       |
| Coupon Yield      | 6.4%      | 6.6%    | -0.2%      |
| Yield to Maturity | 6.1%      | 6.5%    | -0.4%      |
| Wt. Avg. Rating   | B1        | B1 / B2 |            |

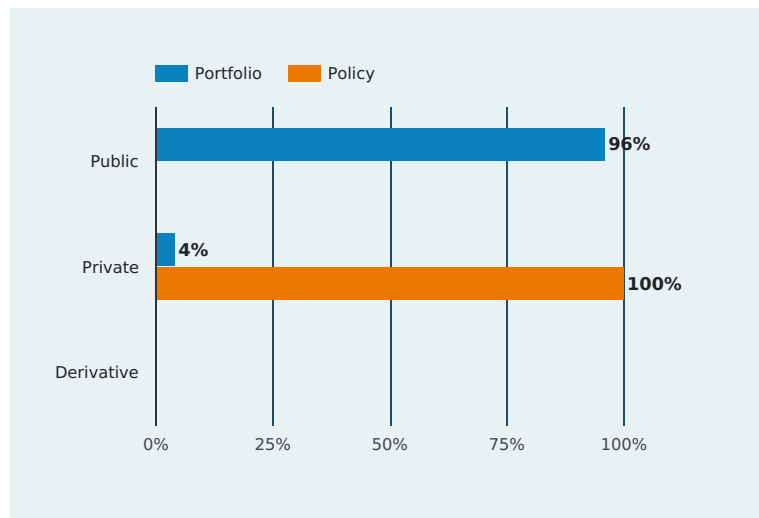
## 23 Credit bucket - Geographic exposure



## 24 Credit bucket - Currency exposure



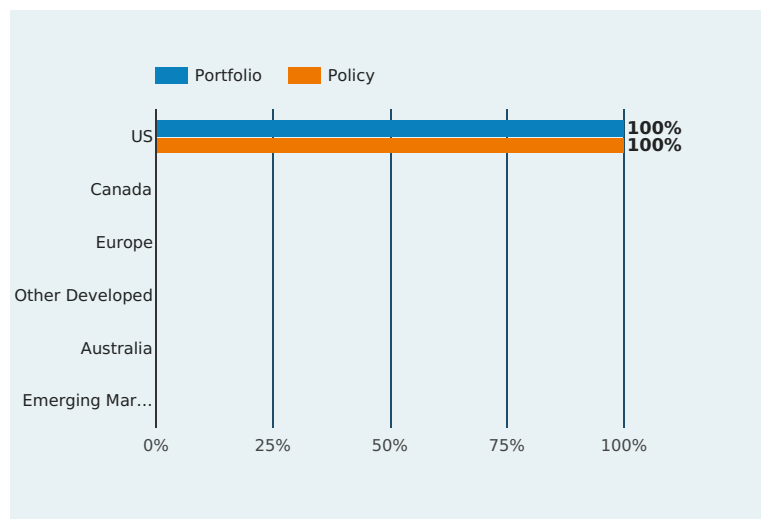
## 25 Credit bucket - Security type



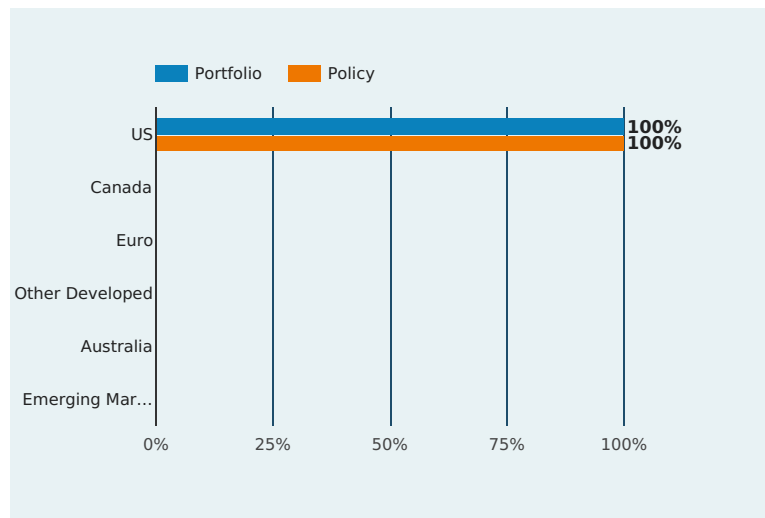
## 26 Inflation bucket

|                        | Portfolio | Policy | Difference |
|------------------------|-----------|--------|------------|
| Real Estate Allocation | 10.4%     | 7.0%   | 3.4%       |
| Other Real Assets      | 5.3%      |        |            |

