

# Portfolio Performance Review

Quarter Ending June 30, 2013

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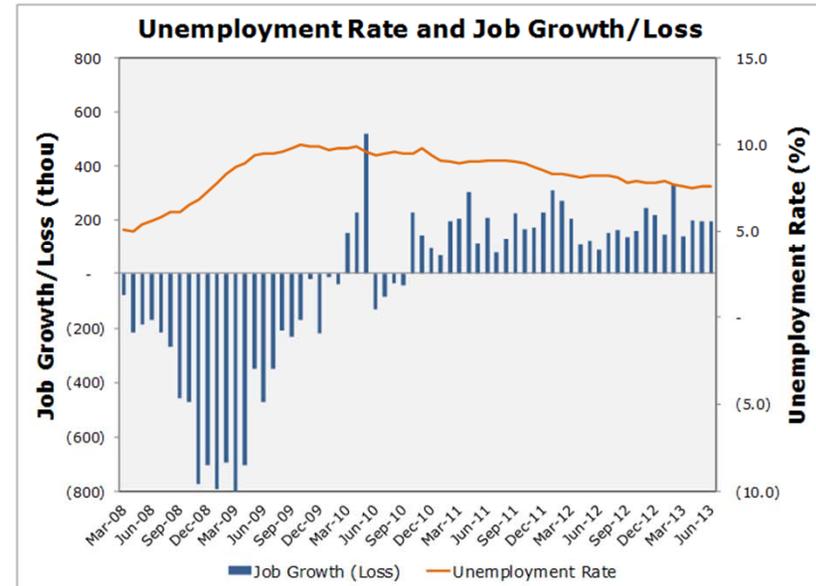
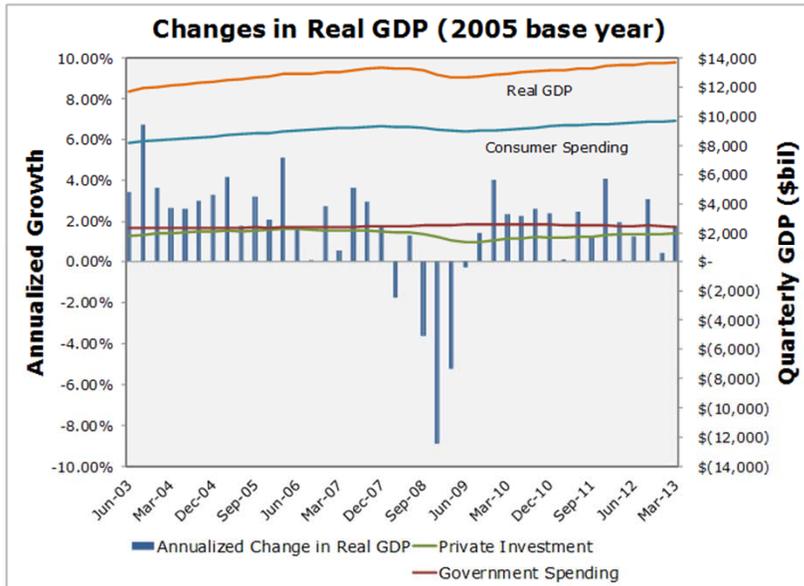


**LACERS**  
LOS ANGELES CITY EMPLOYEES'  
RETIREMENT SYSTEM

# Executive Summary

June 30, 2013		Key Economic Indicators			
<b>CPI (all items)</b> Seasonally adjusted	Monthly Change		Cumulative Change		
	Jun-13	0.5	3-Month	0.3	
	May-13	0.1	12-Month	1.8	
	Apr-13	-0.4	10-Yr Annual	2.4	
Breakeven Inflation	10-Year	2.0			
<b>Consumer Sentiment</b> Unv. of Michigan Survey	Jun-13	84.1			
	May-13	84.5			
	1-Yr Ago	73.2	10-Yr Avg	78.7	
<b>Manufacturing</b> Inst. for Supply Mgmt Purchasing Mngrs' Idx	Jun-13	50.9	Change in Manufacturing Sector		
	May-13	49.0	>50	Expansion	
	1-Yr Avg	51.2	<50	Contraction	

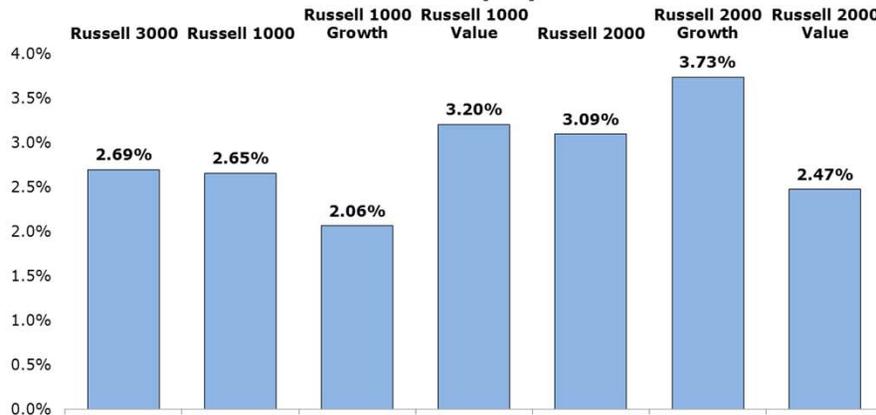
Note: Seasonally adjusted CPI data is utilized to better reflect short-term pricing activity.



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

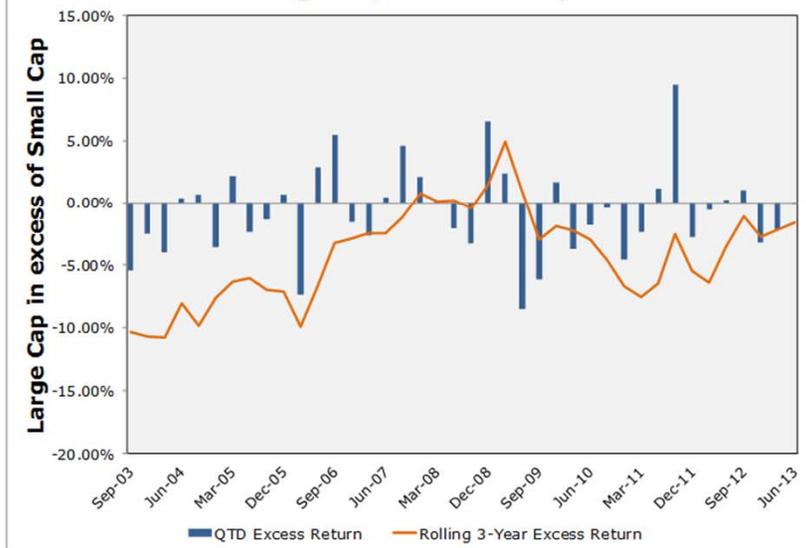
# U.S. Capital Markets: Equity

## U.S. Equity

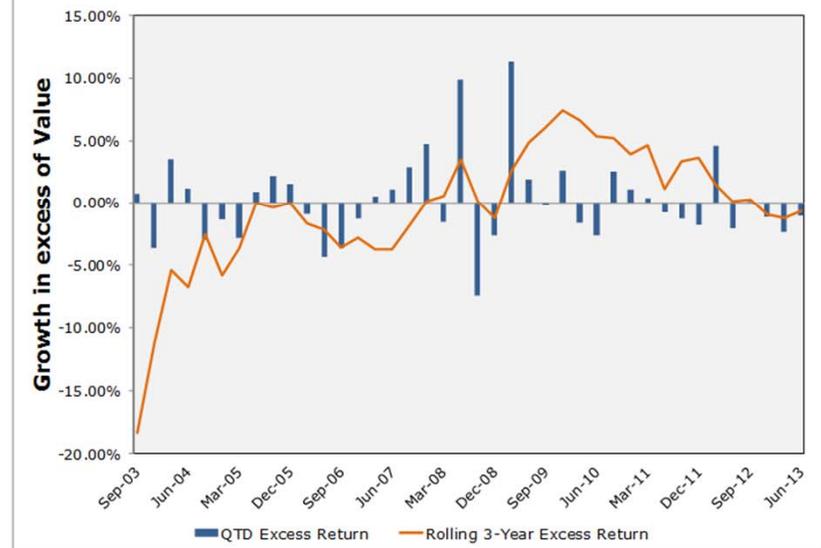


- U.S. stock market, as represented by the Russell 3000 Index, posted a return of 2.7% despite a down month in June, the first monthly loss since October 2012.
- Small-cap growth stocks performed strongest for the quarter.

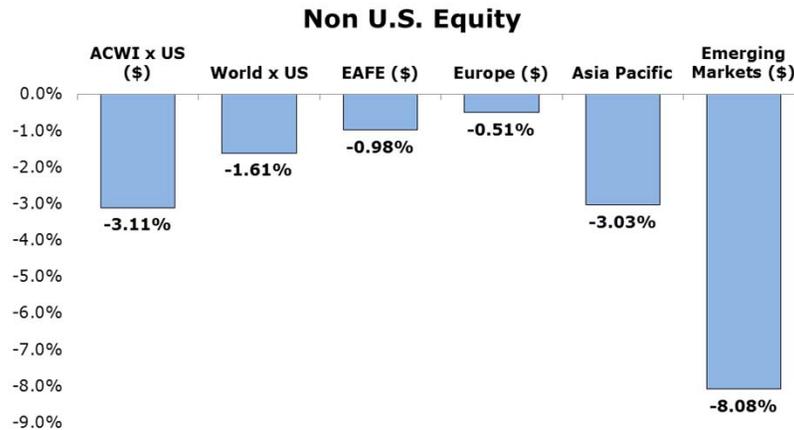
### Large Cap vs. Small Cap



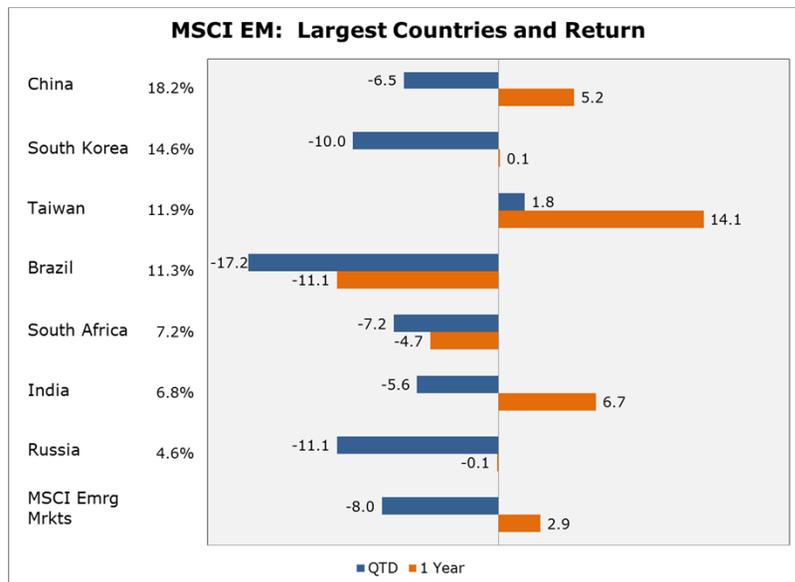
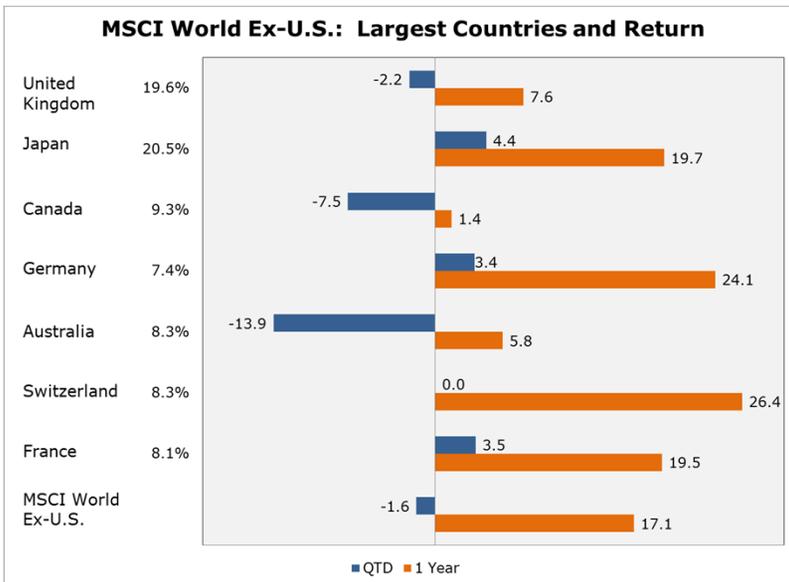
### Growth vs. Value



Data sources: Wilshire Compass, Wilshire Atlas

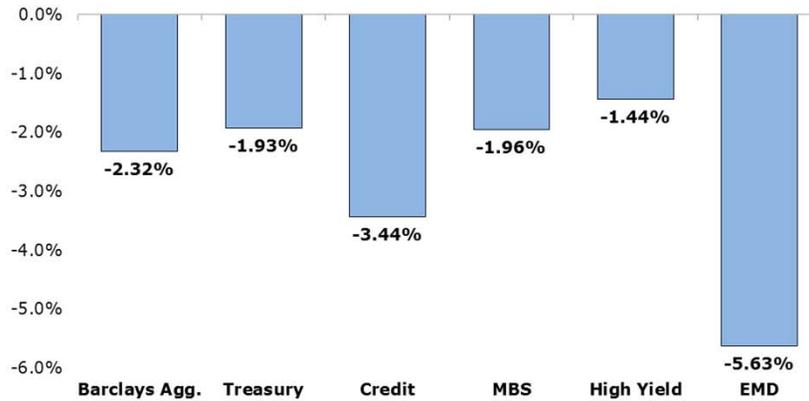


- Global equity markets continued to struggle. The announcement of the Fed's wind down of quantitative easing sent markets down worldwide.
- Japan's 2013 rally plunged into a volatile bear run after the Nikkei hit a five-year high on May 22.
- European Union struggled with political uncertainty in Greece and a recession throughout regions of the EU.
- Emerging Markets performance continues to be stifled by China's slowing domestic economy and political unrest in Brazil.

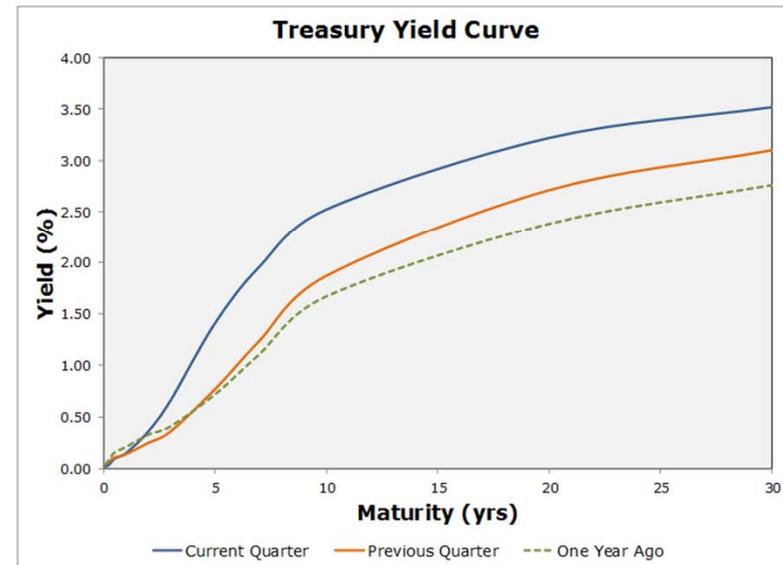
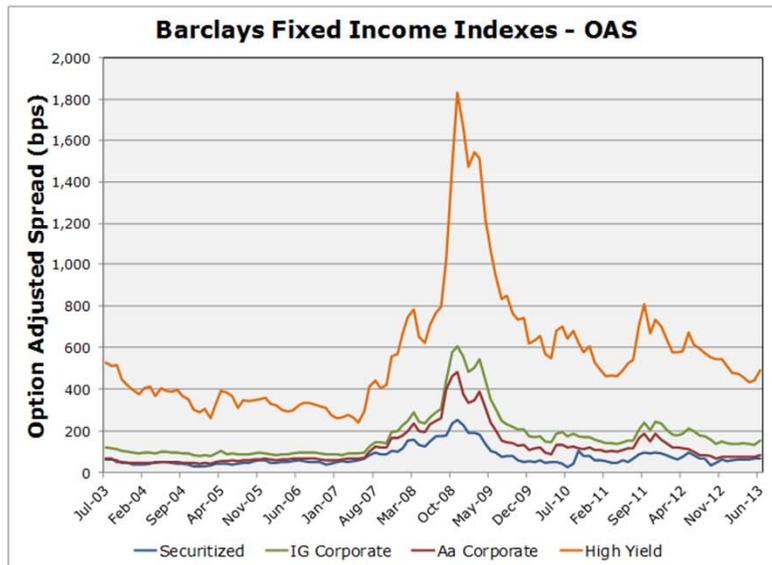


Data sources: Wilshire Compass, MSCI Barra

## Fixed Income



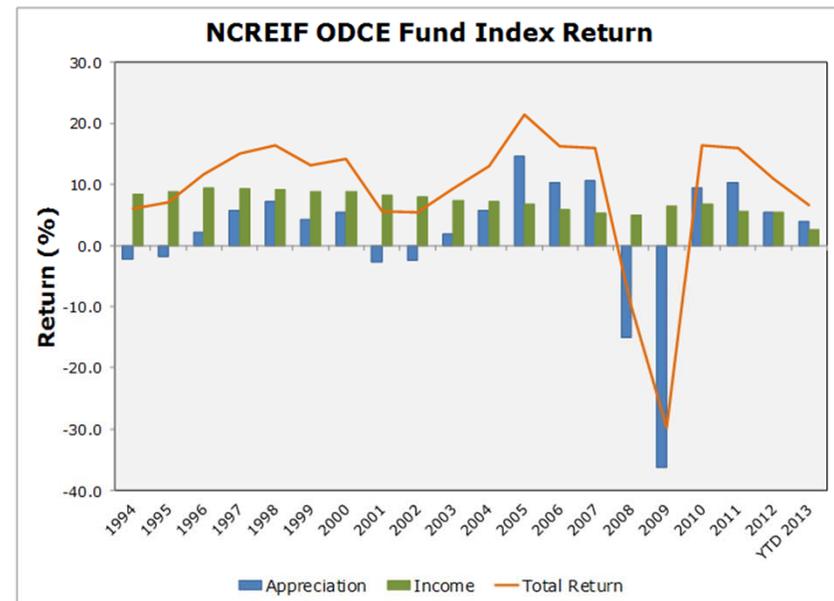
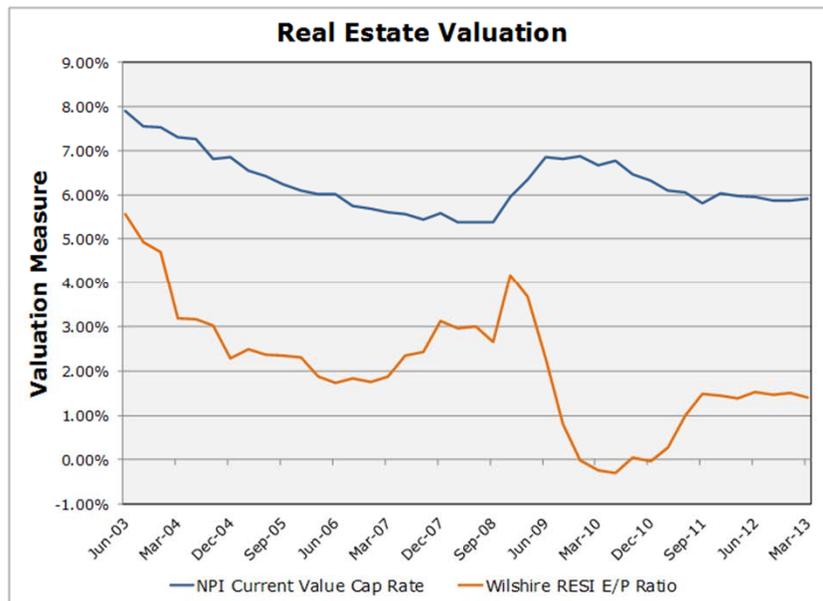
- Bond yields climbed higher after May 1, causing yields to rise sharply with the 10-year closing at 2.52%, 65 basis points higher than 1Q13.
- With the end of quantitative easing in sight, interest-rate sensitive assets, including TIPS, suffered losses.



