



Investment Oversight

As at 31st July 2016 (Preliminary)



D A L L A S
POLICE & FIRE
PENSION SYSTEM



Investment Oversight

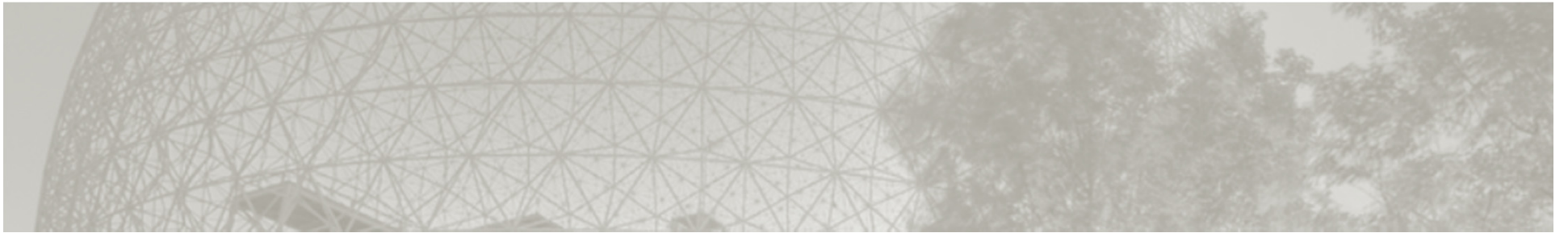
As at 31st July 2016

Dallas Police & Fire Pension System

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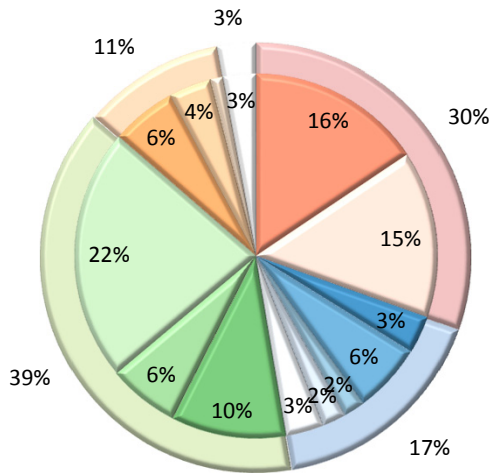


July 2016 Snapshot

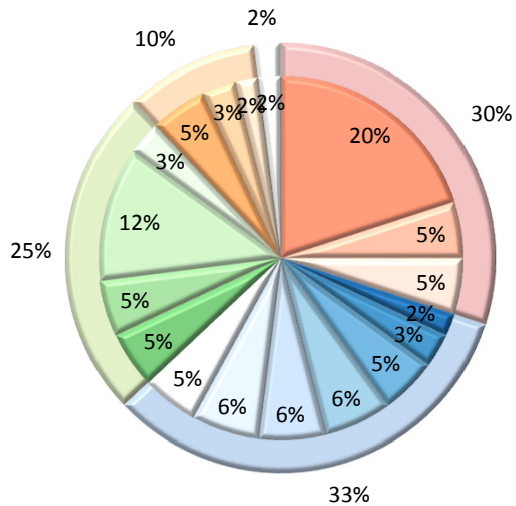
Preliminary July 2016 Snapshot Asset Allocation: Actual vs. Target



Gross Actual Allocation



Target Allocation



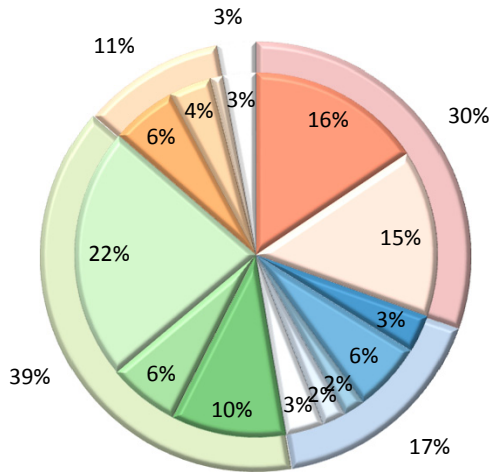
		Actual Allocation (\$)	Net Actual Allocation (%)	Gross Actual Allocation (%)	Target Allocation (%)	Target Range (%)
Equity	Global Equity	439,316,462	16.49%	15.61%	20%	10% - 23%
	EM Equity	0	0.00%	0.00%	5%	0% - 8%
	Private Equity	417,671,994	15.68%	14.84%	5%	4% - 15%
	Sub-Total	856,988,456	32.16%	30.45%	30%	
Fixed Income	Short-Term Core Bonds	0	0.00%	0.00%	2%	0% - 5%
	Global Bonds	93,899,335	3.52%	3.34%	3%	0% - 6%
	High Yield	173,868,099	6.53%	6.18%	5%	2% - 8%
	Bank Loans	53,878,976	2.02%	1.91%	6%	3% - 9%
	Structured Credit & Absolute Return	0	0.00%	0.00%	6%	0% - 9%
	EM Debt	57,694,593	2.17%	2.05%	6%	0% - 9%
	Private Debt	95,337,258	3.58%	3.39%	5%	2% - 7%
	Sub-Total	474,678,260	17.81%	16.87%	33%	
Real Assets	Infrastructure	179,543,526	6.74%	6.38%	5%	3% - 10%
	Natural Resources	287,426,174	10.79%	10.21%	5%	3% - 10%
	Real Estate	632,330,026	23.73%	22.47%	12%	10% - 25%
	Liquid Real Assets	0	0.00%	0.00%	3%	0% - 6%
	Sub-Total	1,099,299,726	41.26%	39.06%	25%	
Asset Allocation	Risk Parity	163,104,887	6.12%	5.80%	5%	2% - 8%
	GTAA	106,889,472	4.01%	3.80%	3%	0% - 6%
	Absolute Return	30,473,047	1.14%	1.08%	2%	0% - 5%
	Sub-Total	300,467,406	11.28%	10.68%	10%	
Cash & Cash Equivalents	83,124,643	3.12%	2.95%	2%	0% - 5%	
Gross Total		2,814,558,490	106%	100%	100%	
Plan Leverage Facility		(150,000,000)				
Net Total		2,664,558,490				

Preliminary
July 2016 Snapshot

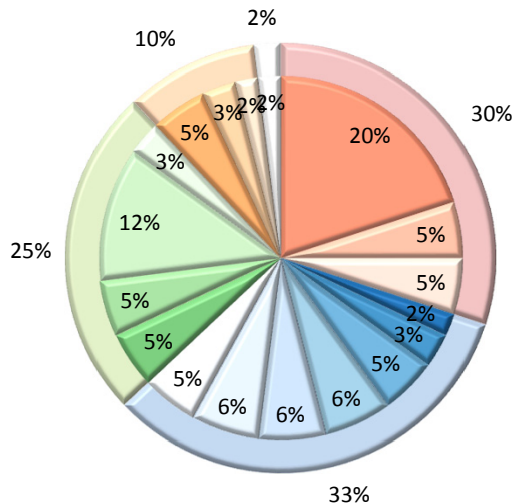


Asset Allocation: Actual vs. Target (cont.)

Gross Actual Allocation



Target Allocation



		Actual Allocation (\$)	Net Actual Allocation (%)	Gross Actual Allocation (%)	Target Allocation (%)	Target Range (%)
Liquid Assets						
Equity	Global Equity	439,316,462	16.49%	15.61%	20%	10% - 23%
	EM Equity	0	0.00%	0.00%	5%	0% - 8%
	Sub-Total	439,316,462	16.49%	15.61%	25%	
Fixed Income	Short-Term Core Bonds	0	0.00%	0.00%	2%	0% - 5%
	Global Bonds	93,899,335	3.52%	3.34%	3%	0% - 6%
	High Yield	173,868,099	6.53%	6.18%	5%	2% - 8%
	Bank Loans	53,878,976	2.02%	1.91%	6%	3% - 9%
	Structured Credit & Absolute Return	0	0.00%	0.00%	6%	0% - 9%
	EM Debt	57,694,593	2.17%	2.05%	6%	0% - 9%
	Sub-Total	379,341,002	14.24%	13.48%	28%	
Real Assets	Liquid Real Assets	0	0.00%	0.00%	3%	0% - 6%
	Sub-Total	0.00%	0.00%	0.00%	3%	
Asset Allocation	Risk Parity	163,104,887	6.12%	5.80%	5%	2% - 8%
	GTAA	106,889,472	4.01%	3.80%	3%	0% - 6%
	Absolute Return	30,473,047	1.14%	1.08%	2%	0% - 5%
	Sub-Total	300,467,406	11.28%	10.68%	10%	5% - 15%
Cash & Cash Equivalents		83,124,643	3.12%	2.95%	2%	0% - 5%
Liquid Assets Total		1,202,249,512	45.12%	42.72%	68%	

Private Assets						
Real Assets	Natural Resources	287,426,174	10.79%	10.21%	5%	3% - 10%
	Infrastructure	179,543,526	6.74%	6.38%	5%	3% - 10%
	Real Estate	632,330,026	23.73%	22.47%	12%	10% - 25%
	Sub-Total	1,099,299,726	41.26%	39.06%	22%	
Private Investments	Private Equity	417,671,994	15.68%	14.84%	5%	4% - 15%
	Private Debt	95,337,258	3.58%	3.39%	5%	2% - 7%
	Sub-Total	513,009,252	19.25%	18.23%	10%	
Private Assets Total		1,612,308,978	60.51%	57.28%	32%	

Gross Total	2,814,558,490	106%	100%	100%	
Plan Leverage Facility	(150,000,000)				
Net Total	2,664,558,490				

Preliminary
July 2016 Snapshot
Public Securities Performance – Equity



July 2016 Estimated Values					
Holding	End NAV	Return	Benchmark	Benchmark Return	Alpha
Eagle Asset Management	46,146,209	5.41%	Russell 2000	5.97%	-0.56%
Mitchell Group	28,747,087	-1.45%	Dow Jones Equal Weight US Oil & Gas	-3.24%	1.80%
OFI Global Institutional	122,714,667	6.47%	MSCI ACWI	4.31%	2.16%
Pyramis (Fidelity)	98,931,553	3.69%	MSCI ACWI	4.31%	-0.62%
RREEF	24,714,340	4.84%	FTSE EPRA/NAREIT	5.02%	-0.17%
Sustainable Asset Management	28,814,016	4.16%	MSCI ACWI	4.31%	-0.15%
Walter Scott	89,248,590	2.92%	MSCI ACWI	4.31%	-1.39%
Total	439,316,462	4.21%	Equity Policy Benchmark	4.55%	-0.34%

Year-To-Date Returns (Using July 2016 Estimated Values)					
Holding	End NAV	Return	Benchmark	Benchmark Return	Alpha
Eagle Asset Management	46,146,209	10.45%	Russell 2000	8.32%	2.13%
Mitchell Group	28,747,087	19.89%	Dow Jones Equal Weight US Oil & Gas	8.55%	11.34%
OFI Global Institutional	122,714,667	-2.87%	MSCI ACWI	5.59%	-8.46%
Pyramis (Fidelity)	98,931,553	3.38%	MSCI ACWI	5.59%	-2.21%
RREEF	24,714,340	14.21%	FTSE EPRA/NAREIT	14.33%	-0.12%
Sustainable Asset Management	28,814,016	12.65%	MSCI ACWI	5.59%	7.06%
Walter Scott	89,248,590	7.55%	MSCI ACWI	5.59%	1.96%
Total	439,316,462	5.12%	Equity Policy Benchmark	8.03%	-2.91%

One Year Returns (Using July 2016 Estimated Values)					
Holding	End NAV	Return	Benchmark	Benchmark Return	Alpha
Eagle Asset Management	46,146,209	2.97%	Russell 2000	0.00%	2.97%
Mitchell Group	28,747,087	2.30%	Dow Jones Equal Weight US Oil & Gas	-14.34%	16.63%
OFI Global Institutional	122,714,667	-10.15%	MSCI ACWI	-0.44%	-9.71%
Pyramis (Fidelity)	98,931,553	-3.18%	MSCI ACWI	-0.44%	-2.74%
RREEF	24,714,340	12.70%	FTSE EPRA/NAREIT	13.30%	-0.60%
Sustainable Asset Management	28,814,016	9.67%	MSCI ACWI	-0.44%	10.12%
Walter Scott	89,248,590	4.31%	MSCI ACWI	-0.44%	4.75%
Total	439,316,462	-1.00%	Equity Policy Benchmark	-1.18%	0.19%

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

Preliminary
July 2016 Snapshot
Public Securities Performance – Fixed Income



July 2016 Estimated Values					
Holding	End NAV	Return	Benchmark	Benchmark	Alpha
Ashmore EM Debt Fund	39,536,987	3.58%	JP Morgan EMBI Global Diversified	1.80%	1.78%
Ashmore EM Local CCY	18,157,606	0.70%	JP Morgan GBI-EM Global Diversified	0.35%	0.35%
Brandywine	93,897,528	1.29%	Barclays Global Aggregate	0.75%	0.54%
Loomis Sayles	126,940,729	3.15%	70% ML HY / 30% JPM EM	2.24%	0.91%
Loomis Sayles Sr. Floating Rate	53,878,976	1.96%	S&P/LSTA Leveraged Loan Index	0.90%	1.06%
Mondrian Investment Partners	1,807	-0.11%	Barclays Global Aggregate	0.75%	-0.86%
W.R. Huff High Yield	46,927,370	1.13%	Citi HY Index	3.45%	-2.33%
Total	379,341,002	2.18%	Fixed Income Policy Benchmark	1.44%	0.75%

Year-To-Date Returns (Using July 2016 Estimated Values)					
Holding	End NAV	Return	Benchmark	Benchmark	Alpha
Ashmore EM Debt Fund	39,536,987	6.71%	JP Morgan EMBI Global Diversified	12.30%	-5.59%
Ashmore EM Local CCY	18,157,606	16.27%	JP Morgan GBI-EM Global Diversified	14.71%	1.56%
Brandywine	93,897,528	10.50%	Barclays Global Aggregate	9.78%	0.72%
Loomis Sayles	126,940,729	15.11%	70% ML HY / 30% JPM EM	12.18%	2.93%
Loomis Sayles Sr. Floating Rate	53,878,976	7.26%	S&P/LSTA Leveraged Loan Index	3.05%	4.22%
Mondrian Investment Partners	1,807	1.86%	Barclays Global Aggregate	9.78%	-7.92%
W.R. Huff High Yield	46,927,370	9.70%	Citi HY Index	13.44%	-3.73%
Total	379,341,002	11.07%	Fixed Income Policy Benchmark	8.52%	2.55%

One Year Returns (Using July 2016 Estimated Values)					
Holding	End NAV	Return	Benchmark	Benchmark	Alpha
Ashmore EM Debt Fund	39,536,987	6.33%	JP Morgan EMBI Global Diversified	11.22%	-4.88%
Ashmore EM Local CCY	18,157,606	6.01%	JP Morgan GBI-EM Global Diversified	5.30%	0.71%
Brandywine	93,897,528	6.07%	Barclays Global Aggregate	9.44%	-3.37%
Loomis Sayles	126,940,729	1.30%	70% ML HY / 30% JPM EM	6.89%	-5.59%
Loomis Sayles Sr. Floating Rate	53,878,976	1.41%	S&P/LSTA Leveraged Loan Index	-2.21%	3.62%
Mondrian Investment Partners	1,807	1.40%	Barclays Global Aggregate	9.44%	-8.04%
W.R. Huff High Yield	46,927,370	0.57%	Citi HY Index	6.29%	-5.72%
Total	379,341,002	3.49%	Fixed Income Policy Benchmark	4.81%	-1.33%

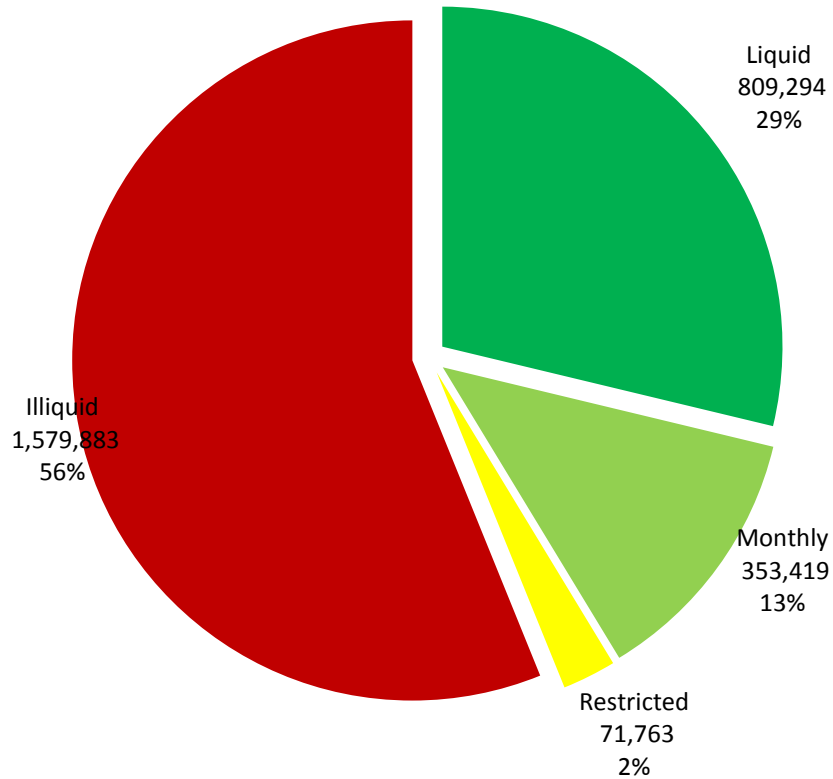
* Equity Policy Benchmark is the weighted return of the Fixed Income policy benchmarks, excluding Private Debt, as defined in Appendix I (page 42).

** Ashmore reporting is on a one-month lag.

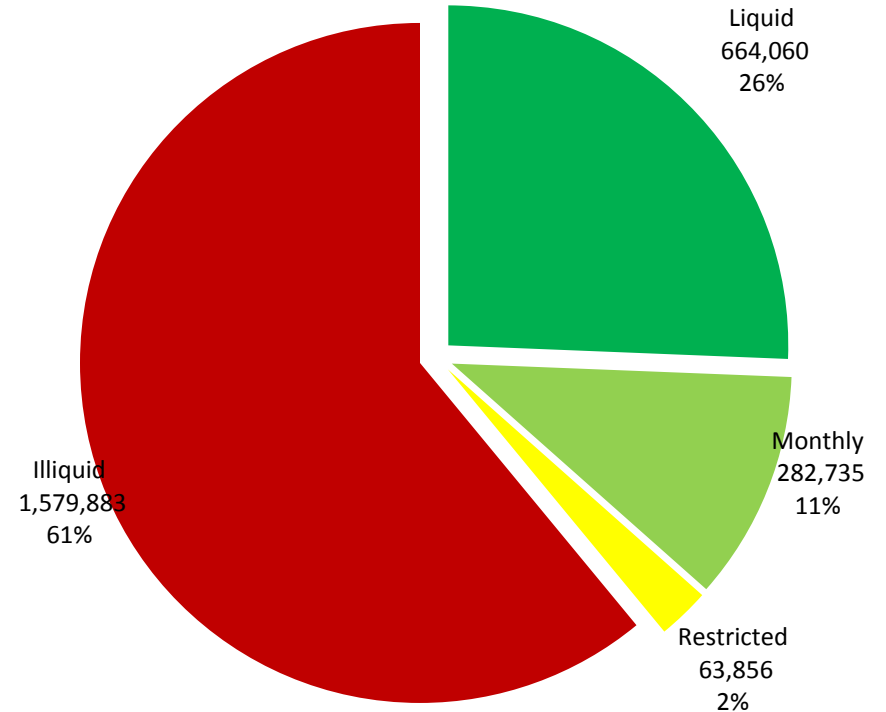
Preliminary July 2016 Snapshot Portfolio Liquidity



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.



