



# Quarterly Investment Performance Analysis

City of Jacksonville Employees' Retirement System

Period Ended: December 31, 2019



# Table of Contents

1	Capital Markets Review	Page 3
2	Total Fund	Page 10
3	Composite Profiles	Page 29
4	Investment Manager Profiles	Page 42
5	Addendum & Glossary	Page 68

# Capital Markets Review

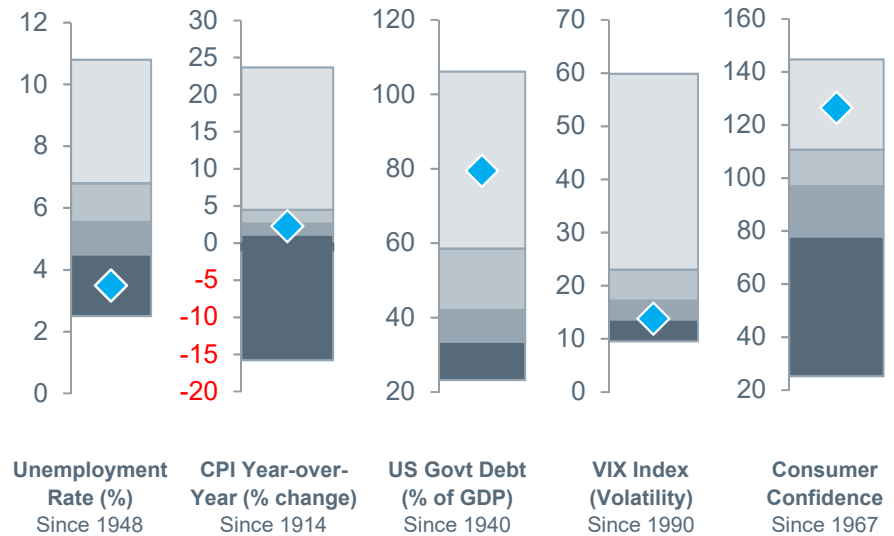


Fourth Quarter Economic Environment

Key Economic Indicators

The fourth quarter of 2019 was a strong quarter for global equity markets, with representative US, developed non-US, and emerging market indices each substantially adding to gains realized earlier in the year. Credit markets also finished in positive territory, as supportive financial conditions and a general risk-on market sentiment drove spreads to tighten across the quality spectrum. Falling discount rates drove valuations and performance for US equities during the first half of the year, but increases in Q4 appeared more directly tied to optimism around international trade. Bilateral negotiations between the US and China finally resulted in an announced “Phase One” trade agreement, including a partial rollback of tariffs, which de-escalated trade tensions to a degree. US economic data released during Q4 was generally positive—although softness remains in some key sectors, such as manufacturing. The ISM PMI value was below 50 in Q4, indicating contraction in the manufacturing sector. Global central banks remain accommodative, though the market expects little additional help from the Federal Reserve in 2020. During its most recent meeting, the FOMC did not forecast any additional rate cuts in 2020.

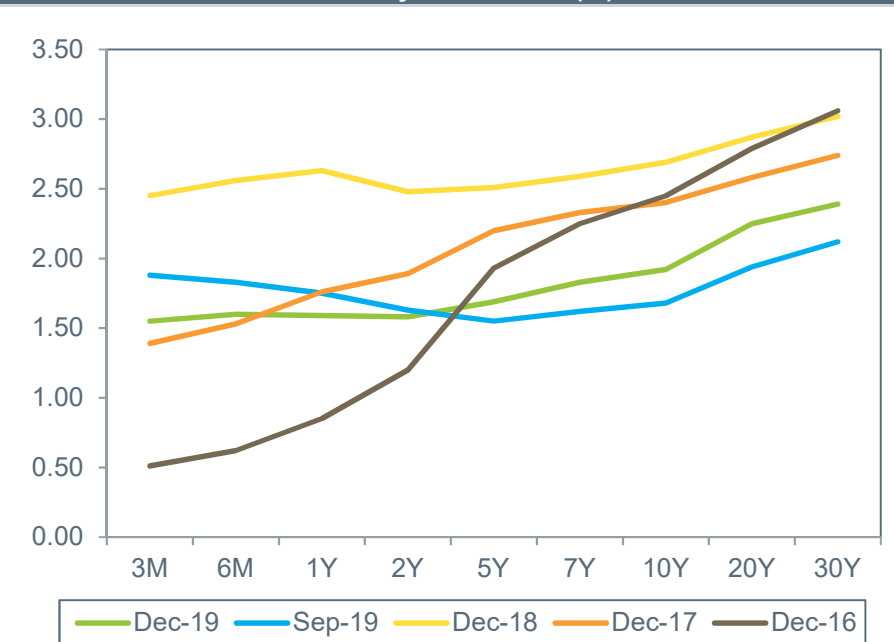
Key Economic Indicators



Economic Indicators

	Dec-19	Sep-19	Dec-18	Dec-16	20 Yr
Federal Funds Rate (%)	1.55 ▼	1.90	2.40	0.55	1.79
Breakeven Infl. - 5 Yr (%)	1.70 ▲	1.35	1.49	1.86	1.85
Breakeven Infl. - 10 Yr (%)	1.79 ▲	1.52	1.71	1.97	2.03
CPI YoY (Headline) (%)	2.3 ▲	1.7	1.9	2.1	2.2
Unemployment Rate (%)	3.5 —	3.5	3.9	4.7	5.9
Real GDP YoY (%)	2.3 ▲	2.1	2.5	2.0	2.1
PMI - Manufacturing	47.2 ▼	47.8	54.3	54.3	52.7
USD Total Wtd Idx	90.82 ▼	93.25	91.79	95.72	86.07
WTI Crude Oil per Barrel (\$)	61.1 ▲	54.1	45.4	53.7	61.9
Gold Spot per Oz (\$)	1,517 ▲	1,472	1,282	1,148	935

Treasury Yield Curve (%)



Market Performance (%)

	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	9.07	31.49	31.49	11.70	13.56
Russell 2000	9.94	25.53	25.53	8.23	11.83
MSCI EAFE (Net)	8.17	22.01	22.01	5.67	5.50
MSCI EAFE SC (Net)	11.52	24.96	24.96	8.85	8.74
MSCI Emg Mkts (Net)	11.84	18.44	18.44	5.61	3.68
Bloomberg US Agg Bond	0.18	8.72	8.72	3.05	3.75
ICE BofAML 3 Mo US T-Bill	0.46	2.28	2.28	1.07	0.58
NCREIF ODCE (Gross)	1.51	5.34	5.34	8.97	11.42
FTSE NAREIT Eq REIT (TR)	-0.76	26.00	26.00	7.21	11.94
HFRI FOF Comp	3.03	8.33	8.33	2.35	2.82
Bloomberg Cmdbt (TR)	4.42	7.69	7.69	-3.92	-4.73

Fourth Quarter Review

**Broad Market**

US markets enjoyed a strong finish to the year amid de-escalation of the US-China trade war and stimulative monetary policy from the Fed. The quarter saw high single and low double digit returns for major indexes across all size segments and styles. The strong quarter pushed the S&P 500 Index to a 31.5% return on the year.

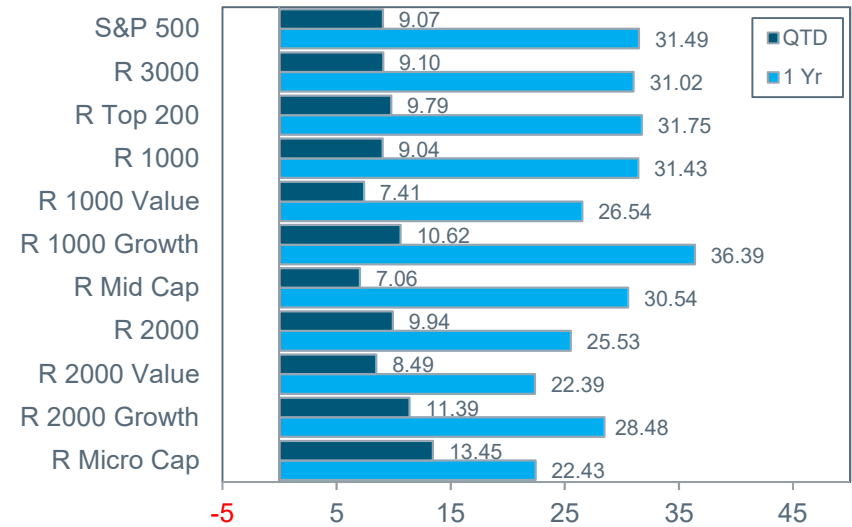
**Market Cap**

Large and mid-cap stocks lagged slightly behind small-cap stocks in Q4, with the Russell 2000 Index returning 9.9% and the S&P 500 and Russell MidCap Indexes returning 9.1% and 7.1%, respectively.

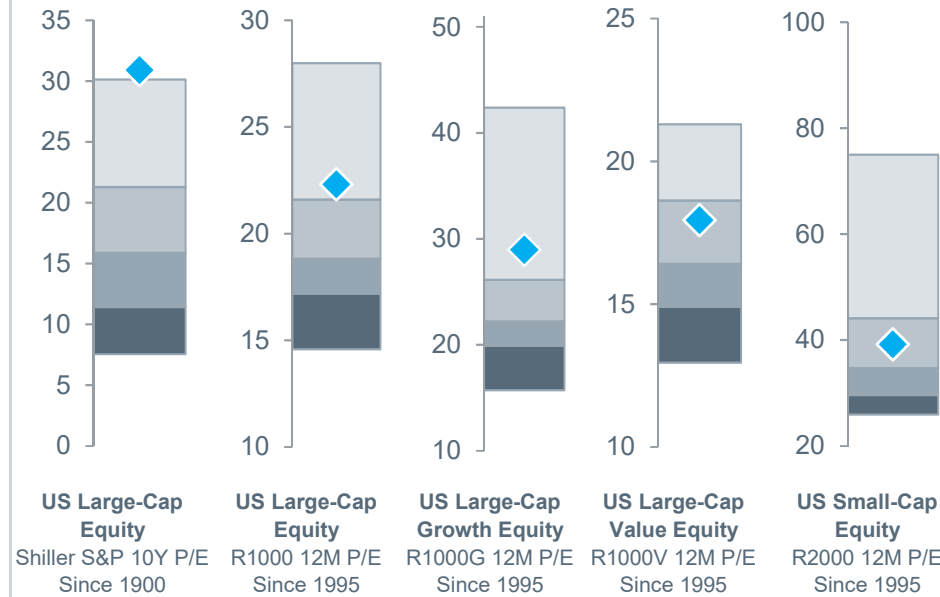
**Style and Sector**

Active managers struggled to keep up with strong benchmark returns in Q4. In addition, value-tilted managers performed notably better than growth and core managers in the quarter.

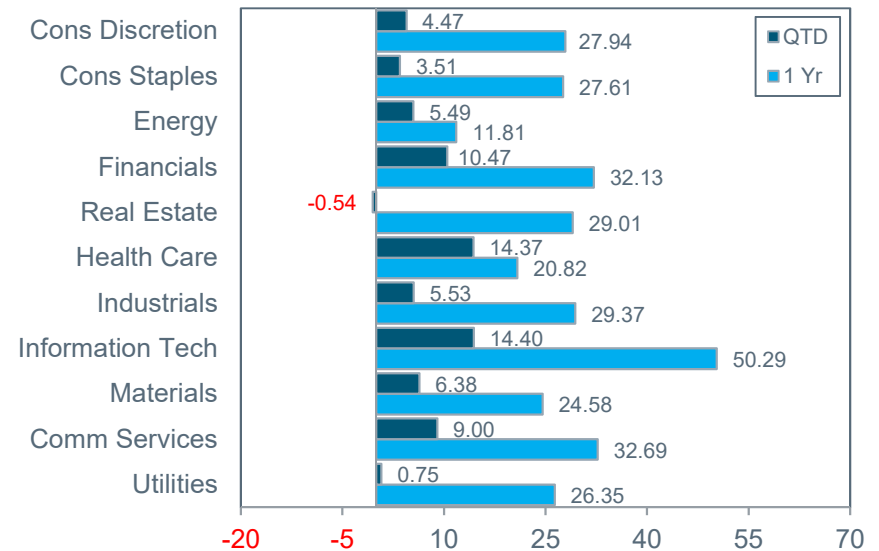
Style and Capitalization Market Performance (%)



Valuations



S&P 500 Index Sector Performance (%)



Valuation data courtesy of Bloomberg Professional Service and Robert J. Shiller, Irrational Exuberance, Second Edition. P/E metrics shown represent the 5th through 95th percentiles to minimize the effect of outliers.



**Fourth Quarter Review**

**Developed Markets**

Developed international markets delivered strong absolute returns in Q4, but they still lagged both domestic and emerging markets. By country, returns for the quarter were positive almost across the board, with only Belgium ending in slightly negative territory. However, Q4 returns were largely driven by multiple expansion, as growth continues to be weak in developed international markets.

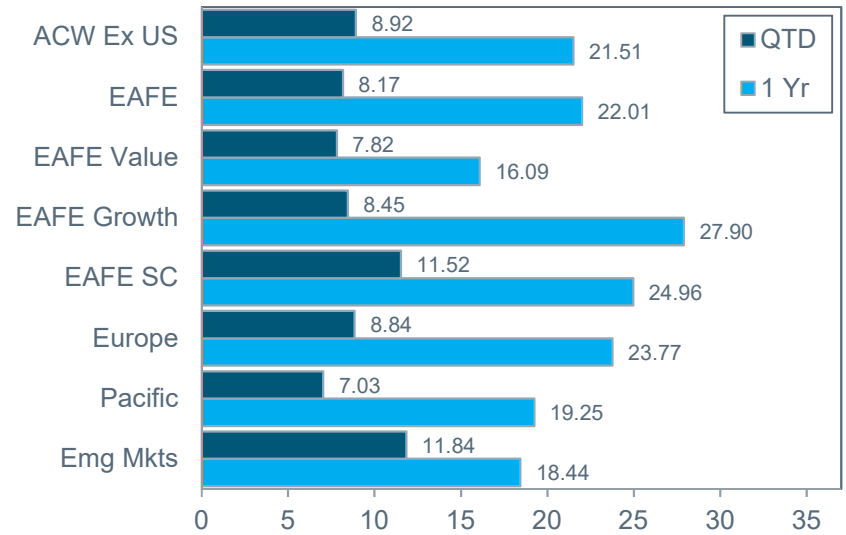
**Emerging Markets**

Emerging markets outperformed all other equity markets in Q4. Returns were largely lifted by the announcement of the initial phase of a trade deal between China and US, potentially indicating de-escalation in the ongoing trade war.

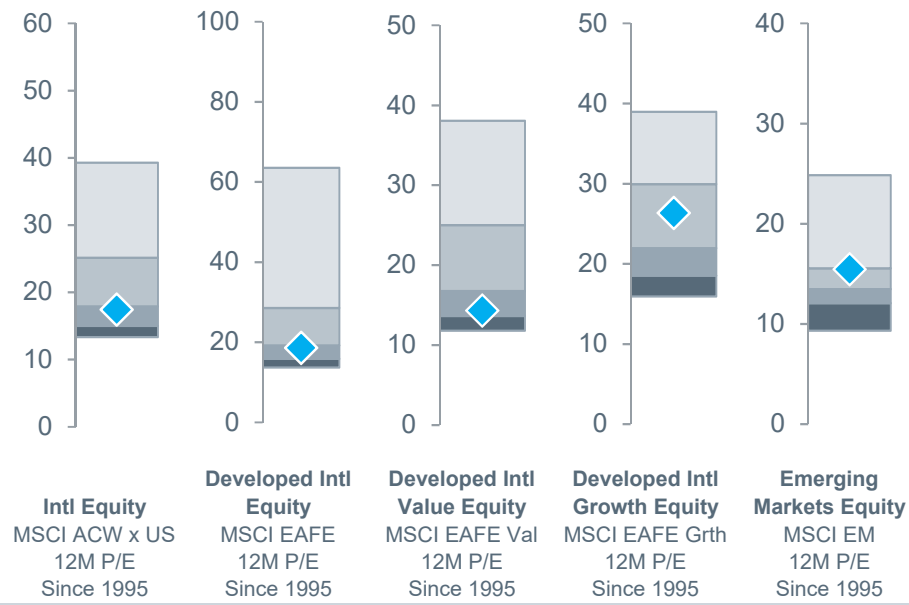
**Market Cap & Style**

In developed international markets, value stocks continued to underperform growth, while small-cap stocks outperformed large-cap for the quarter. In emerging markets, growth stocks outperformed value and large-cap outperformed small-cap.

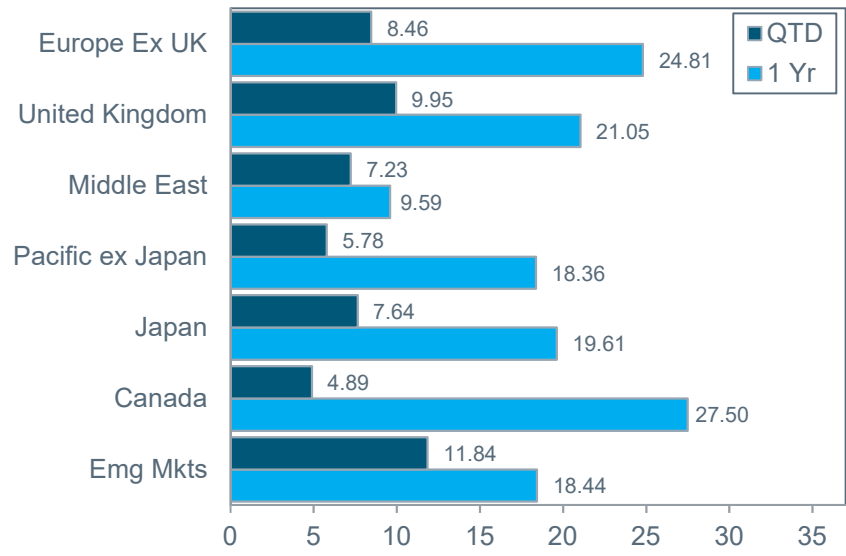
**MSCI Style and Capitalization Market Performance (%)**



**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**

After a solid first three quarters supported by declining rates, the Bloomberg US Aggregate Index finished the year more subdued, returning just 0.2% for the final quarter. The Bloomberg US Government Long Duration Index fell sharply, finishing the quarter with a -4.1% return, but the index still ended the year in positive territory with a return of 14.7%.

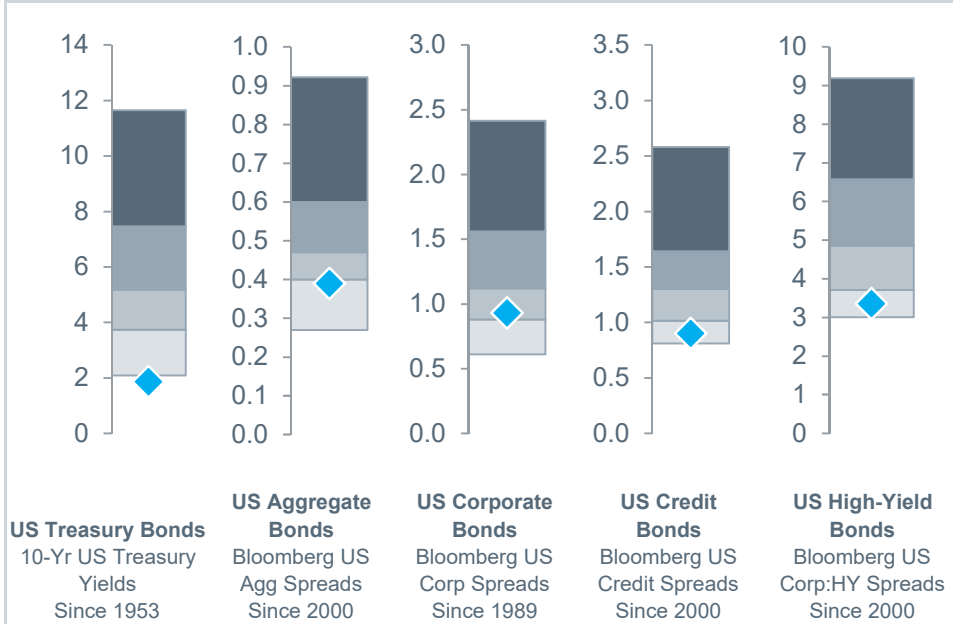
**Credit Market**

Corporate credit fared better than the broader index for the quarter, as strong economic data signaled optimism for the sector. Spreads tightened over the quarter, and the Bloomberg US Corporate Index returned 1.2%, contributing to an already-impressive annual return of 14.5%.

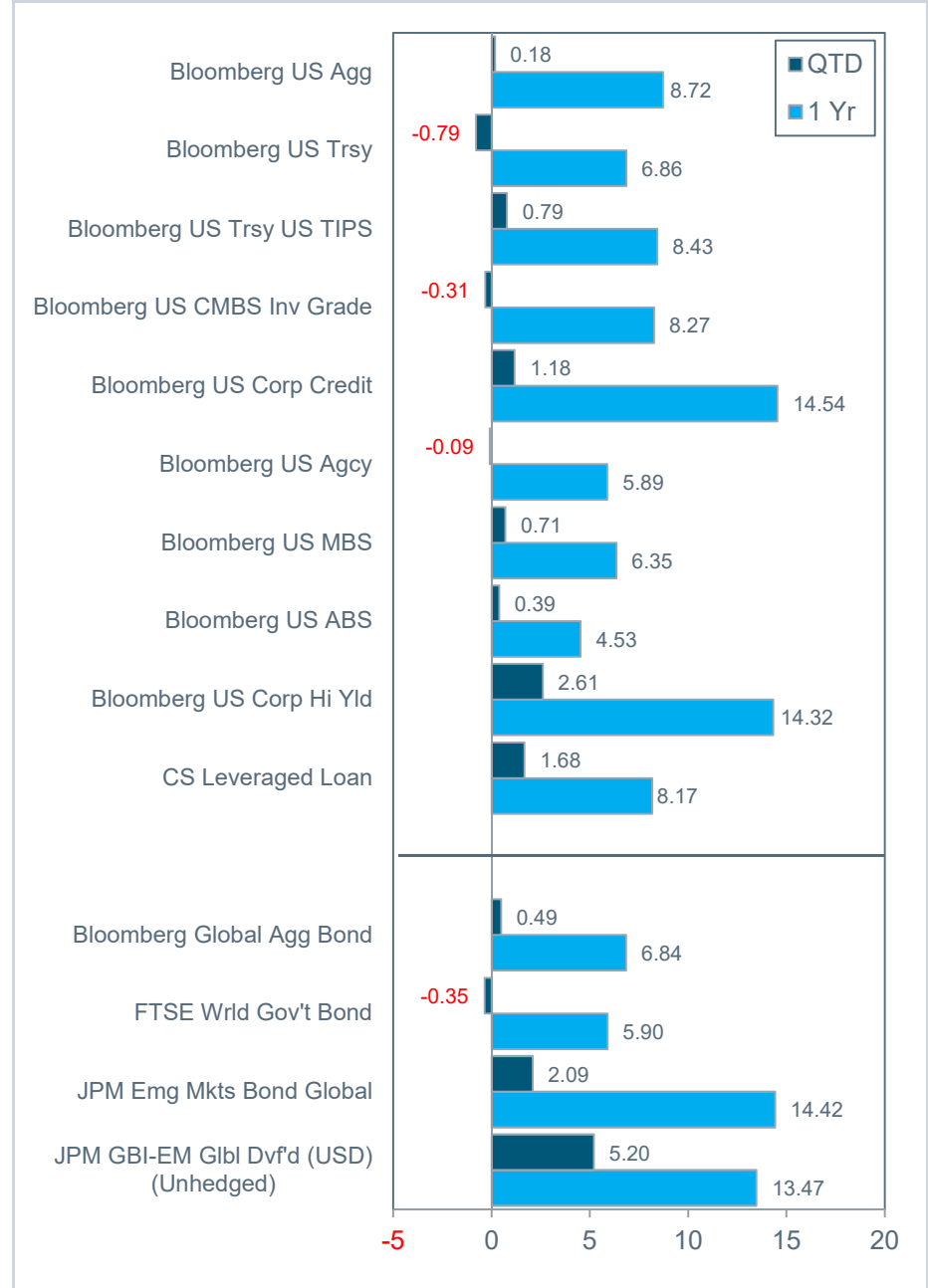
**Emerging Market Debt**

Hard currency emerging markets debt also added to a strong year. The JPM EMBI Global Diversified Index posted 1.8% in the final quarter to finish the year up 15.0%.

**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**

Hedge funds finished the year on a positive note, as the vast majority of strategies in the space added to gains realized earlier in the year. The HFRI Equity Hedge Index return for 2019, at 13.7%, was the best returning year for the index since 2013. Fund of Hedge Funds that maintained significant strategic exposure to Long/Short Equity and Long/Short Credit outperformed funds that rotated towards diversifying, market neutral strategies.

**General Market - Global Tactical Asset Allocation (GTAA)**

Most GTAA managers showed positive absolute performance in 2019, though they generally underperformed a static and less diversified blend of 60% US equity and 40% US fixed income. Nearly all GTAA managers underperformed this measure due to the extraordinarily strong 2019 performance of US large-cap equities compared to most of the other diversifying global asset classes included within GTAA strategies. Generally, those with the strongest returns in 2019 held higher relative allocations to US equities as opposed to developed international or emerging market equities.

**Fourth Quarter Review - Real Assets**

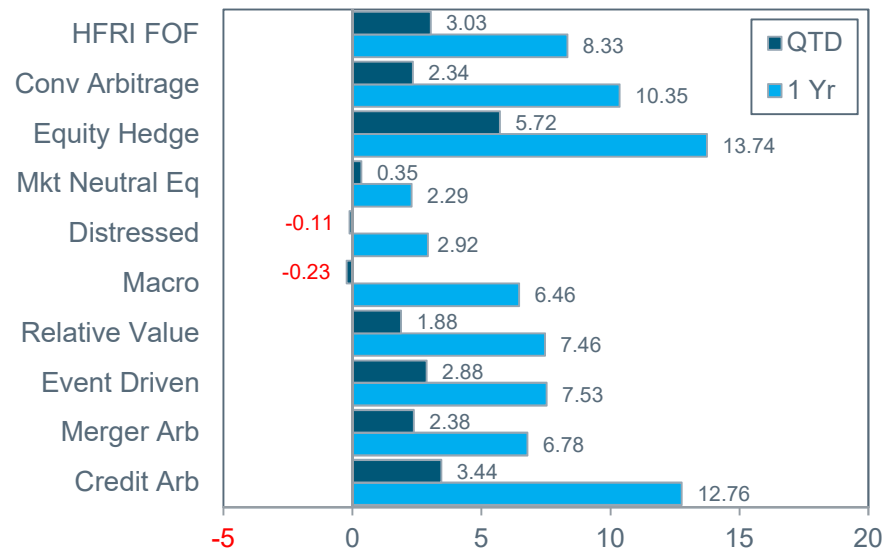
**General Market - Diversified Inflation Strategies (DIS)**

Performance of DIS managers ranged widely throughout both Q4 and the calendar year, though nearly all managers provided significantly stronger than typical positive absolute returns. Managers with larger TIPS allocations tended to underperform peers for the year, despite still achieving their own real return expectations. DIS managers that outperformed peers by the widest margins emphasized allocations to REITs, global listed infrastructure, and/or global natural resource equities.

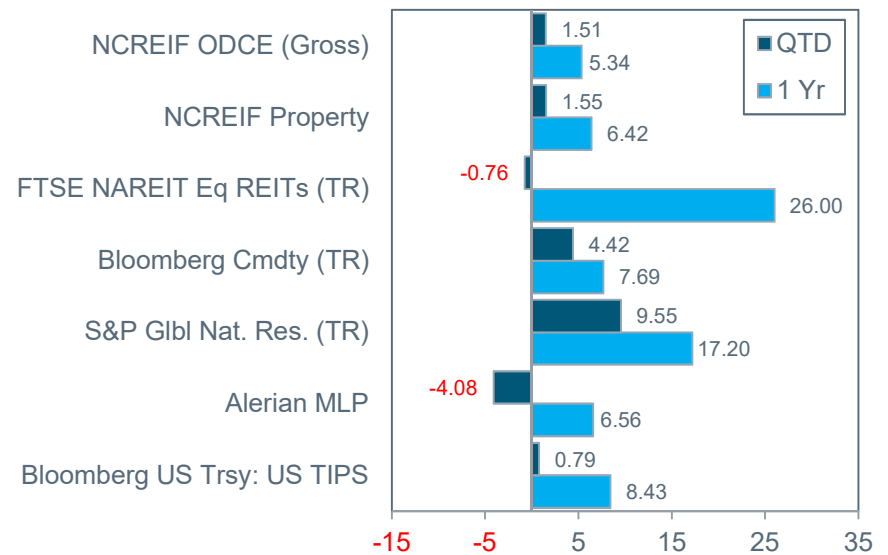
**General Market - Real Estate**

Core private real estate returned 1.5% during the quarter (on a preliminary basis), as reported by the NCREIF-ODCE Index, with the total return comprised of 1.0% income and 0.5% price appreciation. While the income component stayed in-line with historical levels, price appreciation experienced a modest increase of 0.2% compared to the relatively flat Q3 return. Investments in publicly traded real estate trailed their private market counterparts during Q4.

**HFRI Hedge Fund Performance (%)**



**Real Asset Performance (%)**





Annual Asset Class Performance

As of December 31, 2019

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	CYTD
Best	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	31.49
	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	26.00
	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	25.53
	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	24.96
	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	22.01
	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	-4.02	19.59
	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	18.44
	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	14.32
	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	8.72
	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	8.43
	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	8.33
	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	7.69
	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	5.34
Worst	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	2.28
	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, 2019

	Allocation		Performance (%)		Allocation		Performance (%)
	Market Value (\$)	%	QTD		Market Value (\$)	%	QTD
<b>US Equity</b>	<b>801,547,512</b>	<b>34.22</b>	<b>9.95</b>	<b>Real Estate</b>	<b>389,049,300</b>	<b>16.61</b>	<b>1.25</b>
Eagle Capital Large Cap Value (SA)	198,977,133	8.49	10.34	Harrison Street Core Property, LP	105,742,052	4.51	2.20
Mellon Large Cap Core Index (CF)	225,231,334	9.62	9.03	PGIM Real Estate PRISA II (CF)	57,763,360	2.47	1.86
Loomis Sayles Large Cap Growth (CF)	160,703,804	6.86	9.88	Principal US Property (CF)	123,594,349	5.28	1.33
William Blair Small Cap Value (SA)	103,022,072	4.40	4.97	UBS Trumbull Property (CF)	100,799,985	4.30	-0.16
Pinnacle Associates US SMID Cap Growth (SA)	113,613,170	4.85	16.27	Vanguard RE Idx;ETF (VNQ)	1,149,554	0.05	0.54
<b>International Equity</b>	<b>550,007,036</b>	<b>23.48</b>	<b>11.05</b>	<b>Diversifying Assets</b>	<b>146,085,016</b>	<b>6.24</b>	<b>-0.38</b>
Silchester International Value (CF)	271,290,277	11.58	9.11	Harvest Fund Advisors MLP (SA)	47,415,656	2.02	-1.13
Baillie Gifford International Growth (BGEFX)	145,762,899	6.22	14.08	Tortoise Capital Advisors MLP (SA)	45,833,456	1.96	-1.57
Acadian Emerging Markets (CF)	132,953,861	5.68	11.83	Hancock Timberland (SA)	52,835,904	2.26	1.37
<b>Fixed Income</b>	<b>450,901,151</b>	<b>19.25</b>	<b>0.85</b>	Dreyfus Gvt Csh Mgt;Inst (DGCXX)	3,989,788	0.17	0.41
Richmond Capital Core (SA)	139,312,589	5.95	0.38	Transition Account	797,995	0.03	N/A
Taplin Canida & Habacht Intermediate Duration (SA)	137,572,235	5.87	0.81				
Franklin Templeton Global Multisector Plus (CF)	103,030,921	4.40	1.60				
Loomis Sayles Multisector Full Discretion (CF)	70,985,405	3.03	0.78				

Schedule of Investable Assets (Total Assets)

Periods Ending	Beginning Market Value (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)	% Return	Unit Value
CYTD	2,107,578,103	-126,283,007	361,082,703	2,342,377,799	17.50	117.50

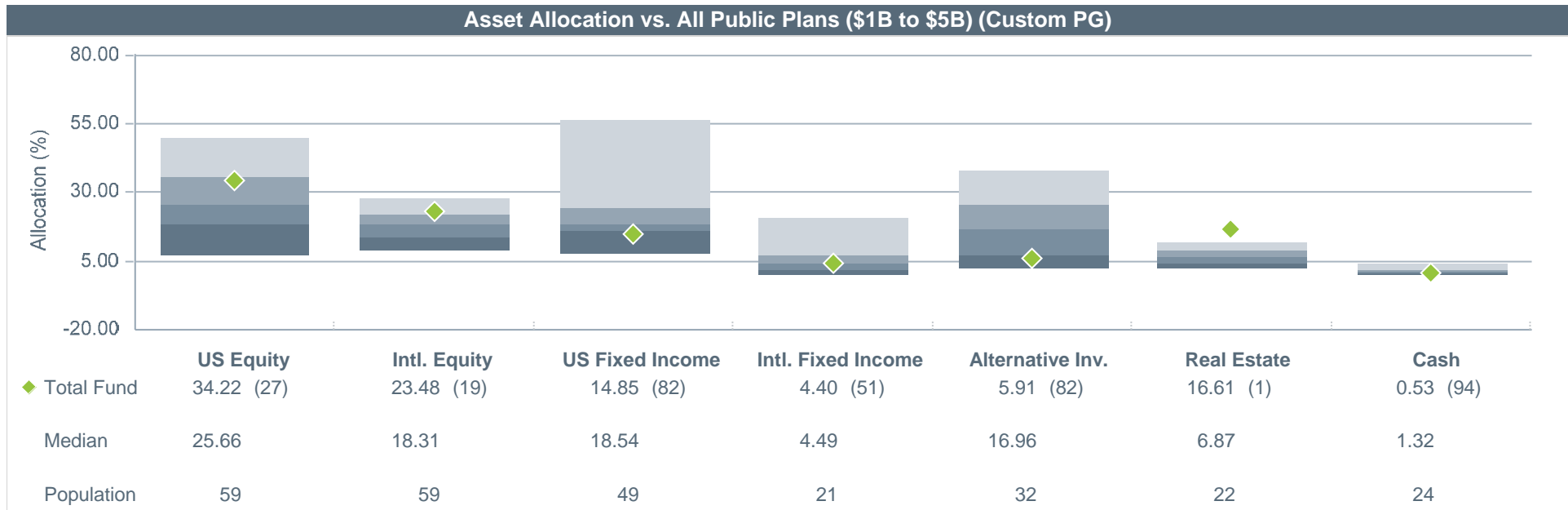
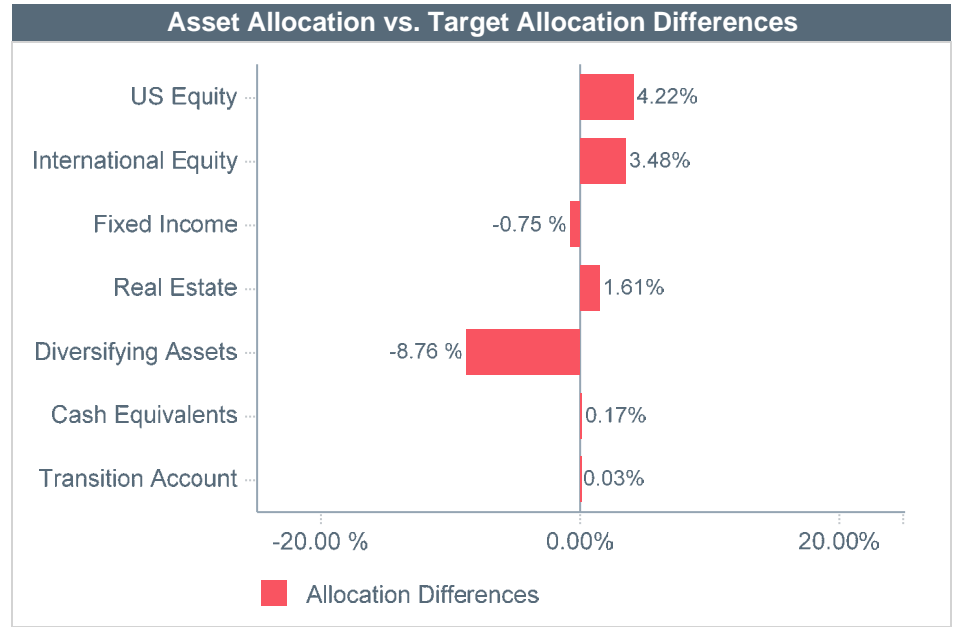
Performance shown is net of fees. Allocations shown may not sum up to 100% exactly due to rounding.



