

# Portfolio Performance Review

Quarter Ending June 30, 2014



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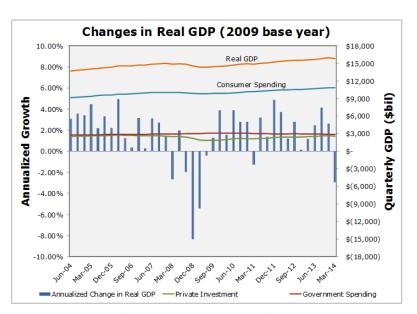


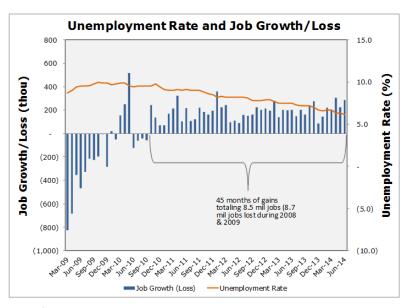
# **Executive Summary**



June 30, 2014		Key Econ	omic Indicators	
CPI (all items)	Monthly C	hange	Cumulativ	e Change
Seasonally adjusted	Jun-14	0.3	3-Month	0.9
	May-14	0.4	12-Month	2.1
	Apr-14	0.3	10-Yr Annual	2.3
Breakeven Inflation	10-Year	2.4		
Consumer Sentiment	Jun-14	82.5		
Unv. of Michigan Survey	May-14	81.9		
	1-Yr Ago	84.1	10-Yr Avg	77.5
Manufacturing	Jun-14	55.3	Change in Manufac	turing Sector
Inst. for Supply Mgmt	May-14	55.4	>50	Expansion
Purchasing Mngrs' ldx	1-Yr Avg	55.1	<50	Contraction

Note: Seasonally adjusted CPI data is utilized to better reflect short-term pricing activity.

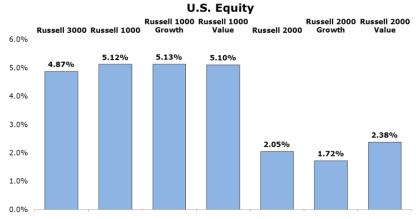




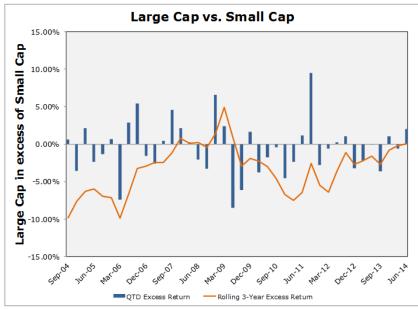
Data sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve Bank of St. Louis, Barclays Capital

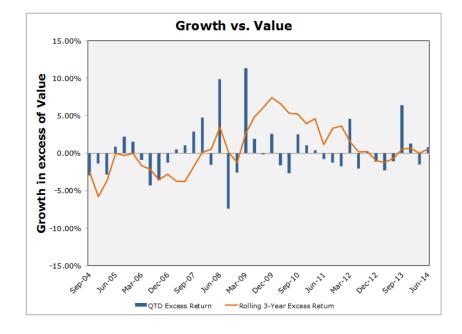


# U.S. Capital Markets: Equity



- U.S. stock market, as represented by the Russell 3000 Index, posted a return of 4.9%.
- Large-cap growth stocks performed strongest for the quarter.



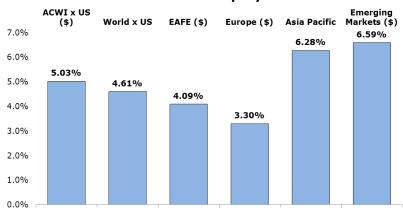


Data sources: Wilshire Compass, Wilshire Atlas





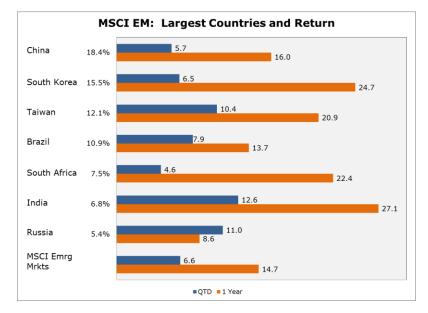






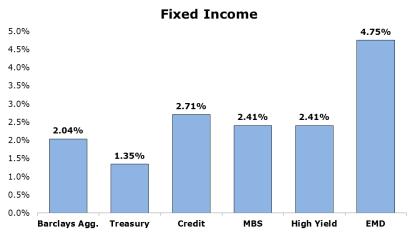
Data sources: Wilshire Compass, MSCI Barra

- Global equity markets also had a positive return for the quarter, with a return of 5.0% for the MSCI ACWI ex-U.S. Index.
- Emerging Markets returned 6.6% for the quarter as investors regained confidence in the Chinese government's support of economic growth.

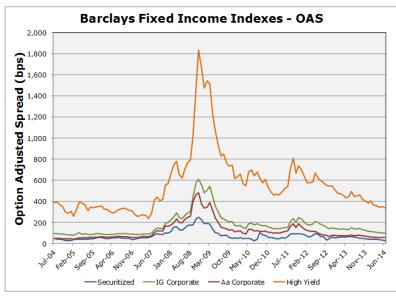


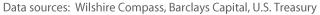


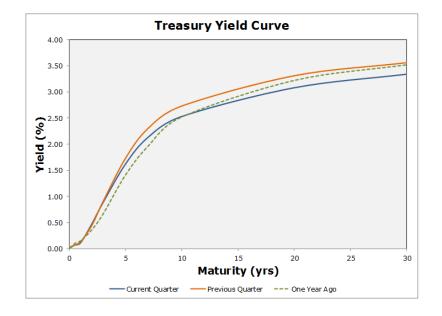
# U.S. Capital Markets: Fixed Income



- Fixed Income, as represented by the Barclays U.S. Aggregate Index, returned 2.0% for the quarter.
- Yields declined at maturities of 5 years and longer during 2Q14. Ten-Year Treasury yields fell to 2.53%, 20 basis points lower than 1Q14.

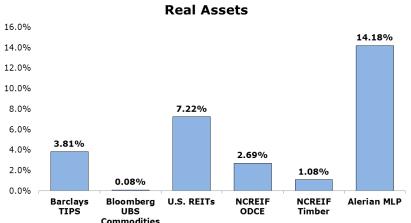


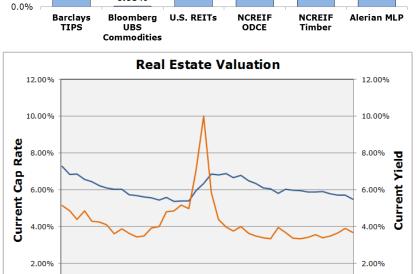


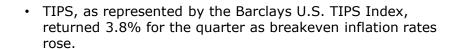




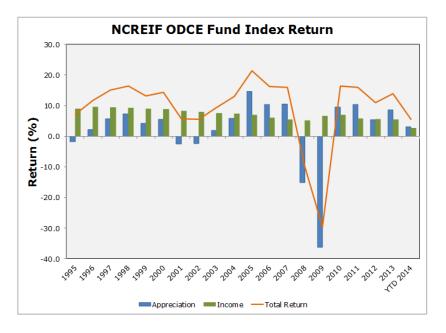
0.00%







- REITS, as represented by the Wilshire U.S. REIT Index, returned 7.2% for the quarter.
- · Commodities were flat for the quarter.



Data sources: Wilshire Compass, National Council of Real Estate Investment Fiduciaries

Wilshire RESI Current Yield

NPI Current Value Cap Rate



## **Performance Overview**

- LACERS' investment portfolio ended the quarter with a market value of \$13.9 billion, a gain of \$0.3 billion from the previous quarter. The Fund's net of fee return was 3.8% for the quarter and 18.2% for the one-year period.
- The Total Fund underperformed its policy benchmark by 0.3% for the quarter and outperformed by 0.3% for the one-year period.
- In comparison to other public funds with market values greater than \$10 billion in the TUCS (Trust Universe Comparison Service) peer universe, LACERS ranked in the 72nd percentile for the quarter and in the 27th percentile for the one-year period.
- All asset classes produced positive returns for the quarter.
- Core Fixed Income outperformed its respective benchmark for the quarter while U.S. Equity, Non-U.S. Equity and Credit Opportunities underperformed their respective benchmarks.
- Private Equity<sup>1</sup> underperformed while Private Real Estate outperformed their respective benchmarks for the quarter.

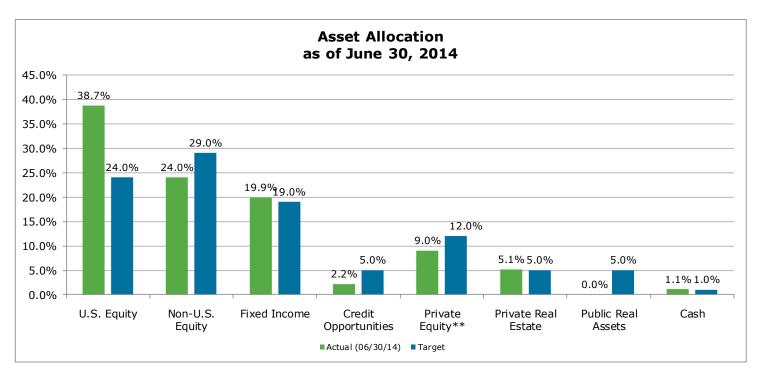
Note: Due to the J-curve effect in early stages of a private equity fund's life, returns may lag prior to realization of proceeds in later years. 

Name change from "Alternative Investments."



# **Fund Overview**





	Actual	Target*	Min.	Max
U.S. Equity**	38.7%	24.0%	19.0%	29.0%
Non-U.S. Equity	24.0%	29.0%	24.0%	34.0%
Fixed Income	19.9%	19.0%	15.0%	22.0%
Credit Opportunities	2.2%	5.0%	0.0%	10.0%
Private Equity***	9.0%	12.0%	n/a	n/a
Private Real Estate	5.1%	5.0%	n/a	n/a
Public Real Assets	0.0%	5.0%	2.0%	8.0%
Cash	1.1%	1.0%	0.0%	2.0%

<sup>\*</sup> Revised 1st Qtr 2012: decrease U.S. Equity from 37% to 24%; increase Non-U.S. Equity from 20% to 29%; decrease Fixed Income from 26% to 19%; allocate 5% in Credit Opportunities; increase Alternative Inv. from 9% to 12%; decrease Private Real Estate from 7% to 5%; allocate 5% in Public Real Assets. On May 13, 2014, an updated implementation plan was adopted by the Board to bring the asset classes within target ranges by 9/30/14.

<sup>\*\*</sup>The 3% underweight to Private Equity is allocated to U.S. Equity

<sup>\*\*\*</sup>Name change from "Alternative Investments."



# **Detail Actual vs Target Allocation**

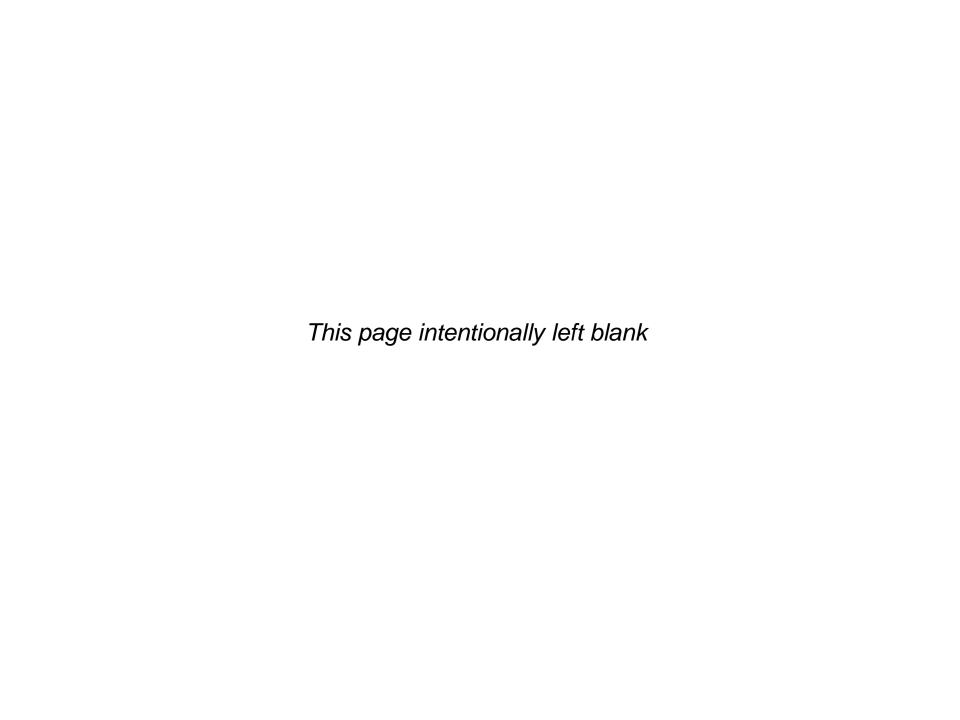
Asset Class / Style	Benchmark		ket Value Billion)	Market Value to Total Fund (%)	Target to Total Fund (%)	Difference from Target (%)
	Equity	\$	10.00	71.7%	65.0%	6.7%
U.S. Equity		\$	5.40	38.7%	24.0%	14.7%
Passive		\$	3.73	26.8%	17.5%	9.3%
Large Cap Core	S&P 500	'	3.58	25.7%	16.6%	9.1%
Large Cap Growth	Russell 1000 Growth		0.15	1.1%	1.0%	0.1%
Large Cap Value	Russell 1000 Value		0.00	0.0%	0.0%	0.0%
Action			1.66	11.00/	C F0/	F F0/
Active	B # 2000	\$	1.66	11.9%	6.5%	5.5%
All Cap	Russell 3000		0.11	0.8%	0.2%	0.6%
Large Cap Core	S&P 500		-	0.0%	0.0%	0.0%
Large Cap Growth	Russell 1000 Growth		<u>-</u>	0.0%	0.0%	0.0%
Large Cap Value	Russell 1000 Value		0.50	3.6%	1.0%	2.6%
Mid Cap Core	Russell Mid Cap		0.08	0.6%	1.2%	-0.6%
Small Cap Core	Russell 2000		0.31	2.2%	1.2%	1.0%
Small Cap Growth	Russell 2000 Growth		0.37	2.7%	1.4%	1.2%
Small Cap Value	Russell 2000 Value		0.29	2.1%	1.4%	0.6%
Non-U.S. Equity		\$	3.34	23.9%	29.0%	-5.1%
Passive		\$	1.46	10.5%	10.2%	0.3%
World ex-U.S.	MSCI World ex-U.S.		1.46	10.5%	10.2%	0.3%
Active		\$	1.88	13.5%	18.8%	-5.3%
Developed Core	MSCI EAFE	Ψ	0.47	3.4%	2.8%	0.6%
Developed Growth	MSCI EAFE/World ex-U.S. Growth		0.46	3.3%	2.9%	0.4%
Developed Value	MSCI EAFE/World ex-U.S. Value		0.48	3.4%	2.9%	0.5%
Emerging Markets Core	MSCI Emerging Markets		0.32	2.3%	2.6%	-0.3%
Emerging Markets Growth	MSCI Emerging Market Growth		0.05	0.4%	2.3%	-1.9%
Emerging Markets Value	MSCI Emerging Market Glowth  MSCI Emerging Market Value		- 0.03	0.4%	2.3%	-2.3%
Small Cap Core	MSCI EAFE Small Cap		0.10	0.7%	2.9%	-2.2%
Small cap core	PIOCI ENI E SITIATI CAP		0.10	0.7 70	2.9/0	- 2.2 /0
Private Equity 1	Vintage Year	\$	1.26	9.0%	12.0%	-3.0%