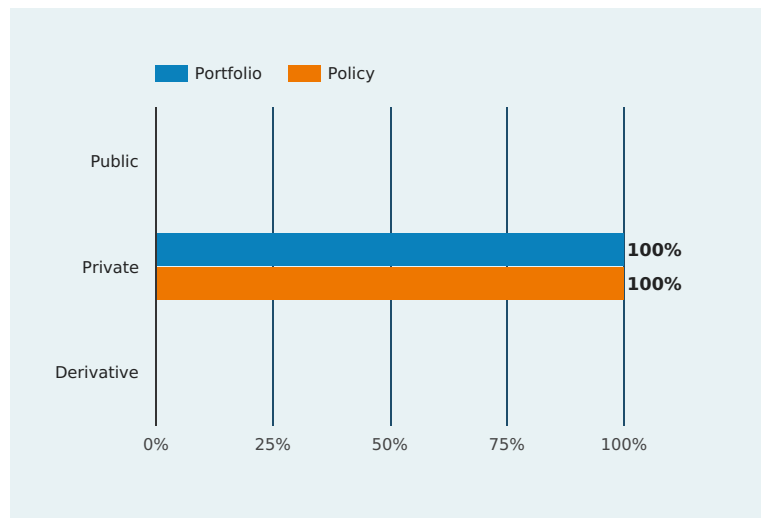
## 27 Inflation bucket - Geographic exposure



