

# PORTFOLIO PERFORMANCE REVIEW

## LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM

Quarter Ending March 31, 2019

May 28, 2019



BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

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# EXECUTIVE SUMMARY

NEPC, LLC

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# EXECUTIVE SUMMARY

## Q1 Market Summary

Macro			Equity			Credit			Real Assets		
US Dollar	VIX	US 10-Yr	S&P 500	MSCI EAFE	MSCI EM	US Agg.	High Yield	Dollar EMD	Oil	Gold	REITS
1.2%	-11.7	-27 bps	13.6%	10.0%	9.9%	2.9%	7.3%	7.0%	33.3%	0.8%	16.7%

	Market Value	3 Mo	Rank	Fiscal YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank	15 Yrs	Rank	Inception	Inception Date
LACERS Master Trust	\$17,316,281,457	7.76%	67	2.55%	50	3.33%	72	8.80%	58	6.37%	58	10.65%	42	7.07%	31	8.16%	Oct-94
Policy Index		9.27%	11	3.38%	20	4.30%	39	9.19%	19	6.42%	49	10.93%	13	6.96%	44	8.10%	Oct-94
InvestorForce Public DB \$5-50B Gross Median		8.33%		2.55%		3.83%		8.86%		6.41%		10.41%		6.84%		7.86%	Oct-94

Note: Performance is gross of fees

### Global equities rallied during the quarter as sentiment improved from easing US-China trade tensions and a dovish pivot by the Fed

- US Equity composite returned 13.98% (gross of fees) led by small cap growth while the Non-US Equity composite returned 10.63% (gross of fees) led by developed markets growth stocks

### The spread between the 10-year Treasury Note and 3-month Treasury Bill temporarily inverted after the Fed held interest rates constant and announced adjustments to their balance sheet normalization process

- Core Fixed Income composite returned 3.17% (gross of fees) and the Credit Opportunities composite returned 6.50% (gross of fees) led by high yield bonds

### Spot crude oil prices rose significantly due to geopolitical concerns in major oil-producing regions



Market segment (index representation) as follows: US Dollar (DXY Index), VIX (CBOE Volatility Index), US 10-Year (US 10-Year Treasury Yield), S&P 500 (US Equity), MSCI EAFE Index (International Develop Equity), MSCI Emerging Markets (Emerging Markets Equity), US Agg (Barclays US Aggregate Bond Index), High Yield (Barclays US High Yield Index), Dollar EMD (JPM EMBI Global Diversified Index), Crude (WTI Crude Oil Spot), Gold (Gold Price Spot), and REITs (NAREIT Composite Index).



# MARKET OUTLOOK

NEPC, LLC

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# MACRO PERFORMANCE OVERVIEW

## Q1 Macro Market Summary

The global growth outlook was revised downward – reflecting slowing growth in most major developed economies

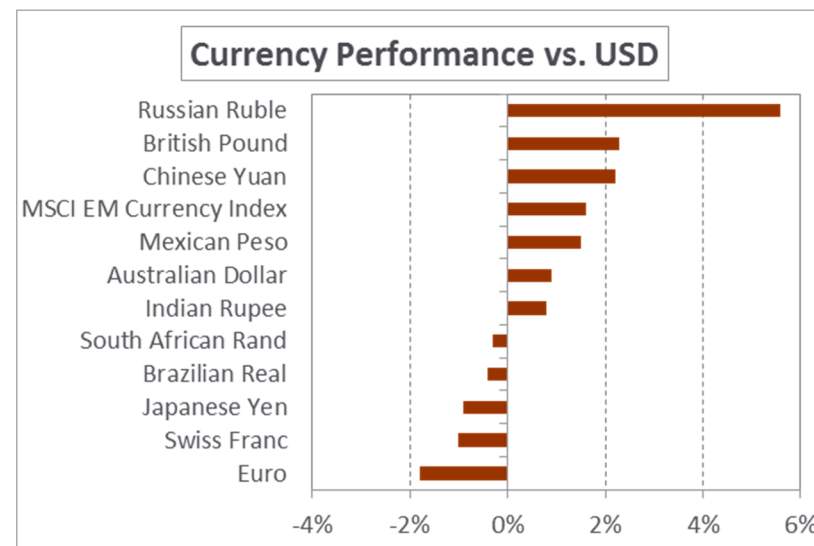
The Fed pivoted toward a more dovish policy stance signaling no additional rate hikes this year

Global bond yields declined with the 10-year German and Japanese yields ending in negative territory

	Yield 12/31/18	Yield 3/31/19	Δ
US 10-Yr	2.68%	2.42%	-0.27%
US 30-Yr	3.01%	2.82%	-0.19%
US Real 10-Yr	0.97%	0.53%	-0.44%
German 10-Yr	0.24%	-0.07%	-0.31%
Japan 10-Yr	-0.01%	-0.09%	-0.09%
China 10-Yr	3.31%	3.07%	-0.24%
EM Local Debt	6.46%	6.16%	-0.30%

Source: Bloomberg

Central Banks	Current Rate	CPI YOY	Notes from the Quarter
Federal Reserve	2.25% - 2.50%	2.2%	The Fed held its benchmark interest rate at 2.25% - 2.50% in March and signaled no additional rate hikes are likely in 2019
European Central Bank	0.0%	1.4%	The ECB maintained its current benchmark interest rate and announced plans to boost commercial lending
Bank of Japan	-0.1%	0.8%	The BoJ will continue its ultra-easy QE program with inflation remaining well below target



Source: Bloomberg



# EQUITY PERFORMANCE OVERVIEW

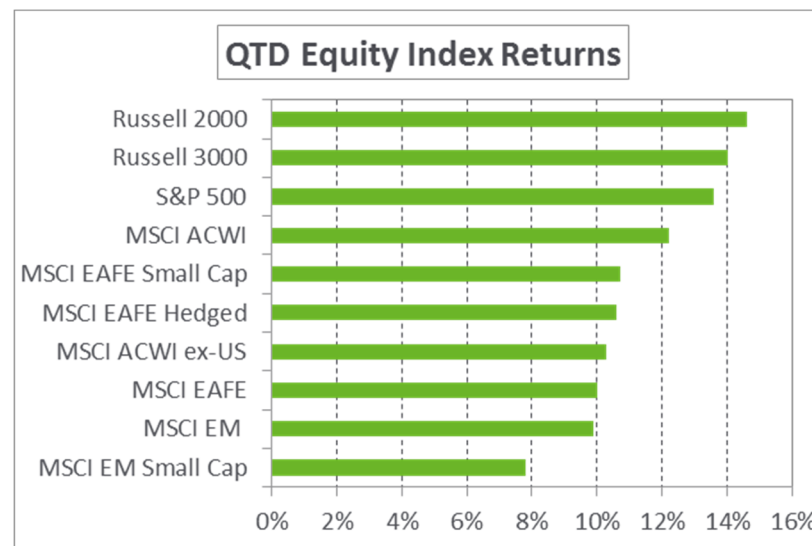
## Q1 Equity Market Summary

**Global equities made a strong comeback this quarter following a dovish pivot from the Fed**

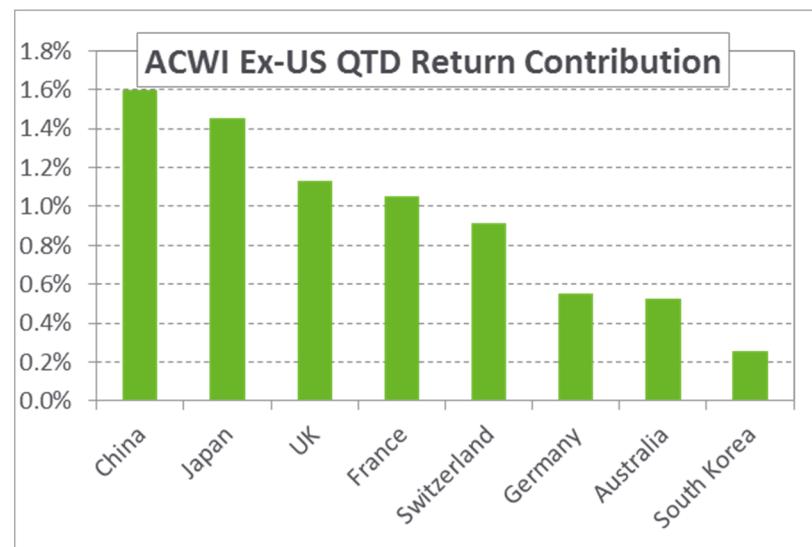
**US and Chinese equities led the way as hopes for a trade deal provided a tailwind for local equity markets**

Russell 3000 QTD Sector Return Contribution	
Information Technology	3.6%
Consumer Discretionary	2.6%
Financials	1.6%
Industrials	0.8%
Consumer Staples	1.1%
Energy	0.7%
Materials	0.4%
Health Care	1.3%
Real Estate	0.6%
Communication Services	1.9%
Utilities	0.3%

Source: Russell, Bloomberg



Source: MSCI, Russell, S&P, Bloomberg



Source: MSCI, Bloomberg. QTD top country contributors to index return



# CREDIT PERFORMANCE OVERVIEW

## Q1 Credit Market Summary

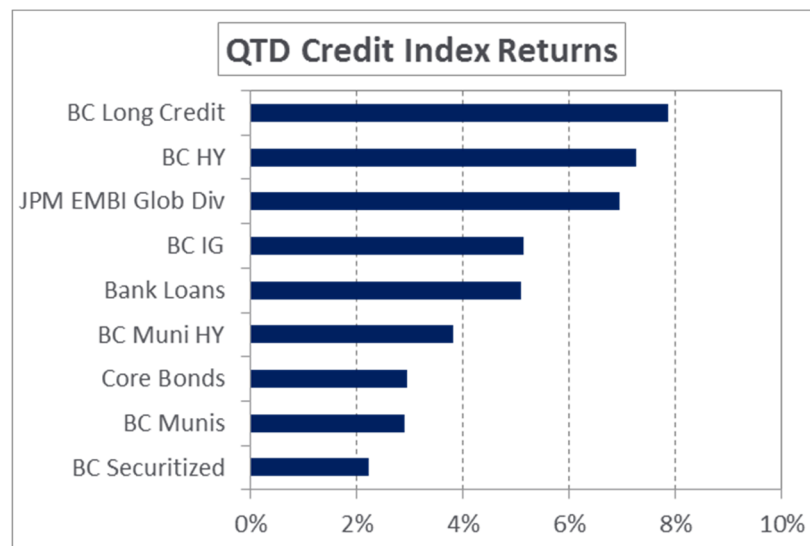
**Global yields declined significantly – reflecting concerns over the global growth outlook**

**Credit spreads broadly declined off of highs at the end of 2018**

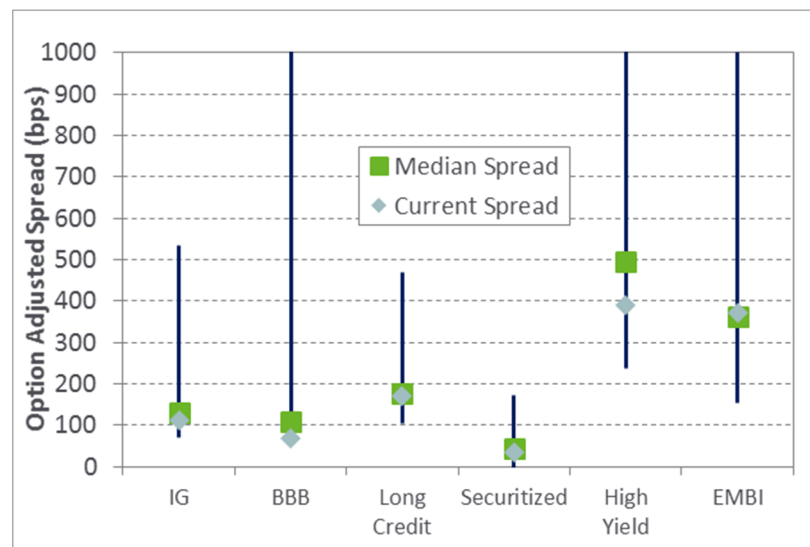
US high yield spreads experienced one of the largest movements – falling 135 basis points, supporting a return of 7.3%

Credit Spread (Basis Points)	12/31/18	3/31/19	\Delta
BC IG Credit	153	119	-34
BC Long Credit	200	172	-28
BC Securitized	35	35	0
BC High Yield	526	391	-135
Muni HY	236	230	-6
JPM EMBI	435	373	-62
Bank Loans - Libor	414	354	-60

Source: Barclays, Merrill Lynch, JPM, Bloomberg, NEPC



Source: Barclays, JPM, S&P, Bloomberg



Source: Barclays, JPM, S&P, Bloomberg; Calculated since 01/31/2000



# REAL ASSETS PERFORMANCE OVERVIEW

## Q1 Real Assets Market Summary

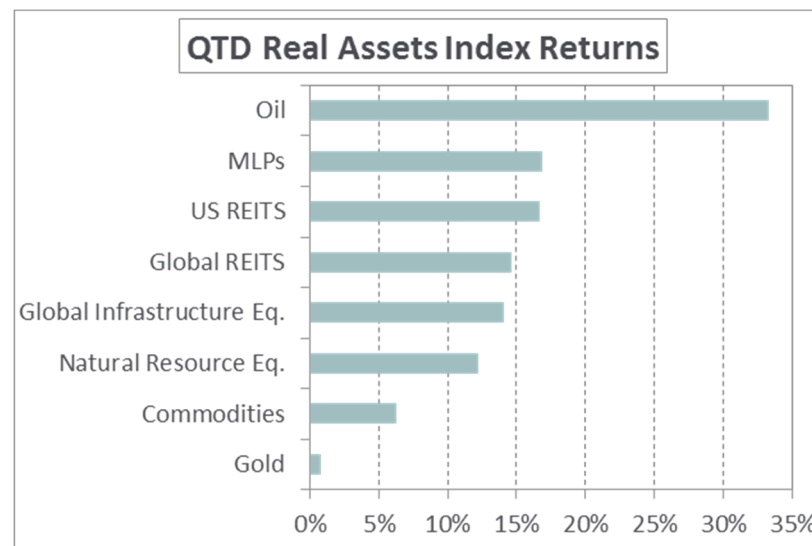
**WTI crude oil increased 33.3% as a result of OPEC production cuts and concerns surrounding Venezuela**

**Midstream energy increased 22.2% following strong earnings and a tailwind from higher oil prices**

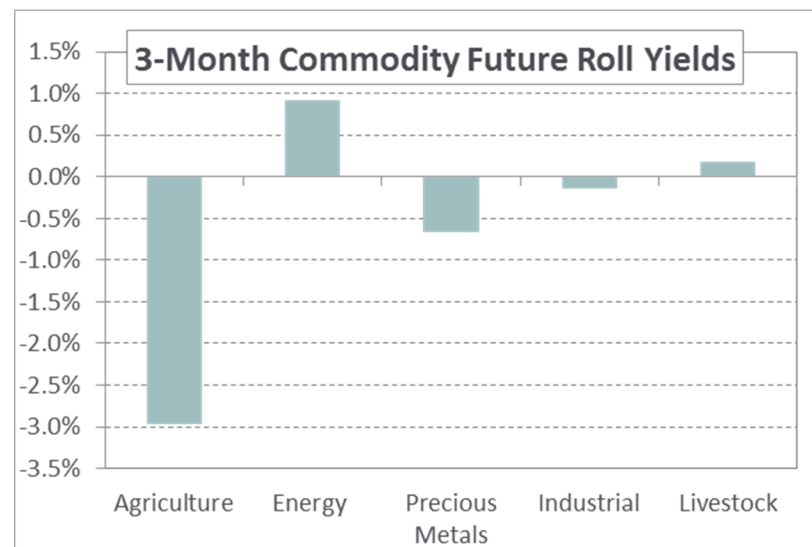
**US REITs increased 16.3% during the quarter with the Fed signaling a pause to monetary policy**

Real Asset Yields	12/31/18	3/31/19
MLPs	8.9%	8.0%
Core Real Estate	4.5%	4.5%
US REITs	4.6%	4.1%
Global REITs	3.9%	3.4%
Global Infrastructure Equities	4.6%	4.4%
Natural Resource Equities	4.5%	4.2%
US 10-Yr Breakeven Inflation	1.7%	1.9%
Commodity Index Roll Yield	-2.7%	-2.7%

Source: NCREIF, Alerian, NAREIT, S&P, Bloomberg



Source: S&P, NAREIT, Alerian, Bloomberg



Source: Bloomberg, NEPC Calculated as of 09/28/2018



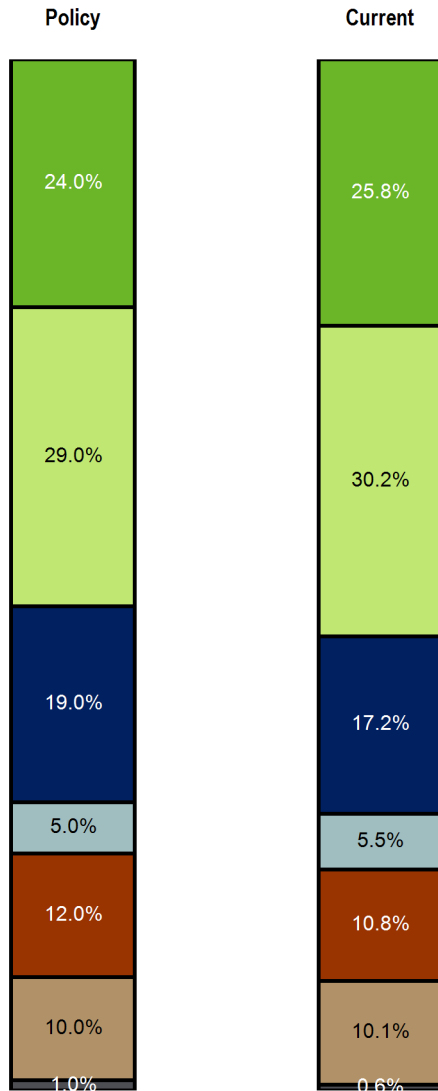
# ASSET CLASS POLICY OVERVIEW

NEPC, LLC

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## Los Angeles City Employees' Retirement System

# TOTAL FUND ASSET ALLOCATION VS. POLICY



Asset Allocation vs. Target						
	Current	Policy	Current Difference*	Policy Range	Within Range	
U.S. Equity	\$4,461,289,894	24.00%	25.76%	1.76%	19.00% - 29.00%	Yes
Non-US Equity Core	\$5,222,447,298	29.00%	30.16%	1.16%	24.00% - 34.00%	Yes
Fixed Income	\$2,974,037,243	19.00%	17.17%	-1.83%	15.00% - 22.00%	Yes
Credit Opportunities	\$946,202,687	5.00%	5.46%	0.46%	0.00% - 10.00%	Yes
Private Equity	\$1,863,771,883	12.00%	10.76%	-1.24%		Yes
Real Assets	\$1,743,217,858	10.00%	10.07%	0.07%	7.00% - 13.00%	Yes
Cash	\$105,314,594	1.00%	0.61%	-0.39%	0.00% - 2.00%	Yes
<b>Total</b>	<b>\$17,316,281,457</b>	<b>100.00%</b>	<b>100.00%</b>			

\*Difference between Policy and Current Allocation

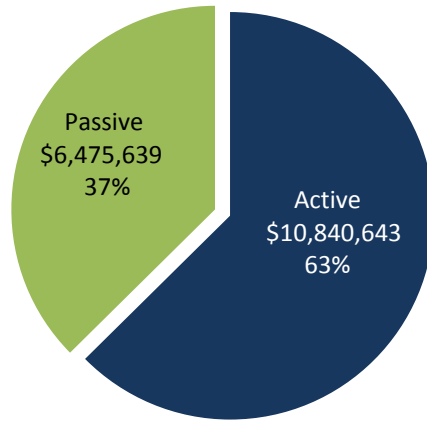
Note: Policy Target Asset Allocation does not reflect the new target asset allocation adopted on April 10, 2018. Implementation of the new asset allocation is currently in progress.



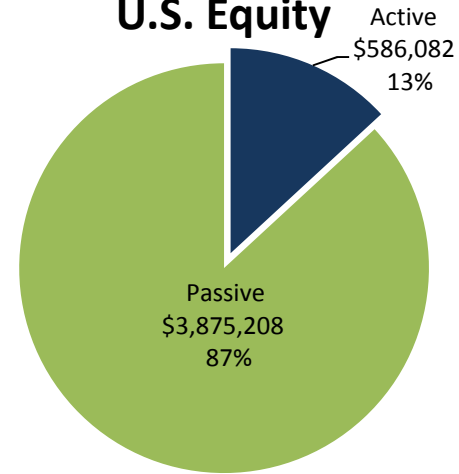
# ACTIVE VS. PASSIVE MANAGER BREAKDOWN

Note: Market values shown in millions \$(000).

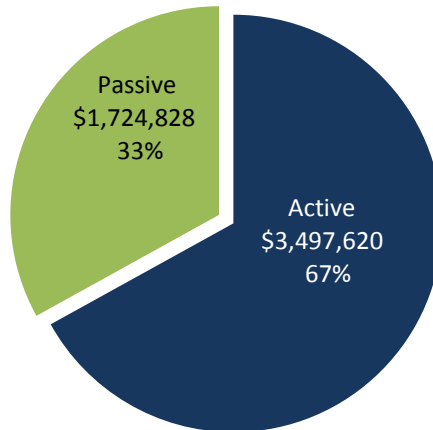
## Total Fund



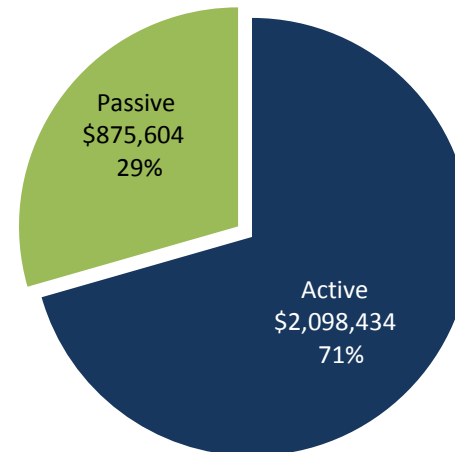
## U.S. Equity



## Non-U.S. Equity



## Core Fixed Income



- Of the Total Fund, LACERS allocated 63% to active managers and 37% to passive managers.

- Credit Opportunities, Private Equity, and Real Assets programs are active and therefore are not shown.





# PERFORMANCE OVERVIEW

NEPC, LLC

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# TOTAL FUND PERFORMANCE SUMMARY (GROSS OF FEES)

	Market Value	3 Mo	Rank	Fiscal YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank	15 Yrs	Rank	Inception	Inception Date
<b>LACERS Master Trust</b>	<b>\$17,316,281,457</b>	<b>7.76%</b>	<b>67</b>	<b>2.55%</b>	<b>50</b>	<b>3.33%</b>	<b>72</b>	<b>8.80%</b>	<b>58</b>	<b>6.37%</b>	<b>58</b>	<b>10.65%</b>	<b>42</b>	<b>7.07%</b>	<b>31</b>	<b>8.16%</b>	<b>Oct-94</b>
Policy Index		9.27%	11	3.38%	20	4.30%	39	9.19%	19	6.42%	49	10.93%	13	6.96%	44	8.10%	Oct-94
InvestorForce Public DB \$5-50B Gross Median		8.33%		2.55%		3.83%		8.86%		6.41%		10.41%		6.84%		7.86%	Oct-94

Over the past five years, the Fund returned 6.37% per year, underperforming the policy index by 0.05% and ranked in the 58<sup>th</sup> percentile in the InvestorForce Public Funds \$5 Billion- \$50 Billion universe. The Fund's volatility was 6.61% ranking in the 53<sup>rd</sup> percentile over this period. The Fund's risk-adjusted performance, as measured by the Sharpe Ratio, ranks in the 58<sup>th</sup> percentile in its peer group.

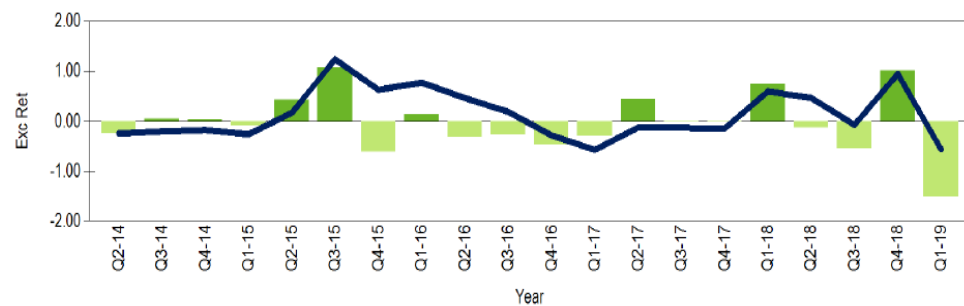
Over the past three years, the Fund returned 8.80% per year, underperforming the policy index by 0.39% and ranked in the 58<sup>th</sup> percentile in its peer group. The Fund's volatility ranks in the 48<sup>th</sup> percentile resulting in a three-year Sharpe Ratio of 1.26, ranking in the 65<sup>th</sup> percentile.

In the one-year ended March 31, 2019, the Fund experienced a net investment gain of \$526.6 million, which includes a net investment gain of \$1.25 billion during the first calendar quarter. Assets increased from \$17.02 billion twelve months ago to \$17.32 billion on March 31, 2019. The Fund returned 7.76%, underperforming the policy index by 1.51% and ranked in the 67<sup>th</sup> percentile in its peer group.

All asset classes were within policy range as of March 31, 2019.

*The InvestorForce Public Funds \$5 Billion- \$50 Billion Universe contains 16 observations for the period ending March 31, 2019.*

## Quarterly and Cumulative Excess Performance



## 5 Years Ending March 31, 2019

	Annualized Return (%)	Rank	Annualized Standard Deviation	Rank	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
LACERS Master Trust	6.37%	58	6.61%	53	0.85	58	1.17	29
Policy Index	6.42%	49	7.46%	97	0.76	72	1.02	57
InvestorForce Public DB \$5-50B Gross Median	6.41%	--	6.55%	--	0.86	--	1.15	--

## 3 Years Ending March 31, 2019

	Annualized Return (%)	Rank	Annualized Standard Deviation	Rank	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
LACERS Master Trust	8.80%	58	6.02%	48	1.26	65	1.20	50
Policy Index	9.19%	19	6.77%	94	1.18	79	1.15	62
InvestorForce Public DB \$5-50B Gross Median	8.86%	--	6.05%	--	1.29	--	1.20	--



## Los Angeles City Employees' Retirement System

# TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>LACERS Master Trust</b>	<b>17,316,281,457</b>	<b>100.00</b>	<b>7.76</b>	<b>2.55</b>	<b>3.33</b>	<b>8.80</b>	<b>6.37</b>	<b>10.65</b>	<b>8.16</b>	<b>Oct-94</b>
Policy Index			9.27	3.38	4.30	9.19	6.42	10.93	8.10	Oct-94
Over/Under			-1.51	-0.83	-0.97	-0.39	-0.05	-0.28	0.06	
<b>U.S. Equity</b>	<b>4,461,289,894</b>	<b>25.76</b>	<b>13.98</b>	<b>3.84</b>	<b>8.32</b>	<b>13.42</b>	<b>10.14</b>	<b>15.99</b>	<b>10.41</b>	<b>Oct-94</b>
U.S. Equity Blend			14.04	4.69	8.77	13.48	10.35	16.00	9.34	Oct-94
Over/Under			-0.06	-0.85	-0.45	-0.06	-0.21	-0.01	1.07	
<b>Non-U.S. Equity</b>	<b>5,222,447,298</b>	<b>30.16</b>	<b>10.63</b>	<b>-2.67</b>	<b>-4.96</b>	<b>8.58</b>	<b>3.64</b>	<b>10.03</b>	<b>5.15</b>	<b>Nov-94</b>
MSCI ACWI ex USA			10.31	-1.64	-4.22	8.09	2.57	8.85	5.17	Nov-94
Over/Under			0.32	-1.03	-0.74	0.49	1.07	1.18	-0.02	
<b>Core Fixed Income</b>	<b>2,974,037,243</b>	<b>17.17</b>	<b>3.17</b>	<b>4.74</b>	<b>4.38</b>	<b>2.48</b>	<b>2.96</b>		<b>3.03</b>	<b>Jul-12</b>
Core Fixed Income Blend			2.94	4.65	4.48	2.03	2.74		2.40	Jul-12
Over/Under			0.23	0.09	-0.10	0.45	0.22		0.63	
<b>Credit Opportunities</b>	<b>946,202,687</b>	<b>5.46</b>	<b>6.50</b>	<b>5.55</b>	<b>4.65</b>	<b>7.48</b>	<b>4.38</b>		<b>5.48</b>	<b>Jun-13</b>
Credit Opportunities Blend			7.15	5.99	5.36	7.61	4.80		5.75	Jun-13
Over/Under			-0.65	-0.44	-0.71	-0.13	-0.42		-0.27	
<b>Real Assets</b>	<b>1,743,217,858</b>	<b>10.07</b>	<b>3.98</b>	<b>3.81</b>	<b>5.81</b>	<b>5.63</b>	<b>6.76</b>	<b>2.26</b>	<b>6.31</b>	<b>Nov-94</b>
CPI + 5% (Unadjusted)			2.42	4.63	6.95	7.30	6.54	6.88	7.30	Nov-94
Over/Under			1.56	-0.82	-1.14	-1.67	0.22	-4.62	-0.99	
<b>Public Real Assets</b>	<b>935,544,125</b>	<b>5.40</b>	<b>5.94</b>	<b>2.24</b>	<b>3.76</b>	<b>2.97</b>			<b>1.40</b>	<b>Jun-14</b>
Public Real Assets Blend			6.55	1.55	4.15	3.03			-0.83	Jun-14
Over/Under			-0.61	0.69	-0.39	-0.06			2.23	
<b>Private Real Estate</b>	<b>787,660,871</b>	<b>4.55</b>	<b>1.85</b>	<b>5.67</b>	<b>8.20</b>	<b>8.24</b>	<b>9.89</b>	<b>3.75</b>	<b>6.94</b>	<b>Oct-94</b>
Real Estate Blend			1.62	5.99	8.38	8.83	11.02	9.62	9.92	Oct-94
Over/Under			0.23	-0.32	-0.18	-0.59	-1.13	-5.87	-2.98	
<b>Private Equity</b>	<b>1,863,771,883</b>	<b>10.76</b>	<b>-1.08</b>	<b>8.17</b>	<b>11.29</b>	<b>12.18</b>	<b>10.72</b>	<b>12.58</b>	<b>10.43</b>	<b>Nov-95</b>
Private Equity Blend			14.85	7.03	12.01	16.85	13.64	19.81	12.94	Nov-95
Over/Under			-15.93	1.14	-0.72	-4.67	-2.92	-7.23	-2.51	
<b>Cash</b>	<b>105,314,594</b>	<b>0.61</b>								



Note - See appendix for blended benchmark definitions.

## Los Angeles City Employees' Retirement System

# TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>LACERS Master Trust</b>	<b>17,316,281,457</b>	<b>100.00</b>	<b>7.72</b>	<b>2.41</b>	<b>3.15</b>	<b>8.60</b>	<b>6.18</b>	<b>10.45</b>		<b>Oct-94</b>
<i>Policy Index</i>			<u>9.27</u>	<u>3.38</u>	<u>4.30</u>	<u>9.19</u>	<u>6.42</u>	<u>10.93</u>		<i>Oct-94</i>
Over/Under			-1.55	-0.97	-1.15	-0.59	-0.24	-0.48		
<b>U.S. Equity</b>	<b>4,461,289,894</b>	<b>25.76</b>	<b>13.96</b>	<b>3.78</b>	<b>8.25</b>	<b>13.34</b>	<b>10.04</b>	<b>15.82</b>		<b>Oct-94</b>
<i>U.S. Equity Blend</i>			<u>14.04</u>	<u>4.69</u>	<u>8.77</u>	<u>13.48</u>	<u>10.35</u>	<u>16.00</u>		<i>Oct-94</i>
Over/Under			-0.08	-0.91	-0.52	-0.14	-0.31	-0.18		
<b>Non-U.S. Equity</b>	<b>5,222,447,298</b>	<b>30.16</b>	<b>10.54</b>	<b>-2.95</b>	<b>-5.32</b>	<b>8.18</b>	<b>3.27</b>	<b>9.66</b>		<b>Nov-94</b>
<i>MSCI ACWI ex USA</i>			<u>10.31</u>	<u>-1.64</u>	<u>-4.22</u>	<u>8.09</u>	<u>2.57</u>	<u>8.85</u>		<i>Nov-94</i>
Over/Under			0.23	-1.31	-1.10	0.09	0.70	0.81		
<b>Core Fixed Income</b>	<b>2,974,037,243</b>	<b>17.17</b>	<b>3.14</b>	<b>4.66</b>	<b>4.27</b>	<b>2.38</b>	<b>2.85</b>		<b>2.91</b>	<b>Jul-12</b>
<i>Core Fixed Income Blend</i>			<u>2.94</u>	<u>4.65</u>	<u>4.48</u>	<u>2.03</u>	<u>2.74</u>		<u>2.40</u>	<i>Jul-12</i>
Over/Under			0.20	0.01	-0.21	0.35	0.11		0.51	
<b>Credit Opportunities</b>	<b>946,202,687</b>	<b>5.46</b>	<b>6.42</b>	<b>5.32</b>	<b>4.33</b>	<b>7.12</b>	<b>4.01</b>		<b>5.14</b>	<b>Jun-13</b>
<i>Credit Opportunities Blend</i>			<u>7.15</u>	<u>5.99</u>	<u>5.36</u>	<u>7.61</u>	<u>4.80</u>		<u>5.75</u>	<i>Jun-13</i>
Over/Under			-0.73	-0.67	-1.03	-0.49	-0.79		-0.61	
<b>Real Assets</b>	<b>1,743,217,858</b>	<b>10.07</b>	<b>3.94</b>	<b>3.69</b>	<b>5.65</b>	<b>5.46</b>	<b>6.60</b>	<b>2.12</b>		<b>Nov-94</b>
<i>CPI + 5% (Unadjusted)</i>			<u>2.42</u>	<u>4.63</u>	<u>6.95</u>	<u>7.30</u>	<u>6.54</u>	<u>6.88</u>		<i>Nov-94</i>
Over/Under			1.52	-0.94	-1.30	-1.84	0.06	-4.76		
<b>Public Real Assets</b>	<b>935,544,125</b>	<b>5.40</b>	<b>5.89</b>	<b>2.08</b>	<b>3.51</b>	<b>2.71</b>			<b>1.20</b>	<b>Jun-14</b>
<i>Public Real Assets Blend</i>			<u>6.55</u>	<u>1.55</u>	<u>4.15</u>	<u>3.03</u>			<u>-0.83</u>	<i>Jun-14</i>
Over/Under			-0.66	0.53	-0.64	-0.32			2.03	
<b>Private Real Estate</b>	<b>787,660,871</b>	<b>4.55</b>	<b>1.83</b>	<b>5.61</b>	<b>8.13</b>	<b>8.16</b>	<b>9.79</b>	<b>3.64</b>		<b>Oct-94</b>
<i>Real Estate Blend</i>			<u>1.62</u>	<u>5.99</u>	<u>8.38</u>	<u>8.83</u>	<u>11.02</u>	<u>9.62</u>		<i>Oct-94</i>
Over/Under			0.21	-0.38	-0.25	-0.67	-1.23	-5.98		
<b>Private Equity</b>	<b>1,863,771,883</b>	<b>10.76</b>	<b>-1.08</b>	<b>8.17</b>	<b>11.29</b>	<b>12.20</b>	<b>10.74</b>	<b>12.58</b>		<b>Nov-95</b>
<i>Private Equity Blend</i>			<u>14.85</u>	<u>7.03</u>	<u>12.01</u>	<u>16.85</u>	<u>13.64</u>	<u>19.81</u>		<i>Nov-95</i>
Over/Under			-15.93	1.14	-0.72	-4.65	-2.90	-7.23		
<b>Cash</b>	<b>105,314,594</b>	<b>0.61</b>								



Note - See appendix for blended benchmark definitions.

## Los Angeles City Employees' Retirement System

# TOTAL FUND RISK STATISTICS (NET)

### 3 Years Ending March 31, 2019

	% of Total MV (%)	Annualized Return (%)	Rank	Annualized Standard Deviation	Rank	Annualized Alpha Jensen (%)	Rank	Information Ratio	Rank	Sortino Ratio RF	Rank	Tracking Error	Rank
LACERS Master Trust	100.00%	8.60%	77	6.03%	49	0.32%	60	-0.58	--	1.17	59	1.03%	57
U.S. Equity	25.76%	13.34%	34	11.35%	47	-0.41%	33	-0.22	--	0.93	44	0.65%	11
Non-U.S. Equity	30.16%	8.18%	36	10.72%	61	0.03%	39	0.08	31	0.89	29	1.13%	10
Developed ex-U.S.	22.60%	7.43%	--	10.68%	--	0.09%	--	0.10	--	0.76	--	1.49%	--
Emerging Markets	7.56%	10.36%	--	13.21%	--	-0.42%	--	-0.27	--	1.12	--	1.17%	--
Core Fixed Income	17.17%	2.38%	65	2.82%	63	0.40%	65	0.87	44	0.57	70	0.40%	11
Credit Opportunities	5.46%	7.12%	--	4.30%	--	-0.10%	--	-0.47	--	2.65	--	1.03%	--
Real Assets	10.07%	5.46%	--	2.30%	--	-0.77%	--	-0.84	--	3.53	--	2.20%	--
Public Real Assets	5.40%	2.71%	--	4.45%	--	0.00%	--	-0.19	--	0.69	--	1.72%	--
Private Real Estate	4.55%	8.16%	31	1.50%	42	8.83%	7	-0.16	--	24.39	28	4.24%	91
Private Equity	10.76%	12.20%	64	4.12%	16	11.42%	34	-0.38	--	9.18	48	12.13%	87

### 5 Years Ending March 31, 2019

	% of Total MV (%)	Annualized Return (%)	Rank	Annualized Standard Deviation	Rank	Annualized Alpha Jensen (%)	Rank	Information Ratio	Rank	Sortino Ratio RF	Rank	Tracking Error	Rank
LACERS Master Trust	100.00%	6.18%	79	6.61%	53	0.42%	34	-0.23	--	1.11	52	1.08%	57
U.S. Equity	25.76%	10.04%	30	11.67%	39	-0.44%	29	-0.49	--	0.97	30	0.65%	8
Non-U.S. Equity	30.16%	3.27%	43	11.83%	69	0.74%	41	0.55	21	0.34	36	1.28%	6
Developed ex-U.S.	22.60%	3.09%	--	11.55%	--	0.81%	--	0.50	--	0.31	--	1.54%	--
Emerging Markets	7.56%	3.05%	--	15.56%	--	-0.68%	--	-0.41	--	0.26	--	1.52%	--
Core Fixed Income	17.17%	2.85%	52	2.74%	60	0.23%	72	0.22	41	1.22	44	0.50%	17
Real Assets	10.07%	6.60%	--	2.39%	--	3.58%	--	0.03	--	6.07	--	2.43%	--
Private Real Estate	4.55%	9.79%	48	1.85%	26	11.25%	6	-0.23	--	31.74	28	5.44%	91
Private Equity	10.76%	10.74%	73	3.92%	6	10.09%	40	-0.24	--	8.71	62	12.25%	81

Sortino Ratio RF = Sortino Ratio Risk Free. The risk free rate is the Citi 91 Day T-Bill Index.



# PRIVATE MARKETS PERFORMANCE AS OF DECEMBER 31, 2018

Private Equity	10 Year IRR	Since Inception IRR	Since Inception Multiple
Aggregate Portfolio	12.7%	11.1%	1.54x
Core Portfolio	13.5%	11.7%	1.57x
Specialized Portfolio	4.2%	2.0%	1.12x
Russell 3000 + 300 bps	16.2%	11.4%	N/A

Real Estate*	10 Year Return (Net)	Since Inception Return (Net)
Total Portfolio (TWR) <sup>1</sup>	3.93%	5.99%
NFI-ODCE + 80 basis points (TWR)	6.81%	7.16%

Note: The Total Value to Paid-In Ratio (TVPI) is a multiple that relates the current value of the private equity portfolio plus all distributions received to date with the total amount of capital contributed.

1 - IRR is not available for the Real Estate portfolio and therefore only time weighted returns (TWR) are reported.

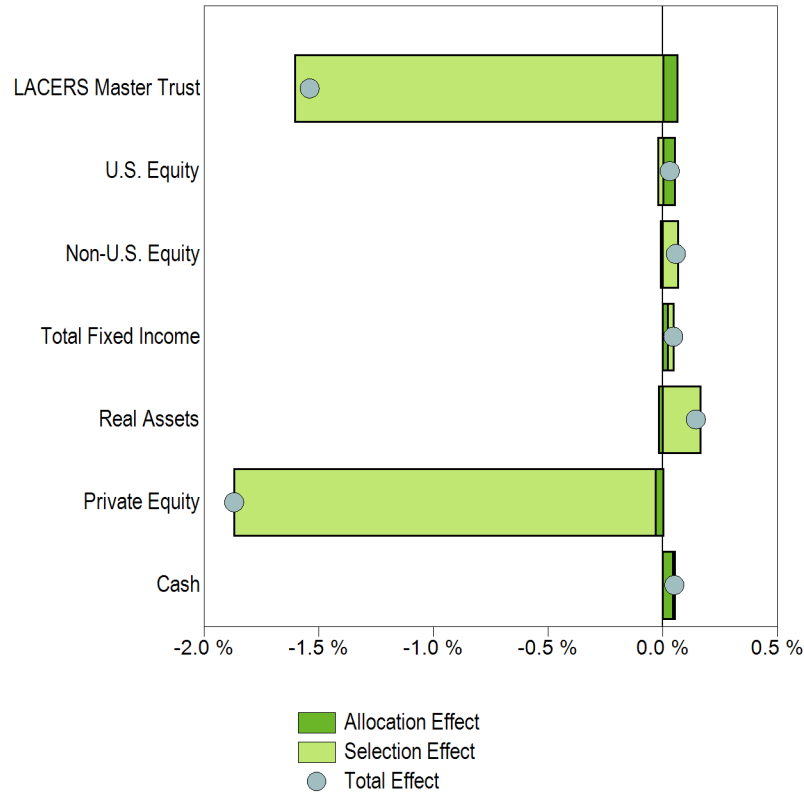
\*Data is considered preliminary.



# Los Angeles City Employees' Retirement System

## TOTAL FUND ATTRIBUTION ANALYSIS (NET)

### Attribution Effects 3 Months Ending March 31, 2019



Attribution Summary 3 Months Ending March 31, 2019							
	Policy Weight	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
U.S. Equity	24.00%	13.96%	14.04%	-0.08%	-0.02%	0.05%	0.03%
Non-U.S. Equity	29.00%	10.54%	10.31%	0.22%	0.06%	-0.01%	0.06%
Total Fixed Income	24.00%	3.91%	3.82%	0.09%	0.02%	0.02%	0.05%
Real Assets	10.00%	3.94%	2.42%	1.52%	0.16%	-0.02%	0.14%
Private Equity	12.00%	-1.08%	14.85%	-15.94%	-1.84%	-0.03%	-1.87%
Cash	1.00%	1.86%	0.59%	1.27%	0.01%	0.04%	0.05%
<b>Total</b>	<b>100.00%</b>	<b>7.73%</b>	<b>9.27%</b>	<b>-1.54%</b>	<b>-1.60%</b>	<b>0.06%</b>	<b>-1.54%</b>

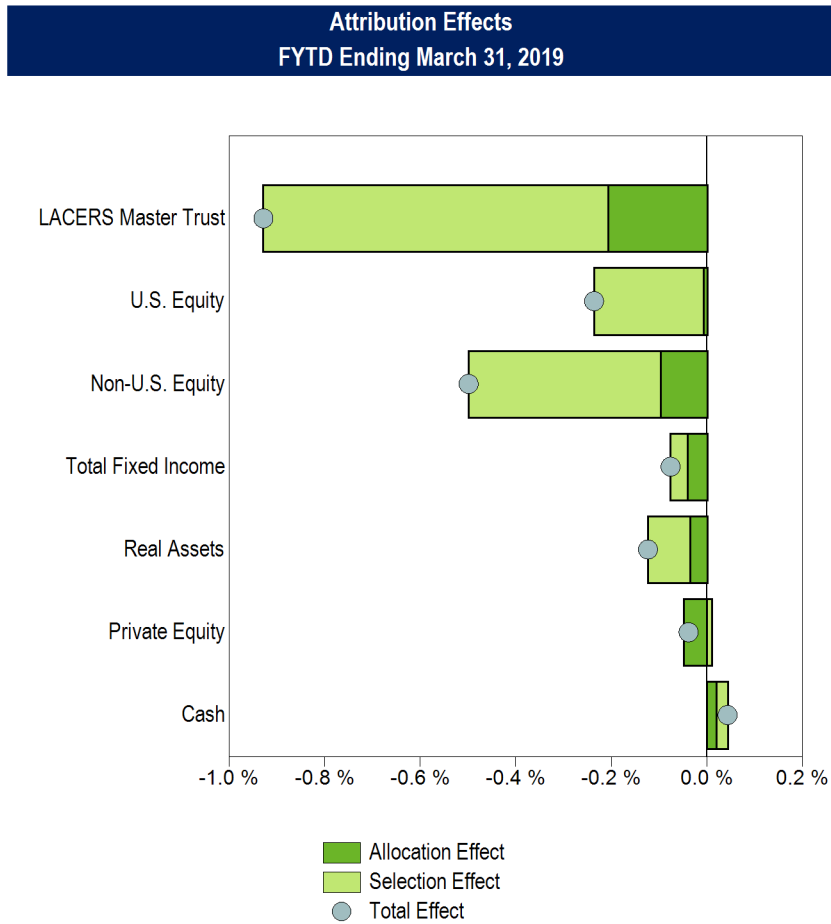
Wtd. = Weighted

Note: Policy Target Asset Allocation does not reflect the new target asset allocation adopted on April 10, 2018. Implementation of the new asset allocation is currently in progress.



# Los Angeles City Employees' Retirement System

## TOTAL FUND ATTRIBUTION ANALYSIS (NET)



**Attribution Summary**  
FYTD Ending March 31, 2019

	Policy Wtd. Weight	Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
U.S. Equity	24.00%	3.78%	4.69%	-0.91%	-0.23%	-0.01%	-0.24%
Non-U.S. Equity	29.00%	-2.95%	-1.64%	-1.31%	-0.40%	-0.10%	-0.50%
Total Fixed Income	24.00%	4.81%	4.95%	-0.14%	-0.04%	-0.04%	-0.08%
Real Assets	10.00%	3.69%	4.63%	-0.95%	-0.09%	-0.04%	-0.12%
Private Equity	12.00%	8.17%	7.03%	1.13%	0.01%	-0.05%	-0.04%
Cash	1.00%	5.99%	1.68%	4.31%	0.02%	0.02%	0.04%
<b>Total</b>	<b>100.00%</b>	<b>2.45%</b>	<b>3.38%</b>	<b>-0.93%</b>	<b>-0.72%</b>	<b>-0.21%</b>	<b>-0.93%</b>

Wtd. = Weighted

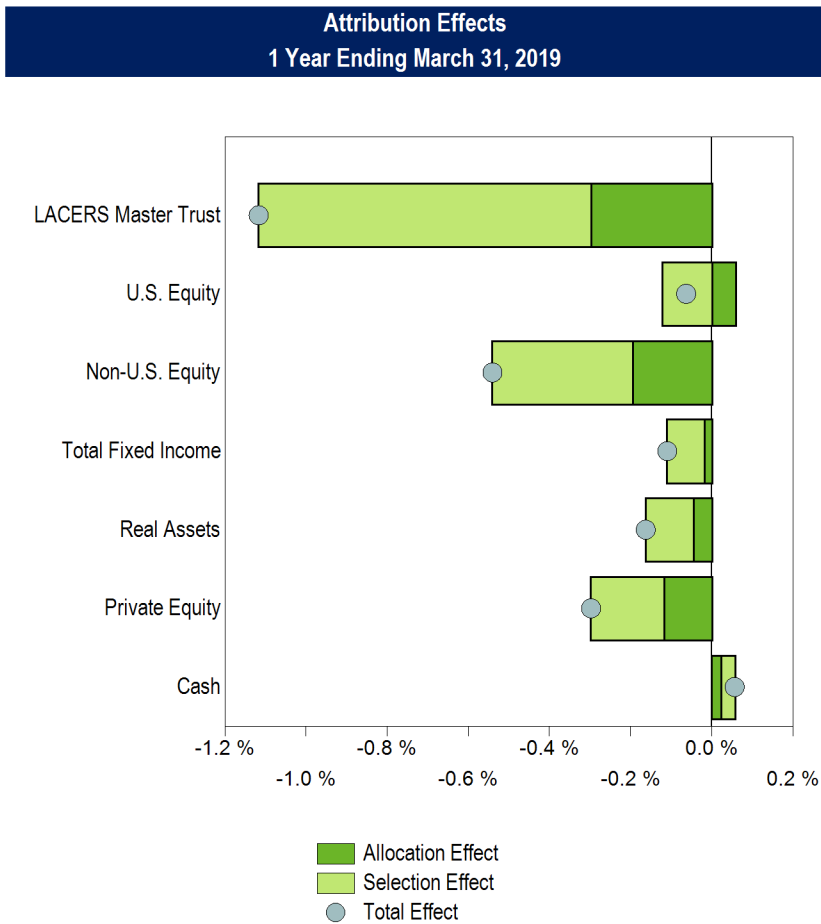
Note: Policy Target Asset Allocation does not reflect the new target asset allocation adopted on April 10, 2018. Implementation of the new asset allocation is currently in progress.





# Los Angeles City Employees' Retirement System

## TOTAL FUND ATTRIBUTION ANALYSIS (NET)



Attribution Summary							
1 Year Ending March 31, 2019							
	Policy Weight	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
U.S. Equity	24.00%	8.25%	8.77%	-0.52%	-0.12%	0.06%	-0.06%
Non-U.S. Equity	29.00%	-5.32%	-4.22%	-1.11%	-0.34%	-0.20%	-0.54%
Total Fixed Income	24.00%	4.30%	4.69%	-0.39%	-0.09%	-0.02%	-0.11%
Real Assets	10.00%	5.65%	6.95%	-1.30%	-0.12%	-0.05%	-0.16%
Private Equity	12.00%	11.29%	12.01%	-0.72%	-0.18%	-0.12%	-0.30%
Cash	1.00%	8.37%	2.15%	6.22%	0.03%	0.02%	0.06%
<b>Total</b>	<b>100.00%</b>	<b>3.19%</b>	<b>4.30%</b>	<b>-1.12%</b>	<b>-0.82%</b>	<b>-0.30%</b>	<b>-1.12%</b>

Wtd. = Weighted

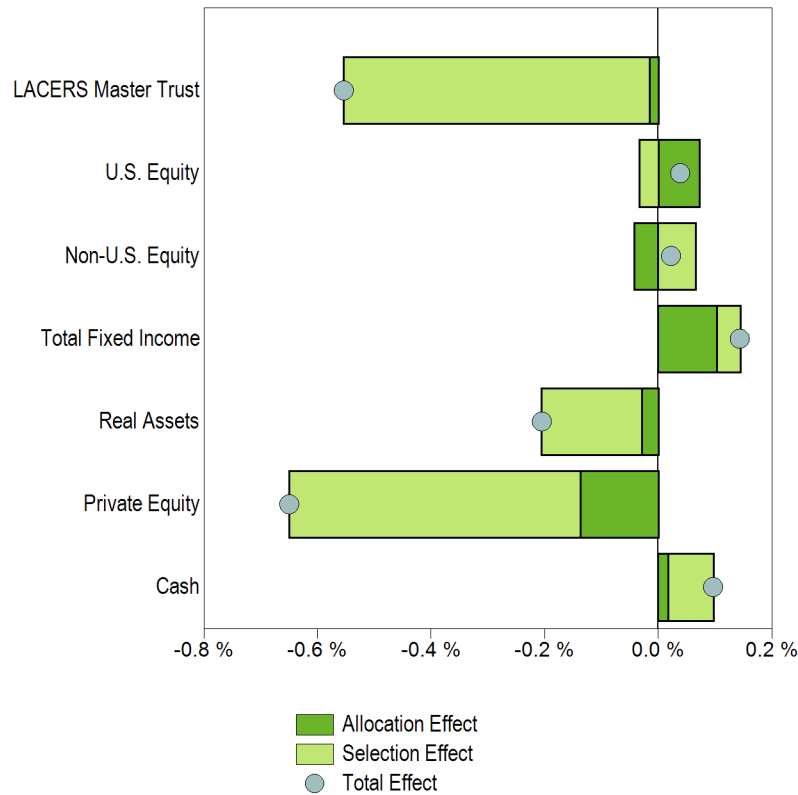
Note: Policy Target Asset Allocation does not reflect the new target asset allocation adopted on April 10, 2018. Implementation of the new asset allocation is currently in progress.



# Los Angeles City Employees' Retirement System

## TOTAL FUND ATTRIBUTION ANALYSIS (NET)

### Attribution Effects 3 Years Ending March 31, 2019



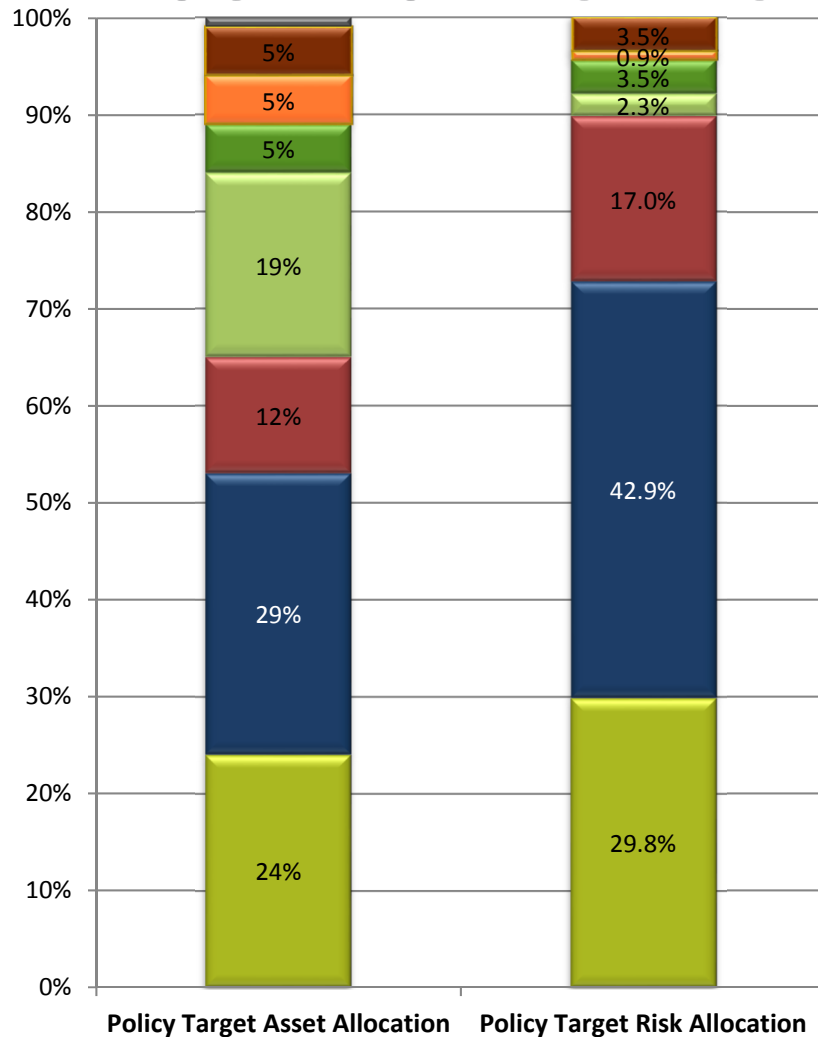
Attribution Summary 3 Years Ending March 31, 2019							
	Policy Weight	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
U.S. Equity	24.00%	13.34%	13.48%	-0.14%	-0.03%	0.07%	0.04%
Non-U.S. Equity	29.00%	8.18%	8.09%	0.09%	0.06%	-0.04%	0.02%
Total Fixed Income	24.00%	3.36%	3.18%	0.18%	0.04%	0.10%	0.14%
Real Assets	10.00%	5.46%	7.30%	-1.84%	-0.18%	-0.03%	-0.20%
Private Equity	12.00%	12.20%	16.85%	-4.66%	-0.51%	-0.14%	-0.65%
Cash	1.00%	7.60%	1.23%	6.37%	0.08%	0.02%	0.10%
<b>Total</b>	<b>100.00%</b>	<b>8.64%</b>	<b>9.20%</b>	<b>-0.55%</b>	<b>-0.54%</b>	<b>-0.02%</b>	<b>-0.55%</b>

Wtd. = Weighted

Note: Policy Target Asset Allocation does not reflect the new target asset allocation adopted on April 10, 2018. Implementation of the new asset allocation is currently in progress.



# TOTAL FUND RISK ALLOCATION – ASSET ALLOCATION VS. RISK ALLOCATION



- Cash
- Private Real Estate
- Public Real Assets
- Credit Opportunities
- Core Fixed Income
- Private Equity
- Non-U.S. Equity
- U.S. Equity

- Public and Private Equity policy target asset allocation is 65%; accounts for 89.7% of the policy target portfolio risk.
- Core Fixed Income and Credit Opportunities policy allocation is 24%, accounting for 5.8% of the policy target portfolio risk.
- Real Assets (Private Real Estate and Public Real Assets) policy allocation is 10%, accounting for 4.4% of policy target portfolio risk.

Note: Policy Target Asset Allocation does not reflect the new target asset allocation adopted on April 10, 2018. Implementation of the new asset allocation is currently in progress.



# PUBLIC MARKETS RISK BUDGET COMPARISON AS OF MARCH 31, 2019

Public Markets Asset Class	Target Risk Budget	Actual 3 Yr Tracking Error
U.S. Equity	0.50%	0.65%
Non-U.S. Equity	1.20%	1.13%
Core Fixed Income	1.00%	0.40%
Credit Opportunities	1.50%	1.03%
Public Real Assets*	3.00%	1.72%

- Current LACERS public market asset class composite tracking error statistics are compared to asset class target risk budgets to ensure active risks are within expectations.
- Risk budgets are to be evaluated over three-year periods, at minimum, to reflect a full market cycle.
- All equity public markets asset classes are within an appropriately narrow range of their respective risk budgets.
- Both Core Fixed Income and Credit Opportunities have exhibited lower than expected active risk.
- The LACERS Public Real Assets composite is not at its target strategy allocation.
- Note: A new Target Risk Budget was approved by the Board on August 14, 2018, and is not reflected in the table above. Implementation of the new asset allocation is in progress.

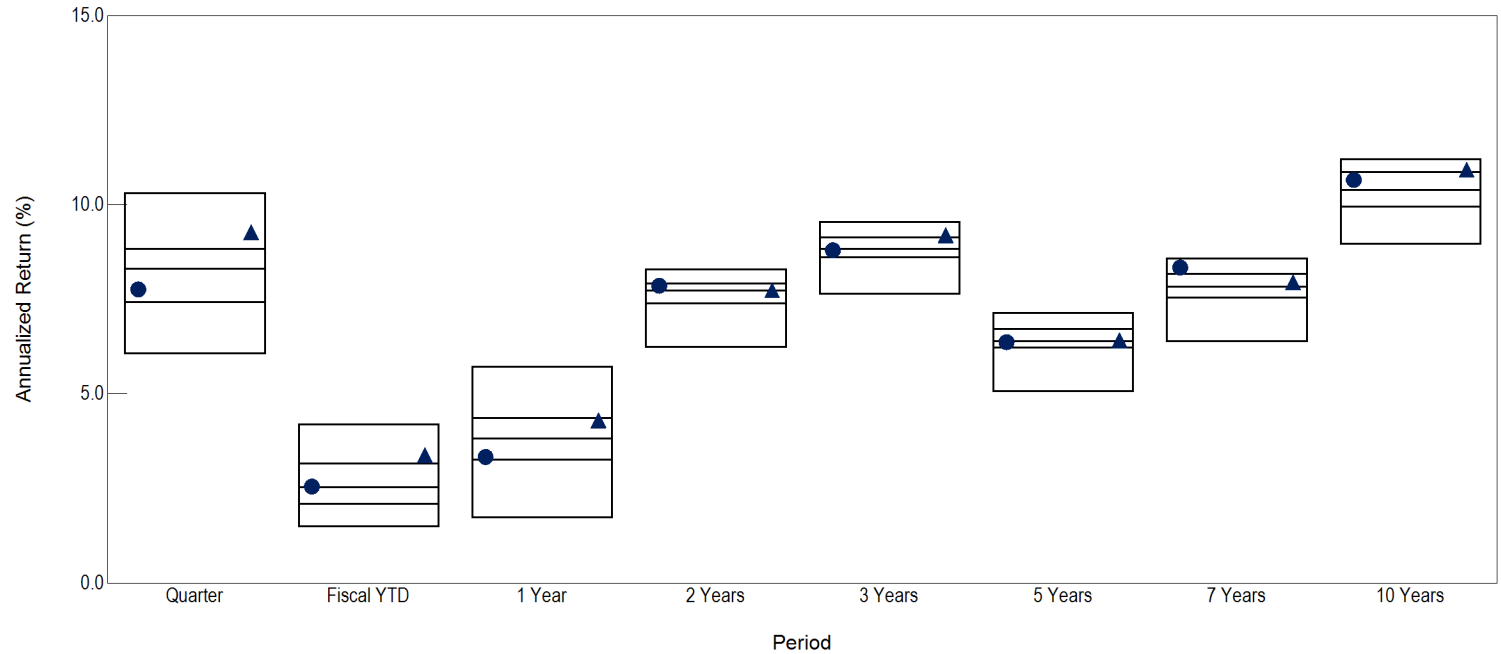
\* The benchmark for the Public Real Assets composite is a custom policy benchmark that is comprised of the target weights of the public real asset components. The public real asset benchmark weights are 60% TIPS, 20% Commodities, 10% REITs, and 10% MLPs.



