



Los Angeles County Employees Retirement Association

# Investments Division

**TOTAL FUND**

**PERFORMANCE  
REPORT**

For the quarter ended  
December 31, 2023



review

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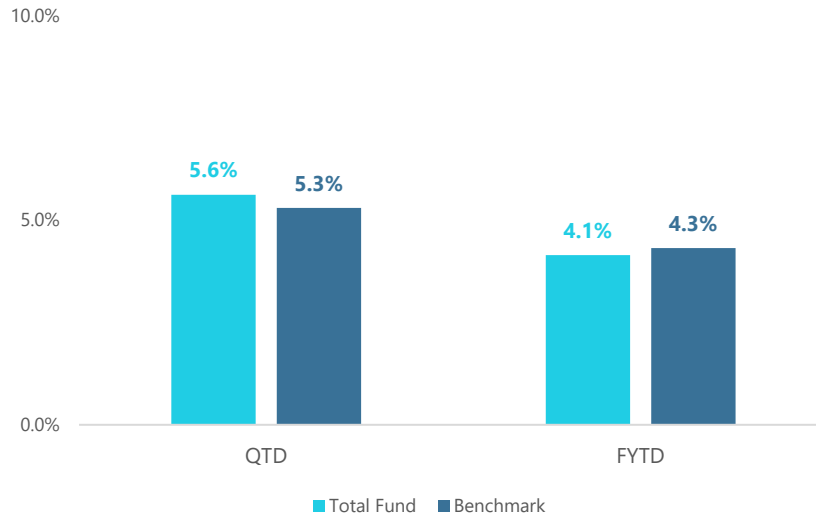
<b>01</b>	TOTAL FUND
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total fund

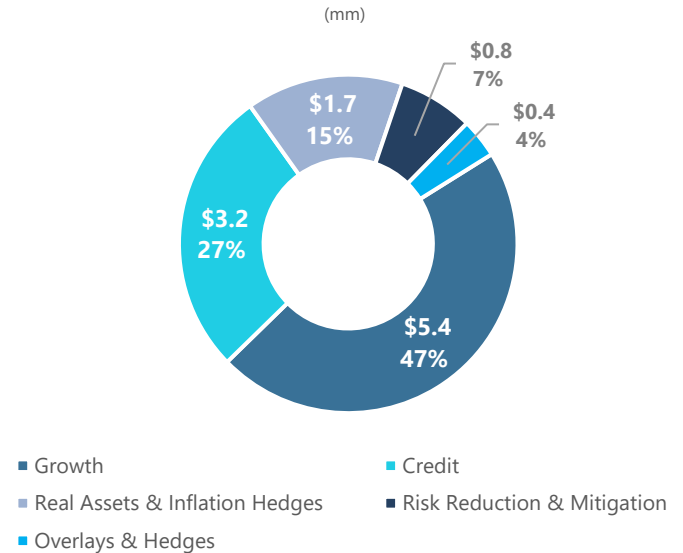
# Quarterly Snapshot

for the quarter ended December 31, 2023

## Performance (net)



## Public Markets Fees<sup>1</sup>



### Ending Market Value

**75,895**

↑ **5%**  
from prior quarter

### Sharpe Ratio<sup>2</sup>

**0.6**

↓ **-18%**  
from prior quarter

### Batting Average<sup>3</sup>

**43%**

↓ **-25%**  
from prior quarter

### Standard Deviation<sup>2</sup>

**7.7**

↓ **-5%**  
from prior quarter

### Tracking Error<sup>2</sup>

**2.9**

—  
from prior quarter

<sup>1</sup> Reflects estimated investment management fees. Additional details in the appendix.

<sup>2</sup> Trailing 3-Years Annualized.

<sup>3</sup> Percentage of managers that outperformed their assigned benchmark for the quarter.

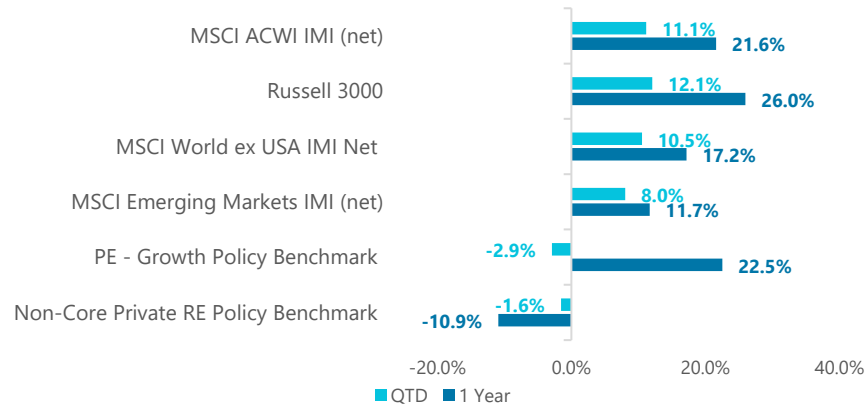
# Market Environment

for the quarter ended December 31, 2023

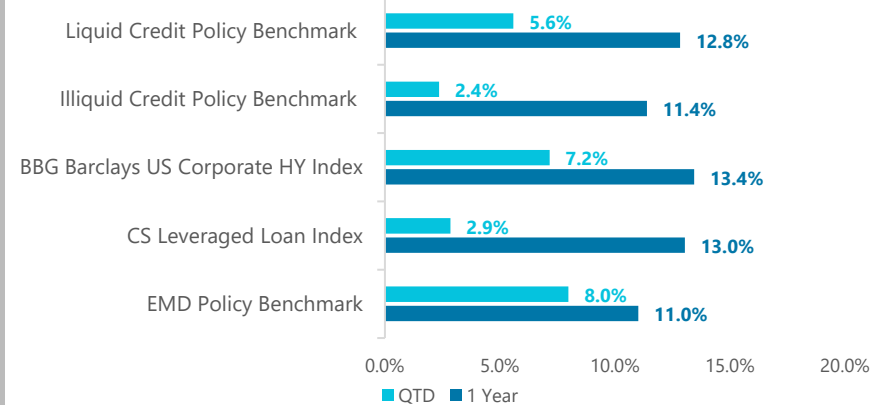


Los Angeles County Employees Retirement Association

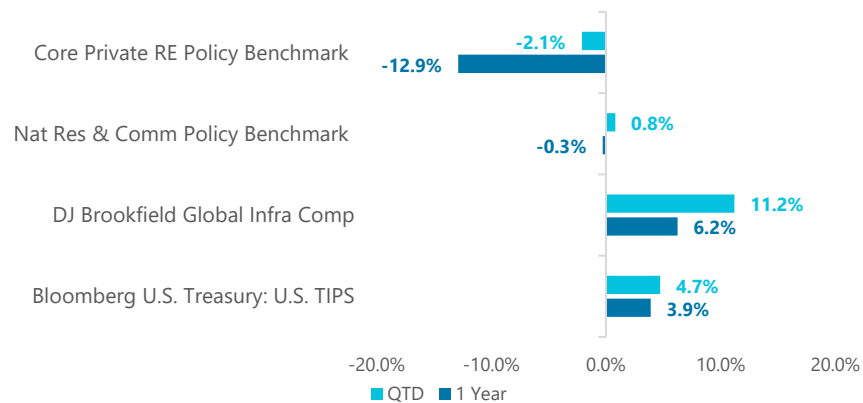
## Growth



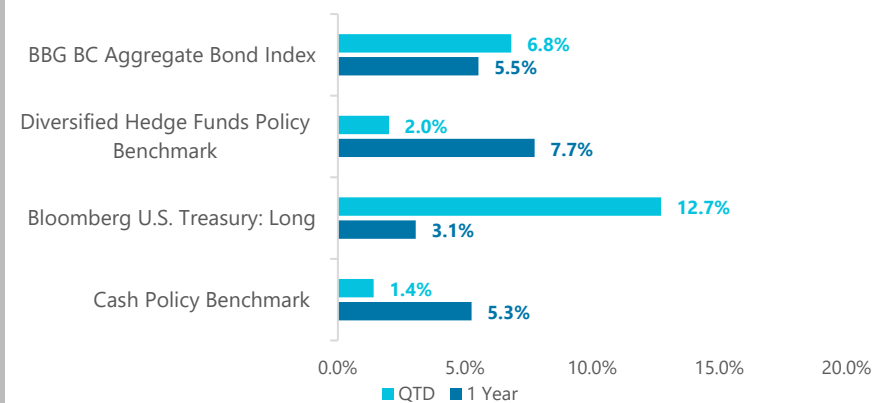
## Credit



## Real Assets & Inflation Hedges



## Risk Reduction & Mitigation



# Summary

for the quarter ended December 31, 2023

## Performance (net)



	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD
<b>Total Fund</b>	<b>5.6%</b>	<b>4.1%</b>	<b>10.3%</b>	<b>10.3%</b>	<b>6.9%</b>	<b>9.2%</b>	<b>7.5%</b>	<b>8.6%</b>
Benchmark	5.3%	4.3%	12.4%	12.4%	4.1%	7.8%	6.8%	--
Excess	0.3%	-0.2%	-2.1%	-2.1%	2.8%	1.4%	0.7%	--

	FY23	FY22	FY21	FY20	FY19
<b>Total Fund</b>	<b>6.4%</b>	<b>0.1%</b>	<b>25.2%</b>	<b>1.8%</b>	<b>6.4%</b>
Benchmark	5.0%	-4.6%	23.1%	2.0%	8.6%

