



# Board Presentation/Executive Summary

## Texas Municipal Retirement System

Period Ended: December 31, 2017



# Capital Markets Update

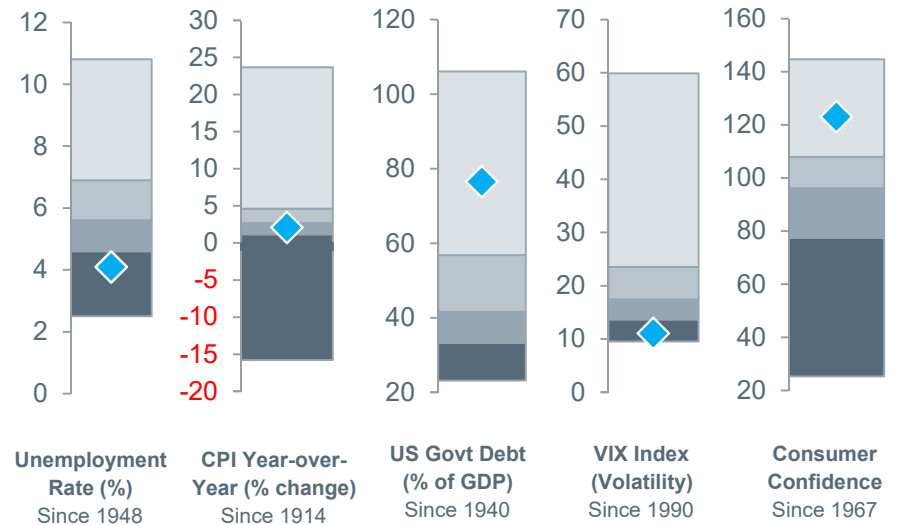


**Fourth Quarter Economic Environment**

**Key Economic Indicators**

Price action across global financial markets continued to be driven by expectations of ongoing economic growth and generally accommodative central bank policies, with equity markets trading to record levels and global sovereign debt yields continuing to trade within recent ranges. The nominal Treasury curve continued to flatten over the quarter. Market participants suggest that recent and expected monetary policy actions, as well as expectations for increased Treasury issuance amidst fiscal stimulus policies, are driving short-maturity and mid-maturity yields higher. Comparatively, longer-dated yields proved stable, and reportedly continue to be heavily influenced by relatively modest expectations for sustained US economic growth and building inflation expectations. Finally, the US dollar continued to depreciate over the quarter, weakening by 1% against major currencies amidst continued economic improvements across developed international and emerging markets. The depreciation over the quarter contributed to a total dollar depreciation of nearly 10% for the year.

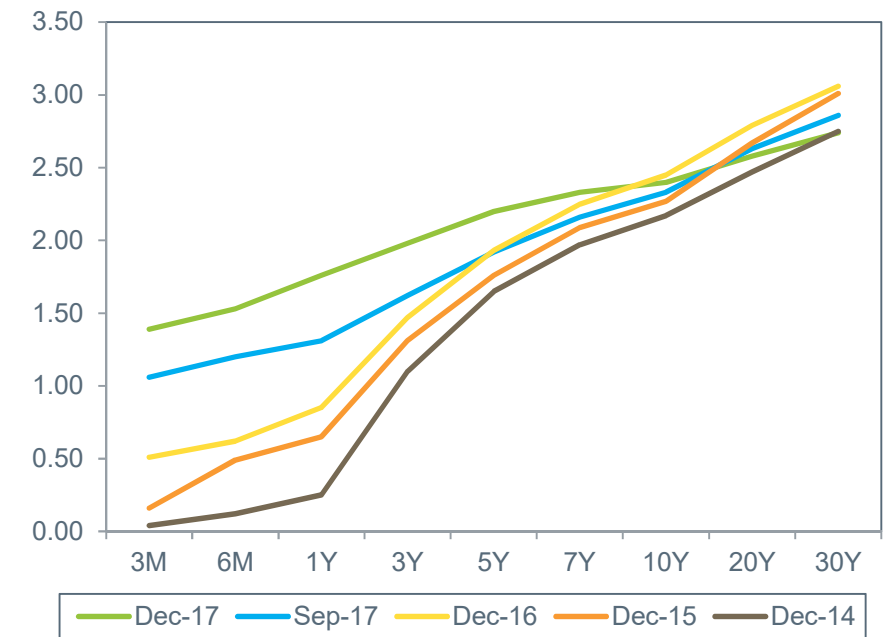
**Key Economic Indicators**



**Economic Indicators**

	Dec-17	Sep-17	Dec-16	Dec-14	20 Yr
Federal Funds Rate (%)	1.33 ▲	1.06	0.55	0.06	2.12
Breakeven Infl. - 1 Yr (%)	0.85 ▼	1.24	1.27	-0.21	N/A
Breakeven Infl. - 10 Yr (%)	1.98 ▲	1.85	1.97	1.68	N/A
CPI YoY (Headline) (%)	2.1 ▼	2.2	2.1	0.8	2.1
Unemployment Rate (%)	4.1 ▼	4.2	4.7	5.6	5.9
Real GDP YoY (%)	2.5 ▲	2.3	1.8	2.7	2.3
PMI - Manufacturing	59.3 ▼	60.2	54.3	54.7	52.4
USD Total Wtd Idx	87.47 ▼	88.10	95.72	85.07	86.73
WTI Crude Oil per Barrel (\$)	60.4 ▲	51.7	53.7	53.3	57.5
Gold Spot per Oz (\$)	1,303 ▲	1,280	1,152	1,185	831

**Treasury Yield Curve (%)**



**Market Performance (%)**

	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	6.64	21.83	21.83	15.79	8.50
Russell 2000	3.34	14.65	14.65	14.12	8.71
MSCI EAFE (Net)	4.23	25.03	25.03	7.90	1.94
MSCI EAFE SC (Net)	6.05	33.01	33.01	12.85	5.77
MSCI Emg Mkts (Net)	7.44	37.28	37.28	4.35	1.68
Bloomberg US Agg Bond	0.39	3.54	3.54	2.10	4.01
BofA ML 3 Mo US T-Bill	0.28	0.86	0.86	0.27	0.39
NCREIF ODCE (Gross)	2.07	7.62	7.62	11.53	5.03
Wilshire US REIT	1.70	4.18	4.18	9.35	7.28
HFRI FOF Comp	1.99	7.69	7.69	3.99	1.08
Bloomberg Cmdty (TR)	4.71	1.70	1.70	-8.45	-6.83

Treasury data courtesy of the US Department of the Treasury. Economic data courtesy of Bloomberg Professional Service. Breakeven Inflation does not have 20 years of history; therefore, its 20-year average is shown as N/A.



Annual Asset Class Performance

As of December 31, 2017

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Best	61.34	33.16	34.00	35.97	39.38	8.44	78.51	28.60	22.49	20.00	38.82	31.78	15.02	21.31	37.28
	55.81	31.45	26.19	32.18	16.23	5.24	58.21	26.85	15.99	18.23	32.39	19.31	9.59	17.13	33.01
	47.25	25.55	21.39	26.34	15.97	2.06	46.78	22.04	13.56	17.59	29.30	13.69	4.23	11.96	25.03
	38.59	20.25	21.36	19.31	11.63	-2.35	31.78	18.88	9.24	17.32	22.78	12.50	1.38	11.77	21.83
	36.18	18.33	13.82	18.37	11.17	-10.01	28.60	16.83	7.84	16.35	13.94	5.97	0.55	11.19	14.65
	28.96	13.06	13.54	16.32	10.25	-21.37	27.17	16.36	4.98	16.00	8.96	4.89	0.05	8.77	10.71
	28.68	11.14	7.49	15.79	6.97	-26.16	26.46	15.12	2.11	15.81	7.44	3.64	-0.27	7.24	7.69
	23.93	10.88	5.34	11.86	6.60	-33.79	18.91	15.06	0.10	10.94	1.86	3.37	-0.31	6.67	7.62
	11.61	9.15	4.91	10.39	5.49	-35.65	11.47	10.16	-4.18	8.78	0.07	2.45	-1.44	4.68	7.50
	9.28	8.56	4.55	4.85	5.00	-37.00	11.41	7.75	-5.72	6.98	-2.02	0.04	-3.30	2.65	4.18
	8.39	8.46	3.07	4.34	1.87	-39.20	5.93	6.54	-12.14	4.79	-2.60	-2.19	-4.41	2.18	3.54
	5.88	6.86	2.84	2.72	1.45	-43.38	1.92	6.31	-13.32	4.21	-8.61	-4.90	-4.47	1.00	3.01
	4.11	4.34	2.74	2.07	-1.57	-47.01	0.21	5.70	-15.94	0.11	-8.83	-4.95	-14.92	0.51	1.70
Worst	1.15	1.33	2.43	0.49	-17.55	-53.33	-29.76	0.13	-18.42	-1.06	-9.52	-17.01	-24.66	0.33	0.86
	S&P 500 - US Large Cap	R 2000 - US Small Cap	MSCI EAFE (Net) - Int'l Dev.	MSCI EAFE SC (Net) - Int'l SC	MSCI EM (Net) - Int'l Emg Mkts	Bloomberg US Agg Bond - FI	Bloomberg US Corp: Hi Yield - FI	Bloomberg US Trsy: US TIPS - FI	Bloomberg US Gov/Credit: Lng - FI	NCREIF ODCE (Gross) - Real Estate	Wilshire US REIT - REITs	HFRI FOF Comp Index - ARS	Bloomberg Cmdty (TR) - Commod.	BofA ML 3 Mo T-Bill - Cash Equiv	

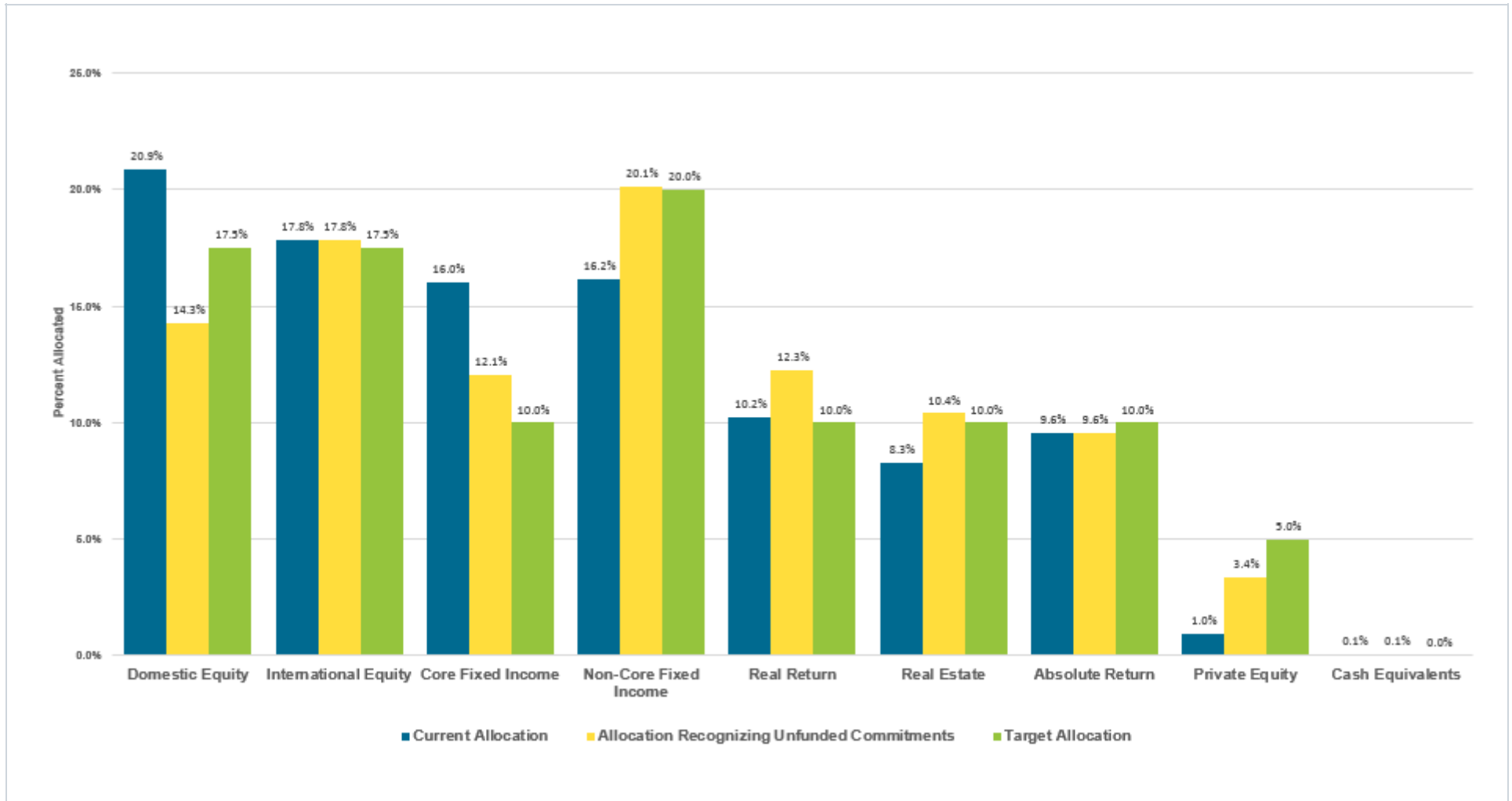
NCREIF ODCE (Gross) performance is reported quarterly; performance is shown N/A in interim-quarter months.



