



# TMRS Quarterly Summary

Period Ended: March 31, 2017



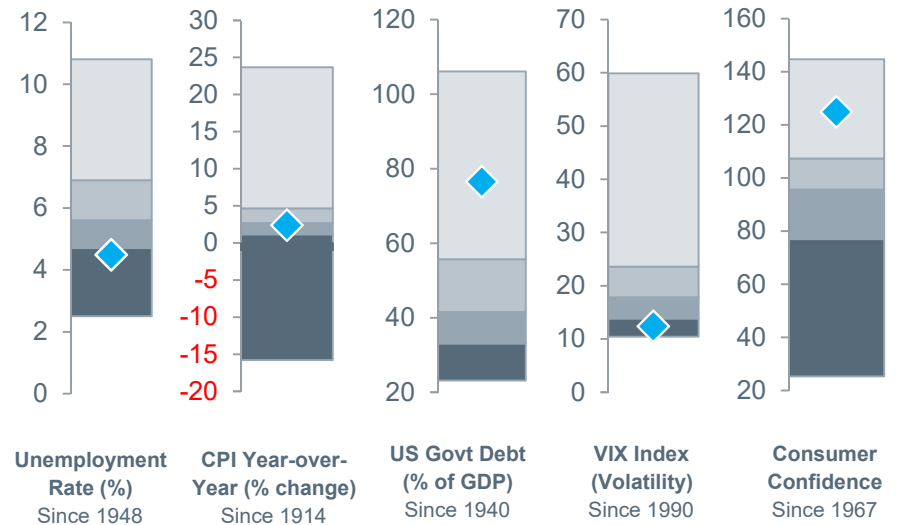
**First Quarter Economic Environment**

**Key Economic Indicators**

Global risk assets rallied during the first quarter of 2017, driven largely by continued positive expectations for US fiscal policy, as well as continued improvements in global economic growth and inflation, more broadly. Duration sensitive assets, however, traded with less conviction and direction, as sovereign debt yields of developed economies ended the quarter relatively unchanged.

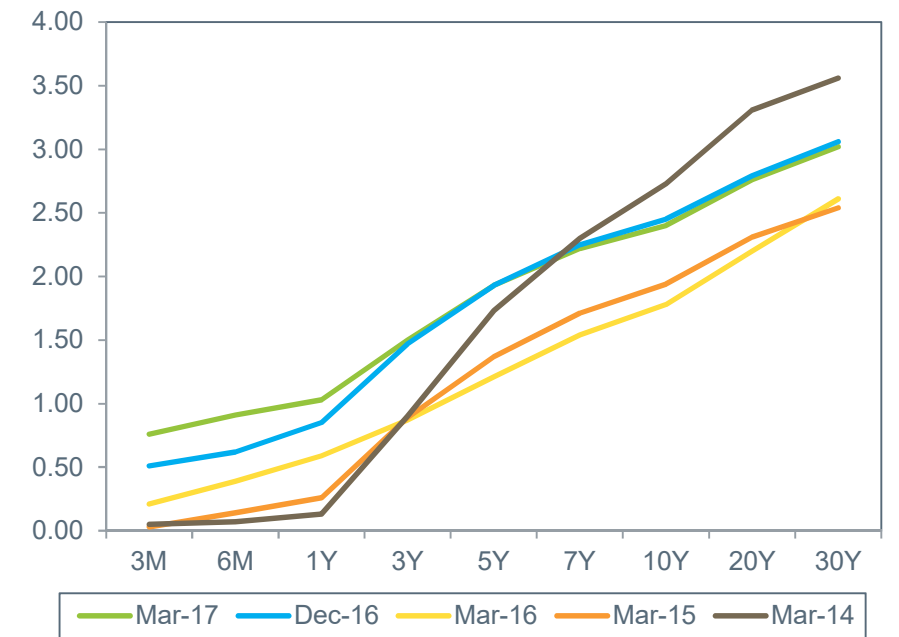
Globally, commodities were mixed, but traded down as a broad category, and the dollar weakened against a trade weighted basket of currencies. Oil prices declined during the quarter, as increased US shale production offset production cuts announced by OPEC in November of last year. In the US, the new administration provided few details regarding proposed pro-growth policies, which may include infrastructure spending, tax reform, and easing of regulations. Nevertheless, elevated valuations in domestic equity markets suggested that investors anticipate positive changes and are comfortable with near-term equity risk.

