



# Investment Performance Analysis

North Dakota Board of University and School Lands

Period Ended: December 31, 2019



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# Capital Markets Review

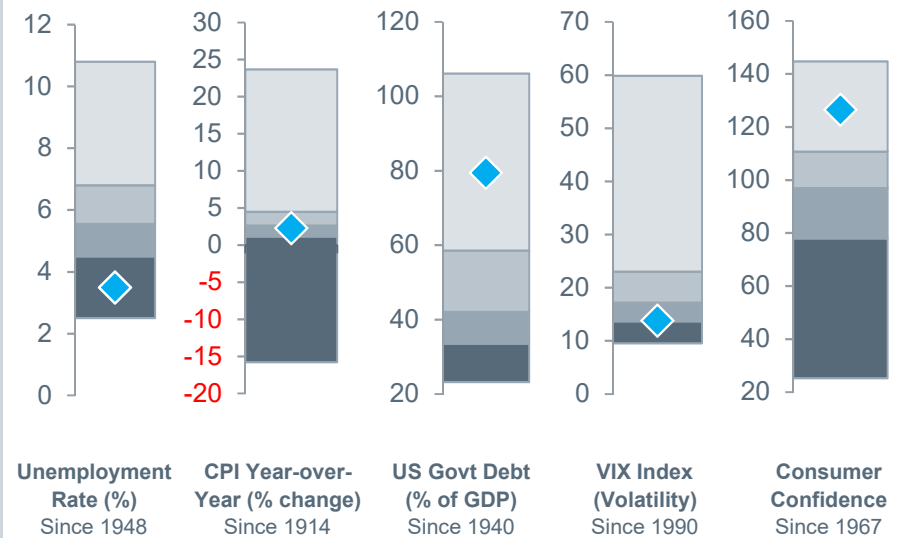


## Fourth Quarter Economic Environment

## Key Economic Indicators

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

## Key Economic Indicators



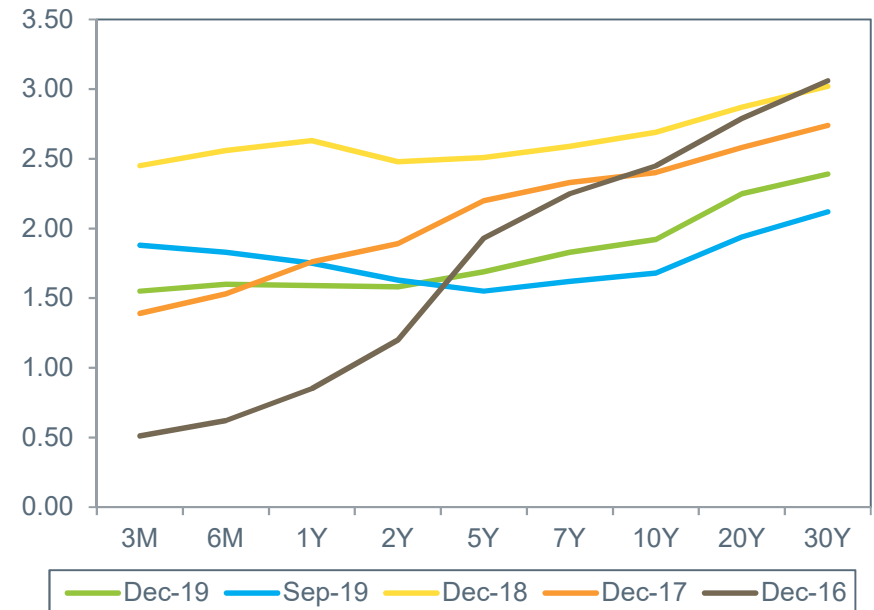
## Economic Indicators

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

## Market Performance (%)

	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	9.07	31.49	31.49	11.70	13.56
Russell 2000	9.94	25.53	25.53	8.23	11.83
MSCI EAFE (Net)	8.17	22.01	22.01	5.67	5.50
MSCI EAFE SC (Net)	11.52	24.96	24.96	8.85	8.74
MSCI Emg Mkts (Net)	11.84	18.44	18.44	5.61	3.68
Bloomberg US Agg Bond	0.18	8.72	8.72	3.05	3.75
ICE BofAML 3 Mo US T-Bill	0.46	2.28	2.28	1.07	0.58
NCREIF ODCE (Gross)	1.51	5.34	5.34	8.97	11.42
FTSE NAREIT Eq REIT (TR)	-0.76	26.00	26.00	7.21	11.94
HFRI FOF Comp	3.12	8.42	8.42	2.37	2.83
Bloomberg Cmtty (TR)	4.42	7.69	7.69	-3.92	-4.73

## Treasury Yield Curve (%)





## Fourth Quarter Review

## Broad Market

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

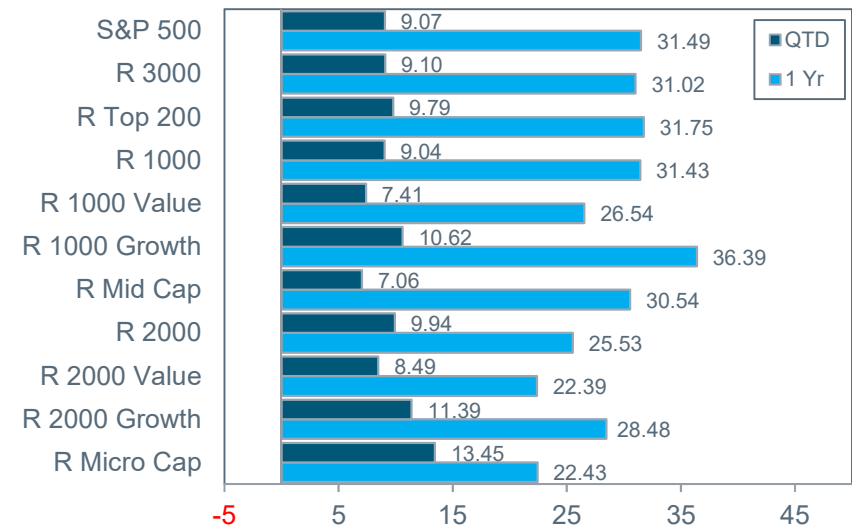
## Market Cap

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

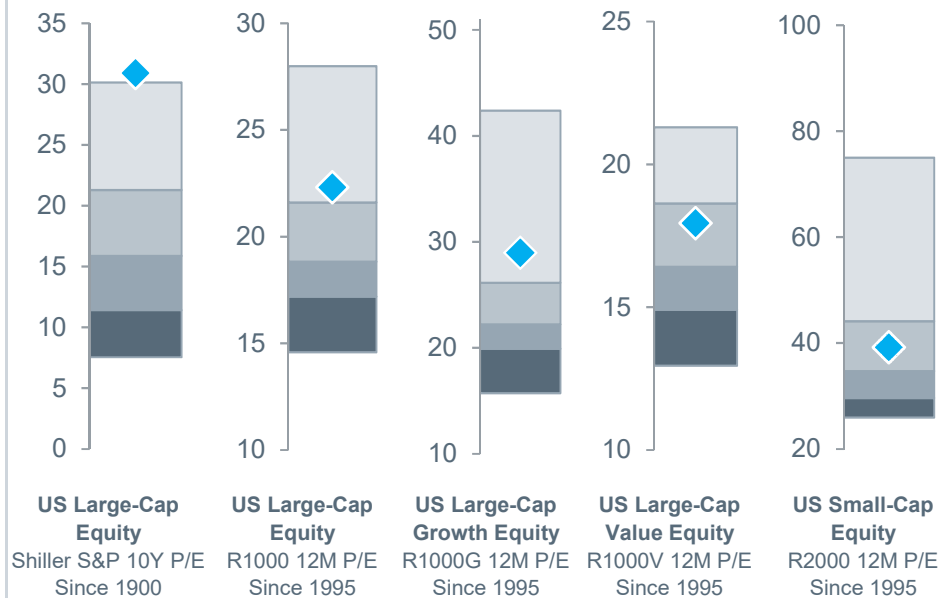
## Style and Sector

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

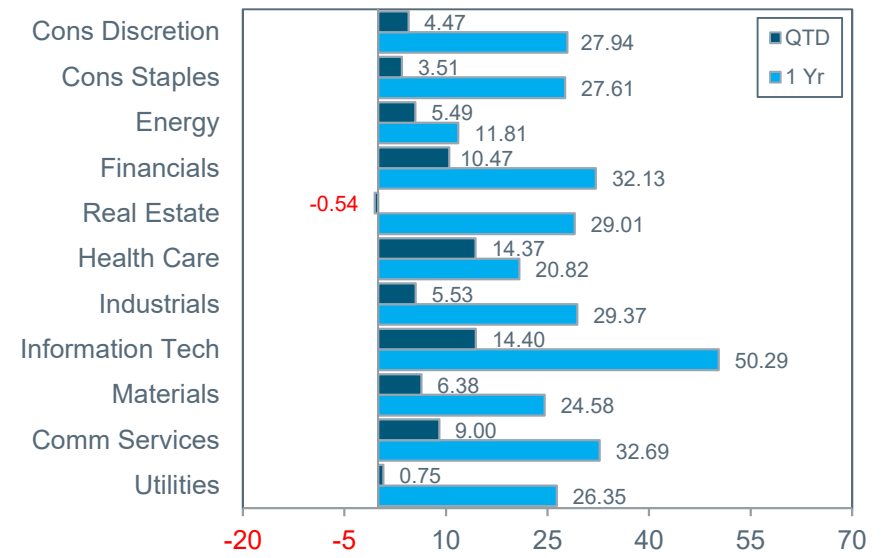
## Style and Capitalization Market Performance (%)



## Valuations



## S&amp;P 500 Index Sector Performance (%)



## Fourth Quarter Review

## Developed Markets

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

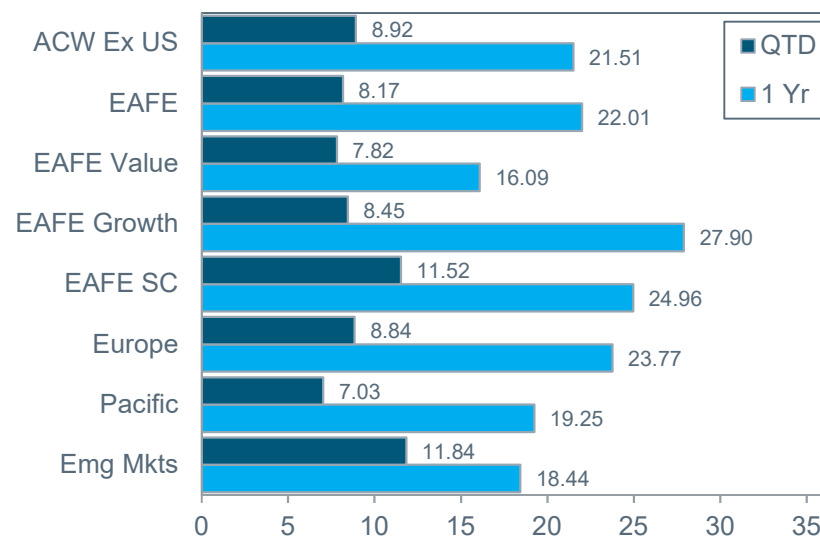
## Emerging Markets

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

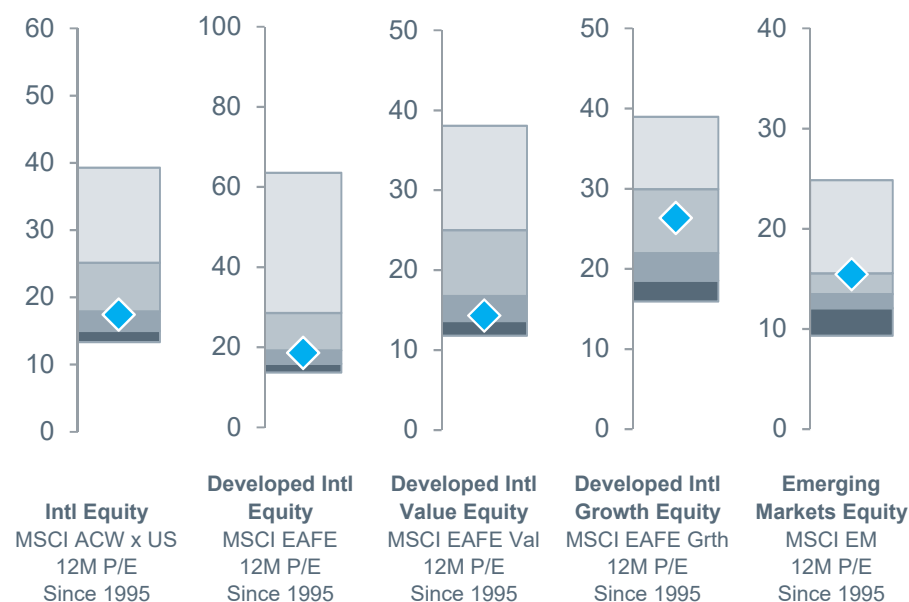
## Market Cap &amp; Style

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

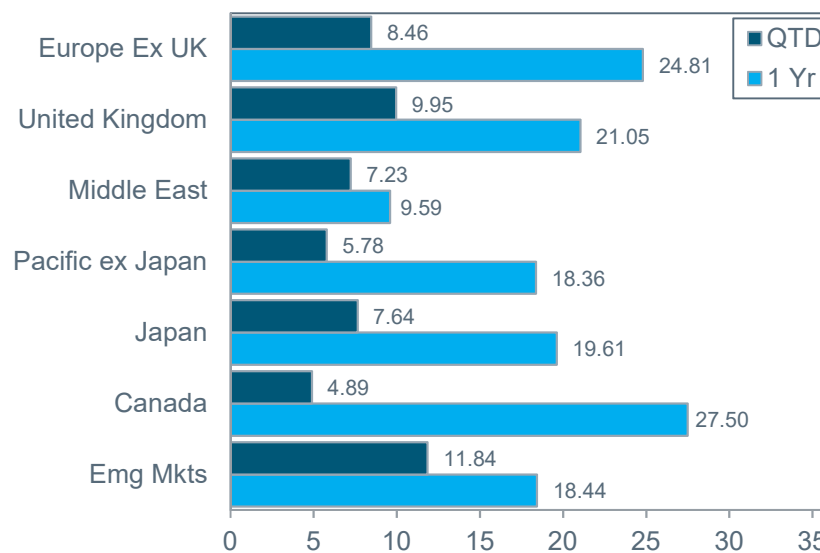
## MSCI Style and Capitalization Market Performance (%)



## Valuations



## MSCI Region Performance (%)



Valuation data courtesy of Bloomberg Professional Service.

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

All returns are shown net of foreign taxes on dividends.

## Fourth Quarter Review

## Broad Market

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

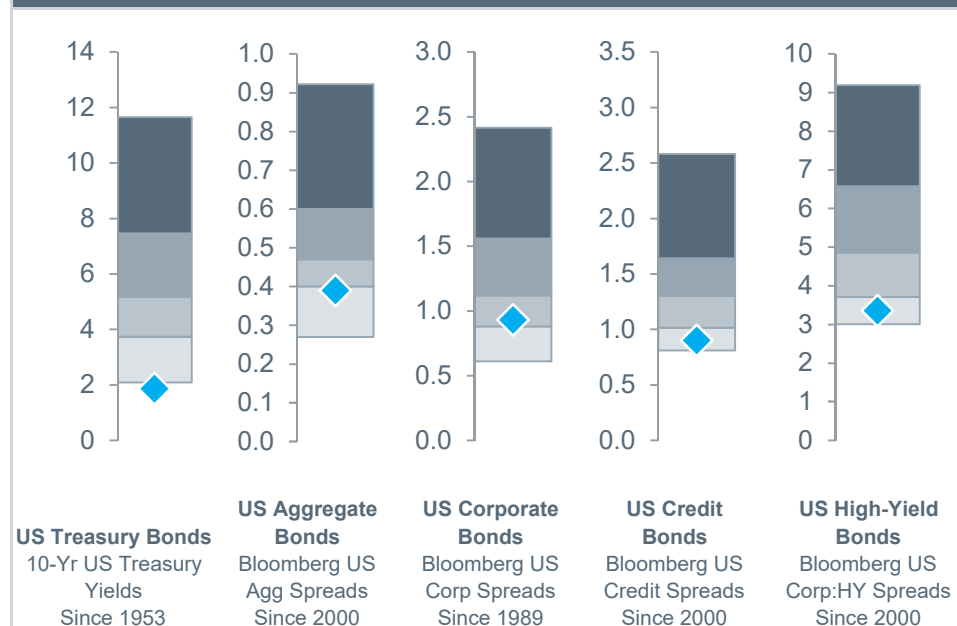
## Credit Market

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

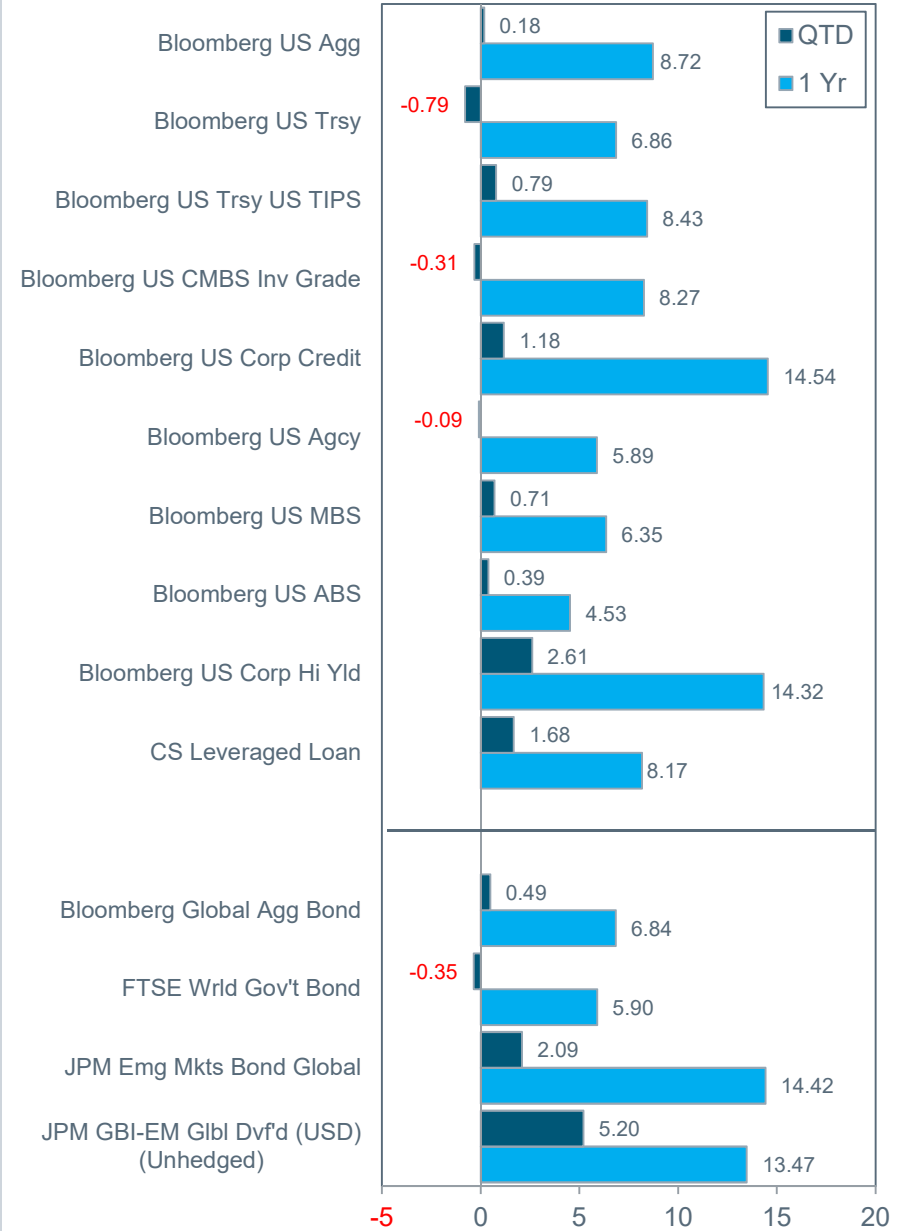
## Emerging Market Debt

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

## Valuations



## Fixed Income Performance (%)



Valuation data courtesy of Bloomberg Professional Service.

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

#### Fourth Quarter Review - Absolute Return

##### General Market - Hedge Funds

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

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

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

#### Fourth Quarter Review - Real Assets

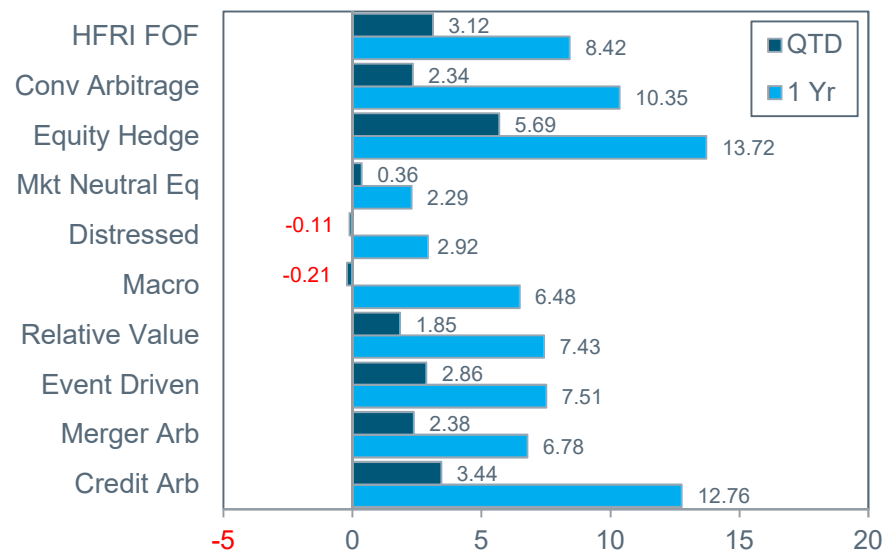
##### General Market - Diversified Inflation Strategies (DIS)

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

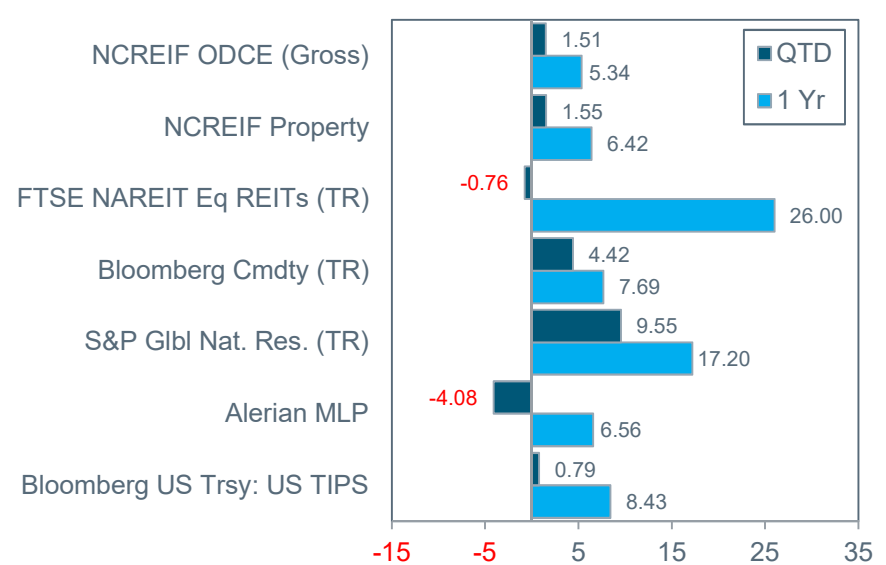
##### General Market - Real Estate

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

#### HFRI Hedge Fund Performance (%)



#### Real Asset Performance (%)





# Annual Asset Class Performance

As of December 31, 2019

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

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

# Total Fund

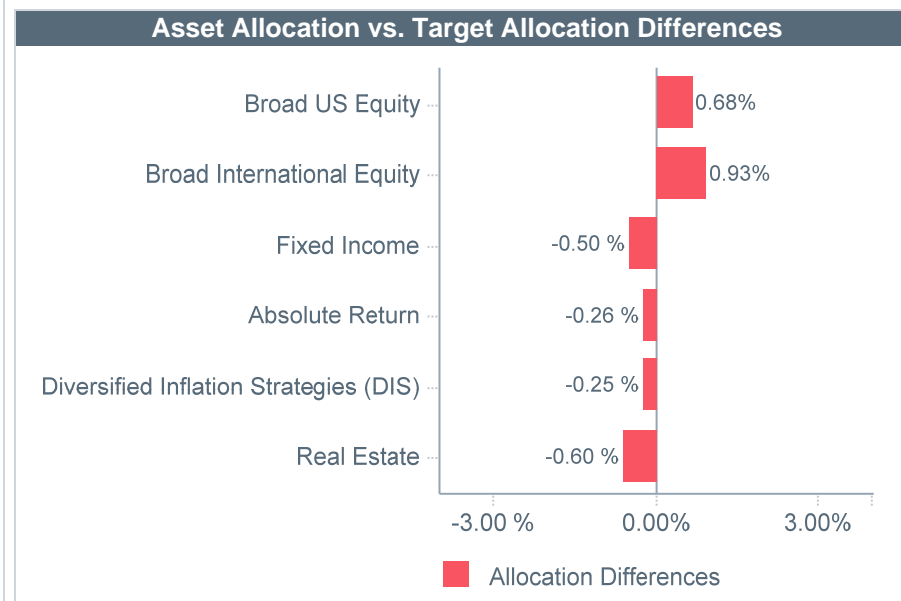


North Dakota Board of University and School Lands  
AA by Manager, AA vs. Target, and Schedule of Investable Assets

As of December 31, 2019

Asset Allocation by Manager		
	Market Value (\$)	Allocation (%)
<b>Broad US Equity</b>		
State Street Russell 1000 Index SL (US Large Cap)	776,091,069	15.14
State Street Russell Mid Cap Index (US Mid Cap)	94,197,431	1.84
NT Small Cap Core (US Small Cap)	113,054,409	2.20
<b>Broad International Equity</b>		
State Street World Ex US Index (International Equity)	625,976,716	12.21
QMA International Small Cap Equity (International Equity)	149,709,689	2.92
DFA Emg Mkts Core Eq;I (Emerging Markets Equity)	110,014,176	2.15
Harding Loevner:IEM;IZ (Emerging Markets Equity)	110,471,238	2.15
<b>Fixed Income</b>		
Payden & Rygel Long Term (Investment Grade US FI)	347,946,421	6.79
JP Morgan FI Intermediate Bond (Investment Grade US FI)	336,831,434	6.57
Brandywine Gbl Opp FI (Global FI)	180,250,889	3.52
FLP (Loans)	15,141,551	0.30
ECLP (Loans)	1,027,941	0.02
Payden:Low Dur;Inv (Low Duration FI)	29,201,873	0.57
AG Direct Lending Fund III, L.P.	124,319,474	2.42
Schroders Securitized Credit (SA)	117,122,213	2.28
ND Land - PTF Cash (Cash)	2,056,345	0.04
<b>Absolute Return</b>		
GMO:Bchmk-Fr All;IV (GTAA)	384,767,000	7.50
PIMCO:All Ast Ath;Inst (GTAA)	371,294,749	7.24
<b>Diversified Inflation Strategies (DIS)</b>		
NT Common TIPS Index (TIPS)	98,371,575	1.92
Gresham Commodities (Commodities)	157,837,860	3.08
Harvest MLP (MLPs)	143,245,980	2.79
Van Eck NR Equities (Natural Resources)	100,533,286	1.96
<b>Real Estate</b>		
Morgan Stanley Prime Property Fund (Core Real Estate)	216,193,719	4.22
UBS Trumbull Property Fund, L.P. (Core Real Estate)	179,160,140	3.49
Jamestown Premier Property Fund (Core Plus Real Estate)	71,980,840	1.40
Prologis USLF (CF) (Core Plus Real Estate)	136,967,259	2.67
JP Morgan US RE Inc & Grth, LP (CF) (Core Plus Real Estate)	133,818,419	2.61

Asset Allocation vs. Target Allocation			
	Asset Allocation (\$000)	Asset Allocation (%)	Target Allocation (%)
Total Fund	5,127,584	100.00	100.00
Broad US Equity	983,343	19.18	18.50
Broad International Equity	996,172	19.43	18.50
Fixed Income	1,153,898	22.50	23.00
Absolute Return	756,062	14.74	15.00
Diversified Inflation Strategies (DIS)	499,989	9.75	10.00
Real Estate	738,120	14.40	15.00



Schedule of Investable Assets					
Periods Ending	Beginning Market Value (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)	% Return
QTD	4,888,285,276	1,927,032	237,371,388	5,127,583,697	4.85

Allocations shown may not sum up to 100% exactly due to rounding. Performance shown is net of fees. Net cash flow includes securities lending income and client directed flows. Gain/loss includes dividend and interest income and capital appreciation.

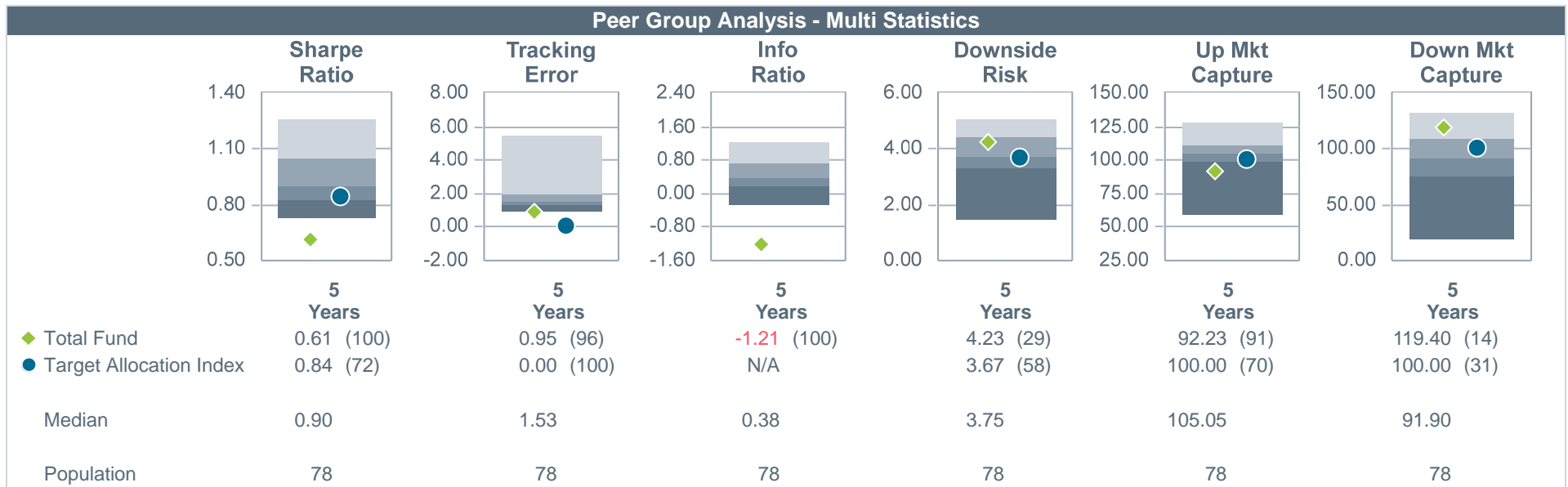
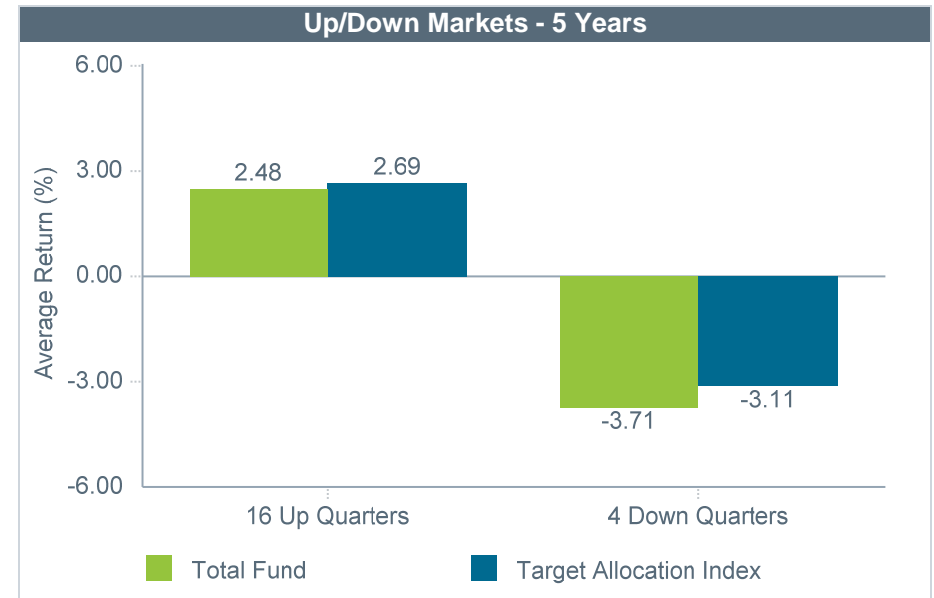
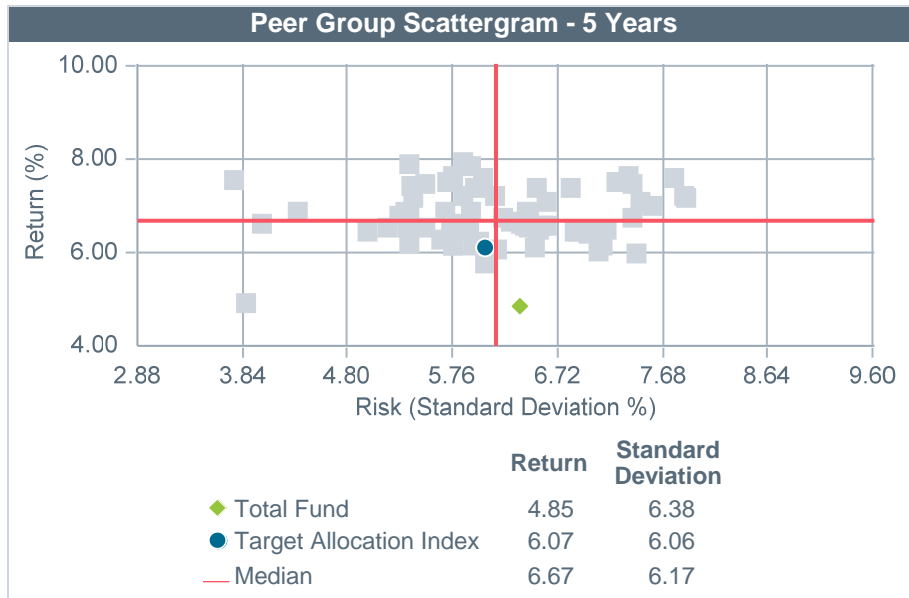
North Dakota Board of University and School Lands  
Comparative Performance

As of December 31, 2019

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	Since Incep.	Inception Date
<b>Total Fund</b>	<b>4.73</b>	<b>4.48</b>	<b>14.33</b>	<b>14.33</b>	<b>6.91</b>	<b>4.85</b>	<b>5.98</b>	<b>6.74</b>	<b>-5.11</b>	<b>12.62</b>	<b>8.65</b>	<b>6.66</b>	<b>08/01/1995</b>
Target Allocation Index	4.65	5.11	16.30	16.30	7.91	6.07	7.11	7.71	-4.51	13.14	7.85	N/A	
Difference	0.08	-0.63	-1.97	-1.97	-1.00	-1.22	-1.13	-0.97	-0.60	-0.52	0.80	N/A	
All Public Plans > \$1B-Total Fund Median	4.87	5.49	16.83	16.83	8.85	6.67	7.71	7.91	-3.50	15.56	7.55	7.38	
Rank	63	92	89	89	95	95	94	92	80	98	8	83	
<b>Broad US Equity</b>	<b>8.73</b>	<b>9.61</b>	<b>30.30</b>	<b>30.30</b>	<b>14.34</b>	<b>11.13</b>	<b>13.58</b>	<b>12.75</b>	<b>-5.49</b>	<b>21.40</b>	<b>13.29</b>	<b>14.48</b>	<b>07/01/2009</b>
Russell 3000 Index	9.10	10.37	31.02	31.02	14.57	11.24	14.38	13.42	-5.24	21.13	12.74	15.00	
Difference	-0.37	-0.76	-0.72	-0.72	-0.23	-0.11	-0.80	-0.67	-0.25	0.27	0.55	-0.52	
<b>Broad International Equity</b>	<b>9.19</b>	<b>7.32</b>	<b>22.05</b>	<b>22.05</b>	<b>8.84</b>	<b>5.07</b>	<b>6.18</b>	<b>4.93</b>	<b>-16.49</b>	<b>26.51</b>	<b>4.82</b>	<b>6.65</b>	<b>07/01/2009</b>
MSCI ACW Ex US Index (USD) (Net)	8.92	6.96	21.51	21.51	9.87	5.51	5.44	4.97	-14.20	27.19	4.50	6.90	
Difference	0.27	0.36	0.54	0.54	-1.03	-0.44	0.74	-0.04	-2.29	-0.68	0.32	-0.25	
<b>Fixed Income</b>	<b>0.86</b>	<b>2.08</b>	<b>7.43</b>	<b>7.43</b>	<b>3.95</b>	<b>3.11</b>	<b>2.80</b>	<b>4.09</b>	<b>-0.24</b>	<b>4.79</b>	<b>3.91</b>	<b>4.53</b>	<b>07/01/2009</b>
Global Fixed Income Custom Index	0.45	2.58	9.21	9.21	4.48	3.30	2.73	3.82	-0.52	4.98	3.66	4.14	
Difference	0.41	-0.50	-1.78	-1.78	-0.53	-0.19	0.07	0.27	0.28	-0.19	0.25	0.39	
Bloomberg US Agg Bond Index	0.18	2.45	8.72	8.72	4.03	3.05	2.72	3.75	0.01	3.54	2.65	3.95	
Difference	0.68	-0.37	-1.29	-1.29	-0.08	0.06	0.08	0.34	-0.25	1.25	1.26	0.58	
<b>Absolute Return</b>	<b>4.50</b>	<b>3.00</b>	<b>11.09</b>	<b>11.09</b>	<b>5.71</b>	<b>3.57</b>	<b>N/A</b>	<b>N/A</b>	<b>-5.16</b>	<b>12.11</b>	<b>7.61</b>	<b>2.62</b>	<b>07/01/2014</b>
Absolute Return Custom Index	5.44	6.32	19.28	19.28	8.99	6.39	7.04	7.07	-5.93	15.39	6.22	5.69	
Difference	-0.94	-3.32	-8.19	-8.19	-3.28	-2.82	N/A	N/A	0.77	-3.28	1.39	-3.07	
Consumer Price Index+5%	1.31	2.80	7.40	7.40	7.21	6.91	6.70	6.84	7.01	7.21	7.18	6.45	
Difference	3.19	0.20	3.69	3.69	-1.50	-3.34	N/A	N/A	-12.17	4.90	0.43	-3.83	
<b>Diversified Inflation Strategies (DIS)</b>	<b>3.48</b>	<b>-0.26</b>	<b>12.19</b>	<b>12.19</b>	<b>-0.48</b>	<b>-2.34</b>	<b>N/A</b>	<b>N/A</b>	<b>-14.24</b>	<b>2.45</b>	<b>18.91</b>	<b>-0.11</b>	<b>04/01/2014</b>
DIS Custom Index	2.30	-0.05	10.27	10.27	1.64	-0.15	0.90	4.00	-9.13	4.80	16.53	0.97	
Difference	1.18	-0.21	1.92	1.92	-2.12	-2.19	N/A	N/A	-5.11	-2.35	2.38	-1.08	
<b>Real Estate</b>	<b>1.30</b>	<b>2.88</b>	<b>4.48</b>	<b>4.48</b>	<b>7.43</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>8.34</b>	<b>9.52</b>	<b>8.48</b>	<b>8.33</b>	<b>07/01/2015</b>
NCREIF ODCE Index (AWA) (Net)	1.27	2.36	4.39	4.39	6.13	7.98	9.17	10.39	7.36	6.66	7.79	7.32	
Difference	0.03	0.52	0.09	0.09	1.30	N/A	N/A	N/A	0.98	2.86	0.69	1.01	

Performance shown is net of fees. Composite inception dates are based on availability of data for each asset class. Please see the Addendum for custom index definitions. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Fiscal year ends 06/30.





