



Quarterly Investment Performance Analysis

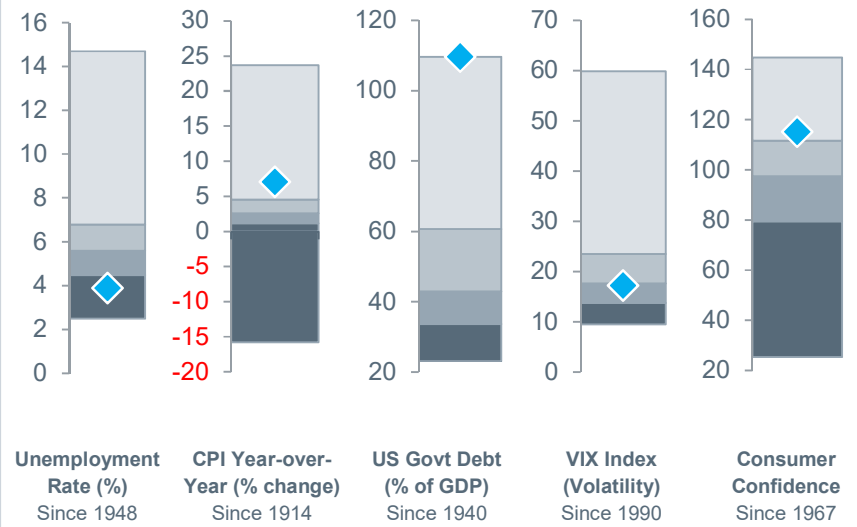
Vermont State Employees' Retirement System

Period Ended: December 31, 2021

Fourth Quarter Economic Environment

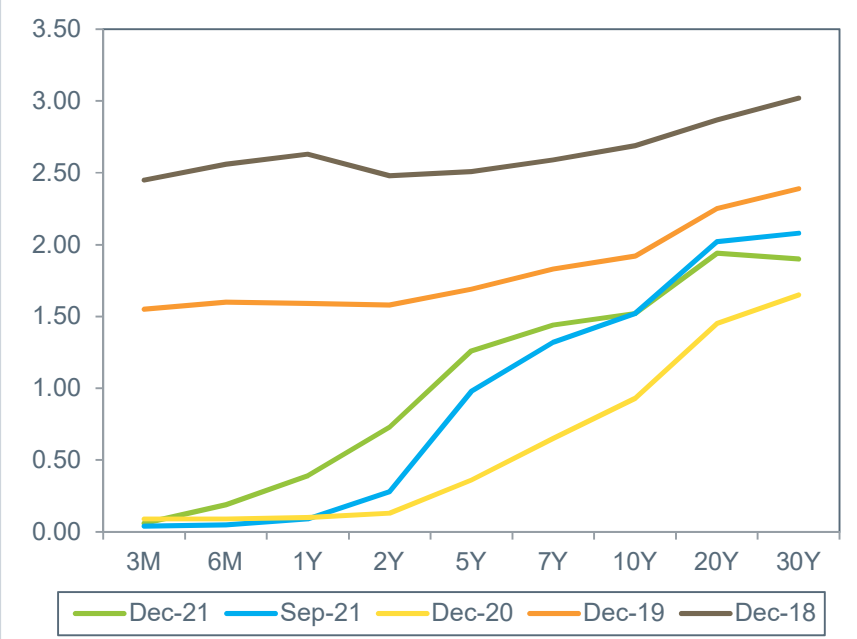
Inflation remained a top concern among investors as the year-over-year change in the CPI reached 7.0% according to the December reading, the highest level in 30 years. Nevertheless, consumer demand and the ability of companies to pass along increasing costs have buoyed corporate profits. Employment data has indicated mixed progress and has been complicated by releases missing expectations, only to be revised higher in subsequent reports. However, strong wage growth and a declining unemployment rate reflect incremental improvement in labor conditions. Headlines were dominated by the emergence of the omicron variant which early studies suggest spreads more quickly, but causes fewer hospitalizations. Continued vaccination efforts and the development of new treatments countered concerns regarding the increased spread of the virus. GDP growth estimates for 2022 were impacted with forecasts trending lower, but most continue to reflect healthy growth expected next year. For instance, the IMF released a 2022 GDP growth forecast of 4.9% in October representing a decline of 0.1% from its July estimate. In response to the current environment, the Federal Reserve has started to reduce measures taken during the pandemic. The tapering of bond purchases began in November and accelerated in December, a trend expected to continue in 2022. In response to these conditions, Treasury yields have trended upwards and credit spreads widened in the quarter.

Key Economic Indicators



Economic Indicators	Dec-21	Sep-21	Dec-20	Dec-18	20 Yr
Federal Funds Rate (%)	0.07 ▲	0.06	0.09	2.40	1.30
Breakeven Infl. - 5 Yr (%)	2.91 ▲	2.53	1.97	1.49	1.86
Breakeven Infl. - 10 Yr (%)	2.59 ▲	2.38	1.99	1.71	2.04
CPI YoY (Headline) (%)	7.0 ▲	5.4	1.4	1.9	2.2
Unemployment Rate (%)	3.9 ▼	4.7	6.7	3.9	6.1
Real GDP YoY (%)	5.5 ▲	4.9	-2.3	2.3	1.9
PMI - Manufacturing	58.8 ▼	60.5	60.5	54.9	53.5
USD Total Wtd Idx	115.32 ▲	114.67	111.33	115.57	103.10
WTI Crude Oil per Barrel (\$)	75.2 ▲	75.0	48.5	45.4	64.4
Gold Spot per Oz (\$)	1,829 ▲	1,757	1,898	1,282	1,086

Treasury Yield Curve (%)



Market Performance (%)	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	11.03	28.71	28.71	18.47	16.55
Russell 2000	2.14	14.82	14.82	12.02	13.23
MSCI EAFE (Net)	2.69	11.26	11.26	9.55	8.03
MSCI EAFE SC (Net)	0.07	10.10	10.10	11.04	10.80
MSCI Emg Mkts (Net)	-1.31	-2.54	-2.54	9.87	5.49
Bloomberg US Agg Bond	0.01	-1.55	-1.55	3.57	2.90
ICE BofAML 3 Mo US T-Bill	0.01	0.05	0.05	1.14	0.63
NCREIF ODCE (Gross)	7.97	22.17	22.17	8.71	10.45
FTSE NAREIT Eq REIT (TR)	16.31	43.24	43.24	10.75	11.38
HFRI FOF Comp	0.29	6.03	6.03	5.68	4.54
Bloomberg Cmdty (TR)	-1.56	27.11	27.11	3.66	-2.85

Fourth Quarter Review

Broad Market

US equity markets finished the year with a strong Q4, providing low double digit returns despite heightened volatility due to the spread of the Omicron variant, inflation fears, and global growth concerns. Volatility expectations, as measured by the CBOE Volatility Index, jumped above 30 in early December. However, investor uncertainty subsided shortly thereafter. The S&P 500 return of 28.7% in 2021 was its third highest calendar year return since 2000.

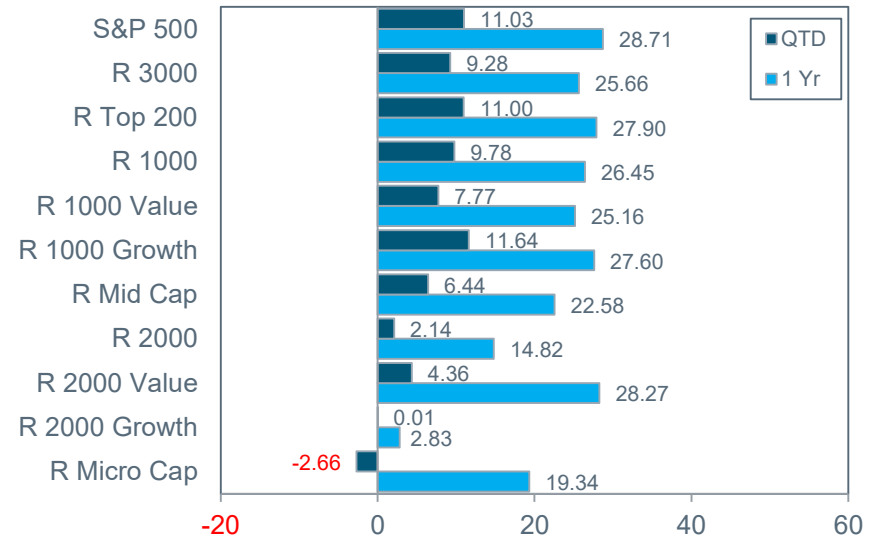
Market Cap

Large-cap stocks significantly outperformed their smaller-cap counterparts. The Russell 2000 Index returned 2.1% compared to 11.0% for the S&P 500.

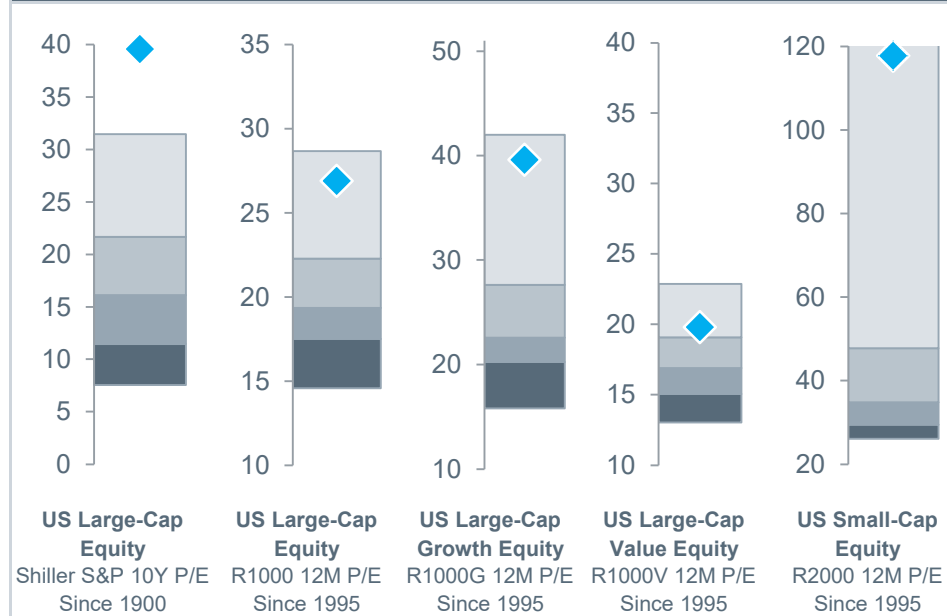
Style and Sector

At the beginning of Q4, growth stocks outperformed value stocks across all market capitalizations before a rotation into value stocks occurred later in the period. Active management performed well in Q4, except for large-cap growth managers, who struggled to keep up with their respective benchmarks.

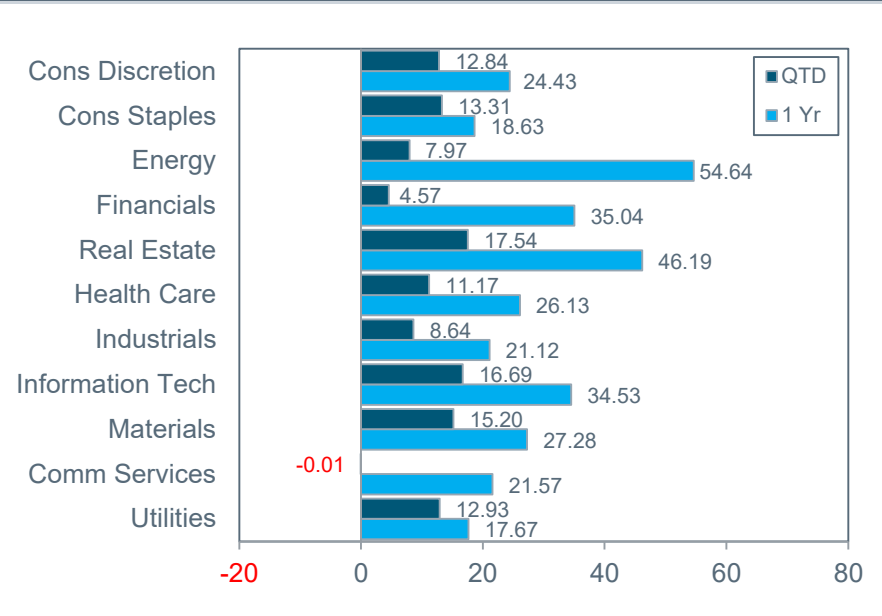
Style and Capitalization Market Performance (%)



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

While international markets lagged behind the US equity market in Q4, developed international equities continued to participate in the recovery despite the COVID-19 surge led by the new Omicron variant. The MSCI EAFE Index saw a positive return of 2.7% for the quarter as growth stocks continued to outperform value from the prior quarter resulting in both growth and value performing in line for the calendar year. Large-cap stocks outperformed small-cap stocks.

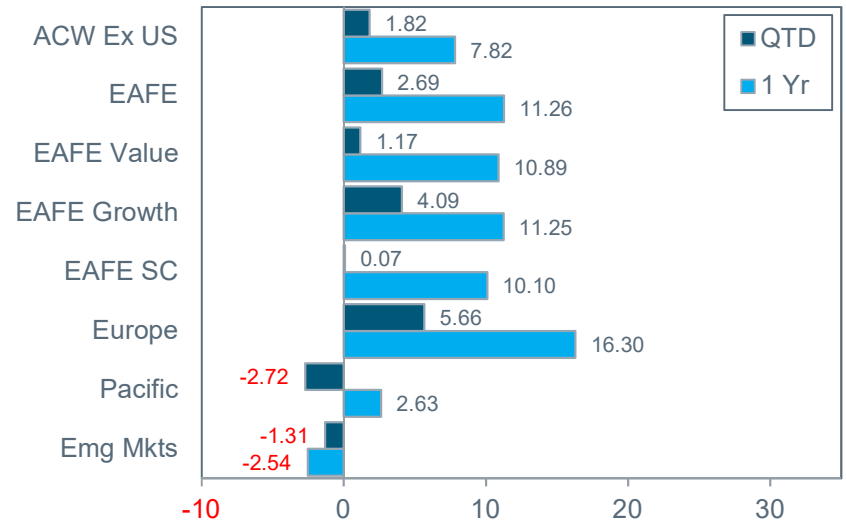
Emerging Markets

Emerging markets experienced moderately negative returns in Q4 with the MSCI EM Index returning -1.3% for the period. Value stocks continued their outperformance over growth while small-cap stocks outperformed large.

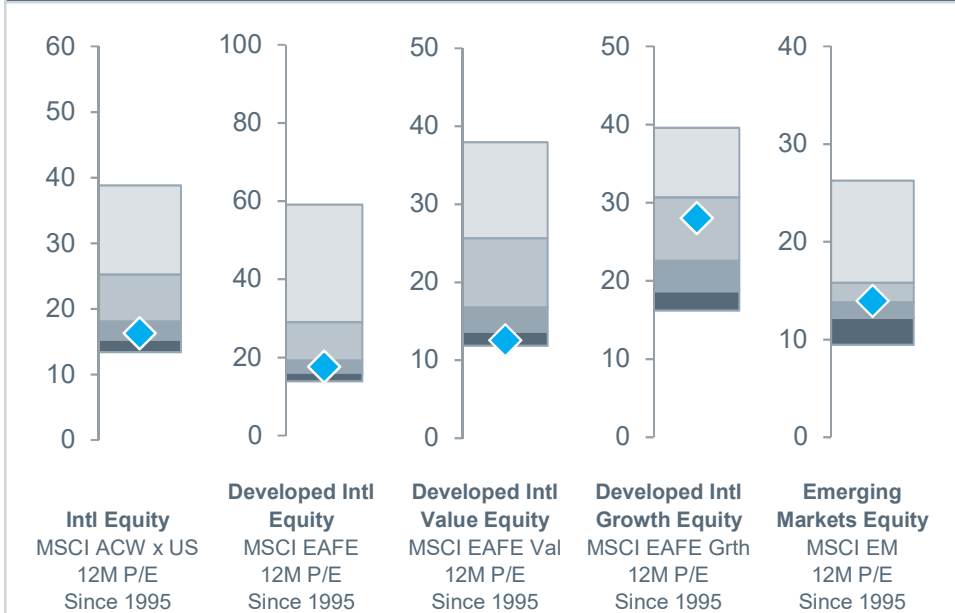
Market Cap & Style

In international markets, growth stocks outperformed value, while large-cap stocks outperformed small-cap. In emerging markets, value stocks outperformed growth, while small-cap stocks outperformed large-cap.

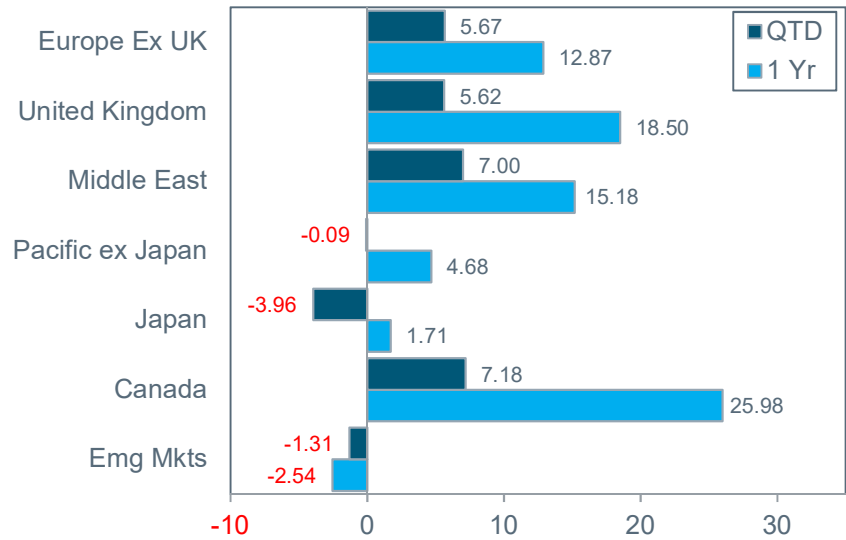
MSCI Style and Capitalization Market Performance (%)



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

The Bloomberg US Aggregate Index ended the quarter flat, capping off the third most negative calendar year on record for the index with an overall annual return of -1.5%. An abrupt rise in interest rates at the start of the year due to inflation concerns and an uncertain outlook, followed by interest rate volatility and an ongoing uncertain outlook drove returns and yields.

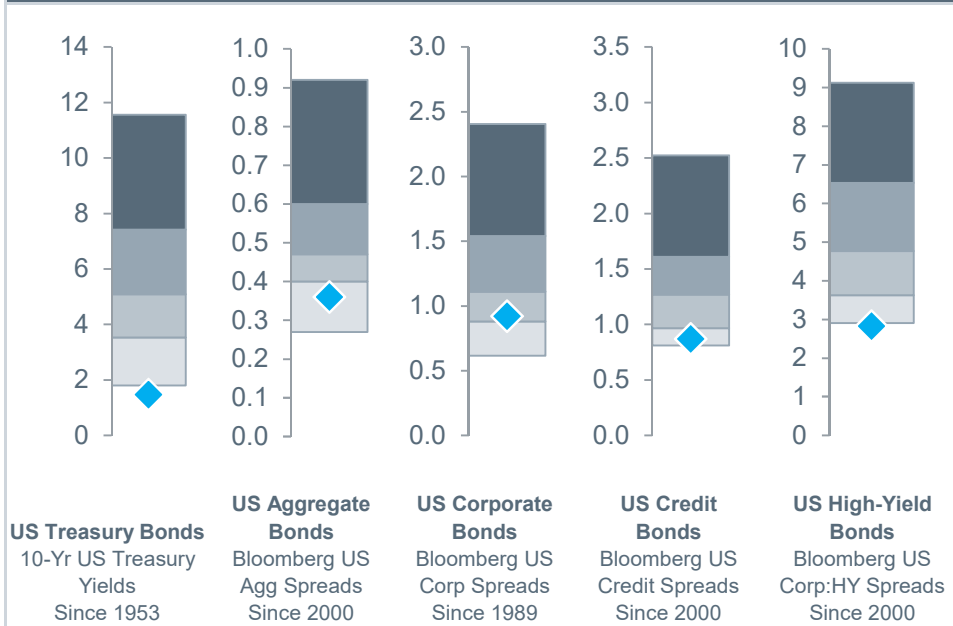
Credit Market

US investment grade credit detracted -1.1% YTD, while US High Yield returned 5.3%, as measured by the Bloomberg US Credit Index and Bloomberg US High Yield Index, respectively. The divergence in returns demonstrates low quality outperformance as investors sought yield in a low interest rate environment.

Emerging Market Debt

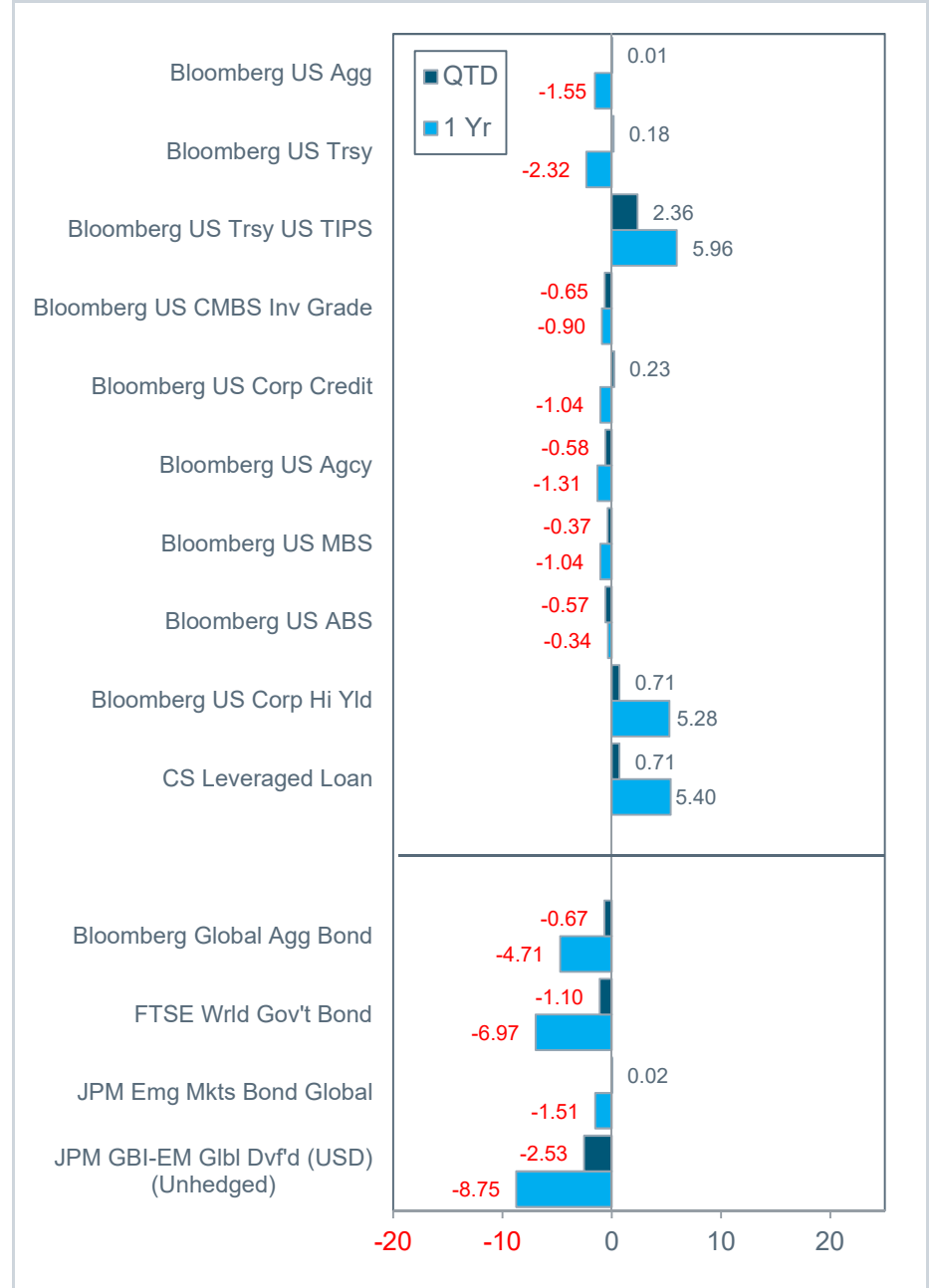
Despite a positive Q4, emerging market debt largely contracted over 2021, as each of the primary emerging market debt indices declined during the full year period.

Valuations



Valuation data courtesy of Bloomberg Professional Service. Valuations shown represent the 5th through 95th percentiles to minimize the effect of outliers.

Fixed Income Performance (%)



Fourth Quarter Review - Absolute Return

General Market - Hedge Funds

Hedge fund results were mixed in Q4. Many high-profile macro and relative value trading firms struggled as the yield curve flattened in October and November, while equity long/short (“ELS”) funds faced headwinds from underperforming crowded trades on the long side of their portfolios amid significant factor rotations. The industry still returned 0.4% during Q4 according to the HFRI Fund Weighted Index, bringing YTD returns to 10.2%, the industry’s third straight year of double-digit returns.

General Market - Global Tactical Asset Allocation (GTAA)

Global Tactical Asset Allocation strategies that RVK follows closely generated disparate performance in Q4. The top performing long-biased GTAA strategies either exclusively held US equity exposure or tended to hold larger proportion of US equities. In contrast, those who underperformed peers tended to hold larger foreign allocations, particularly within Japanese equity and emerging markets equity. Multi-asset managers who target lower correlations, volatility, and market sensitivity also produced disparate absolute returns, though generally with a narrower relative range compared to long-biased peers.

Fourth Quarter Review - Real Assets

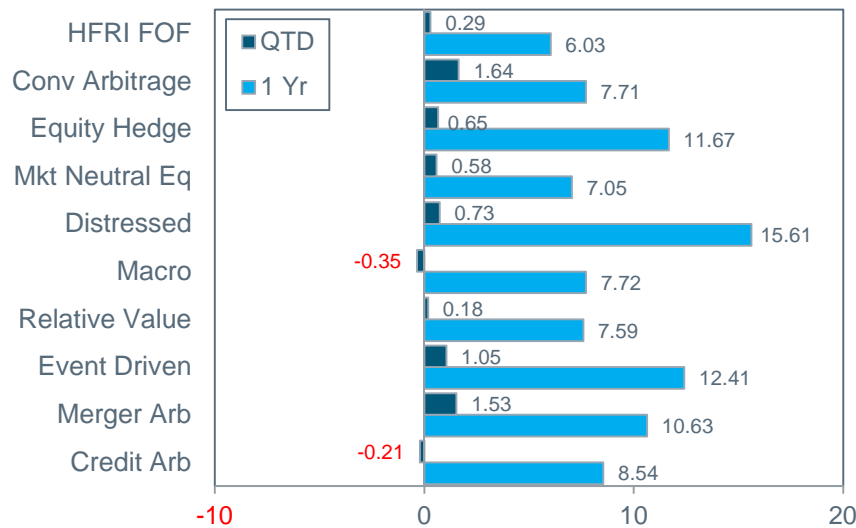
General Market - Diversified Inflation Strategies (DIS)

Diversified Inflation Strategies that RVK follows closely responded to increased inflationary measures with strong positive absolute performance. Managers with larger global listed infrastructure, natural resource equities and REIT exposures posted the strongest positive absolute returns. Whereas on a relative basis, those with larger commodities and TIPS allocations underperformed a strong peer group for the quarter. Inflation, as measured by the year-over-year change in Headline CPI, was reported as 7.0% for December.

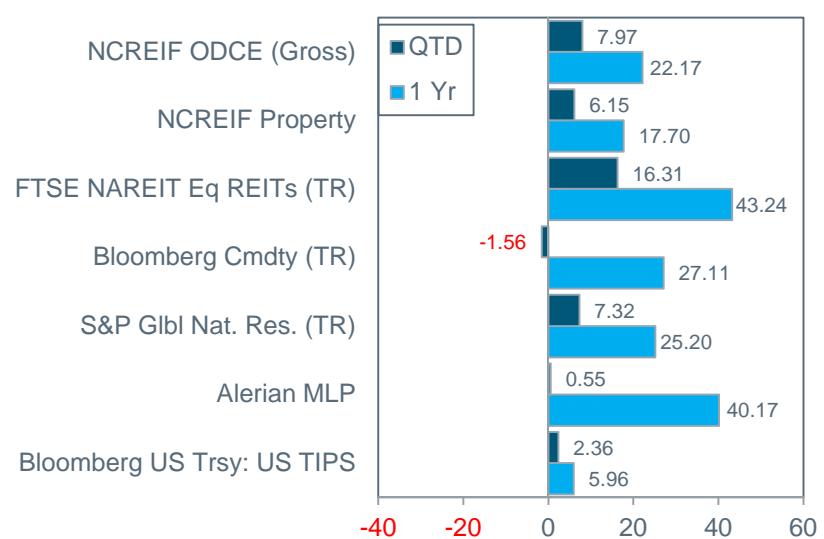
General Market - Real Estate

Core private real estate generated a positive 8.0% return in Q4, as reported by the NFI-ODCE Index, with the total return comprising of 1.0% income and 7.0% price appreciation. While the income return continues to trend in line with historical levels, price appreciation remains elevated. Investors of publicly traded real estate outperformed their private market counterparts by a meaningful margin.