Fund Overview 2



# **Detail Actual vs Target Allocation**

Asset Class / Style	Benchmark		et Value Billion)	Market Value to Total Fund (%)	Target to Total Fund (%)	Difference from Target (%)
Fit	xed Income	\$	3.09	22.2%	24.0%	-1.8%
Core		\$	2.78	19.9%	19.0%	0.9%
Passive	Barclays Capital (BC) Aggregate	\$	-	0.0%	6.7%	-6.7%
Active		\$	2.78	19.9%	12.3%	7.7%
Core	Barclays Capital (BC) Aggregate	Ψ	2.54	18.2%	10.4%	7.9%
Intermediate Core	BC U.S. Govt/Credit Intermediate		0.24	1.7%	1.9%	-0.2%
Credit Opportunities		\$	0.31	2.2%	5.0%	-2.8%
U.S. High Yield	BC U.S. High Yield 2% Capped		0.21	1.5%	2.8%	-1.2%
Emerging Market Debt	JP Morgan - EMBI Global Diversified		0.10	0.7%	1.8%	-1.0%
Opportunistic Credit	TBD		-	0.0%	0.4%	-0.4%
R	teal Assets	\$	0.71	5.1%	10.0%	-4.9%
Public Real Assets		\$	-	0.0%	5.0%	-5.0%
TIPS	BC U.S. TIPS		-	0.0%	3.0%	-3.0%
REITS	TBD		-	0.0%	0.5%	-0.5%
Commodities	TBD		-	0.0%	1.0%	-1.0%
Multi Asset Real Assets	TBD		-	0.0%	0.5%	-0.5%
Private Real Estate		\$	0.71	5.1%	5.0%	0.1%
	Cash	\$	0.15	1.1%	1.0%	0.1%
TOTA	L PORTFOLIO	\$	13.94	100.0%	100.0%	0.0%





# **Fund Performance**



#### **LACERS Total Fund**

(Returns are Net of Fees)

		rket Value \$million)	% to Total Fund	Current Quarter	One Year	Three Years	Five Years	Ten Years	Fifteen Years¹	Since Inception <sup>1</sup>	5 Year Tracking Error
LACERS Master Trust	\$	13,942	100.0%	3.8	18.2	10.8	13.4	7.6	6.7	8.7	1.4
Policy Benchmark*				4.1	17.9	10.8	13.6	7.7	6.2	8.6	
Excess Return				-0.3	0.3	0.0	-0.2	-0.1	0.5	0.1	
U.S. Equity Russell 3000	\$	5,399	38.7%	<b>4.2</b> 4.9	<b>24.9</b> 25.2	<b>15.7</b> 16.5	<b>19.2</b> 19.3	<b>8.0</b> 8.2	<b>6.1</b> 4.7	<b>10.6</b> 9.2	1.3
Excess Return				-0.7	-0.3	-0.8	-0.1	-0.2	1.4	1.4	
Non-U.S. Equity  MSCI ACWI ex U.S.	\$	3,336	23.9%	<b>4.7</b> 5.0	<b>23.2</b> 21.8	<b>7.3</b> 5.7	<b>12.2</b> 11.1	<b>8.0</b> <i>7.7</i>	<b>5.6</b> 5.3	<b>5.7</b> 6.0	1.1
Excess Return				-0.3	1.4	1.6	1.1	0.3	0.3	-0.3	
Core Fixed Income BC U.S. Aggregate	\$	2,766	19.8%	<b>2.2</b> 2.0	<b>6.0</b> 4.4	 	 	 		<b>4.0</b> 2.3	
Excess Return				0.2	1.6					1.7	
Credit Opportunities BC U.S. Corp High Yield 2% Cap	\$	313	2.2%	<b>2.3</b> 2.4	<b>12.1</b> 11.7					<b>12.4</b> 11.7	
Excess Return				-0.1	0.4					0.7	
Private Real Estate ** NCREIF Property Lagged + 100b	<b>\$</b> ops	706	5.1%	<b>3.6</b> 3.0	<b>12.5</b> <i>12.3</i>	<b>10.4</b> 12.4	<b>2.5</b> 8.3	<b>3.5</b> 8.9	<b>5.2</b> 9.0	<b>6.3</b> 9.6	8.3
Excess Return	•			0.6	0.2	-2.0	-5.8	-5.4	-3.8	-3.3	
Private Equity <sup>2</sup> ** Russell 3000 + 300 bps	\$	1,262	9.1%	<b>3.9</b> 5.6	<b>18.2</b> 29.0	<b>13.2</b> 20.2	<b>16.1</b> 23.4	<b>13.2</b> 12.3	<b>11.6</b> 9.1	<b>10.4</b> <i>12.9</i>	15.0
Excess Return				-1.7	-10.8	-7.0	-7.3	0.9	2.5	-2.5	
Cash	\$	160	1.2%								-

<sup>&</sup>lt;sup>1</sup> Indicates gross returns. Inception date 10/31/94.

<sup>&</sup>lt;sup>2</sup> Name change from "Alternative Investments" for performance book only.

<sup>\*</sup> More detailed information available under Definitions section at the back of this presentation.

<sup>\*\*</sup> Due to the J-Curve effect in early stages of a fund's life, returns may lag prior to realization of proceeds in later years.



# **Private Investments**

# Performance by IRR and Multiples<sup>1</sup>

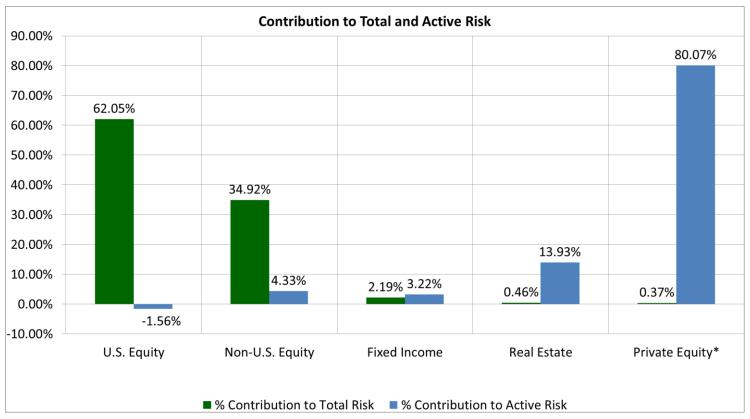
		Since Inception	Since Inception
Private Equity	10-Year IRR	IRR	Equity Multiple
Aggregate Portfolio	13.4%	11.4%	1.5x
Core Portfolio	14.3%	11.9%	1.6x
Specialized Portfolio	N/A	3.3%	1.1x
Russell 3000 + 300 bps	11.5%	9.8%	N/A

	10-Year	Since Inception	Since Inception
Real Estate	Return	Return	Equity Multiple
Total Portfolio (TWR)	3.6%	5.6%	N/A
NCREIF + 100 bps (TWR)	9.7%	8.5%	N/A
Total Portfolio IRR	N/A	4.2%	1.2x

Note: Townsend could not provide cash flow weighted benchmark, so only time weighted return (TWR) is reported. ¹Returns as of 3/31/2014.



## Total Fund – Contribution to 5-Year Total & Active Risk

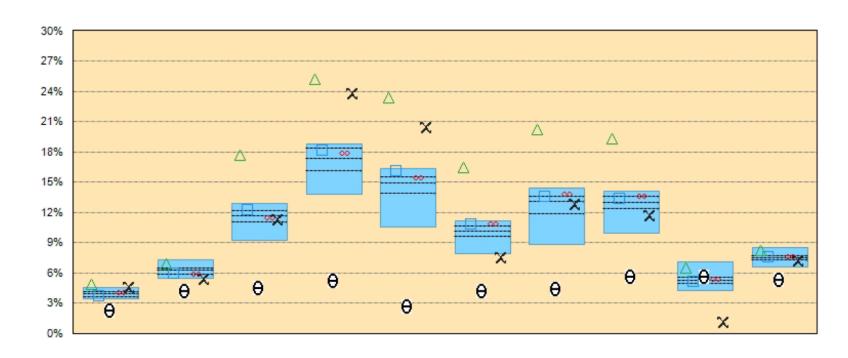


- Public equities comprises 97% of total risk despite actual weighting of 63%.
- Private markets (Real Estate and Private Equities) comprises 94% of active risk as it is difficult to separate active from 'beta' exposures in those asset classes.
- U.S. Equities have provided modest active risk reduction.

<sup>\*</sup>Name change from "Alternative Investments."

# Trust Universe Comparsion Service Performance Comparison

Total Returns of Public Defined Benefit Plans >\$10 billion Cumulative Periods Ending : June 30, 2014

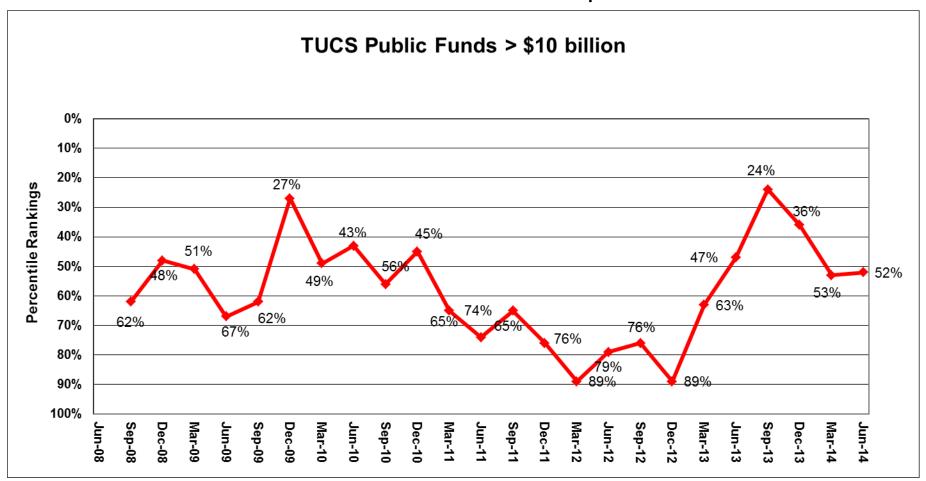


Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	4.61	7.30	12.92	18.81	16.34	11.21	14.47	14.10	7.11	8.54
25th	4.14	6.52	12.24	18.40	15.61	10.64	13.58	13.60	5.55	7.74
50th	3.93	6.30	11.74	17.39	14.92	10.18	13.12	12.98	5.26	7.57
75th	3.71	5.85	11.08	16.20	13.97	9.65	11.87	12.37	4.99	7.36
95th	3.45	5.54	9.25	13.85	10.60	7.97	8.87	9.97	4.31	6.61
No. Of Obs	42	42	42	42	42	42	40	39	39	38
Total Fund NOF	3.79 (72)	5.98 (67)	12.33 (22)	18.22 (27)	16.15 (14)	10.84 (18)	13.61 (22)	13.42 (27)	5.14 (58)	7.63 (41)
Total Fund Policy	4.10 (27)	5.89 (70)	11.52 (65)	17.94 (32)	15.43 (30)	10.86 (18)	13.86 (13)	13.58 (25)	5.41 (40)	7.66 (36)
A Russell 3000	4.87 (1)	6.94 (8)	17.74(1)	25.22(1)	23.34(1)	16.46 (1)	20.25 (1)	19.33 (1)	6.47 (5)	8.23 (8)
MSCI Wld Ex US (Net)	4.61 (5)	5.39 (96)	11.25 (72)	23.83 (1)	20.40(1)	7.57 (99)	12.86 (57)	11.67 (88)	1.14 (100)	7.18 (80)
🖨 Barclays US Univ Indx	2.20 (100)	4.19 (100)	4.43 (100)	5.20 (100)	2.69 (100)	4.22 (100)	4.36 (100)	5.58 (100)	5.58 (22)	5.27 (100)

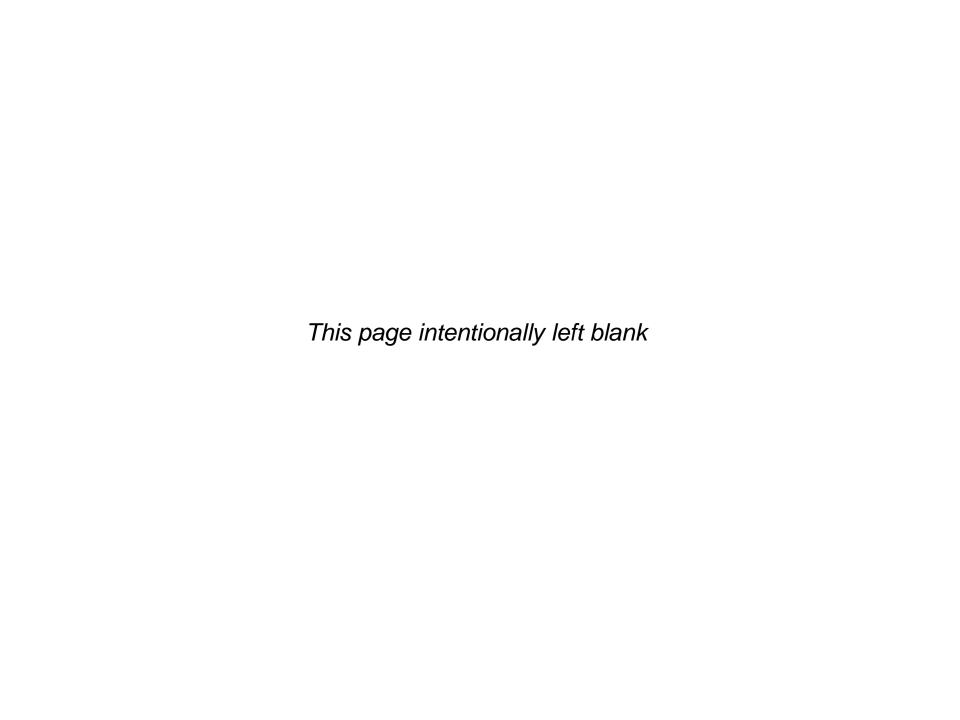
Fund Performance 4



# Return to Risk Ratio Comparison



- Return to risk ratio comparison puts funds with different asset allocation objectives on even footing.
- LACERS currently ranks in the 52<sup>nd</sup> percentile versus peers on return/risk ratio basis.