**Key Economic Indicators**



Economic Indicators	Mar-17	Dec-16	Mar-16	Mar-14	20 Yr
Federal Funds Rate (%)	0.82 ▲	0.55	0.25	0.06	2.29
Breakeven Infl. - 1 Yr (%)	2.06 ▲	1.27	2.10	1.79	N/A
Breakeven Infl. - 10 Yr (%)	1.98 ▲	1.97	1.63	2.14	N/A
CPI YoY (Headline) (%)	2.4 ▲	2.1	0.9	1.5	2.2
Unemployment Rate (%)	4.5 ▼	4.7	5.0	6.7	6.0
Real GDP YoY (%)	1.9 ▼	2.0	1.6	1.6	2.3
PMI - Manufacturing	57.20 ▲	54.50	51.70	55.00	52.24
USD Total Wtd Idx	94.01 ▼	95.76	89.73	76.63	86.89
WTI Crude Oil per Barrel (\$)	50.6 ▼	53.7	38.3	101.6	56.4
Gold Spot per Oz (\$)	1,249.4 ▲	1,152.3	1,232.7	1,284.0	795.0

**Treasury Yield Curve (%)**



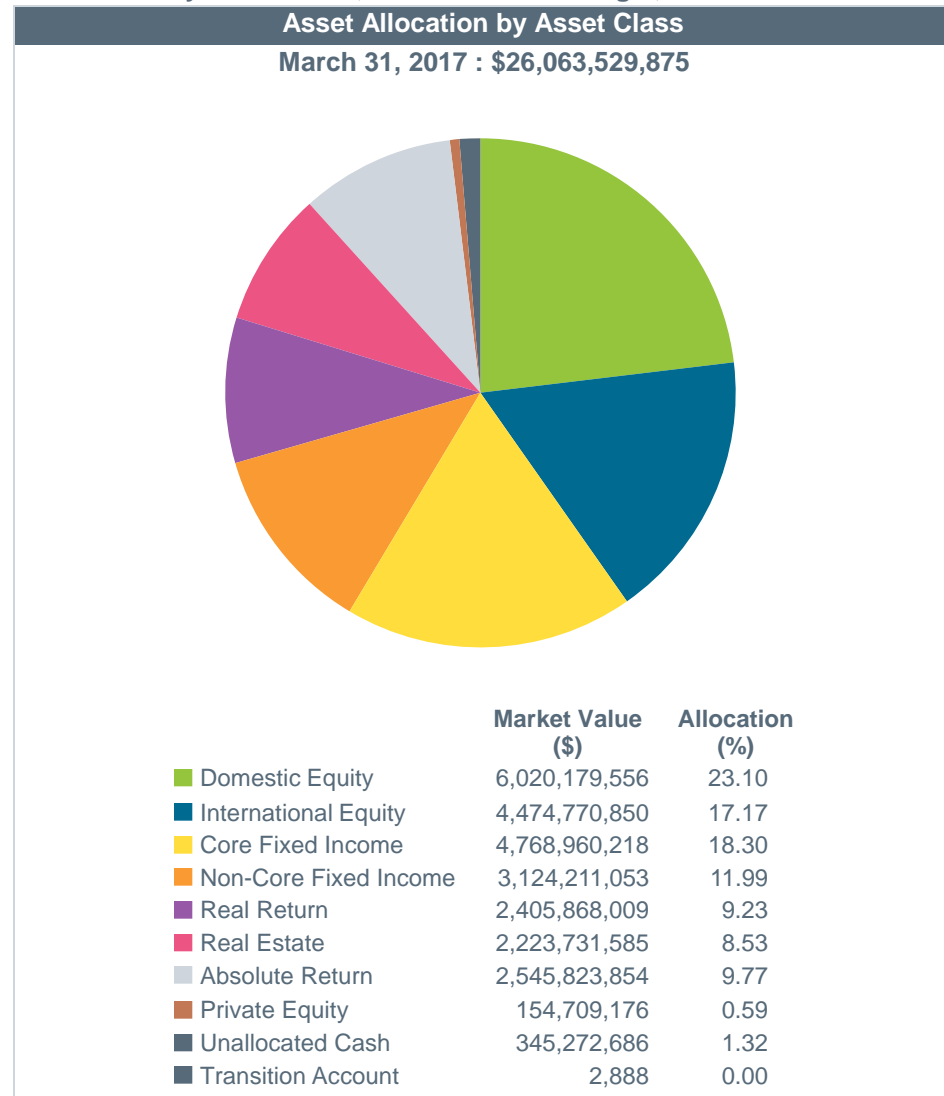
Market Performance (%)	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	6.07	6.07	17.17	13.30	7.51
Russell 2000	2.47	2.47	26.22	12.35	7.12
MSCI EAFE (Net)	7.25	7.25	11.67	5.83	1.05
MSCI EAFE SC (Net)	7.97	7.97	10.99	9.20	3.03
MSCI Emg Mkts (Net)	11.44	11.44	17.21	0.81	2.72
Bloomberg US Agg Bond	0.82	0.82	0.44	2.34	4.27
BofA ML 3 Mo US T-Bill	0.10	0.10	0.36	0.14	0.68
NCREIF ODCE (Gross)	1.77	1.77	8.34	11.98	5.59
Wilshire US REIT	0.03	0.03	1.98	9.76	4.42
HFRI FOF Comp	2.39	2.39	6.23	3.22	1.24
Bloomberg Cmdty (TR)	-2.33	-2.33	8.69	-9.54	-6.22

