



# PORTFOLIO PERFORMANCE REVIEW

LOS ANGELES CITY EMPLOYEES'  
RETIREMENT SYSTEM

QUARTER ENDING DECEMBER 31, 2021



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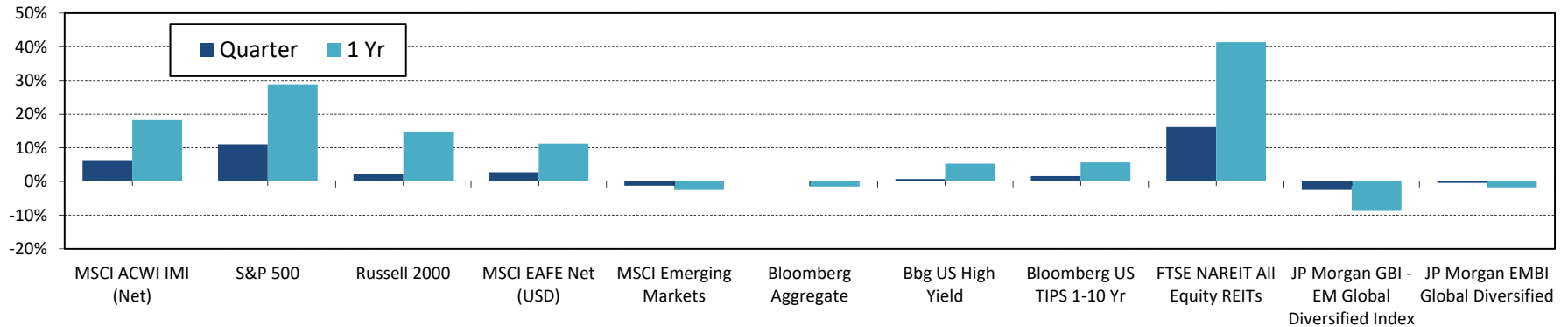
# EXECUTIVE SUMMARY





# PERFORMANCE OVERVIEW

## Q4 Market Summary – Risk Assets Turned In Mixed Results



	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	15 Yrs (%)	Inception (%)	Inception Date
<b>LACERS Master Trust</b>	<b>24,048,346,810</b>	<b>4.3 (49)</b>	<b>16.8 (44)</b>	<b>15.6 (44)</b>	<b>11.8 (50)</b>	<b>10.5 (26)</b>	<b>7.4 (35)</b>	<b>8.7 (27)</b>	<b>Nov-94</b>
<i>Policy Index</i>		4.8 (19)	13.5 (81)	16.1 (34)	11.8 (51)	10.3 (40)	7.3 (44)	8.7 (31)	
<i>InvMetrics Public DB \$5-50B Gross Median</i>		4.3	16.5	15.3	11.8	10.1	7.3	8.4	

Note: Performance is gross of fees

### Global stocks were a mixed bag in the fourth calendar quarter of 2021.

US Equity outperformed, Non-U.S. Equity and Private Equity composites underperformed their benchmarks

### Fixed-income markets ended the quarter mostly flat despite an uptick in volatility.

Core Fixed Income outperformed and Credit Opportunities underperformed

The reemergence of growth and inflation as significant influences on market pricing can potentially weaken the sway held by the extraordinary monetary and fiscal interventions that have become a way of life for over a decade.

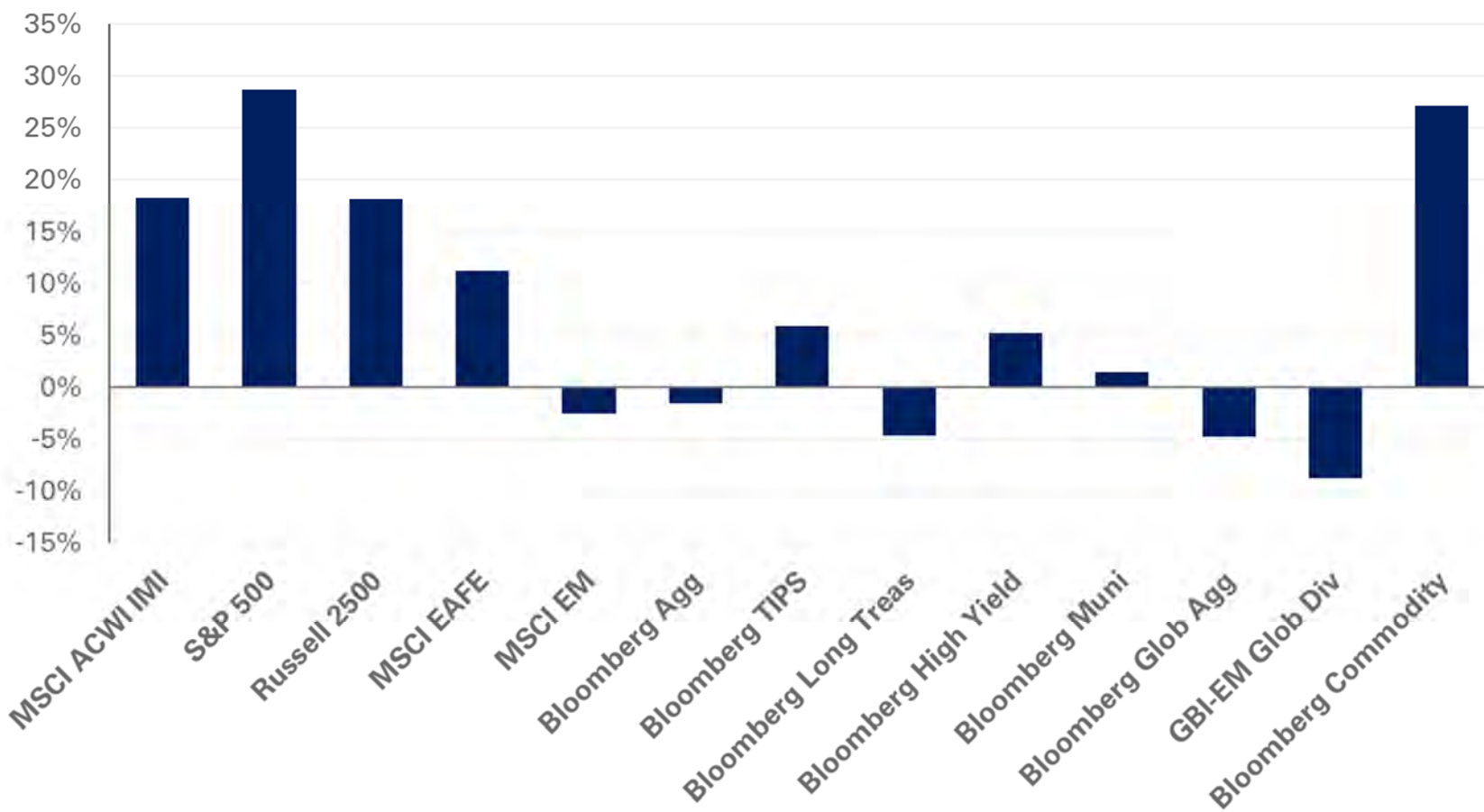




# MARKET ENVIRONMENT

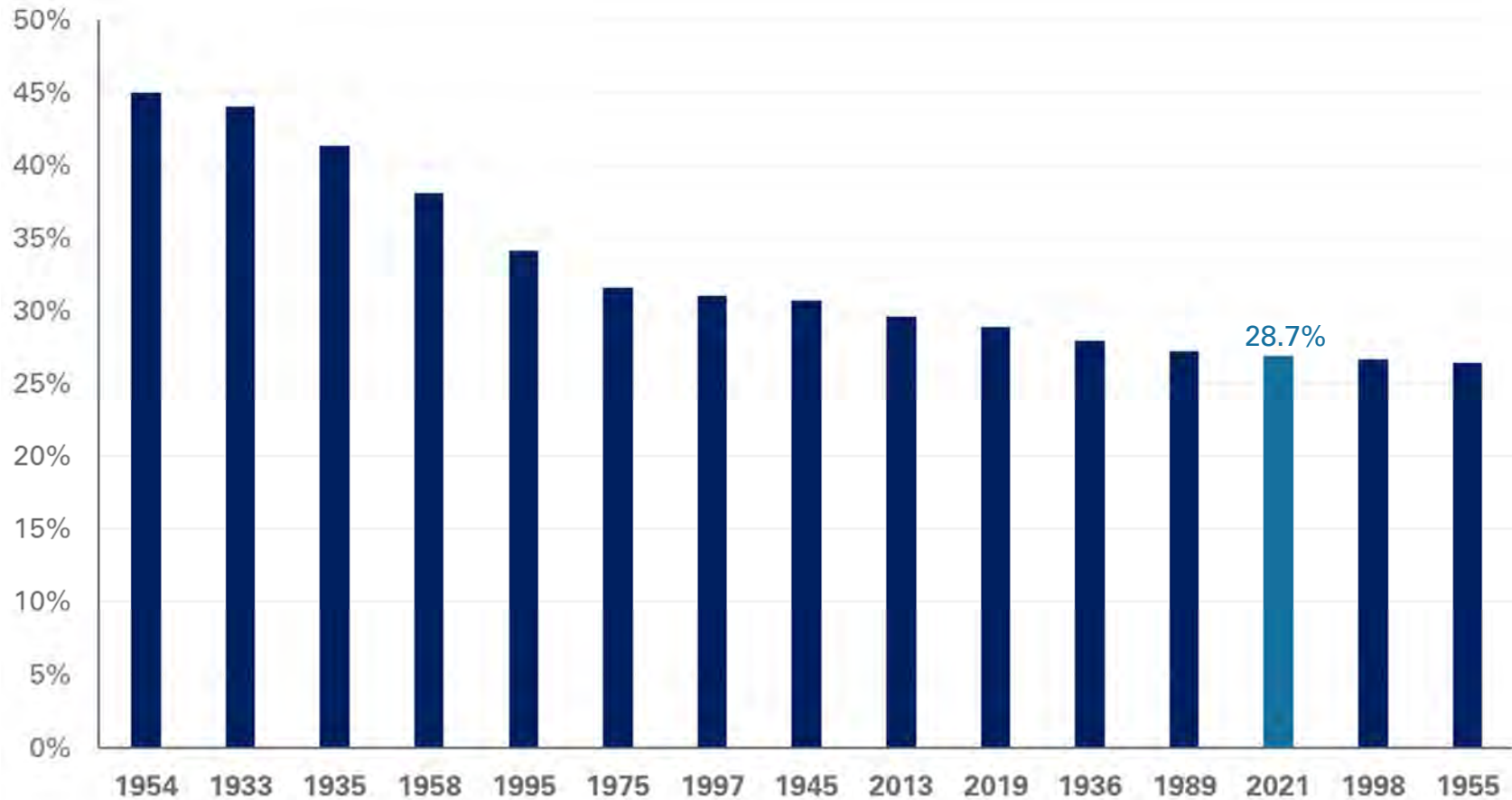
# RISK ASSETS OUTPERFORMED

## ANNUAL TOTAL RETURNS



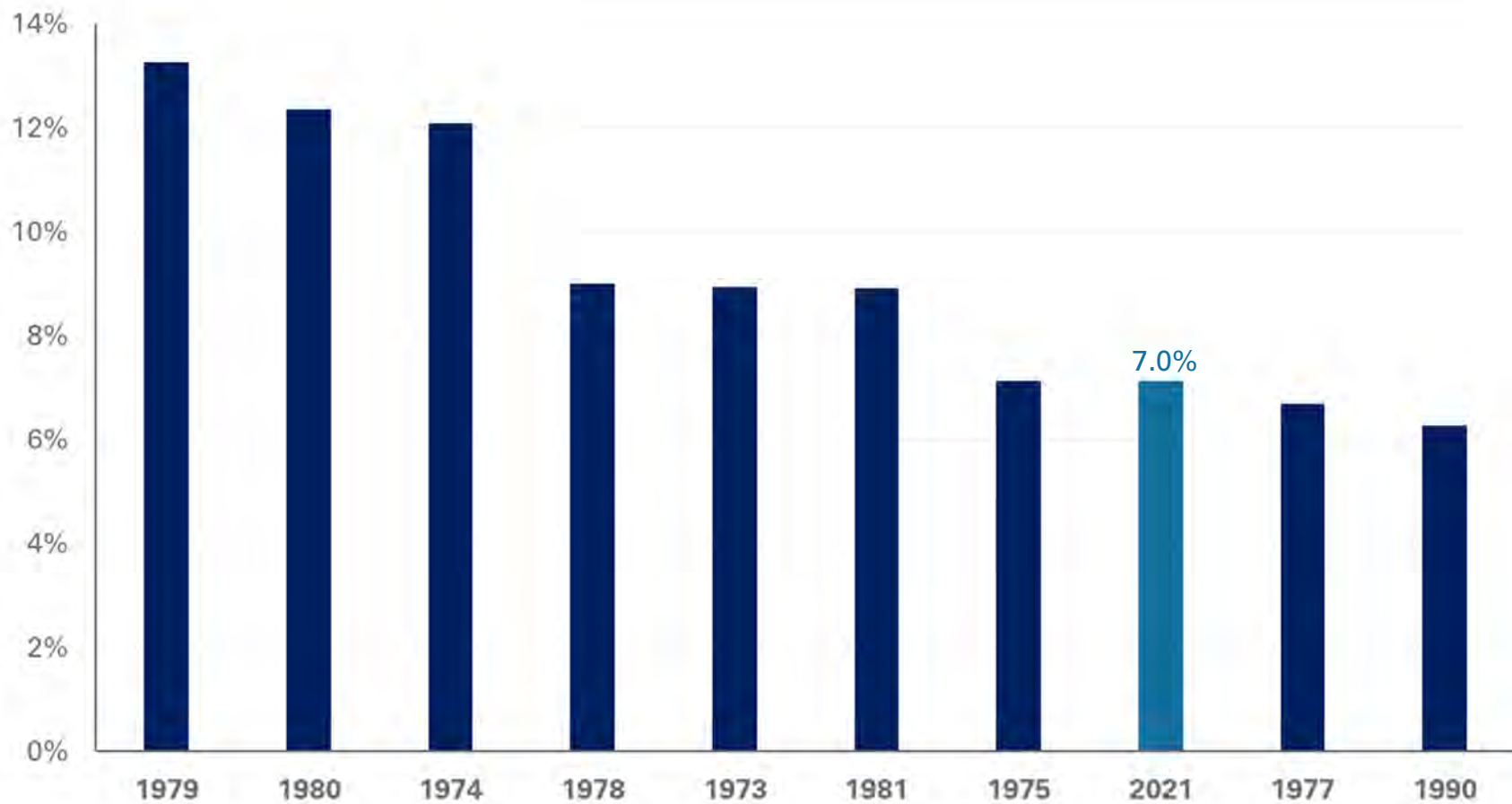
# 2021 EQUITY RETURNS WERE HISTORICALLY HIGH

## TOP 15 S&P 500 CALENDAR YEAR RETURNS



# INFLATION ROSE AT HIGHEST LEVEL SINCE 1981

## TOP 10 ANNUAL U.S. CPI-U CHANGES





# THE U.S. DOLLAR STRENGTHENED IN 2021

## U.S. DOLLAR INDEX



# NEPC KEY MARKET THEMES

AS OF 12/31/21

<p><b>Economic Crossroads</b></p> <p>Change in Status:</p>	DORMANT	FADED	<b>NEUTRAL</b>	PREVALENT	DOMINANT
<p><b>Permanent Interventions</b></p> <p>Change in Status: <i>Prevalent to Faded</i></p>	DORMANT	<b>FADED</b>	NEUTRAL	PREVALENT	DOMINANT
<p><b>Globalization Backlash</b></p> <p>Change in Status: <i>Prevalent to Neutral</i></p>	DORMANT	FADED	<b>NEUTRAL</b>	PREVALENT	DOMINANT
<p><b>China Transitions</b></p> <p>Change in Status:</p>	DORMANT	FADED	NEUTRAL	<b>PREVALENT</b>	DOMINANT

- Diminishing policy support and higher levels of inflation/growth are driving a transition from Fed policy as the dominant input for capital markets to economic fundamentals
- This transition will dramatically influence the pricing of risk premia across capital markets and the economic outcome may track a wide regime spectrum

- Permanent Interventions enhances investor sentiment but is cyclically fading as monetary policy shifts to a less accommodative stance
- The Federal Reserve has begun tapering asset purchases and recent commentary suggests rate liftoff may happen sooner than anticipated given the economic and inflation backdrop

- The importance of this theme may increase as supply-chain disruptions and inflationary pressures strain the electorate and geopolitical relationships
- The world will likely be faced with an amplified wealth divide given economic and labor market conditions, which has historically driven more volatile political outcomes

- The “regulatory reset” highlights the potential for economic and capital market volatility on the country’s long transition path
- While in-line with the longer-term economic goals, these regulations have negatively impacted market sentiment; creating a tail-risk for market and economic contagion

Key Market Themes influence global markets and may remain relevant for an extended period with significant implications for capital markets  
Themes can be disrupted and incite outsized market volatility

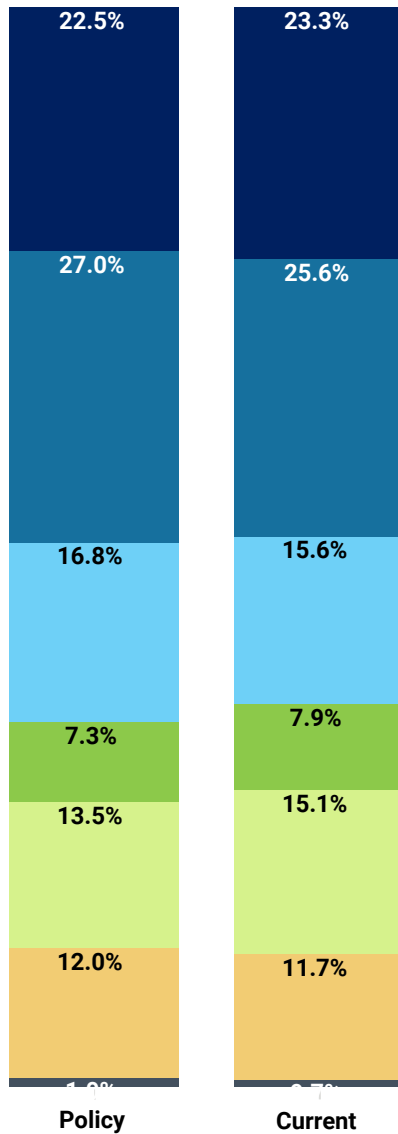


# ASSET CLASS POLICY OVERVIEW



# ASSET ALLOCATION VS. POLICY

## Asset Allocation vs. Target



	Current (\$)	Policy (%)	Current (%)	Differences* (%)	Policy Range (%)	Within Range
■ U.S. Equity	5,601,535,430	22.5	23.3	0.8	16.5 - 28.5	Yes
■ Non-US Equity	6,168,377,591	27.0	25.6	-1.4	21.0 - 33.0	Yes
■ Core Fixed Income	3,749,597,741	16.8	15.6	-1.2	13.3 - 20.0	Yes
■ Credit Opportunities	1,899,256,254	7.3	7.9	0.6	7.3 - 12.8	Yes
■ Private Equity	3,640,051,201	13.5	15.1	1.6		Yes
■ Real Assets	2,813,888,691	12.0	11.7	-0.3		Yes
■ Cash	175,639,903	1.0	0.7	-0.3	0.0 - 2.0	Yes
<b>Total</b>	<b>24,048,346,810</b>	<b>100.0</b>	<b>100.0</b>	<b>0.0</b>		

\*Difference between Policy and Current Allocation

Note: Policy target asset allocation reflects the interim policy allocation adopted on September 14, 2021. Please see appendix for policy definitions.

\*Difference between Policy and Current Allocation

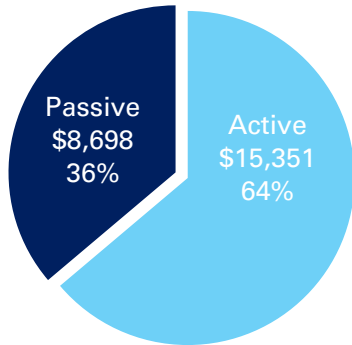




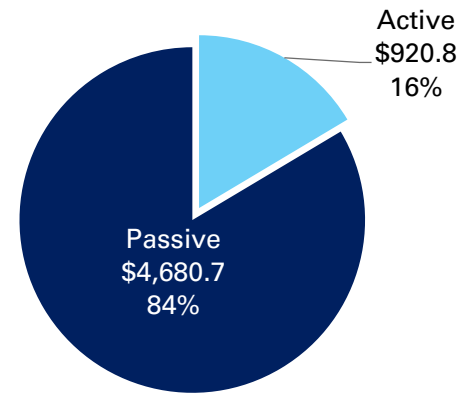
# ACTIVE AND PASSIVE MANAGER BREAKDOWN

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

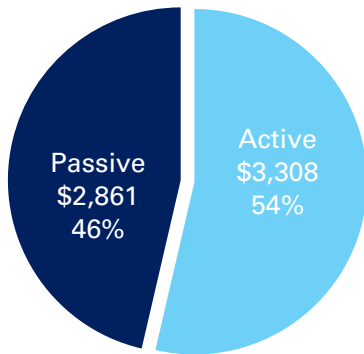
## Total Fund



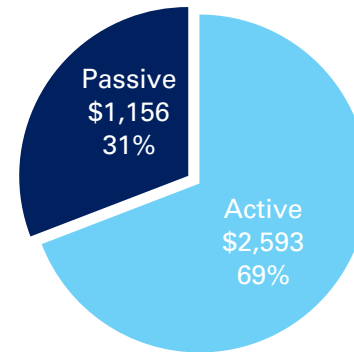
## U.S. Equity



## Non-U.S. Equity



## Core Fixed Income



- LACERS allocated 64% to active managers and 36% to passive managers.
- Credit Opportunities, Private Equity, and Real Assets programs are active and therefore are not shown.





# PERFORMANCE OVERVIEW

# TOTAL FUND PERFORMANCE SUMMARY

## GROSS OF FEES

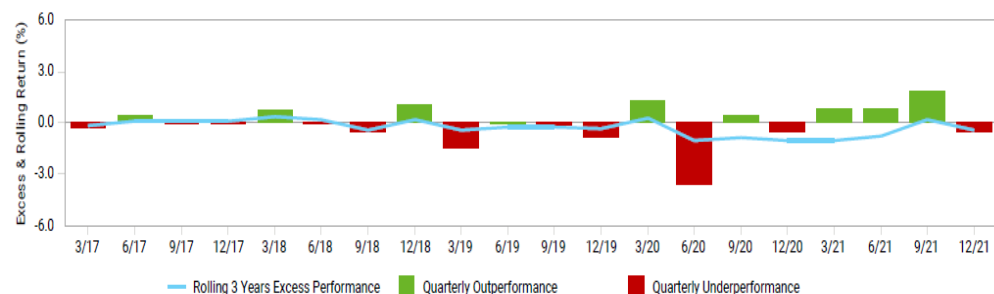
	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	15 Yrs (%)	Inception (%)	Inception Date
<b>LACERS Master Trust</b>	<b>24,048,346,810</b>	<b>4.3 (49)</b>	<b>16.8 (44)</b>	<b>15.6 (44)</b>	<b>11.8 (50)</b>	<b>10.5 (26)</b>	<b>7.4 (35)</b>	<b>8.7 (27)</b>	<b>Nov-94</b>
<i>Policy Index</i>		4.8 (19)	13.5 (81)	16.1 (34)	11.8 (51)	10.3 (40)	7.3 (44)	8.7 (31)	
<i>InvMetrics Public DB \$5-50B Gross Median</i>		4.3	16.5	15.3	11.8	10.1	7.3	8.4	

Over the past five years the Fund return of 11.8% equaled the policy index. This return ranks in the 50<sup>th</sup> percentile within the Public Funds \$5 Billion- \$50 Billion universe. The Fund's volatility of 8.8% ranked in the 63<sup>rd</sup> percentile over this period. The Fund's risk-adjusted performance, as measured by the Sharpe Ratio ranks in the 57<sup>th</sup> percentile and the Sortino Ratio ranks in the 61<sup>st</sup> percentile. Both measures outperformed the benchmark indicating that active management benefited the Plan.

Over the past three years the Fund return of 15.6% underperformed the policy index by 0.5% and ranked in the 44<sup>th</sup> percentile in its peer group. The Fund's volatility ranks in the 60<sup>th</sup> percentile and the Sharpe Ratio ranks in the 54<sup>th</sup> percentile. The Sortino Ratio of 2.3 ranks in the 57<sup>th</sup> percentile.

In the one-year ended December 31, 2021, the Fund returned 16.8% and outperformed the policy index by 3.3%. The Fund's return was above median and ranked in the 44<sup>th</sup> percentile in its peer group.

Quarter Excess Return with a Rolling 3 Years Excess Return vs. Policy Index over 5 Years Ending December 31, 2021



5 Years Ending December 31, 2021

	Return	Standard Deviation	Sharpe Ratio	Sortino Ratio
<b>LACERS Master Trust</b>	<b>11.8</b>	<b>8.8</b>	<b>1.2</b>	<b>1.9</b>
<i>Policy Index</i>	11.8	10.1	1.0	1.6
<i>InvMetrics Public DB \$5-50B Gross Median</i>				

3 Years Ending December 31, 2021

	Return	Standard Deviation	Sharpe Ratio	Sortino Ratio
<b>LACERS Master Trust</b>	<b>15.6</b>	<b>10.0</b>	<b>1.4</b>	<b>2.3</b>
<i>Policy Index</i>	16.1	11.6	1.3	2.0
<i>InvMetrics Public DB \$5-50B Gross Median</i>				



# EXECUTIVE SUMMARY

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	15 Yrs (%)	Inception (%)	Inception Date
<b>LACERS Master Trust</b>	<b>24,048,346,810</b>	<b>4.3 (35)</b>	<b>16.8 (23)</b>	<b>15.6 (23)</b>	<b>11.8 (14)</b>	<b>10.5 (12)</b>	<b>7.4 (13)</b>	<b>8.7 (11)</b>	<b>Nov-94</b>
<i>Policy Index</i>		4.8 (16)	13.5 (72)	16.1 (14)	11.8 (15)	10.3 (15)	7.3 (15)	8.7 (18)	
<i>InvMetrics Public DB \$1-50B Gross Median</i>		4.0	14.5	14.6	10.6	9.5	6.8	8.1	

3 Years Ending December 31, 2021				
	Return	Standard Deviation	Sharpe Ratio	Sortino Ratio
<b>LACERS Master Trust</b>	<b>15.6 (23)</b>	<b>10.0 (47)</b>	<b>1.4 (33)</b>	<b>2.3 (32)</b>
<i>Policy Index</i>	16.1 (14)	11.6 (85)	1.3 (59)	2.0 (51)
<i>InvMetrics Public DB \$1-50B Gross Median</i>	14.6	10.2	1.3	2.1

5 Years Ending December 31, 2021				
	Return	Standard Deviation	Sharpe Ratio	Sortino Ratio
<b>LACERS Master Trust</b>	<b>11.8 (14)</b>	<b>8.8 (46)</b>	<b>1.2 (36)</b>	<b>1.9 (35)</b>
<i>Policy Index</i>	11.8 (15)	10.1 (85)	1.0 (54)	1.6 (49)



# COMPOSITE PERFORMANCE DETAIL GROSS

	Allocation		Performance (%)								Inception Date
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)		
<b>LACERS Master Trust</b>	<b>24,048,346,810</b>	<b>100.00</b>	<b>4.33</b>	<b>16.79</b>	<b>15.62</b>	<b>11.80</b>	<b>10.52</b>	<b>8.16</b>	<b>8.74</b>	<b>Nov-94</b>	
Policy Index			<u>4.82</u>	<u>13.46</u>	<u>16.09</u>	<u>11.77</u>	<u>10.27</u>	<u>7.90</u>	<u>8.68</u>		
Over/Under			-0.49	3.33	-0.47	0.03	0.25	0.26	0.06		
<b>U.S. Equity</b>	<b>5,601,535,430</b>	<b>23.3</b>	<b>9.43</b>	<b>26.33</b>	<b>25.28</b>	<b>17.51</b>	<b>16.24</b>	<b>9.94</b>	<b>11.53</b>	<b>Nov-94</b>	
U.S. Equity Blend			<u>9.28</u>	<u>25.66</u>	<u>25.79</u>	<u>17.97</u>	<u>16.30</u>	<u>9.72</u>	<u>10.60</u>		
Over/Under			0.15	0.67	-0.51	-0.46	-0.06	0.22	0.93		
<b>Non-U.S. Equity</b>	<b>6,168,377,591</b>	<b>25.6</b>	<b>1.58</b>	<b>10.56</b>	<b>15.91</b>	<b>11.73</b>	<b>9.21</b>	<b>7.89</b>	<b>5.94</b>	<b>Nov-94</b>	
MSCI AC World ex USA (Net)			<u>1.82</u>	<u>7.82</u>	<u>13.18</u>	<u>9.61</u>	<u>7.28</u>	<u>6.80</u>	<u>5.52</u>		
Over/Under			-0.24	2.74	2.73	2.12	1.93	1.09	0.42		
<b>Core Fixed Income</b>	<b>3,749,597,741</b>	<b>15.6</b>	<b>0.05</b>	<b>-0.98</b>	<b>5.63</b>	<b>4.11</b>	-	-	<b>3.58</b>	<b>Jul-12</b>	
Core Fixed Income Blend			<u>0.01</u>	<u>-1.55</u>	<u>4.79</u>	<u>3.57</u>	-	-	<u>2.90</u>		
Over/Under			0.04	0.57	0.84	0.54	-	-	0.68		
<b>Credit Opportunities</b>	<b>1,899,455,260</b>	<b>7.9</b>	<b>-0.53</b>	<b>0.46</b>	<b>6.51</b>	<b>5.27</b>	-	-	<b>5.23</b>	<b>Jul-13</b>	
Credit Opportunities Blend			<u>-0.49</u>	<u>1.03</u>	<u>7.21</u>	<u>5.37</u>	-	-	<u>5.58</u>		
Over/Under			-0.04	-0.57	-0.70	-0.10	-	-	-0.35		
<b>Real Assets</b>	<b>2,813,888,691</b>	<b>11.7</b>	<b>5.42</b>	<b>14.72</b>	<b>8.65</b>	<b>6.88</b>	<b>7.87</b>	<b>5.42</b>	<b>6.48</b>	<b>Dec-94</b>	
Real Assets Policy Benchmark			<u>7.75</u>	<u>18.81</u>	<u>10.74</u>	<u>9.27</u>	<u>7.75</u>	<u>6.96</u>	<u>8.25</u>		
Over/Under			-2.33	-4.09	-2.09	-2.39	0.12	-1.54	-1.77		
<b>Private Equity</b>	<b>3,639,852,195</b>	<b>15.1</b>	<b>8.13</b>	<b>54.98</b>	<b>23.26</b>	<b>20.34</b>	<b>16.07</b>	<b>12.97</b>	<b>11.98</b>	<b>Dec-95</b>	
Private Equity Blend			<u>10.06</u>	<u>29.36</u>	<u>29.49</u>	<u>21.46</u>	<u>19.81</u>	<u>13.57</u>	<u>14.26</u>		
Over/Under			-1.93	25.62	-6.23	-1.12	-3.74	-0.60	-2.28		
<b>Cash</b>	<b>175,639,903</b>	<b>0.7</b>									

- Policy Index = Policy target asset allocation reflects interim asset allocation policy targets adopted on September 14, 2021. 22.5% Russell 3000+ 27% MSCI ACWI ex USA + 16.75% BBgBarc US Aggregate TR+ 7.25% Credit Opportunities Blend+ 12% Real Assets Policy Benchmark+ 13.5% Private Equity Blend+ 1% 91 Day T-Bills
- U.S. Equity Blend = Russell 3000
- Core Fixed Income Blend = Bloomberg US AggregateBond Index TR
- Credit Opportunities Blend = 20.7%Bloomberg US High Yield 2% Issuer Cap TR+ Credit Suisse Leveraged Loan Index 20.7% + 55% Blended emerging Markets Debt Index + 3.6% Credit Suisse Leveraged Loan Index Lagged
- Real Assets Policy Benchmark = 41.67% Bloomberg US TIPS Index + 25% FTSE NAREIT ALL Equity REIT Index + 33.33% Real Estate Blended Benchmark

- Private Equity Blend = Russell 3000 + 300bps  
Please refer to the Appendix and/or investment policy for a full description and composition of blended indices



# COMPOSITE PERFORMANCE DETAIL NET

	Allocation		Performance (%)							
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
<b>LACERS Master Trust</b>	<b>24,048,346,810</b>	<b>100.0</b>	<b>4.29</b>	<b>16.62</b>	<b>15.44</b>	<b>11.61</b>	<b>10.33</b>	<b>7.95</b>	<b>7.61</b>	<b>Jul-01</b>
Policy Index			<u>4.82</u>	<u>13.46</u>	<u>16.09</u>	<u>11.77</u>	<u>10.27</u>	<u>7.90</u>	<u>7.61</u>	
Over/Under			-0.53	3.16	-0.65	-0.16	0.06	0.05	0.00	
<b>U.S. Equity</b>	<b>5,601,535,430</b>	<b>23.3</b>	<b>9.41</b>	<b>26.22</b>	<b>25.20</b>	<b>17.43</b>	<b>16.11</b>	<b>9.75</b>	<b>9.72</b>	<b>Sep-01</b>
U.S. Equity Blend			<u>9.28</u>	<u>25.66</u>	<u>25.79</u>	<u>17.97</u>	<u>16.30</u>	<u>9.72</u>	<u>9.66</u>	
Over/Under			0.13	0.56	-0.59	-0.54	-0.19	0.03	0.06	
<b>Non-U.S. Equity</b>	<b>6,168,377,591</b>	<b>25.6</b>	<b>1.50</b>	<b>10.21</b>	<b>15.51</b>	<b>11.34</b>	<b>8.85</b>	<b>7.52</b>	<b>6.88</b>	<b>Jun-01</b>
MSCI AC World ex USA (Net)			<u>1.82</u>	<u>7.82</u>	<u>13.18</u>	<u>9.61</u>	<u>7.28</u>	<u>6.80</u>	<u>6.00</u>	
Over/Under			-0.32	2.39	2.33	1.73	1.57	0.72	0.88	
<b>Core Fixed Income</b>	<b>3,749,597,741</b>	<b>15.6</b>	<b>0.02</b>	<b>-1.06</b>	<b>5.53</b>	<b>4.01</b>	-	-	<b>3.47</b>	<b>Jul-12</b>
Core Fixed Income Blend			<u>0.01</u>	<u>-1.55</u>	<u>4.79</u>	<u>3.57</u>	-	-	<u>2.90</u>	
Over/Under			0.01	0.49	0.74	0.44	-	-	0.57	
<b>Credit Opportunities</b>	<b>1,899,455,260</b>	<b>7.9</b>	<b>-0.63</b>	<b>0.18</b>	<b>6.20</b>	<b>4.95</b>	-	-	<b>4.90</b>	<b>Jul-13</b>
Credit Opportunities Blend			<u>-0.49</u>	<u>1.03</u>	<u>7.21</u>	<u>5.37</u>	-	-	<u>5.58</u>	
Over/Under			-0.14	-0.85	-1.01	-0.42	-	-	-0.68	
<b>Real Assets</b>	<b>2,813,888,691</b>	<b>11.7</b>	<b>5.39</b>	<b>14.58</b>	<b>8.49</b>	<b>6.72</b>	<b>7.72</b>	<b>5.27</b>	<b>5.42</b>	<b>Jun-01</b>
Real Assets Policy Benchmark			<u>7.75</u>	<u>18.81</u>	<u>10.74</u>	<u>9.27</u>	<u>7.75</u>	<u>6.96</u>	<u>6.92</u>	
Over/Under			-2.36	-4.23	-2.25	-2.55	-0.03	-1.69	-1.50	
<b>Private Equity</b>	<b>3,639,852,195</b>	<b>15.1</b>	<b>8.14</b>	<b>55.00</b>	<b>23.28</b>	<b>20.35</b>	<b>16.08</b>	<b>12.90</b>	<b>12.23</b>	<b>Sep-01</b>
Private Equity Blend			<u>10.06</u>	<u>29.36</u>	<u>29.49</u>	<u>21.46</u>	<u>19.81</u>	<u>13.57</u>	<u>13.51</u>	
Over/Under			-1.92	25.64	-6.21	-1.11	-3.73	-0.67	-1.28	
<b>Cash</b>	<b>175,639,903</b>	<b>0.7</b>								

- Policy Index = Policy target asset allocation reflects interim asset allocation policy targets adopted on September 14, 2021. 22.5% Russell 3000+ 27% MSCI ACWI ex USA + 16.75% BBgBarc US Aggregate TR+ 7.25% Credit Opportunities Blend+ 12% Real Assets Policy Benchmark+ 13.5% Private Equity Blend+ 1% 91 Day T-Bills

- U.S. Equity Blend = Russell 3000

- Core Fixed Income Blend = Bloomberg US AggregateBond Index TR

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- Private Equity Blend = Russell 3000 + 300bps

Please refer to the Appendix and/or investment policy for a full description and composition of blended indices



# RISK STATISTICS GROSS OF FEES

3 Years Ending December 31, 2021						
	Return	Standard Deviation	Alpha	Information Ratio	Sortino Ratio	Tracking Error
<b>LACERS Master Trust</b>	<b>15.62 (35)</b>	<b>10.02 (47)</b>	<b>1.76 (42)</b>	<b>-0.24 (38)</b>	<b>2.29 (39)</b>	<b>2.42 (41)</b>
InvMetrics Public DB \$1-50B Gross Median	14.96	10.12	1.06	-0.37	2.10	2.88

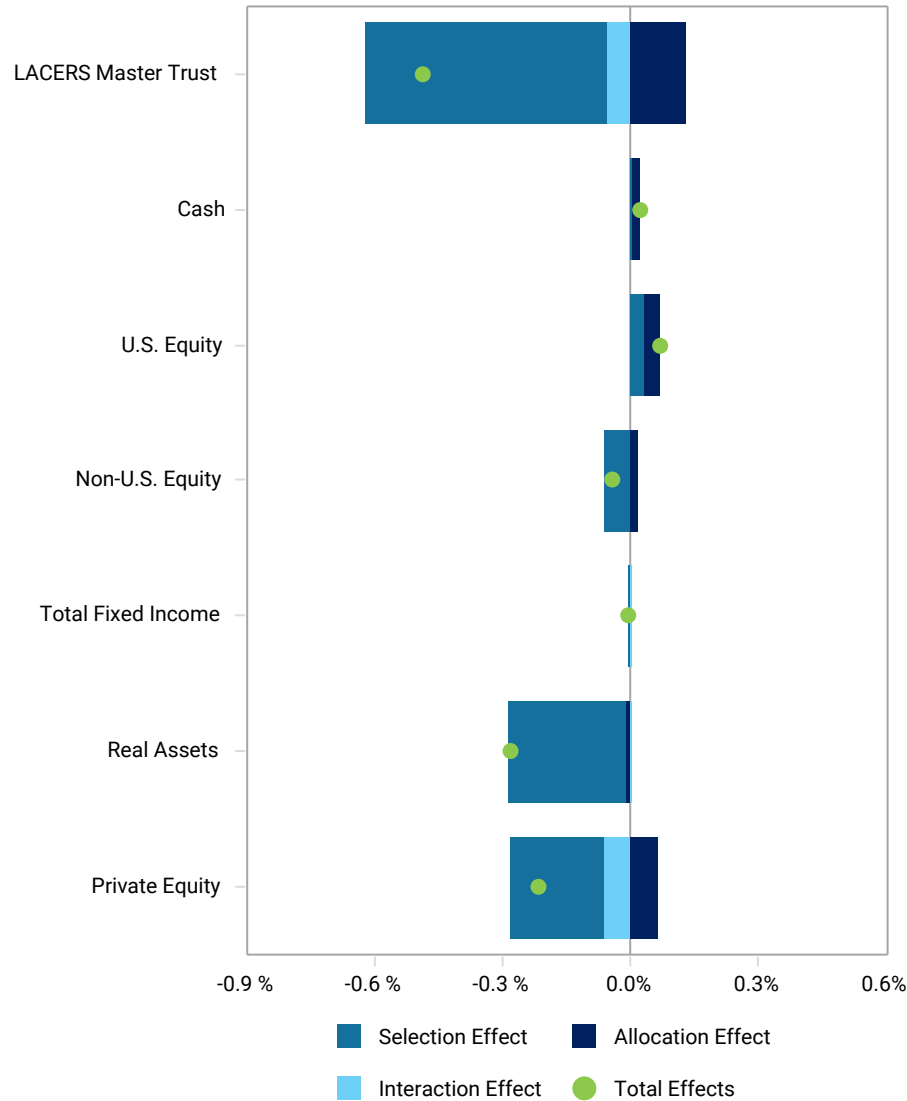
5 Years Ending December 31, 2021						
	Return	Standard Deviation	Alpha	Information Ratio	Sortino Ratio	Tracking Error
<b>LACERS Master Trust</b>	<b>11.80 (32)</b>	<b>8.78 (46)</b>	<b>1.53 (39)</b>	<b>-0.05 (30)</b>	<b>1.85 (39)</b>	<b>1.98 (33)</b>
InvMetrics Public DB \$1-50B Gross Median	11.06	8.81	0.93	-0.27	1.73	2.59

3 Years Ending December 31, 2021						
	Return	Standard Deviation	Alpha	Information Ratio	Sortino Ratio	Tracking Error
<b>LACERS Master Trust</b>	<b>15.62 (15)</b>	<b>10.02 (73)</b>	<b>1.76 (63)</b>	<b>-0.24 (24)</b>	<b>2.29 (62)</b>	<b>2.42 (21)</b>
InvMetrics Public DB \$5-50B Gross Median	14.93	8.49	2.92	-0.38	2.42	3.89

5 Years Ending December 31, 2021						
	Return	Standard Deviation	Alpha	Information Ratio	Sortino Ratio	Tracking Error
<b>LACERS Master Trust</b>	<b>11.80 (23)</b>	<b>8.78 (78)</b>	<b>1.53 (63)</b>	<b>-0.05 (23)</b>	<b>1.85 (63)</b>	<b>1.98 (16)</b>
InvMetrics Public DB \$5-50B Gross Median	11.23	7.48	2.58	-0.23	2.11	3.35

# ATTRIBUTION ANALYSIS

## Attribution Effects 1 Quarter Ending December 31, 2021



## Attribution Summary 1 Quarter Ending December 31, 2021

	Wtd. Actual Return (%)	Wtd. Index Return (%)	Excess Return (%)	Selection Effect (%)	Allocation Effect (%)	Interaction Effects (%)	Total Effects (%)
Cash				0.0	0.0	0.0	0.0
U.S. Equity	9.4	9.3	0.2	0.0	0.0	0.0	0.1
Non-U.S. Equity	1.6	1.8	-0.2	-0.1	0.0	0.0	0.0
Total Fixed Income	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
Real Assets	5.4	7.7	-2.3	-0.3	0.0	0.0	-0.3
Private Equity	8.1	10.1	-2.0	-0.3	0.1	-0.1	-0.2
<b>LACERS Master Trust</b>	<b>4.3</b>	<b>4.8</b>	<b>-0.5</b>	<b>-0.6</b>	<b>0.1</b>	<b>-0.1</b>	<b>-0.5</b>

Wtd. = Weighted

Note: Policy target asset allocation reflects interim asset allocation policy targets adopted on September 14, 2021

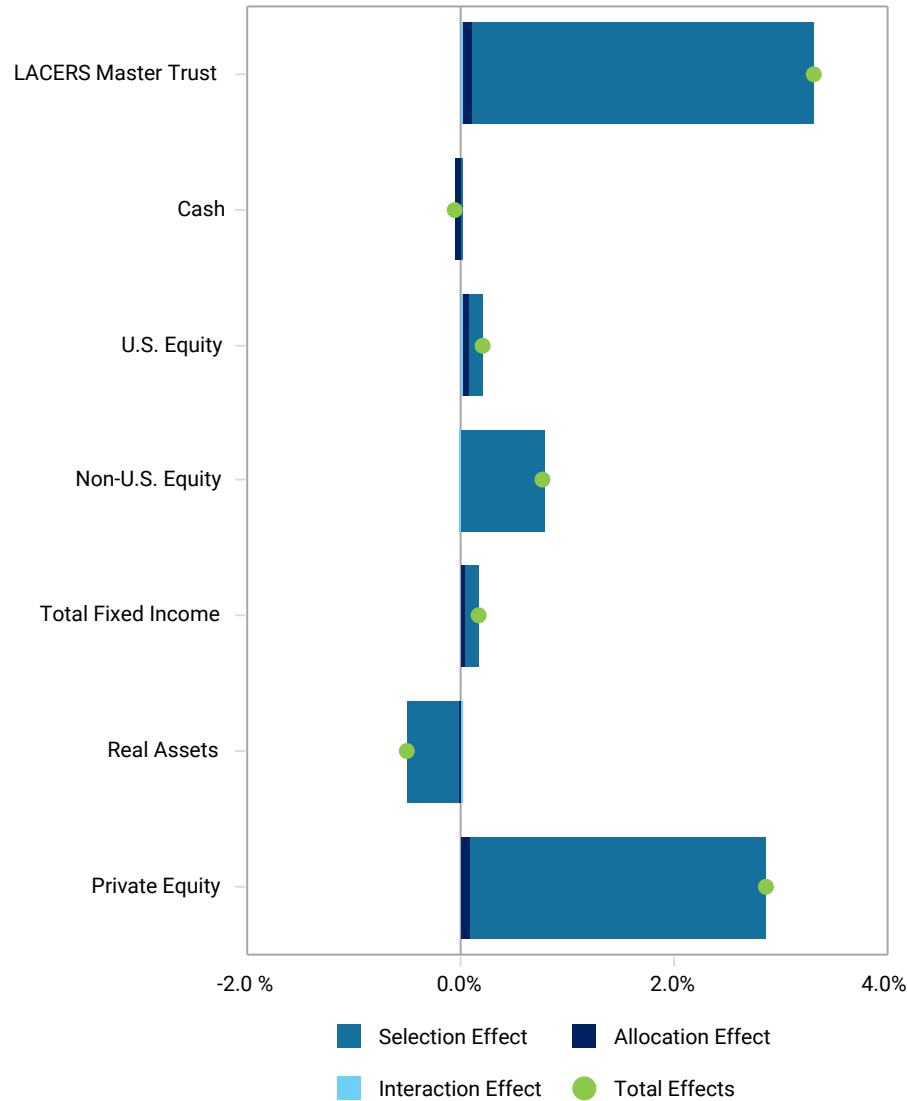
Total Fixed Income is comprised of the Core Fixed Income and Credit Opportunities asset classes.

\*Total Actual and Index returns are weighted average calculations.



# ATTRIBUTION ANALYSIS

## Attribution Effects 1 Year Ending December 31, 2021



## Attribution Summary 1 Year Ending December 31, 2021

	Wtd. Actual Return (%)	Wtd. Index Return (%)	Excess Return (%)	Selection Effect (%)	Allocation Effect (%)	Interaction Effects (%)	Total Effects (%)
Cash				0.0	-0.1	0.0	-0.1
U.S. Equity	26.3	25.7	0.7	0.2	0.1	0.0	0.2
Non-U.S. Equity	10.6	7.8	2.7	0.8	0.0	0.0	0.8
Total Fixed Income	-0.6	-1.1	0.5	0.1	0.0	0.0	0.2
Real Assets	14.7	18.8	-4.1	-0.5	0.0	0.0	-0.5
Private Equity	55.0	29.4	25.5	2.8	0.1	0.0	2.9
<b>LACERS Master Trust</b>	<b>16.8</b>	<b>13.5</b>	<b>3.3</b>	<b>3.4</b>	<b>0.1</b>	<b>0.0</b>	<b>3.3</b>

Wtd. = Weighted

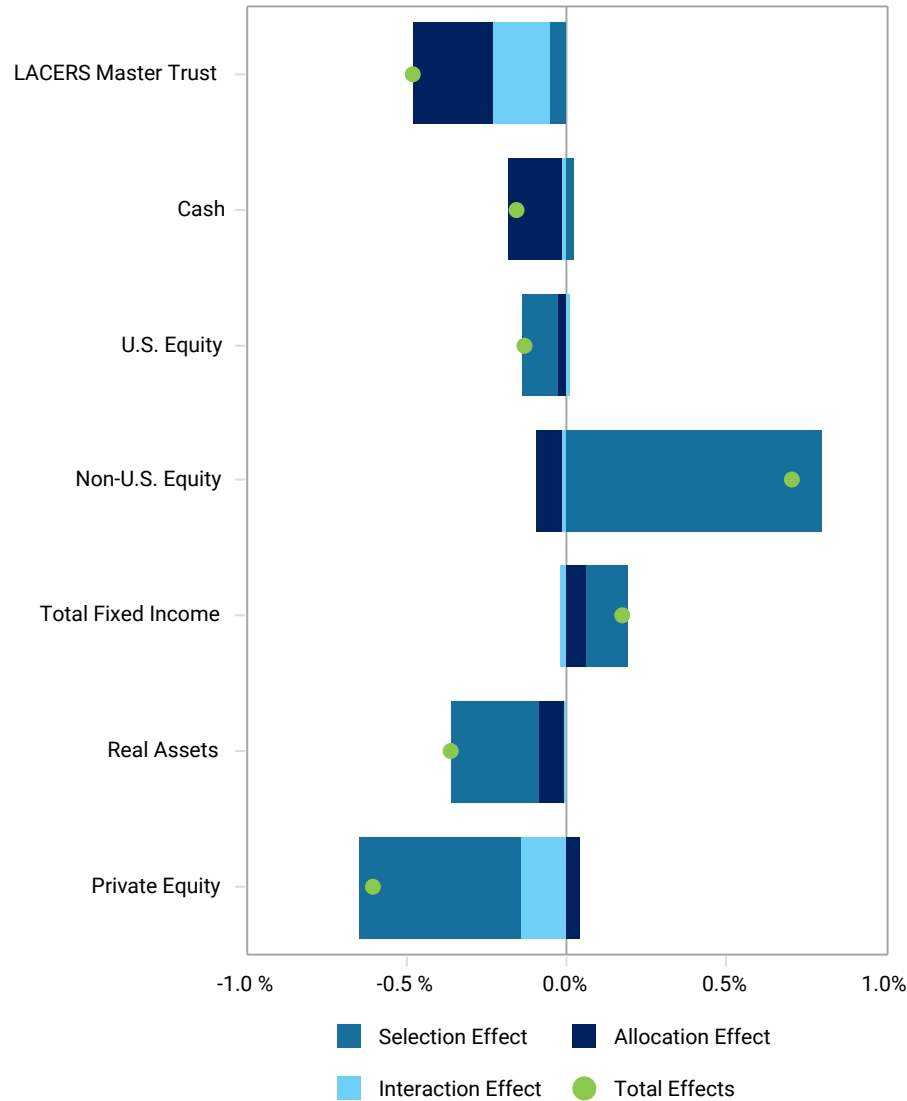
Note: Policy target asset allocation reflects interim asset allocation policy targets adopted on September 14, 2021.

Total Fixed Income is comprised of the Core Fixed Income and Credit Opportunities asset classes.

\*Total Actual and Index returns are weighted average calculations.

# ATTRIBUTION ANALYSIS

**Attribution Effects**  
3 Years Ending December 31, 2021



**Attribution Summary**  
3 Years Ending December 31, 2021

	Wtd. Actual Return (%)	Wtd. Index Return (%)	Excess Return (%)	Selection Effect (%)	Allocation Effect (%)	Interaction Effects (%)	Total Effects (%)
Cash				0.0	-0.2	0.0	-0.2
U.S. Equity	25.3	25.8	-0.5	-0.1	0.0	0.0	-0.1
Non-U.S. Equity	15.9	13.2	2.7	0.8	-0.1	0.0	0.7
Total Fixed Income	5.9	5.3	0.6	0.1	0.1	0.0	0.2
Real Assets	8.6	10.7	-2.1	-0.3	-0.1	0.0	-0.4
Private Equity	23.3	29.6	-6.3	-0.6	0.0	-0.1	-0.6
<b>LACERS Master Trust</b>	<b>15.6</b>	<b>16.1</b>	<b>-0.5</b>	<b>-0.1</b>	<b>-0.2</b>	<b>-0.2</b>	<b>-0.5</b>

Wtd. = Weighted

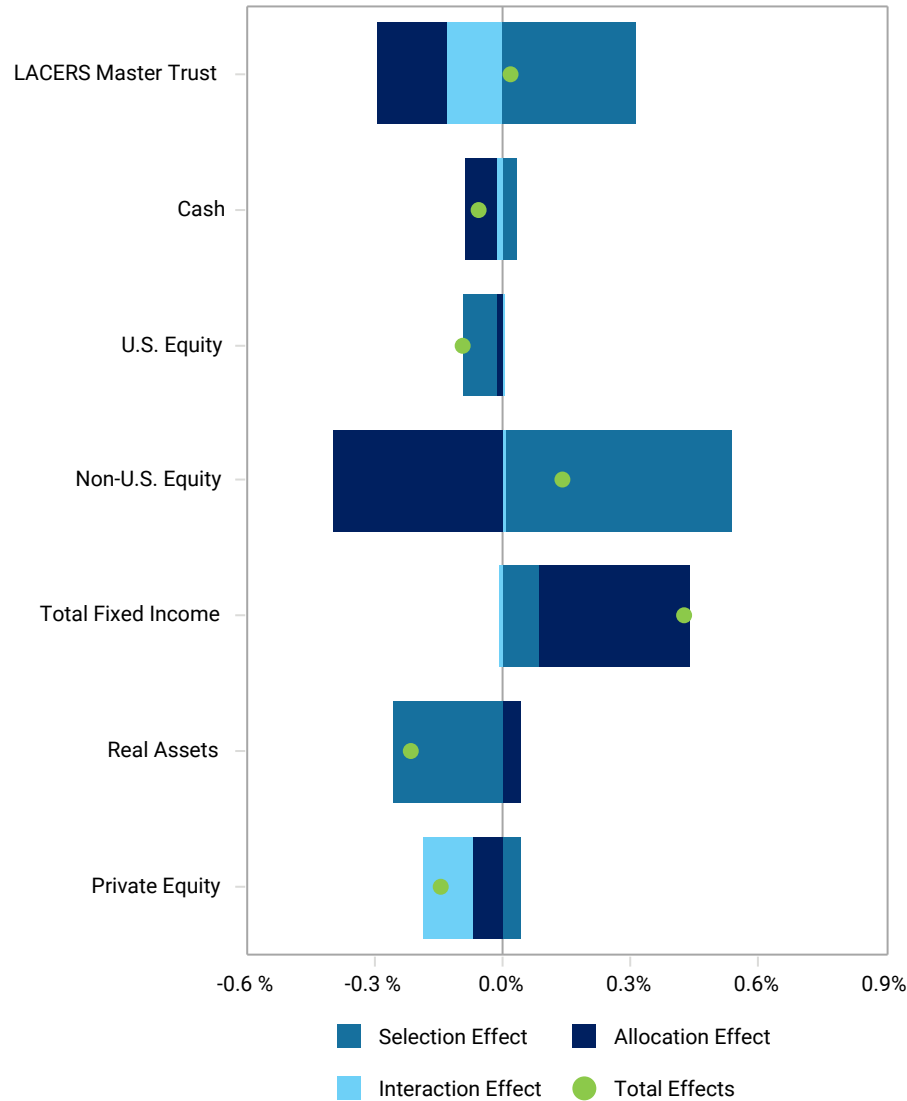
Note: Policy target asset allocation reflects interim asset allocation policy targets adopted on September 14, 2021.

Total Fixed Income is comprised of the Core Fixed Income and Credit Opportunities asset classes.

\*Total Actual and Index returns are weighted average calculations.

# ATTRIBUTION ANALYSIS

**Attribution Effects  
5 Years Ending December 31, 2021**



**Attribution Summary  
5 Years Ending December 31, 2021**

	Wtd. Actual Return (%)	Wtd. Index Return (%)	Excess Return (%)	Selection Effect (%)	Allocation Effect (%)	Interaction Effects (%)	Total Effects (%)
Cash				0.0	-0.1	0.0	-0.1
U.S. Equity	17.5	18.0	-0.5	-0.1	0.0	0.0	-0.1
Non-U.S. Equity	11.7	9.6	2.1	0.5	-0.4	0.0	0.1
Total Fixed Income	4.4	4.0	0.4	0.1	0.4	0.0	0.4
Real Assets	6.9	9.3	-2.4	-0.3	0.0	0.0	-0.2
Private Equity	20.3	21.5	-1.2	-0.1	-0.1	-0.1	-0.1
<b>LACERS Master Trust</b>	<b>11.8</b>	<b>11.8</b>	<b>0.0</b>	<b>0.2</b>	<b>-0.2</b>	<b>-0.1</b>	<b>0.0</b>

Wtd. = Weighted

Note: Policy target asset allocation reflects interim asset allocation policy targets adopted on September 14, 2021.