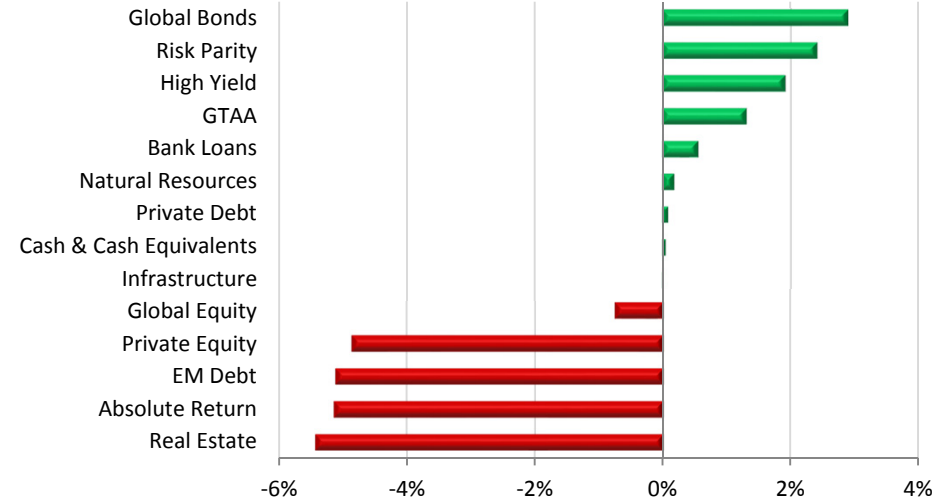
June 2016

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



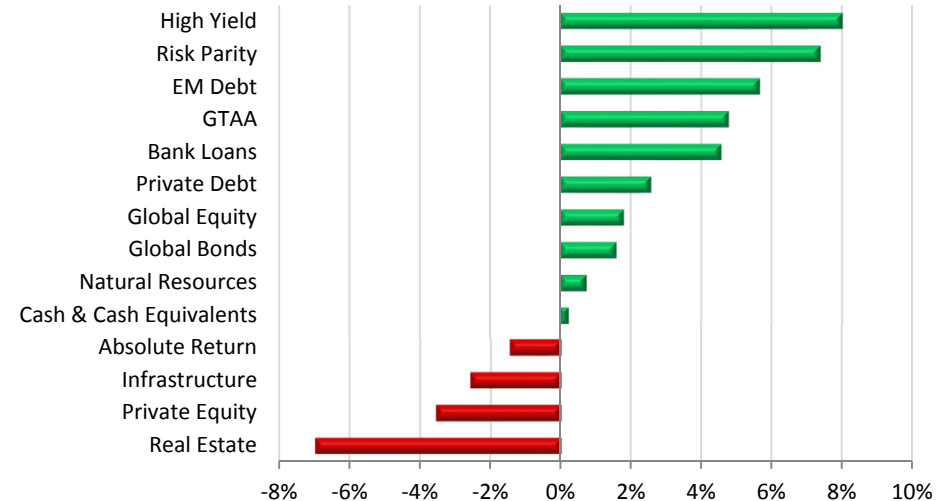
One Month Performance as at June 2016

	One Month		
	DPFP Return	Policy Return (Beta)	Alpha
Global Equity	-0.77%	-0.61%	-0.16%
Private Equity	-4.86%	2.85%	-7.71%
Global Bonds	2.90%	2.92%	-0.03%
High Yield	1.91%	0.92%	0.99%
Bank Loans	0.56%	-0.15%	0.72%
EM Debt	-5.11%	4.63%	-9.74%
Private Debt	0.10%	6.03%	-5.94%
Natural Resources	0.19%	6.76%	-6.57%
Infrastructure	0.01%	4.99%	-4.97%
Real Estate	-5.43%	2.03%	-7.46%
Risk Parity	2.41%	0.80%	1.61%
GTAA	1.31%	0.80%	0.51%
Absolute Return	-5.14%	-0.17%	-4.96%
Cash & Cash Equivalents	0.06%	0.02%	0.04%
Total	-1.91%	1.85%	-3.76%
Total ex Real Estate	-0.67%	1.61%	-2.28%



Quarter-to-Date Performance as at June 2016

	Quarter-to-Date		
	DPFP Return	Policy Return (Beta)	Alpha
Global Equity	1.81%	0.99%	0.83%
Private Equity	-3.56%	2.85%	-6.41%
Global Bonds	1.61%	2.89%	-1.28%
High Yield	8.04%	5.52%	2.52%
Bank Loans	4.58%	2.80%	1.78%
EM Debt	5.67%	3.90%	1.78%
Private Debt	2.59%	6.03%	-3.45%
Natural Resources	0.76%	6.76%	-6.01%
Infrastructure	-2.58%	4.99%	-7.57%
Real Estate	-6.98%	2.03%	-9.01%
Risk Parity	7.40%	1.76%	5.64%
GTAA	4.79%	1.76%	3.03%
Absolute Return	-1.47%	0.35%	-1.81%
Cash & Cash Equivalents	0.25%	0.07%	0.19%
Total	-0.65%	2.61%	-3.26%
Total ex Real Estate	1.41%	2.36%	-0.95%



* Please see Appendix I (page 42) for details on the policy indexes.

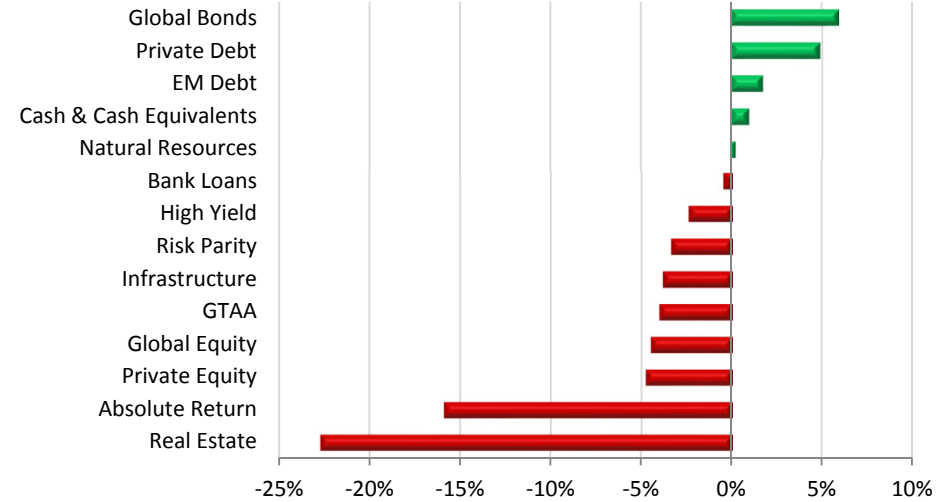
** Returns presented are calculated using custodian bank month-end source data and values. The returns shown here will differ from actuary calculated returns and returns presented by NEPC.

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



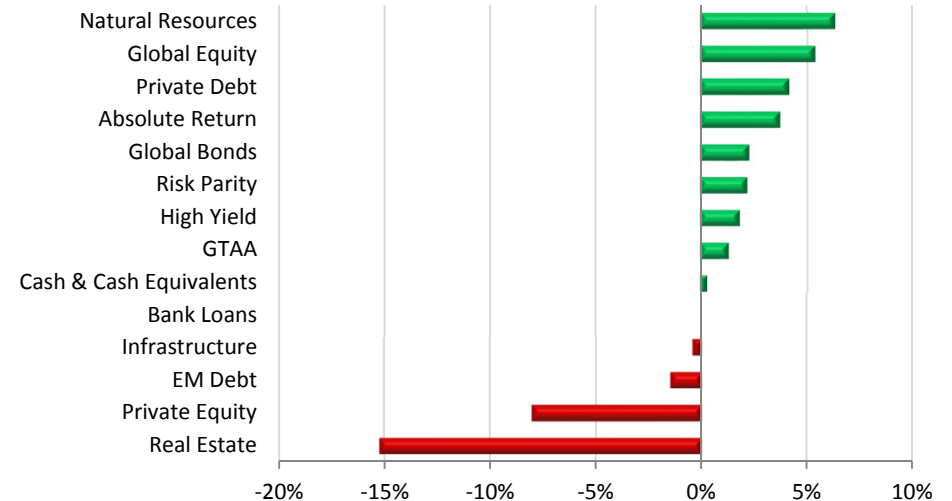
One Year Performance as at June 2016

	One Year		
	DPFP Return	Policy Return (Beta)	Alpha
Global Equity	-4.55%	-3.73%	-0.82%
Private Equity	-4.82%	3.04%	-7.86%
Global Bonds	5.91%	8.87%	-2.96%
High Yield	-2.45%	1.62%	-4.07%
Bank Loans	-0.54%	0.69%	-1.23%
EM Debt	1.74%	5.95%	-4.22%
Private Debt	4.86%	3.65%	1.21%
Natural Resources	0.24%	-9.47%	9.71%
Infrastructure	-3.88%	3.71%	-7.59%
Real Estate	-22.76%	10.64%	-33.40%
Risk Parity	-3.43%	1.40%	-4.82%
GTAA	-4.08%	1.40%	-5.47%
Absolute Return	-15.94%	0.60%	-16.54%
Cash & Cash Equivalents	0.98%	0.18%	0.80%
Total	-8.77%	8.29%	-17.06%
Total ex Real Estate	-3.06%	6.79%	-9.85%



Three Year Performance as at June 2016

	Three Year		
	DPFP Return	Policy Return (Beta)	Alpha
Global Equity	5.40%	6.03%	-0.63%
Private Equity	-8.07%	12.21%	-20.28%
Global Bonds	2.31%	2.80%	-0.49%
High Yield	1.87%	4.18%	-2.31%
Bank Loans	n/a	2.16%	n/a
EM Debt	-1.52%	1.75%	-3.27%
Private Debt	4.17%	6.26%	-2.09%
Natural Resources	6.33%	-3.54%	9.86%
Infrastructure	-0.47%	8.66%	-9.13%
Real Estate	-15.26%	11.60%	-26.86%
Risk Parity	2.21%	4.88%	-2.66%
GTAA	1.35%	4.88%	-3.53%
Absolute Return	3.76%	1.74%	2.01%
Cash & Cash Equivalents	0.33%	0.08%	0.25%
Total	-3.37%	8.90%	-12.27%
Total ex Real Estate	1.28%	7.16%	-5.88%



* Please see Appendix I (page 42) 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 June 2016 Portfolio Attribution (cont.)



One Month as at June 2016

Asset Class	Weights		Returns		Attribution			
	DPFP	Policy	DPFP	Policy	Allocation (1)	Selection (2)	Interaction (3)	Active Return (1+2+3)
Global Equity	15.62%	20.00%	-0.77%	-0.61%	0.11%	-0.03%	0.01%	0.08%
EM Equity	0.00%	5.00%	0.00%	3.35%	-0.07%	-0.17%	0.17%	-0.07%
Private Equity	15.22%	5.00%	-4.86%	2.85%	0.10%	-0.39%	-0.79%	-1.07%
Short Term Core Bonds	0.00%	2.00%	0.00%	0.60%	0.03%	-0.01%	0.01%	0.03%
Global Bonds	3.33%	3.00%	2.90%	2.92%	0.00%	0.00%	0.00%	0.00%
High Yield	6.11%	5.00%	1.91%	0.92%	-0.01%	0.05%	0.01%	0.05%
Bank Loans	1.93%	6.00%	0.56%	-0.15%	0.08%	0.04%	-0.03%	0.10%
Struc. Cred. & Abs. Ret.	0.00%	6.00%	0.00%	0.63%	0.07%	-0.04%	0.04%	0.07%
EM Debt	2.18%	6.00%	-5.11%	4.63%	-0.11%	-0.58%	0.37%	-0.32%
Private Debt	3.32%	5.00%	0.10%	6.03%	-0.07%	-0.30%	0.10%	-0.27%
Natural Resources	10.57%	5.00%	0.19%	6.76%	0.27%	-0.33%	-0.37%	-0.42%
Infrastructure	7.57%	5.00%	0.01%	4.99%	0.08%	-0.25%	-0.13%	-0.30%
Real Estate	25.01%	12.00%	-5.43%	2.03%	0.02%	-0.90%	-0.97%	-1.84%
Liquid Real Assets	0.00%	3.00%	0.00%	0.62%	0.04%	-0.02%	0.02%	0.04%
Risk Parity	7.05%	5.00%	2.41%	0.80%	-0.02%	0.08%	0.03%	0.09%
GTAA	4.59%	3.00%	1.31%	0.80%	-0.02%	0.02%	0.01%	0.01%
Absolute Return	1.18%	2.00%	-5.14%	-0.17%	0.02%	-0.10%	0.04%	-0.04%
Cash & Cash Equivalents	3.06%	2.00%	0.06%	0.02%	-0.02%	0.00%	0.00%	-0.02%
Plan Leverage Facility	-6.74%	0.00%	0.00%	0.00%	0.13%	0.00%	0.00%	0.13%
Total	100.00%	100.00%	-1.91%	1.85%	0.63%	-2.92%	-1.47%	-3.76%

* Please see Appendix II (page 43) for details on the attribution calculation and methodology.

Data as at June 2016 Portfolio Attribution (cont.)



Calendar YTD as at June 2016

Asset Class	Weights		Returns		Attribution			
	DPFP	Policy	DPFP	Policy	Allocation (1)	Selection (2)	Interaction (3)	Active Return (1+2+3)
Global Equity	15.93%	20.00%	0.87%	1.23%	0.18%	-0.07%	0.02%	0.13%
EM Equity	0.00%	5.00%	0.00%	11.48%	-0.32%	-0.61%	0.61%	-0.32%
Private Equity	14.82%	5.00%	-3.76%	4.05%	-0.19%	-0.39%	-0.80%	-1.38%
Short Term Core Bonds	0.00%	2.00%	0.00%	1.44%	0.09%	-0.03%	0.03%	0.09%
Global Bonds	4.52%	3.00%	8.94%	8.96%	0.02%	0.00%	0.00%	0.02%
High Yield	5.90%	5.00%	10.88%	9.06%	0.03%	0.09%	0.01%	0.12%
Bank Loans	1.85%	6.00%	5.20%	5.36%	0.02%	-0.01%	0.01%	0.02%
Struc. Cred. & Abs. Ret.	0.00%	6.00%	0.00%	2.38%	0.22%	-0.14%	0.14%	0.22%
EM Debt	2.10%	6.00%	6.86%	12.24%	-0.24%	-0.29%	0.19%	-0.34%
Private Debt	3.26%	5.00%	2.68%	10.13%	-0.07%	-0.36%	0.12%	-0.31%
Natural Resources	10.51%	5.00%	0.92%	16.49%	0.56%	-0.76%	-0.85%	-1.04%
Infrastructure	7.53%	5.00%	-2.51%	14.09%	0.20%	-0.82%	-0.43%	-1.05%
Real Estate	25.64%	12.00%	-6.43%	4.29%	-0.25%	-1.30%	-1.45%	-3.00%
Liquid Real Assets	0.00%	3.00%	0.00%	3.28%	0.08%	-0.10%	0.10%	0.08%
Risk Parity	8.02%	5.00%	5.19%	4.37%	-0.05%	0.04%	-0.07%	-0.08%
GTAA	4.54%	3.00%	0.20%	4.37%	-0.03%	-0.13%	-0.07%	-0.22%
Absolute Return	1.17%	2.00%	-13.57%	-0.23%	0.05%	-0.28%	0.11%	-0.12%
Cash & Cash Equivalents	2.14%	2.00%	0.88%	0.14%	-0.01%	0.02%	0.00%	0.01%
Plan Leverage Facility	-7.92%	0.00%	0.00%	0.00%	0.48%	0.00%	0.00%	0.48%
Total	100.00%	100.00%	-0.67%	6.02%	0.77%	-5.15%	-2.31%	-6.69%

* Please see Appendix II (page 43) for details on the attribution calculation and methodology.

Data as at June 2016 Portfolio Attribution (cont.)



One Year as at June 2016

Asset Class	Weights		Returns		Attribution			
	DPFP	Policy	DPFP	Policy	Allocation (1)	Selection (2)	Interaction (3)	Active Return (1+2+3)
Global Equity	18.72%	20.00%	-4.55%	-3.73%	0.02%	-0.18%	0.02%	-0.13%
EM Equity	0.00%	5.00%	0.00%	-14.19%	0.77%	0.73%	-0.73%	0.77%
Private Equity	13.96%	5.00%	-4.82%	3.04%	0.16%	-0.38%	-0.79%	-1.01%
Short Term Core Bonds	0.00%	2.00%	0.00%	1.31%	-0.01%	-0.02%	0.02%	-0.01%
Global Bonds	3.92%	3.00%	5.91%	8.87%	0.04%	-0.09%	-0.01%	-0.06%
High Yield	6.05%	5.00%	-2.45%	1.62%	0.00%	-0.21%	-0.05%	-0.26%
Bank Loans	1.79%	6.00%	-0.54%	0.69%	0.02%	-0.08%	0.06%	0.00%
Struc. Cred. & Abs. Ret.	0.00%	6.00%	0.00%	0.22%	0.05%	0.01%	-0.01%	0.05%
EM Debt	2.01%	6.00%	1.74%	5.95%	-0.18%	-0.21%	0.14%	-0.25%
Private Debt	3.20%	5.00%	4.86%	3.65%	-0.04%	0.09%	-0.04%	0.00%
Natural Resources	10.10%	5.00%	0.24%	-9.47%	-0.35%	0.43%	0.28%	0.35%
Infrastructure	7.02%	5.00%	-3.88%	3.71%	0.09%	-0.34%	-0.26%	-0.52%
Real Estate	26.41%	12.00%	-22.76%	10.64%	1.46%	-4.10%	-5.06%	-7.71%
Liquid Real Assets	0.00%	3.00%	0.00%	5.86%	-0.15%	-0.17%	0.17%	-0.15%
Risk Parity	8.24%	5.00%	-3.43%	1.40%	0.02%	-0.24%	-0.28%	-0.50%
GTAA	4.38%	3.00%	-4.08%	1.40%	0.00%	-0.16%	-0.09%	-0.24%
Absolute Return	1.14%	2.00%	-15.94%	0.60%	0.00%	-0.31%	0.11%	-0.20%
Cash & Cash Equivalents	1.93%	2.00%	0.98%	0.18%	-0.08%	0.02%	0.00%	-0.07%
Plan Leverage Facility	-8.90%	0.00%	0.00%	0.00%	-0.04%	0.00%	0.00%	-0.04%
Total	100.00%	100.00%	-8.77%	1.22%	1.77%	-5.23%	-6.53%	-9.99%

* Please see Appendix II (page 43) for details on the attribution calculation and methodology.