# TMRS Total Fund



# TMRS Investment Portfolio Asset Allocation and Performance



	Allocation		Performance (%)									
	Market Value (\$)	%	Quarter	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	15 Years	Since Incep.	Inception Date
<b>Total Fund Composite</b>	28,433,178,555	100.00	3.26	13.78	13.78	6.83	7.19	6.87	6.56	6.58	8.64	01/01/1989
Actual Allocation Benchmark			3.07	13.30	13.30	6.50	6.97	6.65	6.40	6.20	8.08	

Performance shown is net of fees and provided by State Street. Performance is annualized for periods greater than one year.

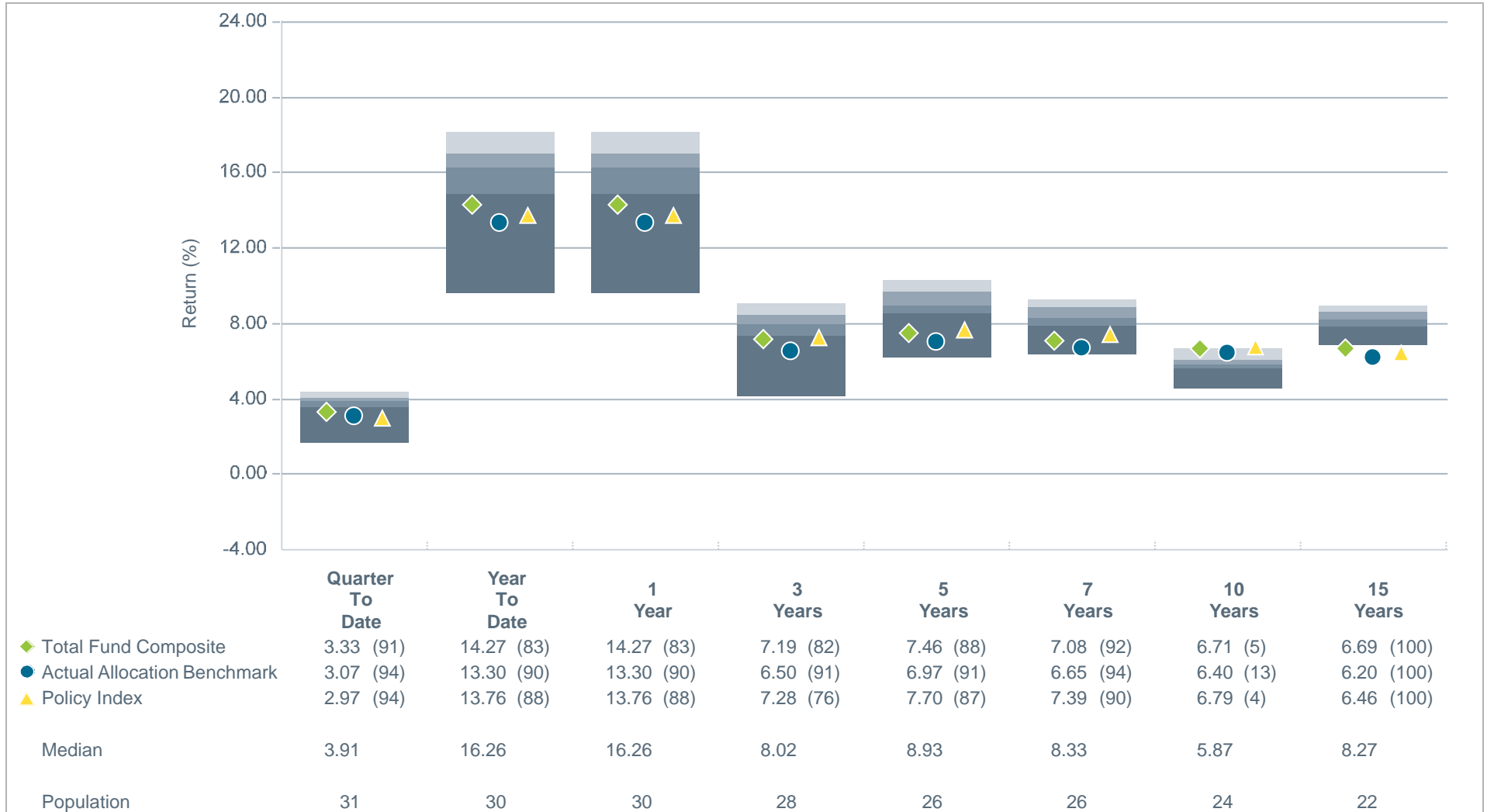
# Asset Class Composite Performance (Net)

	Allocation		Performance (%)									
	Market Value (\$)	%	Quarter	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	15 Years	Since Incep.	Inception Date
<b>Total Fund Composite</b>	<b>28,433,178,555</b>	<b>100.00</b>	<b>3.26</b>	<b>13.78</b>	<b>13.78</b>	<b>6.83</b>	<b>7.19</b>	<b>6.87</b>	<b>6.56</b>	<b>6.58</b>	<b>8.64</b>	<b>01/01/1989</b>
Actual Allocation Benchmark			3.07	13.30	13.30	6.50	6.97	6.65	6.40	6.20	8.08	
<b>Global Equity Composite</b>	<b>11,004,558,233</b>	<b>38.70</b>	<b>5.80</b>	<b>23.97</b>	<b>23.97</b>	<b>10.14</b>	<b>11.93</b>	<b>9.78</b>	<b>N/A</b>	<b>N/A</b>	<b>6.25</b>	<b>02/01/2008</b>
Global Equity Benchmark			5.80	23.84	23.84	10.15	11.85	9.73	N/A	N/A	6.17	
<b>Domestic Equity Composite</b>	<b>5,933,057,318</b>	<b>20.87</b>	<b>6.37</b>	<b>20.33</b>	<b>20.33</b>	<b>10.69</b>	<b>15.24</b>	<b>13.24</b>	<b>N/A</b>	<b>N/A</b>	<b>9.19</b>	<b>02/01/2008</b>
Russell 3000 Index			6.34	21.13	21.13	11.12	15.58	13.50	8.60	10.25	9.36	
<b>International Equity Composite</b>	<b>5,071,498,889</b>	<b>17.84</b>	<b>5.13</b>	<b>29.12</b>	<b>29.12</b>	<b>8.88</b>	<b>7.77</b>	<b>5.71</b>	<b>N/A</b>	<b>N/A</b>	<b>2.84</b>	<b>02/01/2008</b>
International Equity Benchmark			5.23	27.81	27.81	8.38	7.22	5.30	1.47	7.78	2.48	
<b>Core Fixed Income Composite</b>	<b>4,558,093,283</b>	<b>16.03</b>	<b>0.45</b>	<b>3.83</b>	<b>3.83</b>	<b>2.47</b>	<b>2.19</b>	<b>3.37</b>	<b>3.84</b>	<b>4.77</b>	<b>7.68</b>	<b>01/01/1989</b>
Fixed Income Benchmark			0.39	3.54	3.54	2.24	2.10	3.20	3.75	4.43	7.14	
<b>Non-Core Fixed Income Composite</b>	<b>4,596,419,562</b>	<b>16.17</b>	<b>1.08</b>	<b>7.49</b>	<b>7.49</b>	<b>5.11</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>4.93</b>	<b>10/01/2014</b>
Non-Core Fixed Income Benchmark			0.62	9.53	9.53	5.01	3.99	5.43	6.82	8.38	4.76	
<b>Real Return Composite</b>	<b>2,912,213,476</b>	<b>10.24</b>	<b>2.69</b>	<b>8.04</b>	<b>8.04</b>	<b>2.90</b>	<b>1.70</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>3.72</b>	<b>02/01/2011</b>
Bloomberg Wrld Gov't Infl Lnkd Index (Unhedged)			2.84	8.51	8.51	2.46	1.28	3.37	3.24	5.29	3.32	
<b>Real Estate Composite</b>	<b>2,347,159,673</b>	<b>8.26</b>	<b>2.99</b>	<b>10.56</b>	<b>10.56</b>	<b>11.95</b>	<b>12.87</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>11.53</b>	<b>01/01/2012</b>
Real Estate Benchmark			1.88	7.65	7.65	10.83	11.58	12.52	5.03	8.28	11.59	
<b>Absolute Return Composite</b>	<b>2,721,894,750</b>	<b>9.57</b>	<b>2.04</b>	<b>10.09</b>	<b>10.09</b>	<b>5.05</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>4.65</b>	<b>08/01/2014</b>
Absolute Return Benchmark			1.67	5.93	5.93	2.13	3.68	2.55	1.05	3.69	2.33	
<b>Private Equity Composite</b>	<b>269,230,205</b>	<b>0.95</b>	<b>7.73</b>	<b>19.69</b>	<b>19.69</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>10.32</b>	<b>01/01/2016</b>
Russell 3000 Index+3% (1 Qtr Lag)			5.35	22.27	22.27	14.06	17.65	17.71	10.80	13.68	20.32	
<b>TMRS Unallocated Cash</b>	<b>23,609,373</b>	<b>0.08</b>	<b>0.26</b>	<b>0.72</b>	<b>0.72</b>	<b>0.71</b>	<b>0.49</b>	<b>0.36</b>	<b>N/A</b>	<b>N/A</b>	<b>0.40</b>	<b>06/01/2008</b>
FTSE 30 Day T-Bill Index			0.26	0.80	0.80	0.34	0.21	0.16	0.27	1.14	0.20	

Performance shown is net of fees and provided by State Street. Performance is annualized for periods greater than one year. Market value for the Global Equity Composite includes assets held in the Transition Account. Real Estate and Private Equity fund returns are calculated by Private Edge. Private Real Estate fund returns are lagged 1 quarter. Inception dates shown for Real Estate and Private Equity composite represent the first full quarter following initial funding. Inception dates for all other composites represents the first full month following initial funding.