HFRI Hedge Fund Performance (%)



Real Asset Performance (%)



Annual Asset Class Performance

As of December 31, 2021

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	CYTD
Best	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	19.96	43.24
	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	18.40	28.71
	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	18.31	27.11
	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	16.12	22.17
	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	13.07	14.82
	10.25	-21.37	27.17	16.36	4.98	16.00	8.96	4.89	0.05	9.29	14.02	-3.38	19.59	12.34	14.03
	6.97	-26.16	26.89	15.12	2.11	15.81	8.19	4.06	-0.27	8.77	10.71	-4.02	18.44	10.99	11.26
	6.60	-29.87	26.46	15.06	1.81	12.66	7.44	3.64	-0.81	8.52	7.77	-4.38	17.08	10.88	10.10
	5.94	-33.79	18.91	14.41	0.10	10.94	2.47	3.37	-1.44	6.67	7.62	-4.62	14.32	7.82	6.03
	5.49	-35.65	11.47	10.16	-4.13	8.78	0.07	2.45	-2.29	4.68	7.50	-4.68	8.72	7.51	5.96
	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	7.11	5.28
	1.87	-37.74	5.93	6.54	-12.14	4.79	-2.60	-2.19	-4.41	2.18	3.54	-11.25	8.39	1.19	0.05
	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	0.67	-1.55
	-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	-3.12	-2.52
Worst	-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	-8.00	-2.54

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



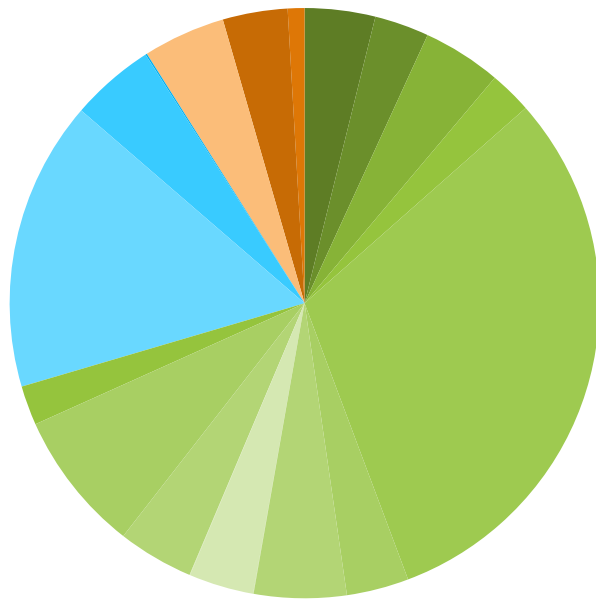
VSERS



Vermont State Employees' Retirement System
Asset Allocation By Manager

As of December 31, 2021

December 31, 2021 : \$2,501,417,708

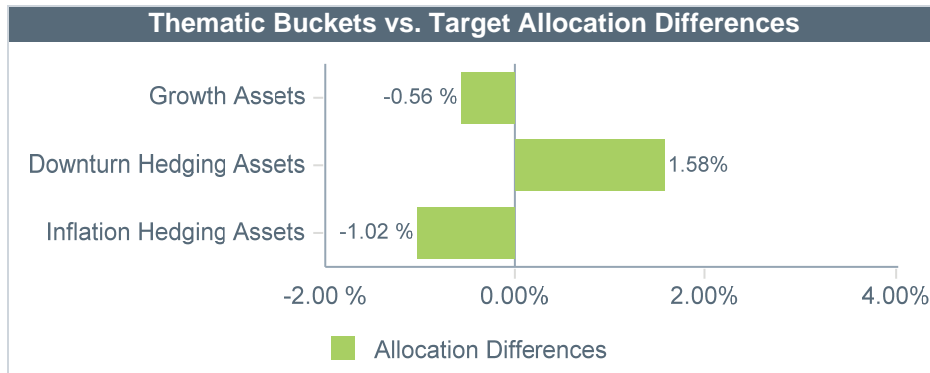


	Market Value (\$)	Allocation (%)
Blackrock S&P 500 (EqI Wtd) (CF)	96,663,518	3.86
Champlain US Mid Cap Core (SA)	74,732,525	2.99
SSgA Russell 2000 Growth (Ex Tobacco) (SA)	6,439	0.00
Acadian International All Cap (SA)	107,815,123	4.31
Mondrian International Equity (SA)	58,470,718	2.34
BlackRock MSCI ACW IMI (CF)	770,080,317	30.79
Blackrock MSCI World LCTR (SA)	85,546,489	3.42
Artisan Global Opportunities (CF)	126,508,490	5.06
PIMCO Liquidation (SA)	806,770	0.03
Wellington Opportunistic EMD (CF)	88,730,602	3.55
PIMCO Unconstrained (SA)	785,156	0.03
Private Debt	103,951,747	4.16
Private Equity	193,836,953	7.75
Non-Core Real Estate	54,107,724	2.16
BlackRock US Agg (CF)	397,454,885	15.89
PIMCO Core (SA)	115,317,908	4.61
Vermont Cash (SA)	1,930,637	0.08
BlackRock TIPS (CF)	112,956,948	4.52
UBS Trumbull Properties (CF)	88,796,438	3.55
Private Infrastructure/Land	22,916,711	0.92
Real Estate Cash (CF)	1,609	0.00

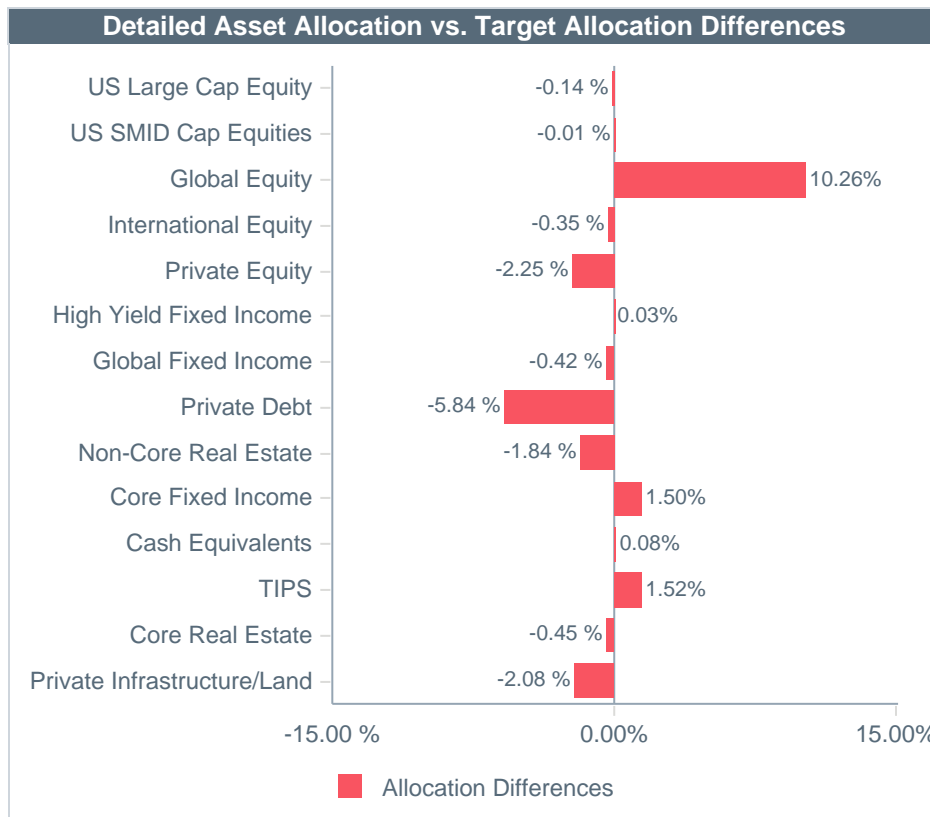
Allocations shown may not sum up to 100% exactly due to rounding. Market values for SSgA Russell 2000 Growth (SA) and PIMCO Unconstrained (SA) represent residual assets after liquidation. During 12/2021, Harbourvest HIPEP IX was funded.



Thematic Buckets vs. Target Allocation			
	Market Value (\$)	Allocation (%)	Target (%)
Growth Assets	1,762,042,572	70.44	71.00
Downturn Hedging Assets	514,703,430	20.58	19.00
Inflation Hedging Assets	224,671,706	8.98	10.00
Total Fund	2,501,417,708	100.00	100.00



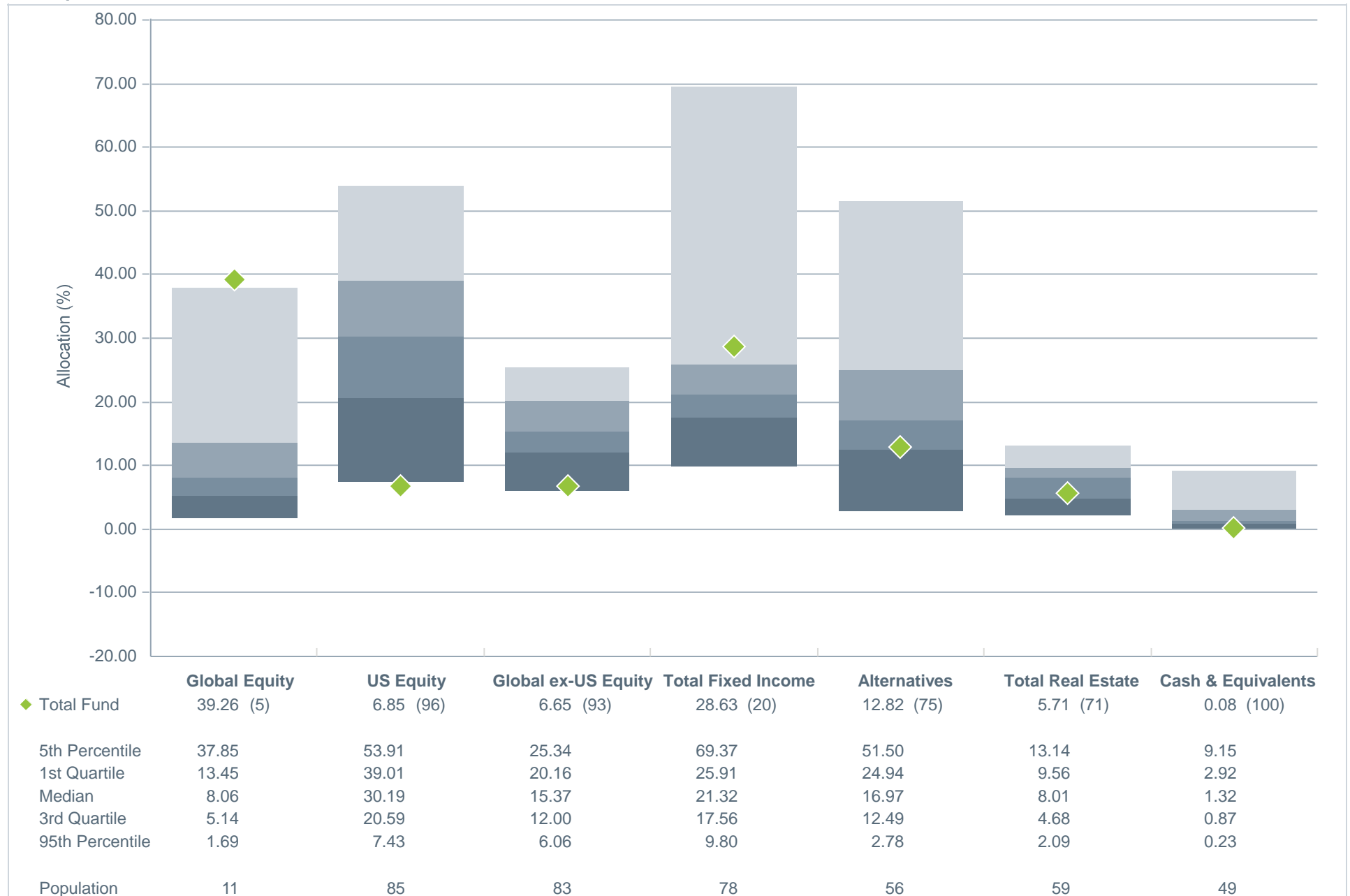
Detailed Asset Allocation vs. Target Allocation			
	Market Value (\$)	Allocation (%)	Target (%)
US Large Cap Equity	96,663,518	3.86	4.00
US SMID Cap Equities	74,738,964	2.99	3.00
Global Equity	982,135,296	39.26	29.00
International Equity	166,285,842	6.65	7.00
Private Equity	193,836,953	7.75	10.00
High Yield Fixed Income	806,770	0.03	0.00
Global Fixed Income	89,515,759	3.58	4.00
Private Debt	103,951,747	4.16	10.00
Non-Core Real Estate	54,107,724	2.16	4.00
Core Fixed Income	512,772,794	20.50	19.00
Cash Equivalents	1,930,637	0.08	0.00
TIPS	112,956,948	4.52	3.00
Core Real Estate	88,798,047	3.55	4.00
Private Infrastructure/Land	22,916,711	0.92	3.00
Total Fund	2,501,417,708	100.00	100.00



Allocations shown may not sum up to 100% exactly due to rounding.

Vermont State Employees' Retirement System
 All Public Plans (\$1B to \$10B; Median) (Custom PG)
 Plan Sponsor TF Asset Allocation

As of December 31, 2021

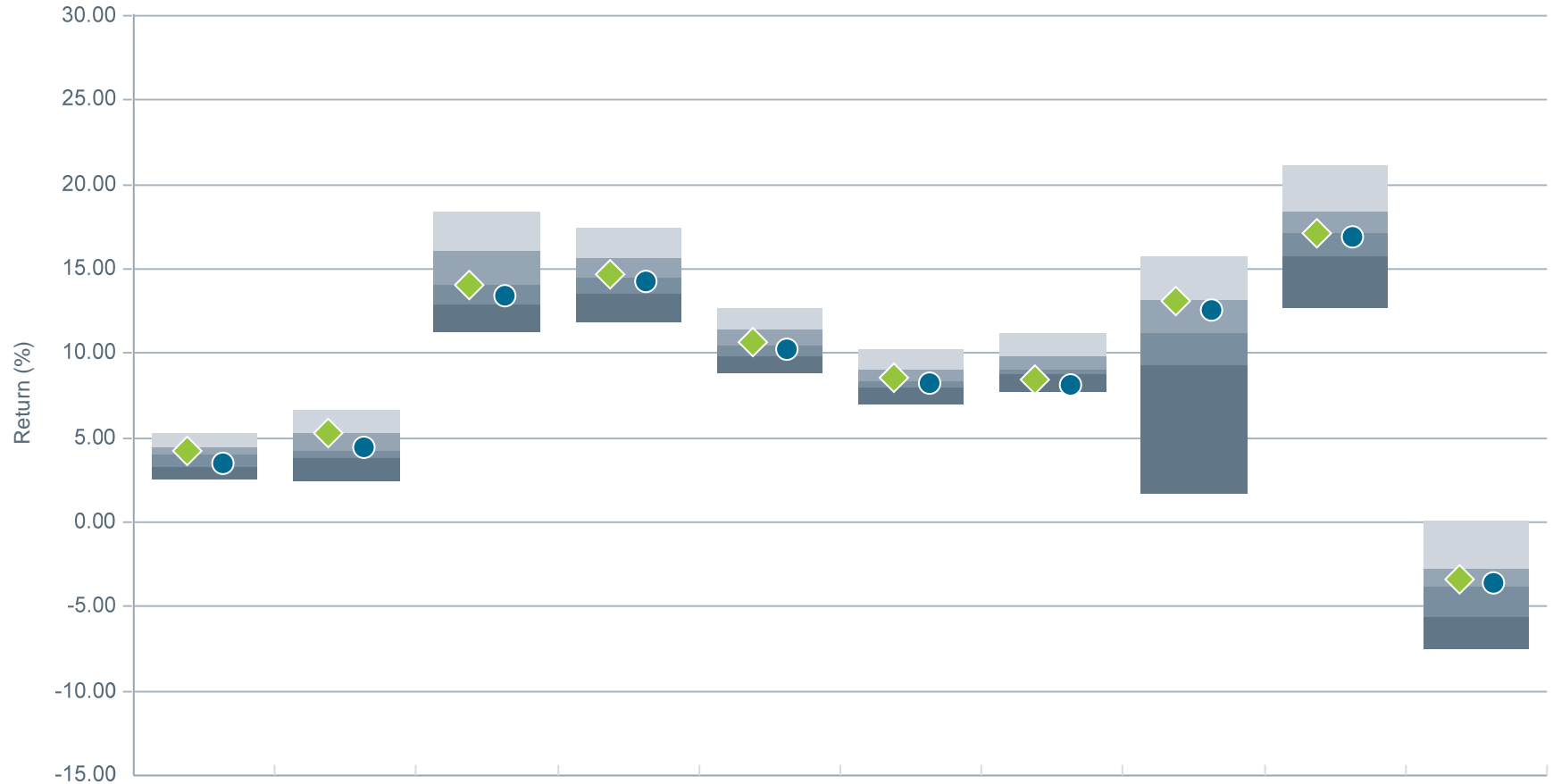


Parentheses contain percentile ranks. Total Fixed Income includes TIPS.



Vermont State Employees' Retirement System
 All Public Plans (\$1B to \$10B) (Custom PG)
 Plan Sponsor Peer Group Analysis

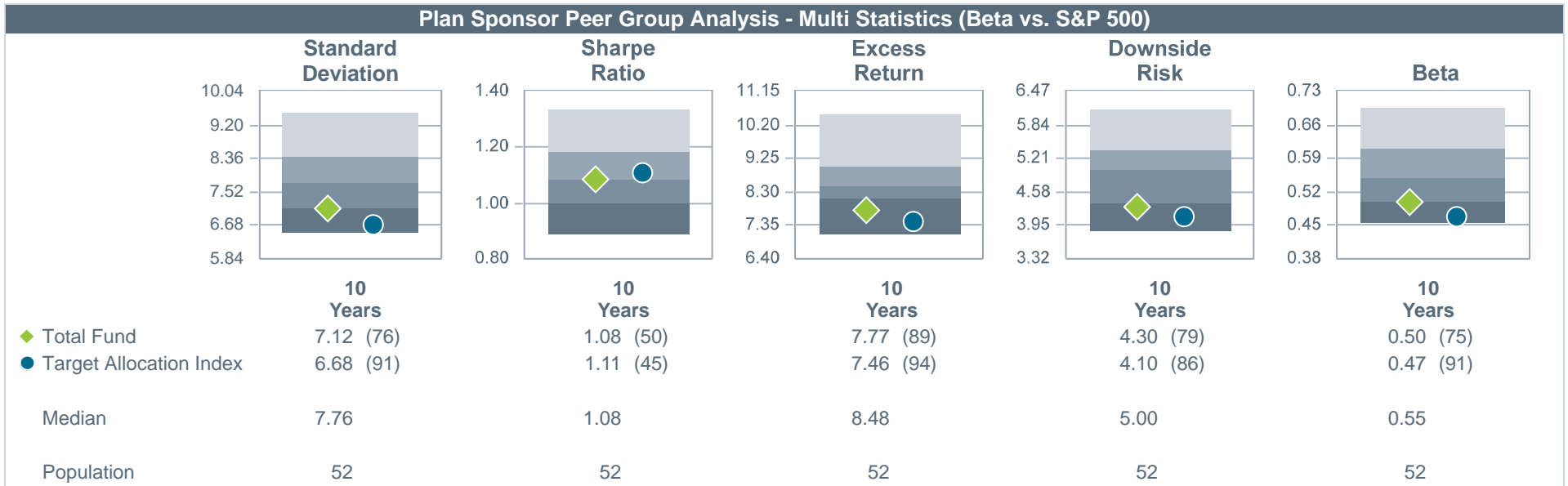
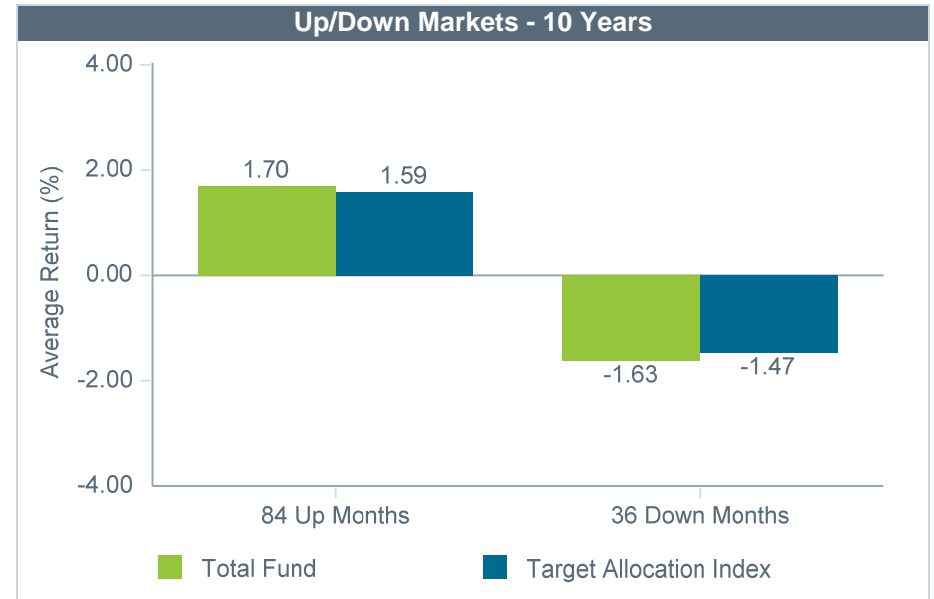
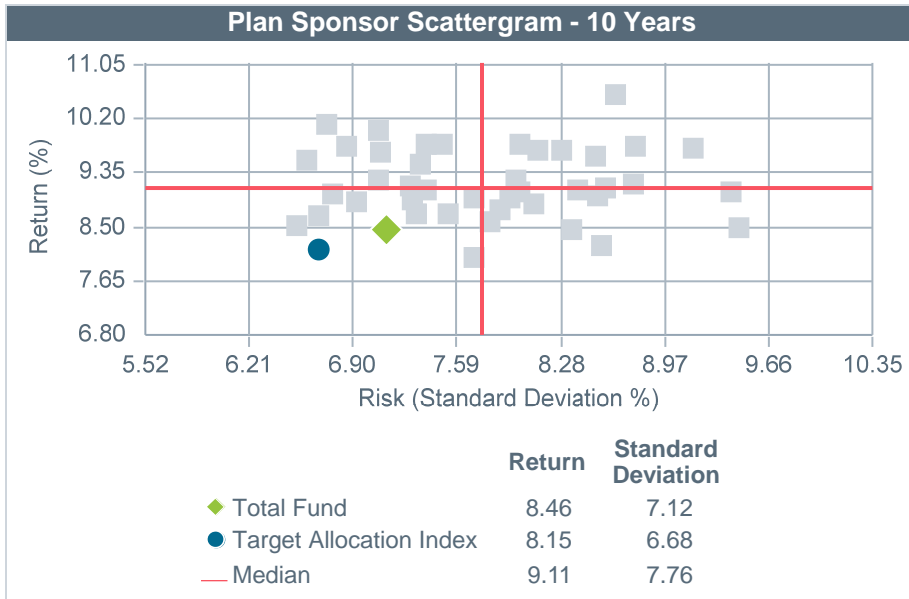
As of December 31, 2021



	QTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018
◆ Total Fund	4.21 (35)	5.23 (26)	14.03 (51)	14.72 (39)	10.71 (36)	8.55 (35)	8.46 (89)	13.07 (27)	17.08 (51)	-3.38 (38)
● Target Allocation Index	3.47 (73)	4.47 (44)	13.37 (68)	14.26 (55)	10.28 (54)	8.26 (58)	8.15 (93)	12.55 (34)	16.91 (53)	-3.63 (45)
5th Percentile	5.27	6.63	18.43	17.42	12.63	10.21	11.21	15.72	21.17	0.12
1st Quartile	4.42	5.24	16.05	15.65	11.40	9.06	9.77	13.16	18.43	-2.70
Median	3.97	4.28	14.06	14.50	10.43	8.38	9.11	11.23	17.09	-3.83
3rd Quartile	3.30	3.78	12.93	13.54	9.85	8.01	8.77	9.26	15.74	-5.63
95th Percentile	2.48	2.44	11.32	11.84	8.88	6.97	7.67	1.67	12.70	-7.55
Population	57	56	56	56	56	55	52	100	98	75

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





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

Vermont State Employees' Retirement System
 Asset Allocation & Performance - Net of Fees

As of December 31, 2021

	Allocation		Performance (%)									
	Market Value (\$)	Actual (%)	QTD	FYTD	1 Year	3 Years	5 Years	10 Years	15 Years	2020	Since Incep.	Inception Date
Total Fund	2,501,417,708	100.00	4.21	5.23	14.03	14.72	10.71	8.46	6.22	13.07	6.86	07/01/2005
Target Allocation Index			3.47	4.47	13.37	14.26	10.28	8.15	6.21	12.55	6.83	
Difference			0.74	0.76	0.66	0.46	0.43	0.31	0.01	0.52	0.03	
Actual Allocation Index			3.74	4.03	12.83	13.80	9.95	7.92	6.00	11.60	6.62	
Difference			0.47	1.20	1.20	0.92	0.76	0.54	0.22	1.47	0.24	
Growth Assets	1,762,042,572	70.44	5.63	6.88	20.44	-	-	-	-	-	25.34	09/01/2020
MSCI ACW IM Index (USD) (Net)			6.10	4.92	18.22	20.20	14.12	11.84	7.16	16.25	23.53	
Difference			-0.47	1.96	2.22	-	-	-	-	-	1.81	
Downturn Hedging Assets	514,703,430	20.58	-0.10	-0.03	-1.63	-	-	-	-	-	-0.65	09/01/2020
Bloomberg US Agg Bond Index			0.01	0.06	-1.55	4.79	3.57	2.90	4.09	7.51	-0.71	
Difference			-0.11	-0.09	-0.08	-	-	-	-	-	0.06	
Inflation Hedging Assets	224,671,706	8.98	3.83	5.85	6.36	-	-	-	-	-	4.97	09/01/2020
Consumer Price Index+2.5%			2.27	3.89	9.71	6.12	5.49	4.69	4.73	3.90	8.04	
Difference			1.56	1.96	-3.35	-	-	-	-	-	-3.07	

Performance shown is net of fees. Allocations shown may not sum up to 100% exactly due to rounding. Manager inception dates shown represent the first full month of available performance. Fiscal year ends 6/30. Please see addendum for custom benchmark definitions. Private Asset market values and performance are lagged to match custodian reported net asset values. Accordingly, fund reported performance will lag benchmark reported performance.