# Los Angeles City Employees' Retirement System

## TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

LACERS Master Trust vs. InvestorForce Public DB \$5-50B Gross



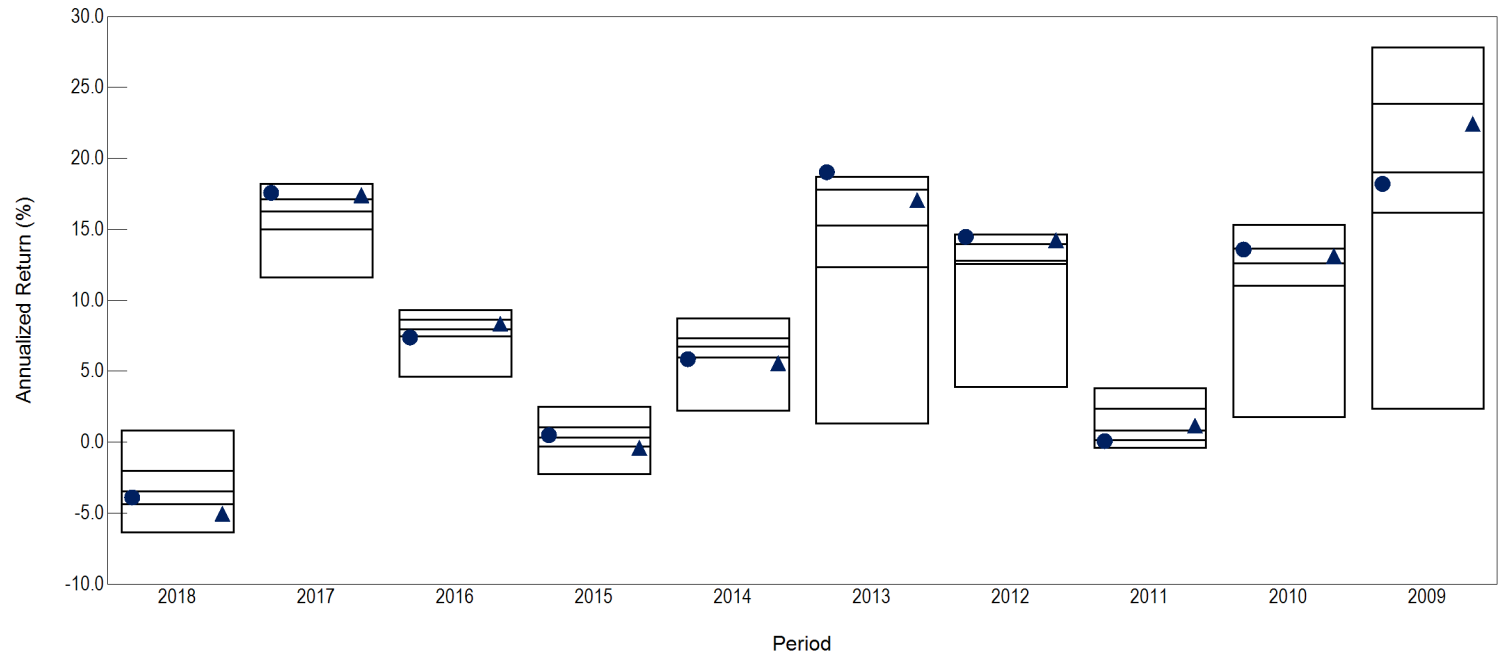
	Return (Rank)															
5th Percentile	10.31	4.19	5.71	8.29	9.55	7.13	8.58	11.21								
25th Percentile	8.86	3.18	4.37	7.93	9.16	6.74	8.19	10.89								
Median	8.33	2.55	3.83	7.76	8.86	6.41	7.86	10.41								
75th Percentile	7.45	2.11	3.28	7.41	8.63	6.24	7.57	9.97								
95th Percentile	6.09	1.51	1.76	6.26	7.66	5.09	6.41	8.99								
# of Portfolios	16	15	15	15	15	15	14	13								
● LACERS Master Trust	7.76	(67)	2.55	(50)	3.33	(72)	7.86	(29)	8.80	(58)	6.37	(58)	8.34	(16)	10.65	(42)
▲ Policy Index	9.27	(11)	3.38	(20)	4.30	(39)	7.74	(56)	9.19	(19)	6.42	(49)	7.96	(43)	10.93	(13)



# Los Angeles City Employees' Retirement System

## TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

LACERS Master Trust vs. InvestorForce Public DB \$5-50B Gross



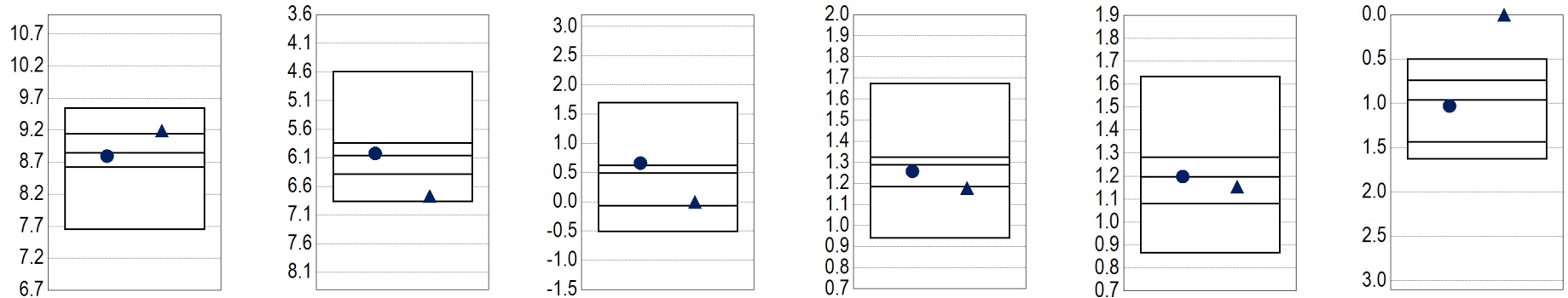
	Return (Rank)																			
5th Percentile	0.81	18.21	9.30	2.50	8.72	18.69	14.65	3.83	15.32	27.83										
25th Percentile	-1.99	17.15	8.68	1.12	7.38	17.86	14.01	2.41	13.67	23.91										
Median	-3.40	16.29	7.99	0.35	6.79	15.31	12.83	0.86	12.66	19.07										
75th Percentile	-4.32	15.05	7.51	-0.24	6.04	12.36	12.58	0.21	11.06	16.24										
95th Percentile	-6.33	11.68	4.65	-2.20	2.25	1.36	3.92	-0.37	1.83	2.42										
# of Portfolios	25	46	30	24	24	23	16	16	15	15										
● LACERS Master Trust	-3.89	(67)	17.57	(12)	7.38	(78)	0.49	(41)	5.85	(81)	19.03	(4)	14.47	(7)	0.08	(89)	13.58	(29)	18.21	(67)
▲ Policy Index	-5.04	(84)	17.41	(14)	8.35	(41)	-0.39	(77)	5.58	(87)	17.06	(31)	14.23	(21)	1.17	(44)	13.11	(34)	22.44	(38)



# TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

## LACERS Master Trust vs. InvestorForce Public DB \$5-50B Gross 3 Years

Annualized Return (%)	Annualized Standard Deviation	Annualized Alpha (%)	Sharpe Ratio	Sortino Ratio Risk Free	Tracking Error
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Annualized Return (%)		Annualized Standard Deviation		Annualized Alpha (%)		Sharpe Ratio		Sortino Ratio Risk Free		Tracking Error	
● LACERS Master Trust	Value 8.80	● LACERS Master Trust	Value 6.02	● LACERS Master Trust	Value 0.66	● LACERS Master Trust	Value 1.26	● LACERS Master Trust	Value 1.20	● LACERS Master Trust	Value 1.03
	Rank 58		Rank 48		Rank 15		Rank 65		Rank 50		Rank 58
▲ Policy Index	Value 9.19	▲ Policy Index	Value 6.77	▲ Policy Index	Value 0.00	▲ Policy Index	Value 1.18	▲ Policy Index	Value 1.15	▲ Policy Index	Value 0.00
	Rank 19		Rank 94		Rank 74		Rank 79		Rank 62		Rank 1
Universe		Universe		Universe		Universe		Universe		Universe	
5th %tile	9.55	5th %tile	4.59	5th %tile	1.69	5th %tile	1.67	5th %tile	1.63	5th %tile	0.50
25th %tile	9.16	25th %tile	5.83	25th %tile	0.63	25th %tile	1.33	25th %tile	1.28	25th %tile	0.73
Median	8.86	Median	6.05	Median	0.50	Median	1.29	Median	1.20	Median	0.95
75th %tile	8.63	75th %tile	6.38	75th %tile	-0.05	75th %tile	1.19	75th %tile	1.08	75th %tile	1.43
95th %tile	7.66	95th %tile	6.85	95th %tile	-0.50	95th %tile	0.94	95th %tile	0.87	95th %tile	1.62

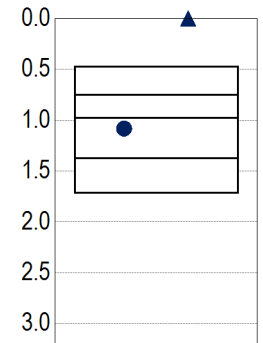
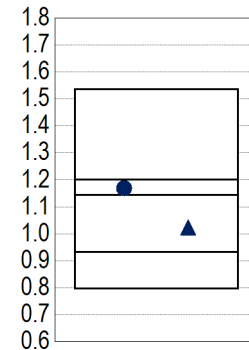
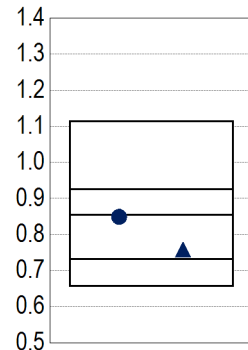
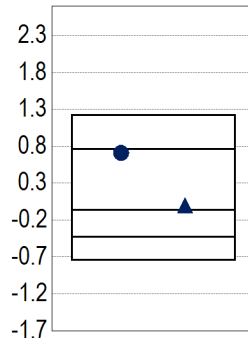
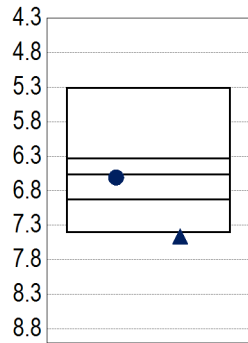
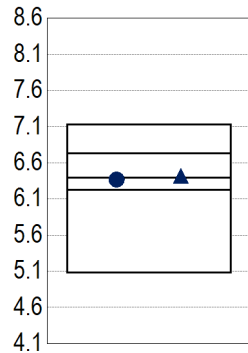
Sortino Ratio RF = Sortino Ratio Risk Free. The risk free rate is the Citi 91 Day T-Bill Index.



# TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

## LACERS Master Trust vs. InvestorForce Public DB \$5-50B Gross 5 Years

Annualized Return (%)	Annualized Standard Deviation	Annualized Alpha (%)	Sharpe Ratio	Sortino Ratio Risk Free	Tracking Error
-----------------------	-------------------------------	----------------------	--------------	-------------------------	----------------



● LACERS Master Trust  
Value 6.37  
Rank 58

▲ Policy Index  
Value 6.42  
Rank 49

● LACERS Master Trust  
Value 6.61  
Rank 53

▲ Policy Index  
Value 7.46  
Rank 97

● LACERS Master Trust  
Value 0.71  
Rank 29

▲ Policy Index  
Value 0.00  
Rank 47

● LACERS Master Trust  
Value 0.85  
Rank 58

▲ Policy Index  
Value 0.76  
Rank 72

● LACERS Master Trust  
Value 1.17  
Rank 29

▲ Policy Index  
Value 1.02  
Rank 57

● LACERS Master Trust  
Value 1.08  
Rank 58

▲ Policy Index  
Value 0.00  
Rank 1

Universe

5th %tile	7.13
25th %tile	6.74
Median	6.41
75th %tile	6.24
95th %tile	5.09

Universe

5th %tile	5.31
25th %tile	6.32
Median	6.55
75th %tile	6.92
95th %tile	7.39

Universe

5th %tile	1.22
25th %tile	0.77
Median	-0.05
75th %tile	-0.42
95th %tile	-0.73

Universe

5th %tile	1.11
25th %tile	0.93
Median	0.86
75th %tile	0.73
95th %tile	0.66

Universe

5th %tile	1.54
25th %tile	1.20
Median	1.15
75th %tile	0.94
95th %tile	0.80

Universe

5th %tile	0.47
25th %tile	0.75
Median	0.97
75th %tile	1.36
95th %tile	1.71

Sortino Ratio RF = Sortino Ratio Risk Free. The risk free rate is the Citi 91 Day T-Bill Index.

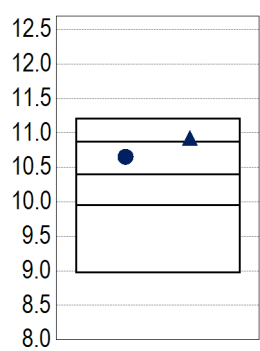




# TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

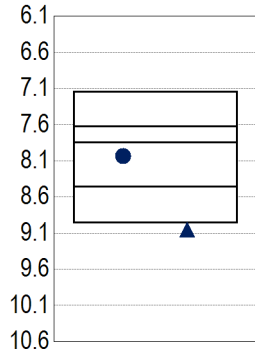
## LACERS Master Trust vs. InvestorForce Public DB \$5-50B Gross 10 Years

Annualized Return (%)	Annualized Standard Deviation	Annualized Alpha (%)	Sharpe Ratio	Sortino Ratio Risk Free	Tracking Error
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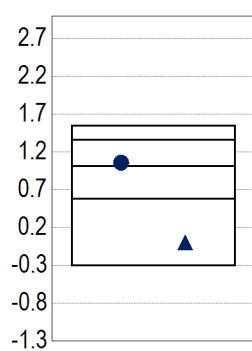
● LACERS Master Trust	Value	10.65
	Rank	42
▲ Policy Index	Value	10.93
	Rank	13

Universe	
5th %tile	11.21
25th %tile	10.89
Median	10.41
75th %tile	9.97
95th %tile	8.99



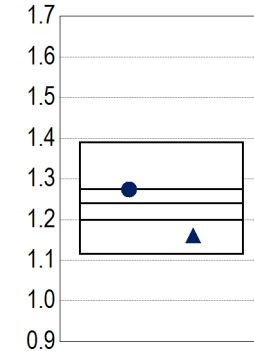
● LACERS Master Trust	Value	8.03
	Rank	68
▲ Policy Index	Value	9.05
	Rank	97

Universe	
5th %tile	7.15
25th %tile	7.61
Median	7.83
75th %tile	8.45
95th %tile	8.95



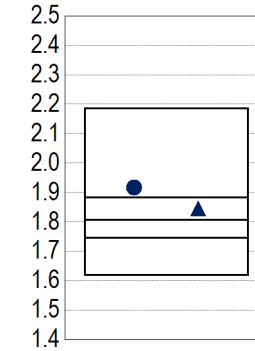
● LACERS Master Trust	Value	1.06
	Rank	41
▲ Policy Index	Value	0.00
	Rank	90

Universe	
5th %tile	1.54
25th %tile	1.37
Median	1.02
75th %tile	0.59
95th %tile	-0.29



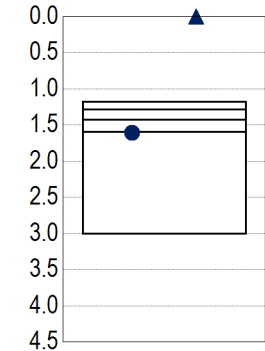
● LACERS Master Trust	Value	1.27
	Rank	26
▲ Policy Index	Value	1.16
	Rank	87

Universe	
5th %tile	1.39
25th %tile	1.28
Median	1.24
75th %tile	1.20
95th %tile	1.12



● LACERS Master Trust	Value	1.92
	Rank	17
▲ Policy Index	Value	1.85
	Rank	44

Universe	
5th %tile	2.19
25th %tile	1.89
Median	1.81
75th %tile	1.75
95th %tile	1.62



● LACERS Master Trust	Value	1.61
	Rank	80
▲ Policy Index	Value	0.00
	Rank	1

Universe	
5th %tile	1.18
25th %tile	1.28
Median	1.42
75th %tile	1.58
95th %tile	3.00

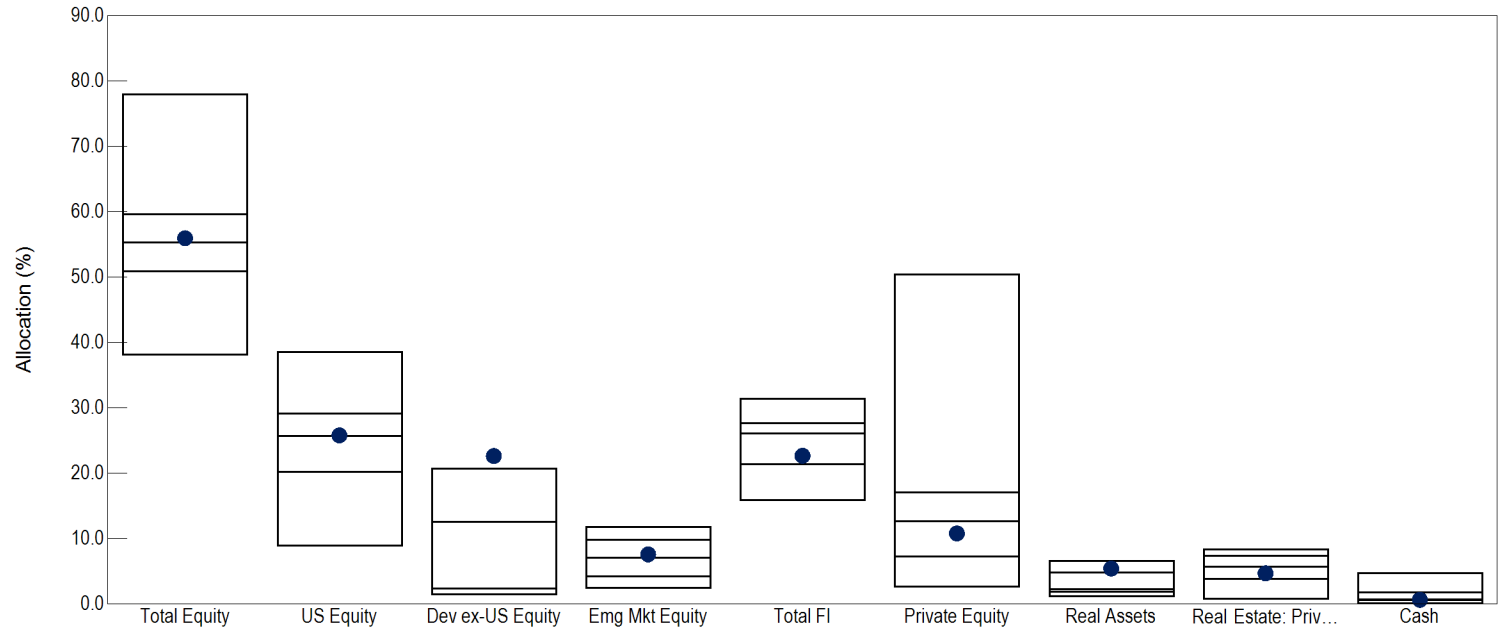
Sortino Ratio RF = Sortino Ratio Risk Free. The risk free rate is the Citi 91 Day T-Bill Index.



# Los Angeles City Employees' Retirement System

## TOTAL FUND ALLOCATION VS. PEER UNIVERSE

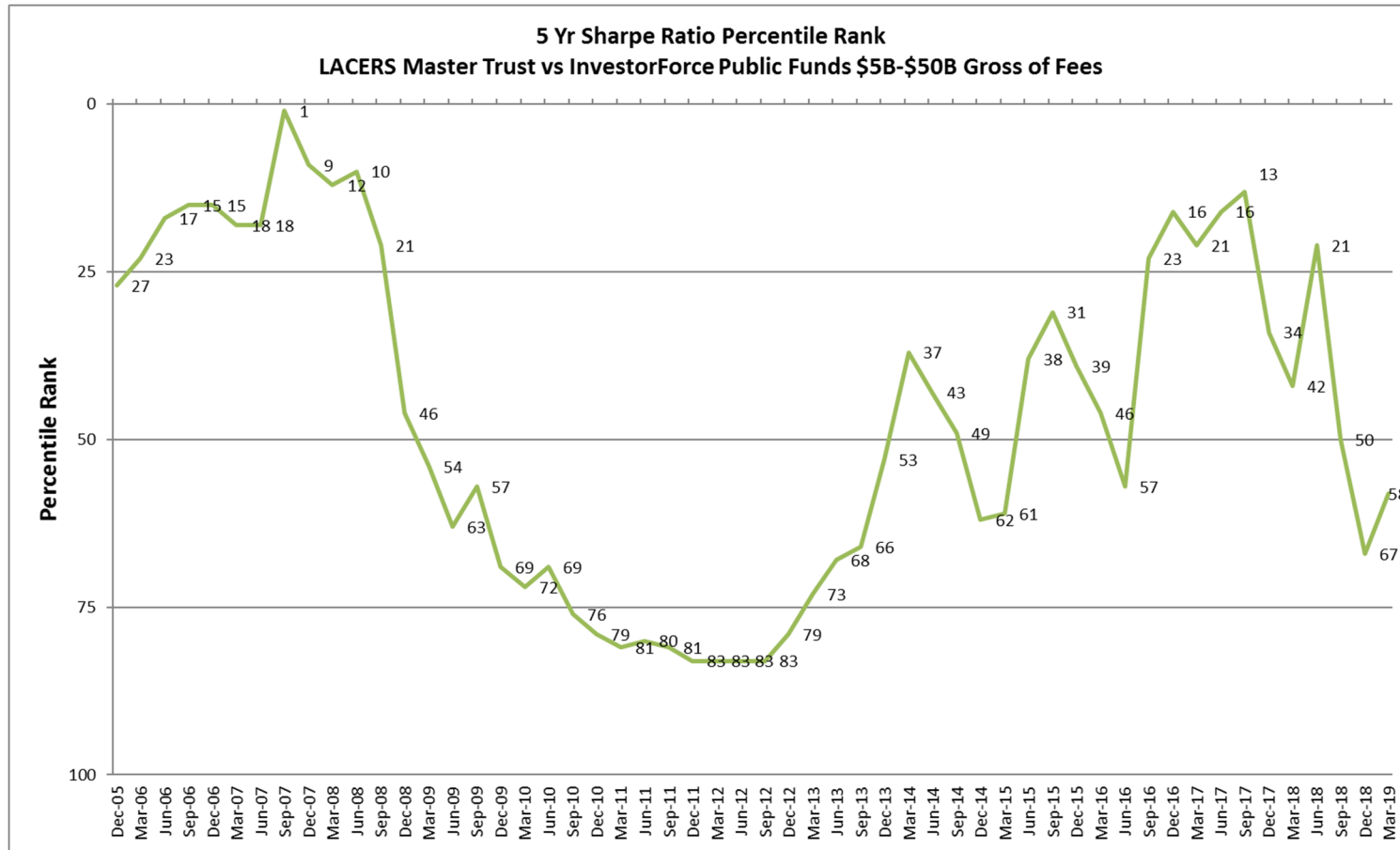
Total Plan Allocation vs. InvestorForce Public DB \$5-50B Gross



	Allocation (Rank)									
5th Percentile	77.89	38.52	20.71	11.73	31.39	50.40	6.60	8.31	4.67	
25th Percentile	59.66	29.21	12.67	9.86	27.72	17.12	4.92	7.42	1.82	
Median	55.40	25.76	2.45	7.11	26.15	12.69	2.32	5.75	0.76	
75th Percentile	51.01	20.24	2.45	4.26	21.46	7.31	2.00	3.94	0.67	
95th Percentile	38.24	8.97	1.54	2.56	15.98	2.69	1.28	0.82	0.20	
# of Portfolios	15	15	5	8	15	8	8	8	15	
● LACERS Master Trust	55.92 (43)	25.76 (50)	22.60 (1)	7.56 (43)	22.64 (72)	10.76 (58)	5.40 (19)	4.66 (69)	0.61 (86)	



# HISTORICAL RISK ADJUSTED RETURN UNIVERSE COMPARISON



- Total Plan ranks in the 58<sup>th</sup> percentile versus other large public plans on a Sharpe Ratio basis.
  - Overweight to non-U.S. equities with contributed positively to Sharpe Ratio rank.
  - Use of passive investment strategies within U.S. Equity has contributed to the overall Sharpe Ratio rank (higher than median).
  - Core Fixed Income contributed negatively to Sharpe Ratio rank.



# U.S. EQUITY

NEPC, LLC

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## Los Angeles City Employees' Retirement System

# U.S. EQUITY (GROSS)

	Market Value (\$)	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>U.S. Equity</b>	<b>4,461,289,894</b>	<b>13.98</b>	<b>3.84</b>	<b>8.32</b>	<b>13.42</b>	<b>10.14</b>	<b>15.99</b>	<b>10.41</b>	<b>Oct-94</b>
U.S. Equity Blend		<u>14.04</u>	<u>4.69</u>	<u>8.77</u>	<u>13.48</u>	<u>10.35</u>	<u>16.00</u>	<u>9.34</u>	Oct-94
Over/Under		-0.06	-0.85	-0.45	-0.06	-0.21	-0.01	1.07	
Aronson, Johnson & Ortiz	177,765,143	10.38	-1.48	0.11	8.92	6.05	13.80	8.28	Oct-01
Russell 1000 Value		<u>11.93</u>	<u>4.45</u>	<u>5.67</u>	<u>10.45</u>	<u>7.72</u>	<u>14.52</u>	<u>7.79</u>	Oct-01
Over/Under		-1.55	-5.93	-5.56	-1.53	-1.67	-0.72	0.49	
Rhumblin Advisors Russell 2000	259,740,899	14.54	-5.21	2.12	12.89			6.66	Apr-15
Russell 2000		<u>14.58</u>	<u>-5.29</u>	<u>2.05</u>	<u>12.92</u>			<u>6.77</u>	Apr-15
Over/Under		-0.04	0.08	0.07	-0.03			-0.11	
Rhumblin Advisors Russell 2000 Growth <sup>1</sup>	137,136,770	17.09	-3.10	3.89	14.82			8.61	Jan-15
Russell 2000 Growth		<u>17.14</u>	<u>-3.15</u>	<u>3.85</u>	<u>14.87</u>			<u>8.69</u>	Jan-15
Over/Under		-0.05	0.05	0.04	-0.05			-0.08	
Rhumblin Advisors Russell 2000 Value <sup>1</sup>	102,580,634	11.91	-7.40	0.27	10.83			13.42	Mar-16
Russell 2000 Value		<u>11.93</u>	<u>-7.51</u>	<u>0.17</u>	<u>10.86</u>			<u>13.44</u>	Mar-16
Over/Under		-0.02	0.11	0.10	-0.03			-0.02	
EAM Investors	128,204,734	19.00	1.82	15.82	20.22			13.69	Sep-15
Russell 2000 Growth		<u>17.14</u>	<u>-3.15</u>	<u>3.85</u>	<u>14.87</u>			<u>12.44</u>	Sep-15
Over/Under		1.86	4.97	11.97	5.35			1.25	
PanAgora	113,401,249	11.39	-9.60	-2.83	7.66	5.57	16.76	6.54	Feb-06
Russell 2000 Value		<u>11.93</u>	<u>-7.51</u>	<u>0.17</u>	<u>10.86</u>	<u>5.59</u>	<u>14.12</u>	<u>6.22</u>	Feb-06
Over/Under		-0.54	-2.09	-3.00	-3.20	-0.02	2.64	0.32	
Principal Global Investors	166,705,762	19.86	9.51	13.62	16.33			13.18	Aug-14
Russell MidCap		<u>16.54</u>	<u>3.55</u>	<u>6.47</u>	<u>11.81</u>			<u>9.03</u>	Aug-14
Over/Under		3.32	5.96	7.15	4.52			4.15	
Rhumblin Advisors S&P 500	3,167,658,535	13.58	5.83	9.46	13.45	10.87	15.94	9.69	Feb-93
S&P 500		<u>13.65</u>	<u>5.86</u>	<u>9.50</u>	<u>13.51</u>	<u>10.91</u>	<u>15.92</u>	<u>9.53</u>	Feb-93
Over/Under		-0.07	-0.03	-0.04	-0.06	-0.04	0.02	0.16	
Rhumblin Advisors Russell 1000 Growth <sup>1</sup>	208,090,873	16.06	6.61	12.74	16.50	13.44		15.30	Jun-13
Russell 1000 Growth		<u>16.10</u>	<u>6.61</u>	<u>12.75</u>	<u>16.53</u>	<u>13.50</u>		<u>15.36</u>	Jun-13
Over/Under		-0.04	0.00	-0.01	-0.03	-0.06		-0.06	
Escrow Account	5,295								

1- Portfolio has a mid-month inception date. Since inception return is calculated from the first full month of performance.

- U.S. Equity Blend = Russell 3000 from 1/1/2000 to present; 33.75% S&P 500/ 35% Russell 1000 Value/ 12.50% Russell 1000 Growth/ 12.50% Russell 2000 Value/ 6.25% Russell 2000 Growth prior to

eA = eVestment Alliance



## Los Angeles City Employees' Retirement System

# U.S. EQUITY (NET)

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>U.S. Equity</b>	<b>4,461,289,894</b>	<b>100.00</b>	<b>13.96</b>	<b>61</b>	<b>3.78</b>	<b>37</b>	<b>8.25</b>	<b>30</b>	<b>13.34</b>	<b>34</b>	<b>10.04</b>	<b>30</b>	<b>15.82</b>	<b>20</b>		<b>Oct-94</b>
U.S. Equity Blend			<u>14.04</u>	53	<u>4.69</u>	23	<u>8.77</u>	25	<u>13.48</u>	28	<u>10.35</u>	9	<u>16.00</u>	12		Oct-94
Over/Under			-0.08		-0.91		-0.52		-0.14		-0.31		-0.18			
InvestorForce Public DB > \$1 Billion US Equity Net Median			14.07		3.06		6.91		13.05		9.31		15.30			Oct-94
Aronson, Johnson & Ortiz	177,765,143	3.98	10.31	80	-1.69	85	-0.17	83	8.61	83	5.72	83	13.48	66	7.99	Oct-01
Russell 1000 Value			<u>11.93</u>	41	<u>4.45</u>	27	<u>5.67</u>	30	<u>10.45</u>	46	<u>7.72</u>	42	<u>14.52</u>	37	<u>7.79</u>	Oct-01
Over/Under			-1.62		-6.14		-5.84		-1.84		-2.00		-1.04		0.20	
eV US Large Cap Value Equity Net Median			11.53		2.12		3.65		10.32		7.39		13.95		8.18	Oct-01
Rhumblin Advisors Russell 2000 <sup>1</sup>	259,740,899	5.82	14.54	43	-5.22	52	2.11	45	12.88	38					6.66	Apr-15
Russell 2000			<u>14.58</u>	42	<u>-5.29</u>	52	<u>2.05</u>	45	<u>12.92</u>	38					<u>6.77</u>	Apr-15
Over/Under			-0.04		0.07		0.06		-0.04						-0.11	
eV US Small Cap Equity Net Median			13.85		-5.04		1.04		11.41						6.46	Apr-15
Rhumblin Advisors Russell 2000 <sup>1</sup> Growth	137,136,770	3.07	17.09	52	-3.11	73	3.88	77	14.82	67					8.61	Jan-15
Russell 2000 Growth			<u>17.14</u>	52	<u>-3.15</u>	73	<u>3.85</u>	77	<u>14.87</u>	67					<u>8.69</u>	Jan-15
Over/Under			-0.05		0.04		0.03		-0.05						-0.08	
eV US Small Cap Growth Equity Net Median			17.26		0.55		8.90		16.89						10.40	Jan-15
Rhumblin Advisors Russell 2000 <sup>1</sup> Value	102,580,634	2.30	11.90	67	-7.40	47	0.27	28	10.83	25					13.41	Mar-16
Russell 2000 Value			<u>11.93</u>	67	<u>-7.51</u>	48	<u>0.17</u>	29	<u>10.86</u>	25					<u>13.44</u>	Mar-16
Over/Under			-0.03		0.11		0.10		-0.03						-0.03	
eV US Small Cap Value Equity Net Median			12.59		-7.74		-2.27		8.94						11.49	Mar-16

1- Portfolio has a mid-month inception date. Since inception return is calculated from the first full month of performance.

- U.S. Equity Blend = Russell 3000 from 1/1/2000 to present; 33.75% S&P 500/ 35% Russell 1000 Value/ 12.50% Russell 1000 Growth/ 12.50% Russell 2000 Value/ 6.25% Russell 2000 Growth prior to

eA = eVestment Alliance



## Los Angeles City Employees' Retirement System

# U.S. EQUITY (NET)

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
EAM Investors	128,204,734	2.87	18.82	16	1.27	18	15.01	7	19.32	12					12.89	Sep-15
<i>Russell 2000 Growth</i>			<u>17.14</u>	22	<u>-3.15</u>	38	<u>3.85</u>	39	<u>14.87</u>	27					<u>12.44</u>	Sep-15
Over/Under			1.68		4.42		11.16		4.45						0.45	
<i>eV US Small Cap Equity Net Median</i>			13.85		-5.04		1.04		11.41						10.85	Sep-15
PanAgora	113,401,249	2.54	11.22	77	-10.06	75	-3.48	60	6.95	81	4.84	64	15.97	33	5.82	Feb-06
<i>Russell 2000 Value</i>			<u>11.93</u>	67	<u>-7.51</u>	48	<u>0.17</u>	29	<u>10.86</u>	25	<u>5.59</u>	43	<u>14.12</u>	68	<u>6.22</u>	Feb-06
Over/Under			-0.71		-2.55		-3.65		-3.91		-0.75		1.85		-0.40	
<i>eV US Small Cap Value Equity Net Median</i>			12.59		-7.74		-2.27		8.94		5.16		14.96		7.06	Feb-06
Principal Global Investors <sup>1</sup>	166,705,762	3.74	19.76	19	9.21	7	13.20	15	15.89	16					12.77	Aug-14
<i>Russell MidCap</i>			<u>16.54</u>	41	<u>3.55</u>	42	<u>6.47</u>	42	<u>11.81</u>	46					<u>9.03</u>	Aug-14
Over/Under			3.22		5.66		6.73		4.08						3.74	
<i>eV US Mid Cap Equity Net Median</i>			15.69		2.18		4.40		11.17						8.61	Aug-14
Rhumblin Advisors S&P 500	3,167,658,535	71.00	13.58	42	5.83	33	9.46	33	13.45	33	10.86	29	15.93	28		Feb-93
<i>S&amp;P 500</i>			<u>13.65</u>	41	<u>5.86</u>	33	<u>9.50</u>	33	<u>13.51</u>	31	<u>10.91</u>	28	<u>15.92</u>	28		Feb-93
Over/Under			-0.07		-0.03		-0.04		-0.06		-0.05		0.01			
<i>eV US Large Cap Equity Net Median</i>			13.03		4.04		7.03		11.91		9.28		14.89			Feb-93
Rhumblin Advisors Russell 1000 Growth	208,090,873	4.66	16.06	50	6.61	45	12.74	40	16.50	38	13.44	19			15.30	Jun-13
<i>Russell 1000 Growth</i>			<u>16.10</u>	49	<u>6.61</u>	45	<u>12.75</u>	40	<u>16.53</u>	38	<u>13.50</u>	19			<u>15.36</u>	Jun-13
Over/Under			-0.04		0.00		-0.01		-0.03		-0.06				-0.06	
<i>eV US Large Cap Growth Equity Net Median</i>			15.99		6.25		11.81		15.98		12.13				14.29	Jun-13
Escrow Account	5,295	0.00														

1- Portfolio has a mid-month inception date. Since inception return is calculated from the first full month of performance.

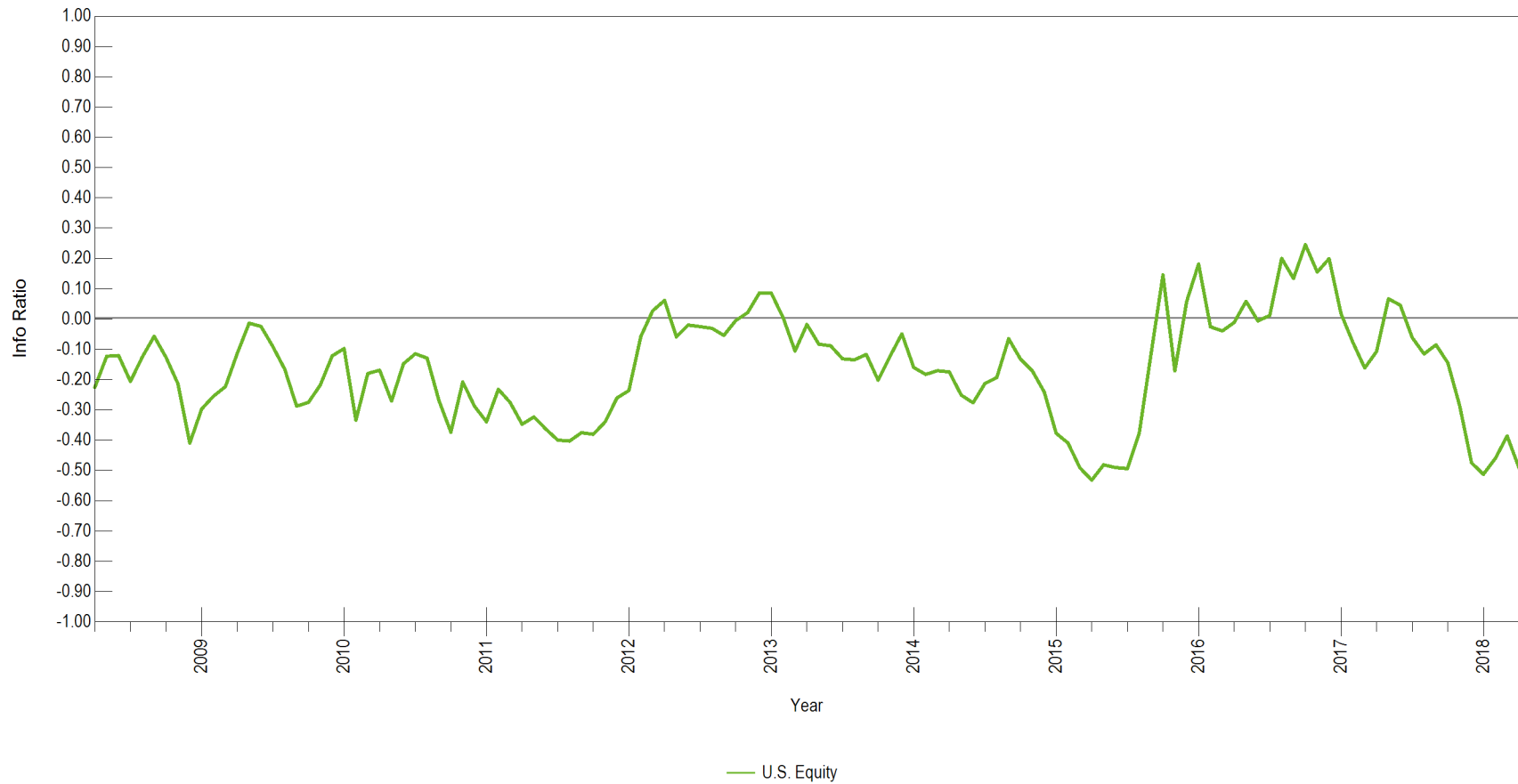
eA = eVestment Alliance



## Los Angeles City Employees' Retirement System

# U.S. EQUITY ROLLING 5 YEAR INFORMATION RATIO

Rolling 5 Year Information Ratio



\*Returns are net of fees.





# MANAGER REPORT CARD

U.S. Equity Managers	Inception Date	Mandate	Current Quarter (Net)		One Year (Net)		Three Years (Net)		Five Years (Net)		Since Inception (Net)	Annual Mgt Fee Paid \$ (000)	Comments
			Index	Universe	Index	Universe	Index	Universe	Index	Universe	Index		
AJO	Oct-01	Large Cap Value	*	*	*	*	*	*	*	*	✓	449.7	On Watch since July 2016 due to performance.
Principal Global Investors	Jul-14	Mid Cap	✓	✓	✓	✓	✓	✓	N/A	N/A	✓	563.0	Performance compliant with LACERS' Manager Monitoring Policy
EAM Investors	Sep-15	Small Cap Growth	✓	✓	✓	✓	✓	✓	N/A	N/A	✓	501.2	Performance compliant with LACERS' Manager Monitoring Policy
PanAgora	Feb-06	Small Cap Value	*	*	*	*	*	*	*	*	*	647.8	On Watch since November 2018 due to performance
Rhumblin (Passive)	Feb-93	S&P 500	*	✓	*	✓	*	✓	*	✓	✓✓	100.9	Performance compliant with LACERS' Manager Monitoring Policy
Rhumblin (Passive)	Jun-13	R1000 Growth	*	=	*	✓	*	✓	*	✓	*	8.8	Performance compliant with LACERS' Manager Monitoring Policy
Rhumblin (Passive)	Jun-15	R2000	*	*	*	*	*	*	N/A	N/A	*	11.9	Performance compliant with LACERS' Manager Monitoring Policy
Rhumblin (Passive)	Jun-15	R2000 Growth	*	*	✓	*	*	*	N/A	N/A	*	5.9	Performance compliant with LACERS' Manager Monitoring Policy
Rhumblin (Passive)	Feb-16	R2000 Value	*	*	✓	✓	*	✓	N/A	N/A	*	2.2	Performance compliant with LACERS' Manager Monitoring Policy

Note: Managers are placed on Watch List for concerns with organization, process and performance. Managers are normally on the Watch List for 12 months though may be longer if manager issues remain but not severe enough to warrant termination recommendation.

- Annual Management Fee Paid as of fiscal year ending June 30, 2018.
- \* Where net of fees performance is not available gross of fee returns are evaluated.

Legend	
✓	Outperformed
*	Underperformed
=	Equal to
✓✓	Gross Return



# NON-U.S. EQUITY

NEPC, LLC

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## Los Angeles City Employees' Retirement System

# NON-U.S. EQUITY (GROSS)

	Market Value (\$)	% of Portfolio	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Non-U.S. Equity</b>	<b>5,222,447,298</b>	<b>100.00</b>	<b>10.63</b>	<b>-2.67</b>	<b>-4.96</b>	<b>8.58</b>	<b>3.64</b>	<b>10.03</b>	<b>5.15</b>	<b>Nov-94</b>
MSCI ACWI ex USA			<u>10.31</u>	<u>-1.64</u>	<u>-4.22</u>	<u>8.09</u>	<u>2.57</u>	<u>8.85</u>	<u>5.17</u>	Nov-94
Over/Under			0.32	-1.03	-0.74	0.49	1.07	1.18	-0.02	
<b>Developed ex-U.S.</b>	<b>3,914,157,482</b>	<b>74.95</b>	<b>11.11</b>	<b>-3.45</b>	<b>-3.99</b>	<b>7.77</b>	<b>3.41</b>		<b>8.03</b>	<b>Jun-12</b>
MSCI EAFE			<u>9.98</u>	<u>-2.51</u>	<u>-3.71</u>	<u>7.27</u>	<u>2.33</u>		<u>7.01</u>	Jun-12
Over/Under			1.13	-0.94	-0.28	0.50	1.08		1.02	
AQR Capital	339,855,365	6.51	8.99	-9.88	-12.10	6.00	4.62		4.31	Feb-14
MSCI EAFE Small Cap			<u>10.65</u>	<u>-7.92</u>	<u>-9.36</u>	<u>7.50</u>	<u>4.47</u>		<u>4.29</u>	Feb-14
Over/Under			-1.66	-1.96	-2.74	-1.50	0.15		0.02	
Barrow Hanley <sup>1</sup>	506,842,175	9.71	10.78	-6.78	-8.08	5.53	0.98		1.91	Nov-13
MSCI EAFE Value			<u>7.92</u>	<u>-3.59</u>	<u>-6.13</u>	<u>6.90</u>	<u>0.67</u>		<u>1.11</u>	Nov-13
Over/Under			2.86	-3.19	-1.95	-1.37	0.31		0.80	
Lazard Asset Management <sup>1</sup>	587,280,012	11.25	11.41	-0.58	-2.23	7.15	4.12		4.54	Nov-13
MSCI EAFE			<u>9.98</u>	<u>-2.51</u>	<u>-3.71</u>	<u>7.27</u>	<u>2.33</u>		<u>2.59</u>	Nov-13
Over/Under			1.43	1.93	1.48	-0.12	1.79		1.95	
MFS Institutional Advisors	593,784,984	11.37	12.44	1.92	4.78	11.43	6.78		6.44	Oct-13
MSCI World ex USA Growth NR USD			<u>12.41</u>	<u>-1.33</u>	<u>-0.82</u>	<u>7.42</u>	<u>3.67</u>		<u>3.91</u>	Oct-13
Over/Under			0.03	3.25	5.60	4.01	3.11		2.53	
Oberweis Asset Mgmt <sup>1</sup>	161,567,405	3.09	16.33	-11.54	-12.65	7.48	6.28		6.82	Jan-14
MSCI EAFE Small Cap			<u>10.65</u>	<u>-7.92</u>	<u>-9.36</u>	<u>7.50</u>	<u>4.47</u>		<u>5.31</u>	Jan-14
Over/Under			5.68	-3.62	-3.29	-0.02	1.81		1.51	
SSgA World ex US IMI	1,724,827,541	33.03	10.62	-2.96	-3.47	7.75	2.83	9.62	5.62	Aug-93
MSCI World ex USA IMI NR USD <sup>2</sup>			<u>10.52</u>	<u>-3.22</u>	<u>-3.97</u>	<u>7.29</u>	<u>2.40</u>	<u>9.23</u>	<u>5.35</u>	Aug-93
Over/Under			0.10	0.26	0.50	0.46	0.43	0.39	0.27	

1 Portfolio has a mid-month inception date. Since inception return is calculated from the first full month of performance.

2 Since inception index return sourced from SSgA.

eA = eVestment



# Los Angeles City Employees' Retirement System

## NON-U.S. EQUITY (GROSS)

	Market Value (\$)	% of Portfolio	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Emerging Markets</b>	<b>1,308,289,816</b>	<b>25.05</b>	<b>9.22</b>	<b>-0.52</b>	<b>-8.63</b>	<b>10.93</b>	<b>3.63</b>		<b>4.06</b>	<b>Jun-12</b>
<i>MSCI Emerging Markets</i>			<u>9.93</u>	<u>0.60</u>	<u>-7.41</u>	<u>10.68</u>	<u>3.68</u>		<u>4.22</u>	<i>Jun-12</i>
Over/Under			-0.71	-1.12	-1.22	0.25	-0.05		-0.16	
Axiom Emerging Markets	426,130,657	8.16	11.00	-1.69	-9.88	11.18	4.27		4.27	Mar-14
<i>MSCI Emerging Markets Growth NR USD</i>			<u>12.04</u>	<u>-2.69</u>	<u>-9.52</u>	<u>11.75</u>	<u>5.04</u>		<u>5.04</u>	<i>Mar-14</i>
Over/Under			-1.04	1.00	-0.36	-0.57	-0.77		-0.77	
DFA Emerging Markets <sup>1</sup>	445,528,181	8.53	7.56	1.98	-6.93	11.32			1.21	Aug-14
<i>MSCI Emerging Markets Value NR USD</i>			<u>7.85</u>	<u>4.03</u>	<u>-5.27</u>	<u>9.54</u>			<u>0.30</u>	<i>Aug-14</i>
Over/Under			-0.29	-2.05	-1.66	1.78			0.91	
QMA Emerging Markets <sup>1</sup>	436,630,978	8.36	9.22	-1.82	-9.17	10.49			3.94	May-14
<i>MSCI Emerging Markets</i>			<u>9.93</u>	<u>0.60</u>	<u>-7.41</u>	<u>10.68</u>			<u>3.67</u>	<i>May-14</i>
Over/Under			-0.71	-2.42	-1.76	-0.19			0.27	

1 Portfolio has a mid-month inception date. Since inception return is calculated from the first full month of performance.  
eA = eVestment



# Los Angeles City Employees' Retirement System

## NON-U.S. EQUITY (NET)

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Non-U.S. Equity</b>	<b>5,222,447,298</b>	<b>100.00</b>	<b>10.54</b>	<b>42</b>	<b>-2.95</b>	<b>60</b>	<b>-5.32</b>	<b>39</b>	<b>8.18</b>	<b>36</b>	<b>3.27</b>	<b>43</b>	<b>9.66</b>	<b>35</b>		<b>Nov-94</b>
MSCI ACWI ex USA			<u>10.31</u>	47	<u>-1.64</u>	38	<u>-4.22</u>	34	<u>8.09</u>	37	<u>2.57</u>	87	<u>8.85</u>	75		Nov-94
Over/Under			0.23		-1.31		-1.10		0.09		0.70		0.81			
<b>Developed ex-U.S.</b>	<b>3,914,157,482</b>	<b>74.95</b>	<b>11.03</b>		<b>-3.69</b>		<b>-4.31</b>		<b>7.43</b>		<b>3.09</b>				<b>7.74</b>	<b>Jun-12</b>
MSCI EAFE			<u>9.98</u>		<u>-2.51</u>		<u>-3.71</u>		<u>7.27</u>		<u>2.33</u>				<u>7.01</u>	Jun-12
Over/Under			1.05		-1.18		-0.60		0.16		0.76				0.73	
InvestorForce Public DB > \$1 Billion Dev Mkt ex-US Eq Net Median																Jun-12
AQR Capital <sup>1</sup>	339,855,365	6.51	8.79	79	-10.41	59	-12.79	62	5.19	85	3.90	61			3.60	Feb-14
MSCI EAFE Small Cap			<u>10.65</u>	43	<u>-7.92</u>	27	<u>-9.36</u>	27	<u>7.50</u>	52	<u>4.47</u>	53			<u>4.29</u>	Feb-14
Over/Under			-1.86		-2.49		-3.43		-2.31		-0.57				-0.69	
eV EAFE Small Cap Equity Net Median			10.06		-9.40		-11.89		7.59		4.69				4.36	Feb-14
Barrow Hanley <sup>1</sup>	506,842,175	9.71	10.65	11	-7.13	61	-8.55	59	5.00	70	0.45	82			1.41	Nov-13
MSCI EAFE Value			<u>7.92</u>	75	<u>-3.59</u>	34	<u>-6.13</u>	45	<u>6.90</u>	47	<u>0.67</u>	80			<u>1.11</u>	Nov-13
Over/Under			2.73		-3.54		-2.42		-1.90		-0.22				0.30	
eV EAFE Value Equity Net Median			8.69		-4.78		-7.45		6.71		1.77				2.13	Nov-13
Lazard Asset Management <sup>1</sup>	587,280,012	11.25	11.28	29	-0.97	16	-2.73	26	6.60	61	3.54	36			4.00	Nov-13
MSCI EAFE			<u>9.98</u>	54	<u>-2.51</u>	33	<u>-3.71</u>	35	<u>7.27</u>	44	<u>2.33</u>	68			<u>2.59</u>	Nov-13
Over/Under			1.30		1.54		0.98		-0.67		1.21				1.41	
eV All EAFE Equity Net Median			10.08		-4.35		-5.48		6.99		2.97				3.37	Nov-13
MFS Institutional Advisors	593,784,984	11.37	12.31	72	1.54	1	4.27	1	10.88	25	6.23	5			5.92	Oct-13
MSCI World ex USA Growth NR USD			<u>12.41</u>	71	<u>-1.33</u>	10	<u>-0.82</u>	11	<u>7.42</u>	66	<u>3.67</u>	56			<u>3.91</u>	Oct-13
Over/Under			-0.10		2.87		5.09		3.46		2.56				2.01	
eV EAFE All Cap Growth Net Median			13.67		-3.85		-3.97		8.68		3.83				4.41	Oct-13

1 Portfolio has a mid-month inception date. Since inception return is calculated from the first full month of performance.  
eA = eVestment



# Los Angeles City Employees' Retirement System

## NON-U.S. EQUITY (NET)

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Oberweis Asset Mgmt <sup>1</sup>	161,567,405	3.09	16.10	2	-12.12	78	-13.42	69	6.58	66	5.36	39			5.92	Jan-14
MSCI EAFE Small Cap			<u>10.65</u>	43	<u>-7.92</u>	27	<u>-9.36</u>	27	<u>7.50</u>	52	<u>4.47</u>	53			<u>5.31</u>	Jan-14
Over/Under			5.45		-4.20		-4.06		-0.92		0.89				0.61	
eV EAFE Small Cap Equity Net Median			10.06		-9.40		-11.89		7.59		4.69				5.46	Jan-14
SSgA World ex US IMI	1,724,827,541	33.03	10.62	40	-2.97	33	-3.49	31	7.72	30	2.81	55	9.59	61		Aug-93
MSCI World ex USA IMI NR USD <sup>2</sup>			<u>10.52</u>	41	<u>-3.22</u>	35	<u>-3.97</u>	36	<u>7.29</u>	41	<u>2.40</u>	72	<u>9.23</u>	67		Aug-93
Over/Under			0.10		0.25		0.48		0.43		0.41		0.36			
eV EAFE Core Equity Net Median			10.13		-4.49		-5.80		6.87		2.97		9.88			Aug-93
<b>Emerging Markets</b>	<b>1,308,289,816</b>	<b>25.05</b>	<b>9.08</b>		<b>-0.89</b>		<b>-9.11</b>		<b>10.36</b>		<b>3.05</b>				<b>3.43</b>	<b>Jun-12</b>
MSCI Emerging Markets			<u>9.93</u>		<u>0.60</u>		<u>-7.41</u>		<u>10.68</u>		<u>3.68</u>				<u>4.22</u>	Jun-12
Over/Under			-0.85		-1.49		-1.70		-0.32		-0.63				-0.79	
InvestorForce Public DB > \$1 Billion Emg Mkt Eq Net Median																Jun-12
Axiom Emerging Markets	426,130,657	8.16	10.82	42	-2.17	67	-10.49	69	10.41	44	3.59	53			3.59	Mar-14
MSCI Emerging Markets Growth NR USD			<u>12.04</u>	30	<u>-2.69</u>	71	<u>-9.52</u>	59	<u>11.75</u>	26	<u>5.04</u>	20			<u>5.04</u>	Mar-14
Over/Under			-1.22		0.52		-0.97		-1.34		-1.45				-1.45	
eV Emg Mkts Equity Net Median			10.27		-0.33		-8.62		9.88		3.77				3.77	Mar-14
DFA Emerging Markets <sup>1</sup>	445,528,181	8.53	7.43	86	1.62	25	-7.39	35	10.78	39					0.72	Aug-14
MSCI Emerging Markets Value NR USD			<u>7.85</u>	83	<u>4.03</u>	8	<u>-5.27</u>	18	<u>9.54</u>	55					<u>0.30</u>	Aug-14
Over/Under			-0.42		-2.41		-2.12		1.24						0.42	
eV Emg Mkts Equity Net Median			10.27		-0.33		-8.62		9.88						2.32	Aug-14
QMA Emerging Markets <sup>1</sup>	436,630,978	8.36	9.12	66	-2.10	67	-9.55	59	10.07	48					3.50	May-14
MSCI Emerging Markets			<u>9.93</u>	57	<u>0.60</u>	38	<u>-7.41</u>	36	<u>10.68</u>	40					<u>3.67</u>	May-14
Over/Under			-0.81		-2.70		-2.14		-0.61						-0.17	
eV Emg Mkts Equity Net Median			10.27		-0.33		-8.62		9.88						3.74	May-14

1 Portfolio has a mid-month inception date. Since inception return is calculated from the first full month of performance.

2 Since inception index return sourced from SSgA.

eA = eVestment



## Los Angeles City Employees' Retirement System

# NON-U.S. EQUITY COUNTRY ALLOCATION

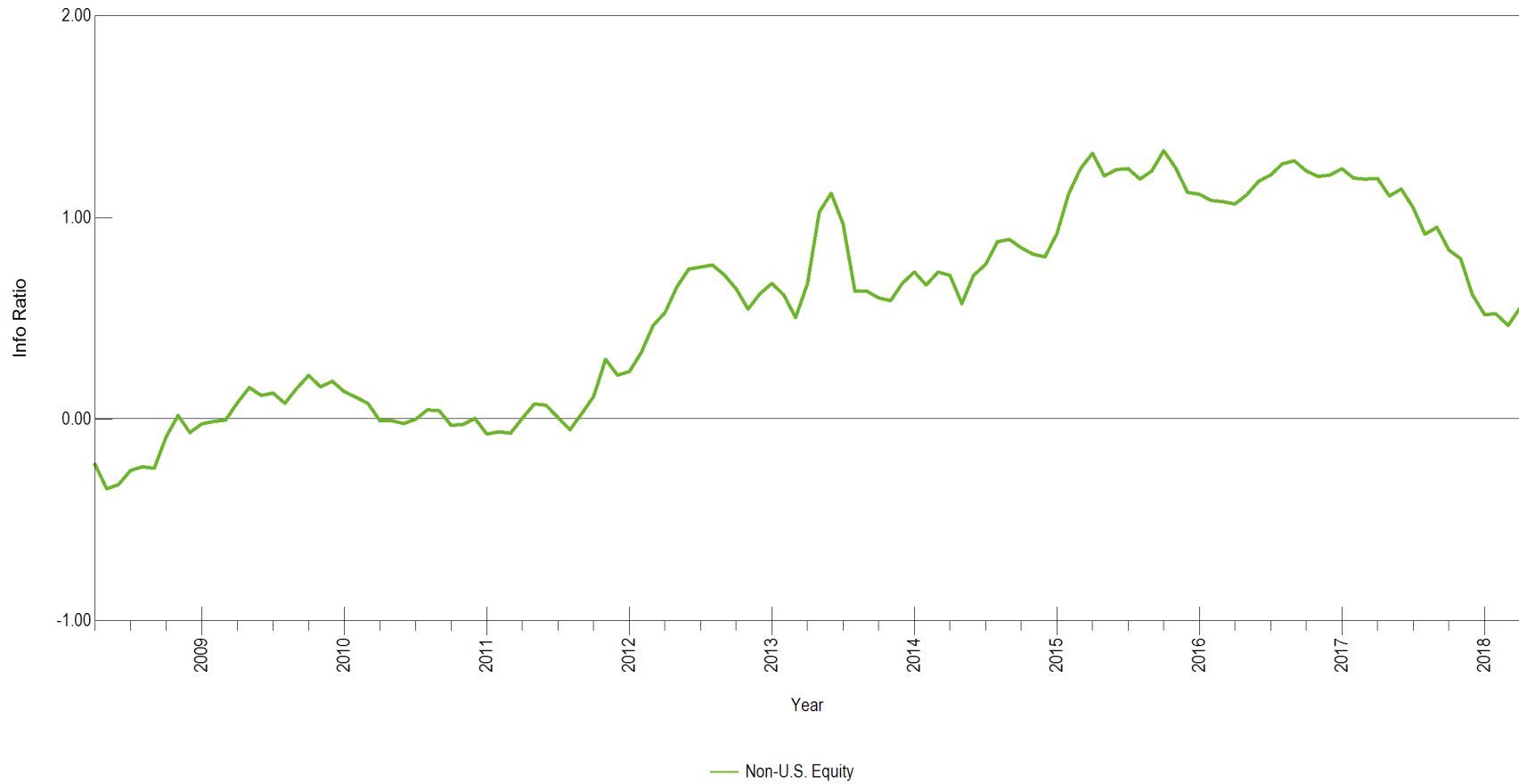
Versus MSCI ACWI ex USA - Quarter Ending March 31, 2019		
	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
<b>Europe</b>		
Austria	0.2%	0.2%
Belgium	0.5%	0.7%
Bulgaria**	0.0%	0.0%
Croatia**	0.0%	0.0%
Czech Republic*	0.1%	0.0%
Denmark	1.3%	1.2%
Estonia**	0.0%	0.0%
Finland	1.0%	0.7%
France	8.5%	7.5%
Germany	5.5%	5.7%
Greece*	0.0%	0.1%
Hungary*	0.1%	0.1%
Ireland	0.5%	0.4%
Italy	1.9%	1.6%
Lithuania**	0.0%	0.0%
Luxembourg	0.1%	0.0%
Netherlands	2.8%	2.4%
Norway	0.8%	0.5%
Poland*	0.2%	0.3%
Portugal	0.1%	0.1%
Romania**	0.0%	0.0%
Russia*	0.8%	1.0%
Serbia**	0.0%	0.0%
Slovenia**	0.0%	0.0%
Spain	1.4%	2.0%
Sweden	1.8%	1.8%
Switzerland	5.4%	6.0%
United Kingdom	11.4%	11.5%
<b>Total-Europe</b>	<b>44.3%</b>	<b>43.7%</b>

Versus MSCI ACWI ex USA - Quarter Ending March 31, 2019		
	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
<b>Americas</b>		
Argentina**	0.0%	0.0%
Brazil*	2.1%	1.8%
Canada	4.4%	6.8%
Chile*	0.2%	0.3%
Colombia*	0.4%	0.1%
Mexico*	0.8%	0.7%
Peru*	0.1%	0.1%
United States	2.4%	0.0%
<b>Total-Americas</b>	<b>10.4%</b>	<b>9.9%</b>
<b>AsiaPacific</b>		
Australia	3.2%	4.7%
China*	5.0%	8.5%
Hong Kong	6.4%	2.8%
India*	2.6%	2.4%
Indonesia*	0.7%	0.6%
Japan	14.3%	16.1%
Korea*	3.1%	3.4%
Malaysia*	0.5%	0.6%
New Zealand	0.2%	0.2%
Philippines*	0.2%	0.3%
Singapore	1.5%	0.9%
Taiwan*	3.3%	2.9%
Thailand*	0.6%	0.6%
<b>Total-AsiaPacific</b>	<b>41.5%</b>	<b>44.0%</b>
<b>Other</b>		
Egypt*	0.1%	0.0%
Israel	0.5%	0.4%
Mauritius**	0.0%	0.0%
Other Countries	0.2%	0.0%
Qatar*	0.1%	0.2%
South Africa*	1.3%	1.5%
Turkey*	0.2%	0.1%
United Arab Emirates*	0.0%	0.2%
<b>Total-Other</b>	<b>2.5%</b>	<b>2.5%</b>
<b>Totals</b>		
Developed	75.9%	74.1%
Emerging*	22.5%	25.9%
Frontier**	0.0%	0.0%
Other	0.2%	
Cash	1.3%	



# NON-U.S. EQUITY ROLLING 5 YEAR INFORMATION

Rolling 5 Year Information Ratio



\*Returns are net of fees





# MANAGER REPORT CARD

Non-U.S. Equity Managers	Inception Date	Mandate	Current Quarter (Net)		One Year (Net)		Three Years (Net)		Five Years (Net)		Since Inception (Net)	Annual Mgt Fee Paid \$ (000)	Comments
			Index	Universe	Index	Universe	Index	Universe	Index	Universe	Index		
Axiom International	Mar-14	Emerging Markets	x	✓	x	x	x	✓	x	x	x	1,866.9	On Watch since March 2019 due to performance.
Q.M.A.	Apr-14	Emerging Markets	x	x	x	x	x	✓	N/A	N/A	x	1,219.4	Performance compliant with LACERS' Manager Monitoring Policy
DFA Emerging Markets	Jul-14	Emerging Markets	x	x	x	✓	x	✓	N/A	N/A	✓	1,188.2	Performance compliant with LACERS' Manager Monitoring Policy
AQR	Feb-14	Non-U.S. Developed	x	x	x	x	x	x	x	x	x	2,314.2	Performance compliant with LACERS' Manager Monitoring Policy
Oberweis Asset Mgt.	Jan-14	Non-U.S. Developed	✓	✓	x	x	x	x	✓	✓	✓	568.5	Performance compliant with LACERS' Manager Monitoring Policy
Barrow, Hanley, Mewhinney & Strauss	Nov-13	Non-U.S. Developed	✓	✓	x	x	x	x	x	x	✓	2,097.9	On Watch since March 2019 due to performance.
Lazard Asset Mgt.	Nov-13	Non-U.S. Developed	✓	✓	✓	✓	x	x	✓	✓	✓	2,467.4	Performance compliant with LACERS' Manager Monitoring Policy
MFS Institutional Advisors	Oct-13	Non-U.S. Developed	x	x	✓	✓	✓	✓	✓	✓	✓	2,313.6	Performance compliant with LACERS' Manager Monitoring Policy
SsgA (Passive)	Aug-93	Non-U.S. Developed	✓	✓	✓	✓	✓	✓	✓	x	✓✓	368.9	Performance compliant with LACERS' Manager Monitoring Policy

Note: Managers are placed on Watch List for concerns with organization, process and performance. Managers are normally on the Watch List for 12 months though may be longer if manager issues remain but not severe enough to warrant termination recommendation.

- Annual Management Fee Paid as of fiscal year ending June 30, 2018.
- \* Where net of fees performance is not available gross of fee returns are evaluated.

Legend	
✓	Outperformed
x	Underperformed
=	Equal to
✓✓	Gross Return



# CORE FIXED INCOME

NEPC, LLC

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## Los Angeles City Employees' Retirement System

# CORE FIXED INCOME (GROSS)

	Market Value (\$)	% of Portfolio	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Core Fixed Income</b>	<b>2,974,037,243</b>	<b>100.00</b>	<b>3.17</b>	<b>4.74</b>	<b>4.38</b>	<b>2.48</b>	<b>2.96</b>		<b>3.03</b>	<b>Jul-12</b>
<i>Core Fixed Income Blend</i>			<u>2.94</u>	<u>4.65</u>	<u>4.48</u>	<u>2.03</u>	<u>2.74</u>		<u>2.40</u>	<i>Jul-12</i>
Over/Under			0.23	0.09	-0.10	0.45	0.22		0.63	
Baird Advisors	263,673,870	8.87	2.62	4.45	4.46	2.30	2.68	4.43	4.25	Mar-05
<i>BBgBarc US Govt/Credit Int TR</i>			<u>2.32</u>	<u>4.24</u>	<u>4.24</u>	<u>1.66</u>	<u>2.12</u>	<u>3.14</u>	<u>3.59</u>	<i>Mar-05</i>
Over/Under			0.30	0.21	0.22	0.64	0.56	1.29	0.66	
LM Capital	310,693,960	10.45	3.50	4.22	3.81	2.15	2.96	4.81	4.49	Mar-05
<i>Core Fixed Income Blend</i>			<u>2.94</u>	<u>4.65</u>	<u>4.48</u>	<u>2.03</u>	<u>2.74</u>	<u>4.16</u>	<u>4.22</u>	<i>Mar-05</i>
Over/Under			0.56	-0.43	-0.67	0.12	0.22	0.65	0.27	
Loomis Sayles	765,380,239	25.74	3.35	4.91	4.70	3.40	3.44	6.30	9.05	Jul-80
<i>BC US Agg LACERS custom</i>			<u>2.94</u>	<u>4.65</u>	<u>4.48</u>	<u>2.03</u>	<u>2.74</u>	<u>3.77</u>	<u>7.55</u>	<i>Jul-80</i>
Over/Under			0.41	0.26	0.22	1.37	0.70	2.53	1.50	
Neuberger Berman	758,685,634	25.51	3.35	4.95	4.08	2.30	2.88	6.13	5.64	Sep-01
<i>Core Fixed Income Blend</i>			<u>2.94</u>	<u>4.65</u>	<u>4.48</u>	<u>2.03</u>	<u>2.74</u>	<u>4.16</u>	<u>4.52</u>	<i>Sep-01</i>
Over/Under			0.41	0.30	-0.40	0.27	0.14	1.97	1.12	
SSgA U.S. Aggregate Bond <sup>1</sup>	875,603,541	29.44	2.91	4.66	4.49	2.04			2.57	Jul-14
<i>BBgBarc US Aggregate TR</i>			<u>2.94</u>	<u>4.65</u>	<u>4.48</u>	<u>2.03</u>			<u>2.55</u>	<i>Jul-14</i>
Over/Under			-0.03	0.01	0.01	0.01			0.02	

1 Portfolio has a mid-month inception date. Since inception return is calculated from the first full month of performance.

BBgBarc = Bloomberg Barclays



# Los Angeles City Employees' Retirement System

## CORE FIXED INCOME (NET)

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Core Fixed Income</b>	<b>2,974,037,243</b>	<b>100.00</b>	<b>3.14</b>	<b>53</b>	<b>4.66</b>	<b>8</b>	<b>4.27</b>	<b>15</b>	<b>2.38</b>	<b>65</b>	<b>2.85</b>	<b>52</b>			<b>2.91</b>	<b>Jul-12</b>
Core Fixed Income Blend			<u>2.94</u>	75	<u>4.65</u>	9	<u>4.48</u>	9	<u>2.03</u>	94	<u>2.74</u>	68			<u>2.40</u>	Jul-12
Over/Under			0.20		0.01		-0.21		0.35		0.11				0.51	
InvestorForce Public DB > \$1 Billion US Fixed Income Net Median			3.16		4.13		3.93		2.95		2.88				2.71	Jul-12
Baird Advisors	263,673,870	8.87	2.59	27	4.36	22	4.34	24	2.17	18	2.55	15	4.30	21	4.12	Mar-05
BBgBarc US Govt/Credit Int TR			<u>2.32</u>	68	<u>4.24</u>	35	<u>4.24</u>	34	<u>1.66</u>	61	<u>2.12</u>	52	<u>3.14</u>	73	<u>3.59</u>	Mar-05
Over/Under			0.27		0.12		0.10		0.51		0.43		1.16		0.53	
eV US Interm Duration Fixed Inc Net Median			2.41		4.11		4.10		1.75		2.12		3.42		3.78	Mar-05
LM Capital	310,693,960	10.45	3.47	18	4.14	90	3.70	94	2.04	63	2.84	45	4.67	31	4.34	Mar-05
Core Fixed Income Blend			<u>2.94</u>	73	<u>4.65</u>	45	<u>4.48</u>	41	<u>2.03</u>	64	<u>2.74</u>	58	<u>4.16</u>	55	<u>4.22</u>	Mar-05
Over/Under			0.53		-0.51		-0.78		0.01		0.10		0.51		0.12	
eV US Core Fixed Inc Net Median			3.18		4.58		4.38		2.18		2.78		4.32		4.25	Mar-05
Loomis Sayles	765,380,239	25.74	3.31	31	4.81	27	4.57	31	3.27	7	3.31	11	6.17	6		Jul-80
BC US Agg LACERS custom			<u>2.94</u>	73	<u>4.65</u>	45	<u>4.48</u>	41	<u>2.03</u>	64	<u>2.74</u>	58	<u>3.77</u>	80		Jul-80
Over/Under			0.37		0.16		0.09		1.24		0.57		2.40			
eV US Core Fixed Inc Net Median			3.18		4.58		4.38		2.18		2.78		4.32			Jul-80
Neuberger Berman	758,685,634	25.51	3.32	31	4.84	25	3.93	88	2.15	52	2.73	61	5.95	7	5.48	Sep-01
Core Fixed Income Blend			<u>2.94</u>	73	<u>4.65</u>	45	<u>4.48</u>	41	<u>2.03</u>	64	<u>2.74</u>	58	<u>4.16</u>	55	<u>4.52</u>	Sep-01
Over/Under			0.38		0.19		-0.55		0.12		-0.01		1.79		0.96	
eV US Core Fixed Inc Net Median			3.18		4.58		4.38		2.18		2.78		4.32		4.46	Sep-01
SSgA U.S. Aggregate Bond <sup>1</sup>	875,603,541	29.44	2.90	76	4.62	47	4.44	43	2.00	66					2.53	Jul-14
BBgBarc US Aggregate TR			<u>2.94</u>	73	<u>4.65</u>	45	<u>4.48</u>	41	<u>2.03</u>	64					<u>2.55</u>	Jul-14
Over/Under			-0.04		-0.03		-0.04		-0.03						-0.02	
eV US Core Fixed Inc Net Median			3.18		4.58		4.38		2.18						2.59	Jul-14

1 Portfolio has a mid-month inception date. Since inception return is calculated from the first full month of performance.

