



Quarterly Investment Performance Analysis

Water and Power Employees' Retirement Plan

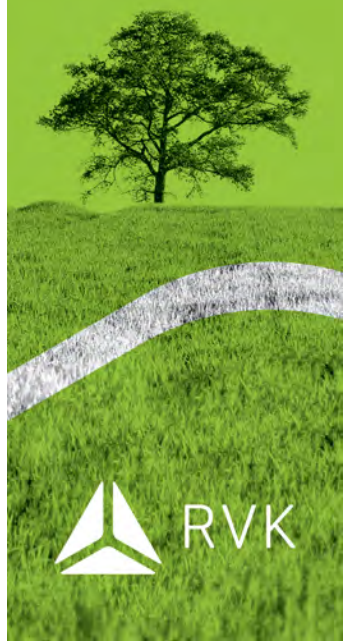
Period Ended: December 31, 2018



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Executive Summary



Capital Markets Review

The fourth quarter of 2018 was characterized by a heightened level of volatility and negative returns for the majority of risk assets. Though equity markets experienced an initial decline in October, the strongest risk-off environment emerged in December as global growth forecasts, inflation expectations, and corporate earnings expectations began to roll over in unison. During the quarter, the Federal Reserve, European Central Bank (“ECB”), and International Monetary Fund (“IMF”) lowered 2019 GDP growth forecasts across regions, and the 5Y/5Y inflation expectation rate fell from nearly 2.3% at the start of the quarter to 1.9% at quarter-end. With this as a backdrop, market participants repriced global equities and moderated expectations for corporate earnings growth in 2019. Factset data indicates that 2019 earnings expectations for the S&P 500 fell from a high of \$178.50 per share near the beginning of the fourth quarter to \$173.45 at quarter-end. On the other side of the spectrum, duration-sensitive assets and government bonds performed well during the December flight to safety, while high yield credit and loan markets posted losses. Emerging market equities outperformed developed equity markets during the quarter, but still trailed their developed counterparts for the full year.

In a move that proved to be more controversial than many anticipated, the Federal Reserve Open Market Committee (“FOMC”) raised the target range for the federal funds rate by 0.25% for the fourth time in 2018 during its December meeting, resulting in a target range of 2.25% to 2.5%. Economic data in the US remained strong, with non-farm payrolls up 312,000 in December on a 3.9% unemployment rate, and the Atlanta Federal Reserve’s GDP Nowcast estimated fourth quarter GDP growth at a robust 2.8%. However, with market attention focused on data indicating a potential Chinese economic slowdown, Chairman Powell’s reference to the Federal Reserve’s balance sheet normalization process being on “autopilot” may have generated further volatility in security pricing, particularly for equities. At this stage, year-end forecasts indicate a likelihood of two rate hikes in 2019 opposed to three as originally forecast earlier in the year. The turmoil in equity markets and uncertainty with respect to 2019 global growth has pushed market implied expectations for another rate increase at the FOMC March meeting down to zero according to data provided by CME.

While the odds of a recession occurring in 2019 remain low, leading indicators such as falling oil prices, a flattening yield curve, declining consumer confidence and a subdued housing market contributed to negative investor sentiment at year-end. The IMF lowered its 2019 growth forecasts for Asia from 5.6% to 5.4% during the quarter, citing trade tensions and evolving financial market stresses as the major drivers behind the decline. The ECB reported that Eurosystem staff lowered 2019 growth guidance for the Eurozone following disappointing growth numbers in the third quarter and tightening financial conditions, and the Federal Reserve lowered its 2019 growth guidance for the United States from 2.5% to 2.3%.



Total Fund

During the fourth quarter, the Retirement Plan underperformed its policy benchmark by 100 basis points and ranked in the 42nd percentile among peers. The Health Plan underperformed its policy benchmark by 106 basis points and ranked in the 43rd percentile among peers.

Over the one-year trailing period, the Retirement Plan underperformed its policy benchmark by 32 basis points, and ranked in the 25th percentile among peers. The Health Plan underperformed the policy benchmark by 25 basis points, and ranked in the 23rd percentile among peers.

Domestic Equity

The Domestic Equity Composite underperformed the Russell 3000 Index for the quarter, returning -14.71% versus -14.30% for the index. This performance ranked the composite in the 56th percentile among peers. Fred Alger Large Cap Growth, Earnest Partners Small Cap Value, and Emerald Small Cap Growth detracted from composite relative performance, returning -20.46%, -18.77%, and -22.24%, respectively. The large cap value managers (MFS and T. Rowe Price) posted the highest absolute performance for the quarter, returning -11.51% and -11.58%, respectively. T. Rowe Price Large Cap Growth posted the highest relative performance, outperforming the Russell 1000 Growth Index by 273 basis points.

International Equity

The International Equity Composite outperformed the MSCI ACW Ex US IM Index for the quarter, returning -11.72% versus -11.88% for the index. This performance ranked the composite in the 40th percentile among peers. MFS Developed International, LA Capital Emerging, and Wellington Emerging contributed to composite outperformance, returning -10.82%, -8.75%, and -8.23%, respectively. Fidelity Developed International posted the lowest absolute performance, returning -14.56% for the quarter.

Fixed Income

The Fixed Income Composite underperformed the Fixed Income Custom Index for the quarter, returning -0.08% versus 0.38% for the index. This performance ranked the composite in the 72nd percentile among peers. Macquarie Unconstrained, Neuberger Unconstrained, and Pacific Asset Bank Loans detracted from composite relative performance, returning -1.57%, -2.44%, and -3.82%, respectively. The principal protection managers (JP Morgan and Wells) posted the highest absolute performance for the quarter, returning 1.84% and 2.12%, respectively.

Alternative Asset Classes

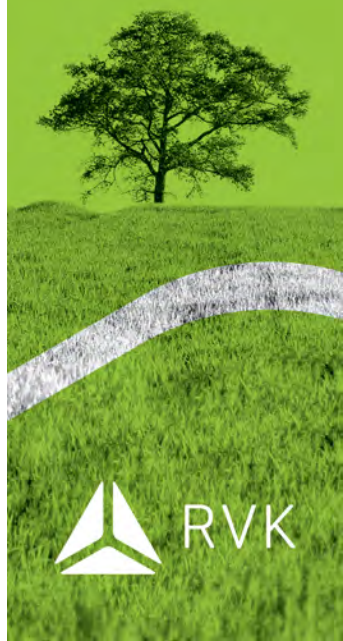
REAL RETURN

The Real Return Composite underperformed the Consumer Price Index+3% by 282 basis points during the fourth quarter. WAMCO managed to post positive performance of 0.12%, but underperformed the Bloomberg World Government Inflation Linked Index (Hedged) by 43 basis points. Invesco Commodity had the lowest absolute performance, returning -7.58%. Hancock Timberland and Molpus IV also detracted from performance, returning -0.58% and -0.15%, respectively.

HEDGE FUNDS

The Hedge Funds Composite posted negative absolute returns and underperformed the ICE BofAML 3 Month US T-Bill Index+3% (1 Month Lag) by 253 basis points during the fourth quarter. Blackstone Hope St. returned -1.25% and underperformed the ICE BofAML 3 Month US T-Bill Index+3% (1 Month Lag) by 253 basis points. MS Convergent returned -2.70%, but is undergoing liquidation and as such no longer represents a meaningful portion of the Hedge Funds Composite.

Watch List



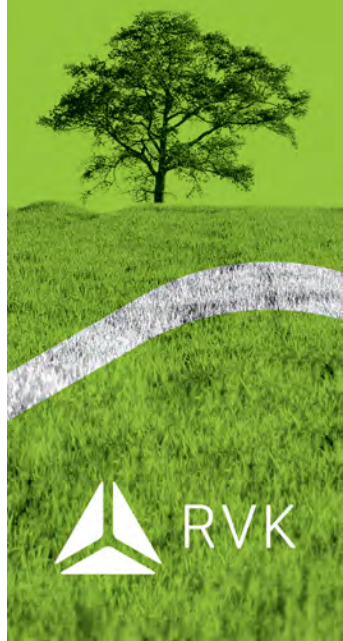
Water and Power Employees' Retirement Plan
Watch List Summary

As of December 31, 2018

Watch List Managers	Date Qualified for Watch	Date Board Approved Manager for Watch	Recent Performance					Reasons on Watch	Recommendation
			MTD	YTD	1 Year	3 Year	5 Year		
Continue On Watch									
Fred Alger Large Cap Growth (SA) <i>Russell 1000 Growth Index</i>	12/31/2015	4/13/2016	-8.86 -8.60	3.17 -1.51	3.17 -1.51	10.23 11.15	8.77 10.40	Failure to meet performance criteria.	At the 07/25/2018 meeting, the Board selected a replacement manager pending contract negotiations.
Macquarie Unconstrained (SA) <i>67% B Global Credit/33% B Global High Yield</i>	9/30/2016	11/9/2016	-0.14 0.31	-2.73 -1.44	-2.73 -1.44	4.37 5.00	N/A N/A	Organization concerns.	Performance and management are continuously being monitored. The manager last provided an update to the Board on 06/13/2018.
WAMCO (SA) <i>Bloomberg Wrld Gov't Infl Lnk'd Index (Hedged)</i>	3/31/2017	4/12/2017	1.57 1.16	-0.38 0.10	-0.38 0.10	4.03 4.46	4.08 4.21	Failure to meet performance criteria.	Performance and management are continuously being monitored. The manager last provided an update to the Board on 12/12/2018.
MS Convergent (CF) (Lagged-1 Mo) - Net <i>ICE BofAML 3 Mo US T-Bill Index+3% (1 Mo Lag)</i>	3/31/2016	6/8/2016	-2.96 0.45	3.36 4.85	3.36 4.85	3.10 3.99	N/A N/A	Failure to meet performance criteria.	At the 04/12/17 meeting, the Board interviewed and selected a replacement manager for the Hedge Fund of Funds mandate.

Performance shown is gross of fees.

2018 Year in Review



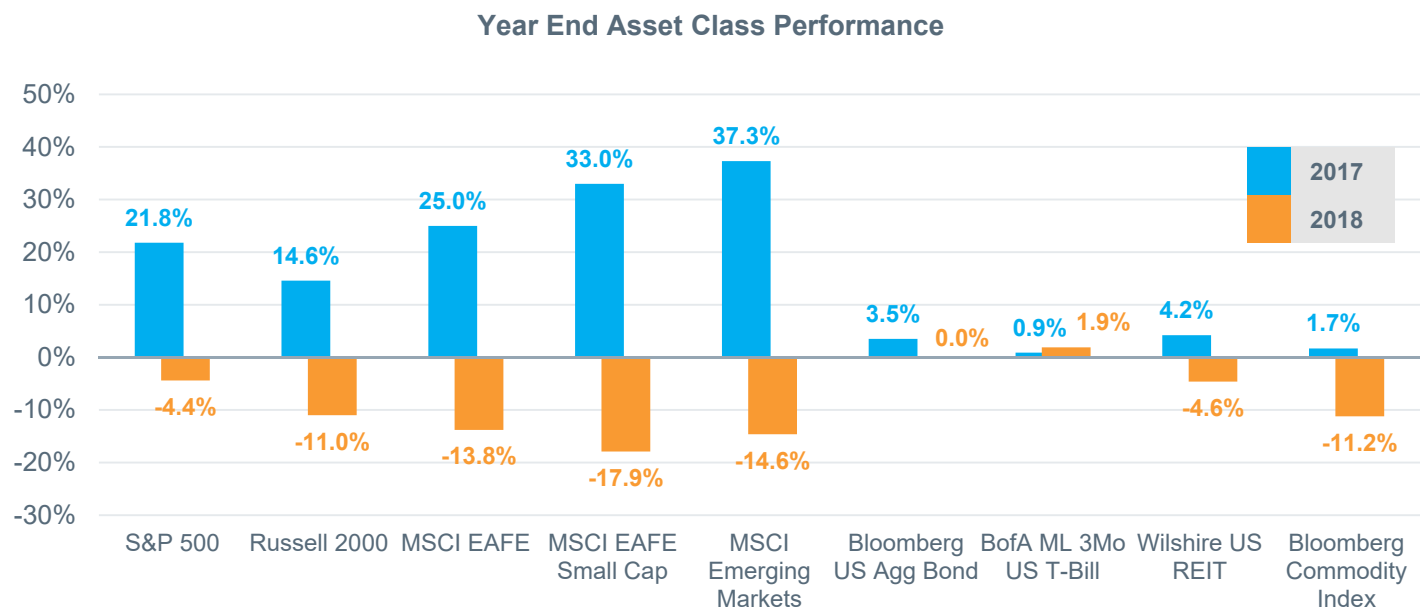
Executive Summary

Preface: 2017

- 2017 was a picturesque year for markets, characterized by low volatility and strong returns.
- Many asset classes were bolstered by synchronized global growth, strong corporate profits, and prolonged accommodative monetary policy.

2018

- A year later and there is a stark contrast. So what happened?



Objective

- The following presentation provides a holistic review of 2018, distilling major capital market themes that occurred throughout the year.
- Specifically, we review broad economic conditions, market volatility, and take a deep-dive into the fourth quarter. We also highlight key themes for 2019.

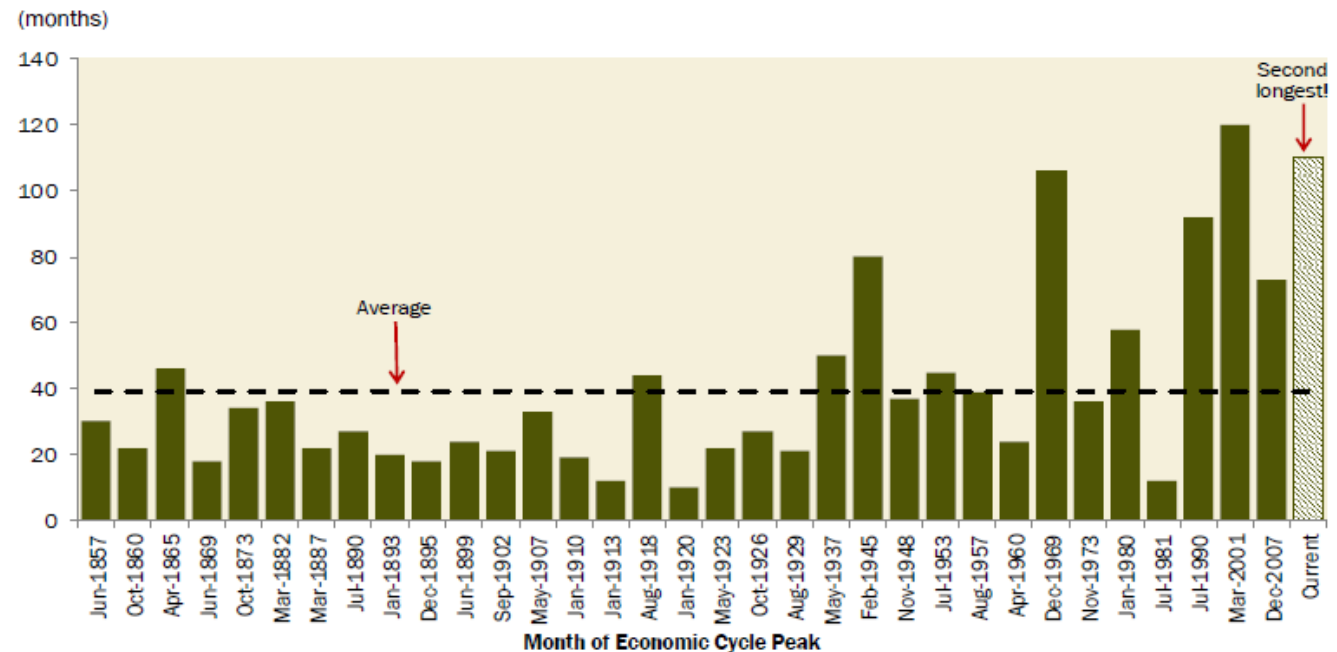
Macroeconomic Conditions

Economic Cycles

Current Cycle

- The general consensus is that the US economy (along with other developed nations) is finally decelerating, with growth expectations tapering off throughout the transition.

United States: Duration of Economic Expansions



Source: Gluskin Sheff + Associates Inc., based off of National Bureau of Economic Research data. As of November 30, 2018.

Key Takeaways

- A mature economy, combined with liquidity tightening as the Fed removes monetary stimulus, can lead to even slower growth and increase downside risk potential.
- Cyclical changes in the economy can create short-term friction for investors, but they should not take precedent over longer-term secular themes when focusing on portfolio construction.

2018 High Level Review

2018 – Overview

Notable Statistics: Year in Review

- Solid global GDP growth at 3.7%.
- Earning growth, propped up by the tax stimulus, was a key driver for US equity markets.
- First trillion dollar company (Apple).
- Federal Reserve: 4 rate hikes throughout the year.

Market Movements: Year in Review

- Aside from a hiccup in February, most markets were able to regain ground throughout the second and third quarters.
- US equity markets did well leading up to the fourth quarter. The rest of the world did not keep pace with the US, but international developed countries were able to post modest gains over the summer, while emerging countries felt more pressure from trade war tensions and unfavorable exchange rates.

Market Performance (%)

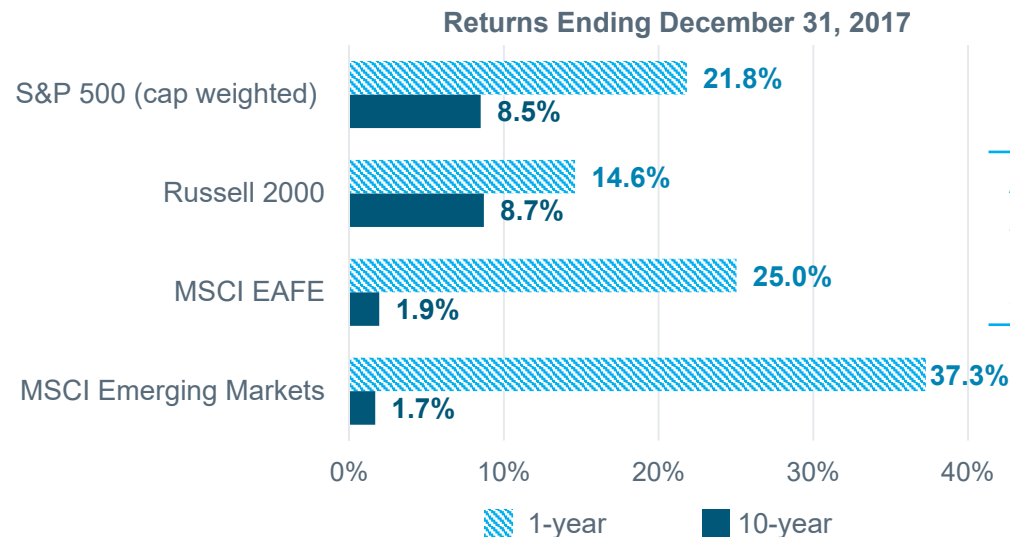
		Monthly		-----Monthly Returns-----			
	Dec 31 2017 YTD	Feb 2018	Sep 30 2018 YTD	Oct 2018	Nov 2018	Dec 2018	Dec 31 2018 YTD
S&P 500 (cap weighted)	21.8	-3.7	10.6	-6.8	2.0	-9.0	-4.4
Russell 2000	14.6	-3.9	11.5	-10.9	1.6	-11.9	-11.0
MSCI EAFE	25.0	-4.5	-1.4	-8.0	-0.1	-4.9	-13.8
MSCI Emerging Markets	37.3	-4.6	-7.7	-8.7	4.1	-2.7	-14.6
Bloomberg US Agg Bond	3.5	-0.9	-1.6	-0.8	0.6	1.8	0.0
US 30 Yr Treasury	2.7	3.1	3.2	3.4	3.3	3.0	3.0
Bloomberg Commodity Index	1.7	-1.7	-2.0	-2.2	-0.6	-6.9	-11.2

2018 High Level Review

2018 – A Year of Mean Reversion

Equity Markets: Long-Term Perspective

- For equity markets in particular, 2018 could be viewed as a year of mean reversion.
- 2017 market returns were well above historical norms. Even without headline events, the sustainability of this growth was bound to come under pressure.



Against this backdrop, 2018 year-end market performance may not seem as severe.

Economic Data: Can Good get Better?

- A healthy economy, strong job market, high corporate earnings, and relatively low interest rates may appear inconsistent with the negative stock market performance, particularly during the fourth quarter.
- However, economic data tends to be backward looking while capital markets are forward-looking.

Economic Indicators:

- The unemployment rate is at its lowest since 1969
- 115 consecutive months of manufacturing expansion

Concern for Future Outlook:

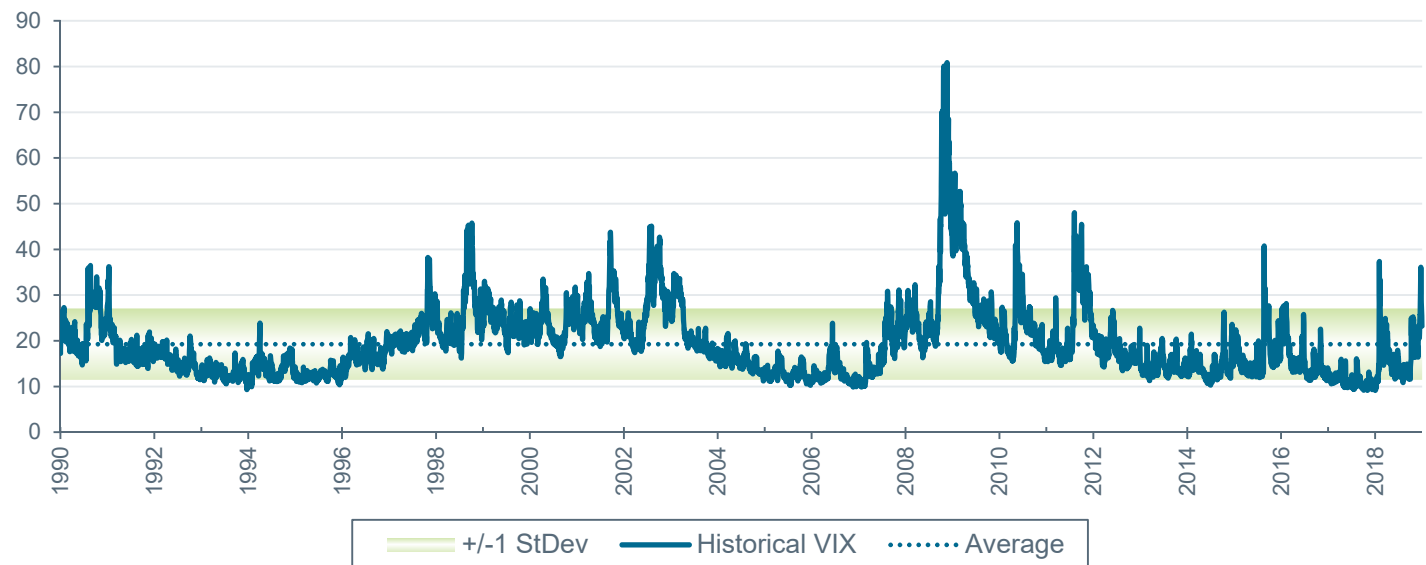
Is there still room for meaningful improvement?

Market Volatility

Historical Context

Long-Term Average of the VIX Index

- Volatility has been subdued since the Financial Crisis due to accommodative monetary policy.
- Prior to 2018, there were long periods of very low volatility compared to historical standards, with a handful of episodic occurrences largely influenced by macro events (e.g. China growth worries in 2015 and Brexit in 2016).



Volatility in Post-Crisis Bull Market

- While volatility was often lower than historical norms since 2009, price changes were not completely absent from the market.

	2013	2014	2015	2016	2017	2018
Number of S&P 500 Price Changes Greater than 1%	38	38	72	48	8	64

- From a historical volatility perspective, 2017 was more of an outlier than 2018.

Source: RVK calculations based on CBOE and Standard & Poor's data.

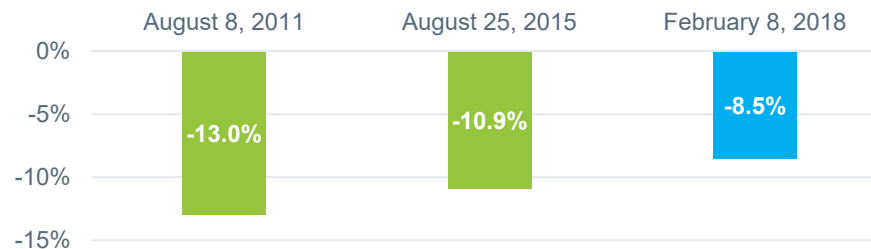
Market Volatility

February Deep Dive

February Market Volatility

- After a strong 2017, markets exhibited fragility in February 2018, with the S&P 500 Index dropping 10.2% by the close of February 8th.
- We noted in our memo that this was the largest 5-day market correction since 2015, coming after over 400 days without a 5% or greater correction.

**Three Largest 5-day Corrections for the S&P 500 Index
since market bottom in 2009**



Note:

While the S&P 500 returned -3.7% for the month of February, it was up 2.7% year-to-date through June 30, 2018.

Source: RVK calculations based on Standard & Poor's data.

Drivers Behind Volatility

- At the beginning of the month, the Labor Department's job's report sparked concerns about wages and inflation, which was received poorly by the markets.
- The drawdown was further exacerbated by the trading mechanics of short volatility products.

Short Volatility Refresh: Our February memo also discussed how short volatility strategies were another contributing factor to the correction. Short volatility products are inverse bets on market volatility, i.e. they profit when a volatility index, such as the VIX, goes down. In a low volatility environment, they can provide consistent positive returns.

However, they are very susceptible to volatility spikes and when the VIX increased 116% on February 5th, these strategies plummeted. Many of the available products were also concentrated in US equity volatility indices, further adding to the downward pressure during the month.
- With short volatility strategies, the market correction transitioned from an information-based trade surrounding economic data to a liquidity trade unrelated to asset or economic fundamentals.

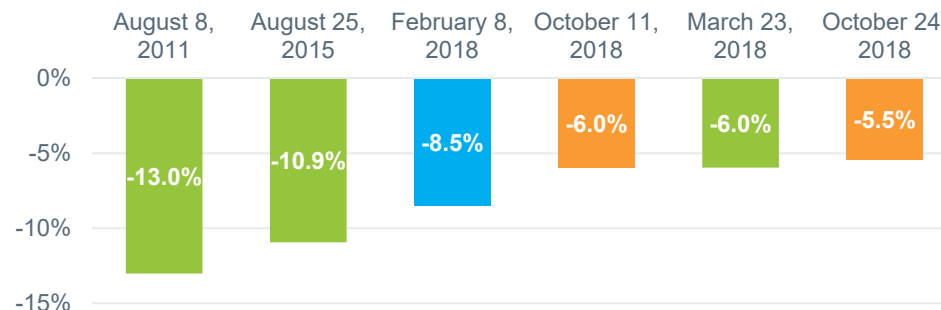
Market Volatility

October Deep Dive

October Market Volatility

- From a high on September 20th through October 26th, the S&P 500 index declined by more than 9%, and finished the month of October down -6.8% after enduring two large drawdowns about a week apart.

Largest 5-day Corrections for the S&P 500 Index since market bottom in 2009



Source: RVK calculations based on Standard & Poor's data.

Well Cited Drivers

- The US-China trade war is the most often cited source of negative pressure on the stock market.
 - As these are the two largest economies in the world, any disruption can have a ripple effect throughout the world.
- The yield curve has also been another source of dismay, with its continued flattening and anticipation of inversion.
 - Historically, recessions have been preceded by an inverted yield curve, although inversion does not guarantee a recession.

Key Takeaways

- China trade talks may have been the catalyst for the October market downturn.
- However, this then prompted the market to reprice future expectations of many factors that were already percolating:
 - Higher interest rates
 - Lower earning expectations for 2019
 - Maturing economic cycles around the globe

Summary – 2018

Source: Macrotrends LLC. Based off of monthly returns, adjusted for inflation using headline CPI. As of 12/31/2018.

Fourth Quarter Highlights

2018 Q4 – The Fed

Central Bank Influence: Mixed Messages

- Against a backdrop of tweets and trade wars, it was the Federal Reserve that seemed to have an inordinate influence on the markets during the fourth quarter of 2018.
- While rate hikes were anticipated, the inconsistent messaging seemed to amplify other concerns that were already on the periphery.

	Oct ¹	Nov	Dec
Tone	Hawkish	Dovish	???
FOMC Meeting Highlights	<p>“...we may go way past neutral. But we are a long way from neutral at this point” – Chairman Powell Oct 3rd</p> <p>“Interest rates...remain just below the broad range of estimates of the level that would be neutral for the economy — that is, neither speeding up nor slowing down growth” – Chairman Powell Nov 28th</p> <p>1. Fed lowered expected rate hikes in 2019 from 3 (announced in September 2018) down to 2 2. Balance Sheet woes: “It will be substantially smaller than it is now” – Chairman Powell Dec 19th</p>		
Federal Funds Rate (Target)	2.25% (↑ 0.25%)	2.25% (no change)	2.50% (↑ 0.25%)
Market Reaction	Negative	Favorable	Negative

- Growth concerns were a strong undercurrent throughout the fourth quarter, but the Fed also played a crucial role. Sequential FOMC meetings with somewhat contrasting messages spurred negative sentiment as the market struggled to interpret the Fed’s direction. Renewed interest in the balance sheet also gave the impression that the Fed was going to be less accommodative going forward.

Notes: “FOMC” stands for Federal Open Market Committee.

¹ Actual FOMC meeting was occurred between September 25-26.

2019 Market Outlook

Potential Themes

Global Growth Projections

- Global growth is expected to slow:

IMF Growth Expectations



Notes from the International Monetary Fund's ("IMF") most recent Economic Outlook:

- Global growth forecasts were modestly reduced from the October Outlook due to "carry over from softer momentum in the second half of 2018."
- The report also indicated that "escalation of trade tensions beyond those already incorporated in the forecast remains a key source of risk."
- Other global risks on the horizon include: "no-deal" withdrawal of the United Kingdom from the European Union and a larger than expected slowdown in China's economy.

Source: IMF, World Economic Outlook Update, January 21, 2019.

Corporate Earnings (US)

- The corporate tax cut that helped lift stocks in 2018 will not be a significant contributor going forward. Corporate earnings will instead have to rely on profit margins and organic company growth, potentially making companies even more susceptible in an environment of uncertainty.

Recession Probability

- A recent Reuters poll of economists showed that the median predicted probability of a recession within the next year is 20%, while the probability of a recession within the next two years rose above 40%.

2019 Market Outlook

Potential Themes

The Fed: Major Factor for Markets in 2019

- The main concern is how the Fed will handle a two variable experiment involving short-term interest rates and balance sheet reduction.

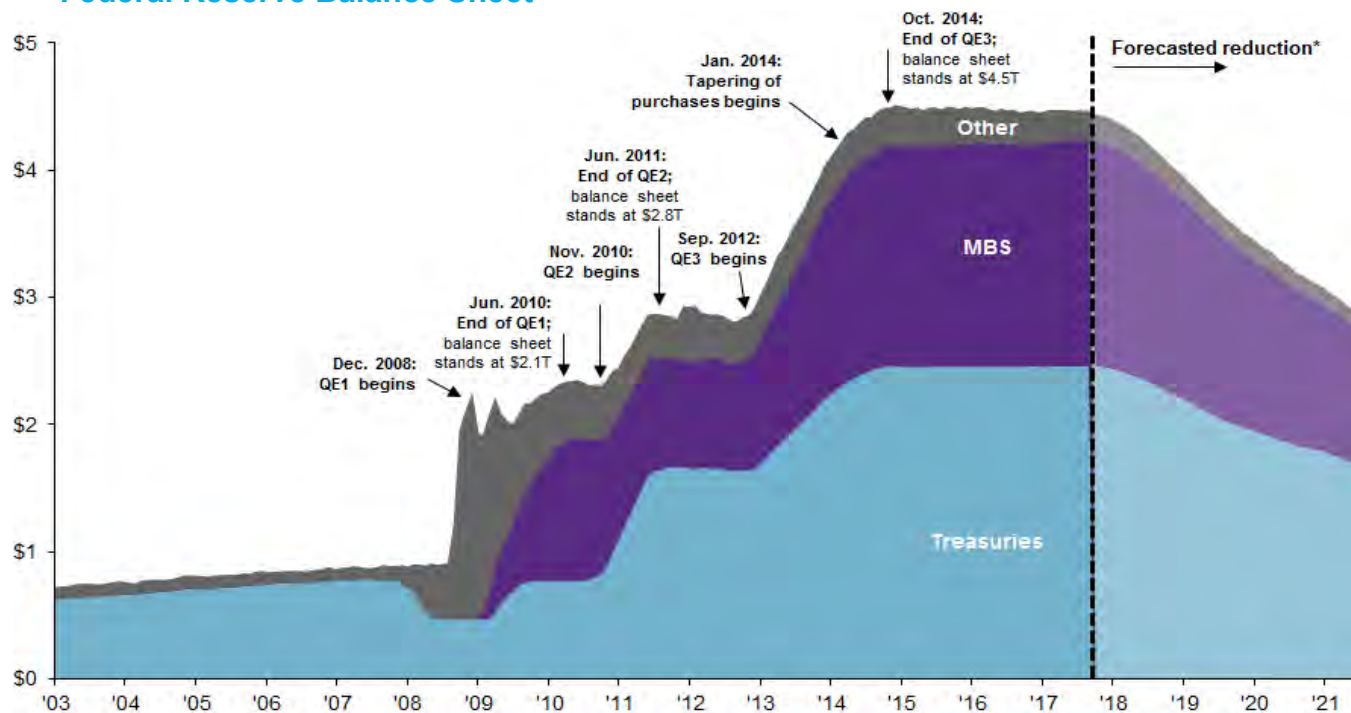
Quantitative Tightening Refresh:

Since the Financial Crisis, the Fed accumulated approximately \$4.5 trillion in assets, mainly composed of US Treasuries and mortgage-backed securities ("MBS"), from their large-scale asset purchasing program, Quantitative Easing.

In October 2017, the Fed began Quantitative Tightening to reduce the size of their balance sheet. Maturing securities were no longer being replaced to remain on the balance sheet, resulting in an "auto-pilot" roll-off of \$50 billion per month.

- Quantitative Easing was unprecedented monetary policy, and the unwinding of that policy, Quantitative Tightening, will be unprecedented as well.

Federal Reserve Balance Sheet



Source: JP Morgan *Guide to the Markets* 3Q 2017.

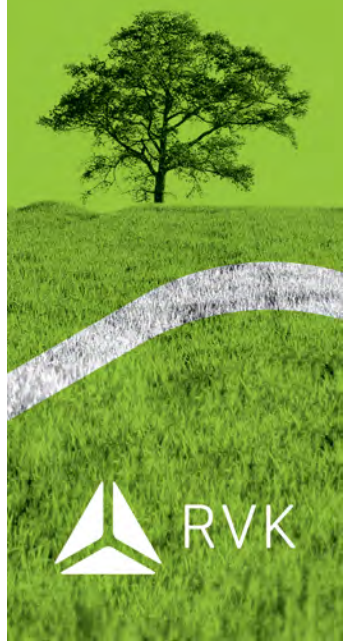
Federal Funds Rate Expectations¹

	2019	2020
FOMC Yr-End Est.	2.88%	3.13%
Market Expectations ¹	2.53%	2.39%
Federal Funds Rate (12/31/2018)		2.40%
FOMC Long-Run Projection		2.75%

¹Per JP Morgan, data as of 12/19/18.

Source: JP Morgan *Guide to the Markets* 1Q 2019.

Capital Markets Review



Fourth Quarter Economic Environment

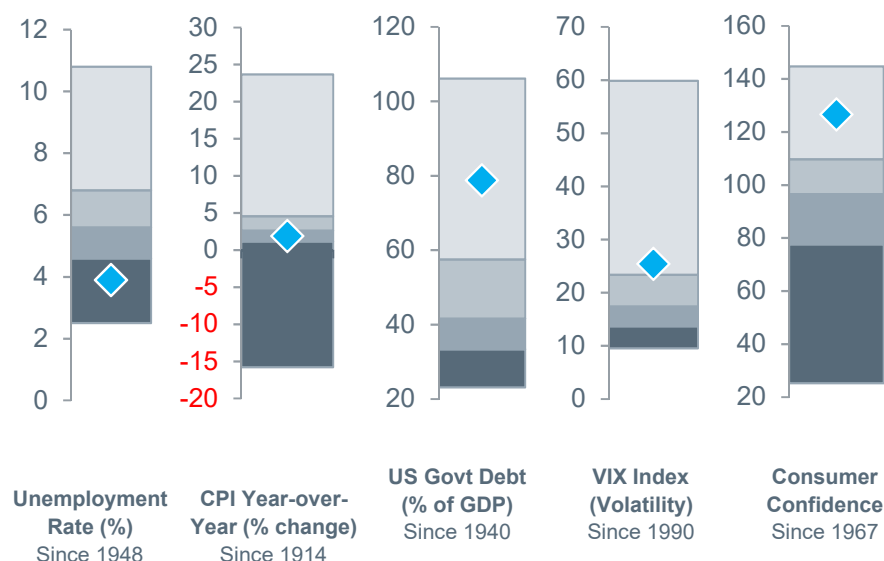
Key Economic Indicators

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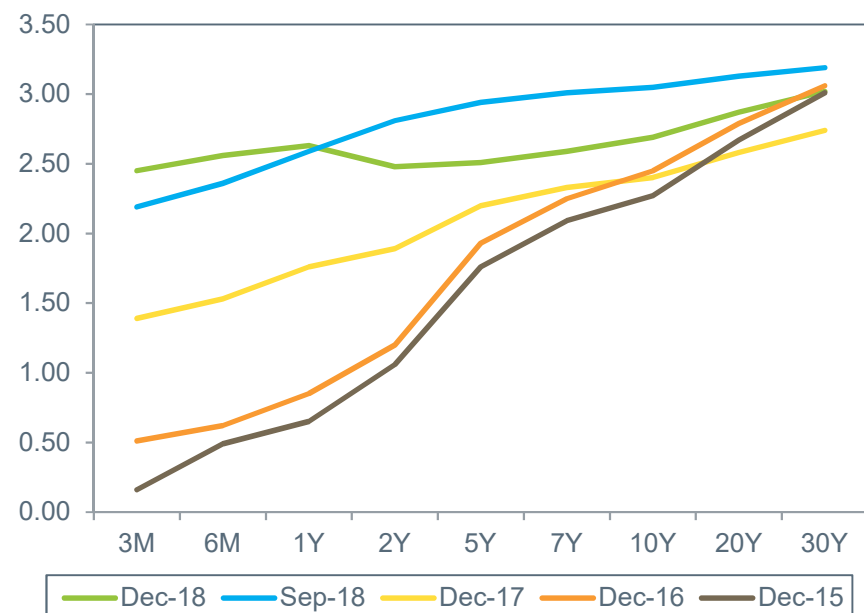
Economic Indicators	Dec-18	Sep-18	Dec-17	Dec-15	20 Yr
Federal Funds Rate (%)	2.40 ▲	2.18	1.33	0.20	1.94
Breakeven Infl. - 1 Yr (%)	-2.84 ▼	1.18	0.85	0.85	N/A
Breakeven Infl. - 10 Yr (%)	1.71 ▼	2.14	1.98	1.58	N/A
CPI YoY (Headline) (%)	1.9 ▼	2.3	2.1	0.7	2.2
Unemployment Rate (%)	3.9 ▲	3.7	4.1	5.0	5.9
Real GDP YoY (%)	N/A	3.0	2.5	2.0	2.2
PMI - Manufacturing	54.3 ▼	59.5	59.4	48.4	52.8
USD Total Wtd Idx	91.79 ▲	90.11	87.47	94.25	86.32
WTI Crude Oil per Barrel (\$)	45.4 ▼	73.3	60.4	37.0	60.1
Gold Spot per Oz (\$)	1,282 ▲	1,193	1,303	1,061	879

Market Performance (%)	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	-13.52	-4.38	-4.38	8.49	13.12
Russell 2000	-20.20	-11.01	-11.01	4.41	11.97
MSCI EAFE (Net)	-12.54	-13.79	-13.79	0.53	6.32
MSCI EAFE SC (Net)	-16.05	-17.89	-17.89	3.06	10.51
MSCI Emg Mkts (Net)	-7.47	-14.58	-14.58	1.65	8.02
Bloomberg US Agg Bond	1.64	0.01	0.01	2.52	3.48
ICE BofAML 3 Mo US T-Bill	0.56	1.87	1.87	0.63	0.37
NCREIF ODCE (Gross)	1.76	8.35	8.35	10.41	7.00
FTSE NAREIT Eq REIT (TR)	-6.73	-4.62	-4.62	7.90	12.12
HFRI FOF Comp	-5.01	-4.09	-4.09	1.38	3.11
Bloomberg Cmtty (TR)	-9.41	-11.25	-11.25	-8.80	-3.78

Key Economic Indicators



Treasury Yield Curve (%)



Fourth Quarter Review

Broad Market

Amid broadening macroeconomic concerns, US equity markets faltered during the fourth quarter as the S&P 500 Index posted returns of -13.5%. Despite a year-to-date return of 10.6% through September, fourth quarter losses drove total S&P 500 Index returns to -4.4% for the year, marking the first negative calendar year result for the index since 2008.

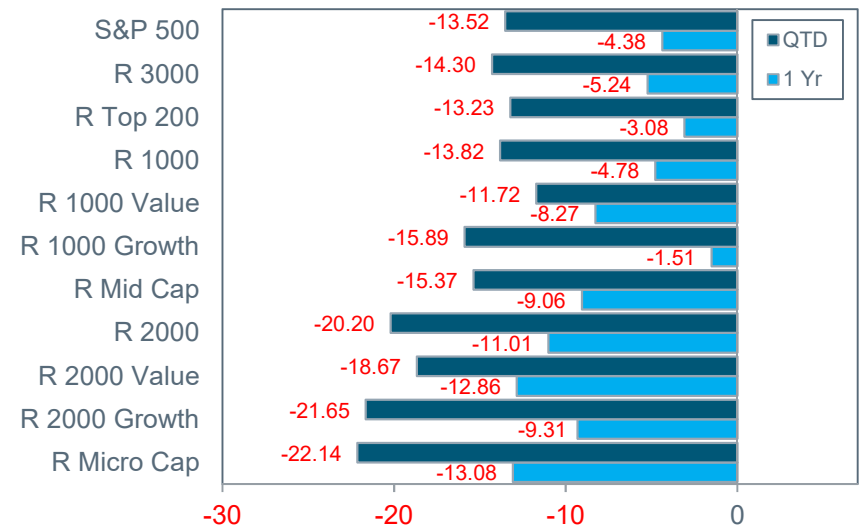
Market Cap

Generally, large cap managers weathered the volatility that characterized the fourth quarter better than small- and mid-cap managers.

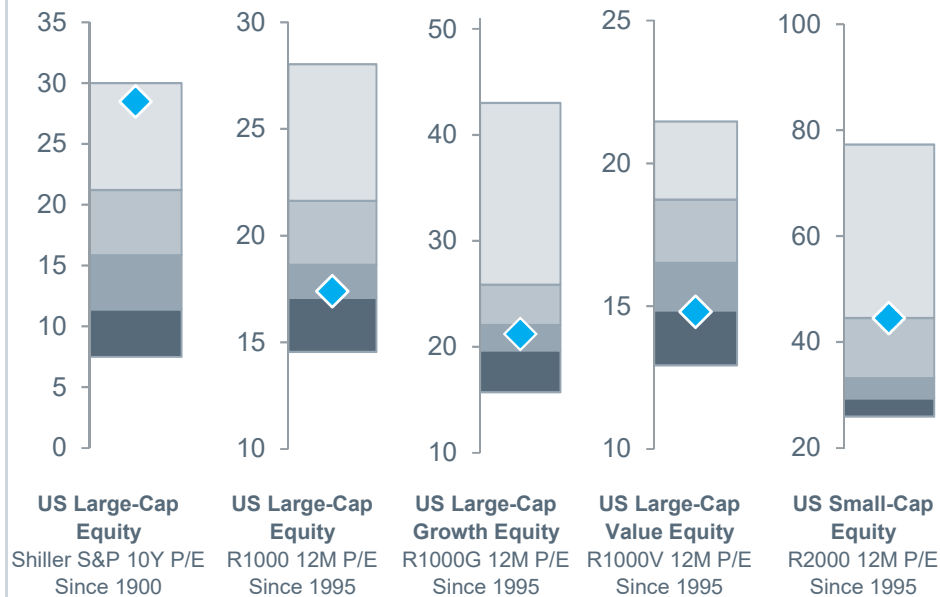
Style and Sector

Value indices outperformed growth indices during the fourth quarter. Active management results were mixed during the quarter, with growth managers performing relatively better across styles and market capitalizations as value generally struggled due to persistent underweights in defensive, income-oriented sectors.

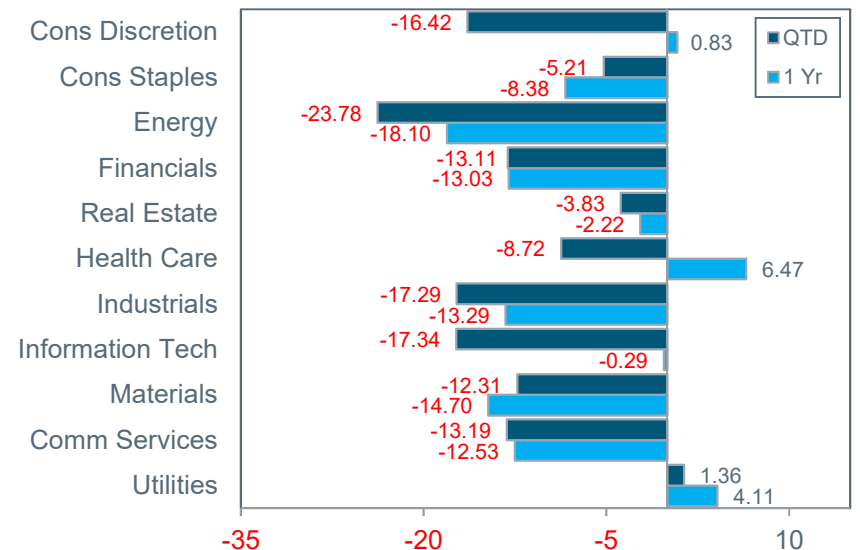
Style and Capitalization Market Performance (%)



Valuations



S&P 500 Index Sector Performance (%)



Fourth Quarter Review

Developed Markets

Developed international markets outperformed domestic markets, but also ended with negative double-digit returns in the fourth quarter. The sell-off was partially induced by volatility in the US market, but also driven by international economic tensions.

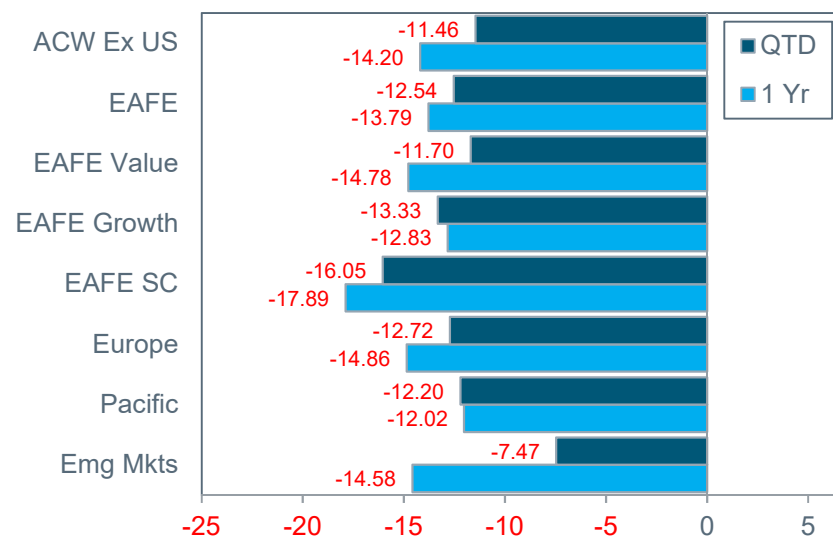
Emerging Markets

The emerging markets were the best performing equity region in the fourth quarter, but still finished the quarter and year in negative territory. Additionally, overall investor sentiment weakened due to continued fears of growth moderation in China.

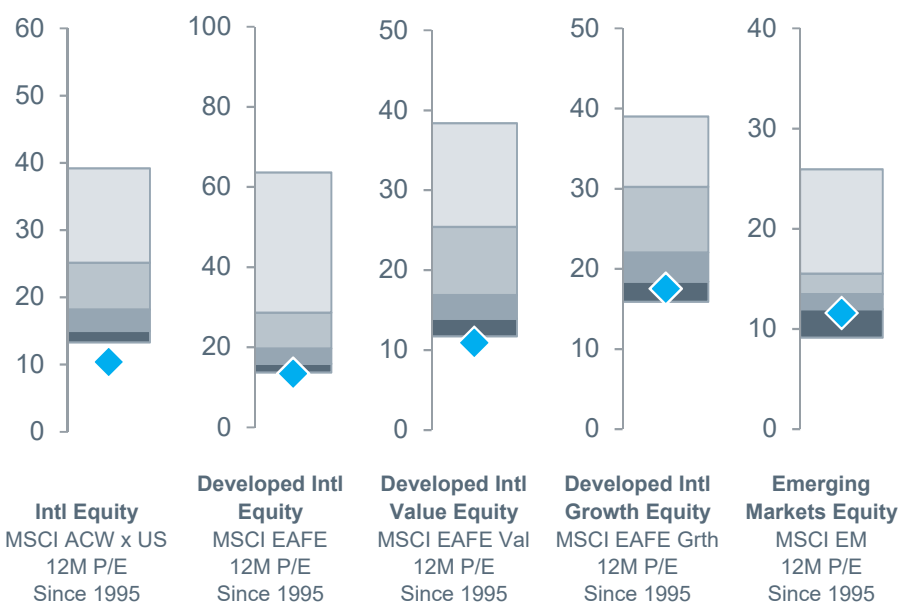
Market Cap & Style

While international stocks were negative in the quarter, value broadly outperformed growth, bucking a long-term trend of growth stock leadership. Large cap outperformed small cap in developed international markets, but in a notable trend difference, emerging markets small cap stocks broadly outperformed the stocks of larger companies.

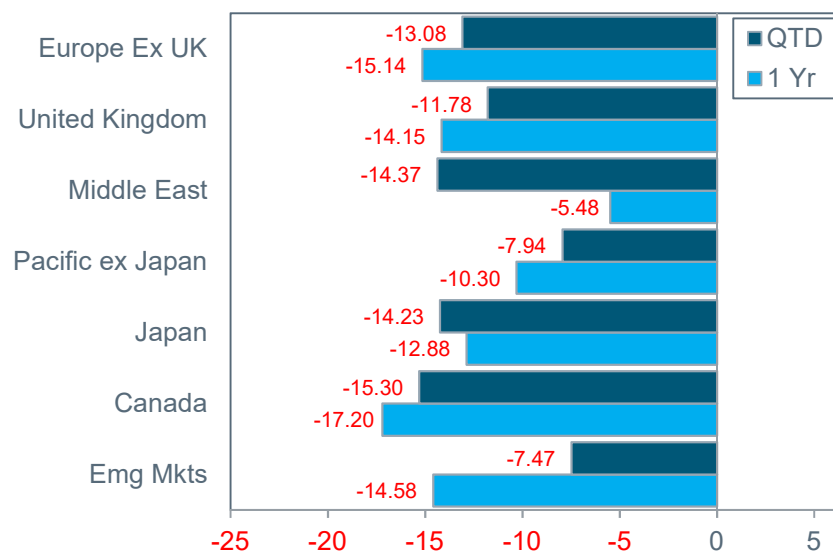
MSCI Style and Capitalization Market Performance (%)



Valuations



MSCI Region Performance (%)



Valuation data courtesy of Bloomberg Professional Service.

P/E metrics shown represent the 5th through 95th percentiles to minimize the effect of outliers.

All returns are shown net of foreign taxes on dividends.

Fourth Quarter Review

Broad Market

The Federal Open Market Committee raised the target range for the federal funds rate by 0.25% for the fourth time in 2018 to 2.25% - 2.5%. The Bloomberg US Agg Bond returned 1.6% during the quarter to end the year roughly flat. The yield spread between 2-year and 10-year maturities, a popular range often cited as a recession indicator, narrowed to 0.21%, the lowest quarter-end value since the second quarter of 2007.

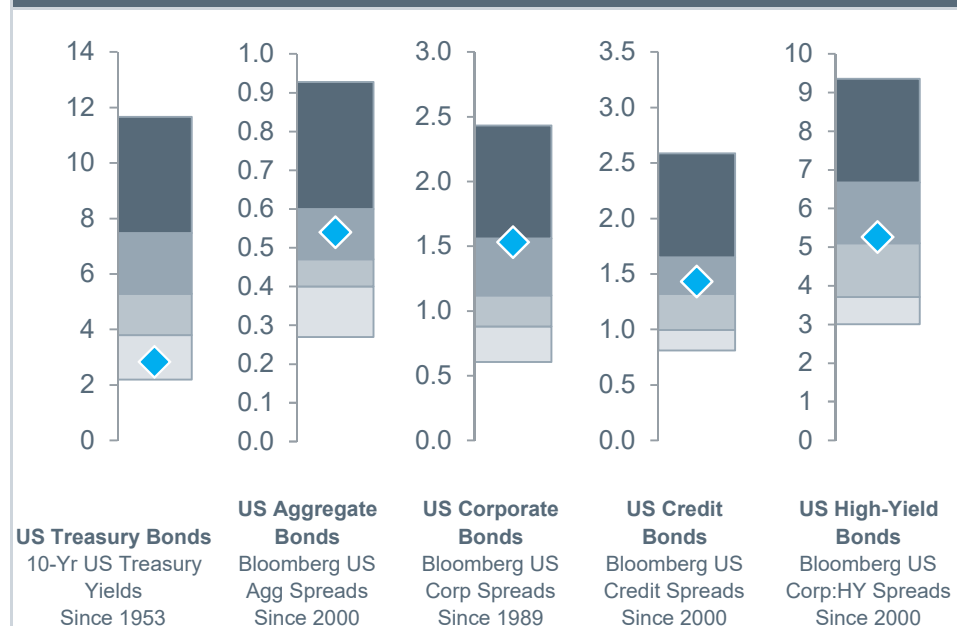
Credit Market

Credit spreads widened over the quarter, as investors sought the safety of Treasuries during the volatile market conditions. Securities rated below investment grade were hit hard during the quarter, with the Bloomberg US High Yield Index returning -4.5%.

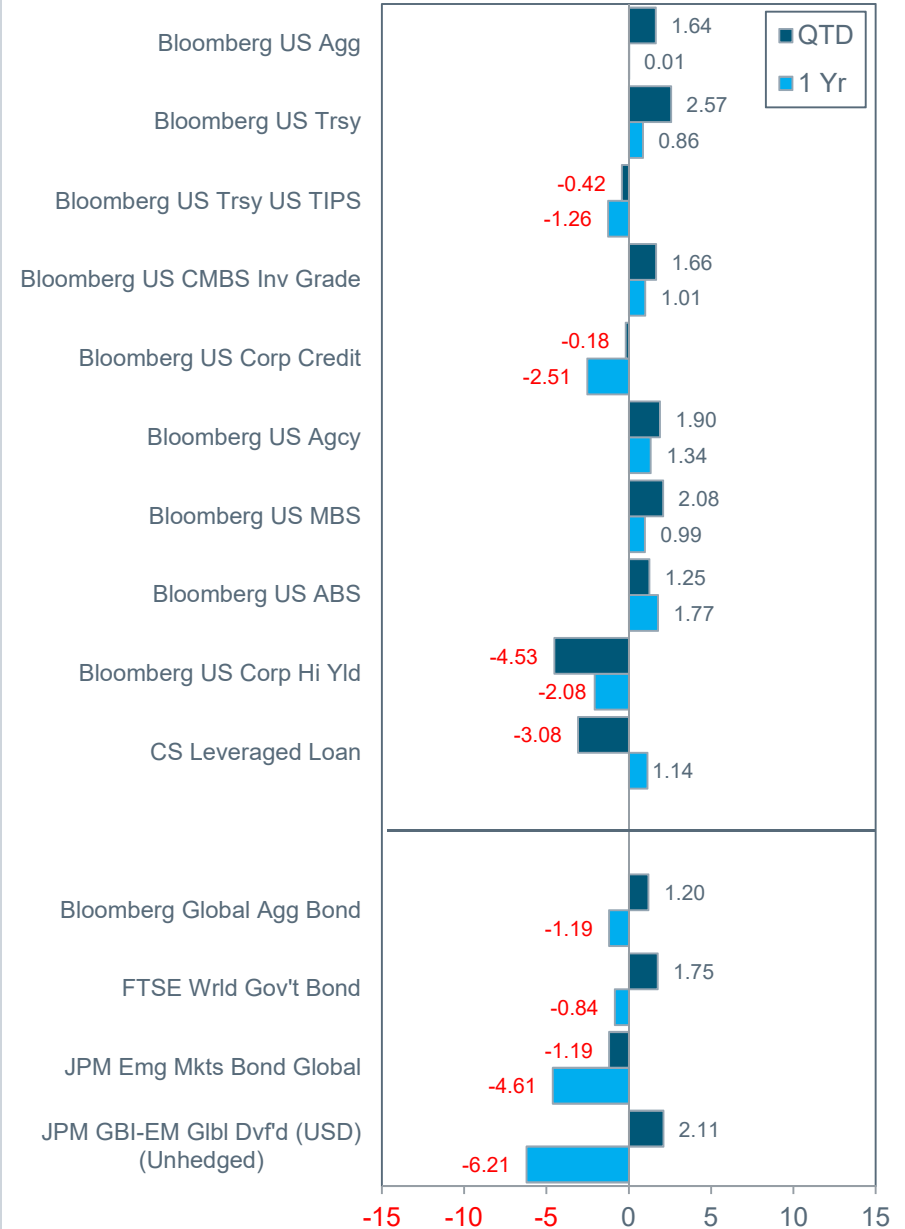
Emerging Market Debt

Non-dollar denominated emerging market debt posted positive returns during the quarter, with the JPM GBI-EM Global Diversified Index returning 2.1%.

Valuations



Fixed Income Performance (%)



Valuation data courtesy of Bloomberg Professional Service.

Valuations shown represent the 5th through 95th percentiles to minimize the effect of outliers.

Fourth Quarter Review - Absolute Return

General Market - Hedge Funds

The hedge fund industry experienced its worst quarter since the third quarter of 2011 as measured by HFRI's Fund Weighted Composite Index, capping off a difficult year for the majority of hedge fund strategies with a return of -4.6%. Equity Long/Short funds in particular were a source of poor relative returns. Specifically, the HFRI Equity Hedge Index fell -8.4% for the quarter and finished the year with a return of -7.1%.

General Market - Global Tactical Asset Allocation (GTAA)

Most GTAA managers underperformed a less diversified blend of 60% US equity and 40% US fixed income in 2018, despite outperforming this benchmark in the fourth quarter. In general, the GTAA managers that achieved the strongest 2018 performance held significant short exposures and fixed income allocations compared to those of their less successful counterparts. The GTAA managers that lagged their peers by the largest margins in 2018 generally held heavier weights in global equities.