## 28 Inflation bucket - Currency exposure



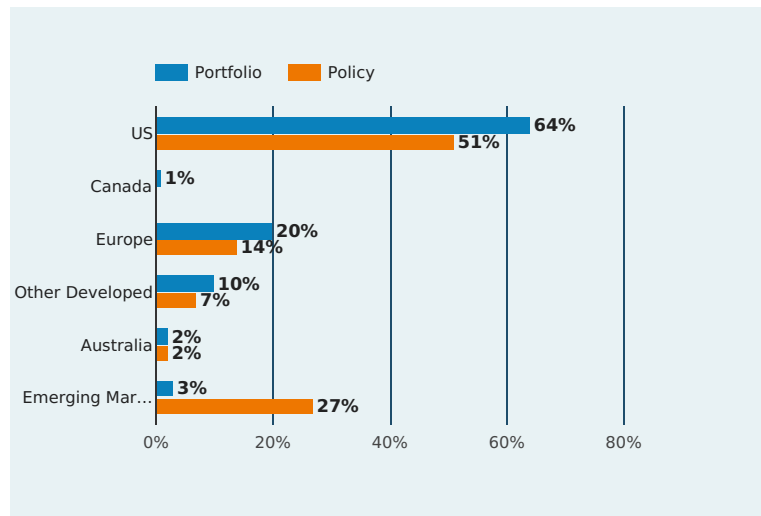
## 29 Inflation bucket - Security type



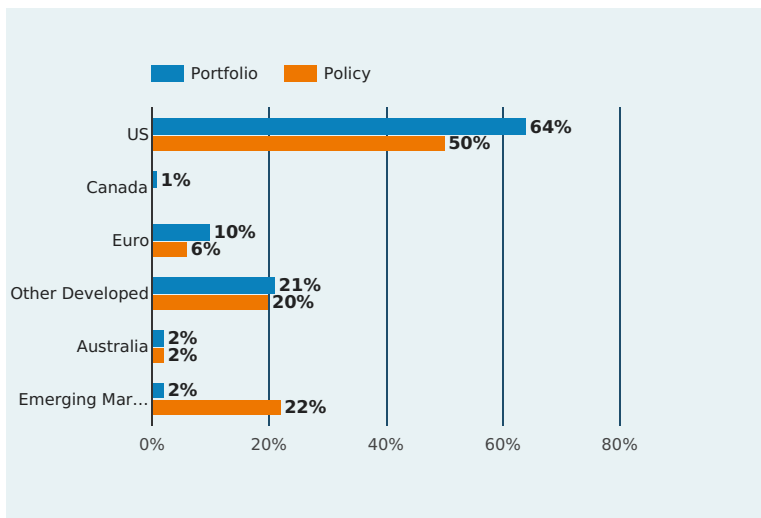
### 30 Equity bucket

|                | Portfolio | Policy | Difference |
|----------------|-----------|--------|------------|
| Beta           | 1.0       | 0.9    | 0.1        |
| Dividend Yield | 2.5%      | 2.7%   | -0.2%      |
| PE Ratio       | 21.5      | 27.8   | -6.3       |

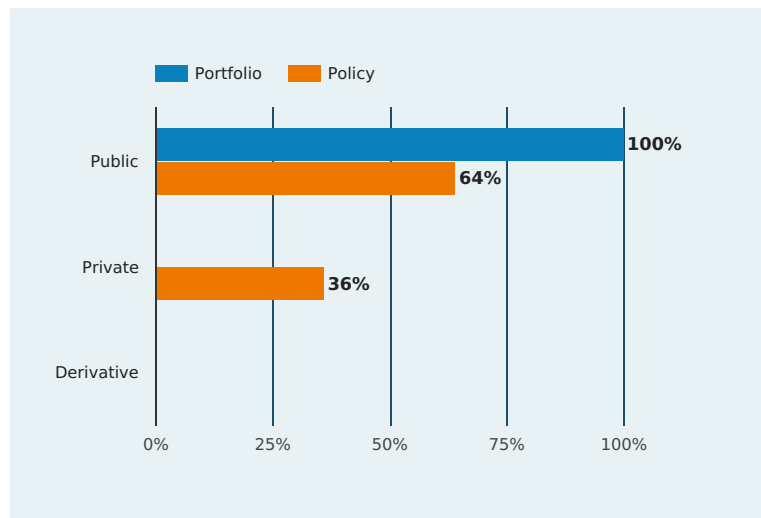
### 31 Equity bucket - Geographic exposure



### 32 Equity bucket - Currency exposure



### 33 Equity bucket - Security type



### 34 Market value summary per BarraOne

| Bucket       | Asset Class          | Account Name                              | Account      | Market Value (millions) |
|--------------|----------------------|---|--------------|-------------------------|
| Cash         | Cash                 | Unallocated Cash                          | CCCERAPen075 | 129.2                   |
|              |                      | Transition                                | CCCERAPen077 | 0.0                     |
|              |                      | Treasurer's Fixed                         | CCCERAPen076 | 0.0                     |
| Cash Total   |                      |   |              | 129.2                   |
| Credit       | High Yield Bonds     | Allianz Global Investors                  | CCCERAPen023 | 387.7                   |
|              | Opportunistic Credit | Angelo Gordon Energy Credit Opportunities | CCCERAPen074 | 16.0                    |
| Credit Total |                      |   |              | 403.7                   |
| Equity       | EAFE Equity          | William Blair                             | CCCERAPen008 | 420.0                   |
|              |                      | Pyrford                                   | CCCERAPen007 | 416.7                   |
|              |                      | International Equity Transition           | CCCERAPen009 | 0.5                     |
|              | Global Equity        | Artisan Partners                          | CCCERAPen010 | 340.4                   |
|              |                      | First Eagle                               | CCCERAPen011 | 324.8                   |
|              |                      | JP Morgan Global Opportunities            | CCCERAPen013 | 277.8                   |
|              |                      | Intech Global Low Vol                     | CCCERAPen012 | 24.0                    |
|              | Private Equity       | Oaktree PIF 2009                          | CCCERAPen073 | 17.6                    |
|              | US Equity            | PIMCO Stocks+ Absolute Return             | CCCERAPen002 | 333.5                   |
|              |                      | Jackson Square Partners                   | CCCERAPen003 | 326.3                   |
|              |                      | Robeco Boston Partners                    | CCCERAPen004 | 318.3                   |
|              |                      | Intech Large Cap Core                     | CCCERAPen001 | 290.8                   |
|              |                      | Emerald Advisers                          | CCCERAPen005 | 242.3                   |
|              |                      | Ceredex                                   | CCCERAPen006 | 229.8                   |
|              |                      |   |              |                         |
| Equity Total |                      |   |              | 3,562.7                 |
| Hedge Fund   | Hedge Fund           | Adams Street Partners                     | CCCERAPen052 | 121.1                   |
|              |                      | Siguler Guff CCCERA Opportunities Fund    | CCCERAPen072 | 70.1                    |
|              |                      | Energy Investor Fund III                  | CCCERAPen060 | 59.9                    |
|              |                      | Energy Investor Fund II                   | CCCERAPen059 | 42.8                    |