**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, 2019

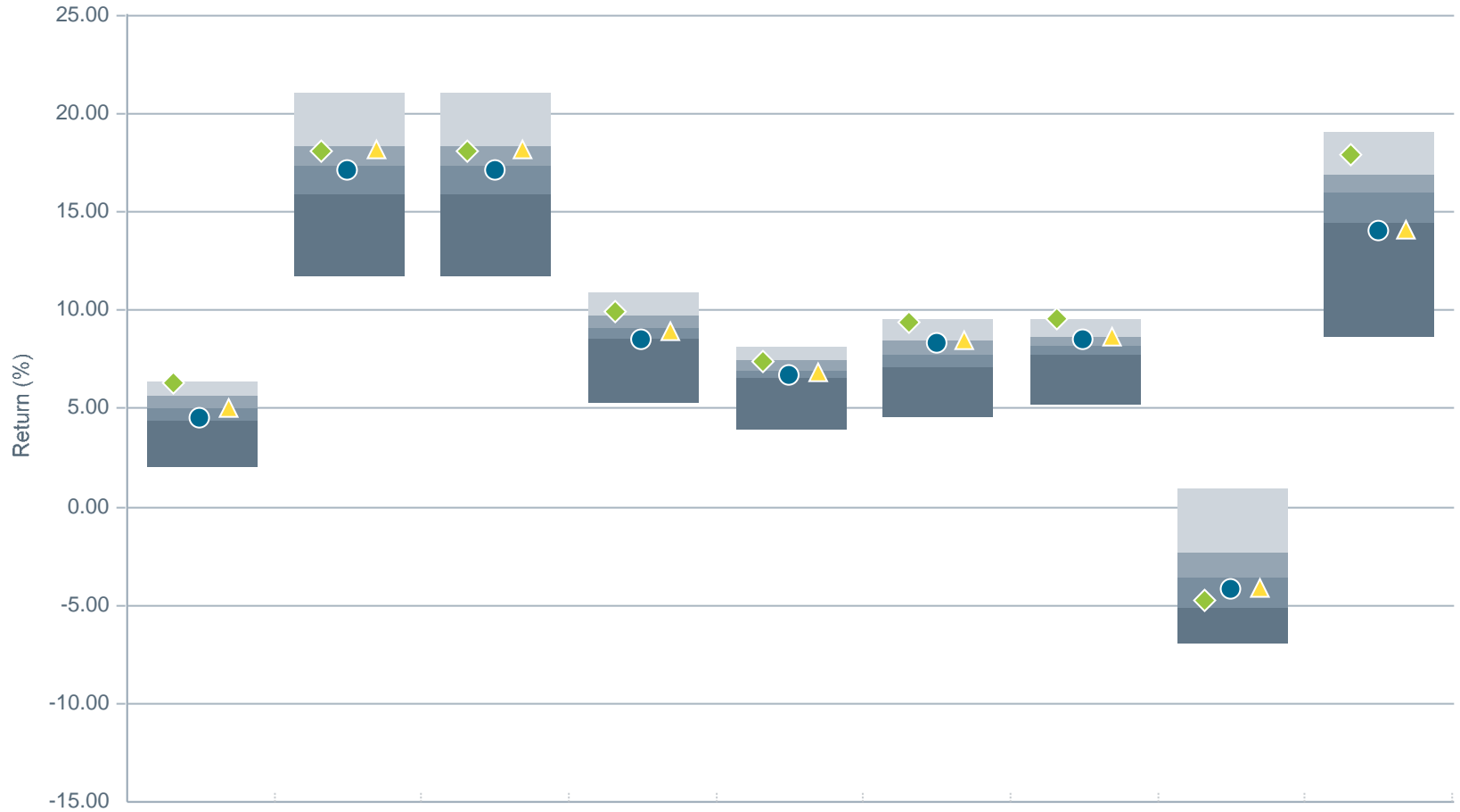
Asset Allocation vs. Target Allocation					
	Market Value (\$)	Allocation (%)	Min (%)	Target (%)	Max (%)
Total Fund	2,342,377,799	100.00	-	100.00	-
US Equity	801,547,512	34.22	20.00	30.00	40.00
International Equity	550,007,036	23.48	10.00	20.00	25.00
Fixed Income	450,901,151	19.25	10.00	20.00	30.00
Real Estate	389,049,300	16.61	0.00	15.00	20.00
Diversifying Assets	146,085,016	6.24	0.00	15.00	20.00
Cash Equivalents	3,989,788	0.17	0.00	0.00	10.00
Transition Account	797,995	0.03	0.00	0.00	0.00



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

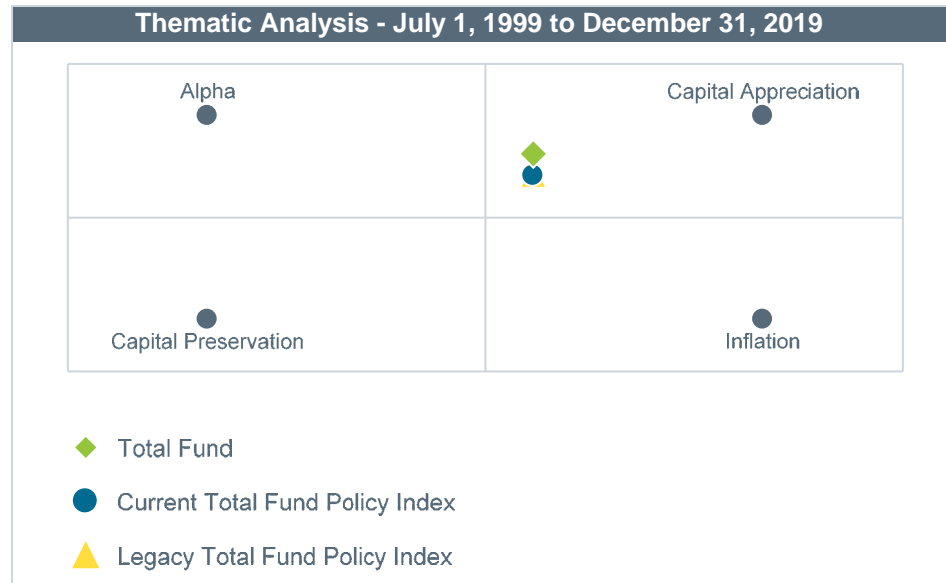
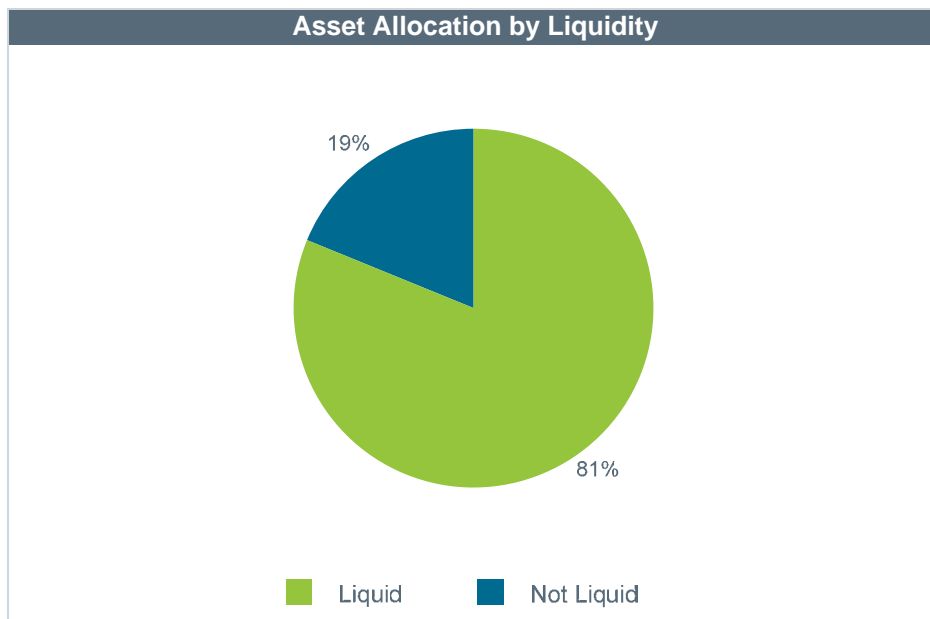
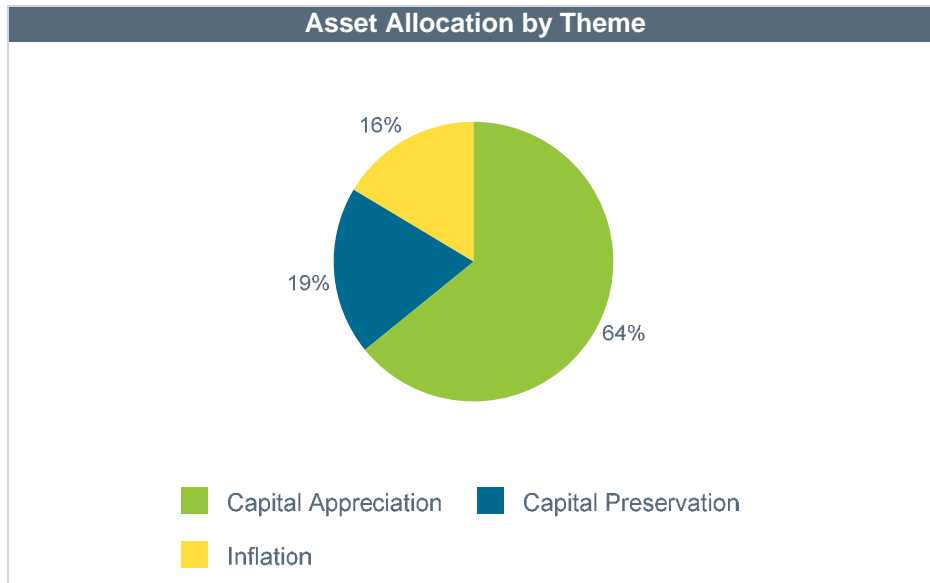
City of Jacksonville Employees' Retirement System  
 Total Fund vs. All Public Plans (\$1B to \$5B) (Custom PG)  
 Plan Sponsor Peer Group Analysis

As of December 31, 2019



	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017
◆ Total Fund	6.27 (7)	18.13 (30)	18.13 (30)	9.91 (20)	7.40 (27)	9.40 (9)	9.57 (6)	-4.72 (70)	17.95 (13)
● Current Total Fund Policy Index	4.47 (75)	17.07 (57)	17.07 (57)	8.52 (84)	6.65 (69)	8.29 (37)	8.51 (33)	-4.24 (67)	14.00 (83)
▲ Legacy Total Fund Policy Index	5.02 (52)	18.15 (29)	18.15 (29)	8.91 (59)	6.88 (58)	8.45 (32)	8.63 (29)	-4.16 (66)	14.07 (82)
5th Percentile	6.44	21.09	21.09	10.94	8.16	9.57	9.60	0.96	19.14
1st Quartile	5.71	18.35	18.35	9.75	7.52	8.53	8.71	-2.35	16.95
Median	5.06	17.42	17.42	9.10	6.96	7.73	8.23	-3.55	15.99
3rd Quartile	4.45	15.90	15.90	8.59	6.59	7.17	7.75	-5.13	14.52
95th Percentile	2.09	11.78	11.78	5.29	3.95	4.56	5.23	-6.96	8.63

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



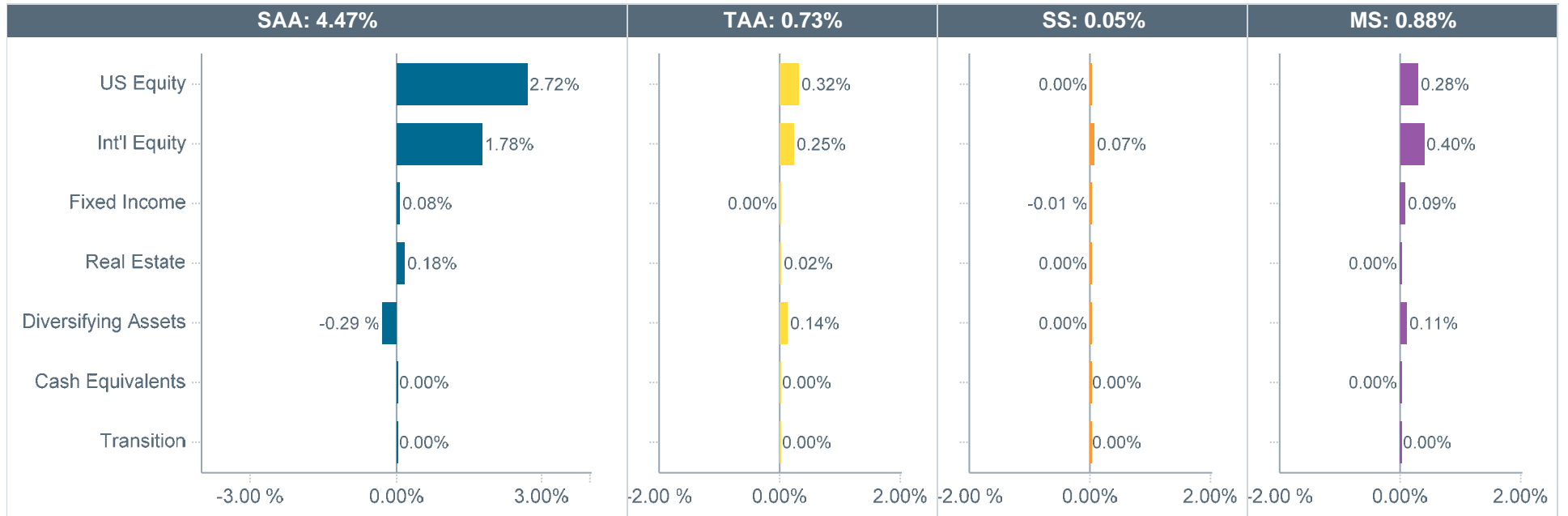
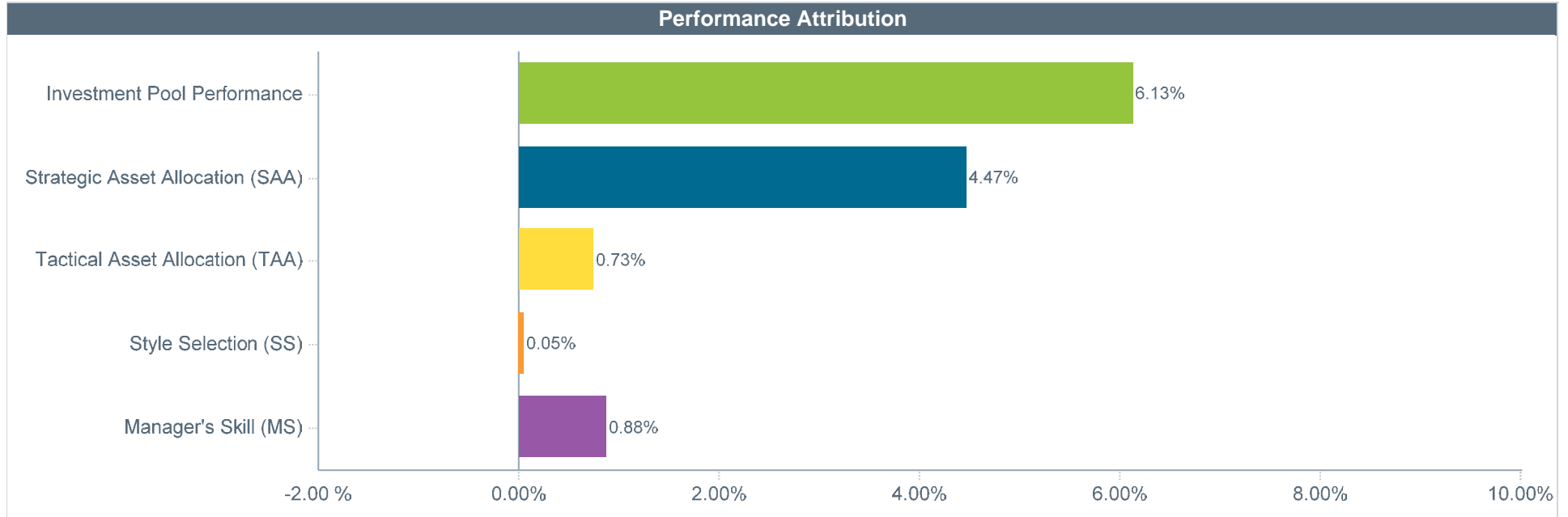
### Correlation Matrix - 10 Years

	A	B	C	D
A	1.00			
B	0.69	1.00		
C	-0.28	-0.40	1.00	
D	0.54	0.77	-0.01	1.00

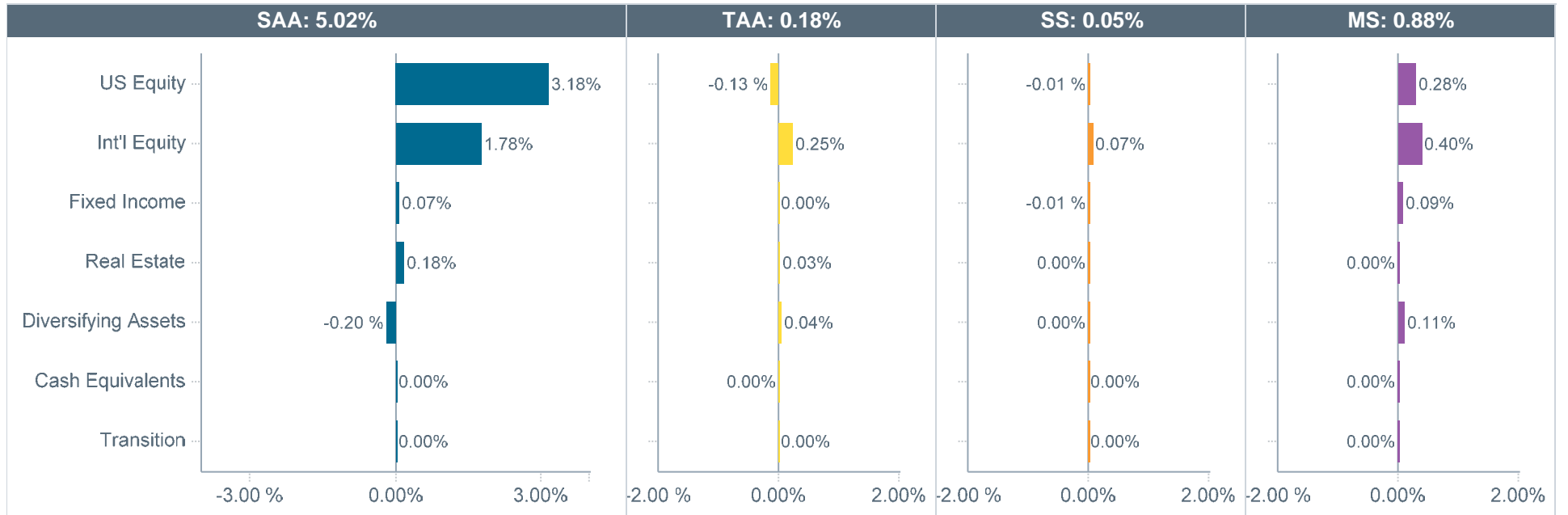
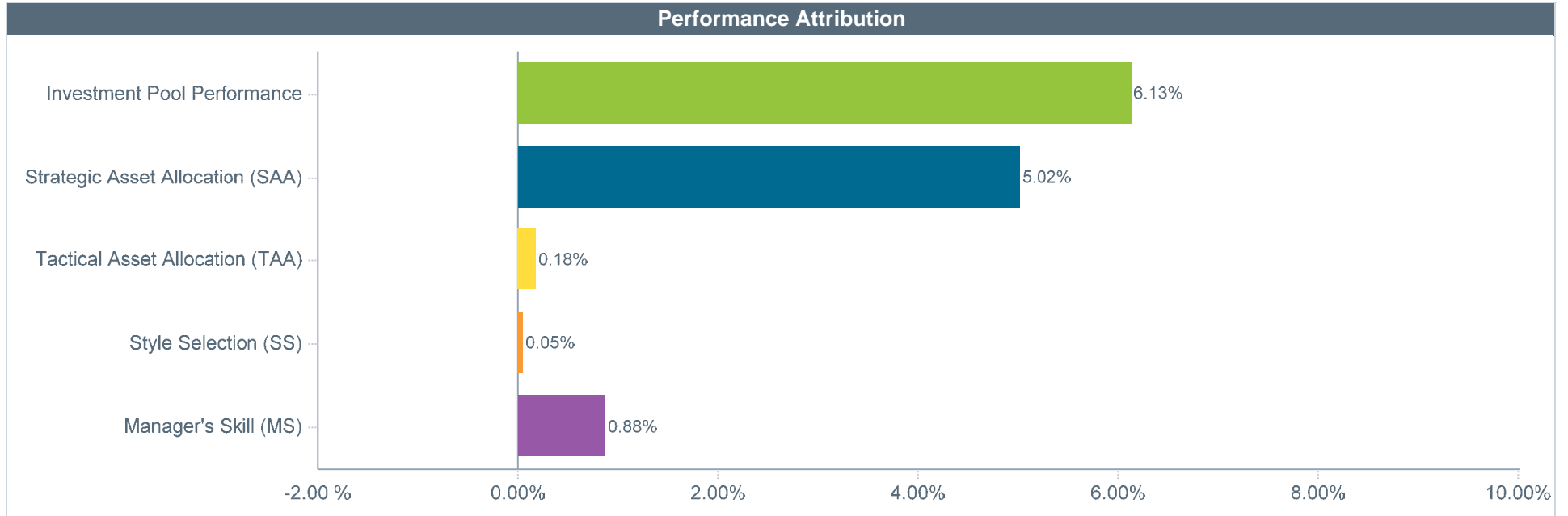
A = HFRI EH: Eq Mkt Neut Index (Alpha)  
 B = MSCI ACW Index (USD) (Gross) (Capital Appreciation)  
 C = Bloomberg US Gov't Bond Index (Capital Preservation)  
 D = Real Return Custom Index (Inflation)

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.





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



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, 2019

	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
<b>Total Fund</b>	<b>2,342,377,799</b>	<b>100.00</b>	<b>6.27</b>	<b>6.27</b>	<b>18.13</b>	<b>18.13</b>	<b>9.91</b>	<b>7.40</b>	<b>9.40</b>	<b>9.57</b>	<b>6.67</b>	<b>07/01/1999</b>
Current Total Fund Policy Index			4.47	4.47	17.07	17.07	8.52	6.65	8.29	8.51	5.91	
Difference			1.80	1.80	1.06	1.06	1.39	0.75	1.11	1.06	0.76	
Legacy Total Fund Policy Index			5.02	5.02	18.15	18.15	8.91	6.88	8.45	8.63	5.96	
Difference			1.25	1.25	-0.02	-0.02	1.00	0.52	0.95	0.94	0.71	
All Public Plans (\$1B to \$5B) (Custom PG) Median			5.08	5.08	17.25	17.25	9.07	6.96	7.78	8.26	6.17	
Rank			8	8	28	28	21	28	11	8	18	
<b>Total Equity</b>	<b>1,351,554,548</b>	<b>57.70</b>	<b>10.53</b>	<b>10.53</b>	<b>28.83</b>	<b>28.83</b>	<b>14.11</b>	<b>9.83</b>	<b>12.16</b>	<b>11.68</b>	<b>6.64</b>	<b>07/01/1999</b>
<b>US Equity</b>	<b>801,547,512</b>	<b>34.22</b>	<b>10.08</b>	<b>10.08</b>	<b>32.68</b>	<b>32.68</b>	<b>15.34</b>	<b>11.01</b>	<b>14.32</b>	<b>13.48</b>	<b>7.07</b>	<b>07/01/1999</b>
US Equity Index			9.10	9.10	31.02	31.02	14.57	11.24	14.38	13.42	6.73	
Difference			0.98	0.98	1.66	1.66	0.77	-0.23	-0.06	0.06	0.34	
IM U.S. Equity (SA+CF) Median			8.26	8.26	28.53	28.53	12.32	10.02	13.49	13.18	8.73	
Rank			20	20	23	23	30	38	38	43	78	
<b>International Equity</b>	<b>550,007,036</b>	<b>23.48</b>	<b>11.20</b>	<b>11.20</b>	<b>22.73</b>	<b>22.73</b>	<b>12.09</b>	<b>7.79</b>	<b>8.20</b>	<b>8.25</b>	<b>6.37</b>	<b>07/01/1999</b>
International Equity Index			8.92	8.92	21.51	21.51	9.87	5.51	5.44	4.83	4.13	
Difference			2.28	2.28	1.22	1.22	2.22	2.28	2.76	3.42	2.24	
IM International Equity (SA+CF) Median			9.99	9.98	22.54	22.54	10.64	6.60	6.95	6.84	7.26	
Rank			33	33	50	50	35	33	31	26	66	
<b>Fixed Income</b>	<b>450,901,151</b>	<b>19.25</b>	<b>0.93</b>	<b>0.93</b>	<b>6.45</b>	<b>6.45</b>	<b>3.72</b>	<b>2.93</b>	<b>2.69</b>	<b>4.45</b>	<b>5.42</b>	<b>07/01/1999</b>
Fixed Income Index			0.45	0.45	9.29	9.29	4.11	3.09	2.75	3.77	4.95	
Difference			0.48	0.48	-2.84	-2.84	-0.39	-0.16	-0.06	0.68	0.47	
IM Global Fixed Income (SA+CF) Median			1.62	1.62	9.46	9.46	5.30	3.67	3.23	4.11	5.78	
Rank			70	70	88	88	86	65	55	45	64	
<b>Real Estate</b>	<b>389,049,300</b>	<b>16.61</b>	<b>1.48</b>	<b>1.48</b>	<b>4.85</b>	<b>4.85</b>	<b>7.30</b>	<b>8.48</b>	<b>9.35</b>	<b>9.60</b>	<b>6.42</b>	<b>12/01/2005</b>
NCREIF ODCE Index (AWA) (Gross)			1.51	1.51	5.34	5.34	7.09	8.97	10.17	11.42	7.14	
Difference			-0.03	-0.03	-0.49	-0.49	0.21	-0.49	-0.82	-1.82	-0.72	
<b>Diversifying Assets</b>	<b>146,085,016</b>	<b>6.24</b>	<b>-0.25</b>	<b>-0.25</b>	<b>6.21</b>	<b>6.21</b>	<b>0.61</b>	<b>-1.04</b>	<b>5.09</b>	<b>N/A</b>	<b>6.38</b>	<b>03/01/2011</b>
Diversifying Assets Index			-1.97	-1.97	7.29	7.29	-0.10	-1.33	2.94	5.10	3.59	
Difference			1.72	1.72	-1.08	-1.08	0.71	0.29	2.15	N/A	2.79	

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

As of December 31, 2019

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<b>US Equity</b>												
<b>Eagle Capital Large Cap Value (SA)</b>	<b>198,977,133</b>	<b>8.49</b>	<b>10.57</b>	<b>10.57</b>	<b>31.94</b>	<b>31.94</b>	<b>16.34</b>	<b>12.42</b>	<b>15.81</b>	<b>15.44</b>	<b>11.35</b>	<b>02/01/2007</b>
Russell 1000 Val Index			7.41	7.41	26.54	26.54	9.68	8.29	12.20	11.80	6.56	
Difference			3.16	3.16	5.40	5.40	6.66	4.13	3.61	3.64	4.79	
IM U.S. Large Cap Value Equity (SA+CF) Median			7.92	7.92	27.32	27.32	10.76	8.94	12.78	12.15	7.66	
Rank			11	11	15	15	4	5	3	2	1	
<b>Mellon Large Cap Core Index (CF)</b>	<b>225,231,334</b>	<b>9.62</b>	<b>9.04</b>	<b>9.04</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>10.80</b>	<b>05/01/2019</b>
Russell 1000 Index			9.04	9.04	31.43	31.43	15.05	11.48	14.60	13.54	10.81	
Difference			0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A	-0.01	
IM U.S. Large Cap Core Equity (SA+CF) Median			8.20	8.20	29.96	29.96	14.32	11.17	14.59	13.39	10.34	
Rank			33	33	N/A	N/A	N/A	N/A	N/A	N/A	40	
<b>Loomis Sayles Large Cap Growth (CF)</b>	<b>160,703,804</b>	<b>6.86</b>	<b>9.96</b>	<b>9.96</b>	<b>32.52</b>	<b>32.52</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>16.51</b>	<b>08/01/2017</b>
Russell 1000 Grth Index			10.62	10.62	36.39	36.39	20.49	14.63	16.92	15.22	18.09	
Difference			-0.66	-0.66	-3.87	-3.87	N/A	N/A	N/A	N/A	-1.58	
IM U.S. Large Cap Growth Equity (SA+CF) Median			9.62	9.62	33.81	33.81	19.44	13.57	16.46	14.76	16.92	
Rank			42	42	63	63	N/A	N/A	N/A	N/A	54	
<b>William Blair Small Cap Value (SA)</b>	<b>103,022,072</b>	<b>4.40</b>	<b>5.22</b>	<b>5.22</b>	<b>22.23</b>	<b>22.23</b>	<b>4.34</b>	<b>6.75</b>	<b>N/A</b>	<b>N/A</b>	<b>6.92</b>	<b>11/01/2014</b>
Russell 2000 Val Index			8.49	8.49	22.39	22.39	4.77	6.99	10.13	10.56	7.22	
Difference			-3.27	-3.27	-0.16	-0.16	-0.43	-0.24	N/A	N/A	-0.30	
IM U.S. Small Cap Value Equity (SA+CF) Median			7.96	7.96	25.07	25.07	5.48	7.66	11.49	12.08	7.93	
Rank			90	90	74	74	76	69	N/A	N/A	72	
<b>Pinnacle Associates US SMID Cap Growth (SA)</b>	<b>113,613,170</b>	<b>4.85</b>	<b>16.45</b>	<b>16.45</b>	<b>41.57</b>	<b>41.57</b>	<b>16.93</b>	<b>11.11</b>	<b>14.33</b>	<b>N/A</b>	<b>14.99</b>	<b>03/01/2010</b>
Russell 2500 Grth Index			10.57	10.57	32.65	32.65	15.17	10.84	14.11	14.01	14.18	
Difference			5.88	5.88	8.92	8.92	1.76	0.27	0.22	N/A	0.81	
IM U.S. SMID Cap Growth Equity (SA+CF) Median			8.50	8.50	31.74	31.74	17.24	11.76	14.37	14.75	14.92	
Rank			2	2	1	1	55	61	51	N/A	42	

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

As of December 31, 2019

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<b>International Equity</b>												
<b>Silchester International Value (CF)</b>	<b>271,290,277</b>	<b>11.58</b>	<b>9.26</b>	<b>9.26</b>	<b>18.05</b>	<b>18.05</b>	<b>9.26</b>	<b>7.65</b>	<b>9.30</b>	<b>9.37</b>	<b>10.61</b>	<b>06/01/2009</b>
MSCI EAFE Val Index (USD) (Net)			7.82	7.82	16.09	16.09	6.31	3.54	4.76	3.98	5.66	
Difference			1.44	1.44	1.96	1.96	2.95	4.11	4.54	5.39	4.95	
IM EAFE Value (SA+CF) Median			8.90	8.90	21.17	21.17	8.65	5.57	6.67	6.51	8.10	
Rank			38	38	89	89	35	17	11	5	8	
<b>Baillie Gifford International Growth (BGEFX)</b>	<b>145,762,899</b>	<b>6.22</b>	<b>14.22</b>	<b>14.22</b>	<b>38.16</b>	<b>38.16</b>	<b>19.15</b>	<b>10.97</b>	<b>10.89</b>	<b>9.84</b>	<b>11.47</b>	<b>06/01/2009</b>
Baillie Gifford Index			9.58	9.58	27.34	27.34	12.12	7.30	7.56	6.74	8.34	
Difference			4.64	4.64	10.82	10.82	7.03	3.67	3.33	3.10	3.13	
Baillie Gifford Spliced Index			9.30	9.30	23.29	23.29	9.94	5.89	6.50	5.61	7.24	
Difference			4.92	4.92	14.87	14.87	9.21	5.08	4.39	4.23	4.23	
IM International Growth Equity (SA+CF) Median			10.34	10.34	28.25	28.25	13.16	8.22	8.34	8.14	10.02	
Rank			9	9	6	6	6	14	13	18	20	
<b>Acadian Emerging Markets (CF)</b>	<b>132,953,861</b>	<b>5.68</b>	<b>11.99</b>	<b>11.99</b>	<b>17.84</b>	<b>17.84</b>	<b>10.10</b>	<b>4.63</b>	<b>3.37</b>	<b>N/A</b>	<b>3.40</b>	<b>02/01/2011</b>
MSCI Emg Mkts Index (USD) (Net)			11.84	11.84	18.44	18.44	11.57	5.61	3.26	3.68	2.45	
Difference			0.15	0.15	-0.60	-0.60	-1.47	-0.98	0.11	N/A	0.95	
IM Emerging Markets Equity (SA+CF) Median			11.36	11.36	19.49	19.49	11.39	6.22	4.82	5.32	3.94	
Rank			37	37	65	65	66	76	77	N/A	64	
<b>Fixed Income</b>												
<b>Richmond Capital Core (SA)</b>	<b>139,312,589</b>	<b>5.95</b>	<b>0.42</b>	<b>0.42</b>	<b>8.82</b>	<b>8.82</b>	<b>4.25</b>	<b>3.40</b>	<b>3.13</b>	<b>4.27</b>	<b>5.33</b>	<b>06/01/1999</b>
Richmond Capital Index			0.18	0.18	8.72	8.72	4.03	3.05	2.72	3.74	4.93	
Difference			0.24	0.24	0.10	0.10	0.22	0.35	0.41	0.53	0.40	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median			0.22	0.22	9.20	9.20	4.40	3.46	3.07	4.27	5.29	
Rank			17	17	70	70	64	55	43	51	46	
<b>Taplin Canida &amp; Habacht Intermediate Duration (SA)</b>	<b>137,572,235</b>	<b>5.87</b>	<b>0.84</b>	<b>0.84</b>	<b>7.97</b>	<b>7.97</b>	<b>3.70</b>	<b>2.95</b>	<b>2.65</b>	<b>3.95</b>	<b>5.00</b>	<b>06/01/1999</b>
ICE BofAML US Corp & Gov't 1-10 Yr Index			0.42	0.42	6.91	6.91	3.29	2.63	2.20	3.15	4.41	
Difference			0.42	0.42	1.06	1.06	0.41	0.32	0.45	0.80	0.59	
IM U.S. Intermediate Duration (SA+CF) Median			0.44	0.44	6.93	6.93	3.45	2.83	2.47	3.40	4.71	
Rank			6	6	10	10	24	36	27	16	21	
<b>Franklin Templeton Global Multisector Plus (CF)</b>	<b>103,030,921</b>	<b>4.40</b>	<b>1.71</b>	<b>1.71</b>	<b>-0.44</b>	<b>-0.44</b>	<b>1.67</b>	<b>1.22</b>	<b>1.74</b>	<b>4.87</b>	<b>6.90</b>	<b>09/01/2007</b>
Frank. Temp. Global Multisector Index			0.64	0.64	7.13	7.13	4.40	2.51	1.53	2.68	3.63	
Difference			1.07	1.07	-7.57	-7.57	-2.73	-1.29	0.21	2.19	3.27	
IM Global Fixed Income (SA+CF) Median			1.62	1.62	9.46	9.46	5.30	3.67	3.23	4.11	4.55	
Rank			50	50	100	100	95	94	72	39	12	

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

As of December 31, 2019

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<b>Loomis Sayles Multisector Full Discretion (CF)</b>	<b>70,985,405</b>	<b>3.03</b>	<b>0.97</b>	<b>0.97</b>	<b>9.79</b>	<b>9.79</b>	<b>6.12</b>	<b>4.83</b>	<b>5.10</b>	<b>7.30</b>	<b>6.92</b>	<b>10/01/2007</b>
Bloomberg Gbl Agg Bond Index			0.49	0.49	6.84	6.84	4.27	2.31	1.35	2.48	3.24	
Difference			0.48	0.48	2.95	2.95	1.85	2.52	3.75	4.82	3.68	
IM Global Fixed Income (SA+CF) Median			1.62	1.62	9.46	9.46	5.30	3.67	3.23	4.11	4.46	
Rank			70	70	47	47	29	32	23	10	7	
<b>Real Estate</b>												
<b>Harrison Street Core Property, LP</b>	<b>105,742,052</b>	<b>4.51</b>	<b>2.46</b>	<b>2.46</b>	<b>7.91</b>	<b>7.91</b>	<b>9.26</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>8.54</b>	<b>11/01/2015</b>
NCREIF ODCE Index (AWA) (Gross)			1.51	1.51	5.34	5.34	7.09	8.97	10.17	11.42	8.05	
Difference			0.95	0.95	2.57	2.57	2.17	N/A	N/A	N/A	0.49	
<b>PGIM Real Estate PRISA II (CF)</b>	<b>57,763,360</b>	<b>2.47</b>	<b>2.15</b>	<b>2.15</b>	<b>7.53</b>	<b>7.53</b>	<b>9.15</b>	<b>10.08</b>	<b>N/A</b>	<b>N/A</b>	<b>10.08</b>	<b>01/01/2015</b>
NCREIF ODCE Index (AWA) (Gross)			1.51	1.51	5.34	5.34	7.09	8.97	10.17	11.42	8.97	
Difference			0.64	0.64	2.19	2.19	2.06	1.11	N/A	N/A	1.11	
<b>Principal US Property (CF)</b>	<b>123,594,349</b>	<b>5.28</b>	<b>1.53</b>	<b>1.53</b>	<b>7.01</b>	<b>7.01</b>	<b>8.41</b>	<b>9.96</b>	<b>N/A</b>	<b>N/A</b>	<b>10.61</b>	<b>01/01/2014</b>
NCREIF ODCE Index (AWA) (Gross)			1.51	1.51	5.34	5.34	7.09	8.97	10.17	11.42	9.55	
Difference			0.02	0.02	1.67	1.67	1.32	0.99	N/A	N/A	1.06	
<b>UBS Trumbull Property (CF)</b>	<b>100,799,985</b>	<b>4.30</b>	<b>0.05</b>	<b>0.05</b>	<b>-2.11</b>	<b>-2.11</b>	<b>3.61</b>	<b>6.13</b>	<b>7.50</b>	<b>9.22</b>	<b>6.12</b>	<b>12/01/2005</b>
NCREIF ODCE Index (AWA) (Gross)			1.51	1.51	5.34	5.34	7.09	8.97	10.17	11.42	7.14	
Difference			-1.46	-1.46	-7.45	-7.45	-3.48	-2.84	-2.67	-2.20	-1.02	
<b>Vanguard RE Idx;ETF (VNQ)</b>	<b>1,149,554</b>	<b>0.05</b>	<b>0.54</b>	<b>0.54</b>	<b>28.80</b>	<b>28.80</b>	<b>8.10</b>	<b>7.05</b>	<b>9.25</b>	<b>11.42</b>	<b>14.25</b>	<b>12/01/2008</b>
Custom REITs Index			0.65	0.65	29.05	29.05	8.97	7.58	9.81	12.21	15.17	
Difference			-0.11	-0.11	-0.25	-0.25	-0.87	-0.53	-0.56	-0.79	-0.92	
<b>Diversifying Assets</b>												
<b>Harvest Fund Advisors MLP (SA)</b>	<b>47,415,656</b>	<b>2.02</b>	<b>-0.93</b>	<b>-0.93</b>	<b>13.49</b>	<b>13.49</b>	<b>-2.04</b>	<b>-4.66</b>	<b>3.52</b>	<b>N/A</b>	<b>6.06</b>	<b>03/01/2011</b>
S&P MLP Index (TR)			-3.09	-3.09	9.78	9.78	-2.90	-6.23	0.18	5.10	1.49	
Difference			2.16	2.16	3.71	3.71	0.86	1.57	3.34	N/A	4.57	
<b>Tortoise Capital Advisors MLP (SA)</b>	<b>45,833,456</b>	<b>1.96</b>	<b>-1.37</b>	<b>-1.37</b>	<b>8.97</b>	<b>8.97</b>	<b>-2.55</b>	<b>-4.71</b>	<b>3.32</b>	<b>N/A</b>	<b>4.80</b>	<b>03/01/2011</b>
S&P MLP Index (TR)			-3.09	-3.09	9.78	9.78	-2.90	-6.23	0.18	5.10	1.49	
Difference			1.72	1.72	-0.81	-0.81	0.35	1.52	3.14	N/A	3.31	
<b>Hancock Timberland (SA)</b>	<b>52,835,904</b>	<b>2.26</b>	<b>1.37</b>	<b>1.37</b>	<b>-1.69</b>	<b>-1.69</b>	<b>6.12</b>	<b>5.85</b>	<b>7.39</b>	<b>4.65</b>	<b>3.46</b>	<b>10/01/2006</b>
NCREIF Timberland Index			-0.04	-0.04	1.30	1.30	2.71	3.13	5.07	4.45	5.50	
Difference			1.41	1.41	-2.99	-2.99	3.41	2.72	2.32	0.20	-2.04	
<b>Dreyfus Gvt Csh Mgt;Inst (DGCXX)</b>	<b>3,989,788</b>	<b>0.17</b>	<b>0.45</b>	<b>0.45</b>	<b>2.26</b>	<b>2.26</b>	<b>1.74</b>	<b>1.13</b>	<b>0.83</b>	<b>0.62</b>	<b>1.45</b>	<b>04/01/2001</b>
FTSE 3 Mo T-Bill Index			0.46	0.46	2.25	2.25	1.65	1.05	0.76	0.56	1.42	
Difference			-0.01	-0.01	0.01	0.01	0.09	0.08	0.07	0.06	0.03	

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	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
<b>Total Fund</b>	<b>2,342,377,799</b>	<b>100.00</b>	<b>6.13</b>	<b>6.13</b>	<b>17.49</b>	<b>17.49</b>	<b>9.35</b>	<b>6.85</b>	<b>8.85</b>	<b>9.07</b>	<b>6.37</b>	<b>07/01/1999</b>
Current Total Fund Policy Index			4.47	4.47	17.07	17.07	8.52	6.65	8.29	8.51	5.91	
Difference			1.66	1.66	0.42	0.42	0.83	0.20	0.56	0.56	0.46	
Legacy Total Fund Policy Index			5.02	5.02	18.15	18.15	8.91	6.88	8.45	8.63	5.96	
Difference			1.11	1.11	-0.66	-0.66	0.44	-0.03	0.40	0.44	0.41	
<b>Total Equity</b>	<b>1,351,554,548</b>	<b>57.70</b>	<b>10.39</b>	<b>10.39</b>	<b>28.19</b>	<b>28.19</b>	<b>13.51</b>	<b>9.23</b>	<b>11.56</b>	<b>11.12</b>	<b>6.35</b>	<b>07/01/1999</b>
<b>US Equity</b>	<b>801,547,512</b>	<b>34.22</b>	<b>9.94</b>	<b>9.94</b>	<b>32.06</b>	<b>32.06</b>	<b>14.75</b>	<b>10.43</b>	<b>13.72</b>	<b>12.92</b>	<b>6.79</b>	<b>07/01/1999</b>
US Equity Index			9.10	9.10	31.02	31.02	14.57	11.24	14.38	13.42	6.73	
Difference			0.84	0.84	1.04	1.04	0.18	-0.81	-0.66	-0.50	0.06	
<b>International Equity</b>	<b>550,007,036</b>	<b>23.48</b>	<b>11.05</b>	<b>11.05</b>	<b>22.05</b>	<b>22.05</b>	<b>11.46</b>	<b>7.17</b>	<b>7.57</b>	<b>7.68</b>	<b>6.05</b>	<b>07/01/1999</b>
International Equity Index			8.92	8.92	21.51	21.51	9.87	5.51	5.44	4.83	4.13	
Difference			2.13	2.13	0.54	0.54	1.59	1.66	2.13	2.85	1.92	
<b>Fixed Income</b>	<b>450,901,151</b>	<b>19.25</b>	<b>0.85</b>	<b>0.85</b>	<b>6.06</b>	<b>6.06</b>	<b>3.47</b>	<b>2.70</b>	<b>2.49</b>	<b>4.26</b>	<b>5.27</b>	<b>07/01/1999</b>
Fixed Income Index			0.45	0.45	9.29	9.29	4.11	3.09	2.75	3.77	4.95	
Difference			0.40	0.40	-3.23	-3.23	-0.64	-0.39	-0.26	0.49	0.32	
<b>Real Estate</b>	<b>389,049,300</b>	<b>16.61</b>	<b>1.25</b>	<b>1.25</b>	<b>3.90</b>	<b>3.90</b>	<b>6.48</b>	<b>7.67</b>	<b>8.50</b>	<b>8.78</b>	<b>5.75</b>	<b>12/01/2005</b>
NCREIF ODCE Index (AWA) (Net)			1.27	1.27	4.39	4.39	6.13	7.98	9.17	10.39	6.08	
Difference			-0.02	-0.02	-0.49	-0.49	0.35	-0.31	-0.67	-1.61	-0.33	
<b>Diversifying Assets</b>	<b>146,085,016</b>	<b>6.24</b>	<b>-0.38</b>	<b>-0.38</b>	<b>5.55</b>	<b>5.55</b>	<b>0.13</b>	<b>-1.53</b>	<b>4.57</b>	<b>N/A</b>	<b>5.87</b>	<b>03/01/2011</b>
Diversifying Assets Index			-1.97	-1.97	7.29	7.29	-0.10	-1.33	2.94	5.10	3.59	
Difference			1.59	1.59	-1.74	-1.74	0.23	-0.20	1.63	N/A	2.28	