# Total Fund Performance vs. Peers

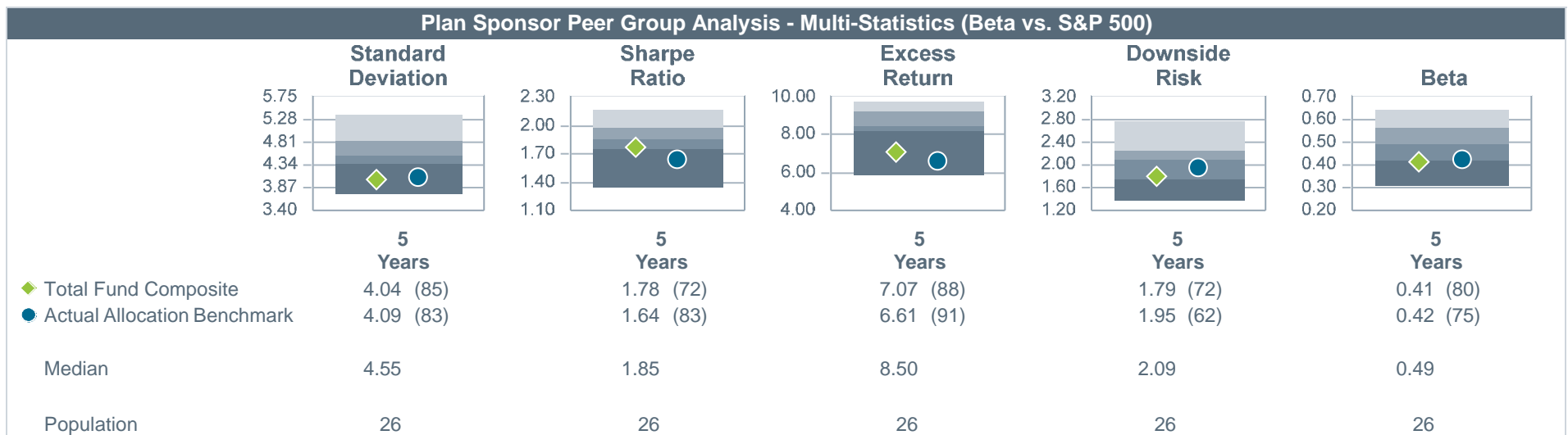
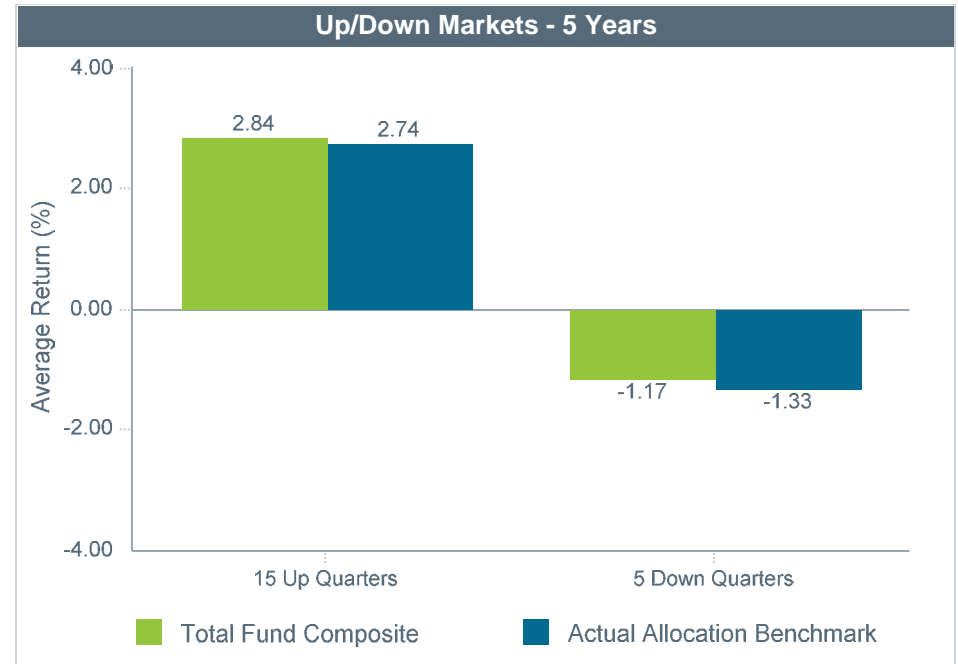
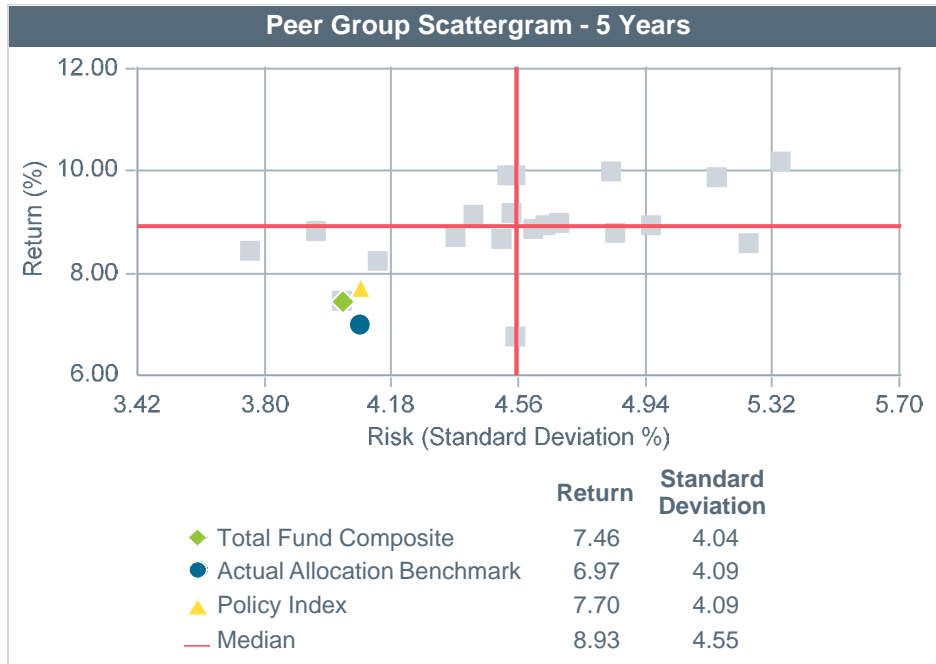
While performance relative to other systems is not an objective of the TMRS fund given the wide range in investment objectives and different benefit plan structures, it is generally of interest to be aware of the performance of other public pension systems.



The Total Fund is ranked against a universe of Public Plans > \$10B.  
Please see Supplemental Information for custom benchmark definitions.  
Performance shown is gross of fees, as of December 31, 2017



# Total Fund Composite vs. All Public Funds > \$10B-Total Fund



Performance shown is gross of fees. Calculations based on quarterly periodicity. Parenthesis contain percentile ranks.

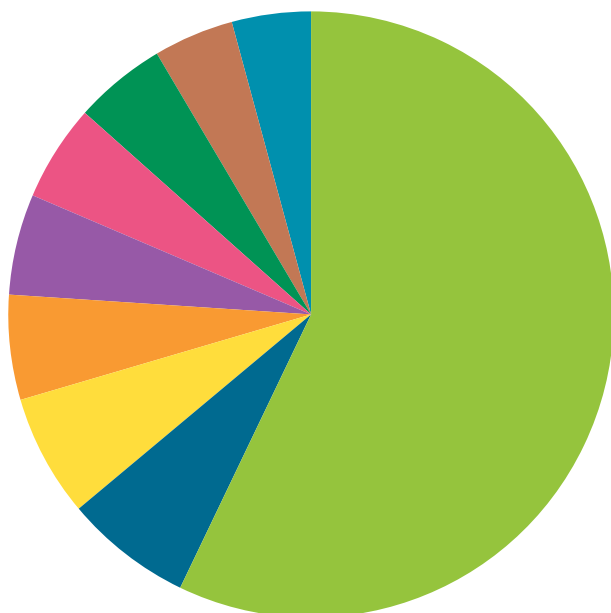
# TMRS Asset Class Composites



# Domestic Equity Composite Performance & Allocation

## Asset Allocation by Manager

\$5,933,048,015



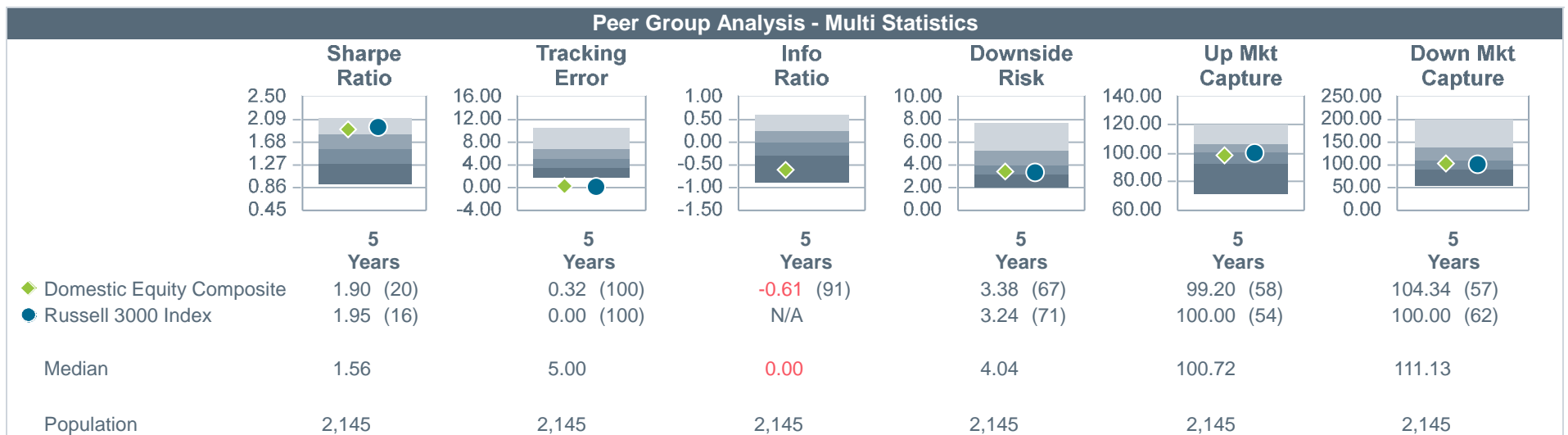
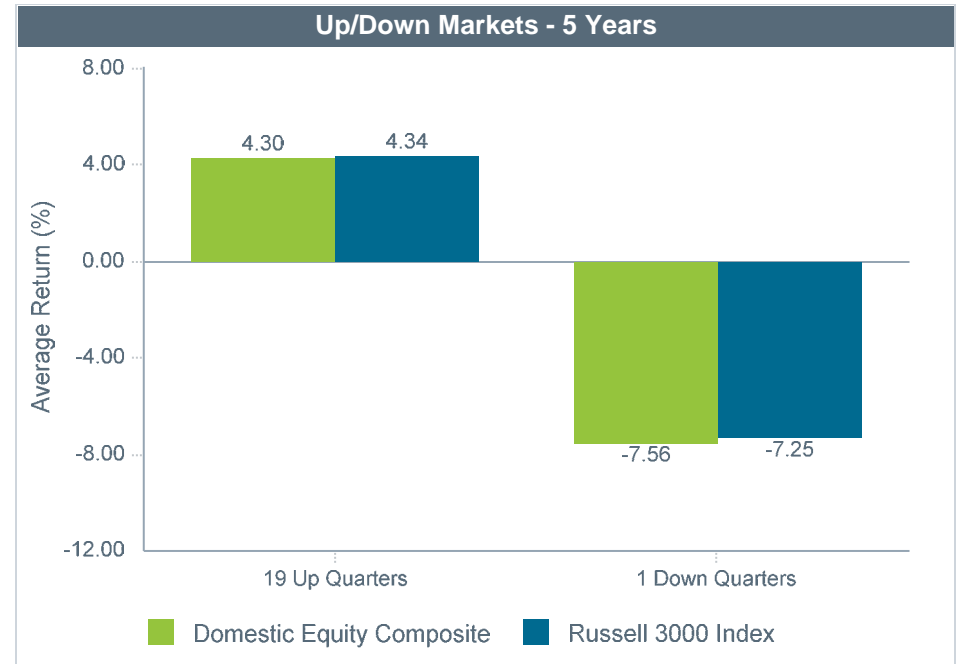
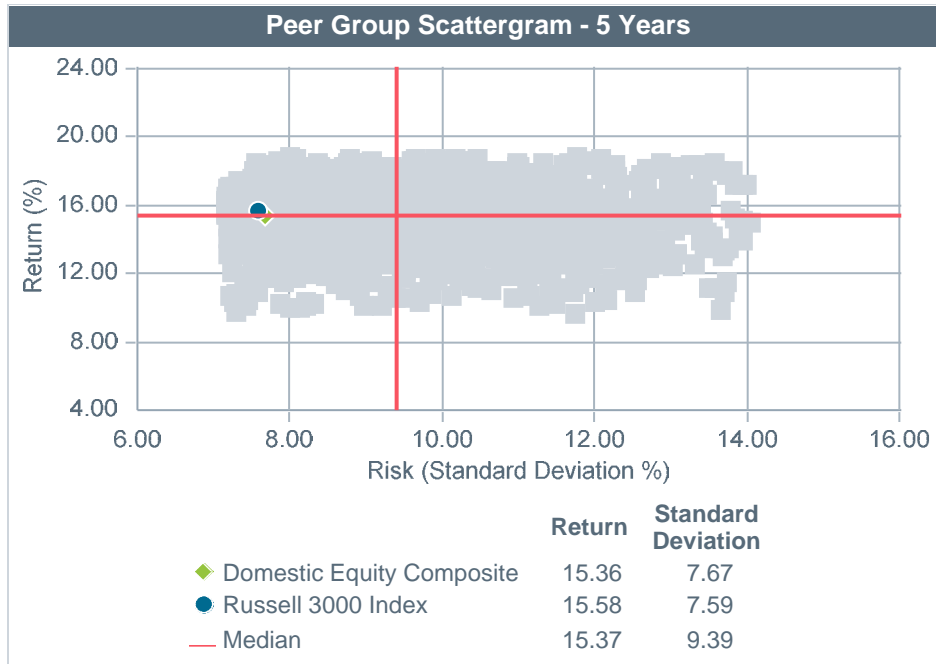
	Market Value (\$)	Allocation (%)
NT Collective Russell 3000 Index NL (CF)	3,388,470,315	57.11
UBS US Equity Min Volatility Index (CF)	403,587,496	6.80
State Street Russell Fndmtl US Index NL (CF)	388,209,524	6.54
The Boston Company Small Cap Opp Value (SA)	331,766,709	5.59
Wellington US Small Cap Opp (SA)	319,381,436	5.38
Epoch U.S. Choice (SA)	305,372,107	5.15
Champlain Mid-Cap Core (SA)	292,131,272	4.92
Sasco U.S. Contrarian Value (SA)	254,181,870	4.28
The Boston Company Mid Cap Opp Value (SA)	249,947,287	4.21

## Comparative Performance

	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012	Since Incep.	Inception Date
<b>Domestic Equity Composite</b>	<b>6.42</b>	<b>20.55</b>	<b>20.55</b>	<b>10.84</b>	<b>15.36</b>	<b>N/A</b>	<b>13.33</b>	<b>-0.32</b>	<b>12.61</b>	<b>33.20</b>	<b>16.33</b>	<b>9.25</b>	<b>02/01/2008</b>
Russell 3000 Index	6.34	21.13	21.13	11.12	15.58	8.60	12.74	0.48	12.56	33.55	16.42	9.36	
Difference	0.08	-0.58	-0.58	-0.28	-0.22	N/A	0.59	-0.80	0.05	-0.35	-0.09	-0.11	

Performance shown is gross of fees. Allocations shown may not sum up to 100% exactly due to rounding. Total Domestic Equity market value excludes Citigroup Global Markets, Inc.