Data sources: Wilshire Compass, Barclays Capital, U.S. Treasury

June 30, 2013	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Barclays U.S. TIPS Index	-7.1	-7.4	-4.8	4.6	4.4	5.2
Dow Jones UBS Commodity Index	-9.4	-10.5	-8.0	-0.2	-11.6	2.4
Global Public Real Estate*	-3.5	3.0	10.5	18.4	6.0	11.3
NCREIF ODCE Fund Index	3.9	6.6	12.2	15.0	-0.1	6.9
NCREIF Timberland Index	0.9	2.5	9.4	3.6	2.0	8.2
Alerian MLP Index (Oil & Gas)	1.9	22.1	28.4	21.0	18.2	16.3

\* Wilshire Global Real Estate Securities from March 2003 to December, 2004. Wilshire Global REITs from 2004 to present.



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

## Performance Overview

- *LACERS' investment portfolio ended the quarter with a market value of \$12.0 billion, the same as the previous quarter. The Fund's net of fee return was 0.7% for the quarter and 14.1% for the one-year period.*
- *The Total Fund outperformed its policy benchmark by 0.8% for the quarter and 1.2% for the one-year period.*
- *In a comparison to other public funds with market values greater than \$10 billion in TUCS (Trust Universe Comparison Service) peer universe, LACERS ranked in the 22nd percentile for the quarter and in the 10th percentile for the one-year period.*
- *Non-U.S. Equity and Fixed Income produced negative returns for the quarter while all other asset classes produced positive returns.*
- *U.S. Equity and Non-U.S. Equity outperformed their respective benchmarks for the quarter while Fixed Income underperformed.*
- *Private Equity<sup>1</sup> and Private Real Estate outperformed their respective benchmarks for the quarter.*

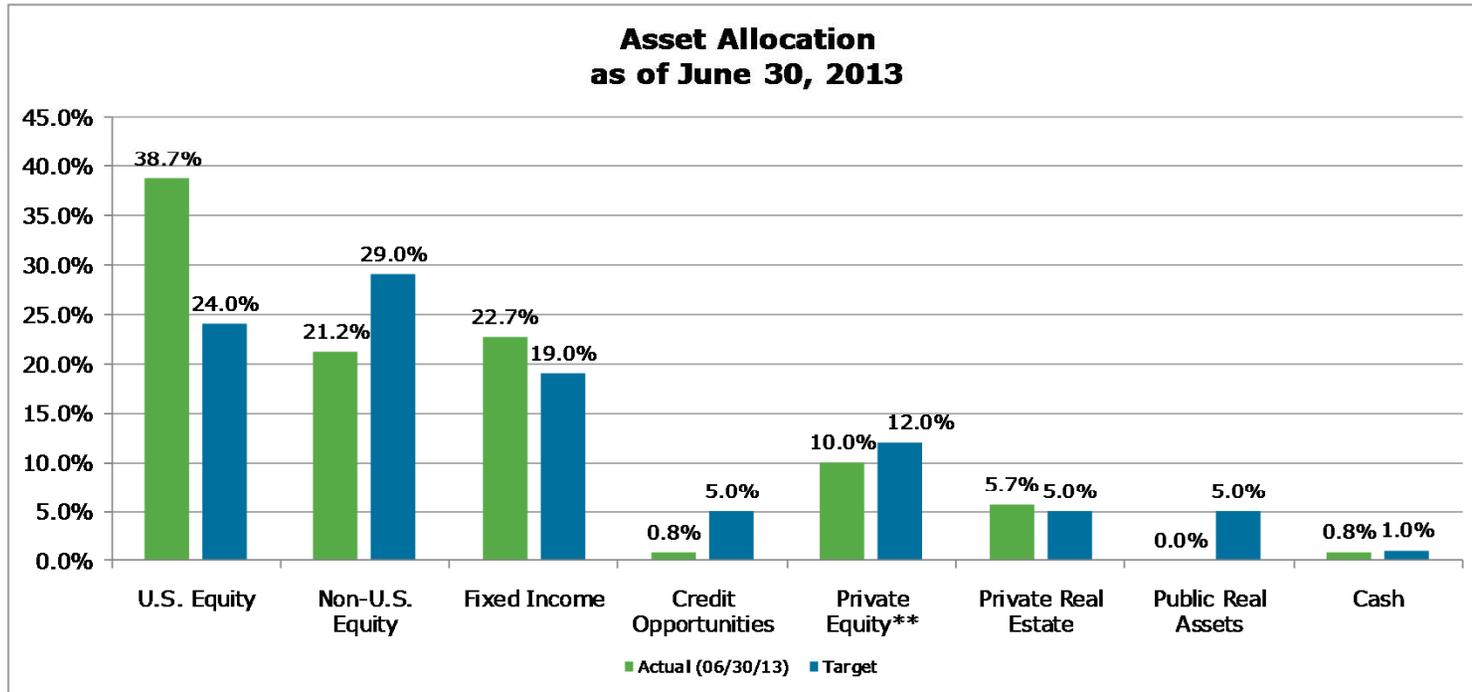
*Note: Due to the J-curve effect in early stages of a fund's life, returns may lag prior to realization of proceeds in later years.*

*<sup>1</sup>Name change from "Alternative Investments."*



# Fund Overview





	<b>Actual</b>	<b>Target*</b>	<b>Min.</b>	<b>Max</b>
U.S. Equity	38.7%	24.0%	19.0%	29.0%
Non-U.S. Equity	21.2%	29.0%	24.0%	34.0%
Fixed Income	22.7%	19.0%	15.0%	22.0%
Credit Opportunities	0.8%	5.0%	0.0%	10.0%
Private Equity**	10.0%	12.0%	n/a	n/a
Private Real Estate	5.7%	5.0%	n/a	n/a
Public Real Assets	0.0%	5.0%	2.0%	8.0%
Cash	0.8%	1.0%	0.0%	2.0%

\* 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. The implementation of the new Asset Allocation will be in stages over a period of 18 months.

\*\*Name change from "Alternative Investments."

## Detail Actual vs Target Allocation

Asset Class / Style	Benchmark	Market Value (\$ Billion)	Market Value to Total Fund (%)	Target to Total Fund (%)	Difference from Target (%)
<b>Equity</b>		<b>\$ 8.35</b>	<b>69.9%</b>	<b>65.0%</b>	<b>4.9%</b>
<b>U.S. Equity</b>		<b>\$ 5.82</b>	<b>48.8%</b>	<b>24.0%</b>	<b>24.8%</b>
<b>Passive</b>		<b>\$ 3.03</b>	<b>25.3%</b>	<b>17.5%</b>	<b>7.8%</b>
Large Cap Core	S&P 500	2.50	20.9%	16.6%	4.3%
Large Cap Growth	Russell 1000 Growth	0.12	1.0%	1.0%	0.1%
Large Cap Value	Russell 1000 Value	0.41	3.4%	0.0%	3.4%
<b>Active</b>		<b>\$ 1.60</b>	<b>13.4%</b>	<b>6.5%</b>	<b>6.9%</b>
All Cap	Russell 3000	0.09	0.8%	0.2%	0.5%
Large Cap Core	S&P 500	-	0.0%	0.0%	0.0%
Large Cap Growth	Russell 1000 Growth	-	0.0%	0.0%	0.0%
Large Cap Value	Russell 1000 Value	0.50	4.2%	1.0%	3.2%
Mid Cap Core	Russell Mid Cap	0.07	0.6%	1.2%	-0.6%
Small Cap Core	Russell 2000	0.30	2.5%	1.2%	1.3%
Small Cap Growth	Russell 2000 Growth	0.33	2.7%	1.4%	1.3%
Small Cap Value	Russell 2000 Value	0.31	2.6%	1.4%	1.2%
<b>Non-U.S. Equity</b>		<b>\$ 2.53</b>	<b>21.2%</b>	<b>29.0%</b>	<b>-7.8%</b>
<b>Passive</b>		<b>\$ 1.17</b>	<b>9.8%</b>	<b>10.2%</b>	<b>-0.4%</b>
World ex-U.S.	MSCI World ex-U.S.	1.17	9.8%	10.2%	-0.4%
<b>Active</b>		<b>\$ 1.36</b>	<b>11.4%</b>	<b>18.8%</b>	<b>-7.4%</b>
European	MSCI Europe/10% Abs.	0.48	4.0%	0.0%	4.0%
Asia/Pacific Basin	MSCI Asia/Pacific	0.46	3.9%	0.0%	3.9%
Developed Core	MSCI EAFE/World ex-U.S.	0.15	1.2%	2.9%	-1.7%
Developed Growth	MSCI EAFE/World ex-U.S. Growth	-	0.0%	2.9%	-2.9%
Developed Value	MSCI EAFE/World ex-U.S. Value	-	0.0%	2.9%	-2.9%
Emerging Markets Core	MSCI Emerging Markets	0.10	0.9%	2.6%	-1.7%
Emerging Markets Growth	MSCI Emerging Market Growth	-	0.0%	2.3%	-2.3%
Emerging Markets Value	MSCI Emerging Market Value	0.17	1.4%	2.3%	-0.9%
Small Cap Core	MSCI EAFE Small Cap	-	0.0%	2.9%	-2.9%
<b>Private Equity<sup>1</sup></b>		<b>\$ 1.20</b>	<b>10.0%</b>	<b>12.0%</b>	<b>-2.0%</b>
	Vintage Year				

<sup>1</sup> Name change from "Alternative Investments."

## Detail Actual vs Target Allocation

Asset Class / Style	Benchmark	Market Value (\$ Billion)	Market Value to Total Fund (%)	Target to Total Fund (%)	Difference from Target (%)
<b>Fixed Income</b>		<b>\$ 2.81</b>	<b>23.5%</b>	<b>24.0%</b>	<b>-0.5%</b>
<b>Core</b>		<b>\$ 2.71</b>	<b>22.7%</b>	<b>19.0%</b>	<b>3.7%</b>
Passive	Barclays Capital (BC) Aggregate	\$ -	0.0%	6.7%	-6.7%
Active		\$ 2.71	22.7%	12.3%	10.5%
Core	Barclays Capital (BC) Aggregate	-	0.0%	10.4%	-10.4%
Core Plus	Barclays Capital (BC) Universal	2.47	20.7%	0.0%	20.7%
Intermediate Core	BC U.S. Govt/Credit Intermediate	0.24	2.0%	1.9%	0.1%
<b>Credit Opportunities</b>		<b>\$ 0.10</b>	<b>0.8%</b>	<b>5.0%</b>	<b>-4.2%</b>
U.S. High Yield	BC U.S. High Yield 2% Capped	0.10	0.8%	2.8%	-1.9%
Emerging Market Debt	JP Morgan - EMBI Global Diversified	-	0.0%	1.8%	-1.8%
Opportunistic Credit	TBD	-	0.0%	0.4%	-0.4%
<b>Real Assets</b>		<b>\$ 0.68</b>	<b>5.7%</b>	<b>10.0%</b>	<b>-4.3%</b>
<b>Public Real Assets</b>		<b>\$ -</b>	<b>0.0%</b>	<b>5.0%</b>	<b>-5.0%</b>
TIPS	BC U.S. TIPS	-	0.0%	3.0%	-3.0%
REITS	Wilshire REIT	-	0.0%	0.5%	-0.5%
Commodities	S&P-GSCI Total Index	-	0.0%	1.0%	-1.0%
Multi Asset Real Assets	CPI + 5%	-	0.0%	0.5%	-0.5%
<b>Private Real Estate</b>		<b>\$ 0.68</b>	<b>5.7%</b>	<b>5.0%</b>	<b>0.7%</b>
<b>Cash</b>		<b>\$ 0.10</b>	<b>0.8%</b>	<b>1.0%</b>	<b>-0.2%</b>
<b>TOTAL PORTFOLIO</b>		<b>\$ 11.95</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

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# Fund Performance



## LACERS Total Fund

(Returns are Net of Fees)

	Market Value (\$million)	% to Total Fund	Current Quarter	One Year	Three Years	Five Years	Ten Years	Fifteen Years <sup>1</sup>	Since Inception <sup>1</sup>	5 Year Tracking Error
<b>LACERS Master Trust</b>	<b>\$ 11,946</b>	<b>100.0%</b>	<b>0.7</b>	<b>14.1</b>	<b>12.1</b>	<b>5.0</b>	<b>7.6</b>	<b>6.4</b>	<b>8.2</b>	<b>2.5</b>
<i>Policy Benchmark</i>			-0.1	12.9	12.5	5.3	7.5	6.0	8.2	
Excess Return			0.8	1.2	-0.4	-0.3	0.1	0.4	0.0	
<b>U.S. Equity</b>	<b>\$ 4,626</b>	<b>38.7%</b>	<b>2.9</b>	<b>22.3</b>	<b>18.3</b>	<b>7.2</b>	<b>7.9</b>	<b>5.6</b>	<b>9.8</b>	<b>1.3</b>
<i>Russell 3000 *</i>			2.7	21.5	18.6	7.2	7.8	4.2	8.4	
Excess Return			0.2	0.8	-0.3	0.0	0.1	1.4	1.4	
<b>Non-U.S. Equity</b>	<b>\$ 2,529</b>	<b>21.2%</b>	<b>-2.2</b>	<b>17.1</b>	<b>8.9</b>	<b>0.4</b>	<b>8.8</b>	<b>5.5</b>	<b>4.8</b>	<b>1.6</b>
<i>MSCI ACWI ex U.S. *</i>			-3.1	13.6	8.0	-0.8	8.6	4.5	5.3	
Excess Return			0.9	3.5	0.9	1.2	0.2	1.0	-0.5	
<b>Total Fixed Income</b>	<b>\$ 2,812</b>	<b>23.6%</b>	<b>-2.8</b>	<b>1.6</b>	<b>5.1</b>	<b>6.9</b>	<b>5.7</b>	<b>6.5</b>	<b>7.2</b>	<b>2.7</b>
<i>BC U.S. Universal *</i>			-2.4	0.2	4.1	5.5	4.8	5.4	6.2	
Excess Return			-0.4	1.4	1.0	1.4	0.9	1.1	1.0	
<b>Private Real Estate **</b>	<b>\$ 682</b>	<b>5.7%</b>	<b>4.1</b>	<b>9.9</b>	<b>10.4</b>	<b>-7.2</b>	<b>2.9</b>	<b>5.2</b>	<b>6.0</b>	<b>10.4</b>
<i>NCREIF Property Lagged + 100bps *</i>			2.8	11.6	13.7	2.5	8.6	9.2	9.5	
Excess Return			1.3	-1.7	-3.3	-9.7	-5.7	-4.0	-3.5	
<b>Private Equity<sup>2**</sup></b>	<b>\$ 1,198</b>	<b>10.0%</b>	<b>4.7</b>	<b>12.3</b>	<b>14.2</b>	<b>6.9</b>	<b>13.7</b>	<b>11.5</b>	<b>10.0</b>	<b>19.6</b>
<i>Russell 3000 + 300 bps * <sup>A</sup></i>			3.5	24.5	21.6	10.2	10.8	7.2	11.4	
Excess Return			1.2	-12.2	-7.4	-3.3	2.9	4.3	--	
<b>Cash</b>	<b>\$ 99</b>	<b>0.8%</b>								

<sup>1</sup> Indicates gross returns.

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

\* Both the MS ACWI ex US and Barclays US Universal indices are historically blended with other indices.

\*\* 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.

<sup>A</sup> Includes Russell 3000 + 400 bps up to 6/30/12. Changed to Russell 3000 + 300 bps after 6/30/2012.