Vermont State Employees' Retirement System
Asset Allocation & Performance - Net of Fees

As of December 31, 2021

	Allocation			Performance (%)									
	Market Value (\$)	Actual (%)	Policy (%)	QTD	FYTD	1 Year	3 Years	5 Years	10 Years	15 Years	2020	Since Incep.	Inception Date
Total Fund	2,501,417,708	100.00	100.00	4.21	5.23	14.03	14.72	10.71	8.46	6.22	13.07	6.86	07/01/2005
Target Allocation Index				3.47	4.47	13.37	14.26	10.28	8.15	6.21	12.55	6.83	
Difference				0.74	0.76	0.66	0.46	0.43	0.31	0.01	0.52	0.03	
Actual Allocation Index				3.74	4.03	12.83	13.80	9.95	7.92	6.00	11.60	6.62	
Difference				0.47	1.20	1.20	0.92	0.76	0.54	0.22	1.47	0.24	
All Public Plans (\$1B to \$10B)				3.95	4.26	13.97	14.45	10.38	9.11	6.60	11.23	7.12	
Rank				35	25	50	38	35	89	73	27	69	
Domestic Equity	171,402,482	6.85	7.00	7.64	7.84	25.46	22.78	15.98	15.45	-	18.83	14.04	01/01/2011
Russell 3000 Index				9.28	9.17	25.66	25.79	17.97	16.30	10.59	20.89	14.82	
Difference				-1.64	-1.33	-0.20	-3.01	-1.99	-0.85	-	-2.06	-0.78	
US Large Cap Equity	96,663,518	3.86	4.00	9.01	8.70	29.44	21.49	15.56	15.24	10.21	13.03	10.66	07/01/2005
S&P 500 Index (Cap Wtd)				11.03	11.67	28.71	26.07	18.47	16.55	10.66	18.40	11.00	
Difference				-2.02	-2.97	0.73	-4.58	-2.91	-1.31	-0.45	-5.37	-0.34	
Blackrock S&P 500 (Eq Wtd) (CF)	96,663,518	3.86	-	9.01	8.70	29.44	-	-	-	-	13.03	20.26	07/01/2019
S&P 500 Index (Eq Wtd)				9.01	8.76	29.63	23.64	15.73	15.63	10.80	12.83	20.26	
Difference				0.00	-0.06	-0.19	-	-	-	-	0.20	0.00	
IM U.S. Large Cap Equity (MF) Median				8.69	8.85	25.27	24.94	17.52	15.54	10.05	18.34	22.03	
Rank				46	53	13	-	-	-	-	64	59	
US SMID Cap Equities	74,738,964	2.99	3.00	5.90	6.78	19.93	24.80	16.35	15.84	11.14	27.32	11.17	07/01/2005
Russell 2500 Index				3.82	1.04	18.18	21.91	13.75	14.15	9.67	19.99	10.19	
Difference				2.08	5.74	1.75	2.89	2.60	1.69	1.47	7.33	0.98	
Champlain US Mid Cap Core (SA)	74,732,525	2.99	-	5.90	6.78	19.93	24.80	18.05	16.62	-	27.32	16.06	10/01/2009
Custom SMID Cap Equity Index				4.27	1.53	18.74	21.74	13.11	14.09	9.64	19.99	13.76	
Difference				1.63	5.25	1.19	3.06	4.94	2.53	-	7.33	2.30	
IM U.S. SMID Cap Equity (MF) Median				5.19	3.35	19.23	22.02	14.49	14.08	10.06	20.27	13.81	
Rank				44	20	49	35	30	16	-	41	18	
Global Equity	982,135,296	39.26	29.00	6.16	5.49	18.22	21.55	-	-	-	19.96	9.58	02/01/2018
MSCI ACW IM Index (USD) (Net)				6.10	4.92	18.22	20.20	14.12	11.84	7.16	16.25	10.56	
Difference				0.06	0.57	0.00	1.35	-	-	-	3.71	-0.98	

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Vermont State Employees' Retirement System
Asset Allocation & Performance - Net of Fees

As of December 31, 2021

	Allocation			Performance (%)									
	Market Value (\$)	Actual (%)	Policy (%)	QTD	FYTD	1 Year	3 Years	5 Years	10 Years	15 Years	2020	Since Incep.	Inception Date
BlackRock MSCI ACW IMI (CF)	770,080,317	30.79	-	6.18	5.08	18.73	-	-	-	-	16.77	17.96	07/01/2019
MSCI ACW IM Index (USD) (Net)				6.10	4.92	18.22	20.20	14.12	11.84	7.16	16.25	17.48	
Difference				0.08	0.16	0.51	-	-	-	-	0.52	0.48	
IM Global Equity (MF) Median				5.83	4.59	16.53	19.90	13.34	11.46	7.03	15.21	17.08	
Rank				45	43	33	-	-	-	-	44	44	
Blackrock MSCI World LCTR (SA)	85,546,489	3.42	-	8.39	-	-	-	-	-	-	-	3.79	09/01/2021
MSCI Wrld Index (USD) (Net)				7.77	7.76	21.82	21.70	15.03	12.70	7.43	15.90	3.29	
Difference				0.62	-	-	-	-	-	-	-	0.50	
IM Global Equity (MF) Median				6.38	5.70	17.97	21.29	14.54	12.61	8.17	16.28	1.89	
Rank				19	-	-	-	-	-	-	-	19	
Artisan Global Opportunities (CF)	126,508,490	5.06	-	4.60	6.70	14.17	29.71	-	-	-	40.50	20.35	07/01/2018
MSCI ACW Index (USD) (Net)				6.68	5.55	18.54	20.38	14.40	11.85	7.05	16.25	14.11	
Difference				-2.08	1.15	-4.37	9.33	-	-	-	24.25	6.24	
IM Global Equity (MF) Median				5.83	4.59	16.53	19.90	13.34	11.46	7.03	15.21	13.27	
Rank				61	22	64	10	-	-	-	14	10	
International Equity	166,285,842	6.65	7.00	3.08	0.80	14.41	12.61	9.69	7.54	-	4.62	5.83	01/01/2011
MSCI EAFE Index (USD) (Net)				2.69	2.24	11.26	13.54	9.55	8.03	3.60	7.82	6.02	
Difference				0.39	-1.44	3.15	-0.93	0.14	-0.49	-	-3.20	-0.19	
Acadian International All Cap (SA)	107,815,123	4.31	-	4.50	1.67	15.96	15.49	12.13	10.79	4.40	12.37	6.64	11/01/2005
MSCI EAFE IM Index (USD) (Net)				2.28	2.04	11.08	13.84	9.76	8.39	3.88	8.47	5.56	
Difference				2.22	-0.37	4.88	1.65	2.37	2.40	0.52	3.90	1.08	
IM All EAFE (MF) Median				2.93	1.54	10.79	13.49	9.29	7.87	3.52	8.17	5.19	
Rank				13	48	8	33	20	8	32	33	16	
Mondrian International Equity (SA)	58,470,718	2.34	-	0.55	-0.74	11.71	8.55	6.64	6.30	3.11	-4.01	5.18	07/01/2005
MSCI EAFE Index (USD) (Net)				2.69	2.24	11.26	13.54	9.55	8.03	3.60	7.82	5.63	
Difference				-2.14	-2.98	0.45	-4.99	-2.91	-1.73	-0.49	-11.83	-0.45	
IM All EAFE (MF) Median				2.93	1.54	10.79	13.49	9.29	7.87	3.52	8.17	5.57	
Rank				87	83	35	97	85	84	62	98	61	
Fixed Income	603,095,322	24.11	23.00	-0.24	-0.27	-1.82	5.06	3.98	3.81	-	8.14	4.18	01/01/2011
Bloomberg US Agg Bond Index				0.01	0.06	-1.55	4.79	3.57	2.90	4.09	7.51	3.34	
Difference				-0.25	-0.33	-0.27	0.27	0.41	0.91	-	0.63	0.84	

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Vermont State Employees' Retirement System
Asset Allocation & Performance - Net of Fees

As of December 31, 2021

	Allocation			Performance (%)									
	Market Value (\$)	Actual (%)	Policy (%)	QTD	FYTD	1 Year	3 Years	5 Years	10 Years	15 Years	2020	Since Incep.	Inception Date
Core Fixed Income	512,772,794	20.50	20.00	-0.10	-0.03	-1.64	-	-	-	-	-	-0.65	09/01/2020
Bloomberg US Agg Bond Index				0.01	0.06	-1.55	4.79	3.57	2.90	4.09	7.51	-0.71	
Difference				-0.11	-0.09	-0.09	-	-	-	-	-	0.06	
BlackRock US Agg (CF)	397,454,885	15.89	-	-0.06	0.01	-1.62	-	-	-	-	7.54	3.53	06/01/2019
Bloomberg US Agg Bond Index				0.01	0.06	-1.55	4.79	3.57	2.90	4.09	7.51	3.69	
Difference				-0.07	-0.05	-0.07	-	-	-	-	0.03	-0.16	
IM U.S. Broad Mkt Core FI (MF)				-0.14	-0.11	-1.32	5.17	3.71	3.10	4.03	8.19	4.05	
Rank				35	33	63	-	-	-	-	71	77	
PIMCO Core (SA)	115,317,908	4.61	-	-0.24	-0.20	-1.68	-	-	-	-	-	-0.32	09/01/2020
Bloomberg US Agg Bond Index				0.01	0.06	-1.55	4.79	3.57	2.90	4.09	7.51	-0.71	
Difference				-0.25	-0.26	-0.13	-	-	-	-	-	0.39	
IM U.S. Broad Mkt Core FI (MF)				-0.14	-0.11	-1.32	5.17	3.71	3.10	4.03	8.19	-0.05	
Rank				67	61	67	-	-	-	-	-	62	
Emerging Markets Debt	88,730,602	3.55	4.00	-1.05	-1.62	-3.32	-	-	-	-	-	0.88	09/01/2020
JPM Emg Mkts Bond Gbl Index (USD)				0.02	-0.52	-1.51	6.06	4.47	4.95	5.99	5.88	1.63	
Difference				-1.07	-1.10	-1.81	-	-	-	-	-	-0.75	
Wellington Opportunistic EMD (CF)	88,730,602	3.55	-	-1.05	-1.62	-3.32	6.44	4.67	5.37	-	7.69	6.09	12/01/2009
JPM Emg Mkts Bond Gbl Index (USD)				0.02	-0.52	-1.51	6.06	4.47	4.95	5.99	5.88	5.80	
Difference				-1.07	-1.10	-1.81	0.38	0.20	0.42	-	1.81	0.29	
IM Emerging Markets Debt (MF) Median				-1.25	-1.92	-2.99	5.44	4.08	4.18	4.80	5.57	4.72	
Rank				34	32	60	15	28	5	-	15	4	
High Yield Fixed Income	806,770	0.03	0.00	5.13	5.49	13.13	7.49	4.80	5.94	6.32	3.27	6.47	06/01/2006
Bloomberg US Corp Hi Yld Index				0.71	1.60	5.28	8.83	6.30	6.83	7.07	7.11	7.32	
Difference				4.42	3.89	7.85	-1.34	-1.50	-0.89	-0.75	-3.84	-0.85	
PIMCO Liquidation (SA)	806,770	0.03	-	5.13	5.49	13.13	7.49	-	-	-	3.26	4.97	08/01/2018
Bloomberg US Corp Hi Yld Index				0.71	1.60	5.28	8.83	6.30	6.83	7.07	7.11	6.67	
Difference				4.42	3.89	7.85	-1.34	-	-	-	-3.85	-1.70	
IM U.S. High Yield Bonds (MF) Median				0.55	1.22	4.71	7.78	5.28	5.82	5.80	5.28	5.62	
Rank				1	1	1	60	-	-	-	81	73	

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Vermont State Employees' Retirement System
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	Allocation			Performance (%)									
	Market Value (\$)	Actual (%)	Policy (%)	QTD	FYTD	1 Year	3 Years	5 Years	10 Years	15 Years	2020	Since Incep.	Inception Date
Private Debt	103,951,747	4.16	10.00	2.85	9.57	18.07	9.08	-	-	-	2.22	7.91	01/01/2018
CS Lvg'd Loan Index+2% (Spliced)				1.21	2.87	7.51	6.40	4.72	4.92	4.67	3.12	4.88	
Difference				1.64	6.70	10.56	2.68	-	-	-	-0.90	3.03	
Private Equity	193,836,953	7.75	10.00	7.74	25.35	59.09	31.64	26.29	-	-	17.25	21.42	01/01/2013
Cambridge US Prvt Eq Index				0.00	5.75	31.80	22.28	18.96	15.94	12.94	21.73	16.21	
Difference				7.74	19.60	27.29	9.36	7.33	-	-	-4.48	5.21	
Non-Core Real Estate	54,107,724	2.16	3.00	6.90	6.96	17.08	5.05	8.53	-	-	-1.80	9.56	09/01/2014
NCREIF ODCE Index+2% (Spliced)				8.21	15.71	23.44	10.10	8.78	9.84	7.55	1.60	9.70	
Difference				-1.31	-8.75	-6.36	-5.05	-0.25	-	-	-3.40	-0.14	
Inflation Hedging Assets (Spliced)	224,671,706	8.98	10.00	3.83	5.85	6.36	0.49	3.11	7.60	-	-2.83	8.60	01/01/2011
CPI+2.5% (Spliced)				2.27	3.89	9.71	5.56	6.07	8.47	6.65	0.75	8.98	
Difference				1.56	1.96	-3.35	-5.07	-2.96	-0.87	-	-3.58	-0.38	
TIPS	112,956,948	4.52	2.00	2.28	4.05	5.81	-	-	-	-	-	5.32	09/01/2020
Bloomberg US Trsy US TIPS Index				2.36	4.16	5.96	8.44	5.34	3.09	4.69	10.99	5.41	
Difference				-0.08	-0.11	-0.15	-	-	-	-	-	-0.09	
BlackRock TIPS (CF)	112,956,948	4.52	-	2.28	4.05	5.81	8.35	5.26	3.01	-	10.96	3.92	12/01/2009
Bloomberg US Trsy US TIPS Index				2.36	4.16	5.96	8.44	5.34	3.09	4.69	10.99	3.97	
Difference				-0.08	-0.11	-0.15	-0.09	-0.08	-0.08	-	-0.03	-0.05	
IM U.S. TIPS (MF) Median				1.71	3.27	5.29	7.50	4.56	2.48	3.95	9.64	3.29	
Rank				14	18	30	22	17	16	-	26	12	
Core Real Estate	88,798,047	3.55	5.00	6.08	8.99	8.13	0.96	2.87	7.48	-	-2.26	8.49	01/01/2011
NCREIF ODCE Index (AWA) (Net)				7.69	14.59	21.06	8.24	7.75	9.44	5.80	0.34	9.93	
Difference				-1.61	-5.60	-12.93	-7.28	-4.88	-1.96	-	-2.60	-1.44	
UBS Trumbull Properties (CF)	88,796,438	3.55	-	6.08	8.99	8.13	1.00	2.89	6.12	4.46	-2.26	5.46	07/01/2005
NCREIF ODCE Index (AWA) (Net)				7.69	14.59	21.06	8.24	7.75	9.44	5.80	0.34	6.77	
Difference				-1.61	-5.60	-12.93	-7.24	-4.86	-3.32	-1.34	-2.60	-1.31	
Private Infrastructure/Land	22,916,711	0.92	3.00	2.80	2.63	5.70	-	-	-	-	-	3.85	08/01/2020
NCREIF Farmland Index (TR)				3.80	5.37	7.83	5.22	5.72	9.68	10.56	3.08	7.37	
Difference				-1.00	-2.74	-2.13	-	-	-	-	-	-3.52	

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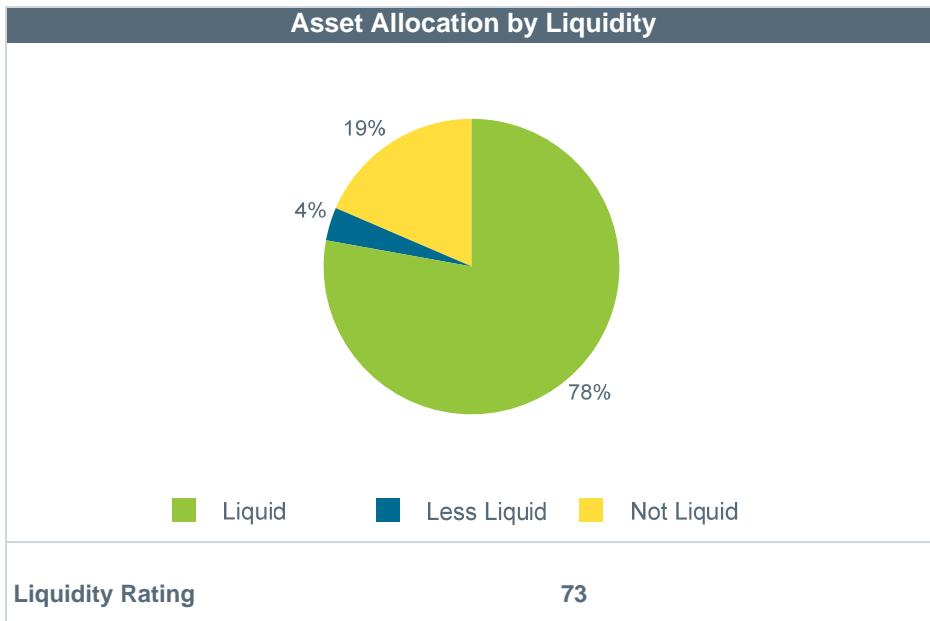
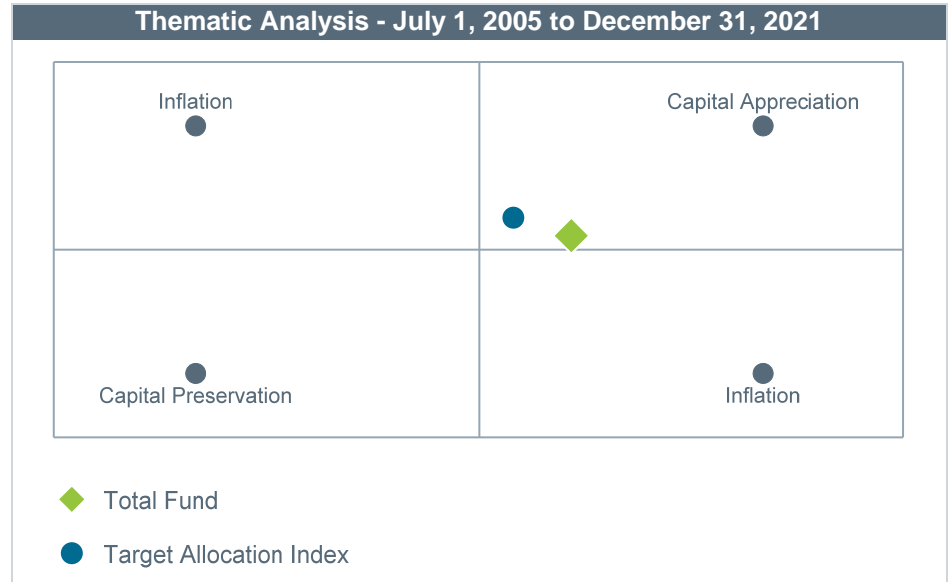
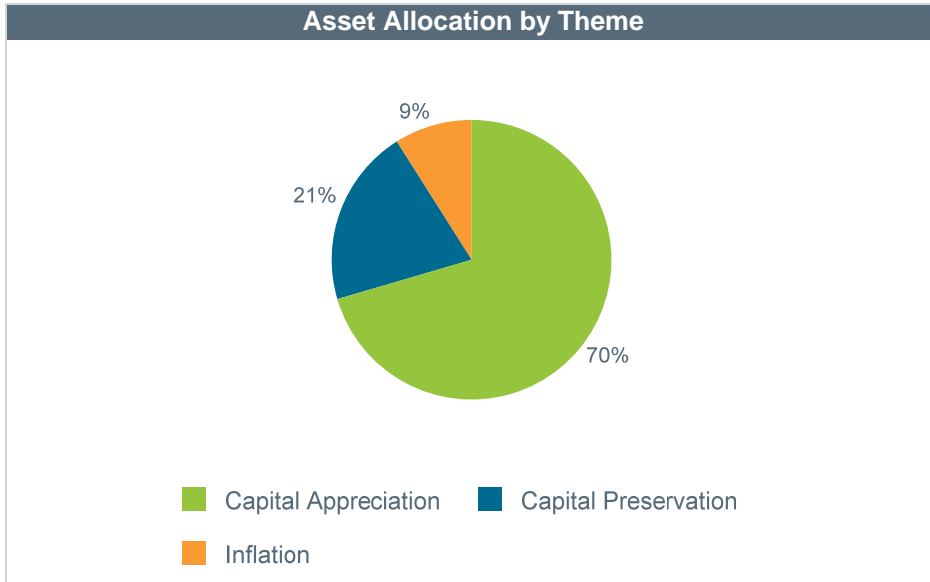
Vermont State Employees' Retirement System
 Asset Allocation & Performance - Net of Fees

As of December 31, 2021

	Allocation			Performance (%)									
	Market Value (\$)	Actual (%)	Policy (%)	QTD	FYTD	1 Year	3 Years	5 Years	10 Years	15 Years	2020	Since Incep.	Inception Date
Cash Equivalents	1,930,637	0.08	0.00	0.00	0.00	-0.07	0.40	0.27	0.14	-	0.37	0.14	01/01/2011
ICE BofAML 3 Mo US T-Bill Index				0.01	0.03	0.05	0.99	1.14	0.63	0.91	0.67	0.58	
Difference				-0.01	-0.03	-0.12	-0.59	-0.87	-0.49	-	-0.30	-0.44	

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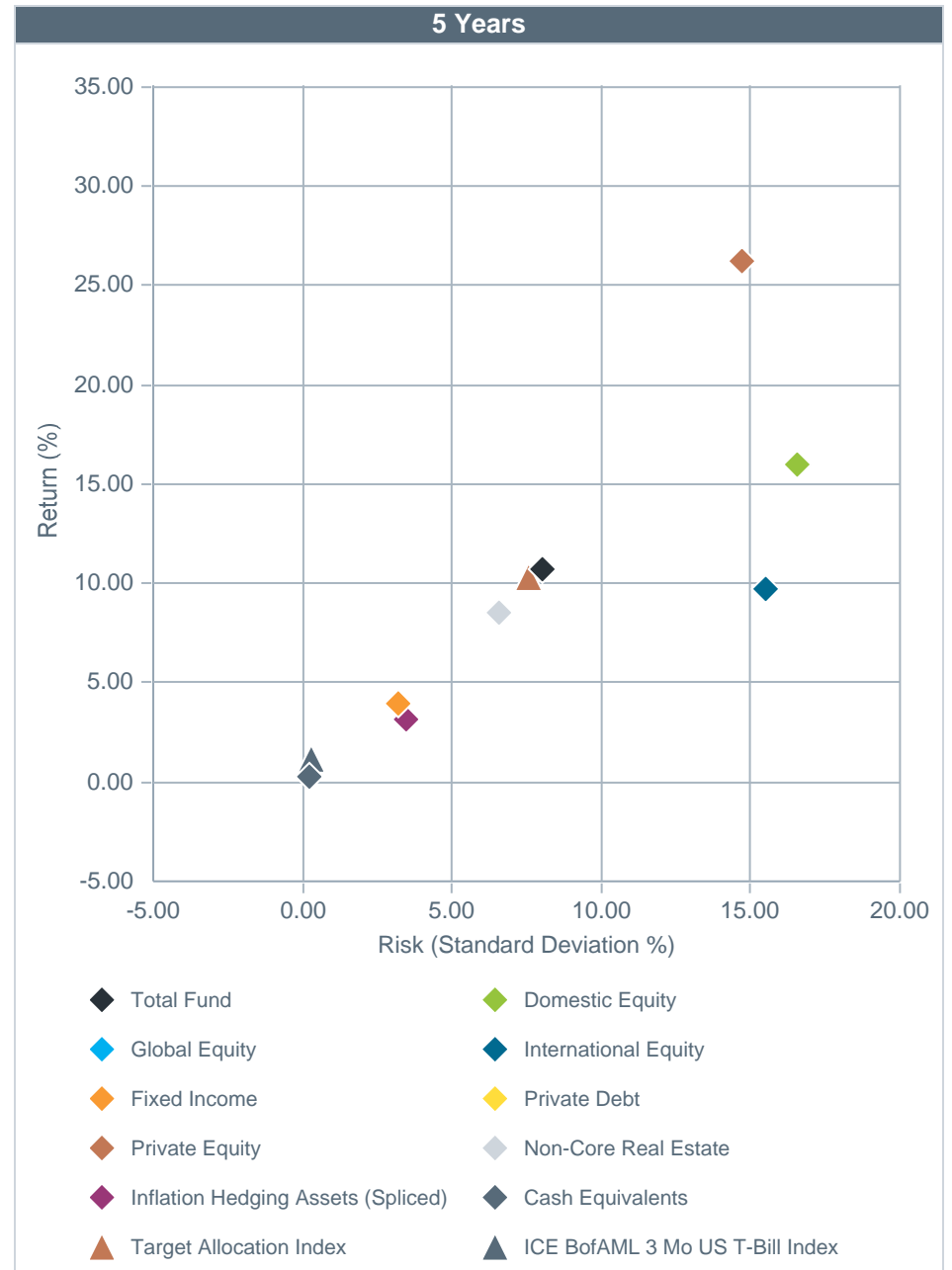
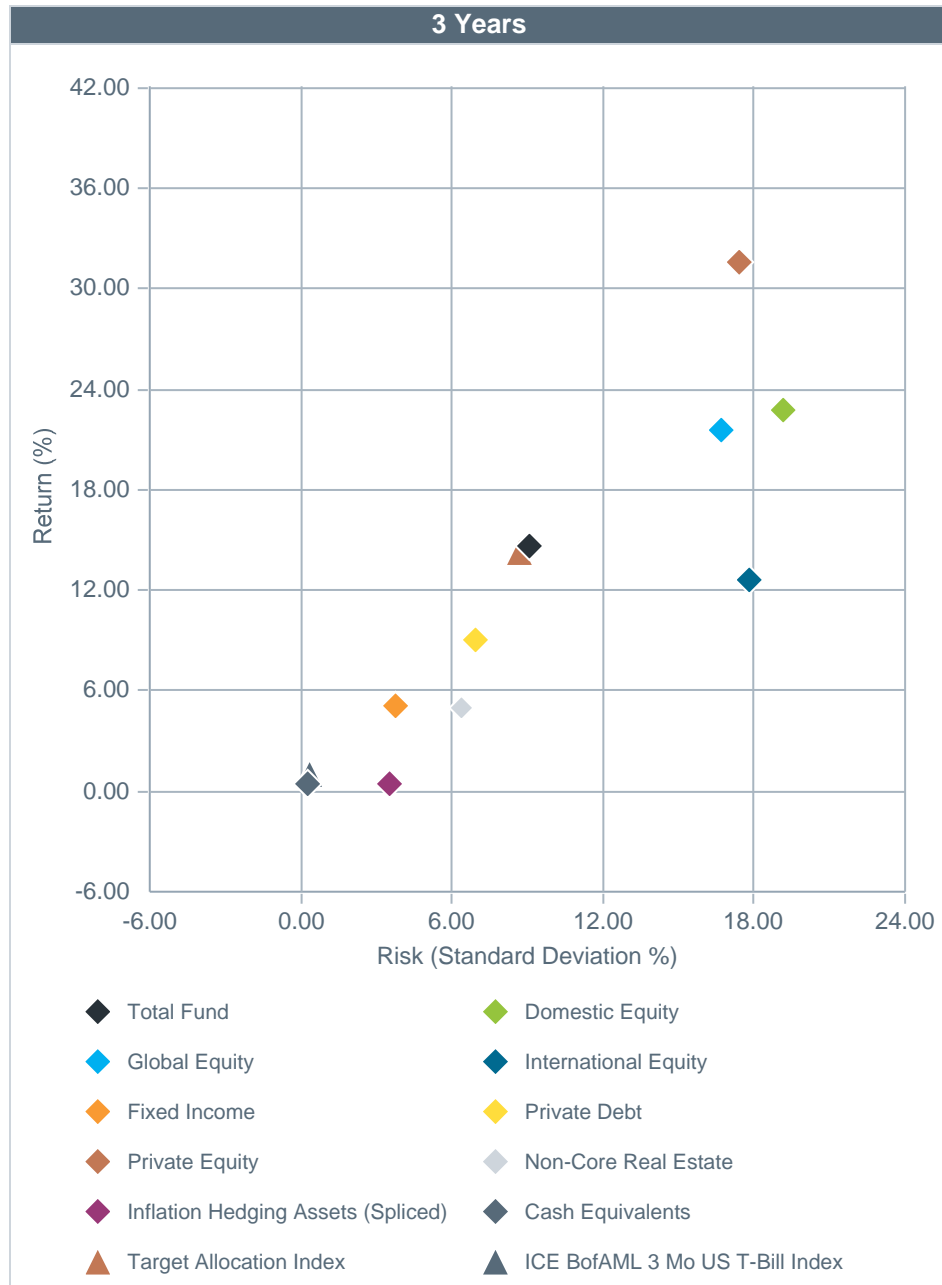


Correlation Matrix - 10 Years

	A	B	C	D
A	1.00			
B	0.64	1.00		
C	-0.17	-0.32	1.00	
D	0.57	0.77	-0.05	1.00

A = HFRI EH: Equity Market Neutral 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)

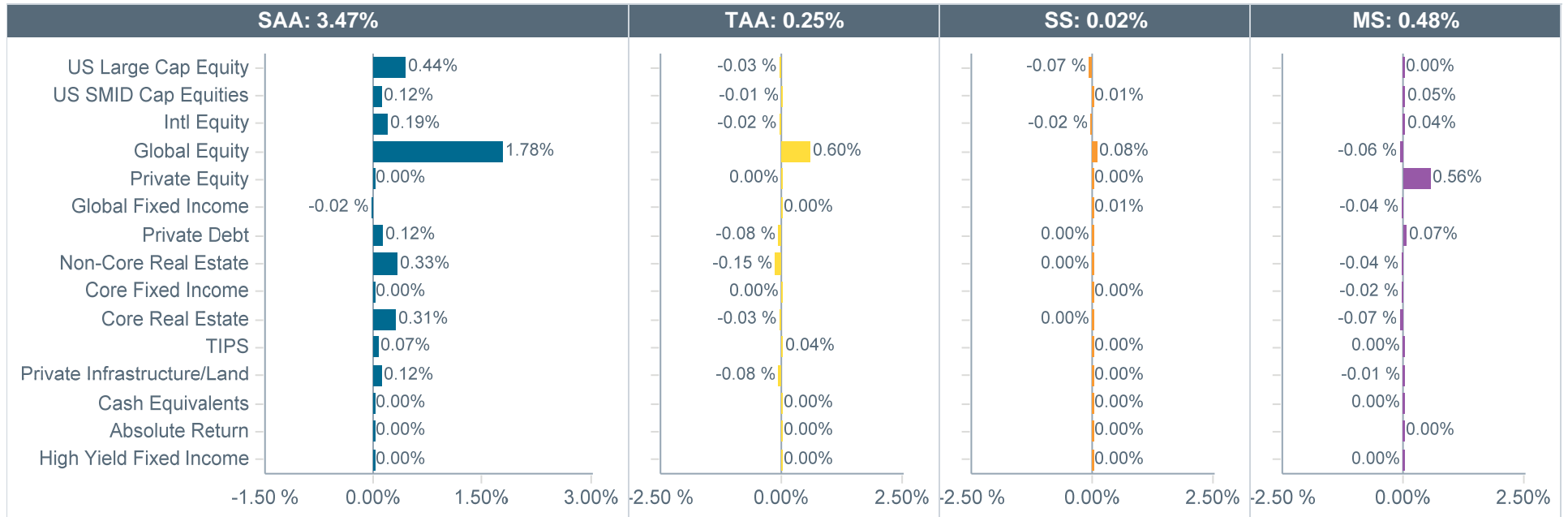
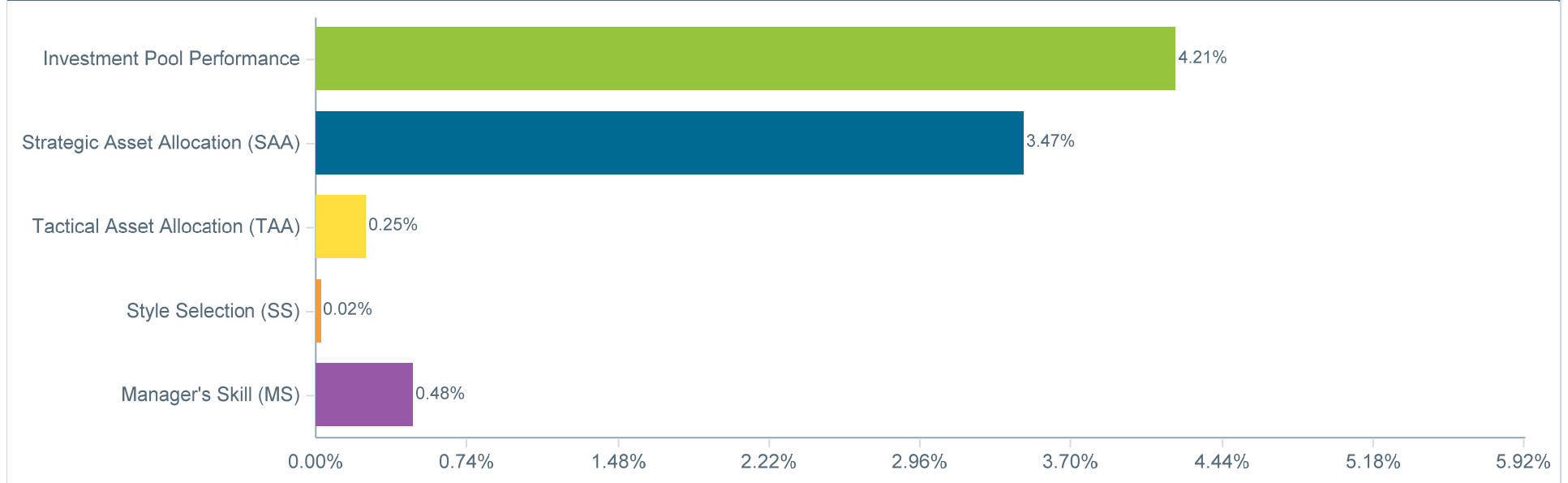
Asset Allocation by Theme is based on dedicated manager allocations; as such, thematic allocations are approximations. The RVK Liquidity Rating is calculated using beginning of month investment weights applied to each corresponding asset class liquidity rating. Please see the Glossary for additional information regarding liquidity, thematic, and custom index descriptions. Allocations may not sum to 100% due to rounding.