# U.S. Equity Managers



# **U.S. Equity Managers**

(Returns are Net of Fees)

	Inception Date	ket Value million)	% to Total U.S. Equity	Current Quarter	One Year	Three Years	Five Years	Ten Years	Since Inception <sup>1</sup>	5 Year Tracking Error
U.S. Equity	Oct-94	\$ 5,399	100.0%	4.2	24.9	15.7	19.2	8.0	10.6	1.3
Russell 3000				4.9	25.2	16.5	19.3	8.2	9.2	
Excess Return				-0.7	-0.3	-0.8	-0.1	-0.2	1.4	
Rhumbline Advisors (Passive) S&P 500	Mar-93	\$ 1,496	27.7%	<b>5.2</b> 5.2	<b>24.5</b> 24.6	<b>16.6</b> 16.6	<b>18.9</b> 18.8	<b>7.9</b> 7.8	<b>9.6</b> 9.4	0.3
Excess Return				0.0	-0.1	0.0	0.1	0.1	0.2	
Blackrock S&P 500 (Passive) S&P 500	Jun-13	\$ 2,087	38.7%	<b>5.2</b> 5.2	<b>24.6</b> 24.6	<b></b> 	<b></b> 	<b></b> 	<b>24.6</b> 24.6	
Excess Return				0.0	0.0				0.0	
Rhumbline Advisors (Passive) Russell 1000 Growth	Jun-13	\$ 152	2.8%	<b>5.1</b> 5.1	<b>26.9</b> 26.9	 	<b></b> 	 	<b>26.7</b> 26.2	
Excess Return				0.0	0.0				0.5	
Aronson, Johnson & Ortiz Russell 1000 Value	Oct-01	\$ 498	9.2%	<b>3.5</b> 5.1	<b>25.6</b> 23.8	<b>17.7</b> 16.9	<b>19.7</b> 19.2	<b>8.7</b> 8.0	<b>9.3</b> 8.1	2.5
Excess Return				-1.6	1.8	0.8	0.5	0.7	1.2	
New Mountain Cap Group Russell Midcap*	Mar-08	\$ 76	1.4%	<b>3.7</b> 5.0	<b>14.3</b> 26.9	<b>8.5</b> 16.1	<b>12.1</b> 18.5	<b></b> 	<b>6.9</b> 7.9	9.3
Excess Return				-1.3	-12.6	-7.6	-6.4		-1.0	

<sup>&</sup>lt;sup>1</sup> Indicates gross returns. \* Changed from the S&P 500 Index on July 1, 2011.



# **U.S. Equity Managers**

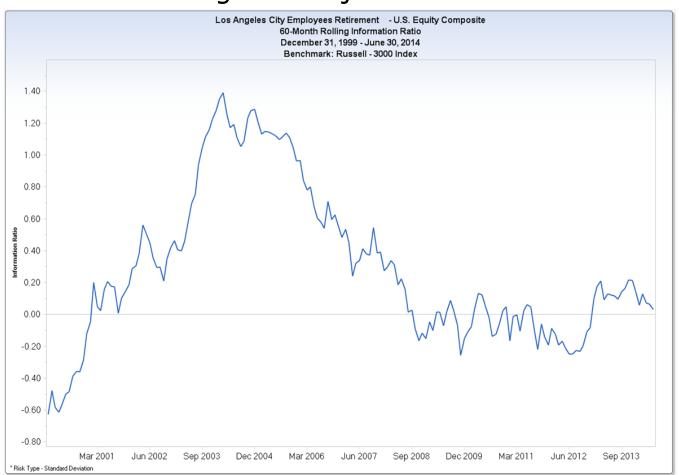
(Returns are Net of Fees)

	Inception Date	Market (\$milli		% to Total U.S. Equity	Current Quarter	One Year	Three Years	Five Years	Ten Years	Since Inception <sup>1</sup>	5 Year Tracking Error
Thomson Horstmann Russell 2000	Oct-95	\$	267	4.9%	<b>-0.9</b> 2.0	<b>21.3</b> <i>23.6</i>	<b>11.1</b> 14.6	<b>20.0</b> 20.2	<b>8.5</b> 8.7	<b>11.2</b> 9.2	4.4
Excess Return					-2.9	-2.3	-3.5	-0.2	-0.2	2.0	
Franklin Advisers Russell 2000 Growth	Sep-94	\$	182	3.4%	<b>2.5</b> 1.7	<b>33.9</b> <i>24.7</i>	<b>19.0</b> 14.5	<b>25.1</b> <i>20.5</i>	<b>10.4</b> 9.0	<b>10.5</b> <i>7.7</i>	4.9
Excess Return					8.0	9.2	4.5	4.6	1.4	2.8	
Sit Investments Russell 2000 Growth	Jan-01	\$	188	3.5%	<b>-0.5</b>	<b>23.5</b> 24.7	<b>12.5</b> 14.5	<b>19.4</b> 20.5	<b>9.8</b> 9.0	<b>5.6</b> 6.0	4.8
Excess Return					-2.2	-1.2	-2.0	-1.1	8.0	-0.4	
PanAgora Asset Management Russell 2000 Value	Feb-06	\$	149	2.8%	<b>2.2</b> 2.4	<b>27.6</b> 22.5	<b>18.7</b> 14.6	<b>23.9</b> 19.9	<b></b> 	<b>7.2</b> 6.7	2.3
Excess Return					-0.2	5.1	4.1	4.0		0.5	
Donald Smith & Co. Russell 2000 Value	Feb-06	\$	142	2.6%	<b>6.6</b> 2.4	<b>30.6</b> <i>22.5</i>	<b>15.2</b> 14.6	<b>20.3</b> 19.9	 	<b>9.2</b> 6.7	6.7
Excess Return					4.2	8.1	0.6	0.4		2.5	
Manager-of-Manager Programs				3.0%							
Attucks Russell 2000	Nov-05	\$	46	0.9%	1.3 2.0	<b>21.8</b> 23.6	<b>13.7</b> 14.6	<b>20.3</b> 20.2	<b></b> 	<b>8.3</b> 8.3	2.3
Excess Return					-0.7	-1.8	-0.9	0.1		0.0	
Capital Prospects Russell 3000	Dec-05	\$	43	0.8%	<b>3.6</b> 4.9	<b>23.8</b> 25.2	<b>14.7</b> 16.5	<b>18.4</b> 19.3	 	<b>7.5</b> 8.0	1.9
Excess Return					-1.3	-1.4	-1.8	-0.9		-0.5	
Progress Investment Russell 3000	Oct-06	\$	72	1.3%	<b>4.5</b> 4.9	<b>26.3</b> 25.2	<b>14.0</b> 16.5	<b>17.3</b> 19.3	<b></b> 	<b>6.3</b> 7.3	2.3
Excess Return					-0.4	1.1	-2.5	-2.0		-1.0	

<sup>&</sup>lt;sup>1</sup> Indicates gross returns.



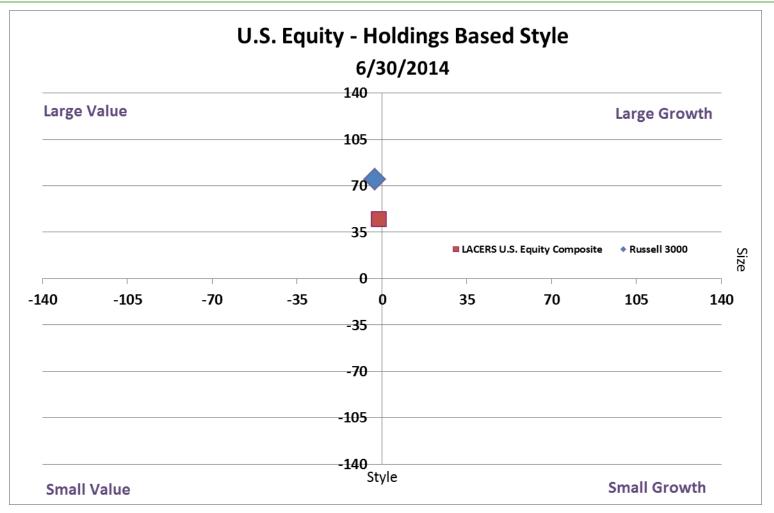
# 5-Year Rolling Risk-Adjusted Active Returns



- Active returns are returns earned over/under benchmark return.
- For the past five years, LACERS' information ratio showed mixed results, but it is positive for past two years.

Risk-adjusted active returns are referred to as "Information Ratio". Information Ratio = Excess return (alpha) / Excess risk (tracking error).





- LACERS U.S. Equity Portfolio exhibits modest, smaller cap bias versus Russell 3000 benchmark.
- As small cap stocks underperformed large cap stocks in the most recent quarter, this bias was a performance drag versus benchmark.



#### MANAGER REPORT CARD<sup>1</sup>

	U.S. Managers	Inception Date	Mandate	Current Quarter		One Year			Three Years		Years	Since Inception	Comments <sup>2</sup>
				I	U	I	U	I	U	I	U	I	
>	Aronson, Johnson & Ortiz	Oct-01	Large Cap Value	sc	3c	✓	✓	✓	✓	✓	×	✓	Performance satisfactory.
>	Thomson Horstmann	Oct-95	Small Cap	x	æ	×	×	×	x	×	×	✓	"On Watch" since Aug. 2013 - performance.
>	Franklin Advisers	Sep-94	Small Cap Growth	✓	✓	✓	✓	✓	✓	✓	✓	✓	Performance satisfactory.
>	Sit Investments	Jan-01	Small Cap Growth	×	,sc	3c	✓	×	JC.	æ	æ	<b>5</b> 0	"On Watch" since Aug. 2013 - performance.
>	Donald Smith	Mar-06	Small Cap Value	✓	✓	✓	✓	✓	x	✓	)c	✓	Performance satisfactory.
>	Panagora	Mar-06	Small Cap Value	×	JC .	✓	✓	✓	✓	✓	✓	✓	Performance satisfactory.
>	New Mountain Cap Grp	Mar-08	Corp Gov	×	n/a	æ	n/a	×	n/a	æ	n/a	<b>5</b> 0	"On Watch" since Aug. 2013 - performance.
>	Attucks	Nov-05	Fund of Funds	x	n/a	æ	n/a	×	n/a	✓	n/a	=	Performance mixed. Monitoring manager.
>	Capital Prospects	Dec-05	Fund of Funds	×	n/a	æ	n/a	×	n/a	æ	n/a	<b>5</b> 0	"On Watch" since Jun. 2011 - performance.
>	Progress	Sep-06	Fund of Funds	x	n/a	✓	n/a	æ	n/a	×	n/a	<b>sc</b>	"On Watch" since Oct. 2009 - performance.
>	Rhumbline Advisors (Passive)	Mar-93	S&P 500 Index	=	✓	æ	✓	=	✓	✓	✓	=	Performance satisfactory.
>	BlackRock S&P 500 (Passive)	Jun-13	S&P 500 Index	=	✓	=	✓	n/a	n/a	n/a	n/a	<b>3</b> ¢	Limited track record.
>	Rhumbline Advisors (Passive)	Jun-13	R1000 Growth Index	=	✓	=	×	n/a	n/a	n/a	n/a	✓	Limited track record.

<sup>&</sup>lt;sup>1</sup>Current Quarter, 1-Yr, 3-Yrs, and 5-Yrs returns are net of fees. Since Inception returns are gross of fee.

LEGEND										
1	outperformed index	I	index							
×	underperformed index	U	universe median							
=	equal to index									

 $<sup>^{2}</sup>$ Managers are placed on the Watch List for concerns with organization, process, and performance. Managers are normally on the Watch List for 6 months though can be longer if manager issues still remain but not severe enough to warrant contract termination recommendation.



# Aronson, Johnson & Ortiz

Mandate: Large Cap Value Benchmark: Russell 1000 Value

Quarterly Rate of Return Vs Benchmark

#### Strategy

Aronson invests in US stocks with large market caps, low P/E ratios and lower historical earnings per share that are expected to increase.

#### **Performance**

-2%

-4% r

09/12

12/12

03/13

— Aronson , Johnson & Ortiz 14% Russell 1000 Value 12% 10% 8% 6% 4% 2% 0%

Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Aronson , Johnson &	3.5	25.6	25.9	17.7	19.7	9.3	Oct-2001
Russell 1000 Value	5.1	23.8	24.6	16.9	19.2	8.1	
Excess Return	(1.6)	1.8	1.3	8.0	0.5	1.2	

06/13

09/13

12/13

03/14

Objective: Outperform the benchmark by 200 bps, annualized over a full market cycle (normally 3-5 years).