Data as at June 2016 Asset Allocations: Monthly Changes



The total NAV of the portfolio at June 30th 2016 is **2,649,549,214**

- P&L of the portfolio decreased by \$52 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 June: Private Equity
- Strategy with the largest cash net outflow in June: Risk Parity
- Over the past 12 months, the largest increase in allocation was in Private Equity
- Over the past 12 months, the largest decrease in allocation was in Global Equity

Top Performing Asset Classes

Asset Class	Performance (June)	
	\$	%
Risk Parity	4,630,350	2.41%
High Yield	3,180,726	1.91%
Global Bonds	2,624,403	2.90%

Bottom Performing Asset Classes

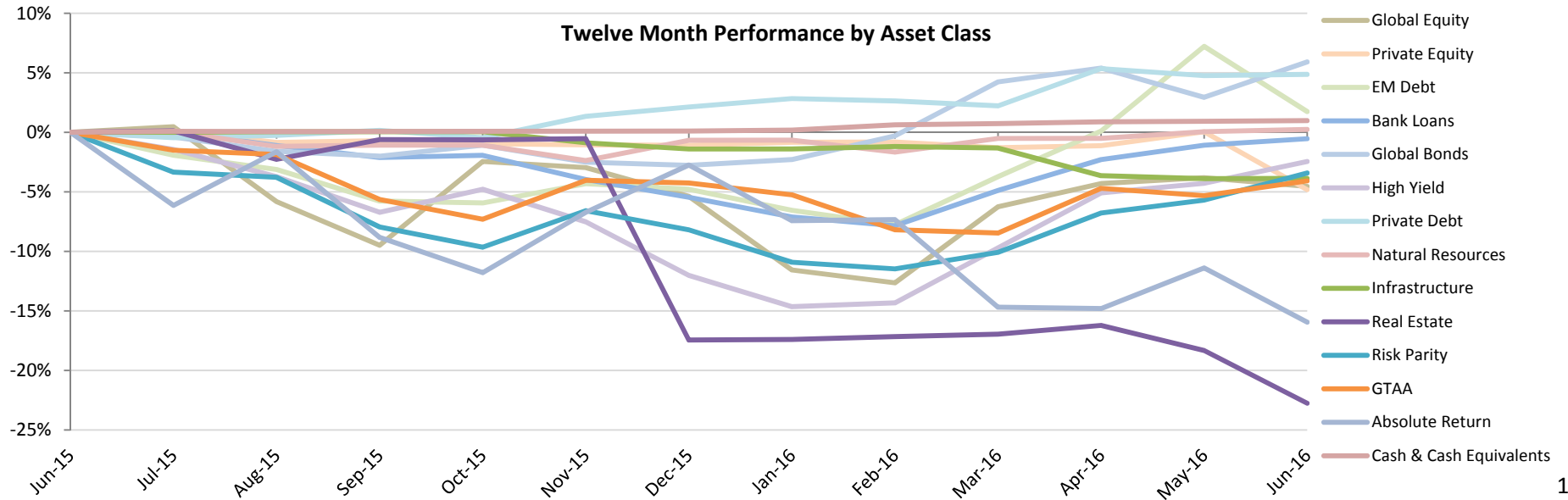
Asset Class	Performance (June)	
	\$	%
Real Estate	(36,922,218)	-5.43%
Private Equity	(20,112,915)	-4.86%
Global Equity	(3,252,041)	-0.77%

Top Performing Holdings

Holding	Performance (June)	
	\$	%
Bridgewater All Weather	4,283,553	4.33%
NTE Segments 3	3,783,324	15.90%
Loomis Sayles	2,831,525	2.36%

Bottom Performing Holdings

Holding	Performance (June)	
	\$	%
RE Separate Accounts	(35,444,322)	-5.71%
Lone Star Opportunities V	(10,462,103)	-39.16%
Lone Star CRA	(6,583,851)	-39.42%



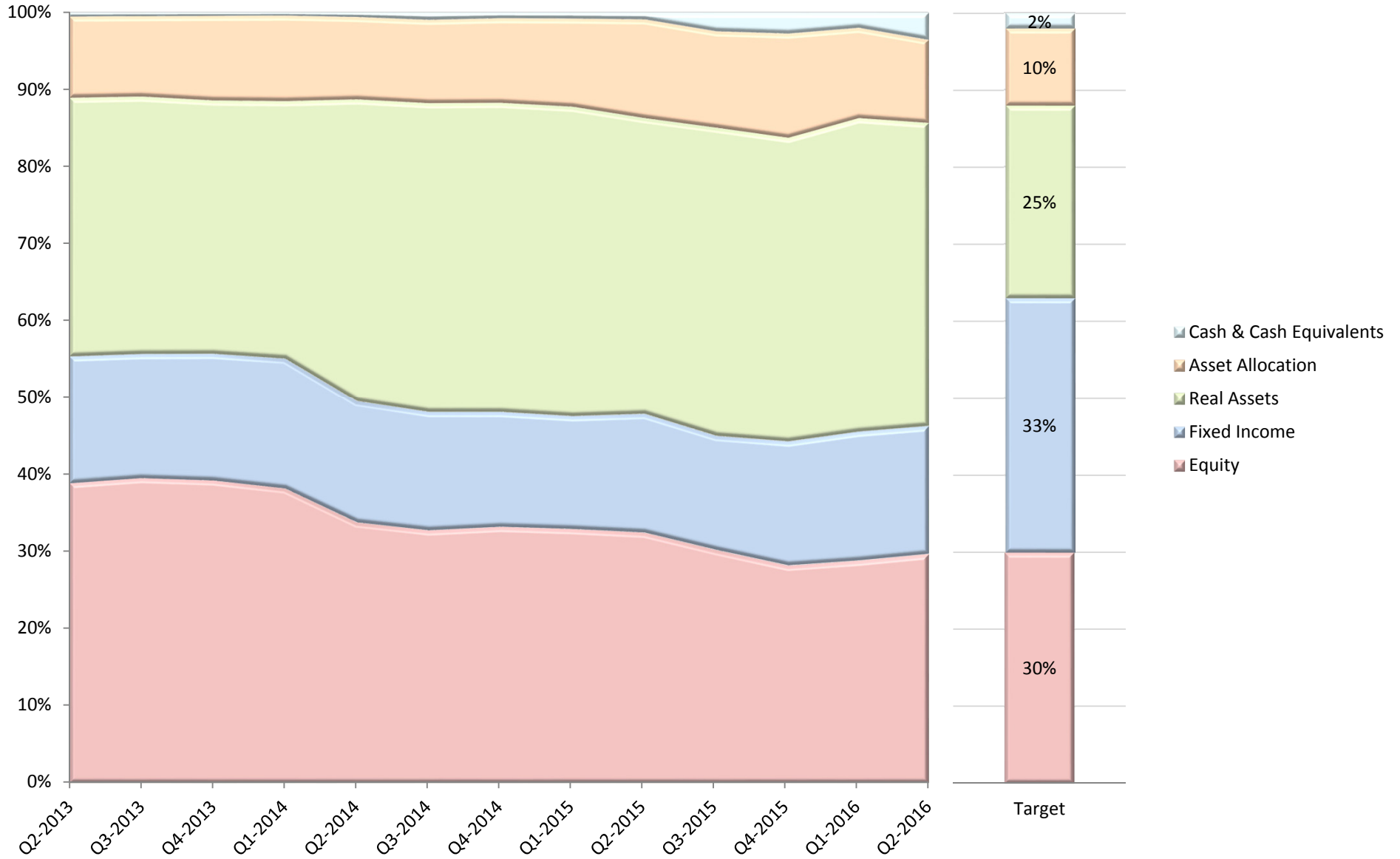
Data as at June 2016
Asset Allocations: Notable Cashflows



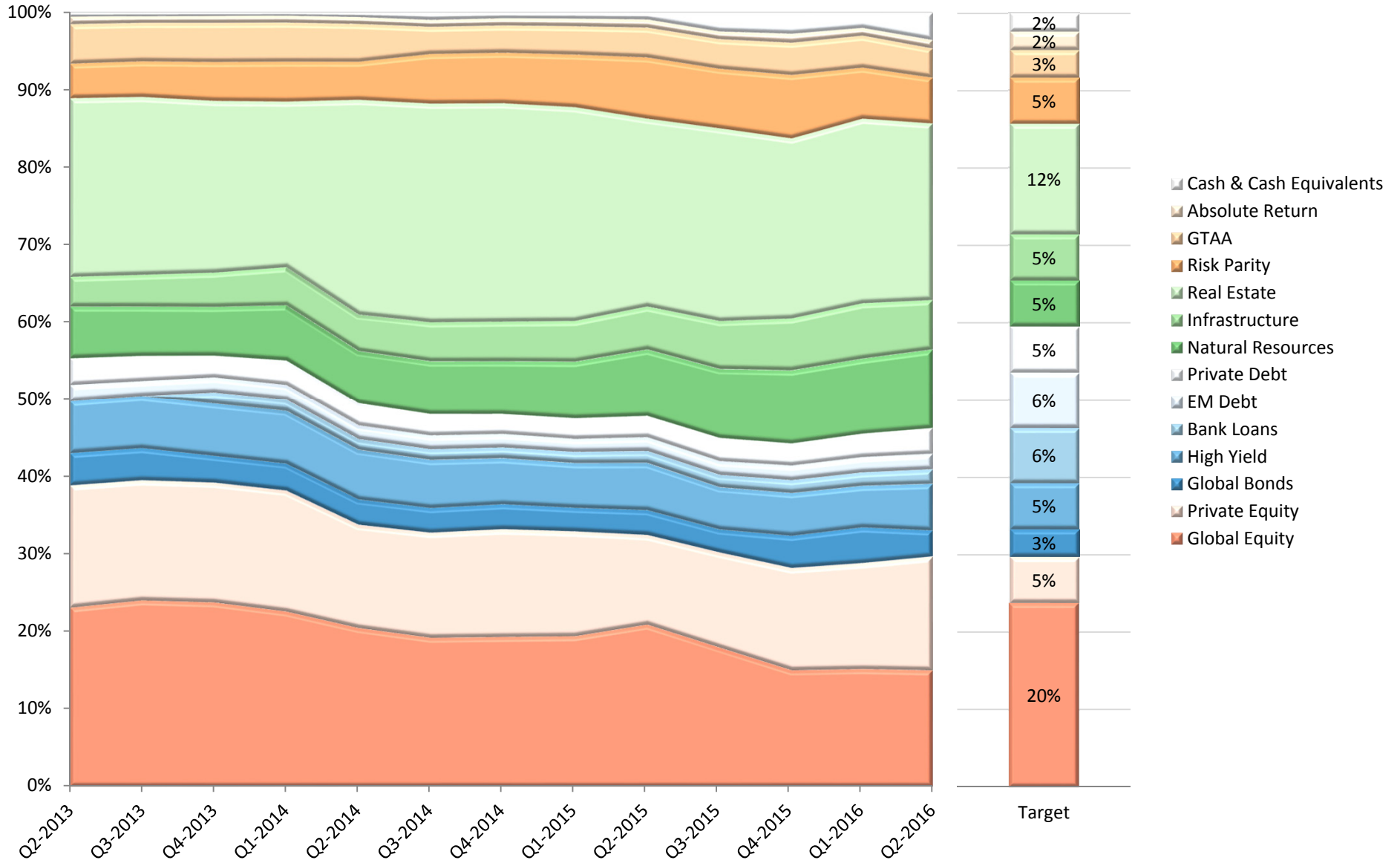
Cashflows over \$3mm USD

Inflow/(Outflow)	Holding	Purpose
17,623,763	AQR GRP EL Fund, L.P.	Liquidated
15,923,148	GMO Benchmark-Free Fund-III	Rebalancing
(13,451,513)	B of A LOAN DTD 3/31/2014 Revolver Loan	Loan Paydown
11,652,000	PanAgora Asset Management	Liquidated
(11,250,000)	Lone Star Opportunities Fund V L.P.	Capital Call
(10,000,000)	B OF A LOAN DTD 3/31/2014 Term Loan	Loan Paydown
23,794,565	NTE Segments 3	Sale
(7,500,000)	Lone Star CRA Fund	Capital Call
4,076,852	GMO Multi-Strategy Fund	Rebalancing

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



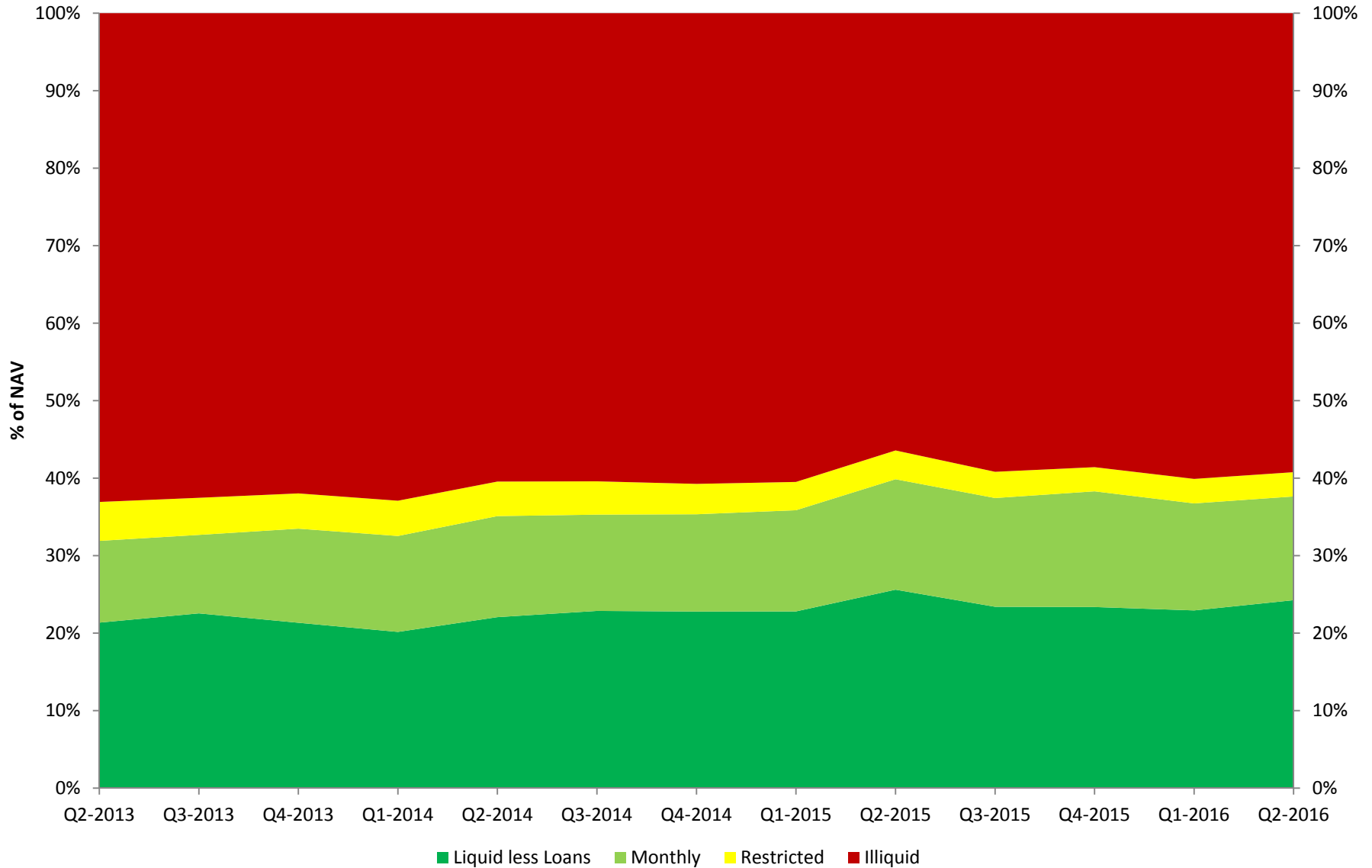
Data as at June 2016
Asset Allocations: Sub-Assets Over Time (Quarterly)



Data as at June 2016 Liquidity Over Time (Quarterly)



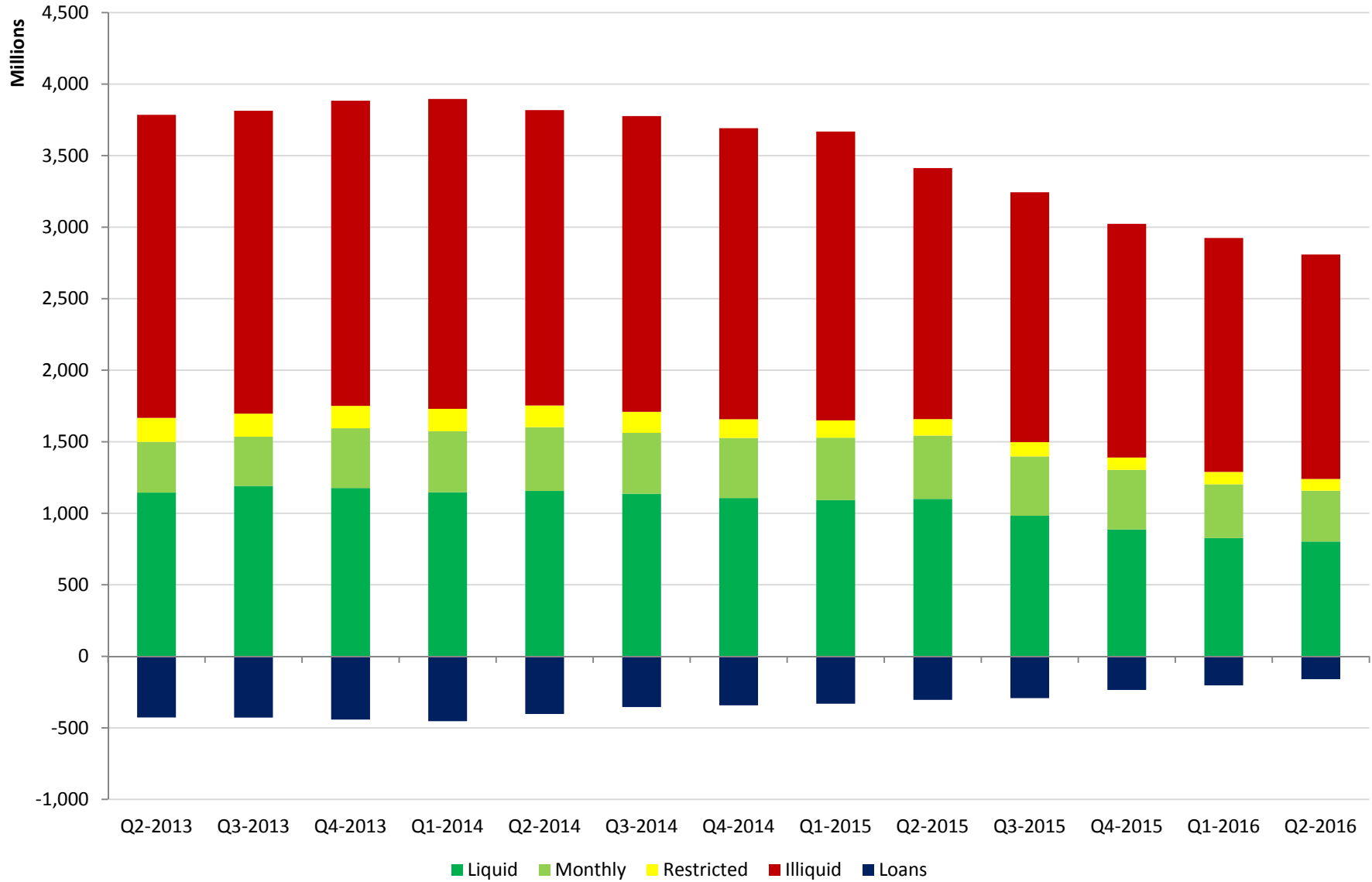
Liquidity Over Time (% of NAV)



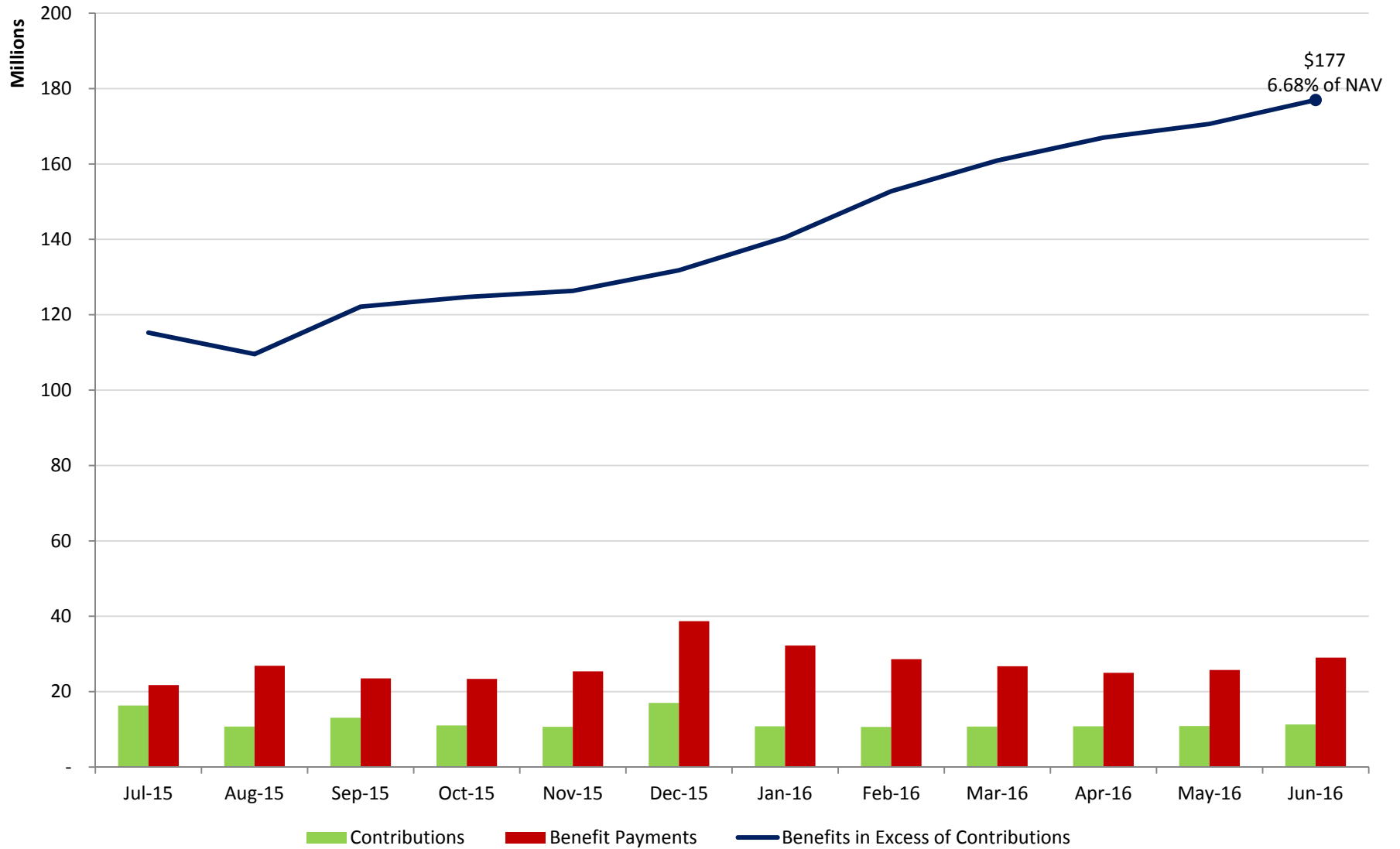
Data as at June 2016
Liquidity Over Time (Quarterly) (cont.)