|                                  |              |      |
|----------------------------------|--------------|------|
| Energy Investor Fund IV          | CCCERAPeno61 | 41.5 |
| Pathway Private Equity Fund      | CCCERAPeno65 | 37.1 |
| Pathway 7                        | CCCERAPeno63 | 32.5 |
| Pathway 6                        | CCCERAPeno62 | 30.0 |
| Carpenter Bancfund               | CCCERAPeno67 | 28.2 |
| Paladin III                      | CCCERAPeno69 | 25.4 |
| Pathway Private Equity Fund 2008 | CCCERAPeno66 | 23.4 |
| Ocean Avenue Fund II             | CCCERAPeno70 | 17.9 |
| Adams Street Partners Fund 5     | CCCERAPeno54 | 16.7 |
| Adams Street Partners II         | CCCERAPeno53 | 15.4 |
| Bay Area Equity Fund II          | CCCERAPeno57 | 9.5  |
| Pathway 8                        | CCCERAPeno64 | 9.4  |
| Brinson - Venture Capital        | CCCERAPeno55 | 5.0  |
| Ocean Avenue Fund III            | CCCERAPeno71 | 4.9  |
| Bay Area Equity Fund I           | CCCERAPeno56 | 4.1  |
| Energy Investor Fund             | CCCERAPeno58 | 0.8  |
| Nogales                          | CCCERAPeno68 | 0.3  |

Hedge Fund Total 595.9

|           |             |                                 |              |       |
|-----------|-------------|---------------------------------|--------------|-------|
| Inflation | Real Assets | Wellington Real Total Return    | CCCERAPeno26 | 188.1 |
|           |             | PIMCO All Asset Fund            | CCCERAPeno25 | 128.6 |
|           |             | Aether Real Assets III          | CCCERAPeno27 | 50.6  |
|           |             | Commonfund                      | CCCERAPeno29 | 26.4  |
|           |             | Aether Real Assets IV           | CCCERAPeno28 | 4.3   |
|           |             | Wastewater Opportunity Fund LLC | CCCERAPeno30 | 3.0   |
|           | Real Estate | Adelante                        | CCCERAPeno31 | 96.4  |
|           |             | DLJ Real Estate IV              | CCCERAPeno35 | 81.4  |
|           |             | Oaktree REOF VI                 | CCCERAPeno47 | 76.5  |

|  |              |      |
|--|--------------|------|
| LaSalle Income & Growth Fund VI                    | CCCERAPeno43 | 70.4 |
| Siguler Guff Distressed RE Opportunities           | CCCERAPeno49 | 58.9 |
| INVESCO International REIT                         | CCCERAPeno38 | 58.9 |
| Angelo Gordon & Co. Realty Fund VIII               | CCCERAPeno32 | 53.1 |
| Siguler Guff Distressed RE Opportunities II        | CCCERAPeno50 | 51.7 |
| DLJ Real Estate V                                  | CCCERAPeno36 | 40.5 |
| DLJ Real Estate III                                | CCCERAPeno34 | 33.3 |
| Angelo Gordon & Co. Realty Fund IX                 | CCCERAPeno33 | 25.4 |
| Long Wharf Fund IV                                 | CCCERAPeno45 | 24.7 |
| Oaktree REOF V                                     | CCCERAPeno46 | 23.3 |
| Paulson Real Estate II                             | CCCERAPeno48 | 21.6 |
| INVESCO Real Estate III                            | CCCERAPeno41 | 20.9 |
| Siguler Guff Distressed RE Opportunities II Co-Inv | CCCERAPeno51 | 12.0 |
| INVESCO Real Estate IV                             | CCCERAPeno42 | 11.6 |
| Long Wharf Fund V                                  | CCCERAPeno78 | 11.6 |
| Long Wharf Fund III                                | CCCERAPeno44 | 9.0  |
| INVESCO Real Estate II                             | CCCERAPeno40 | 8.6  |
| INVESCO Real Estate I                              | CCCERAPeno39 | 0.1  |
| Hearthstone Advisors II                            | CCCERAPeno37 | 0.0  |