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

North Dakota Board of University and School Lands  
Comparative Performance

As of December 31, 2019

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	10 Years	2018	2017	2016	Since Incep.	Inception Date
<b>Total Fund</b>	<b>4.73</b>	<b>4.48</b>	<b>14.33</b>	<b>14.33</b>	<b>6.91</b>	<b>4.85</b>	<b>6.74</b>	<b>-5.11</b>	<b>12.62</b>	<b>8.65</b>	<b>6.66</b>	<b>08/01/1995</b>
Target Allocation Index	4.65	5.11	16.30	16.30	7.91	6.07	7.71	-4.51	13.14	7.85	N/A	
Difference	0.08	-0.63	-1.97	-1.97	-1.00	-1.22	-0.97	-0.60	-0.52	0.80	N/A	
<b>Broad US Equity</b>	<b>8.73</b>	<b>9.61</b>	<b>30.30</b>	<b>30.30</b>	<b>14.34</b>	<b>11.13</b>	<b>12.75</b>	<b>-5.49</b>	<b>21.40</b>	<b>13.29</b>	<b>14.48</b>	<b>07/01/2009</b>
Russell 3000 Index	9.10	10.37	31.02	31.02	14.57	11.24	13.42	-5.24	21.13	12.74	15.00	
Difference	-0.37	-0.76	-0.72	-0.72	-0.23	-0.11	-0.67	-0.25	0.27	0.55	-0.52	
<b>State Street Russell 1000 Index SL (CF)</b>	<b>9.04</b>	<b>10.59</b>	<b>31.39</b>	<b>31.39</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-4.78</b>	<b>N/A</b>	<b>N/A</b>	<b>14.00</b>	<b>06/01/2017</b>
Russell 1000 Index	9.04	10.59	31.43	31.43	15.05	11.48	13.54	-4.78	21.69	12.05	14.01	
Difference	0.00	0.00	-0.04	-0.04	N/A	N/A	N/A	0.00	N/A	N/A	-0.01	
<b>State Street Russell Mid Cap Index (SA)</b>	<b>7.04</b>	<b>7.53</b>	<b>30.38</b>	<b>30.38</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-8.97</b>	<b>N/A</b>	<b>N/A</b>	<b>11.20</b>	<b>06/01/2017</b>
Russell Mid Cap Index	7.06	7.58	30.54	30.54	12.06	9.33	13.19	-9.06	18.52	13.80	11.21	
Difference	-0.02	-0.05	-0.16	-0.16	N/A	N/A	N/A	0.09	N/A	N/A	-0.01	
<b>NT Small Cap Core (CF)</b>	<b>8.10</b>	<b>4.92</b>	<b>23.13</b>	<b>23.13</b>	<b>11.48</b>	<b>9.01</b>	<b>N/A</b>	<b>-7.63</b>	<b>21.82</b>	<b>18.20</b>	<b>7.97</b>	<b>07/01/2014</b>
Russell 2000 Index	9.94	7.30	25.53	25.53	8.59	8.23	11.83	-11.01	14.65	21.31	7.77	
Difference	-1.84	-2.38	-2.40	-2.40	2.89	0.78	N/A	3.38	7.17	-3.11	0.20	

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**North Dakota Board of University and School Lands  
Comparative Performance**

**As of December 31, 2019**

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	10 Years	2018	2017	2016	Since Incep.	Inception Date
<b>Broad International Equity</b>	<b>9.19</b>	<b>7.32</b>	<b>22.05</b>	<b>22.05</b>	<b>8.84</b>	<b>5.07</b>	<b>4.93</b>	<b>-16.49</b>	<b>26.51</b>	<b>4.82</b>	<b>6.65</b>	<b>07/01/2009</b>
MSCI ACW Ex US Index (USD) (Net)	8.92	6.96	21.51	21.51	9.87	5.51	4.97	-14.20	27.19	4.50	6.90	
Difference	0.27	0.36	0.54	0.54	-1.03	-0.44	-0.04	-2.29	-0.68	0.32	-0.25	
<b>State Street World Ex US Index (CF)</b>	<b>7.84</b>	<b>6.83</b>	<b>22.38</b>	<b>22.38</b>	<b>9.26</b>	<b>5.34</b>	<b>N/A</b>	<b>-14.16</b>	<b>24.15</b>	<b>2.66</b>	<b>3.01</b>	<b>07/01/2014</b>
MSCI Wrld Ex US Index (USD) (Net)	7.86	6.85	22.49	22.49	9.34	5.42	5.32	-14.09	24.21	2.75	3.09	
Difference	-0.02	-0.02	-0.11	-0.11	-0.08	-0.08	N/A	-0.07	-0.06	-0.09	-0.08	
<b>QMA International Small Cap Equity (CF)</b>	<b>11.79</b>	<b>9.56</b>	<b>22.54</b>	<b>22.54</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-6.26</b>	<b>02/01/2018</b>
MSCI EAFE Sm Cap Index (USD) (Net)	11.52	11.03	24.96	24.96	10.92	8.85	8.74	-17.89	33.01	2.18	-1.25	
Difference	0.27	-1.47	-2.42	-2.42	N/A	N/A	N/A	N/A	N/A	N/A	-5.01	
<b>DFA Emg Mkts Core Eq;I (DFCEX)</b>	<b>10.55</b>	<b>5.93</b>	<b>16.04</b>	<b>16.04</b>	<b>10.33</b>	<b>5.14</b>	<b>N/A</b>	<b>-15.25</b>	<b>36.55</b>	<b>12.35</b>	<b>3.14</b>	<b>07/01/2014</b>
MSCI Emg Mkts Index (USD) (Net)	11.84	7.09	18.44	18.44	11.57	5.61	3.68	-14.58	37.28	11.19	3.54	
Difference	-1.29	-1.16	-2.40	-2.40	-1.24	-0.47	N/A	-0.67	-0.73	1.16	-0.40	
<b>Harding Loevner:IEM;IZ (HLEZX)</b>	<b>12.23</b>	<b>8.47</b>	<b>25.97</b>	<b>25.97</b>	<b>11.70</b>	<b>6.51</b>	<b>N/A</b>	<b>-18.53</b>	<b>35.79</b>	<b>13.44</b>	<b>4.22</b>	<b>07/01/2014</b>
MSCI Emg Mkts Index (USD) (Net)	11.84	7.09	18.44	18.44	11.57	5.61	3.68	-14.58	37.28	11.19	3.54	
Difference	0.39	1.38	7.53	7.53	0.13	0.90	N/A	-3.95	-1.49	2.25	0.68	

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**North Dakota Board of University and School Lands  
Comparative Performance**

**As of December 31, 2019**

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	10 Years	2018	2017	2016	Since Incep.	Inception Date
<b>Fixed Income</b>	<b>0.86</b>	<b>2.08</b>	<b>7.43</b>	<b>7.43</b>	<b>3.95</b>	<b>3.11</b>	<b>4.09</b>	<b>-0.24</b>	<b>4.79</b>	<b>3.91</b>	<b>4.53</b>	<b>07/01/2009</b>
Global Fixed Income Custom Index	0.45	2.58	9.21	9.21	4.48	3.30	3.82	-0.52	4.98	3.66	4.14	
Difference	0.41	-0.50	-1.78	-1.78	-0.53	-0.19	0.27	0.28	-0.19	0.25	0.39	
Bloomberg US Agg Bond Index	0.18	2.45	8.72	8.72	4.03	3.05	3.75	0.01	3.54	2.65	3.95	
Difference	0.68	-0.37	-1.29	-1.29	-0.08	0.06	0.34	-0.25	1.25	1.26	0.58	
<b>Payden &amp; Rygel Long Term (SA)</b>	<b>0.27</b>	<b>2.59</b>	<b>9.42</b>	<b>9.42</b>	<b>4.79</b>	<b>3.75</b>	<b>4.59</b>	<b>0.16</b>	<b>4.99</b>	<b>3.83</b>	<b>5.87</b>	<b>08/01/1995</b>
Bloomberg US Agg Bond Index	0.18	2.45	8.72	8.72	4.03	3.05	3.75	0.01	3.54	2.65	5.24	
Difference	0.09	0.14	0.70	0.70	0.76	0.70	0.84	0.15	1.45	1.18	0.63	
<b>JP Morgan FI Intermediate Bond (SA)</b>	<b>0.22</b>	<b>1.79</b>	<b>6.70</b>	<b>6.70</b>	<b>3.44</b>	<b>2.72</b>	<b>N/A</b>	<b>1.01</b>	<b>2.71</b>	<b>1.88</b>	<b>2.35</b>	<b>08/01/2012</b>
Bloomberg US Gov't Crdt Int Trm Bond Index	0.37	1.75	6.80	6.80	3.24	2.57	3.05	0.88	2.14	2.08	2.14	
Difference	-0.15	0.04	-0.10	-0.10	0.20	0.15	N/A	0.13	0.57	-0.20	0.21	
<b>Brandywine Gbl Opp FI (CF)</b>	<b>4.14</b>	<b>2.42</b>	<b>9.31</b>	<b>9.31</b>	<b>5.39</b>	<b>2.47</b>	<b>N/A</b>	<b>-5.16</b>	<b>12.91</b>	<b>5.28</b>	<b>2.16</b>	<b>11/01/2014</b>
FTSE Wrld Gov't Bond Index	-0.35	0.50	5.90	5.90	4.12	2.03	1.85	-0.84	7.49	1.60	1.72	
Difference	4.49	1.92	3.41	3.41	1.27	0.44	N/A	-4.32	5.42	3.68	0.44	
<b>Payden:Low Dur;Inv (PYSBX)</b>	<b>0.55</b>	<b>1.22</b>	<b>4.13</b>	<b>4.13</b>	<b>2.21</b>	<b>1.76</b>	<b>2.45</b>	<b>1.05</b>	<b>1.48</b>	<b>1.74</b>	<b>3.42</b>	<b>04/01/2002</b>
Bloomberg US Trsy 1-3 Yr Index	0.51	1.09	3.59	3.59	1.85	1.39	1.23	1.56	0.42	0.86	2.31	
Difference	0.04	0.13	0.54	0.54	0.36	0.37	1.22	-0.51	1.06	0.88	1.11	
<b>AG Direct Lending Fund III, L.P.</b>	<b>0.00</b>	<b>2.84</b>	<b>7.49</b>	<b>7.49</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>7.43</b>	<b>09/01/2018</b>
CS Lvg'd Loan Index	0.00	0.92	6.39	6.39	3.90	4.19	5.01	1.14	4.25	9.88	2.85	
Difference	0.00	1.92	1.10	1.10	N/A	N/A	N/A	N/A	N/A	N/A	4.58	
<b>Schroders Securitized Credit (SA)</b>	<b>0.43</b>	<b>1.25</b>	<b>3.85</b>	<b>3.85</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>3.36</b>	<b>12/01/2018</b>
3 Month LIBOR Index (USD)+1.75%	0.97	2.04	4.39	4.39	3.71	3.11	2.59	3.86	2.88	2.42	4.40	
Difference	-0.54	-0.79	-0.54	-0.54	N/A	N/A	N/A	N/A	N/A	N/A	-1.04	
<b>ND Land - PTF Cash (SA)</b>	<b>0.42</b>	<b>1.31</b>	<b>2.49</b>	<b>2.49</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>1.71</b>	<b>N/A</b>	<b>N/A</b>	<b>1.94</b>	<b>07/01/2017</b>
ICE BofAML 3 Mo US T-Bill Index	0.46	1.03	2.28	2.28	1.67	1.07	0.58	1.87	0.86	0.33	1.88	
Difference	-0.04	0.28	0.21	0.21	N/A	N/A	N/A	-0.16	N/A	N/A	0.06	
<b>FLP (Loans)</b>	<b>1.18</b>	<b>2.40</b>	<b>4.86</b>	<b>4.86</b>	<b>5.72</b>	<b>5.88</b>	<b>5.95</b>	<b>6.15</b>	<b>6.16</b>	<b>6.12</b>	<b>7.15</b>	<b>08/01/1995</b>
<b>ECLP (Loans)</b>	<b>1.11</b>	<b>2.25</b>	<b>4.49</b>	<b>4.49</b>	<b>4.44</b>	<b>4.67</b>	<b>N/A</b>	<b>4.58</b>	<b>4.25</b>	<b>4.89</b>	<b>5.03</b>	<b>11/01/2010</b>

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**North Dakota Board of University and School Lands  
Comparative Performance**

**As of December 31, 2019**

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	10 Years	2018	2017	2016	Since Incep.	Inception Date
<b>Absolute Return</b>	<b>4.50</b>	<b>3.00</b>	<b>11.09</b>	<b>11.09</b>	<b>5.71</b>	<b>3.57</b>	<b>N/A</b>	<b>-5.16</b>	<b>12.11</b>	<b>7.61</b>	<b>2.62</b>	<b>07/01/2014</b>
Absolute Return Custom Index	5.44	6.32	19.28	19.28	8.99	6.39	7.07	-5.93	15.39	6.22	5.69	
Difference	-0.94	-3.32	-8.19	-8.19	-3.28	-2.82	N/A	0.77	-3.28	1.39	-3.07	
<b>GMO:Bchmk-Fr All;IV (GBMBX)</b>	<b>5.41</b>	<b>4.16</b>	<b>11.64</b>	<b>11.64</b>	<b>6.14</b>	<b>3.45</b>	<b>N/A</b>	<b>-5.27</b>	<b>13.07</b>	<b>3.45</b>	<b>2.51</b>	<b>07/01/2014</b>
60% MSCI ACW (Net)/40% Bbrg Gbl Agg Idx	5.51	5.83	18.55	18.55	9.28	6.11	6.42	-6.00	17.09	5.69	5.00	
Difference	-0.10	-1.67	-6.91	-6.91	-3.14	-2.66	N/A	0.73	-4.02	-2.24	-2.49	
Consumer Price Index+5%	1.31	2.80	7.40	7.40	7.21	6.91	6.84	7.01	7.21	7.18	6.45	
Difference	4.10	1.36	4.24	4.24	-1.07	-3.46	N/A	-12.28	5.86	-3.73	-3.94	
<b>PIMCO:All Ast Ath;Inst (PAUIX)</b>	<b>3.57</b>	<b>1.74</b>	<b>7.62</b>	<b>7.62</b>	<b>4.21</b>	<b>2.59</b>	<b>N/A</b>	<b>-6.14</b>	<b>12.04</b>	<b>13.73</b>	<b>0.78</b>	<b>07/01/2014</b>
All Asset Custom Index (EqI Wtd)	3.08	4.15	12.97	12.97	6.58	4.98	5.57	-1.62	8.94	6.47	4.40	
Difference	0.49	-2.41	-5.35	-5.35	-2.37	-2.39	N/A	-4.52	3.10	7.26	-3.62	
Consumer Price Index+5%	1.31	2.80	7.40	7.40	7.21	6.91	6.84	7.01	7.21	7.18	6.45	
Difference	2.26	-1.06	0.22	0.22	-3.00	-4.32	N/A	-13.15	4.83	6.55	-5.67	

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	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	10 Years	2018	2017	2016	Since Incep.	Inception Date
<b>Diversified Inflation Strategies (DIS)</b>	<b>3.48</b>	<b>-0.26</b>	<b>12.19</b>	<b>12.19</b>	<b>-0.48</b>	<b>-2.34</b>	<b>N/A</b>	<b>-14.24</b>	<b>2.45</b>	<b>18.91</b>	<b>-0.11</b>	<b>04/01/2014</b>
DIS Custom Index	2.30	-0.05	10.27	10.27	1.64	-0.15	4.00	-9.13	4.80	16.53	0.97	
Difference	1.18	-0.21	1.92	1.92	-2.12	-2.19	N/A	-5.11	-2.35	2.38	-1.08	
<b>NT Common TIPS Index (CF)</b>	<b>0.81</b>	<b>2.10</b>	<b>8.43</b>	<b>8.43</b>	<b>3.33</b>	<b>2.62</b>	<b>3.40</b>	<b>-1.30</b>	<b>3.09</b>	<b>4.77</b>	<b>4.11</b>	<b>06/01/2004</b>
Bloomberg US Trsy US TIPS Index	0.79	2.14	8.43	8.43	3.32	2.62	3.36	-1.26	3.01	4.68	4.06	
Difference	0.02	-0.04	0.00	0.00	0.01	0.00	0.04	-0.04	0.08	0.09	0.05	
<b>Gresham Commodities (SA)</b>	<b>6.32</b>	<b>4.24</b>	<b>13.59</b>	<b>13.59</b>	<b>2.91</b>	<b>N/A</b>	<b>N/A</b>	<b>-13.80</b>	<b>11.31</b>	<b>11.76</b>	<b>-1.77</b>	<b>07/01/2015</b>
Bloomberg Cmdty Ex Energy Index (TR)	3.78	3.13	6.01	6.01	-0.18	-2.49	-2.05	-10.95	5.36	7.77	-1.79	
Difference	2.54	1.11	7.58	7.58	3.09	N/A	N/A	-2.85	5.95	3.99	0.02	
Gresham Commodities (SA) Custom Index	5.69	4.13	12.83	12.83	0.89	N/A	N/A	-14.04	5.89	12.56	-2.28	
Difference	0.63	0.11	0.76	0.76	2.02	N/A	N/A	0.24	5.42	-0.80	0.51	
<b>Harvest MLP (SA)</b>	<b>-1.09</b>	<b>-6.23</b>	<b>12.72</b>	<b>12.72</b>	<b>-2.74</b>	<b>N/A</b>	<b>N/A</b>	<b>-13.63</b>	<b>-5.50</b>	<b>19.24</b>	<b>-4.39</b>	<b>07/01/2015</b>
S&P MLP Index (TR)	-3.09	-7.01	9.78	9.78	-2.90	-6.23	5.10	-11.67	-5.58	21.95	-5.12	
Difference	2.00	0.78	2.94	2.94	0.16	N/A	N/A	-1.96	0.08	-2.71	0.73	
<b>Van Eck NR Equities (SA)</b>	<b>8.92</b>	<b>-0.36</b>	<b>12.89</b>	<b>12.89</b>	<b>-7.07</b>	<b>N/A</b>	<b>N/A</b>	<b>-28.52</b>	<b>-0.55</b>	<b>44.23</b>	<b>-5.15</b>	<b>07/01/2015</b>
S&P Gbl Ntrl Res Sect Index (TR)	9.55	2.95	17.20	17.20	7.92	4.79	1.61	-12.57	22.66	32.28	5.93	
Difference	-0.63	-3.31	-4.31	-4.31	-14.99	N/A	N/A	-15.95	-23.21	11.95	-11.08	
S&P N Amer Ntrl Res Index	7.47	2.66	17.63	17.63	-2.05	-1.41	1.39	-21.07	1.23	30.87	-0.64	
Difference	1.45	-3.02	-4.74	-4.74	-5.02	N/A	N/A	-7.45	-1.78	13.36	-4.51	

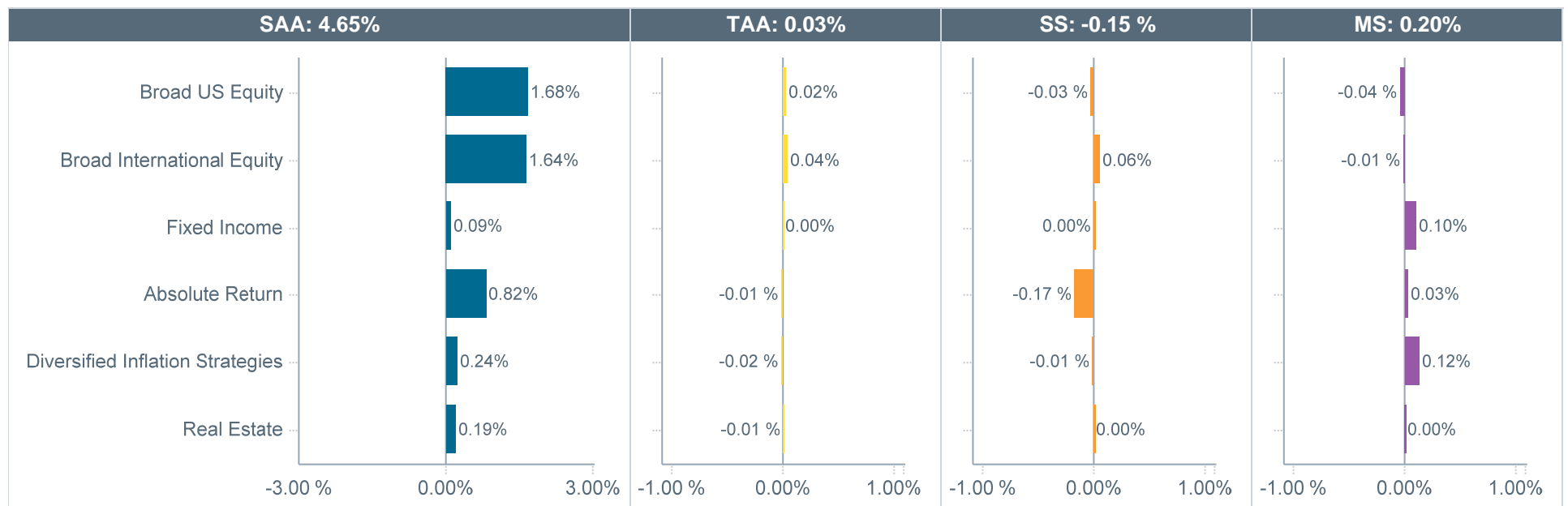
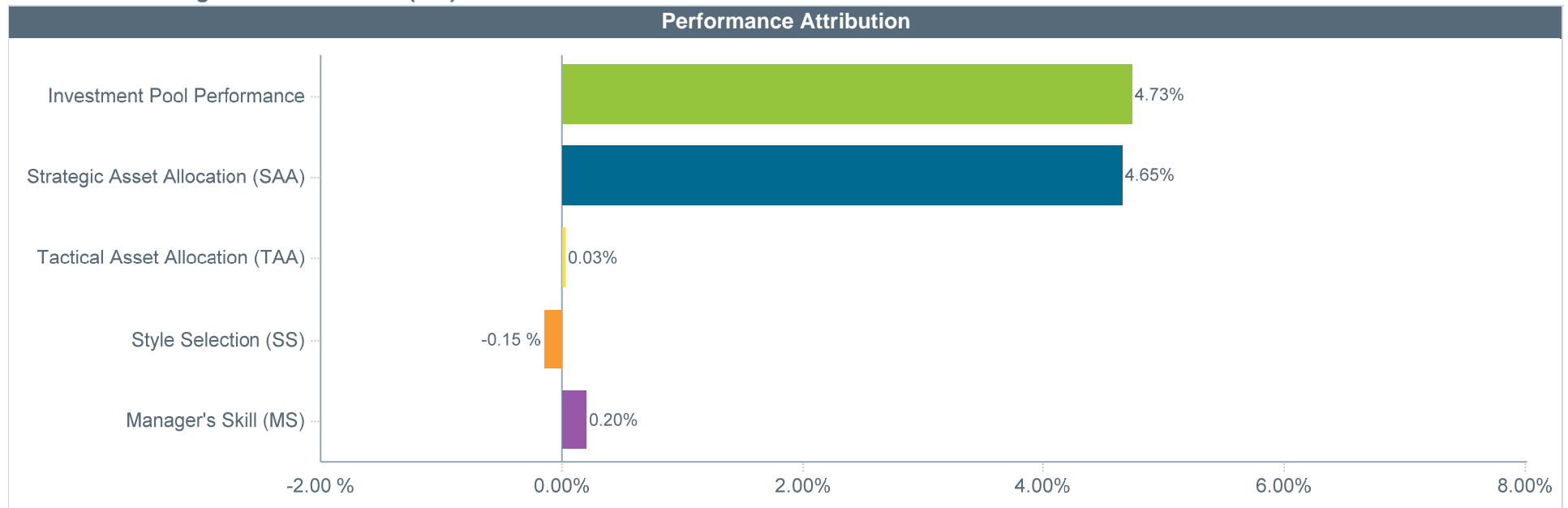
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North Dakota Board of University and School Lands  
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	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	10 Years	2018	2017	2016	Since Incep.	Inception Date
<b>Real Estate</b>	<b>1.30</b>	<b>2.88</b>	<b>4.48</b>	<b>4.48</b>	<b>7.43</b>	<b>N/A</b>	<b>N/A</b>	<b>8.34</b>	<b>9.52</b>	<b>8.48</b>	<b>8.33</b>	<b>07/01/2015</b>
NCREIF ODCE Index (AWA) (Net)	1.27	2.36	4.39	4.39	6.13	7.98	10.39	7.36	6.66	7.79	7.32	
Difference	0.03	0.52	0.09	0.09	1.30	N/A	N/A	0.98	2.86	0.69	1.01	
<b>Morgan Stanley Prime Property Fund (CF)</b>	<b>1.53</b>	<b>2.96</b>	<b>6.17</b>	<b>6.17</b>	<b>7.62</b>	<b>N/A</b>	<b>N/A</b>	<b>7.96</b>	<b>8.75</b>	<b>9.23</b>	<b>8.67</b>	<b>07/01/2015</b>
NCREIF ODCE Index (AWA) (Net)	1.27	2.36	4.39	4.39	6.13	7.98	10.39	7.36	6.66	7.79	7.32	
Difference	0.26	0.60	1.78	1.78	1.49	N/A	N/A	0.60	2.09	1.44	1.35	
<b>UBS Trumbull Property Fund, L.P. (CF)</b>	<b>-0.14</b>	<b>0.57</b>	<b>-2.84</b>	<b>-2.84</b>	<b>2.83</b>	<b>N/A</b>	<b>N/A</b>	<b>6.17</b>	<b>5.42</b>	<b>6.14</b>	<b>4.58</b>	<b>07/01/2015</b>
NCREIF ODCE Index (AWA) (Net)	1.27	2.36	4.39	4.39	6.13	7.98	10.39	7.36	6.66	7.79	7.32	
Difference	-1.41	-1.79	-7.23	-7.23	-3.30	N/A	N/A	-1.19	-1.24	-1.65	-2.74	
<b>Jamestown Premier Property Fund (CF)</b>	<b>-0.07</b>	<b>0.50</b>	<b>2.40</b>	<b>2.40</b>	<b>8.02</b>	<b>N/A</b>	<b>N/A</b>	<b>7.75</b>	<b>14.22</b>	<b>5.26</b>	<b>8.08</b>	<b>07/01/2015</b>
NCREIF ODCE Index (AWA) (Net)	1.27	2.36	4.39	4.39	6.13	7.98	10.39	7.36	6.66	7.79	7.32	
Difference	-1.34	-1.86	-1.99	-1.99	1.89	N/A	N/A	0.39	7.56	-2.53	0.76	
<b>Prologis USLF (CF)</b>	<b>4.27</b>	<b>9.10</b>	<b>16.84</b>	<b>16.84</b>	<b>17.73</b>	<b>N/A</b>	<b>N/A</b>	<b>16.18</b>	<b>20.21</b>	<b>N/A</b>	<b>17.42</b>	<b>04/01/2016</b>
NCREIF ODCE Index (AWA) (Net)	1.27	2.36	4.39	4.39	6.13	7.98	10.39	7.36	6.66	7.79	6.44	
Difference	3.00	6.74	12.45	12.45	11.60	N/A	N/A	8.82	13.55	N/A	10.98	
<b>JP Morgan US Real Estate Income and Growth, LP (CF)</b>	<b>0.72</b>	<b>1.24</b>	<b>2.24</b>	<b>2.24</b>	<b>4.58</b>	<b>N/A</b>	<b>N/A</b>	<b>5.73</b>	<b>5.82</b>	<b>N/A</b>	<b>5.44</b>	<b>07/01/2016</b>
NCREIF ODCE Index (AWA) (Net)	1.27	2.36	4.39	4.39	6.13	7.98	10.39	7.36	6.66	7.79	6.34	
Difference	-0.55	-1.12	-2.15	-2.15	-1.55	N/A	N/A	-1.63	-0.84	N/A	-0.90	

Performance shown is net of fees. Manager inception dates shown represent the first full month following initial funding. Composite inception dates are based on availability of data for each asset class. Please see the Addendum for custom index definitions. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Fiscal year ends 06/30.

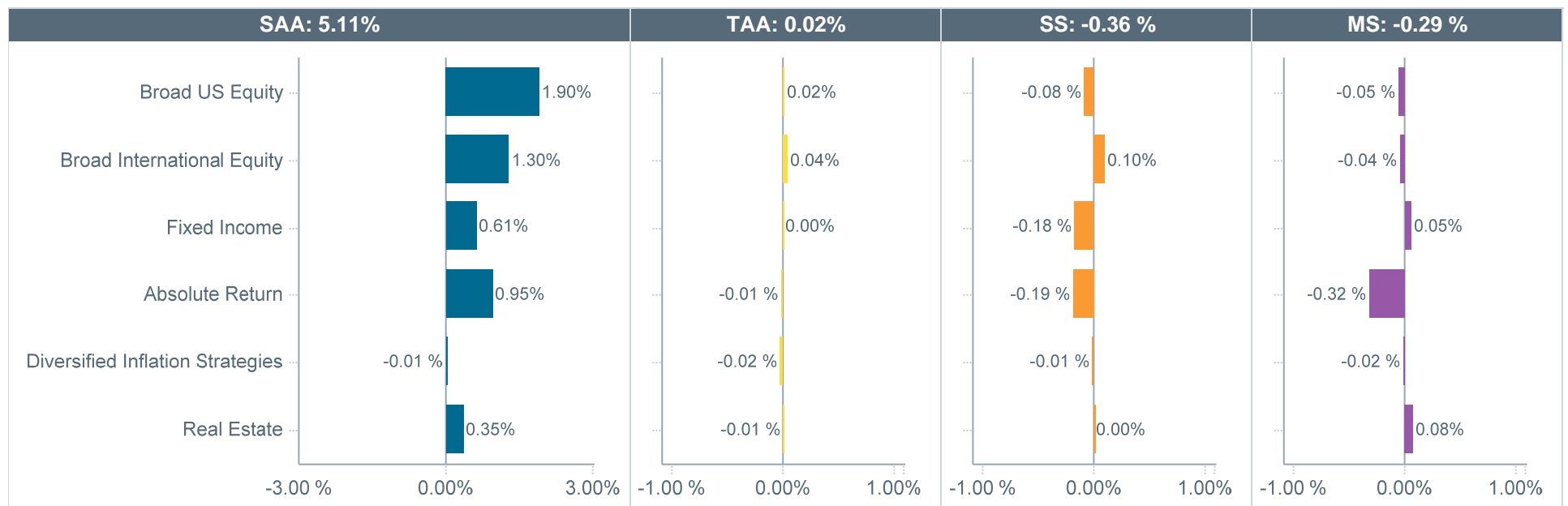
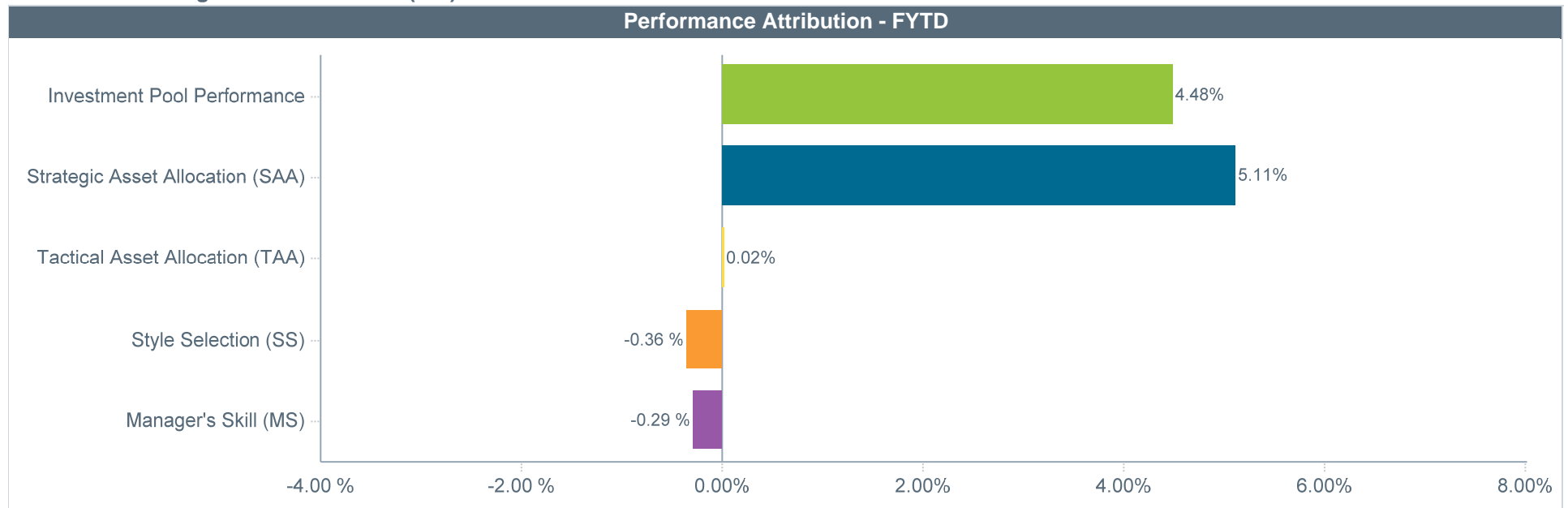


Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity. See Glossary for additional information regarding the Total Fund Attribution - IDP calculation.



North Dakota Board of University and School Lands  
Total Fund Attribution - IDP  
Total Fund vs. Target Allocation Index (Net)

Fiscal Year To Date as of December 31, 2019



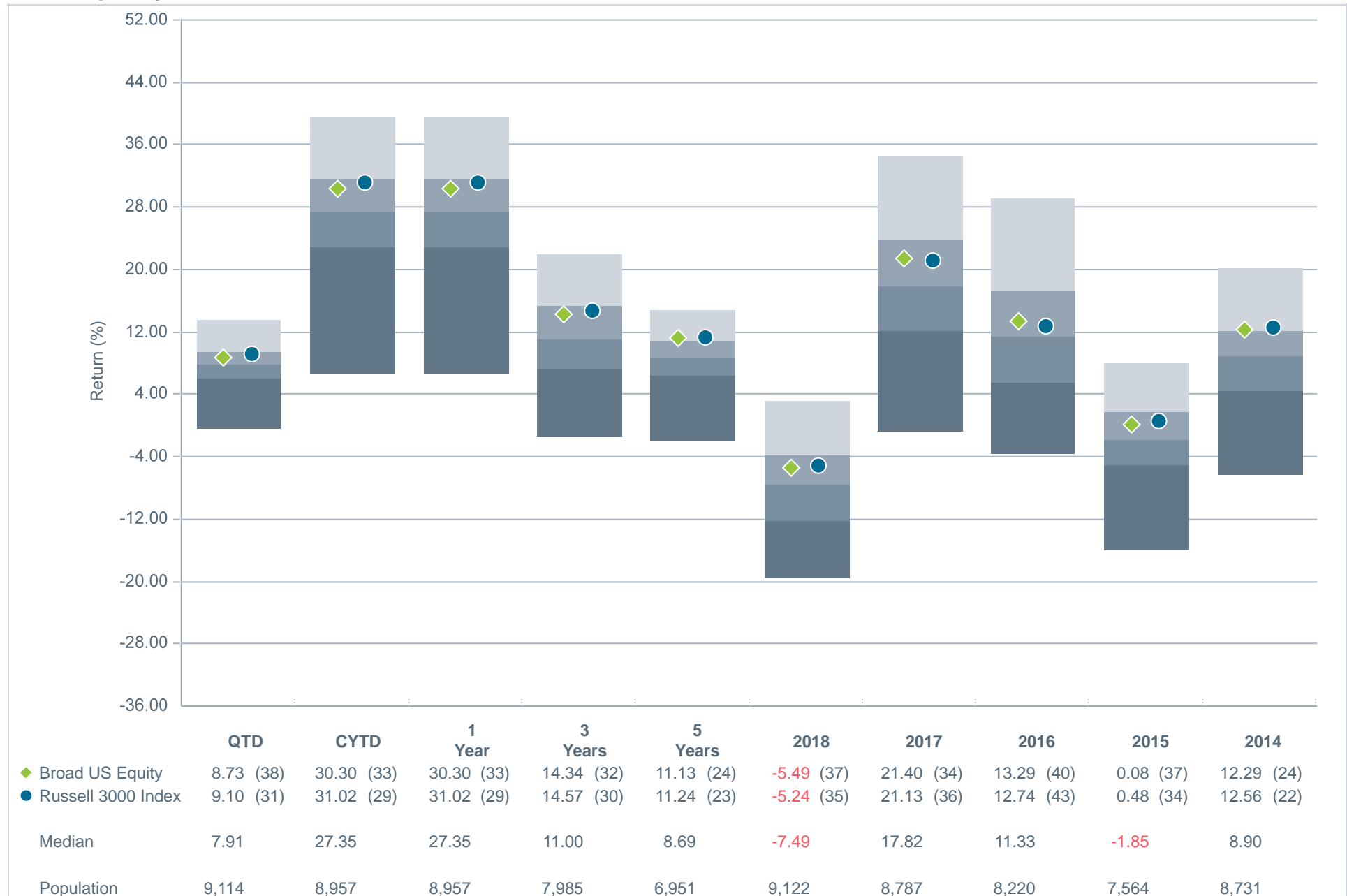
Attribution shown is calculated using the Investment Decision Process (IDP) method. Performance shown is net of fees. Calculation is based on monthly periodicity. See Glossary for additional information regarding the Total Fund Attribution - IDP calculation. Fiscal year ends 06/30.

# Composite Profiles

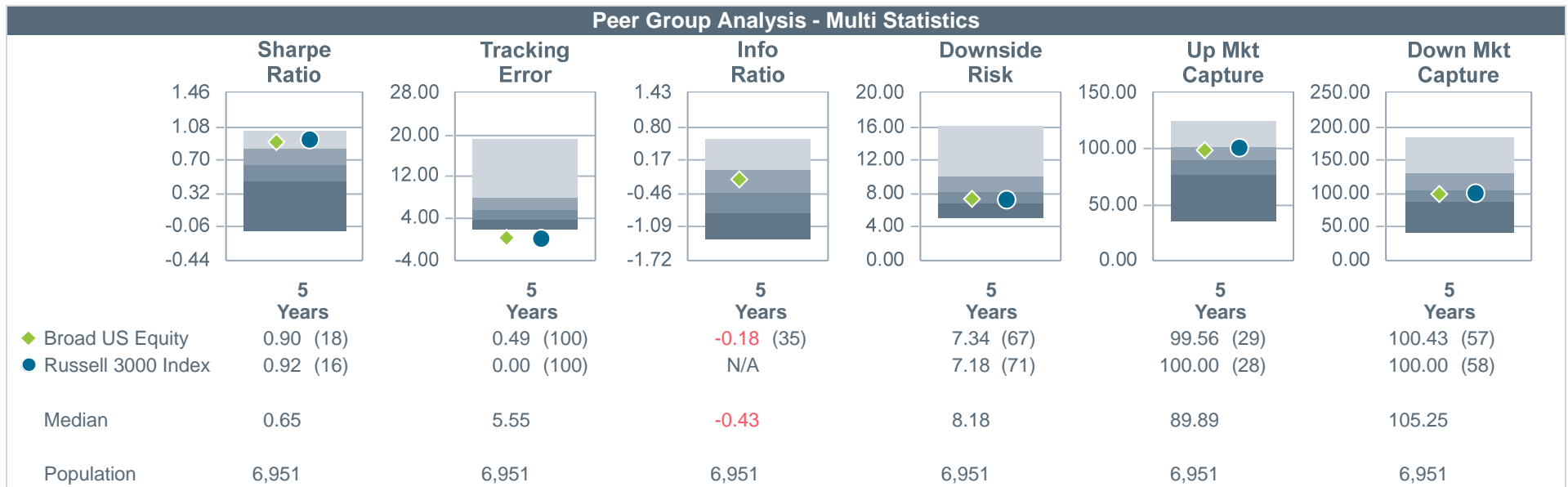
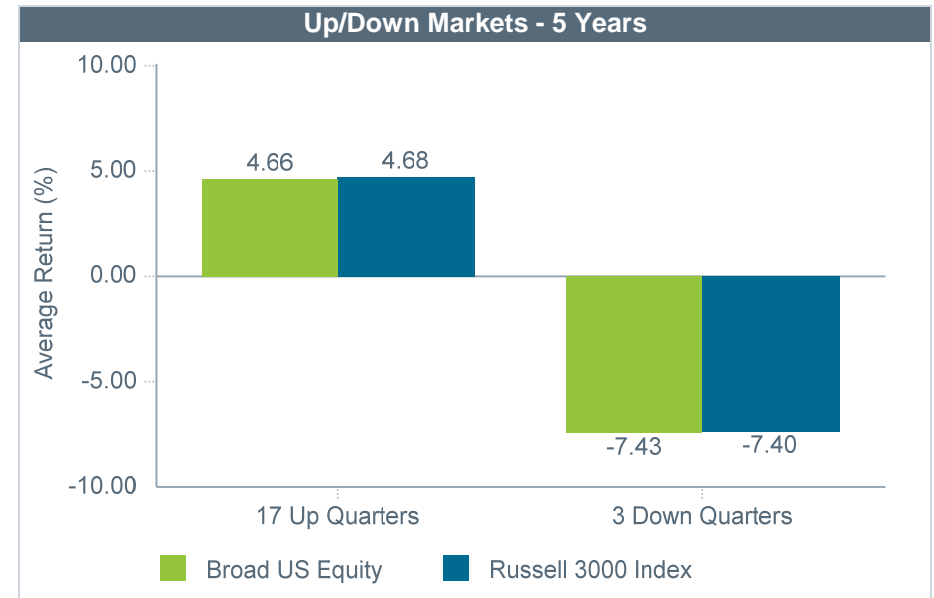
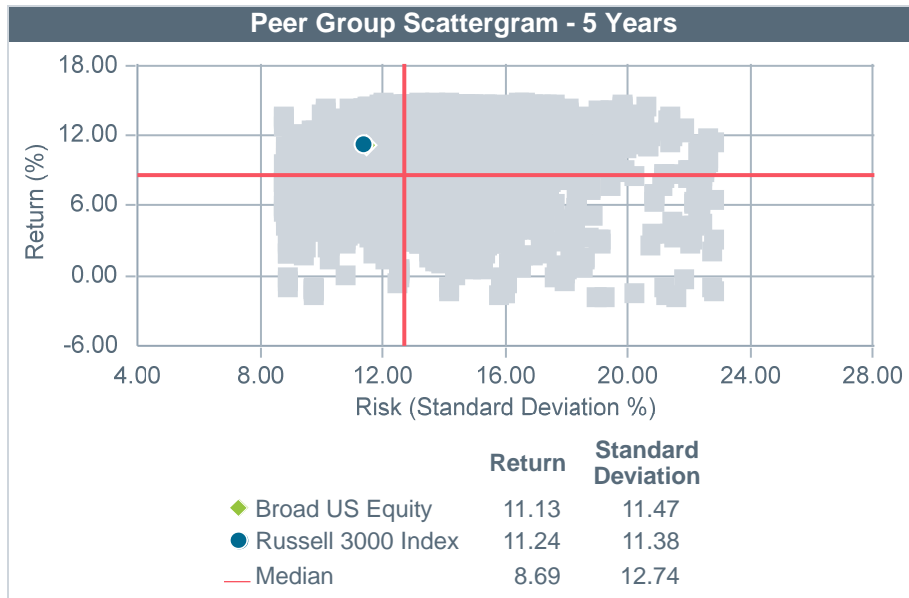


North Dakota Board of University and School Lands  
IM U.S. Equity (MF)  
Peer Group Analysis

As of December 31, 2019



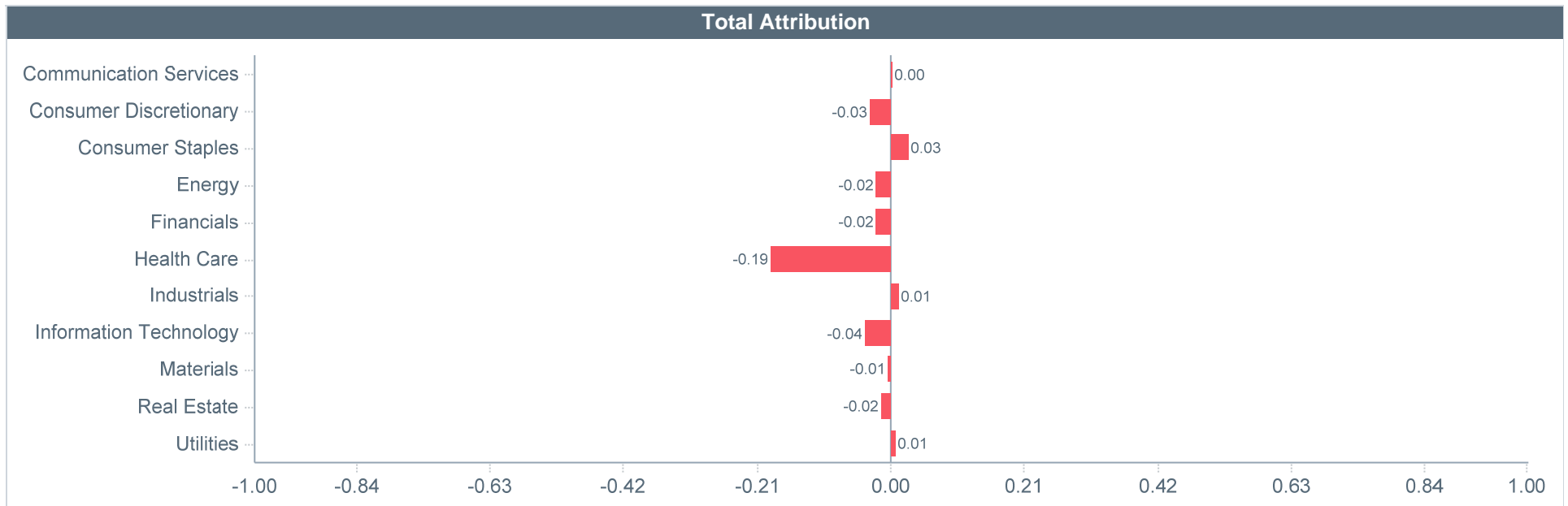
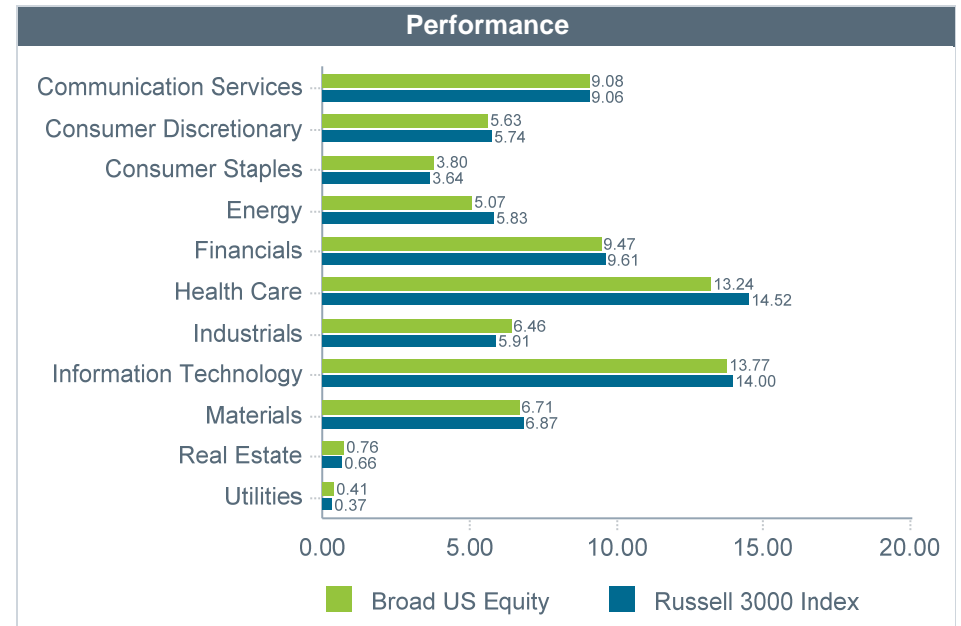
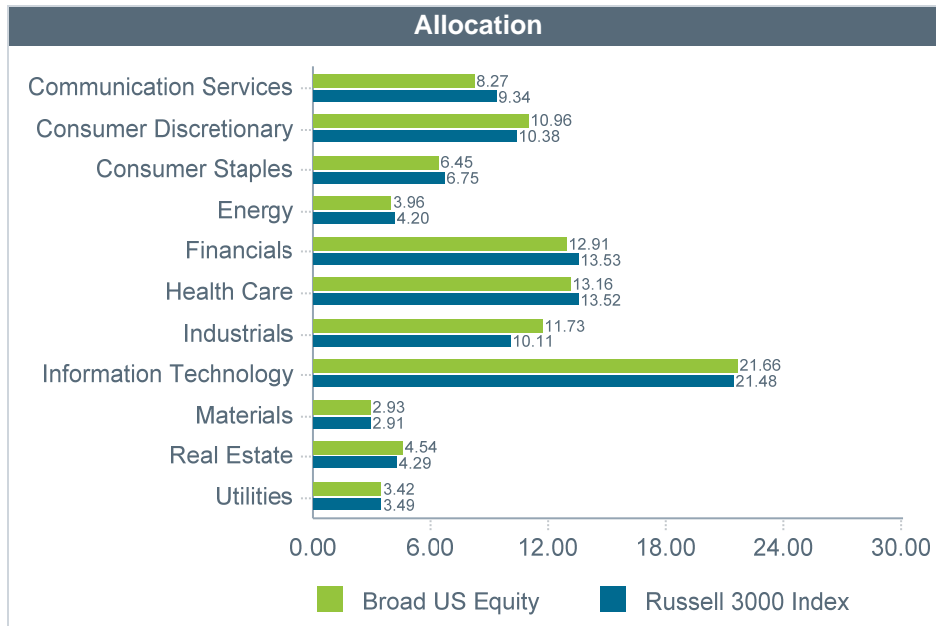
Performance shown is net of fees. Parentheses contain percentile ranks.