Fourth Quarter Review - Real Assets

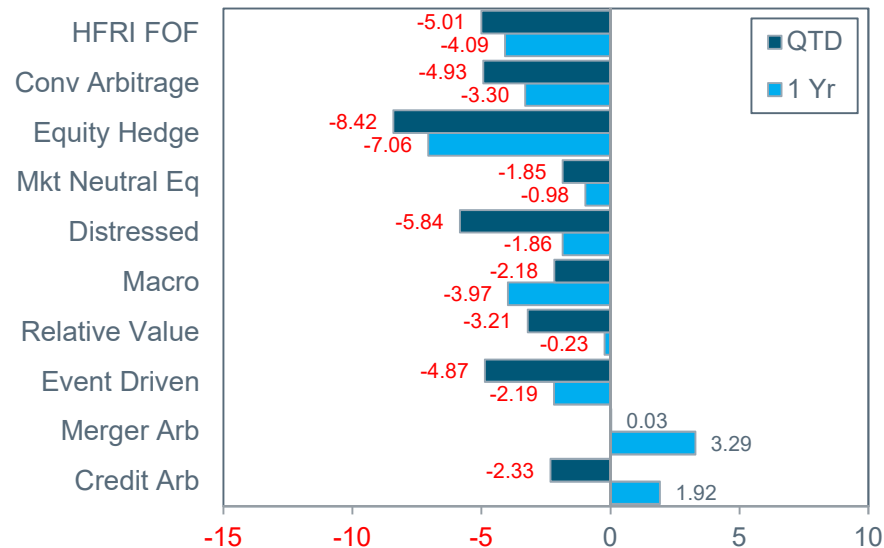
General Market - Diversified Inflation Strategies (DIS)

Performance of DIS managers ranged widely in the fourth quarter, though virtually all managers provided losses in 2018. Poor DIS manager performance during the fourth quarter coincided with both declines in measured inflation and market-based expectations of future inflation levels. Managers with larger allocations to TIPS experienced significantly less downside participation. Among managers with lower levels of TIPS exposure, those with larger natural resource equity and commodity exposure lagged peers by the largest margins.

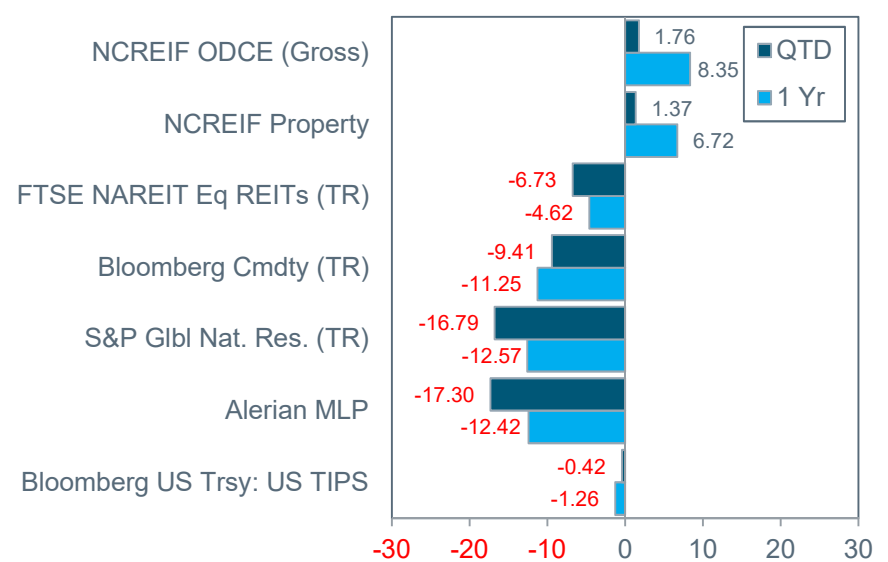
General Market - Real Estate

Core private real estate returned 1.8% during the fourth quarter, as tracked by the NCREIF-ODCE Index, with the total return comprised of 1.0% income and 0.7% price appreciation. Investors in publicly traded real estate significantly underperformed their private market counterparts during the fourth quarter. Publicly traded real estate experienced heightened price volatility over the quarter, ending the year with a negative return, measured by FTSE/NAREIT All REITs Index, of -6.1%.

HFRI Hedge Fund Performance (%)



Real Asset Performance (%)



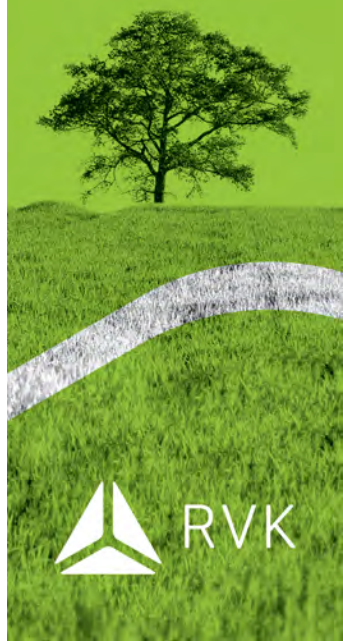
Annual Asset Class Performance

As of December 31, 2018

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Best ↑ 															

NCREIF ODCE (Gross) performance is reported quarterly; performance is shown N/A in interim-quarter months.

Total Fund - Retirement

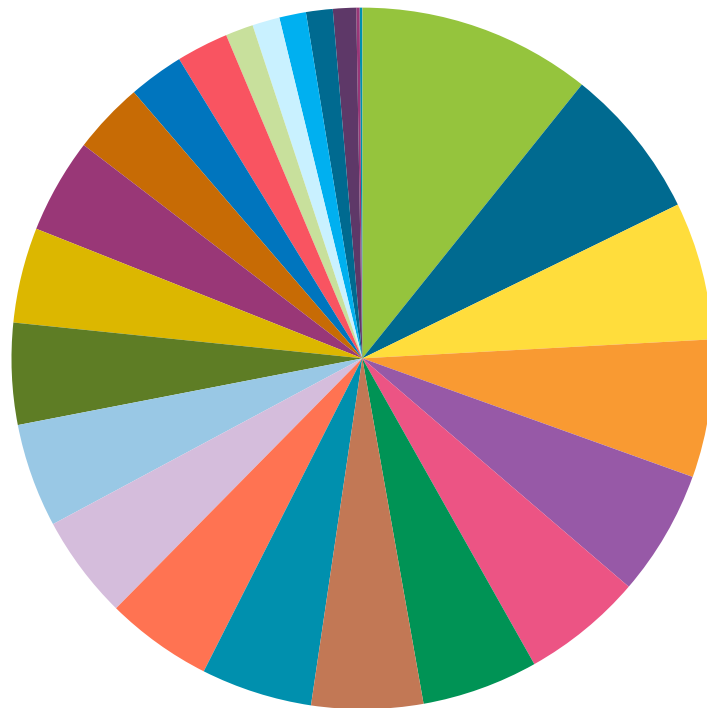


Water and Power Employees' Retirement Plan
Asset Allocation by Manager and Schedule of Investable Assets - Retirement

As of December 31, 2018

Asset Allocation by Manager

December 31, 2018 : \$11,662,189,744



	Market Value (\$)	Allocation (%)
BlackRock Russell 1000 Index (CF)	1,253,930,042	10.75
Real Estate	819,567,572	7.03
JP Morgan Principal Protection (SA)	741,038,541	6.35
Wells Principal Protection (SA)	740,752,077	6.35
T. Rowe Price Large Cap Growth (SA)	675,891,695	5.80
Neuberger Unconstrained (SA)	649,172,758	5.57
Macquarie Unconstrained (SA)	624,980,227	5.36
Blackstone Hope St. LP (CF) (Lagged-1 Mo) - Net	598,323,815	5.13
Fred Alger Large Cap Growth (SA)	597,705,170	5.13
Private Equity	573,366,105	4.92
MFS Developed Int'l (SA)	558,827,821	4.79
T. Rowe Price Large Cap Value (SA)	557,667,657	4.78
MFS Large Cap Value (SA)	545,604,374	4.68
BlackRock Developed Int'l - Passive (CF)	512,390,443	4.39
Fidelity Developed Int'l (SA)	510,134,649	4.37
WAMCO (SA)	386,029,323	3.31
Wellington Emerging (SA)	297,390,858	2.55
LA Capital Emerging (CF)	279,486,855	2.40
Earnest Partners Small Cap Value (SA)	149,040,210	1.28
Emerald Small Cap Growth (SA)	147,435,134	1.26
Pacific Asset Bank Loans (SA)	143,390,497	1.23
Cash Equivalents	142,721,344	1.22
Invesco Commodity (CF)	124,484,768	1.07
Molpus IV (CF) (Lagged-1 Qtr)	18,197,673	0.16
Hancock Timberland (CF) (Lagged-1 Qtr)	13,284,025	0.11
MS Convergent (CF) (Lagged-1 Mo)	1,376,113	0.01

Schedule of Investable Assets - FYTD

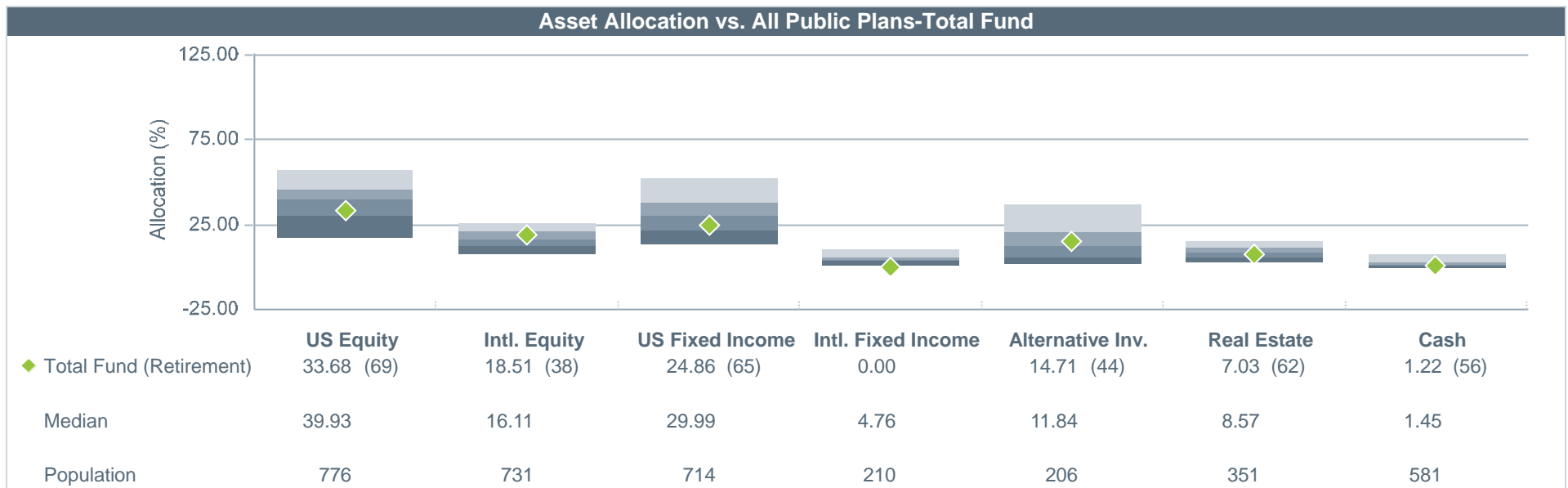
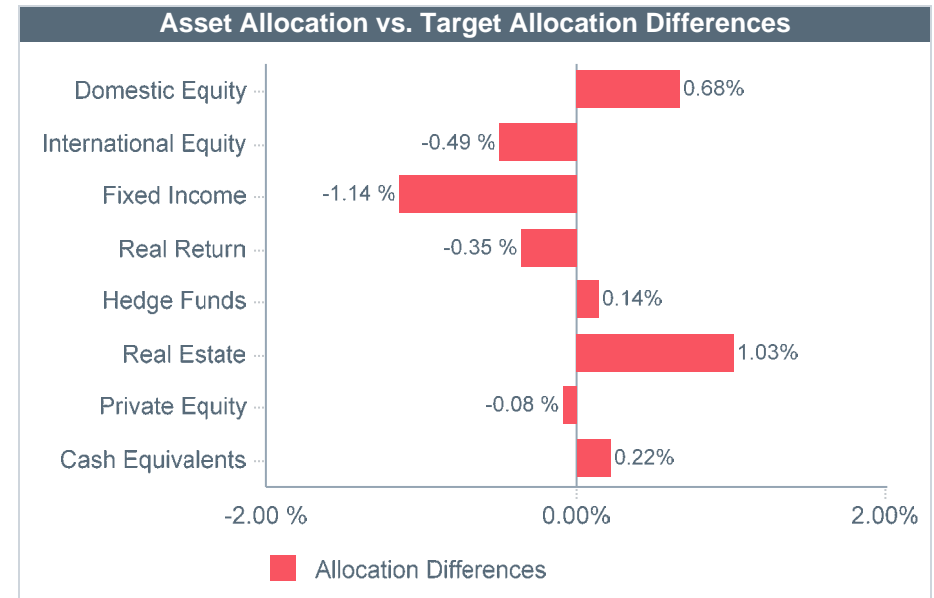
Periods Ending	Beginning Market Value (\$)	Gain/Loss (\$)	Ending Market Value (\$)	% Return	Unit Value
FYTD	12,225,869,300	-563,679,555	11,662,189,744	-4.31	95.69

Allocations shown may not sum up to 100% exactly due to rounding. Performance shown is gross of fees. Fiscal year ends 06/30.

Water and Power Employees' Retirement Plan
Total Fund (Retirement) vs. All Public Plans-Total Fund
Asset Allocation vs. Target and Plan Sponsor Peer Group - Retirement

As of December 31, 2018

Asset Allocation vs. Target Allocation			
	Market Value (\$)	Allocation (%)	Target (%)
Domestic Equity	3,927,274,282	33.68	33.00
International Equity	2,158,230,626	18.51	19.00
Fixed Income	2,899,334,100	24.86	26.00
Real Return	541,995,789	4.65	5.00
Hedge Funds	599,699,928	5.14	5.00
Real Estate	819,567,572	7.03	6.00
Private Equity	573,366,105	4.92	5.00
Cash Equivalents	142,721,344	1.22	1.00
Total Fund	11,662,189,744	100.00	100.00



Parentheses contain percentile ranks. Allocations shown may not sum up to 100% exactly due to rounding.

**Water and Power Employees' Retirement Plan
Comparative Performance - Retirement**

As of December 31, 2018

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
Total Fund (Retirement)	-7.37	-4.31	-2.84	6.59	5.64	8.19	8.92	16.53	6.94	1.68	6.18	01/01/2005
Retirement Policy Benchmark	-6.37	-3.49	-2.52	6.77	5.53	7.89	8.80	15.21	8.37	0.70	6.02	
Difference	-1.00	-0.82	-0.32	-0.18	0.11	0.30	0.12	1.32	-1.43	0.98	0.16	
All Public Plans-Total Fund Median	-7.75	-5.23	-4.32	5.85	4.73	7.35	8.46	15.21	7.62	0.00	5.92	
Rank	42	34	25	24	16	21	30	28	69	11	31	
Domestic Equity	-14.71	-8.39	-3.99	9.79	8.58	13.45	13.73	23.44	11.68	1.96	7.34	04/01/2001
Russell 3000 (Blended) (R)	-14.30	-8.20	-5.24	8.97	7.91	12.46	13.18	21.13	12.74	0.48	6.75	
Difference	-0.41	-0.19	1.25	0.82	0.67	0.99	0.55	2.31	-1.06	1.48	0.59	
All Public Plans-US Equity Segment Median	-14.54	-9.20	-5.86	8.56	7.40	12.11	13.05	20.31	12.98	0.31	6.94	
Rank	56	29	8	7	9	2	7	8	78	7	25	
MFS Large Cap Value (SA)	-11.51	-6.27	-9.67	7.21	6.62	11.87	11.62	17.82	15.80	-0.06	8.41	03/01/2004
Russell 1000 Val Index	-11.72	-6.69	-8.27	6.95	5.95	11.02	11.18	13.66	17.34	-3.83	6.84	
Difference	0.21	0.42	-1.40	0.26	0.67	0.85	0.44	4.16	-1.54	3.77	1.57	
IM U.S. Large Cap Value Equity (SA+CF) Median	-13.57	-8.35	-8.39	7.27	6.23	11.40	11.94	17.22	14.47	-2.27	7.84	
Rank	26	31	63	53	38	37	63	44	38	28	28	
MFS Large Cap Value (SA) - Net	-11.57	-6.41	-9.94	6.89	6.30	11.53	11.27	17.46	15.45	-0.38	8.05	03/01/2004
Russell 1000 Val Index	-11.72	-6.69	-8.27	6.95	5.95	11.02	11.18	13.66	17.34	-3.83	6.84	
Difference	0.15	0.28	-1.67	-0.06	0.35	0.51	0.09	3.80	-1.89	3.45	1.21	
T. Rowe Price Large Cap Value (SA)	-11.58	-7.24	-7.63	8.10	7.04	12.26	12.76	16.74	17.14	-1.90	8.32	10/01/2004
Russell 1000 Val Index	-11.72	-6.69	-8.27	6.95	5.95	11.02	11.18	13.66	17.34	-3.83	7.01	
Difference	0.14	-0.55	0.64	1.15	1.09	1.24	1.58	3.08	-0.20	1.93	1.31	
IM U.S. Large Cap Value Equity (SA+CF) Median	-13.57	-8.35	-8.39	7.27	6.23	11.40	11.94	17.22	14.47	-2.27	8.09	
Rank	27	39	41	34	32	24	29	59	26	46	37	
T. Rowe Price Large Cap Value (SA) - Net	-11.64	-7.38	-7.90	7.78	6.73	11.93	12.41	16.40	16.80	-2.19	7.96	10/01/2004
Russell 1000 Val Index	-11.72	-6.69	-8.27	6.95	5.95	11.02	11.18	13.66	17.34	-3.83	7.01	
Difference	0.08	-0.69	0.37	0.83	0.78	0.91	1.23	2.74	-0.54	1.64	0.95	

Performance shown is gross of fees, except where noted. Performance is annualized for periods greater than one year. Inception dates shown represent the first full month following initial funding. Fiscal year ends 06/30. Please see the Addendum for custom index descriptions.

Water and Power Employees' Retirement Plan
Comparative Performance - Retirement

As of December 31, 2018

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
BlackRock Russell 1000 Index (CF)	-13.80	-7.41	-4.74	9.12	8.24	12.67	13.31	21.70	12.09	0.94	8.55	09/01/2003
Russell 1000 Index	-13.82	-7.42	-4.78	9.09	8.21	12.63	13.28	21.69	12.05	0.92	8.49	
Difference	0.02	0.01	0.04	0.03	0.03	0.04	0.03	0.01	0.04	0.02	0.06	
IM U.S. Large Cap Core Equity (SA+CF) Median	-13.83	-7.66	-5.20	8.47	8.15	12.63	13.05	21.83	10.52	1.43	8.80	
Rank	50	46	43	36	50	49	39	53	31	57	68	
BlackRock Russell 1000 Index (CF) - Net	-13.80	-7.41	-4.74	9.12	8.24	12.67	13.29	21.70	12.09	0.93	8.49	09/01/2003
Russell 1000 Index	-13.82	-7.42	-4.78	9.09	8.21	12.63	13.28	21.69	12.05	0.92	8.49	
Difference	0.02	0.01	0.04	0.03	0.03	0.04	0.01	0.01	0.04	0.01	0.00	
Fred Alger Large Cap Growth (SA)	-20.46	-10.75	3.17	10.23	8.77	13.39	15.09	29.32	0.38	1.73	8.88	03/01/2004
Russell 1000 Grth Index	-15.89	-8.17	-1.51	11.15	10.40	14.14	15.29	30.21	7.08	5.67	8.59	
Difference	-4.57	-2.58	4.68	-0.92	-1.63	-0.75	-0.20	-0.89	-6.70	-3.94	0.29	
IM U.S. Large Cap Growth Equity (SA+CF) Median	-15.14	-8.38	-1.17	10.19	9.66	13.77	14.90	28.11	4.65	5.07	8.83	
Rank	98	83	17	50	70	61	45	42	85	77	47	
Fred Alger Large Cap Growth (SA) - Net	-20.52	-10.88	2.88	9.91	8.47	13.07	14.72	28.95	0.09	1.44	8.53	03/01/2004
Russell 1000 Grth Index	-15.89	-8.17	-1.51	11.15	10.40	14.14	15.29	30.21	7.08	5.67	8.59	
Difference	-4.63	-2.71	4.39	-1.24	-1.93	-1.07	-0.57	-1.26	-6.99	-4.23	-0.06	
T. Rowe Price Large Cap Growth (SA)	-13.16	-6.67	4.79	14.83	13.24	18.21	N/A	36.61	5.78	12.48	14.72	04/01/2010
Russell 1000 Grth Index	-15.89	-8.17	-1.51	11.15	10.40	14.14	15.29	30.21	7.08	5.67	12.89	
Difference	2.73	1.50	6.30	3.68	2.84	4.07	N/A	6.40	-1.30	6.81	1.83	
IM U.S. Large Cap Growth Equity (SA+CF) Median	-15.14	-8.38	-1.17	10.19	9.66	13.77	14.90	28.11	4.65	5.07	12.49	
Rank	26	30	10	3	6	3	N/A	6	41	7	7	
T. Rowe Price Large Cap Growth (SA) - Net	-13.23	-6.82	4.46	14.46	12.88	17.83	N/A	36.17	5.42	12.11	14.34	04/01/2010
Russell 1000 Grth Index	-15.89	-8.17	-1.51	11.15	10.40	14.14	15.29	30.21	7.08	5.67	12.89	
Difference	2.66	1.35	5.97	3.31	2.48	3.69	N/A	5.96	-1.66	6.44	1.45	
Earnest Partners Small Cap Value (SA)	-18.77	-16.49	-14.73	9.41	7.29	12.10	13.30	23.07	24.79	-2.28	8.07	12/01/2004
Russell 2000 Val Index	-18.67	-17.36	-12.86	7.37	3.61	9.57	10.40	7.84	31.74	-7.47	6.04	
Difference	-0.10	0.87	-1.87	2.04	3.68	2.53	2.90	15.23	-6.95	5.19	2.03	
IM U.S. Small Cap Value Equity (SA+CF) Median	-19.21	-17.94	-14.36	6.34	4.10	10.47	13.10	11.61	26.17	-4.28	7.94	
Rank	43	37	54	17	7	17	44	4	59	31	48	
Earnest Partners Small Cap Value (SA) - Net	-18.88	-16.72	-15.20	8.79	6.70	11.47	12.63	22.39	24.08	-2.83	7.40	12/01/2004
Russell 2000 Val Index	-18.67	-17.36	-12.86	7.37	3.61	9.57	10.40	7.84	31.74	-7.47	6.04	
Difference	-0.21	0.64	-2.34	1.42	3.09	1.90	2.23	14.55	-7.66	4.64	1.36	

Performance shown is gross of fees, except where noted. Performance is annualized for periods greater than one year. Inception dates shown represent the first full month following initial funding. Fiscal year ends 06/30. Please see the Addendum for custom index descriptions.



**Water and Power Employees' Retirement Plan
Comparative Performance - Retirement**

As of December 31, 2018

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
Emerald Small Cap Growth (SA)	-22.24	-16.69	-10.54	8.44	N/A	N/A	N/A	29.53	10.02	N/A	6.30	12/01/2015
Russell 2000 Grth Index	-21.65	-17.33	-9.31	7.24	5.13	11.25	13.52	22.17	11.32	-1.38	5.36	
Difference	-0.59	0.64	-1.23	1.20	N/A	N/A	N/A	7.36	-1.30	N/A	0.94	
IM U.S. Small Cap Growth Equity (SA+CF) Median	-20.70	-14.96	-4.28	9.61	6.44	12.84	14.93	23.91	11.40	-0.74	7.92	
Rank	72	76	84	65	N/A	N/A	N/A	21	58	N/A	68	
Emerald Small Cap Growth (SA) - Net	-22.35	-16.94	-11.06	7.79	N/A	N/A	N/A	28.77	9.37	N/A	5.67	12/01/2015
Russell 2000 Grth Index	-21.65	-17.33	-9.31	7.24	5.13	11.25	13.52	22.17	11.32	-1.38	5.36	
Difference	-0.70	0.39	-1.75	0.55	N/A	N/A	N/A	6.60	-1.95	N/A	0.31	
International Equity	-11.72	-10.85	-13.46	4.89	2.38	6.24	7.08	29.34	3.09	-1.39	5.31	07/01/2004
MSCI ACW Ex US IM Index (Blended)	-11.88	-11.53	-14.76	4.39	0.85	5.07	6.97	27.81	4.41	-4.60	5.40	
Difference	0.16	0.68	1.30	0.50	1.53	1.17	0.11	1.53	-1.32	3.21	-0.09	
All Public Plans-Intl. Equity Segment Median	-12.05	-11.23	-13.66	4.79	1.67	6.24	7.66	28.83	3.99	-2.43	6.09	
Rank	40	36	46	46	23	52	73	39	69	30	86	
BlackRock Developed Int'l - Passive (CF)	-13.25	-12.34	-14.30	3.68	1.00	N/A	N/A	25.71	3.45	-1.62	5.00	10/01/2012
MSCI Wrld Ex US IM Index (USD) (Net)	-13.28	-12.43	-14.68	3.21	0.59	5.55	6.68	25.17	2.95	-1.95	4.60	
Difference	0.03	0.09	0.38	0.47	0.41	N/A	N/A	0.54	0.50	0.33	0.40	
IM All EAFE (SA+CF) Median	-13.50	-12.43	-14.52	2.95	1.15	6.78	7.76	26.38	1.06	1.22	5.51	
Rank	46	49	49	36	60	N/A	N/A	59	22	75	70	
BlackRock Developed Int'l - Passive (CF) - Net	-13.25	-12.34	-14.30	3.68	0.99	N/A	N/A	25.71	3.45	-1.64	4.98	10/01/2012
MSCI Wrld Ex US IM Index (USD) (Net)	-13.28	-12.43	-14.68	3.21	0.59	5.55	6.68	25.17	2.95	-1.95	4.60	
Difference	0.03	0.09	0.38	0.47	0.40	N/A	N/A	0.54	0.50	0.31	0.38	
MFS Developed Int'l (SA)	-10.82	-8.71	-8.75	5.00	4.68	N/A	N/A	27.13	-0.22	7.17	9.43	08/01/2012
MSCI Wrld Ex US IM Index (USD) (Net)	-13.28	-12.43	-14.68	3.21	0.59	5.55	6.68	25.17	2.95	-1.95	5.46	
Difference	2.46	3.72	5.93	1.79	4.09	N/A	N/A	1.96	-3.17	9.12	3.97	
IM All EAFE (SA+CF) Median	-13.50	-12.43	-14.52	2.95	1.15	6.78	7.76	26.38	1.06	1.22	6.36	
Rank	17	11	6	15	5	N/A	N/A	42	69	6	3	
MFS Developed Int'l (SA) - Net	-10.90	-8.87	-9.05	4.64	4.33	N/A	N/A	26.70	-0.56	6.83	9.07	08/01/2012
MSCI Wrld Ex US IM Index (USD) (Net)	-13.28	-12.43	-14.68	3.21	0.59	5.55	6.68	25.17	2.95	-1.95	5.46	
Difference	2.38	3.56	5.63	1.43	3.74	N/A	N/A	1.53	-3.51	8.78	3.61	

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Water and Power Employees' Retirement Plan
Comparative Performance - Retirement

As of December 31, 2018

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
Fidelity Developed Int'l (SA)	-14.56	-13.50	-14.99	1.85	0.07	5.93	6.86	25.16	-0.70	0.99	4.86	12/01/2004
International Developed Blend	-13.28	-12.43	-14.68	3.21	0.59	5.55	6.68	25.17	2.95	-1.95	4.03	
Difference	-1.28	-1.07	-0.31	-1.36	-0.52	0.38	0.18	-0.01	-3.65	2.94	0.83	
IM All EAFE (SA+CF) Median	-13.50	-12.43	-14.52	2.95	1.15	6.78	7.76	26.38	1.06	1.22	5.20	
Rank	74	77	59	77	84	79	73	67	73	54	68	
Fidelity Developed Int'l (SA) - Net	-14.62	-13.62	-15.23	1.56	-0.20	5.63	6.54	24.81	-0.98	0.73	4.51	12/01/2004
International Developed Blend	-13.28	-12.43	-14.68	3.21	0.59	5.55	6.68	25.17	2.95	-1.95	4.03	
Difference	-1.34	-1.19	-0.55	-1.65	-0.79	0.08	-0.14	-0.36	-3.93	2.68	0.48	
LA Capital Emerging (CF)	-8.75	-8.76	-15.67	9.07	2.00	N/A	N/A	37.13	12.18	-15.10	2.35	10/01/2012
MSCI Emg Mkts IM Index (USD) (Net)	-7.44	-8.79	-15.05	8.51	1.56	3.29	8.24	36.83	9.90	-13.86	1.76	
Difference	-1.31	0.03	-0.62	0.56	0.44	N/A	N/A	0.30	2.28	-1.24	0.59	
IM Emerging Markets Equity (SA+CF) Median	-7.28	-9.48	-15.23	8.69	2.25	4.71	9.38	36.92	10.16	-12.59	3.07	
Rank	77	43	55	44	60	N/A	N/A	49	35	72	70	
LA Capital Emerging (CF) - Net	-8.90	-9.06	-16.21	8.36	1.35	N/A	N/A	36.24	11.46	-15.65	1.70	10/01/2012
MSCI Emg Mkts IM Index (USD) (Net)	-7.44	-8.79	-15.05	8.51	1.56	3.29	8.24	36.83	9.90	-13.86	1.76	
Difference	-1.46	-0.27	-1.16	-0.15	-0.21	N/A	N/A	-0.59	1.56	-1.79	-0.06	
Wellington Emerging (SA)	-8.23	-9.36	-15.55	N/A	N/A	N/A	N/A	41.01	N/A	N/A	6.02	10/01/2016
MSCI Emg Mkts IM Index (USD) (Net)	-7.44	-8.79	-15.05	8.51	1.56	3.29	8.24	36.83	9.90	-13.86	4.78	
Difference	-0.79	-0.57	-0.50	N/A	N/A	N/A	N/A	4.18	N/A	N/A	1.24	
IM Emerging Markets Equity (SA+CF) Median	-7.28	-9.48	-15.23	8.69	2.25	4.71	9.38	36.92	10.16	-12.59	4.58	
Rank	68	48	54	N/A	N/A	N/A	N/A	29	N/A	N/A	23	
Wellington Emerging (SA) - Net	-8.36	-9.62	-16.03	N/A	N/A	N/A	N/A	40.21	N/A	N/A	5.42	10/01/2016
MSCI Emg Mkts IM Index (USD) (Net)	-7.44	-8.79	-15.05	8.51	1.56	3.29	8.24	36.83	9.90	-13.86	4.78	
Difference	-0.92	-0.83	-0.98	N/A	N/A	N/A	N/A	3.38	N/A	N/A	0.64	

Performance shown is gross of fees, except where noted. Performance is annualized for periods greater than one year. Inception dates shown represent the first full month following initial funding. Fiscal year ends 06/30. Please see the Addendum for custom index descriptions.

**Water and Power Employees' Retirement Plan
Comparative Performance - Retirement**

As of December 31, 2018

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
Fixed Income	-0.08	0.66	-0.23	3.18	3.26	3.28	5.29	4.88	5.00	0.78	5.09	04/01/2001
Fixed Income Custom Index (R)	0.38	1.06	0.02	3.24	3.06	2.77	4.23	4.12	5.65	0.11	4.74	
Difference	-0.46	-0.40	-0.25	-0.06	0.20	0.51	1.06	0.76	-0.65	0.67	0.35	
All Public Plans-US Fixed Income Segment Median	0.60	1.02	-0.24	2.96	2.92	2.93	4.84	4.60	4.72	0.18	4.86	
Rank	72	68	50	45	35	38	32	44	43	33	17	
JP Morgan Principal Protection (SA)	1.85	1.91	1.37	1.75	N/A	N/A	N/A	1.86	2.02	N/A	1.61	09/01/2015
Bloomberg US Int Agg Ex Crdt Index	2.13	2.04	1.21	1.47	1.96	1.55	2.69	1.80	1.40	1.32	1.37	
Difference	-0.28	-0.13	0.16	0.28	N/A	N/A	N/A	0.06	0.62	N/A	0.24	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	1.40	1.60	0.07	2.48	2.86	2.63	4.41	4.05	3.11	0.82	2.28	
Rank	13	11	5	97	N/A	N/A	N/A	100	97	N/A	99	
JP Morgan Principal Protection (SA) - Net	1.82	1.86	1.27	1.65	N/A	N/A	N/A	1.76	1.92	N/A	1.51	09/01/2015
Bloomberg US Int Agg Ex Crdt Index	2.13	2.04	1.21	1.47	1.96	1.55	2.69	1.80	1.40	1.32	1.37	
Difference	-0.31	-0.18	0.06	0.18	N/A	N/A	N/A	-0.04	0.52	N/A	0.14	
Wells Principal Protection (SA)	2.11	2.06	1.27	1.69	N/A	N/A	N/A	1.94	1.86	N/A	1.56	09/01/2015
Bloomberg US Int Agg Ex Crdt Index	2.13	2.04	1.21	1.47	1.96	1.55	2.69	1.80	1.40	1.32	1.37	
Difference	-0.02	0.02	0.06	0.22	N/A	N/A	N/A	0.14	0.46	N/A	0.19	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	1.40	1.60	0.07	2.48	2.86	2.63	4.41	4.05	3.11	0.82	2.28	
Rank	8	6	6	99	N/A	N/A	N/A	100	98	N/A	100	
Wells Principal Protection (SA) - Net	2.08	2.00	1.16	1.57	N/A	N/A	N/A	1.83	1.73	N/A	1.44	09/01/2015
Bloomberg US Int Agg Ex Crdt Index	2.13	2.04	1.21	1.47	1.96	1.55	2.69	1.80	1.40	1.32	1.37	
Difference	-0.05	-0.04	-0.05	0.10	N/A	N/A	N/A	0.03	0.33	N/A	0.07	
Macquarie Unconstrained (SA)	-1.56	-0.67	-2.73	4.37	N/A	N/A	N/A	7.86	8.37	N/A	3.39	09/01/2015
67% B Global Credit/33% B Global High Yield	-1.16	0.22	-1.44	5.00	3.96	5.16	7.90	6.73	10.04	-0.34	4.18	
Difference	-0.40	-0.89	-1.29	-0.63	N/A	N/A	N/A	1.13	-1.67	N/A	-0.79	
IM Global Fixed Income (SA+CF) Median	-1.07	-0.53	-1.82	3.71	2.35	3.23	4.74	7.62	5.75	-2.27	3.15	
Rank	58	53	67	38	N/A	N/A	N/A	46	34	N/A	41	
Macquarie Unconstrained (SA) - Net	-1.60	-0.75	-2.90	4.19	N/A	N/A	N/A	7.67	8.19	N/A	3.21	09/01/2015
67% B Global Credit/33% B Global High Yield	-1.16	0.22	-1.44	5.00	3.96	5.16	7.90	6.73	10.04	-0.34	4.18	
Difference	-0.44	-0.97	-1.46	-0.81	N/A	N/A	N/A	0.94	-1.85	N/A	-0.97	

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**Water and Power Employees' Retirement Plan
Comparative Performance - Retirement**

As of December 31, 2018

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
Neuberger Unconstrained (SA)	-2.29	-0.36	-1.27	5.76	N/A	N/A	N/A	9.26	9.65	N/A	5.06	09/01/2015
67% B Global Credit/33% B Global High Yield	-1.16	0.22	-1.44	5.00	3.96	5.16	7.90	6.73	10.04	-0.34	4.18	
Difference	-1.13	-0.58	0.17	0.76	N/A	N/A	N/A	2.53	-0.39	N/A	0.88	
IM Global Fixed Income (SA+CF) Median	-1.07	-0.53	-1.82	3.71	2.35	3.23	4.74	7.62	5.75	-2.27	3.15	
Rank	67	46	39	20	N/A	N/A	N/A	25	30	N/A	10	
Neuberger Unconstrained (SA) - Net	-2.35	-0.48	-1.49	5.52	N/A	N/A	N/A	9.01	9.40	N/A	4.81	09/01/2015
67% B Global Credit/33% B Global High Yield	-1.16	0.22	-1.44	5.00	3.96	5.16	7.90	6.73	10.04	-0.34	4.18	
Difference	-1.19	-0.70	-0.05	0.52	N/A	N/A	N/A	2.28	-0.64	N/A	0.63	
Pacific Asset Bank Loans (SA)	-4.00	-2.11	-0.13	4.77	N/A	N/A	N/A	5.48	9.18	N/A	4.08	09/01/2015
CS Lvg'd Loan Index	-3.08	-1.21	1.14	5.03	3.33	4.58	8.30	4.25	9.88	-0.38	3.68	
Difference	-0.92	-0.90	-1.27	-0.26	N/A	N/A	N/A	1.23	-0.70	N/A	0.40	
IM U.S. Bank Loans (SA+CF) Median	-3.21	-1.39	0.78	4.76	3.41	4.73	8.11	4.46	9.51	0.68	3.62	
Rank	96	97	95	47	N/A	N/A	N/A	7	59	N/A	19	
Pacific Asset Bank Loans (SA) - Net	-4.07	-2.26	-0.45	4.44	N/A	N/A	N/A	5.14	8.83	N/A	3.74	09/01/2015
CS Lvg'd Loan Index	-3.08	-1.21	1.14	5.03	3.33	4.58	8.30	4.25	9.88	-0.38	3.68	
Difference	-0.99	-1.05	-1.59	-0.59	N/A	N/A	N/A	0.89	-1.05	N/A	0.06	
Real Return	-1.78	-2.85	-2.96	3.53	2.02	1.51	3.76	4.05	9.90	-2.56	2.35	02/01/2007
CPI+3% (Blended)	1.15	2.44	5.27	5.09	4.60	4.30	3.96	5.27	4.73	3.45	4.37	
Difference	-2.93	-5.29	-8.23	-1.56	-2.58	-2.79	-0.20	-1.22	5.17	-6.01	-2.02	
Invesco Commodity (CF)	-7.58	-10.47	-10.99	2.67	-5.03	N/A	N/A	6.09	14.61	-15.75	-5.84	09/01/2013
Bloomberg Cmdty Index (TR)	-9.41	-11.24	-11.25	0.30	-8.80	-7.84	-3.78	1.70	11.77	-24.66	-8.90	
Difference	1.83	0.77	0.26	2.37	3.77	N/A	N/A	4.39	2.84	8.91	3.06	
Invesco Commodity (CF) - Net	-7.72	-10.76	-11.56	2.01	-5.65	N/A	N/A	5.40	13.87	-16.32	-6.44	09/01/2013
Bloomberg Cmdty Index (TR)	-9.41	-11.24	-11.25	0.30	-8.80	-7.84	-3.78	1.70	11.77	-24.66	-8.90	
Difference	1.69	0.48	-0.31	1.71	3.15	N/A	N/A	3.70	2.10	8.34	2.46	
Hancock Timberland (CF) (Lagged-1 Qtr) - Net	-0.58	-1.20	0.15	3.18	N/A	N/A	N/A	4.65	4.81	-0.34	1.52	04/01/2014
NCREIF Timberland Index (Lagged-1 Qtr)	1.02	1.51	4.00	3.52	6.00	5.97	4.01	3.28	3.28	9.26	5.04	
Difference	-1.60	-2.71	-3.85	-0.34	N/A	N/A	N/A	1.37	1.53	-9.60	-3.52	
Molpus IV (CF) (Lagged-1 Qtr) - Net	-0.15	0.40	1.78	1.43	N/A	N/A	N/A	4.52	-1.91	N/A	-3.70	09/01/2015
NCREIF Timberland Index (Lagged-1 Qtr)	1.02	1.51	4.00	3.52	6.00	5.97	4.01	3.28	3.28	9.26	3.56	
Difference	-1.17	-1.11	-2.22	-2.09	N/A	N/A	N/A	1.24	-5.19	N/A	-7.26	

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**Water and Power Employees' Retirement Plan
Comparative Performance - Retirement**

As of December 31, 2018

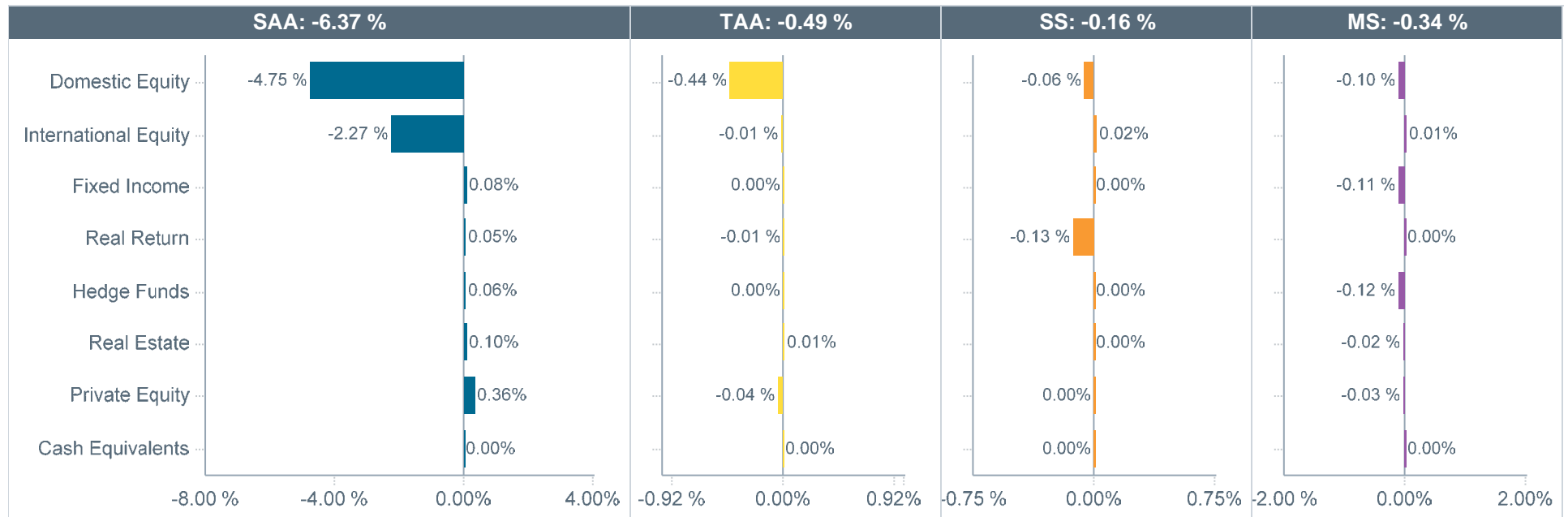
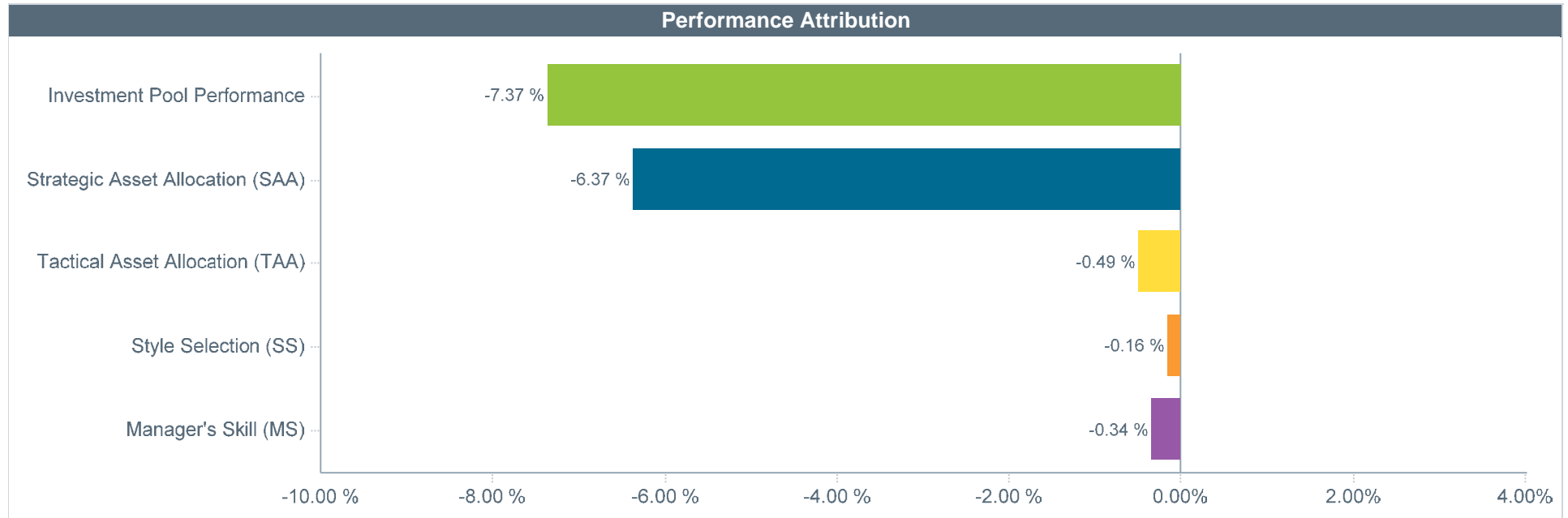
	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
WAMCO (SA)	0.12	-0.33	-0.38	4.03	4.08	2.83	N/A	3.33	9.37	-0.22	3.70	05/01/2010
Bloomberg Wrld Gov't Infl Lnk'd Index (Hedged)	0.55	-0.30	0.10	4.46	4.21	2.96	4.57	3.32	10.22	-1.12	3.97	
Difference	-0.43	-0.03	-0.48	-0.43	-0.13	-0.13	N/A	0.01	-0.85	0.90	-0.27	
WAMCO (SA) - Net	0.08	-0.42	-0.56	3.85	3.91	2.65	N/A	3.15	9.18	-0.39	3.51	05/01/2010
Bloomberg Wrld Gov't Infl Lnk'd Index (Hedged)	0.55	-0.30	0.10	4.46	4.21	2.96	4.57	3.32	10.22	-1.12	3.97	
Difference	-0.47	-0.12	-0.66	-0.61	-0.30	-0.31	N/A	-0.17	-1.04	0.73	-0.46	
Hedge Funds - Net	-1.25	-0.46	1.18	0.90	1.39	3.23	4.08	3.92	-2.30	1.24	2.64	03/01/2007
ICE BofAML 3 Mo US T-Bill Index+3% (1 Mo Lag)	1.28	2.55	4.85	3.99	3.61	3.46	3.37	3.81	3.33	3.02	3.88	
Difference	-2.53	-3.01	-3.67	-3.09	-2.22	-0.23	0.71	0.11	-5.63	-1.78	-1.24	
Blackstone Hope St. LP (CF) (Lagged-1 Mo) - Net	-1.25	-0.45	1.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.51	09/01/2017
ICE BofAML 3 Mo US T-Bill Index+3% (1 Mo Lag)	1.28	2.55	4.85	3.99	3.61	3.46	3.37	3.81	3.33	3.02	4.66	
Difference	-2.53	-3.00	-3.82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-3.15	
MS Convergent (CF) (Lagged-1 Mo) - Net	-2.70	-1.89	3.36	3.10	N/A	N/A	N/A	7.39	-1.27	-1.34	1.77	03/01/2014
ICE BofAML 3 Mo US T-Bill Index+3% (1 Mo Lag)	1.28	2.55	4.85	3.99	3.61	3.46	3.37	3.81	3.33	3.02	3.63	
Difference	-3.98	-4.44	-1.49	-0.89	N/A	N/A	N/A	3.58	-4.60	-4.36	-1.86	

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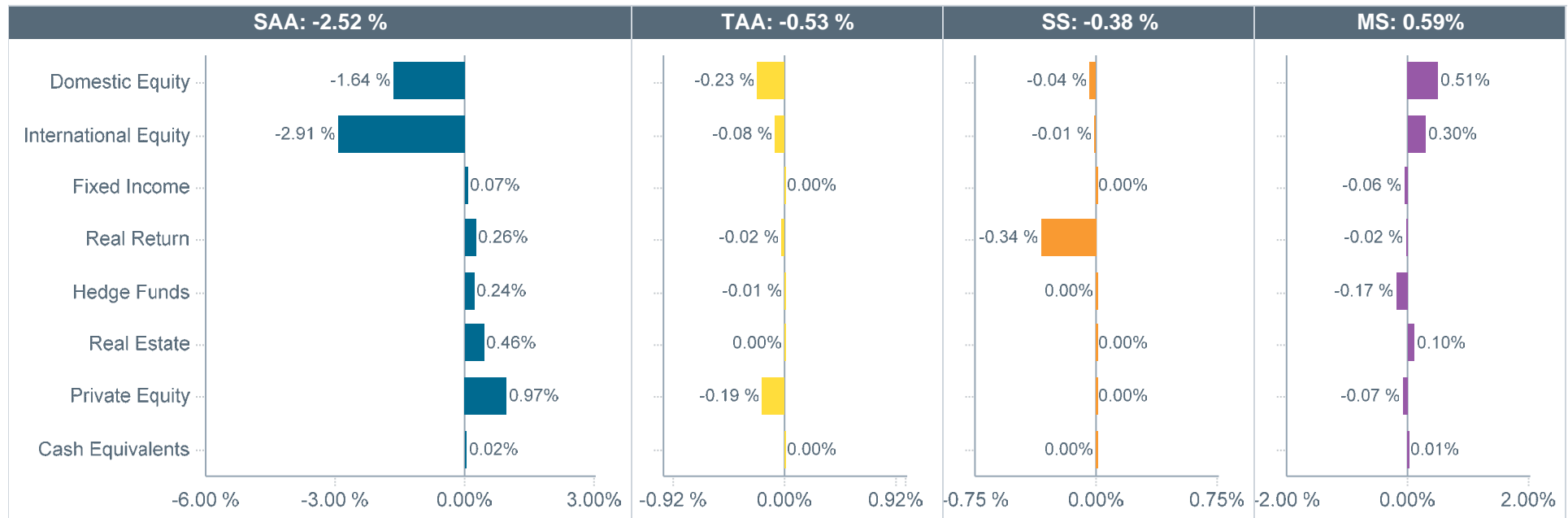
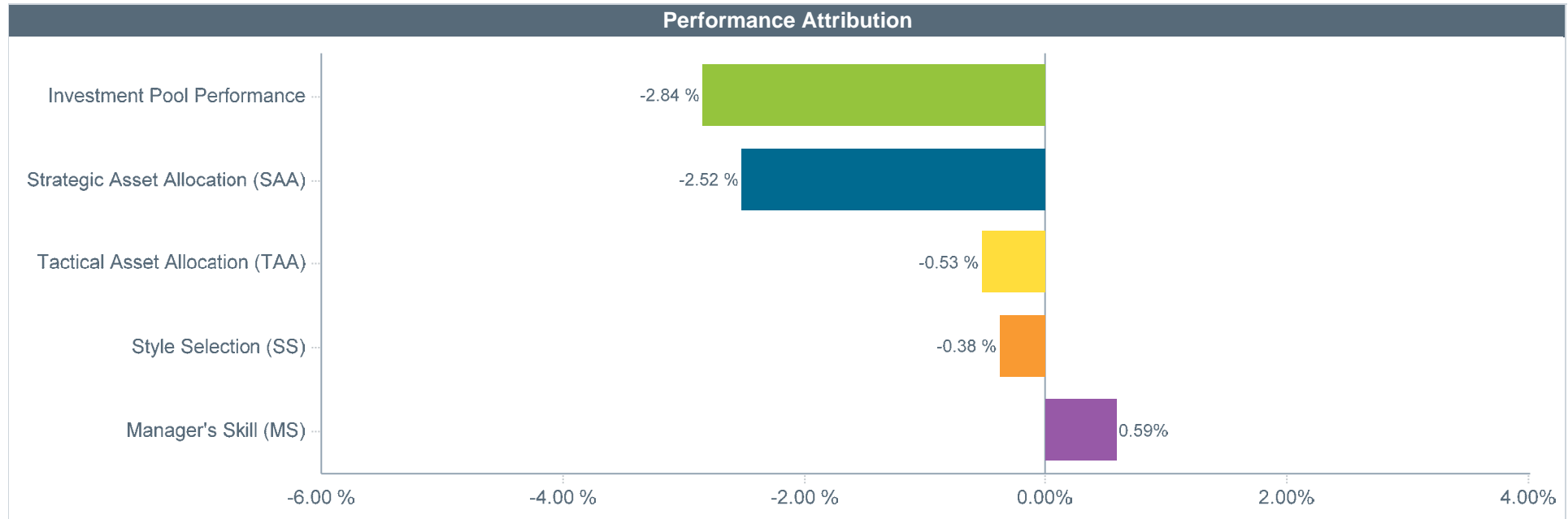
Water and Power Employees' Retirement Plan
Alternative Investment Fund Performance Listing - Retirement

As of September 30, 2018

	Market Value (\$)	% of Alt. Inv. Group	% of Total Fund	Inception IRR	Inception Date
Private Equity	545,339,256	42.90%	4.32%	13.35%	May-06
Adams Street SMB I	26,989,029	2.12%	0.21%	0.18%	Jan-17
Apollo VIII	29,549,438	2.32%	0.23%	17.60%	Jan-14
Ares IV	22,624,315	1.78%	0.18%	16.16%	Nov-12
Ares Special Situation IV	33,876,677	2.67%	0.27%	-6.18%	Jan-15
Ares V	21,373,806	1.68%	0.17%	13.34%	Jan-15
Audax III V	3,689,324	0.29%	0.03%	12.26%	Jan-11
Blackstone Tactical Opps II	30,796,039	2.42%	0.24%	18.45%	Apr-15
Clayton, Dubilier & Rice IX	20,896,370	1.64%	0.17%	18.55%	Apr-14
Clayton, Dubilier & Rice X	13,352,668	1.05%	0.11%	28.52%	Mar-18
Crestview Partners III	25,924,134	2.04%	0.21%	26.37%	Feb-15
EnCap IX	11,809,764	0.93%	0.09%	18.62%	Jan-11
EnCap VIII	4,590,890	0.36%	0.04%	0.56%	Jan-13
EnCap X	27,840,736	2.19%	0.22%	15.86%	Feb-15
EnCap XI	3,797,819	0.30%	0.03%	0%	Jun-17
Fisher Lynch II	15,771,169	1.24%	0.13%	10.96%	Mar-08
Harvest VII	17,320,744	1.36%	0.14%	18.45%	Nov-15
HRJ Special Opp II	5,499,921	0.43%	0.04%	8.08%	Feb-08
Industry Ventures VIII	9,663,481	0.76%	0.08%	92.82%	May-16
Landmark XIII	6,802,028	0.54%	0.05%	6.91%	Oct-06
Landmark XIV	7,101,240	0.56%	0.06%	12.58%	Aug-08
Landmark XV	17,235,713	1.36%	0.14%	17.50%	Feb-14
Lexington VI	3,409,159	0.27%	0.03%	8.26%	May-06
Lexington VII	9,155,097	0.72%	0.07%	17.25%	Aug-09
Oaktree PF V	8,134,327	0.64%	0.06%	5.76%	Jan-09
Silver Lake IV	23,369,323	1.84%	0.19%	33.26%	Sep-13
Silver Lake V	11,098,385	0.87%	0.09%	-9.02%	Feb-17
Vista IV	20,523,759	1.61%	0.16%	21.41%	Sep-11
Vista V	55,414,226	4.36%	0.44%	28.26%	Apr-14
Vista VI	57,729,675	4.54%	0.46%	22.89%	Jun-16
Real Estate	725,799,225	57.10%	5.75%	9.29%	Nov-06
AG Core Plus III	4,222,980	0.33%	0.03%	24.17%	Jan-12
Almanac VI	5,155,666	0.41%	0.04%	16.42%	Jun-12
Almanac VII	16,115,520	1.27%	0.13%	17.81%	Mar-15
BREP Europe IV	11,003,726	0.87%	0.09%	17.60%	Dec-13
BREP VII	15,845,898	1.25%	0.13%	19.47%	Jun-12
Bristol Value II	13,480,945	1.06%	0.11%	12.22%	Nov-12
Dimensional Global REIT	25,088,635	1.97%	0.20%	6.59%	Mar-13
DRA G&I IX	20,649,096	1.62%	0.16%	20.95%	Sep-16
DRA G&I VIII	17,460,140	1.37%	0.14%	13.22%	Jun-14
DRA VII	8,339,606	0.66%	0.07%	13.22%	Oct-11
FPA Core Plus III	41,983,873	3.30%	0.33%	4.25%	Jan-17
Harrison Street Core	61,441,257	4.83%	0.49%	8.98%	Aug-15
Heitman REIT	24,319,778	1.91%	0.19%	8.44%	Sep-13
Invesco Core Realty	57,510,112	4.52%	0.46%	10.99%	Jun-11
Jamestown Premier	44,306,541	3.49%	0.35%	10.27%	Mar-15
JPM Strategic	84,939,265	6.68%	0.67%	5.83%	Sep-07
LaSalle Asia V	4,184,318	0.33%	0.03%	-41.48%	Nov-17
Lone Star RE II	377,947	0.03%	0.00%	28.38%	May-11
Lone Star RE IV	26,242,764	2.06%	0.21%	19.31%	Jun-15
Lone Star V	8,948,564	0.70%	0.07%	7.22%	Aug-17
Lone Star VII	104,046	0.01%	0.00%	49.72%	May-11
Mesa West III	5,058,568	0.40%	0.04%	10.24%	Aug-13
Mesa West IV	15,456,862	1.22%	0.12%	8.34%	Feb-16
PCCP First Mtg II	396	0.00%	0.00%	7.16%	Jun-12
PRISA I	90,446,305	7.12%	0.72%	5.64%	Nov-06
PRISA II	41,588,540	3.27%	0.33%	7.13%	May-07
Prologis USLH	33,440,191	2.63%	0.27%	17.23%	Mar-15
Torchlight IV	8,258,409	0.65%	0.07%	12.67%	Aug-13
Torchlight V	16,669,850	1.31%	0.13%	15.67%	Mar-15
Torchlight VI	3,091,122	0.24%	0.02%	11.68%	Feb-18
Westbrook X	20,068,305	1.58%	0.16%	21.60%	Feb-16



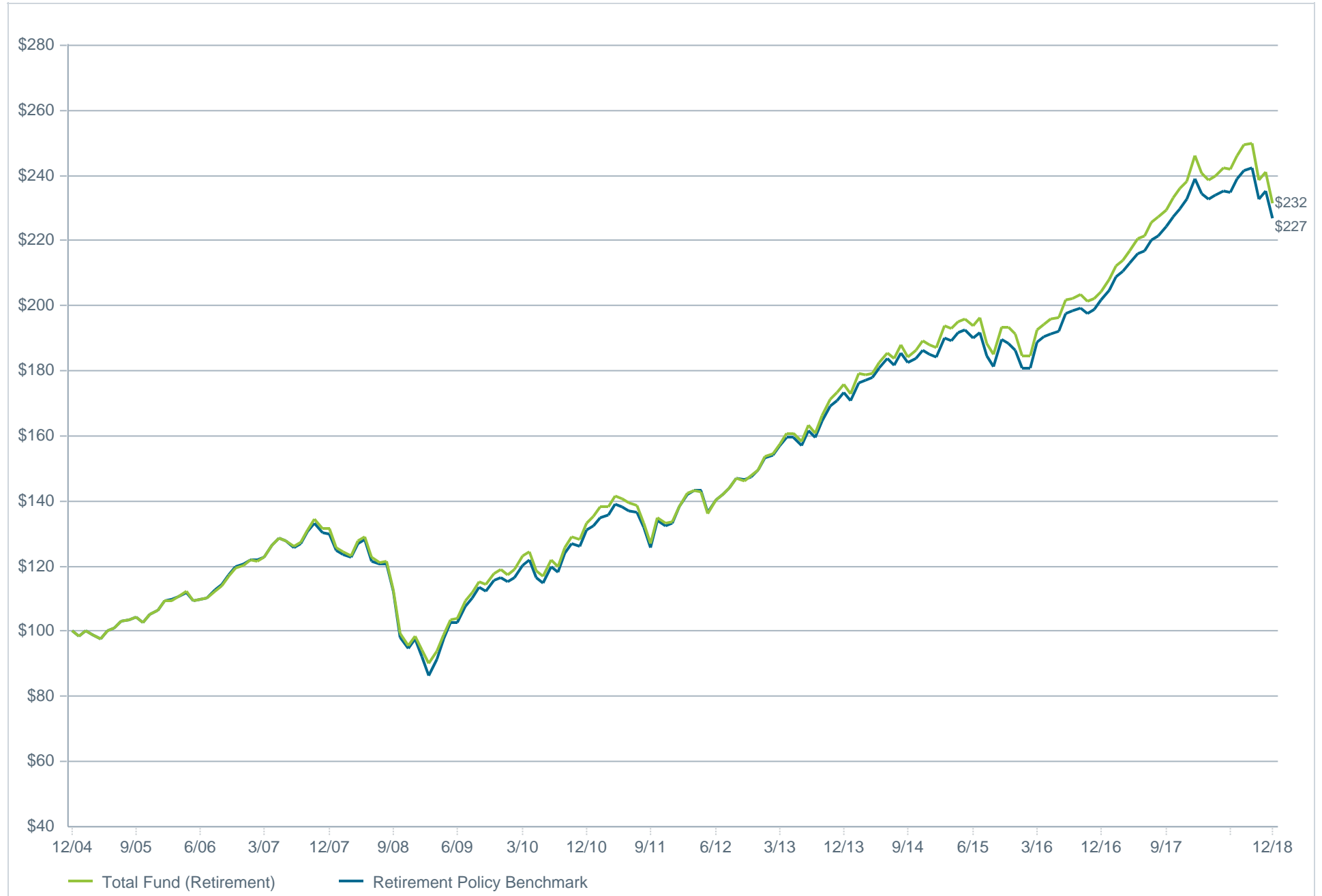
Performance shown is gross of fees. Calculation is based on monthly periodicity.



