



## Investment Oversight

As at 30<sup>th</sup> April 2016 (Preliminary)



D A L L A S  
**POLICE & FIRE**  
PENSION SYSTEM



## Investment Oversight

As at 30<sup>th</sup> April 2016

Dallas Police & Fire Pension System

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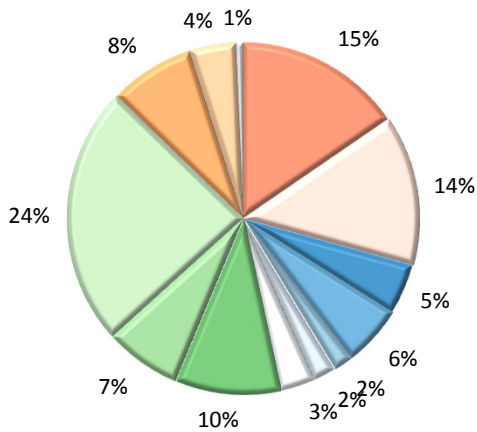


**April 2016 Snapshot**

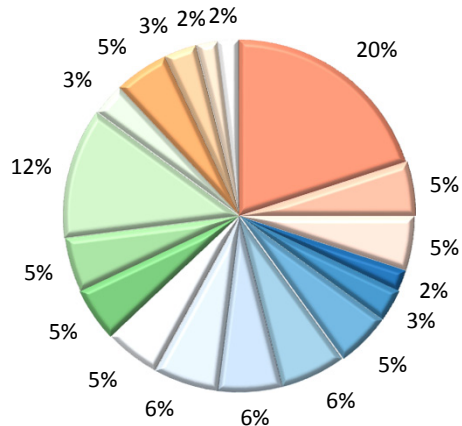
## Preliminary April 2016 Snapshot Asset Allocation: Actual vs. Target



**Gross Actual Allocation**



**Target Allocation**



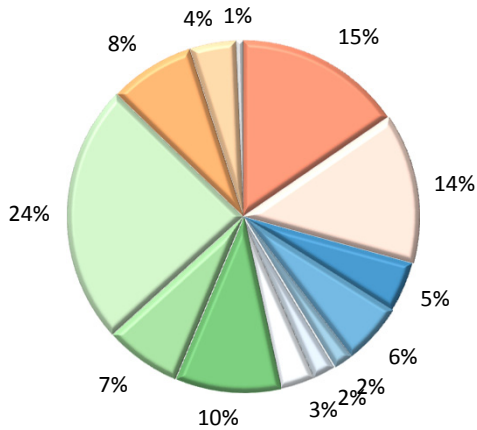
		Actual Allocation (\$)	Net Actual Allocation (%)	Gross Actual Allocation (%)	Target Allocation (%)	Target Range (%)
<b>Equity</b>	Global Equity	452,711,822	16.59%	15.44%	20%	10% - 23%
	EM Equity	0	0.00%	0.00%	5%	0% - 8%
	Private Equity	405,210,820	14.85%	13.82%	5%	4% - 15%
	<b>Sub-Total</b>	<b>857,922,642</b>	<b>31.45%</b>	<b>29.26%</b>	<b>30%</b>	
<b>Fixed Income</b>	Short-Term Core Bonds	0	0.00%	0.00%	2%	0% - 5%
	Global Bonds	135,669,003	4.97%	4.63%	3%	0% - 6%
	High Yield	165,099,917	6.05%	5.63%	5%	2% - 8%
	Bank Loans	51,910,718	1.90%	1.77%	6%	3% - 9%
	Structured Credit & Absolute Return	0	0.00%	0.00%	6%	0% - 9%
	EM Debt	59,444,485	2.18%	2.03%	6%	0% - 9%
	Private Debt	95,516,572	3.50%	3.26%	5%	2% - 7%
	<b>Sub-Total</b>	<b>507,640,694</b>	<b>18.61%</b>	<b>17.32%</b>	<b>33%</b>	
<b>Real Assets</b>	Infrastructure	205,249,764	7.52%	7.00%	5%	3% - 10%
	Natural Resources	285,864,673	10.48%	9.75%	5%	3% - 10%
	Real Estate	700,952,047	25.69%	23.91%	12%	10% - 25%
	Liquid Real Assets	0	0.00%	0.00%	3%	0% - 6%
	<b>Sub-Total</b>	<b>1,192,066,484</b>	<b>43.69%</b>	<b>40.66%</b>	<b>25%</b>	
<b>Asset Allocation</b>	Risk Parity	228,812,574	8.39%	7.80%	5%	2% - 8%
	GTAA	125,642,729	4.61%	4.29%	3%	0% - 6%
	Absolute Return	0	0.00%	0.00%	2%	0% - 5%
	<b>Sub-Total</b>	<b>354,455,303</b>	<b>12.99%</b>	<b>12.09%</b>	<b>10%</b>	
<b>Cash &amp; Cash Equivalents</b>		<b>19,650,104</b>	<b>0.72%</b>	<b>0.67%</b>	<b>2%</b>	<b>0% - 5%</b>
<b>Gross Total</b>		<b>2,931,735,226</b>	<b>107%</b>	<b>100%</b>	<b>100%</b>	
<b>Plan Leverage Facility</b>		<b>(203,451,513)</b>				
<b>Net Total</b>		<b>2,728,283,713</b>				

**Preliminary**  
**April 2016 Snapshot**

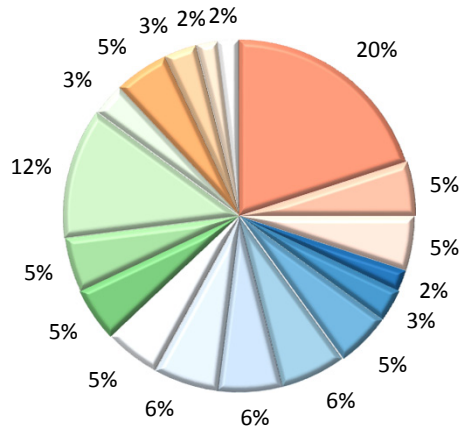


**Asset Allocation: Actual vs. Target (cont.)**

**Gross Actual Allocation**



**Target Allocation**



		Actual Allocation (\$)	Net Actual Allocation (%)	Gross Actual Allocation (%)	Target Allocation (%)	Target Range (%)
<b>Liquid Assets</b>						
Equity	Global Equity	452,711,822	16.59%	15.44%	20%	10% - 23%
	EM Equity	0	0.00%	0.00%	5%	0% - 8%
	<b>Sub-Total</b>	<b>452,711,822</b>	<b>16.59%</b>	<b>15.44%</b>	<b>25%</b>	
Fixed Income	Short-Term Core Bonds	0	0.00%	0.00%	2%	0% - 5%
	Global Bonds	135,669,003	4.97%	4.63%	3%	0% - 6%
	High Yield	165,099,917	6.05%	5.63%	5%	2% - 8%
	Bank Loans	51,910,718	1.90%	1.77%	6%	3% - 9%
	Structured Credit & Absolute Return	0	0.00%	0.00%	6%	0% - 9%
	EM Debt	59,444,485	2.18%	2.03%	6%	0% - 9%
	<b>Sub-Total</b>	<b>412,124,122</b>	<b>15.11%</b>	<b>14.06%</b>	<b>28%</b>	
Real Assets	Liquid Real Assets	0	0.00%	0.00%	3%	0% - 6%
	<b>Sub-Total</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>3%</b>	
Asset Allocation	Risk Parity	228,812,574	8.39%	7.80%	5%	2% - 8%
	GTAA	125,642,729	4.61%	4.29%	3%	0% - 6%
	Absolute Return	0	0.00%	0.00%	2%	0% - 5%
	<b>Sub-Total</b>	<b>354,455,303</b>	<b>12.99%</b>	<b>12.09%</b>	<b>10%</b>	<b>5% - 15%</b>
Cash & Cash Equivalents		19,650,104	0.72%	0.67%	2%	0% - 5%
<b>Liquid Assets Total</b>		<b>1,238,941,350</b>	<b>45.41%</b>	<b>42.26%</b>	<b>68%</b>	
<b>Private Assets</b>						
Real Assets	Natural Resources	285,864,673	10.48%	9.75%	5%	3% - 10%
	Infrastructure	205,249,764	7.52%	7.00%	5%	3% - 10%
	Real Estate	700,952,047	25.69%	23.91%	12%	10% - 25%
	<b>Sub-Total</b>	<b>1,192,066,484</b>	<b>43.69%</b>	<b>40.66%</b>	<b>22%</b>	
Private Investments	Private Equity	405,210,820	14.85%	13.82%	5%	4% - 15%
	Private Debt	95,516,572	3.50%	3.26%	5%	2% - 7%
	<b>Sub-Total</b>	<b>500,727,392</b>	<b>18.35%</b>	<b>17.08%</b>	<b>10%</b>	
<b>Private Assets Total</b>		<b>1,692,793,876</b>	<b>62.05%</b>	<b>57.74%</b>	<b>32%</b>	
<b>Gross Total</b>		<b>2,931,735,226</b>	<b>107%</b>	<b>100%</b>	<b>100%</b>	
<b>Plan Leverage Facility</b>		<b>(203,451,513)</b>				
<b>Net Total</b>		<b>2,728,283,713</b>				

**Preliminary**  
**April 2016 Snapshot**  
**Public Securities Performance – Equity**



April 2016 Estimated Values					
Holding	End NAV	Return	Benchmark	Benchmark Return	Alpha
Eagle Asset Management	51,834,628	0.13%	Russell 2000	1.57%	-1.44%
Mitchell Group	28,733,158	13.03%	Dow Jones Equal Weight US Oil & Gas	14.47%	-1.44%
OFI Global Institutional	120,699,141	2.24%	MSCI World	1.65%	0.59%
Pyramis (Fidelity)	116,082,186	1.57%	MSCI ACWI	1.48%	0.09%
RREEF	22,684,581	-0.65%	FTSE EPRA/NAREIT	-0.10%	-0.55%
Sustainable Asset Management	27,200,703	2.72%	MSCI World	1.65%	1.07%
Walter Scott	85,477,425	0.94%	MSCI ACWI	1.48%	-0.53%
<b>Total</b>	<b>452,711,822</b>	<b>2.07%</b>	<b>Equity Policy Benchmark</b>	<b>1.94%</b>	<b>0.14%</b>

Year-To-Date Returns (Using April 2016 Estimated Values)					
Holding	End NAV	Return	Benchmark	Benchmark Return	Alpha
Eagle Asset Management	51,834,628	0.36%	Russell 2000	0.03%	0.33%
Mitchell Group	28,733,158	19.83%	Dow Jones Equal Weight US Oil & Gas	14.76%	5.08%
OFI Global Institutional	120,699,141	-4.45%	MSCI World	1.45%	-5.90%
Pyramis (Fidelity)	116,082,186	0.43%	MSCI ACWI	1.72%	-1.29%
RREEF	22,684,581	4.83%	FTSE EPRA/NAREIT	5.12%	-0.29%
Sustainable Asset Management	27,200,703	6.34%	MSCI World	1.45%	4.89%
Walter Scott	85,477,425	3.01%	MSCI ACWI	1.72%	1.29%
<b>Total</b>	<b>452,711,822</b>	<b>1.13%</b>	<b>Equity Policy Benchmark</b>	<b>4.69%</b>	<b>-3.57%</b>

One Year Returns (Using April 2016 Estimated Values)					
Holding	End NAV	Return	Benchmark	Benchmark Return	Alpha
Eagle Asset Management	51,834,628	-2.72%	Russell 2000	-5.94%	3.22%
Mitchell Group	28,733,158	-17.59%	Dow Jones Equal Weight US Oil & Gas	-32.74%	15.15%
OFI Global Institutional	120,699,141	-8.07%	MSCI World	-3.61%	-4.46%
Pyramis (Fidelity)	116,082,186	-6.27%	MSCI ACWI	-5.66%	-0.61%
RREEF	22,684,581	1.36%	FTSE EPRA/NAREIT	1.91%	-0.55%
Sustainable Asset Management	27,200,703	1.37%	MSCI World	-3.61%	4.98%
Walter Scott	85,477,425	-0.76%	MSCI ACWI	-5.66%	4.90%
<b>Total</b>	<b>452,711,822</b>	<b>-5.93%</b>	<b>Equity Policy Benchmark</b>	<b>-7.50%</b>	<b>1.57%</b>

\* Equity Policy Benchmark is the weighted return of the Global Equity and EM Equity benchmarks as defined in Appendix I (page 42).

**Preliminary**  
**April 2016 Snapshot**

**Public Securities Performance – Fixed Income**



April 2016 Estimated Values					
Holding	End NAV	Return	Benchmark	Benchmark	Alpha
Ashmore EM Debt Fund	41,229,780	4.21%	J.P. Morgan EMBI Global Core	1.81%	2.40%
Ashmore EM Local CCY	18,214,705	3.44%	J.P. Morgan GBI-EM Core	2.60%	0.84%
Brandywine	93,044,750	1.71%	Barclays Global Aggregate	1.33%	0.38%
Loomis Sayles	118,528,656	5.00%	70% ML HY / 30% JPM EM	3.58%	1.42%
Loomis Sayles Sr. Floating Rate	51,910,718	2.73%	S&P/LSTA Leveraged Loan Index	1.58%	1.15%
Mondrian Investment Partners	42,624,253	-0.17%	Barclays Global Aggregate	1.33%	-1.50%
W.R. Huff High Yield	46,571,261	5.89%	Citi HY Index	4.50%	1.40%
<b>Total</b>	<b>412,124,122</b>	<b>3.36%</b>	<b>Fixed Income Policy Benchmark</b>	<b>2.14%</b>	<b>1.22%</b>

Year-To-Date Returns (Using April 2016 Estimated Values)					
Holding	End NAV	Return	Benchmark	Benchmark	Alpha
Ashmore EM Debt Fund	41,229,780	1.20%	J.P. Morgan EMBI Global Core	7.25%	-6.05%
Ashmore EM Local CCY	18,214,705	15.17%	J.P. Morgan GBI-EM Core	13.68%	1.49%
Brandywine	93,044,750	9.49%	Barclays Global Aggregate	7.30%	2.19%
Loomis Sayles	118,528,656	7.48%	70% ML HY / 30% JPM EM	9.25%	-1.77%
Loomis Sayles Sr. Floating Rate	51,910,718	3.34%	S&P/LSTA Leveraged Loan Index	1.86%	1.48%
Mondrian Investment Partners	42,624,253	6.12%	Barclays Global Aggregate	7.30%	-1.19%
W.R. Huff High Yield	46,571,261	8.87%	Citi HY Index	5.35%	3.52%
<b>Total</b>	<b>412,124,122</b>	<b>7.05%</b>	<b>Fixed Income Policy Benchmark</b>	<b>5.60%</b>	<b>1.45%</b>

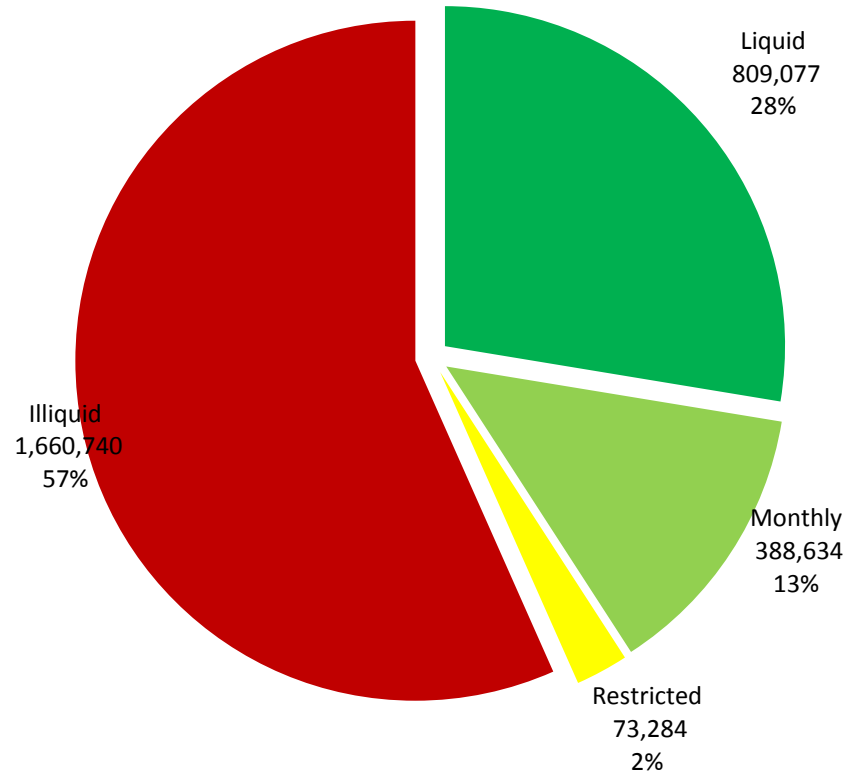
One Year Returns (Using April 2016 Estimated Values)					
Holding	End NAV	Return	Benchmark	Benchmark	Alpha
Ashmore EM Debt Fund	41,229,780	3.10%	J.P. Morgan EMBI Global Core	4.21%	-1.11%
Ashmore EM Local CCY	18,214,705	-2.83%	J.P. Morgan GBI-EM Core	-1.63%	-1.20%
Brandywine	93,044,750	0.92%	Barclays Global Aggregate	4.84%	-3.92%
Loomis Sayles	118,528,656	-8.02%	70% ML HY / 30% JPM EM	-1.37%	-6.64%
Loomis Sayles Sr. Floating Rate	51,910,718	-1.75%	S&P/LSTA Leveraged Loan Index	-4.72%	2.98%
Mondrian Investment Partners	42,624,253	3.89%	Barclays Global Aggregate	4.84%	-0.95%
W.R. Huff High Yield	46,571,261	-4.23%	Citi HY Index	-5.80%	1.56%
<b>Total</b>	<b>412,124,122</b>	<b>-2.61%</b>	<b>Fixed Income Policy Benchmark</b>	<b>0.29%</b>	<b>-2.90%</b>

\* Equity Policy Benchmark is the weighted return of the Fixed Income policy benchmarks, excluding Private Debt, as defined in Appendix I (page 42).

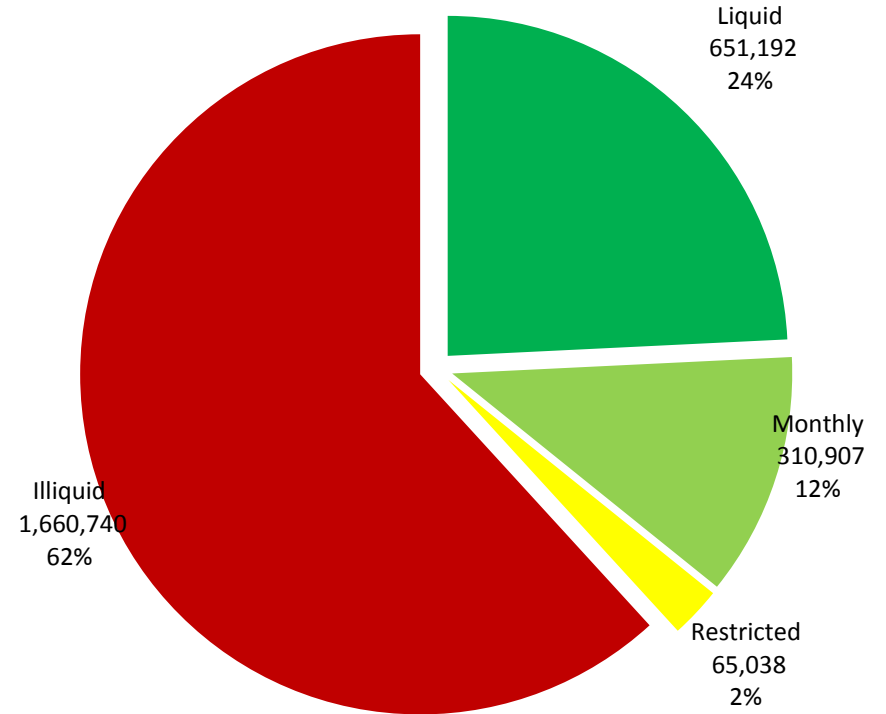
# Preliminary April 2016 Snapshot Portfolio Liquidity



**Normal Market Conditions**



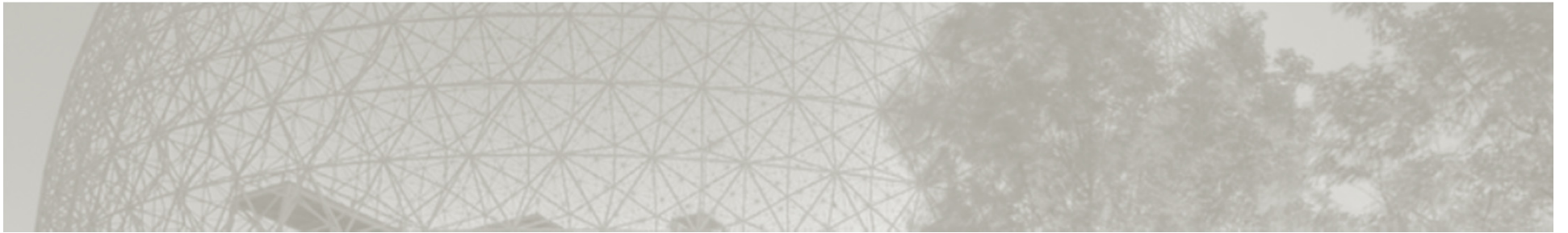
**Stressed Scenario - 20% Market Drawdown**



\* Amounts detailed are in thousands, and are based on the gross asset value of the portfolio.

\*\* Stressed scenario is a result of applying a 20% drawdown to the liquid portfolio.