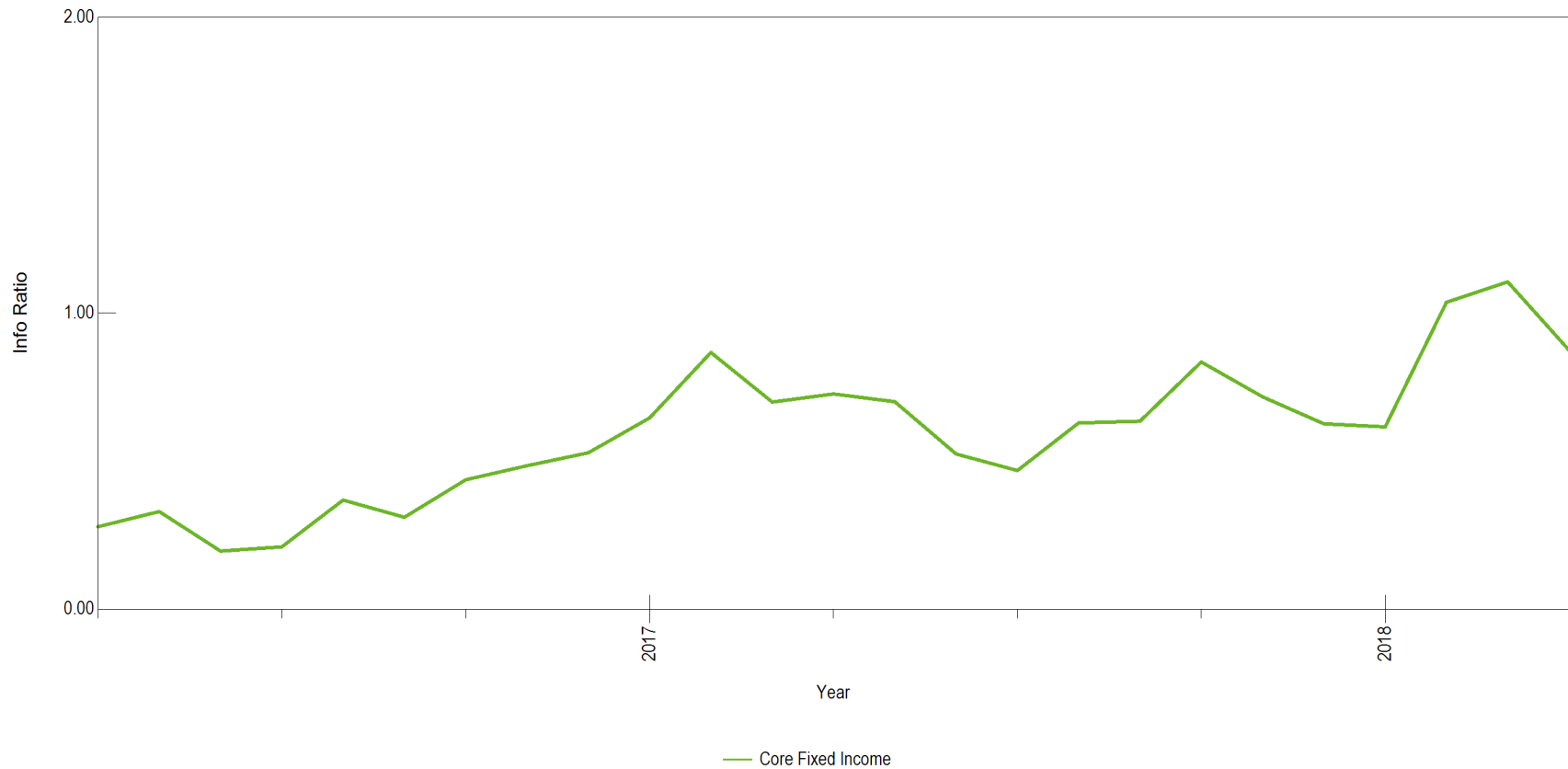
BBgBarc = Bloomberg Barclays

eV = eVestment



# CORE FIXED INCOME 3 YEAR INFORMATION RATIO

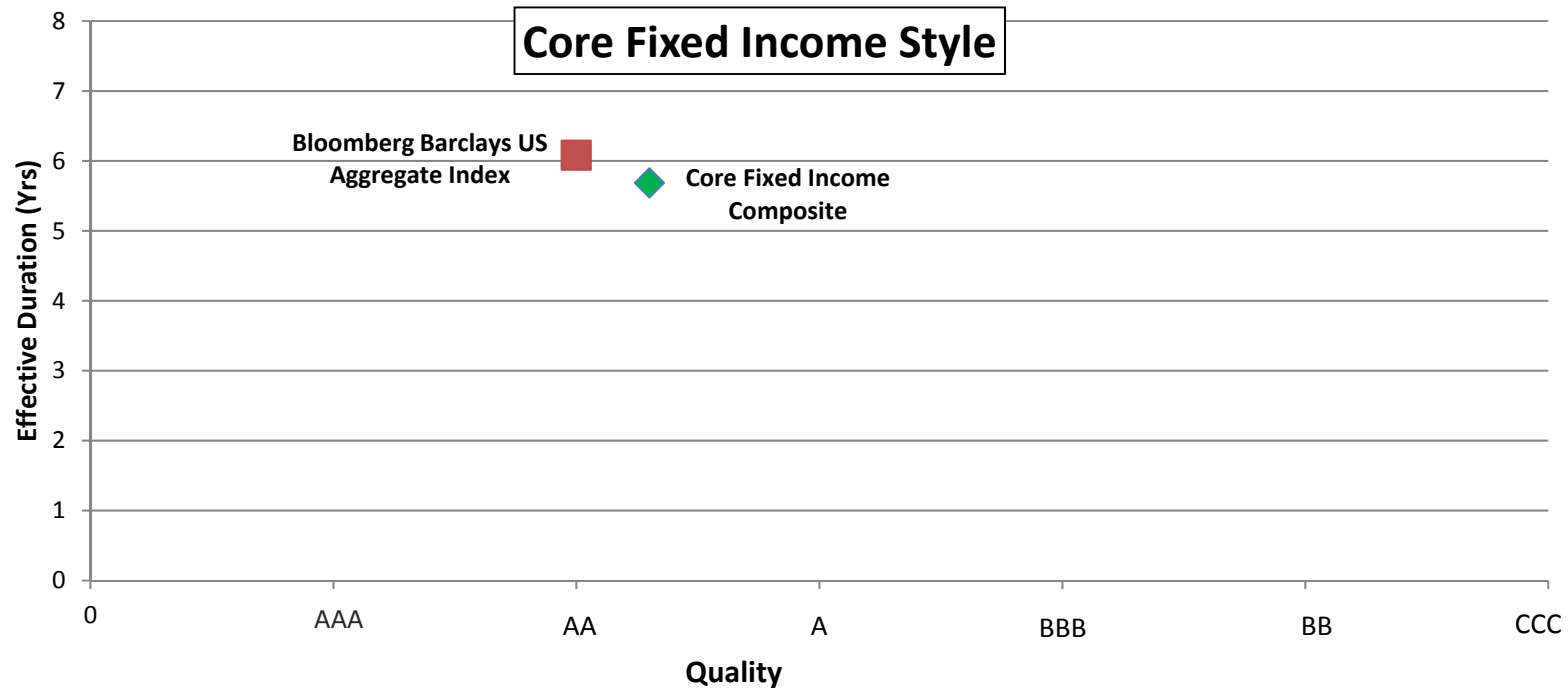
Rolling 3 Year Information Ratio



\*Returns are net of fees



# CORE FIXED INCOME STYLE ANALYSIS



- LACERS has a slightly lower duration (interest rate risk) than its benchmark.
- The Core Fixed Income Composite has slightly lower average quality rating than its benchmark.



# MANAGER REPORT CARD

Core Fixed Income Managers	Inception Date	Mandate	Current Quarter (Net)		One Year (Net)		Three Years (Net)		Five Years (Net)		Since Inception (Net)	Annual Mgt Fee Paid \$ (000)	Comments
			Index	Universe	Index	Universe	Index	Universe	Index	Universe	Index		
			Neuberger Berman	Sep-01	Core	✓	✓	*	*	✓	*		
Loomis Sayles	Jul-80	Core	✓	✓	✓	✓	✓	✓	✓	✓	✓✓	863.0	Performance compliant with LACERS' Manager Monitoring Policy
Baird Advisors	Mar-05	Intermediate	✓	✓	✓	✓	✓	✓	✓	✓	✓	291.7	Performance compliant with LACERS' Manager Monitoring Policy
LM Capital Group	Mar-05	Core	✓	✓	*	*	✓	*	✓	✓	✓	240.1	On Watch since 3/21/19 due to performance
SSgA (Passive)	Jul-14	Core	*	*	*	*	*	*	N/A	N/A	*	369.3	Performance compliant with LACERS' Manager Monitoring Policy

Note: Managers are placed on Watch List for concerns with organization, process and performance. Managers are normally on the Watch List for 12 months though may be longer if manager issues remain but not severe enough to warrant termination recommendation.

- Annual Management Fee Paid as of fiscal year ending June 30, 2018.
- \* Where net of fees performance is not available gross of fee returns are evaluated.

Legend	
✓	Outperformed
*	Underperformed
=	Equal to
✓✓	Gross Return



# CREDIT OPPORTUNITIES

NEPC, LLC

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## Los Angeles City Employees' Retirement System

# CREDIT OPPORTUNITIES (GROSS)

	Market Value (\$)	% of Portfolio	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Credit Opportunities</b>	<b>946,202,687</b>	<b>100.00</b>	<b>6.50</b>	<b>5.55</b>	<b>4.65</b>	<b>7.48</b>	<b>4.38</b>		<b>5.48</b>	<b>Jun-13</b>
<i>Credit Opportunities Blend</i>			<u>7.15</u>	<u>5.99</u>	<u>5.36</u>	<u>7.61</u>	<u>4.80</u>		<u>5.75</u>	<i>Jun-13</i>
Over/Under			-0.65	-0.44	-0.71	-0.13	-0.42		-0.27	
AEGON USA	385,910,485	40.79	7.16	4.73	5.71	8.52	5.18		6.00	Jun-13
<i>BBgBarc US High Yield 2% Issuer Cap TR</i>			<u>7.26</u>	<u>4.85</u>	<u>5.93</u>	<u>8.56</u>	<u>4.69</u>		<u>5.65</u>	<i>Jun-13</i>
Over/Under			-0.10	-0.12	-0.22	-0.04	0.49		0.35	
Prudential Emerging Markets	374,424,279	39.57	7.06	7.91	3.98	6.79			5.28	May-14
<i>JP Morgan EMBI Global Diversified</i>			<u>6.95</u>	<u>8.04</u>	<u>4.21</u>	<u>5.79</u>			<u>4.70</u>	<i>May-14</i>
Over/Under			0.11	-0.13	-0.23	1.00			0.58	
Bain Capital Senior Loan Fund, LP*	185,852,035	19.64	4.05	2.64	3.57	5.83			3.92	Jun-15
<i>Credit Suisse Leveraged Loans</i>			<u>3.78</u>	<u>2.53</u>	<u>3.33</u>	<u>5.87</u>			<u>4.14</u>	<i>Jun-15</i>
Over/Under			0.27	0.11	0.24	-0.04			-0.22	

- Credit Opportunities Blend = 65% BBgBarc US High Yield 2% Issuer Cap TR / 35% JP Morgan EMBI Global Diversified 7/01/2014 to present; BBgBarc US High Yield 2% Issuer Cap TR prior to

eA = eVestment Alliance

BBgBarc = Bloomberg Barclays

\*Net of fee return since vehicle is commingled.



## Los Angeles City Employees' Retirement System

# CREDIT OPPORTUNITIES (NET)

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Credit Opportunities</b>	<b>946,202,687</b>	<b>100.00</b>	<b>6.42</b>		<b>5.32</b>		<b>4.33</b>		<b>7.12</b>		<b>4.01</b>				<b>5.14</b>	<b>Jun-13</b>
<i>Credit Opportunities Blend</i>			<u>7.15</u>		<u>5.99</u>		<u>5.36</u>		<u>7.61</u>		<u>4.80</u>				<u>5.75</u>	<i>Jun-13</i>
Over/Under			-0.73		-0.67		-1.03		-0.49		-0.79				-0.61	
AEGON USA	385,910,485	40.79	7.07	43	4.43	45	5.31	45	8.14	27	4.77	17			5.63	Jun-13
<i>BBgBarc US High Yield 2% Issuer Cap TR</i>			<u>7.26</u>	37	<u>4.85</u>	36	<u>5.93</u>	22	<u>8.56</u>	18	<u>4.69</u>	24			<u>5.65</u>	<i>Jun-13</i>
Over/Under			-0.19		-0.42		-0.62		-0.42		0.08				-0.02	
<i>eV US High Yield Fixed Inc Net Median</i>			6.91		4.26		5.08		7.45		4.08				5.04	<i>Jun-13</i>
Prudential Emerging Markets	374,424,279	39.57	6.96	25	7.61	10	3.59	21	6.39	33					4.89	May-14
<i>JP Morgan EMBI Global Diversified</i>			<u>6.95</u>	25	<u>8.04</u>	6	<u>4.21</u>	14	<u>5.79</u>	56					<u>4.70</u>	<i>May-14</i>
Over/Under			0.01		-0.43		-0.62		0.60						0.19	
<i>eV Emg Mkt Fixed Inc Hedged Net Median</i>			5.55		6.34		0.45		5.85						3.22	<i>May-14</i>
Bain Capital Senior Loan Fund, LP	185,852,035	19.64	4.05	21	2.64	11	3.57	3	5.83	16					3.92	Jun-15
<i>Credit Suisse Leveraged Loans</i>			<u>3.78</u>	45	<u>2.53</u>	15	<u>3.33</u>	6	<u>5.87</u>	15					<u>4.14</u>	<i>Jun-15</i>
Over/Under			0.27		0.11		0.24		-0.04						-0.22	
<i>eV US Float-Rate Bank Loan Fixed Inc Net Median</i>			3.74		2.03		2.58		4.89						3.69	<i>Jun-15</i>

- Credit Opportunities Blend = 65% BBgBarc US High Yield 2% Issuer Cap TR / 35% JP Morgan EMBI Global Diversified 7/01/2014 to present; BBgBarc US High Yield 2% Issuer Cap TR prior to

eA = eVestment Alliance

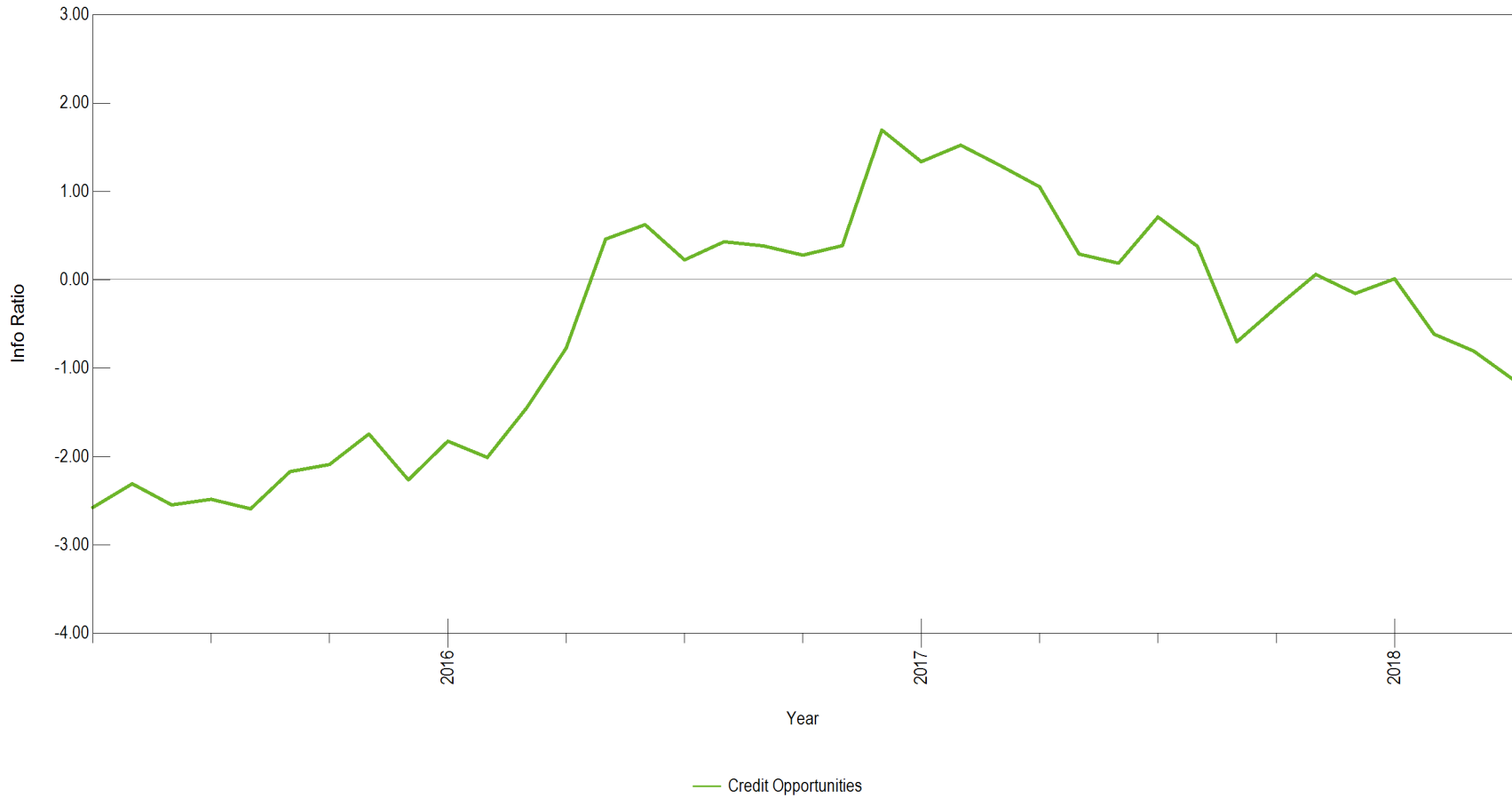
BBgBarc = Bloomberg Barclays



# Los Angeles City Employees' Retirement System

## CREDIT OPPORTUNITIES ROLLING 1 YEAR

Rolling 1 Year Information Ratio



\*Returns are net of fees



# MANAGER REPORT CARD

Credit Opportunities Managers	Inception Date	Mandate	Current Quarter (Net)		One Year (Net)		Three Years (Net)		Five Years (Net)		Since Inception (Net)	Annual Mgt Fee Paid \$ (000)	Comments
			Index	Universe	Index	Universe	Index	Universe	Index	Universe	Index		
AEGON USA	Jun-13	High Yield Bonds	*	✓	*	✓	*	✓	✓	✓	✓	781.6	On Watch since 10/5/17 due to organizational reasons
Prudential	May-14	Emerging Market Debt	✓	✓	*	✓	✓	✓	N/A	N/A	✓	1230.2	Performance compliant with LACERS' Manager Monitoring Policy
Bain	Jun-15	Bank Loans	✓	✓	✓	✓	*	✓	N/A	N/A	*	330.0	Performance compliant with LACERS' Manager Monitoring Policy

Note: Managers are placed on Watch List for concerns with organization, process and performance. Managers are normally on the Watch List for 12 months though may be longer if manager issues remain but not severe enough to warrant termination recommendation.

- Annual Management Fee Paid as of fiscal year ending June 30, 2018.
- \* Where net of fees performance is not available gross of fee returns are evaluated.

Legend	
✓	Outperformed
*	Underperformed
=	Equal to
✓✓	Gross Return



# REAL ASSETS

NEPC, LLC

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## Los Angeles City Employees' Retirement System

# REAL ASSETS (GROSS)

	Market Value (\$)	% of Portfolio	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Real Assets</b>	<b>1,743,217,858</b>	<b>100.00</b>	<b>3.98</b>	<b>3.81</b>	<b>5.81</b>	<b>5.63</b>	<b>6.76</b>	<b>2.26</b>	<b>6.31</b>	<b>Nov-94</b>
<i>CPI + 5% (Unadjusted)</i>			<u>2.42</u>	<u>4.63</u>	<u>6.95</u>	<u>7.30</u>	<u>6.54</u>	<u>6.88</u>	<u>7.30</u>	<i>Nov-94</i>
Over/Under			1.56	-0.82	-1.14	-1.67	0.22	-4.62	-0.99	
<b>Public Real Assets</b>	<b>935,544,125</b>	<b>53.67</b>	<b>5.94</b>	<b>2.24</b>	<b>3.76</b>	<b>2.97</b>			<b>1.40</b>	<b>Jun-14</b>
<i>Public Real Assets Blend</i>			<u>6.55</u>	<u>1.55</u>	<u>4.15</u>	<u>3.03</u>			<u>-0.83</u>	<i>Jun-14</i>
Over/Under			-0.61	0.69	-0.39	-0.06			2.23	
<b>TIPS</b>	<b>631,404,955</b>	<b>36.22</b>	<b>3.61</b>	<b>2.64</b>	<b>3.41</b>	<b>1.84</b>			<b>1.32</b>	<b>Jul-14</b>
<i>BBgBarc US TIPS TR</i>			<u>3.19</u>	<u>1.92</u>	<u>2.70</u>	<u>1.70</u>			<u>1.26</u>	<i>Jul-14</i>
Over/Under			0.42	0.72	0.71	0.14			0.06	
<i>DFA US TIPS<sup>1</sup></i>	<i>631,404,955</i>	<i>36.22</i>	<i>3.61</i>	<i>2.64</i>	<i>3.41</i>	<i>1.84</i>			<i>1.47</i>	<i>Aug-14</i>
<i>BBgBarc US TIPS TR</i>			<u>3.19</u>	<u>1.92</u>	<u>2.70</u>	<u>1.70</u>			<u>1.26</u>	<i>Aug-14</i>
Over/Under			0.42	0.72	0.71	0.14			0.21	
<b>REITS</b>	<b>138,641,438</b>	<b>7.95</b>	<b>17.50</b>	<b>10.94</b>	<b>19.95</b>	<b>8.15</b>			<b>8.41</b>	<b>Mar-15</b>
<i>FTSE NAREIT All Equity REIT</i>			<u>17.17</u>	<u>10.62</u>	<u>20.02</u>	<u>7.71</u>			<u>6.94</u>	<i>Mar-15</i>
Over/Under			0.33	0.32	-0.07	0.44			1.47	
<i>CenterSquare US Real Estate<sup>1</sup></i>	<i>138,641,438</i>	<i>7.95</i>	<i>17.50</i>	<i>10.94</i>	<i>19.95</i>	<i>8.15</i>			<i>9.45</i>	<i>May-15</i>
<i>FTSE NAREIT All Equity REIT</i>			<u>17.17</u>	<u>10.62</u>	<u>20.02</u>	<u>7.71</u>			<u>8.49</u>	<i>May-15</i>
Over/Under			0.33	0.32	-0.07	0.44			0.96	
<b>Commodities</b>	<b>165,497,731</b>	<b>9.49</b>	<b>6.31</b>	<b>-5.00</b>	<b>-4.83</b>	<b>3.31</b>			<b>-4.41</b>	<b>Jun-15</b>
<i>Bloomberg Commodity Index TR USD</i>			<u>6.32</u>	<u>-5.63</u>	<u>-5.25</u>	<u>2.22</u>			<u>-5.12</u>	<i>Jun-15</i>
Over/Under			-0.01	0.63	0.42	1.09			0.71	
<i>CoreCommodity Mgmt<sup>1</sup></i>	<i>165,497,731</i>	<i>9.49</i>	<i>6.31</i>	<i>-5.00</i>	<i>-4.83</i>	<i>3.31</i>			<i>-4.41</i>	<i>Jul-15</i>
<i>Bloomberg Commodity Index TR USD</i>			<u>6.32</u>	<u>-5.63</u>	<u>-5.25</u>	<u>2.22</u>			<u>-5.12</u>	<i>Jul-15</i>
Over/Under			-0.01	0.63	0.42	1.09			0.71	
<b>Private Real Estate</b>	<b>787,660,871</b>	<b>45.18</b>	<b>1.85</b>	<b>5.67</b>	<b>8.20</b>	<b>8.24</b>	<b>9.89</b>	<b>3.75</b>	<b>6.94</b>	<b>Oct-94</b>
<i>Real Estate Blend</i>			<u>1.62</u>	<u>5.99</u>	<u>8.38</u>	<u>8.83</u>	<u>11.02</u>	<u>9.62</u>	<u>9.92</u>	<i>Oct-94</i>
Over/Under			0.23	-0.32	-0.18	-0.59	-1.13	-5.87	-2.98	
<b>Timber</b>	<b>20,012,863</b>	<b>1.15</b>	<b>0.00</b>	<b>-0.14</b>	<b>1.49</b>	<b>2.71</b>	<b>4.22</b>	<b>4.20</b>	<b>9.36</b>	<b>Sep-99</b>

<sup>1</sup> Portfolio has a mid-month inception date. Since inception return is calculated from the first full month of performance.

- Public Real Assets Custom Benchmark = 60% BBgBarc US TIPS TR / 20% Bloomberg Commodity Index TR USD / 10% Alerian MLP TR USD / 10% FTSE NAREIT All REIT

- Real Estate Blend = NCREIF-ODCE + 80bps 7/1/2014 to present; NCREIF Property Index 1 Qtr Lag plus 100bps 7/1/2012 - 6/30/2014; NCREIF Property Index prior to

eA = eVestment Alliance



## Los Angeles City Employees' Retirement System

# REAL ASSETS (NET)

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Real Assets</b>	<b>1,743,217,858</b>	<b>100.00</b>	<b>3.94</b>		<b>3.69</b>		<b>5.65</b>		<b>5.46</b>		<b>6.60</b>		<b>2.12</b>			<b>Nov-94</b>
<i>CPI + 5% (Unadjusted)</i>			<u>2.42</u>		<u>4.63</u>		<u>6.95</u>		<u>7.30</u>		<u>6.54</u>		<u>6.88</u>			<i>Nov-94</i>
Over/Under			1.52		-0.94		-1.30		-1.84		0.06		-4.76			
<b>Public Real Assets</b>	<b>935,544,125</b>	<b>53.67</b>	<b>5.89</b>		<b>2.08</b>		<b>3.51</b>		<b>2.71</b>						<b>1.20</b>	<b>Jun-14</b>
<i>Public Real Assets Blend</i>			<u>6.55</u>		<u>1.55</u>		<u>4.15</u>		<u>3.03</u>						<u>-0.83</u>	<i>Jun-14</i>
Over/Under			-0.66		0.53		-0.64		-0.32						2.03	
<b>TIPS</b>	<b>631,404,955</b>	<b>36.22</b>	<b>3.59</b>		<b>2.60</b>		<b>3.36</b>		<b>1.78</b>						<b>1.26</b>	<b>Jul-14</b>
<i>BBgBarc US TIPS TR</i>			<u>3.19</u>		<u>1.92</u>		<u>2.70</u>		<u>1.70</u>						<u>1.26</u>	<i>Jul-14</i>
Over/Under			0.40		0.68		0.66		0.08						0.00	
<b>DFA US TIPS<sup>1</sup></b>	<b>631,404,955</b>	<b>36.22</b>	<b>3.59</b>	<b>22</b>	<b>2.60</b>	<b>1</b>	<b>3.36</b>	<b>1</b>	<b>1.78</b>	<b>36</b>					<b>1.42</b>	<b>Aug-14</b>
<i>BBgBarc US TIPS TR</i>			<u>3.19</u>	<b>61</b>	<u>1.92</u>	<b>36</b>	<u>2.70</u>	<b>22</b>	<u>1.70</u>	<b>43</b>					<u>1.26</u>	<i>Aug-14</i>
Over/Under			0.40		0.68		0.66		0.08						0.16	
<i>eV US TIPS / Inflation Fixed Inc Net Median</i>			<u>3.29</u>		<u>1.79</u>		<u>2.45</u>		<u>1.62</u>						<u>1.01</u>	<i>Aug-14</i>
<b>REITS</b>	<b>138,641,438</b>	<b>7.95</b>	<b>17.37</b>		<b>10.60</b>		<b>19.29</b>		<b>7.65</b>						<b>7.95</b>	<b>Mar-15</b>
<i>FTSE NAREIT All Equity REIT</i>			<u>17.17</u>		<u>10.62</u>		<u>20.02</u>		<u>7.71</u>						<u>6.94</u>	<i>Mar-15</i>
Over/Under			0.20		-0.02		-0.73		-0.06						1.01	
<b>CenterSquare US Real Estate<sup>1</sup></b>	<b>138,641,438</b>	<b>7.95</b>	<b>17.37</b>	<b>22</b>	<b>10.60</b>	<b>20</b>	<b>19.29</b>	<b>33</b>	<b>7.65</b>	<b>15</b>					<b>8.98</b>	<b>May-15</b>
<i>FTSE NAREIT All Equity REIT</i>			<u>17.17</u>	<b>27</b>	<u>10.62</u>	<b>19</b>	<u>20.02</u>	<b>17</b>	<u>7.71</u>	<b>14</b>					<u>8.49</u>	<i>May-15</i>
Over/Under			0.20		-0.02		-0.73		-0.06						0.49	
<i>eV US REIT Net Median</i>			<u>16.24</u>		<u>9.33</u>		<u>18.44</u>		<u>5.78</u>						<u>6.96</u>	<i>May-15</i>
<b>Commodities</b>	<b>165,497,731</b>	<b>9.49</b>	<b>6.16</b>		<b>-5.48</b>		<b>-5.49</b>		<b>2.51</b>						<b>-5.11</b>	<b>Jun-15</b>
<i>Bloomberg Commodity Index TR USD</i>			<u>6.32</u>		<u>-5.63</u>		<u>-5.25</u>		<u>2.22</u>						<u>-5.12</u>	<i>Jun-15</i>
Over/Under			-0.16		0.15		-0.24		0.29						0.01	
<b>CoreCommodity Mgmt<sup>1</sup></b>	<b>165,497,731</b>	<b>9.49</b>	<b>6.16</b>		<b>-5.48</b>		<b>-5.49</b>		<b>2.51</b>						<b>-5.11</b>	<b>Jul-15</b>
<i>Bloomberg Commodity Index TR USD</i>			<u>6.32</u>		<u>-5.63</u>		<u>-5.25</u>		<u>2.22</u>						<u>-5.12</u>	<i>Jul-15</i>
Over/Under			-0.16		0.15		-0.24		0.29						0.01	

<sup>1</sup> Portfolio has a mid-month inception date. Since inception return is calculated from the first full month of performance. No universe is available.

- Public Real Assets Custom Benchmark = 60% BBgBarc US TIPS TR / 20% Bloomberg Commodity Index TR USD / 10% Alerian MLP TR USD / 10% FTSE NAREIT All REIT

eA = eVestment Alliance



## Los Angeles City Employees' Retirement System

# REAL ASSETS (NET)

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Private Real Estate</b>	<b>787,660,871</b>	<b>45.18</b>	<b>1.83</b>	<b>13</b>	<b>5.61</b>	<b>9</b>	<b>8.13</b>	<b>14</b>	<b>8.16</b>	<b>31</b>	<b>9.79</b>	<b>48</b>	<b>3.64</b>	<b>98</b>		<b>Oct-94</b>
<i>Real Estate Blend</i>			<u>1.62</u>	31	<u>5.99</u>	8	<u>8.38</u>	12	<u>8.83</u>	7	<u>11.02</u>	13	<u>9.62</u>	17		Oct-94
Over/Under			0.21		-0.38		-0.25		-0.67		-1.23		-5.98			
<i>InvestorForce Public DB Real Estate Priv Net Median</i>			1.61		5.18		7.19		8.02		9.65		7.75			Oct-94
<b>Timber</b>	<b>20,012,863</b>	<b>1.15</b>	<b>0.00</b>		<b>-0.14</b>		<b>1.49</b>		<b>2.71</b>		<b>4.21</b>		<b>4.22</b>			<b>Sep-99</b>

- Real Estate Blend = NCREIF-ODCE + 80bps 7/1/2014 to present; NCREIF Property Index 1 Qtr Lag plus 100bps 7/1/2012 - 6/30/2014; NCREIF Property Index prior to eA = eVestment Alliance





# MANAGER REPORT CARD

Real Assets Managers	Inception Date	Mandate	Current Quarter (Net)		One Year (Net)		Three Years (Net)		Five Years (Net)		Since Inception (Net)	Annual Mgt Fee Paid \$ (000)	Comments
			Index	Universe	Index	Universe	Index	Universe	Index	Universe	Index		
DFA	Jul-14	U.S. TIPS	✓	✓	✓	✓	✓	✓	N/A	N/A	✓	194.6	Performance compliant with LACERS' Manager Monitoring Policy
CenterSquare	Apr-15	REITS	✗	✗	✗	✓	✗	✓	N/A	N/A	✓	399.8	Performance compliant with LACERS' Manager Monitoring Policy
CoreCommodity Mgt.	Jul-15	Commodities	✓	N/A	✓	N/A	✓	N/A	N/A	N/A	✓	860.4	Performance compliant with LACERS' Manager Monitoring Policy

Note: Managers are placed on Watch List for concerns with organization, process and performance. Managers are normally on the Watch List for 12 months though may be longer if manager issues remain but not severe enough to warrant termination recommendation.

- Annual Management Fee Paid as of fiscal year ending June 30, 2018.
- \* Where net of fees performance is not available gross of fee returns are evaluated.

Legend	
✓	Outperformed
✗	Underperformed
=	Equal to
✓✓	Gross Return



# APPENDIX

NEPC, LLC

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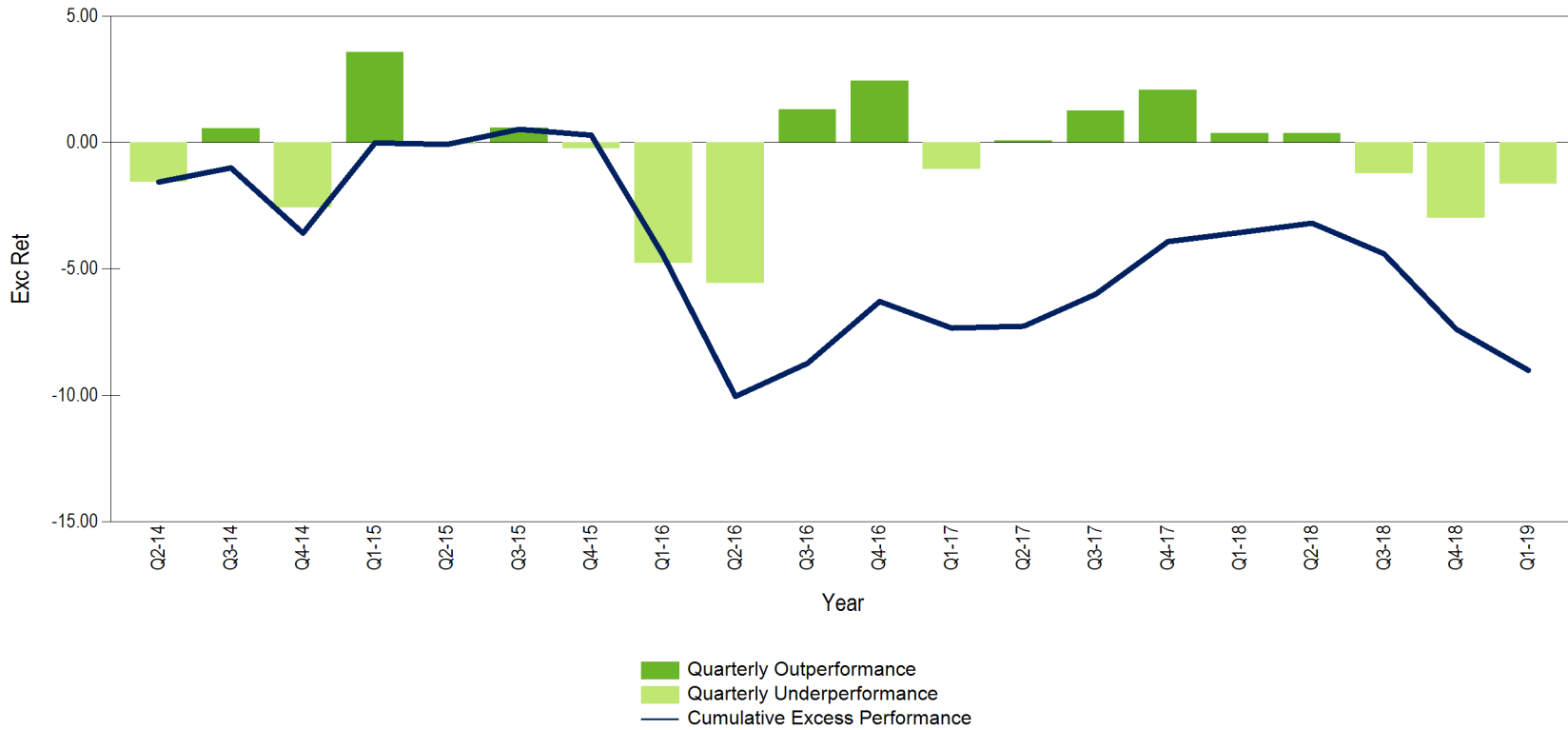
# U.S. EQUITY MANAGER PERFORMANCE

NEPC, LLC

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# ARONSON, JOHNSON & ORTIZ

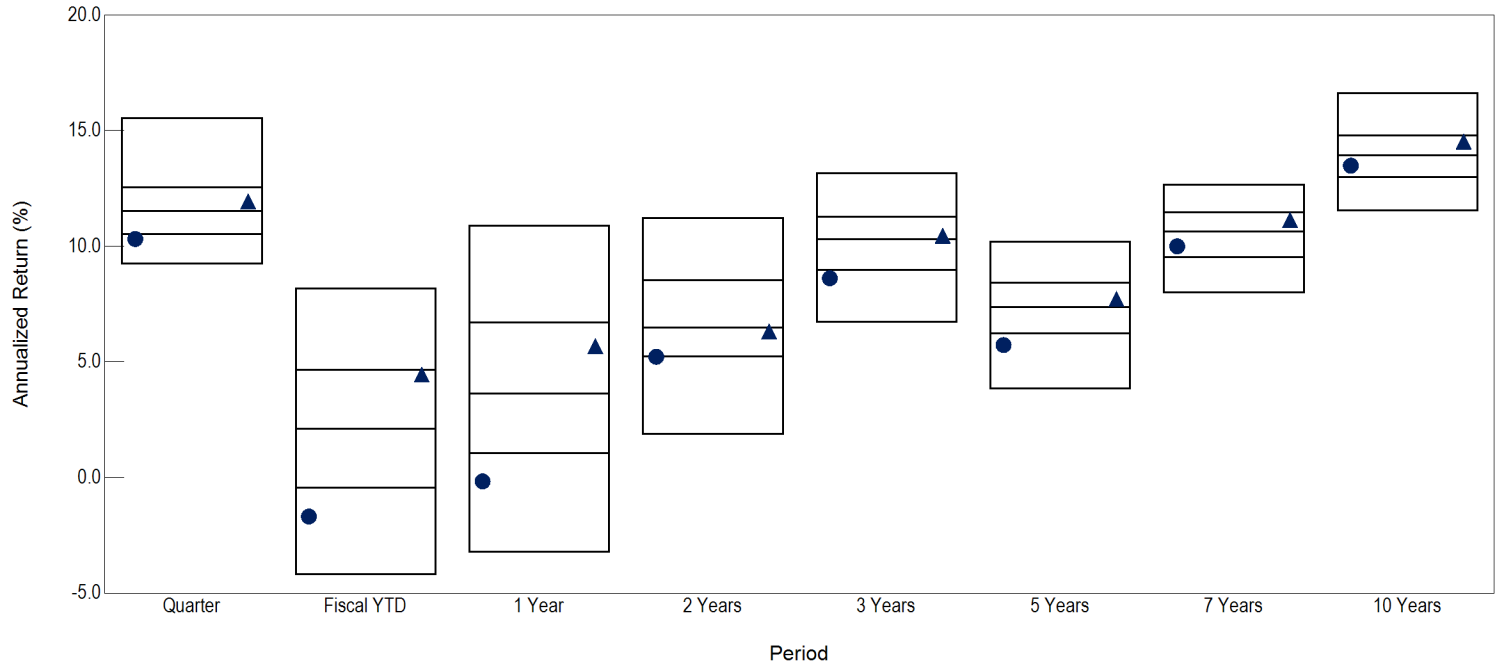
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## ARONSON, JOHNSON & ORTIZ

Aronson, Johnson & Ortiz vs. eV US Large Cap Value Equity Net

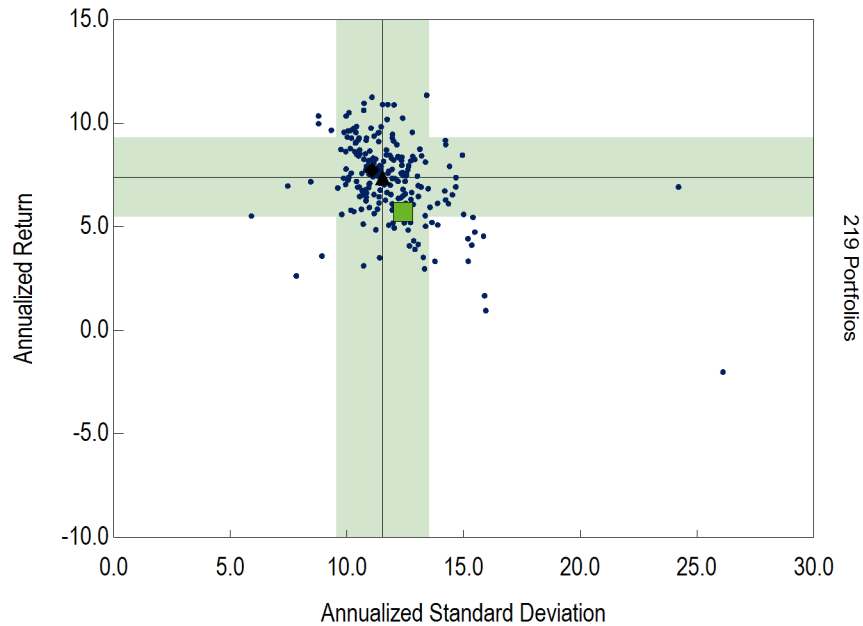


	Return (Rank)		Return (Rank)		Return (Rank)		Return (Rank)		Return (Rank)		Return (Rank)		Return (Rank)			
5th Percentile	15.53	8.17	10.88	11.22	13.16	10.19	12.66	16.62								
25th Percentile	12.56	4.68	6.73	8.56	11.30	8.43	11.50	14.82								
Median	11.53	2.12	3.65	6.50	10.32	7.39	10.65	13.95								
75th Percentile	10.54	-0.41	1.07	5.25	9.01	6.27	9.55	13.00								
95th Percentile	9.28	-4.16	-3.20	1.92	6.77	3.87	8.04	11.58								
# of Portfolios	238	233	233	230	228	219	197	178								
● Aronson, Johnson & Ortiz	10.31	(80)	-1.69	(85)	-0.17	(83)	5.21	(76)	8.61	(83)	5.72	(83)	9.99	(65)	13.48	(66)
▲ Russell 1000 Value	11.93	(41)	4.45	(27)	5.67	(30)	6.31	(55)	10.45	(46)	7.72	(42)	11.14	(38)	14.52	(37)

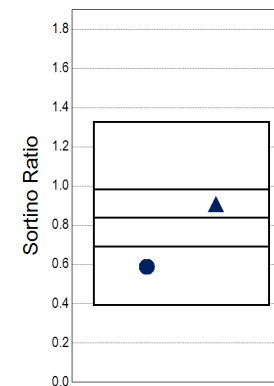
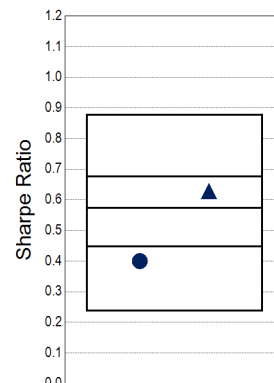
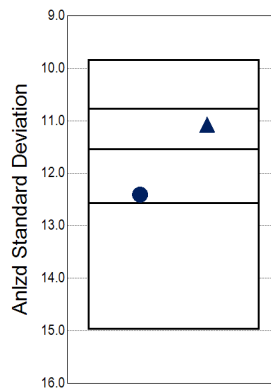
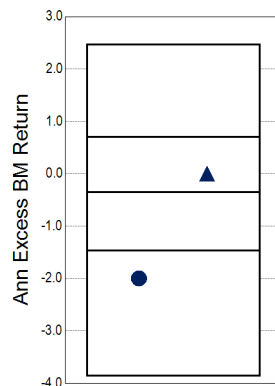
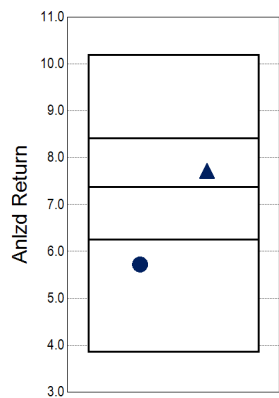
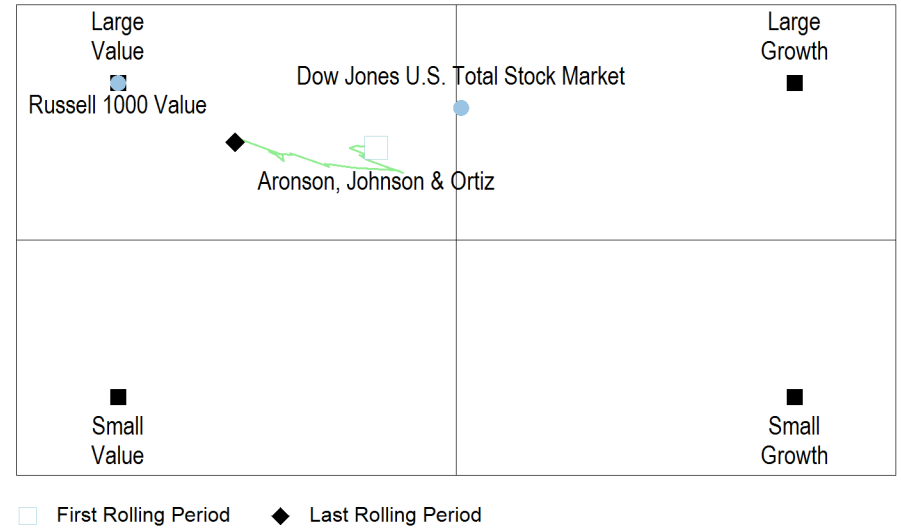


# ARONSON, JOHNSON & ORTIZ

5 Year Risk Return



5 Year Style Map



- Aronson, Johnson & Ortiz
- ▲ Russell 1000 Value
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



# Los Angeles City Employees' Retirement System

## EAM INVESTORS

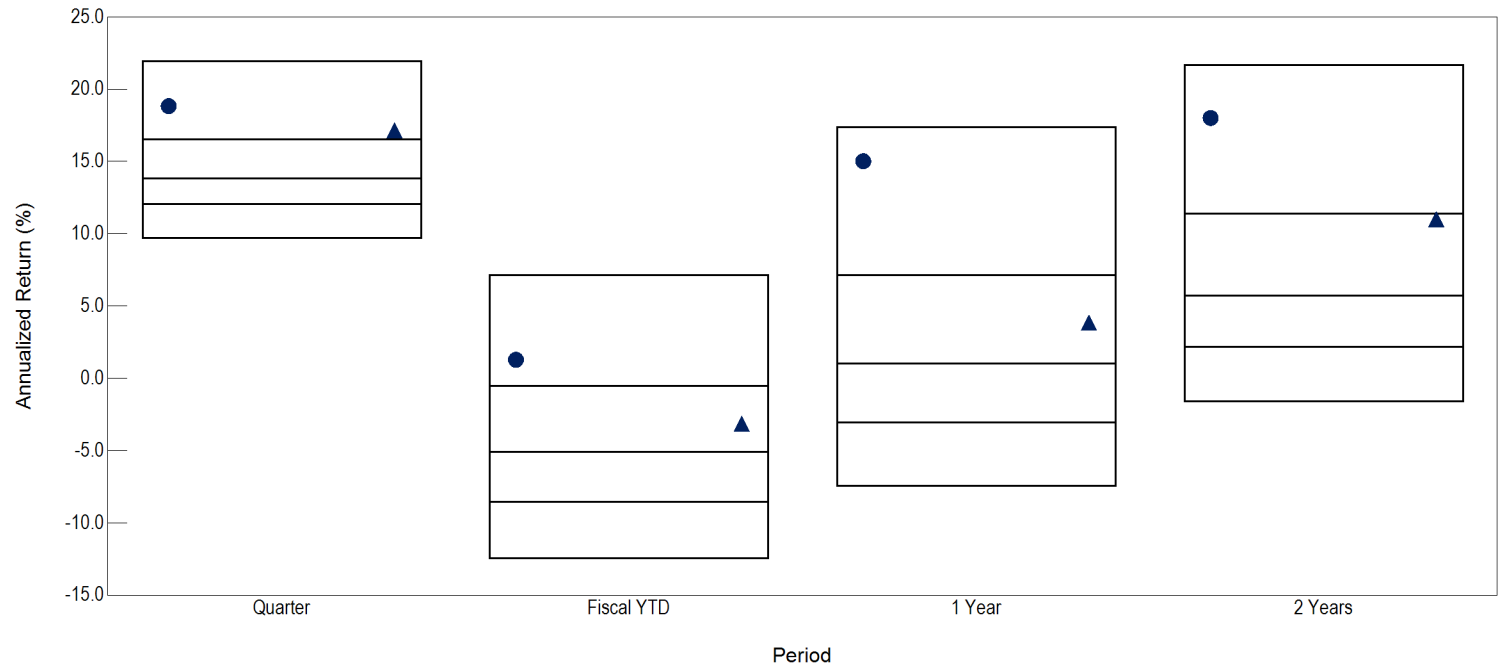
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## EAM INVESTORS

EAM Investors vs. eV US Small Cap Equity Net



	Return (Rank)							
5th Percentile	21.94		7.12		17.38		21.64	
25th Percentile	16.58		-0.51		7.17		11.44	
Median	13.85		-5.04		1.04		5.75	
75th Percentile	12.11		-8.51		-3.02		2.22	
95th Percentile	9.74		-12.41		-7.41		-1.53	
# of Portfolios	403		397		397		391	
● EAM Investors	18.82	(16)	1.27	(18)	15.01	(7)	18.00	(11)
▲ Russell 2000 Growth	17.14	(22)	-3.15	(38)	3.85	(39)	11.00	(26)

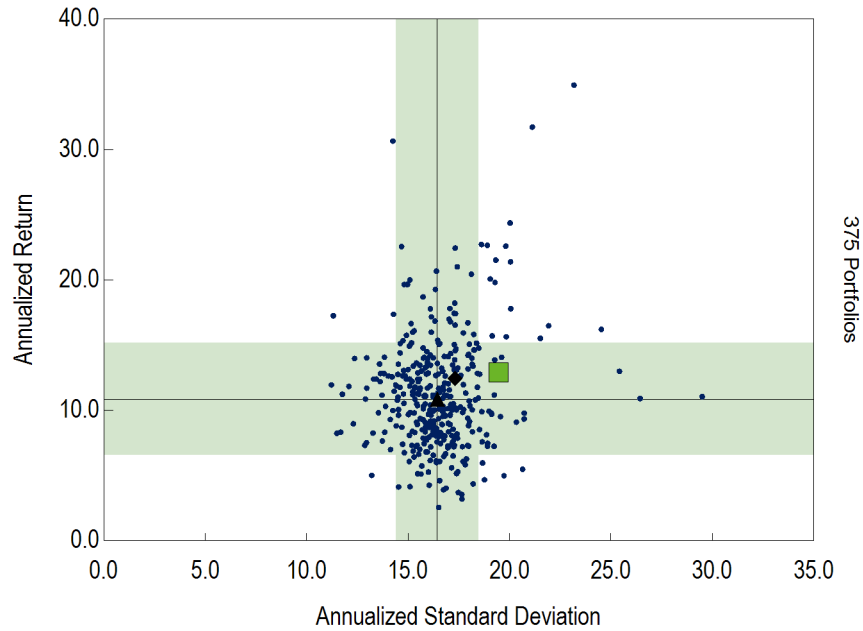




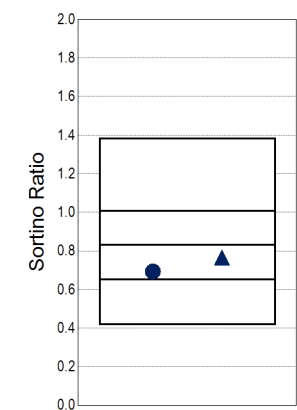
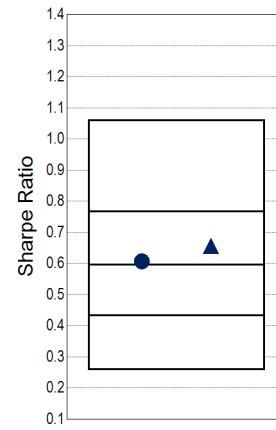
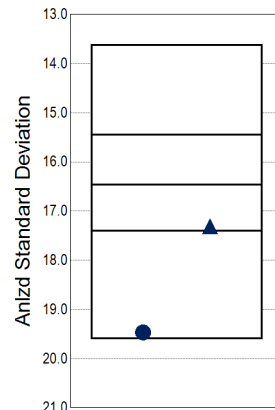
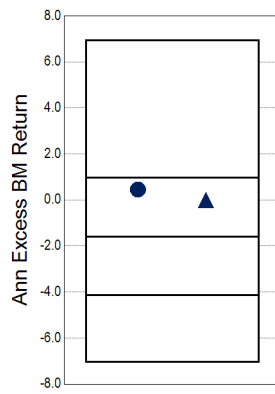
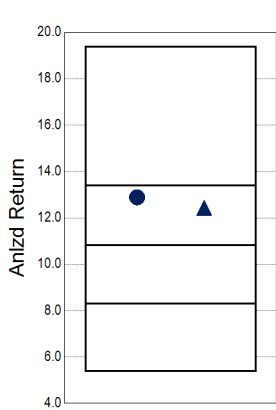
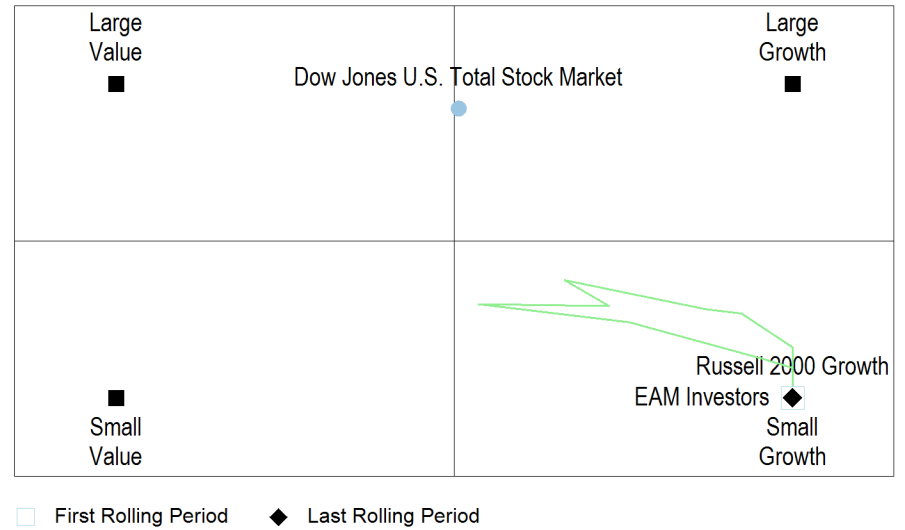
# Los Angeles City Employees' Retirement System

## EAM INVESTORS

Since Inception Risk Return



Since Inception Style Map



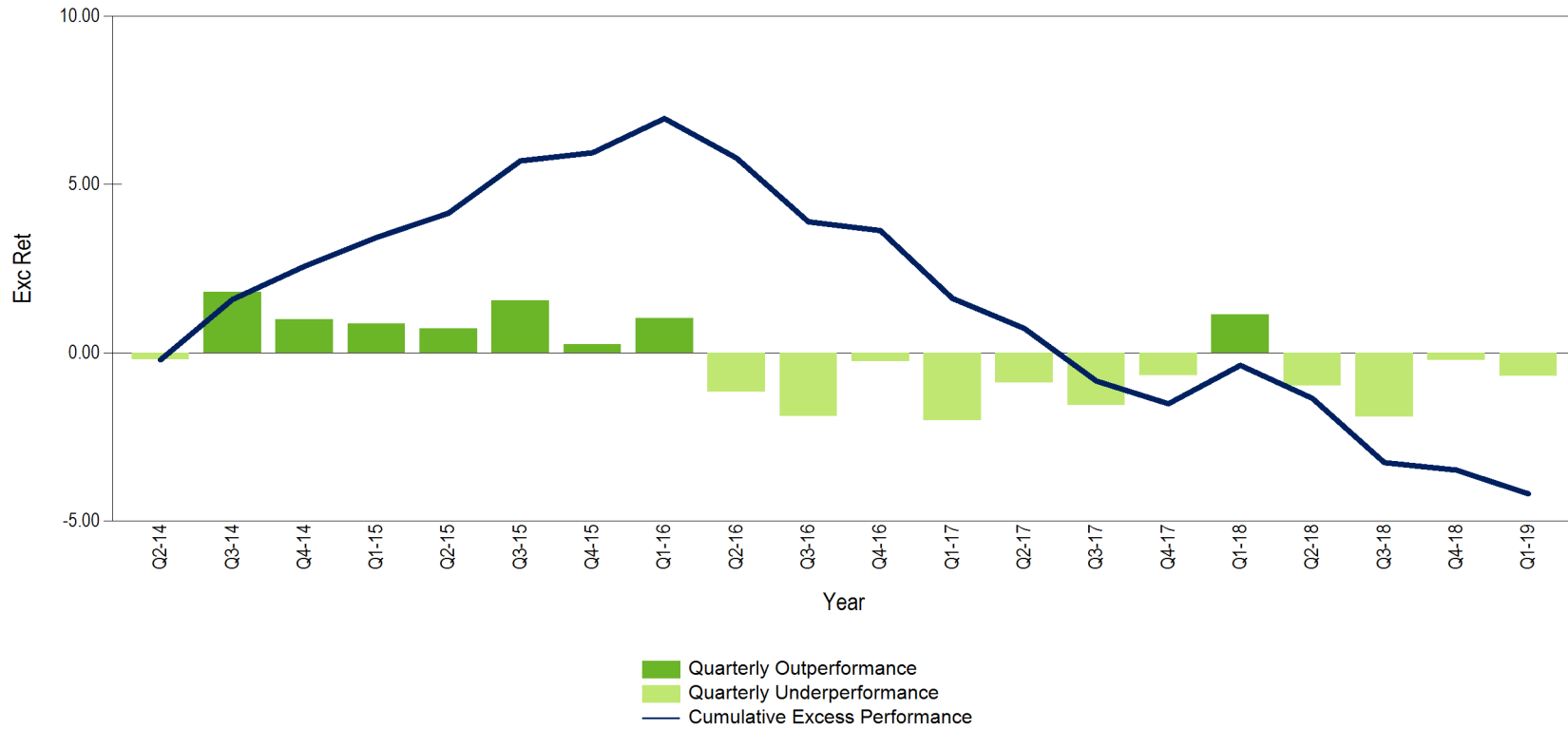
- EAM Investors
- ▲ Russell 2000 Growth
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



# Los Angeles City Employees' Retirement System

## PANAGORA

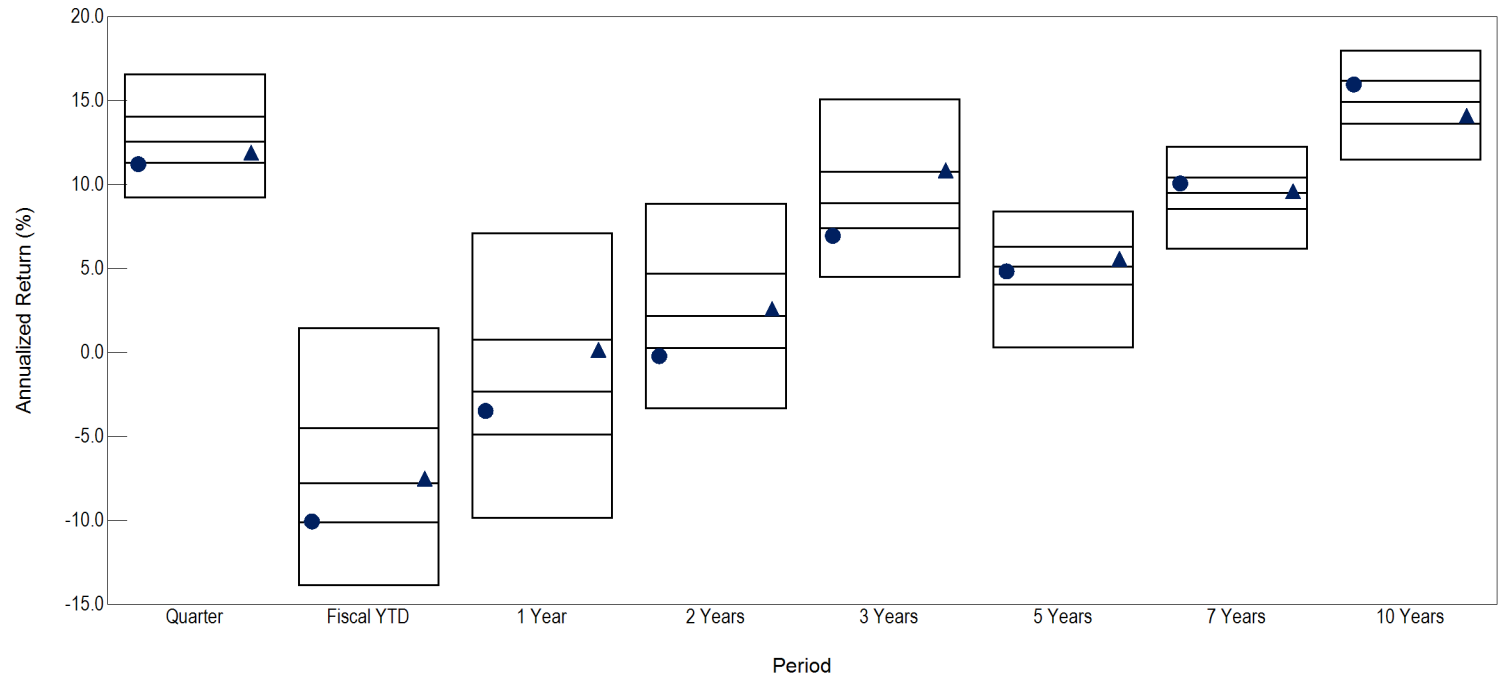
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## PANAGORA

PanAgora vs. eV US Small Cap Value Equity Net



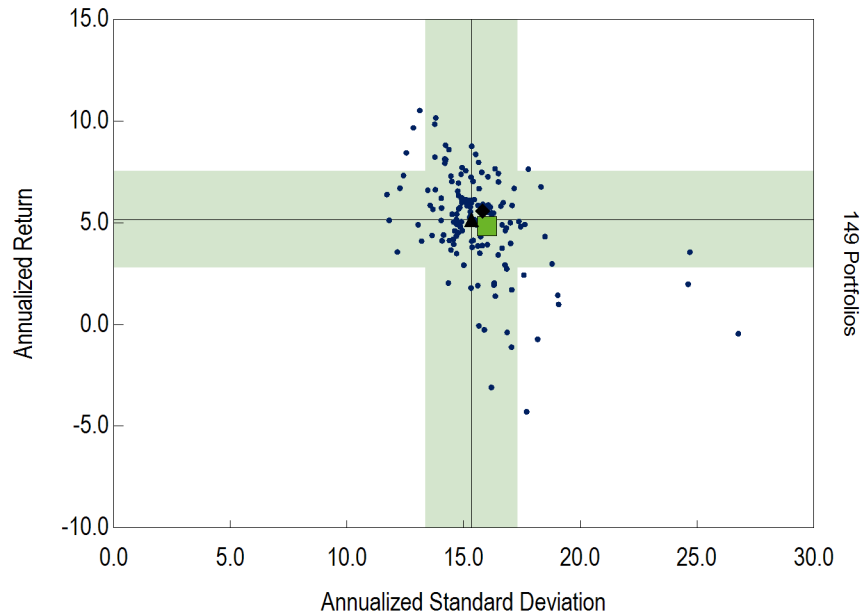
	Return (Rank)															
5th Percentile	16.59	1.47	7.11	8.87	15.08	8.42	12.25	17.98								
25th Percentile	14.07	-4.46	0.80	4.73	10.82	6.34	10.48	16.24								
Median	12.59	-7.74	-2.27	2.20	8.94	5.16	9.56	14.96								
75th Percentile	11.35	-10.06	-4.85	0.32	7.43	4.10	8.60	13.68								
95th Percentile	9.27	-13.81	-9.83	-3.29	4.54	0.36	6.23	11.54								
# of Portfolios	166	163	163	162	159	149	137	123								
● PanAgora	11.22	(77)	-10.06	(75)	-3.48	(60)	-0.21	(81)	6.95	(81)	4.84	(64)	10.07	(33)	15.97	(33)
▲ Russell 2000 Value	11.93	(67)	-7.51	(48)	0.17	(29)	2.62	(45)	10.86	(25)	5.59	(43)	9.61	(46)	14.12	(68)



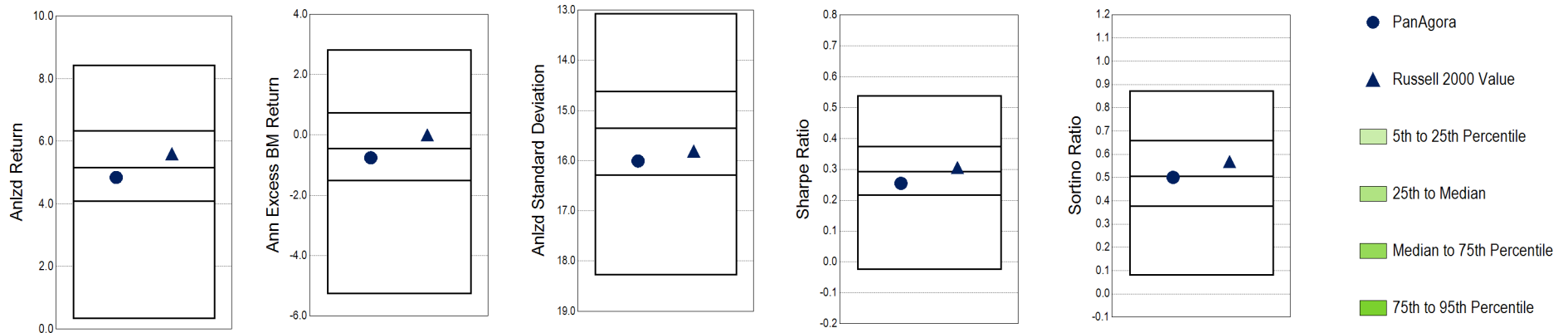
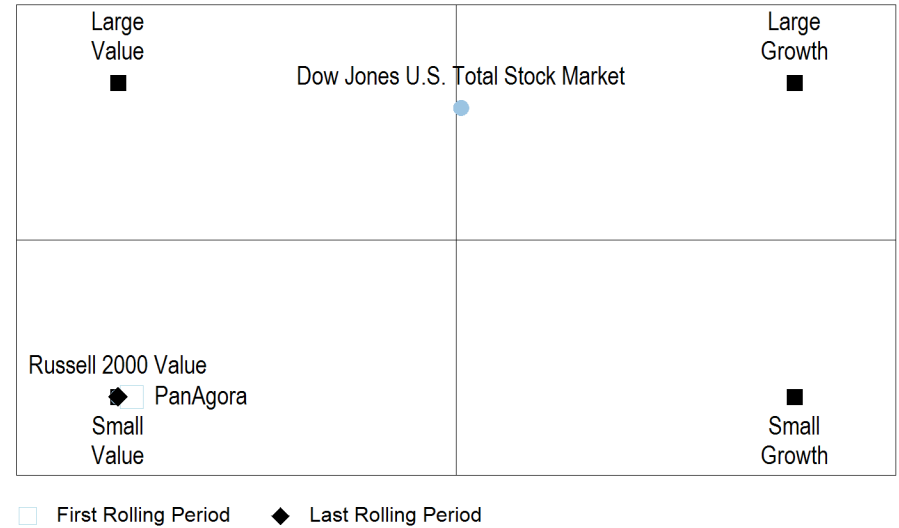
# Los Angeles City Employees' Retirement System