Total Fixed Income is comprised of the Core Fixed Income and Credit Opportunities asset classes.

\*Total Actual and Index returns are weighted average calculations.

# PRIVATE MARKETS PERFORMANCE

AS OF SEPTEMBER 30, 2021

Private Equity	10 Year IRR	Since Inception IRR	Since Inception Multiple
Aggregate Portfolio	16.2%	12.9%	1.77x
Core Portfolio	17.0%	13.4%	1.79x
Specialized Portfolio	3.5%	2.0%	1.13x
Russell 3000 + 300 bps	19.6%	13.1%	N/A

Real Estate	10 Year Return (Net)	Since Inception Return (Net)
Total Portfolio (TWR) <sup>1</sup>	8.62%	6.02%
NFI-ODCE + 80 basis points (TWR)	9.72%	7.14%

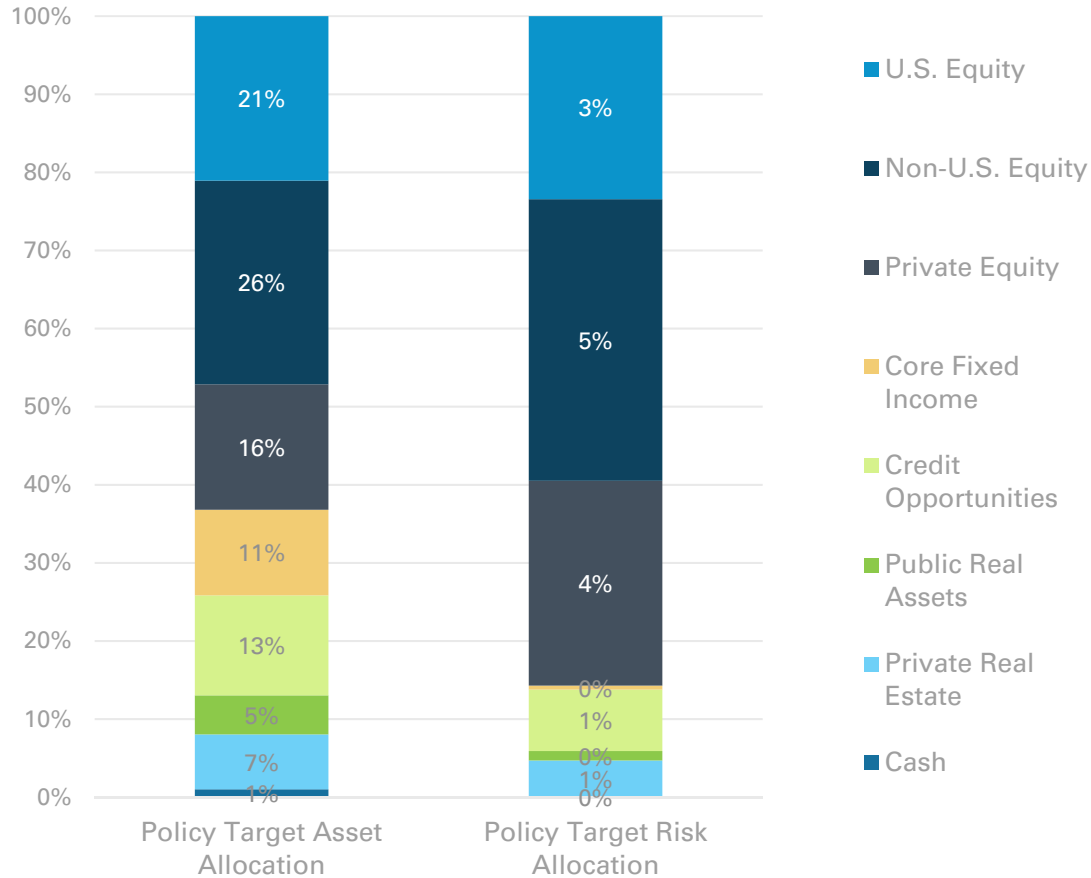
Note: The Total Value to Paid-In Ratio (TVPI) is a multiple that relates the current value of the private equity portfolio plus all distributions received to date with the total amount of capital contributed.

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



# TOTAL FUND RISK ALLOCATION

## ASSET ALLOCATION VS. RISK ALLOCATION



- Public and Private Equity policy target asset allocation is 63%; accounts for 86% of the policy target portfolio risk.
  - Core Fixed Income and Credit Opportunities policy allocation is 24%, accounting for 8% of the policy target portfolio risk.
  - Real Assets (Private Real Estate and Public Real Assets) policy allocation is 12%, accounting for 5% of policy target portfolio risk.
- \* Adopted May 11, 2021



# PUBLIC MARKETS RISK BUDGET COMPARISON

AS OF DECEMBER 31, 2021

Public Markets Asset Class	Target Risk Budget	Actual 3 Yr Tracking Error
U.S. Equity	1.25%	0.92%
Non-U.S. Equity	1.75%	1.64%
Core Fixed Income	1.75%	0.56%
Credit Opportunities	3.50%	1.91%
Public Real Assets*	1.25%	4.15%

- Current 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 Public Real Assets composite is not at its target strategy allocation.
- Note: The target Risk Budget was approved by the Board on June 22, 2021, and is reflected in the table above. Implementation of the new asset allocation is in progress.

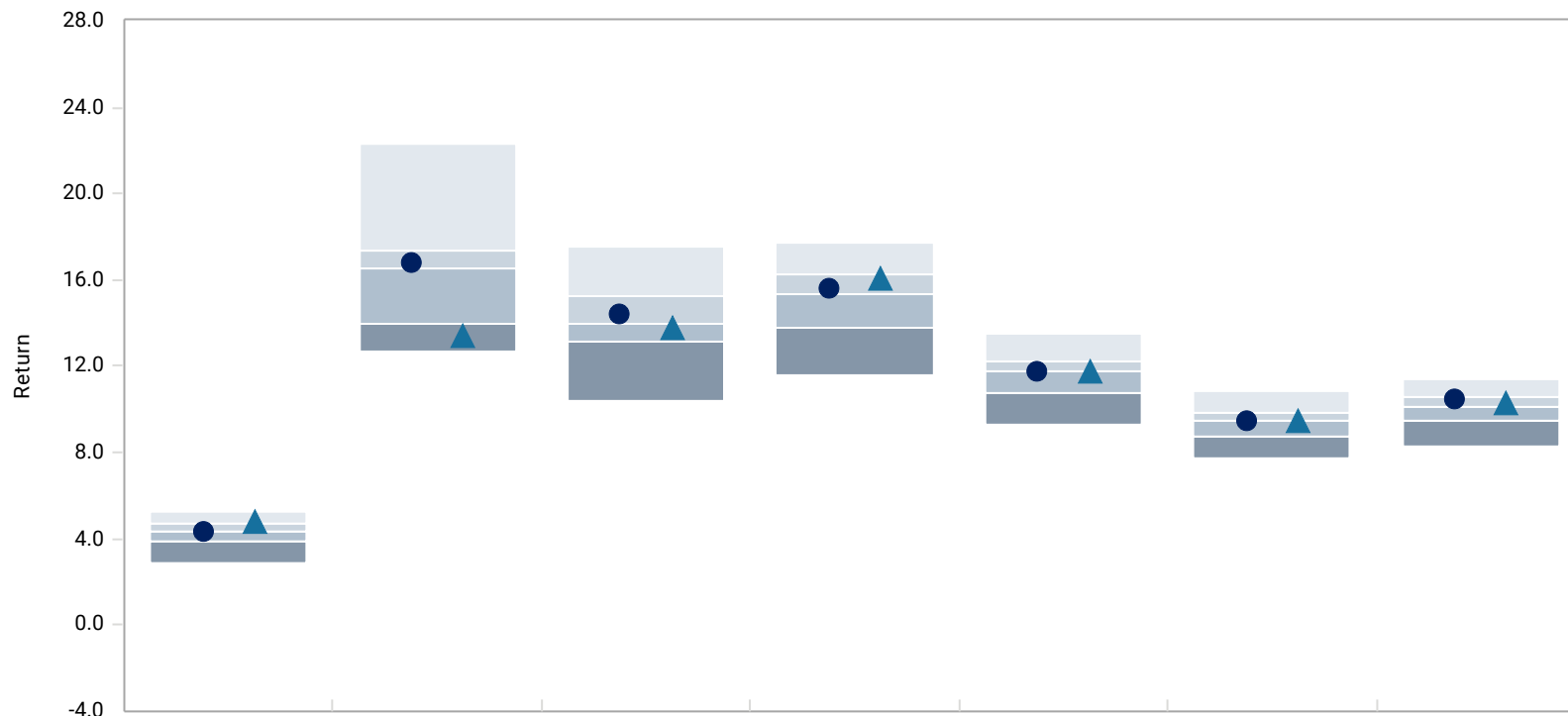
\* The benchmark for the Public Real Assets composite is a custom policy benchmark that is comprised of the target weights of the public real asset components: 62.5% Bloomberg Barclays US TIPS and 37.5% FTSE NAREIT All Equity REIT Index. Historical composition can be found in the investment policy statement.





# RETURN SUMMARY VS. \$5-50B PEER UNIVERSE

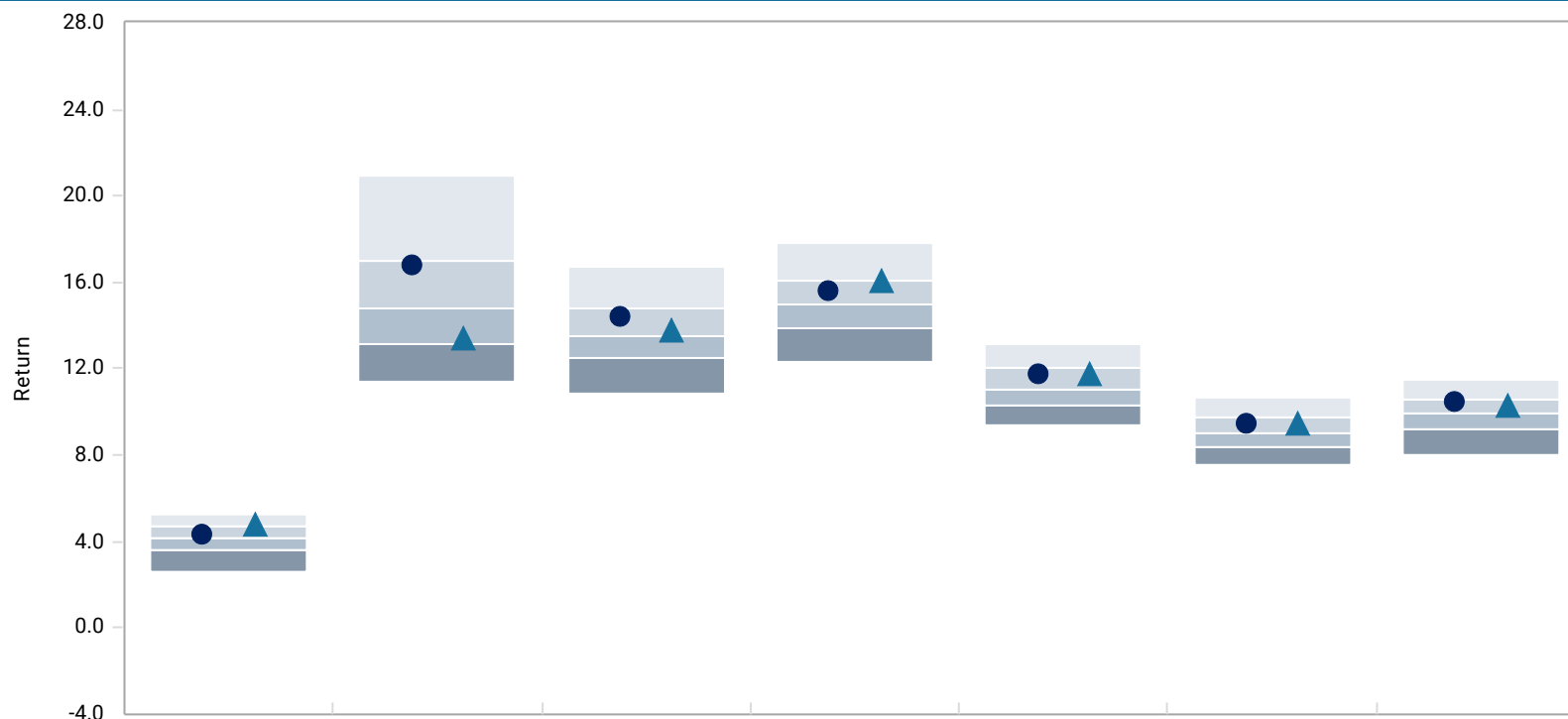
LACERS Master Trust vs. InvMetrics Public DB \$5-50B Gross



	3 Mo (%)	1 Year (%)	2 Years (%)	3 Years (%)	5 Years (%)	7 Years (%)	10 Years (%)
● LACERS Master Trust	4.3 (49)	16.8 (44)	14.4 (47)	15.6 (44)	11.8 (50)	9.5 (51)	10.5 (26)
▲ Policy Index	4.8 (19)	13.5 (81)	13.8 (66)	16.1 (34)	11.8 (51)	9.5 (52)	10.3 (40)
5th Percentile	5.3	22.3	17.5	17.7	13.5	10.9	11.4
1st Quartile	4.7	17.3	15.2	16.2	12.2	9.8	10.5
Median	4.3	16.5	14.0	15.3	11.8	9.5	10.1
3rd Quartile	3.9	14.0	13.1	13.8	10.8	8.7	9.4
95th Percentile	2.9	12.7	10.4	11.6	9.3	7.7	8.3
Population	32	31	31	31	31	29	28

# RETURN SUMMARY VS. \$1-50B PEER UNIVERSE

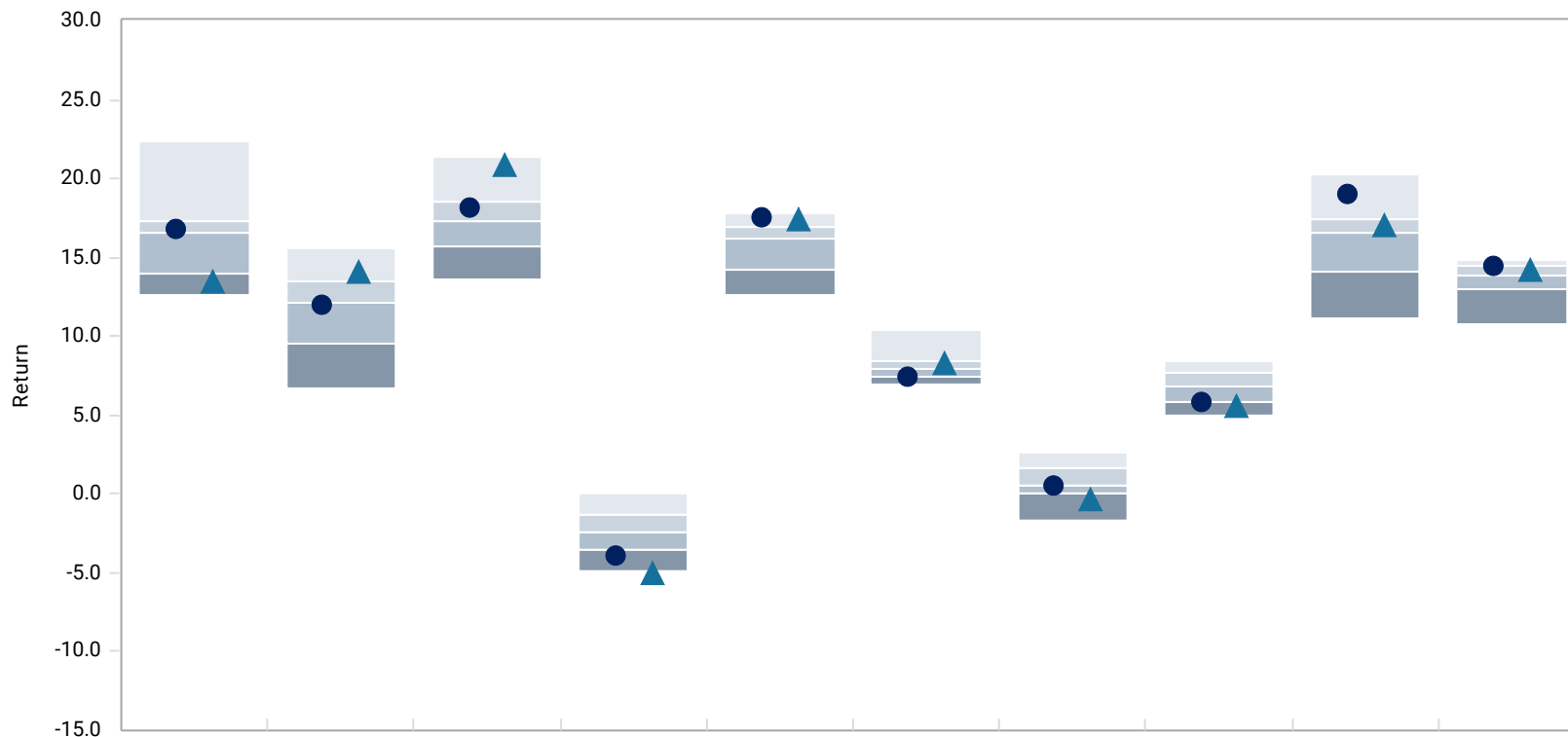
LACERS Master Trust vs. InvMetrics Public DB \$1-50B Gross



	3 Mo (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
● LACERS Master Trust	4.3 (44)	16.8 (30)	14.4 (33)	15.6 (36)	11.8 (32)	9.5 (36)	10.5 (26)
▲ Policy Index	4.8 (20)	13.5 (71)	13.8 (45)	16.1 (27)	11.8 (33)	9.5 (36)	10.3 (32)
5th Percentile	5.2	20.9	16.7	17.8	13.1	10.7	11.5
1st Quartile	4.7	17.0	14.8	16.1	12.1	9.7	10.5
Median	4.1	14.8	13.5	15.0	11.1	9.0	9.9
3rd Quartile	3.6	13.2	12.5	13.9	10.3	8.4	9.2
95th Percentile	2.6	11.4	10.8	12.3	9.4	7.5	8.0
Population	82	80	80	80	80	78	76

# RETURN SUMMARY VS. \$5-50B PEER UNIVERSE

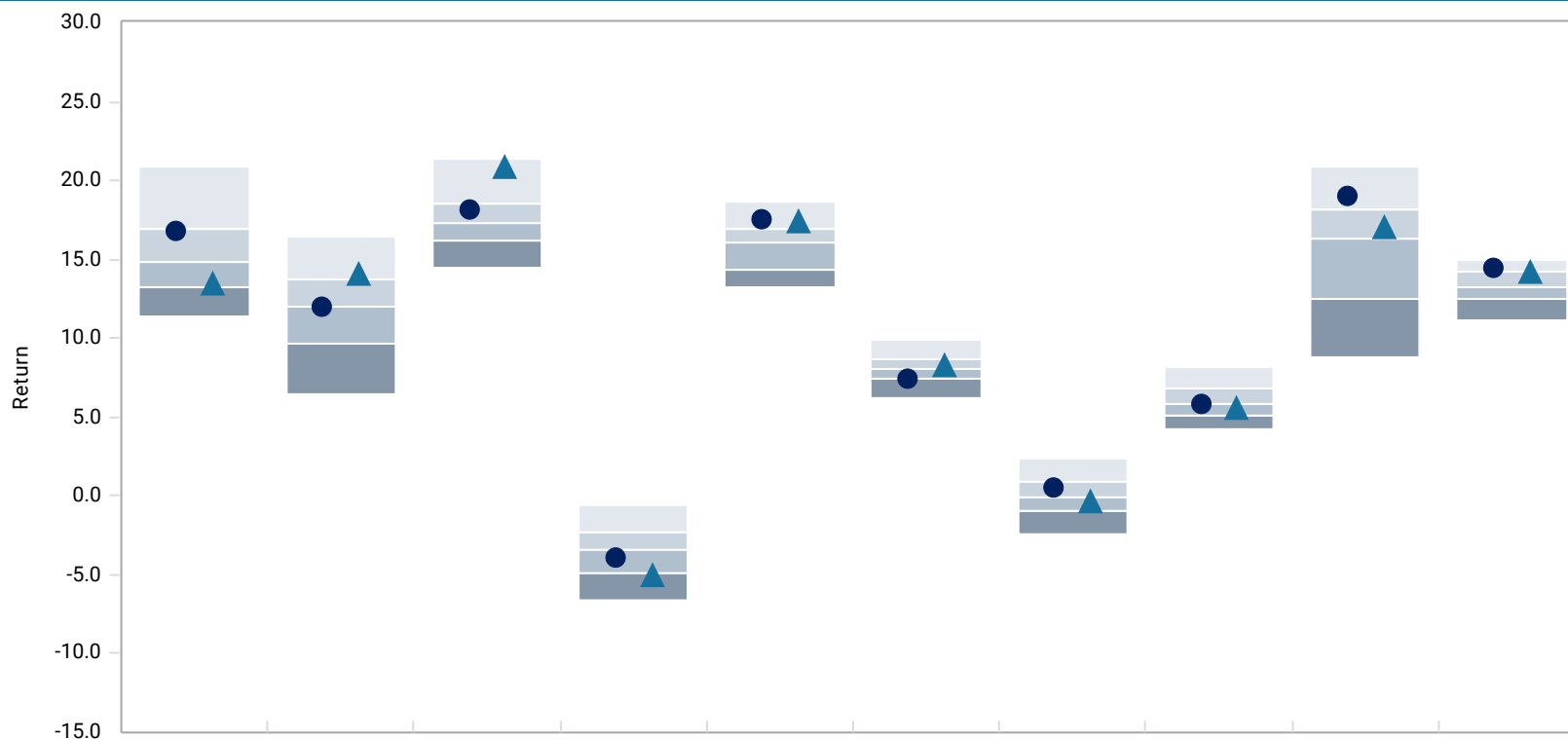
LACERS Master Trust vs. InvMetrics Public DB \$5-50B Gross



	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
● LACERS Master Trust	16.8 (44)	12.1 (52)	18.1 (28)	-3.9 (78)	17.6 (9)	7.4 (84)	0.5 (55)	5.9 (75)	19.0 (12)	14.5 (18)
▲ Policy Index	13.5 (81)	14.1 (19)	20.9 (7)	-5.0 (97)	17.4 (11)	8.3 (27)	-0.4 (80)	5.6 (78)	17.1 (30)	14.2 (34)
5th Percentile	22.3	15.6	21.4	0.1	17.8	10.3	2.7	8.5	20.2	14.8
1st Quartile	17.3	13.5	18.5	-1.3	16.9	8.4	1.6	7.7	17.4	14.4
Median	16.5	12.1	17.3	-2.4	16.2	8.0	0.5	6.8	16.6	13.9
3rd Quartile	14.0	9.5	15.7	-3.6	14.3	7.5	0.0	5.9	14.1	12.9
95th Percentile	12.7	6.7	13.6	-4.9	12.6	6.9	-1.7	4.9	11.2	10.7
Population	31	50	37	32	38	38	38	37	37	34

# RETURN SUMMARY VS. \$1-50B PEER UNIVERSE

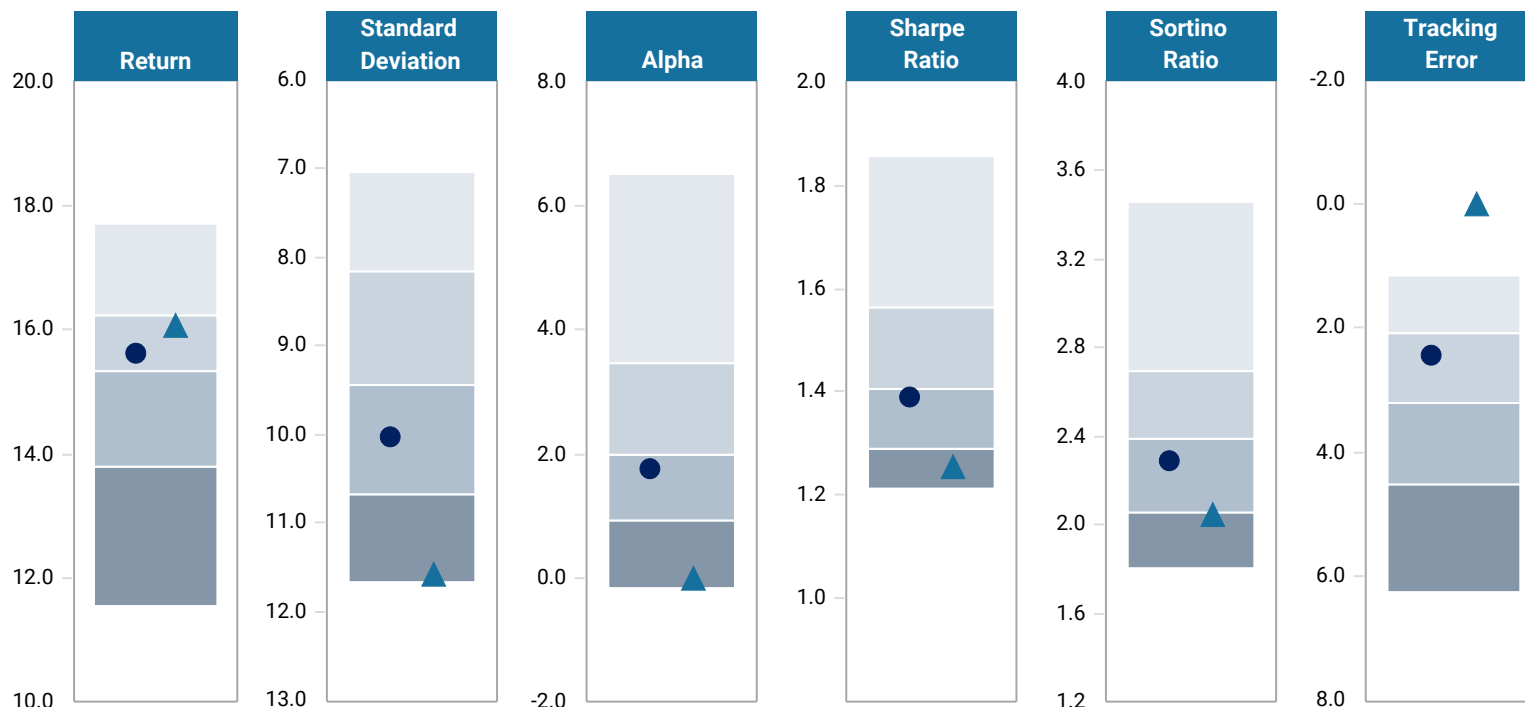
LACERS Master Trust vs. InvMetrics Public DB \$1-50B Gross



	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
● LACERS Master Trust	16.8 (30)	12.1 (49)	18.1 (32)	-3.9 (58)	17.6 (13)	7.4 (78)	0.5 (34)	5.9 (50)	19.0 (19)	14.5 (12)
▲ Policy Index	13.5 (71)	14.1 (22)	20.9 (9)	-5.0 (77)	17.4 (14)	8.3 (35)	-0.4 (60)	5.6 (54)	17.1 (34)	14.2 (22)
5th Percentile	20.9	16.4	21.4	-0.6	18.7	9.9	2.4	8.2	20.9	15.0
1st Quartile	17.0	13.8	18.5	-2.3	16.9	8.6	1.0	6.9	18.1	14.2
Median	14.8	12.0	17.3	-3.4	16.1	8.1	0.0	5.9	16.3	13.2
3rd Quartile	13.2	9.6	16.2	-4.8	14.4	7.4	-0.9	5.1	12.4	12.5
95th Percentile	11.4	6.5	14.5	-6.6	13.2	6.2	-2.4	4.2	8.8	11.2
Population	80	134	100	88	94	102	100	97	95	84

# RISK STATISTICS VS. \$5-50B PEER UNIVERSE

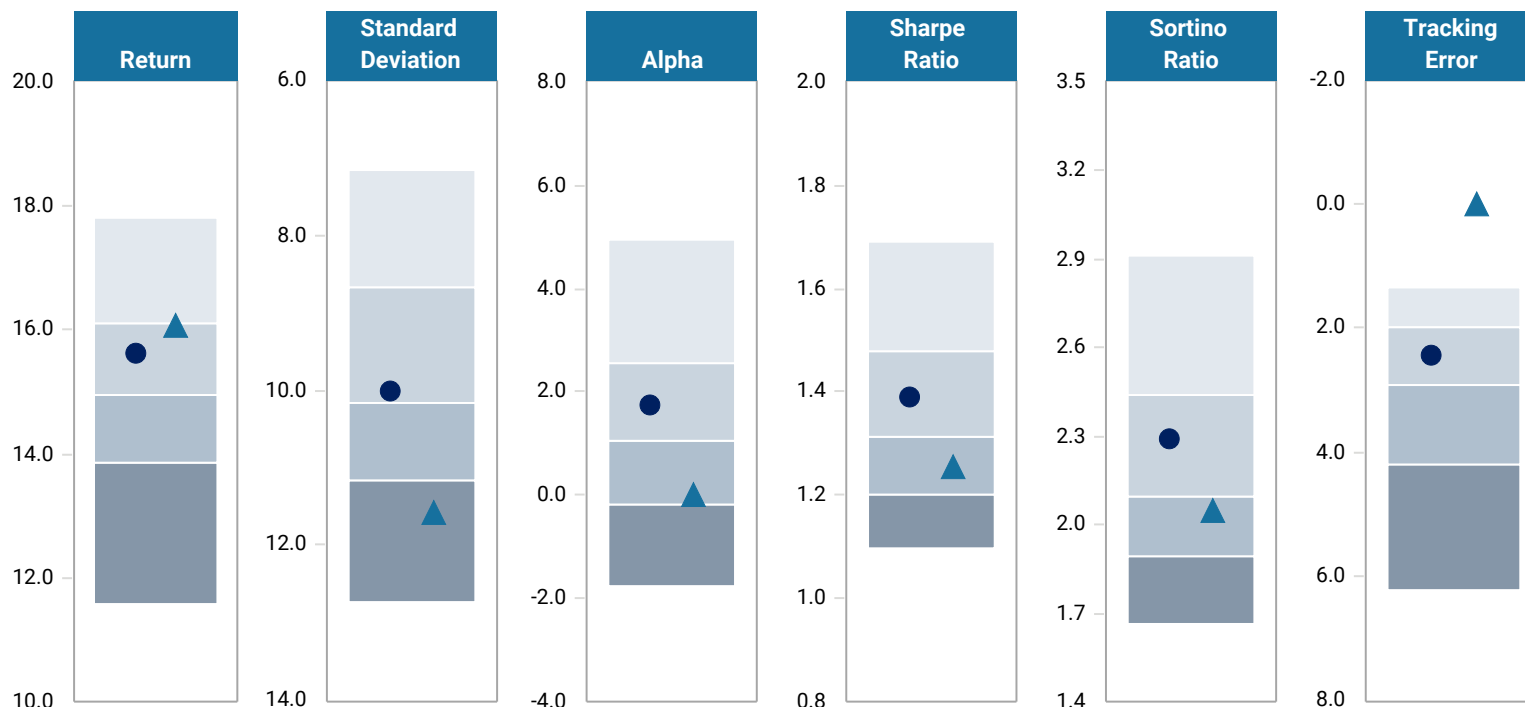
## LACERS Master Trust vs. InvMetrics Public DB \$5-50B Gross



	3 Yrs (%)	3 Yrs (%)	3 Yrs (%)	3 Yrs (%)	3 Yrs (%)	3 Yrs (%)
● LACERS Master Trust	15.6 (44)	10.0 (60)	1.8 (61)	1.4 (54)	2.3 (57)	2.4 (36)
▲ Policy Index	16.1 (34)	11.6 (90)	0.0 (91)	1.3 (88)	2.0 (76)	0.0 (1)
5th Percentile	17.7	7.0	6.5	1.9	3.5	1.2
1st Quartile	16.2	8.2	3.5	1.6	2.7	2.1
Median	15.3	9.4	2.0	1.4	2.4	3.2
3rd Quartile	13.8	10.7	0.9	1.3	2.1	4.5
95th Percentile	11.6	11.7	-0.2	1.2	1.8	6.3
Population	31	31	31	31	31	31

# RISK STATISTICS VS. \$1-50B PEER UNIVERSE

## LACERS Master Trust vs. InvMetrics Public DB \$1-50B Gross



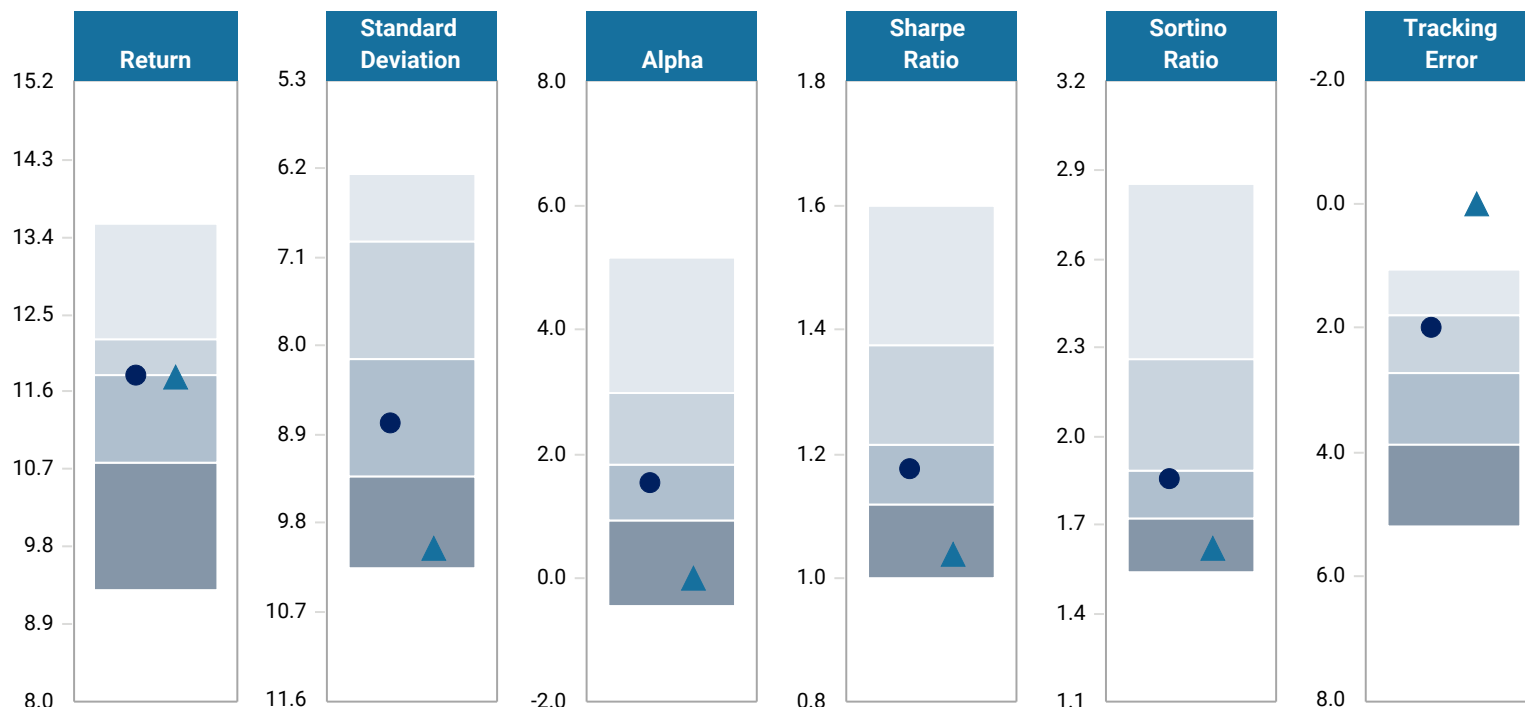
	3 Yrs (%)	3 Yrs (%)	3 Yrs (%)	3 Yrs (%)	3 Yrs (%)	3 Yrs (%)
● LACERS Master Trust	15.6 (35)	10.0 (46)	1.8 (42)	1.4 (39)	2.3 (39)	2.4 (39)
▲ Policy Index	16.1 (27)	11.6 (82)	0.0 (71)	1.3 (68)	2.0 (58)	0.0 (1)
5th Percentile	17.8	7.2	4.9	1.7	2.9	1.3
1st Quartile	16.1	8.7	2.6	1.5	2.4	2.0
Median	15.0	10.2	1.1	1.3	2.1	2.9
3rd Quartile	13.9	11.2	-0.2	1.2	1.9	4.2
95th Percentile	11.6	12.7	-1.8	1.1	1.7	6.2
Population	81	81	81	81	81	81





# RISK STATISTICS VS. \$5-50B PEER UNIVERSE

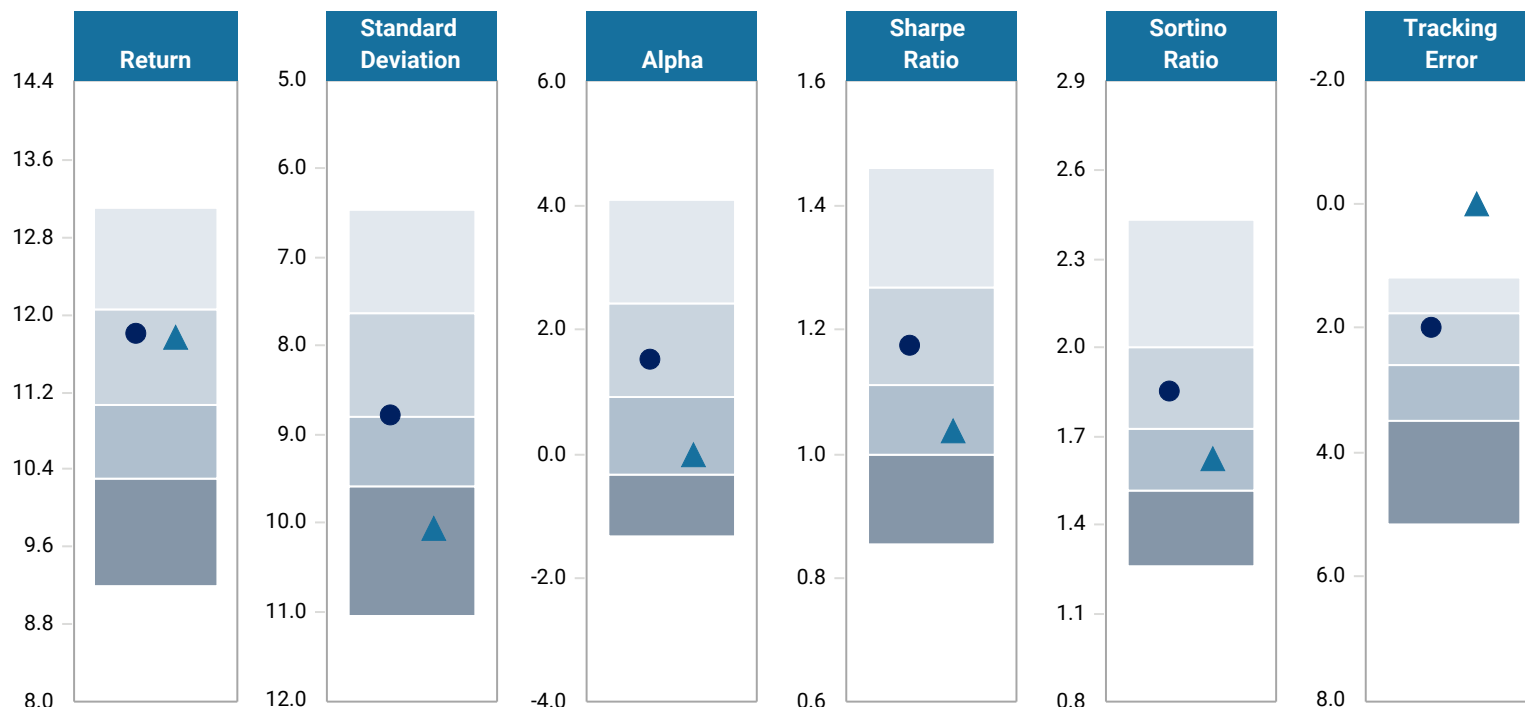
## LACERS Master Trust vs. InvMetrics Public DB \$5-50B Gross



	5 Yrs (%)	5 Yrs (%)	5 Yrs (%)	5 Yrs (%)	5 Yrs (%)	5 Yrs (%)
● LACERS Master Trust	11.8 (50)	8.8 (63)	1.5 (57)	1.2 (57)	1.9 (61)	2.0 (29)
▲ Policy Index	11.8 (51)	10.1 (91)	0.0 (92)	1.0 (90)	1.6 (80)	0.0 (1)
5th Percentile	13.5	6.3	5.2	1.6	2.9	1.1
1st Quartile	12.2	6.9	3.0	1.4	2.3	1.8
Median	11.8	8.1	1.8	1.2	1.9	2.7
3rd Quartile	10.8	9.3	0.9	1.1	1.7	3.9
95th Percentile	9.3	10.3	-0.4	1.0	1.5	5.2
Population	31	31	31	31	31	31

# RISK STATISTICS VS. \$1-50B PEER UNIVERSE

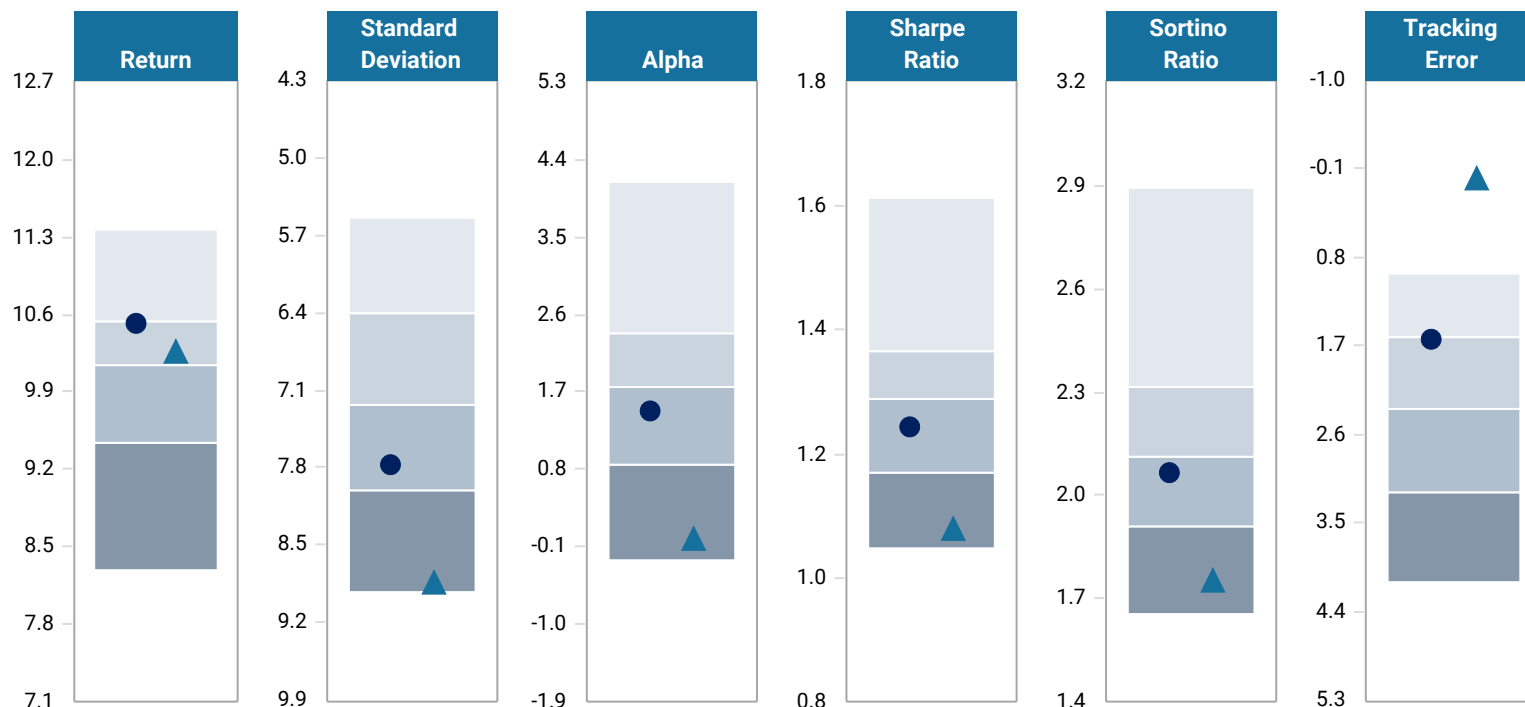
## LACERS Master Trust vs. InvMetrics Public DB \$1-50B Gross



	5 Yrs (%)	5 Yrs (%)	5 Yrs (%)	5 Yrs (%)	5 Yrs (%)	5 Yrs (%)
● LACERS Master Trust	11.8 (32)	8.8 (47)	1.5 (39)	1.2 (39)	1.9 (39)	2.0 (32)
▲ Policy Index	11.8 (33)	10.1 (83)	0.0 (72)	1.0 (65)	1.6 (59)	0.0 (1)
5th Percentile	13.1	6.5	4.1	1.5	2.4	1.2
1st Quartile	12.1	7.6	2.4	1.3	2.0	1.8
Median	11.1	8.8	0.9	1.1	1.7	2.6
3rd Quartile	10.3	9.6	-0.3	1.0	1.5	3.5
95th Percentile	9.2	11.0	-1.3	0.9	1.3	5.2
Population	81	81	81	81	81	81

# RISK STATISTICS VS. \$5-50B PEER UNIVERSE

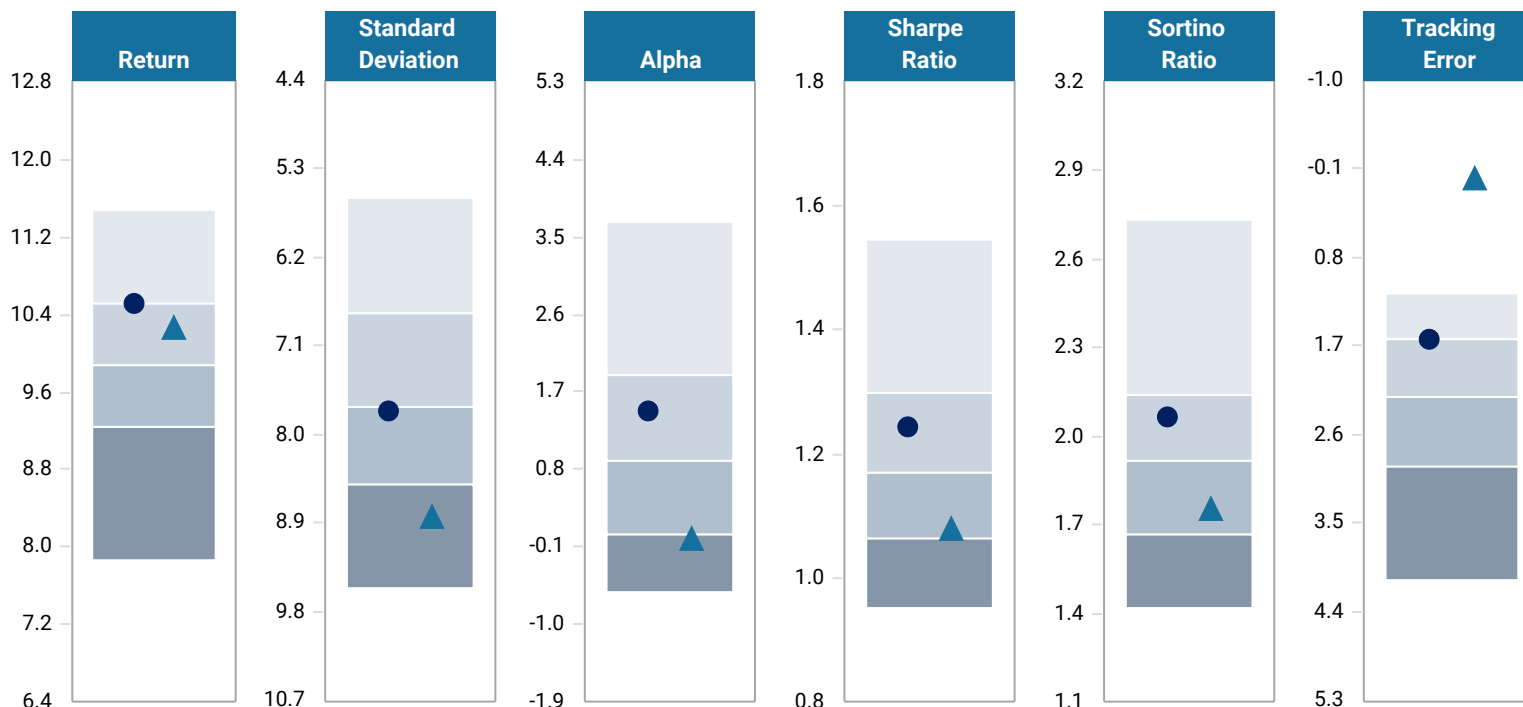
## LACERS Master Trust vs. InvMetrics Public DB \$5-50B Gross



	10 Yrs (%)	10 Yrs (%)	10 Yrs (%)	10 Yrs (%)	10 Yrs (%)	10 Yrs (%)
● LACERS Master Trust	10.5 (26)	7.8 (66)	1.5 (56)	1.2 (56)	2.1 (56)	1.6 (25)
▲ Policy Index	10.3 (40)	8.8 (88)	0.0 (91)	1.1 (85)	1.8 (84)	0.0 (1)
5th Percentile	11.4	5.5	4.2	1.6	2.9	1.0
1st Quartile	10.5	6.4	2.4	1.4	2.3	1.6
Median	10.1	7.2	1.8	1.3	2.1	2.3
3rd Quartile	9.4	8.0	0.8	1.2	1.9	3.2
95th Percentile	8.3	8.9	-0.3	1.0	1.7	4.1
Population	28	28	28	28	28	28

# RISK STATISTICS VS. \$1-50B PEER UNIVERSE

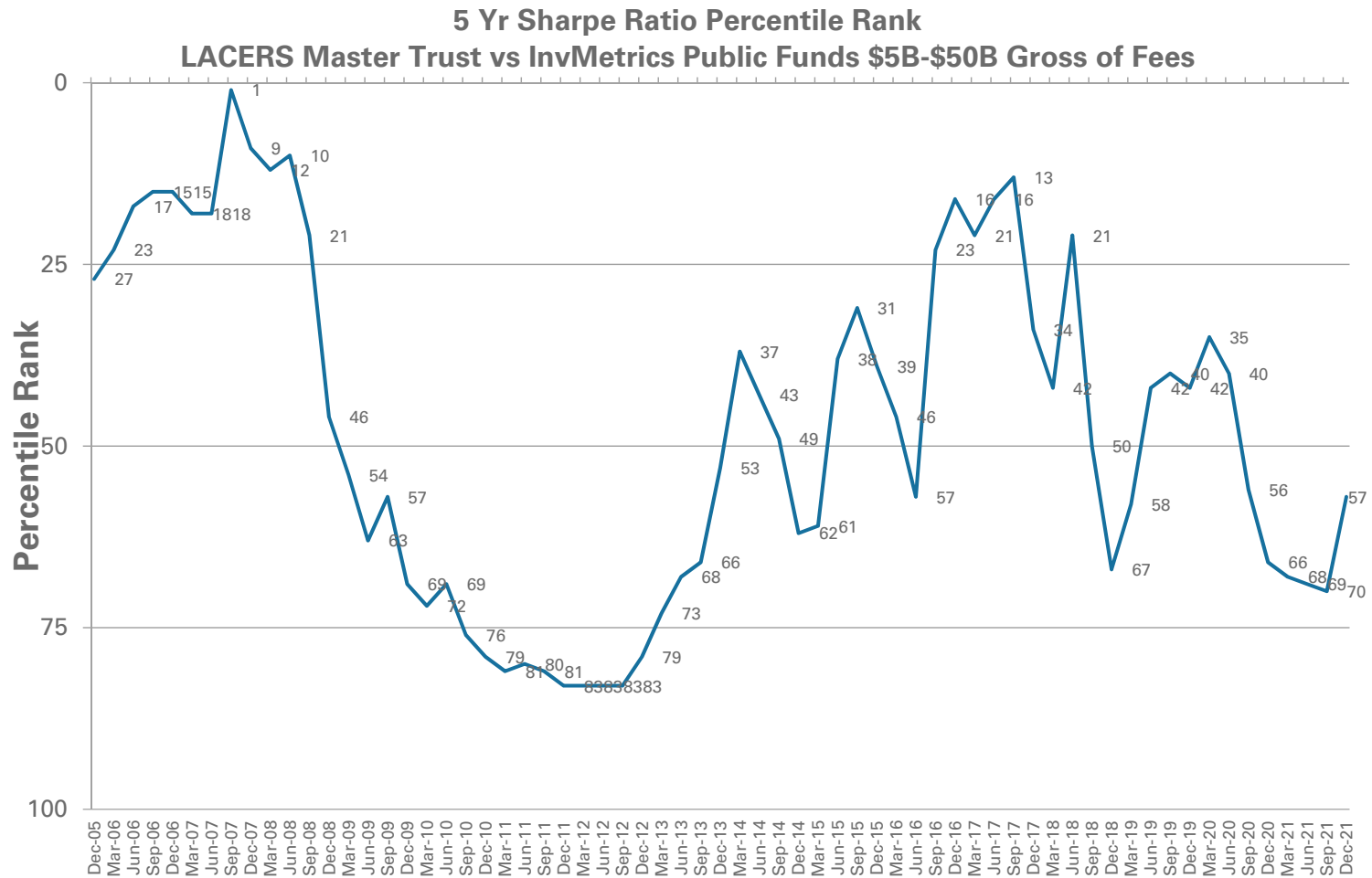
## LACERS Master Trust vs. InvMetrics Public DB \$1-50B Gross



	10 Yrs (%)	10 Yrs (%)	10 Yrs (%)	10 Yrs (%)	10 Yrs (%)	10 Yrs (%)
● LACERS Master Trust	10.5 (26)	7.8 (53)	1.5 (39)	1.2 (37)	2.1 (36)	1.6 (25)
▲ Policy Index	10.3 (32)	8.8 (84)	0.0 (77)	1.1 (72)	1.8 (66)	0.0 (1)
5th Percentile	11.5	5.6	3.7	1.5	2.7	1.2
1st Quartile	10.5	6.8	1.9	1.3	2.1	1.6
Median	9.9	7.7	0.9	1.2	1.9	2.2
3rd Quartile	9.2	8.5	0.0	1.1	1.7	2.9
95th Percentile	7.9	9.6	-0.6	1.0	1.4	4.1
Population	77	77	77	77	77	77

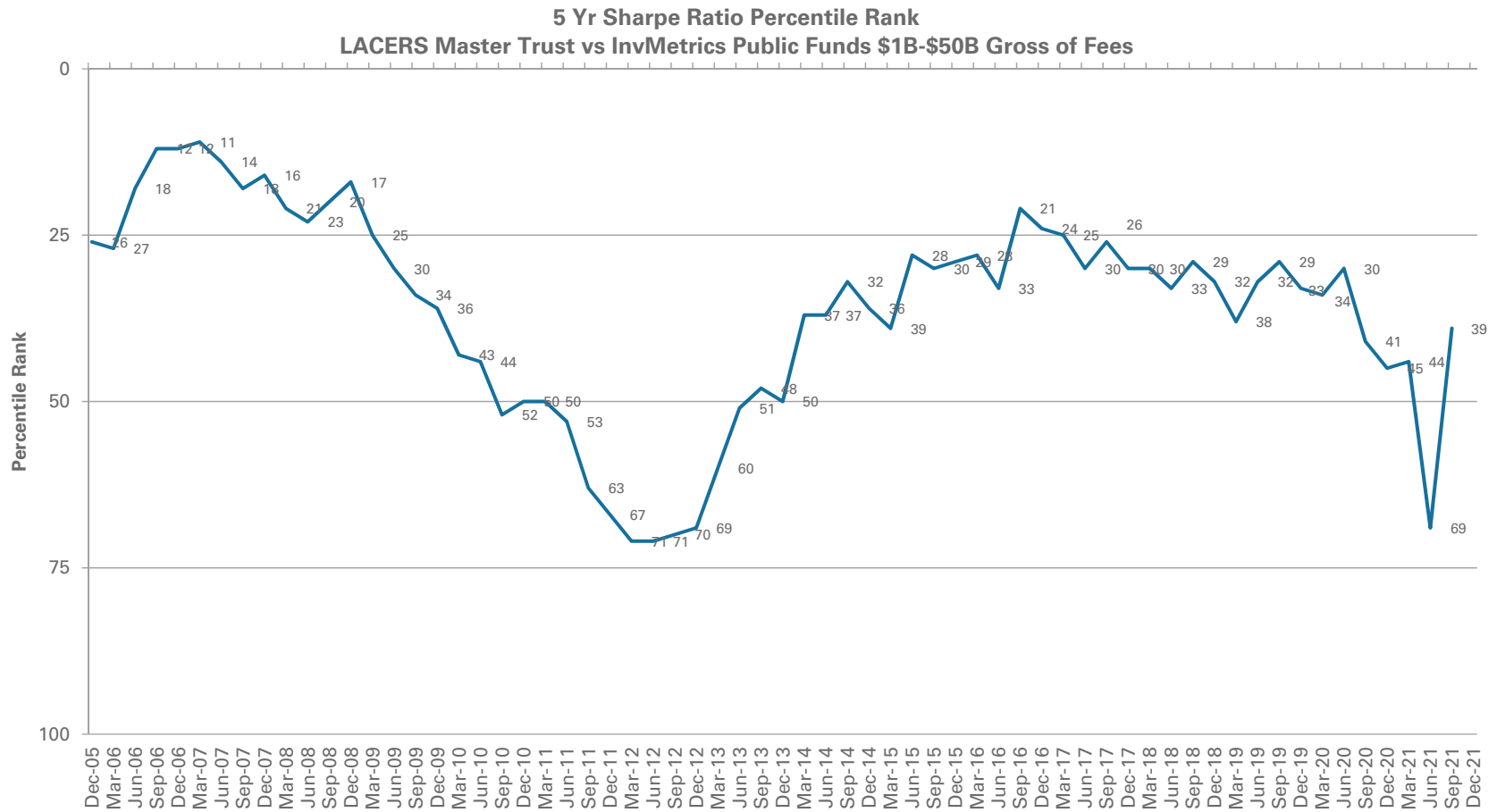
# HISTORICAL RISK ADJUSTED RETURN

## UNIVERSE COMPARISON (\$5-\$50 B GROSS OF FEES)



# HISTORICAL RISK ADJUSTED RETURN

## UNIVERSE COMPARISON (\$1-\$50 B GROSS OF FEES)







# U.S. EQUITY MANAGER PERFORMANCE

**U.S. EQUITY (GROSS)**

	Allocation		Performance (%)						
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>U.S. Equity</b>	<b>5,601,535,430</b>	<b>100.00</b>	<b>9.43</b>	<b>26.33</b>	<b>25.28</b>	<b>17.51</b>	<b>16.24</b>	<b>11.53</b>	<b>Nov-94</b>
U.S. Equity Blend			<u>9.28</u>	<u>25.66</u>	<u>25.79</u>	<u>17.97</u>	<u>16.30</u>	<u>10.60</u>	
Over/Under			0.15	0.67	-0.51	-0.46	-0.06	0.93	
RhumbLine Advisers Russell 2000	360,964,032	6.44	2.18	14.81	20.04	12.06	-	10.44	Apr-15
Russell 2000 Index			<u>2.14</u>	<u>14.82</u>	<u>20.02</u>	<u>12.02</u>	-	<u>10.49</u>	
Over/Under			0.04	-0.01	0.02	0.04	-	-0.05	
RhumbLine Advisers Russell 2000 Growth	28,939	0.00							
Rhumbline Advisers Russell 2000 Value	161,010,669	2.87	4.38	28.16	-	-	-	28.16	Jan-21
Russell 2000 Value Index			<u>4.36</u>	<u>28.27</u>	-	-	-	<u>28.27</u>	
Over/Under			0.02	-0.11	-	-	-	-0.11	
EAM Investors	121,681,920	2.17	5.35	4.48	26.41	19.92	-	16.94	Oct-15
Russell 2000 Growth Index			<u>0.01</u>	<u>2.83</u>	<u>21.17</u>	<u>14.53</u>	-	<u>14.17</u>	
Over/Under			5.34	1.65	5.24	5.39	-	2.77	
Principal Global Investors	353,866,411	6.32	10.71	27.08	29.78	21.17	-	17.23	Aug-14
Russell Midcap Index			<u>6.44</u>	<u>22.58</u>	<u>23.29</u>	<u>15.10</u>	-	<u>12.57</u>	
Over/Under			4.27	4.50	6.49	6.07	-	4.66	
RhumbLine Advisers S&P 500	4,158,737,314	74.24	11.04	28.65	25.88	18.37	16.48	10.87	Mar-93
S&P 500 Index			<u>11.03</u>	<u>28.71</u>	<u>26.07</u>	<u>18.47</u>	<u>16.55</u>	<u>10.74</u>	
Over/Under			0.01	-0.06	-0.19	-0.10	-0.07	0.13	
Escrow Account	6,653	0.00							

# U.S. EQUITY (GROSS)

	Allocation		Performance (%)						Inception Date
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	
Copeland Capital Management	259,439,031	4.63	8.50	26.76	-	-	-	40.92	Oct-20
<i>Russell 2000 Index</i>			<u>2.14</u>	<u>14.82</u>	-	-	-	<u>38.94</u>	
Over/Under			6.36	11.94	-	-	-	1.98	
Granahan Investment Management	91,349,210	1.63	-12.29	0.35	-	-	-	29.26	Oct-20
<i>Russell 2000 Growth Index</i>			<u>0.01</u>	<u>2.83</u>	-	-	-	<u>25.84</u>	
Over/Under			-12.30	-2.48	-	-	-	3.42	
Segall, Bryant & Hamill	94,451,251	1.69	4.92	17.76	-	-	-	39.03	Oct-20
<i>Russell 2000 Value Index</i>			<u>4.36</u>	<u>28.27</u>	-	-	-	<u>53.65</u>	
Over/Under			0.56	-10.51	-	-	-	-14.62	

- 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 1/1/200.  
 -RhumbLine Advisers Russell 2000 Value and Russell 2000, Copeland, Principal, Granahan and Segall, Bryant Hamill have a mid-month inception date. Since inception return is calculated from the first full month of performance.

eV = eVestment

Benchmark composition as of 7/1/2021 unless otherwise noted.