Performance shown is net of fees. Calculation is based on monthly periodicity. Funds or composites with less history than the specified time period will not appear in the chart.



Performance Attribution



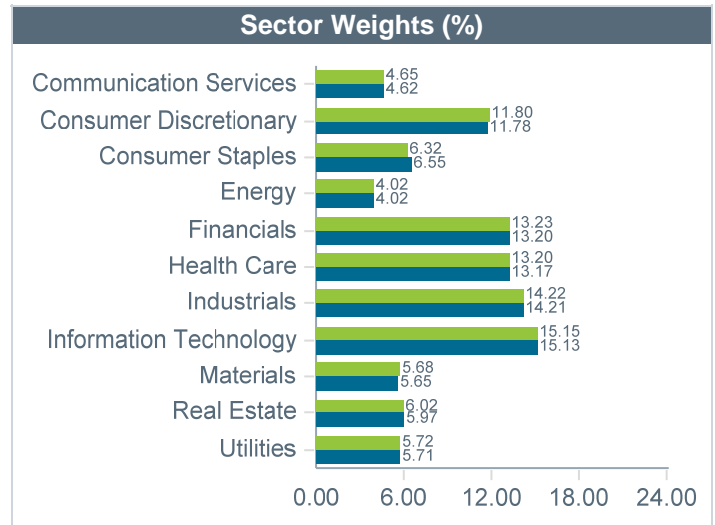
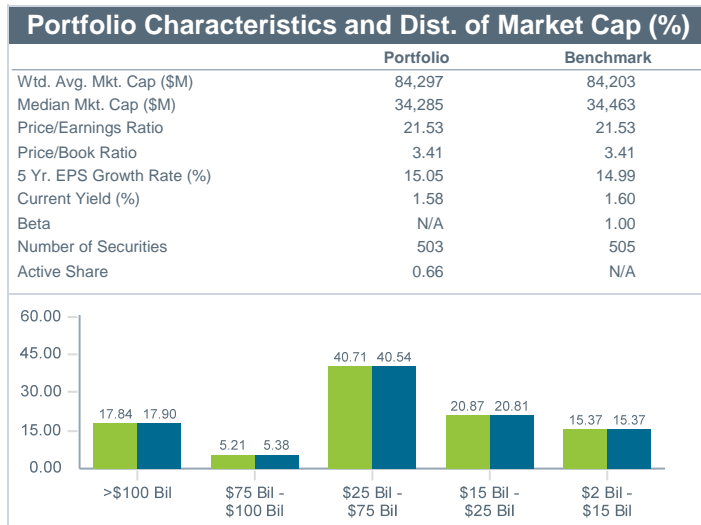
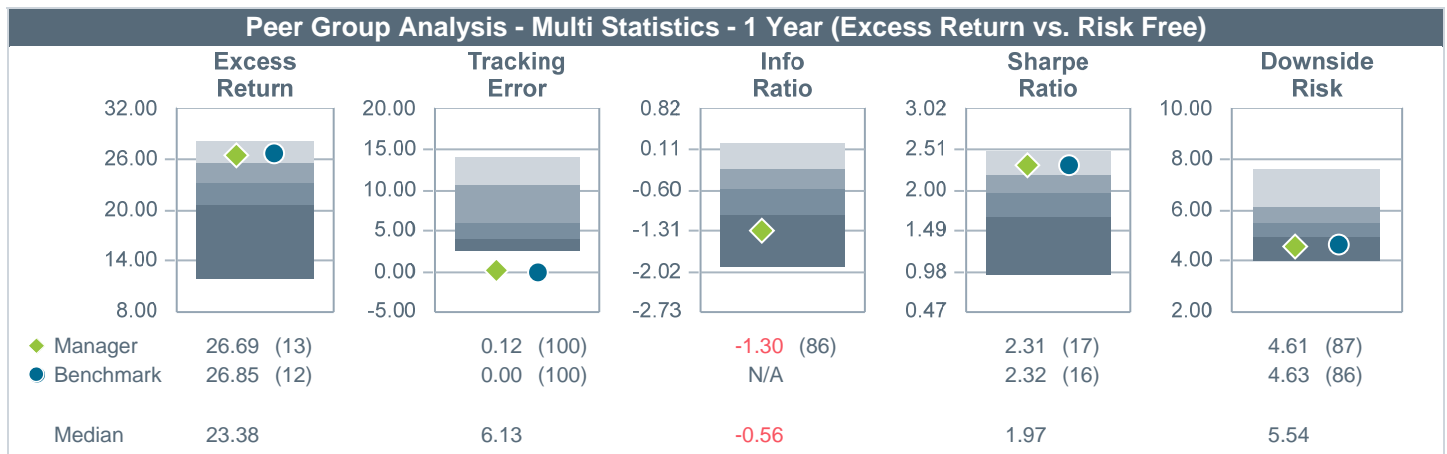
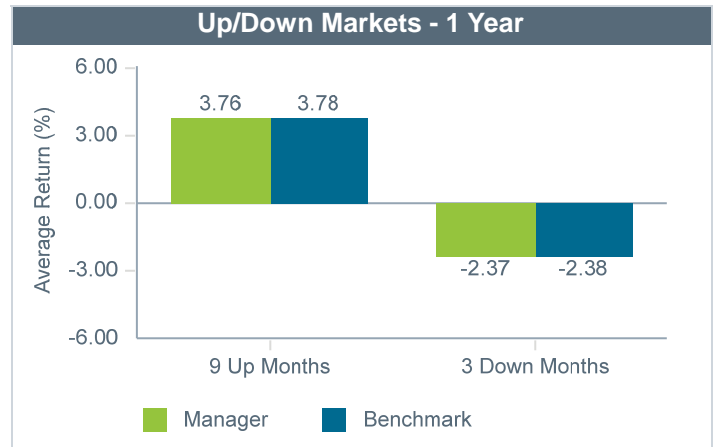
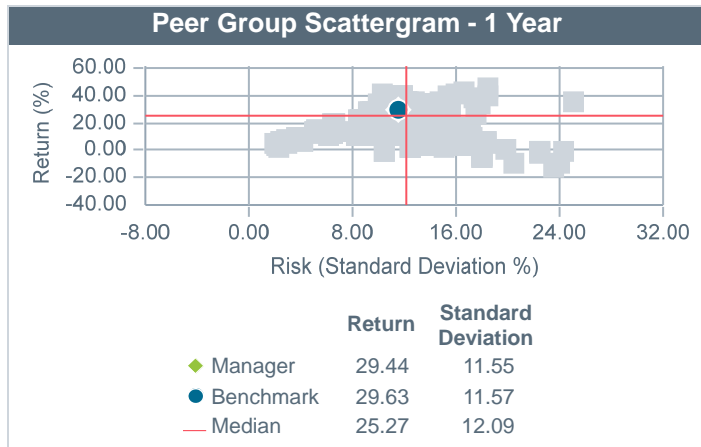
Performance shown is net of fees. Calculation is based on monthly. Private Asset market values, performance and benchmarks are valued quarterly and shown as of most recently available quarter end, adjusted for subsequent cash flows. RVK cautions that the interpretation of time-weighted data on non-marketable investments, such as Private Equity, is imperfect at best and can potentially be misleading. See Glossary for additional information regarding the Total Fund Attribution - IDP calculation.



Investment Manager Profiles



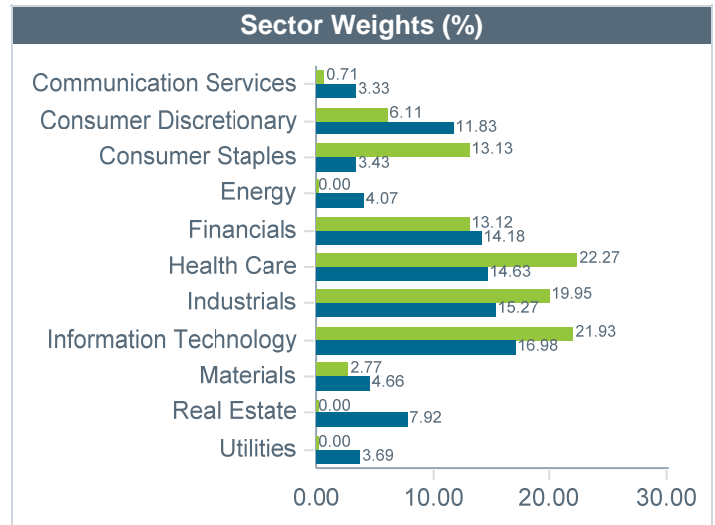
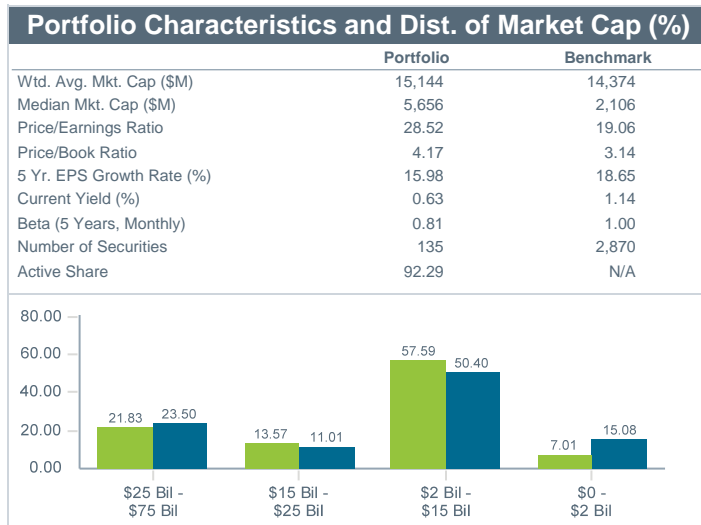
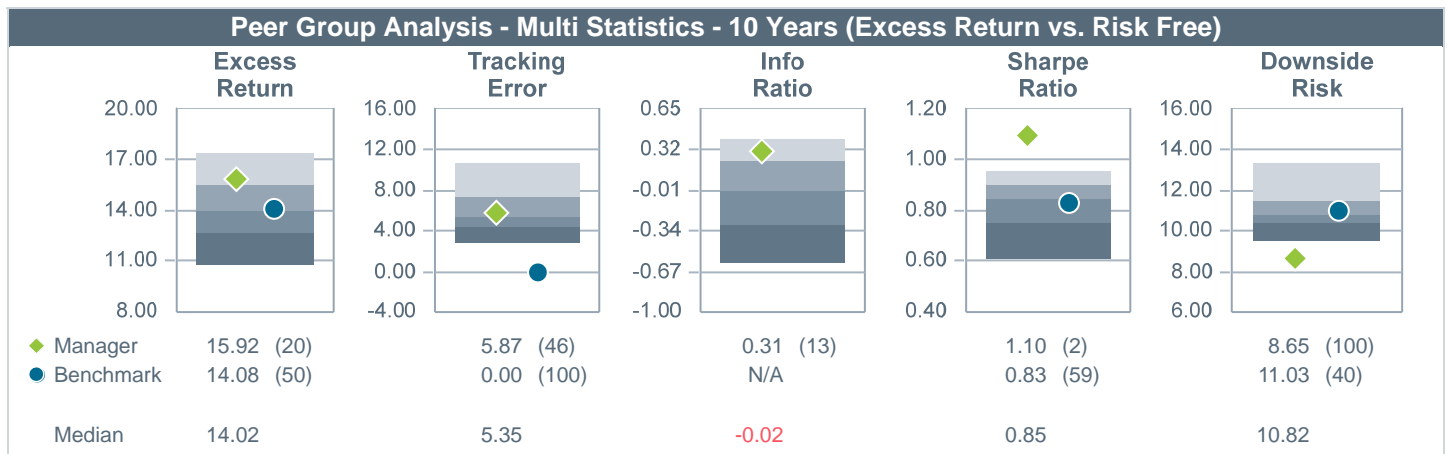
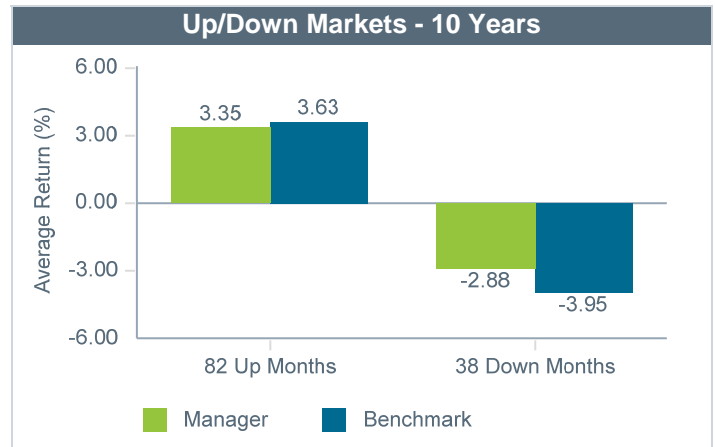
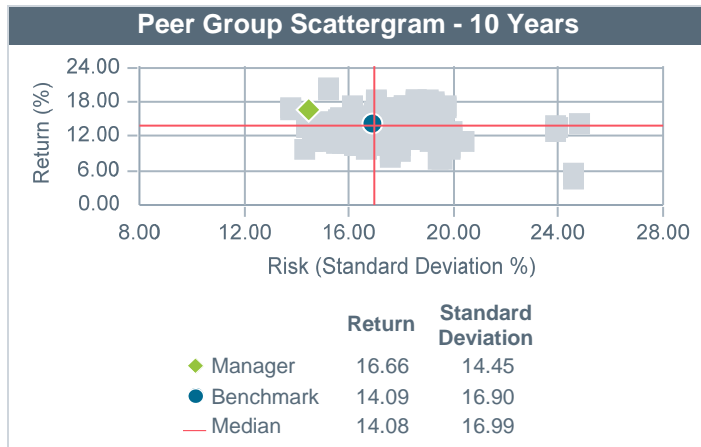
Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
Manager	9.01	29.44	N/A	N/A	N/A	N/A	13.03	N/A	N/A	N/A	N/A
Benchmark	9.01	29.63	23.64	15.73	12.85	15.63	12.83	29.24	-7.64	18.90	14.80
Difference	0.00	-0.19	N/A	N/A	N/A	N/A	0.20	N/A	N/A	N/A	N/A
Peer Group Median	8.69	25.27	24.94	17.52	13.78	15.54	18.34	30.00	-5.02	21.89	9.05
Rank	46	13	N/A	N/A	N/A	N/A	64	N/A	N/A	N/A	N/A
Population	1,949	1,890	1,712	1,533	1,359	1,190	1,868	1,847	1,862	1,791	1,706



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



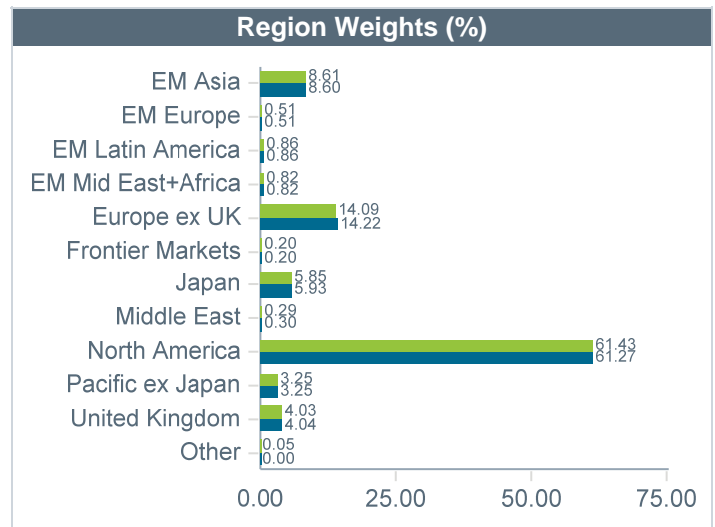
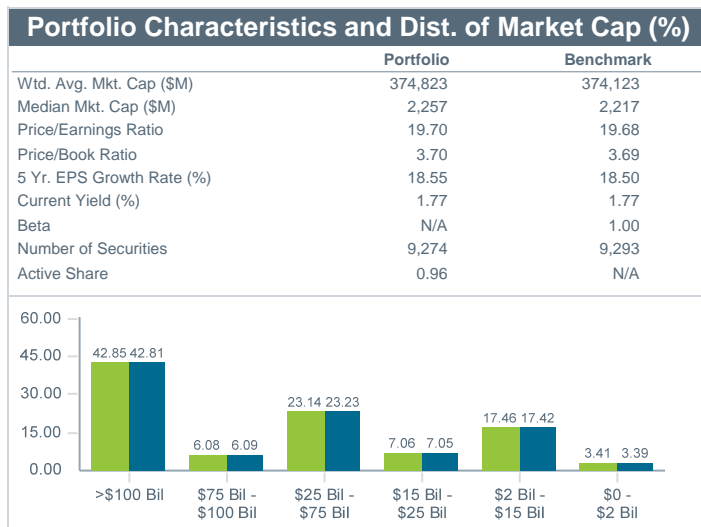
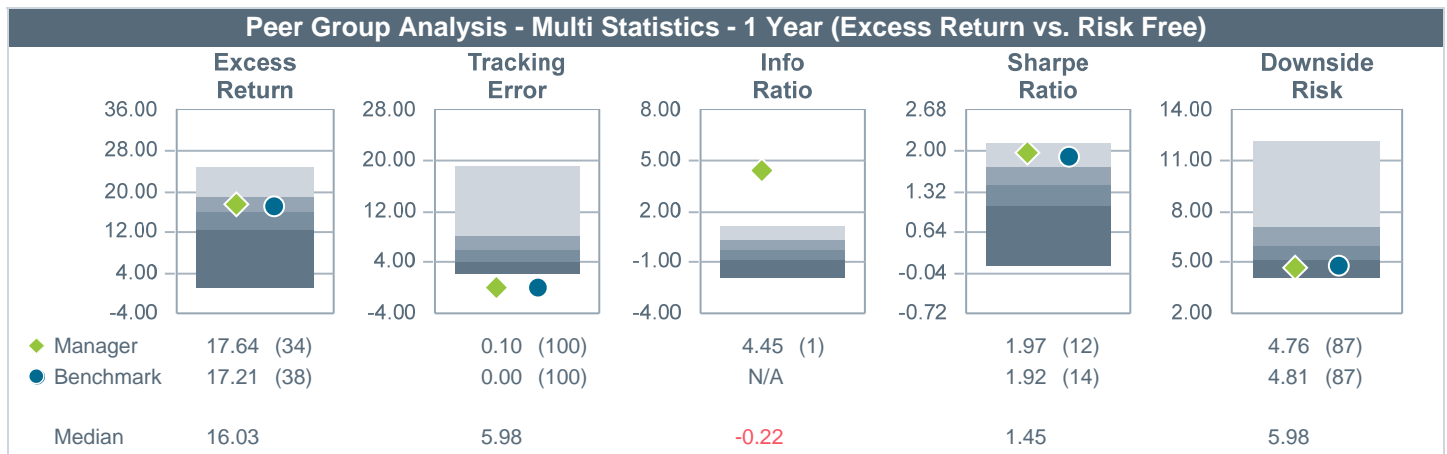
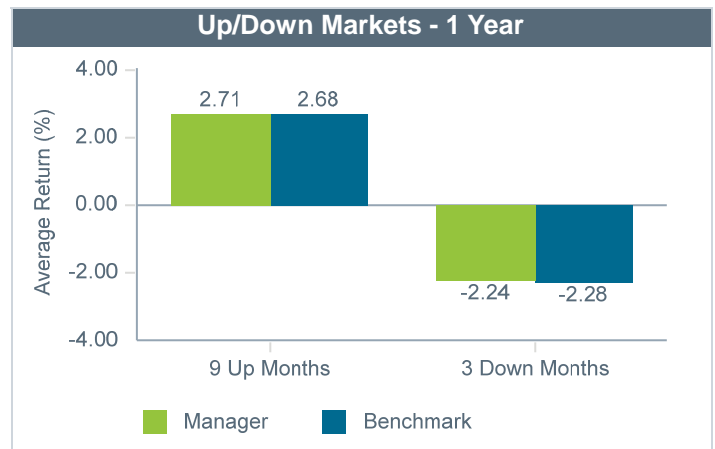
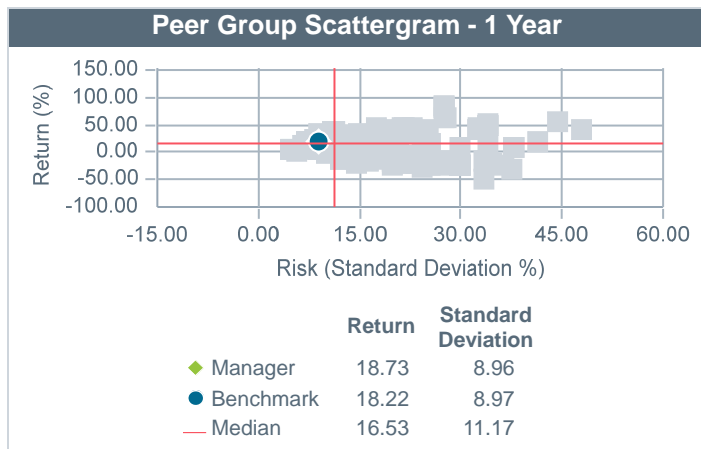
Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
Manager	5.90	19.93	24.80	18.04	15.72	16.66	27.32	27.29	0.47	17.33	19.16
Benchmark	4.27	18.74	21.74	13.11	11.71	14.09	19.99	26.65	-10.50	14.67	22.77
Difference	1.63	1.19	3.06	4.93	4.01	2.57	7.33	0.64	10.97	2.66	-3.61
Peer Group Median	5.19	19.23	22.02	14.49	11.95	14.08	20.27	27.56	-10.18	17.90	14.58
Rank	44	49	35	30	12	16	41	53	9	53	25
Population	462	456	431	392	334	285	466	490	489	462	425



Performance shown is net of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. The Custom SMID Cap Equity Index currently consists of 50% Russell Midcap Index and 50% Russell 2000 index. From 08/2020 through 12/2020 it consisted of 50% Russell 2500 index and 50% Russell 2000 index. Prior data was provided by the previous consultant.



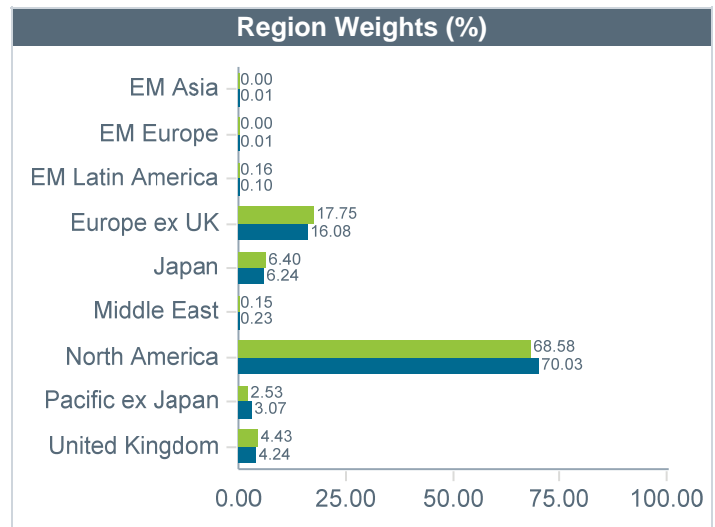
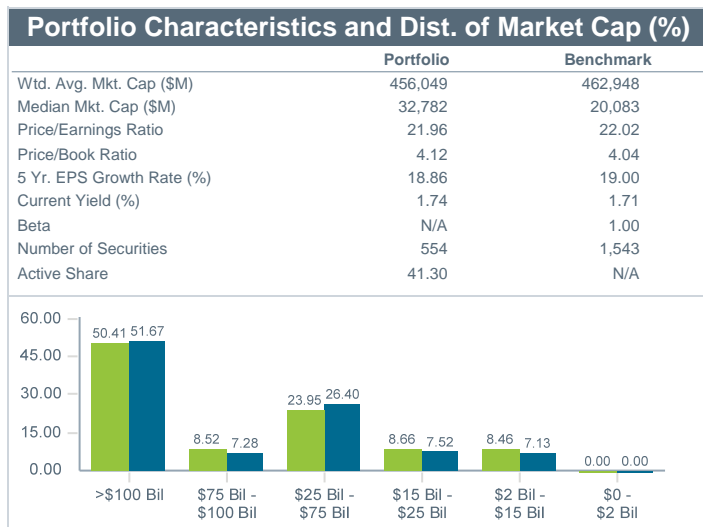
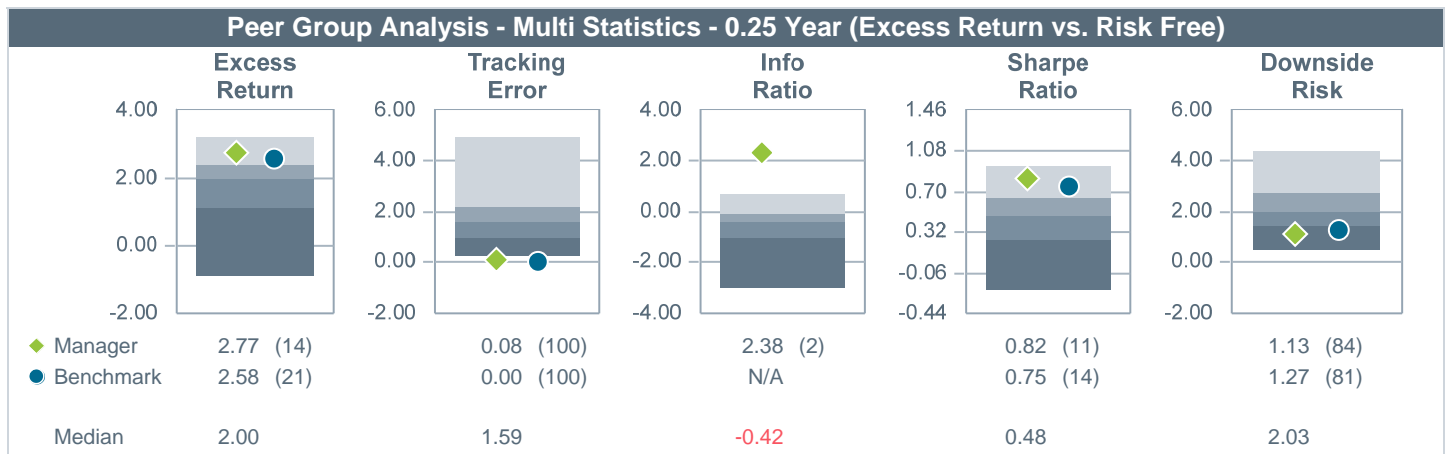
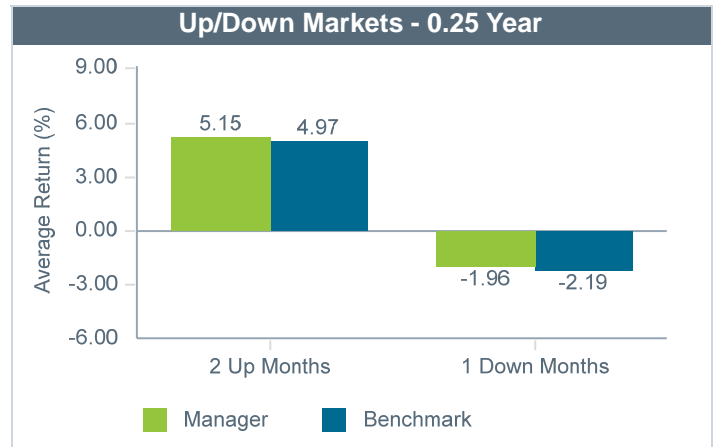
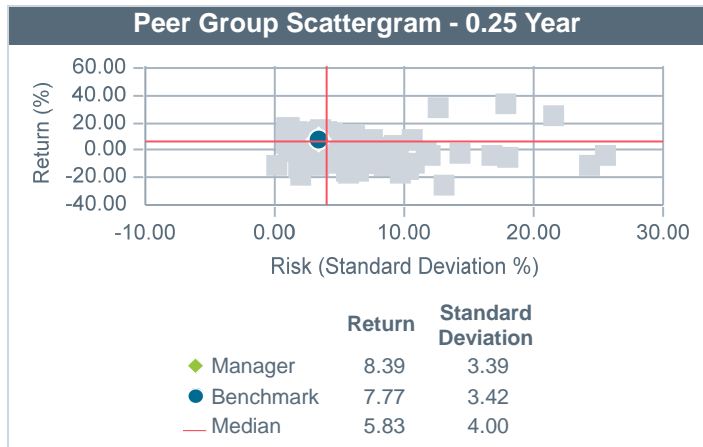
Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
Manager	6.18	18.73	N/A	N/A	N/A	N/A	16.77	N/A	N/A	N/A	N/A
Benchmark	6.10	18.22	20.20	14.12	10.81	11.84	16.25	26.35	-10.08	23.95	8.36
Difference	0.08	0.51	N/A	N/A	N/A	N/A	0.52	N/A	N/A	N/A	N/A
Peer Group Median	5.83	16.53	19.90	13.34	9.86	11.46	15.21	26.35	-9.73	22.32	6.37
Rank	45	33	N/A	N/A	N/A	N/A	44	N/A	N/A	N/A	N/A
Population	1,475	1,393	1,201	1,008	857	631	1,356	1,396	1,395	1,307	1,190