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

As of December 31, 2019

	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
<b>US Equity</b>												
<b>Eagle Capital Large Cap Value (SA)</b>	<b>198,977,133</b>	<b>8.49</b>	<b>10.34</b>	<b>10.34</b>	<b>30.91</b>	<b>30.91</b>	<b>15.46</b>	<b>11.58</b>	<b>14.94</b>	<b>14.63</b>	<b>10.66</b>	<b>02/01/2007</b>
Russell 1000 Val Index			7.41	7.41	26.54	26.54	9.68	8.29	12.20	11.80	6.56	
Difference			2.93	2.93	4.37	4.37	5.78	3.29	2.74	2.83	4.10	
<b>Mellon Large Cap Core Index (CF)</b>	<b>225,231,334</b>	<b>9.62</b>	<b>9.03</b>	<b>9.03</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>10.79</b>	<b>05/01/2019</b>
Russell 1000 Index			9.04	9.04	31.43	31.43	15.05	11.48	14.60	13.54	10.81	
Difference			-0.01	-0.01	N/A	N/A	N/A	N/A	N/A	N/A	-0.02	
<b>Loomis Sayles Large Cap Growth (CF)</b>	<b>160,703,804</b>	<b>6.86</b>	<b>9.84</b>	<b>9.84</b>	<b>31.95</b>	<b>31.95</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>15.97</b>	<b>08/01/2017</b>
Russell 1000 Grth Index			10.62	10.62	36.39	36.39	20.49	14.63	16.92	15.22	18.09	
Difference			-0.78	-0.78	-4.44	-4.44	N/A	N/A	N/A	N/A	-2.12	
<b>William Blair Small Cap Value (SA)</b>	<b>103,022,072</b>	<b>4.40</b>	<b>4.97</b>	<b>4.97</b>	<b>21.13</b>	<b>21.13</b>	<b>3.52</b>	<b>5.91</b>	<b>N/A</b>	<b>N/A</b>	<b>6.10</b>	<b>11/01/2014</b>
Russell 2000 Val Index			8.49	8.49	22.39	22.39	4.77	6.99	10.13	10.56	7.22	
Difference			-3.52	-3.52	-1.26	-1.26	-1.25	-1.08	N/A	N/A	-1.12	
<b>Pinnacle Associates US SMID Cap Growth (SA)</b>	<b>113,613,170</b>	<b>4.85</b>	<b>16.27</b>	<b>16.27</b>	<b>40.76</b>	<b>40.76</b>	<b>16.28</b>	<b>10.36</b>	<b>13.54</b>	<b>N/A</b>	<b>14.21</b>	<b>03/01/2010</b>
Russell 2500 Grth Index			10.57	10.57	32.65	32.65	15.17	10.84	14.11	14.01	14.18	
Difference			5.70	5.70	8.11	8.11	1.11	-0.48	-0.57	N/A	0.03	
<b>International Equity</b>												
<b>Silchester International Value (CF)</b>	<b>271,290,277</b>	<b>11.58</b>	<b>9.11</b>	<b>9.11</b>	<b>17.38</b>	<b>17.38</b>	<b>8.64</b>	<b>7.03</b>	<b>8.67</b>	<b>8.72</b>	<b>9.96</b>	<b>06/01/2009</b>
MSCI EAFE Val Index (USD) (Net)			7.82	7.82	16.09	16.09	6.31	3.54	4.76	3.98	5.66	
Difference			1.29	1.29	1.29	1.29	2.33	3.49	3.91	4.74	4.30	
<b>Baillie Gifford International Growth (BGEFX)</b>	<b>145,762,899</b>	<b>6.22</b>	<b>14.08</b>	<b>14.08</b>	<b>37.48</b>	<b>37.48</b>	<b>18.53</b>	<b>10.38</b>	<b>10.30</b>	<b>9.42</b>	<b>11.07</b>	<b>06/01/2009</b>
Baillie Gifford Index			9.58	9.58	27.34	27.34	12.12	7.30	7.56	6.74	8.34	
Difference			4.50	4.50	10.14	10.14	6.41	3.08	2.74	2.68	2.73	
Baillie Gifford Spliced Index			9.30	9.30	23.29	23.29	9.94	5.89	6.50	5.61	7.24	
Difference			4.78	4.78	14.19	14.19	8.59	4.49	3.80	3.81	3.83	
<b>Acadian Emerging Markets (CF)</b>	<b>132,953,861</b>	<b>5.68</b>	<b>11.83</b>	<b>11.83</b>	<b>17.16</b>	<b>17.16</b>	<b>9.48</b>	<b>4.02</b>	<b>2.75</b>	<b>N/A</b>	<b>2.81</b>	<b>02/01/2011</b>
MSCI Emg Mkts Index (USD) (Net)			11.84	11.84	18.44	18.44	11.57	5.61	3.26	3.68	2.45	
Difference			-0.01	-0.01	-1.28	-1.28	-2.09	-1.59	-0.51	N/A	0.36	

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

As of December 31, 2019

	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
<b>Fixed Income</b>												
<b>Richmond Capital Core (SA)</b>	<b>139,312,589</b>	<b>5.95</b>	<b>0.38</b>	<b>0.38</b>	<b>8.63</b>	<b>8.63</b>	<b>4.07</b>	<b>3.22</b>	<b>2.95</b>	<b>4.10</b>	<b>5.24</b>	<b>06/01/1999</b>
Richmond Capital Index			0.18	0.18	8.72	8.72	4.03	3.05	2.72	3.74	4.93	
Difference			0.20	0.20	-0.09	-0.09	0.04	0.17	0.23	0.36	0.31	
<b>Taplin Canada &amp; Habacht Intermediate Duration (SA)</b>	<b>137,572,235</b>	<b>5.87</b>	<b>0.81</b>	<b>0.81</b>	<b>7.84</b>	<b>7.84</b>	<b>3.57</b>	<b>2.82</b>	<b>2.53</b>	<b>3.84</b>	<b>4.94</b>	<b>06/01/1999</b>
ICE BofAML US Corp & Gov't 1-10 Yr Index			0.42	0.42	6.91	6.91	3.29	2.63	2.20	3.15	4.41	
Difference			0.39	0.39	0.93	0.93	0.28	0.19	0.33	0.69	0.53	
<b>Franklin Templeton Global Multisector Plus (CF)</b>	<b>103,030,921</b>	<b>4.40</b>	<b>1.60</b>	<b>1.60</b>	<b>-1.15</b>	<b>-1.15</b>	<b>1.17</b>	<b>0.63</b>	<b>1.05</b>	<b>4.12</b>	<b>6.11</b>	<b>09/01/2007</b>
Frank. Temp. Global Multisector Index			0.64	0.64	7.13	7.13	4.40	2.51	1.53	2.68	3.63	
Difference			0.96	0.96	-8.28	-8.28	-3.23	-1.88	-0.48	1.44	2.48	
<b>Loomis Sayles Multisector Full Discretion (CF)</b>	<b>70,985,405</b>	<b>3.03</b>	<b>0.78</b>	<b>0.78</b>	<b>9.05</b>	<b>9.05</b>	<b>5.71</b>	<b>4.41</b>	<b>4.66</b>	<b>6.89</b>	<b>6.56</b>	<b>10/01/2007</b>
Bloomberg Gbl Agg Bond Index			0.49	0.49	6.84	6.84	4.27	2.31	1.35	2.48	3.24	
Difference			0.29	0.29	2.21	2.21	1.44	2.10	3.31	4.41	3.32	
<b>Real Estate</b>												
<b>Harrison Street Core Property, LP</b>	<b>105,742,052</b>	<b>4.51</b>	<b>2.20</b>	<b>2.20</b>	<b>6.83</b>	<b>6.83</b>	<b>8.71</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>8.15</b>	<b>11/01/2015</b>
NCREIF ODCE Index (AWA) (Net)			1.27	1.27	4.39	4.39	6.13	7.98	9.17	10.39	6.91	
Difference			0.93	0.93	2.44	2.44	2.58	N/A	N/A	N/A	1.24	
<b>PGIM Real Estate PRISA II (CF)</b>	<b>57,763,360</b>	<b>2.47</b>	<b>1.86</b>	<b>1.86</b>	<b>6.29</b>	<b>6.29</b>	<b>7.97</b>	<b>9.15</b>	<b>N/A</b>	<b>N/A</b>	<b>9.15</b>	<b>01/01/2015</b>
NCREIF ODCE Index (AWA) (Net)			1.27	1.27	4.39	4.39	6.13	7.98	9.17	10.39	7.98	
Difference			0.59	0.59	1.90	1.90	1.84	1.17	N/A	N/A	1.17	
<b>Principal US Property (CF)</b>	<b>123,594,349</b>	<b>5.28</b>	<b>1.33</b>	<b>1.33</b>	<b>6.16</b>	<b>6.16</b>	<b>7.52</b>	<b>9.07</b>	<b>N/A</b>	<b>N/A</b>	<b>9.72</b>	<b>01/01/2014</b>
NCREIF ODCE Index (AWA) (Net)			1.27	1.27	4.39	4.39	6.13	7.98	9.17	10.39	8.56	
Difference			0.06	0.06	1.77	1.77	1.39	1.09	N/A	N/A	1.16	
<b>UBS Trumbull Property (CF)</b>	<b>100,799,985</b>	<b>4.30</b>	<b>-0.16</b>	<b>-0.16</b>	<b>-2.90</b>	<b>-2.90</b>	<b>2.70</b>	<b>5.15</b>	<b>6.49</b>	<b>8.20</b>	<b>5.16</b>	<b>12/01/2005</b>
NCREIF ODCE Index (AWA) (Net)			1.27	1.27	4.39	4.39	6.13	7.98	9.17	10.39	6.08	
Difference			-1.43	-1.43	-7.29	-7.29	-3.43	-2.83	-2.68	-2.19	-0.92	
<b>Vanguard RE Idx;ETF (VNQ)</b>	<b>1,149,554</b>	<b>0.05</b>	<b>0.54</b>	<b>0.54</b>	<b>28.80</b>	<b>28.80</b>	<b>8.10</b>	<b>7.05</b>	<b>9.25</b>	<b>11.42</b>	<b>14.25</b>	<b>12/01/2008</b>
Custom REITs Index			0.65	0.65	29.05	29.05	8.97	7.58	9.81	12.21	15.17	
Difference			-0.11	-0.11	-0.25	-0.25	-0.87	-0.53	-0.56	-0.79	-0.92	

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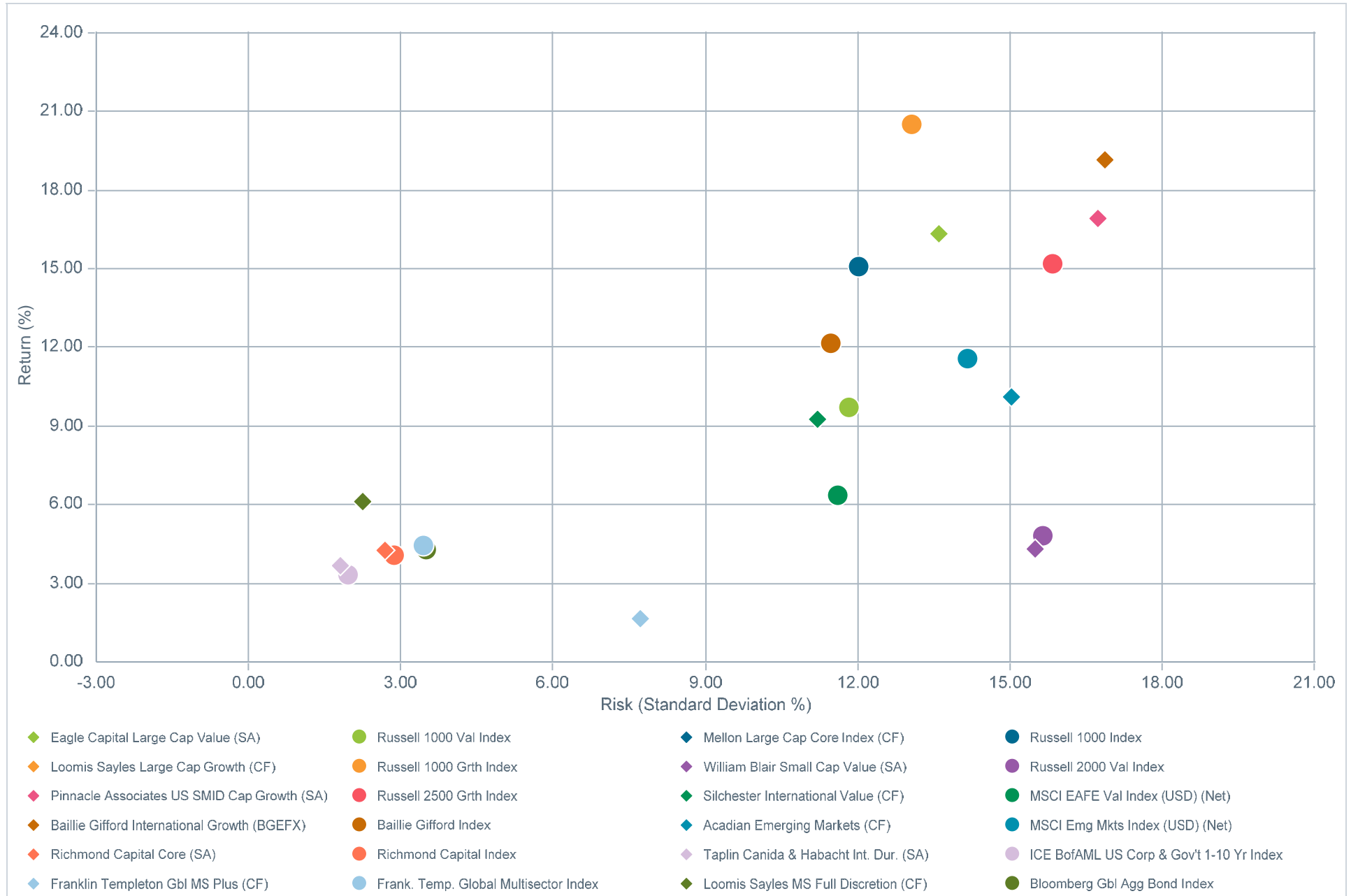
City of Jacksonville Employees' Retirement System  
 Asset Allocation & Performance (Net of Fees)

As of December 31, 2019

	Allocation		Performance (%)									
	Market Value (\$)	%	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
<b>Diversifying Assets</b>												
<b>Harvest Fund Advisors MLP (SA)</b>	<b>47,415,656</b>	<b>2.02</b>	<b>-1.13</b>	<b>-1.13</b>	<b>12.13</b>	<b>12.13</b>	<b>-2.79</b>	<b>-5.40</b>	<b>2.73</b>	<b>N/A</b>	<b>5.29</b>	<b>03/01/2011</b>
S&P MLP Index (TR)			-3.09	-3.09	9.78	9.78	-2.90	-6.23	0.18	5.10	1.49	
Difference			1.96	1.96	2.35	2.35	0.11	0.83	2.55	N/A	3.80	
<b>Tortoise Capital Advisors MLP (SA)</b>	<b>45,833,456</b>	<b>1.96</b>	<b>-1.57</b>	<b>-1.57</b>	<b>8.16</b>	<b>8.16</b>	<b>-3.28</b>	<b>-5.48</b>	<b>2.54</b>	<b>N/A</b>	<b>4.04</b>	<b>03/01/2011</b>
S&P MLP Index (TR)			-3.09	-3.09	9.78	9.78	-2.90	-6.23	0.18	5.10	1.49	
Difference			1.52	1.52	-1.62	-1.62	-0.38	0.75	2.36	N/A	2.55	
<b>Hancock Timberland (SA)</b>	<b>52,835,904</b>	<b>2.26</b>	<b>1.37</b>	<b>1.37</b>	<b>-1.69</b>	<b>-1.69</b>	<b>6.12</b>	<b>5.85</b>	<b>7.39</b>	<b>4.65</b>	<b>3.46</b>	<b>10/01/2006</b>
NCREIF Timberland Index			-0.04	-0.04	1.30	1.30	2.71	3.13	5.07	4.45	5.50	
Difference			1.41	1.41	-2.99	-2.99	3.41	2.72	2.32	0.20	-2.04	
<b>Dreyfus Gvt Csh Mgt;Inst (DGCXX)</b>	<b>3,989,788</b>	<b>0.17</b>	<b>0.41</b>	<b>0.41</b>	<b>2.10</b>	<b>2.10</b>	<b>1.67</b>	<b>1.08</b>	<b>0.80</b>	<b>0.60</b>	<b>1.43</b>	<b>04/01/2001</b>
FTSE 3 Mo T-Bill Index			0.46	0.46	2.25	2.25	1.65	1.05	0.76	0.56	1.42	
Difference			-0.05	-0.05	-0.15	-0.15	0.02	0.03	0.04	0.04	0.01	

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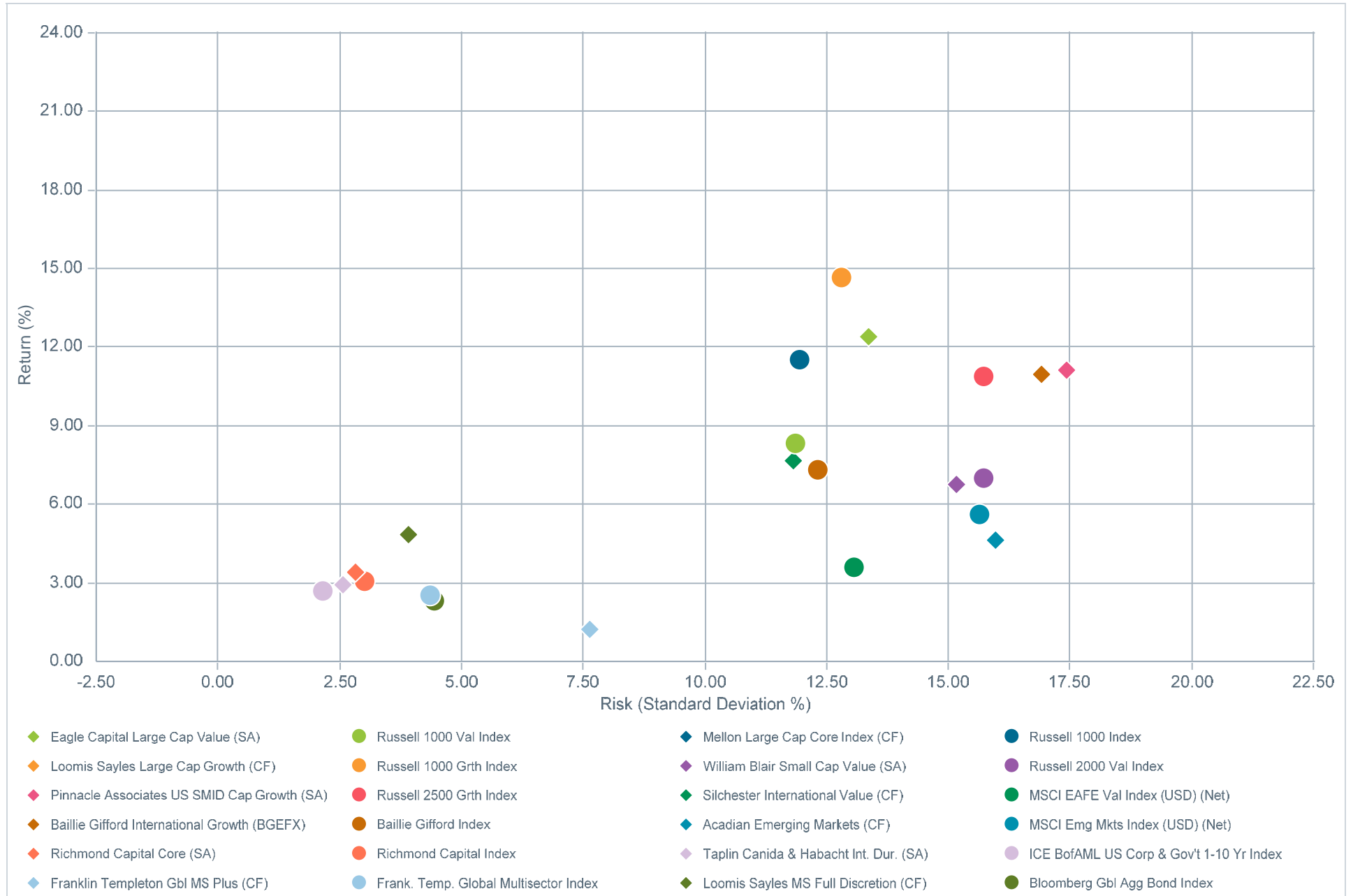




Performance shown is gross of fees and client specific. Calculation is based on monthly periodicity. Managers with less history than the specified time period will not appear. Please see the Addendum for custom index definitions.

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

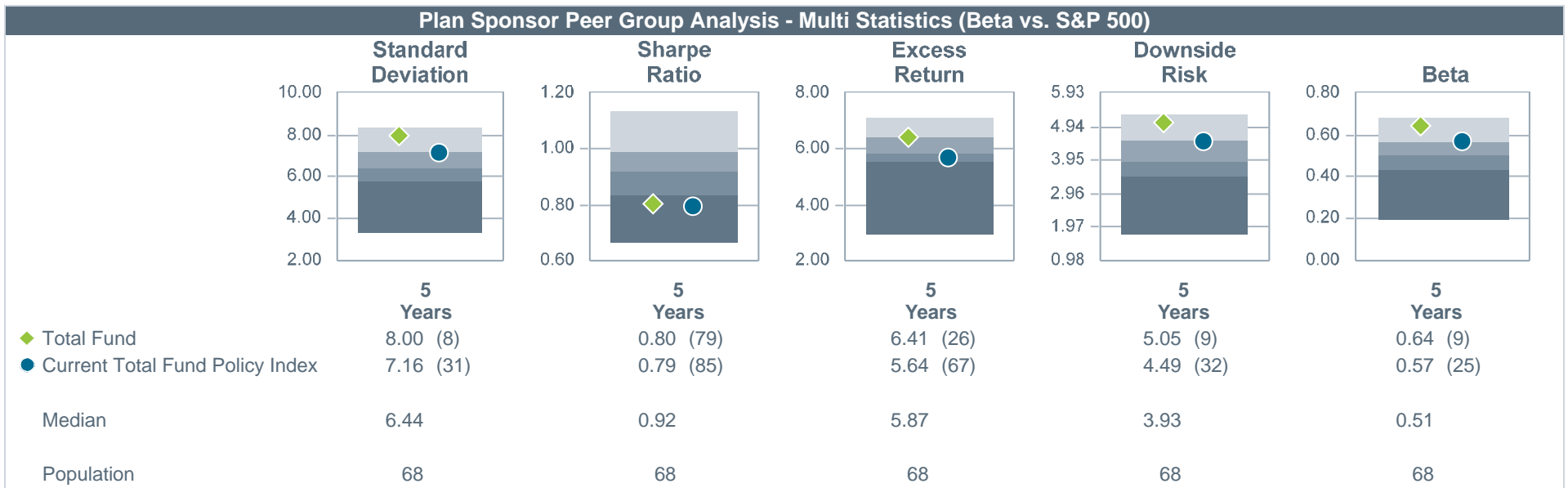
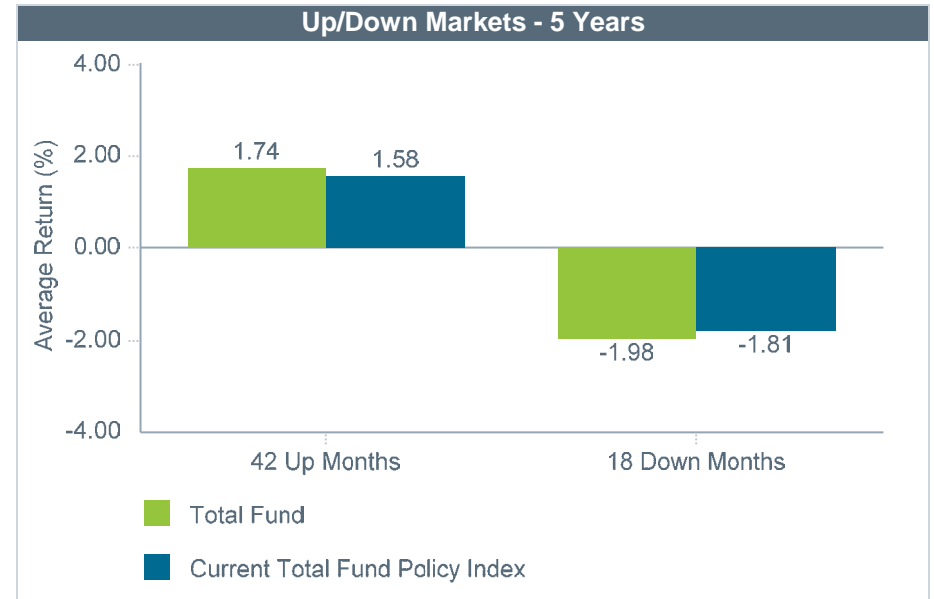
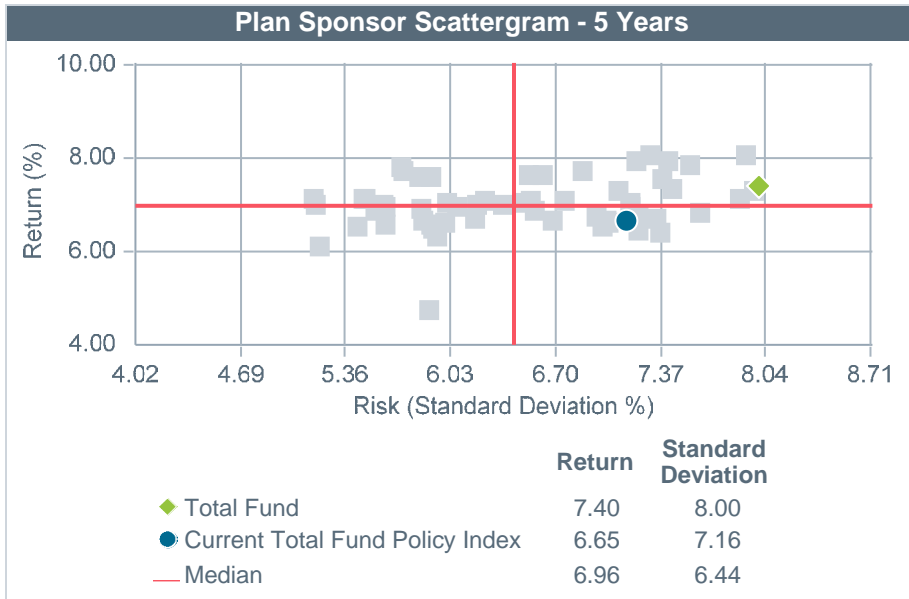
5 Years Ending December 31, 2019



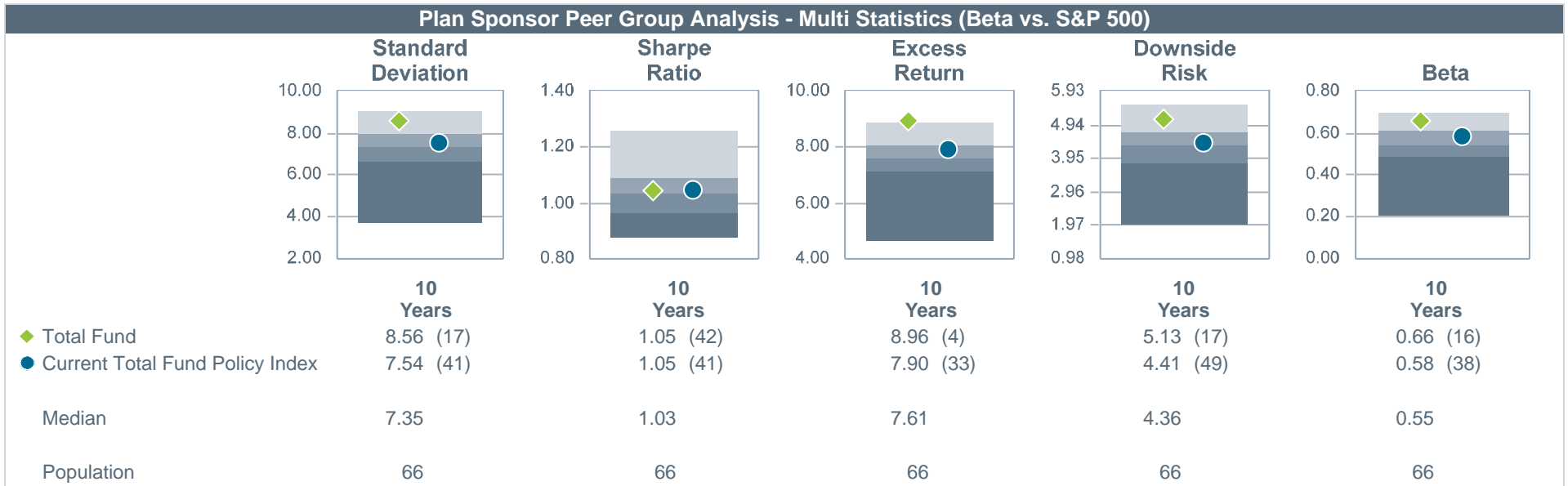
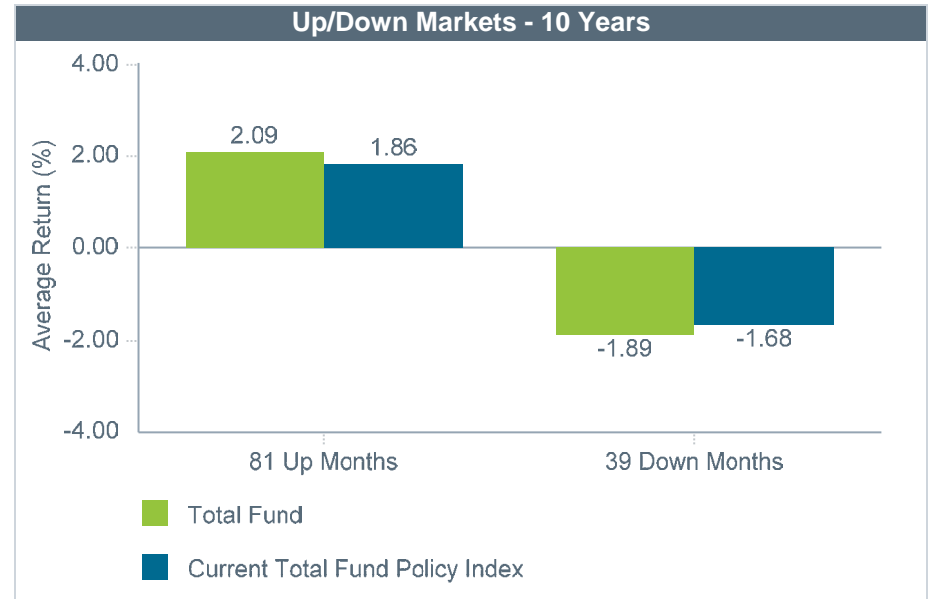
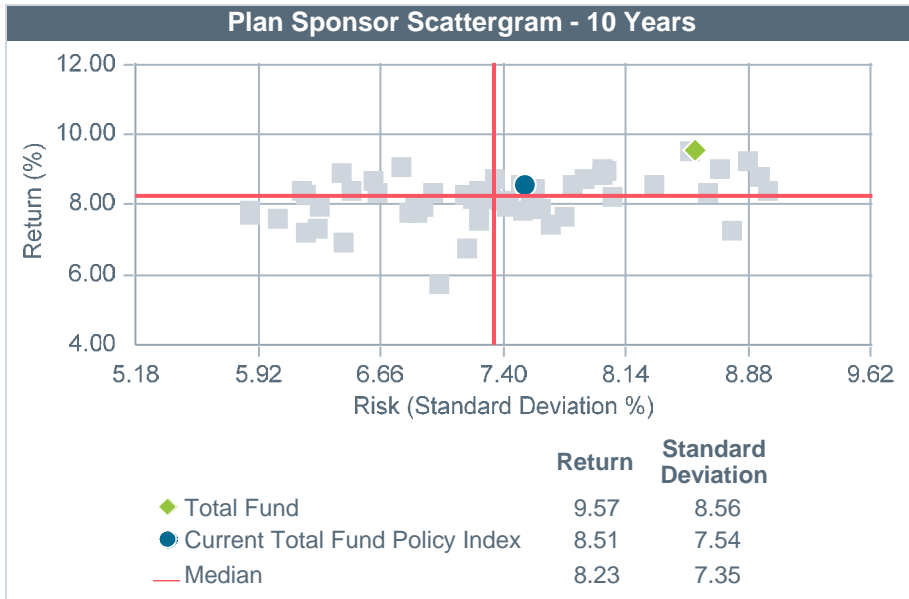
Performance shown is gross of fees and client specific. Calculation is based on monthly periodicity. Managers with less history than the specified time period will not appear. Please see the Addendum for custom index definitions.







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



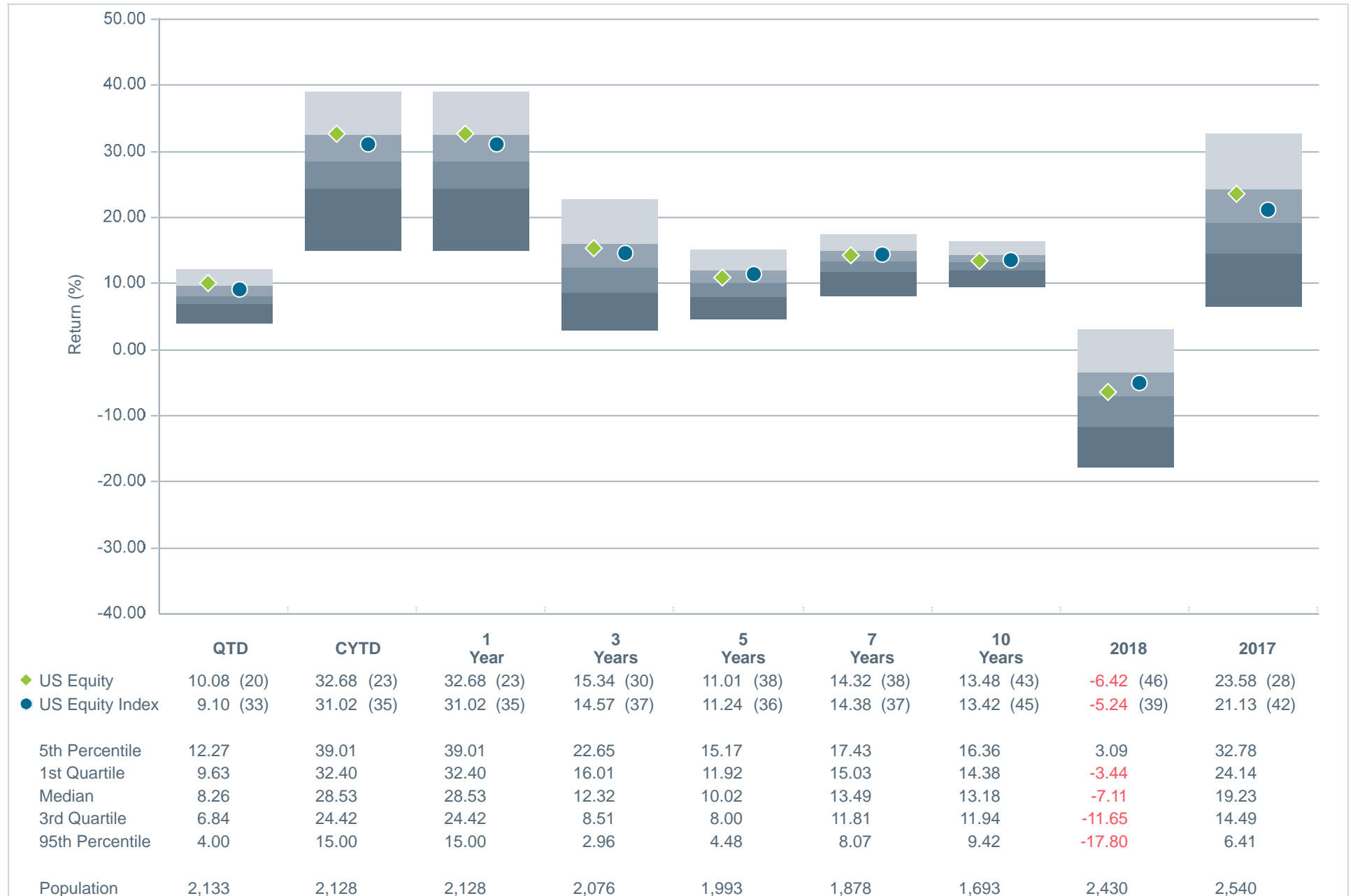
Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

# Composite Profiles



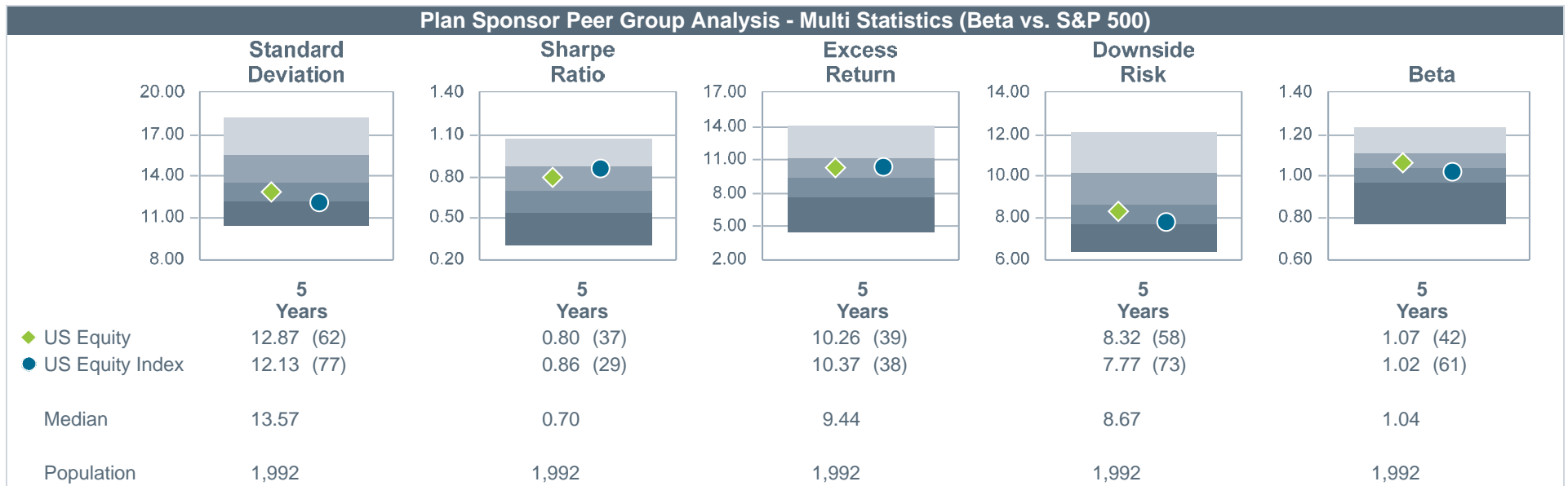
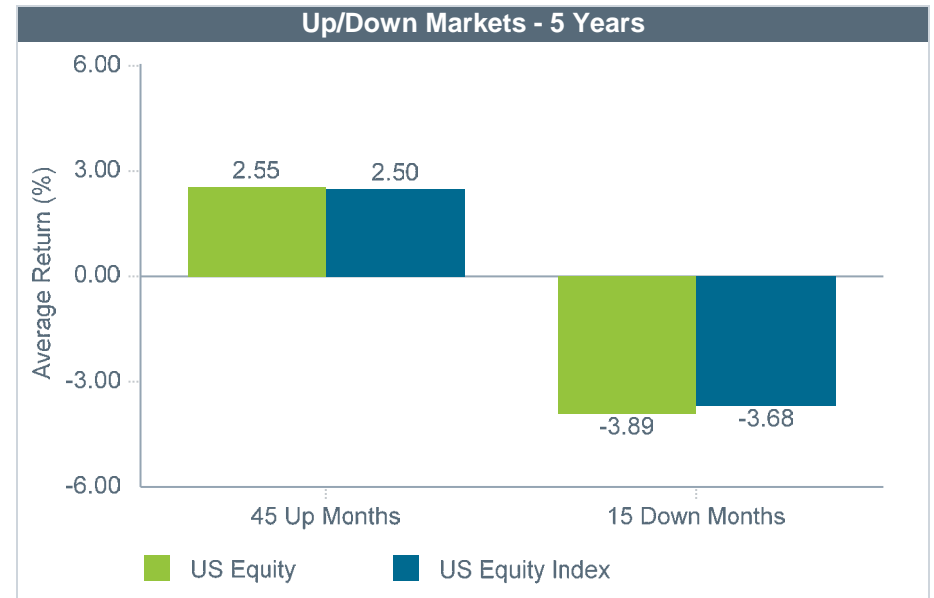
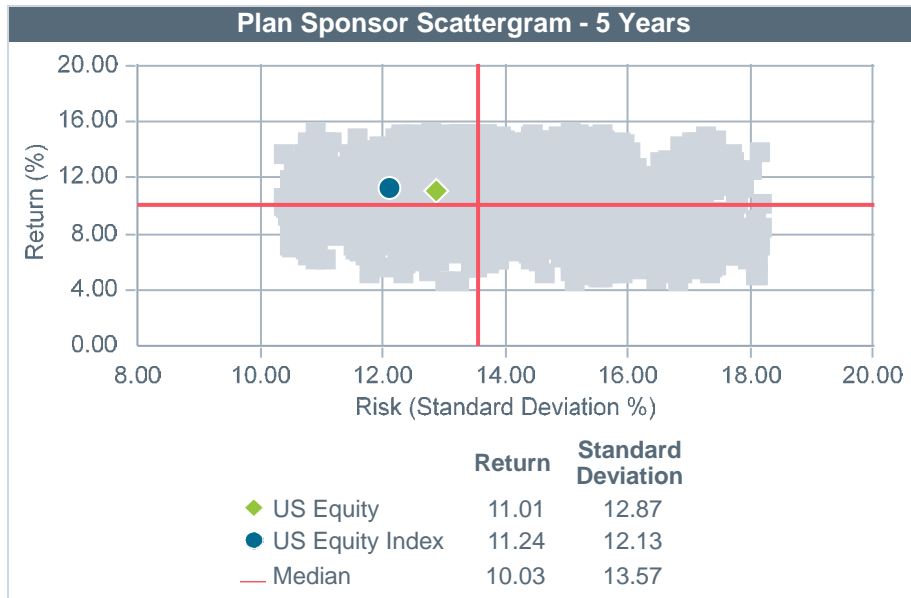
City of Jacksonville Employees' Retirement System  
 US Equity vs. IM U.S. Equity (SA+CF)  
 Peer Group Analysis