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.



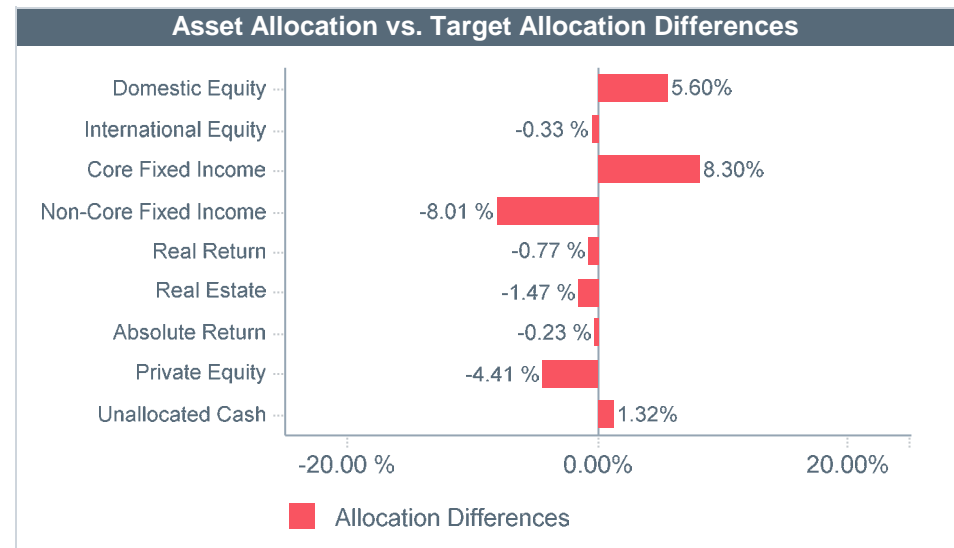
Total Fund Composite

Asset Alloc. by Asset Class, Asset Alloc. vs. Target, and Schedule of Investable Assets



**Asset Allocation vs. Target Allocation**

	Market Value (\$)	Allocation (%)	Target (%)
Domestic Equity	6,020,179,556	23.10	17.50
International Equity	4,474,770,850	17.17	17.50
Core Fixed Income	4,768,960,218	18.30	10.00
Non-Core Fixed Income	3,124,211,053	11.99	20.00
Real Return	2,405,868,009	9.23	10.00
Real Estate	2,223,731,585	8.53	10.00
Absolute Return	2,545,823,854	9.77	10.00
Private Equity	154,709,176	0.59	5.00
Unallocated Cash	345,272,686	1.32	0.00
Total Fund	26,063,526,987	100.00	100.00