## Private Investments

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

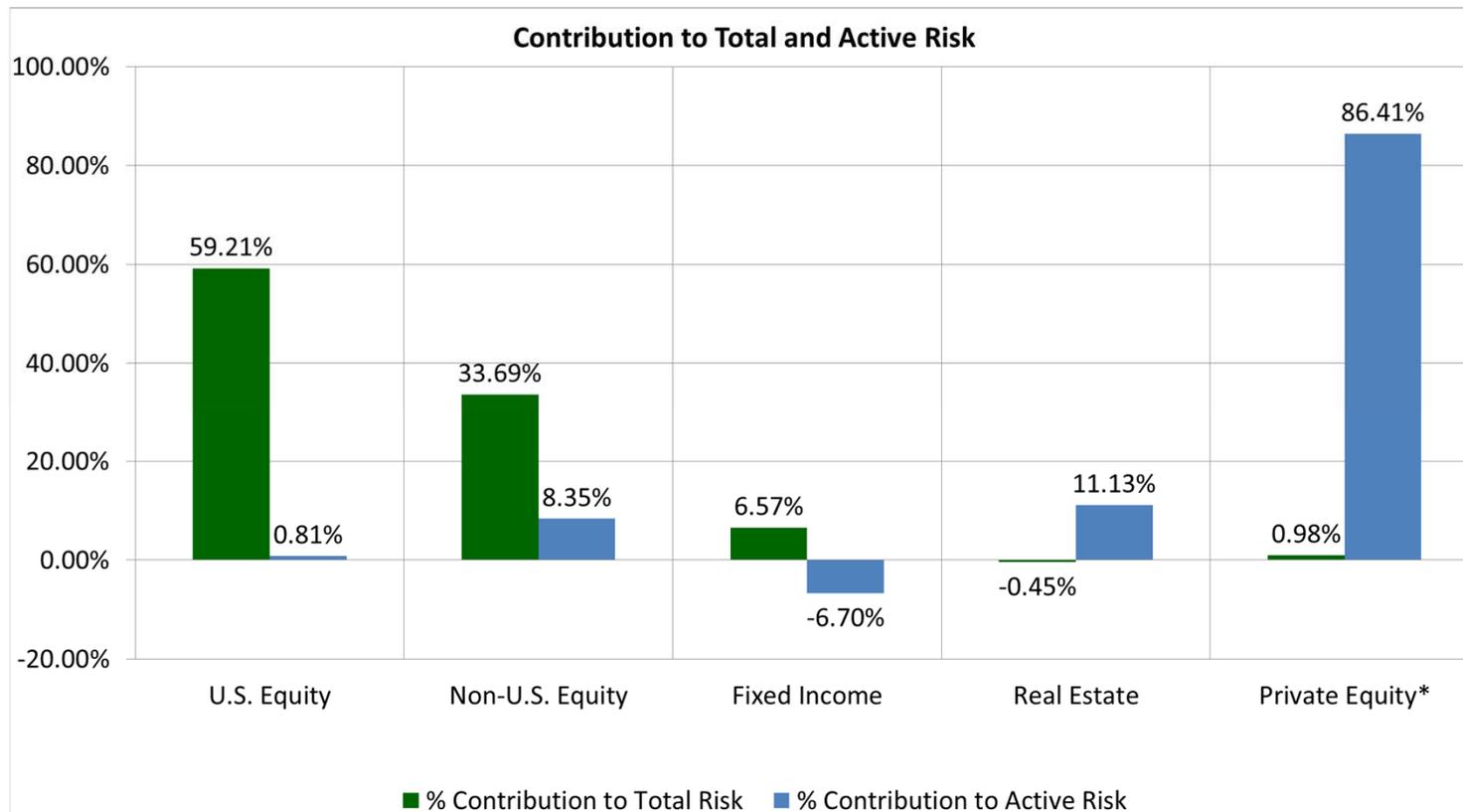
<b>Private Equity</b>	10-Year IRR	10-Year Equity Multiple	Since Inception IRR	Since Inception Equity Multiple
Aggregate Portfolio	14.2%	N/A	10.9%	1.43x
Core Portfolio	15.2%	N/A	11.4%	1.46x
Specialized Portfolio	2.4%	N/A	2.4%	1.08x
<i>Russell 3000 + 300 bps</i>	<i>11.9%</i>	<i>N/A</i>	<i>9.1%</i>	<i>N/A</i>

<b>Real Estate</b>	10-Year TWR	Since Inception TWR	Since Inception IRR	Since-Inception Equity Multiple
Total Portfolio (TWR)	3.3%	5.3%	3.3%	1.11x
<i>NCREIF + 100 bps (TWR)</i>	<i>9.5%</i>	<i>8.3%</i>	<i>N/A</i>	<i>N/A</i>

Note: Courtland could not provide cash flow weighted benchmark, so only time weighted is reported.

<sup>1</sup>Returns as of 3/31/2013.

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

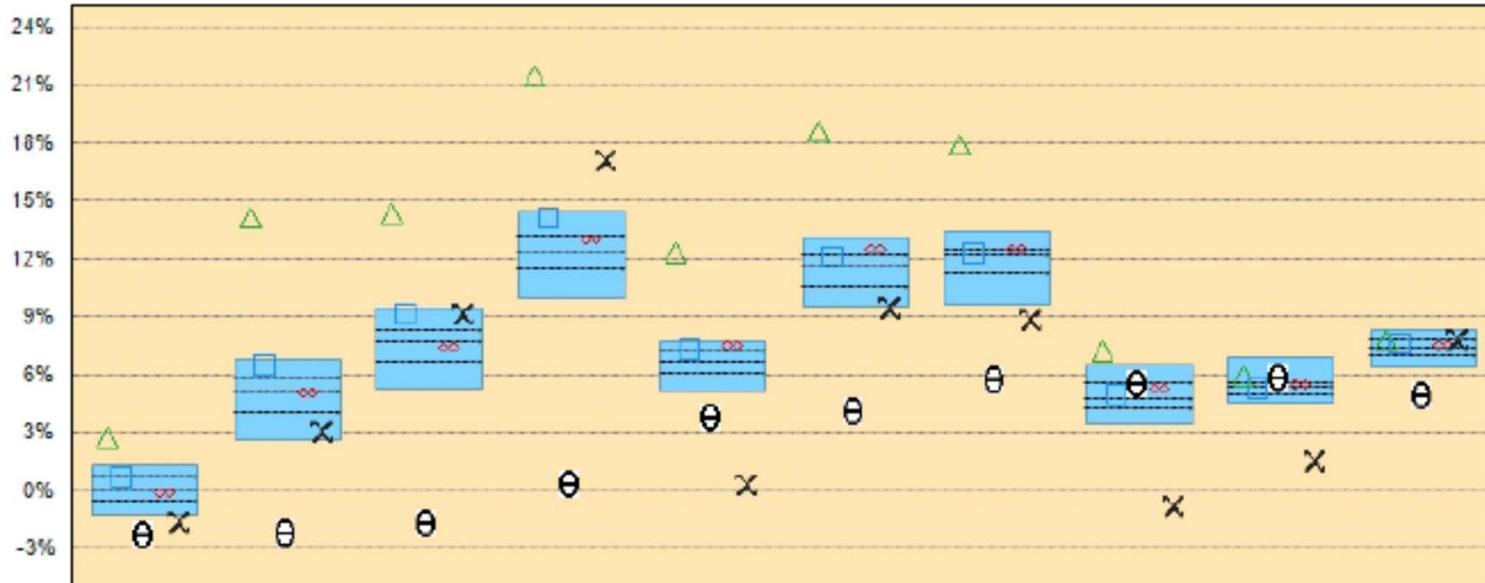


- Public equities comprises 93% of total risk despite actual weighting of 60%.
- Private markets (Real Estate and Private Equities) comprises 97% of active risk as it is difficult to separate active from 'beta' exposures in those asset classes.
- Fixed Income provided reduction to active risk, but not total risk as desired.
- Real Estate has provided modest total risk reduction.

\*Name change from "Alternative Investments."

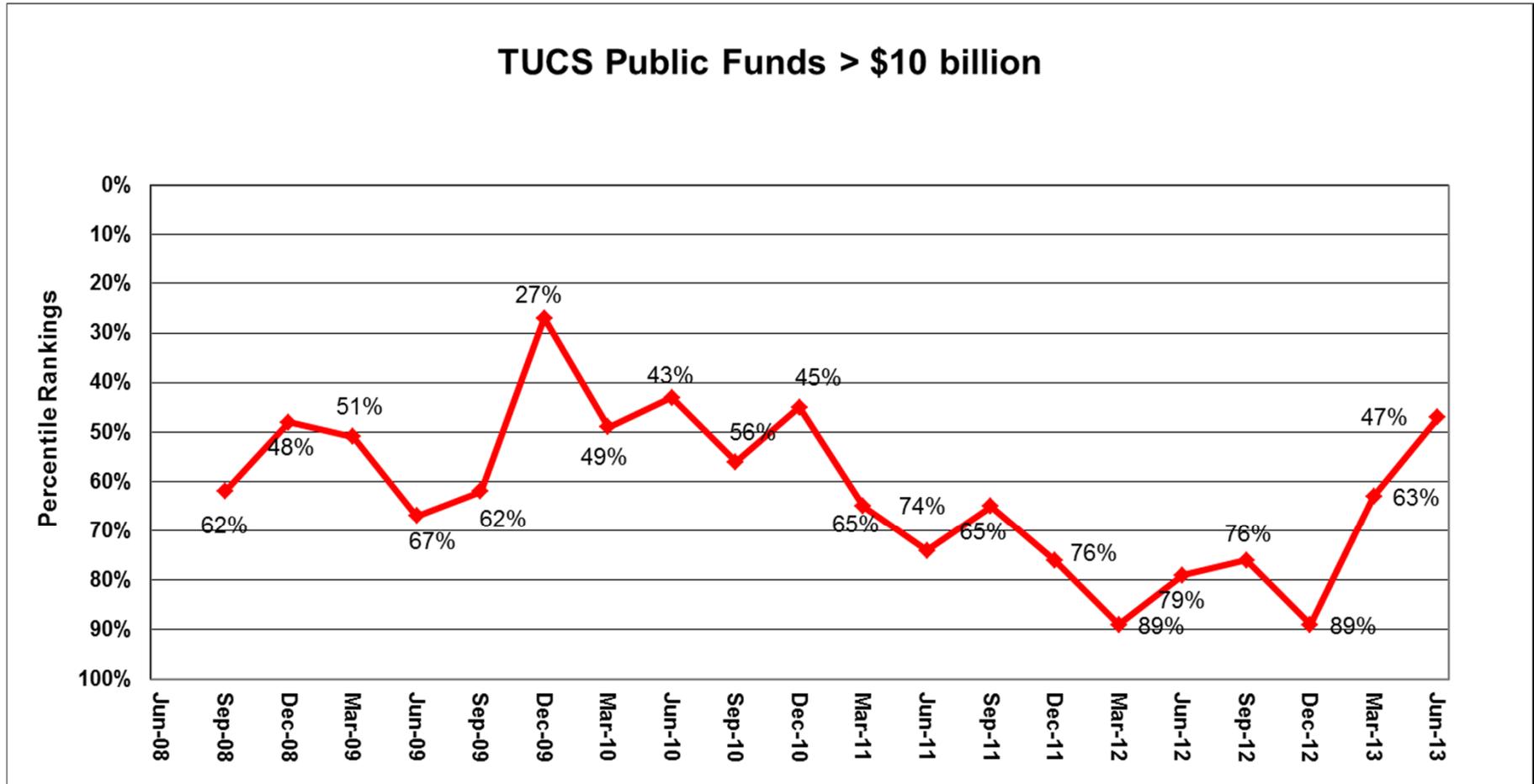
# Trust Universe Comparison Service Performance Comparison

Total Returns of Public Defined Benefit Plans >\$10 billion  
Cumulative Periods Ending : June 30, 2013



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	1.35	6.79	9.39	14.38	7.69	13.07	13.42	6.54	6.92	8.34
25th	0.67	5.89	8.33	13.25	7.20	12.16	12.53	5.55	5.60	7.84
50th	0.10	5.16	7.76	12.43	6.66	11.63	12.16	4.79	5.34	7.44
75th	-0.53	4.04	6.70	11.49	6.13	10.60	11.23	4.22	4.92	7.01
95th	-1.24	2.63	5.26	9.97	5.14	9.53	9.60	3.43	4.51	6.44
No. Of Obs	37	37	37	37	37	34	33	33	33	32
<span style="color: blue;">■</span> Total Fund NOF	0.73 (22)	6.54 (8)	9.15 (10)	14.13 (10)	7.32 (17)	12.11 (28)	12.25 (43)	5.00 (40)	5.27 (59)	7.64 (31)
<span style="color: red;">●</span> Total Fund Policy	-0.11 (61)	5.09 (52)	7.38 (61)	12.97 (33)	7.49 (8)	12.53 (16)	12.51 (25)	5.30 (28)	5.48 (37)	7.52 (40)
<span style="color: green;">▲</span> Russell 3000	2.69 (1)	14.07 (1)	14.36 (1)	21.49 (1)	12.32 (1)	18.64 (1)	17.90 (1)	7.25 (1)	5.84 (11)	7.81 (25)
<span style="color: black;">✕</span> MSCI Wild Ex US (Net)	-1.61 (99)	3.01 (90)	9.11 (10)	17.07 (1)	0.26 (100)	9.42 (96)	8.82 (99)	-0.84 (100)	1.52 (100)	7.86 (18)
<span style="color: black;">●</span> Barclays US Univr Indx	-2.37 (99)	-2.29 (100)	-1.73 (100)	0.24 (100)	3.73 (96)	4.08 (100)	5.67 (100)	5.52 (25)	5.78 (14)	4.84 (100)

## 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 47<sup>th</sup> percentile versus peers on return/risk ratio basis.

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# U.S. Equity Managers

## U.S. Equity Managers

(Returns are Net of Fees)

	Inception Date	Market 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
<b>U.S. Equity</b>	<b>Oct-94</b>	<b>\$ 4,626</b>	<b>100.0%</b>	<b>2.9</b>	<b>22.3</b>	<b>18.3</b>	<b>7.2</b>	<b>7.9</b>	<b>9.8</b>	<b>1.3</b>
<i>Russell 3000</i>				2.7	21.5	18.6	7.2	7.8	8.4	
Excess Return				0.2	0.8	-0.3	0.0	0.1	1.4	
Aronson, Johnson & Ortiz	Oct-01	\$ 500	10.8%	<b>3.7</b>	<b>26.3</b>	<b>19.9</b>	<b>7.4</b>	<b>8.7</b>	<b>8.0</b>	<b>3.2</b>
<i>Russell 1000 Value</i>				3.2	25.3	18.5	6.7	7.8	6.8	
Excess Return				0.5	1.0	1.4	0.7	0.9	1.2	
Blackrock Russell 1000 Value (Passive)	Dec-98	\$ 407	8.8%	<b>3.2</b>	<b>25.3</b>	<b>18.5</b>	<b>6.8</b>	<b>7.9</b>	<b>5.5</b>	<b>0.1</b>
<i>Russell 1000 Value</i>				3.2	25.3	18.5	6.7	7.8	5.5	
Excess Return				0.0	0.0	0.0	0.1	0.1	0.0	
Thomson Horstmann	Oct-95	\$ 262	5.7%	<b>2.6</b>	<b>24.3</b>	<b>17.9</b>	<b>7.2</b>	<b>9.3</b>	<b>10.7</b>	<b>6.5</b>
<i>Russell 2000</i>				3.1	24.2	18.7	8.8	9.5	8.4	
Excess Return				-0.5	0.1	-0.8	-1.6	-0.2	2.3	
Franklin Advisers	Sep-94	\$ 175	3.8%	<b>6.3</b>	<b>30.2</b>	<b>22.6</b>	<b>11.3</b>	<b>9.9</b>	<b>9.4</b>	<b>5.1</b>
<i>Russell 2000 Growth</i>				3.7	23.7	20.0	8.9	9.6	6.9	
Excess Return				2.6	6.5	2.6	2.4	0.3	2.5	
Sit Investments	Jan-01	\$ 153	3.3%	<b>2.2</b>	<b>14.6</b>	<b>17.4</b>	<b>6.7</b>	<b>9.2</b>	<b>4.2</b>	<b>5.9</b>
<i>Russell 2000 Growth</i>				3.7	23.7	20.0	8.9	9.6	4.6	
Excess Return				-1.5	-9.1	-2.6	-2.2	-0.4	-0.4	

<sup>1</sup> Indicates gross returns

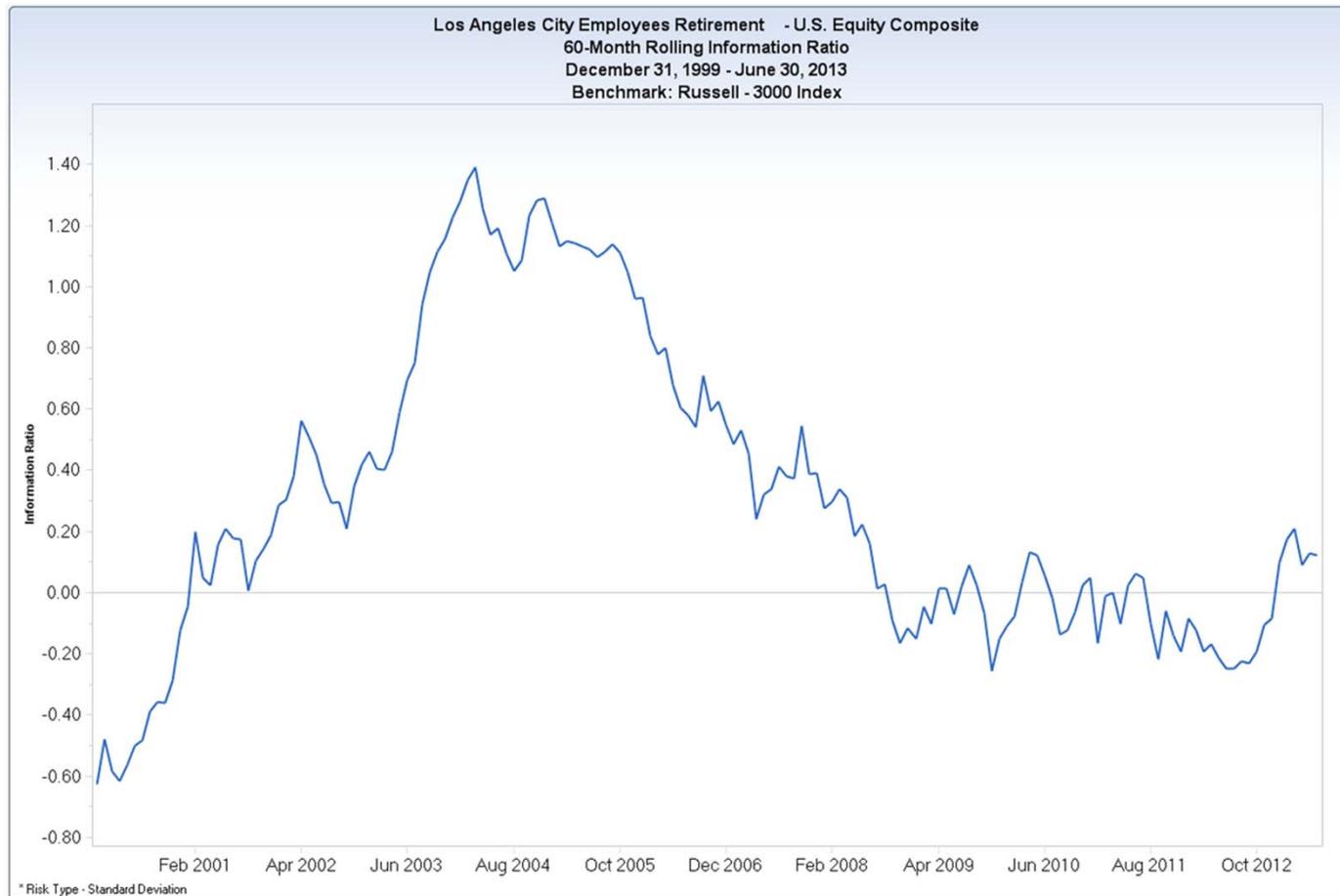
## U.S. Equity Managers

(Returns are Net of Fees)