**U.S. EQUITY (NET)**

	Allocation		Performance (%)							Inception Date
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)		
<b>U.S. Equity</b>	<b>5,601,535,430</b>	<b>100.00</b>	<b>9.41</b>	<b>26.22</b>	<b>25.20</b>	<b>17.43</b>	<b>16.11</b>	<b>9.72</b>	<b>Sep-01</b>	
U.S. Equity Blend			<u>9.28</u>	<u>25.66</u>	<u>25.79</u>	<u>17.97</u>	<u>16.30</u>	<u>9.66</u>		
Over/Under			0.13	0.56	-0.59	-0.54	-0.19	0.06		
RhumbLine Advisers Russell 2000	360,964,032	6.44	2.18 (79)	14.81 (76)	20.03 (61)	12.05 (56)	-	10.43 (58)	Apr-15	
Russell 2000 Index			<u>2.14</u> (79)	<u>14.82</u> (76)	<u>20.02</u> (61)	<u>12.02</u> (56)	-	<u>10.49</u> (58)		
Over/Under			0.04	-0.01	0.01	0.03	-	-0.06		
eV US Small Cap Equity Median			5.41	23.26	21.50	12.67	-	11.00		
RhumbLine Advisers Russell 2000 Growth	28,939	0.00								
Rhumbline Advisers Russell 2000 Value	161,010,669	2.87	4.38 (86)	28.16 (47)	-	-	-	28.16 (47)	Jan-21	
Russell 2000 Value Index			<u>4.36</u> (86)	<u>28.27</u> (45)	-	-	-	<u>28.27</u> (45)		
Over/Under			0.02	-0.11	-	-	-	-0.11		
eV US Small-Mid Cap Value Equity Median			6.76	28.13	-	-	-	28.13		
EAM Investors	121,681,920	2.17	5.18 (19)	3.76 (81)	25.56 (62)	19.08 (55)	-	16.13 (71)	Oct-15	
Russell 2000 Growth Index			<u>0.01</u> (66)	<u>2.83</u> (83)	<u>21.17</u> (86)	<u>14.53</u> (87)	-	<u>14.17</u> (85)		
Over/Under			5.17	0.93	4.39	4.55	-	1.96		
eV US Small Cap Growth Equity Median			1.81	10.09	27.47	19.44	-	17.81		
Principal Global Investors	353,866,411	6.32	10.61 (7)	26.67 (33)	29.35 (15)	20.74 (18)	-	16.81 (10)	Aug-14	
Russell Midcap Index			<u>6.44</u> (61)	<u>22.58</u> (53)	<u>23.29</u> (50)	<u>15.10</u> (50)	-	<u>12.57</u> (48)		
Over/Under			4.17	4.09	6.06	5.64	-	4.24		
eV US Mid Cap Equity Median			7.33	23.40	23.18	15.04	-	12.24		
RhumbLine Advisers S&P 500	4,158,737,314	74.24	11.04 (19)	28.64 (26)	25.87 (36)	18.37 (35)	16.47 (30)			
S&P 500 Index			<u>11.03</u> (19)	<u>28.71</u> (25)	<u>26.07</u> (35)	<u>18.47</u> (34)	<u>16.55</u> (28)			
Over/Under			0.01	-0.07	-0.20	-0.10	-0.08			
eV US Large Cap Equity Median			8.83	25.72	23.20	16.30	14.85	8.34		
Escrow Account	6,653	0.00								

**U.S. EQUITY (NET)**

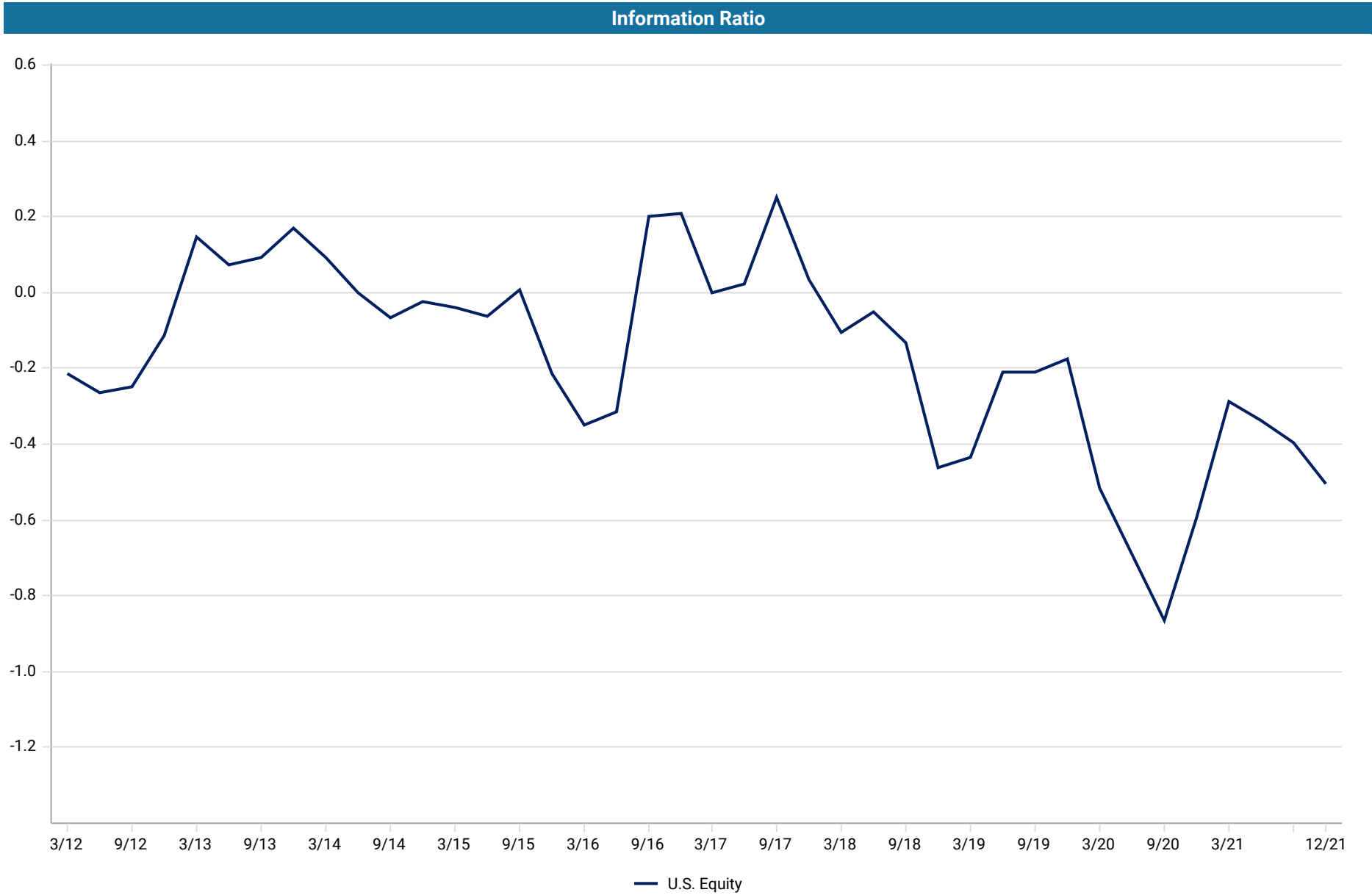
	Allocation		Performance (%)						
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Copeland Capital Management	259,439,031	4.63	8.38 (13)	26.31 (38)	-	-	-	40.52 (60)	Oct-20
<i>Russell 2000 Index</i>			<u>2.14</u> (79)	<u>14.82</u> (76)	-	-	-	<u>38.94</u> (65)	
Over/Under			6.24	11.49	-	-	-	1.58	
<i>eV US Small Cap Equity Median</i>			5.41	23.26	-	-	-	43.95	
Granahan Investment Management	91,349,210	1.63	-12.45 (100)	-0.41 (90)	-	-	-	28.48 (65)	Oct-20
<i>Russell 2000 Growth Index</i>			<u>0.01</u> (66)	<u>2.83</u> (83)	-	-	-	<u>25.84</u> (78)	
Over/Under			-12.46	-3.24	-	-	-	2.64	
<i>eV US Small Cap Growth Equity Median</i>			1.81	10.09	-	-	-	31.23	
Segall, Bryant & Hamill	94,451,251	1.69	4.76 (79)	16.99 (95)	-	-	-	38.30 (91)	Oct-20
<i>Russell 2000 Value Index</i>			<u>4.36</u> (83)	<u>28.27</u> (50)	-	-	-	<u>53.65</u> (39)	
Over/Under			0.40	-11.28	-	-	-	-15.35	
<i>eV US Small Cap Value Equity Median</i>			6.49	28.26	-	-	-	51.10	

- 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 1/1/200.  
 -RhumbLine Advisers Russell 2000 Value and Russell 2000, Copeland, Principal, Granahan and Segall, Bryant Hamill have a mid-month inception date. Since inception return is calculated from the first full month of performance.

eV = eVestment

Benchmark composition as of 7/1/2021 unless otherwise noted.

# U.S. EQUITY ROLLING 5 YEAR INFORMATION RATIO



# INVESTMENT MANAGER REPORT CARD

## U.S. EQUITY

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		
Principal Global Investors	Jul-14	Mid Cap	✓	✓	✓	✓	✓	✓	✓	✓	✓	811.7	Performance compliant with LACERS' Manager Monitoring Policy
EAM Investors	Sep-15	Small Cap Growth	✓	✓	✓	✗	✓	✗	✓	✗	✓	839.4	Performance compliant with LACERS' Manager Monitoring Policy
Copeland	Oct-20	Small Cap Core	✓	✓	✓	✓	N/A	N/A	N/A	N/A	✓	810.8	Newly funded strategy
Granahan	Oct-20	Small Cap Growth	✗	✗	✗	✗	N/A	N/A	N/A	N/A	✓	605.3	Newly funded strategy
Segall Bryant & Hamill	Oct-20	Small Cap Value	✓	✗	✗	✗	N/A	N/A	N/A	N/A	✗	454.8	On Watch as of 2/9/21 due to organizational changes.
RhumbLine (Passive)	Dec-20	R2000 Value	✓	✗	✗	✓	N/A	N/A	N/A	N/A	✗	7.1	Performance compliant with LACERS' Manager Monitoring Policy
RhumbLine (Passive)	Feb-93	S&P 500	✓	✓	✗	✓	✗	✓	✗	✓	✓✓	214.2	Performance compliant with LACERS' Manager Monitoring Policy
RhumbLine (Passive)	Jun-15	R2000	✓	✓	✗	✓	✗	✓	✗	✓	✗	13.2	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, 2021.
- \* 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 MANAGER PERFORMANCE

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

	Allocation		Performance (%)						
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Non-U.S. Equity</b>	<b>6,168,377,591</b>	<b>100.00</b>	<b>1.58</b>	<b>10.56</b>	<b>15.91</b>	<b>11.73</b>	<b>9.21</b>	<b>5.94</b>	<b>Nov-94</b>
<i>MSCI AC World ex USA (Net)</i>			<u>1.82</u>	<u>7.82</u>	<u>13.18</u>	<u>9.61</u>	<u>7.28</u>	<u>5.52</u>	
Over/Under			-0.24	2.74	2.73	2.12	1.93	0.42	
<b>Developed ex-U.S.</b>	<b>4,582,173,953</b>	<b>74.28</b>	<b>1.81</b>	<b>11.31</b>	<b>16.03</b>	<b>11.41</b>	<b>-</b>	<b>9.50</b>	<b>Jul-12</b>
<i>MSCI EAFE (Net)</i>			<u>2.69</u>	<u>11.26</u>	<u>13.54</u>	<u>9.55</u>	<u>-</u>	<u>8.14</u>	
Over/Under			-0.88	0.05	2.49	1.86	-	1.36	
Barrow Hanley	514,228,347	8.34	1.84	15.25	15.04	9.16	-	5.56	Nov-13
<i>MSCI EAFE Value Index (Net)</i>			<u>1.17</u>	<u>10.89</u>	<u>7.82</u>	<u>5.34</u>	<u>-</u>	<u>2.67</u>	
Over/Under			0.67	4.36	7.22	3.82	-	2.89	
Lazard Asset Management	617,975,450	10.02	-0.23	7.81	13.54	10.95	-	6.44	Nov-13
<i>MSCI EAFE (Net)</i>			<u>2.69</u>	<u>11.26</u>	<u>13.54</u>	<u>9.55</u>	<u>-</u>	<u>5.41</u>	
Over/Under			-2.92	-3.45	0.00	1.40	-	1.03	
MFS Institutional Advisors	625,436,382	10.14	4.72	11.03	17.71	14.64	-	8.99	Oct-13
<i>MSCI World ex USA Growth NR USD</i>			<u>4.27</u>	<u>11.57</u>	<u>19.11</u>	<u>13.37</u>	<u>-</u>	<u>8.09</u>	
Over/Under			0.45	-0.54	-1.40	1.27	-	0.90	
Oberweis Asset Mgmt	331,400,614	5.37	-3.81	4.79	30.06	19.28	-	12.32	Jan-14
<i>MSCI EAFE Small Cap (Net)</i>			<u>0.07</u>	<u>10.10</u>	<u>15.62</u>	<u>11.04</u>	<u>-</u>	<u>7.60</u>	
Over/Under			-3.88	-5.31	14.44	8.24	-	4.72	
SSgA World ex US IMI	2,149,996,538	34.86	2.78	12.88	15.09	10.43	8.64	6.24	Aug-93
<i>MSCI World ex U.S. IMI Index (Net)</i>			<u>2.71</u>	<u>12.40</u>	<u>14.38</u>	<u>9.83</u>	<u>8.12</u>	<u>-</u>	
Over/Under			0.07	0.48	0.71	0.60	0.52	-	
State Street EAFE SC	343,136,624	5.56	0.06	10.11	-	-	-	10.11	Jan-21
<i>MSCI EAFE Small Cap (Net)</i>			<u>0.07</u>	<u>10.10</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>10.10</u>	
Over/Under			-0.01	0.01	-	-	-	0.01	

# NON-U.S. EQUITY (GROSS)

	Allocation		Performance (%)						
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Emerging Markets</b>	<b>1,586,203,638</b>	<b>25.72</b>	<b>0.95</b>	<b>8.47</b>	<b>15.19</b>	<b>12.42</b>	-	<b>6.57</b>	<b>Jul-12</b>
<i>MSCI Emerging Markets (Net)</i>			<i>-1.31</i>	<i>-2.54</i>	<i>10.94</i>	<i>9.87</i>	-	<i>5.36</i>	
Over/Under			2.26	11.01	4.25	2.55	-	1.21	
Axiom Emerging Markets	394,377,824	6.39	-1.44	-3.57	17.27	13.61	-	8.09	May-14
<i>MSCI Emerging Markets (Net)</i>			<i>-1.31</i>	<i>-2.54</i>	<i>10.94</i>	<i>9.87</i>	-	<i>5.28</i>	
Over/Under			-0.13	-1.03	6.33	3.74	-	2.81	
<i>MSCI Emerging Markets Growth (Net)</i>			<i>-2.08</i>	<i>-8.41</i>	<i>14.60</i>	<i>12.55</i>	-	<i>7.31</i>	
Over/Under			0.64	4.84	2.67	1.06	-	0.78	
DFA Emerging Markets	459,064,926	7.44	0.49	12.55	9.36	8.92	-	3.45	Aug-14
<i>MSCI Emerging Markets Value (Net)</i>			<i>-0.41</i>	<i>4.00</i>	<i>7.09</i>	<i>7.02</i>	-	<i>1.96</i>	
Over/Under			0.90	8.55	2.27	1.90	-	1.49	
State Street Emerging Markets	367,553,260	5.96	-1.00	-2.56	-	-	-	-2.56	Jan-21
<i>MSCI Emerging Markets (Net)</i>			<i>-1.31</i>	<i>-2.54</i>	-	-	-	<i>-2.54</i>	
Over/Under			0.31	-0.02	-	-	-	-0.02	
Wasatch Global Investors	365,207,628	5.92	6.46	36.12	-	-	-	36.12	Jan-21
<i>MSCI Emerging Markets Small Cap (Net)</i>			<i>1.33</i>	<i>18.75</i>	-	-	-	<i>18.75</i>	
Over/Under			5.13	17.37	-	-	-	17.37	

- Barrow Hanley, Lazard Asset Management, Oberweis Asset Mgmt, State Street EAFE SC, State Street Emerging Markets and Wasatch Global Investors have a mid-month inception date. Since inception return is calculated from the first full month of performance.

- Since inception return sourced from SSgA.

eV = eVestment

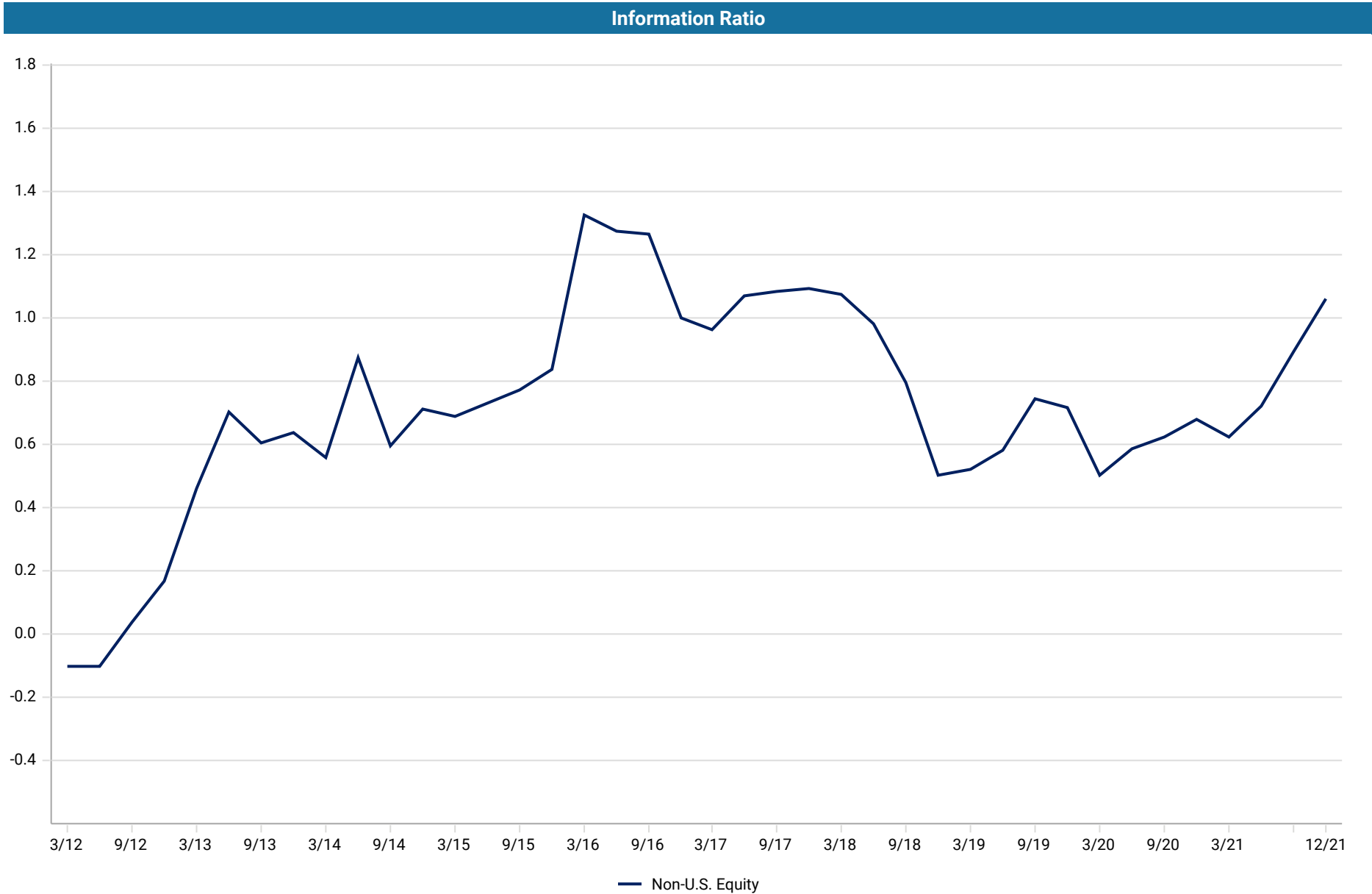
**NON-U.S. EQUITY (NET)**

	Allocation		Performance (%)							Inception Date
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)		
<b>Non-U.S. Equity</b>	<b>6,168,377,591</b>	<b>100.00</b>	<b>1.50 (55)</b>	<b>10.21 (49)</b>	<b>15.51 (56)</b>	<b>11.34 (53)</b>	<b>8.85 (59)</b>	<b>6.88 (53)</b>	<b>Jun-01</b>	
MSCI AC World ex USA (Net)			<u>1.82</u> (50)	<u>7.82</u> (65)	<u>13.18</u> (74)	<u>9.61</u> (72)	<u>7.28</u> (83)	<u>6.00</u> (79)		
Over/Under			-0.32	2.39	2.33	1.73	1.57	0.88		
eV All ACWI ex-US Equity Median			1.81	10.11	16.70	11.57	9.43	7.12		
<b>Developed ex-U.S.</b>	<b>4,582,173,953</b>	<b>74.28</b>	<b>1.74</b>	<b>11.03</b>	<b>15.69</b>	<b>11.07</b>	<b>-</b>	<b>9.20</b>	<b>Jul-12</b>	
MSCI EAFE (Net)			<u>2.69</u>	<u>11.26</u>	<u>13.54</u>	<u>9.55</u>	-	<u>8.14</u>		
Over/Under			-0.95	-0.23	2.15	1.52	-	1.06		
Barrow Hanley	514,228,347	8.34	1.72 (41)	14.71 (20)	14.50 (10)	8.64 (13)	-	5.06 (30)	Nov-13	
MSCI EAFE Value Index (Net)			<u>1.17</u> (62)	<u>10.89</u> (54)	<u>7.82</u> (91)	<u>5.34</u> (91)	-	<u>2.67</u> (87)		
Over/Under			0.55	3.82	6.68	3.30	-	2.39		
eV EAFE Value Equity Median			1.47	11.19	10.62	7.00	-	4.18		
Lazard Asset Management	617,975,450	10.02	-0.35 (86)	7.30 (79)	12.98 (63)	10.37 (42)	-	5.91 (53)	Nov-13	
MSCI EAFE (Net)			<u>2.69</u> (44)	<u>11.26</u> (53)	<u>13.54</u> (59)	<u>9.55</u> (56)	-	<u>5.41</u> (64)		
Over/Under			-3.04	-3.96	-0.56	0.82	-	0.50		
eV All EAFE Equity Median			2.38	11.37	14.05	9.78	-	5.99		
MFS Institutional Advisors	625,436,382	10.14	4.61 (21)	10.58 (31)	17.24 (95)	14.14 (37)	-	8.50 (48)	Oct-13	
MSCI World ex USA Growth NR USD			<u>4.27</u> (22)	<u>11.57</u> (26)	<u>19.11</u> (56)	<u>13.37</u> (69)	-	<u>8.09</u> (60)		
Over/Under			0.34	-0.99	-1.87	0.77	-	0.41		
eV EAFE All Cap Growth Median			2.63	9.04	19.49	13.97	-	8.38		
Oberweis Asset Mgmt	331,400,614	5.37	-4.01 (97)	3.92 (86)	29.03 (1)	18.30 (4)	-	11.41 (1)	Jan-14	
MSCI EAFE Small Cap (Net)			<u>0.07</u> (59)	<u>10.10</u> (65)	<u>15.62</u> (48)	<u>11.04</u> (49)	-	<u>7.60</u> (49)		
Over/Under			-4.08	-6.18	13.41	7.26	-	3.81		
eV EAFE Small Cap Equity Median			0.34	12.57	15.40	10.98	-	7.44		

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

	Allocation		Performance (%)							Inception Date
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)		
SSgA World ex US IMI	2,149,996,538	34.86	2.78 (47)	12.86 (41)	15.07 (44)	10.41 (46)	8.62 (61)	6.28 (54)	Aug-98	
<i>MSCI World ex U.S. IMI Index (Net)</i>			<u>2.71</u> (49)	<u>12.40</u> (51)	<u>14.38</u> (51)	<u>9.83</u> (53)	<u>8.12</u> (76)	<u>5.39</u> (86)		
Over/Under			0.07	0.46	0.69	0.58	0.50	0.89		
<i>eV EAFE Core Equity Median</i>			2.58	12.40	14.41	10.13	8.97	6.44		
State Street EAFE SC	343,136,624	5.56	0.05 (59)	10.07 (65)	-	-	-	10.07 (65)	Jan-21	
<i>MSCI EAFE Small Cap (Net)</i>			<u>0.07</u> (59)	<u>10.10</u> (65)	-	-	-	<u>10.10</u> (65)		
Over/Under			-0.02	-0.03	-	-	-	-0.03		
<i>eV EAFE Small Cap Equity Median</i>			0.34	12.57	-	-	-	12.57		
<b>Emerging Markets</b>	<b>1,586,203,638</b>	<b>25.72</b>	<b>0.83</b>	<b>7.94</b>	<b>14.63</b>	<b>11.87</b>	<b>-</b>	<b>5.96</b>	<b>Jul-12</b>	
<i>MSCI Emerging Markets (Net)</i>			<u>-1.31</u>	<u>-2.54</u>	<u>10.94</u>	<u>9.87</u>	-	<u>5.36</u>		
Over/Under			2.14	10.48	3.69	2.00	-	0.60		
Axiom Emerging Markets	394,377,824	6.39	-1.62 (64)	-4.28 (73)	16.50 (23)	12.85 (20)	-	7.38 (24)	May-14	
<i>MSCI Emerging Markets (Net)</i>			<u>-1.31</u> (57)	<u>-2.54</u> (66)	<u>10.94</u> (66)	<u>9.87</u> (53)	-	<u>5.28</u> (59)		
Over/Under			-0.31	-1.74	5.56	2.98	-	2.10		
<i>eV Emg Mkts Equity Median</i>			-0.86	0.41	12.51	10.11	-	5.51		
<i>MSCI Emerging Markets Growth (Net)</i>			<u>-2.08</u> (69)	<u>-8.41</u> (87)	<u>14.60</u> (33)	<u>12.55</u> (24)	-	<u>7.31</u> (24)		
Over/Under			0.46	4.13	1.90	0.30	-	0.07		
DFA Emerging Markets	459,064,926	7.44	0.37 (28)	12.01 (17)	8.83 (87)	8.39 (78)	-	2.95 (88)	Aug-14	
<i>MSCI Emerging Markets Value (Net)</i>			<u>-0.41</u> (44)	<u>4.00</u> (34)	<u>7.09</u> (95)	<u>7.02</u> (92)	-	<u>1.96</u> (96)		
Over/Under			0.78	8.01	1.74	1.37	-	0.99		
<i>eV Emg Mkts Equity Median</i>			-0.86	0.41	12.51	10.11	-	4.69		
State Street Emerging Markets	367,553,260	5.96	-1.01 (54)	-2.60 (66)	-	-	-	-2.60 (66)	Jan-21	
<i>MSCI Emerging Markets (Net)</i>			<u>-1.31</u> (57)	<u>-2.54</u> (66)	-	-	-	<u>-2.54</u> (66)		
Over/Under			0.30	-0.06	-	-	-	-0.06		
<i>eV Emg Mkts Equity Median</i>			-0.86	0.41	-	-	-	0.41		
Wasatch Global Investors	365,207,628	5.92	6.27 (1)	35.30 (1)	-	-	-	35.30 (1)	Jan-21	
<i>MSCI Emerging Markets Small Cap (Net)</i>			<u>1.33</u> (52)	<u>18.75</u> (32)	-	-	-	<u>18.75</u> (32)		
Over/Under			4.94	16.55	-	-	-	16.55		
<i>eV Emg Mkts Small Cap Equity Median</i>			1.47	15.45	-	-	-	15.45		

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



# INVESTMENT MANAGER REPORT CARD

## NON-U.S. EQUITY

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		
SsgA (Passive)	Dec-20	Emerging Markets	✓	*	*	*	N/A	N/A	N/A	N/A	*	86.1	Newly funded strategy
Axiom International	Mar-14	Emerging Markets	*	*	*	*	✓	✓	✓	✓	✓	2,708.7	On Watch in August 2020 due to benchmark change, Watch status extended in October 2020 due to CIO change, Watch status extended in October 2021 due to departure of President.
DFA Emerging Markets	Jul-14	Emerging Markets	✓	✓	✓	✓	✓	*	✓	*	✓	1,948.4	Performance compliant with LACERS' Manager Monitoring Policy
Wasatch	Dec-20	Emerging Markets Small Cap	✓	✓	✓	✓	N/A	N/A	N/A	N/A	✓	1,139.1	Newly funded strategy
Oberweis Asset Mgt.	Jan-14	Non-U.S. Developed	*	*	*	*	✓	✓	✓	✓	✓	2,856.8	Performance compliant with LACERS' Manager Monitoring Policy
Barrow, Hanley, Mewhinney & Strauss	Nov-13	Non-U.S. Developed	✓	✓	✓	✓	✓	✓	✓	✓	✓	2,351.1	On Watch in August 2020 due to organizational change, Watch status extended in August 2021 due to organizational change and AUM Strategy Concentration.
Lazard Asset Mgt.	Nov-13	Non-U.S. Developed	*	*	*	*	*	*	✓	✓	✓	2,946.6	On Watch since August 2021 due to performance.
MFS Institutional Advisors	Oct-13	Non-U.S. Developed	✓	✓	*	✓	*	*	✓	*	✓	2,419.3	Performance compliant with LACERS' Manager Monitoring Policy
SsgA (Passive)	Dec-20	Non-U.S. Developed Small Cap	*	*	*	*	N/A	N/A	N/A	N/A	*	69.7	Newly funded strategy
SsgA (Passive)	Aug-93	Non-U.S. Developed	✓	✓	✓	✓	✓	✓	✓	✓	✓✓	401.7	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, 2021.
- \* Where net of fees performance is not available gross of fee returns are evaluated.

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







# CORE FIXED INCOME MANAGER PERFORMANCE



**CORE FIXED INCOME (GROSS)**

	Allocation		Performance (%)						
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Core Fixed Income</b>	<b>3,749,597,741</b>	<b>100.00</b>	<b>0.05</b>	<b>-0.98</b>	<b>5.63</b>	<b>4.11</b>	<b>-</b>	<b>3.58</b>	<b>Jul-12</b>
Core Fixed Income Blend			0.01	-1.55	4.79	3.57	-	2.90	
Over/Under			0.04	0.57	0.84	0.54	-	0.68	
Loomis Sayles & Co. Core Fixed Income	655,877,457	17.49	0.40	-0.70	6.37	4.75	4.32	8.75	Jul-80
Loomis Custom Benchmark			0.01	-1.55	4.79	3.57	3.04	7.29	
Over/Under			0.39	0.85	1.58	1.18	1.28	1.46	
SSgA U.S. Aggregate Bond	1,156,385,658	30.84	-0.02	-1.55	4.82	3.60	-	3.16	Aug-14
Blmbg. U.S. Aggregate Index			0.01	-1.55	4.79	3.57	-	3.13	
Over/Under			-0.03	0.00	0.03	0.03	-	0.03	
Baird Advisors Core Fixed Income	646,249,316	17.24	0.01	-	-	-	-	0.24	Jul-21
Blmbg. U.S. Aggregate Index			0.01	-	-	-	-	0.06	
Over/Under			0.00	-	-	-	-	0.18	
Garcia Hamilton & Associates	427,862,571	11.41	0.03	-	-	-	-	0.00	Jul-21
Blmbg. U.S. Aggregate Index			0.01	-	-	-	-	0.06	
Over/Under			0.02	-	-	-	-	-0.06	
JP Morgan Investment Management	429,814,436	11.46	-0.06	-	-	-	-	0.11	Jul-21
Blmbg. U.S. Aggregate Index			0.01	-	-	-	-	0.06	
Over/Under			-0.07	-	-	-	-	0.05	
Income Research & Management	433,408,241	11.56	-0.13	-	-	-	-	0.06	Jul-21
Blmbg. U.S. Aggregate Index			0.01	-	-	-	-	0.06	
Over/Under			-0.14	-	-	-	-	0.00	

Baird Advisors Core Fixed Income, Garcia Hamilton & Associates, JP Morgan Investment Management and Income Research & Management have a mid-month inception date. Since inception return is calculated from the first full month of performance.

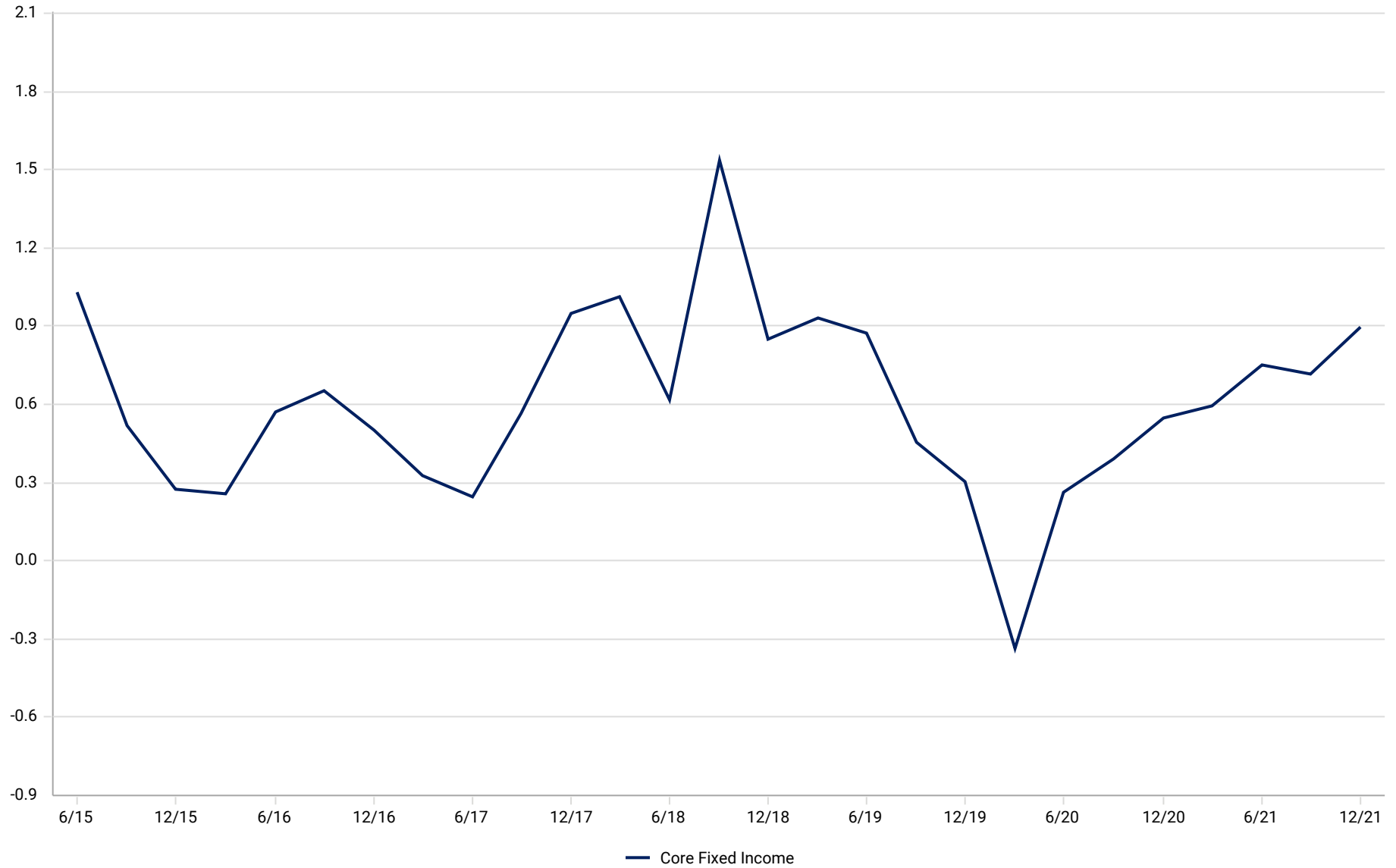
# CORE FIXED INCOME (NET)

	Allocation		Performance (%)						
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Core Fixed Income</b>	<b>3,749,597,741</b>	<b>100.00</b>	<b>0.02</b>	<b>-1.06</b>	<b>5.53</b>	<b>4.01</b>	<b>-</b>	<b>3.47</b>	<b>Jul-12</b>
Core Fixed Income Blend			0.01	-1.55	4.79	3.57	-	2.90	
Over/Under			0.01	0.49	0.74	0.44	-	0.57	
Loomis Sayles & Co. Core Fixed Income	655,877,457	17.49	0.33 (3)	-0.83 (22)	6.24 (5)	4.62 (3)	4.18 (5)	8.68 (-)	Jul-80
Loomis Custom Benchmark			0.01 (23)	-1.55 (54)	4.79 (77)	3.57 (74)	3.04 (70)	7.29 (-)	
Over/Under			0.32	0.72	1.45	1.05	1.14	1.39	
eV US Core Fixed Inc Median			-0.11	-1.46	5.21	3.81	3.25	-	
SSgA U.S. Aggregate Bond	1,156,385,658	30.84	-0.02 (32)	-1.57 (55)	4.78 (78)	3.56 (74)	-	3.12 (73)	Aug-14
Blmbg. U.S. Aggregate Index			0.01 (23)	-1.55 (54)	4.79 (77)	3.57 (74)	-	3.13 (73)	
Over/Under			-0.03	-0.02	-0.01	-0.01	-	-0.01	
eV US Core Fixed Inc Median			-0.11	-1.46	5.21	3.81	-	3.31	
Baird Advisors Core Fixed Income	646,249,316	17.24	-0.02 (32)	-	-	-	-	0.21 (15)	Jul-21
Blmbg. U.S. Aggregate Index			0.01 (23)	-	-	-	-	0.06 (29)	
Over/Under			-0.03	-	-	-	-	0.15	
eV US Core Fixed Inc Median			-0.11	-	-	-	-	-0.10	
Garcia Hamilton & Associates	427,862,571	11.41	0.00 (27)	-	-	-	-	-0.03 (41)	Jul-21
Blmbg. U.S. Aggregate Index			0.01 (23)	-	-	-	-	0.06 (29)	
Over/Under			-0.01	-	-	-	-	-0.09	
eV US Core Fixed Inc Median			-0.11	-	-	-	-	-0.10	
JP Morgan Investment Management	429,814,436	11.46	-0.09 (48)	-	-	-	-	0.08 (27)	Jul-21
Blmbg. U.S. Aggregate Index			0.01 (23)	-	-	-	-	0.06 (29)	
Over/Under			-0.10	-	-	-	-	0.02	
eV US Core Fixed Inc Median			-0.11	-	-	-	-	-0.10	
Income Research & Management	433,408,241	11.56	-0.16 (66)	-	-	-	-	0.03 (34)	Jul-21
Blmbg. U.S. Aggregate Index			0.01 (23)	-	-	-	-	0.06 (29)	
Over/Under			-0.17	-	-	-	-	-0.03	
eV US Core Fixed Inc Median			-0.11	-	-	-	-	-0.10	

Baird Advisors Core Fixed Income, Garcia Hamilton & Associates, JP Morgan Investment Management and Income Research & Management have a mid-month inception date. Since inception return is calculated from the first full month of performance.

# CORE FIXED INCOME 3 YEAR INFORMATION RATIO

## Information Ratio



# INVESTMENT MANAGER REPORT CARD

## CORE FIXED INCOME

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		
Loomis Sayles	Jul-80	Core	✓	✓	✓	✓	✓	✓	✓	✓	✓✓	1,062.4	Performance compliant with LACERS' Manager Monitoring Policy
Baird Advisors	Jul-21	Core	*	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓	23.5	Newly funded strategy
Garcia Hamilton	Jul-21	Core	*	✓	N/A	N/A	N/A	N/A	N/A	N/A	*	12.7	Newly funded strategy
IR&M	Jul-21	Core	*	*	N/A	N/A	N/A	N/A	N/A	N/A	*	N/A	Newly funded strategy
J.P. Morgan	Jul-21	Core	*	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓	14.2	Newly funded strategy
SSgA (Passive)	Aug-14	Core	*	✓	*	*	*	*	*	*	*	243.1	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.

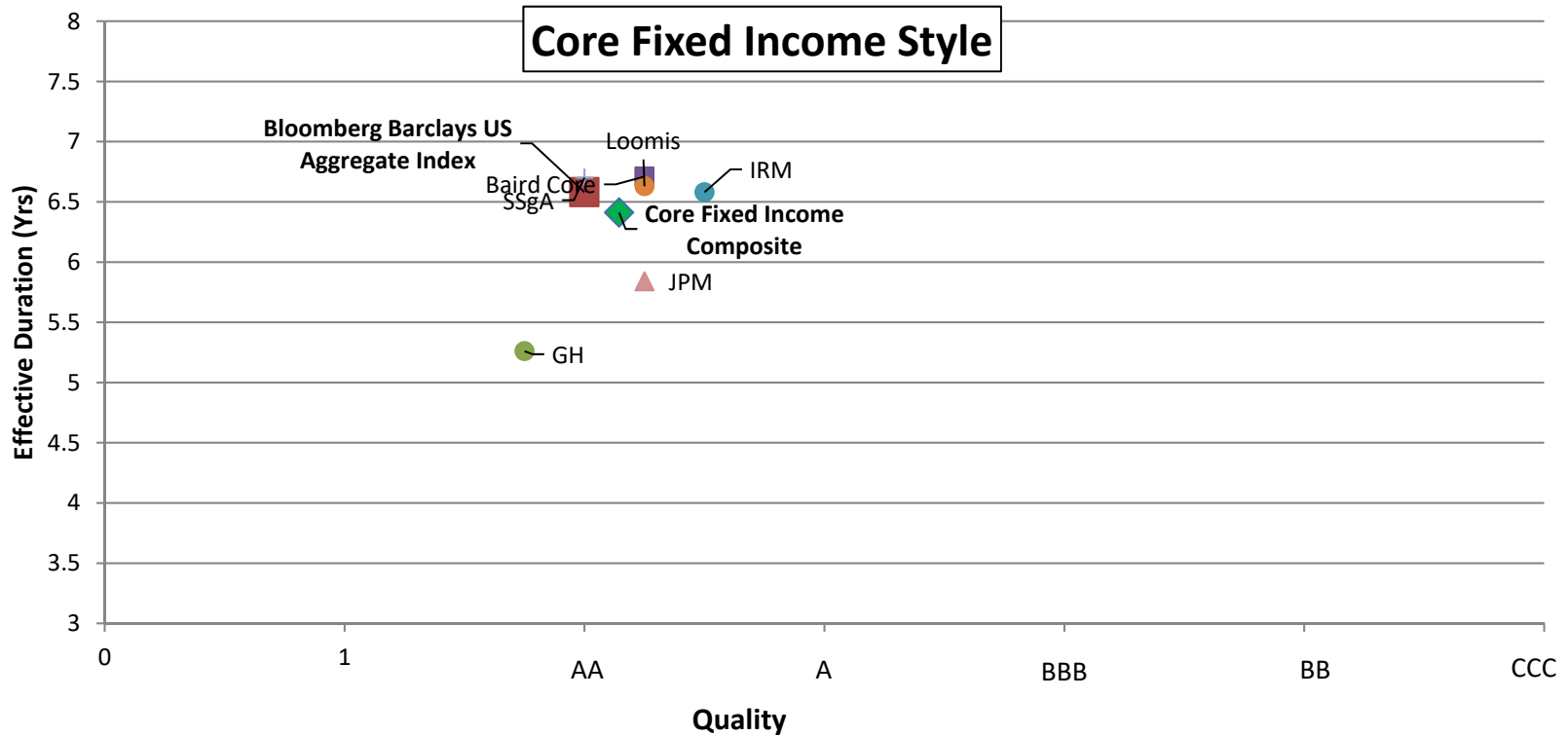
- Annual Management Fee Paid as of fiscal year ending June 30, 2021.
- \* Where net of fees performance is not available gross of fee returns are evaluated.

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



# CORE FIXED INCOME

## STYLE ANALYSIS



- LACERS Core Fixed Income Composite 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.





# CREDIT OPPORTUNITIES MANAGER PERFORMANCE

# Los Angeles City Employees' Retirement System-LACERS Master Trust

## CREDIT OPPORTUNITIES (GROSS)

December 31, 2021

	Allocation		Performance (%)						
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Credit Opportunities</b>	<b>1,899,455,260</b>	<b>100.00</b>	<b>-0.53</b>	<b>0.46</b>	<b>6.51</b>	<b>5.27</b>	<b>-</b>	<b>5.23</b>	<b>Jul-13</b>
<i>Credit Opportunities Blend</i>			<u>-0.49</u>	<u>1.03</u>	<u>7.21</u>	<u>5.37</u>	<u>-</u>	<u>5.58</u>	
Over/Under			-0.04	-0.57	-0.70	-0.10	-	-0.35	
PGIM Blended	493,301,705	25.97	-1.38	-	-	-	-	-3.92	Feb-21
<i>50% JPM EMBI Global Diversified/ 50% JPM GBI-EM Global Diversified</i>			<u>-1.49</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-4.28</u>	
Over/Under			0.11	-	-	-	-	0.36	
Wellington	489,460,444	25.77	-1.51	-	-	-	-	-3.75	Feb-21
<i>50% JPM EMBI Global Diversified/ 50% JPM GBI-EM Global Diversified</i>			<u>-1.49</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-4.28</u>	
Over/Under			-0.02	-	-	-	-	0.53	
Bain Capital Senior Loan Fund, LP*	245,174,066	12.91	1.01	7.27	6.65	5.02	-	4.69	Jul-15
<i>Credit Suisse Leveraged Loan Index</i>			<u>0.71</u>	<u>5.40</u>	<u>5.43</u>	<u>4.32</u>	<u>-</u>	<u>4.30</u>	
Over/Under			0.30	1.87	1.22	0.70	-	0.39	
DDJ Capital Management	300,870,170	15.84	-0.03	5.77	-	-	-	8.65	Nov-20
<i>50% BBgBarc US High Yield 2% Issuer Cap / 50% Credit Suisse Leveraged Loan Index</i>			<u>0.70</u>	<u>5.34</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>8.74</u>	
Over/Under			-0.73	0.43	-	-	-	-0.09	
Loomis Sayles & Co. High Yield	303,113,679	15.96	0.41	4.57	-	-	-	9.93	Nov-20
<i>Blmbg. U.S. High Yield - 2% Issuer Cap</i>			<u>0.69</u>	<u>5.26</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>9.77</u>	
Over/Under			-0.28	-0.69	-	-	-	0.16	
Benefit Street Partners LLC*	42,336,190	2.23	3.64	3.72	-	-	-	3.43	Dec-20
<i>Credit Suisse Leveraged Loan Qtr Lag</i>			<u>1.13</u>	<u>8.46</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>8.47</u>	
Over/Under			2.51	-4.74	-	-	-	-5.04	
Crescent*	199,006	0.01	-	-	-	-	-	0.00	Dec-21
<i>Credit Suisse Leveraged Loan Qtr Lag</i>			<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>0.65</u>	
Over/Under			-	-	-	-	-	-0.65	
Monroe*	25,000,000	1.32	-	-	-	-	-	0.00	Dec-21
<i>Credit Suisse Leveraged Loan Qtr Lag</i>			<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>0.65</u>	
Over/Under			-	-	-	-	-	-0.65	

- Credit Opportunities Blend = 20.7% Bloomberg US High Yield 2% Issuer Cap + 20.7% Credit Suisse Leveraged Loan Index + 55% Emerging Markets Debt Blend + 3.6% Credit Suisse Leveraged Loan Index (One Quarter Lagged).

PGIM Blended, Wellington, DDJ Capital Management, Loomis Sayles & Co and High Yield have a mid-month inception date. Since inception return is calculated from the first full month of performance.

Benchmark composition as of 7/1/2021 unless otherwise noted.

eV= eVestment Alliance

\* Net of fee return due to investment vehicle.



# CREDIT OPPORTUNITIES (NET)

	Allocation		Performance (%)						
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Credit Opportunities</b>	<b>1,899,455,260</b>	<b>100.00</b>	<b>-0.63</b>	<b>0.18</b>	<b>6.20</b>	<b>4.95</b>	<b>-</b>	<b>4.90</b>	<b>Jul-13</b>
<i>Credit Opportunities Blend</i>			<u>-0.49</u>	<u>1.03</u>	<u>7.21</u>	<u>5.37</u>	<u>-</u>	<u>5.58</u>	
Over/Under			-0.14	-0.85	-1.01	-0.42	-	-0.68	
PGIM Blended	493,301,705	25.97	-1.46 (53)	-	-	-	-	-4.12 (69)	Feb-21
<i>50% JPM EMBI Global Diversified/ 50% JPM GBI-EM Global Diversified</i>			<u>-1.49</u> (54)	-	-	-	-	<u>-4.28</u> (71)	
Over/Under			0.03	-	-	-	-	0.16	
<i>eV All Emg Mkts Fixed Inc Median</i>			-1.43	-	-	-	-	-1.74	
Wellington	489,460,444	25.77	-1.63 (58)	-	-	-	-	-4.04 (69)	Feb-21
<i>50% JPM EMBI Global Diversified/ 50% JPM GBI-EM Global Diversified</i>			<u>-1.49</u> (54)	-	-	-	-	<u>-4.28</u> (71)	
Over/Under			-0.14	-	-	-	-	0.24	
<i>eV All Emg Mkts Fixed Inc Median</i>			-1.43	-	-	-	-	-1.74	
Bain Capital Senior Loan Fund, LP	245,174,066	12.91	1.01 (7)	7.27 (9)	6.65 (2)	5.02 (7)	-	4.69 (10)	Jul-15
<i>Credit Suisse Leveraged Loan Index</i>			<u>0.71</u> (36)	<u>5.40</u> (33)	<u>5.43</u> (30)	<u>4.32</u> (19)	-	<u>4.30</u> (22)	
Over/Under			0.30	1.87	1.22	0.70	-	0.39	
<i>eV US Float-Rate Bank Loan Fixed Inc Median</i>			0.63	4.74	4.91	3.77	-	3.80	
DDJ Capital Management	300,870,170	15.84	-0.15 (98)	5.31 (43)	-	-	-	8.24 (69)	Nov-20
<i>50% BBgBarc US High Yield 2% Issuer Cap / 50% Credit Suisse Leveraged Loan Index</i>			<u>0.70</u> (44)	<u>5.34</u> (43)	-	-	-	<u>8.74</u> (59)	
Over/Under			-0.85	-0.03	-	-	-	-0.50	
<i>eV US High Yield Fixed Inc Median</i>			0.63	5.05	-	-	-	9.14	
Loomis Sayles & Co. High Yield	303,113,679	15.96	0.23 (90)	4.24 (73)	-	-	-	9.63 (41)	Nov-20
<i>Blmbg. U.S. High Yield - 2% Issuer Cap</i>			<u>0.69</u> (46)	<u>5.26</u> (44)	-	-	-	<u>9.77</u> (40)	
Over/Under			-0.46	-1.02	-	-	-	-0.14	
<i>eV US High Yield Fixed Inc Median</i>			0.63	5.05	-	-	-	9.14	
Benefit Street Partners LLC	42,336,190	2.23	3.64	3.72	-	-	-	3.43	Dec-20
<i>Credit Suisse Leveraged Loan Qtr Lag</i>			<u>1.13</u>	<u>8.46</u>	-	-	-	<u>8.47</u>	
Over/Under			2.51	-4.74	-	-	-	-5.04	
Crescent	199,006	0.01	-	-	-	-	-	0.00	Dec-21
<i>Credit Suisse Leveraged Loan Qtr Lag</i>			-	-	-	-	-	<u>0.65</u>	
Over/Under			-	-	-	-	-	-0.65	
Monroe	25,000,000	1.32	-	-	-	-	-	0.00	Dec-21
<i>Credit Suisse Leveraged Loan Qtr Lag</i>			-	-	-	-	-	<u>0.65</u>	
Over/Under			-	-	-	-	-	-0.65	

- Credit Opportunities Blend = 20.7% Bloomberg US High Yield 2% Issuer Cap + 20.7% Credit Suisse Leveraged Loan Index + 55% Emerging Markets Debt Blend + 3.6% Credit Suisse Leveraged Loan Index (One Quarter Lagged).