# Domestic Equity Composite vs. IM U.S. Equity

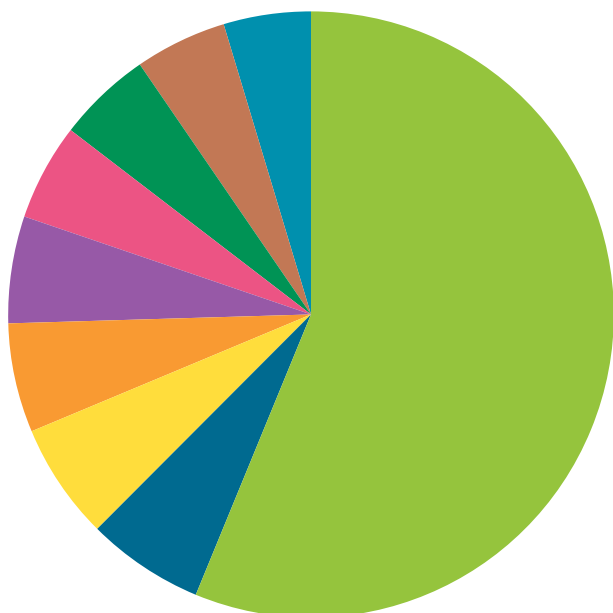


Performance shown is gross of fees. Calculations based on quarterly periodicity. Parenthesis contain percentile ranks.

# International Equity Composite Performance and Allocation

## Asset Allocation by Manager

\$5,071,498,889



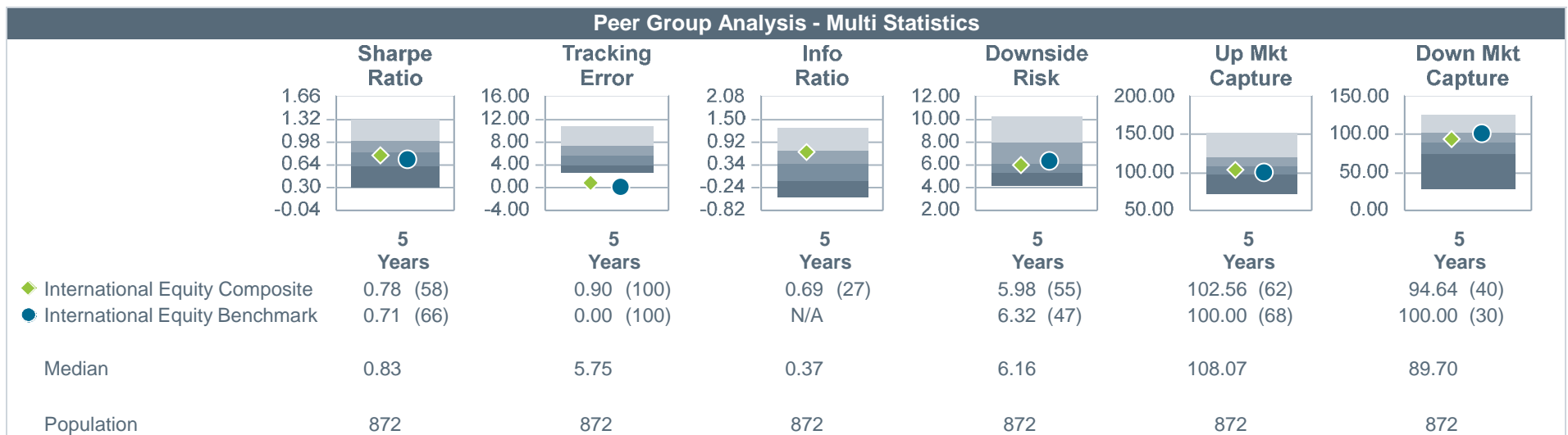
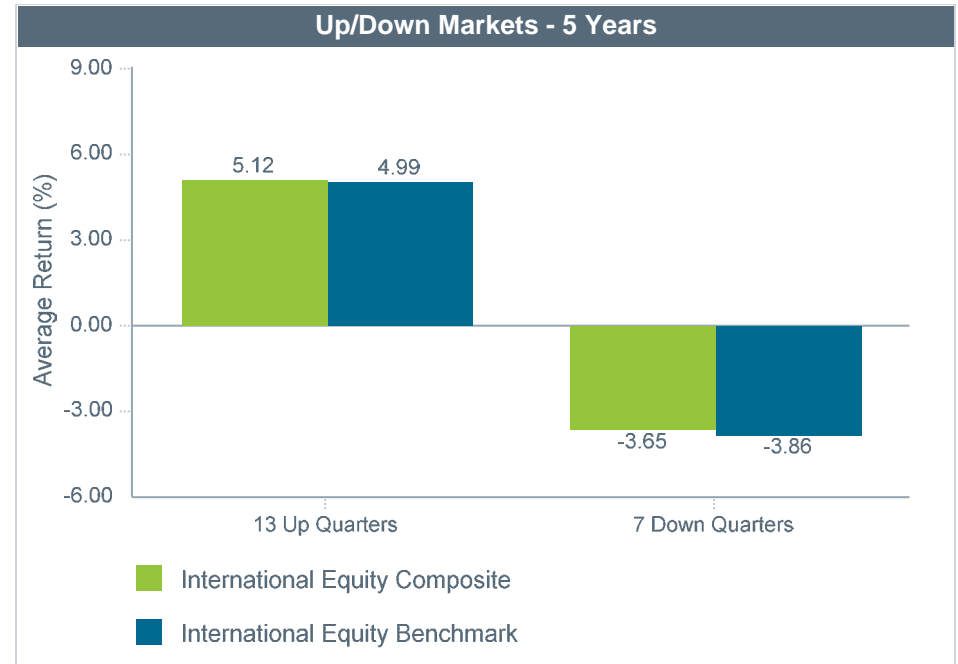
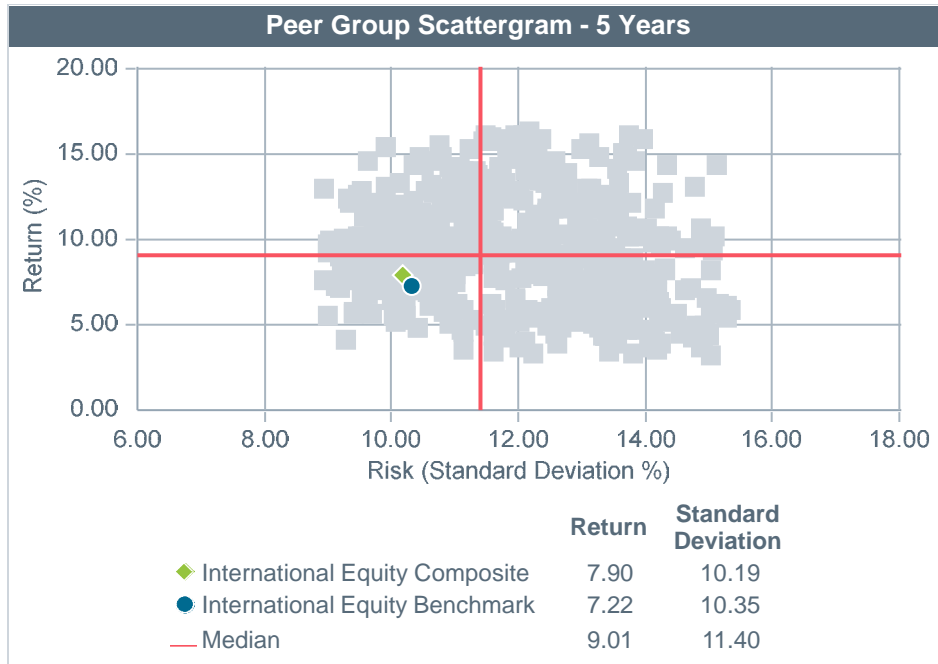
Manager	Market Value (\$)	Allocation (%)
NT Daily Collective ACW Ex US IMI Non-Lending (CF)	2,850,726,807	56.21
Wellington International Small Cap Opp (SA)	317,772,046	6.27
UBS World Ex US Min Volatility NL (CF)	315,695,618	6.22
Wasatch International Small Cap Growth (SA)	295,263,612	5.82
State Street Russell Fndmtl Gbl ex-US Index NL (CF)	289,413,760	5.71
Acadian Emerging Markets (SA)	262,709,192	5.18
Wellington International Horizons (SA)	254,534,083	5.02
William Blair Emerging Markets (SA)	249,576,348	4.92
Lazard International Equity Plus (SA)	235,807,423	4.65

## Comparative Performance

	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012	Since Incep.	Inception Date
International Equity Composite	5.19	29.41	29.41	9.08	7.90	N/A	3.72	-3.32	-3.11	16.31	17.23	2.92	02/01/2008
International Equity Benchmark	5.23	27.81	27.81	8.38	7.22	1.47	4.41	-4.60	-3.89	15.82	17.04	2.48	
Difference	-0.04	1.60	1.60	0.70	0.68	N/A	-0.69	1.28	0.78	0.49	0.19	0.44	

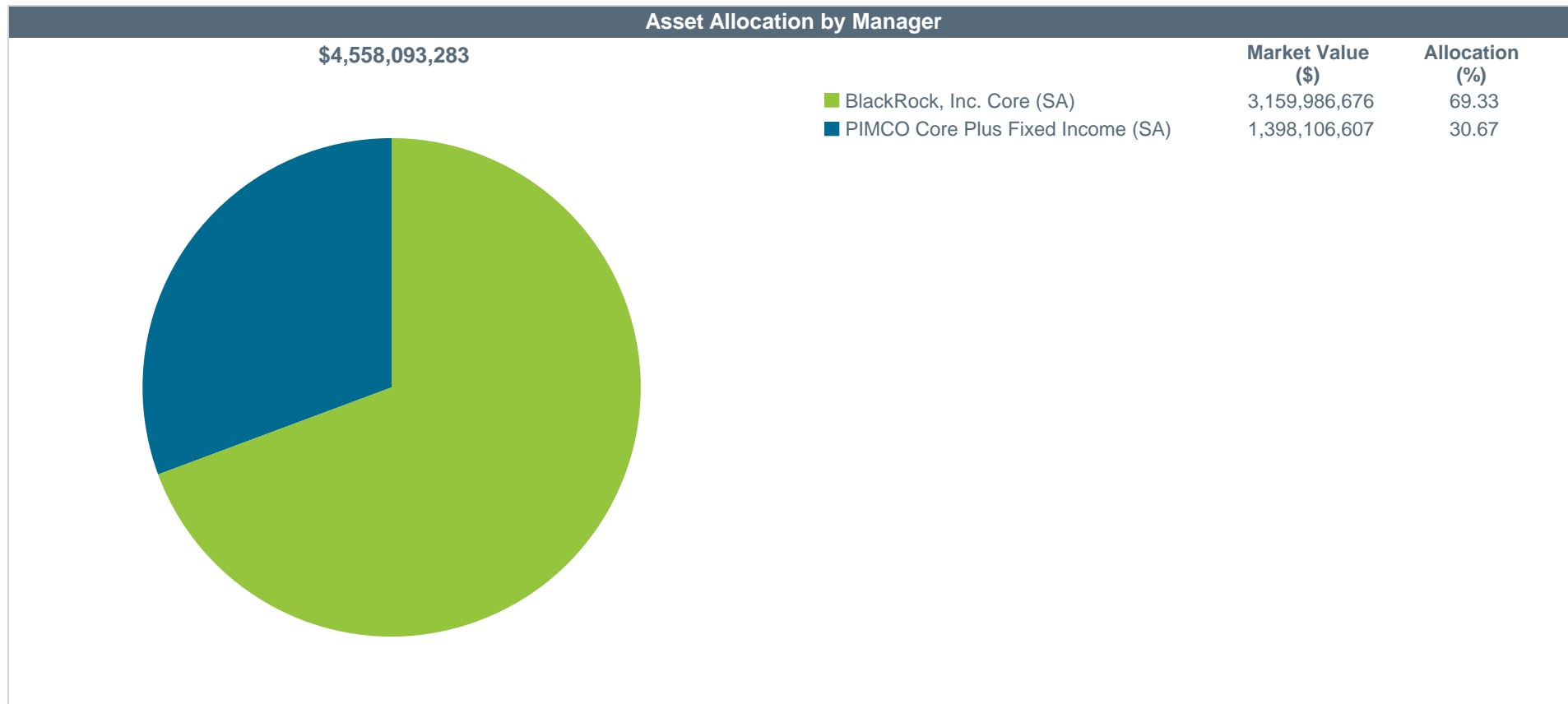
Performance shown is gross of fees. Allocations shown may not sum up to 100% exactly due to rounding.