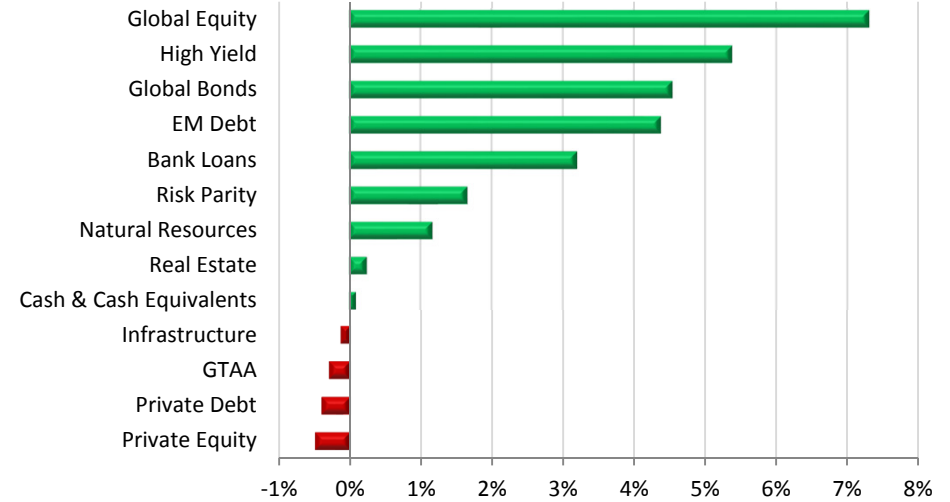
**March 2016**

## Data as at March 2016 Asset Class Performance: Actual vs. Policy



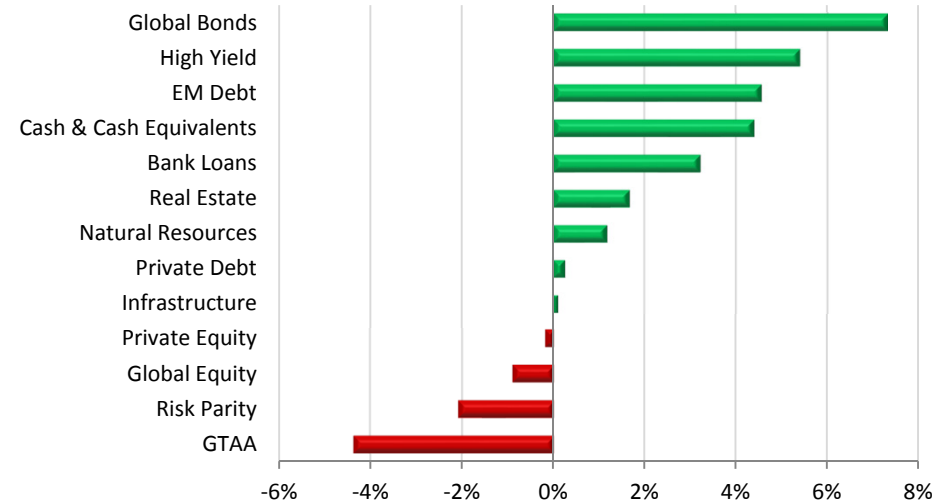
### One Month Performance as at Mar. 2016

	One Month		
	DPPF Return	Policy Return (Beta)	Alpha
Global Equity	7.31%	7.41%	-0.10%
Private Equity	-0.49%	1.17%	-1.66%
Global Bonds	4.55%	1.33%	3.22%
High Yield	5.39%	4.44%	0.95%
Bank Loans	3.21%	3.15%	0.06%
EM Debt	4.39%	6.15%	-1.76%
Private Debt	-0.40%	3.86%	-4.26%
Natural Resources	1.18%	9.11%	-7.93%
Infrastructure	-0.14%	8.67%	-8.81%
Real Estate	0.26%	2.21%	-1.96%
Risk Parity	1.67%	4.98%	-3.31%
GTAA	-0.30%	4.98%	-5.28%
Cash & Cash Equivalents	0.10%	0.03%	0.07%
<b>Total</b>	<b>2.04%</b>	<b>5.00%</b>	<b>-2.96%</b>
<b>Total ex Real Estate</b>	<b>2.39%</b>	<b>4.74%</b>	<b>-2.35%</b>



### Quarter-to-Date Performance as at Mar. 2016

	Quarter-to-Date		
	DPPF Return	Policy Return (Beta)	Alpha
Global Equity	-0.92%	0.24%	-1.16%
Private Equity	-0.21%	1.17%	-1.38%
Global Bonds	7.22%	4.48%	2.73%
High Yield	2.63%	3.35%	-0.72%
Bank Loans	0.59%	2.49%	-1.90%
EM Debt	1.12%	8.07%	-6.96%
Private Debt	0.09%	3.86%	-3.77%
Natural Resources	0.16%	9.11%	-8.95%
Infrastructure	0.07%	8.67%	-8.60%
Real Estate	0.59%	2.21%	-1.62%
Risk Parity	-2.11%	2.03%	-4.13%
GTAA	-4.38%	2.03%	-6.41%
Cash & Cash Equivalents	0.63%	0.07%	0.56%
<b>Total</b>	<b>0.10%</b>	<b>3.89%</b>	<b>-3.79%</b>
<b>Total ex Real Estate</b>	<b>-0.05%</b>	<b>3.63%</b>	<b>-3.68%</b>



\* Please see Appendix I (page 41) for details on the policy indexes.

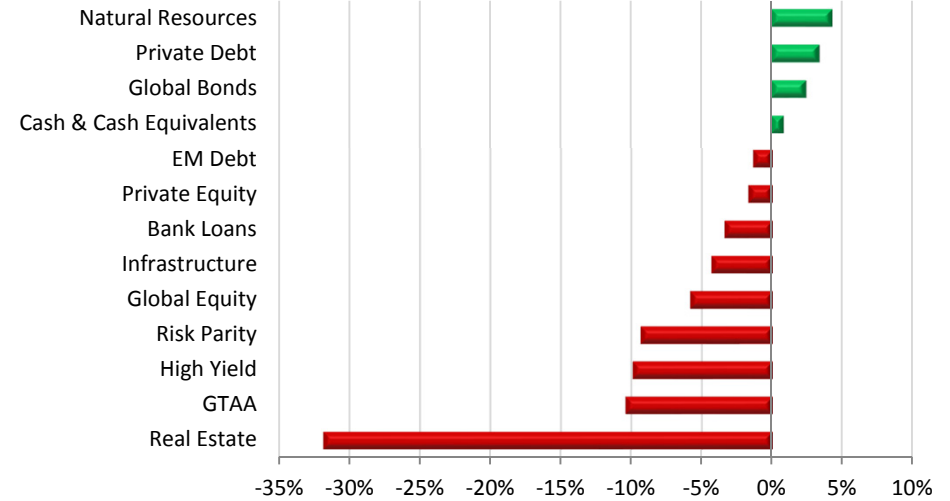
\*\* Returns presented are calculated using custodian bank month-end source data and values. The returns shown here will differ from actuary calculated returns and returns presented by NEPC.

## Data as at March 2016 Asset Class Performance: Actual vs. Policy (cont.)



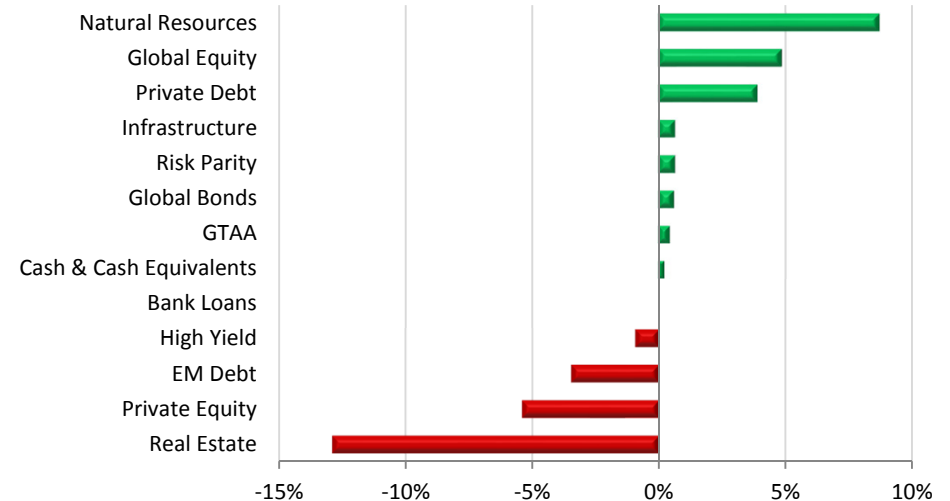
### One Year Performance as at Mar. 2016

	One Year		
	DPFP Return	Policy Return (Beta)	Alpha
Global Equity	-5.89%	-4.34%	-1.55%
Private Equity	-1.75%	0.59%	-2.34%
Global Bonds	2.45%	3.17%	-0.72%
High Yield	-9.98%	-3.69%	-6.28%
Bank Loans	-3.45%	-2.14%	-1.31%
EM Debt	-1.41%	1.40%	-2.82%
Private Debt	3.38%	-1.76%	5.14%
Natural Resources	4.28%	-15.30%	19.58%
Infrastructure	-4.38%	-3.00%	-1.38%
Real Estate	-31.92%	11.84%	-43.76%
Risk Parity	-9.41%	-1.13%	-8.29%
GTAA	-10.49%	-1.13%	-9.36%
Cash & Cash Equivalents	0.87%	0.12%	0.75%
<b>Total</b>	<b>-12.95%<sup>1</sup></b>	<b>6.91%</b>	<b>-19.86%</b>
<b>Total ex Real Estate</b>	<b>-4.03%</b>	<b>5.18%</b>	<b>-9.21%</b>



### Three Year Performance as at Mar. 2016

	Three Year		
	DPFP Return	Policy Return (Beta)	Alpha
Global Equity	4.84%	5.54%	-0.70%
Private Equity	-5.43%	12.24%	-17.67%
Global Bonds	0.62%	0.42%	0.20%
High Yield	-0.96%	1.84%	-2.80%
Bank Loans			
EM Debt	-3.48%	-1.55%	-1.93%
Private Debt	3.89%	3.88%	0.01%
Natural Resources	8.69%	-8.78%	17.47%
Infrastructure	0.67%	5.89%	-5.22%
Real Estate	-12.89%	11.91%	-24.80%
Risk Parity	0.66%	3.61%	-2.95%
GTAA	0.46%	3.61%	-3.16%
Cash & Cash Equivalents	0.25%	0.06%	0.18%
<b>Total</b>	<b>-2.68%</b>	<b>8.32%</b>	<b>-11.00%</b>
<b>Total ex Real Estate</b>	<b>1.35%</b>	<b>6.51%</b>	<b>-5.16%</b>



<sup>1</sup> Approximately two-thirds of the one year loss relates to the lagged returns from Q4 2014 for private investments. These losses were reflected in the 2014 CAFR and 1/1/15 actuarial valuation

\* Please see Appendix I (page 41) for details on the policy indexes.

\*\* Returns presented are calculated using custodian bank month-end source data and values. The returns shown here will differ from actuary calculated returns and returns presented by NEPC.

## Attribution Metrics

- Allocation refers to the proportion of the active return that can be attributed to tactical asset allocation decisions.
- Selection refers to the proportion of the active return that can be attributed to manager selection and subsequent performance of the selected managers.
- Interaction refers to the proportion of the active return that cannot be attributed solely to tactical asset allocation decisions or manager selection.

## Data as at March 2016 Portfolio Attribution (cont.)



### One Month as at Mar. 2016

Asset Class	Weights		Returns		Attribution			
	DPFP	Policy	DPFP	Policy	Allocation (1)	Selection (2)	Interaction (3)	Active Return (1+2+3)
Global Equity	15.37%	20.00%	7.31%	7.41%	-0.11%	-0.02%	0.00%	-0.13%
EM Equity	0.00%	5.00%	0.00%	15.57%	-0.53%	-0.78%	0.78%	-0.53%
Private Equity	14.96%	5.00%	-0.49%	1.17%	-0.38%	-0.08%	-0.17%	-0.63%
Short Term Core Bonds	0.00%	2.00%	0.00%	0.17%	0.10%	0.00%	0.00%	0.10%
Global Bonds	4.77%	3.00%	4.55%	1.33%	-0.07%	0.10%	0.06%	0.09%
High Yield	5.53%	5.00%	5.39%	4.44%	0.00%	0.05%	0.01%	0.05%
Bank Loans	1.82%	6.00%	3.21%	3.15%	0.08%	0.00%	0.00%	0.08%
Struc. Cred. & Abs. Ret.	0.00%	6.00%	0.00%	1.73%	0.20%	-0.10%	0.10%	0.20%
EM Debt	2.04%	6.00%	4.39%	6.15%	-0.05%	-0.11%	0.07%	-0.08%
Private Debt	3.22%	5.00%	-0.40%	3.86%	0.02%	-0.21%	0.08%	-0.12%
Natural Resources	10.61%	5.00%	1.18%	9.11%	0.23%	-0.40%	-0.44%	-0.61%
Infrastructure	7.62%	5.00%	-0.14%	8.67%	0.10%	-0.44%	-0.23%	-0.57%
Real Estate	26.22%	12.00%	0.26%	2.21%	-0.40%	-0.23%	-0.28%	-0.91%
Liquid Real Assets	0.00%	3.00%	0.00%	0.50%	0.14%	-0.01%	0.01%	0.14%
Risk Parity	10.12%	5.00%	1.67%	4.98%	0.00%	-0.17%	-0.17%	-0.34%
GTAA	4.50%	3.00%	-0.30%	4.98%	0.00%	-0.16%	-0.08%	-0.24%
Absolute Return	0.00%	2.00%	0.00%	-0.29%	0.11%	0.01%	-0.01%	0.11%
Cash & Cash Equivalents	1.96%	2.00%	0.10%	0.03%	0.00%	0.00%	0.00%	0.00%
Plan Leverage Facility	-8.75%	0.00%	0.00%	0.00%	0.44%	0.00%	0.00%	0.44%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>	<b>2.04%</b>	<b>5.00%</b>	<b>-0.14%</b>	<b>-2.56%</b>	<b>-0.26%</b>	<b>-2.96%</b>

\* Please see Appendix II (page 42) for details on the attribution calculation and methodology.

## Data as at March 2016 Portfolio Attribution (cont.)



### Calendar YTD as at Mar. 2016

Asset Class	Weights		Returns		Attribution			
	DPFP	Policy	DPFP	Policy	Allocation (1)	Selection (2)	Interaction (3)	Active Return (1+2+3)
Global Equity	15.69%	20.00%	-0.92%	0.24%	0.09%	-0.24%	0.05%	-0.09%
EM Equity	0.00%	5.00%	0.00%	12.91%	-0.49%	-0.65%	0.65%	-0.49%
Private Equity	14.74%	5.00%	-0.21%	1.17%	-0.21%	-0.07%	-0.13%	-0.41%
Short Term Core Bonds	0.00%	2.00%	0.00%	0.90%	0.04%	-0.02%	0.02%	0.04%
Global Bonds	4.63%	3.00%	7.22%	4.48%	0.01%	0.08%	0.05%	0.14%
High Yield	5.83%	5.00%	2.63%	3.35%	0.00%	-0.04%	-0.01%	-0.04%
Bank Loans	1.81%	6.00%	0.59%	2.49%	0.03%	-0.12%	0.08%	-0.01%
Struc. Cred. & Abs. Ret.	0.00%	6.00%	0.00%	-0.68%	0.24%	0.05%	-0.05%	0.24%
EM Debt	2.04%	6.00%	1.12%	8.07%	-0.19%	-0.41%	0.27%	-0.33%
Private Debt	3.16%	5.00%	0.09%	3.86%	-0.01%	-0.18%	0.06%	-0.13%
Natural Resources	10.52%	5.00%	0.16%	9.11%	0.32%	-0.44%	-0.49%	-0.62%
Infrastructure	7.46%	5.00%	0.07%	8.67%	0.13%	-0.42%	-0.22%	-0.51%
Real Estate	25.76%	12.00%	0.59%	2.21%	-0.16%	-0.19%	-0.23%	-0.57%
Liquid Real Assets	0.00%	3.00%	0.00%	1.18%	0.06%	-0.04%	0.04%	0.06%
Risk Parity	10.11%	5.00%	-2.11%	2.03%	-0.06%	-0.21%	-0.22%	-0.49%
GTAA	4.54%	3.00%	-4.38%	2.03%	-0.02%	-0.20%	-0.10%	-0.31%
Absolute Return	0.00%	2.00%	0.00%	-0.58%	0.07%	0.01%	-0.01%	0.07%
Cash & Cash Equivalents	2.32%	2.00%	0.63%	0.07%	0.02%	0.01%	0.00%	0.03%
Plan Leverage Facility	-8.62%	0.00%	0.00%	0.00%	0.28%	0.00%	0.00%	0.28%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>	<b>0.10%</b>	<b>3.24%</b>	<b>0.17%</b>	<b>-3.06%</b>	<b>-0.25%</b>	<b>-3.13%</b>

\* Please see Appendix II (page 42) for details on the attribution calculation and methodology.

## Data as at March 2016 Portfolio Attribution (cont.)



### One Year as at Mar. 2016

Asset Class	Weights		Returns		Attribution			
	DPFP	Policy	DPFP	Policy	Allocation (1)	Selection (2)	Interaction (3)	Active Return (1+2+3)
Global Equity	20.11%	20.00%	-5.89%	-4.34%	-0.06%	-0.30%	0.05%	-0.31%
EM Equity	0.00%	5.00%	0.00%	-11.45%	0.46%	0.52%	-0.52%	0.46%
Private Equity	13.78%	5.00%	-1.75%	0.59%	0.10%	-0.12%	-0.23%	-0.26%
Short Term Core Bonds	0.00%	2.00%	0.00%	0.92%	-0.04%	-0.02%	0.02%	-0.04%
Global Bonds	3.65%	3.00%	2.45%	3.17%	0.02%	-0.03%	0.03%	0.02%
High Yield	6.15%	5.00%	-9.98%	-3.69%	-0.03%	-0.31%	-0.07%	-0.41%
Bank Loans	1.72%	6.00%	-3.45%	-2.14%	0.05%	-0.07%	0.04%	0.03%
Struc. Cred. & Abs. Ret.	0.00%	6.00%	0.00%	-1.92%	0.05%	0.11%	-0.11%	0.05%
EM Debt	1.93%	6.00%	-1.41%	1.40%	-0.08%	-0.14%	0.08%	-0.13%
Private Debt	3.09%	5.00%	3.38%	-1.76%	0.01%	0.26%	-0.10%	0.17%
Natural Resources	9.54%	5.00%	4.28%	-15.30%	-0.54%	0.89%	0.71%	1.06%
Infrastructure	6.57%	5.00%	-4.38%	-3.00%	0.01%	-0.05%	-0.08%	-0.12%
Real Estate	27.51%	12.00%	-31.92%	11.84%	1.85%	-5.39%	-7.39%	-10.93%
Liquid Real Assets	0.00%	3.00%	0.00%	5.88%	-0.20%	-0.16%	0.16%	-0.20%
Risk Parity	9.53%	5.00%	-9.41%	-1.13%	-0.01%	-0.39%	-0.40%	-0.80%
GTAA	4.24%	3.00%	-10.49%	-1.13%	0.00%	-0.27%	-0.13%	-0.40%
Absolute Return	0.00%	2.00%	0.00%	0.58%	-0.03%	-0.01%	0.01%	-0.03%
Cash & Cash Equivalent	1.76%	2.00%	0.87%	0.12%	-0.04%	0.01%	0.00%	-0.03%
Plan Leverage Facility	-9.58%	0.00%	0.46%	0.00%	-0.14%	0.00%	-0.04%	-0.18%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>	<b>-12.95%<sup>1</sup></b>	<b>-0.89%</b>	<b>1.38%</b>	<b>-5.47%</b>	<b>-7.98%</b>	<b>-12.06%</b>

<sup>1</sup> Approximately two-thirds of the one year loss relates to the lagged returns from Q4 2014 for private investments. These losses were reflected in the 2014 CAFR and 1/1/15 actuarial valuation

\* Please see Appendix II (page 42) for details on the attribution calculation and methodology.

## Data as at March 2016 Asset Allocations: Monthly Changes



The total NAV of the portfolio at March 31<sup>th</sup> 2016 is **2,724,167,292**

- P&L of the portfolio decreased by \$9 million.
- \$11 million was added in contributions, \$29 million paid in benefits.
- No new managers were added during the month.
- No managers were liquidated during the month.

- Strategy with the largest cash net inflow in Feb: Real Estate
- Strategy with the largest cash net outflow in Feb: Fixed Income
- Over the past 12 months, the largest increase in allocation was in Natural Res.
- Over the past 12 months, the largest decrease in allocation was in Real Estate.