- PGIM Blended, Wellington, DDJ Capital Management, Loomis Sayles & Co and High Yield have a mid-month inception date. Since inception return is calculated from the first full month of performance.

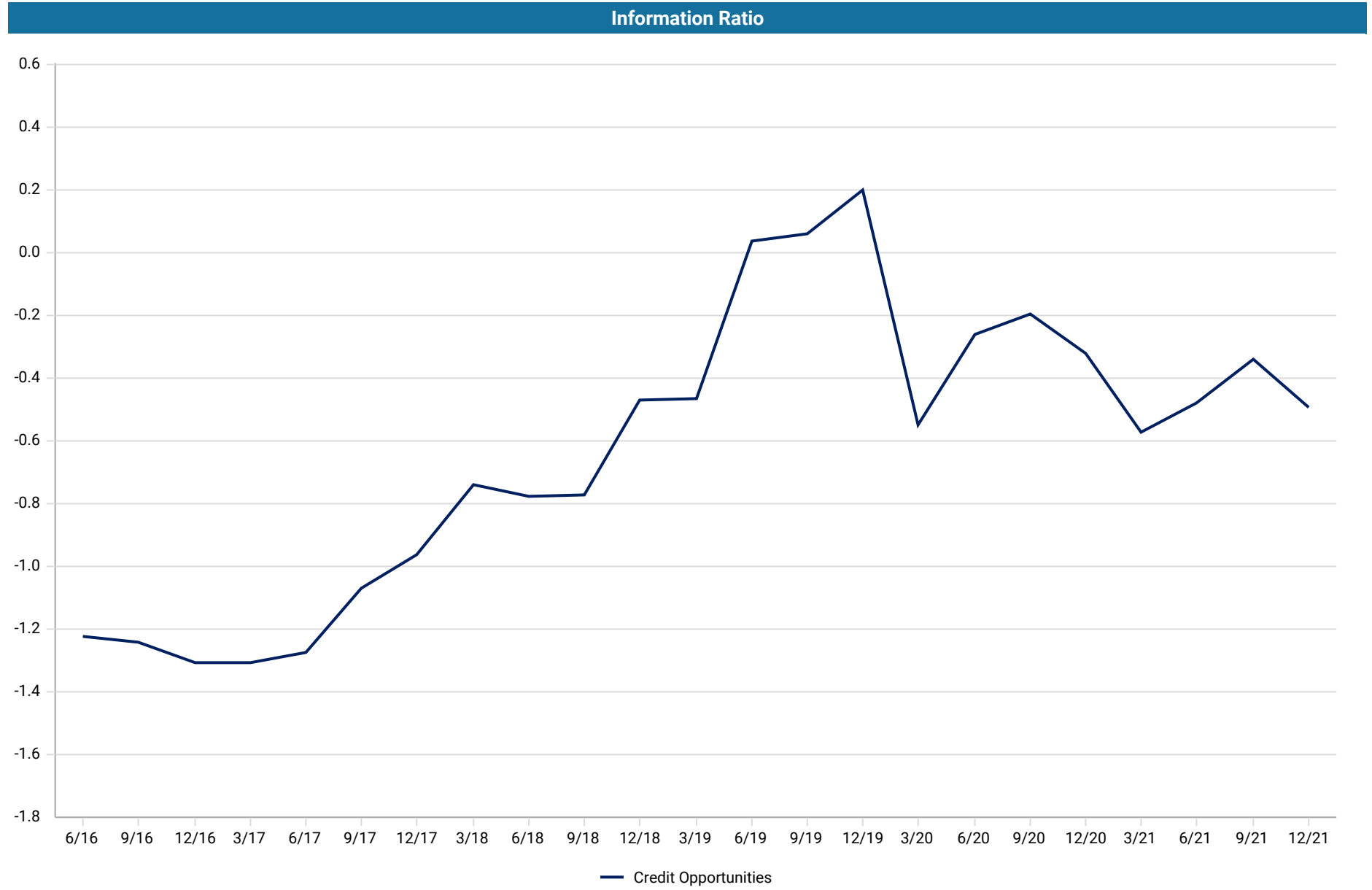
Benchmark composition as of 7/1/2021 unless otherwise noted.

eV= eVestment Alliance





# CREDIT OPPORTUNITIES ROLLING 3 YEAR INFORMATION RATIO



# INVESTMENT MANAGER REPORT CARD

## CREDIT OPPORTUNITIES

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			
PGIM	Feb-21	Emerging Market Debt Blended	✓	*	N/A	N/A	N/A	N/A	N/A	N/A	✓	612.8	Newly funded strategy
Wellington	Feb-21	Emerging Market Debt Blended	*	*	N/A	N/A	N/A	N/A	N/A	N/A	✓	882.3	Newly funded strategy
Bain	Jun-15	Bank Loans	✓	✓	✓	✓	✓	✓	✓	✓	✓	876.9	Performance compliant with LACERS' Manager Monitoring Policy
Benefit Street Partners	Dec-20	Private Credit	✓	N/A	*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Newly funded strategy
Crescent	Dec-21	Private Credit	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Newly funded strategy
Monroe	Dec-21	Private Credit	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Newly funded strategy
Loomis Sayles	Nov-20	High Yield	*	*	*	*	N/A	N/A	N/A	N/A	*	654.2	Newly funded strategy
DDJ	Nov-20	High Yield/Bank Loan	*	*	*	✓	N/A	N/A	N/A	N/A	*	861.6	On Watch since December 2021 due to organizational change

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, 2021.
- \* Where net of fees performance is not available gross of fee returns are evaluated.

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





# REAL ASSETS MANAGER PERFORMANCE

**REAL ASSETS (GROSS)**

	Allocation		Performance (%)						
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Real Assets</b>	<b>2,813,888,691</b>	<b>100.00</b>	<b>5.42</b>	<b>14.72</b>	<b>8.65</b>	<b>6.88</b>	<b>7.87</b>	<b>6.48</b>	<b>Dec-94</b>
Real Assets Policy Benchmark			<u>7.75</u>	<u>18.81</u>	<u>10.74</u>	<u>9.27</u>	<u>7.75</u>	<u>8.25</u>	
Over/Under			-2.33	-4.09	-2.09	-2.39	0.12	-1.77	
<b>Public Real Assets</b>	<b>1,827,915,707</b>	<b>64.96</b>	<b>5.49</b>	<b>16.29</b>	<b>11.57</b>	<b>6.87</b>	<b>-</b>	<b>4.59</b>	<b>Jul-14</b>
Public Real Assets Blend			<u>7.48</u>	<u>21.34</u>	<u>11.89</u>	<u>6.51</u>	<u>-</u>	<u>3.18</u>	
Over/Under			-1.99	-5.05	-0.32	0.36	-	1.41	
<b>TIPS</b>	<b>1,306,837,130</b>	<b>46.44</b>	<b>2.11</b>	<b>5.84</b>	<b>8.79</b>	<b>5.63</b>	<b>-</b>	<b>3.83</b>	<b>Aug-14</b>
Blmbg. U.S. TIPS			<u>2.36</u>	<u>5.96</u>	<u>8.44</u>	<u>5.34</u>	<u>-</u>	<u>3.71</u>	
Over/Under			-0.25	-0.12	0.35	0.29	-	0.12	
DFA US TIPS	1,306,837,130	46.44	2.11	5.84	8.79	5.63	-	3.93	Aug-14
Blmbg. U.S. TIPS			<u>2.36</u>	<u>5.96</u>	<u>8.44</u>	<u>5.34</u>	<u>-</u>	<u>3.71</u>	
Over/Under			-0.25	-0.12	0.35	0.29	-	0.22	
<b>REITS</b>	<b>521,078,573</b>	<b>18.52</b>	<b>15.06</b>	<b>42.61</b>	<b>22.86</b>	<b>14.21</b>	<b>-</b>	<b>12.92</b>	<b>May-15</b>
FTSE NAREIT All Equity REITs			<u>16.17</u>	<u>41.30</u>	<u>19.93</u>	<u>12.46</u>	<u>-</u>	<u>11.23</u>	
Over/Under			-1.11	1.31	2.93	1.75	-	1.69	
CenterSquare US Real Estate	521,078,573	18.52	15.06	42.61	22.86	14.21	-	12.92	May-15
FTSE NAREIT All Equity REITs			<u>16.17</u>	<u>41.30</u>	<u>19.93</u>	<u>12.46</u>	<u>-</u>	<u>11.23</u>	
Over/Under			-1.11	1.31	2.93	1.75	-	1.69	
<b>Private Real Estate</b>	<b>967,932,463</b>	<b>34.40</b>	<b>5.36</b>	<b>13.03</b>	<b>4.75</b>	<b>6.24</b>	<b>8.41</b>	<b>5.77</b>	<b>Jul-01</b>
Real Estate Blend			<u>8.18</u>	<u>23.13</u>	<u>10.07</u>	<u>9.57</u>	<u>10.99</u>	<u>9.39</u>	
Over/Under			-2.82	-10.10	-5.32	-3.33	-2.58	-3.62	
<b>Timber</b>	<b>18,040,520</b>	<b>0.64</b>	<b>0.43</b>	<b>3.16</b>	<b>2.82</b>	<b>2.71</b>	<b>5.23</b>	<b>8.56</b>	<b>Oct-99</b>

1 - Real Assets Policy Benchmark = 41.67% Bloomberg US TIPS Index + 25% FTSE NAREIT ALL Equity REIT Index + 33.33% Real Estate Blended Benchmark

2 - Public Real Assets Blend = 62.5% Bloomberg US TIPS Index + 37.5% FTSE NAREIT ALL Equity REIT Index

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

4 - 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 Inception - 6/30/2012

Benchmark composition as of 7/1/2021 unless otherwise noted.

DFA and CenterSquare have mid-month inception dates. Since inception return is calculated from the first full month of performance.

# REAL ASSETS (NET)

	Allocation		Performance (%)						
	Market Value (\$)	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Real Assets</b>	<b>2,813,888,691</b>	<b>100.00</b>	<b>5.39</b>	<b>14.58</b>	<b>8.49</b>	<b>6.72</b>	<b>7.72</b>	<b>5.42</b>	<b>Jun-01</b>
Real Assets Policy Benchmark			<u>7.75</u>	<u>18.81</u>	<u>10.74</u>	<u>9.27</u>	<u>7.75</u>	<u>6.92</u>	
Over/Under			-2.36	-4.23	-2.25	-2.55	-0.03	-1.50	
<b>Public Real Assets</b>	<b>1,827,915,707</b>	<b>64.96</b>	<b>5.46</b>	<b>16.10</b>	<b>11.37</b>	<b>6.65</b>	<b>-</b>	<b>4.39</b>	<b>Jul-14</b>
Public Real Assets Blend			<u>7.48</u>	<u>21.34</u>	<u>11.89</u>	<u>6.51</u>	<u>-</u>	<u>3.18</u>	
Over/Under			-2.02	-5.24	-0.52	0.14	-	1.21	
<b>TIPS</b>	<b>1,306,837,130</b>	<b>46.44</b>	<b>2.10</b>	<b>5.79</b>	<b>8.74</b>	<b>5.58</b>	<b>-</b>	<b>3.77</b>	<b>Aug-14</b>
Bmbg. U.S. TIPS			<u>2.36</u>	<u>5.96</u>	<u>8.44</u>	<u>5.34</u>	<u>-</u>	<u>3.71</u>	
Over/Under			-0.26	-0.17	0.30	0.24	-	0.06	
DFA US TIPS	1,306,837,130	46.44	2.10 (55)	5.79 (32)	8.74 (13)	5.58 (12)	-	3.87 (22)	Aug-14
Bmbg. U.S. TIPS			<u>2.36</u> (8)	<u>5.96</u> (23)	<u>8.44</u> (36)	<u>5.34</u> (46)	<u>-</u>	<u>3.71</u> (25)	
Over/Under			-0.26	-0.17	0.30	0.24	-	0.16	
eV US TIPS / Inflation Fixed Inc Median			2.15	5.60	8.33	5.28	-	3.54	
<b>REITS</b>	<b>521,078,573</b>	<b>18.52</b>	<b>14.96</b>	<b>42.12</b>	<b>22.39</b>	<b>13.75</b>	<b>-</b>	<b>12.46</b>	<b>May-15</b>
FTSE NAREIT All Equity REITs			<u>16.17</u>	<u>41.30</u>	<u>19.93</u>	<u>12.46</u>	<u>-</u>	<u>11.23</u>	
Over/Under			-1.21	0.82	2.46	1.29	-	1.23	
CenterSquare US Real Estate	521,078,573	18.52	14.96 (61)	42.12 (41)	22.39 (25)	13.75 (18)	-	12.46 (13)	May-15
FTSE NAREIT All Equity REITs			<u>16.17</u> (32)	<u>41.30</u> (59)	<u>19.93</u> (55)	<u>12.46</u> (40)	<u>-</u>	<u>11.23</u> (37)	
Over/Under			-1.21	0.82	2.46	1.29	-	1.23	
eV US REIT Median			15.54	41.94	20.33	12.08	-	10.67	
<b>Private Real Estate</b>	<b>967,932,463</b>	<b>34.40</b>	<b>5.36</b>	<b>13.03</b>	<b>4.75</b>	<b>6.24</b>	<b>8.41</b>	<b>5.77</b>	<b>Jul-01</b>
Real Estate Blend			<u>8.18</u>	<u>23.13</u>	<u>10.07</u>	<u>9.57</u>	<u>10.99</u>	<u>9.39</u>	
Over/Under			-2.82	-10.10	-5.32	-3.33	-2.58	-3.62	
<b>Timber</b>	<b>18,040,520</b>	<b>0.64</b>	<b>0.43</b>	<b>3.16</b>	<b>2.82</b>	<b>2.71</b>	<b>5.23</b>	<b>7.57</b>	<b>Sep-01</b>

1 - Real Assets Policy Benchmark = 41.67% Bloomberg US TIPS Index + 25% FTSE NAREIT ALL Equity REIT Index + 33.33% Real Estate Blended Benchmark

2 - Public Real Assets Blend = 62.5% Bloomberg US TIPS Index + 37.5% FTSE NAREIT ALL Equity REIT Index

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Benchmark composition as of 7/1/2021 unless otherwise noted.

DFA and CenterSquare have mid-month inception dates. Since inception return is calculated from the first full month of performance.

# INVESTMENT MANAGER REPORT CARD

## REAL ASSETS

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	x	x	x	✓	✓	✓	✓	✓	✓	420.3	Performance compliant with LACERS' Manager Monitoring Policy
CenterSquare	Apr-15	REITS	x	x	✓	✓	✓	✓	✓	✓	✓	1,100.5	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, 2021.
- \* Where net of fees performance is not available gross of fee returns are evaluated.

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





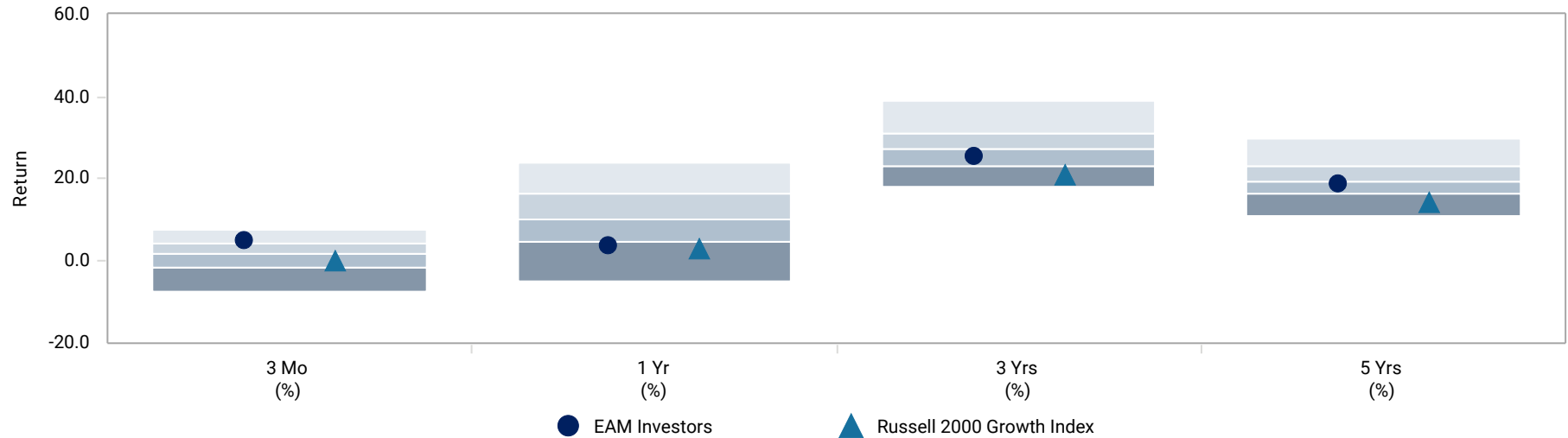


# U.S. EQUITY MANAGER PERFORMANCE

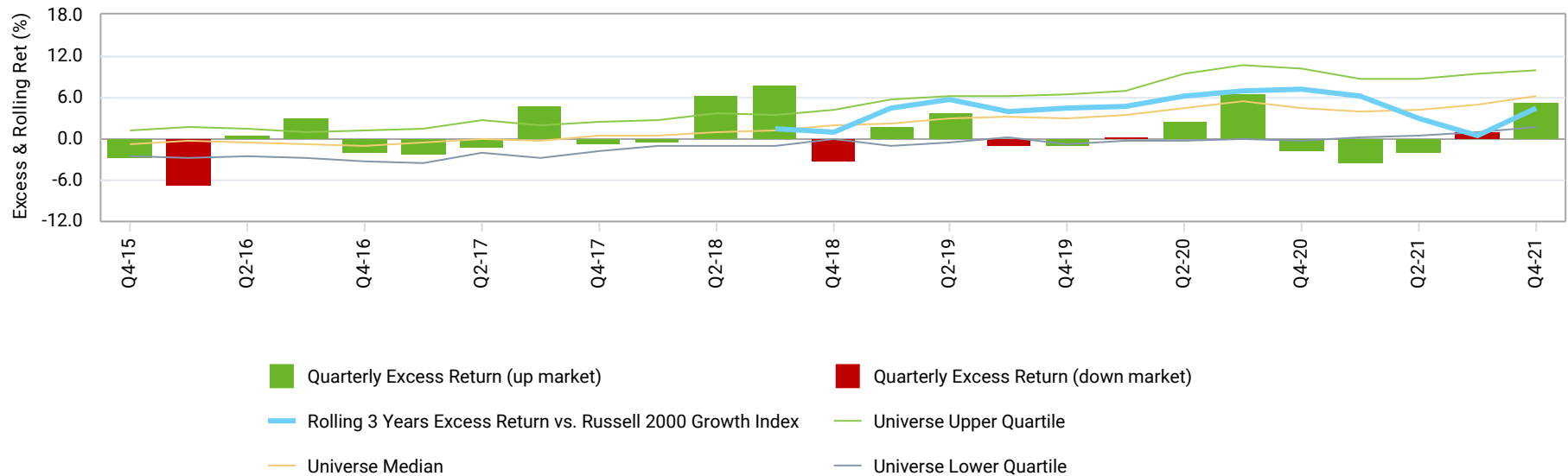


# EAM INVESTORS

## eV US Small Cap Growth Equity (net of fees)



## Quarter Excess Return with a Rolling 3 Years Excess Return over Since Inception Ending December 31, 2021



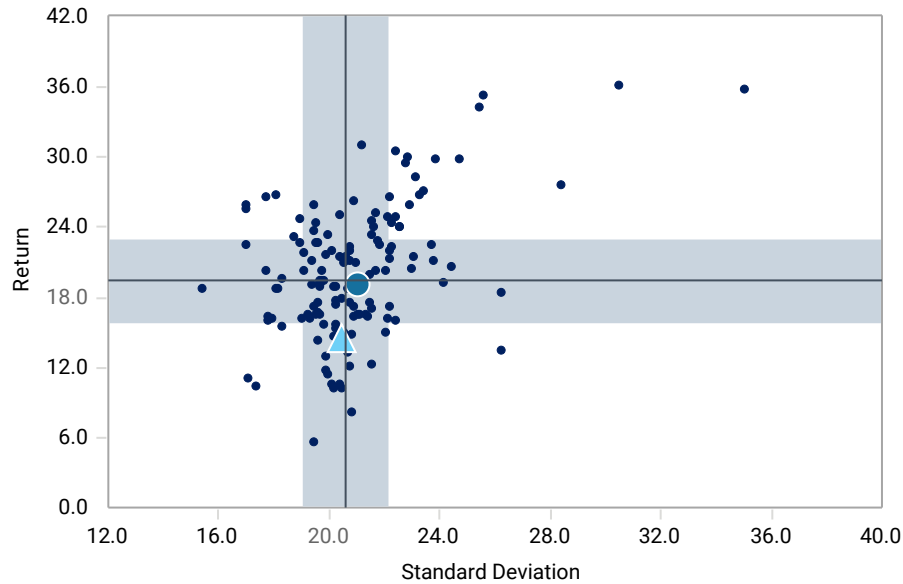
- Quarterly Excess Return (up market)
- Quarterly Excess Return (down market)
- Rolling 3 Years Excess Return vs. Russell 2000 Growth Index
- Universe Upper Quartile
- Universe Median
- Universe Lower Quartile





# EAM INVESTORS

5 Years Return vs. Standard Deviation



● EAM Investors

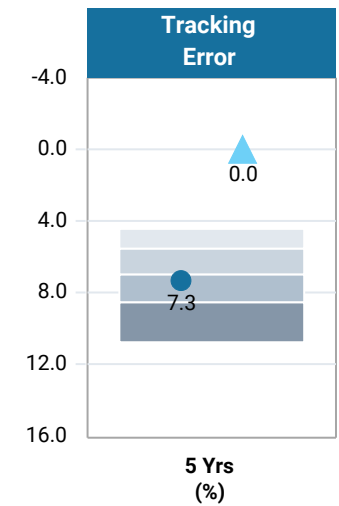
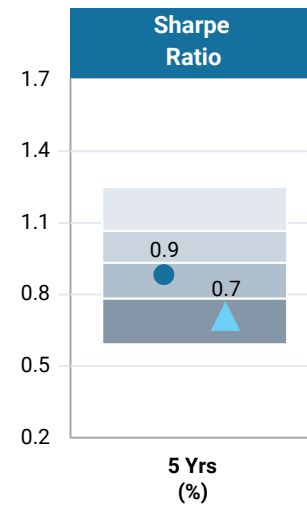
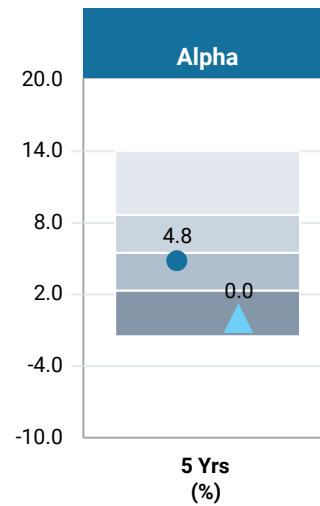
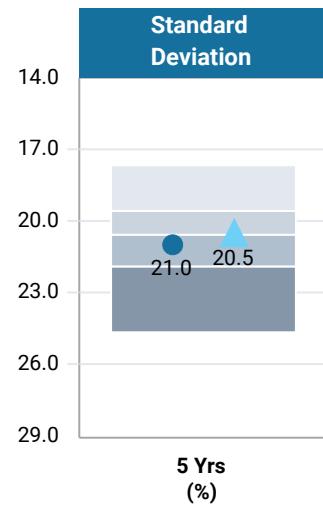
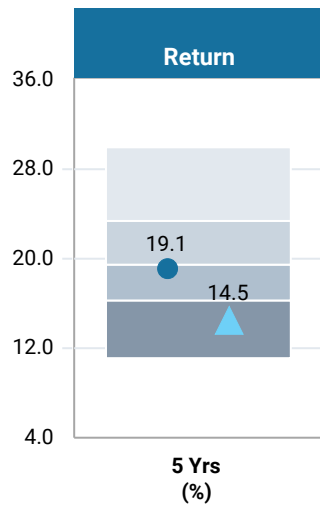
▲ Russell 2000 Growth Index

Rolling 3 Years Style Map



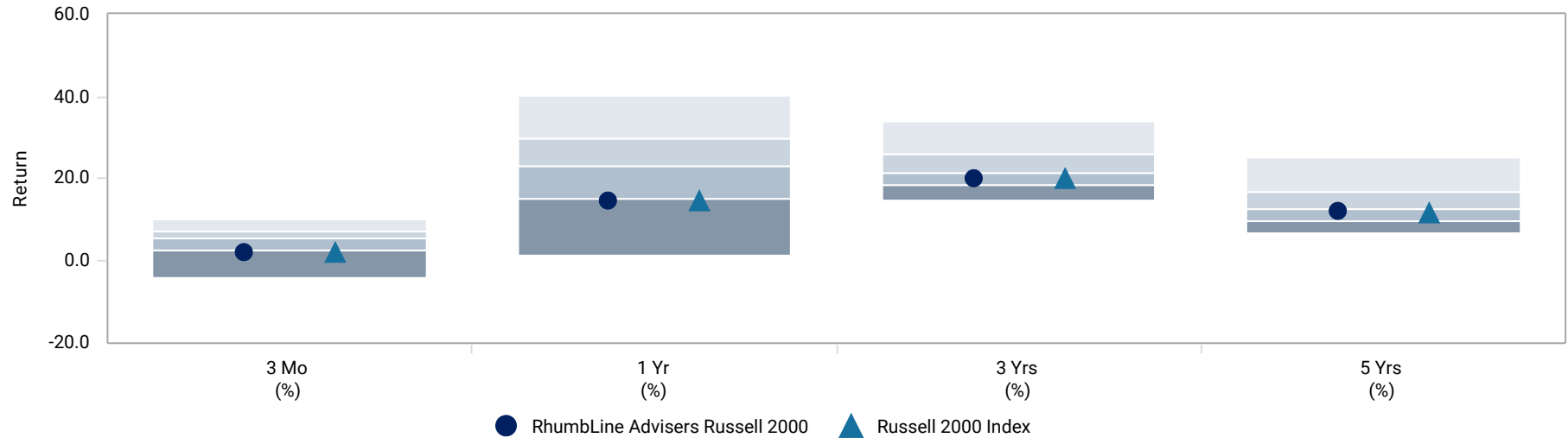
● EAM Investors

▲ Russell 2000 Growth Index

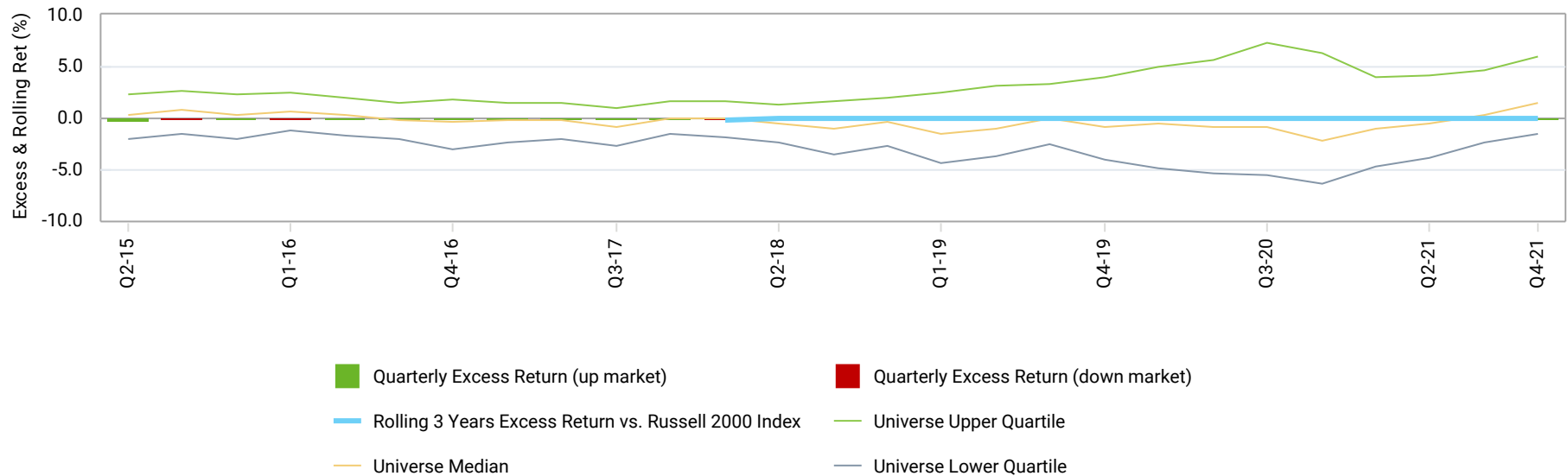


# RHUMBLINE ADVISORS RUSSELL 2000

## eV US Small Cap Equity (net of fees)

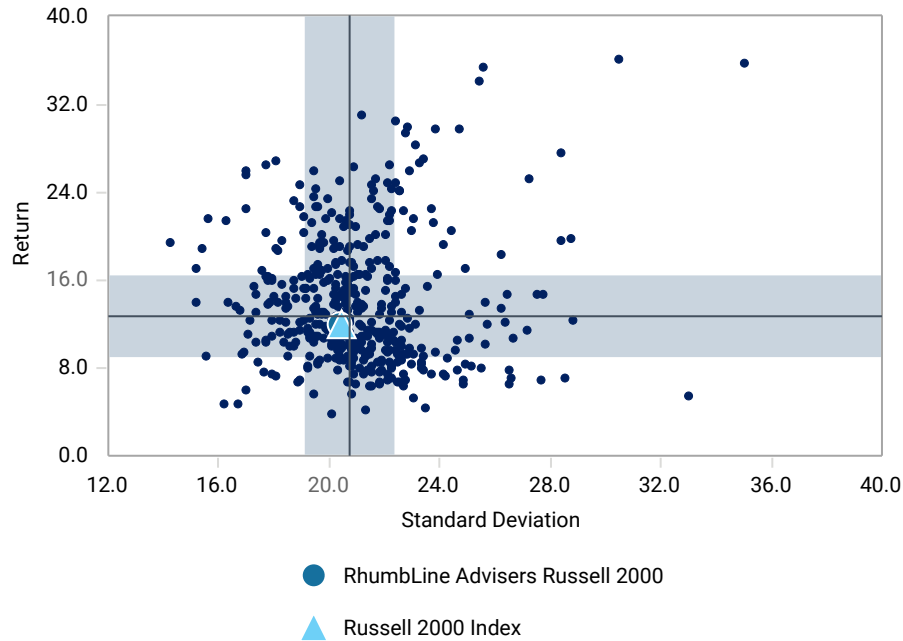


## Quarter Excess Return with a Rolling 3 Years Excess Return over Since Inception Ending December 31, 2021

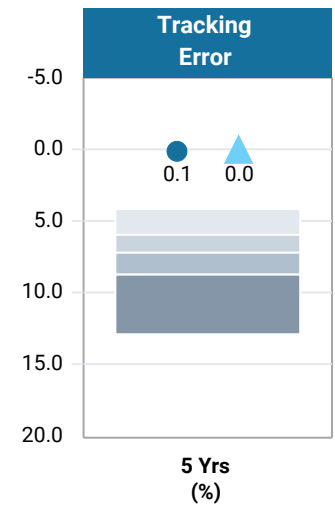
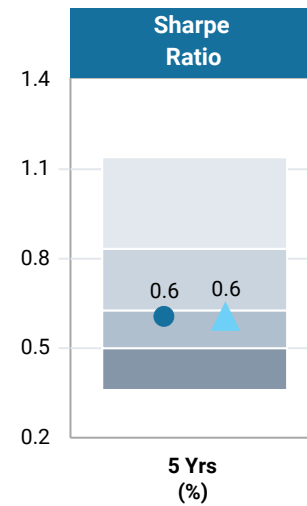
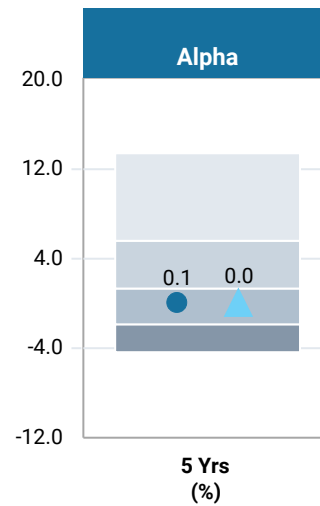
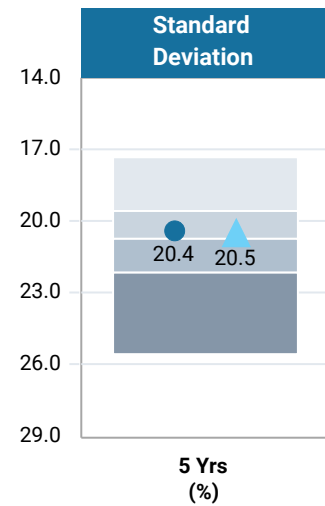
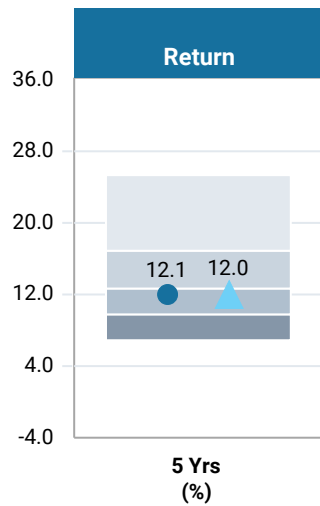
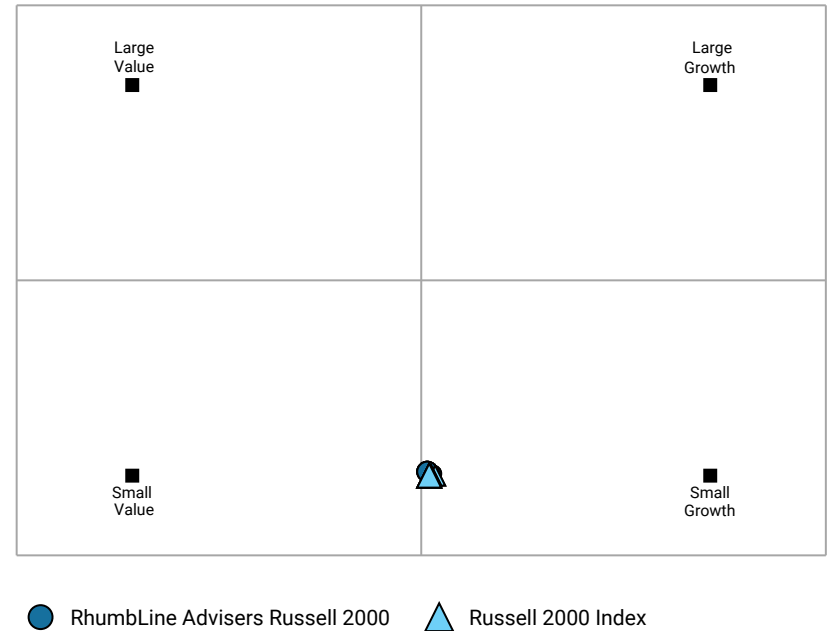


# RHUMBLINE ADVISORS RUSSELL 2000

5 Years Return vs. Standard Deviation



Rolling 3 Years Style Map

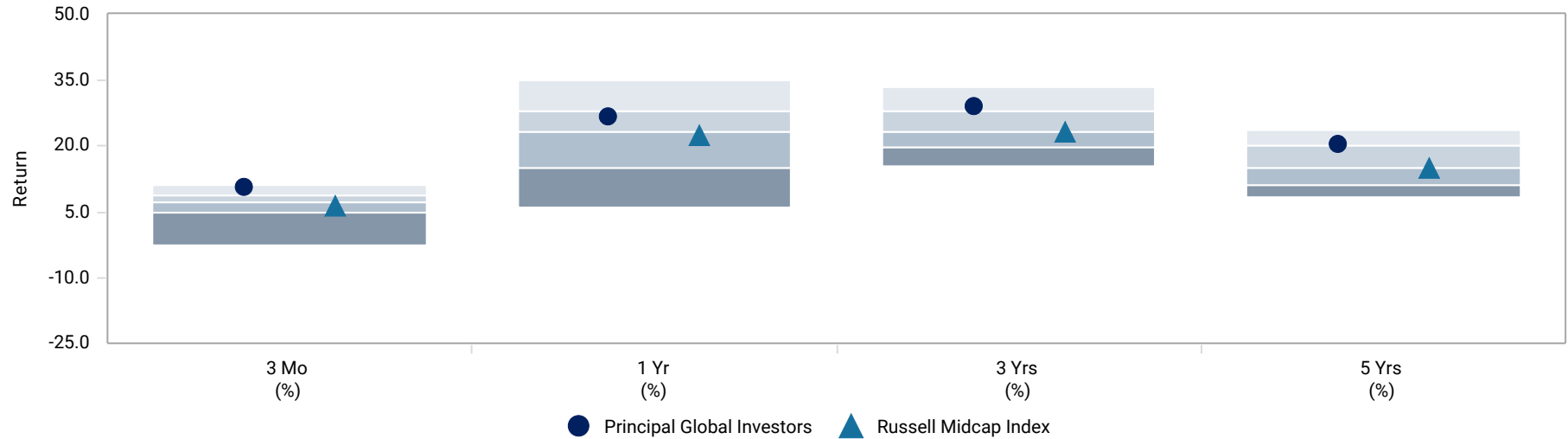


# Los Angeles City Employees' Retirement System-LACERS Master Trust

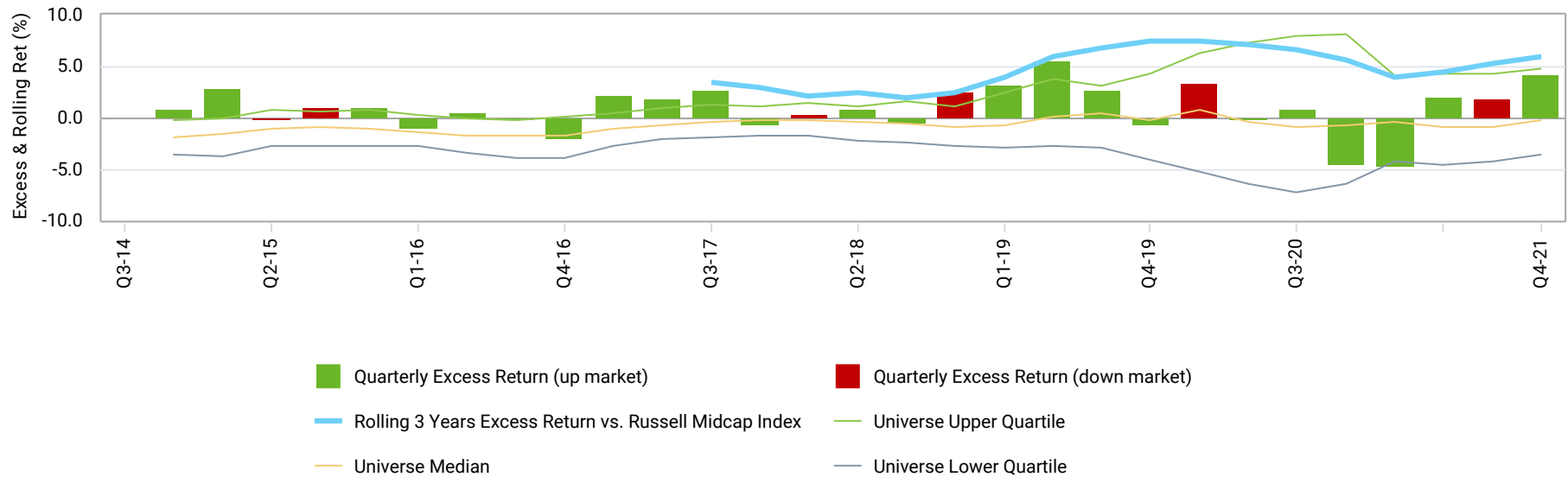
## PRINCIPAL GLOBAL INVESTORS

December 31, 2021

### eV US Mid Cap Equity (net of fees)



### Quarter Excess Return with a Rolling 3 Years Excess Return over Since Inception Ending December 31, 2021

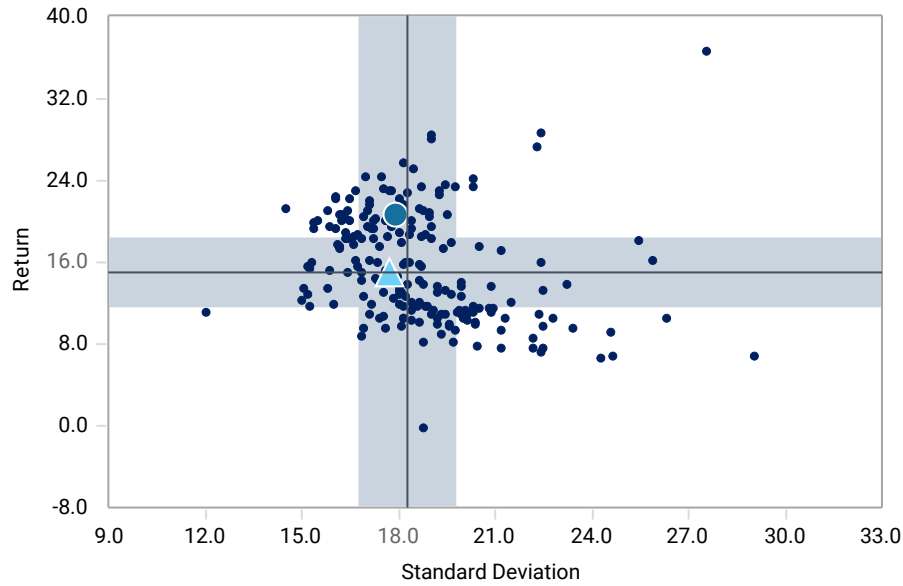


# Los Angeles City Employees' Retirement System-LACERS Master Trust

## PRINCIPAL GLOBAL INVESTORS

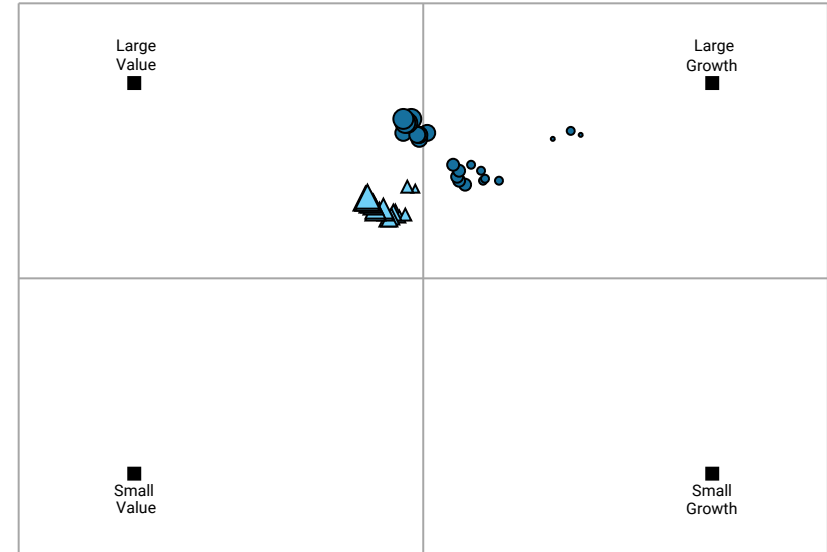
December 31, 2021

5 Years Return vs. Standard Deviation

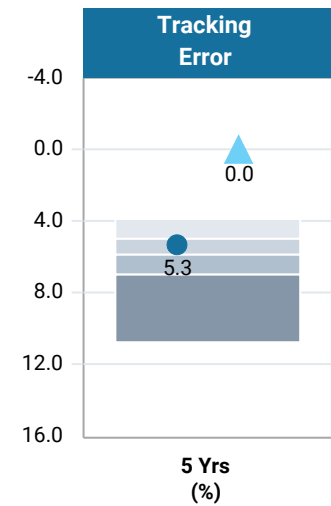
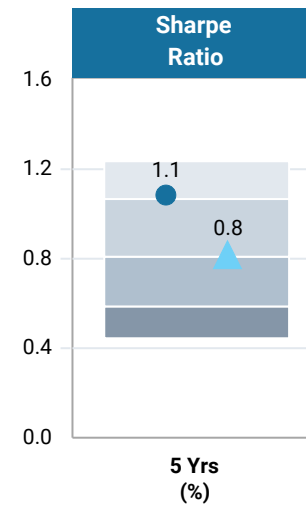
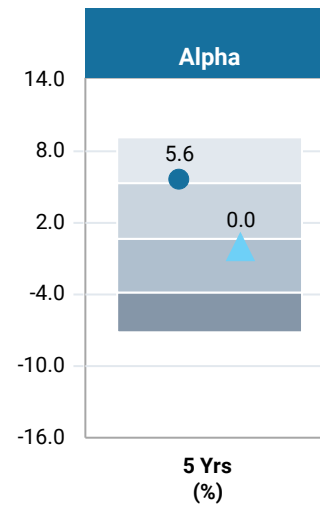
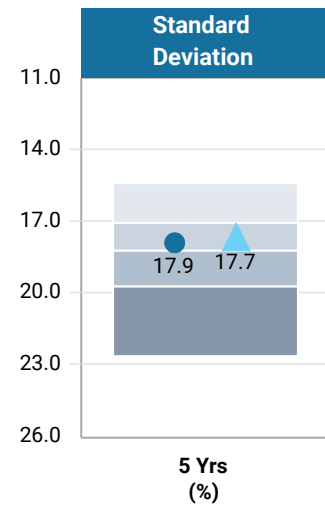
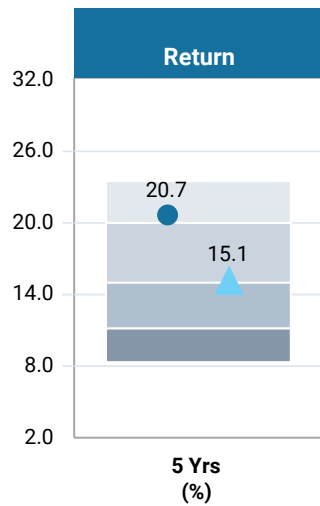


● Principal Global Investors ▲ Russell Midcap Index

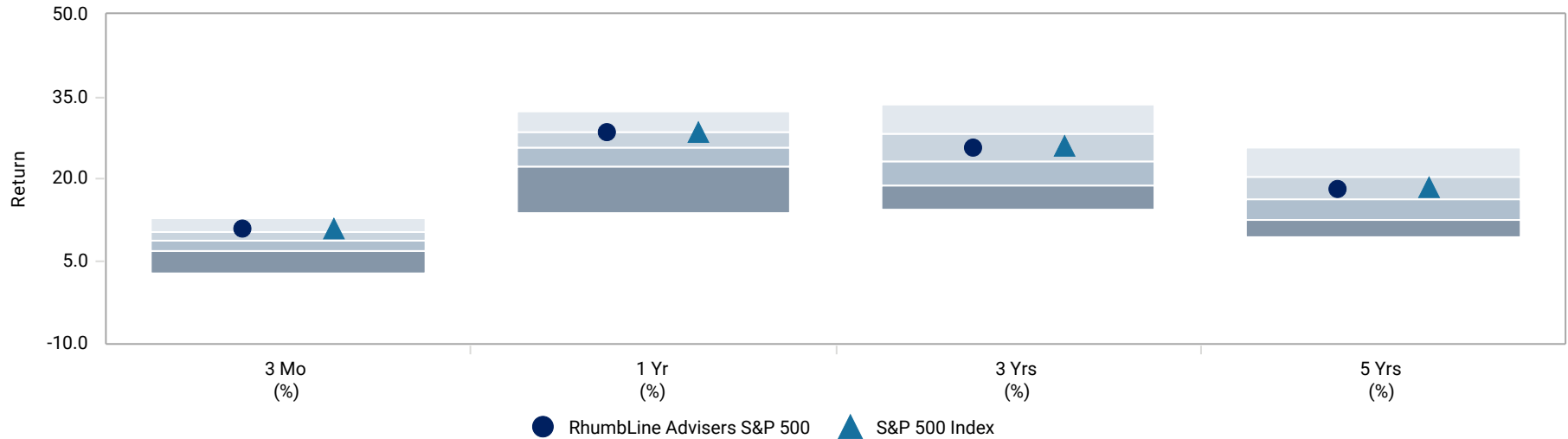
Rolling 5 Years Style Map



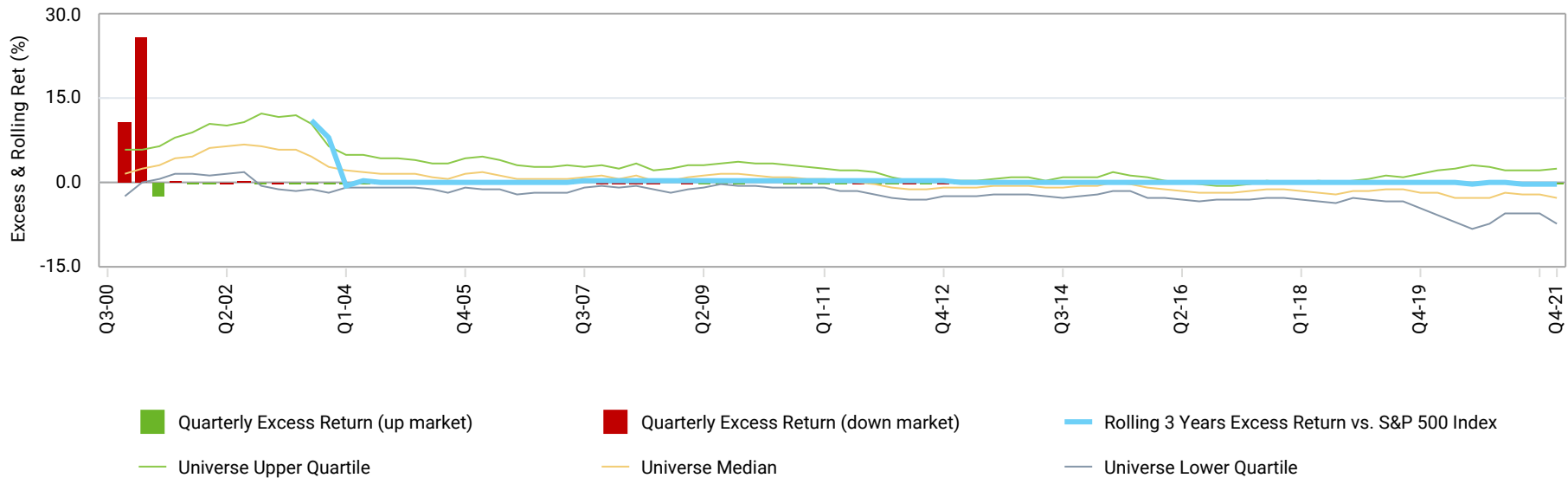
● Principal Global Investors ▲ Russell Midcap Index



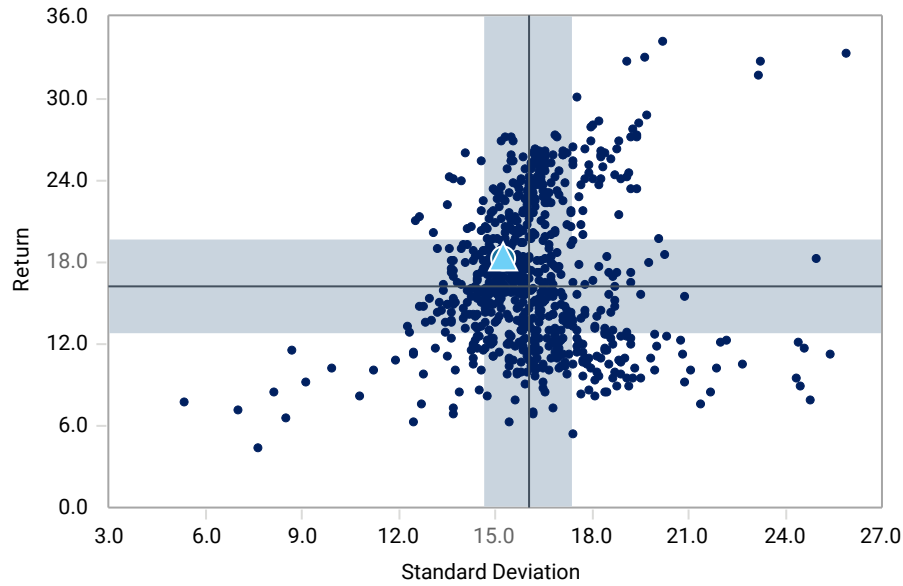
**eV US Large Cap Equity (net of fees)**



**Quarter Excess Return with a Rolling 3 Years Excess Return over Since Inception Ending December 31, 2021**



5 Years Return vs. Standard Deviation

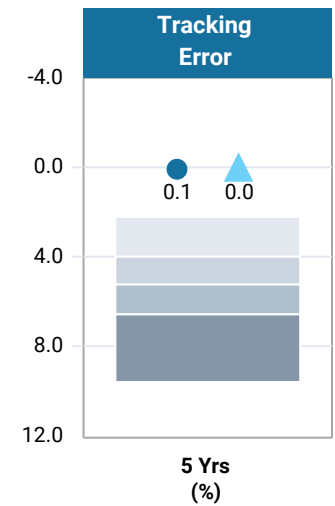
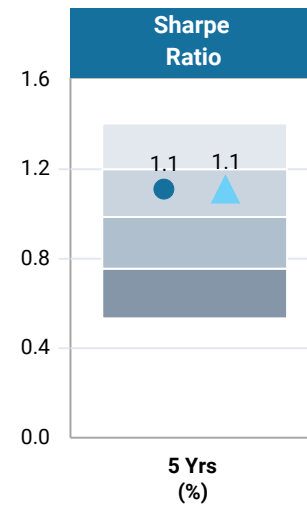
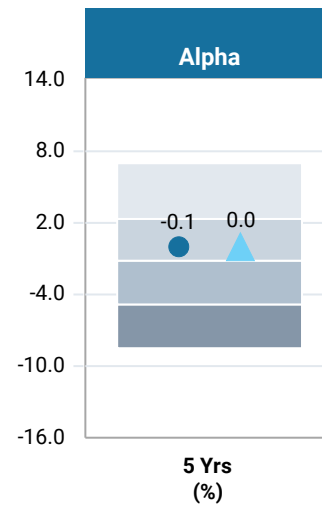
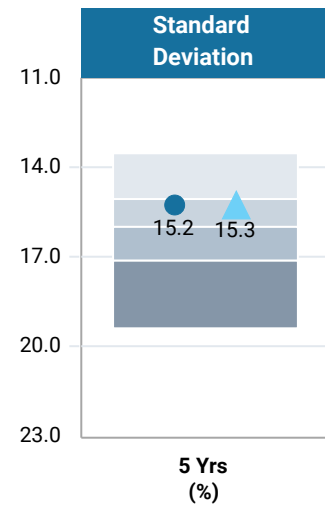
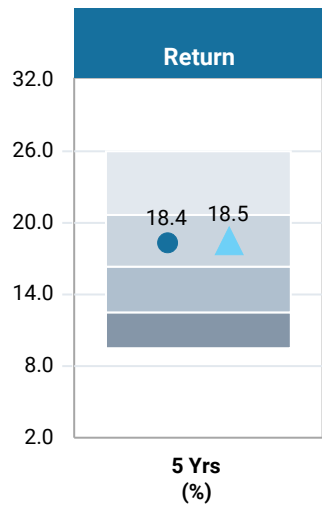