	Inception Date	Market 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
Donald Smith & Co. <i>Russell 2000 Value</i>	Feb-06	\$ 110	2.4%	<b>0.3</b>	<b>26.3</b>	<b>14.3</b>	<b>8.9</b>	--	<b>6.5</b>	<b>9.2</b>
Excess Return				2.5	24.8	17.3	8.6	--	4.7	
				-2.2	1.5	-3.0	0.3	--	1.8	
PanAgora Asset Management <i>Russell 2000 Value</i>	Feb-06	\$ 202	4.4%	<b>1.8</b>	<b>29.3</b>	<b>22.4</b>	<b>11.2</b>	--	<b>4.6</b>	<b>2.9</b>
Excess Return				2.5	24.8	17.3	8.6	--	4.7	
				-0.7	4.5	5.1	2.6	--	-0.1	
New Mountain Cap Group <i>Russell Midcap Blend</i>	Mar-08	\$ 66	1.4%	<b>2.8</b>	<b>16.6</b>	<b>8.6</b>	<b>5.4</b>	--	<b>5.6</b>	<b>12.8</b>
Excess Return				2.2	25.4	17.2	6.4	--	4.6	
				0.6	-8.8	-8.6	-1.0	--	1.0	
Rhumblin Advisors (Passive) <i>S&amp;P 500</i>	Mar-93	\$ 821	17.8%	<b>2.9</b>	<b>20.6</b>	<b>18.5</b>	<b>7.2</b>	<b>7.4</b>	<b>8.9</b>	<b>0.3</b>
Excess Return				2.9	20.6	18.5	7.0	7.3	8.7	
				0.0	0.0	0.0	0.2	0.1	0.2	
Blackrock S&P 500 Index Plus <i>S&amp;P 500</i>	Feb-10	\$ 1,676	36.2%	<b>3.0</b>	<b>20.7</b>	<b>18.6</b>	--	--	<b>14.3</b>	--
Excess Return				2.9	20.6	18.5	--	--	14.1	
				0.1	0.1	0.1	--	--	0.2	
Rhumblin Advisors (Passive) <i>Russell 1000 Growth</i>	Jun-13	\$ 122	2.6%	--	--	--	--	--	<b>0.0</b>	--
				--	--	--	--	--	-0.4	
				--	--	--	--	--	0.4	
<b>Manager-of-Manager Programs</b>			<b>2.8%</b>							
Attucks <i>Russell 2000</i>	Nov-05	\$ 39	0.8%	<b>2.9</b>	<b>26.4</b>	<b>19.1</b>	<b>8.2</b>	--	<b>6.6</b>	<b>3.3</b>
Excess Return				3.1	24.2	18.7	8.8	--	6.4	
				-0.2	2.2	0.4	-0.6	--	0.2	
Capital Prospects <i>Russell 3000</i>	Dec-05	\$ 36	0.8%	<b>2.7</b>	<b>21.1</b>	<b>17.9</b>	<b>5.8</b>	--	<b>5.4</b>	<b>2.4</b>
Excess Return				2.7	21.5	18.6	7.2	--	5.9	
				0.0	-0.4	-0.7	-1.4	--	-0.5	
Progress Investment <i>Russell 3000</i>	Oct-06	\$ 58	1.2%	<b>1.5</b>	<b>19.2</b>	<b>15.5</b>	<b>4.9</b>	--	<b>3.5</b>	<b>2.4</b>
Excess Return				2.7	21.5	18.6	7.2	--	4.9	
				-1.2	-2.3	-3.1	-2.3	--	-1.4	

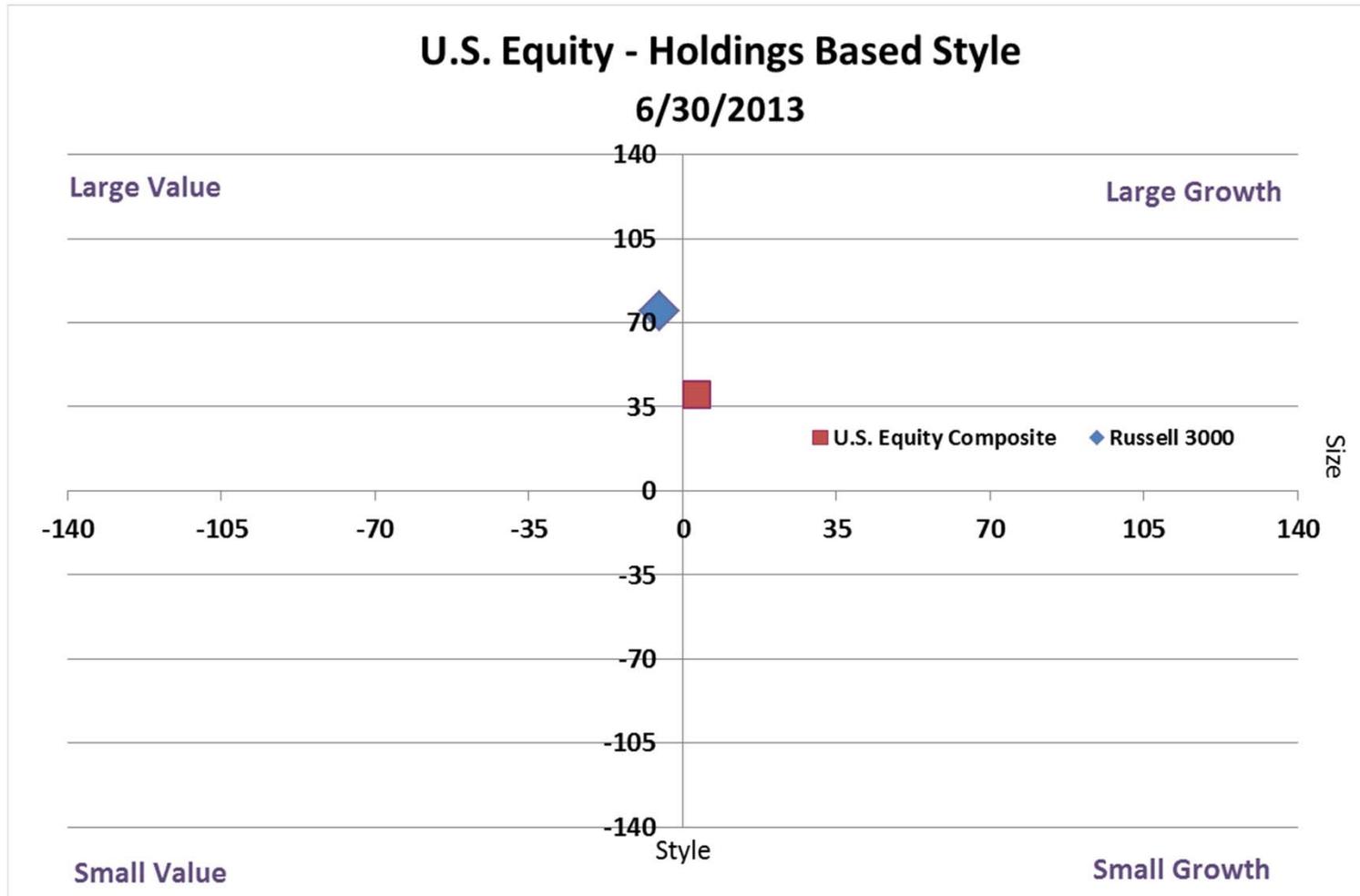
<sup>1</sup> Indicates gross returns

## 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 trending upward.

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 smaller cap bias versus Russell 3000 benchmark.
- As small cap stocks currently outperforming large cap stocks, this bias is source of outperformance versus benchmark.

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

U.S. Managers	Inception Date	Mandate	Current Quarter		One Year		Three Years		Five Years		Since Inception	Comments <sup>2</sup>
			I	U	I	U	I	U	I	U	I	
➤ <b>Aronson, Johnson &amp; Ortiz</b>	Oct-01	Large Cap Value	✓	✗	✓	✓	✓	✓	✓	✗	✓	Performance satisfactory.
➤ <b>Thomson Horstmann</b>	Oct-95	Small Cap	✗	✗	✓	✗	✗	✗	✗	✗	✓	Performance poor. Monitoring manager.
➤ <b>Franklin Advisers</b>	Sep-94	Small Cap Growth	✓	✓	✓	✓	✓	✓	✓	✓	✓	Performance satisfactory.
➤ <b>Sit Investments</b>	Jan-01	Small Cap Growth	✗	✗	✗	✗	✗	✗	✗	✗	✗	Performance is poor. Monitor manager.
➤ <b>Donald Smith</b>	Mar-06	Small Cap Value	✗	✗	✓	✓	✗	✗	✓	✗	✓	Performance mixed. Monitoring manager.
➤ <b>Panagora</b>	Mar-06	Small Cap Value	✗	✗	✓	✓	✓	✓	✓	✗	✗	Performance satisfactory; removed from "Watch" list on Nov. 2012
➤ <b>New Mountain Cap Grp</b>	Mar-08	Corp Gov	✓	n/a	✗	n/a	✗	n/a	✗	n/a	✓	Performance mixed. Monitoring manager.
➤ <b>Attucks</b>	Nov-05	Fund of Funds	✗	n/a	✓	n/a	✓	n/a	✗	n/a	✓	"On Watch" since Jun. 2011 - performance.
➤ <b>Capital Prospects</b>	Dec-05	Fund of Funds	✓	n/a	✗	n/a	✗	n/a	✗	n/a	✗	"On Watch" since Jun. 2011 - performance.
➤ <b>Progress</b>	Sep-06	Fund of Funds	✗	n/a	✗	n/a	✗	n/a	✗	n/a	✗	"On Watch" since Oct. 2009 - performance.
➤ <b>BlackRock R1000 Value</b>	Dec-98	R1000 Value Index	✗	✗	✗	✓	✓	✓	✓	✗	✓	Performance satisfactory.
➤ <b>BlackRock S&amp;P 500</b>	Feb-10	S&P 500 Index	✓	✓	✓	✓	✓	✓	n/a	n/a	✓	Performance satisfactory.
➤ <b>Rhumblin Advisors</b>	Mar-93	S&P 500 Index	✓	✓	✗	✓	✓	✓	✓	✗	✓	Performance satisfactory.

<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>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
✗	underperformed index U universe median
=	equal to index

## Aronson , Johnson & Ortiz

Mandate: Large Cap Value

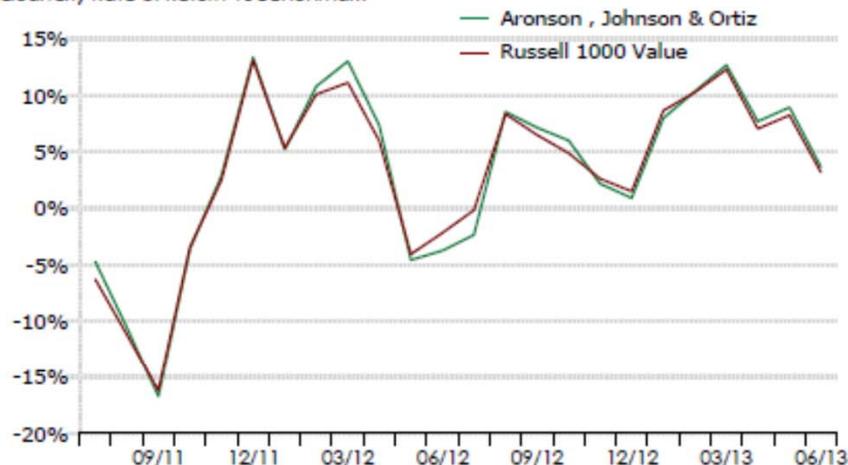
Benchmark: Russell 1000 Value

### 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

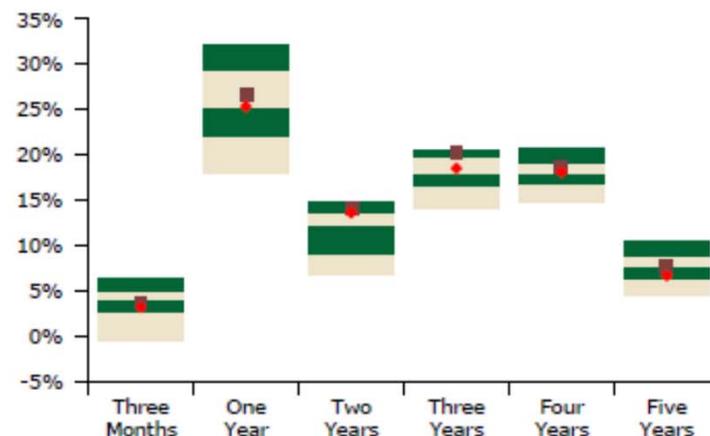
Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	Gross ITD				Inception Date	
		1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.		
Aronson , Johnson &	3.7	26.3	13.9	19.9	7.4	8.0	Oct-2001
Russell 1000 Value	3.2	25.3	13.6	18.5	6.7	6.8	
<i>Excess Return</i>	0.5	1.0	0.3	1.4	0.7	1.2	

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

### Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Aronson , Johnson & Ortiz	3.7	26.6	14.2	20.2	18.6	7.7
◆ Russell 1000 Value	3.2	25.3	13.6	18.5	18.1	6.7
Rank	60	38	16	16	38	51
Rank	68	48	29	41	49	66
10th Percentile	6.4	32.2	14.7	20.4	20.6	10.5
1st Quartile	5.0	29.2	13.7	19.7	19.1	8.9
Median	4.1	25.2	12.3	18.1	18.1	7.7
3rd Quartile	2.8	22.0	9.0	16.5	16.8	6.3
90th Percentile	(0.4)	17.9	6.8	14.1	14.8	4.5
Number Of Observations	207	200	177	149	115	106

## Thomson Horstmann

Mandate: Small Cap

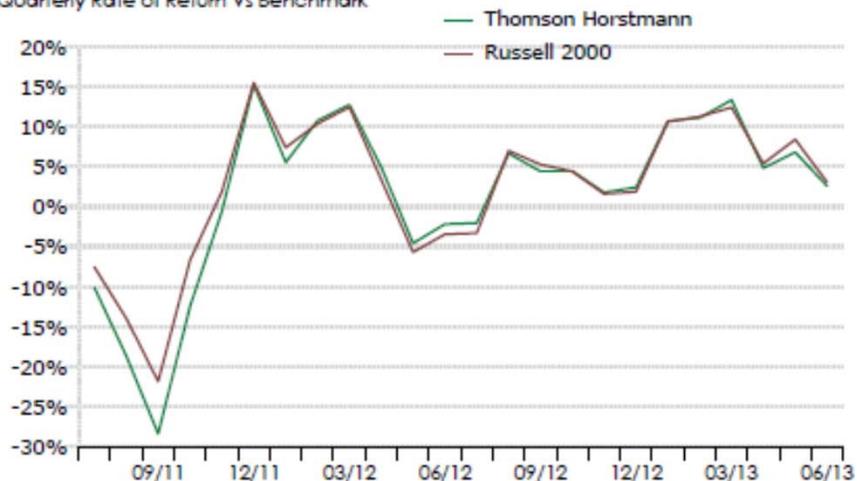
Benchmark: Russell 2000

### Strategy

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

### Performance

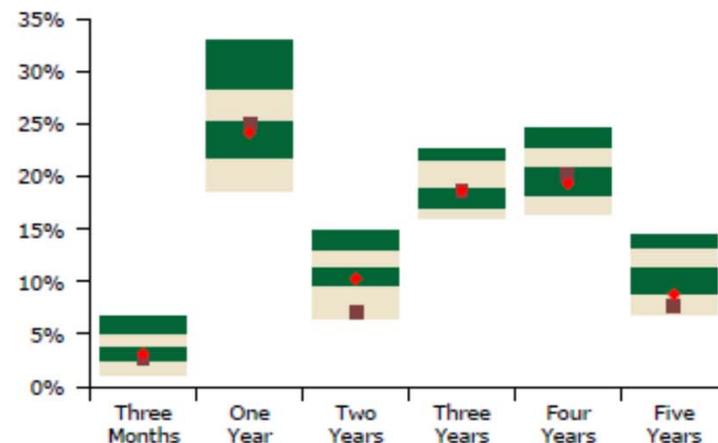
Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Thomson Horstmann	2.6	24.3	6.3	17.9	7.2	10.7	Oct-1995
Russell 2000	3.1	24.2	10.3	18.7	8.8	8.4	
<i>Excess Return</i>	(0.5)	0.1	(4.0)	(0.8)	(1.6)	2.3	

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

### Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Thomson Horstmann	2.7	25.1	7.0	18.6	20.3	7.8
◆ Russell 2000	3.1	24.2	10.3	18.7	19.4	8.8
10th Percentile	6.6	33.0	14.9	22.7	24.5	14.5
1st Quartile	5.1	28.4	13.0	21.6	22.9	13.2
Median	3.9	25.5	11.4	19.1	20.9	11.4
3rd Quartile	2.6	21.7	9.6	17.1	18.3	8.9
90th Percentile	1.1	18.7	6.4	16.0	16.5	6.9
Number Of Observations	119	143	137	112	103	93

## Franklin Global Advisers

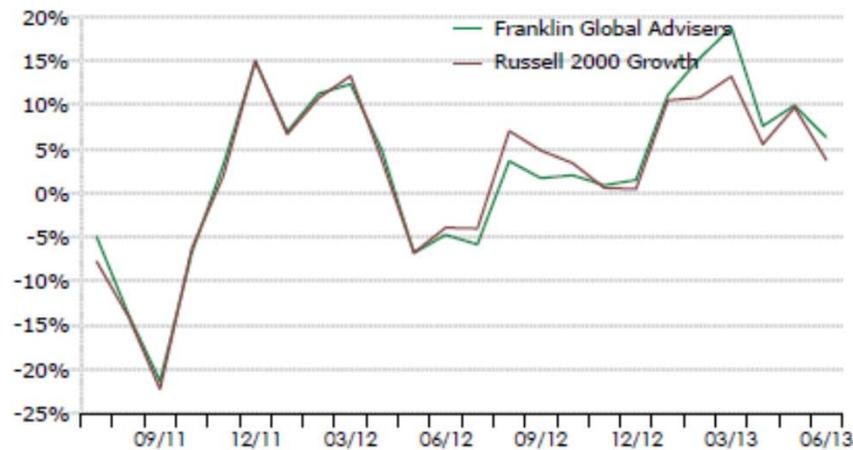
Mandate: Small Cap Growth  
Benchmark: Russell 2000 Growth

### 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

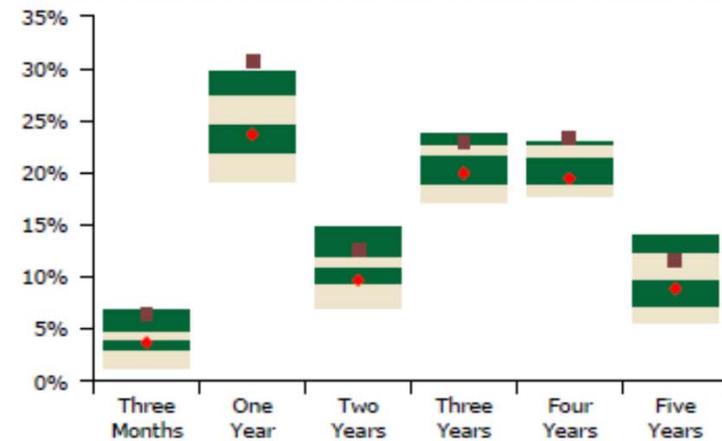
Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Franklin Global Advis	6.3	30.2	12.2	22.6	11.3	9.4	Sep-1994
Russell 2000 Growth	3.7	23.7	9.7	20.0	8.9	6.9	
<i>Excess Return</i>	2.6	6.5	2.5	2.6	2.4	2.5	

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

### Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Franklin Global Advisers Rank	6.4	30.7	12.6	22.9	23.3	11.6
◆ Russell 2000 Growth Rank	3.7	23.7	9.7	20.0	19.5	8.9
10th Percentile	6.7	29.8	14.8	23.8	23.0	14.1
1st Quartile	4.8	27.5	12.1	22.7	22.7	12.3
Median	4.0	24.8	10.9	21.8	21.6	9.8
3rd Quartile	3.0	21.9	9.4	18.9	18.9	7.2
90th Percentile	1.2	19.2	7.1	17.1	17.8	5.5
Number Of Observations	43	46	44	28	27	30

