



Quarterly Investment Performance Analysis

City of Jacksonville Employees' Retirement System

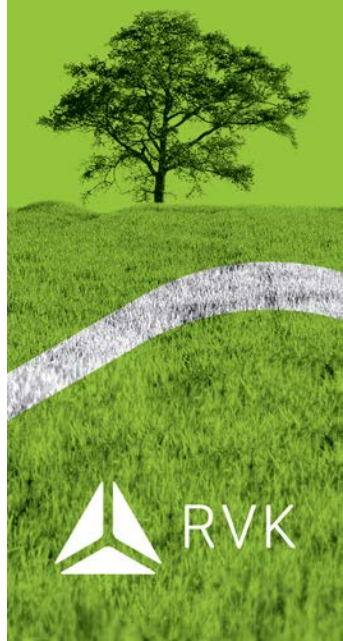
Period Ended: December 31, 2018



Table of Contents

1	2018 Year in Review	Page 3
2	Capital Markets Review	Page 15
3	Total Fund	Page 22
4	Composite Profiles	Page 41
5	Investment Manager Profiles	Page 54
6	Addendum & Glossary	Page 81

2018 Year in Review



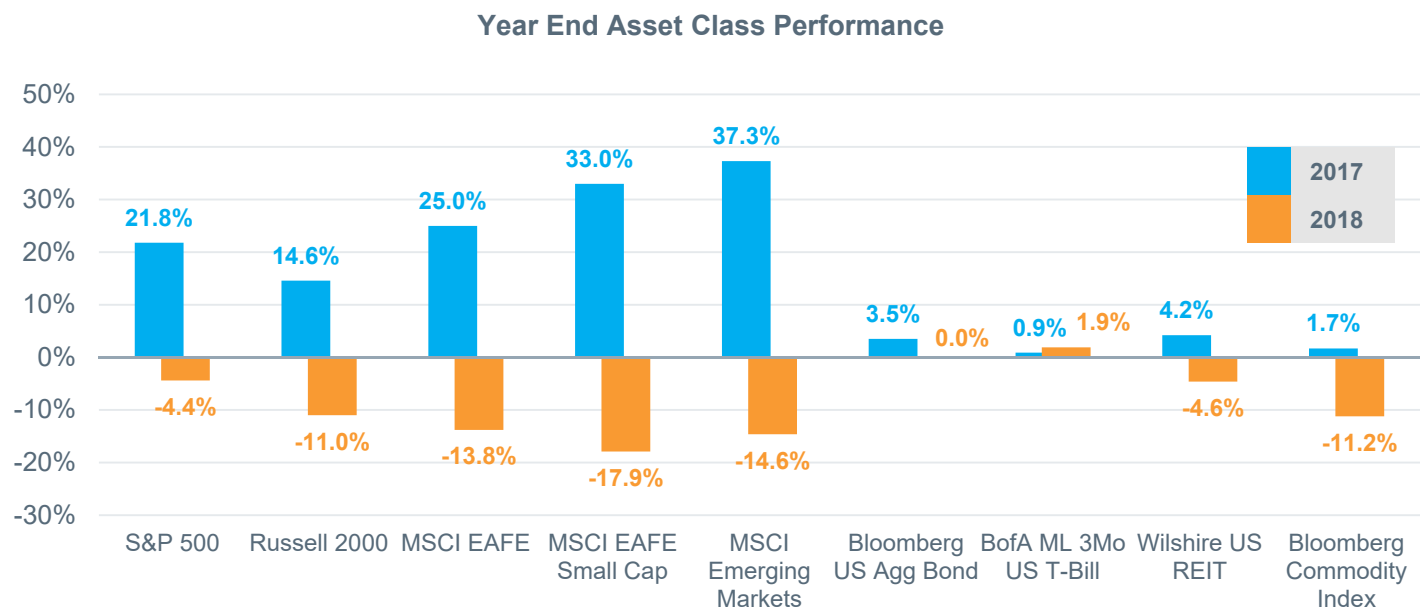
Executive Summary

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.

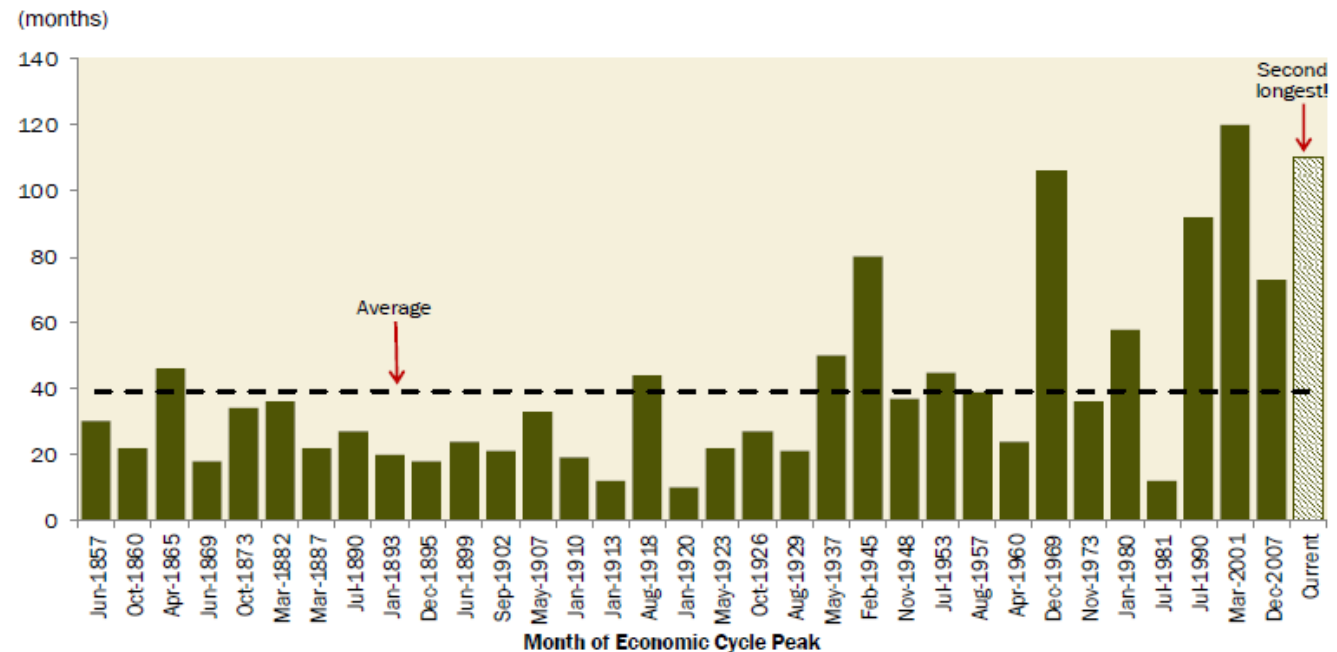
Macroeconomic Conditions

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 (%)

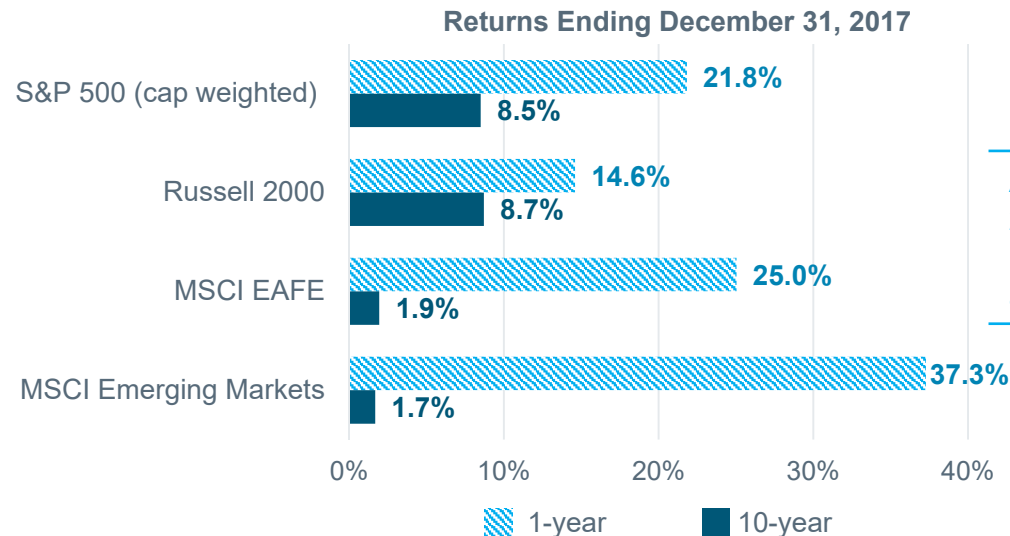
		Monthly		-----Monthly Returns-----			
	Dec 31 2017 YTD	Feb 2018	Sep 30 2018 YTD	Oct 2018	Nov 2018	Dec 2018	Dec 31 2018 YTD
S&P 500 (cap weighted)	21.8	-3.7	10.6	-6.8	2.0	-9.0	-4.4
Russell 2000	14.6	-3.9	11.5	-10.9	1.6	-11.9	-11.0
MSCI EAFE	25.0	-4.5	-1.4	-8.0	-0.1	-4.9	-13.8
MSCI Emerging Markets	37.3	-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:

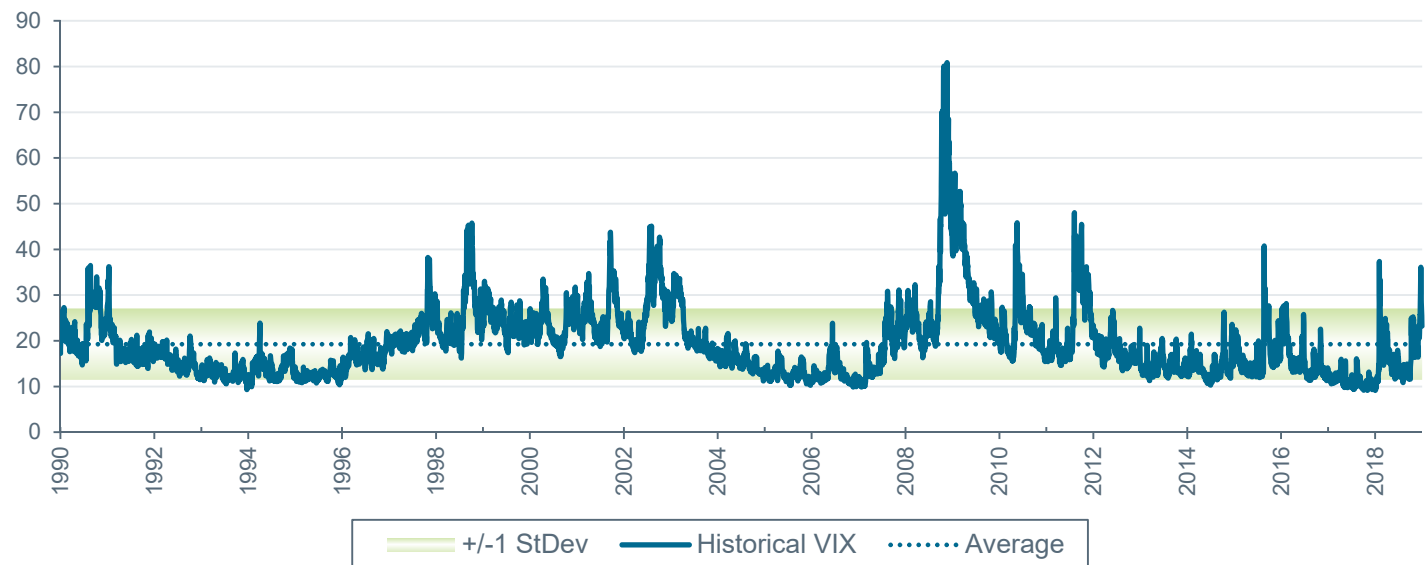
Is there still room for meaningful improvement?

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% (daily)	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.

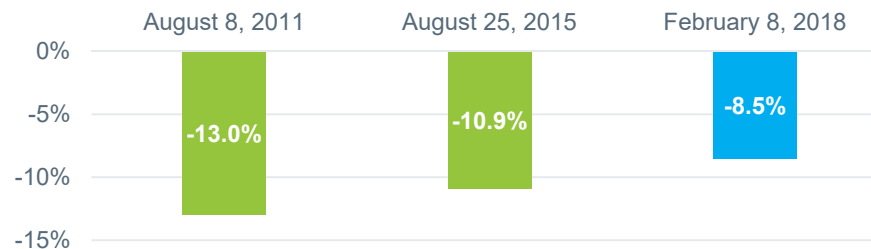
Market Volatility

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.

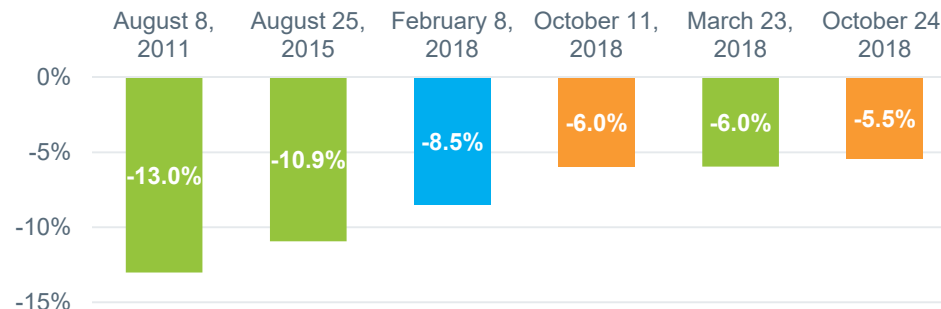
Market Volatility

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”</p> <p>– 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”</p> <p>– Chairman Powell Nov 28th</p>	<p>1. Fed lowered expected rate hikes in 2019 from 3 (announced in September 2018) down to 2</p> <p>2. Balance Sheet woes: “It will be substantially smaller than it is now”</p> <p>– 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.

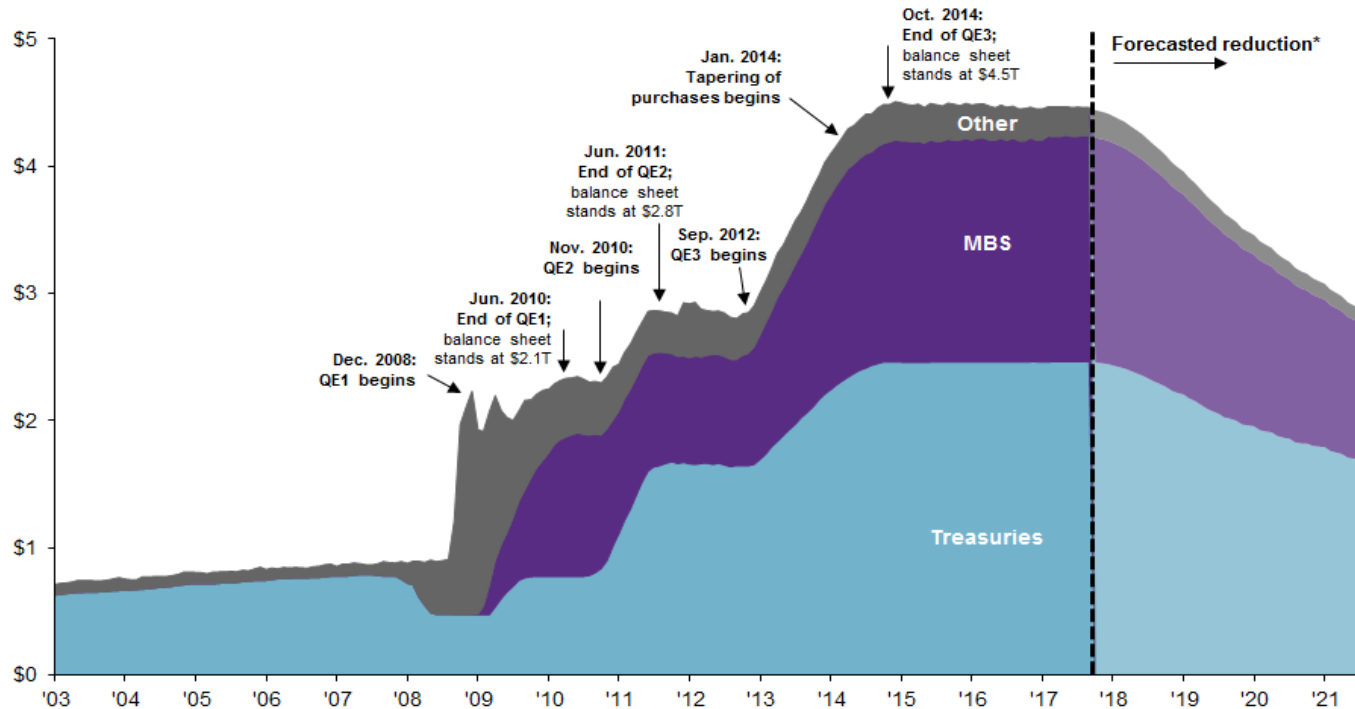
Quantitative Tightening Refresh:

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.

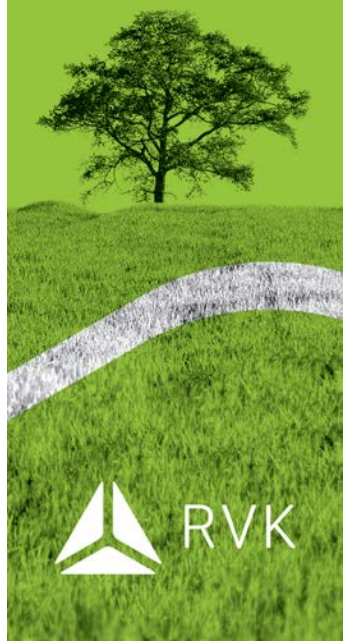
Federal Funds Rate Expectations¹

	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

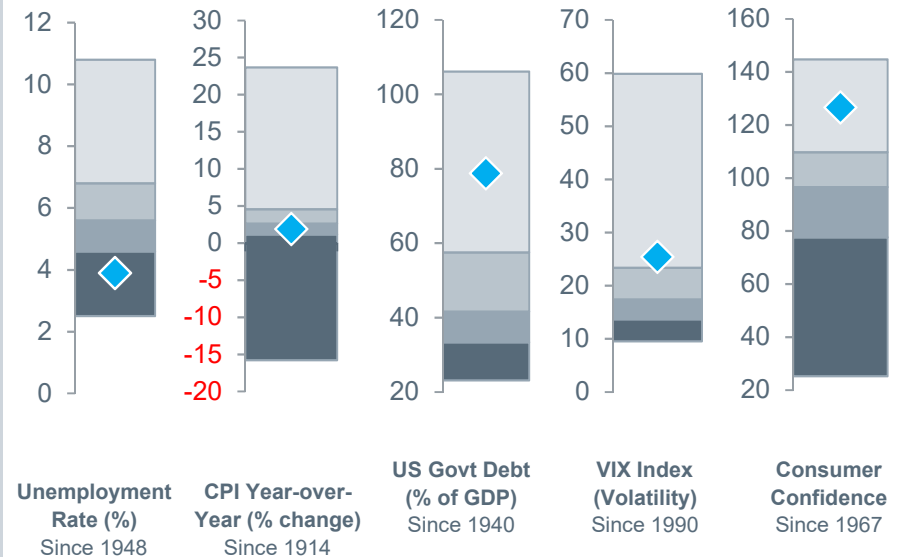
Key Economic Indicators

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, and International Monetary Fund 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. In a move that proved to be more controversial than many anticipated, the 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%. US Economic data remained strong, with non-farm payrolls up 312,000 in December on a 3.9% unemployment rate. 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.

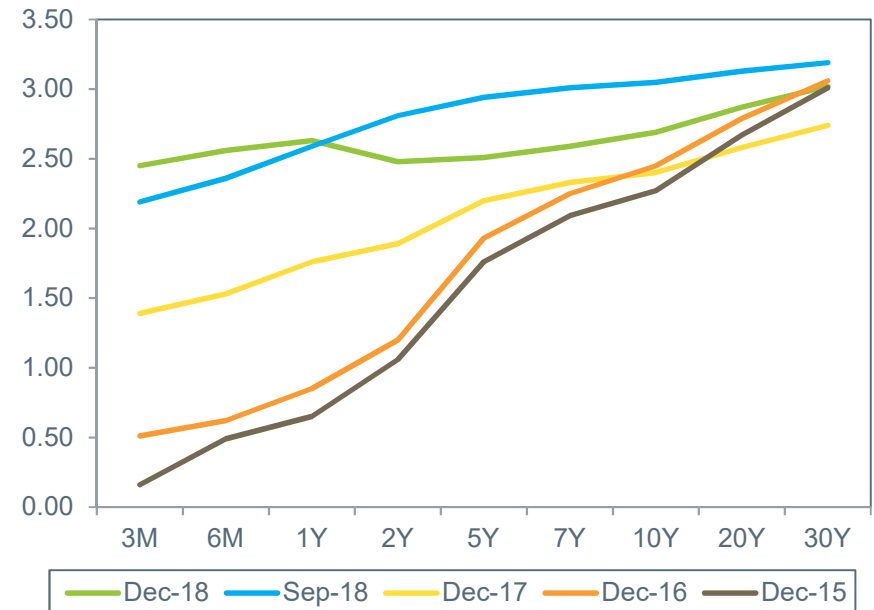
Economic Indicators	Dec-18	Sep-18	Dec-17	Dec-15	20 Yr
Federal Funds Rate (%)	2.40 ▲	2.18	1.33	0.20	1.94
Breakeven Infl. - 1 Yr (%)	-2.84 ▼	1.18	0.85	0.85	N/A
Breakeven Infl. - 10 Yr (%)	1.71 ▼	2.14	1.98	1.58	N/A
CPI YoY (Headline) (%)	1.9 ▼	2.3	2.1	0.7	2.2
Unemployment Rate (%)	3.9 ▲	3.7	4.1	5.0	5.9
Real GDP YoY (%)	3.1 ▲	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	-4.95	-4.03	-4.03	1.40	3.12
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.

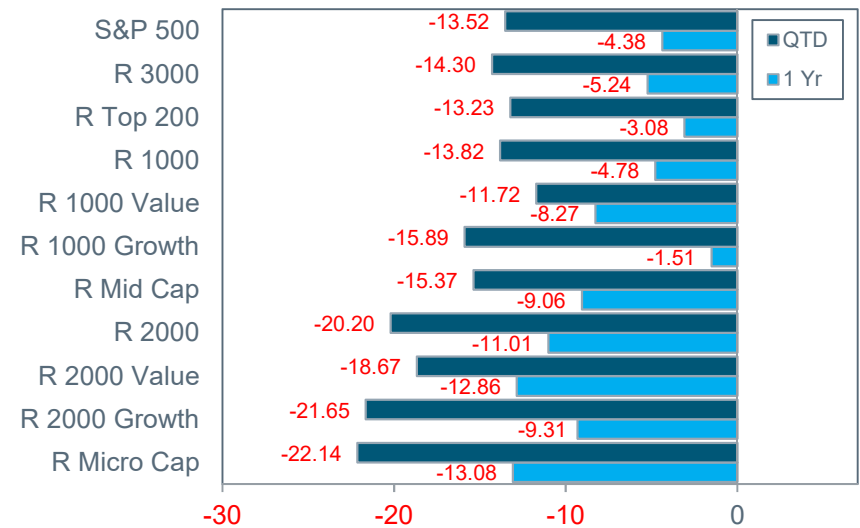
Market Cap

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

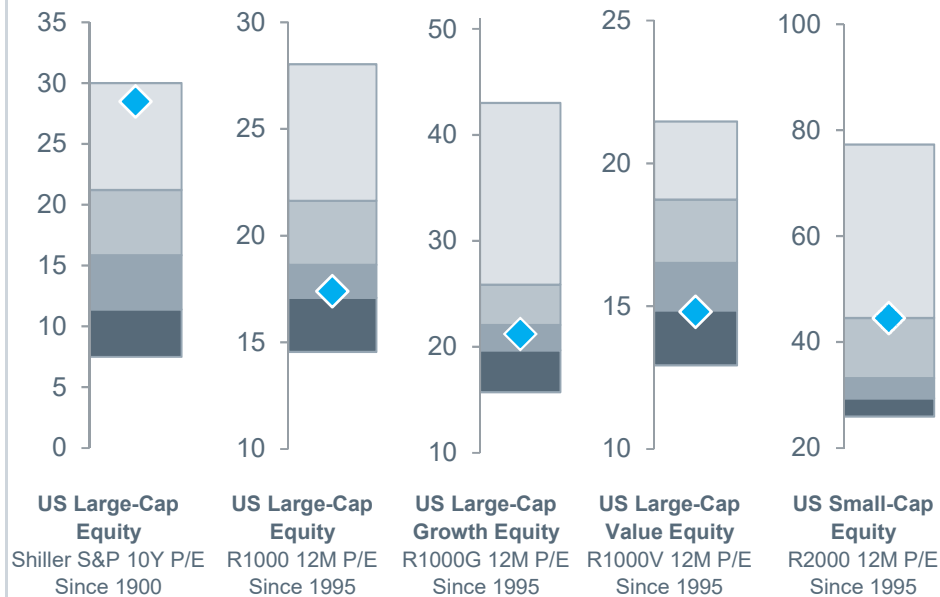
Style and Sector

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.

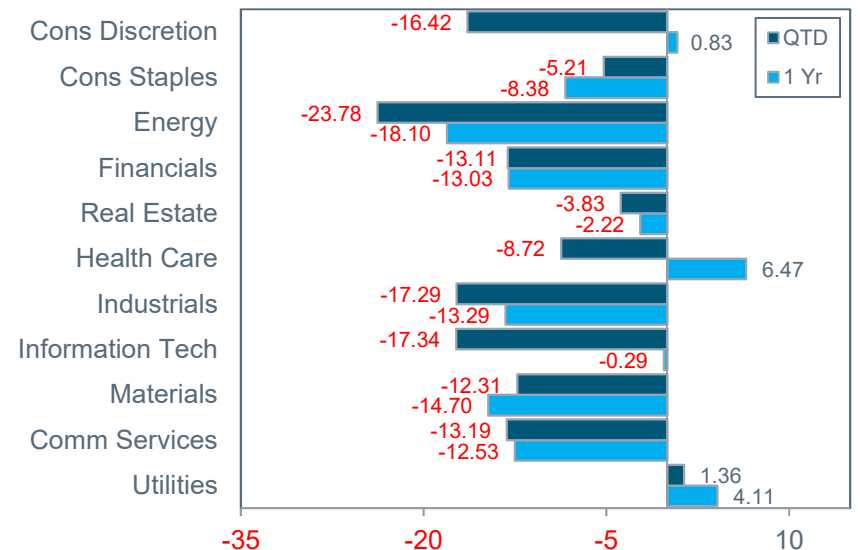
Style and Capitalization Market Performance (%)



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.

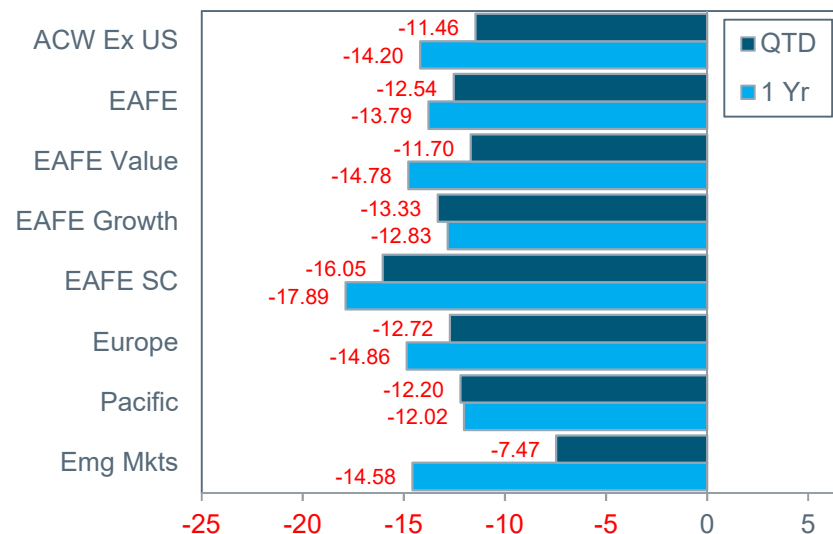
Emerging Markets

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.

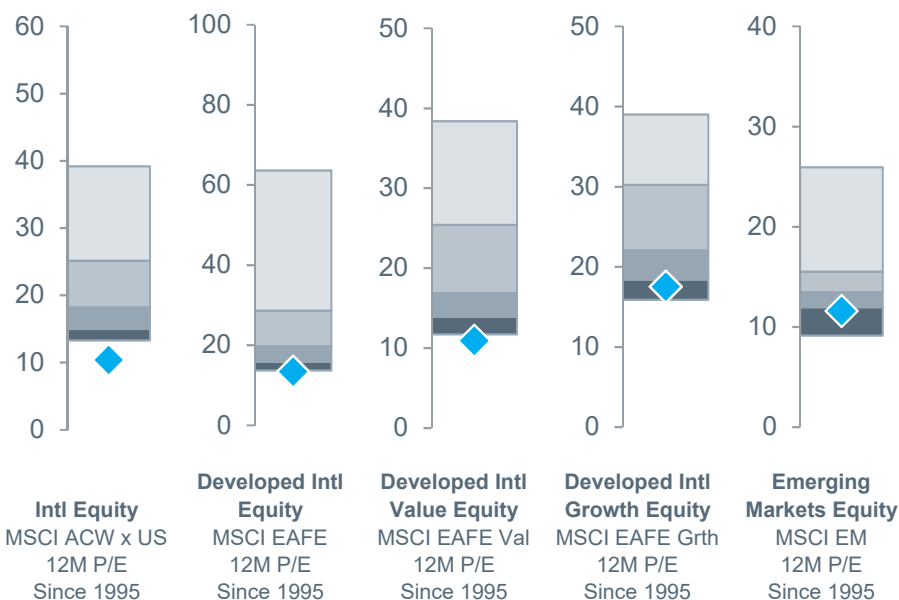
Market Cap & Style

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.

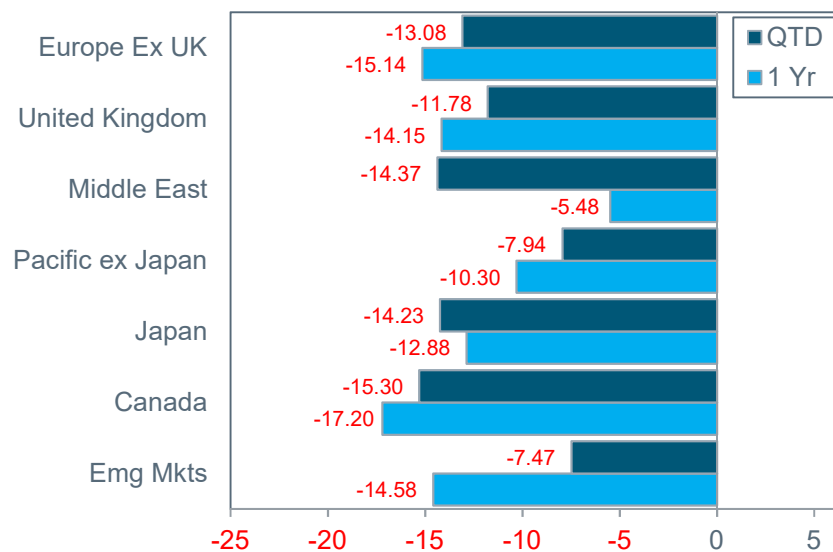
MSCI Style and Capitalization Market Performance (%)



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.

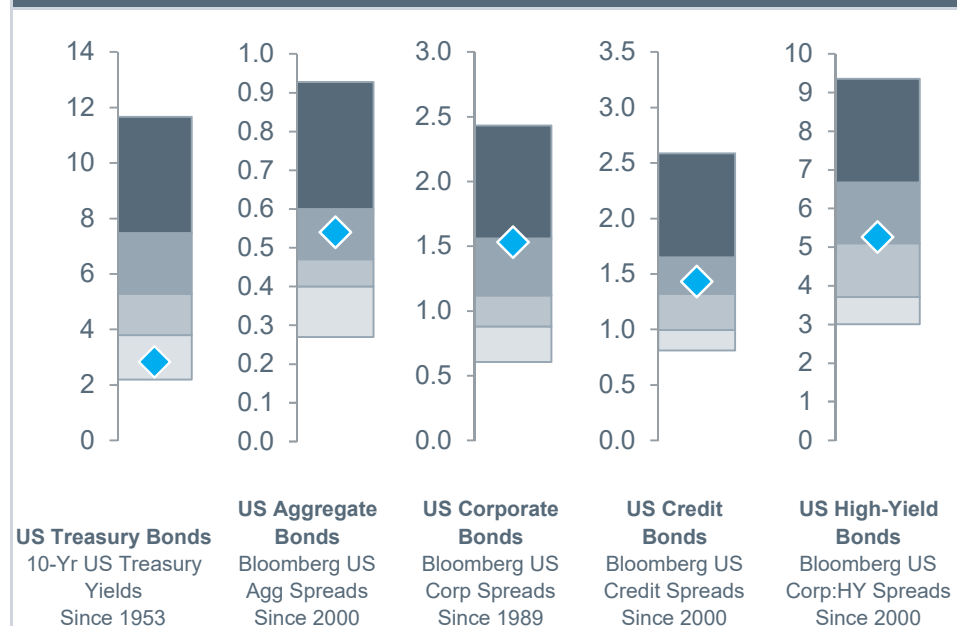
Credit Market

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%.

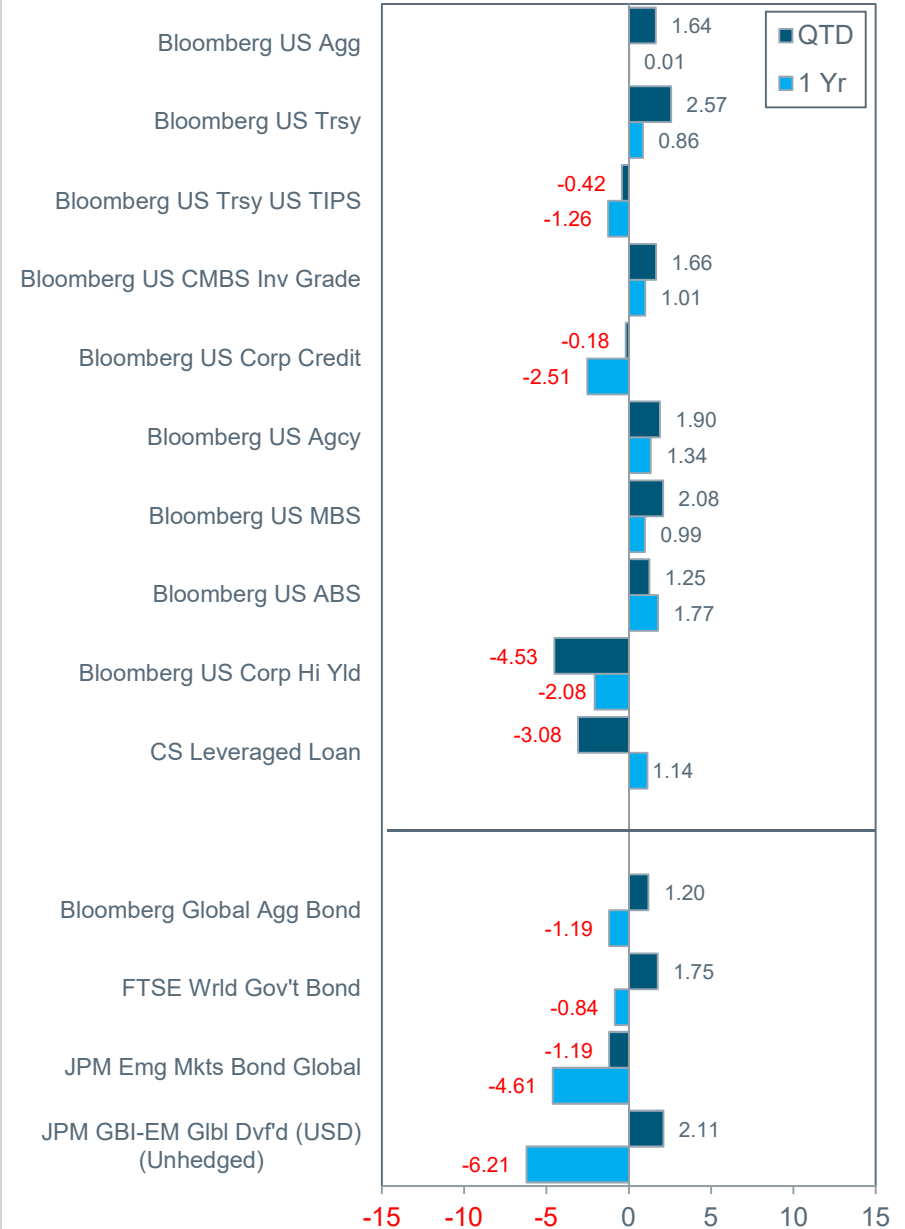
Emerging Market Debt

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

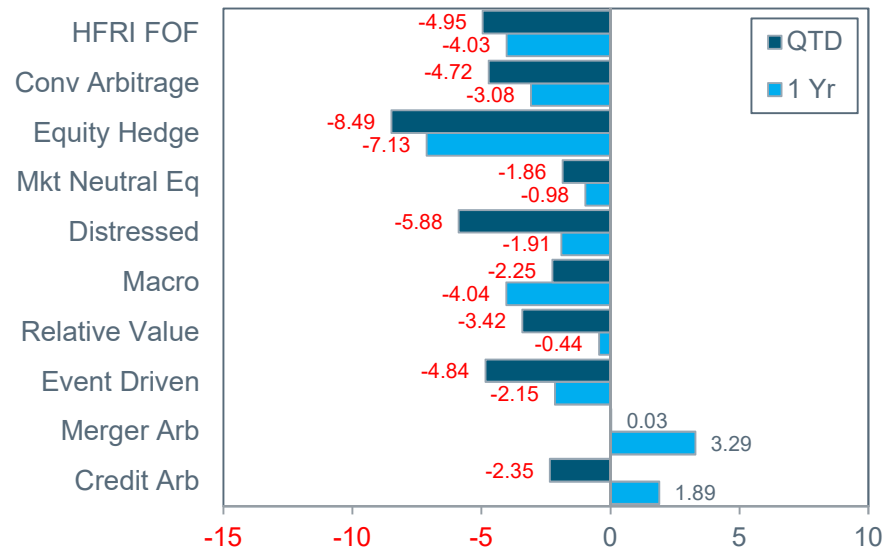
General Market - Diversified Inflation Strategies (DIS)

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.