Quarti	le Rankinç	gs						
30% ¬								
25% -		•	•					
20% -				١_				
15% -								
10% -								
5% -	•							
0% -	Three Months	One Year	Two Years		ree ars	Four Years	Five Year	
			QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs

Aronson , Johnson & Ortiz

Rank	8	32	33	35 2	23 2	20 4	1
Russell 1000 Value	5	.1 23	.8 24	.6 16	.9 19	.8 19.	2
Rank	3	31	53	57	39 5	6 6	7
10th Percentile	6.6	28.7	29.5	19.1	22.0	21.7	
1st Quartile	5.4	26.9	27.0	17.8	21.4	21.1	
Median	4.4	24.8	25.0	16.4	20.1	19.8	
3rd Quartile	3.7	22.9	23.0	14.0	18.6	18.6	
90th Percentile	2.6	20.3	20.5	10.7	15.3	17.0	
Number Of Observations	210	171	142	123	107	87	

18.0

20.0

06/14



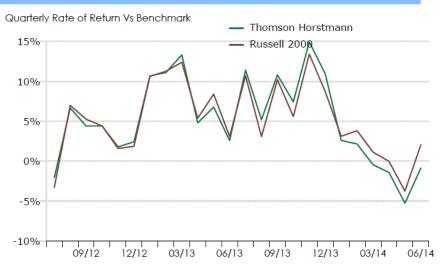
### Thomson Horstmann

Mandate: Small Cap Benchmark: Russell 2000

#### Strategy

Thomson invests in US stocks with small market caps and low P/E ratios.

#### **Performance**



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Thomson Horstmann	(0.9)	21.3	22.8	11.1	20.0	11.2	Oct-1995
Russell 2000	2.0	23.6	23.9	14.6	20.2	9.2	
Excess Return	(2.9)	(2.3)	(1.1)	(3.5)	(0.2)	2.0	

Objective: Outperform the benchmark by 250 bps, annualized over a full market cycle (normally 3-5 years).

Quartile Rankings	ver a ruii	тыкес	cycle (I	ютпану	3-3 yea	ars).
30% ¬						
250/						
25% -	•					
20% -				<u>•</u>		
15% -			•			
10% -						
5% -						
0% -						
-5%	Τ	Τ.			Т	
Three One Months Year	Two Years		ree ars	Four Years	Five Year	
	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Thomson Horstmann	(0.7)	22.1	23.6	11.8	19.4	20.6
Rank	85	63	62	90	76	70
Russell 2000	2.0	23.6	23.9	14.6	19.9	20.2
Rank	54	52	57	65	69	73
10th Percentile	4.9	28.6	29.8	19.1	23.4	25.9
1st Quartile	4.0	26.8	27.4	17.0	22.2	23.3
Median	2.2	24.3	25.1	15.8	20.9	21.7
3rd Quartile	0.4	20.7	22.3	14.0	19.5	19.6
90th Percentile	(2.3)	17.9	20.0	11.6	18.0	17.5
Number Of Observations	175	167	157	145	129	112



#### Franklin Global Advisers

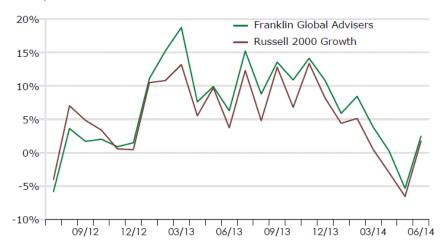
Mandate: Small Cap Growth
Benchmark: Russell 2000 Growth

#### Strategy

Franklin invests in US stocks with small market caps, low P/E ratios and earnings per share that are expected to increase at rates much greater than the overall market.

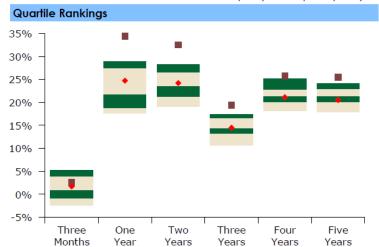
#### **Performance**

Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Franklin Global Advis	2.5	33.9	32.1	19.0	25.1	10.5	Sep-1994
Russell 2000 Growth	1.7	24.7	24.2	14.5	20.5	7.7	
Excess Return	0.8	9.2	7.9	4.5	4.6	2.8	

Objective: Outperform the benchmark by 200 bps, annualized over a full market cycle (normally 3-5 years).



		QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
	Franklin Global Advisers	2.6	34.4	32.5	19.4	25.7	25.5
	Rank	36	1	1	1	9	5
<b>*</b>	Russell 2000 Growth	1.7	24.7	24.2	14.5	21.1	20.5
	Rank	42	32	41	47	55	69
	10th Percentile	5.3	28.9	28.3	17.3	25.1	24.2
	1st Quartile	3.9	27.4	26.6	16.5	22.8	22.9
	Median	1.0	21.8	23.6	14.4	21.4	21.4
	3rd Quartile	(1.0)	18.8	21.3	13.2	20.1	20.1
	90th Percentile	(2.4)	17.7	19.1	10.6	18.2	17.9
	Number Of Observations	77	64	62	55	43	36



#### Sit Investments

Quartile Panking

Mandate: Small Cap Growth
Benchmark: Russell 2000 Growth

#### Strategy

SIT invests in US stocks with small market caps, low P/E ratios and earnings per share that are expected to increase at rates much greater than the overall market.

#### **Performance**

Quarterly Rate ot Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Sit Investments	(0.5)	23.5	19.0	12.5	19.4	5.6	Jan-2001
Russell 2000 Growth	1.7	24.7	24.2	14.5	20.5	6.0	
Excess Return	(2.2)	(1.2)	(5.2)	(2.0)	(1.1)	(0.4)	

Objective: Outperform the benchmark by 300-450 bps, annualized over a full market cycle (normally 3-5 years).

30% 7						
25% -	•					
20% -				1	•	
15% -						
10% -						
5% -						
0% -						
-5%					1	
Three One Months Year	Two Years		ree ars	Four Years	Five Year	
	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
Sit Investments	(0.3)	24.4	19.8	13.3	19.7	20.2
<ul><li>Sit Investments</li><li>Rank</li></ul>	(0.3) 69	24.4 34	19.8 90	13.3 75	19.7	20.2 72
	69					
Rank	69	34	90	75	80	72
Rank ◆ Russell 2000 Growth	69 1.7	34 24.7	90 24.2	75 14.5	80 21.1	72 20.5
Rank ◆ Russell 2000 Growth Rank	69 1.7 42	34 24.7 32	90 24.2 41	75 14.5 47	80 21.1 55	72 20.5 69
Rank ◆ Russell 2000 Growth Rank 10th Percentile	69 1.7 42 5.3	34 24.7 32 28.9	90 24.2 41 28.3	75 14.5 47 17.3	80 21.1 55 25.1	72 20.5 69 24.2
Rank  ◆ Russell 2000 Growth  Rank  10th Percentile  1st Quartile	69 1.7 42 5.3 3.9	34 24.7 32 28.9 27.4	90 24.2 41 28.3 26.6	75 14.5 47 17.3 16.5	80 21.1 55 25.1 22.8	72 20.5 69 24.2 22.9
Rank  ◆ Russell 2000 Growth  Rank  10th Percentile  1st Quartile  Median	69 1.7 42 5.3 3.9 1.0	34 24.7 32 28.9 27.4 21.8	90 24.2 41 28.3 26.6 23.6	75 14.5 47 17.3 16.5 14.4	80 21.1 55 25.1 22.8 21.4	72 20.5 69 24.2 22.9 21.4



#### Donald Smith & Co.

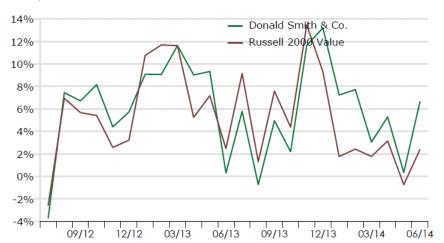
Small Cap Value Mandate: Benchmark: Russell 2000 Value

#### Strategy

Donald Smith invests in US stocks with small market caps, low P/E ratios and lower historical earnings per share that are expected to increase.

#### **Performance**

Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Donald Smith & Co.	6.6	30.6	28.4	15.2	20.3	9.2	Feb-2006
Russell 2000 Value	2.4	22.5	23.6	14.6	19.9	6.7	
Excess Return	4.2	8.1	4.8	0.6	0.4	2.5	

Objective: Outperform the benchmark by 300 bps,

	nnualized ov						ars).
Quartile Rank	ings						
35% 7							
30% -							
25% -		•					
20% -					Ţ	-	
15% -							
10% -							
5% -	•						
0%		I					
Three Months		Two Years	Two Three Years Years		Four Years	Five Year	
		QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Donald S	mith & Co.	6.9	31.6	29.6	16.2	19.1	21.3
Rank		1	1	12	53	73	62
<ul><li>Russell 2</li></ul>	000 Value	2.4	22.5	23.6	14.6	18.6	19.9
Rank 10th	Percentile	62 4.7	69 28.5	70 30.2	75 19.6	77 22.9	73 26.3
1	st Quartile	4.0	26.5	27.7	17.3	22.0	23.9

3rd Quartile

90th Percentile

Number Of Observations

Median

3.1

2.0

0.3

92

25.1

22.2

18.9

94

25.7

22.6

20.2

87

16.4

14.6

12.4

86

20.7

18.6

17.9

78

21.7

19.4

16.8

74



# PanAgora Asset Management

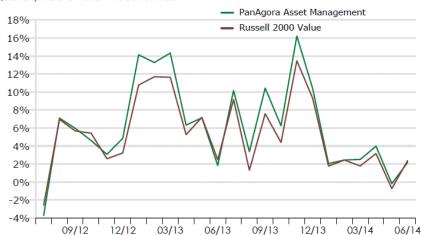
Mandate: Small Cap Value
Benchmark: Russell 2000 Value

#### Strategy

Panagora invests in US stocks with small market caps, low P/E ratios and lower historical earnings per share that are expected to increase.

#### **Performance**

Quarterly Rate of Return Vs Benchmark

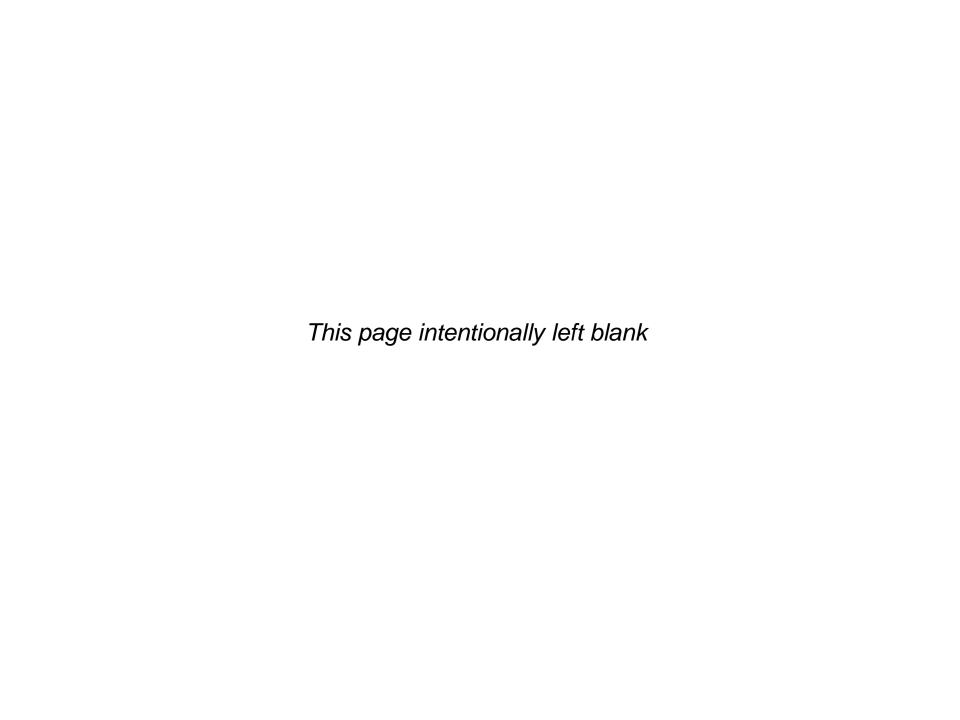


Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
PanAgora Asset Mana	2.2	27.6	28.5	18.7	23.9	7.2	Feb-2006
Russell 2000 Value	2.4	22.5	23.6	14.6	19.9	6.7	
Excess Return	(0.2)	5.1	4.9	4.1	4.0	0.5	

Objective: Outperform the benchmark by 200 bps , annualized over a full market cycle (normally 3-5 years).

	aiiii	dalized ov	er a run m	arket cycle	(Hormany	3-3 years).
Quartile	Ranking	ıs				
35% 7						
30% -						
25% -		_	•			
20% -					•	•
15% -				•		
10% -						
5% -						
0%	•		ı			
'	Three Months	One Year	Two Years	Three Years	Four Years	Five Years

	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ PanAgora Asset Mana	2.3	28.4	29.3	19.5	24.5	24.7
Rank	63	11	16	11	1	20
♦ Russell 2000 Value	2.4	22.5	23.6	14.6	18.6	19.9
Rank 10th Percentile	62 4.7	69 28.5	70 30.2	75 19.6	77 22.9	73 26.3
1st Quartile	4.0	26.5	27.7	17.3	22.0	23.9
Median	3.1	25.1	25.7	16.4	20.7	21.7
3rd Quartile	2.0	22.2	22.6	14.6	18.6	19.4
90th Percentile	0.3	18.9	20.2	12.4	17.9	16.8
Number Of Observations	92	94	87	86	78	74





# Non-U.S. Equity Managers



# **Non-U.S. Equity Managers**

(Returns are Net of Fees)