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

North Dakota Board of University and School Lands  
Broad US Equity vs. Russell 3000 Index  
Buy and Hold Sector Attribution Graph

1 Quarter Ending December 31, 2019

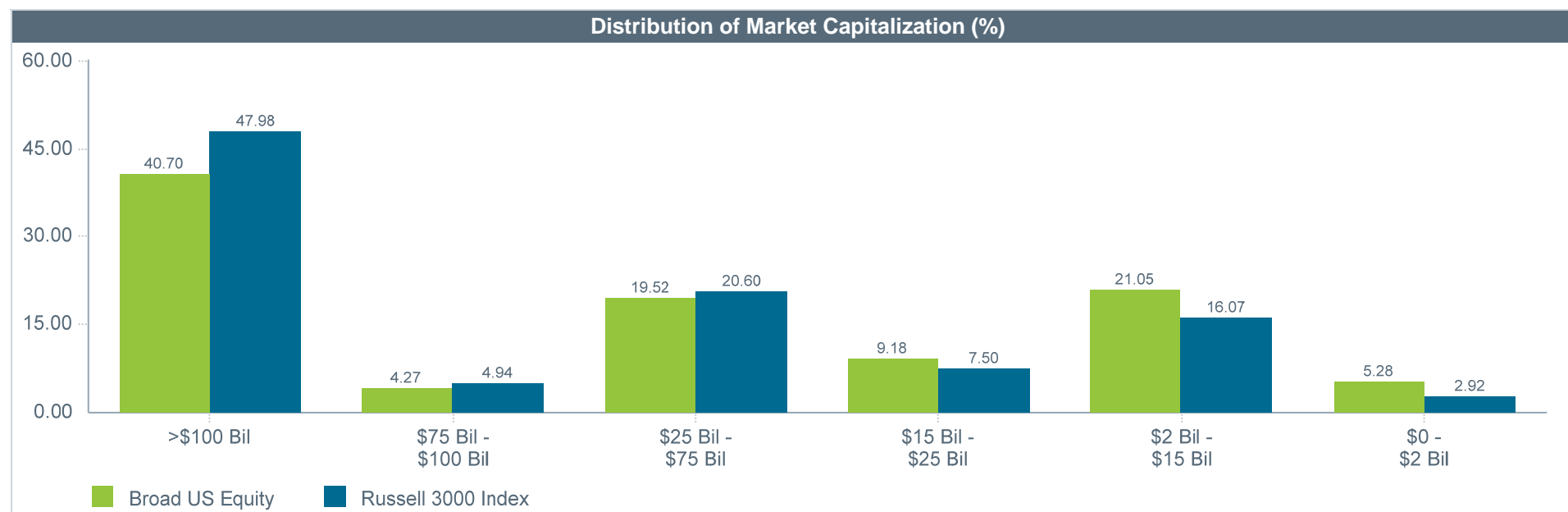


North Dakota Board of University and School Lands  
Broad US Equity vs. Russell 3000 Index  
Portfolio Characteristics

As of December 31, 2019

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Apple Inc	3.48	4.11	-0.63	31.50
Microsoft Corp	3.18	3.75	-0.57	13.82
Amazon.com Inc	2.04	2.41	-0.37	6.45
Facebook Inc	1.31	1.54	-0.23	15.26
Berkshire Hathaway Inc	1.19	1.39	-0.20	8.88
JPMorgan Chase & Co	1.16	1.37	-0.21	19.40
Alphabet Inc	1.07	1.26	-0.19	9.68
Alphabet Inc	1.07	1.26	-0.19	9.68
Johnson & Johnson	1.04	1.22	-0.18	13.53
Visa Inc	0.86	1.01	-0.15	9.42
% of Portfolio	16.40	19.32	-2.92	

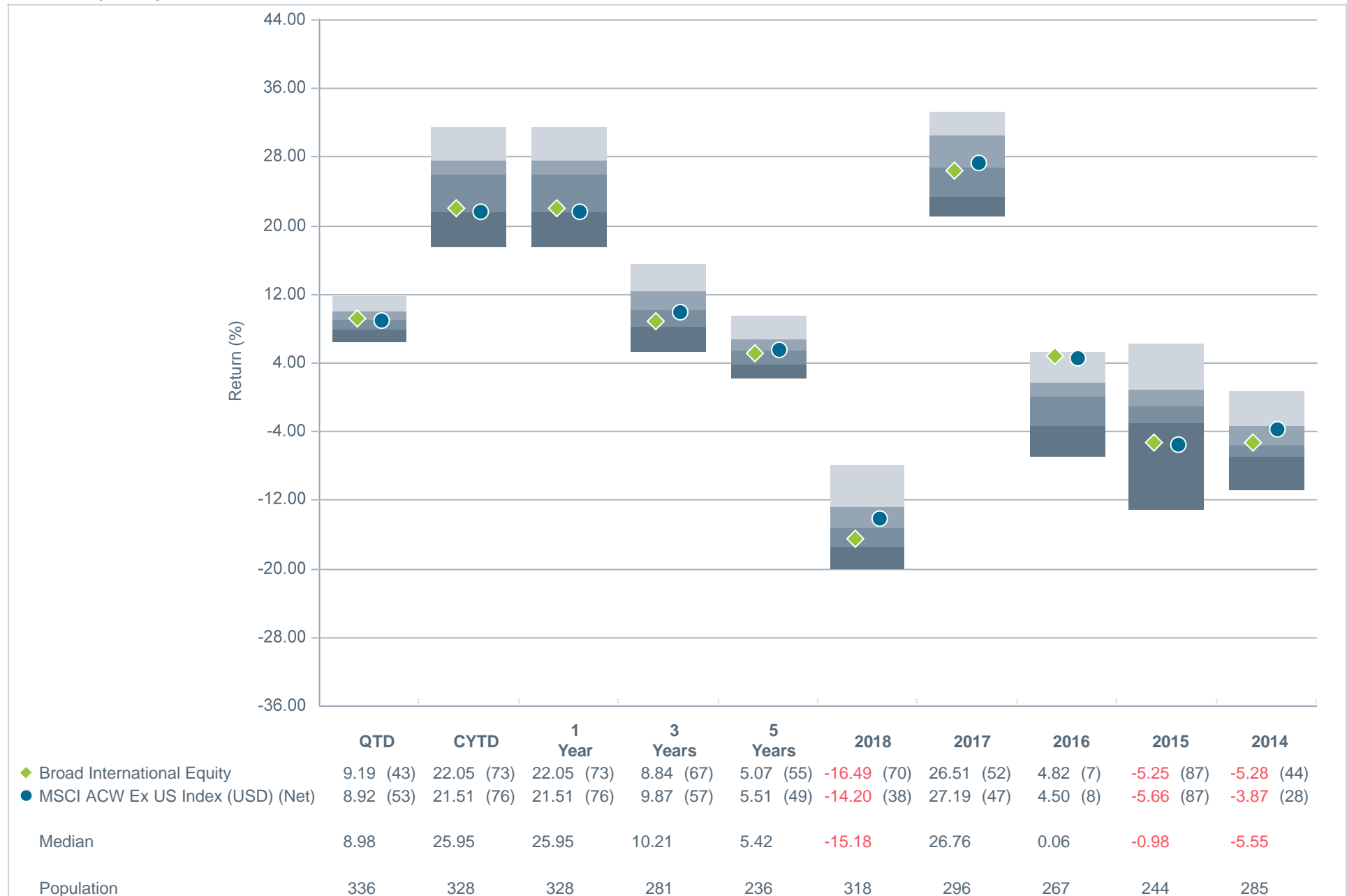
Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	210,454	245,926
Median Mkt. Cap (\$M)	8,879	1,775
Price/Earnings Ratio	22.78	22.63
Price/Book Ratio	3.44	3.50
5 Yr. EPS Growth Rate (%)	14.35	14.19
Current Yield (%)	1.73	1.79
Beta (5 Years, Monthly)	1.00	1.00
Number of Securities	1,158	2,991



Alphabet Inc. is shown twice in the Top Ten Equity Holdings, but represents two different share classes: GOOGL (Class A) and GOOG (Class C).

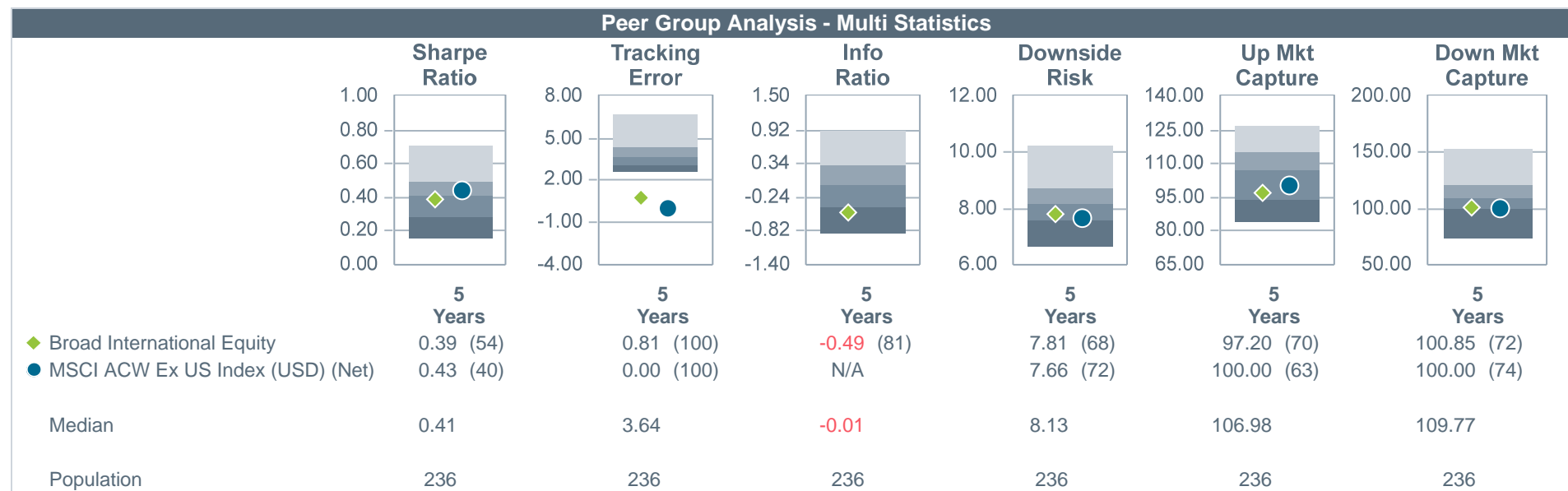
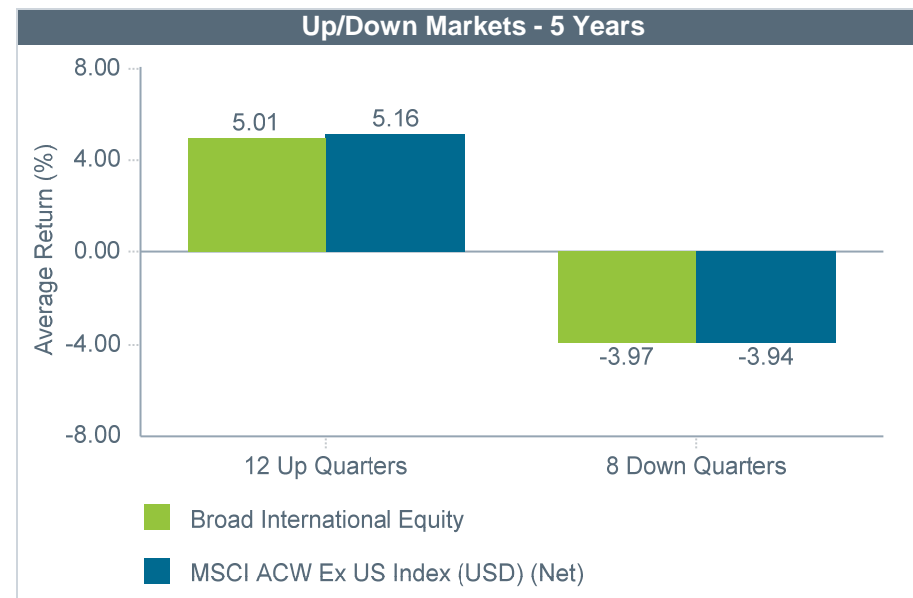
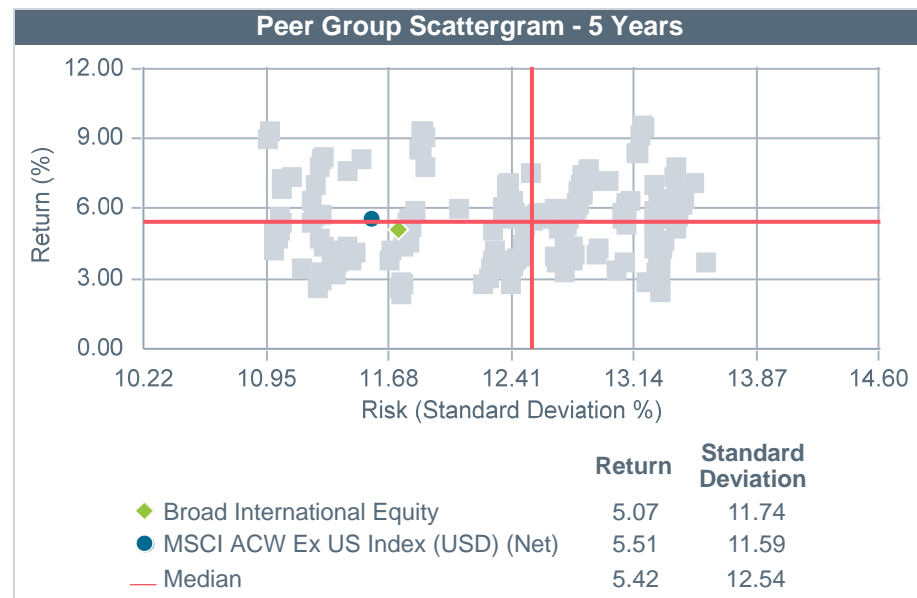
North Dakota Board of University and School Lands  
IM International Large Cap Equity (MF)  
Peer Group Analysis

As of December 31, 2019



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

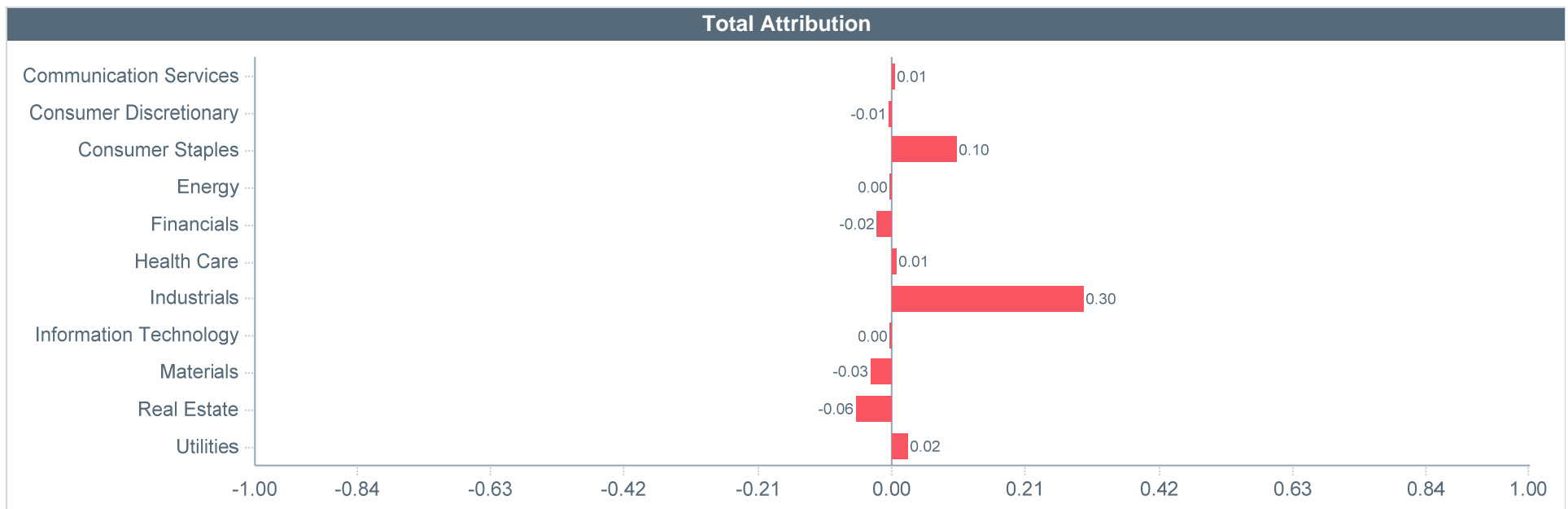
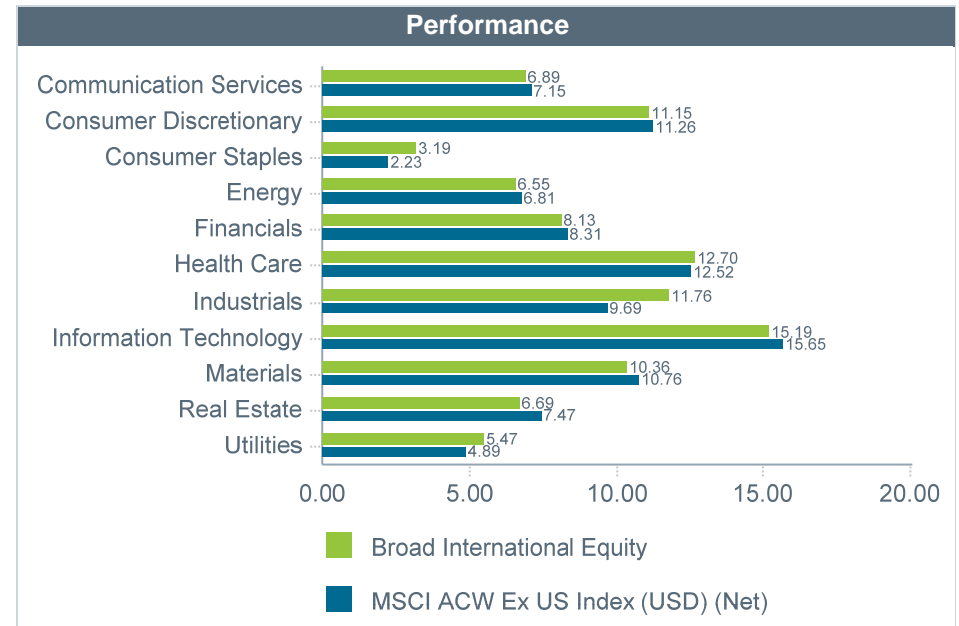
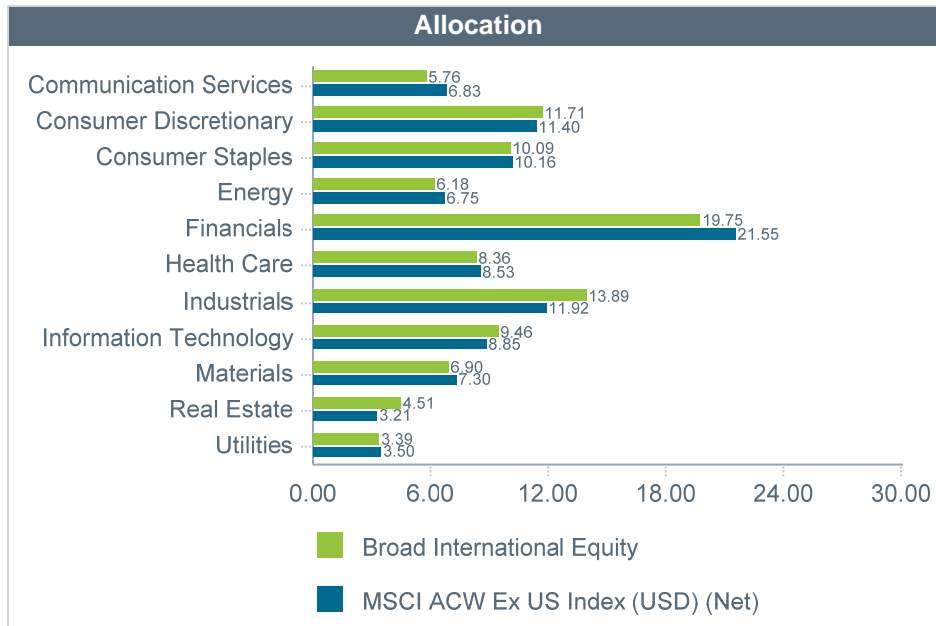




Performance shown is net of fees. Calculation is based on quarterly periodicity. Parentheses contain percentile ranks.

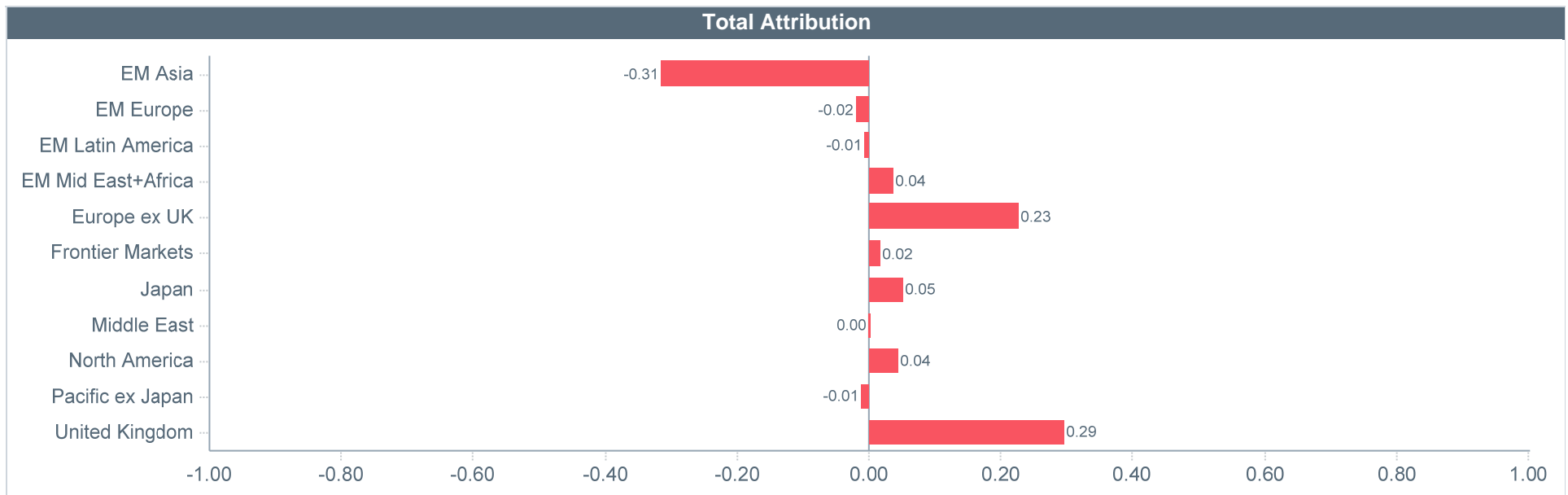
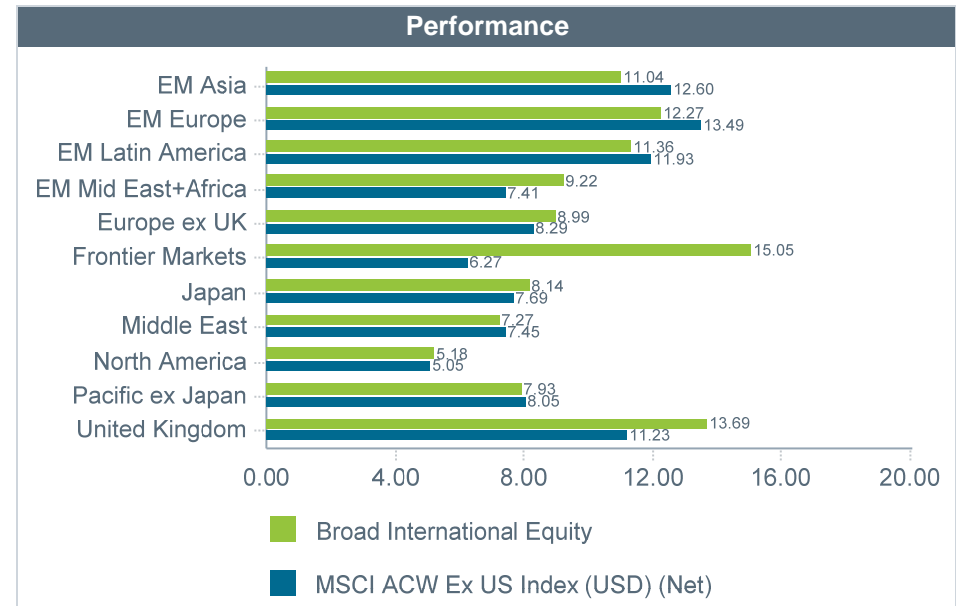
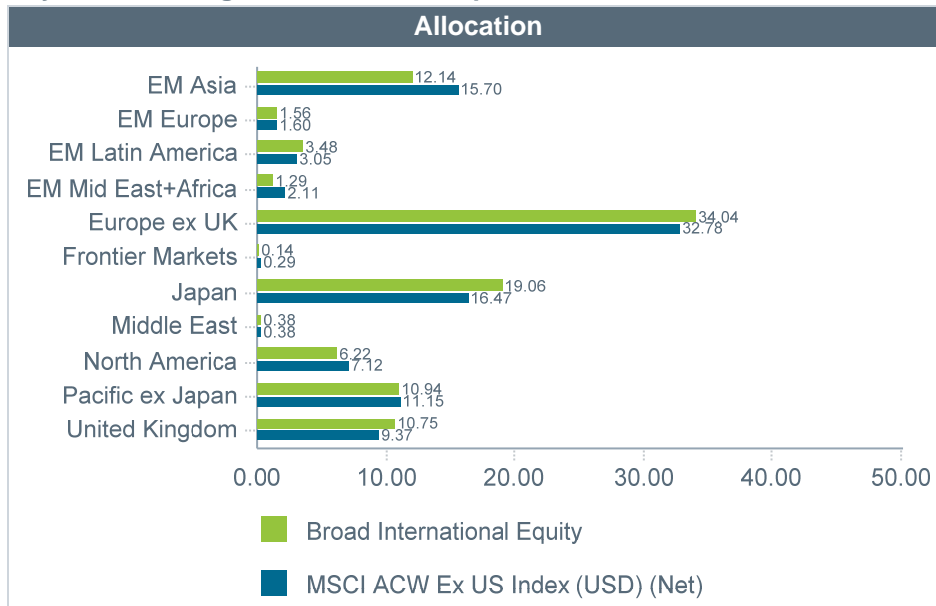
North Dakota Board of University and School Lands  
Broad International Equity vs. MSCI ACW Ex US Index (USD) (Net)  
Buy and Hold Sector Attribution Graph

1 Quarter Ending December 31, 2019



North Dakota Board of University and School Lands  
Broad International Equity vs. MSCI ACW Ex US Index (USD) (Net)  
Buy and Hold Region Attribution Graph

1 Quarter Ending December 31, 2019

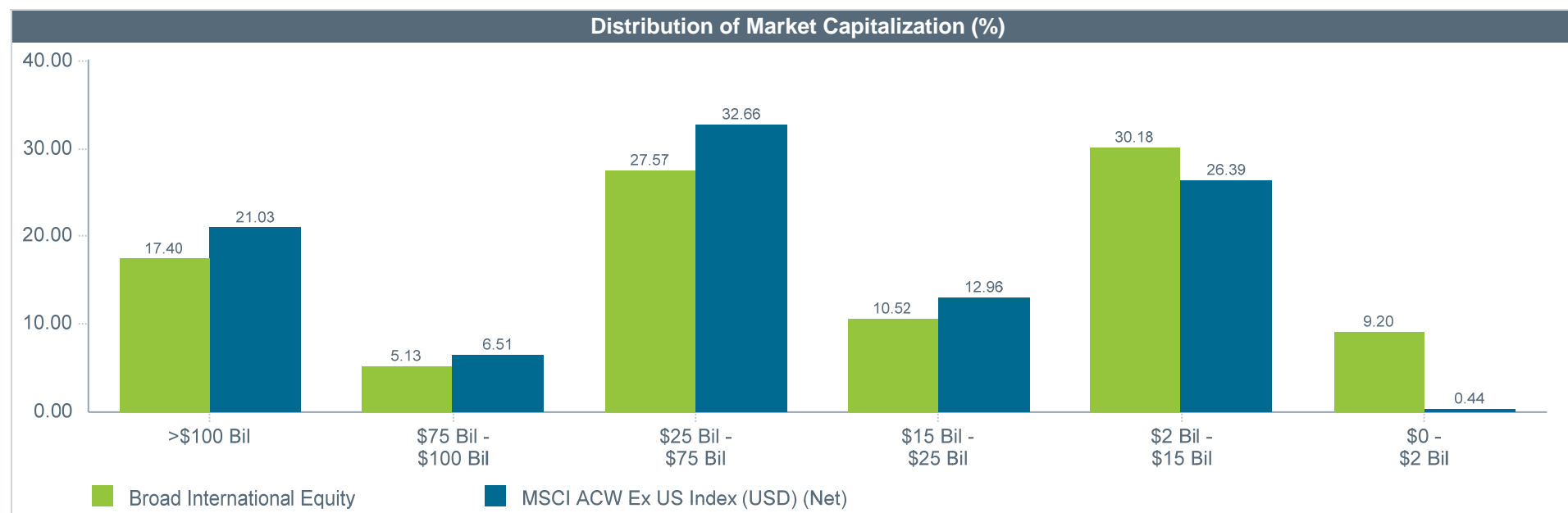


North Dakota Board of University and School Lands  
Broad International Equity vs. MSCI ACW Ex US Index (USD) (Net)  
Portfolio Characteristics

As of December 31, 2019

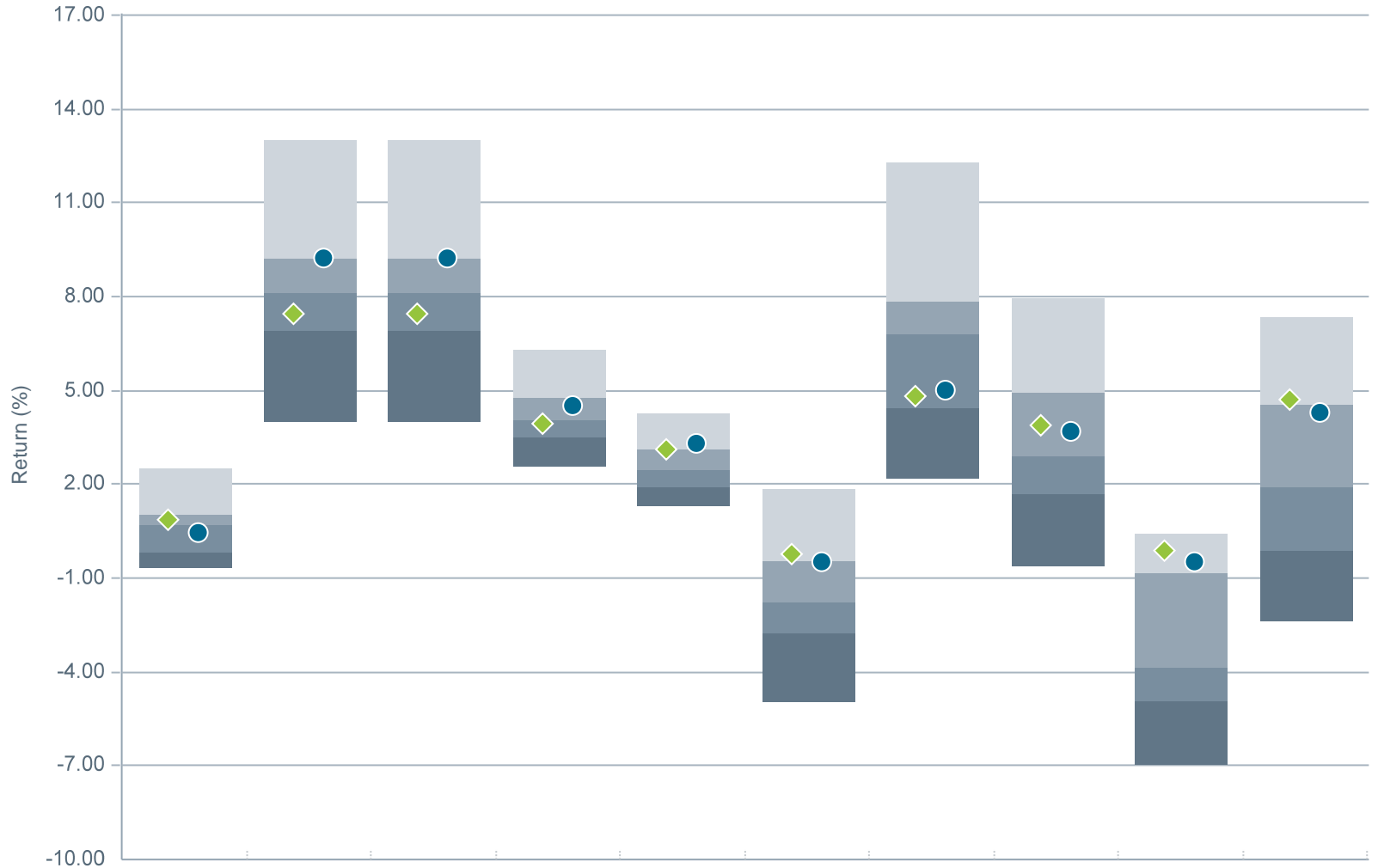
Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Nestle SA, Cham Und Vevey	1.26	1.42	-0.16	-0.31
Roche Holding AG	0.89	1.01	-0.12	11.37
Taiwan Semiconductor Mfg	0.85	1.21	-0.36	27.33
Novartis AG	0.80	0.90	-0.10	9.40
AIA Group Ltd	0.79	0.56	0.23	11.20
Tencent Holdings LTD	0.75	1.22	-0.47	14.50
Alibaba Group Holding Ltd	0.67	1.59	-0.92	26.83
Toyota Motor Corp	0.62	0.72	-0.10	6.32
HSBC HLDGS PLC	0.59	0.00	0.59	N/A
Samsung Electronics Co Ltd	0.52	1.02	-0.50	18.85
% of Portfolio	7.74	9.65	-1.91	

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	59,766	75,601
Median Mkt. Cap (\$M)	774	8,444
Price/Earnings Ratio	15.71	16.14
Price/Book Ratio	2.35	2.34
5 Yr. EPS Growth Rate (%)	9.03	8.14
Current Yield (%)	3.06	3.19
Beta (5 Years, Monthly)	0.99	1.00
Number of Securities	6,174	2,412

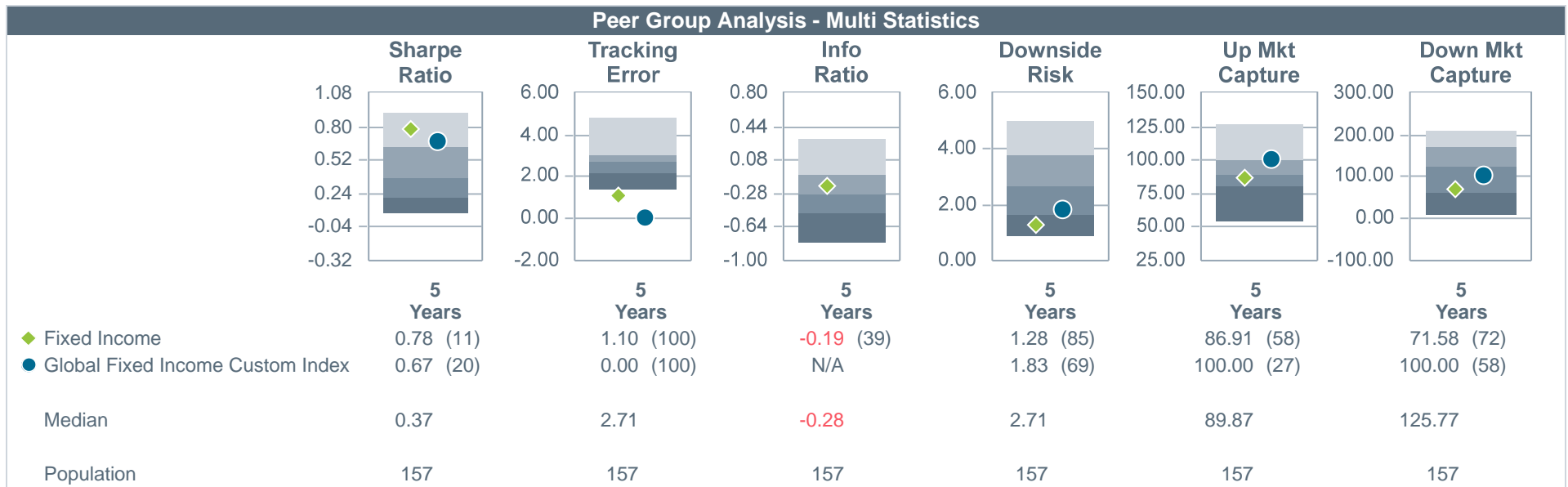
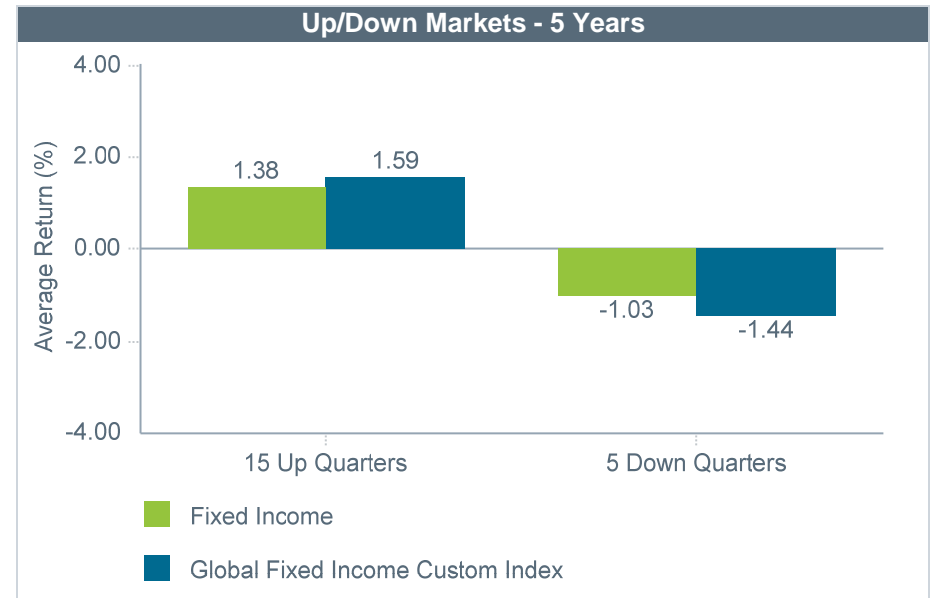
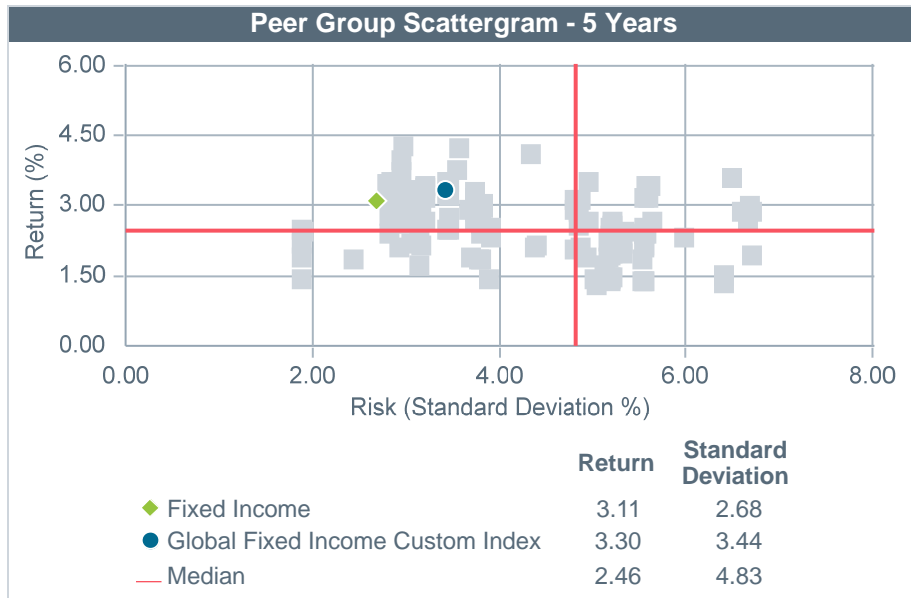


North Dakota Board of University and School Lands  
IM Global Fixed Income (MF)  
Peer Group Analysis

As of December 31, 2019



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

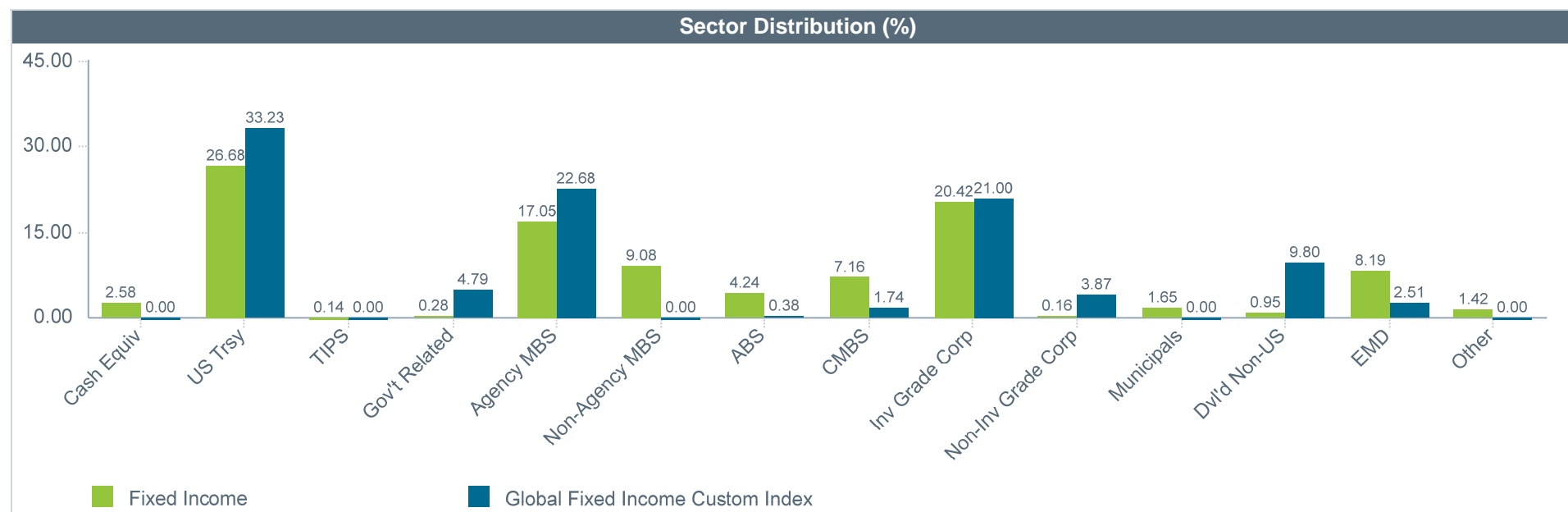


Performance shown is net of fees. Calculation is based on quarterly periodicity. Parentheses contain percentile ranks.