## Cumulative Return

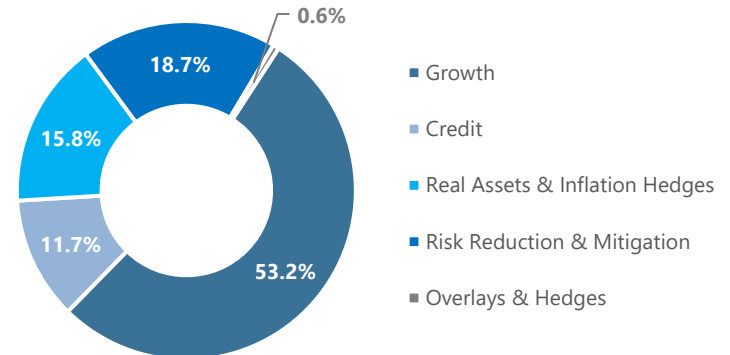


## Functional Category<sup>1</sup>

	QTD	FYTD	YTD	1 Year	3 Year
<b>Growth</b>	<b>7.0%</b>	<b>5.4%</b>	<b>15.0%</b>	<b>15.0%</b>	<b>9.9%</b>
Growth Policy Benchmark	5.8%	5.6%	19.9%	19.9%	6.3%
Excess	1.3%	-0.2%	-4.8%	-4.8%	3.6%
<b>Credit</b>	<b>4.1%</b>	<b>7.2%</b>	<b>13.7%</b>	<b>13.7%</b>	<b>5.6%</b>
Credit Policy Benchmark	3.5%	6.7%	12.0%	12.0%	2.1%
Excess	0.5%	0.6%	1.7%	1.7%	3.5%
<b>Real Assets &amp; Inflation Hedges</b>	<b>2.1%</b>	<b>-0.2%</b>	<b>-1.9%</b>	<b>-1.9%</b>	<b>7.2%</b>
RA & IH Policy Benchmark	3.5%	0.6%	-2.1%	-2.1%	6.8%
Excess	-1.4%	-0.8%	0.3%	0.3%	0.4%
<b>Risk Reduction &amp; Mitigation</b>	<b>5.8%</b>	<b>2.4%</b>	<b>5.0%</b>	<b>5.0%</b>	<b>-1.9%</b>
RR & M Policy Benchmark	6.6%	2.7%	5.8%	5.8%	-2.1%
Excess	-0.8%	-0.3%	-0.9%	-0.9%	0.3%

<sup>1</sup> Overlays & Hedges composite not shown. Program details can be found in the functional category's dedicated section.

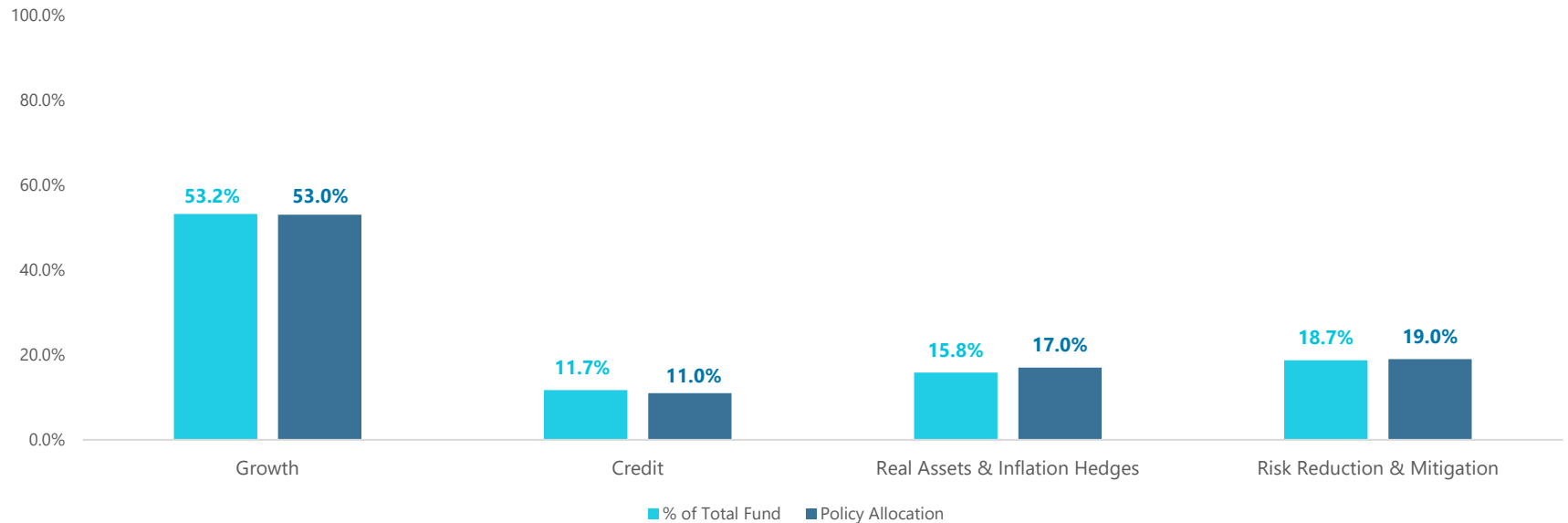
## Exposure



# Asset Allocation

for the quarter ended December 31, 2023

## Actual vs. Policy



	Ending Market Value (mm)	% of Total Fund	Policy Allocation	Over/Under (%)	Over/Under (mm)
<b>Total Fund</b>	<b>75,895</b>	<b>100.0%</b>	<b>100.0%</b>		
Growth	40,355	53.2%	53.0%	0.2%	130
Credit	8,883	11.7%	11.0%	0.7%	535
Real Assets & Inflation Hedges	12,020	15.8%	17.0%	-1.2%	-882
Risk Reduction & Mitigation	14,202	18.7%	19.0%	-0.3%	-218
Overlays & Hedges	435	0.6%			

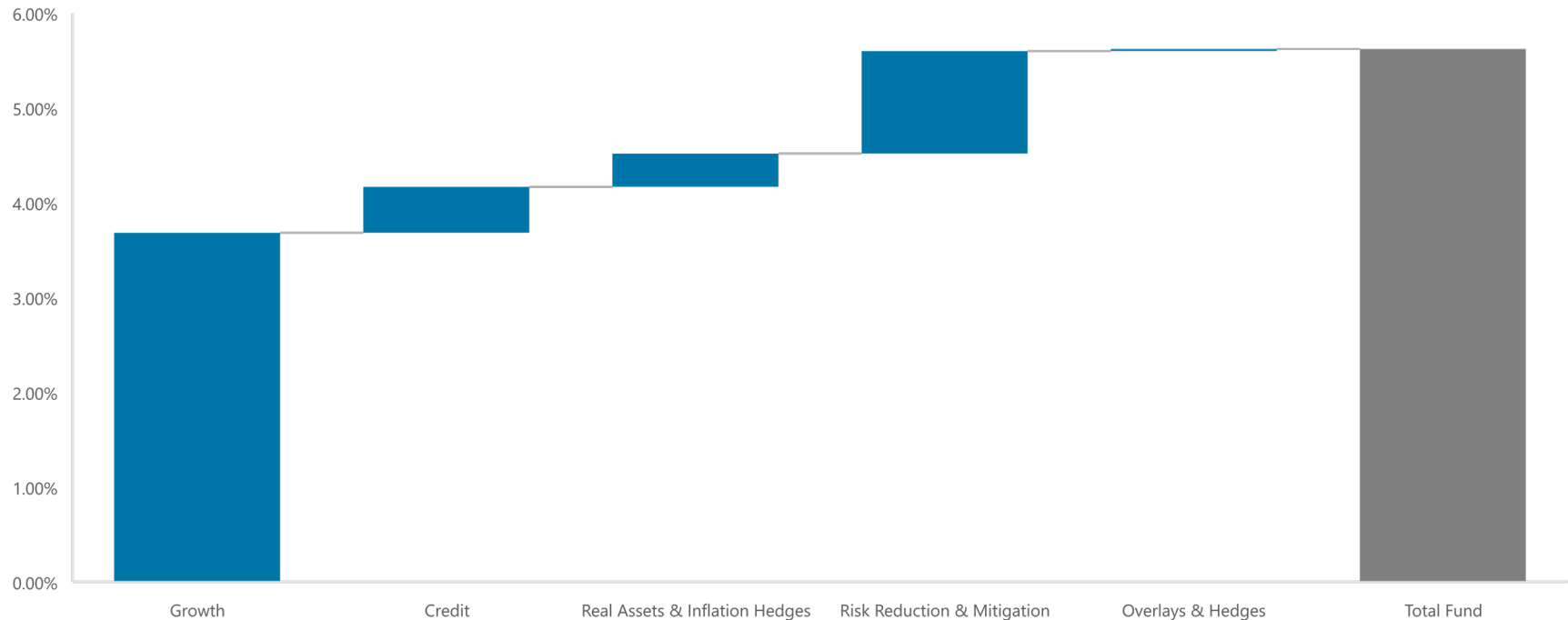
# Contribution to Return

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## QTD Contribution to Return



Functional Category	Contributors	Detractors
Growth	3.68% SSGA MSCI ACWI IMI	2.26% Real Estate - Real Assets
Credit	0.48% JPMAM Strategic Beta US	0.74% Real Estate - Growth
Real Assets & Inflation Hedges	0.35% BlackRock Long Treasury Bonds	0.48% Gresham (Comm. Assets)
Risk Reduction & Mitigation	1.08% DWS Infrastructure	0.29% Credit Suisse Commodity
Overlays & Hedges	0.02% Private Equity - Growth	0.27%
<b>Total Fund</b>	<b>5.62%</b>	