Performance shown is gross of fees. Calculation is based on monthly periodicity.

Water and Power Employees' Retirement Plan
Growth of \$100 - Retirement

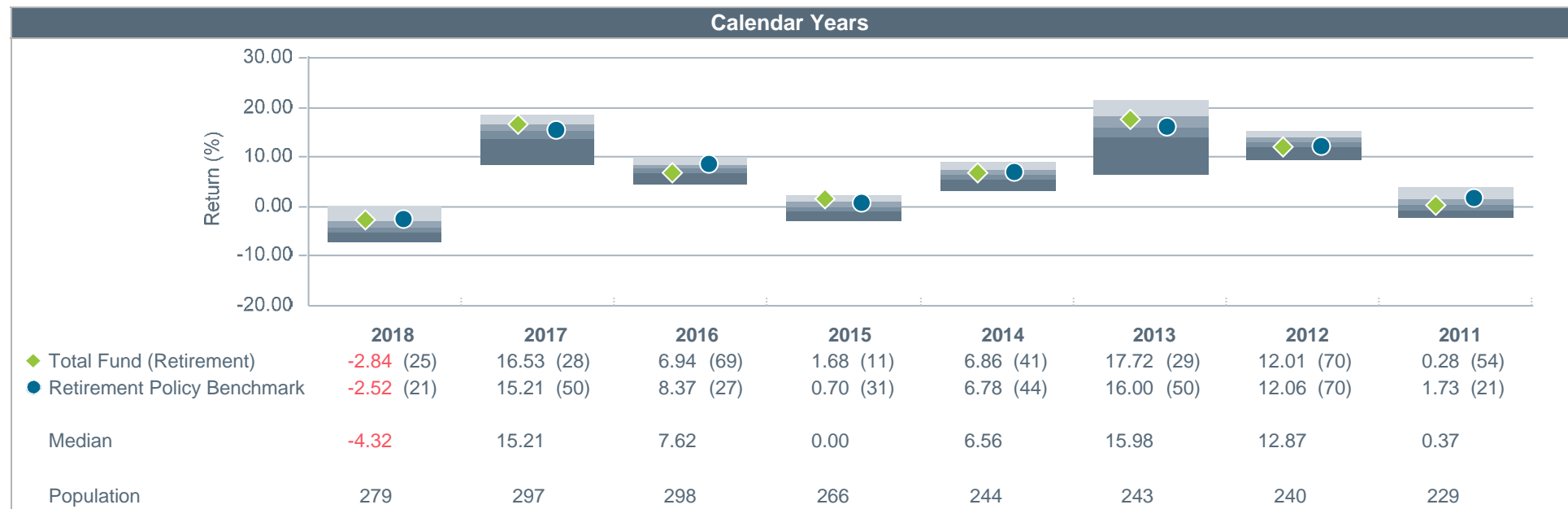
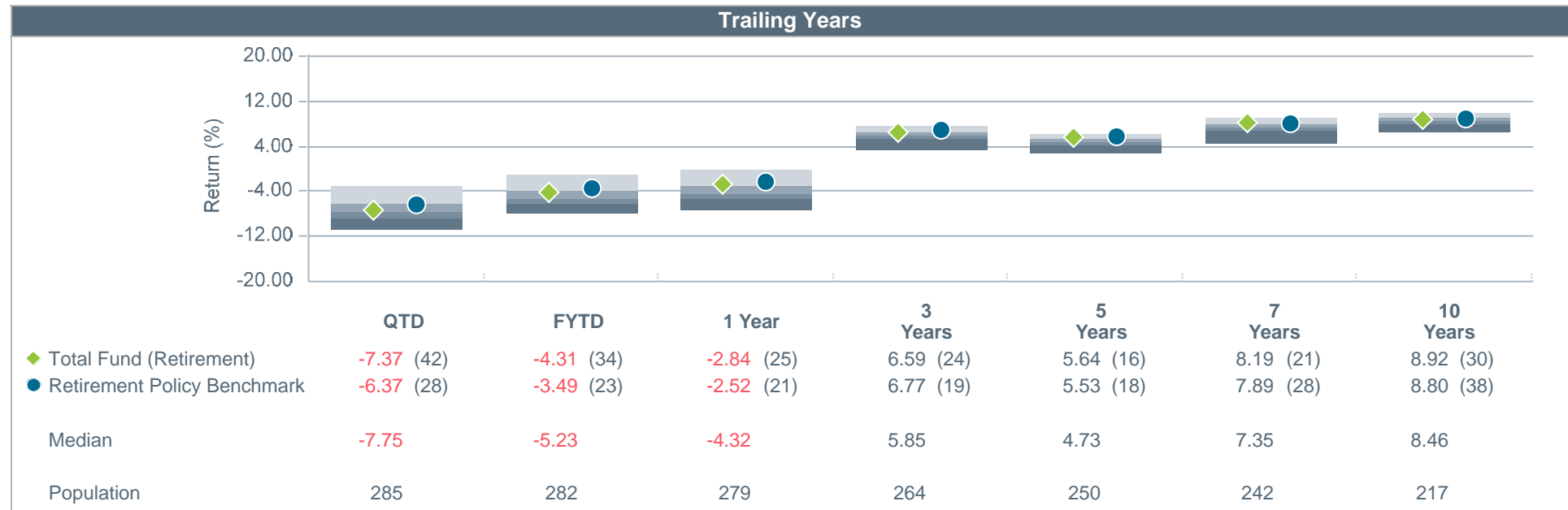
Since Inception Ending December 31, 2018



Performance shown is gross of fees. Calculation is based on monthly periodicity.

Water and Power Employees' Retirement Plan
Plan Sponsor Peer Group Analysis - Retirement
All Public Plans-Total Fund

As of December 31, 2018

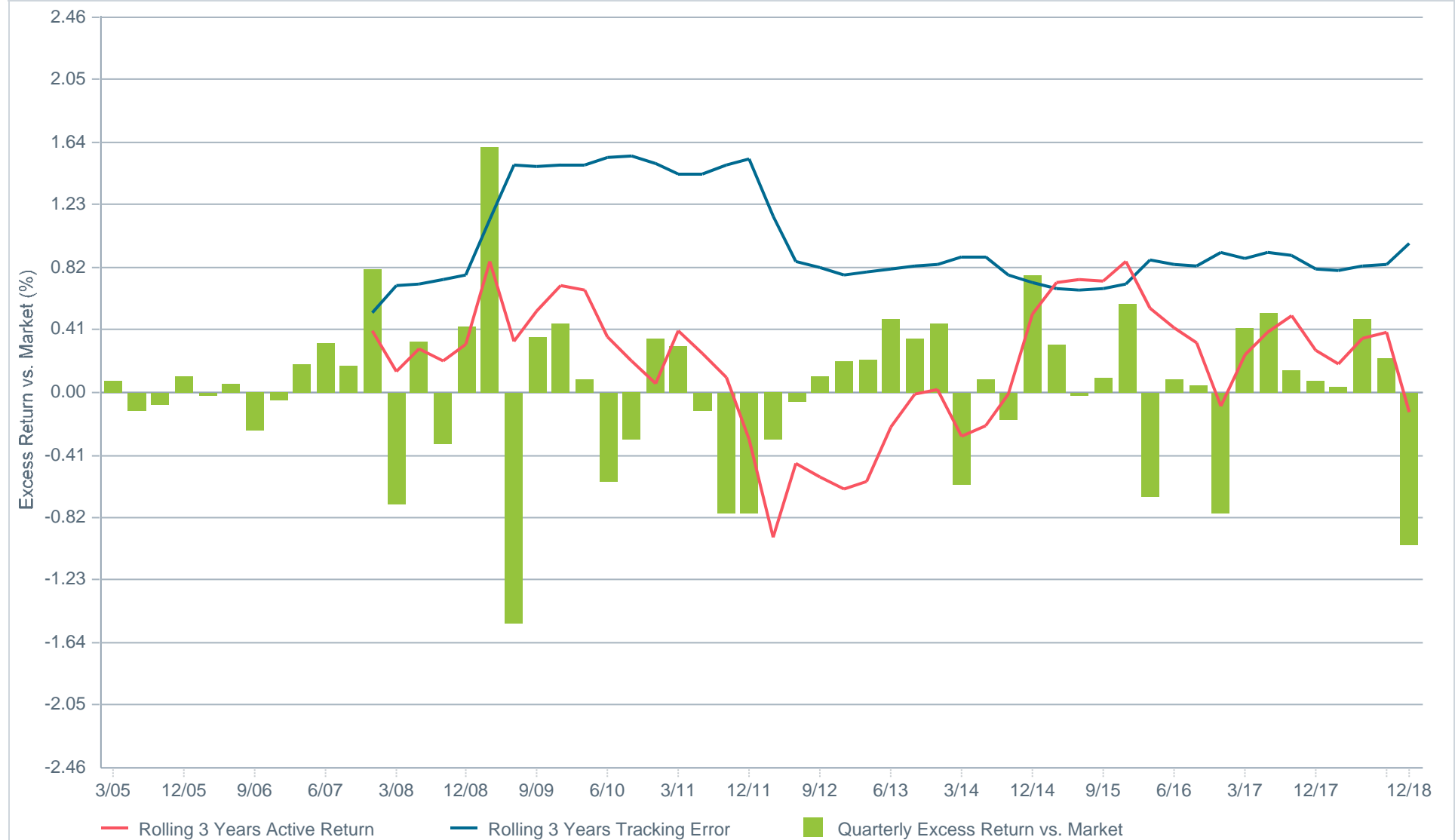


Performance shown is gross of fees. Parenthesis contain percentile ranks.

Water and Power Employees' Retirement Plan
Total Fund (Retirement) vs. Retirement Policy Benchmark
Comparative Performance & Rolling Return - Retirement

As of December 31, 2018

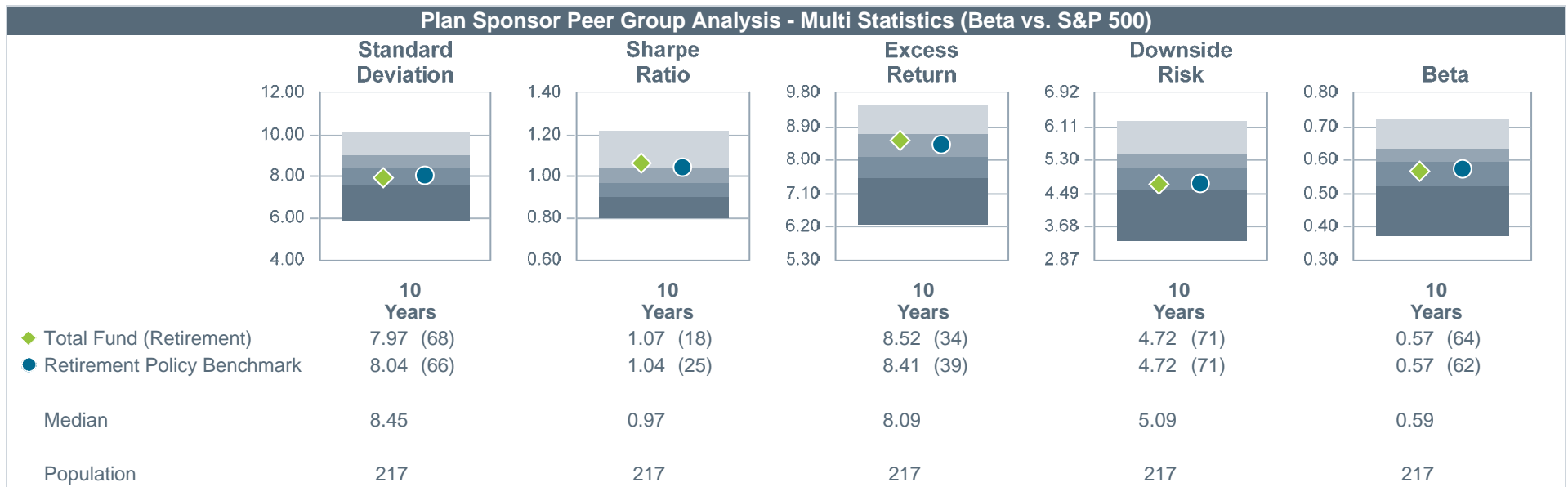
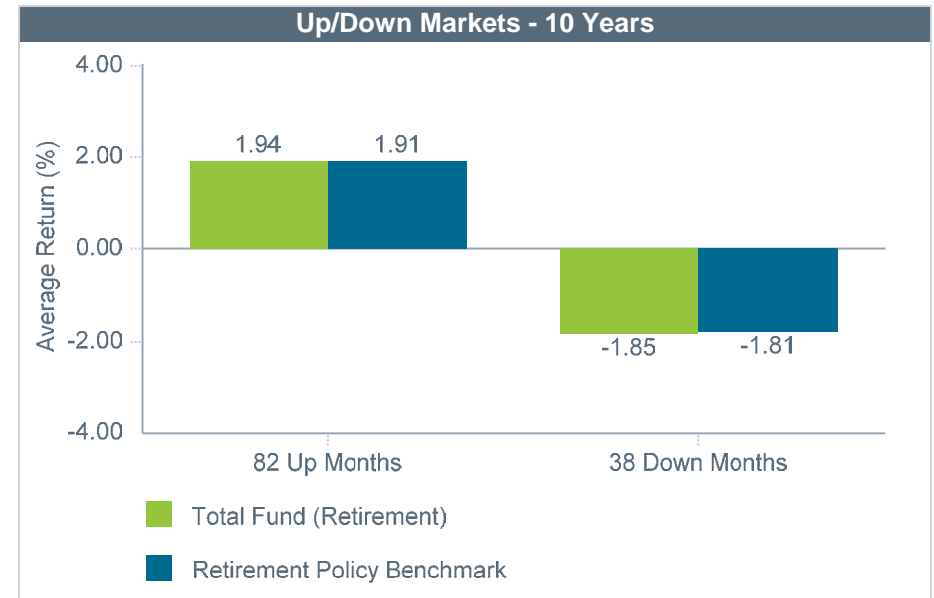
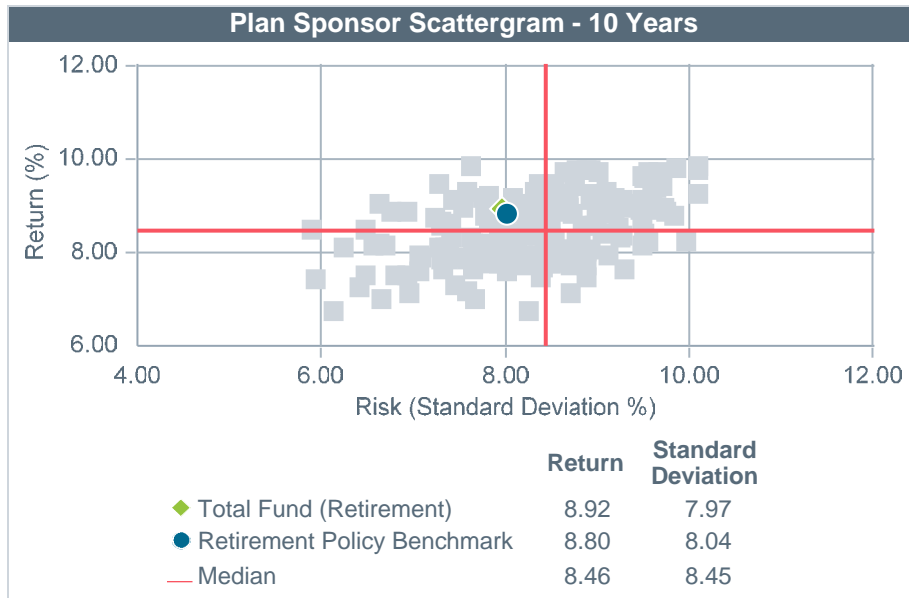
	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Total Fund (Retirement)	-7.37	-4.31	-2.84	6.59	5.64	8.19	8.92	16.53	6.94	1.68	6.86	17.72
Retirement Policy Benchmark	-6.37	-3.49	-2.52	6.77	5.53	7.89	8.80	15.21	8.37	0.70	6.78	16.00
Difference	-1.00	-0.82	-0.32	-0.18	0.11	0.30	0.12	1.32	-1.43	0.98	0.08	1.72



Performance shown is gross of fees. Calculation is based on quarterly periodicity. Fiscal year ends 06/30.

Water and Power Employees' Retirement Plan
Total Fund (Retirement) vs. All Public Plans-Total Fund

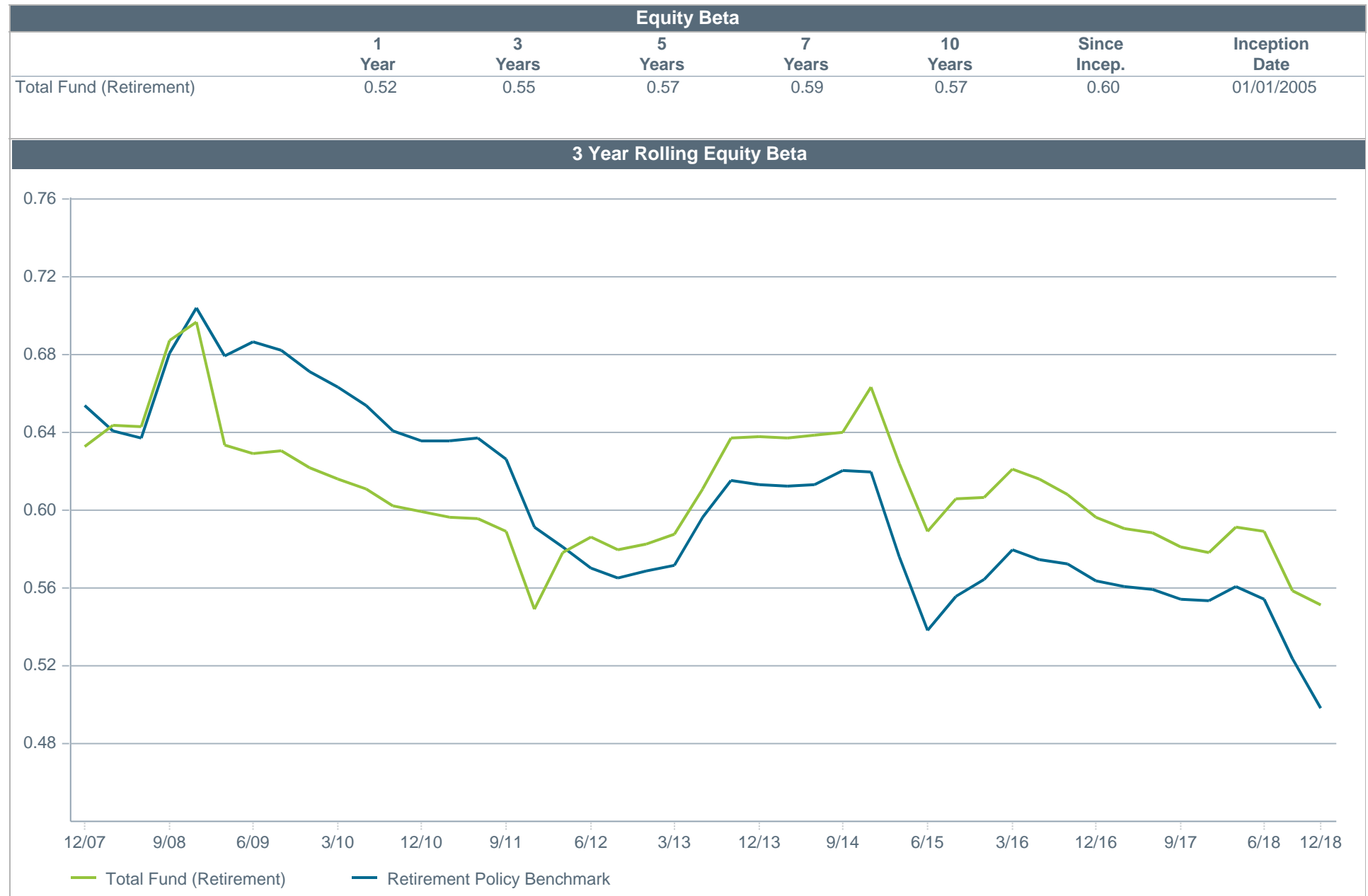
As of December 31, 2018



Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

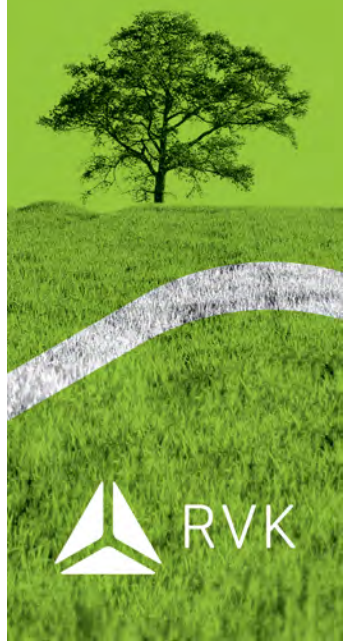
Water and Power Employees' Retirement Plan
Equity Beta Analysis - Retirement

As of December 31, 2018



Performance shown is gross of fees. The objective of the Total Fund Beta is to measure the aggregate level of non-diversifiable or systematic equity risk exposure of the Water and Power Employees' Retirement Plan - Retirement. The Total Fund Beta is calculated using the S&P 500 Index (Cap Wtd) as the benchmark and is based on monthly periodicity. It represents a measure of the sensitivity of the Total Fund to movements of the S&P 500 Index (Cap Wtd) over the preceding three year period.

Total Fund - Health

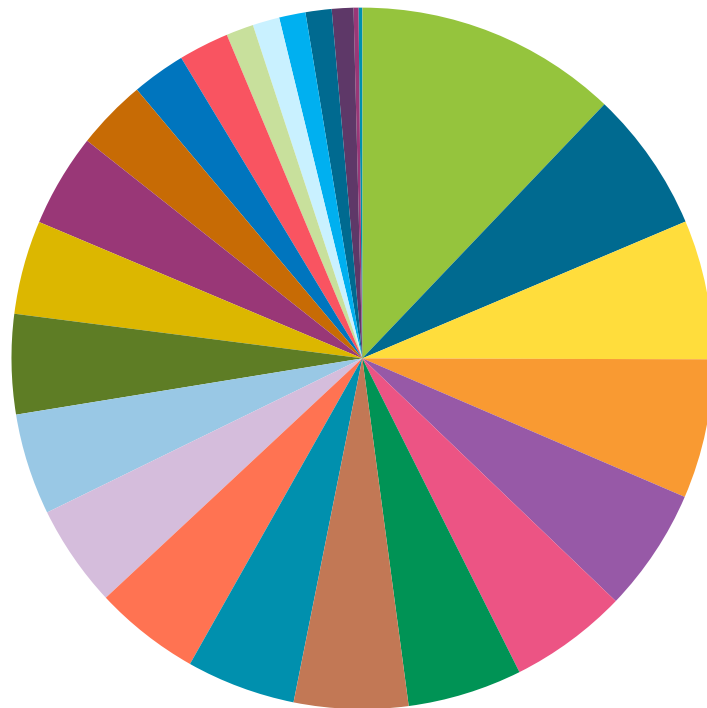


Water and Power Employees' Retirement Plan
Asset Allocation by Manager and Schedule of Investable Assets - Health

As of December 31, 2018

Asset Allocation by Manager

December 31, 2018 : \$1,997,232,247



	Market Value (\$)	Allocation (%)
BlackRock Russell 1000 Index (CF)	241,862,196	12.11
Real Estate	130,026,933	6.51
Wells Principal Protection (SA)	128,279,040	6.42
JP Morgan Principal Protection (SA)	128,209,242	6.42
T. Rowe Price Large Cap Growth (SA)	113,805,002	5.70
Neuberger Unconstrained (SA)	108,910,200	5.45
Private Equity	105,474,661	5.28
Macquarie Unconstrained (SA)	104,883,838	5.25
Fred Alger Large Cap Growth (SA)	100,406,670	5.03
Blackstone Hope St. LP (CF) (Lagged-1 Mo) - Net	97,400,207	4.88
MFS Developed Int'l (SA)	94,044,506	4.71
T. Rowe Price Large Cap Value (SA)	93,428,972	4.68
MFS Large Cap Value (SA)	91,819,326	4.60
BlackRock Developed Int'l - Passive (CF)	86,241,627	4.32
Fidelity Developed Int'l (SA)	85,876,162	4.30
WAMCO (SA)	64,651,717	3.24
Wellington Emerging (SA)	49,465,858	2.48
LA Capital Emerging (CF)	46,425,589	2.32
Cash Equivalents	25,166,482	1.26
Earnest Partners Small Cap Value (SA)	24,747,370	1.24
Pacific Asset Bank Loans (SA)	24,184,994	1.21
Emerald Small Cap Growth (SA)	24,035,104	1.20
Invesco Commodity (CF)	19,792,512	0.99
Molpus IV (CF) (Lagged-1 Qtr)	4,549,418	0.23
Hancock Timberland (CF) (Lagged-1 Qtr)	3,321,004	0.17
MS Convergent (CF) (Lagged-1 Mo)	223,618	0.01

Schedule of Investable Assets - FYTD

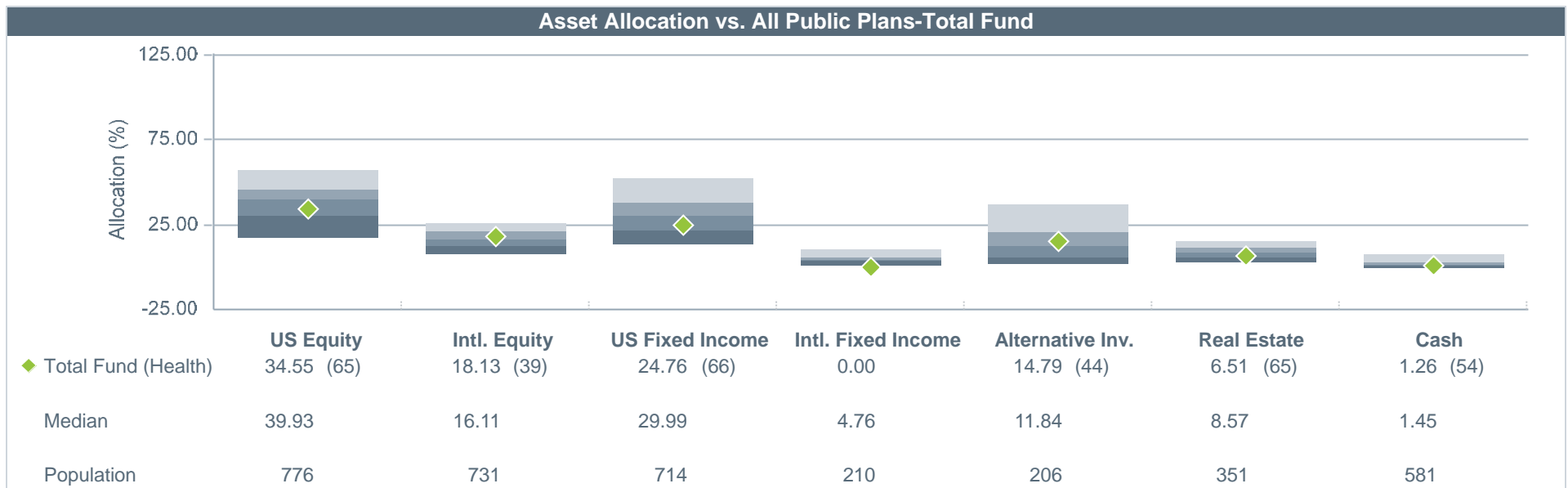
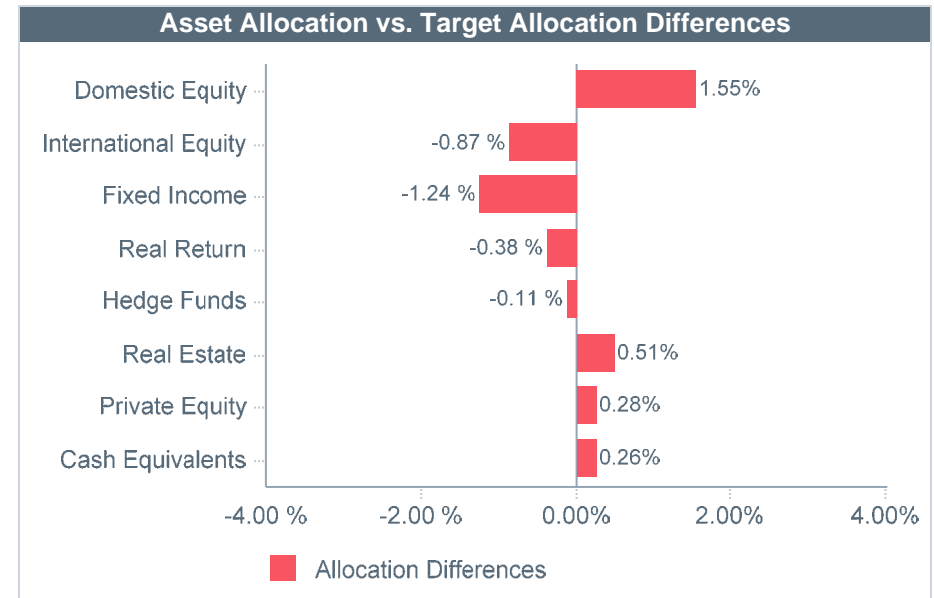
Periods Ending	Beginning Market Value (\$)	Gain/Loss (\$)	Ending Market Value (\$)	% Return	Unit Value
FYTD	2,093,435,423	-96,203,176	1,997,232,247	-4.30	95.70

Allocations shown may not sum up to 100% exactly due to rounding. Performance shown is gross of fees. Fiscal year ends 06/30.

Water and Power Employees' Retirement Plan
Total Fund (Health) vs. All Public Plans-Total Fund
Asset Allocation vs. Target and Plan Sponsor Peer Group - Health

As of December 31, 2018

Asset Allocation vs. Target Allocation			
	Market Value (\$)	Allocation (%)	Target (%)
Domestic Equity	690,104,640	34.55	33.00
International Equity	362,053,743	18.13	19.00
Fixed Income	494,467,314	24.76	26.00
Real Return	92,314,650	4.62	5.00
Hedge Funds	97,623,825	4.89	5.00
Real Estate	130,026,933	6.51	6.00
Private Equity	105,474,661	5.28	5.00
Cash Equivalents	25,166,482	1.26	1.00
Total Fund	1,997,232,247	100.00	100.00



Parentheses contain percentile ranks. Allocations shown may not sum up to 100% exactly due to rounding.

**Water and Power Employees' Retirement Plan
Comparative Performance - Health**

As of December 31, 2018

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
Total Fund (Health)	-7.43	-4.30	-2.77	6.67	5.62	8.10	8.89	16.75	6.93	1.46	5.86	01/01/2007
Health Policy Benchmark	-6.37	-3.49	-2.52	6.77	5.53	7.84	8.76	15.21	8.37	0.70	5.41	
Difference	-1.06	-0.81	-0.25	-0.10	0.09	0.26	0.13	1.54	-1.44	0.76	0.45	
All Public Plans-Total Fund Median	-7.75	-5.23	-4.32	5.85	4.73	7.35	8.46	15.21	7.62	0.00	5.23	
Rank	43	34	23	23	17	22	31	23	70	14	17	
Domestic Equity	-14.66	-8.32	-3.99	9.77	8.58	13.43	13.63	23.37	11.67	1.99	7.52	01/01/2007
Russell 3000 (Blended) (H)	-14.30	-8.20	-5.24	8.97	7.91	12.46	13.17	21.13	12.74	0.48	7.09	
Difference	-0.36	-0.12	1.25	0.80	0.67	0.97	0.46	2.24	-1.07	1.51	0.43	
All Public Plans-US Equity Segment Median	-14.54	-9.20	-5.86	8.56	7.40	12.11	13.05	20.31	12.98	0.31	7.05	
Rank	54	27	8	8	9	2	12	8	78	6	13	
MFS Large Cap Value (SA)	-11.50	-6.26	-9.58	7.23	6.63	11.86	N/A	17.80	15.76	-0.06	10.90	10/01/2009
Russell 1000 Val Index	-11.72	-6.69	-8.27	6.95	5.95	11.02	11.18	13.66	17.34	-3.83	10.47	
Difference	0.22	0.43	-1.31	0.28	0.68	0.84	N/A	4.14	-1.58	3.77	0.43	
IM U.S. Large Cap Value Equity (SA+CF) Median	-13.57	-8.35	-8.39	7.27	6.23	11.40	11.94	17.22	14.47	-2.27	11.00	
Rank	26	30	62	51	37	37	N/A	44	38	28	54	
MFS Large Cap Value (SA) - Net	-11.57	-6.40	-9.85	6.91	6.31	11.52	N/A	17.45	15.41	-0.38	10.55	10/01/2009
Russell 1000 Val Index	-11.72	-6.69	-8.27	6.95	5.95	11.02	11.18	13.66	17.34	-3.83	10.47	
Difference	0.15	0.29	-1.58	-0.04	0.36	0.50	N/A	3.79	-1.93	3.45	0.08	
T. Rowe Price Large Cap Value (SA)	-11.59	-7.26	-7.66	8.07	7.08	12.29	N/A	16.73	17.11	-1.77	11.50	10/01/2009
Russell 1000 Val Index	-11.72	-6.69	-8.27	6.95	5.95	11.02	11.18	13.66	17.34	-3.83	10.47	
Difference	0.13	-0.57	0.61	1.12	1.13	1.27	N/A	3.07	-0.23	2.06	1.03	
IM U.S. Large Cap Value Equity (SA+CF) Median	-13.57	-8.35	-8.39	7.27	6.23	11.40	11.94	17.22	14.47	-2.27	11.00	
Rank	28	40	41	34	31	24	N/A	59	26	46	34	
T. Rowe Price Large Cap Value (SA) - Net	-11.66	-7.39	-7.93	7.76	6.76	11.95	N/A	16.38	16.77	-2.06	11.17	10/01/2009
Russell 1000 Val Index	-11.72	-6.69	-8.27	6.95	5.95	11.02	11.18	13.66	17.34	-3.83	10.47	
Difference	0.06	-0.70	0.34	0.81	0.81	0.93	N/A	2.72	-0.57	1.77	0.70	

Performance shown is gross of fees, except where noted. Performance is annualized for periods greater than one year. Inception dates shown represent the first full month following initial funding. Fiscal year ends 06/30. Please see the Addendum for custom index descriptions.

Water and Power Employees' Retirement Plan
Comparative Performance - Health

As of December 31, 2018

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
BlackRock Russell 1000 Index (CF)	-13.80	-7.41	-4.75	9.13	8.24	12.66	13.33	21.70	12.12	0.91	7.27	01/01/2007
Russell 1000 Index	-13.82	-7.42	-4.78	9.09	8.21	12.63	13.28	21.69	12.05	0.92	7.18	
Difference	0.02	0.01	0.03	0.04	0.03	0.03	0.05	0.01	0.07	-0.01	0.09	
IM U.S. Large Cap Core Equity (SA+CF) Median	-13.83	-7.66	-5.20	8.47	8.15	12.63	13.05	21.83	10.52	1.43	7.35	
Rank	50	46	43	35	50	49	38	53	31	58	55	
BlackRock Russell 1000 Index (CF) - Net	-13.80	-7.41	-4.75	9.13	8.24	12.66	13.30	21.70	12.12	0.90	7.23	01/01/2007
Russell 1000 Index	-13.82	-7.42	-4.78	9.09	8.21	12.63	13.28	21.69	12.05	0.92	7.18	
Difference	0.02	0.01	0.03	0.04	0.03	0.03	0.02	0.01	0.07	-0.02	0.05	
Fred Alger Large Cap Growth (SA)	-20.46	-10.75	3.17	10.22	8.78	13.40	N/A	29.33	0.37	1.77	12.50	10/01/2009
Russell 1000 Grth Index	-15.89	-8.17	-1.51	11.15	10.40	14.14	15.29	30.21	7.08	5.67	13.64	
Difference	-4.57	-2.58	4.68	-0.93	-1.62	-0.74	N/A	-0.88	-6.71	-3.90	-1.14	
IM U.S. Large Cap Growth Equity (SA+CF) Median	-15.14	-8.38	-1.17	10.19	9.66	13.77	14.90	28.11	4.65	5.07	13.22	
Rank	98	83	17	50	70	60	N/A	42	85	77	68	
Fred Alger Large Cap Growth (SA) - Net	-20.52	-10.88	2.88	9.91	8.48	13.08	N/A	28.96	0.08	1.48	12.14	10/01/2009
Russell 1000 Grth Index	-15.89	-8.17	-1.51	11.15	10.40	14.14	15.29	30.21	7.08	5.67	13.64	
Difference	-4.63	-2.71	4.39	-1.24	-1.92	-1.06	N/A	-1.25	-7.00	-4.19	-1.50	
T. Rowe Price Large Cap Growth (SA)	-13.17	-6.66	4.82	14.82	13.25	18.20	N/A	36.61	5.70	12.53	15.11	05/01/2010
Russell 1000 Grth Index	-15.89	-8.17	-1.51	11.15	10.40	14.14	15.29	30.21	7.08	5.67	12.88	
Difference	2.72	1.51	6.33	3.67	2.85	4.06	N/A	6.40	-1.38	6.86	2.23	
IM U.S. Large Cap Growth Equity (SA+CF) Median	-15.14	-8.38	-1.17	10.19	9.66	13.77	14.90	28.11	4.65	5.07	12.36	
Rank	26	29	10	3	6	3	N/A	6	41	7	6	
T. Rowe Price Large Cap Growth (SA) - Net	-13.24	-6.81	4.49	14.45	12.89	17.82	N/A	36.17	5.35	12.16	14.73	05/01/2010
Russell 1000 Grth Index	-15.89	-8.17	-1.51	11.15	10.40	14.14	15.29	30.21	7.08	5.67	12.88	
Difference	2.65	1.36	6.00	3.30	2.49	3.68	N/A	5.96	-1.73	6.49	1.85	
Earnest Partners Small Cap Value (SA)	-18.78	-16.49	-14.73	9.41	7.30	12.18	N/A	23.09	24.78	-2.27	12.37	10/01/2009
Russell 2000 Val Index	-18.67	-17.36	-12.86	7.37	3.61	9.57	10.40	7.84	31.74	-7.47	9.48	
Difference	-0.11	0.87	-1.87	2.04	3.69	2.61	N/A	15.25	-6.96	5.20	2.89	
IM U.S. Small Cap Value Equity (SA+CF) Median	-19.21	-17.94	-14.36	6.34	4.10	10.47	13.10	11.61	26.17	-4.28	10.99	
Rank	43	37	54	17	7	14	N/A	4	59	31	20	
Earnest Partners Small Cap Value (SA) - Net	-18.89	-16.72	-15.20	8.80	6.71	11.55	N/A	22.41	24.07	-2.82	11.72	10/01/2009
Russell 2000 Val Index	-18.67	-17.36	-12.86	7.37	3.61	9.57	10.40	7.84	31.74	-7.47	9.48	
Difference	-0.22	0.64	-2.34	1.43	3.10	1.98	N/A	14.57	-7.67	4.65	2.24	

Performance shown is gross of fees, except where noted. Performance is annualized for periods greater than one year. Inception dates shown represent the first full month following initial funding. Fiscal year ends 06/30. Please see the Addendum for custom index descriptions.



Water and Power Employees' Retirement Plan
Comparative Performance - Health

As of December 31, 2018

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
Emerald Small Cap Growth (SA)	-22.13	-16.52	-10.25	8.60	N/A	N/A	N/A	29.57	10.14	N/A	6.46	12/01/2015
Russell 2000 Grth Index	-21.65	-17.33	-9.31	7.24	5.13	11.25	13.52	22.17	11.32	-1.38	5.36	
Difference	-0.48	0.81	-0.94	1.36	N/A	N/A	N/A	7.40	-1.18	N/A	1.10	
IM U.S. Small Cap Growth Equity (SA+CF) Median	-20.70	-14.96	-4.28	9.61	6.44	12.84	14.93	23.91	11.40	-0.74	7.92	
Rank	69	72	82	61	N/A	N/A	N/A	21	56	N/A	68	
Emerald Small Cap Growth (SA) - Net	-22.25	-16.77	-10.78	7.96	N/A	N/A	N/A	28.81	9.49	N/A	5.83	12/01/2015
Russell 2000 Grth Index	-21.65	-17.33	-9.31	7.24	5.13	11.25	13.52	22.17	11.32	-1.38	5.36	
Difference	-0.60	0.56	-1.47	0.72	N/A	N/A	N/A	6.64	-1.83	N/A	0.47	
International Equity	-11.72	-10.87	-13.44	4.87	2.37	6.01	N/A	29.29	3.06	-1.40	4.43	09/01/2009
MSCI ACW Ex US IM Index (Net)	-11.88	-11.53	-14.76	4.39	0.85	5.07	6.97	27.81	4.41	-4.60	4.37	
Difference	0.16	0.66	1.32	0.48	1.52	0.94	N/A	1.48	-1.35	3.20	0.06	
All Public Plans-Intl. Equity Segment Median	-12.05	-11.23	-13.66	4.79	1.67	6.24	7.66	28.83	3.99	-2.43	5.44	
Rank	40	36	45	47	23	60	N/A	41	70	30	97	
BlackRock Developed Int'l - Passive (CF)	-13.25	-12.34	-14.30	3.68	1.00	N/A	N/A	25.71	3.45	-1.62	5.03	10/01/2012
MSCI Wrld Ex US IM Index (USD) (Net)	-13.28	-12.43	-14.68	3.21	0.59	5.55	6.68	25.17	2.95	-1.95	4.60	
Difference	0.03	0.09	0.38	0.47	0.41	N/A	N/A	0.54	0.50	0.33	0.43	
IM All EAFE (SA+CF) Median	-13.50	-12.43	-14.52	2.95	1.15	6.78	7.76	26.38	1.06	1.22	5.51	
Rank	46	49	49	36	60	N/A	N/A	59	22	75	68	
BlackRock Developed Int'l - Passive (CF) - Net	-13.25	-12.34	-14.30	3.68	0.99	N/A	N/A	25.71	3.45	-1.65	5.01	10/01/2012
MSCI Wrld Ex US IM Index (USD) (Net)	-13.28	-12.43	-14.68	3.21	0.59	5.55	6.68	25.17	2.95	-1.95	4.60	
Difference	0.03	0.09	0.38	0.47	0.40	N/A	N/A	0.54	0.50	0.30	0.41	
MFS Developed Int'l (SA)	-10.81	-8.71	-8.70	4.99	4.67	N/A	N/A	27.12	-0.29	7.13	9.43	08/01/2012
MSCI Wrld Ex US IM Index (USD) (Net)	-13.28	-12.43	-14.68	3.21	0.59	5.55	6.68	25.17	2.95	-1.95	5.46	
Difference	2.47	3.72	5.98	1.78	4.08	N/A	N/A	1.95	-3.24	9.08	3.97	
IM All EAFE (SA+CF) Median	-13.50	-12.43	-14.52	2.95	1.15	6.78	7.76	26.38	1.06	1.22	6.36	
Rank	17	11	6	15	5	N/A	N/A	42	70	7	3	
MFS Developed Int'l (SA) - Net	-10.89	-8.87	-9.00	4.63	4.32	N/A	N/A	26.69	-0.64	6.79	9.07	08/01/2012
MSCI Wrld Ex US IM Index (USD) (Net)	-13.28	-12.43	-14.68	3.21	0.59	5.55	6.68	25.17	2.95	-1.95	5.46	
Difference	2.39	3.56	5.68	1.42	3.73	N/A	N/A	1.52	-3.59	8.74	3.61	

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Water and Power Employees' Retirement Plan
Comparative Performance - Health

As of December 31, 2018

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
Fidelity Developed Int'l (SA)	-14.57	-13.50	-15.01	1.85	0.06	5.88	N/A	25.16	-0.67	0.98	4.70	10/01/2009
International Developed Blend	-13.28	-12.43	-14.68	3.21	0.59	5.55	6.68	25.17	2.95	-1.95	4.03	
Difference	-1.29	-1.07	-0.33	-1.36	-0.53	0.33	N/A	-0.01	-3.62	2.93	0.67	
IM All EAFE (SA+CF) Median	-13.50	-12.43	-14.52	2.95	1.15	6.78	7.76	26.38	1.06	1.22	5.39	
Rank	74	76	59	77	84	80	N/A	67	73	55	74	
Fidelity Developed Int'l (SA) - Net	-14.63	-13.62	-15.24	1.57	-0.21	5.58	N/A	24.81	-0.94	0.71	4.39	10/01/2009
International Developed Blend	-13.28	-12.43	-14.68	3.21	0.59	5.55	6.68	25.17	2.95	-1.95	4.03	
Difference	-1.35	-1.19	-0.56	-1.64	-0.80	0.03	N/A	-0.36	-3.89	2.66	0.36	
LA Capital Emerging (CF)	-8.75	-8.76	-15.67	9.04	1.99	N/A	N/A	37.13	12.11	-15.10	2.34	10/01/2012
MSCI Emg Mkts IM Index (USD) (Net)	-7.44	-8.79	-15.05	8.51	1.56	3.29	8.24	36.83	9.90	-13.86	1.76	
Difference	-1.31	0.03	-0.62	0.53	0.43	N/A	N/A	0.30	2.21	-1.24	0.58	
IM Emerging Markets Equity (SA+CF) Median	-7.28	-9.48	-15.23	8.69	2.25	4.71	9.38	36.92	10.16	-12.59	3.07	
Rank	77	43	55	44	60	N/A	N/A	49	36	72	70	
LA Capital Emerging (CF) - Net	-8.90	-9.06	-16.21	8.34	1.34	N/A	N/A	36.24	11.39	-15.65	1.69	10/01/2012
MSCI Emg Mkts IM Index (USD) (Net)	-7.44	-8.79	-15.05	8.51	1.56	3.29	8.24	36.83	9.90	-13.86	1.76	
Difference	-1.46	-0.27	-1.16	-0.17	-0.22	N/A	N/A	-0.59	1.49	-1.79	-0.07	
Wellington Emerging (SA)	-8.18	-9.48	-15.52	N/A	N/A	N/A	N/A	40.87	N/A	N/A	5.99	10/01/2016
MSCI Emg Mkts IM Index (USD) (Net)	-7.44	-8.79	-15.05	8.51	1.56	3.29	8.24	36.83	9.90	-13.86	4.78	
Difference	-0.74	-0.69	-0.47	N/A	N/A	N/A	N/A	4.04	N/A	N/A	1.21	
IM Emerging Markets Equity (SA+CF) Median	-7.28	-9.48	-15.23	8.69	2.25	4.71	9.38	36.92	10.16	-12.59	4.58	
Rank	68	50	54	N/A	N/A	N/A	N/A	30	N/A	N/A	24	
Wellington Emerging (SA) - Net	-8.31	-9.73	-15.99	N/A	N/A	N/A	N/A	40.07	N/A	N/A	5.39	10/01/2016
MSCI Emg Mkts IM Index (USD) (Net)	-7.44	-8.79	-15.05	8.51	1.56	3.29	8.24	36.83	9.90	-13.86	4.78	
Difference	-0.87	-0.94	-0.94	N/A	N/A	N/A	N/A	3.24	N/A	N/A	0.61	

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Water and Power Employees' Retirement Plan
Comparative Performance - Health

As of December 31, 2018

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
Fixed Income	-0.07	0.64	-0.24	3.14	3.25	3.16	4.96	4.89	4.85	0.83	5.15	01/01/2007
Fixed Income Custom Index (H)	0.38	1.06	0.02	3.24	3.06	2.77	4.00	4.12	5.65	0.11	4.35	
Difference	-0.45	-0.42	-0.26	-0.10	0.19	0.39	0.96	0.77	-0.80	0.72	0.80	
All Public Plans-US Fixed Income Segment Median	0.60	1.02	-0.24	2.96	2.92	2.93	4.84	4.60	4.72	0.18	4.34	
Rank	72	69	50	47	36	43	43	44	45	29	23	
JP Morgan Principal Protection (SA)	1.84	1.90	1.35	1.71	N/A	N/A	N/A	1.87	1.92	N/A	1.59	09/01/2015
Bloomberg US Int Agg Ex Crdt Index	2.13	2.04	1.21	1.47	1.96	1.55	2.69	1.80	1.40	1.32	1.37	
Difference	-0.29	-0.14	0.14	0.24	N/A	N/A	N/A	0.07	0.52	N/A	0.22	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	1.40	1.60	0.07	2.48	2.86	2.63	4.41	4.05	3.11	0.82	2.28	
Rank	13	14	5	98	N/A	N/A	N/A	100	97	N/A	100	
JP Morgan Principal Protection (SA) - Net	1.81	1.85	1.25	1.61	N/A	N/A	N/A	1.77	1.81	N/A	1.49	09/01/2015
Bloomberg US Int Agg Ex Crdt Index	2.13	2.04	1.21	1.47	1.96	1.55	2.69	1.80	1.40	1.32	1.37	
Difference	-0.32	-0.19	0.04	0.14	N/A	N/A	N/A	-0.03	0.41	N/A	0.12	
Wells Principal Protection (SA)	2.12	2.06	1.27	1.69	N/A	N/A	N/A	1.94	1.85	N/A	1.56	09/01/2015
Bloomberg US Int Agg Ex Crdt Index	2.13	2.04	1.21	1.47	1.96	1.55	2.69	1.80	1.40	1.32	1.37	
Difference	-0.01	0.02	0.06	0.22	N/A	N/A	N/A	0.14	0.45	N/A	0.19	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	1.40	1.60	0.07	2.48	2.86	2.63	4.41	4.05	3.11	0.82	2.28	
Rank	8	6	6	99	N/A	N/A	N/A	100	98	N/A	100	
Wells Principal Protection (SA) - Net	2.09	2.00	1.16	1.57	N/A	N/A	N/A	1.83	1.72	N/A	1.44	09/01/2015
Bloomberg US Int Agg Ex Crdt Index	2.13	2.04	1.21	1.47	1.96	1.55	2.69	1.80	1.40	1.32	1.37	
Difference	-0.04	-0.04	-0.05	0.10	N/A	N/A	N/A	0.03	0.32	N/A	0.07	
Macquarie Unconstrained (SA)	-1.57	-0.68	-2.78	4.39	N/A	N/A	N/A	7.99	8.35	N/A	3.42	09/01/2015
67% B Global Credit/33% B Global High Yield	-1.16	0.22	-1.44	5.00	3.96	5.16	7.90	6.73	10.04	-0.34	4.18	
Difference	-0.41	-0.90	-1.34	-0.61	N/A	N/A	N/A	1.26	-1.69	N/A	-0.76	
IM Global Fixed Income (SA+CF) Median	-1.07	-0.53	-1.82	3.71	2.35	3.23	4.74	7.62	5.75	-2.27	3.15	
Rank	58	54	68	38	N/A	N/A	N/A	43	34	N/A	41	
Macquarie Unconstrained (SA) - Net	-1.62	-0.76	-2.95	4.21	N/A	N/A	N/A	7.81	8.17	N/A	3.25	09/01/2015
67% B Global Credit/33% B Global High Yield	-1.16	0.22	-1.44	5.00	3.96	5.16	7.90	6.73	10.04	-0.34	4.18	
Difference	-0.46	-0.98	-1.51	-0.79	N/A	N/A	N/A	1.08	-1.87	N/A	-0.93	

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Water and Power Employees' Retirement Plan
Comparative Performance - Health

As of December 31, 2018

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
Neuberger Unconstrained (SA)	-2.44	-0.54	-1.29	5.75	N/A	N/A	N/A	9.42	9.48	N/A	5.09	09/01/2015
67% B Global Credit/33% B Global High Yield	-1.16	0.22	-1.44	5.00	3.96	5.16	7.90	6.73	10.04	-0.34	4.18	
Difference	-1.28	-0.76	0.15	0.75	N/A	N/A	N/A	2.69	-0.56	N/A	0.91	
IM Global Fixed Income (SA+CF) Median	-1.07	-0.53	-1.82	3.71	2.35	3.23	4.74	7.62	5.75	-2.27	3.15	
Rank	68	51	40	20	N/A	N/A	N/A	24	31	N/A	10	
Neuberger Unconstrained (SA) - Net	-2.50	-0.66	-1.51	5.50	N/A	N/A	N/A	9.17	9.23	N/A	4.85	09/01/2015
67% B Global Credit/33% B Global High Yield	-1.16	0.22	-1.44	5.00	3.96	5.16	7.90	6.73	10.04	-0.34	4.18	
Difference	-1.34	-0.88	-0.07	0.50	N/A	N/A	N/A	2.44	-0.81	N/A	0.67	
Pacific Asset Bank Loans (SA)	-3.82	-2.20	-0.26	4.76	N/A	N/A	N/A	5.40	9.37	N/A	4.06	09/01/2015
CS Lvg'd Loan Index	-3.08	-1.21	1.14	5.03	3.33	4.58	8.30	4.25	9.88	-0.38	3.68	
Difference	-0.74	-0.99	-1.40	-0.27	N/A	N/A	N/A	1.15	-0.51	N/A	0.38	
IM U.S. Bank Loans (SA+CF) Median	-3.21	-1.39	0.78	4.76	3.41	4.73	8.11	4.46	9.51	0.68	3.62	
Rank	92	98	98	50	N/A	N/A	N/A	7	54	N/A	19	
Pacific Asset Bank Loans (SA) - Net	-3.89	-2.36	-0.58	4.43	N/A	N/A	N/A	5.06	9.02	N/A	3.73	09/01/2015
CS Lvg'd Loan Index	-3.08	-1.21	1.14	5.03	3.33	4.58	8.30	4.25	9.88	-0.38	3.68	
Difference	-0.81	-1.15	-1.72	-0.60	N/A	N/A	N/A	0.81	-0.86	N/A	0.05	
Real Return	-1.70	-2.72	-2.79	3.46	1.98	1.54	N/A	3.97	9.56	-2.58	2.82	04/01/2010
CPI+3% (Blended)	1.15	2.44	5.27	5.09	4.60	4.30	3.96	5.27	4.73	3.45	4.07	
Difference	-2.85	-5.16	-8.06	-1.63	-2.62	-2.76	N/A	-1.30	4.83	-6.03	-1.25	
Invesco Commodity (CF)	-7.55	-10.48	-10.99	2.46	-5.24	N/A	N/A	5.95	14.05	-15.83	-6.01	09/01/2013
Bloomberg Cmdty Index (TR)	-9.41	-11.24	-11.25	0.30	-8.80	-7.84	-3.78	1.70	11.77	-24.66	-8.90	
Difference	1.86	0.76	0.26	2.16	3.56	N/A	N/A	4.25	2.28	8.83	2.89	
Invesco Commodity (CF) - Net	-7.70	-10.77	-11.56	1.79	-5.86	N/A	N/A	5.26	13.30	-16.41	-6.60	09/01/2013
Bloomberg Cmdty Index (TR)	-9.41	-11.24	-11.25	0.30	-8.80	-7.84	-3.78	1.70	11.77	-24.66	-8.90	
Difference	1.71	0.47	-0.31	1.49	2.94	N/A	N/A	3.56	1.53	8.25	2.30	
Hancock Timberland (CF) (Lagged-1 Qtr) - Net	-0.58	-1.20	0.15	3.18	N/A	N/A	N/A	4.65	4.81	-0.34	1.52	04/01/2014
NCREIF Timberland Index (Lagged-1 Qtr)	1.02	1.51	4.00	3.52	6.00	5.97	4.01	3.28	3.28	9.26	5.04	
Difference	-1.60	-2.71	-3.85	-0.34	N/A	N/A	N/A	1.37	1.53	-9.60	-3.52	
Molpus IV (CF) (Lagged-1 Qtr) - Net	-0.15	0.40	1.78	1.43	N/A	N/A	N/A	4.52	-1.91	N/A	-3.70	09/01/2015
NCREIF Timberland Index (Lagged-1 Qtr)	1.02	1.51	4.00	3.52	6.00	5.97	4.01	3.28	3.28	9.26	3.56	
Difference	-1.17	-1.11	-2.22	-2.09	N/A	N/A	N/A	1.24	-5.19	N/A	-7.26	

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Water and Power Employees' Retirement Plan
Comparative Performance - Health