	Inception Date	ket Value million)	% to Total Non-U.S. Equity	Current Quarter	One Year	Three Years	Five Years	Ten Years	Since Inception <sup>1</sup>	5 Year Tracking Error
Non-U.S. Equity MSCI ACWI ex U.S.	Oct-94	\$ 3,336	100.0%	<b>4.7</b> 5.0	<b>23.2</b> 21.8	<b>7.3</b> 5.7	<b>12.2</b> 11.1	<b>8.0</b> <i>7.7</i>	<b>5.7</b> 6.0	1.1
Excess Return				-0.3	1.4	1.6	1.1	0.3	-0.3	
Developed ex-U.S. MSCI EAFE ND	Jun-12	\$ 2,959	88.7%	<b>4.3</b> 4.1	<b>24.0</b> 23.6	 	 	 	<b>21.9</b> 21.1	
Excess Return				0.2	0.4				0.8	
State Street Equity (Passive)  MSCI World ex U.S.	Aug-93	\$ 1,458	43.7%	<b>4.6</b> 4.4	<b>24.9</b> 24.5	<b>8.2</b> <i>7.7</i>	<b>12.4</b> 12.1	<b>7.6</b> <i>7.3</i>	<b>6.5</b> 5.8	0.2
Excess Return				0.2	0.4	0.5	0.3	0.3	0.7	
Lazard Asset Management MSCI EAFE ND	Dec-13	\$ 469	14.1%	<b>4.9</b> 4.1	<b></b>	<b></b>	<b></b>	<b></b>	<b>10.9</b> 8.2	
Excess Return				0.8					2.7	
MFS Inst. Adv.  MSCI World ex U.S. Growth	Dec-13	\$ 459	13.8%	<b>4.5</b> 4.0	<u></u>	 	 	 	<b>5.7</b> 6.9	
Excess Return				0.5					-1.2	
Barrow Hanley MSCI EAFE Value	Dec-13	\$ 477	14.3%	<b>4.2</b> 5.0	 	 	 	<b></b> 	<b>12.6</b> 8.8	
Excess Return				-0.8					3.8	
Oberweiss Asset Mgmt MSCI EAFE Sm Cp	Jan-14	\$ 34	1.0%	<b>3.3</b> 2.2	 	 	 	 	<b>2.3</b> 4.2	
Excess Return				1.1					-1.9	
AQR Capital MSCI EAFE Sm Cp	Feb-14	\$ 61	1.8%	<b>1.7</b> 2.2	<b></b> 	 	<b></b> 	<b></b> 	<b>1.5</b> 2.8	
Excess Return				-0.5					-1.3	
TT International*  MSCI World ex U.S.	May-01	\$ 1	0.0%	<b></b> 	<b></b> 	<b></b> 	<b></b> 	<b></b> 	<b></b> 	
Excess Return										

¹ Indicates gross returns. \* Terminated May 5, 2014



# Non-U.S. Equity Managers

(Returns are Net of Fees)

	Inception Date	t Value illion)	% to Total Non-U.S. Equity	Current Quarter	One Year	Three Years	Five Years	Ten Years	Since Inception <sup>1</sup>	5 Year Tracking Error
Emerging Markets	Jun-12	\$ 377	11.3%	8.6	16.3				9.1	
MSCI Emerging Markets ND				6.6	14.3				8.4	
Excess Return				2.0	2.0				0.7	
									·	
Boston Company MSCI Emerging Markets ND	Jan-03	\$ 209	6.3%	<b>10.8</b> 6.6	<b>21.4</b> 14.3	<b>-1.1</b> -0.4	<b>7.9</b> 9.2	<b>10.7</b> 11.9	<b>15.0</b> 14.7	3.7
Excess Return				4.2	7.1	-0.7	-1.3	-1.2	0.3	
Axiom International  MSCI Emerging Market Growth	Mar-14	\$ 54	1.6%	<b>5.6</b> 6.2	<b></b> 	<b></b> 	<u></u>	<b></b> 	<b>5.6</b> 6.2	
Excess Return				-0.6					-0.6	
Quantitative Management MSCI Emerging Markets ND	Apr-14	\$ 113	3.4%	<b></b> 	<b></b> 	<b></b> 	<b></b> 	 	<b>5.8</b> 5.3	
Excess Return									0.5	

<sup>&</sup>lt;sup>1</sup> Indicates gross returns.

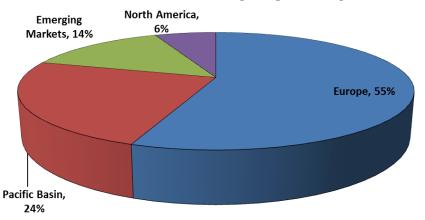


# **Country Allocation**

### Benchmark - MSCI ACWI x U.S. Index

# North America, Emerging 8% Europe, 48% Pacific Basin, 24%

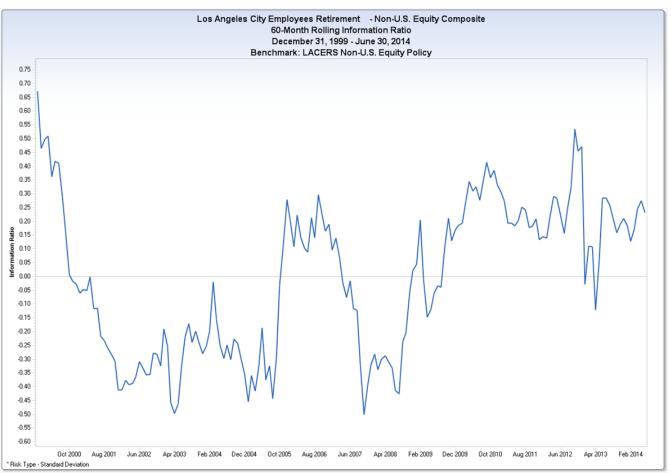
# **LACERS Non-U.S. Equity Composite**



- As LACERS implements the new asset allocation, the geographic weightings of the Non-U.S. Equity Composite will become closer to the benchmark.
- Underweight to Emerging Markets Equity was a source of underperformance during the quarter as emerging markets outperformed developed markets.



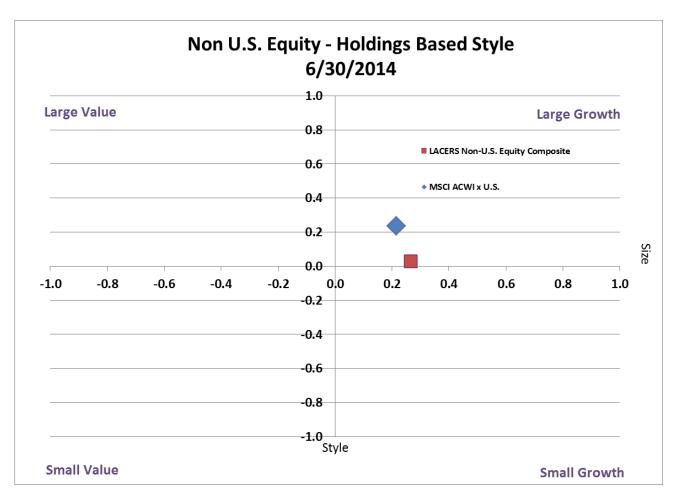
# 5-Year Rolling Risk-Adjusted Active Returns



- Active returns are returns earned over/under benchmark return.
- Non-U.S. Equity's rolling information ratio has been mostly positive for past 3 years.

Risk-adjusted active returns are referred to as "Information Ratio". Information Ratio = Excess return (alpha) / Excess risk (tracking error).





 LACERS Non-U.S. Equity Portfolio has exhibited modest small cap bias compared to MSCI ACWI x U.S. index, which was a source of underperformance over the quarter.



### MANAGER REPORT CARD<sup>1</sup>

Non-U.S. Managers	Inception Date	Mandate	Cur Qua		One Year		Three Years		Five Years		Since Inception	Comments <sup>2</sup>
			I	U	I	U	I	U	I	U	I	
> Boston Company	Jan-03	Emerging Markets	✓	✓	✓	✓	3c	3c	JC	×	✓	"On Watch" since Feb. 2012 - performance lagging. Monitoring manager.
> Axiom International	Mar-14	Emerging Markets	×	✓	n/a	n/a	n/a	n/a	n/a	n/a	<b>sc</b>	Limited track record.
> Quantitative Mgmt	Apr-14	Emerging Markets	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓	Limited track record.
> AQR Capital	Feb-14	Non US Developed	*	✓	n/a	n/a	n/a	n/a	n/a	n/a	æ	Limited track record.
> Oberweiss Asset	Jan-14	Non US Developed	✓	✓	n/a	n/a	n/a	n/a	n/a	n/a	<b>sc</b>	Limited track record.
> Barrow Hanley	Dec-13	Non US Developed	×	✓	n/a	n/a	n/a	n/a	n/a	n/a	✓	Limited track record.
> Lazard Asset	Dec-13	Non US Developed	✓	✓	n/a	n/a	n/a	n/a	n/a	n/a	✓	Limited track record.
> MFS Inst. Adv.	Dec-13	Non US Developed	✓	✓	n/a	n/a	n/a	n/a	n/a	n/a	*	Limited track record.
> TT International	May-01	Non US Developed	✓	✓	✓	✓	✓	✓	✓	*	✓	Terminated May 5, 2014.
> State Street (Passive)	Aug-93	Non US Developed	✓	✓	✓	✓	✓	×	✓	×	✓	Performance satisfactory.
Knight Vinke	Apr-06	Corp Gov - Europe	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	In redemption process.

<sup>&</sup>lt;sup>1</sup>Current Quarter, 1-Yr, 3-Yrs, and 5-Yrs returns are net of fees. Since Inception returns are gross of fee.

<sup>&</sup>lt;sup>2</sup>Managers are placed on the Watch List for concerns with organization, process, and performance. Managers are normally on the Watch List for 6 months though can be longer if manager issues still remain but not severe enough to warrant contract termination recommendation.

LE	GEND	
outperformed index	I	index
underperformed index	( U	universe median
equal to index		



# **Boston Company**

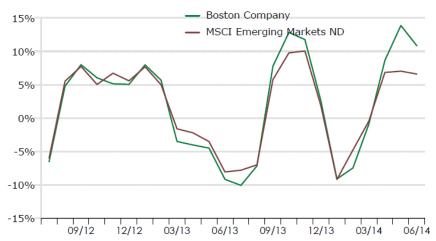
Mandate: Emerging Markets Equity
Benchmark: MSCI Emerging Markets ND

### Strategy

Boston Co. invests in Non-US stocks in emerging countries that are part of the MSCI Emerging Markets index.

### **Performance**

Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Boston Company	10.8	21.4	9.9	(1.1)	7.9	15.0	Jan-2003
MSCI Emerging Mark	6.6	14.3	8.4	(0.4)	9.2	14.7	
Excess Return	4.2	7.1	1.5	(0.7)	(1.3)	0.3	

Quarti	le Ranking	gs				
25% -						
20% -						
15% -		•				
10% -			•			
5% -	•					
0% -						
-5% -			Ι	I		
	Three Months	One Year	Two Years	Three Years	Four Years	Five Years

	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Boston Company	11.0	22.3	10.7	(0.4)	5.2	8.8
Rank	9	4	39	70	76	70
MSCI Emerging Market	6.6	14.3	8.4	(0.4)	6.0	9.2
Rank 10th Percentile	63 10.1	46 19.5	64 13.6	70 5.2	69 10.7	68 14.4
1st Quartile	8.3	16.7	11.8	4.0	9.6	12.8
Median	7.2	13.8	9.4	1.9	8.0	11.0
3rd Quartile	6.0	11.0	8.0	(1.5)	5.2	8.3
90th Percentile	4.1	8.2	6.5	(2.8)	3.3	7.0
Number Of Observations	94	88	79	71	62	50



# **Axiom International**

Mandate: Emerging Markets Equity

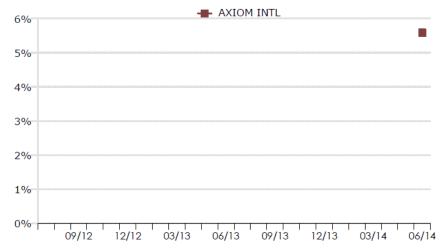
Benchmark: MSCI Emerging Market Growth

### Strategy

Axiom International invests in Non-US stocks in emerging countries that are part of the MSCI Emerging Markets growth index.

### **Performance**

Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
AXIOM INTL	5.6					5.6	Mar-2014
MSCI Emerging Mark	6.2					6.2	
Excess Return	(0.6)					(0.6)	

Quarti	le Ranking	ıs				
20% ¬						
15% -		•				
10% -	•				•	•
5% -				•		
0% -						
-5% —	Three Months	One Year	Two Years	Three Years	Four Years	Five Years

	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
AXIOM INTL	5.6					
Rank	78					
♦ MSCI Emerging Mark	6.2	14.4	10.7	1.0	7.5	10.4
Rank	71	45	36	60	59	56
10th Percentile	10.1	19.5	13.6	5.2	10.7	14.4
1st Quartile	8.3	16.7	11.8	4.0	9.6	12.8
Median	7.2	13.8	9.4	1.9	8.0	11.0
3rd Quartile	6.0	11.0	8.0	(1.5)	5.2	8.3
90th Percentile	4.1	8.2	6.5	(2.8)	3.3	7.0
Number Of Observations	94	88	79	71	62	50



# Quantitative Management

Mandate: Emerging Markets Equity
Benchmark: MSCI Emerging Markets ND

### Strategy

Quantitative invests in Non-US stocks in emerging countries that are part of the MSCI Emerging Markets index.

### **Performance**

Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
QUANTITATIVE MANA						5.8	Apr-2014
MSCI Emerging Mark						5.3	
Excess Return						0.5	

Quarti	le Ranking	gs				
20% ¬						
15% -		•				
10% -	•		•			•
5% -					•	
0% -				•		
-5% +	Three Months	One Year	Two Years	Three Years	Four Years	Five Years
	MOHUIS	rear	rears	rears	rears	rears

	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
QUANTITATIVE MANA						
Rank	78					
♦ MSCI Emerging Mark	6.6	14.3	8.4	(0.4)	6.0	9.2
Rank 10th Percentile	63 10.1	46 19.5	64 13.6	70 5.2	69 10.7	68 14.4
1st Quartile	8.3	16.7	11.8	4.0	9.6	12.8
Median	7.2	13.8	9.4	1.9	8.0	11.0
3rd Quartile	6.0	11.0	8.0	(1.5)	5.2	8.3
90th Percentile	4.1	8.2	6.5	(2.8)	3.3	7.0
Number Of Observations	94	88	79	71	62	50



# AQR CAPITAL

Mandate: Non-US Developed Equity Mgrs.

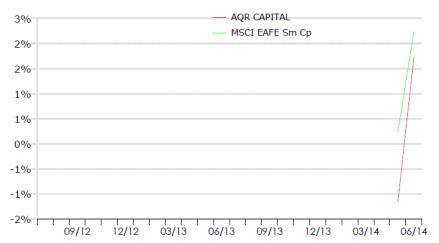
Benchmark: MSCI EAFE Sm Cp

### Strategy

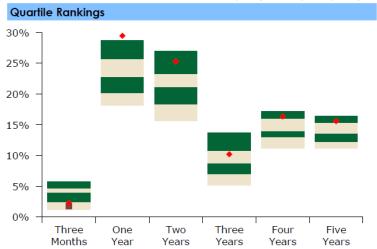
AQR Capital invests in Non-US stocks across all developed countries.