North Dakota Board of University and School Lands  
Fixed Income vs. Global Fixed Income Custom Index  
Portfolio Characteristics

As of December 31, 2019

Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	4.11	5.68
Avg. Maturity	6.40	7.94
Avg. Quality	A1	N/A
Coupon Rate (%)	3.47	3.49
Yield To Worst (%)	2.64	2.65
Current Yield (%)	3.37	0.20



FLP & ECLP Bank Loans, AG Direct Lending Fund III, L.P. and ND Land - PTF Cash (SA) are excluded from portfolio characteristics and sector distribution.  
Allocation to "Other" consists of currency forwards.



# Investment Manager Profiles



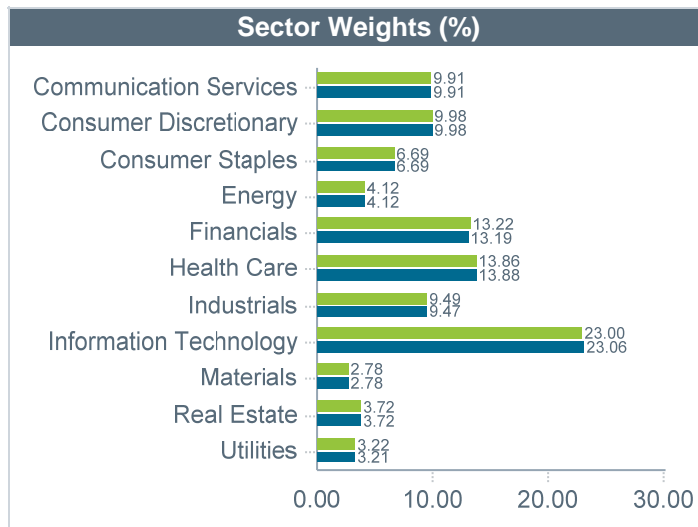
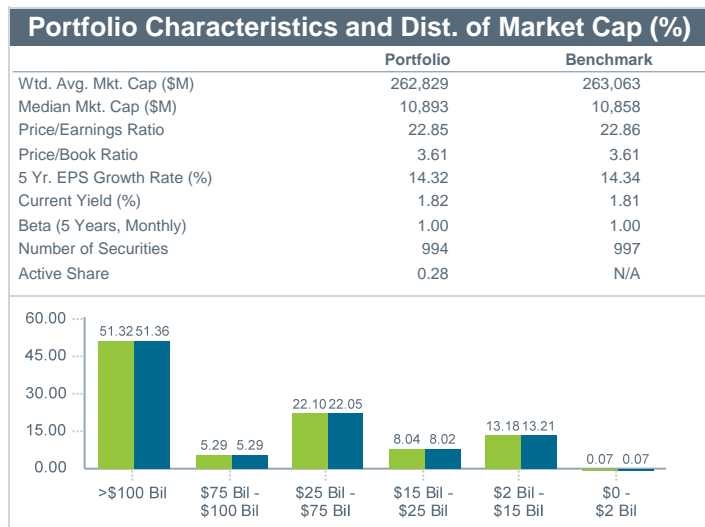
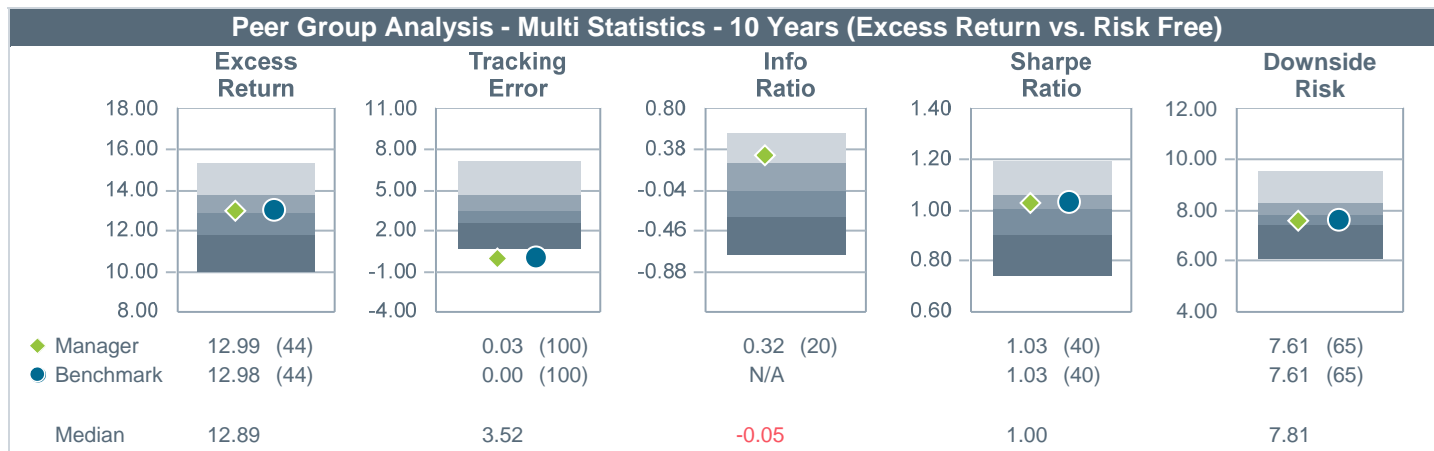
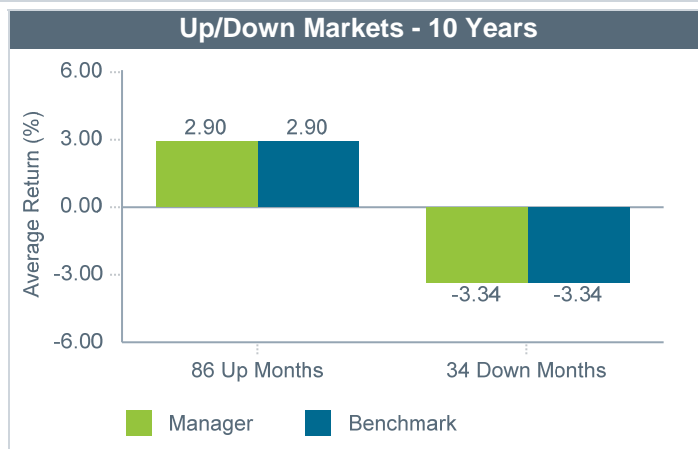
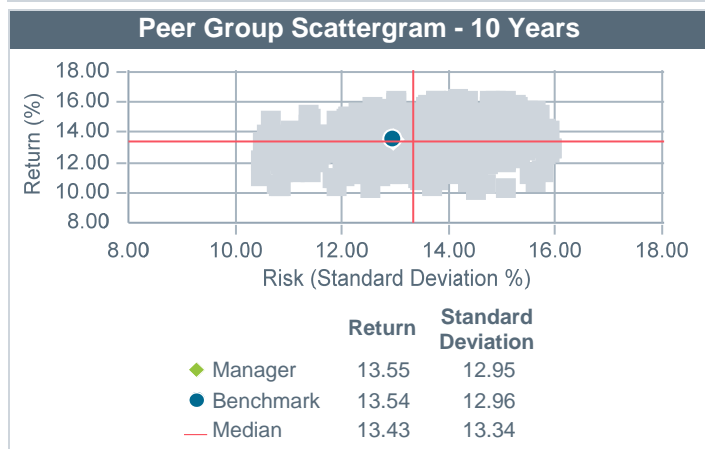
Manager: State Street Russell 1000 Index Lending (CF)

As of December 31, 2019

Benchmark: Russell 1000 Index

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

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	9.04	31.42	15.05	11.49	14.60	13.55	-4.77	21.70	12.03	0.96	13.23
Benchmark	9.04	31.43	15.05	11.48	14.60	13.54	-4.78	21.69	12.05	0.92	13.24
Difference	0.00	-0.01	0.00	0.01	0.00	0.01	0.01	0.01	-0.02	0.04	-0.01
Peer Group Median	8.73	30.22	14.59	11.10	14.42	13.43	-5.13	21.70	11.01	0.94	12.90
Rank	42	40	44	42	46	43	47	51	40	50	45
Population	889	888	878	847	808	737	1,021	1,085	1,162	1,233	1,291



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

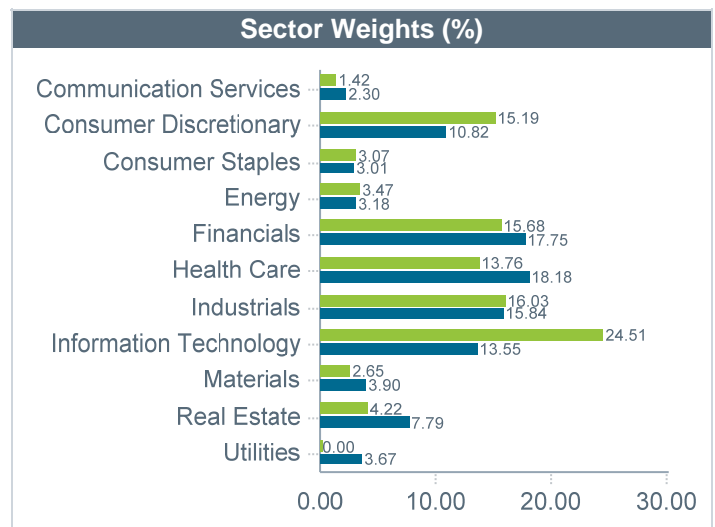
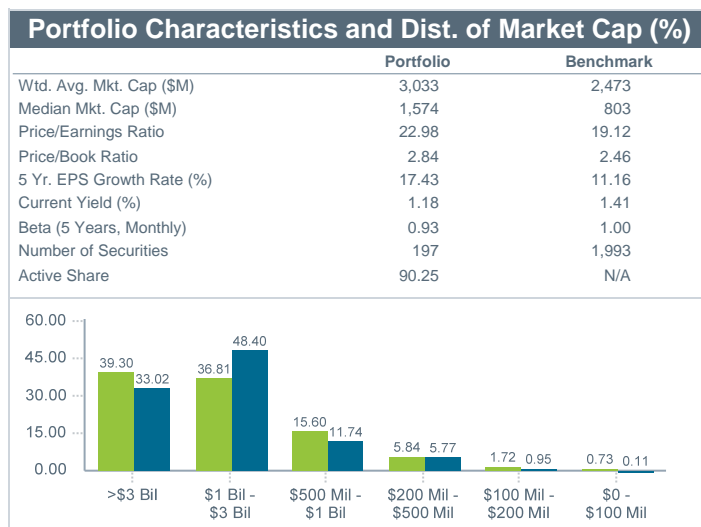
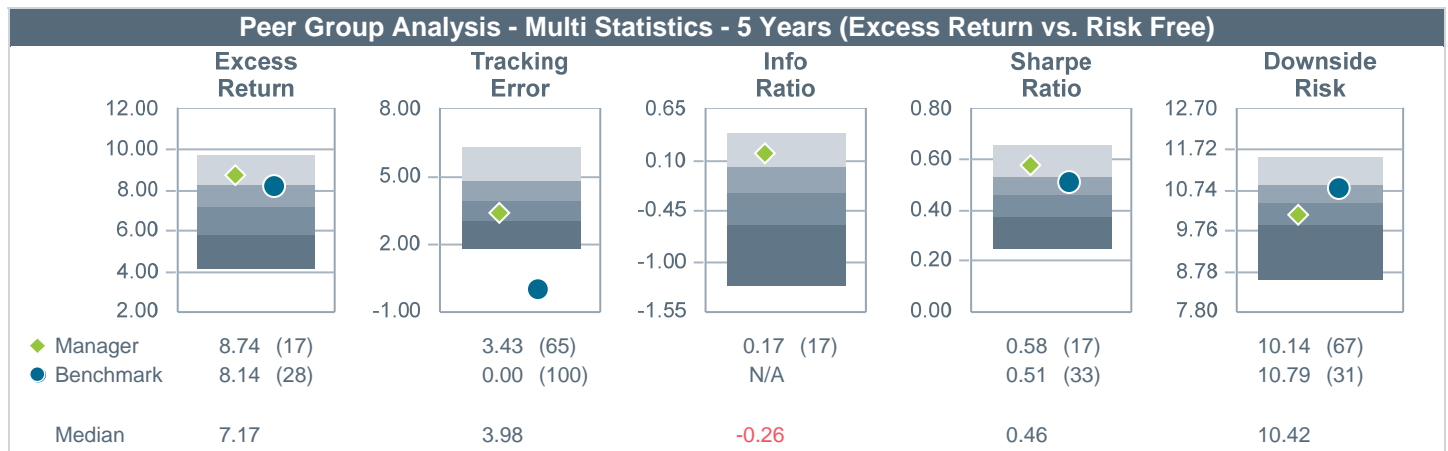
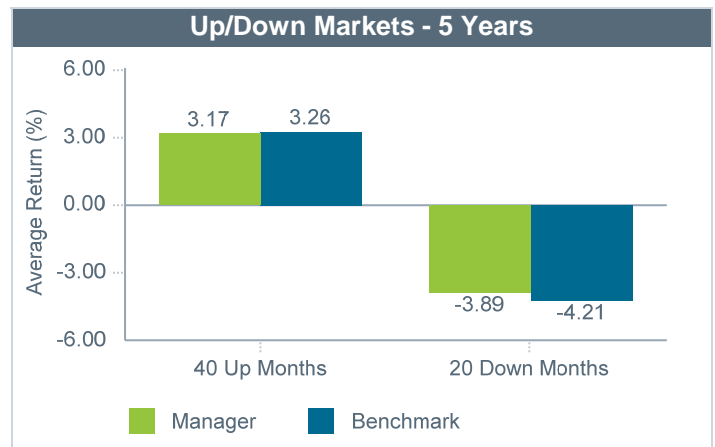
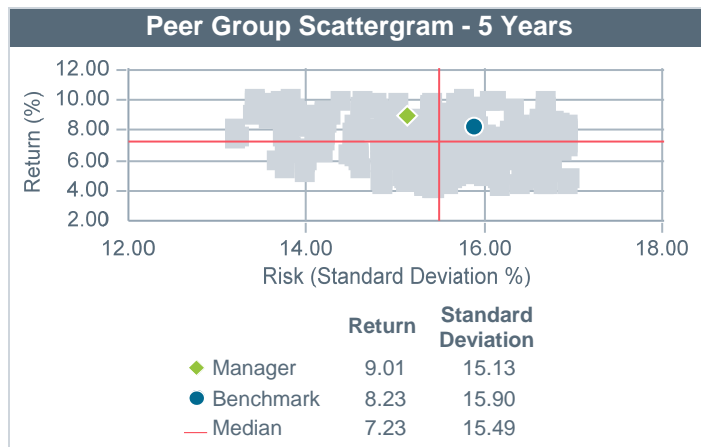
Manager: NT Small Cap Core (CF)

As of December 31, 2019

Benchmark: Russell 2000 Index

Peer Group: IM U.S. Small Cap Core Equity (MF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	8.10	23.13	11.48	9.01	N/A	N/A	-7.63	21.82	18.20	-6.01	N/A
Benchmark	9.94	25.53	8.59	8.23	11.65	11.83	-11.01	14.65	21.31	-4.41	4.89
Difference	-1.84	-2.40	2.89	0.78	N/A	N/A	3.38	7.17	-3.11	-1.60	N/A
Peer Group Median	8.12	23.86	6.54	7.23	10.75	11.04	-12.68	12.37	21.34	-4.34	4.64
Rank	51	59	3	16	N/A	N/A	7	2	79	72	N/A
Population	787	780	706	583	493	411	818	814	745	668	757

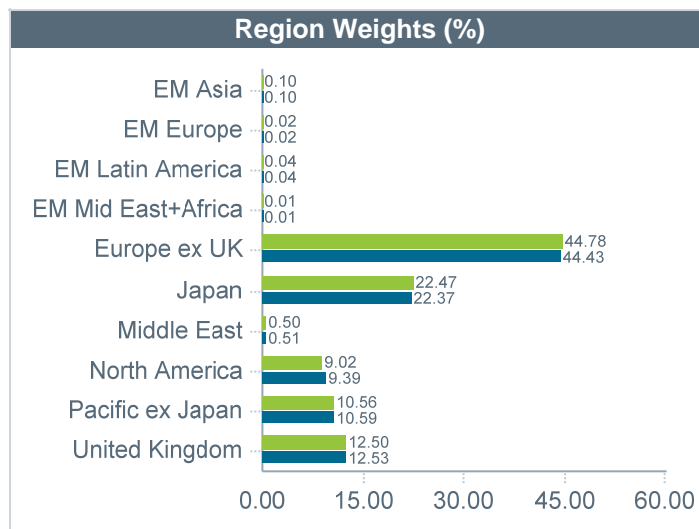
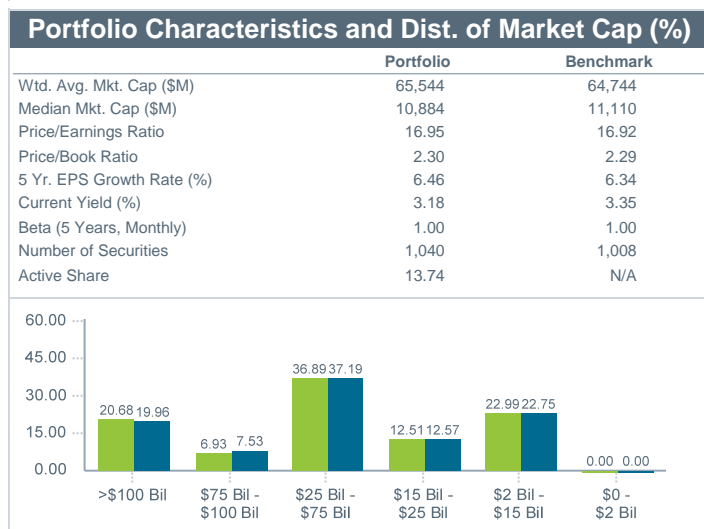
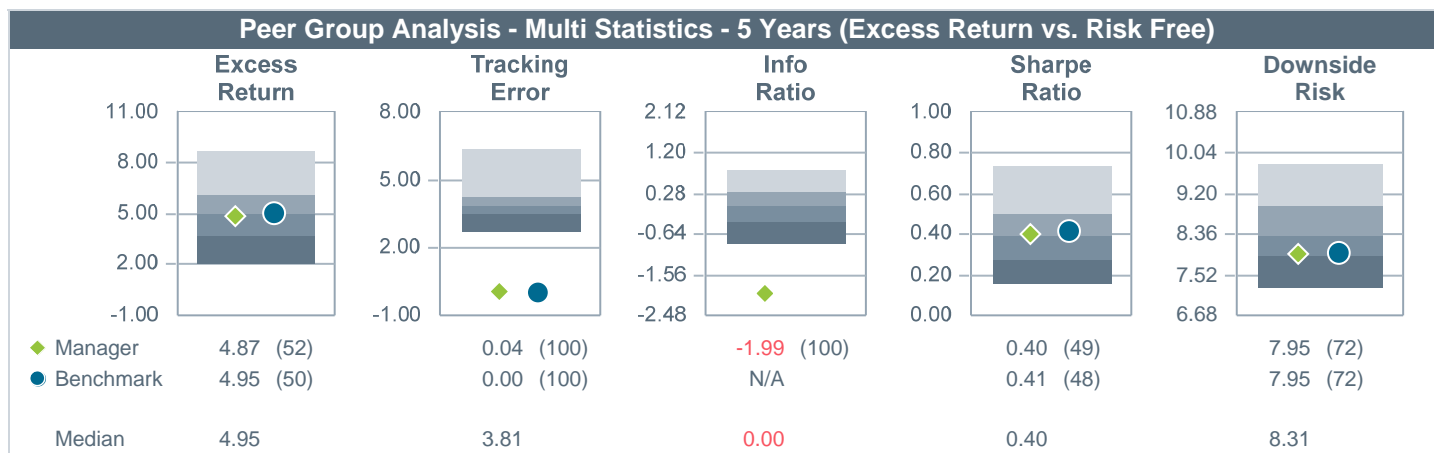
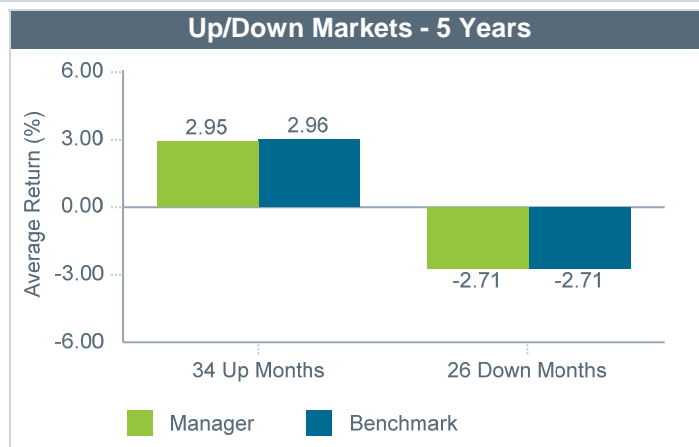
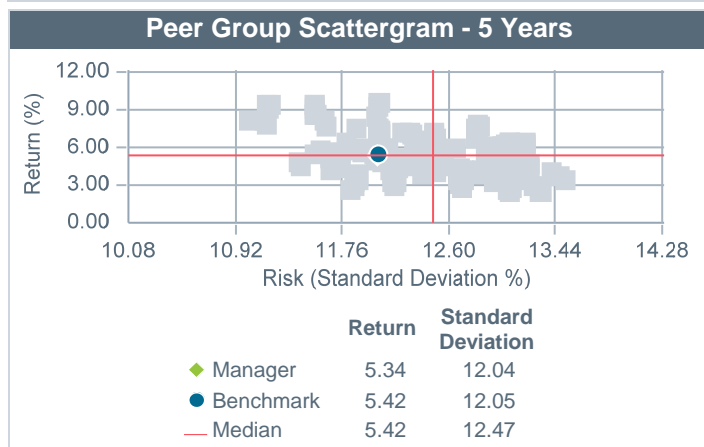


Performance shown is net of fees and product specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

**Manager:** State Street World Ex US Index (CF)  
**Benchmark:** MSCI Wrld Ex US Index (USD) (Net)  
**Peer Group:** IM International Large Cap Equity (MF)

As of December 31, 2019

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	7.84	22.38	9.26	5.34	N/A	N/A	-14.16	24.15	2.66	-3.12	N/A
Benchmark	7.86	22.49	9.34	5.42	6.04	5.32	-14.09	24.21	2.75	-3.04	-4.32
Difference	-0.02	-0.11	-0.08	-0.08	N/A	N/A	-0.07	-0.06	-0.09	-0.08	N/A
Peer Group Median	8.98	25.95	10.21	5.42	5.73	5.28	-15.18	26.76	0.06	-0.98	-5.55
Rank	77	72	63	52	N/A	N/A	38	70	16	78	N/A
Population	336	328	281	236	219	186	318	296	267	244	285

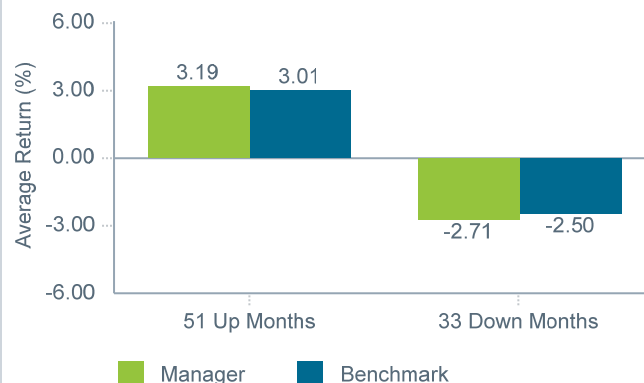


Performance shown is net of fees and client specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

**Manager: QMA Int'l Sm Cap Equity (CF)**
**As of December 31, 2019**
**Benchmark: MSCI EAFE Sm Cap Index (USD) (Gross)**
**Peer Group: IM International Small Cap Core Equity (SA+CF)**

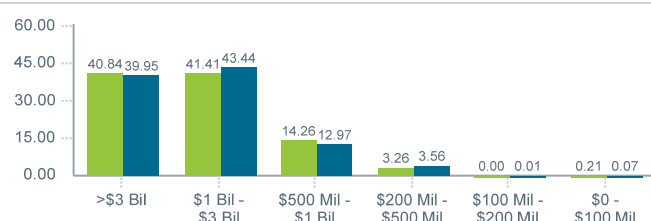
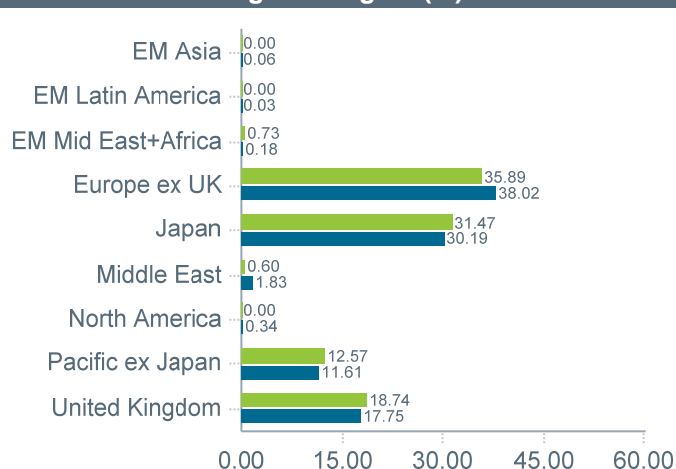
Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	12.42	23.52	8.80	7.25	10.07	N/A	-22.79	35.05	-0.81	11.09	0.02
Benchmark	11.56	25.47	11.35	9.25	9.81	9.12	-17.58	33.50	2.55	9.94	-4.63
Difference	0.86	-1.95	-2.55	-2.00	0.26	N/A	-5.21	1.55	-3.36	1.15	4.65
Peer Group Median	11.53	24.96	11.79	8.83	10.06	10.34	-18.82	34.07	2.13	9.91	-2.43
Rank	28	64	88	92	49	N/A	98	46	86	43	27
Population	45	45	42	35	30	20	45	45	43	39	35

**Peer Group Scattergram - 7 Years**

**Up/Down Markets - 7 Years**

**Peer Group Analysis - Multi Statistics - 7 Years (Excess Return vs. Risk Free)**

**Portfolio Characteristics and Dist. of Market Cap (%)**

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$M)	2,538	2,823
Median Mkt. Cap (\$M)	1,675	1,118
Price/Earnings Ratio	12.21	16.18
Price/Book Ratio	2.19	2.23
5 Yr. EPS Growth Rate (%)	15.41	9.33
Current Yield (%)	3.11	2.74
Beta (5 Years, Monthly)	1.04	1.00
Number of Securities	269	2,346
Active Share	85.55	N/A


**Region Weights (%)**


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

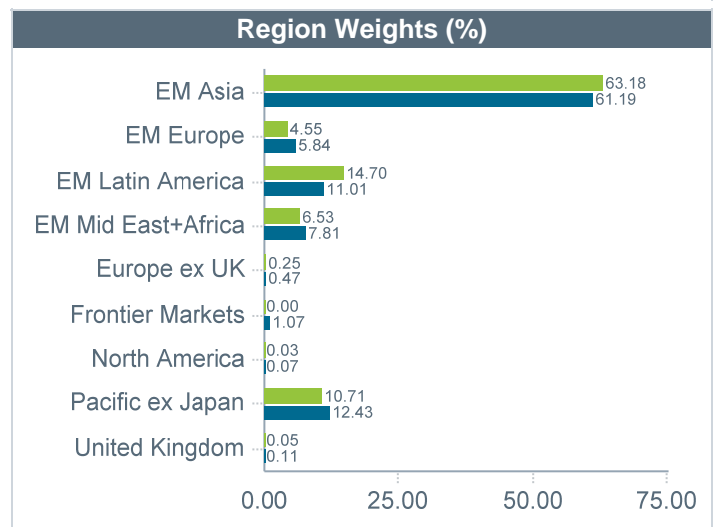
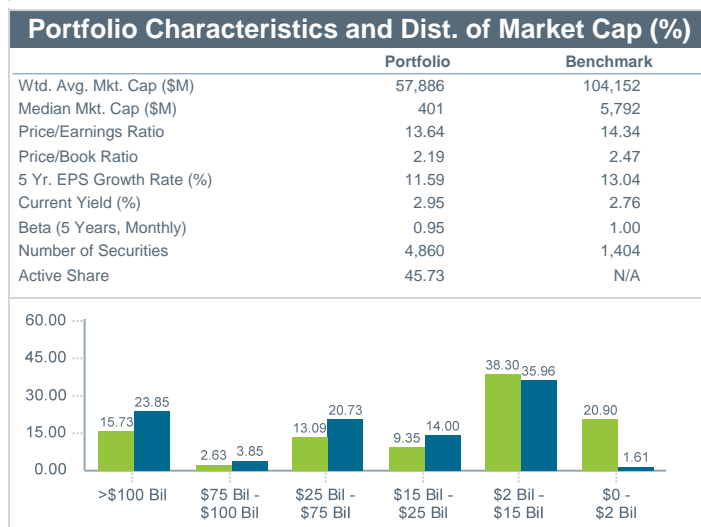
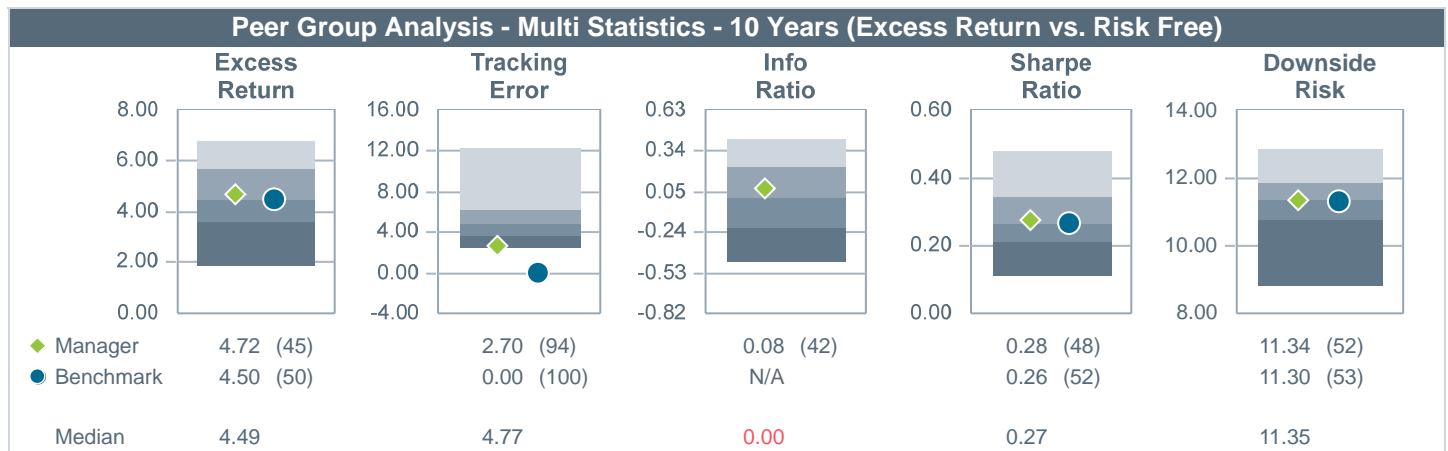
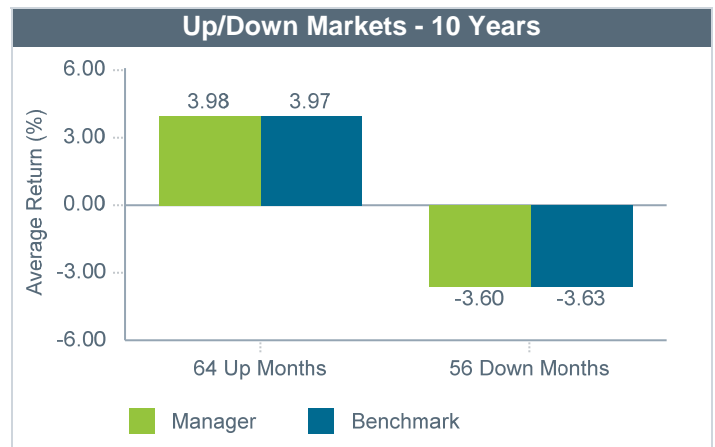
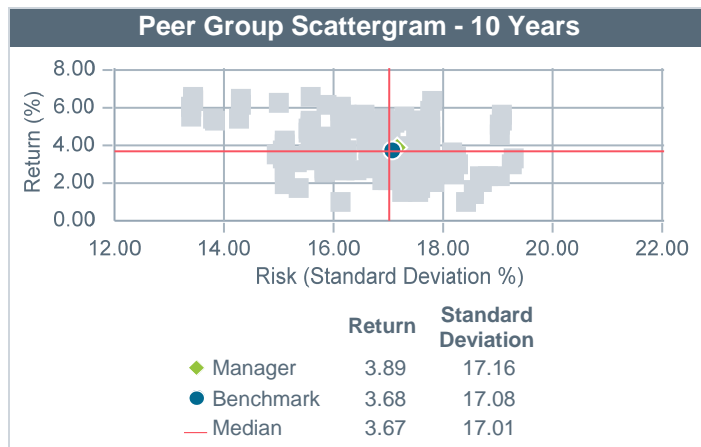
Manager: DFA Emg Mkts Core Eq;I (DFCEX)

As of December 31, 2019

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

Peer Group: IM Emerging Markets Equity (MF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	10.55	16.04	10.33	5.14	3.11	3.89	-15.25	36.55	12.35	-14.86	-0.91
Benchmark	11.84	18.44	11.57	5.61	3.26	3.68	-14.58	37.28	11.19	-14.92	-2.19
Difference	-1.29	-2.40	-1.24	-0.47	-0.15	0.21	-0.67	-0.73	1.16	0.06	1.28
Peer Group Median	11.03	20.06	10.63	5.13	3.18	3.67	-16.40	35.37	8.35	-13.66	-2.92
Rank	60	77	56	50	52	46	40	45	21	63	31
Population	863	846	722	590	432	252	843	813	750	656	724



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

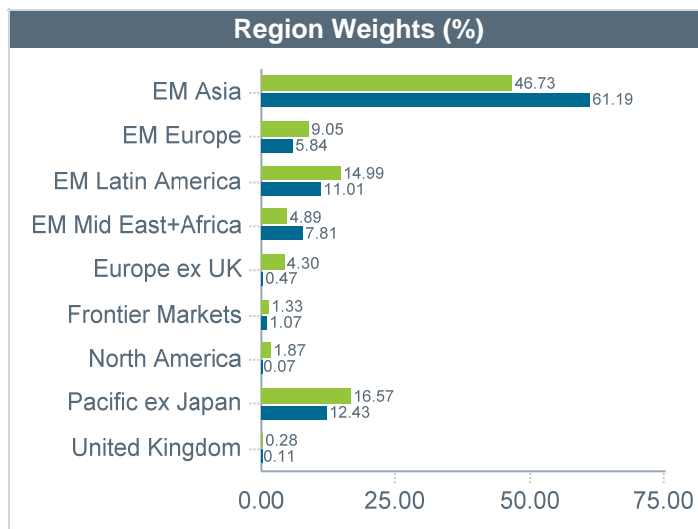
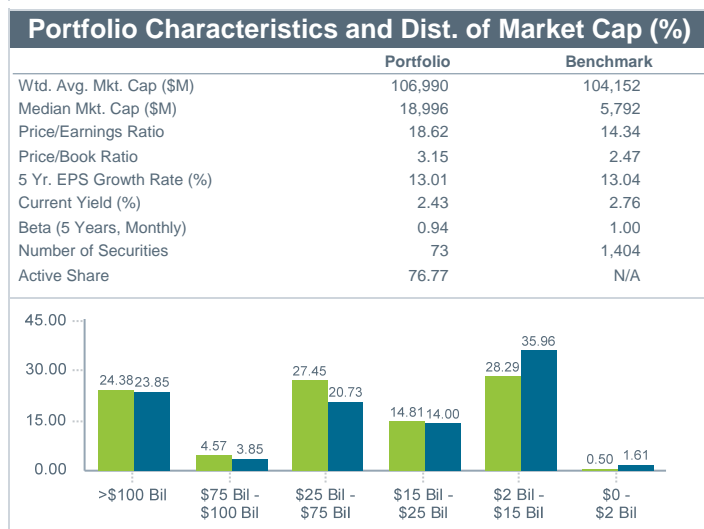
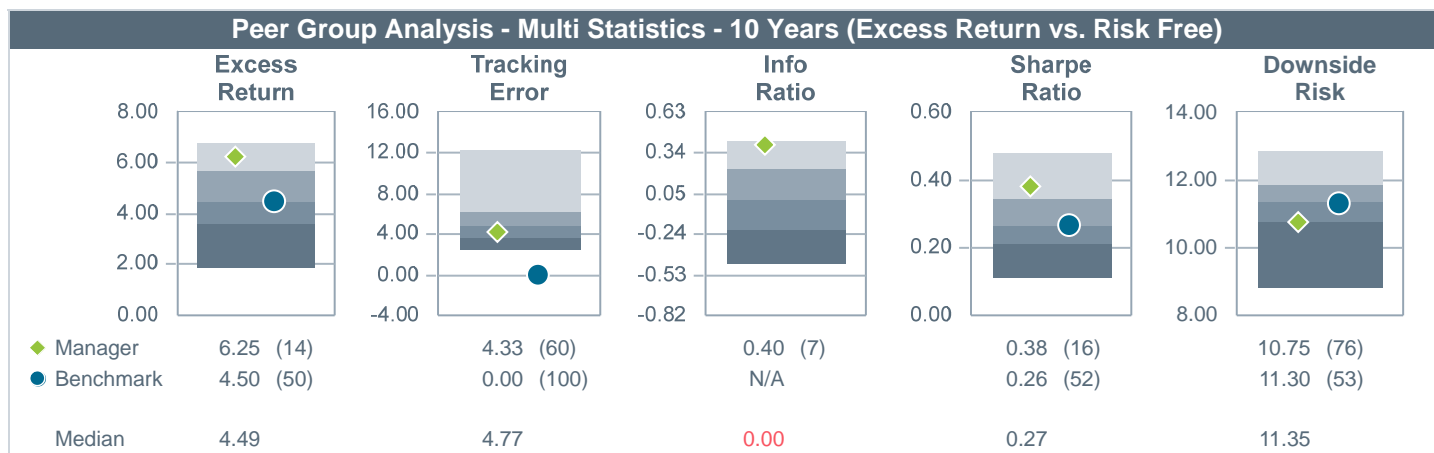
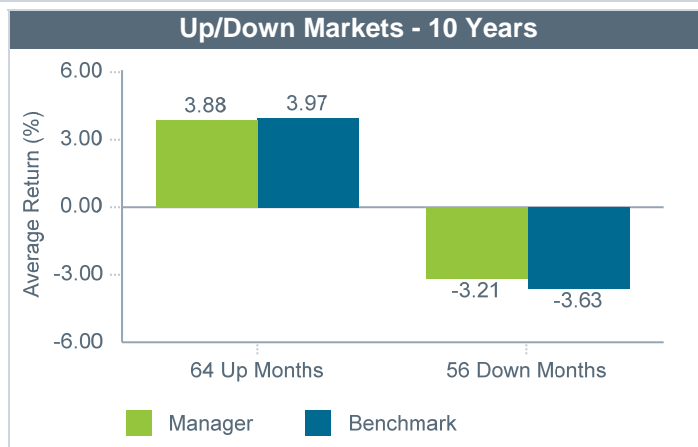
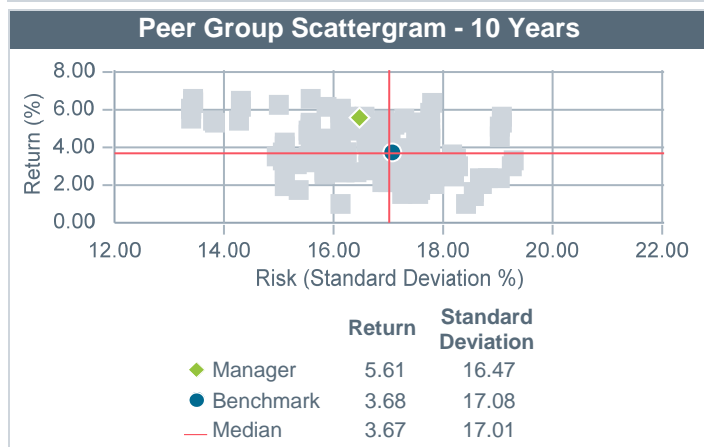
Manager: Harding Loevner: IEM; IZ (HLEZX)