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



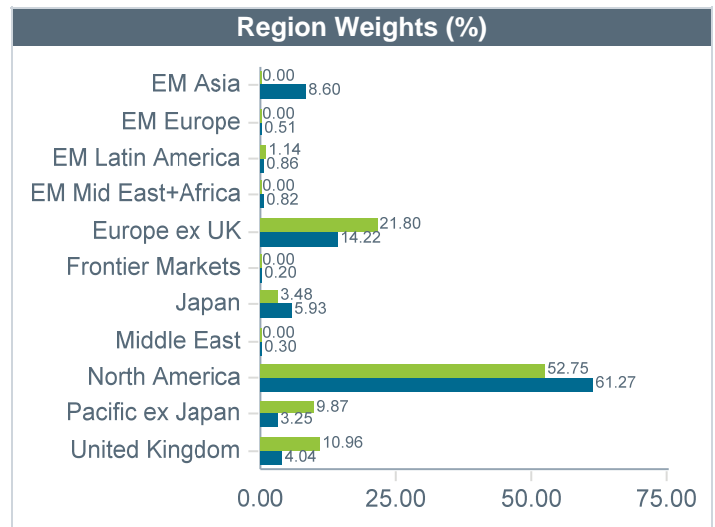
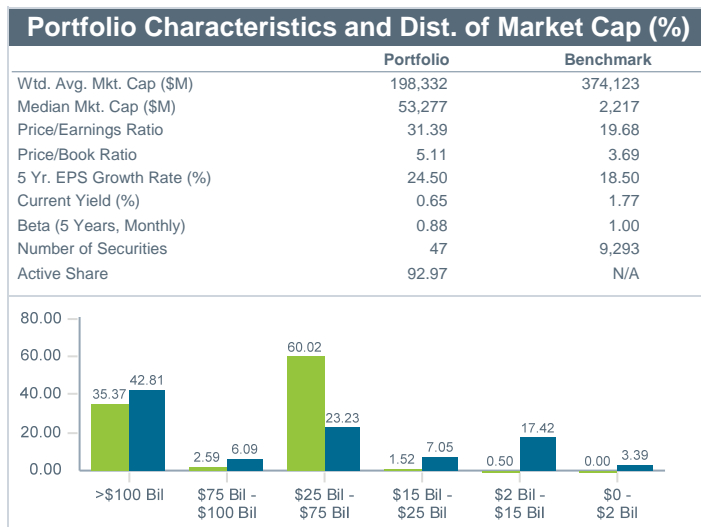
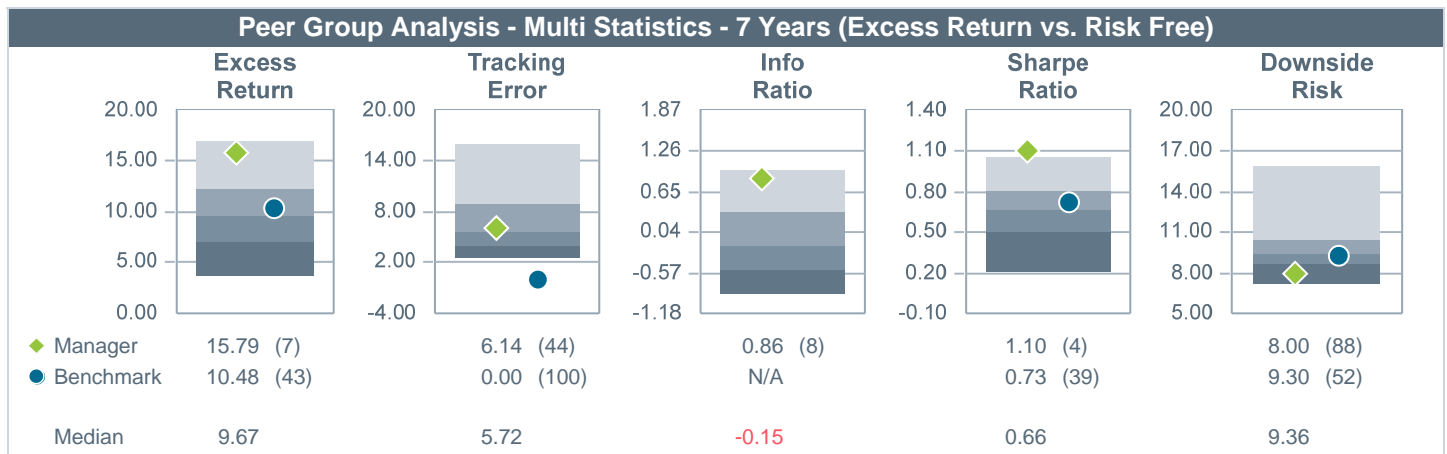
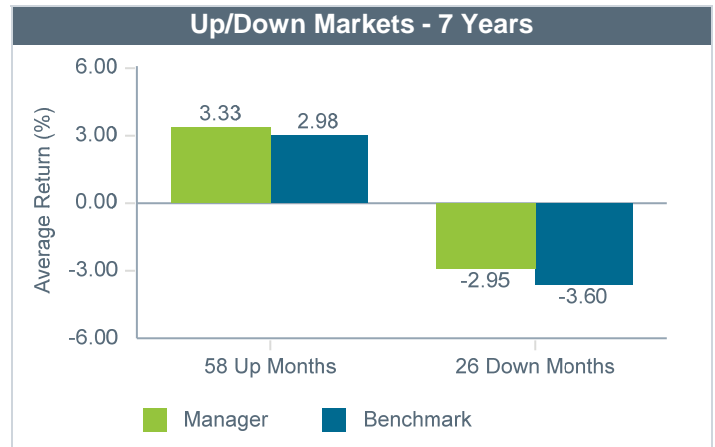
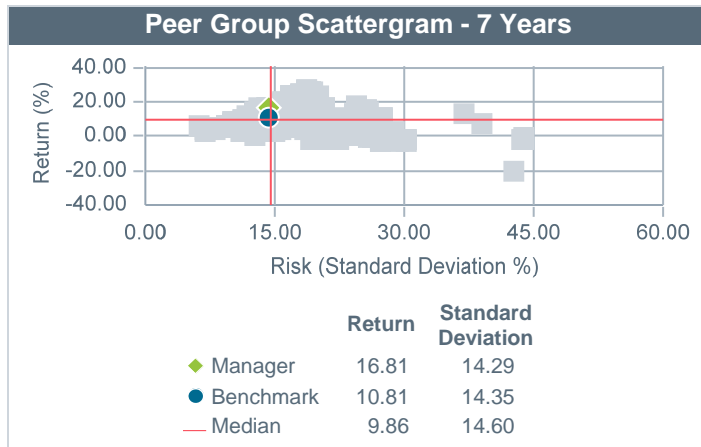
Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
Manager	8.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benchmark	7.77	21.82	21.70	15.03	11.53	12.70	15.90	27.67	-8.71	22.40	7.51
Difference	0.62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A



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



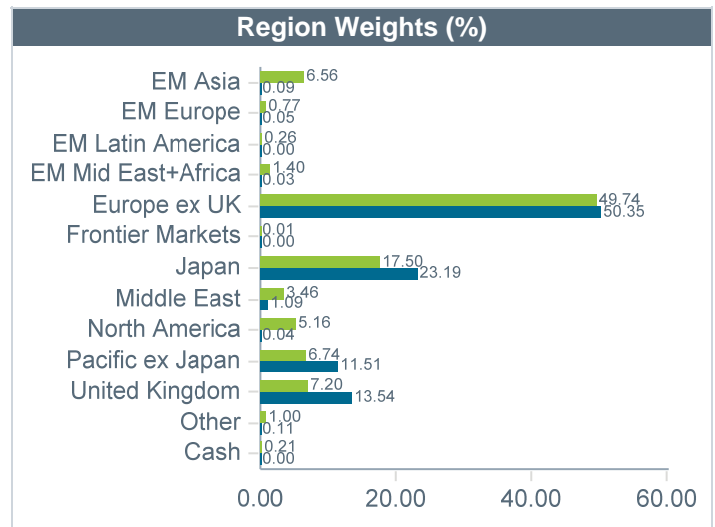
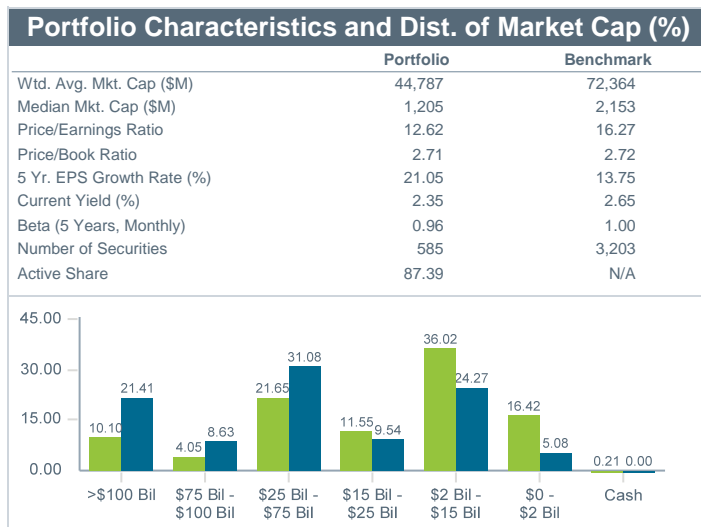
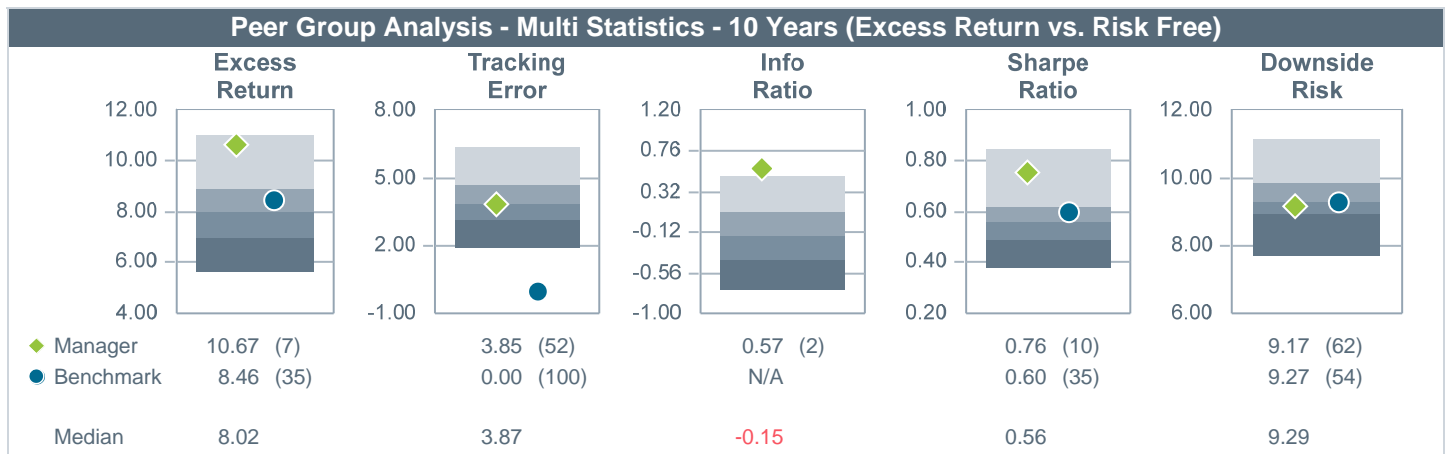
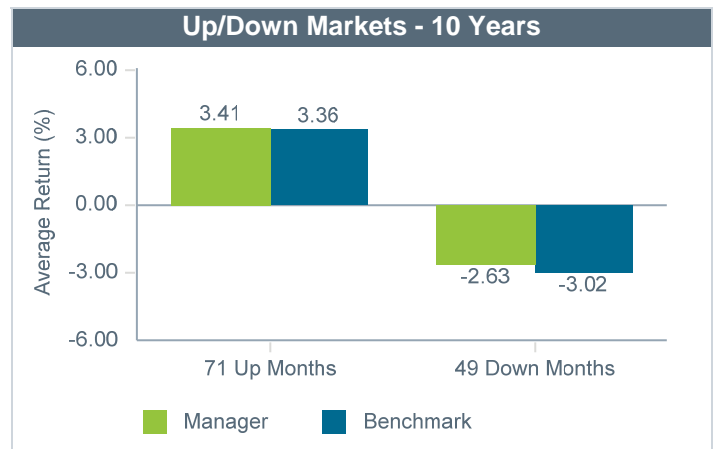
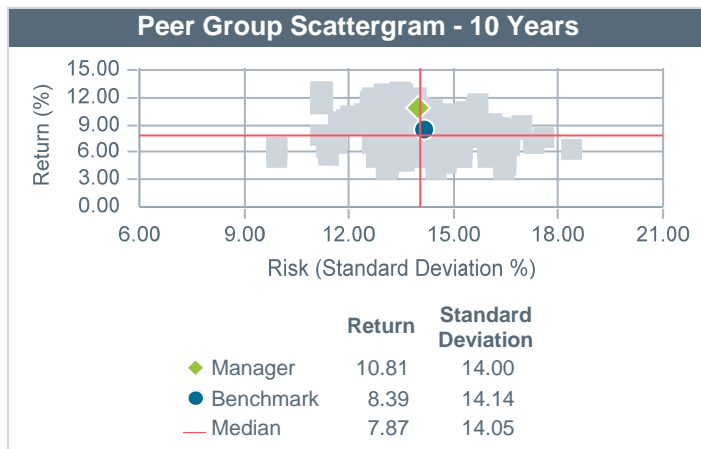
Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
Manager	4.56	14.10	29.58	21.21	16.81	N/A	40.32	35.89	-8.68	31.69	4.77
Benchmark	6.10	18.22	20.20	14.12	10.81	11.84	16.25	26.35	-10.08	23.95	8.36
Difference	-1.54	-4.12	9.38	7.09	6.00	N/A	24.07	9.54	1.40	7.74	-3.59
Peer Group Median	5.83	16.53	19.90	13.34	9.86	11.46	15.21	26.35	-9.73	22.32	6.37
Rank	61	65	11	9	6	N/A	14	6	38	12	64
Population	1,475	1,393	1,201	1,008	857	631	1,356	1,396	1,395	1,307	1,190



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

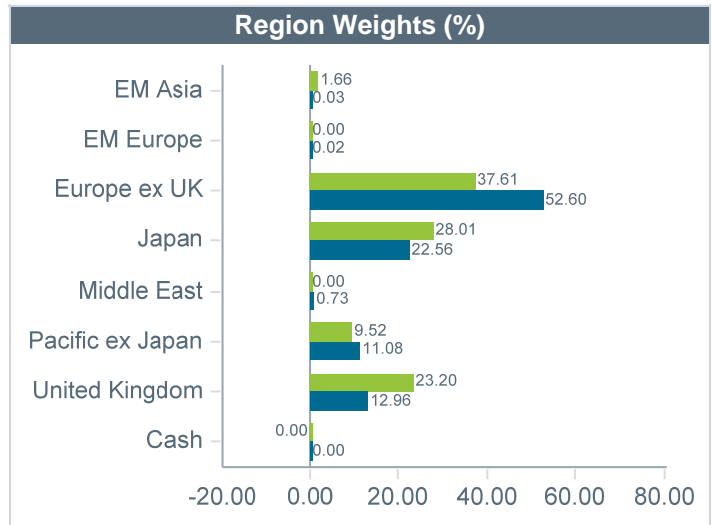
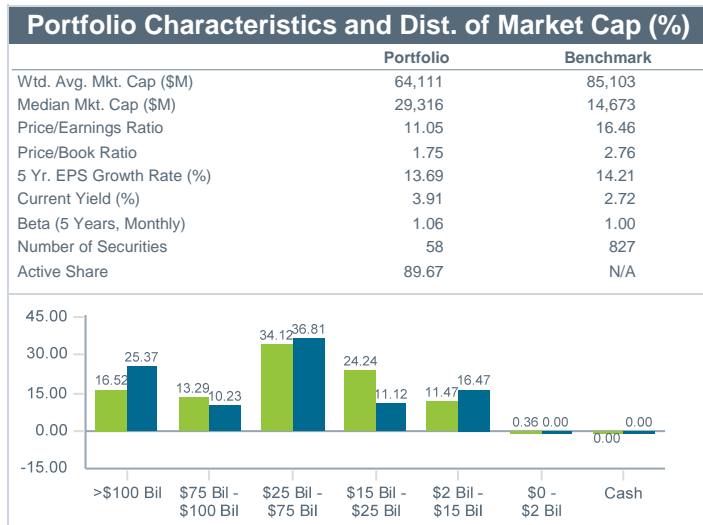
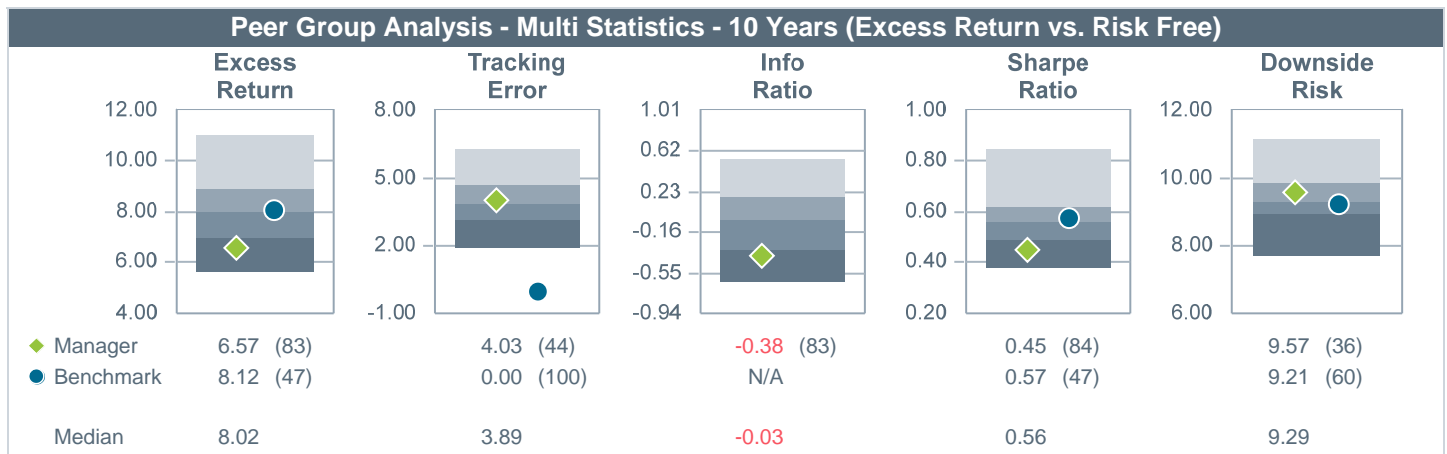
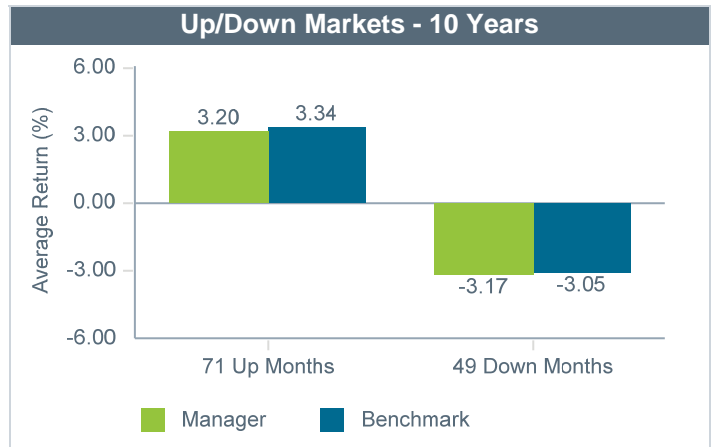
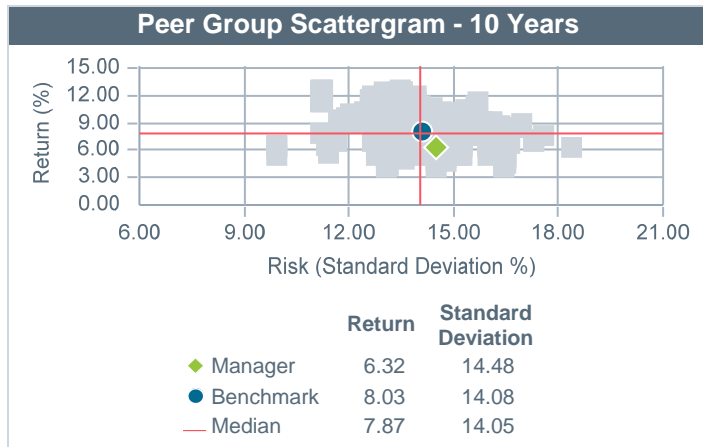


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
Manager	4.50	15.96	15.49	12.13	10.06	10.81	12.37	18.22	-15.89	36.78	7.45
Benchmark	2.28	11.08	13.84	9.76	7.13	8.39	8.47	22.44	-14.40	26.16	1.15
Difference	2.22	4.88	1.65	2.37	2.93	2.42	3.90	-4.22	-1.49	10.62	6.30
Peer Group Median	2.93	10.79	13.49	9.29	6.47	7.87	8.17	21.59	-15.91	25.26	0.09
Rank	13	8	33	20	7	7	33	78	50	3	4
Population	558	557	557	557	484	400	596	642	671	698	669



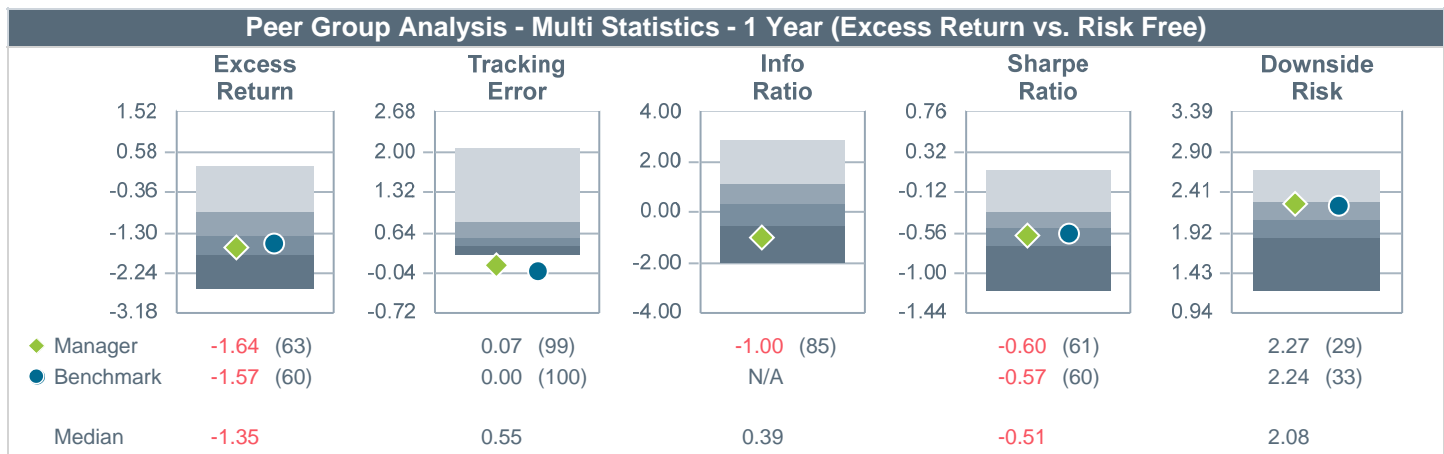
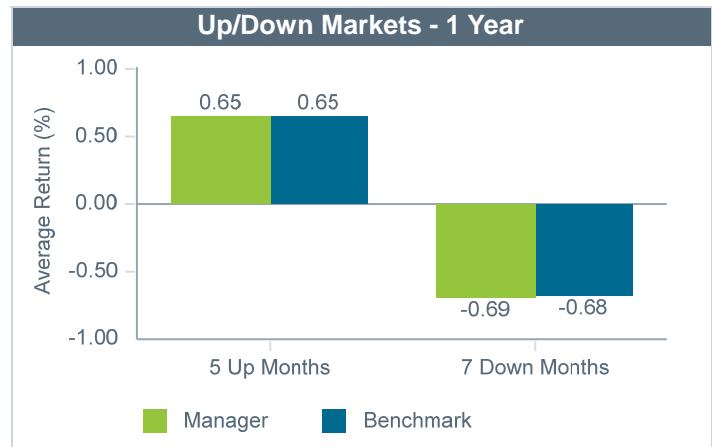
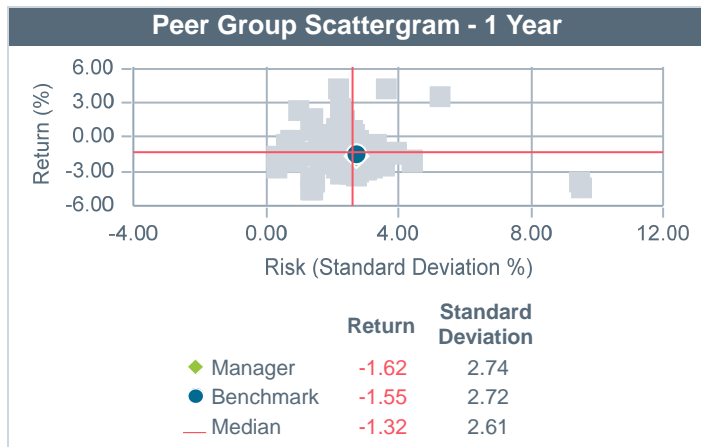
Performance shown is net of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
Manager	0.55	11.71	8.55	6.65	4.86	6.32	-4.01	19.29	-11.66	22.08	4.37
Benchmark	2.69	11.26	13.54	9.55	6.76	8.03	7.82	22.01	-13.79	25.03	1.00
Difference	-2.14	0.45	-4.99	-2.90	-1.90	-1.71	-11.83	-2.72	2.13	-2.95	3.37
Peer Group Median	2.93	10.79	13.49	9.29	6.47	7.87	8.17	21.59	-15.91	25.26	0.09
Rank	87	35	97	85	82	83	98	69	14	85	8
Population	558	557	557	557	484	400	596	642	671	698	669



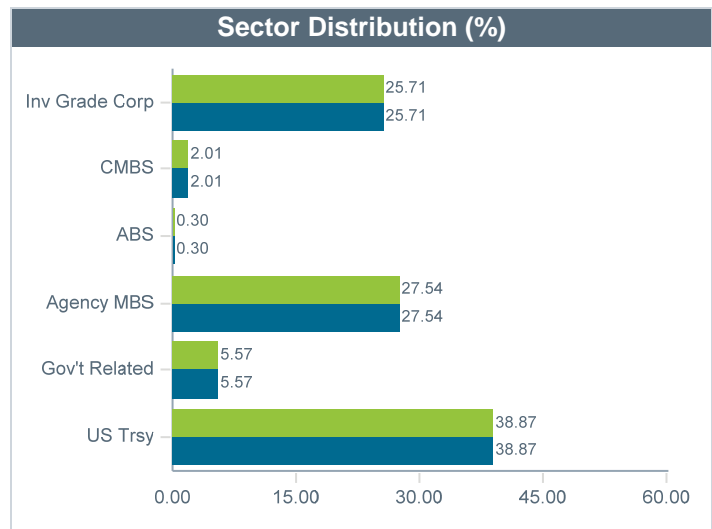
Performance shown is net of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
Manager	-0.06	-1.62	N/A	N/A	N/A	N/A	7.54	N/A	N/A	N/A	N/A
Benchmark	0.01	-1.55	4.79	3.57	3.00	2.90	7.51	8.72	0.01	3.54	2.65
Difference	-0.07	-0.07	N/A	N/A	N/A	N/A	0.03	N/A	N/A	N/A	N/A
Peer Group Median	-0.14	-1.32	5.17	3.71	3.07	3.10	8.19	8.76	-0.63	3.59	2.86
Rank	35	63	N/A	N/A	N/A	N/A	71	N/A	N/A	N/A	N/A
Population	501	492	464	415	359	305	488	511	506	498	469



Portfolio Characteristics

	Portfolio	Benchmark
Effective Duration	6.78	6.78
Spread Duration	N/A	N/A
Avg. Maturity	8.71	8.71
Avg. Quality	Aa1/Aa2	Aa1/Aa2
Yield To Maturity (%)	1.76	1.76
Coupon Rate (%)	2.43	2.43
Current Yield (%)	N/A	N/A
Holdings Count	12,350	12,350



Performance shown is net of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Portfolio characteristics are proxied using benchmark statistics.