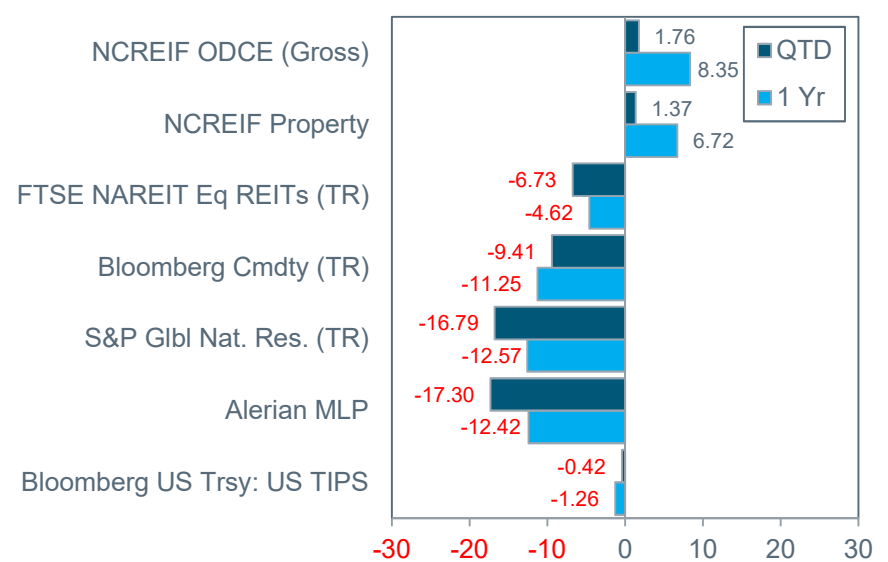
General Market - Real Estate

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 (%)



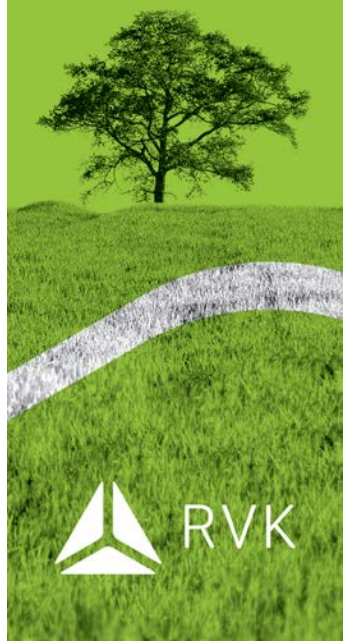
Annual Asset Class Performance

As of December 31, 2018

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Best	31.56	34.00	35.03	39.38	8.44	78.51	27.94	22.49	20.00	38.82	30.14	15.02	21.31	37.28	8.35
	31.45	26.19	32.18	16.23	5.24	58.21	26.85	15.99	18.23	32.39	19.31	9.59	17.13	33.01	1.87
	25.55	21.39	26.34	15.97	2.06	46.78	22.04	13.56	18.06	29.30	13.69	3.20	11.96	25.03	0.01
	20.25	21.36	19.31	11.63	-2.35	31.78	18.88	8.29	17.32	22.78	12.50	1.38	11.77	21.83	-1.26
	18.33	13.54	18.37	11.17	-10.01	28.01	16.83	7.84	16.35	13.94	5.97	0.55	11.19	14.65	-2.08
	13.06	12.17	16.32	10.25	-21.37	27.17	16.36	4.98	16.00	8.96	4.89	0.05	8.77	10.71	-4.03
	11.14	7.49	15.79	6.97	-26.16	26.46	15.12	2.11	15.81	7.44	3.64	-0.27	8.52	7.77	-4.38
	10.88	5.34	11.86	6.60	-33.79	18.91	15.06	0.10	10.94	2.47	3.37	-0.81	6.67	7.62	-4.62
	9.15	4.91	10.39	5.49	-35.65	11.47	10.16	-4.18	8.78	0.07	2.45	-1.44	4.68	7.50	-4.68
	8.56	4.55	4.85	5.00	-37.00	11.41	7.75	-5.72	6.98	-2.02	0.04	-3.30	2.65	5.23	-11.01
	8.46	3.07	4.34	1.87	-37.74	5.93	6.54	-12.14	4.79	-2.60	-2.19	-4.41	2.18	3.54	-11.25
	6.86	2.84	2.72	1.45	-43.38	1.92	6.31	-13.32	4.21	-8.61	-4.90	-4.47	1.00	3.01	-13.79
	4.34	2.74	2.07	-1.57	-47.01	0.21	5.70	-15.94	0.11	-8.83	-4.95	-14.92	0.51	1.70	-14.58
Worst	1.33	2.43	0.49	-15.70	-53.33	-29.76	0.13	-18.42	-1.06	-9.52	-17.01	-24.66	0.33	0.86	-17.89
	S&P 500 - US Large Cap	R 2000 - US Small Cap	MSCI EAFE (Net) - Int'l Dev.	MSCI EAFE SC (Net) - Int'l SC	MSCI EM (Net) - Int'l Emg Mkts	Bloombrg US Agg Bond - FI	Bloombrg US Corp Hi Yield - FI	Bloombrg US Trsy US TIPS - FI	Bloombrg US Gov Credit Lng - FI	NCREIF ODCE (Gross) - Real Estate	FTSE NAREIT Eq REITs Index (TR)	HFRI FOF Comp Index - ARS	Bloombrg Cmdty (TR) - Commod.	ICE BofAML 3 Mo T-Bill - Cash Equiv	

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

Total Fund



City of Jacksonville Employees' Retirement System
Asset Allocation, Performance & Schedule of Investable Assets

As of December 31, 2018

	Allocation		Performance (%)		Allocation		Performance (%)
	Market Value (\$)	%	QTD		Market Value (\$)	%	QTD
US Equity	713,919,225	33.87	-15.47	Real Estate	374,453,462	17.77	1.45
Eagle Capital Large Cap Value (SA)	194,939,977	9.25	-13.70	Harrison Street Core Property, LP	98,983,364	4.70	1.81
INTECH Enhanced (SA)	156,066,472	7.41	-15.31	PGIM Real Estate PRISA II (CF)	54,343,540	2.58	1.16
Mellon Large Cap Growth Index (CF)	95,040,519	4.51	-15.89	Principal US Property (CF)	116,419,964	5.52	1.29
Loomis Sayles Large Cap Growth (CF)	93,245,699	4.42	-11.67	UBS Trumbull Property (CF)	103,814,056	4.93	1.52
William Blair Small Cap Value (SA)	96,546,964	4.58	-19.29	Vanguard RE Idx;ETF (VNQ)	892,538	0.04	-6.43
Pinnacle Associates US SMID Cap Growth (SA)	78,079,594	3.70	-18.84				
International Equity	450,634,075	21.38	-12.64	Diversifying Assets	138,403,163	6.57	-12.51
Silchester International Value (CF)	231,128,838	10.97	-10.93	Harvest Fund Advisors MLP (SA)	42,285,638	2.01	-20.64
Bail Giff EAFE;4 (BGEFX)	106,028,009	5.03	-19.17	Tortoise Capital Advisors MLP (SA)	42,375,515	2.01	-16.43
Acadian Emerging Markets II (CF)	113,477,228	5.38	-9.36	Hancock Timberland (SA)	53,742,011	2.55	-0.84
Fixed Income	425,135,117	20.17	1.06	Dreyfus Gvt Csh Mgt;Inst (DGCXX)	4,490,160	0.21	0.50
Richmond Capital Core (SA)	128,242,442	6.08	1.61	Transition Account	542,900	0.03	N/A
Taplin Canada & Habacht Intermediate Duration (SA)	127,567,684	6.05	0.18				
Franklin Templeton Global Multisector Plus (CF)	104,232,193	4.95	2.23				
Loomis Sayles Multisector Full Discretion (CF)	65,092,798	3.09	-0.14				

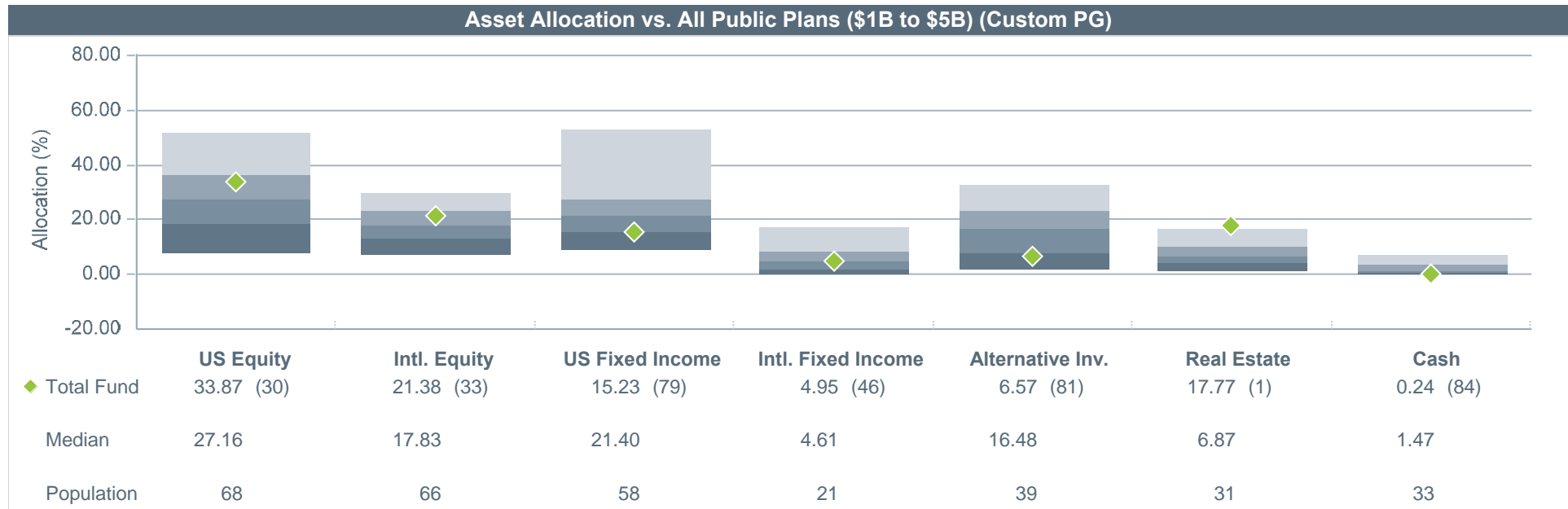
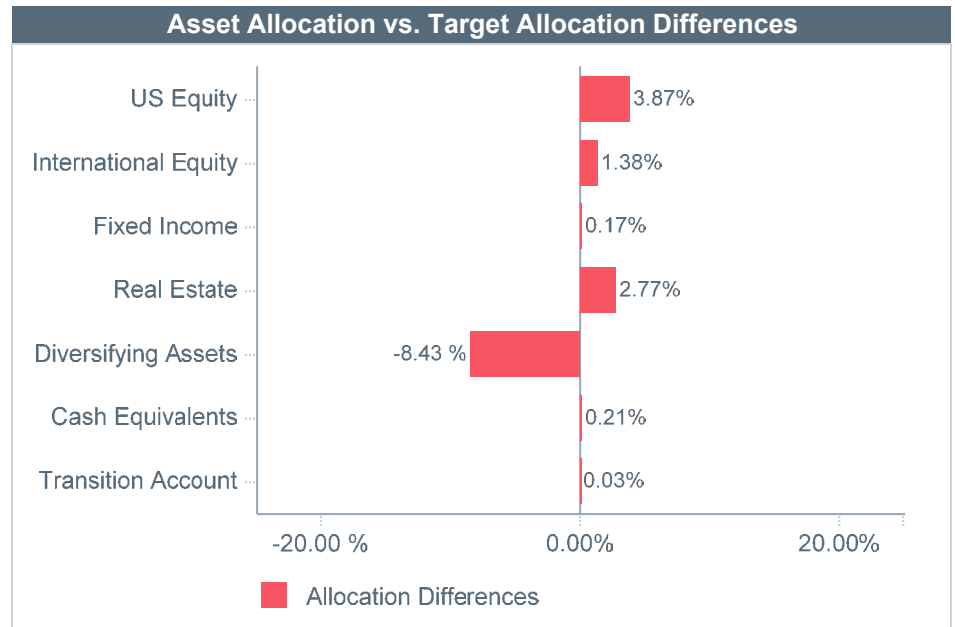
Schedule of Investable Assets (Total Assets)						
Periods Ending	Beginning Market Value (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)	% Return	Unit Value
CYTD	2,313,030,722	-94,052,118	-111,400,502	2,107,578,103	-5.19	94.81

Performance shown is net of fees. Allocations shown may not sum up to 100% exactly due to rounding.

City of Jacksonville Employees' Retirement System
Total Fund vs. All Public Plans (\$1B to \$5B) (Custom PG)
Asset Allocation vs. Target and Plan Sponsor Peer Group

As of December 31, 2018

Asset Allocation vs. Target Allocation					
	Market Value (\$)	Allocation (%)	Min (%)	Target (%)	Max (%)
Total Fund	2,107,578,103	100.00	-	100.00	-
US Equity	713,919,225	33.87	20.00	30.00	40.00
International Equity	450,634,075	21.38	10.00	20.00	25.00
Fixed Income	425,135,117	20.17	10.00	20.00	30.00
Real Estate	374,453,462	17.77	0.00	15.00	20.00
Diversifying Assets	138,403,163	6.57	0.00	15.00	20.00
Cash Equivalents	4,490,160	0.21	0.00	0.00	10.00
Transition Account	542,900	0.03	0.00	0.00	0.00



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

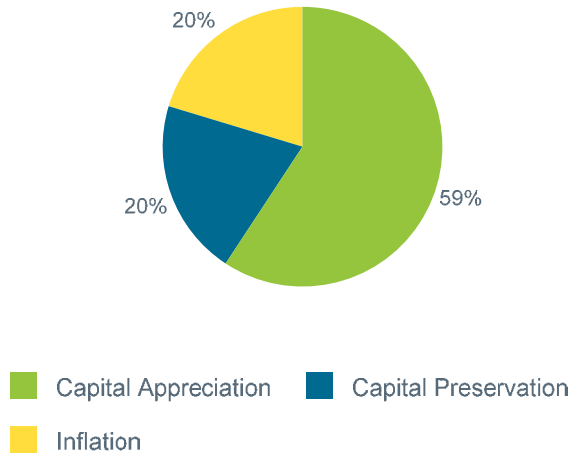
City of Jacksonville Employees' Retirement System
Total Fund vs. All Public Plans (\$1B to \$5B) (Custom PG)
Plan Sponsor Peer Group Analysis

As of December 31, 2018

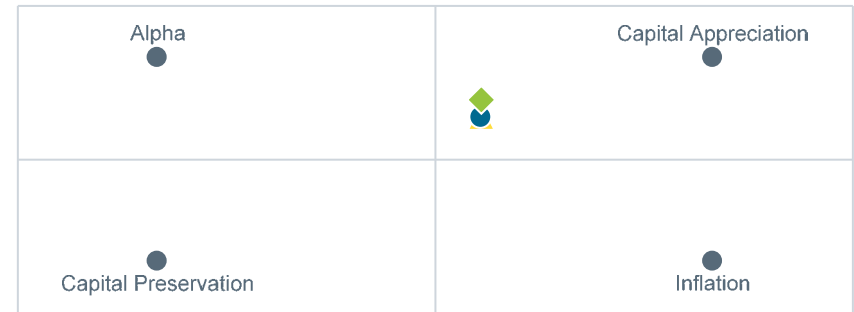


Performance shown is gross of fees. Parentheses contain percentile ranks.

Asset Allocation by Theme

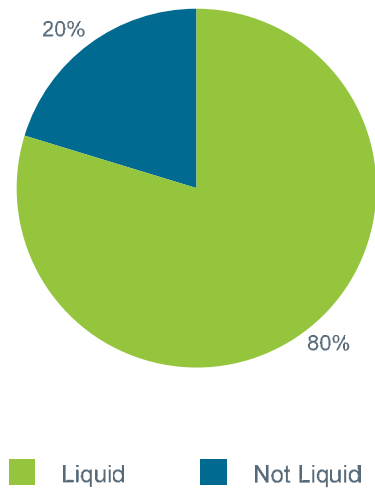


Thematic Analysis - July 1, 1999 to December 31, 2018



- ◆ Total Fund
- Current Total Fund Policy Index
- ▲ Legacy Total Fund Policy Index

Asset Allocation by Liquidity



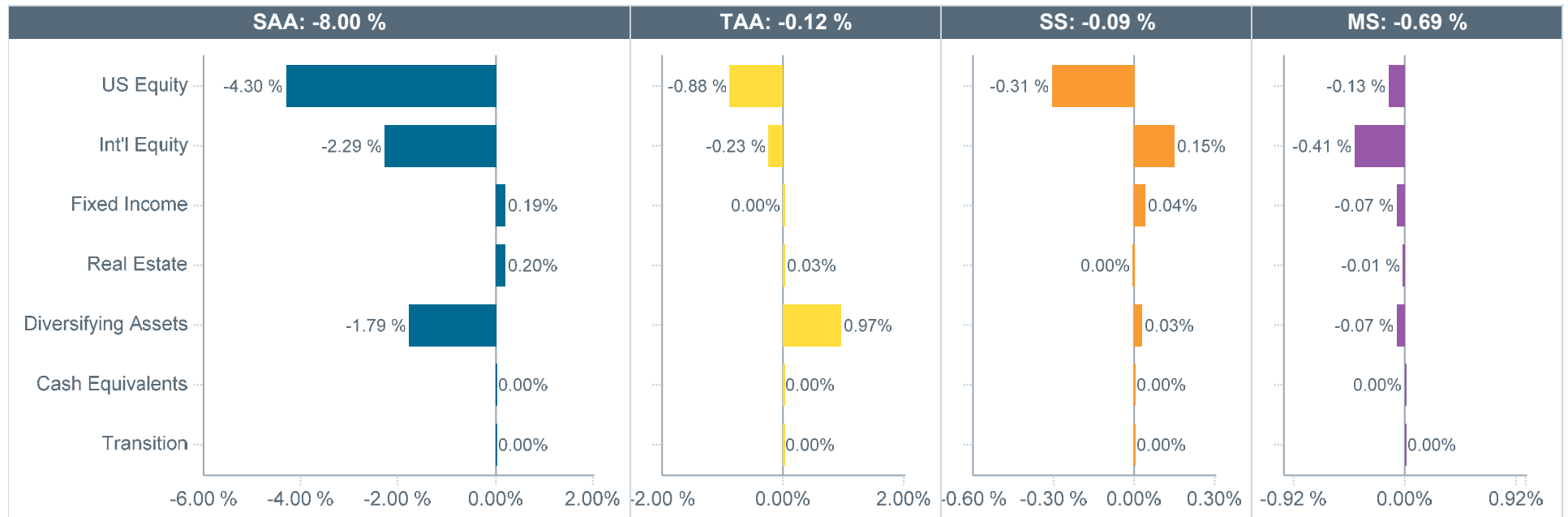
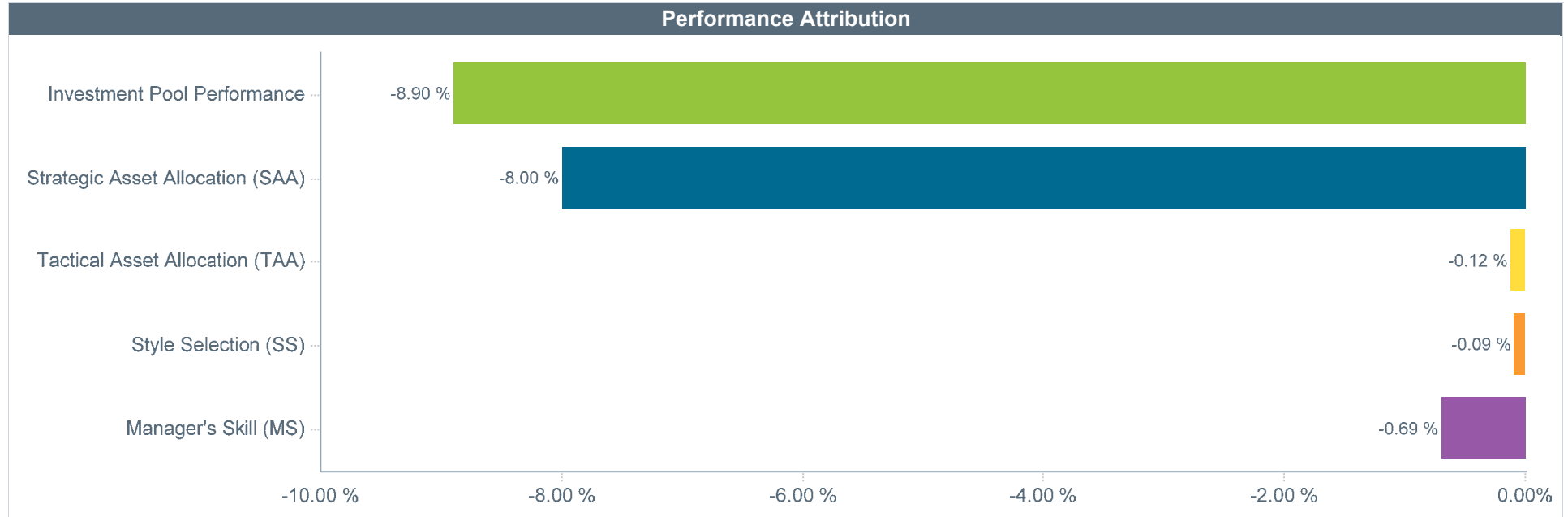
Correlation Matrix - 10 Years

	A	B	C	D
A	1.00			
B	0.62	1.00		
C	-0.29	-0.26	1.00	
D	0.49	0.83	0.02	1.00
A	=	HFRI EH: Eq Mkt Neut Index (Alpha)		
B	=	MSCI ACW Index (USD) (Gross) (Capital Appreciation)		
C	=	Bloomberg US Gov't Bond Index (Capital Preservation)		
D	=	Real Return Custom Index (Inflation)		

Asset Allocation by Theme is based on dedicated manager allocations; as such, thematic allocations are approximations. The RVK Liquidity Rating is calculated using beginning of month investment weights applied to each corresponding asset class liquidity rating. Please see the Glossary for additional information regarding liquidity, thematic, and custom index descriptions.

City of Jacksonville Employees' Retirement System
Total Fund Attribution - IDP vs. Current Total Fund Policy Index

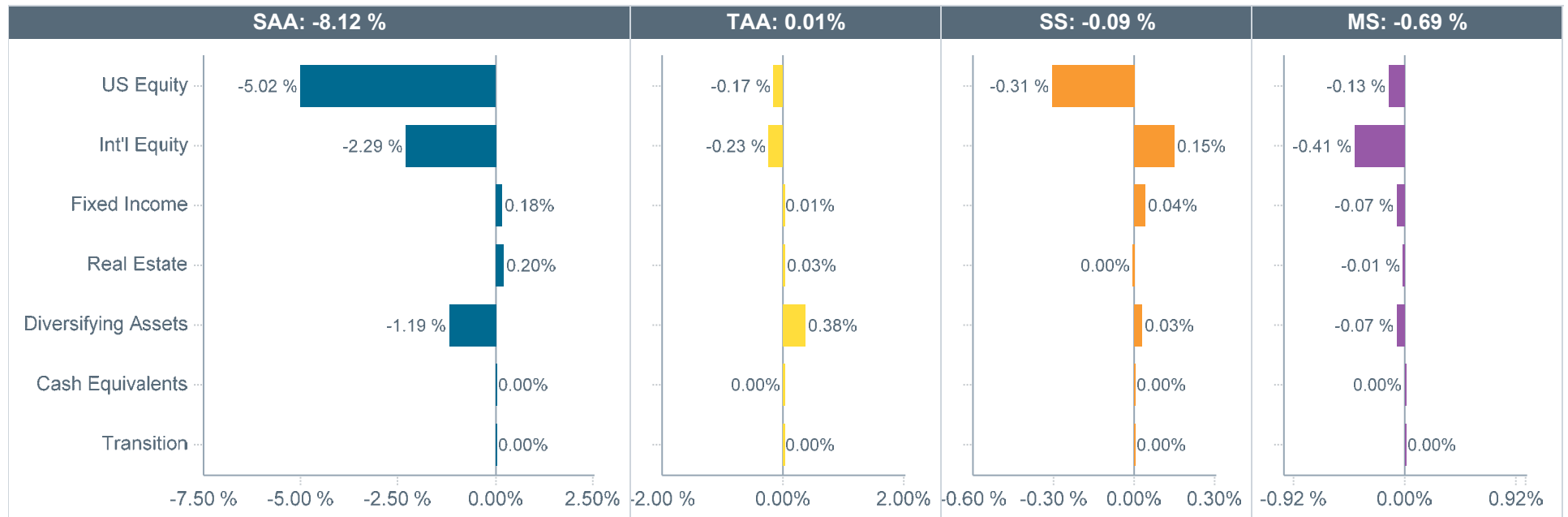
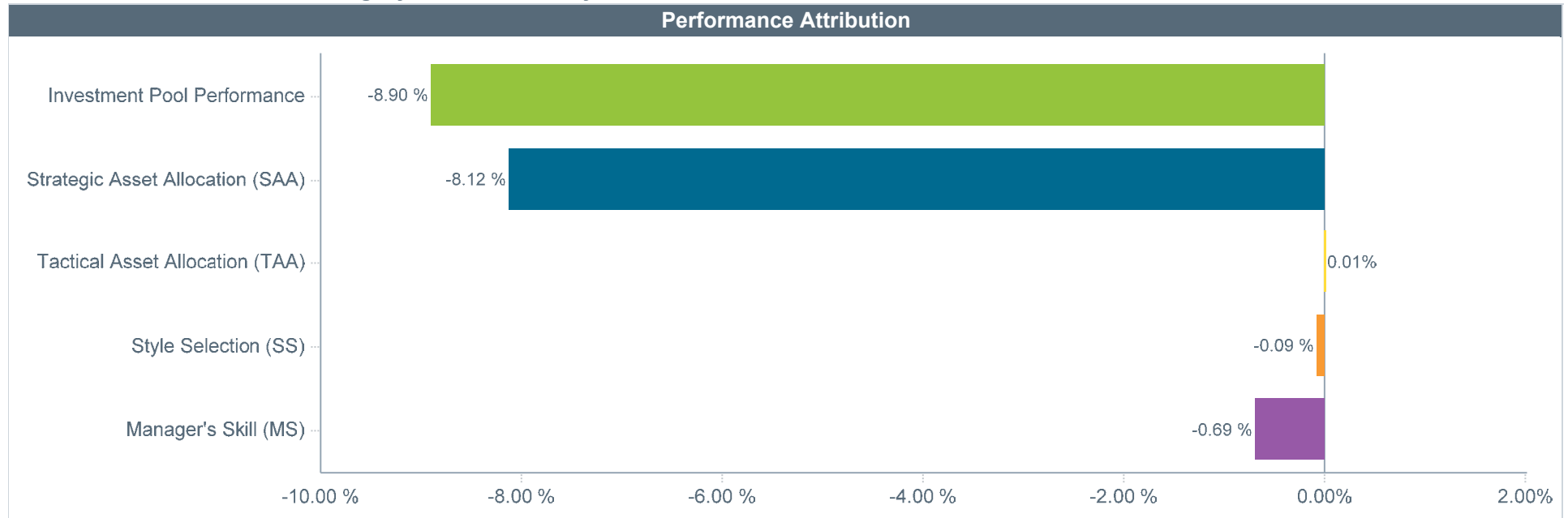
Quarter To Date Ending December 31, 2018



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

City of Jacksonville Employees' Retirement System
Total Fund Attribution - IDP vs. Legacy Total Fund Policy Index

Quarter To Date Ending December 31, 2018



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

City of Jacksonville Employees' Retirement System
Asset Allocation & Performance (Gross of Fees)

As of December 31, 2018

	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Total Fund	2,107,578,103	100.00	-8.78	-8.78	-4.72	-4.72	6.56	5.35	8.82	9.74	6.11	07/01/1999
Current Total Fund Policy Index			-8.00	-8.00	-4.24	-4.24	5.78	4.83	7.63	8.56	5.37	
Difference			-0.78	-0.78	-0.48	-0.48	0.78	0.52	1.19	1.18	0.74	
Legacy Total Fund Policy Index			-8.12	-8.12	-4.16	-4.16	5.83	4.86	7.65	8.57	5.37	
Difference			-0.66	-0.66	-0.56	-0.56	0.73	0.49	1.17	1.17	0.74	
All Public Plans (\$1B to \$5B) (Custom PG) Median			-6.92	-6.92	-3.67	-3.67	6.18	4.81	7.32	8.60	5.51	
Rank			91	91	69	69	33	26	8	9	13	
Total Equity	1,164,553,300	55.26	-14.27	-14.27	-10.05	-10.05	7.52	5.68	10.63	11.47	5.61	07/01/1999
US Equity	713,919,225	33.87	-15.34	-15.34	-6.42	-6.42	7.64	7.08	12.15	13.08	5.90	07/01/1999
US Equity Index			-14.30	-14.30	-5.24	-5.24	8.97	7.91	12.46	13.21	5.61	
Difference			-1.04	-1.04	-1.18	-1.18	-1.33	-0.83	-0.31	-0.13	0.29	
IM U.S. Equity (SA+CF) Median			-16.02	-16.02	-7.18	-7.18	8.04	6.50	11.91	13.35	7.92	
Rank			44	44	46	46	57	44	45	58	80	
International Equity	450,634,075	21.38	-12.51	-12.51	-15.42	-15.42	7.35	3.10	7.72	8.02	5.59	07/01/1999
International Equity Index			-11.46	-11.46	-14.20	-14.20	4.48	0.68	4.85	5.74	3.31	
Difference			-1.05	-1.05	-1.22	-1.22	2.87	2.42	2.87	2.28	2.28	
IM International Equity (SA+CF) Median			-11.85	-11.85	-14.87	-14.87	4.79	2.05	6.63	8.56	6.57	
Rank			55	55	56	56	28	31	33	62	62	
Fixed Income	425,135,117	20.17	1.08	1.08	0.15	0.15	3.28	2.44	3.27	5.69	5.37	07/01/1999
Fixed Income Index			1.17	1.17	-0.25	-0.25	1.95	2.46	2.05	3.45	4.73	
Difference			-0.09	-0.09	0.40	0.40	1.33	-0.02	1.22	2.24	0.64	
IM Global Fixed Income (SA+CF) Median			-1.09	-1.09	-1.84	-1.84	3.65	2.31	3.14	4.73	5.97	
Rank			17	17	21	21	64	48	49	39	62	
Real Estate	374,453,462	17.77	1.68	1.68	9.11	9.11	8.50	10.26	10.23	7.18	6.54	12/01/2005
NCREIF ODCE Index (AWA) (Gross)			1.76	1.76	8.35	8.35	8.24	10.41	10.99	7.00	7.28	
Difference			-0.08	-0.08	0.76	0.76	0.26	-0.15	-0.76	0.18	-0.74	
Diversifying Assets	138,403,163	6.57	-12.45	-12.45	-4.42	-4.42	3.04	0.42	5.14	N/A	6.40	03/01/2011
Diversifying Assets Index			-11.91	-11.91	-6.47	-6.47	1.50	-0.93	2.85	7.28	3.13	
Difference			-0.54	-0.54	2.05	2.05	1.54	1.35	2.29	N/A	3.27	

Performance shown is gross of fees and is annualized for periods greater than one year. Allocations may not sum up to 100% due to the exclusion of managers in liquidation. Please see the addendum for custom benchmark definitions. Fiscal year for the COJ ends 09/30.

City of Jacksonville Employees' Retirement System
Asset Allocation & Performance (Gross of Fees)

As of December 31, 2018

	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
US Equity												
Eagle Capital Large Cap Value (SA)	194,939,977	9.25	-13.51	-13.51	-3.90	-3.90	9.97	8.97	13.94	15.45	9.77	02/01/2007
Russell 1000 Val Index			-11.72	-11.72	-8.27	-8.27	6.95	5.95	11.02	11.18	5.04	
Difference			-1.79	-1.79	4.37	4.37	3.02	3.02	2.92	4.27	4.73	
IM U.S. Large Cap Value Equity (SA+CF) Median			-13.55	-13.55	-8.41	-8.41	7.27	6.22	11.39	11.96	6.21	
Rank			50	50	15	15	8	6	2	3	1	
INTECH Enhanced (SA)	156,066,472	7.41	-15.22	-15.22	-7.29	-7.29	7.42	8.12	12.35	13.06	8.10	02/01/2008
INTECH Enhanced Index			-13.52	-13.52	-4.38	-4.38	9.26	8.49	12.70	13.29	7.98	
Difference			-1.70	-1.70	-2.91	-2.91	-1.84	-0.37	-0.35	-0.23	0.12	
IM U.S. Large Cap Equity (SA+CF) Median			-13.93	-13.93	-5.16	-5.16	8.62	7.99	12.51	13.11	8.05	
Rank			72	72	70	70	71	47	55	53	48	
Mellon Large Cap Growth Index (CF)	95,040,519	4.51	-15.88	-15.88	-1.58	-1.58	N/A	N/A	N/A	N/A	6.63	08/01/2017
Russell 1000 Grth Index			-15.89	-15.89	-1.51	-1.51	11.15	10.40	14.14	15.29	6.67	
Difference			0.01	0.01	-0.07	-0.07	N/A	N/A	N/A	N/A	-0.04	
IM U.S. Large Cap Growth Equity (SA+CF) Median			-15.00	-15.00	-1.20	-1.20	10.15	9.66	13.75	14.89	5.95	
Rank			62	62	54	54	N/A	N/A	N/A	N/A	43	
Loomis Sayles Large Cap Growth (CF)	93,245,699	4.42	-11.57	-11.57	-1.71	-1.71	N/A	N/A	N/A	N/A	6.39	08/01/2017
Russell 1000 Grth Index			-15.89	-15.89	-1.51	-1.51	11.15	10.40	14.14	15.29	6.67	
Difference			4.32	4.32	-0.20	-0.20	N/A	N/A	N/A	N/A	-0.28	
IM U.S. Large Cap Growth Equity (SA+CF) Median			-15.00	-15.00	-1.20	-1.20	10.15	9.66	13.75	14.89	5.95	
Rank			13	13	55	55	N/A	N/A	N/A	N/A	46	
William Blair Small Cap Value (SA)	96,546,964	4.58	-19.09	-19.09	-14.72	-14.72	5.84	N/A	N/A	N/A	3.54	11/01/2014
Russell 2000 Val Index			-18.67	-18.67	-12.86	-12.86	7.37	3.61	9.57	10.40	3.87	
Difference			-0.42	-0.42	-1.86	-1.86	-1.53	N/A	N/A	N/A	-0.33	
IM U.S. Small Cap Value Equity (SA+CF) Median			-19.19	-19.19	-14.33	-14.33	6.33	4.12	10.47	13.10	4.03	
Rank			49	49	54	54	56	N/A	N/A	N/A	58	
Pinnacle Associates US SMID Cap Growth (SA)	78,079,594	3.70	-18.69	-18.69	-10.36	-10.36	5.93	5.37	12.36	N/A	12.32	03/01/2010
Russell 2500 Grth Index			-20.08	-20.08	-7.47	-7.47	8.11	6.19	11.96	14.76	12.25	
Difference			1.39	1.39	-2.89	-2.89	-2.18	-0.82	0.40	N/A	0.07	
IM U.S. SMID Cap Growth Equity (SA+CF) Median			-19.57	-19.57	-4.53	-4.53	9.51	6.62	12.08	15.25	12.80	
Rank			33	33	89	89	92	75	39	N/A	63	

Performance shown is gross of fees and is annualized for periods greater than one year. Allocations may not sum up to 100% due to the exclusion of managers in liquidation. Please see the addendum for custom benchmark definitions. Fiscal year for the COJ ends 09/30.

City of Jacksonville Employees' Retirement System
Asset Allocation & Performance (Gross of Fees)

As of December 31, 2018

	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
International Equity												
Silchester International Value (CF)	231,128,838	10.97	-10.80	-10.80	-13.74	-13.74	6.16	3.94	9.20	N/A	9.87	06/01/2009
MSCI EAFE Val Index (USD) (Net)			-11.70	-11.70	-14.78	-14.78	2.82	-0.61	4.96	5.50	4.63	
Difference			0.90	0.90	1.04	1.04	3.34	4.55	4.24	N/A	5.24	
IM EAFE Value (SA+CF) Median			-13.21	-13.21	-15.76	-15.76	2.87	0.76	6.21	7.27	6.58	
Rank			24	24	41	41	11	9	10	N/A	6	
Bail Giff EAFE;4 (BGEFX)	106,028,009	5.03	-19.06	-19.06	-16.77	-16.77	7.68	2.67	8.37	N/A	9.00	06/01/2009
Baillie Gifford Index			-12.20	-12.20	-14.43	-14.43	2.38	1.32	6.25	6.91	6.52	
Difference			-6.86	-6.86	-2.34	-2.34	5.30	1.35	2.12	N/A	2.48	
IM ACWI Ex US Growth (SA+CF) Median			-14.23	-14.23	-14.19	-14.19	4.27	2.44	7.23	9.14	7.96	
Rank			100	100	79	79	11	44	21	N/A	13	
Acadian Emerging Markets II (CF)	113,477,228	5.38	-9.22	-9.22	-18.39	-18.39	8.85	1.70	4.05	N/A	1.71	02/01/2011
MSCI Emg Mkts Index (USD) (Net)			-7.47	-7.47	-14.58	-14.58	9.25	1.65	3.23	8.02	0.59	
Difference			-1.75	-1.75	-3.81	-3.81	-0.40	0.05	0.82	N/A	1.12	
IM Emerging Markets Equity (SA+CF) Median			-7.26	-7.26	-15.23	-15.23	8.67	2.24	4.69	9.39	1.90	
Rank			82	82	82	82	47	64	66	N/A	56	
Fixed Income												
Richmond Capital Core (SA)	128,242,442	6.08	1.65	1.65	0.26	0.26	2.38	2.98	2.68	4.36	5.16	06/01/1999
Richmond Capital Index			1.64	1.64	0.01	0.01	2.06	2.52	2.10	3.40	4.74	
Difference			0.01	0.01	0.25	0.25	0.32	0.46	0.58	0.96	0.42	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median			1.40	1.40	0.07	0.07	2.48	2.87	2.62	4.37	5.10	
Rank			22	22	32	32	57	41	46	52	43	
Taplin Canida & Habacht Intermediate Duration (SA)	127,567,684	6.05	0.21	0.21	-0.10	-0.10	2.63	2.19	2.52	4.38	4.85	06/01/1999
ICE BofAML US Corp & Gov't 1-10 Yr Index			1.61	1.61	0.89	0.89	1.74	1.94	1.83	3.03	4.29	
Difference			-1.40	-1.40	-0.99	-0.99	0.89	0.25	0.69	1.35	0.56	
IM U.S. Intermediate Duration (SA+CF) Median			1.39	1.39	0.95	0.95	1.99	2.16	2.15	3.52	4.61	
Rank			99	99	99	99	8	48	24	17	27	
Franklin Templeton Global Multisector Plus (CF)	104,232,193	4.95	2.23	2.23	0.36	0.36	N/A	N/A	N/A	N/A	5.69	03/01/2016
Frank. Temp. Global Multisector Index			1.02	1.02	-1.36	-1.36	2.99	1.20	1.22	7.01	2.13	
Difference			1.21	1.21	1.72	1.72	N/A	N/A	N/A	N/A	3.56	
IM Global Fixed Income (SA+CF) Median			-1.09	-1.09	-1.84	-1.84	3.65	2.31	3.14	4.73	3.83	
Rank			3	3	19	19	N/A	N/A	N/A	N/A	25	
Loomis Sayles Multisector Full Discretion (CF)	65,092,798	3.09	-0.14	-0.14	0.09	0.09	6.33	4.40	6.56	10.09	6.67	10/01/2007
Bloomberg Gbl Agg Bond Index			1.20	1.20	-1.19	-1.19	2.70	1.08	1.00	2.49	2.93	
Difference			-1.34	-1.34	1.28	1.28	3.63	3.32	5.56	7.60	3.74	
IM Global Fixed Income (SA+CF) Median			-1.09	-1.09	-1.84	-1.84	3.65	2.31	3.14	4.73	4.12	
Rank			38	38	21	21	13	13	7	7	7	

Performance shown is gross of fees and is annualized for periods greater than one year. Allocations may not sum up to 100% due to the exclusion of managers in liquidation. Please see the addendum for custom benchmark definitions. Fiscal year for the COJ ends 09/30.

City of Jacksonville Employees' Retirement System
Asset Allocation & Performance (Gross of Fees)

As of December 31, 2018

	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Real Estate												
Harrison Street Core Property, LP	98,983,364	4.70	2.07	2.07	9.99	9.99	9.25	N/A	N/A	N/A	8.74	11/01/2015
NCREIF ODCE Index (AWA) (Gross)			1.76	1.76	8.35	8.35	8.24	10.41	10.99	7.00	8.92	
Difference			0.31	0.31	1.64	1.64	1.01	N/A	N/A	N/A	-0.18	
PGIM Real Estate PRISA II (CF)	54,343,540	2.58	1.45	1.45	11.99	11.99	10.23	N/A	N/A	N/A	10.73	01/01/2015
NCREIF ODCE Index (AWA) (Gross)			1.76	1.76	8.35	8.35	8.24	10.41	10.99	7.00	9.90	
Difference			-0.31	-0.31	3.64	3.64	1.99	N/A	N/A	N/A	0.83	
Principal US Property (CF)	116,419,964	5.52	1.49	1.49	9.12	9.12	9.42	11.34	N/A	N/A	11.34	01/01/2014
NCREIF ODCE Index (AWA) (Gross)			1.76	1.76	8.35	8.35	8.24	10.41	10.99	7.00	10.41	
Difference			-0.27	-0.27	0.77	0.77	1.18	0.93	N/A	N/A	0.93	
UBS Trumbull Property (CF)	103,814,056	4.93	1.73	1.73	6.97	6.97	6.79	8.96	9.33	6.74	6.77	12/01/2005
NCREIF ODCE Index (AWA) (Gross)			1.76	1.76	8.35	8.35	8.24	10.41	10.99	7.00	7.28	
Difference			-0.03	-0.03	-1.38	-1.38	-1.45	-1.45	-1.66	-0.26	-0.51	
Vanguard RE Idx;ETF (VNQ)	892,538	0.04	-6.43	-6.43	-6.02	-6.02	2.06	7.12	7.71	11.30	12.90	12/01/2008
Custom REITs Index			-6.72	-6.72	-4.57	-4.57	2.88	7.80	8.38	12.17	13.88	
Difference			0.29	0.29	-1.45	-1.45	-0.82	-0.68	-0.67	-0.87	-0.98	
Diversifying Assets												
Harvest Fund Advisors MLP (SA)	42,285,638	2.01	-20.64	-20.64	-13.00	-13.00	-0.16	-3.96	3.39	N/A	5.15	03/01/2011
S&P MLP Index (TR)			-17.80	-17.80	-11.67	-11.67	0.57	-6.59	-0.46	10.35	0.47	
Difference			-2.84	-2.84	-1.33	-1.33	-0.73	2.63	3.85	N/A	4.68	
Tortoise Capital Advisors MLP (SA)	42,375,515	2.01	-16.24	-16.24	-12.73	-12.73	-0.50	-3.49	3.15	N/A	4.28	03/01/2011
S&P MLP Index (TR)			-17.80	-17.80	-11.67	-11.67	0.57	-6.59	-0.46	10.35	0.47	
Difference			1.56	1.56	-1.06	-1.06	-1.07	3.10	3.61	N/A	3.81	
Hancock Timberland (SA)	53,742,011	2.55	-0.84	-0.84	12.47	12.47	9.61	7.64	7.65	3.80	3.89	10/01/2006
NCREIF Timberland Index			0.75	0.75	3.21	3.21	3.14	4.94	6.00	3.81	5.85	
Difference			-1.59	-1.59	9.26	9.26	6.47	2.70	1.65	-0.01	-1.96	
Dreyfus Gvt Csh Mgt;Inst (DGCXX)	4,490,160	0.21	0.54	0.54	2.03	2.03	1.11	0.71	0.52	0.41	1.41	04/01/2001
FTSE 3 Mo T-Bill Index			0.57	0.57	1.86	1.86	0.99	0.60	0.45	0.35	1.37	
Difference			-0.03	-0.03	0.17	0.17	0.12	0.11	0.07	0.06	0.04	

Performance shown is gross of fees and is annualized for periods greater than one year. Allocations may not sum up to 100% due to the exclusion of managers in liquidation. Please see the addendum for custom benchmark definitions. Fiscal year for the COJ ends 09/30.

City of Jacksonville Employees' Retirement System
Asset Allocation & Performance (Net of Fees)

As of December 31, 2018

	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Total Fund	2,107,578,103	100.00	-8.90	-8.90	-5.19	-5.19	6.03	4.83	8.30	9.26	5.83	07/01/1999
Current Total Fund Policy Index			-8.00	-8.00	-4.24	-4.24	5.78	4.83	7.63	8.56	5.37	
Difference			-0.90	-0.90	-0.95	-0.95	0.25	0.00	0.67	0.70	0.46	
Legacy Total Fund Policy Index			-8.12	-8.12	-4.16	-4.16	5.83	4.86	7.65	8.57	5.37	
Difference			-0.78	-0.78	-1.03	-1.03	0.20	-0.03	0.65	0.69	0.46	
Total Equity	1,164,553,300	55.26	-14.40	-14.40	-10.55	-10.55	6.92	5.11	10.03	10.96	5.33	07/01/1999
US Equity	713,919,225	33.87	-15.47	-15.47	-6.93	-6.93	7.05	6.51	11.56	12.58	5.63	07/01/1999
US Equity Index			-14.30	-14.30	-5.24	-5.24	8.97	7.91	12.46	13.21	5.61	
Difference			-1.17	-1.17	-1.69	-1.69	-1.92	-1.40	-0.90	-0.63	0.02	
International Equity	450,634,075	21.38	-12.64	-12.64	-15.90	-15.90	6.74	2.51	7.11	7.49	5.29	07/01/1999
International Equity Index			-11.46	-11.46	-14.20	-14.20	4.48	0.68	4.85	5.74	3.31	
Difference			-1.18	-1.18	-1.70	-1.70	2.26	1.83	2.26	1.75	1.98	
Fixed Income	425,135,117	20.17	1.06	1.06	0.00	0.00	3.07	2.26	3.10	5.45	5.23	07/01/1999
Fixed Income Index			1.17	1.17	-0.25	-0.25	1.95	2.46	2.05	3.45	4.73	
Difference			-0.11	-0.11	0.25	0.25	1.12	-0.20	1.05	2.00	0.50	
Real Estate	374,453,462	17.77	1.45	1.45	8.32	8.32	7.76	9.46	9.38	6.42	5.89	12/01/2005
NCREIF ODCE Index (AWA) (Net)			1.52	1.52	7.36	7.36	7.27	9.41	9.96	6.01	6.20	
Difference			-0.07	-0.07	0.96	0.96	0.49	0.05	-0.58	0.41	-0.31	
Diversifying Assets	138,403,163	6.57	-12.51	-12.51	-4.77	-4.77	2.58	-0.05	4.64	N/A	5.91	03/01/2011
Diversifying Assets Index			-11.91	-11.91	-6.47	-6.47	1.50	-0.93	2.85	7.28	3.13	
Difference			-0.60	-0.60	1.70	1.70	1.08	0.88	1.79	N/A	2.78	

Performance shown is net of fees and is annualized for periods greater than one year. Allocations may not sum up to 100% due to the exclusion of managers in liquidation. Please see the addendum for custom benchmark definitions. Fiscal year for the COJ ends 09/30.