As of December 31, 2019



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

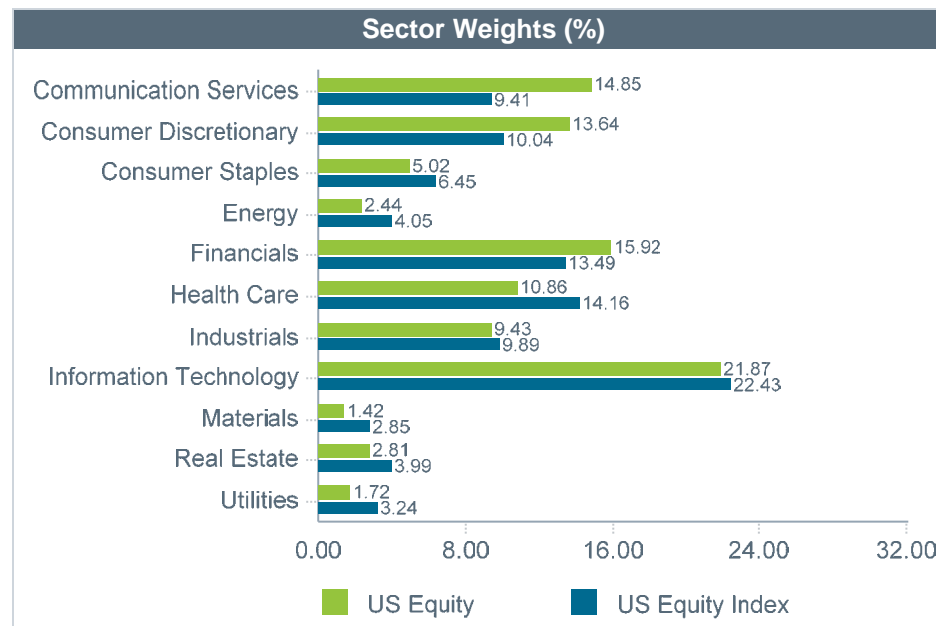
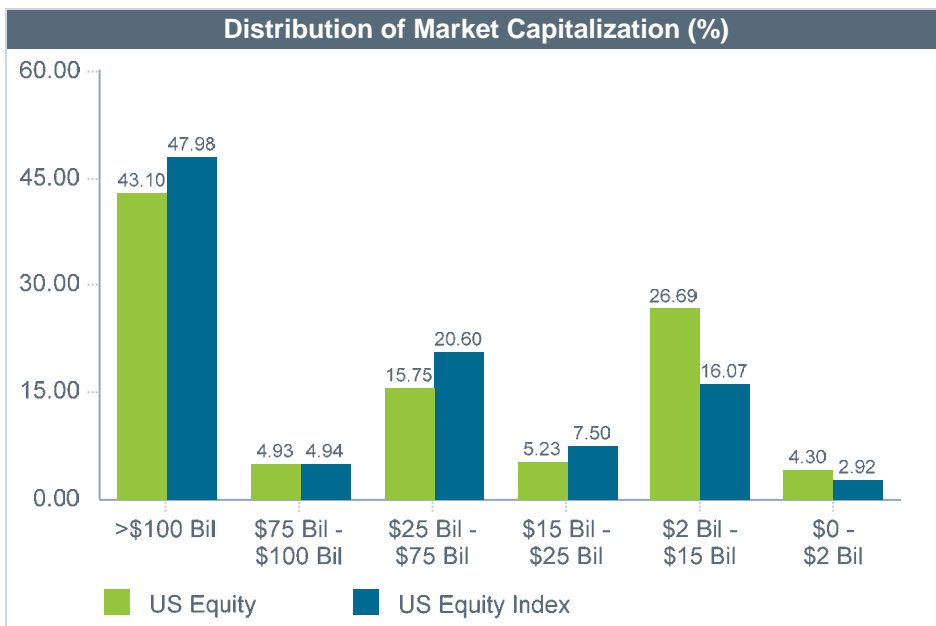




Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Microsoft Corp	3.97	3.75	0.22	13.82
Amazon.com Inc	3.30	2.41	0.89	6.45
Alphabet Inc	2.89	1.26	1.63	9.68
Facebook Inc	2.76	1.54	1.22	15.26
Berkshire Hathaway Inc	2.36	1.39	0.97	8.88
Citigroup Inc	1.81	0.55	1.26	16.45
Visa Inc	1.73	1.01	0.72	9.42
Oracle Corp	1.65	0.34	1.31	-3.30
Comcast Corp	1.44	0.64	0.80	0.23
Goldman Sachs	1.40	0.23	1.17	11.58
% of Portfolio	23.31	13.12	10.19	

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	226,736	245,926
Median Mkt. Cap (\$M)	9,529	1,775
Price/Earnings Ratio	22.19	22.63
Price/Book Ratio	3.34	3.50
5 Yr. EPS Growth Rate (%)	16.60	14.19
Current Yield (%)	1.36	1.79
Beta (5 Years, Monthly)	1.05	1.00
Number of Securities	1,115	2,991





Style Map (12 Months Rolling)

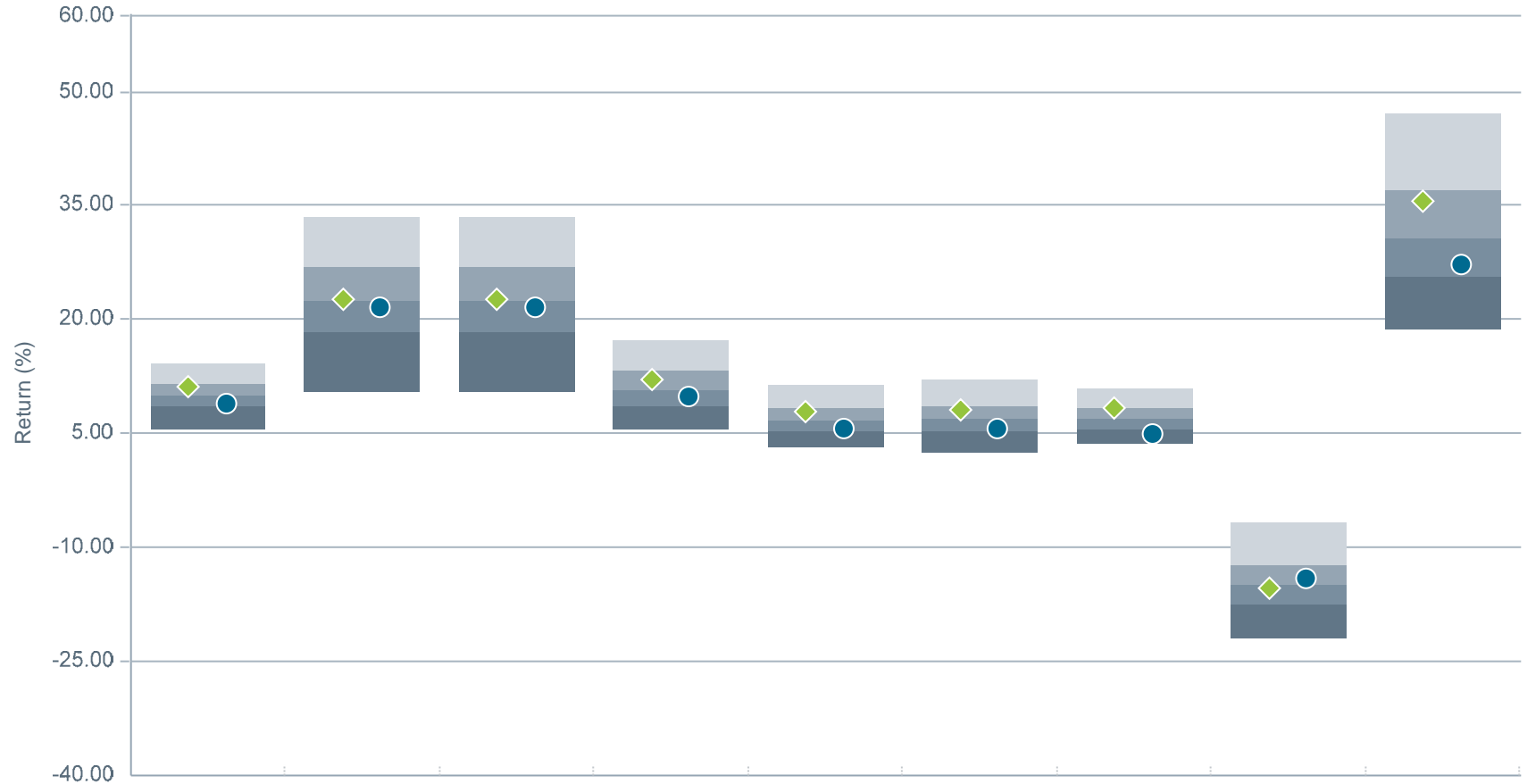


- ◆ US Equity
- Eagle Capital Large Cap Value (SA)
- ◆ Mellon Large Cap Core Index (CF)
- ▼ Loomis Sayles Large Cap Growth (CF)
- William Blair Small Cap Value (SA)
- Pinnacle Associates US SMID Cap Growth (SA)

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

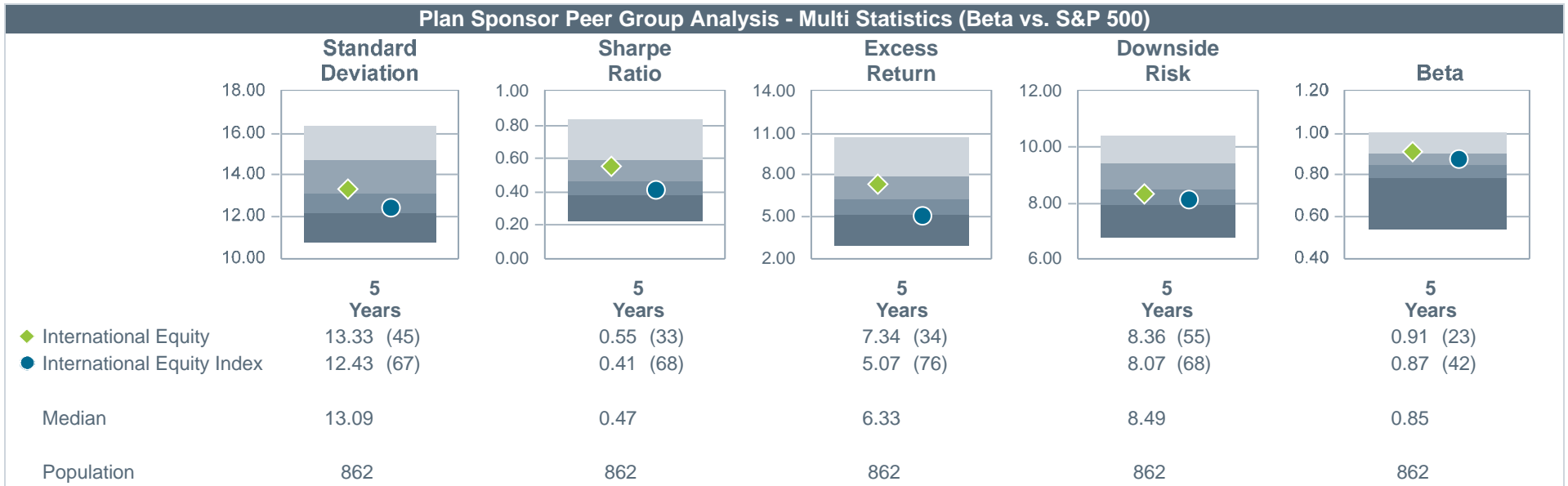
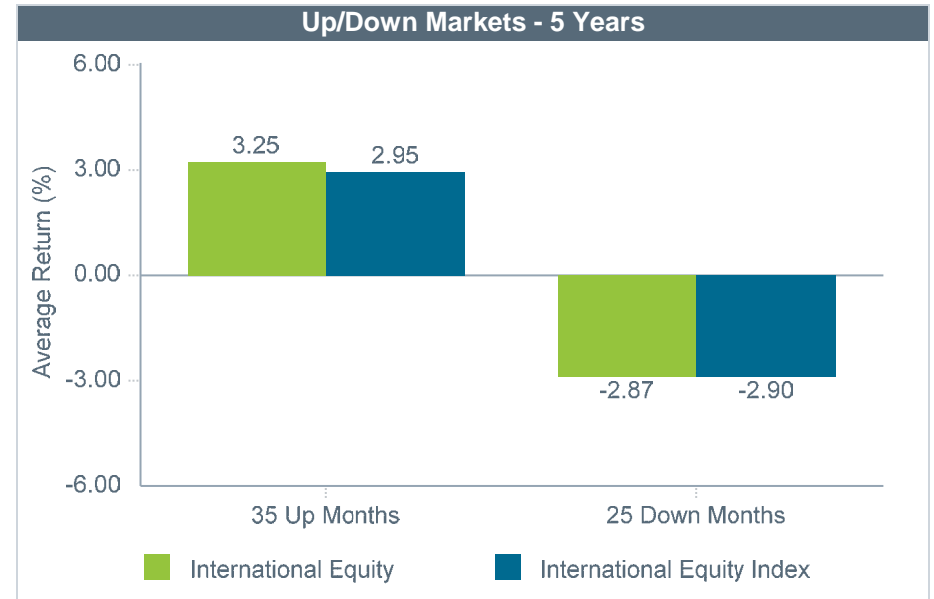
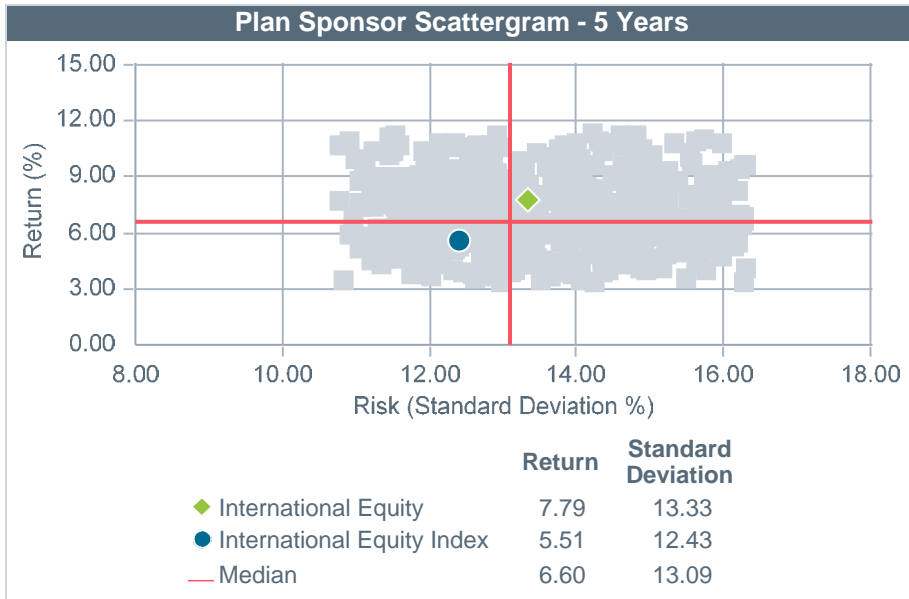
City of Jacksonville Employees' Retirement System  
 International Equity vs. IM International Equity (SA+CF)  
 Peer Group Analysis

As of December 31, 2019



	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017
◆ International Equity	11.20 (33)	22.73 (50)	22.73 (50)	12.09 (35)	7.79 (33)	8.20 (31)	8.25 (26)	-15.42 (56)	35.68 (30)
● International Equity Index	8.92 (69)	21.51 (59)	21.51 (59)	9.87 (62)	5.51 (73)	5.44 (75)	4.83 (85)	-14.20 (44)	27.19 (68)
5th Percentile	14.12	33.56	33.56	17.31	11.32	12.03	10.86	-6.70	47.09
1st Quartile	11.74	26.94	26.94	13.24	8.45	8.64	8.28	-12.39	36.95
Median	9.99	22.55	22.55	10.64	6.60	6.94	6.84	-14.81	30.57
3rd Quartile	8.51	18.43	18.43	8.69	5.41	5.32	5.50	-17.44	25.65
95th Percentile	5.46	10.48	10.48	5.61	3.27	2.53	3.71	-21.86	18.71
Population	988	986	986	948	862	768	623	1,105	1,146

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



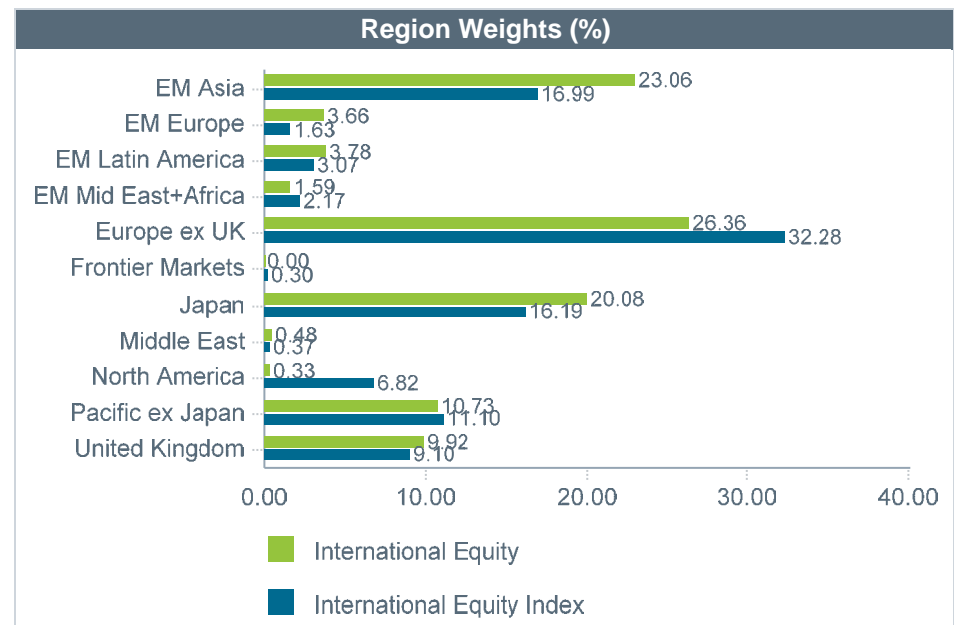
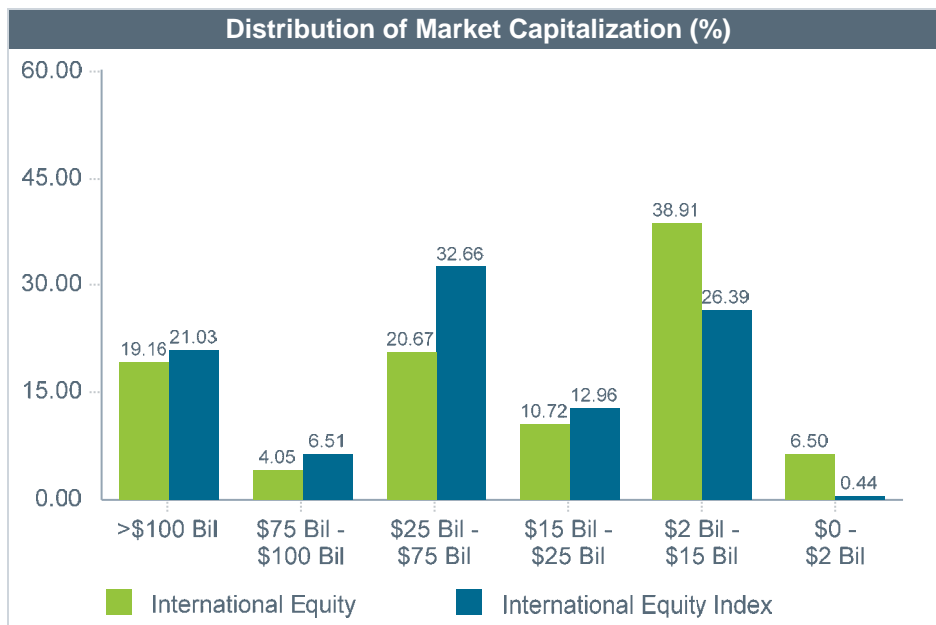
Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

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

As of December 31, 2019

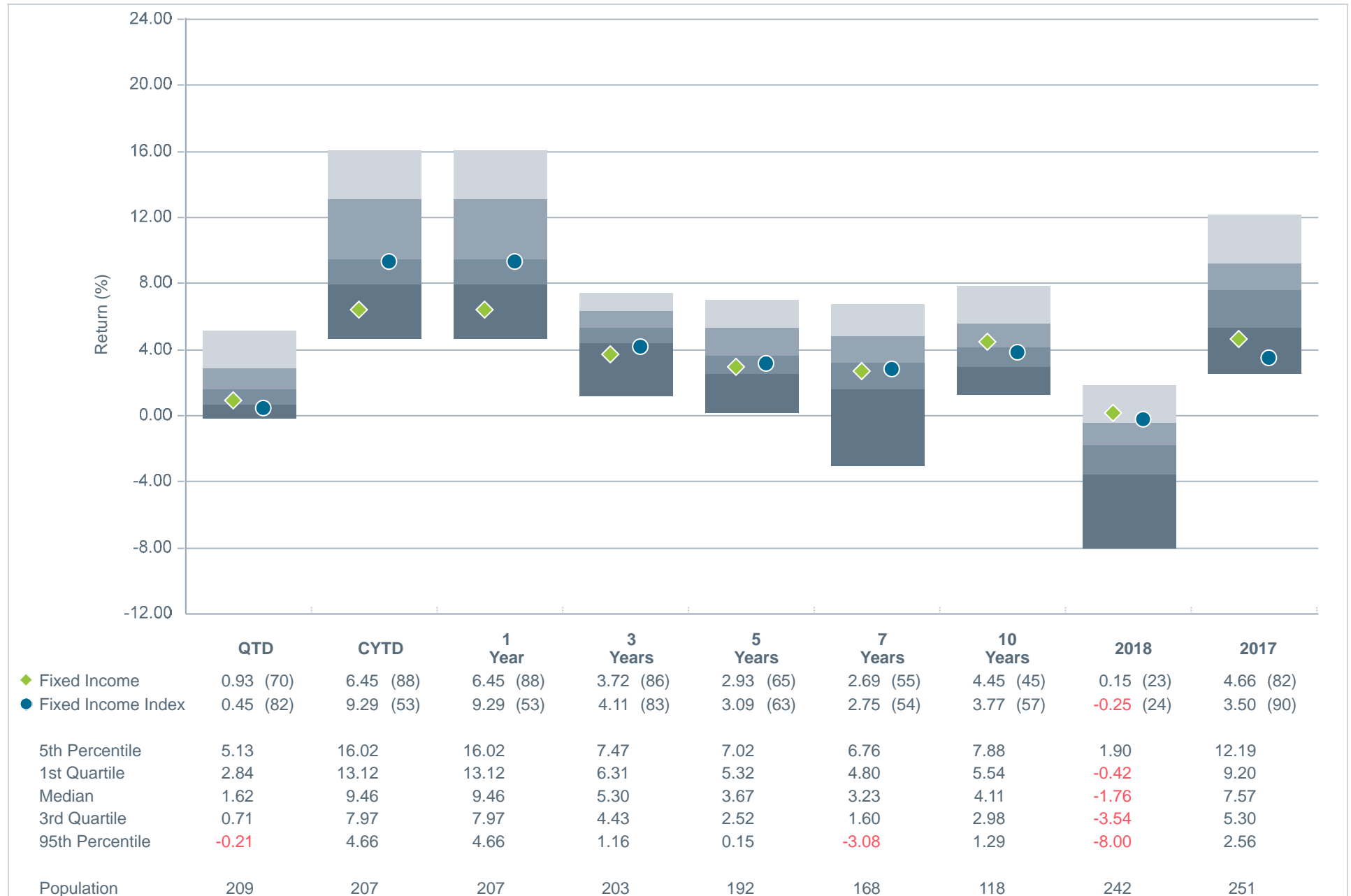
Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
ASML Holding NV	2.06	0.56	1.50	19.93
Alibaba Group Holding Ltd	2.06	1.59	0.47	26.83
Sanofi	1.80	0.50	1.30	8.43
Ferrari NV	1.57	0.09	1.48	7.53
Honda Motor Co Ltd	1.55	0.21	1.34	11.12
Samsung Electronics Co Ltd	1.54	1.02	0.52	18.85
Tencent Holdings LTD	1.30	1.22	0.08	14.50
Credit Suisse Group	1.30	0.15	1.15	10.34
Glaxosmithkline PLC	1.27	0.52	0.75	11.02
M3 Inc	1.18	0.06	1.12	26.33
% of Portfolio	15.63	5.92	9.71	

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	59,995	75,601
Median Mkt. Cap (\$M)	2,641	8,444
Price/Earnings Ratio	13.65	16.14
Price/Book Ratio	2.41	2.34
5 Yr. EPS Growth Rate (%)	8.74	8.14
Current Yield (%)	3.08	3.19
Beta (5 Years, Monthly)	1.06	1.00
Number of Securities	670	2,412

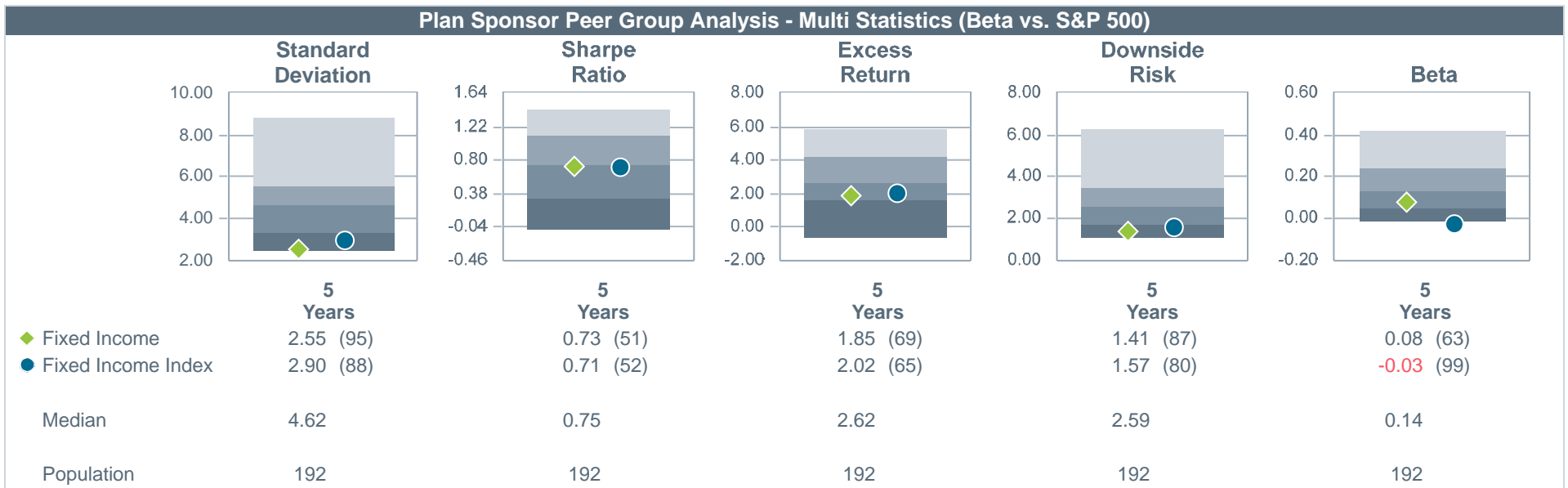
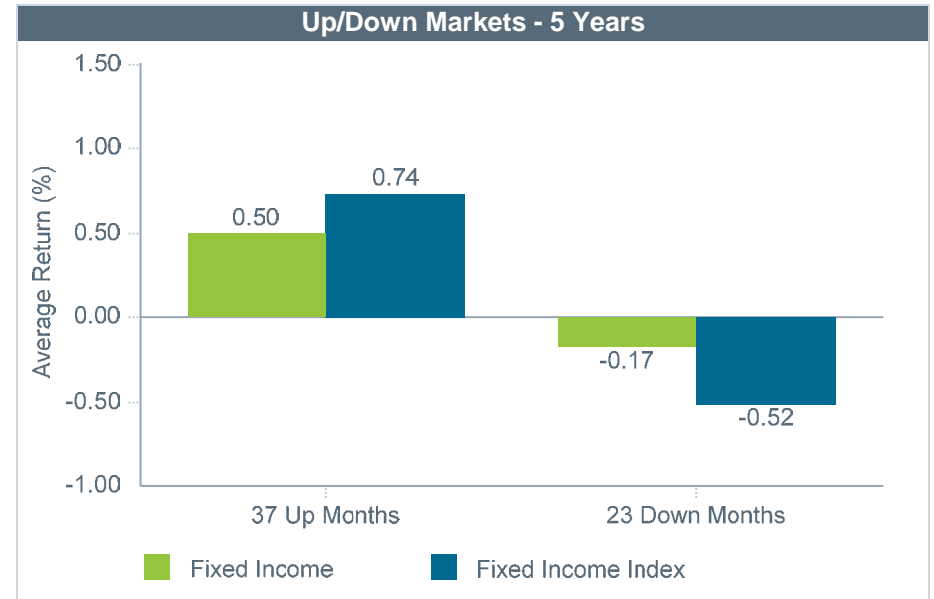
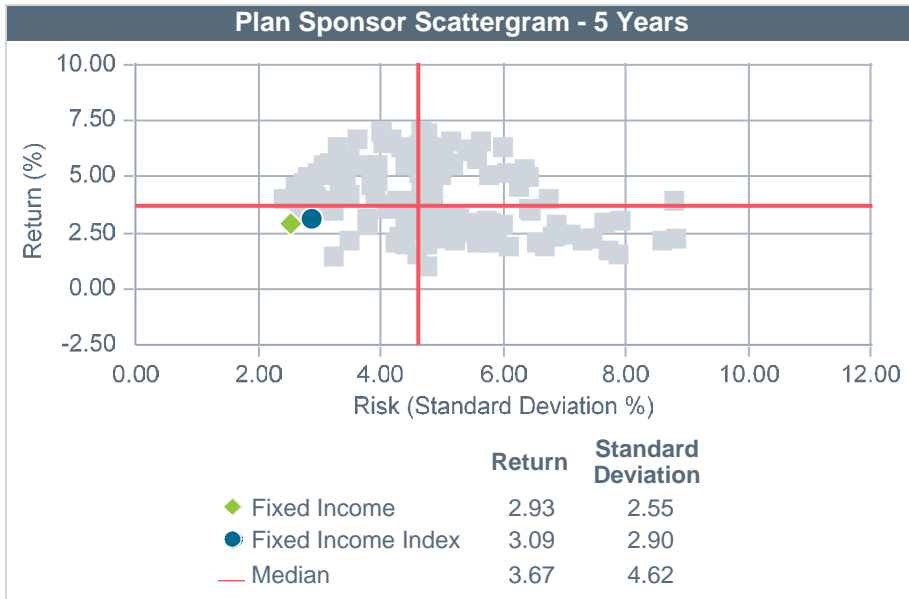


City of Jacksonville Employees' Retirement System  
 Fixed Income vs. IM Global Fixed Income (SA+CF)  
 Peer Group Analysis

As of December 31, 2019



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

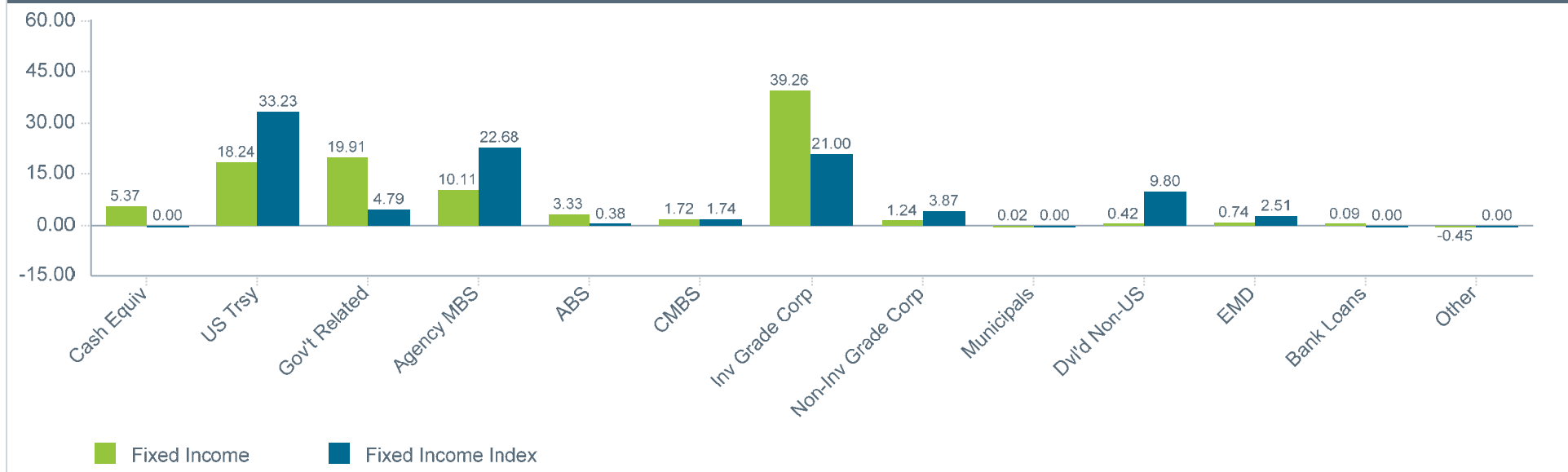


Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Portfolio Characteristics

	Portfolio	Benchmark
Effective Duration	3.46	5.68
Avg. Maturity	5.13	7.94
Avg. Quality	A1	N/A
Yield To Maturity (%)	3.28	2.69
Coupon Rate (%)	3.94	3.49
Current Yield (%)	3.81	0.20

Sector Distribution (%)

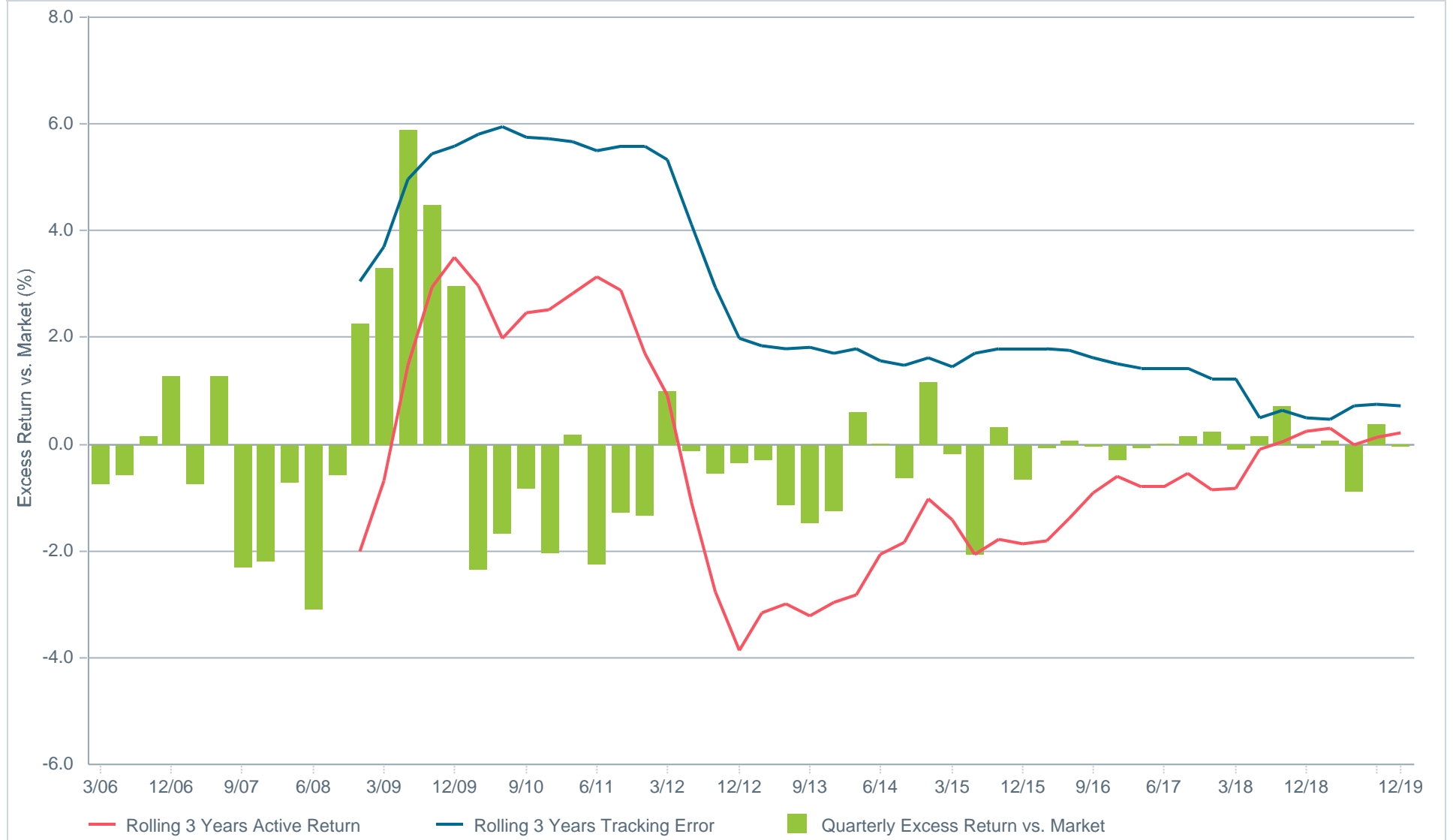


Cash equivalents are defined as any security with duration under one year. Allocation to "Other" consists of convertibles, derivatives, equity, and preferreds.