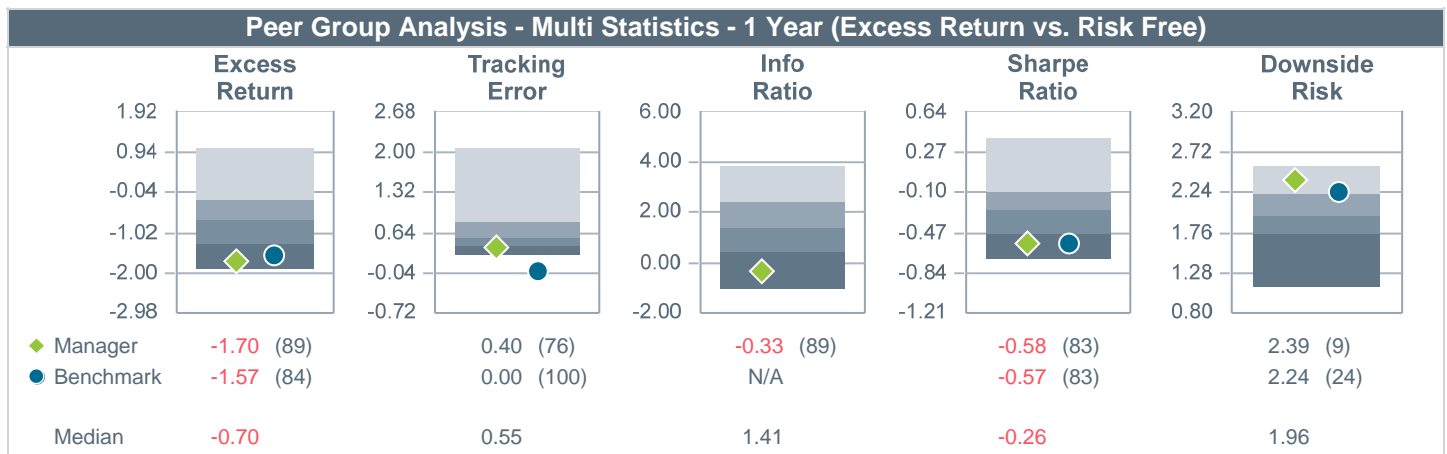
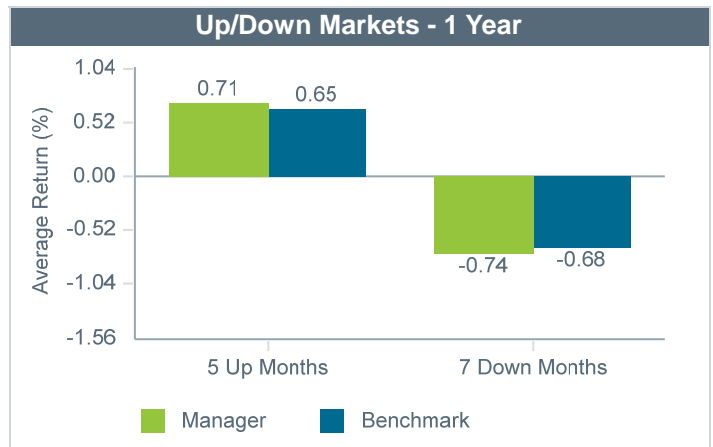
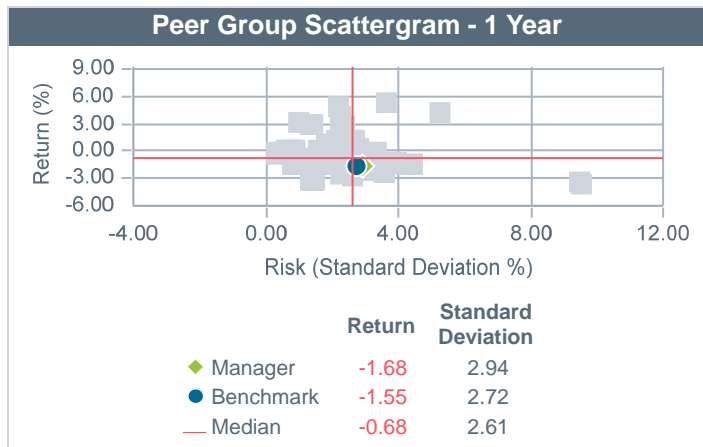
Manager: PIMCO Core (SA)

As of December 31, 2021

Benchmark: Bloomberg US Agg Bond Index

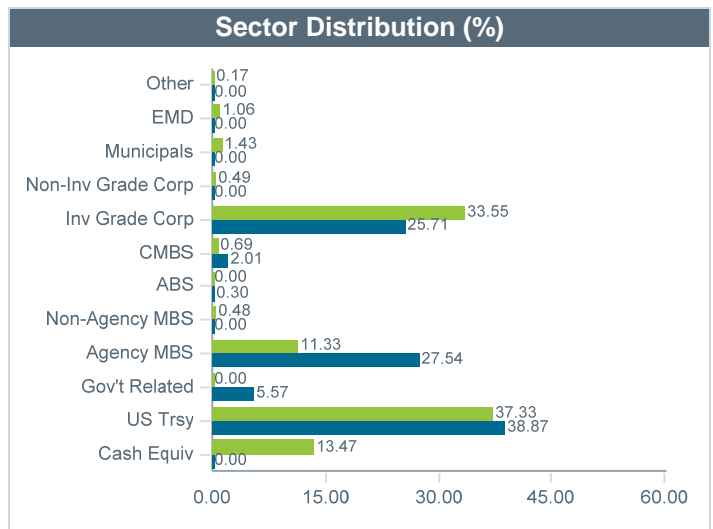
Peer Group: IM U.S. Broad Market Core Fixed Income (MF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
Manager	-0.24	-1.68	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benchmark	0.01	-1.55	4.79	3.57	3.00	2.90	7.51	8.72	0.01	3.54	2.65
Difference	-0.25	-0.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Peer Group Median	0.17	-0.68	5.87	4.33	3.79	3.87	8.99	9.56	-0.01	4.36	3.49
Rank	90	89	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Population	501	492	464	415	359	305	488	511	506	498	469



Portfolio Characteristics

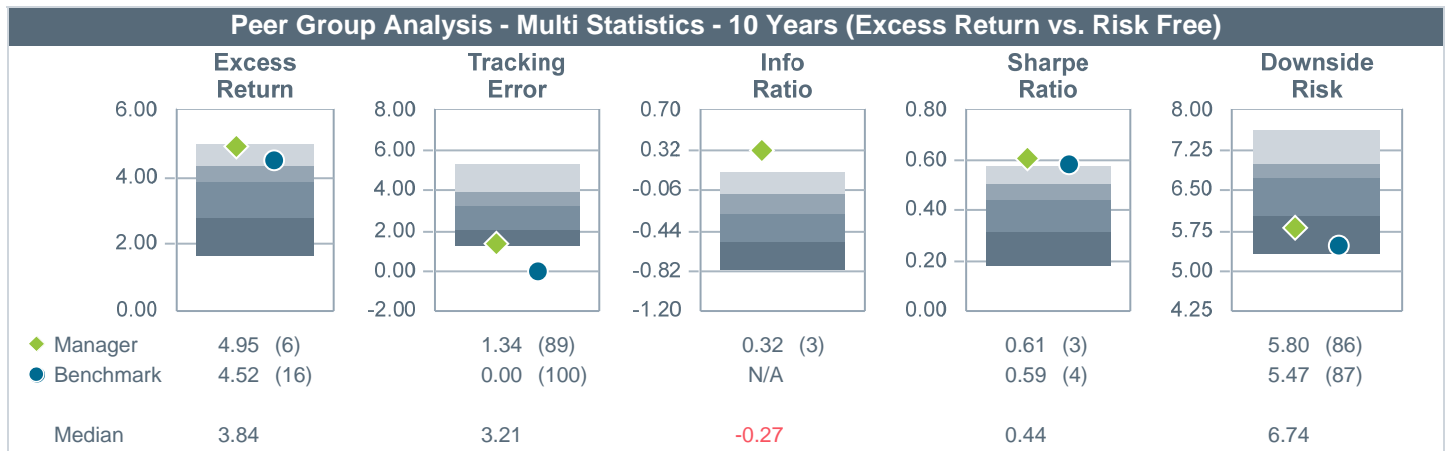
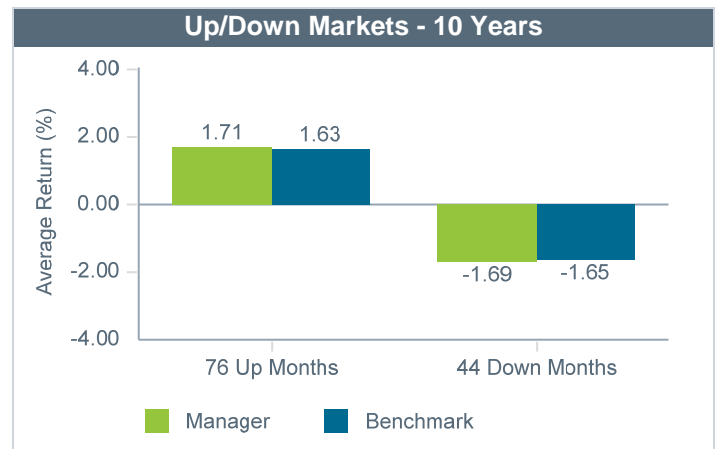
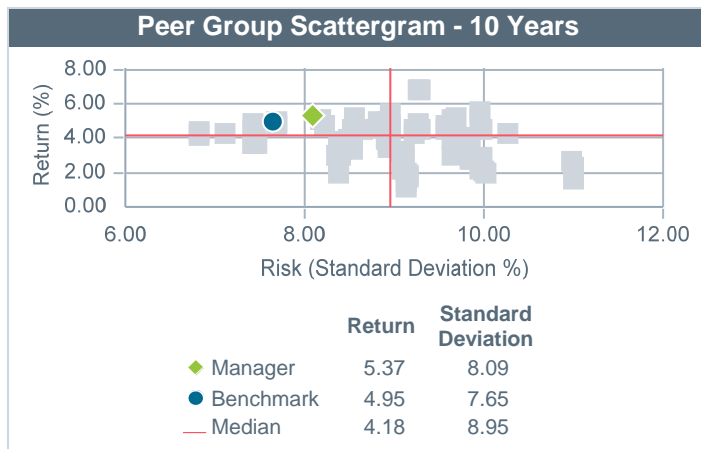
	Portfolio	Benchmark
Effective Duration	5.76	6.78
Spread Duration	4.12	N/A
Avg. Maturity	7.11	8.71
Avg. Quality	AA	Aa1/Aa2
Yield To Maturity (%)	1.69	1.76
Coupon Rate (%)	2.01	2.43
Current Yield (%)	1.94	N/A
Holdings Count	286	12,350



Performance shown is net of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Allocation to "other" consists of Euro/Yankees.

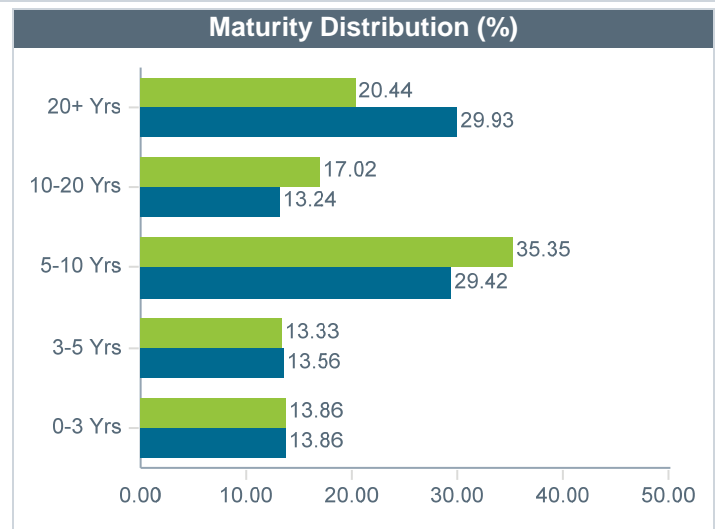


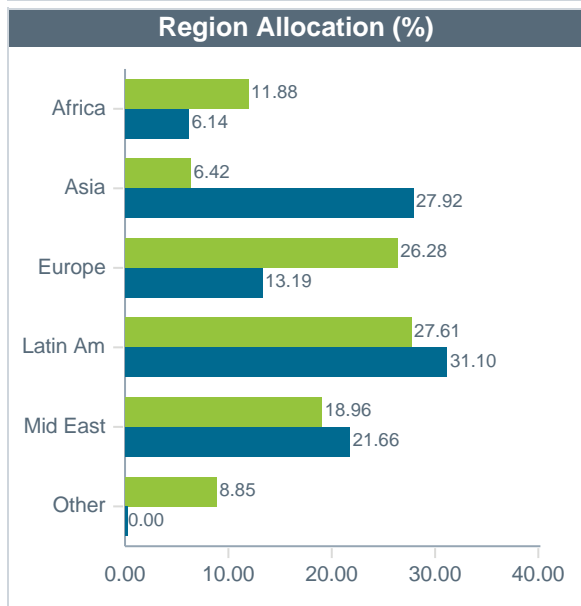
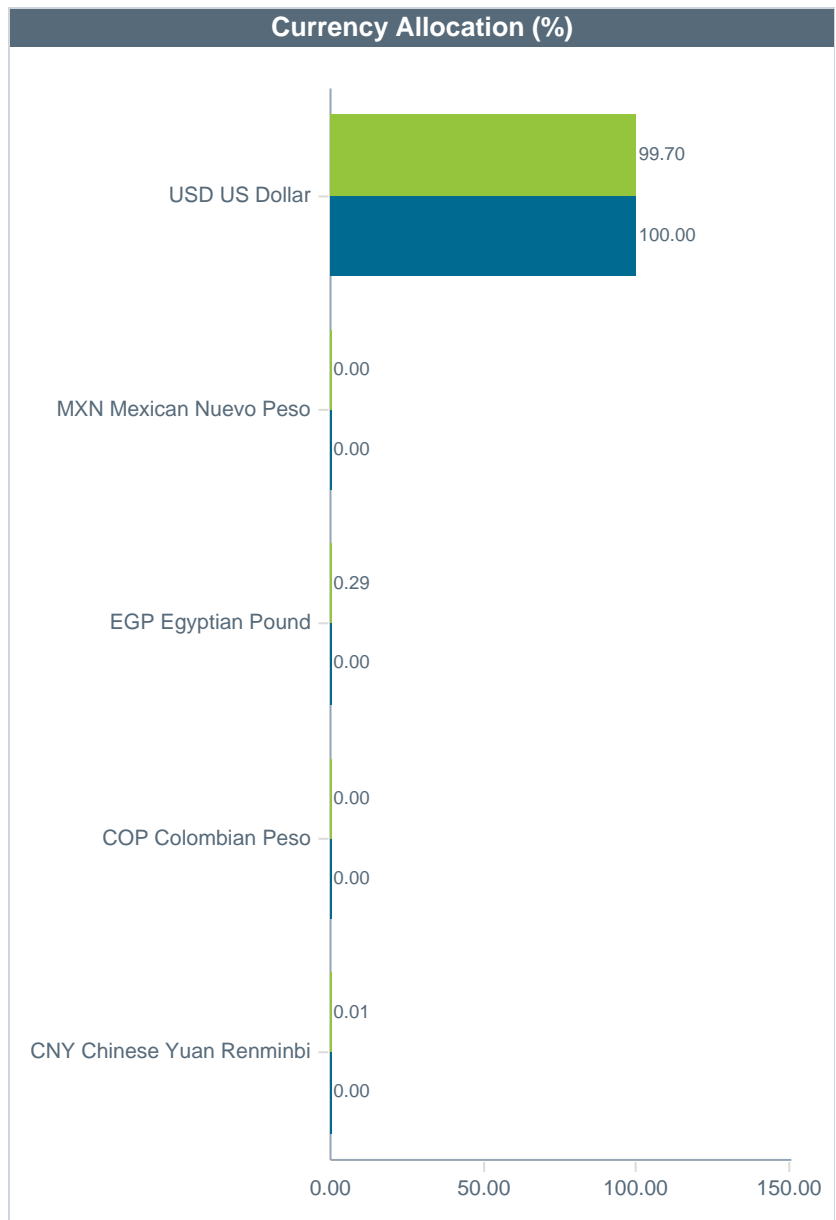
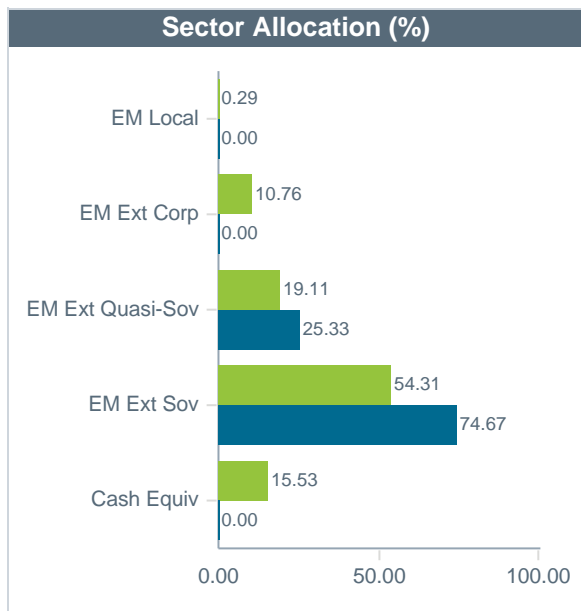
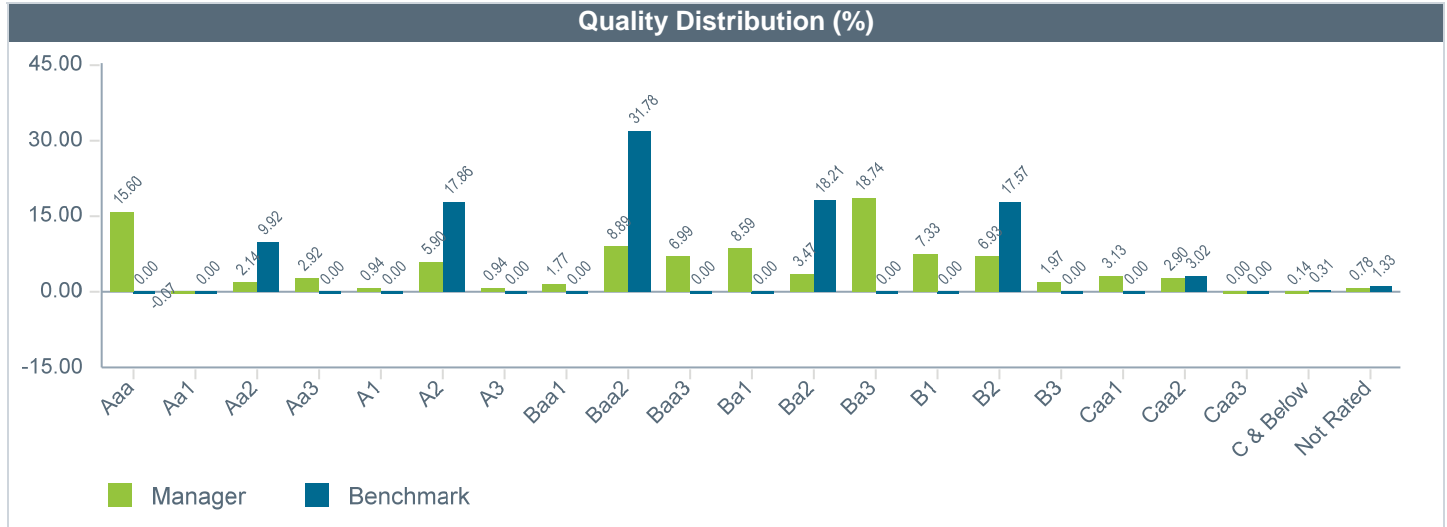
Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
Manager	-1.05	-3.32	6.44	4.67	4.97	5.37	7.69	15.84	-5.78	10.56	12.85
Benchmark	0.02	-1.51	6.06	4.47	4.79	4.95	5.88	14.42	-4.61	9.32	10.19
Difference	-1.07	-1.81	0.38	0.20	0.18	0.42	1.81	1.42	-1.17	1.24	2.66
Peer Group Median	-1.25	-2.99	5.44	4.08	4.04	4.18	5.57	13.58	-5.92	10.49	10.42
Rank	34	60	15	28	16	5	15	9	48	50	28
Population	272	263	251	220	168	85	262	274	275	265	233



Portfolio Characteristics (%)

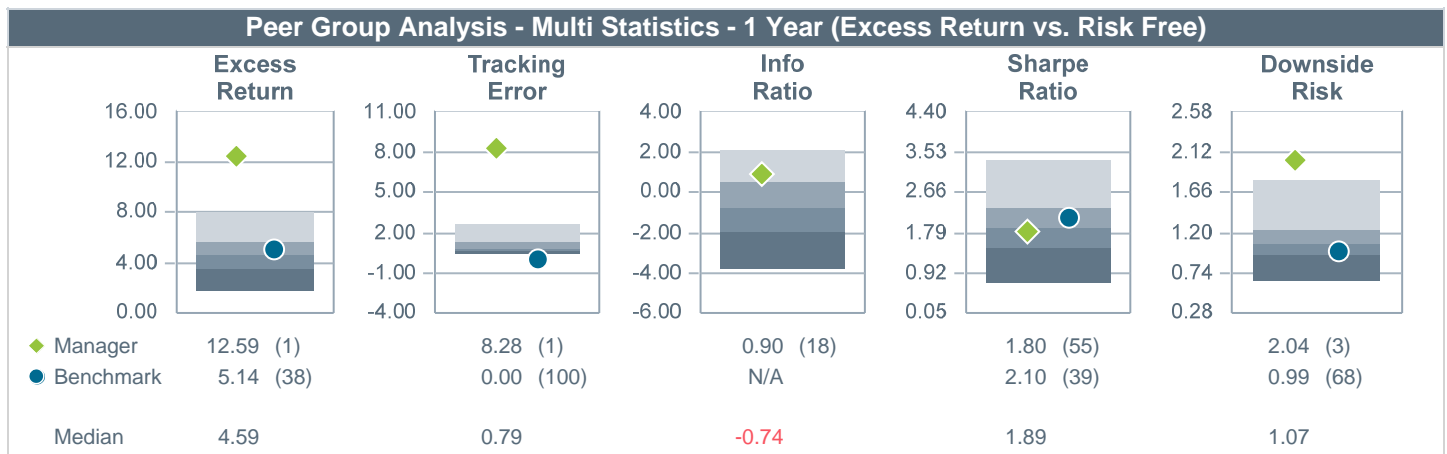
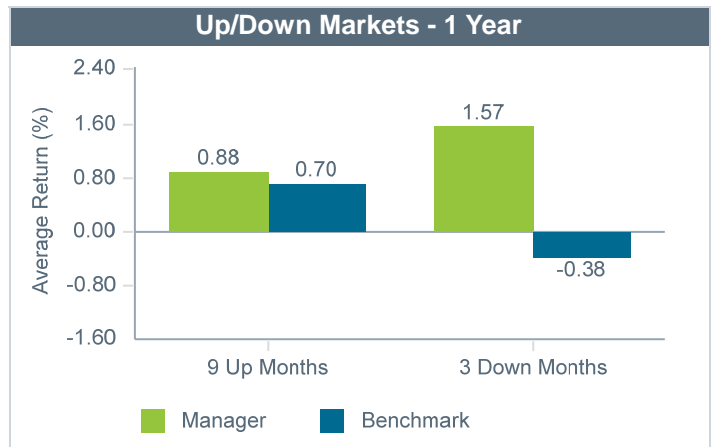
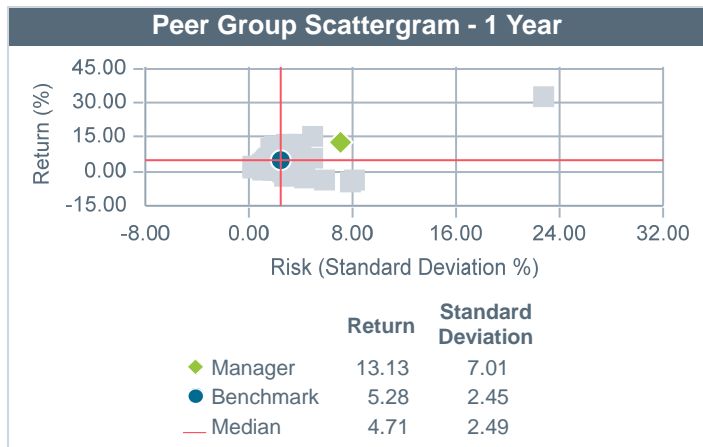
	Portfolio	Benchmark
Effective Duration	7.92	8.19
Spread Duration	7.43	8.04
Avg. Maturity	12.30	13.59
Avg. Quality	Baa3	Baa3
Yield To Maturity (%)	4.75	4.54
Coupon Rate (%)	4.31	4.71
Current Yield (%)	4.72	4.69
Holdings Count	409	961





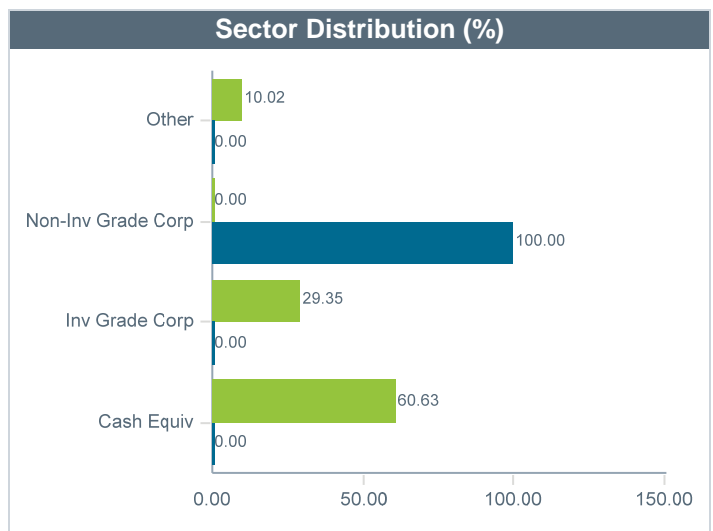
Performance shown is net of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Region allocation to other consists of cash, cash equivalents, currency forwards, EM CDX and North America. Region allocation to other consists of EM government debt.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
Manager	5.13	13.13	7.49	N/A	N/A	N/A	3.26	6.30	N/A	N/A	N/A
Benchmark	0.71	5.28	8.83	6.30	6.15	6.83	7.11	14.32	-2.08	7.50	17.13
Difference	4.42	7.85	-1.34	N/A	N/A	N/A	-3.85	-8.02	N/A	N/A	N/A
Peer Group Median	0.55	4.71	7.78	5.28	4.97	5.82	5.28	13.51	-2.91	6.65	13.52
Rank	1	1	60	N/A	N/A	N/A	81	99	N/A	N/A	N/A
Population	670	653	621	542	481	358	659	682	669	626	594



Portfolio Characteristics

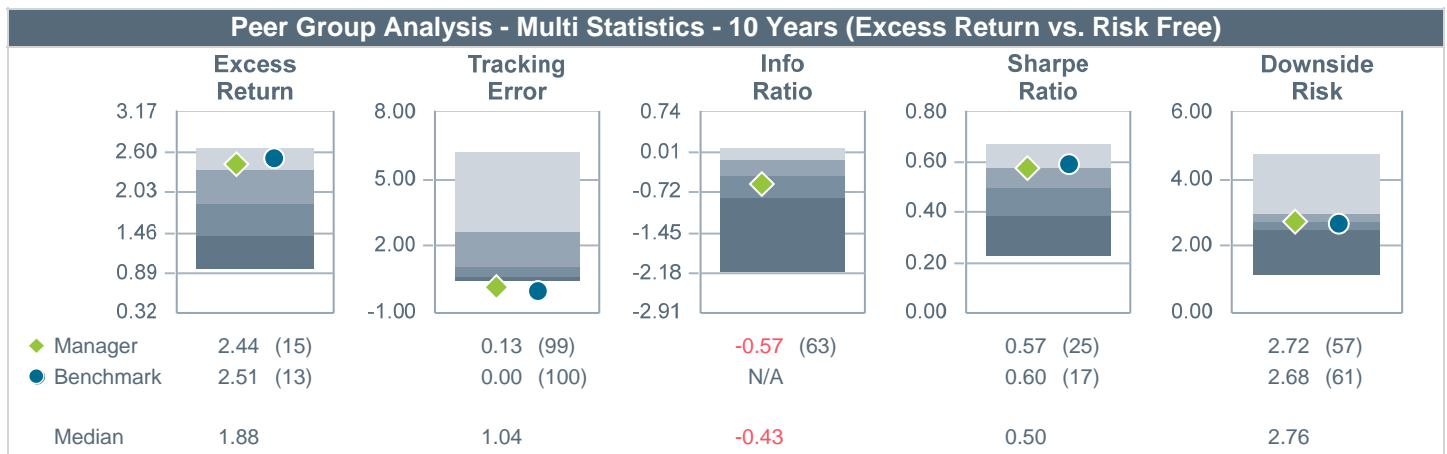
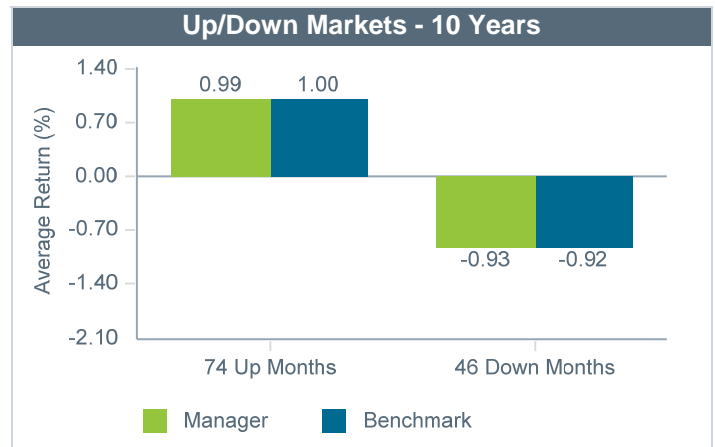
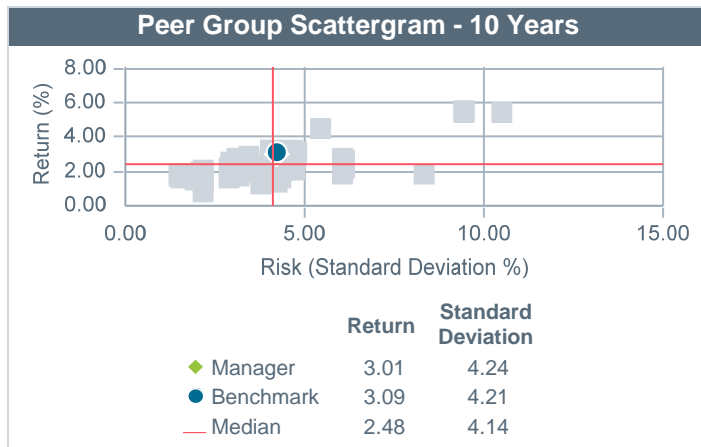
	Portfolio	Benchmark
Effective Duration	0.26	3.83
Spread Duration	6.74	3.80
Avg. Maturity	0.55	6.51
Avg. Quality	AAA	Ba3/B1
Yield To Maturity (%)	2.94	4.86
Coupon Rate (%)	2.38	5.67
Current Yield (%)	2.16	N/A
Holdings Count	9	2,235



Performance shown is net of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Allocation to other consists of common stock.