**Schedule of Investable Assets**

Periods Ending	Beginning Market Value (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)	% Return	Unit Value
CYTD	25,103,517,939	-62,392,860	1,022,404,796	26,063,529,875	4.06	104.06

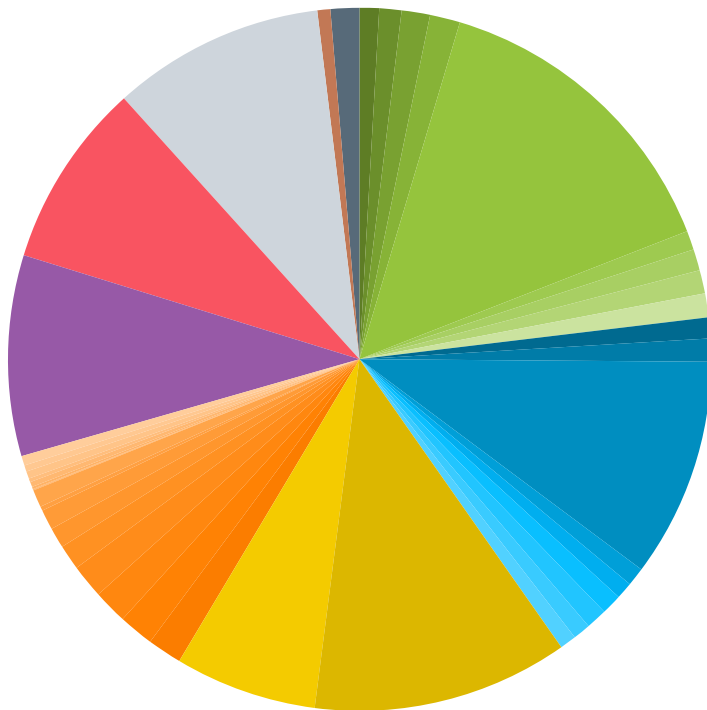
Performance shown is gross of fees and provided by State Street. Allocations shown may not sum up to 100% exactly due to rounding. Gain/Loss figure includes both realized and unrealized gains and losses. Asset Allocation vs. Target Allocation charts do not include the Transition Account. Domestic Equity includes Citi Global Markets, Inc.