## PANAGORA

5 Year Risk Return



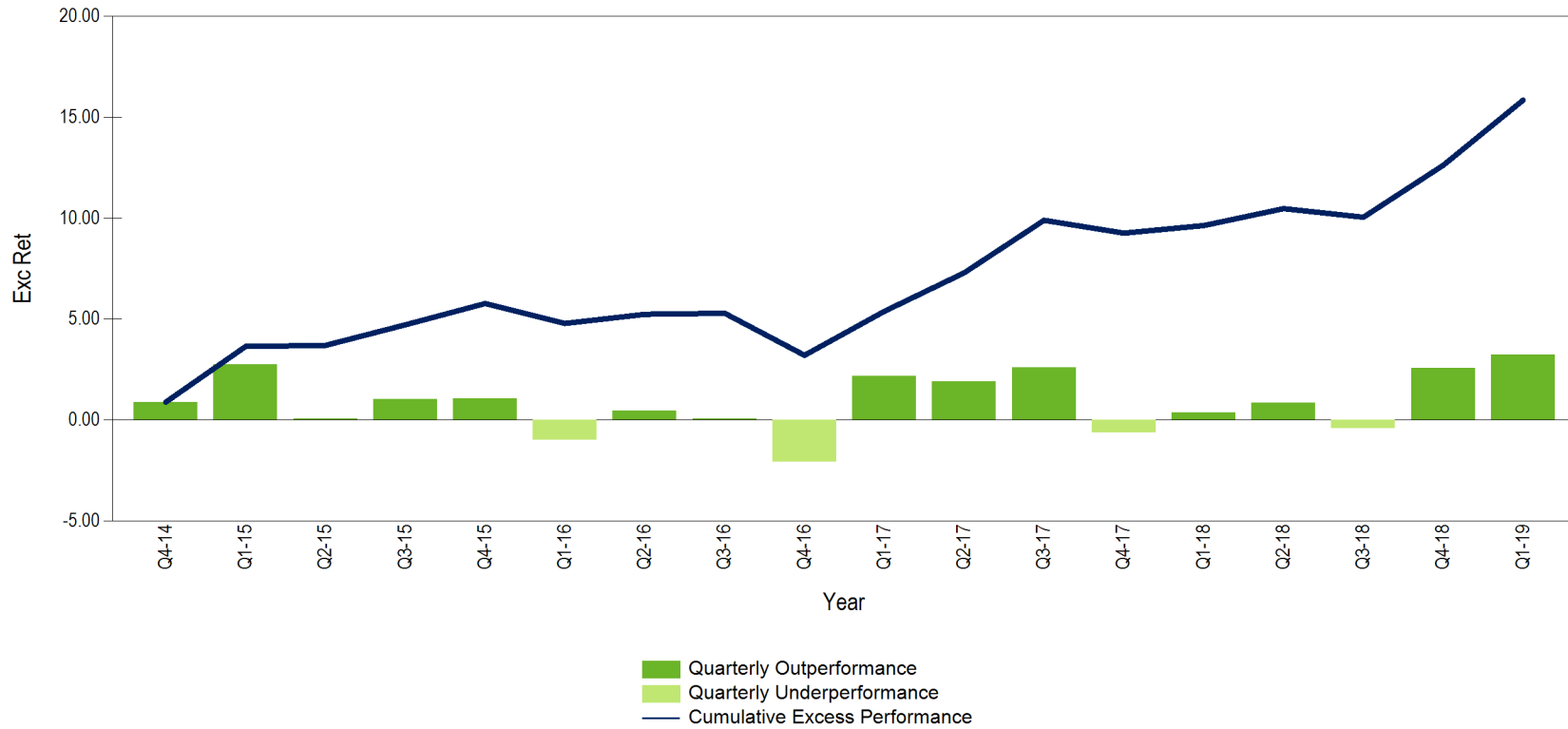
5 Year Style Map



# Los Angeles City Employees' Retirement System

## PRINCIPAL GLOBAL INVESTORS

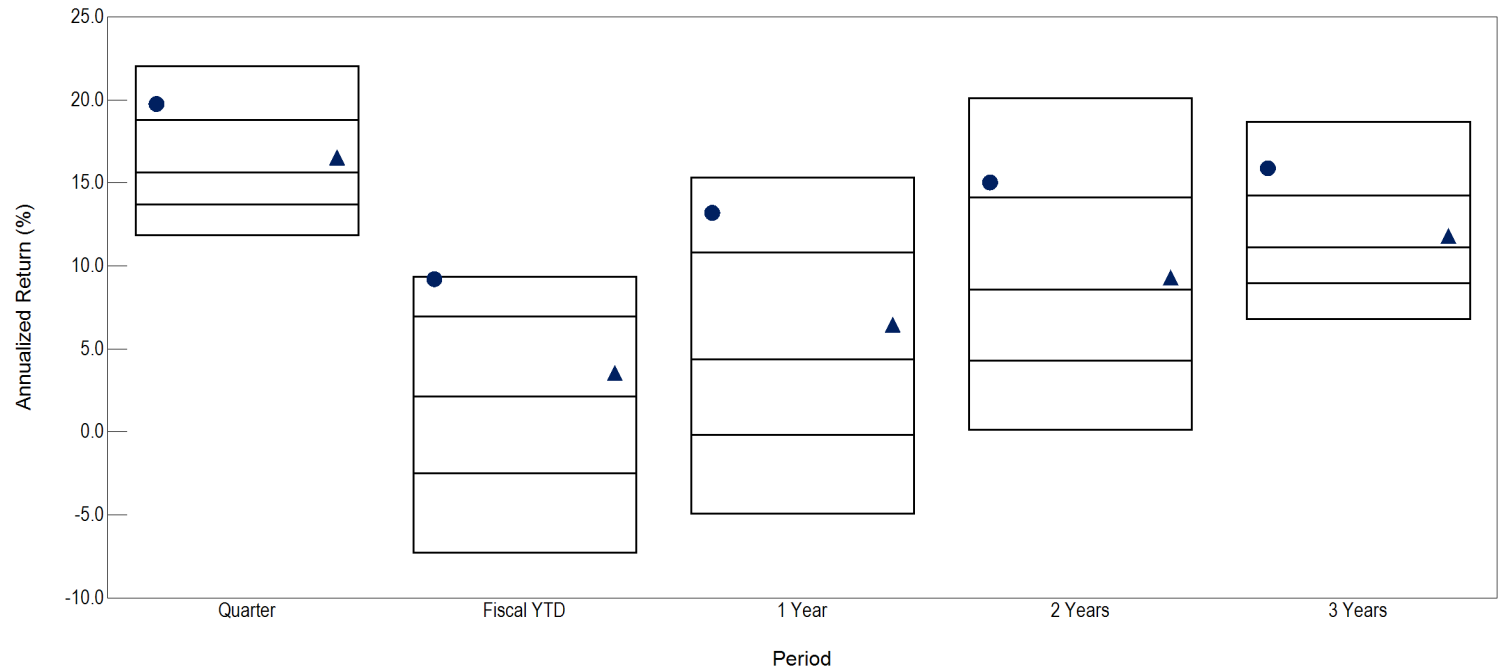
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## PRINCIPAL GLOBAL INVESTORS

Principal Global Investors vs. eV US Mid Cap Equity Net



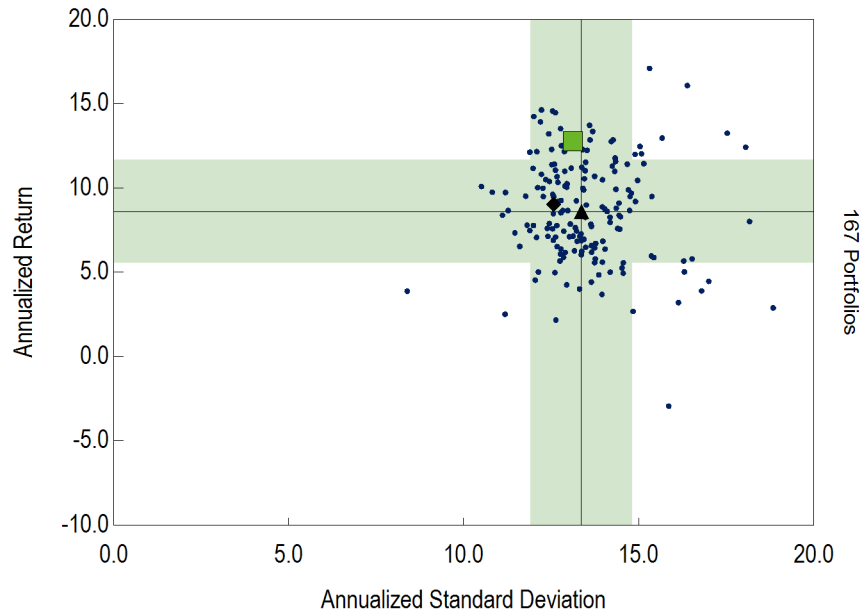
	Return (Rank)									
5th Percentile	22.02		9.35		15.32		20.10		18.69	
25th Percentile	18.82		7.00		10.85		14.18		14.27	
Median	15.69		2.18		4.40		8.63		11.17	
75th Percentile	13.73		-2.45		-0.15		4.32		9.01	
95th Percentile	11.90		-7.25		-4.87		0.15		6.83	
# of Portfolios	178		176		176		174		172	
● Principal Global Investors	19.76	(19)	9.21	(7)	13.20	(15)	15.03	(20)	15.89	(16)
▲ Russell MidCap	16.54	(41)	3.55	(42)	6.47	(42)	9.30	(48)	11.81	(46)



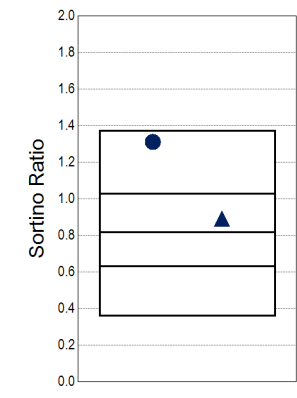
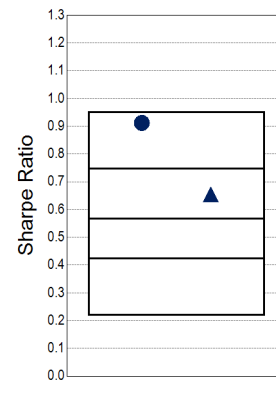
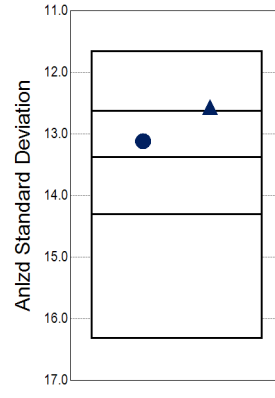
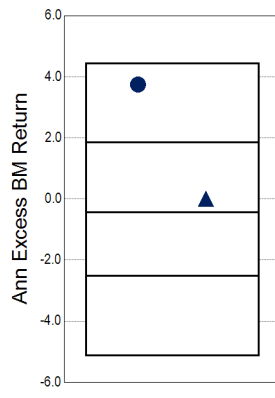
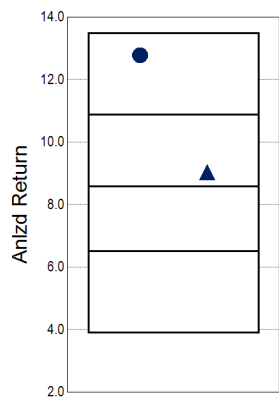
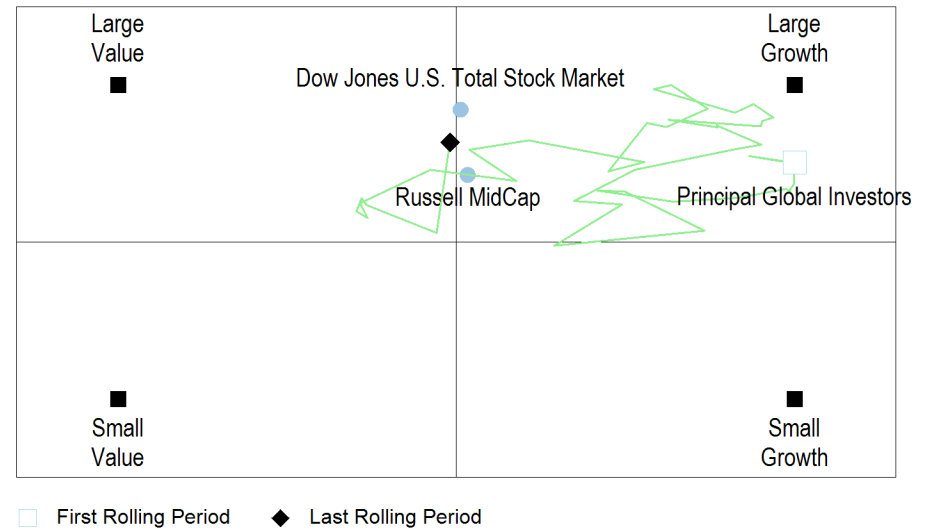
# Los Angeles City Employees' Retirement System

## PRINCIPAL GLOBAL INVESTORS

Since Inception Risk Return



Since Inception Style Map



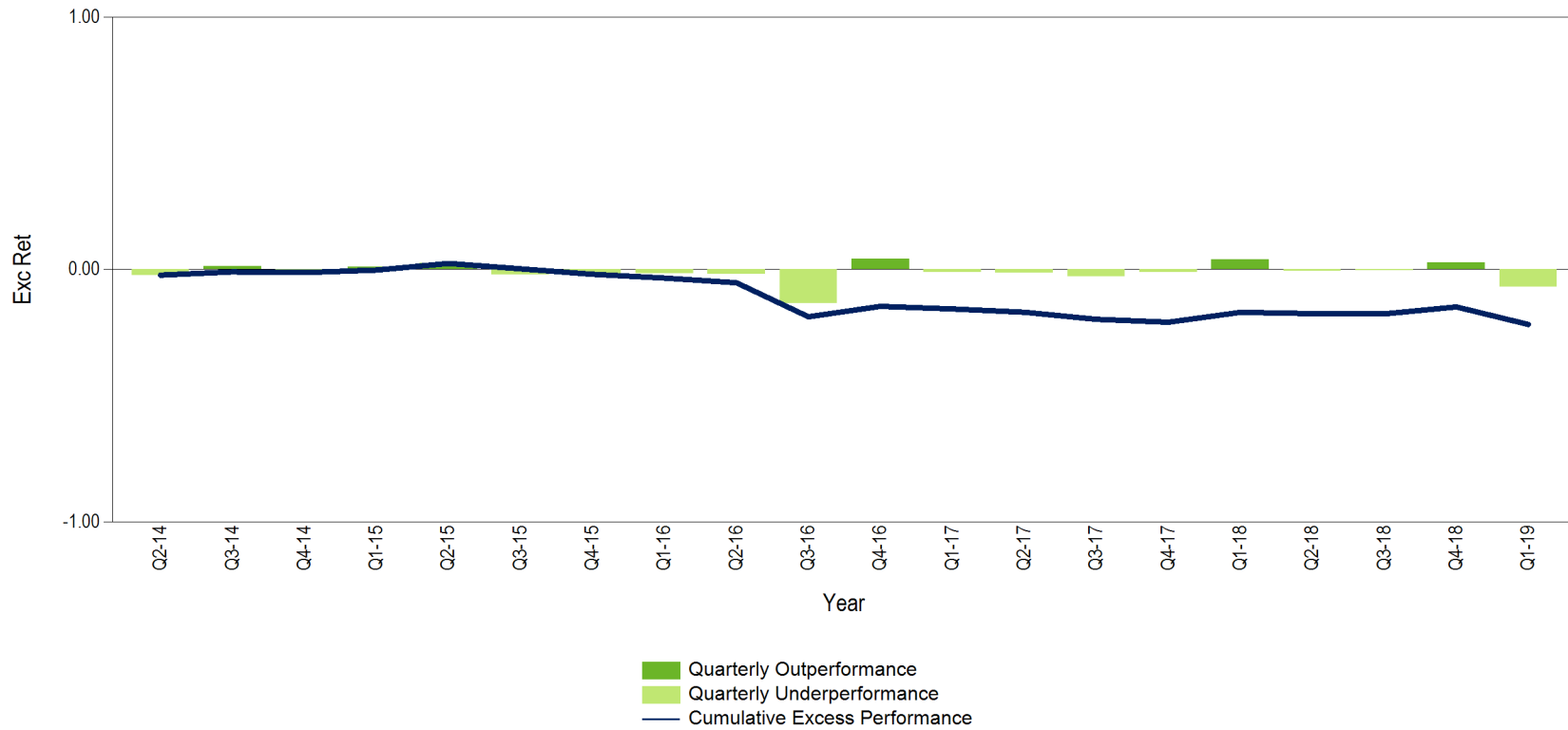
- Principal Global Investors
- ▲ Russell MidCap
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



# Los Angeles City Employees' Retirement System

## RHUMBLINE ADVISORS S&P 500

Quarterly and Cumulative Excess Performance

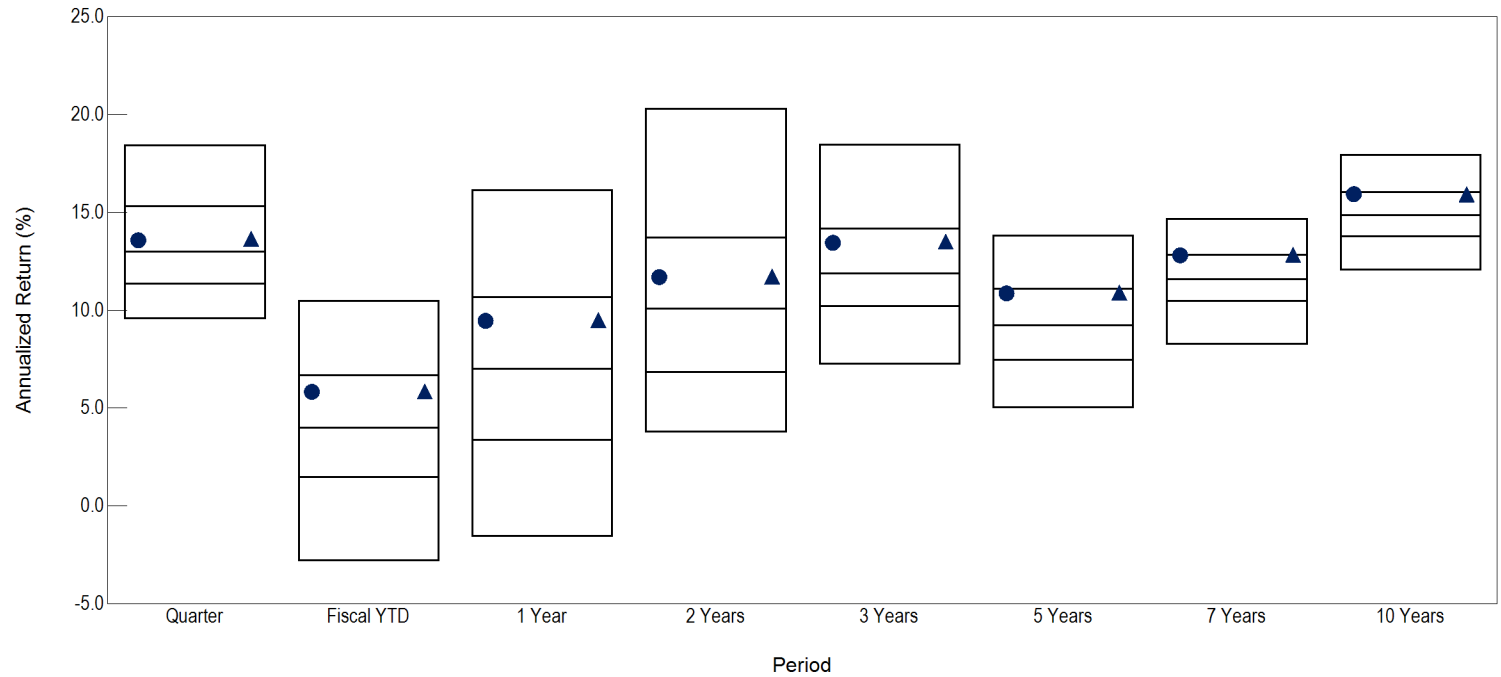




# Los Angeles City Employees' Retirement System

## RHUMBLINE ADVISORS S&P 500

Rhumbline Advisors S&P 500 vs. eV US Large Cap Equity Net

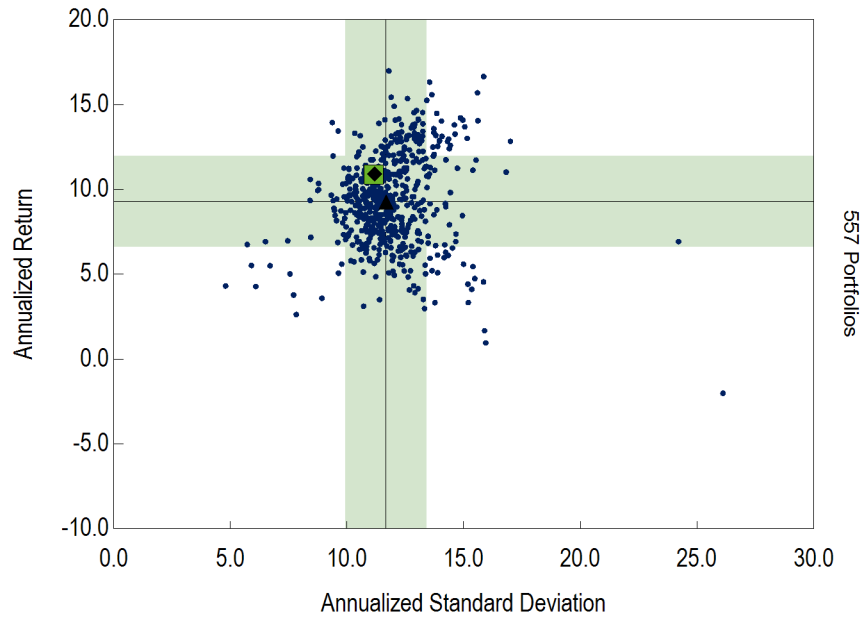


	Return (Rank)															
5th Percentile	18.42	10.49	16.13	20.30	18.46	13.81	14.67	17.94								
25th Percentile	15.35	6.71	10.71	13.75	14.20	11.13	12.86	16.06								
Median	13.03	4.04	7.03	10.11	11.91	9.28	11.64	14.89								
75th Percentile	11.40	1.50	3.41	6.88	10.26	7.50	10.53	13.81								
95th Percentile	9.61	-2.75	-1.51	3.85	7.31	5.07	8.30	12.13								
# of Portfolios	617	604	604	591	582	557	498	451								
● Rhumbline Advisors S&P 500	13.58	(42)	5.83	(33)	9.46	(33)	11.70	(36)	13.45	(33)	10.86	(29)	12.81	(26)	15.93	(28)
▲ S&P 500	13.65	(41)	5.86	(33)	9.50	(33)	11.72	(36)	13.51	(31)	10.91	(28)	12.85	(26)	15.92	(28)

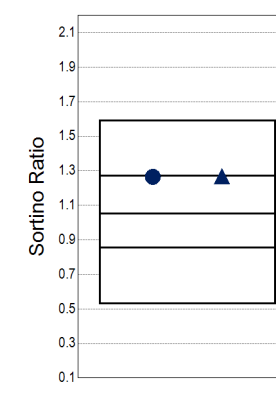
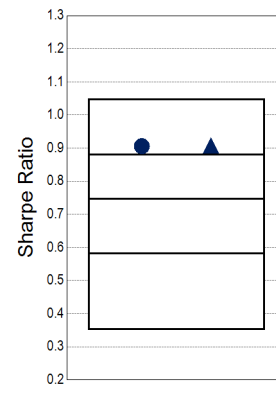
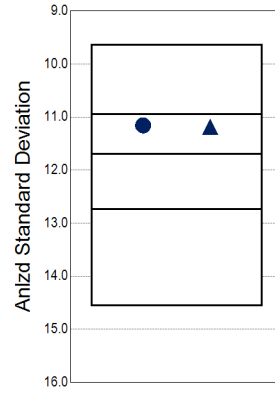
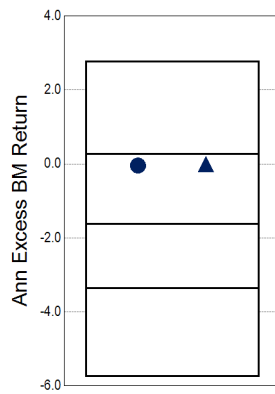
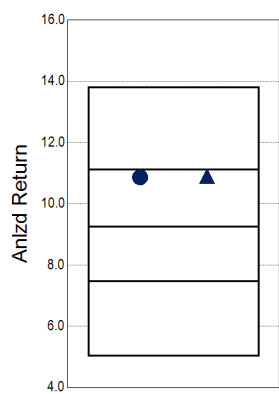
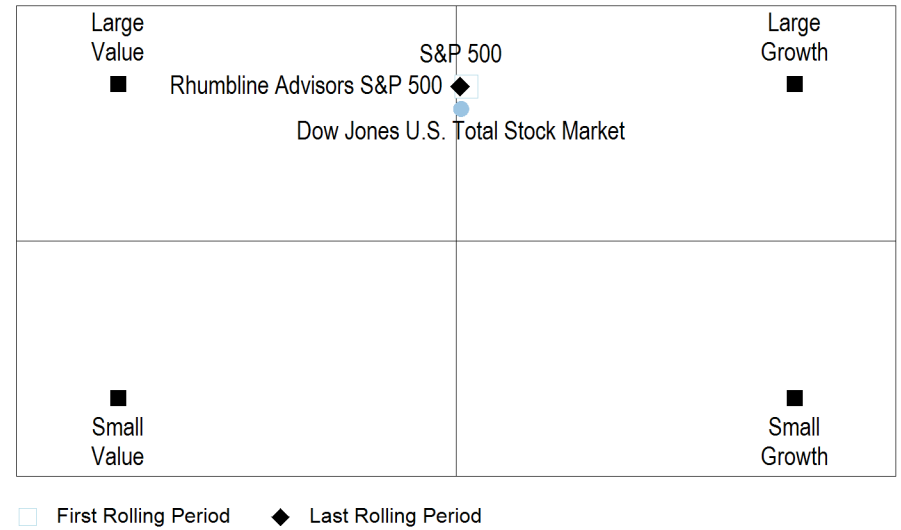


# RHUMBLINE ADVISORS S&P 500

5 Year Risk Return



5 Year Style Map

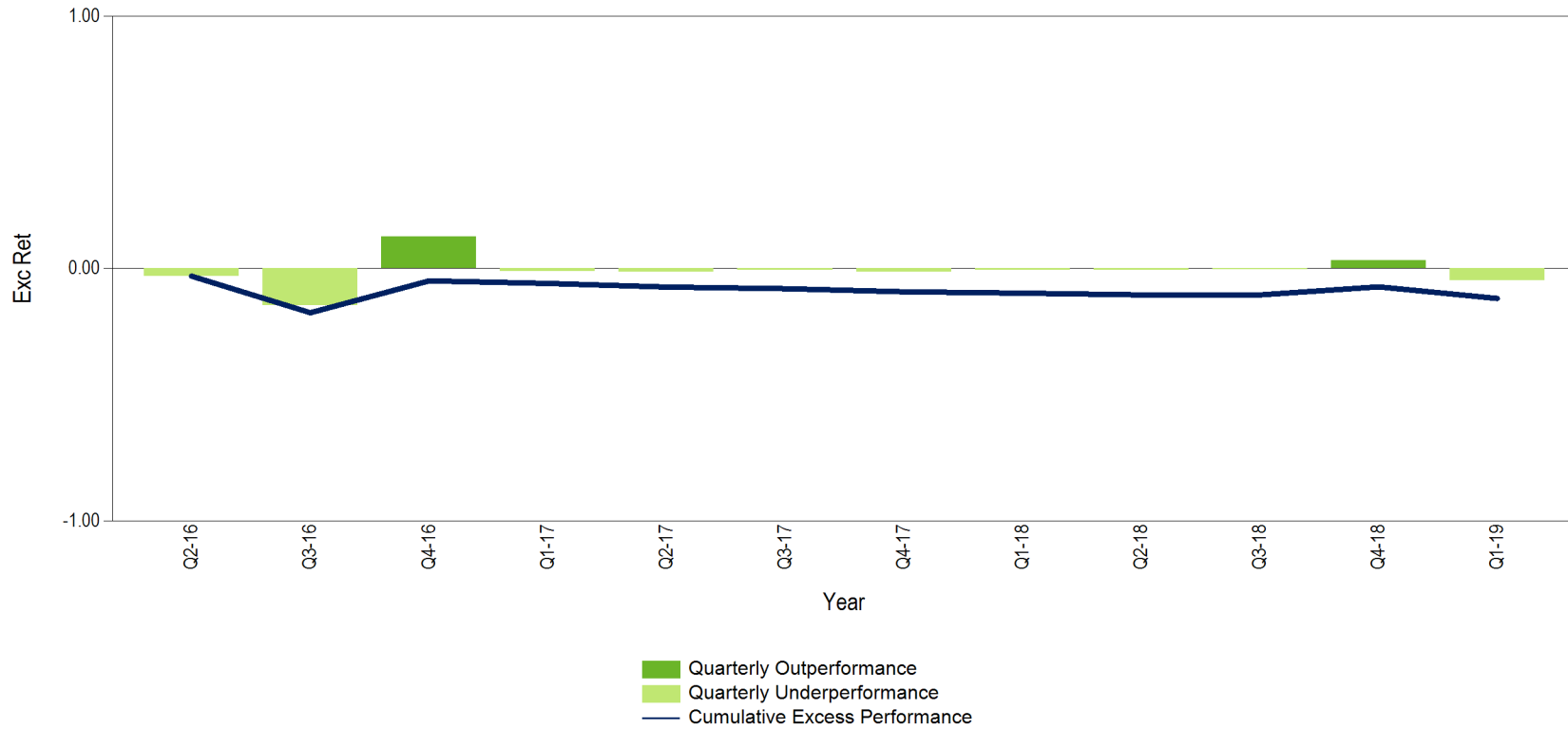


- Rhumbline Advisors S&P 500
- ▲ S&P 500
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



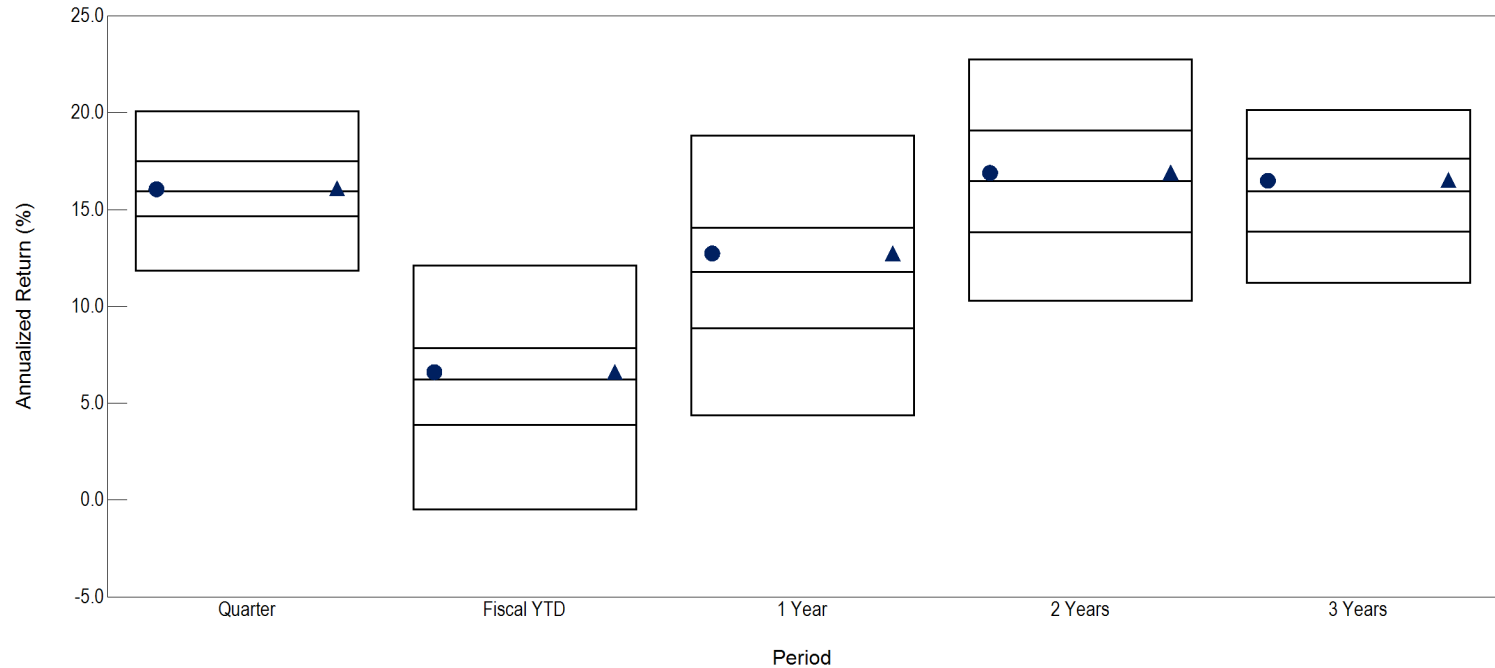
# RHUMBLINE ADVISORS RUSSELL 1000 GROWTH

Quarterly and Cumulative Excess Performance



# RHUMBLINE ADVISORS RUSSELL 1000 GROWTH

Rhumbline Advisors Russell 1000 Growth vs. eV US Large Cap Growth Equity Net

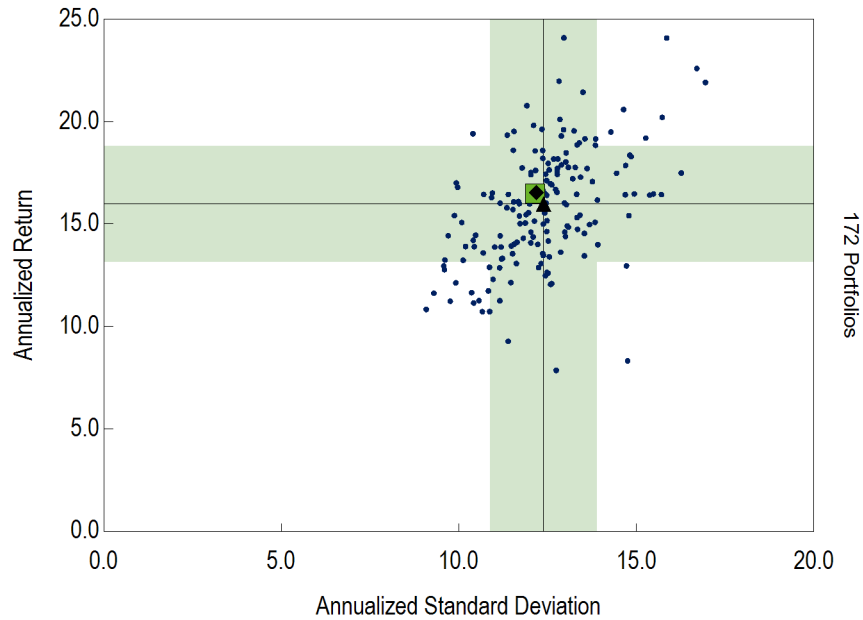


	Return (Rank)									
5th Percentile	20.09		12.11		18.84		22.75		20.15	
25th Percentile	17.54		7.87		14.10		19.12		17.65	
Median	15.99		6.25		11.81		16.50		15.98	
75th Percentile	14.69		3.93		8.92		13.88		13.89	
95th Percentile	11.89		-0.46		4.41		10.34		11.25	
# of Portfolios	183		180		180		176		172	
● Rhumbline Advisors Russell 1000 Growth	16.06	(50)	6.61	(45)	12.74	(40)	16.90	(45)	16.50	(38)
▲ Russell 1000 Growth	16.10	(49)	6.61	(45)	12.75	(40)	16.92	(44)	16.53	(38)

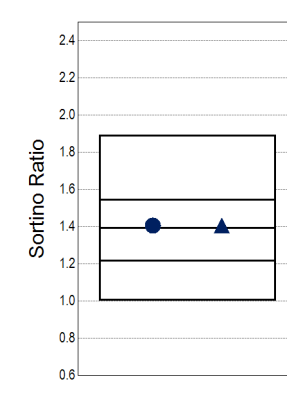
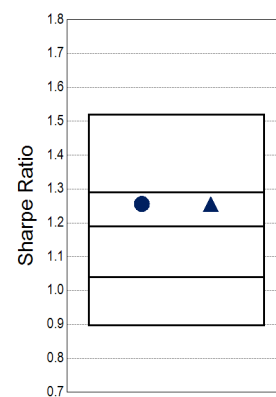
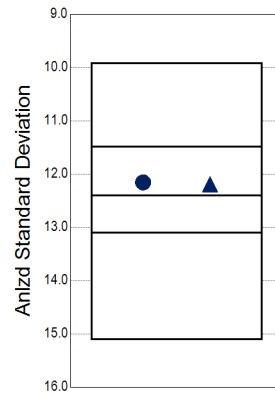
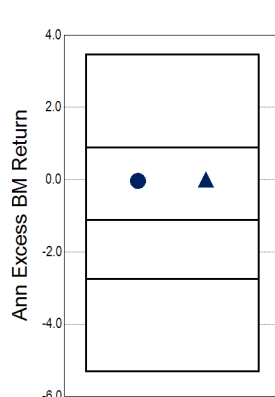
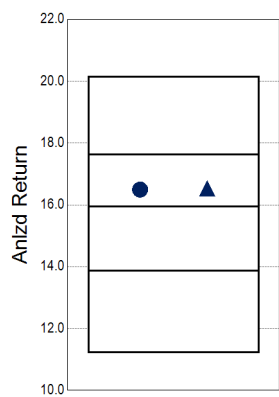
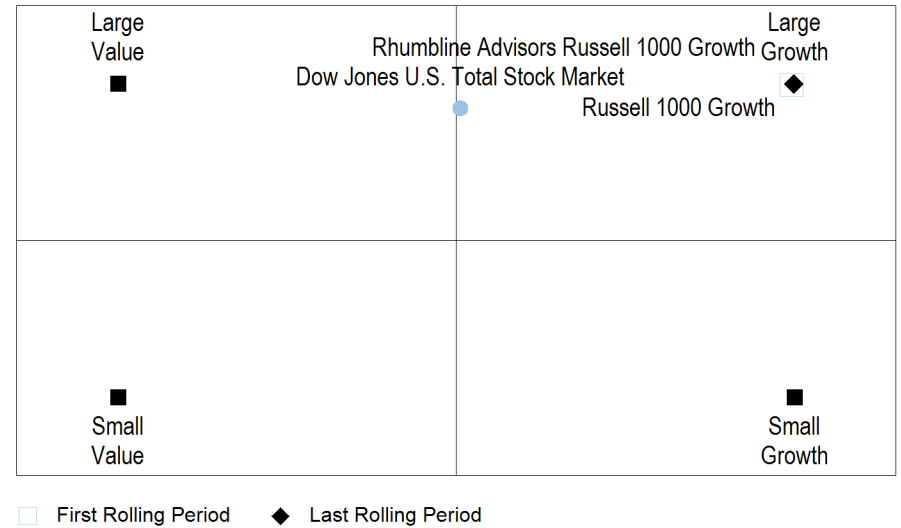


# RHUMBLINE ADVISORS RUSSELL 1000 GROWTH

3 Year Risk Return



3 Year Style Map

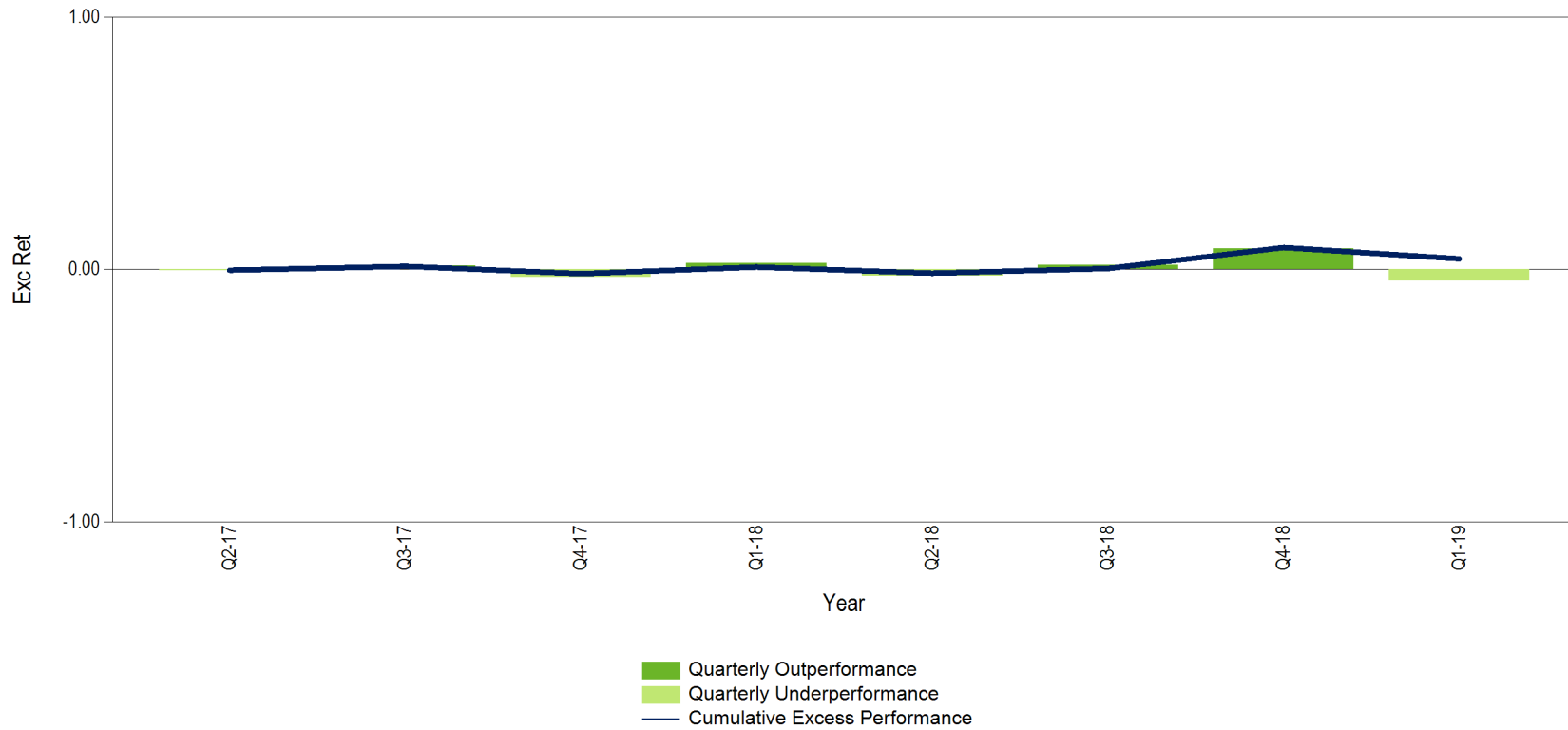


- Rhumbline Advisors Russell 1000 Growth
- ▲ Russell 1000 Growth
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



# RHUMBLINE ADVISORS RUSSELL 2000

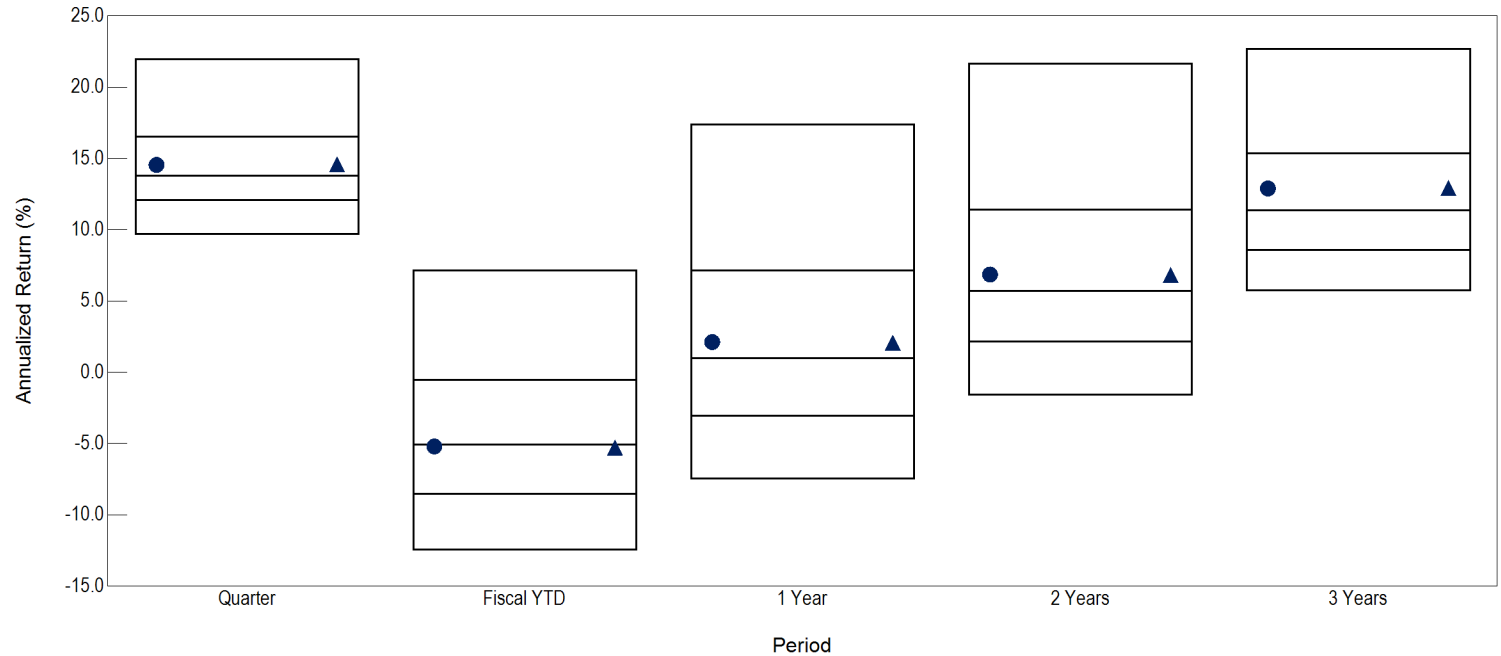
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## RHUMBLINE ADVISORS RUSSELL 2000

Rhumbline Advisors Russell 2000 vs. eV US Small Cap Equity Net

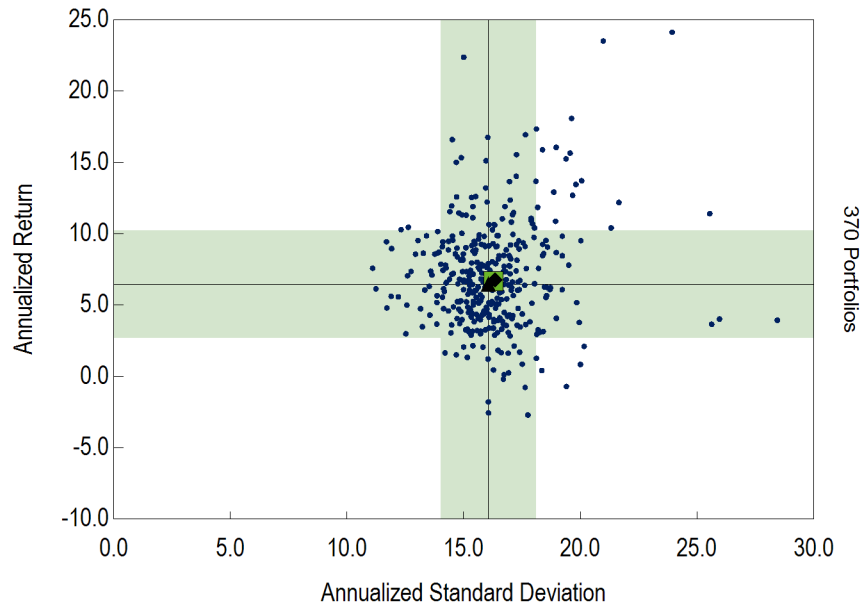


	Return (Rank)									
5th Percentile	21.94		7.12		17.38		21.64		22.68	
25th Percentile	16.58		-0.51		7.17		11.44		15.39	
Median	13.85		-5.04		1.04		5.75		11.41	
75th Percentile	12.11		-8.51		-3.02		2.22		8.64	
95th Percentile	9.74		-12.41		-7.41		-1.53		5.77	
# of Portfolios	403		397		397		391		381	
● Rhumbline Advisors Russell 2000	14.54	(43)	-5.22	(52)	2.11	(45)	6.85	(43)	12.88	(38)
▲ Russell 2000	14.58	(42)	-5.29	(52)	2.05	(45)	6.81	(43)	12.92	(38)

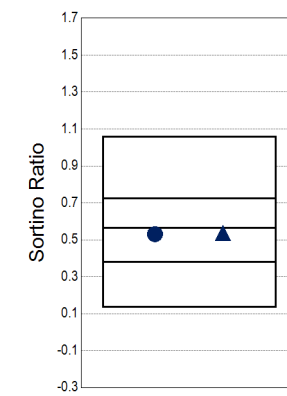
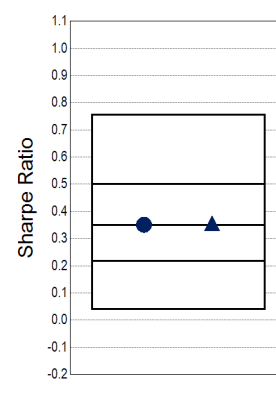
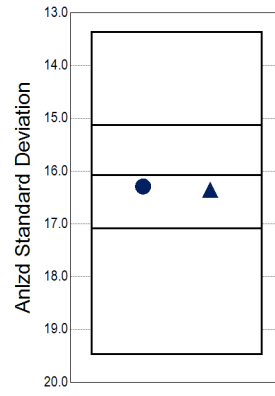
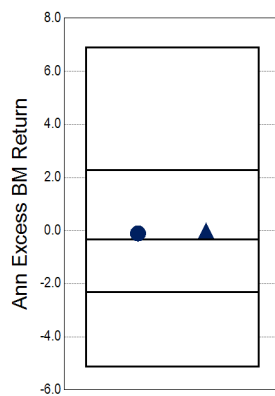
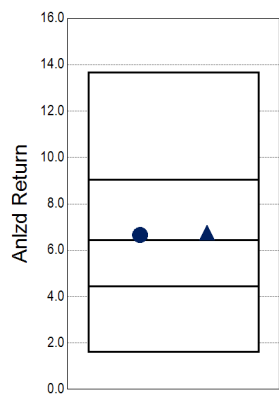
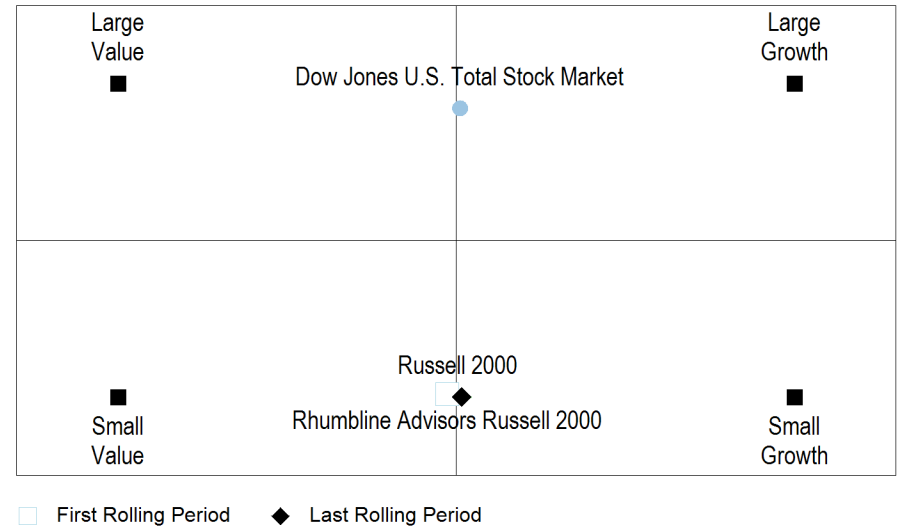


# RHUMBLINE ADVISORS RUSSELL 2000

Since Inception Risk Return



Since Inception Style Map



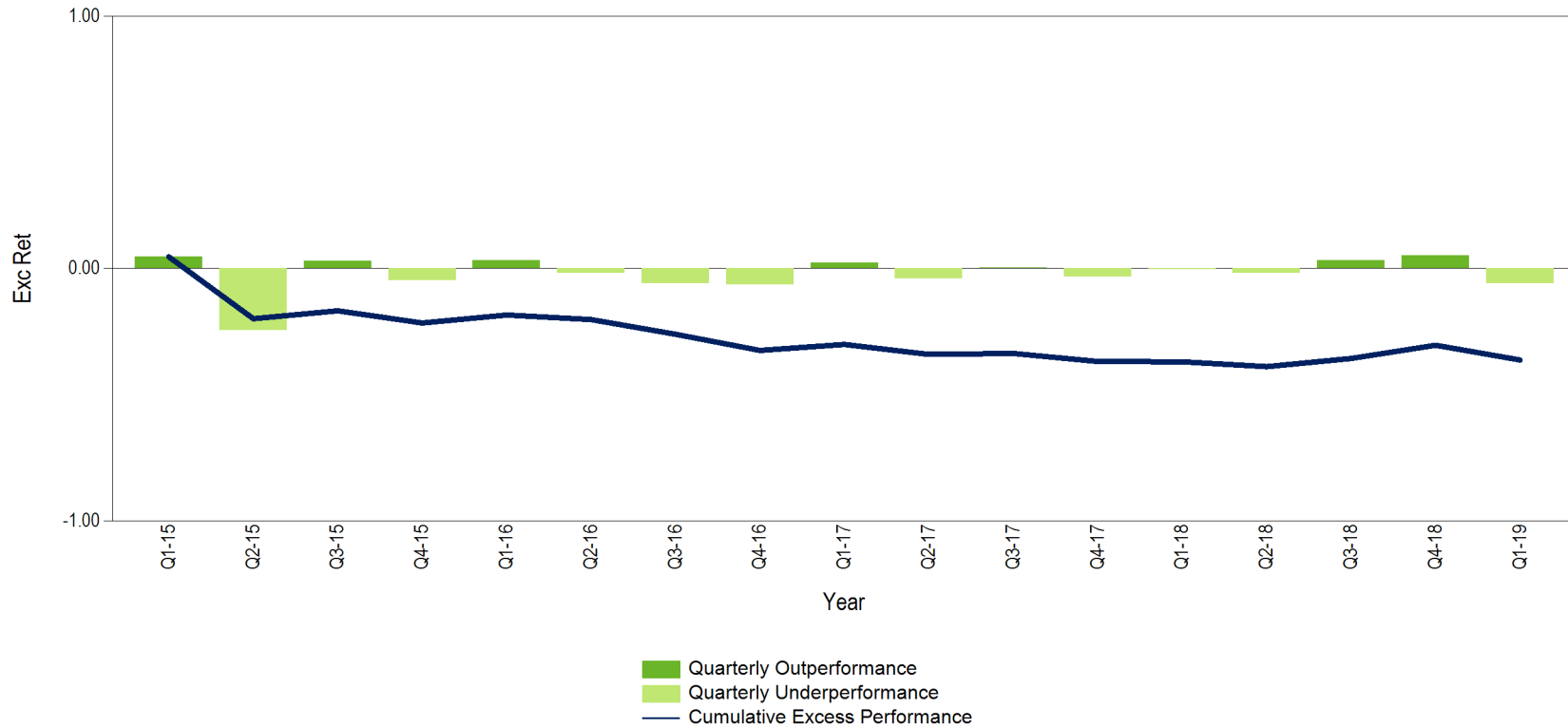
- Rhumbline Advisors Russell 2000
- ▲ Russell 2000
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile





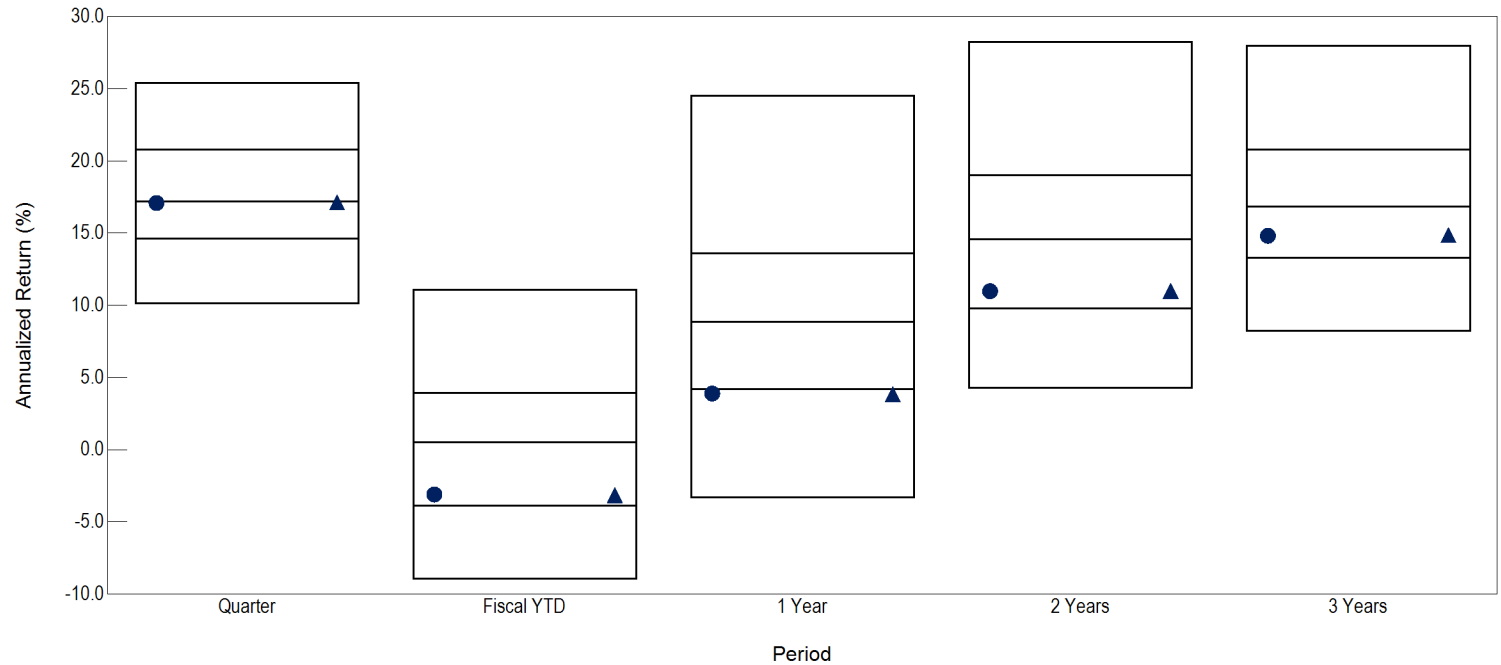
# RHUMBLINE ADVISORS RUSSELL 2000 GROWTH

Quarterly and Cumulative Excess Performance



# RHUMBLINE ADVISORS RUSSELL 2000 GROWTH

Rhumbline Advisors Russell 2000 Growth vs. eV US Small Cap Growth Equity Net

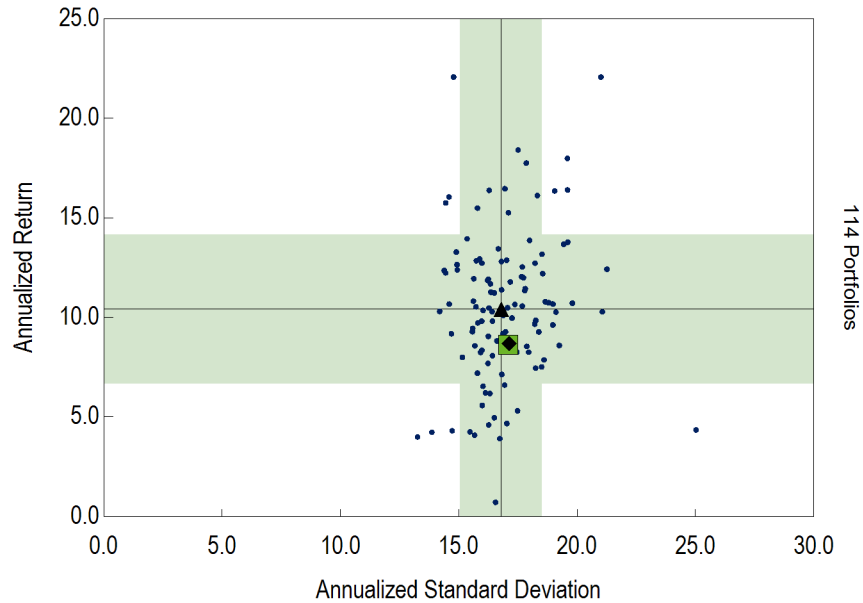


	Return (Rank)									
5th Percentile	25.40		11.06		24.53		28.26		27.98	
25th Percentile	20.84		3.97		13.63		19.07		20.82	
Median	17.26		0.55		8.90		14.63		16.89	
75th Percentile	14.65		-3.82		4.25		9.81		13.34	
95th Percentile	10.20		-8.88		-3.26		4.34		8.29	
# of Portfolios	126		124		124		124		121	
● Rhumbline Advisors Russell 2000 Growth	17.09	(52)	-3.11	(73)	3.88	(77)	10.98	(69)	14.82	(67)
▲ Russell 2000 Growth	17.14	(52)	-3.15	(73)	3.85	(77)	11.00	(69)	14.87	(67)

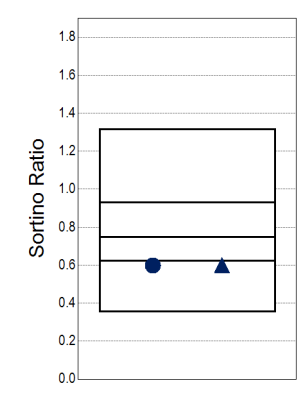
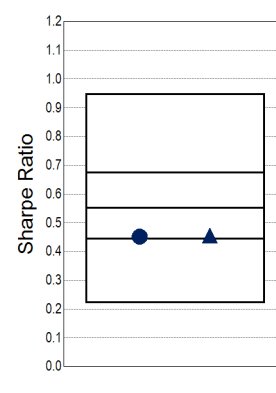
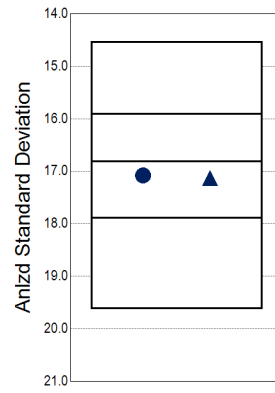
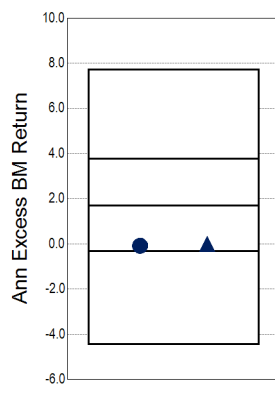
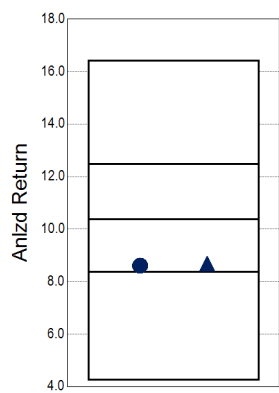
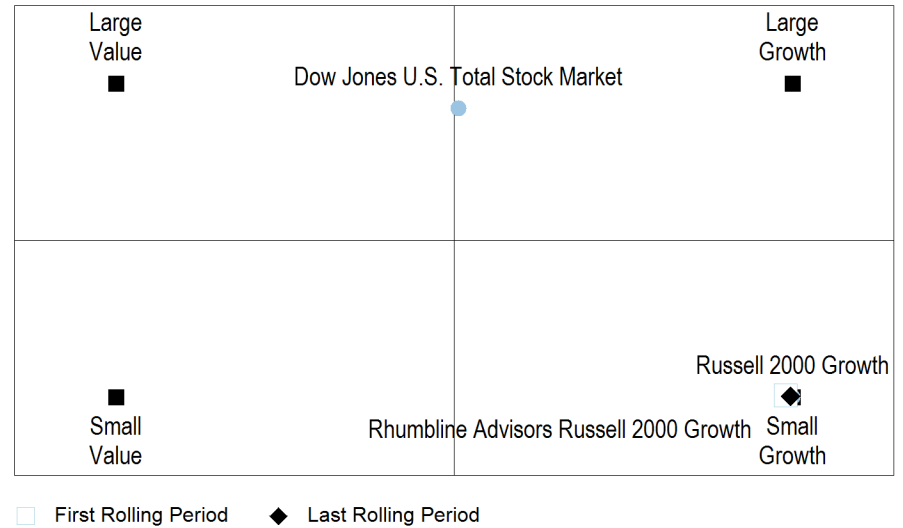