Inflation Total 1,191.0

|       |              |                         |              |       |
|-------|--------------|-------------------------|--------------|-------|
| Rates | Global Bonds | Lazard                  | CCCERAPeno24 | 244.8 |
|       | US Bonds     | PIMCO Fixed Income      | CCCERAPeno17 | 442.3 |
|       |              | Lord Abbett             | CCCERAPeno16 | 333.1 |
|       |              | Goldman Sachs Core Plus | CCCERAPeno14 | 328.8 |
|       |              | AFL-CIO                 | CCCERAPeno22 | 245.4 |
|       |              | Torchlight IV           | CCCERAPeno20 | 62.6  |
|       |              | Torchlight II           | CCCERAPeno18 | 45.7  |

|                        |              |      |
|------------------------|--------------|------|
| Torchlight V           | CCCERAPeno21 | 15.1 |
| Torchlight III         | CCCERAPeno19 | 10.6 |
| GSAM Workout Portfolio | CCCERAPeno15 | 0.0  |

Rates Total 1,728.3

**Total Portfolio (millions) 7,610.8**

## Chart Definitions

- 1 Portfolio risk**

Total risk comparison of portfolio, Policy, and Avg. Pension. Policy is composed of 1% Cash, 14% MSCI EM, 10% MSCI EAFE, 6% S&P500, 17% Private Equity, 24% Barclays Capital 1-3 Yr Gov/Credit, 2% Barclays Capital U.S. Treasury: 7-10 Year, 7% NCREIF NPI, 17% Barclays Capital U.S. Corporate High Yield, and 2% HFRI FOF Index. Average pension is based on median allocation of DB Plans > \$1 Billion, which is composed of 1.1% Cash, 26.1% US Equity, 15.1% Global ex-US Equity, 3.4% EM Equity, 6% Private Equity, 22.5% US Fixed Income, 4.3% Global Fixed Income, 1.5% Global ex-US Fixed Income, 2.4% EM Fixed Income, 8.1% Hedge Fund, 1.05% Commodity, 1.05% Forestry, and 7.4% Real Estate.
- 2 Portfolio equity beta**

Equity risk presented by equity beta to market. Equity beta is a measure describing the sensitivity of portfolio returns with returns of the equity market (MSCI ACWI).
- 3 Portfolio interest rate risk - Duration**

Interest rate risk presented by duration and dollar movement of portfolios. Duration of a financial asset that consists of fixed cash flows is the weighted average of the times until those fixed cash flows are received (measured in years). It also measures the percentage change in price for a given change in yields (the price sensitivity to yield). DVo1 \$ (dollar duration) is the change in price in dollars of a financial instrument resulting from a one basis point change in yield.
- 4 Portfolio credit risk - Spread duration**

Credit risk presented by spread duration and dollar movement of portfolios. Spread duration measures the percentage change in price for a one percentage point change in spreads.
- 5 Exposure allocation by asset class**

Exposure allocation among various asset classes.
- 6 Exposure allocation**

Exposure allocation among major risk buckets (rates, credit, equity, inflation, currency) and net currency exposure (domestic vs. foreign). Full Cash collateral is assumed for all derivatives.
- 7 Relative risk vs target by bucket**

Comparative riskiness of Portfolio vs. Policy on total portfolio and risk bucket levels: For example, equity bucket relative risk compares the riskiness of the Portfolio equity bucket vs the Policy equity bucket.
- 8 Relative risk vs target by risk factor**