● RhumbLine Advisers S&P 500 ▲ S&P 500 Index

Rolling 5 Years Style Map

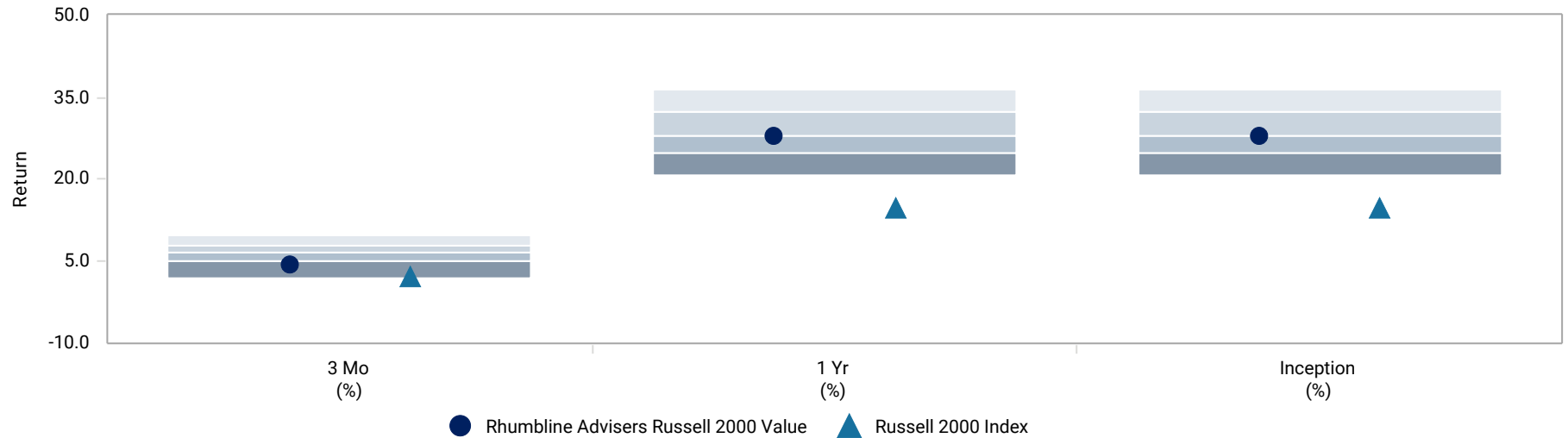


● RhumbLine Advisers S&P 500 ▲ S&P 500 Index

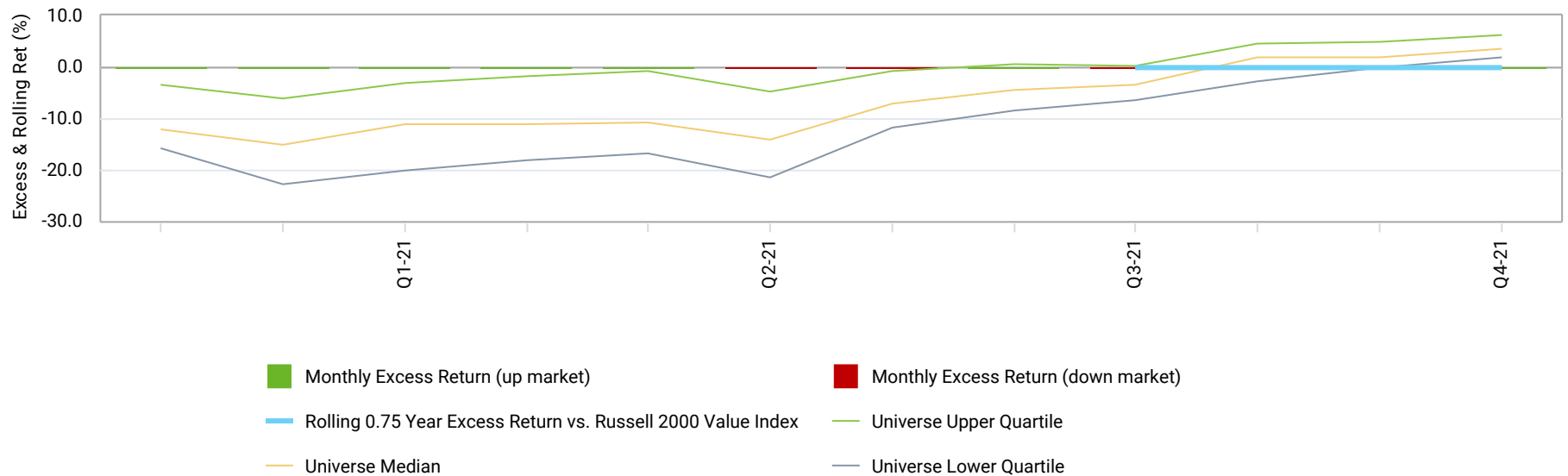


# RHUMBLINE ADVISERS RUSSELL 2000 VALUE

eV US Small-Mid Cap Value Equity (net of fees)



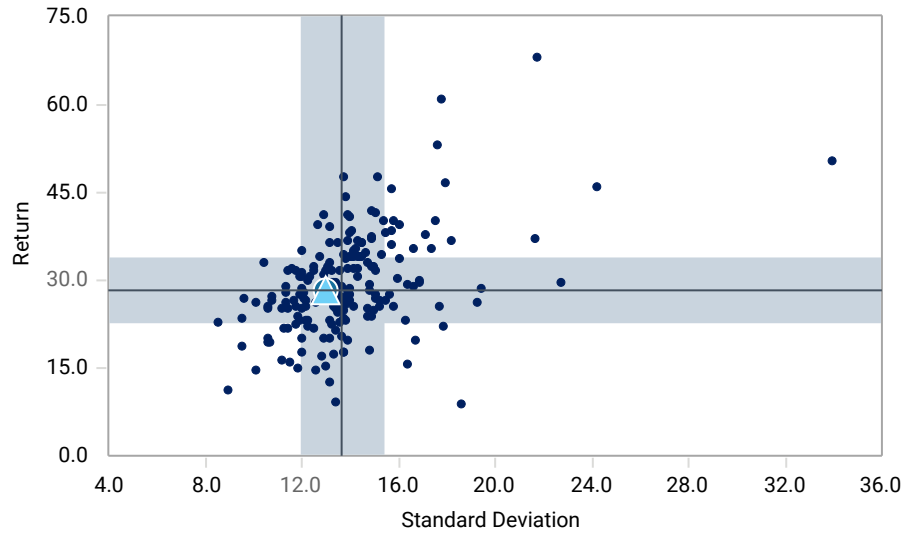
Quarter Excess Return with a Rolling 0.75 Year Excess Return over Since Inception Ending December 31, 2021





# RHUMBLINE ADVISERS RUSSELL 2000 VALUE

Since Inception Return vs. Standard Deviation

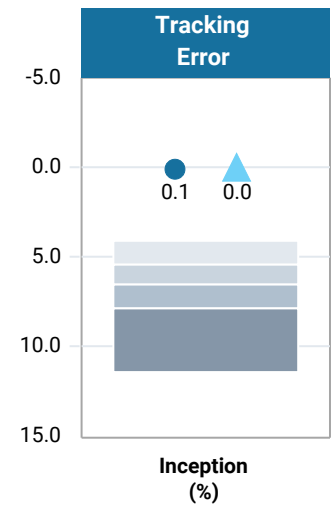
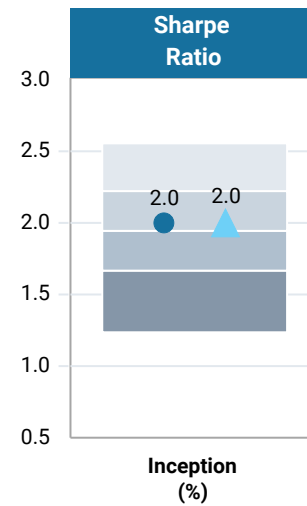
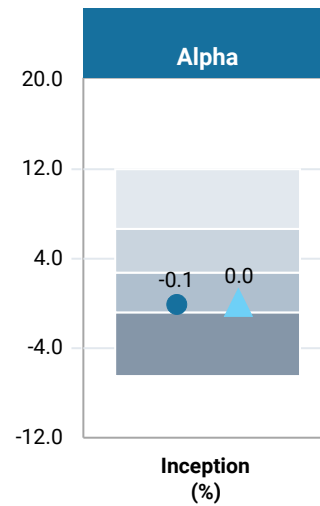
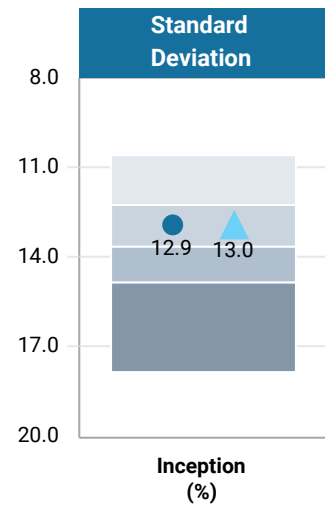
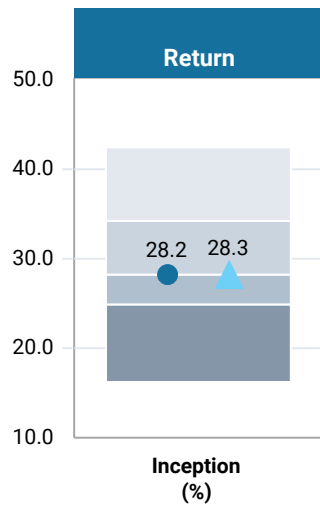


● Rhumbline Advisers Russell 2000 Value  
▲ Russell 2000 Value Index

Rolling 0.75 Year Style Map



● Rhumbline Advisers Russell 2000 Value  
▲ Russell 2000 Value Index

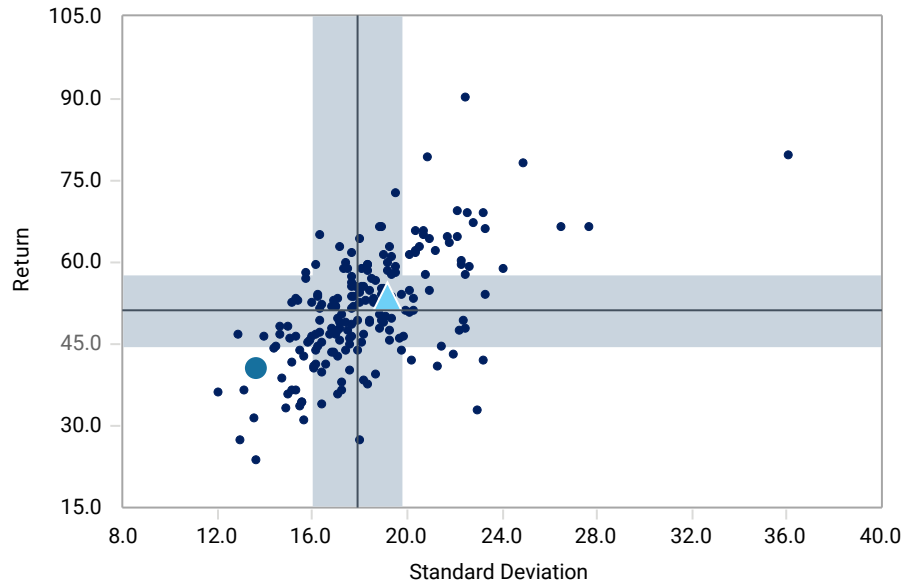


# Los Angeles City Employees' Retirement System-LACERS Master Trust

## COPELAND CAPITAL MANAGEMENT

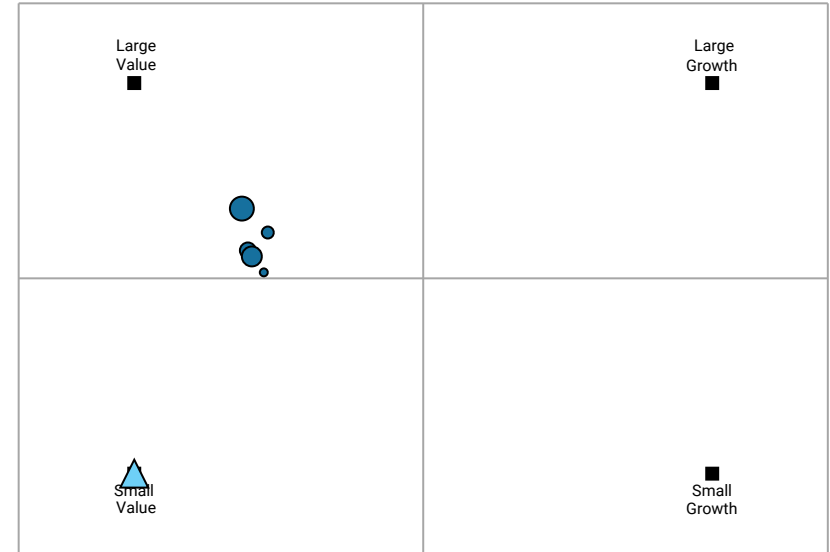
December 31, 2021

Since Inception Return vs. Standard Deviation

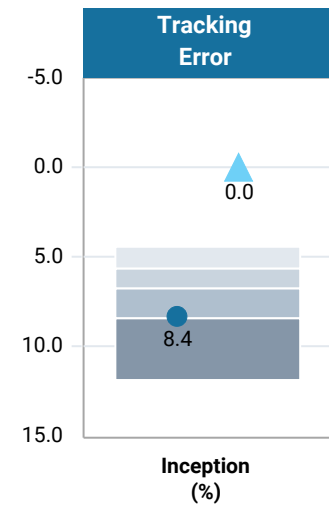
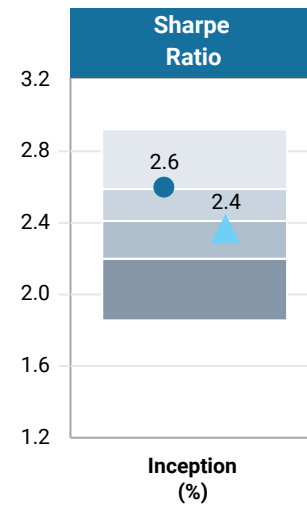
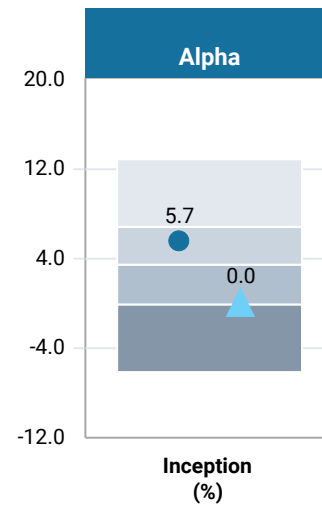
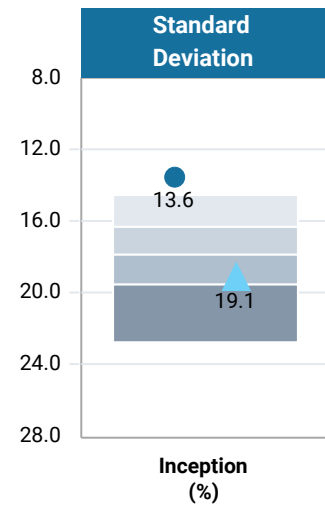
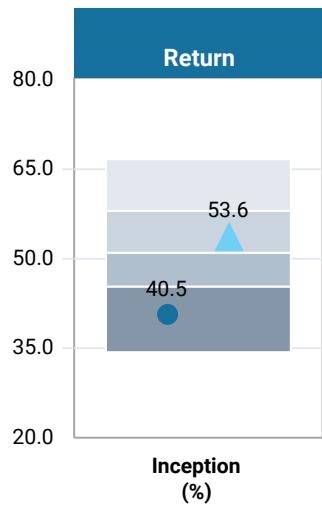


● Copeland Capital Management ▲ Russell 2000 Value Index

Rolling 0.75 Year Style Map



● Copeland Capital Management ▲ Russell 2000 Value Index

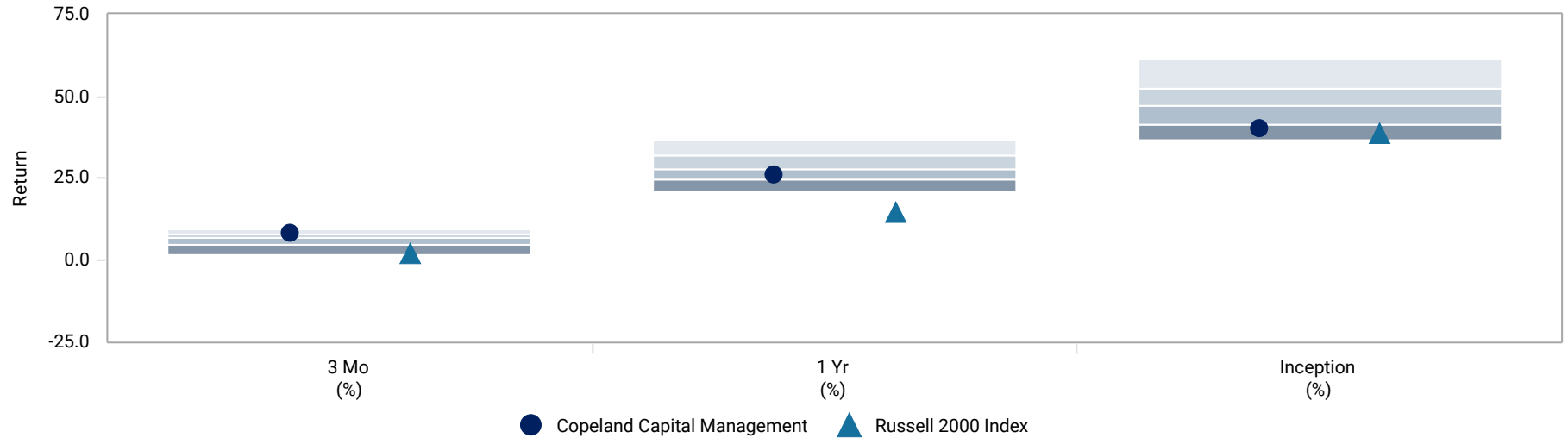


# Los Angeles City Employees' Retirement System-LACERS Master Trust

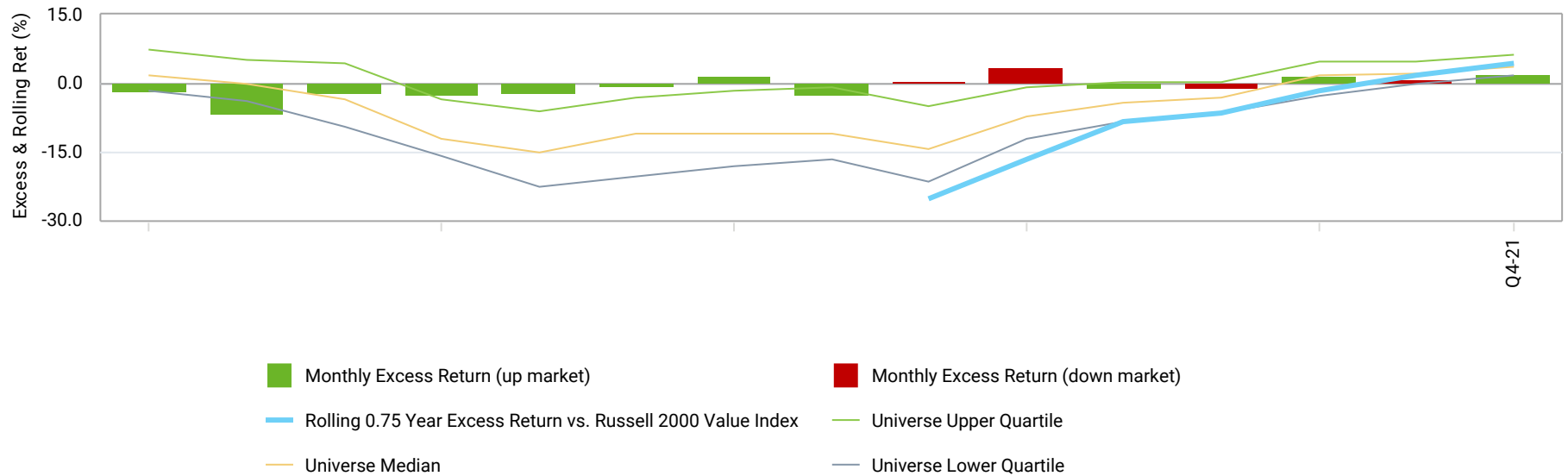
## COPELAND CAPITAL MANAGEMENT

December 31, 2021

### eV US Small-Mid Cap Value Equity (net of fees)

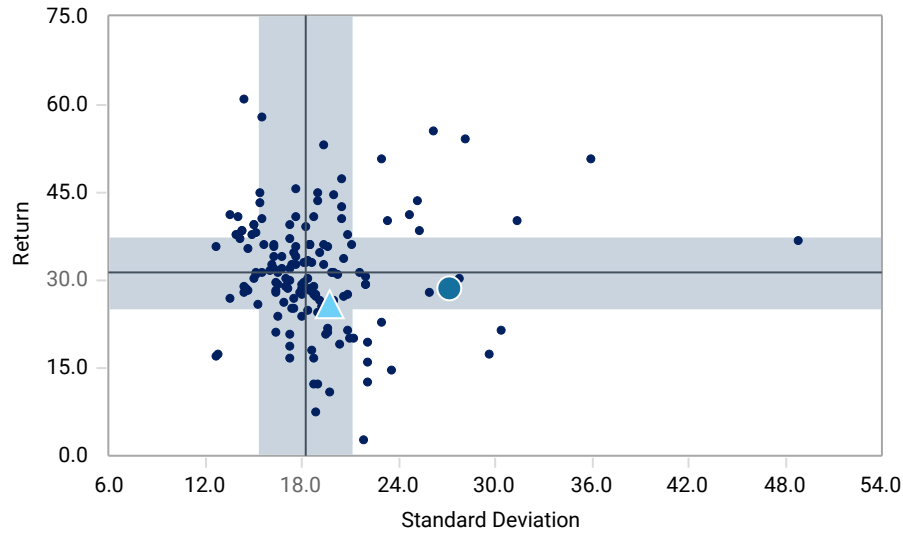


### Quarter Excess Return with a Rolling 0.75 Year Excess Return over Since Inception Ending December 31, 2021



# GRANAHAN INVESTMENT MANAGEMENT

Since Inception Return vs. Standard Deviation

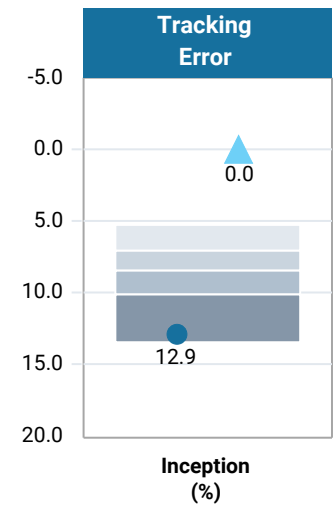
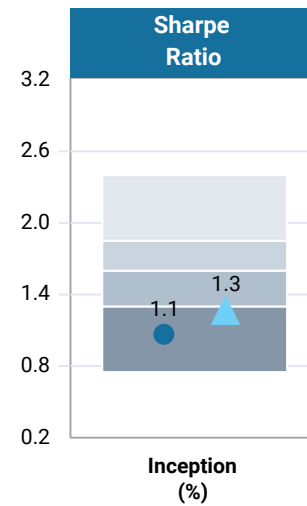
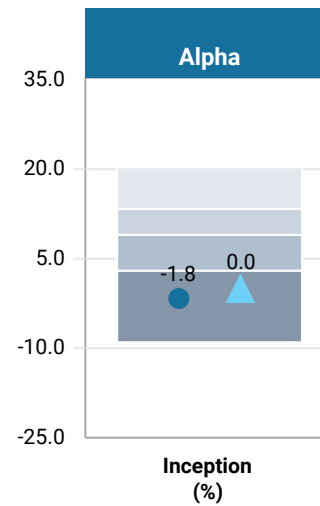
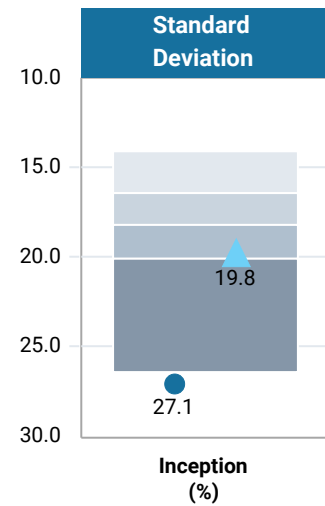
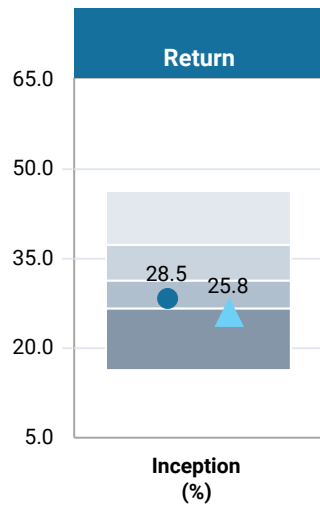


- Granahan Investment Management
- ▲ Russell 2000 Growth Index

Rolling 0.75 Year Style Map

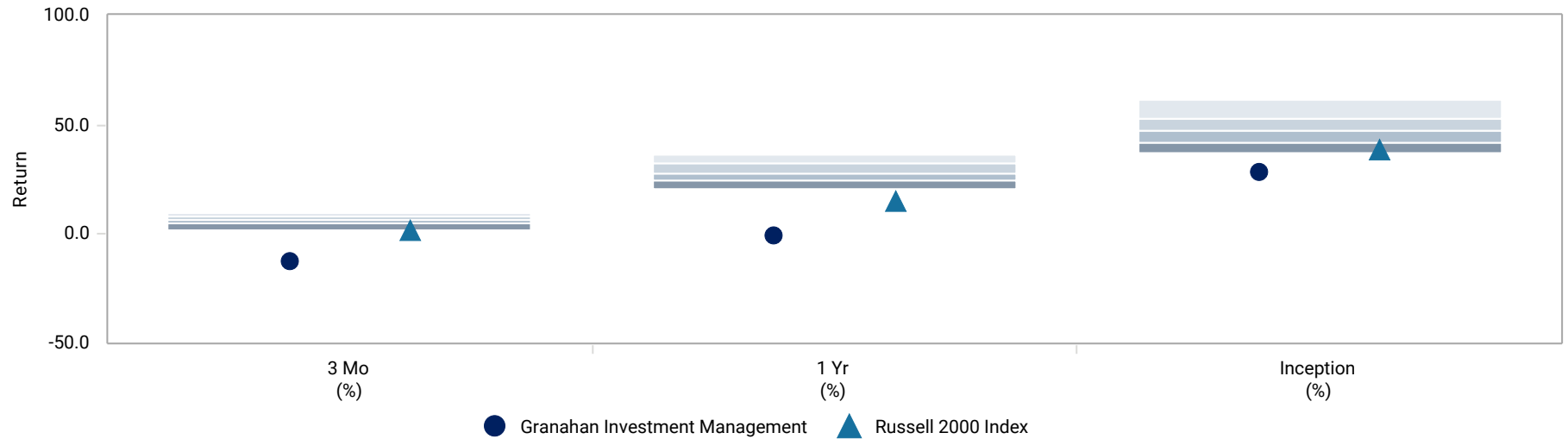


- Granahan Investment Management
- ▲ Russell 2000 Growth Index

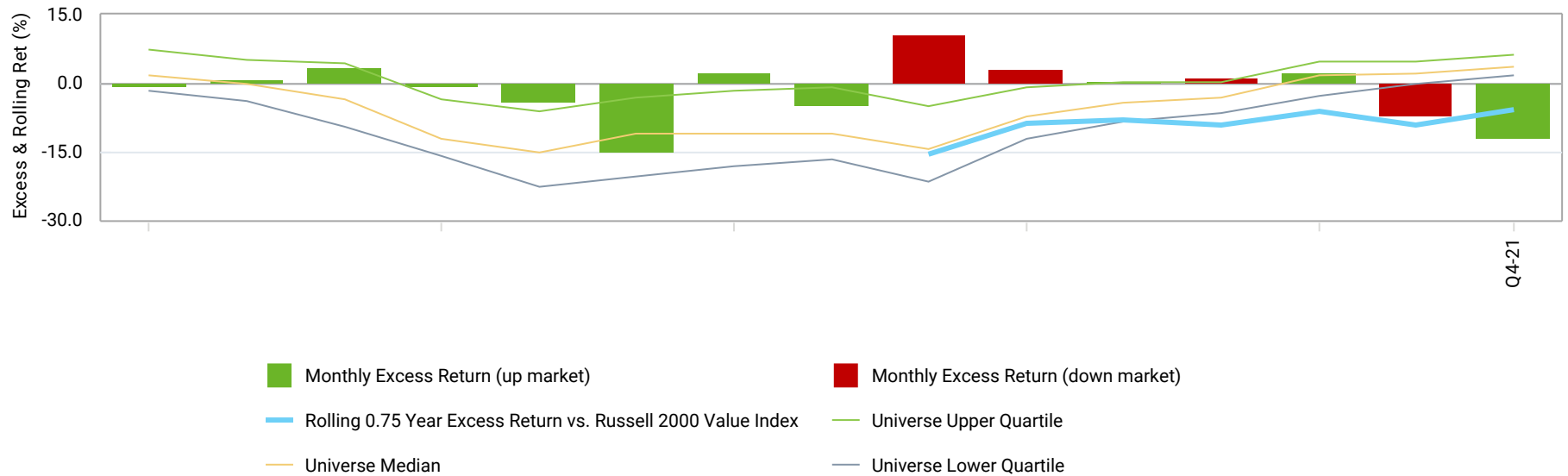


# GRANAHAAN INVESTMENT MANAGEMENT

## eV US Small-Mid Cap Value Equity (net of fees)



## Quarter Excess Return with a Rolling 0.75 Year Excess Return over Since Inception Ending December 31, 2021

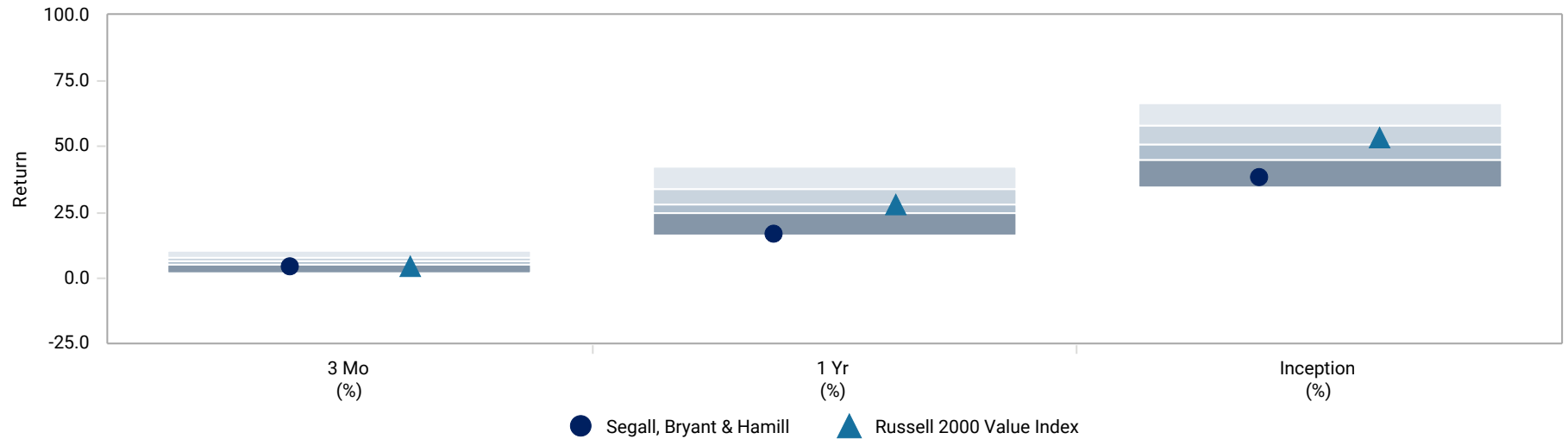


- Monthly Excess Return (up market)
- Monthly Excess Return (down market)
- Rolling 0.75 Year Excess Return vs. Russell 2000 Value Index
- Universe Upper Quartile
- Universe Median
- Universe Lower Quartile

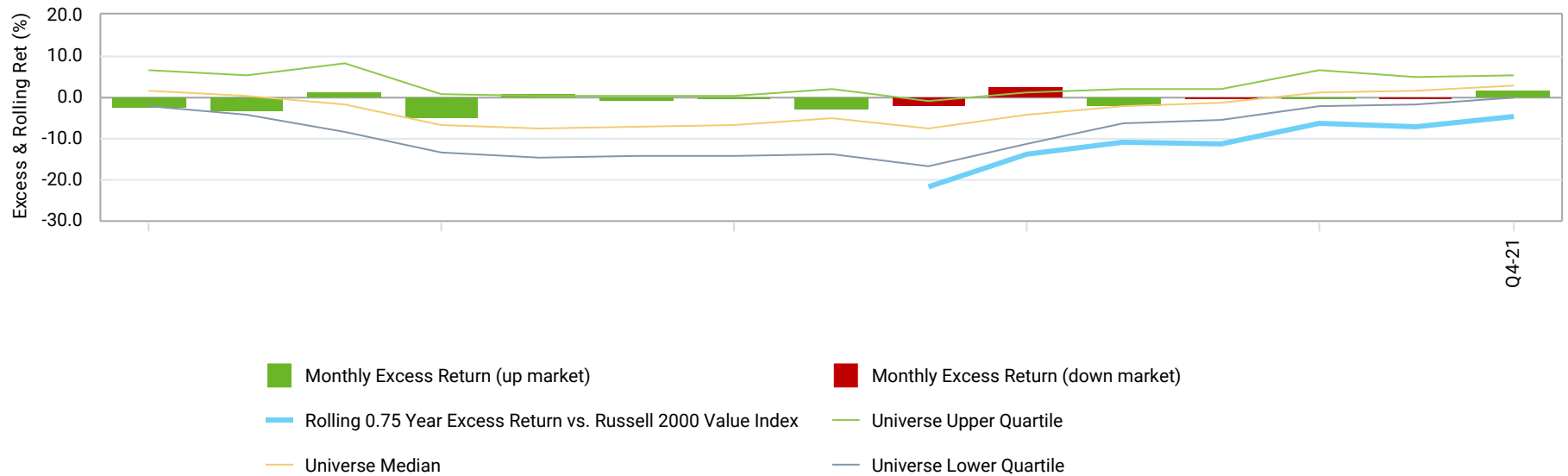


# SEGALL, BRYANT & HAMILL

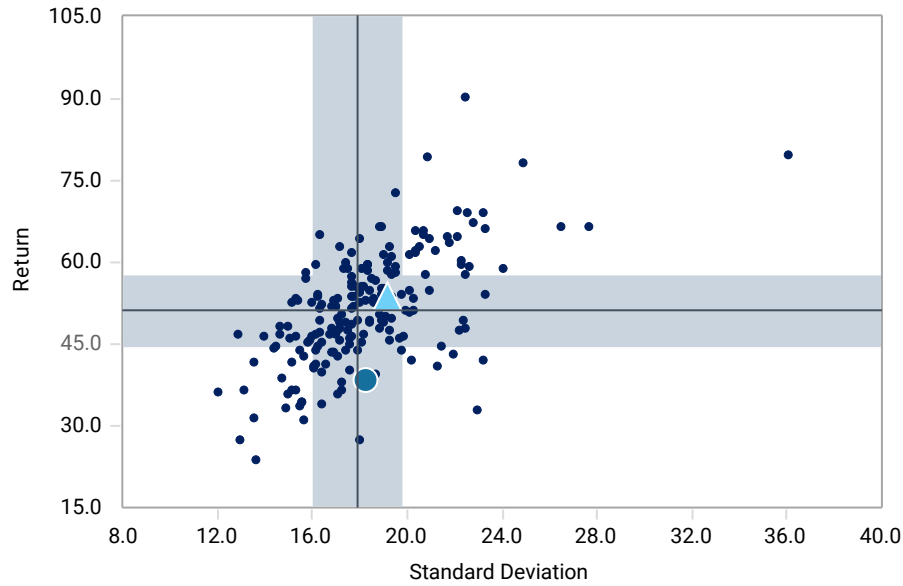
## eV US Small Cap Value Equity (net of fees)



## Quarter Excess Return with a Rolling 0.75 Year Excess Return over Since Inception Ending December 31, 2021



Since Inception Return vs. Standard Deviation

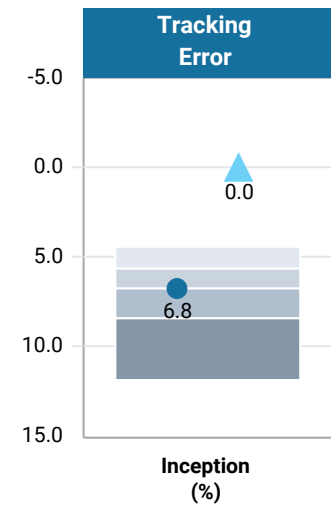
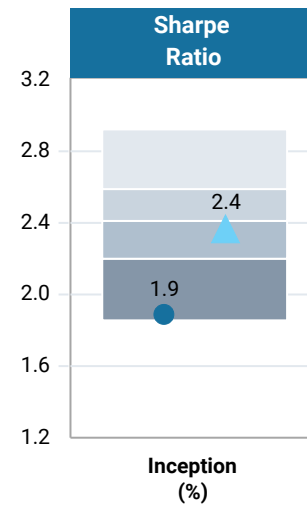
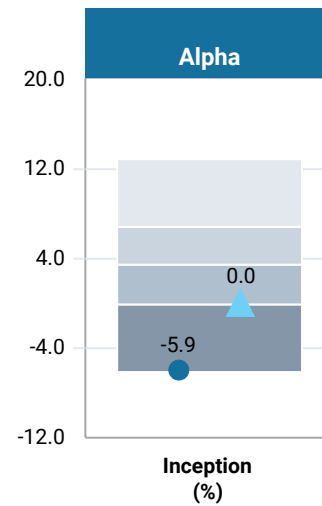
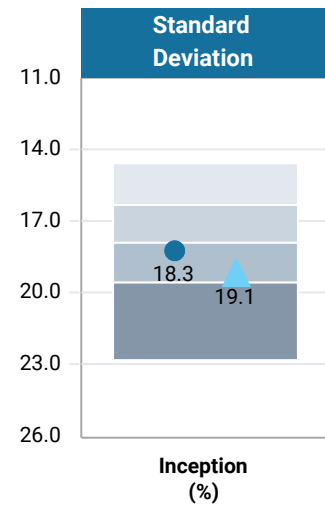
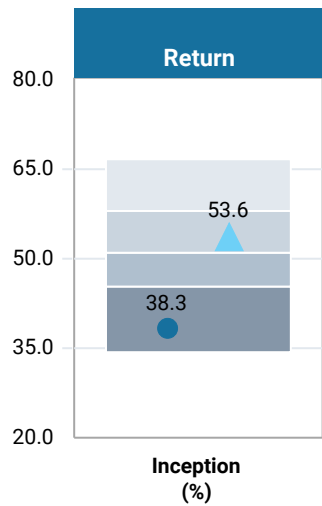


● Segall, Bryant & Hamill    ▲ Russell 2000 Value Index

Rolling 0.75 Year Style Map



● Segall, Bryant & Hamill    ▲ Russell 2000 Value Index





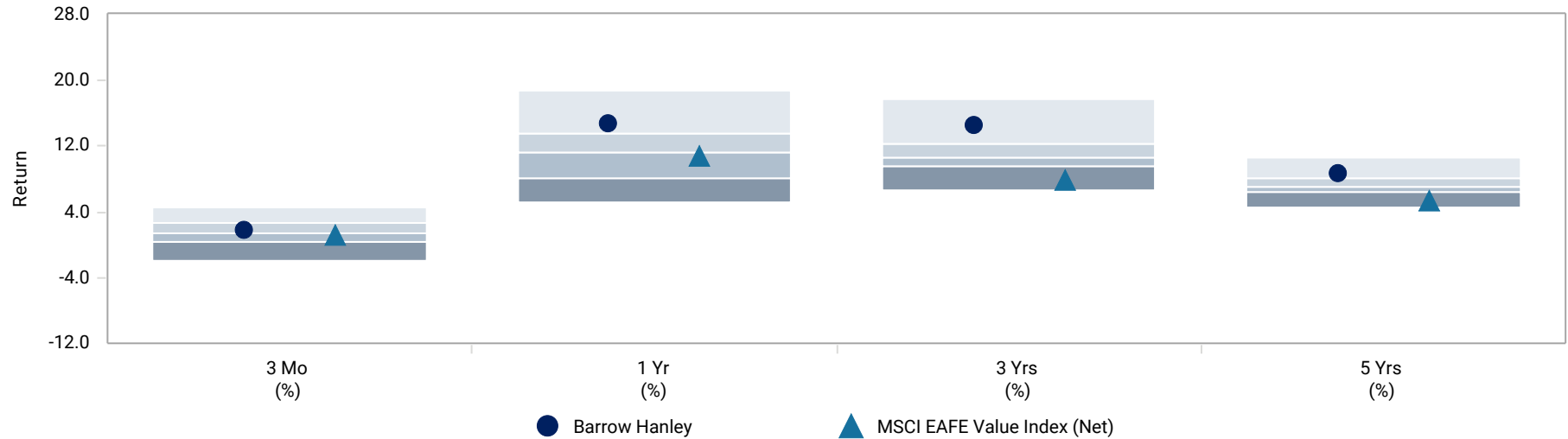
# NON-U.S. EQUITY MANAGER PERFORMANCE



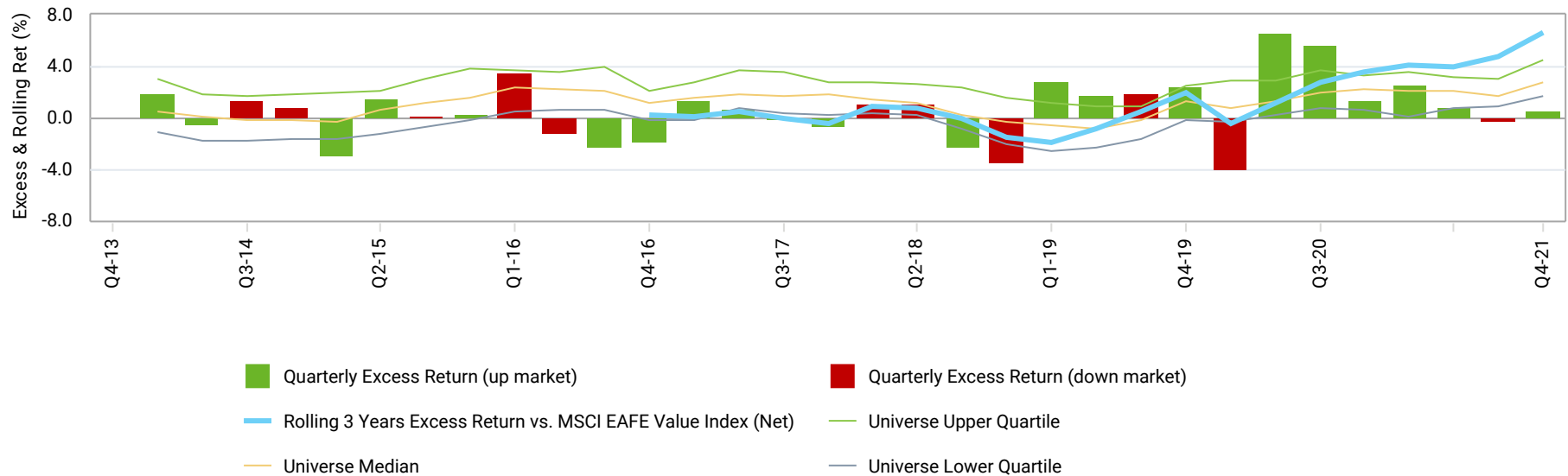


# BARROW HANLEY

## eV EAFE Value Equity (net of fees)

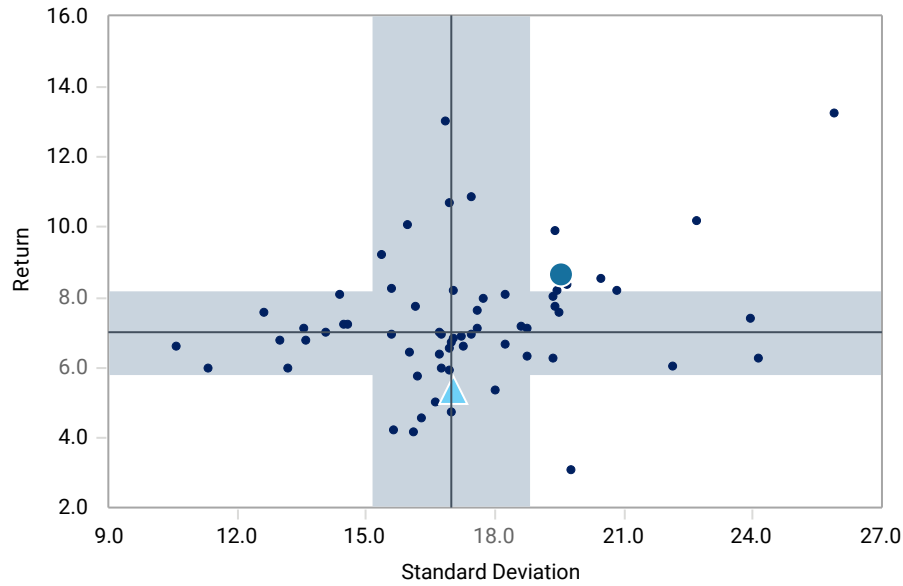


## Quarter Excess Return with a Rolling 3 Years Excess Return over Since Inception Ending December 31, 2021



# BARROW HANLEY

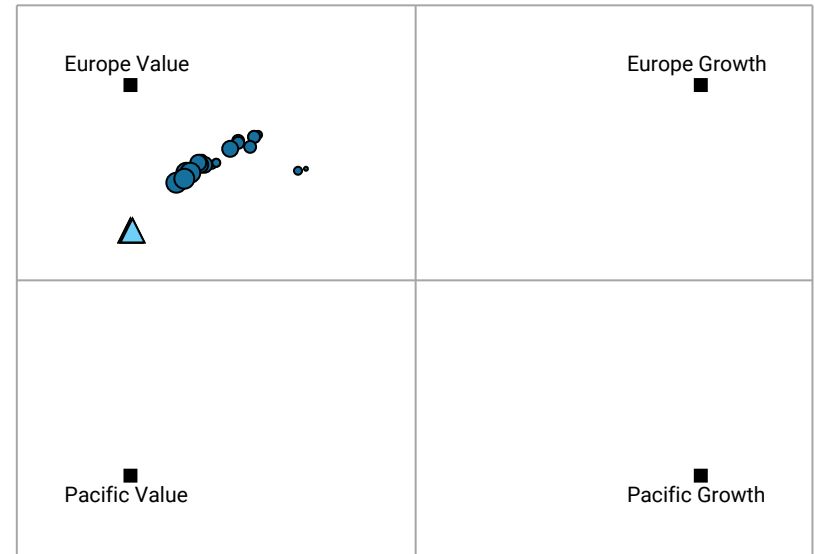
5 Years Return vs. Standard Deviation



● Barrow Hanley

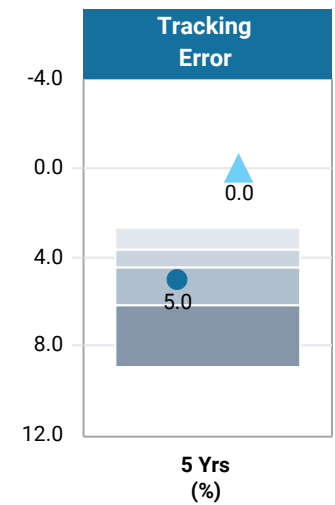
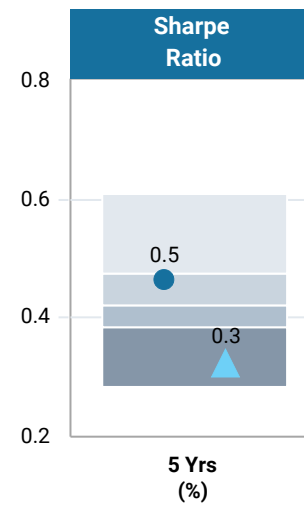
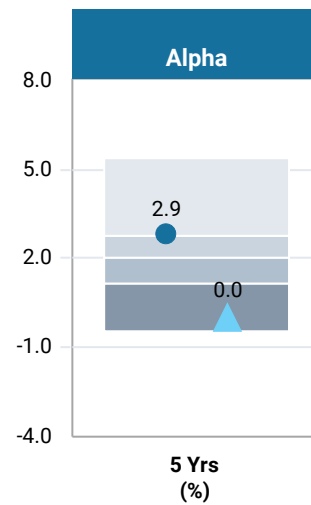
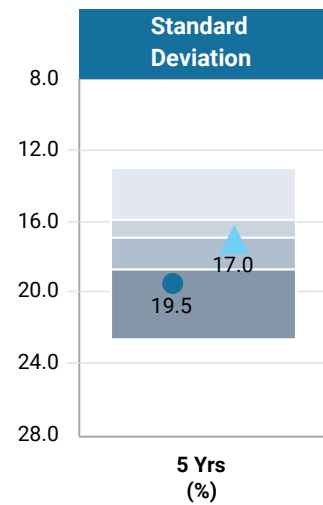
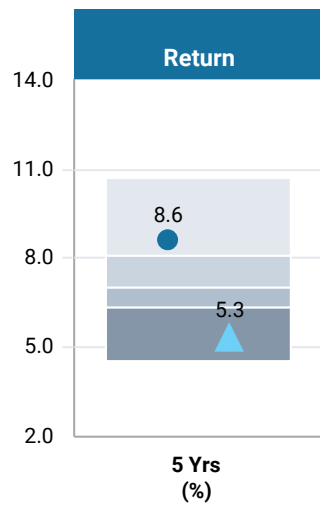
▲ MSCI EAFE Value Index (Net)

Rolling 5 Years Style Map



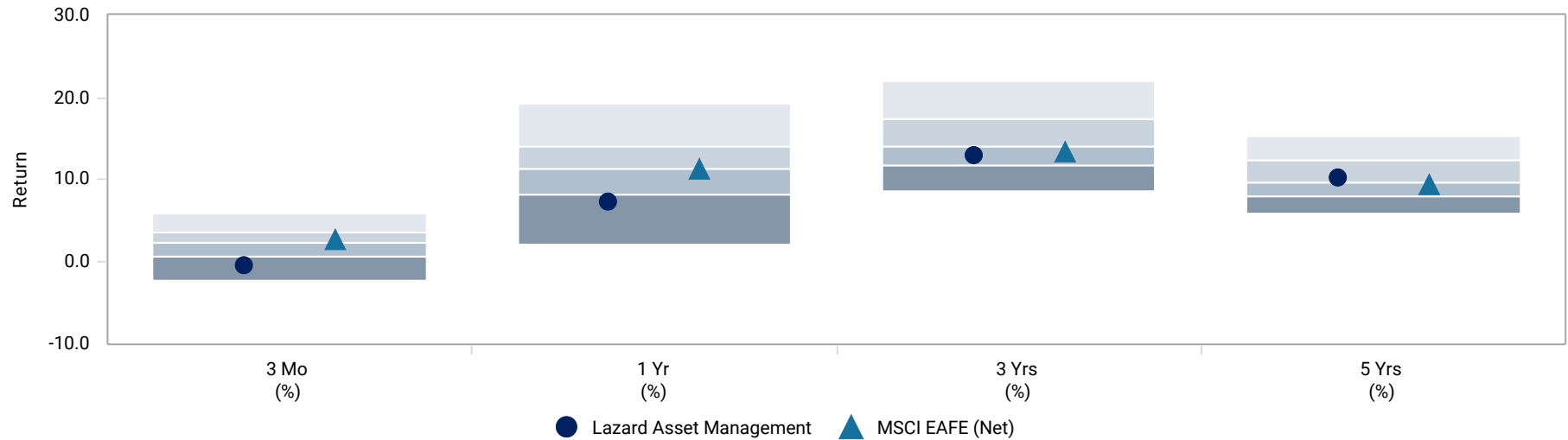
● Barrow Hanley

▲ MSCI EAFE Value Index (Net)

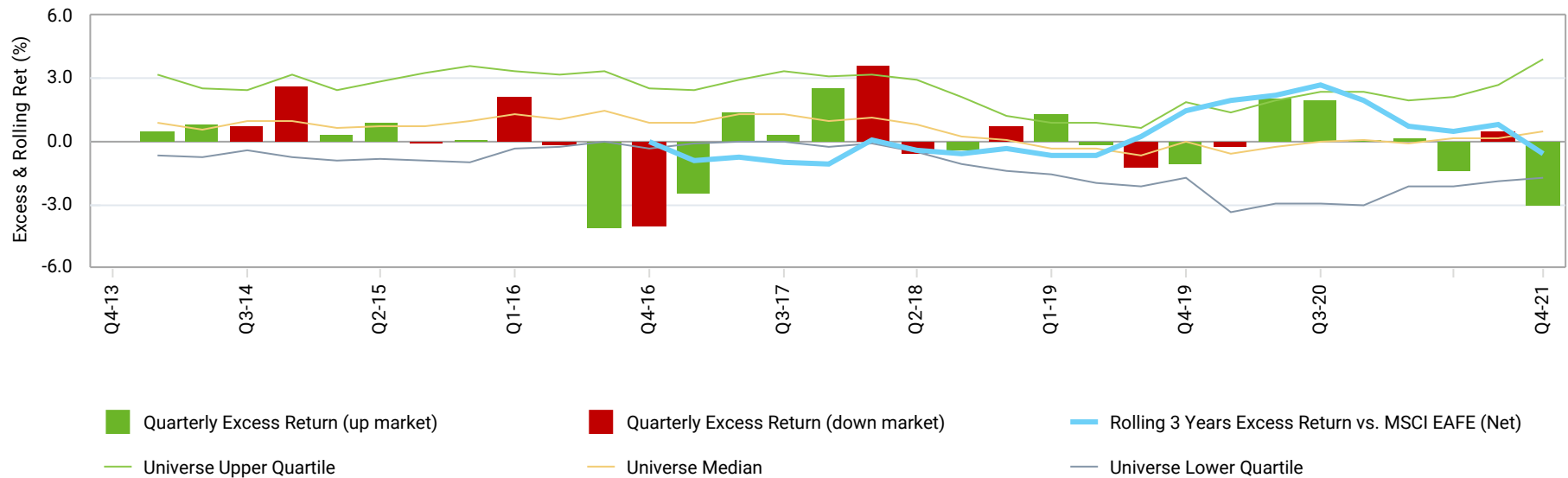


# LAZARD ASSET MANAGEMENT

eV All EAFE Equity (net of fees)

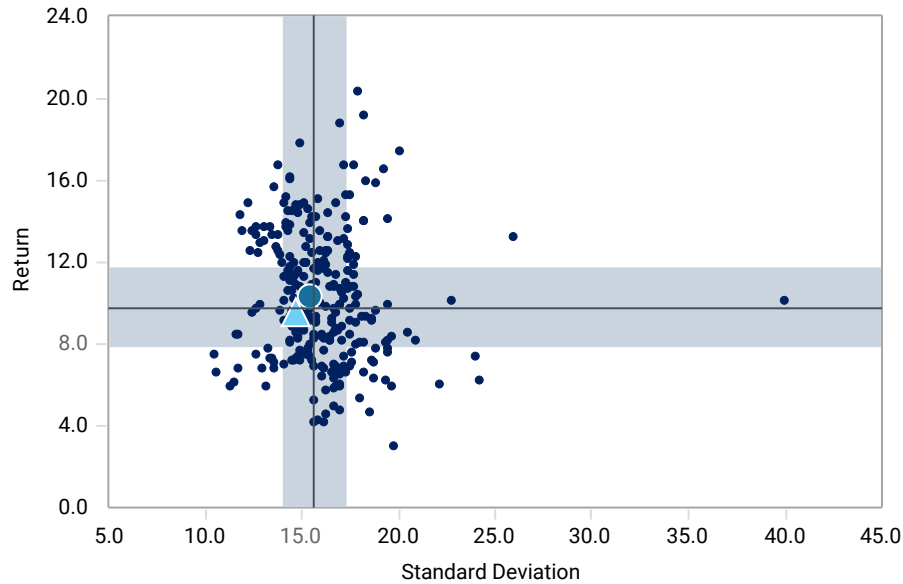


Quarter Excess Return with a Rolling 3 Years Excess Return over Since Inception Ending December 31, 2021