Liquidity Over Time (\$ Value)



Data as at June 2016
Trailing 12 Month Funding Gap



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

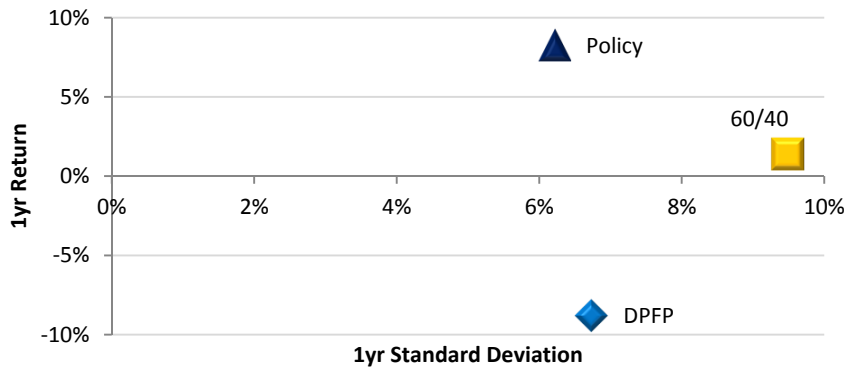


Trend Commentary

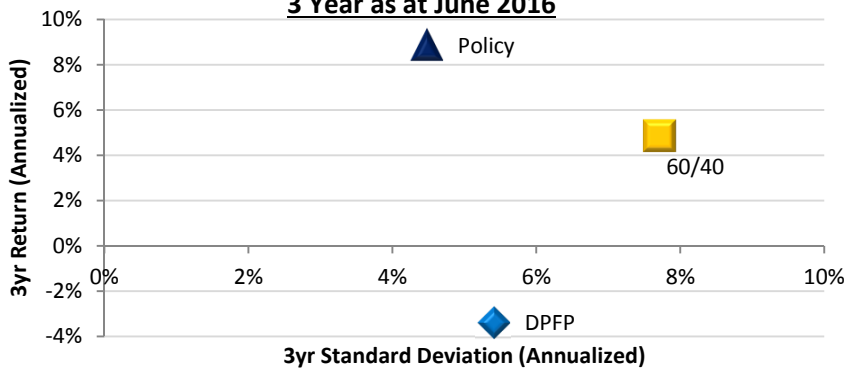
- The DPF portfolio is less volatile than the 60/40 portfolio across all time horizons.
- The DPF portfolio is less volatile than the Policy benchmark across the 5 year time horizon.

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 DPF plan portfolio.

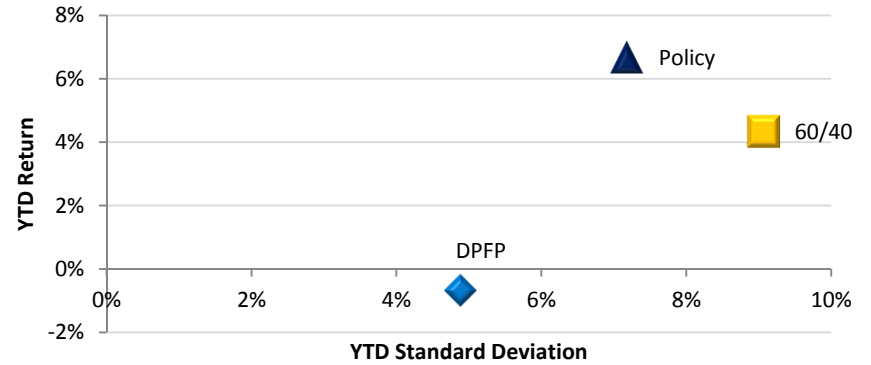
1 Year as at June 2016



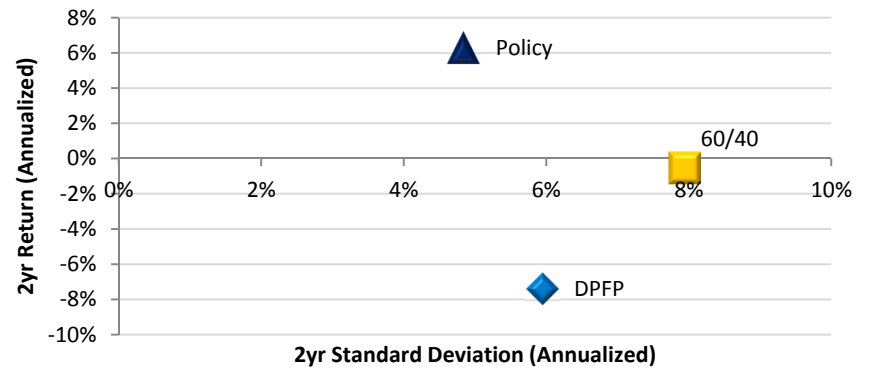
3 Year as at June 2016



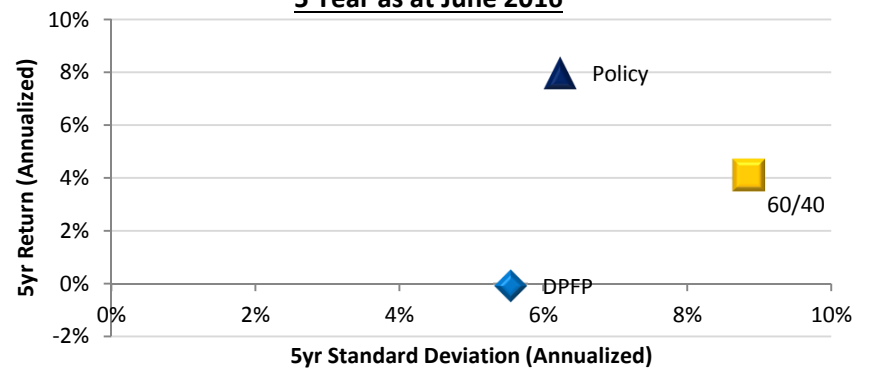
YTD as at June 2016



2 Year as at June 2016



5 Year as at June 2016



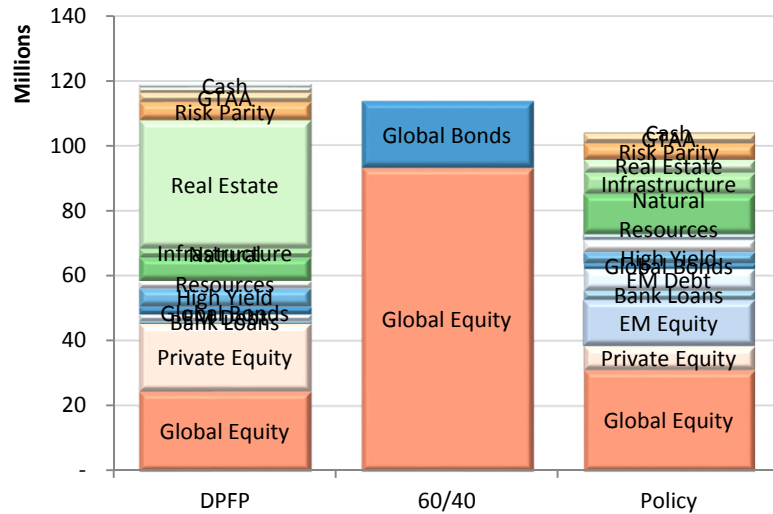
* Please see Appendix I (page 42) for details on the composition of the 60/40 and Policy benchmarks.

Data as at June 2016

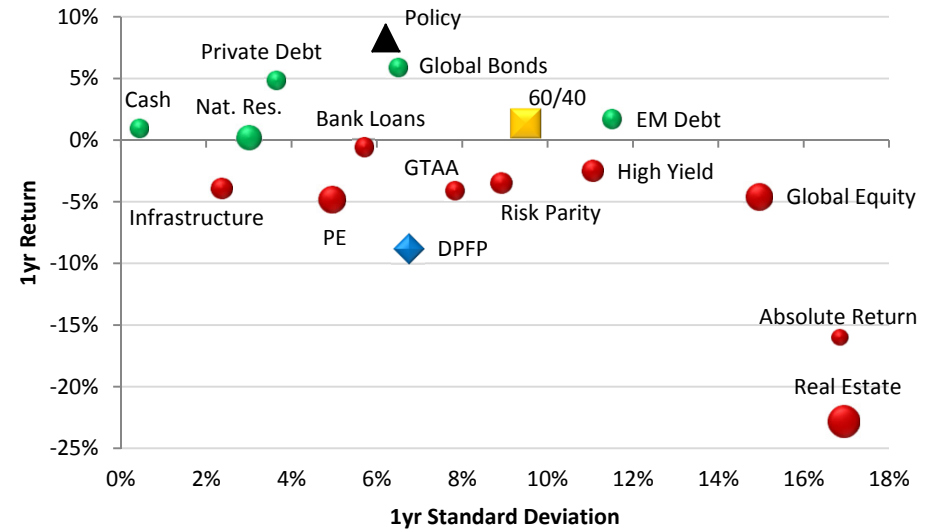
Risk Profile



Five Year Value at Risk (95% Confidence Level) as at June 2016

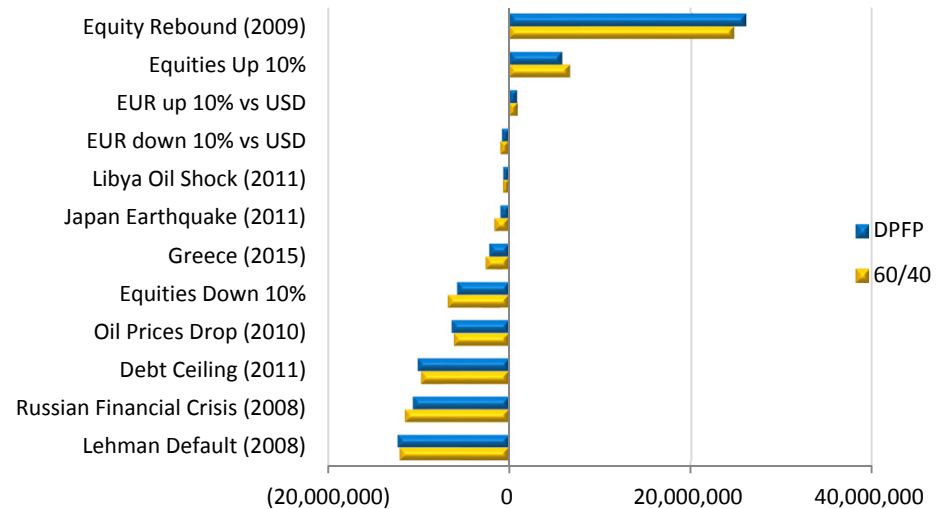


Sub-Asset Class Risk vs Return (Sharpe) as at June 2016



Portfolio Stress Testing as at June 2016

Scenario	P&L (\$)	P&L (%)
Equity Rebound (2009)	26,000,630	24.64%
Equities Up 10%	5,768,419	5.47%
EUR up 10% vs USD	824,988	0.78%
EUR down 10% vs USD	(824,710)	-0.78%
Libya Oil Shock (2011)	(668,740)	-0.63%
Japan Earthquake (2011)	(992,454)	-0.94%
Greece (2015)	(2,211,159)	-2.10%
Equities Down 10%	(5,767,282)	-5.47%
Oil Prices Drop (2010)	(6,351,708)	-6.02%
Debt Ceiling (2011)	(10,096,699)	-9.57%
Russian Financial Crisis (2008)	(10,613,888)	-10.06%
Lehman Default (2008)	(12,283,898)	-11.64%



* Stress Test Scenarios and the proxy instruments used are detailed in Appendix I (page 42).

** 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 June 2016 Equity Overview – Global Equity

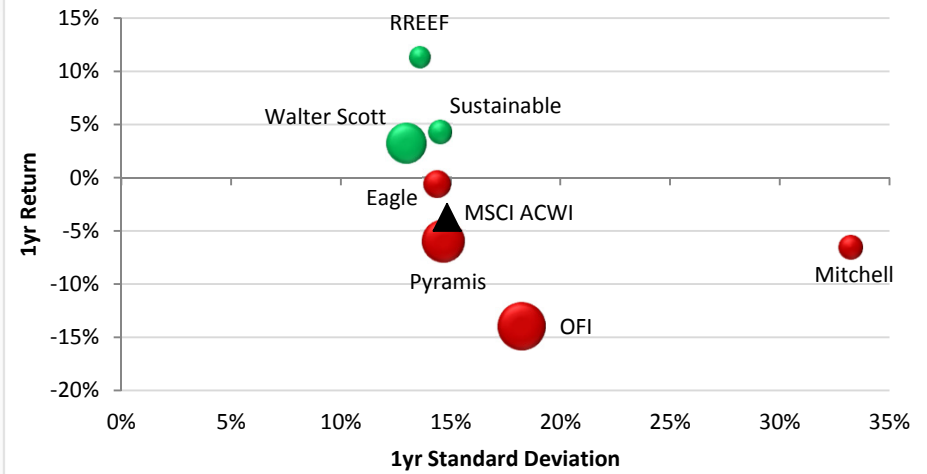


Commentary

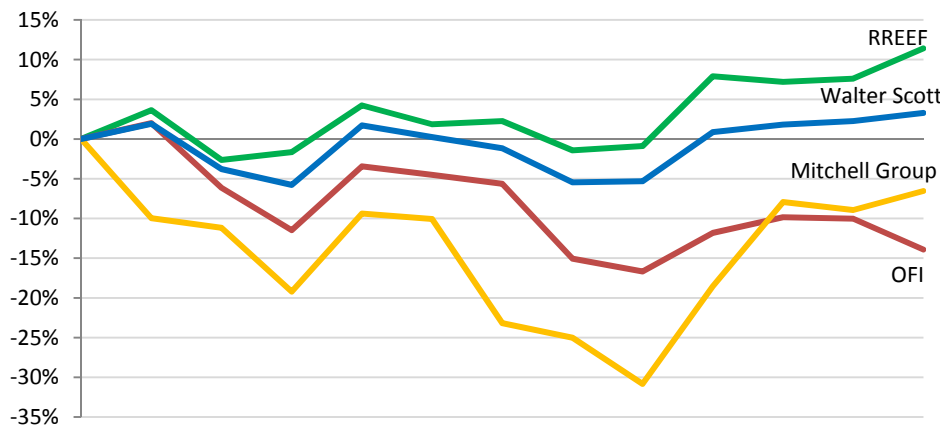
- US equities were up for the month (up 0.1%) despite a tumultuous run. The S&P ended the second quarter up 0.26%, the first half of the year up 1.4%, and closed June just 1.5% below its all-time-high.
- On June 23, the UK voted to be the first member of the EU to leave since its formation in 1993, which sent global markets into chaos. Unlike US markets, Brexit's disorder wasn't kind to European equity markets: the EuroStoxx 50, the Dax and the CAC fell 6.0%, 5.7%, and 5.3%, respectively. Non-intuitively, the FTSE 100 (UK large cap index) gained 4.7% due to the large percentage of multi-nationals in the index which generate revenue abroad that should benefit from the depreciation of the British Pound.
- In Japan, Prime Minister Abe said he would postpone the planned sales tax increase (from 8% to 10%) until 2019 and would implement new stimulus packages to aid the Japanese economy. The Nikkei finished down 9.5% while the Yen rallied 7.3% as investors sought safety in government debt.
- Led by Latin America, emerging market equities (MSCI Emerging Markets Index up 4.1%) were a bright spot in June. Argentina and Brazil were up 15.8% and 6.3%, respectively, thanks to the reversal of oversold political conditions as well as the likely delay of any Federal Reserve rate hikes.
- Equity market volatility increased month-over-month as the VIX closed June at 15.6, up from 14.2 at the end of May. However, the month-over-month figures hide the Brexit-induced volatility spike to 25.8 on June 24th.

Source – Cliffwater

Manager Risk vs Return (Sharpe) as at June 2016

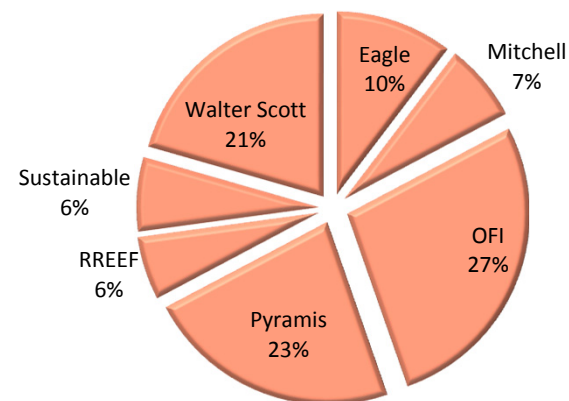


Twelve Month Compounded Performance as at June 2016



— Top Performer
 — Bottom Performer
 — Most Volatile
 — Least Volatile

Exposure by Manager as at June 2016

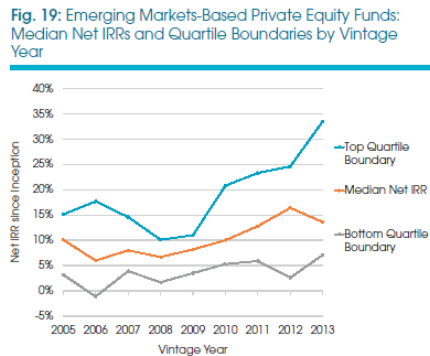


Data as at June 2016 Equity Overview – Private Equity



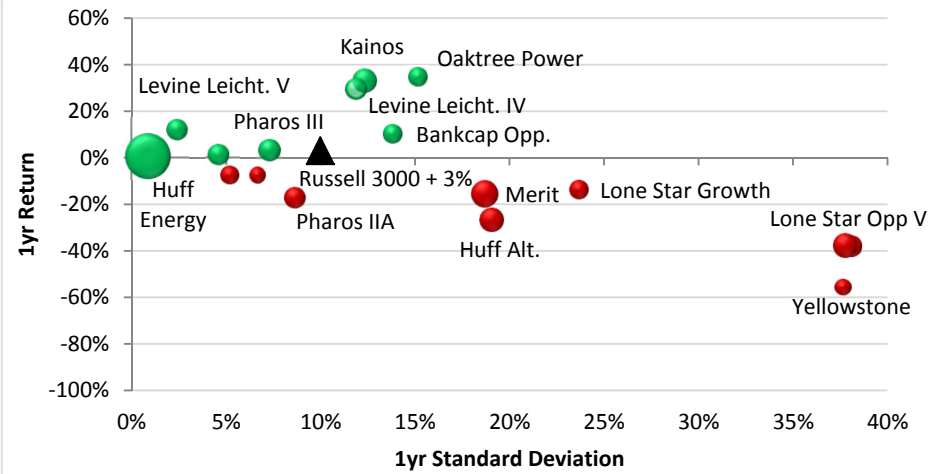
Commentary

- The median net IRRs of emerging markets-based funds have generally been rising since vintage 2008. The median net IRR of 2010 vintage funds (10%) is up from 2009 (8%); however, the top quartile net IRR boundary for 2010 vintage funds increased significantly from the previous year. This trend of a larger gap in performance between the median net IRR and the top quartile boundary has been present since 2010, and while this trend is more akin to pre-crisis performance, all IRR boundaries of 2010 vintage funds are higher than that of 2006 vintage funds.