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

As of December 31, 2019

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	Since Incep.	Inception Date
Real Estate	1.48	1.48	4.85	4.85	7.30	8.48	9.35	9.60	9.11	7.99	8.42	6.42	12/01/2005
NCREIF ODCE Index (AWA) (Gross)	1.51	1.51	5.34	5.34	7.09	8.97	10.17	11.42	8.35	7.62	8.77	7.14	
Difference	-0.03	-0.03	-0.49	-0.49	0.21	-0.49	-0.82	-1.82	0.76	0.37	-0.35	-0.72	



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

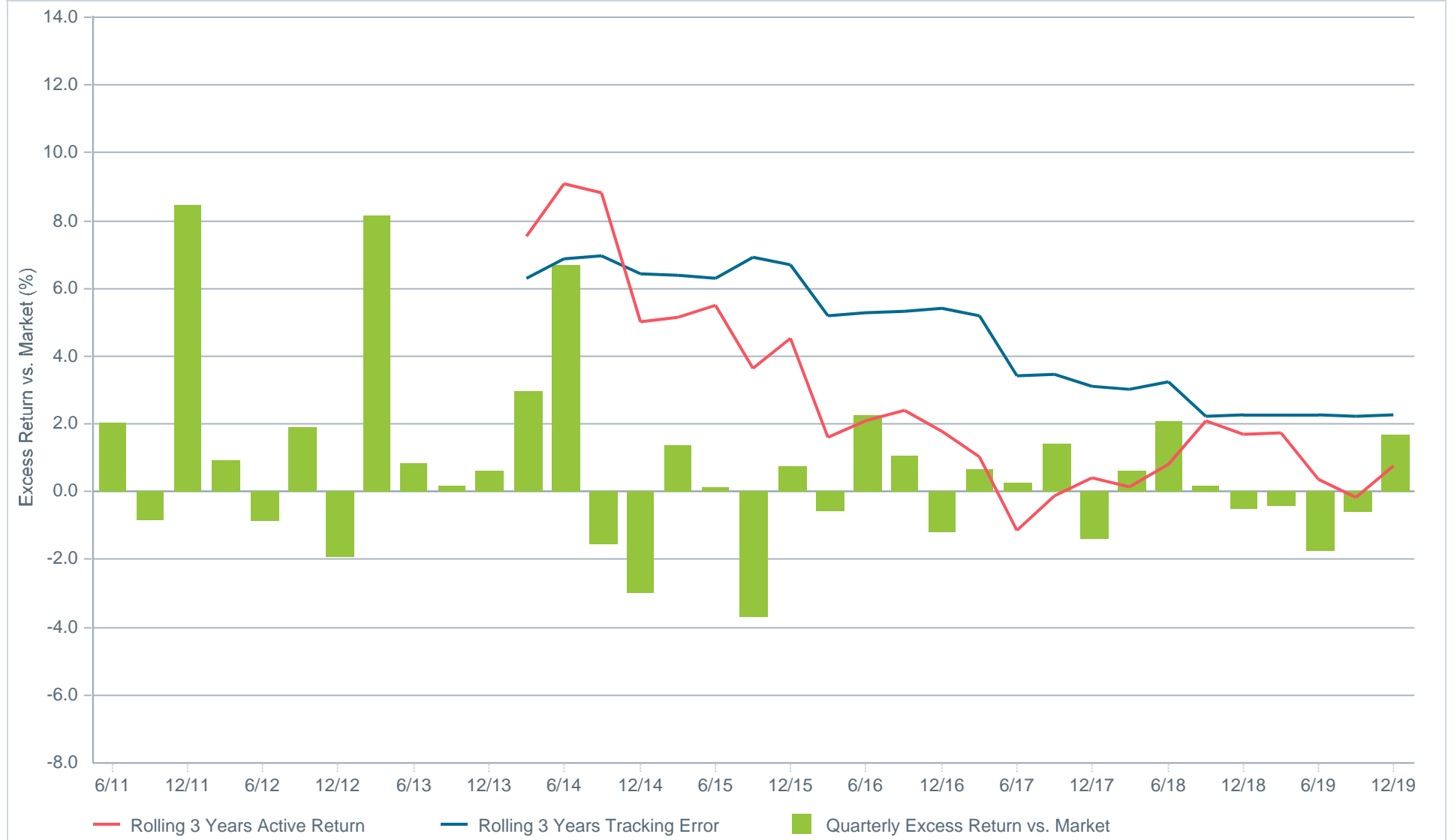




City of Jacksonville Employees' Retirement System  
 Diversifying Assets vs. Diversifying Assets Index  
 Comparative Performance & Rolling Return

As of December 31, 2019

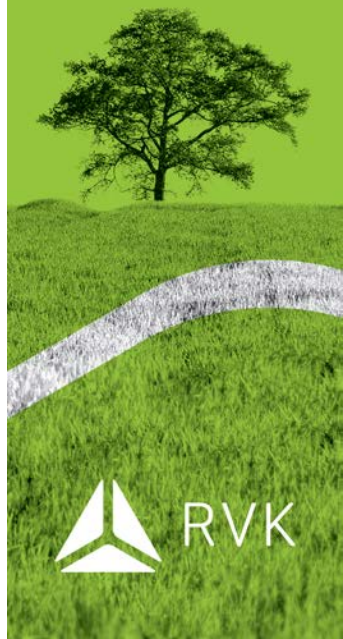
	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	Since Incep.	Inception Date
Diversifying Assets	-0.25	-0.25	6.21	6.21	0.61	-1.04	5.09	N/A	-4.42	0.33	14.07	6.38	03/01/2011
Diversifying Assets Index	-1.97	-1.97	7.29	7.29	-0.10	-1.33	2.94	5.10	-6.47	-0.66	12.53	3.59	
Difference	1.72	1.72	-1.08	-1.08	0.71	0.29	2.15	N/A	2.05	0.99	1.54	2.79	



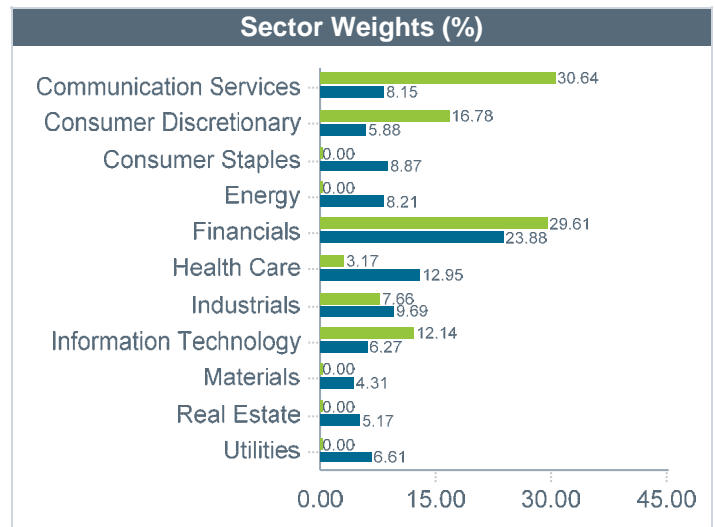
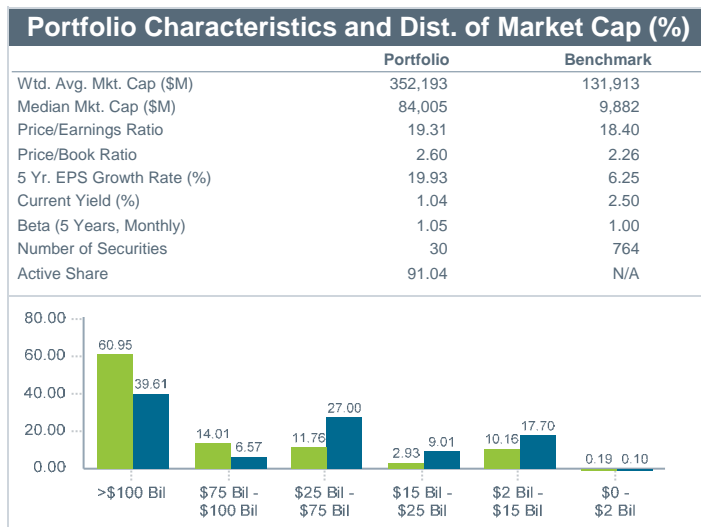
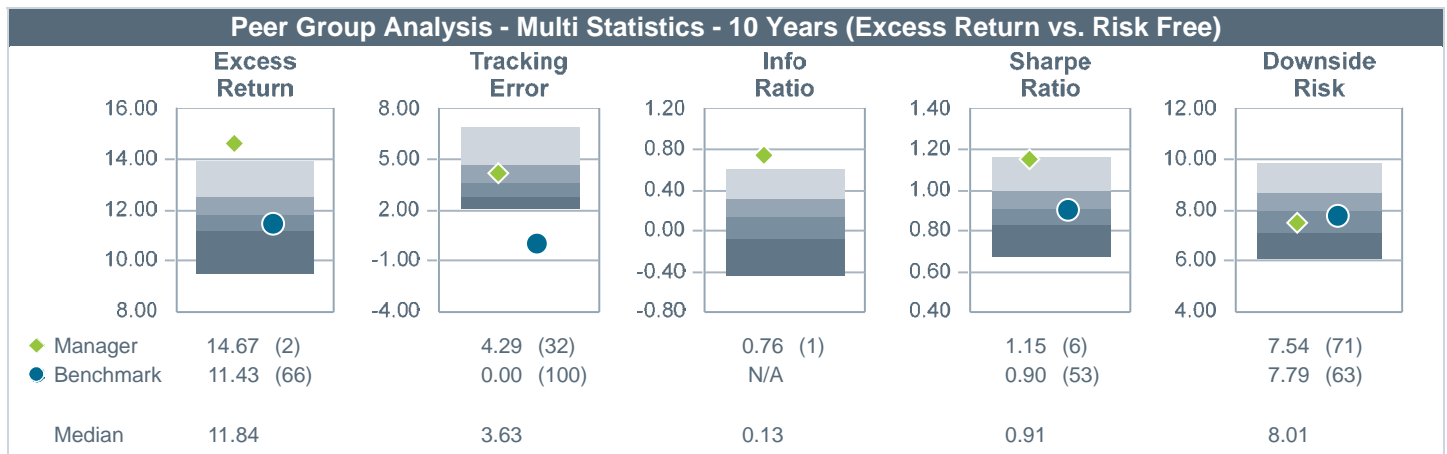
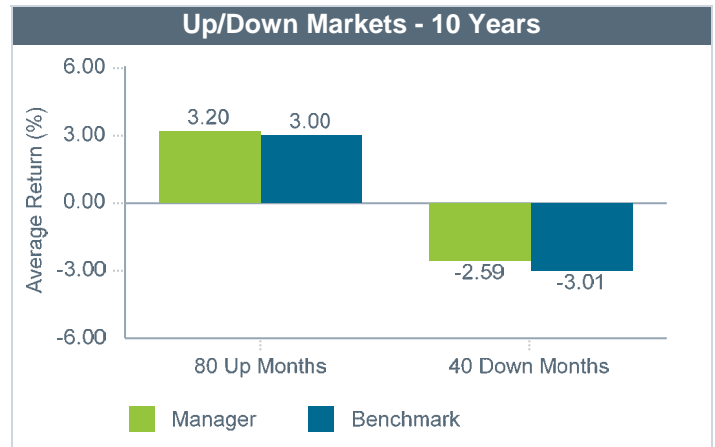
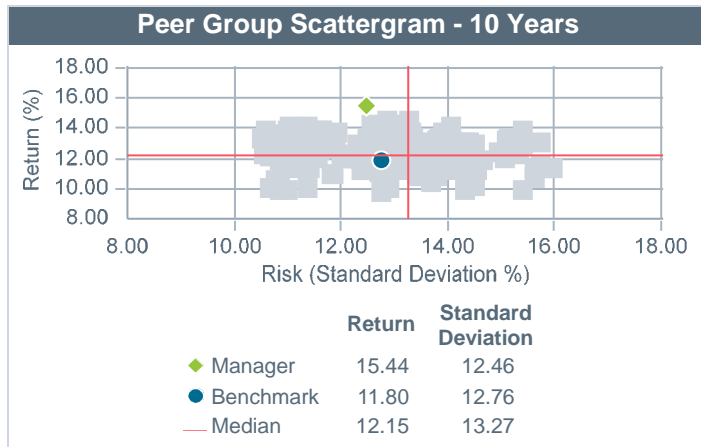
Performance shown is gross of fees. Calculation is based on quarterly periodicity.



# Investment Manager Profiles



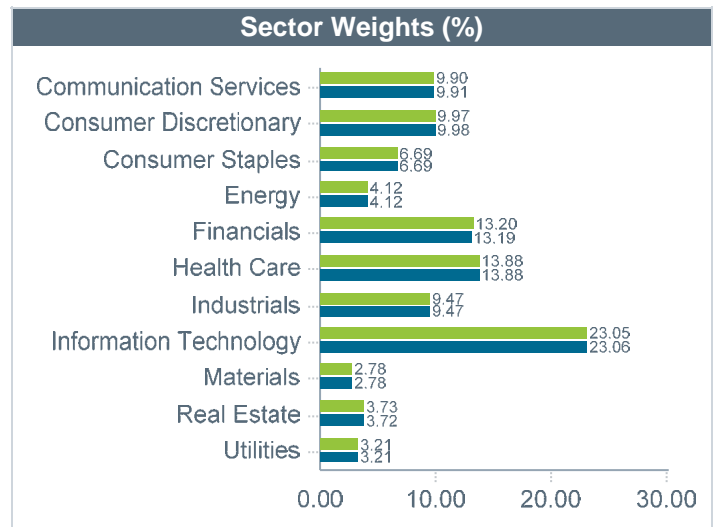
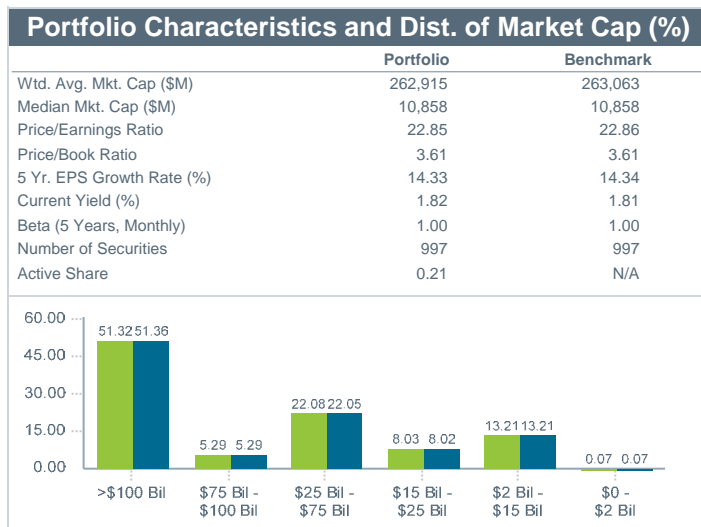
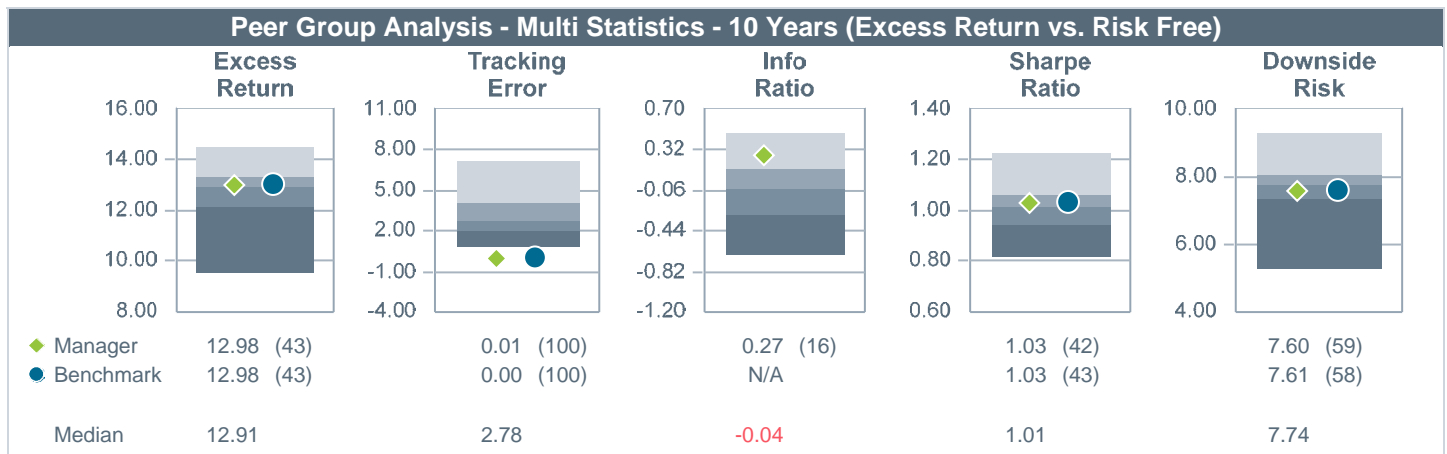
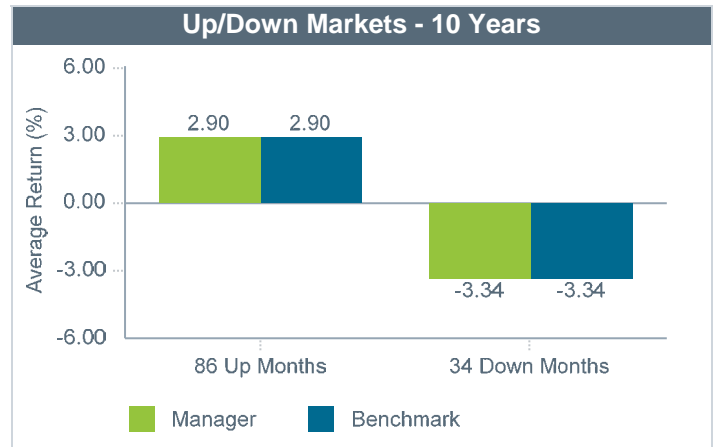
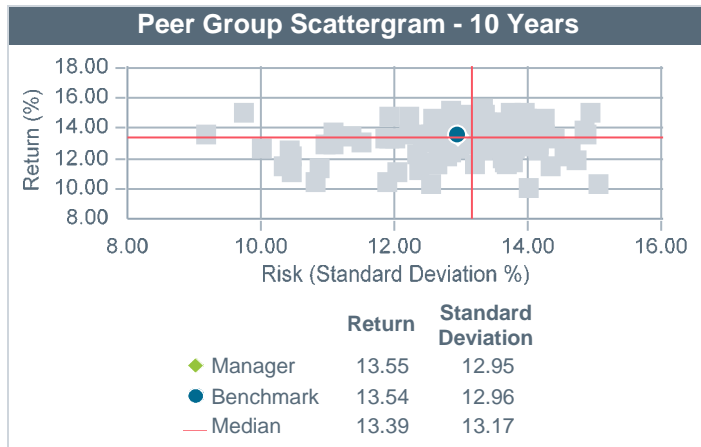
Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	10.57	31.94	16.34	12.42	15.81	15.44	-3.90	24.19	11.46	2.34	12.90
Benchmark	7.41	26.54	9.68	8.29	12.20	11.80	-8.27	13.66	17.34	-3.83	13.45
Difference	3.16	5.40	6.66	4.13	3.61	3.64	4.37	10.53	-5.88	6.17	-0.55
Peer Group Median	7.92	27.32	10.76	8.94	12.78	12.15	-8.35	17.24	14.52	-2.25	12.14
Rank	11	15	4	5	3	2	15	7	73	12	41
Population	296	296	295	285	276	250	326	348	375	391	414



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

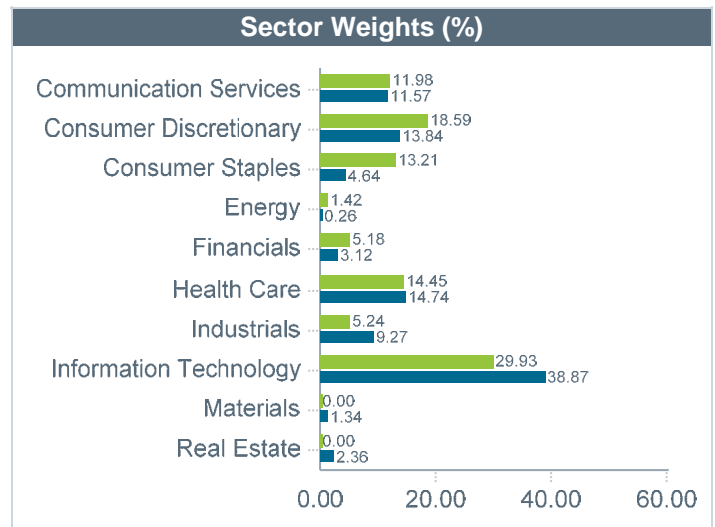
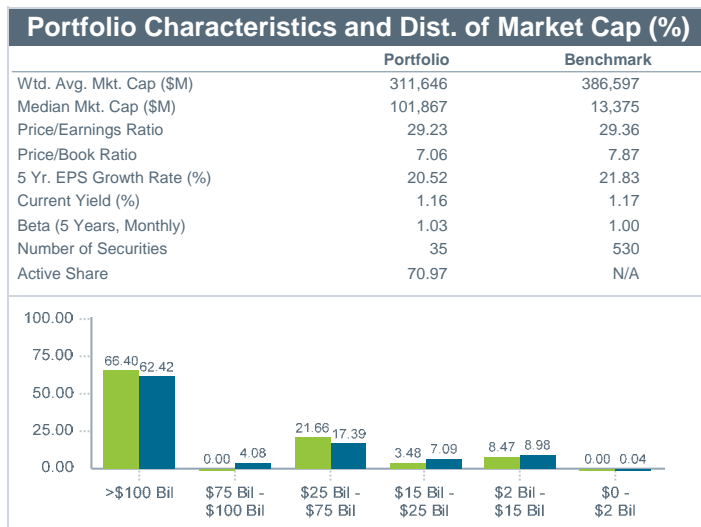
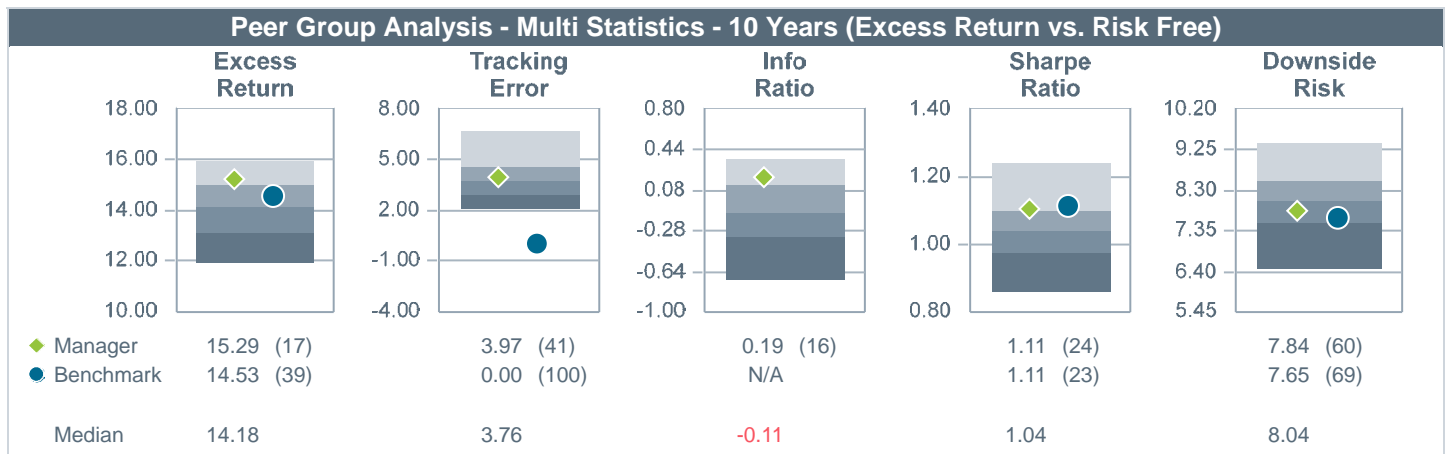
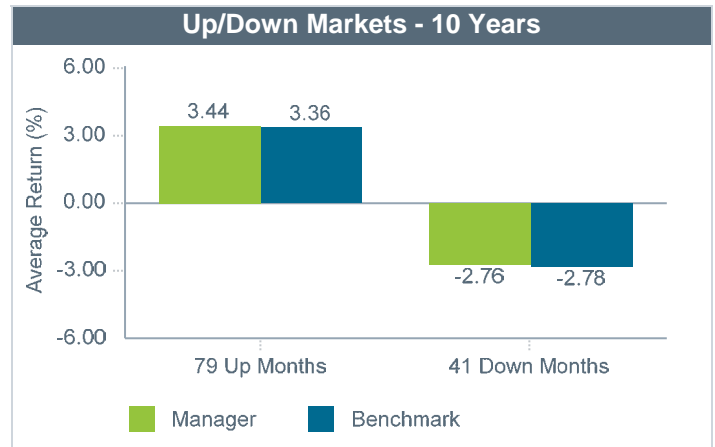
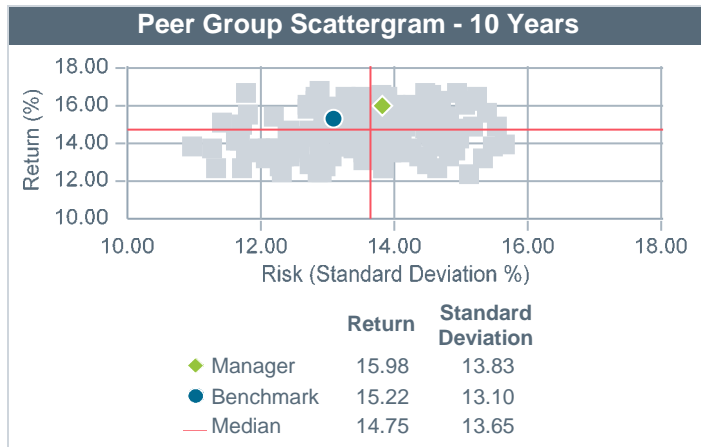


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	9.04	31.42	15.05	11.48	14.60	13.55	-4.77	21.68	12.04	0.93	13.24
Benchmark	9.04	31.43	15.05	11.48	14.60	13.54	-4.78	21.69	12.05	0.92	13.24
Difference	0.00	-0.01	0.00	0.00	0.00	0.01	0.01	-0.01	-0.01	0.01	0.00
Peer Group Median	8.20	29.96	14.32	11.17	14.59	13.39	-5.17	21.83	10.52	1.43	13.42
Rank	33	36	38	40	50	43	43	53	32	57	53
Population	223	222	219	211	200	177	265	290	311	327	349



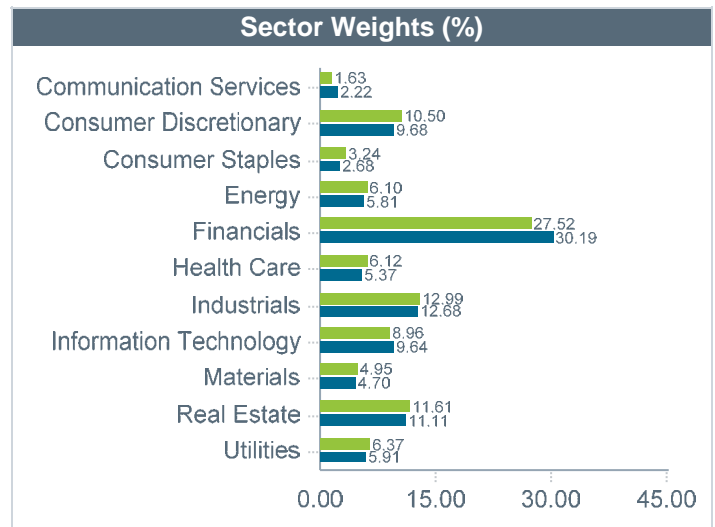
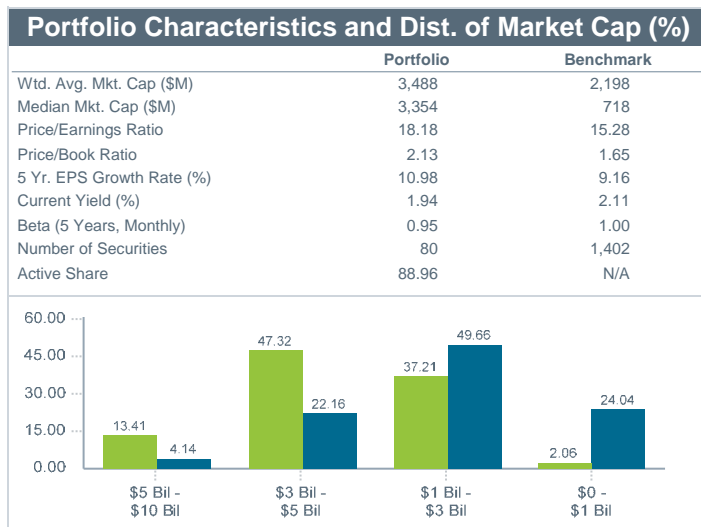
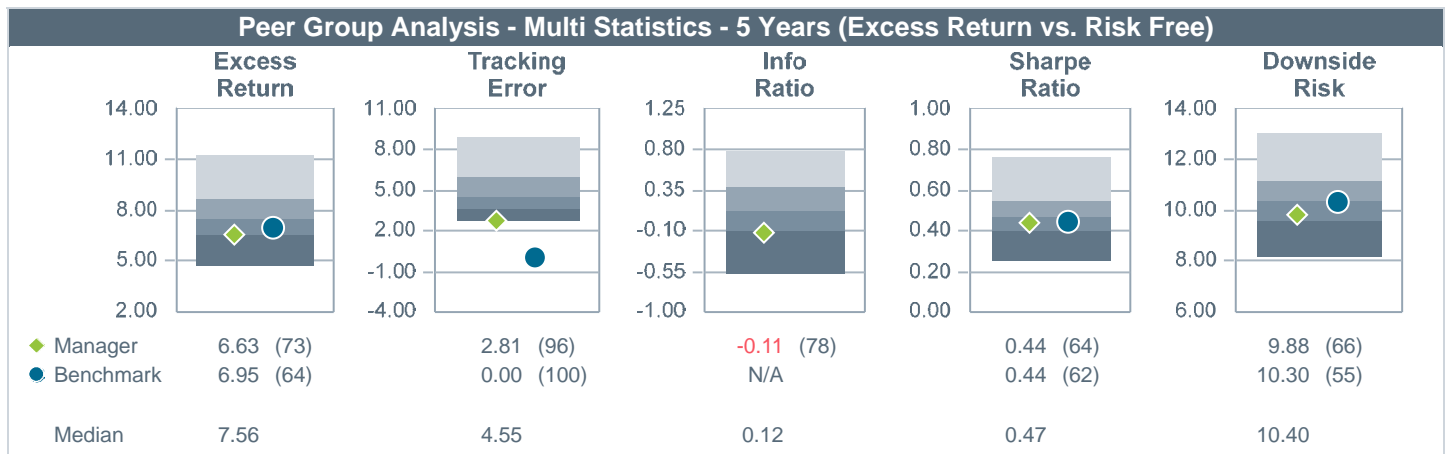
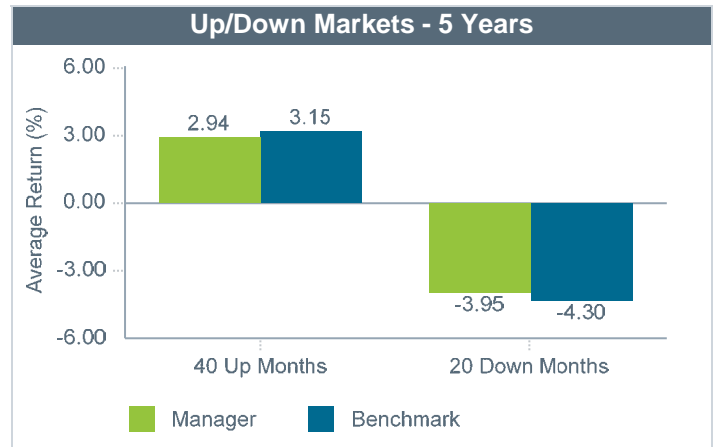
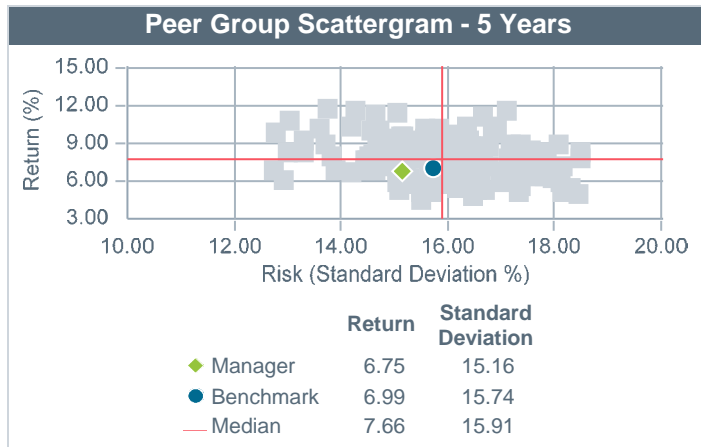
Performance shown is gross of fees and product specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
<b>Manager</b>	<b>9.95</b>	<b>32.71</b>	<b>20.47</b>	<b>15.63</b>	<b>17.87</b>	<b>15.98</b>	<b>-1.72</b>	<b>34.03</b>	<b>6.54</b>	<b>10.99</b>	<b>11.75</b>
Benchmark	10.62	36.39	20.49	14.63	16.92	15.22	-1.51	30.21	7.08	5.67	13.05
Difference	-0.67	-3.68	-0.02	1.00	0.95	0.76	-0.21	3.82	-0.54	5.32	-1.30
Peer Group Median	9.62	33.81	19.44	13.57	16.46	14.76	-0.90	28.16	4.68	4.93	12.05
Rank	43	62	41	16	16	18	57	15	34	11	55
Population	241	241	236	227	215	201	274	288	308	338	349



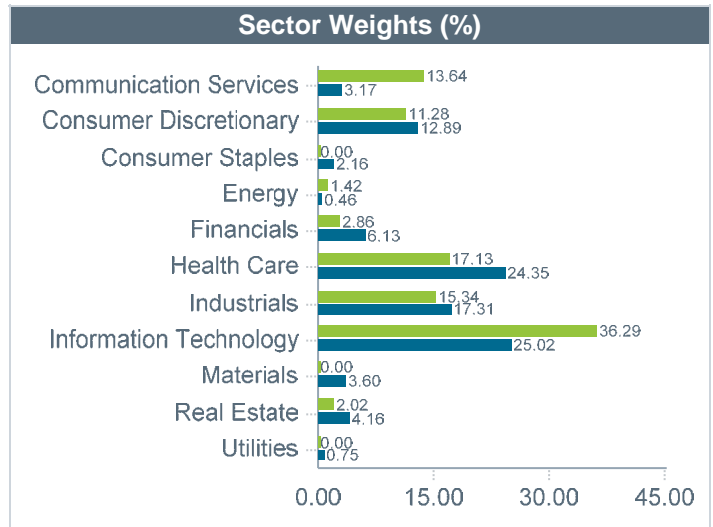
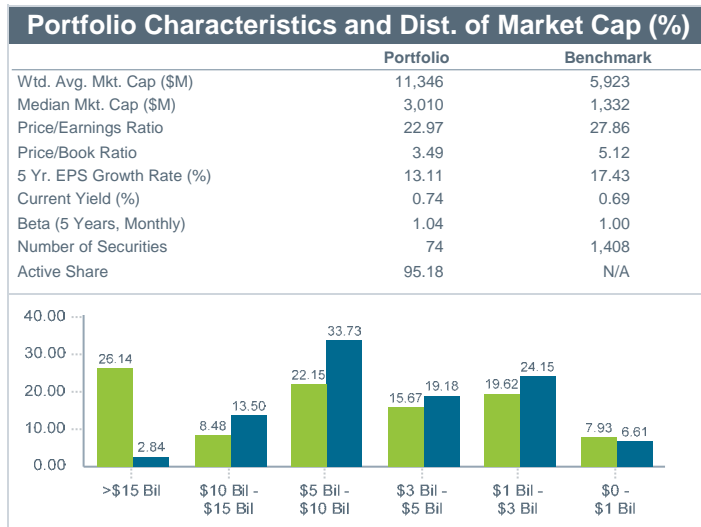
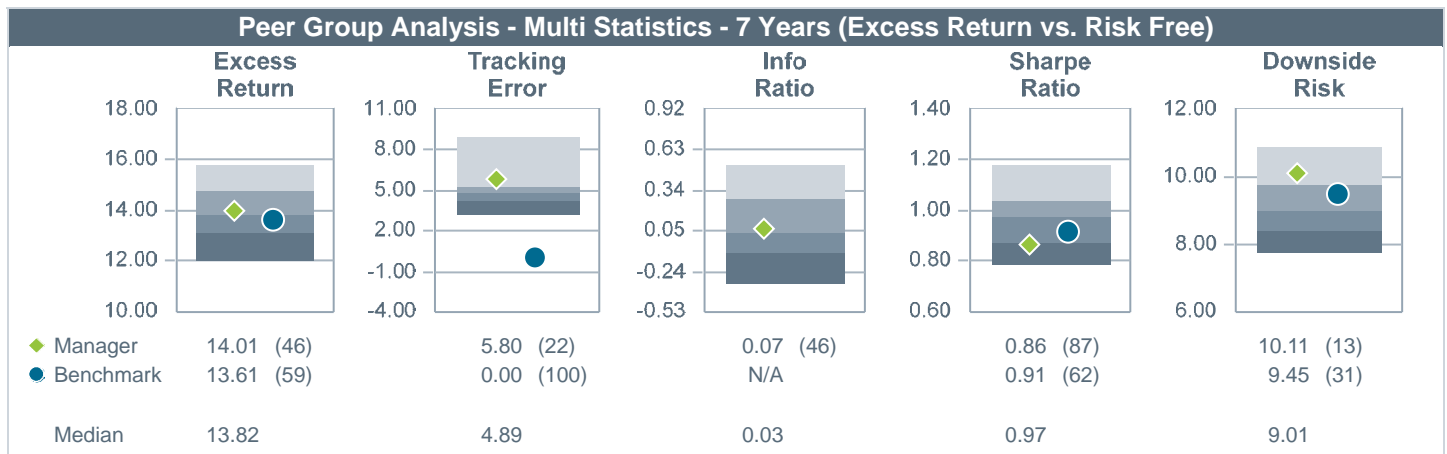
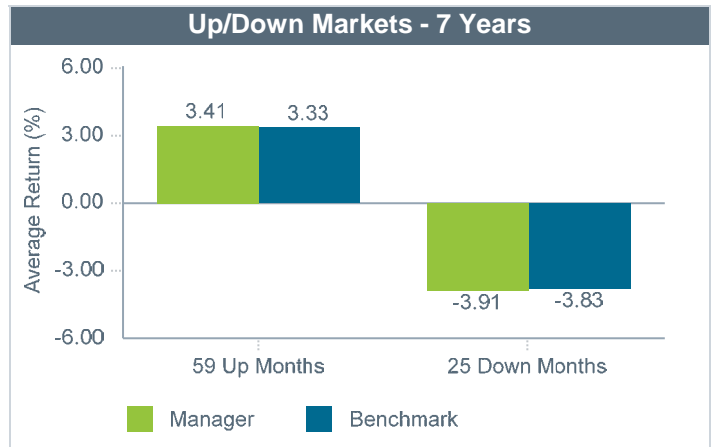
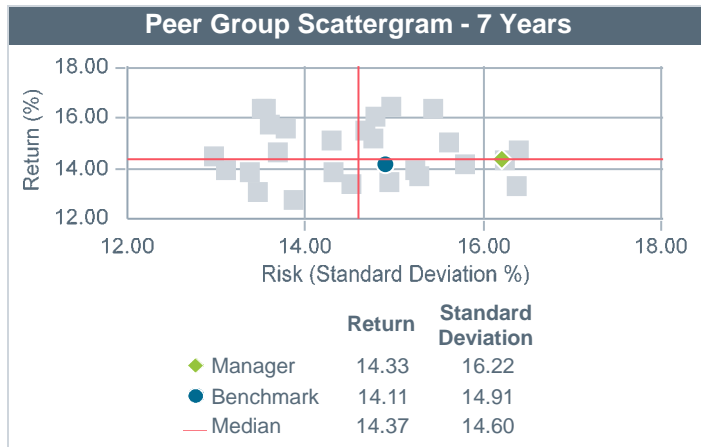
Performance shown is gross of fees and product specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	5.22	22.23	4.34	6.75	N/A	N/A	-14.72	8.97	27.58	-4.33	N/A
Benchmark	8.49	22.39	4.77	6.99	10.13	10.56	-12.86	7.84	31.74	-7.47	4.22
Difference	-3.27	-0.16	-0.43	-0.24	N/A	N/A	-1.86	1.13	-4.16	3.14	N/A
Peer Group Median	7.96	25.07	5.48	7.66	11.49	12.08	-14.30	11.58	26.11	-4.30	5.71
Rank	90	74	76	69	N/A	N/A	54	68	42	51	N/A
Population	191	190	185	182	175	161	215	224	231	241	252



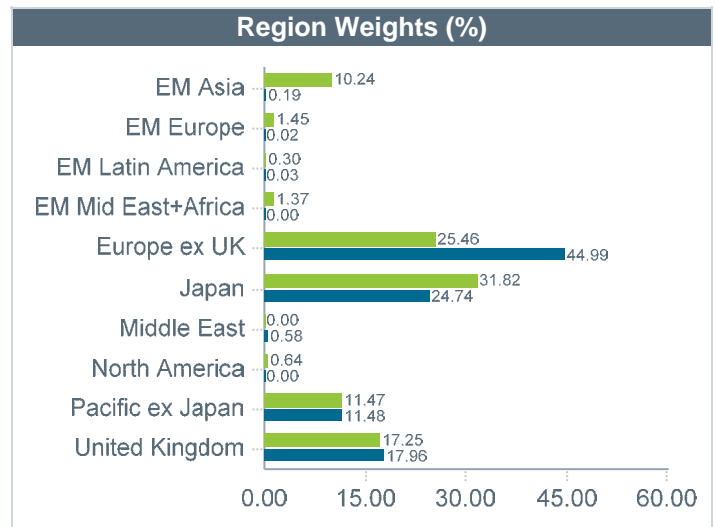
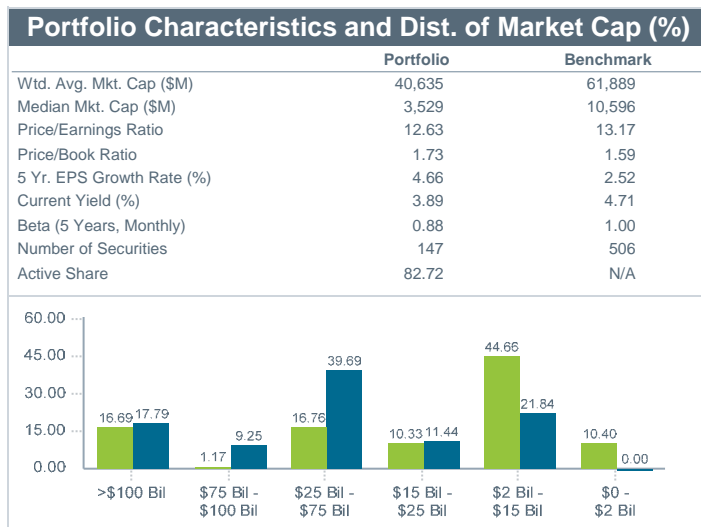
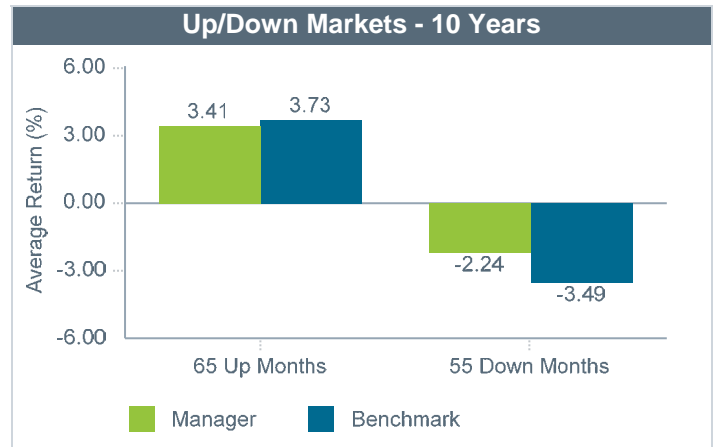
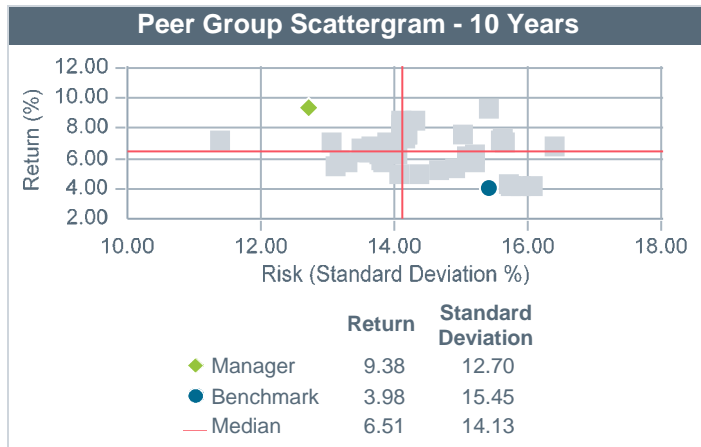
Performance shown is gross of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	16.45	41.57	16.93	11.11	14.33	N/A	-10.36	25.99	5.26	0.62	8.59
Benchmark	10.57	32.65	15.17	10.84	14.11	14.01	-7.47	24.46	9.73	-0.19	7.05
Difference	5.88	8.92	1.76	0.27	0.22	N/A	-2.89	1.53	-4.47	0.81	1.54
Peer Group Median	8.50	31.74	17.24	11.76	14.37	14.75	-4.62	25.04	8.56	0.11	5.48
Rank	2	1	55	61	51	N/A	86	45	78	39	23
Population	53	53	48	41	34	30	61	61	67	68	71