### **Performance**

Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
AQR CAPITAL	1.7					1.5	Feb-2014
MSCI EAFE Sm Cp	2.2					2.8	
Excess Return	(0.5)					(1.3)	



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ AQR CAPITAL	1.7					
Rank	87					
♦ MSCI EAFE Sm Cp	2.2	29.5	25.3	10.2	16.3	15.6
Rank 10th Percentile	80 5.8	5 28.7	17 27.0	34 13.7	22 17.2	23 16.4
1st Quartile	4.7	25.7	23.3	10.8	16.0	15.3
Median	3.9	22.8	21.1	8.8	14.0	13.6
3rd Quartile	2.4	20.2	18.4	7.0	13.0	12.2
90th Percentile	1.2	18.1	15.6	5.2	11.2	11.2
Number Of Observations	217	198	191	172	159	134



# Oberweis Asset Mgmt

Mandate: Non-US Developed Equity Mgrs.

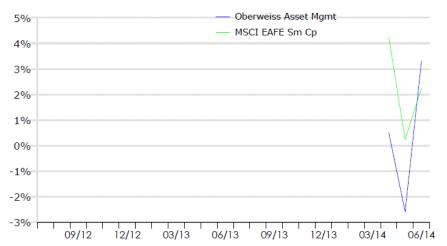
Benchmark: MSCI EAFE Sm Cp

### **Strategy**

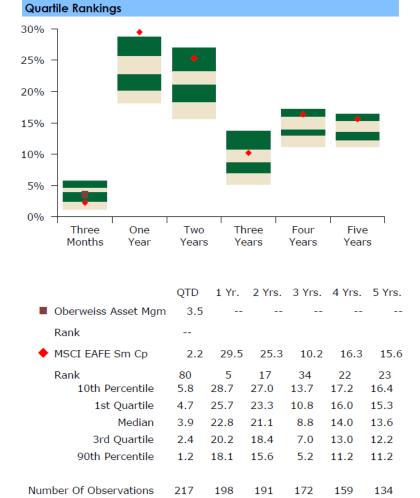
Oberweiss Asset Mgmt. invests in Non-US stocks across all developed countries.

### **Performance**

Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Oberweiss Asset Mgm	3.3					2.3	Jan-2014
MSCI EAFE Sm Cp	2.2					4.2	
Excess Return	1.1					(1.9)	





# Barrow Hanley

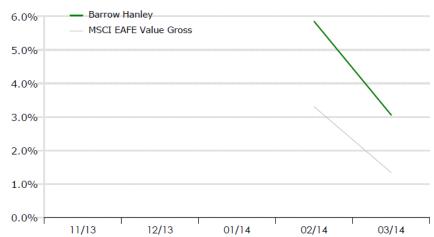
Mandate: Non-US Developed Equity Mgrs.
Benchmark: MSCI EAFE Value Gross

### Strategy

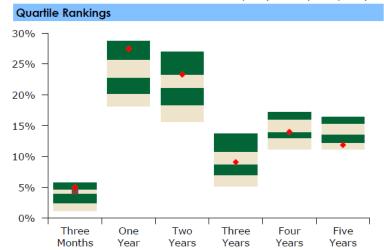
Barrow Hanley invests in Non-US stocks across all developed countries.

### **Performance**

Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Barrow Hanley	4.2					12.6	Nov-2013
MSCI EAFE Value Gro	5.0					8.8	
Excess Return	(8.0)					3.8	



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Barrow Hanley	4.4					
Rank	31					
♦ MSCI EAFE Value Gro	5.0	27.5	23.3	9.1	14.0	11.9
Rank	22	16	26	47	51	80
10th Percentile	5.8	28.7	27.0	13.7	17.2	16.4
1st Quartile	4.7	25.7	23.3	10.8	16.0	15.3
Median	3.9	22.8	21.1	8.8	14.0	13.6
3rd Quartile	2.4	20.2	18.4	7.0	13.0	12.2
90th Percentile	1.2	18.1	15.6	5.2	11.2	11.2
Number Of Observations	217	198	191	172	159	134



# Lazard Asset Management

Mandate: Non-US Developed Equity Mgrs.

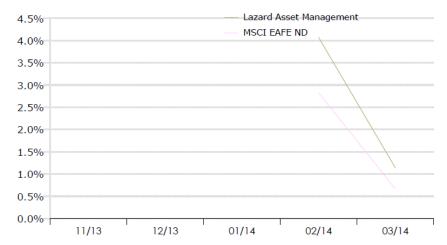
Benchmark: MSCI EAFE ND

### Strategy

Lazard invests in Non-US stocks across all developed countries.

### **Performance**

Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Lazard Asset Manage	4.9					10.9	Nov-2013
MSCI EAFE ND	4.1					8.2	
Excess Return	0.8					2.7	

Quarti	le Rankinç	gs				
30% 7		•				
25% -						
20% -						
15% -					•	
10% -				•		•
5% -						
0% -				Ι .		
	Three	One	Two	Three	Four	Five
	Months	Year	Years	Years	Years	Years

	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
Lazard Asset Manager	5.2					
Rank	19					
◆ MSCI EAFE ND	4.1	23.6	21.1	8.1	13.3	11.8
Rank 10th Percentile	46 5.8	44 28.7	51 27.0	67 13.7	69 17.2	82 16.4
1st Quartile	4.7	25.7	23.3	10.8	16.0	15.3
Median	3.9	22.8	21.1	8.8	14.0	13.6
3rd Quartile	2.4	20.2	18.4	7.0	13.0	12.2
90th Percentile	1.2	18.1	15.6	5.2	11.2	11.2
Number Of Observations	217	198	191	172	159	134



# MFS Inst. Adv.

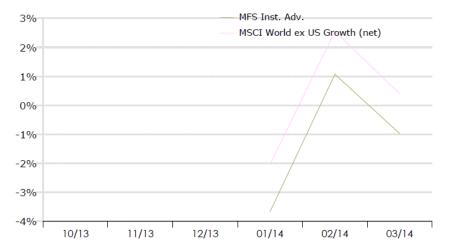
Mandate: Non-US Developed Equity Mgrs.
Benchmark: MSCI World ex US Growth (net)

### Strategy

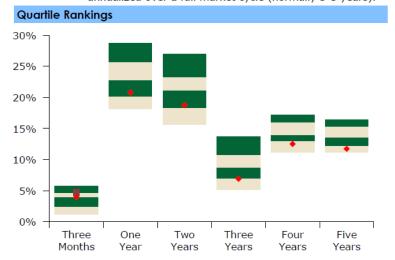
MFS Inst. Adv. invests in Non-US stocks across all developed countries.

### **Performance**

Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
MFS Inst. Adv.	4.5					5.7	Oct-2013
MSCI World ex US Gr	4.0					6.9	
Excess Return	0.5					(1.2)	



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
MFS Inst. Adv.	4.7					
Rank	26					
MSCI World ex US Gr	4.0	20.8	18.7	6.9	12.5	11.7
Rank	48	71	73	77	79	83
10th Percentile	5.8	28.7	27.0	13.7	17.2	16.4
1st Quartile	4.7	25.7	23.3	10.8	16.0	15.3
Median	3.9	22.8	21.1	8.8	14.0	13.6
3rd Quartile	2.4	20.2	18.4	7.0	13.0	12.2
90th Percentile	1.2	18.1	15.6	5.2	11.2	11.2
Number Of Observations	217	198	191	172	159	134



# Fixed Income Managers



# **Fixed Income Managers**

(Returns are Net of Fees)

	Inception Date	ket Value smillion)	% to Total Fixed Income	Current Quarter	One Year	Three Years	Five Years	Ten Years	Since Inception <sup>1</sup>	5 Year Tracking Error
Core Fixed Income BC U.S. Aggregate*	Jun-12	\$ 2,766	100.0%	<b>2.2</b> 2.0	<b>6.0</b> 4.4	<b></b>	<b></b>	<b></b> 	<b>4.0</b> 2.3	
Excess Return				0.2	1.6				1.7	
Loomis Sayles BC U.S. Aggregate*	Jun-80	\$ 1,122	40.6%	<b>2.3</b> 2.0	<b>7.2</b> 4.4	<b>5.4</b> 3.9	<b>7.4</b> 5.4	<b>6.4</b> <i>5.2</i>	<b>9.8</b> 8.2	1.9
Excess Return				0.3	2.8	1.5	2.0	1.2	1.6	
Neuberger Berman BC U.S. Aggregate*	Nov-90	\$ 1,124	40.6%	<b>2.2</b> 2.0	<b>5.4</b> 4.4	<b>4.7</b> 3.9	<b>7.9</b> 5.4	<b>6.5</b> 5.2	<b>7.5</b> 6.6	2.4
Excess Return				0.2	1.0	0.8	2.5	1.3	0.9	
Baird Advisors  BC U.S. Govt/Credit Intermed	Mar-05	\$ 239	8.6%	<b>1.5</b> <i>1.2</i>	<b>3.7</b> 2.9	<b>4.0</b> 2.8	<b>5.8</b> 4.1	<u></u>	<b>5.2</b> 4.4	0.8
Excess Return				0.3	0.8	1.2	1.7		0.8	
LM Capital Group BC U.S. Aggregate*	Mar-05	\$ 281	10.2%	<b>2.4</b> 2.0	<b>5.8</b> 4.4	<b>4.0</b> 3.8	<b>5.8</b> <i>4.7</i>	<u></u>	<b>5.5</b> 4.8	1.3
Excess Return				0.4	1.4	0.2	1.1		0.7	
Credit Opportunities BC U.S. Corp High Yield 2% Cap	Jun-13	\$ 313	100.0%	<b>2.3</b> 2.4	<b>12.1</b> 11.7	<b></b> 	<b></b> 	<b></b> 	<b>12.4</b> 11.7	
Excess Return				-0.1	0.4				0.7	
Aegon USA BC U.S. Corp High Yield 2% Cap	Jun-13	\$ 104	33.1%	<b>2.3</b> 2.4	<b>11.0</b> <i>11.7</i>	 	<b></b> 	<b></b> 	<b>11.3</b> 11.7	
Excess Return				-0.1	-0.7				-0.4	
Franklin Advisors BC U.S. Corp High Yield 2% Cap	Jun-13	\$ 108	34.7%	<b>2.4</b> 2.4	<b>13.3</b> <i>11.7</i>	 	<b></b> 	<b></b> 	<b>13.6</b> 11.7	
Excess Return				0.0	1.6				1.9	
Prudential Emerging  JPM EMBI Global Diversified	May-14	\$ 101	32.2%	<b></b> 	<b></b>	<b></b> 	 	<b></b> 	<b>0.7</b> 1.3	
Excess Return									-0.6	

<sup>&</sup>lt;sup>1</sup> Indicates gross returns.

<sup>\*</sup> Changed from the BC Universal Index on July 1, 2013.



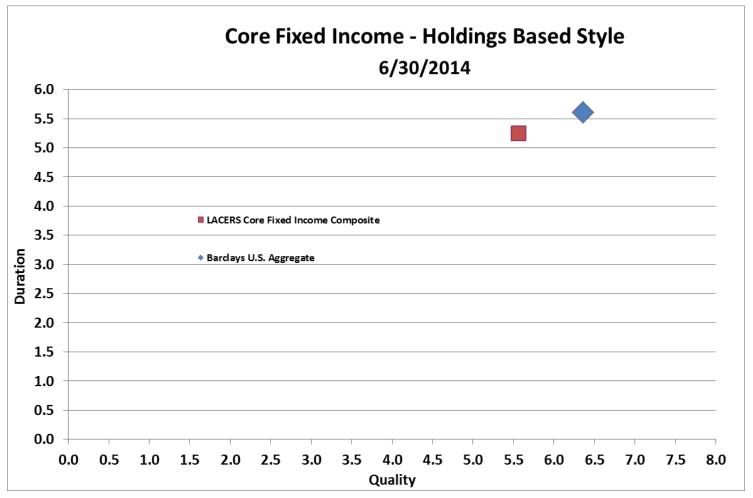
# 5-Year Rolling Risk-Adjusted Active Returns



- Active returns are returns earned over/under benchmark return.
- Despite dip in 2008, fixed income composite has provided mostly positive risk-adjusted active returns since inception.

Risk-adjusted active returns are referred to as "Information Ratio". Information Ratio = Excess return (alpha) / Excess risk (tracking error).





- LACERS Core Fixed Income portfolio has slightly lower duration than benchmark.
- Portfolio is modestly lower quality versus benchmark.



# MANAGER REPORT CARD<sup>1</sup>

Fixed Income	Inception Date	Mandate		rent rter	One	Year		ree ars		ve ars	Since Inception	Comments <sup>2</sup>
			I	U	I	U	I	U	I	U	I	
> Neuberger Berman	Nov-90	Core	✓	x	✓	×	✓	×	✓	✓	✓	Performance satisfactory.
> Loomis Sayles	Jun-80	Core	✓	✓	✓	✓	✓	✓	✓	✓	✓	Performance satisfactory.
> Baird Advisors	Mar-05	Intermediate	✓	✓	✓	✓	✓	✓	✓	✓	✓	Performance satisfactory.
> LM Capital Group	Feb-05	Core	✓	✓	✓	✓	✓	✓	✓	✓	✓	Performance satisfactory.
Credit Opportunities												
> Aegon USA	Jun-13	High Yield Bonds	×	✓	x	x	n/a	n/a	n/a	n/a	3C	Limited track record.
> Franklin Advisers	Jun-13	High Yield Bonds	-	✓	✓	✓	n/a	n/a	n/a	n/a	✓	Limited track record.
> Prudential Emerging	May-14	High Yield Bonds	x	n/a	n/a	n/a	n/a	n/a	n/a	n/a	*	Limited track record.

<sup>&</sup>lt;sup>1</sup>Current Quarter, 1-Yr, 3-Yrs, and 5-Yrs returns are net of fees. Since Inception returns are gross of fee.

<sup>&</sup>lt;sup>2</sup>Managers are placed on the Watch List for concerns with organization, process, and performance. Managers are normally on the Watch List for 6 months though can be longer if manager issues still remain but not severe enough to warrant contract termination recommendation.