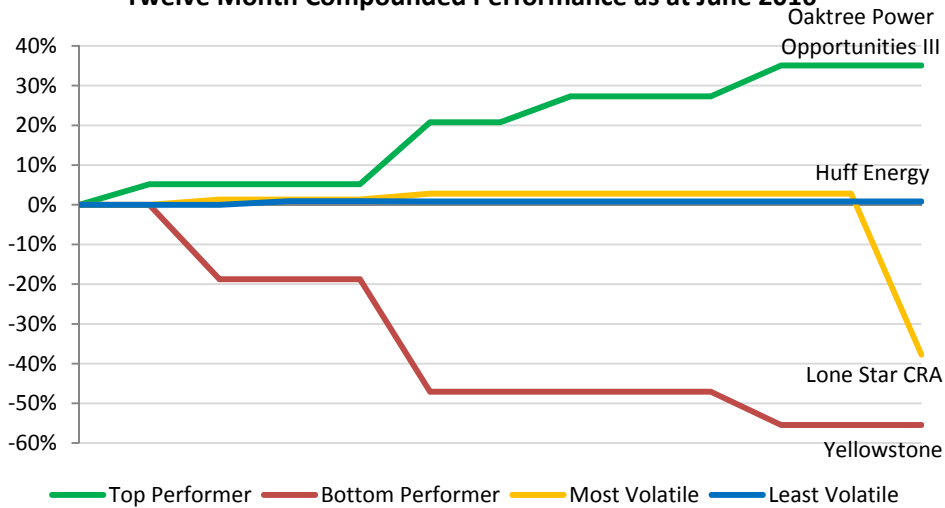


Source – Preqin

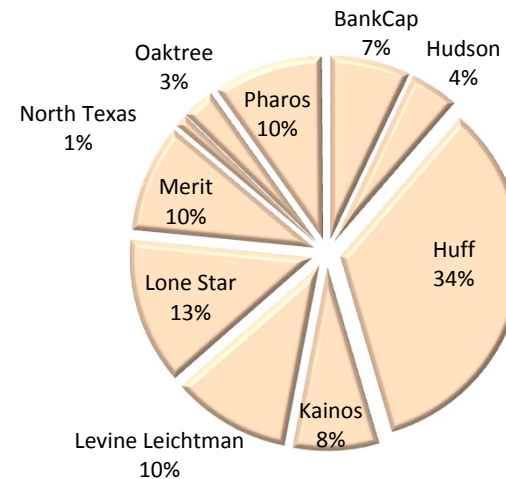
Manager Risk vs Return (Sharpe) as at June 2016



Twelve Month Compounded Performance as at June 2016



Exposure by Manager as at June 2016



Data as at June 2016 Fixed Income Overview

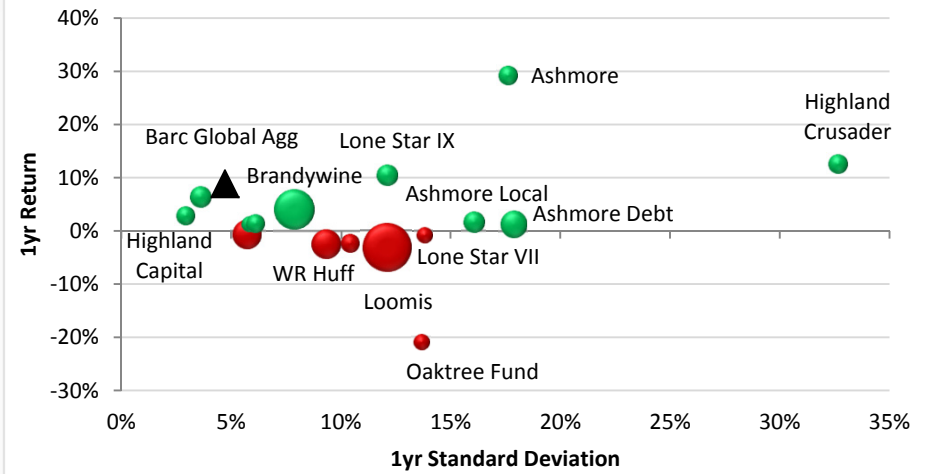


Commentary

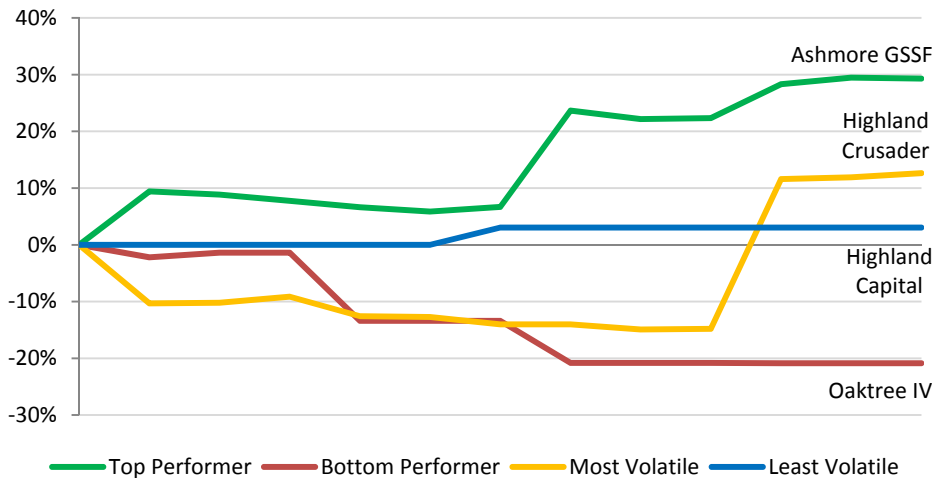
- All global financial instruments were extremely impacted by Brexit, and global fixed income benefitted from a flight-to-quality rally. On the month, US 10Y yields tumbled 38bps to a near record low of 1.47% while US 30Y yields collapsed 36bps to 2.28%. German 10Y bunds traded at a negative rate for the first time in history (falling 29bps to -0.13% and touching a new all-time low of -0.17%), joining Japan, Denmark, and Switzerland in negative territory.
- The Brexit referendum had significantly political ramifications in the United Kingdom as Prime Minister David Cameron and the UK's European Commissioner Jonathan Hill immediately announced their resignations. UK 10-year Gilt yields fell a startling 56bps to an all-time low of 0.87% and the British Pound sold off 8.1% in June versus the US Dollar.
- Four major central banks - the Federal Reserve, Bank of Japan, Bank of England, and Swiss National Bank - all held policy meetings and all stood pat, keeping their key interest rates unchanged. However, all four cited a litany of growth concerns that fueled strong demand for sovereign debt. The ECB also officially launched its bond purchase program, which was another factor that led to the plummeting of European yields.
- The amount of global sovereign debt with negative yields was \$11.7 trillion by the end of June, according to Fitch Ratings. Subzero bonds totaled \$8.5 trillion in long-term debt and \$3.2 trillion in short-term debt, and Japanese government bonds represents about two-thirds of the global total. Worries over the global growth outlook, further fueled by Brexit, continued to support demand for higher-quality sovereign paper. Swiss 30Y yields dropped below zero on June 16 for the first time on record. Furthermore, virtually the entire Swiss government bond curve carried a negative yield by the end of June, as did Japan out to 17 years.

Source – Cliffwater

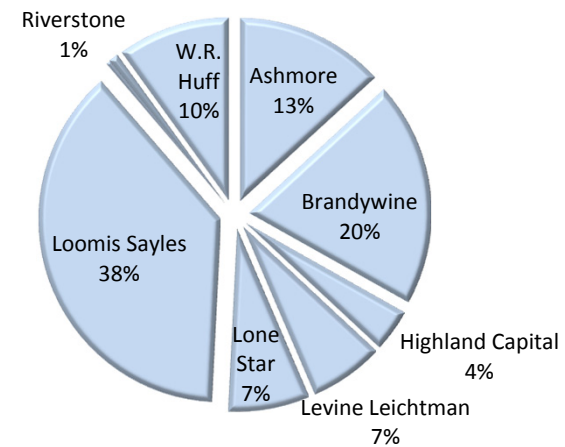
Manager Risk vs Return (Sharpe) as at June 2016



Twelve Month Compounded Performance as at June 2016



Exposure by Manager as at June 2016



Data as at June 2016 Asset Allocation Overview

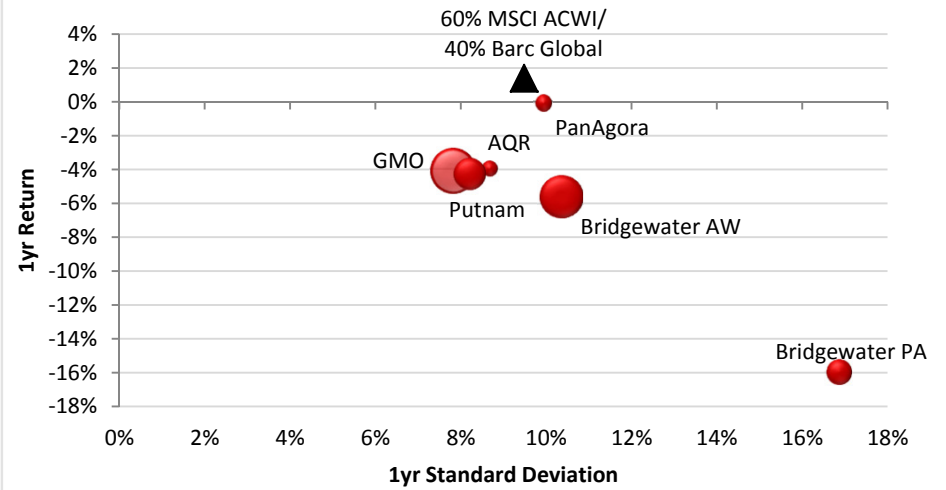


Commentary

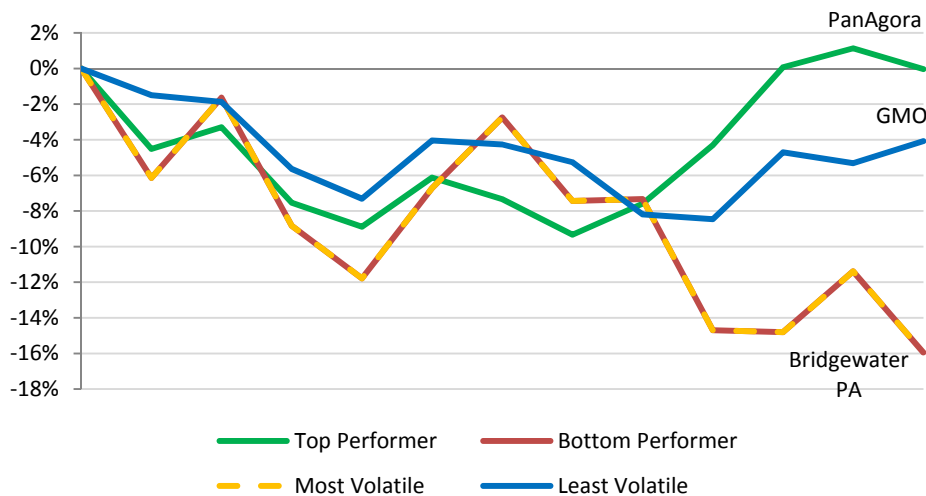
- In June, the HFRI Fund Weighted Composite Index gained 0.8%, its fourth consecutive month of positive performance, as many hedge funds were able to capitalize on the massive market dislocations around the world as a result of the Brexit vote. Fund of Funds fell 0.3%, though, as a wide dispersion among strategies and managers reiterated the importance of diversification.
- Global Macro gained 3.0%, its strongest gain since December 2010, while Systematic Macro was up 4.4%. Macro led strategy performance in June. Discretionary managers were generally correctly positioned for the collapse of the British Pound while systematic global macro strategies were also long the Japanese Yen, long fixed income, and long precious metals.
- Headline HFR Equity (-0.3%) and Event Driven Strategies (-0.4%) saw mixed performance on the month. In addition to some negative alpha, managers were cautiously positioned going into the Brexit referendum with lower gross and net exposures, which helped limit downside participation but also moderated participation in the rebound.
- Credit (+0.6%) and Distressed (+0.7%) funds were modestly positive despite the post-Brexit high yield sell off. Managers with long exposure to CCC and energy-related credit generally outperformed in June, while losses were taken in European credit and European financials.
- Relative Value (+0.3%) strategies, which generally perform best in low volatility markets, were able to profit as yields plummeted and yield curves flattened in the US, Europe, and Japan due to heightened investor risk aversion.

Source – Cliffwater

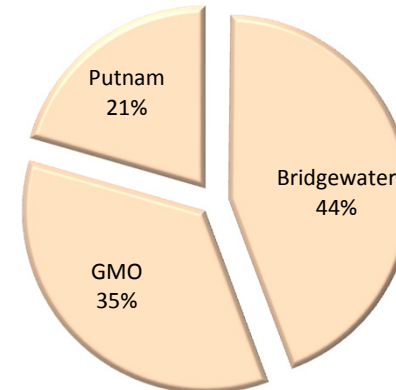
Manager Risk vs Return (Sharpe) as at June 2016



Twelve Month Compounded Performance as at June 2016



Exposure by Manager as at June 2016



Data as at June 2016 Natural Resources Overview

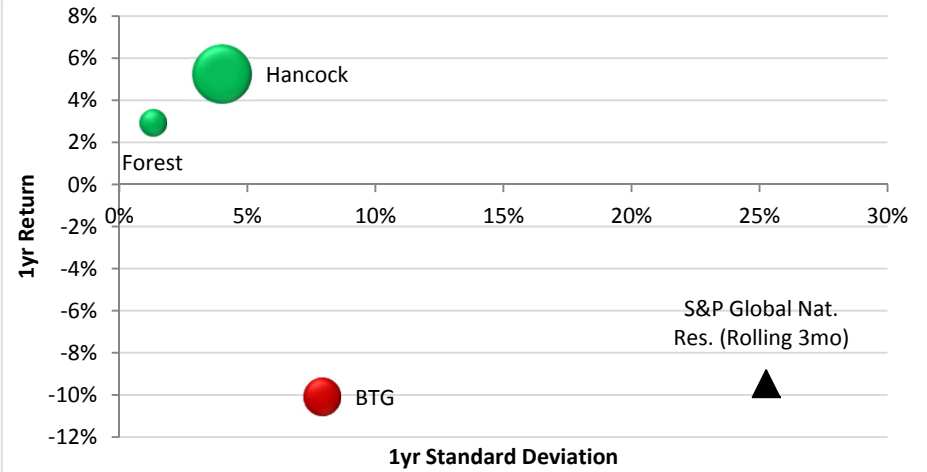


Commentary

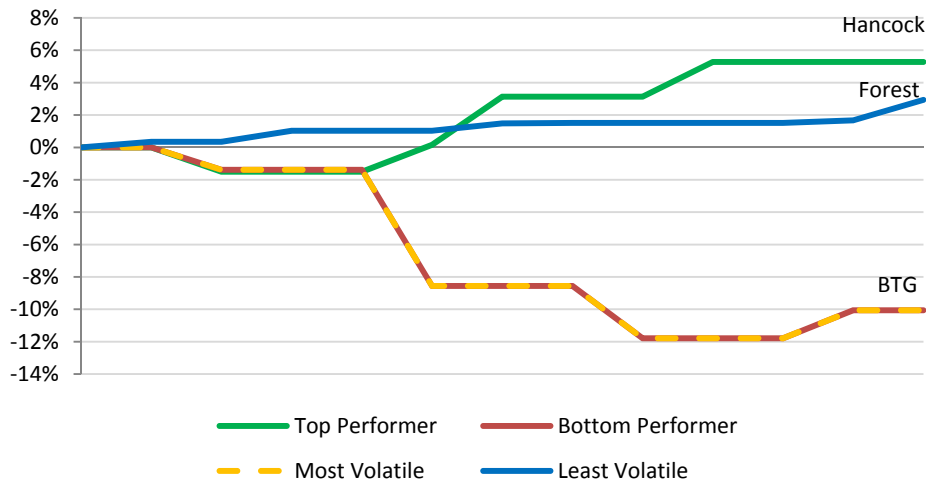
- Natural gas (30.9% total return in the index¹) led the energy commodities, with its biggest rally in a decade as a decline in production and healthy demand helped to shrink oversupplied conditions. Crude oil enjoyed strong gains for similar reasons. Brent crude (19.5%) and West Texas Intermediate (18.6%) benefited further from production disruptions in Canada, Nigeria, Venezuela and elsewhere that brought the global oil surplus closer to balanced conditions.
- Expectations for increased monetary accommodation globally, as well as economic and political uncertainty in the U.K. and EU, sparked flights to perceived safe havens. Silver (19.8%) enjoyed particularly strong investor demand, climbing to its highest level in nearly two years in the process. Gold (6.7%) likewise rose on safe-haven buying.
- Among the industrial metals, zinc (15.5%) rallied on expectations of tightening market conditions after several mature mines were closed. Despite continued oversupplied conditions, nickel (10.7%) garnered attention following comments from recently elected Philippines President Rodrigo Duterte, who warned that mining projects that harm the environment would face closure. Duterte specifically mentioned an important nickel-exporting region in his threat. Aluminum (8.1%) rallied after six of China's largest smelters reportedly discussed cutting production to help stabilize prices. Copper (0.0%) was pressured by weak demand and large stock builds in London Metals Exchange warehouses, though a report in June indicating that China plans to boost stockpiles helped to eliminate the metal's loss by quarter's end.