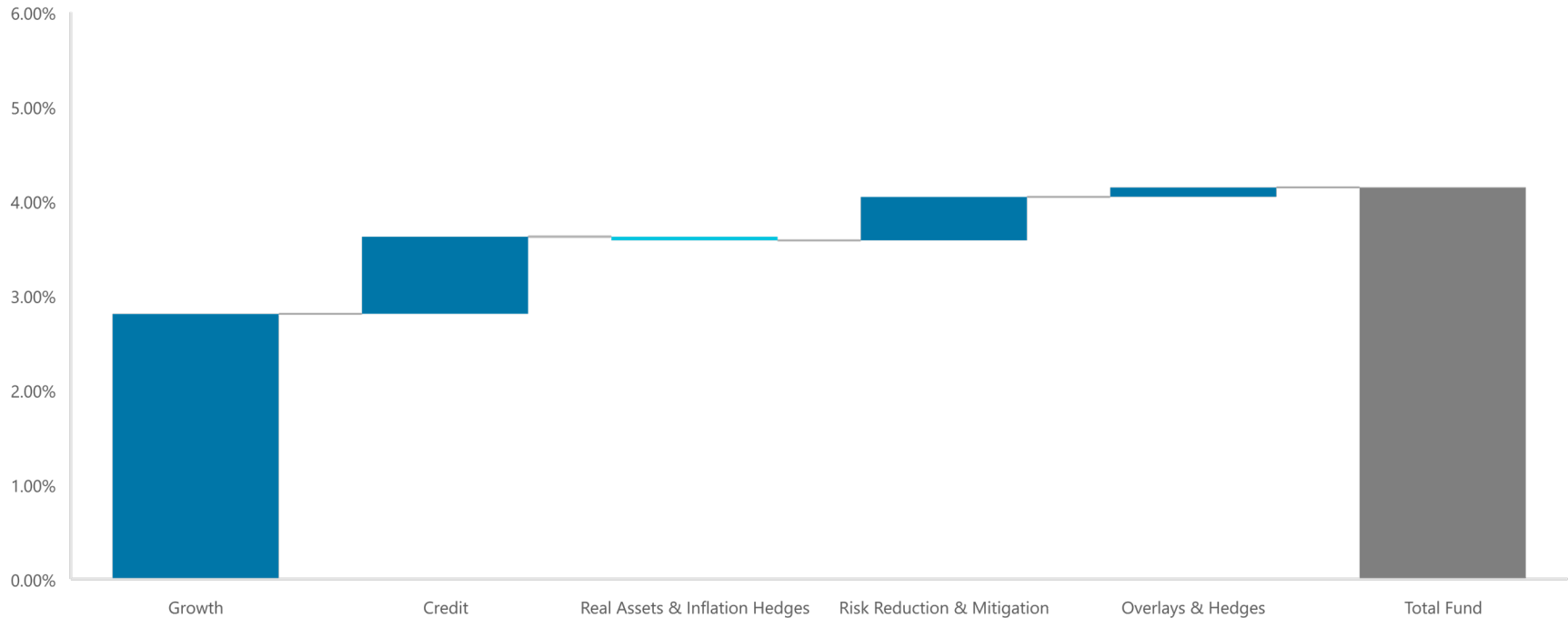
# Contribution to Return

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## FYTD Contribution to Return



Functional Category	Contributors	Detractors
Growth	2.81% SSGA MSCI ACWI IMI	1.51% Real Estate - Real Assets
Credit	0.82% JPMAM Strategic Beta US	0.54% Real Estate - Growth
Real Assets & Inflation Hedges	-0.04% Private Equity - Growth	0.53% BlackRock Long Treasury Bonds
Risk Reduction & Mitigation	0.46% Magnetar	0.16% AM Asia Strategies
Overlays & Hedges	0.10%	
<b>Total Fund</b>	<b>4.14%</b>	

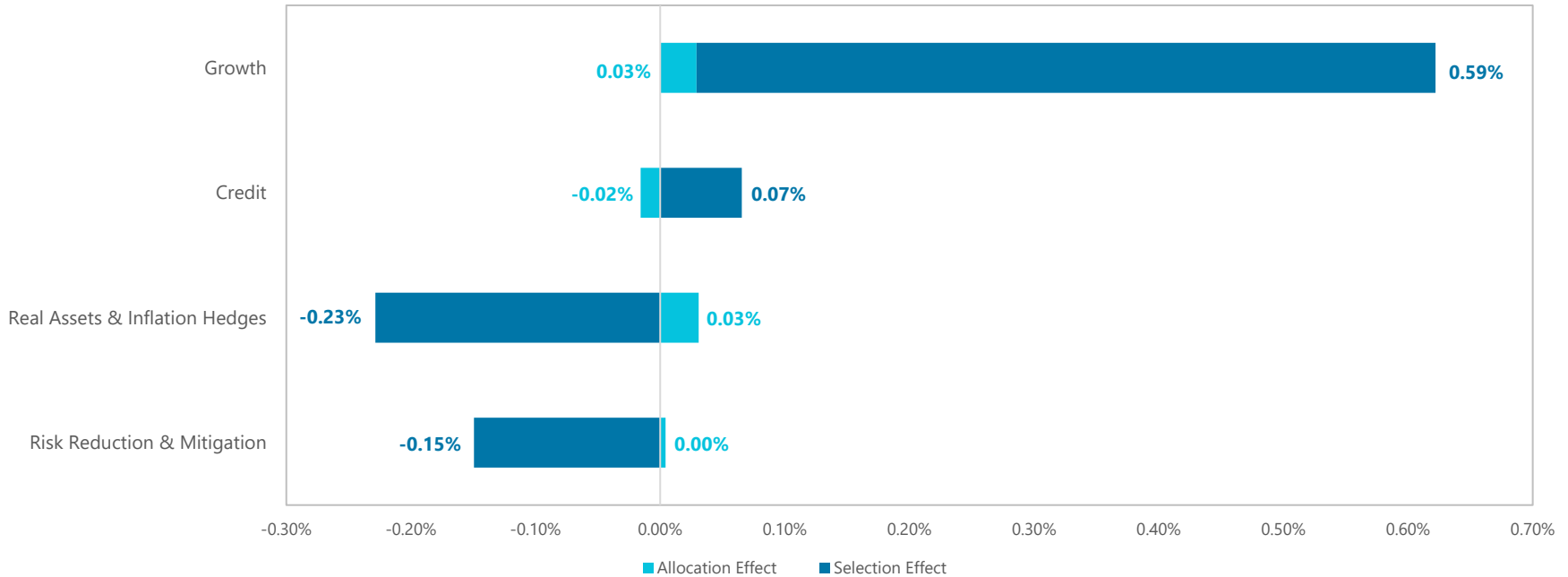
# Return Attribution

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## QTD Performance Attribution<sup>1,2</sup>



	Ending Market Value (mm)	% of Total Fund	Policy Allocation	Portfolio Return	Benchmark Return	Allocation Effect	Selection Effect	Total Value Add
<b>Total Fund</b>	<b>75,895</b>	<b>100.0%</b>	<b>100.0%</b>	<b>5.6%</b>	<b>5.3%</b>	<b>0.02%</b>	<b>0.31%</b>	<b>0.32%</b>
Growth	40,355	53.2%	53.0%	7.0%	5.8%	0.03%	0.59%	0.62%
Credit	8,883	11.7%	11.0%	4.1%	3.5%	-0.02%	0.07%	0.05%
Real Assets & Inflation Hedges	12,020	15.8%	17.0%	2.1%	3.5%	0.03%	-0.23%	-0.20%
Risk Reduction & Mitigation	14,202	18.7%	19.0%	5.8%	6.6%	0.00%	-0.15%	-0.15%
Overlays & Hedges	435	0.6%						

<sup>1</sup> Total Value Add column includes Interaction Effect.

<sup>2</sup> Overlays & Hedges composite attribution not shown. Program details can be found in the functional category's dedicated section.

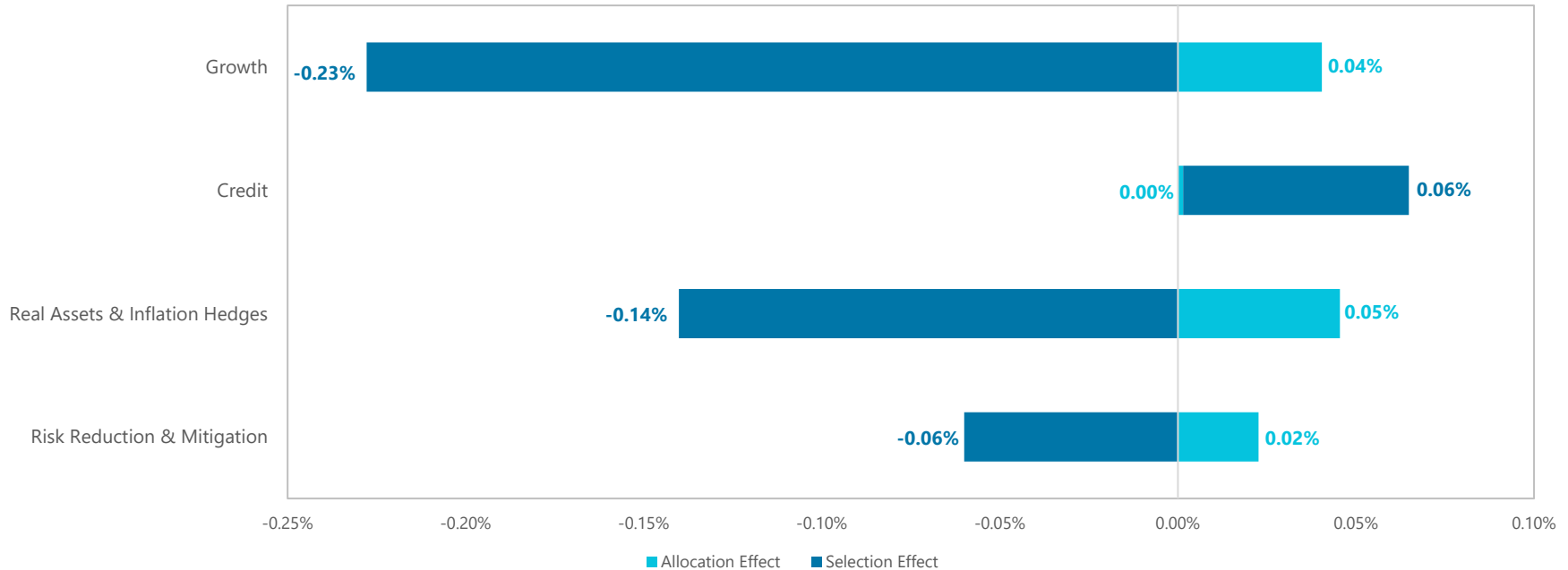
# Return Attribution

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## FYTD Performance Attribution<sup>1,2</sup>