City of Jacksonville Employees' Retirement System
Asset Allocation & Performance (Net of Fees)

As of December 31, 2018

	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
US Equity												
Eagle Capital Large Cap Value (SA)	194,939,977	9.25	-13.70	-13.70	-4.64	-4.64	9.17	8.16	13.09	14.74	9.11	02/01/2007
Russell 1000 Val Index			-11.72	-11.72	-8.27	-8.27	6.95	5.95	11.02	11.18	5.04	
Difference			-1.98	-1.98	3.63	3.63	2.22	2.21	2.07	3.56	4.07	
INTECH Enhanced (SA)	156,066,472	7.41	-15.31	-15.31	-7.61	-7.61	7.06	7.77	11.99	12.75	7.80	02/01/2008
INTECH Enhanced Index			-13.52	-13.52	-4.38	-4.38	9.26	8.49	12.70	13.29	7.98	
Difference			-1.79	-1.79	-3.23	-3.23	-2.20	-0.72	-0.71	-0.54	-0.18	
Mellon Large Cap Growth Index (CF)	95,040,519	4.51	-15.89	-15.89	-1.63	-1.63	N/A	N/A	N/A	N/A	6.57	08/01/2017
Russell 1000 Grth Index			-15.89	-15.89	-1.51	-1.51	11.15	10.40	14.14	15.29	6.67	
Difference			0.00	0.00	-0.12	-0.12	N/A	N/A	N/A	N/A	-0.10	
Loomis Sayles Large Cap Growth (CF)	93,245,699	4.42	-11.67	-11.67	-2.18	-2.18	N/A	N/A	N/A	N/A	5.87	08/01/2017
Russell 1000 Grth Index			-15.89	-15.89	-1.51	-1.51	11.15	10.40	14.14	15.29	6.67	
Difference			4.22	4.22	-0.67	-0.67	N/A	N/A	N/A	N/A	-0.80	
William Blair Small Cap Value (SA)	96,546,964	4.58	-19.29	-19.29	-15.57	-15.57	5.00	N/A	N/A	N/A	2.78	11/01/2014
Russell 2000 Val Index			-18.67	-18.67	-12.86	-12.86	7.37	3.61	9.57	10.40	3.87	
Difference			-0.62	-0.62	-2.71	-2.71	-2.37	N/A	N/A	N/A	-1.09	
Pinnacle Associates US SMID Cap Growth (SA)	78,079,594	3.70	-18.84	-18.84	-10.87	-10.87	5.29	4.62	11.55	N/A	11.54	03/01/2010
Russell 2500 Grth Index			-20.08	-20.08	-7.47	-7.47	8.11	6.19	11.96	14.76	12.25	
Difference			1.24	1.24	-3.40	-3.40	-2.82	-1.57	-0.41	N/A	-0.71	
International Equity												
Silchester International Value (CF)	231,128,838	10.97	-10.93	-10.93	-14.23	-14.23	5.55	3.34	8.55	N/A	9.21	06/01/2009
MSCI EAFE Val Index (USD) (Net)			-11.70	-11.70	-14.78	-14.78	2.82	-0.61	4.96	5.50	4.63	
Difference			0.77	0.77	0.55	0.55	2.73	3.95	3.59	N/A	4.58	
Bail Giff EAFE;4 (BGEFX)	106,028,009	5.03	-19.17	-19.17	-17.23	-17.23	7.11	2.11	7.86	N/A	8.63	06/01/2009
Baillie Gifford Index			-12.20	-12.20	-14.43	-14.43	2.38	1.32	6.25	6.91	6.52	
Difference			-6.97	-6.97	-2.80	-2.80	4.73	0.79	1.61	N/A	2.11	
Acadian Emerging Markets II (CF)	113,477,228	5.38	-9.36	-9.36	-18.87	-18.87	8.22	1.10	3.41	N/A	1.12	02/01/2011
MSCI Emg Mkts Index (USD) (Net)			-7.47	-7.47	-14.58	-14.58	9.25	1.65	3.23	8.02	0.59	
Difference			-1.89	-1.89	-4.29	-4.29	-1.03	-0.55	0.18	N/A	0.53	

Performance shown is net of fees and is annualized for periods greater than one year. Allocations may not sum up to 100% due to the exclusion of managers in liquidation. Please see the addendum for custom benchmark definitions. Fiscal year for the COJ ends 09/30.

City of Jacksonville Employees' Retirement System
Asset Allocation & Performance (Net of Fees)

As of December 31, 2018

	Allocation		Performance (%)										Inception Date
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.		
Fixed Income													
Richmond Capital Core (SA)	128,242,442	6.08	1.61	1.61	0.09	0.09	2.21	2.80	2.50	4.21	5.07	06/01/1999	
Richmond Capital Index			1.64	1.64	0.01	0.01	2.06	2.52	2.10	3.40	4.74		
Difference			-0.03	-0.03	0.08	0.08	0.15	0.28	0.40	0.81	0.33		
Taplin Canida & Habacht Intermediate Duration (SA)	127,567,684	6.05	0.18	0.18	-0.22	-0.22	2.49	2.07	2.40	4.28	4.79	06/01/1999	
ICE BofAML US Corp & Gov't 1-10 Yr Index			1.61	1.61	0.89	0.89	1.74	1.94	1.83	3.03	4.29		
Difference			-1.43	-1.43	-1.11	-1.11	0.75	0.13	0.57	1.25	0.50		
Franklin Templeton Global Multisector Plus (CF)	104,232,193	4.95	2.23	2.23	0.16	0.16	N/A	N/A	N/A	N/A	5.41	03/01/2016	
Frank. Temp. Global Multisector Index			1.02	1.02	-1.36	-1.36	2.99	1.20	1.22	7.01	2.13		
Difference			1.21	1.21	1.52	1.52	N/A	N/A	N/A	N/A	3.28		
Loomis Sayles Multisector Full Discretion (CF)	65,092,798	3.09	-0.14	-0.14	-0.01	-0.01	5.97	4.02	6.16	9.75	6.34	10/01/2007	
Bloomberg Gbl Agg Bond Index			1.20	1.20	-1.19	-1.19	2.70	1.08	1.00	2.49	2.93		
Difference			-1.34	-1.34	1.18	1.18	3.27	2.94	5.16	7.26	3.41		
Real Estate													
Harrison Street Core Property, LP	98,983,364	4.70	1.81	1.81	9.44	9.44	9.06	N/A	N/A	N/A	8.57	11/01/2015	
NCREIF ODCE Index (AWA) (Net)			1.52	1.52	7.36	7.36	7.27	9.41	9.96	6.01	7.70		
Difference			0.29	0.29	2.08	2.08	1.79	N/A	N/A	N/A	0.87		
PGIM Real Estate PRISA II (CF)	54,343,540	2.58	1.16	1.16	10.61	10.61	9.28	N/A	N/A	N/A	9.88	01/01/2015	
NCREIF ODCE Index (AWA) (Net)			1.52	1.52	7.36	7.36	7.27	9.41	9.96	6.01	8.90		
Difference			-0.36	-0.36	3.25	3.25	2.01	N/A	N/A	N/A	0.98		
Principal US Property (CF)	116,419,964	5.52	1.29	1.29	8.18	8.18	8.53	10.44	N/A	N/A	10.44	01/01/2014	
NCREIF ODCE Index (AWA) (Net)			1.52	1.52	7.36	7.36	7.27	9.41	9.96	6.01	9.41		
Difference			-0.23	-0.23	0.82	0.82	1.26	1.03	N/A	N/A	1.03		
UBS Trumbull Property (CF)	103,814,056	4.93	1.52	1.52	6.09	6.09	5.78	7.91	8.26	5.72	5.81	12/01/2005	
NCREIF ODCE Index (AWA) (Net)			1.52	1.52	7.36	7.36	7.27	9.41	9.96	6.01	6.20		
Difference			0.00	0.00	-1.27	-1.27	-1.49	-1.50	-1.70	-0.29	-0.39		
Vanguard RE Idx;ETF (VNQ)	892,538	0.04	-6.43	-6.43	-6.02	-6.02	2.06	7.12	7.71	11.30	12.90	12/01/2008	
Custom REITs Index			-6.72	-6.72	-4.57	-4.57	2.88	7.80	8.38	12.17	13.88		
Difference			0.29	0.29	-1.45	-1.45	-0.82	-0.68	-0.67	-0.87	-0.98		

Performance shown is net of fees and is annualized for periods greater than one year. Allocations may not sum up to 100% due to the exclusion of managers in liquidation. Please see the addendum for custom benchmark definitions. Fiscal year for the COJ ends 09/30.

City of Jacksonville Employees' Retirement System
Asset Allocation & Performance (Net of Fees)

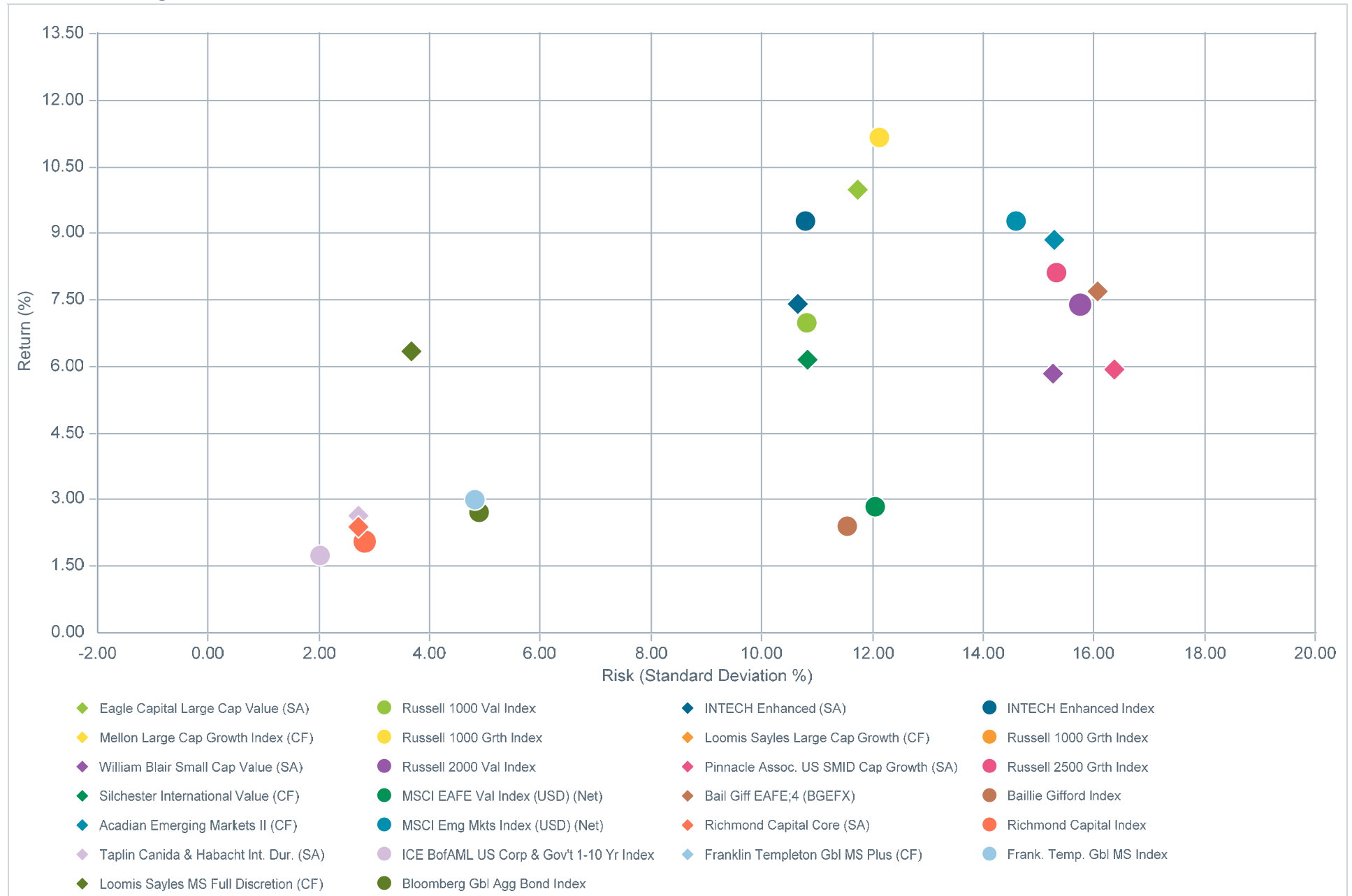
As of December 31, 2018

	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Diversifying Assets												
Harvest Fund Advisors MLP (SA)	42,285,638	2.01	-20.64	-20.64	-13.32	-13.32	-0.77	-4.62	2.67	N/A	4.45	03/01/2011
S&P MLP Index (TR)			-17.80	-17.80	-11.67	-11.67	0.57	-6.59	-0.46	10.35	0.47	
Difference			-2.84	-2.84	-1.65	-1.65	-1.34	1.97	3.13	N/A	3.98	
Tortoise Capital Advisors MLP (SA)	42,375,515	2.01	-16.43	-16.43	-13.39	-13.39	-1.32	-4.23	2.37	N/A	3.53	03/01/2011
S&P MLP Index (TR)			-17.80	-17.80	-11.67	-11.67	0.57	-6.59	-0.46	10.35	0.47	
Difference			1.37	1.37	-1.72	-1.72	-1.89	2.36	2.83	N/A	3.06	
Hancock Timberland (SA)	53,742,011	2.55	-0.84	-0.84	12.47	12.47	9.61	7.64	7.65	3.80	3.89	10/01/2006
NCREIF Timberland Index			0.75	0.75	3.21	3.21	3.14	4.94	6.00	3.81	5.85	
Difference			-1.59	-1.59	9.26	9.26	6.47	2.70	1.65	-0.01	-1.96	
Dreyfus Gvt Csh Mgt;Inst (DGCXX)	4,490,160	0.21	0.50	0.50	2.00	2.00	1.08	0.70	0.51	0.40	1.39	04/01/2001
FTSE 3 Mo T-Bill Index			0.57	0.57	1.86	1.86	0.99	0.60	0.45	0.35	1.37	
Difference			-0.07	-0.07	0.14	0.14	0.09	0.10	0.06	0.05	0.02	

Performance shown is net of fees and is annualized for periods greater than one year. Allocations may not sum up to 100% due to the exclusion of managers in liquidation. Please see the addendum for custom benchmark definitions. Fiscal year for the COJ ends 09/30.

City of Jacksonville Employees' Retirement System
Risk and Return
Traditional Managers

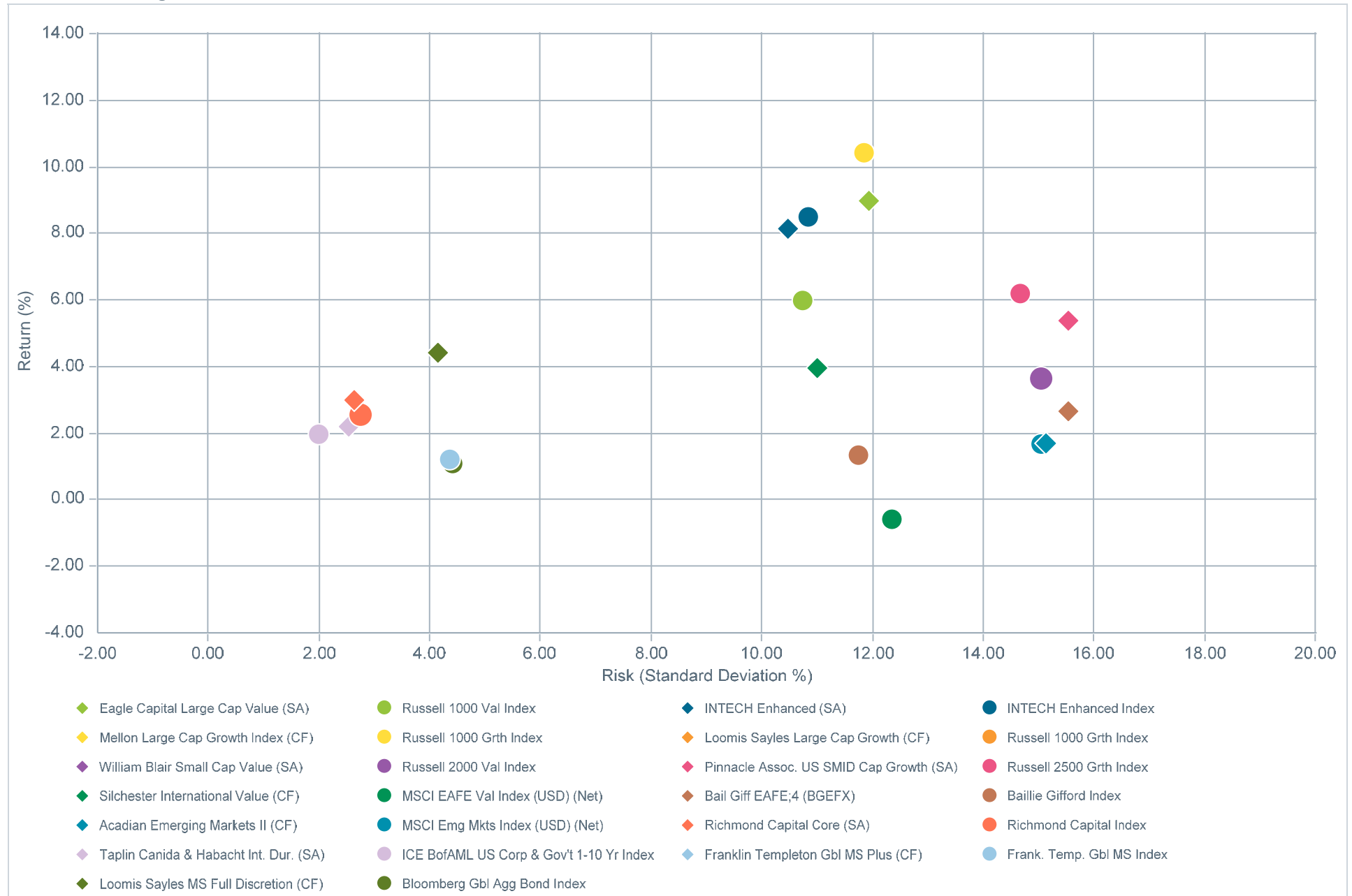
3 Years Ending December 31, 2018



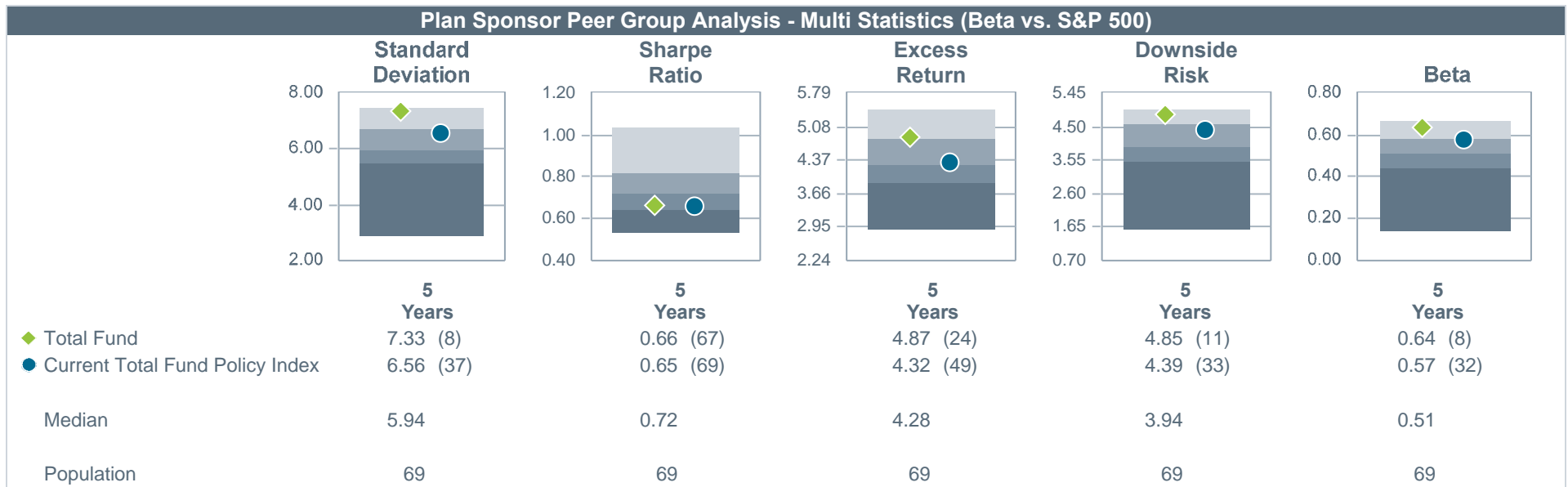
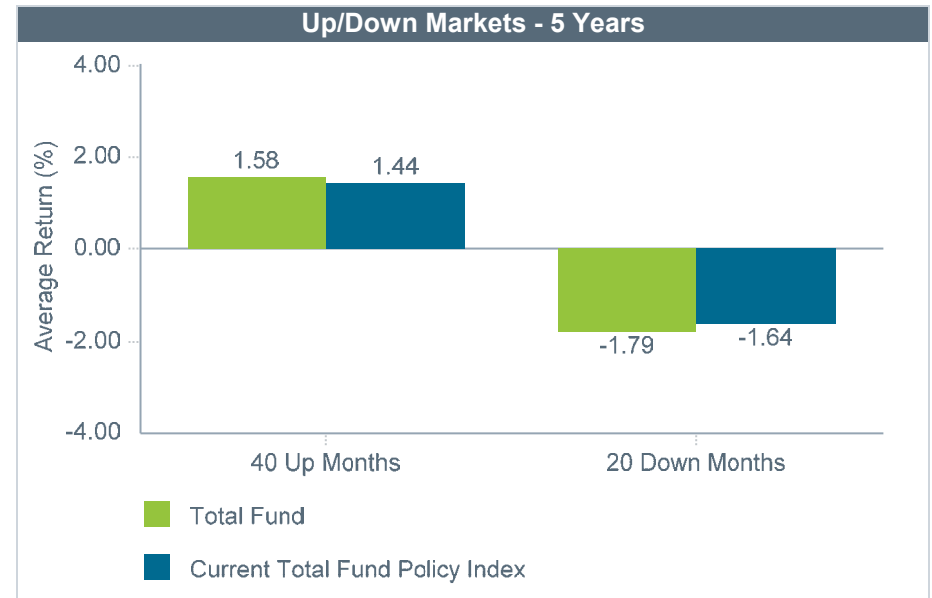
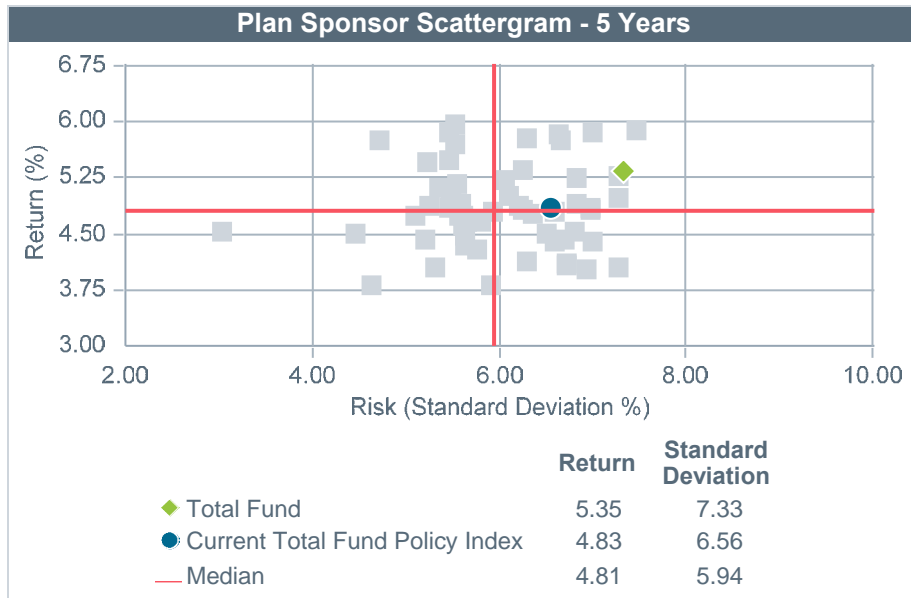
Performance shown is gross of fees and client specific. Calculation is based on monthly periodicity. Managers with less history than the specified time period will not appear. Please see the Addendum for custom index definitions.

City of Jacksonville Employees' Retirement System
Risk and Return
Traditional Managers

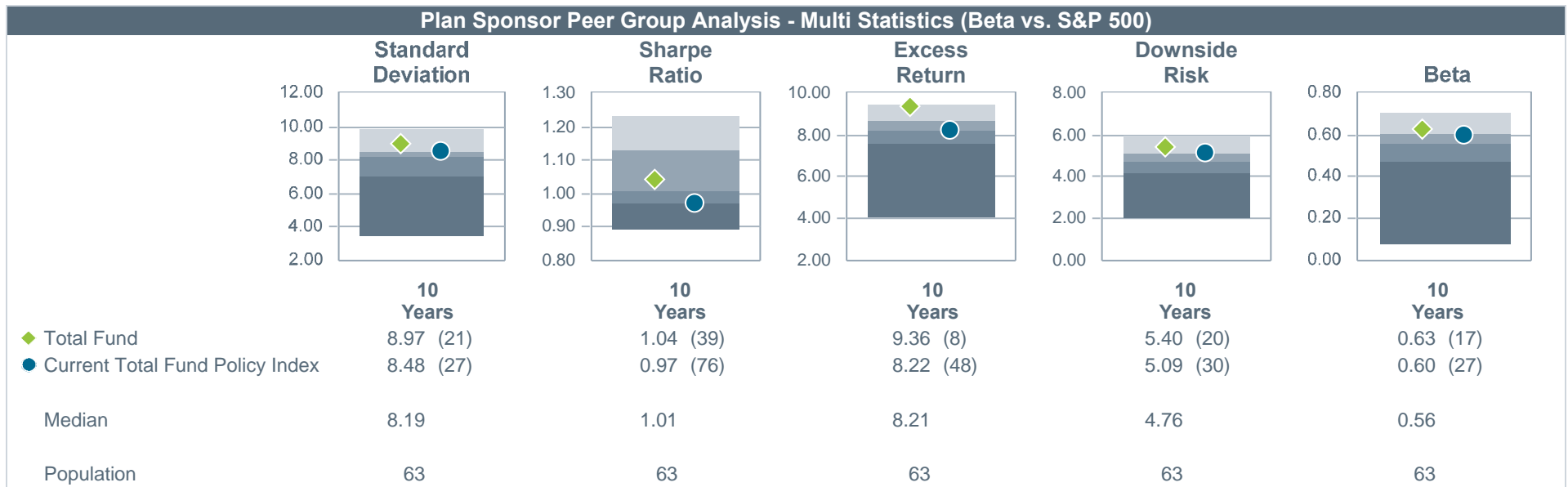
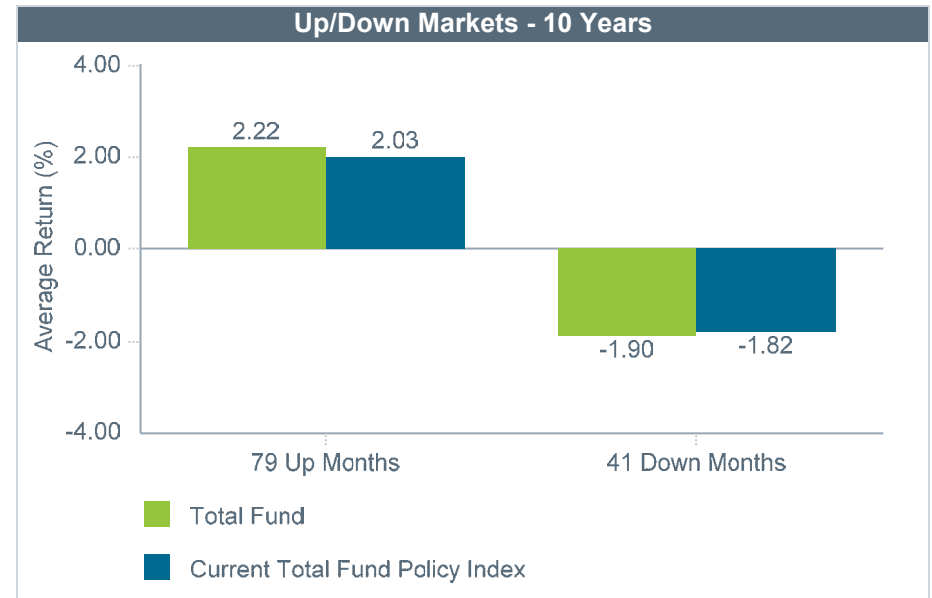
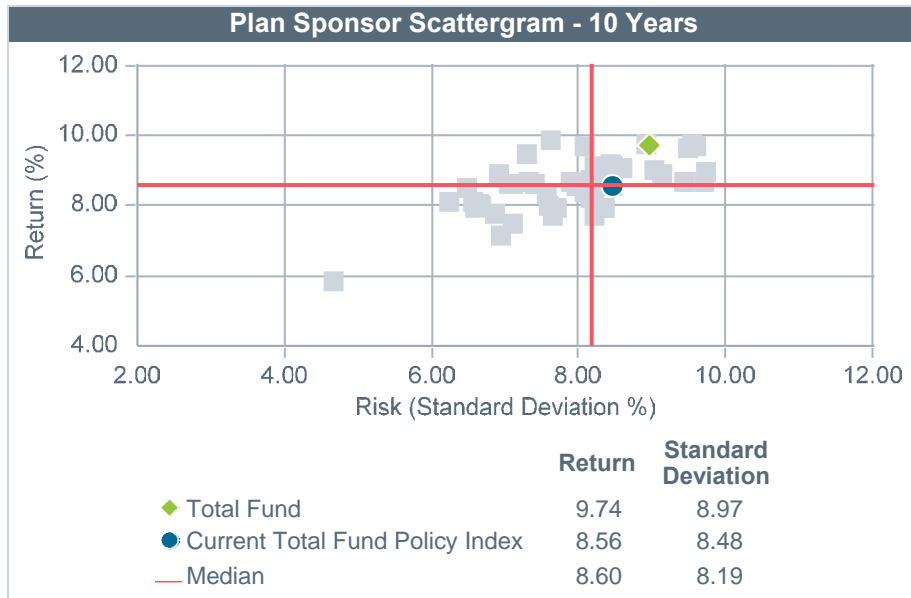
5 Years Ending December 31, 2018



Performance shown is gross of fees and client specific. Calculation is based on monthly periodicity. Managers with less history than the specified time period will not appear. Please see the Addendum for custom index definitions.

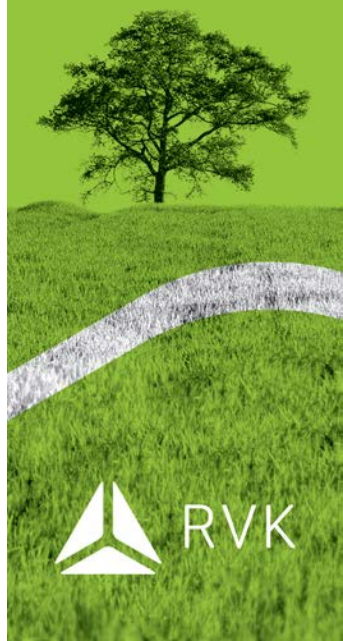


Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.



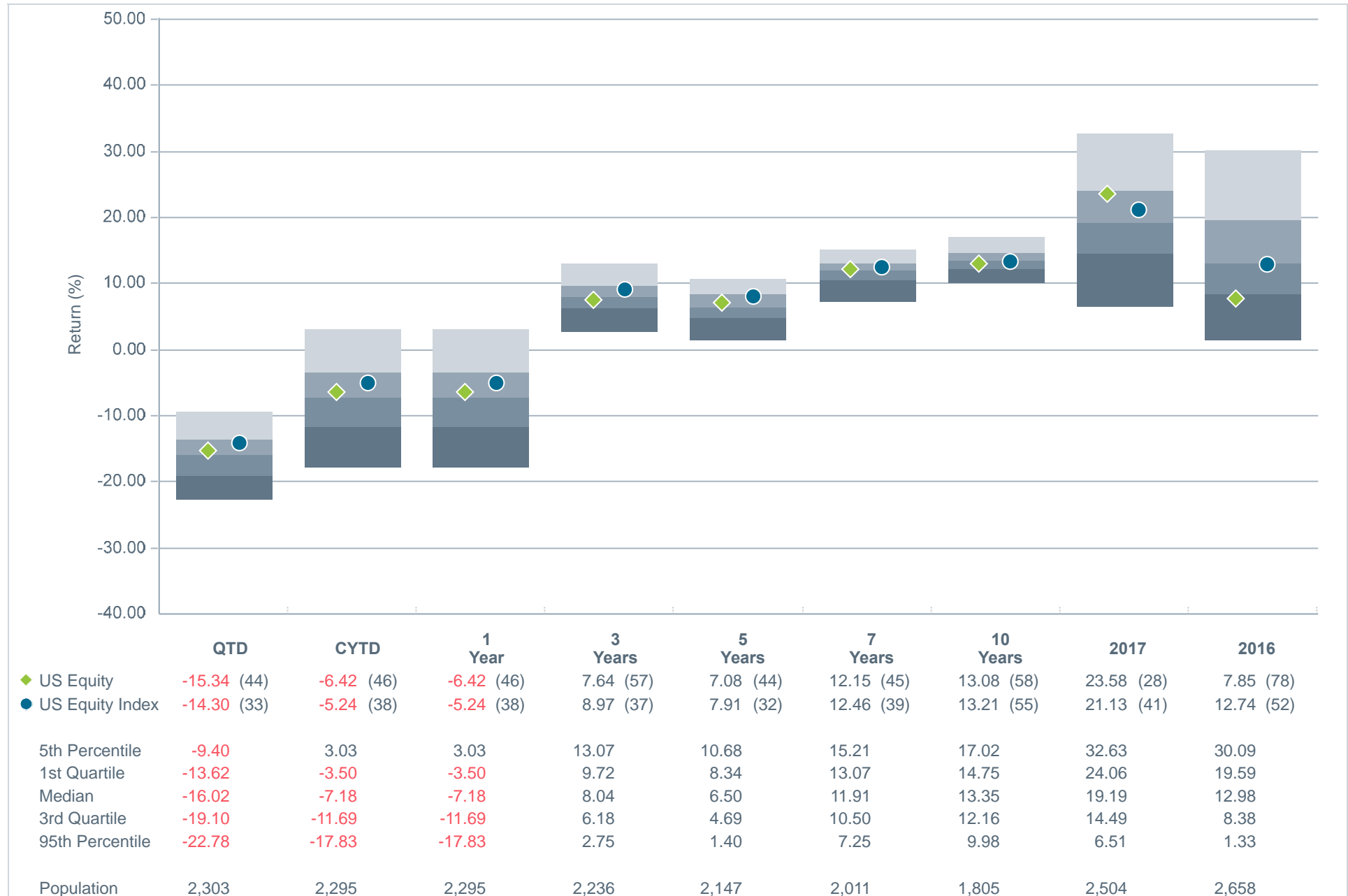
Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Composite Profiles

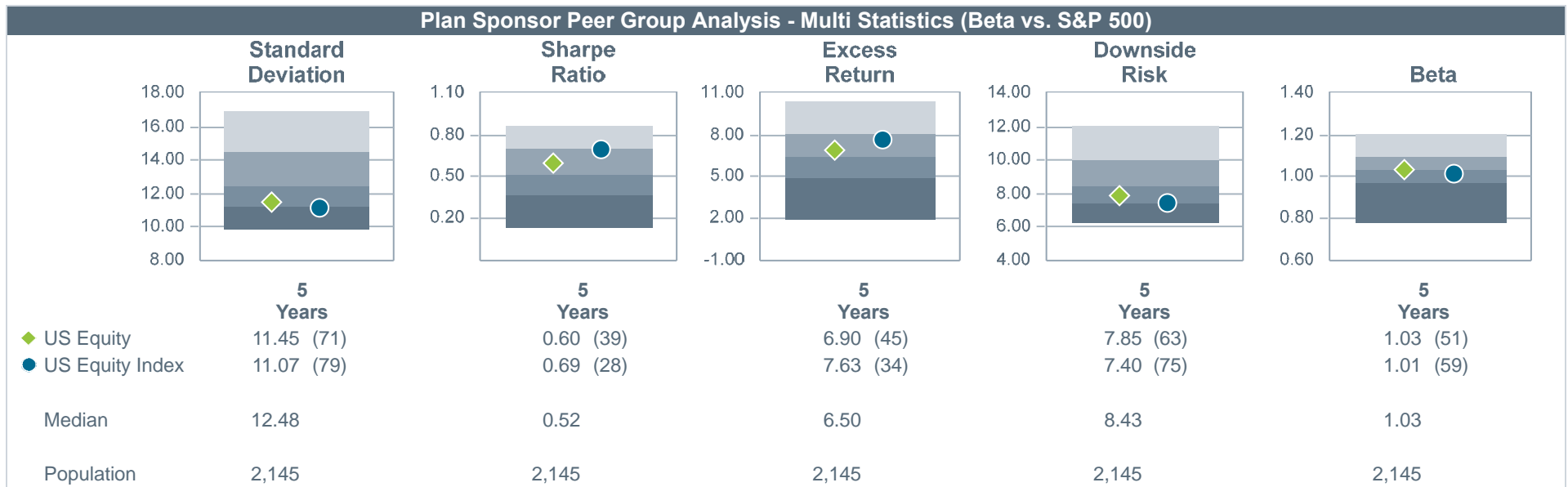
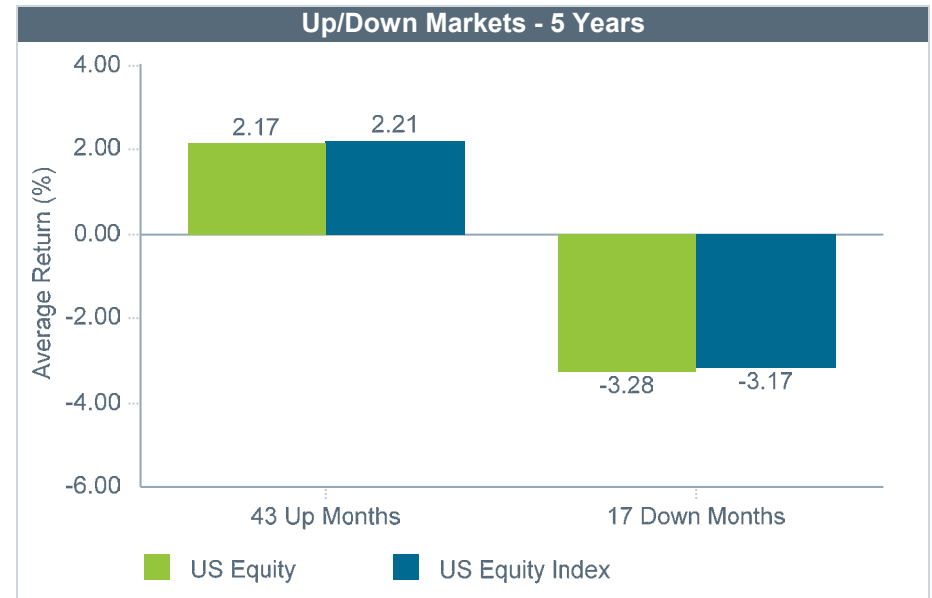
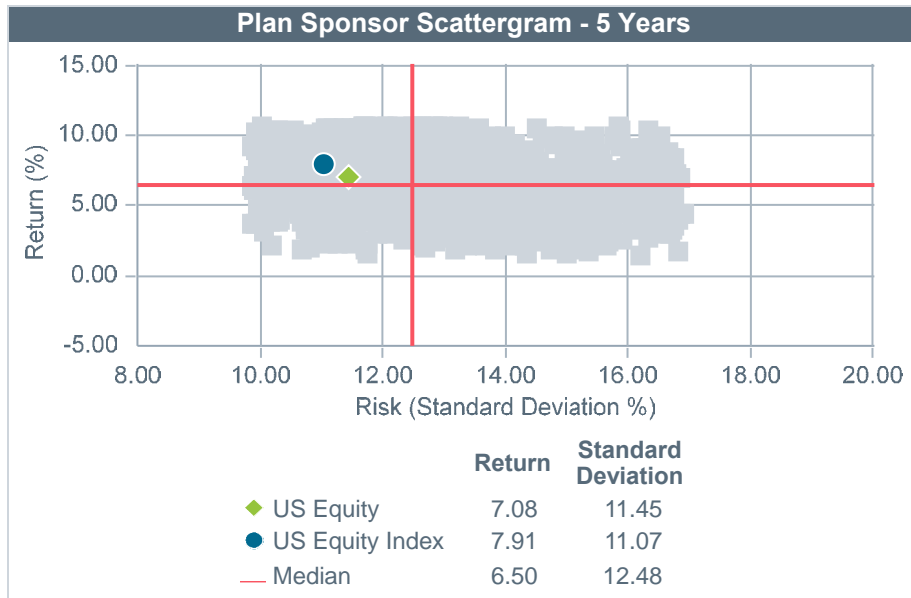


City of Jacksonville Employees' Retirement System
US Equity vs. IM U.S. Equity (SA+CF)
Peer Group Analysis

As of December 31, 2018



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



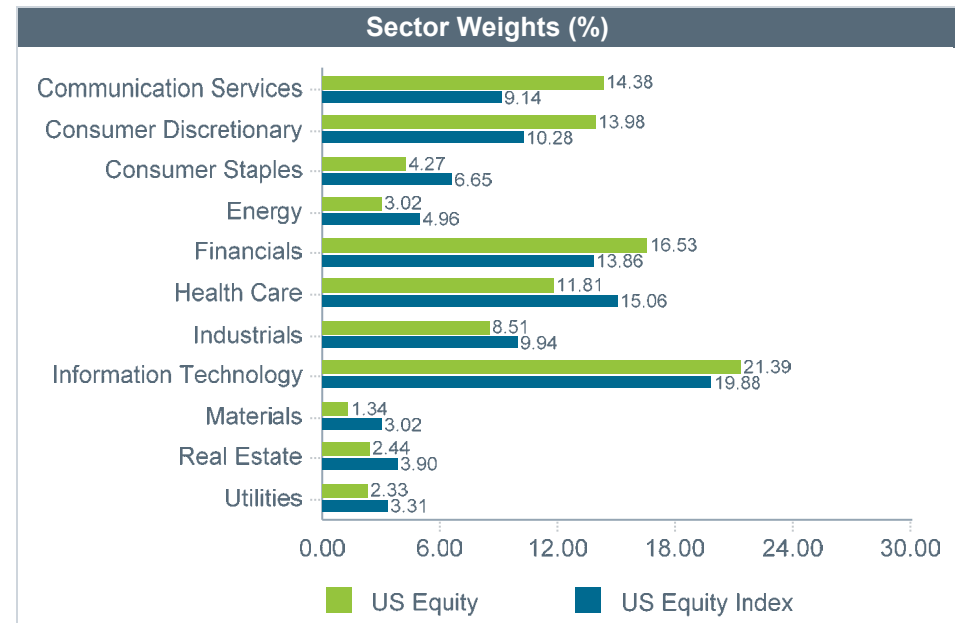
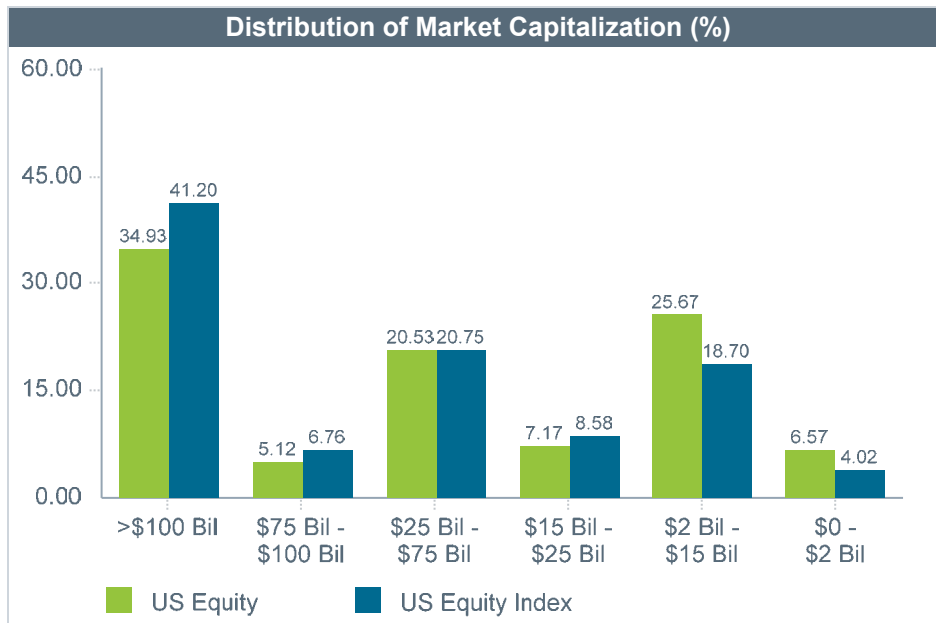
Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