	LEGEND		
>	outperformed index	I	index
æ	underperformed index	U	universe median
ш	equal to index		



# **Baird Advisors**

Mandate: Intermediate Fixed Income
Benchmark: BC US Agg Govt/Credit Intermed

### Strategy

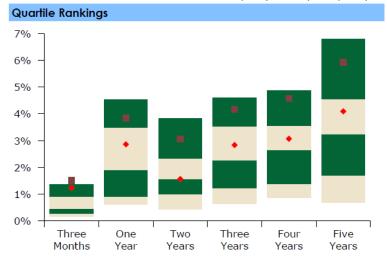
Baird invests primarily in US investment-grade bonds in the govenment and credit sectors with 3-5 year maturities.

### **Performance**

Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Baird Advisors	1.5	3.7	2.9	4.0	5.8	5.2	Mar-2005
BC US Agg Govt/Crea	1.2	2.9	1.6	2.8	4.1	4.4	
Excess Return	0.3	0.8	1.3	1.2	1.7	0.8	



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Baird Advisors	1.5	3.8	3.1	4.2	4.6	5.9
Rank	9	18	20	20	18	22
BC US Agg Govt/Cred	1.2	2.9	1.6	2.8	3.1	4.1
Rank 10th Percentile	17 1.4	33 4.5	51 3.8	43 4.6	36 4.9	31 6.8
1st Quartile	0.9	3.5	2.3	3.5	3.6	4.6
Median	0.5	1.9	1.6	2.3	2.6	3.2
3rd Quartile	0.3	0.9	1.0	1.2	1.4	1.7
90th Percentile	0.2	0.6	0.4	0.6	0.9	0.7
Number Of Observations	40	39	24	31	34	30



# LM Capital Group

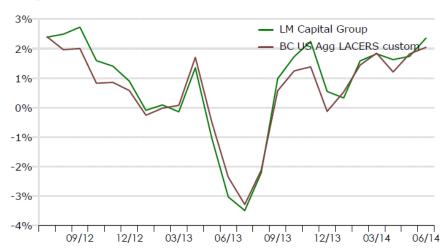
Mandate: Intermediate Fixed Income Benchmark: BC US Agg LACERS

### **Strategy**

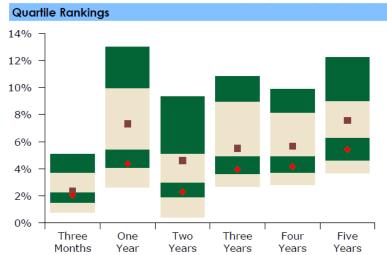
LM Capital invests primarily in US investment-grade bonds in the govenment and credit sectors with 3-5 year maturities.

### **Performance**

Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
LM Capital Group	2.4	5.8	3.0	4.0	5.8	5.5	Mar-2005
BC US Agg LACERS c	2.0	4.4	2.3	3.8	4.7	4.8	
Excess Return	0.4	1.4	0.7	0.2	1.1	0.7	



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
LM Capital Group	2.4	6.0	3.2	4.2	4.6	6.0
Rank	1	4	19	20	18	21
BC US Agg LACERS	2.0	4.4	2.3	3.8	3.8	4.7
Rank 10th Percentile	6 1.4	12 4.5	26 3.8	23 4.6	21 4.9	25 6.8
1st Quartile	0.9	3.5	2.3	3.5	3.6	4.6
Median	0.5	1.9	1.6	2.3	2.6	3.2
3rd Quartile	0.3	0.9	1.0	1.2	1.4	1.7
90th Percentile	0.2	0.6	0.4	0.6	0.9	0.7
Number Of Observations	40	39	24	31	34	30



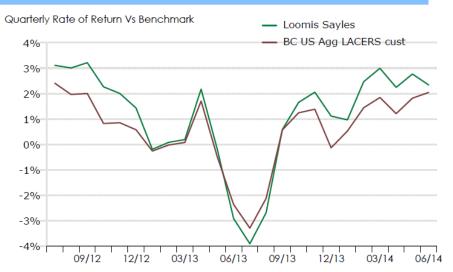
# Loomis Sayles

Mandate: US Fixed Income Manager Benchmark: BC US Agg LACERS

Strategy

Loomis invests primarily in US investment-grade bonds rated BBB- or higher by S&P or Baa3 or higher by Moodys.

### **Performance**



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Loomis Sayles	2.3	7.2	4.5	5.4	7.4	9.8	Jun-1980
BC US Agg LACERS c	2.0	4.4	2.3	3.9	5.4	8.2	
Excess Return	0.3	2.8	2.2	1.5	2.0	1.6	

Quarti	le Ranking	gs				
14% ¬						
12% -						
10% -						
8% -						
6% -						•
4% -		•		•	•	
2% -	•		•			
0% -				ı	Γ	
'	Three Months	One Year	Two Years	Three Years	Four Years	Five Years

	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Loomis Sayles	2.4	7.3	4.6	5.5	5.7	7.6
Rank	46	38	31	41	40	34
BC US Agg LACERS	2.0	4.4	2.3	3.9	4.2	5.4
Rank 10th Percentile	61 5.1	69 13.0	67 9.3	68 10.8	66 9.9	66 12.2
1st Quartile	3.7	10.0	5.1	9.0	8.2	9.0
Median	2.2	5.4	3.0	5.0	4.9	6.3
3rd Quartile	1.5	4.1	1.9	3.6	3.7	4.6
90th Percentile	0.8	2.6	0.4	2.7	2.8	3.7
Number Of Observations	411	393	339	313	289	251



# Neuberger Berman

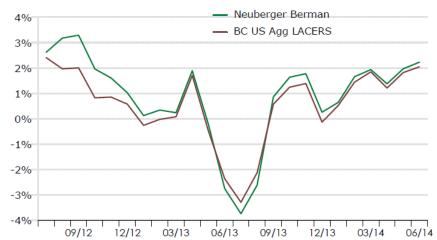
Mandate: US Fixed Income Manager Benchmark: BC US Agg LACERS

### **Strategy**

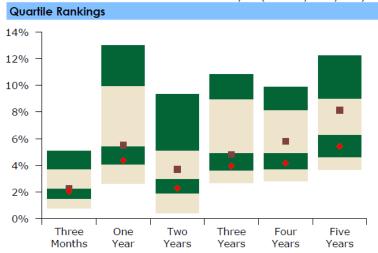
Neuberger invests primarily in US investment-grade bonds rated BBB- or higher by S&P or Baa3 or higher by Moodys.

### **Performance**

Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Neuberger Berman	2.2	5.4	3.5	4.7	7.9	7.5	Nov-1990
BC US Agg LACERS	2.0	4.4	2.3	3.9	5.4	6.6	
Excess Return	0.2	1.0	1.2	0.8	2.5	0.9	



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Neuberger Berman	2.3	5.5	3.7	4.8	5.8	8.1
Rank	49	50	41	52	37	30
BC US Agg LACERS	2.0	4.4	2.3	3.9	4.2	5.4
Rank	61	69	67	68	66	66
10th Percentile	5.1	13.0	9.3	10.8	9.9	12.2
1st Quartile	3.7	10.0	5.1	9.0	8.2	9.0
Median	2.2	5.4	3.0	5.0	4.9	6.3
3rd Quartile	1.5	4.1	1.9	3.6	3.7	4.6
90th Percentile	0.8	2.6	0.4	2.7	2.8	3.7
Number Of Observations	411	393	339	313	289	251



# Aegon USA

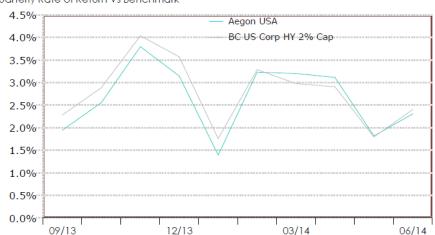
Mandate: High Yield Fixed Income Benchmark: BC US Corp HY 2% Cap

### **Strategy**

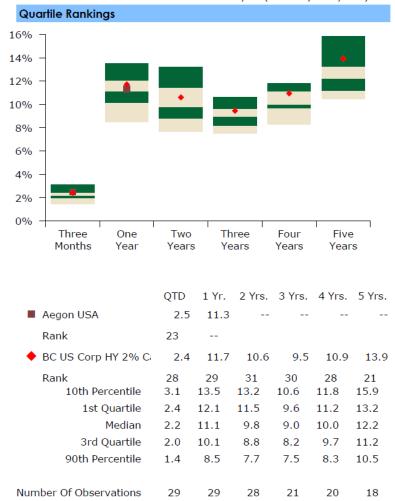
Aegon USA Investment Management, LLC. primarily invests in fixed income securities that are issued by corporations with high yield ratings (below investment grade) with a heavy focus on controlling credit risk via in-depth research of all issuers in the portfolio.

### **Performance**

Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Aegon USA	2.3	11.0				11.3	Jun-2013
BC US Corp HY 2% C	2.4	11.7				11.7	
Excess Return	(0.1)	(0.7)				(0.4)	





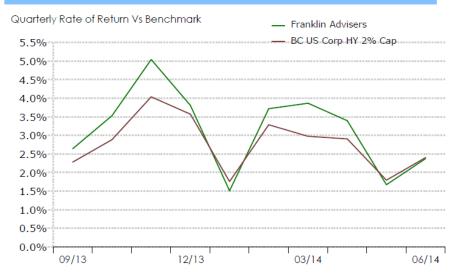
### Franklin Advisers

Mandate: High Yield Fixed Income Benchmark: BC US Corp HY 2% Cap

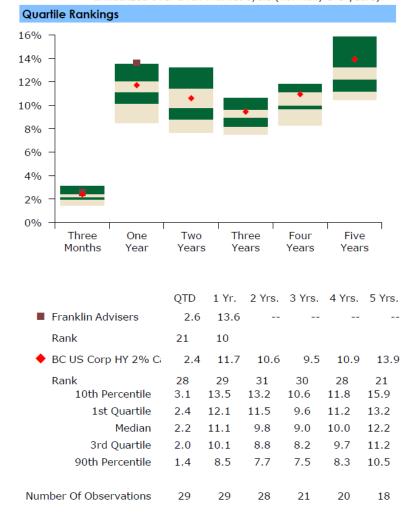
### Strategy

Franklin Advisers, Inc. invests in U.S. high yield corporate bond market that focus on fundamental credit analysis of corporate issuers across the high yield market with a goal of identifying those securities offering the potential for strong risk-adjusted total returns.

### **Performance**



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Franklin Advisers	2.4	13.3				13.6	Jun-2013
BC US Corp HY 2% C	2.4	11.7				11.7	
Excess Return	(0.0)	1.6				1.9	





# **Prudential Emerging**

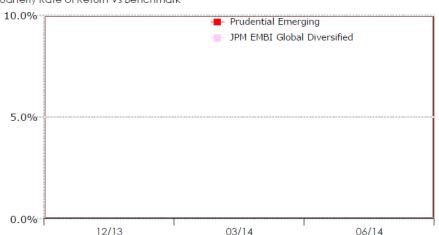
Mandate: High Yield Fixed Income
Benchmark: JPM EMBI Global Diversified

### **Strategy**

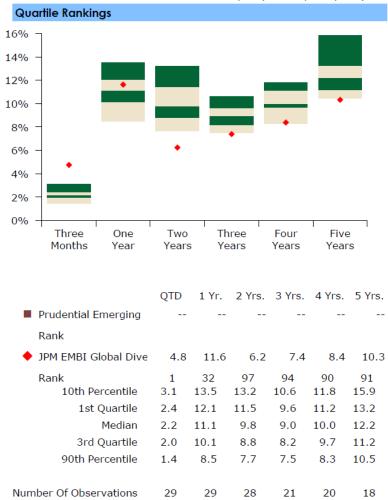
Aegon USA Investment Management, LLC. primarily invests in fixed income securities that are issued by corporations with high yield ratings (below investment grade) with a heavy focus on controlling credit risk via in-depth research of all issuers in the portfolio.

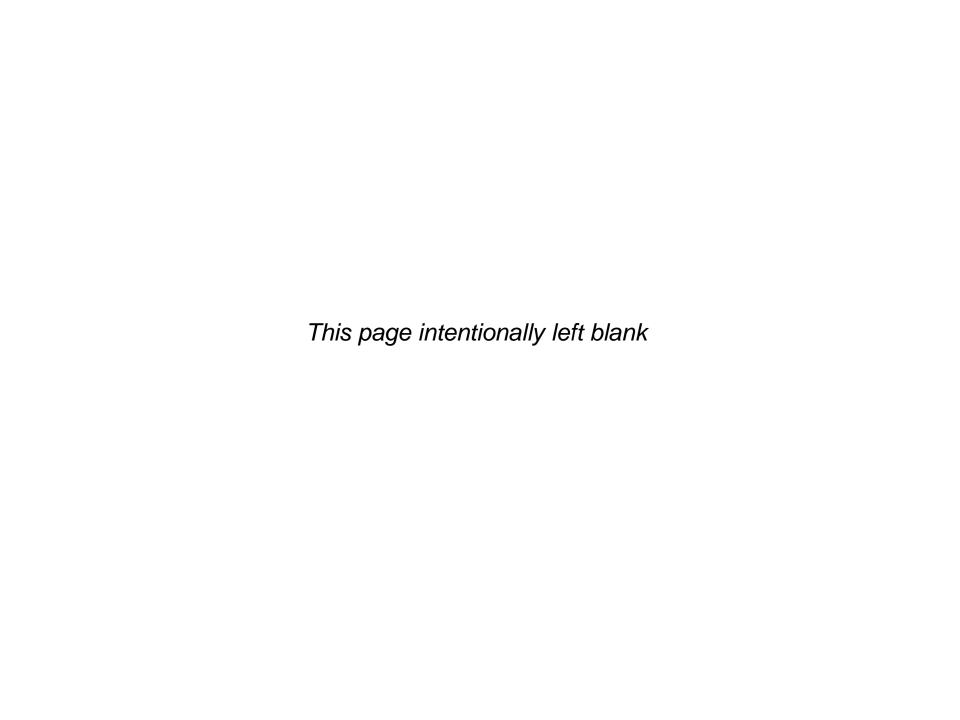
### **Performance**

Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Prudential Emerging						0.7	May-2014
JPM EMBI Global Dive						1.3	
Excess Return						(0.6)	







# **Definitions**



### I. Asset Allocation

• Market %: market value as a percent of the total fund's market value.