## Sit Investments

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

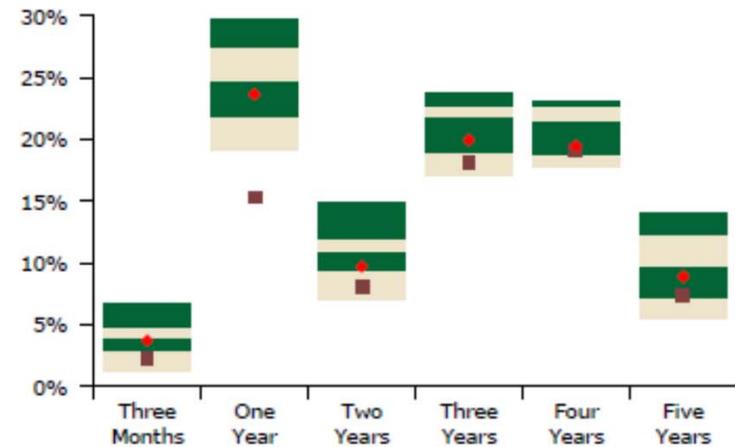
Quarterly Rate of Return Vs benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Sit Investments	2.2	14.6	7.4	17.4	6.7	4.2	Jan-2001
Russell 2000 Growth	3.7	23.7	9.7	20.0	8.9	4.6	
<i>Excess Return</i>	<i>(1.5)</i>	<i>(9.1)</i>	<i>(2.3)</i>	<i>(2.6)</i>	<i>(2.2)</i>	<i>(0.4)</i>	

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

### Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Sit Investments	2.3	15.3	8.1	18.1	19.2	7.4
Rank	78	97	85	83	65	72
◆ Russell 2000 Growth	3.7	23.7	9.7	20.0	19.5	8.9
Rank	66	69	72	67	64	59
10th Percentile	6.7	29.8	14.8	23.8	23.0	14.1
1st Quartile	4.8	27.5	12.1	22.7	22.7	12.3
Median	4.0	24.8	10.9	21.8	21.6	9.8
3rd Quartile	3.0	21.9	9.4	18.9	18.9	7.2
90th Percentile	1.2	19.2	7.1	17.1	17.8	5.5
Number Of Observations	43	46	44	28	27	30

## Donald Smith & Co.

Mandate: Small Cap Value

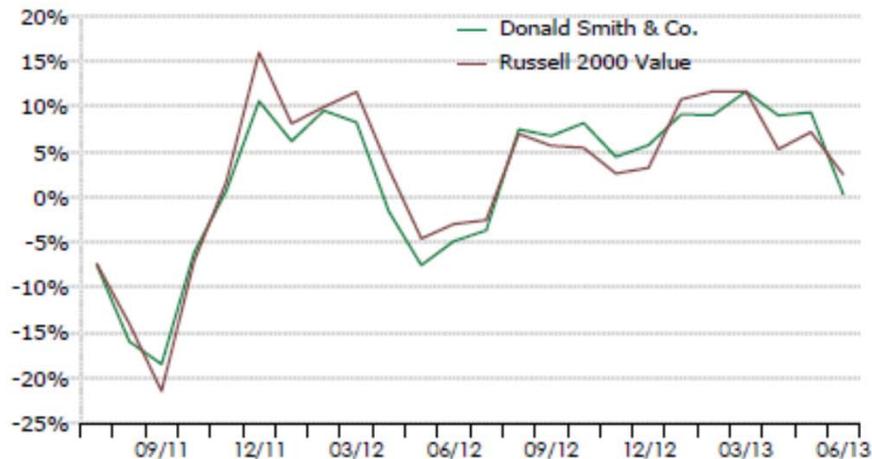
Benchmark: Russell 2000 Value

### 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

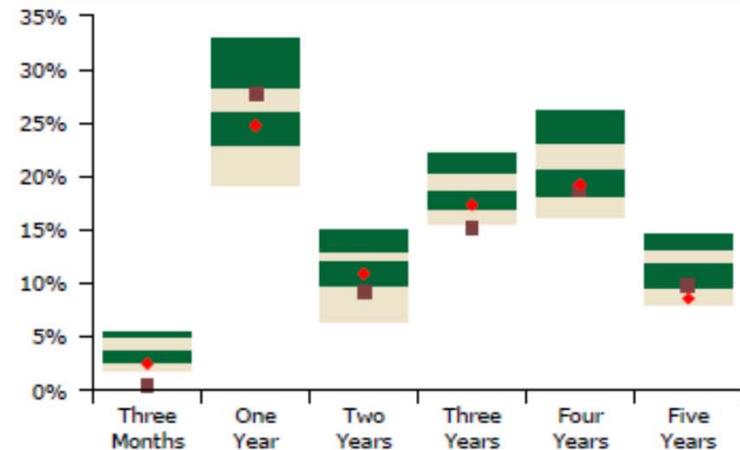
Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Donald Smith & Co.	0.3	26.3	8.3	14.3	8.9	6.5	Feb-2006
Russell 2000 Value	2.5	24.8	10.9	17.3	8.6	4.7	
<i>Excess Return</i>	<i>(2.2)</i>	<i>1.5</i>	<i>(2.6)</i>	<i>(3.0)</i>	<i>0.3</i>	<i>1.8</i>	

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

### Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Donald Smith & Co.	0.5	27.6	9.2	15.3	18.8	9.8
Rank	97	34	80	92	72	70
◆ Russell 2000 Value	2.5	24.8	10.9	17.3	19.2	8.6
Rank	78	66	68	68	67	83
10th Percentile	5.4	32.8	15.1	22.0	26.1	14.6
1st Quartile	5.1	28.3	13.0	20.4	23.0	13.2
Median	3.8	26.1	12.2	18.9	20.7	12.0
3rd Quartile	2.6	23.0	9.8	16.9	18.2	9.6
90th Percentile	1.9	19.2	6.3	15.5	16.2	8.1
Number Of Observations	68	89	89	78	77	67

## PanAgora Asset Management

Mandate: Small Cap Value

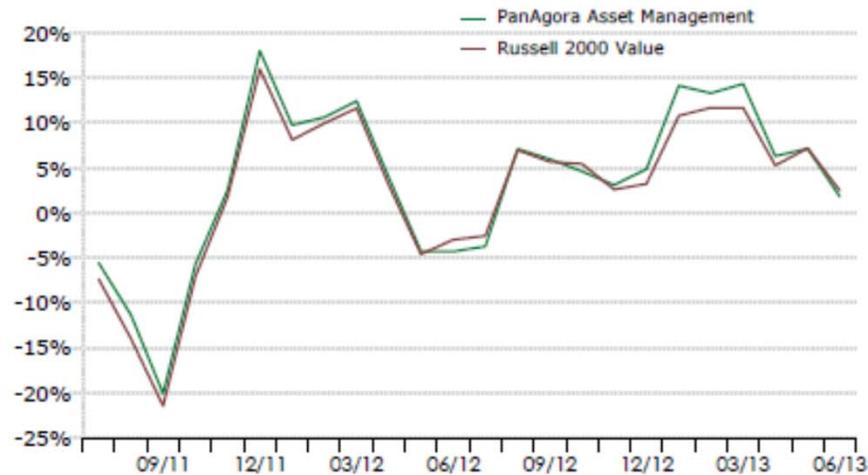
Benchmark: Russell 2000 Value

### 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

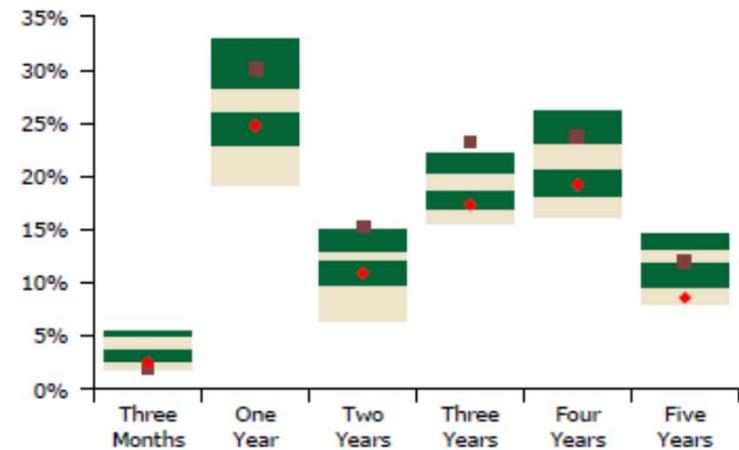
Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
PanAgora Asset Mana	1.8	29.3	14.5	22.4	11.2	4.6	Feb-2006
Russell 2000 Value	2.5	24.8	10.9	17.3	8.6	4.7	
<i>Excess Return</i>	<i>(0.7)</i>	<i>4.5</i>	<i>3.6</i>	<i>5.1</i>	<i>2.6</i>	<i>(0.1)</i>	

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

### Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ PanAgora Asset Mana	2.0	30.1	15.3	23.3	23.7	12.0
Rank	87	19	10	3	22	51
◆ Russell 2000 Value	2.5	24.8	10.9	17.3	19.2	8.6
Rank	78	66	68	68	67	83
10th Percentile	5.4	32.8	15.1	22.0	26.1	14.6
1st Quartile	5.1	28.3	13.0	20.4	23.0	13.2
Median	3.8	26.1	12.2	18.9	20.7	12.0
3rd Quartile	2.6	23.0	9.8	16.9	18.2	9.6
90th Percentile	1.9	19.2	6.3	15.5	16.2	8.1
Number Of Observations	68	89	89	78	77	67

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# Non-U.S. Equity Managers



## Non-U.S. Equity Managers

(Returns are Net of Fees)

	Inception Date	Market 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
<b>Non-U.S. Equity</b>	<b>Oct-94</b>	<b>\$ 2,529</b>	<b>100.0%</b>	<b>-2.2</b>	<b>17.1</b>	<b>8.9</b>	<b>0.4</b>	<b>8.8</b>	<b>4.8</b>	<b>1.6</b>
<i>MSCI ACWI ex U.S.*</i>				-3.1	13.6	8.0	-0.8	8.6	5.3	
Excess Return				0.9	3.5	0.9	1.2	0.2	-0.5	
<b>Emerging Markets</b>	<b>Jun-12</b>	<b>\$ 276</b>	<b>10.9%</b>	<b>-8.9</b>	<b>0.9</b>	--	--	--	<b>1.6</b>	--
<i>MSCI Emerging Markets ND</i>				-8.1	2.9	--	--	--	2.9	
Excess Return				-0.8	-2.0	--	--	--	-1.3	
Batterymarch	Sep-08	\$ 104	4.1%	<b>-8.3</b>	<b>3.4</b>	<b>0.9</b>	--	--	<b>6.0</b>	--
<i>MSCI Emerging Markets ND</i>				-8.1	2.9	3.4	--	--	6.7	
Excess Return				-0.2	0.5	-2.5	--	--	-0.7	
Boston Company	Jan-03	\$ 172	6.8%	<b>-9.2</b>	<b>-0.6</b>	<b>-0.8</b>	<b>-0.6</b>	--	<b>14.3</b>	<b>4.0</b>
<i>MSCI Emerging Markets ND</i>				-8.1	2.9	3.4	-0.4	--	14.7	
Excess Return				-1.1	-3.5	-4.2	-0.2	--	-0.4	
<b>Developed ex-U.S.</b>	<b>Jun-12</b>	<b>\$ 2,252</b>	<b>89.1%</b>	<b>-1.4</b>	<b>19.5</b>	--	--	--	<b>19.7</b>	--
<i>MSCI EAFE ND</i>				-1.0	18.6	--	--	--	18.6	
Excess Return				-0.4	0.9	--	--	--	1.1	
Capital Guardian	May-96	\$ 478	18.9%	<b>0.6</b>	<b>23.9</b>	<b>13.2</b>	<b>0.9</b>	<b>8.0</b>	<b>8.8</b>	<b>2.9</b>
<i>MSCI Europe</i>				-0.5	18.9	10.5	-1.3	7.5	6.4	
Excess Return				1.1	5.0	2.7	2.2	0.5	2.4	
Daiwa	Dec-95	\$ 213	8.4%	<b>-1.0</b>	<b>16.9</b>	<b>7.4</b>	<b>0.1</b>	<b>8.5</b>	<b>4.1</b>	<b>2.4</b>
<i>MSCI Pacific*</i>				-1.7	18.4	9.5	1.1	8.2	1.1	
Excess Return				0.7	-1.5	-2.1	-1.0	0.3	3.0	
Franklin Templeton	Nov-91	\$ 248	9.8%	<b>-5.9</b>	<b>18.8</b>	<b>14.0</b>	<b>6.9</b>	<b>12.9</b>	<b>8.0</b>	<b>5.9</b>
<i>MS AC Asia Pacific*</i>				-3.0	14.3	7.8	1.6	9.2	3.3	
Excess Return				-2.9	4.5	6.2	5.3	3.7	4.7	

<sup>1</sup> Indicates gross returns.

## Non-U.S. Equity Managers

(Returns are Net of Fees)

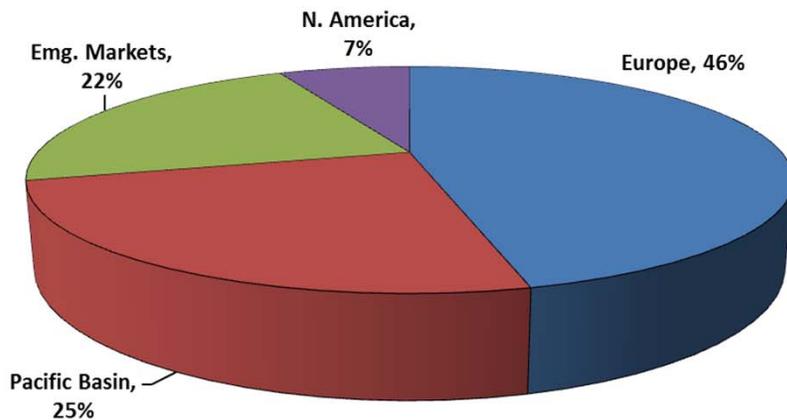
	Inception Date	Market Value (\$million)	% to Total Non-U.S. Equity	Current Quarter	One Year	Three Years	Five Years	Ten Years	Since Inception <sup>1</sup>	5 Year Tracking Error
State Street Equity (Passive) <i>MSCI World ex U.S.</i>	Aug-93	\$ 1,167	46.2%	<b>-1.6</b>	<b>17.6</b>	<b>10.0</b>	<b>0.0</b>	<b>8.3</b>	<b>5.6</b>	<b>0.5</b>
Excess Return				0.2	0.4	0.4	0.5	0.3	0.7	
TT International <i>MSCI World ex U.S.</i>	May-01	\$ 146	5.8%	<b>1.5</b>	<b>23.9</b>	<b>10.5</b>	<b>-2.0</b>	<b>7.1</b>	<b>4.4</b>	<b>4.5</b>
Excess Return				3.1	6.8	1.1	-1.2	-0.7	-0.2	

<sup>1</sup> Indicates gross returns.

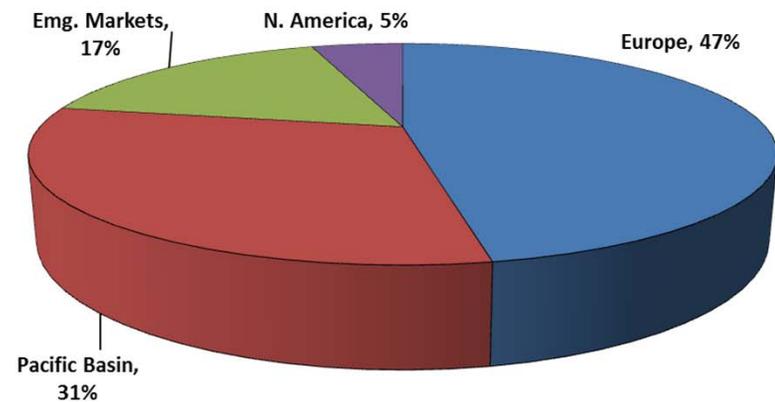
\* The MS ACWI ex U.S., MSCI Pacific, and MSCI AC Asia Pacific indices are historically blended with other indices.