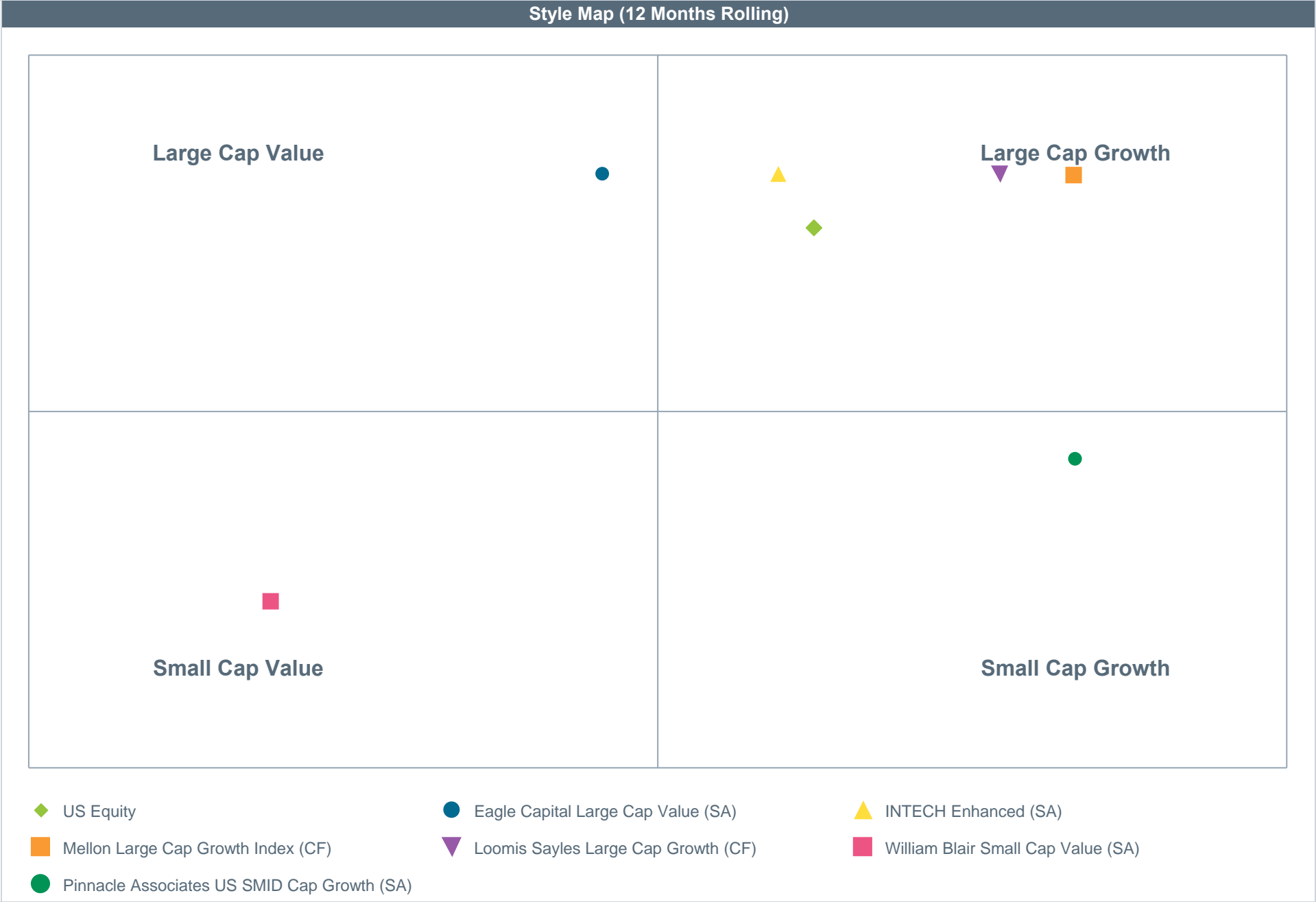
City of Jacksonville Employees' Retirement System
US Equity vs. US Equity Index
Portfolio Characteristics

As of December 31, 2018

Top Ten Equity Holdings			
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)
Microsoft Corp	4.11	3.06	1.05
Amazon.com Inc	3.67	2.43	1.24
Alphabet Inc	2.85	1.25	1.60
Berkshire Hathaway Inc	2.37	1.57	0.80
Oracle Corp	1.95	0.46	1.49
Facebook Inc	1.93	1.24	0.69
Unitedhealth Group Inc	1.90	0.95	0.95
Apple Inc	1.60	2.98	-1.38
Citigroup Inc	1.56	0.51	1.05
Visa Inc	1.39	0.92	0.47
% of Portfolio	23.33	15.37	7.96

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	166,441	167,103
Median Mkt. Cap (\$M)	9,432	1,418
Price/Earnings Ratio	18.28	16.99
Price/Book Ratio	3.22	3.04
5 Yr. EPS Growth Rate (%)	19.60	15.88
Current Yield (%)	1.52	2.14
Beta (5 Years, Monthly)	1.02	1.00
Number of Securities	805	3,015

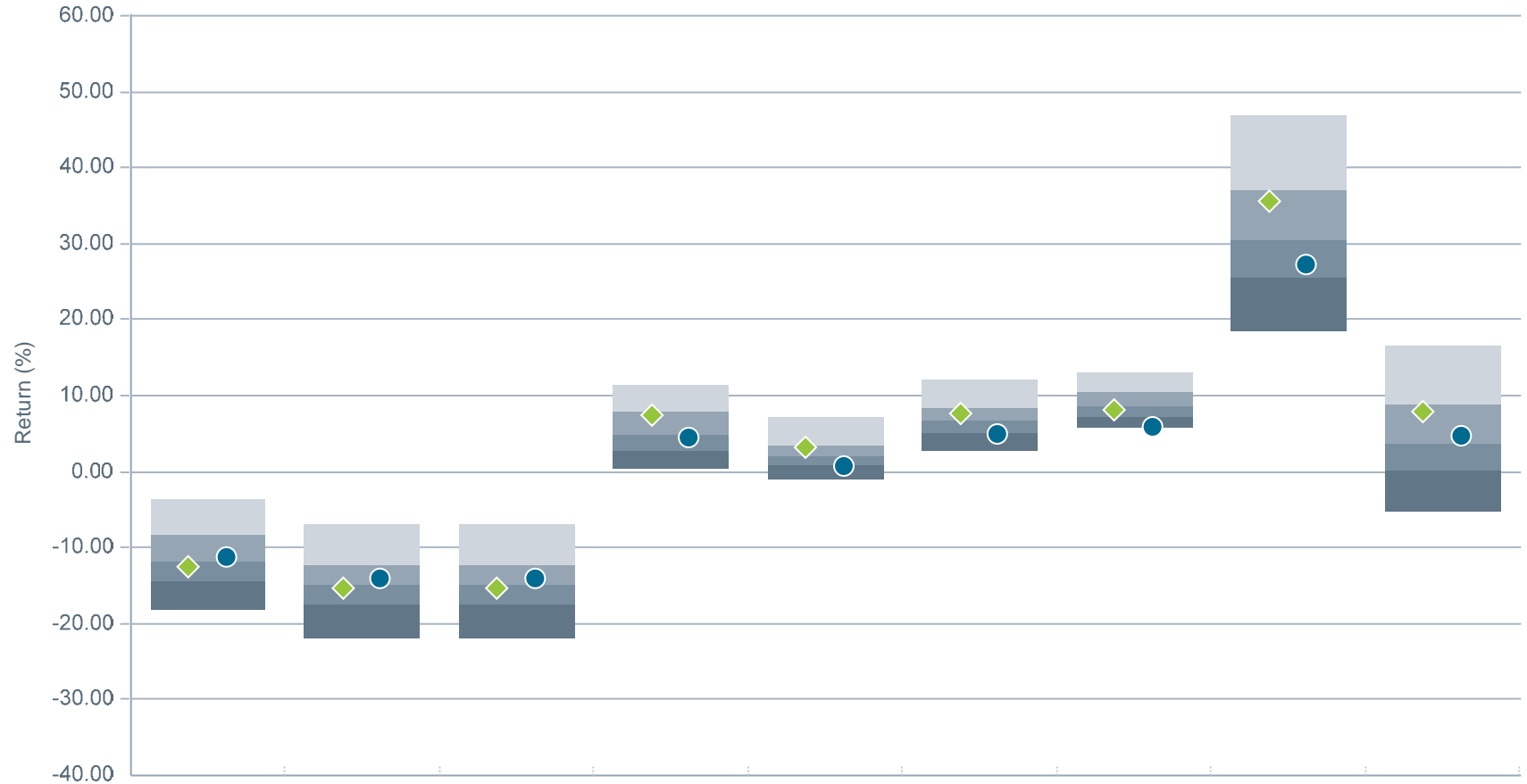




Calculation is based on monthly periodicity. This is a return based calculation.

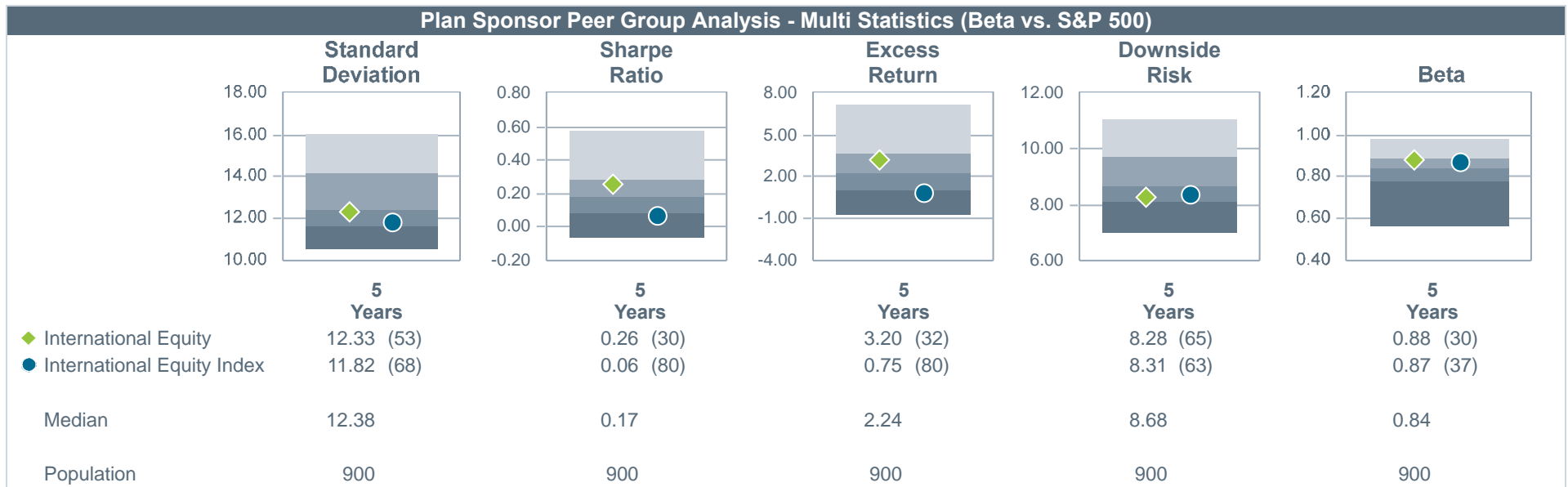
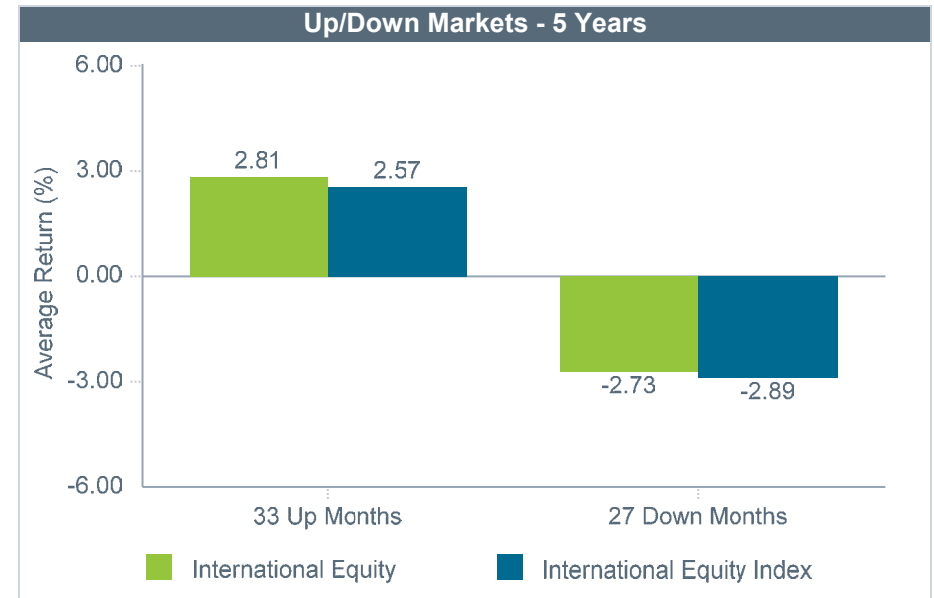
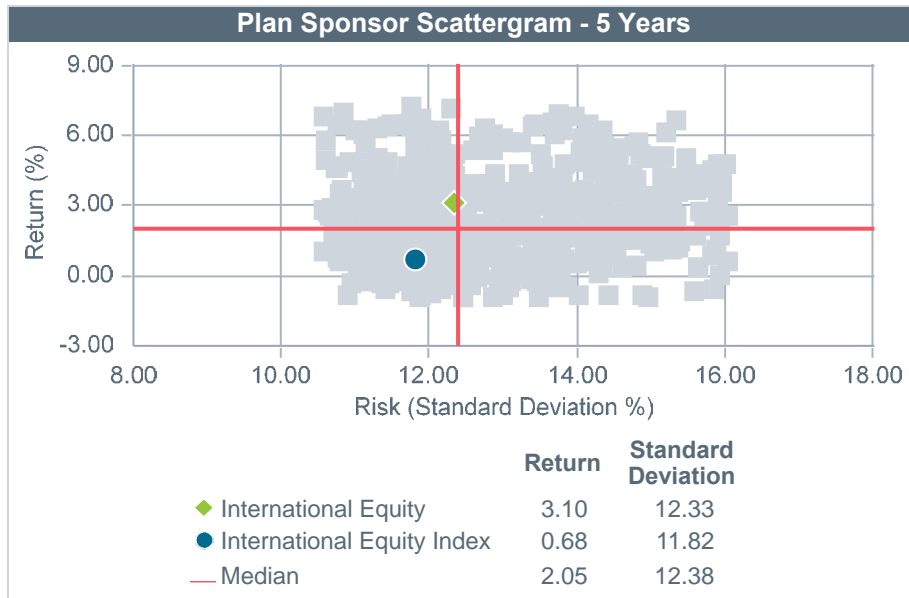
City of Jacksonville Employees' Retirement System
International Equity vs. IM International Equity (SA+CF)
Peer Group Analysis

As of December 31, 2018



	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016
◆ International Equity	-12.51 (55)	-15.42 (56)	-15.42 (56)	7.35 (28)	3.10 (31)	7.72 (33)	8.02 (62)	35.68 (30)	7.79 (30)
● International Equity Index	-11.46 (47)	-14.20 (44)	-14.20 (44)	4.48 (54)	0.68 (79)	4.85 (80)	5.74 (96)	27.19 (67)	4.50 (47)
5th Percentile	-3.50	-6.80	-6.80	11.51	7.20	12.07	12.96	46.85	16.57
1st Quartile	-8.28	-12.40	-12.40	7.89	3.54	8.25	10.38	36.95	8.84
Median	-11.85	-14.87	-14.87	4.79	2.05	6.63	8.56	30.50	3.74
3rd Quartile	-14.51	-17.53	-17.53	2.75	0.88	5.13	7.30	25.58	0.18
95th Percentile	-18.13	-21.91	-21.91	0.27	-0.97	2.65	5.80	18.48	-5.22
Population	1,055	1,040	1,040	989	900	789	654	1,103	1,146

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



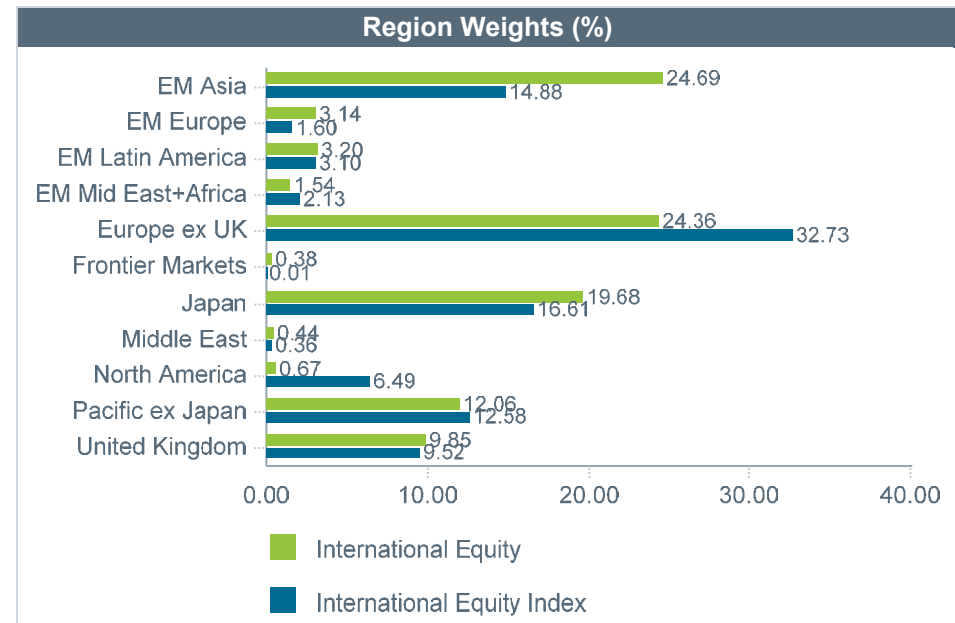
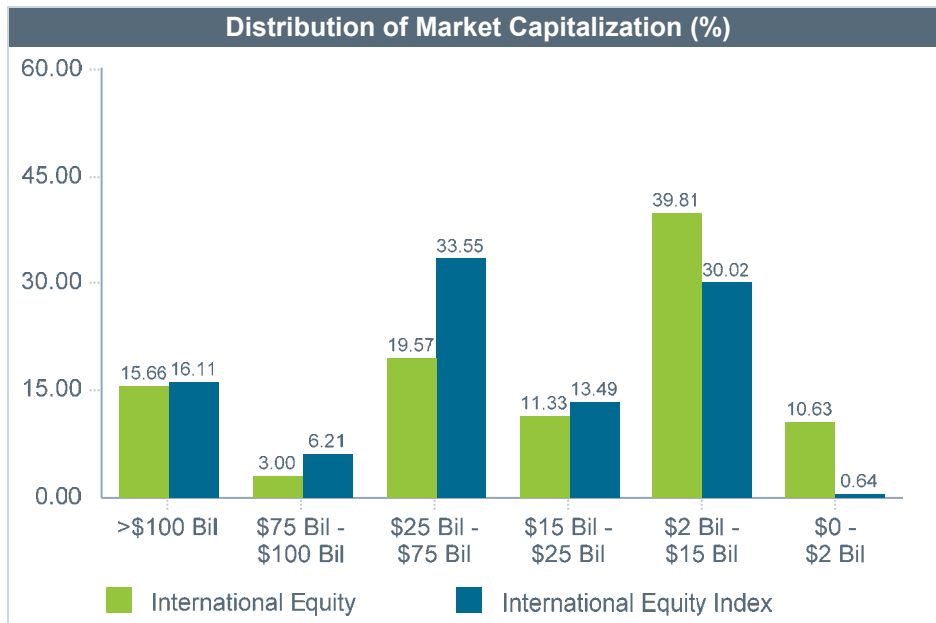
Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

City of Jacksonville Employees' Retirement System
International Equity vs. International Equity Index
Portfolio Characteristics

As of December 31, 2018

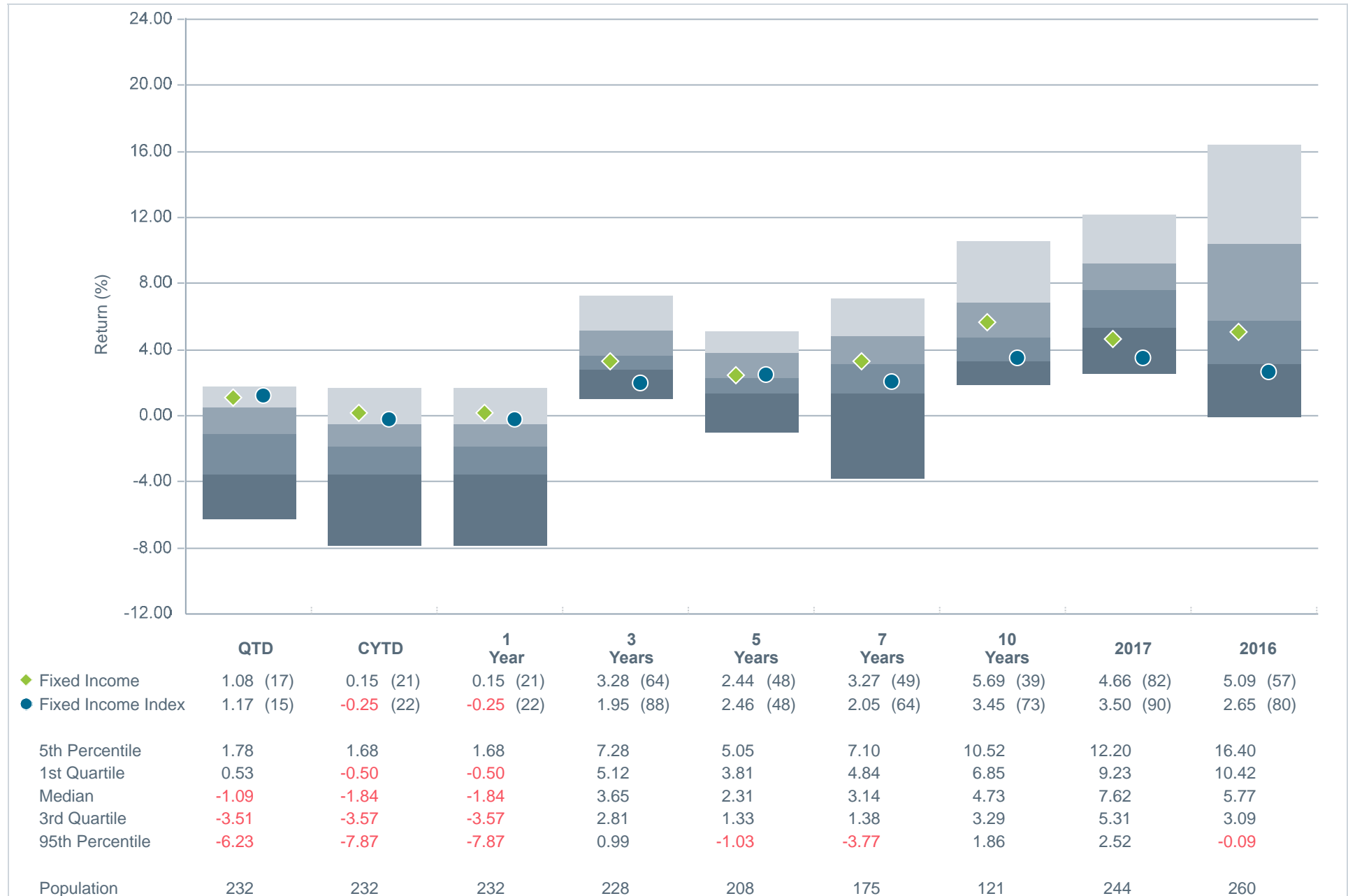
Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Sanofi	1.89	0.53	1.36	-2.62
Samsung Electronics Co Ltd	1.70	0.90	0.80	-16.16
Honda Motor Co Ltd	1.48	0.23	1.25	-12.07
China Mobile Ltd	1.45	0.32	1.13	-2.42
ASML Holding NV	1.41	0.35	1.06	-16.00
Tencent Holdings LTD	1.39	1.24	0.15	-2.93
Glaxosmithkline PLC	1.35	0.51	0.84	-4.05
Novartis AG	1.24	1.00	0.24	-1.23
Credit Suisse Group	1.22	0.15	1.07	-27.37
Roche Holding AG	1.18	0.94	0.24	1.55
% of Portfolio	14.31	6.17	8.14	

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	46,665	58,116
Median Mkt. Cap (\$M)	1,864	7,298
Price/Earnings Ratio	10.52	12.03
Price/Book Ratio	2.31	2.15
5 Yr. EPS Growth Rate (%)	11.82	10.64
Current Yield (%)	3.45	3.54
Beta (5 Years, Monthly)	1.03	1.00
Number of Securities	825	2,136

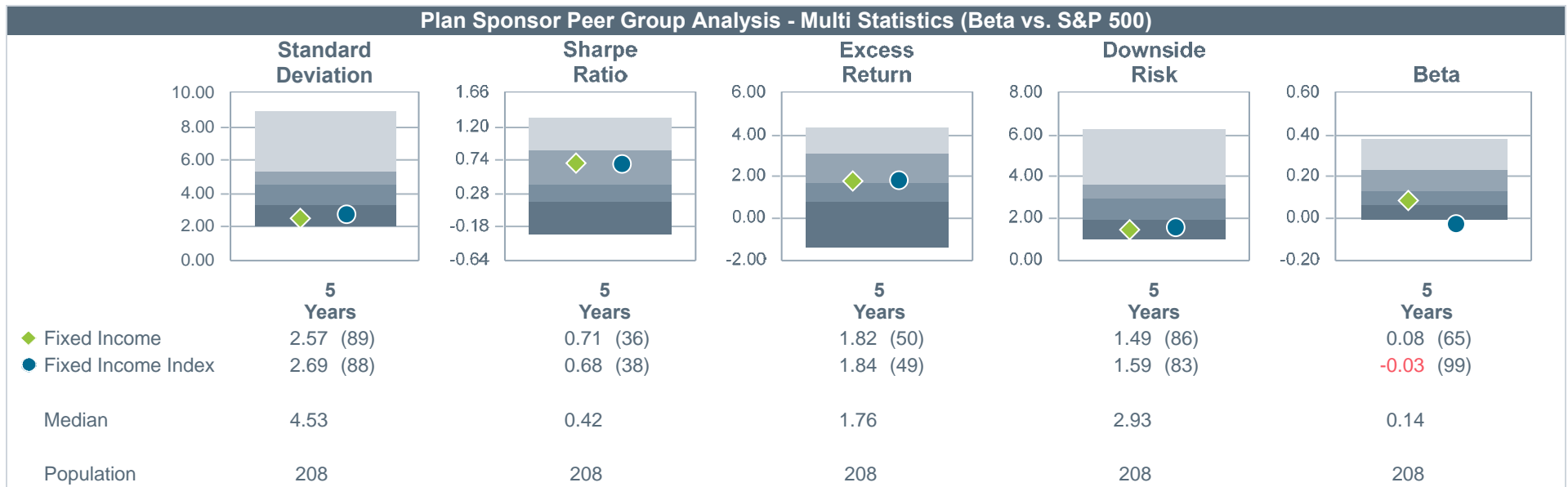
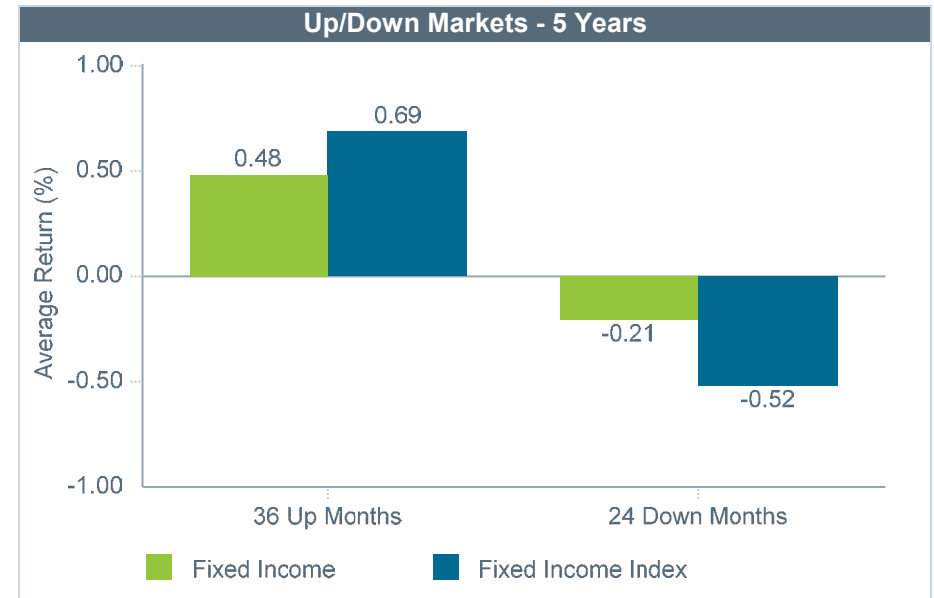
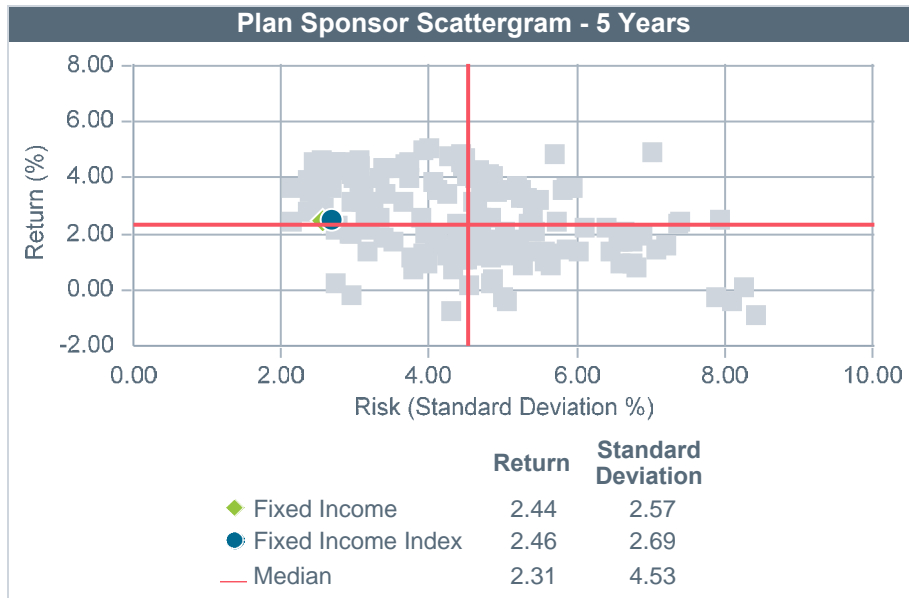


City of Jacksonville Employees' Retirement System
Fixed Income vs. IM Global Fixed Income (SA+CF)
Peer Group Analysis

As of December 31, 2018



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

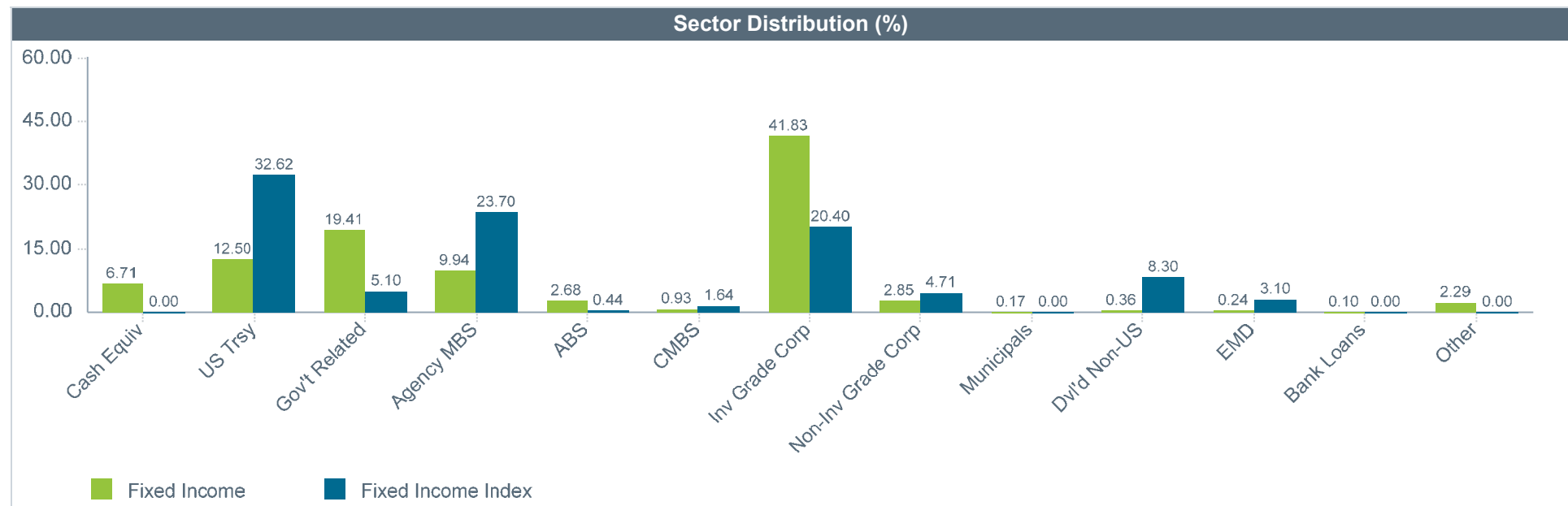


Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

City of Jacksonville Employees' Retirement System
Fixed Income vs. Fixed Income Index
Portfolio Characteristics

As of December 31, 2018

Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	3.19	5.67
Avg. Maturity	5.25	8.01
Avg. Quality	A2	N/A
Yield To Maturity (%)	5.67	3.73
Coupon Rate (%)	3.91	3.53
Current Yield (%)	3.95	0.21

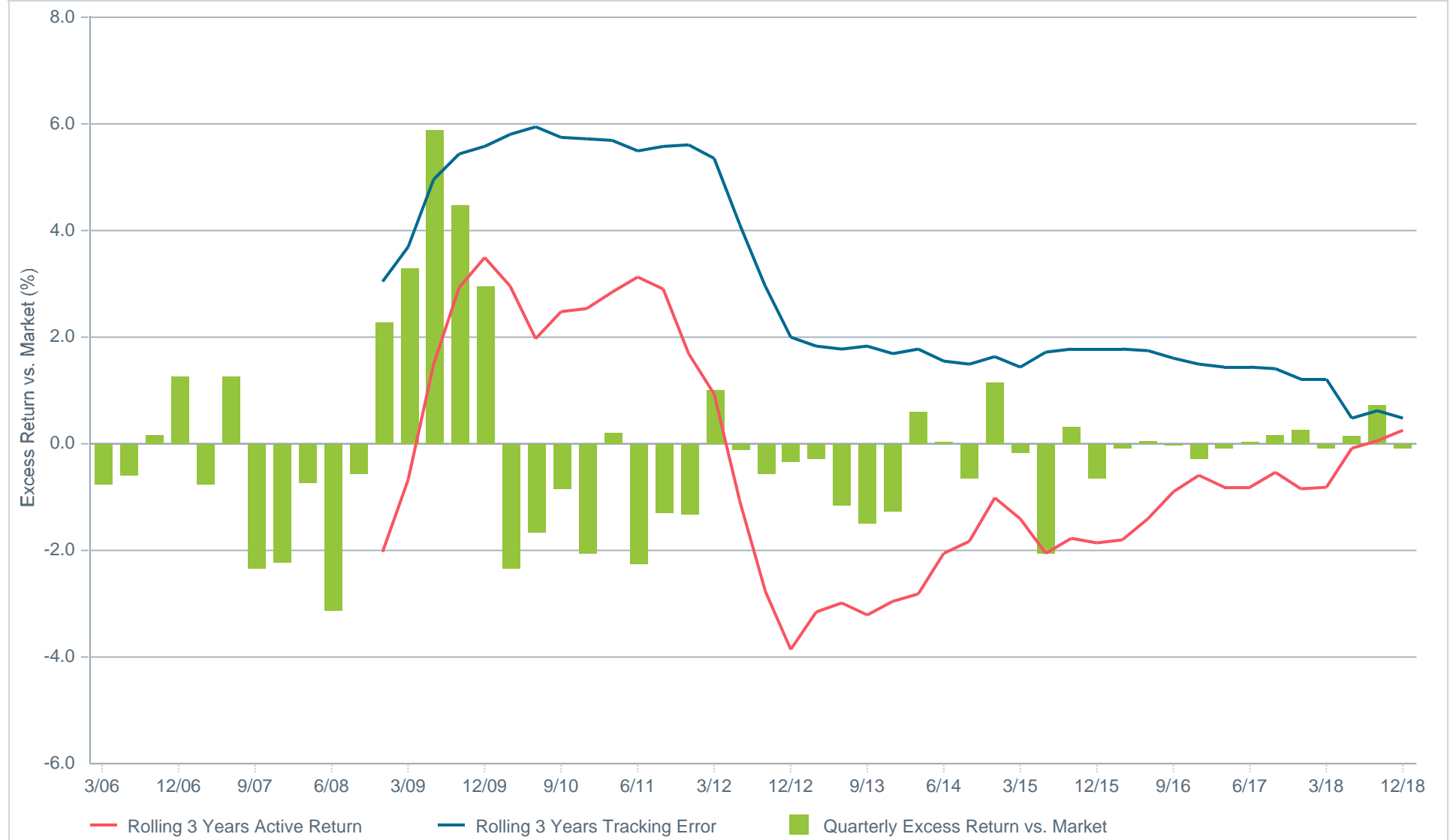


Cash equivalents are defined as any security with duration under one year. Allocation to other consists of convertibles, preferred/equity, sovereign bonds and derivatives.

City of Jacksonville Employees' Retirement System
Real Estate vs. NCREIF ODCE Index (AWA) (Gross)
Comparative Performance & Rolling Return

As of December 31, 2018

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
Real Estate	1.68	1.68	9.11	9.11	8.50	10.26	10.23	7.18	7.99	8.42	12.17	6.54	12/01/2005
NCREIF ODCE Index (AWA) (Gross)	1.76	1.76	8.35	8.35	8.24	10.41	10.99	7.00	7.62	8.77	15.02	7.28	
Difference	-0.08	-0.08	0.76	0.76	0.26	-0.15	-0.76	0.18	0.37	-0.35	-2.85	-0.74	

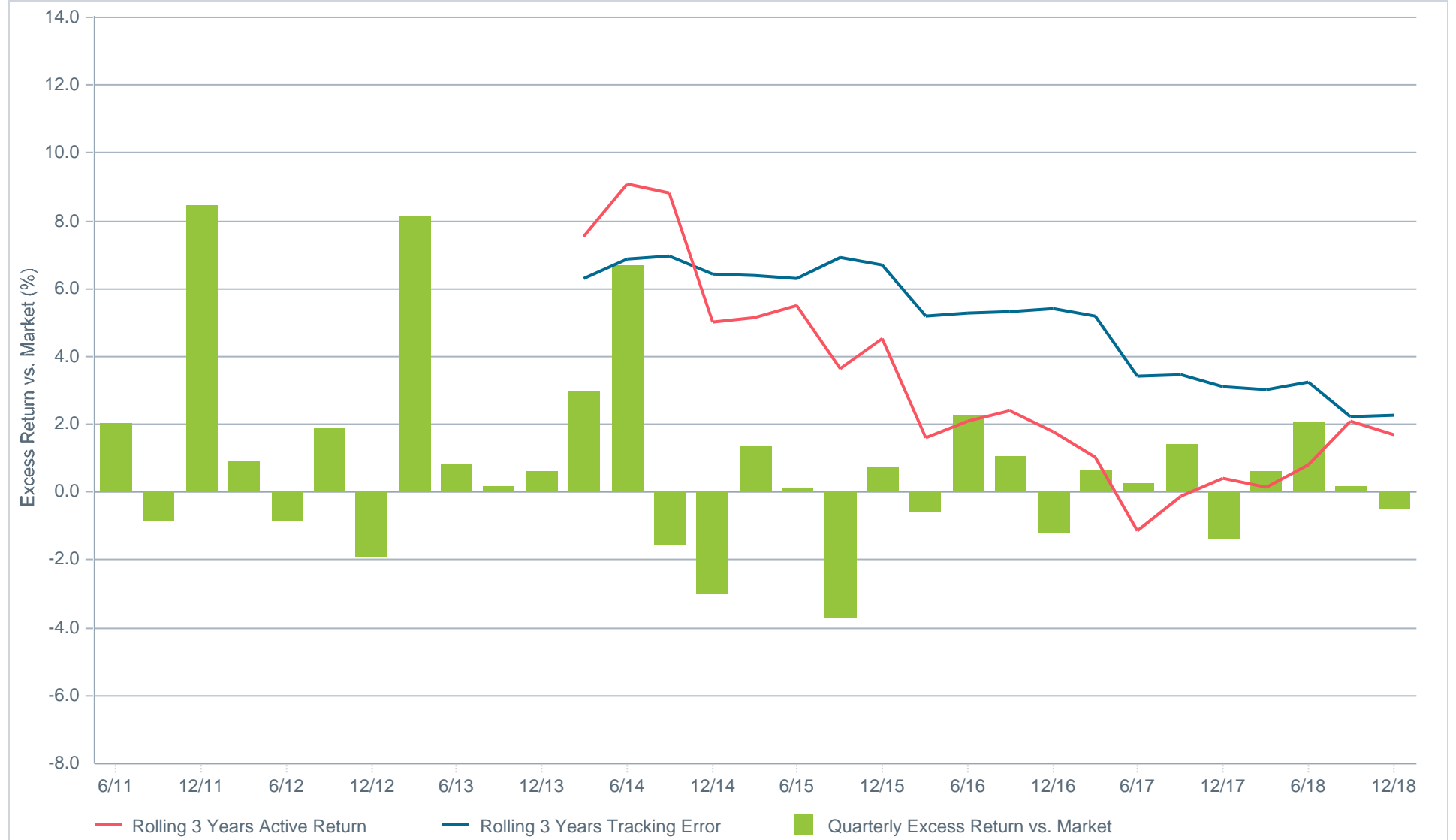


Performance shown is gross of fees. Calculation is based on quarterly periodicity.