As of December 31, 2019

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

Peer Group: IM Emerging Markets Equity (MF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	12.23	25.97	11.70	6.51	4.98	5.61	-18.53	35.79	13.44	-13.31	-1.74
Benchmark	11.84	18.44	11.57	5.61	3.26	3.68	-14.58	37.28	11.19	-14.92	-2.19
Difference	0.39	7.53	0.13	0.90	1.72	1.93	-3.95	-1.49	2.25	1.61	0.45
Peer Group Median	11.03	20.06	10.63	5.13	3.18	3.67	-16.40	35.37	8.35	-13.66	-2.92
Rank	23	21	37	25	19	13	71	49	15	47	40
Population	863	846	722	590	432	252	843	813	750	656	724



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



Manager: Payden & Rygel Long Term (SA)

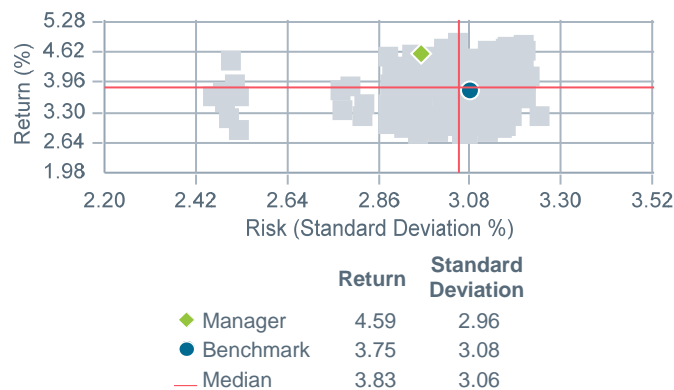
As of December 31, 2019

Benchmark: Bloomberg US Agg Bond Index

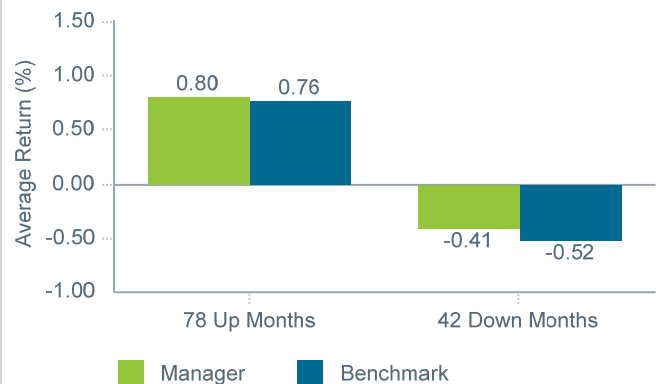
Peer Group: IM U.S. Broad Market Core Fixed Income (MF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	0.27	9.42	4.79	3.75	3.28	4.59	0.16	4.99	3.83	0.62	5.80
Benchmark	0.18	8.72	4.03	3.05	2.72	3.75	0.01	3.54	2.65	0.55	5.97
Difference	0.09	0.70	0.76	0.70	0.56	0.84	0.15	1.45	1.18	0.07	-0.17
Peer Group Median	0.18	8.75	3.88	2.89	2.57	3.83	-0.63	3.59	2.86	0.06	5.54
Rank	39	30	5	4	7	10	12	6	21	18	37
Population	516	509	450	387	352	290	504	496	467	431	477

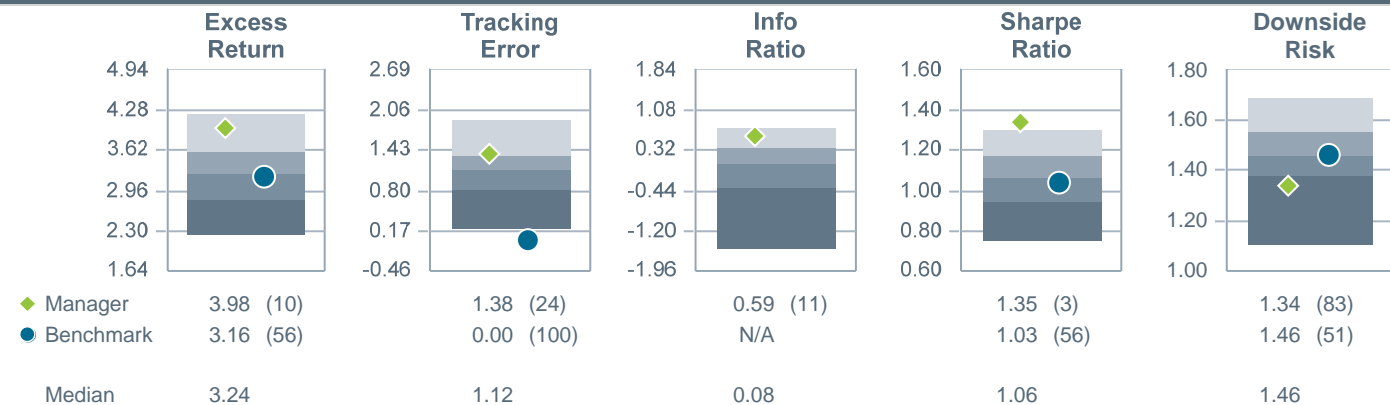
#### Peer Group Scattergram - 10 Years



#### Up/Down Markets - 10 Years



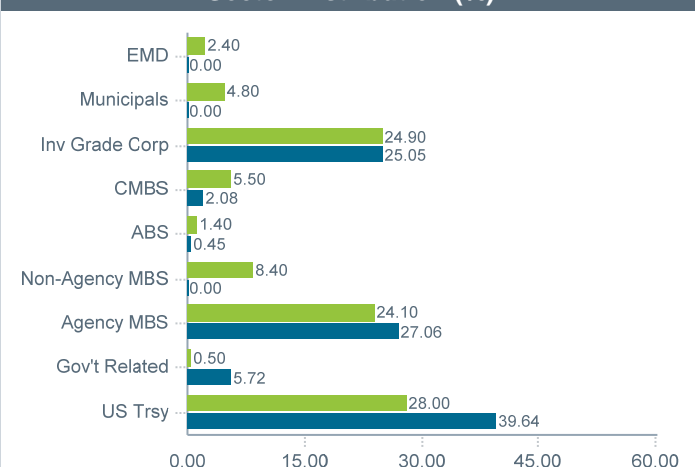
#### Peer Group Analysis - Multi Statistics - 10 Years (Excess Return vs. Risk Free)



#### Portfolio Characteristics

	Portfolio	Benchmark
Effective Duration	5.87	5.87
Spread Duration	4.15	6.08
Avg. Maturity	8.52	8.06
Avg. Quality	Aa3	Aa1/Aa2
Yield To Maturity (%)	2.68	2.32
Coupon Rate (%)	3.60	3.17
Current Yield (%)	3.25	N/A
Holdings Count	246	11,037

#### Sector Distribution (%)



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

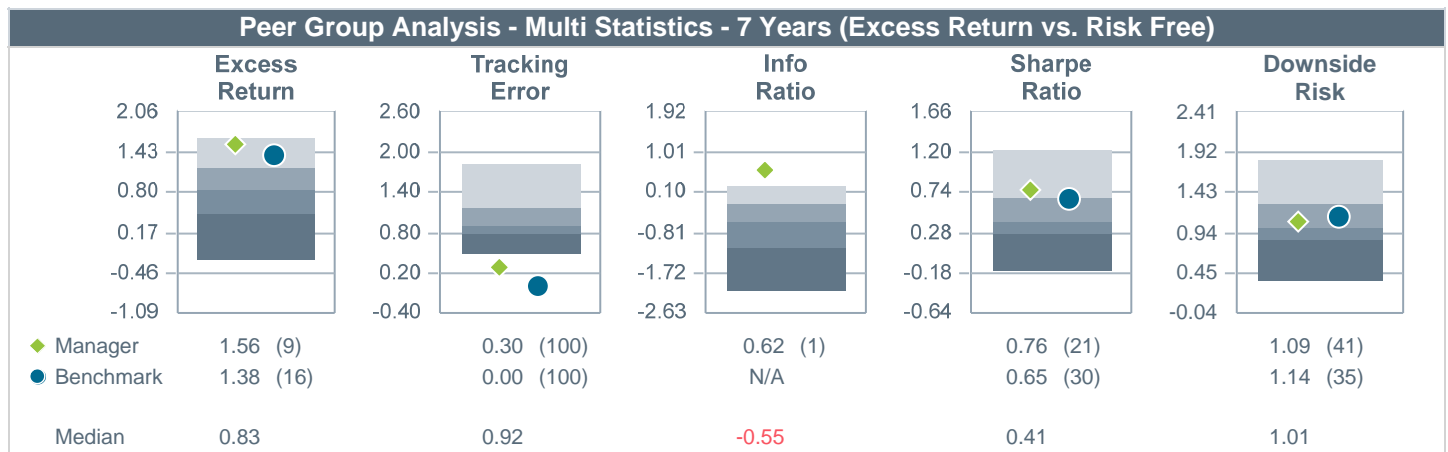
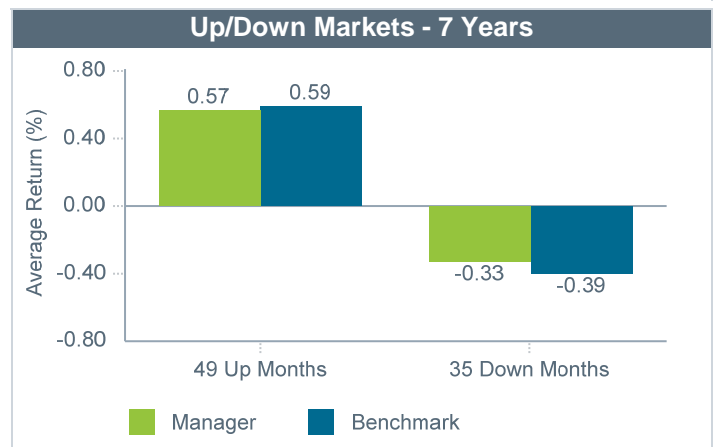
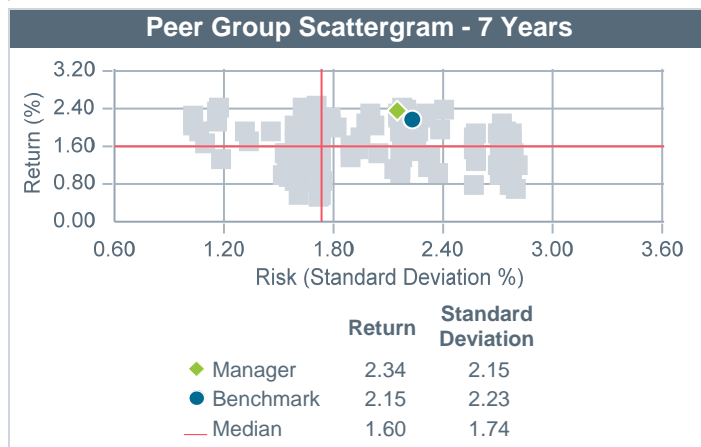
Manager: JP Morgan FI Intermediate Bond (SA)

As of December 31, 2019

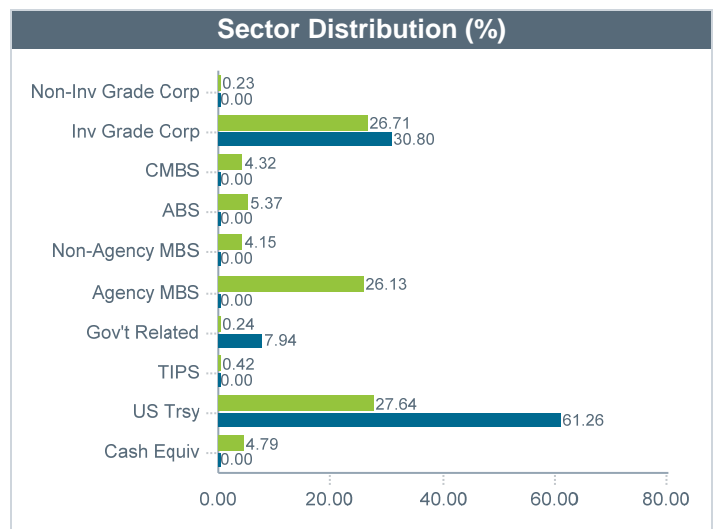
Benchmark: Bloomberg US Gov't Crdt Int Trm Bond Index

Peer Group: IM U.S. Intermediate Duration Fixed Income (MF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	0.22	6.70	3.44	2.72	2.34	N/A	1.01	2.71	1.88	1.42	3.86
Benchmark	0.37	6.80	3.24	2.57	2.15	3.05	0.88	2.14	2.08	1.07	3.13
Difference	-0.15	-0.10	0.20	0.15	0.19	N/A	0.13	0.57	-0.20	0.35	0.73
Peer Group Median	0.39	5.29	2.50	1.96	1.60	2.43	0.64	1.68	1.69	0.48	2.07
Rank	72	12	3	10	9	N/A	27	8	44	10	22
Population	247	244	212	199	175	118	229	220	215	204	237

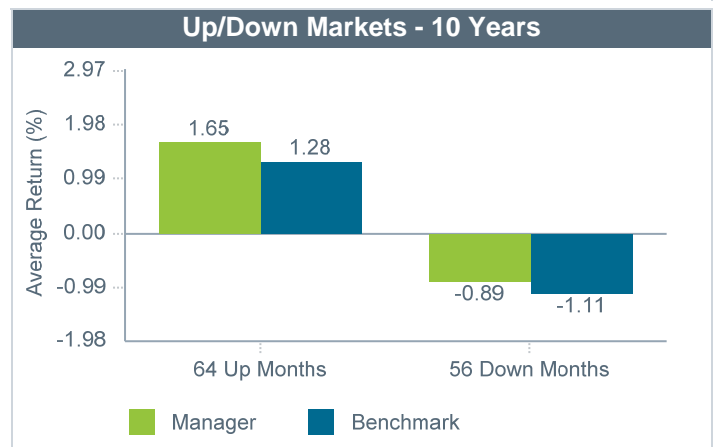
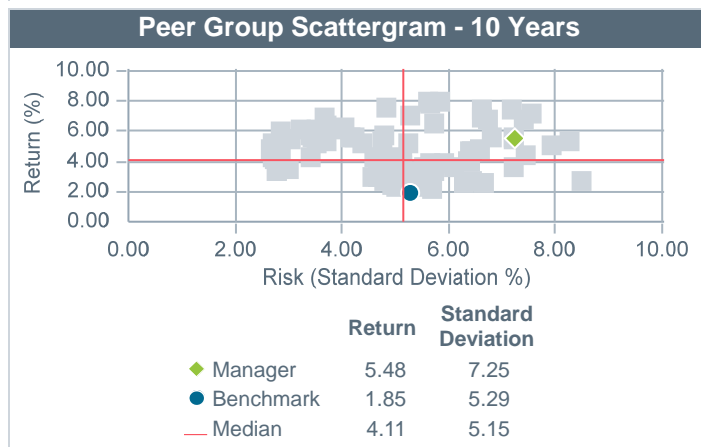


Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	3.80	3.91
Spread Duration	2.62	3.91
Avg. Maturity	4.57	4.30
Avg. Quality	Aa3	Aa2/Aa3
Yield To Maturity (%)	2.33	1.94
Coupon Rate (%)	3.10	2.64
Current Yield (%)	3.14	N/A
Holdings Count	2,349	4,911

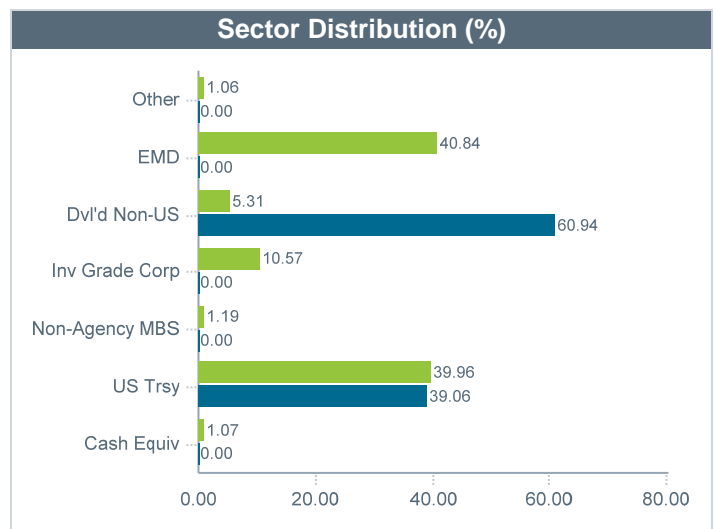


Performance shown is net of fees and client specific. Calculation is based on quarterly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	4.25	9.73	5.86	2.91	2.58	5.48	-4.66	13.39	5.75	-8.02	6.91
Benchmark	-0.35	5.90	4.12	2.03	0.79	1.85	-0.84	7.49	1.60	-3.57	-0.48
Difference	4.60	3.83	1.74	0.88	1.79	3.63	-3.82	5.90	4.15	-4.45	7.39
Peer Group Median	1.62	9.46	5.30	3.67	3.23	4.11	-1.76	7.57	5.85	-2.30	2.83
Rank	11	48	34	66	56	28	88	4	52	92	17
Population	209	207	203	192	168	118	242	251	265	275	275



Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	4.05	8.32
Spread Duration	0.74	N/A
Avg. Maturity	8.38	9.24
Avg. Quality	A1	Aa2
Yield To Maturity (%)	3.56	1.01
Coupon Rate (%)	4.38	2.29
Current Yield (%)	4.12	N/A
Holdings Count	54	N/A



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

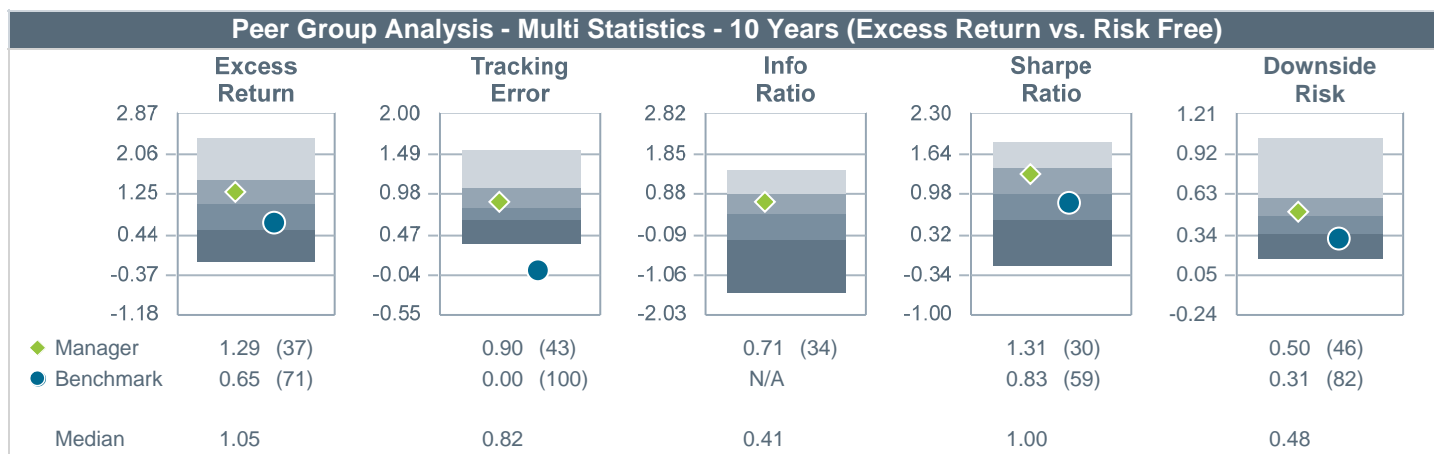
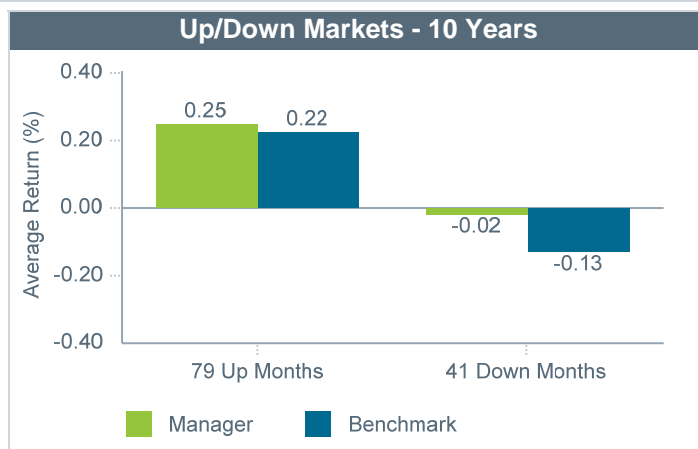
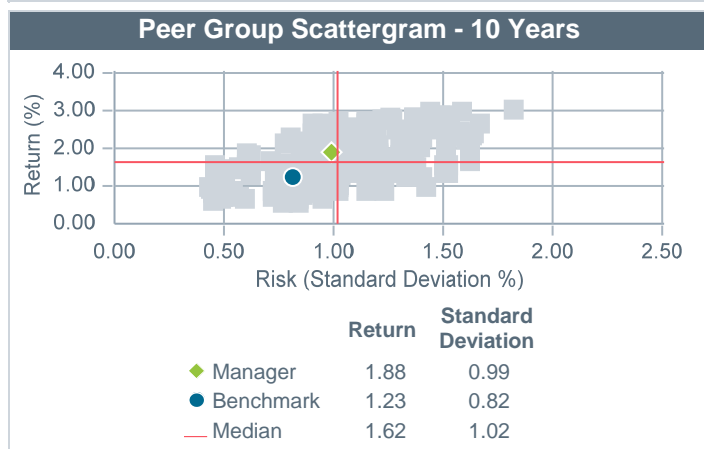
Manager: Payden:Low Dur;Inv (PYSBX)

As of December 31, 2019

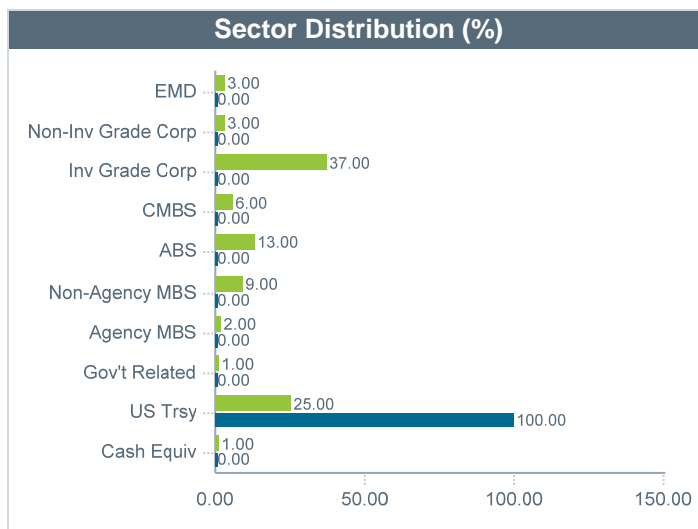
Benchmark: Bloomberg US Trsy 1-3 Yr Index

Peer Group: IM U.S. Short Duration Fixed Income (MF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	0.54	4.12	2.19	1.77	1.43	1.88	1.01	1.47	1.85	0.43	0.71
Benchmark	0.51	3.59	1.85	1.39	1.14	1.23	1.56	0.42	0.86	0.56	0.63
Difference	0.03	0.53	0.34	0.38	0.29	0.65	-0.55	1.05	0.99	-0.13	0.08
Peer Group Median	0.52	3.81	2.09	1.60	1.25	1.62	1.20	1.33	1.45	0.27	0.64
Rank	45	44	42	38	40	37	65	41	33	36	46
Population	668	655	560	484	419	313	633	598	564	514	569

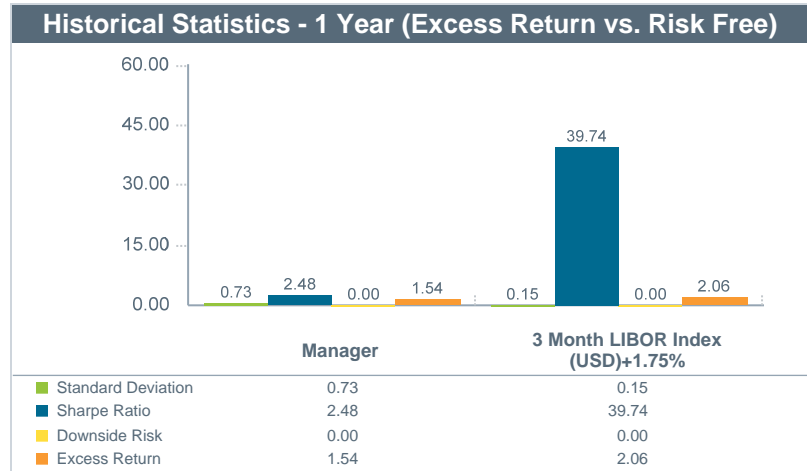


Portfolio Characteristics		
	Portfolio	Benchmark
Effective Duration	1.88	1.91
Spread Duration	1.64	1.91
Avg. Maturity	2.18	1.96
Avg. Quality	A1	Aaa
Yield To Maturity (%)	2.21	1.60
Coupon Rate (%)	2.58	2.01
Current Yield (%)	2.78	N/A
Holdings Count	315	93



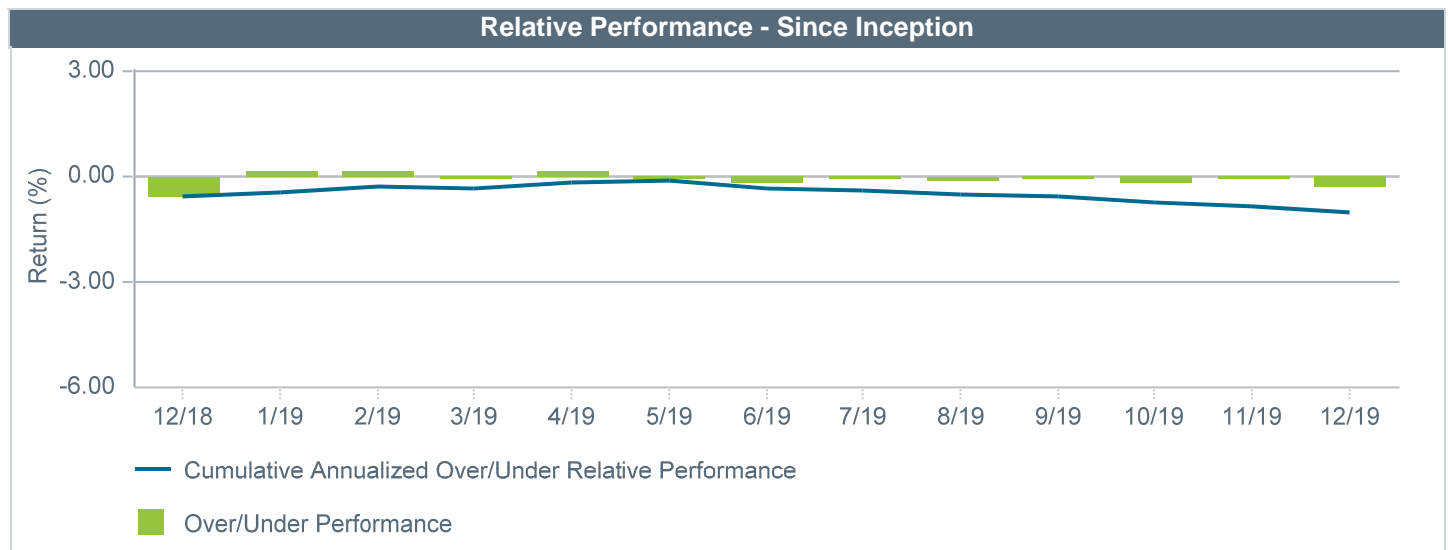
Performance shown is net of fees and product specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	0.43	3.85	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benchmark	0.97	4.39	3.71	3.11	2.79	2.59	3.86	2.88	2.42	1.99	1.99
Difference	-0.54	-0.54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A



**Actual Correlation - 1 Year**

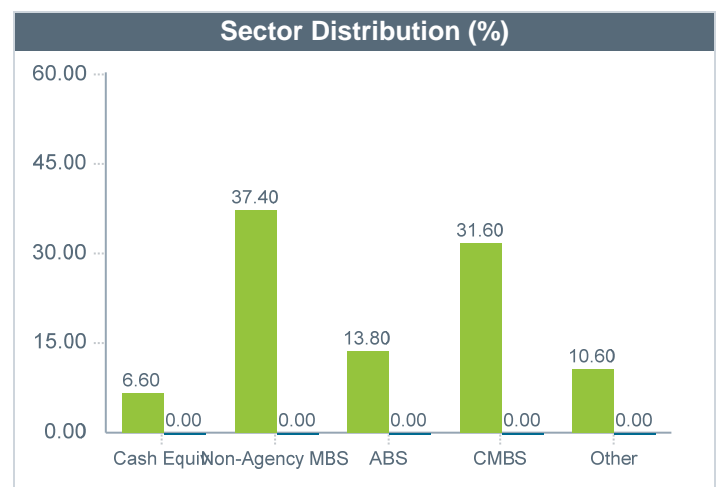
	Actual Correlation
3 Month LIBOR Index (USD)+1.75%	0.98
Bloomberg US Agg Bond Index	0.91
S&P 500 Index (Cap Wtd)	0.33



**Portfolio Characteristics**

	Portfolio	Benchmark
Effective Duration	0.40	N/A
Spread Duration	2.79	N/A
Avg. Maturity	3.40	N/A
Avg. Quality	A1	N/A
Yield To Maturity (%)	3.40	N/A
Coupon Rate (%)	2.97	N/A

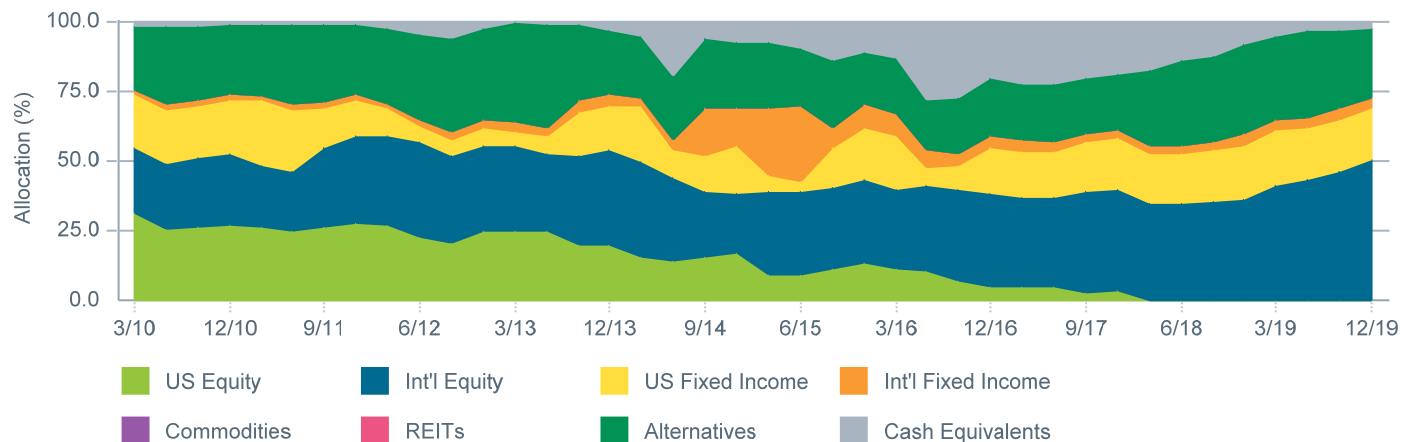
Sector	Portfolio (%)	Benchmark (%)
Cash	6.60	0.00
Equi	0.00	0.00
Non-Agency MBS	37.40	0.00
ABS	13.80	0.00
CMBS	31.60	0.00
Other	10.60	0.00



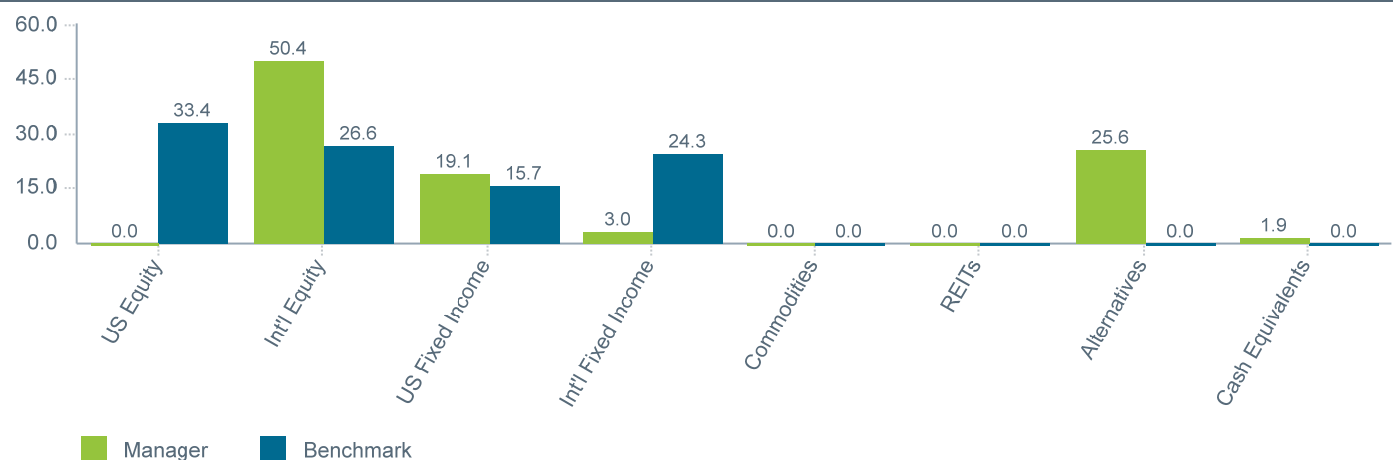
Performance shown is net of fees and client specific. Calculation is based on quarterly periodicity.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	5.41	11.64	6.14	3.45	4.15	4.77	-5.27	13.07	3.45	-4.23	1.25
Benchmark	5.51	18.55	9.28	6.11	6.45	6.42	-6.00	17.09	5.69	-2.47	2.78
Difference	-0.10	-6.91	-3.14	-2.66	-2.30	-1.65	0.73	-4.02	-2.24	-1.76	-1.53

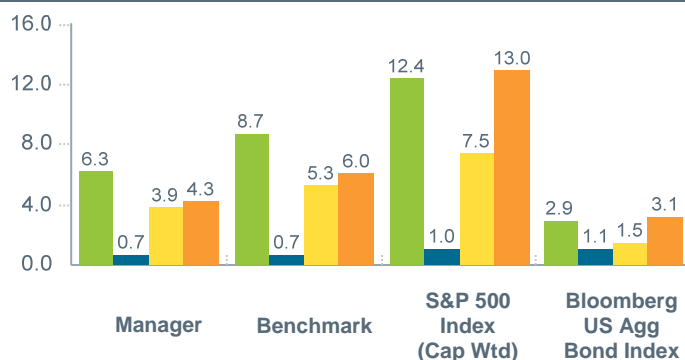
## Historical Asset Allocation - 10 Years



## Asset Allocation vs. Benchmark



## Historical Statistics - 10 Years

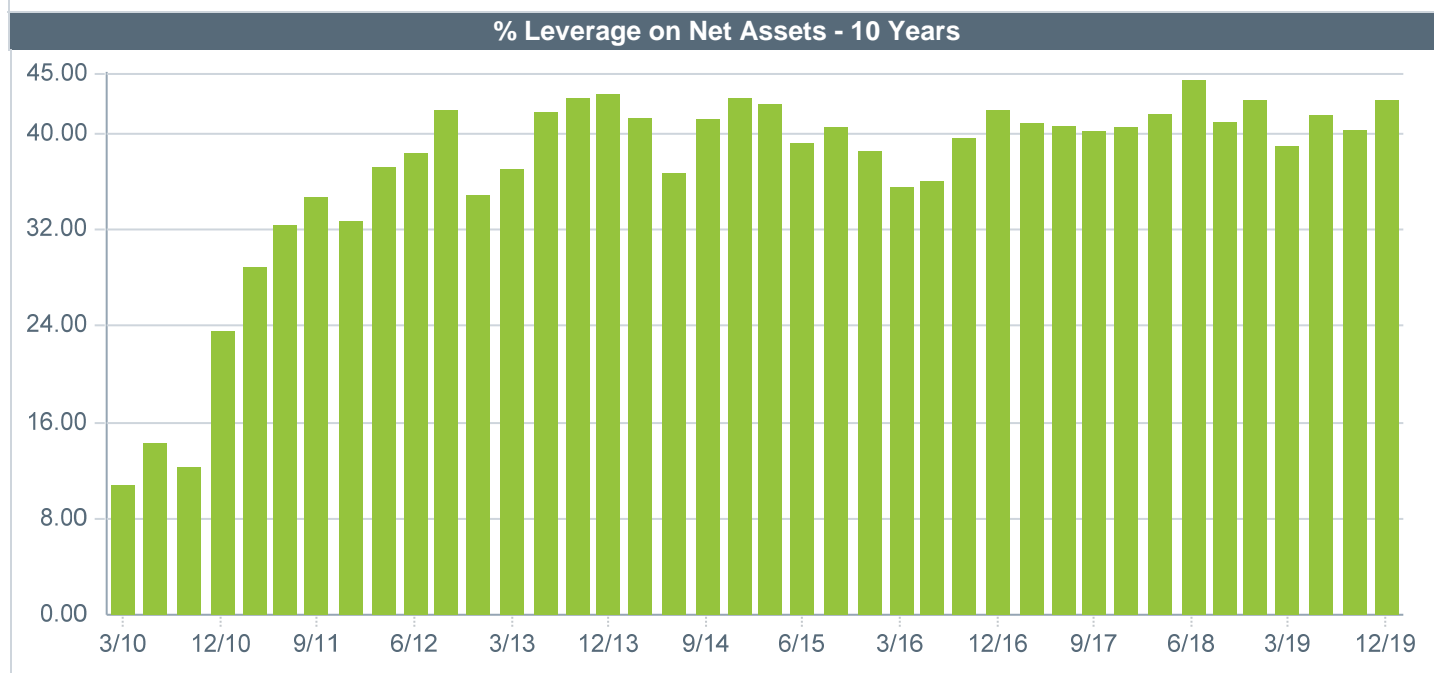
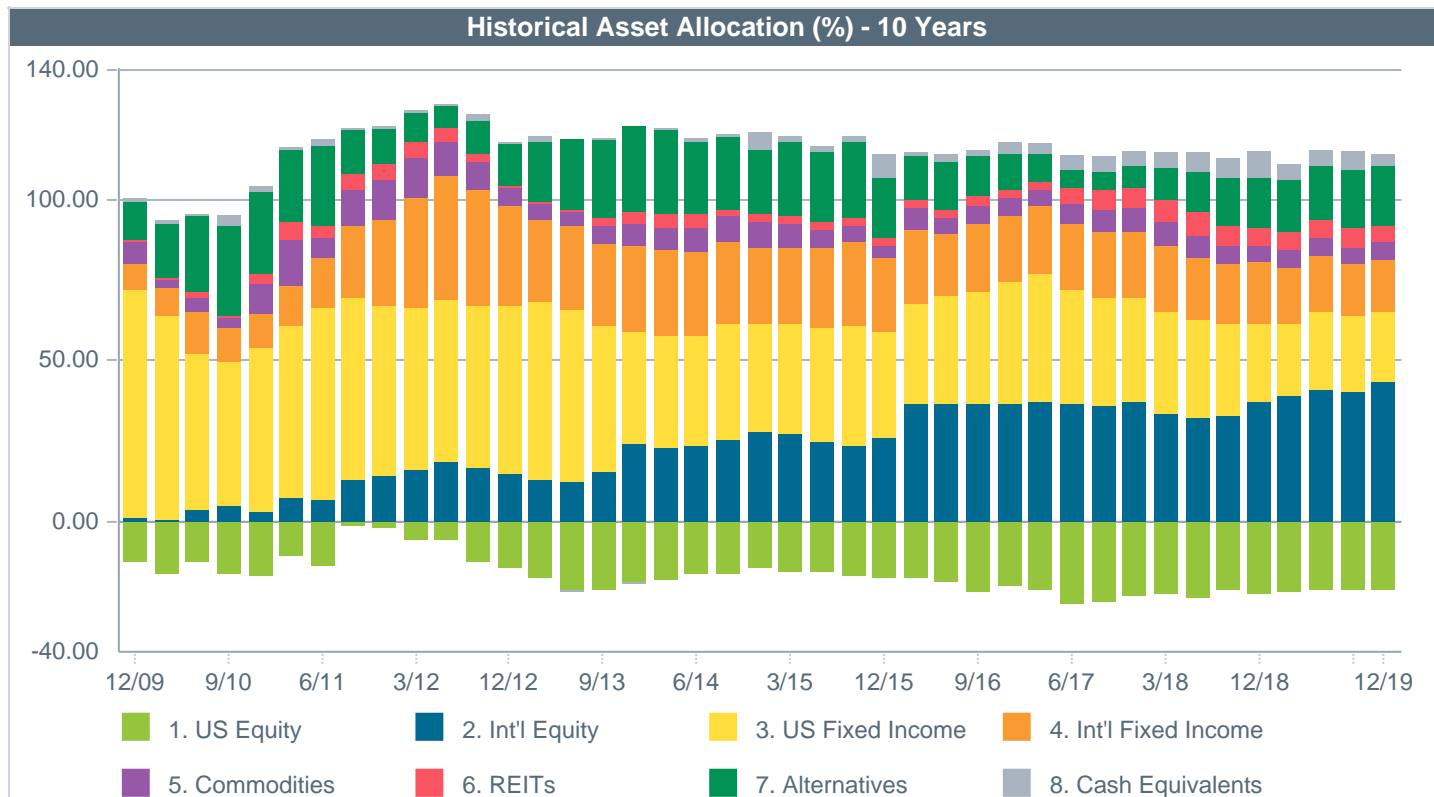


### Actual Correlation - 10 Years

	Actual Correlation
60% MSCI ACW (Net)/40% Bbrg Gbl Agg Idx	0.92
S&P 500 Index (Cap Wtd)	0.84
Russell 2000 Index	0.69
MSCI EAFE Index (USD) (Net)	0.90
MSCI Emg Mkts Index (USD) (Net)	0.87
Bloomberg US Agg Bond Index	-0.02
Bloomberg US Trsy US TIPS Index	0.16
Wilshire US REIT Index	0.51
HFRI FOF Comp Index	0.80
Bloomberg Cmnty Index (TR)	0.58
ICE BofAML 3 Mo US T-Bill Index	0.00
Cons Price Index (Unadjusted)	0.09

Performance shown is net of fees and product specific. Calculation is based on monthly periodicity. Allocation to Int'l Eq includes Dev Ex-US, Emg Mkts, & ACWI Ex-US. Allocation to US Fixed Income includes ABS/Structured Products, Hi Yld/Distr'd Debt, & US TIPS. Allocation to Int'l Fixed Income includes Emg Debt. Allocation to Alternatives includes Merger Arbitrage, Special Op, Systematic Global Macro, Relative Value Interest Rates & FX (Global), Quality vs. S&P 500, Put Selling, & EAFE Value (FX Hedged) vs. S&P 500.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	3.57	7.62	4.21	2.59	0.68	3.47	-6.14	12.04	13.73	-11.73	-2.35
Benchmark	3.08	12.97	6.58	4.98	4.96	5.57	-1.62	8.94	6.47	-1.07	3.73
Difference	0.49	-5.35	-2.37	-2.39	-4.28	-2.10	-4.52	3.10	7.26	-10.66	-6.08



Performance shown is net of fees and product specific. Manager may use leverage up to one-half of net assets. This is accomplished through a line of credit from external banks, the proceeds of which are used to gain incremental exposure to the desired underlying fund(s). Current gross exposures sum to 142.90% due to the use of 42.90% leverage on net assets. Historical Commodities and REITs allocations shown are available at a one-quarter lag due to the disclosure guidelines set by the investment manager for the underlying fund strategies. Please see the Addendum for custom index definition.