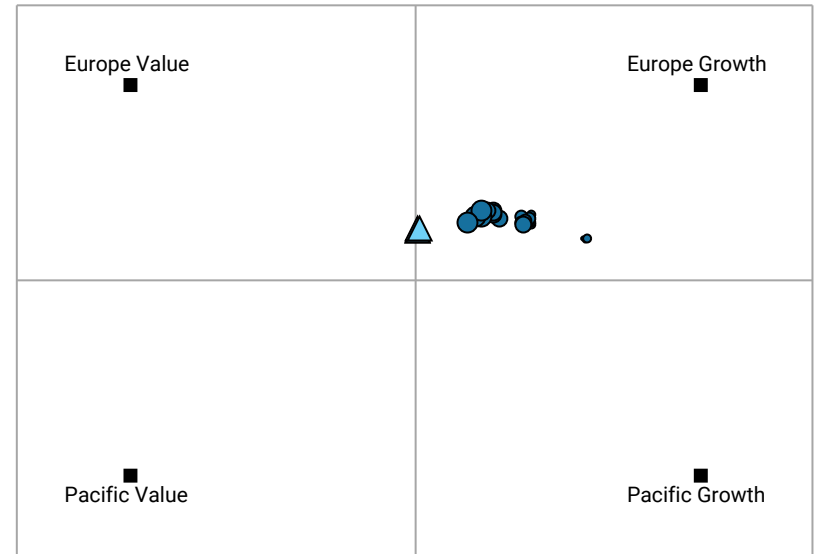
# LAZARD ASSET MANAGEMENT

5 Years Return vs. Standard Deviation

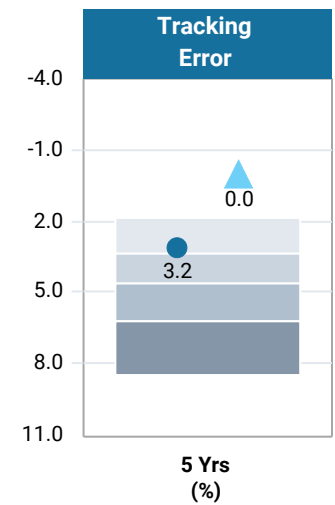
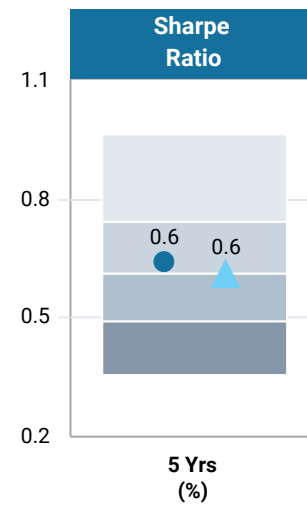
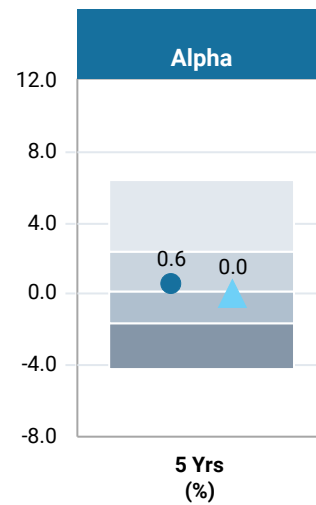
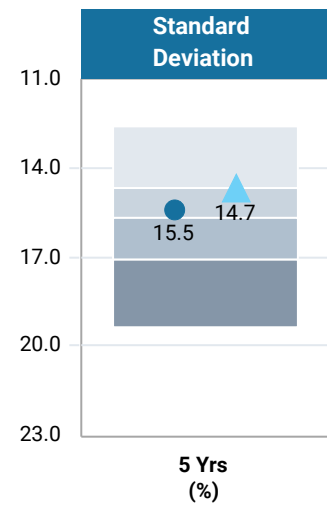
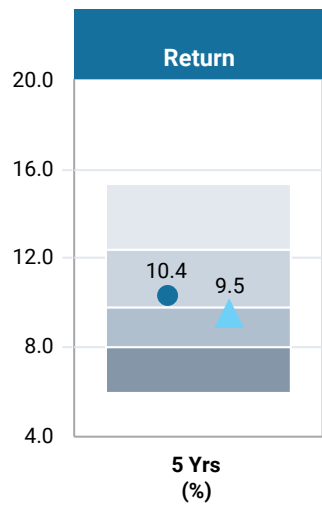


● Lazard Asset Management ▲ MSCI EAFE (Net)

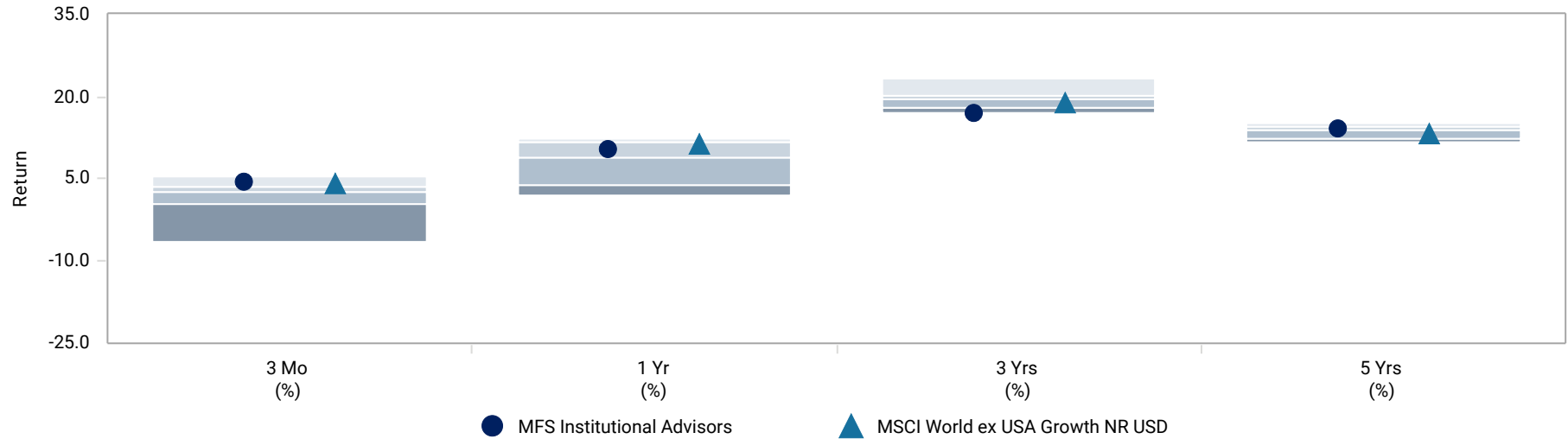
Rolling 5 Years Style Map



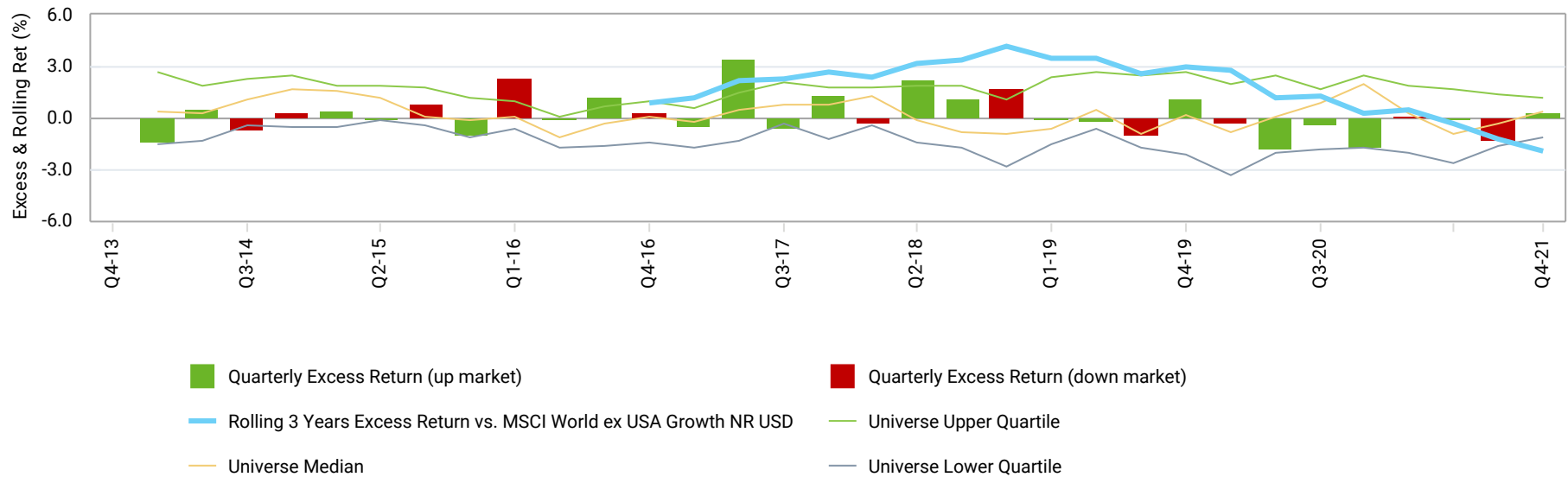
● Lazard Asset Management ▲ MSCI EAFE (Net)



**eV EAFE All Cap Growth (net of fees)**



**Quarter Excess Return with a Rolling 3 Years Excess Return over Since Inception Ending December 31, 2021**

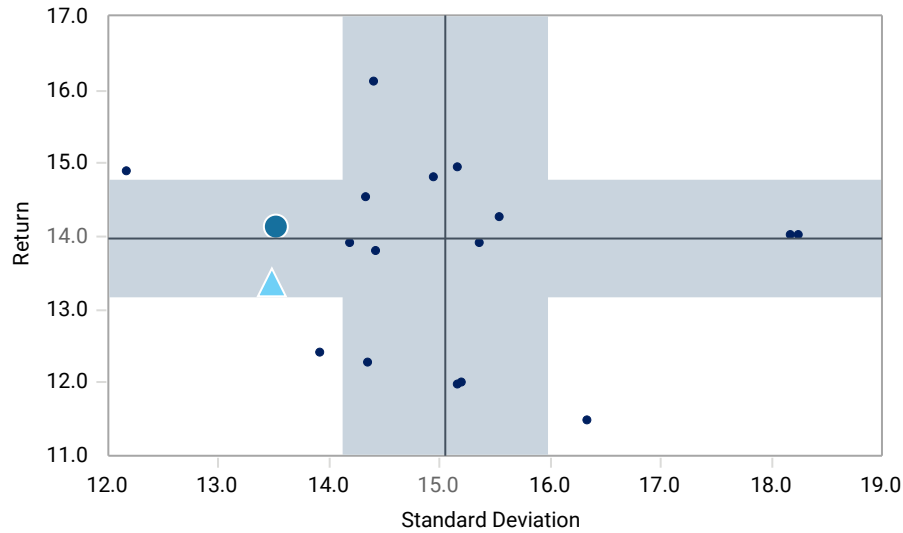


# Los Angeles City Employees' Retirement System-LACERS Master Trust

## MFS INSTITUTIONAL ADVISORS

December 31, 2021

5 Years Return vs. Standard Deviation

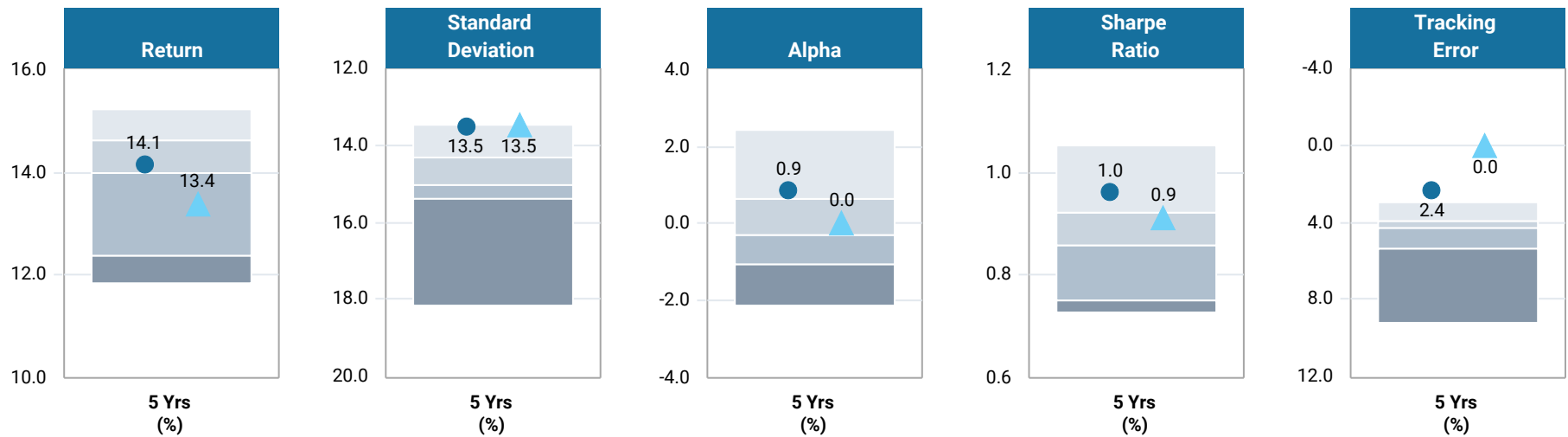


- MFS Institutional Advisors
- ▲ MSCI World ex USA Growth NR USD

Rolling 5 Years Style Map

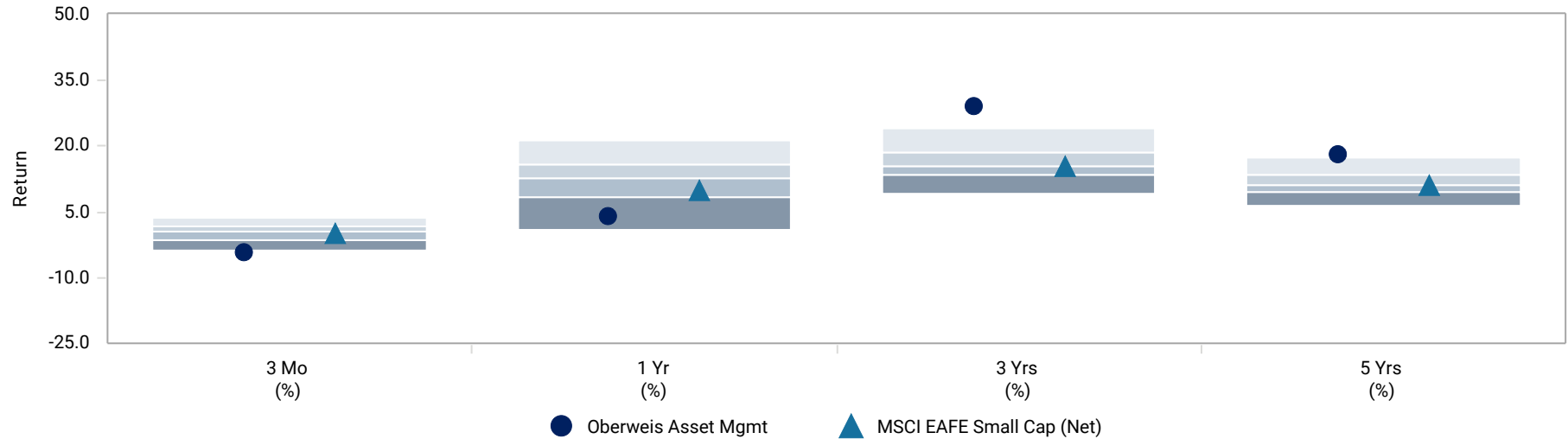


- MFS Institutional Advisors
- ▲ MSCI World ex USA Growth NR USD

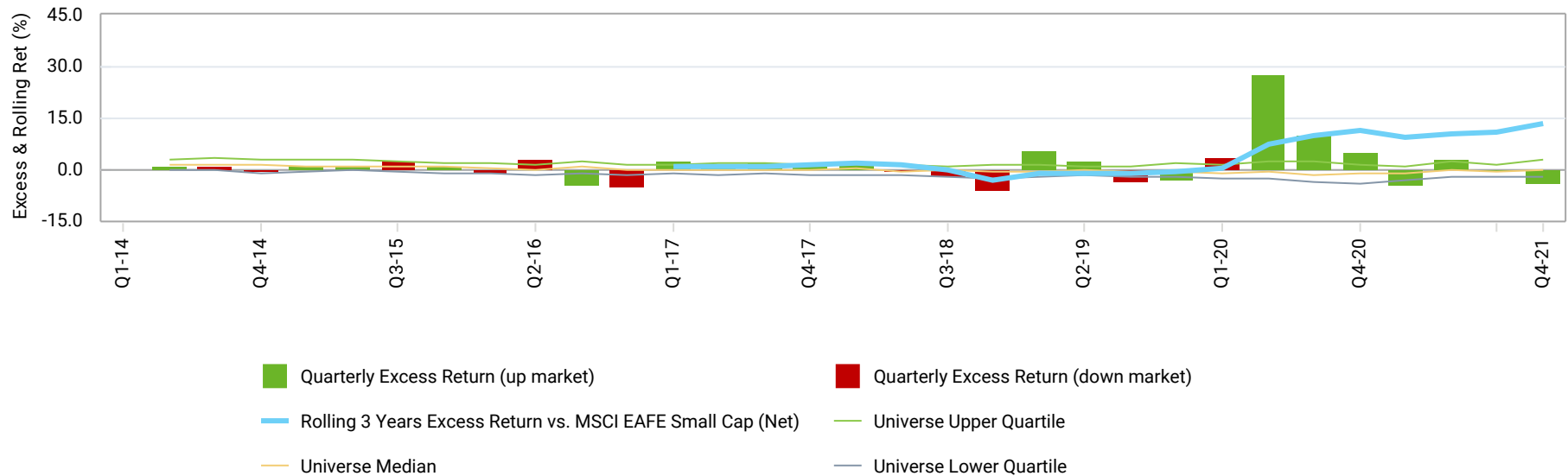


# OBERWEIS ASSET MGMT

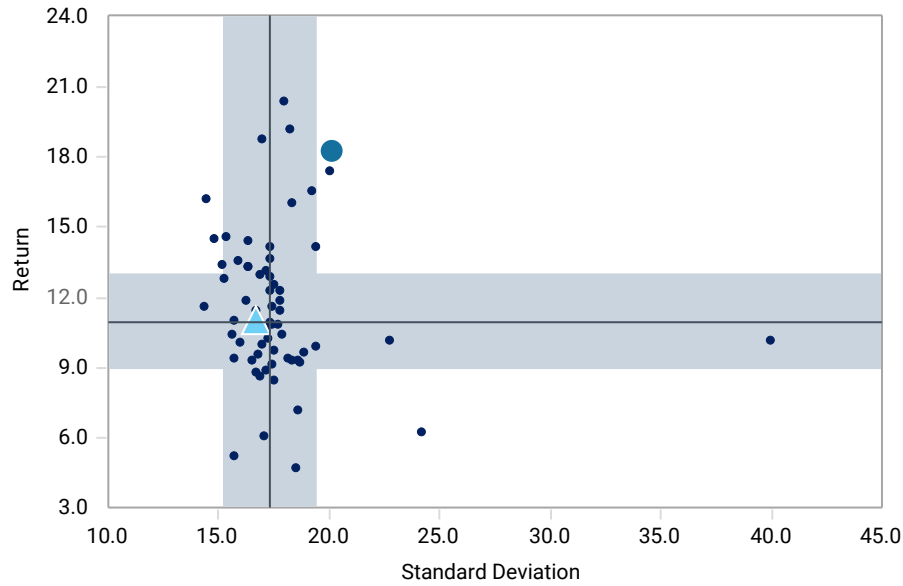
## eV EAFE Small Cap Equity (net of fees)



## Quarter Excess Return with a Rolling 3 Years Excess Return over Since Inception Ending December 31, 2021

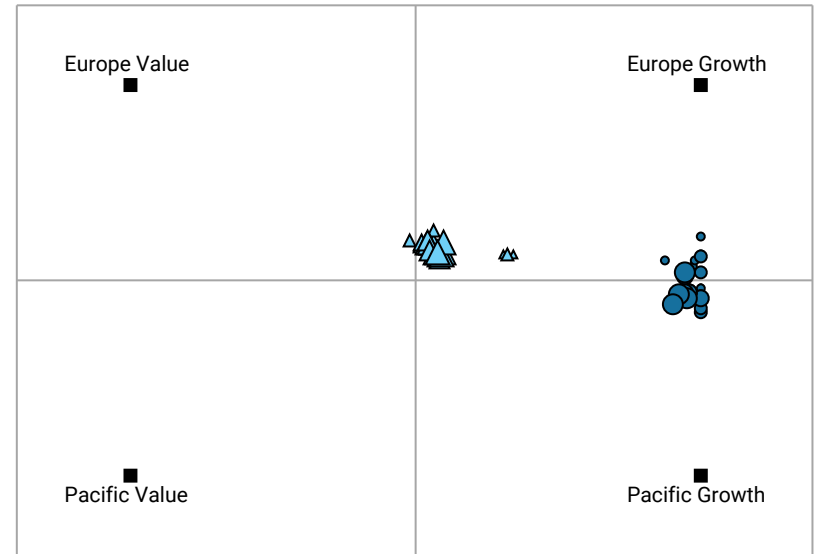


5 Years Return vs. Standard Deviation

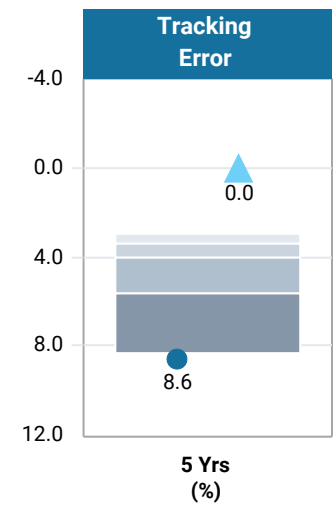
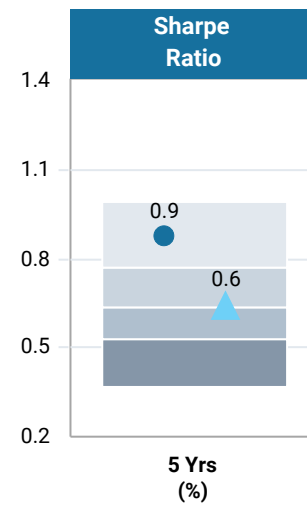
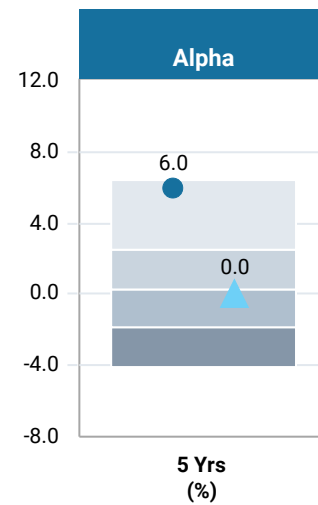
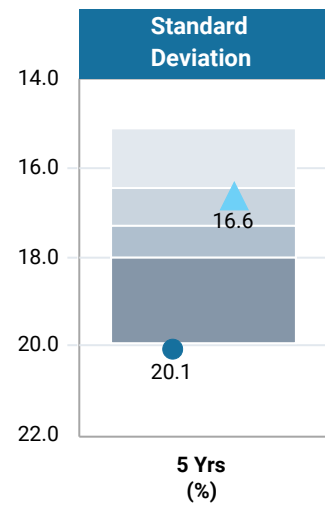
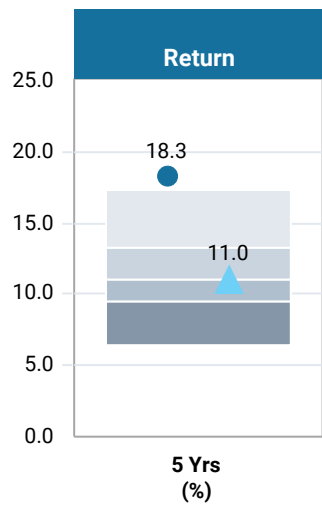


● Oberweis Asset Mgmt    ▲ MSCI EAFE Small Cap (Net)

Rolling 5 Years Style Map



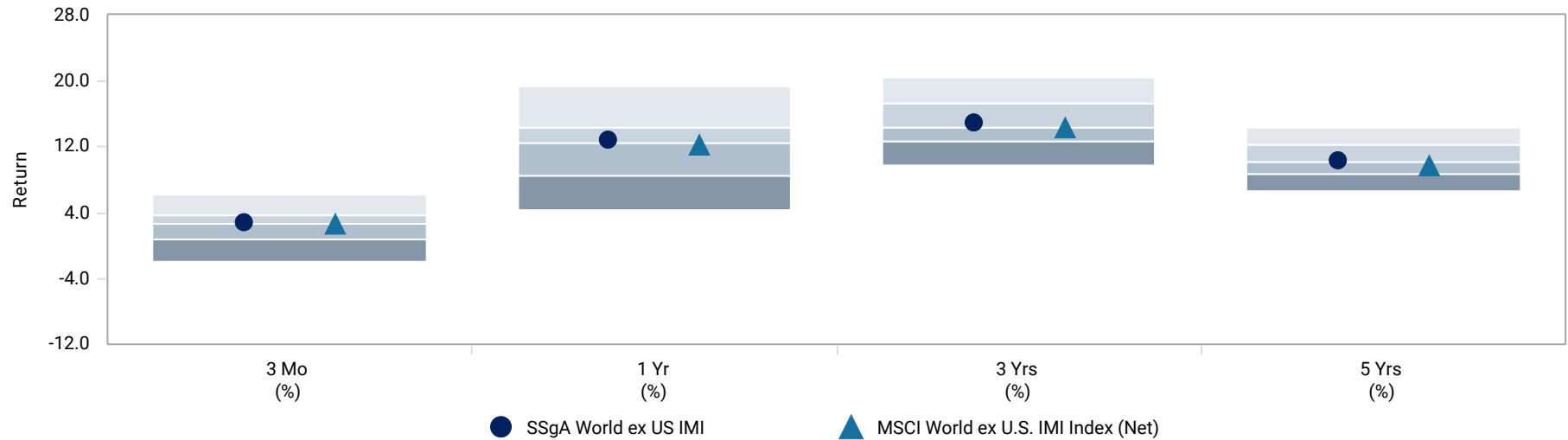
● Oberweis Asset Mgmt    ▲ MSCI EAFE Small Cap (Net)



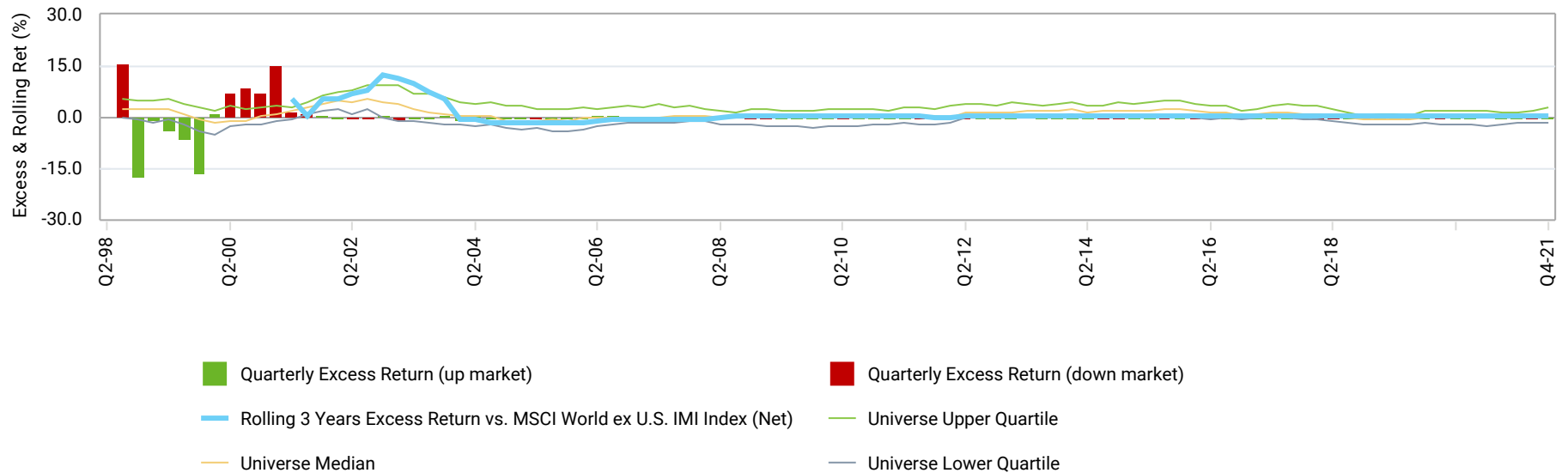


# SSGA WORLD EX US IMI

eV EAFE Core Equity (net of fees)



Quarter Excess Return with a Rolling 3 Years Excess Return over Since Inception Ending December 31, 2021

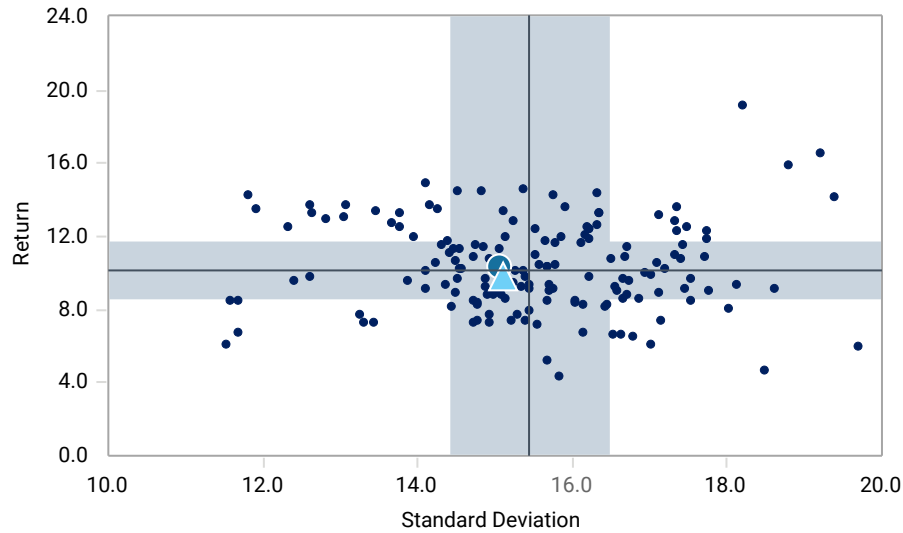


# Los Angeles City Employees' Retirement System-LACERS Master Trust

## SSGA WORLD EX US IMI

December 31, 2021

5 Years Return vs. Standard Deviation

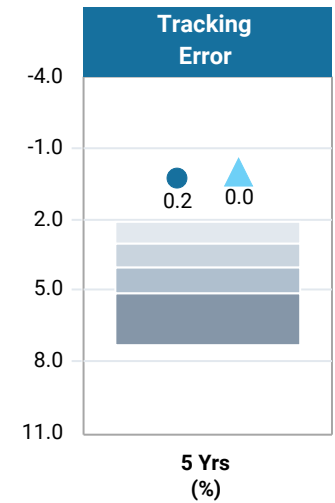
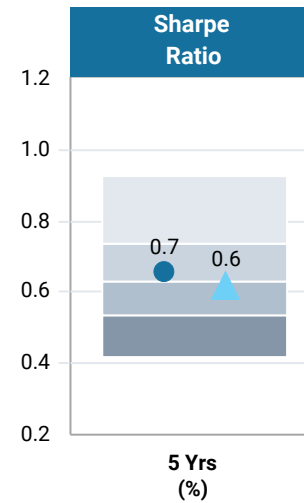
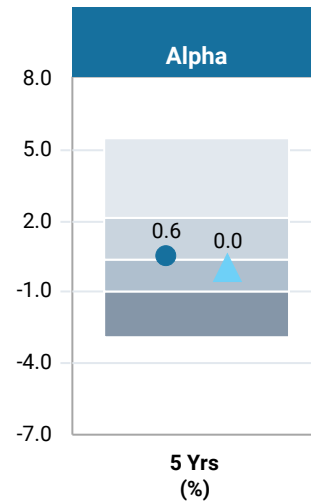
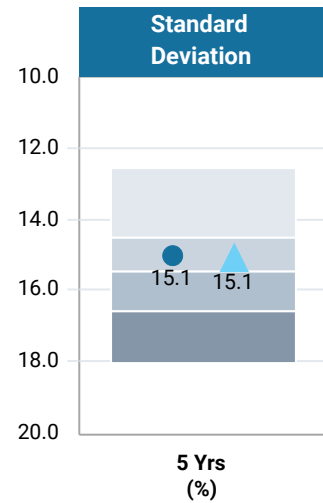
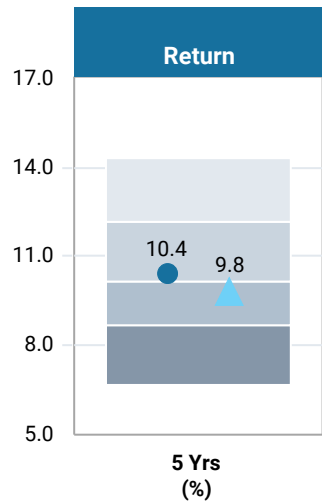


● SSGA World ex US IMI  
▲ MSCI World ex U.S. IMI Index (Net)

Rolling 5 Years Style Map

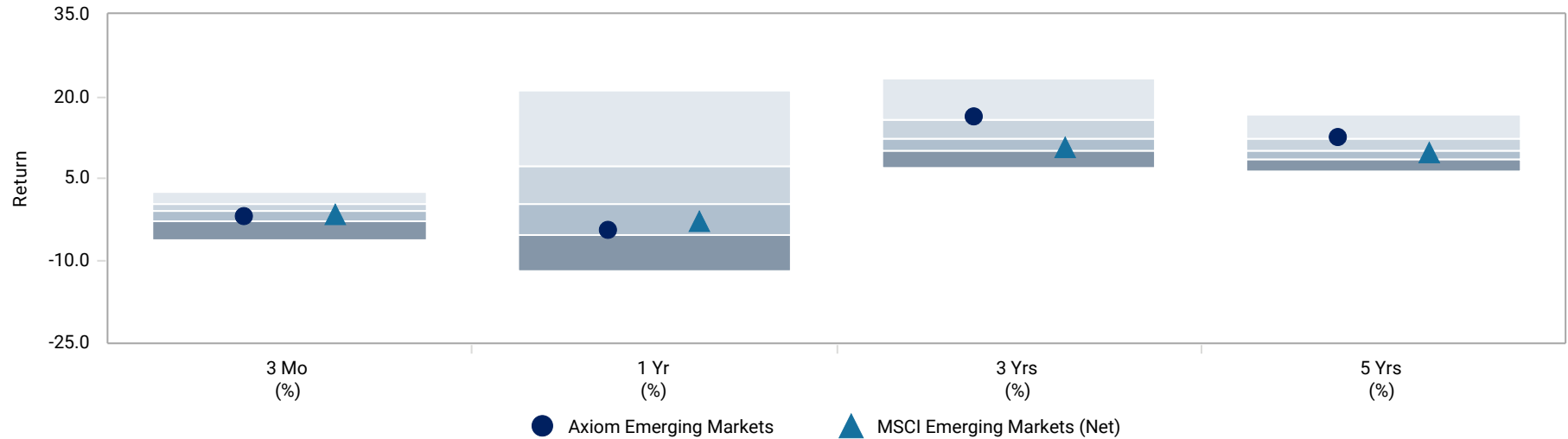


● SSGA World ex US IMI  
▲ MSCI World ex U.S. IMI Index (Net)

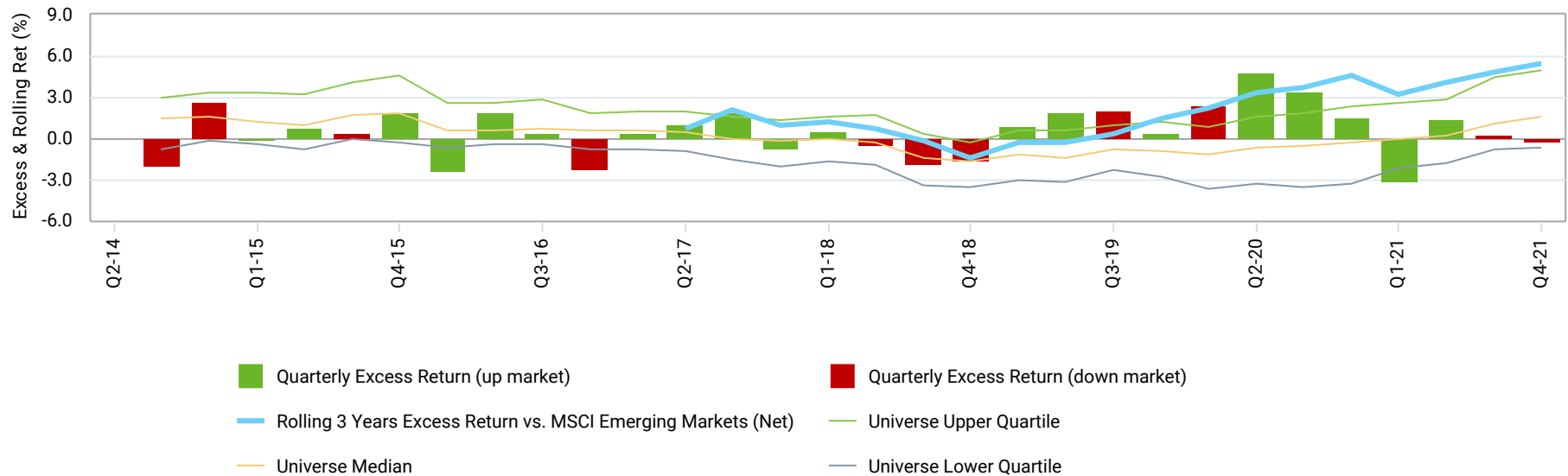


# AXIOM EMERGING MARKETS

eV Emg Mkts Equity (net of fees)

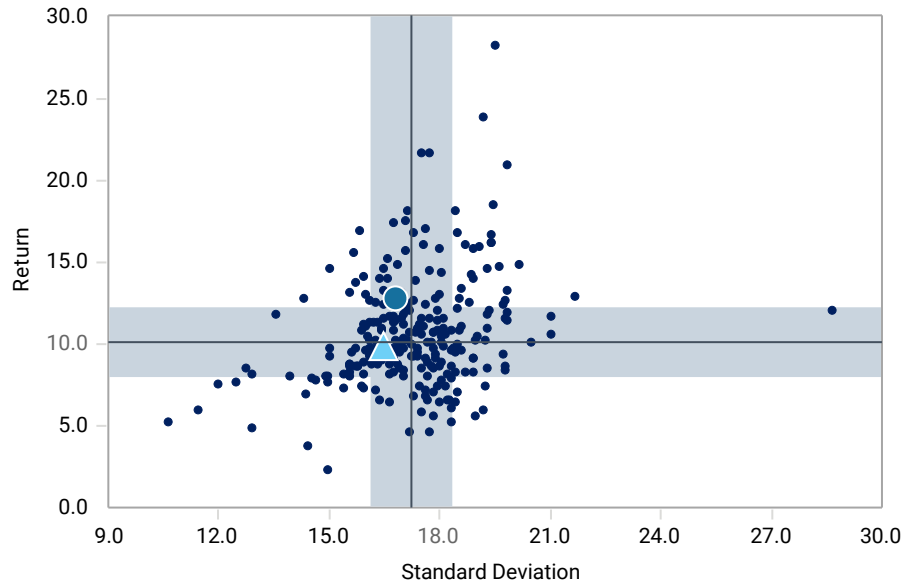


Quarter Excess Return with a Rolling 3 Years Excess Return over Since Inception Ending December 31, 2021

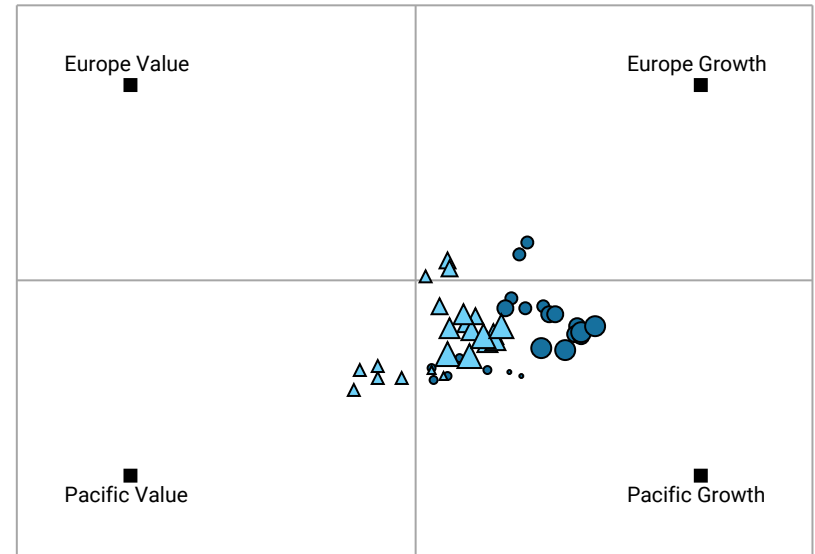


# AXIOM EMERGING MARKETS

5 Years Return vs. Standard Deviation



Rolling 5 Years Style Map

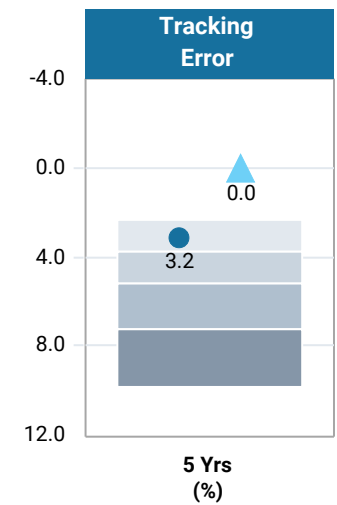
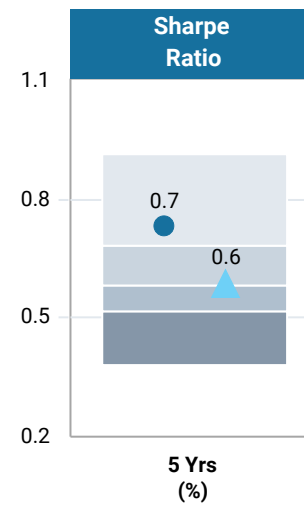
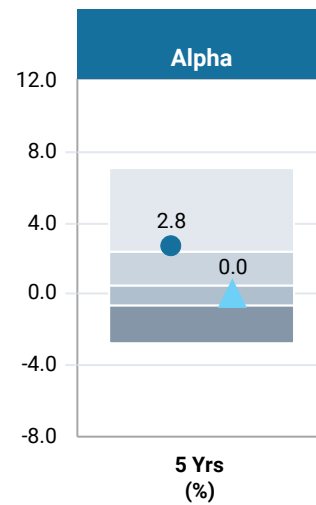
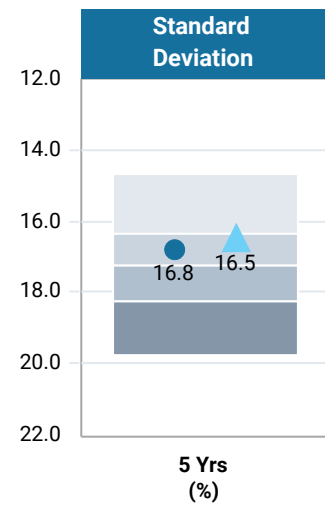
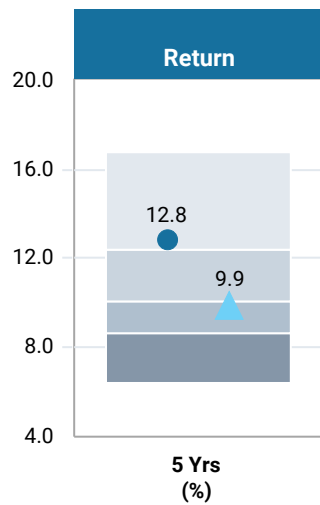


● Axiom Emerging Markets

▲ MSCI Emerging Markets (Net)

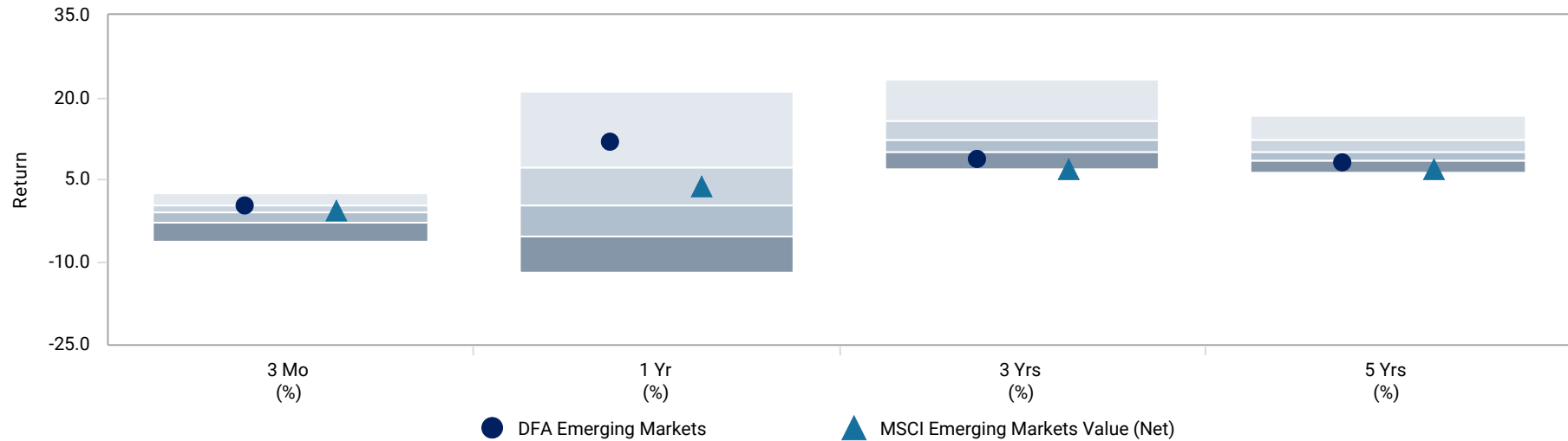
● Axiom Emerging Markets

▲ MSCI Emerging Markets (Net)

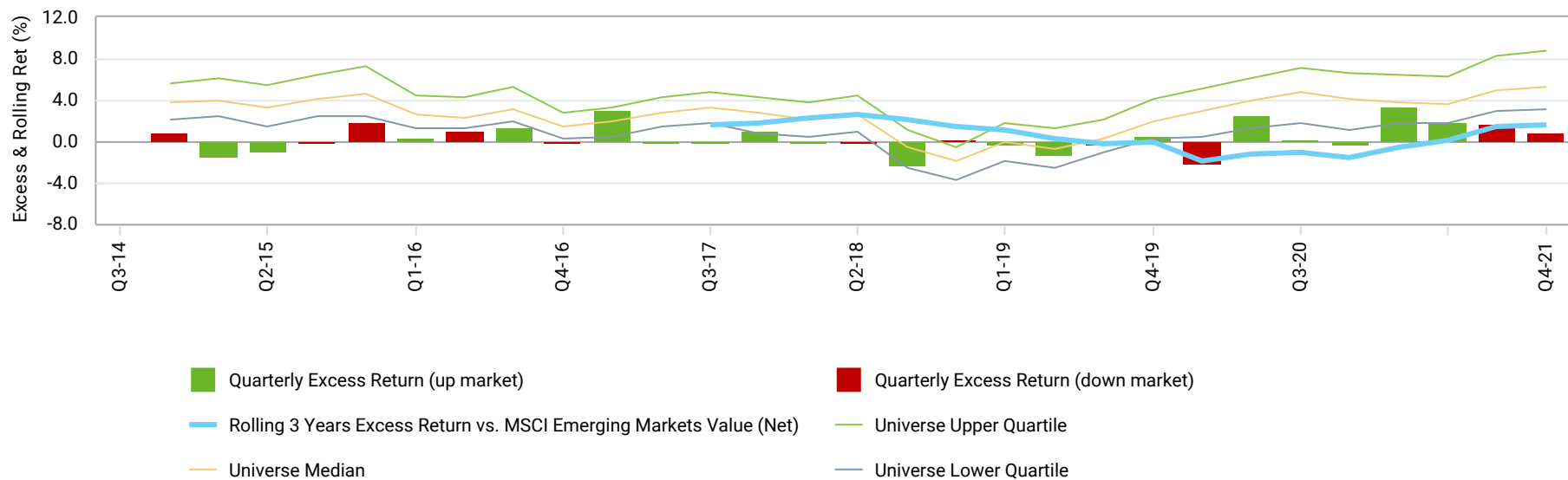


# DFA EMERGING MARKETS

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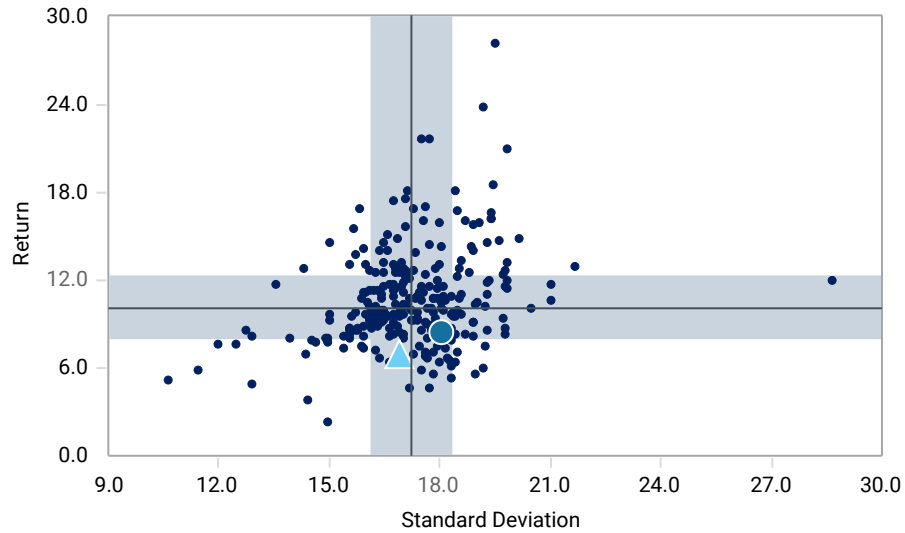


Quarter Excess Return with a Rolling 3 Years Excess Return over Since Inception Ending December 31, 2021



# DFA EMERGING MARKETS

5 Years Return vs. Standard Deviation

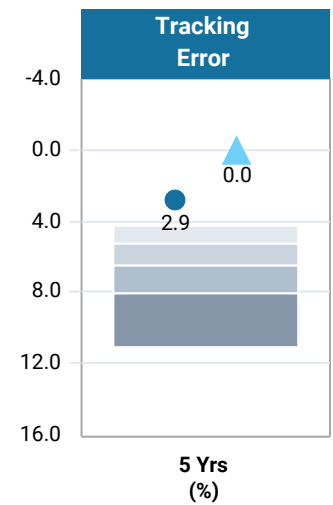
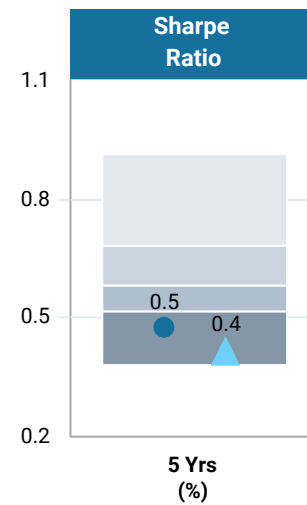
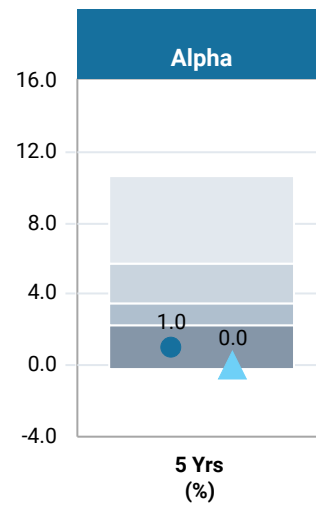
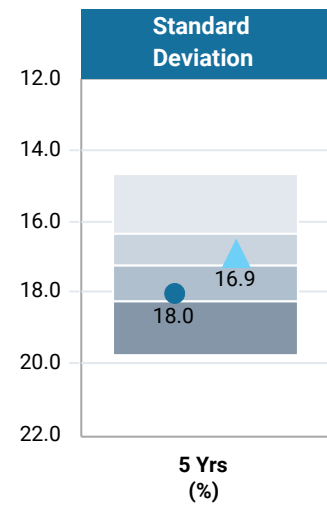
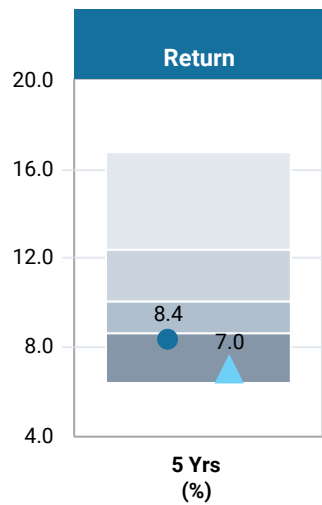


Rolling 5 Years Style Map

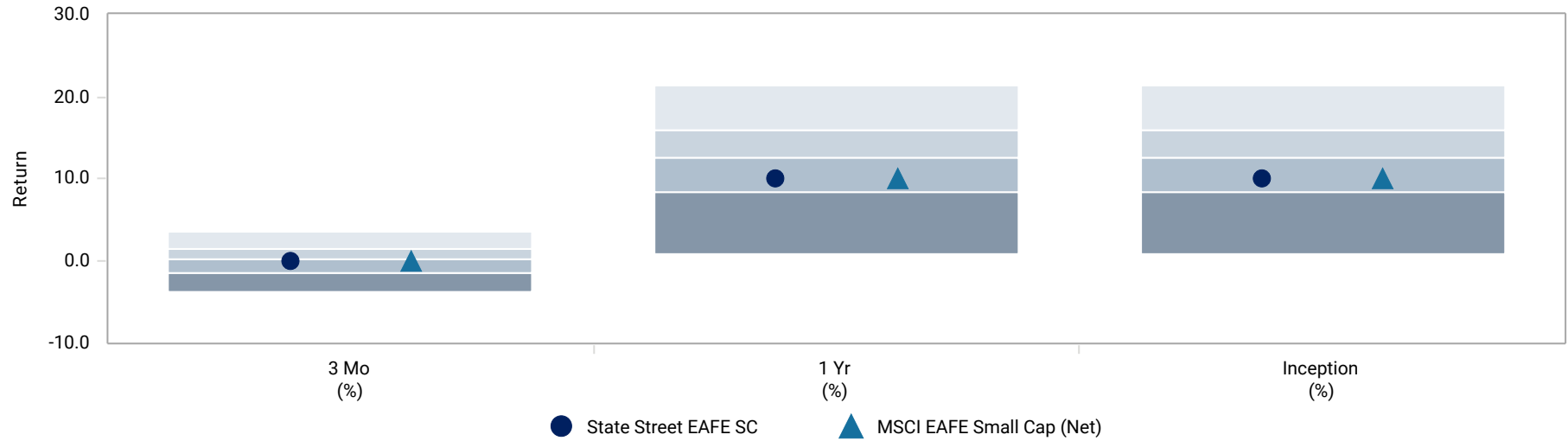


- DFA Emerging Markets
- ▲ MSCI Emerging Markets Value (Net)

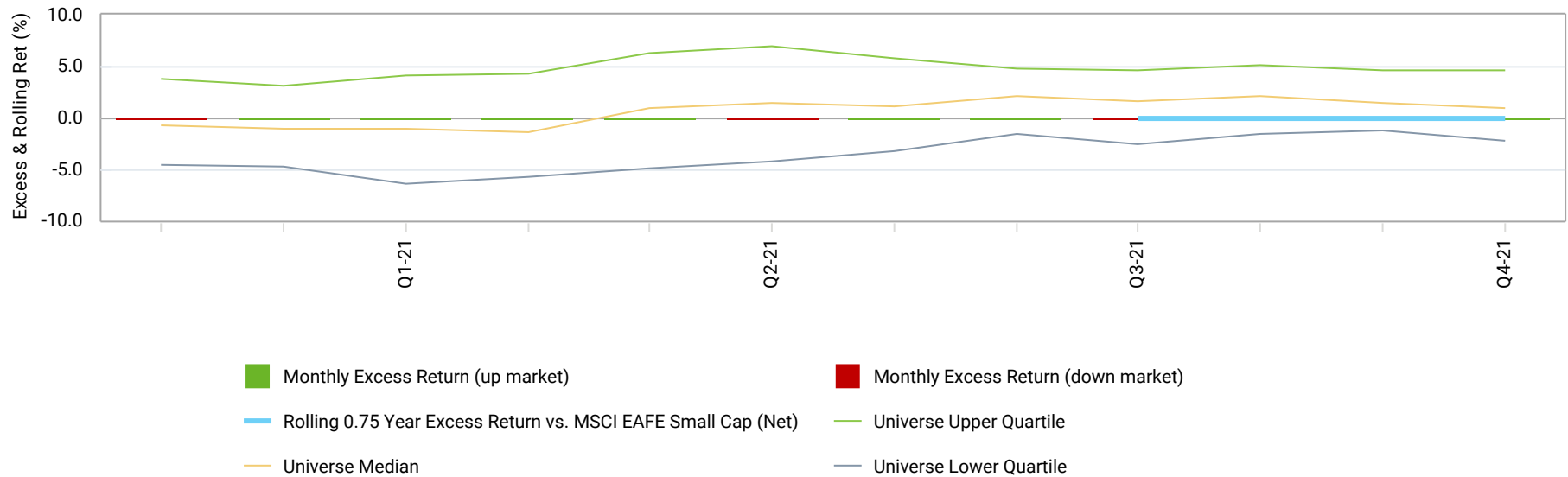
- DFA Emerging Markets
- ▲ MSCI Emerging Markets Value (Net)