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

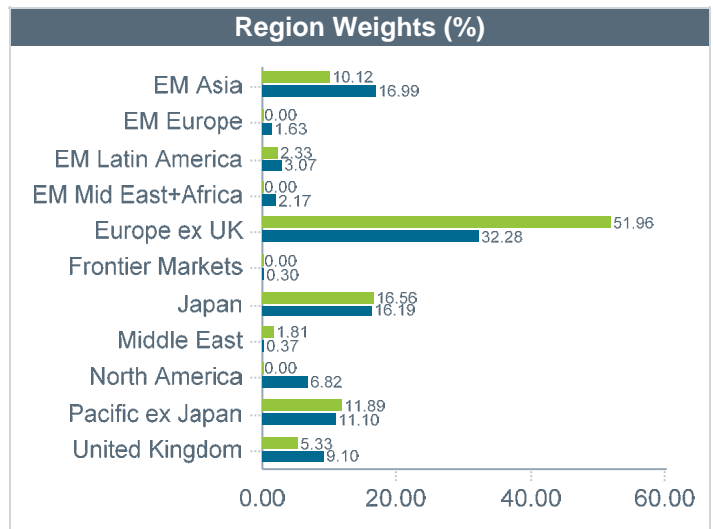
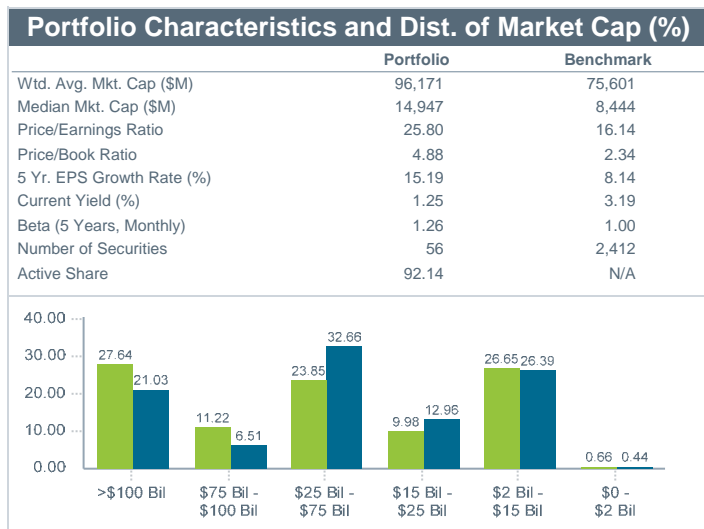
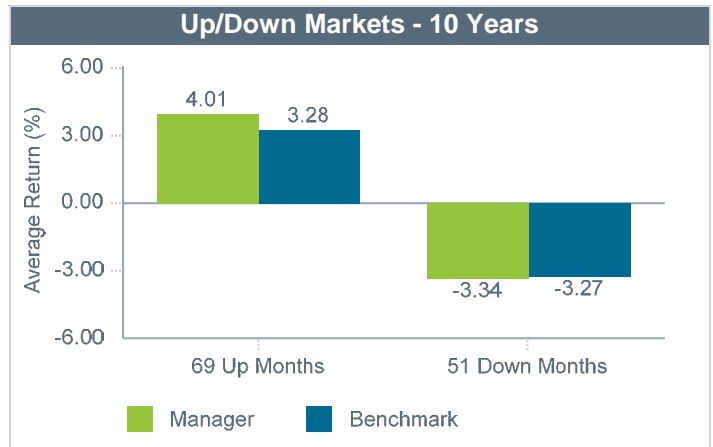
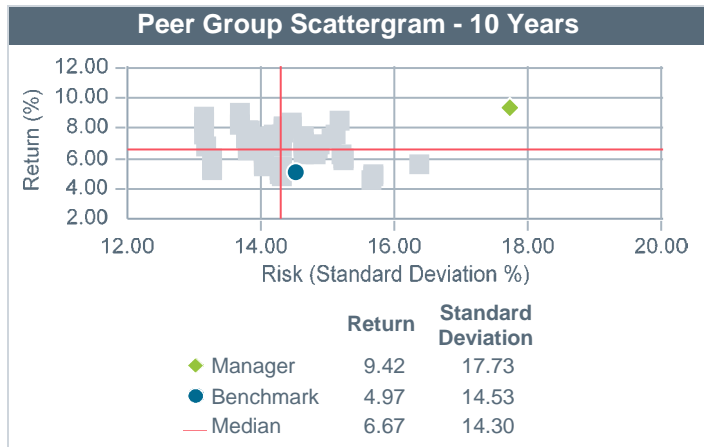
Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
<b>Manager</b>	<b>9.26</b>	<b>18.02</b>	<b>9.25</b>	<b>7.64</b>	<b>9.30</b>	<b>9.38</b>	<b>-13.74</b>	<b>28.10</b>	<b>8.27</b>	<b>2.35</b>	<b>-0.92</b>
Benchmark	7.82	16.09	6.31	3.54	4.76	3.98	-14.78	21.44	5.02	-5.68	-5.39
Difference	1.44	1.93	2.94	4.10	4.54	5.40	1.04	6.66	3.25	8.03	4.47
Peer Group Median	8.90	21.17	8.65	5.57	6.67	6.51	-15.76	24.17	3.15	-1.05	-4.30
Rank	38	90	35	17	11	5	41	26	9	26	14
Population	55	55	55	55	52	50	59	61	65	76	77



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



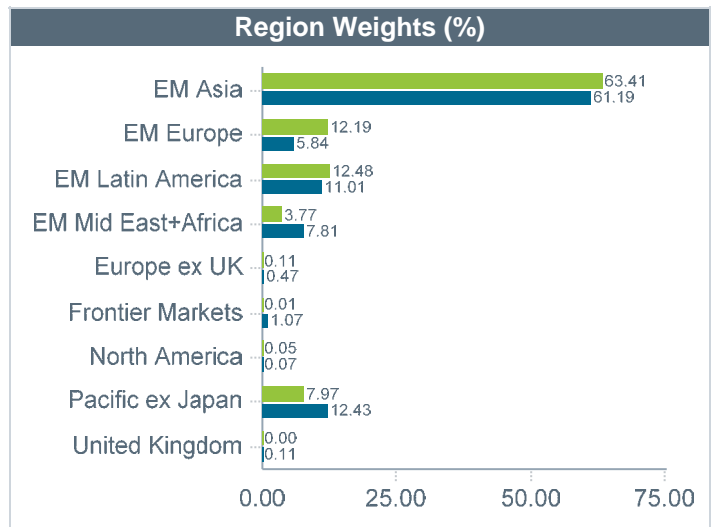
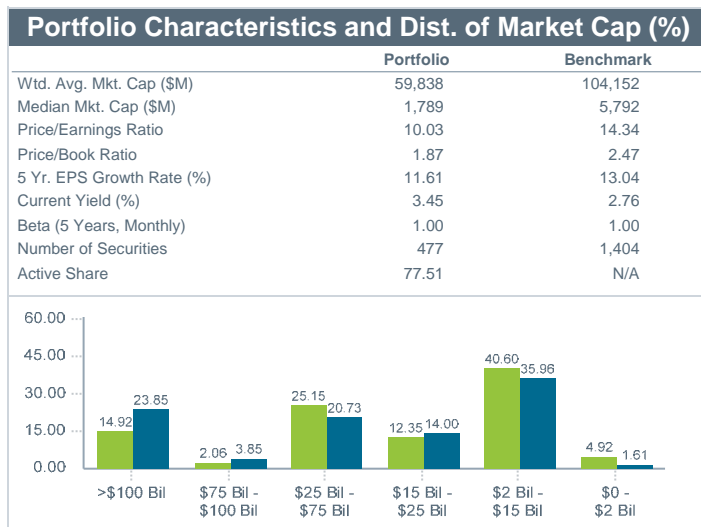
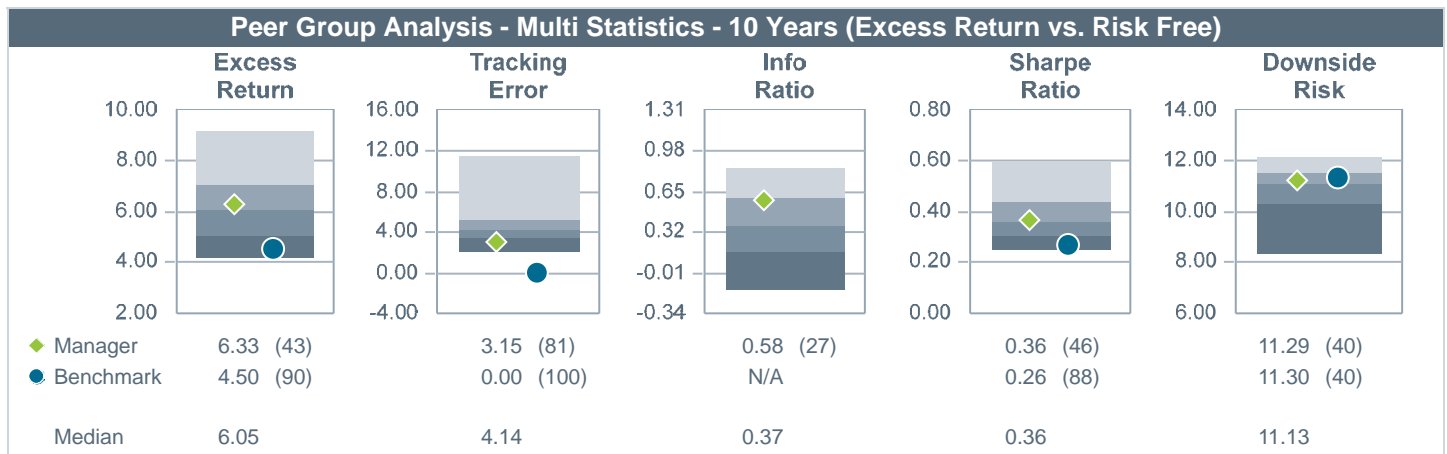
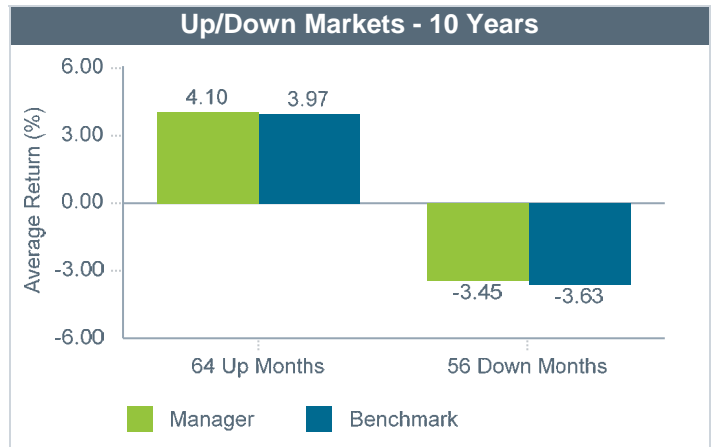
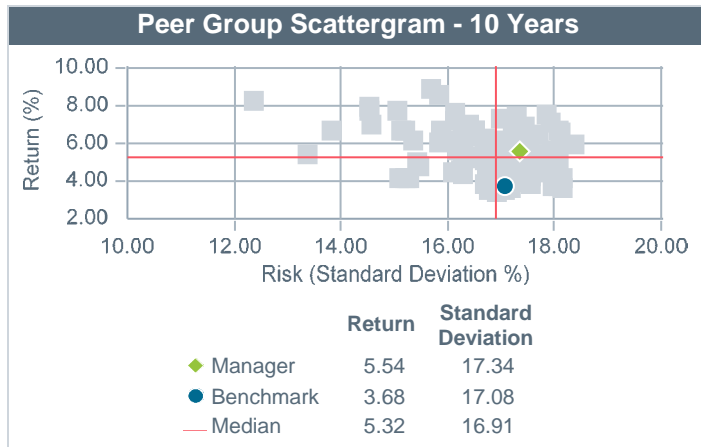
Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	14.08	37.48	18.53	10.38	10.30	9.42	-17.23	46.37	1.43	-2.99	-6.88
Benchmark	8.92	21.51	9.87	5.51	5.44	4.97	-14.20	27.19	4.50	-5.66	-3.87
Difference	5.16	15.97	8.66	4.87	4.86	4.45	-3.03	19.18	-3.07	2.67	-3.01
Peer Group Median	10.00	27.84	13.14	7.33	7.28	6.67	-14.32	32.37	-0.80	0.27	-3.22
Rank	1	2	8	10	7	2	79	5	17	100	85
Population	172	172	172	134	123	102	176	188	165	143	146



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

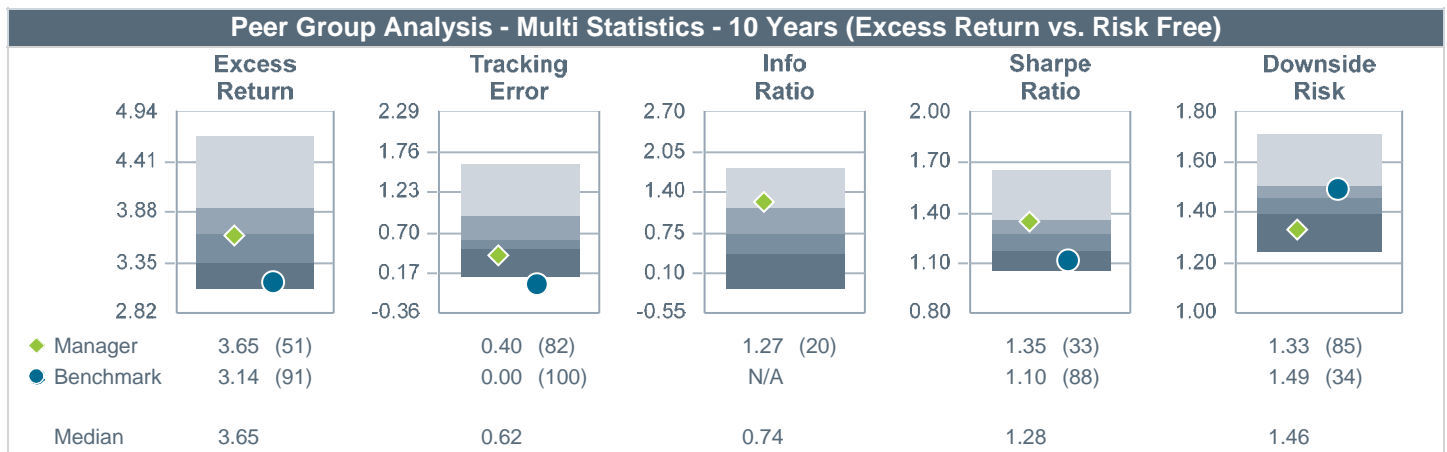
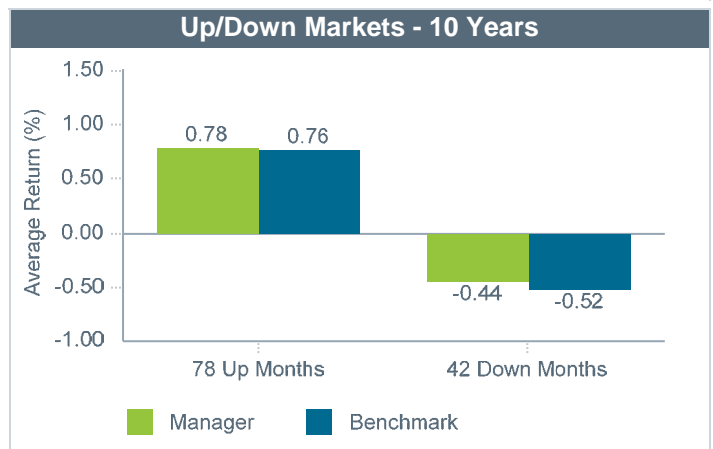
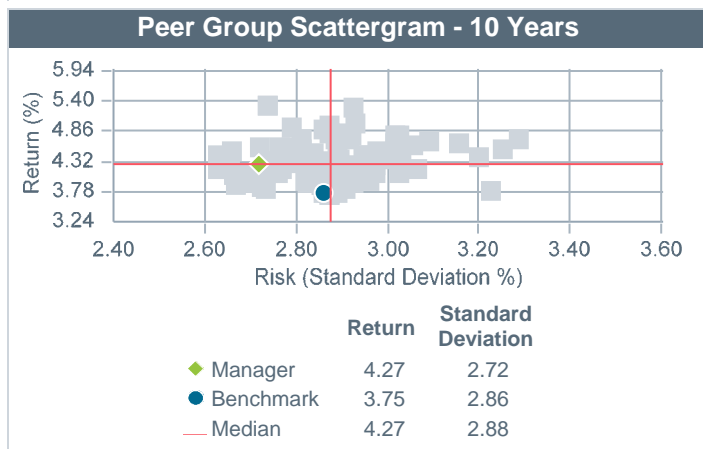


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
<b>Manager</b>	<b>12.00</b>	<b>18.00</b>	<b>10.23</b>	<b>4.77</b>	<b>3.53</b>	<b>5.54</b>	<b>-18.30</b>	<b>38.94</b>	<b>14.08</b>	<b>-17.37</b>	<b>2.40</b>
Benchmark	11.84	18.44	11.57	5.61	3.26	3.68	-14.58	37.28	11.19	-14.92	-2.19
Difference	0.16	-0.44	-1.34	-0.84	0.27	1.86	-3.72	1.66	2.89	-2.45	4.59
Peer Group Median	11.36	19.49	11.39	6.22	4.82	5.32	-15.23	36.81	10.36	-12.66	-0.09
Rank	37	65	65	75	76	44	81	36	23	90	31
Population	283	282	271	242	202	137	311	326	336	340	334



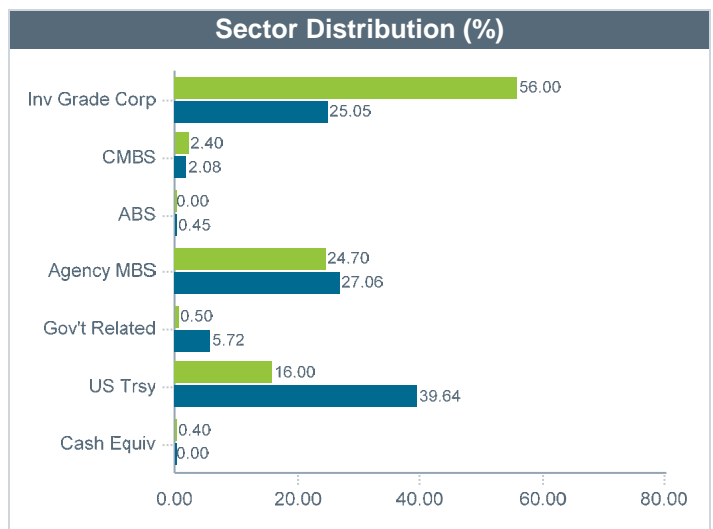
Performance shown is gross of fees and product specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	0.42	8.82	4.25	3.40	3.13	4.27	0.26	3.84	3.08	1.21	6.63
Benchmark	0.18	8.72	4.03	3.05	2.72	3.75	0.01	3.54	2.65	0.55	5.97
Difference	0.24	0.10	0.22	0.35	0.41	0.52	0.25	0.30	0.43	0.66	0.66
Peer Group Median	0.22	9.20	4.40	3.46	3.07	4.27	0.07	4.04	3.10	0.82	6.16
Rank	17	70	64	55	43	51	31	60	53	17	30
Population	143	143	142	138	133	129	154	159	167	172	185



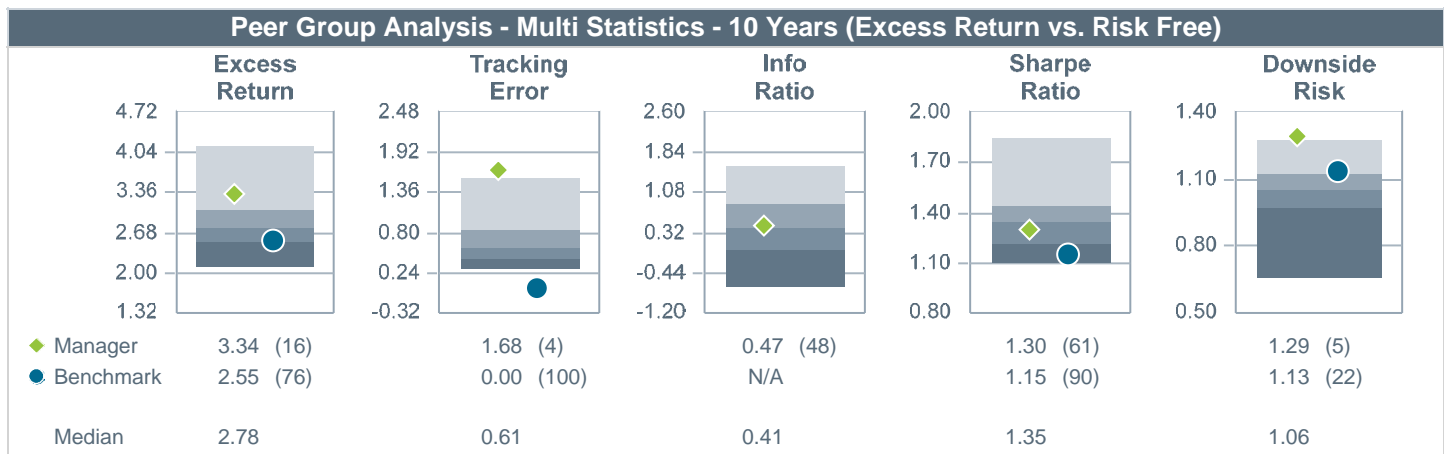
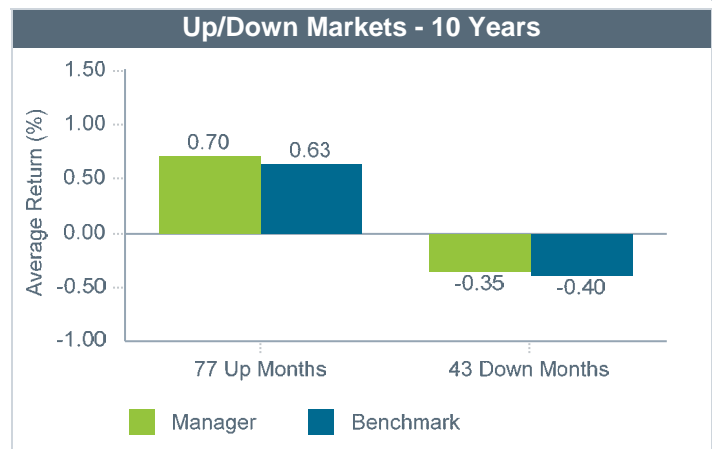
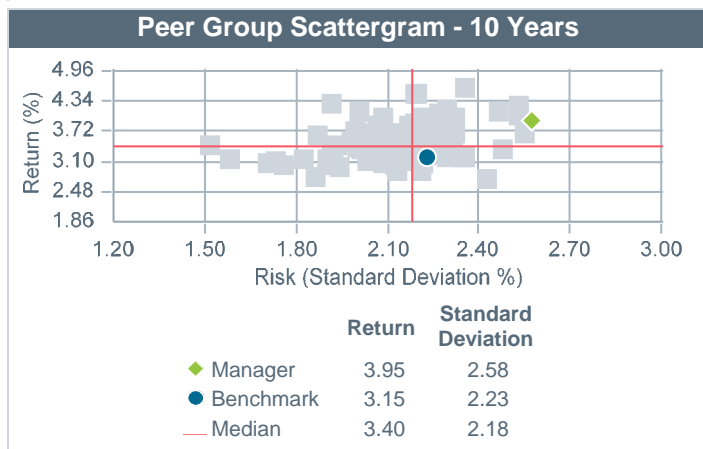
### Portfolio Characteristics

	Portfolio	Benchmark
Effective Duration	5.11	5.87
Spread Duration	4.02	6.08
Avg. Maturity	6.77	8.06
Avg. Quality	Aa1	Aa1/Aa2
Yield To Maturity (%)	2.33	2.32
Coupon Rate (%)	3.87	3.17
Current Yield (%)	3.49	N/A
Holdings Count	192	11,037



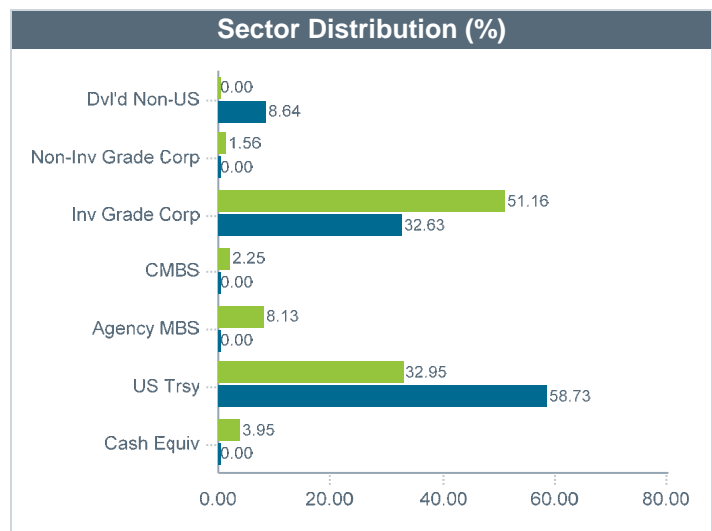
Performance shown is gross of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	0.84	7.97	3.70	2.95	2.65	3.95	-0.10	3.38	4.66	-0.91	4.05
Benchmark	0.42	6.91	3.29	2.63	2.20	3.15	0.89	2.17	2.15	1.17	3.34
Difference	0.42	1.06	0.41	0.32	0.45	0.80	-0.99	1.21	2.51	-2.08	0.71
Peer Group Median	0.44	6.93	3.45	2.83	2.47	3.40	0.93	2.56	2.39	1.30	3.56
Rank	6	10	24	36	27	16	98	17	5	100	33
Population	158	158	155	153	146	135	167	172	181	180	181



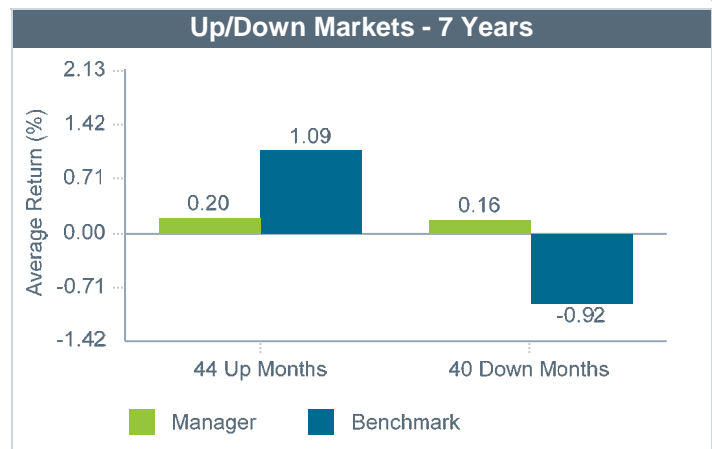
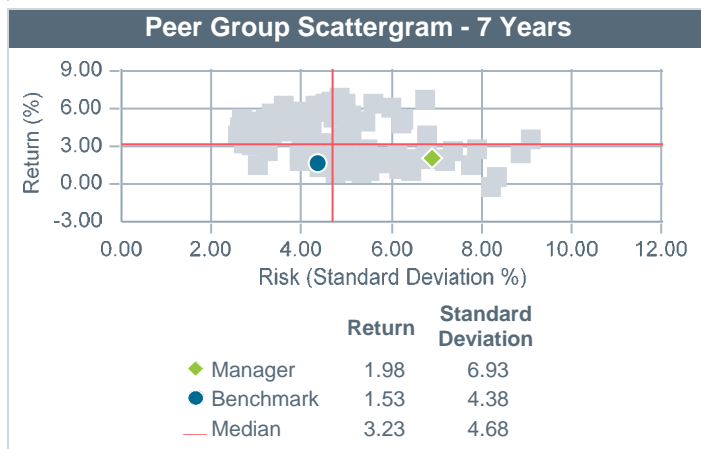
### Portfolio Characteristics

	Portfolio	Benchmark
Effective Duration	3.77	3.87
Spread Duration	N/A	3.87
Avg. Maturity	4.40	4.27
Avg. Quality	Aa3	Aa2
Yield To Maturity (%)	2.38	1.99
Coupon Rate (%)	3.06	2.76
Current Yield (%)	3.10	2.81
Holdings Count	135	6,610



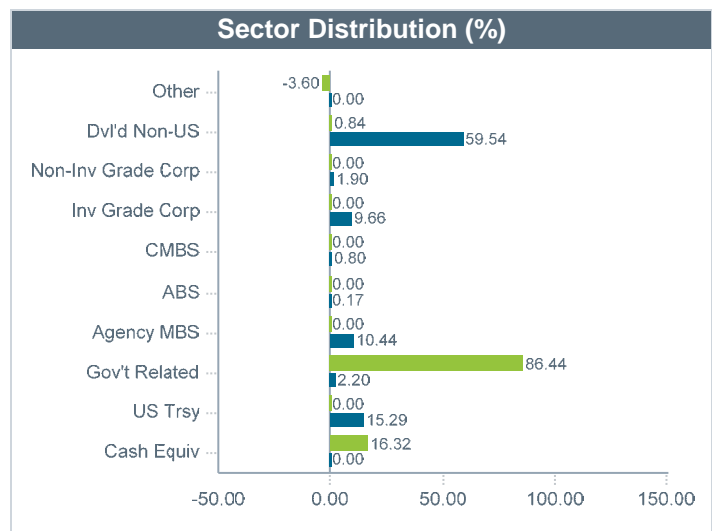
Performance shown is gross of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	1.73	-0.33	1.72	1.88	1.98	N/A	0.52	5.06	8.01	-3.43	0.81
Benchmark	0.64	7.13	4.40	2.51	1.53	2.68	-1.36	7.69	2.84	-3.29	0.48
Difference	1.09	-7.46	-2.68	-0.63	0.45	N/A	1.88	-2.63	5.17	-0.14	0.33
Peer Group Median	1.62	9.46	5.30	3.67	3.23	4.11	-1.76	7.57	5.85	-2.30	2.83
Rank	49	100	95	91	64	N/A	19	77	38	65	75
Population	209	207	203	192	168	118	242	251	265	275	275



### Portfolio Characteristics

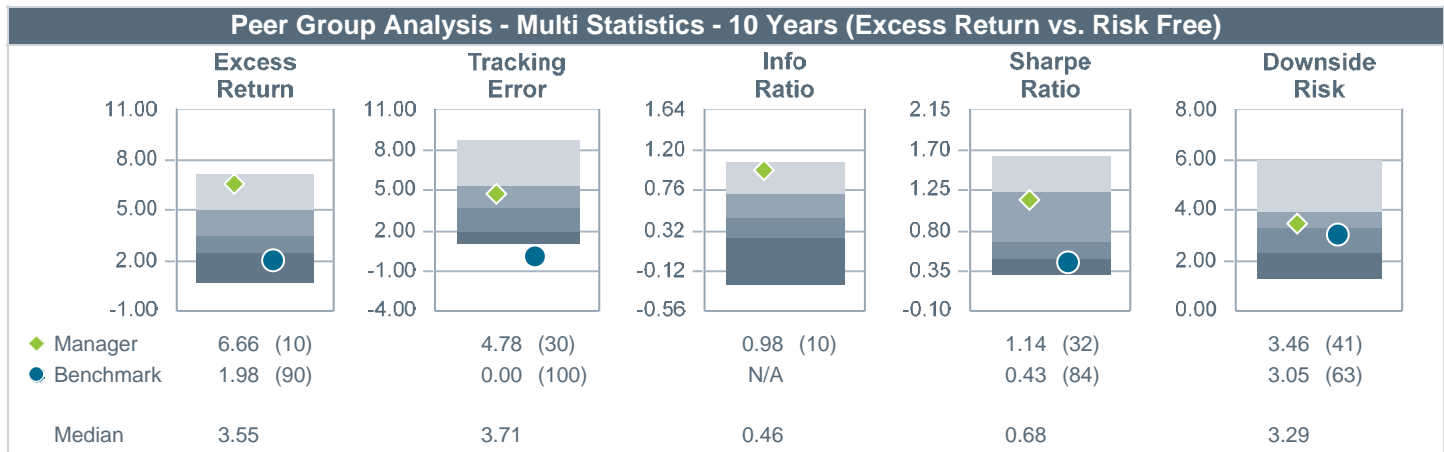
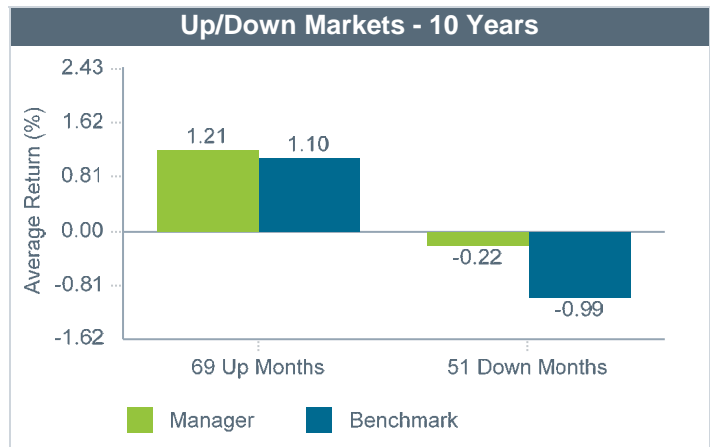
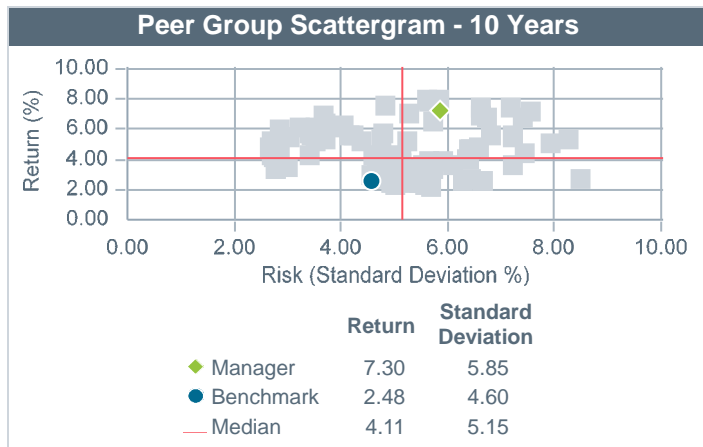
	Portfolio	Benchmark
Effective Duration	-1.04	6.96
Spread Duration	-1.04	N/A
Avg. Maturity	1.76	8.81
Avg. Quality	A3	N/A
Yield To Maturity (%)	5.51	1.70
Coupon Rate (%)	5.07	2.84
Current Yield (%)	5.08	0.11
Holdings Count	284	28,208



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.