# International Equity Composite vs. IM International Equity



Performance shown is gross of fees. Calculations based on quarterly periodicity. Parenthesis contain percentile ranks.

# Core Fixed Income Composite Performance and Allocation

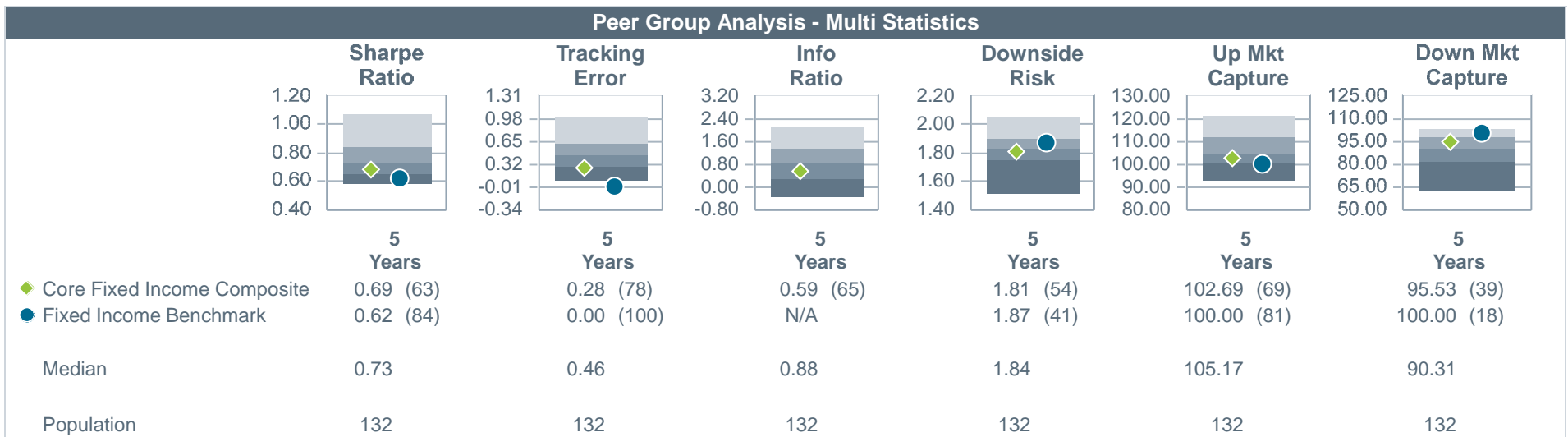
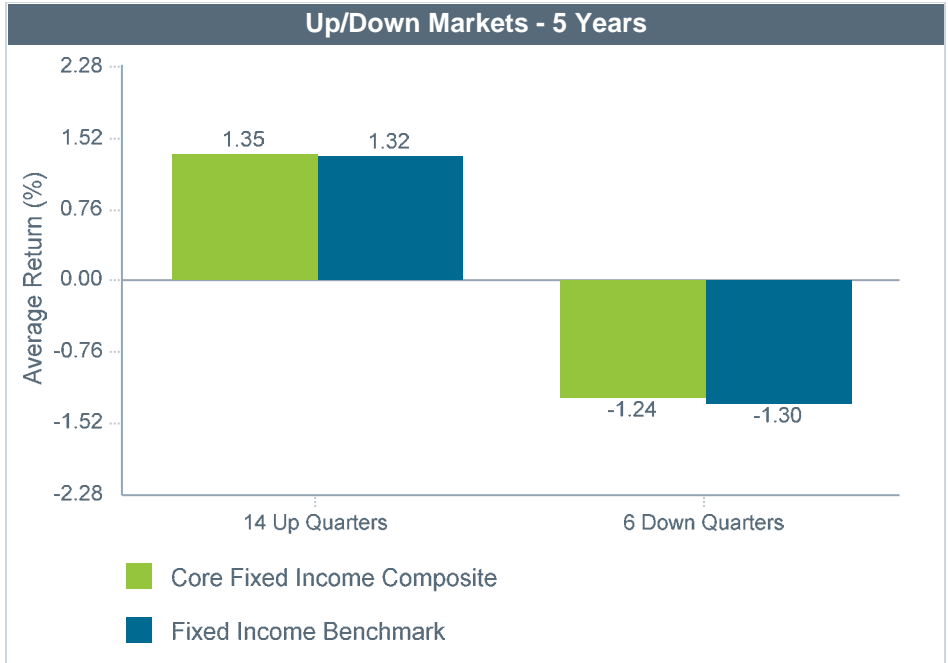
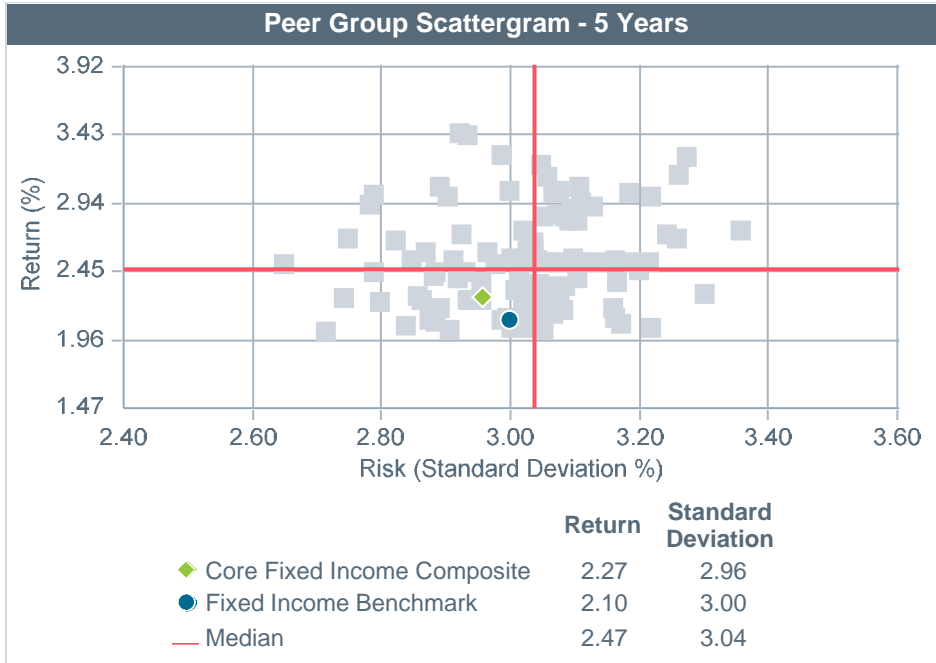


**Comparative Performance**

	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012	Since Incep.	Inception Date
<b>Core Fixed Income Composite</b>	<b>0.47</b>	<b>3.93</b>	<b>3.93</b>	<b>2.56</b>	<b>2.27</b>	<b>3.91</b>	<b>2.98</b>	<b>0.80</b>	<b>5.77</b>	<b>-1.94</b>	<b>4.94</b>	<b>7.70</b>	<b>01/01/1989</b>
Fixed Income Benchmark	0.39	3.54	3.54	2.24	2.10	3.75	2.65	0.55	5.97	-2.02	4.21	7.14	
Difference	0.08	0.39	0.39	0.32	0.17	0.16	0.33	0.25	-0.20	0.08	0.73	0.56	

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

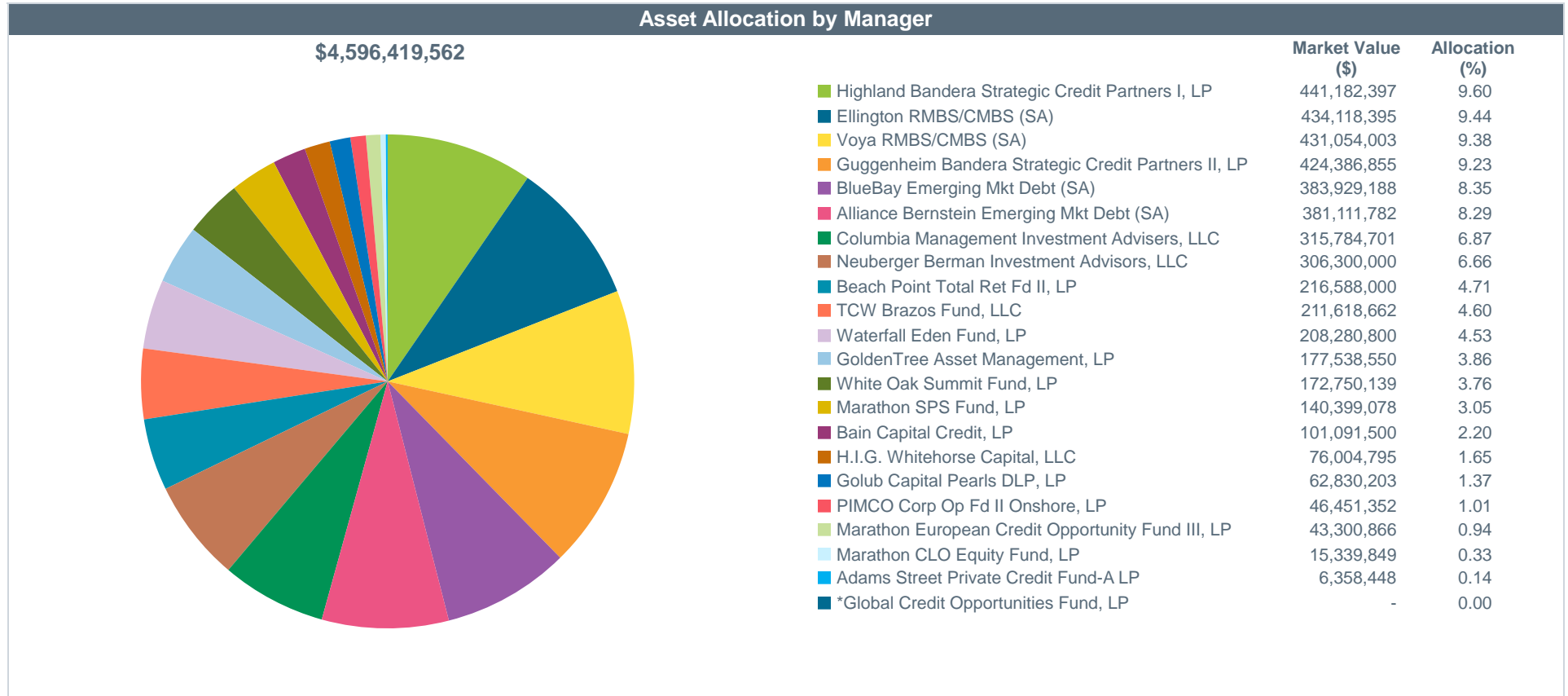
# Core Fixed Income Composite vs. IM U.S. Broad Market Core Fixed Income



Performance shown is gross of fees. Calculations based on quarterly periodicity. Parenthesis contain percentile ranks.



# Non-Core Fixed Income Composite Performance & Allocation



Comparative Performance													
	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012	Since Incep.	Inception Date
<b>Non-Core Fixed Income Composite</b>	1.13	8.06	8.06	5.66	N/A	N/A	7.96	1.09	N/A	N/A	N/A	5.47	10/01/2014
Non-Core Fixed Income Benchmark	0.62	9.53	9.53	5.01	3.99	6.82	13.56	-6.90	3.82	1.18	15.94	4.76	
Difference	0.51	-1.47	-1.47	0.65	N/A	N/A	-5.60	7.99	N/A	N/A	N/A	0.71	

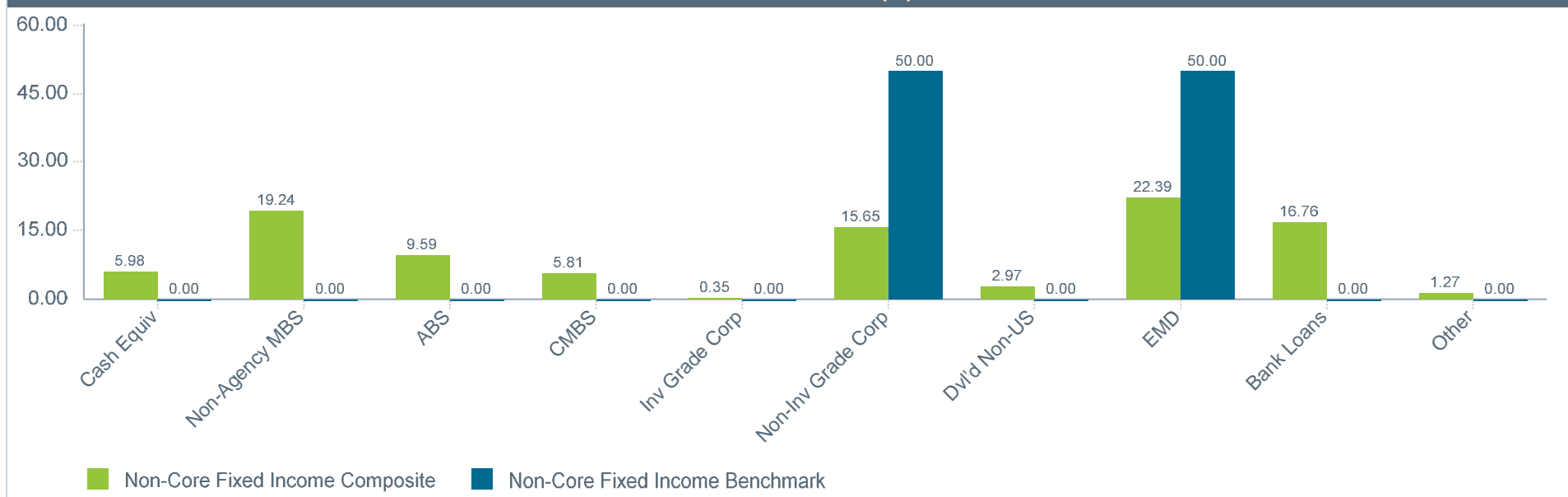
Performance shown is gross of fees. Allocations shown may not sum up to 100% exactly due to rounding.  
 \*Represents approved investments that have not been funded and/or are pending legal documents.