As of December 31, 2018

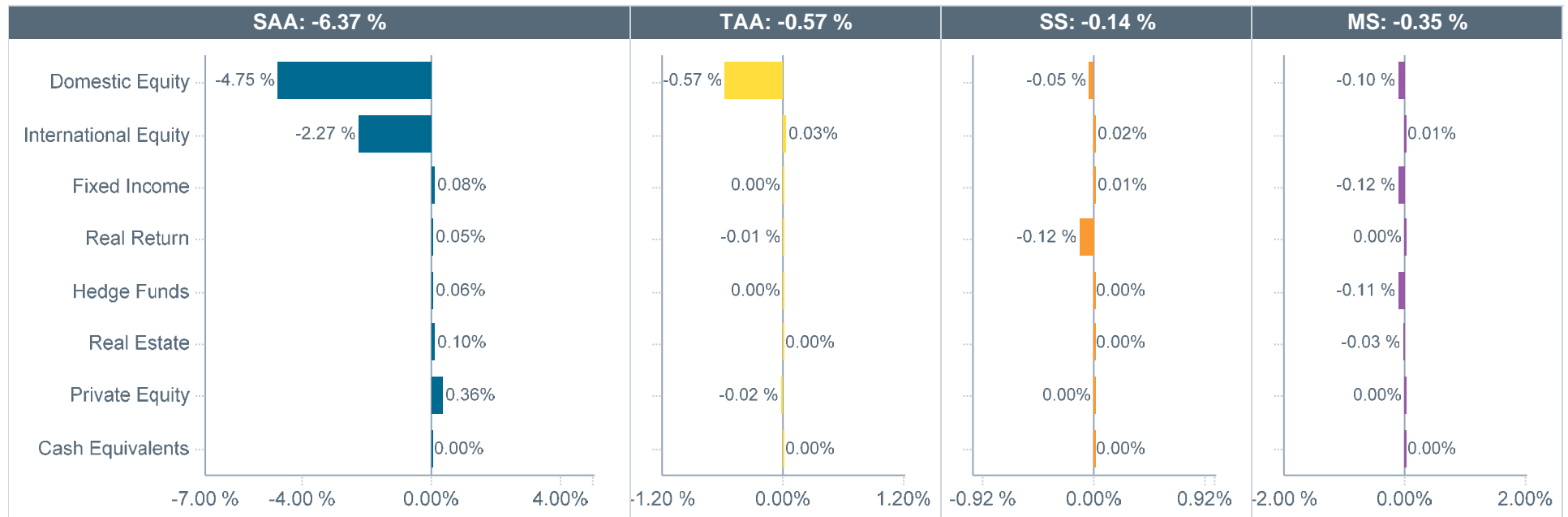
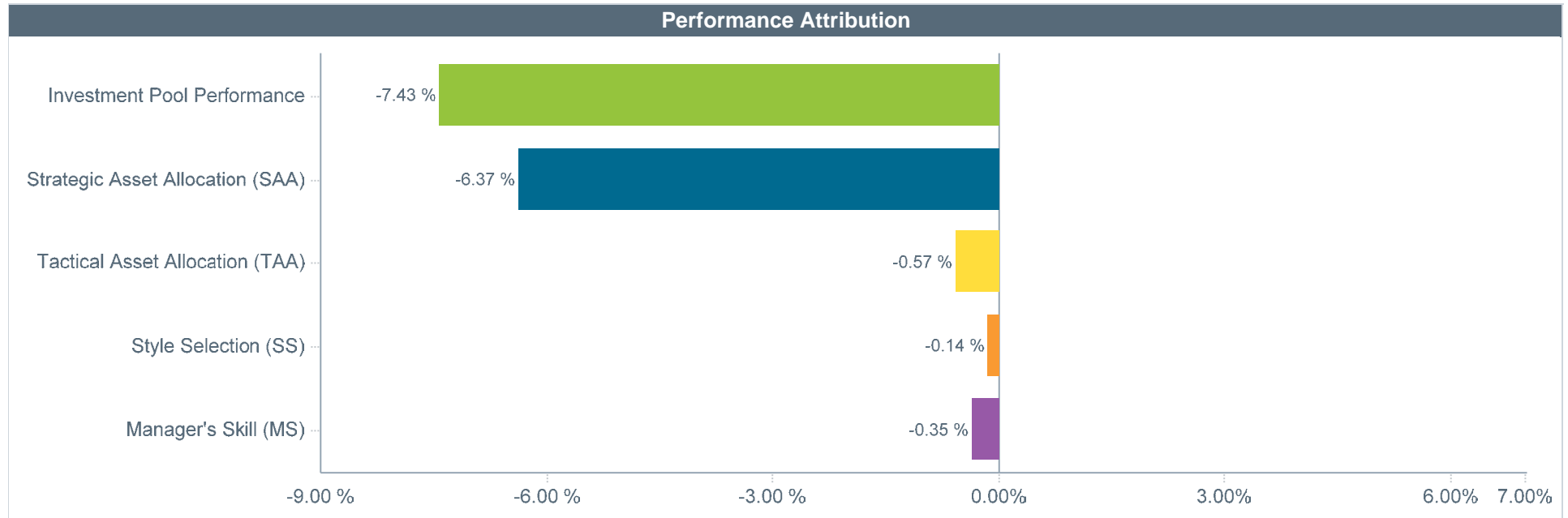
	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
WAMCO (SA)	0.07	-0.38	-0.43	3.99	4.14	2.84	N/A	3.29	9.36	-0.18	3.70	05/01/2010
Bloomberg Wrld Gov't Infl Lnk'd Index (Hedged)	0.55	-0.30	0.10	4.46	4.21	2.96	4.57	3.32	10.22	-1.12	3.97	
Difference	-0.48	-0.08	-0.53	-0.47	-0.07	-0.12	N/A	-0.03	-0.86	0.94	-0.27	
WAMCO (SA) - Net	0.03	-0.47	-0.61	3.81	3.97	2.66	N/A	3.11	9.17	-0.35	3.51	05/01/2010
Bloomberg Wrld Gov't Infl Lnk'd Index (Hedged)	0.55	-0.30	0.10	4.46	4.21	2.96	4.57	3.32	10.22	-1.12	3.97	
Difference	-0.52	-0.17	-0.71	-0.65	-0.24	-0.30	N/A	-0.21	-1.05	0.77	-0.46	
Hedge Funds - Net	-1.25	-0.45	1.19	0.90	1.50	3.26	N/A	3.91	-2.30	1.24	3.04	09/01/2010
ICE BofAML 3 Mo US T-Bill Index+3% (1 Mo Lag)	1.28	2.55	4.85	3.99	3.61	3.46	3.37	3.81	3.33	3.02	3.41	
Difference	-2.53	-3.00	-3.66	-3.09	-2.11	-0.20	N/A	0.10	-5.63	-1.78	-0.37	
Blackstone Hope St. LP (CF) (Lagged-1 Mo) - Net	-1.25	-0.45	1.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.52	09/01/2017
ICE BofAML 3 Mo US T-Bill Index+3% (1 Mo Lag)	1.28	2.55	4.85	3.99	3.61	3.46	3.37	3.81	3.33	3.02	4.66	
Difference	-2.53	-3.00	-3.81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-3.14	
MS Convergent (CF) (Lagged-1 Mo) - Net	-2.70	-1.89	3.36	3.10	N/A	N/A	N/A	7.39	-1.27	-1.34	1.77	03/01/2014
ICE BofAML 3 Mo US T-Bill Index+3% (1 Mo Lag)	1.28	2.55	4.85	3.99	3.61	3.46	3.37	3.81	3.33	3.02	3.63	
Difference	-3.98	-4.44	-1.49	-0.89	N/A	N/A	N/A	3.58	-4.60	-4.36	-1.86	

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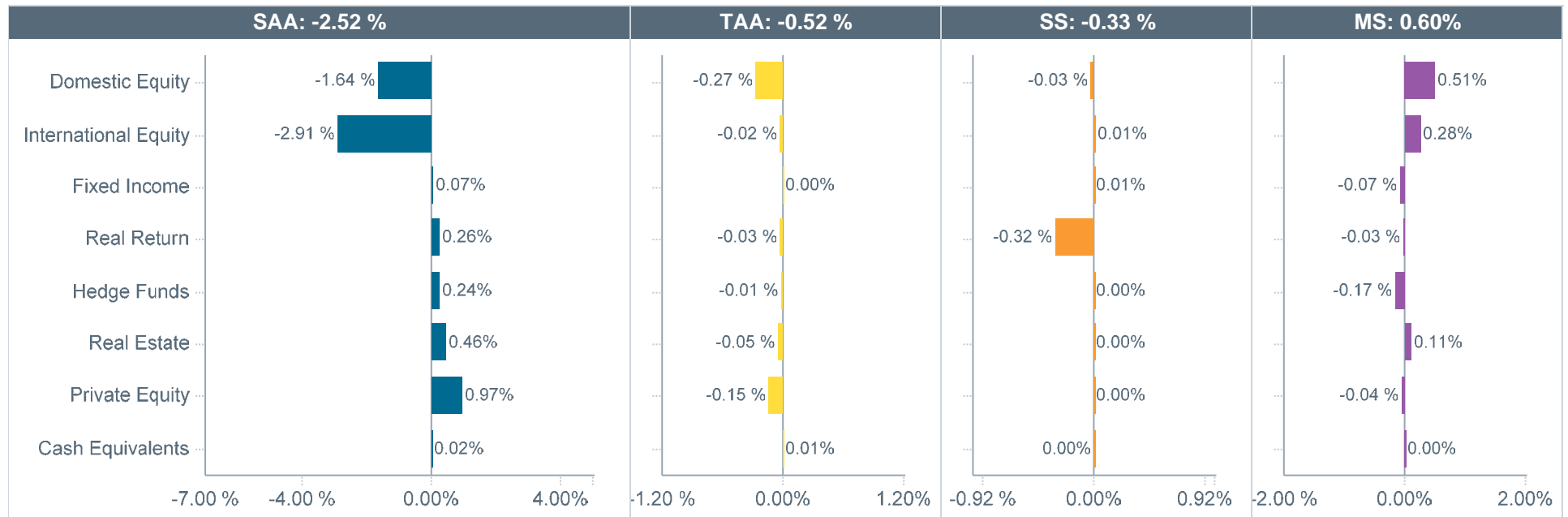
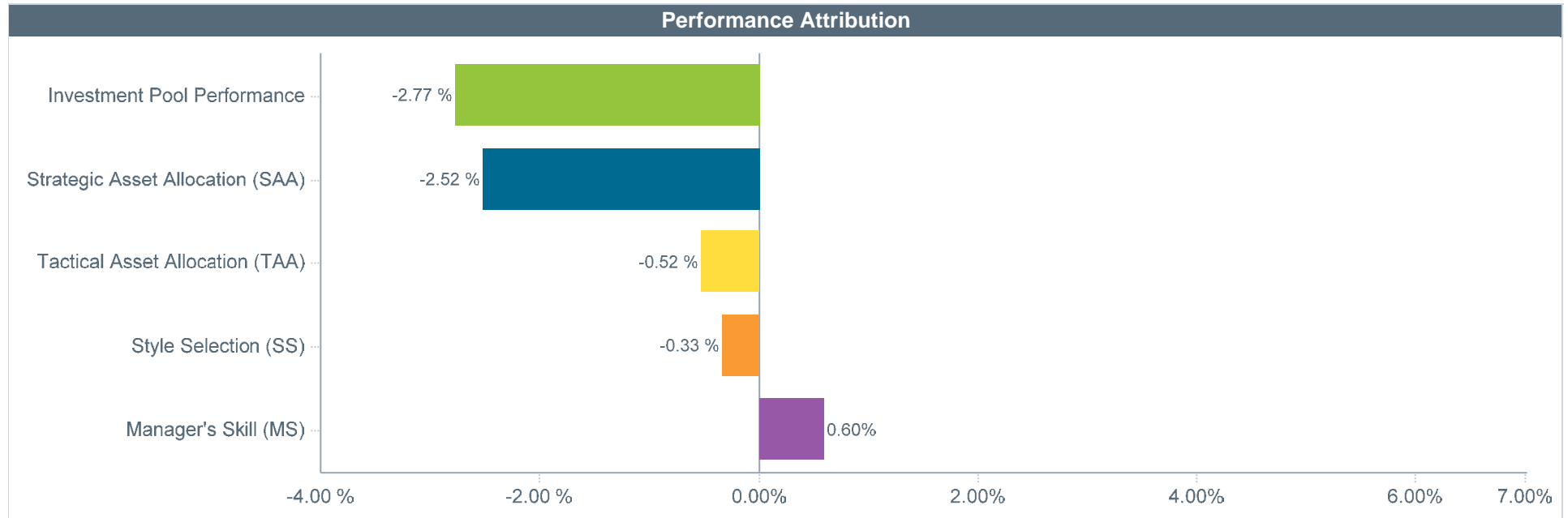
Water and Power Employees' Retirement Plan
Alternative Investment Fund Performance Listing - Health

As of September 30, 2018

	Market Value (\$)	% of Alt. Inv. Group	% of Total Fund	Inception IRR	Inception Date
Private Equity	99,428,872	47.84%	4.60%	17.17%	Aug-09
Adams Street SMB I	5,397,806	2.60%	0.25%	0.18%	Jan-17
Apollo VIII	5,214,606	2.51%	0.24%	17.60%	Jan-14
Ares IV	4,524,869	2.18%	0.21%	16.16%	Nov-12
Ares Special Situation IV	6,775,335	3.26%	0.31%	-6.18%	Jan-15
Ares V	4,274,762	2.06%	0.20%	13.34%	Jan-15
Audax Mezz III	651,056	0.31%	0.03%	12.13%	Jan-11
Blackstone Tactical Opps	6,159,208	2.96%	0.29%	18.65%	Apr-15
CDR IX	4,179,274	2.01%	0.19%	18.55%	Apr-14
CDR X	2,719,988	1.31%	0.13%	28.52%	Mar-18
Crestview Partners III	5,184,821	2.49%	0.24%	26.37%	Feb-15
EnCap VIII	918,178	0.44%	0.04%	0.56%	Jan-11
EnCap IX	2,084,076	1.00%	0.10%	18.62%	Jan-13
EnCap X	5,267,166	2.53%	0.24%	15.86%	Feb-15
EnCap XI	759,564	0.37%	0.04%	0.08%	Jun-17
Harvest VII	3,464,147	1.67%	0.16%	18.42%	Nov-15
Industry Ventures VIII	1,932,696	0.93%	0.09%	92.82%	Aug-16
Landmark XIV	1,183,538	0.57%	0.05%	12.59%	Aug-08
Landmark XV	3,016,256	1.45%	0.14%	17.50%	Feb-14
Lexington VII	1,525,886	0.73%	0.07%	17.25%	Aug-09
Oaktree V	1,270,994	0.61%	0.06%	5.85%	Jan-09
Silver Lake IV	3,894,903	1.87%	0.18%	32.88%	Sep-13
Silver Lake V	2,296,214	1.10%	0.11%	-9.02%	Feb-17
Vista IV	4,104,747	1.97%	0.19%	21.41%	Sep-11
Vista V	11,082,846	5.33%	0.51%	28.26%	Apr-14
Vista VI	11,545,936	5.55%	0.53%	22.89%	Jun-16
Real Estate	108,421,013	52.16%	5.02%	13.08%	Jan-10
AG Core Plus III	469,221	0.23%	0.02%	24.16%	Jan-12
Almanac VI	572,864	0.28%	0.03%	16.42%	Jun-12
Almanac VII	4,028,871	1.94%	0.19%	17.81%	Mar-15
BREP Europe IV	2,750,938	1.32%	0.13%	17.60%	Dec-13
BREP VII	3,961,492	1.91%	0.18%	19.47%	Jun-12
Bristol Value II	3,370,253	1.62%	0.16%	12.22%	Nov-12
Dimensional Global REIT	6,282,411	3.02%	0.29%	6.59%	Mar-13
DRA G&I IX	4,129,821	1.99%	0.19%	21.43%	Sep-16
DRA G&I VIII	1,988,676	0.96%	0.09%	13.50%	Jun-14
DRA VII	4,365,036	2.10%	0.20%	22.76%	Oct-11
FPA Core Plus III	8,396,775	4.04%	0.39%	4.25%	Jan-17
Harrison Street Core	12,288,252	5.91%	0.57%	8.98%	Aug-15
Heitman REIT	6,041,804	2.91%	0.28%	8.27%	Sep-13
Invesco Core Realty	9,583,810	4.61%	0.44%	10.99%	Jun-11
Jamestown Premier	8,861,308	4.26%	0.41%	10.27%	Mar-15
LaSalle Asia V	836,864	0.40%	0.04%	-41.48%	Nov-17
Lone Star RE II	41,998	0.02%	0.00%	-41.48%	May-11
Lone Star RE IV	5,248,552	2.53%	0.24%	28.38%	Jun-15
Lone Star VII	11,559	0.01%	0.00%	7.22%	May-11
Lone Star RE V	1,579,159	0.76%	0.07%	19.31%	Aug-17
Mesa West III	1,264,643	0.61%	0.06%	8.80%	Aug-13
Mesa West IV	3,091,372	1.49%	0.14%	8.34%	Feb-16
PCCP First Mtg II	97	0.00%	0.00%	7.16%	Jun-12
Prologis USLH	8,360,048	4.02%	0.39%	17.23%	Mar-15
Torchlight IV	2,064,606	0.99%	0.10%	12.63%	Aug-13
Torchlight V	4,167,452	2.01%	0.19%	15.67%	Mar-15
Torchlight VI	618,225	0.30%	0.03%	11.68%	Feb-18
Westbrook X	4,044,906	1.95%	0.19%	21.60%	Feb-16



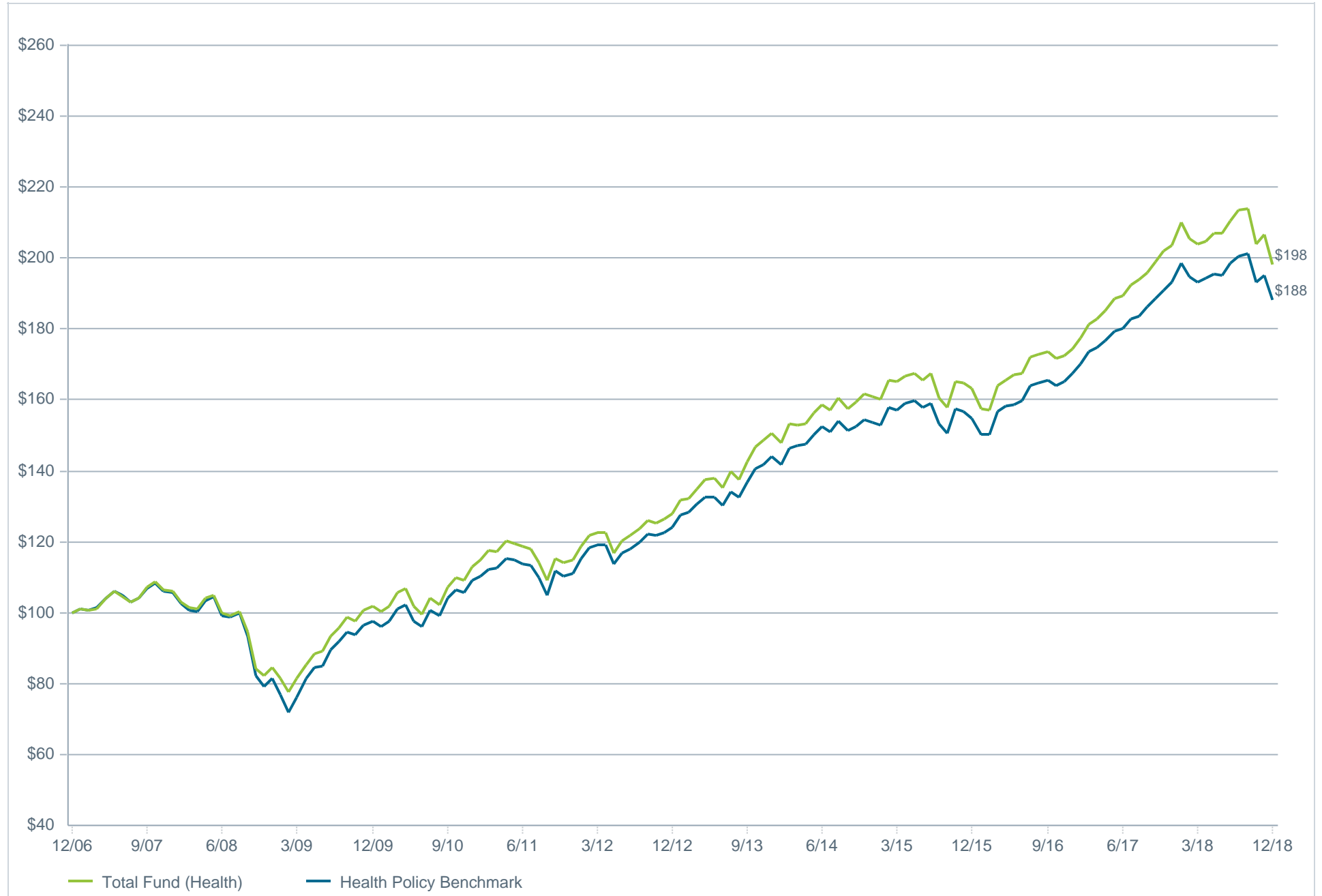
Performance shown is gross of fees. Calculation is based on monthly periodicity. See Glossary for additional information regarding the Total Fund Attribution - IDP calculation.



Performance shown is gross of fees. Calculation is based on monthly periodicity. See Glossary for additional information regarding the Total Fund Attribution - IDP calculation.

Water and Power Employees' Retirement Plan
Growth of \$100 - Health

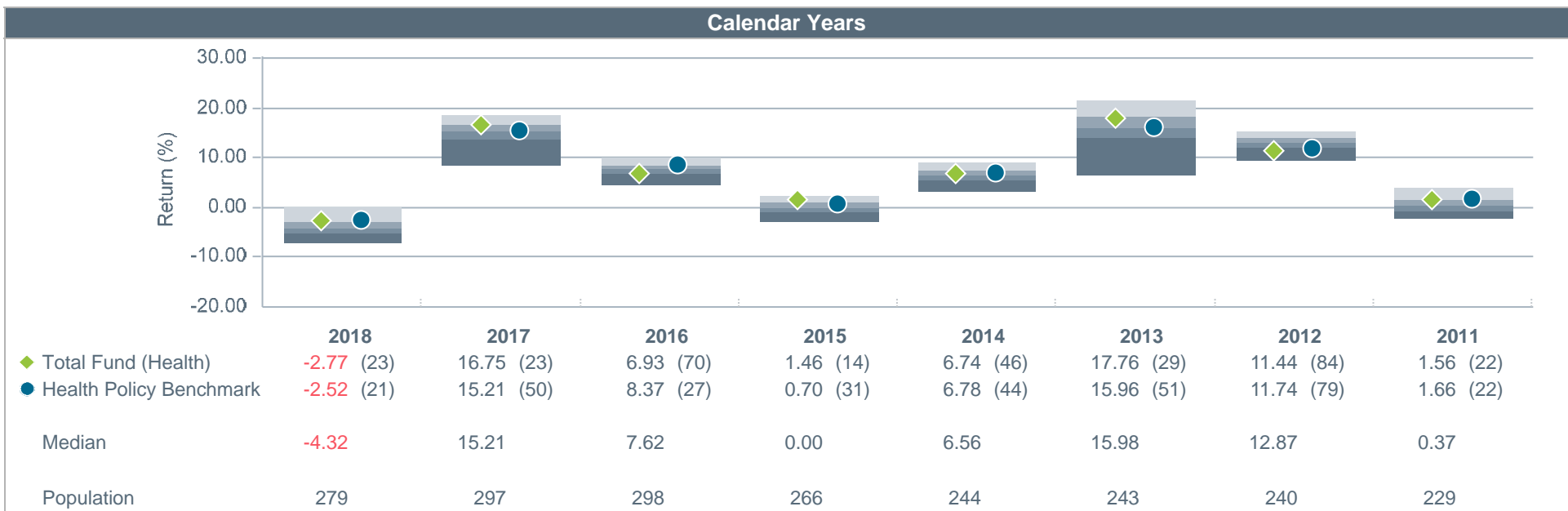
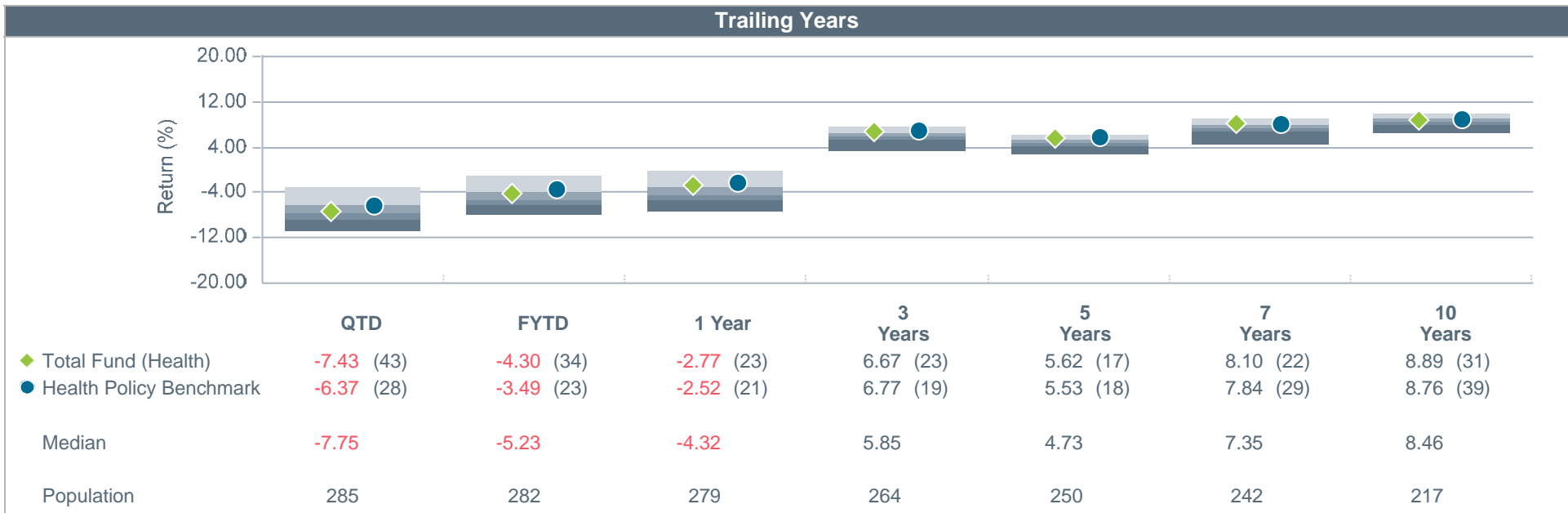
Since Inception Ending December 31, 2018



Performance shown is gross of fees. Calculation is based on monthly periodicity.

Water and Power Employees' Retirement Plan
Plan Sponsor Peer Group Analysis - Health
All Public Plans-Total Fund

As of December 31, 2018

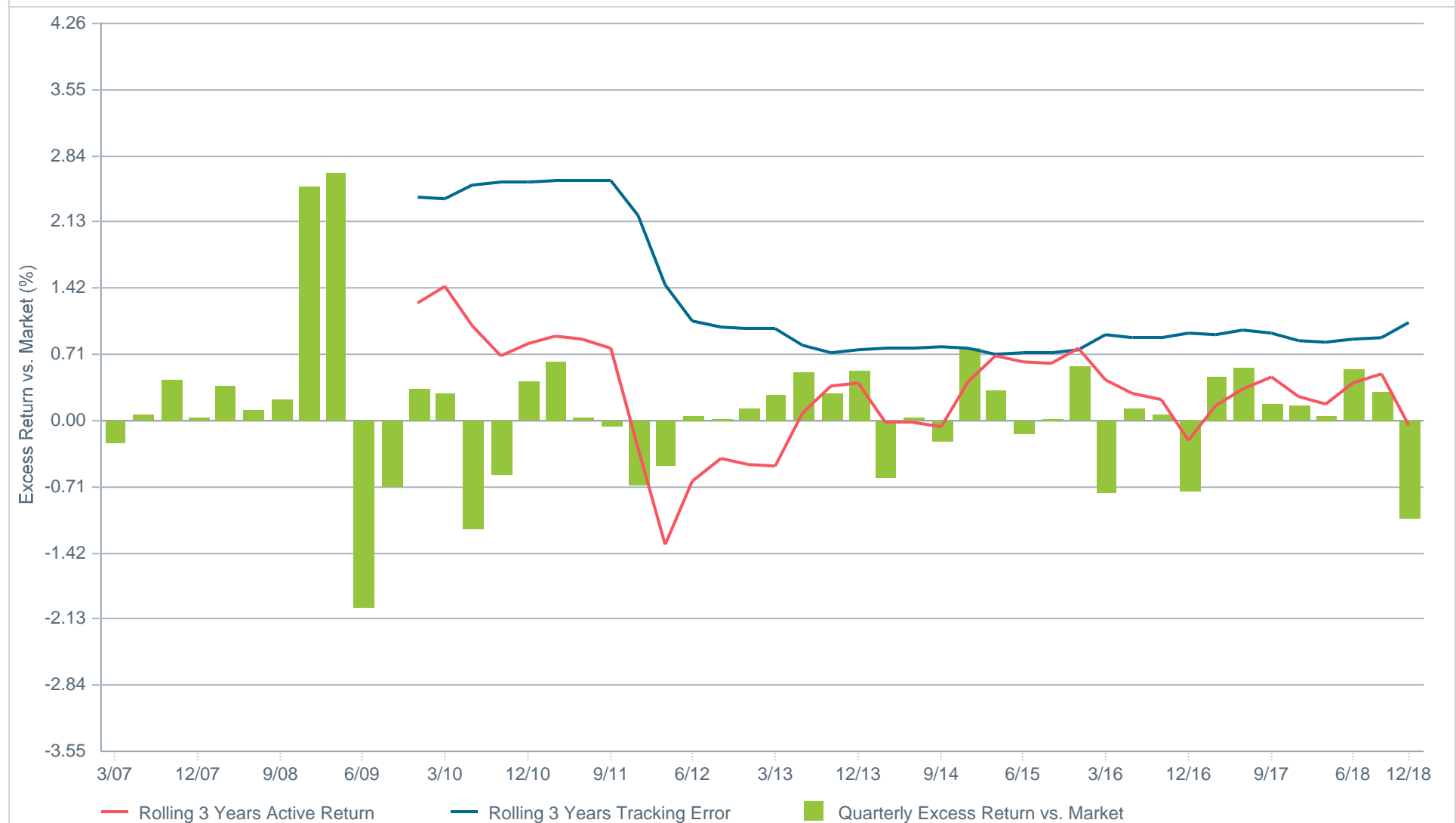


Performance shown is gross of fees. Parenthesis contain percentile ranks.

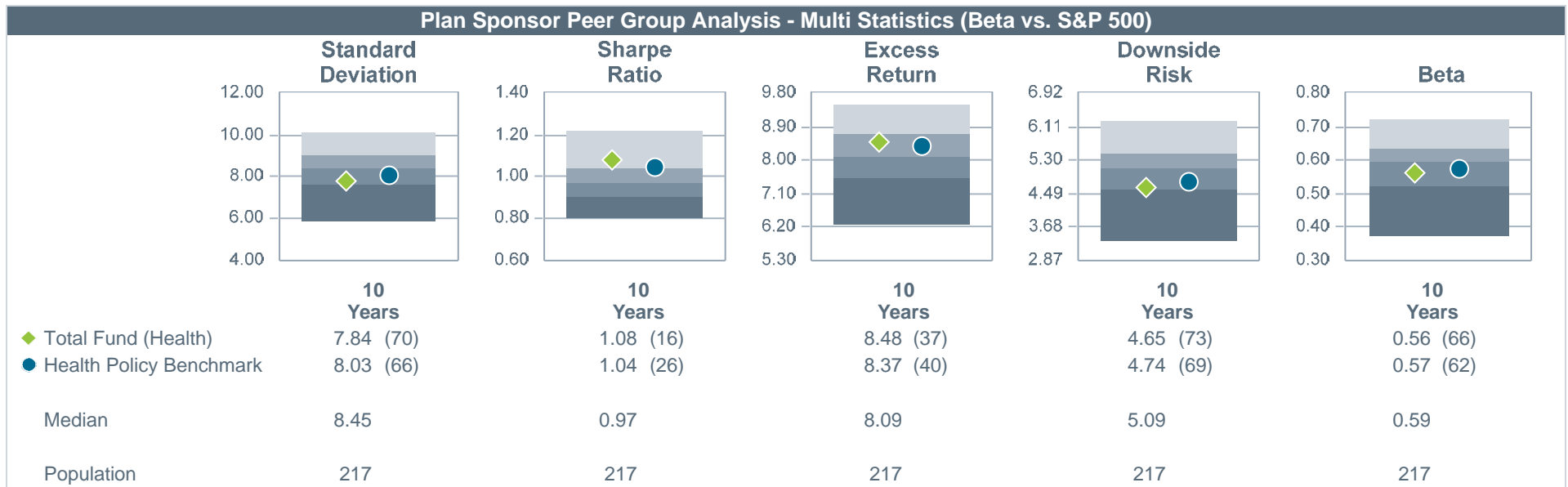
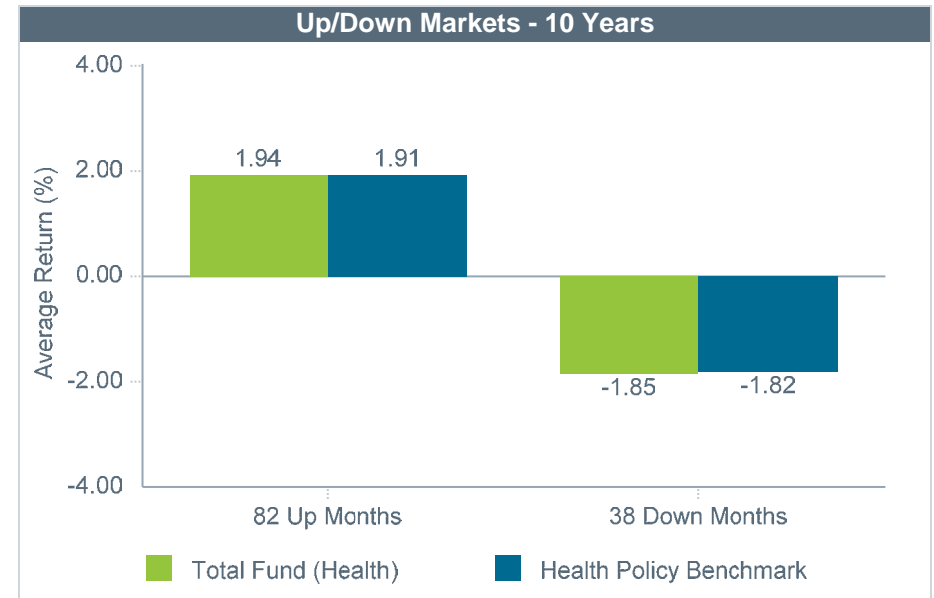
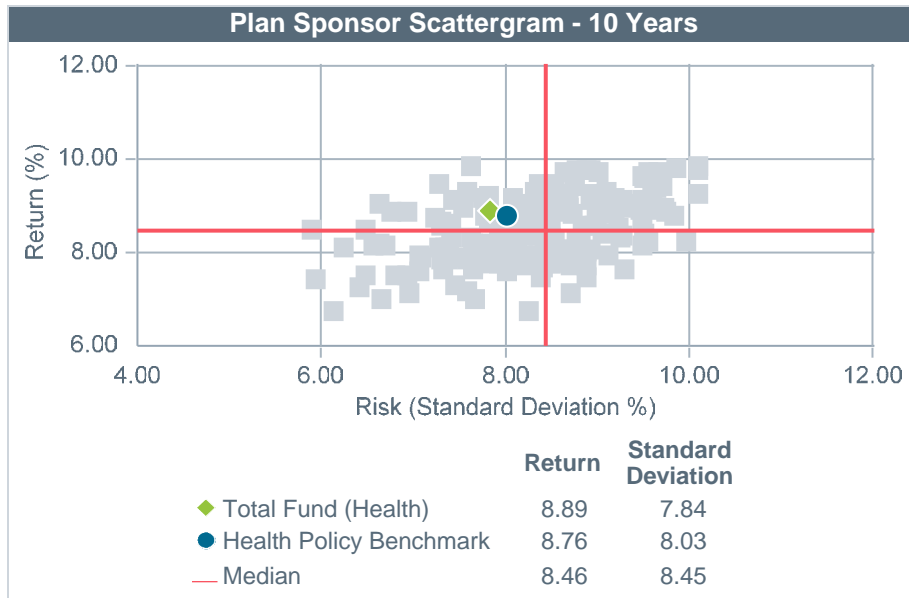
Water and Power Employees' Retirement Plan
Total Fund (Health) vs. Health Policy Benchmark
Comparative Performance & Rolling Return - Health

As of December 31, 2018

	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Total Fund (Health)	-7.43	-4.30	-2.77	6.67	5.62	8.10	8.89	16.75	6.93	1.46	6.74	17.76
Health Policy Benchmark	-6.37	-3.49	-2.52	6.77	5.53	7.84	8.76	15.21	8.37	0.70	6.78	15.96
Difference	-1.06	-0.81	-0.25	-0.10	0.09	0.26	0.13	1.54	-1.44	0.76	-0.04	1.80



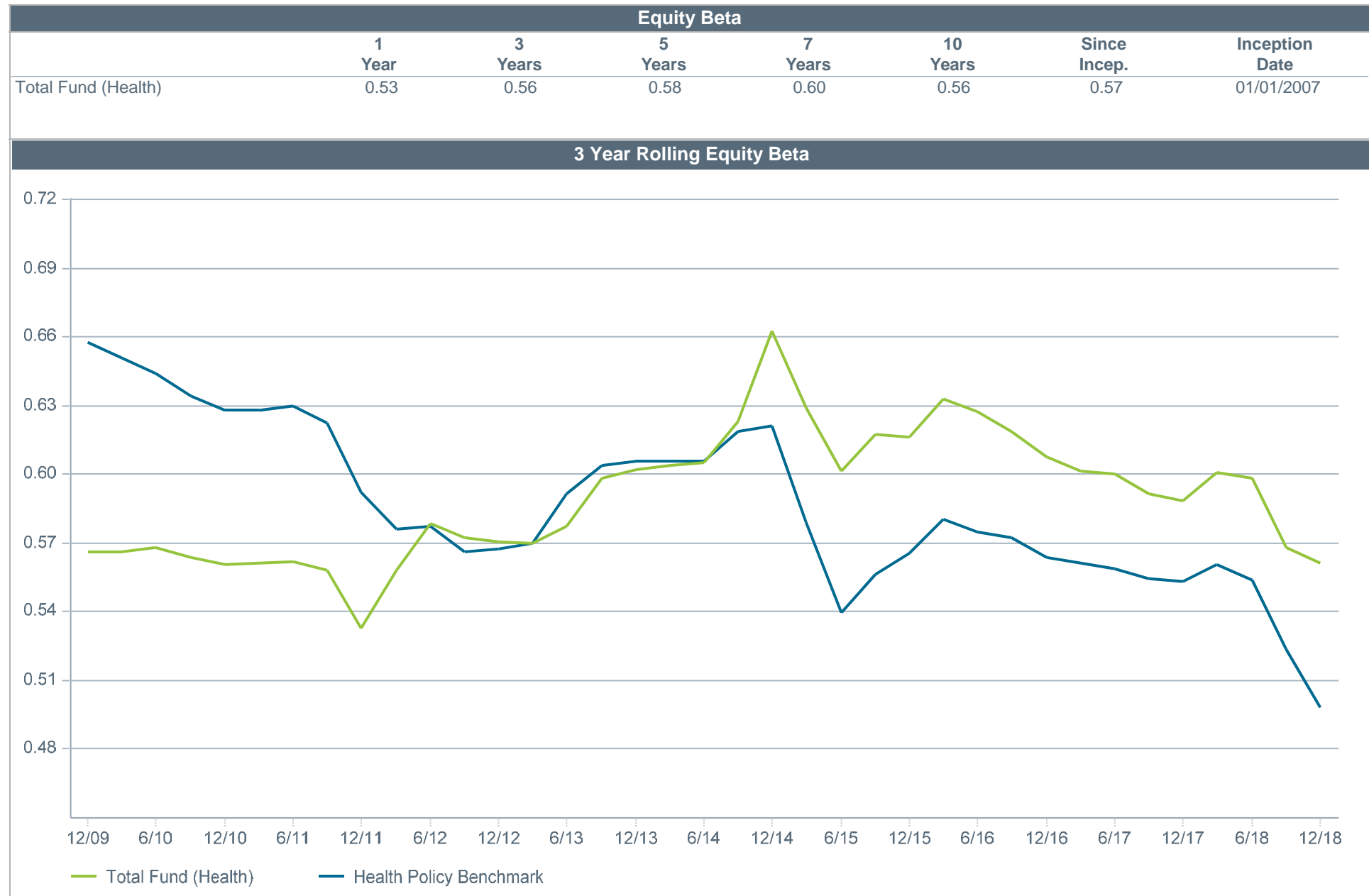
Performance shown is gross of fees. Calculation is based on quarterly periodicity. Fiscal year ends 06/30.



Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

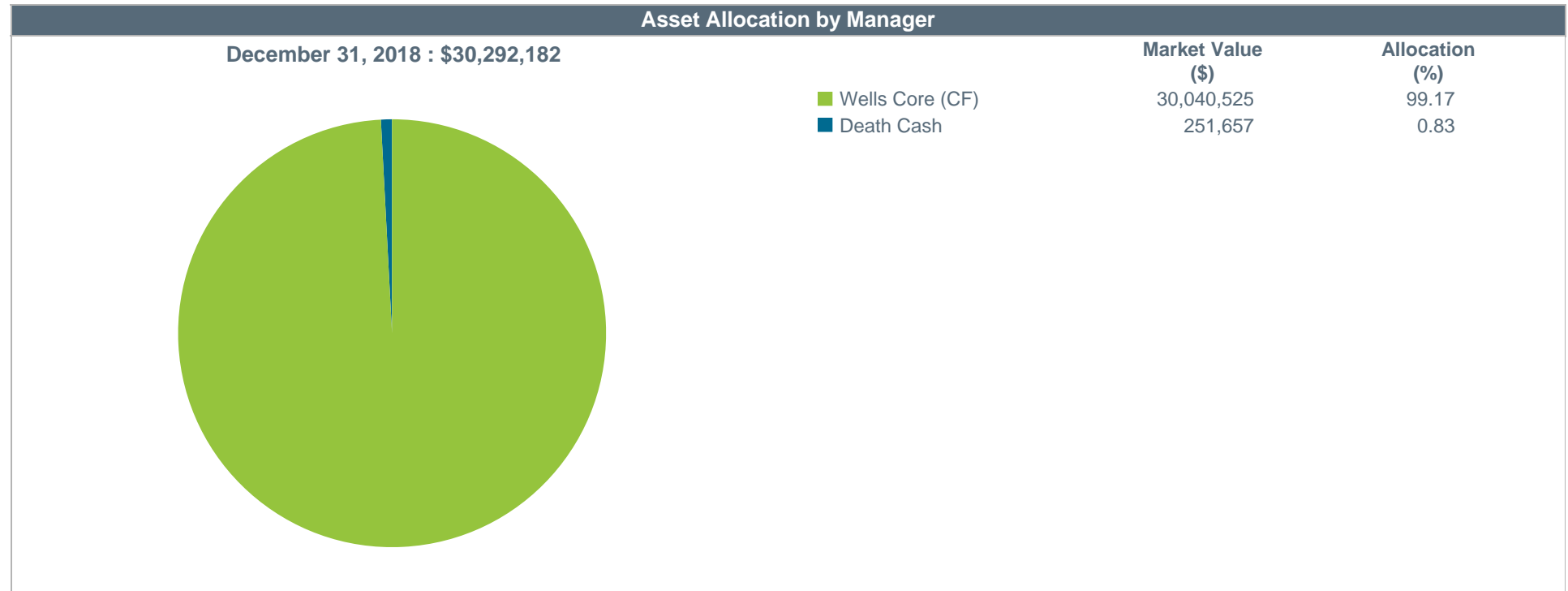
Water and Power Employees' Retirement Plan
Equity Beta Analysis - Health

As of December 31, 2018



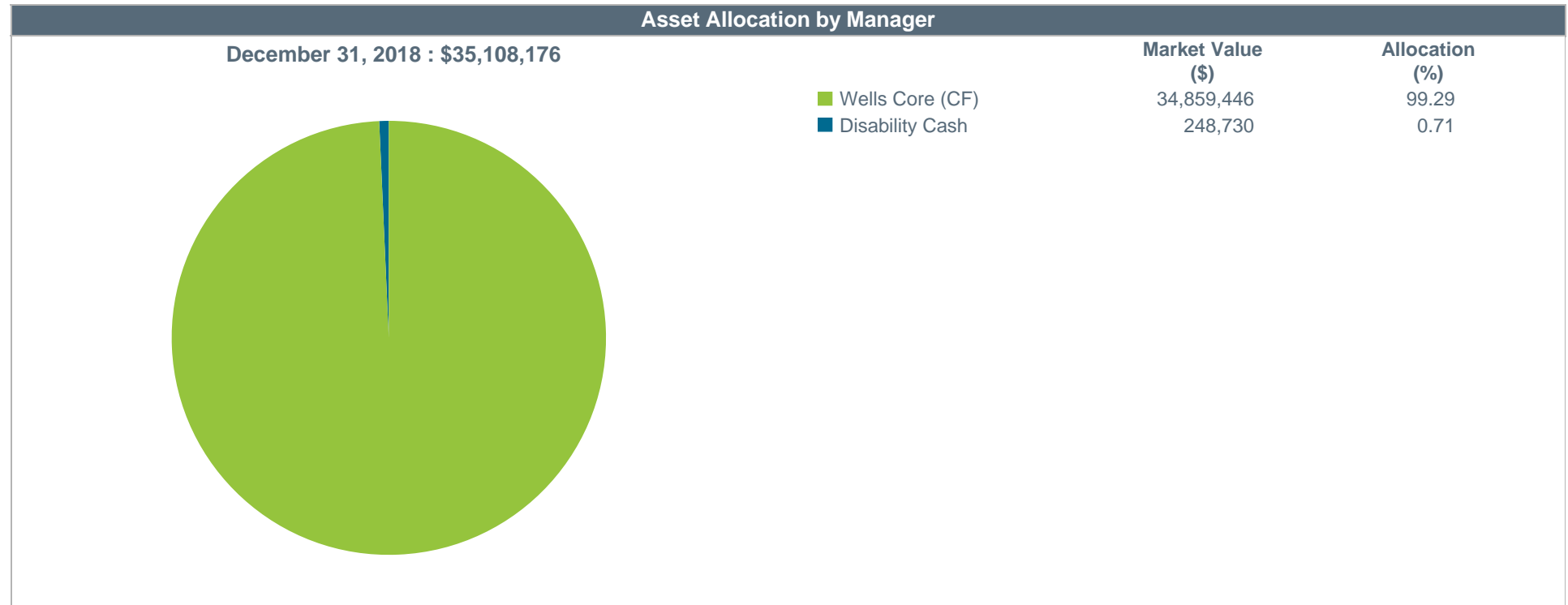
Performance shown is gross of fees. The objective of the Total Fund Beta is to measure the aggregate level of non-diversifiable or systematic equity risk exposure of the Water and Power Employees' Retirement Plan - Health. The Total Fund Beta is calculated using the S&P 500 Index (Cap Wtd) as the benchmark and is based on monthly periodicity. It represents a measure of the sensitivity of the total fund to movements of the S&P 500 Index (Cap Wtd) over the preceding three year period.

Total Fund - Death and Disability



Comparative Performance												
	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
Total Fund (Death)	1.51	1.59	0.03	2.11	2.68	2.61	4.38	3.41	2.92	1.08	5.17	12/01/1995
Death Policy Benchmark	1.59	1.63	0.09	2.01	2.44	2.03	3.35	3.43	2.55	0.53	4.84	
Difference	-0.08	-0.04	-0.06	0.10	0.24	0.58	1.03	-0.02	0.37	0.55	0.33	
Wells Core (CF)	1.52	1.60	0.01	2.14	2.72	2.66	4.82	3.46	2.98	1.06	4.78	07/01/2004
Bloomberg US Agg Bond Index	1.64	1.66	0.01	2.06	2.52	2.10	3.48	3.54	2.65	0.55	3.99	
Difference	-0.12	-0.06	0.00	0.08	0.20	0.56	1.34	-0.08	0.33	0.51	0.79	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	1.40	1.60	0.07	2.48	2.86	2.63	4.41	4.05	3.11	0.82	4.43	
Rank	40	51	61	76	63	48	31	88	58	27	21	
Wells Core (CF) - Net	1.52	1.60	0.01	2.14	2.72	2.66	4.82	3.46	2.98	1.06	4.54	07/01/2004
Bloomberg US Agg Bond Index	1.64	1.66	0.01	2.06	2.52	2.10	3.48	3.54	2.65	0.55	3.99	
Difference	-0.12	-0.06	0.00	0.08	0.20	0.56	1.34	-0.08	0.33	0.51	0.55	

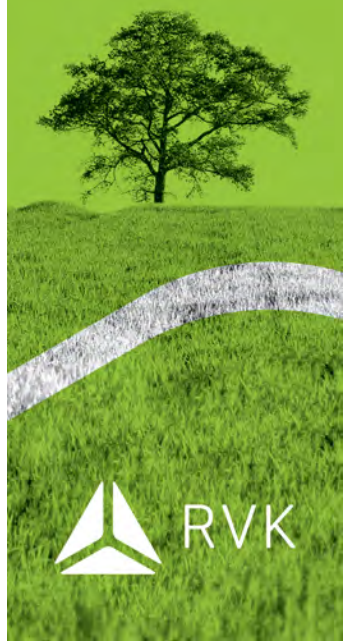
Allocations shown may not sum up to 100% exactly due to rounding. Performance shown is gross of fees, except where noted. Performance is annualized for periods greater than one year. Fiscal year ends 06/30. Please see the Addendum for custom index descriptions.



Comparative Performance												
	QTD/ FYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
Total Fund (Disability)	1.54	1.63	0.06	2.14	2.72	2.65	4.56	3.44	2.97	1.10	5.50	12/01/1995
Disability Policy Benchmark	1.58	1.63	0.11	2.00	2.43	2.02	3.32	3.41	2.53	0.53	4.81	
Difference	-0.04	0.00	-0.05	0.14	0.29	0.63	1.24	0.03	0.44	0.57	0.69	
Wells Core (CF)	1.55	1.64	0.05	2.15	2.72	2.66	4.83	3.46	2.98	1.06	4.78	07/01/2004
Bloomberg US Agg Bond Index	1.64	1.66	0.01	2.06	2.52	2.10	3.48	3.54	2.65	0.55	3.99	
Difference	-0.09	-0.02	0.04	0.09	0.20	0.56	1.35	-0.08	0.33	0.51	0.79	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	1.40	1.60	0.07	2.48	2.86	2.63	4.41	4.05	3.11	0.82	4.43	
Rank	38	43	54	75	62	48	31	88	58	27	21	
Wells Core (CF) - Net	1.55	1.64	0.05	2.15	2.72	2.66	4.83	3.46	2.98	1.06	4.50	07/01/2004
Bloomberg US Agg Bond Index	1.64	1.66	0.01	2.06	2.52	2.10	3.48	3.54	2.65	0.55	3.99	
Difference	-0.09	-0.02	0.04	0.09	0.20	0.56	1.35	-0.08	0.33	0.51	0.51	

Allocations shown may not sum up to 100% exactly due to rounding. Performance shown is gross of fees, except where noted. Performance is annualized for periods greater than one year. Fiscal year ends 06/30. Please see the Addendum for custom index descriptions.

Composite and Manager Reviews



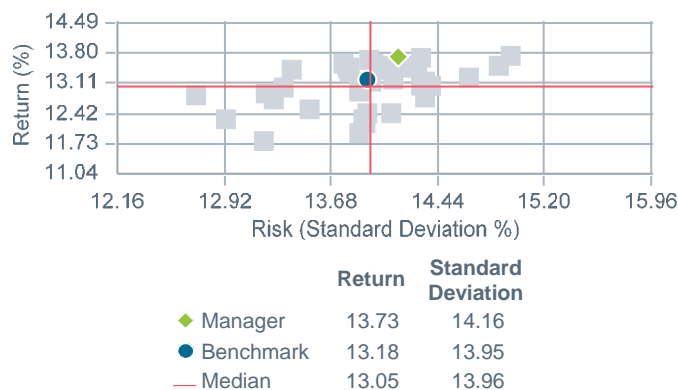
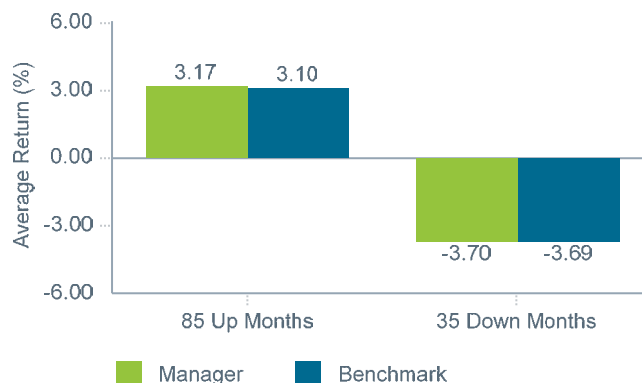
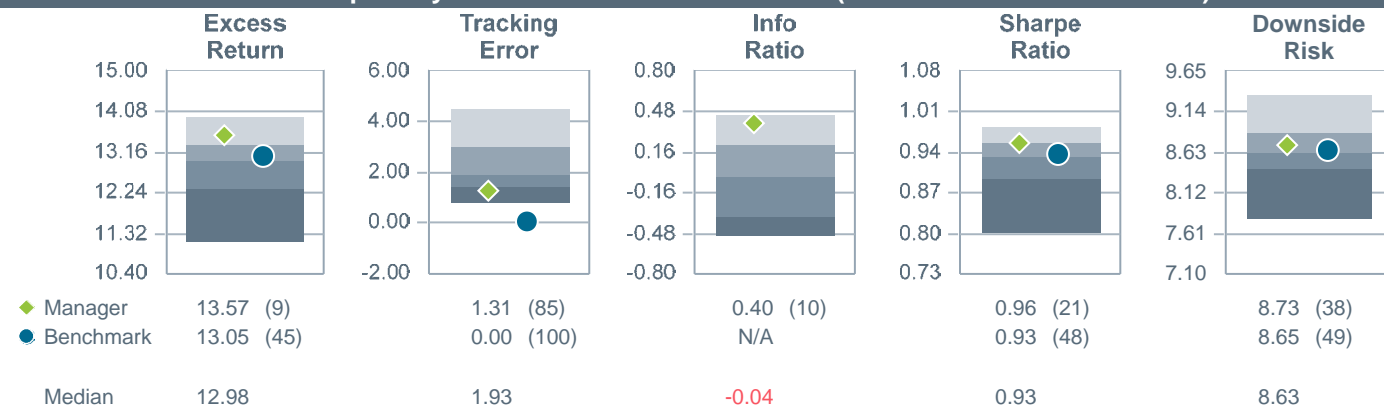
Manager: Domestic Equity - Retirement

As of December 31, 2018

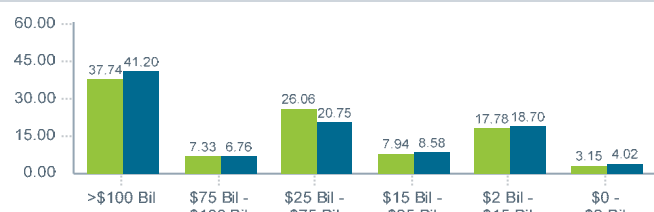
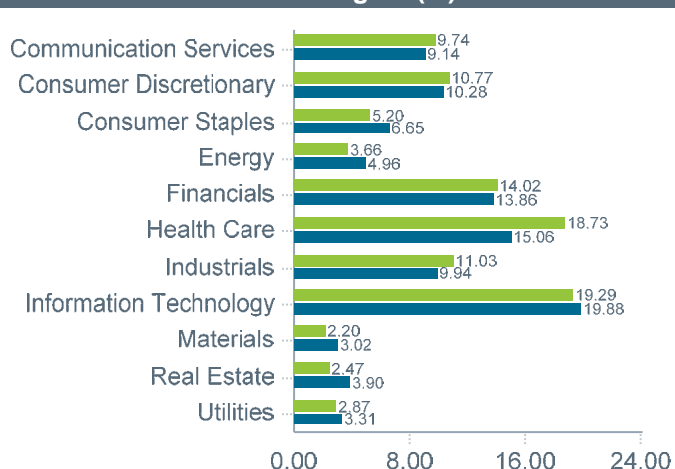
Benchmark: Russell 3000 (Blended) (R)

Peer Group: All Public Plans-US Equity Segment

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-14.71	-3.99	9.79	8.58	13.45	13.73	23.44	11.68	1.96	11.82	36.97
Benchmark	-14.30	-5.24	8.97	7.91	12.46	13.18	21.13	12.74	0.48	12.56	33.55
Difference	-0.41	1.25	0.82	0.67	0.99	0.55	2.31	-1.06	1.48	-0.74	3.42
Peer Group Median	-14.54	-5.86	8.56	7.40	12.11	13.05	20.31	12.98	0.31	11.41	33.91
Rank	56	8	7	9	2	7	8	78	7	30	8
Population	76	71	67	63	54	44	84	77	60	35	33

Peer Group Scattergram - 10 Years

Up/Down Markets - 10 Years

Peer Group Analysis - Multi Statistics - 10 Years (Excess Return vs. Risk Free)

Portfolio Characteristics and Dist. of Market Cap (%)

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	161,602	167,103
Median Mkt. Cap (\$M)	7,241	1,418
Price/Earnings Ratio	18.98	16.99
Price/Book Ratio	3.35	3.04
5 Yr. EPS Growth Rate (%)	17.92	15.88
Current Yield (%)	1.88	2.14
Beta (5 Years, Monthly)	1.02	1.00
Number of Securities	1,133	3,015
Active Share	35.19	N/A


Sector Weights (%)


Performance shown is gross of fees. Calculation is based on monthly periodicity. Parenthesis contain percentile ranks.

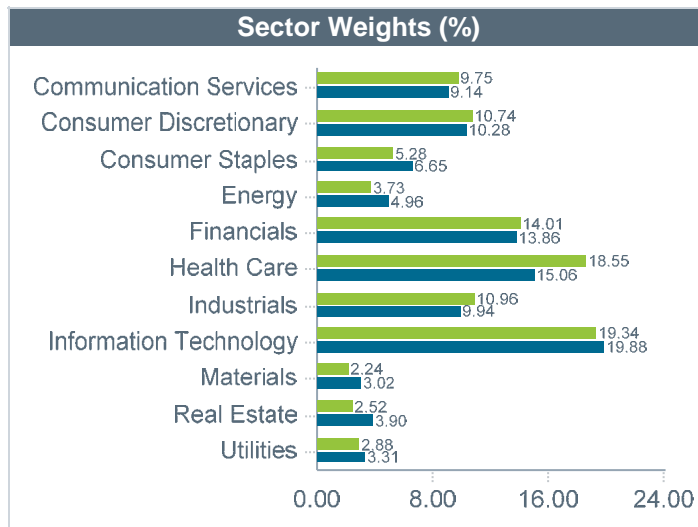
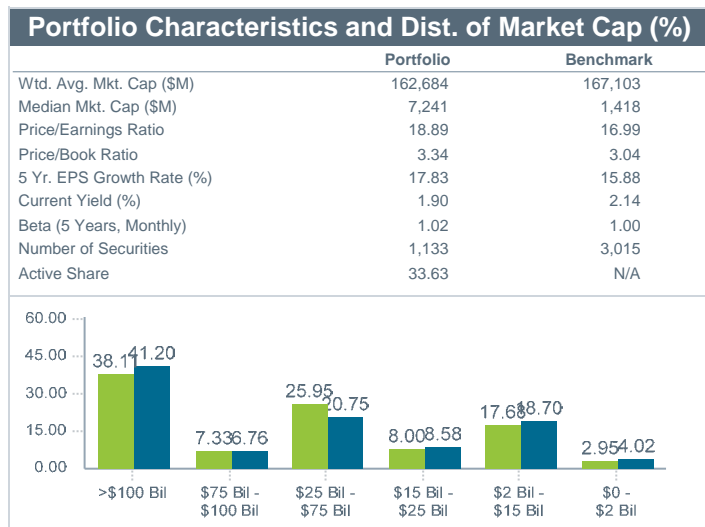
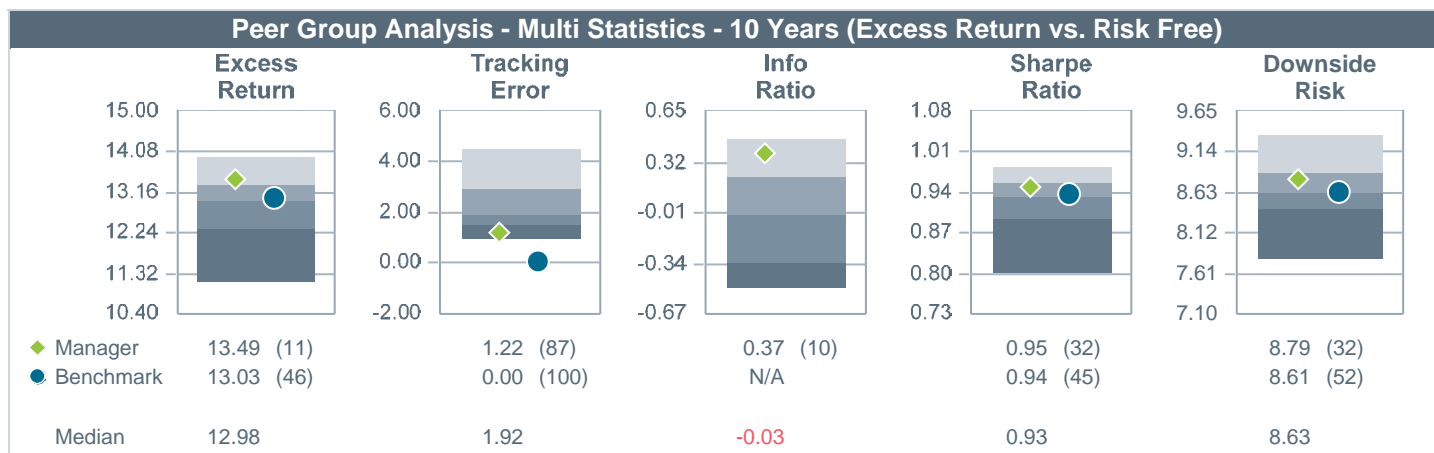
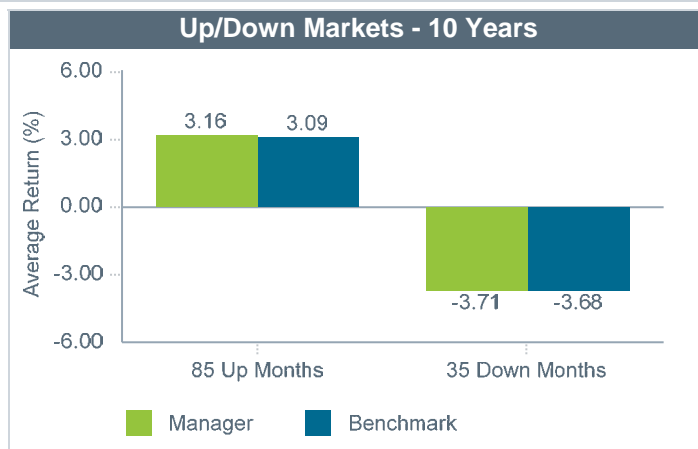
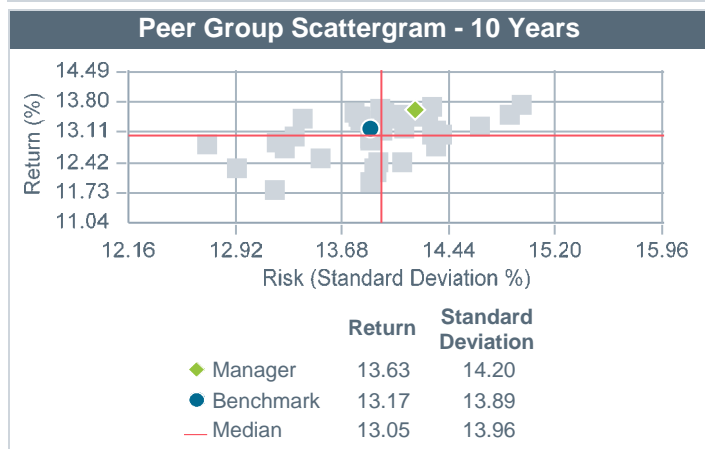
Manager: Domestic Equity - Health

As of December 31, 2018

Benchmark: Russell 3000 (Blended) (H)

Peer Group: All Public Plans-US Equity Segment

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-14.66	-3.99	9.77	8.58	13.43	13.63	23.37	11.67	1.99	11.88	36.87
Benchmark	-14.30	-5.24	8.97	7.91	12.46	13.17	21.13	12.74	0.48	12.56	33.55
Difference	-0.36	1.25	0.80	0.67	0.97	0.46	2.24	-1.07	1.51	-0.68	3.32
Peer Group Median	-14.54	-5.86	8.56	7.40	12.11	13.05	20.31	12.98	0.31	11.41	33.91
Rank	54	8	8	9	2	12	8	78	6	29	9
Population	76	71	67	63	54	44	84	77	60	35	33



Performance shown is gross of fees. Calculation is based on monthly periodicity. Parenthesis contain percentile ranks.