# RHUMBLINE ADVISORS RUSSELL 2000 GROWTH

Since Inception Risk Return



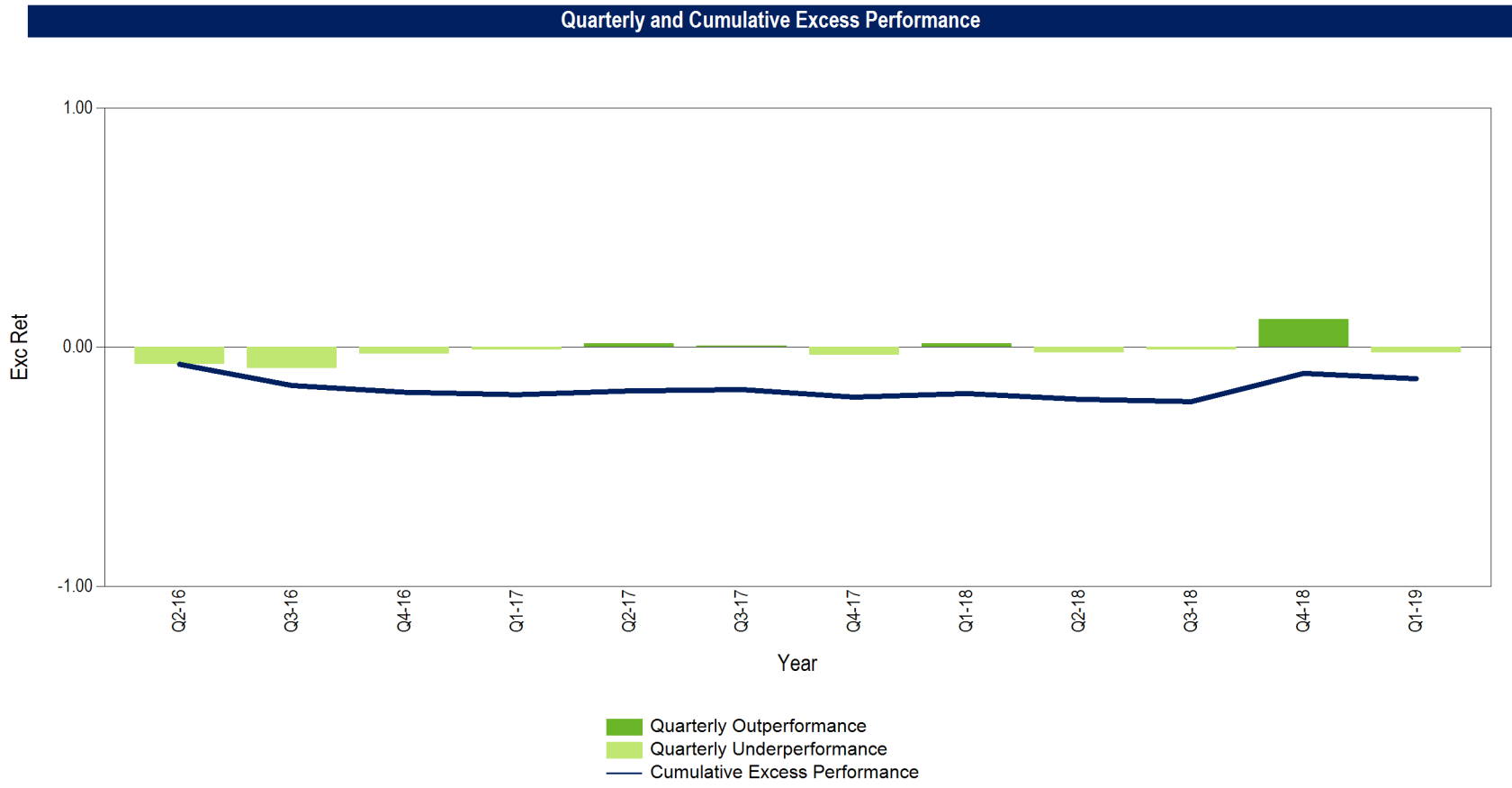
Since Inception Style Map



- Rhumbline Advisors Russell 2000 Growth
- ▲ Russell 2000 Growth
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



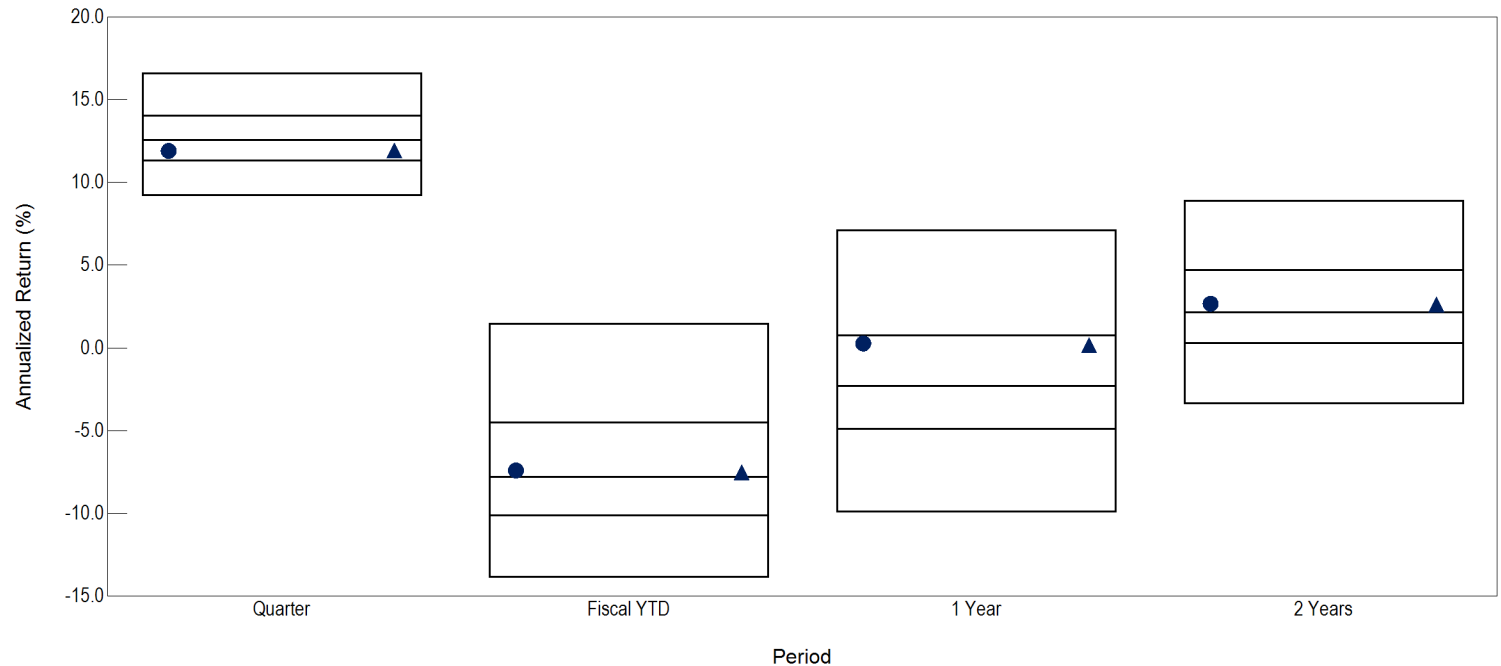
# RHUMBLINE ADVISORS RUSSELL 2000 VALUE



# Los Angeles City Employees' Retirement System

## RHUMBLINE ADVISORS RUSSELL 2000 VALUE

Rhumbline Advisors Russell 2000 Value vs. eV US Small Cap Value Equity Net

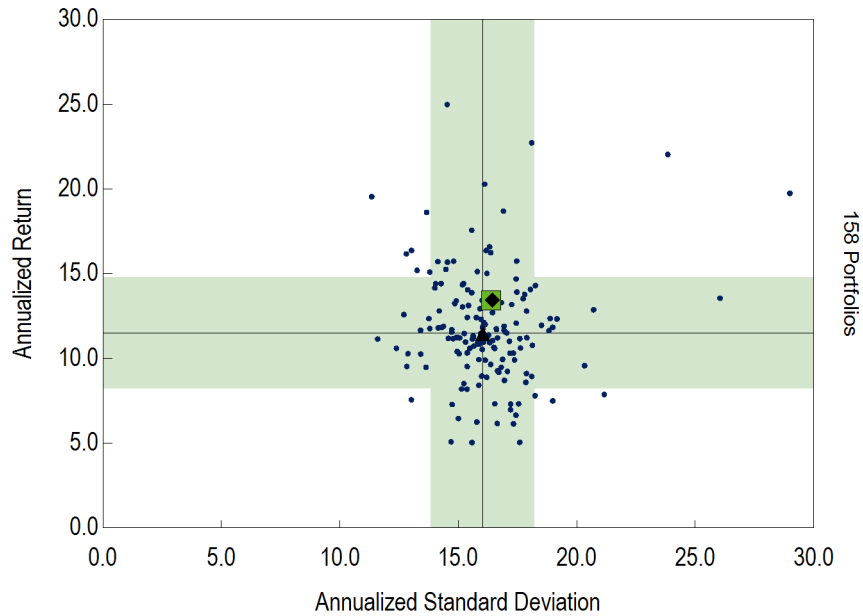


	Return (Rank)							
5th Percentile	16.59		1.47		7.11		8.87	
25th Percentile	14.07		-4.46		0.80		4.73	
Median	12.59		-7.74		-2.27		2.20	
75th Percentile	11.35		-10.06		-4.85		0.32	
95th Percentile	9.27		-13.81		-9.83		-3.29	
# of Portfolios	166		163		163		162	
● Rhumbline Advisors Russell 2000 Value	11.90	(67)	-7.40	(47)	0.27	(28)	2.67	(43)
▲ Russell 2000 Value	11.93	(67)	-7.51	(48)	0.17	(29)	2.62	(45)

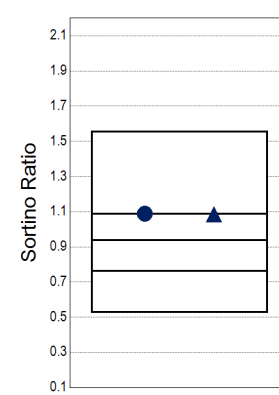
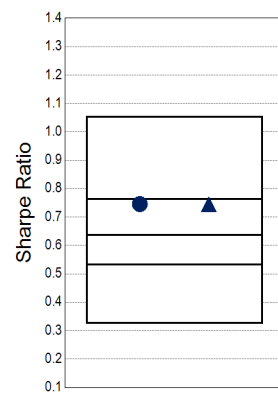
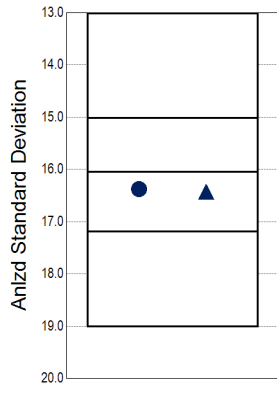
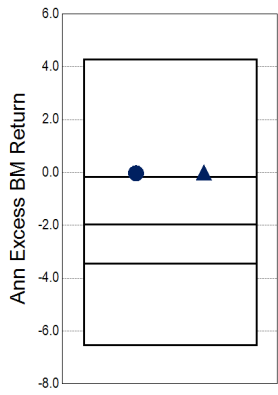
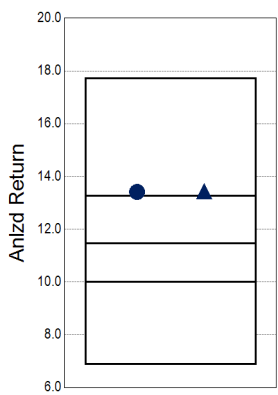
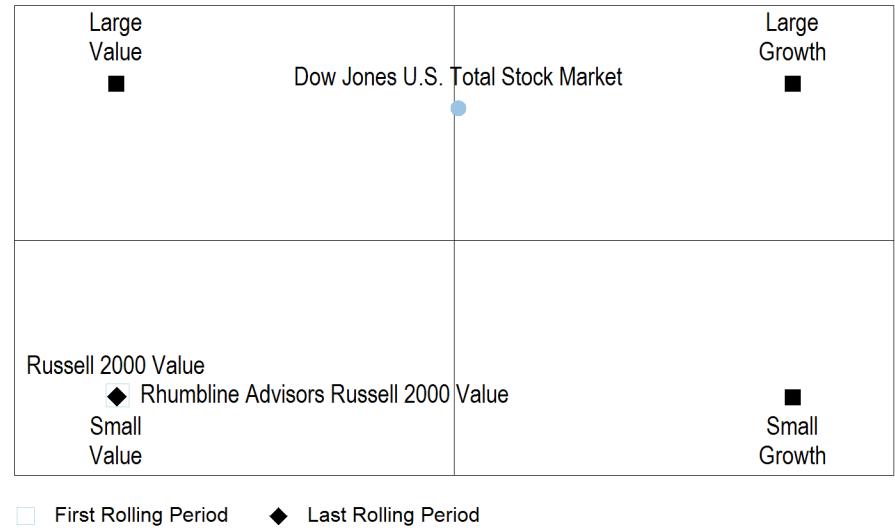


# RHUMBLINE ADVISORS RUSSELL 2000 VALUE

Since Inception Risk Return



Since Inception Style Map



- Rhumbline Advisors Russell 2000 Value
- ▲ Russell 2000 Value
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



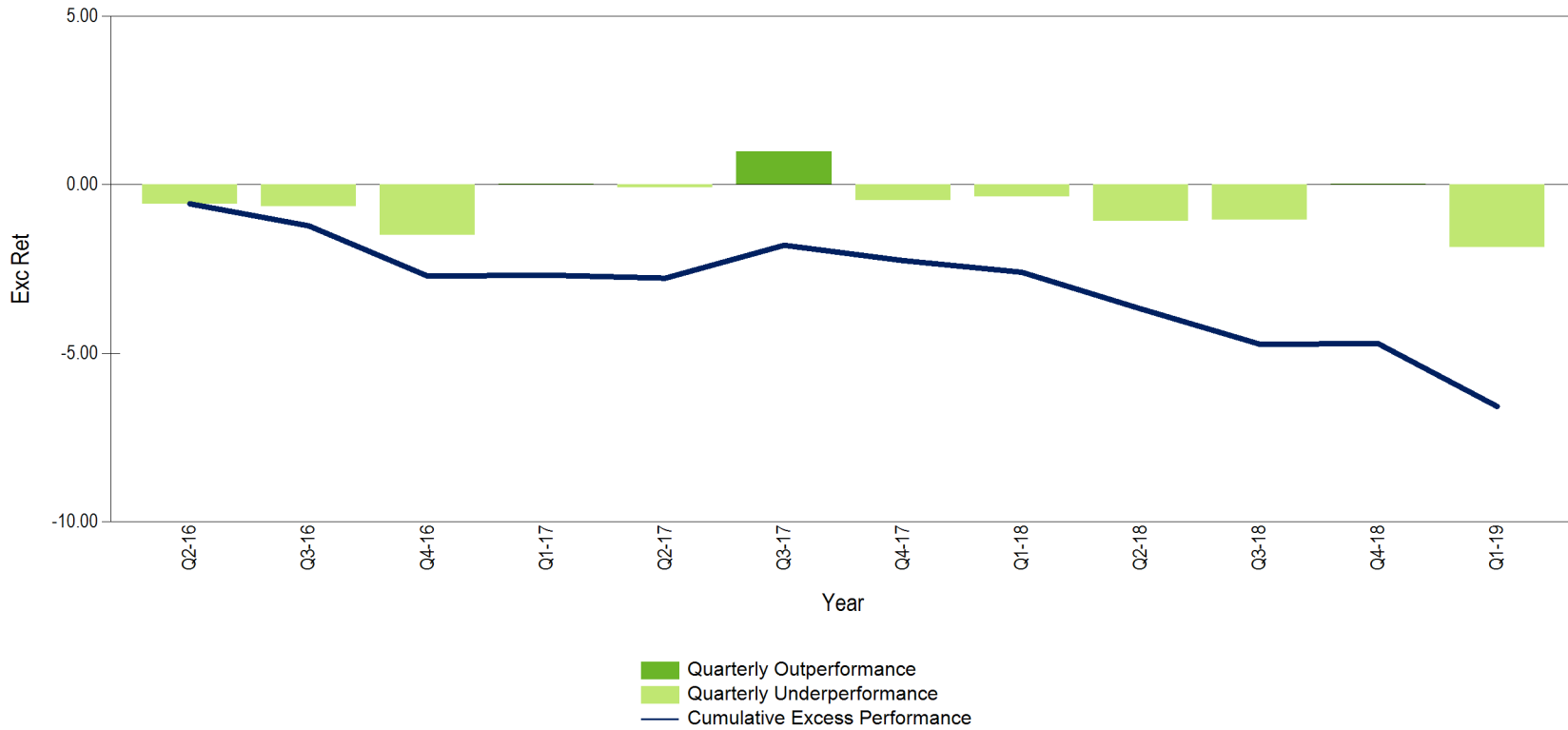
# **NON-U.S. EQUITY MANAGER PERFORMANCE**

NEPC, LLC

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# AQR CAPITAL

Quarterly and Cumulative Excess Performance

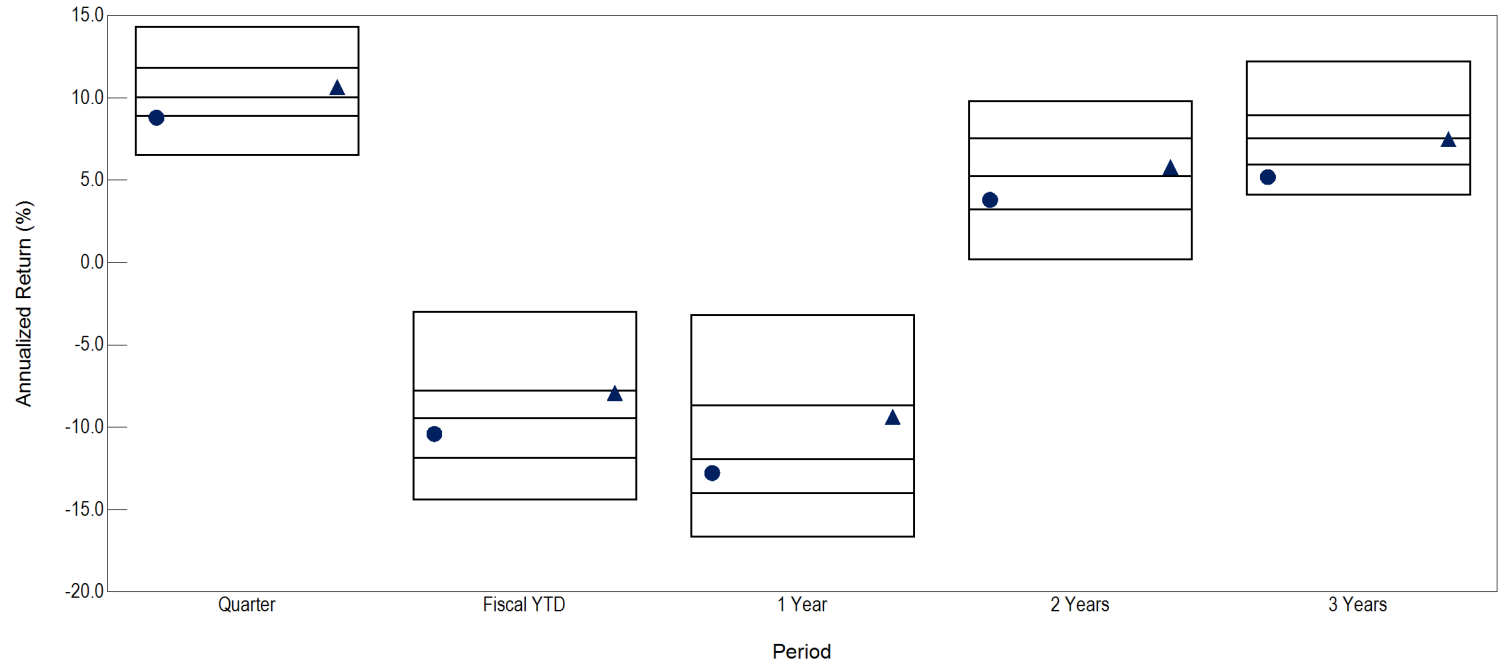




# Los Angeles City Employees' Retirement System

## AQR CAPITAL

AQR Capital vs. eV EAFE Small Cap Equity Net



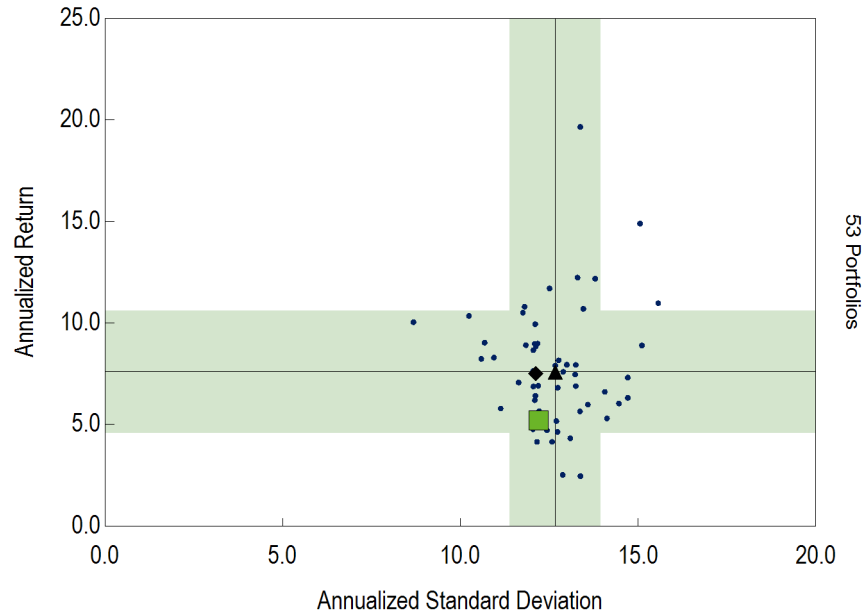
	Return (Rank)									
5th Percentile	14.30		-3.00		-3.17		9.82		12.20	
25th Percentile	11.87		-7.75		-8.62		7.57		8.98	
Median	10.06		-9.40		-11.89		5.30		7.59	
75th Percentile	8.93		-11.84		-13.97		3.25		5.98	
95th Percentile	6.59		-14.37		-16.60		0.24		4.14	
# of Portfolios	55		55		55		54		53	
● AQR Capital	8.79	(79)	-10.41	(59)	-12.79	(62)	3.80	(65)	5.19	(85)
▲ MSCI EAFE Small Cap	10.65	(43)	-7.92	(27)	-9.36	(27)	5.80	(45)	7.50	(52)



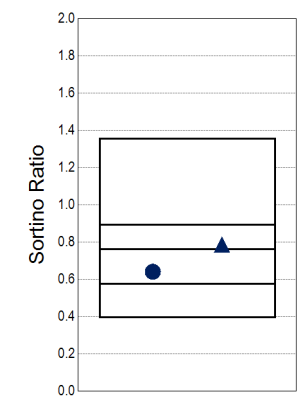
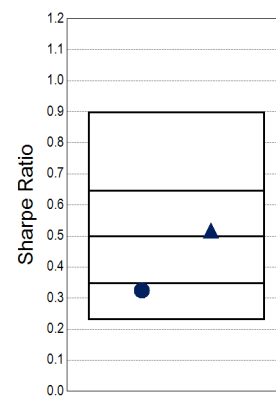
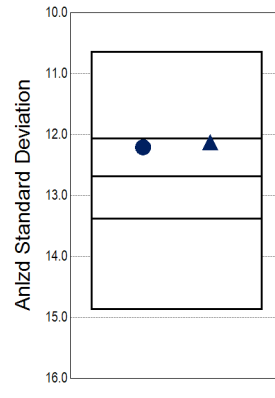
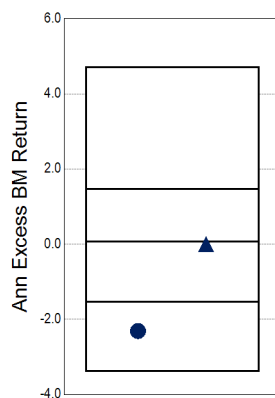
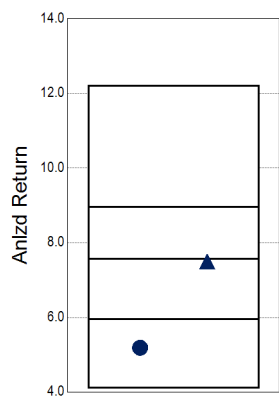
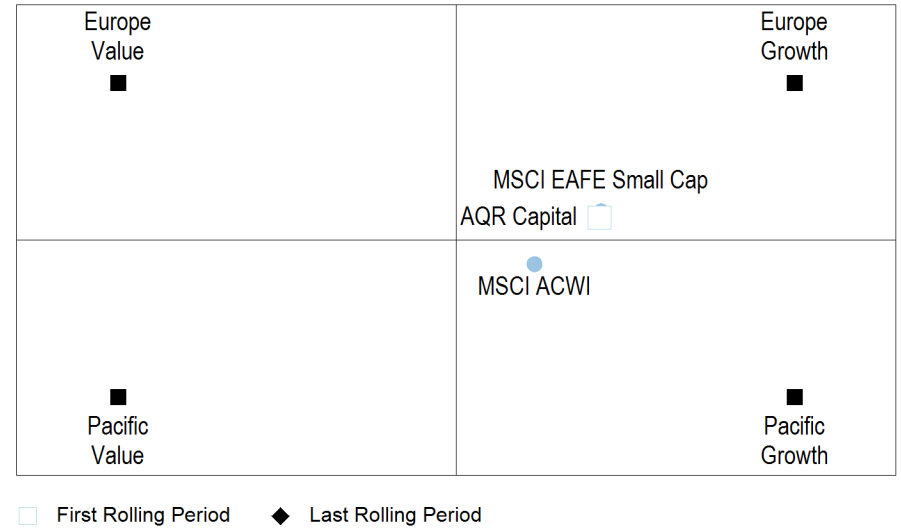
# Los Angeles City Employees' Retirement System

## AQR CAPITAL

3 Year Risk Return



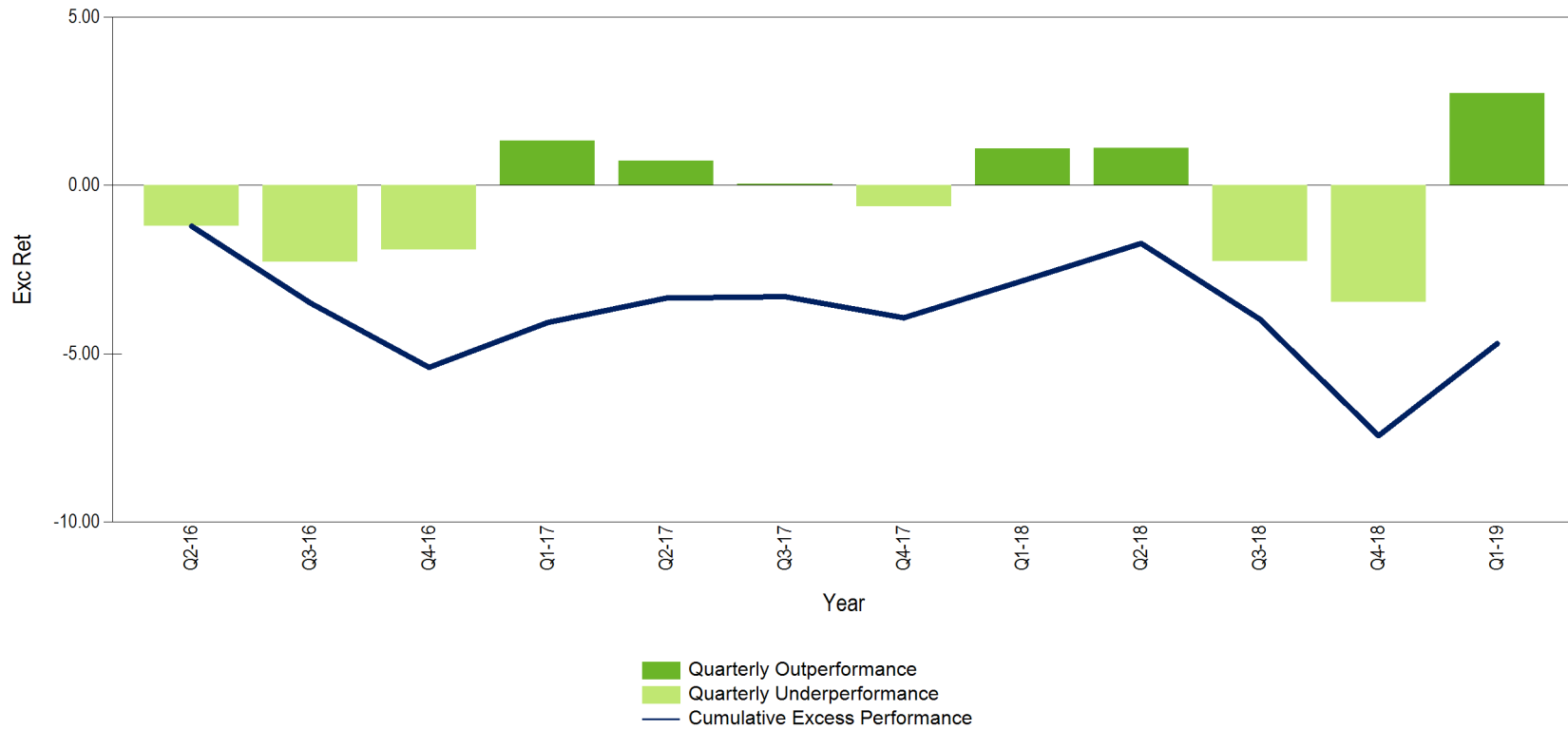
3 Year Style Map



- AQR Capital
- ▲ MSCI EAFE Small Cap
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



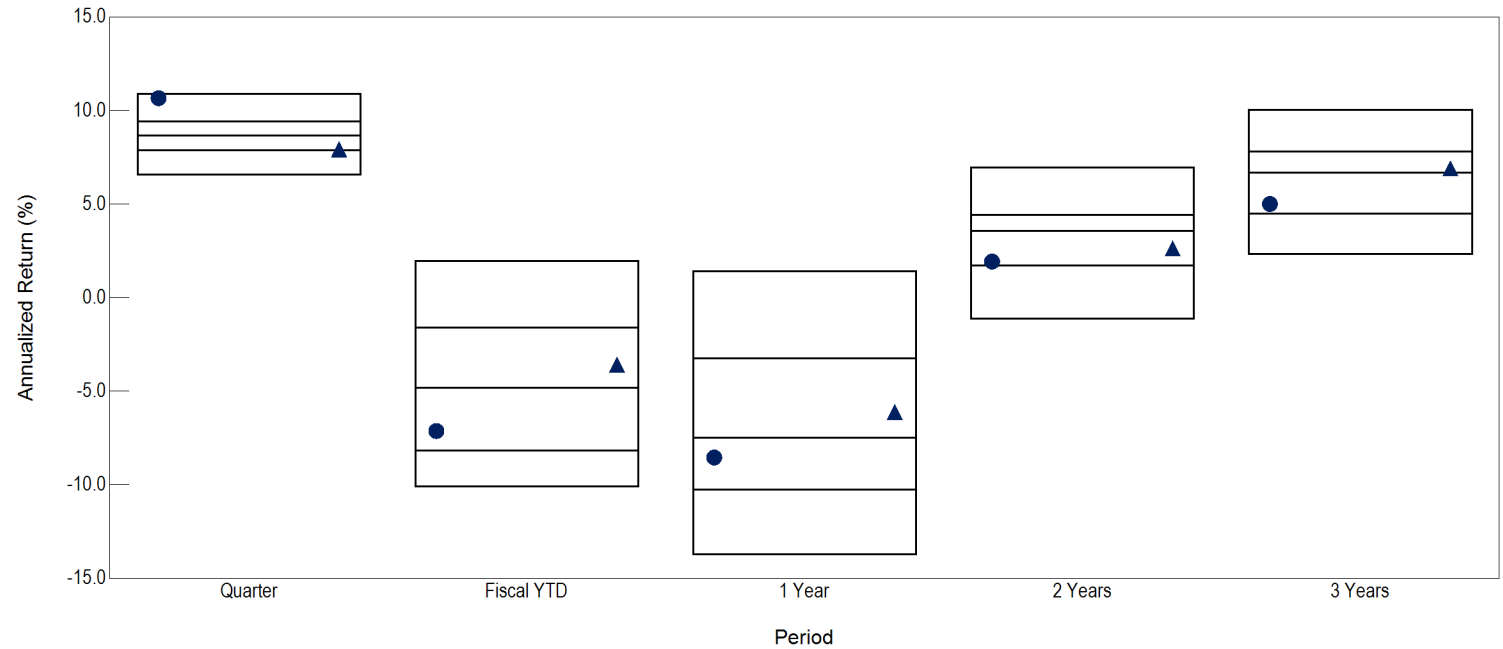
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## BARROW HANLEY

Barrow Hanley vs. eV EAFE Value Equity Net



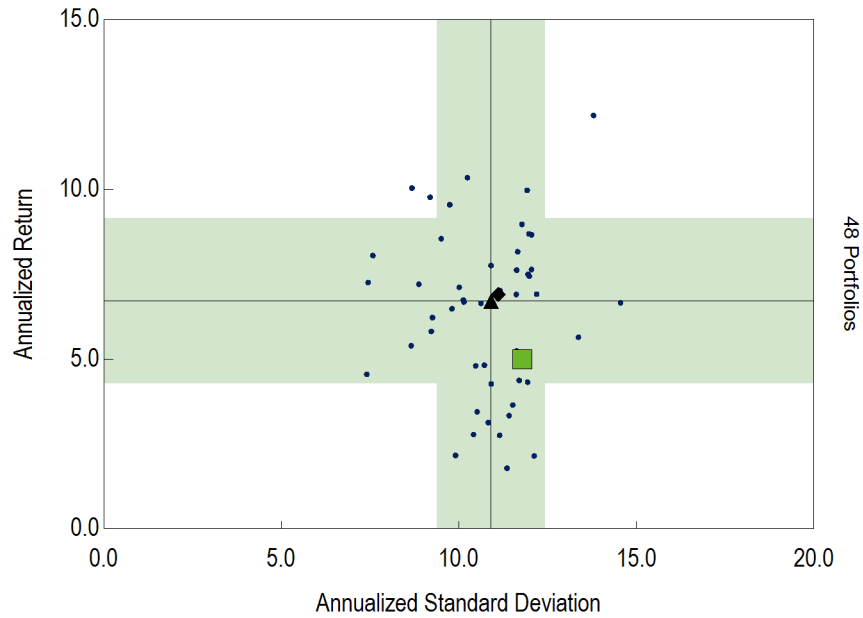
	Return (Rank)									
5th Percentile	10.88		1.95		1.41		6.96		10.02	
25th Percentile	9.46		-1.56		-3.22		4.45		7.83	
Median	8.69		-4.78		-7.45		3.60		6.71	
75th Percentile	7.91		-8.14		-10.23		1.73		4.50	
95th Percentile	6.60		-10.06		-13.69		-1.09		2.37	
# of Portfolios	52		50		50		49		48	
● Barrow Hanley	10.65	(11)	-7.13	(61)	-8.55	(59)	1.92	(70)	5.00	(70)
▲ MSCI EAFE Value	7.92	(75)	-3.59	(34)	-6.13	(45)	2.62	(57)	6.90	(47)



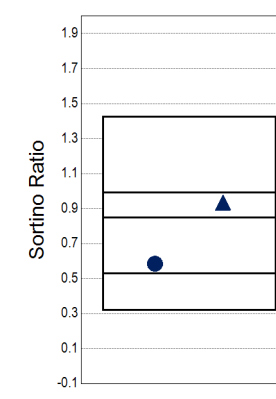
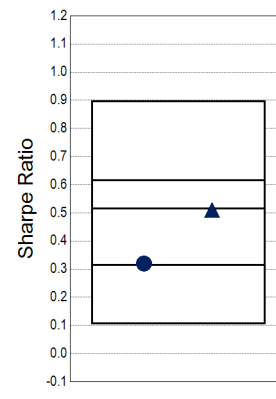
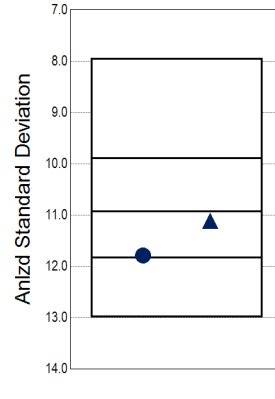
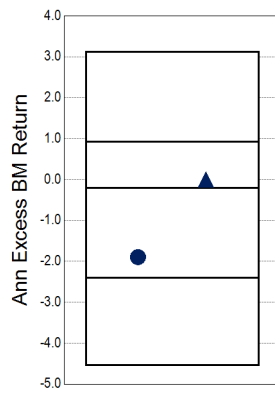
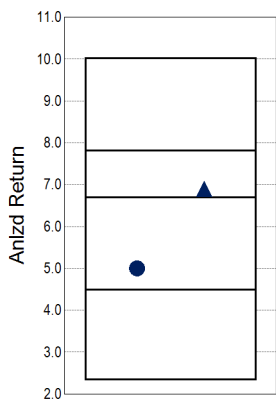
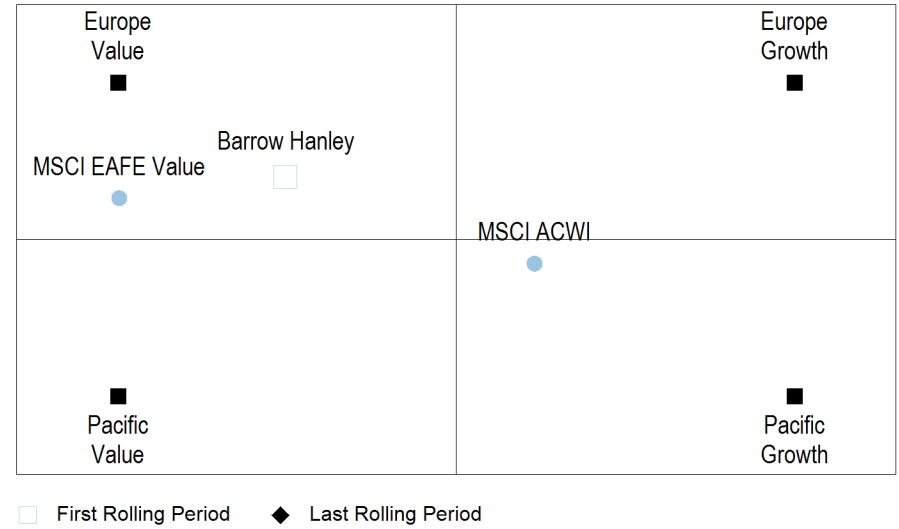
# Los Angeles City Employees' Retirement System

## BARROW HANLEY

3 Year Risk Return



3 Year Style Map

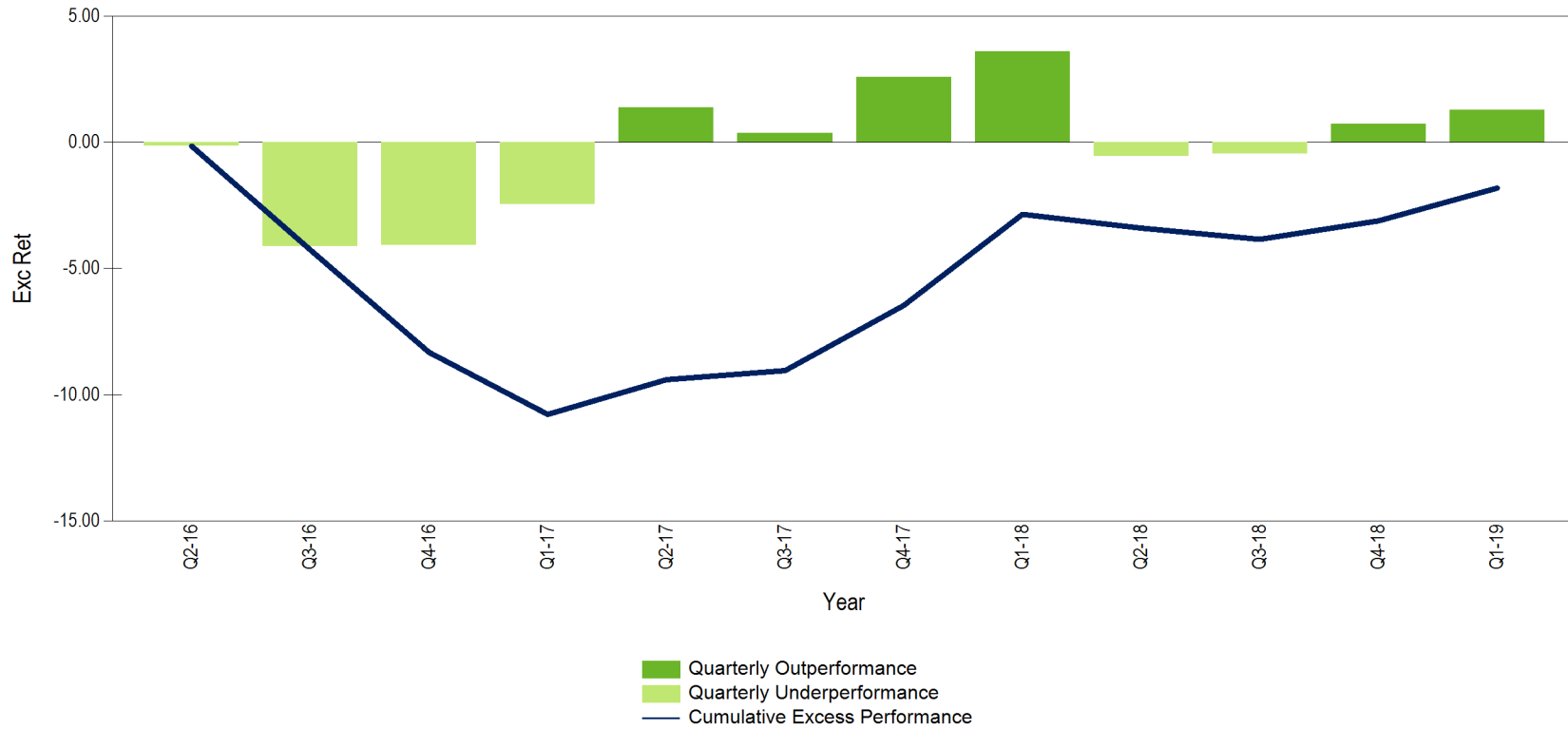


- Barrow Hanley
- ▲ MSCI EAFE Value
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



# LAZARD ASSET MANAGEMENT

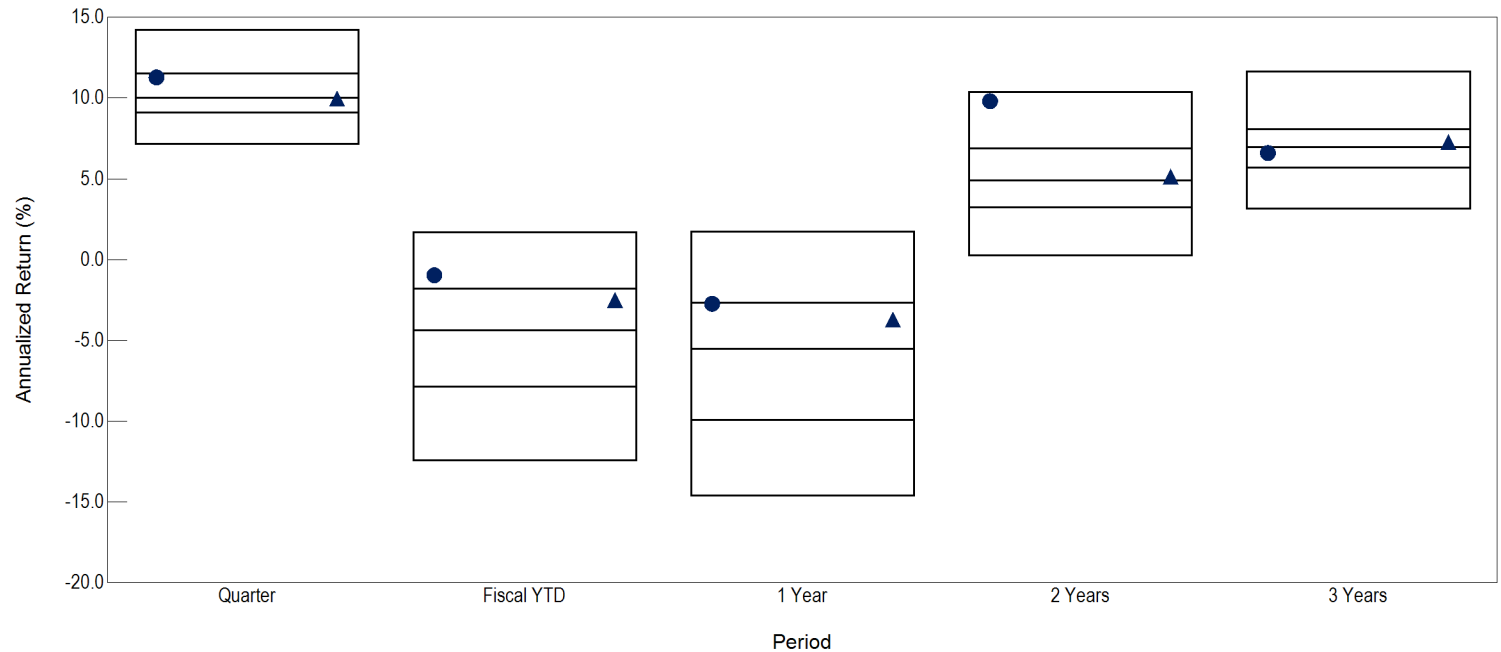
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## LAZARD ASSET MANAGEMENT

Lazard Asset Management vs. eV All EAFE Equity Net

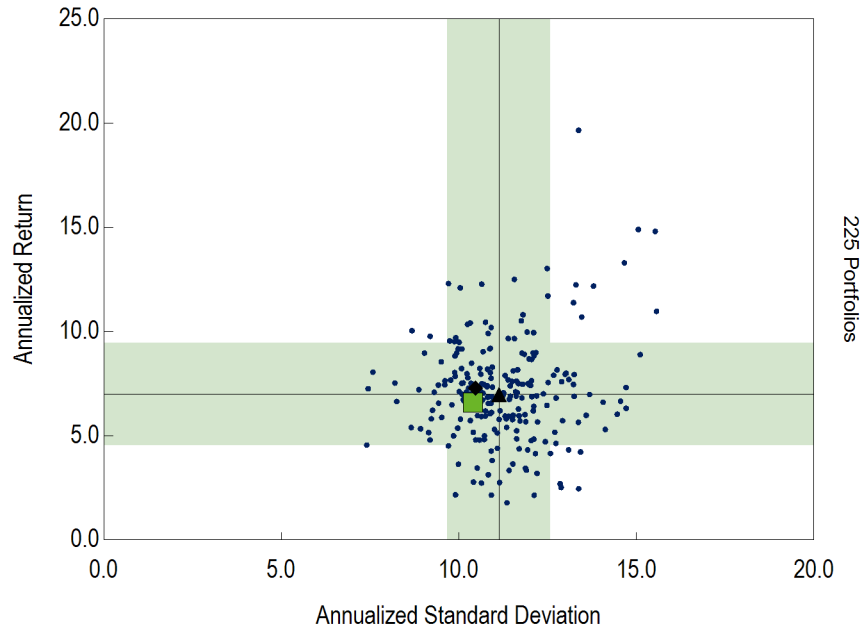


	Return (Rank)									
5th Percentile	14.20		1.69		1.75		10.36		11.64	
25th Percentile	11.57		-1.75		-2.61		6.91		8.11	
Median	10.08		-4.35		-5.48		4.95		6.99	
75th Percentile	9.14		-7.81		-9.86		3.29		5.73	
95th Percentile	7.19		-12.39		-14.56		0.29		3.22	
# of Portfolios	241		234		234		231		225	
● Lazard Asset Management	11.28	(29)	-0.97	(16)	-2.73	(26)	9.81	(8)	6.60	(61)
▲ MSCI EAFE	9.98	(54)	-2.51	(33)	-3.71	(35)	5.14	(49)	7.27	(44)

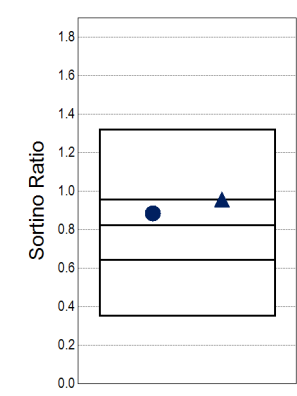
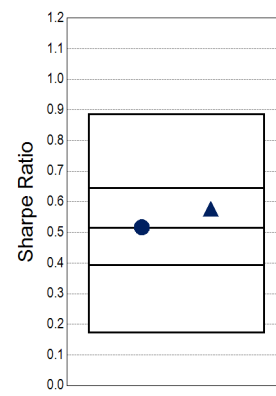
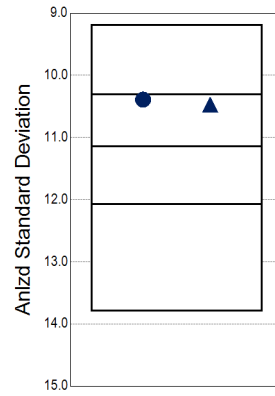
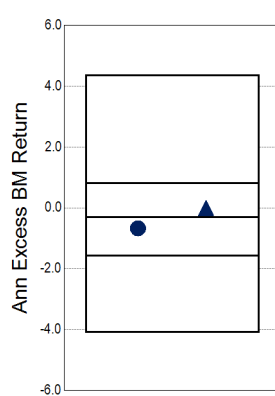
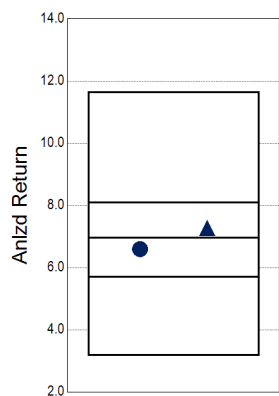
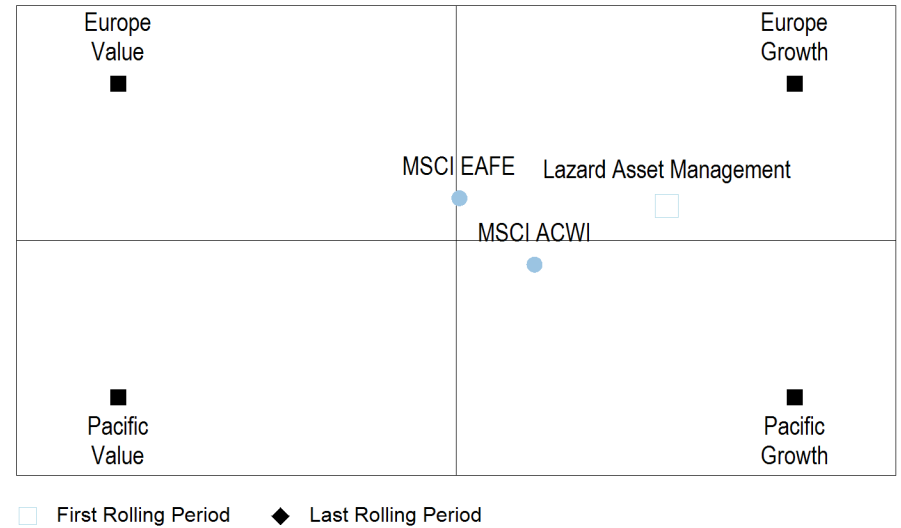


# LAZARD ASSET MANAGEMENT

3 Year Risk Return



3 Year Style Map



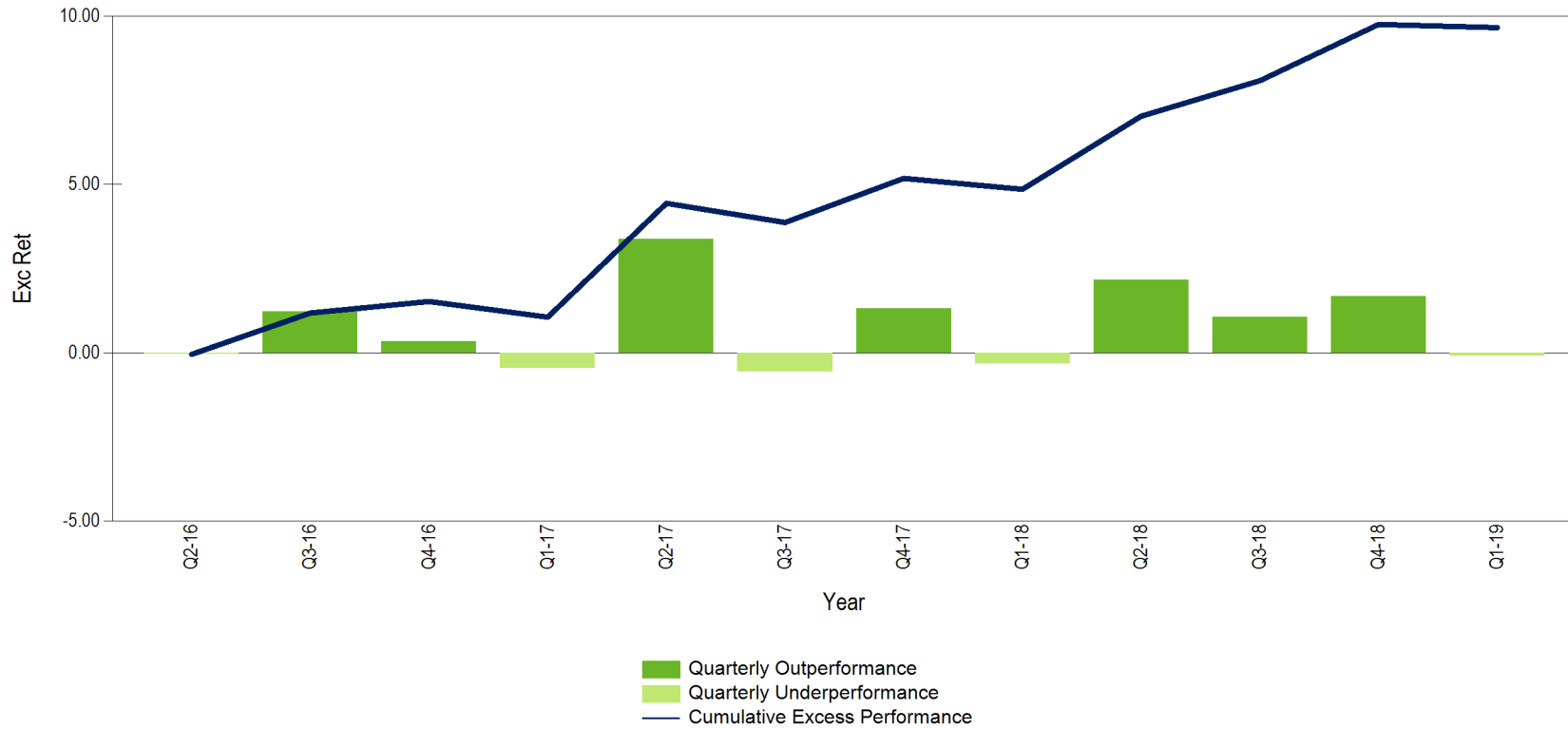
- Lazard Asset Management
- ▲ MSCI EAFE
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile





# MFS INSTITUTIONAL ADVISORS

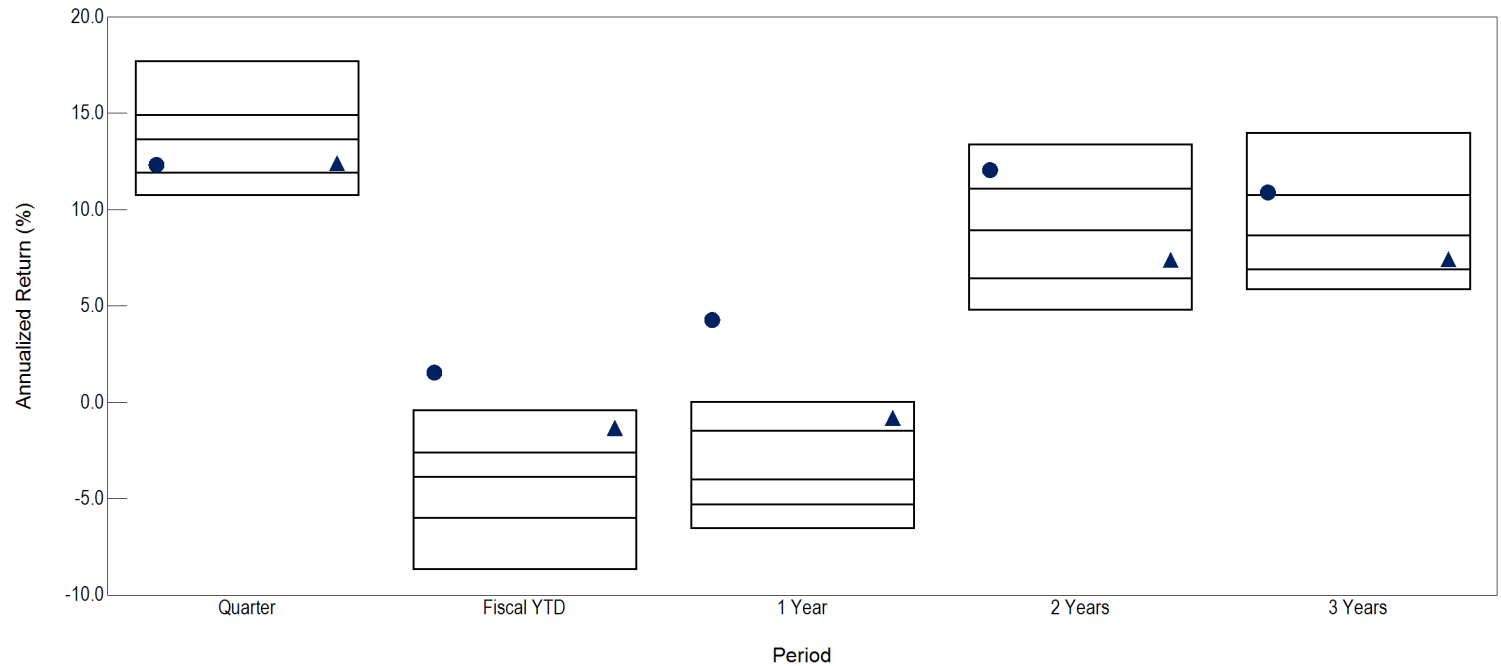
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## MFS INSTITUTIONAL ADVISORS

MFS Institutional Advisors vs. eV EAFE All Cap Growth Net

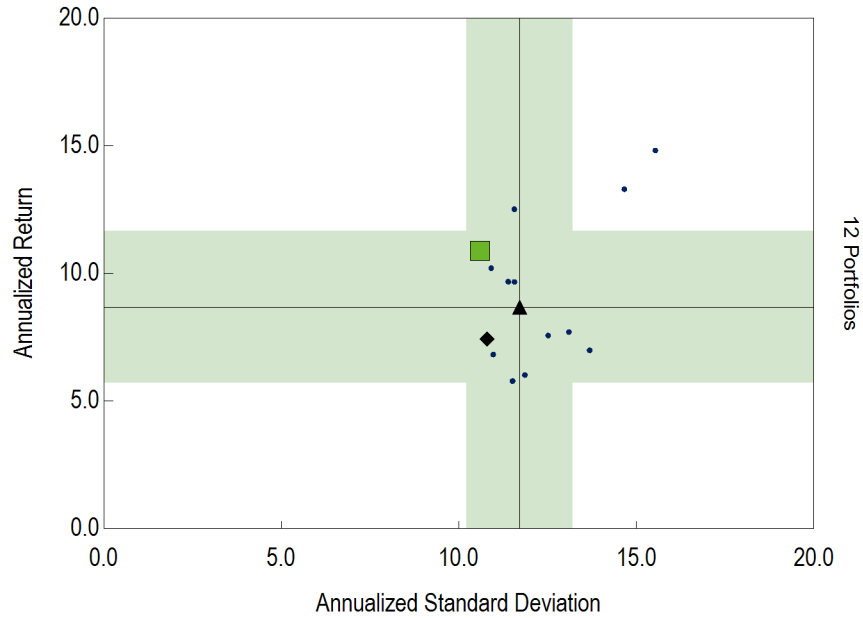


	Return (Rank)									
5th Percentile	17.71		-0.41		0.02		13.38		13.97	
25th Percentile	14.94		-2.59		-1.44		11.11		10.77	
Median	13.67		-3.85		-3.97		8.97		8.68	
75th Percentile	11.95		-5.94		-5.25		6.46		6.94	
95th Percentile	10.78		-8.61		-6.48		4.83		5.90	
# of Portfolios	14		13		13		13		12	
● MFS Institutional Advisors	12.31	(72)	1.54	(1)	4.27	(1)	12.04	(14)	10.88	(25)
▲ MSCI World ex USA Growth NR USD	12.41	(71)	-1.33	(10)	-0.82	(11)	7.39	(69)	7.42	(66)

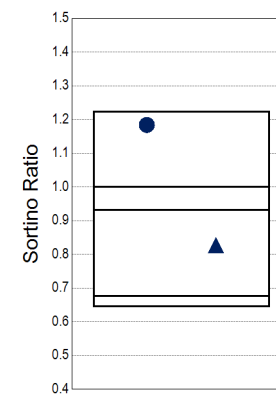
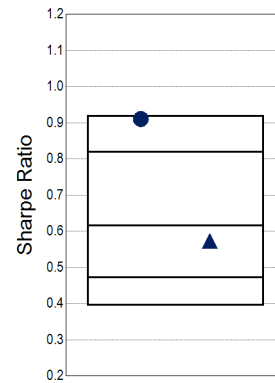
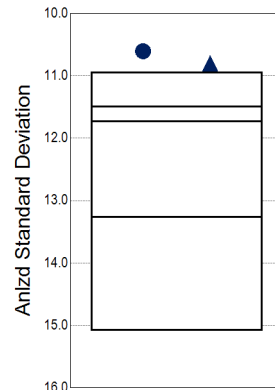
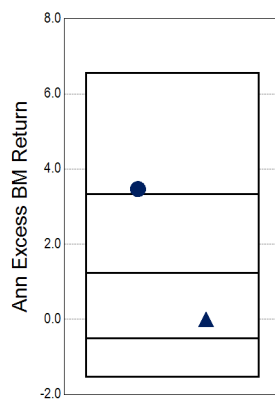
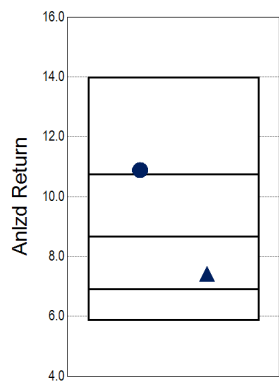
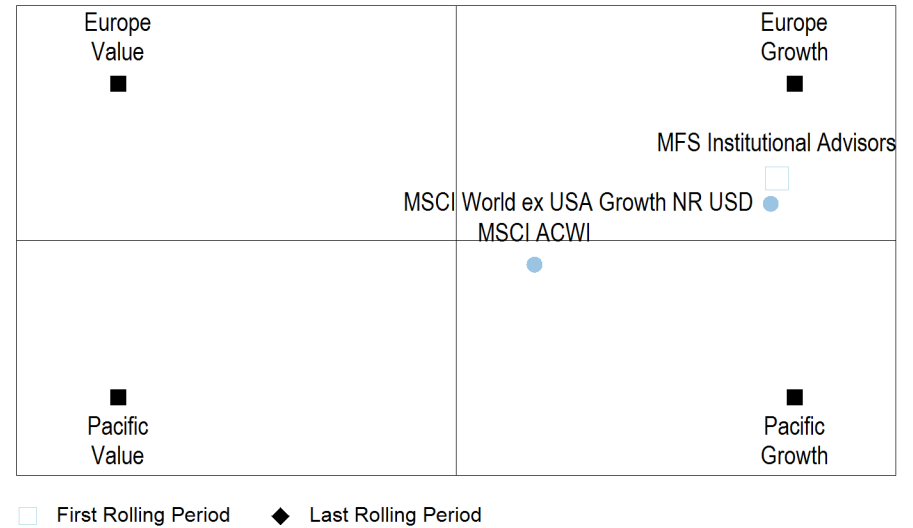


# MFS INSTITUTIONAL ADVISORS

3 Year Risk Return



3 Year Style Map



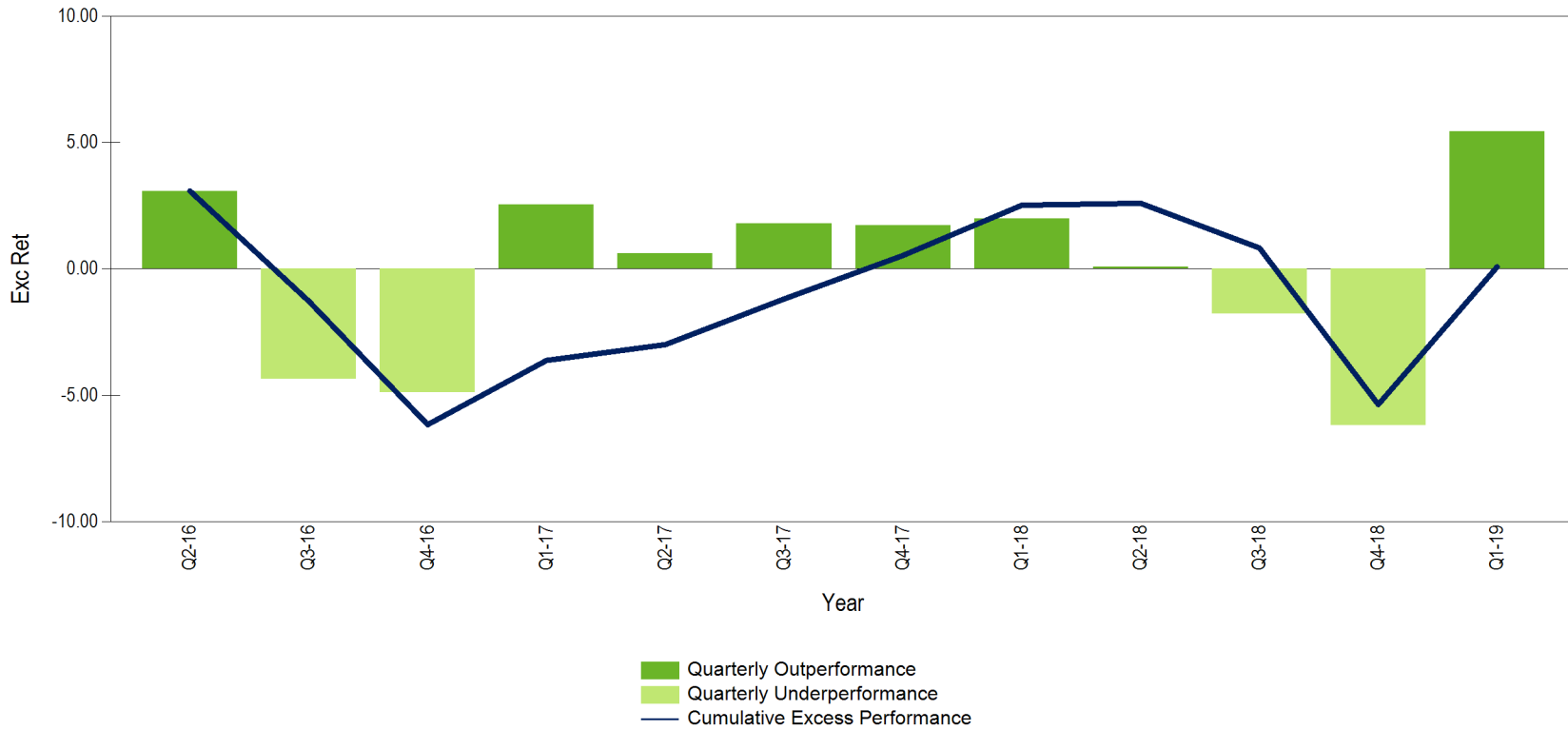
- MFS Institutional Advisors
- ▲ MSCI World ex USA Growth NR USD
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