# Non-Core Fixed Income Composite vs. Non-Core Fixed Income Benchmark

## Portfolio Characteristics

	Portfolio	Benchmark
Spread Duration	3.87	N/A
Avg. Maturity	8.83	7.20
Avg. Quality	Ba3	Ba3
Yield To Maturity (%)	5.55	5.77
Coupon Rate (%)	5.14	6.16

## Sector Distribution (%)

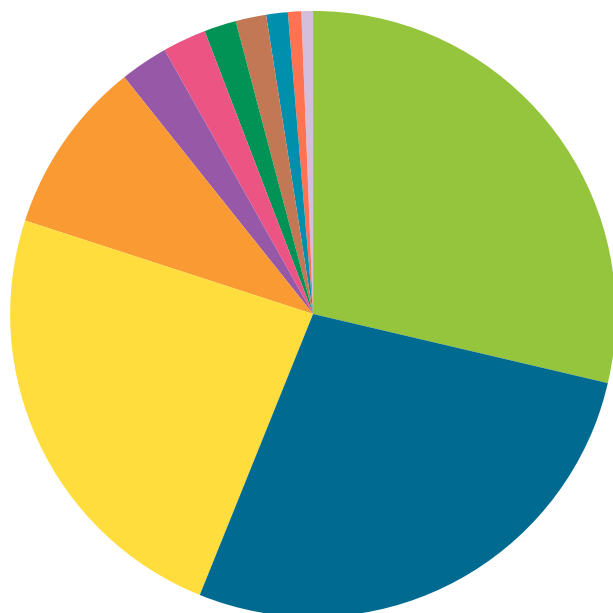


Bond characteristics exclude Private and Opportunistic Credit. Allocation to "Other" consists of derivative offsets, private placements, and miscellaneous differences between the account's net asset value and its trade date based clean holdings.

# Real Return Composite Performance and Allocation

## Asset Allocation by Manager

\$2,912,213,476



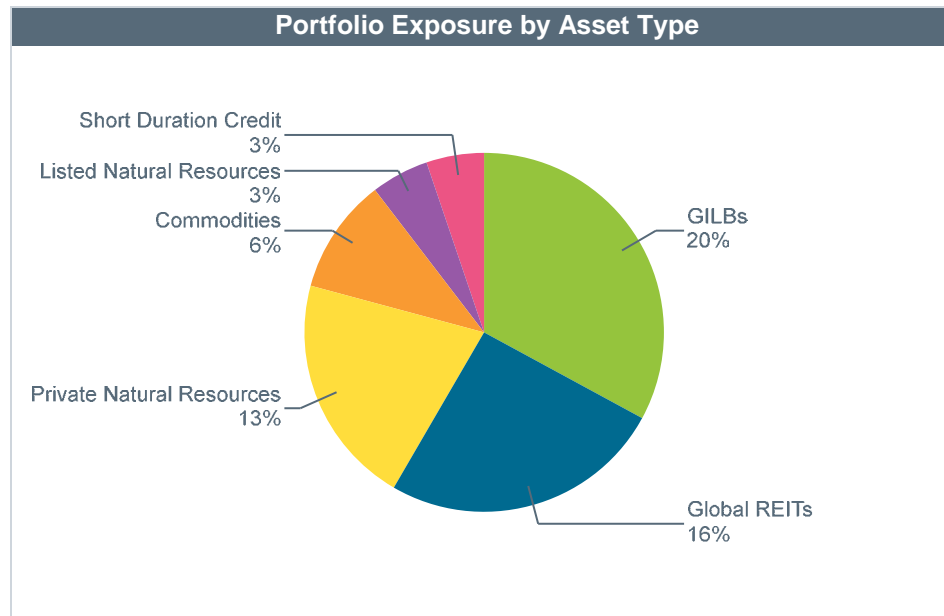
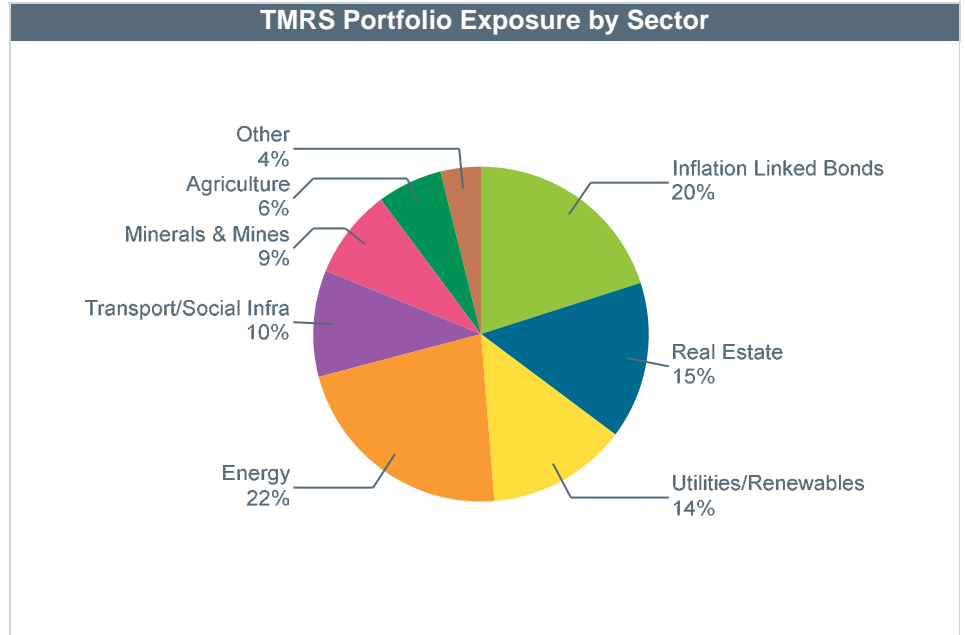
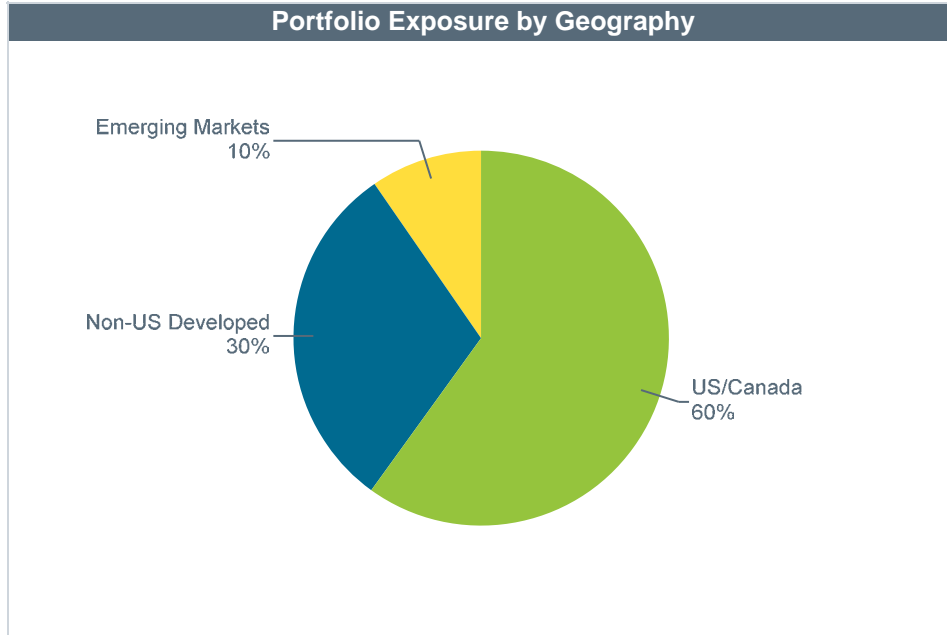
	Market Value (\$)	Allocation (%)
Nuveen Real Asset Income	834,792,355	28.67
Cohen & Steers Real Asset	798,894,175	27.43
Colchester Global Inflation Linked Bond (SA)	695,898,269	23.90
Chickasaw Capital Management, LLC	270,689,269	9.29
Amerra Agriculture Fund III	74,442,205	2.56
MTP Energy Opportunities Fund II	67,616,259	2.32
Brookfield Infrastructure Partner Fund III	49,913,579	1.71
Orion Mine Finance Fund II	47,777,719	1.64
Blue Sky Strategic Australian Agriculture Fund	33,265,169	1.14
Actis Energy IV, LP	20,934,739	0.72
Sprott Resource Lending Fund, LP	17,989,739	0.62
*I Squared Global Infrastructure Fund II	-	0.00
*MTP Energy Opportunities Fund III	-	0.00
*Orion Mine Finance Co-Fund II	-	0.00
*Stonepeak Infrastructure Fund III, LP	-	0.00

## Comparative Performance

	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012	Since Incep.	Inception Date
<b>Real Return Composite</b>	<b>2.76</b>	<b>8.32</b>	<b>8.32</b>	<b>3.06</b>	<b>1.87</b>	<b>N/A</b>	<b>6.99</b>	<b>-5.55</b>	<b>4.44</b>	<b>-4.06</b>	<b>10.83</b>	<b>3.89</b>	<b>02/01/2011</b>
Bloomberg Wrld Gov't Infl Lnkd Index (Unhedged)	2.84	8.51	8.51	2.46	1.28	3.24	4.02	-4.70	4.08	-4.84	6.95	3.32	
Difference	-0.08	-0.19	-0.19	0.60	0.59	N/A	2.97	-0.85	0.36	0.78	3.88	0.57	

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# Real Return Portfolio Diversification

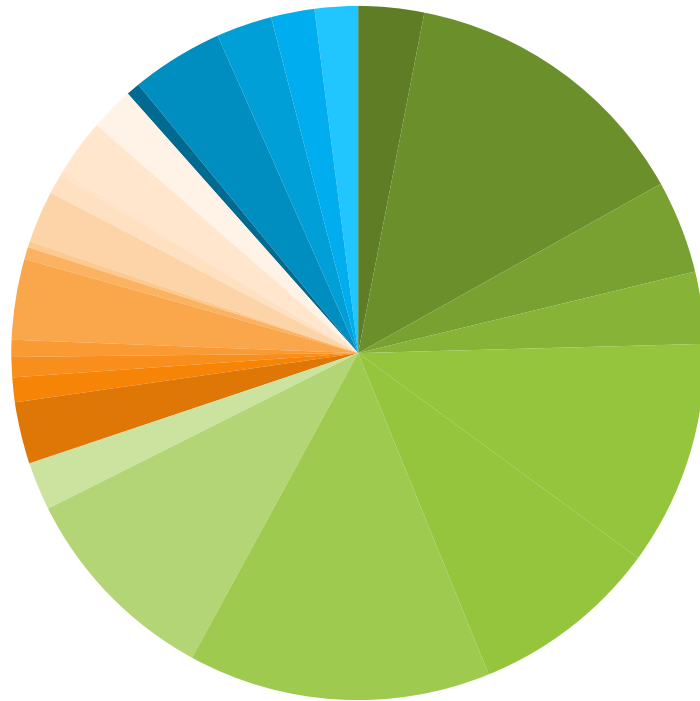


Allocations may not sum up to 100% exactly due to rounding. Allocations are by adjusted commitments. Allocation information is as of December 31, 2017 and provided by TMRS.