Texas Municipal Retirement System  
Asset Allocation By Manager

As of March 31, 2017

March 31, 2017 : \$26,063,529,875



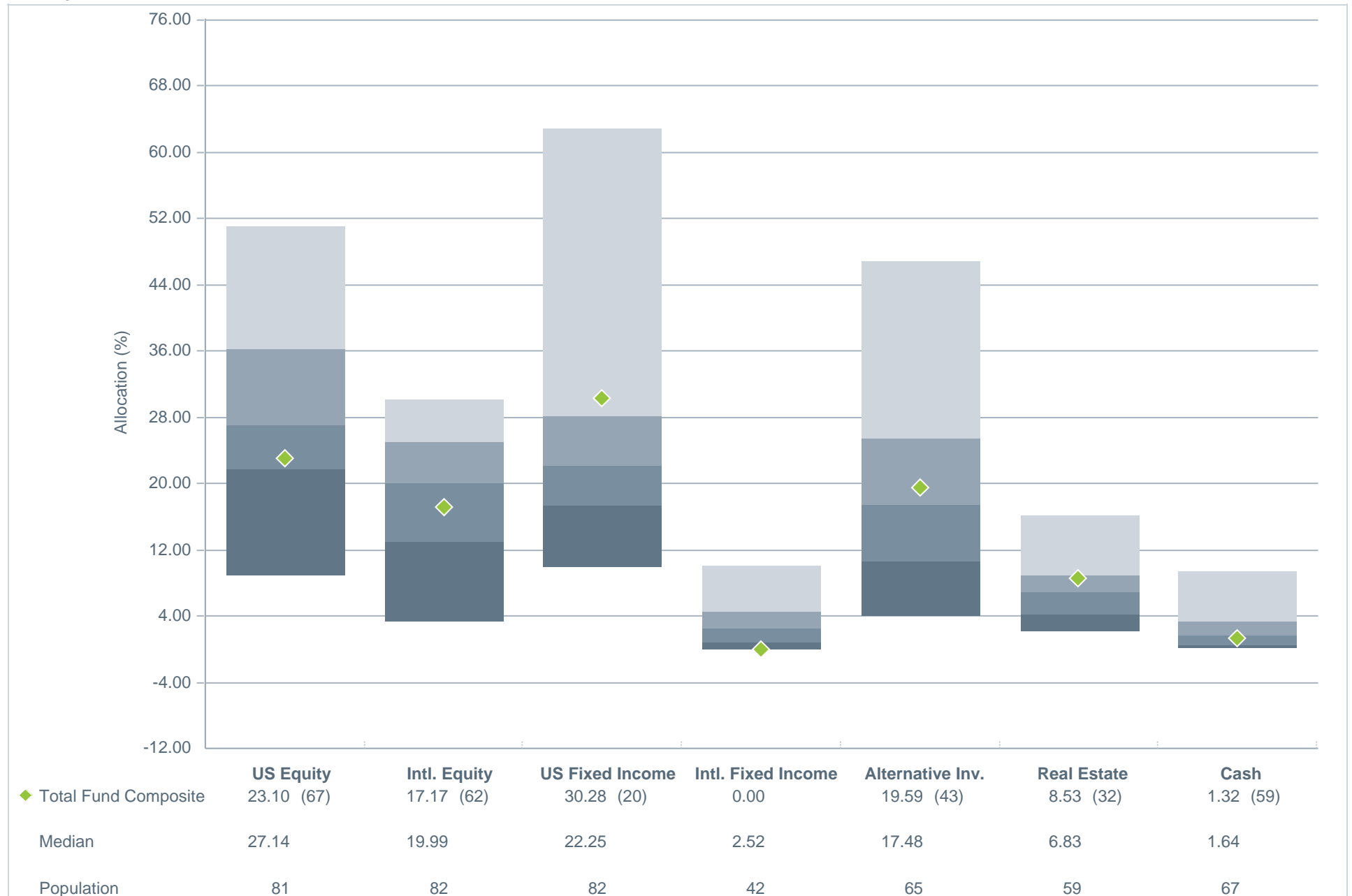
	Market Value (\$)	Allocation (%)
Sasco U.S. Contrarian Value (SA)	231,548,378	0.89
Epoch U.S. Choice (SA)	264,495,570	1.01
State Street Russell Fndmtl US Index NL (CF)	343,846,094	1.32
UBS US Equity Min Volatility Index (CF)	359,450,021	1.38
NT Collective Russell 3000 Index NL (CF)	3,769,902,554	14.46
The Boston Company Mid Cap Opp Value (SA)	227,552,587	0.87
Champlain Mid-Cap Core (SA)	256,750,024	0.99
Wellington US Small Cap Opp (SA)	279,548,096	1.07
The Boston Company Small Cap Opp Value (SA)	287,077,287	1.10
State Street Russell Fndmtl Gbl ex-US Index NL (CF)	247,845,675	0.95
UBS World Ex US Min Volatility NL (CF)	277,570,305	1.06
NT Daily Collective ACW Ex US IMI Non-Lending (CF)	2,631,412,346	10.10
Wellington International Horizons (SA)	217,420,360	0.83
Lazard International Equity Plus (SA)	201,262,573	0.77
Wasatch International Small Cap Growth (SA)	242,114,183	0.93
Wellington International Small Cap Opp (SA)	250,893,473	0.96
Acadian Emerging Markets (SA)	211,443,686	0.81
William Blair Emerging Markets (SA)	194,808,249	0.75
BlackRock, Inc. Core (SA)	3,070,299,958	11.78
PIMCO Core Plus Fixed Income (SA)	1,698,660,260	6.52
Guggenheim Bandera Strategic Credit Partners II, LP	413,078,902	1.58
Highland Bandera Strategic Credit Partners I, LP	421,692,621	1.62
Voya RMBS/CMBS (SA)	408,665,945	1.57
Ellington RMBS/CMBS (SA)	405,439,750	1.56
Columbia Management Investment Advisers, LLC	301,723,842	1.16
Alliance Bernstein Emerging Mkt Debt (SA)	244,357,440	0.94
BlueBay Emerging Mkt Debt (SA)	241,752,000	0.93
Marathon SPS Fund, LP	52,794,320	0.20
Beach Point Total Ret Fd II, LP	208,743,400	0.80
Marathon CLO Equity Fund, LP	5,737,278	0.02
Marathon European Credit Opportunity Fund III, LP	10,981,267	0.04
PIMCO Corp Op Fd II Onshore, LP	26,468,221	0.10
Golub Capital Pearls DLP, LP	62,173,119	0.24
H.I.G. Whitehorse Capital, LLC	44,003,011	0.17
TCW Brazos Fund, LLC	87,108,674	0.33
Waterfall Eden Fund, LP	75,000,000	0.29
White Oak Summit Fund, LP	114,491,263	0.44
Real Return	2,405,868,009	9.23
Real Estate	2,223,731,585	8.53
Absolute Return	2,545,823,854	9.77
Private Equity	154,709,176	0.59
State Street Government STIF 6 (CF) - Cash	345,272,686	1.32
Citigroup Global Markets, Inc.	8,944	0.00
Transition Account	2,888	0.00