### Top Performing Asset Classes

Asset Class	Performance (Mar.)	
	\$	%
Global Equity	30,223,919	7.31%
High Yield	8,025,353	5.39%
Global Bonds	5,840,232	4.55%

### Bottom Performing Asset Classes

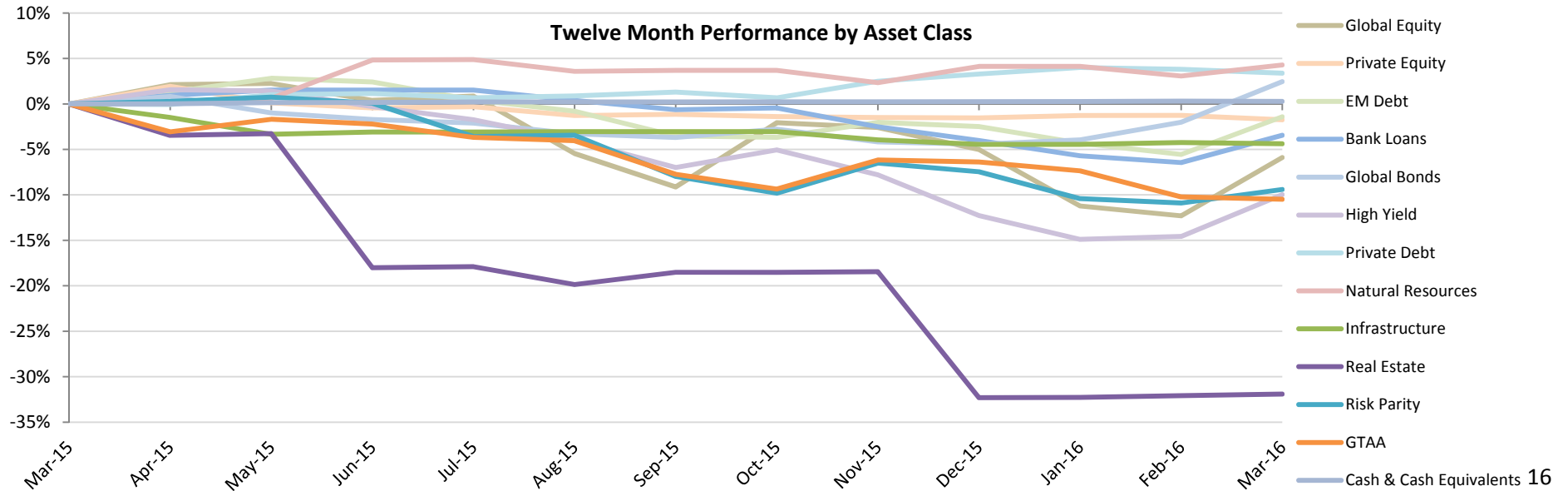
Asset Class	Performance (Mar.)	
	\$	%
Private Equity	(1,978,970)	-0.49%
GTAA	(362,506)	-0.30%
Private Debt	(348,225)	-0.40%

### Top Performing Holdings

Holding	Performance (Mar.)	
	\$	%
Pyramis (Fidelity)	7,468,808	6.99%
OFI Global Institutional	6,500,495	5.83%
Loomis Sayles	6,340,036	5.95%

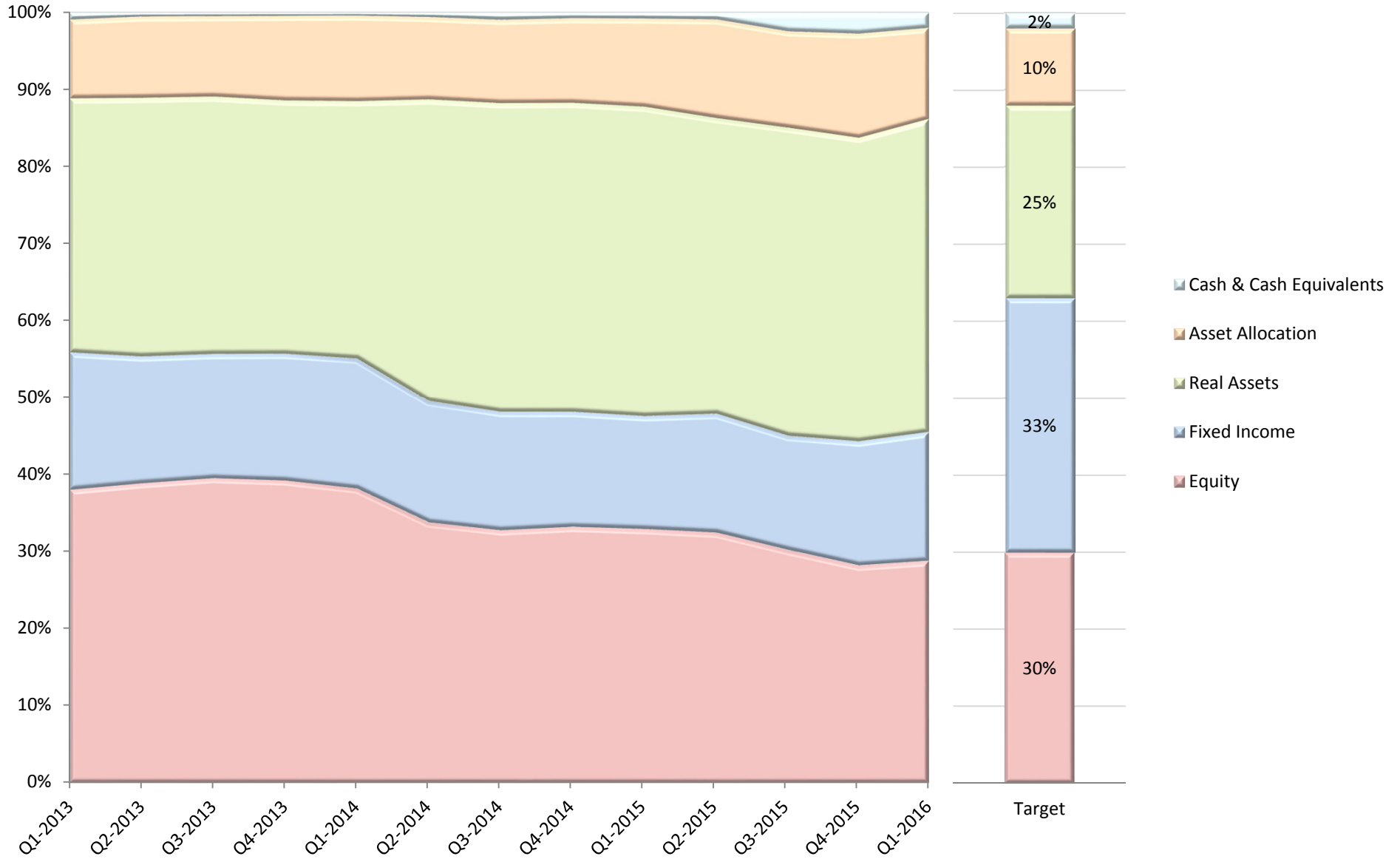
### Bottom Performing Holdings

Holding	Performance (Mar.)	
	\$	%
Merit Energy E, F, G, H	(7,048,864)	-16.78%
Pharos III	(632,566)	-3.71%
Levine Leichtman DV	(591,135)	-4.83%

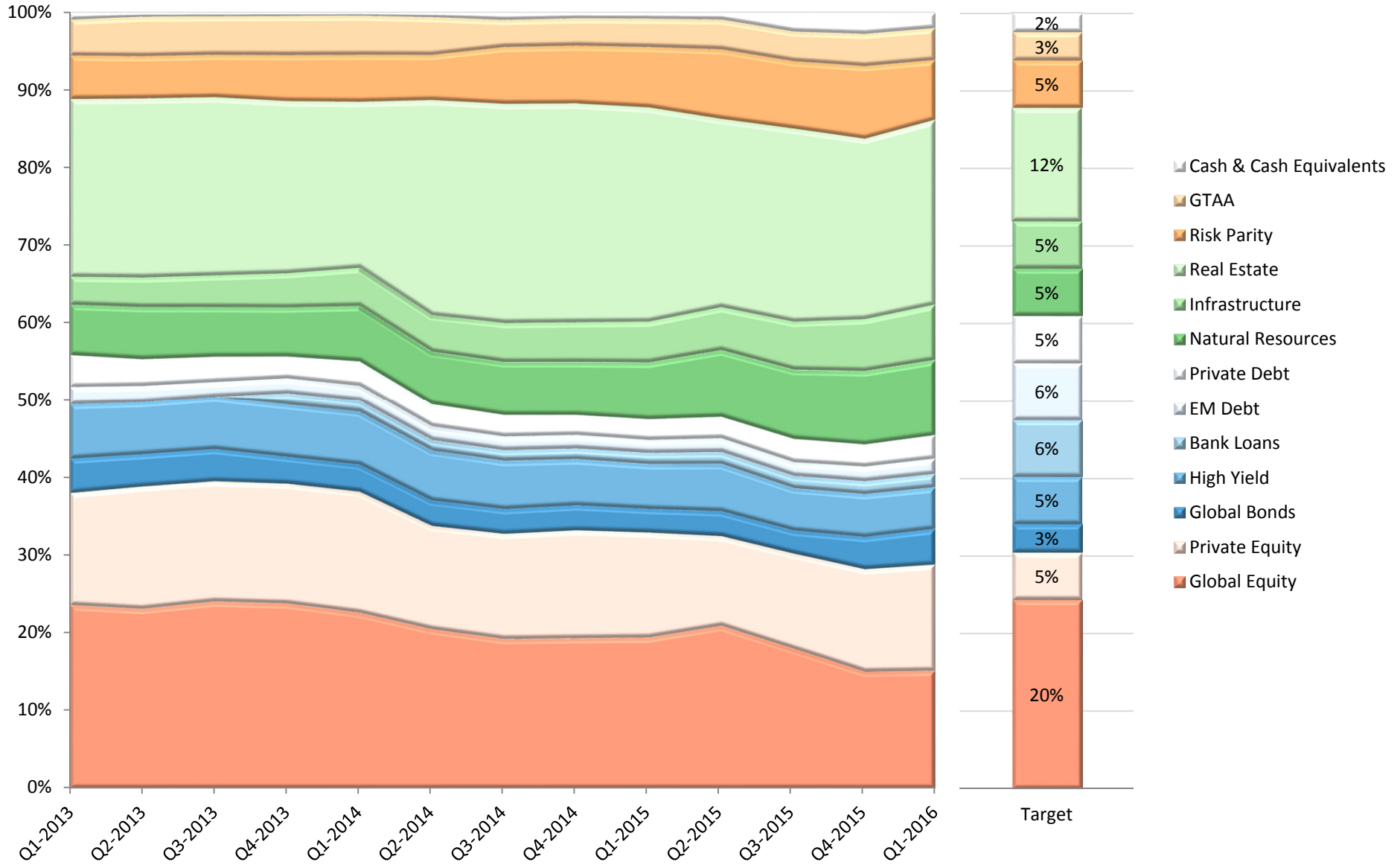




## Data as at March 2016 Asset Allocations: Over Time (Quarterly)



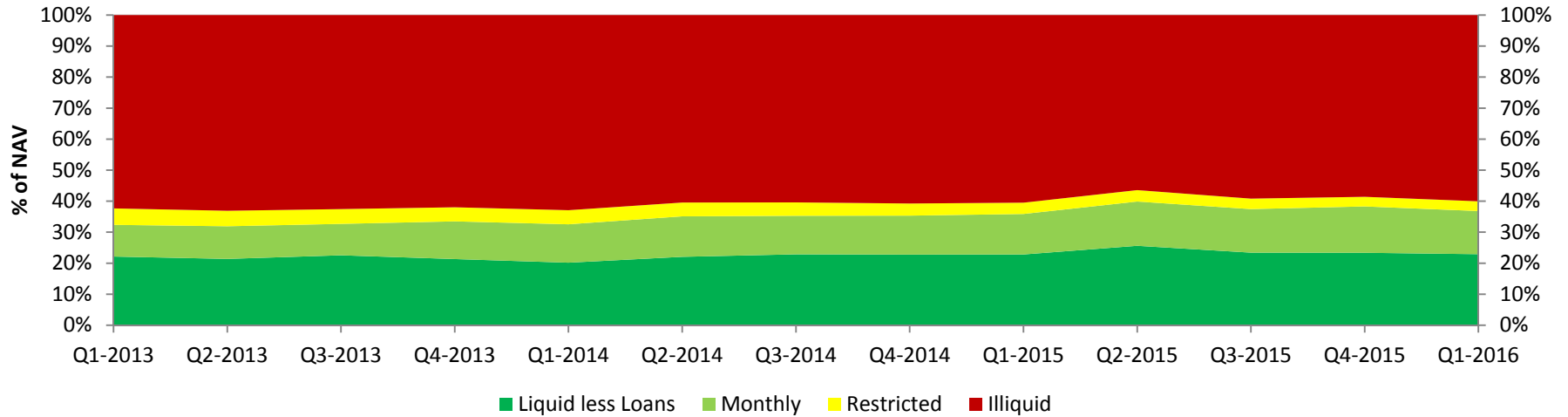
**Data as at March 2016**  
**Asset Allocations: Sub-Asset Over Time (Quarterly)**



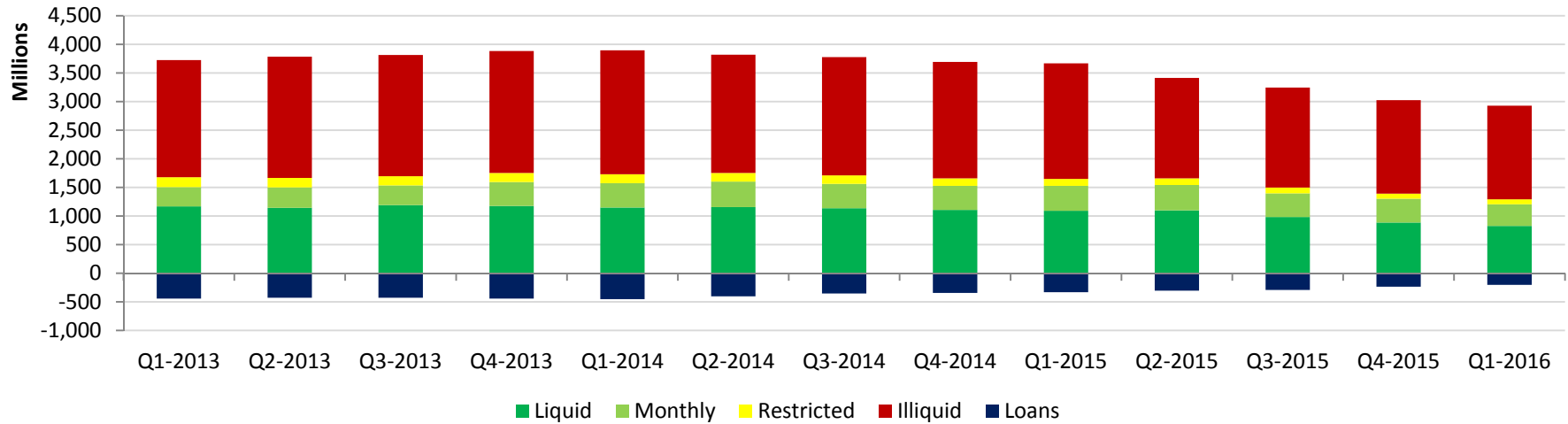
## Data as at March 2016 Liquidity Over Time (Quarterly)



Liquidity Over Time (% of NAV)



Liquidity Over Time (\$ Value)



## Data as at March 2016 Long Term Plan Risk/Return vs Policy and 60/40

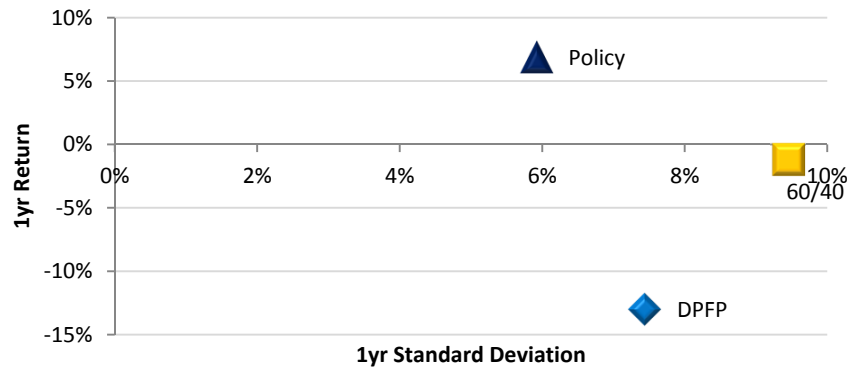


**Trend Commentary**

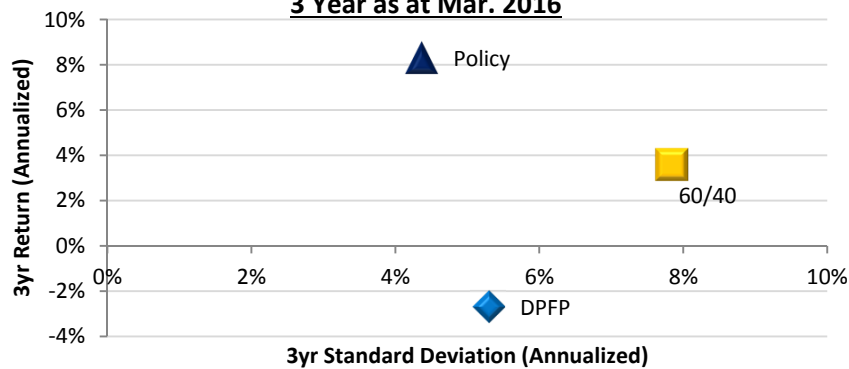
- The DFPF portfolio is less volatile than the 60/40 portfolio across all time horizons.
- The DFPF portfolio is less volatile than the Policy benchmark across the 5 year time horizon.

*Note: Higher allocations to illiquid assets tend to deemphasize volatility due to the infrequency of marks received. This may be particularly acute in the case of the DFPF plan portfolio.*

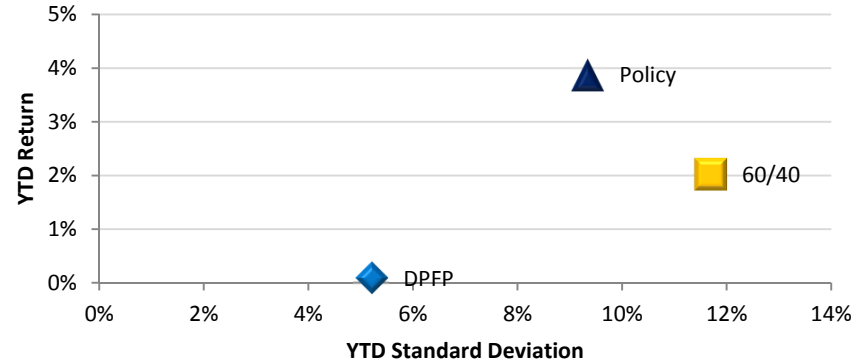
**1 Year as at Mar. 2016**



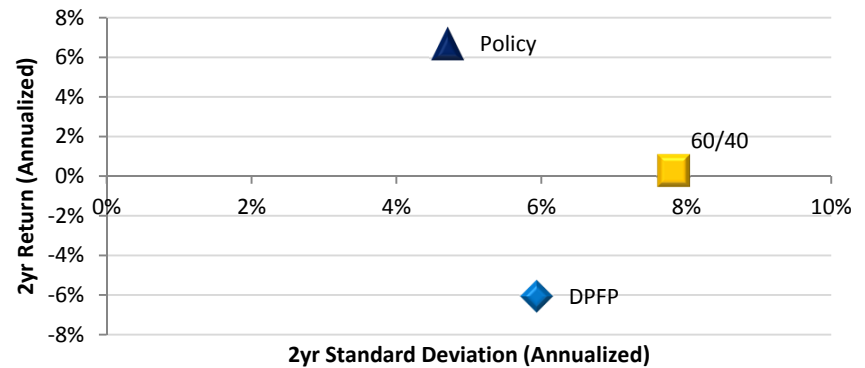
**3 Year as at Mar. 2016**



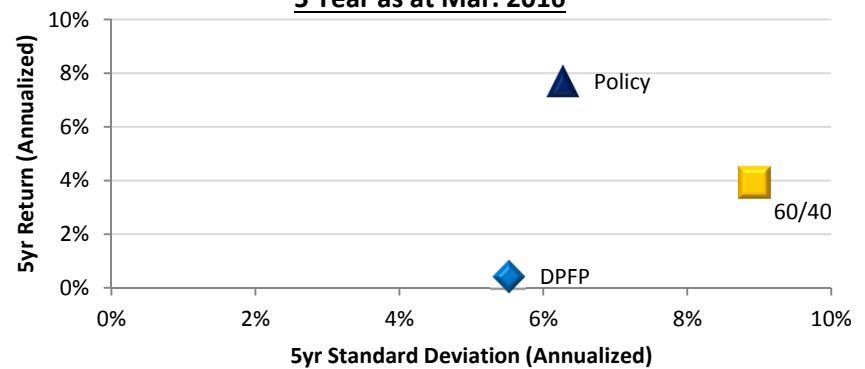
**YTD as at Mar. 2016**



**2 Year as at Mar. 2016**



**5 Year as at Mar. 2016**

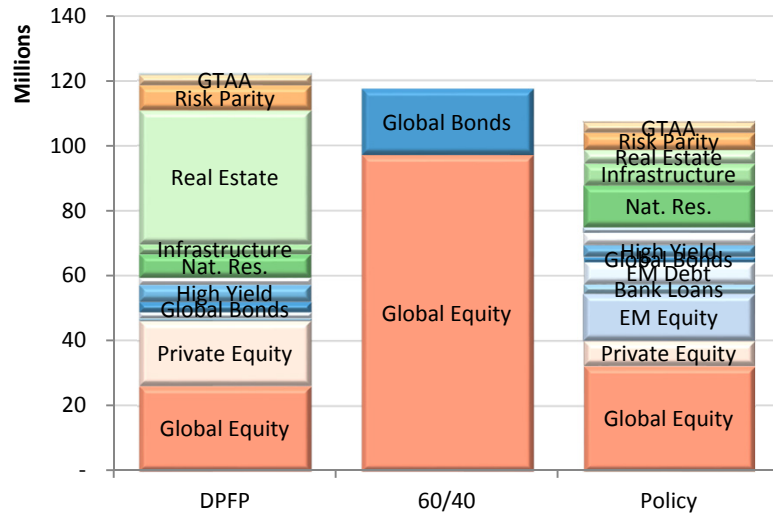


\* Please see Appendix I (page 41) for details on the composition of the 60/40 and Policy benchmarks.