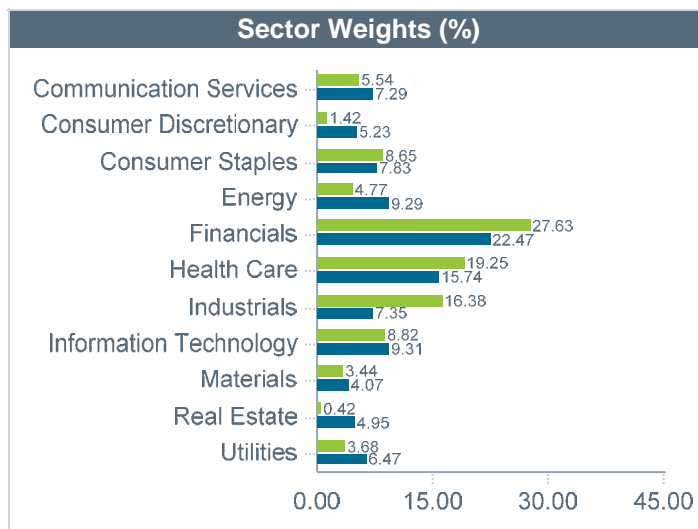
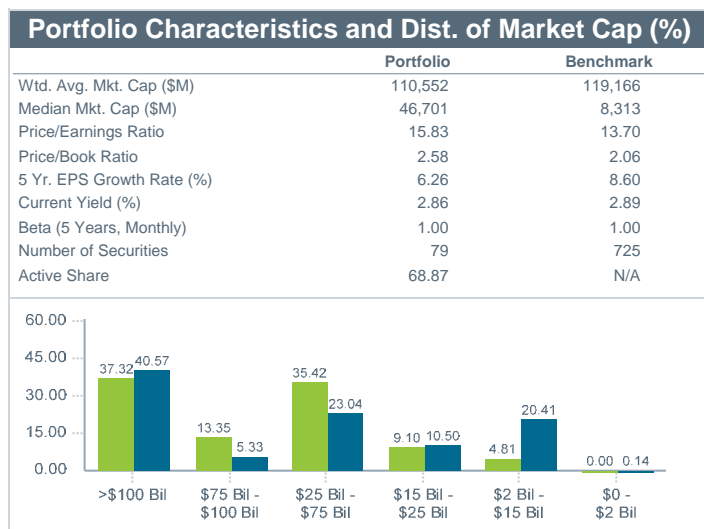
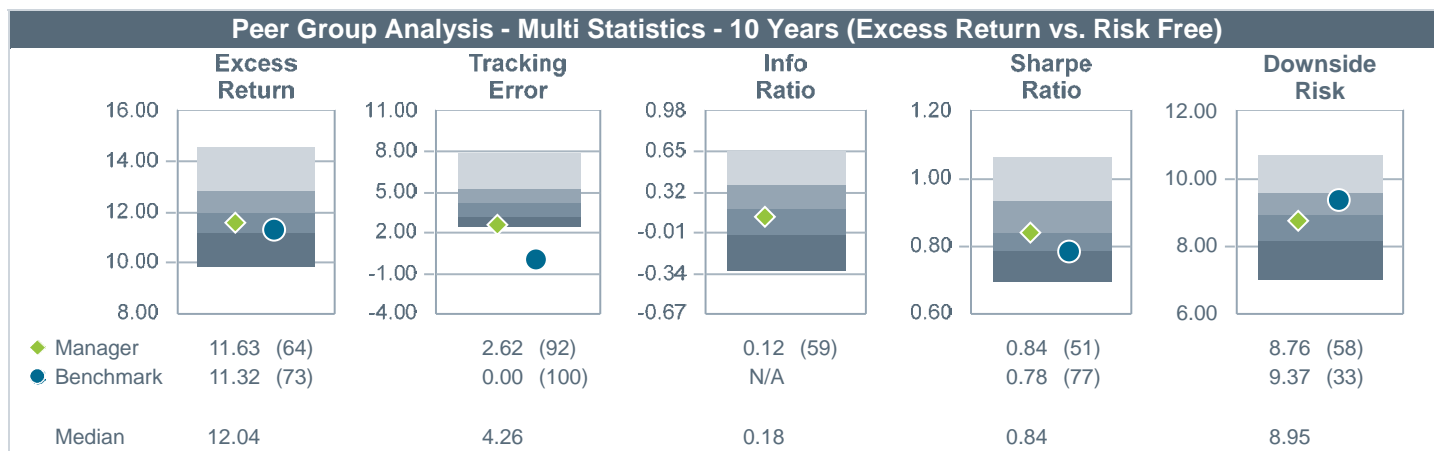
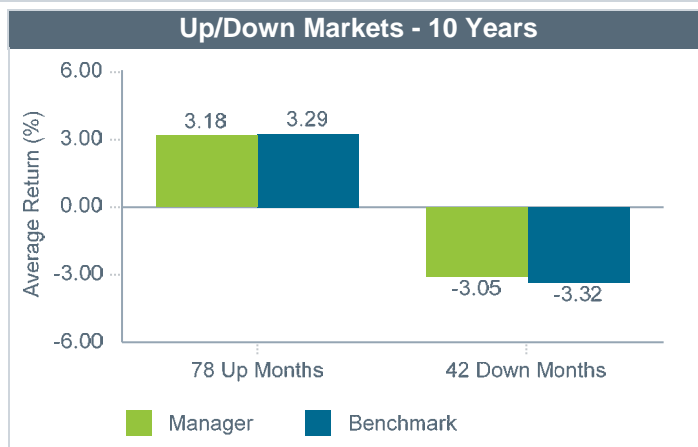
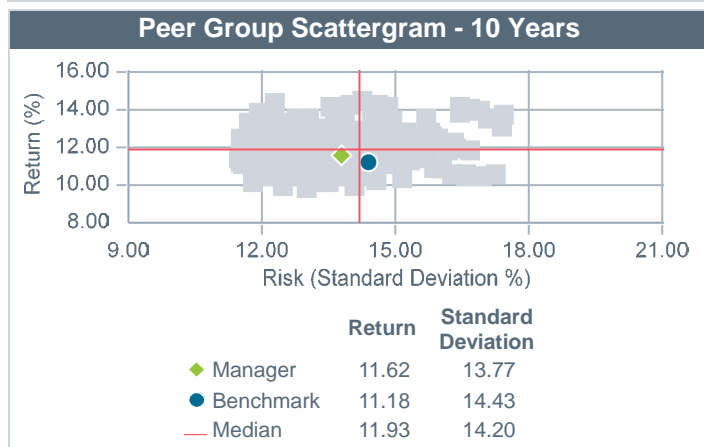
Manager: MFS Large Cap Value (SA)

As of December 31, 2018

Benchmark: Russell 1000 Val Index

Peer Group: IM U.S. Large Cap Value Equity (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-11.51	-9.67	7.21	6.62	11.87	11.62	17.82	15.80	-0.06	11.86	36.41
Benchmark	-11.72	-8.27	6.95	5.95	11.02	11.18	13.66	17.34	-3.83	13.45	32.53
Difference	0.21	-1.40	0.26	0.67	0.85	0.44	4.16	-1.54	3.77	-1.59	3.88
Peer Group Median	-13.57	-8.39	7.27	6.23	11.40	11.94	17.22	14.47	-2.27	12.22	34.27
Rank	26	63	53	38	37	63	44	38	28	56	34
Population	311	311	306	299	283	261	342	371	388	412	412



Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on monthly periodicity. Parenthesis contain percentile ranks.

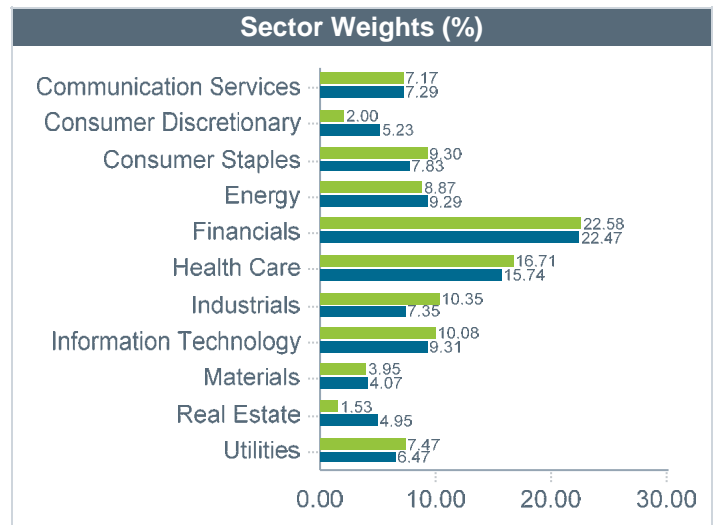
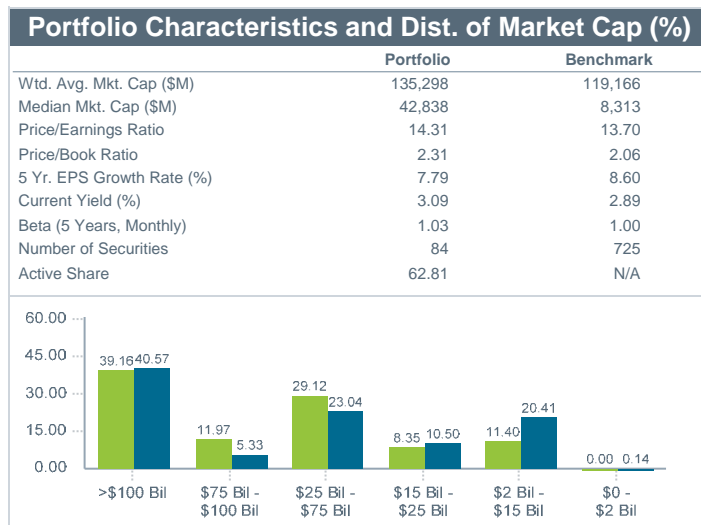
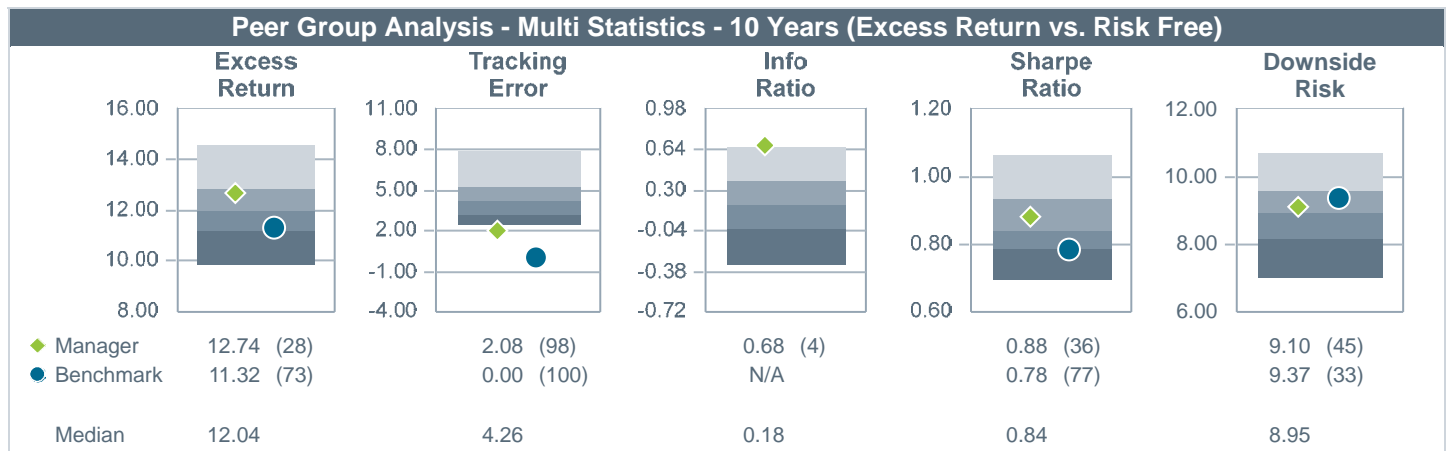
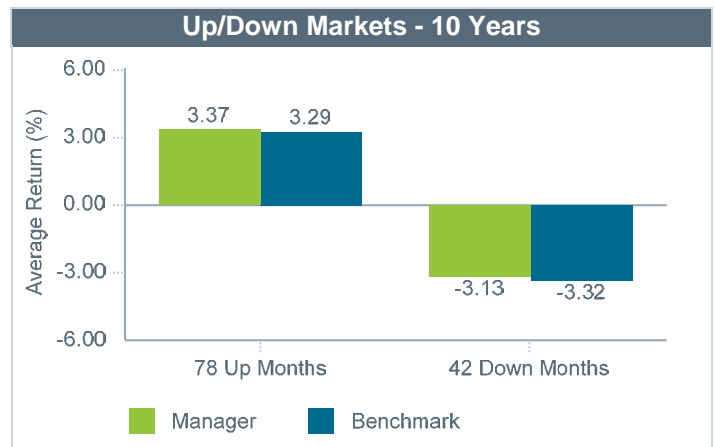
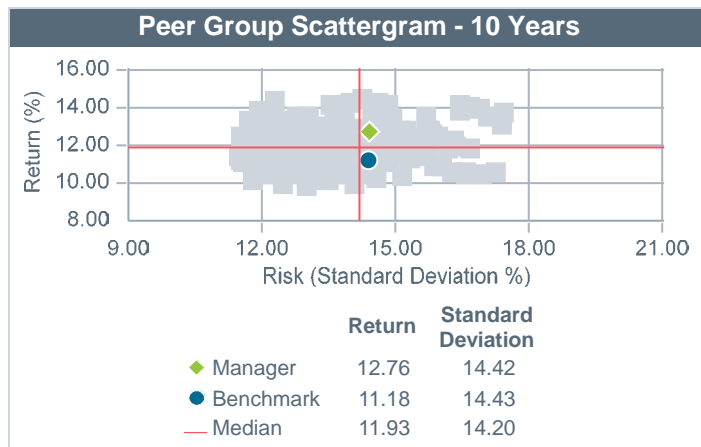
Manager: T. Rowe Price Large Cap Value (SA)

As of December 31, 2018

Benchmark: Russell 1000 Val Index

Peer Group: IM U.S. Large Cap Value Equity (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-11.58	-7.63	8.10	7.04	12.26	12.76	16.74	17.14	-1.90	13.43	35.32
Benchmark	-11.72	-8.27	6.95	5.95	11.02	11.18	13.66	17.34	-3.83	13.45	32.53
Difference	0.14	0.64	1.15	1.09	1.24	1.58	3.08	-0.20	1.93	-0.02	2.79
Peer Group Median	-13.57	-8.39	7.27	6.23	11.40	11.94	17.22	14.47	-2.27	12.22	34.27
Rank	27	41	34	32	24	29	59	26	46	35	42
Population	311	311	306	299	283	261	342	371	388	412	412



Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on monthly periodicity. Parenthesis contain percentile ranks.

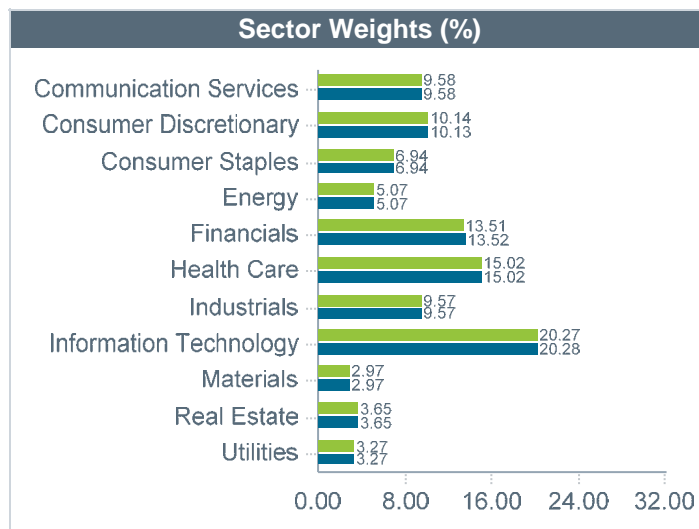
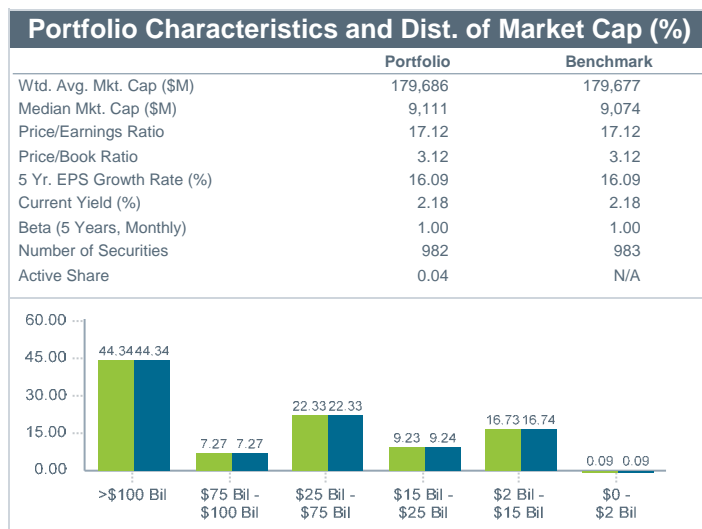
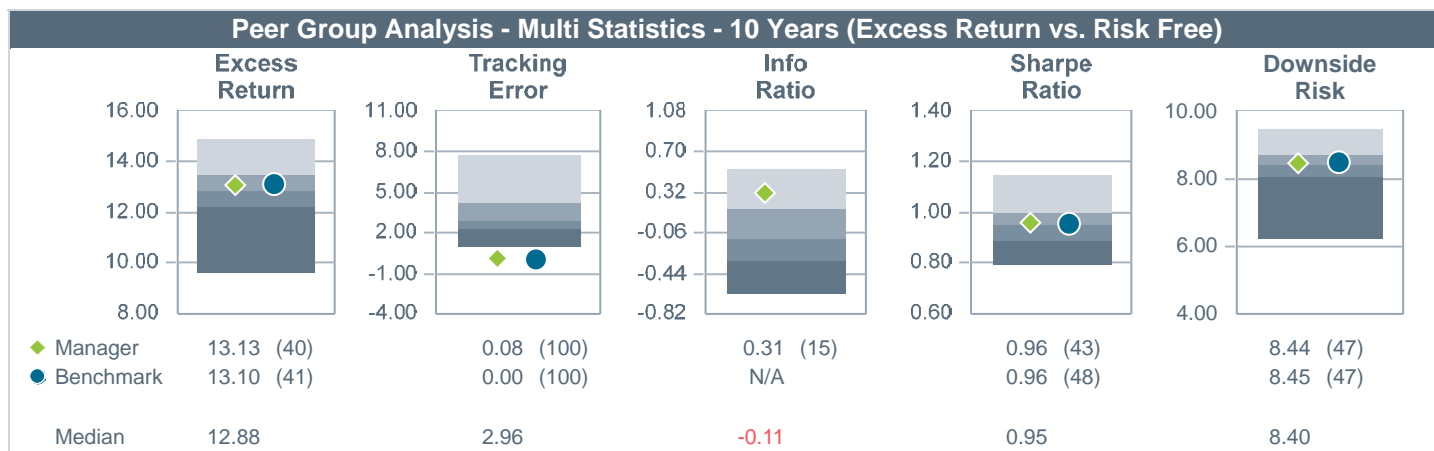
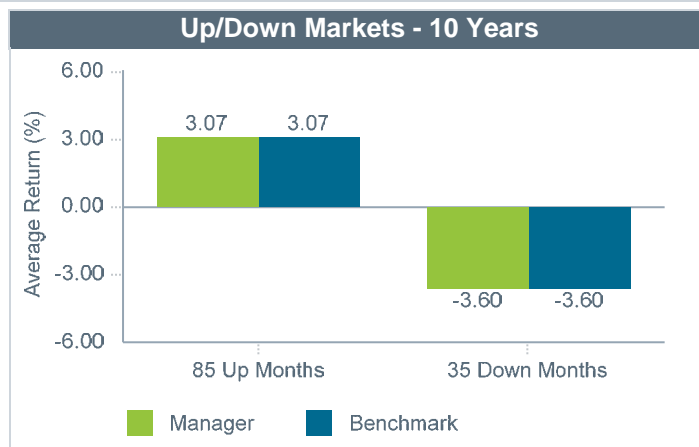
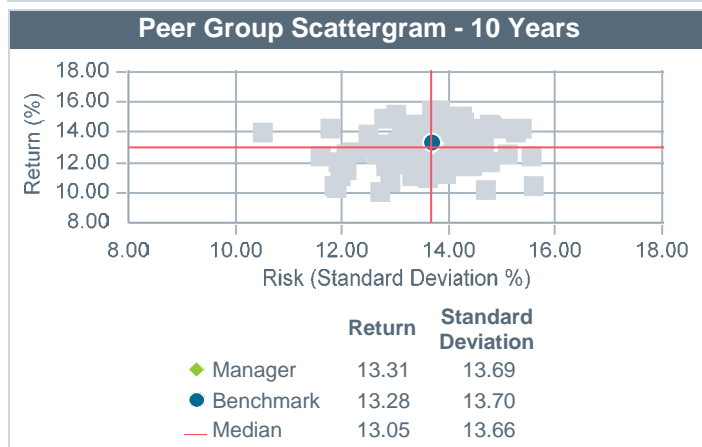
Manager: BlackRock Russell 1000 Index (CF)

As of December 31, 2018

Benchmark: Russell 1000 Index

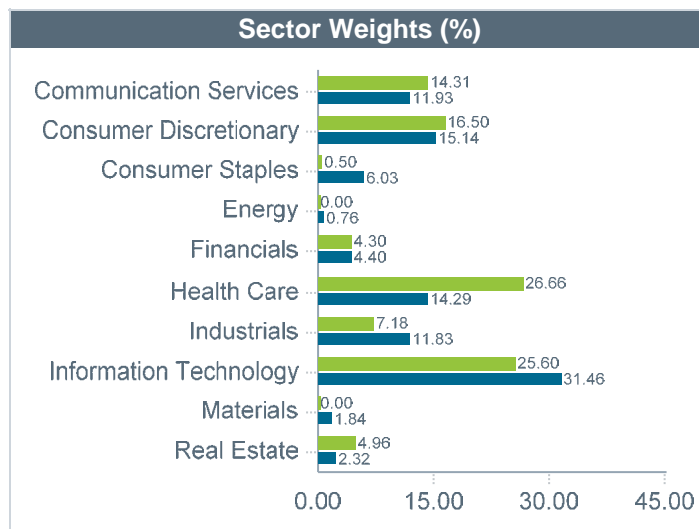
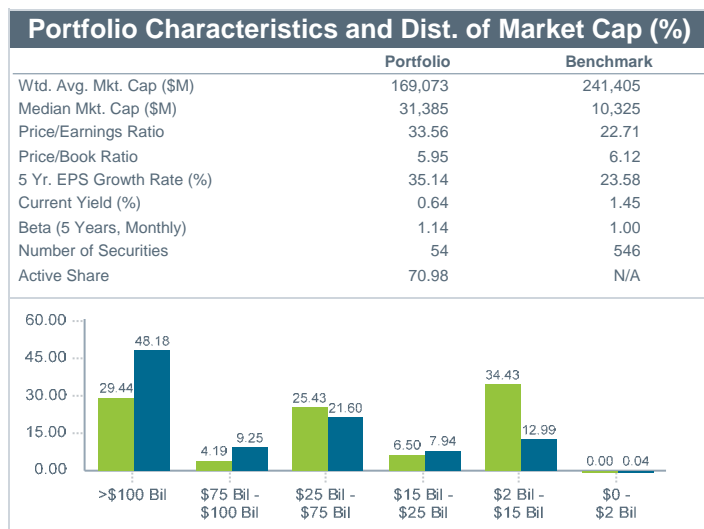
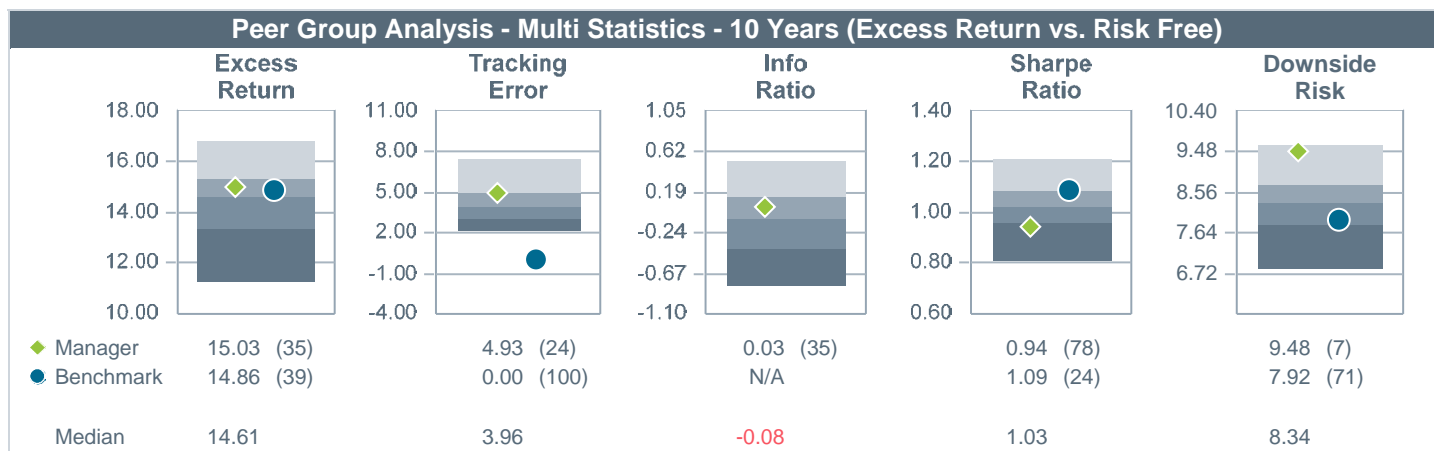
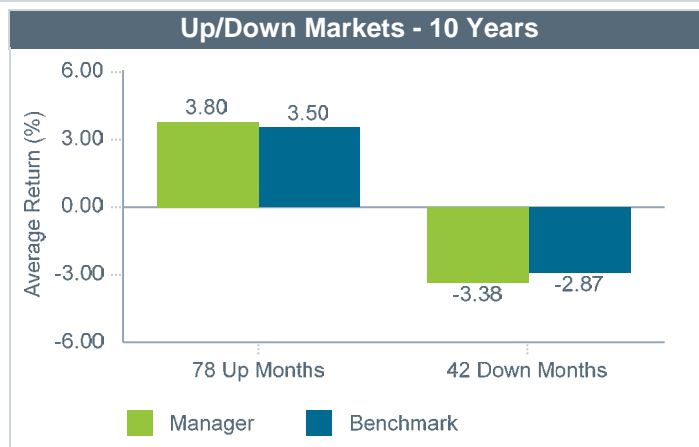
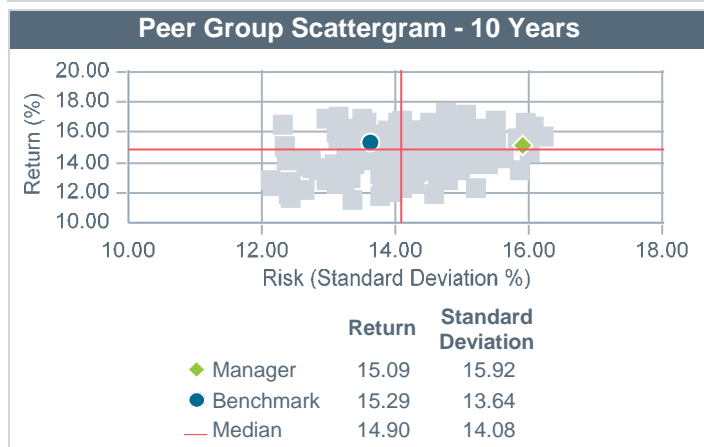
Peer Group: IM U.S. Large Cap Core Equity (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-13.80	-4.74	9.12	8.24	12.67	13.31	21.70	12.09	0.94	13.27	33.16
Benchmark	-13.82	-4.78	9.09	8.21	12.63	13.28	21.69	12.05	0.92	13.24	33.11
Difference	0.02	0.04	0.03	0.03	0.04	0.03	0.01	0.04	0.02	0.03	0.05
Peer Group Median	-13.83	-5.20	8.47	8.15	12.63	13.05	21.83	10.52	1.43	13.42	32.98
Rank	50	43	36	50	49	39	53	31	57	52	50
Population	242	242	236	229	214	192	284	308	326	345	363



Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on monthly periodicity. Parenthesis contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-20.46	3.17	10.23	8.77	13.39	15.09	29.32	0.38	1.73	11.75	37.29
Benchmark	-15.89	-1.51	11.15	10.40	14.14	15.29	30.21	7.08	5.67	13.05	33.48
Difference	-4.57	4.68	-0.92	-1.63	-0.75	-0.20	-0.89	-6.70	-3.94	-1.30	3.81
Peer Group Median	-15.14	-1.17	10.19	9.66	13.77	14.90	28.11	4.65	5.07	11.99	34.52
Rank	98	17	50	70	61	45	42	85	77	54	27
Population	255	254	242	236	223	210	283	308	337	347	353



Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on monthly periodicity. Parenthesis contain percentile ranks.

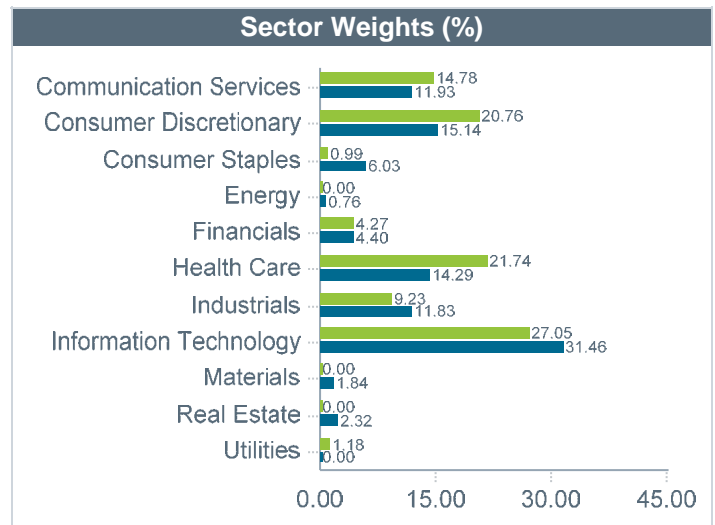
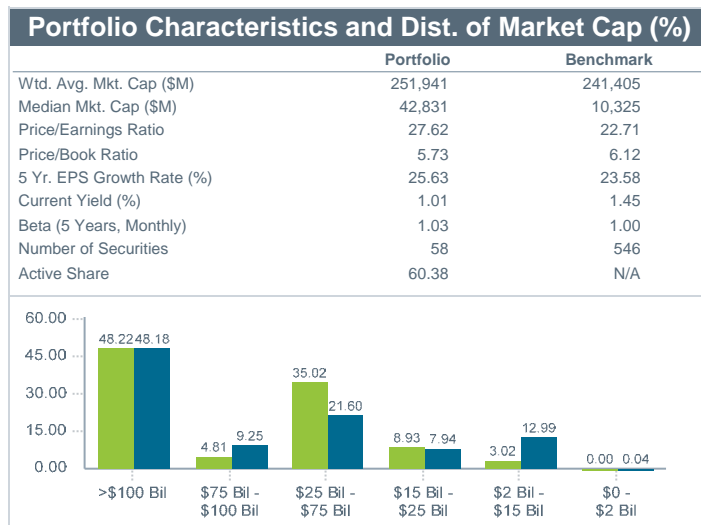
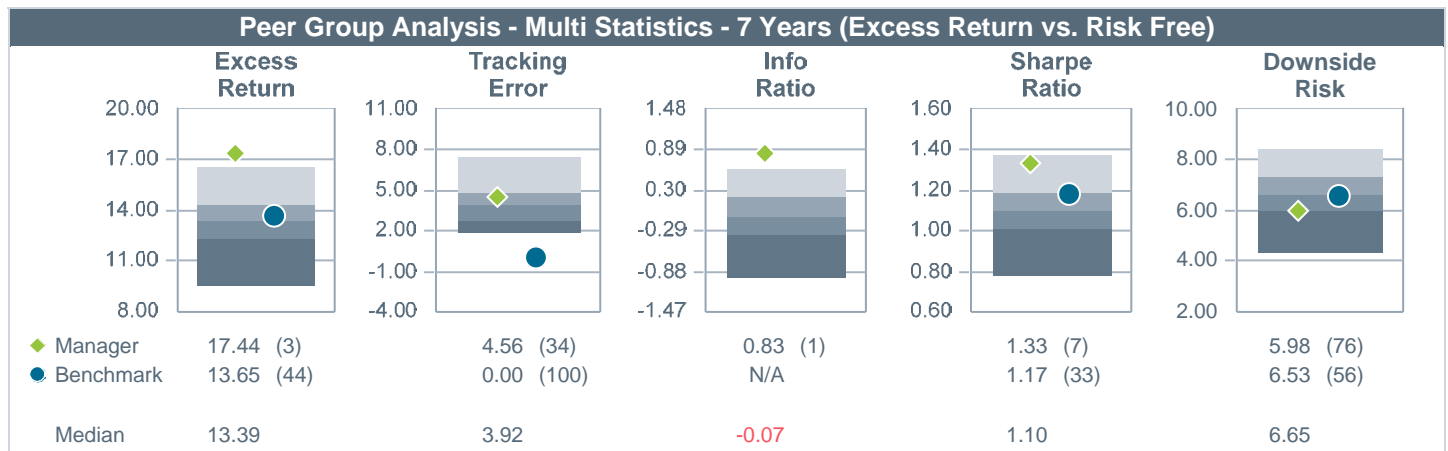
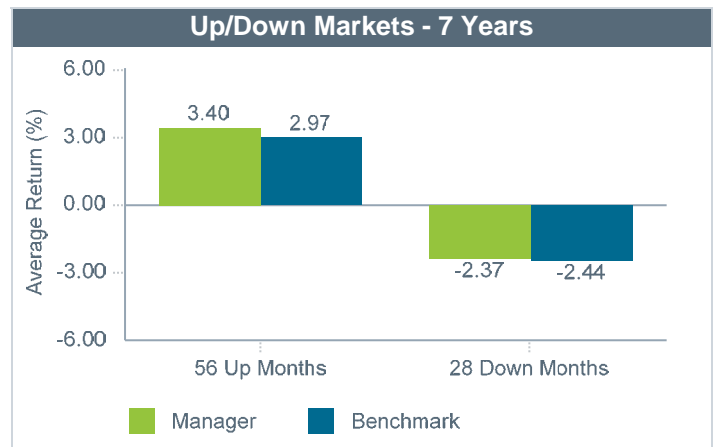
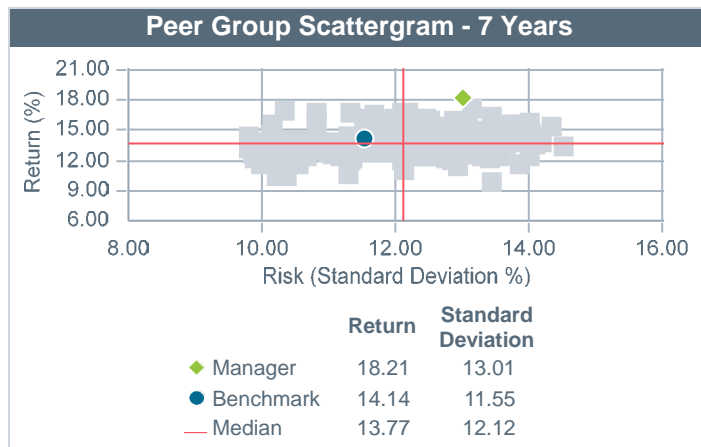
Manager: T. Rowe Price Large Cap Growth (SA)

As of December 31, 2018

Benchmark: Russell 1000 Grth Index

Peer Group: IM U.S. Large Cap Growth Equity (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-13.16	4.79	14.83	13.24	18.21	N/A	36.61	5.78	12.48	9.31	44.58
Benchmark	-15.89	-1.51	11.15	10.40	14.14	15.29	30.21	7.08	5.67	13.05	33.48
Difference	2.73	6.30	3.68	2.84	4.07	N/A	6.40	-1.30	6.81	-3.74	11.10
Peer Group Median	-15.14	-1.17	10.19	9.66	13.77	14.90	28.11	4.65	5.07	11.99	34.52
Rank	26	10	3	6	3	N/A	6	41	7	80	6
Population	255	254	242	236	223	210	283	308	337	347	353



Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on quarterly periodicity. Parenthesis contain percentile ranks.

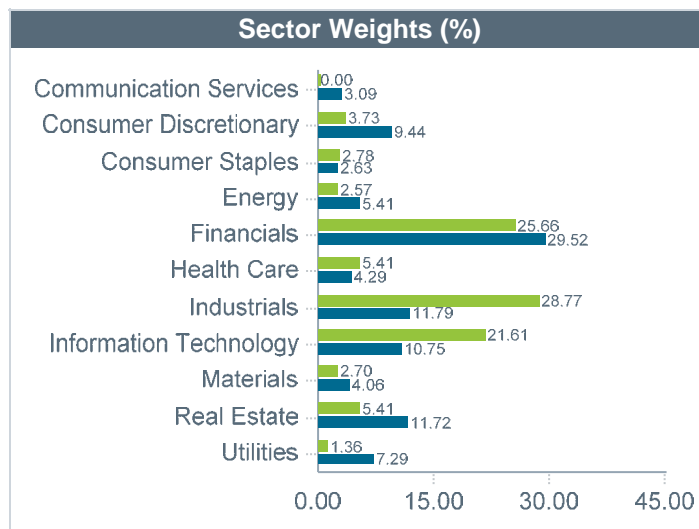
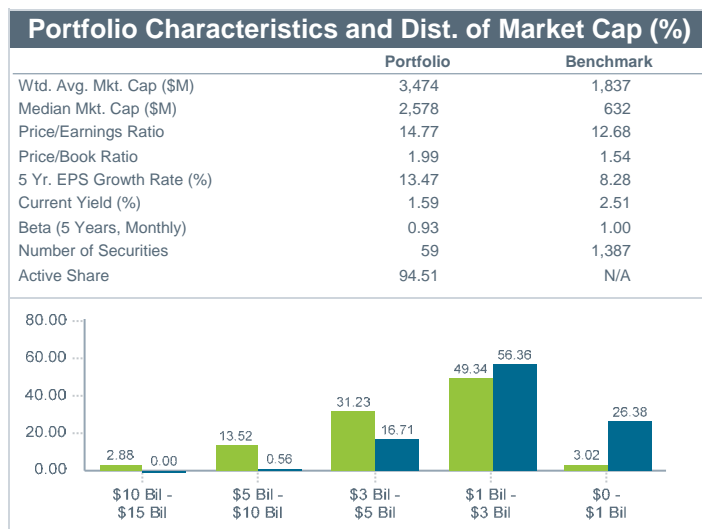
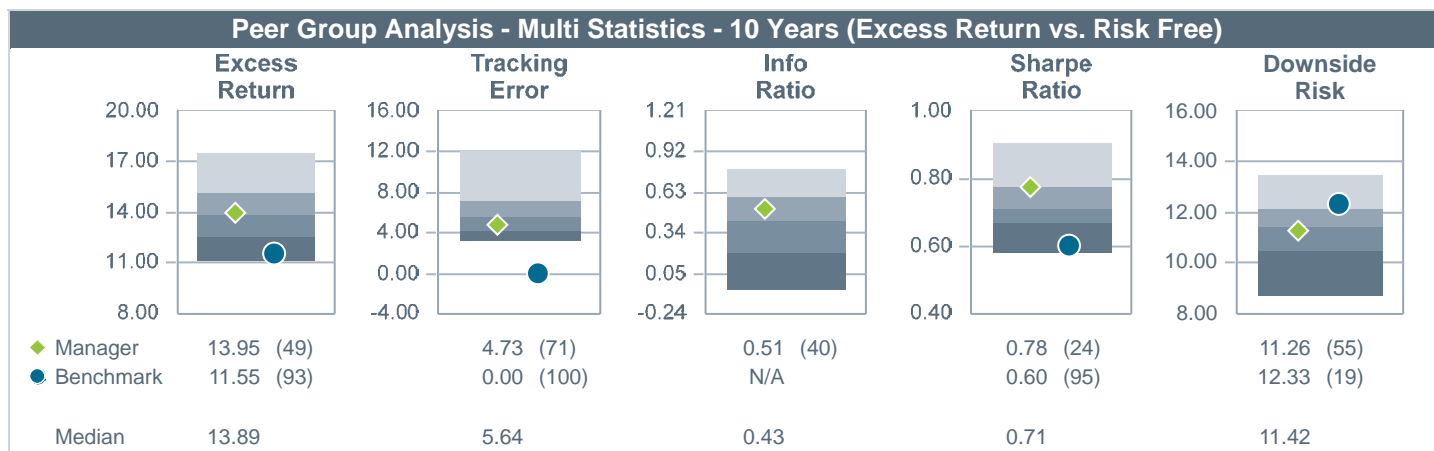
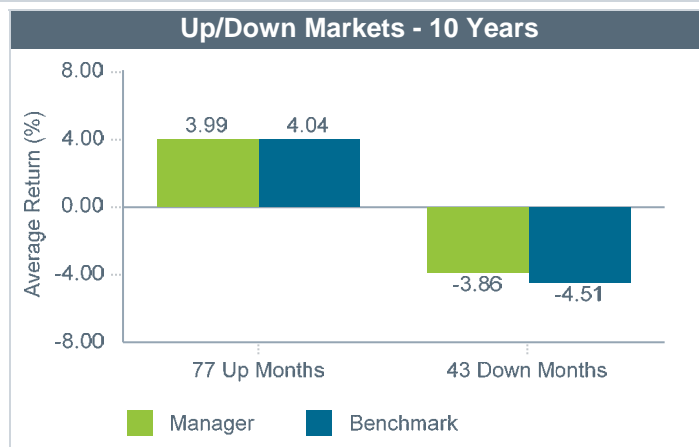
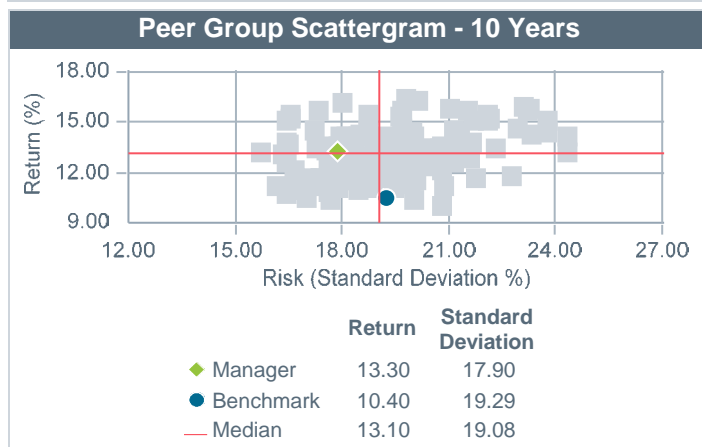
Manager: Earnest Partners Small Cap Value (SA)

As of December 31, 2018

Benchmark: Russell 2000 Val Index

Peer Group: IM U.S. Small Cap Value Equity (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-18.77	-14.73	9.41	7.29	12.10	13.30	23.07	24.79	-2.28	11.11	35.47
Benchmark	-18.67	-12.86	7.37	3.61	9.57	10.40	7.84	31.74	-7.47	4.22	34.52
Difference	-0.10	-1.87	2.04	3.68	2.53	2.90	15.23	-6.95	5.19	6.89	0.95
Peer Group Median	-19.21	-14.36	6.34	4.10	10.47	13.10	11.61	26.17	-4.28	5.66	38.07
Rank	43	54	17	7	17	44	4	59	31	6	72
Population	202	201	198	192	180	167	225	233	243	254	256



Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on quarterly periodicity. Parentheses contain percentile ranks.

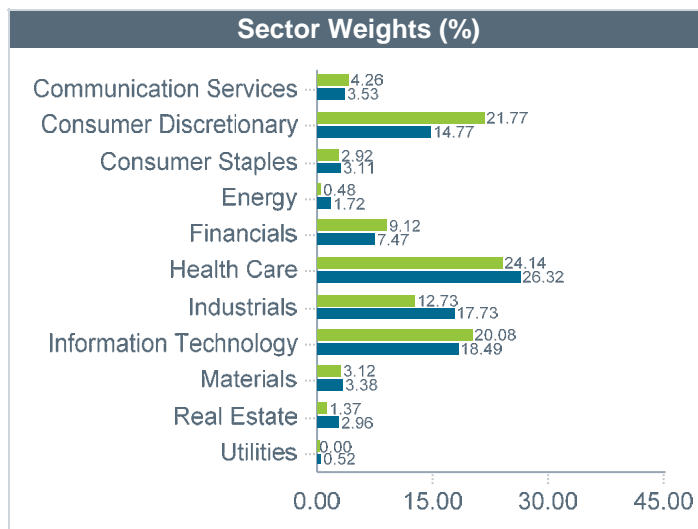
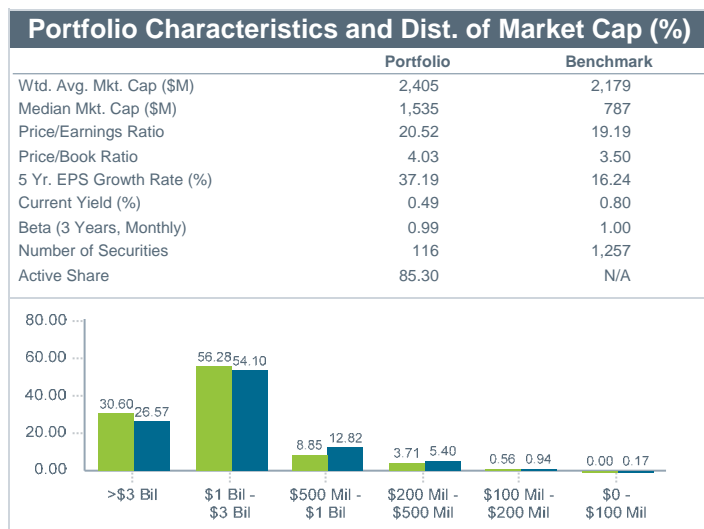
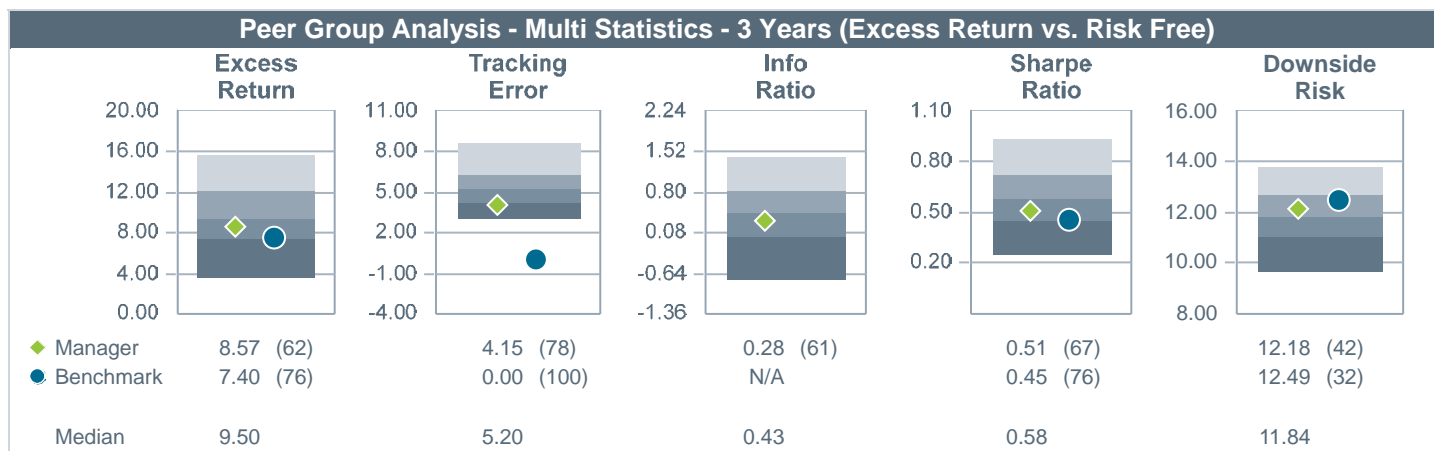
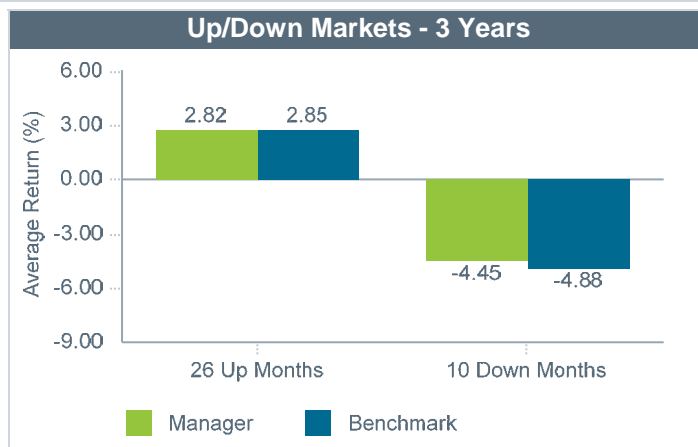
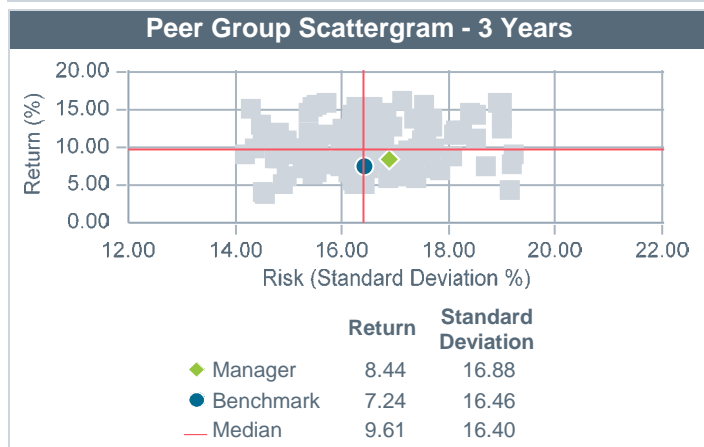
Manager: Emerald Small Cap Growth (SA)

As of December 31, 2018

Benchmark: Russell 2000 Grth Index

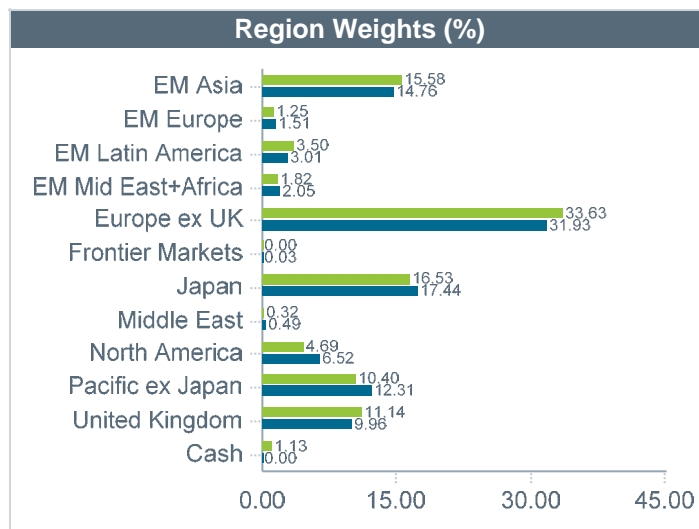
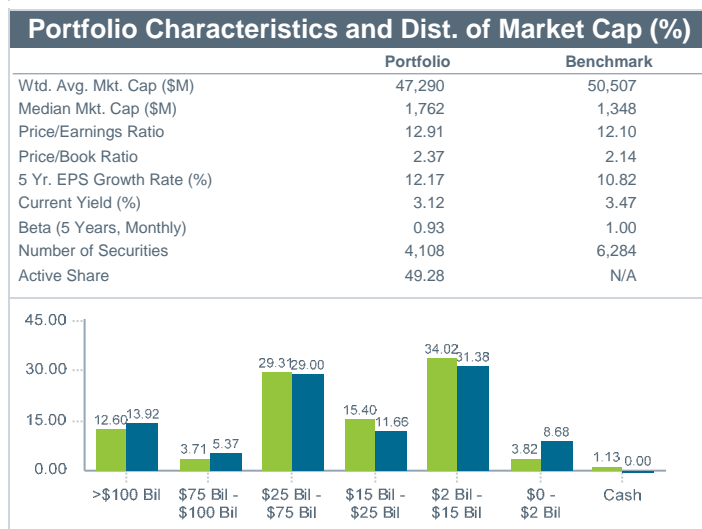
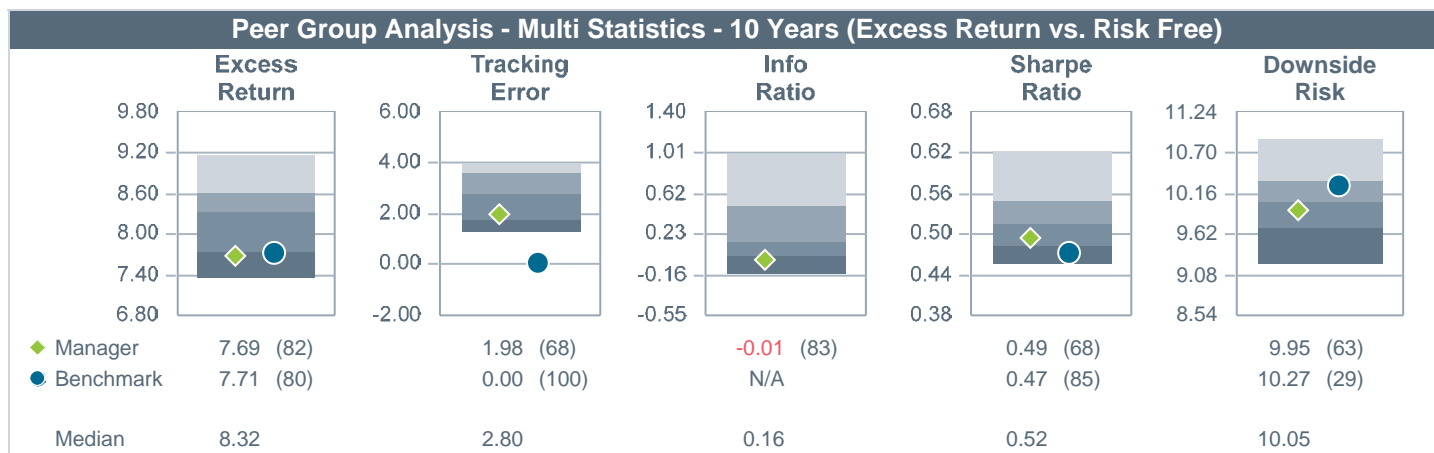
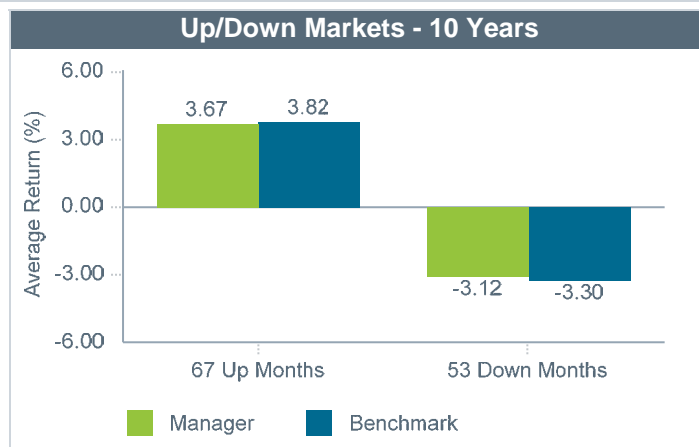
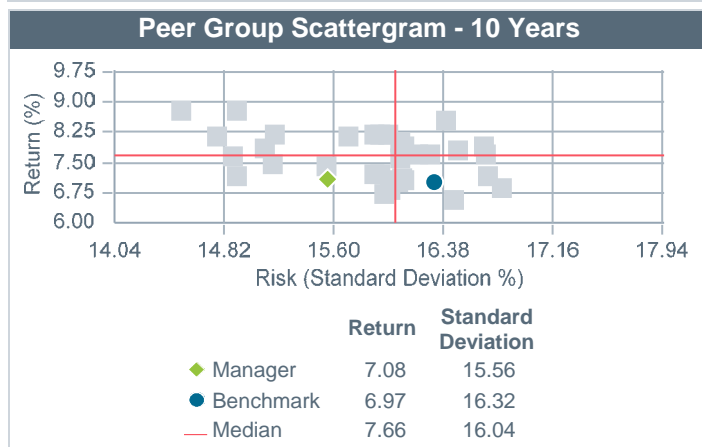
Peer Group: IM U.S. Small Cap Growth Equity (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-22.24	-10.54	8.44	N/A	N/A	N/A	29.53	10.02	N/A	N/A	N/A
Benchmark	-21.65	-9.31	7.24	5.13	11.25	13.52	22.17	11.32	-1.38	5.60	43.30
Difference	-0.59	-1.23	1.20	N/A	N/A	N/A	7.36	-1.30	N/A	N/A	N/A
Peer Group Median	-20.70	-4.28	9.61	6.44	12.84	14.93	23.91	11.40	-0.74	4.13	45.47
Rank	72	84	65	N/A	N/A	N/A	21	58	N/A	N/A	N/A
Population	162	161	157	152	146	139	175	185	203	213	219



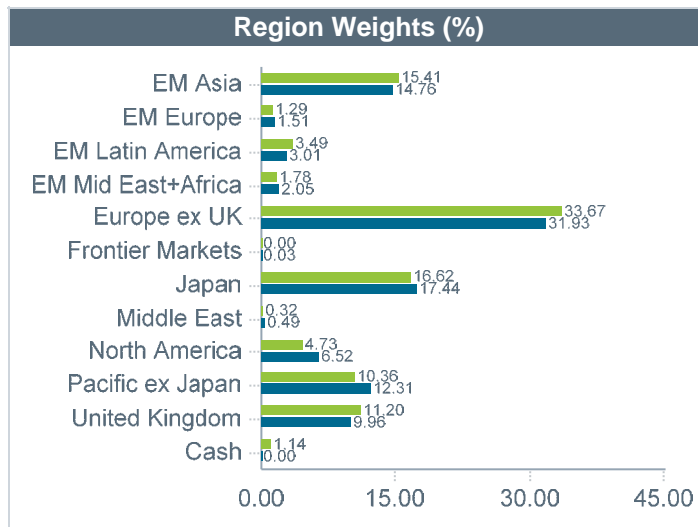
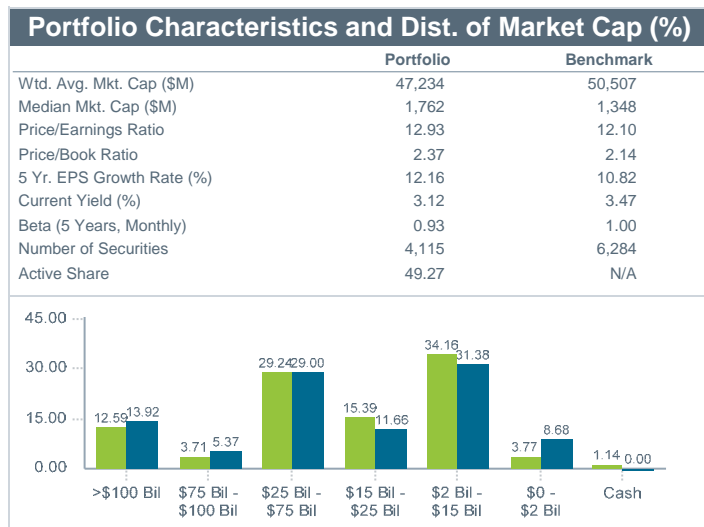
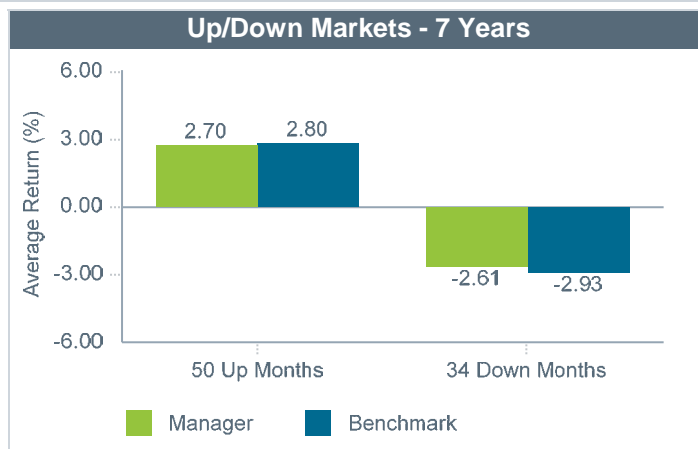
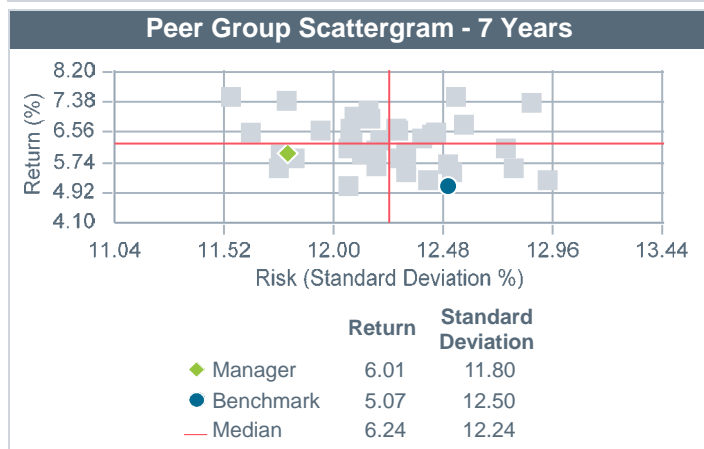
Performance shown is gross of fees and product specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-11.72	-13.46	4.89	2.38	6.24	7.08	29.34	3.09	-1.39	-1.15	19.16
Benchmark	-11.88	-14.76	4.39	0.85	5.07	6.97	27.81	4.41	-4.60	-3.89	15.82
Difference	0.16	1.30	0.50	1.53	1.17	0.11	1.53	-1.32	3.21	2.74	3.34
Peer Group Median	-12.05	-13.66	4.79	1.67	6.24	7.66	28.83	3.99	-2.43	-2.71	18.65
Rank	40	46	46	23	52	73	39	69	30	24	40
Population	74	71	66	60	48	41	80	77	54	32	31



Performance shown is gross of fees. Calculation is based on monthly periodicity. Parenthesis contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-11.72	-13.44	4.87	2.37	6.01	N/A	29.29	3.06	-1.40	-1.14	18.81
Benchmark	-11.88	-14.76	4.39	0.85	5.07	6.97	27.81	4.41	-4.60	-3.89	15.82
Difference	0.16	1.32	0.48	1.52	0.94	N/A	1.48	-1.35	3.20	2.75	2.99
Peer Group Median	-12.05	-13.66	4.79	1.67	6.24	7.66	28.83	3.99	-2.43	-2.71	18.65
Rank	40	45	47	23	60	N/A	41	70	30	23	46
Population	74	71	66	60	48	41	80	77	54	32	31



Performance shown is gross of fees. Calculation is based on monthly periodicity. Parenthesis contain percentile ranks.