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



**Texas Municipal Retirement System  
All Public Plans > \$1B-Total Fund  
Plan Sponsor TF Asset Allocation**

As of March 31, 2017



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

**Texas Municipal Retirement System  
Comparative Performance**

As of March 31, 2017

	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years	2016	Since Incep.	Inception Date
<b>Total Fund Composite</b>	<b>4.06</b>	<b>4.06</b>	<b>10.24</b>	<b>5.26</b>	<b>6.38</b>	<b>6.60</b>	<b>6.46</b>	<b>7.42</b>	<b>8.58</b>	<b>01/01/1989</b>
Actual Allocation Benchmark	3.85	3.85	9.19	4.77	5.95	6.29	6.05	6.94	7.97	
Difference	0.21	0.21	1.05	0.49	0.43	0.31	0.41	0.48	0.61	
<b>Global Equity Composite</b>	<b>6.74</b>	<b>6.74</b>	<b>16.07</b>	<b>6.17</b>	<b>9.57</b>	<b>8.84</b>	<b>N/A</b>	<b>9.58</b>	<b>5.10</b>	<b>02/01/2008</b>
Global Equity Benchmark	6.60	6.60	16.17	5.97	9.40	8.70	N/A	9.54	4.97	
Difference	0.14	0.14	-0.10	0.20	0.17	0.14	N/A	0.04	0.13	
<b>Domestic Equity Composite</b>	<b>5.65</b>	<b>5.65</b>	<b>18.42</b>	<b>9.60</b>	<b>13.03</b>	<b>12.78</b>	<b>N/A</b>	<b>13.33</b>	<b>8.48</b>	<b>02/01/2008</b>
Russell 3000 Index	5.74	5.74	18.07	9.76	13.18	12.89	7.54	12.74	8.55	
Difference	-0.09	-0.09	0.35	-0.16	-0.15	-0.11	N/A	0.59	-0.07	
<b>International Equity Composite</b>	<b>8.48</b>	<b>8.48</b>	<b>12.28</b>	<b>1.44</b>	<b>5.18</b>	<b>4.24</b>	<b>N/A</b>	<b>3.72</b>	<b>1.20</b>	<b>02/01/2008</b>
International Equity Benchmark	7.99	7.99	13.01	0.82	4.66	3.81	0.43	4.41	0.81	
Difference	0.49	0.49	-0.73	0.62	0.52	0.43	N/A	-0.69	0.39	
<b>Core Fixed Income Composite</b>	<b>0.89</b>	<b>0.89</b>	<b>0.90</b>	<b>2.84</b>	<b>2.54</b>	<b>3.65</b>	<b>4.32</b>	<b>2.98</b>	<b>7.80</b>	<b>01/01/1989</b>
Fixed Income Benchmark	0.82	0.82	0.44	2.68	2.34	3.48	4.03	2.65	7.23	
Difference	0.07	0.07	0.46	0.16	0.20	0.17	0.29	0.33	0.57	
<b>Non-Core Fixed Income Composite</b>	<b>2.55</b>	<b>2.55</b>	<b>11.22</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>7.96</b>	<b>4.95</b>	<b>10/01/2014</b>
Non-Core Fixed Income Benchmark	3.71	3.71	11.76	3.49	4.72	5.96	6.60	13.56	3.94	
Difference	-1.16	-1.16	-0.54	N/A	N/A	N/A	N/A	-5.60	1.01	
<b>Real Return Composite</b>	<b>1.04</b>	<b>1.04</b>	<b>3.22</b>	<b>1.28</b>	<b>1.95</b>	<b>N/A</b>	<b>N/A</b>	<b>6.95</b>	<b>3.19</b>	<b>02/01/2011</b>
Bloomberg Wrld Gov't Infl Lnk'd Index (Unhedged)	1.36	1.36	0.63	0.62	0.75	3.17	3.59	4.02	2.59	
Difference	-0.32	-0.32	2.59	0.66	1.20	N/A	N/A	2.93	0.60	
<b>Real Estate Composite</b>	<b>3.51</b>	<b>3.51</b>	<b>13.21</b>	<b>15.21</b>	<b>14.47</b>	<b>N/A</b>	<b>N/A</b>	<b>14.76</b>	<b>13.73</b>	<b>01/01/2012</b>
Real Estate Benchmark	2.09	2.09	8.74	12.05	12.20	13.32	5.81	9.97	12.21	
Difference	1.42	1.42	4.47	3.16	2.27	N/A	N/A	4.79	1.52	
<b>Absolute Return Composite</b>	<b>3.32</b>	<b>3.32</b>	<b>10.54</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>2.97</b>	<b>3.97</b>	<b>08/01/2014</b>
Absolute Return Benchmark	1.92	1.92	5.37	1.71	3.23	2.54	1.27	0.45	1.51	
Difference	1.40	1.40	5.17	N/A	N/A	N/A	N/A	2.52	2.46	
<b>Private Equity Composite</b>	<b>6.95</b>	<b>6.95</b>	<b>5.80</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>1.68</b>	<b>6.94</b>	<b>01/01/2016</b>
Russell 3000 Index + 3%	6.53	6.53	21.61	13.05	16.58	16.28	10.76	16.12	18.55	
Difference	0.42	0.42	-15.81	N/A	N/A	N/A	N/A	-14.44	-11.61	