City of Jacksonville Employees' Retirement System
Diversifying Assets vs. Diversifying Assets Index
Comparative Performance & Rolling Return

As of December 31, 2018

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	Since Incep.	Inception Date
Diversifying Assets	-12.45	-12.45	-4.42	-4.42	3.04	0.42	5.14	N/A	0.33	14.07	-18.30	6.40	03/01/2011
Diversifying Assets Index	-11.91	-11.91	-6.47	-6.47	1.50	-0.93	2.85	7.28	-0.66	12.53	-16.63	3.13	
Difference	-0.54	-0.54	2.05	2.05	1.54	1.35	2.29	N/A	0.99	1.54	-1.67	3.27	



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

Investment Manager Profiles

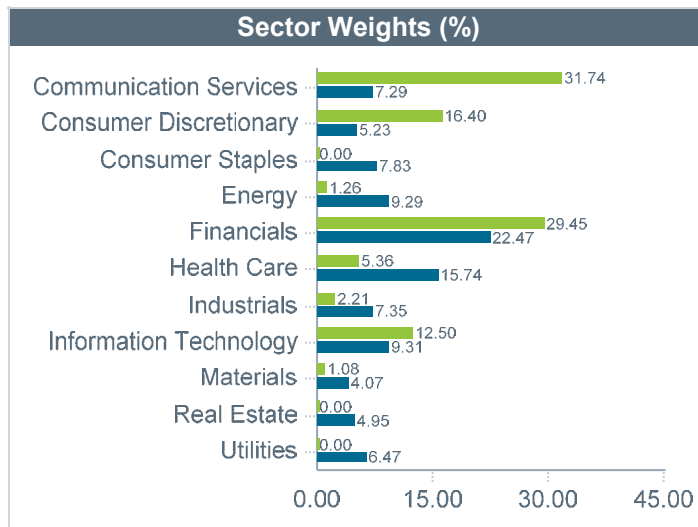
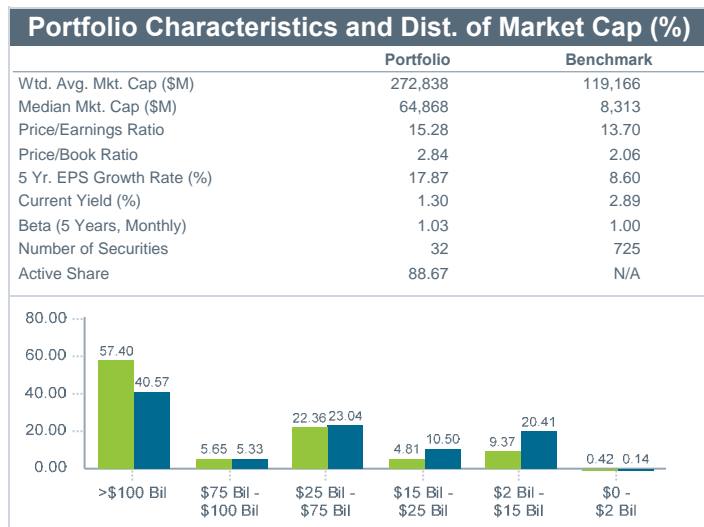
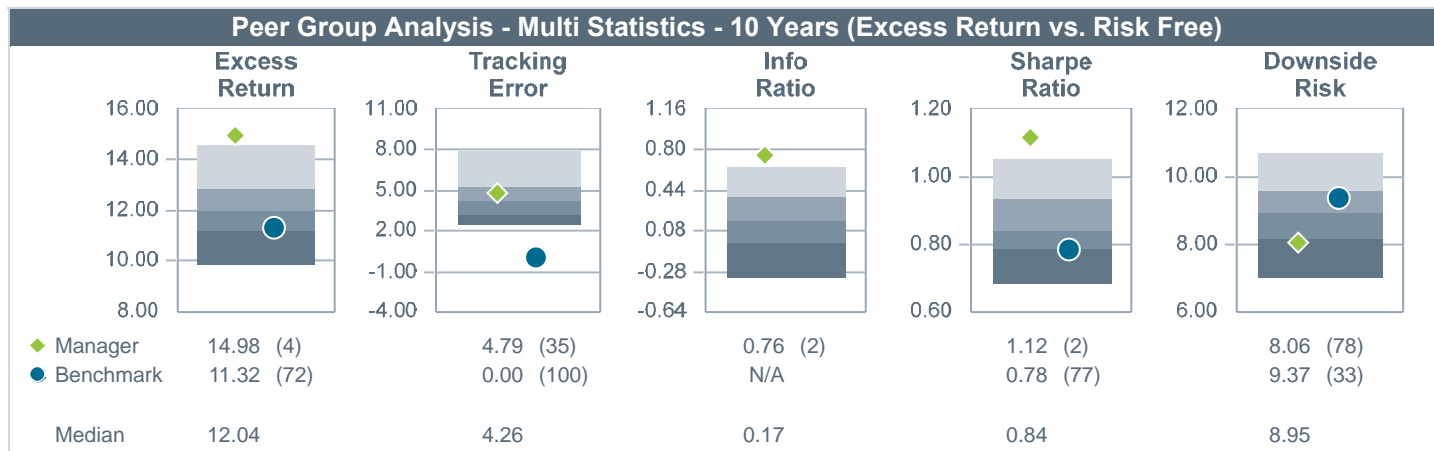
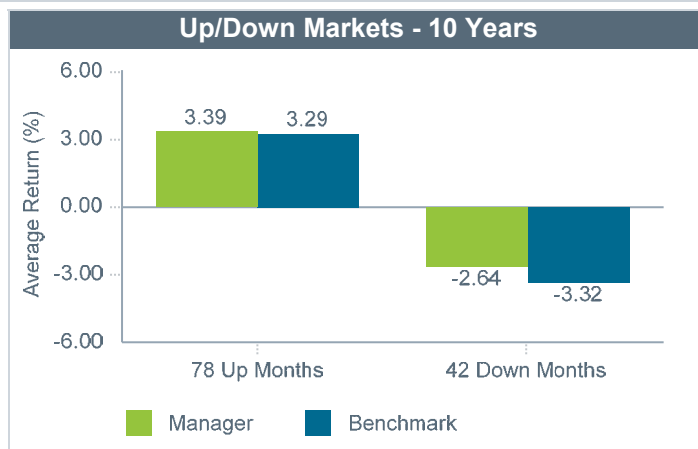
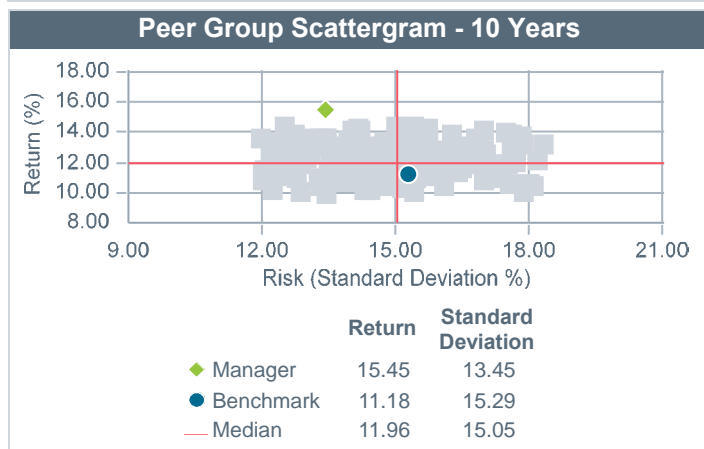
Manager: Eagle Capital Large Cap Value (SA)

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	-13.51	-3.90	9.97	8.97	13.94	15.45	24.19	11.46	2.34	12.90	37.83
Benchmark	-11.72	-8.27	6.95	5.95	11.02	11.18	13.66	17.34	-3.83	13.45	32.53
Difference	-1.79	4.37	3.02	3.02	2.92	4.27	10.53	-5.88	6.17	-0.55	5.30
Peer Group Median	-13.55	-8.41	7.27	6.22	11.39	11.96	17.22	14.49	-2.28	12.21	34.27
Rank	50	15	8	6	2	3	7	73	11	42	25
Population	313	313	308	301	285	262	343	372	389	413	413



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

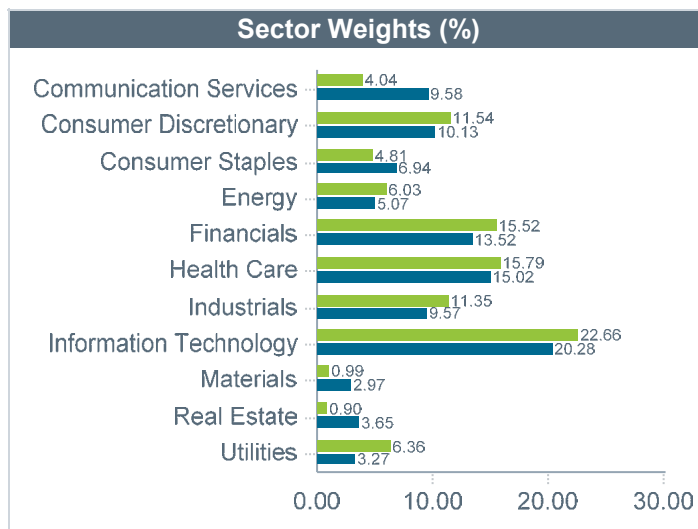
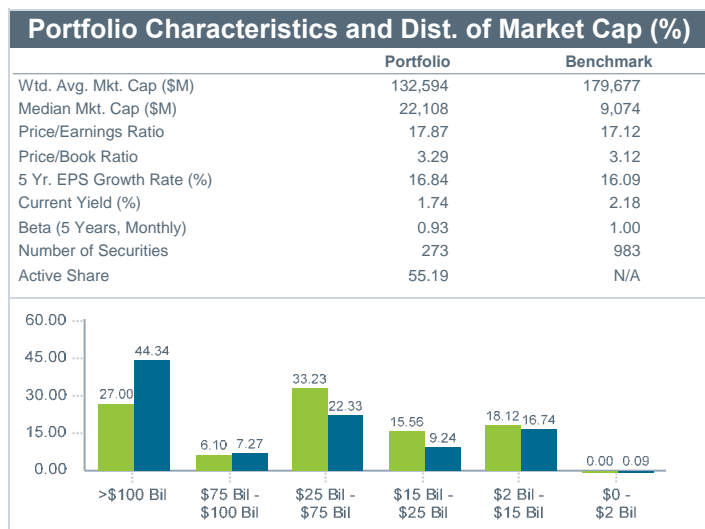
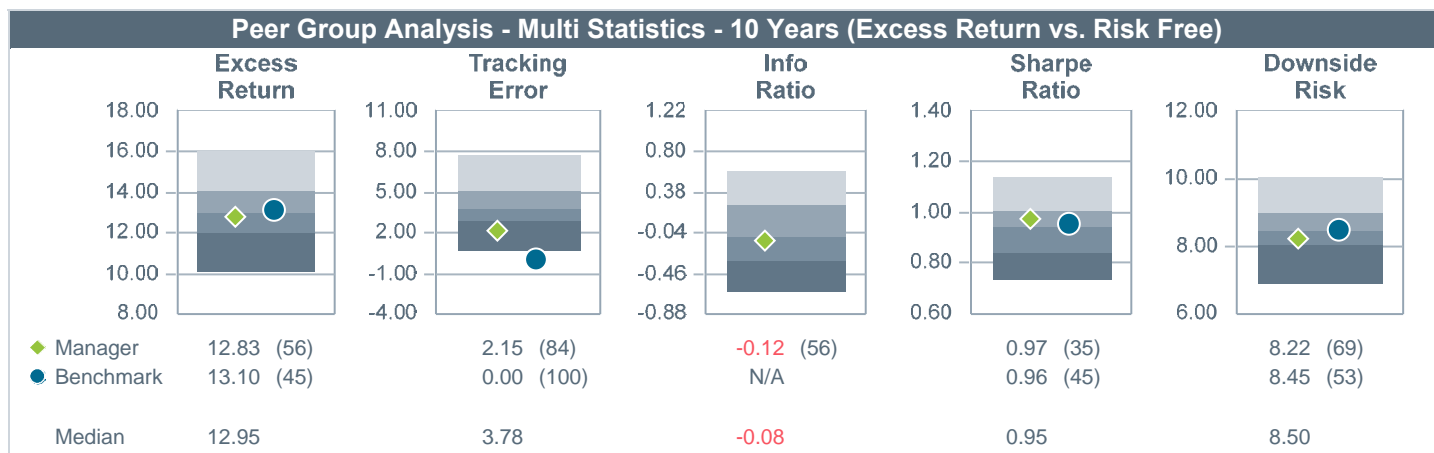
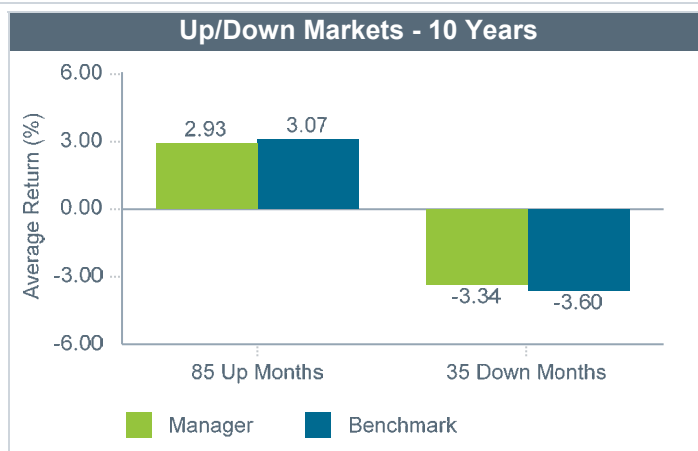
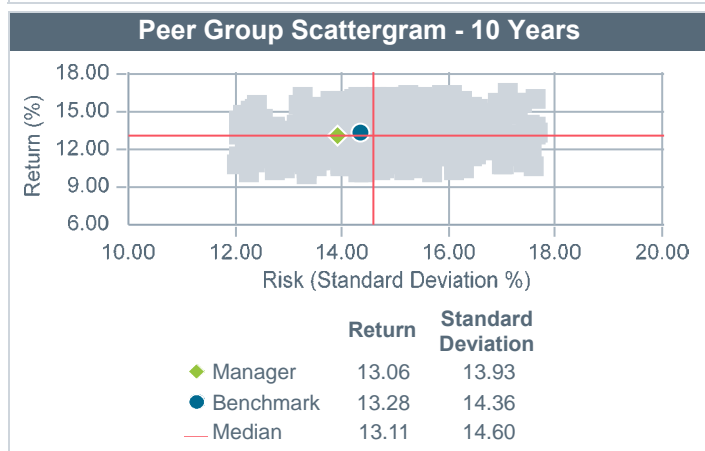
Manager: INTECH Enhanced (SA)

As of December 31, 2018

Benchmark: Russell 1000 Index

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

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-15.22	-7.29	7.42	8.12	12.35	13.06	23.52	8.24	3.16	15.56	32.88
Benchmark	-13.82	-4.78	9.09	8.21	12.63	13.28	21.69	12.05	0.92	13.24	33.11
Difference	-1.40	-2.51	-1.67	-0.09	-0.28	-0.22	1.83	-3.81	2.24	2.32	-0.23
Peer Group Median	-13.93	-5.16	8.62	7.99	12.51	13.11	21.67	10.98	0.94	12.92	33.51
Rank	72	70	71	47	55	53	35	69	31	15	58
Population	967	966	941	917	864	795	1,066	1,153	1,227	1,285	1,312



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

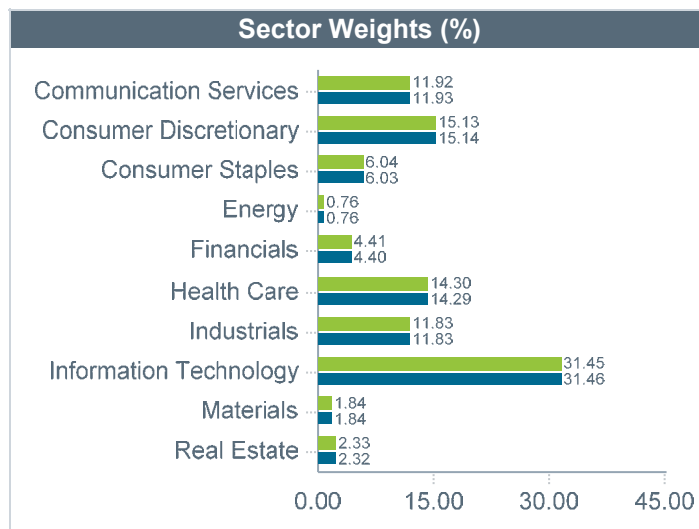
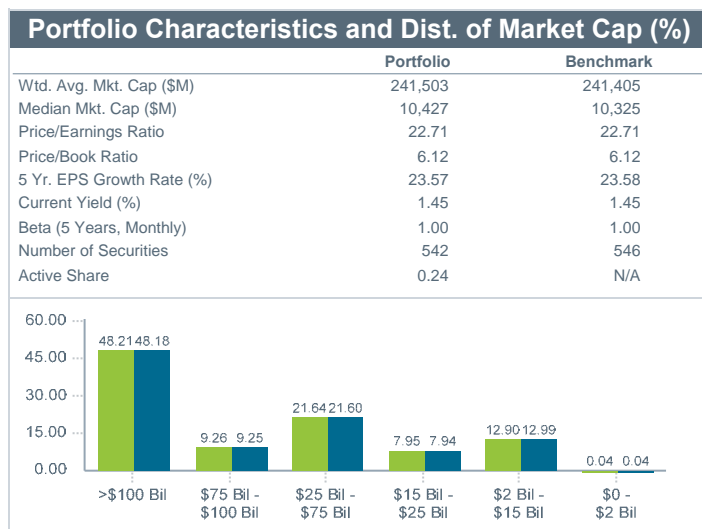
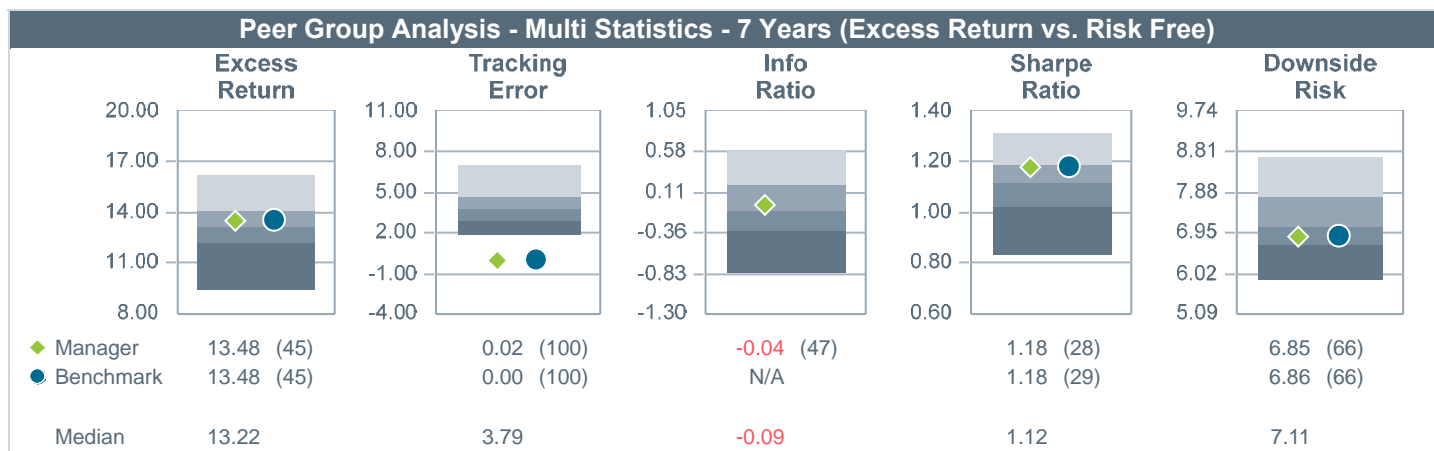
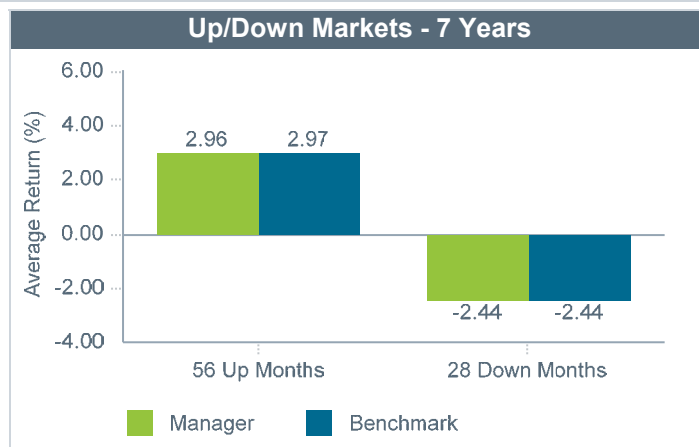
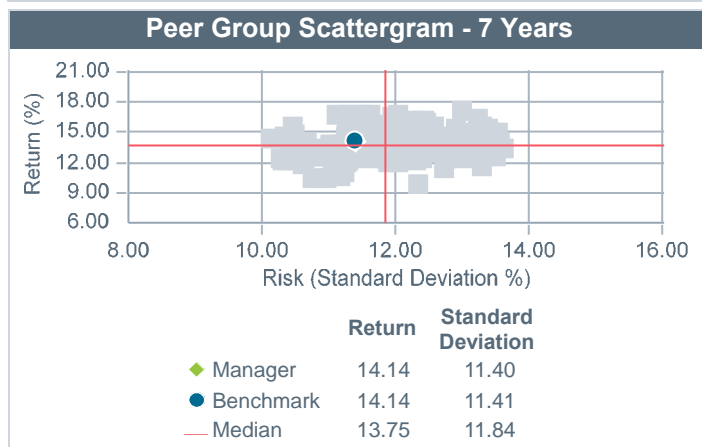
Manager: Mellon EB DV Non-SL Lg Cap Grth Stock Index (CF)

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	-15.89	-1.52	11.14	10.40	14.14	N/A	30.20	7.07	5.65	13.06	33.47
Benchmark	-15.89	-1.51	11.15	10.40	14.14	15.29	30.21	7.08	5.67	13.05	33.48
Difference	0.00	-0.01	-0.01	0.00	0.00	N/A	-0.01	-0.01	-0.02	0.01	-0.01
Peer Group Median	-15.00	-1.20	10.15	9.66	13.75	14.89	28.11	4.65	5.07	12.02	34.52
Rank	62	54	29	32	43	N/A	38	26	46	39	59
Population	257	256	244	239	225	212	283	308	337	348	353



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

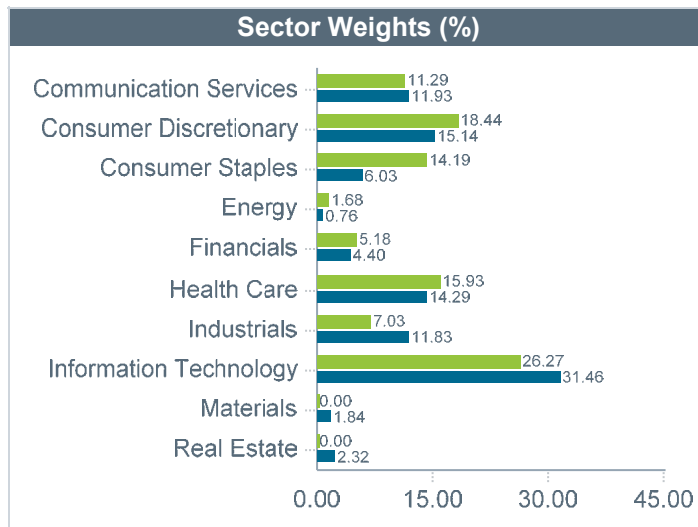
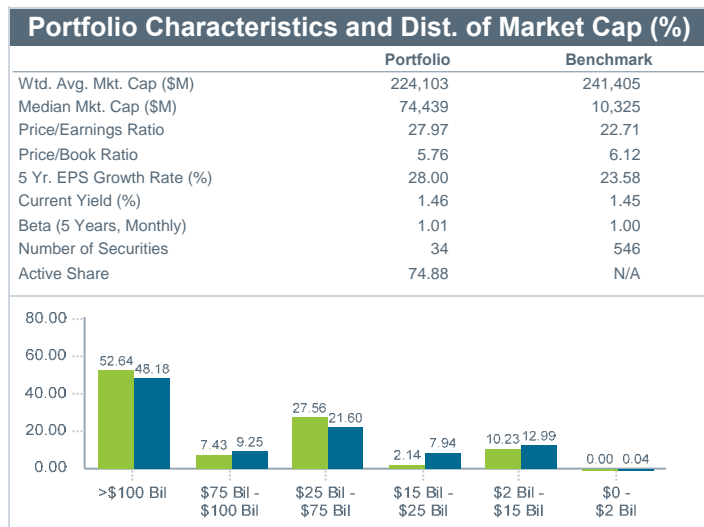
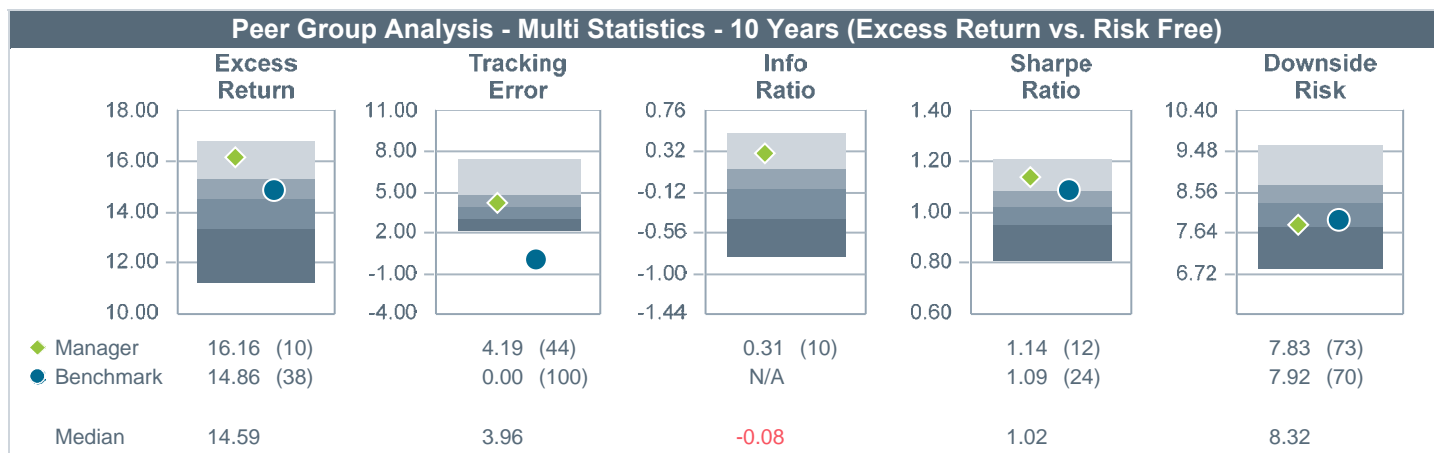
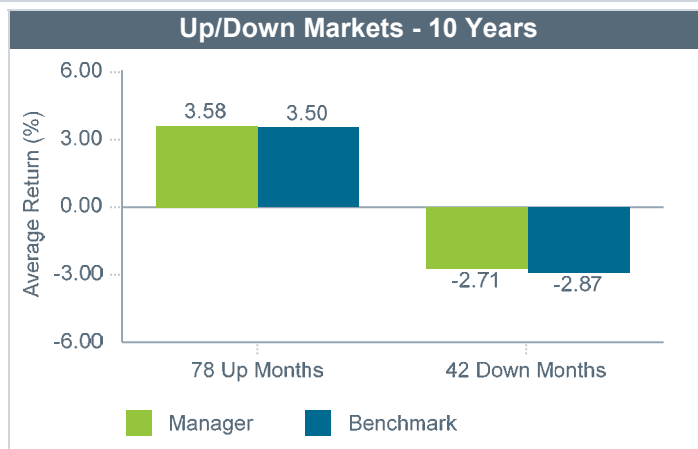
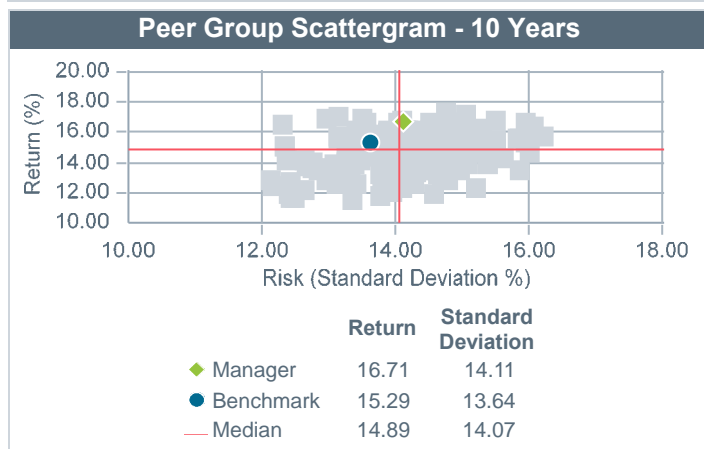
Manager: Loomis, Sayles & Co. Lrg Cap Grth (CF)

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	-11.58	-1.72	11.96	11.73	16.16	16.71	34.03	6.54	10.99	11.75	36.84
Benchmark	-15.89	-1.51	11.15	10.40	14.14	15.29	30.21	7.08	5.67	13.05	33.48
Difference	4.31	-0.21	0.81	1.33	2.02	1.42	3.82	-0.54	5.32	-1.30	3.36
Peer Group Median	-15.00	-1.20	10.15	9.66	13.75	14.89	28.11	4.65	5.07	12.02	34.52
Rank	13	55	19	13	10	9	15	33	11	55	29
Population	257	256	244	239	225	212	283	308	337	348	353



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

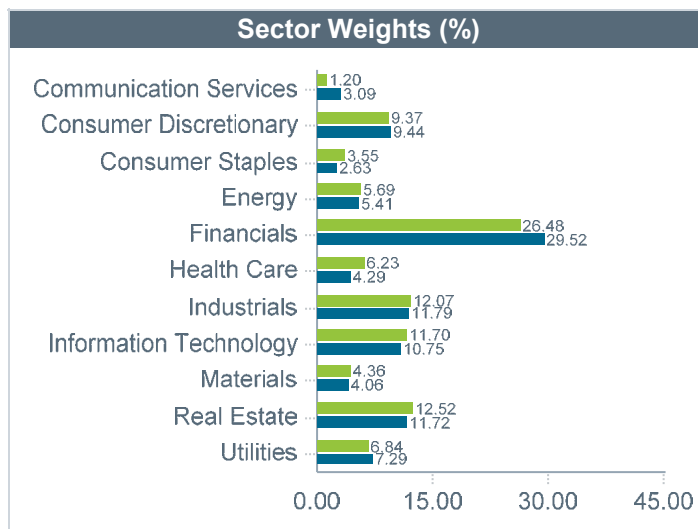
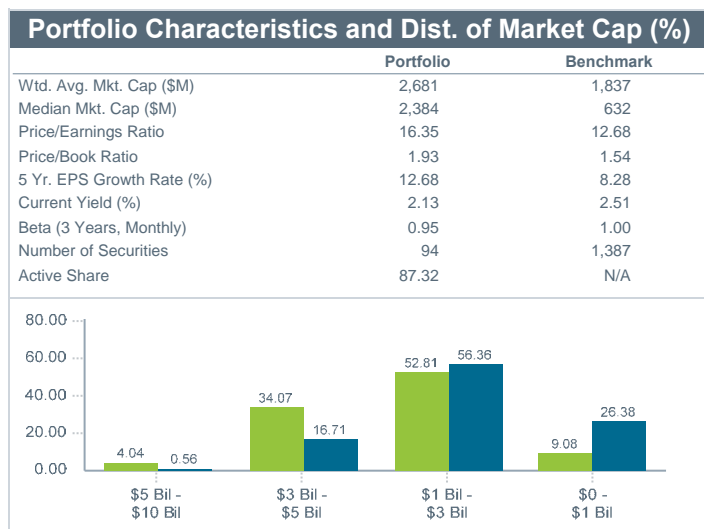
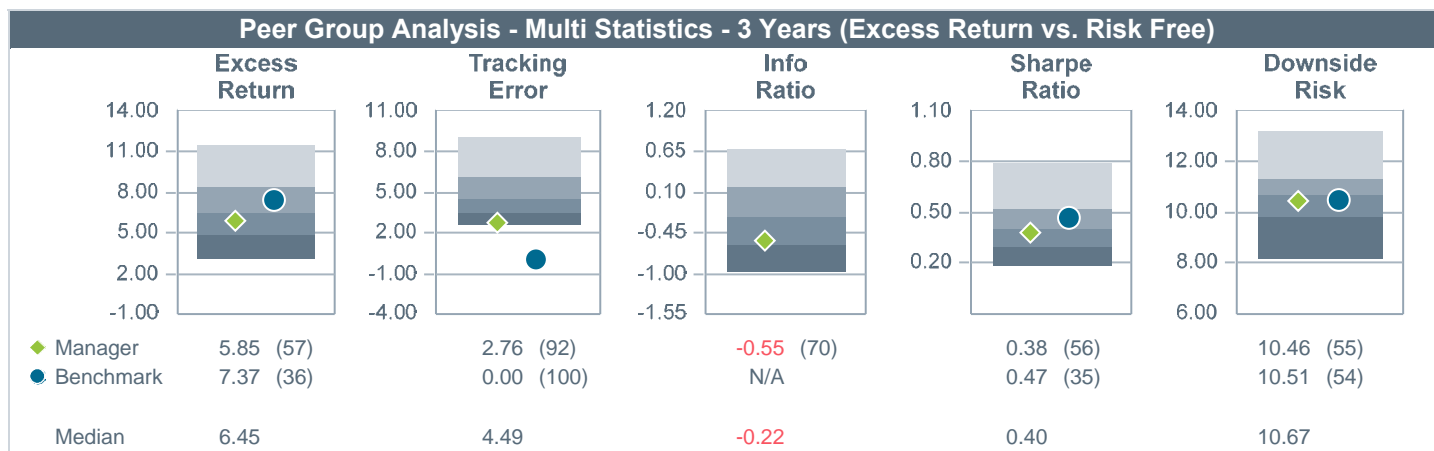
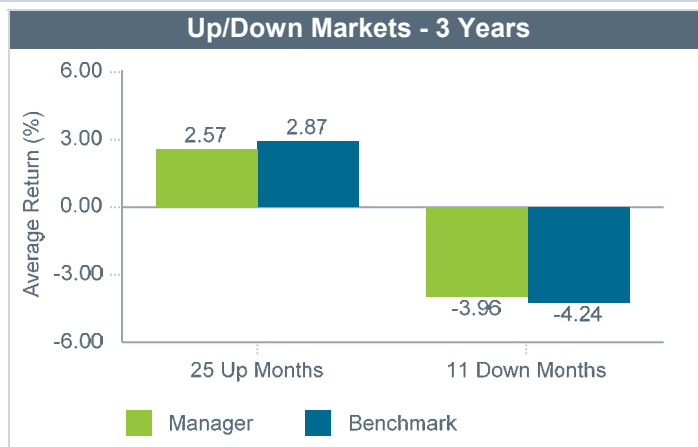
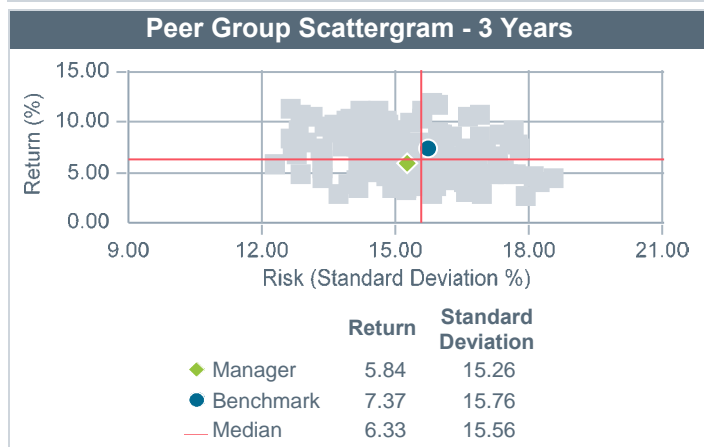
Manager: William Blair Small Cap Value (SA)

As of December 31, 2018

Benchmark: Russell 2000 Val Index

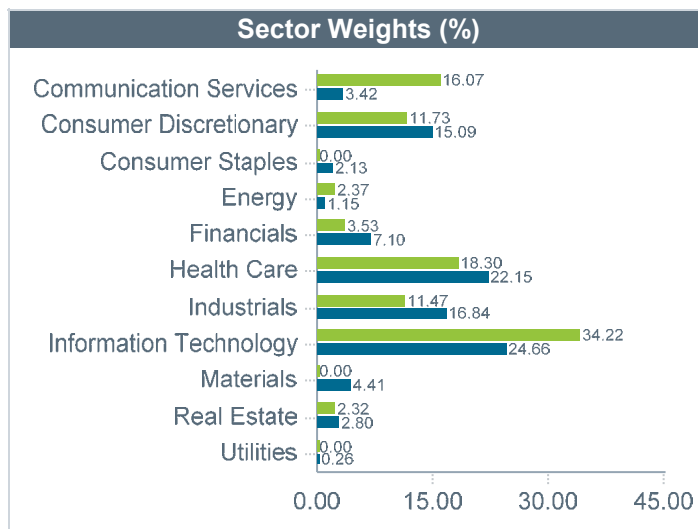
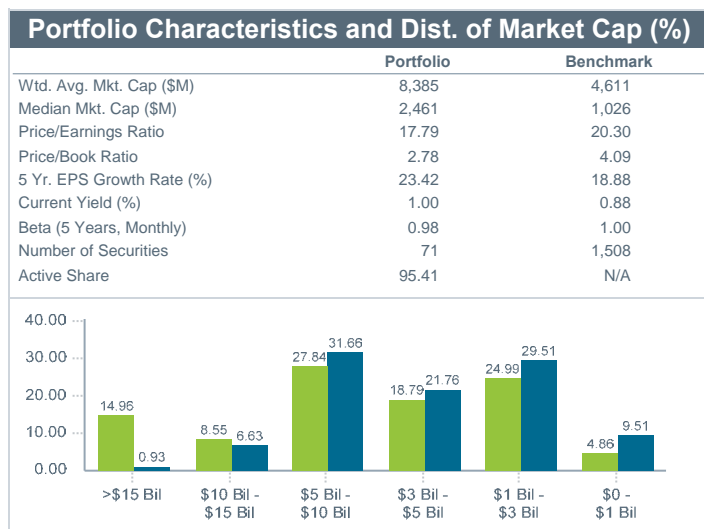
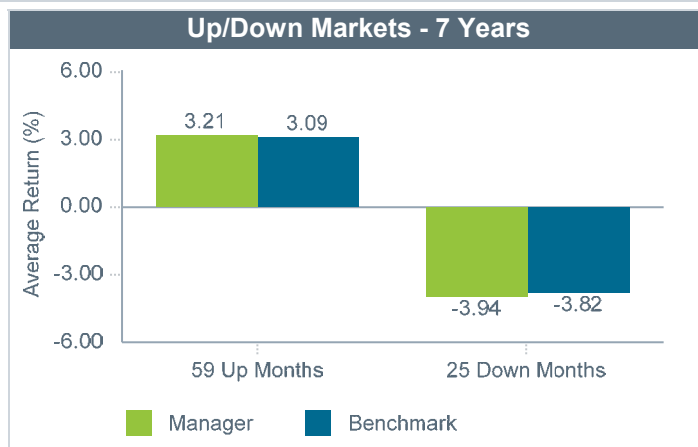
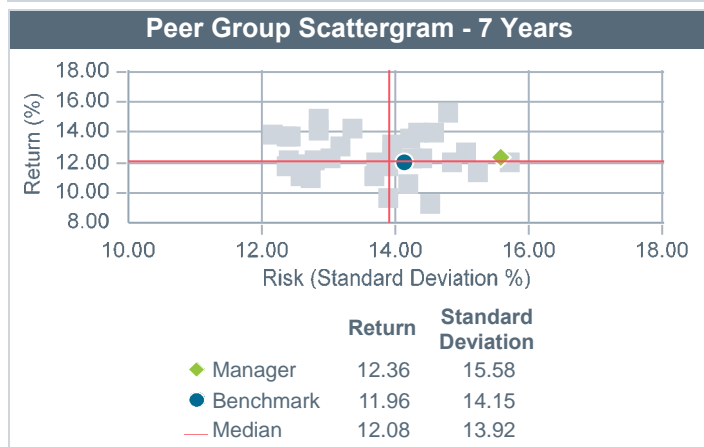
Peer Group: IM U.S. Small Cap Value Equity (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-19.09	-14.72	5.84	N/A	N/A	N/A	8.97	27.58	-4.33	N/A	N/A
Benchmark	-18.67	-12.86	7.37	3.61	9.57	10.40	7.84	31.74	-7.47	4.22	34.52
Difference	-0.42	-1.86	-1.53	N/A	N/A	N/A	1.13	-4.16	3.14	N/A	N/A
Peer Group Median	-19.19	-14.33	6.33	4.12	10.47	13.10	11.60	26.17	-4.28	5.66	38.07
Rank	49	54	56	N/A	N/A	N/A	68	43	52	N/A	N/A
Population	205	204	201	194	182	169	226	233	243	254	256