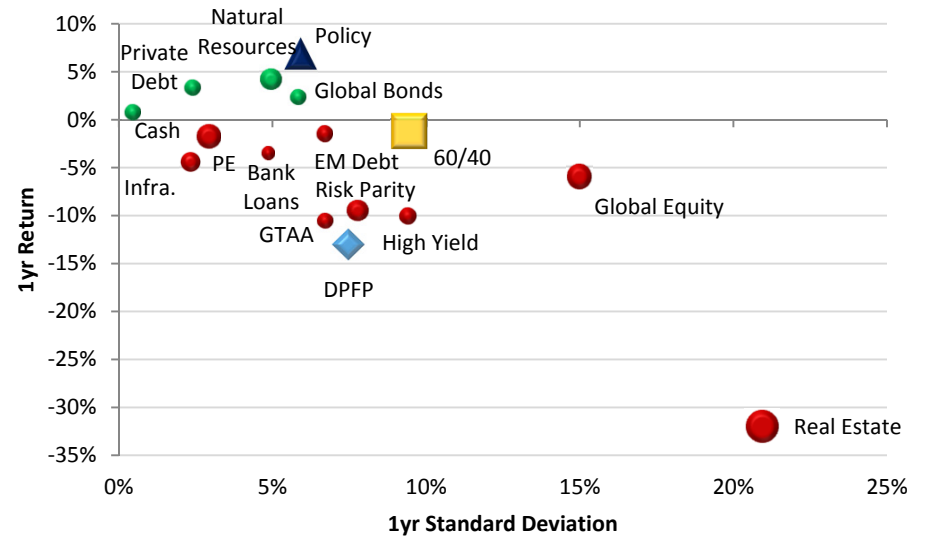
# Data as at March 2016 Risk Profile



**Five Year Value at Risk (95% Confidence Level) as at Mar. 2016**

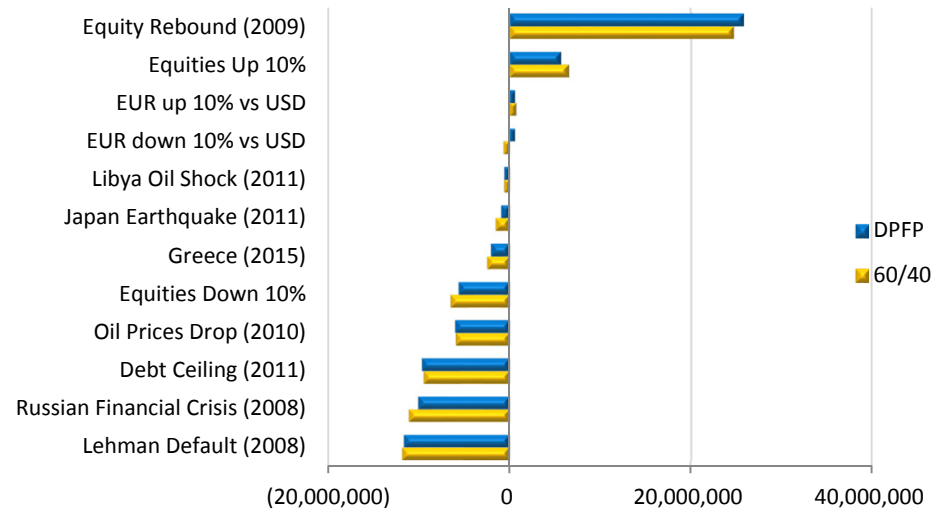


**Asset Class Risk vs Return (Sharpe) as at Mar. 2016**



**Portfolio Stress Testing as at Mar. 2016**

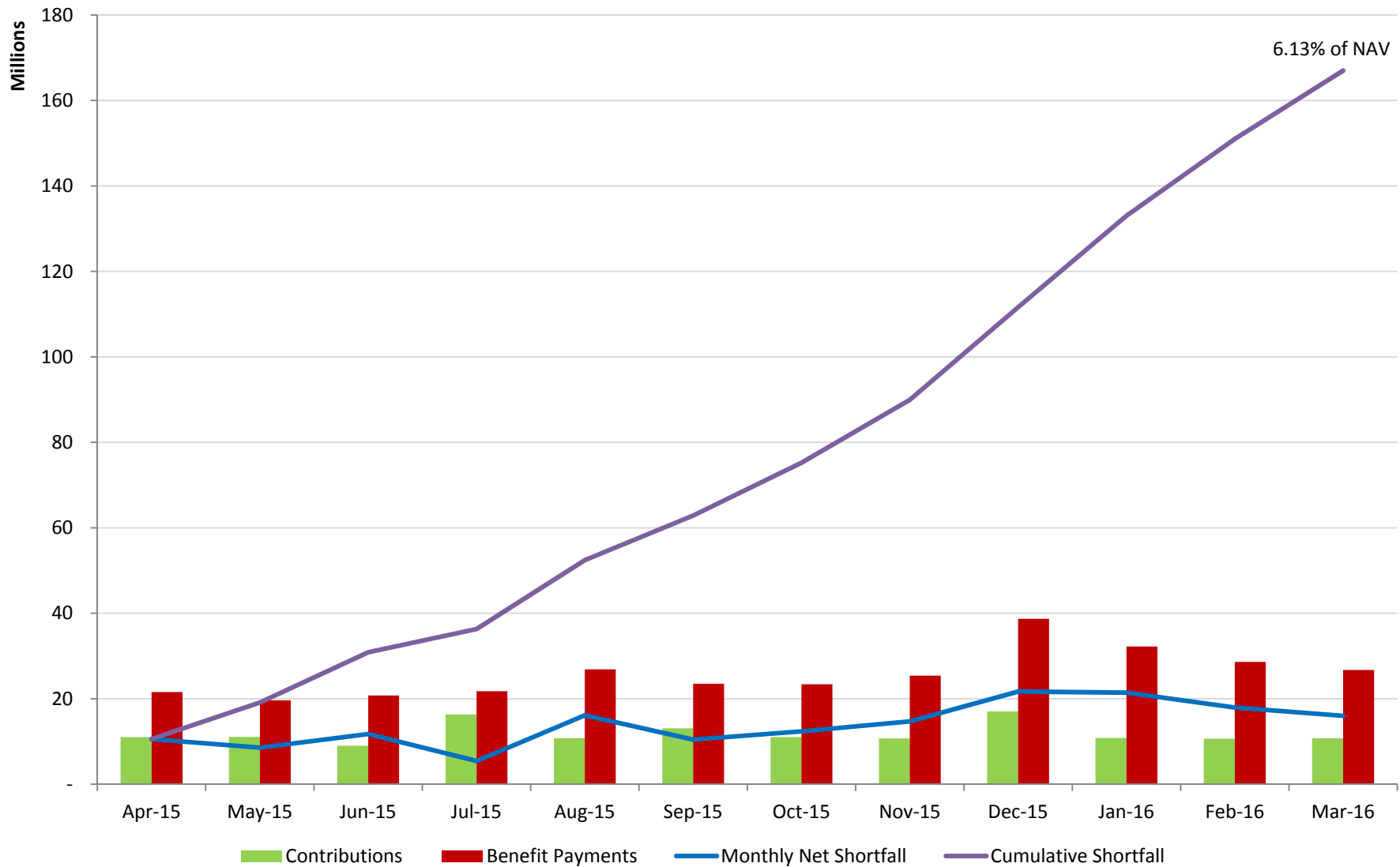
Scenario	P&L (\$)	P&L (%)
Equity Rebound (2009)	25,745,940	25.24%
Equities Up 10%	5,634,461	5.52%
EUR up 10% vs USD	556,472	0.55%
EUR down 10% vs USD	556,427	-0.55%
Libya Oil Shock (2011)	(626,099)	-0.61%
Japan Earthquake (2011)	(935,266)	-0.92%
Greece (2015)	(2,075,994)	-2.03%
Equities Down 10%	(5,633,442)	-5.52%
Oil Prices Drop (2010)	(6,036,514)	-5.92%
Debt Ceiling (2011)	(9,690,119)	-9.50%
Russian Financial Crisis (2008)	(10,078,136)	-9.88%
Lehman Default (2008)	(11,664,491)	-11.43%



\* Stress Test Scenarios and the proxy instruments used are detailed in Appendix I (page 41).

\*\* Value at Risk on the DPFP portfolio is significantly higher than the policy, as realized losses and volatility are significant within the DPFP portfolio. This is particularly true in the case of the Real Estate Portfolio, which also contains leverage.

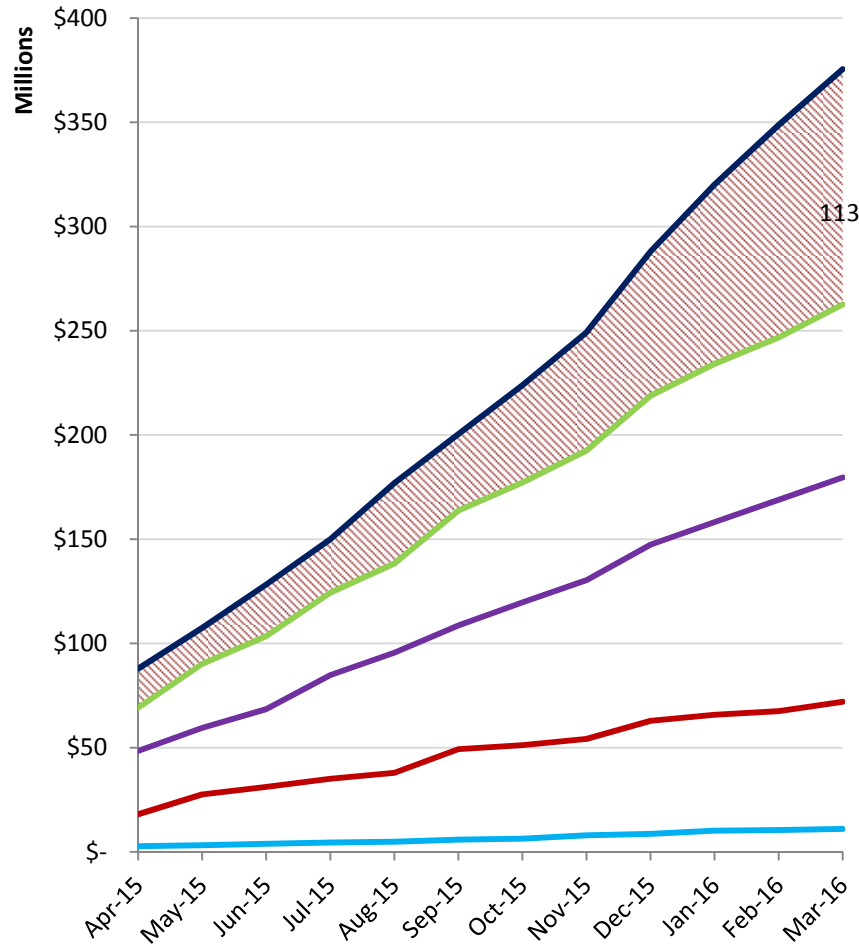
## Data as at March 2016 Trailing 12 Month Funding Gap



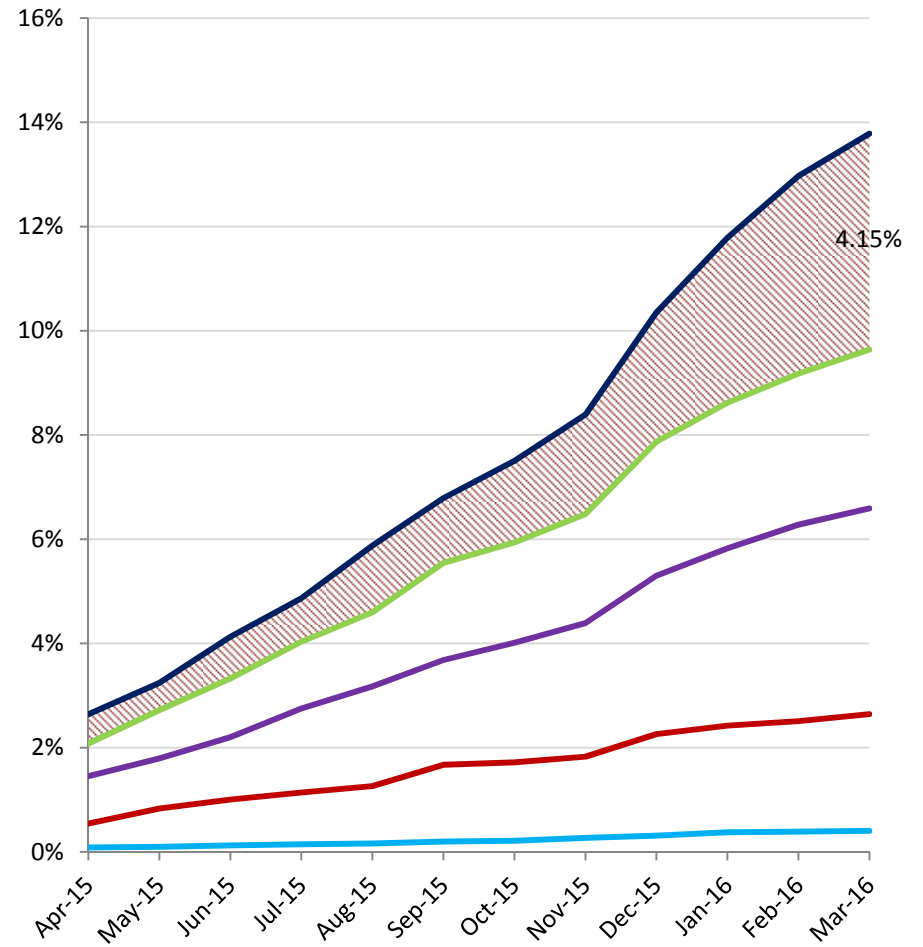
## Data as at March 2016 Trailing 12 Month Yield Gap



**Monthly Cumulative (\$)**



**Monthly Cumulative (% of Plan NAV)**



Funding Gap    
  Benefit Payments    
  Total Cash Inflows  
 Dividends    
  Interest    
  Contributions

\*53 accounts are contributing income to the above figures.

## Data as at March 2016 Equity Overview – Global Equity

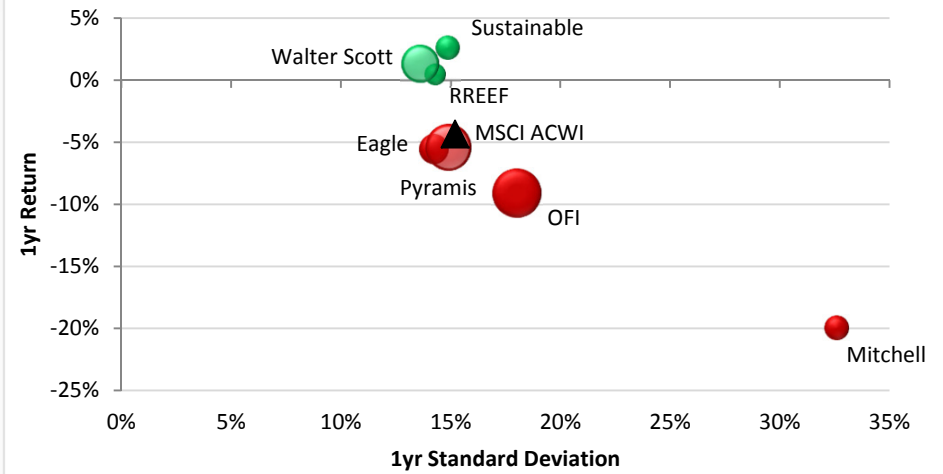


### Commentary

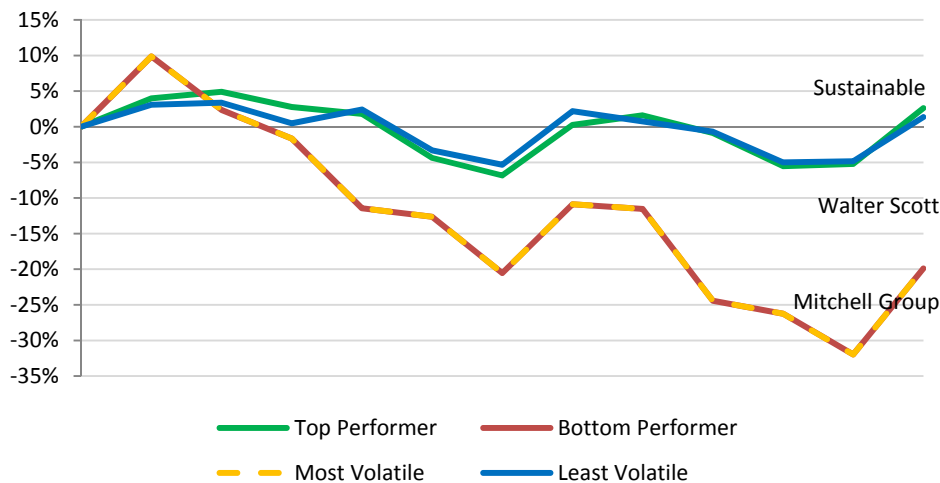
- Aided by the rising tide of oil (WTI up 4.6% to \$38.34) and helped by the FOMC's inaction and Chair Yellen's dovish remarks, the S&P 500 rallied strongly in March (up 6.6%) and finished the first quarter of 2016 in the black (up 0.8%).
- The breadth of the S&P 500's constituents was strongly positive as 462 issues finished in positive territory, gaining an average of 8.9%. However, Valeant Pharmaceuticals (VRX) fell 60% for the month and is down 90% from its August 2015 price on negative news that included accounting revisions and the departure of its CEO.
- The Brussels terrorist bombings on March 22, which resulted in at least 32 deaths, did little to derail global or even European equity markets: the Eurostoxx 50 Index finished the month up 2.0% and the German Dax Index gained 5.0%.
- In Japan, the Nikkei gained 4.6% and took a break from its year-to-date rout (down 11.9% for the year). The Bank of Japan left its rates unchanged at -0.1% (as expected) at their mid-month policy meeting and the price-weighted index rallied alongside global bourses.
- Fueled by the weak US Dollar and the rally in crude, many Emerging Market indices were up double digits during the month (MSCI Emerging Markets Index +13.0%). In Brazil, the Bovespa gained a whopping 17.0% as President Dilma Rousseff impeachment odds saw a boost. PMDB, the main partner in Dilma Rousseff's coalition government, decided to formally break up, leaving Rousseff in charge of a fragile minority government. Former President Inacio Lula da Silva was also detained by the federal police for interrogation on charges that he benefited from kickbacks from contracts with Petrobras.

*Source – Cliffwater*

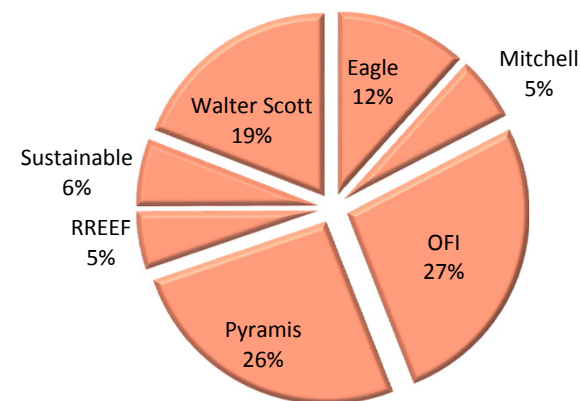
### Manager Risk vs Return (Sharpe) as at Mar. 2016



### Twelve Month Compounded Performance as at Mar. 2016



### Exposure by Manager as at Mar. 2016



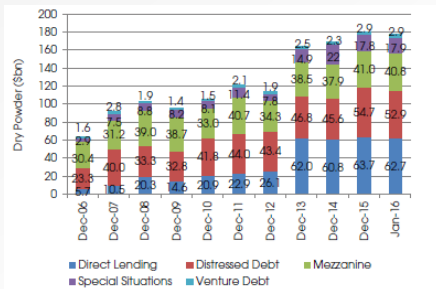


# Data as at March 2016 Equity Overview – Private Equity



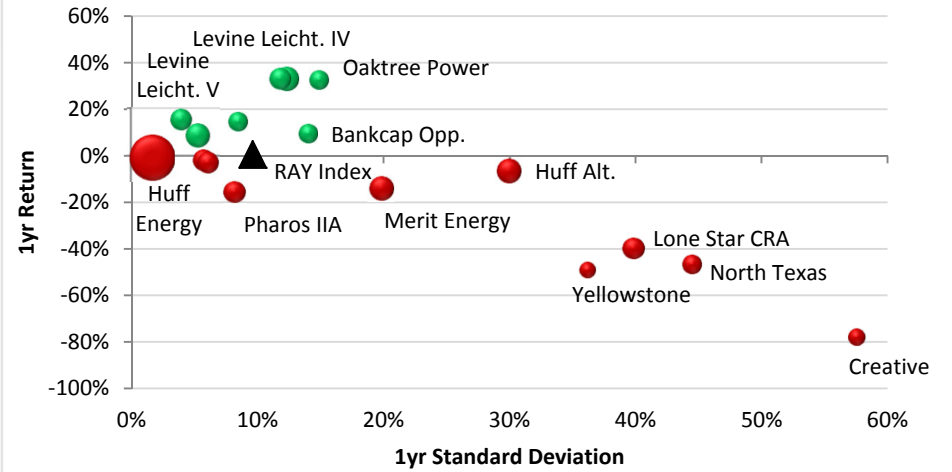
**Commentary**

- Although annual fundraising for distressed debt funds has been consistently increasing since the nadir of \$8bn committed in 2009, it has yet to recover to the pre-economic crisis levels - figures for 2015 reveal 11 funds closed, securing \$21.4bn in total, and surpassing the \$20.2bn secured for funds closed in 2014, even with five fewer funds closed.
- What is striking about this period is the speed at which distressed debt managers were able to put this capital to use. Although there was a rise in dry powder of 72% between 2006 and 2007, from \$23.3bn to \$40bn, this is far below the 500%+ increase in capital raised between these two vintages. Distressed debt dry powder levels actually fell between 2007 and 2008 by 17%, falling again slightly in 2009 before increasing consistently since.