Performance shown is gross of fees and provided by State Street. Performance is annualized for periods greater than one year. 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 the Private Real Estate and Private Equity funds and composites represent the first full quarter following initial funding. Inception dates for non-real estate and private equity funds and composites represent the first full month following initial funding.



**Texas Municipal Retirement System  
Comparative Performance**

**As of March 31, 2017**

	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years	2016	Since Incep.	Inception Date
<b>TMRS Unallocated Cash (SA)</b>	<b>0.07</b>	<b>0.07</b>	<b>0.27</b>	<b>0.56</b>	<b>0.37</b>	<b>0.29</b>	<b>N/A</b>	<b>0.58</b>	<b>0.36</b>	<b>06/01/2008</b>
BofA ML 3 Mo US T-Bill Index	0.10	0.10	0.36	0.17	0.14	0.13	0.68	0.33	0.24	
Difference	-0.03	-0.03	-0.09	0.39	0.23	0.16	N/A	0.25	0.12	

- Historical performance shown for the Global Equity, Domestic Equity, International Equity, and Total Fixed Income composites is provided by State Street.
- RVK cautions that for private market investments like Commercial Real Estate, for which there are no market prices as are available for public securities, and for which an appraised value is calculated only quarterly, daily time weighted return calculations (public market return methodology) are imperfect at best and usually misleading.

Performance shown is gross of fees and provided by State Street. Performance is annualized for periods greater than one year. 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 the Private Real Estate and Private Equity funds and composites represent the first full quarter following initial funding. Inception dates for non-real estate and private equity funds and composites represent the first full month following initial funding.