Comparative riskiness of Portfolio vs. Policy on a total portfolio level and major risk factor levels.
- 9 Risk factor weight relative to target**

Contribution by factor to total relative risk of the Portfolio vs the Policy: For example, Equity is equity risk contribution to Portfolio minus equity risk contribution to the Policy, divided by total risk of the Policy. The factor overweights are additive to the total relative risk at the top line.
- 10 Tail risk - Scenario analysis**

Tail risk is a form of risk measurement that considers the possibility that a market will experience losses greater than what the normal distribution would suggest. This graph shows the expected performance under various historical scenarios (described in the appendix at the end of this report). For each historical scenario, the current market value is recalculated to determine return under identical market conditions, assuming an instantaneous shock.
- 11 Tail risk - Stress tests**

This display shows expected performance when individual risk factors are subjected to instantaneous shocks. Directly affected assets are revalued at factor level
- 12 Risk contribution by risk factor**

Risk contribution by risk factor. Volatility measures the price variation of a portfolio or financial instrument over time.
- 13 Active risk contribution by risk factor**

Active risk in terms of annual tracking error: Tracking Error (TE) measures how closely a portfolio follows its benchmark. It is the standard deviation of the difference between the portfolio and benchmark returns.
- 14 Geographic exposure**

Geographic exposures are calculated using the notional exposure as a percentage of market value, including derivatives, cash securities and currency holdings, but excluding currency derivatives. Any portfolio that uses derivatives may have a total different than 100% because both cash and derivative country exposures are included.
- 15 Currency exposure**

Currency portfolio allocation. Currency exposures from both the underlying securities and the purchasing currency of the futures contract are included.
- 16 Net geographic exposure**

Difference between portfolio and policy allocation among major geographic areas.
- 17 Net currency exposure**

Difference between portfolio and policy allocation among major currencies.
- 18 Interest rate bucket**

Coupon yield (nominal yield) of a fixed income security is a fixed percentage of the par value that does not vary with the market price of the security. Yield to Maturity (YTM) is the interest rate of return earned by an investor who buys a fixed-interest security today at the market price and holds it until maturity. Ratings indicate credit quality of a security and the issuer's ability to make payments of interest and principal.
- 19 Rates bucket - Geographic exposure**

Geographic exposures specific to the Rates bucket are calculated using the notional exposure as a percentage of market value, including derivatives, cash securities and currency holdings, but excluding currency derivatives. Any portfolio that uses derivatives may have a total different than 100% because both cash and derivative country exposures are included.
- 20 Rates bucket - Currency exposure**

Currency allocation of interest rate instruments.



|    |  |
|----|--|
| 21 | <b>Rates bucket - Security type</b><br>Allocation of interest rate instruments among different security types.   |
| 22 | <b>Credit bucket</b><br>Various characteristics of credit instruments.   |
| 23 | <b>Credit bucket - Geographic exposure</b><br>Geographic exposures specific to the Credit bucket are calculated using the notional exposure as a percentage of market value, including derivatives, cash securities and currency holdings, but excluding currency derivatives. Any portfolio that uses derivatives may have a total different than 100% because both cash and derivative country exposures are included.       |
| 24 | <b>Credit bucket - Currency exposure</b><br>Currency allocation of credit instruments.   |
| 25 | <b>Credit bucket - Security type</b><br>Allocation of credit instruments among different security types.   |
| 26 | <b>Inflation bucket</b><br>Composition of inflation hedging instruments in portfolio and benchmark. Notional duration of real rates instruments is also included.  |
| 27 | <b>Inflation bucket - Geographic exposure</b><br>Geographic exposures specific to the Inflation bucket are calculated using the notional exposure as a percentage of market value, including derivatives, cash securities and currency holdings, but excluding currency derivatives. Any portfolio that uses derivatives may have a total different than 100% because both cash and derivative country exposures are included. |
| 28 | <b>Inflation bucket - Currency exposure</b><br>Currency allocation of inflation instruments.   |
| 29 | <b>Inflation bucket - Security type</b><br>Allocation of inflation instruments among different security types.   |
| 30 | <b>Equity bucket</b><br>P/E ratio is a valuation ratio of a company's current share price compared to its per-share earnings. Beta measures sensitivity to Global Equities.  |
| 31 | <b>Equity bucket - Geographic exposure</b><br>Geographic exposures specific to the Equity bucket are calculated using the notional exposure as a percentage of market value, including derivatives, cash securities and currency holdings, but excluding currency derivatives. Any portfolio that uses derivatives may have a total different than 100% because both cash and derivative country exposures are included.       |
| 32 | <b>Equity bucket - Currency exposure</b><br>Currency allocation of equity assets.  |
| 33 | <b>Equity bucket - Security type</b><br>Allocation of equity assets among different security types.  |
| 34 | <b>Market value summary per BarraOne</b><br>Summary of market value of Portfolio holdings by bucket as reported through BarraOne. Some differences may exist due to timing, pricing sources and availability of information on new investments.  |