	Ending Market Value (mm)	% of Total Fund	Policy Allocation	Portfolio Return	Benchmark Return	Allocation Effect	Selection Effect	Total Value Add
<b>Total Fund</b>	<b>75,895</b>	<b>100.0%</b>	<b>100.0%</b>	<b>4.1%</b>	<b>4.3%</b>	<b>0.09%</b>	<b>-0.26%</b>	<b>-0.17%</b>
Growth	40,355	53.2%	53.0%	5.4%	5.6%	0.04%	-0.23%	-0.19%
Credit	8,883	11.7%	11.0%	7.2%	6.7%	0.00%	0.06%	0.06%
Real Assets & Inflation Hedges	12,020	15.8%	17.0%	-0.2%	0.6%	0.05%	-0.14%	-0.09%
Risk Reduction & Mitigation	14,202	18.7%	19.0%	2.4%	2.7%	0.02%	-0.06%	-0.04%
Overlays & Hedges	435	0.6%						

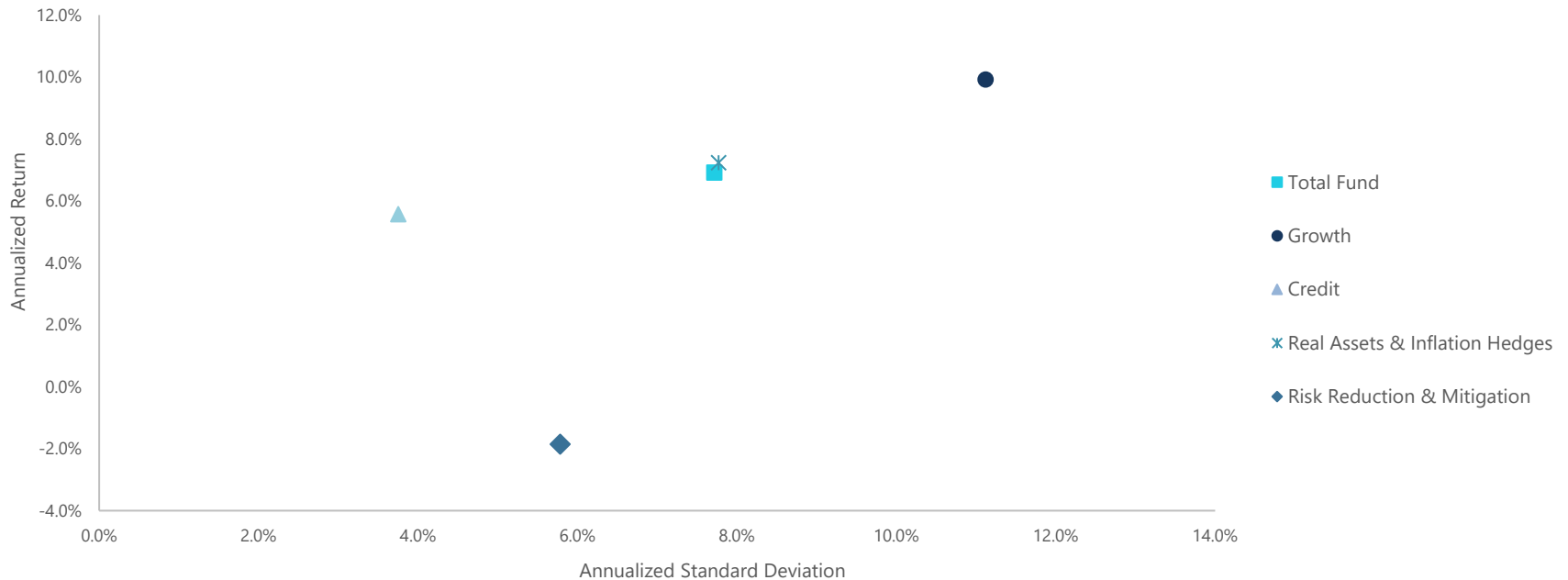
<sup>1</sup> Total Value Add column includes Interaction Effect.

<sup>2</sup> Overlays & Hedges composite attribution not shown. Program details can be found in the functional category's dedicated section.

# Risk vs. Return

for the quarter ended December 31, 2023

## 3 Year (Annualized)<sup>1</sup>



	Annualized Return	Standard Deviation	Sharpe Ratio	Information Ratio	Beta	Tracking Error
<b>Total Fund</b>	<b>6.9%</b>	<b>7.7%</b>	<b>0.63</b>	<b>0.91</b>	<b>0.88</b>	<b>2.9%</b>
Growth	9.9%	11.1%	0.72	0.62	0.84	5.3%
Credit	5.6%	3.8%	0.90	1.01	0.55	3.3%
Real Assets & Inflation Hedges	7.2%	7.8%	0.67	0.11	0.86	2.8%
Risk Reduction & Mitigation	-1.9%	5.8%	(0.66)	0.26	0.89	0.9%

<sup>1</sup> Overlays & Hedges composite not shown. Program details can be found in the functional category's dedicated section.

# Performance Detail

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Annualized Net Returns<sup>1</sup>

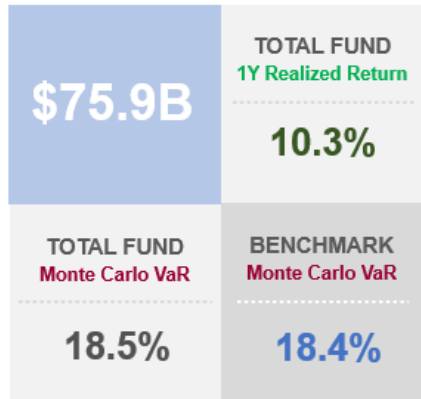
	% of Total Fund	Ending Market Value (mm)	Prior Quarter Ending MV (mm)	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date
<b>Total Fund</b>	<b>100.0%</b>	<b>75,895</b>	<b>72,166</b>	<b>5.6%</b>	<b>4.1%</b>	<b>10.3%</b>	<b>10.3%</b>	<b>6.9%</b>	<b>9.2%</b>	<b>7.5%</b>	<b>8.6%</b>	<b>Dec-1988</b>
<b>Total Fund Policy Benchmark</b>												
<b>Growth</b>	<b>53.2%</b>	<b>40,355</b>	<b>38,154</b>	<b>5.3%</b>	<b>4.3%</b>	<b>12.4%</b>	<b>12.4%</b>	<b>4.1%</b>	<b>7.8%</b>	<b>6.8%</b>	<b>--</b>	<b>Apr-2019</b>
<b>Growth Policy Benchmark</b>												
Global Equity	33.5%	25,394	23,352	11.1%	7.5%	21.9%	21.9%	6.6%	--	--	10.0%	Apr-2019
Global Equity Policy Benchmark				11.1%	7.4%	21.6%	21.6%	5.5%	--	--	9.4%	
Private Equity - Growth	18.2%	13,828	13,625	1.4%	2.9%	6.1%	6.1%	19.2%	17.0%	--	17.0%	Jan-2019
PE - Growth Policy Benchmark				-2.9%	3.3%	22.5%	22.5%	9.0%	8.2%	--	8.2%	
Non-Core Private Real Estate	1.5%	1,133	1,177	-7.2%	-8.5%	-10.8%	-10.8%	8.3%	8.3%	10.9%	4.2%	Jan-1996
Non-Core Private RE Policy Benchmark				-1.6%	-3.9%	-10.9%	-10.9%	8.8%	7.5%	10.2%	10.7%	
<b>Credit</b>	<b>11.7%</b>	<b>8,883</b>	<b>8,351</b>	<b>4.1%</b>	<b>7.2%</b>	<b>13.7%</b>	<b>13.7%</b>	<b>5.6%</b>	<b>--</b>	<b>--</b>	<b>5.6%</b>	<b>Apr-2019</b>
<b>Credit Policy Benchmark</b>												
Liquid Credit	4.0%	3,019	3,089	5.3%	7.3%	13.8%	13.8%	--	--	--	2.0%	Oct-2021
Liquid Credit Policy Benchmark				5.6%	6.8%	12.8%	12.8%	--	--	--	1.8%	
Illiquid Credit	7.7%	5,864	5,262	3.4%	7.3%	13.4%	13.4%	11.7%	--	--	10.2%	Apr-2019
Illiquid Credit Policy Benchmark				2.4%	6.6%	11.4%	11.4%	1.9%	--	--	5.3%	
<b>Real Assets &amp; Inflation Hedges</b>	<b>15.8%</b>	<b>12,020</b>	<b>11,912</b>	<b>2.1%</b>	<b>-0.2%</b>	<b>-1.9%</b>	<b>-1.9%</b>	<b>7.2%</b>	<b>--</b>	<b>--</b>	<b>5.2%</b>	<b>Apr-2019</b>
<b>RA &amp; IH Policy Benchmark</b>												
Core Private Real Estate	4.7%	3,597	3,920	-2.5%	-6.5%	-13.9%	-13.9%	6.2%	3.9%	6.6%	6.8%	Oct-1985
Core Private RE Policy Benchmark				-2.1%	-4.9%	-12.9%	-12.9%	6.3%	5.0%	7.6%	6.6%	
Natural Resources & Commodities	2.9%	2,172	2,179	-1.1%	2.3%	2.6%	2.6%	13.7%	9.5%	0.4%	-0.7%	Jul-2007
Nat Res & Comm Policy Benchmark				0.8%	4.8%	-0.3%	-0.3%	12.8%	9.4%	-0.1%	-1.6%	
Infrastructure	5.4%	4,111	3,966	7.5%	3.7%	6.5%	6.5%	7.2%	--	--	7.1%	Jun-2019
DJ Brookfield Global Infra Comp				11.2%	3.5%	6.2%	6.2%	6.7%	--	--	4.1%	
TIPS	2.8%	2,140	1,847	4.4%	1.7%	3.6%	3.6%	-1.1%	--	--	2.5%	May-2019
Bloomberg U.S. Treasury: U.S. TIPS				4.7%	2.0%	3.9%	3.9%	-1.0%	--	--	2.6%	
<b>Risk Reduction &amp; Mitigation</b>	<b>18.7%</b>	<b>14,202</b>	<b>13,267</b>	<b>5.8%</b>	<b>2.4%</b>	<b>5.0%</b>	<b>5.0%</b>	<b>-1.9%</b>	<b>--</b>	<b>--</b>	<b>1.5%</b>	<b>Apr-2019</b>
<b>RR &amp; M Policy Benchmark</b>												
Investment Grade Bonds	6.9%	5,213	4,883	6.8%	3.4%	5.8%	5.8%	-3.3%	1.3%	2.1%	5.2%	Nov-1994
BBG BC Aggregate Bond Index				6.8%	3.4%	5.5%	5.5%	-3.3%	1.1%	1.8%	4.7%	
Diversified Hedge Funds	6.3%	4,759	4,676	1.8%	3.4%	5.3%	5.3%	6.5%	--	--	6.4%	Apr-2019
Diversified Hedge Funds Policy Benchmark				2.0%	4.0%	7.7%	7.7%	4.6%	--	--	4.4%	
Long-Term Government Bonds	4.1%	3,135	2,792	12.3%	-1.1%	2.5%	2.5%	--	--	--	-13.6%	Nov-2021
Bloomberg U.S. Treasury: Long				12.7%	-0.6%	3.1%	3.1%	--	--	--	-14.1%	
Cash	1.4%	1,095	916	1.8%	2.4%	5.6%	5.6%	3.2%	2.6%	1.8%	2.0%	Jun-2001
Cash Policy Benchmark				1.4%	2.8%	5.3%	5.3%	2.2%	1.9%	1.3%	1.6%	
<b>Overlays &amp; Hedges</b>	<b>0.6%</b>	<b>435</b>	<b>482</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>Oct-2021</b>
<b>Cash Overlay</b>												
Total Overlay Custom BM	0.7%	559	353	--	--	--	--	--	--	--	--	Aug-2019
Currency Hedge	-0.2%	-124	129	--	--	--	--	--	--	--	--	Oct-2021
50% FX Hedge Custom Benchmark				--	--	--	--	--	--	--	--	