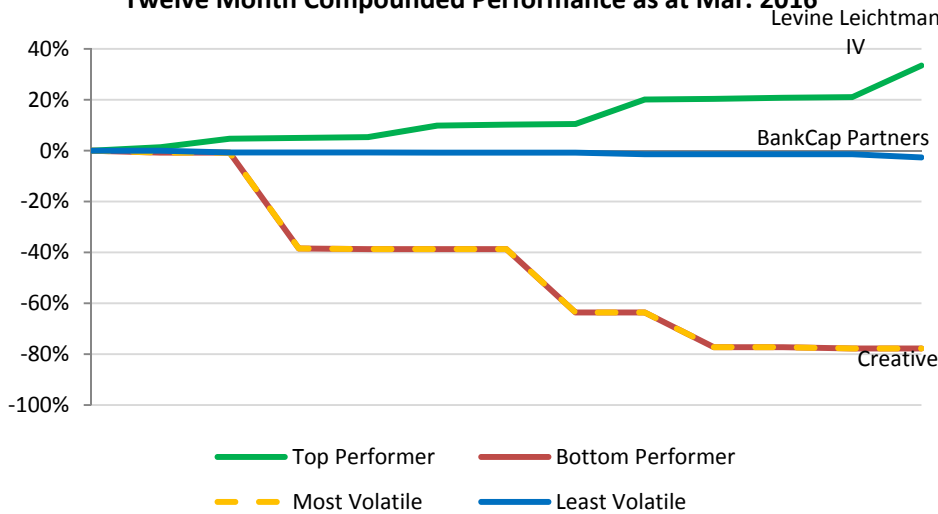


Source – Preqin

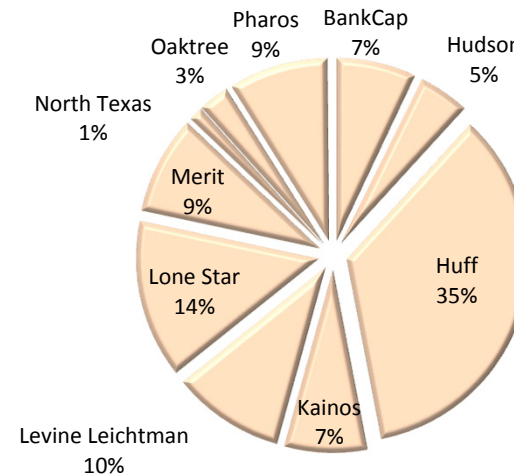
**Manager Risk vs Return (Sharpe) as at Mar. 2016**



**Twelve Month Compounded Performance as at Mar. 2016**



**Exposure by Manager as at Mar. 2016**



# Data as at March 2016 Fixed Income Overview

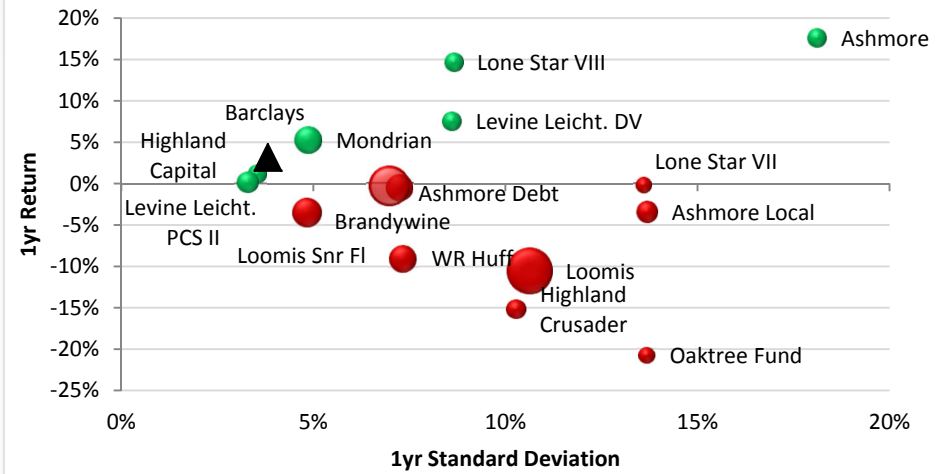


### Commentary

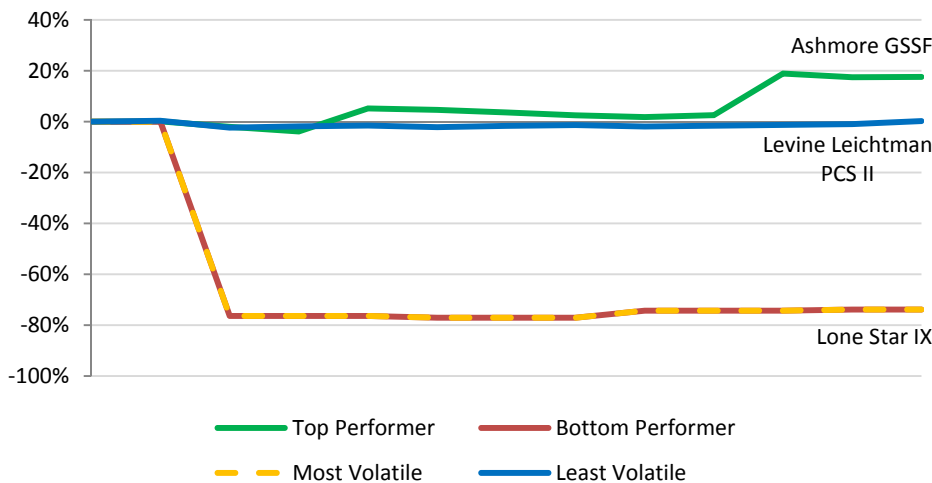
- Fixed income markets extended a historic rally in March that started in mid-February as a dovish central bank narrative, fears of a US recession fading and a rally in commodity prices drove risk assets higher. The high yield index posted a 4.7% gain in March, which was its strongest performance since October 2011. Not surprisingly, Energy and Metals/Mining bonds were up 15.0% and 10.0%, respectively. CCC-rated bonds were up nearly 10% in March, compared to BB-rated bonds that were up 2.7%.
- The ECB delivered unprecedented stimulus on March 10 as President Mario Draghi announced the ECB will be dropping its deposit rate to -0.4%, cutting its benchmark rate to 0.0%, reducing its marginal lending rate to 0.25%, and expanding the size and composition of its asset purchases. However, Draghi's hawkish forward guidance was an unpalatable change from prior "do whatever it takes" rhetoric and the market had mixed reactions. German bunds sold off 6bps to 0.12% over the course of March's risk-on rally.
- March's other major central bank event, the Fed's March 15-16th meeting, saw the benchmark rate left unchanged as expected. However, the Fed's dot plot now shows that policymakers expect only two more rate hikes in 2016 after the previous forecast called for four. Yellen shut down any idea that the Fed was investigating negative rates, but US fixed income nevertheless sold off on the month: The 10-year US Treasury Bond closed at 1.77%, up from last month's 1.73%, but it remained lower than its year-end 2015 rate of 2.27%.

Source – Cliffwater

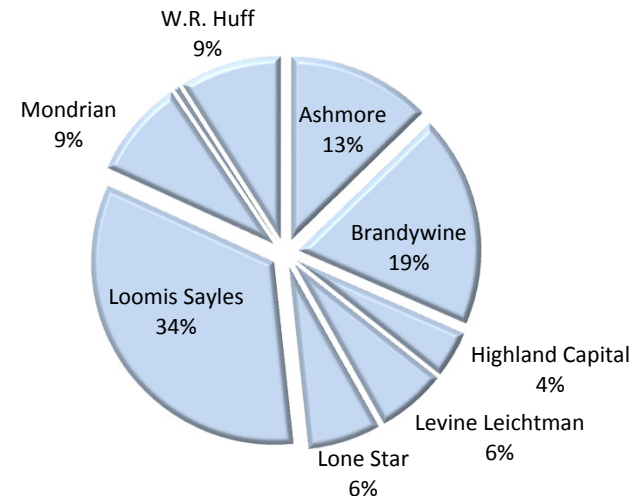
### Manager Risk vs Return (Sharpe) as at Mar. 2016



### Twelve Month Compounded Performance as at Mar. 2016



### Exposure by Manager as at Mar. 2016



## Data as at March 2016 Asset Allocation Overview

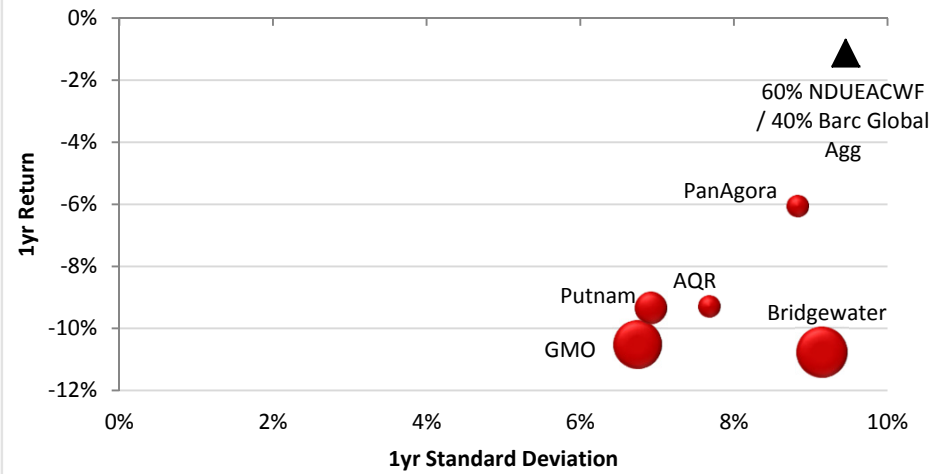


### Commentary

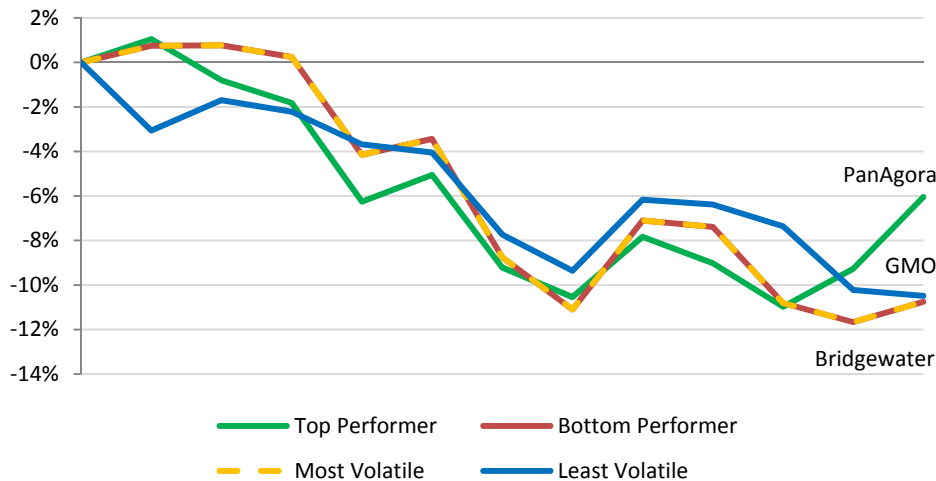
- In March, the HFRI Fund Weighted and Fund of Funds indices were up 1.8% and 1.1%, respectively. Disappointingly, hedge fund portfolios generally underperformed global markets thanks to negative alpha and de-risking, but there was a wide dispersion among strategies and managers.
- Headline HFR Equity (+3.4%) and Event Driven Strategies (+2.7%) saw a strong finish to the first quarter of 2016. Managers with net long biases dramatically outperformed more tightly-hedged peers, but both Equity and Event Driven managers have typically maintained defensive positioning with relatively low net and gross exposures.
- Relative Value (+2.3%) strategies, which generally perform best in low volatility markets, were able to capitalize on the market reversal. While fixed income and convertible bond arbitrage managers were in the black, long volatility market neutral managers were hurt by the decline in implied volatility.
- Global Macro (-1.4%) and Systematic Macro (-2.2%) were the worst performing strategies after two consecutive months of being the bright spots for hedge fund portfolios. Systematic global macro strategies were adversely affected by reversals of trends across all asset classes while discretionary macro funds were generally hurt by the sharp sell-off of the US Dollar.

Source – Cliffwater

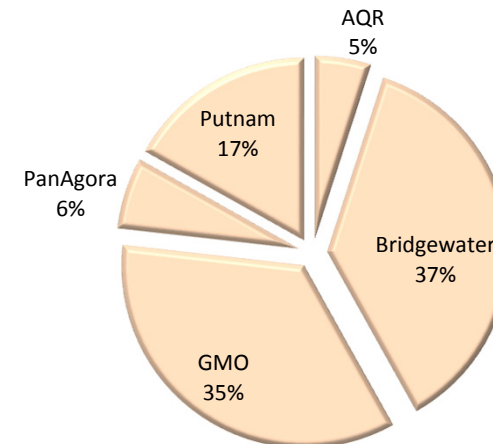
### Manager Risk vs Return (Sharpe) as at Mar. 2016



### Twelve Month Compounded Performance as at Mar. 2016



### Exposure by Manager as at Mar. 2016



## Data as at March 2016 Natural Resources Overview

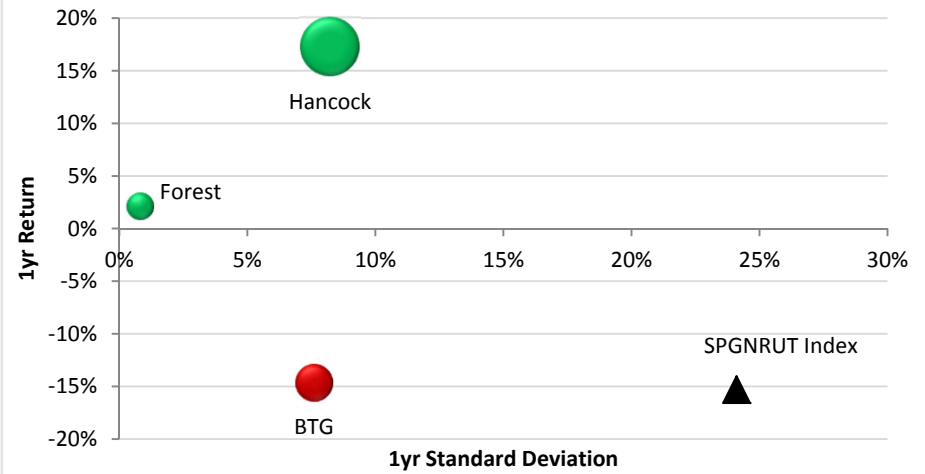


### Commentary

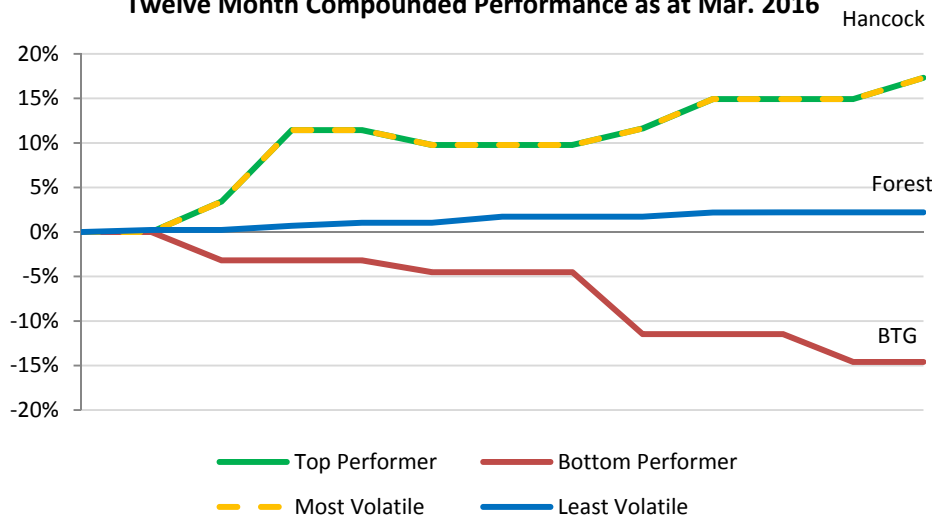
- Gains in precious metals and other subsectors eclipsed losses in energy, where the volatility was particularly pronounced. Natural gas prices (-21.8% total return in the index) fell to a 17-year low before recovering modestly as inventories climbed to 52% above their five-year average due to warmer weather resulting in much lower-than-expected withdrawals. Crude oil prices initially declined sharply on economic concerns and near-record inventories, but dramatically pared those losses on the improved economic data and on the hope that oil exporters would soon agree to production ceilings. The upcoming Organization of Petroleum Exporting Countries (OPEC) and non-OPEC meeting helped North Sea Brent crude (-0.5%) regain its premium over West Texas Intermediate (-11.6%), as did total U.S. petroleum and Cushing, OK inventories reaching new record levels. Surplus conditions also depressed gasoline prices (-11.8%), which declined despite strong demand stemming from an all-time high for U.S. vehicle miles driven.
- Precious metals rose as investors sought safe havens amid elevated stock market volatility and increased prospects for negative interest rates. Gold (16.4%) climbed to its highest level in more than a year, with investor inflows into gold exchange-traded funds persistent throughout the quarter. Silver (11.9%) followed in gold's slipstream, though likely lagged due to somewhat soft industrial demand. Base metals were mixed. Zinc (12.3%) and copper (2.1%) benefited from improved economic data from China and the government signaling that it would not sacrifice the country's growth when implementing structural reforms. Aluminum (-0.2%) and nickel (-4.2%) trailed, with those markets remaining amply supplied.

*Source – Cohen and Steers*

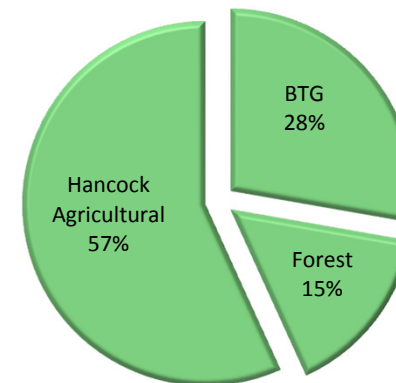
### Manager Risk vs Return (Sharpe) as at Mar. 2016



### Twelve Month Compounded Performance as at Mar. 2016



### Exposure by Manager as at Mar. 2016

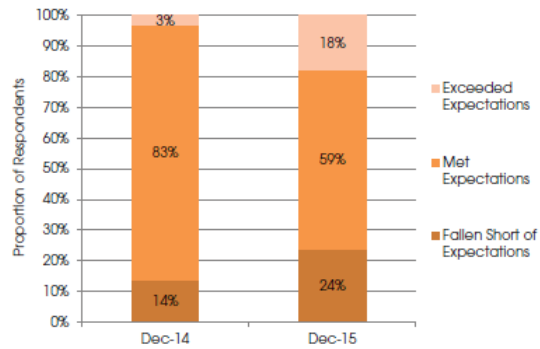


# Data as at March 2016 Infrastructure Overview



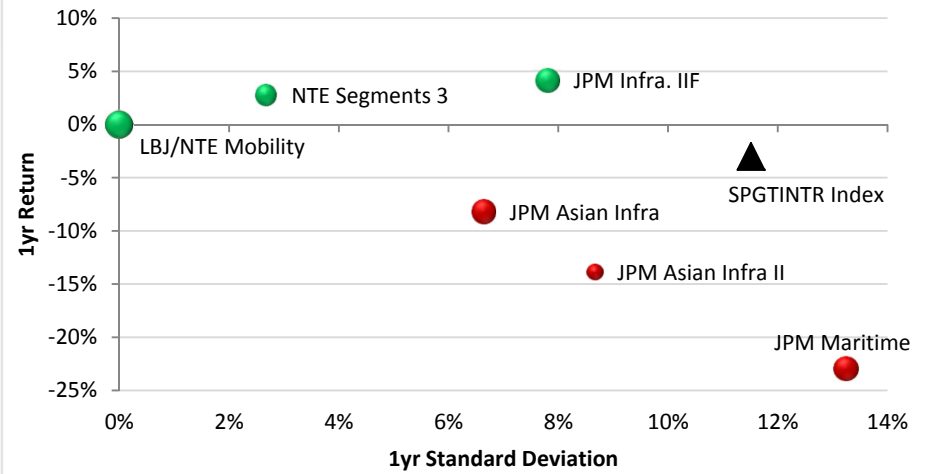
### Commentary

- The below chart shows that over three-quarters of surveyed institutional investors felt the performance of their infrastructure fund investments had met or exceeded expectations over 2015. This is encouraging and demonstrates that most investors appear satisfied with the performance delivered by the asset class. Notably, the proportion of investors that thought performance exceeded their expectations over the past 12 months increased from 3% in 2014 to 18% in 2015. However, almost a quarter of respondents felt their investments had fallen short of expectations, an increase from the 14% that stated the same the previous year.