# Los Angeles City Employees' Retirement System

## OBERWEIS ASSET MGMT

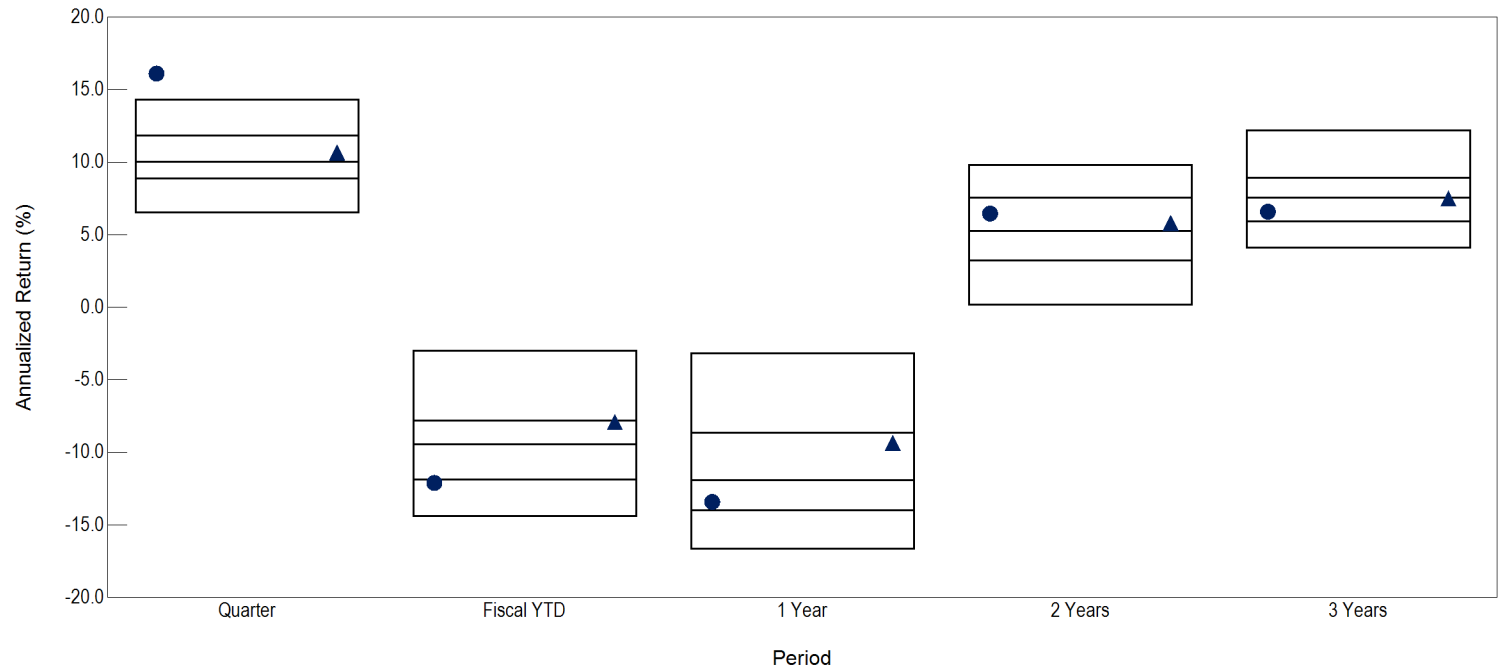
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## OBERWEIS ASSET MGMT

Oberweis Asset Mgmt vs. eV EAFE Small Cap Equity Net



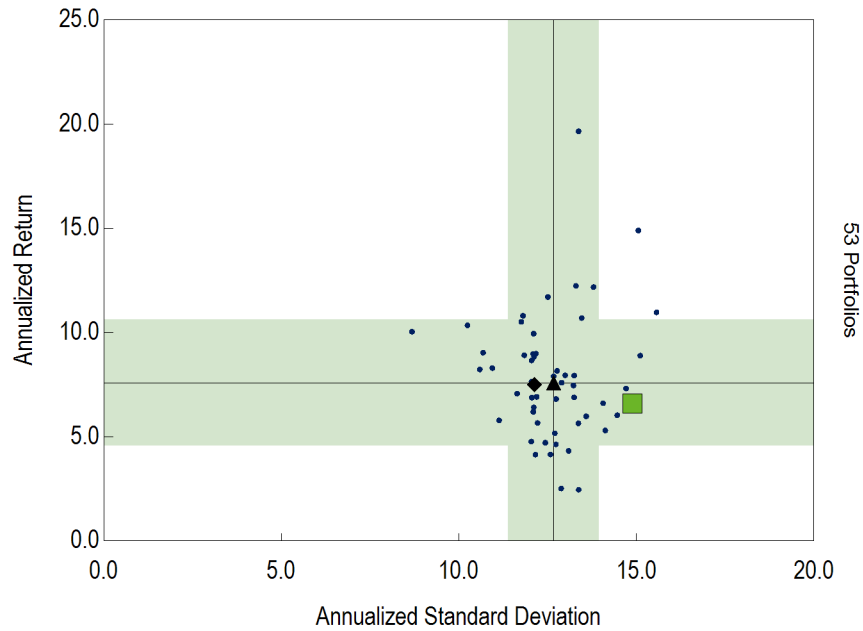
	Return (Rank)									
5th Percentile	14.30		-3.00		-3.17		9.82		12.20	
25th Percentile	11.87		-7.75		-8.62		7.57		8.98	
Median	10.06		-9.40		-11.89		5.30		7.59	
75th Percentile	8.93		-11.84		-13.97		3.25		5.98	
95th Percentile	6.59		-14.37		-16.60		0.24		4.14	
# of Portfolios	55		55		55		54		53	
● Oberweis Asset Mgmt	16.10	(2)	-12.12	(78)	-13.42	(69)	6.45	(41)	6.58	(66)
▲ MSCI EAFE Small Cap	10.65	(43)	-7.92	(27)	-9.36	(27)	5.80	(45)	7.50	(52)



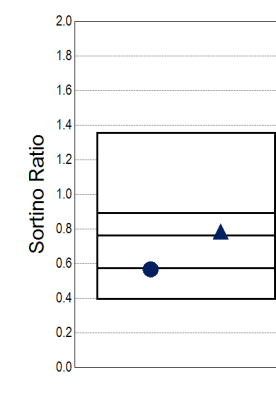
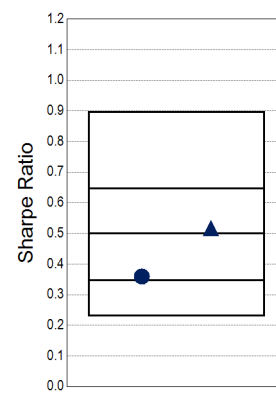
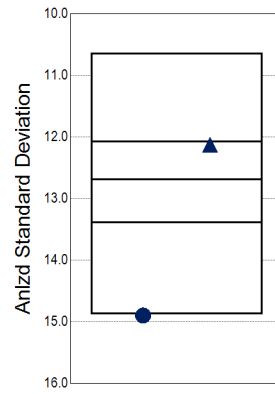
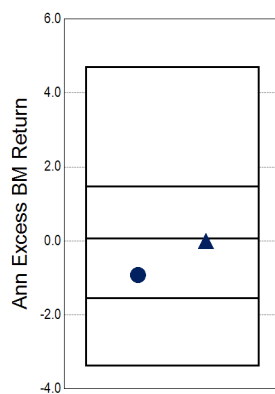
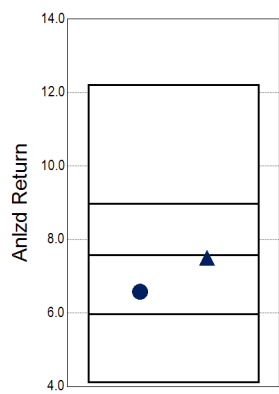
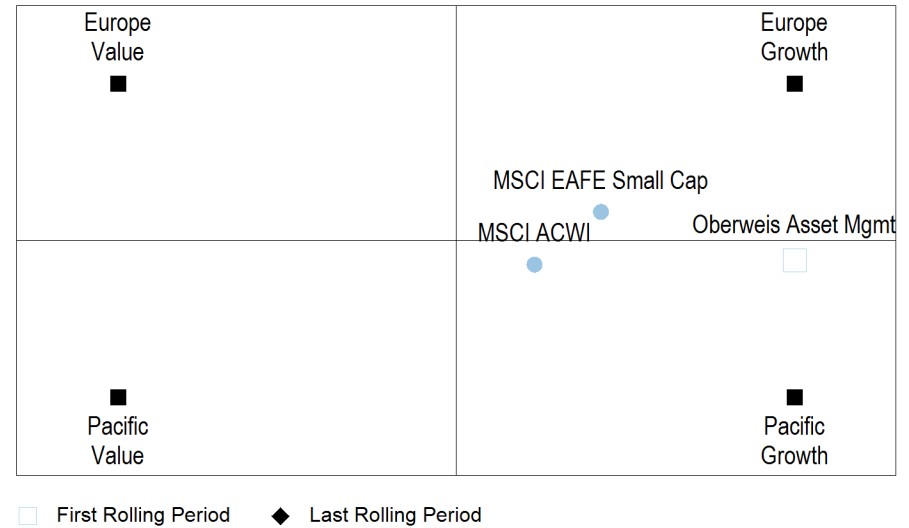
# Los Angeles City Employees' Retirement System

## OBERWEIS ASSET MGMT

3 Year Risk Return



3 Year Style Map



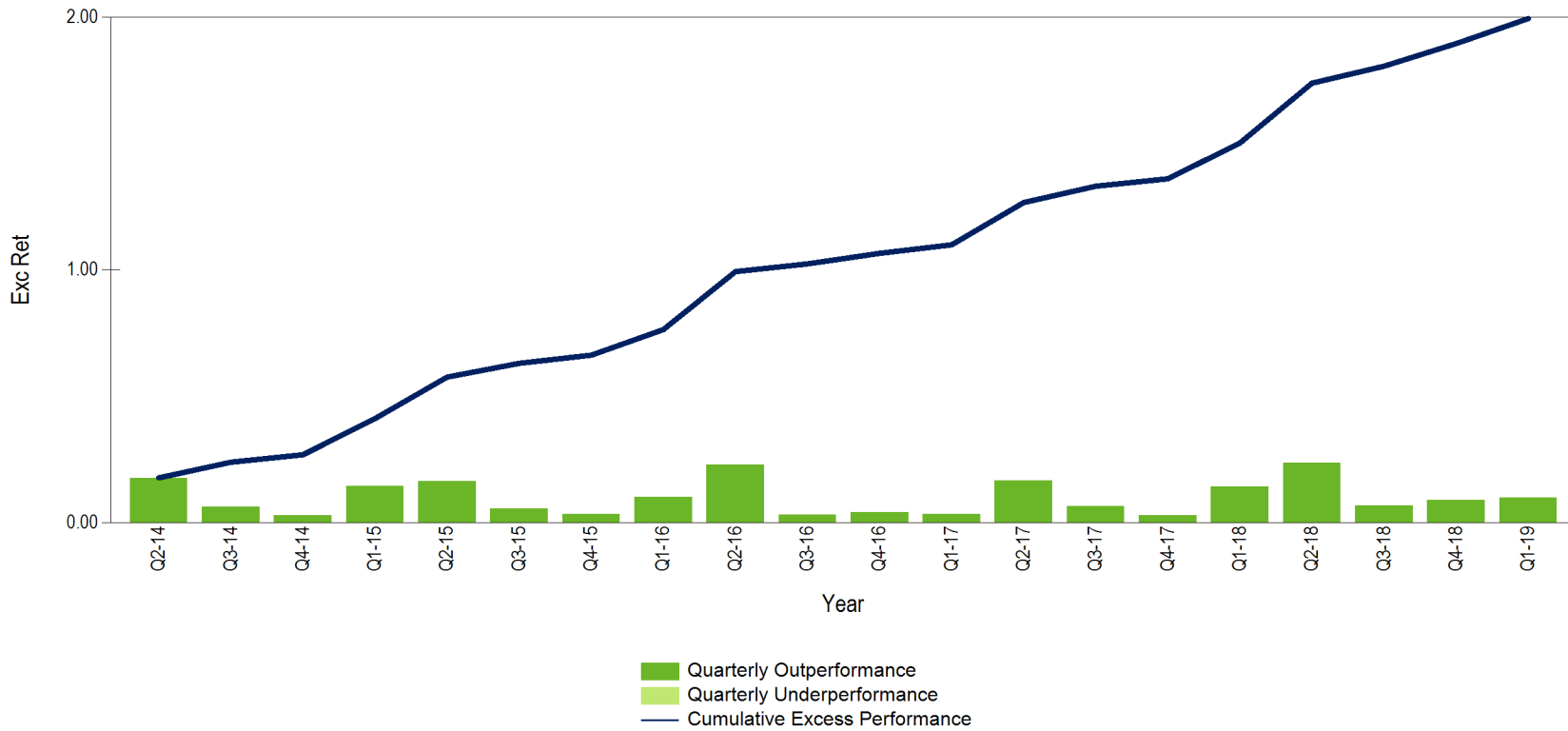
- Oberweis Asset Mgmt
- ▲ MSCI EAFE Small Cap
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



# Los Angeles City Employees' Retirement System

## SSGA WORLD EX US IMI

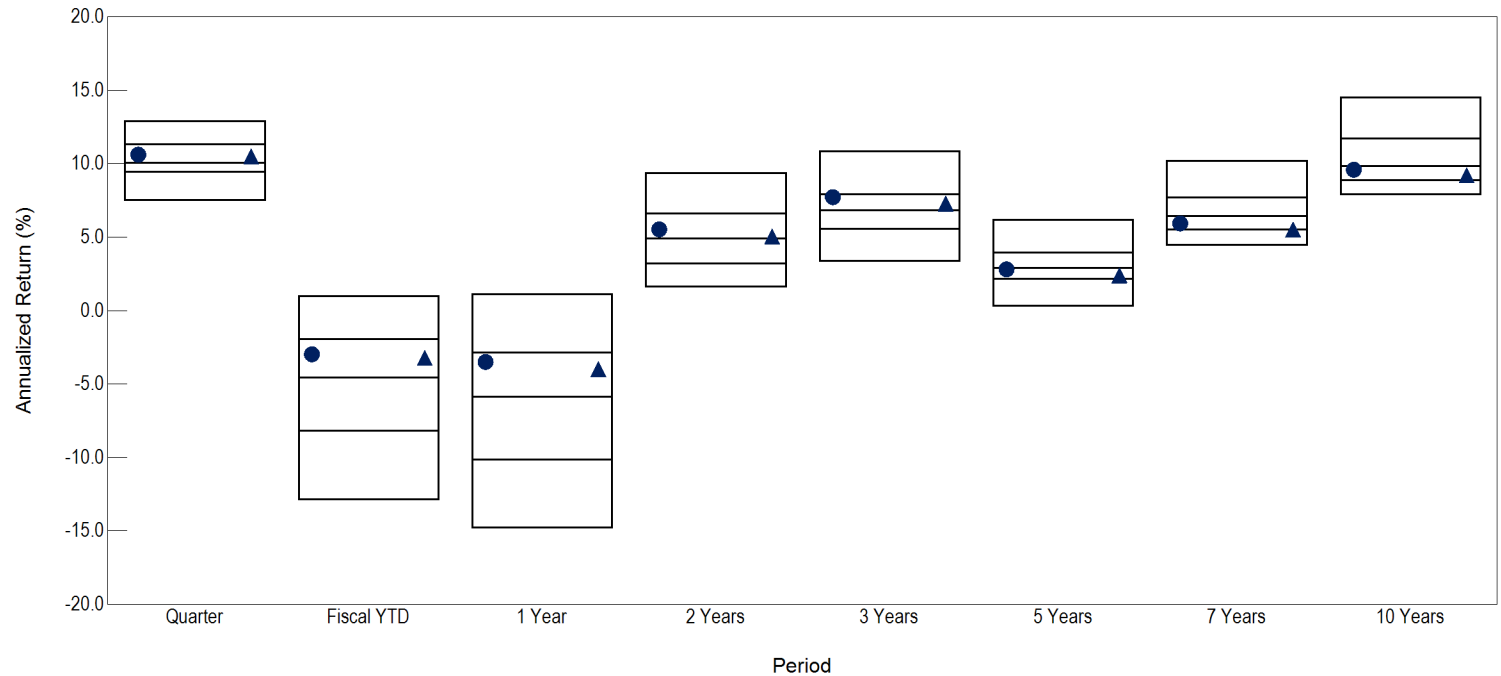
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## SSGA WORLD EX US IMI

SSgA World ex US IMI vs. eV EAFE Core Equity Net



	Return (Rank)															
5th Percentile	12.89	0.97	1.11	9.35	10.84	6.18	10.19	14.51								
25th Percentile	11.39	-1.90	-2.83	6.68	7.98	4.00	7.76	11.74								
Median	10.13	-4.49	-5.80	4.95	6.87	2.97	6.49	9.88								
75th Percentile	9.50	-8.14	-10.12	3.25	5.59	2.19	5.56	8.93								
95th Percentile	7.56	-12.79	-14.73	1.69	3.41	0.36	4.52	7.98								
# of Portfolios	141	139	139	138	136	118	97	82								
● SSGA World ex US IMI	10.62	(40)	-2.97	(33)	-3.49	(31)	5.53	(41)	7.72	(30)	2.81	(55)	5.93	(65)	9.59	(61)
▲ MSCI World ex USA IMI NR USD	10.52	(41)	-3.22	(35)	-3.97	(36)	5.06	(48)	7.29	(41)	2.40	(72)	5.51	(77)	9.23	(67)

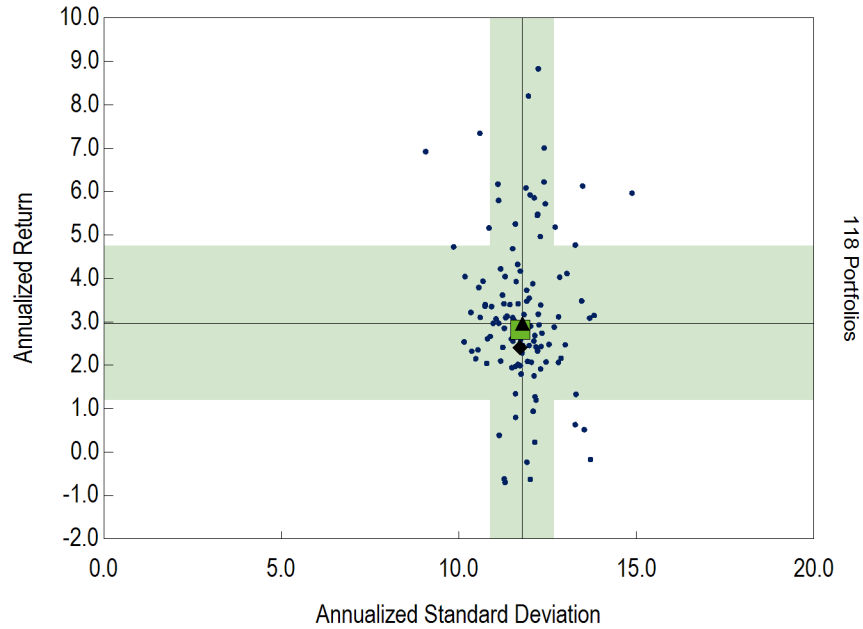




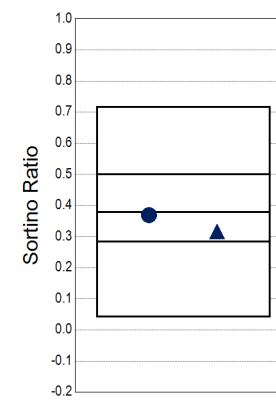
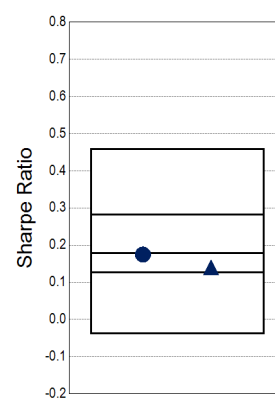
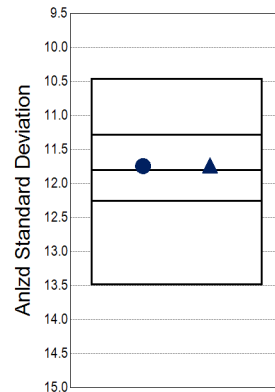
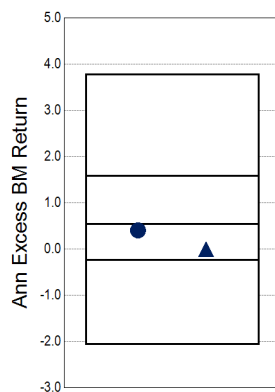
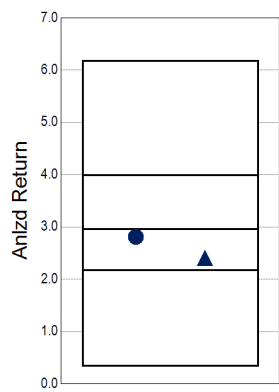
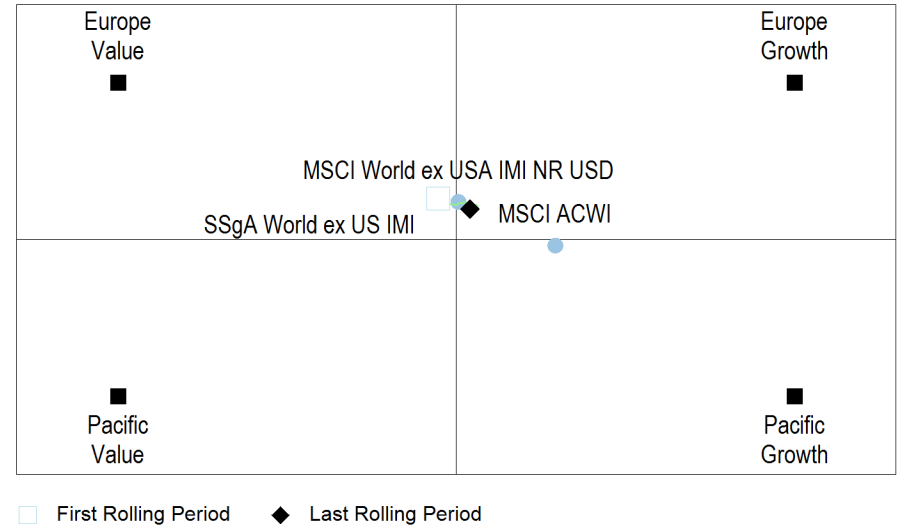
# Los Angeles City Employees' Retirement System

## SSGA WORLD EX US IMI

### 5 Year Risk Return



### 5 Year Style Map

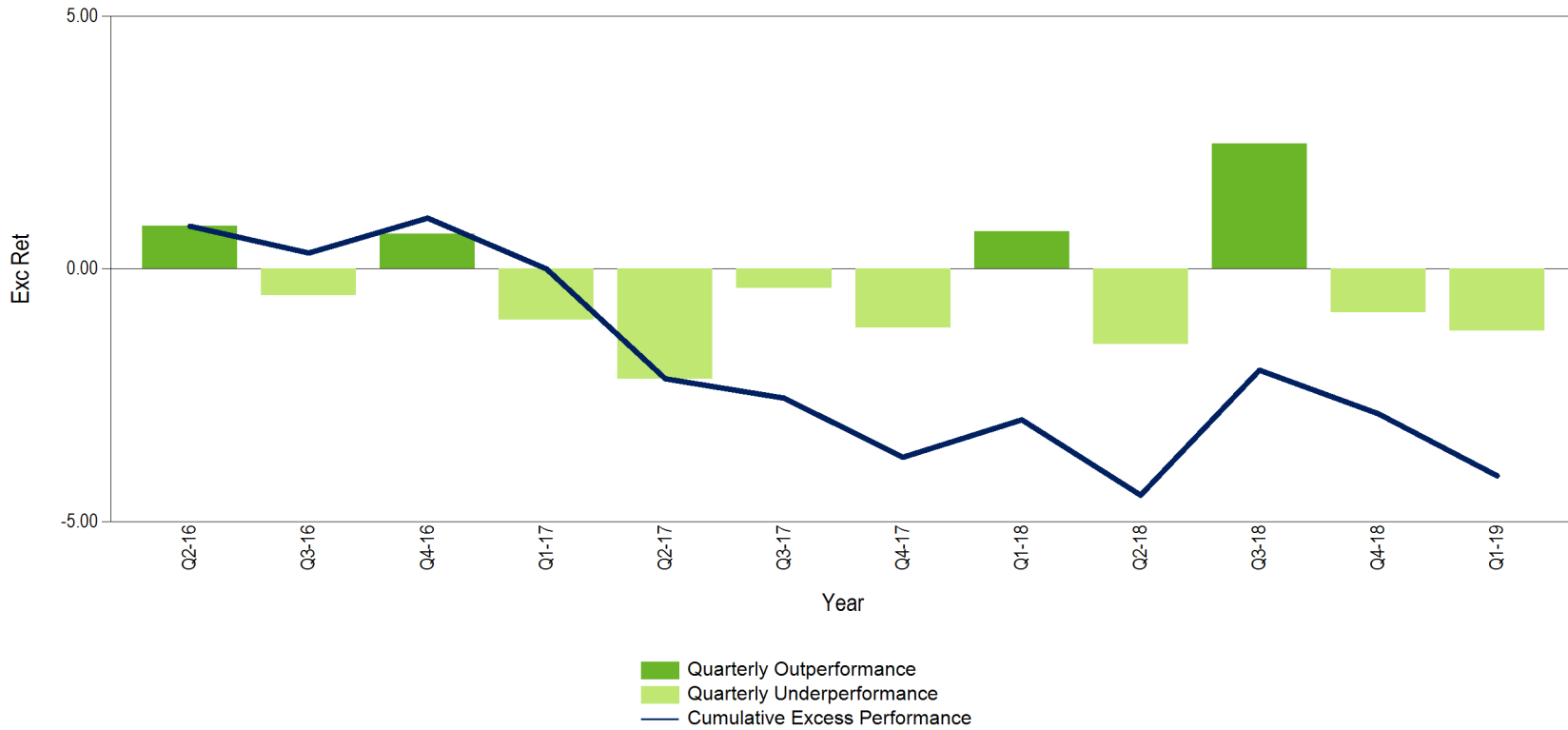


- SSGA World ex US IMI
- ▲ MSCI World ex USA IMI NR USD
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



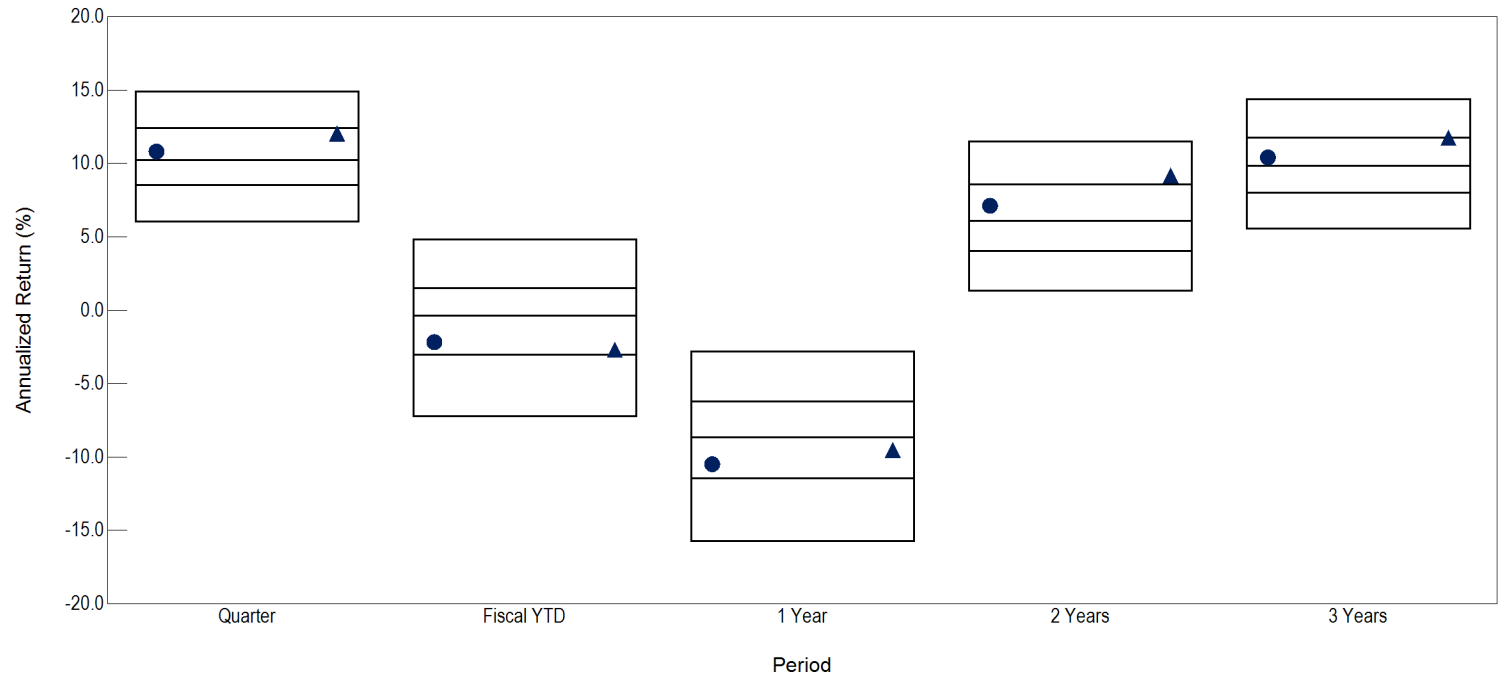
# AXIOM EMERGING MARKETS

Quarterly and Cumulative Excess Performance



# AXIOM EMERGING MARKETS

Axiom Emerging Markets vs. eV Emg Mkts Equity Net

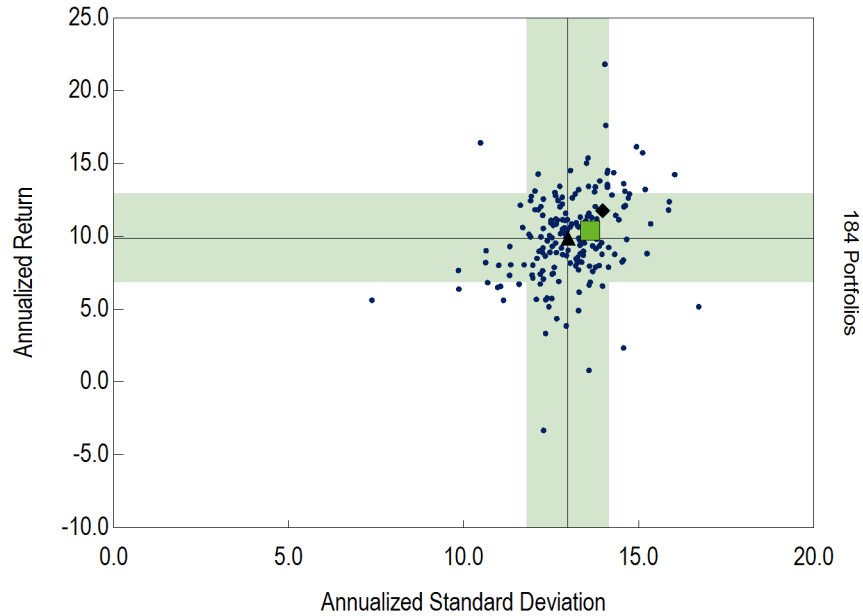


	Return (Rank)									
5th Percentile	14.90		4.81		-2.79		11.52		14.36	
25th Percentile	12.45		1.54		-6.18		8.62		11.82	
Median	10.27		-0.33		-8.62		6.12		9.88	
75th Percentile	8.58		-2.99		-11.41		4.10		8.04	
95th Percentile	6.07		-7.19		-15.69		1.38		5.61	
# of Portfolios	210		202		200		195		184	
● Axiom Emerging Markets	10.82	(42)	-2.17	(67)	-10.49	(69)	7.12	(40)	10.41	(44)
▲ MSCI Emerging Markets Growth NR USD	12.04	(30)	-2.69	(71)	-9.52	(59)	9.18	(19)	11.75	(26)

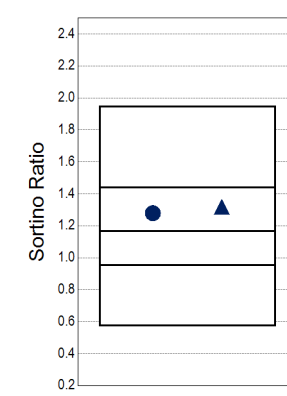
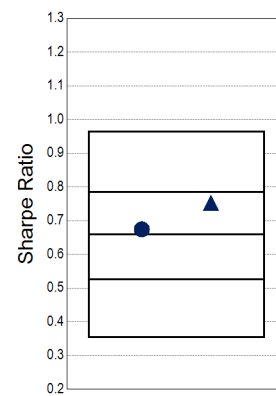
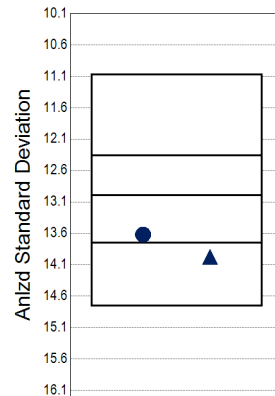
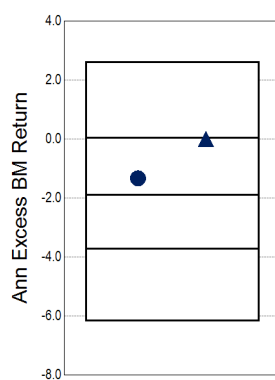
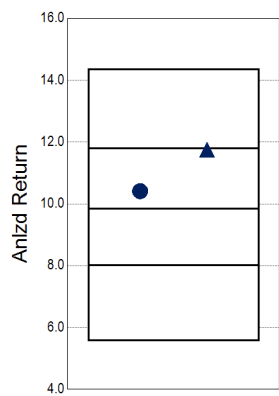
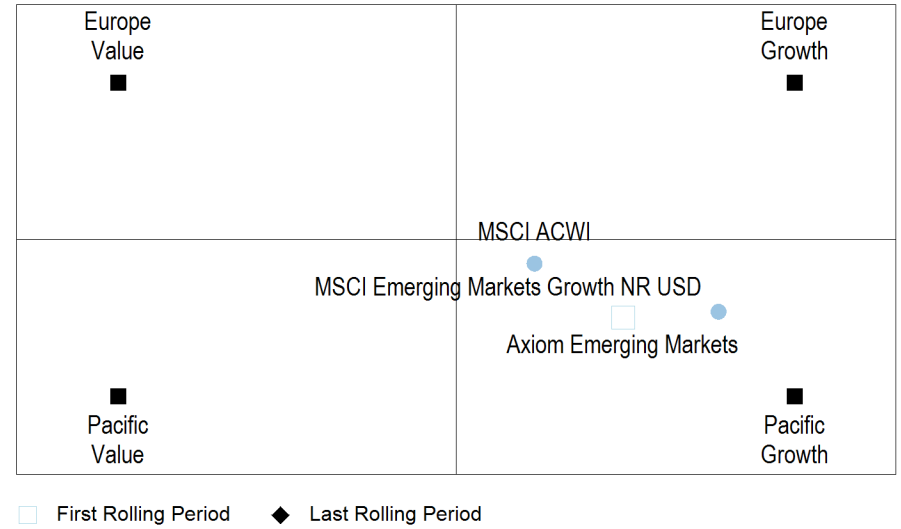


# AXIOM EMERGING MARKETS

3 Year Risk Return



3 Year Style Map



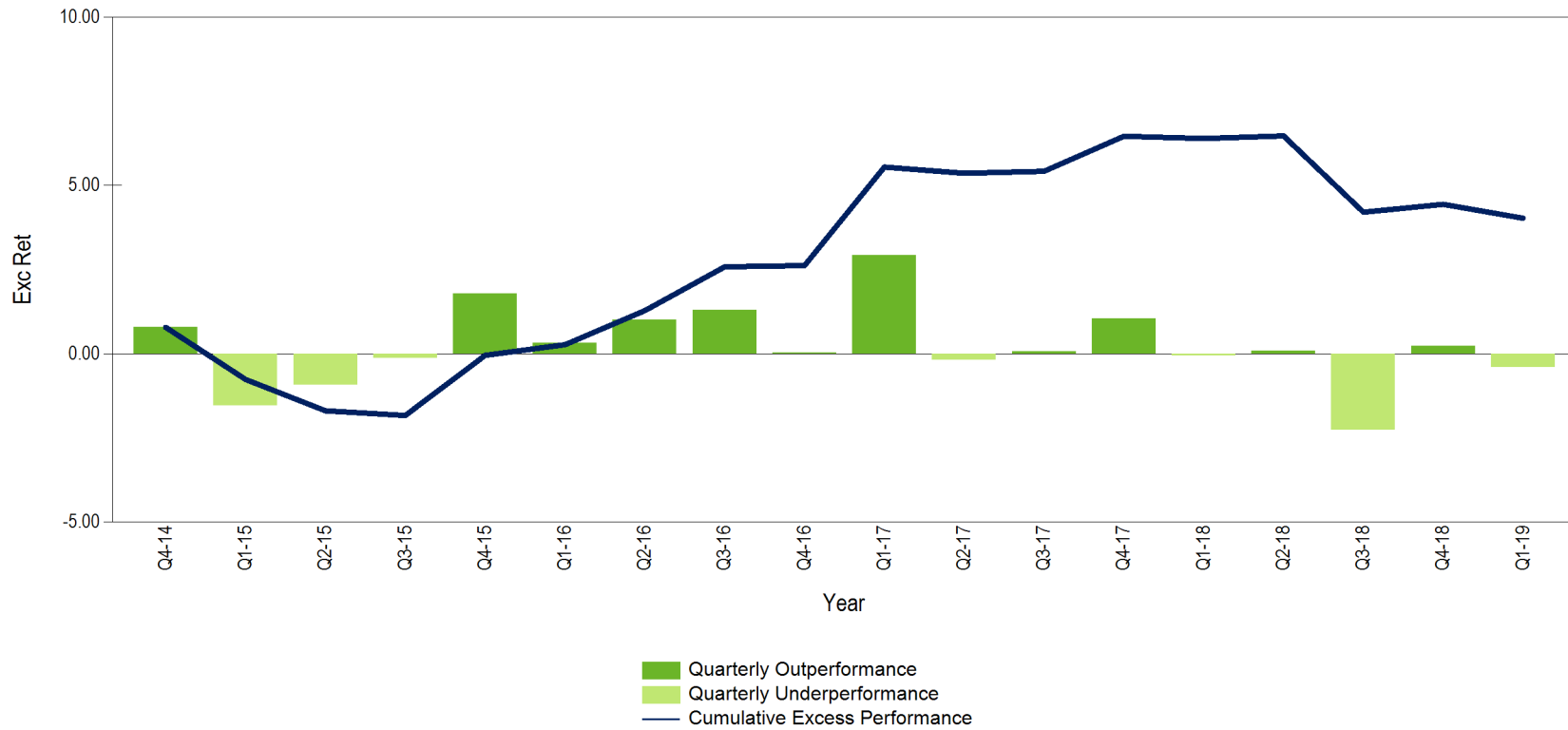
- Axiom Emerging Markets
- ▲ MSCI Emerging Markets Growth...
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



# Los Angeles City Employees' Retirement System

## DFA EMERGING MARKETS

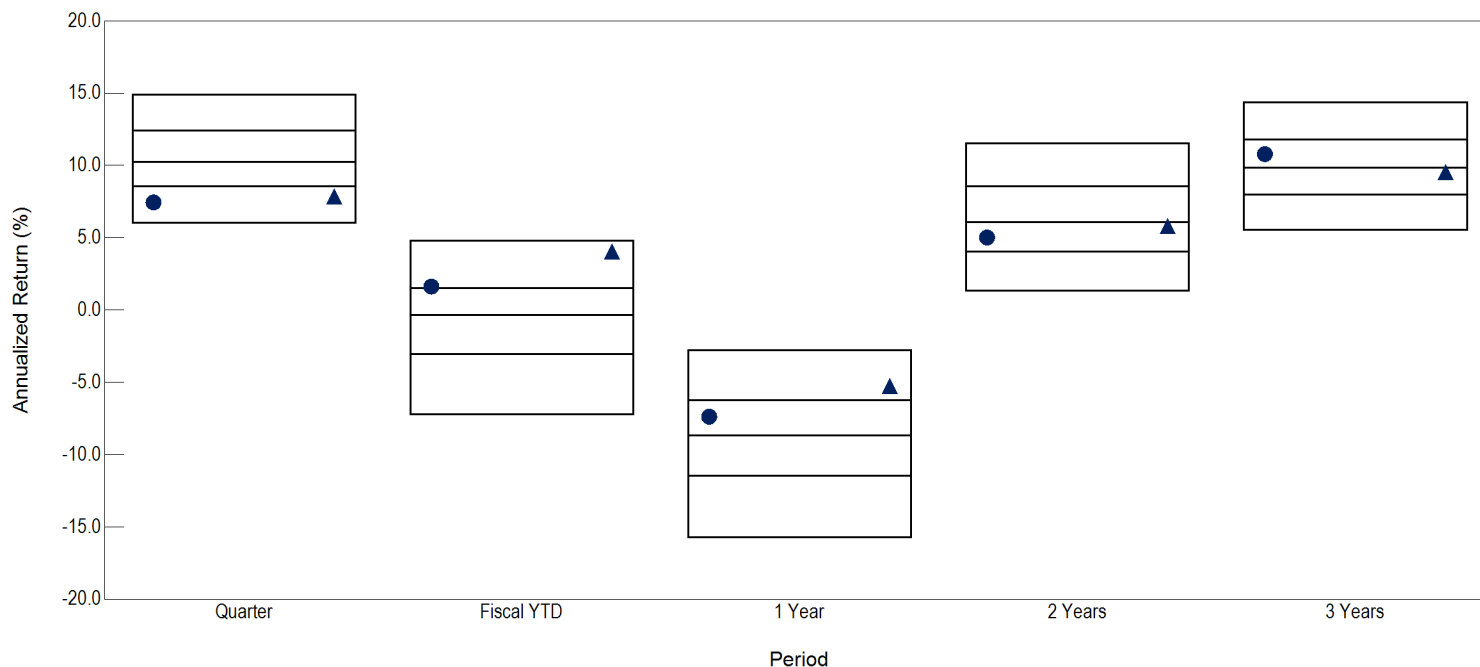
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## DFA EMERGING MARKETS

DFA Emerging Markets vs. eV Emg Mkts Equity Net



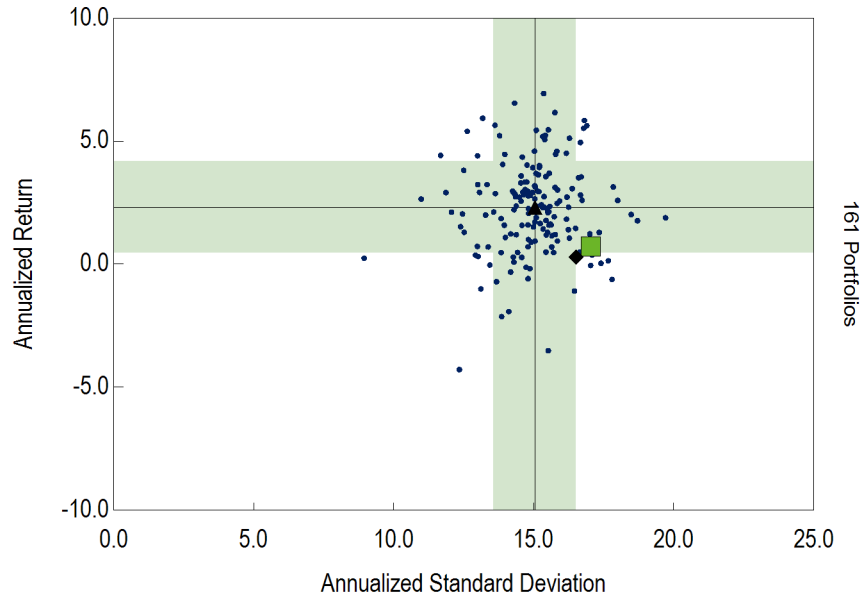
	Quarter		Fiscal YTD		1 Year		2 Years		3 Years	
Return (Rank)	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
5th Percentile	14.90		4.81		-2.79		11.52		14.36	
25th Percentile	12.45		1.54		-6.18		8.62		11.82	
Median	10.27		-0.33		-8.62		6.12		9.88	
75th Percentile	8.58		-2.99		-11.41		4.10		8.04	
95th Percentile	6.07		-7.19		-15.69		1.38		5.61	
# of Portfolios	210		202		200		195		184	
● DFA Emerging Markets	7.43	(86)	1.62	(25)	-7.39	(35)	5.01	(67)	10.78	(39)
▲ MSCI Emerging Markets Value NR USD	7.85	(83)	4.03	(8)	-5.27	(18)	5.79	(53)	9.54	(55)



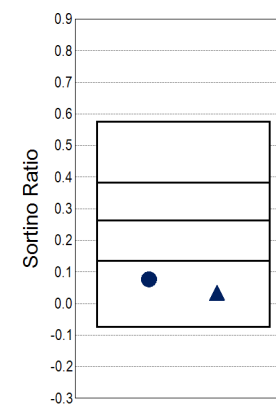
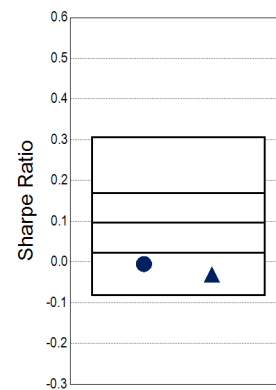
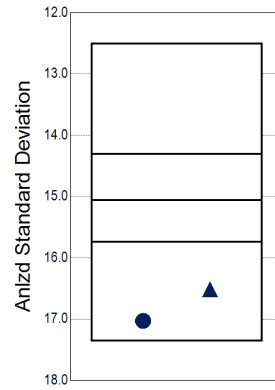
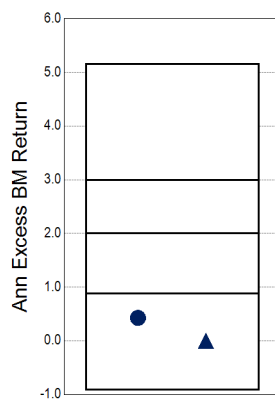
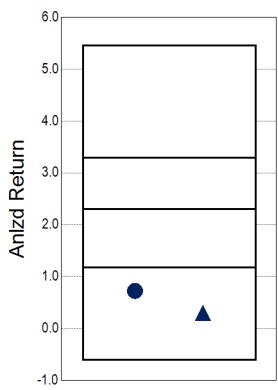
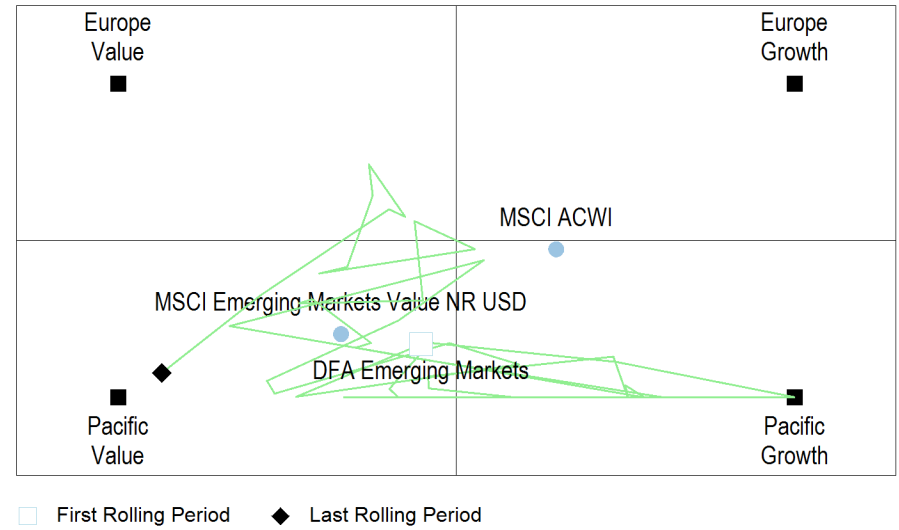
# Los Angeles City Employees' Retirement System

## DFA EMERGING MARKETS

Since Inception Risk Return



Since Inception Style Map



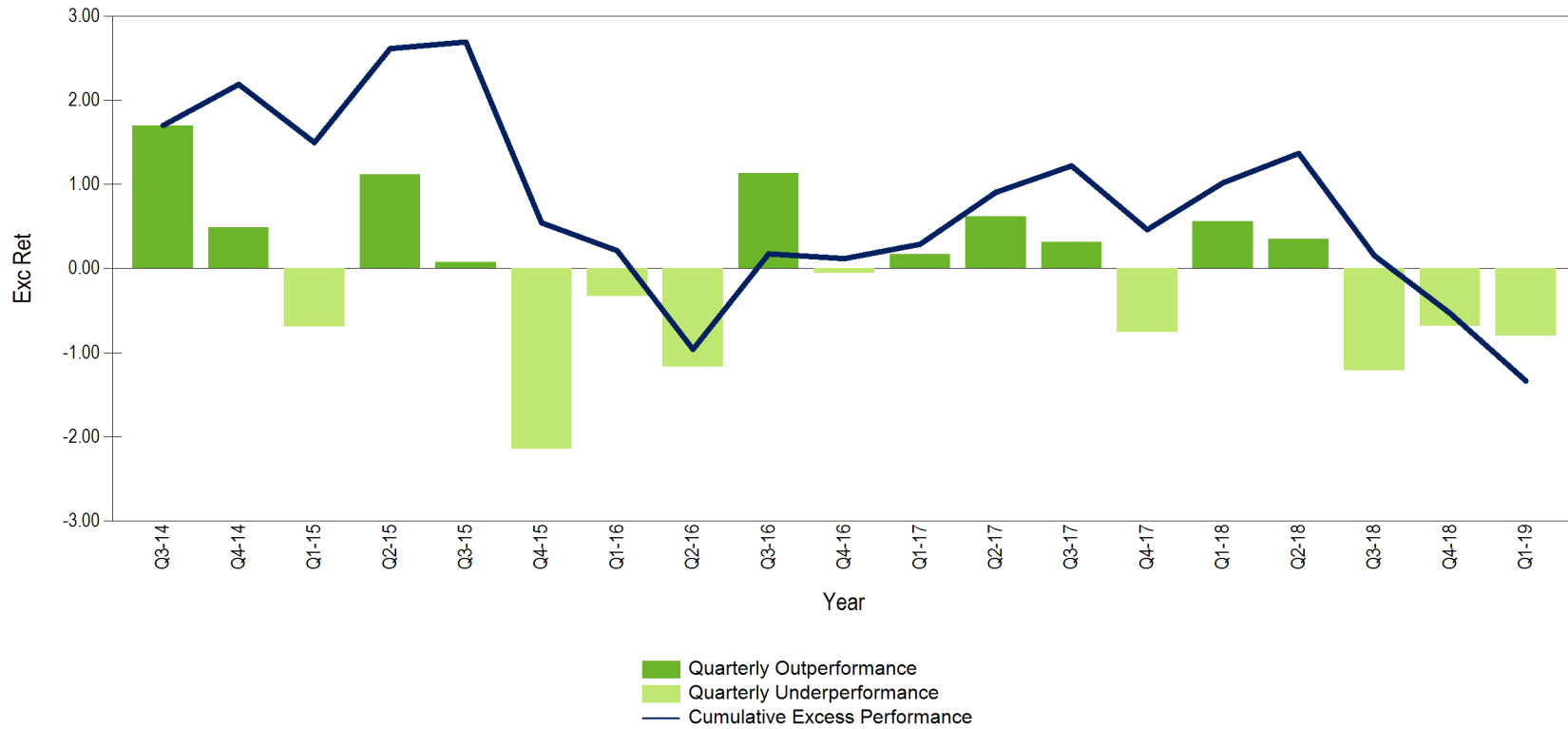
- DFA Emerging Markets
- ▲ MSCI Emerging Markets Value NR USD
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



# Los Angeles City Employees' Retirement System

## QMA EMERGING MARKETS

Quarterly and Cumulative Excess Performance

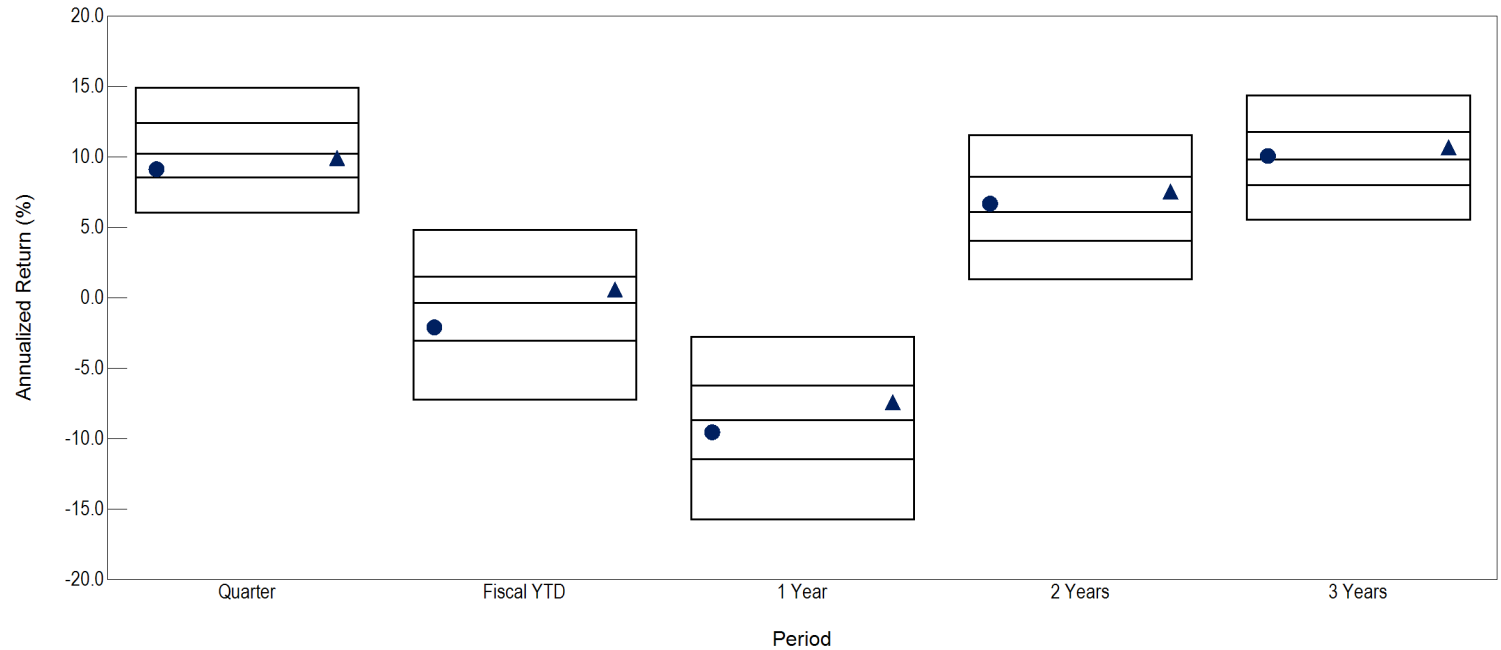




# Los Angeles City Employees' Retirement System

## QMA EMERGING MARKETS

QMA Emerging Markets vs. eV Emg Mkts Equity Net



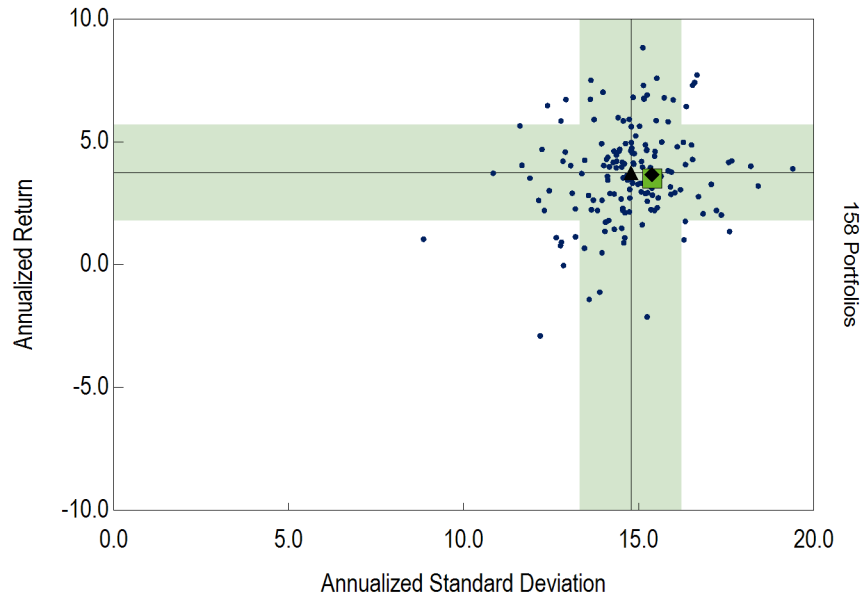
	Return (Rank)									
5th Percentile	14.90		4.81		-2.79		11.52		14.36	
25th Percentile	12.45		1.54		-6.18		8.62		11.82	
Median	10.27		-0.33		-8.62		6.12		9.88	
75th Percentile	8.58		-2.99		-11.41		4.10		8.04	
95th Percentile	6.07		-7.19		-15.69		1.38		5.61	
# of Portfolios	210		202		200		195		184	
● QMA Emerging Markets	9.12	(66)	-2.10	(67)	-9.55	(59)	6.68	(44)	10.07	(48)
▲ MSCI Emerging Markets	9.93	(57)	0.60	(38)	-7.41	(36)	7.55	(35)	10.68	(40)



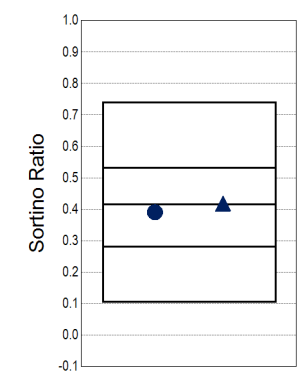
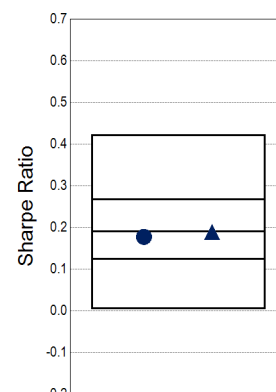
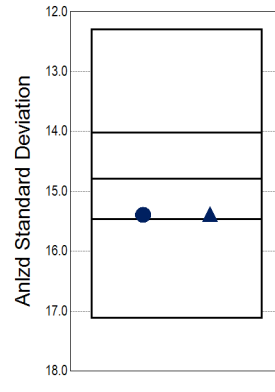
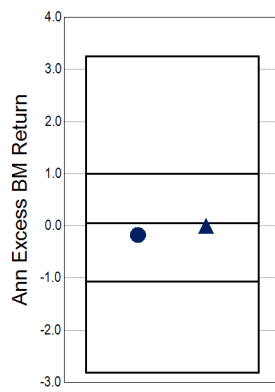
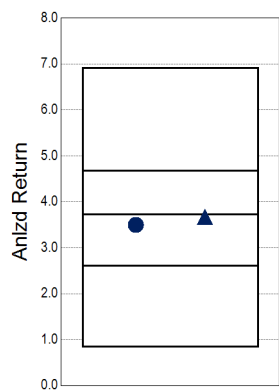
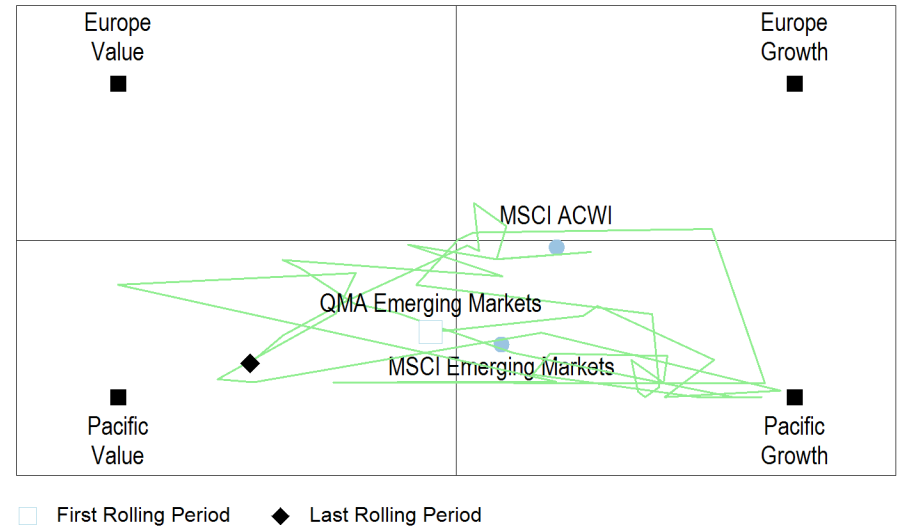
# Los Angeles City Employees' Retirement System

## QMA EMERGING MARKETS

Since Inception Risk Return



Since Inception Style Map



- QMA Emerging Markets
- ▲ MSCI Emerging Markets
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



# **CORE FIXED INCOME MANAGER PERFORMANCE**

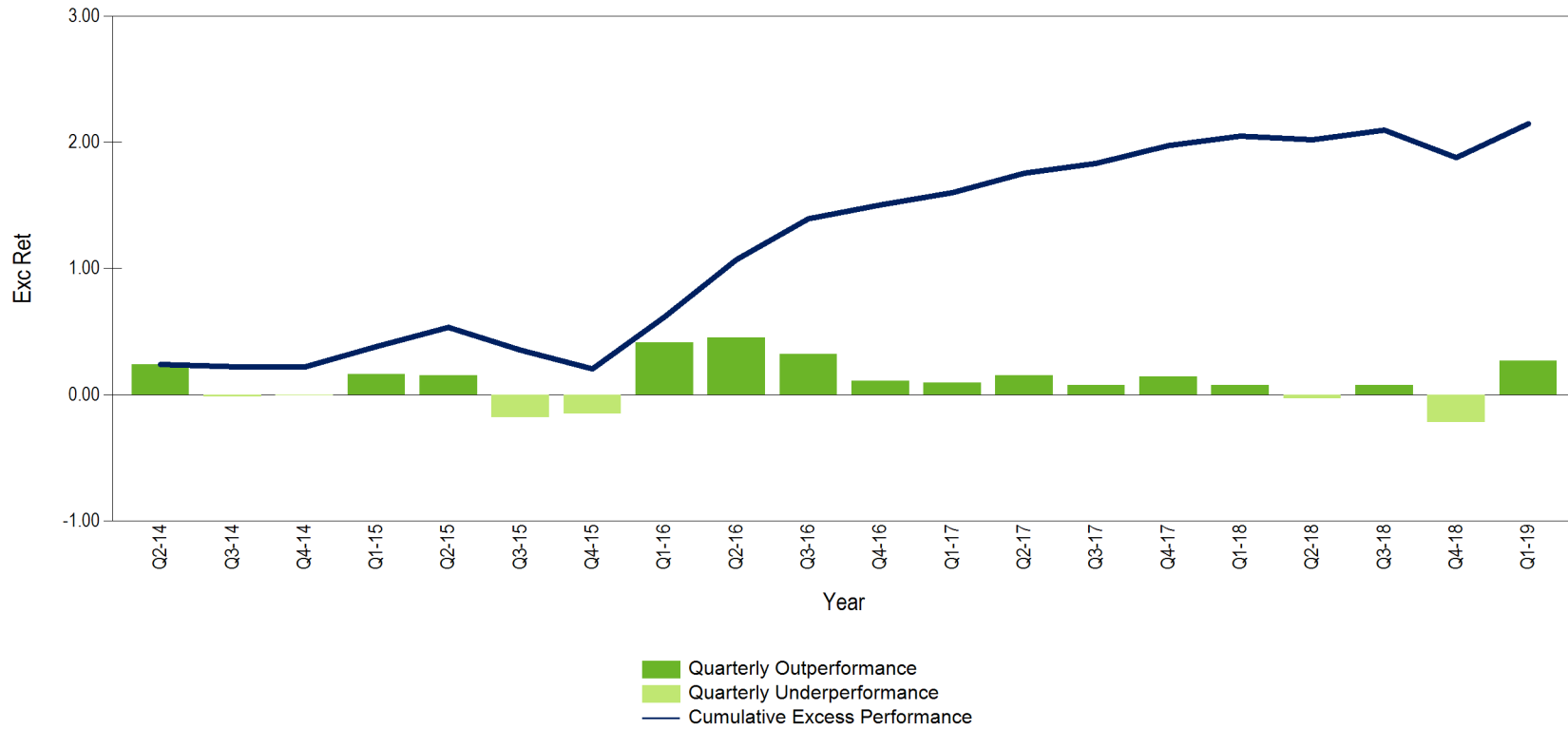
NEPC, LLC

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# Los Angeles City Employees' Retirement System

## BAIRD ADVISORS

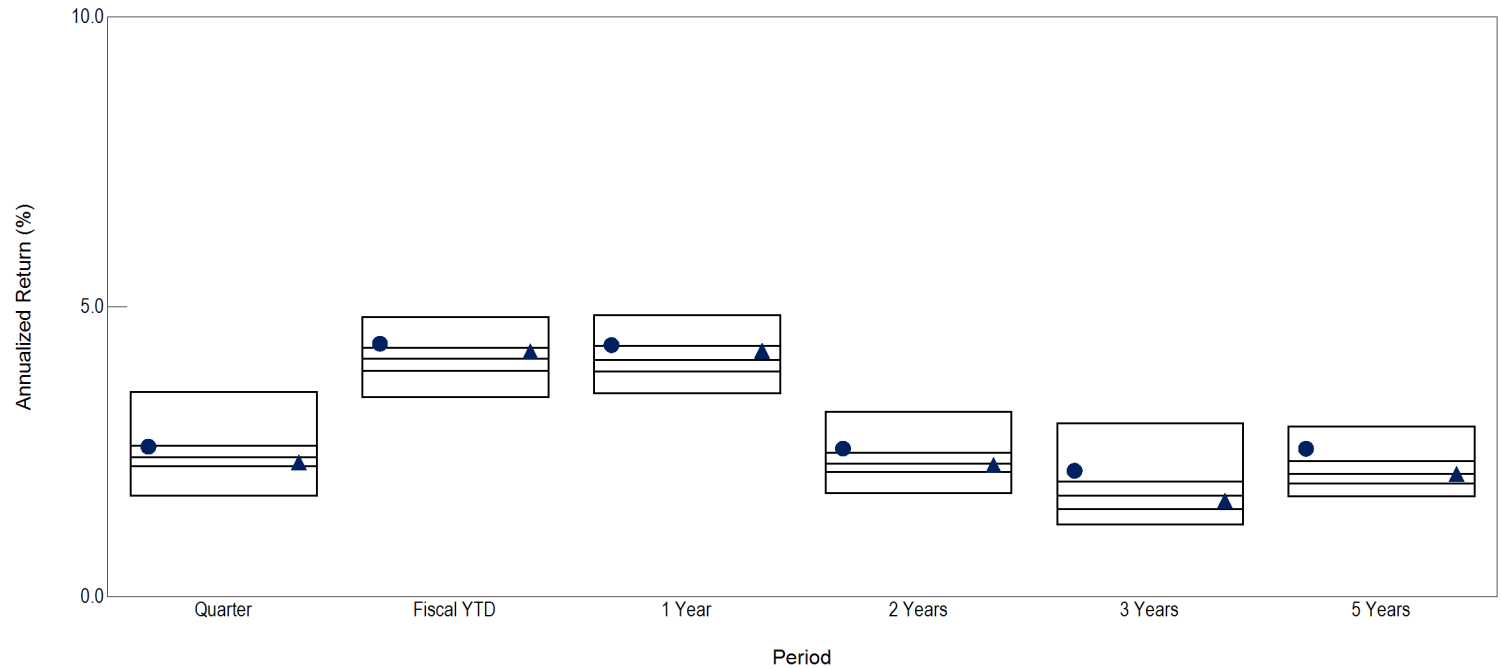
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## BAIRD ADVISORS