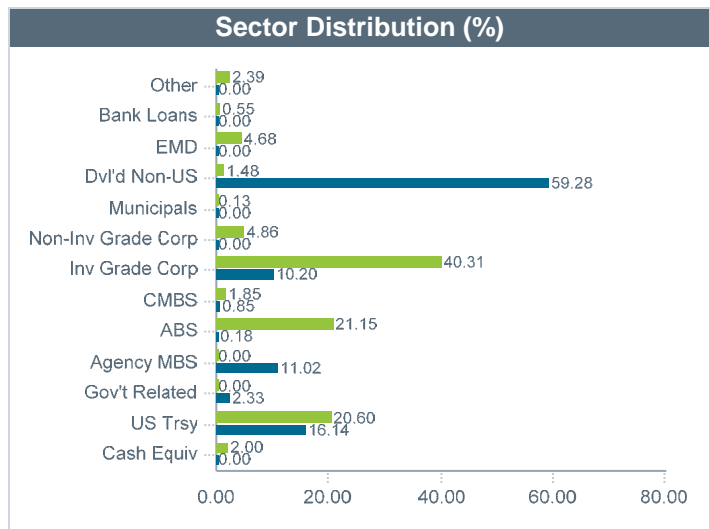


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	0.96	9.78	6.12	4.82	5.09	7.30	0.09	8.74	10.44	-4.09	7.53
Benchmark	0.49	6.84	4.27	2.31	1.35	2.48	-1.19	7.39	2.09	-3.15	0.59
Difference	0.47	2.94	1.85	2.51	3.74	4.82	1.28	1.35	8.35	-0.94	6.94
Peer Group Median	1.62	9.46	5.30	3.67	3.23	4.11	-1.76	7.57	5.85	-2.30	2.83
Rank	70	47	29	32	23	10	23	28	25	76	14
Population	209	207	203	192	168	118	242	251	265	275	275



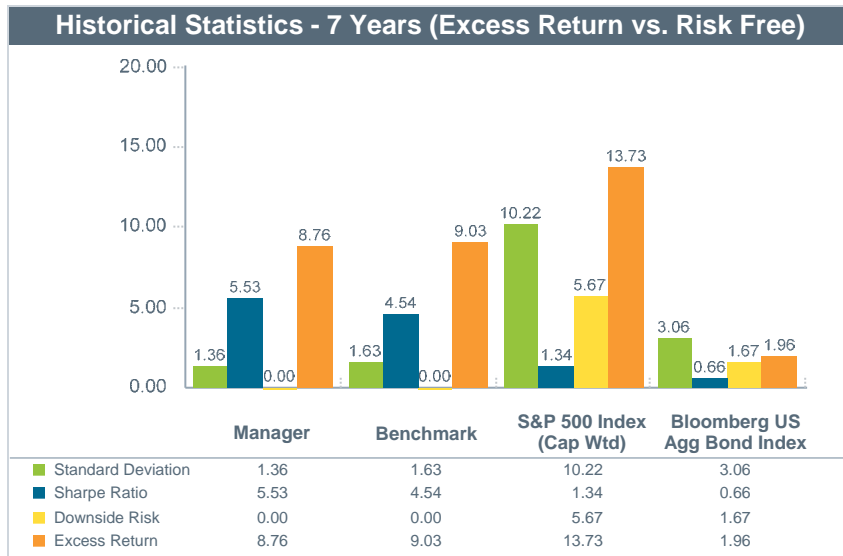
### Portfolio Characteristics

	Portfolio	Benchmark
Effective Duration	6.13	7.12
Spread Duration	3.57	N/A
Avg. Maturity	8.20	8.92
Avg. Quality	A3	N/A
Yield To Maturity (%)	3.67	1.45
Coupon Rate (%)	4.17	2.65
Current Yield (%)	3.95	0.03
Holdings Count	547	24,728



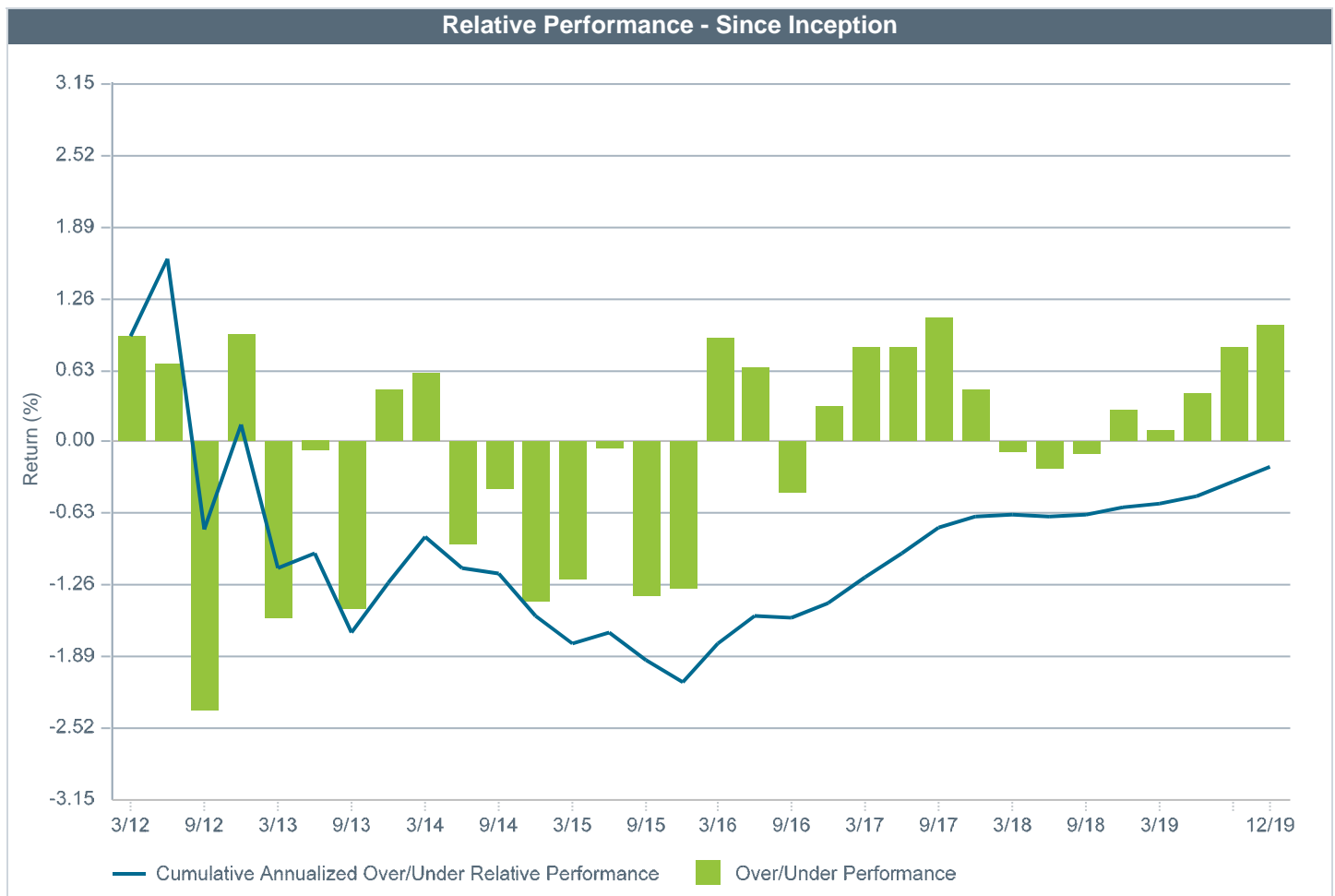
Performance shown is gross of fees and product specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Allocation to "Other" consists of preferred equity and convertibles.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	2.55	7.87	9.04	9.61	9.88	N/A	8.18	11.11	10.34	10.60	10.11
Benchmark	1.51	5.34	7.09	8.97	10.17	11.42	8.35	7.62	8.77	15.02	12.50
Difference	1.04	2.53	1.95	0.64	-0.29	N/A	-0.17	3.49	1.57	-4.42	-2.39



### Actual Correlation - 7 Years

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.36
S&P 500 Index (Cap Wtd)	-0.13
Russell 2000 Index	-0.19
MSCI EAFE Index (USD) (Net)	-0.13
MSCI Emg Mkts Index (USD) (Net)	-0.01
Bloomberg US Agg Bond Index	-0.31
Bloomberg US Trsy US TIPS Index	-0.38
Wilshire US REIT Index	-0.39
HFRI FOF Comp Index	-0.15
Bloomberg Cmdb Index (TR)	0.14
ICE BofAML 3 Mo US T-Bill Index	-0.39
Cons Price Index (Unadjusted)	0.00
NCREIF ODCE Index (AWA) (Gross)	0.36



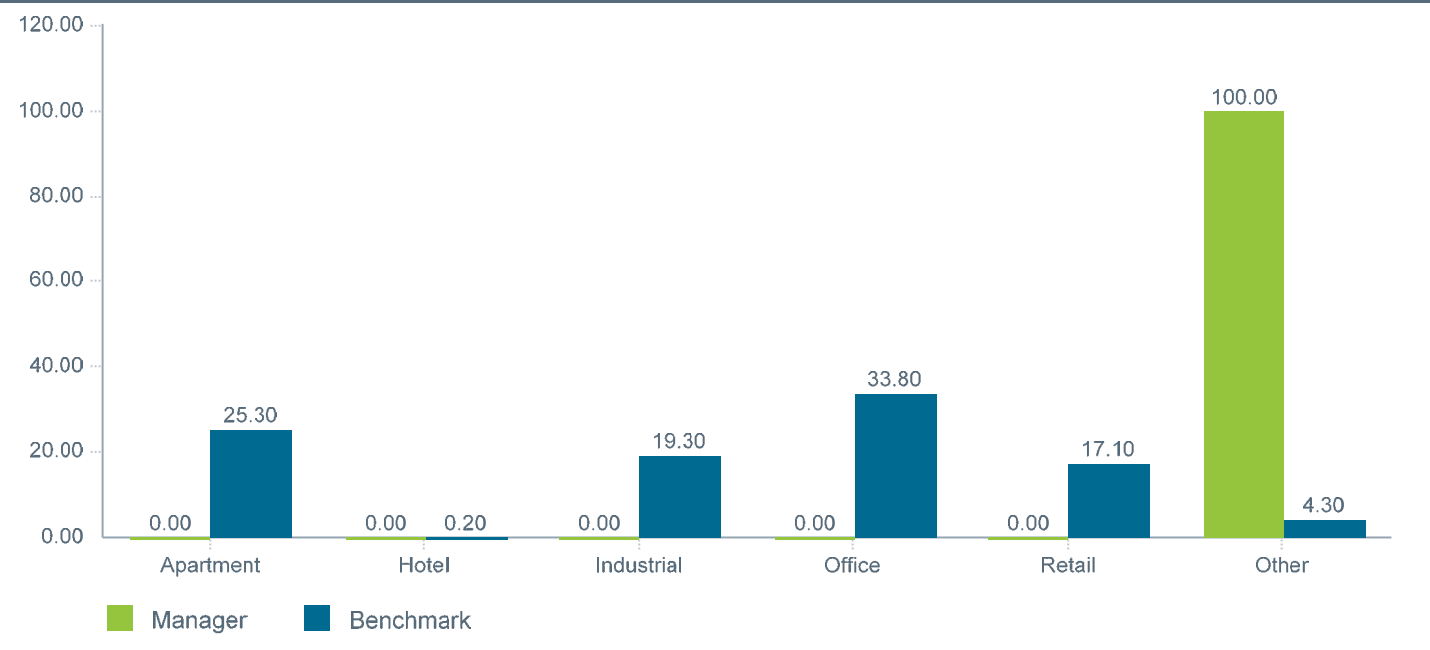
**Investment Strategy**

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.

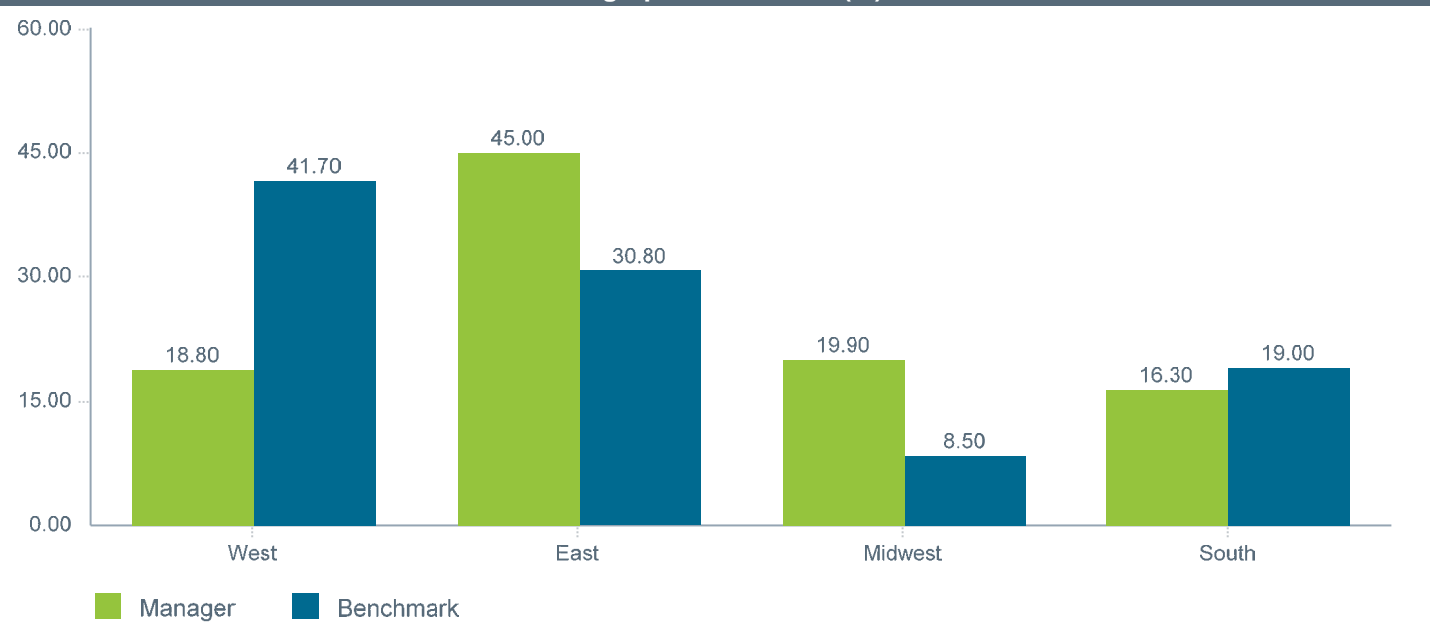
**Investment Profile**

Fund Inception	2011
Legal Structure	LP
Fund Structure	Open-End
Gross Real Estate Assets (\$M)	8,433
Fund Leverage %	25.43
Portfolio Occupancy %	91.60
Cash Reserve %	3.73
Number of Investments	288
Number of Limited Partners	166

**Property Type Allocation (%)**



**Geographic Allocation (%)**

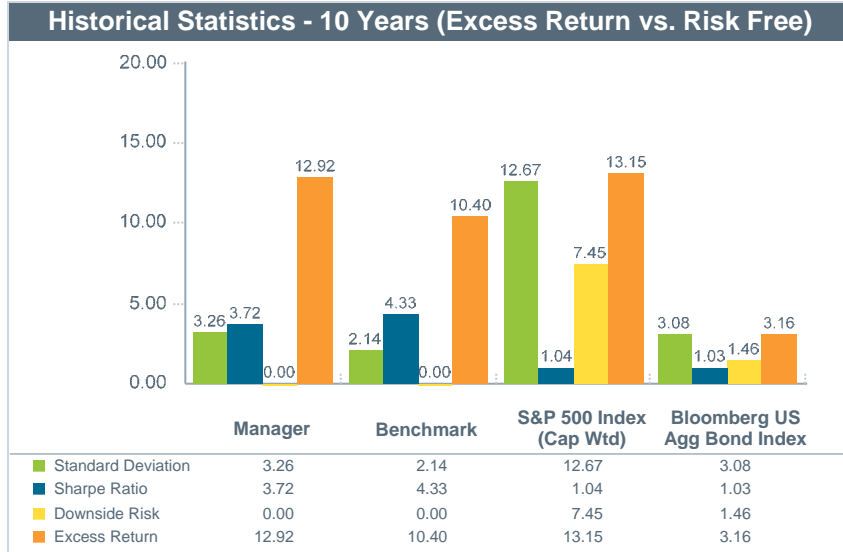


Performance shown is gross of fees and product specific. Calculation is based on quarterly periodicity. Investment profile data shown is provided by the investment manager and is as of the most recently available quarter end. Allocation data shown is based on NAV. Manager allocation to "Other" consists 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.



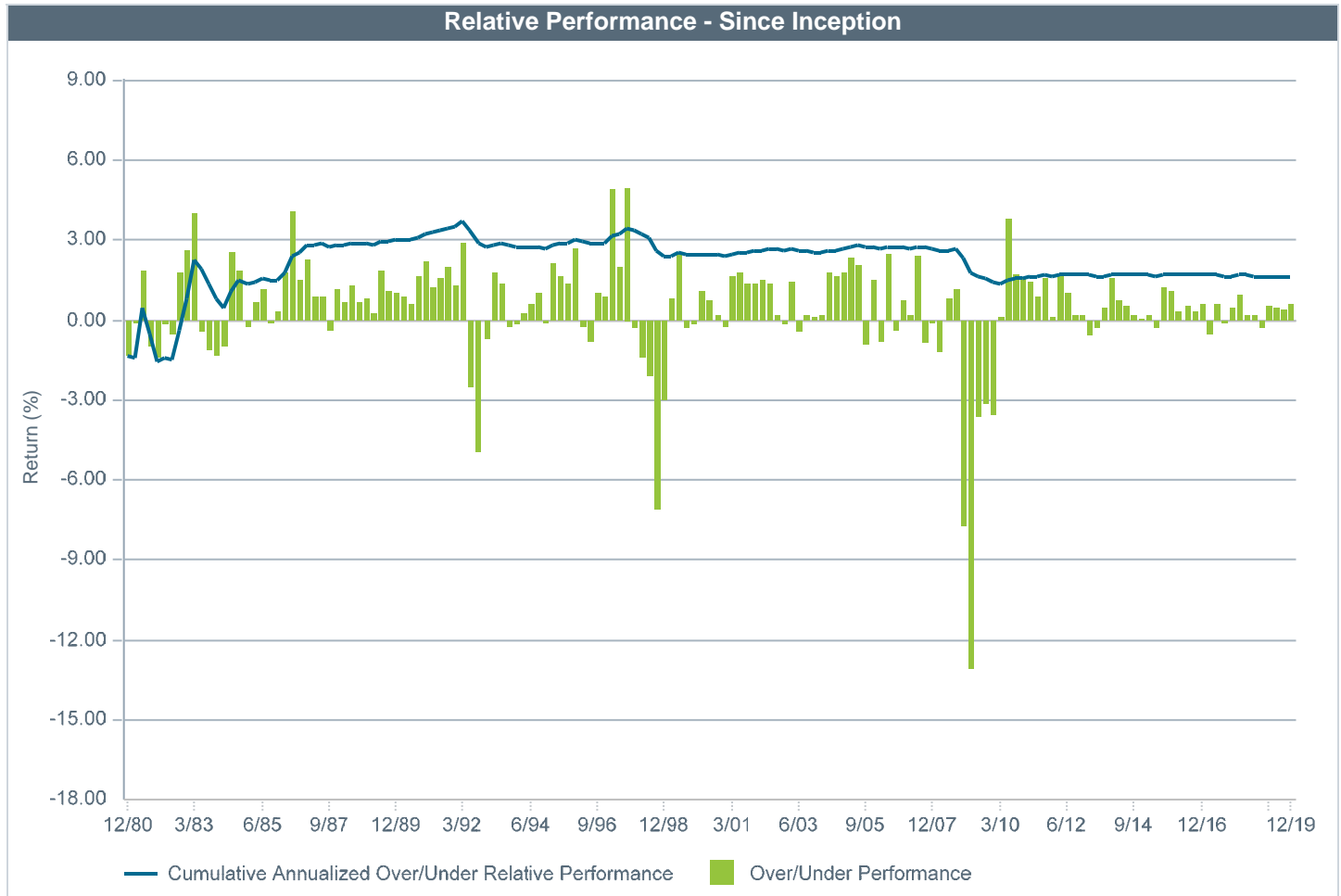


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	2.15	7.52	8.35	10.60	11.76	14.14	9.48	8.06	10.70	17.53	14.22
Benchmark	1.51	5.34	7.09	8.97	10.17	11.42	8.35	7.62	8.77	15.02	12.50
Difference	0.64	2.18	1.26	1.63	1.59	2.72	1.13	0.44	1.93	2.51	1.72



### Actual Correlation - 10 Years

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.90
S&P 500 Index (Cap Wtd)	-0.14
Russell 2000 Index	-0.09
MSCI EAFE Index (USD) (Net)	-0.11
MSCI Emg Mkts Index (USD) (Net)	-0.13
Bloomberg US Agg Bond Index	0.07
Bloomberg US Trsy US TIPS Index	0.13
Wilshire US REIT Index	-0.02
HFRI FOF Comp Index	-0.11
Bloomberg Cmnty Index (TR)	0.07
ICE BofAML 3 Mo US T-Bill Index	-0.50
Cons Price Index (Unadjusted)	-0.05



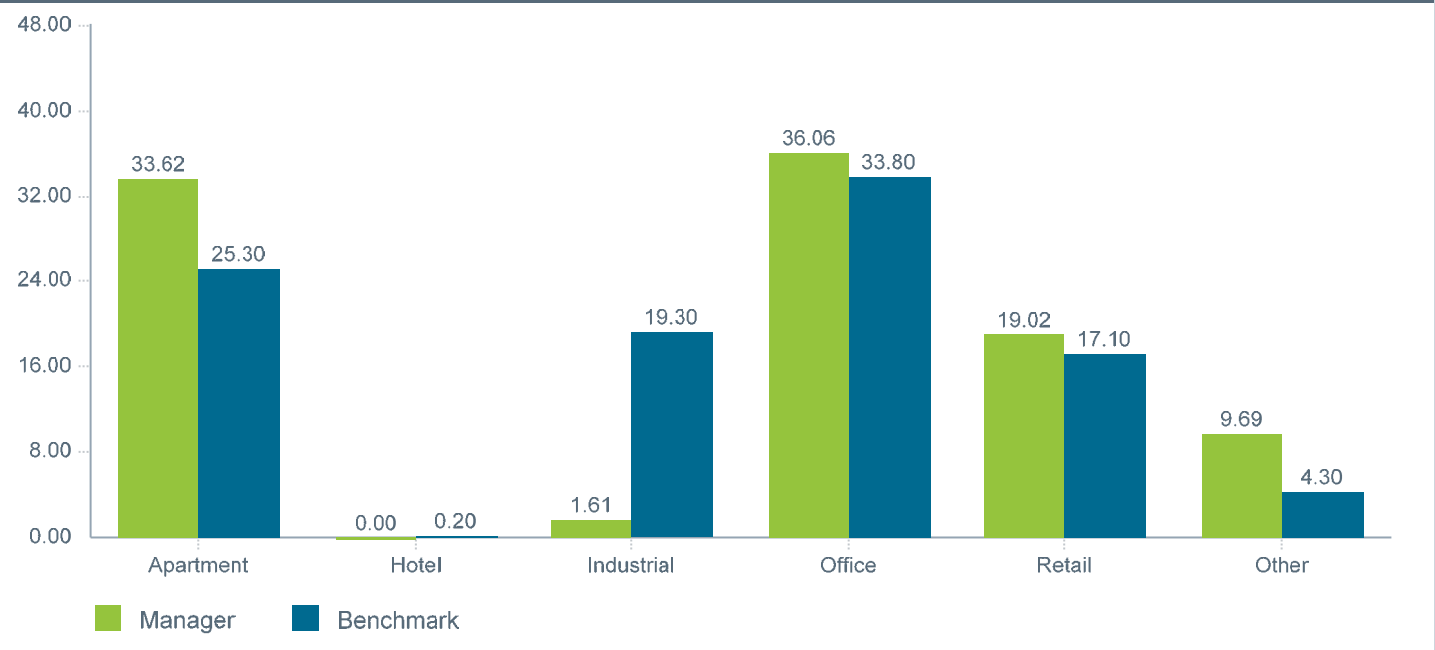
**Investment Strategy**

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.

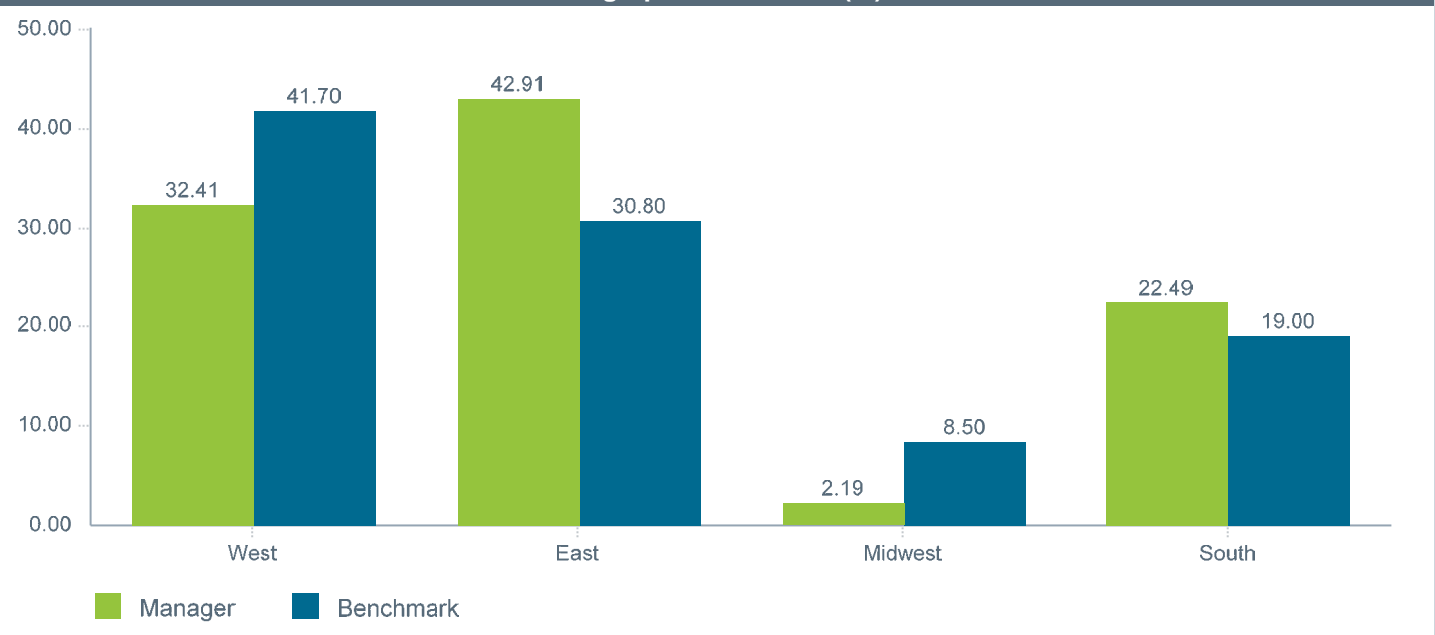
**Investment Profile**

Fund Inception	1980
Legal Structure	REIT
Fund Structure	Open-End
Gross Real Estate Assets (\$M)	13,410
Fund Leverage %	35.24
Portfolio Occupancy %	90.04
Cash Reserve %	1.34
Number of Investments	166
Number of Limited Partners	103

**Property Type Allocation (%)**



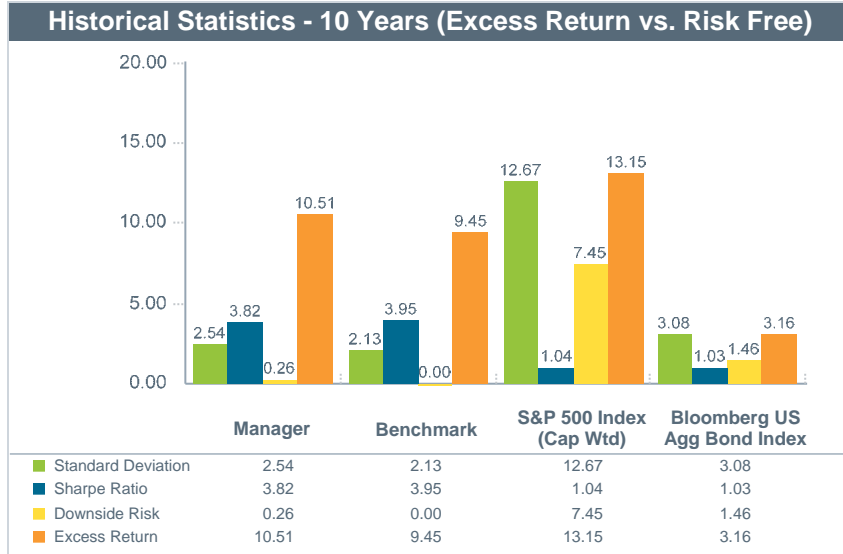
**Geographic Allocation (%)**



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.

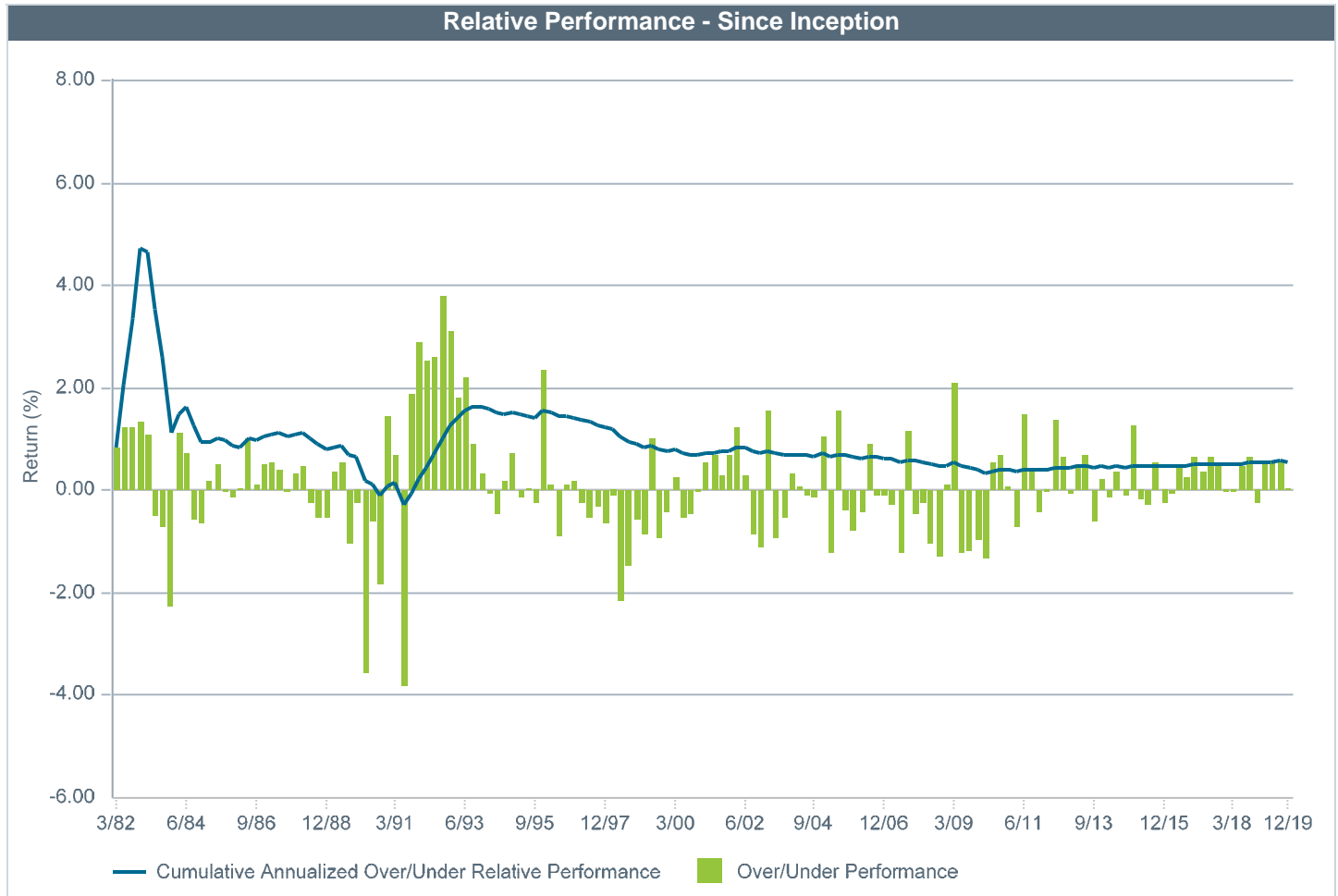


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	1.34	6.22	7.60	9.14	10.35	11.53	8.32	8.29	9.21	13.81	13.04
Benchmark	1.27	4.39	6.13	7.98	9.17	10.39	7.36	6.66	7.79	13.95	11.46
Difference	0.07	1.83	1.47	1.16	1.18	1.14	0.96	1.63	1.42	-0.14	1.58



### Actual Correlation - 10 Years

	Actual Correlation
NCREIF ODCE Index (AWA) (Net)	0.90
S&P 500 Index (Cap Wtd)	-0.10
Russell 2000 Index	-0.07
MSCI EAFE Index (USD) (Net)	-0.08
MSCI Emg Mkts Index (USD) (Net)	-0.19
Bloomberg US Agg Bond Index	0.01
Bloomberg US Trsy US TIPS Index	0.00
Wilshire US REIT Index	0.00
HFRI FOF Comp Index	-0.11
Bloomberg Cmdty Index (TR)	-0.02
ICE BofAML 3 Mo US T-Bill Index	-0.46
Cons Price Index (Unadjusted)	-0.12
NCREIF ODCE Index (AWA) (Gross)	0.90



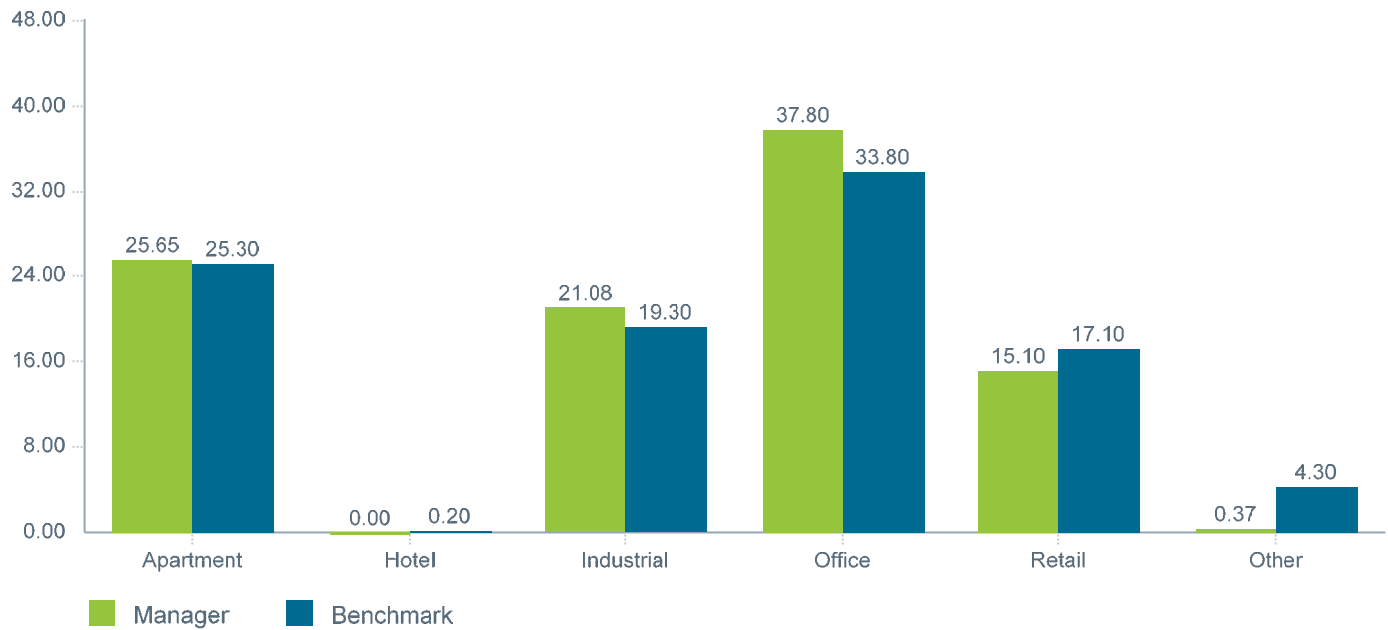
**Investment Strategy**

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.

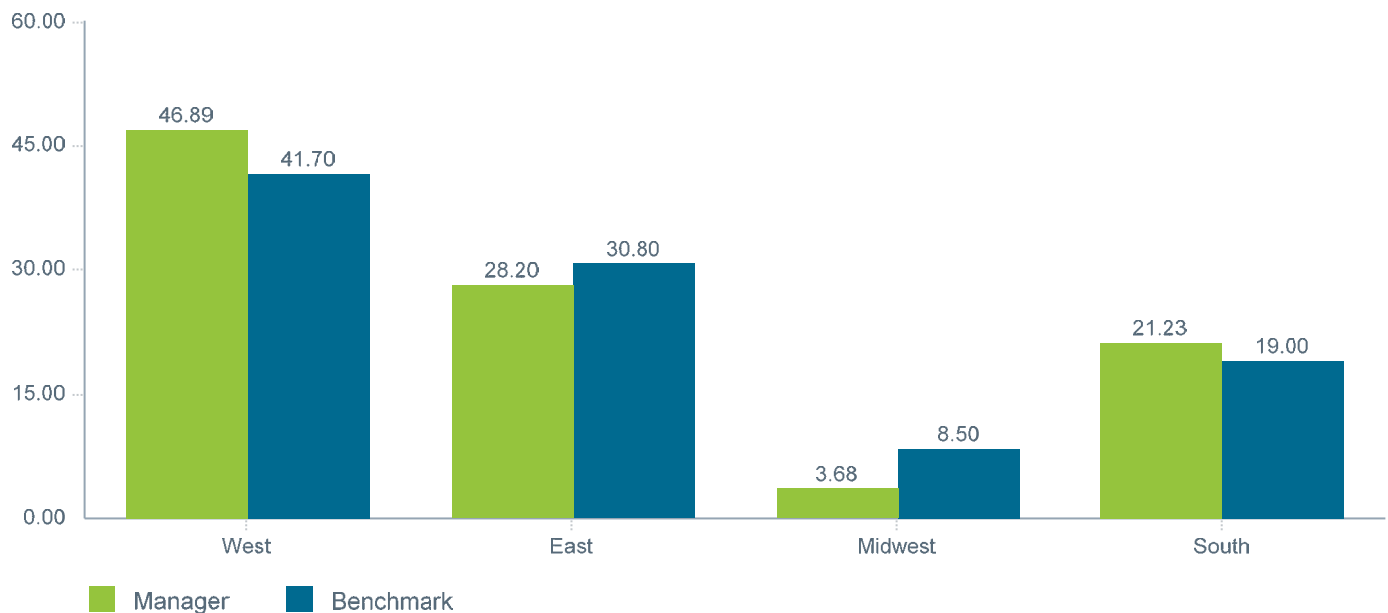
**Investment Profile**

Fund Inception	1982
Legal Structure	Insurance SA
Fund Structure	Open-End
Gross Real Estate Assets (\$M)	10,700
Fund Leverage %	17.99
Portfolio Occupancy %	90.64
Cash Reserve %	6.30
Number of Investments	129
Number of Limited Partners	6,109

**Property Type Allocation (%)**



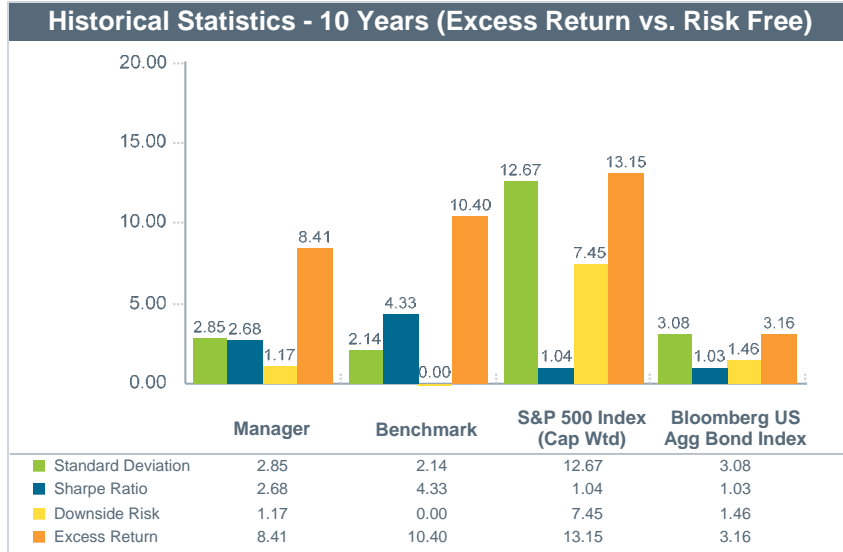
**Geographic Allocation (%)**



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.

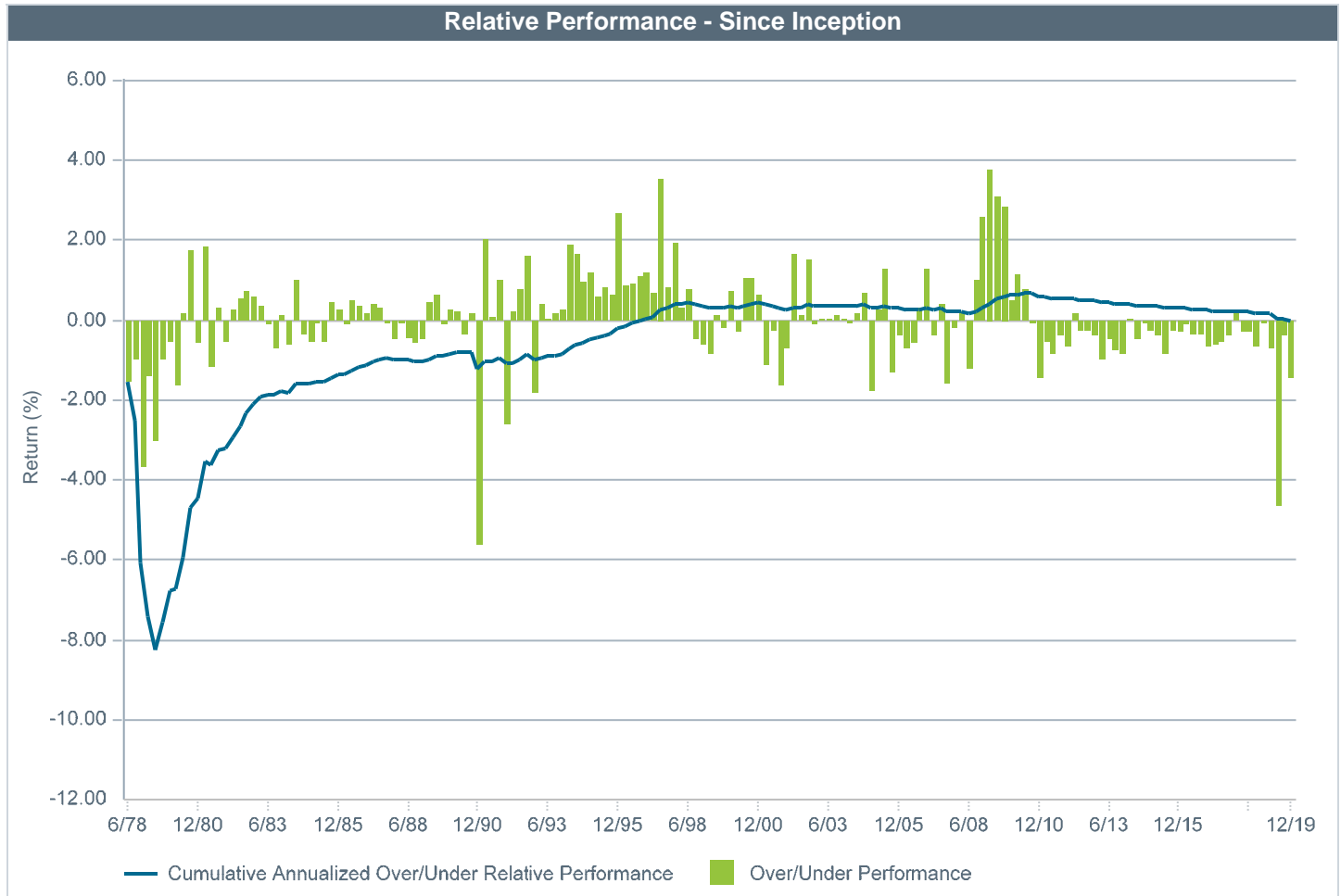


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	0.05	-2.10	3.64	6.15	7.53	9.25	6.99	6.30	7.21	12.94	11.69
Benchmark	1.51	5.34	7.09	8.97	10.17	11.42	8.35	7.62	8.77	15.02	12.50
Difference	-1.46	-7.44	-3.45	-2.82	-2.64	-2.17	-1.36	-1.32	-1.56	-2.08	-0.81



### Actual Correlation - 10 Years

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.82
S&P 500 Index (Cap Wtd)	-0.17
Russell 2000 Index	-0.11
MSCI EAFE Index (USD) (Net)	-0.15
MSCI Emg Mkts Index (USD) (Net)	-0.12
Bloomberg US Agg Bond Index	-0.04
Bloomberg US Trsy US TIPS Index	-0.04
Wilshire US REIT Index	0.03
HFRI FOF Comp Index	-0.18
Bloomberg Cmdb Index (TR)	-0.06
ICE BofAML 3 Mo US T-Bill Index	-0.68
Cons Price Index (Unadjusted)	-0.10



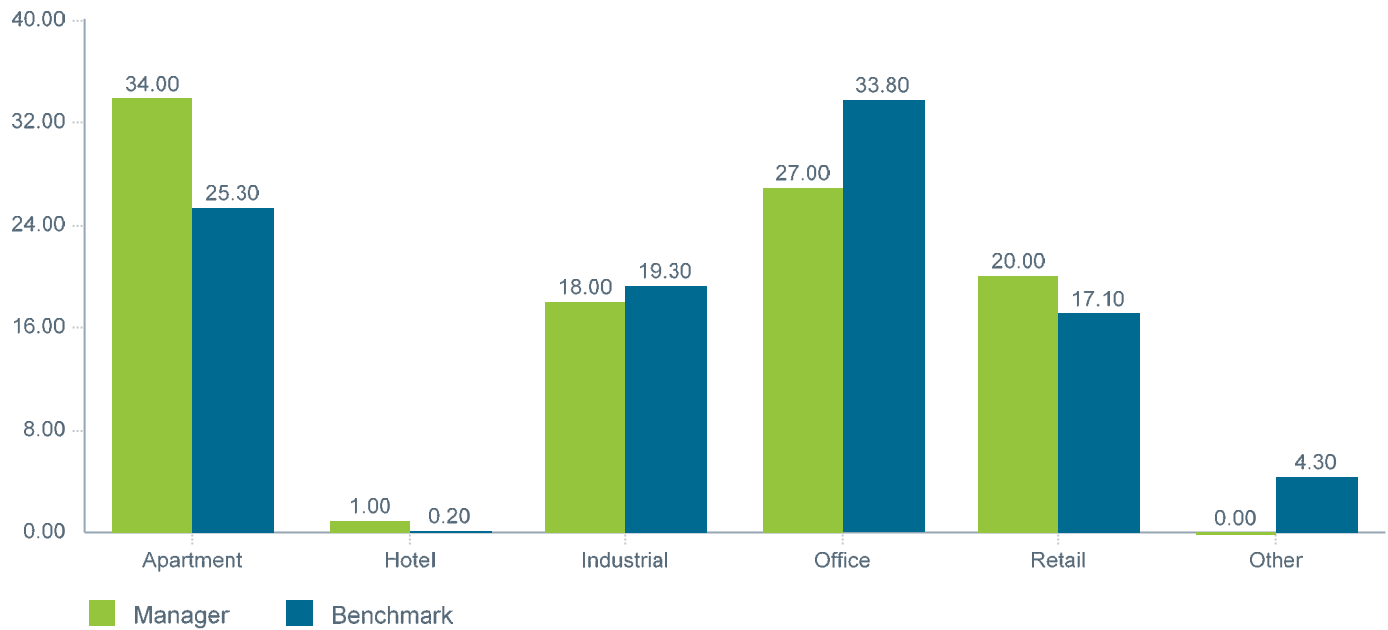
**Investment Strategy**

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.