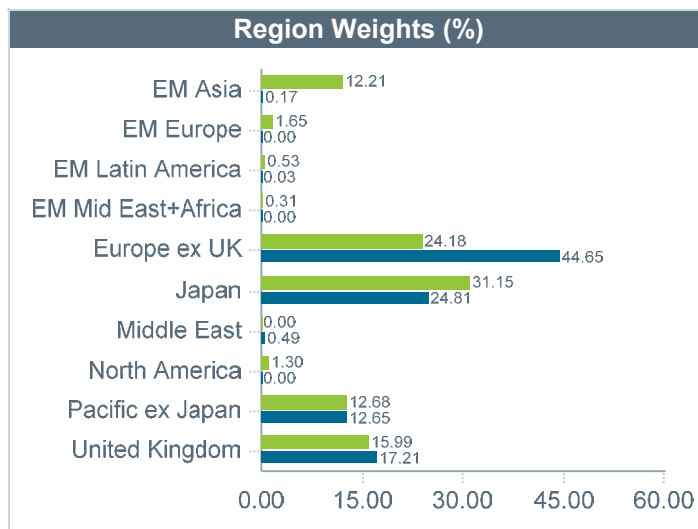
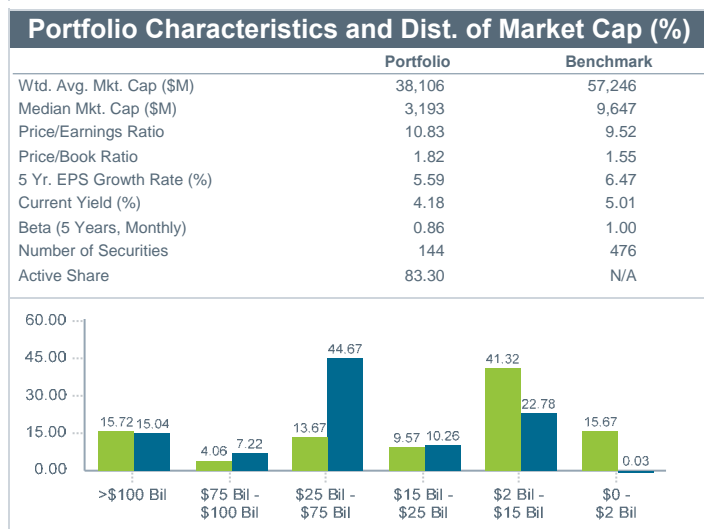
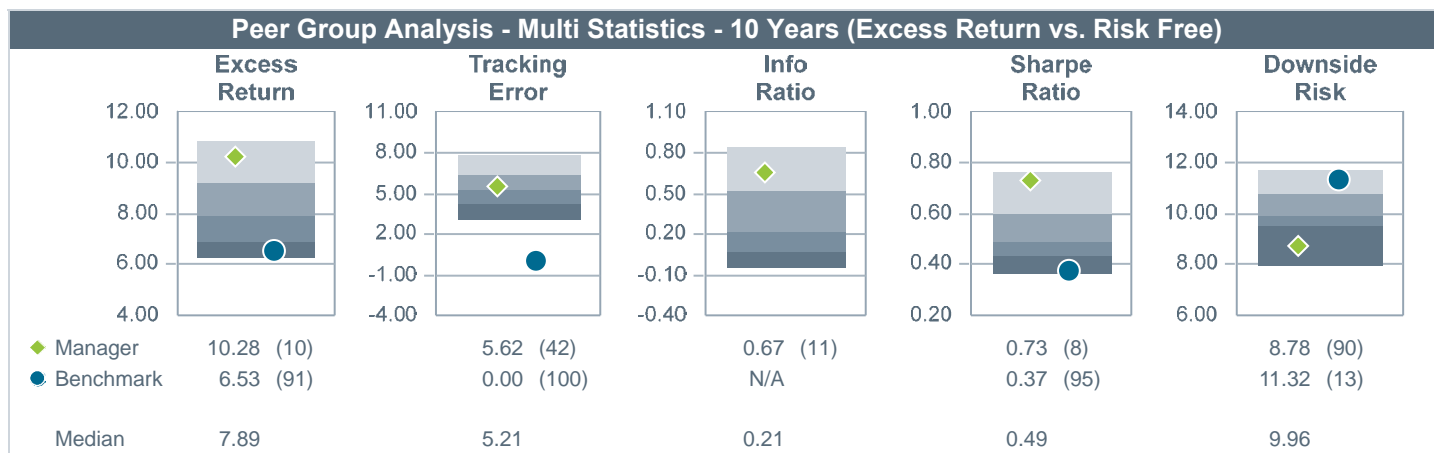
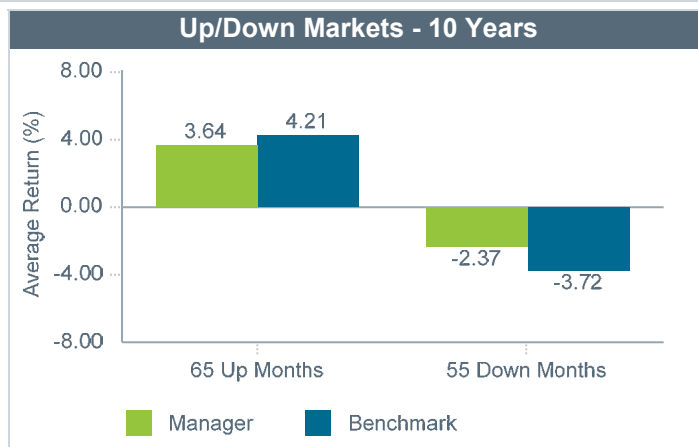
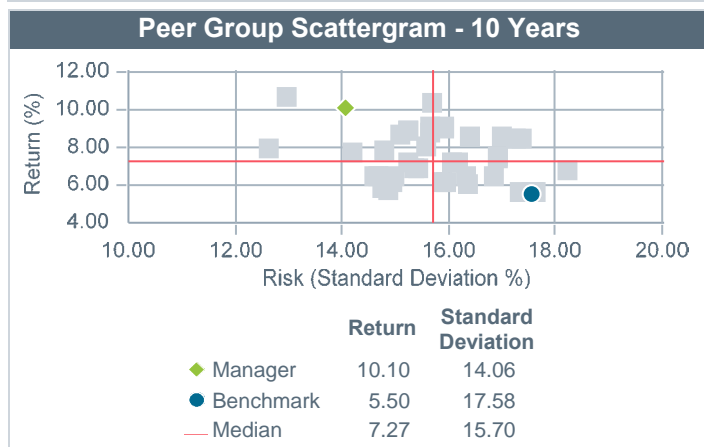
Performance shown is gross of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-18.69	-10.36	5.93	5.37	12.36	N/A	25.99	5.26	0.62	8.59	38.85
Benchmark	-20.08	-7.47	8.11	6.19	11.96	14.76	24.46	9.73	-0.19	7.05	40.65
Difference	1.39	-2.89	-2.18	-0.82	0.40	N/A	1.53	-4.47	0.81	1.54	-1.80
Peer Group Median	-19.57	-4.53	9.51	6.62	12.08	15.25	24.77	8.56	0.11	5.59	40.20
Rank	33	89	92	75	39	N/A	44	77	39	24	65
Population	61	60	55	46	41	36	62	69	70	73	73



Performance shown is gross of fees and client 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	-10.80	-13.74	6.16	3.94	9.20	10.10	28.10	8.27	2.35	-0.92	30.12
Benchmark	-11.70	-14.78	2.82	-0.61	4.96	5.50	21.44	5.02	-5.68	-5.39	22.95
Difference	0.90	1.04	3.34	4.55	4.24	4.60	6.66	3.25	8.03	4.47	7.17
Peer Group Median	-13.21	-15.76	2.87	0.76	6.21	7.27	24.17	3.15	-1.05	-4.30	24.18
Rank	24	41	11	9	10	9	26	9	26	14	8
Population	59	59	59	58	55	52	61	65	76	77	75



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

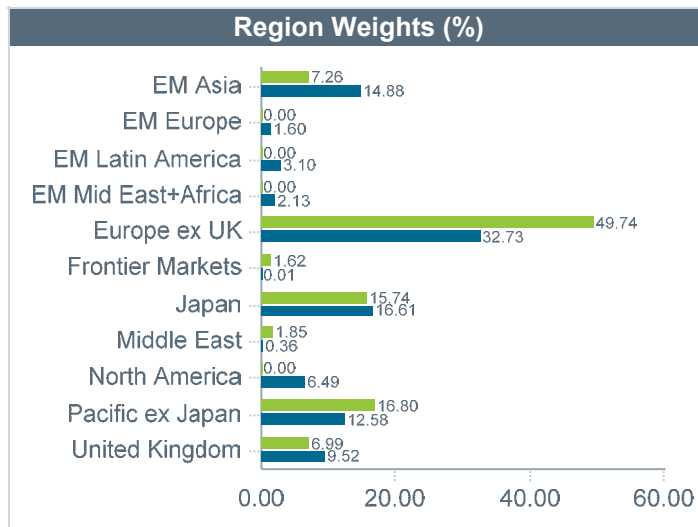
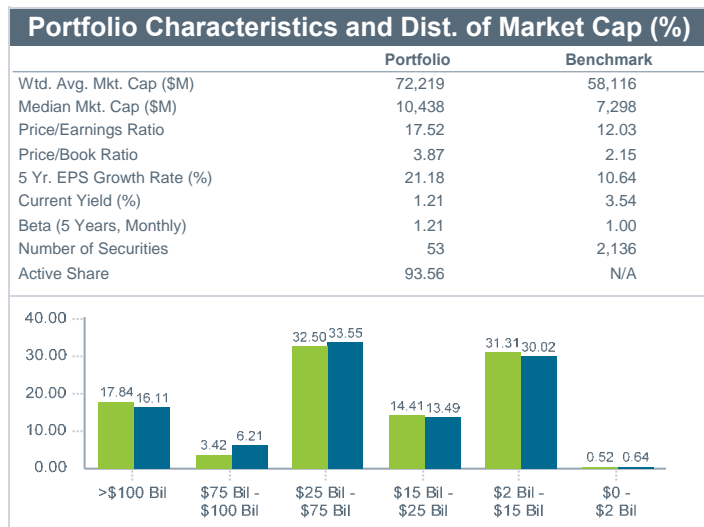
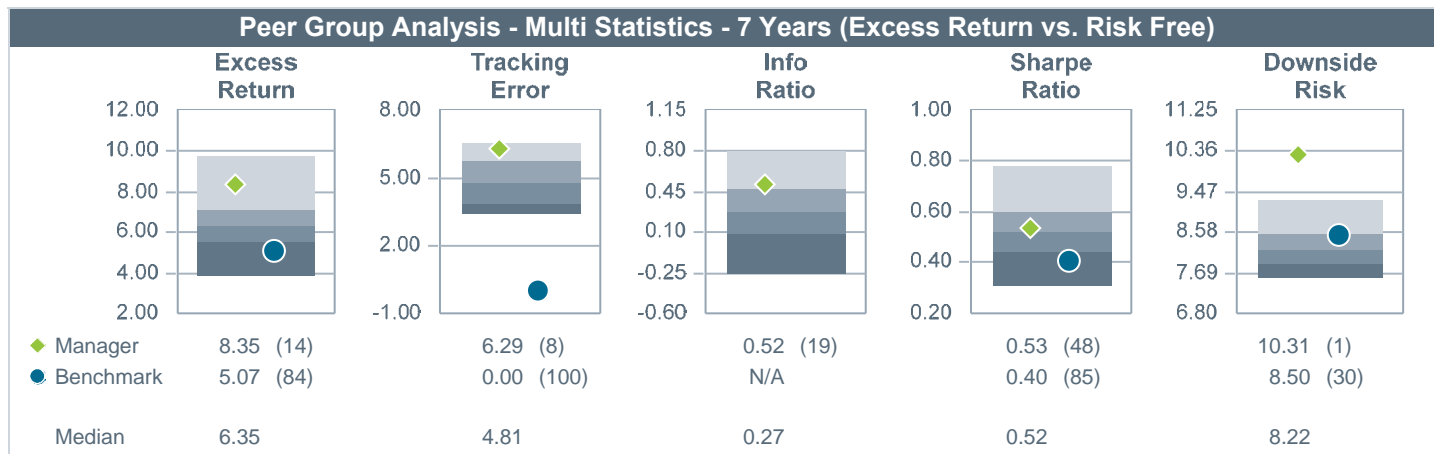
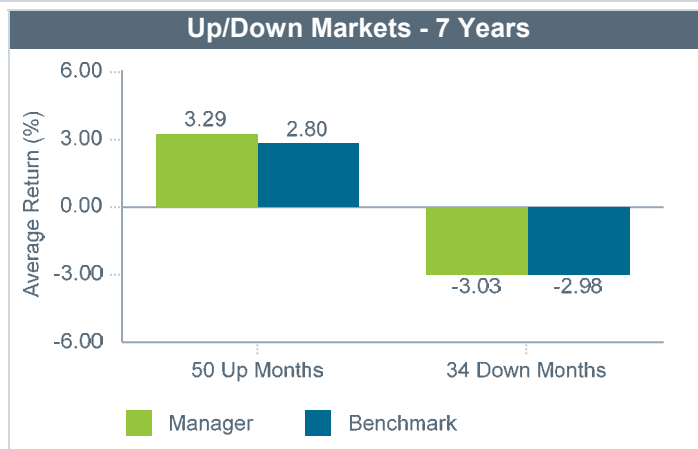
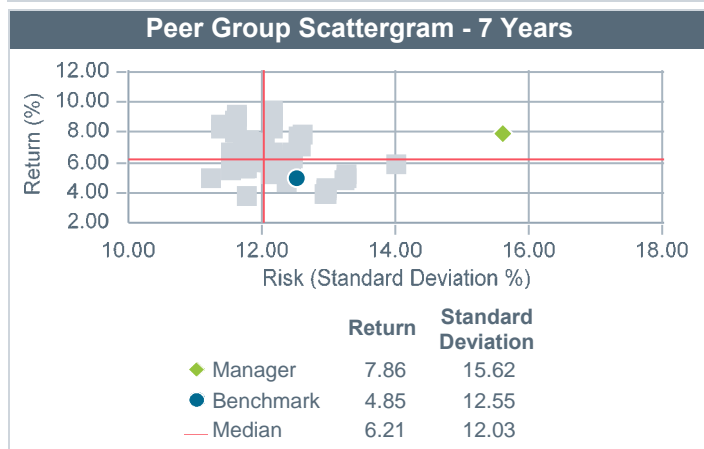
Manager: Bail Giff EAFE;4 (BGEFX)

As of December 31, 2018

Benchmark: MSCI ACW Ex US Index (USD) (Net)

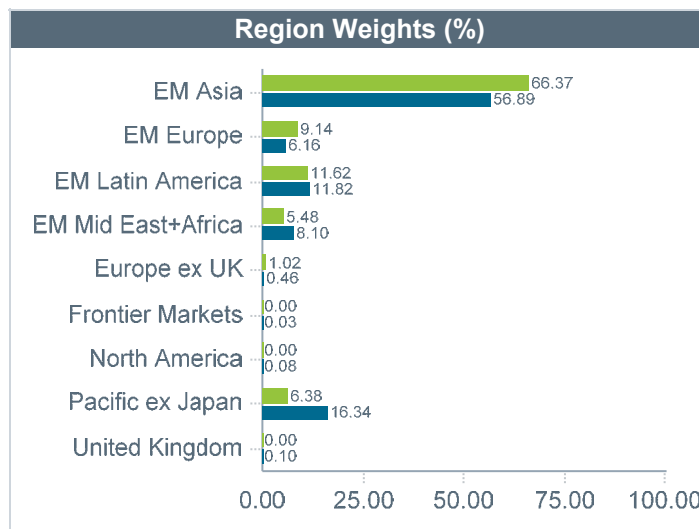
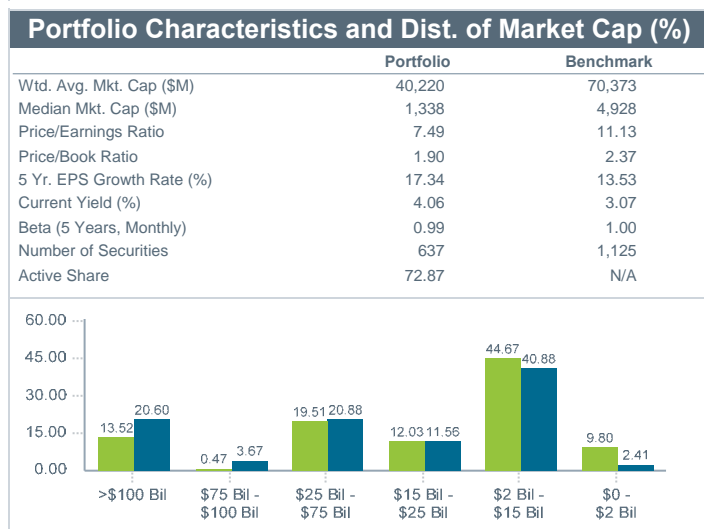
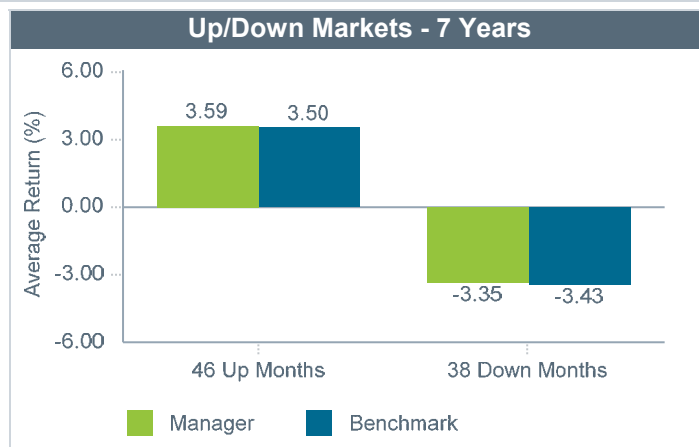
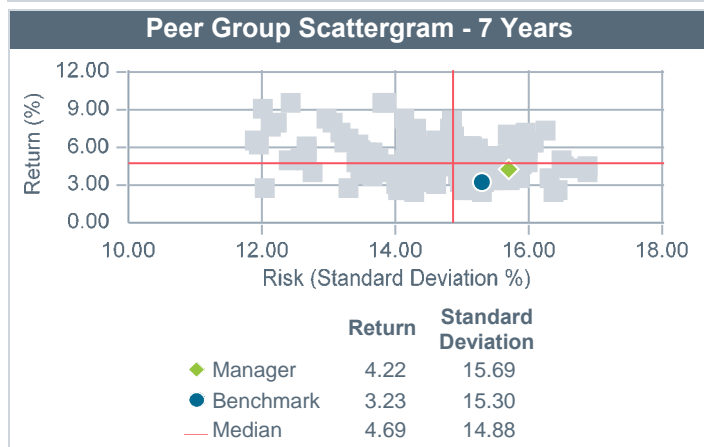
Peer Group: IM ACWI Ex US Growth (MF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-19.17	-17.23	7.11	2.11	7.86	N/A	46.37	1.43	-2.99	-6.88	30.14
Benchmark	-11.46	-14.20	4.48	0.68	4.85	6.57	27.19	4.50	-5.66	-3.87	15.29
Difference	-7.71	-3.03	2.63	1.43	3.01	N/A	19.18	-3.07	2.67	-3.01	14.85
Peer Group Median	-14.21	-14.32	3.67	1.55	6.21	7.54	32.37	-0.80	0.27	-3.22	19.26
Rank	100	79	10	39	18	N/A	5	17	100	85	1
Population	176	176	157	130	112	100	188	165	143	146	140



Performance shown is net of fees and client 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	-9.19	-18.30	9.00	1.84	4.22	N/A	38.94	14.08	-17.37	2.40	-1.40
Benchmark	-7.47	-14.58	9.25	1.65	3.23	8.02	37.28	11.19	-14.92	-2.19	-2.60
Difference	-1.72	-3.72	-0.25	0.19	0.99	N/A	1.66	2.89	-2.45	4.59	1.20
Peer Group Median	-7.26	-15.23	8.67	2.24	4.69	9.39	36.91	10.12	-12.61	-0.07	1.00
Rank	81	81	45	64	63	N/A	38	22	90	31	68
Population	297	291	281	247	193	141	310	324	336	329	311



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

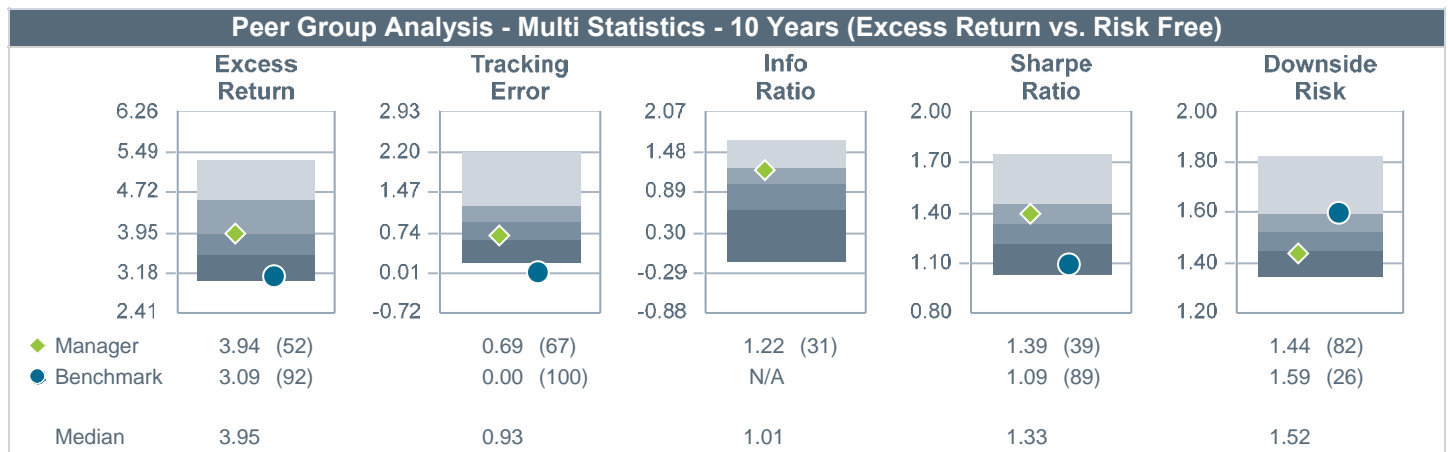
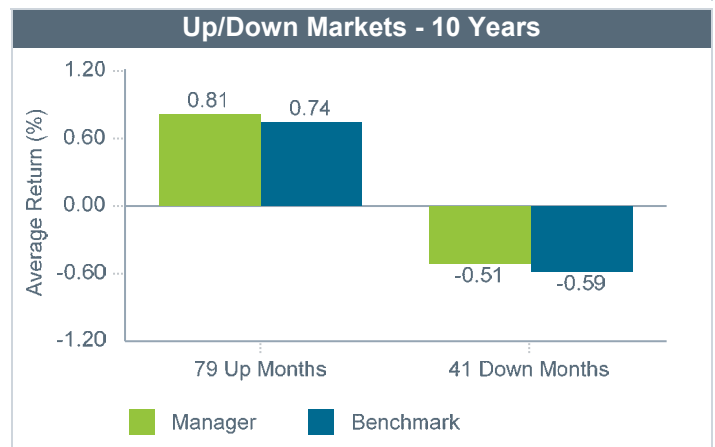
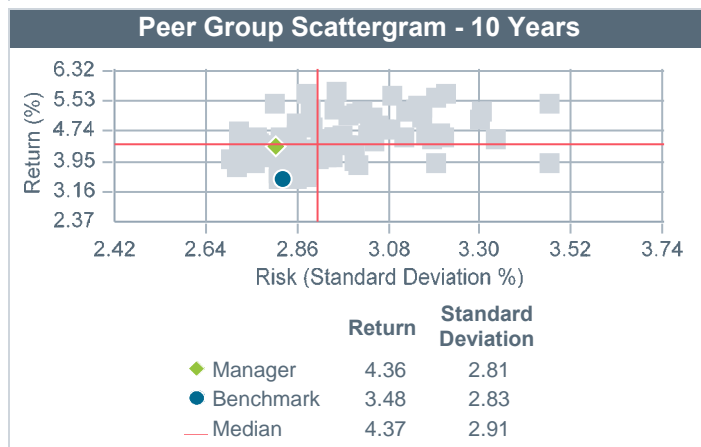
Manager: Richmond Capital Core (SA)

As of December 31, 2018

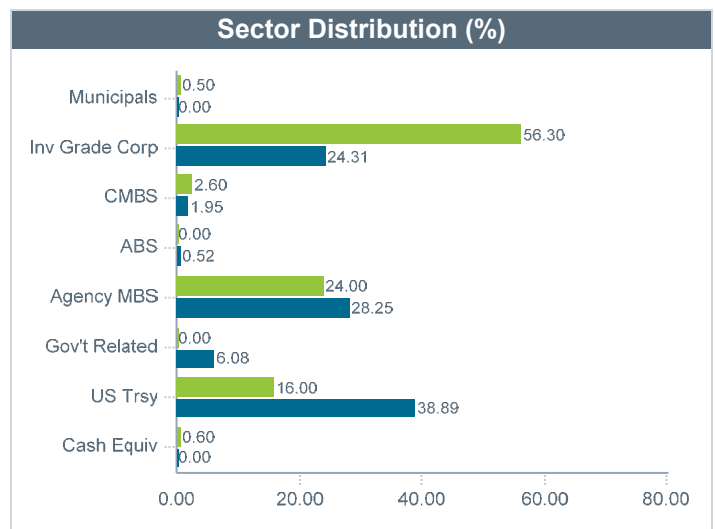
Benchmark: Bloomberg US Agg Bond Index

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	1.65	0.26	2.38	2.98	2.68	4.36	3.84	3.08	1.21	6.63	-1.57
Benchmark	1.64	0.01	2.06	2.52	2.10	3.48	3.54	2.65	0.55	5.97	-2.02
Difference	0.01	0.25	0.32	0.46	0.58	0.88	0.30	0.43	0.66	0.66	0.45
Peer Group Median	1.40	0.07	2.48	2.87	2.62	4.37	4.05	3.11	0.82	6.17	-1.56
Rank	22	32	57	41	46	52	61	54	17	30	51
Population	142	141	140	135	130	125	152	162	167	181	191

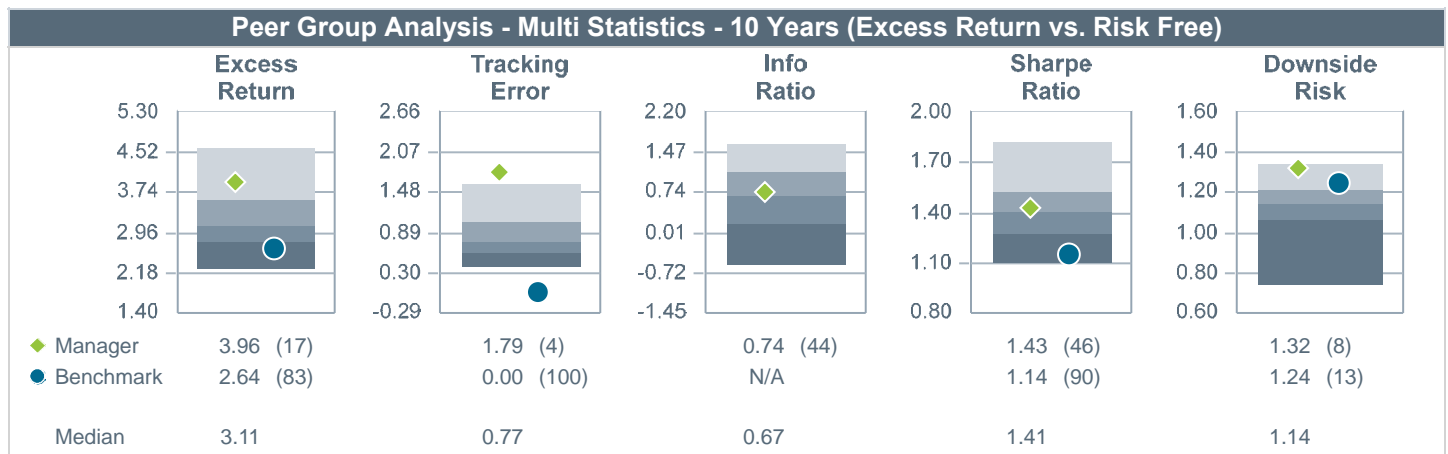
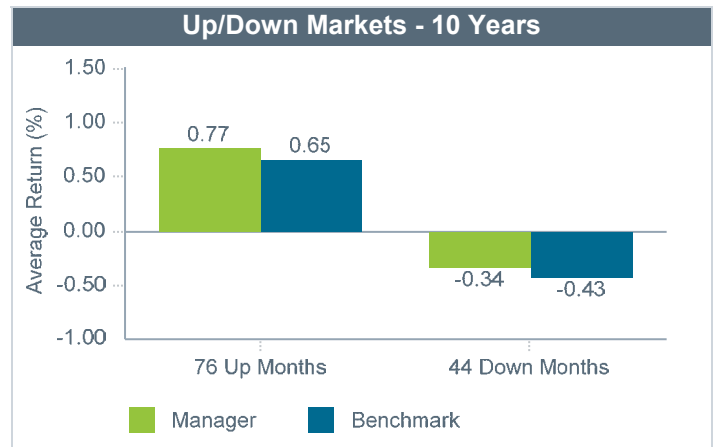
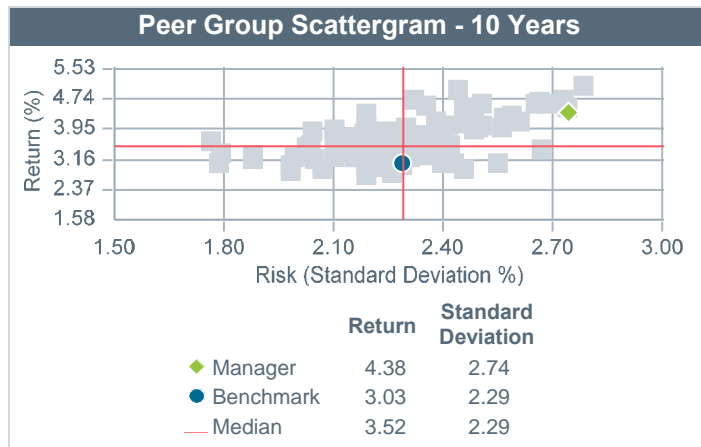


Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	5.78	5.87
Spread Duration	3.88	6.00
Avg. Maturity	7.99	8.22
Avg. Quality	Aa2	Aa1/Aa2
Yield To Maturity (%)	N/A	3.28
Coupon Rate (%)	4.01	3.20
Current Yield (%)	3.83	N/A
Holdings Count	188	10,252

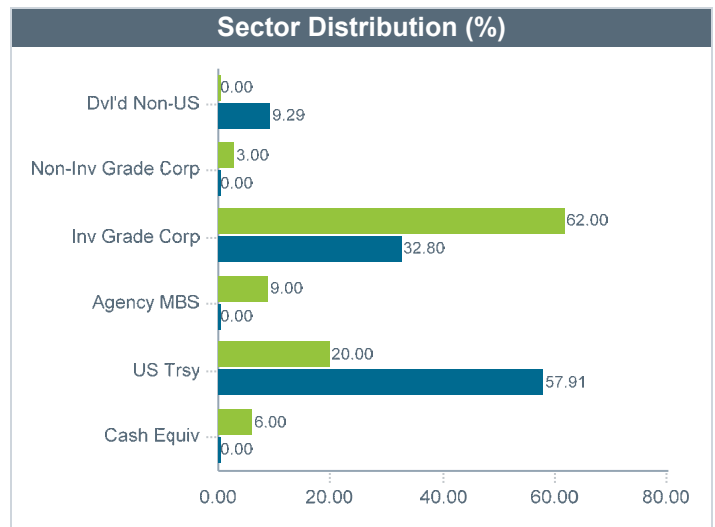


Performance shown is gross of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	0.21	-0.10	2.63	2.19	2.52	4.38	3.38	4.66	-0.91	4.05	-0.16
Benchmark	1.61	0.89	1.74	1.94	1.83	3.03	2.17	2.15	1.17	3.34	-1.04
Difference	-1.40	-0.99	0.89	0.25	0.69	1.35	1.21	2.51	-2.08	0.71	0.88
Peer Group Median	1.39	0.95	1.99	2.16	2.15	3.52	2.54	2.39	1.30	3.56	-0.53
Rank	99	99	8	48	24	17	16	5	100	33	29
Population	153	153	152	146	143	127	166	177	176	179	186



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	3.45	3.81
Spread Duration	N/A	3.82
Avg. Maturity	4.10	4.23
Avg. Quality	A2	Aa2
Yield To Maturity (%)	4.01	3.05
Coupon Rate (%)	3.45	2.80
Current Yield (%)	3.40	2.84
Holdings Count	N/A	6,573



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

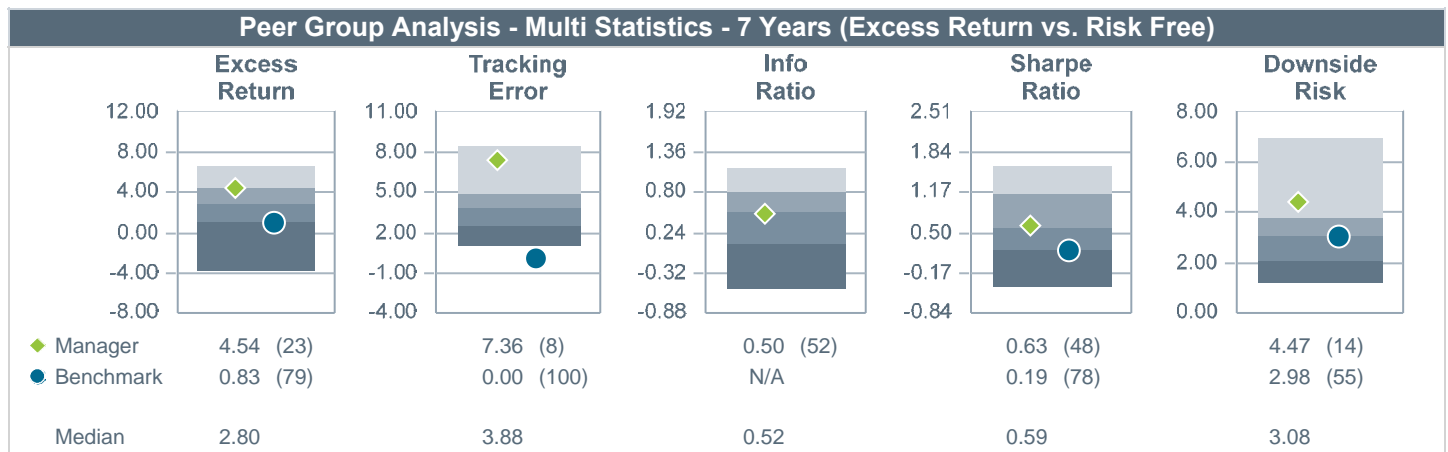
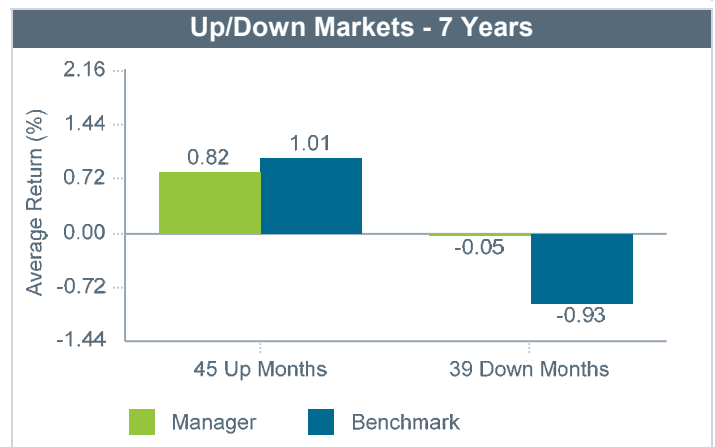
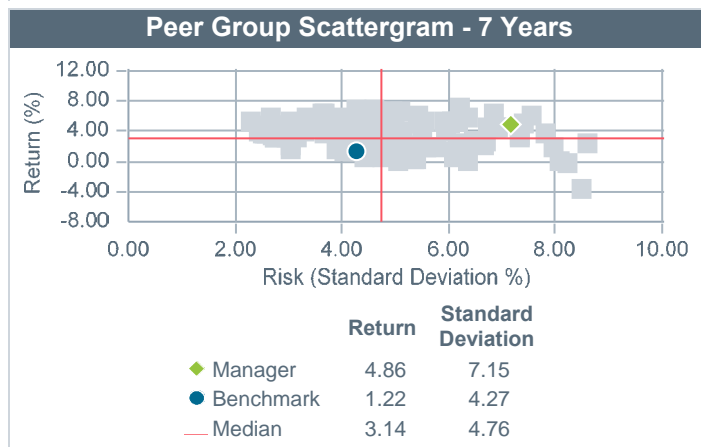
Manager: Franklin Templeton Global Multisector Plus (CF)

As of December 31, 2018

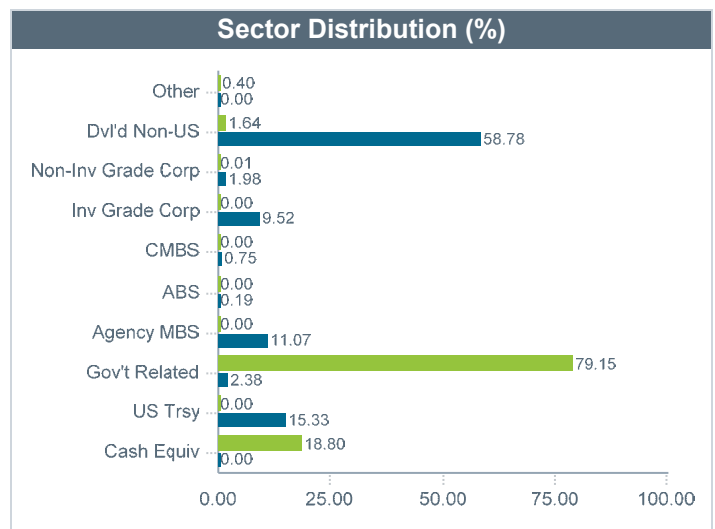
Benchmark: Bloomberg Multiverse Index

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	2.27	0.52	4.48	2.11	4.86	N/A	5.06	8.01	-3.43	0.81	3.67
Benchmark	1.02	-1.36	2.99	1.20	1.22	2.77	7.69	2.84	-3.29	0.48	-2.19
Difference	1.25	1.88	1.49	0.91	3.64	N/A	-2.63	5.17	-0.14	0.33	5.86
Peer Group Median	-1.09	-1.84	3.65	2.31	3.14	4.73	7.62	5.77	-2.27	2.50	-0.10
Rank	1	17	35	54	25	N/A	78	38	66	74	30
Population	232	232	228	208	175	121	244	260	271	270	262

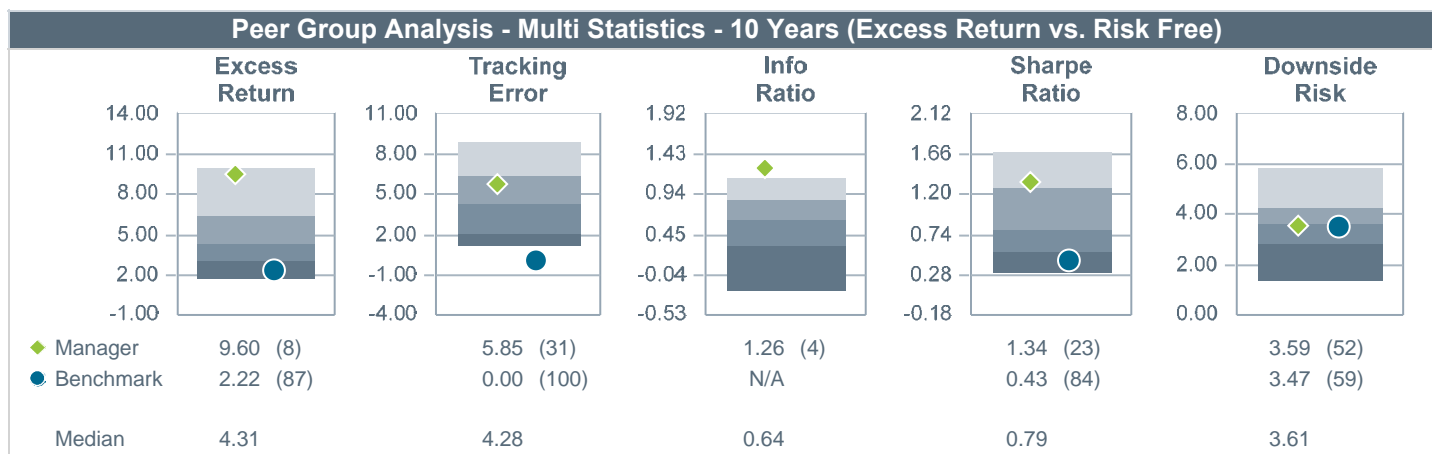
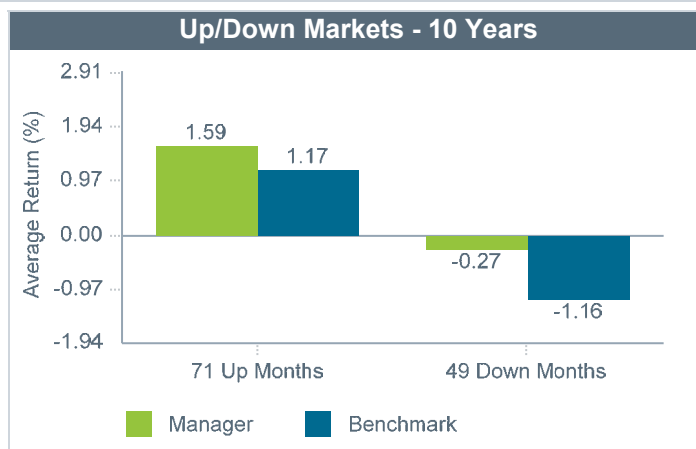
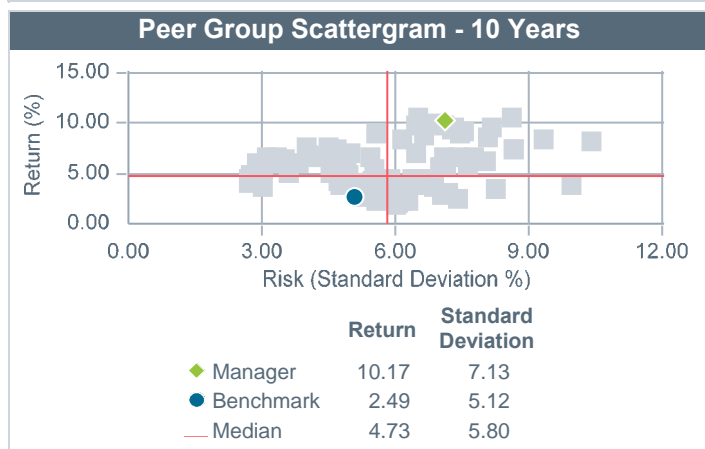


Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	-1.41	6.82
Spread Duration	-1.37	N/A
Avg. Maturity	2.30	8.68
Avg. Quality	Baa1	N/A
Yield To Maturity (%)	10.68	2.31
Coupon Rate (%)	4.25	2.86
Current Yield (%)	4.29	0.11
Holdings Count	175	26,087

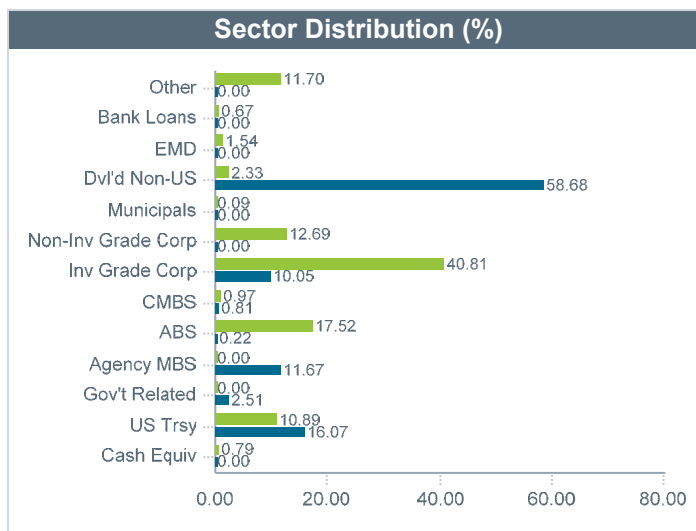


Performance shown is gross of fees and product specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Allocation to "Other" consists of derivatives and equity.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-0.16	0.07	6.31	4.39	6.53	10.17	8.76	10.40	-4.06	7.56	4.03
Benchmark	1.20	-1.19	2.70	1.08	1.00	2.49	7.39	2.09	-3.15	0.59	-2.60
Difference	-1.36	1.26	3.61	3.31	5.53	7.68	1.37	8.31	-0.91	6.97	6.63
Peer Group Median	-1.09	-1.84	3.65	2.31	3.14	4.73	7.62	5.77	-2.27	2.50	-0.10
Rank	38	21	13	13	7	7	28	26	76	13	27
Population	232	232	228	208	175	121	244	260	271	270	262



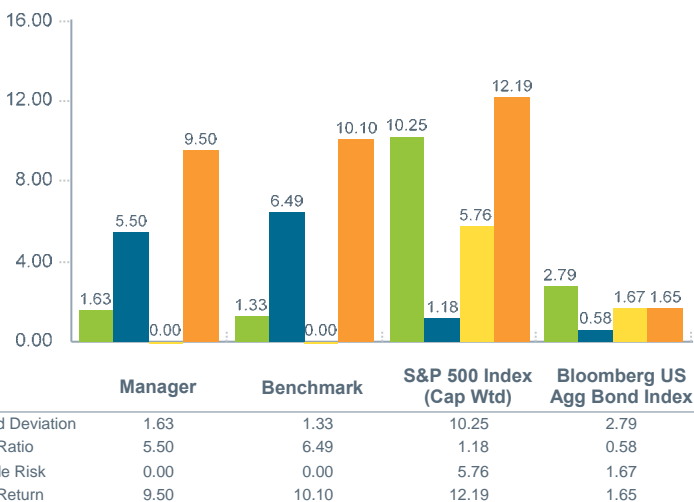
Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	4.91	6.96
Spread Duration	3.91	N/A
Avg. Maturity	6.81	8.81
Avg. Quality	Baa1	N/A
Yield To Maturity (%)	5.27	2.03
Coupon Rate (%)	4.08	2.68
Current Yield (%)	4.73	0.02
Holdings Count	417	22,663