## Country Allocation

**Benchmark – MSCI ACWI x U.S. Index**

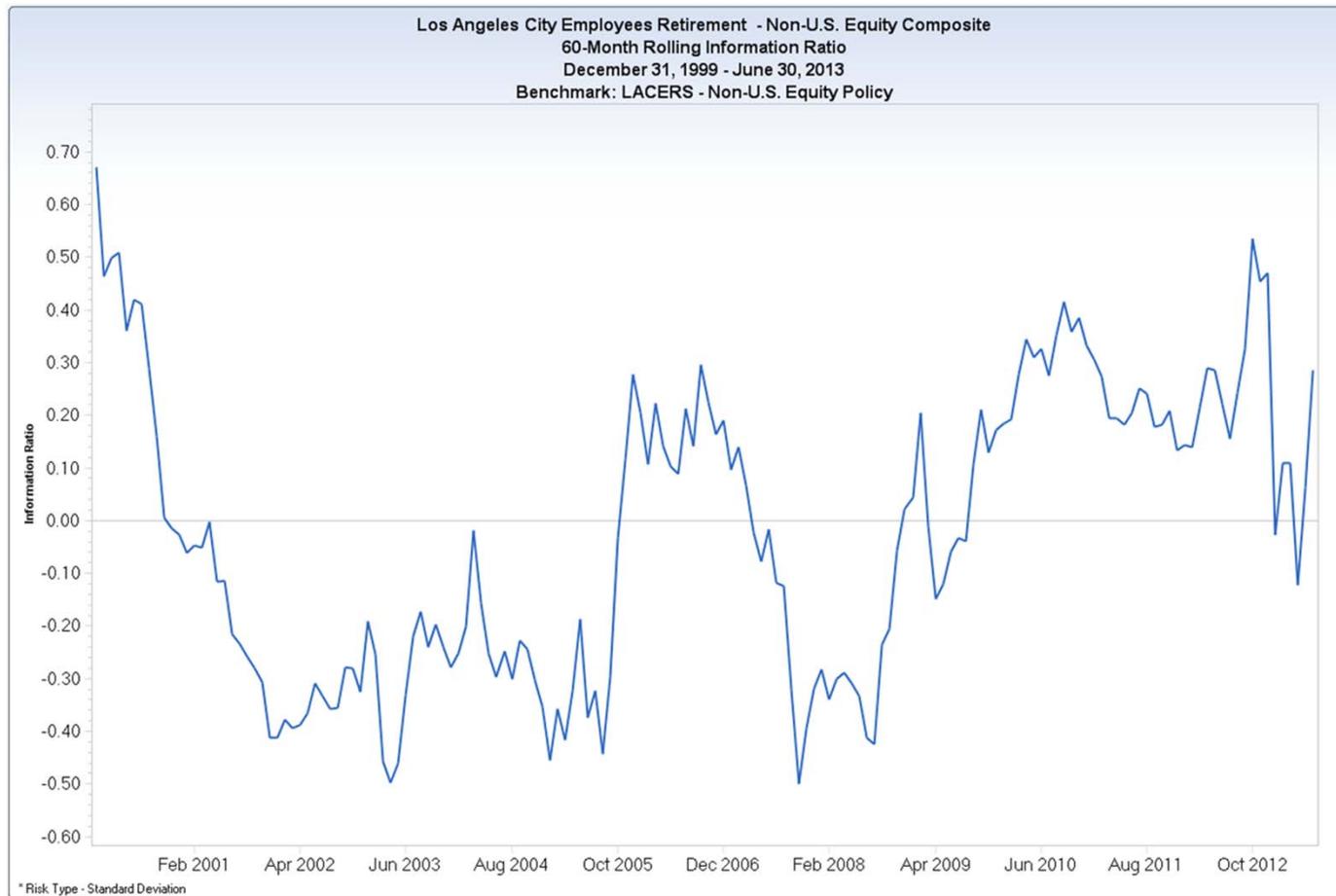


**Non U.S. Equity Composite**



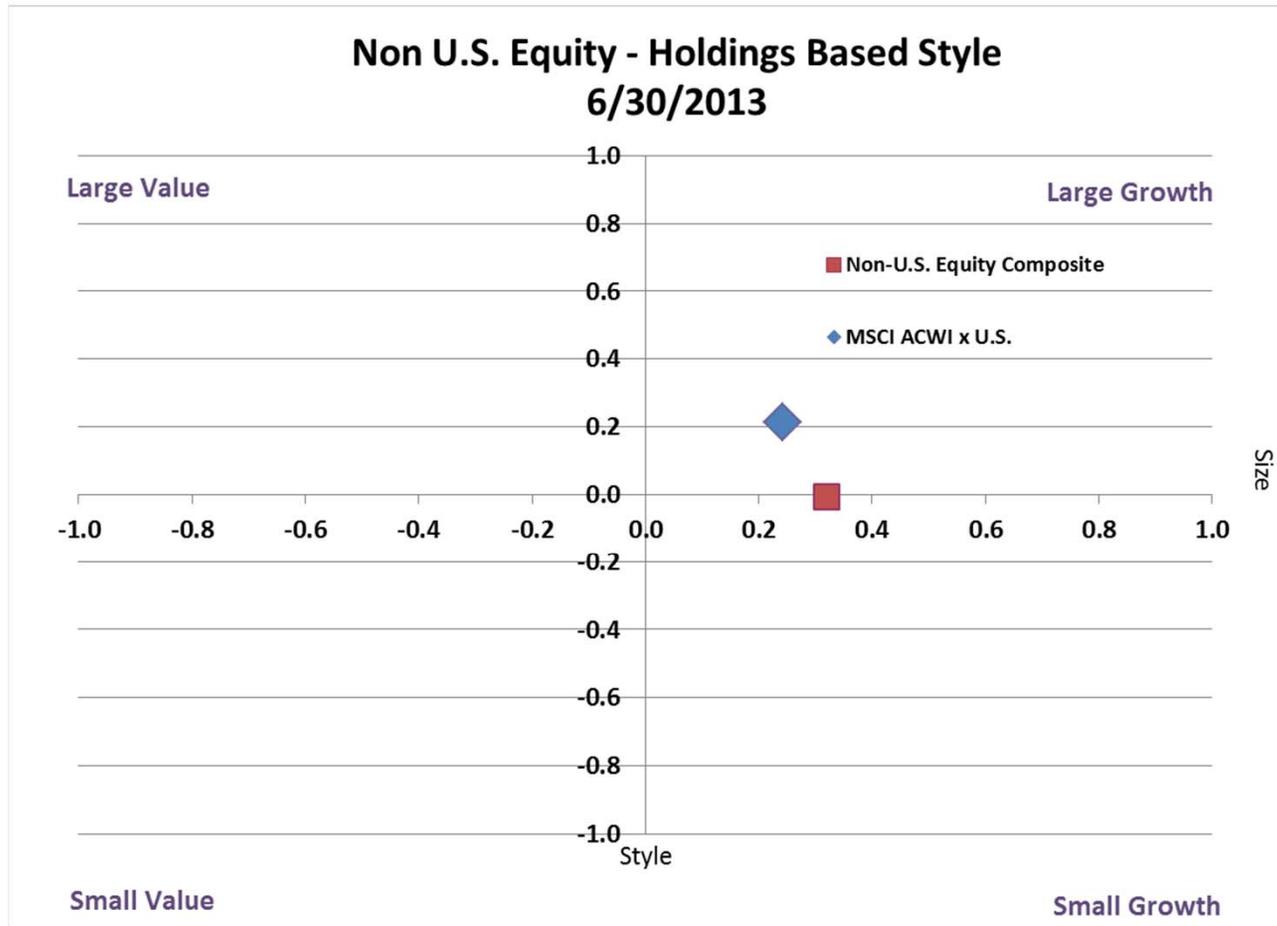
- As LACERS implements the new asset allocation, the geographic weightings of the Non-U.S. Equity Composite will become closer to the benchmark.

## 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 increasing 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.

MANAGER REPORT CARD<sup>1</sup>

Non-U.S. Managers	Inception Date	Mandate	Current Quarter		One Year		Three Years		Five Years		Since Inception	Comments <sup>2</sup>
			I	U	I	U	I	U	I	U	I	
➤ <b>Batterymarch</b>	Aug-08	Emerging Markets	✗	✗	✓	✗	✗	✗	n/a	n/a	✗	Performance poor. Monitoring manager.
➤ <b>Boston Company</b>	Jan-03	Emerging Markets	✗	✗	✗	✗	✗	✗	✗	✗	✗	"On Watch" since Feb. 2012 - performance lagging. Monitoring manager.
➤ <b>Capital Guardian</b>	May-96	Europe	✓	✗	✓	✓	✓	✗	✓	✗	✓	Performance satisfactory.
➤ <b>Daiwa</b>	Dec-95	Asia Pacific	✓	✓	✗	✗	✗	✗	✗	✗	✓	"On Watch" since Oct. 2011 - organization. Performance mixed. Monitoring manager.
➤ <b>Franklin Templeton</b>	Nov-91	Asia Pacific	✗	✗	✓	✗	✓	✓	✓	✓	✓	Performance satisfactory.
➤ <b>TT International</b>	May-01	Non US Developed	✓	✓	✓	✓	✓	✗	✗	✗	✗	"On Watch" since Jan. 2009 - performance improving. Monitoring manager.
➤ <b>State Street</b>	Aug-93	Non US Developed	✓	✗	✓	✗	✓	✗	✓	✗	✓	Performance satisfactory.
➤ <b>Knight Vinke</b>	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>1</sup>Current Quarter, 1-Yr, 3-Yrs, and 5-Yrs returns are net of fees. Since Inception returns are gross of fee.

<sup>2</sup>Managers are placed on Watch List for concerns with organization, process, and performance. Managers are normally on 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
✗	underperformed index	U universe median
=	equal to index	

# Batterymarch

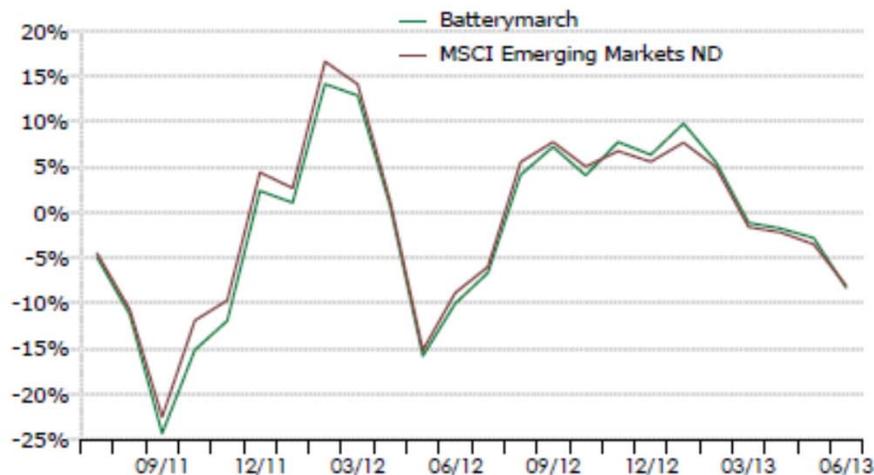
Mandate: Emerging Markets Equity  
Benchmark: MSCI Emerging Markets ND

## Strategy

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

## Performance

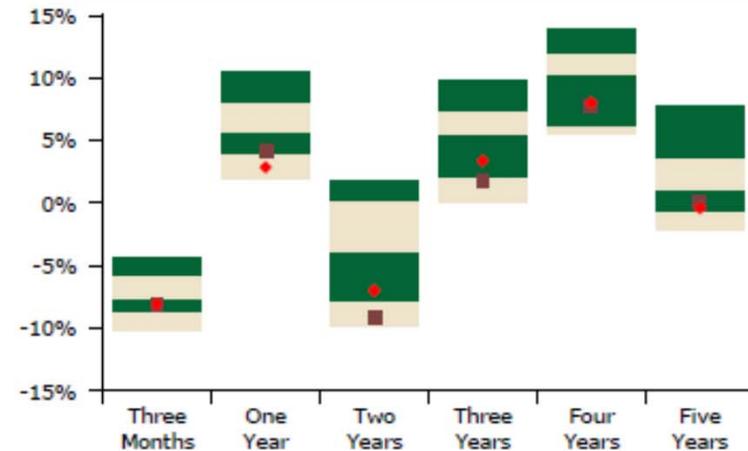
Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Batterymarch	(8.3)	3.4	(9.9)	0.9	--	6.0	Sep-2008
MSCI Emerging Mark	(8.1)	2.9	(7.0)	3.4	--	6.7	
<i>Excess Return</i>	<i>(0.2)</i>	<i>0.5</i>	<i>(2.9)</i>	<i>(2.5)</i>	<i>--</i>	<i>(0.7)</i>	

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

## Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ BatteryMarch	(8.1)	4.2	(9.1)	1.9	7.7	--
Rank	63	71	79	78	63	
◆ MSCI Emerging Mark	(8.1)	2.9	(7.0)	3.4	8.0	(0.4)
Rank	62	87	71	64	62	66
10th Percentile	(4.4)	10.5	1.7	9.9	13.9	7.8
1st Quartile	(6.0)	8.2	(0.0)	7.5	12.0	3.7
Median	(7.8)	5.6	(4.0)	5.5	10.3	1.1
3rd Quartile	(8.9)	3.9	(8.0)	2.2	6.2	(0.8)
90th Percentile	(10.2)	2.0	(9.9)	0.0	5.6	(2.1)
Number Of Observations	80	75	70	62	54	49

## Boston Company

Mandate: Emerging Markets Equity

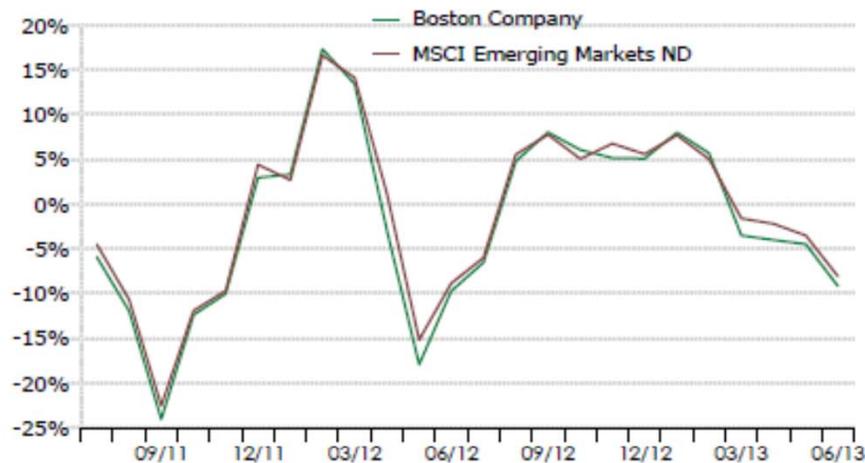
Benchmark: MSCI Emerging Markets ND

### Strategy

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

### Performance

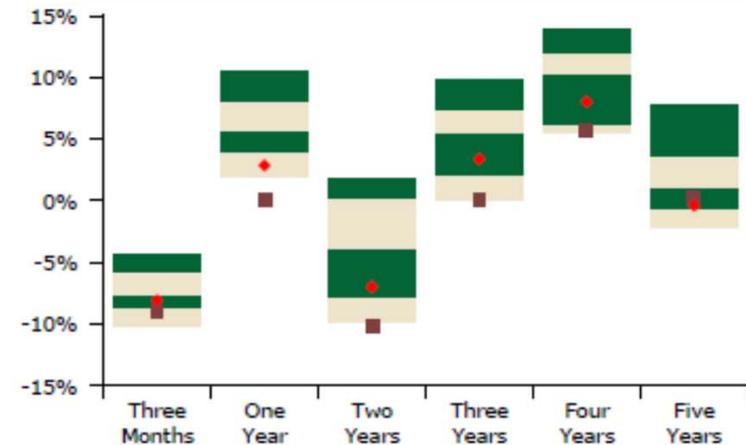
Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Boston Company	(9.2)	(0.6)	(10.8)	(0.8)	(0.6)	14.3	Jan-2003
MSCI Emerging Mark	(8.1)	2.9	(7.0)	3.4	(0.4)	14.7	
<b>Excess Return</b>	<b>(1.1)</b>	<b>(3.5)</b>	<b>(3.8)</b>	<b>(4.2)</b>	<b>(0.2)</b>	<b>(0.4)</b>	

Objective: Outperform the benchmark by 200-300 bps , annualized over a full market cycle (normally 3-5 years).

### Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Boston Company	(9.0)	0.1	(10.2)	(0.0)	5.6	0.2
Rank	80	94	95	91	87	63
◆ MSCI Emerging Markets	(8.1)	2.9	(7.0)	3.4	8.0	(0.4)
Rank	62	87	71	64	62	66
10th Percentile	(4.4)	10.5	1.7	9.9	13.9	7.8
1st Quartile	(6.0)	8.2	(0.0)	7.5	12.0	3.7
Median	(7.8)	5.6	(4.0)	5.5	10.3	1.1
3rd Quartile	(8.9)	3.9	(8.0)	2.2	6.2	(0.8)
90th Percentile	(10.2)	2.0	(9.9)	0.0	5.6	(2.1)
Number Of Observations	80	75	70	62	54	49

## Capital Guardian

Mandate: Europe Region Equity Manager

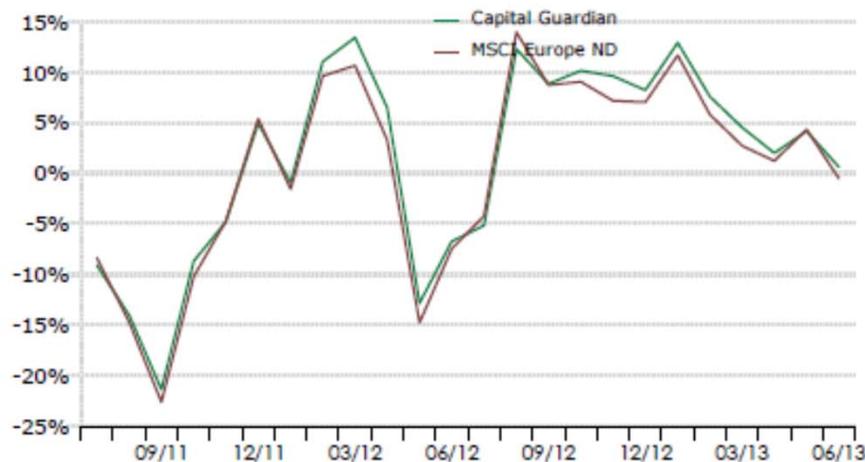
Benchmark: MSCI Europe ND

### Strategy

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

### Performance

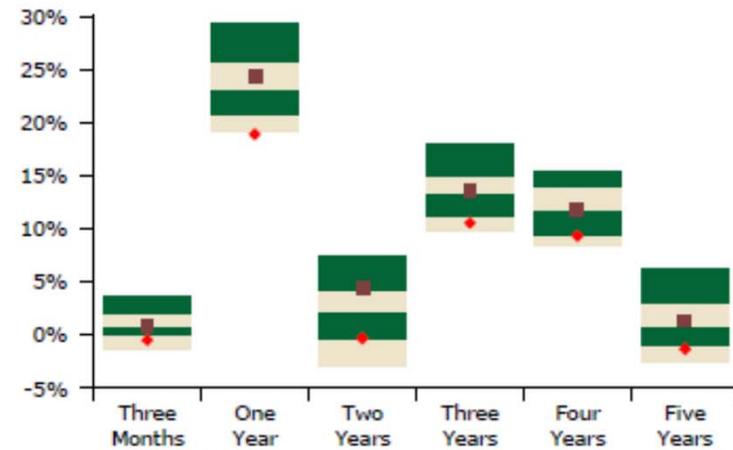
Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Capital Guardian	0.6	23.9	4.0	13.2	0.9	8.8	May-1996
MSCI Europe ND	(0.5)	18.9	(0.4)	10.5	(1.3)	6.4	
<i>Excess Return</i>	1.1	5.0	4.4	2.7	2.2	2.4	

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

### Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Capital Guardian	0.7	24.4	4.4	13.6	11.8	1.3
Rank	55	40	25	45	50	50
◆ MSCI Europe ND	(0.5)	18.9	(0.4)	10.5	9.3	(1.3)
Rank	80	95	75	85	75	85
10th Percentile	3.5	29.3	7.3	17.8	15.4	6.2
1st Quartile	2.0	25.7	4.3	14.9	14.0	3.0
Median	0.8	23.1	2.3	13.3	11.8	0.9
3rd Quartile	(0.3)	20.7	(0.6)	11.2	9.3	(1.1)
90th Percentile	(1.5)	19.1	(3.0)	9.7	8.3	(2.6)
Number Of Observations	117	115	109	108	106	99

## Daiwa

Mandate: Pacific Basin Manager

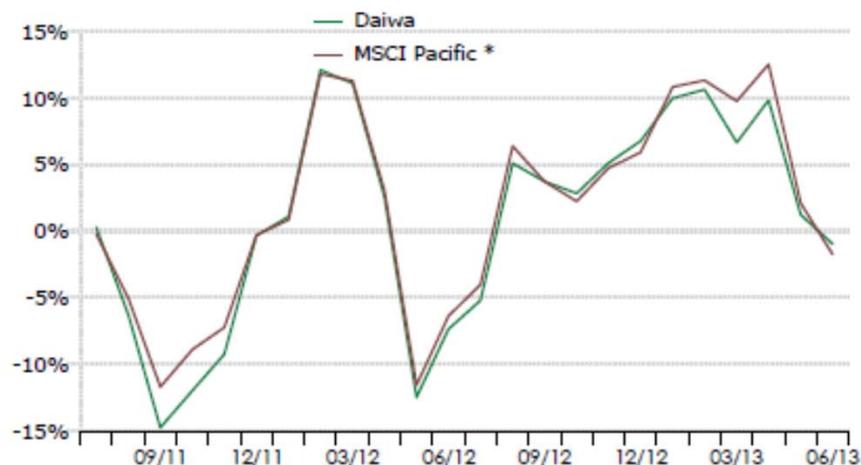
Benchmark: MSCI Pacific

### Strategy

DAIWA invests in Non-US stocks primarily in Japan and Australia. Investment opportunities in other Asian countries are also pursued.