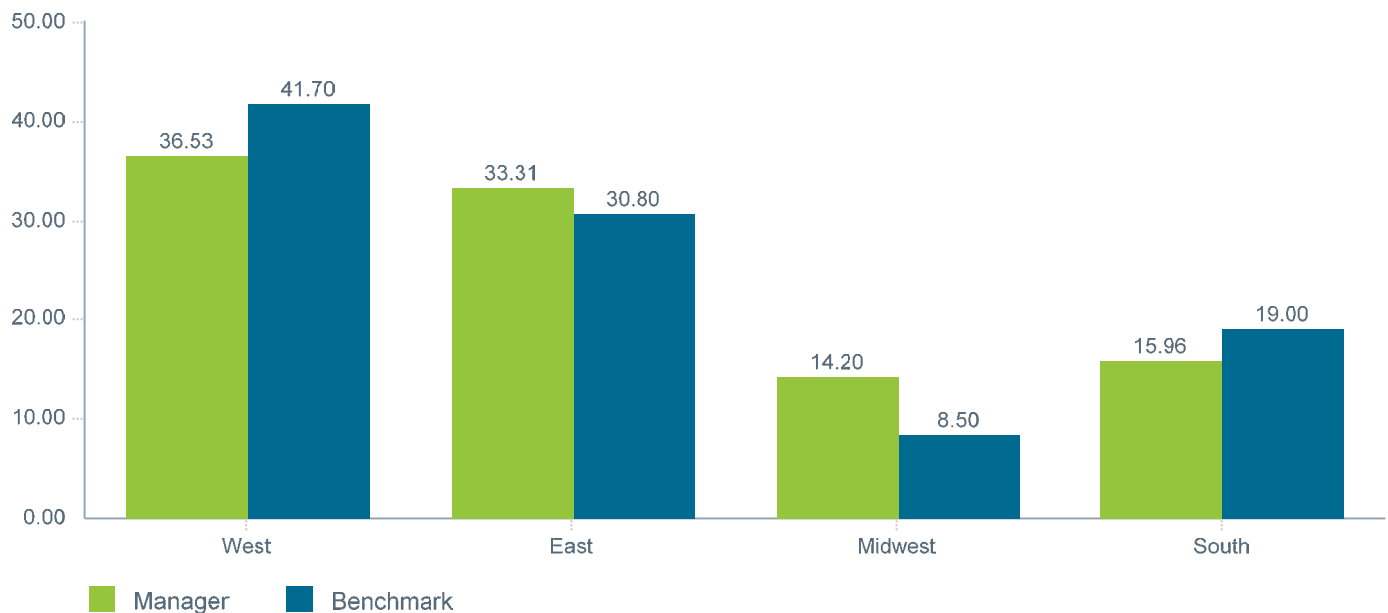
**Investment Profile**

Fund Inception	1978
Legal Structure	LP
Fund Structure	Open-End
Gross Real Estate Assets (\$M)	20,594
Fund Leverage %	18.40
Portfolio Occupancy %	93.00
Cash Reserve %	3.30
Number of Investments	183
Number of Limited Partners	446

**Property Type Allocation (%)**



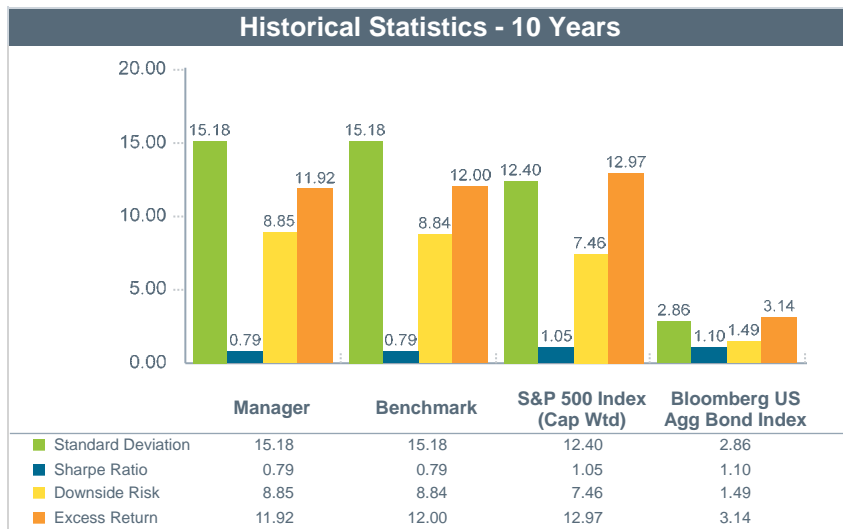
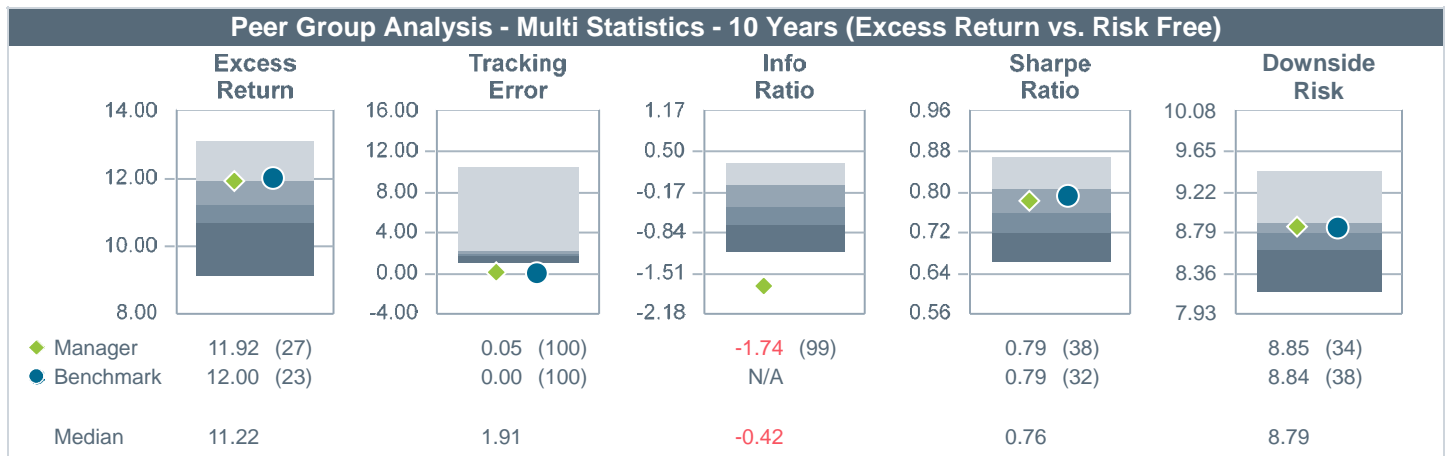
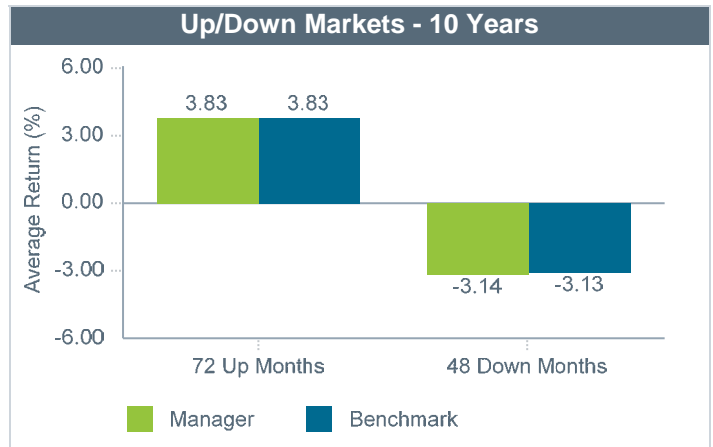
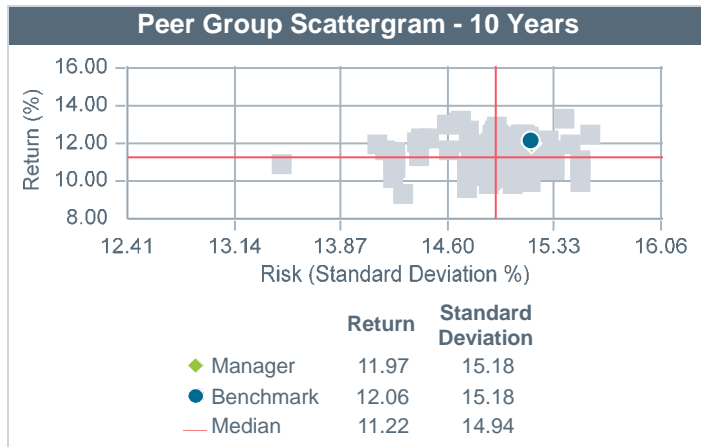
**Geographic Allocation (%)**



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	2018	2017	2016	2015	2014
<b>Manager</b>	<b>0.60</b>	<b>28.91</b>	<b>8.36</b>	<b>7.17</b>	<b>9.49</b>	<b>11.97</b>	<b>-5.95</b>	<b>4.95</b>	<b>8.53</b>	<b>2.37</b>	<b>30.29</b>
Benchmark	0.65	29.03	8.47	7.28	9.59	12.06	-5.86	5.07	8.60	2.52	30.38
Difference	-0.05	-0.12	-0.11	-0.11	-0.10	-0.09	-0.09	-0.12	-0.07	-0.15	-0.09
Peer Group Median	0.14	27.38	7.86	6.67	8.74	11.22	-5.75	5.20	6.08	2.88	29.43
Rank	31	36	42	36	25	28	54	56	19	64	32
Population	261	256	225	201	174	137	244	244	231	218	249



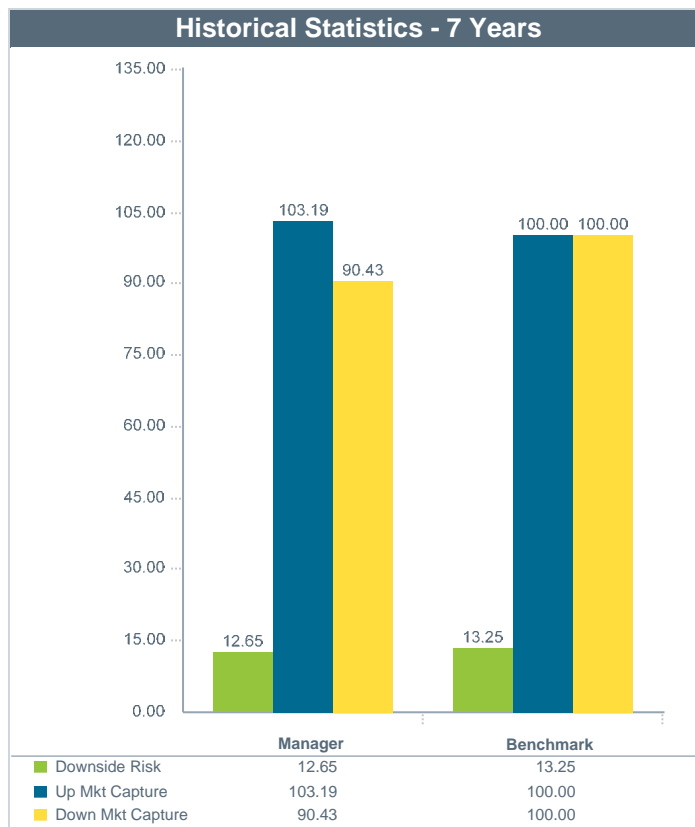
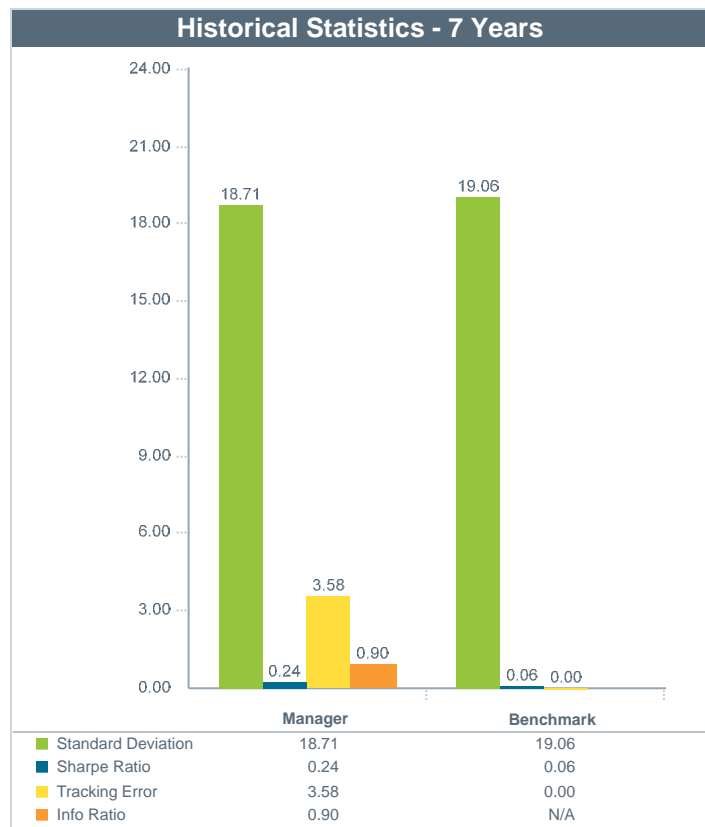
### Actual Correlation - 10 Years

Index	Actual Correlation
Vanguard Spl Real Estate Index	1.00
S&P 500 Index (Cap Wtd)	0.62
Russell 2000 Index	0.60
MSCI EAFE Index (USD) (Net)	0.55
MSCI Emg Mkts Index (USD) (Net)	0.52
Bloomberg US Agg Bond Index	0.31
Bloomberg US Trsy US TIPS Index	0.37
Wilshire US REIT Index	1.00
HFRI FOF Comp Index	0.47
Bloomberg Cmnty Index (TR)	0.33
ICE BofAML 3 Mo US T-Bill Index	0.02
Cons Price Index (Unadjusted)	-0.04

Performance shown is net of fees and product specific. Calculation is based on monthly periodicity. Performance shown is calculated using Net Asset Values (NAV). Parentheses contain percentile ranks. Benchmark consists of MSCI US REIT Index (USD) (Gross) adjusted to include a 2% cash position (Lipper Money Market Average) through 04/30/09; MSCI US REIT Index (USD) (Gross) through 01/31/18; MSCI US IM Real Estate 25/50 Transition Index through 07/24/18; and MSCI US IM Real Estate 25/50 Index (Gross) thereafter.

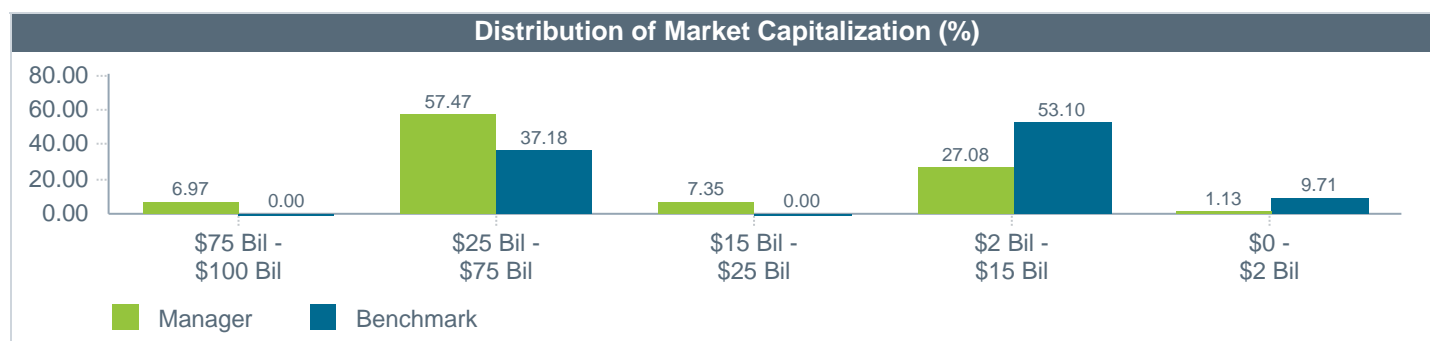


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	-0.93	13.49	-2.04	-4.66	3.52	N/A	-13.00	-4.80	20.17	-30.26	17.74
Benchmark	-3.09	9.78	-2.90	-6.23	0.18	5.10	-11.67	-5.58	21.95	-35.07	7.66
Difference	2.16	3.71	0.86	1.57	3.34	N/A	-1.33	0.78	-1.78	4.81	10.08



### Portfolio Characteristics

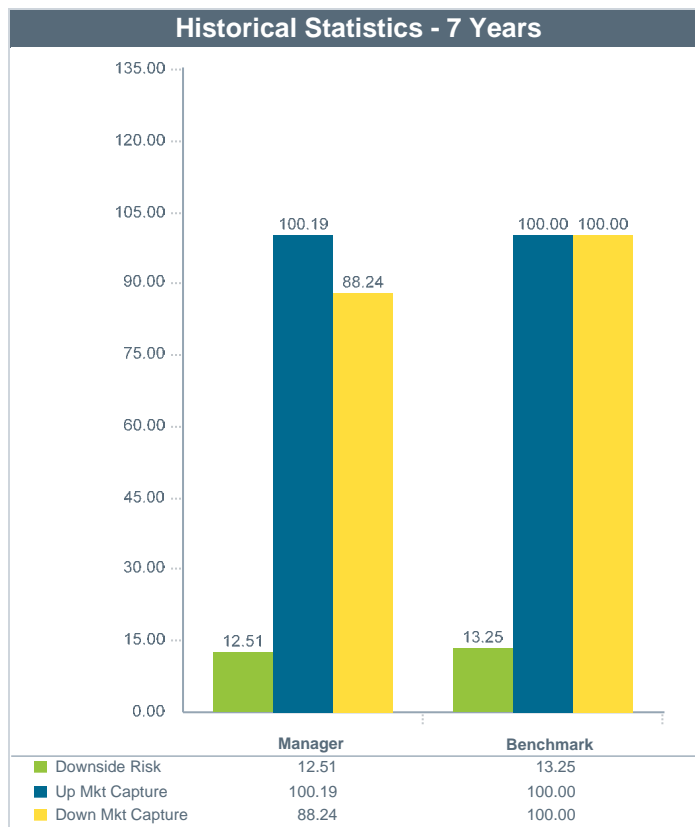
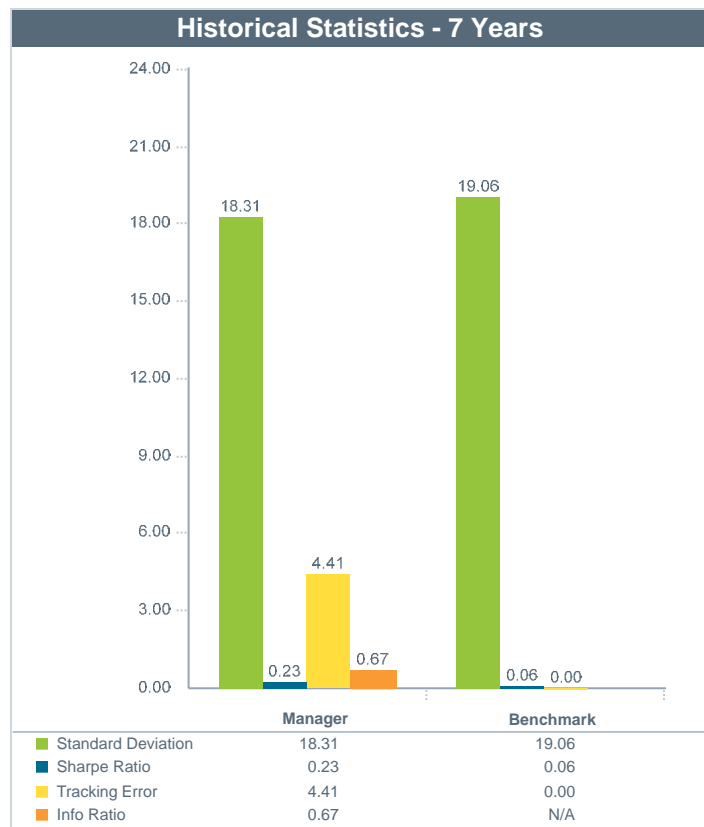
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	34,866	21,530
Median Mkt. Cap (\$M)	13,708	2,753
Price/Earnings Ratio	12.15	11.04
Price/Book Ratio	1.87	2.26
5 Yr. EPS Growth Rate (%)	14.00	18.43
Current Yield (%)	7.41	8.93
Beta (5 Years, Monthly)	0.98	1.00
Number of Securities	26	36



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

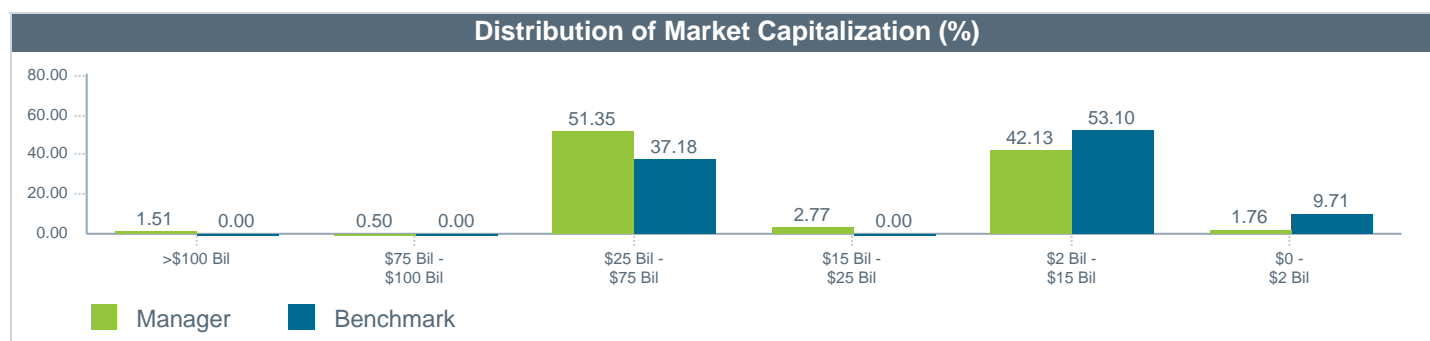


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	-1.37	8.97	-2.55	-4.71	3.32	N/A	-12.73	-2.70	15.99	-26.79	16.14
Benchmark	-3.09	9.78	-2.90	-6.23	0.18	5.10	-11.67	-5.58	21.95	-35.07	7.66
Difference	1.72	-0.81	0.35	1.52	3.14	N/A	-1.06	2.88	-5.96	8.28	8.48



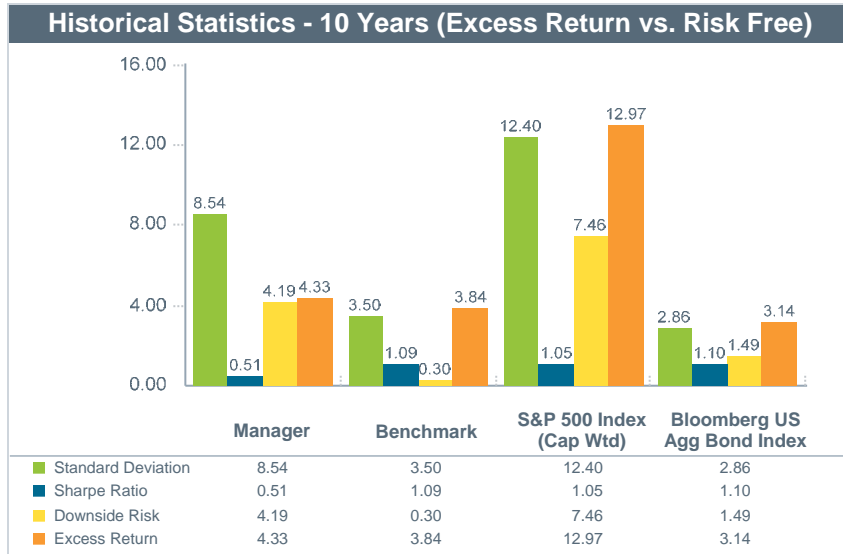
### Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	27,408	21,530
Median Mkt. Cap (\$M)	14,194	2,753
Price/Earnings Ratio	12.81	11.04
Price/Book Ratio	2.21	2.26
5 Yr. EPS Growth Rate (%)	14.12	18.43
Current Yield (%)	7.53	8.93
Beta (5 Years, Monthly)	0.93	1.00
Number of Securities	24	36



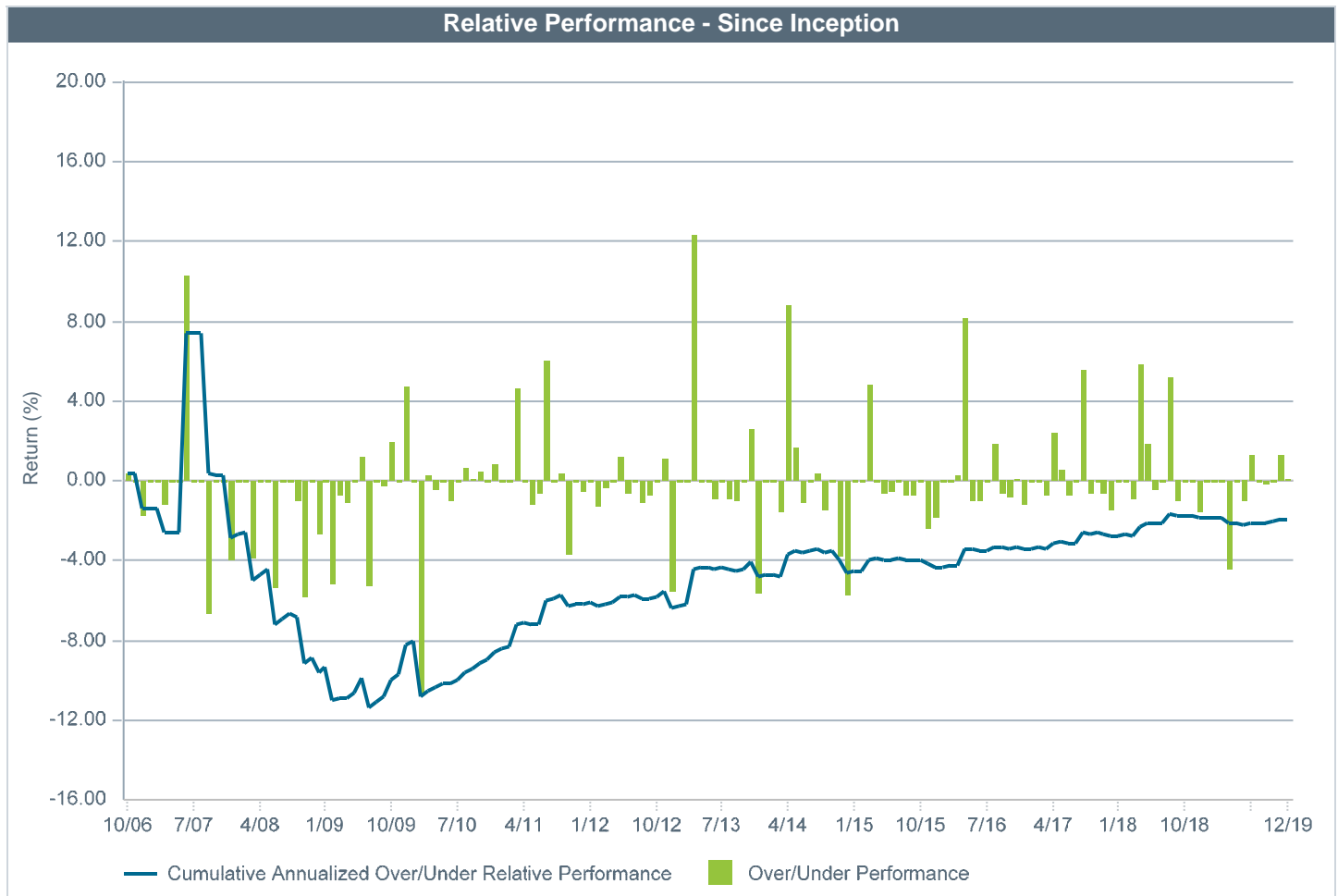
Performance shown is gross of fees and client specific. Calculations are based on monthly periodicity.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	1.37	-1.69	6.12	5.85	7.39	4.65	12.47	8.08	8.32	2.66	6.87
Benchmark	-0.04	1.30	2.71	3.13	5.07	4.45	3.21	3.63	2.59	4.97	10.48
Difference	1.41	-2.99	3.41	2.72	2.32	0.20	9.26	4.45	5.73	-2.31	-3.61



### Actual Correlation - 10 Years

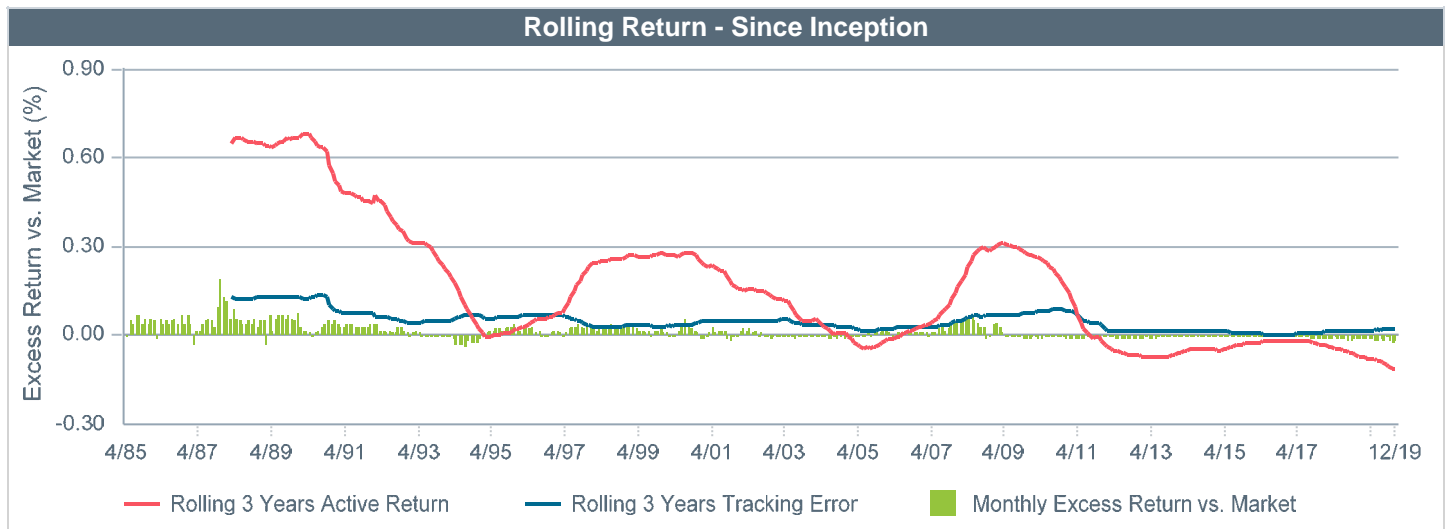
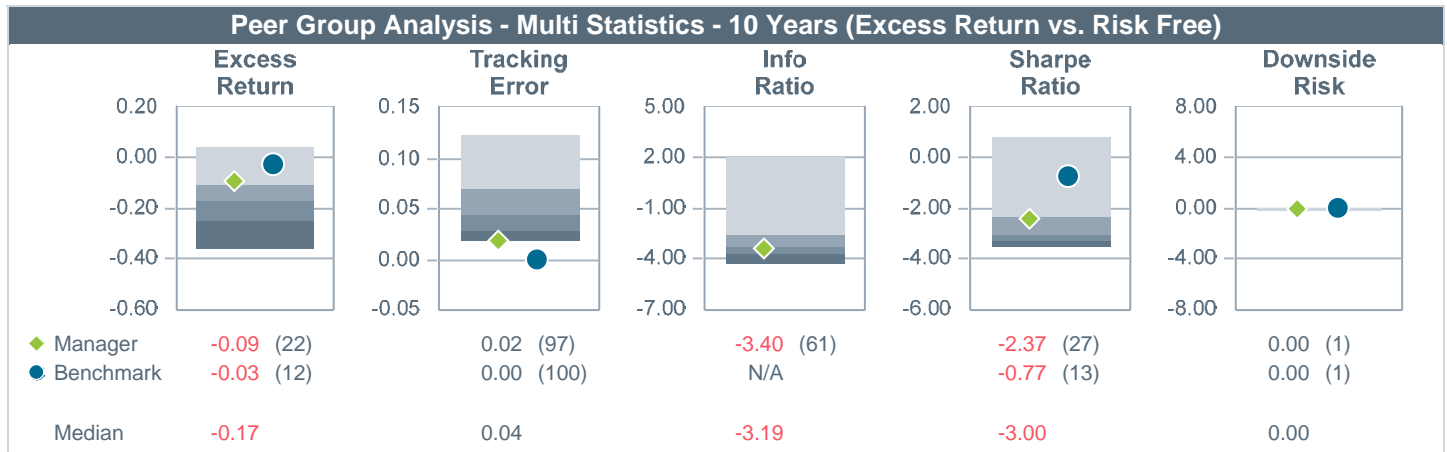
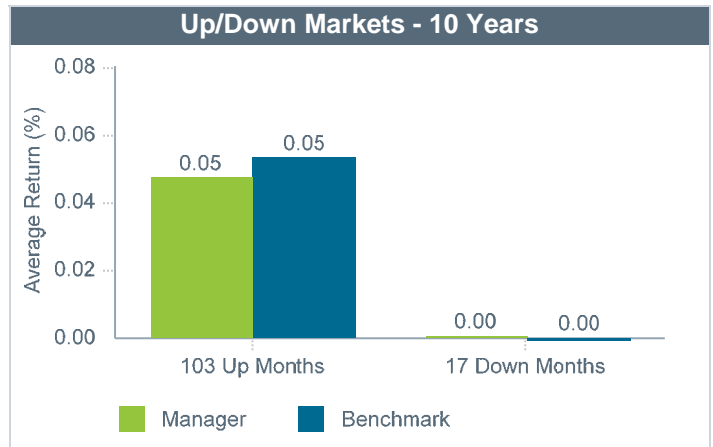
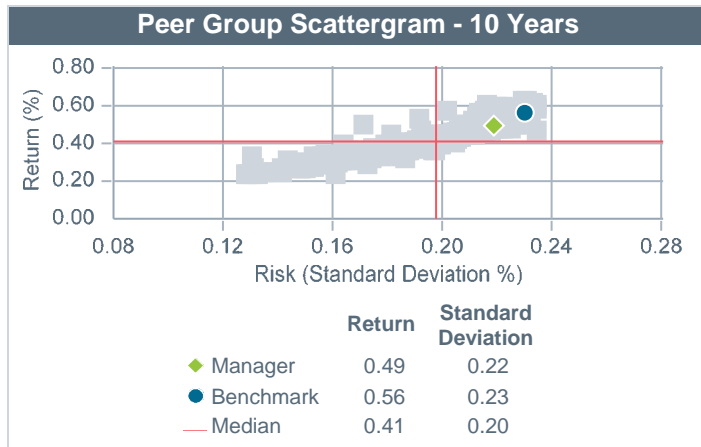
	Actual Correlation
NCREIF Timberland Index	0.06
S&P 500 Index (Cap Wtd)	-0.07
Russell 2000 Index	-0.05
MSCI EAFE Index (USD) (Net)	-0.04
MSCI Emg Mkts Index (USD) (Net)	-0.04
Bloomberg US Agg Bond Index	0.05
Bloomberg US Trsy US TIPS Index	0.14
Wilshire US REIT Index	-0.06
HFRI FOF Comp Index	0.02
Bloomberg Cmdb Index (TR)	0.06
ICE BofAML 3 Mo US T-Bill Index	0.01
Cons Price Index (Unadjusted)	0.20



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

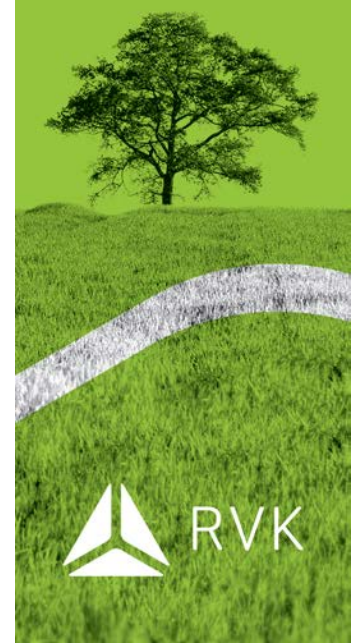


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	0.40	2.09	1.53	0.97	0.70	0.49	1.73	0.79	0.25	0.01	0.01
Benchmark	0.46	2.25	1.65	1.05	0.76	0.56	1.86	0.84	0.27	0.03	0.02
Difference	-0.06	-0.16	-0.12	-0.08	-0.06	-0.07	-0.13	-0.05	-0.02	-0.02	-0.01
Peer Group Median	0.37	1.90	1.33	0.81	0.58	0.41	1.54	0.55	0.06	0.01	0.01
Rank	26	21	20	20	20	22	22	17	18	35	48
Population	806	788	746	621	604	567	814	829	741	695	986



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.
- Franklin Templeton Global Multisector Plus (CF) performance prior to 03/2016 is represented by Templeton Global Total Return (SICAV).

### 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:

- **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.
- **Baillie Gifford Spliced Index:** The passive Baillie Gifford Spliced Index consists of 100% MSCI EAFE Index (USD) (Net) through 11/2019 and 100% MSCI ACW Ex US 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&amp;P</u>	<u>Moody's</u>	<u>Explanation</u>	<u>S&amp;P</u>	<u>Moody's</u>	<u>Explanation</u>
<b>Higher Credit Quality – Investment Grade</b>			<b>Lower Credit Quality – Below Investment Grade</b>		
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., 1<sup>st</sup> quartile, 2<sup>nd</sup> quartile, 3<sup>rd</sup> quartile, and 4<sup>th</sup> quartile). The median observation is where the 2<sup>nd</sup> quartile and 3<sup>rd</sup> 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.

**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 4<sup>th</sup> 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.

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