## Tail Risk Scenario Definitions

|   |  |
|---|--|
| 1 | <b>2009-2010 July-January</b><br>(7/1/2009 - 12/31/2009) As global economic woes persisted, many countries were saddled with widening budget deficits, rising borrowing costs, slowing growth, higher unemployment, and higher inflation, which made monetary stimulus difficult. Dubai World sought to delay its huge debt repayments, shocking the global market, while the financial distress in Greece and Ireland began to emerge in late 2009.   |
| 2 | <b>2007-2009 Subprime Meltdown</b><br>(1/10/2007 - 2/27/2009) The burst of the housing bubble in mid-2007 marked the beginning of the years-long subprime mortgage crisis, rooted from the easy credit, low interest rates, and loose regulatory environment in the early 2000s, which made low quality (subprime) mortgaging extremely easy. The contagious meltdown quickly led to plunging asset prices in the financial markets, rising bankruptcies, delinquencies, and foreclosures, and central bank monetary rescues and fiscal interventions by governments around the globe. |
| 3 | <b>2007-2008 Oil Price Rise</b><br>(1/18/2007 - 6/27/2008) Oil prices spiked from around \$60/bbl in 2007 to a record high of \$145/bbl on 3 July 2008.  |
| 4 | <b>2001 Dot-com Slowdown</b><br>(3/10/2001 - 10/9/2002) Upon the burst of the tech bubble in 2000, more and more internet companies went out of business as the stock market plummeted further.  |
| 5 | <b>1997-1999 Oil Price Decline</b><br>(1/8/1997 - 2/16/1999) The combined effect of OPEC overproduction and lower oil demand due to the Asia economic crisis sent oil prices into a downward spiral.   |
| 6 | <b>1994 US Rate Hike</b><br>(1/31/1994 - 12/13/1994) In combating inflation, the U.S. Federal Reserve raised its interest rate from 3.25% in February to 5.5% in November 1994.  |
| 7 | <b>1992-1993 European Currency Crisis</b><br>(9/1/1992 - 8/13/1993) Upon Germany's reunification, the German mark appreciated rapidly, which destabilized exchange rates between European countries under the European Monetary System. It led to a series of European currency devaluations, interest rate increases, and the widening range of exchange rates in 1992.   |
| 8 | <b>1989-1990 Nikkei Stock Price Correction</b><br>(12/29/1989 - 3/30/1990) After hitting the Nikkei stock index's all-time high on December 29, 1989, the Japan financial market crashed and plunged to a low in March 1990.   |

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9 **1987 Market Crash (Oct 14 to Oct 19)**

(10/14/1987 - 10/19/1987) The U.S. stock market began to topple on October 14, 1987 after reaching a record high. It was triggered by reports of a larger trade deficit and the elimination of the tax benefits of financing mergers. The aggravating selling pressure in October 19, from confused and fearful investors, and the failing portfolio insurers' models led to a substantial global market sell-off.

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10 **1972-1974 Oil Crisis (Dec to Sep)**

(12/1/1972 - 9/30/1974) Many developed countries suffered in this energy crisis as OPEC members placed an oil embargo on the U.S. and Israel's allies during the Yom Kippur War in October 1973, which sent global oil prices soaring.

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