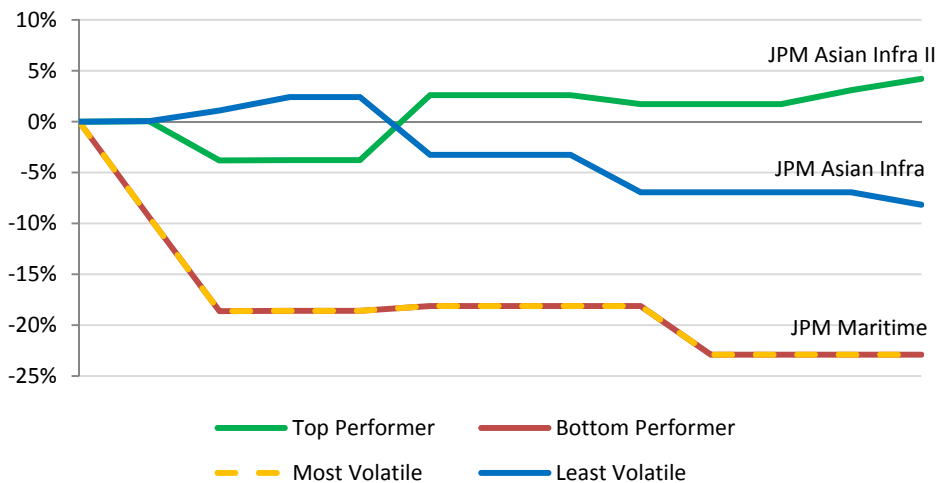


Source – Preqin

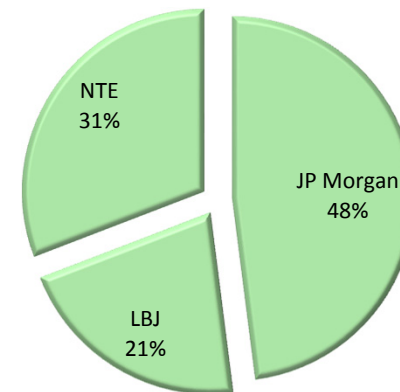
### Manager Risk vs Return (Sharpe) as at Mar. 2016



### Twelve Month Compounded Performance as at Mar. 2016



### Exposure by Manager as at Mar. 2016



## Data as at March 2016 Real Estate Overview

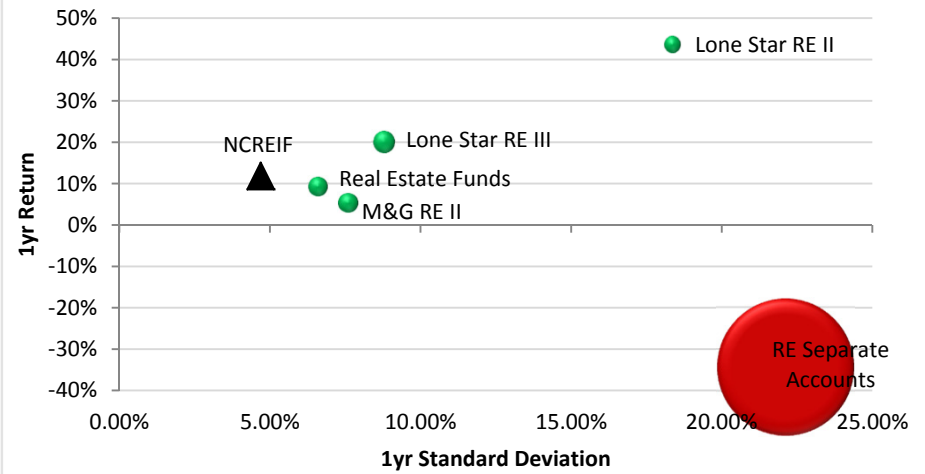


### Commentary

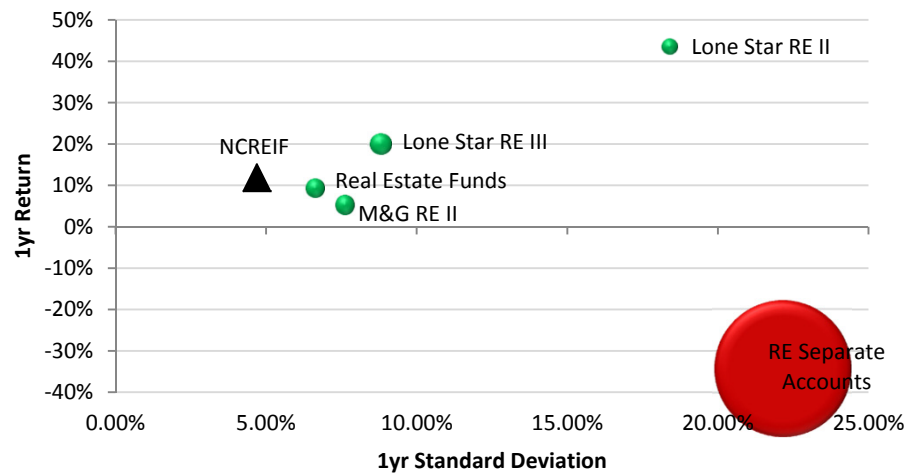
- U.S. REITs advanced in the first quarter, a challenging period for stocks broadly. The first half of the quarter saw elevated risk aversion, with markets tumbling amid declining oil prices and lackluster economic data from the U.S., China and Europe. As oil stabilized and U.S. data firmed, these trends reversed, aided by favorable policies adopted by several central banks.
- REITs outpaced the wider U.S. stock market, as the Federal Reserve took a more dovish stance toward interest-rate hikes and as commercial real estate fundamentals remained generally healthy. Returns were positive for nearly all property types. Free-standing retail REITs (18.7% total return) were a positive standout. With stable long-term cash flows, the group benefited from a decline in bond yields for the quarter. Self storage companies (10.8%) also outperformed amid steady demand growth and very little new supply.
- Shopping center REITs (8.0%), which are generally anchored by non-discretionary grocery stores and bargain-priced retailers, performed well in an uncertain economic environment. Regional malls (5.7%), which have experienced softer consumption trends, were in line with the broader REIT market. However, mall landlord Rouse Properties rose nearly 30% on an unsolicited takeout offer from Canada's Brookfield Asset Management

*Source – Cohen and Steers*

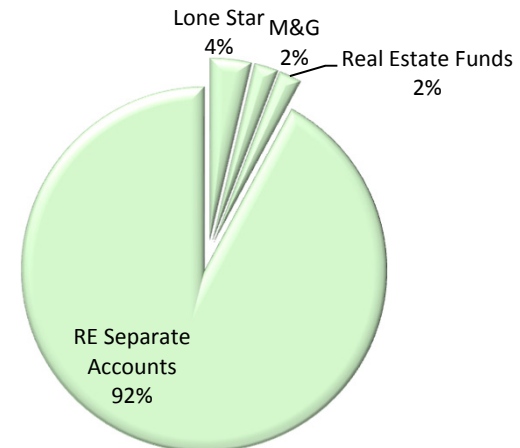
### Manager Risk vs Return (Sharpe) as at Mar. 2016



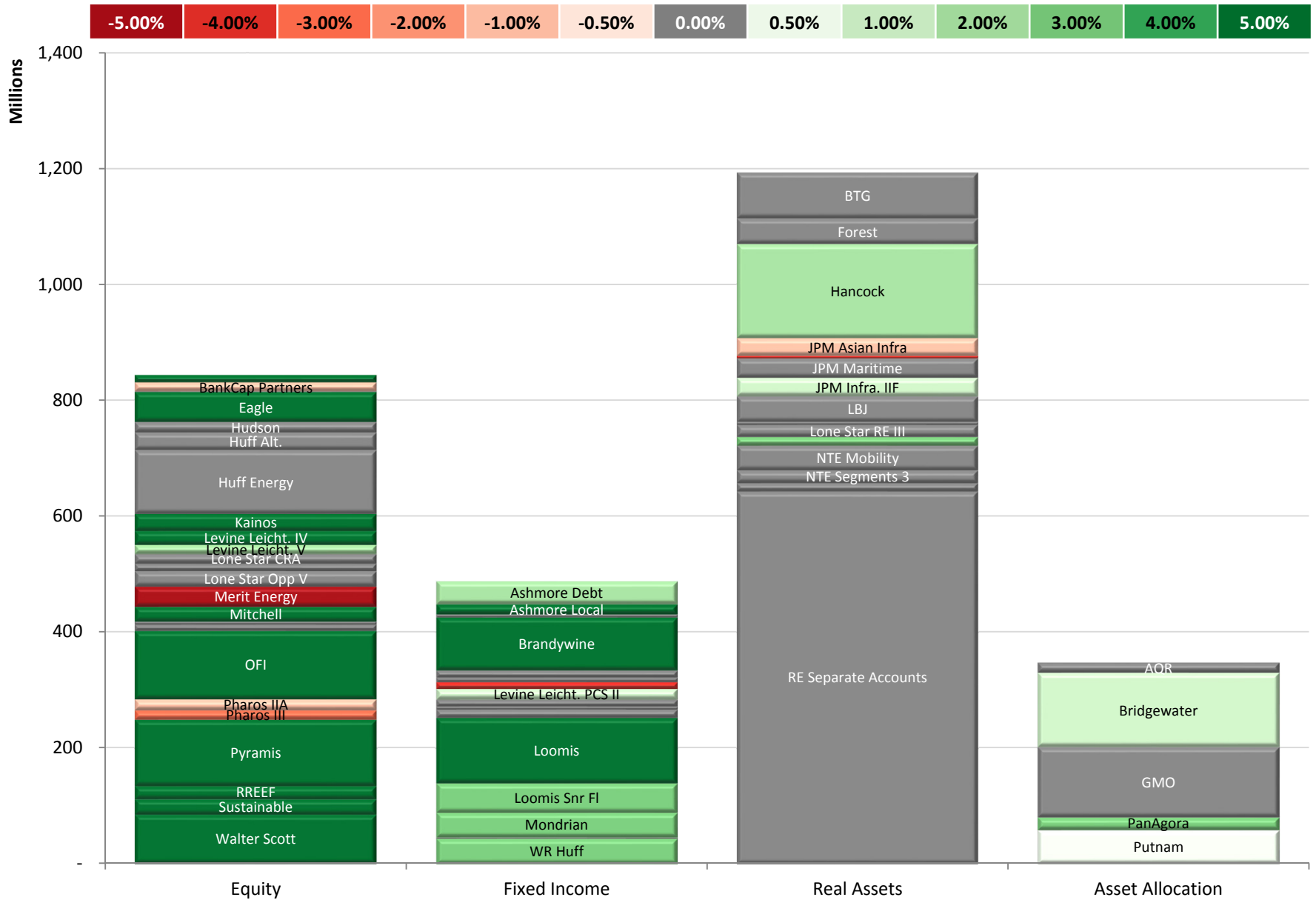
### Manager Risk vs Return (Sharpe) as at Mar. 2016



### Exposure by Manager as at Mar. 2016

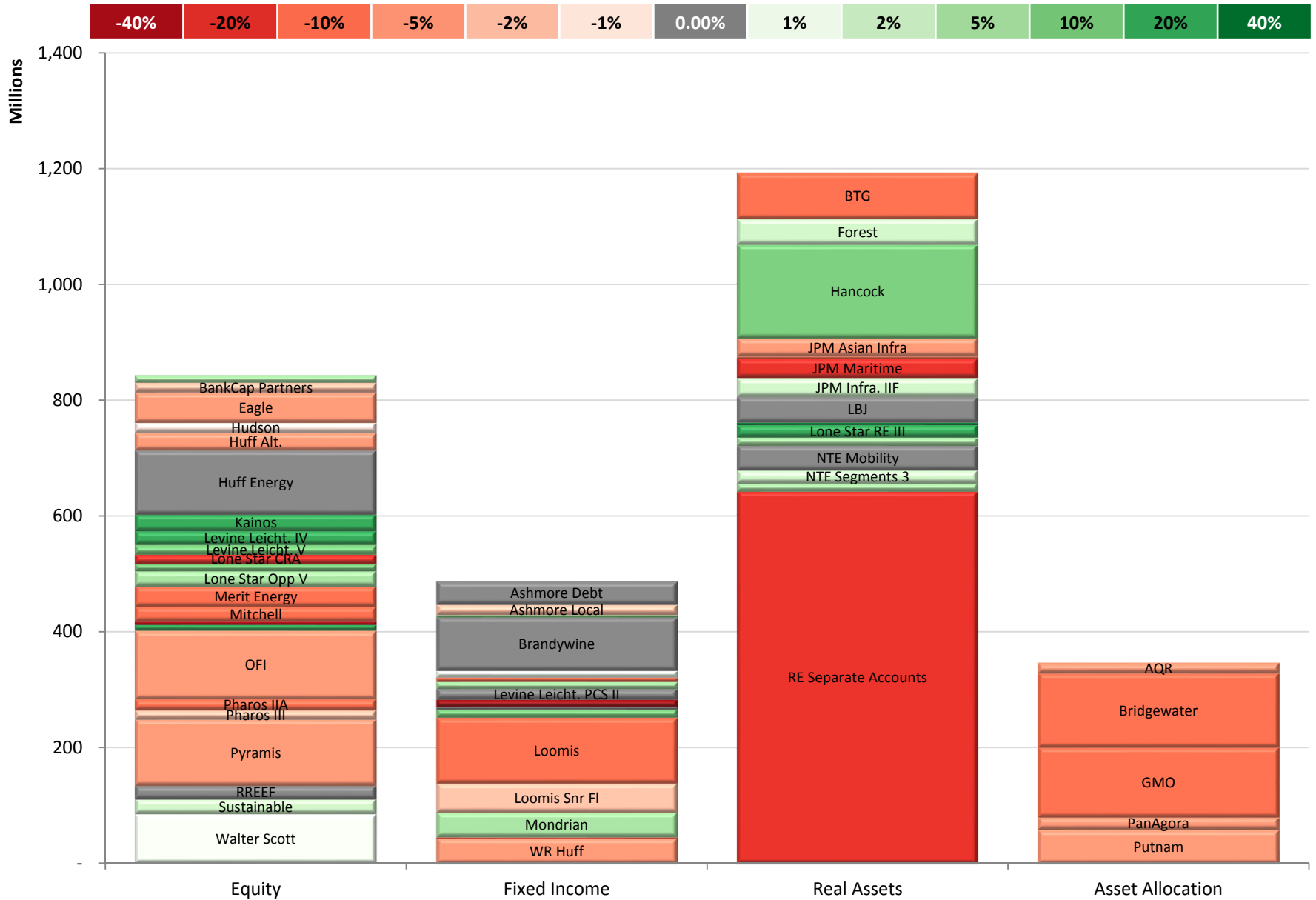


# Data as at March 2016 One Month Performance Heat Map



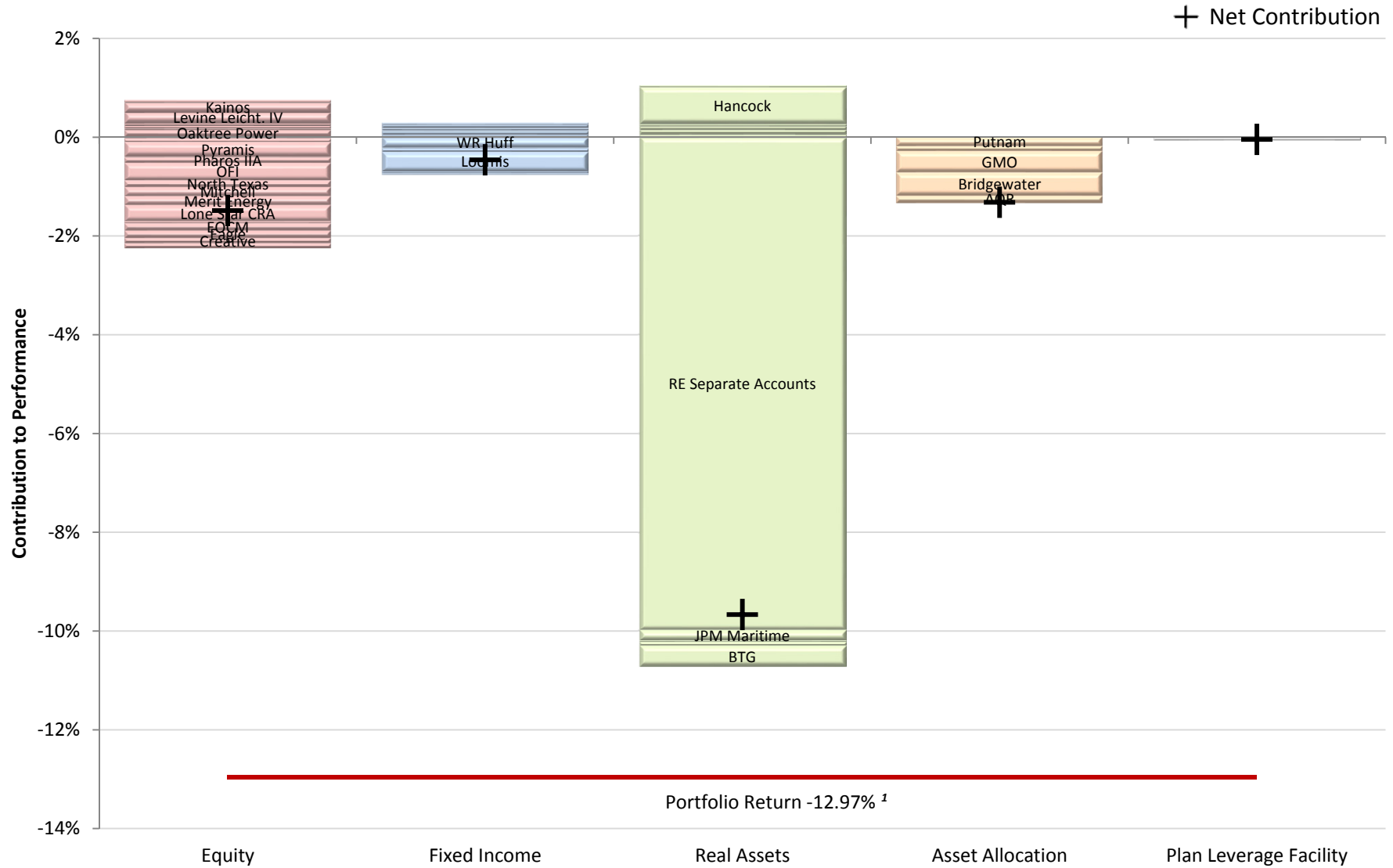
\*Private assets only report on a quarterly basis therefore the one month return is often unchanged..

## Data as at March 2016 Twelve Month Performance Heat Map





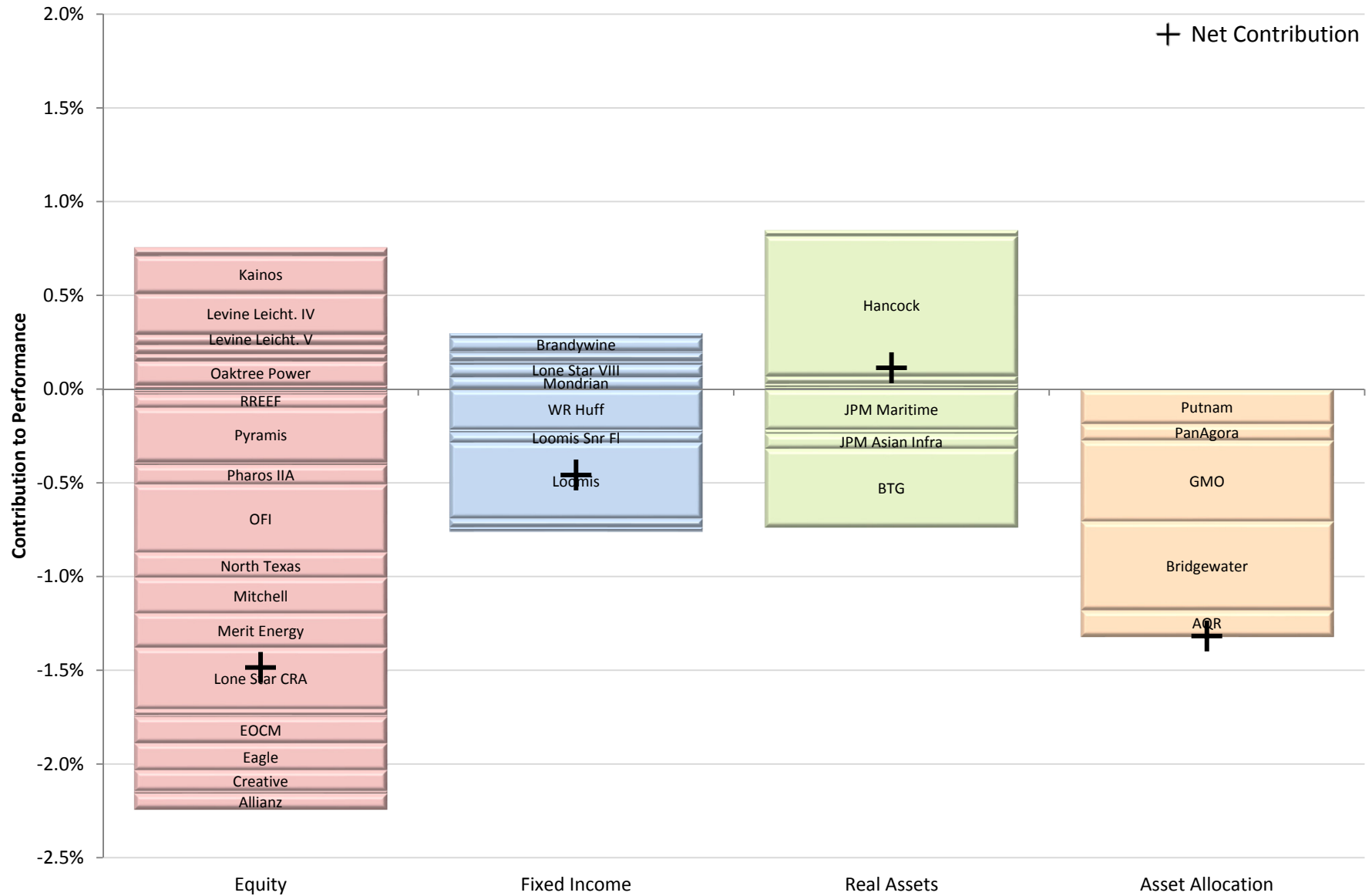
## Data as at March 2016 Twelve Month Contribution to Performance



<sup>1</sup> Approximately two-thirds of the one year loss relates to the lagged returns from Q4 2014 for private investments. These losses were reflected in the 2014 CAFR and 1/1/15 actuarial valuation

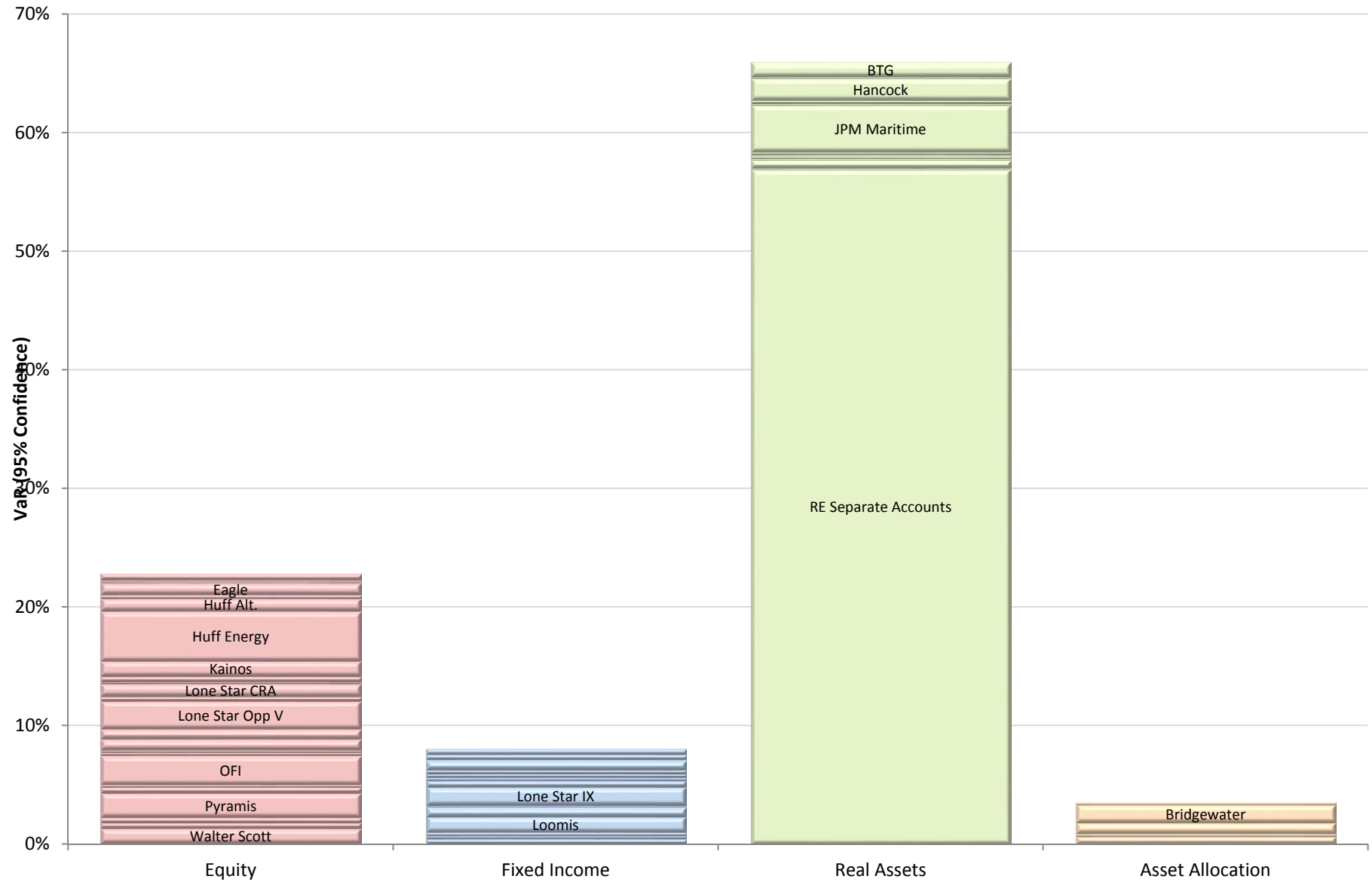
\* Returns presented are calculated using custodian bank month-end source data and values. The returns shown here will differ from actuary calculated returns and returns presented by NEPC.