Source – Cohen & Steers

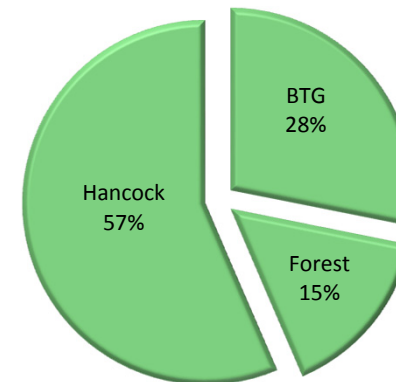
Manager Risk vs Return (Sharpe) as at June 2016



Twelve Month Compounded Performance as at June 2016



Exposure by Manager as at June 2016



Data as at June 2016 Infrastructure Overview

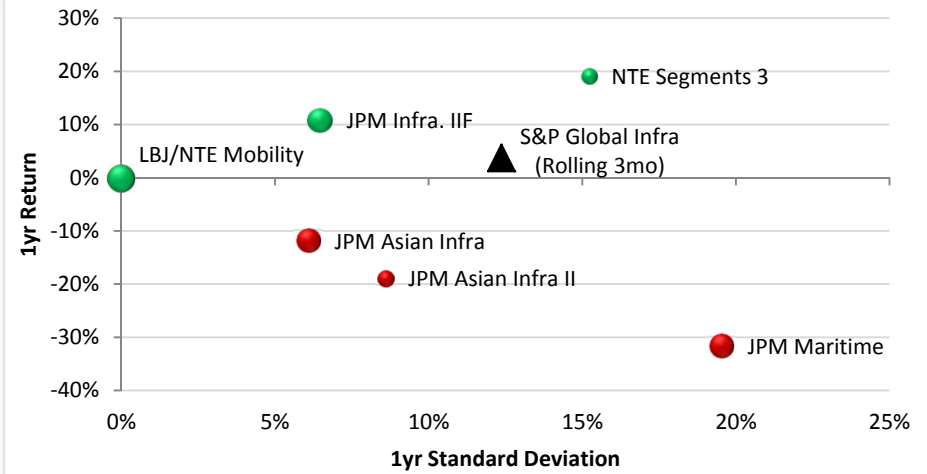


Commentary

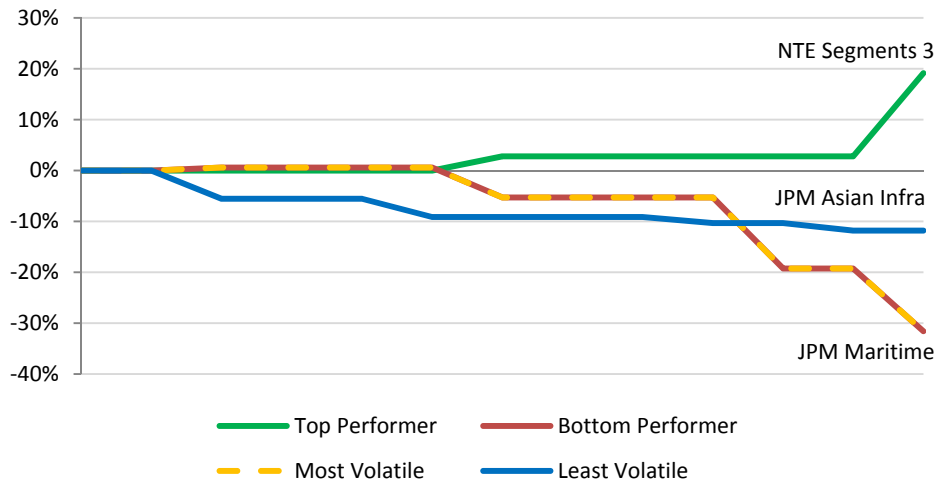
- Global listed infrastructure produced healthy returns in the second quarter, adding to the sector's year-to-date outperformance relative to the broader global equity market. The second quarter was marked by improving but relatively modest global economic activity and declining bond yields, as central banks worldwide maintained accommodative monetary policies to stimulate growth.
- There was broad dispersion in returns among infrastructure stocks in the quarter. The more defensive subsectors advanced throughout the period, as declining bond yields made the stocks' relatively high yields more attractive, and as investors sought to hold assets with relatively stable cash flows amid increased equity market volatility. The more economically sensitive subsectors underperformed.
- Midstream energy companies (14.1%) benefited from firmer crude oil prices and reduced contract counterparty risk. Several of the general partners were top performers—these included Oneok and Semgroup, which climbed approximately 62% and 48%, respectively.
- Within the communications subsector (6.3%), cell tower companies in the U.S. advanced, while their European counterparts performed poorly on the heels of lowered expectations for consolidation activity. Satellites declined sharply as one of the leading operators, Eutelsat, guided to a materially lower outlook, highlighting a significant increase in competitive pressures in the business.

Source – Cohen & Steers

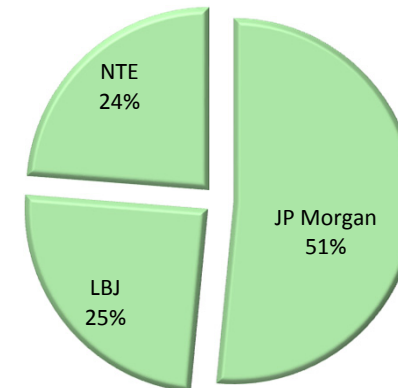
Manager Risk vs Return (Sharpe) as at June 2016



Twelve Month Compounded Performance as at June 2016



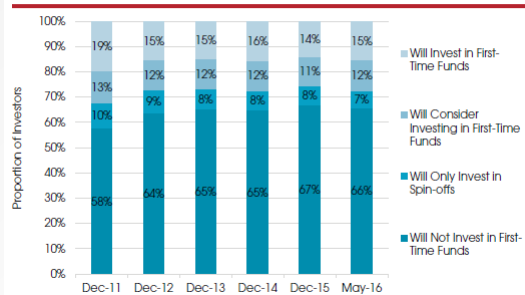
Exposure by Manager as at June 2016



Commentary

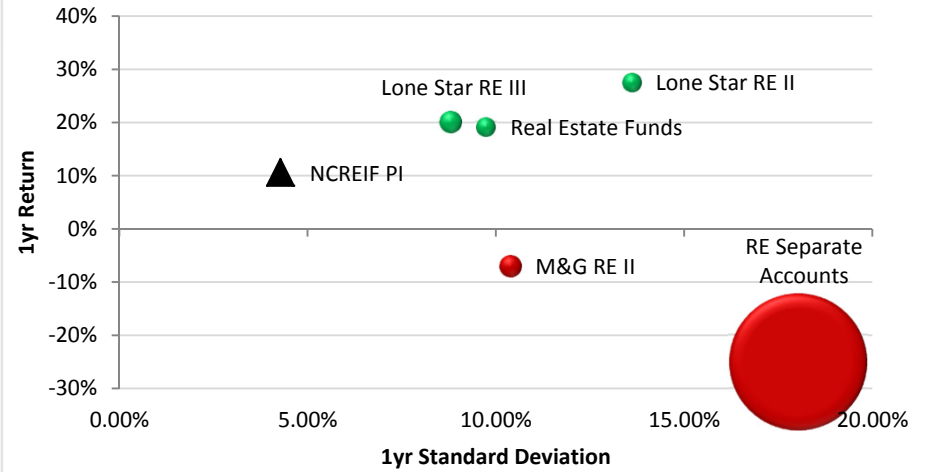
- The experience and track record of a fund manager has become increasingly important to investors in recent years. Of the investors surveyed for the Preqin Investor Outlook: Alternative Assets, H1 2016, past performance and length of track record were cited as two of the three most important factors investors consider when looking for a real estate fund manager. Preqin's Real Estate Online reveals that of the 5,294 institutional investors currently active in real estate, two-thirds will not invest in first-time funds – this is an eight percentage point increase compared with 2011. Equally, the proportion of investors willing to invest in first-time funds has dropped by four percentage points in the same period.

Fig. 1: Real Estate Investor Appetite for First-Time Funds, December 2011 - May 2016

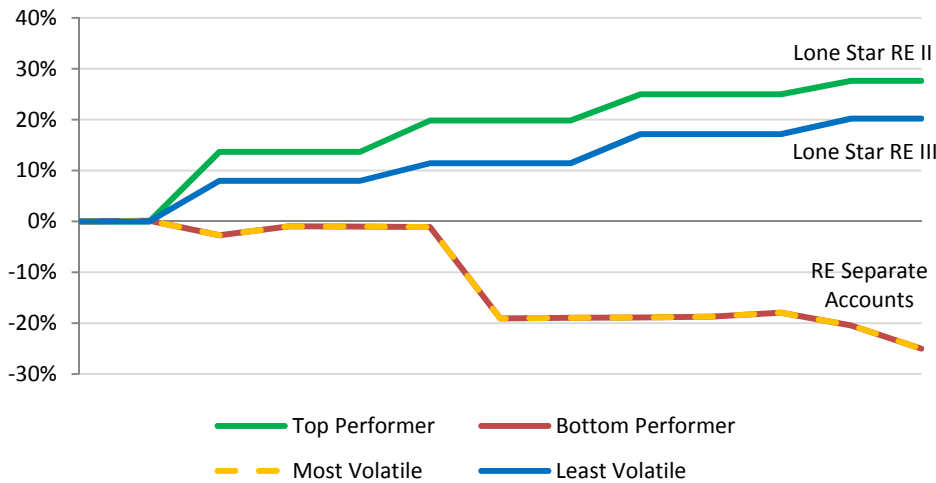


Source – Preqin

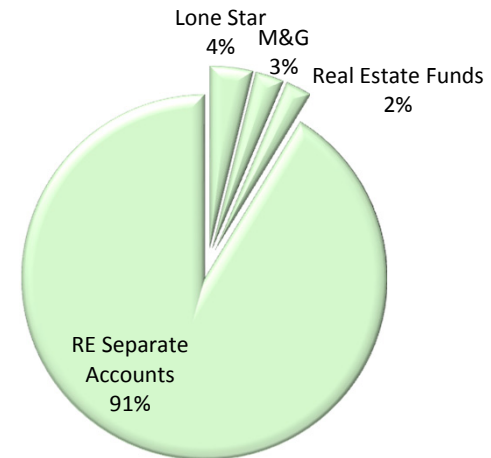
Manager Risk vs Return (Sharpe) as at June 2016



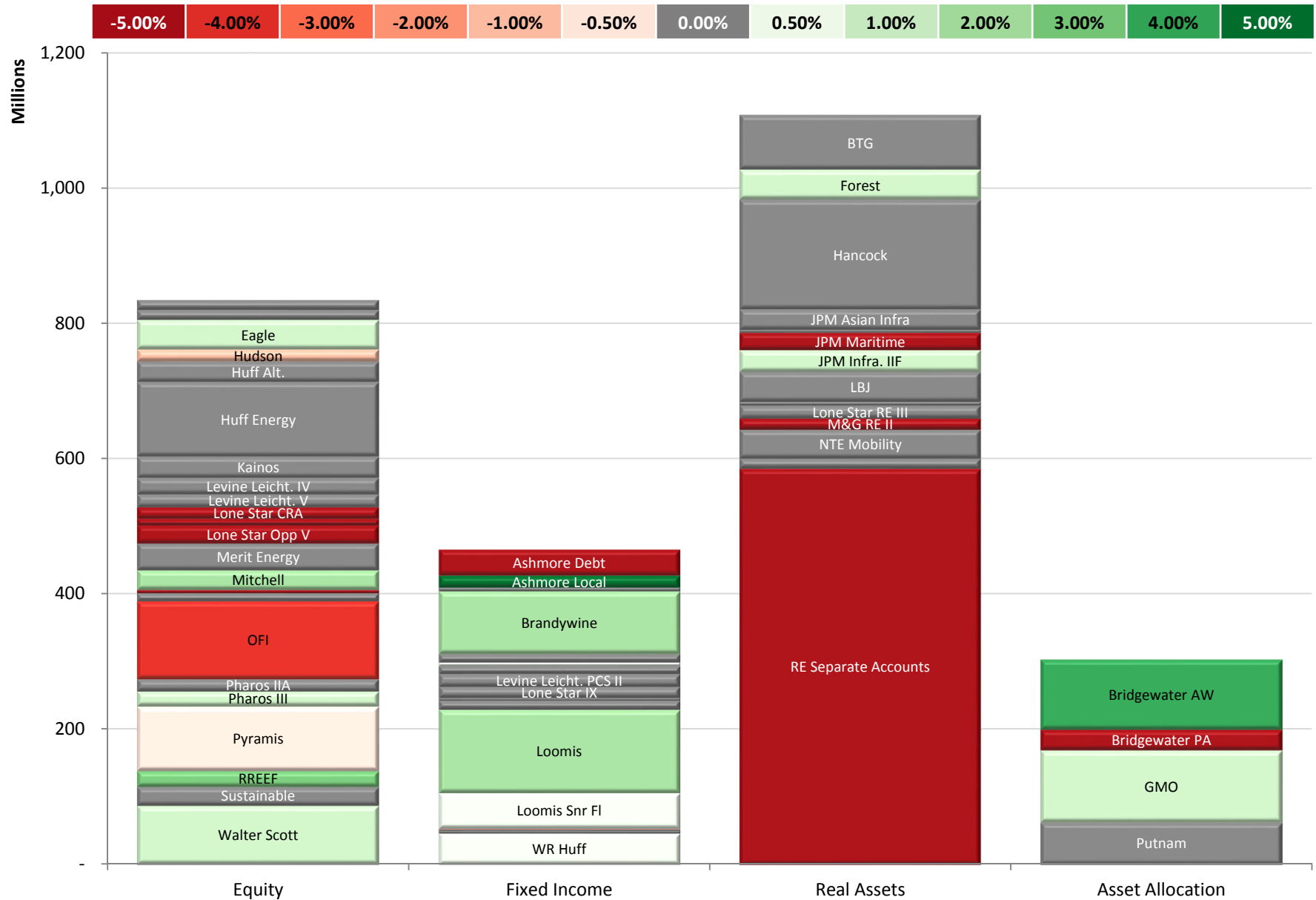
Twelve Month Compounded Performance as at June 2016



Exposure by Manager as at June 2016

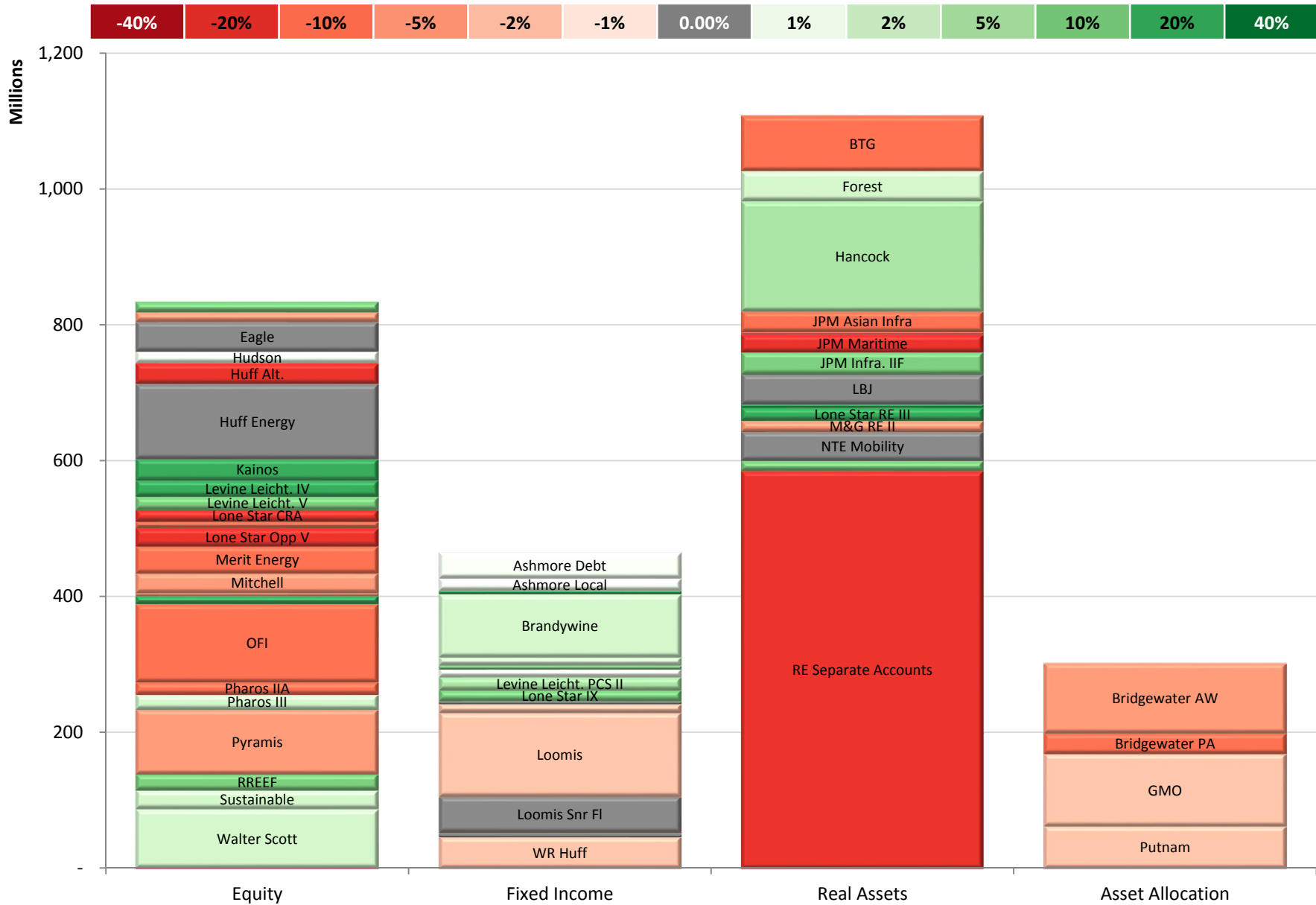


Data as at June 2016 One Month Performance Heat Map

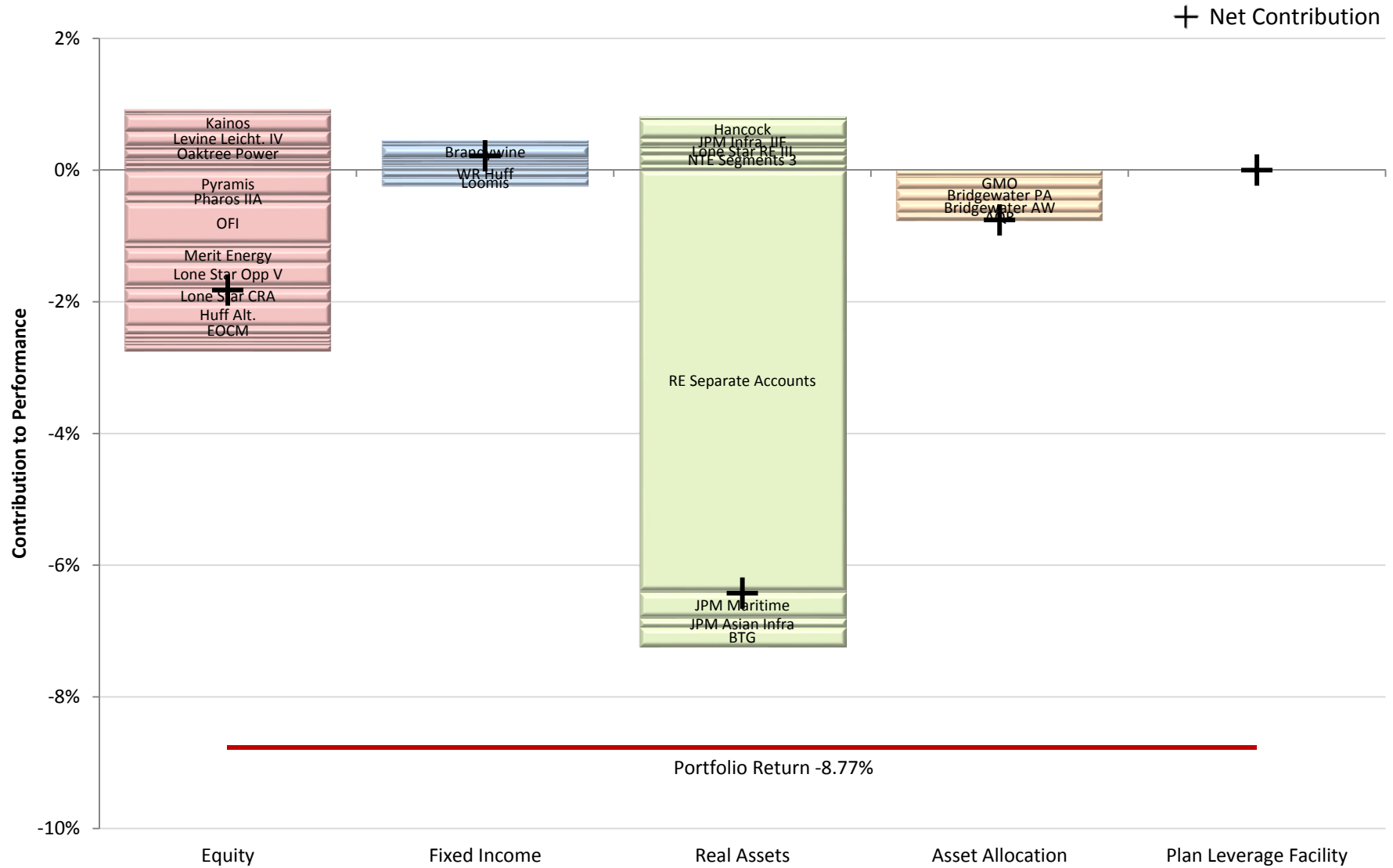


*Private assets only report on a quarterly basis therefore the one month return is often unchanged.