Baird Advisors vs. eV US Interm Duration Fixed Inc Net



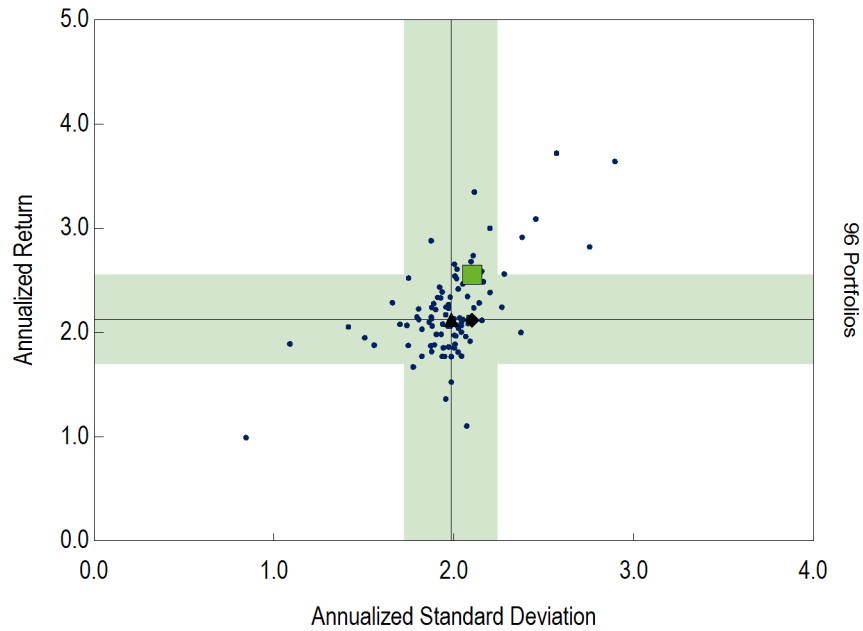
	Return (Rank)		Quarter		Fiscal YTD		1 Year		2 Years		3 Years		5 Years	
5th Percentile	3.54		4.82		4.86		3.19		2.99		2.94			
25th Percentile	2.61		4.30		4.33		2.49		2.00		2.36			
Median	2.41		4.11		4.10		2.31		1.75		2.12			
75th Percentile	2.26		3.91		3.89		2.16		1.53		1.97			
95th Percentile	1.75		3.45		3.52		1.80		1.26		1.74			
# of Portfolios	102		102		102		101		100		96			
● Baird Advisors	2.59	(27)	4.36	(22)	4.34	(24)	2.56	(21)	2.17	(18)	2.55	(15)		
▲ BBgBarc US Govt/Credit Int TR	2.32	(68)	4.24	(35)	4.24	(34)	2.28	(54)	1.66	(61)	2.12	(52)		



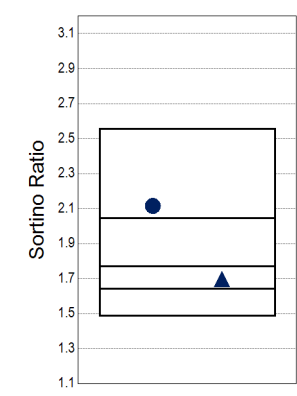
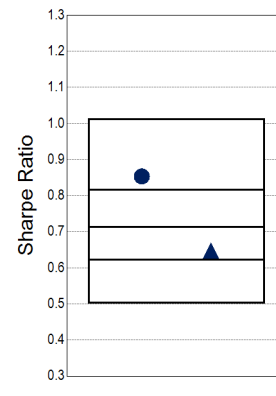
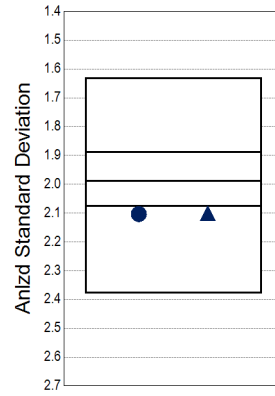
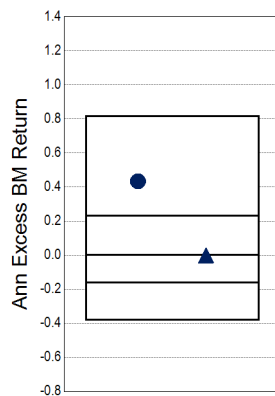
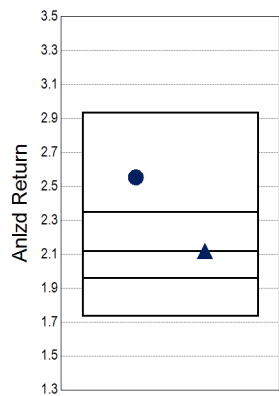
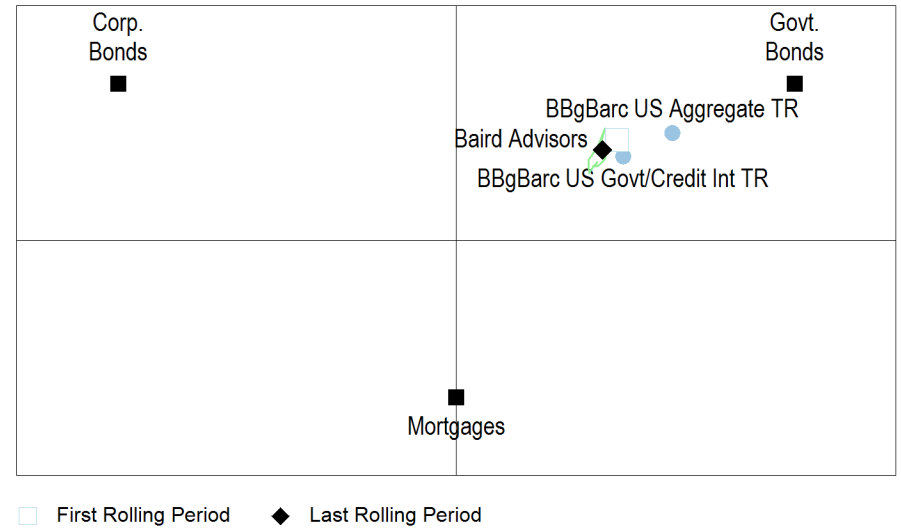
# Los Angeles City Employees' Retirement System

## BAIRD ADVISORS

5 Year Risk Return



5 Year Style Map



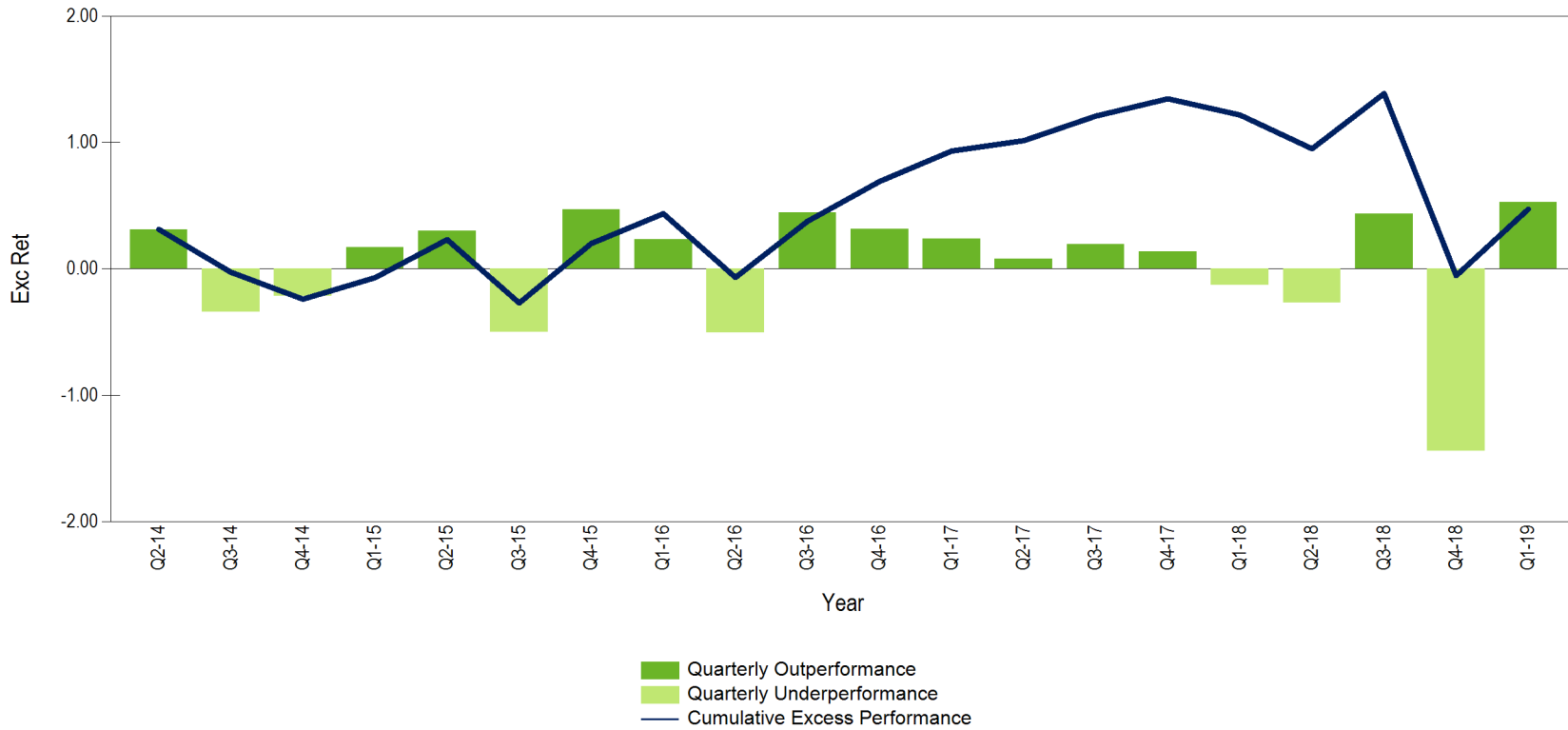
- Baird Advisors
- ▲ BBgBarc US Govt/Credit Int TR
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



# Los Angeles City Employees' Retirement System

## LM CAPITAL

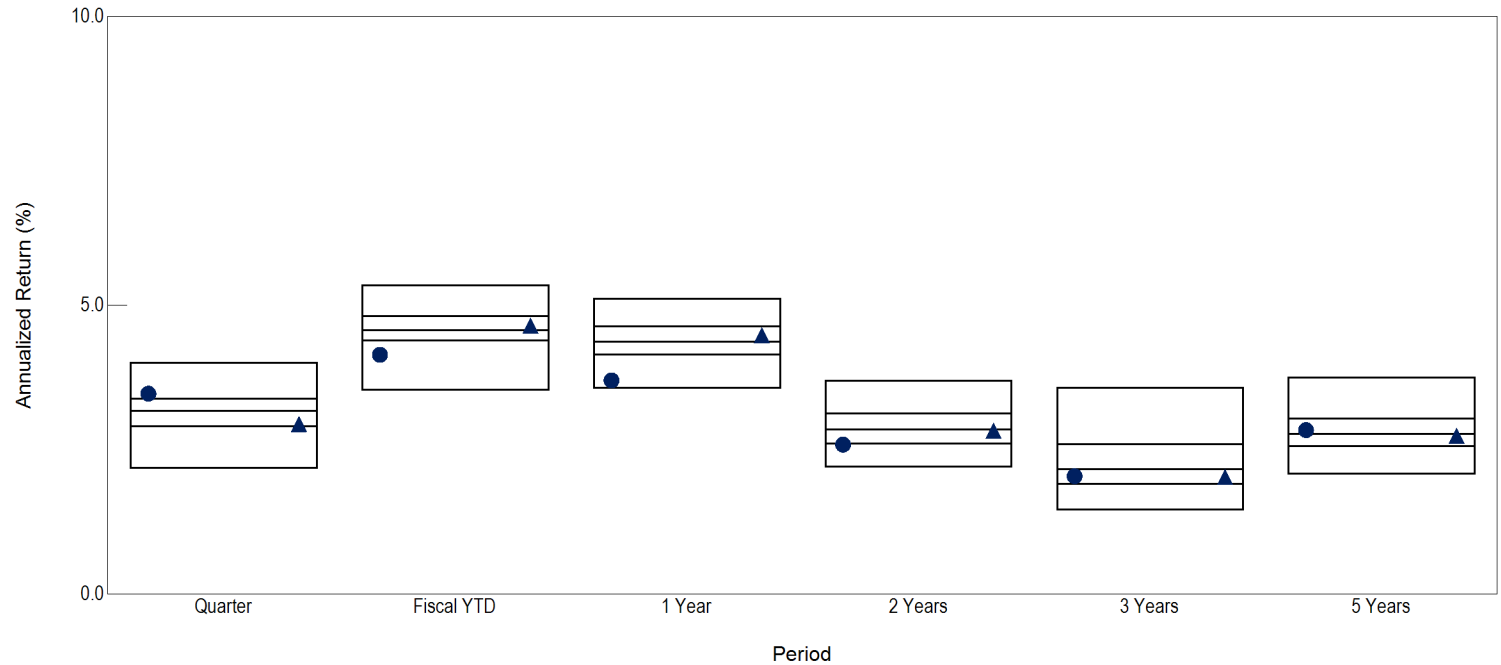
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## LM CAPITAL

Core Fixed Income Managers vs. eV US Core Fixed Inc Net



	Return (Rank)										
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years					
5th Percentile	4.01	5.34	5.11	3.69	3.57	3.74					
25th Percentile	3.39	4.82	4.65	3.14	2.61	3.05					
Median	3.18	4.58	4.38	2.86	2.18	2.78					
75th Percentile	2.91	4.41	4.16	2.62	1.92	2.58					
95th Percentile	2.20	3.55	3.58	2.22	1.48	2.10					
# of Portfolios	147	146	145	143	139	136					
● LM Capital	3.47	4.14	3.70	2.59	2.04	2.84	(18)	(90)	(78)	(63)	(45)
▲ Core Fixed Income Blend	2.94	4.65	4.48	2.83	2.03	2.74	(73)	(45)	(54)	(64)	(58)

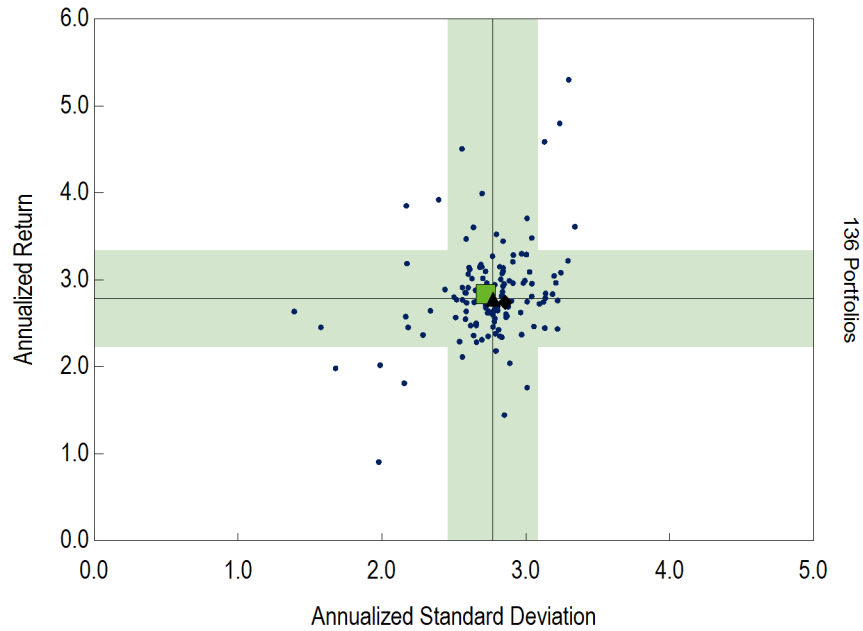




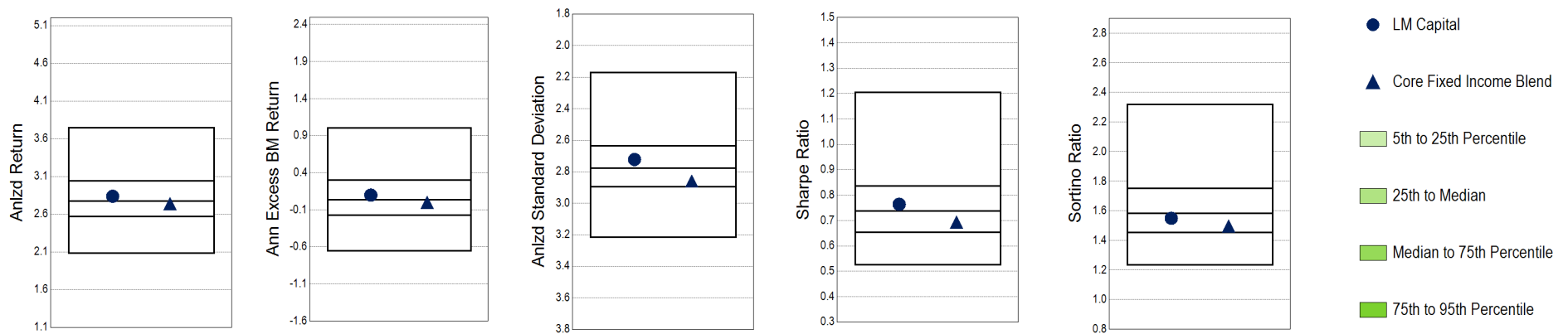
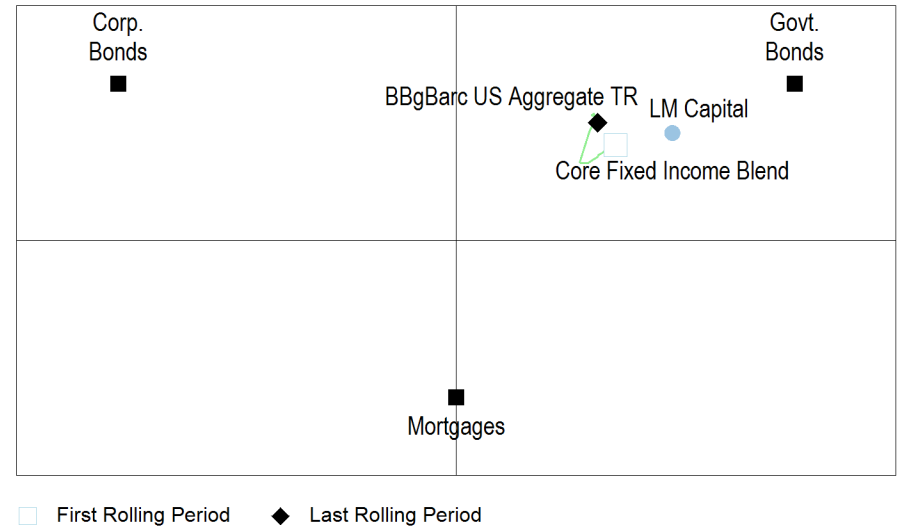
# Los Angeles City Employees' Retirement System

## LM CAPITAL

5 Year Risk Return



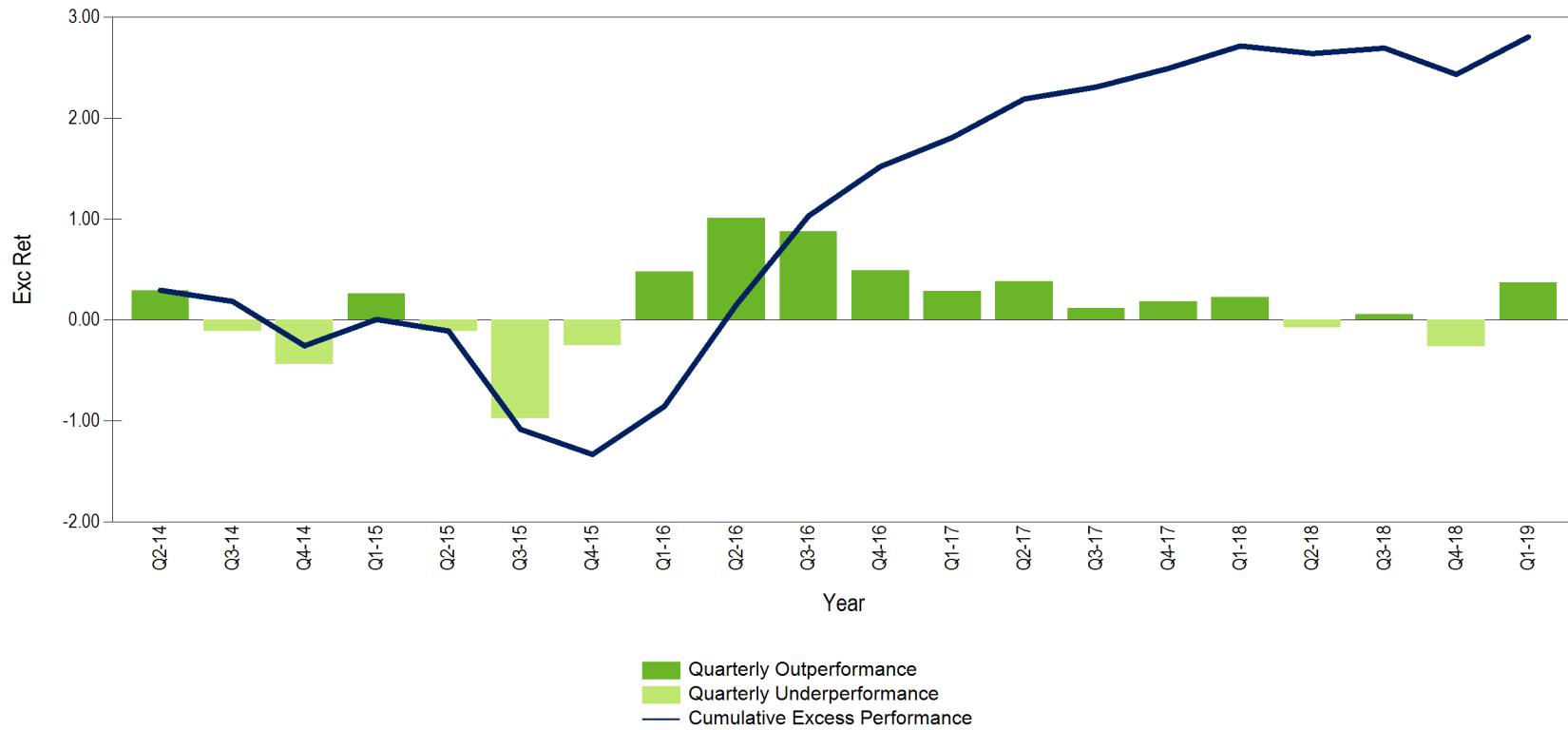
5 Year Style Map



# Los Angeles City Employees' Retirement System

## LOOMIS SAYLES

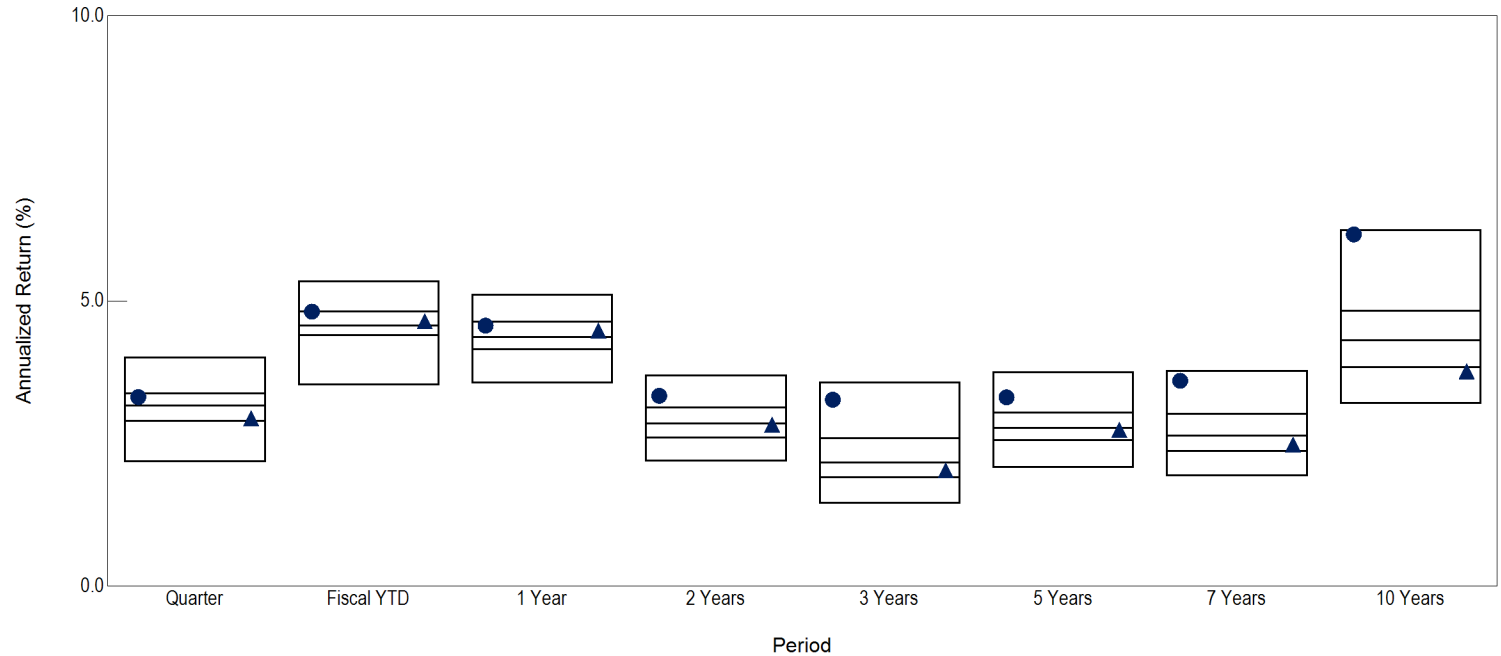
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## LOOMIS SAYLES

Loomis Sayles vs. eV US Core Fixed Inc Net



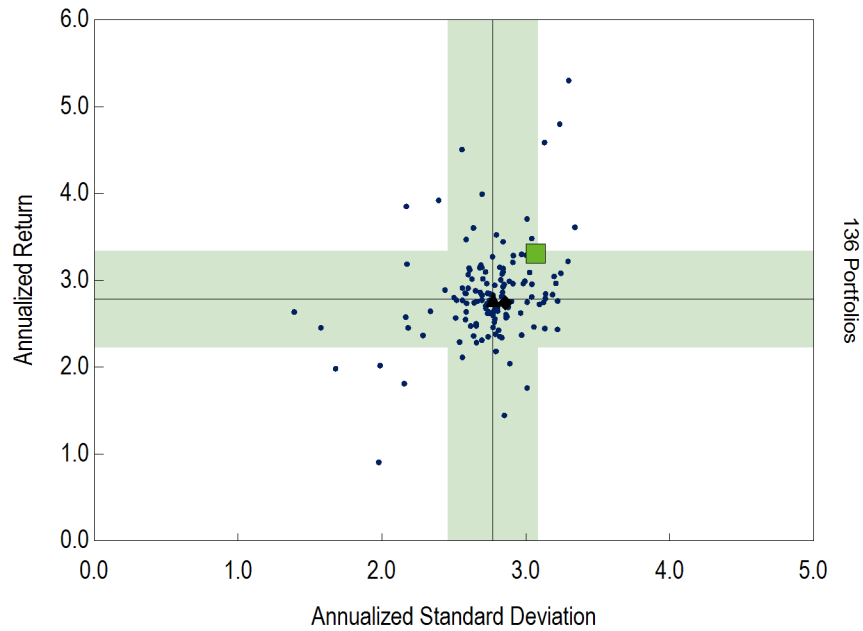
	Return (Rank)															
5th Percentile	4.01	5.34	5.11	3.69	3.57	3.74	3.77	6.24								
25th Percentile	3.39	4.82	4.65	3.14	2.61	3.05	3.03	4.84								
Median	3.18	4.58	4.38	2.86	2.18	2.78	2.65	4.32								
75th Percentile	2.91	4.41	4.16	2.62	1.92	2.58	2.38	3.85								
95th Percentile	2.20	3.55	3.58	2.22	1.48	2.10	1.95	3.22								
# of Portfolios	147	146	145	143	139	136	133	122								
● Loomis Sayles	3.31	(31)	4.81	(27)	4.57	(31)	3.34	(10)	3.27	(7)	3.31	(11)	3.60	(8)	6.17	(6)
▲ BC US Agg LACERS custom	2.94	(73)	4.65	(45)	4.48	(41)	2.83	(54)	2.03	(64)	2.74	(58)	2.48	(66)	3.77	(80)



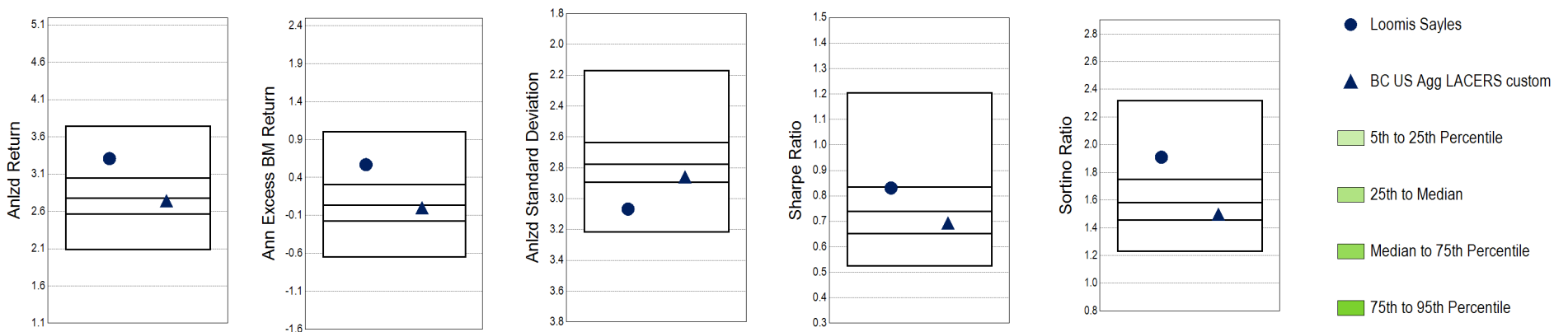
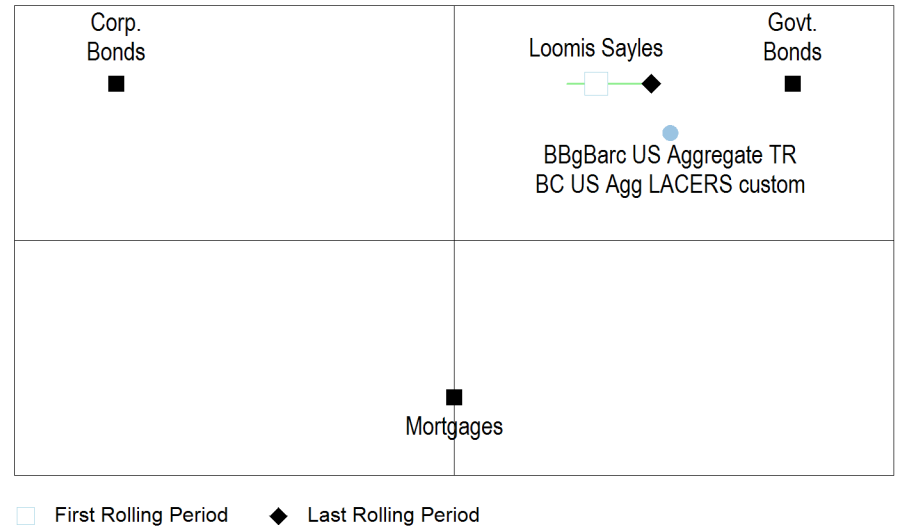
# Los Angeles City Employees' Retirement System

## LOOMIS SAYLES

5 Year Risk Return



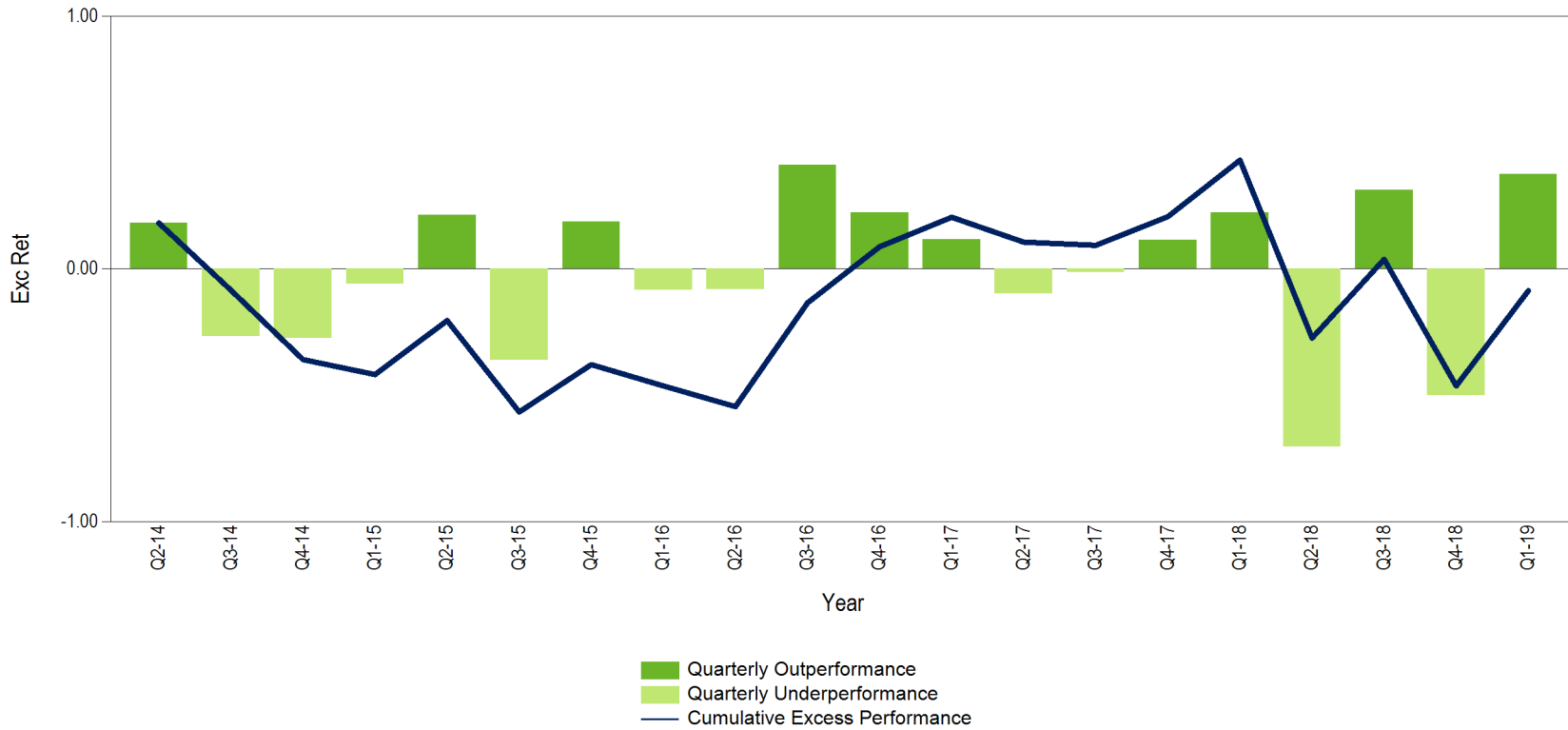
5 Year Style Map



# Los Angeles City Employees' Retirement System

## NEUBERGER BERMAN

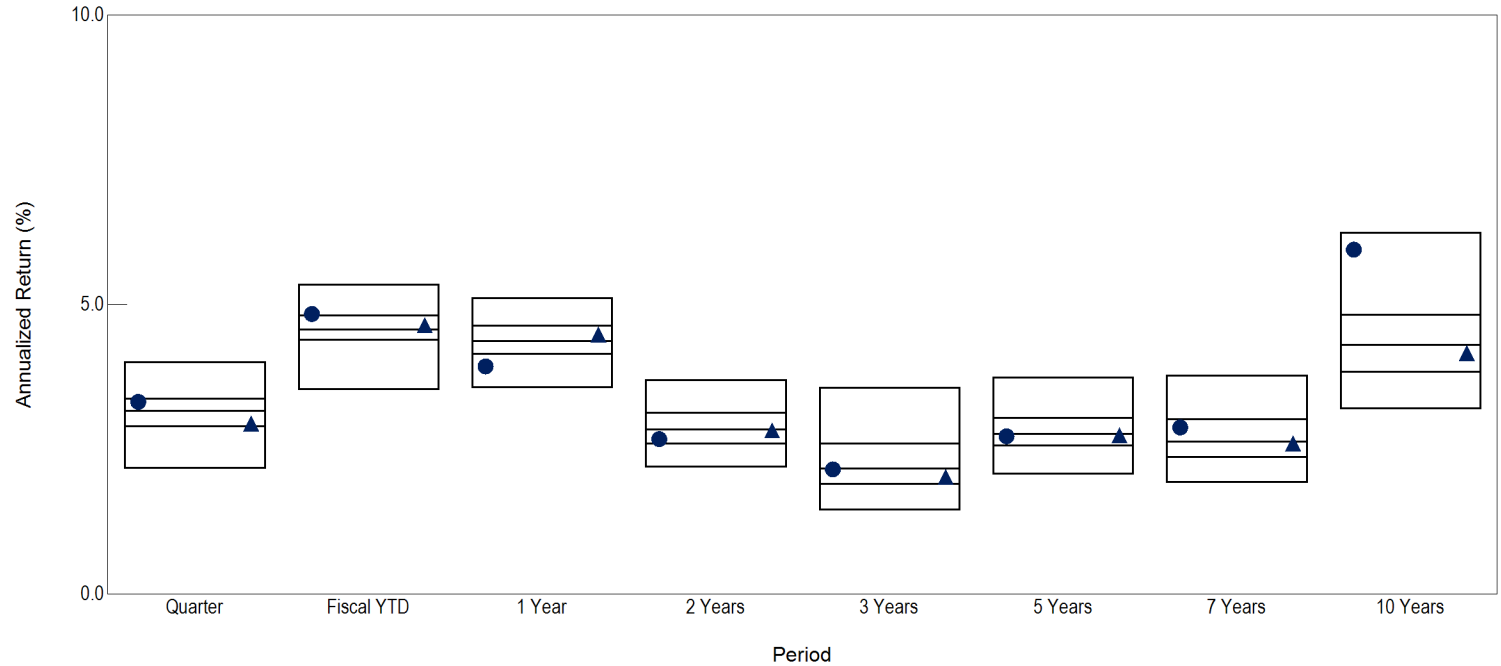
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## NEUBERGER BERMAN

Neuberger Berman vs. eV US Core Fixed Inc Net



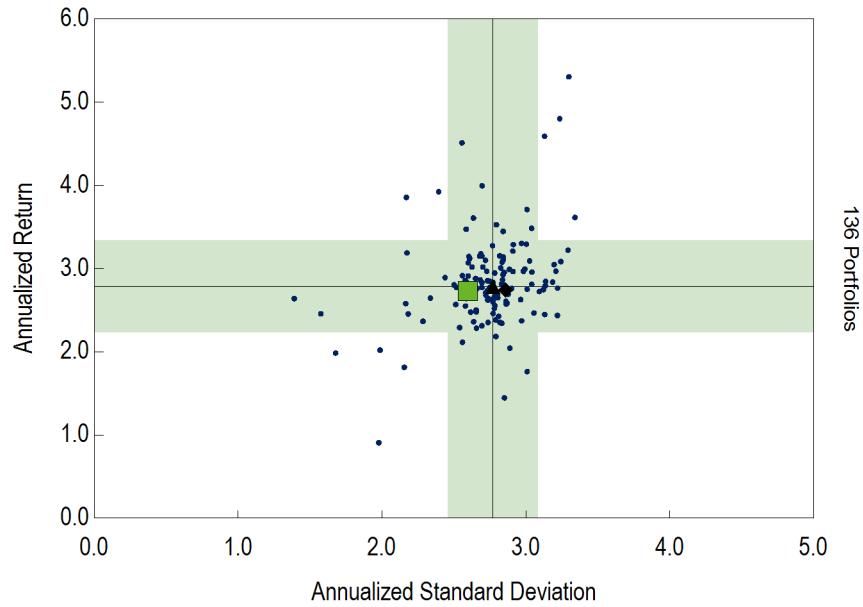
	Return (Rank)															
5th Percentile	4.01	5.34	5.11	3.69	3.57	3.74	3.77	6.24								
25th Percentile	3.39	4.82	4.65	3.14	2.61	3.05	3.03	4.84								
Median	3.18	4.58	4.38	2.86	2.18	2.78	2.65	4.32								
75th Percentile	2.91	4.41	4.16	2.62	1.92	2.58	2.38	3.85								
95th Percentile	2.20	3.55	3.58	2.22	1.48	2.10	1.95	3.22								
# of Portfolios	147	146	145	143	139	136	133	122								
● Neuberger Berman	3.32	(31)	4.84	(25)	3.93	(88)	2.68	(72)	2.15	(52)	2.73	(61)	2.88	(36)	5.95	(7)
▲ Core Fixed Income Blend	2.94	(73)	4.65	(45)	4.48	(41)	2.83	(54)	2.03	(64)	2.74	(58)	2.60	(55)	4.16	(55)



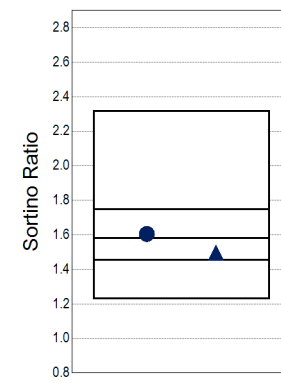
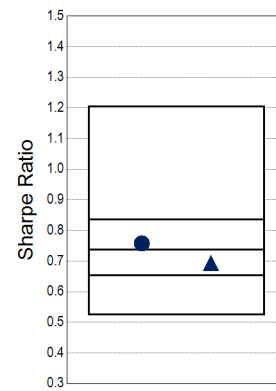
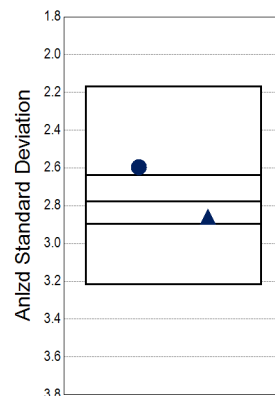
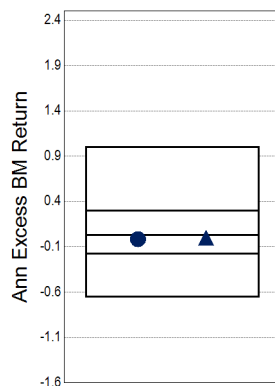
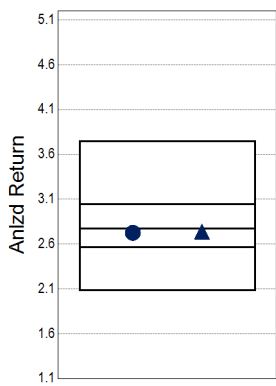
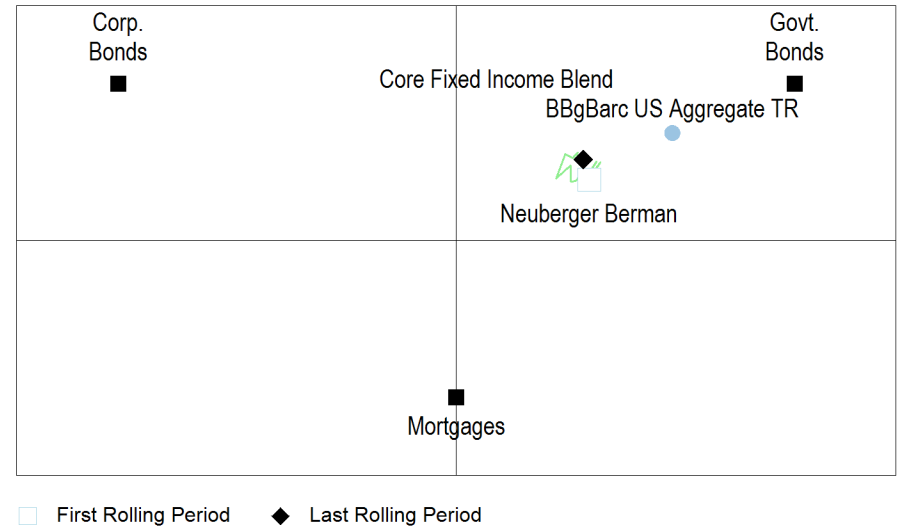
# Los Angeles City Employees' Retirement System

## NEUBERGER BERMAN

5 Year Risk Return



5 Year Style Map



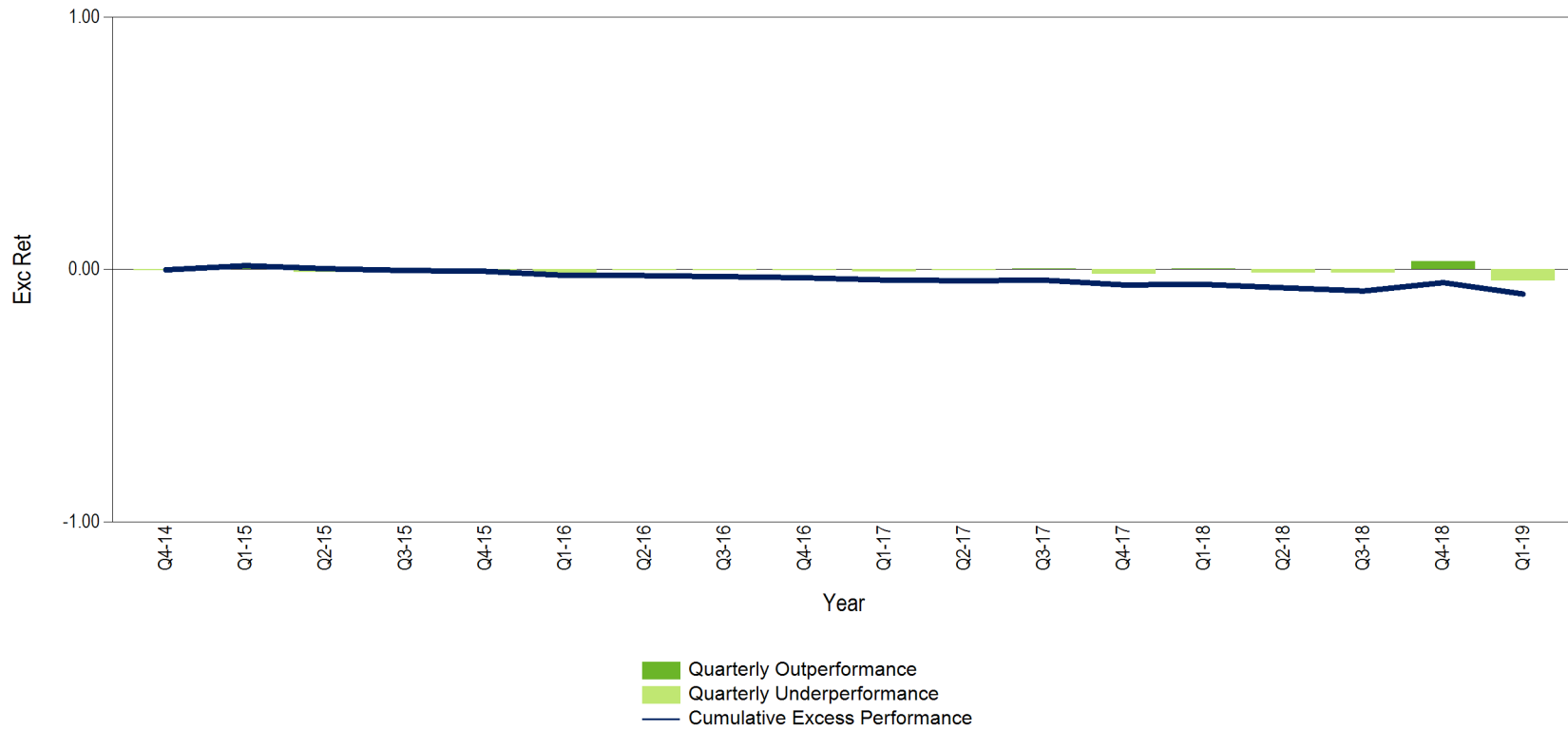
- Neuberger Berman
- ▲ Core Fixed Income Blend
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



# Los Angeles City Employees' Retirement System

## SSGA U.S. AGGREGATE BOND

Quarterly and Cumulative Excess Performance

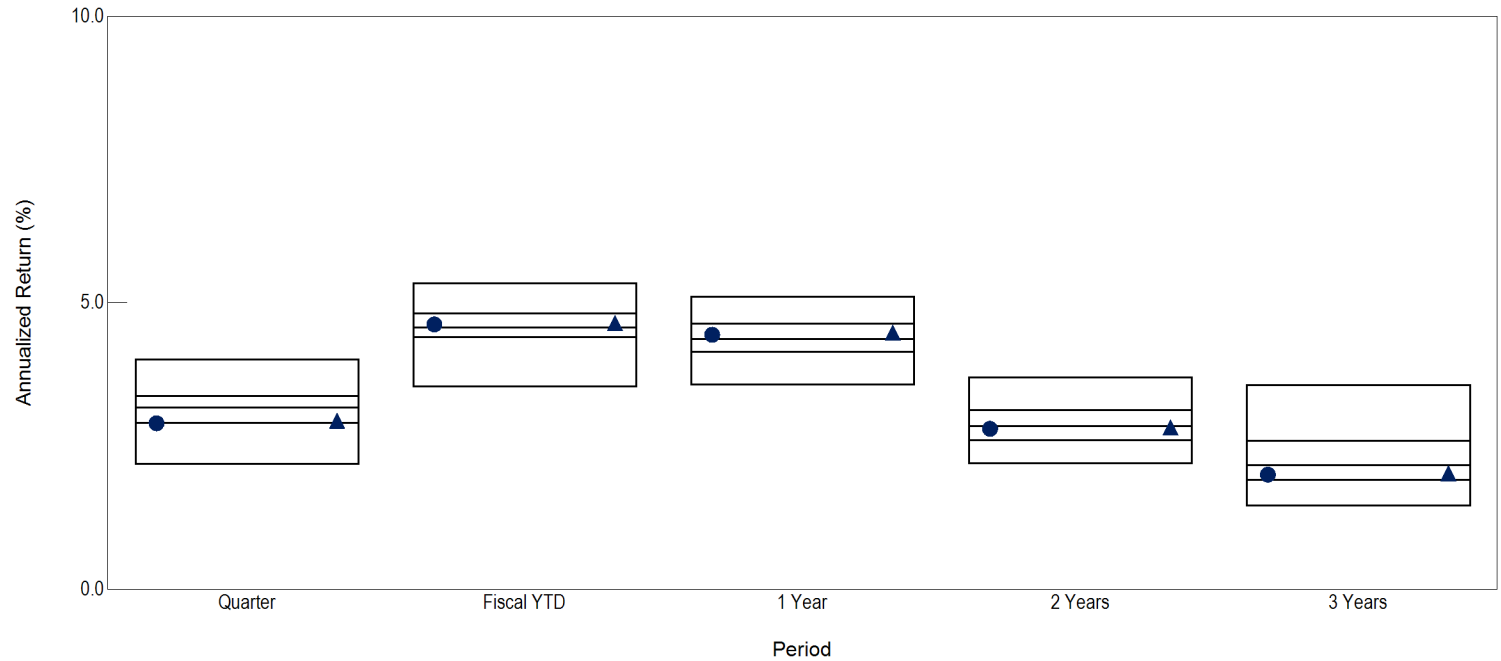




# Los Angeles City Employees' Retirement System

## SSGA U.S. AGGREGATE BOND

SSgA U.S. Aggregate Bond vs. eV US Core Fixed Inc Net



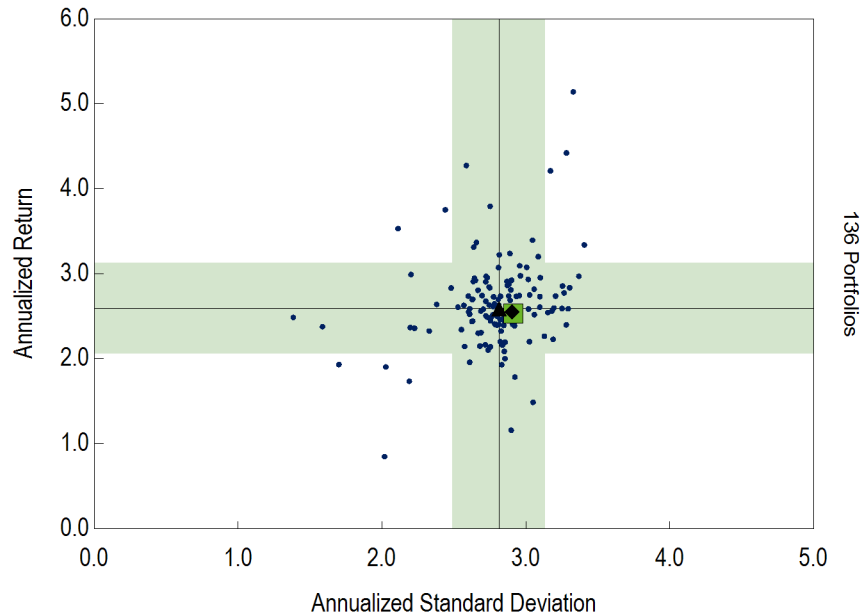
	Return (Rank)									
5th Percentile	4.01		5.34		5.11		3.69		3.57	
25th Percentile	3.39		4.82		4.65		3.14		2.61	
Median	3.18		4.58		4.38		2.86		2.18	
75th Percentile	2.91		4.41		4.16		2.62		1.92	
95th Percentile	2.20		3.55		3.58		2.22		1.48	
# of Portfolios	147		146		145		143		139	
● SSGA U.S. Aggregate Bond	2.90	(76)	4.62	(47)	4.44	(43)	2.80	(59)	2.00	(66)
▲ BbgBarc US Aggregate TR	2.94	(73)	4.65	(45)	4.48	(41)	2.83	(54)	2.03	(64)



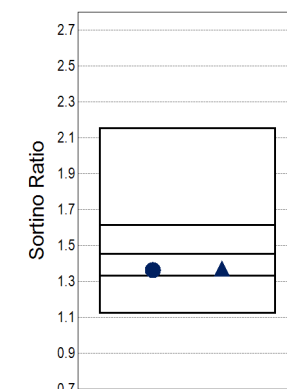
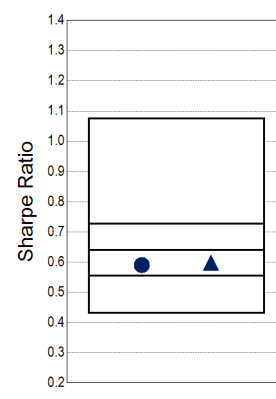
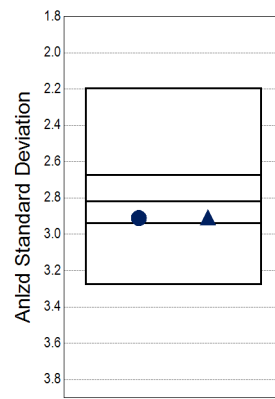
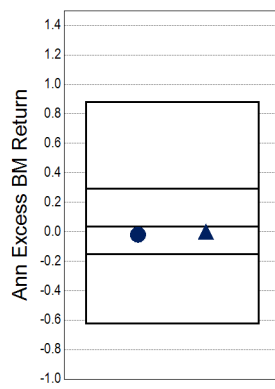
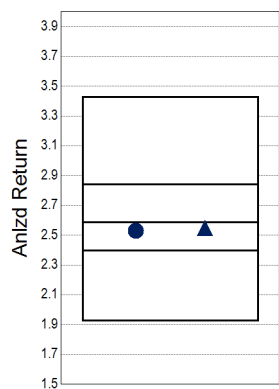
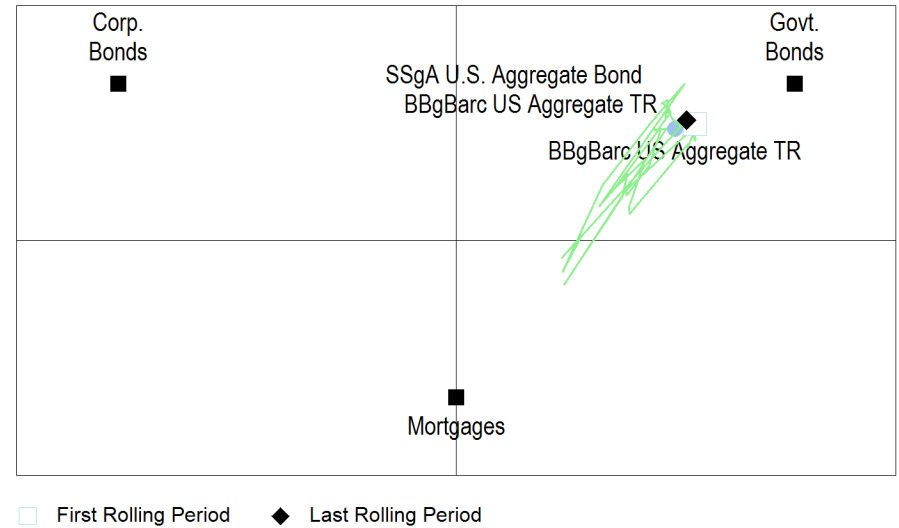
# Los Angeles City Employees' Retirement System

## SSGA U.S. AGGREGATE BOND

Since Inception Risk Return



Since Inception Style Map



- SSGA U.S. Aggregate Bond
- ▲ BBgBarc US Aggregate TR
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



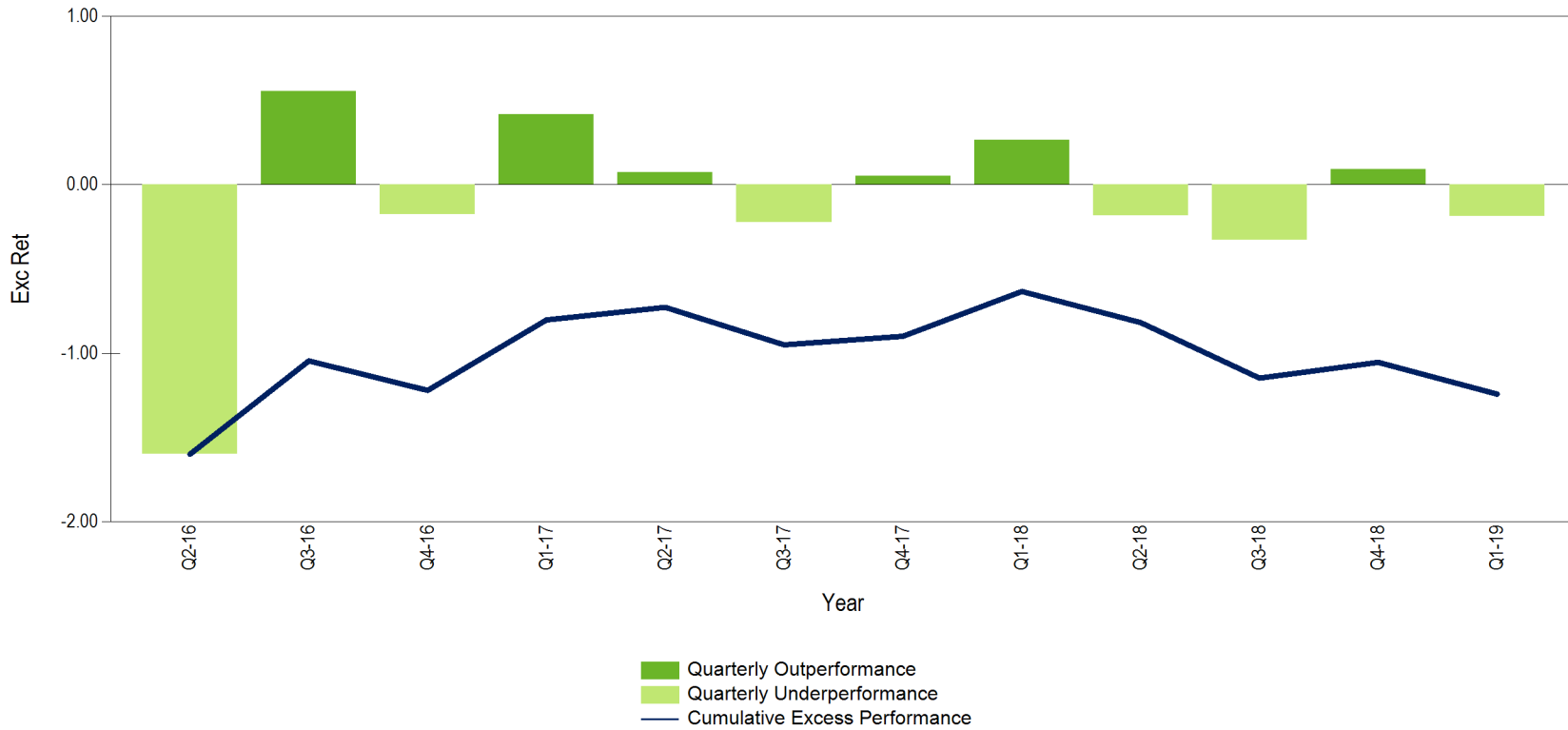
# **CREDIT OPPORTUNITIES MANAGER PERFORMANCE**

NEPC, LLC

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# AEGON USA

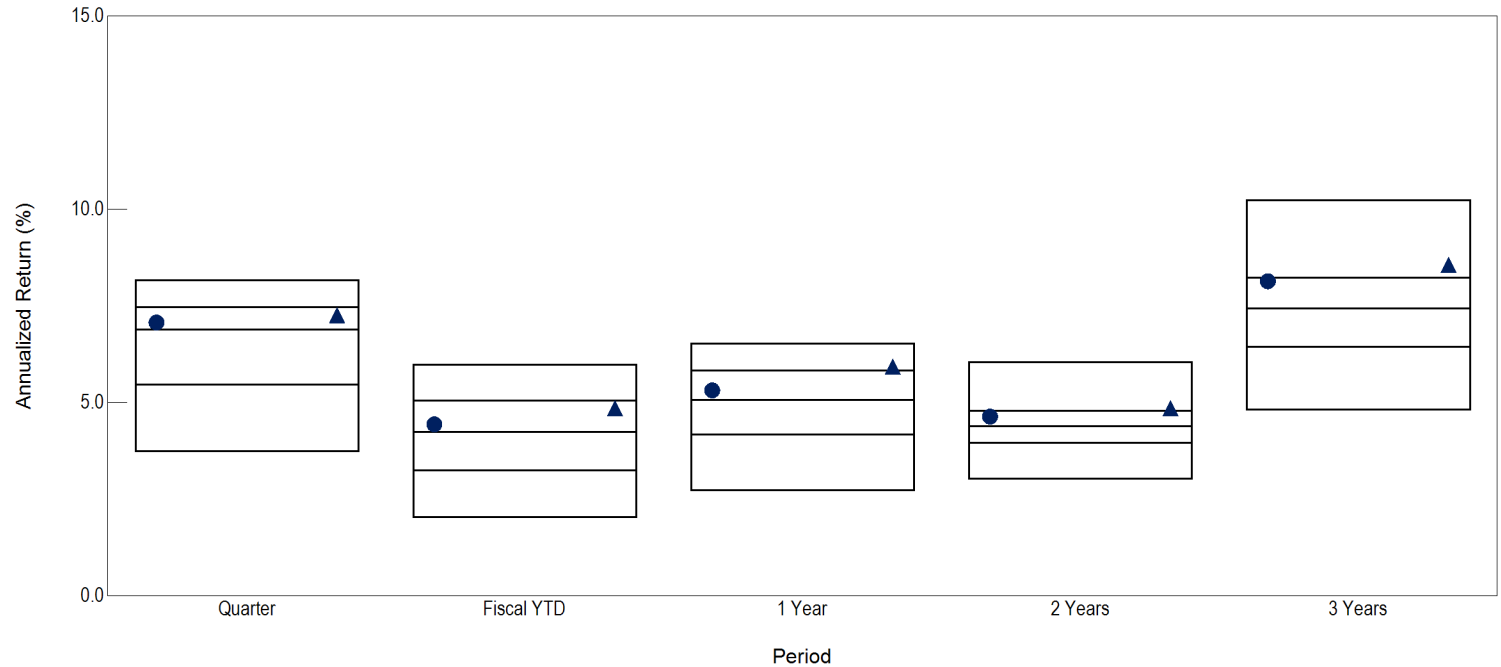
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## AEGON USA

AEGON USA vs. eV US High Yield Fixed Inc Net



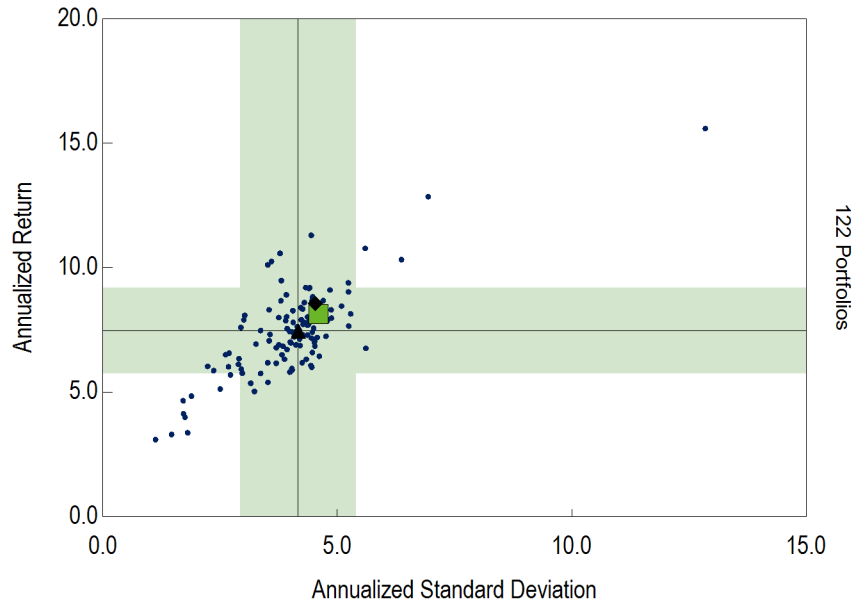
	Return (Rank)									
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	Quarter	Fiscal YTD	1 Year	2 Years	3 Years
5th Percentile	8.17	5.98	6.53	6.05	10.23					
25th Percentile	7.49	5.06	5.84	4.81	8.25					
Median	6.91	4.26	5.08	4.40	7.45					
75th Percentile	5.48	3.27	4.19	3.98	6.45					
95th Percentile	3.76	2.05	2.74	3.05	4.84					
# of Portfolios	133	132	132	128	122					
● AEGON USA	7.07	4.43	5.31	4.64	8.14	(43)	(45)	(45)	(34)	(27)
▲ BBgBarc US High Yield 2% Issuer Cap TR	7.26	4.85	5.93	4.85	8.56	(37)	(36)	(22)	(23)	(18)