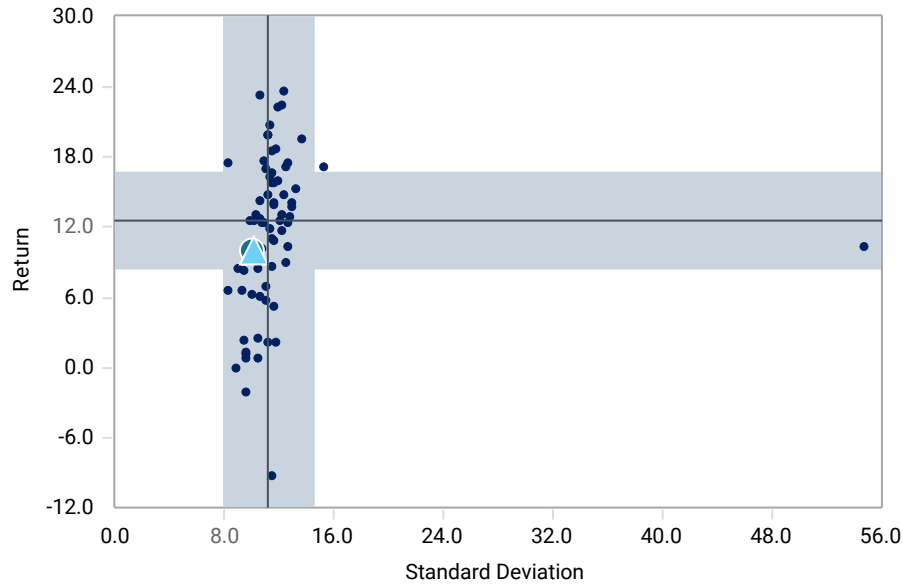
**eV EAFE Small Cap Equity (net of fees)**



**Quarter Excess Return with a Rolling 0.75 Year Excess Return over Since Inception Ending December 31, 2021**

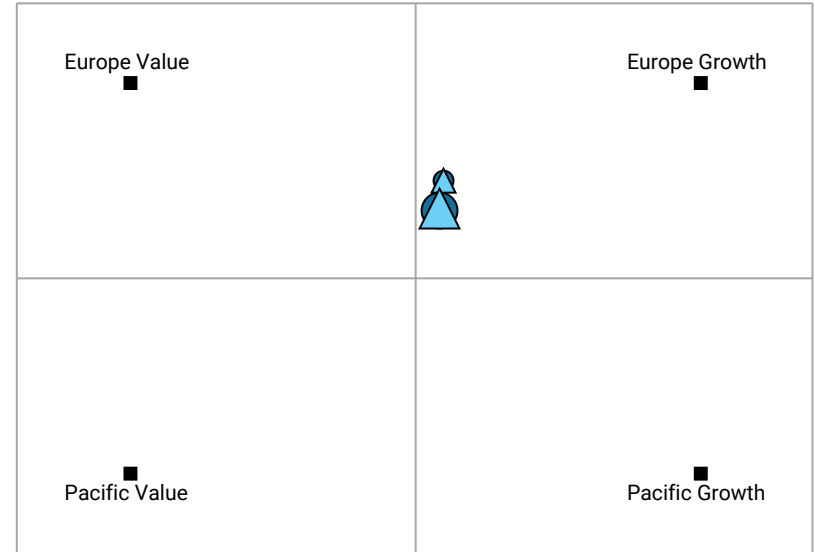


Since Inception Return vs. Standard Deviation

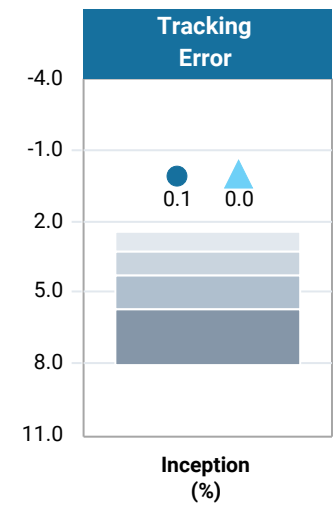
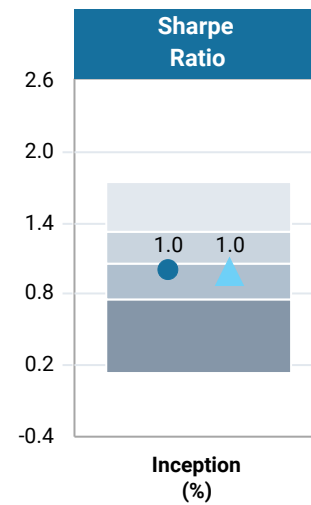
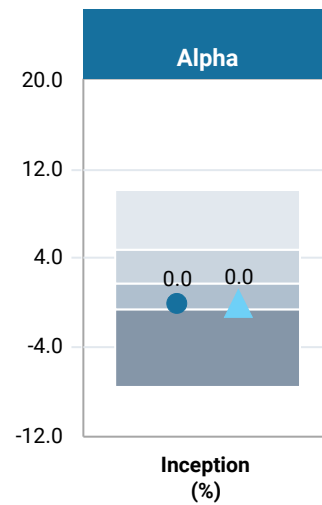
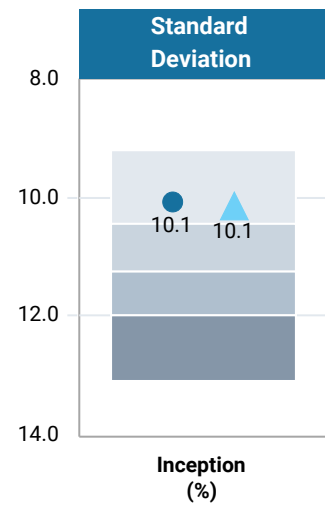
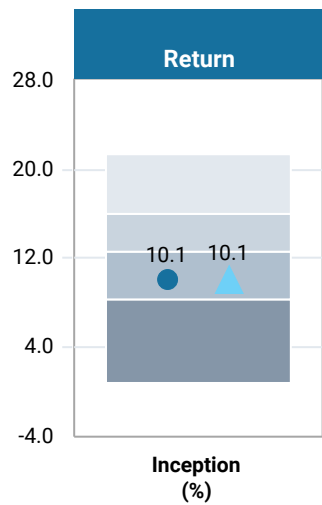


● State Street EAFE SC    ▲ MSCI EAFE Small Cap (Net)

Rolling 0.75 Year Style Map



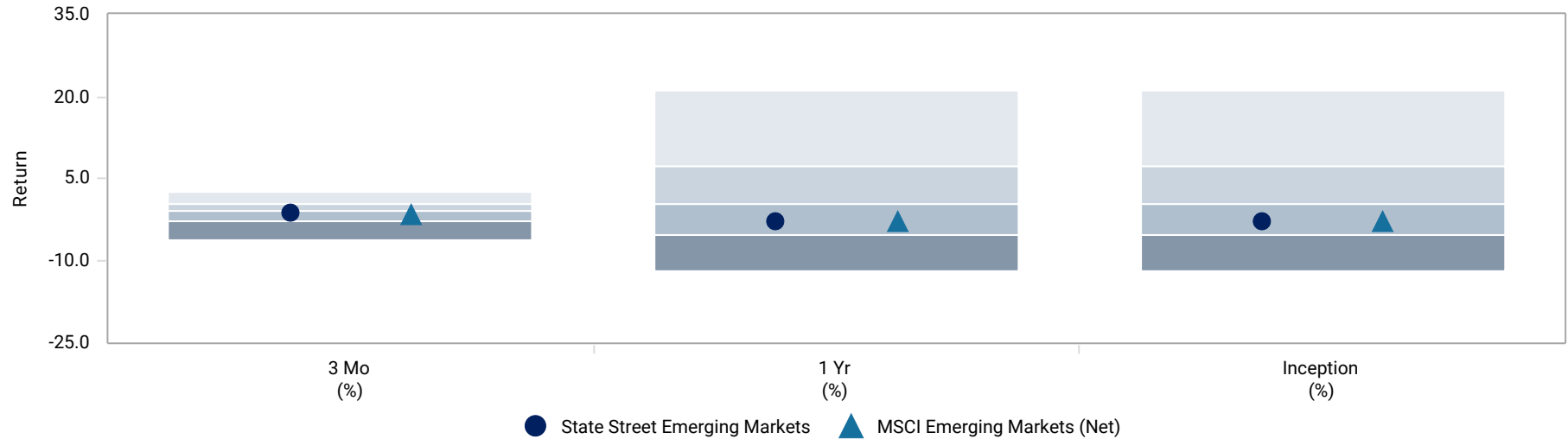
● State Street EAFE SC    ▲ MSCI EAFE Small Cap (Net)



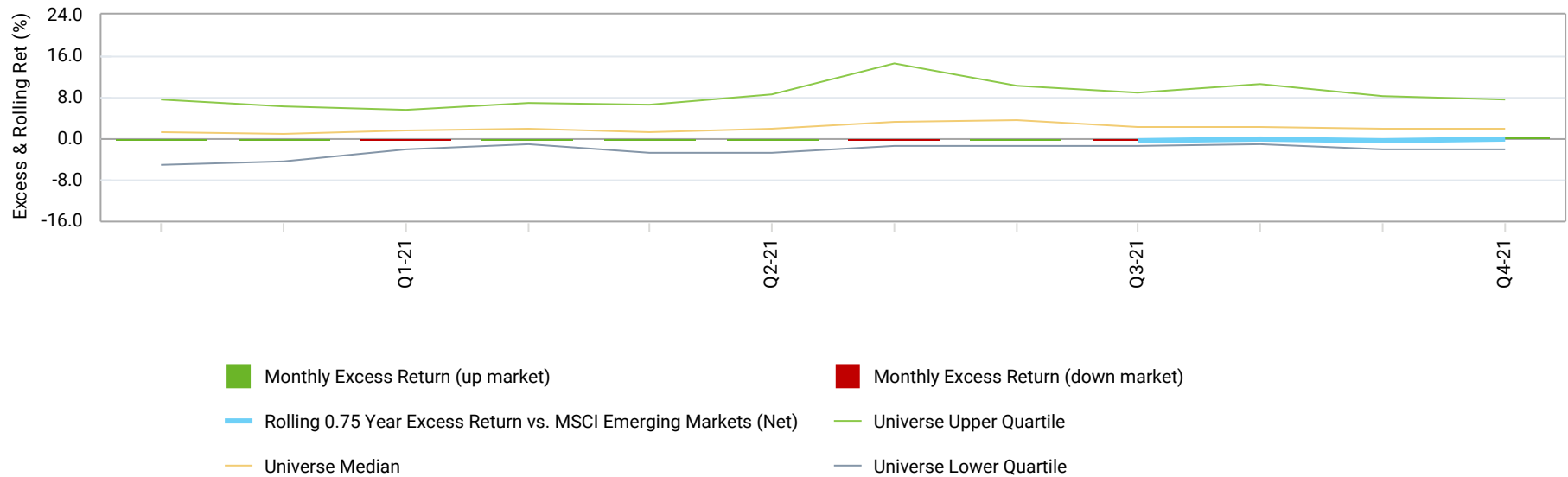


# SSGA EMERGING MARKETS

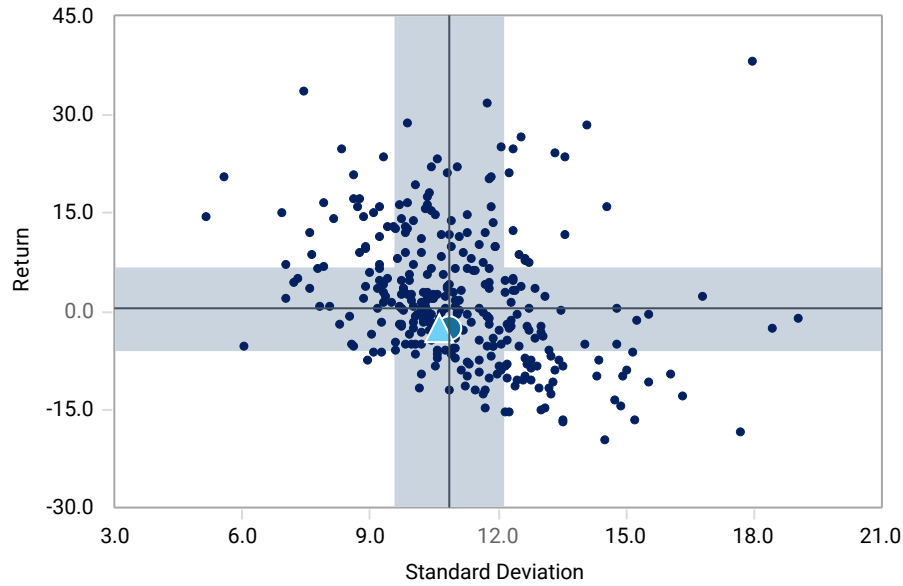
eV Emg Mkts Equity (net of fees)



Quarter Excess Return with a Rolling 0.75 Year Excess Return over Since Inception Ending December 31, 2021

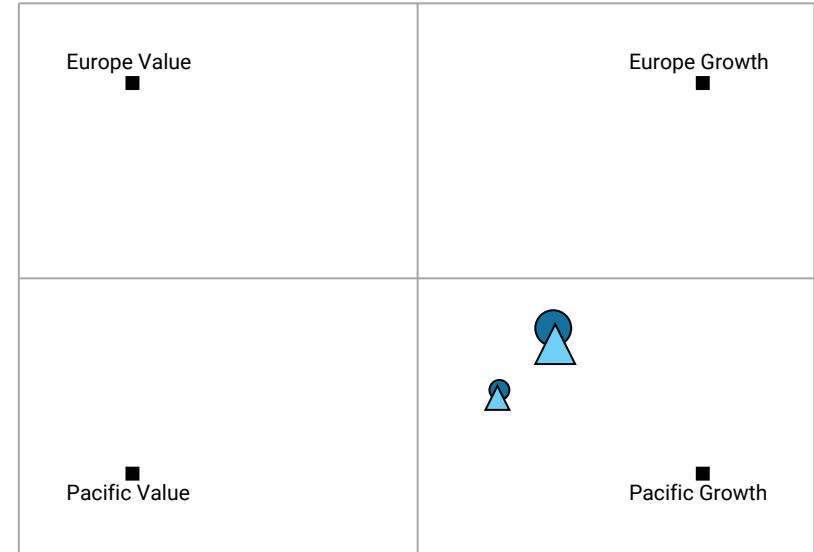


Since Inception Return vs. Standard Deviation

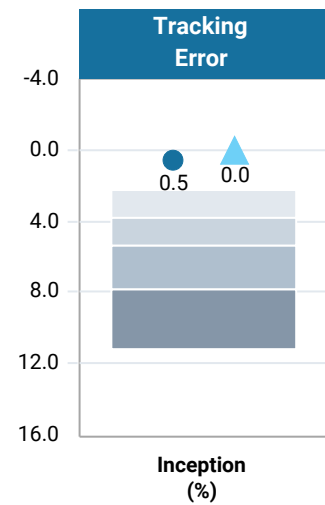
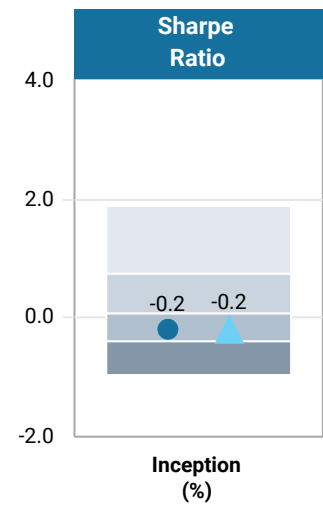
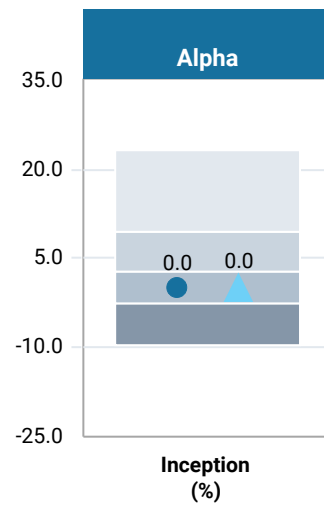
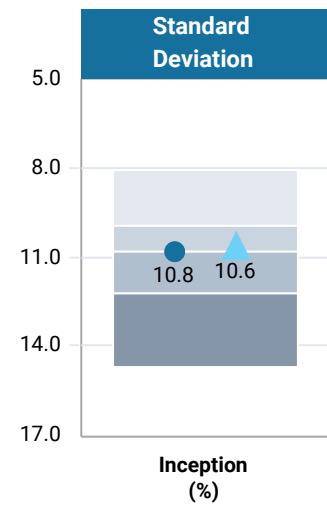
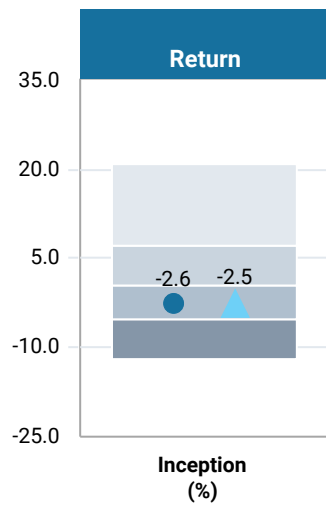


● State Street Emerging Markets ▲ MSCI Emerging Markets (Net)

Rolling 0.75 Year Style Map

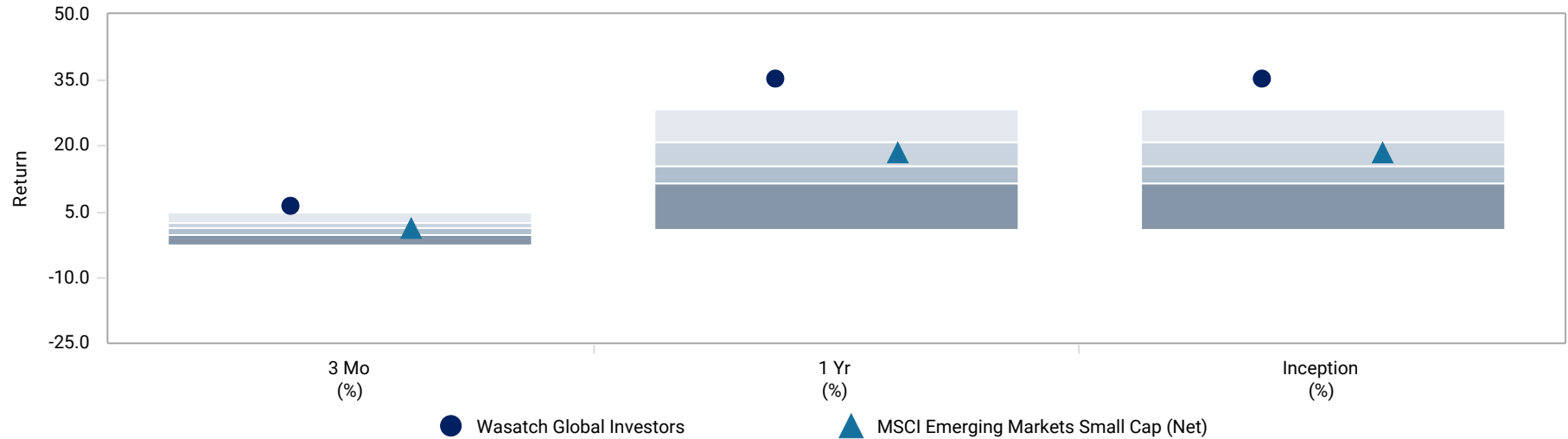


● State Street Emerging Markets ▲ MSCI Emerging Markets (Net)

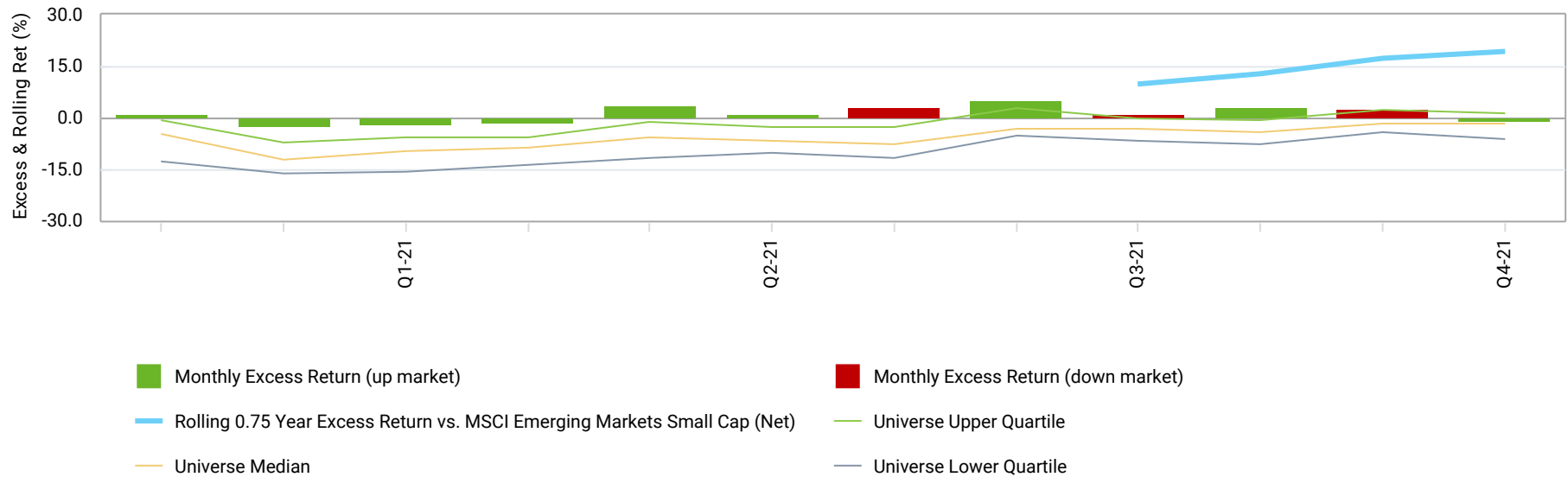


# WASATCH GLOBAL INVESTORS

## eV Emg Mkts Small Cap Equity (net of fees)



## Quarter Excess Return with a Rolling 0.75 Year Excess Return over Since Inception Ending December 31, 2021

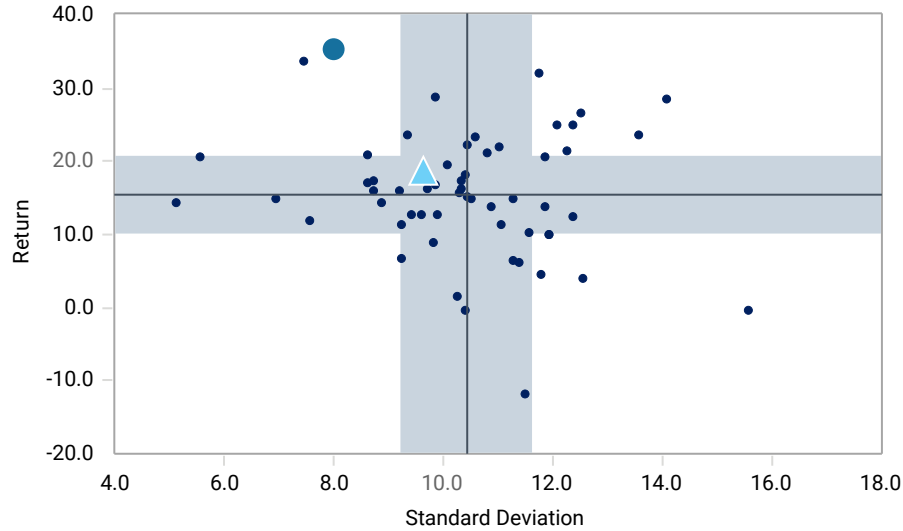


# Los Angeles City Employees' Retirement System-LACERS Master Trust

## WASATCH GLOBAL INVESTORS

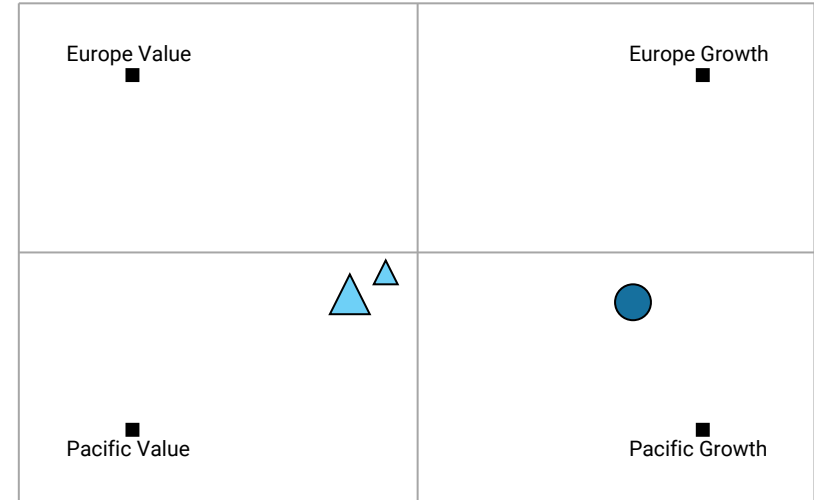
December 31, 2021

Since Inception Return vs. Standard Deviation

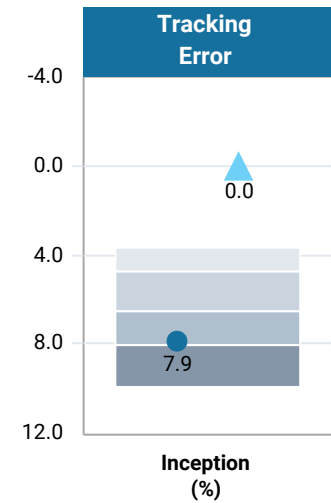
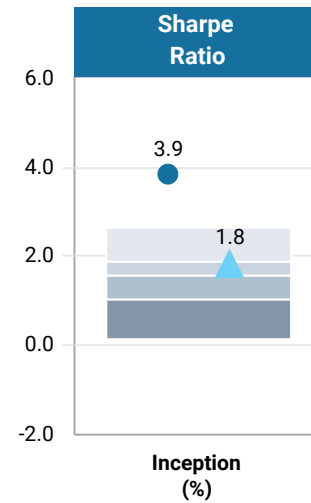
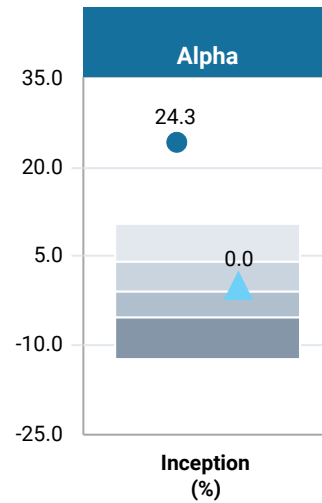
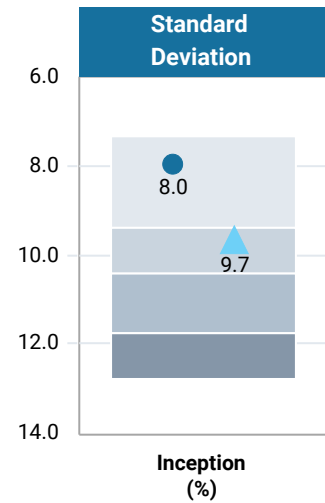
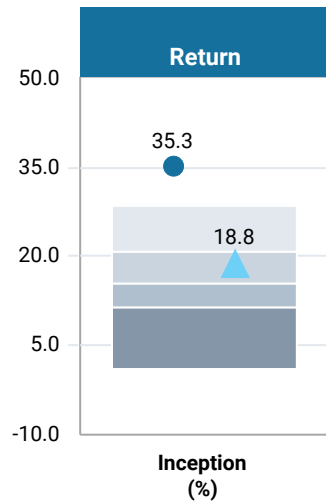


- Wasatch Global Investors
- ▲ MSCI Emerging Markets Small Cap (Net)

Rolling 0.75 Year Style Map



- Wasatch Global Investors
- ▲ MSCI Emerging Markets Small Cap (Net)



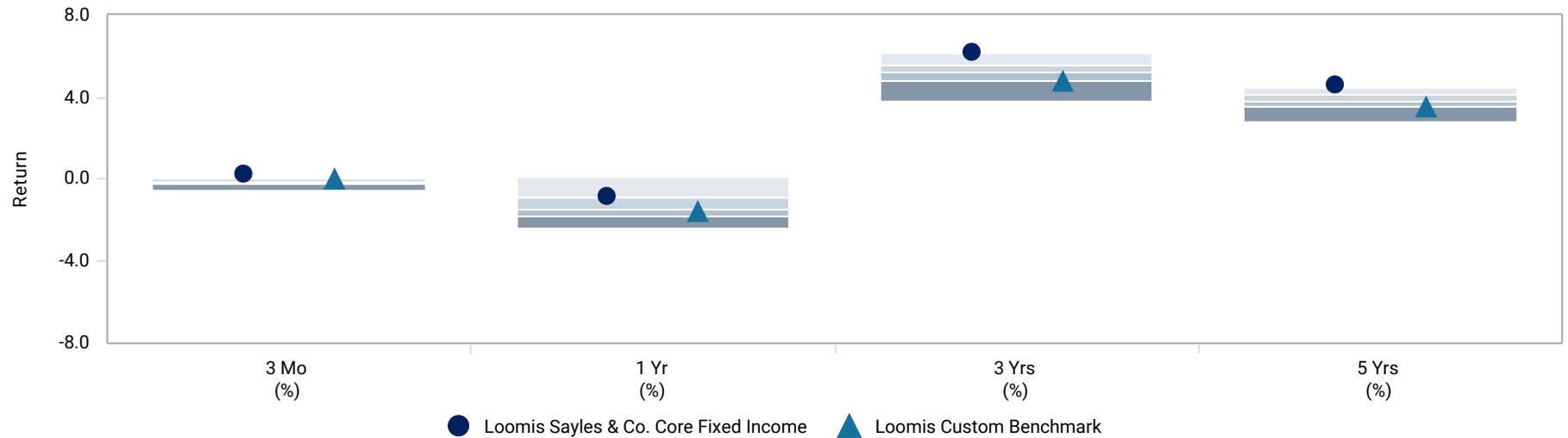


# CORE FIXED INCOME MANAGER PERFORMANCE

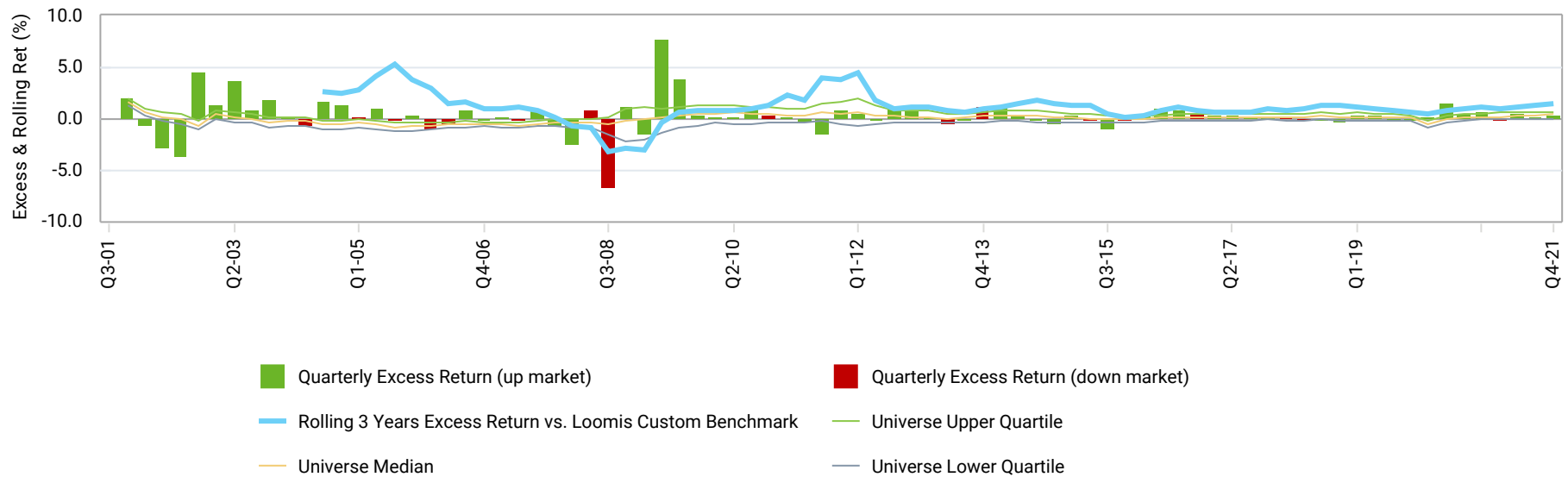


# LOOMIS SAYLES & CO. CORE FIXED INCOME

## eV US Core Fixed Inc (net of fees)

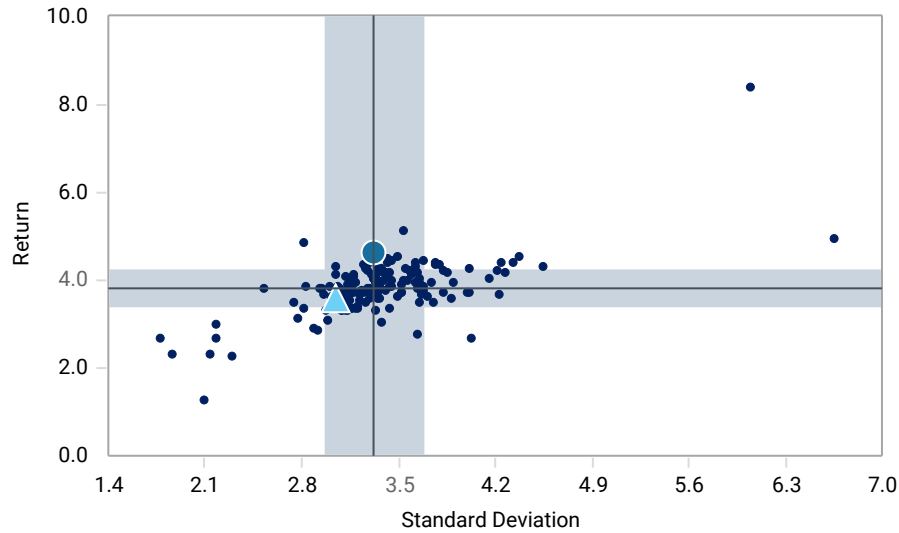


## Quarter Excess Return with a Rolling 3 Years Excess Return over Since Inception Ending December 31, 2021



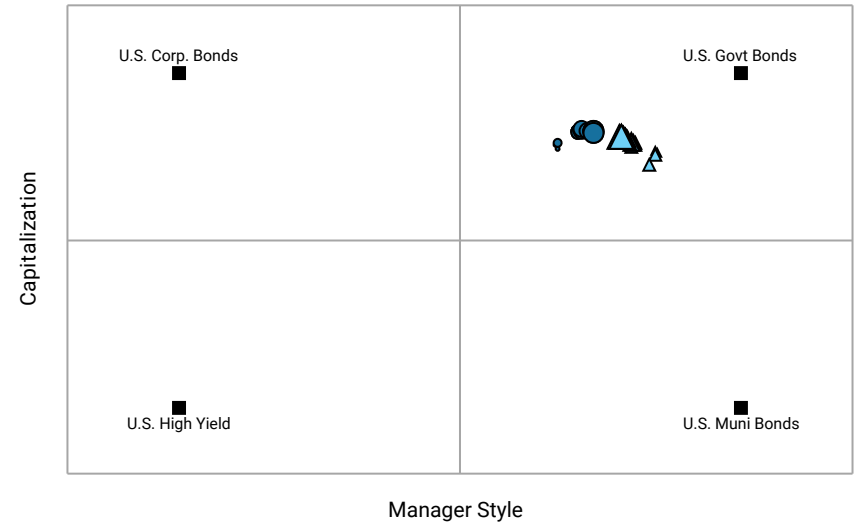
# LOOMIS SAYLES & CO. CORE FIXED INCOME

5 Years Return vs. Standard Deviation

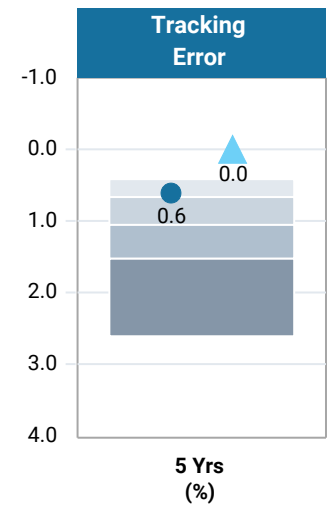
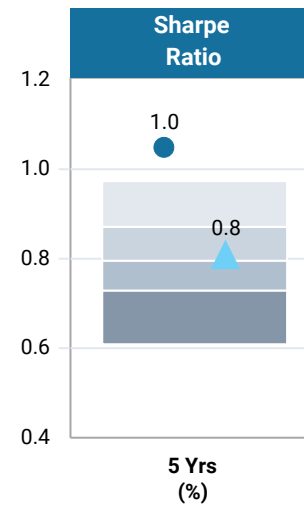
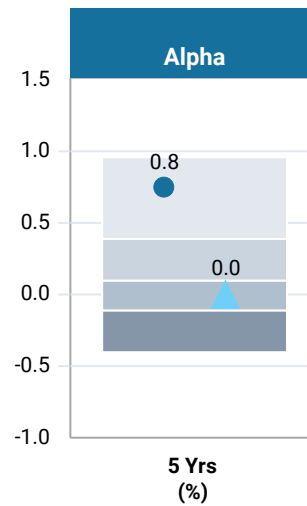
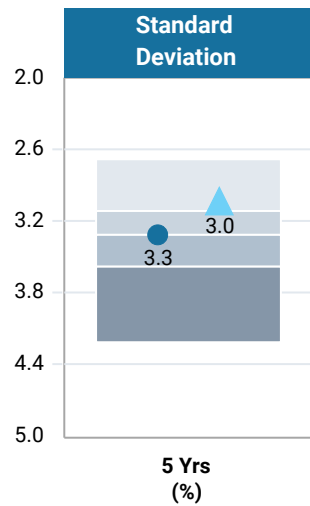
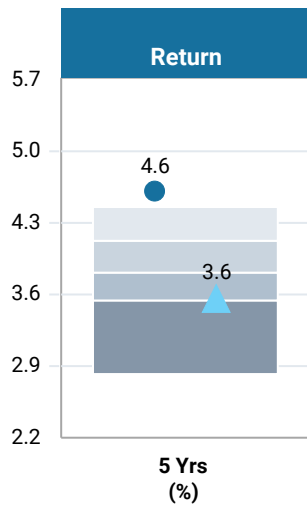


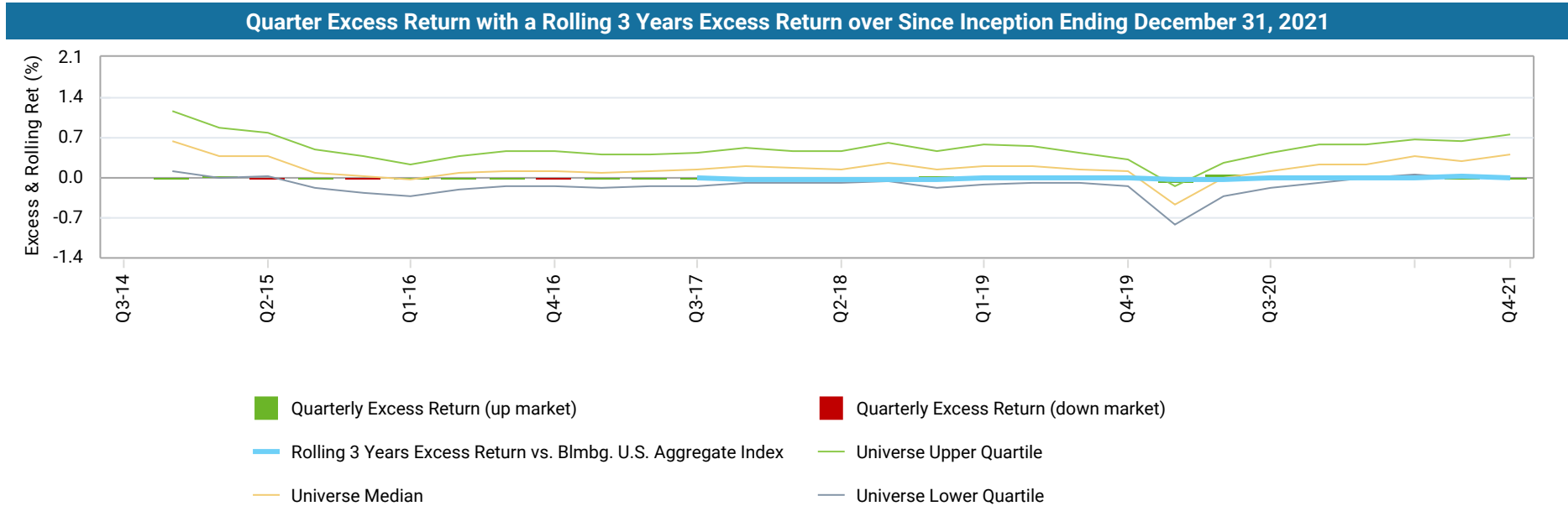
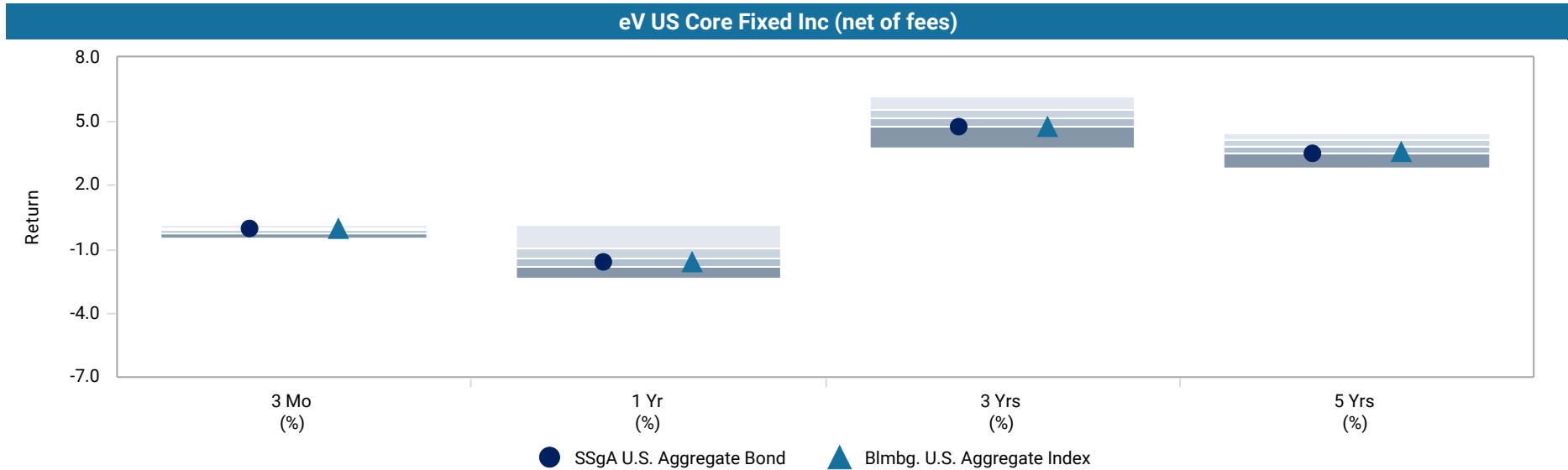
● Loomis Sayles & Co. Core Fixed Income  
▲ Loomis Custom Benchmark

Style Map: (5 Years)



● Loomis Sayles & Co. Core Fixed Income  
▲ Loomis Custom Benchmark





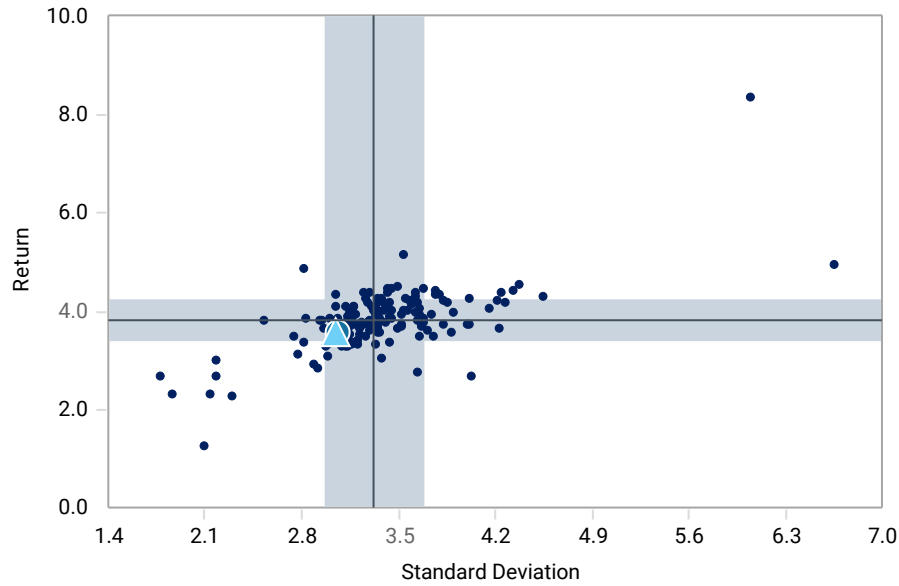


# Los Angeles City Employees' Retirement System-LACERS Master Trust

## SSGA U.S. AGGREGATE BOND

December 31, 2021

5 Years Return vs. Standard Deviation

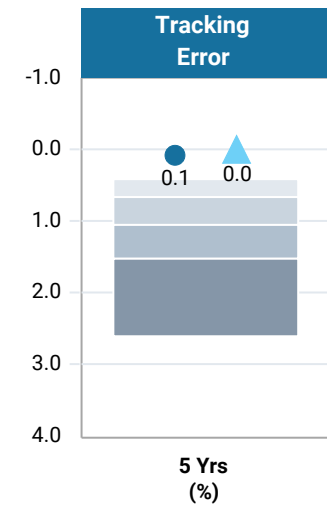
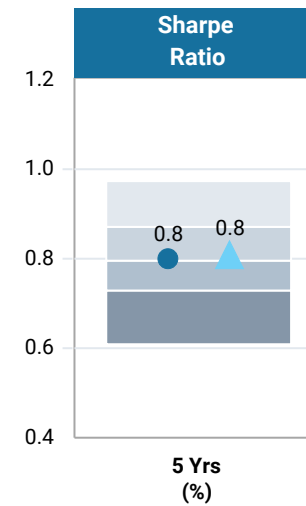
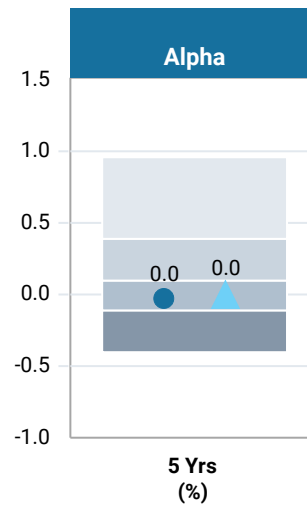
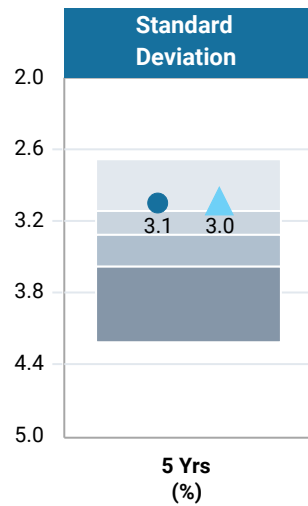
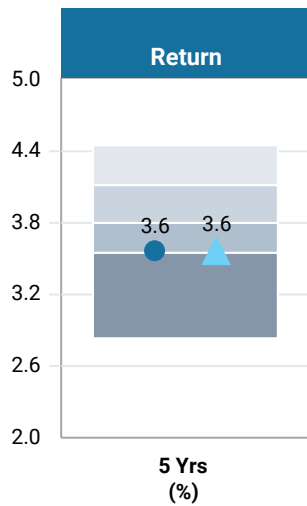


● SSGA U.S. Aggregate Bond    ▲ Blmbg. U.S. Aggregate Index

Style Map: (5 Years)



● SSGA U.S. Aggregate Bond    ▲ Blmbg. U.S. Aggregate Index



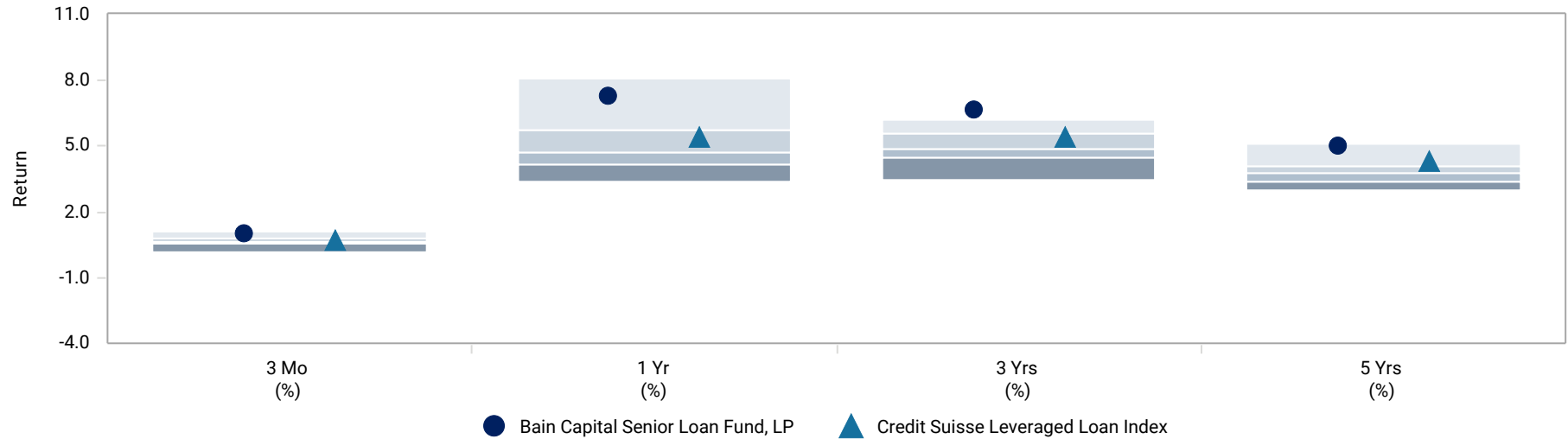


# CREDIT OPPORTUNITIES MANAGER PERFORMANCE

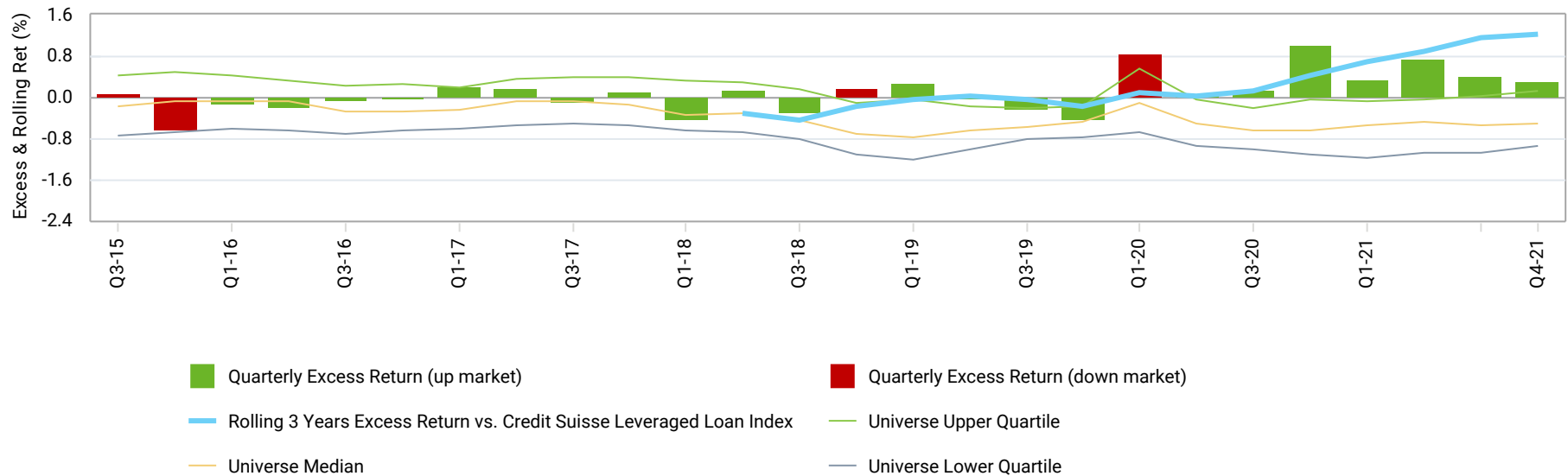


# BAIN CAPITAL SENIOR LOAN FUND, LP

## eV US Float-Rate Bank Loan Fixed Inc (net of fees)

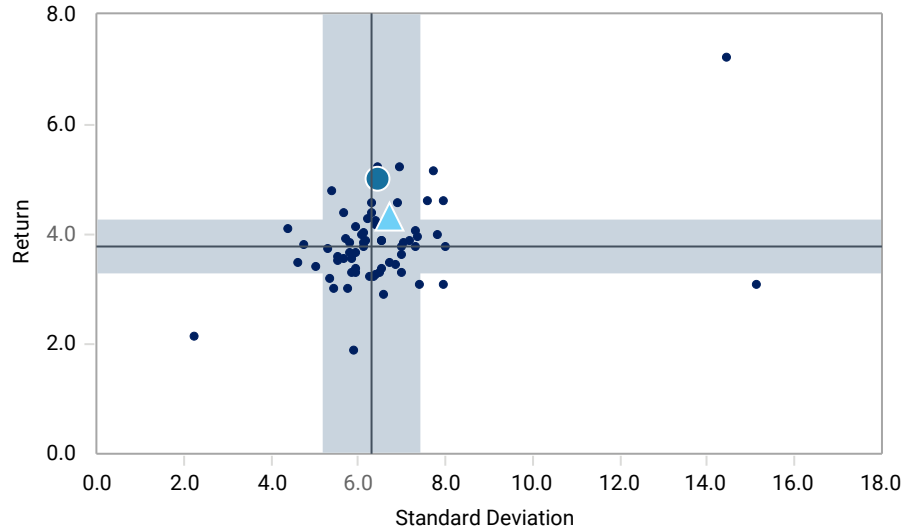


## Quarter Excess Return with a Rolling 3 Years Excess Return over Since Inception Ending December 31, 2021



# BAIN CAPITAL SENIOR LOAN FUND, LP

5 Years Return vs. Standard Deviation

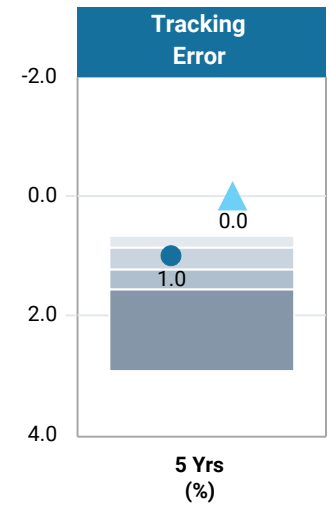
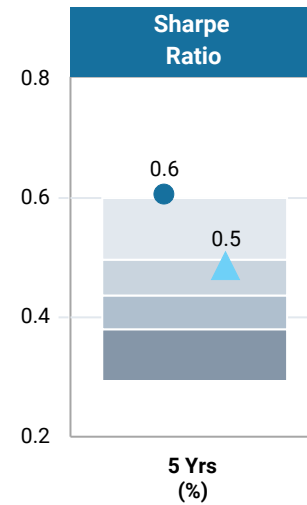
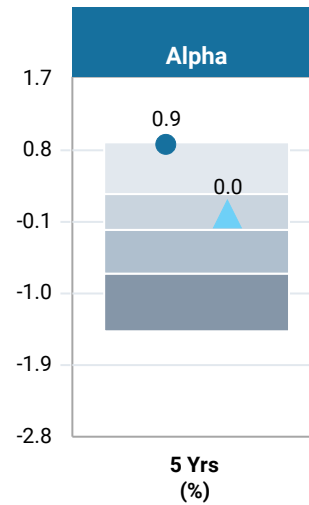
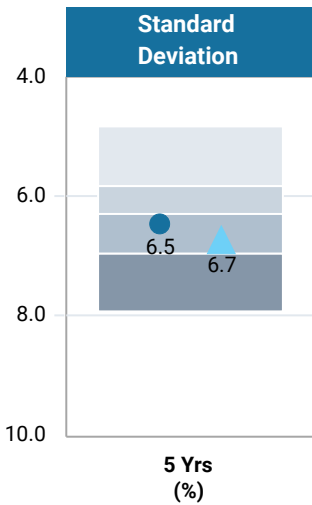
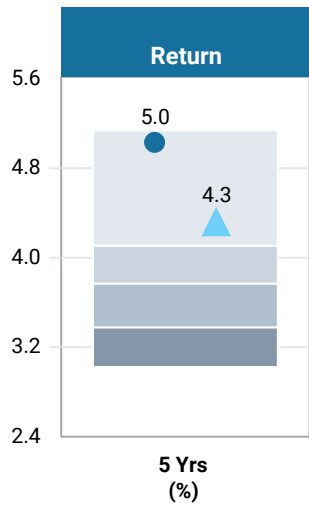