<sup>1</sup> Overlays & Hedges composite returns not shown. Program details can be found in the functional category's dedicated section.

# Risk Summary

for the quarter ended December 31, 2023

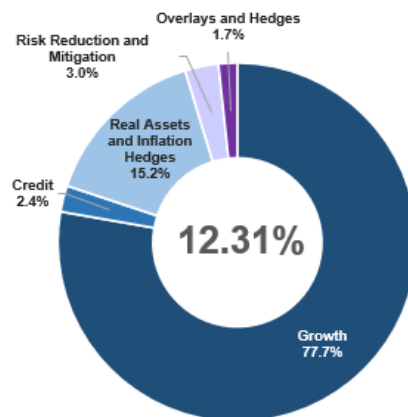
## Realized (Ex-Post) Risks



## Projected (Ex-Ante) Risks

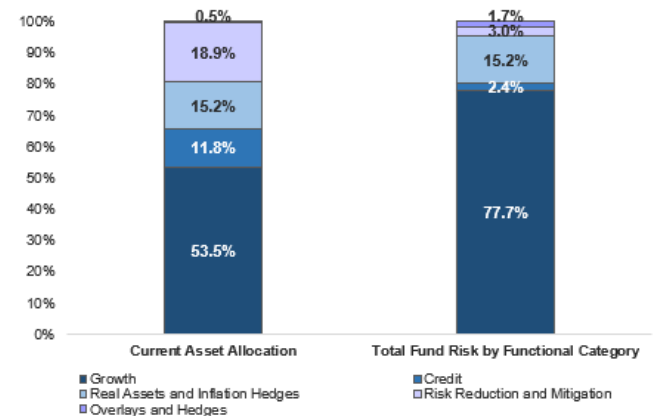


## Functional Category Contributions to Total Fund Risk



## Total Fund Asset Allocation

Capital-based versus Risk-based



# Risk Summary

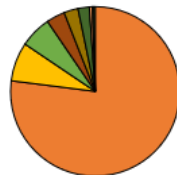
for the quarter ended December 31, 2023

## Decomposition of MSCI Risk Factors

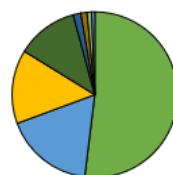
Total Volatility					
1	Currency	Local Market			
2	Idiosyncratic	Common Factors			
3		Growth	Credit	Real Assets and Inflation Hedges	Risk, Reduction, and Mitigation
	<b>Global Equity</b>	<ul style="list-style-type: none"> <li>Country</li> <li>Industry</li> <li>Market</li> <li>Spread</li> <li>Style</li> </ul>	<b>Liquid Credit</b> <ul style="list-style-type: none"> <li>Implied Volatility</li> <li>Inflation</li> <li>Market</li> <li>Spread</li> <li>Term Structure</li> </ul>	<b>Core Real Estate</b> <ul style="list-style-type: none"> <li>Private Real Estate                             <ul style="list-style-type: none"> <li>Country</li> <li>Property Type</li> <li>US Metropolitan Area</li> </ul> </li> </ul>	<b>Inv. Grade Bonds</b> <ul style="list-style-type: none"> <li>Implied Volatility</li> <li>Spread</li> <li>Term Structure</li> </ul>
	<b>Private Equity</b>	<ul style="list-style-type: none"> <li>Country</li> <li>Industry</li> <li>Market</li> <li>Private Equity                             <ul style="list-style-type: none"> <li>Small Buyouts</li> <li>Large Buyouts</li> <li>Early Stage Ventures</li> <li>Late Stage Ventures</li> <li>Distressed</li> </ul> </li> <li>Spread</li> <li>Style</li> <li>Term Structure</li> </ul>	<b>Illiquid Credit</b> <ul style="list-style-type: none"> <li>Implied Volatility</li> <li>Inflation</li> <li>Private Equity                             <ul style="list-style-type: none"> <li>Distressed</li> <li>Private Real Estate                                     <ul style="list-style-type: none"> <li>US Metropolitan Area</li> </ul> </li> </ul> </li> <li>Spread</li> <li>Style</li> <li>Term Structure</li> </ul>	<b>Public Natural Resources &amp; Comm</b> <ul style="list-style-type: none"> <li>Commodities</li> <li>Country</li> <li>Industry</li> <li>Market</li> <li>Spread</li> <li>Style</li> <li>Term Structure</li> </ul>	<b>Diversified Hedge Funds</b> <ul style="list-style-type: none"> <li>Commodities</li> <li>Country</li> <li>Hedge Funds                             <ul style="list-style-type: none"> <li>Fixed Income Arbitrage</li> </ul> </li> <li>Market</li> <li>Style</li> <li>Term Structure</li> </ul>
	<b>Non-Core Private RE</b>	<ul style="list-style-type: none"> <li>Country</li> <li>Industry</li> <li>Private Real Estate                             <ul style="list-style-type: none"> <li>Country</li> <li>Property Type</li> <li>US Metropolitan Area</li> </ul> </li> </ul>		<b>Private Natural Resources &amp; Infra</b> <ul style="list-style-type: none"> <li>Country</li> <li>Implied Volatility</li> <li>Industry</li> <li>Inflation</li> <li>Market</li> <li>Private Equity                             <ul style="list-style-type: none"> <li>Small Buyouts</li> </ul> </li> <li>Style</li> <li>Term Structure</li> </ul>	<b>LT Govt Bonds</b> <ul style="list-style-type: none"> <li>Basis</li> <li>Term Structure</li> </ul>
				<b>Public Infrastructure</b> <ul style="list-style-type: none"> <li>Country</li> <li>Industry</li> <li>Market</li> <li>Style</li> </ul>	<b>Cash</b> <ul style="list-style-type: none"> <li>Term Structure</li> </ul>
				<b>TIPS</b> <ul style="list-style-type: none"> <li>Inflation</li> <li>Term Structure</li> </ul>	
	<b>Total Fund</b>	<b>Growth</b>	<b>Credit</b>	<b>Real Assets and Inflation Hedges</b>	<b>Risk, Reduction, and Mitigation</b>



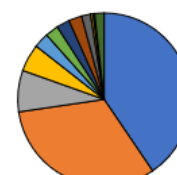
- Growth 73.2%
- Currency 8.6%
- Private Real Estate 6.6%
- Private Equity 6.1%
- Credit 4.8%
- Commodities 0.2%
- Idiosyncratic 0.4%



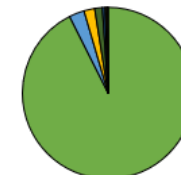
- Market 77.0%
- Private Equity 7.4%
- Currency 8.0%
- Country 3.5%
- Private Real Estate 2.7%
- Style 2.2%
- Industry 0.6%
- Spread 0.3%
- Idiosyncratic 0.3%



- Spread 52.0%
- Term Structure 17.4%
- Idiosyncratic 14.4%
- Currency 12.0%
- Inflation 1.5%
- Private Real Estate 1.2%
- Implied Volatility 0.9%
- Private Equity 0.6%



- Market 42.0%
- Private Real Estate 33.3%
- Currency 8.0%
- Private Equity 5.3%
- Industry 2.9%
- Country 2.8%
- Inflation 2.6%
- Commodities 2.6%
- Term Structure 1.7%
- Idiosyncratic 0.8%
- Spread 0.3%
- Style -1.8%



- Term Structure 92.9%
- Currency 2.9%
- Spread 2.0%
- Idiosyncratic 1.5%
- Implied Volatility 0.5%
- Hedge Funds 0.3%
- Market 0.1%
- Industry -0.1%
- Country -0.1%