Performance shown is gross of fees and product specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Allocation to "Other" consists of preferred equity and convertibles.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	2.04	8.18	9.87	10.06	10.34	N/A	11.11	10.34	10.60	10.11	10.98
Benchmark	1.76	8.35	8.24	10.41	10.99	7.00	7.62	8.77	15.02	12.50	13.94
Difference	0.28	-0.17	1.63	-0.35	-0.65	N/A	3.49	1.57	-4.42	-2.39	-2.96

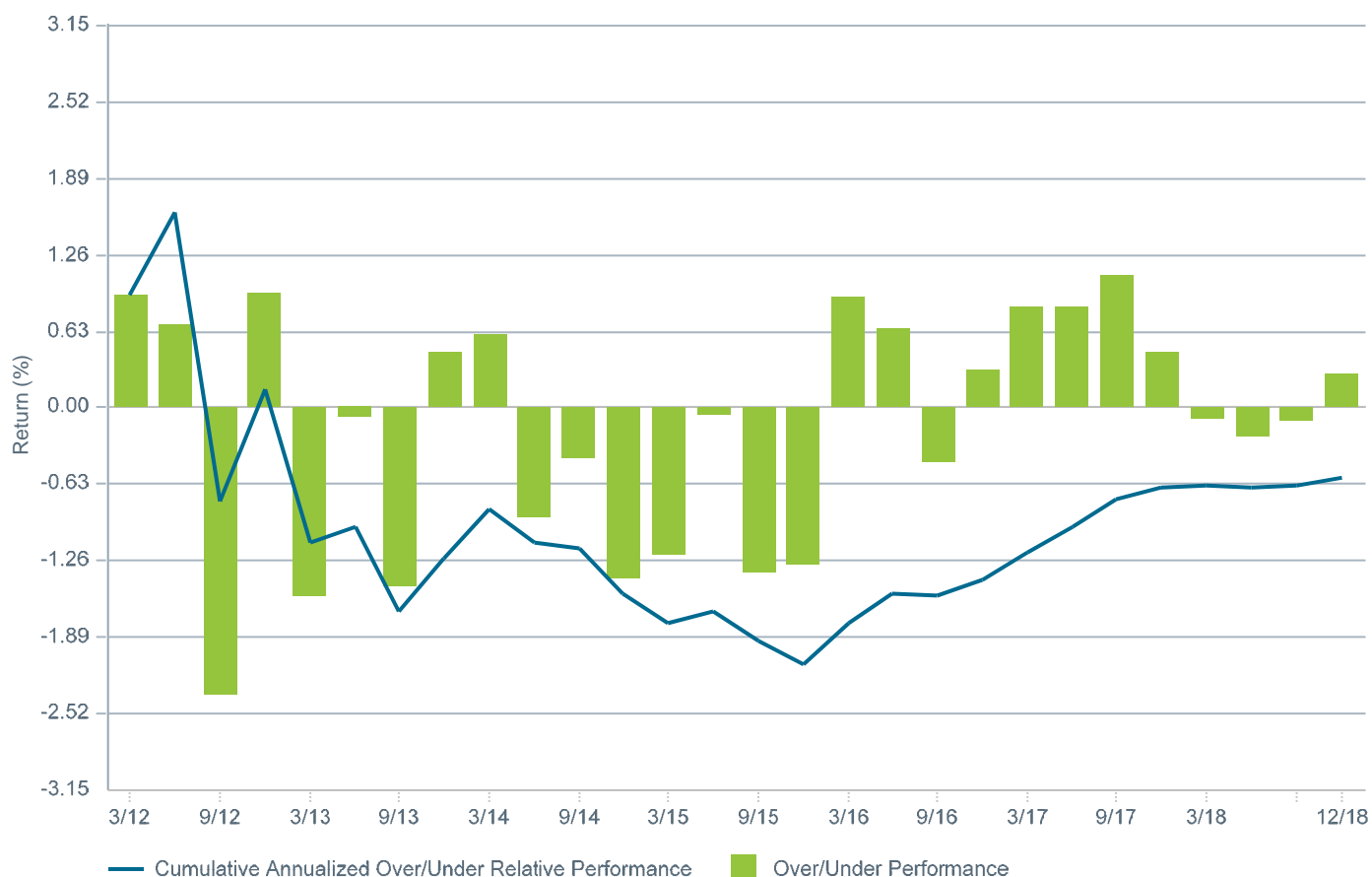
Historical Statistics - 7 Years (Excess Return vs. Risk Free)



Actual Correlation - 7 Years

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.16
S&P 500 Index (Cap Wtd)	-0.05
Russell 2000 Index	-0.11
MSCI EAFE Index (USD) (Net)	-0.06
MSCI Emg Mkts Index (USD) (Net)	0.02
Bloomberg US Agg Bond Index	-0.17
Bloomberg US Trsy US TIPS Index	-0.22
Wilshire US REIT Index	-0.11
HFRI FOF Comp Index	-0.10
Bloomberg Cmdty Index (TR)	-0.02
ICE BofAML 3 Mo US T-Bill Index	-0.22
Cons Price Index (Unadjusted)	0.03
NCREIF ODCE Index (AWA) (Gross)	0.16

Relative Performance - Since Inception



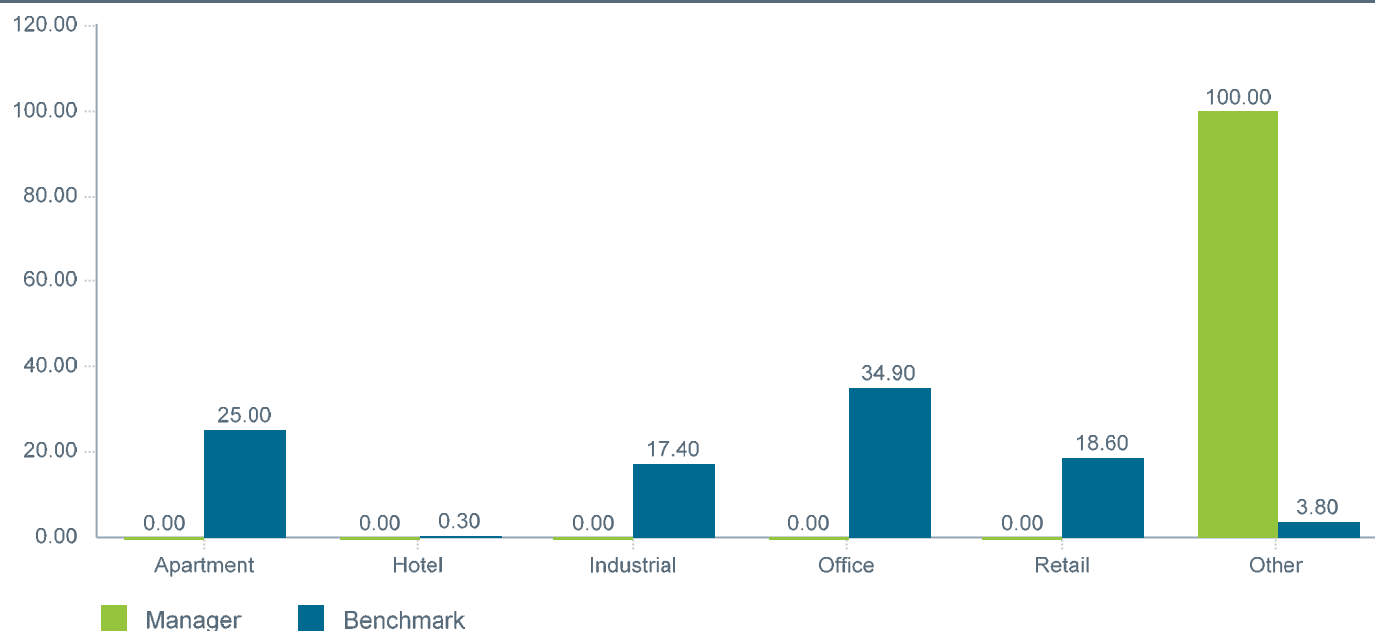
Investment Strategy

The Fund's strategy is on primarily stabilized income-producing investments in niche sectors; Education, Health, and Storage. Within these sectors the fund invests in student housing, seniors housing, medical office buildings, life science buildings, and self-storage. The majority of the return from the Fund is expected to be realized from current income, with a modest portion of the return to be derived from asset appreciation. Harrison Street believes that the primary property types it targets will provide better risk/return profiles than properties in traditional core portfolios across all economic cycles.

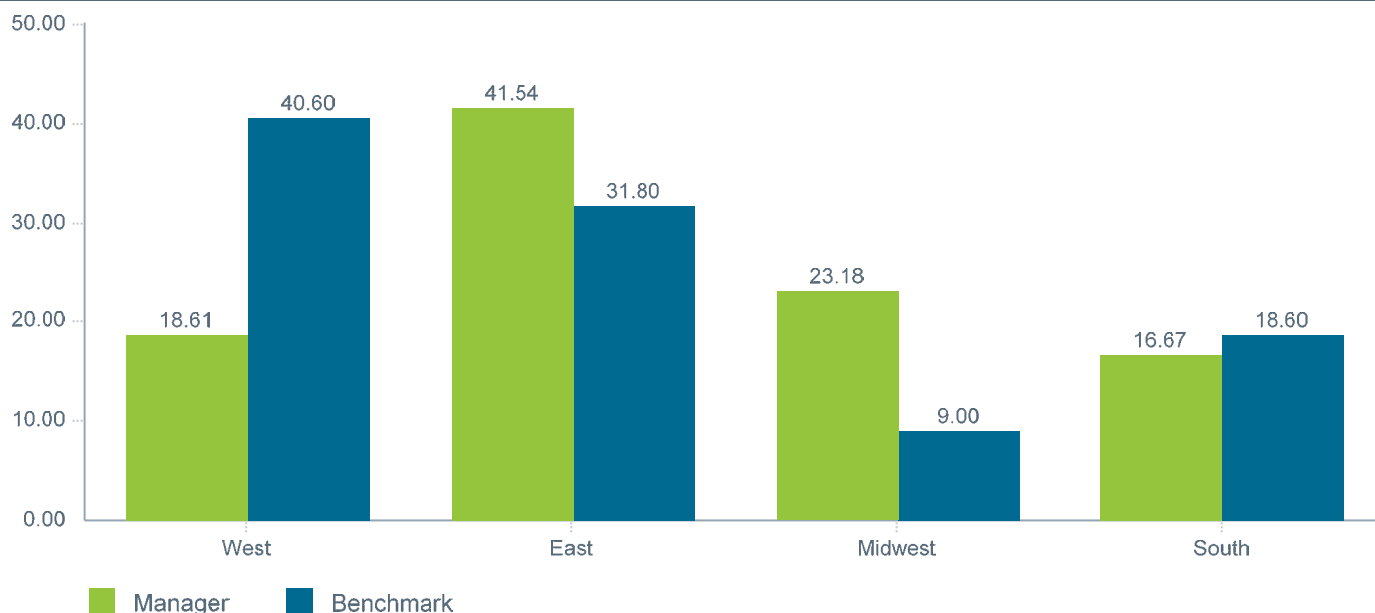
Investment Profile

Fund Inception	2011
Legal Structure	LP
Fund Structure	Open-End
Gross Real Estate Assets (\$M)	6,788
Fund Leverage %	25.10
Portfolio Occupancy %	90.60
Cash Reserve %	1.87
Number of Investments	260
Number of Limited Partners	142

Property Type Allocation (%)

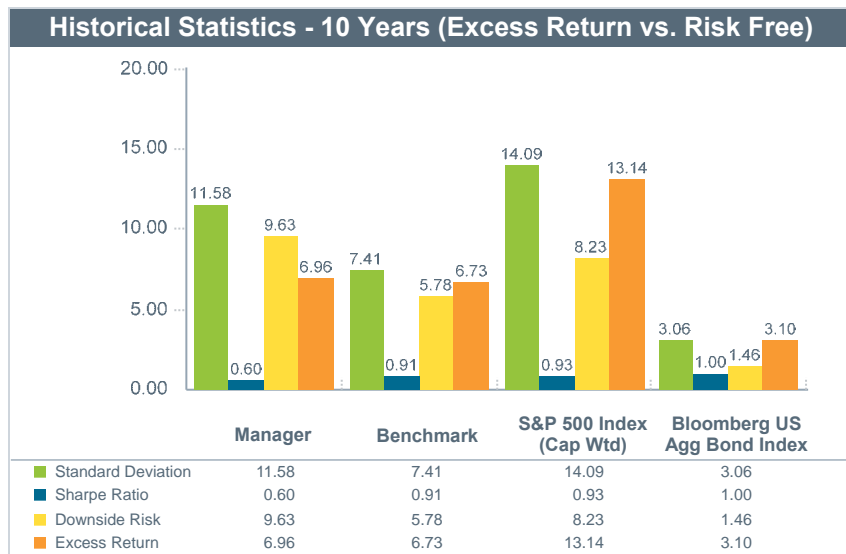


Geographic Allocation (%)



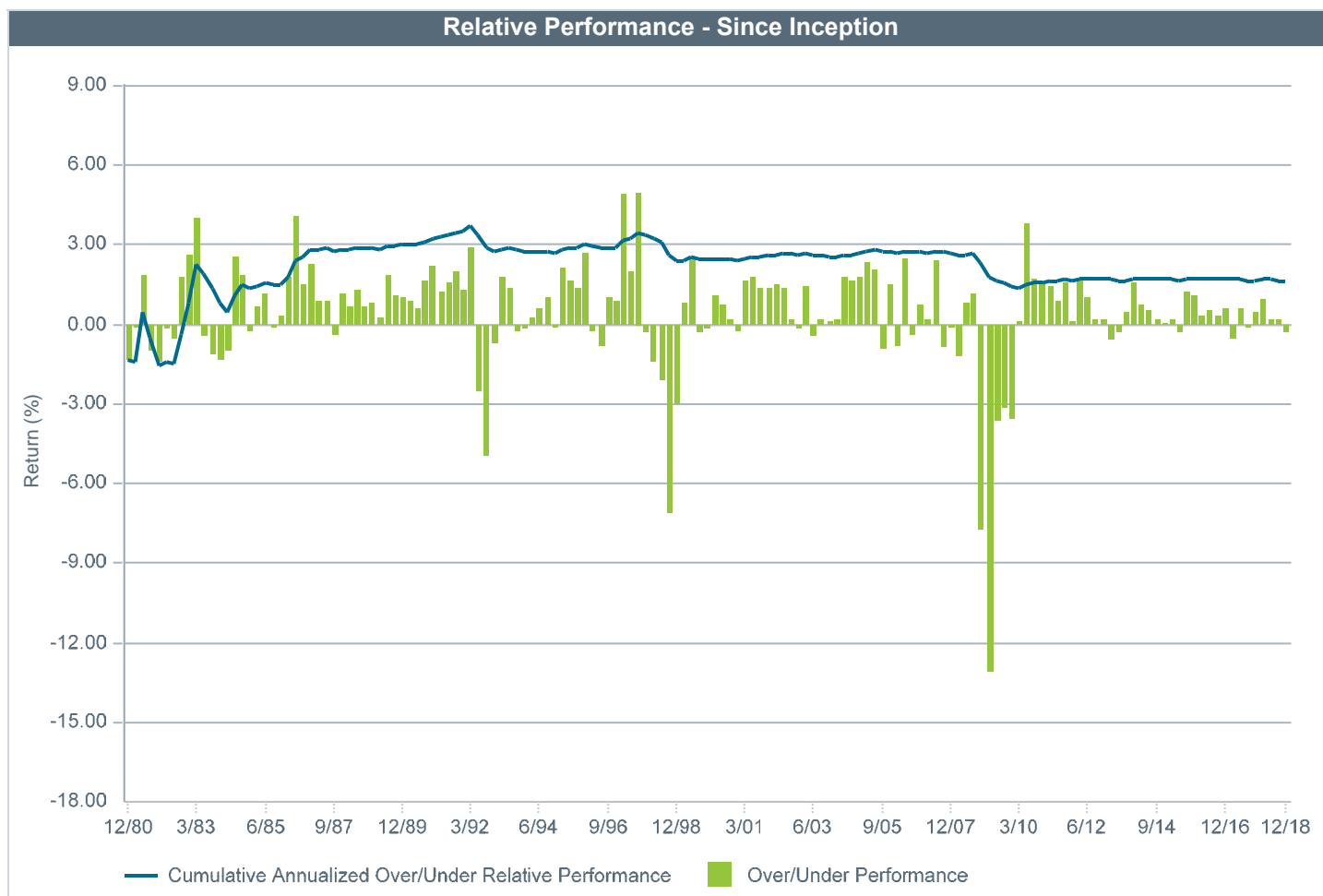
Performance shown is gross of fees and product specific. Calculation is based on quarterly periodicity. Investment profile data shown is provided by the investment manager and is as of the most recently available quarter end. Allocation data shown is based on NAV. Manager allocation to "Other" consists of student housing, senior housing, medical office buildings, self-storage, marinas, boat storage, and life science buildings. Benchmark allocation to "Other" consists of entertainment (theaters, golf courses, bowling alleys), healthcare (hospitals, clinics), manufactured homes, parking lots, self-storage units, senior living, and undeveloped land.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	1.46	9.48	9.41	11.95	12.75	6.74	8.06	10.70	17.53	14.22	15.18
Benchmark	1.76	8.35	8.24	10.41	10.99	7.00	7.62	8.77	15.02	12.50	13.94
Difference	-0.30	1.13	1.17	1.54	1.76	-0.26	0.44	1.93	2.51	1.72	1.24



Actual Correlation - 10 Years

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.99
S&P 500 Index (Cap Wtd)	-0.01
Russell 2000 Index	-0.01
MSCI EAFE Index (USD) (Net)	-0.10
MSCI Emg Mkts Index (USD) (Net)	-0.37
Bloomberg US Agg Bond Index	-0.03
Bloomberg US Trsy US TIPS Index	-0.26
Wilshire US REIT Index	0.05
HFRI FOF Comp Index	-0.22
Bloomberg Cmnty Index (TR)	-0.09
ICE BofAML 3 Mo US T-Bill Index	-0.02
Cons Price Index (Unadjusted)	-0.17



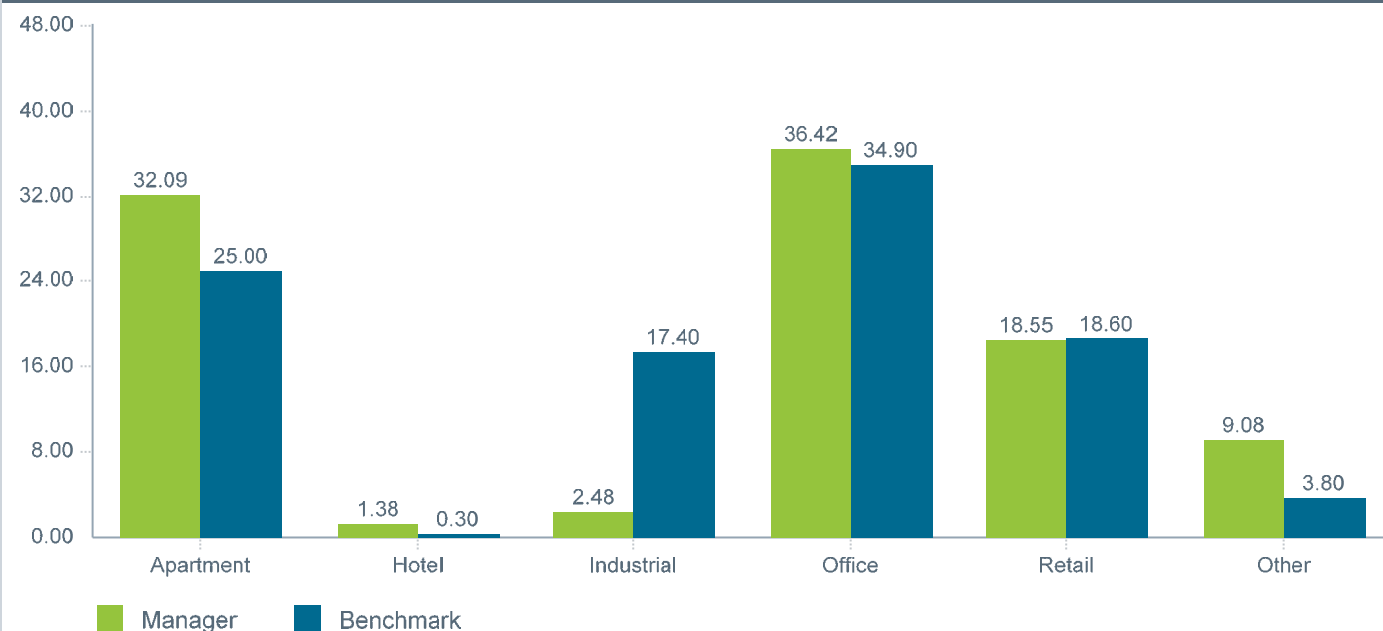
Investment Strategy

The Fund pursues a diversified core-plus real estate strategy that seeks to outperform the NCREIF ODCE Index by 100 basis points over a complete market cycle by structuring investments to enhance risk-adjusted returns. Investments may be made through direct property ownership or indirectly through such vehicles as joint ventures, general or limited partnerships, limited liability companies, mortgage loans and other loan types, including mezzanine debt, and debt secured by an interest in the borrowing entity or interests in companies or entities that directly or indirectly hold real estate or real estate interests. It operates with a leverage limit of 40% and may invest up to 35% of its gross assets in higher-risk, non-core real estate investment opportunities.

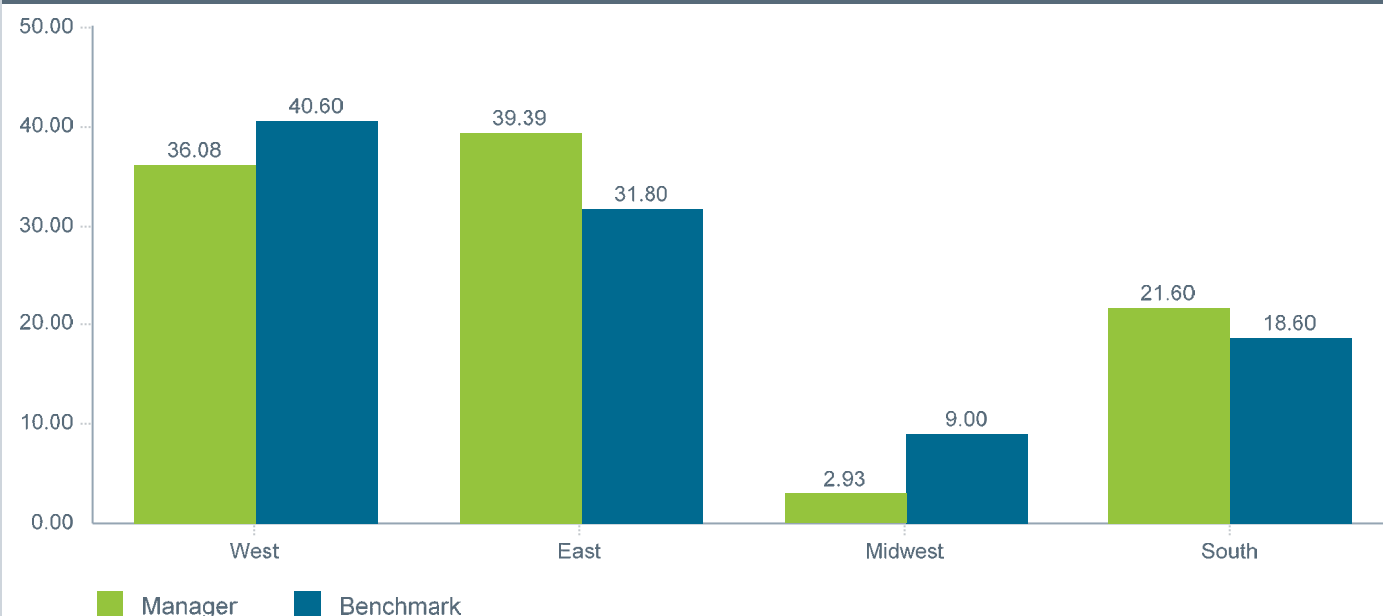
Investment Profile

Fund Inception	1980
Legal Structure	REIT
Fund Structure	Open-End
Gross Real Estate Assets (\$M)	13,386
Fund Leverage %	33.10
Portfolio Occupancy %	87.60
Cash Reserve %	1.74
Number of Investments	162
Number of Limited Partners	97

Property Type Allocation (%)

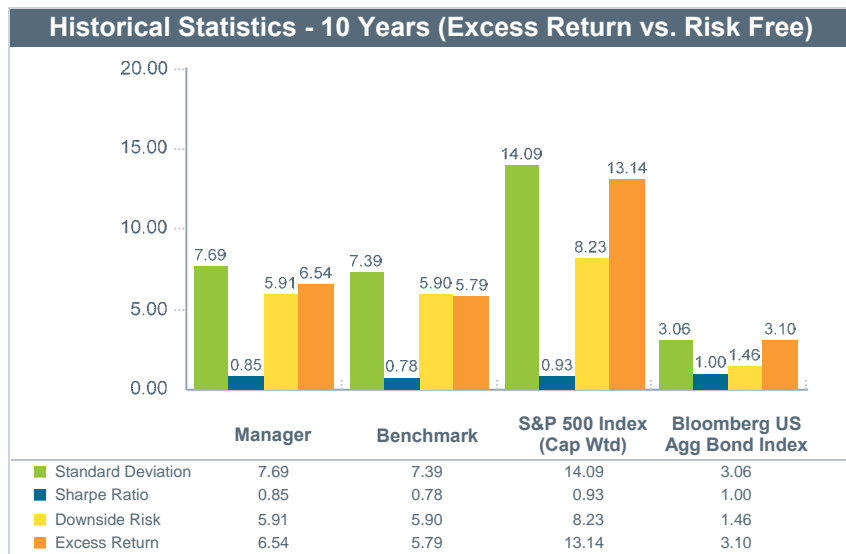


Geographic Allocation (%)



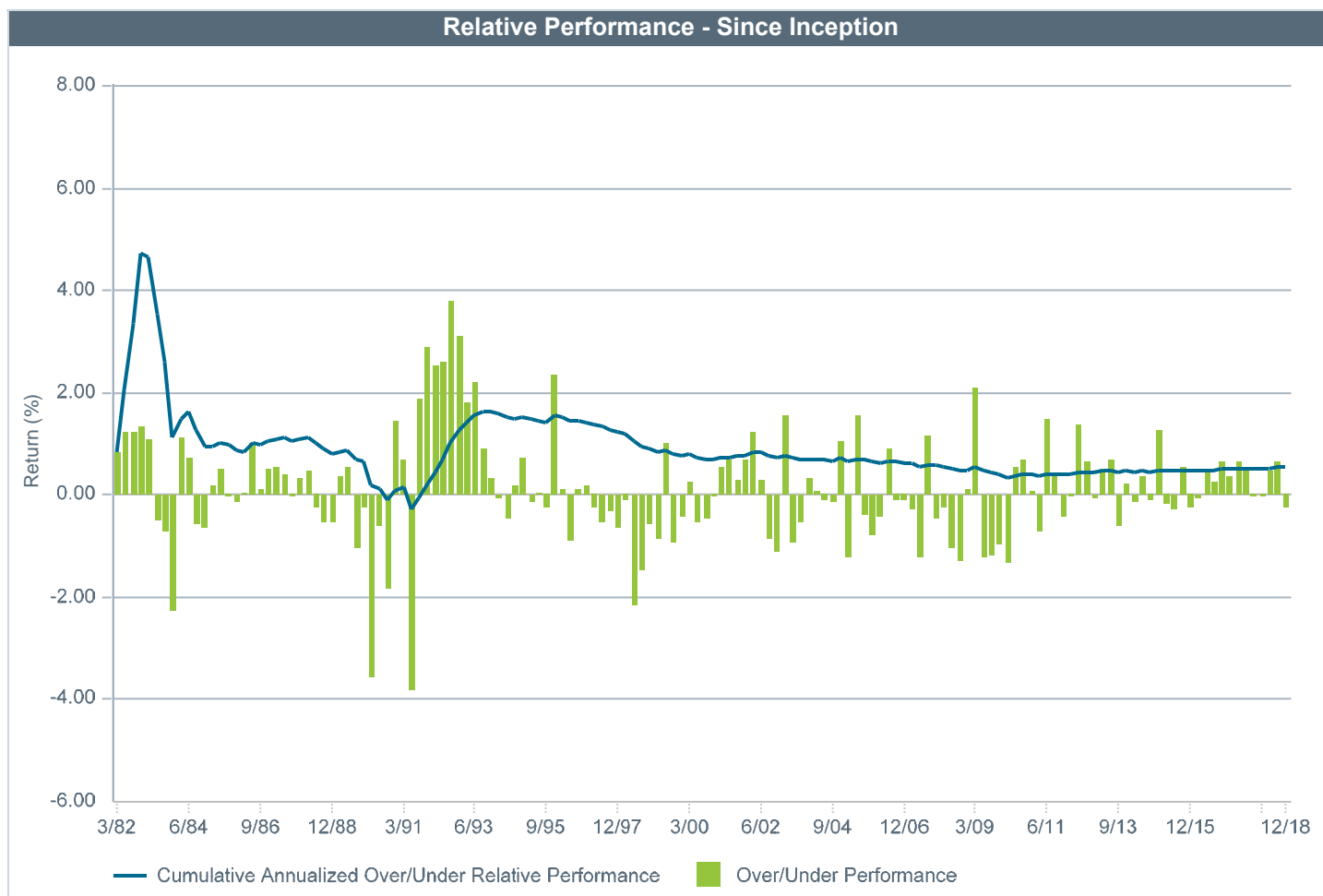
Performance shown is gross of fees and product specific. Calculation is based on quarterly periodicity. Investment profile data shown is provided by the investment manager and is as of the most recently available quarter end. Allocation data shown is based on NAV. Manager allocation to "Other" consists of self-storage and land. Benchmark allocation to "Other" consists of entertainment (theaters, golf courses, bowling alleys), healthcare (hospitals, clinics), manufactured homes, parking lots, self-storage units, senior living, and undeveloped land.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	1.29	8.32	8.60	10.51	11.18	6.77	8.29	9.21	13.81	13.04	13.80
Benchmark	1.52	7.36	7.27	9.41	9.96	6.01	6.66	7.79	13.95	11.46	12.90
Difference	-0.23	0.96	1.33	1.10	1.22	0.76	1.63	1.42	-0.14	1.58	0.90



Actual Correlation - 10 Years

	Actual Correlation
NCREIF ODCE Index (AWA) (Net)	0.98
S&P 500 Index (Cap Wtd)	-0.11
Russell 2000 Index	-0.11
MSCI EAFE Index (USD) (Net)	-0.22
MSCI Emg Mkts Index (USD) (Net)	-0.48
Bloomberg US Agg Bond Index	-0.09
Bloomberg US Trsy US TIPS Index	-0.26
Wilshire US REIT Index	-0.12
HFRI FOF Comp Index	-0.28
Bloomberg Cmdty Index (TR)	-0.18
ICE BofAML 3 Mo US T-Bill Index	-0.02
Cons Price Index (Unadjusted)	-0.18
NCREIF ODCE Index (AWA) (Gross)	0.98
NCREIF ODCE Index (AWA) (Gross)	0.98



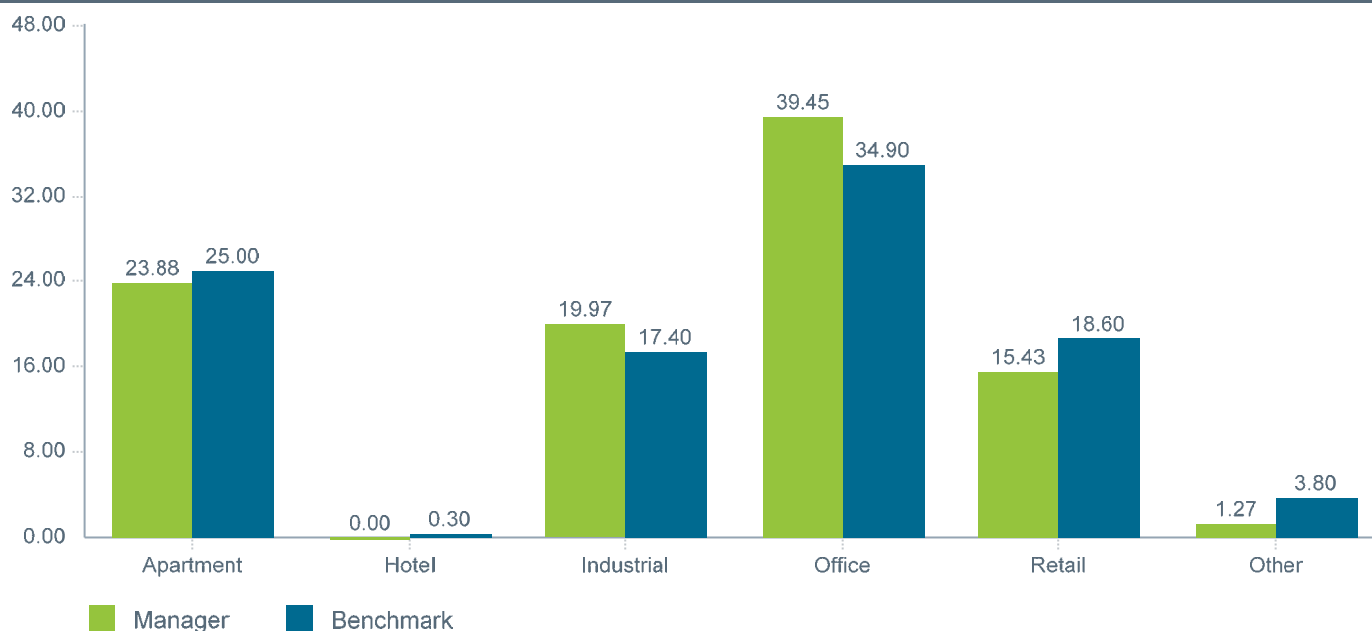
Investment Strategy

The Principal U.S. Property Account is a core real estate account designed to have a low to moderate risk profile consistent with other open-end real estate funds comprising the NFI-ODCE. This risk profile has two components: 1) a low to moderate real estate property risk profile; and 2) a low to moderate risk portfolio level operating profile. Low to moderate real estate property risk is accomplished by investing primarily in well-leased properties on an unleveraged basis. Low to moderate portfolio level risk is accomplished by operating with limited portfolio level obligations and a well-diversified portfolio. The Account invests in the traditional real estate property types; multifamily, office, industrial, and retail.

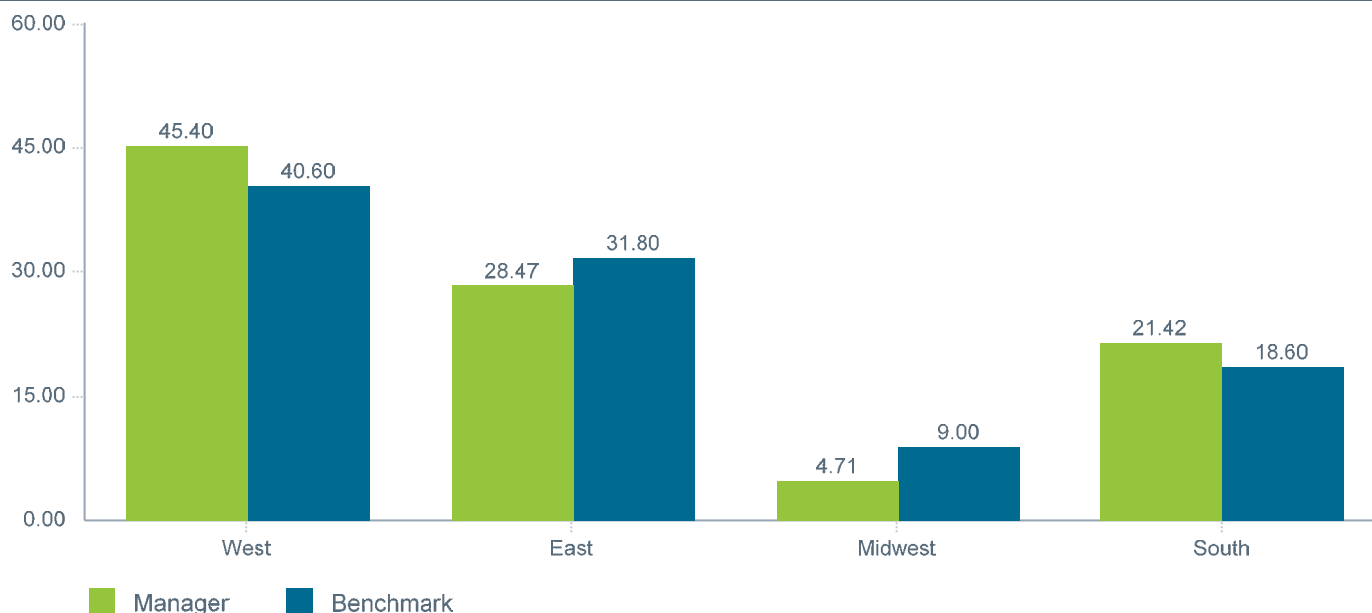
Investment Profile

Fund Inception	1982
Legal Structure	Insurance SA
Fund Structure	Open-End
Gross Real Estate Assets (\$M)	10,201
Fund Leverage %	18.25
Portfolio Occupancy %	92.57
Cash Reserve %	2.45
Number of Investments	136
Number of Limited Partners	6,468

Property Type Allocation (%)

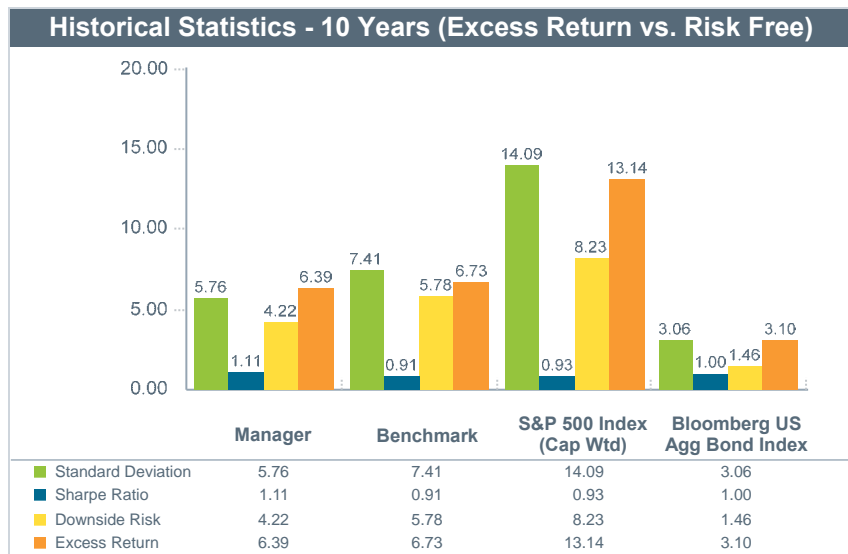


Geographic Allocation (%)



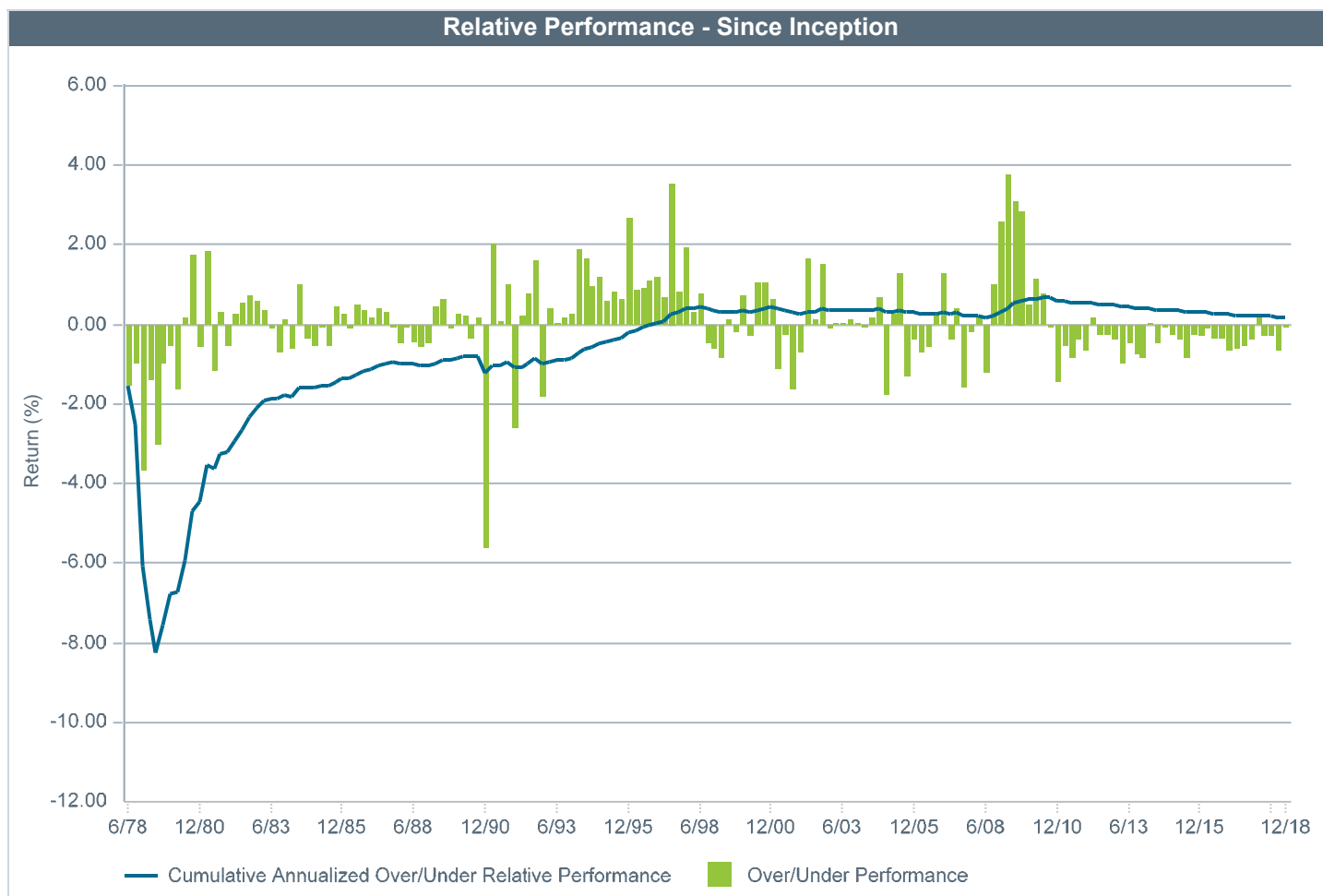
Performance shown is net of fees and product specific. Calculation is based on quarterly periodicity. Investment profile data shown is provided by the investment manager and is as of the most recently available quarter end. Allocation data shown is based on NAV. Manager allocation to "Other" consists of land. Benchmark allocation to "Other" consists of entertainment (theaters, golf courses, bowling alleys), healthcare (hospitals, clinics), manufactured homes, parking lots, self-storage units, senior living, and undeveloped land.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	1.73	6.99	6.83	8.99	9.36	6.76	6.30	7.21	12.94	11.69	10.44
Benchmark	1.76	8.35	8.24	10.41	10.99	7.00	7.62	8.77	15.02	12.50	13.94
Difference	-0.03	-1.36	-1.41	-1.42	-1.63	-0.24	-1.32	-1.56	-2.08	-0.81	-3.50



Actual Correlation - 10 Years

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.99
S&P 500 Index (Cap Wtd)	-0.07
Russell 2000 Index	-0.06
MSCI EAFE Index (USD) (Net)	-0.15
MSCI Emg Mkts Index (USD) (Net)	-0.40
Bloomberg US Agg Bond Index	-0.01
Bloomberg US Trsy US TIPS Index	-0.24
Wilshire US REIT Index	0.00
HFRI FOF Comp Index	-0.25
Bloomberg Cmtty Index (TR)	-0.15
ICE BofAML 3 Mo US T-Bill Index	-0.05
Cons Price Index (Unadjusted)	-0.18



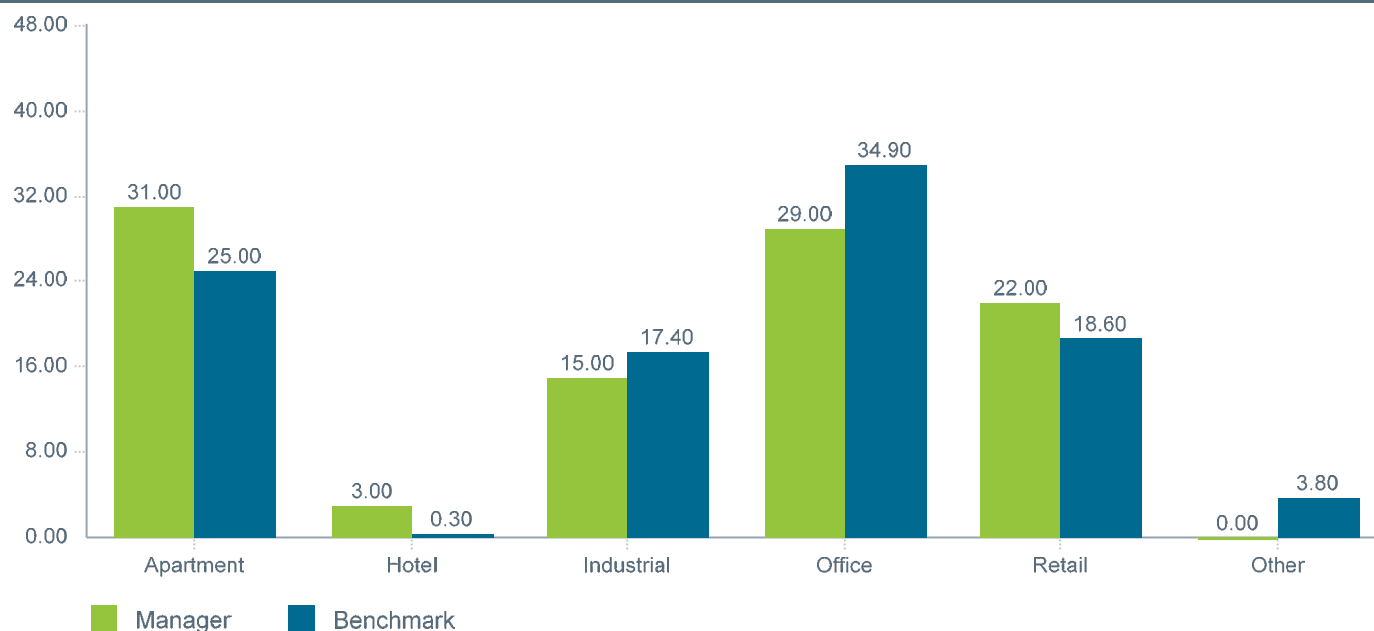
Investment Strategy

The Fund pursues a diversified core real estate strategy that seeks to produce attractive risk-adjusted returns by focusing on selective acquisitions, diversification, active portfolio management, and asset management. The Fund invests in well-leased, stabilized assets in major US metropolitan markets and receives the majority of its return from the income component. Diversification for the Fund is consistently pursued on many levels, including geographic region, property type, and economic sector. The Fund has historically maintained a leverage ratio significantly lower than the NCREIF ODCE Index and invests 5-15% of its gross assets in value-added type real estate investment opportunities.