• Target %: investment policy on target allocation for each asset classes.

• Minimum and Maximum %: range of allocation for each asset classes.

### II. Policy Benchmarks

Current (adopted January 24, 2012)

♦ U.S Equity: 24% Russell 3000

♦ Non-U.S Equity: 29% MS ACWI ex U.S. Net Div

◆ Fixed Income: 19% Barclays Capital (BC) Aggregate

♦ Credit Opportunities: 5% 65% Barclays U.S. High Yield Capped / 35% JP Morgan EMBI - Global Diversified

♦ Public Real Assets: 5% CPI + 5%

◆ Private Real Estate: 5% NCREIF + 100 bps annually

♦ Private Equity: 12% Russell 3000 plus 300 bps annually. Calculated on a dollar-weighted basis, and

holding cash flows at 0% return for the first 36 months

♦ Cash: 1% 90-day Treasury Bill

◆ **Total**: 24% U.S. Equity; 29% Non-U.S. Equity; 19% Fixed Income; 5% Credit Opportunities; 5% Public Real Assets; 5% Private Real Estate; 12% Private Equity; 1% Cash

### Prior (adopted October 13, 2009)

◆ U.S Equity: 27% Russell 3000

♦ Non-U.S Equity: 20% MS ACWI ex U.S. Net Div

♦ Core Fixed Income: 26% Barclays Capital (BC) Universal

◆ Private Real Estate: 7% NCREIF

◆ Private Equity: 9% Russell 3000 plus 400 bps annually. Calculated on a dollar-weighted basis, and holding

cash flows at 0% return for the first 36 months.

♦ Cash: 1% 90-day Treasury Bill

Total: 37% U.S. Equity; 20% Non-U.S. Equity; 26% Core Fixed Income; 7% Private Real Estate; 9% Private Equity;
 1% Cash



### III. Indices

### Cash

**Salomon Brothers 3-Month Treasury Bills:** an average of the last three 3-month treasury bill issues' monthly return equivalents of yield averages, which are not marked to market. Month-end discount yields are converted to bond-equivalent yields, then a simple average is taken, and that number is decompounded to a monthly return using the actual number of days in the month and a 365-day year.

### Equity

- **Dow Jones Industrial Average**: This index is the price-weighted average of 30 actively traded blue chip stocks.
- NASDAQ: A market value weighted index that measures all domestic and non-US based securities, more than 4700 companies listed on the NASDAQ stock market.
- ◆ Russell Midcap Value: contains Russell Midcap stocks having less-than-average growth orientation and are included in the Russell 1000 Value Index.
- Russell 1000: consists of the 1000 largest securities in the Russell 3000 Index. The Russell 1000 is capitalization-weighted.
- Russell 1000 Growth: contains Russell 1000 stocks having greater-than-average growth orientation. Stocks tend to exhibit lower dividend yields and higher price-to-book ratios, price-earnings ratios and forecast growth values than the Value universe. The index is capitalization-weighted (as opposed to equal-weighted).
- Russell 1000 Value: contains those Russell 1000 securities with a less-than-average growth orientation. Securities in this index tend to exhibit lower price-to-book and price-earnings ratios, higher dividend yields and lower forecasted growth values than the Growth universe. Russell 1000 Value is capitalization-weighted.
- **Russell 2000:** contains the smallest 2,000 stocks in the Russell 3000 Index, representing approximately 11% of the Russell 3000 total market capitalization. The index is capitalization-weighted (as opposed to equal-weighted).
- Russell 2000 Growth: contains those Russell 2000 securities with a greater-than-average growth orientation. Securities in this index tend to exhibit higher price-to-book and price-earnings ratios, lower dividend yields and higher forecasted growth values than the Value universe.
- Russell 2000 Value: contains those Russell 2000 securities with a less-than-average growth orientation. Securities
  in this index tend to exhibit lower price-to-book and price-earnings ratios, higher dividend yields and lower
  forecasted growth values than the Growth universe.
- Russell 3000: measures performance of the 3000 largest US companies based on total market capitalization. This index represents approximately 98% of the investable US equity market. The Russell 3000 is capitalization-weighted.
- Standard and Poor 500: the S&P, which represents approximately 75% of NYSE market capitalization and 30% of NYSE issues, contains 500 industrial, utility, transportation and financial companies in the U.S. markets (mostly



- NYSE issues). The S&P is capitalization-weighted (as opposed to equal-weighted), calculated on a total return basis with dividends reinvested.
- Morgan Stanley All Country World ex USA: an arithmetic, market value-weighted average of approx. 1800 securities from outside the United States. The index is calculated on a total return basis, including reinvestment of gross dividends before deduction of withholding taxes.
- Morgan Stanley World ex USA: contains securities of all of the following developed counties, excluding U.S.: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, Israel, Australia, New Zealand, Singapore, Hong Kong, and Japan.
- Morgan Stanley Capital International Emerging Markets Free: contains securities of the following counties which are available to all investors regardless of local status: Argentina, Brazil, Chile, Colombia, Greece, India, Indonesia, Israel, Jordan, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Portugal, South Africa, Sri Lanka, Thailand, Turkey and Venezuela.
- Morgan Stanley Capital International Emerging Markets ND: contains securities of the following counties which
  are available to all investors regardless of local status: Argentina, Brazil, Chile, Colombia, Greece, India, Indonesia,
  Israel, Jordan, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Portugal, South Africa, Sri Lanka, Thailand,
  Turkey and Venezuela. The index is computed using the net return, which withholds applicable taxes for non-resident
  investors.
- Morgan Stanley Capital International EAFE Value Gross: contains securities of large and mid-cap in the following developed counties, excluding U.S. and Canada: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, Israel, Australia, New Zealand, Singapore, Hong Kong, and Japan.
- Morgan Stanley Capital International EAFE Small Cap: contains securities of small-capitalization in the following developed counties, excluding U.S. and Canada: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, Israel, Australia, New Zealand, Singapore, Hong Kong, and Japan.

### Fixed Income

♦ Barclays Capital Aggregate: an aggregate of the Government/Corporate Bond Index, the Mortgage-Backed Securities Index, and the Asset-Backed Securities Index. The index contains fixed rate debt issues with at least one-year maturity, \$100 million par value outstanding, and investment grade ratings by Moody's, S&P or Fitch (in that order). Returns are market-value weighted inclusive of accrued interest.



- ♦ Barclays Capital Universal: This index contains the Barclays Capital Aggregate index bonds plus approximately 10% of the remaining index includes US High Yield, Eurodollar, Emerging Markets, 144A Private Placements, and CMBS bonds.
- ◆ Barclays Capital US Govt/Credit Intermediate: This index is a sub-component of the Barclays Capital Aggregate index. Bonds consist of the US Treasury, US Agency (non-MBS), and US Investment-grade credit holdings with a maturity range of 1 to 10 years.
- ♦ Barclays U.S. High Yield 2% Capped: This index is an unmanaged index that covers U.S. corporate, fixed-rate, non-investment grade debt with at least one year to maturity and at least \$150 million in par outstanding. Index weights for each issuer are capped at 2%.
- ♦ **Bond Rating Methodology:** Bond ratings are intended to characterize the risk associated with holding a particular bond or categories of bonds. These ratings are the risk assessed by the market and that the bond issuer must pay to attract purchasers to the bond. These ratings are expressed as a series of letters and sequences.

### Rating Categories in descending order:

$\Diamond$	AAA:	The best quality rating, stable cash flows,	very protective bond covenants, v	ery low probability of
		default.		

♦ Aa: The second best rating. Stable cash flows, less protective bond covenants, very low probability of

default.

♦ A: Stable cash flows, less protective bond covenants, long-term probability of default is higher than

AAA or Aa.

Medium quality rating, reliable cash flows short term, less-reliable cash flows long term, bond

covenants offer limited protection. Moderate probability of default. Downgrade to a lower rating is

also possible. Baa bonds are the lowest rating still considered 'investment grade.

Ba thru B: Highly speculative. Long-term assurance of cash flows and protective elements are low.

Purchasers of these bonds generally specialize in assessing credit risk of specific bond issues. Much higher spreads versus investment grade bonds provide the incentive for purchasers. High

default or downgrade risk.

♦ Caa thru C: Poor standing. Either close to default or in default. Highly probable loss of principal.

♦ **D:** Coupon payments were not paid on the due date which puts the bond In default. Unless both

Protective covenants and issuer assets are adequate (not likely), holder loses all likelihood of

recovering principal.



### Private Real Estate

**NCREIF Property Index:** the NPI contains investment-grade, non-agricultural, income-producing properties which may be financed in excess of 5% gross market value; were acquired on behalf of tax exempt institutions; and are held in a fiduciary environment. Data is collected quarterly from a membership of investment managers and plan sponsors. Returns are gross of fees; include income, realized gains/losses, and appreciation/depreciation; and are market-value weighted. Property values are determined by consistent appraisal methodology and sold properties are removed in the quarter of the sale (the historical data remains). Current quarter performance is preliminary.

### IV. Universe Comparison

All Northern Trust Universes are gross of fees. Universe breaks are at 10, 25, 50, 75 and 90 percentiles.

### TUCS Plan Universes

Published on a quarterly basis using monthly observations. Over time, the plan population members will change due to new plans being introduced and other plans closing or leaving the universe.

### **Public Funds**

Includes the range of performance of all Public Funds greater than 10 billion dollars. Monitored by the Wilshire's Trust Universe Comparison Services Group. Plans include state and municipal plans and systems.

### Manager Universes

Created using the performance of managers used by sponsor subscribers to the Risk & Performance Services Group (RPS). Each occurrence of a manager is considered as an observation. The manager universes are used to describe the actual experience of plan sponsors use of the managers; no manager supplied representative portfolios or composites are used in the creation of the universes. All occurrences of a manager are included in the magnitudes they are used by the sponsors; no stratification or judgments are introduced by RPS to alter a manager's representation. Manager portfolios are used from all market segments (ERISA, Public, Foundation & Endowments, and Wealth) since managers are hired to fulfill a specific policy objective that is not unique by plan type. Inclusion in a universe is based upon quantitative screening using the criteria described; an RPS analyst determines the comparison of a manager to this style background for reporting purposes. The portfolio criteria are applied as the average of the values over the time period being observed and not simply the current point in time value.



### ♦ U.S. Equity - Large Cap Core

Includes portfolios with a portfolio average market capitalization greater than \$10 billion but not displaying any significant growth or value bias. The Barra Growth and Barra Book to Price risk factors are used to determine style orientation. Most of the portfolios also display a market-like beta.

### ♦ U.S. Equity - Large Cap Growth

Includes portfolios with a portfolio average market capitalization greater than \$10 billion. Portfolios will also display a significant growth bias as represented by a Barra Growth Risk Factor in the top 40% of all US equity portfolios and a Barra Price/Book score in the bottom 70% of all US equity portfolios monitored by RPS. Most growth portfolios display an above market beta.

### ◆ U.S. Equity - Large Cap Value

Includes portfolios with a portfolio average market capitalization greater than \$10 billion. Portfolios will also display a significant value bias as represented by a Barra Price/Book score in the top 30% of all US equity portfolios monitored by RPS. Most value portfolios display a below market beta and above market dividend yield.

### ♦ U.S. Equity - Small Cap Growth

Includes portfolios with a portfolio average market capitalization of less than \$2 billion. Small Cap Growth portfolios will also display a growth bias as represented by a Barra Growth Risk Factor in the top 31% of all US equity portfolios monitored by RPS.

### ◆ U.S. Equity - Small Cap Value

Includes portfolios with a portfolio average market capitalization of less than \$2 billion. Small Cap Value portfolios will also display a value bias as represented by a Barra Price/Book score in the top 27% and a Barra Growth factor score in the bottom 31% of all US equity portfolios monitored by RPS.

### Non-U.S. Equity - Developed Markets

Includes all managers investing in developed markets outside of North America. The majority of the portfolios in this universe are EAFE-oriented but may contain an opportunistic allocation to emerging markets equity (extended EAFE). There are a few regional non-US equity managers (Europe & Pacific Basin) also represented.



### ♦ Non-U.S. Equity - Emerging Markets

Includes all managers investing in emerging markets. The universe includes emerging markets managers that are diversified across all emerging markets as well as specialists in regional emerging markets.

### U.S. Core Fixed Income

Includes all managers, active and passive, investing in US Fixed Income.

### Credit Opportunities

Includes all managers, active and passive, investing in US high yield and emerging market debt managers.

### Public Real Assets

Includes all managers investing in Public REITS, TIPS, Commodities, and Multi Asset Real Asset/Return managers.

### V. Investment Performance

- Time: the internal rate of return (accounting for daily cash flows) monthly based on trade-date, full accrual accounting, and using market values. For periods of greater than one month, a time series of linked monthly returns is maintained, introducing a time weighted effect.
- The Private Real Estate and the Private Equity returns are lagged one quarter.
- The LACERS Total Fund return is dollar-weighted to include Private Equity.

### VI. Performance Attribution

### Holdings-Based Attribution.

U.S. Equity, Non-U.S. Equity, and Fixed Income tables are Holdings-based. The table details various attribution subcategories which impacted each manager's performance such as: selection, weighting, duration, yield, quality, etc.

### VII. Terminology

• **Duration**: A measure of the sensitivity of the price (the value of principal) of a fixed-income portfolio given a 1% change in the US Treasury yield curve (interest rates). A portfolio with a duration of 4 would be expected to lose 4% of



its value when interest rates rise 1%. Duration is expressed as a number of years. Rising interest rates mean falling bond prices, while declining interest rates mean rising bond prices.

- Information ratio: A ratio of portfolio returns above the returns of a benchmark (usually an index) to the volatility of those returns. The information ratio (IR) measures a portfolio manager's ability to generate excess returns relative to a benchmark, but also attempts to identify the consistency of the investor. This ratio will identify if a manager has beaten the benchmark by a lot in a few months or a little every month. The higher the IR the more consistent a manager is and consistency is an ideal trait.
- **Standard deviation**: A statistical measure of volatility or the degree to which an individual value in a probability distribution tends to vary from the mean of the distribution. A manager with a one-year return of 5% and a standard deviation of 5, indicates the range of returns for this manager will likely fall between 0% and 10% during most annual time periods.
- **Tracking error**: A measure of the difference between returns of the portfolio and that of the benchmark it was attempting to imitate; reported as a "standard deviation percentage" difference.