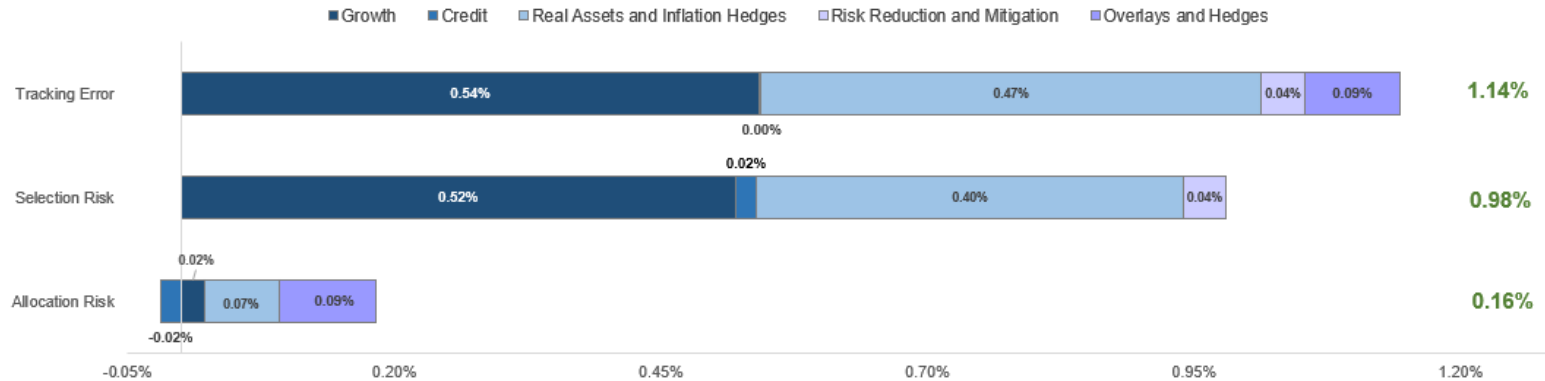
# Risk Summary

for the quarter ended December 31, 2023

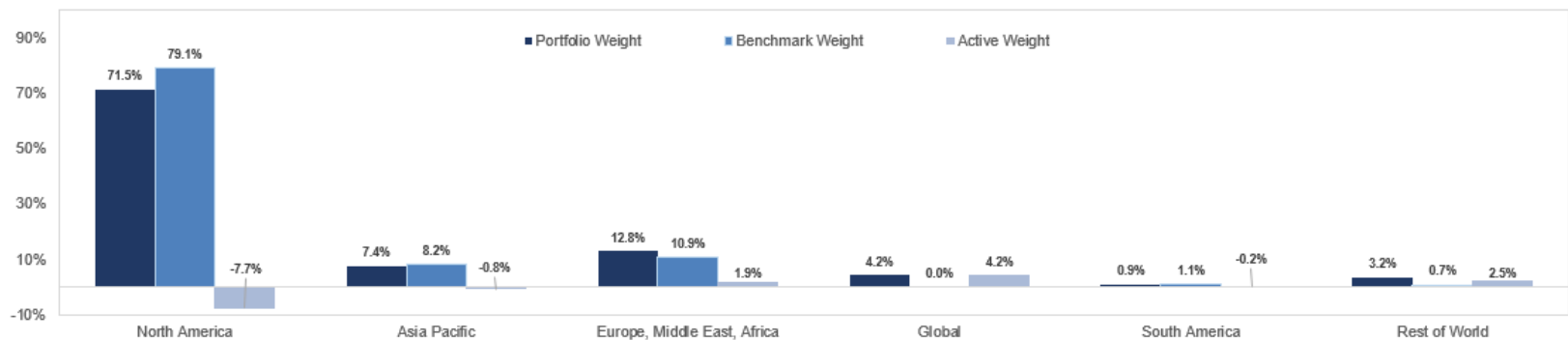


Los Angeles County Employees Retirement Association

## Functional Category Contributions to Tracking Error



## Portfolio Allocation by Region<sup>1,2</sup>



<sup>1</sup> Global represents investments made in regions where specific country allocations are not available.<sup>2</sup>

<sup>2</sup> Rest of World is sum of countries with weights below 0.5%.



# Stress Tests









































for the quarter ended December 31, 2023

## Scenarios by Asset Category





# Stress Tests

for the quarter ended December 31, 2023

Historical Scenario	Description	Stock Market	Interest Rates	Bond Market	Commodity Market
<b>1994 US Rate Hike</b>	In combating inflation, the US Federal Reserve raised rates from 3.25% in February to 5.5% in November 1994.				
<b>2000-2003 Tech Crash &amp; Recession</b>	Period of crisis and slowdown for technological firms due to a rapid jump in stock prices when tech bubble began to burst.				
<b>2001 September 11th</b>	The US stock market was closed for a week upon a series of coordinated suicide attacks upon the US on September 11, 2001.				
<b>2008-2009 Global Financial Crisis</b>	Major financial crisis starting with the failure of several US-based financial firms. Extended into 2009, when stock markets reached their lowest.				
<b>2010 European Bond Crisis</b>	During crisis, the liquidity access for peripheral countries was affected by budget deficits, high borrowing costs, and failing banking systems.				
<b>2011 US Debt Ceiling Act</b>	Political deadlock on appropriate level of US government spending and its impacts. Debt and equity markets experienced significant volatility.				
<b>2016 Brexit</b>	The referendum by British voters to exit the European Union roiled global markets causing the pound to fall to its lowest level in decades.				
<b>2020 COVID March Selloff</b>	Peak and Valley of the MSCI ACWI index when Covid became a Global Pandemic.				
<b>2020 COVID Volatility Spike</b>	Period it took for the Cboe Volatility Index (VIX) to revert to pre-pandemic levels.				
<b>2022-2023 US Rate Hike</b>	Period between March 2022 and August 2023 when the US Federal Reserve raised interest rates by 525 bps.				

### Market Trend Signals

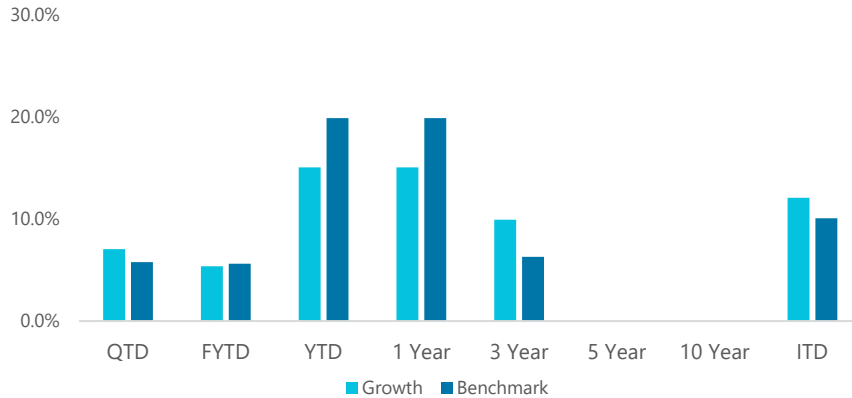
 Up
  Slightly Up
  Neutral
  Down
  Slightly Down

growth

# Summary

for the quarter ended December 31, 2023

## Performance (net)



	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD
<b>Growth</b>	<b>7.0%</b>	<b>5.4%</b>	<b>15.0%</b>	<b>15.0%</b>	<b>9.9%</b>	--	--	<b>12.1%</b>
Benchmark	5.8%	5.6%	19.9%	19.9%	6.3%	--	--	10.1%
Excess	1.3%	-0.2%	-4.8%	-4.8%	3.6%	--	--	2.0%

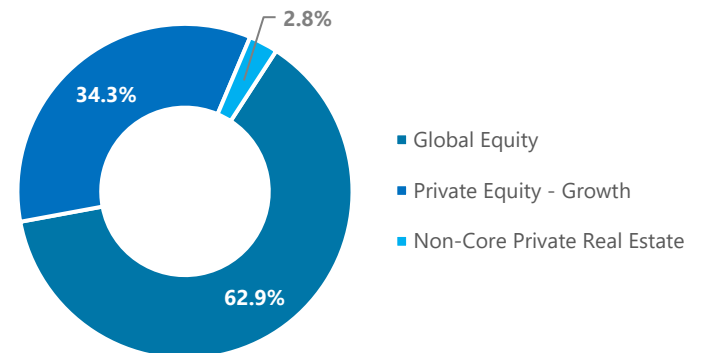
## Cumulative Return



## Functional Category

	QTD	FYTD	YTD	1 Year	3 Year
<b>Global Equity</b>	<b>11.1%</b>	<b>7.5%</b>	<b>21.9%</b>	<b>21.9%</b>	<b>6.6%</b>
Global Equity Policy Benchmark	11.1%	7.4%	21.6%	21.6%	5.5%
Excess	0.0%	0.2%	0.3%	0.3%	1.1%
<b>Private Equity - Growth</b>	<b>1.4%</b>	<b>2.9%</b>	<b>6.1%</b>	<b>6.1%</b>	<b>19.2%</b>
PE - Growth Policy Benchmark	-2.9%	3.3%	22.5%	22.5%	9.0%
Excess	4.3%	-0.4%	-16.4%	-16.4%	10.1%
<b>Non-Core Private Real Estate</b>	<b>-7.2%</b>	<b>-8.5%</b>	<b>-10.8%</b>	<b>-10.8%</b>	<b>8.3%</b>
Non-Core Private RE Policy Benchmark	-1.6%	-3.9%	-10.9%	-10.9%	8.8%
Excess	-5.6%	-4.6%	0.1%	0.1%	-0.5%