## Data as at March 2016 Twelve Month Contribution to Performance excluding Real Estate



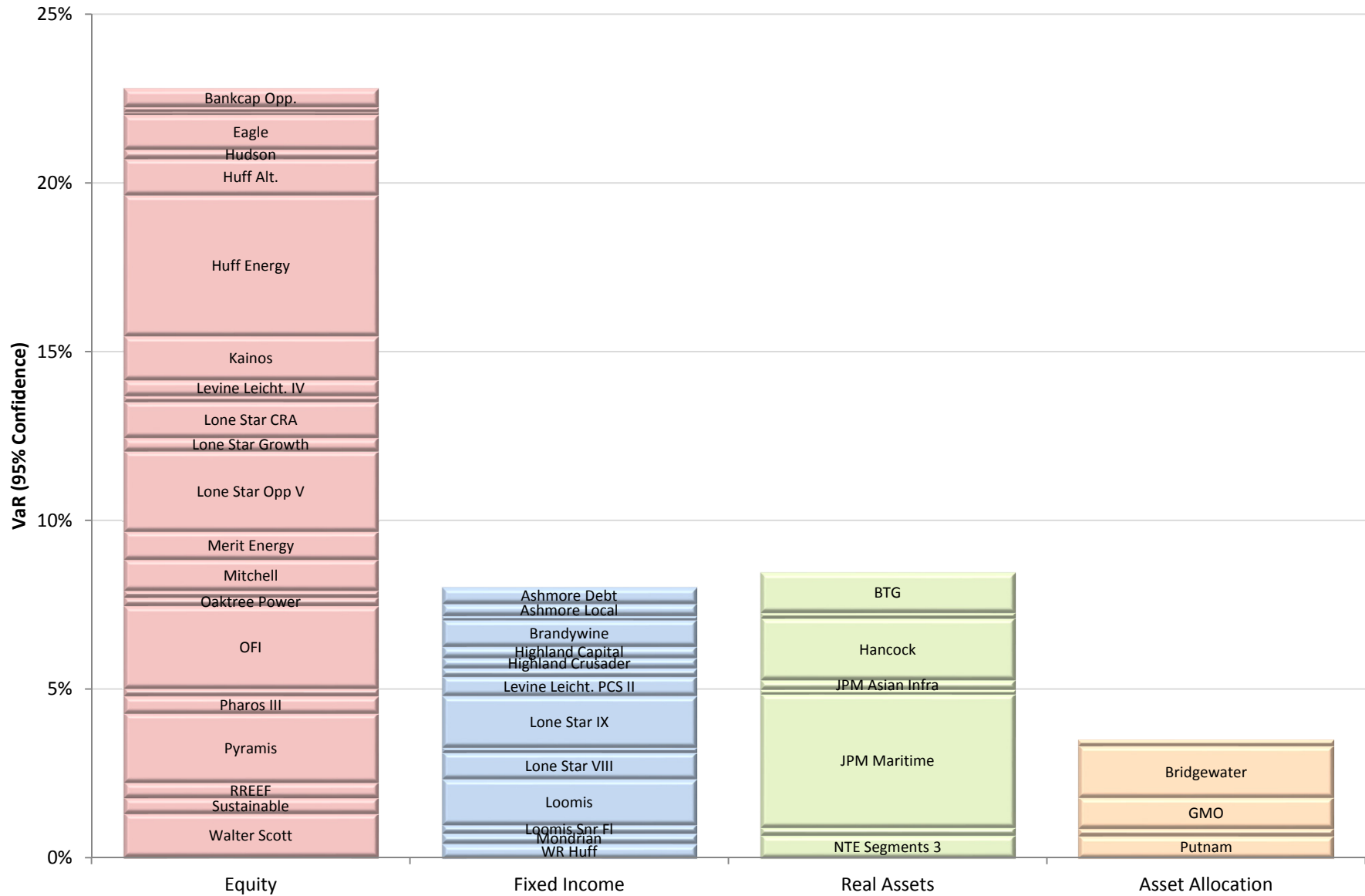
\* Returns presented are calculated using custodian bank month-end source data and values. The returns shown here will differ from actuary calculated returns and returns presented by NEPC.

**Data as at March 2016**  
**Five Year Contribution to Risk**



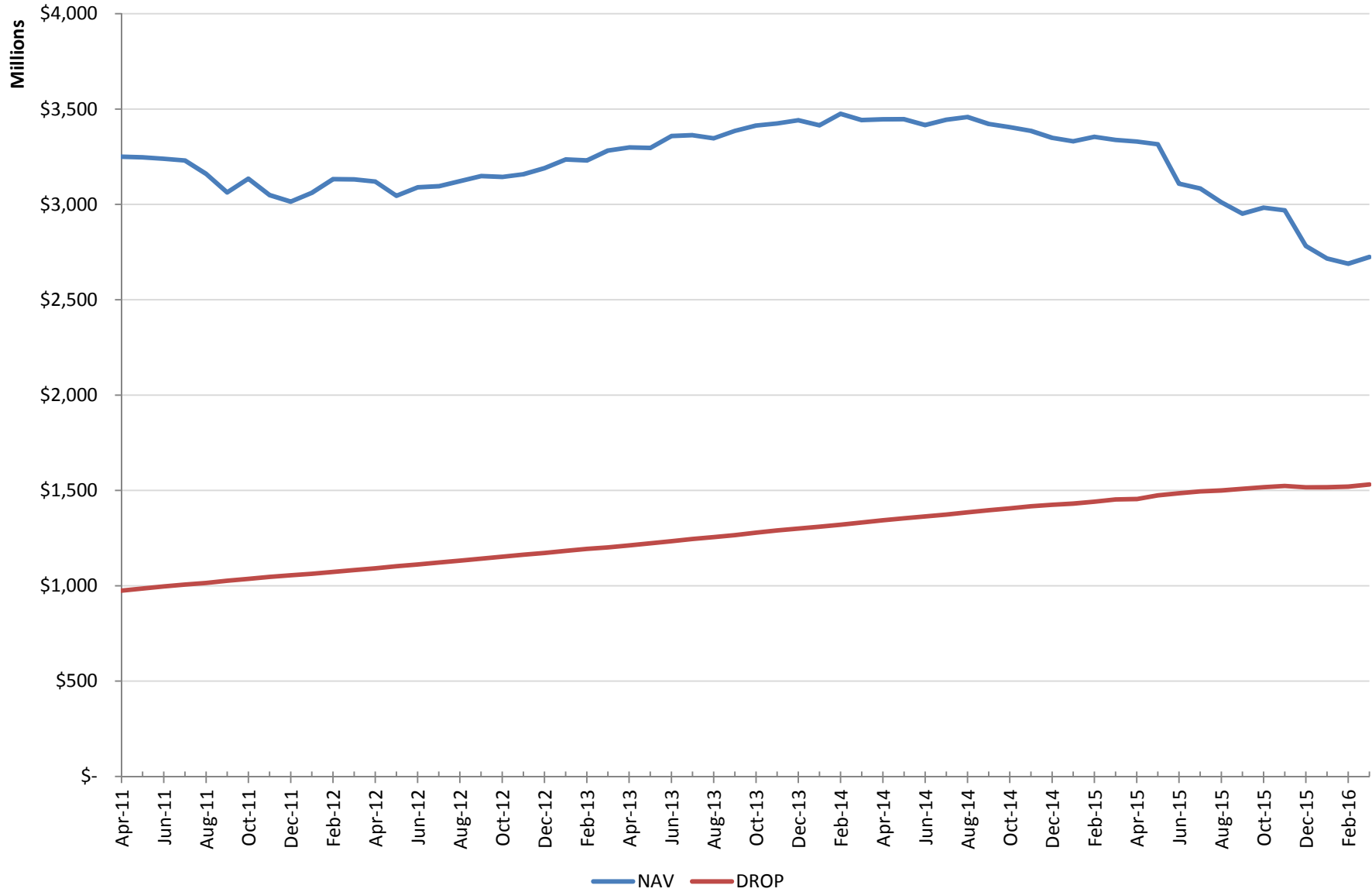
\* VaR is expressed, on a position basis, as a percentage of the total portfolio VaR.

**Data as at March 2016**  
**Five Year Contribution to Risk**  
**excluding Real Estate**



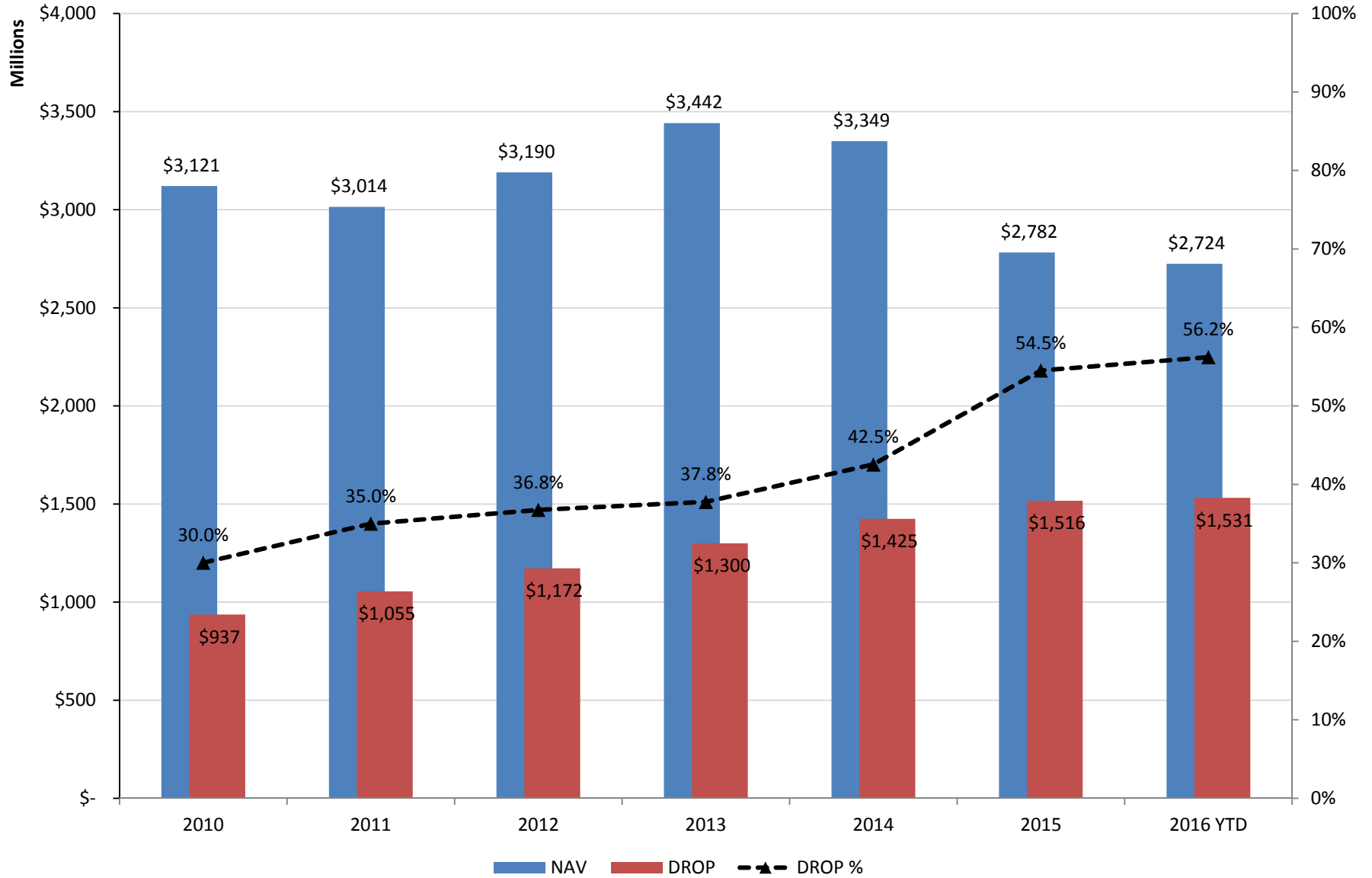
\* VaR is expressed, on a position basis, as a percentage of the total portfolio VaR.

# Data as at March 2016 Monthly NAV & Drop Balances



\*On a rolling five year basis.

**Data as at March 2016**  
**DROP as % of NAV**



Investment Oversight

As at 30th April 2016

Dallas Police & Fire Pension System

Data as at March 2016  
 Manager Overview



Fund	Inception Date	Current Exposure	Net Allocation (%)	1M	3M	YTD	1yr	2yr	3yr	5yr
<b>Portfolio</b>	<b>Jun 1996</b>	<b>\$ 2,724,167,292</b>		<b>2.04%</b>	<b>0.09%</b>	<b>0.09%</b>	<b>-12.97%<sup>1</sup></b>	<b>-6.03%</b>	<b>-2.68%</b>	<b>0.43%</b>
<b>Plan Leverage Facility</b>	<b>Mar 2014</b>	<b>\$ (203,451,513)</b>		<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.46%</b>	<b>1.57%</b>	<b>n/a</b>	<b>n/a</b>
<b>EQUITY</b>		<b>\$ 843,270,656</b>	<b>30.96%</b>	<b>3.46%</b>	<b>-0.62%</b>	<b>-0.62%</b>	<b>-4.53%</b>	<b>-3.04%</b>	<b>0.50%</b>	<b>2.84%</b>
<b>Global Equity</b>	<b>Jul 2006</b>	<b>\$ 443,529,728</b>	<b>16.28%</b>	<b>7.31%</b>	<b>-0.92%</b>	<b>-0.92%</b>	<b>-5.89%</b>	<b>-0.81%</b>	<b>4.84%</b>	<b>4.64%</b>
<i>MSCI ACWI</i>				<i>7.41%</i>	<i>0.24%</i>	<i>0.24%</i>	<i>-4.34%</i>	<i>0.42%</i>	<i>5.54%</i>	<i>5.22%</i>
Allianz EcoTrends	Nov 2008	\$ -	0.00%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Eagle Asset Management	Feb 2005	\$ 51,768,252	1.90%	6.93%	0.23%	0.23%	-5.51%	2.52%	8.42%	7.40%
Mitchell Group	Oct 2001	\$ 25,420,375	0.93%	17.76%	6.02%	6.02%	-19.89%	-18.89%	-8.40%	-6.01%
OFI Global Institutional	Oct 2007	\$ 118,060,375	4.33%	5.83%	-6.54%	-6.54%	-9.05%	-0.20%	6.27%	6.45%
Pyramis (Fidelity)	Mar 2002	\$ 114,286,611	4.20%	6.99%	-1.13%	-1.13%	-5.38%	0.87%	6.49%	5.85%
RREEF	Feb 1999	\$ 22,833,791	0.84%	8.87%	5.52%	5.52%	0.51%	8.25%	5.97%	8.04%
Sustainable Asset Management	Nov 2008	\$ 26,480,869	0.97%	8.28%	3.53%	3.53%	2.62%	1.40%	8.64%	6.85%
Walter Scott	Dec 2009	\$ 84,679,456	3.11%	6.52%	2.05%	2.05%	1.35%	3.19%	6.22%	7.67%
<b>Private Equity</b>	<b>Oct 2005</b>	<b>\$ 399,740,928</b>	<b>14.67%</b>	<b>-0.49%</b>	<b>-0.21%</b>	<b>-0.21%</b>	<b>-1.75%</b>	<b>-5.79%</b>	<b>-5.43%</b>	<b>0.81%</b>
<i>Russell 3000 + 3% (Rolling 3mo)</i>				<i>6.85%</i>	<i>0.42%</i>	<i>0.42%</i>	<i>-0.15%</i>	<i>6.47%</i>	<i>11.96%</i>	<i>11.89%</i>
BankCap Opportunity Fund	Aug 2013	\$ 12,667,300	0.46%	13.97%	13.97%	13.97%	9.58%	-17.54%	n/a	n/a
BankCap Partners	Feb 2007	\$ 15,478,370	0.57%	-1.25%	-1.25%	-1.25%	-2.66%	-0.24%	1.74%	-0.30%
Creative Attractions	Dec 2012	\$ 1,085,223	0.04%	0.00%	-2.28%	-2.28%	-77.78%	-74.27%	-59.67%	n/a
Hudson Clean Energy	Aug 2009	\$ 17,977,837	0.66%	0.00%	0.00%	0.00%	-1.61%	1.91%	-11.65%	-5.25%
Huff Alternative Fund	Jun 2001	\$ 30,390,586	1.12%	0.00%	0.00%	0.00%	-6.50%	-2.35%	4.42%	-7.79%
Huff Energy Fund LP	Dec 2005	\$ 110,127,486	4.04%	0.00%	0.00%	0.00%	-0.54%	-12.31%	-18.54%	-6.13%
Kainos Capital Partners	Jan 2014	\$ 29,331,955	1.08%	7.67%	7.67%	7.67%	33.32%	21.03%	n/a	n/a
Levine Leichtman Capital Partners IV	Apr 2008	\$ 23,980,164	0.88%	10.22%	10.87%	10.87%	33.41%	11.01%	13.50%	22.91%
Levine Leichtman Capital Partners V	Aug 2013	\$ 15,916,295	0.58%	2.12%	3.02%	3.02%	15.44%	16.40%	n/a	n/a
Lone Star CRA	Jul 2008	\$ 16,699,959	0.61%	0.00%	0.00%	0.00%	-39.63%	-11.24%	2.71%	19.50%
Lone Star Growth Capital	Dec 2006	\$ 12,707,831	0.47%	0.00%	0.00%	0.00%	14.82%	-10.61%	0.70%	6.42%
Lone Star Opportunities V	Jan 2012	\$ 26,715,246	0.98%	0.00%	0.18%	0.18%	8.77%	7.00%	37.74%	n/a
Merit Energy E, F, G, H	Oct 2004	\$ 34,950,515	1.28%	-16.78%	-16.78%	-16.78%	-13.80%	-16.38%	-7.05%	1.04%
North Texas Opportunity Fund	Aug 2000	\$ 5,046,915	0.19%	0.00%	0.00%	0.00%	-46.58%	-17.91%	-16.51%	-12.14%
Oaktree Power Opportunities Fund III	Apr 2011	\$ 10,842,420	0.40%	0.00%	5.42%	5.42%	32.74%	10.33%	15.90%	6.83%
Pharos IIA	Aug 2005	\$ 18,986,279	0.70%	-1.60%	-1.60%	-1.60%	-15.48%	-7.75%	-0.69%	4.31%
Pharos III	Dec 2012	\$ 16,228,843	0.60%	-3.71%	-3.71%	-3.71%	-2.63%	-4.02%	-12.66%	n/a
Yellowstone Capital	Sep 2008	\$ 607,703	0.02%	0.00%	0.00%	0.00%	-49.05%	-53.29%	-41.99%	-33.25%
<b>Cash &amp; Cash Equivalents</b>		<b>\$ 57,727,140</b>	<b>2.12%</b>	<b>0.10%</b>	<b>0.63%</b>	<b>0.63%</b>	<b>0.87%</b>	<b>0.37%</b>	<b>0.25%</b>	<b>-0.78%</b>

<sup>1</sup> Approximately two-thirds of the one year loss relates to the lagged returns from Q4 2014 for private investments. These losses were reflected in the 2014 CAFR and 1/1/15 actuarial valuation