### Performance

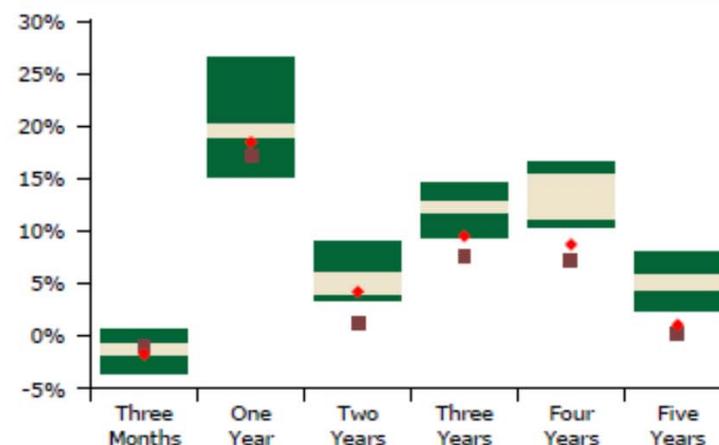
Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Daiwa	(1.0)	16.9	1.1	7.4	0.1	4.1	Dec-1995
MSCI Pacific *	(1.7)	18.4	4.2	9.5	1.1	1.1	
<i>Excess Return</i>	0.7	(1.5)	(3.1)	(2.1)	(1.0)	3.0	

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

### Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Daiwa	(1.0)	17.1	1.2	7.5	7.2	0.3
Rank	50	75	99	99	99	99
◆ MSCI Pacific *	(1.7)	18.4	4.2	9.5	8.7	1.1
Rank	50	75	50	75	99	99
10th Percentile	0.6	26.4	9.0	14.6	16.5	8.0
1st Quartile	(0.8)	20.4	6.3	12.9	15.5	5.9
Median	(2.1)	19.0	4.1	11.7	11.3	4.4
3rd Quartile	(3.5)	15.1	3.4	9.4	10.3	2.4
90th Percentile	(3.5)	15.1	3.4	9.4	10.3	2.4
Number Of Observations	11	11	11	11	11	10

## Franklin Templeton

Mandate: Pacific Basin Manager

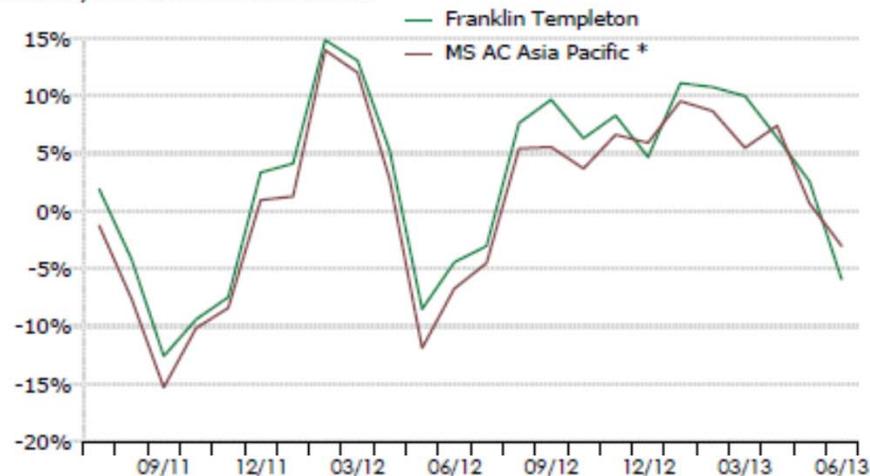
Benchmark: MS AC Asia Pacific \*

### Strategy

Franklin invests in Non-US stocks in the Asia/Pacific region. Investments are in both developed and emerging countries.

### Performance

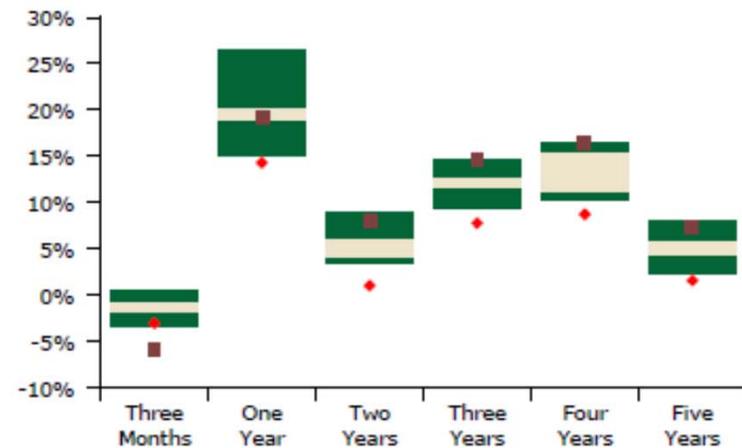
Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Franklin Templeton	(5.9)	18.8	7.6	14.0	6.9	8.0	Nov-1991
MS AC Asia Pacific *	(3.0)	14.3	1.1	7.8	1.6	3.3	
<i>Excess Return</i>	(2.9)	4.5	6.5	6.2	5.3	4.7	

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

### Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Franklin Templeton	(5.8)	19.2	8.1	14.6	16.5	7.3
Rank	99	50	25	25	25	25
◆ MS AC Asia Pacific *	(3.0)	14.3	1.1	7.8	8.8	1.6
Rank	75	99	99	99	99	99
10th Percentile	0.6	26.4	9.0	14.6	16.5	8.0
1st Quartile	(0.8)	20.4	6.3	12.9	15.5	5.9
Median	(2.1)	19.0	4.1	11.7	11.3	4.4
3rd Quartile	(3.5)	15.1	3.4	9.4	10.3	2.4
90th Percentile	(3.5)	15.1	3.4	9.4	10.3	2.4
Number Of Observations	11	11	11	11	11	10

## TT International

Mandate: Non-US Developed Equity Mgrs.

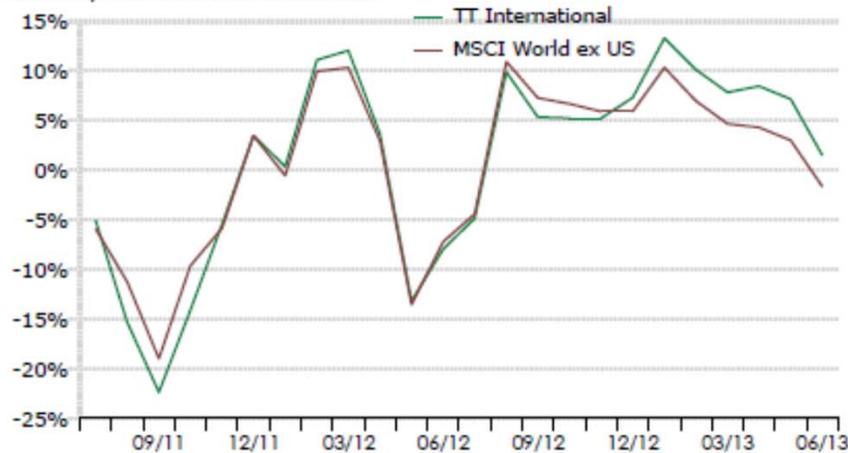
Benchmark: MSCI World ex US

### Strategy

TT Intl invests in Non-US stocks primarily in developed countries. There is no regional focus. Potential investment opportunities are pursued in all countries within the MSCI World ex US index.

### Performance

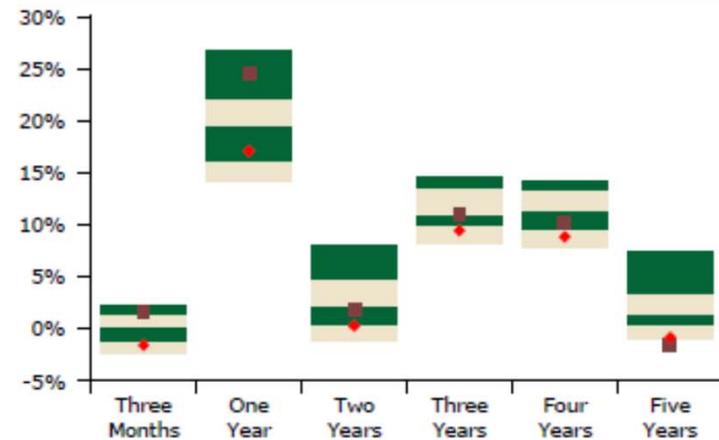
Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
TT International	1.5	23.9	1.3	10.5	(2.0)	4.4	May-2001
MSCI World ex US	(1.6)	17.1	0.3	9.4	(0.8)	4.6	
<i>Excess Return</i>	3.1	6.8	1.0	1.1	(1.2)	(0.2)	

Objective: Annualized absolute excess returns expected to be 15% per annum over a full market cycle (normally 3-5 years).

### Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ TT International	1.7	24.5	1.8	11.0	10.2	(1.5)
Rank	23	14	57	52	66	95
◆ MSCI World ex US	(1.6)	17.1	0.3	9.4	8.8	(0.8)
Rank	83	69	80	82	87	90
10th Percentile	2.3	26.7	8.0	14.5	14.2	7.3
1st Quartile	1.4	22.1	4.9	13.6	13.4	3.4
Median	(0.0)	19.6	2.2	11.1	11.3	1.5
3rd Quartile	(1.3)	16.2	0.5	9.9	9.5	0.4
90th Percentile	(2.3)	14.1	(1.3)	8.1	7.9	(0.9)
Number Of Observations	183	178	167	159	136	126



# Fixed Income Managers

## Fixed Income Managers

(Returns are Net of Fees)

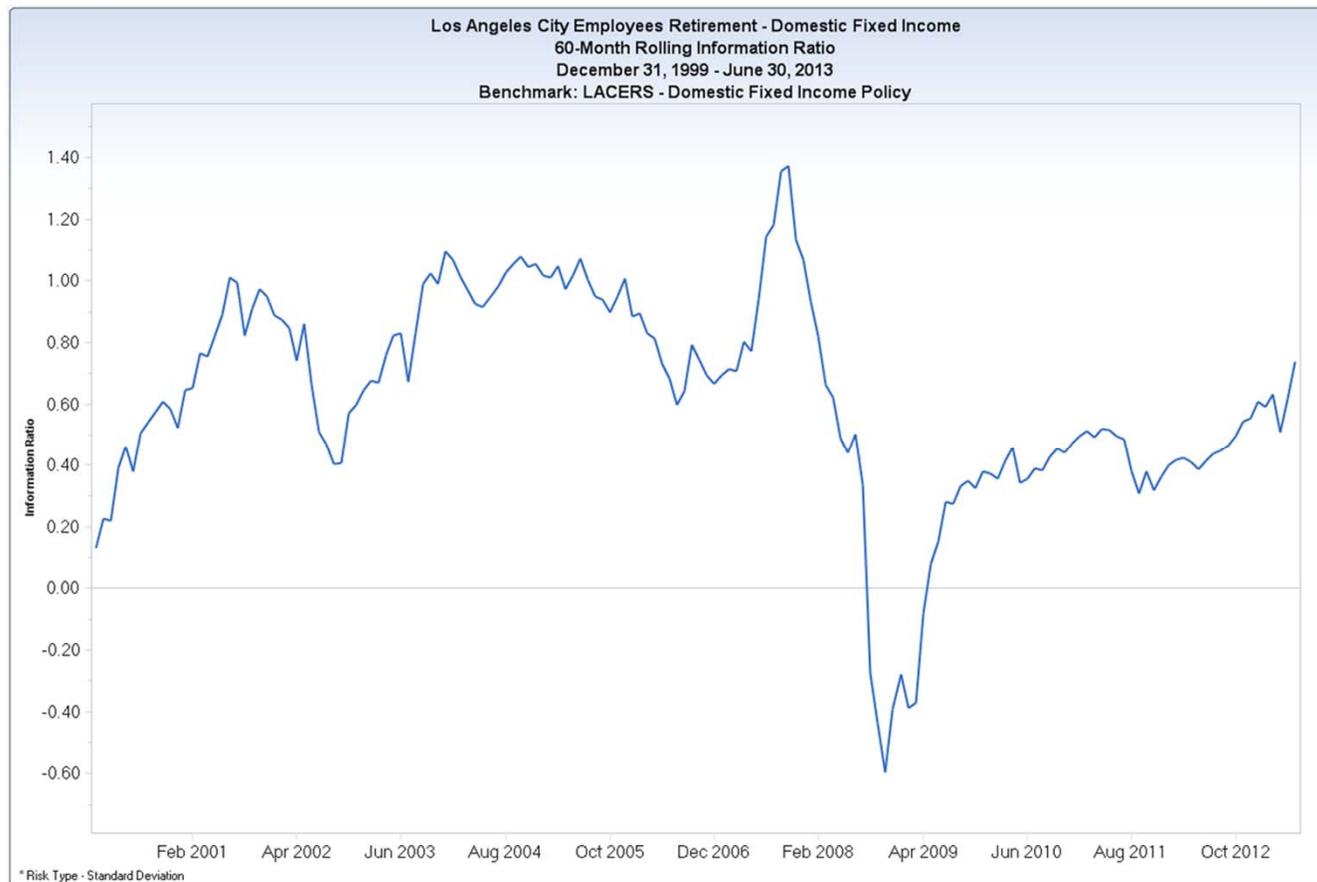
	Inception Date	Market Value (\$million)	% to Total Fixed Income	Current Quarter	One Year	Three Years	Five Years	Ten Years	Since Inception <sup>1</sup>	5 Year Tracking Error
<b>Total Fixed Income</b>	<b>Oct-94</b>	<b>\$ 2,812</b>	<b>100.0%</b>	<b>-2.8</b>	<b>1.6</b>	<b>5.1</b>	<b>6.9</b>	<b>5.7</b>	<b>7.2</b>	<b>2.7</b>
<i>BC U.S. Universal*</i>				-2.4	0.2	4.1	5.5	4.8	6.2	
Excess Return				-0.4	1.4	1.0	1.4	0.9	1.0	
<b>Core Fixed Income</b>	<b>Jun-12</b>	<b>\$ 2,714</b>	<b>96.5%</b>	<b>-2.8</b>	<b>1.7</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>1.8</b>	<b>--</b>
<i>BC U.S. Universal</i>				-2.4	0.2	--	--	--	0.2	
Excess Return				-0.4	1.5	--	--	--	1.6	
Loomis Sayles	Jun-80	\$ 1,094	38.9%	<b>-2.9</b>	<b>1.8</b>	<b>5.0</b>	<b>6.9</b>	<b>5.9</b>	<b>9.9</b>	<b>4.1</b>
<i>BC U.S. Universal*</i>				-2.4	0.2	4.1	5.5	4.8	8.4	
Excess Return				-0.5	1.6	0.9	1.4	1.1	1.5	
Neuberger Berman	Nov-90	\$ 1,115	39.6%	<b>-2.8</b>	<b>1.7</b>	<b>5.7</b>	<b>8.2</b>	<b>6.2</b>	<b>7.6</b>	<b>3.4</b>
<i>BC U.S. Universal*</i>				-2.4	0.2	4.1	5.5	4.8	6.7	
Excess Return				-0.4	1.5	1.6	2.7	1.4	0.9	
Baird Advisors	Mar-05	\$ 240	8.5%	<b>-1.6</b>	<b>2.2</b>	<b>4.7</b>	<b>5.7</b>	<b>--</b>	<b>5.3</b>	<b>1.3</b>
<i>BC U.S. Agg Govt/Credit Intermed</i>				-1.7	0.3	3.1	4.6	--	4.6	
Excess Return				0.1	1.9	1.6	1.1	--	0.7	
LM Capital Group	Mar-05	\$ 265	9.5%	<b>-3.0</b>	<b>0.4</b>	<b>4.0</b>	<b>5.5</b>	<b>--</b>	<b>5.4</b>	<b>2.9</b>
<i>BC U.S. Universal*</i>				-2.4	0.2	3.6	4.8	--	4.8	
Excess Return				-0.6	0.2	0.4	0.7	--	0.6	
<b>Credit Opportunities</b>	<b>Jun-13</b>	<b>\$ 98</b>	<b>3.5%</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>BC US Corp HY 2% Cap</i>				--	--	--	--	--	--	
Excess Return				--	--	--	--	--	--	
Aegon USA**	Jun-13	\$ 49	1.8%	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>BC US Corp HY 2% Cap</i>				--	--	--	--	--	--	
Excess Return				--	--	--	--	--	--	
Franklin Advisors**	Jun-13	\$ 49	1.7%	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>BC US Corp HY 2% Cap</i>				--	--	--	--	--	--	
Excess Return				--	--	--	--	--	--	

<sup>1</sup> Indicates gross returns.

\* The BC U.S. Universal index has historical data blended with other indices.

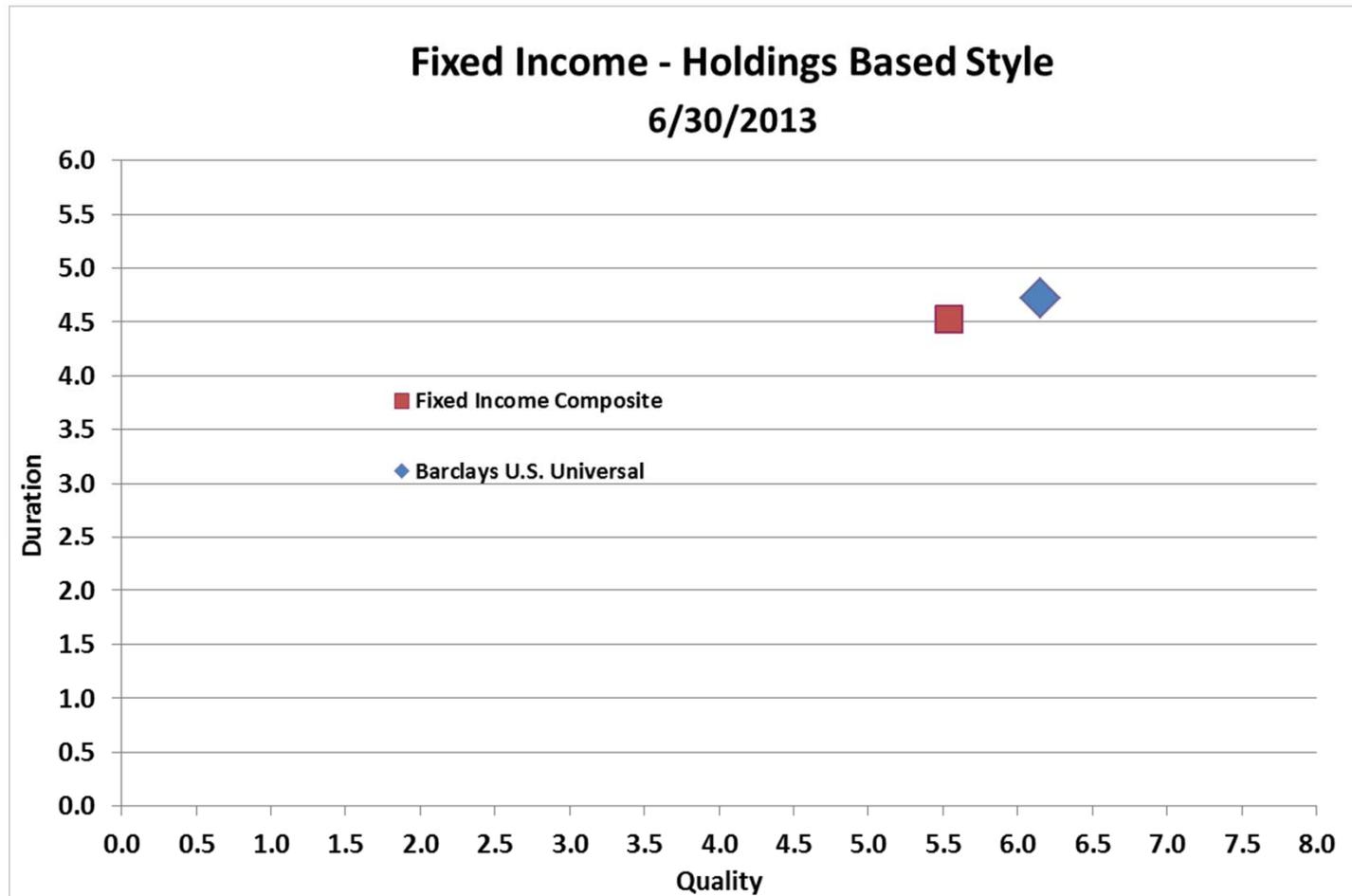
\*\* Managers funded in mid-June 2013; however, portfolio performance calculation began on July 1, 2013.