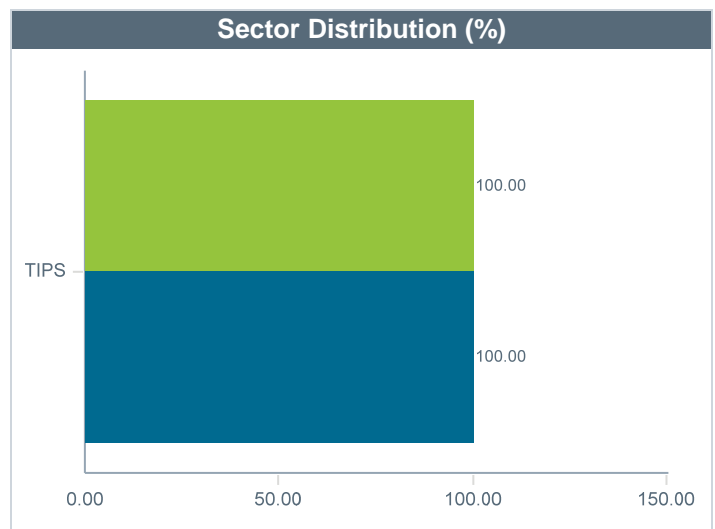


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
Manager	2.28	5.81	8.35	5.26	4.20	3.01	10.97	8.33	-1.36	2.98	4.67
Benchmark	2.36	5.96	8.44	5.34	4.25	3.09	10.99	8.43	-1.26	3.01	4.68
Difference	-0.08	-0.15	-0.09	-0.08	-0.05	-0.08	-0.02	-0.10	-0.10	-0.03	-0.01
Peer Group Median	1.71	5.29	7.50	4.56	3.46	2.48	9.64	7.53	-1.57	2.62	4.39
Rank	14	30	22	17	14	15	26	25	42	31	38
Population	212	208	201	176	146	118	206	221	227	228	220



Portfolio Characteristics

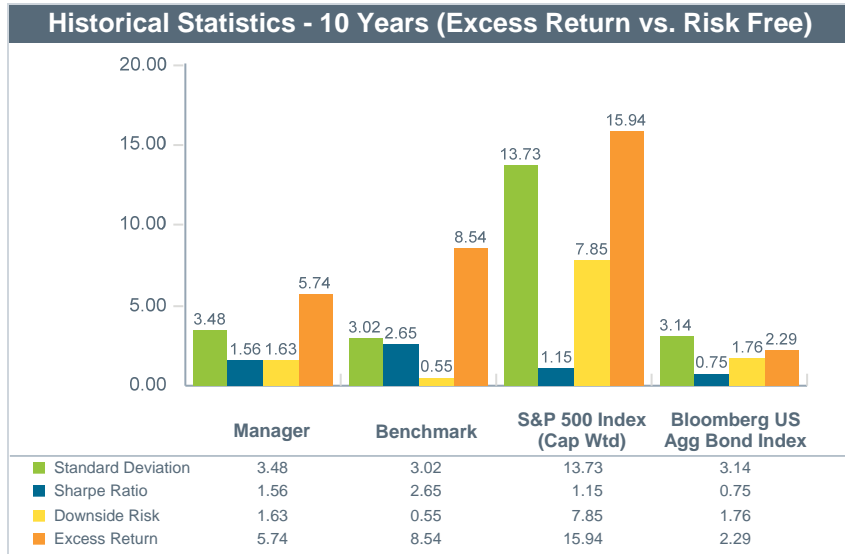
	Portfolio	Benchmark
Effective Duration	4.40	4.40
Spread Duration	4.40	4.40
Avg. Maturity	7.97	7.97
Avg. Quality	Aaa	Aaa
Yield To Maturity (%)	1.34	1.34
Coupon Rate (%)	0.65	0.65
Current Yield (%)	N/A	N/A
Holdings Count	45	45



Performance shown is net of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. Portfolio characteristics are proxied using benchmark statistics.

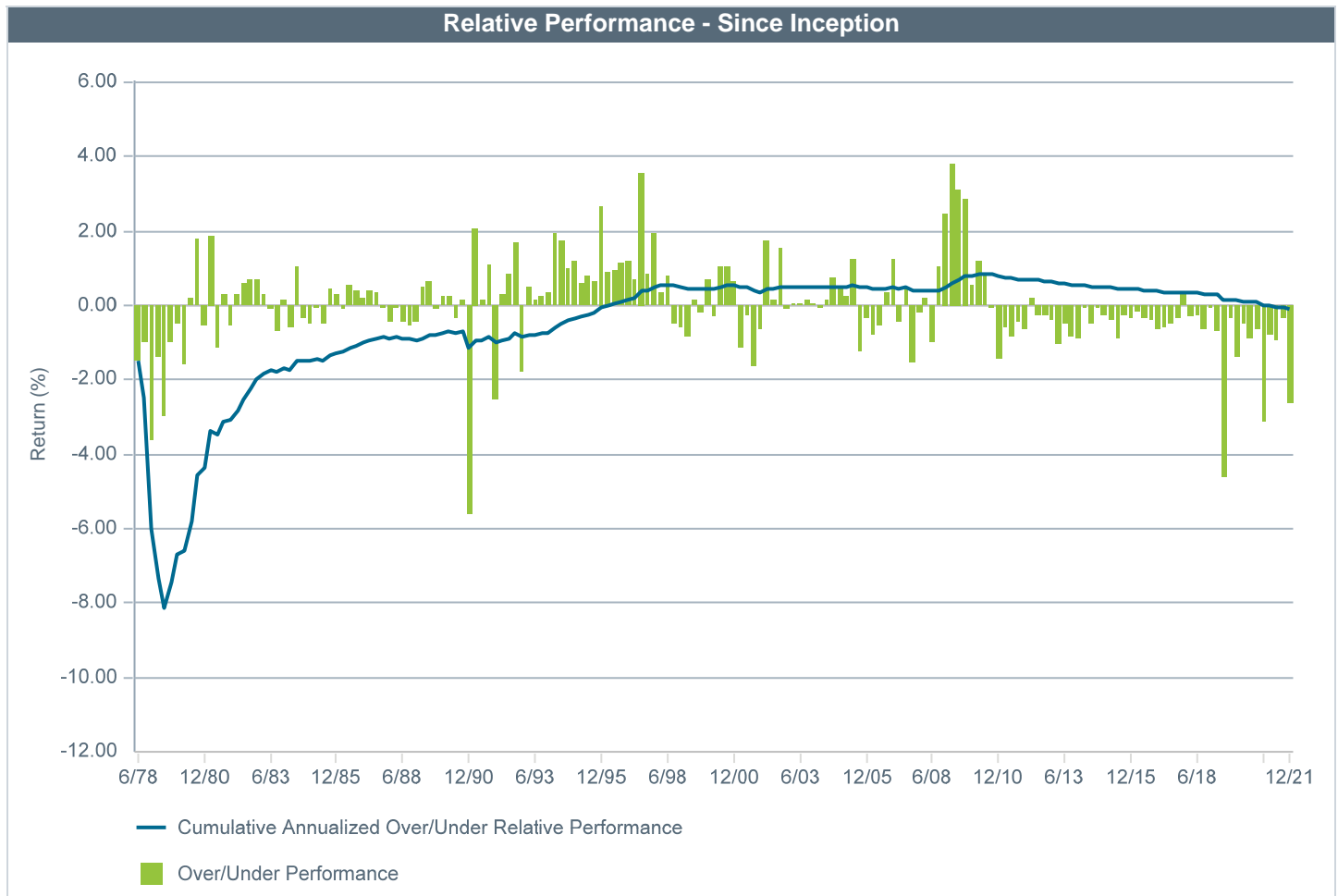


Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
Manager	4.86	15.42	2.21	3.63	5.12	6.46	-4.74	-2.87	6.15	5.42	6.14
Benchmark	7.69	21.06	8.24	7.75	8.62	9.44	0.34	4.39	7.36	6.66	7.79
Difference	-2.83	-5.64	-6.03	-4.12	-3.50	-2.98	-5.08	-7.26	-1.21	-1.24	-1.65



Actual Correlation - 10 Years

	Actual Correlation
NCREIF ODCE Index (AWA) (Net)	0.85
S&P 500 Index (Cap Wtd)	-0.21
Russell 2000 Index	-0.32
MSCI EAFE Index (USD) (Net)	-0.26
MSCI Emg Mkts Index (USD) (Net)	-0.38
Bloomberg US Agg Bond Index	-0.30
Bloomberg US Trsy US TIPS Index	-0.27
Wilshire US REIT Index	0.06
HFRI FOF Comp Index	-0.32
Bloomberg Cmdty Index (TR)	-0.15
ICE BofAML 3 Mo US T-Bill Index	-0.45
Cons Price Index (Unadjusted)	0.10
NCREIF Property Index	0.83



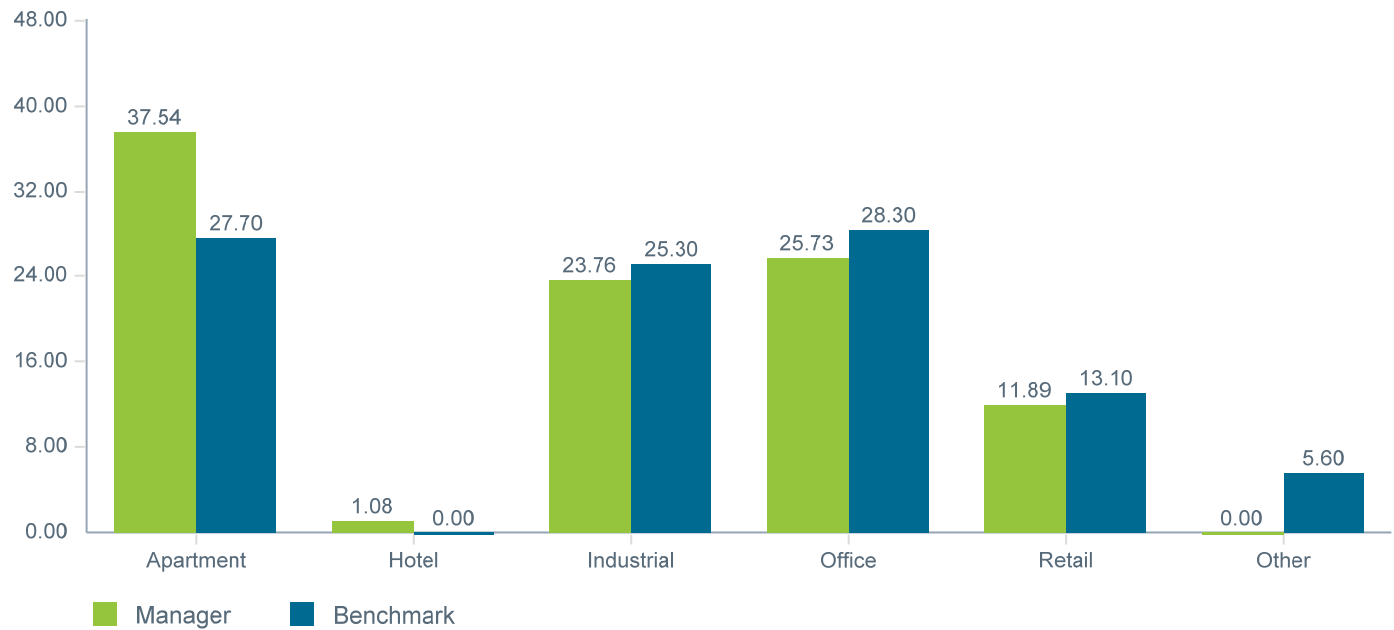
Investment Strategy

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.

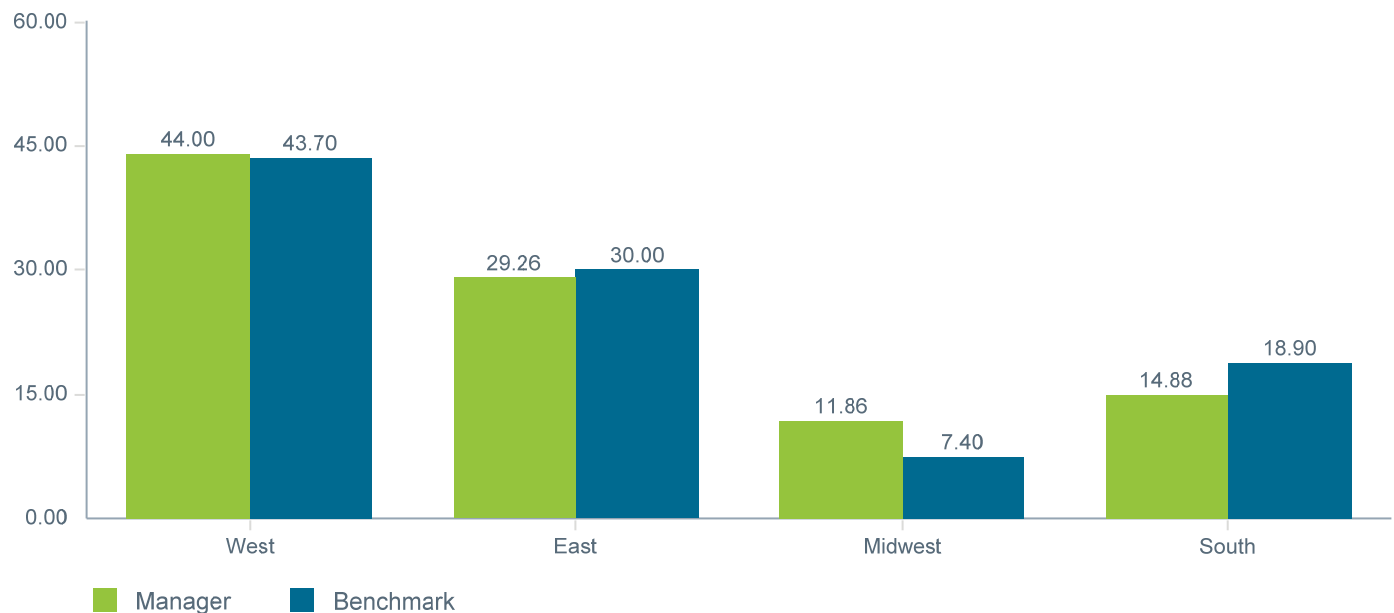
Investment Profile

Fund Inception	1978
Legal Structure	LP
Fund Structure	Open-End
Gross Real Estate Assets (\$M)	17,892
Fund Leverage %	17.00
Portfolio Occupancy %	93.20
Cash Reserve %	1.70
Number of Investments	167
Number of Limited Partners	445

Property Type Allocation (%)



Geographic Allocation (%)



Performance shown is net 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.



VPIC Total Alternatives Portfolio



General Comments

- Through this reporting period, Vermont Pension Investment Commission has committed a total of \$1,350,000,000 to 29 non-marketable alternative investments.
- The average age of active investments (based upon vintage year and weighted by commitment) was 3.38 years.
- A total of \$722,114,616 has been called or otherwise contributed to date.
- Distributions have totaled \$242,031,375 since plan inception.
- The residual estimated value of interests in these partnerships/investments is \$839,655,035.
- Since inception net performance for the investments are as follows:
 - Annualized since-inception estimated Internal Rate of Return (IRR) of 21.17%.
 - Were an investment into the benchmark index (MSCI ACW IM Index (USD) (Net)) ("Index IRR") made with the identical cash-flow pattern, the resulting return would be equal to 13.82% indicating roughly 734 basis points of annualized out-performance.
 - For every \$1 paid into the portfolio, \$1.50 has been returned as a distribution or is held in residual value (multiple on invested capital = 1.50x).

Private Credit - Direct Lending

- Private Credit - Direct Lending funds account for 19.63% of commitments, 22.84% of contributed funds, 20.00% of distributed funds, and 17.18% of reported residual value.
- Pooled portfolio since inception performance is as follows:
 - Annualized since-inception IRR of 8.14%
 - MSCI ACW IM Index (USD) (Net) IRR of 13.61%
 - A multiple on invested capital of 1.17x.

Private Credit - Distressed/Special Situations

- Private Credit - Distressed/Special Situations funds account for 3.70% of commitments, 5.09% of contributed funds, 0.00% of distributed funds, and 4.97% of reported residual value.
- Pooled portfolio since inception performance is as follows:
 - Annualized since-inception IRR - Not Material
 - MSCI ACW IM Index (USD) (Net) IRR - Not Material
 - A multiple on invested capital of 1.14x.

Private Credit - Specialty Finance

- Private Credit - Specialty Finance funds account for 4.81% of commitments, 2.30% of contributed funds, 0.08% of distributed funds, and 2.47% of reported residual value.
- Pooled portfolio since inception performance is as follows:
 - Annualized since-inception IRR - Not Material
 - MSCI ACW IM Index (USD) (Net) IRR - Not Material
 - A multiple on invested capital of 1.26x.

Private Equity - Buyout

- Private Equity - Buyout funds account for 19.04% of commitments, 17.73% of contributed funds, 17.67% of distributed funds, and 21.55% of reported residual value.
- Pooled portfolio since inception performance is as follows:
 - Annualized since-inception IRR of 28.72%
 - MSCI ACW IM Index (USD) (Net) IRR of 15.81%
 - A multiple on invested capital of 1.75x.

Private Equity - Fund of Funds

- Private Equity - Fund of Funds funds account for 4.74% of commitments, 4.33% of contributed funds, 2.95% of distributed funds, and 5.55% of reported residual value.
- Pooled portfolio since inception performance is as follows:
 - Annualized since-inception IRR of 28.64%
 - MSCI ACW IM Index (USD) (Net) IRR of 13.88%
 - A multiple on invested capital of 1.72x.

Private Equity - Natural Resources

- Private Equity - Natural Resources funds account for 9.63% of commitments, 7.66% of contributed funds, 0.29% of distributed funds, and 6.73% of reported residual value.
- Pooled portfolio since inception performance is as follows:
 - Annualized since-inception IRR of 4.81%
 - MSCI ACW IM Index (USD) (Net) IRR of 20.04%
 - A multiple on invested capital of 1.03x.

Private Equity - Non-US Private Equity

- Private Equity - Non-US Private Equity funds account for 7.04% of commitments, 1.76% of contributed funds, 2.62% of distributed funds, and 2.90% of reported residual value.
- Pooled portfolio since inception performance is as follows:
 - Annualized since-inception IRR of 26.83%
 - MSCI ACW IM Index (USD) (Net) IRR of 12.97%
 - A multiple on invested capital of 2.41x.

Private Equity - Secondaries

- Private Equity - Secondaries funds account for 12.22% of commitments, 12.85% of contributed funds, 26.90% of distributed funds, and 11.41% of reported residual value.
- Pooled portfolio since inception performance is as follows:
 - Annualized since-inception IRR of 28.92%
 - MSCI ACW IM Index (USD) (Net) IRR of 12.25%
 - A multiple on invested capital of 1.73x.

Private Equity - Venture

- Private Equity - Venture funds account for 5.11% of commitments, 6.71% of contributed funds, 11.10% of distributed funds, and 12.46% of reported residual value.
- Pooled portfolio since inception performance is as follows:
 - Annualized since-inception IRR of 34.22%
 - MSCI ACW IM Index (USD) (Net) IRR of 12.55%
 - A multiple on invested capital of 2.71x.

Real Estate - Opportunistic

- Real Estate - Opportunistic funds account for 11.48% of commitments, 16.76% of contributed funds, 16.73% of distributed funds, and 13.16% of reported residual value.
- Pooled portfolio since inception performance is as follows:
 - Annualized since-inception IRR of 8.87%
 - MSCI ACW IM Index (USD) (Net) IRR of 12.32%
 - A multiple on invested capital of 1.25x.

Real Estate - Value Added

- Real Estate - Value Added funds account for 2.59% of commitments, 1.96% of contributed funds, 1.66% of distributed funds, and 1.62% of reported residual value.
- Pooled portfolio since inception performance is as follows:
 - Annualized since-inception IRR of 20.23%
 - MSCI ACW IM Index (USD) (Net) IRR of 29.56%
 - A multiple on invested capital of 1.25x.

Vermont Pension Investment Commission
Alternative Investment Private Equity Fund Performance Listing

As of September 30, 2021

Fund Name	Vintage	Asset Class	Commitment (\$)	Paid In Capital (\$)	Distributions (\$)	Valuation (\$)	Fund IRR (%)	Quartile	Index IRR (%)	Fund Multiple
HarbourVest Partners IX - Buyout, LP	2011	Private Equity - Buyout	24,000,000	20,507,188	23,377,547	22,275,543	20.50	1st	9.78	2.23
HarbourVest Partners IX - Credit Opportunities Fund, LP	2011	Private Equity - Fund of Funds	4,000,000	3,210,265	2,805,194	2,513,986	13.66	1st	10.96	1.66
HarbourVest Partners IX - Venture, LP	2011	Private Equity - Venture	12,000,000	11,437,671	17,736,596	24,071,385	26.45	1st	9.13	3.66
Dover Street VIII, LP (HarbourVest)	2012	Private Equity - Secondaries	25,000,000	23,000,000	33,360,343	6,512,367	20.60	2nd	8.62	1.73
HarbourVest International Private Equity Partners VII Partnership, LP	2014	Private Equity - Non-US Private Equity	15,000,000	12,712,500	6,332,861	21,002,105	23.41	2nd	12.97	2.15
HarbourVest International Private Equity Partners VIII Partnership, LP	2014	Private Equity - Fund of Funds	60,000,000	28,050,000	4,330,259	44,121,839	37.09	1st	15.10	1.73
HarbourVest Partners X - Buyout, LP	2015	Private Equity - Buyout	45,500,000	27,302,787	12,335,033	40,111,106	29.71	1st	14.75	1.92
HarbourVest Partners X - Venture, LP	2015	Private Equity - Venture	19,500,000	15,845,422	6,673,384	43,523,397	44.81	1st	13.41	3.17
Dover Street IX, LP (HarbourVest)	2016	Private Equity - Secondaries	40,000,000	32,800,000	24,289,369	35,572,735	30.77	1st	13.41	1.83
Dover Street X, LP (HarbourVest)	2018	Private Equity - Secondaries	100,000,000	37,000,000	7,449,063	53,679,346	92.27	1st	20.41	1.65
HarbourVest Partners XI - Buyout Fund, LP	2018	Private Equity - Buyout	75,000,000	28,500,000	5,633,873	41,919,575	62.05	1st	26.35	1.67
HarbourVest Partners XI - Micro Buyout Fund, LP	2018	Private Equity - Buyout	12,500,000	4,437,500	917,999	6,585,876	76.75	1st	30.82	1.69
HarbourVest Partners Co-Investment Fund V, LP	2019	Private Equity - Buyout	25,000,000	19,375,000	0	32,317,980	48.69	1st	23.48	1.67
HarbourVest Partners XI - Venture Fund, LP	2019	Private Equity - Venture	37,500,000	21,187,500	2,460,154	37,012,064	79.73	1st	24.50	1.86
Nuveen Global Farmland Fund, LP	2019	Private Equity - Natural Resources	100,000,000	48,072,766	707,213	49,875,900	7.57	4th	20.88	1.05
Pontifax Global Food and Agriculture Technology Fund II, LP	2019	Private Equity - Natural Resources	30,000,000	7,257,236	0	6,667,032	-8.98	4th	15.97	0.92
Siguler Guff Small Buyout Opportunities Fund IV	2019	Private Equity - Buyout	50,000,000	21,525,000	508,859	27,888,785	37.57	2nd	33.72	1.32

Certain valuations (marked with a **) are preliminary estimates of valuation as of the date of reporting and reflect the estimated impact of subsequent net cash contributions/distributions. These figures may be used in calculations contained in this report. Index IRR represents the dollar-weighted returns calculated using the MSCI ACWI IM Index (USD) (Net) assuming an index investment with the same cash flow timing. IRRs are shown only for investments with one year or more of cash flows and for which an accurate IRR could be calculated. Applicable IRRs are marked with 'N/M' for not material. Fund IRR is the annualized since-inception net internal rate for the indicated fund or composite. Fund Multiple is the since inception sum of distributions and valuation divided by paid in capital. Quartile data is based on information provided by Preqin.



Vermont Pension Investment Commission
 Alternative Investment Private Equity Fund Performance Listing

As of September 30, 2021

Fund Name	Vintage	Asset Class	Commitment (\$)	Paid In Capital (\$)	Distributions (\$)	Valuation (\$)	Fund IRR (%)	Quartile	Index IRR (%)	Fund Multiple
HarbourVest HIPEP IX Fund, LP	2020	Private Equity - Non-US Private Equity	80,000,000	0	0	3,340,412	N/M	N/A	N/M	
NB Strategic Co-Investment Partners IV LP	2020	Private Equity - Buyout	25,000,000	6,401,548	0	9,828,015	94.06	N/A	19.76	1.54
			780,000,000	368,622,383	148,917,747	508,819,448	29.48		14.14	1.78

Certain valuations (marked with a **) are preliminary estimates of valuation as of the date of reporting and reflect the estimated impact of subsequent net cash contributions/distributions. These figures may be used in calculations contained in this report. Index IRR represents the dollar-weighted returns calculated using the MSCI ACW IM Index (USD) (Net) assuming an index investment with the same cash flow timing. IRRs are shown only for investments with one year or more of cash flows and for which an accurate IRR could be calculated. Applicable IRRs are marked with 'N/M' for not material. Fund IRR is the annualized since-inception net internal rate for the indicated fund or composite. Fund Multiple is the since inception sum of distributions and valuation divided by paid in capital. Quartile data is based on information provided by Preqin.



Vermont Pension Investment Commission
Alternative Investment Real Estate Fund Performance Listing

As of September 30, 2021

Fund Name	Vintage	Asset Class	Commitment (\$)	Paid In Capital (\$)	Distributions (\$)	Valuation (\$)	Fund IRR (%)	Quartile	Index IRR (%)	Fund Multiple
Siguler Guff Distressed Real Estate Opportunities Fund II	2013	Real Estate - Opportunistic	40,000,000	35,272,308	25,559,102	25,498,771	8.66	4th	7.75	1.45
Siguler Guff DREOF II Co-Investment Fund	2016	Real Estate - Opportunistic	15,000,000	12,669,146	6,344,010	9,592,616	6.42	4th	6.30	1.26
Blue Vista Real Estate Partners V	2018	Real Estate - Value Added	35,000,000	14,175,000	4,023,242	13,638,170	20.23	2nd	9.42	1.25
Brookfield Strategic Real Estate Partners III	2019	Real Estate - Opportunistic	100,000,000	73,083,901	8,583,278	75,413,571	10.72	N/A	8.14	1.15
			190,000,000	135,200,355	44,509,633	124,143,128	9.33		7.72	1.25

Certain valuations (marked with a **) are preliminary estimates of valuation as of the date of reporting and reflect the estimated impact of subsequent net cash contributions/distributions. These figures may be used in calculations contained in this report. Index IRR represents the dollar-weighted returns calculated using the NCREIF ODCE Index (AWA)(Net) assuming an index investment with the same cash flow timing. IRRs are shown only for investments with one year or more of cash flows and for which an accurate IRR could be calculated. Applicable IRRs are marked with 'N/M' for not material. Fund IRR is the annualized since-inception net internal rate for the indicated fund or composite. Fund Multiple is the since inception sum of distributions and valuation divided by paid in capital. Quartile data is based on information provided by Preqin.