Manager: NT Common TIPS Index Lending (CF)

As of December 31, 2019

Benchmark: Bloomberg US Trsy US TIPS Index

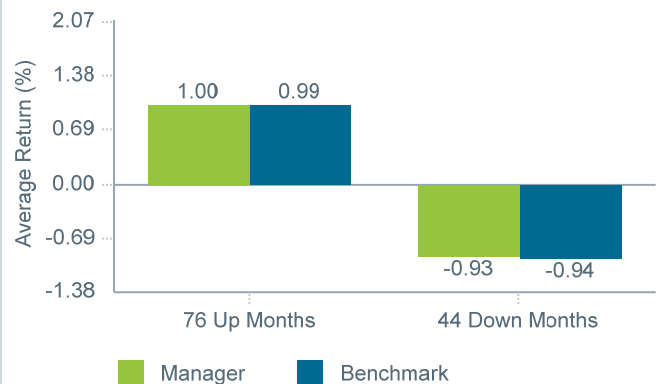
Peer Group: IM U.S. TIPS (SA+CF)

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	0.82	8.48	3.38	2.68	1.13	3.45	-1.25	3.14	4.82	-1.47	3.71
Benchmark	0.79	8.43	3.32	2.62	1.08	3.36	-1.26	3.01	4.68	-1.44	3.64
Difference	0.03	0.05	0.06	0.06	0.05	0.09	0.01	0.13	0.14	-0.03	0.07
Peer Group Median	0.80	8.43	3.34	2.62	1.10	3.36	-1.25	3.09	4.66	-1.41	3.61
Rank	38	27	30	28	36	29	51	45	29	67	35
Population	30	30	30	30	28	25	35	36	38	39	44

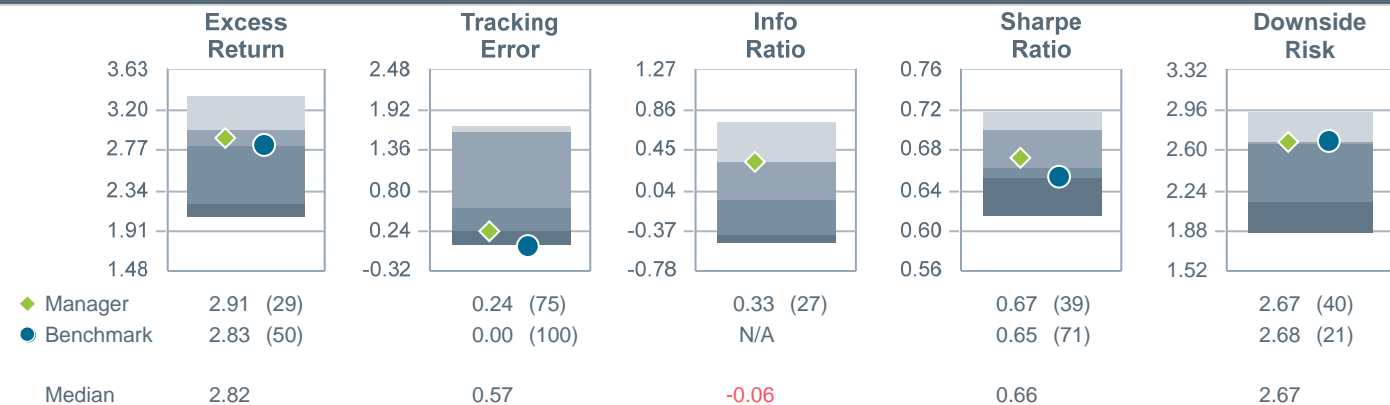
Peer Group Scattergram - 10 Years



Up/Down Markets - 10 Years



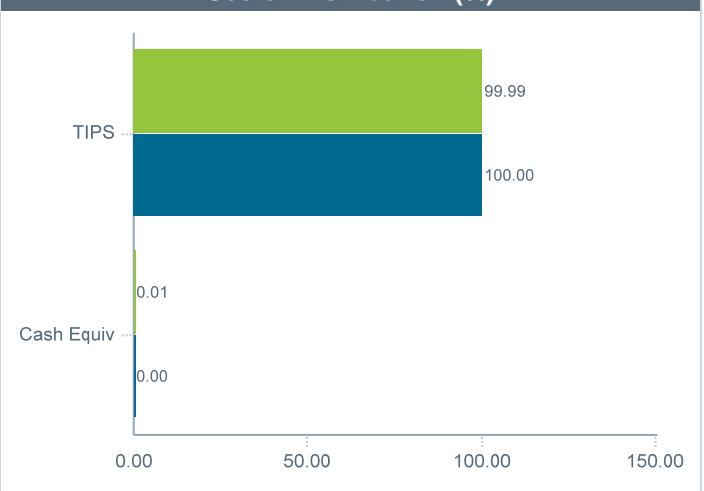
Peer Group Analysis - Multi Statistics - 10 Years (Excess Return vs. Risk Free)



Portfolio Characteristics

	Portfolio	Benchmark
Effective Duration	4.85	4.67
Spread Duration	0.00	4.67
Avg. Maturity	7.99	7.98
Avg. Quality	Aaa	Aaa
Yield To Maturity (%)	1.76	1.99
Coupon Rate (%)	0.79	0.73
Current Yield (%)	0.70	N/A
Holdings Count	43	41

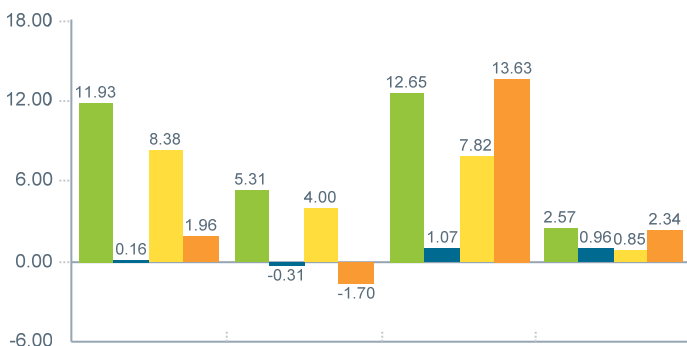
Sector Distribution (%)



Performance shown is gross of fees and product specific. Calculation is based on monthly periodicity. Parentheses contain percentile ranks. During Q2 2019, Bloomberg implemented a new empirical duration calculation for its US TIPS indices.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	6.32	13.59	2.91	N/A	N/A	N/A	-13.80	11.31	11.76	N/A	N/A
Benchmark	3.78	6.01	-0.18	-2.49	-5.23	-2.05	-10.95	5.36	7.77	-17.74	-6.47
Difference	2.54	7.58	3.09	N/A	N/A	N/A	-2.85	5.95	3.99	N/A	N/A

#### Historical Statistics - 3 Years (Excess Return vs. Risk Free)



#### Actual Correlation - 3 Years

	Actual Correlation
Bloomberg Cmdty Ex Energy Index (TR)	0.36
S&P 500 Index (Cap Wtd)	0.88
Russell 2000 Index	0.91
MSCI EAFE Index (USD) (Net)	0.82
MSCI Emg Mkts Index (USD) (Net)	0.65
Bloomberg US Agg Bond Index	-0.06
Bloomberg US Trsy US TIPS Index	0.51
Wilshire US REIT Index	0.52
HFRI FOF Comp Index	0.92
Bloomberg Cmdty Index (TR)	0.98
ICE BofAML 3 Mo US T-Bill Index	-0.14
Cons Price Index (Unadjusted)	0.40

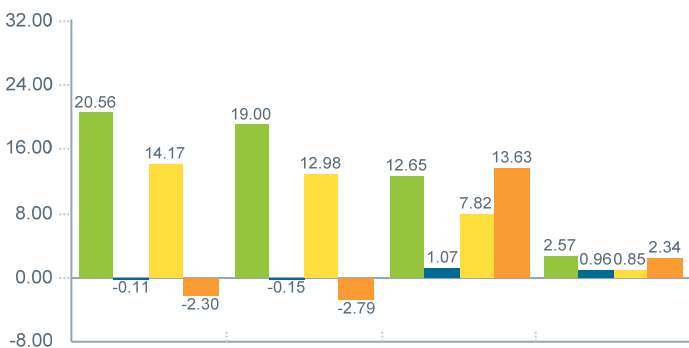
#### Relative Performance - Since Inception



Performance shown is net of fees and client specific. Calculation is based on quarterly periodicity.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	-1.09	12.72	-2.74	N/A	N/A	N/A	-13.63	-5.50	19.24	N/A	N/A
Benchmark	-3.09	9.78	-2.90	-6.23	0.18	5.10	-11.67	-5.58	21.95	-35.07	7.66
Difference	2.00	2.94	0.16	N/A	N/A	N/A	-1.96	0.08	-2.71	N/A	N/A

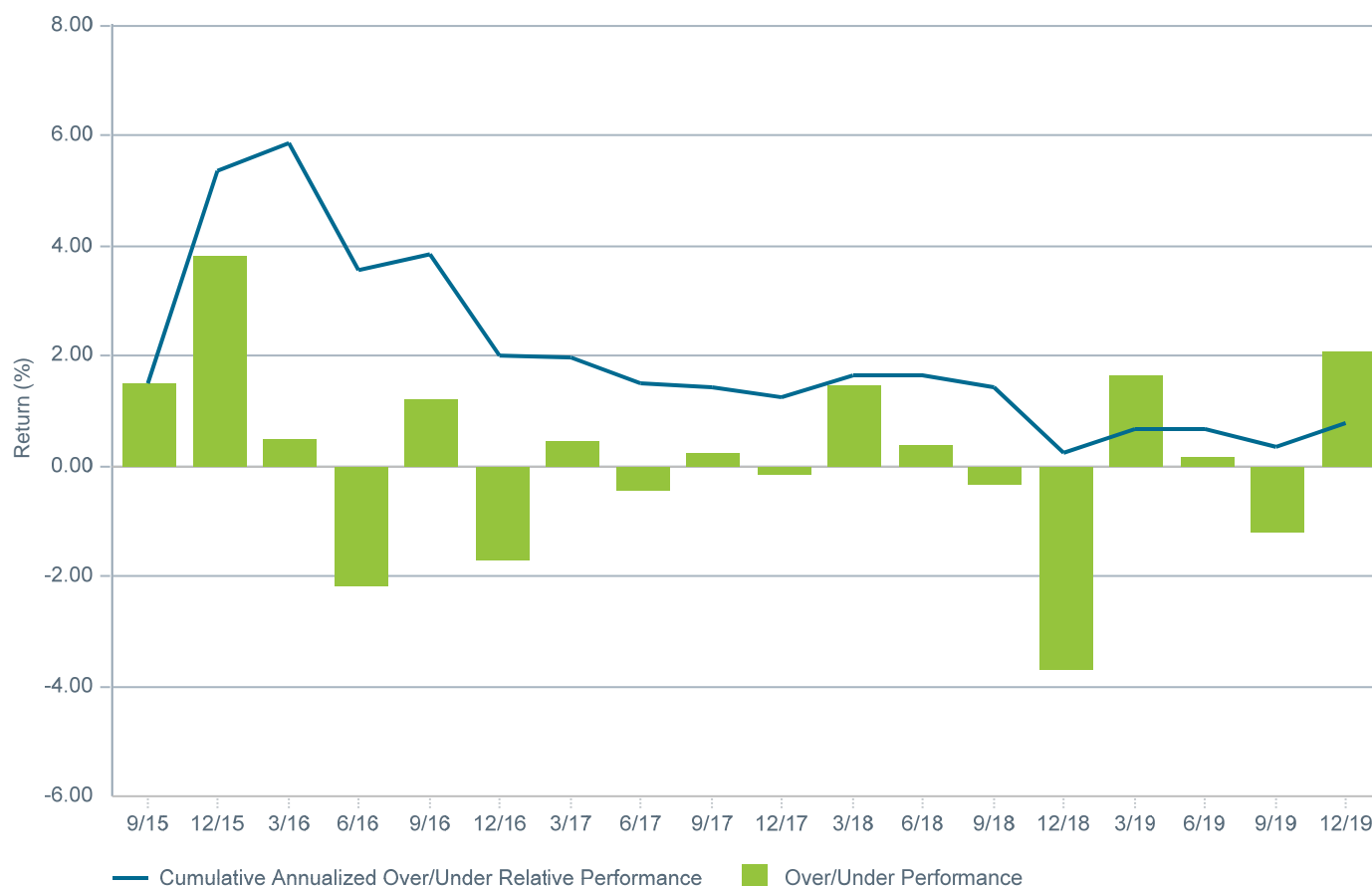
#### Historical Statistics - 3 Years (Excess Return vs. Risk Free)



#### Actual Correlation - 3 Years

	Actual Correlation
S&P MLP Index (TR)	0.99
S&P 500 Index (Cap Wtd)	0.82
Russell 2000 Index	0.84
MSCI EAFE Index (USD) (Net)	0.62
MSCI Emg Mkts Index (USD) (Net)	0.28
Bloomberg US Agg Bond Index	0.12
Bloomberg US Trsy US TIPS Index	0.56
Wilshire US REIT Index	0.81
HFRI FOF Comp Index	0.72
Bloomberg Cmtty Index (TR)	0.66
ICE BofAML 3 Mo US T-Bill Index	0.09
Cons Price Index (Unadjusted)	0.55

#### Relative Performance - Since Inception



Performance shown is net of fees and client specific. Calculation is based on quarterly periodicity.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	8.92	12.89	-7.07	N/A	N/A	N/A	-28.52	-0.55	44.23	N/A	N/A
Benchmark	9.55	17.20	7.92	4.79	2.13	1.61	-12.57	22.66	32.28	-24.00	-9.66
Difference	-0.63	-4.31	-14.99	N/A	N/A	N/A	-15.95	-23.21	11.95	N/A	N/A

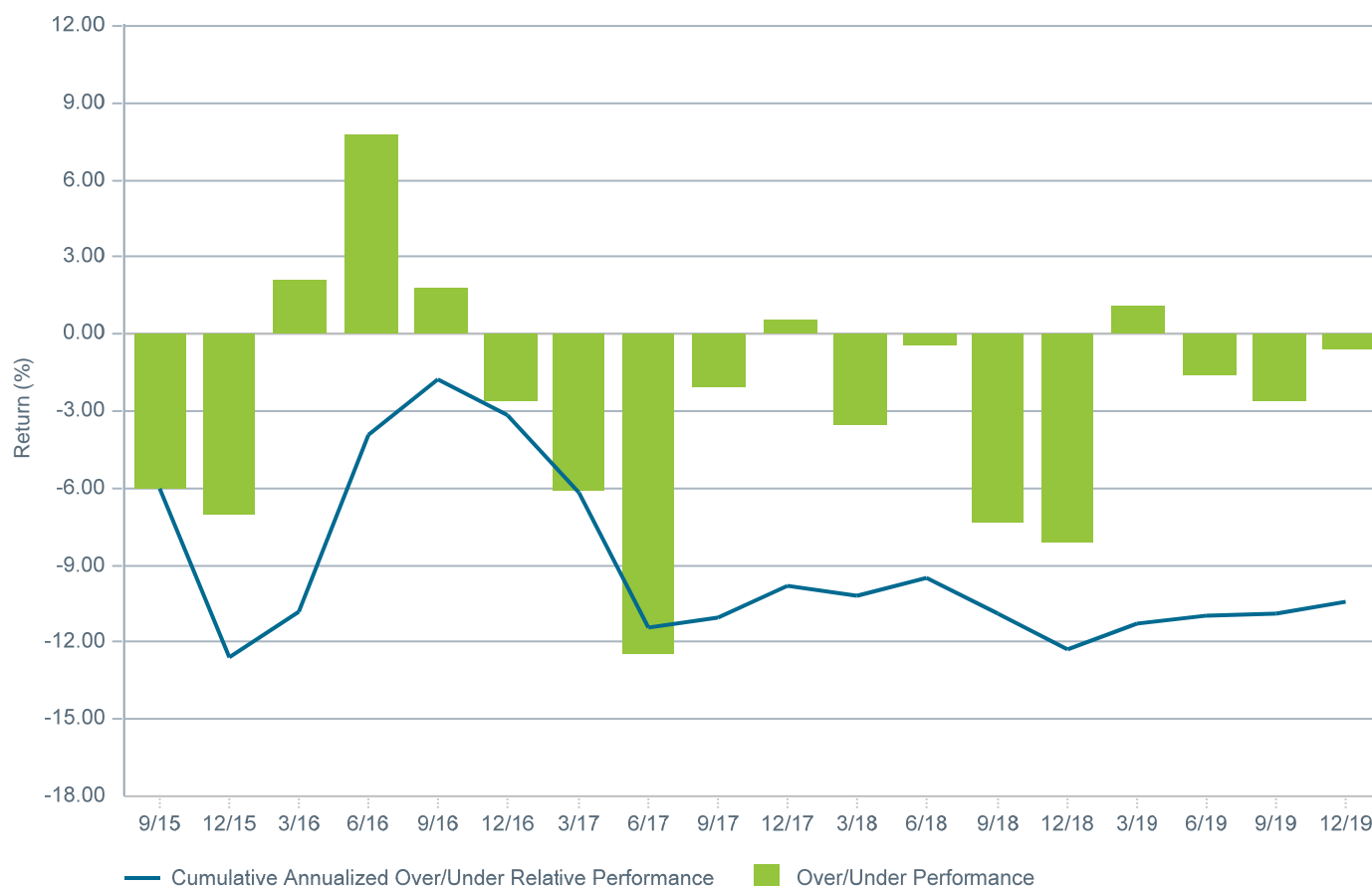
#### Historical Statistics - 3 Years (Excess Return vs. Risk Free)



#### Actual Correlation - 3 Years

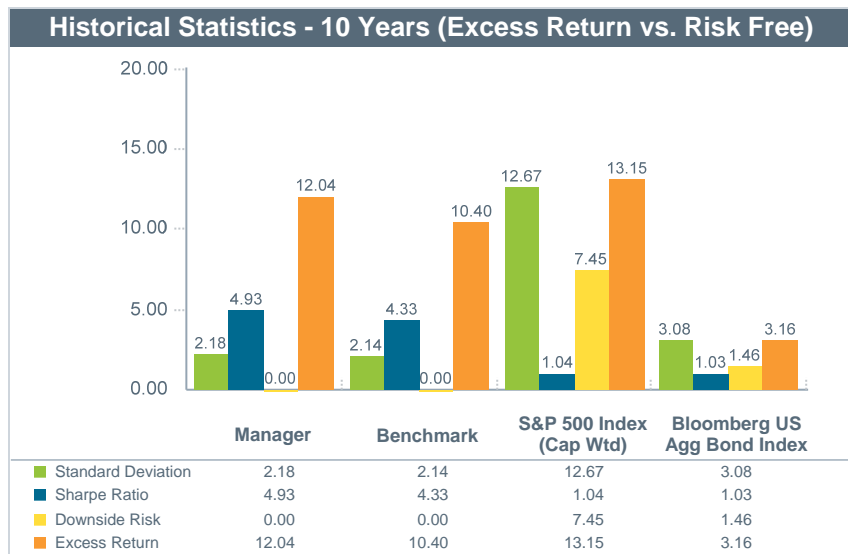
	Actual Correlation
S&P Gbl Ntrl Res Sect Index (TR)	0.95
S&P 500 Index (Cap Wtd)	0.81
Russell 2000 Index	0.86
MSCI EAFE Index (USD) (Net)	0.72
MSCI Emg Mkts Index (USD) (Net)	0.55
Bloomberg US Agg Bond Index	-0.04
Bloomberg US Trsy US TIPS Index	0.60
Wilshire US REIT Index	0.52
HFRI FOF Comp Index	0.87
Bloomberg Cmtty Index (TR)	0.96
ICE BofAML 3 Mo US T-Bill Index	-0.02
Cons Price Index (Unadjusted)	0.41

#### Relative Performance - Since Inception



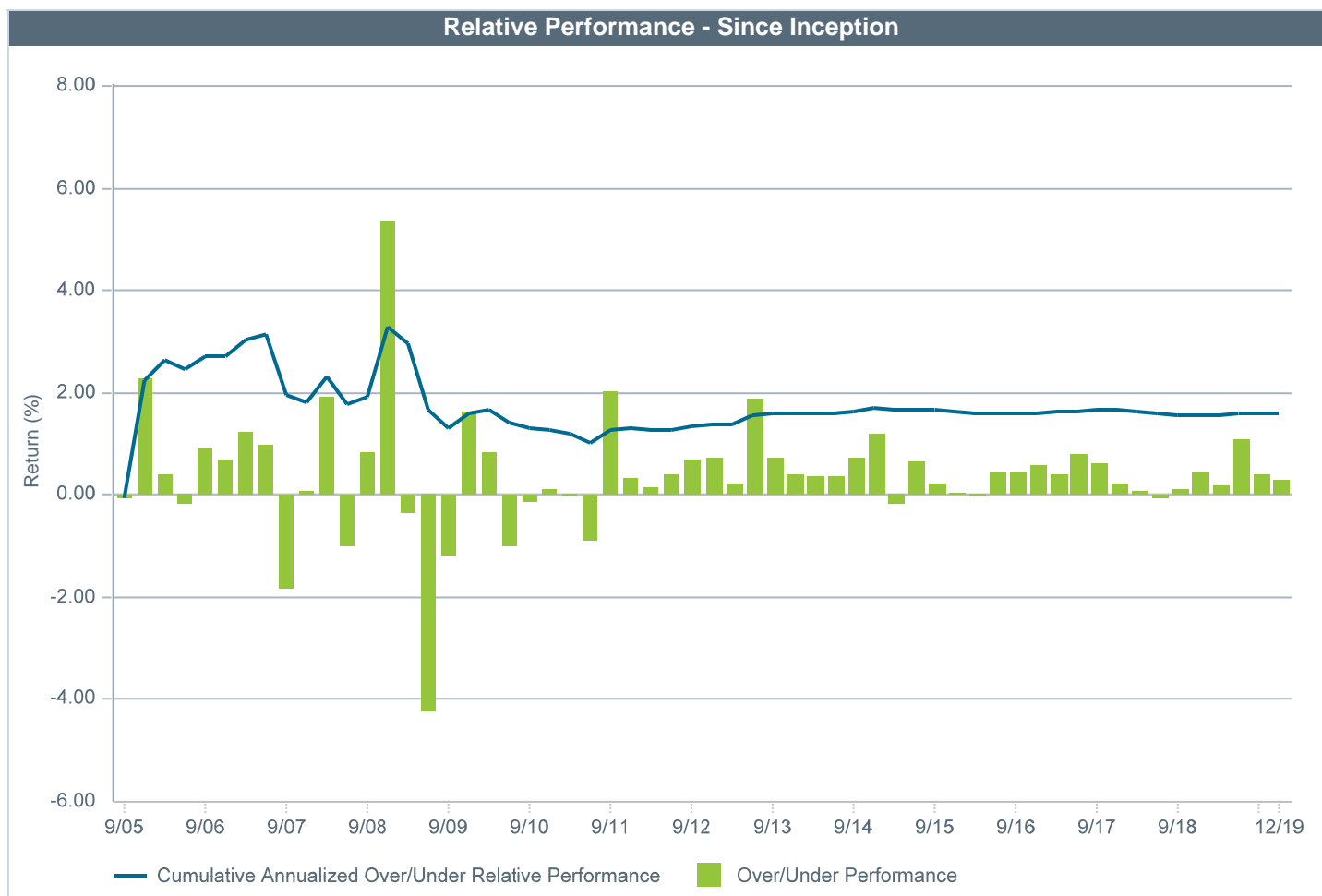
Performance shown is net of fees and client specific. Calculation is based on quarterly periodicity.

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	1.80	7.40	8.74	10.46	12.17	13.20	8.99	9.84	10.38	15.86	15.52
Benchmark	1.51	5.34	7.09	8.97	10.17	11.42	8.35	7.62	8.77	15.02	12.50
Difference	0.29	2.06	1.65	1.49	2.00	1.78	0.64	2.22	1.61	0.84	3.02



**Actual Correlation - 10 Years**

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.86
S&P 500 Index (Cap Wtd)	-0.12
Russell 2000 Index	-0.09
MSCI EAFE Index (USD) (Net)	-0.11
MSCI Emg Mkts Index (USD) (Net)	-0.24
Bloomberg US Agg Bond Index	-0.15
Bloomberg US Trsy US TIPS Index	-0.22
Wilshire US REIT Index	-0.16
HFRI FOF Comp Index	-0.11
Bloomberg Cmtty Index (TR)	-0.09
ICE BofAML 3 Mo US T-Bill Index	-0.62
Cons Price Index (Unadjusted)	-0.17



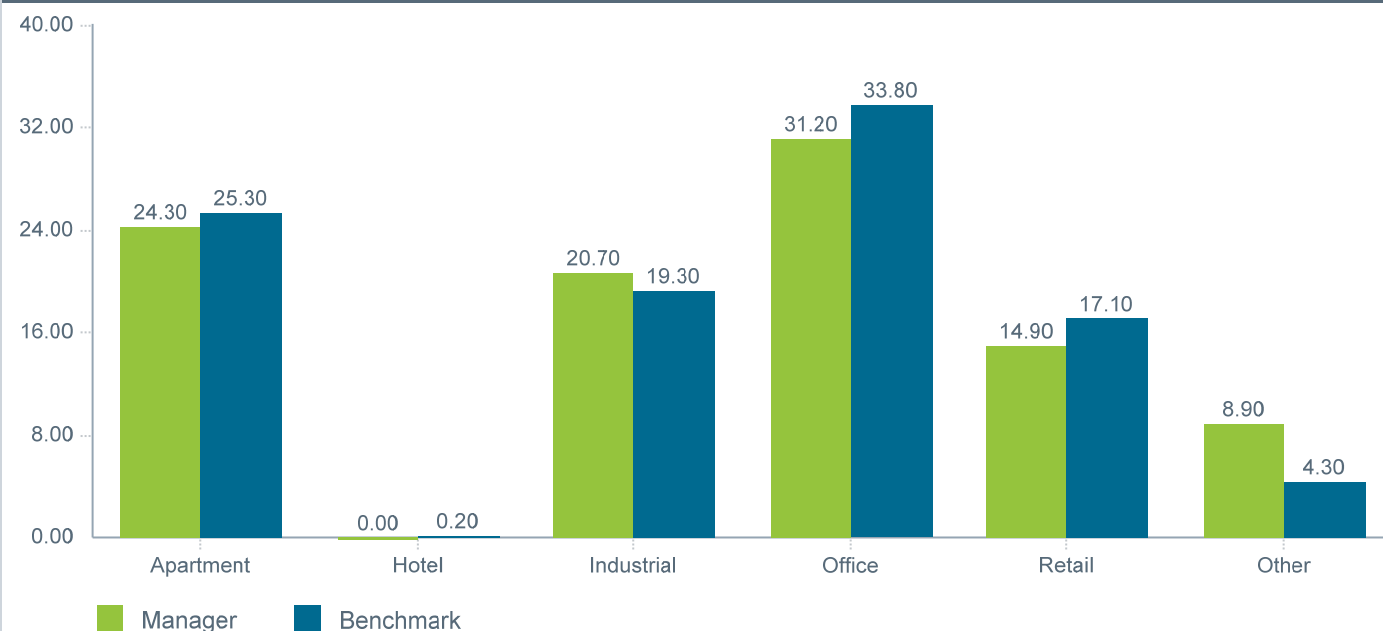
### Investment Strategy

The Fund pursues a diversified core real estate strategy that invests in assets with stable, highly predictable cash flow returns. The Fund targets high quality office, Class A multifamily, warehouse distribution, and top-tier super regional malls in addition to storage facilities in targeted primary markets. The Fund favors investing in major metropolitan markets and secondary markets expected to achieve above-average economic performance and believes that those cities offer better liquidity, more diverse tenant bases, and stronger resilience to market cycles. It operates with leverage of 50% or less and may invest up to 15% of its gross assets in higher-risk, value-added real estate investment opportunities.

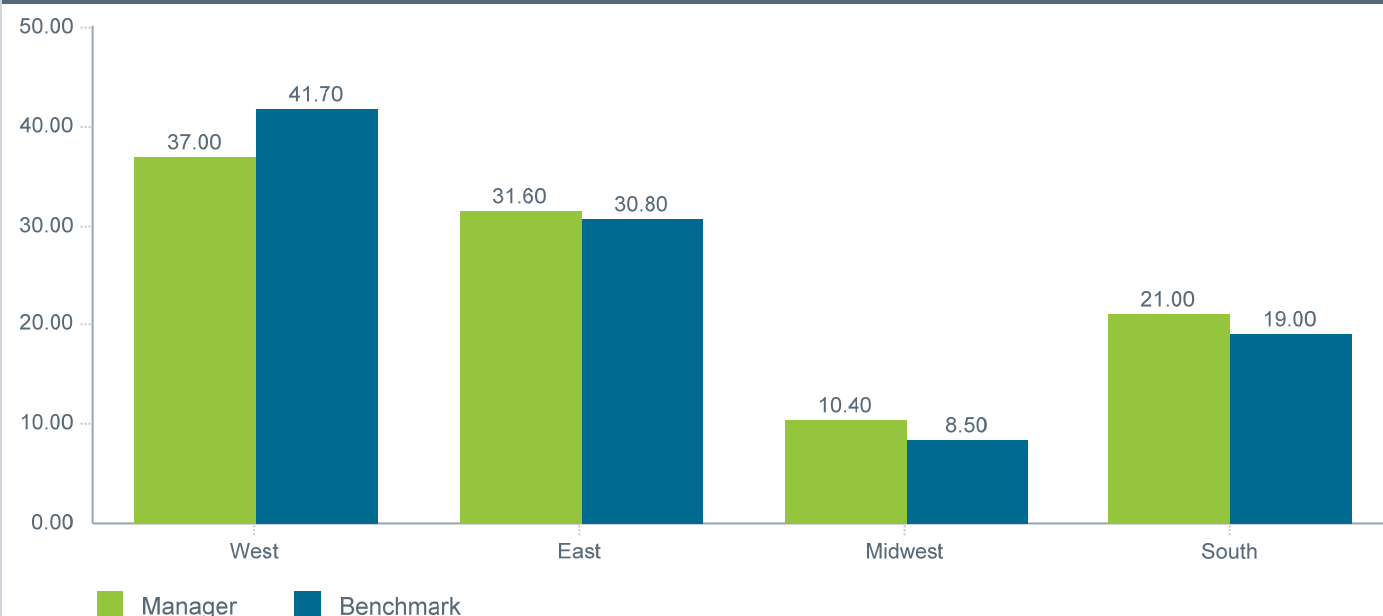
### Investment Profile

Fund Inception	1973
Legal Structure	LLC
Fund Structure	Open-End
Gross Real Estate Assets (\$M)	30,417
Fund Leverage %	16.50
Portfolio Occupancy %	93.50
Cash Reserve %	1.50
Number of Investments	437
Number of Limited Partners	395

### Property Type Allocation (%)

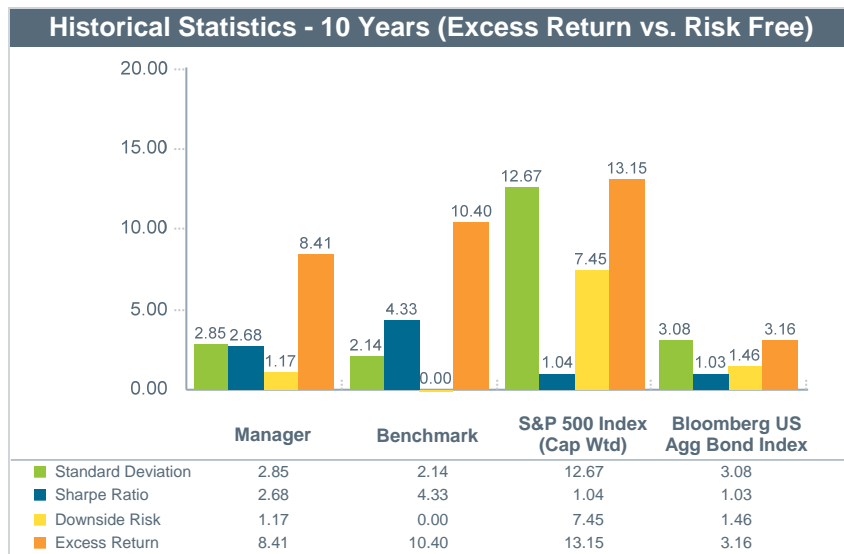


### Geographic Allocation (%)



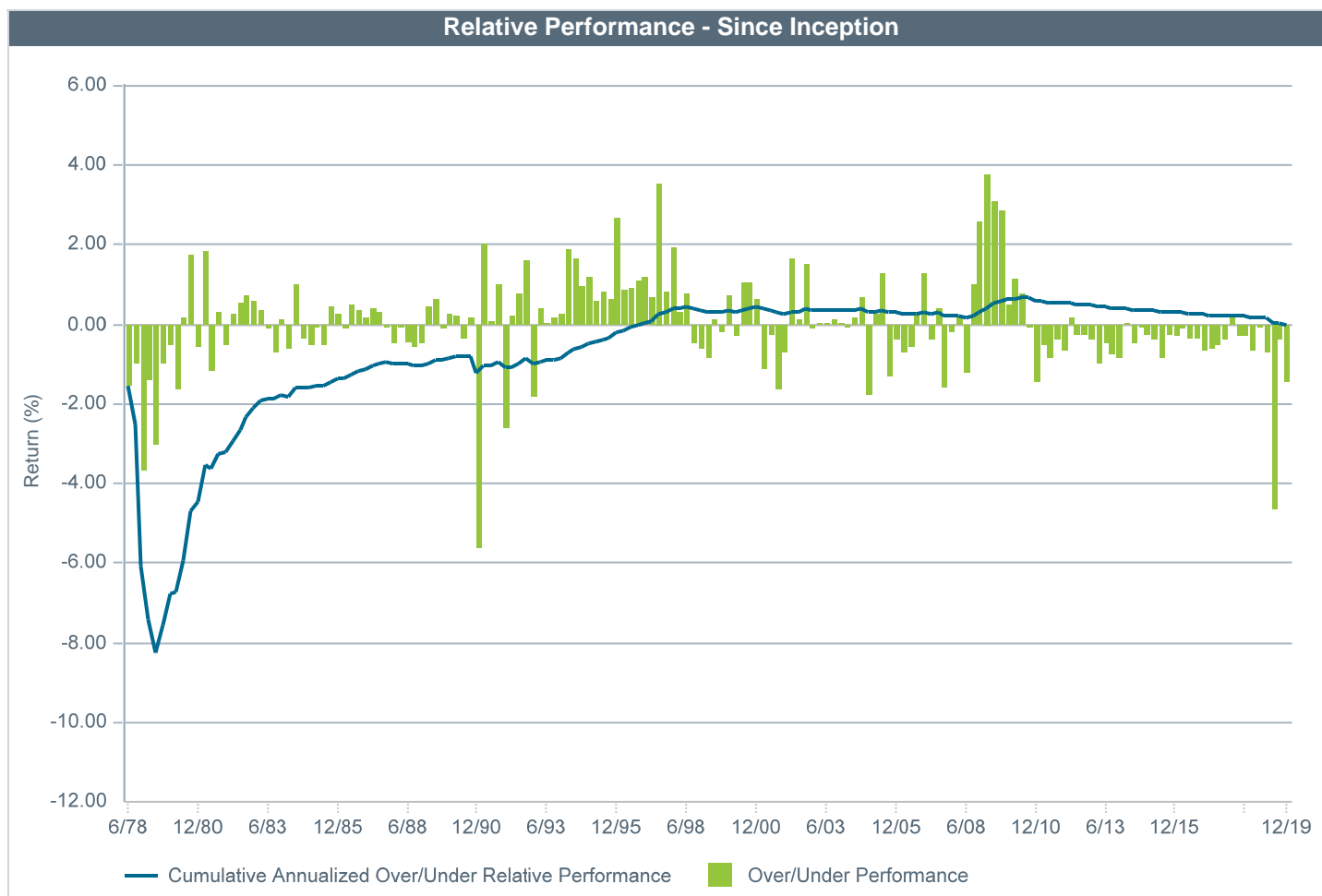
Performance shown is gross of fees and product specific. Calculation is based on quarterly periodicity. Investment profile data shown is provided by the investment manager and is as of the most recently available quarter end. Allocation data shown is based on NAV. Manager allocation to "Other" consists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

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



**Actual Correlation - 10 Years**

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



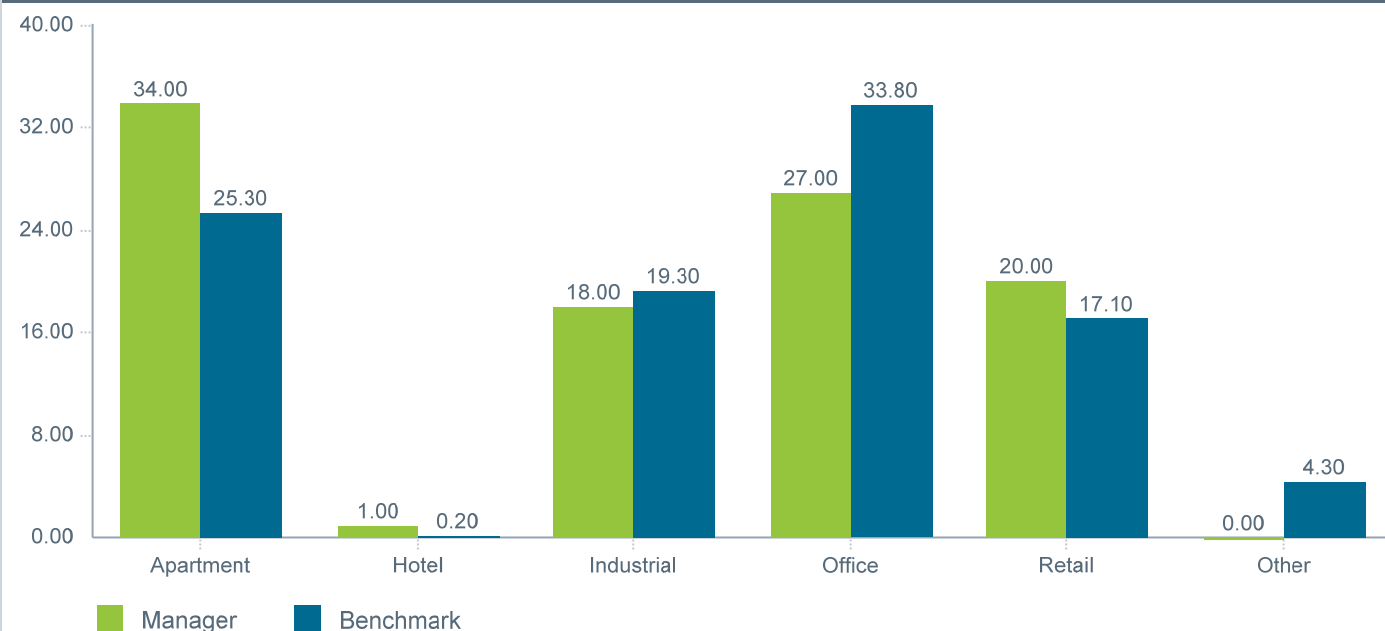
### Investment Strategy

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

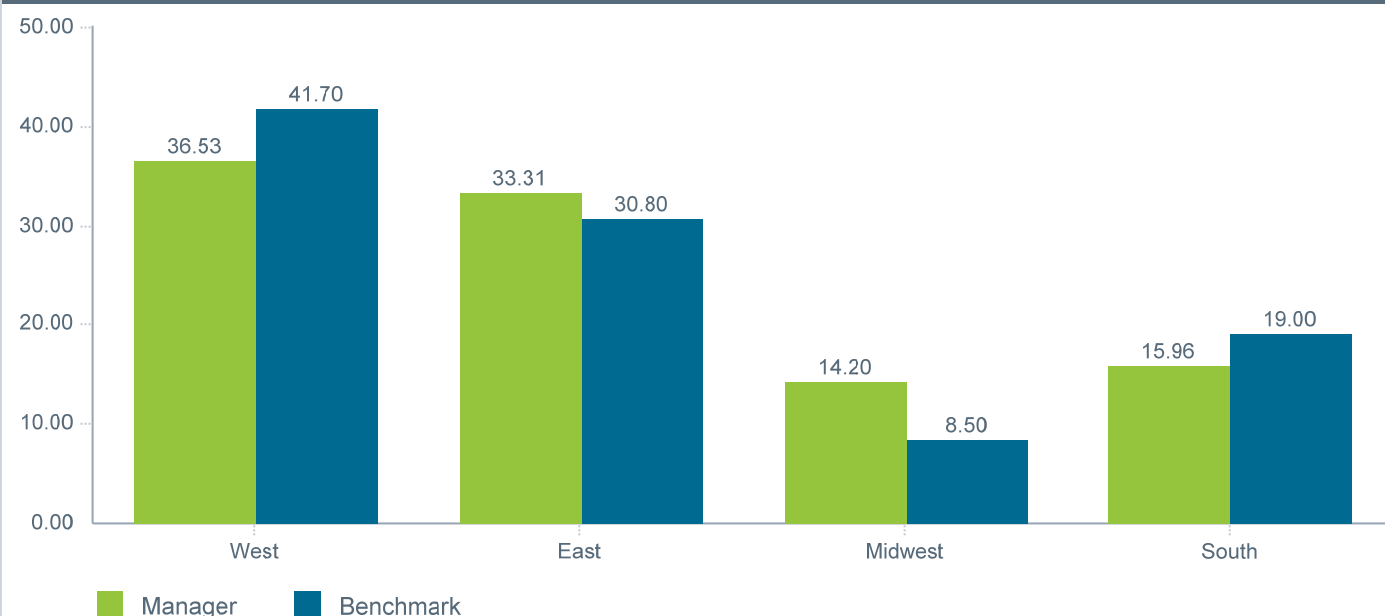
### Investment Profile

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

### Property Type Allocation (%)



### Geographic Allocation (%)

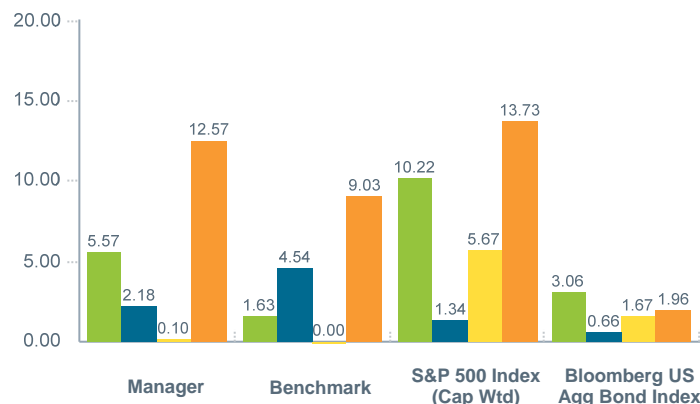


Performance shown is gross of fees and product specific. Calculation is based on quarterly periodicity. Investment profile data shown is provided by the investment manager and is as of the most recently available quarter end. Allocation data shown is based on NAV. Benchmark allocation to "Other" consists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



Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	0.19	3.03	10.08	11.72	13.87	N/A	9.71	18.01	6.60	22.42	14.69
Benchmark	1.51	5.34	7.09	8.97	10.17	11.42	8.35	7.62	8.77	15.02	12.50
Difference	-1.32	-2.31	2.99	2.75	3.70	N/A	1.36	10.39	-2.17	7.40	2.19

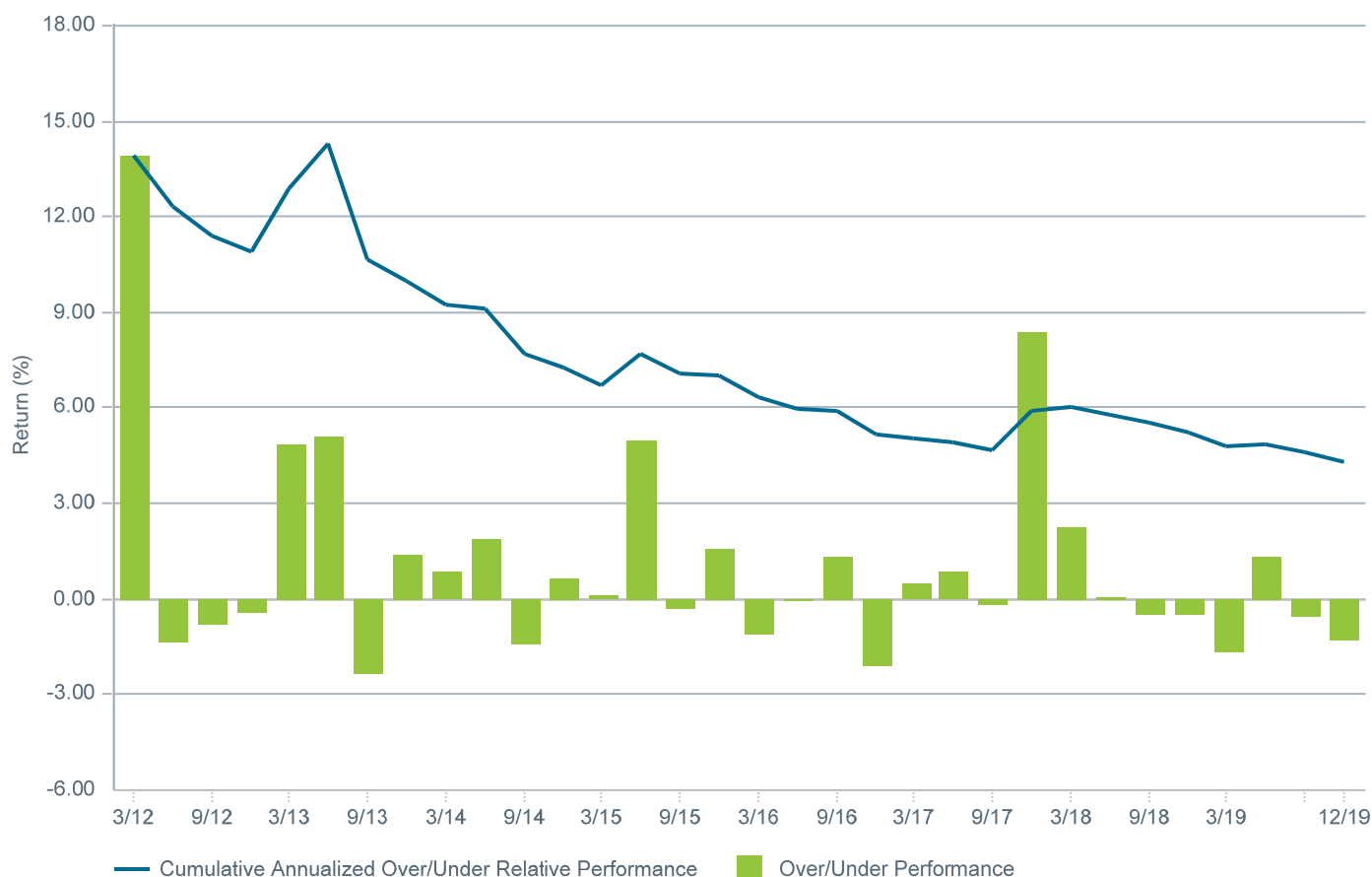
#### Historical Statistics - 7 Years (Excess Return vs. Risk Free)



#### Actual Correlation - 7 Years

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.50
S&P 500 Index (Cap Wtd)	0.06
Russell 2000 Index	0.03
MSCI EAFE Index (USD) (Net)	0.01
MSCI Emg Mkts Index (USD) (Net)	-0.10
Bloomberg US Agg Bond Index	-0.39
Bloomberg US Trsy US TIPS Index	-0.36
Wilshire US REIT Index	-0.15
HFRI FOF Comp Index	0.11
Bloomberg Cmnty Index (TR)	-0.09
ICE BofAML 3 Mo US T-Bill Index	-0.40
Cons Price Index (Unadjusted)	0.02

#### Relative Performance - Since Inception



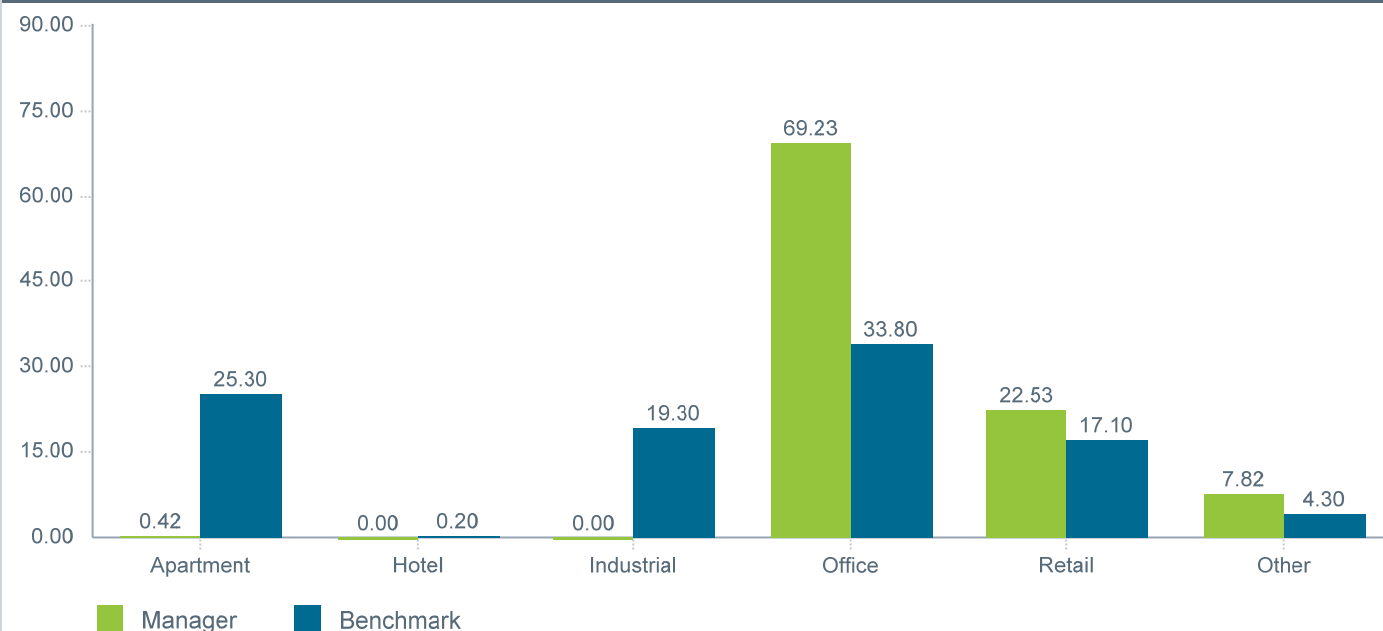
### Investment Strategy

The Fund pursues a concentrated core-plus real estate strategy that acquires, manages and enhances the value of core and core-plus office, retail and mixed-used assets in major metropolitan markets. Target assets are stabilized or nearly stabilized core properties with high-quality, creditworthy and diversified tenant rosters producing predictable and growing income, with the potential for operational improvements to enhance NOI and drive capital appreciation. Additionally, the Fund also targets assets that are moderately- to substantially-leased but could benefit from repositioning. It operates with leverage of 50% or less and may invest up to 20% of its gross assets in higher-risk, non-core real estate investment opportunities.

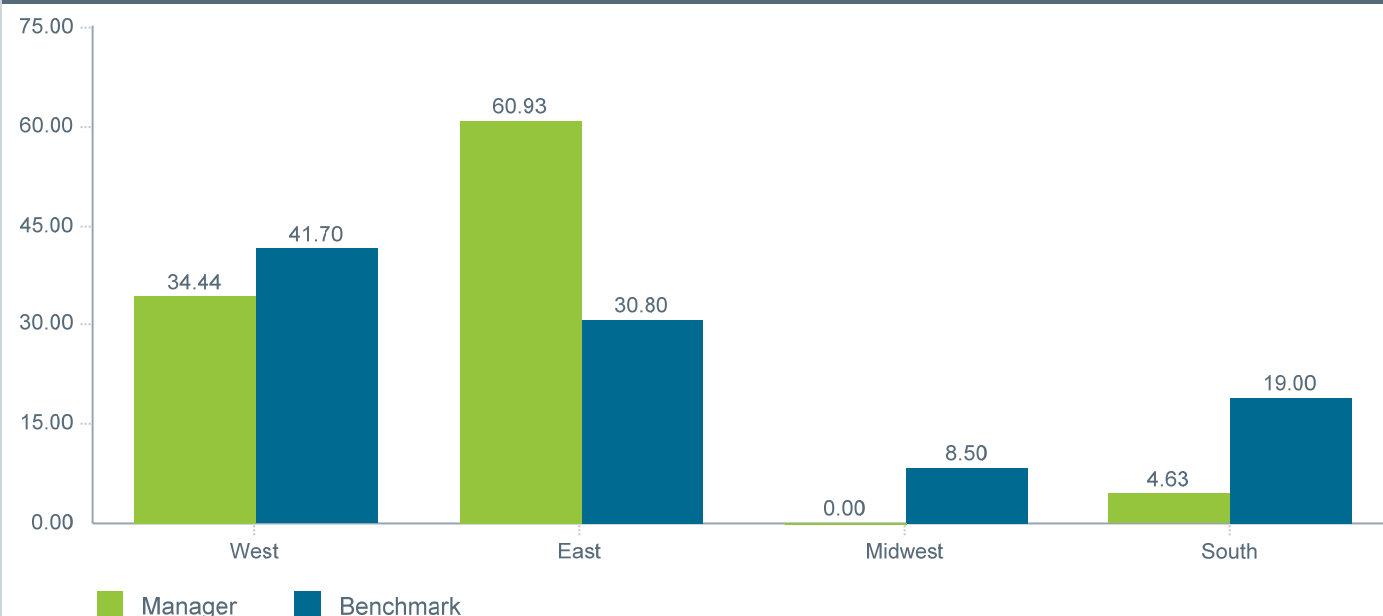
### Investment Profile

Fund Inception	2011
Legal Structure	REIT
Fund Structure	Open-End
Gross Real Estate Assets (\$M)	4,424
Fund Leverage %	41.76
Portfolio Occupancy %	81.40
Cash Reserve %	3.91
Number of Investments	25
Number of Limited Partners	53

### Property Type Allocation (%)

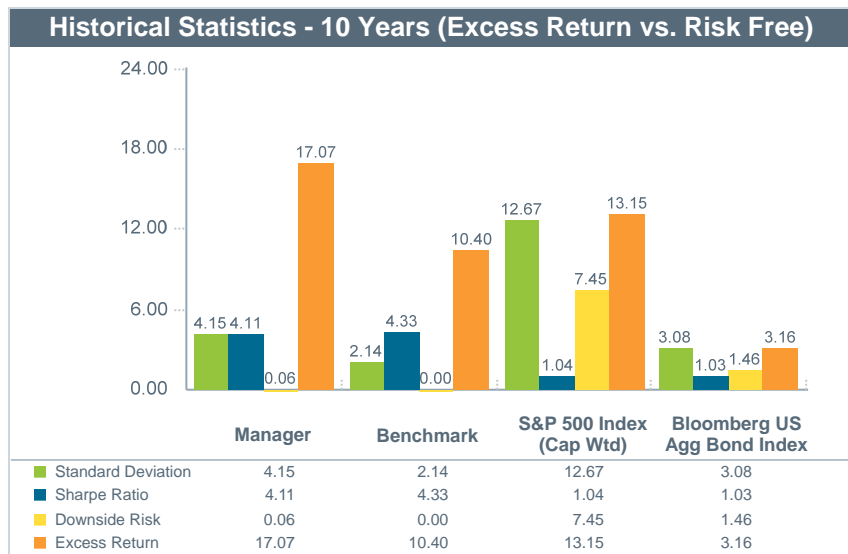


### Geographic Allocation (%)



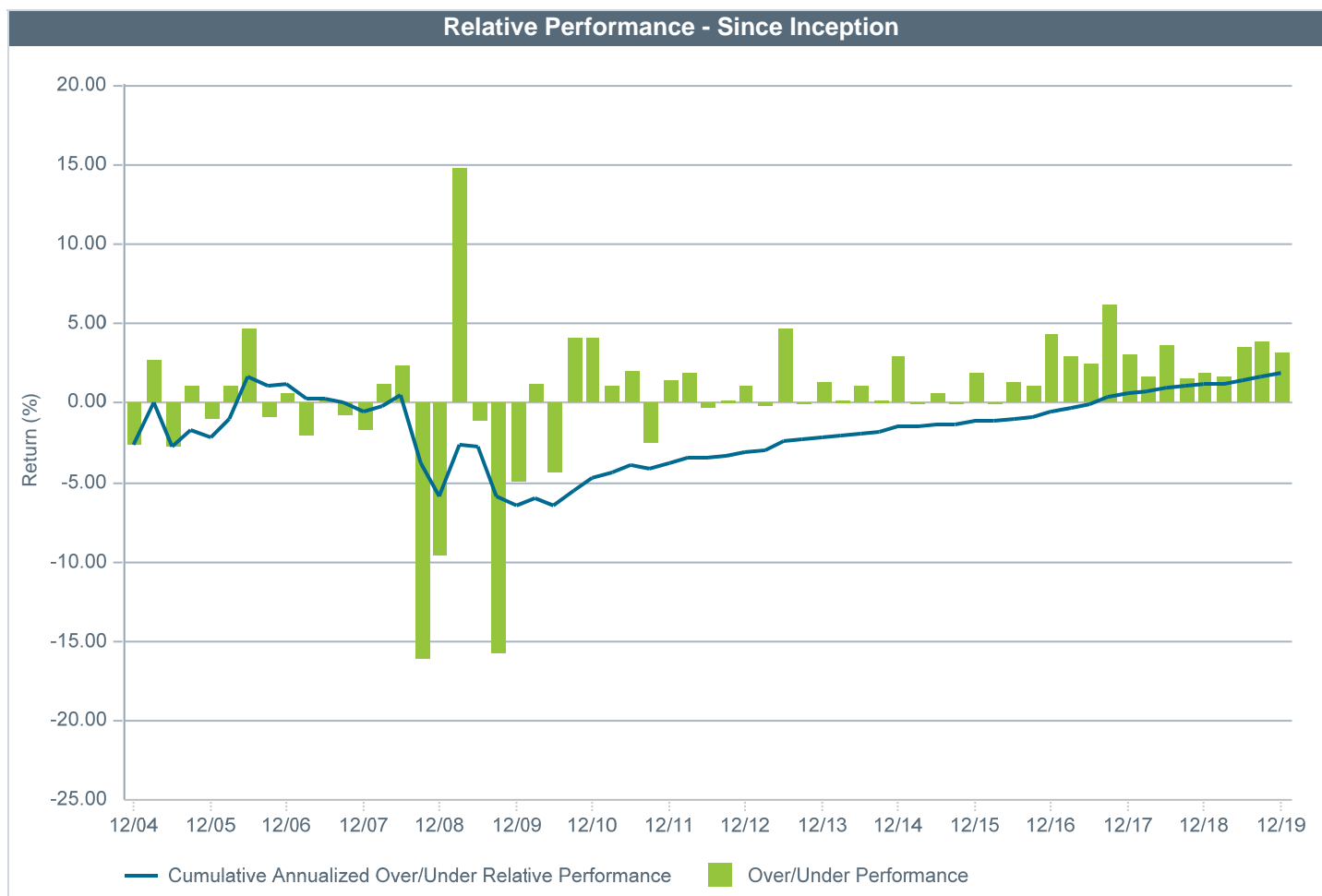
Performance shown is gross of fees and product specific. Calculation is based on quarterly periodicity. Investment profile data shown is provided by the investment manager and is as of the most recently available quarter end. Allocation data shown is based on NAV. Manager allocation to "Other" consists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

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	4.75	18.88	20.38	18.98	19.00	18.76	18.19	24.16	16.08	17.76	17.45
Benchmark	1.51	5.34	7.09	8.97	10.17	11.42	8.35	7.62	8.77	15.02	12.50
Difference	3.24	13.54	13.29	10.01	8.83	7.34	9.84	16.54	7.31	2.74	4.95



**Actual Correlation - 10 Years**

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.32
S&P 500 Index (Cap Wtd)	0.43
Russell 2000 Index	0.42
MSCI EAFE Index (USD) (Net)	0.44
MSCI Emg Mkts Index (USD) (Net)	0.31
Bloomberg US Agg Bond Index	-0.44
Bloomberg US Trsy US TIPS Index	-0.40
Wilshire US REIT Index	0.26
HFRI FOF Comp Index	0.37
Bloomberg Cmtty Index (TR)	0.28
ICE BofAML 3 Mo US T-Bill Index	0.05
Cons Price Index (Unadjusted)	-0.10



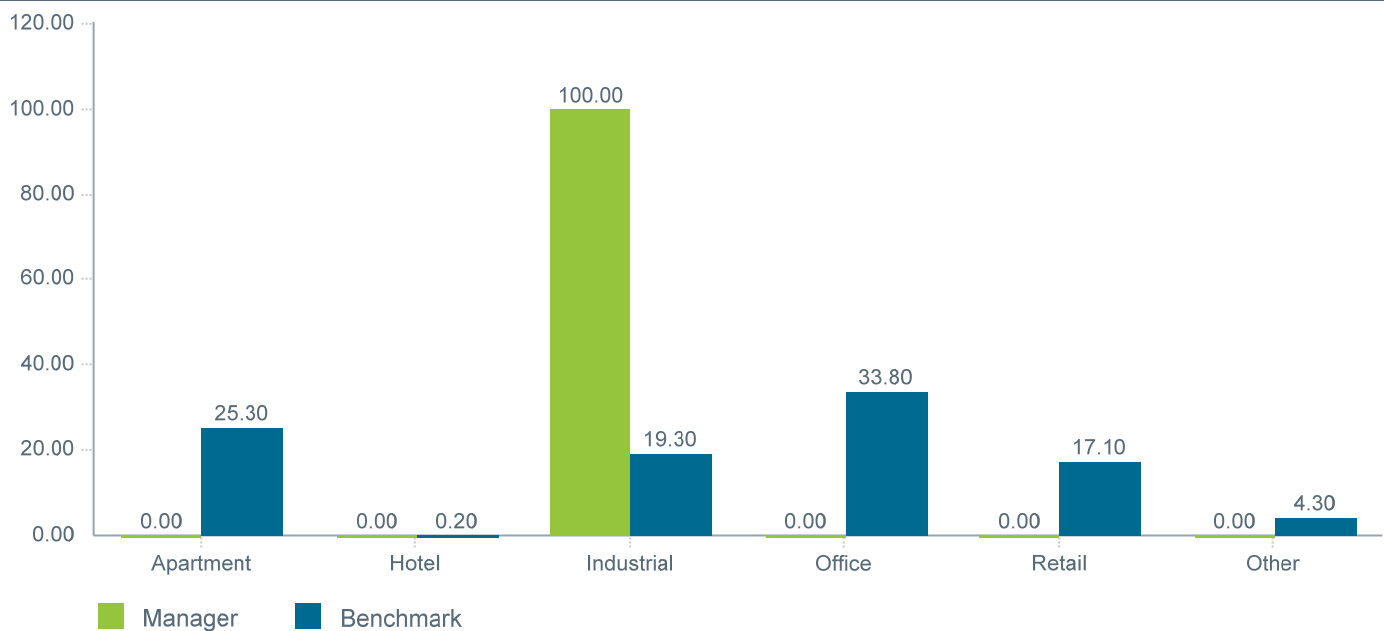
### Investment Strategy

The Fund pursues a concentrated core-plus real estate investment strategy focusing on the industrial sector and seeks to combine attractive current income with long-term capital growth by acquiring, operating, renovating and disposing of assets located in the US. The Fund's investment activities focus on properties near key passenger and cargo airports, seaports, and ground transportation systems in major metropolitan areas. It operates with a leverage limit of 45% and does not invest in "value-added" real estate investment opportunities.

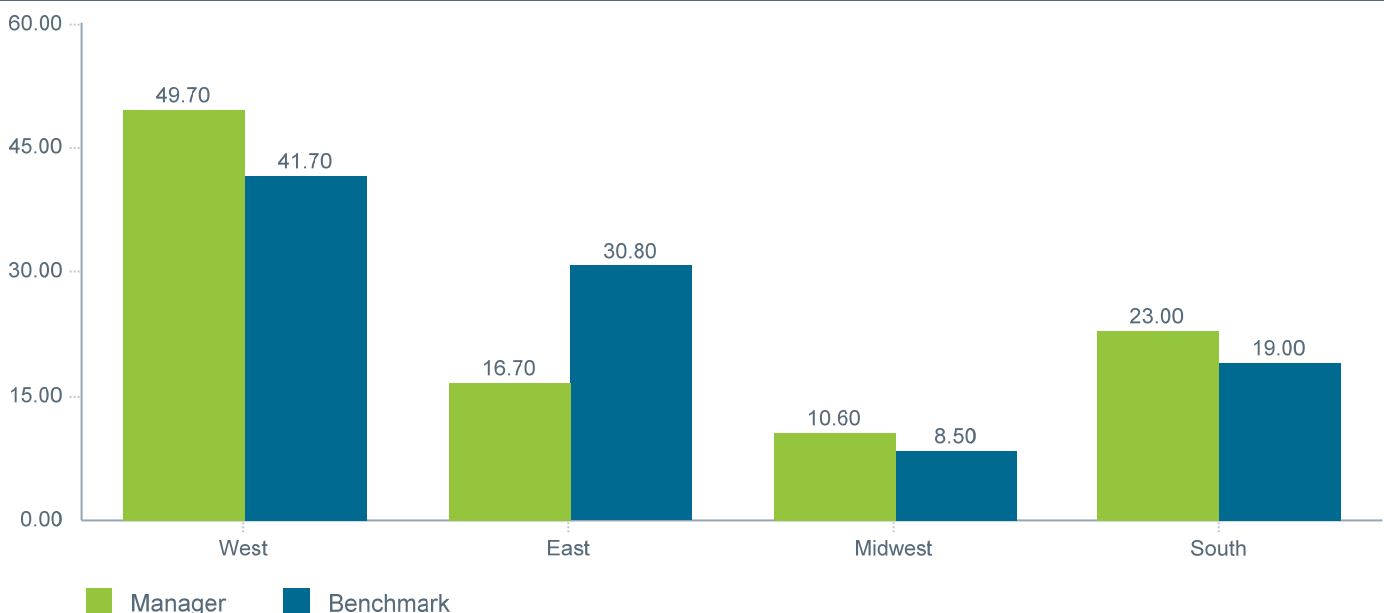
### Investment Profile

Fund Inception	2004
Legal Structure	LP
Fund Structure	Open-End
Gross Real Estate Assets (\$M)	15,793
Fund Leverage %	17.30
Portfolio Occupancy %	96.00
Cash Reserve %	0.40
Number of Investments	596
Number of Limited Partners	82

### Property Type Allocation (%)

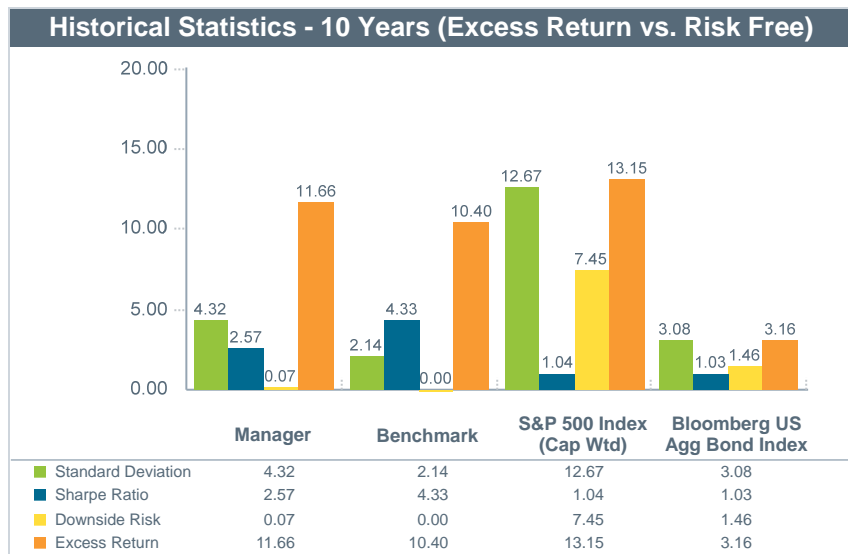


### Geographic Allocation (%)



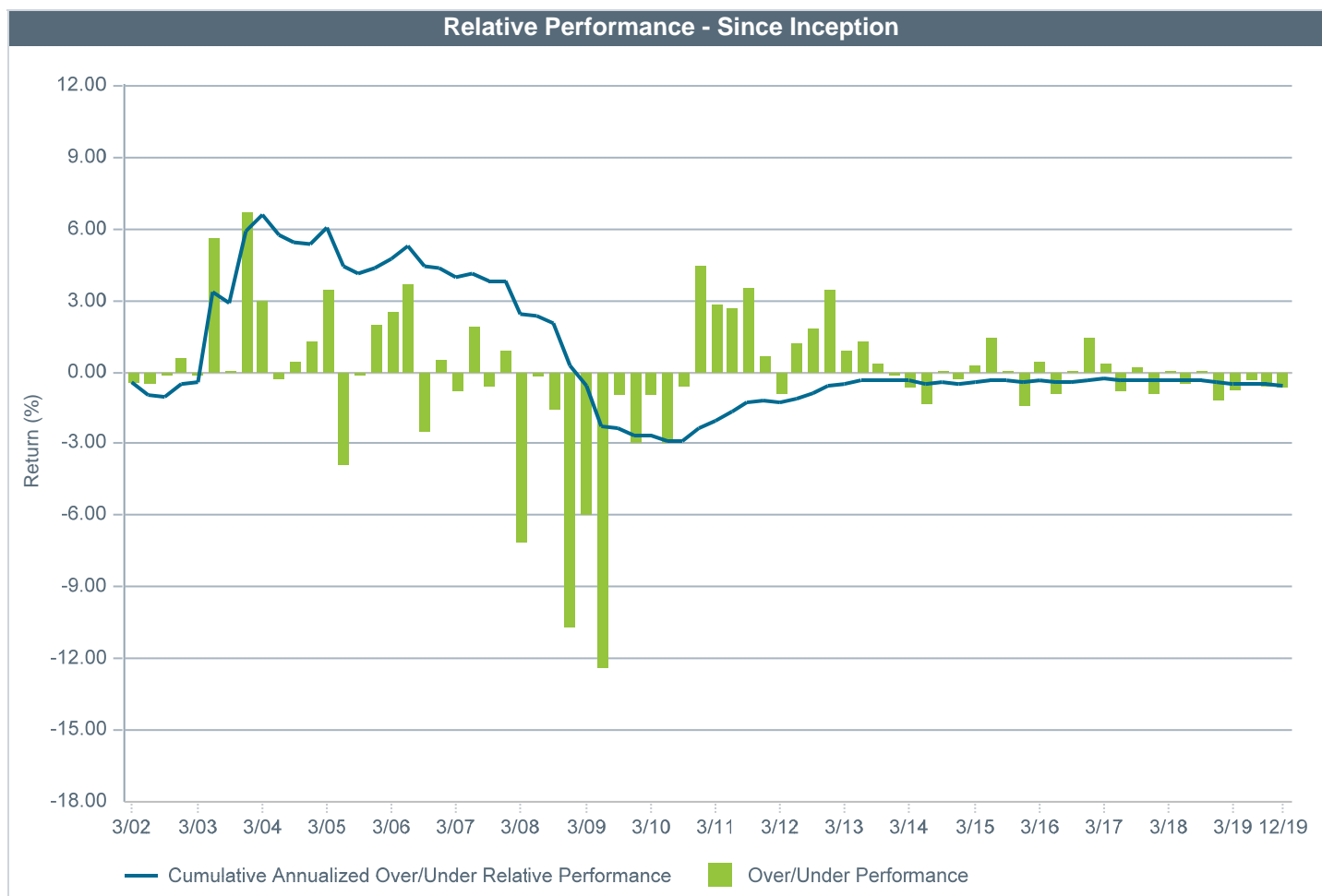
Performance shown is gross of fees and product specific. Calculation is based on quarterly periodicity. Investment profile data shown is provided by the investment manager and is as of the most recently available quarter end. Allocation data shown is based on NAV. Benchmark allocation to "Other" consists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

Performance											
	QTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	2015	2014
Manager	0.84	3.01	5.35	8.19	9.65	12.72	6.59	6.50	9.90	15.34	10.08
Benchmark	1.51	5.34	7.09	8.97	10.17	11.42	8.35	7.62	8.77	15.02	12.50
Difference	-0.67	-2.33	-1.74	-0.78	-0.52	1.30	-1.76	-1.12	1.13	0.32	-2.42



**Actual Correlation - 10 Years**

	Actual Correlation
NCREIF ODCE Index (AWA) (Gross)	0.75
S&P 500 Index (Cap Wtd)	-0.04
Russell 2000 Index	0.02
MSCI EAFE Index (USD) (Net)	-0.01
MSCI Emg Mkts Index (USD) (Net)	-0.14
Bloomberg US Agg Bond Index	-0.23
Bloomberg US Trsy US TIPS Index	-0.06
Wilshire US REIT Index	-0.14
HFRI FOF Comp Index	-0.05
Bloomberg Cmdb Index (TR)	0.09
ICE BofAML 3 Mo US T-Bill Index	-0.51
Cons Price Index (Unadjusted)	0.02



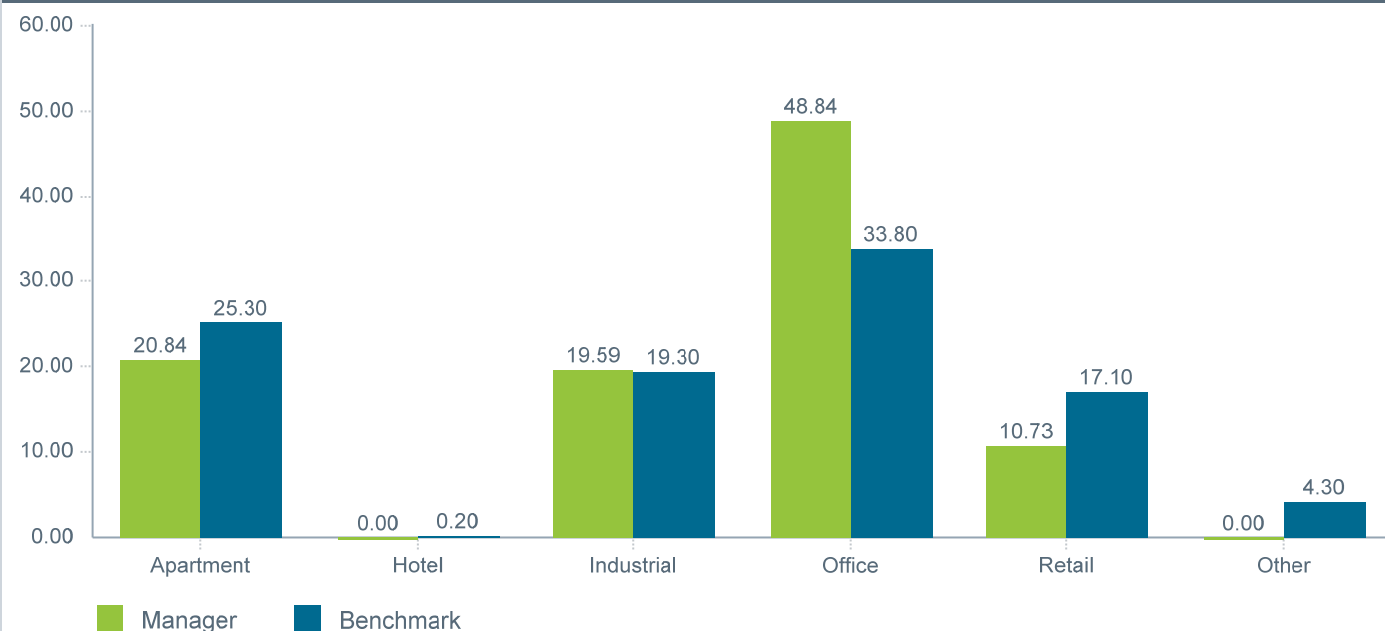
### Investment Strategy

The Fund pursues a core-plus real estate strategy and focuses on producing high income returns with the potential for capital appreciation. The Fund's broad investment scope allows it to participate in market opportunities across private equity and debt markets, as well as all property sectors and US geographic regions. It invests primarily in leveraged direct core real estate and may dedicate up to 25% of its gross asset value to non-core investments, including up to 15% in mezzanine debt and up to 10% in build-to-core opportunities. Investments are concentrated in the four primary property types, while volatile and/or specialized sectors such as hotels and self-storage investments are avoided. The Fund operates with leverage of 40% or less.

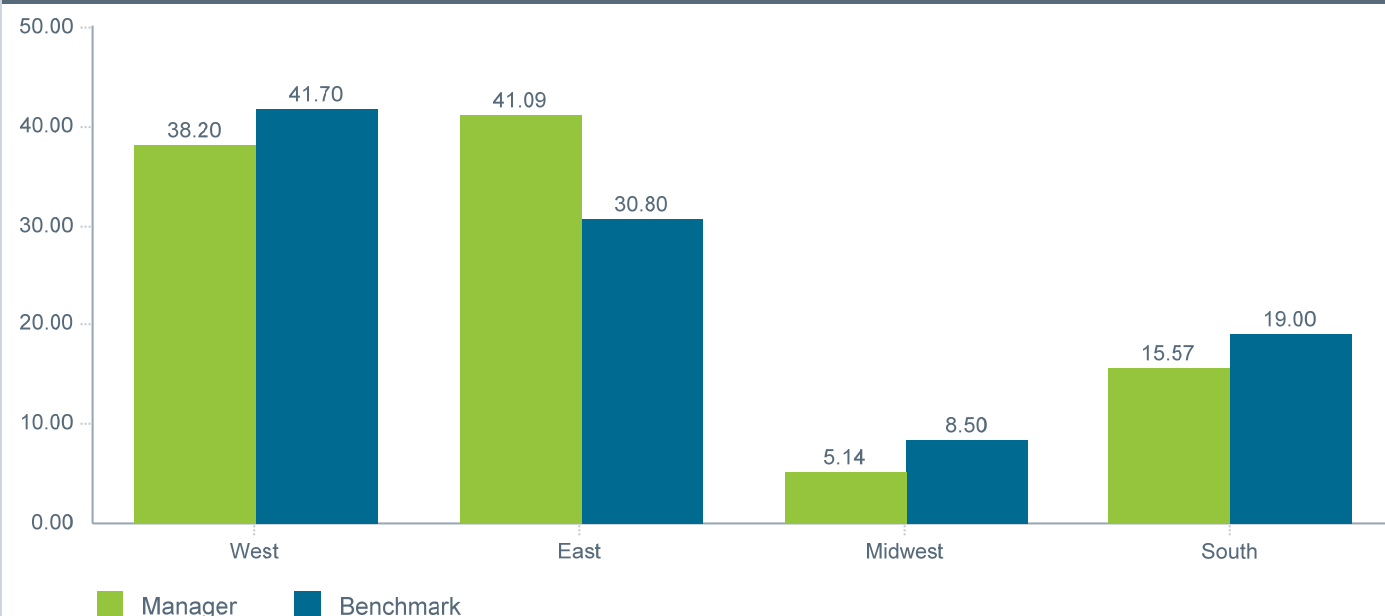
### Investment Profile

Fund Inception	2002
Legal Structure	LP
Fund Structure	Open-End
Gross Real Estate Assets (\$M)	4,064
Fund Leverage %	35.40
Portfolio Occupancy %	92.00
Cash Reserve %	3.25
Number of Investments	71
Number of Limited Partners	56

### Property Type Allocation (%)



### Geographic Allocation (%)



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

# Addendum & Glossary



Asset Allocation							
		Within Target Range?		Targets			
Asset Class	Market Value	Yes	No	Current (%)	Min.	Target	Max.
Broad US Equity	\$ 983,342,909	✓		19.18%	13.5%	18.5%	23.5%
Broad International Equity	\$ 996,171,819	✓		19.43%	13.5%	18.5%	23.5%
Fixed Income	\$ 1,153,898,141	✓		22.50%	18.0%	23.0%	28.0%
Absolute Return	\$ 756,061,749	✓		14.74%	10.0%	15.0%	20.0%
Diversified Inflation Strategies (DIS)	\$ 499,988,701	✓		9.75%	5.0%	10.0%	15.0%
Real Estate	\$ 738,120,377	✓		14.40%	10.0%	15.0%	20.0%
Total Fund	\$ 5,127,583,697			100.00%			

Monitoring Guideline (Over a Full Market Cycle of 5 Years)				Explanation
<b>Total Fund</b>		<b>Yes</b>	<b>No</b>	
Total Fund returns exceed the Target Allocation Index over a 5-year period.			✓	The Total Fund returned 4.85% vs. 6.07% for the index.
<b>Broad US Equity</b>		<b>Yes</b>	<b>No</b>	
The composite returns exceed the Russell 3000 Index over a 5 year period.			✓	The composite returned 11.13% vs. 11.24% for the index. Includes managers which are no longer in the portfolio.
Rank above the IM U.S. Equity Median.		✓		The composite has a ranking of 24. Includes managers which are no longer in the portfolio.
<b>State Street Russell 1000 Index SL (CF)</b>		<b>Yes</b>	<b>No</b>	
The fund returns are in line with the Russell 1000 Index over a 5 year period.				5 year data is unavailable.
Rank above the IM U.S. Large Cap Equity Median.				5 year data is unavailable.
<b>State Street Russell Mid Cap Index (SA)</b>		<b>Yes</b>	<b>No</b>	
The fund returns are in line with the Russell Mid Cap Index over a 5 year period.				5 year data is unavailable.
Rank above the IM U.S. Mid Cap Equity Median.				5 year data is unavailable.
<b>NT Small Cap Core (CF)</b>		<b>Yes</b>	<b>No</b>	
The fund returns exceed the Russell 2000 Index over a 5 year period.		✓		The fund returned 9.01% vs. 8.23% for the index.
Rank above the IM U.S. Small Cap Core Equity Median.		✓		The fund has a ranking of 16.
<b>Broad International Equity</b>		<b>Yes</b>	<b>No</b>	
The composite returns exceed the MSCI ACW Ex US Index (USD) (Net) over a 5 year period.			✓	The composite returned 5.07% vs. 5.51% for the index. Includes managers which are no longer in the portfolio. Current managers added 07/2014 and 02/2018.
Rank above the IM International Large Cap Equity Median.			✓	The composite has a ranking of 55. Includes managers which are no longer in the portfolio. Current managers added 07/2014 and 02/2018.
<b>State Street World Ex US Index (CF)</b>		<b>Yes</b>	<b>No</b>	
The fund returns are in line with the MSCI Wrld Ex US Index (USD) (Net) over a 5 year period.		✓		The fund returned 5.34% vs. 5.42% for the index.
Rank above the IM International Large Cap Equity Median.			✓	The fund has a ranking of 52.
<b>QMA International Small Cap Equity (CF)</b>		<b>Yes</b>	<b>No</b>	
The fund returns exceed the MSCI EAFE Sm Cap Index (USD) (Net) over a 5 year period.				5 year data is unavailable.
Rank above the IM International SMID Cap Core Equity Median.				5 year data is unavailable.
<b>DFA Emg Mkts Core Eq:I (DFCEX)</b>		<b>Yes</b>	<b>No</b>	
The fund returns exceed the MSCI Emg Mkts Index (USD) (Net) over a 5 year period.			✓	The fund returned 5.14% vs. 5.61% for the index.
Rank above the IM Emerging Markets Equity Median.		✓		The fund has a ranking of 50.
<b>Harding Loevner: IEM; IZ (HLEZX)</b>		<b>Yes</b>	<b>No</b>	
The fund returns exceed the MSCI Emg Mkts Index (USD) (Net) over a 5 year period.		✓		The fund returned 6.51% vs. 5.61% for the index.
Rank above the IM Emerging Markets Equity Median.		✓		The fund has a ranking of 25.
<b>Fixed Income</b>		<b>Yes</b>	<b>No</b>	
The composite returns exceed the Global Fixed Income Custom Index over a 5 year period.			✓	The composite returned 3.11% vs. 3.30% for the index.
Rank above the IM Global Fixed Income Median.		✓		The composite has a ranking of 26.
<b>Payden &amp; Rygel Long Term (SA)</b>		<b>Yes</b>	<b>No</b>	
The fund returns exceed the Bloomberg US Agg Bond Index over a 5 year period.		✓		The fund returned 3.75% vs. 3.05% for the index.
Rank above the IM U.S. Broad Market Core Fixed Income Median.		✓		The fund has a ranking of 4.
<b>JP Morgan FI Intermediate Bond (SA)</b>		<b>Yes</b>	<b>No</b>	
The fund returns exceed the Bloomberg US Gov't Crdt Int Trm Bond Index over a 5 year period.		✓		The fund returned 2.72% vs. 2.57% for the index.
Rank above the IM U.S. Intermediate Duration Fixed Income Median.		✓		The fund has a ranking of 10.
<b>Brandywine Gbl Opp FI (CF)</b>		<b>Yes</b>	<b>No</b>	
The fund returns exceed the FTSE Wrld Gov't Bond Index over a 5 year period.		✓		The fund returned 2.47% vs. 2.03% for the index.
Rank above the IM Global Fixed Income Median.		✓		The fund has a ranking of 50.