**Custom Benchmark Comments**

- The **Actual Allocation Benchmark** is calculated monthly using beginning of month asset class weights applied to each corresponding benchmark return and currently consists of the following:
  - Russell 3000 Index
  - International Equity Benchmark
  - Fixed Income Benchmark
  - Non-Core Fixed Income Benchmark
  - Bloomberg World Government Inflation-Linked Index (Unhedged)\*
  - Real Estate Benchmark
  - Absolute Return Benchmark
  - Russell 3000 Index+3%
  - BofA Merrill Lynch 3 Month US Treasury Bill Index

\*As the Real Return asset class structure becomes diversified, the performance objective will be the Consumer Price Index+4%.

The **Global Equity Benchmark** is calculated monthly and consists of 50% Russell 3000 Index and 50% MSCI EAFE Index (USD) (Net) through July 31, 2010; a blend of the Russell 3000 Index, MSCI ACW Ex US IM Index (USD) (Net) and MSCI EAFE Index (USD) (Net) at beginning of month investment weights through November 30, 2012; and a blend of the Russell 3000 Index and the MSCI ACW Ex US IM Index (USD) (Net) at beginning of the month weights thereafter.

The **International Equity Benchmark** is calculated monthly and consists of the MSCI EAFE Index (USD) (Net) through July 31, 2010; a blend of the MSCI ACW Ex US IM Index (USD) (Net) and MSCI EAFE Index (USD) (Net) at beginning of month investment weights through January 31, 2012; and the MSCI ACW Ex US IM Index (USD) (Net) thereafter.

The **Fixed Income Benchmark** is calculated monthly and consists of the Bloomberg Gov't/Credit Long Term Bond Index through June 30, 2009; and Bloomberg US Agg Bond Index thereafter.

The **Non-Core Fixed Income Benchmark** consists of 50% Bloomberg US Corporate: Hi Yld Index, 25% JPM GBI-EM Global Diversified Total Return Index (USD) (Unhedged), and 25% JPM CEMBI Broad Diversified Index. As part of the transition to a non-lagged benchmark, the October 2015 return for the previously lagged portion of the Non-Core Fixed Income Benchmark includes linked returns for September and October.

From December 2014 to October 2015, the Non-Core Fixed Income Benchmark is calculated monthly and consists of 50% Bloomberg US Corporate: Hi Yld Index, 25% JPM GBI-EM Global Diversified Total Return Index (USD) (Unhedged), and 25% JPM CEMBI Broad Diversified Index. The return is composed of lagged and un-lagged returns in the same proportion as the market value of managers whose returns are being reported on a lagged versus non-lagged basis. Prior to December 2014, the Non-Core Fixed Income Benchmark consists of 50% Bloomberg US Corporate: Hi Yld Index, 25% JPM GBI-EM Global Diversified Total Return Index (USD) (Unhedged), and 25% JPM CEMBI Broad Diversified Index.

The **Real Estate Benchmark** is calculated quarterly and consists of the NCREIF ODCE Index (AWA) (Gross); interim months assume a 0.00% return. The return is composed of lagged and un-lagged returns in the same proportion as the market value of managers whose returns are being reported on a lagged versus non-lagged basis.

The **Absolute Return Benchmark** is calculated monthly and consists of the HFRI Fund of Funds Diversified Index through November 30, 2014; the HFRI Fund of Funds Diversified Index - 1 Month Lag through October 31, 2015; and HFRI Fund of Funds Diversified Index thereafter.

**Real Estate Performance Comments**

"Privately held real estate fund returns are one-quarter lagged and are provided by Private Edge. Quarterly returns are incorporated in the last month of that particular quarter. The returns for the first two months are zero.

Market values are previous quarter-end values as reported, rolled forward with current cash flows. Returns and market values provided by Private Edge are rolled into their respective Real Estate composite and the Total Plan composite.

Publicly traded real estate fund performance is non-lagged, reflecting monthly fluctuations. Detailed information regarding methodology can be found in the internal TMRS Performance Reporting Policy statement" (State Street Performance Team).

H/2 CP, LP is a publicly traded real estate fund, previously classified as non-public. Performance from Oct 2015 - Dec 2015 is revised to reflect the change in calculation methodology.



PORTLAND

CHICAGO

NEW YORK

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