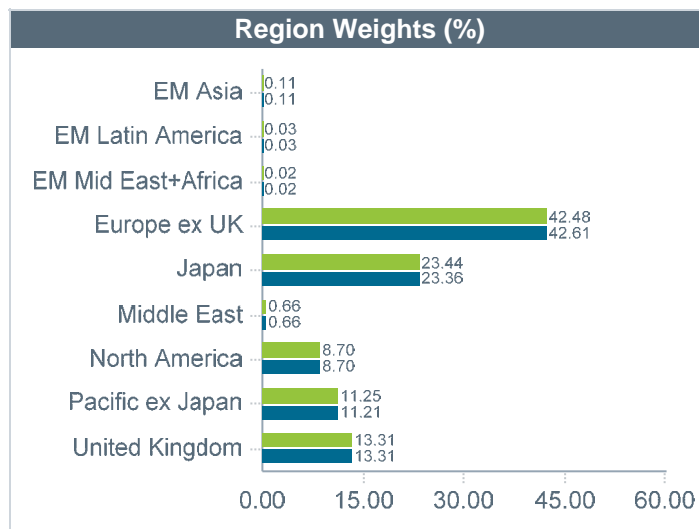
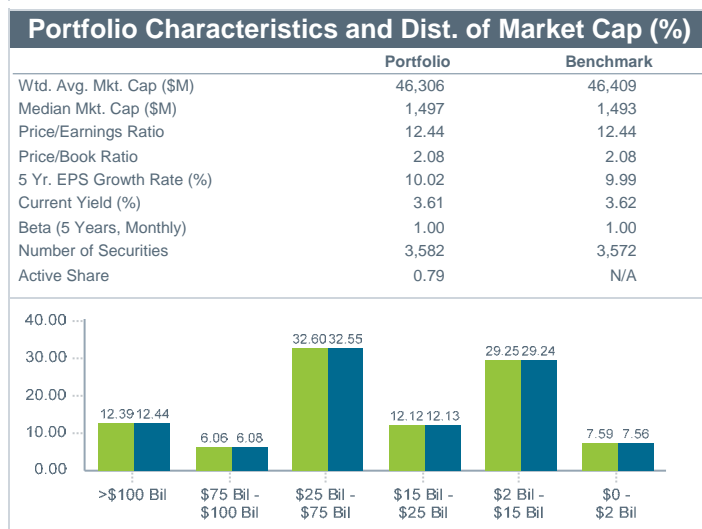
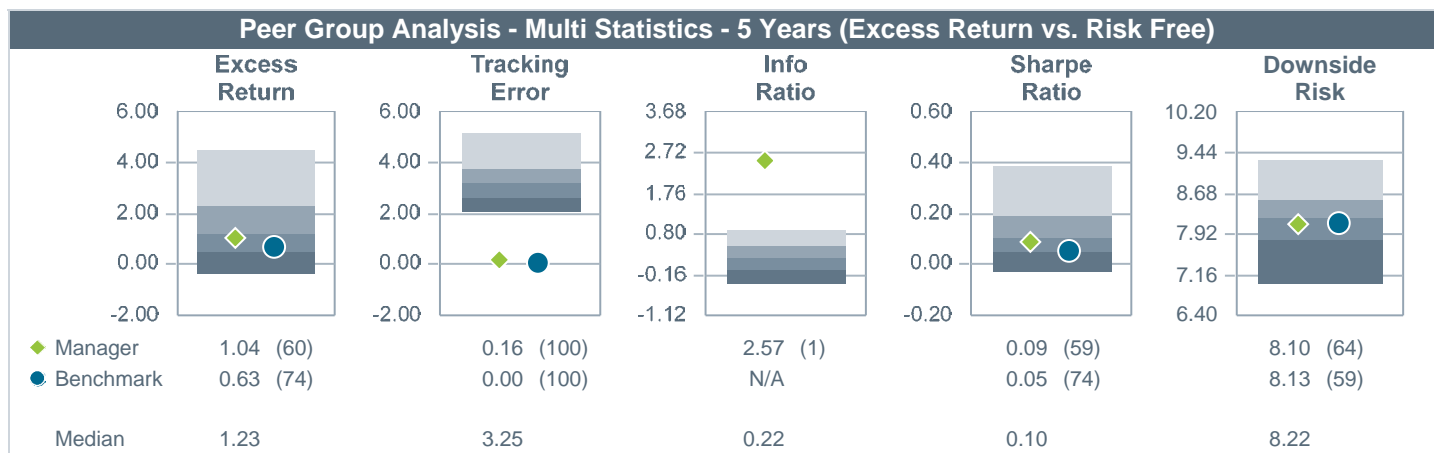
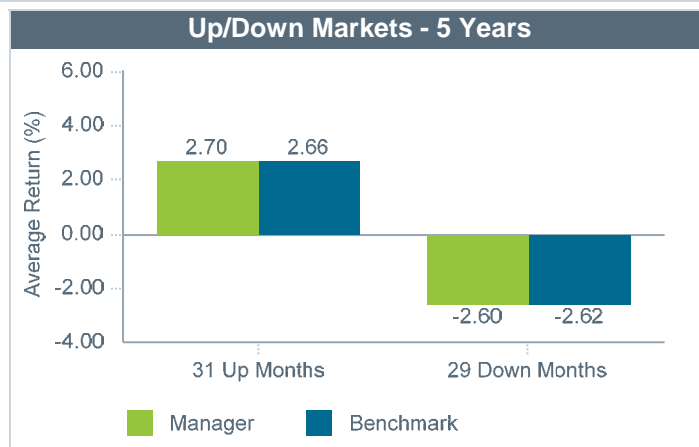
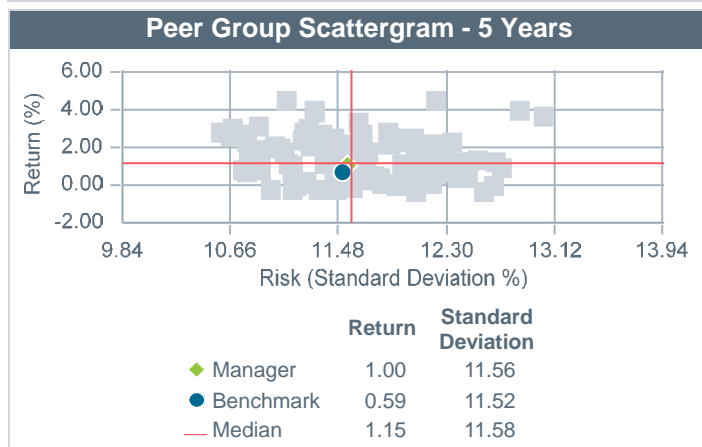
Manager: BlackRock Developed Int'l - Passive (CF)

As of December 31, 2018

Benchmark: MSCI Wrld Ex US IM Index (USD) (Net)

Peer Group: IM All EAFE (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-13.25	-14.30	3.68	1.00	N/A	N/A	25.71	3.45	-1.62	-4.13	21.90
Benchmark	-13.28	-14.68	3.21	0.59	5.55	6.68	25.17	2.95	-1.95	-4.45	21.57
Difference	0.03	0.38	0.47	0.41	N/A	N/A	0.54	0.50	0.33	0.32	0.33
Peer Group Median	-13.50	-14.52	2.95	1.15	6.78	7.76	26.38	1.06	1.22	-4.26	24.32
Rank	46	49	36	60	N/A	N/A	59	22	75	50	71
Population	159	159	158	157	149	140	184	195	211	209	203



Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on monthly periodicity. Parenthesis contain percentile ranks.

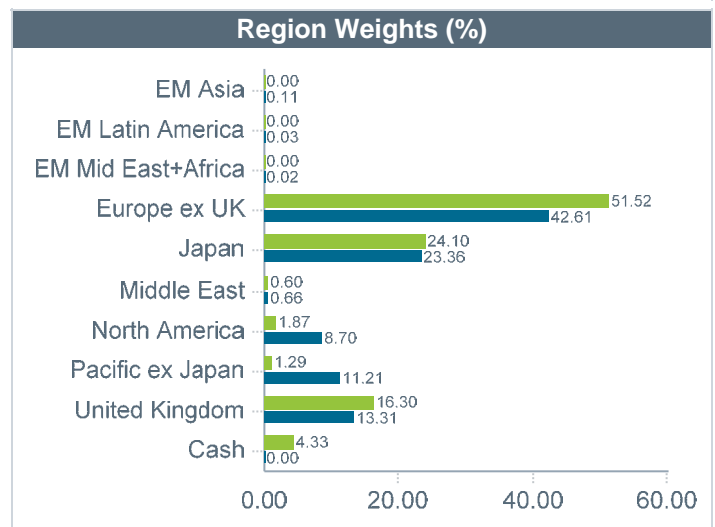
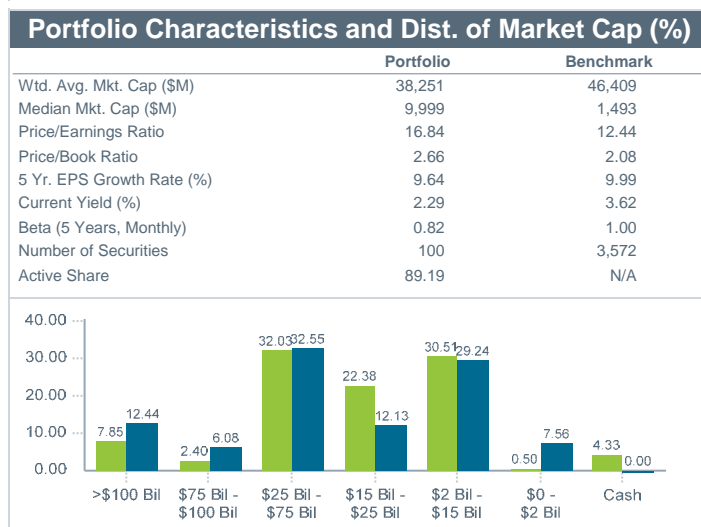
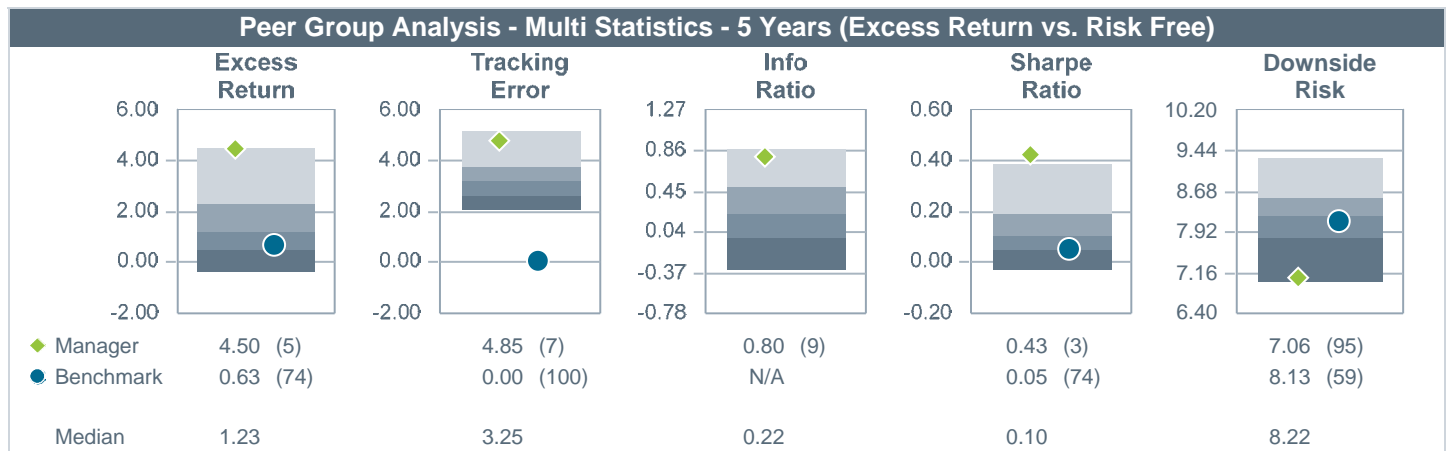
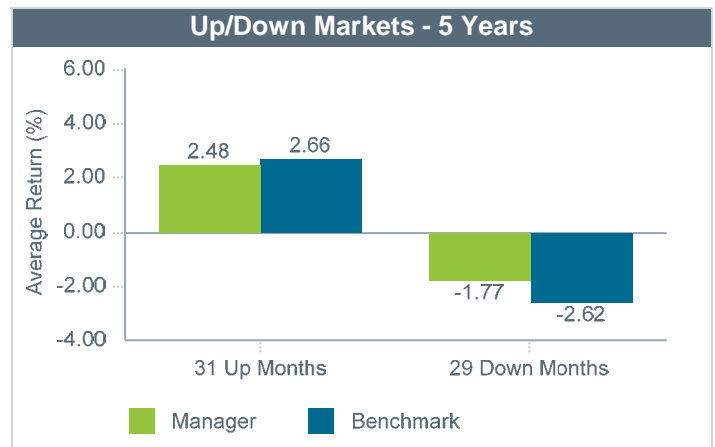
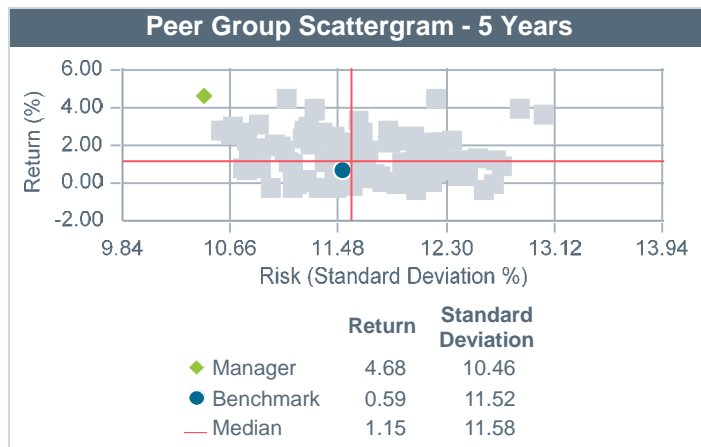
Manager: MFS Developed Int'l (SA)

As of December 31, 2018

Benchmark: MSCI Wrld Ex US IM Index (USD) (Net)

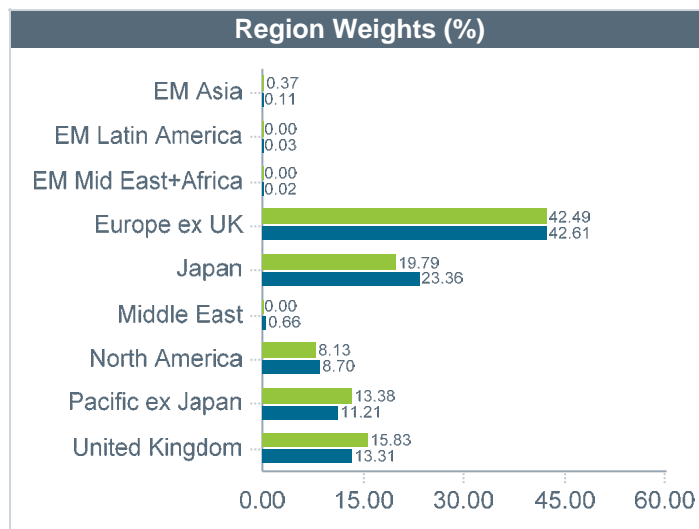
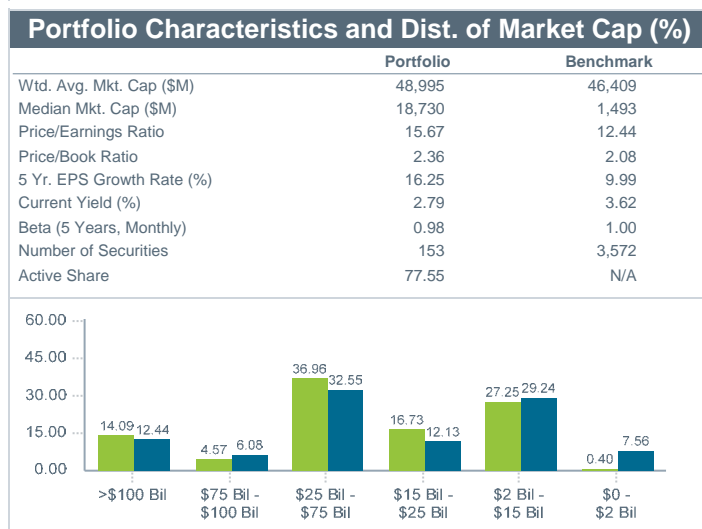
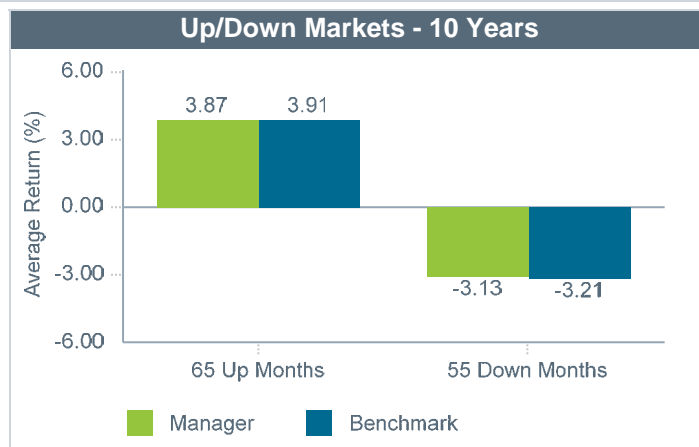
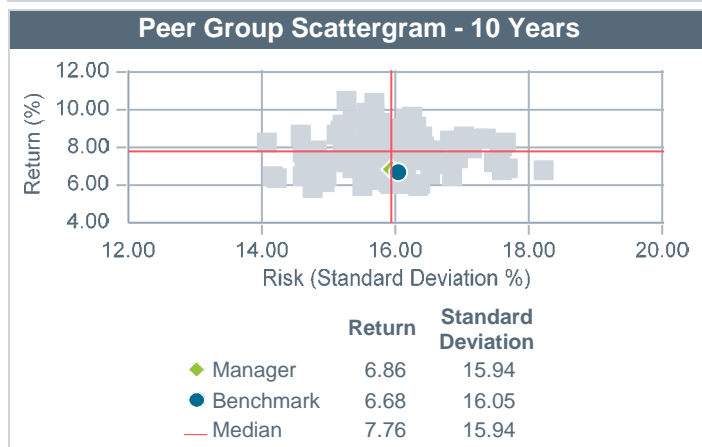
Peer Group: IM All EAFE (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-10.82	-8.75	5.00	4.68	N/A	N/A	27.13	-0.22	7.17	1.31	31.52
Benchmark	-13.28	-14.68	3.21	0.59	5.55	6.68	25.17	2.95	-1.95	-4.45	21.57
Difference	2.46	5.93	1.79	4.09	N/A	N/A	1.96	-3.17	9.12	5.76	9.95
Peer Group Median	-13.50	-14.52	2.95	1.15	6.78	7.76	26.38	1.06	1.22	-4.26	24.32
Rank	17	6	15	5	N/A	N/A	42	69	6	6	7
Population	159	159	158	157	149	140	184	195	211	209	203



Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on monthly periodicity. Parenthesis contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-14.56	-14.99	1.85	0.07	5.93	6.86	25.16	-0.70	0.99	-5.94	26.02
Benchmark	-13.28	-14.68	3.21	0.59	5.55	6.68	25.17	2.95	-1.95	-4.45	21.57
Difference	-1.28	-0.31	-1.36	-0.52	0.38	0.18	-0.01	-3.65	2.94	-1.49	4.45
Peer Group Median	-13.50	-14.52	2.95	1.15	6.78	7.76	26.38	1.06	1.22	-4.26	24.32
Rank	74	59	77	84	79	73	67	73	54	80	35
Population	159	159	158	157	149	140	184	195	211	209	203



Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on monthly periodicity. Parenthesis contain percentile ranks.

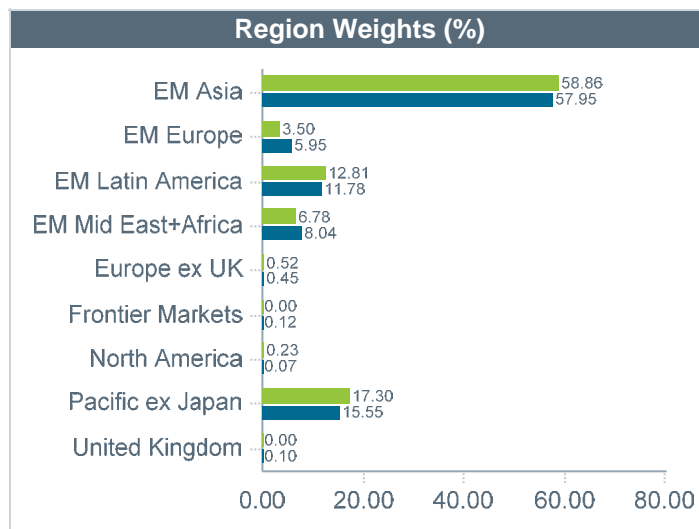
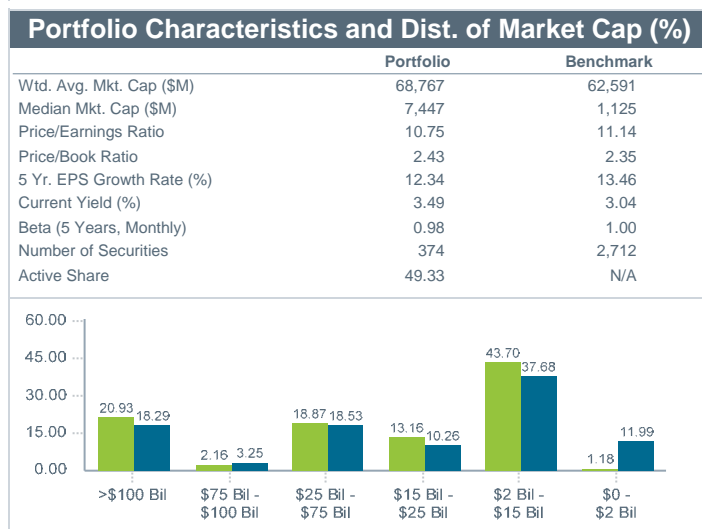
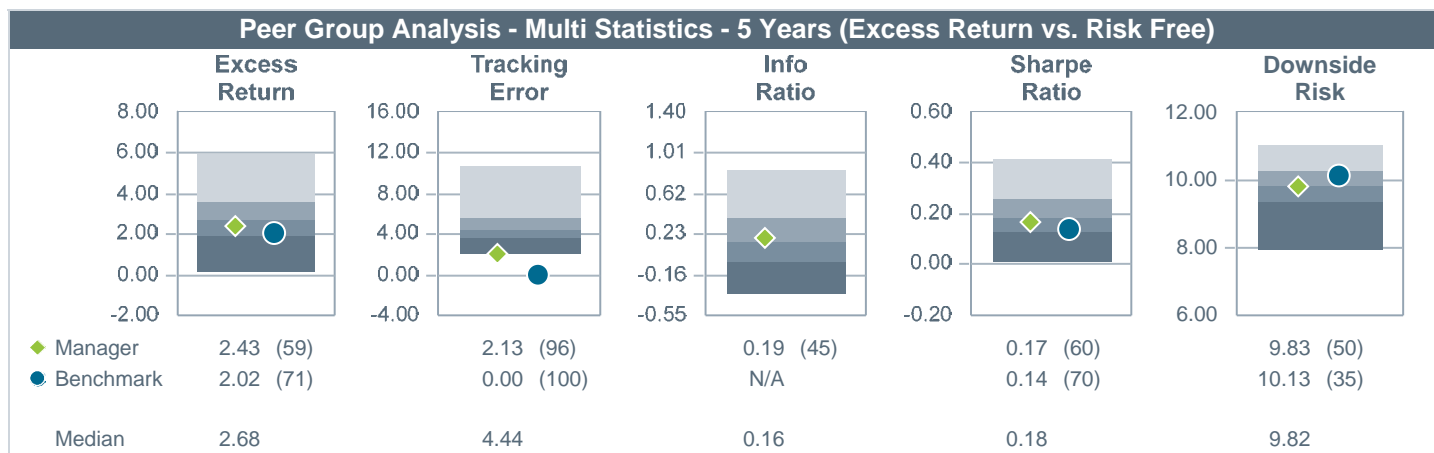
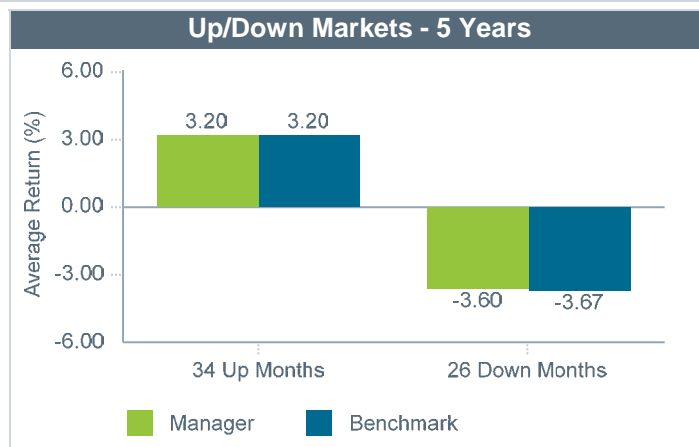
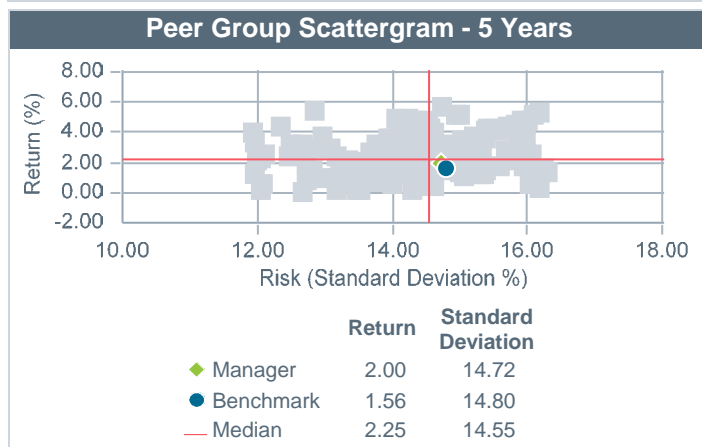
Manager: LA Capital Emerging (CF)

As of December 31, 2018

Benchmark: MSCI Emg Mkts IM Index (USD) (Net)

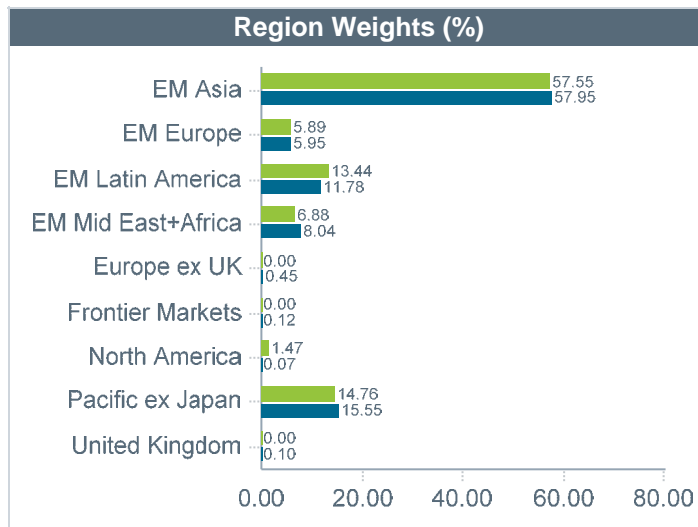
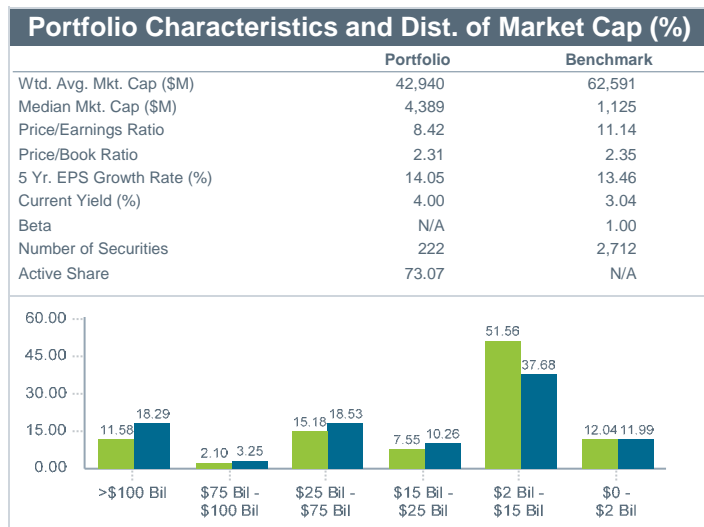
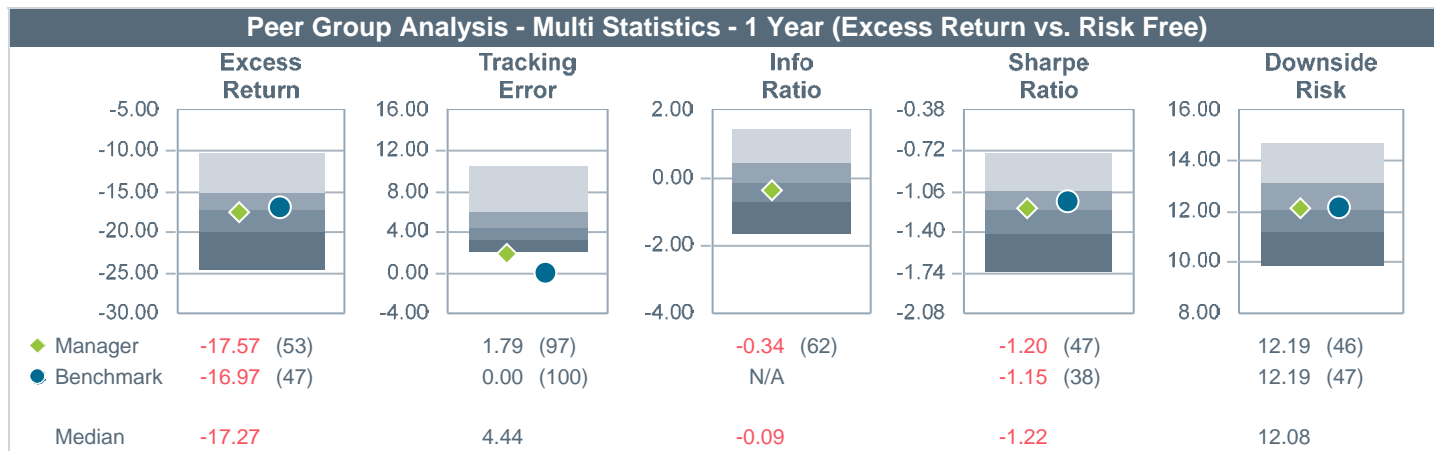
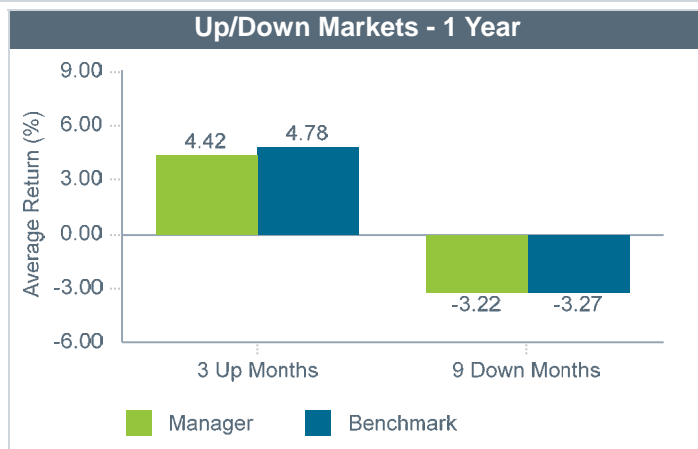
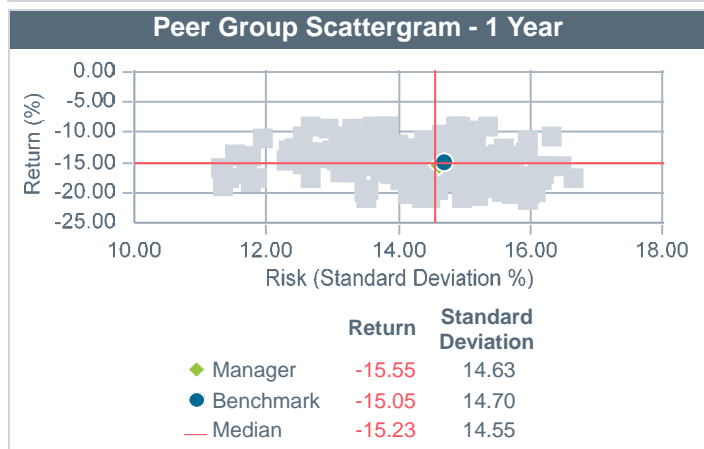
Peer Group: IM Emerging Markets Equity (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-8.75	-15.67	9.07	2.00	N/A	N/A	37.13	12.18	-15.10	0.24	-1.67
Benchmark	-7.44	-15.05	8.51	1.56	3.29	8.24	36.83	9.90	-13.86	-1.79	-2.20
Difference	-1.31	-0.62	0.56	0.44	N/A	N/A	0.30	2.28	-1.24	2.03	0.53
Peer Group Median	-7.28	-15.23	8.69	2.25	4.71	9.38	36.92	10.16	-12.59	-0.05	1.00
Rank	77	55	44	60	N/A	N/A	49	35	72	47	70
Population	288	283	274	242	189	138	309	323	335	328	311



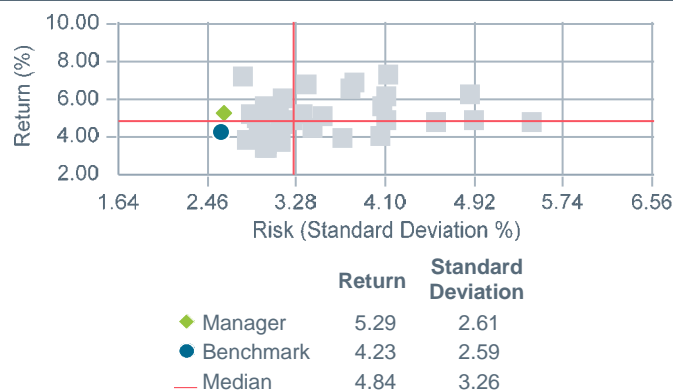
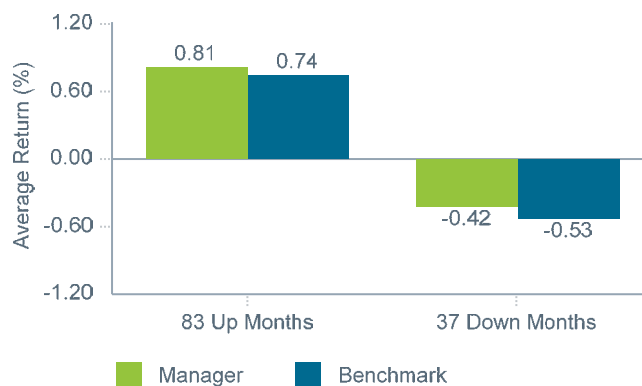
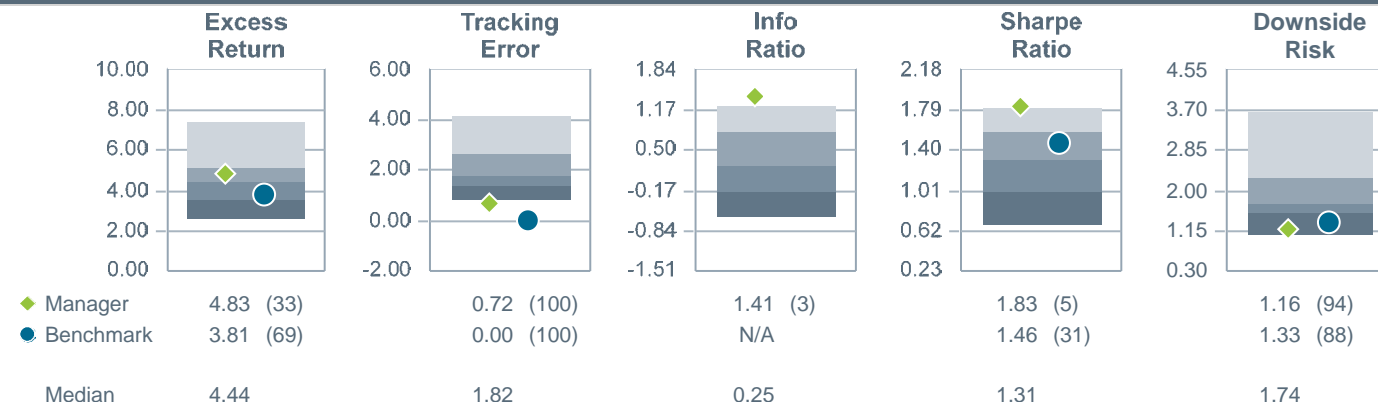
Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on monthly periodicity. Parenthesis contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-8.23	-15.55	N/A	N/A	N/A	N/A	41.01	N/A	N/A	N/A	N/A
Benchmark	-7.44	-15.05	8.51	1.56	3.29	8.24	36.83	9.90	-13.86	-1.79	-2.20
Difference	-0.79	-0.50	N/A	N/A	N/A	N/A	4.18	N/A	N/A	N/A	N/A
Peer Group Median	-7.28	-15.23	8.69	2.25	4.71	9.38	36.92	10.16	-12.59	-0.05	1.00
Rank	68	54	N/A	N/A	N/A	N/A	29	N/A	N/A	N/A	N/A
Population	288	283	274	242	189	138	309	323	335	328	311

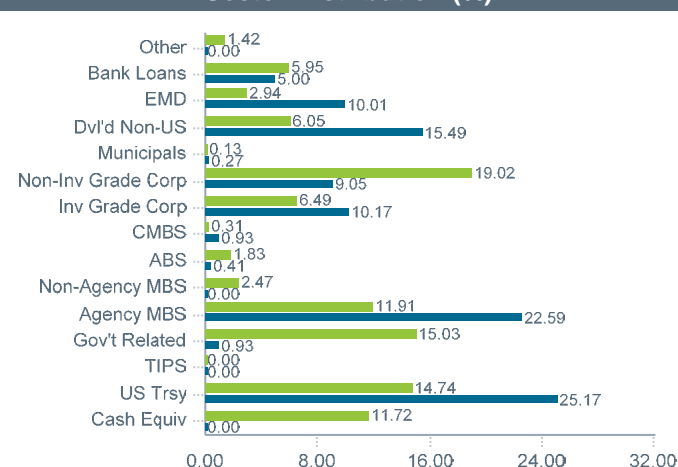


Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on monthly periodicity. Parenthesis contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-0.08	-0.23	3.18	3.26	3.28	5.29	4.88	5.00	0.78	6.05	-0.68
Benchmark	0.38	0.02	3.24	3.06	2.77	4.23	4.12	5.65	0.11	5.56	-1.35
Difference	-0.46	-0.25	-0.06	0.20	0.51	1.06	0.76	-0.65	0.67	0.49	0.67
Peer Group Median	0.60	-0.24	2.96	2.92	2.93	4.84	4.60	4.72	0.18	5.87	-1.45
Rank	72	50	45	35	38	32	44	43	33	45	37
Population	76	75	73	69	60	45	82	82	58	36	35

Peer Group Scattergram - 10 Years

Up/Down Markets - 10 Years

Peer Group Analysis - Multi Statistics - 10 Years (Excess Return vs. Risk Free)

Portfolio Characteristics

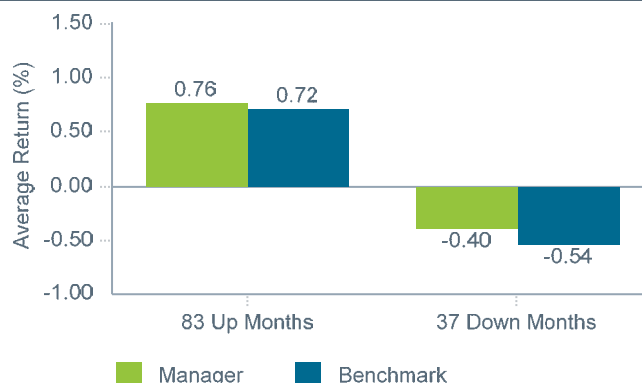
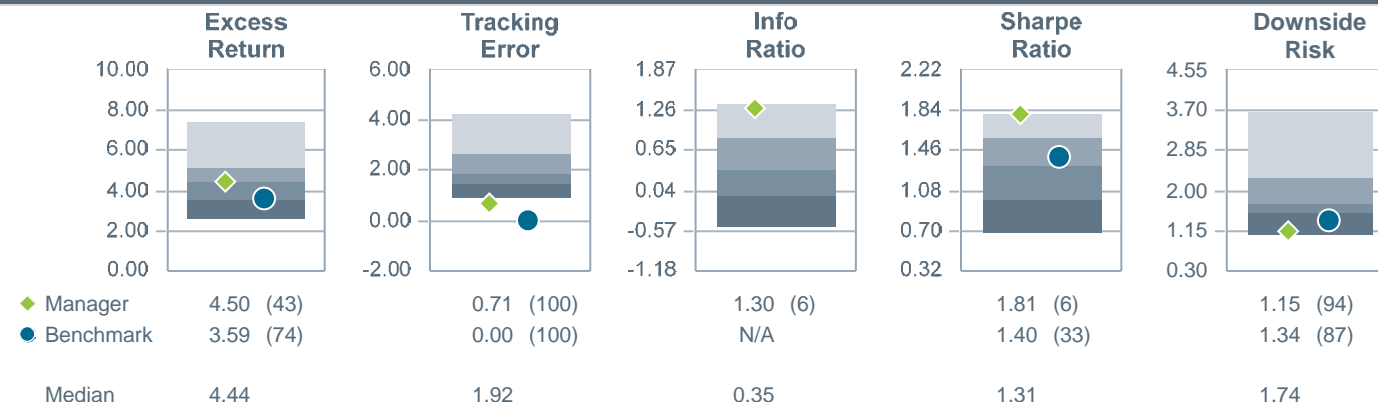
	Portfolio	Benchmark
Effective Duration	4.40	N/A
Spread Duration	N/A	N/A
Avg. Maturity	6.12	6.21
Avg. Quality	A2	A2
Yield To Maturity (%)	4.64	4.46
Coupon Rate (%)	4.21	3.82
Current Yield (%)	4.51	4.07
Holdings Count	N/A	N/A

Sector Distribution (%)


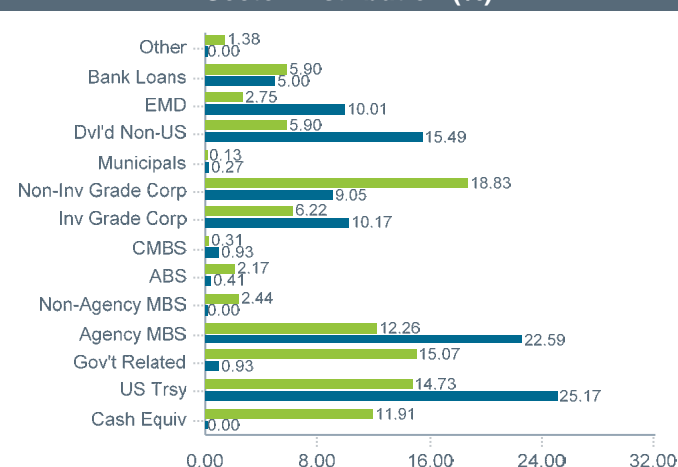
Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Composite allocation to Non-Inv Grade Corp may include some Inv Grade Corp and allocation to Agency MBS may include some Non-Agency MBS. Allocation to "Other" consists of Preferred Stock and Convertible Bonds.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-0.07	-0.24	3.14	3.25	3.16	4.96	4.89	4.85	0.83	6.05	-0.82
Benchmark	0.38	0.02	3.24	3.06	2.77	4.00	4.12	5.65	0.11	5.56	-1.35
Difference	-0.45	-0.26	-0.10	0.19	0.39	0.96	0.77	-0.80	0.72	0.49	0.53
Peer Group Median	0.60	-0.24	2.96	2.92	2.93	4.84	4.60	4.72	0.18	5.87	-1.45
Rank	72	50	47	36	43	43	44	45	29	45	39
Population	76	75	73	69	60	45	82	82	58	36	35

Peer Group Scattergram - 10 Years

Up/Down Markets - 10 Years

Peer Group Analysis - Multi Statistics - 10 Years (Excess Return vs. Risk Free)

Portfolio Characteristics

	Portfolio	Benchmark
Effective Duration	4.50	N/A
Spread Duration	N/A	N/A
Avg. Maturity	6.17	6.21
Avg. Quality	A2	A2
Yield To Maturity (%)	4.71	4.46
Coupon Rate (%)	4.15	3.82
Current Yield (%)	4.53	4.07
Holdings Count	N/A	N/A

Sector Distribution (%)


Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Composite allocation to Non-Inv Grade Corp may include some Inv Grade Corp and allocation to Agency MBS may include some Non-Agency MBS. Allocation to "Other" consists of Preferred Stock and Convertible Bonds.

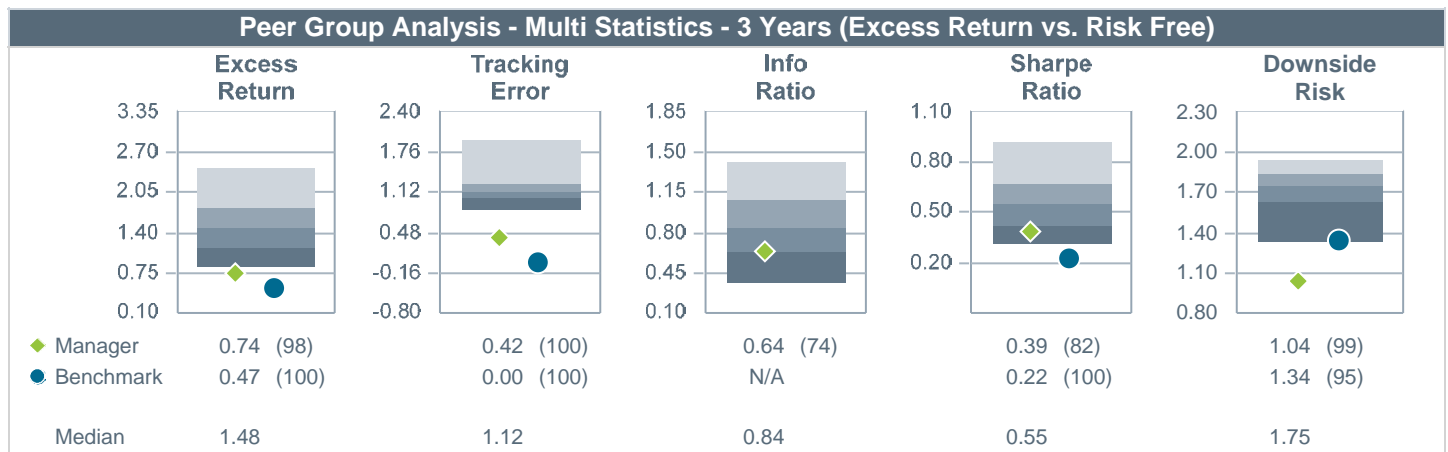
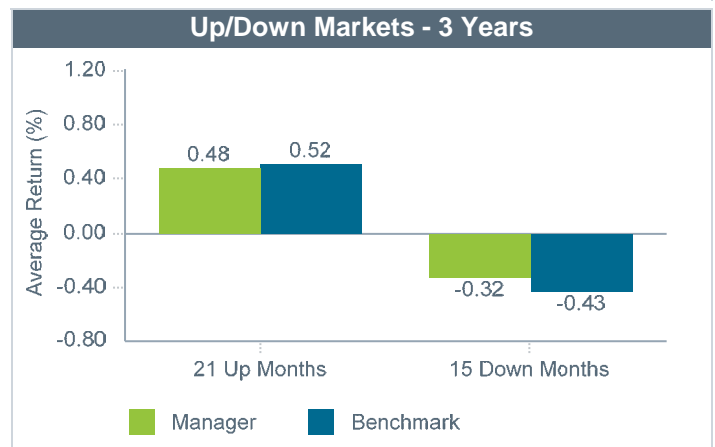
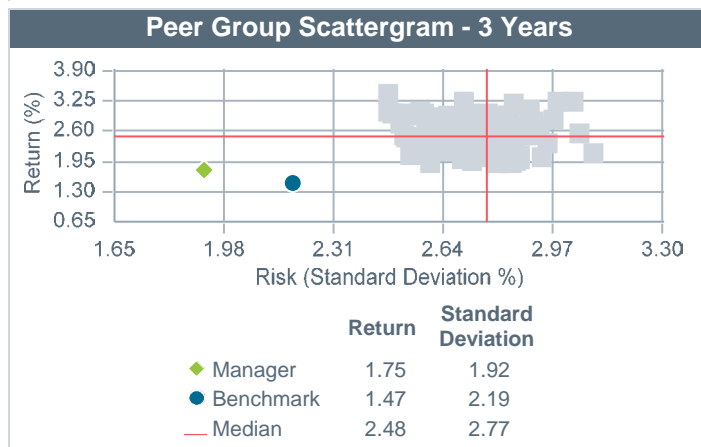
Manager: JP Morgan Principal Protection (SA)

As of December 31, 2018

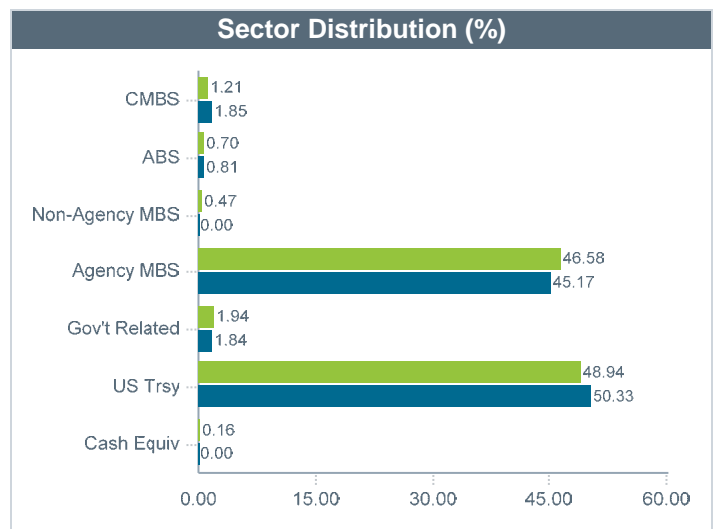
Benchmark: Bloomberg US Int Agg Ex Crdt Index

Peer Group: IM U.S. Broad Market Core Fixed Income (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	1.85	1.37	1.75	N/A	N/A	N/A	1.86	2.02	N/A	N/A	N/A
Benchmark	2.13	1.21	1.47	1.96	1.55	2.69	1.80	1.40	1.32	4.11	-1.27
Difference	-0.28	0.16	0.28	N/A	N/A	N/A	0.06	0.62	N/A	N/A	N/A
Peer Group Median	1.40	0.07	2.48	2.86	2.63	4.41	4.05	3.11	0.82	6.17	-1.56
Rank	13	5	97	N/A	N/A	N/A	100	97	N/A	N/A	N/A
Population	138	137	136	130	126	121	152	162	167	180	191



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	3.59	3.95
Spread Duration	2.45	2.43
Avg. Maturity	4.49	5.04
Avg. Quality	Aaa	Aaa
Yield To Maturity (%)	3.06	2.94
Coupon Rate (%)	3.55	2.85
Current Yield (%)	3.73	2.85
Holdings Count	362	3,633



Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Allocation to "Other" consists of Covered Bonds.