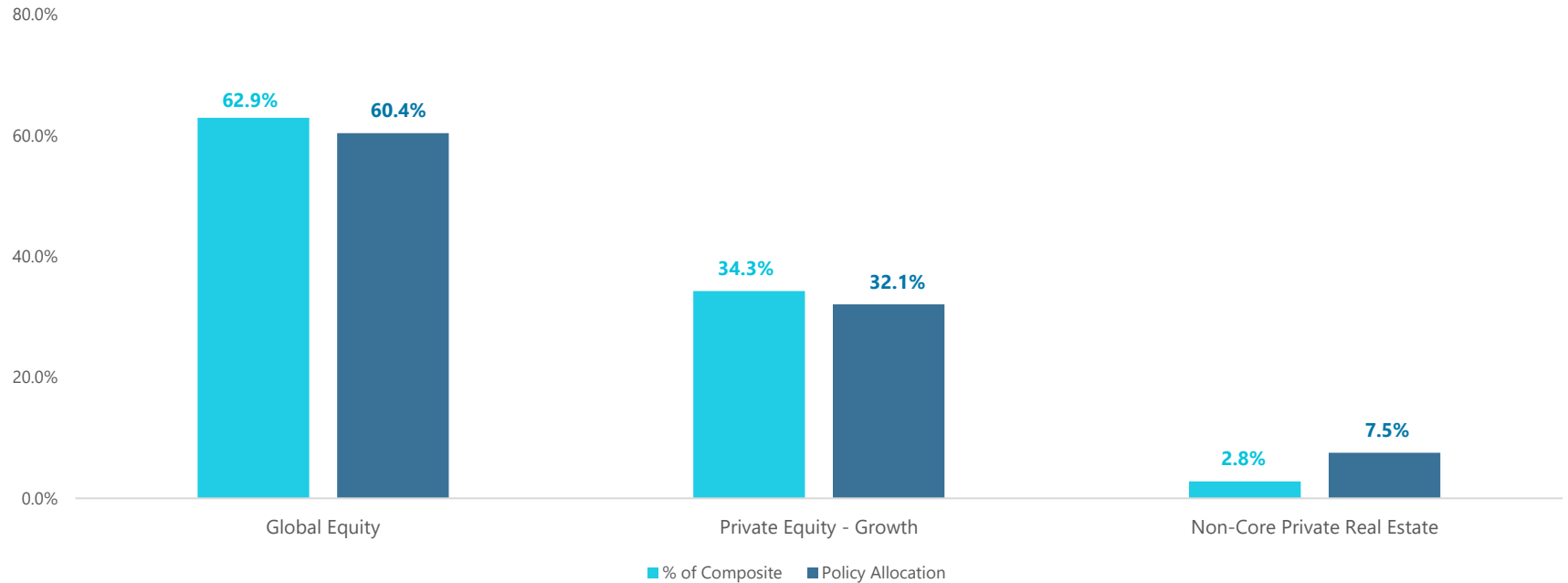
## Exposure



# Asset Allocation

for the quarter ended December 31, 2023

## Actual vs. Policy

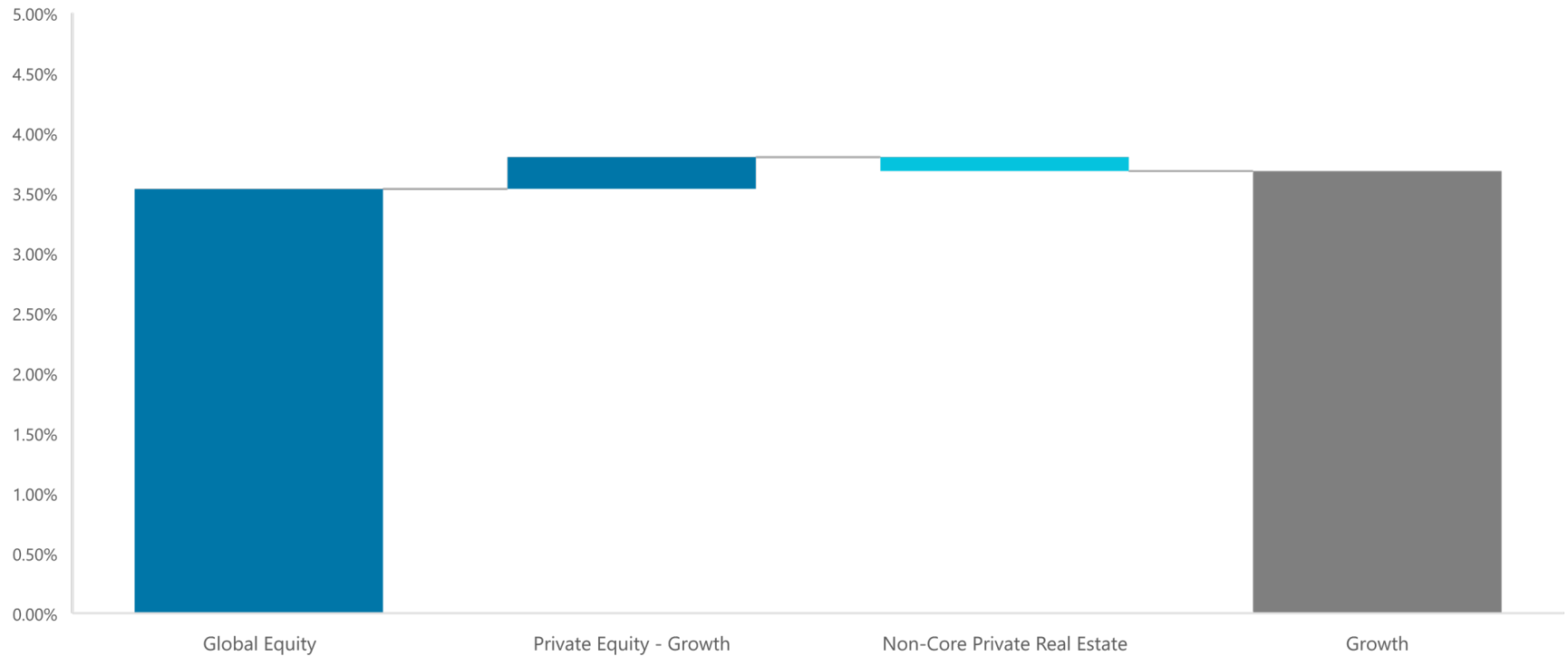


	Ending Market Value (mm)	% of Composite	Policy Allocation	Over / Under (%)	Over / Under (mm)
<b>Growth</b>	<b>40,355</b>	<b>100.0%</b>	<b>100.0%</b>		
Global Equity	25,394	62.9%	60.4%	2.7%	1,106
Private Equity - Growth	13,828	34.3%	32.1%	2.3%	925
Non-Core Private Real Estate	1,133	2.8%	7.5%	-4.7%	-1,907

# Contribution to Return

for the quarter ended December 31, 2023

## QTD Contribution to Return



Functional Category	Contributors	Detractors
Global Equity	SSGA MSCI ACWI IMI	Real Estate - Growth
Private Equity - Growth	JPMAM Strategic Beta US	
Non-Core Private Real Estate	Private Equity - Growth	
Growth	BTC Euro Tilts	
	Cevian Capital II - Activist	

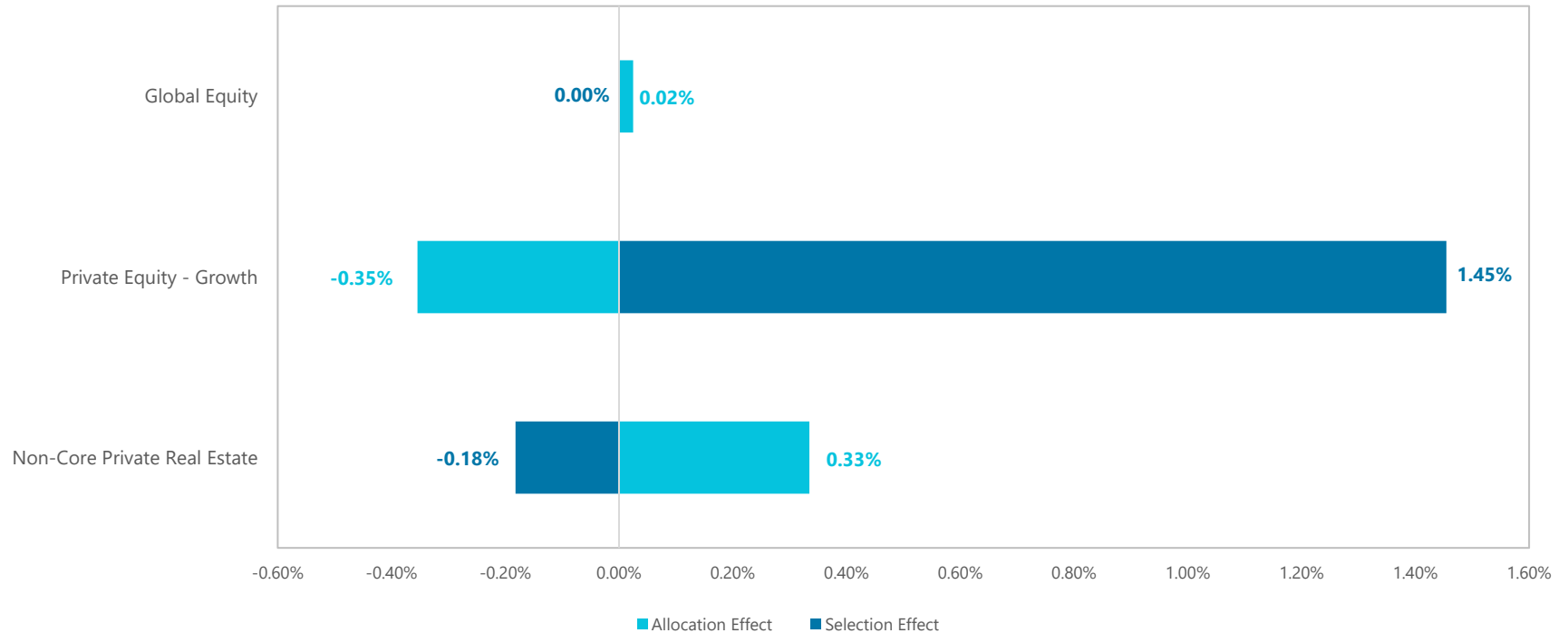
# Return Attribution

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## QTD Performance Attribution<sup>1</sup>