## 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".  $\text{Information Ratio} = \text{Excess return (alpha)} / \text{Excess risk (tracking error)}$ .



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

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

Core Fixed Income	Inception Date	Mandate	Current Quarter		One Year		Three Years		Five Years		Since Inception	Comments <sup>2</sup>
			I	U	I	U	I	U	I	U	I	
➤ <b>Neuberger Berman</b>	Nov-90	Core - Plus	✘	✘	✓	✓	✓	✓	✓	✓	✓	Performance satisfactory.
➤ <b>Loomis Sayles</b>	Jun-80	Core - Plus	✘	✘	✓	✓	✓	✓	✓	✓	✓	Performance satisfactory.
➤ <b>Baird Advisors</b>	Mar-05	Intermediate	✓	✘	✓	✓	✓	✓	✓	✓	✓	Performance satisfactory.
➤ <b>LM Capital Group</b>	Feb-05	Intermediate	✘	✘	✓	✘	✓	✓	✓	✓	✓	Performance satisfactory.

<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>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
✘	underperformed index
=	equal to index
I	index
U	universe median

## Baird Advisors

Mandate: Intermediate Fixed Income

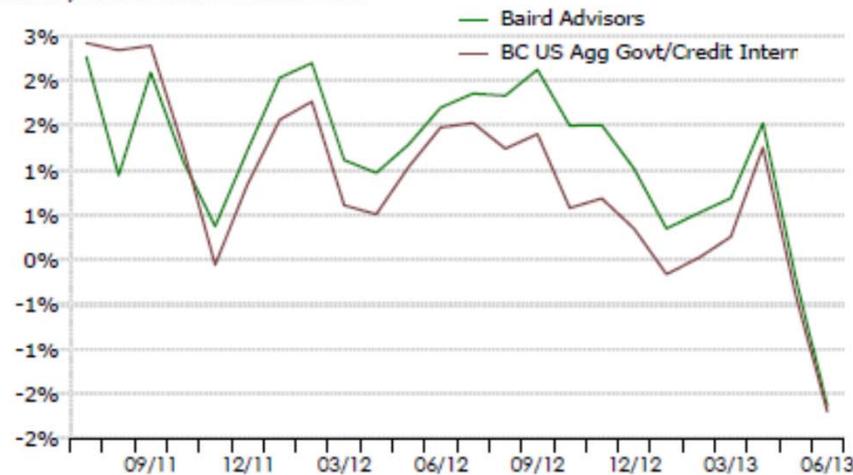
Benchmark: BC US Agg Govt/Credit Intermed

### Strategy

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

### Performance

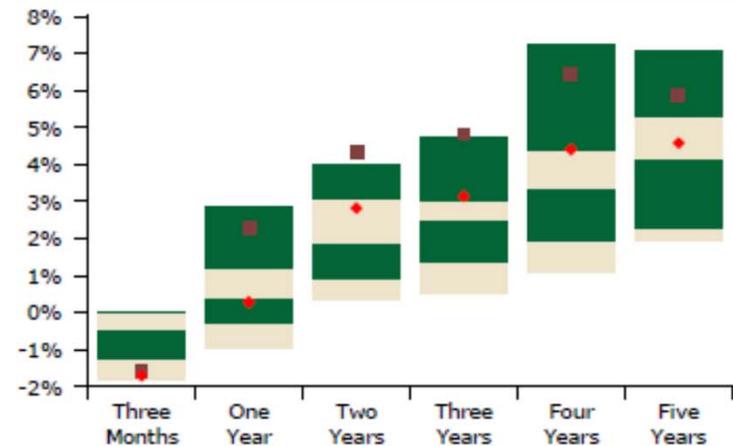
Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Baird Advisors	(1.6)	2.2	4.2	4.7	5.7	5.3	Mar-2005
BC US Agg Govt/Cred	(1.7)	0.3	2.8	3.1	4.6	4.6	
<i>Excess Return</i>	0.1	1.9	1.4	1.6	1.1	0.7	

Objective: Outperform the benchmark by 15-40 bps , annualized over a full market cycle (normally 3-5 years).

### Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Baird Advisors	(1.6)	2.3	4.3	4.8	6.4	5.8
Rank	85	15	5	5	17	20
◆ BC US Agg Govt/Cred	(1.7)	0.3	2.8	3.1	4.4	4.6
Rank	87	63	29	24	25	45
10th Percentile	0.0	2.9	4.0	4.7	7.2	7.0
1st Quartile	(0.1)	1.2	3.1	3.0	4.4	5.3
Median	(0.5)	0.4	1.9	2.5	3.4	4.1
3rd Quartile	(1.3)	(0.3)	0.9	1.4	2.0	2.3
90th Percentile	(1.8)	(0.9)	0.3	0.5	1.1	1.9
Number Of Observations	42	38	41	43	34	26

## LM Capital Group

Mandate: U.S. Fixed Income Manager

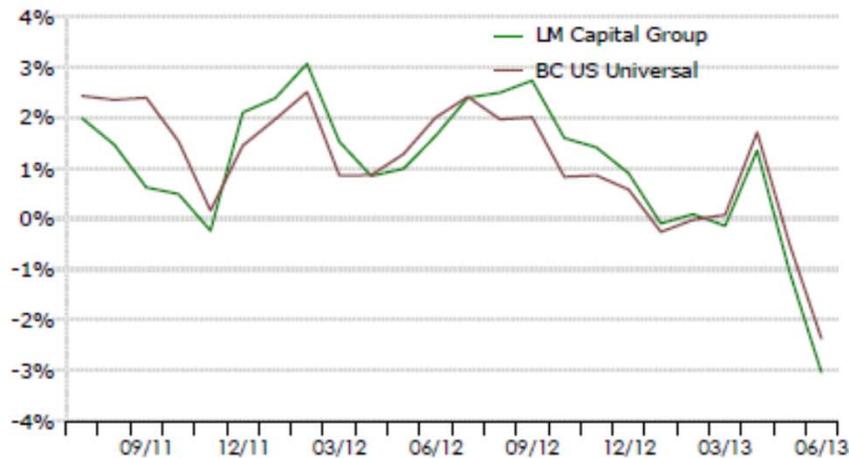
Benchmark: BC US Universal

### Strategy

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

### Performance

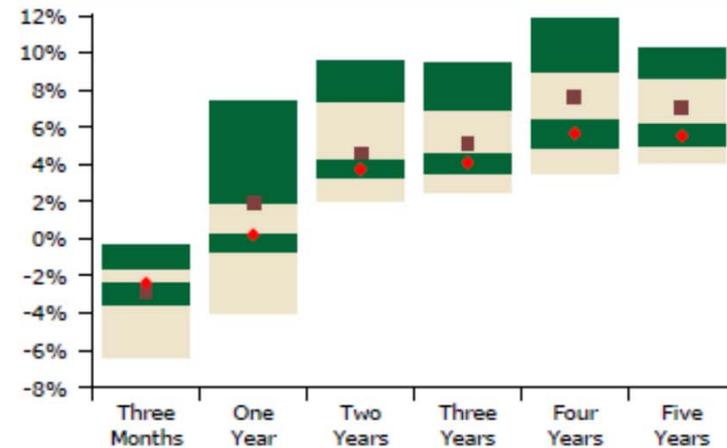
Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
LM Capital Group	(3.0)	0.4	3.1	4.0	5.5	5.4	Mar-2005
BC US Universal	(2.4)	0.2	3.5	3.6	4.8	4.8	
<b>Excess Return</b>	<b>(0.6)</b>	<b>0.2</b>	<b>(0.4)</b>	<b>0.4</b>	<b>0.7</b>	<b>0.6</b>	

Objective: Outperform the benchmark by 30-80 bps, annualized over a full market cycle (normally 3-5 years).

### Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ LM Capital Group	(3.0)	0.5	3.3	4.1	6.0	5.7
Rank	99	43	24	18	19	20
◆ BC US Universal	(2.4)	0.2	3.5	3.6	4.7	4.8
Rank	95	68	20	22	22	38
10th Percentile	0.0	2.9	4.0	4.7	7.2	7.0
1st Quartile	(0.1)	1.2	3.1	3.0	4.4	5.3
Median	(0.5)	0.4	1.9	2.5	3.4	4.1
3rd Quartile	(1.3)	(0.3)	0.9	1.4	2.0	2.3
90th Percentile	(1.8)	(0.9)	0.3	0.5	1.1	1.9
Number Of Observations	42	38	41	43	34	26

# Loomis Sayles

Mandate: US Fixed Income Manager

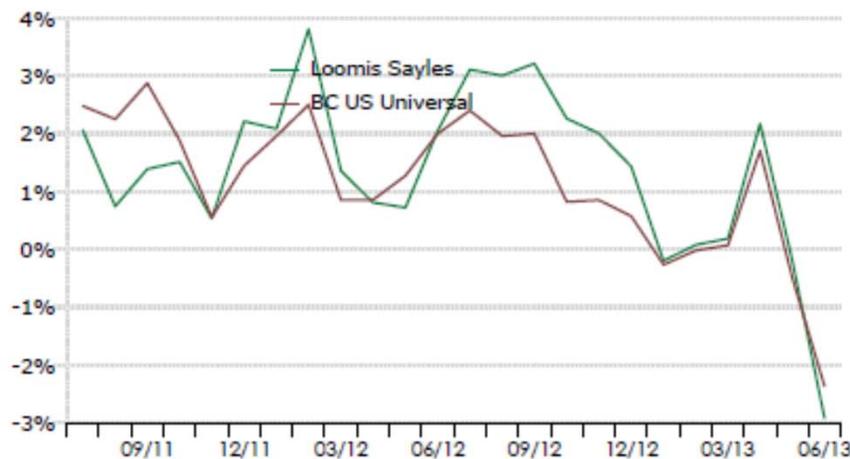
Benchmark: BC US Universal

## Strategy

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

## Performance

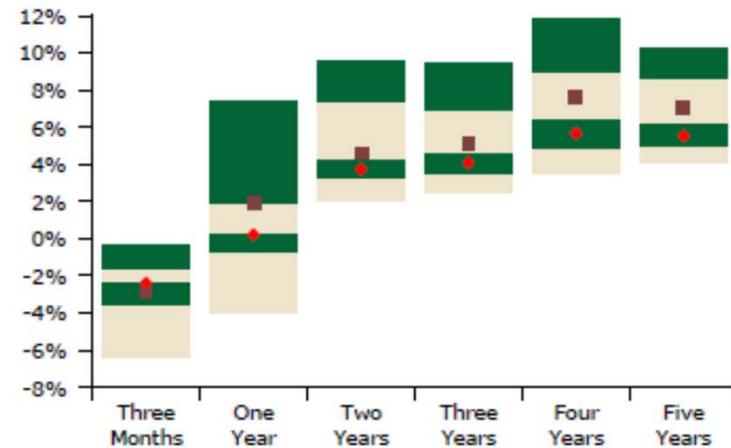
Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Loomis Sayles	(2.9)	1.8	4.5	5.0	6.9	9.9	Jun-1980
BC US Universal	(2.4)	0.2	3.7	4.1	5.5	8.4	
<i>Excess Return</i>	<i>(0.5)</i>	<i>1.6</i>	<i>0.8</i>	<i>0.9</i>	<i>1.4</i>	<i>1.5</i>	

Objective: Outperform the benchmark by 50 bps, annualized over a full market cycle (normally 3-5 years).

## Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Loomis Sayles	(2.9)	1.9	4.6	5.1	7.6	7.1
Rank	67	26	45	41	33	37
◆ BC US Universal	(2.4)	0.2	3.7	4.1	5.7	5.5
Rank	51	52	64	64	63	65
10th Percentile	(0.3)	7.4	9.5	9.5	11.8	10.2
1st Quartile	(1.7)	2.0	7.4	7.0	9.0	8.7
Median	(2.4)	0.3	4.3	4.7	6.5	6.3
3rd Quartile	(3.6)	(0.8)	3.3	3.5	4.9	5.0
90th Percentile	(6.4)	(4.0)	2.0	2.5	3.5	4.1
Number Of Observations	453	405	375	347	298	254

## Neuberger Berman

Mandate: US Fixed Income Manager

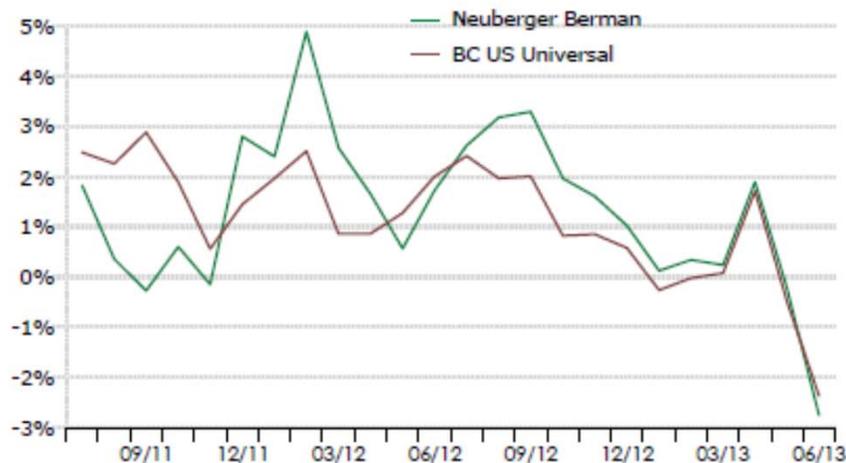
Benchmark: BC US Universal

### Strategy

Neuberger invests in investment-grade bonds rated BBB- or higher by Moodys.

### Performance

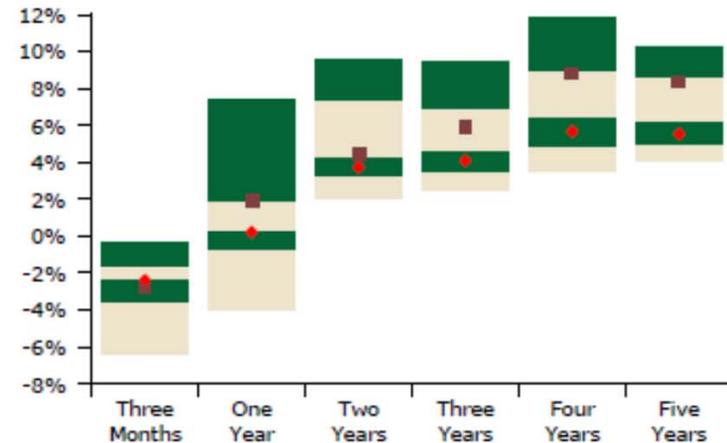
Quarterly Rate of Return Vs Benchmark



Net Returns %	LCQ	1 Yr.	2 Yrs.	3 Yrs.	5 Yrs.	Gross ITD Return	Inception Date
Neuberger Berman	(2.8)	1.7	4.3	5.7	8.2	7.6	Nov-1990
BC US Universal	(2.4)	0.2	3.7	4.1	5.5	6.7	
<i>Excess Return</i>	<i>(0.4)</i>	<i>1.5</i>	<i>0.6</i>	<i>1.6</i>	<i>2.7</i>	<i>0.9</i>	

Objective: Outperform the benchmark by 100 bps , annualized over a full market cycle (normally 3-5 years).

### Quartile Rankings



	QTD	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.
■ Neuberger Berman	(2.7)	1.9	4.5	5.9	8.8	8.4
Rank	63	26	48	32	27	28
◆ BC US Universal	(2.4)	0.2	3.7	4.1	5.7	5.5
Rank	51	52	64	64	63	65
10th Percentile	(0.3)	7.4	9.5	9.5	11.8	10.2
1st Quartile	(1.7)	2.0	7.4	7.0	9.0	8.7
Median	(2.4)	0.3	4.3	4.7	6.5	6.3
3rd Quartile	(3.6)	(0.8)	3.3	3.5	4.9	5.0
90th Percentile	(6.4)	(4.0)	2.0	2.5	3.5	4.1
Number Of Observations	453	405	375	347	298	254



# 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 decomposed 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 Capital International Emerging Markets Free:** contains securities of the following countries 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 EAFE:** an arithmetic, market value-weighted average of over 900 securities from Europe, Australia, and the Far East. The index is calculated on a total return basis, including reinvestment of gross dividends before deduction of withholding taxes. The following countries are represented: Australia, Austria, Belgium, Denmark, Finland, France, Germany, Hong Kong, Ireland, Italy, Japan, Malaysia, Netherlands, New Zealand, Norway, Singapore, Spain, Sweden, Switzerland and the United Kingdom.
- ◆ **Morgan Stanley Capital International Europe:** includes companies representing 15 European countries: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.
- ◆ **Morgan Stanley Capital International Pacific:** includes companies representing 5 countries: Australia, Hong Kong, Japan, New Zealand and Singapore.
- ◆ **Morgan Stanley Capital International Pacific ex Japan:** includes companies representing 4 countries: Australia, Hong Kong, New Zealand and Singapore.
- ◆ **Morgan Stanley All Country Asia Pacific:** includes companies representing 14 countries: Australia, China, Hong Kong, India, Indonesia, Japan, Malaysia, Pakistan, Philippines, Korea, New Zealand, Singapore, Thailand, and Taiwan. It is calculated on a total return basis with dividends reinvested.
- **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.
- ◆ **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:**

- ◇ **AAA:** The best quality rating, stable cash flows, very protective bond covenants, very 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.
- ◇ **Baa:** 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.