# North Dakota Board of University and School Lands Long-Term Monitoring Tool

As of December 31, 2019

Fixed Income (Continued)			
Payden:Low Dur;Inv (PYSBX)	Yes	No	
The fund returns exceed the Bloomberg US Trsy 1-3 Yr Index over a 5 year period.	✓		The fund returned 1.76% vs. 1.39% for the index.
Rank above the IM U.S. Short Duration Fixed Income Median.	✓		The fund has a ranking of 40.
AG Direct Lending Fund III, L.P.	Yes	No	
The fund returns exceed the Bloomberg US Gov't Crdt Int Trm Bond Index over a 5 year period.			5 year data is unavailable.
Rank above the IM U.S. Intermediate Duration (MF) Median.			5 year data is unavailable.
Schroders Securitized Credit (SA)	Yes	No	
The fund returns exceed the FTSE Wrld Gov't Bond Index over a 5 year period.			5 year data is unavailable
ND Land - PTF Cash (SA)	Yes	No	
The fund returns exceed the BofA ML 3 Mo US T-Bill Index over a 5 year period.			5 year data is unavailable.
Absolute Return	Yes	No	
The composite returns exceed the Absolute Return Custom Index over a 5 year period.		✓	The composite returned 3.57% vs. 6.39% for the index.
GMO:Bchmk-Fr All;IV (GBMBX)	Yes	No	
The fund returns exceed the 60% MSCI ACWI (Net)/40% B Gbl Agg Idx over a 5 year period.		✓	The fund returned 3.45% vs. 6.11% for the index.
PIMCO:All Ast Ath;Inst (PAUIX)	Yes	No	
The fund returns exceed the All Asset Custom Index (Eql Wtd) over a 5 year period.		✓	The fund returned 2.59% vs. 4.98% for the index.
Diversified Inflation Strategies (DIS)	Yes	No	
The composite returns exceed the DIS Custom Index over a 5 year period.		✓	The composite returned -2.34% vs. -0.15% for the index.
NT Common TIPS Index (CF)	Yes	No	
The fund returns are in line with the Bloomberg US Trsy US TIPS Index over a 5 year period.	✓		The fund returned 2.62% vs. 2.62% for the index.
Rank above the IM U.S. TIPS Median.	✓		The fund has a ranking of 13.
Gresham Commodities (SA)	Yes	No	
The fund returns exceed the Bloomberg Cmddy Ex-Energy Index (TR) over a 5 year period.			5 year data is unavailable.
Harvest MLP (SA)	Yes	No	
The fund returns exceed the S&P MLP Index Index (TR) over a 5 year period.			5 year data is unavailable.
Van Eck NR Equities (SA)	Yes	No	
The fund returns exceed the S&P Gbl Natural Res Sect Index (TR) Index over a 5 year period.			5 year data is unavailable.
Real Estate	Yes	No	
The composite returns exceed the NCREIF ODCE Index (AWA) (Net) over a 5 year period.			5 year data is unavailable.
Morgan Stanley Prime Property Fund (CF)	Yes	No	
The fund returns exceed the NCREIF ODCE Index (AWA) (Net) over a 5 year period.			5 year data is unavailable.
UBS Trumbull Property Fund, L.P. (CF)	Yes	No	
The fund returns exceed the NCREIF ODCE Index (AWA) (Net) over a 5 year period.			5 year data is unavailable.
Jamestown Premier Property Fund (CF)	Yes	No	
The fund returns exceed the NCREIF ODCE Index (AWA) (Net) over a 5 year period.			5 year data is unavailable.
Prologis USLF (CF)	Yes	No	
The fund returns exceed the NCREIF ODCE Index (AWA) (Net) over a 5 year period.			5 year data is unavailable.
JP Morgan US Real Estate Income and Growth, LP (CF)	Yes	No	
The fund returns exceed the NCREIF ODCE Index (AWA) (Net) over a 5 year period.			5 year data is unavailable.

Color Key
Performance:
Green: Manager outperformed benchmark.
Yellow: Manager underperformed benchmark by 100 basis points or less.
Red: Manager underperformed benchmark by more than 100 basis points.
Peer Group Ranks:
Green: Manager ranks in the top 50th percentile compared to its peers.
Yellow: Manager ranks between the 51st and 64th percentile compared to its peers.
Red: Manager ranks in the 65th percentile or lower compared to its peers.

North Dakota Board of University and School Lands  
Comparative Performance - Gross

As of December 31, 2019

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
<b>Total Fund</b>	<b>4.85</b>	<b>4.74</b>	<b>14.89</b>	<b>14.89</b>	<b>7.46</b>	<b>5.35</b>	<b>6.43</b>	<b>7.13</b>	<b>8.18</b>	<b>07/01/2009</b>
Target Allocation Index (Gross)	4.68	5.18	16.45	16.45	8.05	6.21	7.23	7.79	9.00	
Difference	0.17	-0.44	-1.56	-1.56	-0.59	-0.86	-0.80	-0.66	-0.82	
<b>Broad US Equity</b>	<b>8.76</b>	<b>9.66</b>	<b>30.42</b>	<b>30.42</b>	<b>14.46</b>	<b>11.26</b>	<b>13.72</b>	<b>12.88</b>	<b>14.62</b>	<b>07/01/2009</b>
Russell 3000 Index	9.10	10.37	31.02	31.02	14.57	11.24	14.38	13.42	15.00	
Difference	-0.34	-0.71	-0.60	-0.60	-0.11	0.02	-0.66	-0.54	-0.38	
<b>Broad International Equity</b>	<b>9.27</b>	<b>7.47</b>	<b>22.39</b>	<b>22.39</b>	<b>9.11</b>	<b>5.31</b>	<b>6.53</b>	<b>5.35</b>	<b>7.09</b>	<b>07/01/2009</b>
MSCI ACW Ex US Index (USD) (Net)	8.92	6.96	21.51	21.51	9.87	5.51	5.44	4.97	6.90	
Difference	0.35	0.51	0.88	0.88	-0.76	-0.20	1.09	0.38	0.19	
<b>Fixed Income</b>	<b>0.91</b>	<b>2.20</b>	<b>7.70</b>	<b>7.70</b>	<b>4.18</b>	<b>3.34</b>	<b>3.03</b>	<b>4.33</b>	<b>4.76</b>	<b>07/01/2009</b>
Global Fixed Income Custom Index	0.45	2.58	9.21	9.21	4.48	3.30	2.73	3.82	4.14	
Difference	0.46	-0.38	-1.51	-1.51	-0.30	0.04	0.30	0.51	0.62	
Bloomberg US Agg Bond Index	0.18	2.45	8.72	8.72	4.03	3.05	2.72	3.75	3.95	
Difference	0.73	-0.25	-1.02	-1.02	0.15	0.29	0.31	0.58	0.81	
<b>Absolute Return</b>	<b>4.73</b>	<b>3.47</b>	<b>12.01</b>	<b>12.01</b>	<b>6.55</b>	<b>4.39</b>	<b>N/A</b>	<b>N/A</b>	<b>3.43</b>	<b>07/01/2014</b>
Absolute Return Custom Index	5.44	6.32	19.28	19.28	8.99	6.39	7.04	7.07	5.69	
Difference	-0.71	-2.85	-7.27	-7.27	-2.44	-2.00	N/A	N/A	-2.26	
Consumer Price Index+5%	1.31	2.80	7.40	7.40	7.21	6.91	6.70	6.84	6.45	
Difference	3.42	0.67	4.61	4.61	-0.66	-2.52	N/A	N/A	-3.02	
<b>Diversified Inflation Strategies (DIS)</b>	<b>3.61</b>	<b>0.00</b>	<b>12.78</b>	<b>12.78</b>	<b>0.06</b>	<b>-1.83</b>	<b>N/A</b>	<b>N/A</b>	<b>0.39</b>	<b>04/01/2014</b>
DIS Custom Index	2.30	-0.05	10.27	10.27	1.64	-0.15	0.90	4.00	0.97	
Difference	1.31	0.05	2.51	2.51	-1.58	-1.68	N/A	N/A	-0.58	
<b>Real Estate</b>	<b>1.60</b>	<b>3.52</b>	<b>5.70</b>	<b>5.70</b>	<b>8.85</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>9.74</b>	<b>07/01/2015</b>
NCREIF ODCE Index (AWA) (Gross)	1.51	2.84	5.34	5.34	7.09	8.97	10.17	11.42	8.30	
Difference	0.09	0.68	0.36	0.36	1.76	N/A	N/A	N/A	1.44	

Performance shown is gross of fees except where noted. Composite inception dates are based on availability of data for each asset class. Please see the Addendum for custom index definitions. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Fiscal year ends 06/30.

North Dakota Board of University and School Lands  
Comparative Performance - Gross

As of December 31, 2019

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	Since Incep.	Inception Date
<b>Broad US Equity</b>													
<b>State Street Russell 1000 Index SL (CF)</b>	<b>9.04</b>	<b>10.59</b>	<b>31.40</b>	<b>31.40</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-4.77</b>	<b>N/A</b>	<b>N/A</b>	<b>14.00</b>	<b>06/01/2017</b>
Russell 1000 Index	9.04	10.59	31.43	31.43	15.05	11.48	14.60	13.54	-4.78	21.69	12.05	14.01	
Difference	0.00	0.00	-0.03	-0.03	N/A	N/A	N/A	N/A	0.01	N/A	N/A	-0.01	
IM U.S. Large Cap Equity (SA+CF) Median	8.73	10.12	30.22	30.22	14.59	11.10	14.42	13.43	-5.13	21.70	11.01	13.49	
Rank	42	37	40	40	N/A	N/A	N/A	N/A	47	N/A	N/A	43	
<b>State Street Russell Mid Cap Index (SA)</b>													
<b>State Street Russell Mid Cap Index (SA)</b>	<b>7.05</b>	<b>7.55</b>	<b>30.42</b>	<b>30.42</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-8.94</b>	<b>N/A</b>	<b>N/A</b>	<b>11.23</b>	<b>06/01/2017</b>
Russell Mid Cap Index	7.06	7.58	30.54	30.54	12.06	9.33	13.21	13.19	-9.06	18.52	13.80	11.21	
Difference	-0.01	-0.03	-0.12	-0.12	N/A	N/A	N/A	N/A	0.12	N/A	N/A	0.02	
IM U.S. Mid Cap Equity (SA+CF) Median	7.25	7.52	29.97	29.97	11.96	9.76	13.47	13.46	-9.10	19.89	12.67	10.98	
Rank	59	50	47	47	N/A	N/A	N/A	N/A	49	N/A	N/A	49	
<b>NT Small Cap Core (CF)</b>													
<b>NT Small Cap Core (CF)</b>	<b>8.29</b>	<b>5.29</b>	<b>23.98</b>	<b>23.98</b>	<b>12.26</b>	<b>9.77</b>	<b>N/A</b>	<b>N/A</b>	<b>-6.97</b>	<b>22.66</b>	<b>19.02</b>	<b>8.72</b>	<b>07/01/2014</b>
Russell 2000 Index	9.94	7.30	25.53	25.53	8.59	8.23	11.65	11.83	-11.01	14.65	21.31	7.77	
Difference	-1.65	-2.01	-1.55	-1.55	3.67	1.54	N/A	N/A	4.04	8.01	-2.29	0.95	
IM U.S. Small Cap Core Equity (SA+CF) Median	8.67	6.90	24.72	24.72	8.81	9.42	13.03	13.04	-10.73	15.18	20.77	9.03	
Rank	59	78	58	58	15	43	N/A	N/A	24	9	74	55	
<b>NT Small/Smid Composite</b>													
<b>NT Small/Smid Composite</b>	<b>8.29</b>	<b>5.29</b>	<b>23.98</b>	<b>23.98</b>	<b>12.26</b>	<b>9.77</b>	<b>12.40</b>	<b>12.30</b>	<b>-6.97</b>	<b>22.66</b>	<b>19.02</b>	<b>10.58</b>	<b>03/01/1996</b>
Small/Smid Blended Index	9.94	7.30	25.53	25.53	8.59	8.23	11.91	12.34	-11.01	14.65	21.31	9.76	
Difference	-1.65	-2.01	-1.55	-1.55	3.67	1.54	0.49	-0.04	4.04	8.01	-2.29	0.82	
IM U.S. SMID Cap Core Equity (SA+CF) Median	8.07	7.50	29.73	29.73	11.09	9.88	13.27	13.42	-9.66	18.01	16.93	N/A	
Rank	39	91	93	93	35	52	85	85	17	13	17	N/A	

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North Dakota Board of University and School Lands  
Comparative Performance - Gross

As of December 31, 2019

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	Since Incep.	Inception Date
<b>Broad International Equity</b>													
<b>State Street World Ex US Index (CF)</b>	<b>7.84</b>	<b>6.84</b>	<b>22.40</b>	<b>22.40</b>	<b>9.28</b>	<b>5.36</b>	<b>N/A</b>	<b>N/A</b>	<b>-14.14</b>	<b>24.17</b>	<b>2.68</b>	<b>3.03</b>	<b>07/01/2014</b>
MSCI Wrld Ex US Index (USD) (Net)	7.86	6.85	22.49	22.49	9.34	5.42	6.04	5.32	-14.09	24.21	2.75	3.09	
Difference	-0.02	-0.01	-0.09	-0.09	-0.06	-0.06	N/A	N/A	-0.05	-0.04	-0.07	-0.06	
IM International Large Cap Equity (SA+CF) Median	9.32	7.79	23.87	23.87	10.23	6.51	7.24	7.00	-14.24	27.67	1.73	4.38	
Rank	84	71	60	60	68	79	N/A	N/A	48	78	40	84	
<b>DFA Emg Mkts Core Eq;I (DFCEX)</b>													
<b>DFA Emg Mkts Core Eq;I (DFCEX)</b>	<b>10.69</b>	<b>6.21</b>	<b>16.64</b>	<b>16.64</b>	<b>10.94</b>	<b>5.75</b>	<b>N/A</b>	<b>N/A</b>	<b>-14.77</b>	<b>37.36</b>	<b>13.05</b>	<b>3.74</b>	<b>07/01/2014</b>
MSCI Emg Mkts Index (USD) (Net)	11.84	7.09	18.44	18.44	11.57	5.61	3.26	3.68	-14.58	37.28	11.19	3.54	
Difference	-1.15	-0.88	-1.80	-1.80	-0.63	0.14	N/A	N/A	-0.19	0.08	1.86	0.20	
IM Emerging Markets Equity (SA+CF) Median	11.36	7.27	19.49	19.49	11.39	6.22	4.82	5.32	-15.23	36.81	10.36	4.29	
Rank	60	64	71	71	55	58	N/A	N/A	44	45	31	62	
<b>Harding Loevner: IEM;IZ (HLEZX)</b>													
<b>Harding Loevner: IEM;IZ (HLEZX)</b>	<b>12.53</b>	<b>9.06</b>	<b>27.35</b>	<b>27.35</b>	<b>12.94</b>	<b>7.71</b>	<b>N/A</b>	<b>N/A</b>	<b>-17.61</b>	<b>37.29</b>	<b>14.73</b>	<b>5.39</b>	<b>07/01/2014</b>
MSCI Emg Mkts Index (USD) (Net)	11.84	7.09	18.44	18.44	11.57	5.61	3.26	3.68	-14.58	37.28	11.19	3.54	
Difference	0.69	1.97	8.91	8.91	1.37	2.10	N/A	N/A	-3.03	0.01	3.54	1.85	
IM Emerging Markets Equity (SA+CF) Median	11.36	7.27	19.49	19.49	11.39	6.22	4.82	5.32	-15.23	36.81	10.36	4.29	
Rank	26	29	17	17	34	24	N/A	N/A	76	45	21	28	
<b>QMA International Small Cap Equity (CF)</b>													
<b>QMA International Small Cap Equity (CF)</b>	<b>11.97</b>	<b>9.89</b>	<b>23.29</b>	<b>23.29</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-5.74</b>	<b>02/01/2018</b>
MSCI EAFE Sm Cap Index (USD) (Gross)	11.56	11.15	25.47	25.47	11.35	9.25	9.81	9.12	-17.58	33.50	2.55	-0.85	
Difference	0.41	-1.26	-2.18	-2.18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-4.89	
IM International Small Cap Core Equity (SA+CF) Median	11.53	10.19	24.96	24.96	11.79	8.83	10.06	10.34	-18.82	34.07	2.13	-0.99	
Rank	47	55	65	65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	97	

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North Dakota Board of University and School Lands  
Comparative Performance - Gross

As of December 31, 2019

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	Since Incep.	Inception Date
<b>Fixed Income</b>													
<b>Payden &amp; Rygel Long Term (SA)</b>	<b>0.32</b>	<b>2.69</b>	<b>9.64</b>	<b>9.64</b>	<b>4.99</b>	<b>3.96</b>	<b>3.48</b>	<b>4.78</b>	<b>0.36</b>	<b>5.20</b>	<b>4.03</b>	<b>6.00</b>	<b>08/01/1995</b>
Bloomberg US Agg Bond Index	0.18	2.45	8.72	8.72	4.03	3.05	2.72	3.75	0.01	3.54	2.65	5.24	
Difference	0.14	0.24	0.92	0.92	0.96	0.91	0.76	1.03	0.35	1.66	1.38	0.76	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	0.22	2.56	9.20	9.20	4.40	3.46	3.07	4.27	0.07	4.04	3.10	5.60	
Rank	28	31	27	27	9	9	18	16	27	7	20	11	
<b>JP Morgan FI Intermediate Bond (SA)</b>	<b>0.24</b>	<b>1.83</b>	<b>6.80</b>	<b>6.80</b>	<b>3.55</b>	<b>2.83</b>	<b>2.45</b>	<b>N/A</b>	<b>1.11</b>	<b>2.81</b>	<b>1.99</b>	<b>2.45</b>	<b>08/01/2012</b>
Bloomberg US Gov't Crdt Int Trm Bond Index	0.37	1.75	6.80	6.80	3.24	2.57	2.15	3.05	0.88	2.14	2.08	2.14	
Difference	-0.13	0.08	0.00	0.00	0.31	0.26	0.30	N/A	0.23	0.67	-0.09	0.31	
IM U.S. Intermediate Duration (SA+CF) Median	0.44	1.83	6.93	6.93	3.45	2.83	2.47	3.40	0.93	2.56	2.39	2.48	
Rank	92	50	59	59	38	51	52	N/A	38	31	78	53	
<b>Brandywine Gbl Opp FI (CF)</b>	<b>4.24</b>	<b>2.62</b>	<b>9.74</b>	<b>9.74</b>	<b>5.82</b>	<b>2.88</b>	<b>N/A</b>	<b>N/A</b>	<b>-4.71</b>	<b>13.33</b>	<b>5.69</b>	<b>2.56</b>	<b>11/01/2014</b>
FTSE Wrld Gov't Bond Index	-0.35	0.50	5.90	5.90	4.12	2.03	0.79	1.85	-0.84	7.49	1.60	1.72	
Difference	4.59	2.12	3.84	3.84	1.70	0.85	N/A	N/A	-3.87	5.84	4.09	0.84	
IM Global Fixed Income (SA+CF) Median	1.62	2.80	9.46	9.46	5.30	3.67	3.23	4.11	-1.76	7.57	5.85	3.45	
Rank	11	53	48	48	35	67	N/A	N/A	90	4	54	64	
<b>Payden:Low Dur;Inv (PYSBX)</b>	<b>0.66</b>	<b>1.43</b>	<b>4.57</b>	<b>4.57</b>	<b>2.65</b>	<b>2.22</b>	<b>1.90</b>	<b>2.94</b>	<b>1.48</b>	<b>1.93</b>	<b>2.26</b>	<b>3.92</b>	<b>04/01/2002</b>
Bloomberg US Trsy 1-3 Yr Index	0.51	1.09	3.59	3.59	1.85	1.39	1.14	1.23	1.56	0.42	0.86	2.31	
Difference	0.15	0.34	0.98	0.98	0.80	0.83	0.76	1.71	-0.08	1.51	1.40	1.61	
IM U.S. Short Duration Fixed Income (SA+CF) Median	0.60	1.44	4.49	4.49	2.56	2.05	1.77	2.09	1.68	1.51	1.61	3.03	
Rank	30	51	43	43	38	34	36	8	82	25	25	3	
<b>AG Direct Lending Fund III, L.P.</b>	<b>0.00</b>	<b>3.11</b>	<b>8.32</b>	<b>8.32</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>8.08</b>	<b>09/01/2018</b>
CS Lvg'd Loan Index	0.00	0.92	6.39	6.39	3.90	4.19	4.16	5.01	1.14	4.25	9.88	2.85	
Difference	0.00	2.19	1.93	1.93	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.23	
IM U.S. Intermediate Duration Fixed Income (MF) Median	0.57	1.71	6.08	6.08	3.29	2.71	2.41	3.31	1.27	2.56	2.51	5.31	
Rank	87	1	2	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
<b>Schroders Securitized Credit (SA)</b>	<b>0.52</b>	<b>1.43</b>	<b>4.22</b>	<b>4.22</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>3.76</b>	<b>12/01/2018</b>
3 Month LIBOR Index (USD)+1.75%	0.97	2.04	4.39	4.39	3.71	3.11	2.79	2.59	3.86	2.88	2.42	4.40	
Difference	-0.45	-0.61	-0.17	-0.17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.64	
<b>ND Land - PTF Cash (SA)</b>	<b>0.47</b>	<b>1.37</b>	<b>2.56</b>	<b>2.56</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>1.71</b>	<b>N/A</b>	<b>N/A</b>	<b>1.97</b>	<b>07/01/2017</b>
ICE BofAML 3 Mo US T-Bill Index	0.46	1.03	2.28	2.28	1.67	1.07	0.78	0.58	1.87	0.86	0.33	1.88	
Difference	0.01	0.34	0.28	0.28	N/A	N/A	N/A	N/A	-0.16	N/A	N/A	0.09	

Performance shown is gross of fees, except for FLP & ECLP Bank Loans which are shown net of fees. Manager inception dates shown represent the first full month following initial funding. Please see the Addendum for custom index definitions. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Fiscal year ends 06/30.

North Dakota Board of University and School Lands  
Comparative Performance - Gross

As of December 31, 2019

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	Since Incep.	Inception Date
FLP (Loans)	1.18	2.40	4.86	4.86	5.72	5.88	5.82	5.95	6.15	6.16	6.12	7.15	08/01/1995
ECLP (Loans)	1.11	2.25	4.49	4.49	4.44	4.67	4.79	N/A	4.58	4.25	4.89	5.03	11/01/2010

Performance shown is gross of fees, except for FLP & ECLP Bank Loans which are shown net of fees. Manager inception dates shown represent the first full month following initial funding. Please see the Addendum for custom index definitions. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Fiscal year ends 06/30.

North Dakota Board of University and School Lands  
Comparative Performance - Gross

As of December 31, 2019

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	Since Incep.	Inception Date
<b>Absolute Return</b>													
<b>GMO:Bchmk-Fr All;IV (GBMBX)</b>	<b>5.64</b>	<b>4.61</b>	<b>12.59</b>	<b>12.59</b>	<b>7.06</b>	<b>4.34</b>	<b>N/A</b>	<b>N/A</b>	<b>-4.46</b>	<b>14.07</b>	<b>4.35</b>	<b>3.39</b>	<b>07/01/2014</b>
60% MSCI ACW (Net)/40% Bbrg Gbl Agg Idx	5.51	5.83	18.55	18.55	9.28	6.11	6.45	6.42	-6.00	17.09	5.69	5.00	
Difference	0.13	-1.22	-5.96	-5.96	-2.22	-1.77	N/A	N/A	1.54	-3.02	-1.34	-1.61	
Consumer Price Index+5%	1.31	2.80	7.40	7.40	7.21	6.91	6.70	6.84	7.01	7.21	7.18	6.45	
Difference	4.33	1.81	5.19	5.19	-0.15	-2.57	N/A	N/A	-11.47	6.86	-2.83	-3.06	
<b>PIMCO:All Ast Ath;Inst (PAUIX)</b>													
<b>All Asset Custom Index (EqI Wtd)</b>	<b>3.81</b>	<b>2.22</b>	<b>8.63</b>	<b>8.63</b>	<b>5.20</b>	<b>3.56</b>	<b>N/A</b>	<b>N/A</b>	<b>-5.22</b>	<b>13.09</b>	<b>14.80</b>	<b>1.74</b>	<b>07/01/2014</b>
All Asset Custom Index (EqI Wtd)	3.08	4.15	12.97	12.97	6.58	4.98	4.96	5.57	-1.62	8.94	6.47	4.40	
Difference	0.73	-1.93	-4.34	-4.34	-1.38	-1.42	N/A	N/A	-3.60	4.15	8.33	-2.66	
Consumer Price Index+5%	1.31	2.80	7.40	7.40	7.21	6.91	6.70	6.84	7.01	7.21	7.18	6.45	
Difference	2.50	-0.58	1.23	1.23	-2.01	-3.35	N/A	N/A	-12.23	5.88	7.62	-4.71	
<b>Diversified Inflation Strategies (DIS)</b>													
<b>NT Common TIPS Index (CF)</b>	<b>0.82</b>	<b>2.12</b>	<b>8.48</b>	<b>8.48</b>	<b>3.38</b>	<b>2.67</b>	<b>1.13</b>	<b>3.45</b>	<b>-1.25</b>	<b>3.14</b>	<b>4.82</b>	<b>4.16</b>	<b>06/01/2004</b>
Bloomberg US Trsy US TIPS Index	0.79	2.14	8.43	8.43	3.32	2.62	1.08	3.36	-1.26	3.01	4.68	4.06	
Difference	0.03	-0.02	0.05	0.05	0.06	0.05	0.05	0.09	0.01	0.13	0.14	0.10	
IM U.S. TIPS (SA+CF) Median	0.80	2.13	8.43	8.43	3.34	2.62	1.10	3.36	-1.25	3.09	4.66	4.12	
Rank	38	52	27	27	30	30	36	29	51	45	29	34	
<b>Gresham Commodities (SA)</b>													
<b>Bloomberg Cmdty Ex Energy Index (TR)</b>	<b>6.47</b>	<b>4.54</b>	<b>14.25</b>	<b>14.25</b>	<b>3.52</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-13.29</b>	<b>11.98</b>	<b>12.44</b>	<b>-1.18</b>	<b>07/01/2015</b>
Bloomberg Cmdty Ex Energy Index (TR)	3.78	3.13	6.01	6.01	-0.18	-2.49	-5.23	-2.05	-10.95	5.36	7.77	-1.79	
Difference	2.69	1.41	8.24	8.24	3.70	N/A	N/A	N/A	-2.34	6.62	4.67	0.61	
Gresham Commodities (SA) Custom Index	5.69	4.13	12.83	12.83	0.89	N/A	N/A	N/A	-14.04	5.89	12.56	-2.28	
Difference	0.78	0.41	1.42	1.42	2.63	N/A	N/A	N/A	0.75	6.09	-0.12	1.10	
<b>Harvest MLP (SA)</b>													
<b>S&amp;P MLP Index (TR)</b>	<b>-0.91</b>	<b>-5.89</b>	<b>13.54</b>	<b>13.54</b>	<b>-2.03</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-12.98</b>	<b>-4.81</b>	<b>20.10</b>	<b>-3.68</b>	<b>07/01/2015</b>
S&P MLP Index (TR)	-3.09	-7.01	9.78	9.78	-2.90	-6.23	0.18	5.10	-11.67	-5.58	21.95	-5.12	
Difference	2.18	1.12	3.76	3.76	0.87	N/A	N/A	N/A	-1.31	0.77	-1.85	1.44	
<b>Van Eck NR Equities (SA)</b>													
<b>S&amp;P Gbl Ntrl Res Sect Index (TR)</b>	<b>9.08</b>	<b>-0.04</b>	<b>13.59</b>	<b>13.59</b>	<b>-6.47</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-28.04</b>	<b>0.09</b>	<b>45.15</b>	<b>-4.53</b>	<b>07/01/2015</b>
S&P Gbl Ntrl Res Sect Index (TR)	9.55	2.95	17.20	17.20	7.92	4.79	2.13	1.61	-12.57	22.66	32.28	5.93	
Difference	-0.47	-2.99	-3.61	-3.61	-14.39	N/A	N/A	N/A	-15.47	-22.57	12.87	-10.46	
S&P N Amer Ntrl Res Index	7.47	2.66	17.63	17.63	-2.05	-1.41	-0.30	1.39	-21.07	1.23	30.87	-0.64	
Difference	1.61	-2.70	-4.04	-4.04	-4.42	N/A	N/A	N/A	-6.97	-1.14	14.28	-3.89	

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North Dakota Board of University and School Lands  
Comparative Performance - Gross

As of December 31, 2019

	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2018	2017	2016	Since Incep.	Inception Date
<b>Real Estate</b>													
<b>Morgan Stanley Prime Property Fund (CF)</b>	<b>1.79</b>	<b>3.54</b>	<b>7.38</b>	<b>7.38</b>	<b>8.76</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>9.05</b>	<b>9.86</b>	<b>10.43</b>	<b>9.85</b>	<b>07/01/2015</b>
NCREIF ODCE Index (AWA) (Gross)	1.51	2.84	5.34	5.34	7.09	8.97	10.17	11.42	8.35	7.62	8.77	8.30	
Difference	0.28	0.70	2.04	2.04	1.67	N/A	N/A	N/A	0.70	2.24	1.66	1.55	
<b>UBS Trumbull Property Fund, L.P. (CF)</b>	<b>0.05</b>	<b>0.95</b>	<b>-2.11</b>	<b>-2.11</b>	<b>3.64</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>6.98</b>	<b>6.30</b>	<b>7.21</b>	<b>5.49</b>	<b>07/01/2015</b>
NCREIF ODCE Index (AWA) (Gross)	1.51	2.84	5.34	5.34	7.09	8.97	10.17	11.42	8.35	7.62	8.77	8.30	
Difference	-1.46	-1.89	-7.45	-7.45	-3.45	N/A	N/A	N/A	-1.37	-1.32	-1.56	-2.81	
<b>Jamestown Premier Property Fund (CF)</b>	<b>0.08</b>	<b>0.80</b>	<b>3.02</b>	<b>3.02</b>	<b>10.15</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>9.96</b>	<b>18.00</b>	<b>6.58</b>	<b>10.17</b>	<b>07/01/2015</b>
NCREIF ODCE Index (AWA) (Gross)	1.51	2.84	5.34	5.34	7.09	8.97	10.17	11.42	8.35	7.62	8.77	8.30	
Difference	-1.43	-2.04	-2.32	-2.32	3.06	N/A	N/A	N/A	1.61	10.38	-2.19	1.87	
<b>Prologis USLF (CF)</b>	<b>4.93</b>	<b>10.59</b>	<b>19.51</b>	<b>19.51</b>	<b>20.74</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>18.56</b>	<b>24.22</b>	<b>N/A</b>	<b>20.31</b>	<b>04/01/2016</b>
NCREIF ODCE Index (AWA) (Gross)	1.51	2.84	5.34	5.34	7.09	8.97	10.17	11.42	8.35	7.62	8.77	7.41	
Difference	3.42	7.75	14.17	14.17	13.65	N/A	N/A	N/A	10.21	16.60	N/A	12.90	
<b>JP Morgan US Real Estate Income and Growth, LP (CF)</b>	<b>0.95</b>	<b>1.72</b>	<b>3.21</b>	<b>3.21</b>	<b>5.58</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>6.75</b>	<b>6.83</b>	<b>N/A</b>	<b>6.47</b>	<b>07/01/2016</b>
NCREIF ODCE Index (AWA) (Gross)	1.51	2.84	5.34	5.34	7.09	8.97	10.17	11.42	8.35	7.62	8.77	7.31	
Difference	-0.56	-1.12	-2.13	-2.13	-1.51	N/A	N/A	N/A	-1.60	-0.79	N/A	-0.84	

Performance shown is gross of fees, except for FLP & ECLP Bank Loans which are shown net of fees. Manager inception dates shown represent the first full month following initial funding. Please see the Addendum for custom index definitions. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Fiscal year ends 06/30.



**Performance Related Comments**

- Manager inception dates shown represent the first full month following initial funding.
- RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Prior historical data was provided by North Dakota Board of University and School Lands.
- Indices show N/A for since inception returns when the fund contains more history than the corresponding benchmark.
- Historical gross performance for composites was calculated by aggregating gross performance for each of the composites' underlying managers. Managers' gross performance was provided by North Dakota Board of University and School Lands. As of 07/2014, composite and manager performance is provided and calculated by RVK.
- Payden:Low Dur;Inv (PYSBX) performance prior to 08/2012 consists of blended Payden:Low Dur;Inv (PYSBX) and Payden:GNMA;Inv (PYGNX).

**Index Comments**

- The Target Allocation Index (Net) is a static custom index that is calculated monthly and consists of:
  - From 07/2019 through present: 18.5% Russell 3000 Index, 18.5% MSCI ACW Ex US Index (USD) (Net), 23% Global Fixed Income Custom Index, 15% NCREIF ODCE Index (AWA) (Net), 15% Absolute Return Custom Index, and 10% DIS Custom Index.
  - From 02/2018 through 06/2019: 17% Russell 3000 Index, 17% MSCI ACW Ex US Index (USD) (Net), 21% Global Fixed Income Custom Index, 15% NCREIF ODCE Index (AWA) (Net), 20% Absolute Return Custom Index, and 10% DIS Custom Index.
  - From 07/2014 through 01/2018: 17% Russell 3000 Index, 15% MSCI ACW Ex US Index (USD) (Net), 23% Global Fixed Income Custom Index, 15% NCREIF ODCE Index (AWA) (Net), 20% Absolute Return Custom Index, and 10% DIS Custom Index.
  - From 01/2013 through 06/2014: 18.7% Russell 1000 Index, 12.4% Russell 2500 Index, 7.5% FTSE EPRA/NAREIT US Index, 12.4% MSCI EAFE Index (USD) (Net), 33.3% Bloomberg US Agg Bond Index, 0.70% CS Lvg'd Loan Index, 10% Bloomberg US Corp Hi Yld Index, and 5% Bloomberg Gbl Agg Ex USD Index (Hedged).
  - From 07/2009 through 12/2012: 15% Russell 1000 Index, 10% Russell 2500 Index, 6% FTSE EPRA/NAREIT US Index, 10% MSCI EAFE Index (USD) (Net), 32.3% Bloomberg US Agg Bond Index, 1.70% CS Lvg'd Loan Index, 10% Bloomberg US Corp Hi Yld Index, 5% Bloomberg Gbl Agg Ex USD Index (Hedged), and 10% ICE BofAML Cnvt Bonds Index (All Qual).
- The Target Allocation Index (Gross) is a static custom index that is calculated monthly and consists of:
  - From 07/2019 through present: 18.5% Russell 3000 Index, 18.5% MSCI ACW Ex US Index (USD) (Net), 23% Global Fixed Income Custom Index, 15% NCREIF ODCE Index (AWA) (Gross), 15% Absolute Return Custom Index, and 10% DIS Custom Index.
  - From 02/2018 through 06/2019: 17% Russell 3000 Index, 17% MSCI ACW Ex US Index (USD) (Net), 21% Global Fixed Income Custom Index, 15% NCREIF ODCE Index (AWA) (Gross), 20% Absolute Return Custom Index, and 10% DIS Custom Index.
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  - From 07/2009 through 12/2012: 15% Russell 1000 Index, 10% Russell 2500 Index, 6% FTSE EPRA/NAREIT US Index, 10% MSCI EAFE Index (USD) (Net), 32.3% Bloomberg US Agg Bond Index, 1.70% CS Lvg'd Loan Index, 10% Bloomberg US Corp Hi Yld Index, 5% Bloomberg Gbl Agg Ex USD Index (Hedged), and 10% ICE BofAML Cnvt Bonds Index (All Qual).
- The Global Fixed Income Custom Index consists of the Bloomberg US Unv Bond Index. Prior to 03/2019, the index consisted of 75% Bloomberg US Unv Bond Index and 25% Bloomberg Multiverse Index.
- The Absolute Return Custom Index consists of 60% MSCI ACW IM Index (USD) (Net) and 40% Bloomberg US Agg Bond Index.
- The DIS Custom Index consists of 50% Bloomberg US Trsy US TIPS Index and 50% FTSE EPRA/NAREIT Dvl'd Index (\$) (Gross) through 06/2015. It consists of 20% Bloomberg US Trsy US TIPS Index, 30% Bbrg Cmdty Ex-Energy Index (TR), 30% S&P MLP Index (TR), and 20% S&P Gbl Natural Res Sect Index (TR) thereafter.
- The Gresham Custom Index consists of the Bloomberg Commodities Index excluding WTI, Brent and Natural Gas.
- The Small/Smid Blended Index consists of 100% Russell 2500 Index through 05/2014 and 100% Russell 2000 Index thereafter.
- The All Asset Custom Index (Eql Wtd) is an equal-weighted hybrid created independently by RVK specifically for PIMCO's All Asset strategies, and it consists of the following benchmarks:
  1. Short Term Strategies: ICE BofAML 1 Yr T-Bill Index
  2. US Core and Long Maturity Bond Strategies: Bloomberg US Agg Bond Index
  3. EM and Gbl Bond Strategies: PIMCO GLADI Index\*
  4. Crdt Strategies: ICE BofAML US Hi Yld Master II Index
  5. Inflation Related Strategies: Bloomberg US Trsy US TIPS Index
  6. US Equity Strategies: Russell 3000 Index

7. Global Equity Strategies: MSCI ACW Index (USD) (Net)

8. Alternative Strategies: ICE BofAML 3 Mo US T-Bill Index + 3%

\*Performance for the PIMCO Gbl Advantage Bond Index (London Close) prior to 01/01/2004 consists of the JPM EMBI Gbl Dv'd Index (TR).

**Peer Groups**

- Total Fund - All Master Trust Universe
- US Equity - IM US Equity (MF)
- International Equity - IM International Large Cap Equity (MF)
- Fixed Income - IM Global Fixed Income (MF)

## Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

### Capital Markets Review -

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

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

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

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

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



## Glossary

- Purchasing Managers Index (PMI)** - Measures economic activity by surveying purchasing managers on a monthly basis as to whether business conditions have improved, worsened, or stayed the same.
- Real Gross Domestic Product (Real GDP)** - An inflation-adjusted measure that reflects the value of all goods and services produced by an economy in a given year.
- US Dollar Total Weighted Index** - Measures the value of the US Dollar relative to a basket of other world currencies. It is calculated as the weighted geometric mean of the dollar's value versus the EUR, GBP, CAD, SEK, CHF, and JPY.
- Unemployment Rate** - The percentage of the total labor force that is unemployed but actively seeking employment.
- VIX** - Measures the implied volatility of S&P 500 Index options by looking at the market's expectation of the S&P 500 Index volatility over the next 30 day period. Commonly referred to as the "fear index" or the "fear gauge."
- Cash Flow Effect** - The composite's active return minus the sum of each managers' active return minus the benchmark effect.
- Consistency** - The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. The higher the consistency figure, the more value a manager has contributed to the product's performance.
- Convexity** - A measure of the shape of the curve that describes the relationship between bond prices and bond yields.
- Correlation** - A statistical measure of the relationship between asset class returns. A value of 1.00 is a perfect correlation; that is, the asset classes always move in the same direction. A value of -1.00 indicates a perfect negative correlation, in which the asset classes always move in opposite directions of each other. A value of 0 indicates there is no relationship between the direction of returns of the two asset classes. Correlation calculations only consider the direction of changes relative to two variables and not the magnitude of those changes.
- Coupon Rate** - The percentage rate of interest paid on a bond or fixed income security; it is typically paid twice per year.
- Current Yield** - The annual income of a security divided by the security's current price.
- Down Market Capture** - Down market by definition is negative benchmark return and down market capture represents the ratio in % terms of the average portfolios return over the benchmark during the down market period. The lower the value of the down market capture the better the product's performance.
- Downside Risk** - A measure similar to standard deviation, but focuses only on the negative movements of the return series. It is calculated by taking the standard deviation of the negative 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 multiplying by the estimated funded status. An estimated plan hedge ratio of zero indicates that the Plan's liabilities have not been hedged, whereas a value of one indicates fully hedged.
- Modified Duration** - The approximate percentage change in a bond's price for a 100 basis point change in yield, assuming the bonds' expected cash flows do not change.

## Glossary

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

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

### Peer Groups -

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

**Investment Manager Peer Groups** - RVK utilizes Investment Metrics' Peer Groups for investment manager peer comparison and ranking. The Investment Metrics Peer Group database includes performance and other quantitative data for over 840 investment management firms and 29,000 investments products, across more than 160 standard peer groups. Mutual Fund Peer Groups are net of fees.

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

1 - Highest Statistical Value

100 - Lowest Statistical Value

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

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

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

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

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

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

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

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

**Return** - Compounded rate of return for the period.

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

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

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



## Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## Glossary

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

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

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

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

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

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