Data as at June 2016 Twelve Month Performance Heat Map

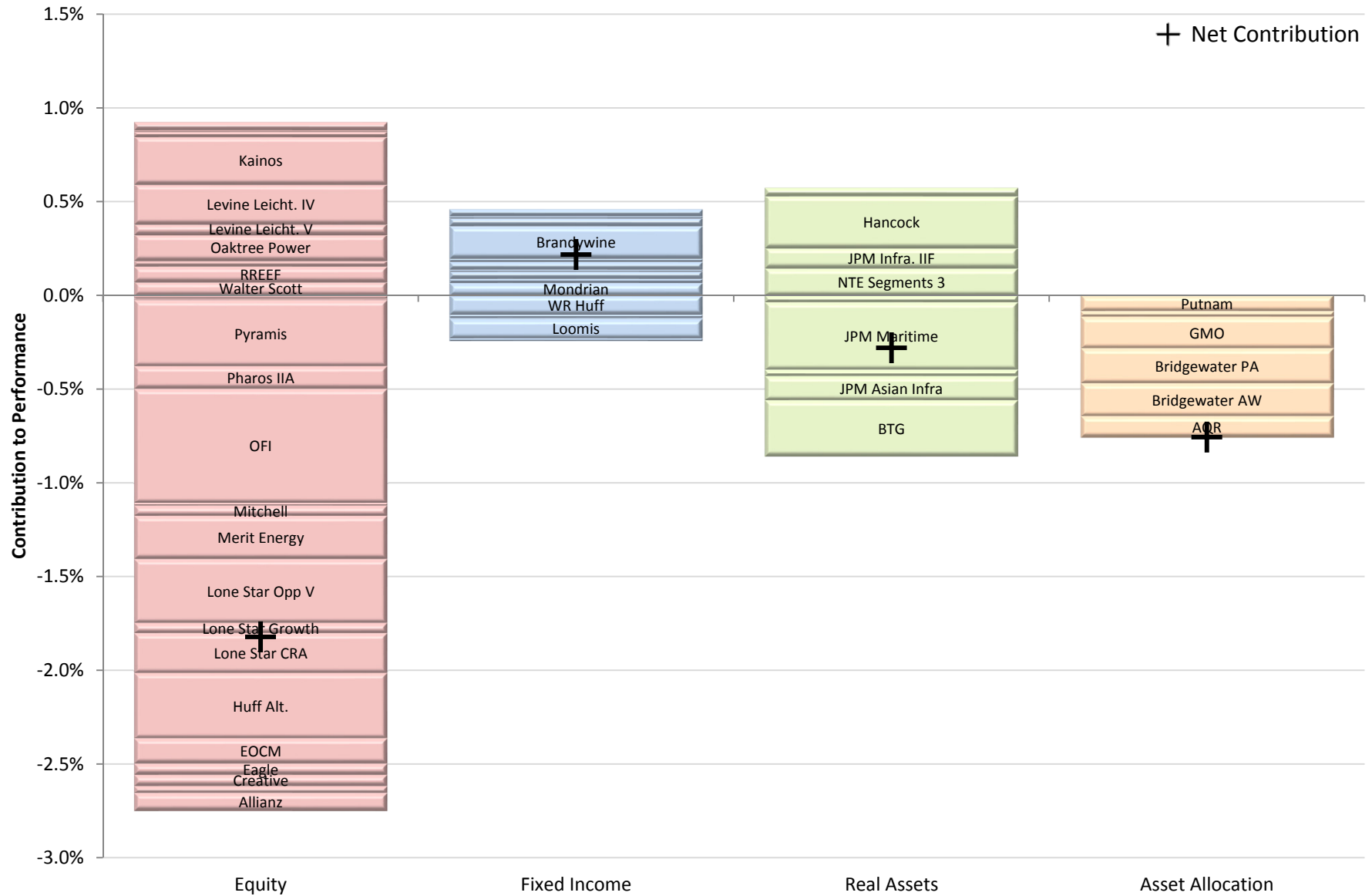


Data as at June 2016 Twelve Month Contribution to Performance



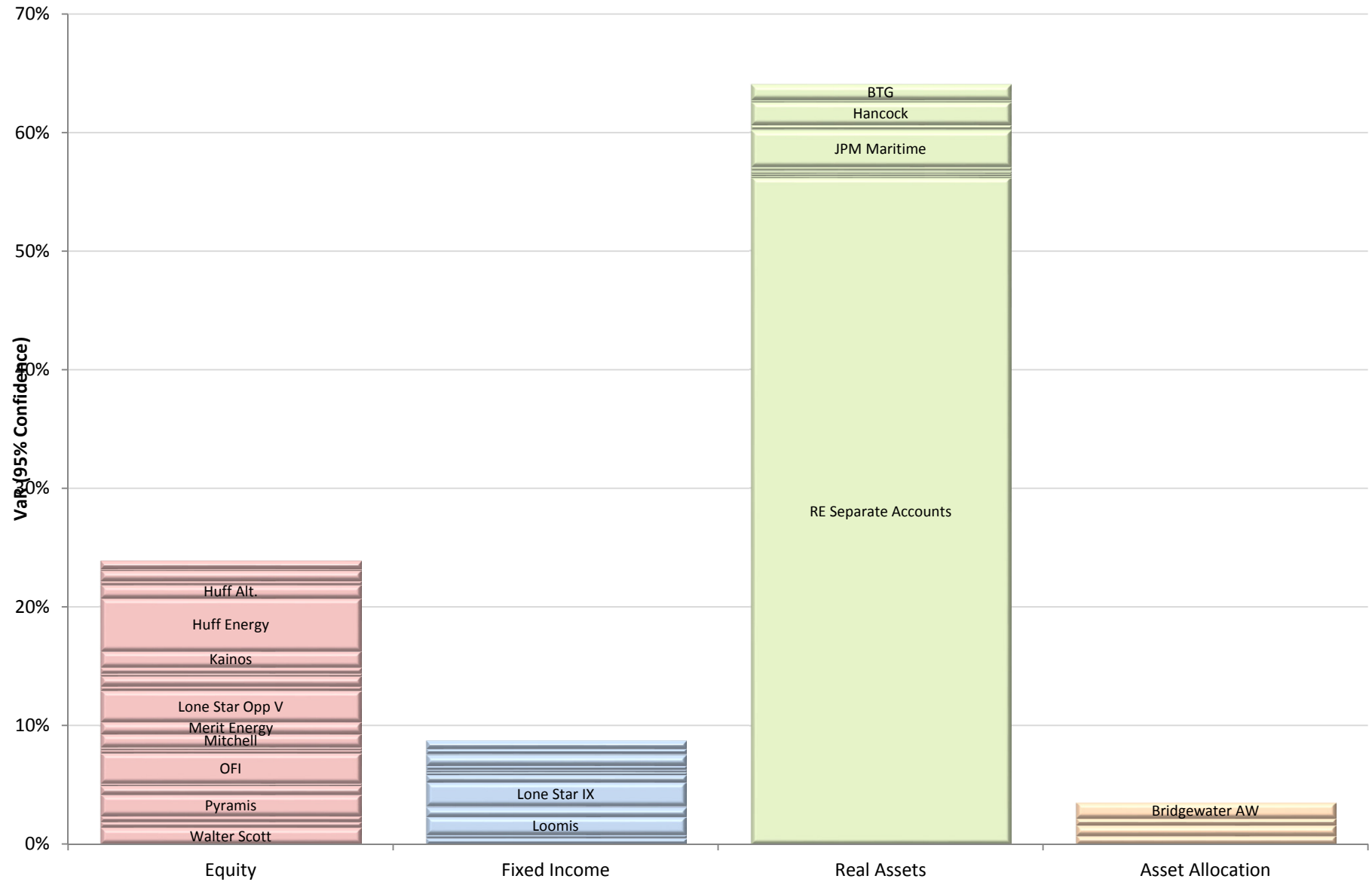
* Returns presented are calculated using custodian bank month-end source data and values. The returns shown here will differ from actuary calculated returns and returns presented by NEPC.

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



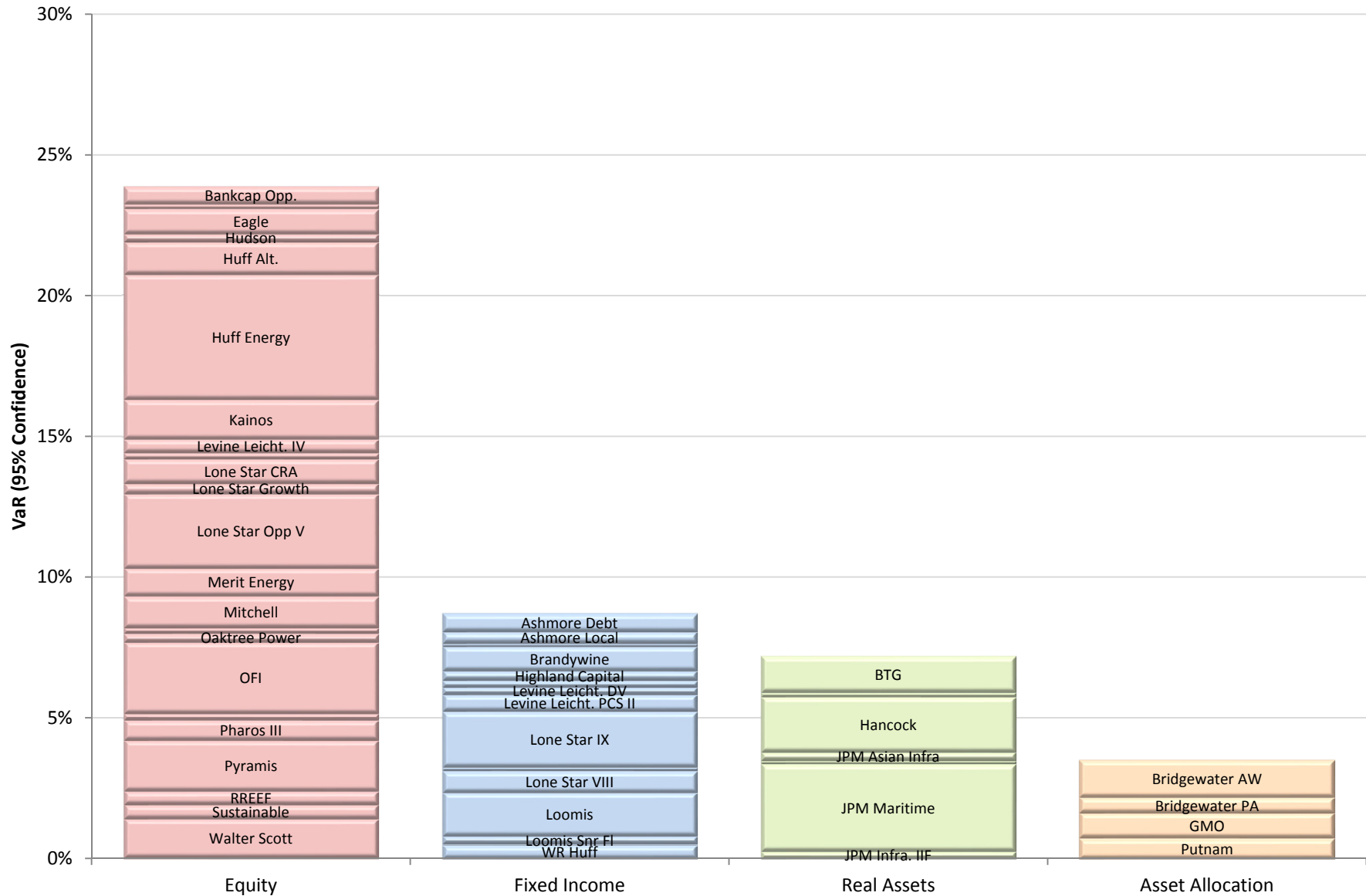
* Returns presented are calculated using custodian bank month-end source data and values. The returns shown here will differ from actuary calculated returns and returns presented by NEPC.

Data as at June 2016
Five Year Contribution to Risk



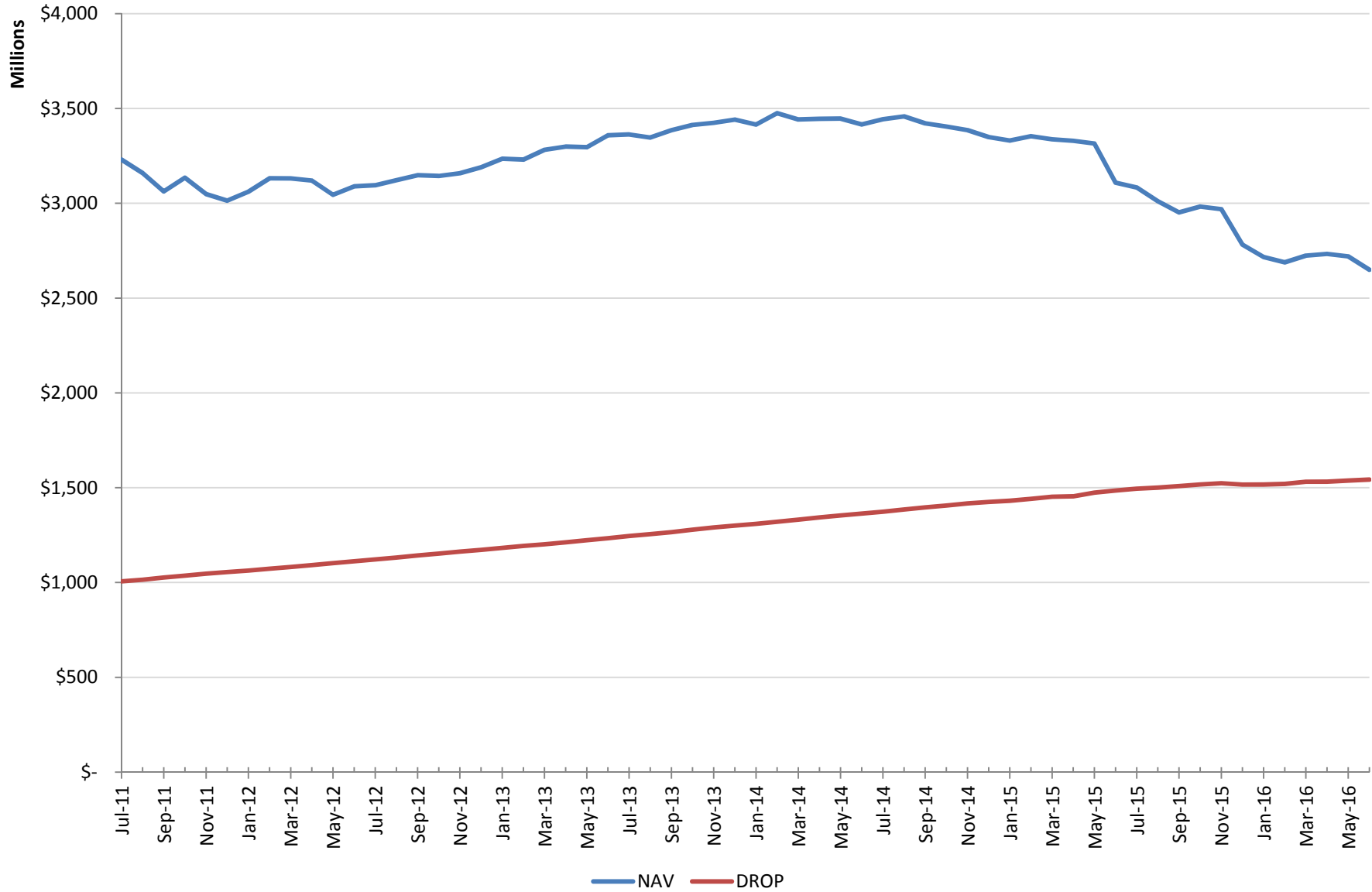
* VaR is expressed, on a position basis, as a percentage of the total portfolio VaR.

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



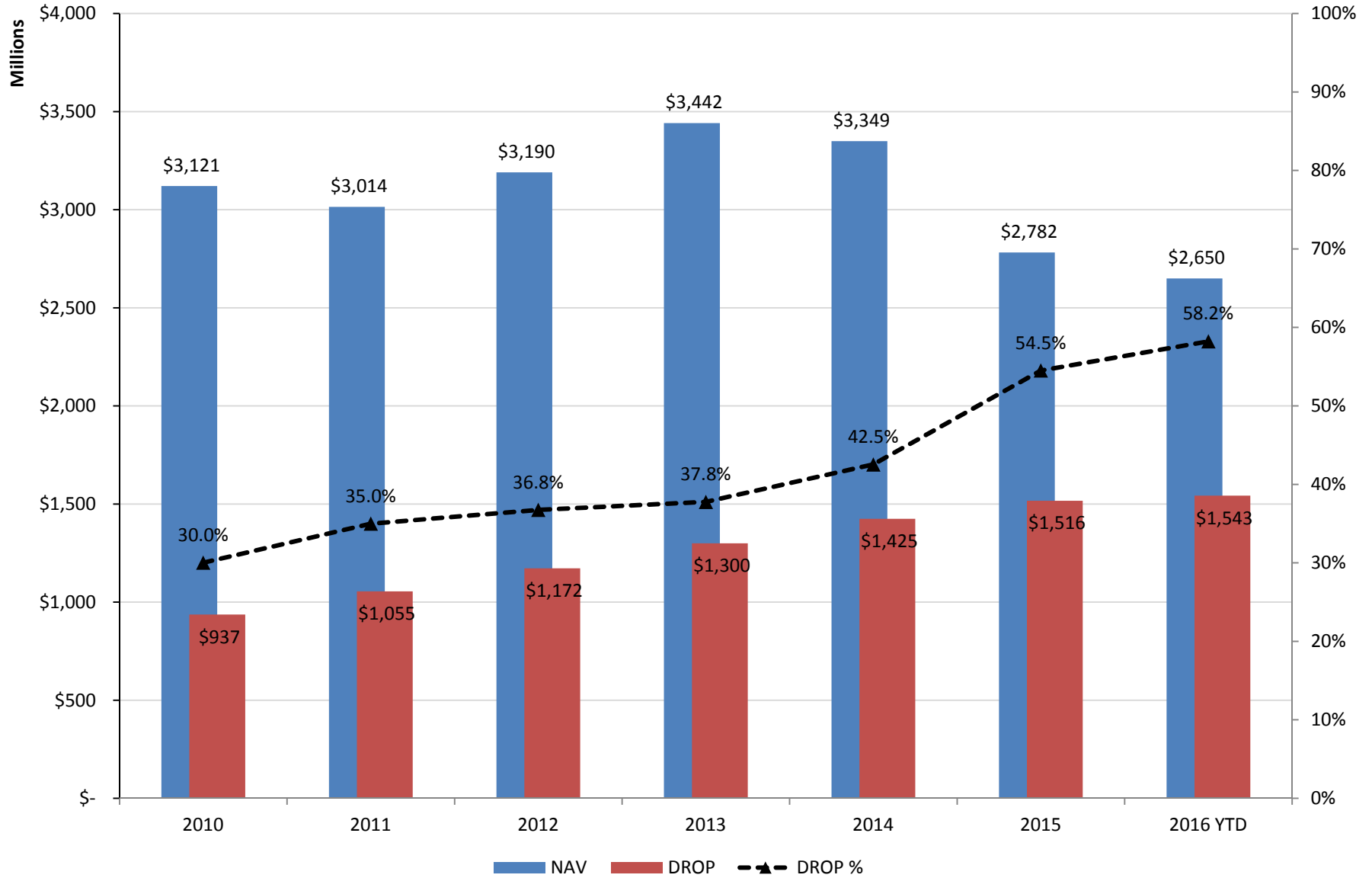
* VaR is expressed, on a position basis, as a percentage of the total portfolio VaR.