# Real Estate Composite Allocation

## Asset Allocation by Manager

\$2,347,159,673



	Market Value (\$)	Allocation (%)
Abacus Core Income Fund, LP	72,067,420	3.07
BlackStone Property Partners	324,495,616	13.83
H/2 CP, LP	101,539,784	4.33
H/2 CP Core RE Debt Fund, LP	78,812,250	3.36
Harrison St. Real Estate	245,499,850	10.46
INVESCO Advisers, Inc.	206,620,125	8.80
Stockbridge Smart Markets Fund, LP	331,120,242	14.11
USAA Eagle Real Estate Fund, LP	226,583,108	9.65
Walton St Real Estate Debt Fund	52,513,869	2.24
Abacus Multi-Family Partners II, LP	637,944	0.03
Abacus Multi-Family Partners III, LP	67,080,432	2.86
Alcion RE Part Fund III-B, LP	27,118,036	1.16
DivcoWest V	22,247,198	0.95
Greenfield Acquisition Partners VI, LP	18,651,456	0.79
Greenfield Acquisition Partners VII, LP	87,737,876	3.74
IC Berkeley Partners IV, LP	13,588,136	0.58
*Madison Realty Capital Debt Fund IV, LP	-	0.00
Miller Global Fund VII	6,569,634	0.28
Rubenstein Properties Fund II	57,034,340	2.43
Rubenstein Properties Fund III	21,596,311	0.92
Stockbridge Value Fund, LLC	4,663,076	0.20
Stockbridge Value Fund II, LP	61,755,881	2.63
*Stockbridge Value Fund III, LP	-	0.00
Torchlight Debt Opp Fund V, LP	47,842,830	2.04
European Property Inv Special	15,113,556	0.64
*Kildare European Partners II	-	0.00
Lubert-Adler Fund VII	100,468,434	4.28
Moorfield Real Estate III	60,981,951	2.60
TPG Real Estate Part II, LP	47,410,805	2.02
*TPG Real Estate Partners III, LP	-	0.00
Walton St Real Estate Fund VII	47,409,510	2.02

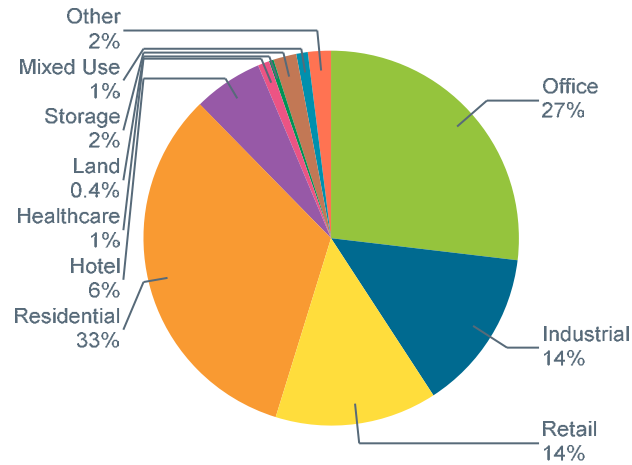
## Comparative Performance

	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012	Since Incep.	Inception Date
Real Estate Composite	2.99	11.93	11.93	13.97	14.75	N/A	14.76	15.25	20.35	11.69	6.79	13.39	01/01/2012
Real Estate Benchmark	1.88	7.65	7.65	10.83	11.58	5.03	9.97	15.00	12.40	13.04	11.61	11.59	
Difference	1.11	4.28	4.28	3.14	3.17	N/A	4.79	0.25	7.95	-1.35	-4.82	1.80	

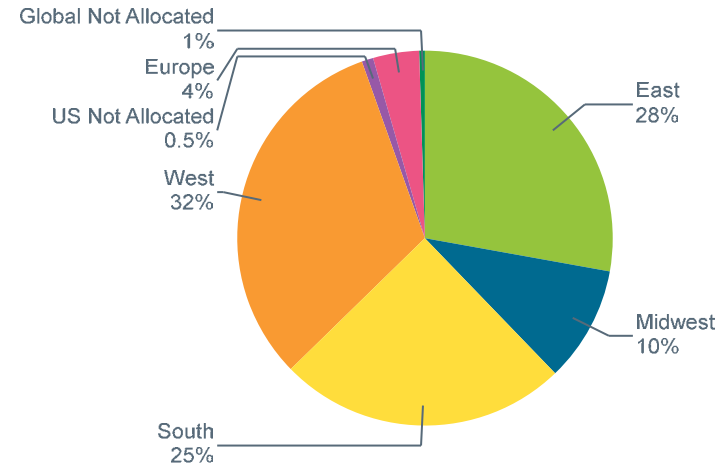
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# Real Estate Portfolio Diversification

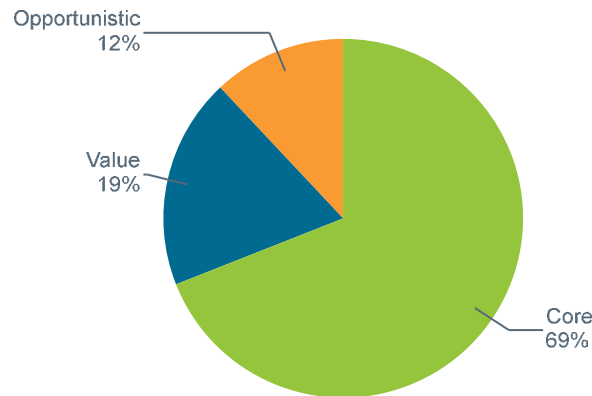
Property Type Diversification Based on Market Value



Geographic Diversification Based on Market Value



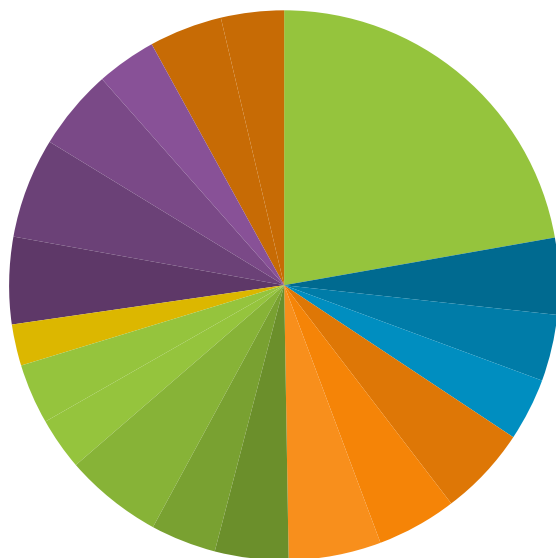
Sector Diversification Based on Market Value



# Absolute Return Performance and Allocation

## Asset Allocation by Manager

December 31, 2017 : \$2,721,894,750



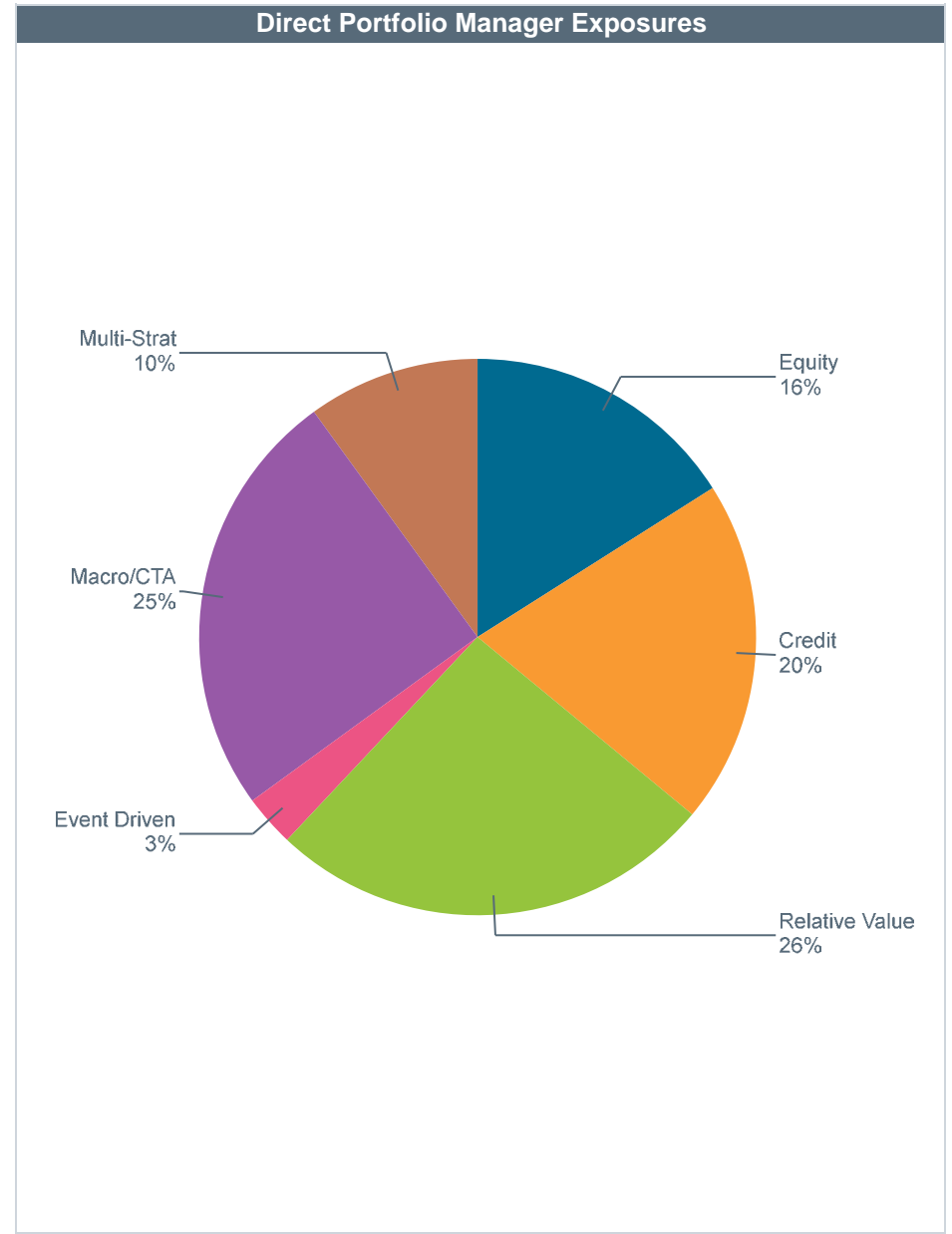
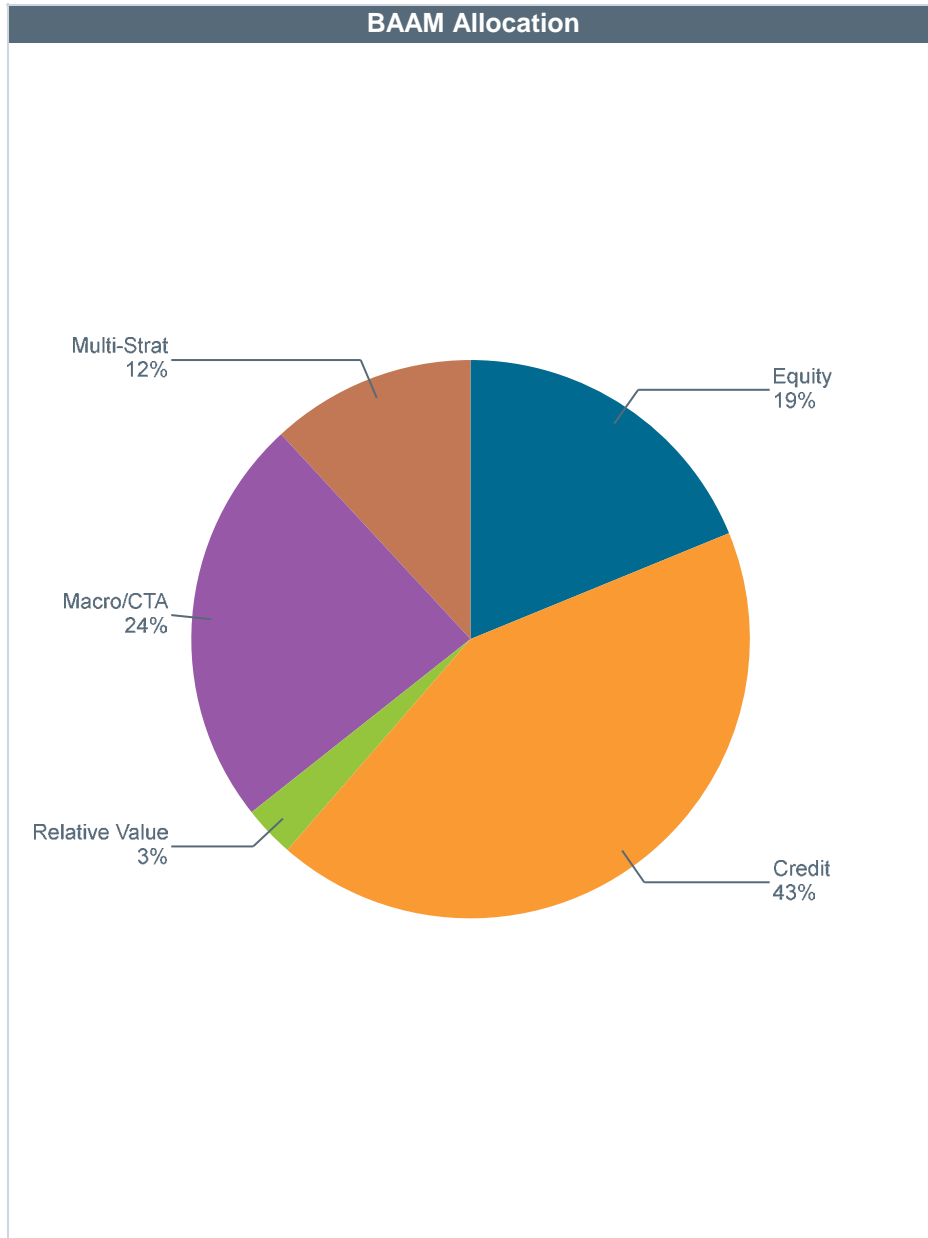
	Market Value (\$)	Allocation (%)
Blackstone Treaty Oak Fund, LP	604,943,898	22.23
L/S Equity Manager 1	122,330,450	4.49
L/S Equity Manager 2	106,544,970	3.91
L/S Equity Manager 3	100,430,480	3.69
Credit Manager 1	143,662,080	5.28
Credit Manager 2	127,959,000	4.70
Credit Manager 3	147,779,600	5.43
Relative Value Manager 1	117,567,605	4.32
Relative Value Manager 2	104,868,900	3.85
Relative Value Manager 3	156,839,100	5.76
Relative Value Manager 4	83,774,068	3.08
Relative Value Manager 5	96,370,740	3.54
Event Driven Manager 1	66,143,340	2.43
Global Macro Manager 1	139,655,500	5.13
Global Macro Manager 2	160,424,700	5.89
Global Macro Manager 3	129,479,700	4.76
Global Macro Manager 4	95,393,340	3.50
Multi Strat Manager 1	117,145,500	4.30
Multi Strat Manager 2	100,581,779	3.70