Investment Oversight

As at 30th April 2016

Dallas Police & Fire Pension System

**Data as at March 2016**  
**Manager Overview (cont.)**



Fund	Inception Date	Current Exposure	Net Allocation (%)	1M	3M	YTD	1yr	2yr	3yr	5yr
<b>FIXED INCOME</b>	<b>Jul 2006</b>	<b>\$ 487,456,393</b>	<b>17.89%</b>	<b>3.74%</b>	<b>2.93%</b>	<b>2.93%</b>	<b>-3.05%</b>	<b>-1.05%</b>	<b>0.19%</b>	<b>2.87%</b>
<b>Bank Loans</b>		<b>\$ 50,529,116</b>	<b>1.85%</b>	<b>3.21%</b>	<b>0.59%</b>	<b>0.59%</b>	<b>-3.45%</b>	<b>-0.40%</b>	<b>n/a</b>	<b>n/a</b>
<i>S&amp;P Leveraged Loan Index</i>				3.15%	2.49%	2.49%	-2.14%	-0.17%	1.16%	2.78%
Loomis Sayles Sr. Floating Rate	Jan 2014	\$ 50,529,116	1.85%	3.21%	0.59%	0.59%	-3.45%	-0.40%	n/a	n/a
<b>EM Debt</b>		<b>\$ 57,173,762</b>	<b>2.10%</b>	<b>4.39%</b>	<b>1.12%</b>	<b>1.12%</b>	<b>-1.41%</b>	<b>-2.78%</b>	<b>-3.48%</b>	<b>1.04%</b>
<i>JPM EMBI + JPM GBI-EM</i>				6.15%	8.07%	8.07%	1.40%	-0.55%	-1.55%	2.46%
Ashmore EM Debt Fund	Feb 2005	\$ 39,564,631	1.45%	2.13%	-2.89%	-2.89%	-0.48%	-0.71%	-1.22%	2.94%
Ashmore EM Local CCY	Mar 2011	\$ 17,609,131	0.65%	9.81%	11.34%	11.34%	-3.39%	-6.95%	-7.93%	-2.71%
<b>Global Bonds</b>		<b>\$ 134,175,349</b>	<b>4.93%</b>	<b>4.55%</b>	<b>7.22%</b>	<b>7.22%</b>	<b>2.45%</b>	<b>0.78%</b>	<b>0.62%</b>	<b>2.55%</b>
<i>Barclays Global Aggregate</i>				1.33%	4.48%	4.48%	3.17%	-0.31%	0.42%	1.53%
Brandywine	Oct 2004	\$ 91,476,777	3.36%	5.07%	7.65%	7.65%	-0.27%	0.09%	0.02%	3.46%
Mondrian Investment Partners	Oct 2003	\$ 42,698,572	1.57%	3.46%	6.30%	6.30%	5.31%	1.40%	1.19%	1.54%
<b>High Yield</b>		<b>\$ 156,862,330</b>	<b>5.76%</b>	<b>5.39%</b>	<b>2.63%</b>	<b>2.63%</b>	<b>-9.98%</b>	<b>-5.29%</b>	<b>-0.96%</b>	<b>2.49%</b>
<i>Barclays Global HY</i>				4.44%	3.35%	3.35%	-3.69%	-0.89%	1.84%	4.93%
Loomis Sayles	Oct 1998	\$ 112,883,227	4.14%	5.95%	2.36%	2.36%	-10.50%	-5.03%	-0.11%	2.84%
W.R. Huff High Yield	Jun 1996	\$ 43,979,103	1.61%	3.99%	2.81%	2.81%	-9.02%	-5.63%	-2.21%	1.81%
<b>Private Debt</b>		<b>\$ 88,715,836</b>	<b>3.26%</b>	<b>-0.40%</b>	<b>0.09%</b>	<b>0.09%</b>	<b>3.38%</b>	<b>6.19%</b>	<b>3.89%</b>	<b>5.16%</b>
<i>Barclays Global HY + 2% (Rolling 3mo)</i>				4.44%	3.35%	3.35%	-2.24%	0.85%	3.71%	6.92%
Ashmore GSSF IV	Oct 2007	\$ 5,004,248	0.18%	0.12%	14.65%	14.65%	17.60%	-1.84%	-6.19%	-10.54%
Highland Capital Management	Jan 2007	\$ 12,431,871	0.46%	0.00%	0.00%	0.00%	1.23%	0.03%	8.52%	11.90%
Highland Crusader Fund	Jul 2003	\$ 7,785,665	0.29%	0.15%	-0.93%	-0.93%	-15.11%	-6.31%	-3.45%	11.07%
Levine Leichtman Capital Partners Deep Value	Oct 2006	\$ 11,637,925	0.43%	-4.83%	-4.37%	-4.37%	7.54%	16.31%	-4.00%	1.28%
Levine Leichtman Capital Partners PCS II	Feb 2012	\$ 18,479,999	0.68%	1.21%	1.86%	1.86%	0.23%	-0.85%	3.20%	n/a
Lone Star Fund IX, LP	Apr 2015	\$ 11,965,378	0.44%	0.02%	1.75%	1.75%	-73.84%	n/a	n/a	n/a
Lone Star Fund VII, LP	Jul 2011	\$ 4,835,350	0.18%	0.00%	-4.41%	-4.41%	-0.12%	19.12%	54.28%	n/a
Lone Star Fund VIII, LP	Jun 2013	\$ 14,602,505	0.54%	0.00%	-0.39%	-0.39%	14.72%	29.74%	n/a	n/a
Oaktree Fund IV & 2x Loan Fund	Jan 2002	\$ 1,972,896	0.07%	0.00%	-8.57%	-8.57%	-20.72%	-11.23%	-5.78%	-2.22%
<b>ASSET ALLOCATION</b>	<b>Jul 2007</b>	<b>\$ 345,826,691</b>	<b>12.69%</b>	<b>1.37%</b>	<b>-6.44%</b>	<b>-6.44%</b>	<b>-19.29%</b>	<b>-2.11%</b>	<b>0.72%</b>	<b>6.32%</b>
<b>GTAA</b>		<b>\$ 120,690,437</b>	<b>4.43%</b>	<b>-0.30%</b>	<b>-4.38%</b>	<b>-4.38%</b>	<b>-10.49%</b>	<b>-1.28%</b>	<b>0.46%</b>	<b>1.39%</b>
<i>60% NDUEACWF / 40% Barc Global Agg</i>				4.98%	2.03%	2.03%	-1.13%	0.30%	3.61%	3.93%
GMO	Sep 2007	\$ 120,690,437	4.43%	-0.30%	-4.38%	-4.38%	-10.49%	-2.44%	0.42%	3.35%
<b>Risk Parity</b>		<b>\$ 225,136,254</b>	<b>8.26%</b>	<b>1.67%</b>	<b>-2.11%</b>	<b>-2.11%</b>	<b>-9.41%</b>	<b>-0.49%</b>	<b>0.66%</b>	<b>5.21%</b>
<i>60% NDUEACWF / 40% Barc Global Agg</i>				4.98%	2.03%	2.03%	-1.13%	0.30%	3.61%	3.93%
AQR	Oct 2013	\$ 17,226,120	0.63%	3.00%	0.15%	0.15%	-9.29%	-2.91%	n/a	n/a
Bridgewater	Sep 2007	\$ 127,600,634	4.68%	1.03%	-3.64%	-3.64%	-10.75%	0.04%	0.76%	6.07%
PanAgora	Nov 2013	\$ 21,877,809	0.80%	3.56%	3.27%	3.27%	-6.04%	3.52%	n/a	n/a
Putnam	Dec 2009	\$ 58,431,691	2.14%	0.60%	-4.43%	-4.43%	-9.33%	-3.04%	-0.33%	2.46%

\* P&F Holdings returns are based on assets transferred into the account. Write-downs and write-ups have contributed to exaggerated performance.

\*\* "Real Estate Funds" includes LSF III – VI, LSREF, Hearthstone and Olympus funds.



## Data as at March 2016 Manager Overview (cont.)



Fund	Inception Date	Current Exposure	Net Allocation (%)	1M	3M	YTD	1yr	2yr	3yr	5yr
<b>REAL ASSETS</b>	Mar 2015	\$ 1,193,337,924	43.81%	0.41%	0.40%	0.40%	-21.35%	-10.49%	-6.70%	-3.07%
<b>Natural Resources</b>	Apr 2015	\$ 285,864,673	10.49%	1.18%	0.16%	0.16%	4.28%	8.38%	8.69%	7.15%
<i>S&amp;P Global Nat. Res. (Rolling 3mo)</i>				9.70%	9.11%	9.11%	-15.30%	-13.92%	-8.78%	-8.69%
BTG Pactual Asset Management	Oct 2006	\$ 79,356,793	2.91%	0.00%	-3.53%	-3.53%	-14.60%	-5.52%	-7.67%	-6.52%
Forest Investment Associates	Jan 1992	\$ 44,240,892	1.62%	0.00%	0.02%	0.02%	2.21%	6.06%	5.74%	4.10%
Hancock Agricultural	Dec 2002	\$ 162,266,988	5.96%	2.08%	2.08%	2.08%	17.32%	18.60%	21.03%	18.05%
<b>Infrastructure</b>	Jul 2012	\$ 209,436,749	7.69%	-0.14%	0.07%	0.07%	-4.38%	-1.51%	0.67%	0.88%
<i>S&amp;P Global Infra (Rolling 3mo)</i>				8.47%	8.67%	8.67%	-3.00%	0.79%	5.89%	5.78%
JP Morgan Asian Infrastructure	Aug 2008	\$ 30,449,363	1.12%	-1.32%	-1.32%	-1.32%	-8.16%	-2.87%	-2.06%	1.61%
JP Morgan Asian Infrastructure II	Mar 2014	\$ 4,642,725	0.17%	-4.44%	-4.44%	-4.44%	-13.84%	-10.51%	n/a	n/a
JP Morgan Global Maritime	Jun 2010	\$ 33,334,395	1.22%	0.00%	0.00%	0.00%	-22.90%	-3.58%	18.54%	-80.86%
JP Morgan Infrastructure IIF	Oct 2007	\$ 32,054,032	1.18%	1.08%	2.44%	2.44%	4.20%	1.60%	2.63%	4.63%
LBJ Infrastructure Group Holdings	Jun 2010	\$ 44,346,035	1.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
NTE Mobility Partners	Dec 2009	\$ 42,625,545	1.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
NTE Segments 3	Sep 2013	\$ 21,984,654	0.81%	0.00%	0.00%	0.00%	2.79%	1.80%	n/a	n/a
<b>Real Estate</b>	Mar 1985	\$ 698,036,502	25.62%	0.26%	0.59%	0.59%	-31.92%	-17.99%	-12.89%	-7.12%
<i>NCREIF Property Index</i>				2.21%	2.21%	2.21%	11.84%	12.28%	11.91%	11.93%
Lone Star RE II	Sep 2011	\$ 4,649,041	0.17%	0.00%	4.31%	4.31%	43.75%	53.27%	40.98%	n/a
Lone Star RE III	May 2014	\$ 21,125,156	0.78%	0.00%	5.13%	5.13%	20.11%	n/a	n/a	n/a
M&G Real Estate Debt Fund II, LP	Dec 2013	\$ 14,962,464	0.55%	3.14%	-0.71%	-0.71%	5.36%	1.05%	n/a	n/a
RE Separate Accounts		\$ 643,013,994	23.60%	0.21%	0.43%	0.43%	-34.22%	-20.94%	-14.59%	-8.87%
Real Estate Funds	Jan 1999	\$ 14,285,848	0.52%	0.00%	0.65%	0.65%	9.45%	4.66%	5.86%	4.53%

## Data as at March 2016

### Appendix I – Stress Test Scenarios, Proxies, Policy Composition



#### Stress Test Scenarios

Scenario/Stress	Calculation Period	Description
Debt Ceiling Crisis & Downgrade (2011)	07/22/2011 - 08/08/2011	Debt ceiling crisis that led to USA credit downgrade. This stress scenario describes a 17-day period starting from 7/22/2011 when the market began to react to debt ceiling impasse. 8/8/2011 is the first business day after the downgrade announcement.
Equities Down 10%	Stress Test	Global market factors down 10%.
Equities Up 10%	Stress Test	Global market factors up 10%.
Equity Markets Rebound (2009)	03/04/2009 - 06/01/2009	Global equity markets rebound following 2008 drawdown.
EUR down 10% vs. USD	Stress Test	FX rate shift. EUR weakens 10% to USD.
EUR up 10% vs. USD	Stress Test	FX rate shift. EUR strengthens 10% to USD.
Greek Financial Crisis (2015)	06/22/2015 - 07/08/2015	Athens resistance via referendum and ultimately agreement to rush through long-resisted economic reforms, imposed by its creditors, in a bid to stay in the Eurozone
Lehman Default (2008)	09/15/2008 - 10/14/2008	Month immediately following default of Lehman Brothers in 2008.
Libya Oil Shock (2011)	02/14/2011 - 02/23/2011	Civil war in Libya breaks out on March 15th 2011, causing oil prices to surge.
Oil Prices Drop (2010)	05/03/2010 - 05/20/2010	The price of oil drops 20% due to concerns over how European countries would reduce budget deficits in the wake of the European economic crisis.
Russian Financial Crisis (2008)	08/07/2008 - 10/06/2008	War with Georgia and rapidly declining oil prices raise fears of an economic recession within the region.

#### Stress Test Proxies

Sub-Asset Class	Proxy
Global Equity	iShares MSCI ACWI ETF
Private Equity	PowerShares Senior Loan Portfolio ETF
Global Bonds	SPDR Barclays Capital High Yield Bond ETF
High Yield	SPDR Barclays Capital High Yield Bond ETF
Bank Loans	SPDR Blackstone GSO Senior Loan ETF
EM Debt	WisdomTree Emerging Markets Local Debt Fund
Private Debt	iShares Floating Rate Bond ETF
Natural Resources	SPDR Barclays 1-3 Month T-Bill ETF
Infrastructure	SPDR Barclays 1-3 Month T-Bill ETF
Real Estate	iShares Mortgage Real Estate Capped ETF
Risk Parity	iShares Russell 2000 ETF
GTAA	iShares Russell 2000 ETF
Cash & Cash Equivalents	iShares 20+ Year Treasury Bond ETF

\*Proxies for stress tests are chosen based on correlation analysis of index returns to tradeable ETFs.

#### Policy Composition

Asset Class	Benchmark	Weight
Global Equity	MSCI ACWI	20%
EM Equity	MSCI EM Equity	5%
Private Equity	Russell 3000 + 3% (Rolling 3mo)	5%
Short-Term Core Bonds	Barclays UST 1-3 Year	2%
Global Bonds	Barclays Global Aggregate	3%
High Yield	Barclays Global HY	5%
Bank Loans	S&P Leveraged Loan Index	6%
Struc. Cred. & Abs. Ret.	50% HFRI FV FI ABS/50% HFRI FV FI Corp	6%
EM Debt	JPM EMBI + JPM GBI-EM	6%
Private Debt	Barclays Global HY + 2% (Rolling 3mo)	5%
Natural Resources	S&P Global Nat. Res. (Rolling 3mo)	5%
Infrastructure	S&P Global Infra (Rolling 3mo)	5%
Real Estate	NCREIF Property Index	12%
Liquid Real Assets	CPI + 5%	3%
Risk Parity	60% NDUEACWF / 40% Barc Global Agg	5%
GTAA	60% NDUEACWF / 40% Barc Global Agg	3%
Absolute Return	HFRX Abs Ret	2%
Cash & Cash Equivalents	90 Day T-Bill	2%

\*60/40 Portfolio is defined as 60% MSCI ACWI, 40% Barclays Global Aggregate.

**Attribution details**

Single period attribution uses arithmetic attribution per the Brinson Model

$$\text{Asset Allocation} = \sum_j (w_j^p - w_j^b) \times (r_j^b - r_{total}^b)$$

$$\text{Stock Selection} = \sum_j w_j^b \times (r_j^p - r_j^b)$$

$$\text{Interaction} = \sum_j (w_j^p - w_j^b) \times (r_j^p - r_j^b)$$

$$\text{Total Value Added} = (r_{total}^p - r_{total}^b)$$

where

$$\begin{aligned} w_j^p &= \text{Weight of Portfolio component } j \\ w_j^b &= \text{Weight of Benchmark component } j \\ r_j^p &= \text{Return of Portfolio component } j \\ r_j^b &= \text{Return of Benchmark component } j \\ r_{total}^p &= \text{Total Return of Portfolio} \\ r_{total}^b &= \text{Total Return of Benchmark} \end{aligned}$$

Multi period attribution is calculated using the Frongello model to produce the cumulative effects of attribution across multiple periods.

$$F_{itb} = G_{itb} \left( \prod_{j=1}^{t-1} (1 + R_j) \right) + \bar{R}_t \left( \sum_{j=1}^{t-1} F_{ijb} \right)$$

In the Frongello method, each original attribute ( $G_{itb}$ ) is scaled by the portfolio total return through the prior period ( $1+R_j$ ) and the current period return of the benchmark ( $\bar{R}_t$ ) compounds with the total return due to that attribute through the prior period ( $F_{ijb}$ )

\* For the one month attribution, the weights displayed on page 13 are the beginning weights for the period. For the Calendar YTD and One Year weights, they are the average of the beginning weights over the period

## Data as at March 2016

### Appendix III – Investment Terms & Performance Statistics



**Active Premium:** A measure of the investment’s annualized return minus the benchmark’s annualized return

**Alpha:** Return generated by the manager that is not explained by the returns of the benchmark. A measure of a fund’s performance beyond what its benchmark would predict

**Annual Return:** The annual rate at which an investment would have grown, if it had grown at a steady rate. Also called “Compound Annual Growth Rate” (CAGR), or the “Compound Rate of Return Annualized” (Compound RoR)

**Annual Volatility:** A statistical measure of the dispersion of returns around the average (mean) return. Often used as a measure of investment risk with a higher value indicating higher risk

**Arbitrage:** The simultaneous purchase and sale of an asset in order to profit from a difference in the price

**Beta:** A measure of the risk of the fund relative to the benchmark. Beta describes the sensitivity of the investment to benchmark movements where the benchmark is always assigned a beta of 1.0

**Calmar Ratio:** A return/risk ratio calculated over the last three year period as [annual compounded return / (Maximum Drawdown)]

**Capital Commitment:** Every investor in a private equity fund commits to investing a specified sum of money in the fund partnership over a specified period of time.

**Capital Distribution:** The returns that an investor in a private equity fund receives; the income and capital realized from investments less expenses and liabilities

**Carried Interest:** The share of profits that the fund manager is due once it has returned the cost of investment to investors

**Catch up:** A clause that allows the general partner to take, for a limited period of time, a greater share of the carried interest than would normally be allowed. This continues until the time when the carried interest allocation, as agreed in the limited partnership, has been reached.

**Clawback:** Ensures that a general partner does not receive more than its agreed percentage of carried interest over the life of the fund

**Correlation:** A measure between +1 and -1 that explains the degree to which the returns of the fund and a benchmark are related

**Down Capture:** Measures how much of the benchmark’s return the fund captures when the benchmark is negative

**Down Number:** The percentage of the time the fund was down when the benchmark was down

**Drawdown:** When a private equity firm has decided where it would like to invest, it will approach its own investors in order to draw down the money. The money will already have been pledged to the fund but this is the actual act of transferring the money so that it reaches the investment target

**Excess Kurtosis:** Measures the distribution of observed data around the mean with an emphasis on “outlier” data, both positive and negative

**Exit:** The means by which a fund is able to realize its investment in a company – by an initial public offering, a trade sale, selling to another private equity firm or a company buy-back

**Fundraising:** The process by which a private equity firm solicits financial commitments from limited partners for a fund

## Data as at March 2016

### Appendix III – Investment Terms & Performance Statistics (cont.)



**General Partner:** This can refer to the top-ranking partner(s) at a private equity firm as well as the firm managing the private equity fund

**Gross Exposure:** Aggregate of long and short investment positions in relation to the Net Asset Value (NAV)

**Holding Period:** The length of time that an investment is held

**Information Ratio:** The Active Premium divided by the Tracking Error. This measure explicitly relates the degree by which an investment has beaten the benchmark to the consistency by which the investment has beaten the benchmark

**Internal Rate of Return:** A time-weighted return expressed as a percentage that uses the present sum of cash drawdowns (money invested), the present value of distributions (money returned from investments) and the current value of unrealized investments and applies a discount

**Leverage:** Increasing exposure to markets (both long and short) by borrowing or the use of derivatives

**Limited Partnership:** The standard vehicle for investment in private equity funds

**Long Position:** Owning a security

**Management Fee:** The annual fee paid to the general partner

**Max Drawdown:** The largest percentage loss of Net Asset Value (NAV) as measured from peak-to-trough

**Net Exposure:** Difference between the long and short positions, representing the exposure to market fluctuations

**Preferred Return:** This is the minimum amount of return that is distributed to the limited partners until the time when the general partner is eligible to deduct carried interest

**Omega Ratio:** The weighted gain/loss ratio relative to the average monthly historical return; captures the effects of extreme returns and conveys the preference for positive volatility versus negative volatility

**Sharpe Ratio:** A return/risk ratio calculated as:  $[(\text{annual compounded return} - \text{risk-free rate}) / (\text{annual volatility of returns})]$

**Skewness:** A measure of the symmetry of return distribution, as compared with a normal (bell-shaped) distribution

**Sortino Ratio:** A return/risk ratio calculated as such:  $[(\text{annual compounded return} - \text{minimum acceptable return (MAR)}) / (\text{downside deviation of returns below MAR})]$ . This ratio was developed to differentiate between good (upside) and bad (downside) volatility

**Standard Deviation:** Measures the dispersal or uncertainty in a random variable (in this case, investment returns). It measures the degree of variation of returns around the mean (average) return

**Short Position:** Selling a security

**Tracking Error:** A measure of the unexplained portion of an investments performance relative to a benchmark

## Investment Oversight

As at 30th April 2016

Dallas Police & Fire Pension System

# Data as at March 2016 Appendix III – Investment Terms & Performance Statistics (cont.)



Up Capture: Measures the percentage of the benchmark's return the fund captures when the benchmark is positive

Up Number: The percentage of the time the fund was up when the benchmark was up

Value at Risk (VAR): The maximum loss that can be expected within a specified holding period with a specified confidence level