Vermont Pension Investment Commission
Alternative Investment Private Credit Fund Performance Listing

As of September 30, 2021

Fund Name	Vintage	Asset Class	Commitment (\$)	Paid In Capital (\$)	Distributions (\$)	Valuation (\$)	Fund IRR (%)	Quartile	Index IRR (%)	Fund Multiple
Benefit Street Partners Senior Secured Opportunities Fund	2016	Private Credit - Direct Lending	70,000,000	70,000,000	33,540,529	51,149,376	6.24	4th	6.67	1.21
(Arcmont) Direct Lending Fund III (USD-L) SLP	2018	Private Credit - Direct Lending	70,000,000	42,499,755	13,286,581	37,166,350	11.62	3rd	6.25	1.19
Benefit Street Partners Senior Secured Opportunities Fund II (Levered US)	2019	Private Credit - Direct Lending	75,000,000	31,231,136	1,299,177	33,064,155	19.07	1st	9.44	1.10
AG Direct Lending Fund IV, LP	2020	Private Credit - Direct Lending	50,000,000	21,199,533	277,411	22,879,386	12.77	N/A	10.31	1.09
Ares Pathfinder Fund, LP	2020	Private Credit - Specialty Finance	65,000,000	16,622,483	200,298	20,705,172	N/M	N/A	N/M	1.26
Kennedy Lewis Capital Partners Master Fund II, LP	2020	Private Credit - Distressed/Special Situations	50,000,000	36,738,970	0	41,728,020	N/M	N/A	N/M	1.14
			380,000,000	218,291,878	48,603,996	206,692,459	9.89		7.04	1.17

Certain valuations (marked with a **) are preliminary estimates of valuation as of the date of reporting and reflect the estimated impact of subsequent net cash contributions/distributions. These figures may be used in calculations contained in this report. Index IRR represents the dollar-weighted returns calculated using the Credit Suisse Leveraged Loan Index+2% assuming an index investment with the same cash flow timing. IRRs are shown only for investments with one year or more of cash flows and for which an accurate IRR could be calculated. Applicable IRRs are marked with 'N/M' for not material. Fund IRR is the annualized since-inception net internal rate for the indicated fund or composite. Fund Multiple is the since inception sum of distributions and valuation divided by paid in capital. Quartile data is based on information provided by Preqin.



Average Commitment-weighted Active Investment Age (in years): 3.54

Vintage Year	Commitment (\$)	Paid In Capital (\$)	Distributions (\$)	Valuation (\$)	Vintage Year IRR (%)	Index IRR (%)	Vintage Year Multiple	Cumulative Multiple
2011	40,000,000	35,155,124	43,919,337	48,860,914	22.66	9.64	2.64	2.64
2012	25,000,000	23,000,000	33,360,343	6,512,367	20.60	8.62	1.73	2.28
2014	75,000,000	40,762,500	10,663,120	65,123,944	28.87	13.91	1.86	2.11
2015	65,000,000	43,148,209	19,008,417	83,634,503	36.70	14.19	2.38	2.19
2016	40,000,000	32,800,000	24,289,369	35,572,735	30.77	13.41	1.83	2.12
2018	187,500,000	69,937,500	14,000,935	102,184,797	75.34	24.11	1.66	1.99
2019	242,500,000	117,417,502	3,676,226	153,761,761	38.09	24.19	1.34	1.78
2020	105,000,000	6,401,548	0	13,168,427	188.13	19.76	2.06	1.78
TOTAL	780,000,000	368,622,383	148,917,747	508,819,448	29.48	14.14		1.78

Index IRR represents the dollar-weighted returns calculated using the MSCI ACW IM Index (USD) (Net) assuming an index investment with the same cash flow timing. IRRs are shown only for investments with one year or more of cash flows and for which an accurate IRR could be calculated. Applicable IRRs are marked with 'N/M' for not material. Vintage Year IRR is the annualized since-inception net internal rate for the indicated fund or composite. This report may contain valuations for investments that are preliminary estimates of valuation as of the date of reporting which reflect the estimated impact of subsequent net cash contributions/distributions. These figures may be used in calculations contained in this report. Vintage Year Multiple is the since inception sum of distributions and valuation divided by paid in capital. Cumulative Multiple is the since inception sum of distributions and valuation divided by paid in capital for all investments through the indicated vintage year.



Average Commitment-weighted Active Investment Age (in years): 4.23

Vintage Year	Commitment (\$)	Paid In Capital (\$)	Distributions (\$)	Valuation (\$)	Vintage Year IRR (%)	Index IRR (%)	Vintage Year Multiple	Cumulative Multiple
2013	40,000,000	35,272,308	25,559,102	25,498,771	8.66	7.75	1.45	1.45
2016	15,000,000	12,669,146	6,344,010	9,592,616	6.42	6.30	1.26	1.40
2018	35,000,000	14,175,000	4,023,242	13,638,170	20.23	9.42	1.25	1.36
2019	100,000,000	73,083,901	8,583,278	75,413,571	10.72	8.14	1.15	1.25
TOTAL	190,000,000	135,200,355	44,509,633	124,143,128	9.33	7.72		1.25

Index IRR represents the dollar-weighted returns calculated using the NCREIF ODCE Index (AWA)(Net) assuming an index investment with the same cash flow timing. IRRs are shown only for investments with one year or more of cash flows and for which an accurate IRR could be calculated. Applicable IRRs are marked with 'N/M' for not material. Vintage Year IRR is the annualized since-inception net internal rate for the indicated fund or composite. This report may contain valuations for investments that are preliminary estimates of valuation as of the date of reporting which reflect the estimated impact of subsequent net cash contributions/distributions. These figures may be used in calculations contained in this report. Vintage Year Multiple is the since inception sum of distributions and valuation divided by paid in capital. Cumulative Multiple is the since inception sum of distributions and valuation divided by paid in capital for all investments through the indicated vintage year.

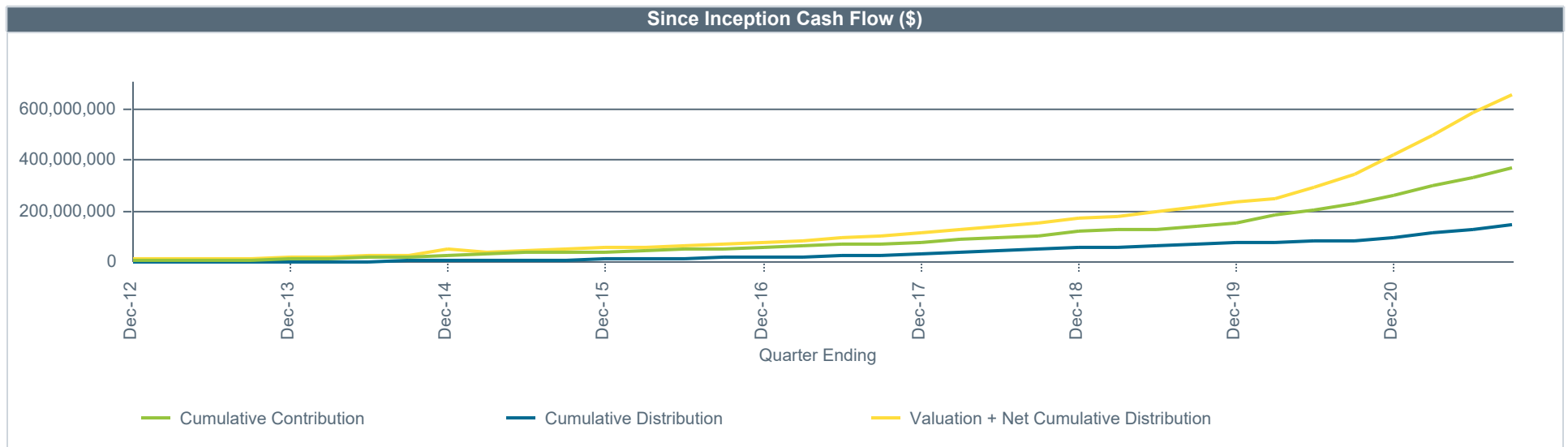
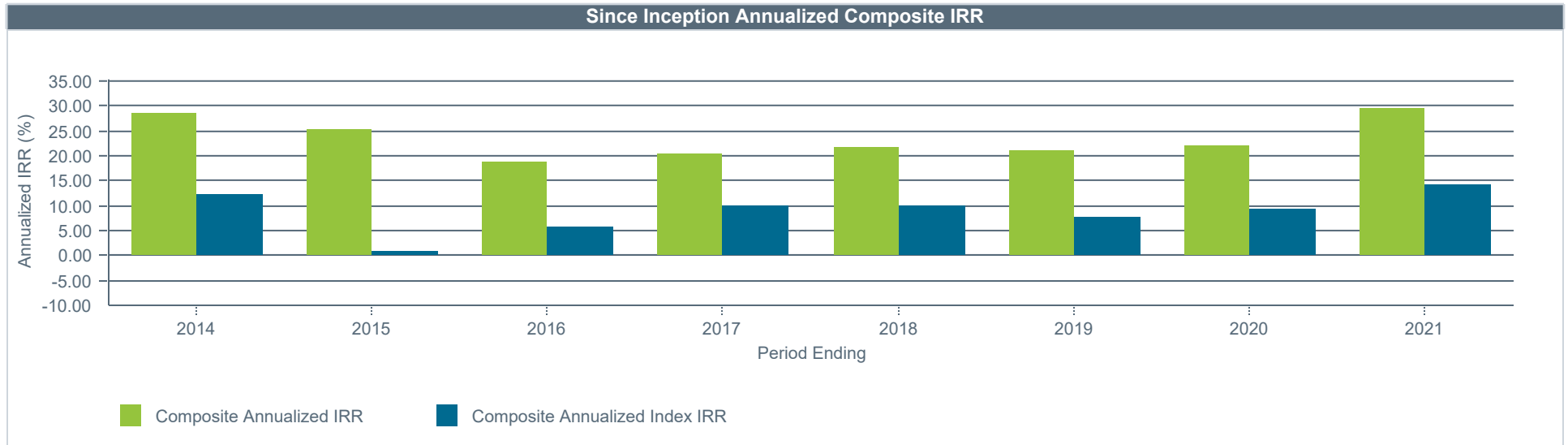


Average Commitment-weighted Active Investment Age (in years): 2.61

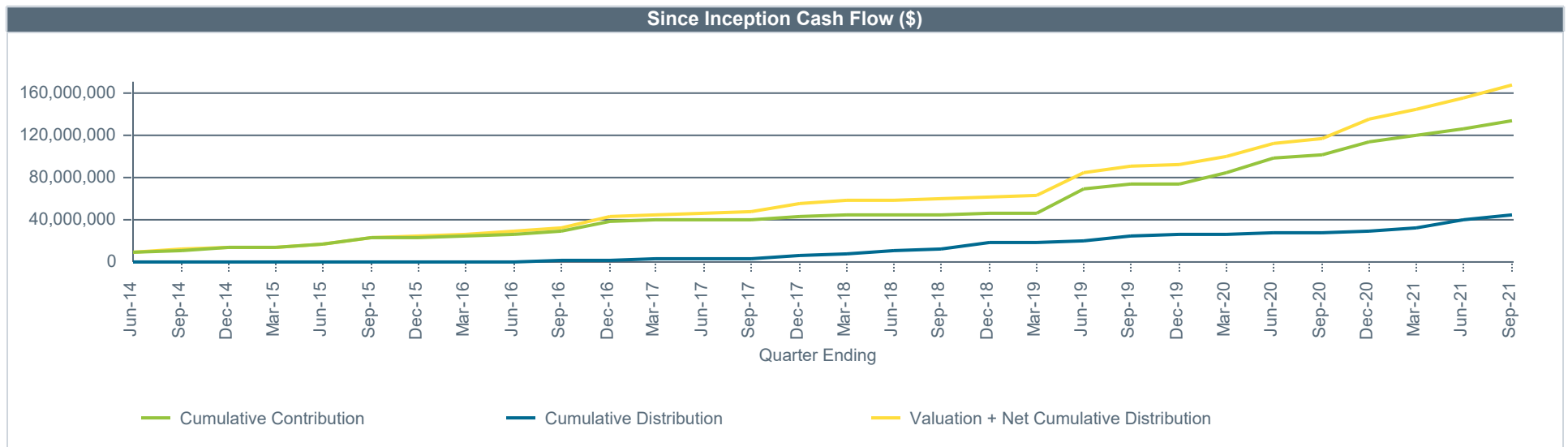
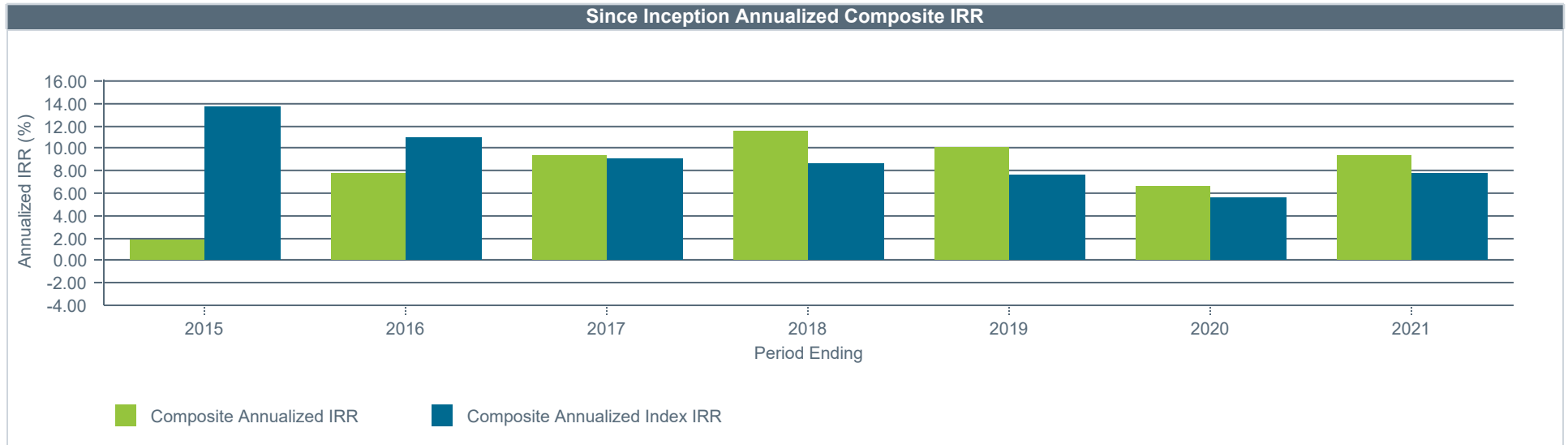
Vintage Year	Commitment (\$)	Paid In Capital (\$)	Distributions (\$)	Valuation (\$)	Vintage Year IRR (%)	Index IRR (%)	Vintage Year Multiple	Cumulative Multiple
2016	70,000,000	70,000,000	33,540,529	51,149,376	6.24	4.57	1.21	1.21
2018	70,000,000	42,499,755	13,286,581	37,166,350	11.62	4.17	1.19	1.20
2019	75,000,000	31,231,136	1,299,177	33,064,155	19.07	7.28	1.10	1.18
2020	165,000,000	74,560,986	477,709	85,312,578	27.64	7.84	1.15	1.17
TOTAL	380,000,000	218,291,878	48,603,996	206,692,459	9.89	4.96		1.17

Index IRR represents the dollar-weighted returns calculated using the CS Lvg'd Loan Index assuming an index investment with the same cash flow timing. IRRs are shown only for investments with one year or more of cash flows and for which an accurate IRR could be calculated. Applicable IRRs are marked with 'N/M' for not material. Vintage Year IRR is the annualized since-inception net internal rate for the indicated fund or composite. This report may contain valuations for investments that are preliminary estimates of valuation as of the date of reporting which reflect the estimated impact of subsequent net cash contributions/distributions. These figures may be used in calculations contained in this report. Vintage Year Multiple is the since inception sum of distributions and valuation divided by paid in capital. Cumulative Multiple is the since inception sum of distributions and valuation divided by paid in capital for all investments through the indicated vintage year.



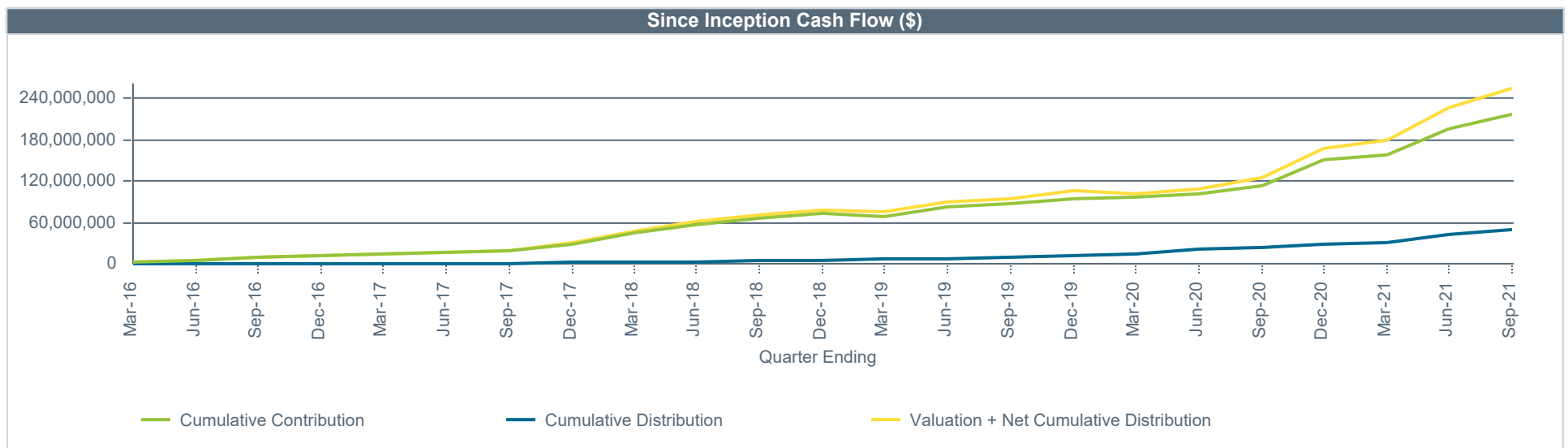
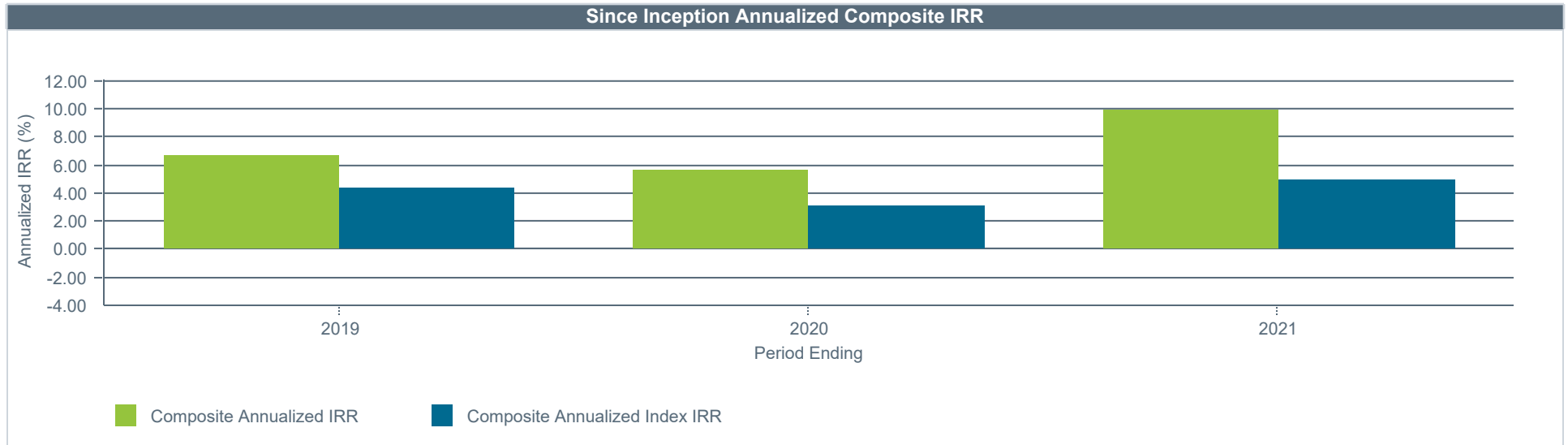


Index IRR represents the dollar-weighted returns calculated using the MSCI ACW IM Index (USD) (Net) assuming an index investment with the same cash flow timing. This report may contain valuations for investments that are preliminary estimates of valuation as of the date of reporting which reflect the estimated impact of subsequent net cash contributions/distributions. These figures may be used in calculations contained in this report. IRRs are shown only for investments with one year or more of cash flows and for which an accurate IRR could be calculated.



Index IRR represents the dollar-weighted returns calculated using the NCREIF ODCE Index (AWA)(Net) assuming an index investment with the same cash flow timing. This report may contain valuations for investments that are preliminary estimates of valuation as of the date of reporting which reflect the estimated impact of subsequent net cash contributions/distributions. These figures may be used in calculations contained in this report. IRRs are shown only for investments with one year or more of cash flows and for which an accurate IRR could be calculated.





Index IRR represents the dollar-weighted returns calculated using the CS Lvg'd Loan Index assuming an index investment with the same cash flow timing. This report may contain valuations for investments that are preliminary estimates of valuation as of the date of reporting which reflect the estimated impact of subsequent net cash contributions/distributions. These figures may be used in calculations contained in this report. IRRs are shown only for investments with one year or more of cash flows and for which an accurate IRR could be calculated.



Addendum & Glossary



**Vermont State Employees' Retirement System
Fee Schedule**

As of December 31, 2021

	Fee Schedule	Market Value As of 12/31/2021 (\$)	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Blackrock S&P 500 (EqI Wtd) (CF)	0.020 % of Assets	96,663,518	19,333	0.020
Champlain US Mid Cap Core (SA)	0.850 % of First \$50 M 0.750 % of Next \$50 M 0.650 % Thereafter	74,732,525	610,494	0.817
BlackRock MSCI ACW IMI (CF)	0.025 % of Assets	770,080,317	192,520	0.025
Blackrock MSCI World LCTR (SA)	0.055 % of Assets	85,546,489	47,051	0.055
Artisan Global Opportunities (CF)	0.750 % of Assets	126,508,490	948,814	0.750
Acadian International All Cap (SA)	0.700 % of First \$25 M 0.600 % of Next \$25 M 0.500 % of Next \$25 M 0.300 % Thereafter	107,815,123	548,445	0.509
Mondrian International Equity (SA)	0.500 % of First \$50 M 0.350 % of Next \$50 M 0.300 % Thereafter	58,470,718	279,648	0.478
Wellington Opportunistic EMD (CF)	0.550 % of Assets	88,730,602	488,018	0.550
PIMCO Liquidation (SA)	0.300 % of Assets	806,770	2,420	0.300
BlackRock US Agg (CF)	0.030 % of Assets	397,454,885	119,236	0.030
PIMCO Core (SA)	0.190 % of Assets	115,317,908	219,104	0.190
UBS Trumbull Properties (CF)	0.955 % of First \$10 M 0.825 % of Next \$15 M 0.805 % of Next \$25 M 0.790 % of Next \$50 M 0.670 % of Next \$150 M 0.600 % of Next \$150 M 0.560 % of Next \$200 M 0.520 % Thereafter	88,796,438	726,992	0.819
BlackRock TIPS (CF)	0.025 % of Assets	112,956,948	28,239	0.025
Total Fund		2,501,417,708	4,230,314	0.169

Mutual Fund fees are sourced from Morningstar and/or the investment manager. UBS also has a variable fee ranging from 0.00% to 0.25%. The variable fee has been suspended from 4/01/2018 to 3/31/2022. Total fund fee shown excludes fees on Private Assets.

Performance Related Comments

- RVK began monitoring the plan's assets as of 9/2020. Prior data was provided by the previous consultant.
- Performance shown is net of fees.
- Inception dates shown represent the first full month of available performance.
- Fiscal year ends 6/30.
- Private Asset market values and performance are lagged to match custodian reported net asset values. Accordingly, fund reported performance will lag benchmark reported performance.
- Inception dates for allocation buckets are when RVK started calculating performance in 09/2020.
- PIMCO Liquidation (SA) consists of residual assets from Vermont Pension's High Yield allocation.
- During 12/2020, the Real Assets composite consisting of Core Real Estate, Non-Core Real Estate, and Private Infrastructure/Land was replaced by the Inflation Hedging Assets composite consisting of TIPS, Core Real Estate, and Private Infrastructure/Land. A new Non-Core Real Estate composite was created.
- During 06/2021, the inception dates for Blackrock S&P 500, Artisan Global Opportunities and Wellington EMD were adjusted to reflect the first full month of performance.

Decisions Made by the Committee Over the Last 18 Months

Manager Additions

- Nuveen Global Agriculture (CF), Angelo Gordan Direct Lending, Harbourvest Dover X, Harbourvest XI Funds, Siguer Guff SBOF IV, Neuberger Berman, Benefit Street Partners II, Blue Vista Real Estate Partners, Ares Pathfinder Fund I, Blackrock MSCI World LCTR (SA), , Harbourvest HIPEP IX and Kennedy Lewis Capital II.

Manager Liquidations

- SGA International Small Cap (CF), Pinnacle Natural Resources and Blackrock Transition Account.

Policy Changes

- During 01/2021, the board approved an updated target allocation index and fund level benchmarks. Benchmark changes were reflected starting 01/2021.

Historical Transition Comments

- SGA International Small Cap (CF) was liquidated during 09/2020. Remaining market value represents residual assets.
- Angelo Gordon Direct Lending IV was funded during 09/2020.
- Wellington Small Cap Value (SA), SSgA Russell 2000 Growth (SA), Pinnacle Natural Resources (CF) and PIMCO Unconstrained (SA) were liquidated prior to 09/2020. Remaining market values represent residual assets.
- The Wellington Small Cap Value (SA) liquidation was completed during 03/2021.
- Ares Pathfinder Fund I was funded during 04/2021.
- During 06/2021, Blackrock Transition was liquidated.
- During 08/2021, Blackrock MSCI World LCTR (SA) was funded.
- The Pinnacle Natural Resources (CF) liquidation was completed during 09/2021.
- During 12/2021, Harbourvest HIPEP IX was funded.

Benchmark Comments

- The Target Allocation Index currently consists of 4% S&P 500 Index (Cap Wtd), 3% Russell 2500 Index, 5% MSCI EAFE Index, 29% MSCI ACW IM Index (USD) (Net), 2% MSCI EAFE Small Cap Index, 20% Bloomberg US Aggregate Bond Index, 3% NCREIF ODCE Index (AWA) (Net)+2%, 4% JP Morgan Emerging Mkts Bond Gbl Index, 10% Credit Suisse Leveraged Loan Index + 2%, 10% Cambridge US PE Index and 10% CPI+ 2.5%. From 08/31/2020 through 12/31/2020, the index consisted of 4% S&P 500 Index (Cap Wtd), 3% Russell 2500 Index, 5% MSCI EAFE Index, 29% MSCI ACW IM Index (USD) (Net), 2% MSCI EAFE Small Cap Index, 20% Bloomberg US Aggregate Bond Index, 3% Bloomberg US Treasury US TIPS Index (TR), 4% JP Morgan Emerging Mkts Bond Gbl Index, 10% S&P/LSTA Leveraged Loan Index (TR), 10% Cambridge US PE Index and 10% NCREIF Property Index. Prior data was provided by the previous consultant.
- The Actual Allocation Indices are calculated monthly using beginning of month investment weights applied to each corresponding benchmark return.
- The Custom SMID Cap Equity Index currently consists of 50% Russell Midcap Index and 50% Russell 2000 index. From 08/2020 through 12/2020 it consisted of 50% Russell 2500 index and 50% Russell 2000 index. Prior data was provided by the previous consultant.

- The CPI+2.5% (Spliced) consists of the NCREIF Property Index prior to 08/31/2020 and the Consumer Price Index+2.5% thereafter.
- CS Lvg'd Loan Index+2% (Spliced) consists of the S&P/LSTA Loan Index prior to 12/31/2020 and the Credit Suisse Leveraged Loan Index+2% thereafter.
- NCREIF ODCE Index+2% (Spliced) consists of the NCREIF Property Index prior to 12/31/2020 and the NCREIF ODCE Index (Net)+2% thereafter.

Glossary

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

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

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

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

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

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

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

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

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

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

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

Country/Region - Attribution is calculated using the Morgan Stanley Capital International (MSCI) region standards. Stocks are classified by their domicile country/region, as defined by S&P Capital IQ data, and thus may differ from the classification of the investment manager and/or index provider.

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, and 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. Stocks are unclassified when there is not enough data to determine a size and style metric.

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.



Glossary

- 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.
- 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.
- Unemployment Rate** - The percentage of the total labor force that is unemployed but actively seeking employment.
- 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.
- 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 that focuses only on the negative movements of the return series. It is calculated by taking the standard deviation of the negative returns for the selected periodicity. 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

Glossary

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.

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.

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

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

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

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

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

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

Price to Earnings Ratio - The ratio valuing a company's current share price relative to its trailing 12-month per-share earnings (EPS).

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.

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.

Return - Compounded rate of return for the period.

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

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	Stable Value (Plan Sponsor Directed)	50
TIPS	95	Hedge Funds of Funds	35
US Large Cap Equity	95		
Diversified Real Return	93		
Stable Value (Participant Directed)	91		
Global Equity	90	<u>Not Liquid Investments</u>	
Non-US Large Cap Equity	90	Core Real Estate	25
Global Tactical Asset Allocation	88	Core Plus Real Estate	15
MLPs	85	Non-Core Real Estate	5
US Mid Cap Equity	85	Private Equity Funds of Funds	5
US SMid Cap Equity	85		
US Small Cap Equity	85		
REITs	85		
Non-US Small Cap Equity	85		
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.

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		

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

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.



Glossary

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

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 portfolio's 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.