## Comparative Performance

	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012	Since Incep.	Inception Date
<b>Absolute Return Composite</b>	<b>2.04</b>	<b>11.35</b>	<b>11.35</b>	<b>5.84</b>	<b>N/A</b>	<b>N/A</b>	<b>2.97</b>	<b>3.39</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>5.37</b>	<b>08/01/2014</b>
Absolute Return Benchmark	1.67	5.93	5.93	2.13	3.68	1.05	0.45	0.11	3.15	9.04	4.81	2.33	
Difference	0.37	5.42	5.42	3.71	N/A	N/A	2.52	3.28	N/A	N/A	N/A	3.04	
<b>Blackstone Treaty Oak Fund, LP</b>	<b>2.43</b>	<b>6.91</b>	<b>6.91</b>	<b>4.43</b>	<b>N/A</b>	<b>N/A</b>	<b>3.04</b>	<b>3.39</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>4.14</b>	<b>08/01/2014</b>
Absolute Return Benchmark	1.67	5.93	5.93	2.13	3.68	1.05	0.45	0.11	3.15	9.04	4.81	2.33	
Difference	0.76	0.98	0.98	2.30	N/A	N/A	2.59	3.28	N/A	N/A	N/A	1.81	
<b>Absolute Return Direct Composite</b>	<b>1.92</b>	<b>13.21</b>	<b>13.21</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>2.65</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>7.80</b>	<b>01/01/2016</b>
Absolute Return Benchmark	1.67	5.93	5.93	2.13	3.68	1.05	0.45	0.11	3.15	9.04	4.81	3.15	
Difference	0.25	7.28	7.28	N/A	N/A	N/A	2.20	N/A	N/A	N/A	N/A	4.65	

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# Absolute Return Strategy Exposures



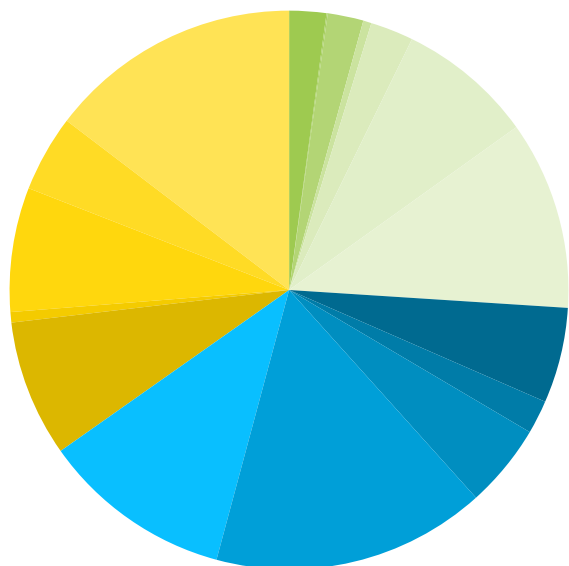
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# Private Equity Performance and Allocation

## Asset Allocation by Manager

\$269,230,205



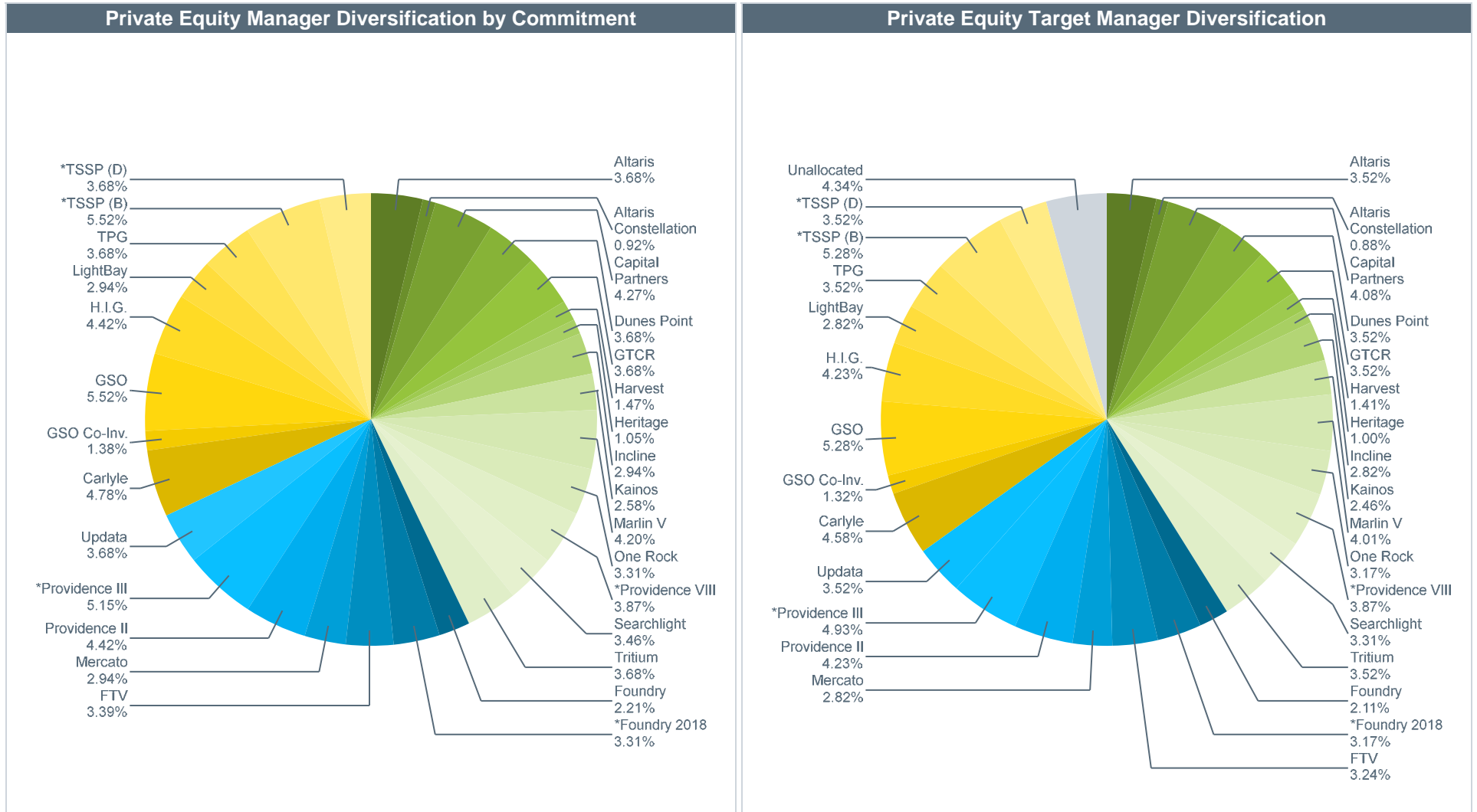
	Market Value (\$)	Allocation (%)
*Altaris Constellation Partners IV, LP	-	0.00
*Altaris Health Partners IV, LP	-	0.00
*Capital Partners Private Equity Income Fund III, LP	-	0.00
*Dunes Point Capital Fund II, LP	-	0.00
*GTCR Fund XII, LP	-	0.00
Harvest Partners VII	5,777,225	2.15
Incline Equity IV	202,256	0.08
Kainos Capital Partners II	5,546,602	2.06
Marlin Heritage II, LP	1,285,330	0.48
*Marlin Equity V, LP	-	0.00
One Rock Capital Partners II, LP	6,693,403	2.49
Searchlight Capital II	21,161,361	7.86
Tritium I, LP	29,404,420	10.92
Foundry Group Next Fund, LP	14,869,999	5.52
FTV V	5,221,103	1.94
Mercato Partners Growth III, LP	13,038,106	4.84
Providence Strategic Growth II	42,688,503	15.86
*Providence Strategic Growth III, LP	-	0.00
Update Partners V, LP	29,726,900	11.04
Carlyle Energy Mezzanine Fund II	21,278,257	7.90
GSO COF III Co-investment Fund, LP	1,641,311	0.61
GSO Capital Opportunities Fund III, LP	19,341,255	7.18
H.I.G. Bayside Fund IV	11,944,831	4.44
*LightBay Investment Partners, LP	-	0.00
TSSP Adjacent Opportunities Fund III	39,409,343	14.64

## Comparative Performance

	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012	Since Incep.	Inception Date
<b>Private Equity Composite</b>	<b>7.73</b>	<b>19.69</b>	<b>19.69</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>1.68</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>10.32</b>	<b>01/01/2016</b>
Russell 3000 Index+3% (1 Qtr Lag)	5.35	22.27	22.27	14.06	17.65	10.80	18.41	2.49	21.29	25.25	34.11	20.32	
Difference	2.38	-2.58	-2.58	N/A	N/A	N/A	-16.73	N/A	N/A	N/A	N/A	-10.00	
<b>Private Equity - Buy Out</b>	<b>11.17</b>	<b>7.09</b>	<b>7.09</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>23.91</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>15.19</b>	<b>01/01/2016</b>
Russell 3000 Index+3% (1 Qtr Lag)	5.35	22.27	22.27	14.06	17.65	10.80	18.41	2.49	21.29	25.25	34.11	20.32	
Difference	5.82	-15.18	-15.18	N/A	N/A	N/A	5.50	N/A	N/A	N/A	N/A	-5.13	
<b>Private Equity - Venture/Growth</b>	<b>8.93</b>	<b>34.71</b>	<b>34.71</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>N/A</b>	<b>9.65</b>	<b>07/01/2016</b>
Russell 3000 Index+3% (1 Qtr Lag)	5.35	22.27	22.27	14.06	17.65	10.80	18.41	2.49	21.29	25.25	34.11	20.91	
Difference	3.58	12.44	12.44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-11.26	
<b>Private Equity - Special Situations</b>	<b>1.90</b>	<b>12.52</b>	<b>12.52</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>N/A</b>	<b>7.82</b>	<b>04/01/2016</b>
Russell 3000 Index+3% (1 Qtr Lag)	5.35	22.27	22.27	14.06	17.65	10.80	18.41	2.49	21.29	25.25	34.11	18.83	
Difference	-3.45	-9.75	-9.75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-11.01	

\*Represents approved investments that have not been funded and/or are pending legal documents.  
Performance shown is gross of fees. Allocations shown may not sum up to 100% exactly due to rounding.

# Private Equity Strategic Allocation



## Policy Strategy Ranges

No more than 35% with any one investment manager  
 No more than 25% in any one investment vehicle

Allocations may not sum up to 100% exactly due to rounding. Allocation information is by adjusted commitment as of December 31, 2017 and is provided by TMRS.  
 \*Represents investments awaiting board approval.

PORTLAND

CHICAGO

NEW YORK

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