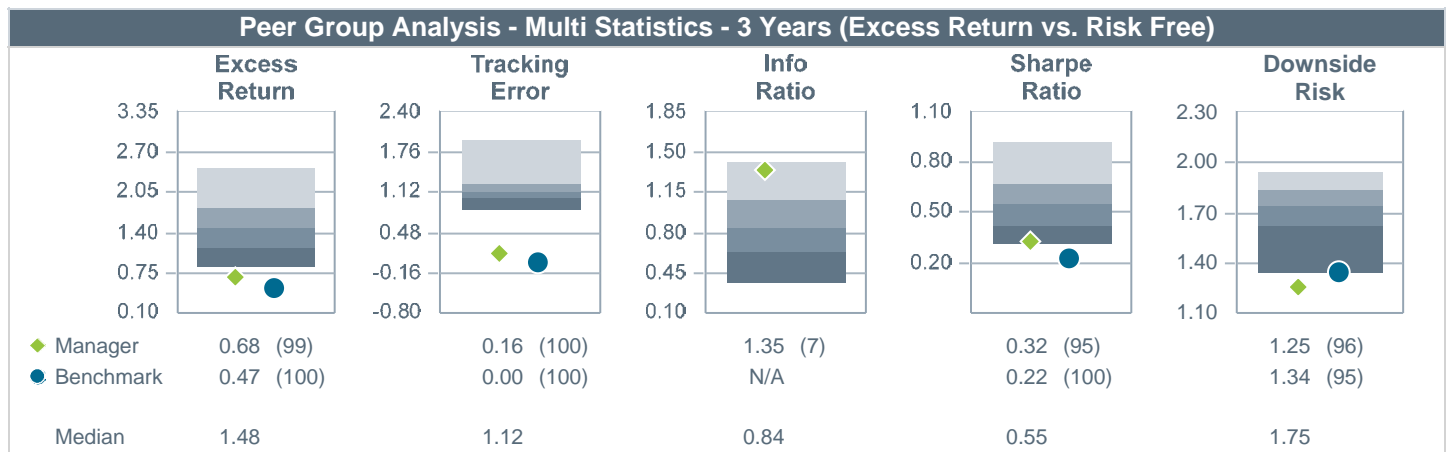
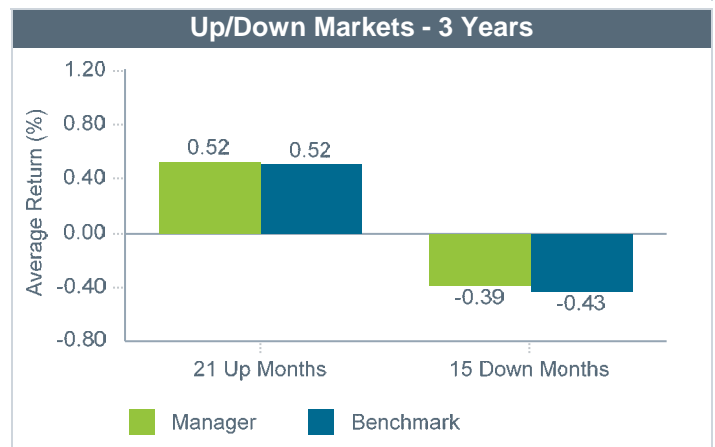
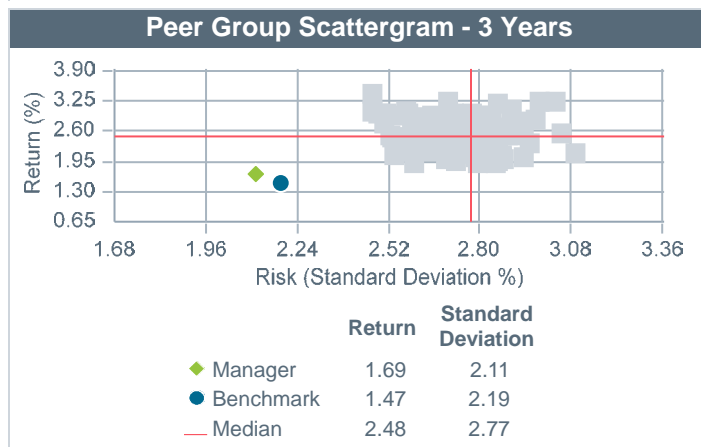
Manager: Wells Principal Protection (SA)

As of December 31, 2018

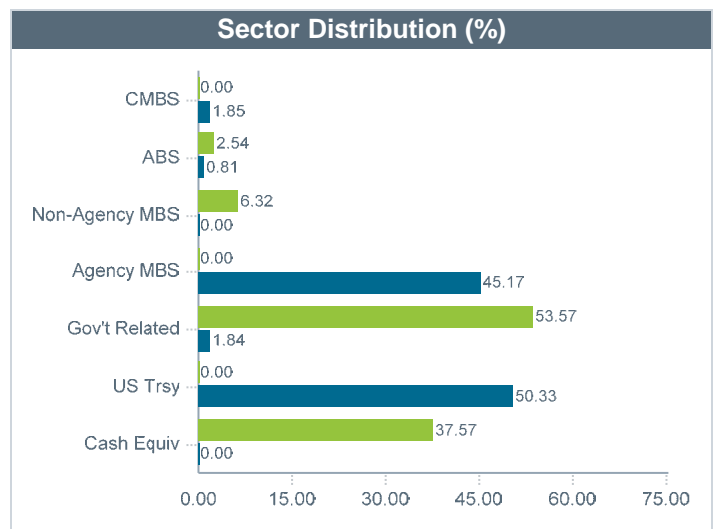
Benchmark: Bloomberg US Int Agg Ex Crdt Index

Peer Group: IM U.S. Broad Market Core Fixed Income (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	2.11	1.27	1.69	N/A	N/A	N/A	1.94	1.86	N/A	N/A	N/A
Benchmark	2.13	1.21	1.47	1.96	1.55	2.69	1.80	1.40	1.32	4.11	-1.27
Difference	-0.02	0.06	0.22	N/A	N/A	N/A	0.14	0.46	N/A	N/A	N/A
Peer Group Median	1.40	0.07	2.48	2.86	2.63	4.41	4.05	3.11	0.82	6.17	-1.56
Rank	8	6	99	N/A	N/A	N/A	100	98	N/A	N/A	N/A
Population	138	137	136	130	126	121	152	162	167	180	191



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	4.28	3.95
Spread Duration	2.87	2.43
Avg. Maturity	5.56	5.04
Avg. Quality	Aaa	Aaa
Yield To Maturity (%)	3.38	2.94
Coupon Rate (%)	3.41	2.85
Current Yield (%)	3.36	2.85
Holdings Count	349	3,633



Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Allocation to "Other" consists of Covered Bonds.

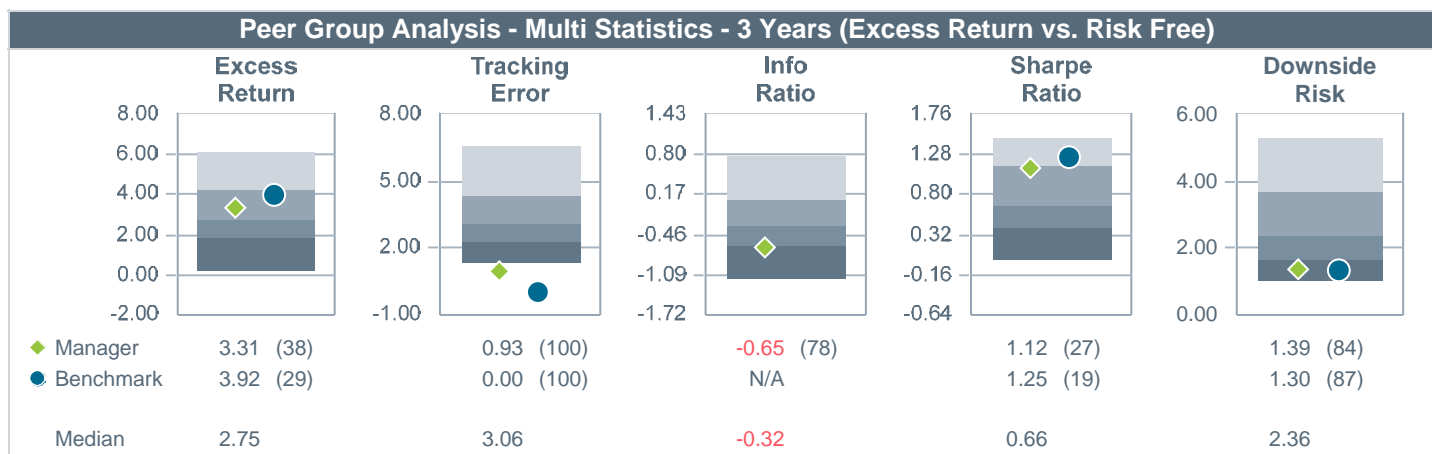
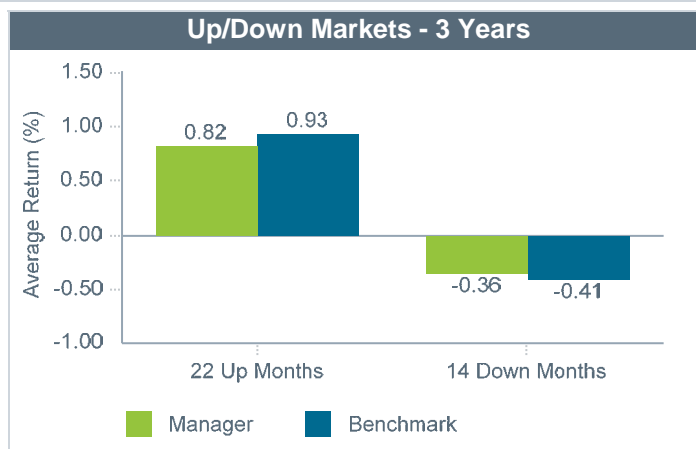
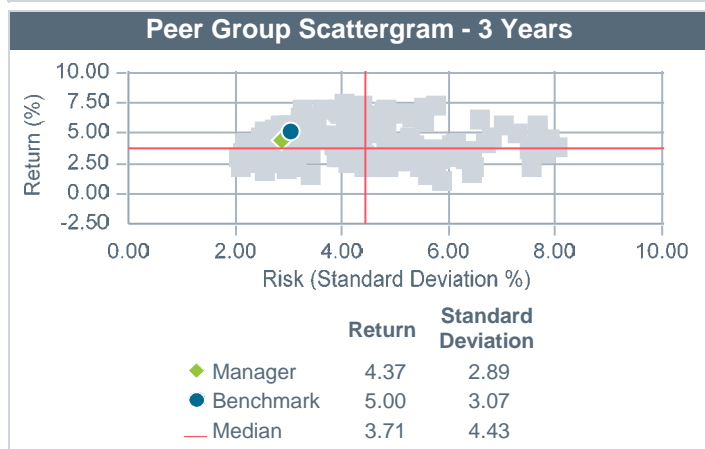
Manager: Macquarie Unconstrained (SA)

As of December 31, 2018

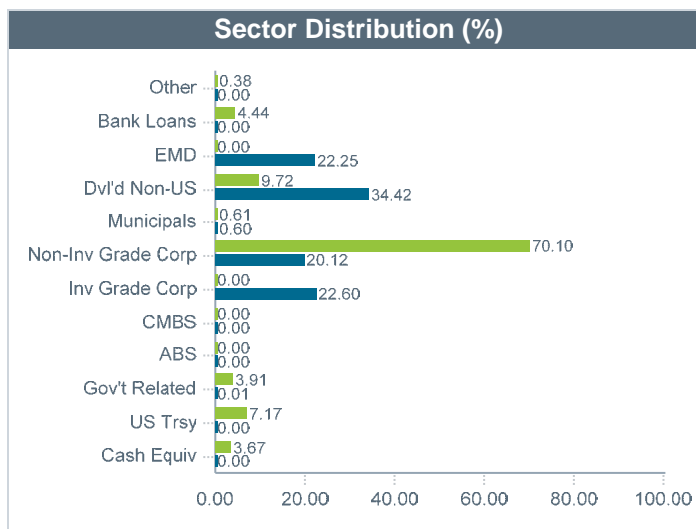
Benchmark: 67% B Global Credit/33% B Global High Yield

Peer Group: IM Global Fixed Income (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-1.56	-2.73	4.37	N/A	N/A	N/A	7.86	8.37	N/A	N/A	N/A
Benchmark	-1.16	-1.44	5.00	3.96	5.16	7.90	6.73	10.04	-0.34	5.28	2.58
Difference	-0.40	-1.29	-0.63	N/A	N/A	N/A	1.13	-1.67	N/A	N/A	N/A
Peer Group Median	-1.07	-1.82	3.71	2.35	3.23	4.74	7.62	5.75	-2.27	2.51	-0.06
Rank	58	67	38	N/A	N/A	N/A	46	34	N/A	N/A	N/A
Population	223	223	219	200	167	120	243	259	270	269	262



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	5.29	5.53
Spread Duration	N/A	5.49
Avg. Maturity	7.24	7.62
Avg. Quality	Baa2	Baa3
Yield To Maturity (%)	5.41	5.80
Coupon Rate (%)	4.86	4.65
Current Yield (%)	5.03	5.15
Holdings Count	N/A	17,719



Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Manager allocation to Non-Inv Grade Corp may include some Inv Grade Corp and allocation to Agency MBS may include some Non-Agency MBS. Allocation to "Other" consists of Preferred Stock, Sovereigns, and Convertible Bonds. On March 31, 2017, Delaware Investments adopted the name of its parent company, Macquarie Investment Management.



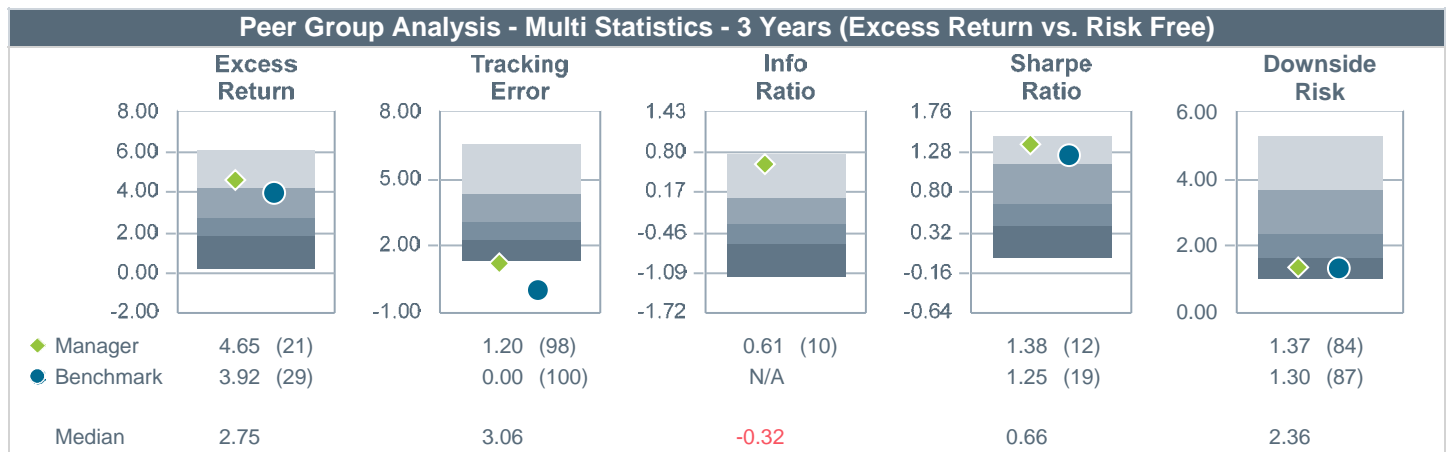
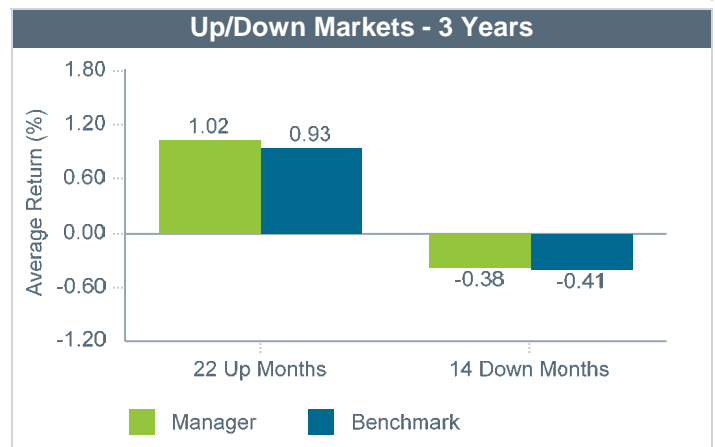
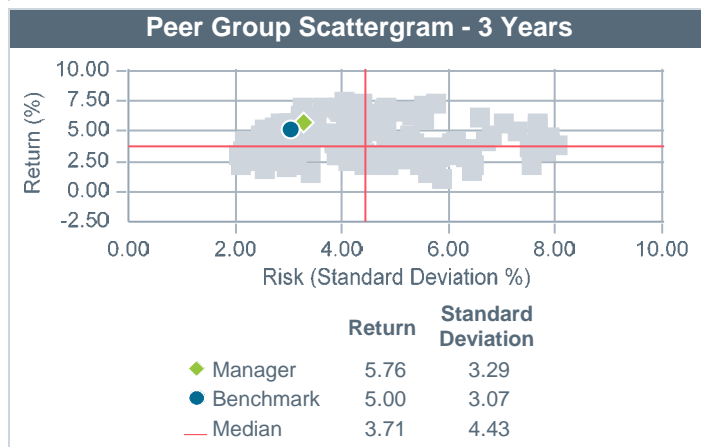
Manager: Neuberger Unconstrained (SA)

As of December 31, 2018

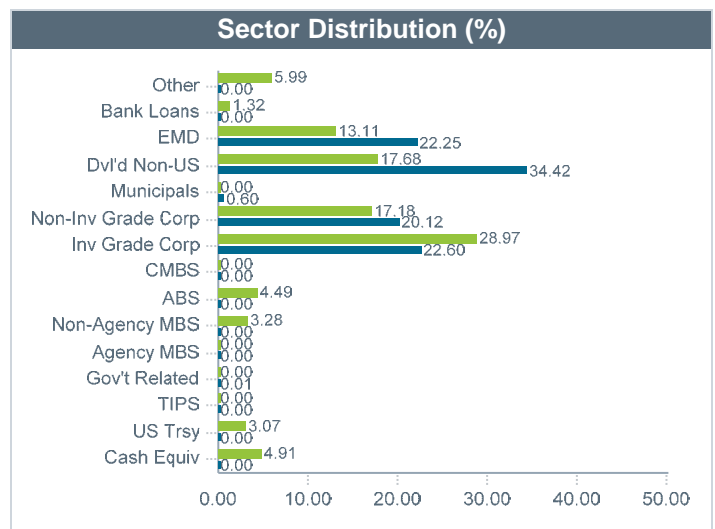
Benchmark: 67% B Global Credit/33% B Global High Yield

Peer Group: IM Global Fixed Income (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-2.29	-1.27	5.76	N/A	N/A	N/A	9.26	9.65	N/A	N/A	N/A
Benchmark	-1.16	-1.44	5.00	3.96	5.16	7.90	6.73	10.04	-0.34	5.28	2.58
Difference	-1.13	0.17	0.76	N/A	N/A	N/A	2.53	-0.39	N/A	N/A	N/A
Peer Group Median	-1.07	-1.82	3.71	2.35	3.23	4.74	7.62	5.75	-2.27	2.51	-0.06
Rank	67	39	20	N/A	N/A	N/A	25	30	N/A	N/A	N/A
Population	223	223	219	200	167	120	243	259	270	269	262



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	5.51	5.53
Spread Duration	5.07	5.49
Avg. Maturity	7.79	7.62
Avg. Quality	Ba1	Baa3
Yield To Maturity (%)	6.12	5.80
Coupon Rate (%)	4.90	4.65
Current Yield (%)	5.15	5.15
Holdings Count	875	17,719



Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Allocation to "Other" consists of CRTs.

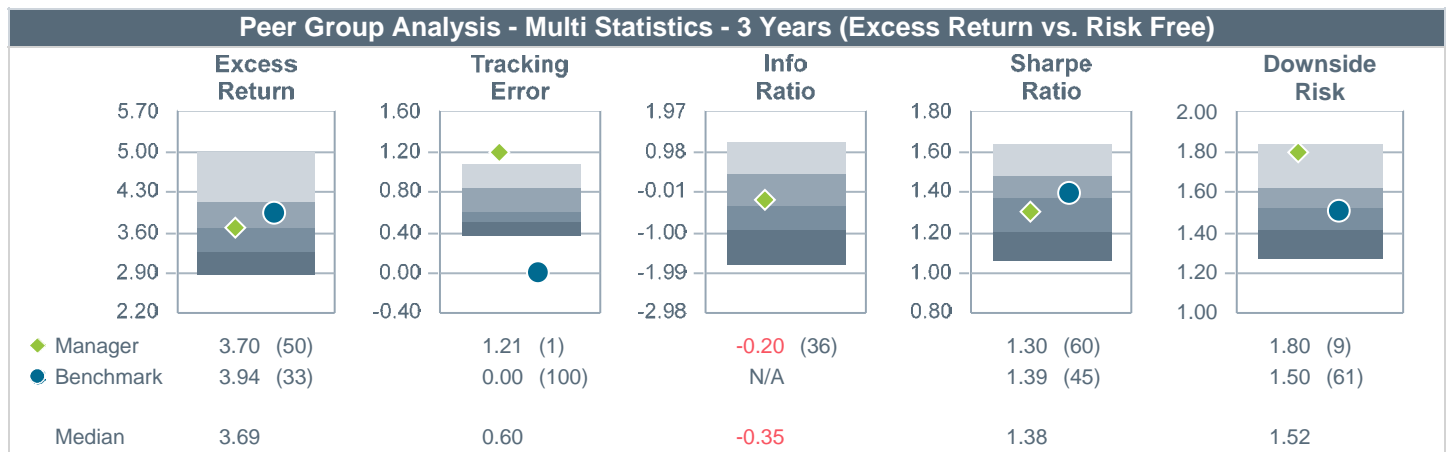
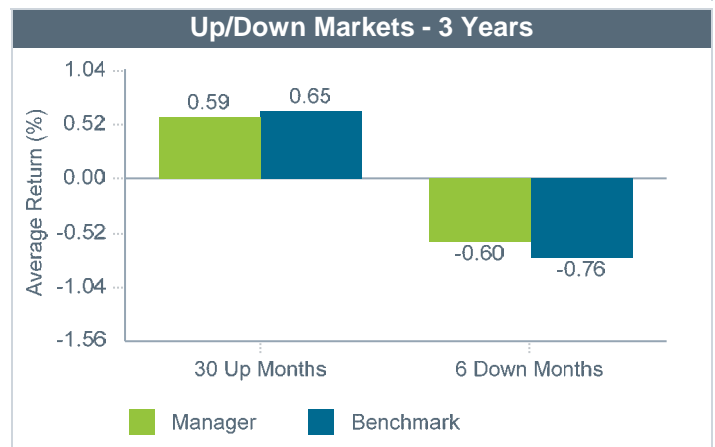
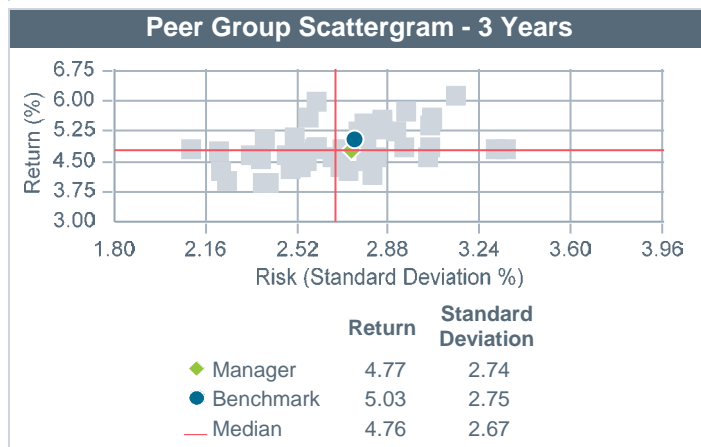
Manager: Pacific Asset Bank Loans (SA)

As of December 31, 2018

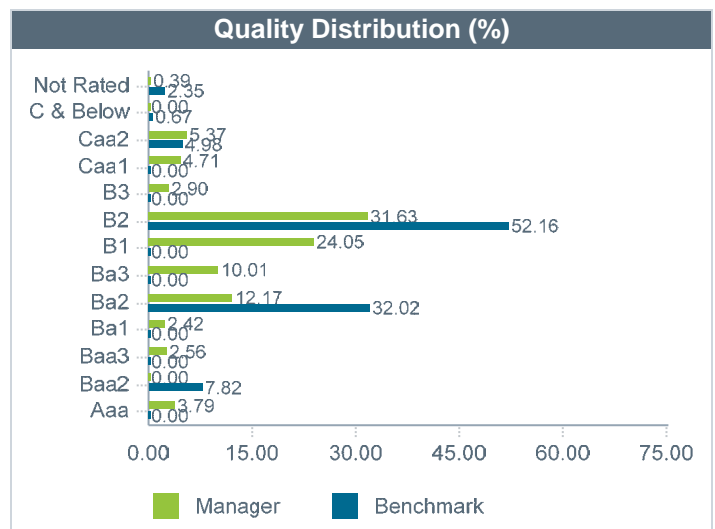
Benchmark: CS Lvg'd Loan Index

Peer Group: IM U.S. Bank Loans (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-4.00	-0.13	4.77	N/A	N/A	N/A	5.48	9.18	N/A	N/A	N/A
Benchmark	-3.08	1.14	5.03	3.33	4.58	8.30	4.25	9.88	-0.38	2.06	6.15
Difference	-0.92	-1.27	-0.26	N/A	N/A	N/A	1.23	-0.70	N/A	N/A	N/A
Peer Group Median	-3.21	0.78	4.76	3.41	4.73	8.11	4.46	9.51	0.68	2.07	6.28
Rank	96	95	47	N/A	N/A	N/A	7	59	N/A	N/A	N/A
Population	57	57	54	54	49	37	63	64	67	70	63



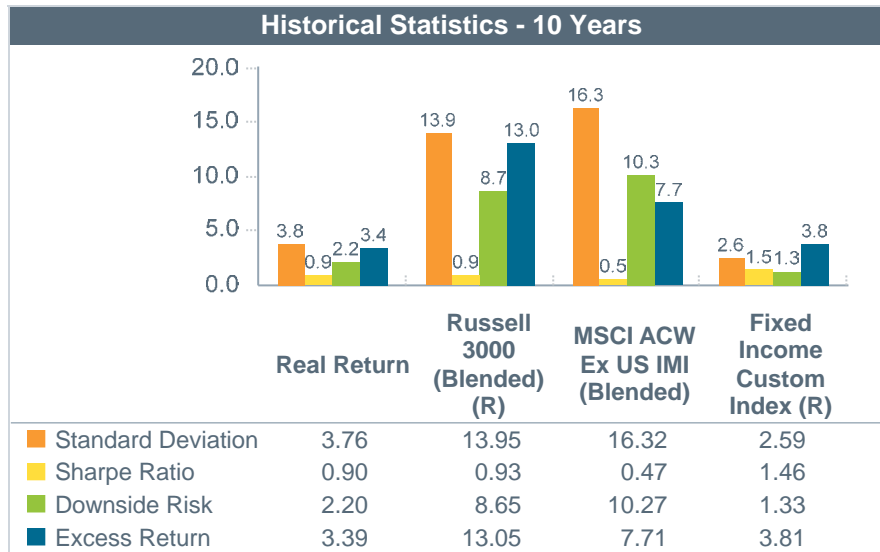
Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	0.29	N/A
Spread Duration	0.29	N/A
Avg. Maturity	5.01	5.13
Avg. Quality	B1	Ba2
Yield To Maturity (%)	9.31	7.64
Coupon Rate (%)	5.82	6.12
Current Yield (%)	9.31	6.50
Holdings Count	147	1,664



Performance shown is gross of fees and product specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

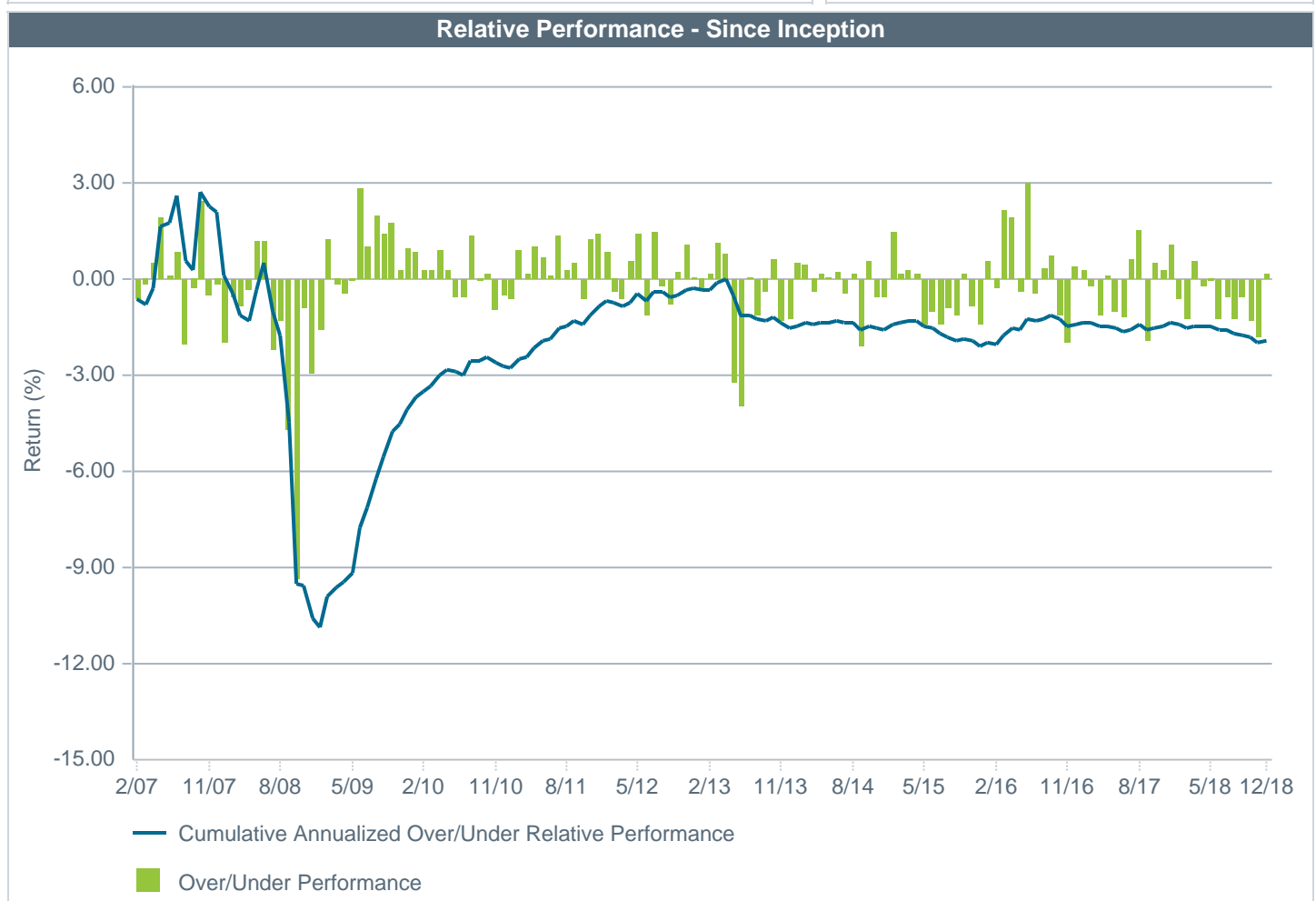


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-1.78	-2.96	3.53	2.02	1.51	3.76	4.05	9.90	-2.56	2.21	-4.88
Benchmark	1.15	5.27	5.09	4.60	4.30	3.96	5.27	4.73	3.45	4.29	4.02
Difference	-2.93	-8.23	-1.56	-2.58	-2.79	-0.20	-1.22	5.17	-6.01	-2.08	-8.90

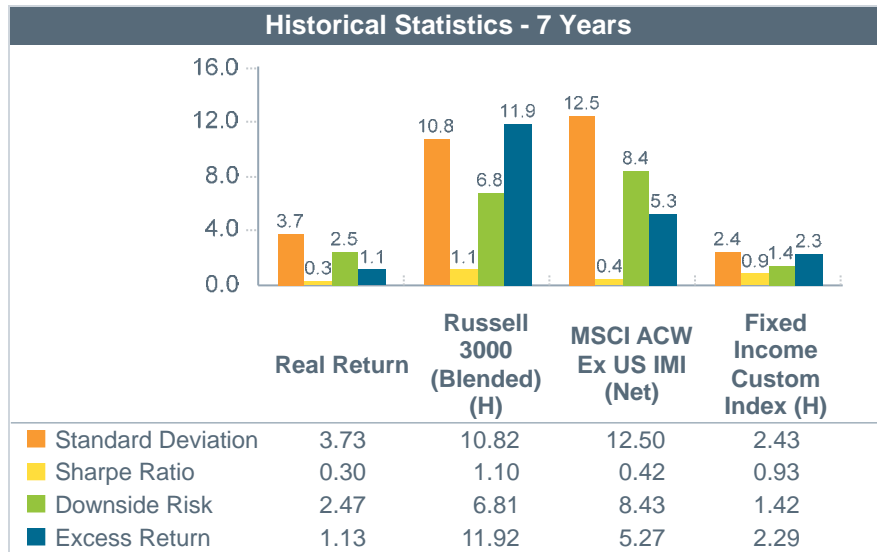


Actual Correlation - 10 Years

	Actual Correlation
Composite Benchmark	-0.06
S&P 500 Index (Cap Wtd)	-0.02
Russell 2000 Index	-0.03
MSCI EAFE Index (USD) (Net)	0.06
MSCI Emg Mkts Index (USD) (Net)	0.17
Bloomberg US Agg Bond Index	0.58
Bloomberg US Trsy US TIPS Index	0.56
Wilshire US REIT Index	0.16
HFRI FOF Comp Index	0.11
Bloomberg Cmtty Index (TR)	0.19
ICE BofAML 3 Mo US T-Bill Index	-0.09
Cons Price Index (Unadjusted)	0.10

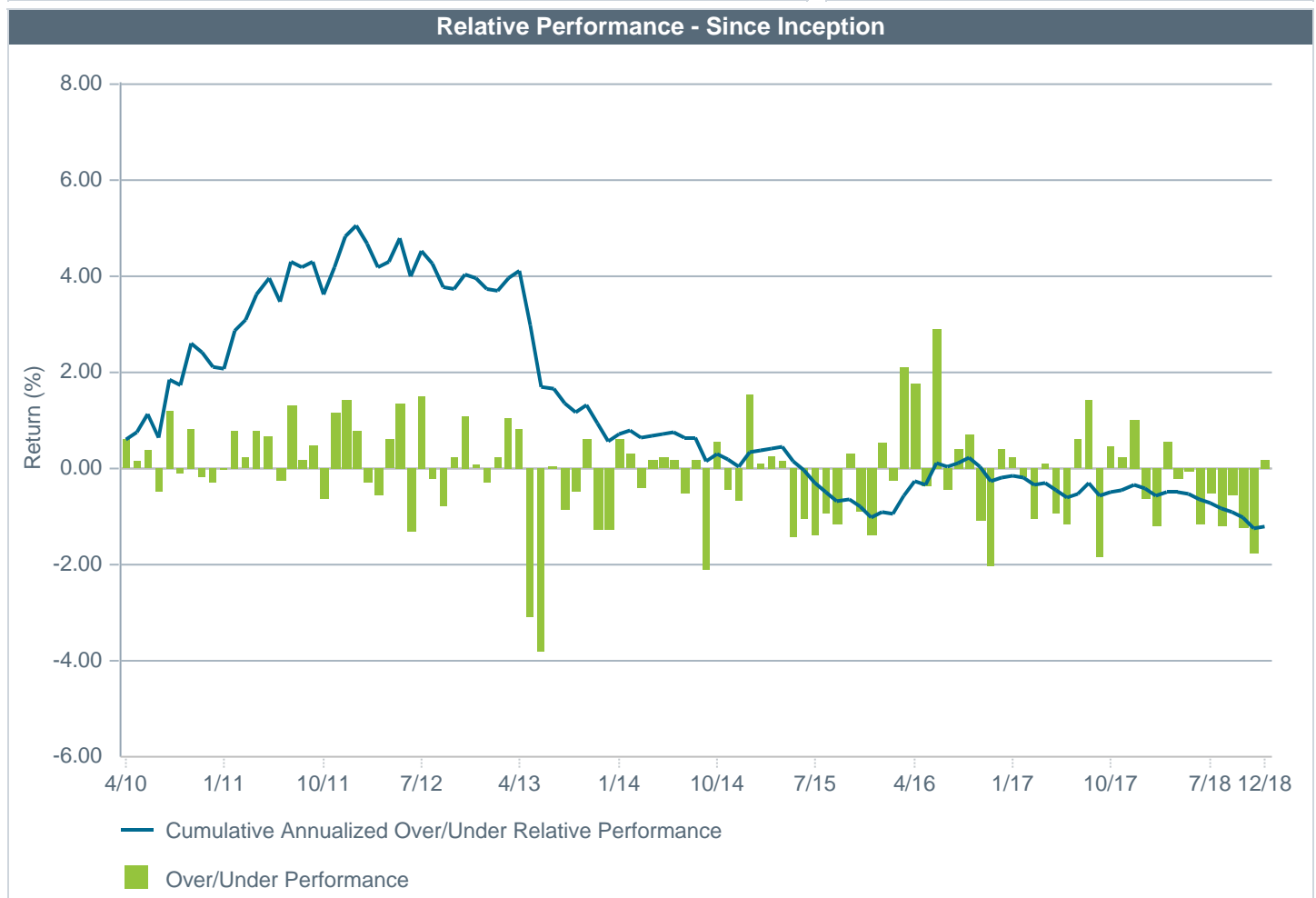


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-1.70	-2.79	3.46	1.98	1.54	N/A	3.97	9.56	-2.58	2.26	-4.45
Benchmark	1.15	5.27	5.09	4.60	4.30	3.96	5.27	4.73	3.45	4.29	4.02
Difference	-2.85	-8.06	-1.63	-2.62	-2.76	N/A	-1.30	4.83	-6.03	-2.03	-8.47

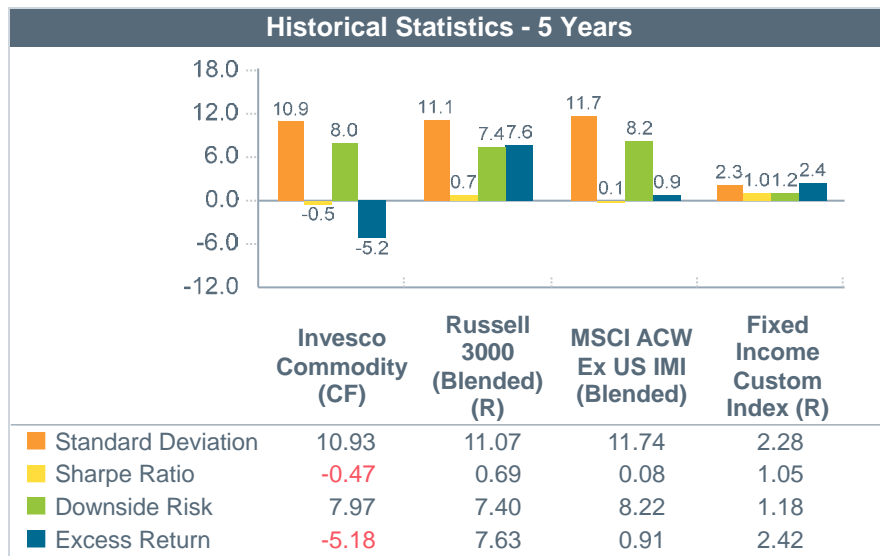


Actual Correlation - 7 Years

	Actual Correlation
Composite Benchmark	0.01
S&P 500 Index (Cap Wtd)	0.04
Russell 2000 Index	0.00
MSCI EAFE Index (USD) (Net)	0.16
MSCI Emg Mkts Index (USD) (Net)	0.37
Bloomberg US Agg Bond Index	0.66
Bloomberg US Trsy US TIPS Index	0.78
Wilshire US REIT Index	0.32
HFRI FOF Comp Index	0.18
Bloomberg Cmtty Index (TR)	0.36
ICE BofAML 3 Mo US T-Bill Index	-0.04
Cons Price Index (Unadjusted)	0.07

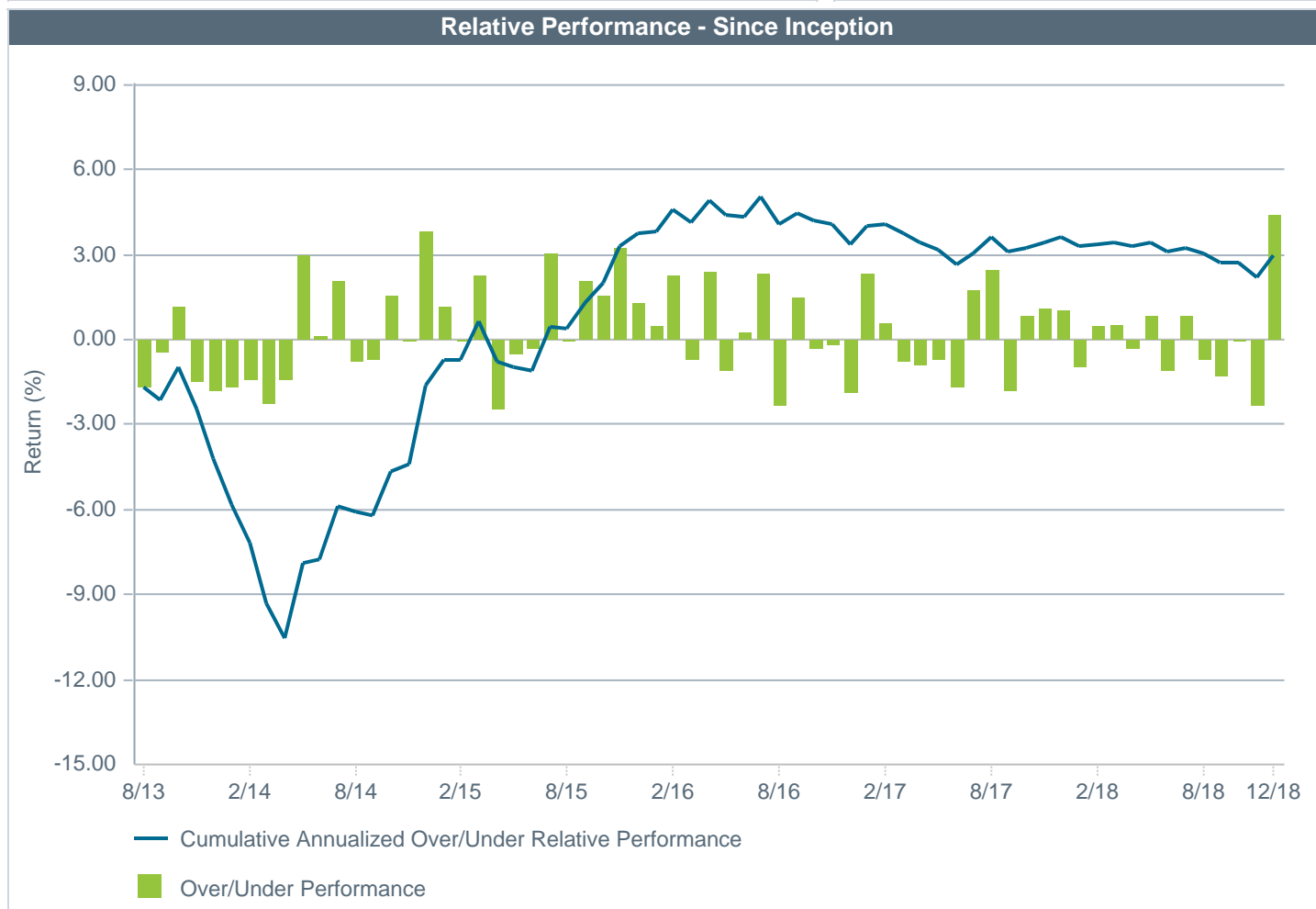


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-7.58	-10.99	2.67	-5.03	N/A	N/A	6.09	14.61	-15.75	-15.29	N/A
Benchmark	-9.41	-11.25	0.30	-8.80	-7.84	-3.78	1.70	11.77	-24.66	-17.01	-9.52
Difference	1.83	0.26	2.37	3.77	N/A	N/A	4.39	2.84	8.91	1.72	N/A



Actual Correlation - 5 Years

	Actual Correlation
Manager Benchmark	0.88
S&P 500 Index (Cap Wtd)	0.25
Russell 2000 Index	0.24
MSCI EAFE Index (USD) (Net)	0.33
MSCI Emg Mkts Index (USD) (Net)	0.46
Bloomberg US Agg Bond Index	0.01
Bloomberg US Trsy US TIPS Index	0.27
Wilshire US REIT Index	0.01
HFRI FOF Comp Index	0.23
ICE BofAML 3 Mo US T-Bill Index	0.04
Cons Price Index (Unadjusted)	0.36

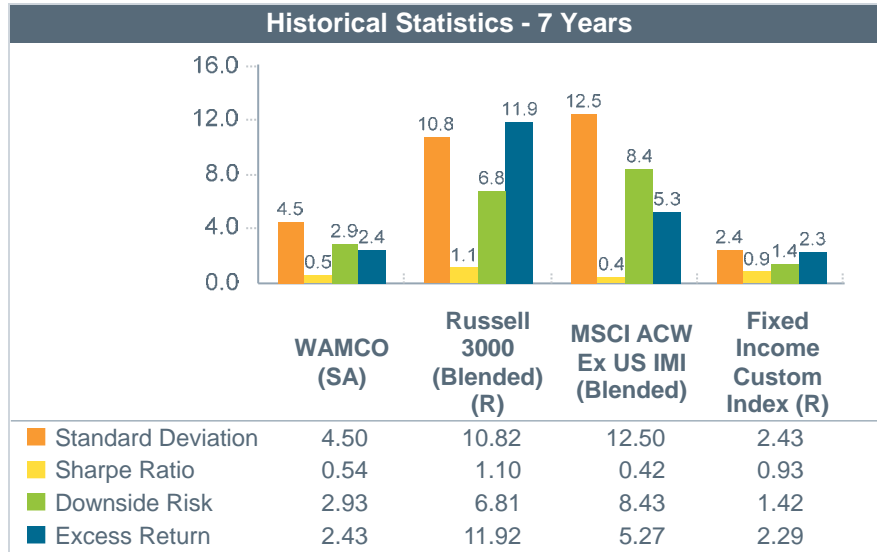


Manager: WAMCO (SA)

As of December 31, 2018

Benchmark: Bloomberg Wrld Gov't Infl Lnkd Index (Hedged)

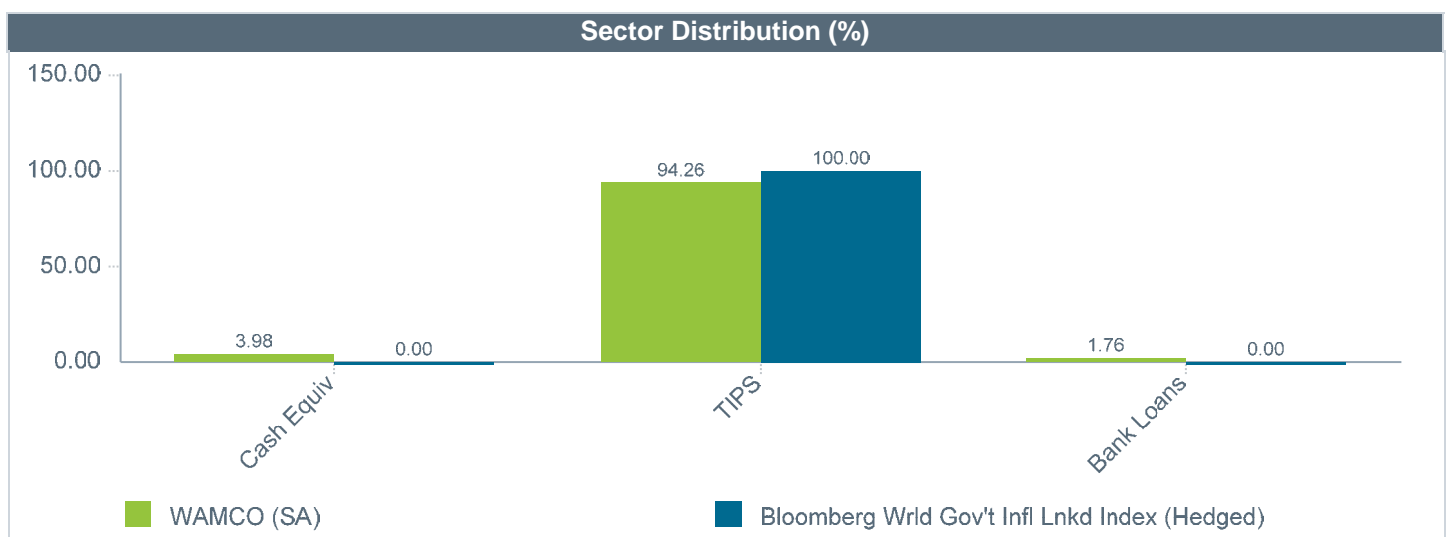
Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	0.12	-0.38	4.03	4.08	2.83	N/A	3.33	9.37	-0.22	8.75	-5.64
Benchmark	0.55	0.10	4.46	4.21	2.96	4.57	3.32	10.22	-1.12	9.04	-5.51
Difference	-0.43	-0.48	-0.43	-0.13	-0.13	N/A	0.01	-0.85	0.90	-0.29	-0.13



Actual Correlation - 7 Years

	Actual Correlation
Manager Benchmark	0.97
S&P 500 Index (Cap Wtd)	-0.01
Russell 2000 Index	-0.08
MSCI EAFE Index (USD) (Net)	0.10
MSCI Emg Mkts Index (USD) (Net)	0.25
Bloomberg US Agg Bond Index	0.80
Bloomberg US Trsy US TIPS Index	0.82
Wilshire US REIT Index	0.43
HFRI FOF Comp Index	0.10
Bloomberg Cndty Index (TR)	-0.06
ICE BofAML 3 Mo US T-Bill Index	-0.05
Cons Price Index (Unadjusted)	-0.12

Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	9.40	N/A
Spread Duration	N/A	N/A
Avg. Maturity	11.06	11.04
Avg. Quality	N/A	Aaa
Yield To Maturity (%)	2.77	N/A
Coupon Rate (%)	1.02	N/A
Yield To Worst (%)	1.54	-0.47
Current Yield (%)	1.29	N/A
Holdings Count	54	140



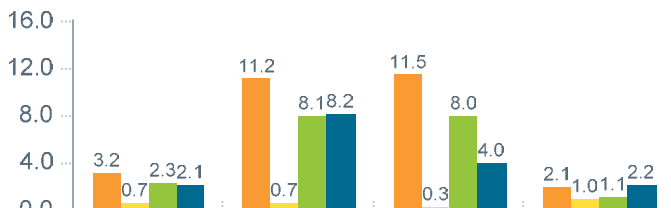
Performance shown is gross of fees and representative of the Retirement Plan. Calculation is based on monthly periodicity. Allocation to "Other" consists of Eurobonds.

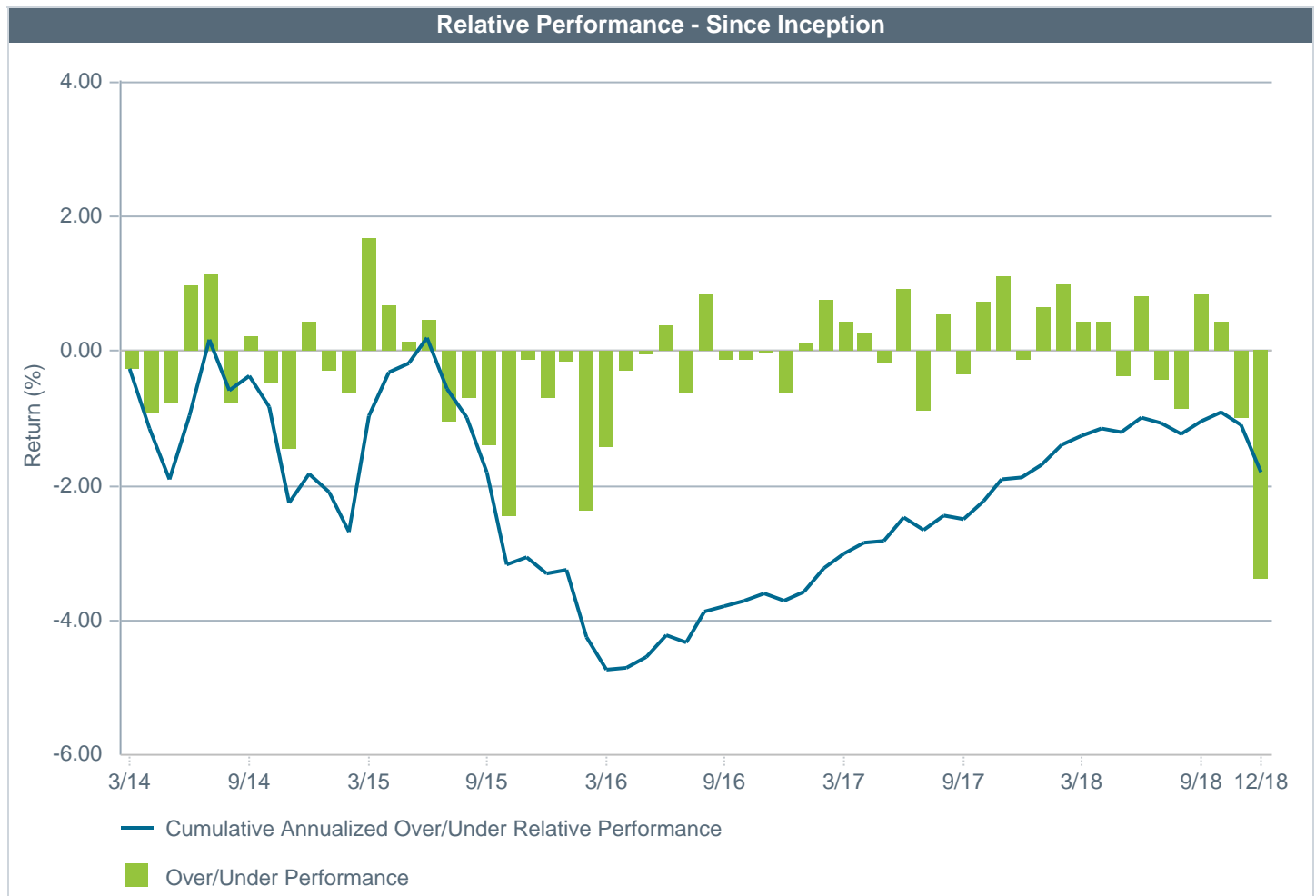
Manager: MS Convergent (CF) (Lagged-1 Mo)

As of December 31, 2018

Benchmark: ICE BofAML 3 Mo US T-Bill Index+3% (1 Mo Lag)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-2.70	3.36	3.10	N/A	N/A	N/A	7.39	-1.27	-1.34	N/A	N/A
Benchmark	1.28	4.85	3.99	3.61	3.46	3.37	3.81	3.33	3.02	3.05	3.08
Difference	-3.98	-1.49	-0.89	N/A	N/A	N/A	3.58	-4.60	-4.36	N/A	N/A

Historical Statistics - 3 Years					Actual Correlation - 3 Years																									
 <table border="1"><thead><tr><th>Index</th><th>Standard Deviation</th><th>Sharpe Ratio</th><th>Downside Risk</th><th>Excess Return</th></tr></thead><tbody><tr><td>MS Convergent (CF) (Lagged-1 Mo)</td><td>3.2</td><td>0.7</td><td>2.3</td><td>2.1</td></tr><tr><td>Russell 3000 (Blended) (R)</td><td>11.2</td><td>0.7</td><td>8.1</td><td>8.2</td></tr><tr><td>MSCI ACW Ex US IMI (Blended)</td><td>11.5</td><td>0.3</td><td>8.0</td><td>4.0</td></tr><tr><td>Fixed Income Custom Index (R)</td><td>2.1</td><td>1.0</td><td>1.1</td><td>2.2</td></tr></tbody></table>					Index	Standard Deviation	Sharpe Ratio	Downside Risk	Excess Return	MS Convergent (CF) (Lagged-1 Mo)	3.2	0.7	2.3	2.1	Russell 3000 (Blended) (R)	11.2	0.7	8.1	8.2	MSCI ACW Ex US IMI (Blended)	11.5	0.3	8.0	4.0	Fixed Income Custom Index (R)	2.1	1.0	1.1	2.2	Actual Correlation
Index	Standard Deviation	Sharpe Ratio	Downside Risk	Excess Return																										
MS Convergent (CF) (Lagged-1 Mo)	3.2	0.7	2.3	2.1																										
Russell 3000 (Blended) (R)	11.2	0.7	8.1	8.2																										
MSCI ACW Ex US IMI (Blended)	11.5	0.3	8.0	4.0																										
Fixed Income Custom Index (R)	2.1	1.0	1.1	2.2																										
					Manager Benchmark	-0.03																								
					S&P 500 Index (Cap Wtd)	0.15																								
					Russell 2000 Index	0.10																								
					MSCI EAFE Index (USD) (Net)	0.02																								
					MSCI Emg Mkts Index (USD) (Net)	-0.10																								
					Bloomberg US Agg Bond Index	-0.46																								
					Bloomberg US Trsy US TIPS Index	-0.36																								
					Wilshire US REIT Index	0.00																								
					HFRI FOF Comp Index	0.16																								
					Bloomberg Cmdty Index (TR)	0.20																								
					ICE BofAML 3 Mo US T-Bill Index	-0.04																								
					Cons Price Index (Unadjusted)	0.35																								
Standard Deviation	3.21	11.18	11.47	2.05																										
Sharpe Ratio	0.65	0.74	0.34	1.05																										
Downside Risk	2.28	8.06	7.96	1.12																										
Excess Return	2.10	8.25	3.95	2.20																										



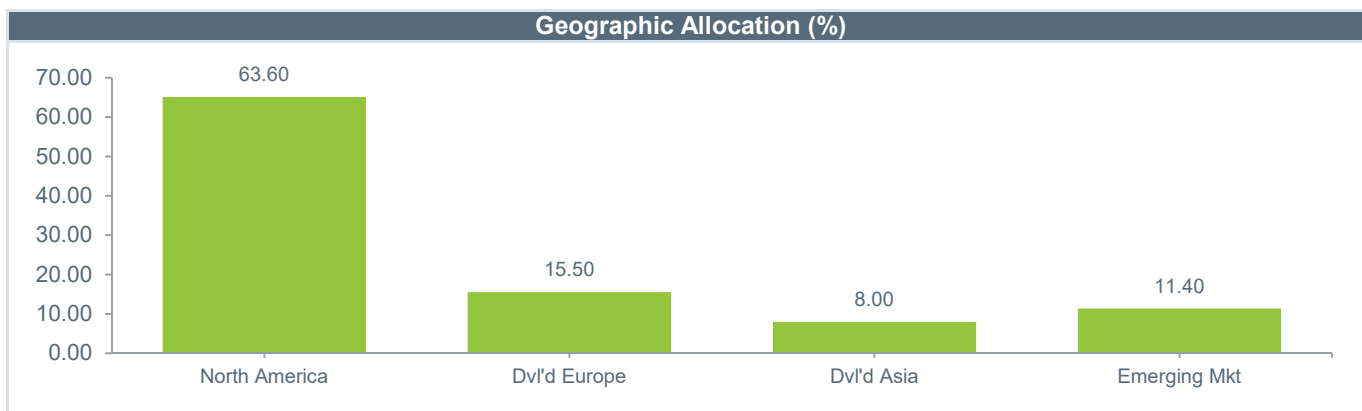
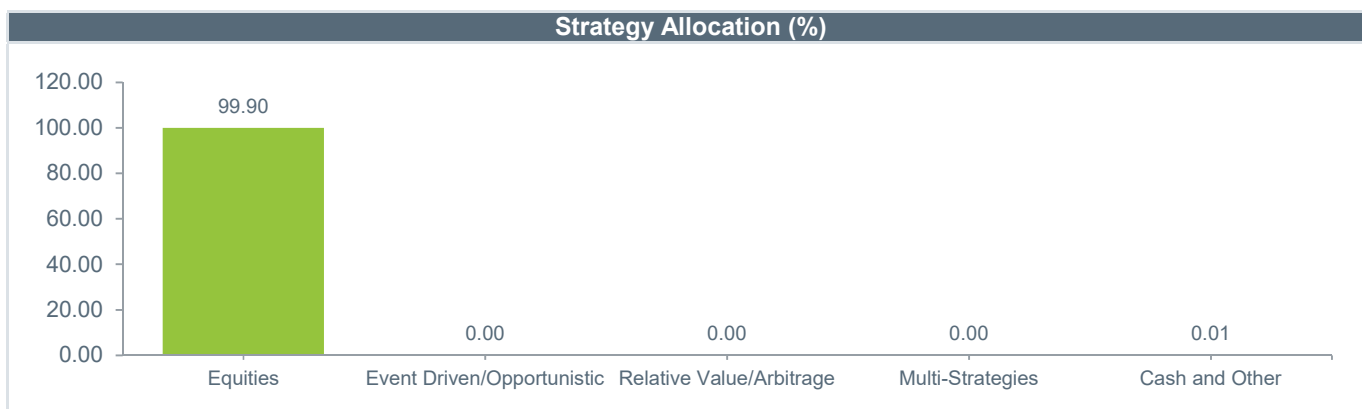
Performance shown is net of fees and representative of the Retirement Plan. Calculation is based on monthly periodicity.