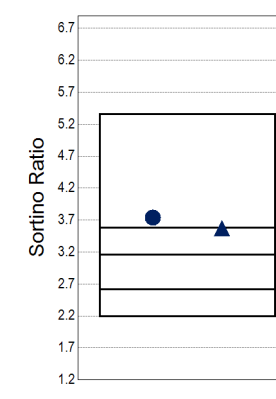
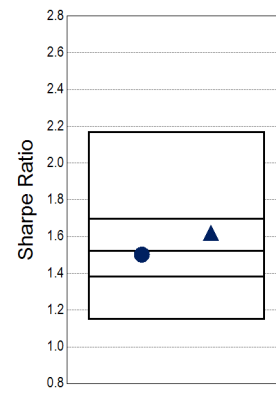
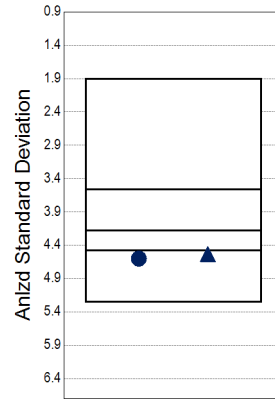
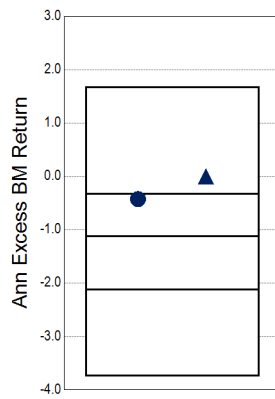
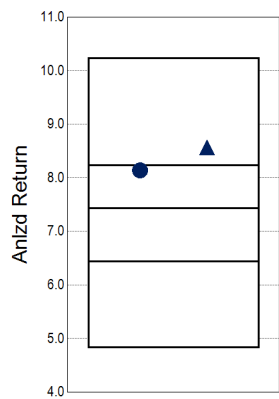
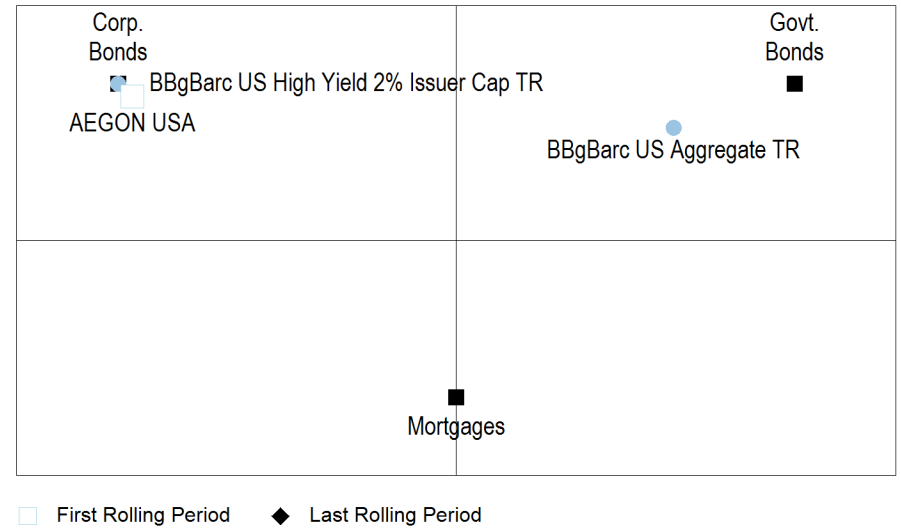
# Los Angeles City Employees' Retirement System

## AEGON USA

3 Year Risk Return



3 Year Style Map

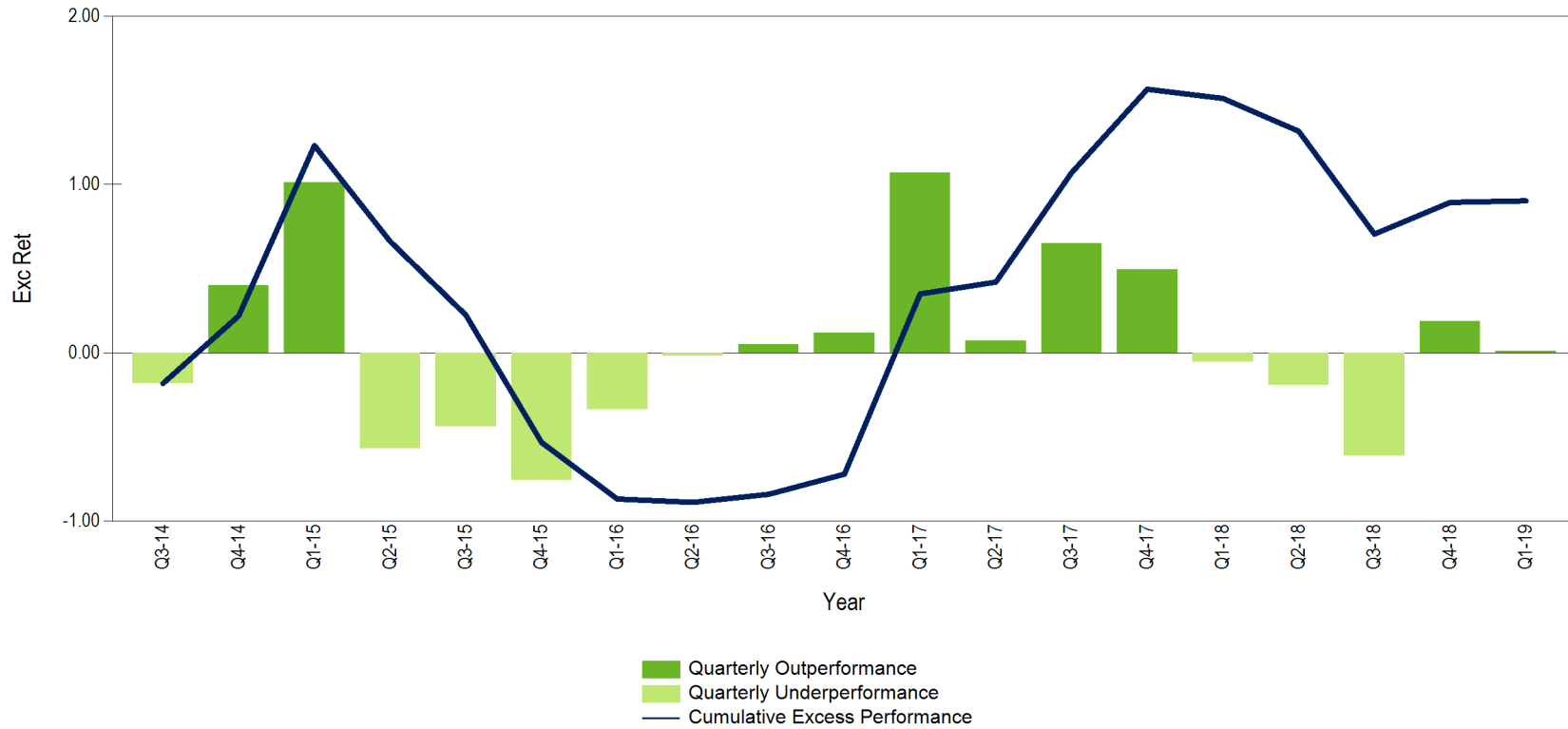


- AEGON USA
- ▲ BBgBarc US High Yield 2% Issuer Cap TR
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



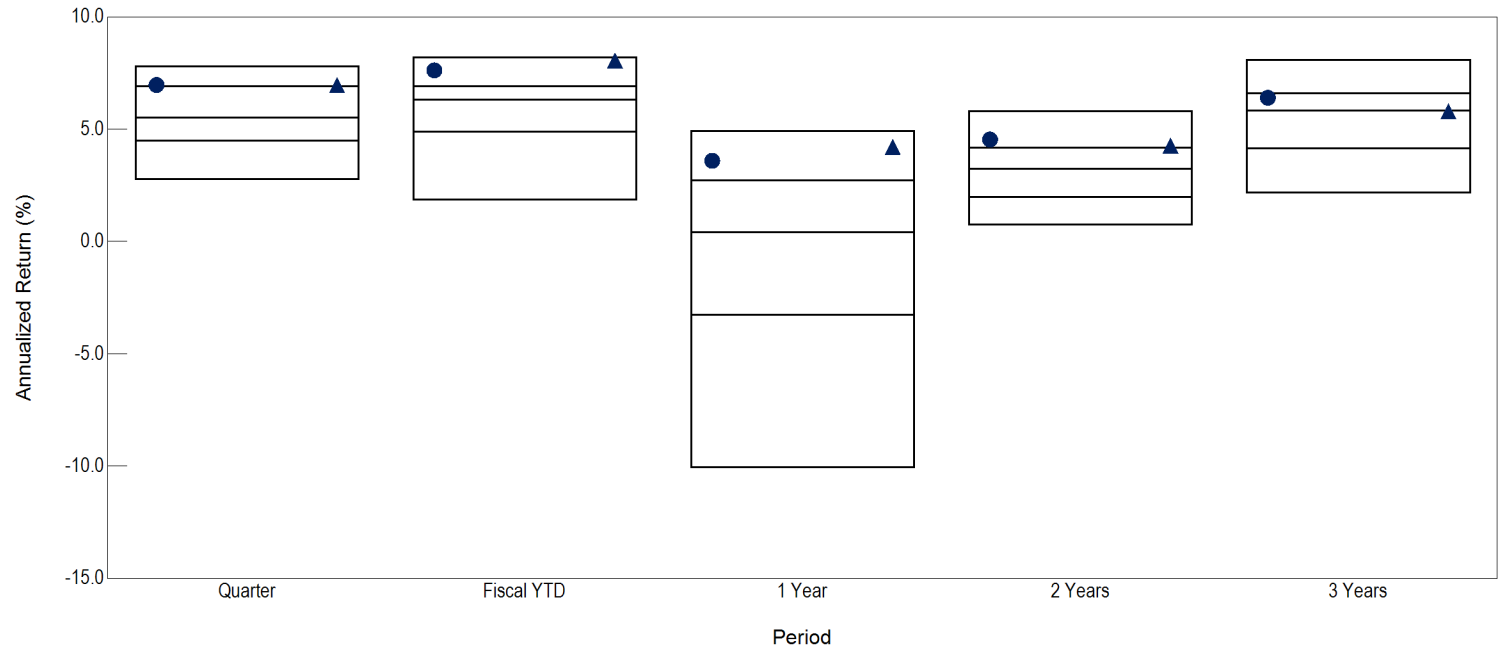
# PRUDENTIAL EMERGING MARKETS

Quarterly and Cumulative Excess Performance



# PRUDENTIAL EMERGING MARKETS

Prudential Emerging Markets vs. eV Emg Mkt Fixed Inc Hedged Net



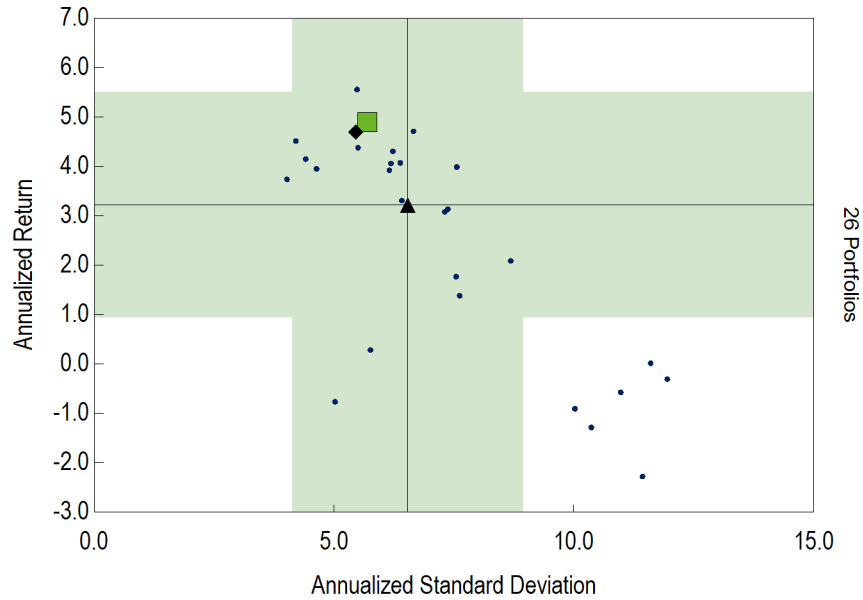
	Quarter		Fiscal YTD		1 Year		2 Years		3 Years	
<b>Return (Rank)</b>										
5th Percentile	7.80		8.18		4.92		5.81		8.08	
25th Percentile	6.95		6.94		2.74		4.20		6.63	
Median	5.55		6.34		0.45		3.25		5.85	
75th Percentile	4.52		4.91		-3.24		2.01		4.16	
95th Percentile	2.80		1.88		-10.03		0.79		2.21	
# of Portfolios	37		33		33		33		33	
● Prudential Emerging Markets	6.96	(25)	7.61	(10)	3.59	(21)	4.53	(17)	6.39	(33)
▲ JP Morgan EMBI Global Diversified	6.95	(25)	8.04	(6)	4.21	(14)	4.26	(24)	5.79	(56)



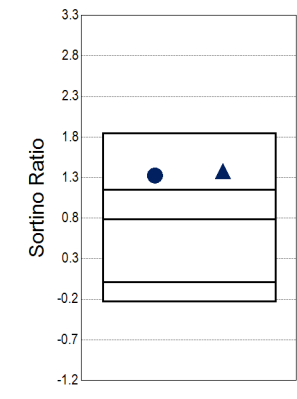
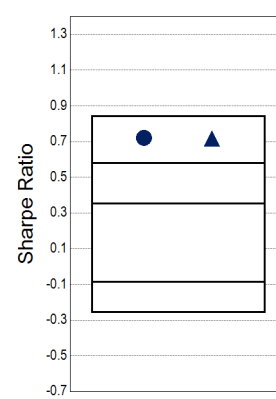
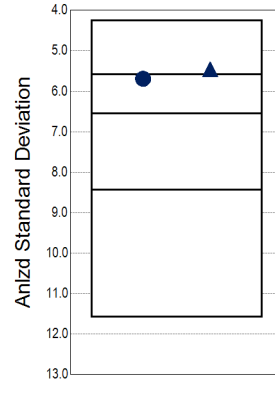
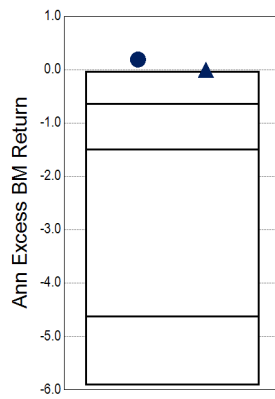
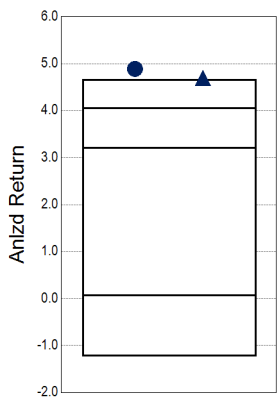
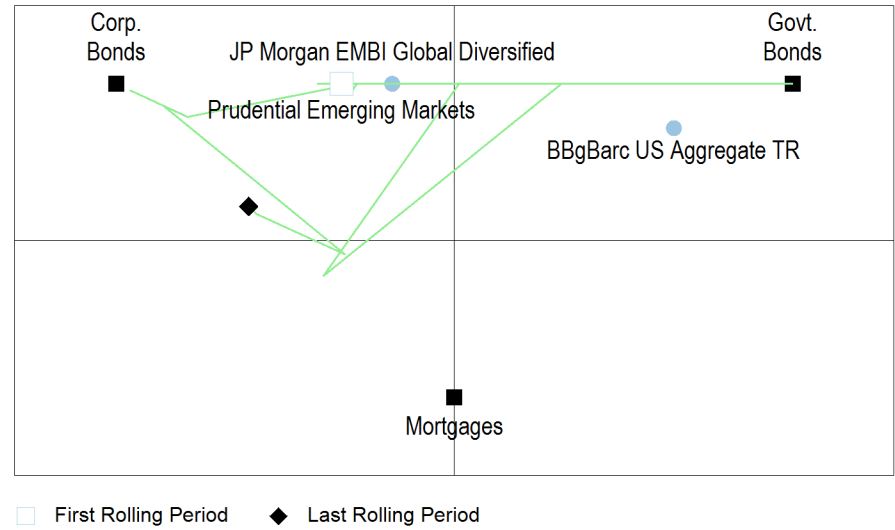


# PRUDENTIAL EMERGING MARKETS

Since Inception Risk Return



Since Inception Style Map



- Prudential Emerging Markets
- ▲ JP Morgan EMBI Global Div...
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



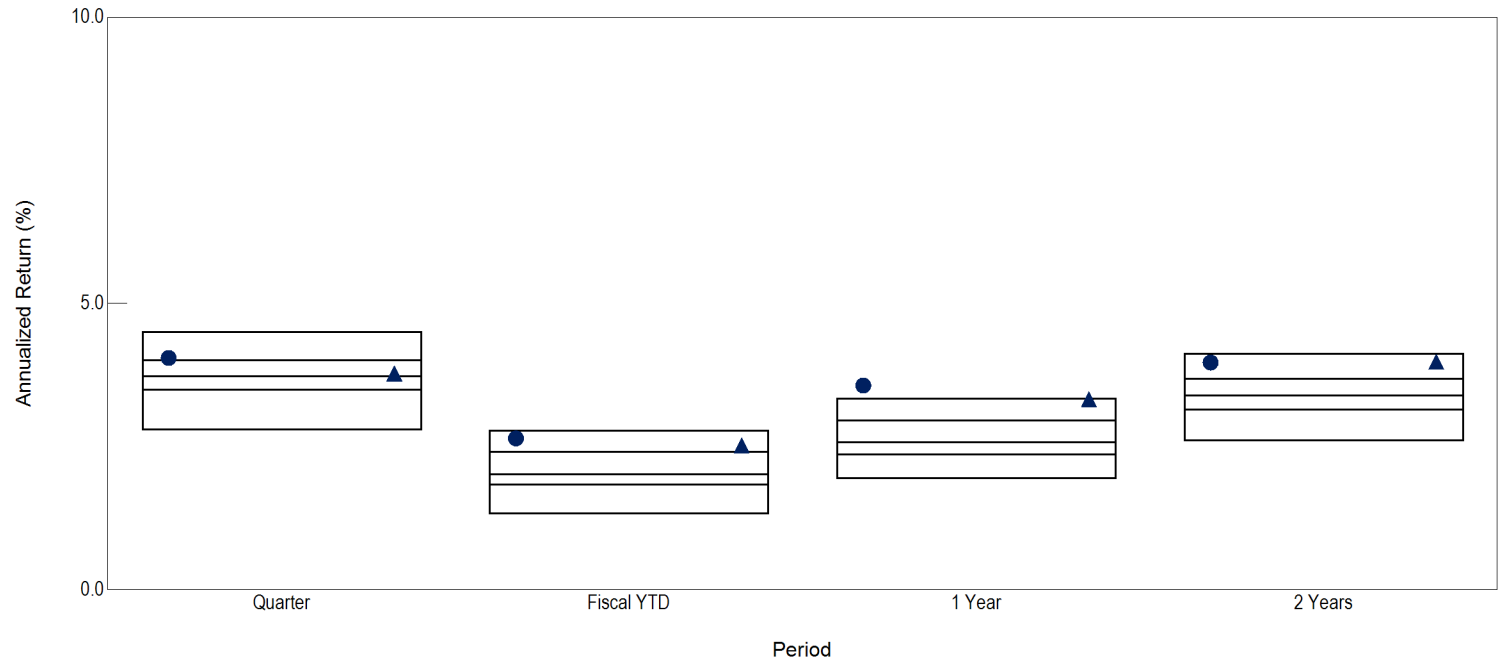
# BAIN CAPITAL SENIOR LOAN FUND, LP

Quarterly and Cumulative Excess Performance



# BAIN CAPITAL SENIOR LOAN FUND, LP

Bain Capital Senior Loan Fund, LP vs. eV US Float-Rate Bank Loan Fixed Inc Net



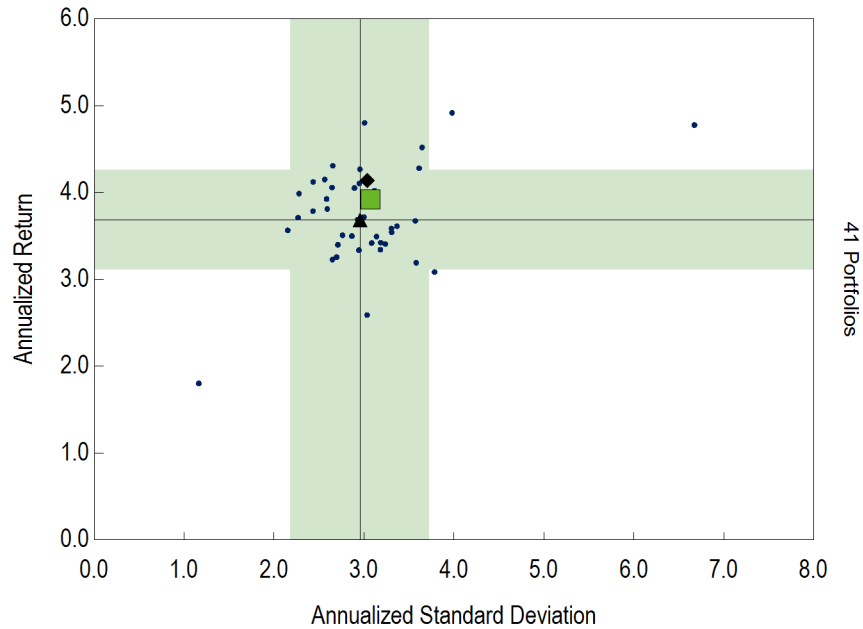
	Return (Rank)			
	Quarter	Fiscal YTD	1 Year	2 Years
5th Percentile	4.51	2.78	3.33	4.12
25th Percentile	4.02	2.42	2.97	3.70
Median	3.74	2.03	2.58	3.40
75th Percentile	3.51	1.85	2.37	3.16
95th Percentile	2.82	1.35	1.96	2.62
# of Portfolios	44	44	43	43
● Bain Capital Senior Loan Fund, LP	4.05 (21)	2.64 (11)	3.57 (3)	3.97 (9)
▲ Credit Suisse Leveraged Loans	3.78 (45)	2.53 (15)	3.33 (6)	3.98 (9)



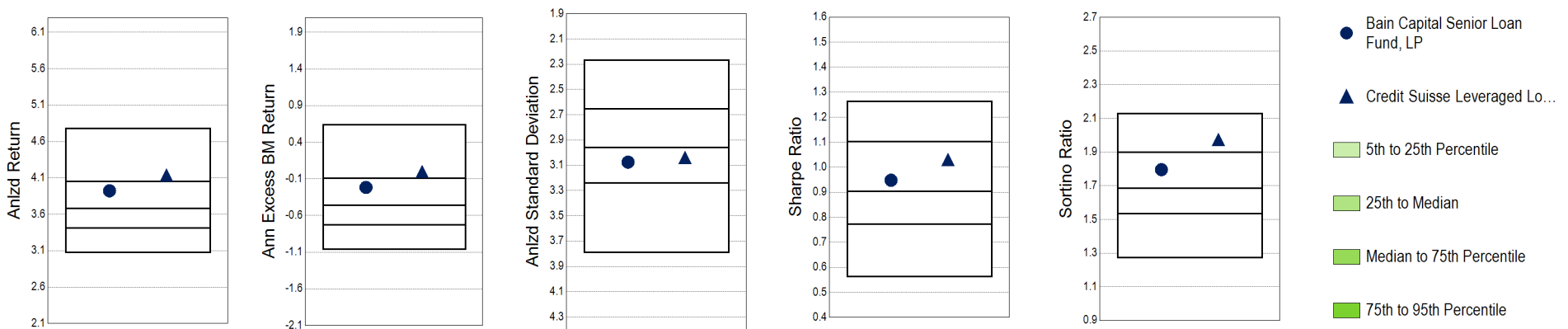
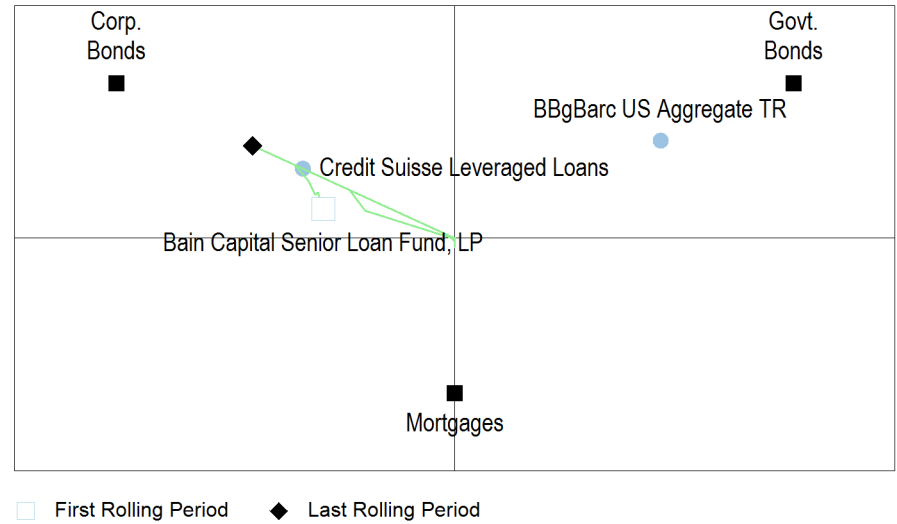
# Los Angeles City Employees' Retirement System

## BAIN CAPITAL SENIOR LOAN FUND, LP

Since Inception Risk Return



Since Inception Style Map



# **REAL ASSETS MANAGER PERFORMANCE**

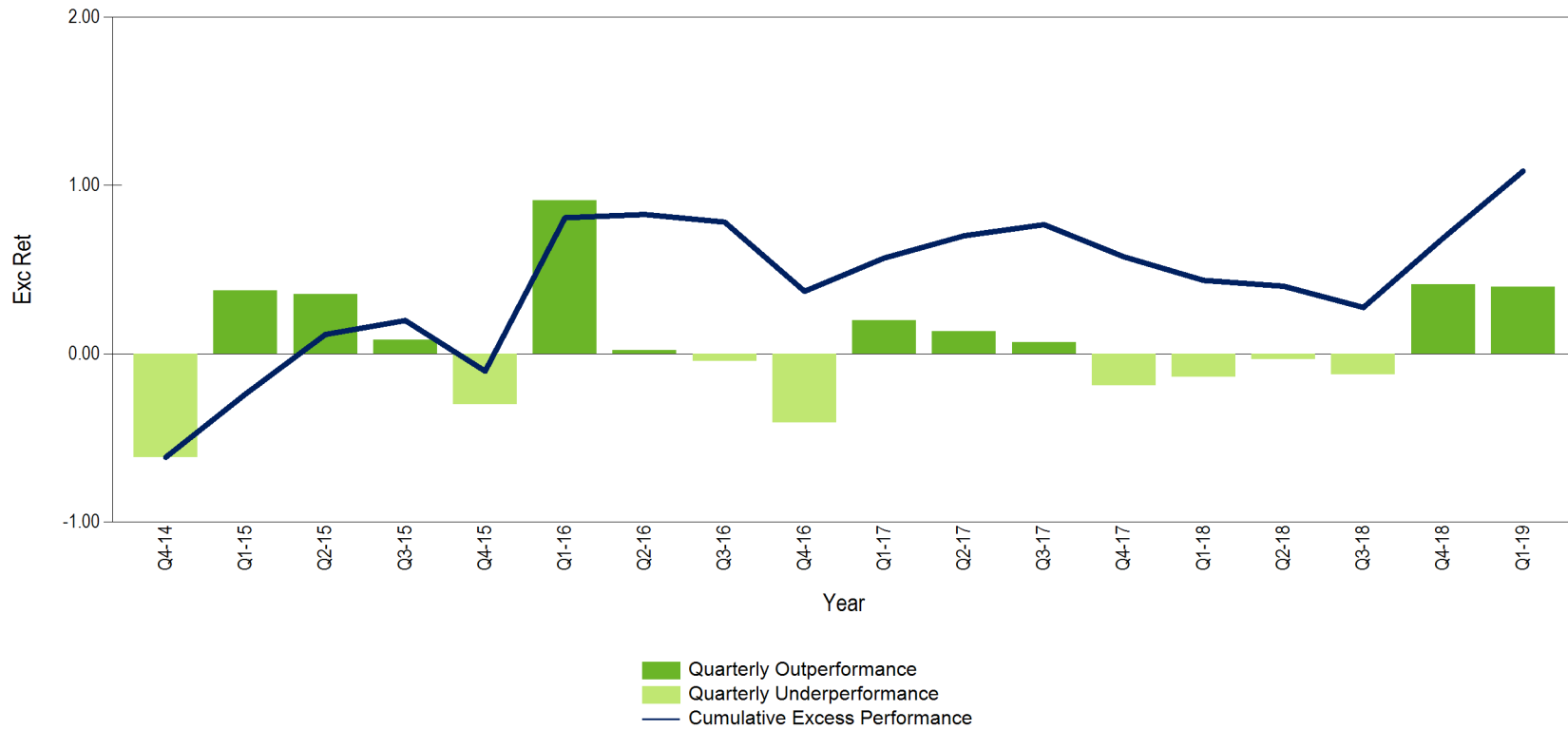
NEPC, LLC

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# Los Angeles City Employees' Retirement System

## DFA US TIPS

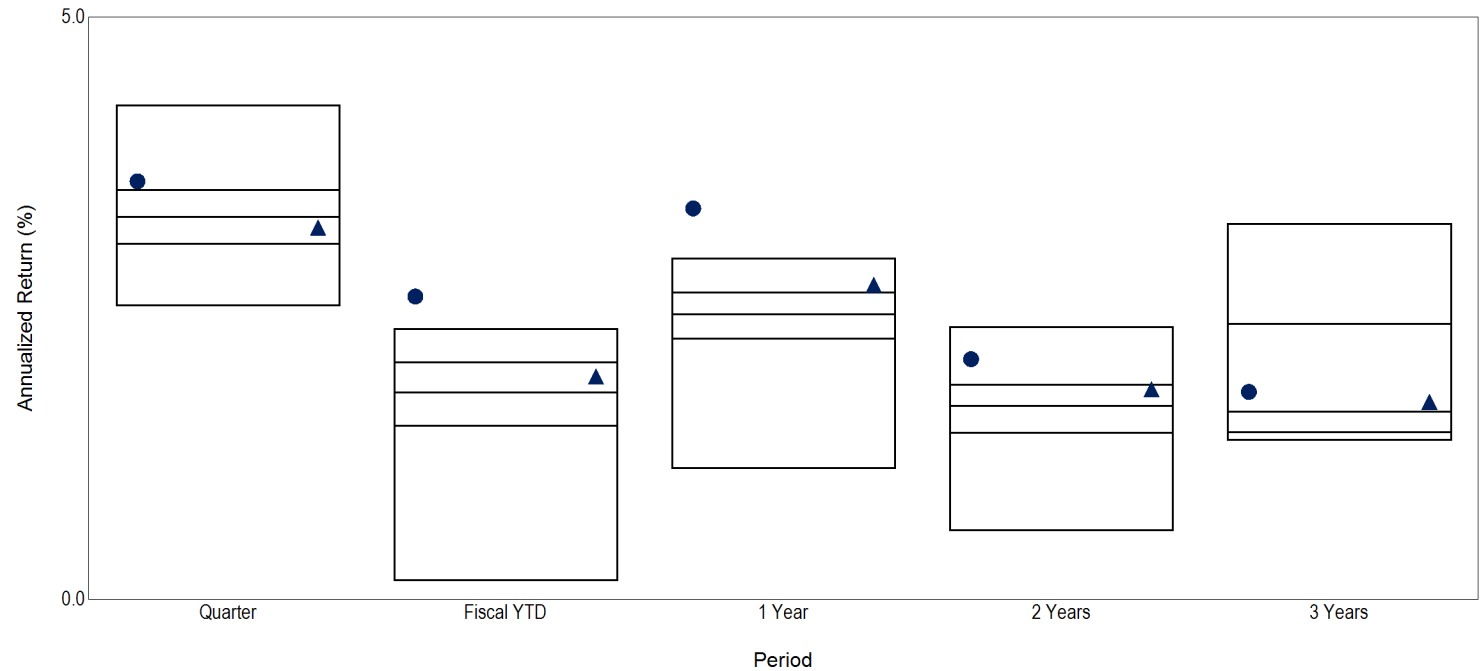
Quarterly and Cumulative Excess Performance



# Los Angeles City Employees' Retirement System

## DFA US TIPS

DFA US TIPS vs. eV US TIPS / Inflation Fixed Inc Net



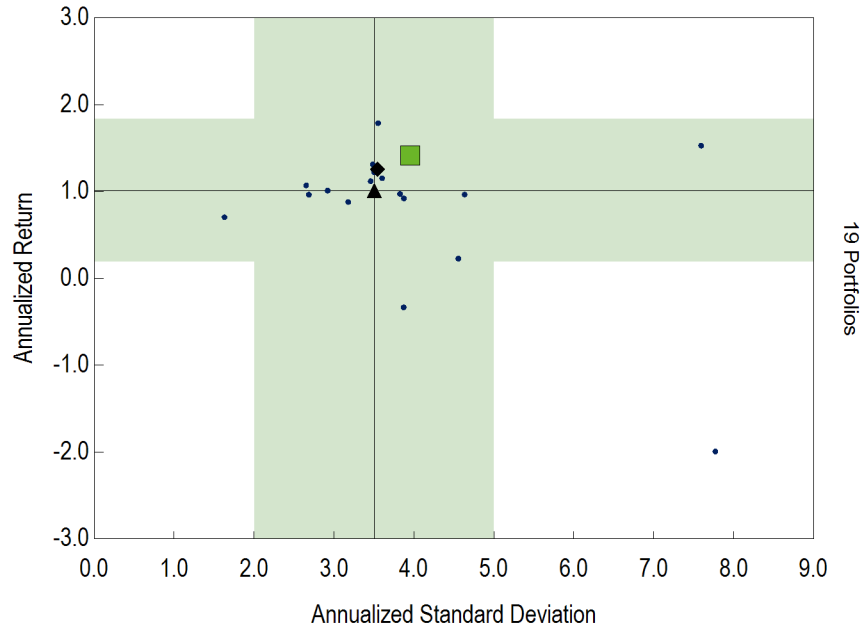
	Return (Rank)									
5th Percentile	4.24		2.33		2.93		2.34		3.23	
25th Percentile	3.52		2.05		2.64		1.85		2.38	
Median	3.29		1.79		2.45		1.67		1.62	
75th Percentile	3.06		1.50		2.25		1.44		1.44	
95th Percentile	2.53		0.17		1.14		0.60		1.38	
# of Portfolios	23		22		22		21		21	
● DFA US TIPS	3.59	(22)	2.60	(1)	3.36	(1)	2.06	(10)	1.78	(36)
▲ BBgBarc US TIPS TR	3.19	(61)	1.92	(36)	2.70	(22)	1.81	(32)	1.70	(43)



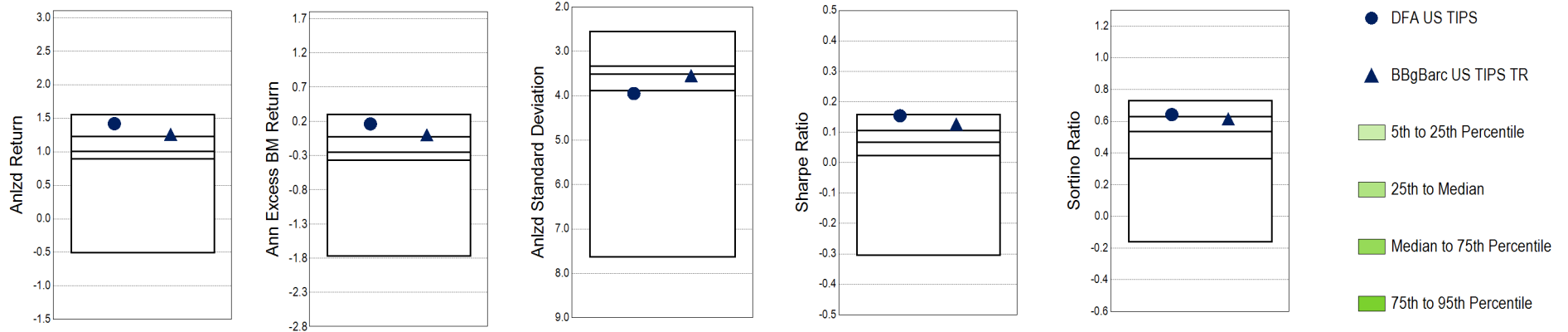
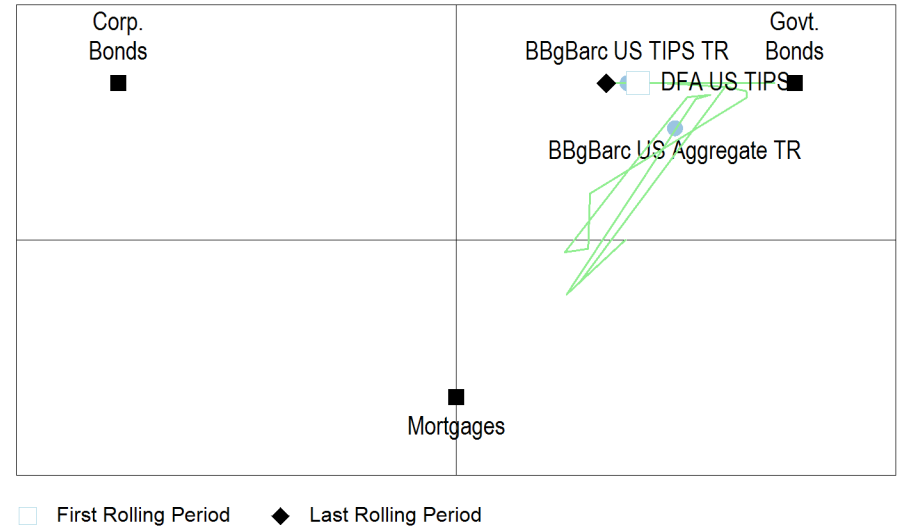
# Los Angeles City Employees' Retirement System

## DFA US TIPS

Since Inception Risk Return



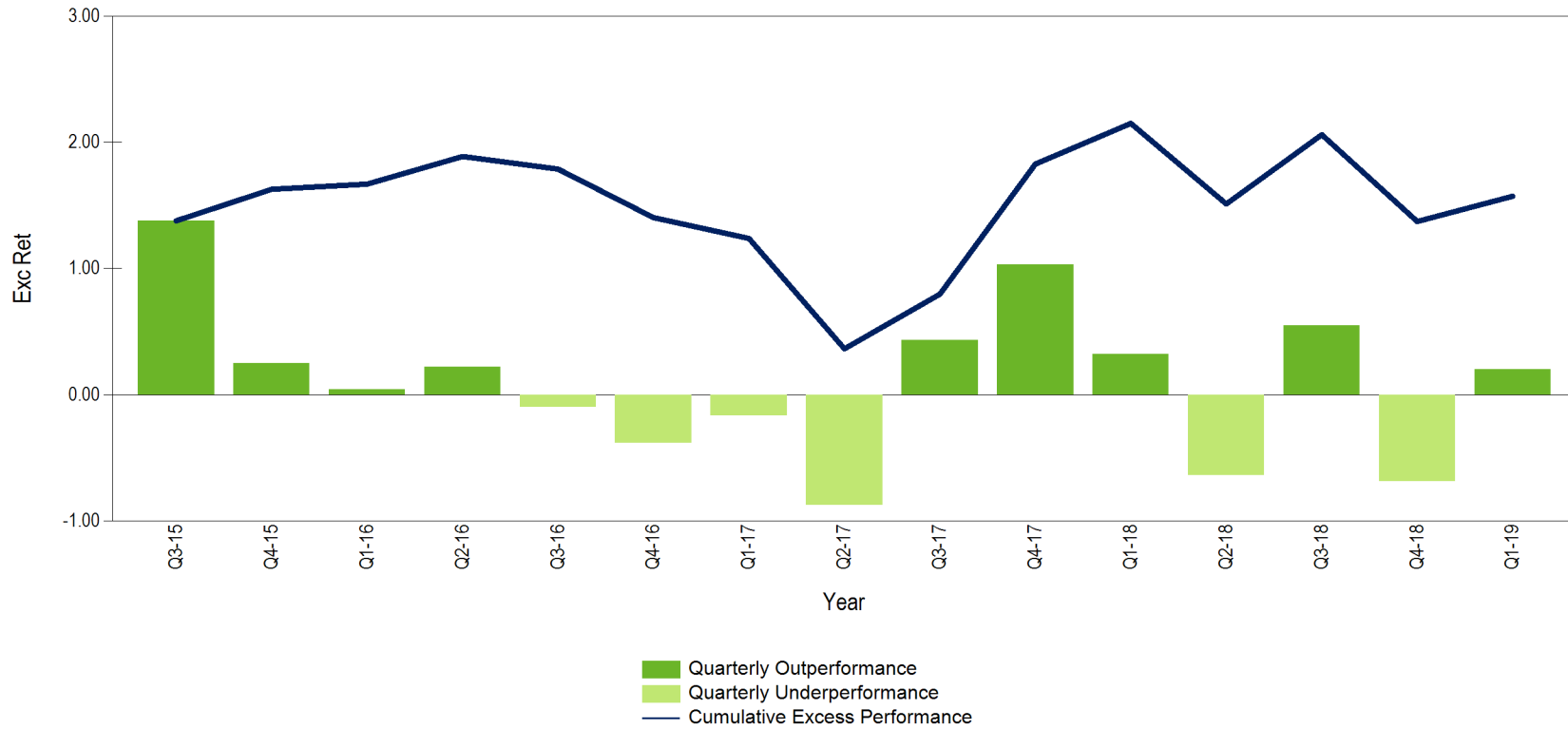
Since Inception Style Map





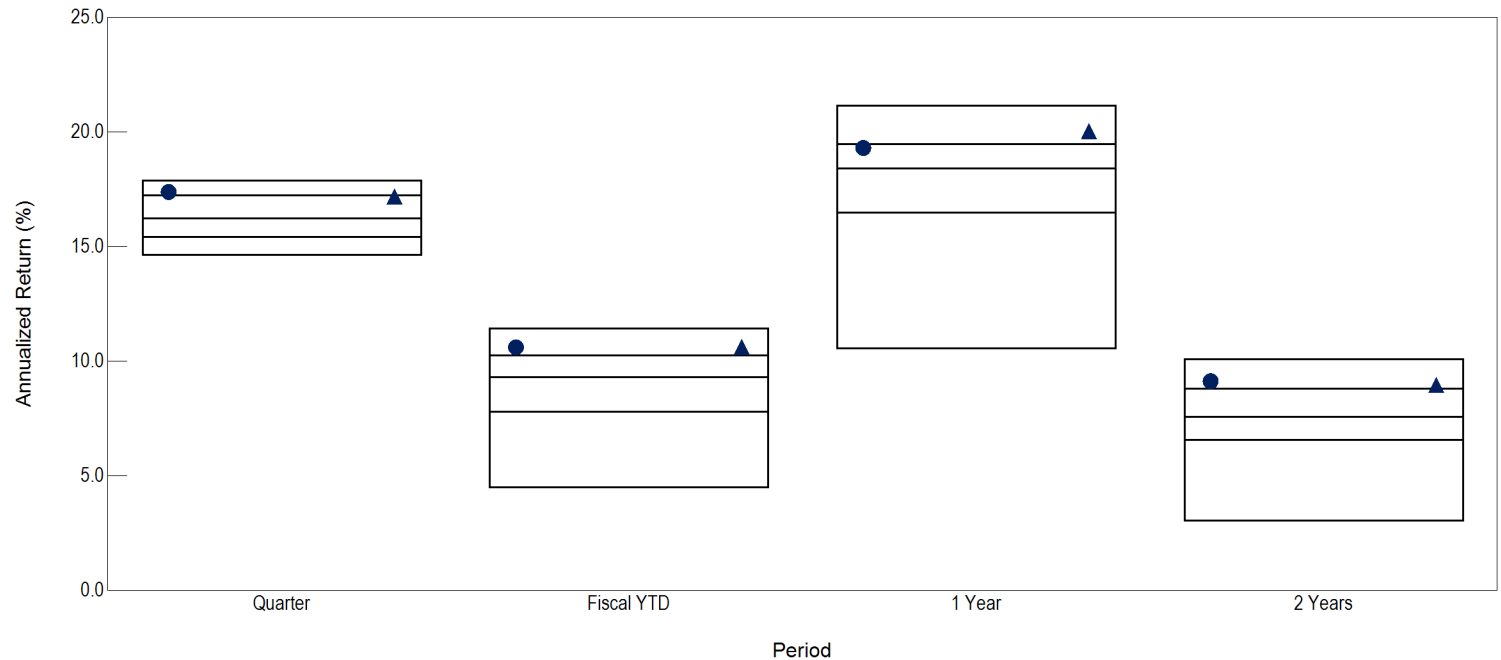
# CENTERSQUARE US REAL ESTATE

Quarterly and Cumulative Excess Performance



# CENTERSQUARE US REAL ESTATE

CenterSquare US Real Estate vs. eV US REIT Net

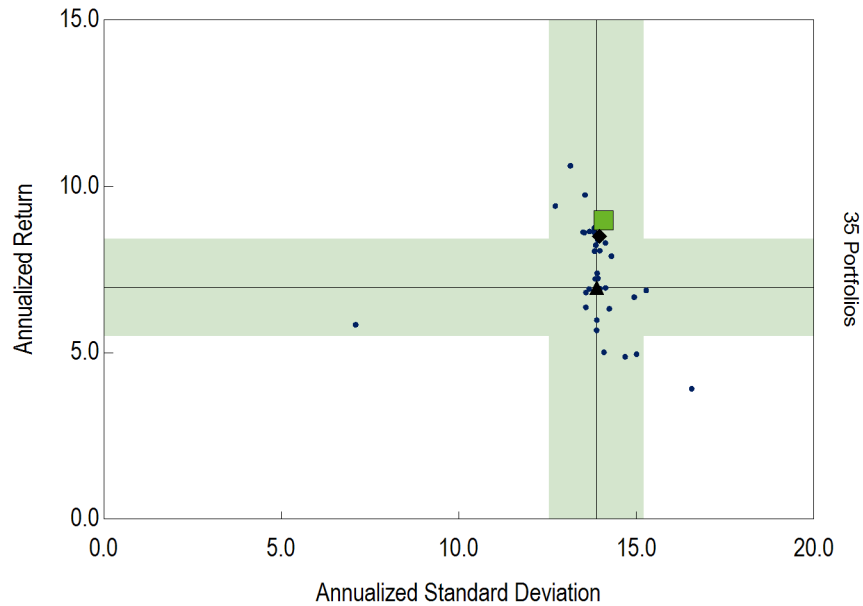


	Return (Rank)							
5th Percentile	17.88		11.42		21.14		10.09	
25th Percentile	17.26		10.28		19.49		8.83	
Median	16.24		9.33		18.44		7.58	
75th Percentile	15.46		7.83		16.49		6.60	
95th Percentile	14.66		4.53		10.60		3.07	
# of Portfolios	38		37		37		36	
● CenterSquare US Real Estate	17.37	(22)	10.60	(20)	19.29	(33)	9.12	(20)
▲ FTSE NAREIT All Equity REIT	17.17	(27)	10.62	(19)	20.02	(17)	8.96	(23)

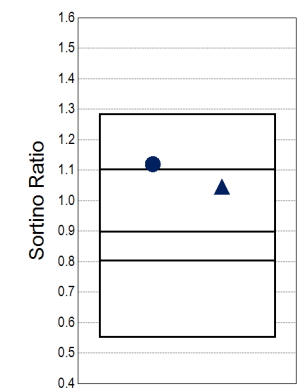
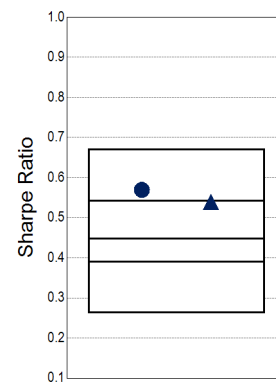
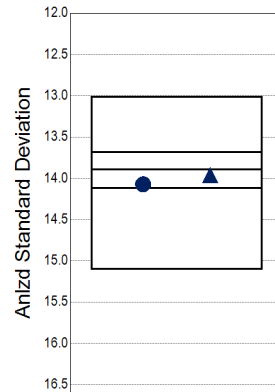
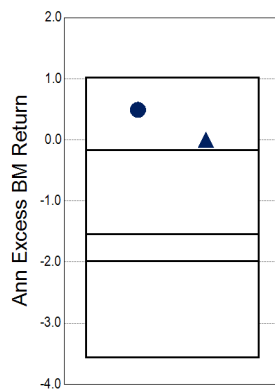
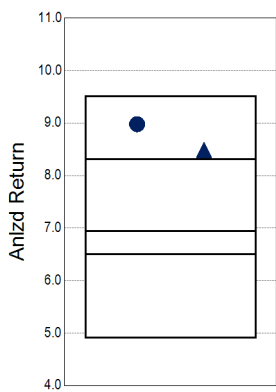
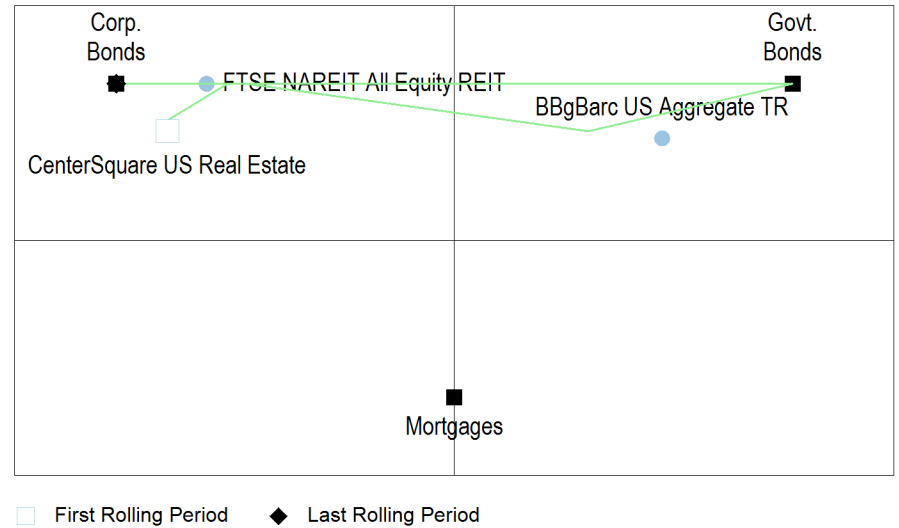


# CENTERSQUARE US REAL ESTATE

Since Inception Risk Return



Since Inception Style Map



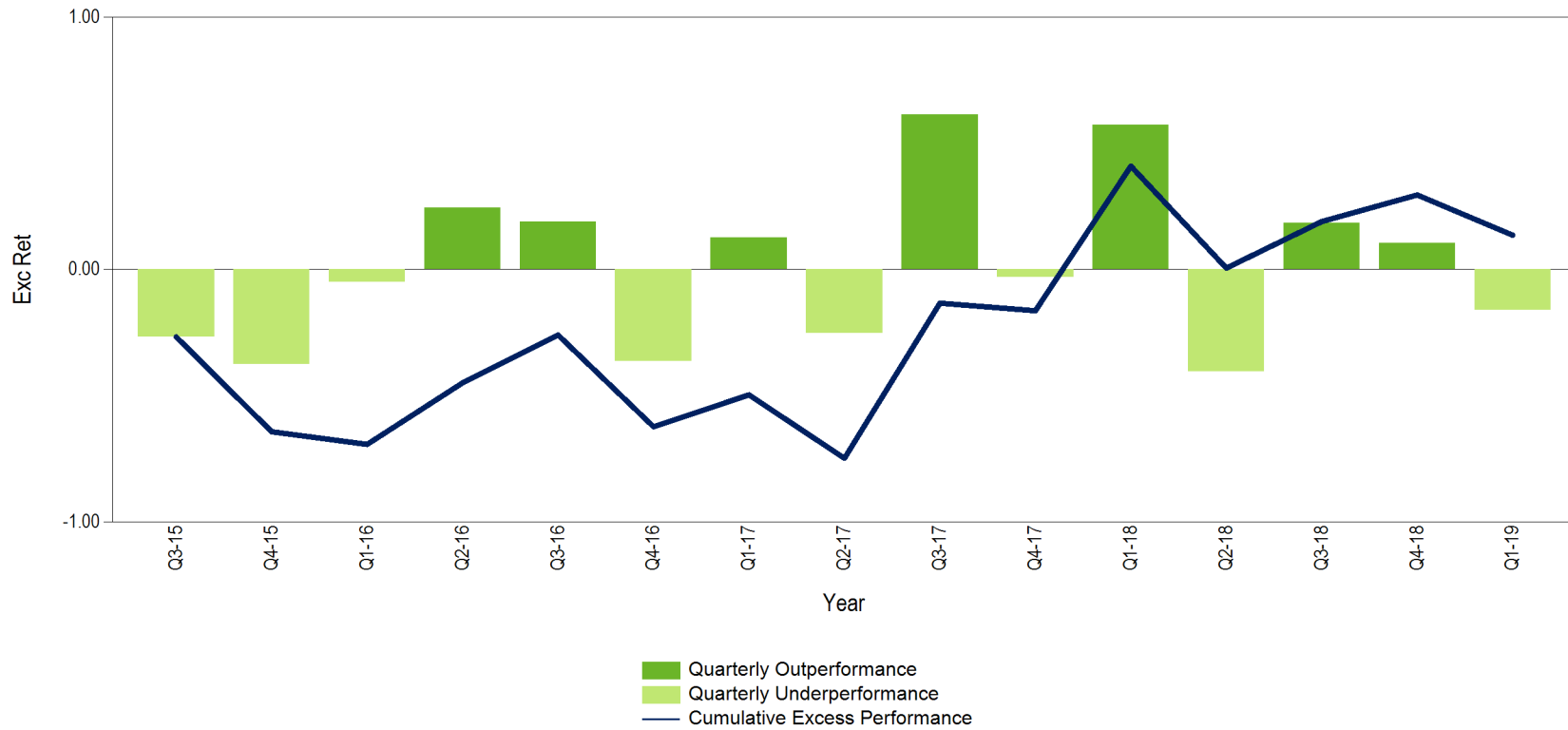
- CenterSquare US Real Estate
- ▲ FTSE NAREIT All Equity REIT
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



# Los Angeles City Employees' Retirement System

## CORE COMMODITY MGMT

Quarterly and Cumulative Excess Performance



# DEFINITIONS

NEPC, LLC

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# POLICY INDEX DEFINITIONS

**Policy Index:** Current (adopted January 10, 2012) 24% Russell 3000 Index, 29% MSCI ACWI ex USA Net Index, 19% Bbg Barclays U.S. Aggregate Bond Index, 5% Credit Opportunities Blend, 10% Real Assets Blend, 12% Private Equity Blend, 1% Citi 3 Month T-Bill Index

**U.S. Equity Blend:** July 1, 2011 - Current: Russell 3000 Index; September 30, 1994 - December 31, 1999 S&P 500 Index 33.75, Russell 1000 Value Index 35%, Russell 1000 Growth 12.5%, Russell 2000 Value 12.5%, Russell 2000 Growth 6.25%

**Core Fixed Income Blend:** July 1, 2013 – Current: Bbg Barclays U.S. Aggregate Bond Index

**Credit Opportunities Blend:** 65% Bbg Barclays U.S. HY 2% Cap Index, 35% JPM EMBIGD Index

**Public Real Assets Blend:** 60% Bbg Barclays U.S. TIPS Index, 20% Bbg Commodity Index, 10% FTSE NAREIT All Equity Index, 10% Alerian MLP Index

**Real Estate Blend:** July 1, 2014 - Current NCREIF ODCE + 0.80%; July 1, 2012 - June 30, 2014 NCREIF Property Index Lagged +1%; October 1, 1994 - June 30, 2012 NCREIF Property Index Lagged

**Private Equity Blend:** February 1, 2012 – current: Russell 3000 + 3%; Inception – January 31, 2012: Russell 3000 + 4%

Note: Policy index definitions do not reflect the updated target asset allocation adopted on April 10, 2018.

Note: See Investment Policy for a full description of the indices listed.



# GLOSSARY OF INVESTMENT TERMINOLOGY

**# Of Portfolios/Observations<sup>1</sup>** - The total number of data points that make up a specified universe

**Allocation Index<sup>3</sup>** - The allocation index measures the value added (or subtracted) to each portfolio by active management. It is calculated monthly: The portfolio asset allocation to each category from the prior month-end is multiplied by a specified market index.

**Asset Allocation Effect<sup>2</sup>** - Measures an investment manager's ability to effectively allocate their portfolio's assets to various sectors. The allocation effect determines whether the overweighting or underweighting of sectors relative to benchmark contributes positively or negatively to the overall portfolio return. Positive allocation occurs when the portfolio is over weighted in a sector that outperforms the benchmark and underweighted in a sector that underperforms the benchmark. Negative allocation occurs when the portfolio is over weighted in a sector that underperforms the benchmark and under weighted in a sector that outperforms the benchmark.

**Agency Bonds (Agencies)<sup>3</sup>** - The full faith and credit of the United States government is normally not pledged to payment of principal and interest on the majority of government agencies issuing these bonds, with maturities of up to ten years. Their yields, therefore, are normally higher than government and their marketability is good, thereby qualifying them as a low risk-high liquidity type of investment. They are eligible as security for advances to the member banks by the Federal Reserve, which attests to their standing.

**Asset Backed Securities (ABS)<sup>3</sup>** - Bonds which are similar to mortgage-backed securities but are collateralized by assets other than mortgages; commonly backed by credit card receivables, auto loans, or other types of consumer financing.

**Attribution<sup>3</sup>** - Attribution is an analytical technique that allows us to evaluate the performance of the portfolio relative to the benchmark. A proper attribution tells us where value was added or subtracted as a result of the manager's decisions.

**Average Effective Maturity<sup>4</sup>** - For a single bond, it is a measure of maturity that takes into account the possibility that a bond might be called back to the issuer.

For a portfolio of bonds, average effective maturity is the weighted average of the maturities of the underlying bonds. The measure is computed by weighing each bond's maturity by its market value with respect to the portfolio and the likelihood of any of the bonds being called. In a pool of mortgages, this would also account for the likelihood of prepayments on the mortgages.

**Batting Average<sup>1</sup>** - A measurement representing an investment manager's ability to meet or beat an index.

*Formula: Divide the number of days (or months, quarters, etc.) in which the manager beats or matches the index by the total number of days (or months, quarters, etc.) in the period of question and multiply that factor by 100.*

**Brinson Fachler (BF) Attribution<sup>1</sup>** - The BF methodology is a highly accepted industry standard for calculating the allocation, selection, and interaction effects within a portfolio that collectively explains a portfolio's underlying performance. The main advantage of the BF methodology is that rather than using the overall return of the benchmark, it goes a level deeper than BHB and measures whether the benchmark sector, country, etc. outperformed/or underperformed the overall benchmark.

**Brinson Hood Beebower (BHB) Attribution<sup>1</sup>** - The BHB methodology shows that excess return must be equal to the sum of all other factors (i.e., allocation effect, selection effect, interaction effect, etc.). The advantage to using the BHB methodology is that it is a highly accepted industry standard for calculating the allocation, selection, and interaction effects within a portfolio that collectively explains a portfolio's underlying performance.

**Corporate Bond (Corp)<sup>4</sup>** - A debt security issued by a corporation and sold to investors. The backing for the bond is usually the payment ability of the company, which is typically money to be earned from future operations. In some cases, the company's physical assets may be used as collateral for bonds.

**Correlation<sup>1</sup>** - A range of statistical relationships between two or more random variables or observed data values. A correlation is a single number that describes the degree of relationship between variables.

Data Source: <sup>1</sup>InvestorForce, <sup>2</sup>Interaction Effect Performance Attribution, <sup>3</sup>NEPC, LLC, <sup>4</sup>Investopedia, <sup>5</sup>Hedgeco.net



# GLOSSARY OF INVESTMENT TERMINOLOGY

**Coupon<sup>4</sup>** – The interest rate stated on a bond when it is issued. The coupon is typically paid semiannually. This is also referred to as the "coupon rate" or "coupon percent rate."

**Currency Effect<sup>1</sup>** – Is the effect that changes in currency exchange rates over time affect excess performance.

**Derivative Instrument<sup>2</sup>** – A financial obligation that derives its precise value from the value of one or more other instruments (or assets) at the same point of time. For example, the relationship between the value of an S&P 500 futures contract (the derivative instrument in this case) is determined by the value of the S&P 500 Index and the value of a U.S. Treasury bill that matures at the expiration of the futures contract.

**Downside Deviation<sup>1</sup>** – Equals the standard deviation of negative return or the measure of downside risk focusing on the standard deviation of negative returns.

*Formula:*

*Annualized Standard Deviation (Fund Return - Average Fund Return) where average fund return is greater than individual fund returns, monthly or quarterly.*

**Duration<sup>3</sup>** – Duration is a measure of interest rate risk. The greater the duration of a bond, or a portfolio of bonds, the greater its price volatility will be in response to a change in interest rates. A bond's duration is inversely related to interest rates and directly related to time to maturity.

**Equity/Debt/Cash Ratio<sup>1</sup>** – The percentage of an investment or portfolio that is in Equity, Debt, and/or Cash (i.e. A 7/89/4 ratio represents an investment that is made up of 7% Equity, 89% Debt, and 4% Cash).

**Foreign Bond<sup>3</sup>** – A bond that is issued in a domestic market by a foreign entity, in the domestic market's currency. A foreign bond is most often issued by a foreign firm to raise capital in a domestic market that would be most interested in purchasing the firm's debt. For foreign firms doing a large amount of business in the domestic market, issuing foreign bonds is a common practice.

**Hard Hurdle<sup>5</sup>** – is a hurdle rate that once beaten allows a fund manager to charge a performance fee on only the funds above the specified hurdle rate.

**High-Water Mark<sup>4</sup>** – The highest peak in value that an investment fund/account has reached. This term is often used in the context of fund manager compensation, which is performance based. Some performance-based fees only get paid when fund performance exceeds the high-water mark. The high-water mark ensures that the manager does not get paid large sums for poor performance.

**Hurdle Rate<sup>4</sup>** – The minimum rate of return on an investment required, in order for a manager to collect incentive fees from the investor, which is usually tied to a benchmark.

**Interaction Effects<sup>2</sup>** – The interaction effect measures the combined impact of an investment manager's selection and allocation decisions within a sector. For example, if an investment manager had superior selection and over weighted that particular sector, the interaction effect is positive. If an investment manager had superior selection, but underweighted that sector, the interaction effect is negative. In this case, the investment manager did not take advantage of the superior selection by allocating more assets to that sector. Since many investment managers consider the interaction effect to be part of the selection or the allocation, it is often combined with the either effect.

**Median<sup>3</sup>** – The value (rate of return, market sensitivity, etc.) that exceeds one-half of the values in the population and that is exceeded by one-half of the values. The median has a percentile rank of 50.

**Modified Duration<sup>3</sup>** – The percentage change in the price of a fixed income security that results from a change in yield.

**Mortgage Backed Securities (MBS)<sup>3</sup>** – Bonds which are a general obligation of the issuing institution but are also collateralized by a pool of mortgages.

**Municipal Bond (Muni)<sup>4</sup>** – A debt security issued by a state, municipality or county to finance its capital expenditures.

**Net Investment Change<sup>1</sup>** – Is the change in an investment after accounting for all Net Cash Flows.

**Performance Fee<sup>4</sup>** – A payment made to a fund manager for generating positive returns. The performance fee is generally calculated as a percentage of investment profits, often both realized and unrealized.

*Data Source: <sup>1</sup>InvestorForce, <sup>2</sup>Interaction Effect Performance Attribution, <sup>3</sup>NEPC, LLC, <sup>4</sup>Investopedia, <sup>5</sup>Hedgeco.net*





# GLOSSARY OF INVESTMENT TERMINOLOGY

**Policy Index<sup>3</sup>** - A custom benchmark designed to indicate the returns that a passive investor would earn by consistently following the asset allocation targets set forth in this investment policy statement.

**Price to Book (P/B)<sup>4</sup>** - A ratio used to compare a stock's market value to its book value. It is calculated by dividing the current closing price of the stock by the latest quarter's book value per share, also known as the "price-equity ratio".

**Price to Earnings (P/E)<sup>3</sup>** - The weighted equity P/E is based on current price and trailing 12 months earnings per share (EPS).

**Price to Sales (P/S)<sup>4</sup>** - A ratio for valuing a stock relative to its own past performance, other companies, or the market itself. Price to sales is calculated by dividing a stock's current price by its revenue per share for the trailing 12 months.

**Return on Equity (ROE)<sup>4</sup>** - The amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested.

**Selection (or Manager) Effect<sup>2</sup>** - Measures the investment manager's ability to select securities within a given sector relative to a benchmark. The over or underperformance of the portfolio is weighted by the benchmark weight, therefore, selection is not affected by the manager's allocation to the sector. The weight of the sector in the portfolio determines the size of the effect—the larger the sector, the larger the effect is, positive or negative.

**Soft Hurdle rate<sup>5</sup>** - is a hurdle rate that once beaten allows a fund manager to charge a performance fee based on the entire annualized return.

**Tiered Fee<sup>1</sup>** - A fee structure that is paid to fund managers based on the size of the investment (i.e. 1.00% fee on the first \$10M invested, 0.90% on the next \$10M, and 0.80% on the remaining balance).

**Total Effects<sup>2</sup>** - The active management (total) effect is the sum of the selection, allocation, and interaction effects. It is also the difference between the total portfolio return and the total benchmark return. You can use the active management effect to determine the amount the investment manager has added to a portfolio's return.

**Total Return<sup>1</sup>** - The actual rate of return of an investment over a specified time period. Total return includes interest, capital gains, dividends, and distributions realized over a defined time period.

**Universe<sup>3</sup>** - The list of all assets eligible for inclusion in a portfolio.

**Upside Deviation<sup>1</sup>** - Standard Deviation of Positive Returns

**Weighted Avg. Market Cap.<sup>4</sup>** - A stock market index weighted by the market capitalization of each stock in the index. In such a weighting scheme, larger companies account for a greater portion of the index. Most indexes are constructed in this manner, with the best example being the S&P 500.

**Yield (%)<sup>3</sup>** - The current yield of a security is the current indicated annual dividend rate divided by current price.

**Yield to Maturity<sup>3</sup>** - The discount rate that equates the present value of cash flows, both principal and interest, to market price.

Data Source: <sup>1</sup>InvestorForce, <sup>2</sup>Interaction Effect Performance Attribution, <sup>3</sup>NEPC, LLC, <sup>4</sup>Investopedia, <sup>5</sup>Hedgeco.net



# DISCLOSURES

NEPC, LLC

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### **Information Disclaimer**

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
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### **Reporting Methodology**

- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.