Data as at June 2016 Monthly NAV & Drop Balances



*On a rolling five year basis.

Data as at June 2016
DROP as % of NAV



Investment Oversight

As at 31st July 2016

Dallas Police & Fire Pension System

Data as at June 2016
 Manager Overview



Fund	Inception Date	Current Exposure	Net Allocation (%)	1M	3M	YTD	1yr	2yr	3yr	5yr
Portfolio	Jun 1996	\$ 2,649,549,214		-1.91%	-0.65%	-0.67%	-8.77%	-7.36%	-3.37%	-0.08%
Plan Leverage Facility	Mar 2014	\$ (160,000,000)		0.00%	0.00%	0.00%	0.00%	0.90%	n/a	n/a
EQUITY		\$ 834,316,446	31.49%	-2.79%	-0.82%	-1.44%	-5.32%	-4.89%	-0.41%	2.30%
Global Equity	Jul 2006	\$ 421,511,217	15.91%	-0.77%	1.81%	0.87%	-4.55%	-2.42%	5.40%	5.27%
<i>MSCI ACWI</i>				-0.61%	0.99%	1.23%	-3.73%	-1.53%	6.03%	5.38%
Eagle Asset Management	Feb 2005	\$ 43,730,043	1.65%	1.14%	4.54%	4.78%	-0.54%	3.37%	9.82%	8.94%
Mitchell Group	Oct 2001	\$ 29,169,046	1.10%	2.63%	14.75%	21.65%	-6.54%	-19.22%	-4.01%	-2.94%
OFI Global Institutional	Oct 2007	\$ 115,242,548	4.35%	-4.32%	-2.39%	-8.77%	-13.92%	-3.17%	5.02%	5.53%
Pyramis (Fidelity)	Mar 2002	\$ 95,414,527	3.60%	-0.96%	0.84%	-0.29%	-5.91%	-1.12%	6.40%	6.05%
RREEF	Feb 1999	\$ 23,573,348	0.89%	3.54%	3.24%	8.94%	11.40%	5.90%	8.44%	8.12%
Sustainable Asset Management	Nov 2008	\$ 27,663,794	1.04%	-0.12%	4.47%	8.15%	4.32%	1.41%	10.36%	8.04%
Walter Scott	Dec 2009	\$ 86,717,912	3.27%	1.01%	2.41%	4.50%	3.29%	2.17%	7.26%	7.59%
Private Equity	Oct 2005	\$ 412,805,229	15.58%	-4.86%	-3.56%	-3.76%	-4.82%	-7.56%	-8.07%	-1.53%
<i>Russell 3000 + 3% (Rolling 3mo)</i>				2.85%	2.85%	4.05%	3.04%	5.70%	12.21%	12.63%
BankCap Opportunity Fund	Aug 2013	\$ 14,650,027	0.55%	0.00%	-1.28%	12.51%	10.33%	-1.77%	n/a	n/a
BankCap Partners	Feb 2007	\$ 14,642,715	0.55%	0.00%	-5.40%	-6.58%	-7.26%	-4.27%	-1.26%	-1.15%
Hudson Clean Energy	Aug 2009	\$ 17,669,588	0.67%	-1.59%	-1.71%	-1.71%	1.49%	-0.83%	-5.21%	-6.36%
Huff Alternative Fund	Jun 2001	\$ 30,390,586	1.15%	0.00%	0.00%	0.00%	-26.29%	2.02%	-1.31%	-7.79%
Huff Energy Fund LP	Dec 2005	\$ 110,127,486	4.16%	0.00%	0.00%	0.00%	0.81%	-13.08%	-18.35%	-7.65%
Kainos Capital Partners	Jan 2014	\$ 31,532,549	1.19%	0.00%	7.50%	15.75%	33.41%	27.49%	n/a	n/a
Levine Leichtman Capital Partners IV	Apr 2008	\$ 24,276,861	0.92%	0.24%	2.24%	13.36%	29.89%	12.69%	11.02%	18.05%
Levine Leichtman Capital Partners V	Aug 2013	\$ 19,184,500	0.72%	0.31%	1.90%	4.98%	12.05%	14.68%	n/a	n/a
Lone Star CRA	Jul 2008	\$ 17,024,743	0.64%	-39.42%	-39.42%	-39.42%	-37.72%	-37.55%	-21.22%	-5.36%
Lone Star Growth Capital	Dec 2006	\$ 9,882,945	0.37%	-22.23%	-22.23%	-22.23%	-13.60%	-0.55%	-12.38%	1.12%
Lone Star Opportunities V	Jan 2012	\$ 26,622,008	1.00%	-39.16%	-39.06%	-38.95%	-37.43%	-16.87%	-12.63%	n/a
Merit Energy E, F, G, H	Oct 2004	\$ 39,508,705	1.49%	0.00%	7.81%	-10.28%	-15.49%	-13.71%	-5.39%	0.50%
North Texas Opportunity Fund	Aug 2000	\$ 4,695,538	0.18%	-6.96%	-6.96%	-6.96%	-7.24%	-29.79%	-14.23%	-13.40%
Oaktree Power Opportunities Fund III	Apr 2011	\$ 11,871,507	0.45%	0.00%	6.10%	11.86%	35.08%	13.90%	18.57%	8.11%
Pharos IIA	Aug 2005	\$ 18,075,621	0.68%	0.00%	-4.80%	-6.32%	-16.85%	-9.68%	-5.71%	1.29%
Pharos III	Dec 2012	\$ 22,138,491	0.84%	1.22%	6.82%	2.86%	3.42%	0.77%	-9.54%	n/a
Yellowstone Capital	Sep 2008	\$ 511,359	0.02%	0.00%	-15.85%	-15.85%	-55.46%	-48.14%	-45.60%	-34.66%
Cash & Cash Equivalents		\$ 99,693,304	3.76%	0.06%	0.25%	0.88%	0.98%	0.54%	0.33%	-0.71%

Investment Oversight

As at 31st July 2016

Dallas Police & Fire Pension System

Data as at June 2016
Manager Overview (cont.)



Fund	Inception Date	Current Exposure	Net Allocation (%)	1M	3M	YTD	1yr	2yr	3yr	5yr
FIXED INCOME	Jul 2006	\$ 465,053,625	17.55%	0.69%	4.49%	7.55%	1.14%	-0.35%	1.97%	3.07%
Bank Loans		\$ 52,843,834	1.99%	0.56%	4.58%	5.20%	-0.54%	1.02%	n/a	n/a
<i>S&P Leveraged Loan Index</i>				<i>-0.15%</i>	<i>2.80%</i>	<i>5.36%</i>	<i>0.69%</i>	<i>0.49%</i>	<i>2.16%</i>	<i>3.46%</i>
Loomis Sayles Sr. Floating Rate	Jan 2014	\$ 52,843,834	1.99%	0.56%	4.58%	5.20%	-0.54%	1.02%	n/a	n/a
EM Debt		\$ 56,201,108	2.12%	-5.11%	5.67%	6.86%	1.74%	-1.53%	-1.52%	0.65%
<i>JPM EMBI + JPM GBI-EM</i>				<i>4.63%</i>	<i>3.90%</i>	<i>12.24%</i>	<i>5.95%</i>	<i>-1.12%</i>	<i>1.75%</i>	<i>2.10%</i>
Ashmore EM Debt Fund	Feb 2005	\$ 38,170,348	1.44%	-9.81%	6.08%	3.02%	1.34%	1.32%	-0.49%	2.26%
Ashmore EM Local CCY	Mar 2011	\$ 18,030,760	0.68%	6.53%	3.69%	15.46%	1.70%	-7.69%	-4.00%	-2.79%
Global Bonds		\$ 93,276,058	3.52%	2.90%	1.61%	8.94%	5.91%	0.22%	2.31%	2.22%
<i>Barclays Global Aggregate</i>				<i>2.92%</i>	<i>2.89%</i>	<i>8.96%</i>	<i>8.87%</i>	<i>0.57%</i>	<i>2.80%</i>	<i>1.77%</i>
Brandywine	Oct 2004	\$ 92,704,961	3.50%	2.94%	1.34%	9.09%	4.08%	-0.93%	1.71%	3.15%
Mondrian Investment Partners	Oct 2003	\$ 571,097	0.02%	-3.48%	-4.08%	1.97%	1.35%	-1.65%	0.80%	-0.03%
High Yield		\$ 169,467,362	6.40%	1.91%	8.04%	10.88%	-2.45%	-3.40%	1.87%	3.73%
<i>Barclays Global HY</i>				<i>0.92%</i>	<i>5.52%</i>	<i>9.06%</i>	<i>1.62%</i>	<i>0.60%</i>	<i>4.18%</i>	<i>5.84%</i>
Loomis Sayles	Oct 1998	\$ 123,062,806	4.64%	2.36%	9.02%	11.60%	-3.01%	-2.97%	2.99%	4.23%
W.R. Huff High Yield	Jun 1996	\$ 46,404,556	1.75%	0.76%	5.52%	8.48%	-2.32%	-4.48%	-0.12%	2.62%
Private Debt		\$ 93,265,263	3.52%	0.10%	2.59%	2.68%	4.86%	6.42%	4.17%	4.73%
<i>Barclays Global HY + 2% (Rolling 3mo)</i>				<i>6.03%</i>	<i>6.03%</i>	<i>10.13%</i>	<i>3.65%</i>	<i>2.62%</i>	<i>6.26%</i>	<i>7.95%</i>
Ashmore GSSF IV	Oct 2007	\$ 5,230,799	0.20%	-0.14%	5.70%	21.18%	29.29%	3.14%	-3.96%	-9.19%
Highland Capital Management	Jan 2007	\$ 12,431,871	0.47%	0.00%	0.00%	0.00%	3.04%	-1.59%	3.25%	8.03%
Highland Crusader Fund	Jul 2003	\$ 5,118,111	0.19%	0.67%	32.22%	30.98%	12.64%	6.21%	3.83%	17.45%
Levine Leichtman Capital Partners Deep Value	Oct 2006	\$ 11,829,111	0.45%	0.00%	2.53%	-1.95%	1.46%	14.19%	0.08%	-0.46%
Levine Leichtman Capital Partners PCS II	Feb 2012	\$ 19,006,095	0.72%	0.30%	4.25%	6.18%	6.49%	-2.28%	3.12%	n/a
Lone Star Fund IX, LP	Apr 2015	\$ 16,528,395	0.62%	0.02%	-0.06%	1.69%	10.56%	n/a	n/a	n/a
Lone Star Fund VII, LP	Jul 2011	\$ 3,794,344	0.14%	0.00%	-5.20%	-9.38%	-0.70%	17.06%	41.33%	39.98%
Lone Star Fund VIII, LP	Jun 2013	\$ 13,365,506	0.50%	0.00%	-8.44%	-8.80%	-2.17%	24.13%	39.79%	n/a
Oaktree Fund IV & 2x Loan Fund	Jan 2002	\$ 1,971,797	0.07%	0.00%	-0.06%	-8.62%	-20.86%	-12.57%	-6.27%	-2.30%
Riverstone Credit Partners LP	Jun 2016	\$ 3,989,235	0.15%	0.00%	n/a	n/a	n/a	n/a	n/a	n/a
ASSET ALLOCATION	Jul 2007	\$ 302,552,830	11.42%	1.32%	5.68%	1.86%	-4.83%	-0.78%	2.05%	3.68%
GTAA		\$ 106,222,360	4.01%	1.31%	4.79%	0.20%	-4.08%	-1.55%	1.35%	2.38%
<i>60% NDUEACWF / 40% Barc Global Agg</i>				<i>0.80%</i>	<i>1.76%</i>	<i>4.37%</i>	<i>1.40%</i>	<i>-0.53%</i>	<i>4.88%</i>	<i>4.12%</i>
GMO	Sep 2007	\$ 106,222,360	4.01%	1.31%	4.79%	0.20%	-4.08%	-2.10%	1.15%	3.73%
Risk Parity		\$ 165,895,110	6.26%	2.41%	7.40%	5.19%	-3.43%	-0.30%	2.21%	5.29%
<i>60% NDUEACWF / 40% Barc Global Agg</i>				<i>0.80%</i>	<i>1.76%</i>	<i>4.37%</i>	<i>1.40%</i>	<i>-0.53%</i>	<i>4.88%</i>	<i>4.12%</i>
AQR	Oct 2013	\$ 574,538	0.02%	1.55%	6.38%	6.54%	-3.94%	-2.02%	n/a	n/a
Bridgewater All Weather	Sep 2007	\$ 103,149,184	3.89%	4.33%	8.49%	4.10%	-5.56%	-1.17%	1.45%	5.52%
PanAgora	Nov 2013	\$ 6,439	0.00%	-1.16%	4.46%	7.87%	-0.04%	3.33%	n/a	n/a
Putnam	Dec 2009	\$ 62,164,949	2.35%	0.35%	6.39%	1.68%	-4.25%	-1.47%	1.83%	2.94%
Absolute Return		\$ 30,435,360	1.15%	-5.14%	-1.47%	-13.57%	-15.94%	-0.69%	3.76%	n/a
Bridgewater Pure Alpha		\$ 30,435,360	1.15%	-5.14%	-1.47%	-13.57%	-15.94%	-0.69%	3.76%	n/a

Investment Oversight

As at 31st July 2016

Dallas Police & Fire Pension System

Data as at June 2016
Manager Overview (cont.)



Fund	Inception Date	Current Exposure	Net Allocation (%)	1M	3M	YTD	1yr	2yr	3yr	5yr
REAL ASSETS	Mar 2015	\$ 1,107,933,009	41.82%	-3.10%	-4.34%	-3.96%	-14.75%	-12.31%	-8.76%	-4.06%
Natural Resources	Apr 2015	\$ 287,476,331	10.85%	0.19%	0.76%	0.92%	0.24%	6.41%	6.33%	6.94%
<i>S&P Global Nat. Res. (Rolling 3mo)</i>				6.76%	6.76%	16.49%	-9.47%	-13.89%	-3.54%	-6.70%
BTG Pactual Asset Management	Oct 2006	\$ 80,905,128	3.05%	0.00%	1.95%	-1.65%	-10.06%	-6.29%	-7.32%	-6.52%
Forest Investment Associates	Jan 1992	\$ 44,311,443	1.67%	1.24%	1.41%	1.43%	2.94%	4.93%	5.67%	3.58%
Hancock Agricultural	Dec 2002	\$ 162,259,760	6.12%	0.00%	0.00%	2.07%	5.27%	15.45%	15.79%	17.91%
Infrastructure	Jul 2012	\$ 179,404,019	6.77%	0.01%	-2.58%	-2.51%	-3.88%	-3.56%	-0.47%	0.51%
<i>S&P Global Infra (Rolling 3mo)</i>				4.99%	4.99%	14.09%	3.71%	-0.82%	8.66%	6.16%
JP Morgan Asian Infrastructure	Aug 2008	\$ 30,128,438	1.14%	0.00%	-1.66%	-2.95%	-11.82%	-5.17%	-4.03%	1.38%
JP Morgan Asian Infrastructure II	Mar 2014	\$ 4,445,279	0.17%	0.00%	-4.25%	-8.50%	-18.89%	-12.44%	n/a	n/a
JP Morgan Global Maritime	Jun 2010	\$ 25,630,816	0.97%	-15.25%	-27.75%	-27.75%	-31.57%	-20.91%	2.74%	-79.47%
JP Morgan Infrastructure IIF	Oct 2007	\$ 32,226,382	1.22%	1.80%	2.35%	4.84%	10.83%	1.77%	4.09%	4.89%
LBJ Infrastructure Group Holdings	Jun 2010	\$ 44,346,035	1.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
NTE Mobility Partners	Dec 2009	\$ 42,625,545	1.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
NTE Segments 3	Sep 2013	\$ 1,525	0.00%	15.90%	15.90%	15.90%	19.13%	9.59%	n/a	n/a
Real Estate	Mar 1985	\$ 641,052,659	24.19%	-5.43%	-6.98%	-6.43%	-22.76%	-19.95%	-15.26%	-8.57%
<i>NCREIF Property Index</i>				2.03%	2.03%	4.29%	10.64%	11.80%	11.60%	11.51%
Lone Star RE II	Sep 2011	\$ 5,168,576	0.20%	0.00%	2.12%	6.52%	27.64%	47.94%	39.25%	n/a
Lone Star RE III	May 2014	\$ 19,393,769	0.73%	0.00%	2.60%	7.86%	20.19%	12.73%	n/a	n/a
M&G Real Estate Debt Fund II, LP	Dec 2013	\$ 16,487,782	0.62%	-8.17%	-4.34%	-5.02%	-6.92%	-2.19%	n/a	n/a
RE Separate Accounts		\$ 585,059,048	22.08%	-5.71%	-7.74%	-7.34%	-25.00%	-21.92%	-17.14%	-10.46%
Real Estate Funds	Jan 1999	\$ 14,943,483	0.56%	0.00%	7.55%	8.25%	19.20%	8.43%	8.27%	6.13%

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

Data as at June 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 February 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 portfolio 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 June 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 June 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 31st July 2016

Dallas Police & Fire Pension System

Data as at June 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

Data as at June 2016

Appendix IV – Investment IRRs



Holding	Inception	IRR	End NAV	Subscriptions	Redemptions	Net Cashflows
Equity						
Eagle Asset Management	02/01/2005	7.88%	\$ 43,730,043	\$ 125,347,734	\$ 184,800,000	\$ 59,452,266
Mitchell Group	10/01/2001	12.91%	\$ 29,169,046	\$ 21,277,945	\$ 38,450,000	\$ 17,172,055
OFI Global Institutional	10/01/2007	4.20%	\$ 115,242,548	\$ 126,463,387	\$ 50,500,000	\$ (75,963,387)
Pyramis (Fidelity)	03/01/2002	9.07%	\$ 95,414,527	\$ 313,821,030	\$ 435,200,000	\$ 121,378,970
RREEF	02/01/1999	8.70%	\$ 23,573,348	\$ 28,277,404	\$ 59,917,403	\$ 31,639,999
Sustainable Asset Management	11/01/2008	11.16%	\$ 27,663,794	\$ 25,000,000	\$ 24,500,000	\$ (500,000)
Walter Scott	12/01/2009	11.61%	\$ 86,717,912	\$ 101,587,415	\$ 91,500,000	\$ (10,087,415)
Fixed Income						
Ashmore EM Debt Fund	02/01/2005	9.34%	\$ 38,170,348	\$ 50,000,000	\$ 65,388,475	\$ 15,388,475
Ashmore EM Local CCY	03/01/2011	-1.22%	\$ 18,030,760	\$ 25,000,000	\$ 5,588,313	\$ (19,411,687)
Brandywine	10/01/2004	5.03%	\$ 92,704,961	\$ 212,613,712	\$ 172,282,935	\$ (40,330,777)
Loomis Sayles	10/01/1998	8.83%	\$ 123,062,806	\$ 194,861,505	\$ 321,499,146	\$ 117,017,062
Loomis Sayles Sr. Floating Rate	01/01/2014	2.16%	\$ 52,843,834	\$ 50,000,000	\$ 849	\$ (49,999,151)
W.R. Huff High Yield	06/01/1996	4.90%	\$ 46,404,556	\$ 101,585,758	\$ 145,783,939	\$ 44,198,181
Asset Allocation						
Bridgewater	09/01/2007	5.27%	\$ 133,584,544	\$ 94,175,000	\$ 100	\$ (94,174,900)
GMO	09/01/2007	3.41%	\$ 106,222,360	\$ 100,000,000	\$ 20,000,000	\$ (80,000,000)
Putnam	12/01/2009	4.40%	\$ 62,164,949	\$ 50,000,000	\$ -	\$ (50,000,000)