Investment Strategy
Morgan Stanley AIP seeks to provide superior performance with minimal principal loss over a complete investment cycle. The fund attempts to achieve its objective principally through investing in a diversified portfolio of investment funds managed by third party investment strategies who employ a variety of investment strategies.

Firm Statistics	
Year Firm Established	2000
Firm AUM (\$B)	\$25
Percentage Employee Owned	0.00%

Fund Statistics	
Fund Inception	2014
Fund Size (\$M)	\$3
Number of Underlying Managers	1
Maximum Weighting of an Underlying Manager	100%
Current Leverage (Assets/Equity)	None
Annual Manager Turnover	11.00%
Annual Management Fee	None
Performance Fee	No
Hurdle	No
Initial Lock-Up Period	No
Redemption Frequency	Monthly
Notification Period	N/A



Fund statistics shown are provided by the investment manager and are as of the most recently available quarter end. Actual management and performance fees and other terms may vary based on the invested assets or other manager concessions.

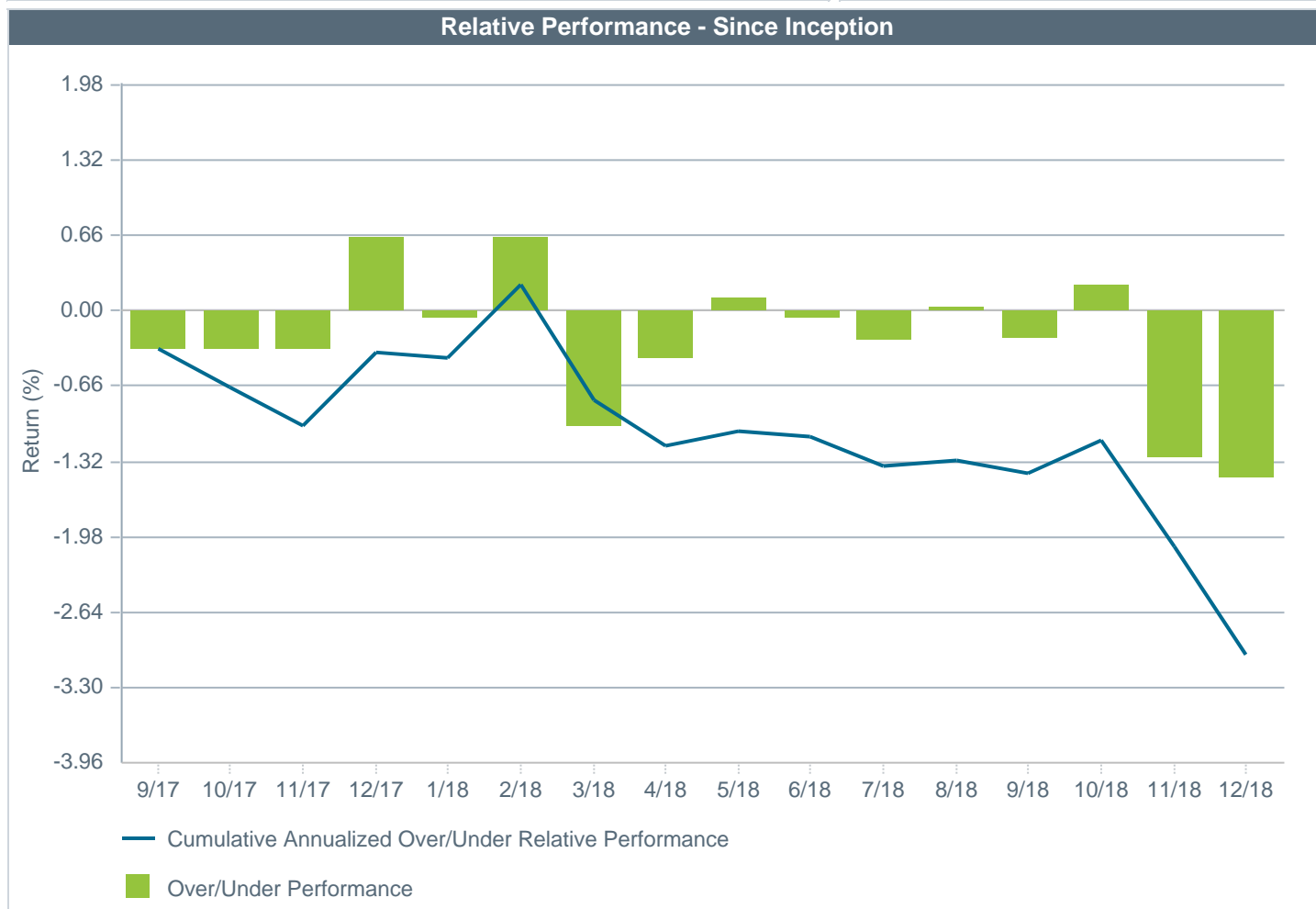
While California Govt. Code sec. 7514.7 requires certain fund information be disclosed to the public, sec. 6254.26(a) exempts from public disclosure certain contract terms, such as management fees expressed as a percentage, unless the fund manager consents to release such information. In this case, Morgan Stanley has consented to release this information to the public.

Allocation by Strategy	
Strategy	Allocation (%)
Equities L/S Opportunistic	0.0
Event Driven Equity	0.0
Equity L/S High Hedge	99.9
Equity L/S High Hedge Manager 1	99.9
Statistical Arbitrage	0.0
Mortgage Arbitrage	0.0
Multi-Strategy	0.0
Cash and Other	0.1
Cash and Other	0.1

Quarterly Turnover		
Strategy	New	Terms/Trans
Equities L/S Opportunistic	0	0
Event Driven Equity	0	0
Equity L/S High Hedge	0	0
Statistical Arbitrage	0	0
Mortgage Arbitrage	0	0
Multi-Strategy	0	0
Cash and Other	0	0
Total Quarterly Turnover	0	0

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-1.25	1.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benchmark	1.28	4.85	3.99	3.61	3.46	3.37	3.81	3.33	3.02	3.05	3.08
Difference	-2.53	-3.82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Historical Statistics - 1 Year					Actual Correlation - 1 Year	
					Actual Correlation	
Blackstone Hope St. LP (CF) (Lagged-1 Mo)	2.07	14.85	12.10	1.52	Manager Benchmark	-0.35
Russell 3000 (Blended) (R)	-0.38	-0.41	-1.40	-1.24	S&P 500 Index (Cap Wtd)	0.22
MSCI ACW Ex US IMI (Blended)	1.49	12.59	11.30	1.08	Russell 2000 Index	0.15
Fixed Income Custom Index (R)	-0.81	-6.10	-16.98	-1.83	MSCI EAFE Index (USD) (Net)	-0.10
					MSCI Emg Mkts Index (USD) (Net)	-0.33
					Bloomberg US Agg Bond Index	-0.67
					Wilshire US REIT Index	-0.14
					HFRI FOF Comp Index	0.05
					Bloomberg Cmtty Index (TR)	0.27
					ICE BofAML 3 Mo US T-Bill Index	-0.52
					Cons Price Index (Unadjusted)	0.69



Investment Strategy

BAAM manages a custom discretionary Hope Street fund on behalf of LADWP. Hope Street is a broadly diversified portfolio designed to provide downside capital protection and achieve the portfolio objective over a full market cycle. The portfolio is designed to maintain low volatility vs. the global equity markets.

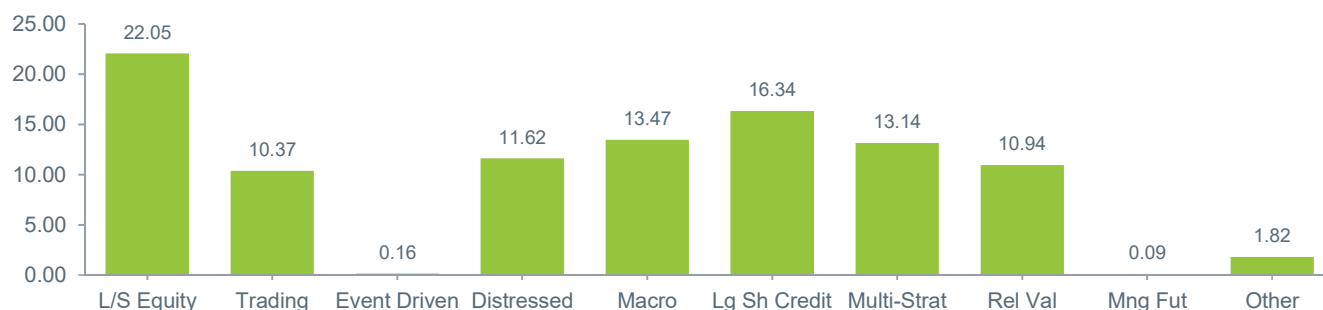
Firm Statistics

Year Firm Established	1990
Firm AUM (\$M)	\$80,005
Percentage Employee Owned	47.00%

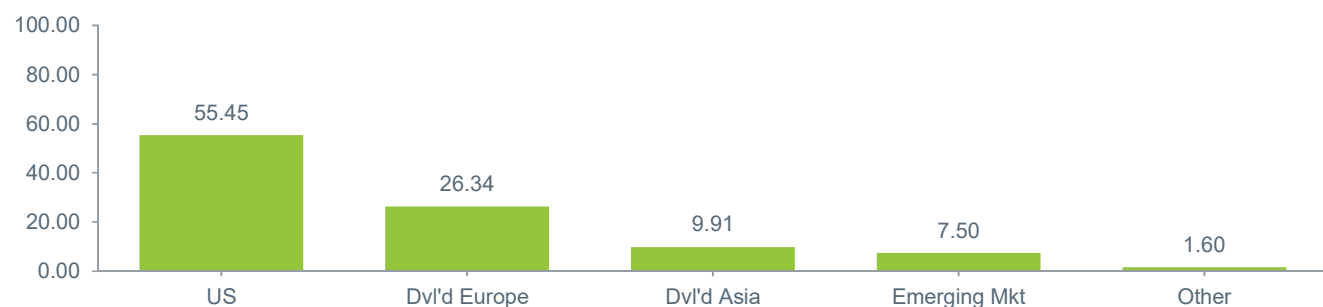
Fund Statistics

Fund Inception	2017
Fund Size (\$M)	\$708
Number of Underlying Managers	36
Maximum Weighting of an Underlying Manager	5.50%
Current Leverage (Assets/Equity)	3.48
Annual Manager Turnover	N/A
Annual Management Fee %	0.6
Performance Fee %	12
Hurdle %	4.4
Initial Lock-Up Period	No
Redemption Frequency	Daily
Notification Period	60 Days

Strategy Allocation (%)



Geographic Allocation (%)



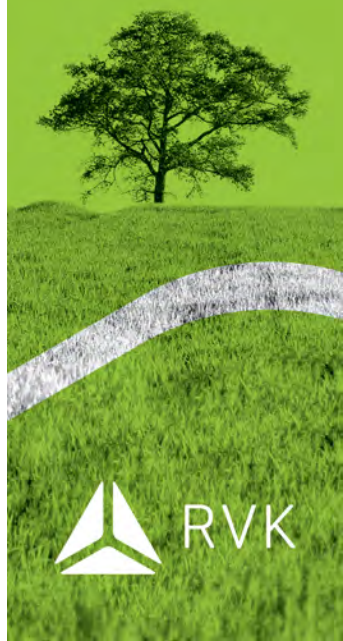
Strategy Allocation to "Other" includes cash, hedging, and other expenses. Geographic Allocation to "Other" consists of Canada. Investment profile data shown is provided by the investment manager and is as of the most recently available quarter end. While California Govt. Code sec. 7514.7 requires certain fund information be disclosed to the public, sec. 6254.26(a) exempts from public disclosure certain contract terms, such as management fees expressed as a percentage, unless the fund manager consents to release such information. In this case, BlackStone has consented to release this information to the public.

Fund statistics shown are provided by the investment manager and are as of the most recently available quarter end. Actual management and performance fees or other terms may vary based on the invested assets or other manager concessions.

Allocation by Strategy	
Strategy	Allocation (%)
Equities	29.3
Equity Manager 1	3.2
Equity Manager 2	2.5
Equity Manager 3	2.3
Equity Manager 4	0.1
Equity Manager 5	3.3
Equity Manager 6	0.7
Equity Manager 7	4.1
Equity Manager 8	4.1
Equity Manager 9	2.8
Equity Manager 10	2.3
Equity Manager 11	1.4
Equity Manager 12	1.2
Equity Manager 13	0.8
Equity Manager 14	0.5
Credit	41.2
Credit Manager 1	4.3
Credit Manager 2	1.9
Credit Manager 3	2.5
Credit Manager 4	5.2
Credit Manager 5	3.0
Credit Manager 6	2.9
Credit Manager 7	6.1
Credit Manager 8	3.8
Credit Manager 9	3.7
Credit Manager 10	3.6
Credit Manager 11	4.3
Multi-Strategies	7.4
Multi-Strategies Manager 1	5.2
Multi-Strategies Manager 2	2.2
Macro	13.6
Macro Manager 1	13.6
Special Situations	6.3
Special Situations Manager 1	3.6
Special Situations Manager 2	2.7
Arbitrage	2.2

Quarterly Turnover		
Strategy	New	Terms/Trans
Equities	2	0
Credit	0	0
Multi-Strategies	0	0
Macro	0	1
Event Driven/Opportunistic	0	0
Special Situations	0	0
Arbitrage	1	0
Cash and Other	0	1
Total Quarterly Turnover	3	2

Appendix



As stated in Section IV of the Investment Policy:

The purpose of a watch list is to focus attention and discussion on the managers that need it - due to difficulties or changes. However, being placed on the watch list does not suggest termination is imminent, as all managers, even top performers, experience some periods of underperformance. An investment manager/portfolio attains watch status if at least one of two events occurs:

- (i) the portfolio's rolling 60 month net return is less than the benchmark's return at two consecutive calendar quarter end dates, or
- (ii) after the Portfolio Review is conducted, Investment Staff and/or the investment consultant recommends to the Board that an investment manager is a candidate for watch status.

However, a manager with less than 60 months of performance with the Plan may be placed on watch for material underperformance relative to the benchmark. An investment manager/portfolio may also be placed on watch at any time as a result of qualitative factors, including but not limited to:

- Violation of investment guidelines
- Deviation from stated investment style and/ or shifts in the firm's philosophy or process
- Turnover of one or more key personnel
- Change in firm ownership or structure
- Significant loss of clients and/or assets under management
- Significant and persistent lack of responsiveness to client requests
- Litigation
- Failure to disclose significant information, including potential conflicts of interest
- Chronic violations of the Plan's Investment Policy
- Any other issue or situation of which the Investment Staff, the Advisory Consultant and/or Board become aware that is deemed material.

Water and Power Employees' Retirement Plan
Historical Policy Benchmark - Retirement

As of December 31, 2018

Time Period	Asset Class	Target	Change	Policy Benchmarks
12/1/2017 - Present (Updated Interim Targets)	Domestic Equity	33%	-1.25%	Russell 3000
	International Equity	19%	-	MSCI ACWI ex U.S. IMI
	Fixed Income	26%	-2.75%	Fixed Income Custom Index (R)
	Real Return	5%	-	CPI+3% (Blended)
	Hedge Funds	5%	+3%	T-Bill + 3% Lag
	Real Estate	6%	+1%	NCREIF + 0.5% Lag
	Private Equity	5%	-	Russell 3000 + 3% Lag
	Cash	1%	-	T-Bill
2/1/2016 - Present (Interim Targets)	Domestic Equity	34.25%	+1.25%	Russell 3000
	International Equity	19%	-2%	MSCI ACWI ex U.S. IMI
	Fixed Income	28.75%	+4.75%	Fixed Income Custom Index (R)
	Real Return	5%	-1%	CPI+3% (Blended)
	Hedge Funds	2%	+2%	T-Bill + 3% Lag
	Real Estate	5%	-	NCREIF + 0.5% Lag
	Private Equity	5%	-	Russell 3000 + 3% Lag
	Cash	1%	-	T-Bill
9/1/2015 - 1/31/2016	Domestic Equity	33%	-	Russell 3000
	International Equity	21%	-	MSCI ACWI ex U.S. IMI
	Fixed Income	24%	-	Fixed Income Custom Index (R)
	Real Return	6%	-	CPI+3% (Blended)
	Real Estate	5%	-	NCREIF + 0.5% Lag
	Private Equity	5%	-	Russell 3000 + 3% Lag
	Covered Calls	5%	-	CBOE BXM
	Cash	1%	-	T-Bill
10/1/2014 - 8/31/2015	Domestic Equity	33%	-	Russell 3000
	International Equity	21%	-	MSCI ACWI ex U.S. IMI
	Fixed Income	24%	-	B Universal
	Covered Calls	5%	-	CBOE BXM
	Real Estate	5%	-	NCREIF + 0.5% Lag
	Private Equity	5%	-	Russell 3000 + 3% Lag
	Real Return	6%	-	CPI+3% (Blended)
	Cash	1%	-	T-Bill
7/1/2013 - 9/30/2014	Domestic Equity	33%	-1%	Russell 3000
	International Equity	21%	-	MSCI ACWI ex U.S. IMI
	Fixed Income	24%	-1%	B Universal
	Covered Calls	5%	-	CBOE BXM
	Real Estate	5%	+1%	NCREIF + 0.5% Lag
	Private Equity	5%	+1%	Russell 3000 + 3% Lag
	Real Return	6%	-	CPI+3% (Blended)
	Cash	1%	-	T-Bill

Please see the Addendum for custom index definitions.

Water and Power Employees' Retirement Plan
Historical Policy Benchmark - Retirement

As of December 31, 2018

Time Period	Asset Class	Target	Change	Policy Benchmarks
4/1/2012-6/30/2013	Domestic Equity	34%	-1%	Russell 3000
	International Equity	21%	-1%	MSCI ACWI ex U.S. IMI
	Fixed Income	25%	-8%	B Universal
	Covered Calls	5%	+5%	CBOE BXM
	Real Estate	4%	+2%	NCREIF + 0.5% Lag
	Private Equity	4%	+2%	Russell 3000 + 3% Lag
	Real Return	6%	+1%	T-Bill + 3% Lag
	Cash	1%	-	T-Bill
10/1/2011-3/31/2012	Domestic Equity	35%	+1%	Russell 3000
	International Equity	22%	+2%	MSCI ACWI ex U.S. IMI
	Fixed Income	33%	-	B Universal
	Real Estate	2%	-2%	NCREIF + 0.5% Lag
	Private Equity	2%	-1%	Russell 3000 + 3% Lag
	Real Return	5%	-	T-Bill + 3% Lag
	Cash	1%	-	T-Bill
10/1/2010-9/30/2011	Domestic Equity	34%	+1%	Russell 3000
	International Equity	20%	+3%	MSCI ACWI ex U.S. IMI
	Fixed Income	33%	-7%	B Universal
	Real Estate	4%	+1%	NCREIF + 0.5% Lag
	Private Equity	3%	+1%	85% Cambridge U.S. Private Equity Lag / 15% Cambridge U.S. Venture Capital Lag
	Real Return	5%	+2%	T-Bill + 3% Lag
	Cash	1%	-1%	T-Bill
7/1/2009-9/30/2010	Domestic Equity	33%	-7%	Russell 3000
	International Equity	17%	-7%	MSCI ACWI ex U.S. IMI
	Fixed Income	40%	+10%	B Universal
	Real Estate	3%	+1%	NCREIF + 0.5% Lag
	Private Equity	2%	+1%	85% Cambridge U.S. Private Equity Lag / 15% Cambridge U.S. Venture Capital Lag
	Real Return	3%	+1%	T-Bill + 3% Lag
	Cash	2%	+1%	T-Bill
1/1/2009-6/30/2009	Domestic Equity	40%	-	Russell 3000
	International Equity	24%	-	MSCI ACWI ex U.S. IMI
	Fixed Income	30%	-	B Universal
	Real Estate	2%	-	NCREIF + 0.5% Lag
	Private Equity	1%	-	85% Cambridge U.S. Private Equity Lag / 15% Cambridge U.S. Venture Capital Lag
	Real Return	2%	-	T-Bill + 3% Lag
	Cash	1%	-	T-Bill

Water and Power Employees' Retirement Plan
Historical Policy Benchmark - Retirement

As of December 31, 2018

Time Period	Asset Class	Target	Change	Policy Benchmarks
7/1/2008-12/31/2008	Domestic Equity	40%	-	Russell 3000
	International Equity	24%	+9%	MSCI ACWI ex U.S.
	Fixed Income	30%	-5%	B Universal
	Real Estate	2%	-2%	NCREIF + 0.5% Lag
	Private Equity	1%	-3%	85% Cambridge U.S. Private Equity Lag / 15% Cambridge U.S. Venture Capital Lag
	Real Return	2%	+1%	T-Bill + 3% Lag
	Cash	1%	-	T-Bill
3/1/2007-6/30/2008	Domestic Equity	40%	-	Russell 3000
	International Equity	15%	-	MSCI ACWI ex U.S.
	Fixed Income	35%	-	B Universal
	Real Estate	4%	-	NCREIF + 0.5% Lag
	Private Equity	4%	-1%	85% Cambridge U.S. Private Equity Lag / 15% Cambridge U.S. Venture Capital Lag
	Real Return	1%	+1%	T-Bill + 3% Lag
	Cash	1%	-	T-Bill
1/1/2007-2/28/2007	Domestic Equity	40%	-	Russell 3000
	International Equity	15%	-	MSCI ACWI ex U.S.
	Fixed Income	35%	-	B Universal
	Real Estate	4%	-	NCREIF + 0.5% Lag
	Private Equity	5%	-	85% Cambridge U.S. Private Equity Lag / 15% Cambridge U.S. Venture Capital Lag
	Cash	1%	-	T-Bill
4/1/2003-12/31/2006	Domestic Equity	40%	-20%	Russell 3000
	International Equity	15%	+15%	MSCI ACWI ex U.S.
	Fixed Income	35%	+5%	B Universal
	Cash	1%	-9%	T-Bill
	Real Estate	4%	+4%	The Plan had allocated 5% to Alternatives and 4% to Real Estate asset classes.
	Alternatives	5%	+5%	
Thru 3/31/2003	Domestic Equity	60%	-	S&P 500
	Fixed Income	30%	-	Citigroup BIG
	Cash	10%	-	Citigroup T-Bill

Water and Power Employees' Retirement Plan
Historical Policy Benchmark - Health

As of December 31, 2018

Time Period	Asset Class	Target	Change	Policy Benchmarks
12/1/2017 - Present (Updated Interim Targets)	Domestic Equity	33.00%	-1.25%	Russell 3000
	International Equity	19%	-	MSCI ACWI ex U.S. IMI
	Fixed Income	26.00%	-2.75%	Fixed Income Custom Index (H)
	Real Return	5%	-	CPI+3% (Blended)
	Hedge Funds	5%	+3%	T-Bill + 3% Lag
	Real Estate	6%	+1%	NCREIF + 0.5% Lag
	Private Equity	5%	-	Russell 3000 + 3% Lag
	Cash	1%	-	T-Bill
2/1/2016 - Present (Interim Targets)	Domestic Equity	34.25%	+1.25%	Russell 3000
	International Equity	19%	-2%	MSCI ACWI ex U.S. IMI
	Fixed Income	28.75%	+4.75%	Fixed Income Custom Index (H)
	Real Return	5%	-1%	CPI+3% (Blended)
	Hedge Funds	2%	+2%	T-Bill + 3% Lag
	Real Estate	5%	-	NCREIF + 0.5% Lag
	Private Equity	5%	-	Russell 3000 + 3% Lag
	Cash	1%	-	T-Bill
9/1/2015 - 1/31/2016	Domestic Equity	33%	-	Russell 3000
	International Equity	21%	-	MSCI ACWI ex U.S. IMI
	Fixed Income	24%	-	Fixed Income Custom Index (H)
	Covered Calls	5%	-	CBOE BXM
	Real Estate	5%	-	NCREIF + 0.5% Lag
	Private Equity	5%	-	Russell 3000 + 3% Lag
	Real Return	6%	-	CPI+3% (Blended)
	Cash	1%	-	T-Bill
10/1/2014 - 8/31/2015	Domestic Equity	33%	-	Russell 3000
	International Equity	21%	-	MSCI ACWI ex U.S. IMI
	Fixed Income	24%	-	B Universal
	Covered Calls	5%	-	CBOE BXM
	Real Estate	5%	-	NCREIF + 0.5% Lag
	Private Equity	5%	-	Russell 3000 + 3% Lag
	Real Return	6%	-	CPI+3% (Blended)
	Cash	1%	-	T-Bill
7/1/2013 - 9/30/2014	Domestic Equity	33%	-2%	Russell 3000
	International Equity	21%	-	MSCI ACWI ex U.S. IMI
	Fixed Income	24%	-2%	B Universal
	Covered Calls	5%	-	CBOE BXM
	Real Estate	5%	+2%	NCREIF + 0.5% Lag
	Private Equity	5%	+2%	Russell 3000 + 3% Lag
	Real Return	6%	-	CPI+3% (Blended)
	Cash	1%	-	T-Bill
4/1/2012-6/30/2013	Domestic Equity	35%	-1%	Russell 3000
	International Equity	21%	+1%	MSCI ACWI ex U.S. IMI
	Fixed Income	26%	-10%	B Universal
	Covered Calls	5%	+5%	CBOE BXM
	Real Estate	3%	+2%	NCREIF + 0.5% Lag
	Private Equity	3%	+2%	Russell 3000 + 3% Lag
	Real Return	6%	+1%	T-Bill + 3% Lag
	Cash	1%	-	T-Bill
10/1/2011-3/31/2012	Domestic Equity	36%	+2%	Russell 3000
	International Equity	20%	+2%	MSCI ACWI ex U.S. IMI
	Fixed Income	36%	-6%	B Universal
	Real Estate	1%	+1%	NCREIF + 0.5% Lag
	Private Equity	1%	-	Russell 3000 + 3% Lag
	Real Return	5%	+2%	T-Bill + 3% Lag
	Cash	1%	-1%	T-Bill

Please see the Addendum for custom index definitions.

Water and Power Employees' Retirement Plan
Historical Policy Benchmark - Health

As of December 31, 2018

Time Period	Asset Class	Target	Change	Policy Benchmarks
7/1/2010-9/30/2011	Domestic Equity	34%	-3%	Russell 3000
	International Equity	18%	+3%	MSCI ACWI ex U.S. IMI
	Fixed Income	42%	-3%	B Universal
	Private Equity	1%	-	85% Cambridge U.S. Private Equity Lag / 15% Cambridge U.S. Venture Capital Lag
	Real Return	3%	+3%	T-Bill + 3% Lag
	Cash	2%	-	T-Bill
10/1/09-6/30/10	Domestic Equity	37%	-23%	Russell 3000
	International Equity	15%	+15%	MSCI ACWI ex U.S. IMI
	Fixed Income	45%	+5%	B Universal
	Private Equity	1%	+1%	85% Cambridge U.S. Private Equity Lag / 15% Cambridge U.S. Venture Capital Lag
	Cash	2%	+2%	T-Bill
Thru 9/30/2009	Domestic Equity	60%	-	Russell 3000
	Fixed Income	40%	-	B Universal

Water and Power Employees' Retirement Plan
Summary of Retirement Plan Transitions

As of December 31, 2018

Manager	Mandate	Funded	Terminated
2018			
Almanac VIII	Real Estate	4Q 2018	
Torchlight Debt Opp VI	Real Estate	1Q 2018	
2017			
LaSalle Asia V	Real Estate	4Q 2017	
Blackstone Hope St. LP	Hedge Fund	3Q 2017	
EnCap XI	Private Equity	3Q 2017	
Silver Lake V	Private Equity	1Q 2017	
CD&R X	Private Equity	1Q 2017	
2016			
FPA Core Plus III	Real Estate	4Q 2016	
Adams Street SMB I	Private Equity	4Q 2016	
Wellington Emerging	Emerging Markets	3Q 2016	
DRA G&I IX	Real Estate	3Q 2016	
Industry Ventures VIII	Private Equity	2Q 2016	
Industry Ven SP Opp III-A	Private Equity	2Q 2016	
Lone Star V	Real Estate	2Q 2016	
Mesa West IV	Real Estate	1Q 2016	
Westbrook X	Real Estate	1Q 2016	
Vista VI	Private Equity	1Q 2016	
2015			
Emerald Small Cap Growth (SA)	Small Cap Growth	4Q 2015	
Ares V	Private Equity	4Q 2015	
Harvest VII	Private Equity	4Q 2015	
JP Morgan Principal Protection (SA)	Principal Protection	3Q 2015	
Wells Principal Protection (SA)	Principal Protection	3Q 2015	
Macquarie Unconstrained (SA)	Extended Credit	3Q 2015	
Neuberger Unconstrained (SA)	Extended Credit	3Q 2015	
Pacific Asset Bank Loans (SA)	Bank Loans	3Q 2015	
Harrison Street Core	Real Estate	3Q 2015	
Jamestown Premier	Real Estate	2Q 2015	
Lone Star IV	Real Estate	2Q 2015	
Blackstone Tactical Opps	Private Equity	2Q 2015	
EnCap X	Private Equity	1Q 2015	
2014			
Torchlight Debt Opp V	Real Estate	4Q 2014	
Ares Special Situation IV	Private Equity	4Q 2014	
Almanac VII	Real Estate	4Q 2014	
Crestview Partners III	Private Equity	3Q 2014	
Prologis USLH	Real Estate	3Q 2014	
DRA G&I VIII	Real Estate	3Q 2014	
Molpus IV	Real Return	3Q 2014	
Hancock	Timber	2Q 2014	
Vista Equity V	Private Equity	2Q 2014	
CD&R IX	Private Equity	2Q 2014	
Landmark XV	Private Equity	1Q 2014	
Apollo VIII	Private Equity	1Q 2014	
Morgan Stanley	Hedge Fund	1Q 2014	
Brep Europe IV	Real Estate	1Q 2014	

Water and Power Employees' Retirement Plan
Summary of Retirement Plan Transitions

As of December 31, 2018

Manager	Mandate	Funded	Terminated
2013			
GAM	Hedge Fund	4Q 2013	2Q 2018
Silver Lake IV	Private Equity	4Q 2013	
Heitman	Real Estate	4Q 2013	
Invesco Commodity	Commodities	3Q 2013	
Mesa West Fund III	Real Estate	3Q 2013	
Torchlight Debt Opp IV	Real Estate	3Q 2013	
DFA	Real Estate	1Q 2013	
EnergyCap IX	Private Equity	1Q 2013	
2012			
Vontobel	Emerging Markets	4Q 2012	3Q 2016
AresCorp. Opp. IV	Private Equity	4Q 2012	
Bristol Value II	Real Estate	4Q 2012	
ARS VI	Real Estate	3Q 2012	
Blackstone	Real Estate	3Q 2012	
PCCP	Real Estate	3Q 2012	
L.A. Capital	Emerging Markets	3Q 2012	
MFS	Developed International	3Q 2012	
BlackRock	Developed International	3Q 2012	
Gateway (non-replication)	Covered Calls	2Q 2012	1Q 2016
Gateway (replication)	Covered Calls	2Q 2012	1Q 2016
AG Core	Real Estate	1Q 2012	
2011			
DRA	Real Estate	4Q 2011	
Vista Equity Partners IV	Private Equity	4Q 2011	
Invesco	Real Estate	3Q 2011	
Lone Star VII	Real Estate	2Q 2011	
Lone Star II	Real Estate	2Q 2011	
Audax Mezz III	Private Equity	1Q 2011	
EnergyCap VIII	Private Equity	1Q 2011	
2010			
WAMCO	GILS	2Q 2010	
JP Morgan	Core Fixed Income	2Q 2010	3Q 2015
Frontier	Small Cap Growth	2Q 2010	4Q 2015
T. Rowe Price	Large Cap Growth	2Q 2010	
Lexington VIII	Private Equity	1Q 2010	
Mesa West	Real Estate	1Q 2010	
2009			
Oaktree V	Private Equity	1Q 2009	
2008			
Landmark XIV	Private Equity	3Q 2008	
CB Richard Ellis	Private Equity	2Q 2008	Q3 2016
Fisher Lynch	Real Estate	2Q 2008	
HRJ	Private Equity	1Q 2008	
2007			
JPM Strategic	Real Estate	3Q 2007	
Prisa II	Real Estate	2Q 2007	
PAAMCO	Hedge Fund	1Q 2007	4Q 2010
Aetos	Hedge Fund	1Q 2007	2Q 2013

Water and Power Employees' Retirement Plan
Summary of Retirement Plan Transitions

As of December 31, 2018

Manager	Mandate	Funded	Terminated
2006			
Prisa	Real Estate	4Q 2006	
Landmark XIII	Private Equity	4Q 2006	
Paradigm	Small Cap Growth	3Q 2006	1Q 2010
Northpointe	Small Cap Growth	3Q 2006	2Q 2009
Lexington VI	Private Equity	3Q 2006	
2005			
Boston Company	Large Cap Active		1Q 2005
T. Rowe Price	Emerging Markets	1Q 2005	3Q 2011
Boston Company	Emerging Markets	1Q 2005	4Q 2011
Loomis Sayles	High Yield	1Q 2005	3Q 2015
Boston Company	International	1Q 2005	4Q 2011
2004			
Wells Capital	High Yield	4Q 2004	3Q 2015
Pyramis (formerly Fidelity)	International	4Q 2004	
Earnest Partners	Small Cap Value	4Q 2004	
Bank of New York	Small Cap Growth	4Q 2004	1Q 2006
Wells Capital	Core Fixed Income	3Q 2004	3Q 2015
ING/Aeltus	Core Fixed Income	3Q 2004	4Q 2009
T. Rowe Price	Large Cap Value	3Q 2004	
Invesco	International	2Q 2004	4Q 2011
MFS	Large Cap Value	1Q 2004	
Intech	Large Cap Growth	1Q 2004	3Q 2009
Fred Alger	Large Cap Growth	1Q 2004	
2003			
Northern Trust	Passive Core	3Q 2003	1Q 2005
BlackRock (formerly Merrill Lynch)	Passive Core	3Q 2003	

Water and Power Employees' Retirement Plan
Hedge Funds Characteristics and Terms

Strategy	Definition
Relative Value	
Convertible Arbitrage	Seeks to profit from pricing anomalies between a company's convertible securities and its equity. A manager buys the convertible instrument (often a bond) and sells short the common stock.
Fixed Income/Credit Arbitrage	Exploits pricing inefficiencies between fixed income securities with similar characteristics, such as corporate vs. Treasury yield spreads. Offsetting long and short positions typically neutralize exposure to interest rate risk, isolating the pricing discrepancy.
Equity Market Neutral	Exploits relative pricing inefficiencies between equity securities while neutralizing market exposure. Typically the net (total long and short) portfolio exposure is balanced so that there is no directional bias to equity sectors or styles.
Event Driven	
Risk/Merger Arbitrage	Invests in the shares of companies involved in mergers, acquisitions, and LBOs. A common merger arbitrage strategy is to buy the equity of the "target" and sell short the equity of the "acquirer," making a profit if the deal outcome (and timing) is in line with the manager's positioning.
Distressed Securities	Managers pursuing this strategy invest in bank debt, corporate debt, trade claims, common stock, and warrants of companies either in bankruptcy or having financial or operational issues. The goal is to anticipate how corporate events (such as bankruptcies, reorganizations, distressed sales, and restructurings to reverse negative trends) will impact the underlying securities.
Opportunistic	
Global Macro	Employs a "top down" approach to invest across a wide range of global asset classes based on forecasted changes in global economies, political fortunes, or global supply and demand for resources.
Short Selling	Taking short positions in stocks in anticipation of a price decline, based on a view that the stock is overvalued, company earnings will disappoint, or there is a market selloff approaching.
Emerging Markets	Generally long-biased equity or debt positions that seek to capitalize on the undervaluation of companies in developing countries, which tend to have higher inflation and volatile growth.
Long/Short Equity	Core holding of long equities hedged to varying degrees with short positions in stocks or derivatives.

Performance Related Comments

- Performance shown is gross of fees, except where noted.
- Performance and data are provided by Northern Trust.
- RVK began monitoring the assets of Water and Power Employees' Retirement Plan as of 12/31/2014.

Custom Index Comments

- The Retirement Policy Benchmark returns shown prior to 12/31/2014 were provided by Northern Trust. The passive index is calculated monthly and currently consists of 33% Russell 3000 (Blended) (R), 19% MSCI ACWI Ex US IM Index (Blended), 26% Fixed Income Custom Index (R), 5% CPI+3% (Blended), 5% ICE BofAML 3 Mo US T-Bill Index+3%, 6% NCREIF Property Index+0.5% (Lagged-1 Qtr), 5% Russell 3000+3% (Blended), and 1% ICE BofAML 3 Mo US T-Bill Index.
- The Russell 3000 (Blended) (R) consists of the S&P 500 Index (Cap Wtd) through 03/31/2003 and the Russell 3000 Index thereafter.
- The MSCI ACWI Ex US IM Index (Blended) consists of the MSCI ACW Ex US Index (USD) (Net) through 12/31/2008 and the MSCI ACW Ex US IM Index (Net) thereafter.
- The Fixed Income Custom Index (R) is calculated monthly and consists of the Bloomberg US Universal Bond Index through 08/31/2015 and 50% Bloomberg US Intermediate Aggregate Bond Ex Credit Index, 45% 67% Bloomberg Global Credit/33% Bloomberg Global High Yield, and 5% Credit Suisse Leveraged Loan Index thereafter.
- The International Developed Blend consists of the MSCI EAFE Index (Hedged) through 12/31/2008 and the MSCI World Ex US IM Index (Net) thereafter.
- The CPI+3% (Blended) consists of the ICE BofAML 3 Mo US T-Bill Index+3% through 06/30/2013 and the CPI (Seasonally Adjusted) +3% 1 Month Lag thereafter.
- The Russell 3000+3% (Blended) consists of 50% Cambridge US Private Equity Index (Lagged-1 Qtr) (Monthly) and 50% Cambridge US Venture Capital Index (Lagged-1Qtr) (Monthly) through 09/30/2011 and the Russell 3000+3% (Lagged-1 Qtr) thereafter.
- The Health Policy Benchmark returns shown prior to 12/31/2014 were provided by Northern Trust. The passive index is calculated monthly and currently consists of 33% Russell 3000 (Blended) (H), 19% MSCI ACWI Ex US IM Index, 26% Fixed Income Custom Index (H), 5% CPI+3% (Blended), 5% ICE BofAML 3 Mo US T-Bill Index+3%, 6% NCREIF Property Index+0.5% (Lagged-1 Qtr), 5% Russell 3000+3% (Blended), and 1% ICE BofAML 3 Mo US Treasury Bill Index.
- The Russell 3000 (Blended) (H) consists of the Russell 1000 Index through 09/30/2009, and the Russell 3000 Index thereafter.
- The Fixed Income Custom Index (H) is calculated monthly and consists of the Bloomberg US Aggregate Bond Index through 10/31/2009, the Bloomberg US Universal Bond Index through 08/31/2015, and 50% Bloomberg US Intermediate Aggregate Bond Ex Credit Index, 45% 67% Bloomberg Global Credit/33% Bloomberg Global High Yield, and 5% Credit Suisse Leveraged Loan Index thereafter.
- The Death Policy Benchmark is a passive index calculated monthly and currently consists of 96% Bloomberg US Aggregate Bond Index and 4% FTSE 3 Mo Treasury Bill Index.
- The Disability Policy Benchmark is a passive index calculated monthly and currently consists of 95% Bloomberg US Aggregate Bond Index and 5% FTSE 3 Mo Treasury Bill Index.

Miscellaneous Comments

- In 09/2015, the Board approved a change in the Plan's target allocation that will begin implementation in early 2016. The new targets are as follows:
 - 29% Domestic Equity
 - 19% International Equity
 - 25% Fixed Income
 - 8% Real Estate
 - 8% Private Equity
 - 5% Real Return
 - 5% Hedge Funds
 - 1% Cash Equivalents
- Interim targets were approved as the plan moves towards the long-term strategic targets.

Glossary

Active Return - The difference between the investment manager/composite performance relative to the performance of an appropriate market benchmark.

Active Share - Measures the degree to which the holdings of a fund differ from the holdings of the benchmark. Active share is calculated by taking the sum of the absolute value of the differences of the weight of each holding in the fund versus the weight of each holding in the benchmark and dividing by two.

Alpha - A measure of the difference between a portfolio's actual returns and its expected performance, given its level of risk as measured by beta. It is a measure of the portfolio's historical performance not explained by movements of the market or a portfolio's non-systematic return.

Alpha Ratio - A measure of a portfolio's non-systematic return per unit of downside risk. It is measured by dividing the alpha of a portfolio by the downside risk. The non-systematic return is a measure of a portfolio's historical performance not explained by movements of the market.

Average Quality - Bond quality ratings are reported using the investment managers' and the index providers' preferred rating agency. *Average Quality for managers unable to provide this statistic is instead provided by Morningstar; if unavailable on Morningstar, it has been estimated using a credit quality distribution provided by the manager.* There are two primary rating agencies in the US. *Moody's* assigns ratings on a system that employs up to four symbols (consisting of letters and numbers) such as, Aaa, Aa2, etc., with Aaa being the highest or safest rating. *Standard & Poor's (S&P)* employs a system that uses + and - along with letters such as AAA, AA+, etc. The two rating agencies' systems are summarized below:

<u>S&P</u>	<u>Moody's</u>	<u>Explanation</u>	<u>S&P</u>	<u>Moody's</u>	<u>Explanation</u>
Higher Credit Quality – Investment Grade			Lower Credit Quality – Below Investment Grade		
AAA	Aaa	Prime/Highest credit quality	BB+	Ba1	Speculative/Low credit quality
AA+	Aa1	High credit quality	BB	Ba2	
AA	Aa2		BB-	Ba3	
AA-	Aa3		B+	B1	Highly speculative
A+	A1	Upper-medium credit quality	B	B2	
A	A2		B-	B3	
A-	A3		CCC+	Caa1	Substantial credit/default risk
BBB+	Baa1	Lower-medium credit quality	CCC	Caa2	Extremely speculative
BBB	Baa2		CCC-	Caa3	
BBB-	Baa3		CC	Ca	Vulnerable to default
			C	Ca	
			D	C	In default

Benchmark Effect - The difference between the blended return of each respective managers' benchmark within a composite and the composite's benchmark return.

Beta - A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of a portfolio's non-diversifiable or systematic risk.

Box Plots - A graphical representation of the distribution of observations. From top to bottom, the four boxes represent the spread between the maximum value and the minimum value in each quartile. A quartile represents the values that divide the observations into four quarters (i.e., 1st quartile, 2nd quartile, 3rd quartile, and 4th quartile). The median observation is where the 2nd quartile and 3rd quartile meet.

Buy and Hold Attribution - At the beginning of the time period under analysis, the manager and benchmark portfolios are broken down into segments (i.e., styles, sectors, countries, and regions) based on the desired type of attribution. The formula assumes zero turn-over to the manager and benchmark portfolios throughout the period and calculates the segment returns ("buy and hold returns") to arrive at performance attribution. Due to portfolio turnover, buy and hold attribution may not accurately represent quarterly performance relative to the benchmark. Country, region, sector, and style allocations are as of the date one quarter prior to the reporting date, and the returns shown are for those segments throughout the quarter reported. Due to disclosure guidelines set by each investment manager, equity characteristics shown are as of the most recent date available. The following is the methodology for segment classification:

Sector - Attribution is calculated using the Global Industry Classification Standard (GICS) which is a detailed and comprehensive structure for sector and industry analysis. Stocks are classified by their primary sector, as defined by S&P Capital IQ data.

Country/Region - Attribution is calculated using the Morgan Stanley Capital International (MSCI) region standards. Stocks are classified by their domicile country/region, as defined by S&P Capital IQ data.

Style - Stocks are classified into the following style boxes: large/mid/small vs. growth/neutral/value. Stocks are classified along large/mid/small categories at the time of the Russell index rebalancing, using the index market cap boundaries as cutoff points. Stocks are classified along growth/neutral/value categories at the time of the Russell index rebalancing, using the price/book ratio as supplied by S&P Capital IQ. Stocks in the Russell 3000 Index portfolio are sorted by price/book ratio; names with the highest price/book ratio that make up 1/3 of the total market capitalization are assigned to the growth category, names that make up the subsequent 1/3 of the total market capitalization are assigned to the neutral category, while the balance of the names are assigned to the value category.

Portfolio Characteristics and Buy and Hold Attribution reports utilize product-specific data for all mutual funds and commingled funds.

Capital Markets Review -

Breakeven Inflation - Measures the expected inflation rate at each stated maturity by taking the difference between the real yield of the inflation-linked maturity curve and the yield of the closest nominal Treasury maturity.

Consumer Confidence - Measures domestic consumer confidence as defined by the degree of optimism on the state of the economy that consumers express through saving and spending.

Consumer Price Index (CPI) - Measures the change in the price level of consumer goods and services.

Federal Funds Rate - The interest rate at which a depository institution lends funds maintained at the Federal Reserve to another depository institution overnight. It is one of the most influential interest rates in the US economy, since it affects monetary and financial conditions, which in turn have a bearing on key aspects of the broad economy including employment, growth and inflation.

Option-Adjusted Spread - Measures the flat spread of an index or bond to the Treasury yield curve after removing the effect of any embedded options.



Glossary

- Purchasing Managers Index (PMI)** - Measures economic activity by surveying purchasing managers on a monthly basis as to whether business conditions have improved, worsened, or stayed the same.
- Real Gross Domestic Product (Real GDP)** - An inflation-adjusted measure that reflects the value of all goods and services produced by an economy in a given year.
- US Dollar Total Weighted Index** - Measures the value of the US Dollar relative to a basket of other world currencies. It is calculated as the weighted geometric mean of the dollar's value versus the EUR, GBP, CAD, SEK, CHF, and JPY.
- Unemployment Rate** - The percentage of the total labor force that is unemployed but actively seeking employment.
- VIX** - Measures the implied volatility of S&P 500 Index options by looking at the market's expectation of the S&P 500 Index volatility over the next 30 day period. Commonly referred to as the "fear index" or the "fear gauge."
- Cash Flow Effect** - The composite's active return minus the sum of each managers' active return minus the benchmark effect.
- Consistency** - The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. The higher the consistency figure, the more value a manager has contributed to the product's performance.
- Convexity** - A measure of the shape of the curve that describes the relationship between bond prices and bond yields.
- Correlation** - A statistical measure of the relationship between asset class returns. A value of 1.00 is a perfect correlation; that is, the asset classes always move in the same direction. A value of -1.00 indicates a perfect negative correlation, in which the asset classes always move in opposite directions of each other. A value of 0 indicates there is no relationship between the direction of returns of the two asset classes. Correlation calculations only consider the direction of changes relative to two variables and not the magnitude of those changes.
- Coupon Rate** - The percentage rate of interest paid on a bond or fixed income security; it is typically paid twice per year.
- Current Yield** - The annual income of a security divided by the security's current price.
- Down Market Capture** - Down market by definition is negative benchmark return and down market capture represents the ratio in % terms of the average portfolios return over the benchmark during the down market period. The lower the value of the down market capture the better the product's performance.
- Downside Risk** - A measure similar to standard deviation, but focuses only on the negative movements of the return series. It is calculated by taking the standard deviation of the negative monthly returns. The higher the factor, the riskier the product.
- Earnings Per Share** - It is backward looking, calculated using the one year current EPS divided by the one year EPS five years ago.
- Effective Duration** - The approximate percentage change in a bond's price for a 100 basis point change in yield.
- Excess Return vs. Market** - Average of the monthly arithmetic difference between the manager's return and the benchmark return over a specified time period, shown on an annualized basis.
- Excess Return vs. Risk Free** - Average of the monthly arithmetic difference between the manager's return and the risk-free return (i.e., ICE BofAML 3 Mo US T-Bill Index unless specified otherwise) over a specified time period, shown on an annualized basis.
- Excess Risk** - A measure of the standard deviation of a portfolio's performance relative to the risk free return.
- Expense Ratios** - Morningstar is the source for mutual fund expense ratios.
- Gain/Loss** - The net increase or decrease in the market value of a portfolio excluding its Net Cash Flow for a given period.
- Indices** - All indices and related information are considered intellectual property and are licensed by each index provider. The indices may not be copied, used or distributed without the index provider's prior written approval. Index providers make no warranties and bear no liability with respect to the indices, any related data, their quality, accuracy, suitability and/or completeness.
- Information Ratio** - Measured by dividing the active rate of return by the tracking error. The higher the information ratio, the more value-added contribution by the manager.
- Liability Driven Investing (LDI)** - A method to optimally structure asset investments relative to liabilities. The change in liabilities is estimated by the Ryan Labs Generic PPA Index of appropriate duration for that Plan. This benchmark is based on generic data and is therefore an approximation. RVK is not an actuarial firm, and does not have actuarial expertise.
- Estimated Funded Status** - The estimated ratio of a Plan's assets relative to its future liabilities. This is calculated by dividing the Plan's asset market value by the estimated present value of its liabilities. The higher the estimated funded status, the better the Plan's ability to cover its projected benefit obligations. An estimated funded status of 100% indicates a Plan that is fully funded.
- Estimated PV of Liabilities** - An estimate of a Plan's future liabilities in present value terms. The beginning of the period liability is provided by the Plan's actuary. The period-end present value liability estimate provided in this report is derived by applying the estimated percentage change generated using the Ryan Labs Generic PPA Index with duration similar to that reported on the most recent actuarial valuation report.
- Duration of Liabilities** - The sensitivity of the value of a Plan's liabilities to changes in interest rates, as calculated by the Plan's actuary.
- Duration of Assets** - The dollar-weighted average duration of all the individual Plan assets.
- Estimated Plan Hedge Ratio** - The estimate of how well a Plan's investment portfolio is hedged against changes in interest rates - a primary driver of funded status movements. This is calculated by dividing the dollar-weighted values of both the Plan asset duration by the liability duration and multiplying by the estimated funded status. An estimated plan hedge ratio of zero indicates that the Plan's liabilities have not been hedged, whereas a value of one indicates fully hedged.
- Modified Duration** - The approximate percentage change in a bond's price for a 100 basis point change in yield, assuming the bonds' expected cash flows do not change.

Glossary

Mutual Fund Performance - Whenever possible, manager performance is extended for any share class that does not have 10 years of history. Using Morningstar's methodology, a single ticker within the same fund family (often the oldest share class) is chosen to append historical performance.

Net Cash Flow - The sum, in dollars, of a portfolio's contributions and withdrawals. This includes all management fees and expenses only when performance shown is gross of fees.

Peer Groups -

Plan Sponsor Peer Groups - RVK utilizes the Mellon Analytical Solutions Trust Universe along with the Investment Metrics Plan Sponsor Universe. The combined Mellon Analytical Solutions Trust Universe and Investment Metrics Plan Sponsor Universe is used for comparison of total fund composite results and utilizes actual client performance compiled from consultant and custodian data. The Plan Sponsor Peer Group database includes performance and other quantitative data for over 2,100 plans which include corporate, endowment, foundation, public, and Taft Hartley plans. Plan Sponsor Peer Groups are gross of fees.

Investment Manager Peer Groups - RVK utilizes Investment Metrics' Peer Groups for investment manager peer comparison and ranking. The Investment Metrics Peer Group database includes performance and other quantitative data for over 840 investment management firms and 29,000 investments products, across more than 160 standard peer groups. Mutual Fund Peer Groups are net of fees. For more information on Peer Groups, visit <https://www.invmetrics.com/style-peer-groups>.

Percentile Rankings - Percentile rank compares an individual fund's performance with those of other funds within a defined peer group of managers possessing a similar investment style. Percentile rank identifies the percentage of a fund's peer group that has a higher return (or other comparative measurement) than the fund being ranked. Conversely, 100 minus the individual fund's ranking will identify the percentage of funds within the peer group that have a lower return than the fund being ranked.

1 - Highest Statistical Value

100 - Lowest Statistical Value

Example: American Funds AMCP;R-4 (RAFEX) is ranked in the 4th percentile within the IM US Equity Large-Cap Growth Funds (MF) Peer Group for the Sharpe Ratio. Within the IM US Equity Large-Cap Growth Funds peer group, 4% of the other funds performed better than American Funds AMCP;R-4 (RAFEX), while 96% of the funds performed worse.

Performance Methodology - RVK calculates performance for investment managers and composites using different methodologies.

Investment Managers - Performance is calculated for interim periods between all large external cash flows for a given month and geometrically linked to calculate period returns. An external cash flow is defined as cash, securities, or assets that enter or exit a portfolio. RVK defines a "large cash flow" as a net aggregate cash flow of $\geq 10\%$ of the beginning-period portfolio market value or any cash flow that causes RVK calculated performance to deviate from manager/custodian reported performance in excess of 5 basis points for a given month.

Composites - The Modified Dietz methodology is utilized to calculate asset class, sub-asset class, and total fund composite performance. The Modified Dietz method calculates a time-weighted total rate of return that considers the timing of external cash flows; however, it does not utilize interim period performance to mitigate the impact of significant cash in- and outflows to the composite.

RVK calculates performance beginning with the first full month following inception. Since inception performance may vary from manager reported performance due to RVK using the first full month of returns as the inception date. Performance for both managers and composites is annualized for periods greater than one year.

Portfolio Characteristics - Due to disclosure guidelines set by each investment manager, portfolio characteristics shown are as of the most recent date available.

Price to Earnings Ratio - The ratio of a company's share price to its per-share earnings

Private Equity Quartile Ranks - Private Equity quartile ranks are generated using vintage year peer group data provided by Thomson Reuters, and are based on each fund's annualized, since inception internal rate of return (IRR). Three Private Equity peer groups are available via Thomson Reuters: Buyout, Venture, and All Private Equity. Ranks are available quarterly, at a one-quarter lag.

Return - Compounded rate of return for the period.

% Return - The time-weighted rate of return of a portfolio for a given period.

R-Squared - The percentage of a portfolio's performance explained by the behavior of the appropriate benchmark. High R-Squared means a higher correlation of the portfolio's performance to the appropriate benchmark.

Risk Free Benchmark - ICE BofAML 3 Mo US T-Bill Index unless specified otherwise.

Glossary

RVK Liquidity Rating - A qualitative method for determining the relative amount of liquidity in a portfolio. The characteristics considered when determining relative liquidity include trading volume, gates for redemption, leverage, nature of transactions, and pricing mechanisms. The RVK Liquidity Rating is calculated using beginning of month investment weights applied to each corresponding asset class liquidity rating.

<u>Asset Class</u>	<u>RVK Liquidity Rating</u>	<u>Asset Class</u>	<u>RVK Liquidity Rating</u>
<u>Liquid Investments</u>		<u>Less Liquid Investments</u>	
T-Bills and Treasuries	100	Fixed Income Plus Sector	50
Cash Equivalents	98	Bank Loans	50
TIPS	95	Stable Value (Plan Sponsor Directed)	50
US Large Cap Equity	95	Absolute Return Strategies	35
Diversified Real Return	93		
Stable Value (Participant Directed)	91		
Non-US Large Cap Equity	90	<u>Not Liquid Investments</u>	
Global Tactical Asset Allocation	88	Core Real Estate	25
US Small Cap Equity	85	Core Plus Real Estate	15
REITS	85	Non-Core Real Estate	5
Non-US Small Cap Equity	85	Private Equity Funds of Funds	5
Emerging Markets Equity	85		
Core Fixed Income	85		
Core Plus Fixed Income	80		

Sector Allocation - Negative fixed income sector allocation reflects manager's use of derivatives, short selling, or interest rate swaps.

Sharpe Ratio - Represents the excess rate of return over the risk-free return (i.e., ICE BofAML 3 Mo US T-Bill Index unless specified otherwise), divided by the standard deviation of the excess return to the risk free asset. The result is the absolute rate of return per unit of risk. The higher the value, the better the product's historical risk-adjusted performance.

Simple Alpha - The difference between the manager's return and the benchmark's return.

Spread Duration - The approximate percentage change in a bond's price for a 100 basis point change in its spread over a Treasury of the same maturity.

Standard Deviation - A statistical measure of the range of a portfolio's performance. The variability of a return around its average return over a specified time period.

Time Period Abbreviations - QTD - Quarter-to-Date. CYTD - Calendar Year-to-Date. FYTD - Fiscal Year-to-Date. YOY - Year Over Year.

Thematic Classification - Represents dedicated manager allocations; as such, thematic allocations are approximations. RVK categorizes the following asset classes as Alpha, Capital Appreciation, Capital Preservation, and Inflation:

<u>Alpha</u>	<u>Capital Appreciation</u>	<u>Capital Preservation</u>	<u>Inflation</u>
Absolute Return Strategies	Public Equity	Core Fixed Income	TIPS
Currency Overlay	Private Equity	CMBS Fixed Income	Bank Loans
	Preferred Securities	Asset Backed Fixed Income	Core Real Estate
	High Yield	Domestic Core Plus Fixed Income	Real Return
	Convertible Fixed Income	Mortgage Backed Fixed Income	Inflation Hedges
	TALF Funds	International Developed Fixed Income	REITS
	Distressed Debt	Cash Equivalents	Commodities
	Emerging Market Fixed Income	Stable Value	
	Value Added Real Estate		
	Opportunistic Real Estate		

Total Fund Attribution - The Investment Decision Process (IDP) model provides an approach to evaluating investment performance that applies to all asset classes and investment styles. The IDP model is based on a top-down hierarchy framework of investment decisions, with each decision contributing to the overall profit or loss. The IDP approach starts from the strategic asset allocation and follows the flow of the investments down to the manager's skill.

Strategic Asset Allocation (SAA) - The percentage return gained or lost from the long-term strategic asset allocation decision, the most significant determinant of long-term performance. SAA is the product of the target asset allocation multiplied by the corresponding benchmark returns.

Tactical Asset Allocation (TAA) - The percentage return gained or lost from not having been precisely allocated at the target asset allocation mix, whether by deviations that are tactical in nature or a by-product of moving towards the target mix. TAA is the product of the actual asset allocation multiplied by the broad asset class benchmarks, less the SAA.

Style Selection (SS) - The percentage return gained or lost from intentional style biases within each asset class (e.g. value rather than core or overweight to emerging markets relative to benchmark). SS is the product of the actual manager allocation within each asset class multiplied by their specific benchmark, less TAA.

Manager's Skill (MS) - The percentage return gained or lost from manager value added relative to their specific benchmark. MS is the product of the actual manager allocation multiplied by their achieved excess return.

Total Fund Beta - Total Fund Beta is calculated using the S&P 500 as the benchmark. It represents a measure of the sensitivity of the total fund to movements in the S&P 500 and is a measure of the Total Fund's non-diversifiable or systematic risk.

Tracking Error - A measure of the standard deviation of a portfolio's performance relative to the performance of an appropriate market benchmark.

Glossary

Treynor Ratio - Similar to Sharpe ratio, but focuses on beta rather than excess risk (standard deviation). Treynor ratio represents the excess rate of return over the risk-free rate (i.e., ICE BofAML 3 Mo US T-Bill Index unless specified otherwise) divided by the beta. The result is the absolute rate of return per unit of risk. The higher the value, the better historical risk-adjusted performance.

Unit Value - The dollar value of a portfolio, assuming an initial nominal investment of \$100, growing at the compounded rate of %Return for a given period.

Up Market Capture - Up market by definition is positive benchmark return and up market capture represents the ratio in % terms of the average portfolios return over the benchmark during the up market period. The higher the value of the up market capture the better the product's performance.

Yield to Maturity - The rate of return achieved on a bond or other fixed income security assuming the security is bought and held to maturity and that the coupon interest paid over the life of the bond will be reinvested at the same rate of return. The 30-Day SEC Yield is similar to the Yield to Maturity and is reported for mutual funds.

Yield to Worst - The bond yield calculated by using the worst possible yield taking into consideration all call, put, and optional sink dates.

PORTLAND

CHICAGO

NEW YORK

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