- Bain Capital Senior Loan Fund, LP
- ▲ Credit Suisse Leveraged Loan Index

Style Map: (3 Years)



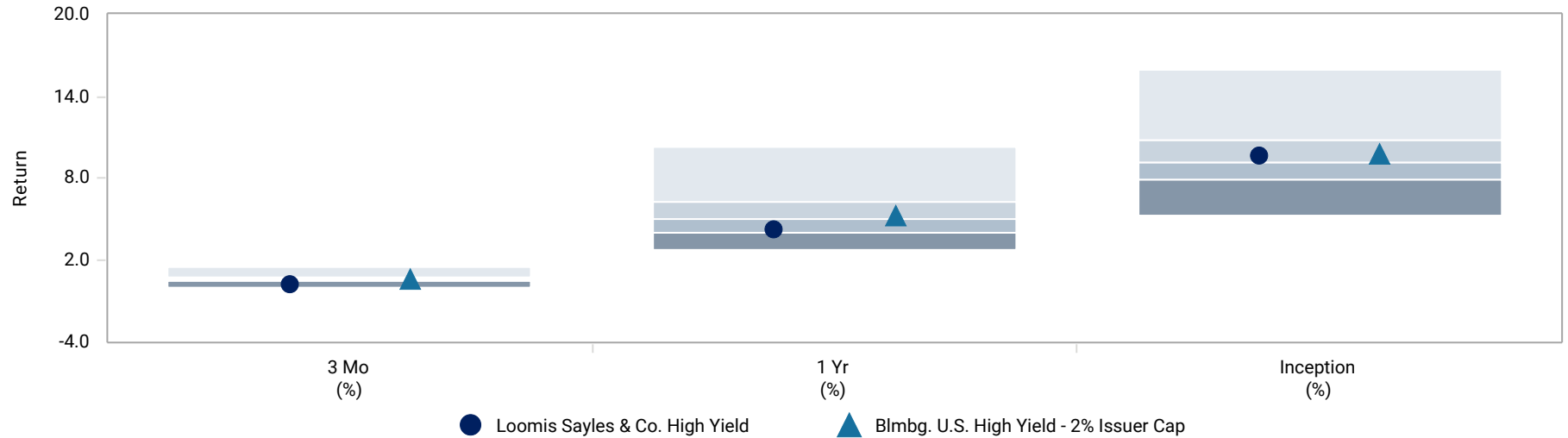
- Bain Capital Senior Loan Fund, LP
- ▲ Credit Suisse Leveraged Loan Index



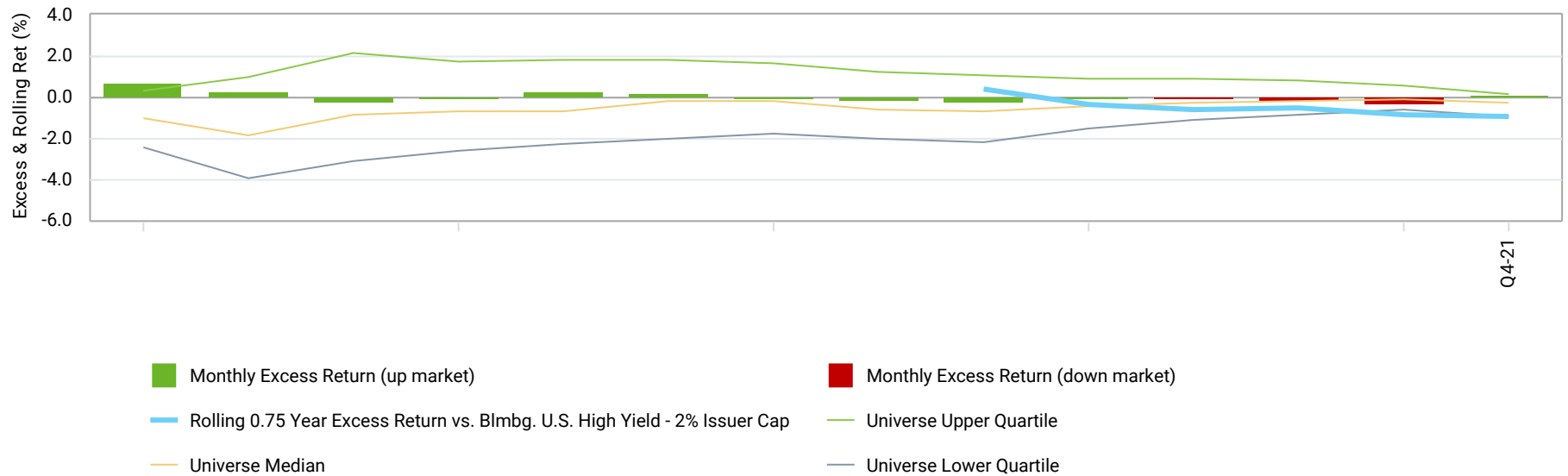
Los Angeles City Employees' Retirement System-LACERS Master Trust  
**LOOMIS SAYLES & CO. HIGH YIELD**

December 31, 2021

**eV US High Yield Fixed Inc (net of fees)**



**Quarter Excess Return with a Rolling 0.75 Year Excess Return over Since Inception Ending December 31, 2021**

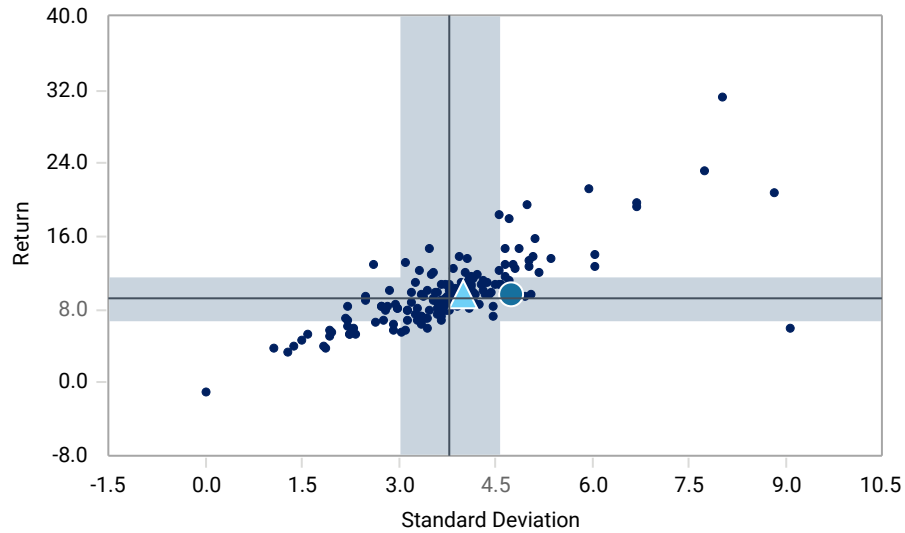


# Los Angeles City Employees' Retirement System-LACERS Master Trust

## LOOMIS SAYLES & CO. HIGH YIELD

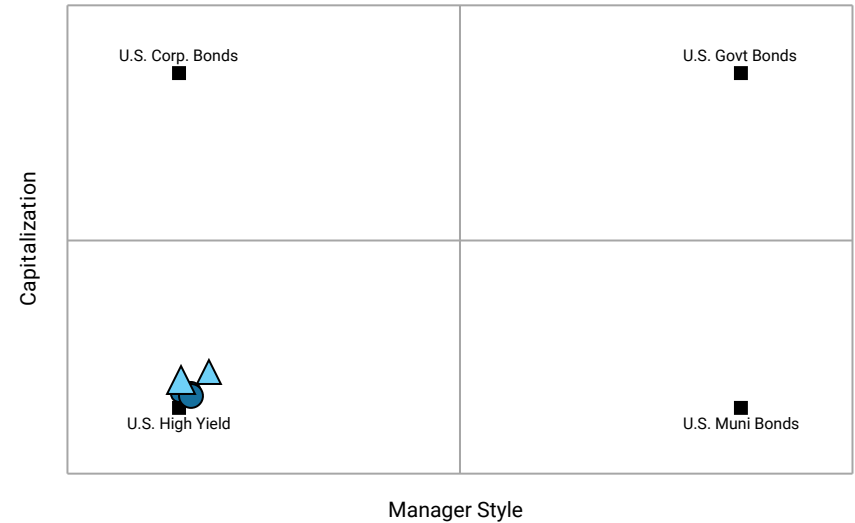
December 31, 2021

Since Inception Return vs. Standard Deviation

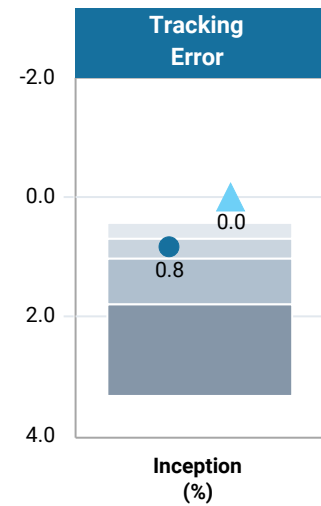
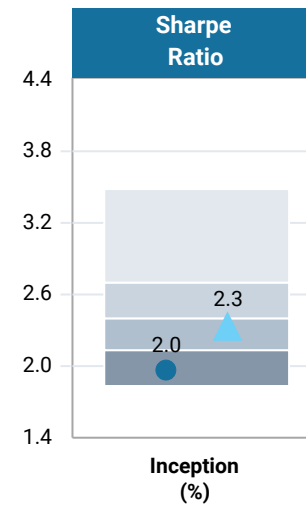
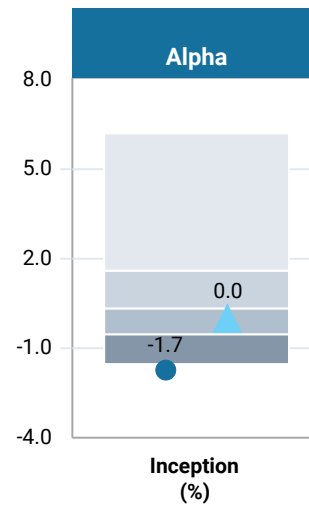
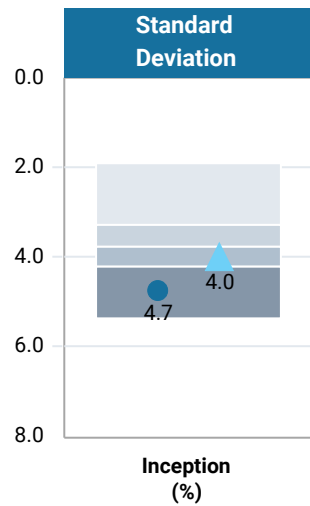
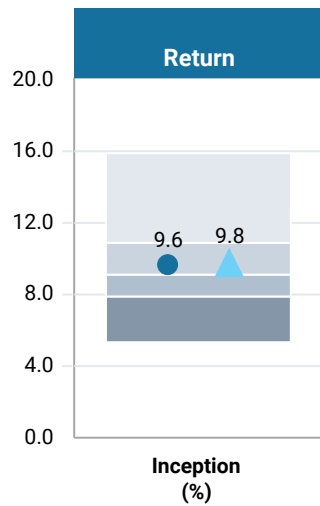


- Loomis Sayles & Co. High Yield
- ▲ Blmbg. U.S. High Yield - 2% Issuer Cap

Style Map: (0.75 Year)

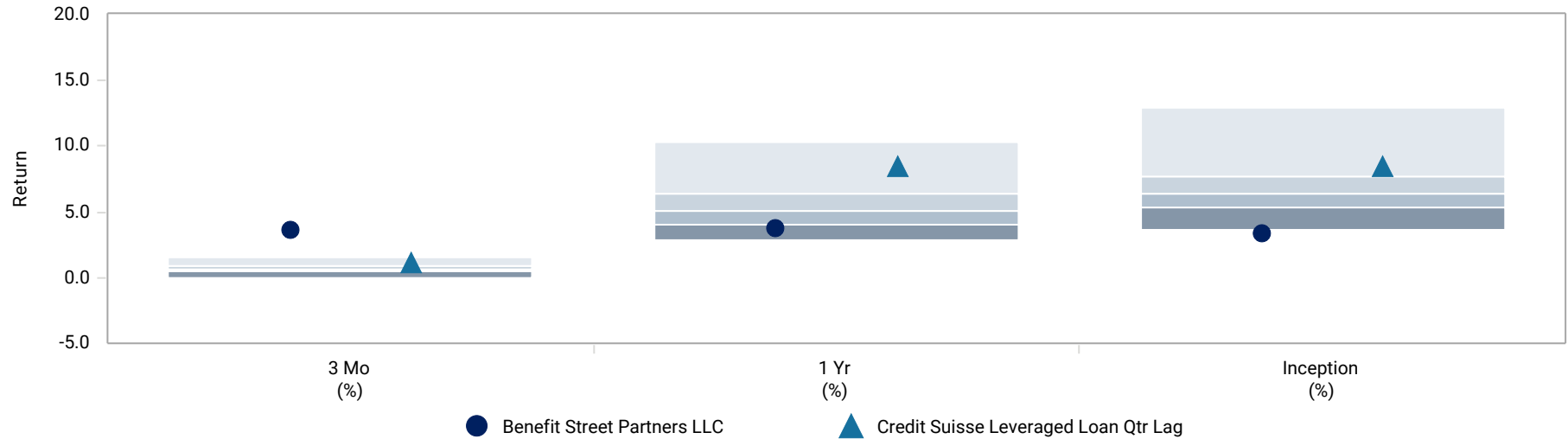


- Loomis Sayles & Co. High Yield
- ▲ Blmbg. U.S. High Yield - 2% Issuer Cap

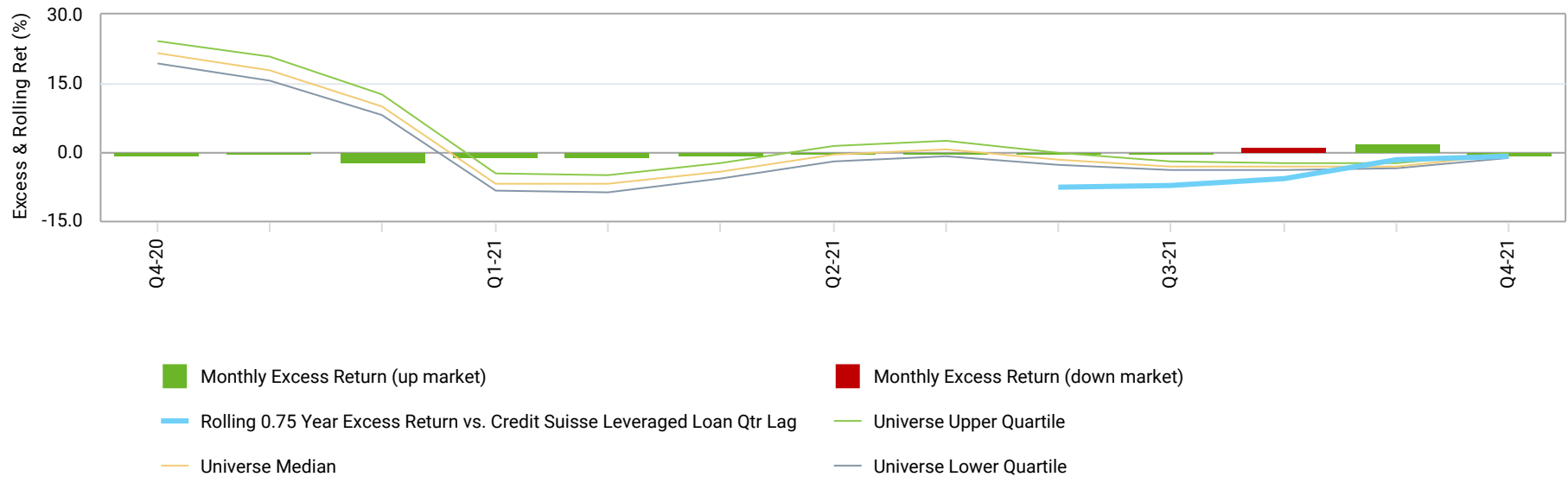


# BENEFIT STREET PARTNERS LLC

## eV US High Yield Fixed Inc (net of fees)



## Quarter Excess Return with a Rolling 0.75 Year Excess Return over Since Inception Ending December 31, 2021

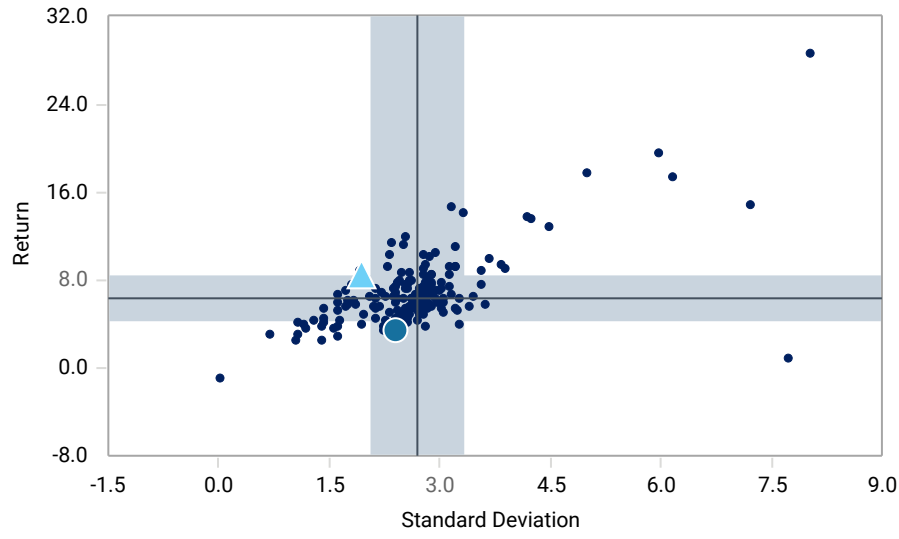


# Los Angeles City Employees' Retirement System-LACERS Master Trust

## BENEFIT STREET PARTNERS LLC

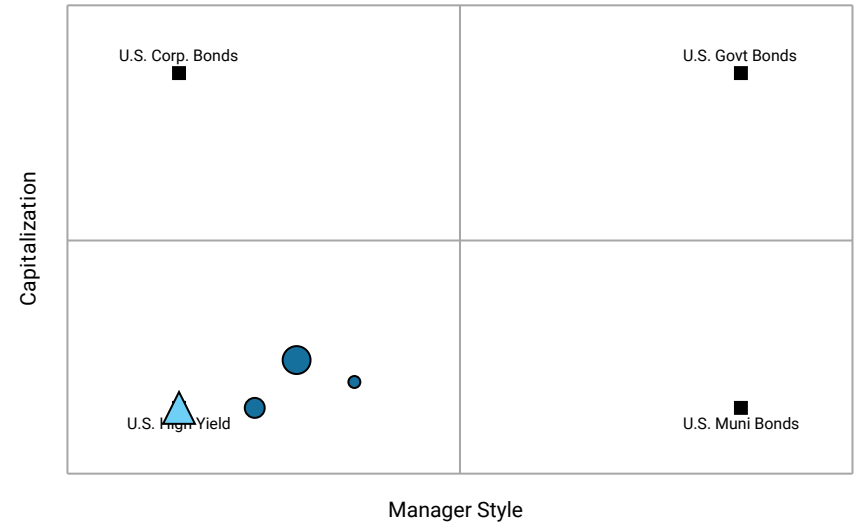
December 31, 2021

Since Inception Return vs. Standard Deviation

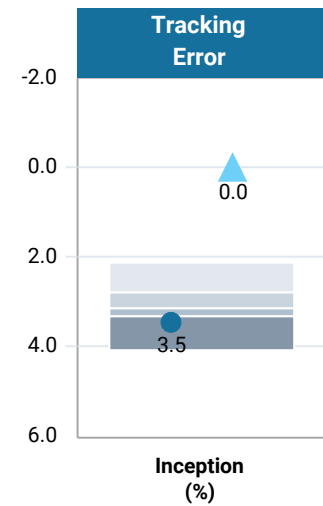
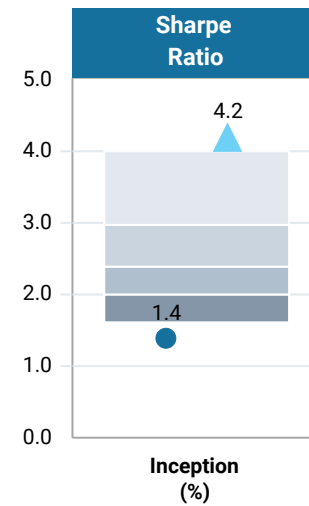
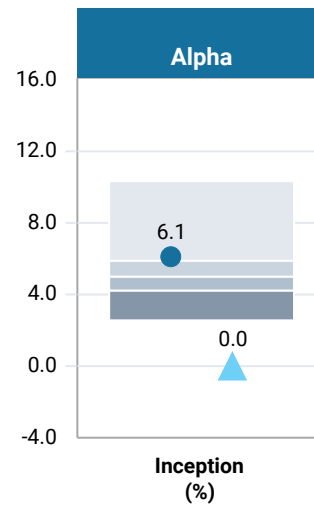
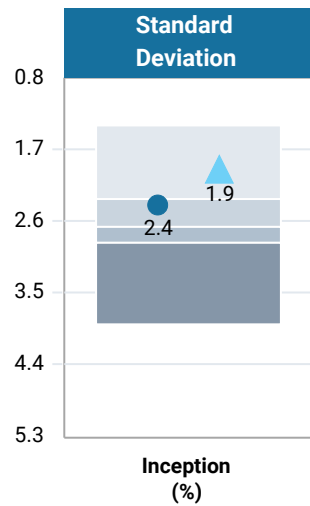
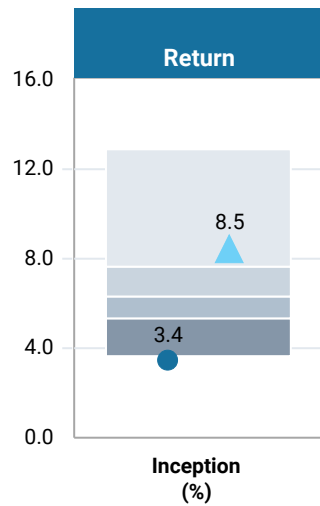


- Benefit Street Partners LLC
- ▲ Credit Suisse Leveraged Loan Qtr Lag

Style Map: (0.75 Year)



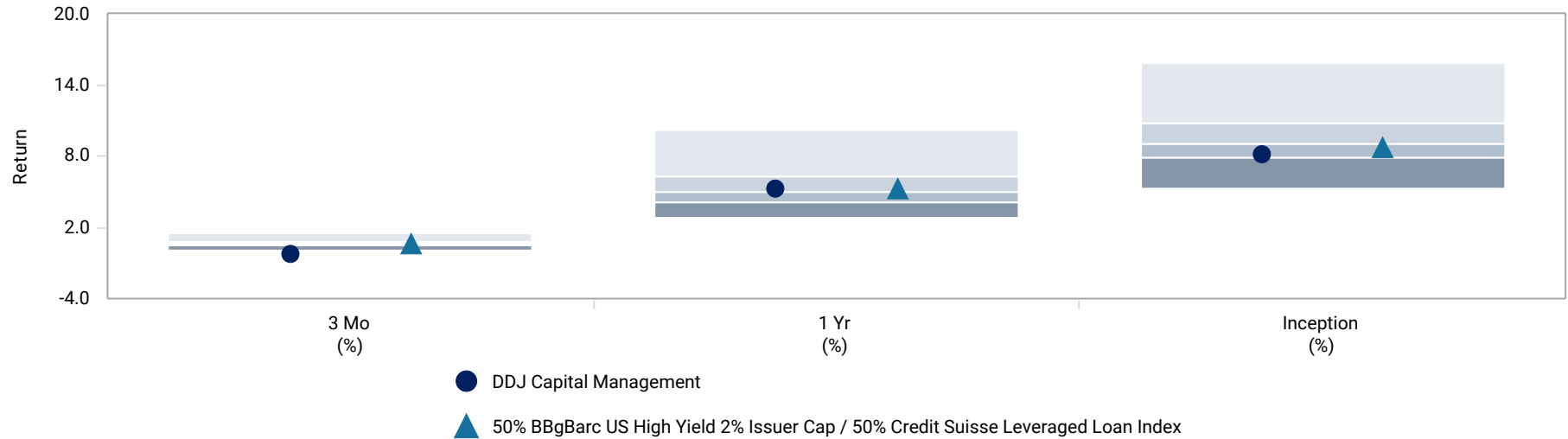
- Benefit Street Partners LLC
- ▲ Credit Suisse Leveraged Loan Qtr Lag



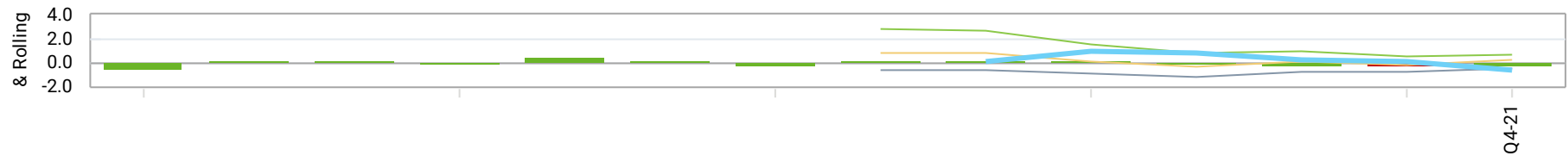


# DDJ CAPITAL MANAGEMENT

## eV US High Yield Fixed Inc (net of fees)



## Quarter Excess Return with a Rolling 0.75 Year Excess Return over Since Inception Ending December 31, 2021



- Monthly Excess Return (up market)
- Monthly Excess Return (down market)
- Rolling 0.75 Year Excess Return vs. 50% BBgBarc US High Yield 2% Issuer Cap / 50% Credit Suisse Leveraged Loan Index
- Universe Upper Quartile
- Universe Median
- Universe Lower Quartile

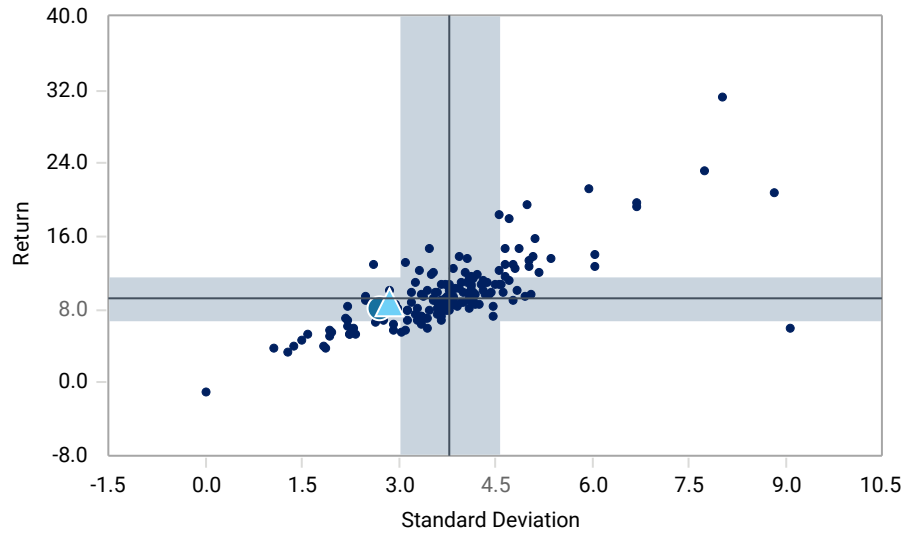


# Los Angeles City Employees' Retirement System-LACERS Master Trust

## DDJ CAPITAL MANAGEMENT

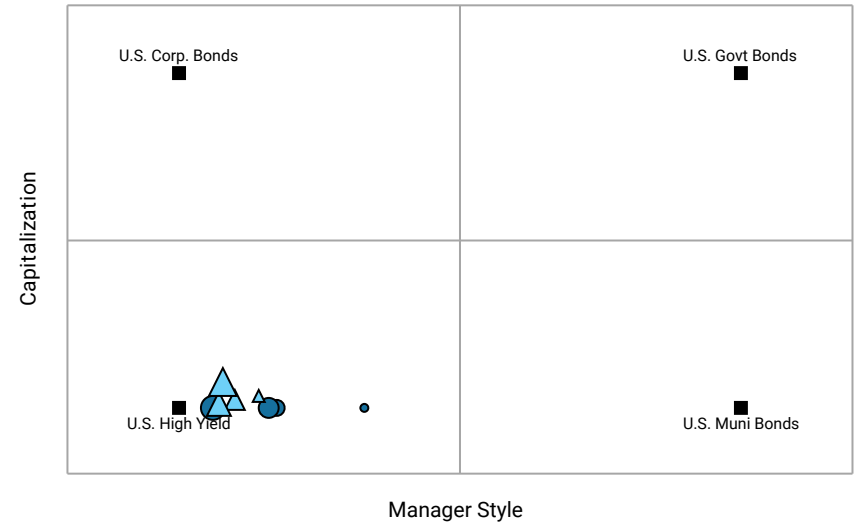
December 31, 2021

Since Inception Return vs. Standard Deviation

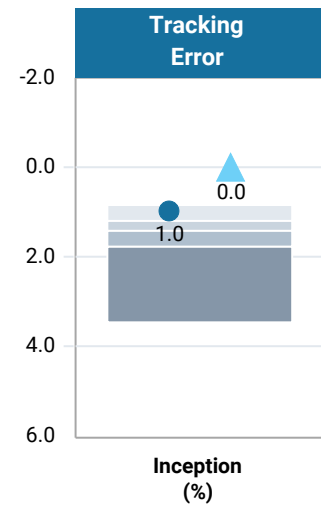
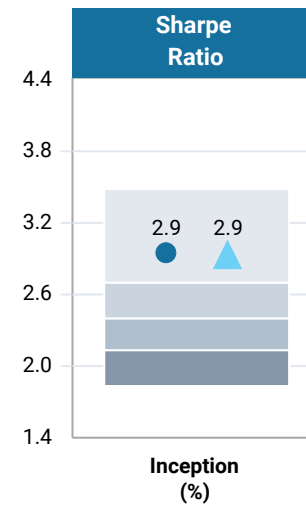
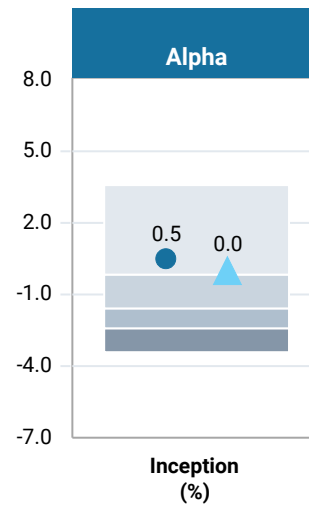
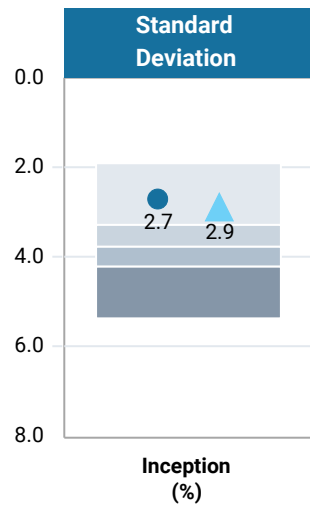
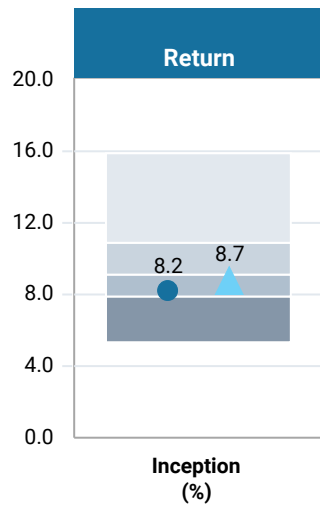


- DDJ Capital Management
- ▲ 50% BBgBarc US High Yield 2% Issuer Cap / 50% Credit Suisse Leveraged Loa

Style Map: (0.75 Year)



- DDJ Capital Management
- ▲ 50% BBgBarc US High Yield 2% Issuer Cap / 50% Credit Suisse Leveraged Loan

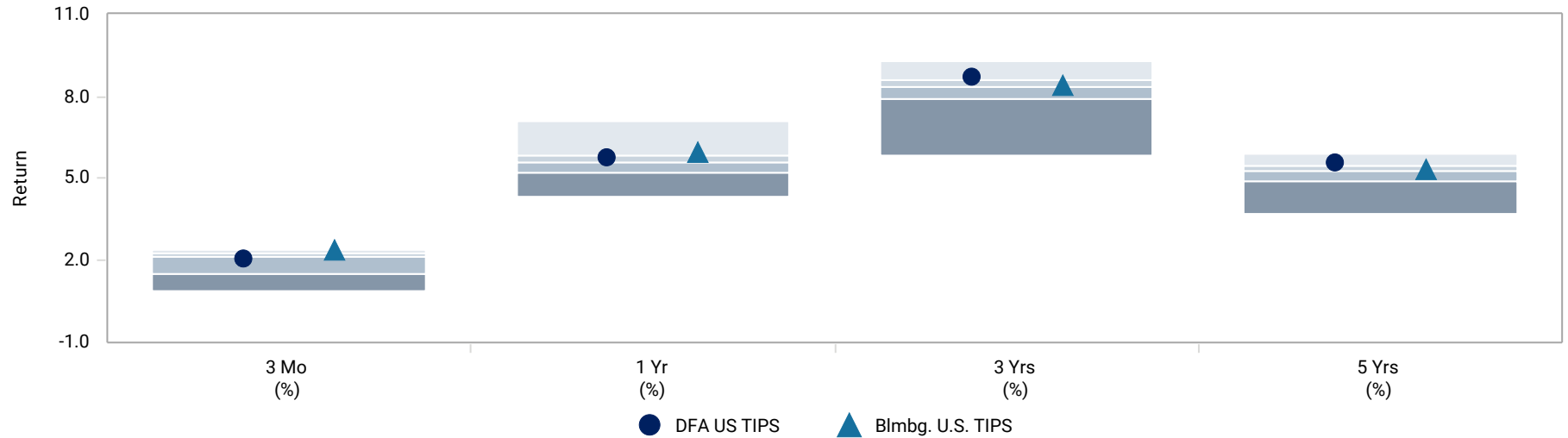




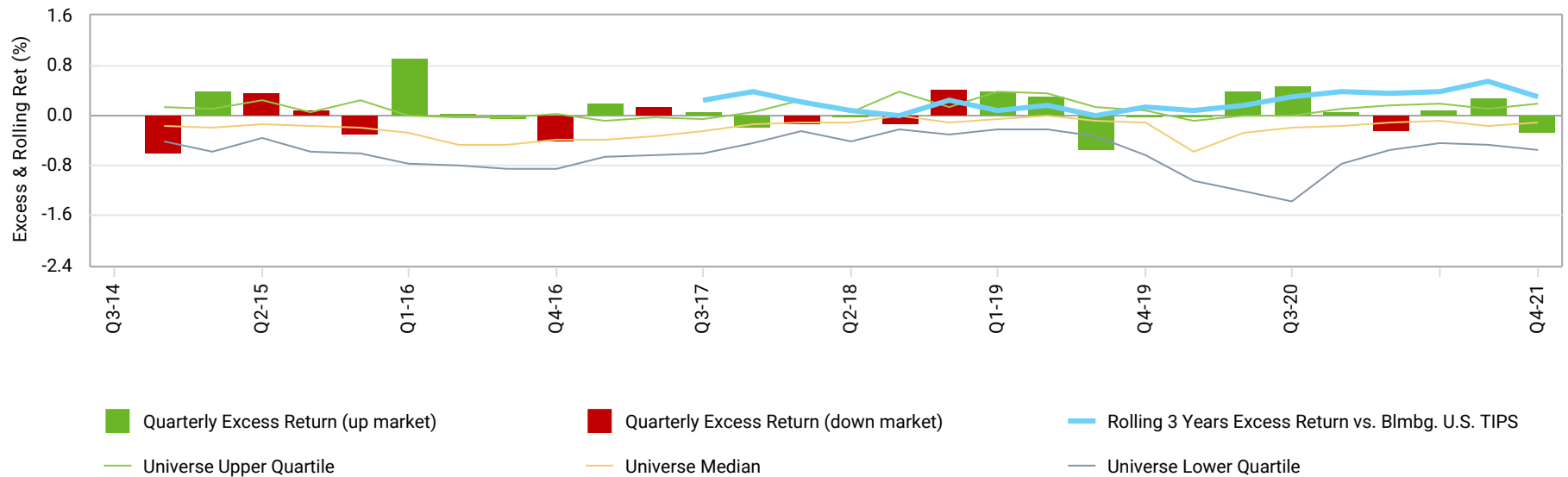
# REAL ASSETS MANAGER PERFORMANCE

# DFA US TIPS

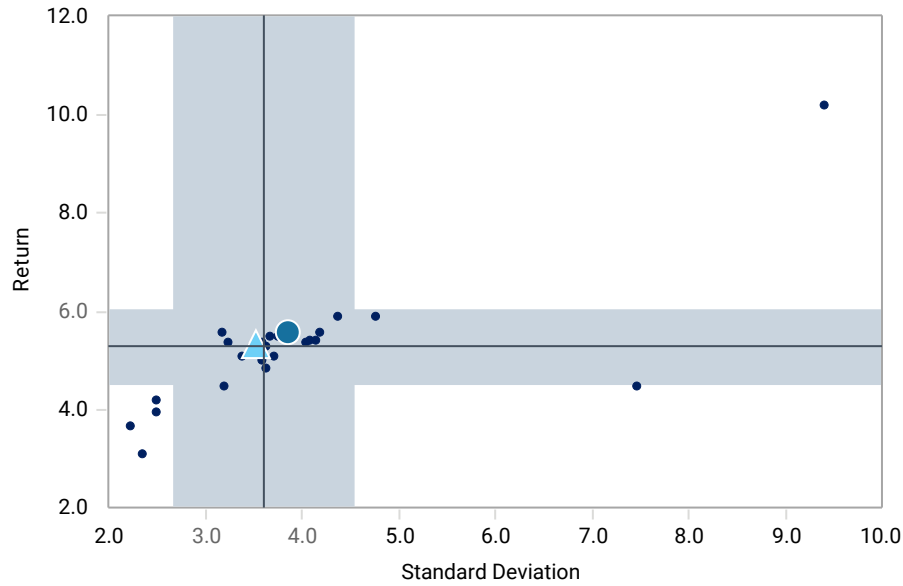
eV US TIPS / Inflation Fixed Inc (net of fees)



Quarter Excess Return with a Rolling 3 Years Excess Return over Since Inception Ending December 31, 2021



5 Years Return vs. Standard Deviation

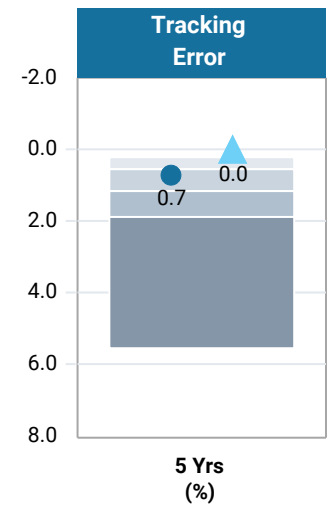
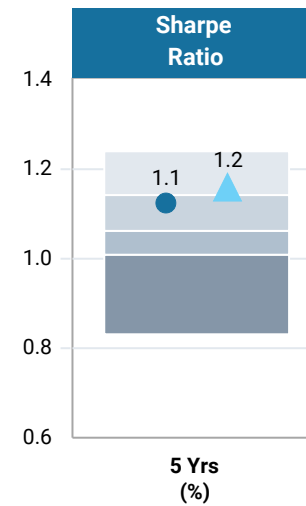
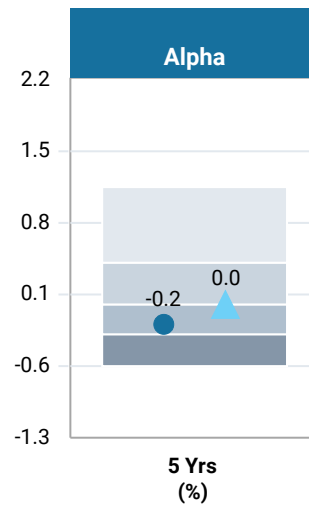
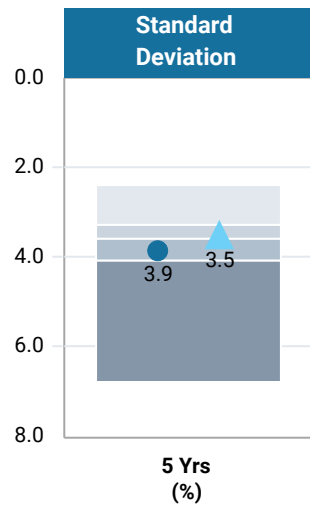
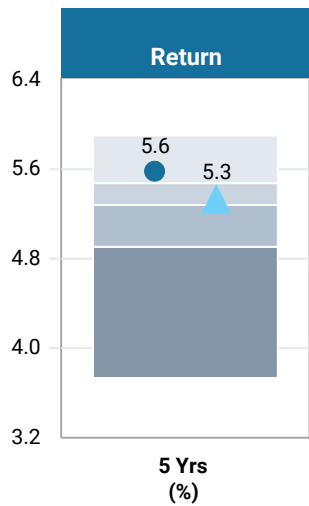


Style Map: (5 Years)



● DFA US TIPS    ▲ Blmbg. U.S. TIPS

● DFA US TIPS    ▲ Blmbg. U.S. TIPS

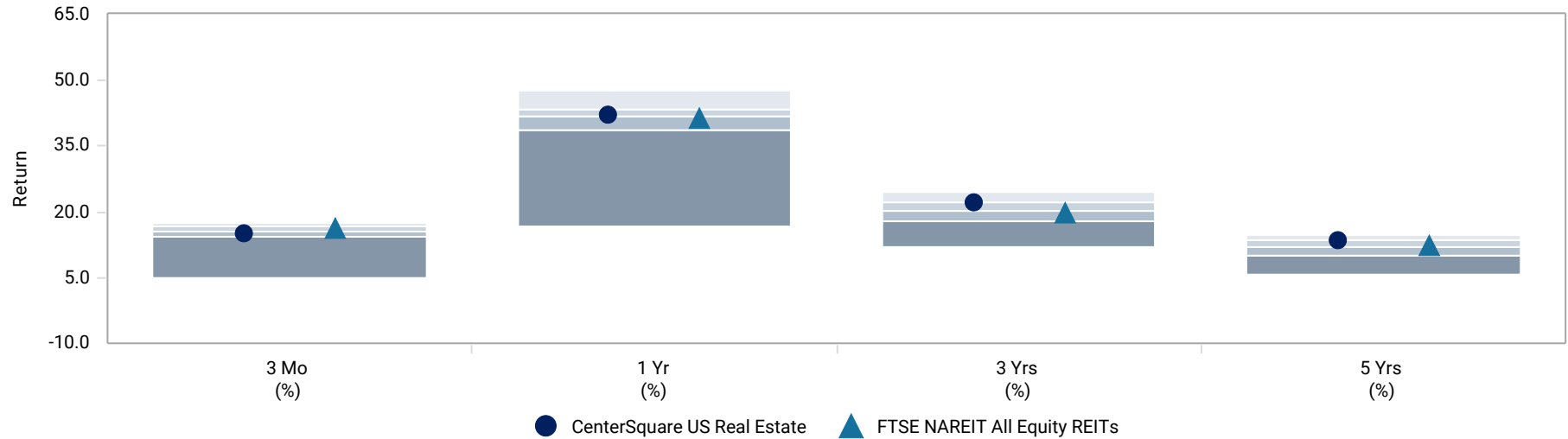


# Los Angeles City Employees' Retirement System-LACERS Master Trust

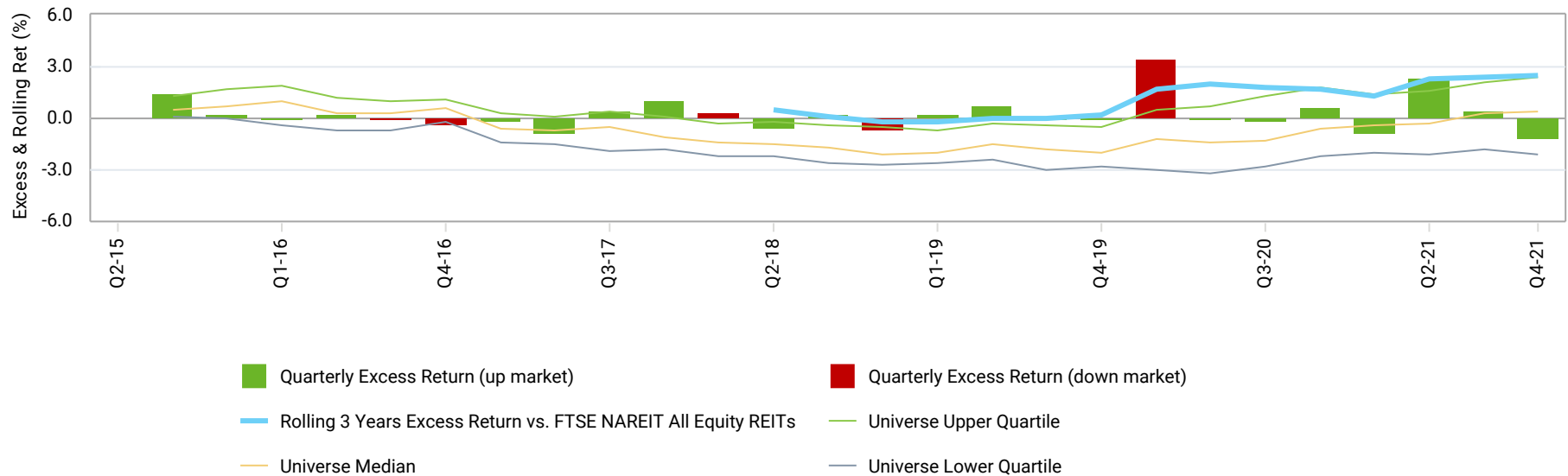
## CENTERSQUARE US REAL ESTATE

December 31, 2021

### eV US REIT (net of fees)



### Quarter Excess Return with a Rolling 3 Years Excess Return over Since Inception Ending December 31, 2021

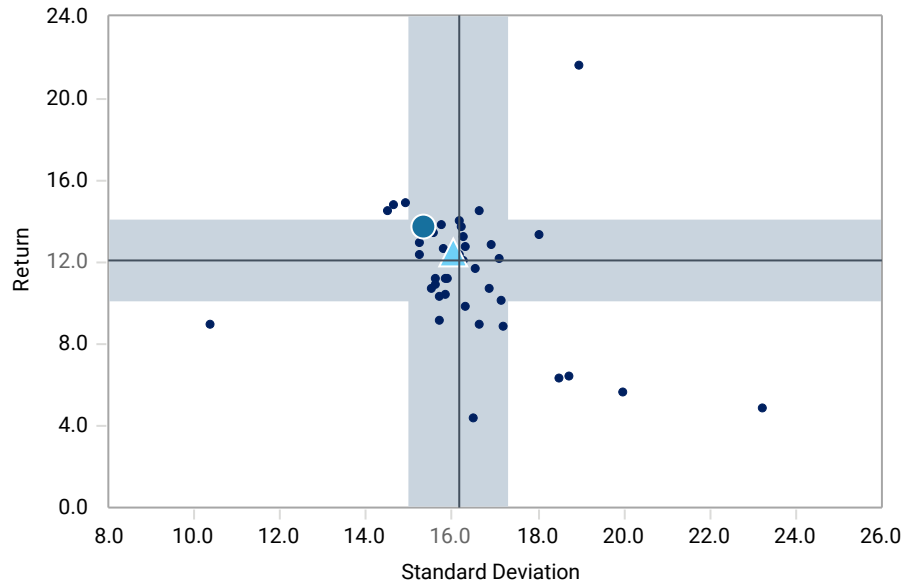


# Los Angeles City Employees' Retirement System-LACERS Master Trust

## CENTERSQUARE US REAL ESTATE

December 31, 2021

5 Years Return vs. Standard Deviation

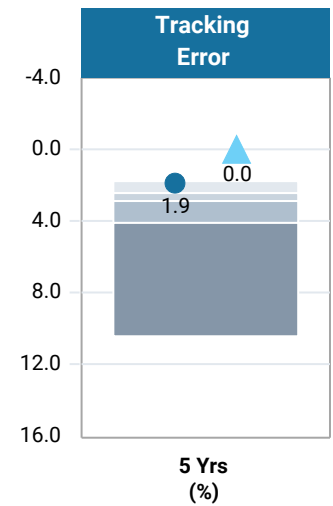
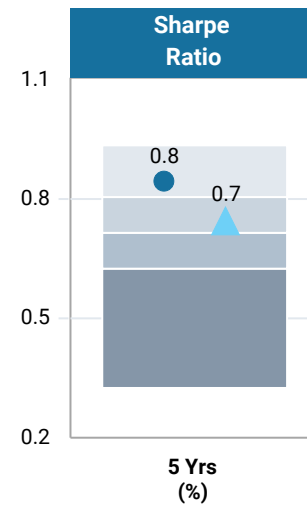
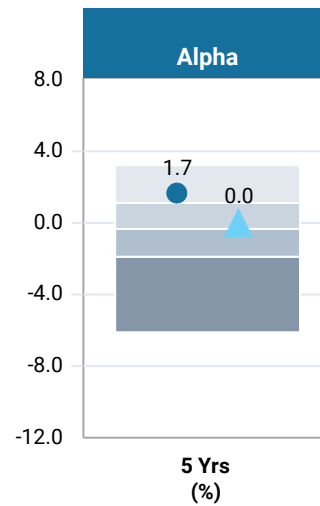
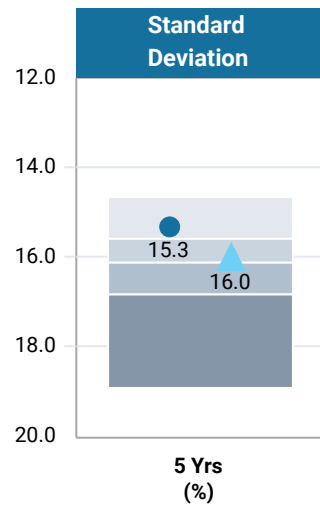
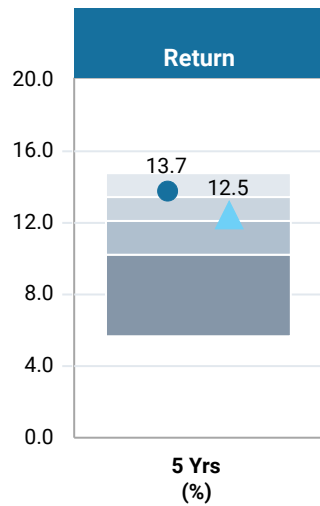


Style Map: (2.5 Years)



● CenterSquare US Real Estate ▲ FTSE NAREIT All Equity REITs

● CenterSquare US Real Estate ▲ FTSE NAREIT All Equity REITs





# DEFINITIONS



# POLICY INDEX DEFINITIONS

**Policy Index:** Current (FY 2021 interim targets adopted September 14, 2021) 22.5% Russell 3000 Index, 27% MSCI ACWI ex USA Net Index, 16.75% Bloomberg U.S. Aggregate Bond Index, 7.25% Credit Opportunities Blend, 12% Real Assets Blend, 13.5% 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: Bloomberg U.S. Aggregate Bond Index

**Credit Opportunities Blend:** 20.7% Bloomberg US High Yield 2% Issuer Capped Index, 20.7% Credit Suisse Leveraged Loan Index, 55% Blended Emerging Markets Debt Blend, 3.6% Credit Suisse Leveraged Loan Index One Quarter Lagged

**Emerging Markets Debt Blend:** 50% JPM EMBI Global Diversified, 50% JPM GBI-EM Global Diversified

**Real Assets Blend:** 41.67% Bloomberg US TIPS Index, 25% FTSE NAREIT All Equity Index, 33.33% Real Estate Blend

**Public Real Assets Blend:** 62.5% Bloomberg US TIPS Index, 37.5% FTSE NAREIT All Equity 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: See Investment Policy for a full description of the indices listed.



# POLICY INDEX DEFINITIONS

INTERIM POLICY TARGETS ADOPTED ON SEPTEMBER 14, 2021

Asset Class	Policy Target %	Interim Policy Targets				
		2021	2022	2023	2024	2025
U.S. Equity	21.00%	22.50%	22.00%	21.50%	21.40%	21.00%
Non-U.S. Equity	26.00%	27.00%	27.00%	26.50%	26.10%	26.00%
Private Equity	16.00%	13.50%	14.00%	15.00%	15.50%	16.00%
Core Fixed Income	11.25%	16.75%	16.00%	14.75%	13.25%	11.25%
Credit Opportunities	12.75%	7.25%	8.00%	9.25%	10.75%	12.75%
Public Real Assets	5.00%	8.00%	7.50%	7.00%	6.00%	5.00%
Real Estate	7.00%	4.00%	4.50%	5.00%	6.00%	7.00%
Cash	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%



# GLOSSARY OF INVESTMENT TERMINOLOGY

- **# Of Portfolios/Observations<sup>1</sup>**
  - The total number of data points that make up a universe or sample.
- **Allocation Index<sup>3</sup>**
  - The Allocation Index measures the value added to (or subtracted from) each portfolio by active management. It is calculated monthly: The portfolio weight allocated to each category from the prior month-end is multiplied by a specified market index return.
- **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 a 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 used to evaluate the performance of a portfolio relative to a benchmark. A proper attribution highlights 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 history in surpassing an index.  
*Formula: Divide the number of days (or months, quarters, etc.) in which the manager beat or matched the index by the total number of days (or months, quarters, etc.) in the time period, 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.

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

- **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.
- **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>**
  - The effect that changes in currency exchange rates over time affect excess performance.
- **Derivative Instrument<sup>3</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>**
  - 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>**
  - A rate of return that, once beaten, allows a fund manager to charge a performance fee on returns above the specified hurdle rate.
- **High-Water Mark<sup>4</sup>**
  - The highest 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.

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

- **High-Water Mark<sup>4</sup>**
  - The highest 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 for a manager to collect incentive fees from the investor, which is usually tied to a benchmark.
- **Interaction Effect<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 overweighted 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 either effect.
- **Median<sup>3</sup>**
  - The value that exceeds one-half of the values in a 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>**
  - 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.
- **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 the 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.
- **Quartile<sup>3</sup>**
  - One of four segments of a distribution. The top quartile consists of observations that rank from 1 to 25, the second quartile consists of observations that rank between 25 and 50, etc.

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

- **Rank<sup>3</sup>**
  - The relative position of a single observation in a larger population. Universe rankings range from 1 to 100, with 1 being the best and 100 the worst.
- **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, positive or negative.
- **Soft Hurdle<sup>5</sup>**
  - A rate of return 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 Effect<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 the time period.
- **Universe<sup>3</sup>**
  - The list of all assets eligible for inclusion in a portfolio, or group of portfolios eligible for inclusion in a distribution.
- **Upside Deviation<sup>1</sup>**
  - Standard Deviation of Positive Returns
- **Weighted Average 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.

# DISCLAIMERS & DISCLOSURES

Past performance is no guarantee of future results.

Returns for pooled funds, e.g. mutual funds and collective investment trusts, are collected from third parties; they are not generally calculated by NEPC. Returns for separate accounts, with some exceptions, are calculated by NEPC. Returns are reported net of manager fees unless otherwise noted.

A “since inception” return, if reported, begins with the first full month after funding, although actual inception dates (e.g. the middle of a month) and the timing of cash flows are taken into account in Composite return calculations.

NEPC’s preferred data source is the plan’s custodian bank or record-keeper. If data cannot be obtained from one of the preferred data sources, data provided by investment managers may be used. Information on market indices and security characteristics is received from additional providers. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within. In addition, some index returns displayed in this report or used in calculation of a policy index, allocation index or other custom benchmark may be preliminary and subject to change.

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Source of private fund performance benchmark data: Cambridge Associates, via Refinitiv