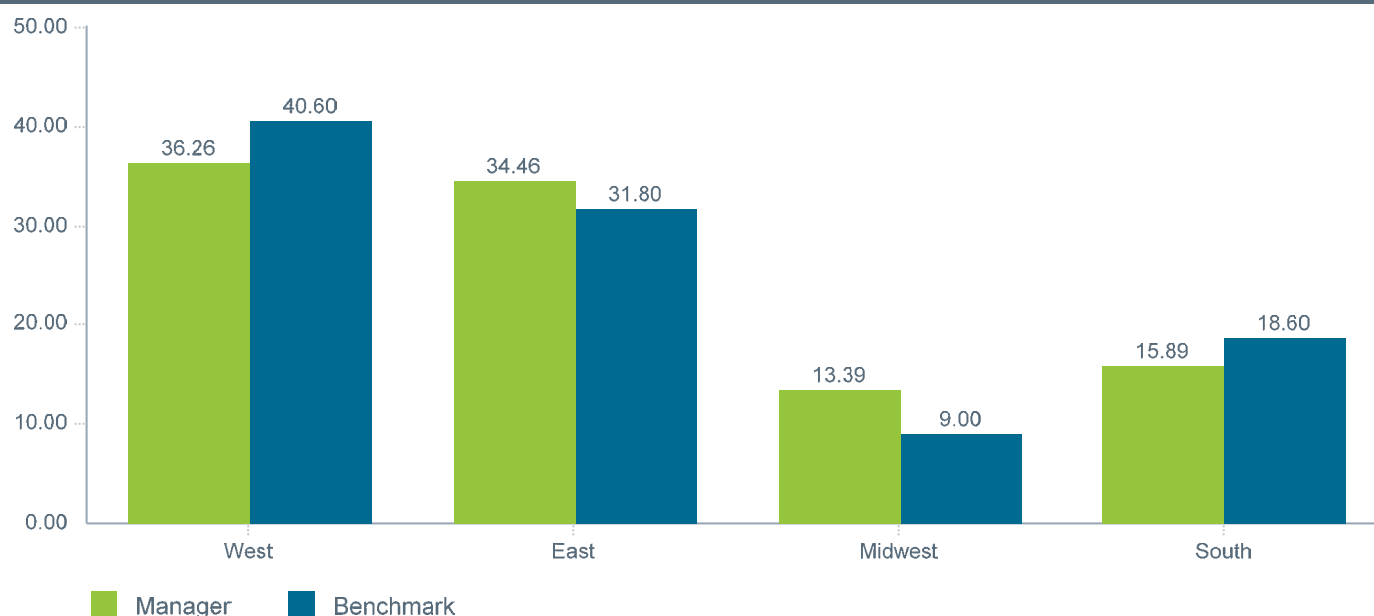
Investment Profile

Fund Inception	1978
Legal Structure	LP
Fund Structure	Open-End
Gross Real Estate Assets (\$M)	23,414
Fund Leverage %	17.60
Portfolio Occupancy %	93.40
Cash Reserve %	5.40
Number of Investments	203
Number of Limited Partners	435

Property Type Allocation (%)

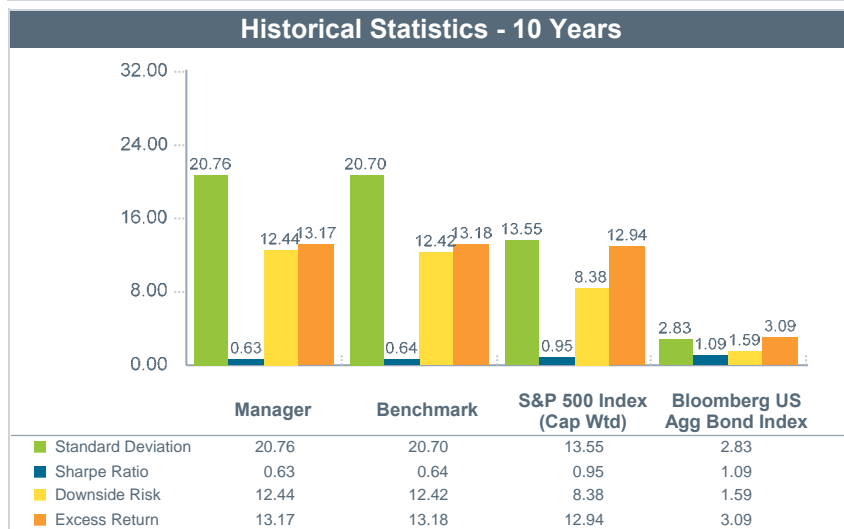
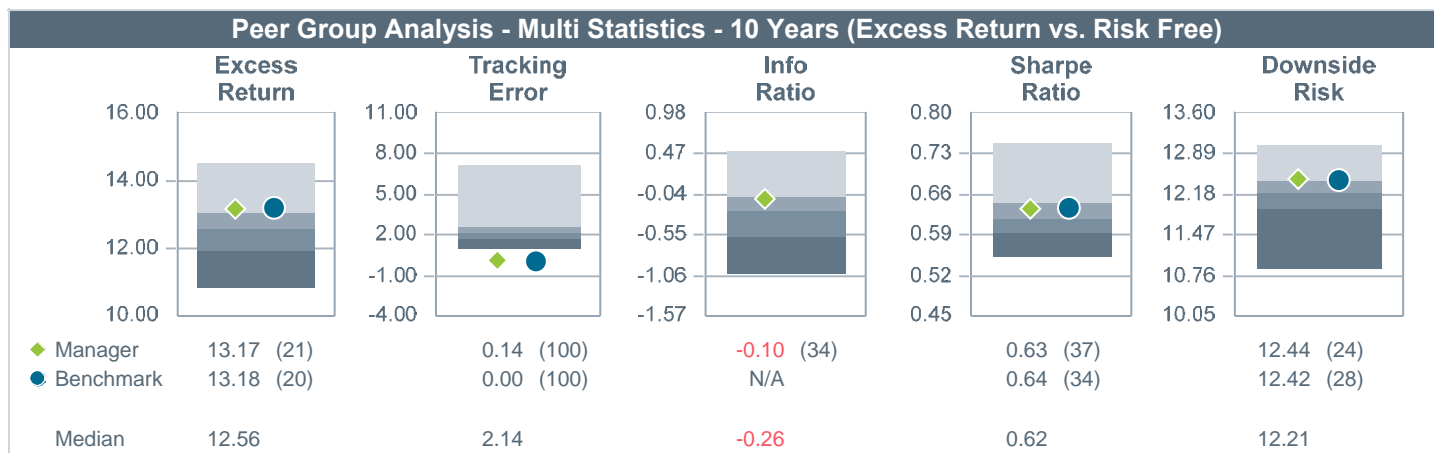
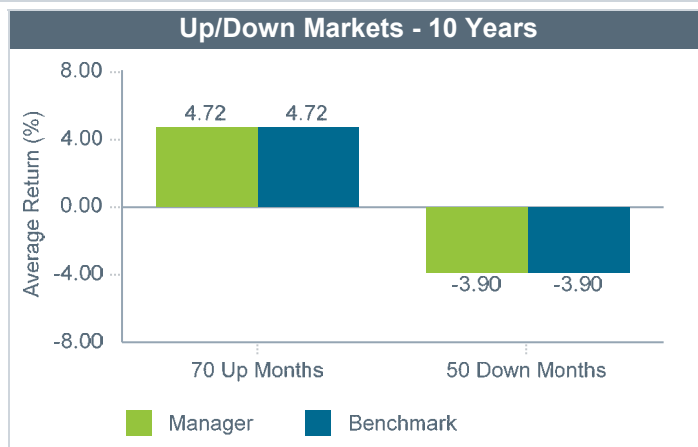
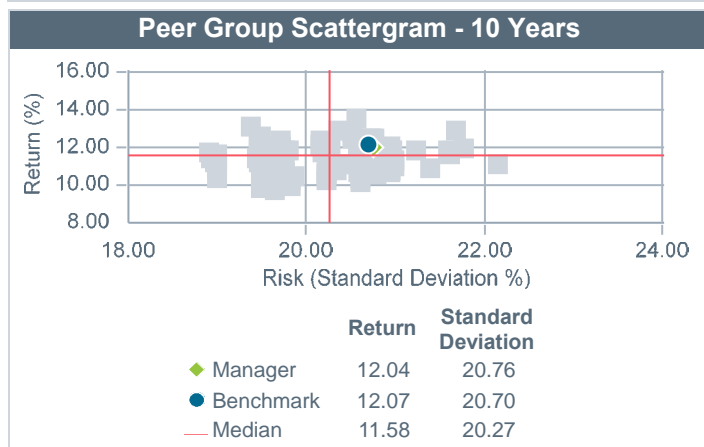


Geographic Allocation (%)



Performance shown is gross of fees and product specific. Calculation is based on quarterly periodicity. Investment profile data shown is provided by the investment manager and is as of the most recently available quarter end. Allocation data shown is based on NAV. Benchmark allocation to "Other" consists of entertainment (theaters, golf courses, bowling alleys), healthcare (hospitals, clinics), manufactured homes, parking lots, self-storage units, senior living, and undeveloped land.

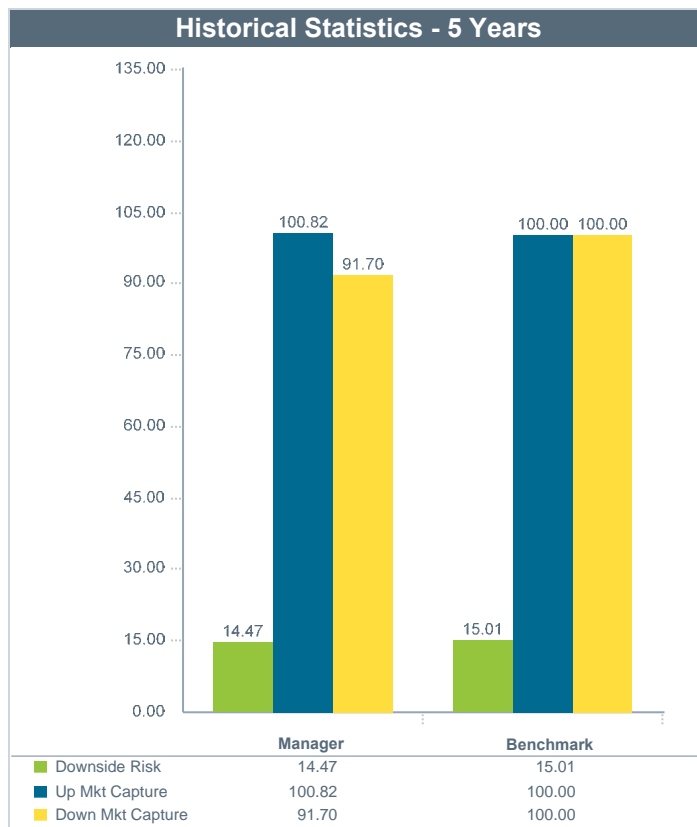
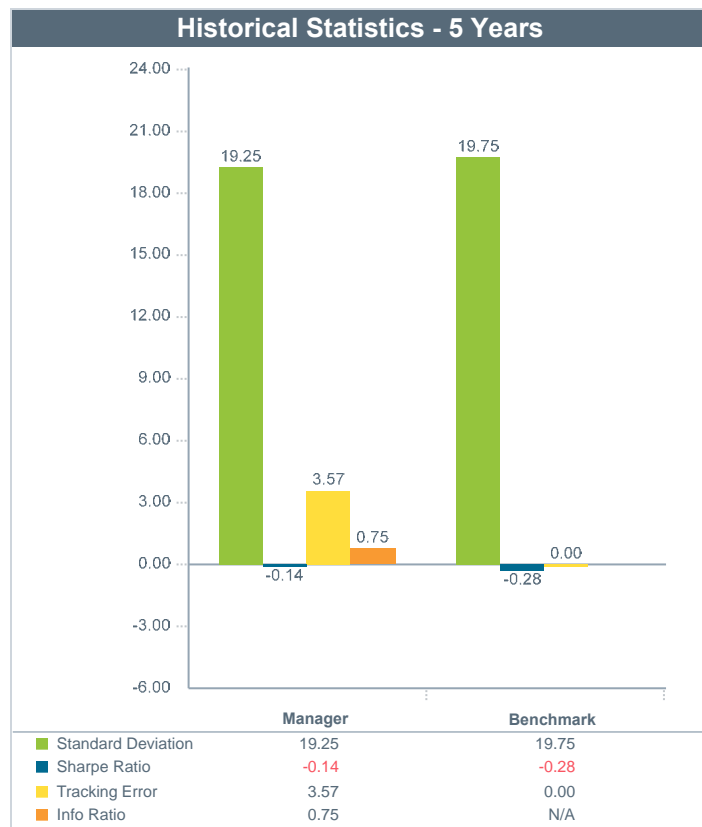
Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-6.46	-5.95	2.32	7.40	8.07	12.04	4.95	8.53	2.37	30.29	2.42
Benchmark	-6.44	-5.86	2.41	7.50	8.17	12.07	5.07	8.60	2.52	30.38	2.47
Difference	-0.02	-0.09	-0.09	-0.10	-0.10	-0.03	-0.12	-0.07	-0.15	-0.09	-0.05
Peer Group Median	-6.76	-5.67	1.86	6.93	7.52	11.58	5.14	6.18	2.94	29.43	1.62
Rank	33	55	40	35	26	26	55	18	65	33	30
Population	262	248	220	194	171	136	248	235	222	253	244



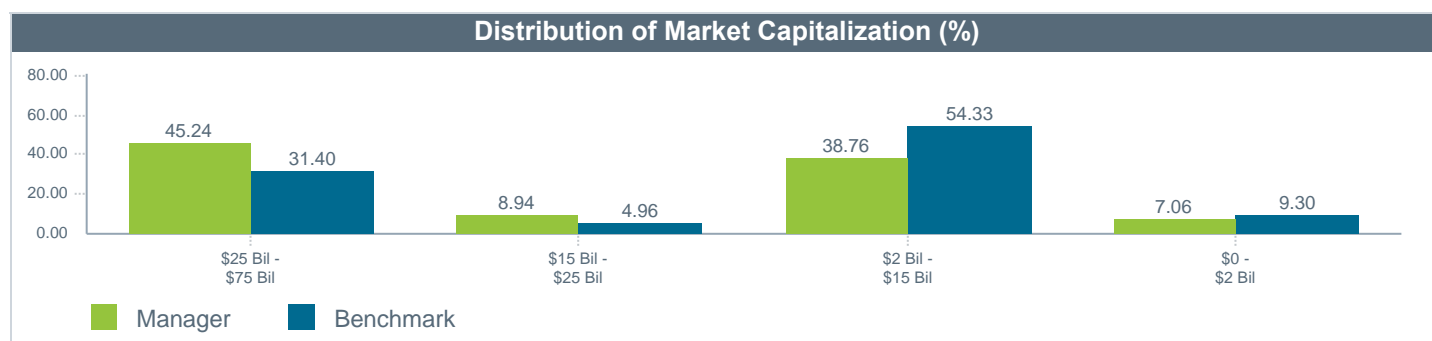
Actual Correlation - 10 Years

	Actual Correlation
Vanguard Spl Real Estate Index	1.00
S&P 500 Index (Cap Wtd)	0.70
Russell 2000 Index	0.69
MSCI EAFE Index (USD) (Net)	0.65
MSCI Emg Mkts Index (USD) (Net)	0.57
Bloomberg US Agg Bond Index	0.30
Bloomberg US Trsy US TIPS Index	0.21
Wilshire US REIT Index	1.00
HFRI FOF Comp Index	0.40
Bloomberg Cmnty Index (TR)	0.31
ICE BofAML 3 Mo US T-Bill Index	-0.04
Cons Price Index (Unadjusted)	-0.11

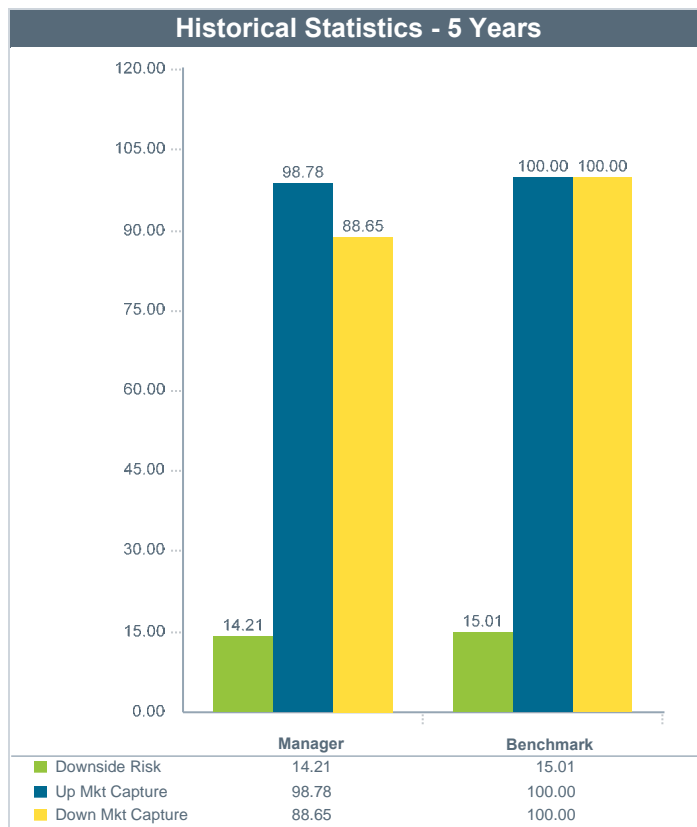
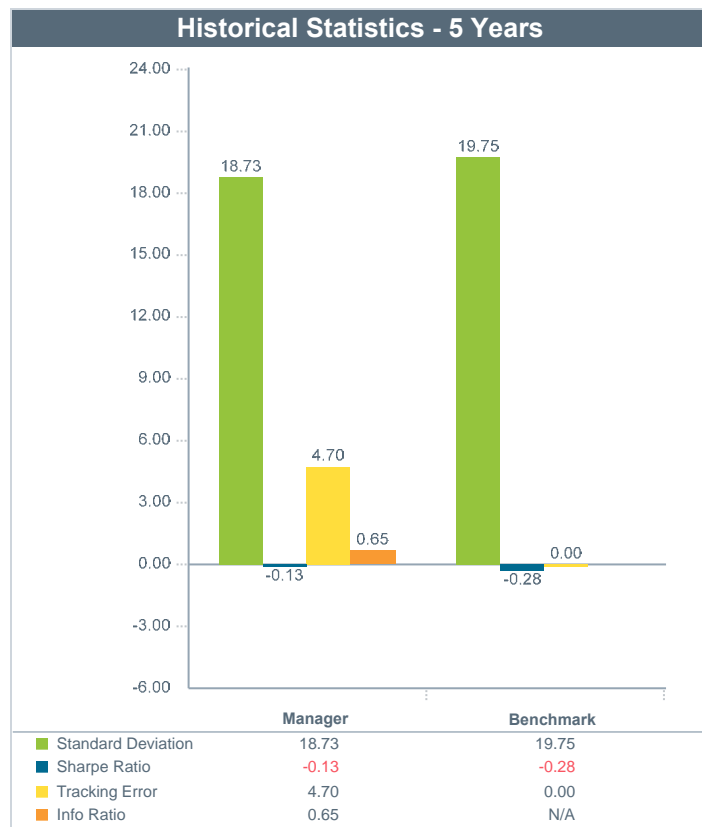
Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-20.64	-13.00	-0.16	-3.96	3.39	N/A	-4.80	20.17	-30.26	17.74	37.35
Benchmark	-17.80	-11.67	0.57	-6.59	-0.46	10.35	-5.58	21.95	-35.07	7.66	29.75
Difference	-2.84	-1.33	-0.73	2.63	3.85	N/A	0.78	-1.78	4.81	10.08	7.60



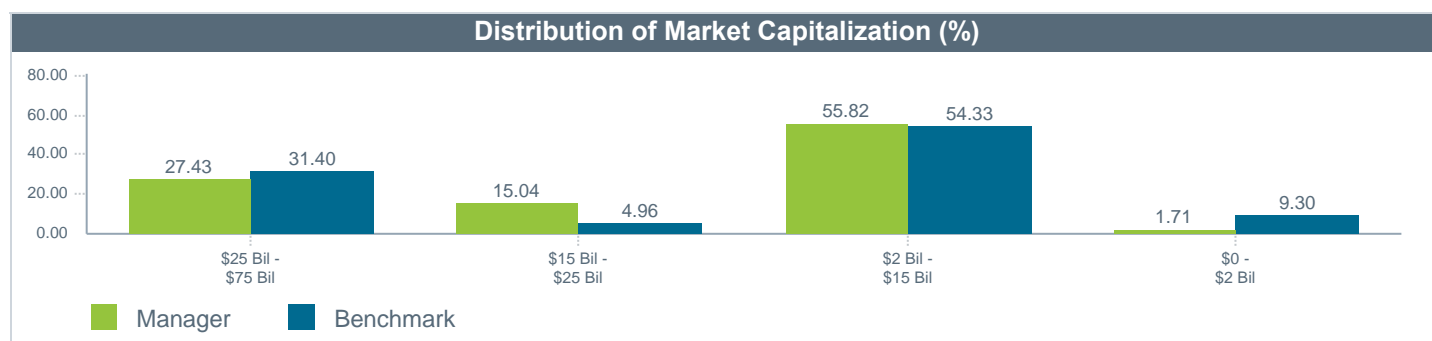
Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	23,755	19,170
Median Mkt. Cap (\$M)	4,033	2,290
Price/Earnings Ratio	13.68	12.80
Price/Book Ratio	1.94	2.28
5 Yr. EPS Growth Rate (%)	9.48	10.55
Current Yield (%)	8.20	8.91
Beta (5 Years, Monthly)	0.96	1.00
Number of Securities	35	49



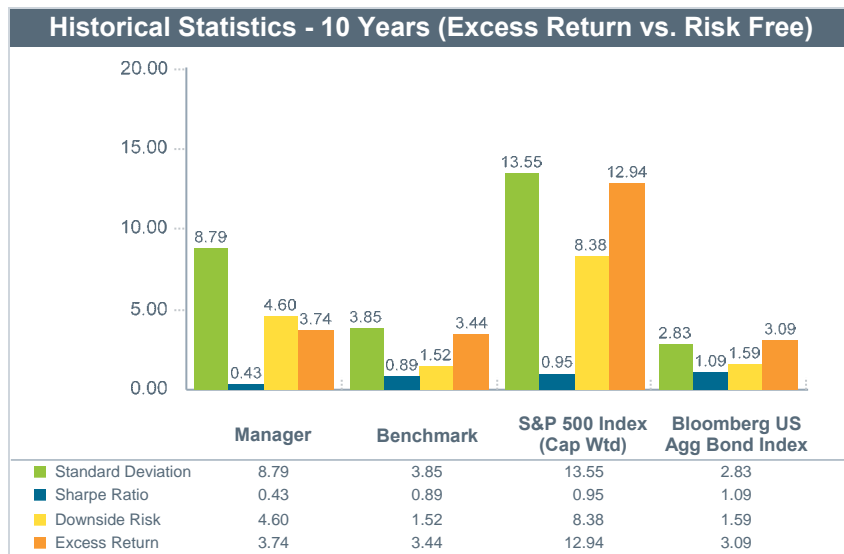
Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-16.24	-12.73	-0.50	-3.49	3.15	N/A	-2.70	15.99	-26.79	16.14	37.72
Benchmark	-17.80	-11.67	0.57	-6.59	-0.46	10.35	-5.58	21.95	-35.07	7.66	29.75
Difference	1.56	-1.06	-1.07	3.10	3.61	N/A	2.88	-5.96	8.28	8.48	7.97



Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	18,854	19,170
Median Mkt. Cap (\$M)	6,445	2,290
Price/Earnings Ratio	13.45	12.80
Price/Book Ratio	2.09	2.28
5 Yr. EPS Growth Rate (%)	12.65	10.55
Current Yield (%)	8.04	8.91
Beta (5 Years, Monthly)	0.92	1.00
Number of Securities	23	49

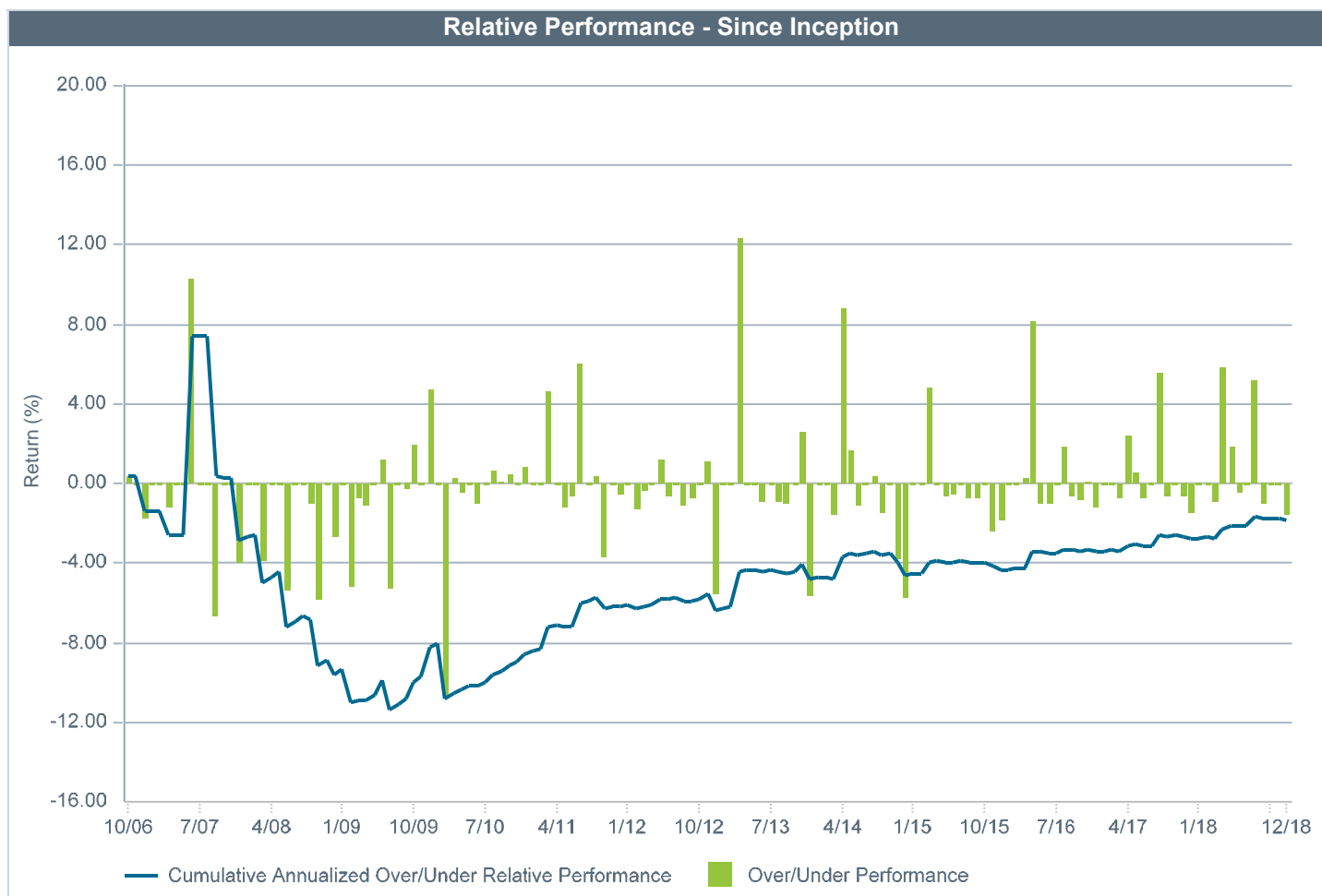


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	-0.84	12.47	9.61	7.64	7.65	3.80	8.08	8.32	2.66	6.87	16.00
Benchmark	0.75	3.21	3.14	4.94	6.00	3.81	3.63	2.59	4.97	10.48	9.69
Difference	-1.59	9.26	6.47	2.70	1.65	-0.01	4.45	5.73	-2.31	-3.61	6.31



Actual Correlation - 10 Years

	Actual Correlation
NCREIF Timberland Index	0.07
S&P 500 Index (Cap Wtd)	-0.04
Russell 2000 Index	-0.05
MSCI EAFE Index (USD) (Net)	-0.03
MSCI Emg Mkts Index (USD) (Net)	-0.07
Bloomberg US Agg Bond Index	0.03
Bloomberg US Trsy US TIPS Index	0.16
Wilshire US REIT Index	-0.04
HFRI FOF Comp Index	0.01
Bloomberg Cmtty Index (TR)	0.06
ICE BofAML 3 Mo US T-Bill Index	0.11
Cons Price Index (Unadjusted)	0.20



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

Manager: Dreyfus Gvt Csh Mgt;Inst (DGCXX)

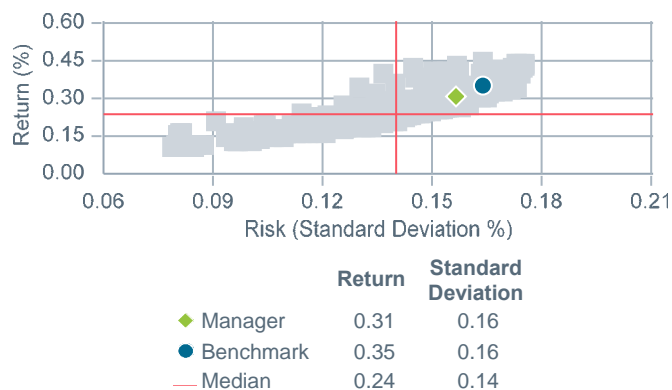
As of December 31, 2018

Benchmark: FTSE 3 Mo T-Bill Index

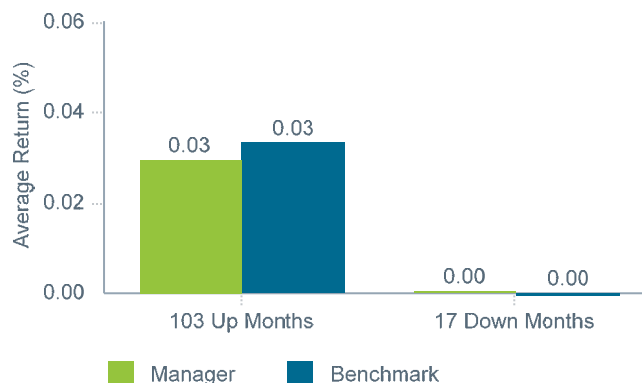
Peer Group: IM U.S. Taxable Money Market (MF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013
Manager	0.53	1.73	0.92	0.56	0.40	0.31	0.79	0.25	0.01	0.01	0.01
Benchmark	0.57	1.86	0.99	0.60	0.45	0.35	0.84	0.27	0.03	0.02	0.06
Difference	-0.04	-0.13	-0.07	-0.04	-0.05	-0.04	-0.05	-0.02	-0.02	-0.01	-0.05
Peer Group Median	0.48	1.54	0.70	0.43	0.31	0.24	0.55	0.06	0.01	0.01	0.01
Rank	23	22	18	18	20	23	17	18	35	48	46
Population	831	815	705	649	630	571	830	742	696	989	1,005

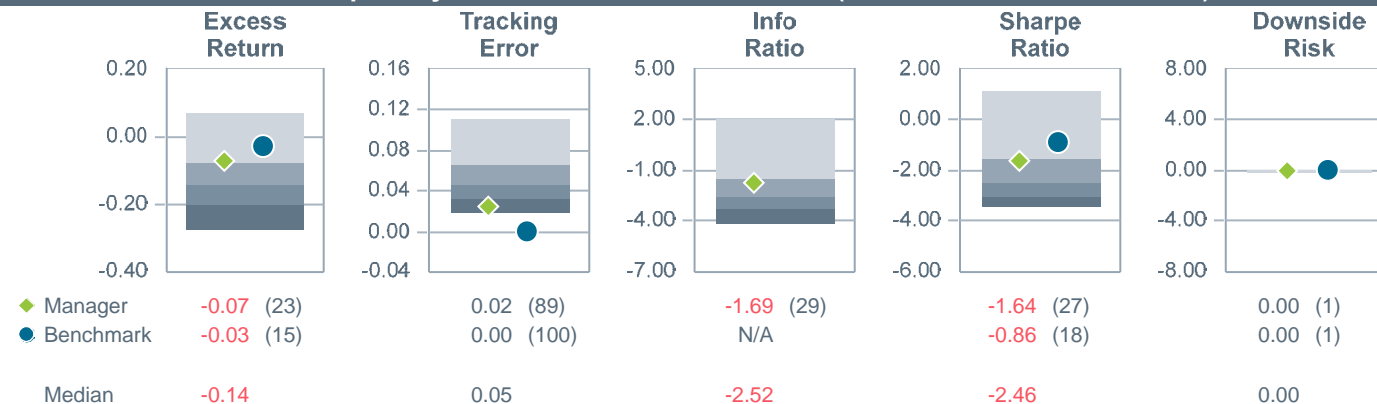
Peer Group Scattergram - 10 Years



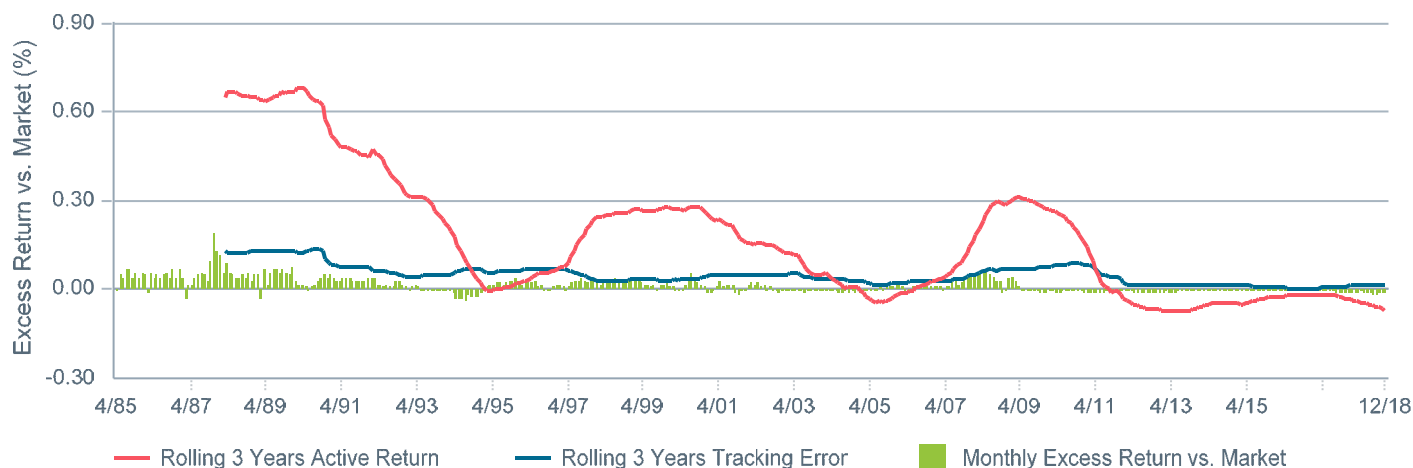
Up/Down Markets - 10 Years



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



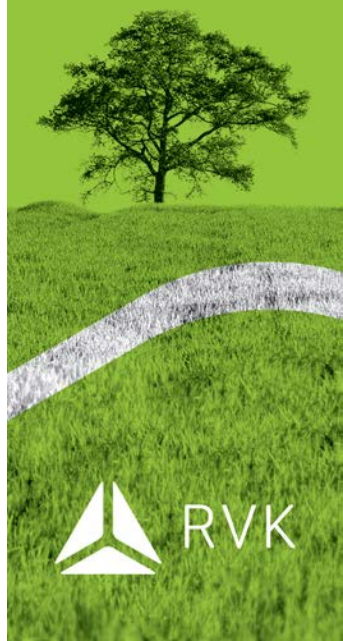
Rolling Return - Since Inception



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



Addendum & Glossary



City of Jacksonville Employees' Retirement System Addendum

Performance Related Comments:

- Performance is annualized for periods greater than one year.
- The inception date shown indicates the first full month of performance following initial funding.
- The market value shown for the Transition Account includes residual assets from terminated managers.
- RVK began monitoring the assets of the City of Jacksonville Retirement System on 01/01/2019. Prior historical data was provided by the custodian and previous consultant.

Custom Composite Benchmark Comments:

- **Current Total Fund Policy Index:** The passive Current Total Fund Policy Index is calculated monthly and currently consists of 30% Russell 3000 Index, 20% MSCI ACW Ex US Index (USD) (Net), 20% Fixed Income Index, 15% NCREIF ODCE Index (AWA) (Net), and 15% Diversifying Assets Index. The Current Total Fund Policy Index is representative of the target asset allocation approved 10/26/2017. Prior to 11/1/2017, the Current Total Fund Policy Index consists of the Legacy Total Fund Policy Index.
- **Legacy Total Fund Policy Index:** The passive Legacy Total Fund Policy Index is calculated monthly and currently consists of 35% Russell 3000 Index, 20% MSCI ACW Ex US Index (USD) (Net), 19% Fixed Income Index, 15% NCREIF ODCE Index (AWA) (Net), 10% Diversifying Assets Index, and 1% FTSE 3 Mo US T-Bill Index.
- **US Equity Index:** The passive US Equity Index consists of 100% DJ US TSM Index through 06/2009 and 100% Russell 3000 Index thereafter.
- **International Equity Index:** The passive International Equity Index consists of 100% MSCI EAFE Index (USD) (Gross) through 01/2011 and 100% MSCI ACW Ex US Index (USD) (Net) thereafter.
- **Fixed Income Index:** The passive Fixed Income Index consists of 100% Bloomberg US Agg Bond Index through 10/2017 and 100% Bloomberg US Universal Bond Index thereafter.
- **Diversifying Assets Index:** The passive Diversifying Assets Index is calculated monthly and consists of 50% S&P MLP Index (TR)/50% NCREIF Timberland Index through 10/2017 and 67% S&P MLP Index (TR)/33% NCREIF Timberland Index thereafter.

Custom Manager Benchmark Comments:

- **INTECH Enhanced Index:** The passive INTECH Enhanced Index consists of 100% Russell 1000 Index through 09/2009 and 100% S&P 500 Index (Cap Wtd) thereafter.
- **Baillie Gifford Index:** The passive Baillie Gifford Index consists of 100% MSCI EAFE Grth Index (USD) (Net) through 10/2017 and 100% MSCI ACW Ex US Grth Index (USD) (Net) thereafter.
- **Richmond Capital Index:** The passive Richmond Capital Index consists of 100% ICE BofAML US Domestic Master through 06/2011 and 100% Bbrg Barc US Aggregate Index thereafter.
- **Frank. Temp. Global Multisector Index:** The passive Frank. Temp. Global Multisector Index consists of 100% ICE BofAML Gbl Hi Yld Index through 12/2009 and 100% Bloomberg Multiverse Index thereafter.
- **Custom REITs Index:** The passive Custom REITs Index consists of 100% MSCI US REIT Index (USD) (Gross) through 01/31/2019 and 100% Vanguard Spl Real Estate Index thereafter.
- **Vanguard Spliced Real Estate Index:** The Vanguard Spl Real Estate Index consists of MSCI US REIT Index (USD) (Gross) adjusted to include a 2% cash position (Lipper Money Market Average) through 04/30/2009, MSCI US REIT Index (USD) (Gross) through 01/31/2018, MSCI US IM Real Estate 25/50 Transition Index through 07/24/2018, and MSCI US IM Real Estate 25/50 Index (Gross) thereafter.

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

Disclaimer of Warranties and Limitation of Liability - This document was prepared by RVK, Inc. (RVK) and may include information and data from some or all of the following sources: client staff; custodian banks; investment managers; specialty investment consultants; actuaries; plan administrators/record-keepers; index providers; as well as other third-party sources as directed by the client or as we believe necessary or appropriate. RVK has taken reasonable care to ensure the accuracy of the information or data, but makes no warranties and disclaims responsibility for the accuracy or completeness of information or data provided or methodologies employed by any external source. This document is provided for the client's internal use only and does not constitute a recommendation by RVK or an offer of, or a solicitation for, any particular security and it is not intended to convey any guarantees as to the future performance of the investment products, asset classes, or capital markets.