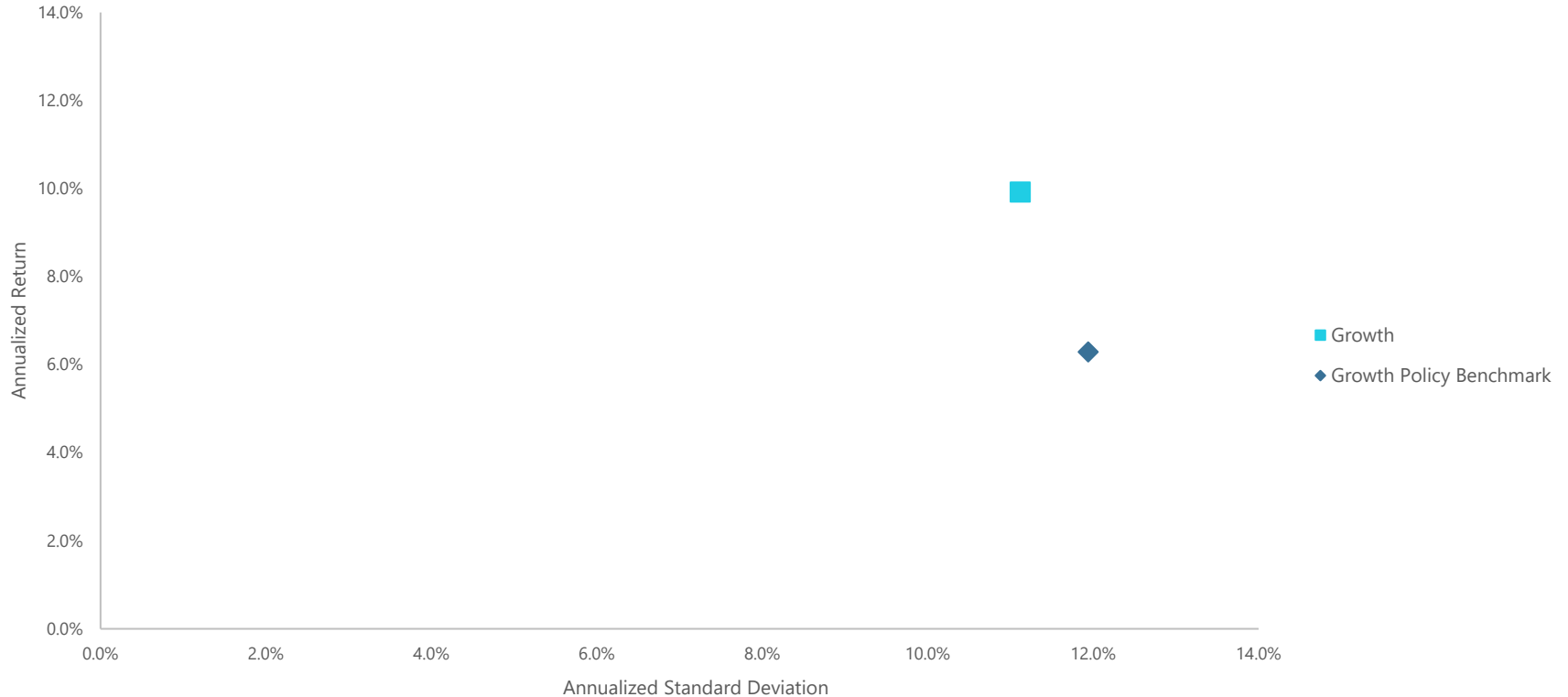
	Ending Market Value (mm)	% of Composite	Policy Allocation	Portfolio Return	Benchmark Return	Allocation Effect	Selection Effect	Total Value Add
<b>Growth</b>	<b>40,355</b>	<b>100.0%</b>	<b>100.0%</b>	<b>7.0%</b>	<b>5.8%</b>	<b>0.00%</b>	<b>1.27%</b>	<b>1.28%</b>
Global Equity	25,394	62.9%	60.4%	11.1%	11.1%	0.02%	0.00%	0.02%
Private Equity - Growth	13,828	34.3%	32.1%	1.4%	-2.9%	-0.35%	1.45%	1.10%
Non-Core Private Real Estate	1,133	2.8%	7.5%	-7.2%	-1.6%	0.33%	-0.18%	0.15%

<sup>1</sup> Total Value Add column includes Interaction Effect.

# Risk vs. Return

for the quarter ended December 31, 2023

## 3 Year (Annualized)



	Annualized Return	Standard Deviation	Sharpe Ratio	Information Ratio	Beta	Tracking Error
<b>Growth</b>	<b>9.9%</b>	<b>11.1%</b>	<b>0.72</b>	<b>0.62</b>	<b>0.84</b>	<b>5.3%</b>
Growth Policy Benchmark	6.3%	11.9%				



# Performance Detail

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Annualized Net Returns<sup>1</sup>

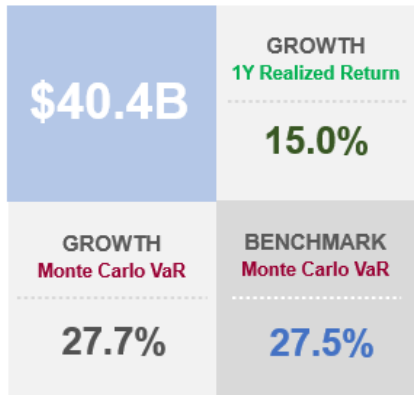
	% of Composite	Ending Market Value (mm)	Prior Quarter Ending MV (mm)	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date
<b>Growth</b>	<b>100.0%</b>	<b>40,355</b>	<b>38,154</b>	<b>7.0%</b>	<b>5.4%</b>	<b>15.0%</b>	<b>15.0%</b>	<b>9.9%</b>	--	--	<b>12.1%</b>	<b>Apr-2019</b>
Growth Policy Benchmark				5.8%	5.6%	19.9%	19.9%	6.3%	--	--	10.1%	
<b>Global Equity</b>	<b>62.9%</b>	<b>25,394</b>	<b>23,352</b>	<b>11.1%</b>	<b>7.5%</b>	<b>21.9%</b>	<b>21.9%</b>	<b>6.6%</b>	--	--	<b>10.0%</b>	<b>Apr-2019</b>
Global Equity Policy Benchmark				11.1%	7.4%	21.6%	21.6%	5.5%	--	--	9.4%	
<b>Passive</b>												
SSGA MSCI ACWI IMI	40.1%	16,170	14,947	11.2%	7.4%	21.7%	21.7%	6.1%	--	--	8.5%	Jan-2020
<b>Factor Based</b>												
JPMAM Strategic Beta Non-US	1.6%	639	582	9.7%	6.5%	16.1%	16.1%	2.8%	--	--	7.7%	Aug-2020
JPMAM Strategic Beta US	12.4%	4,999	4,519	11.9%	8.6%	26.5%	26.5%	9.8%	--	--	15.3%	Jul-2020
<b>Active</b>												
Acadian Developed Markets	1.6%	630	573	9.9%	7.5%	12.4%	12.4%	3.6%	8.7%	6.4%	4.8%	Apr-2006
BTC Euro Tilts	1.6%	645	580	11.3%	6.2%	22.2%	22.2%	9.3%	11.0%	5.7%	4.3%	Jan-2007
Cevian Capital II - Activist	1.3%	517	457	13.0%	14.2%	29.7%	29.7%	15.9%	14.0%	--	10.5%	Oct-2016
CGT International Equity	1.1%	427	382	12.0%	3.3%	17.3%	17.3%	-1.1%	9.4%	5.5%	5.6%	Nov-1994
ComerCap US Small Cap - EMP	0.2%	92	81	13.7%	11.7%	13.7%	13.7%	12.4%	13.4%	--	8.4%	Oct-2018
Frontier US SMID Growth	0.8%	317	282	12.4%	4.6%	23.9%	23.9%	6.3%	12.8%	9.0%	10.3%	Jun-2002
Global Alpha	0.4%	178	167	6.8%	1.1%	7.5%	7.5%	-0.6%	6.3%	--	4.9%	Nov-2018
Lazard Emerging Markets	1.0%	401	367	9.2%	5.0%	8.8%	8.8%	-5.5%	5.6%	3.5%	2.6%	Feb-2013
Systematic US Small Cap Value	0.5%	217	196	10.2%	8.9%	16.2%	16.2%	11.0%	12.2%	--	7.2%	Jul-2018
<b>Private Equity - Growth</b>	<b>34.3%</b>	<b>13,828</b>	<b>13,625</b>	<b>1.4%</b>	<b>2.9%</b>	<b>6.1%</b>	<b>6.1%</b>	<b>19.2%</b>	<b>17.0%</b>	--	<b>17.0%</b>	<b>Jan-2019</b>
PE - Growth Policy Benchmark				-2.9%	3.3%	22.5%	22.5%	9.0%	8.2%	--	8.2%	
<b>Non-Core Private Real Estate</b>	<b>2.8%</b>	<b>1,133</b>	<b>1,177</b>	<b>-7.2%</b>	<b>-8.5%</b>	<b>-10.8%</b>	<b>-10.8%</b>	<b>8.3%</b>	<b>8.3%</b>	<b>10.9%</b>	<b>4.2%</b>	<b>Jan-1996</b>
Non-Core Private RE Policy Benchmark				-1.6%	-3.9%	-10.9%	-10.9%	8.8%	7.5%	10.2%	10.7%	

<sup>1</sup> Parametric Global Equity overlay accounts not shown. Program details can be found in the Overlays & Hedges section.

# Growth Risk Summary

for the quarter ended December 31, 2023

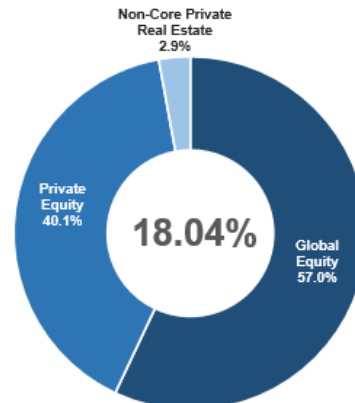
## Realized (Ex-Post) Risks



## Projected (Ex-Ante) Risks

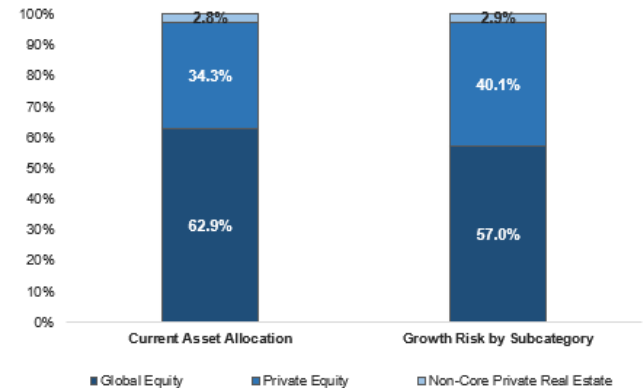


## Subcategory Contributions to Growth Risk



## Growth Asset Allocation

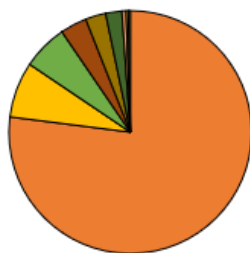
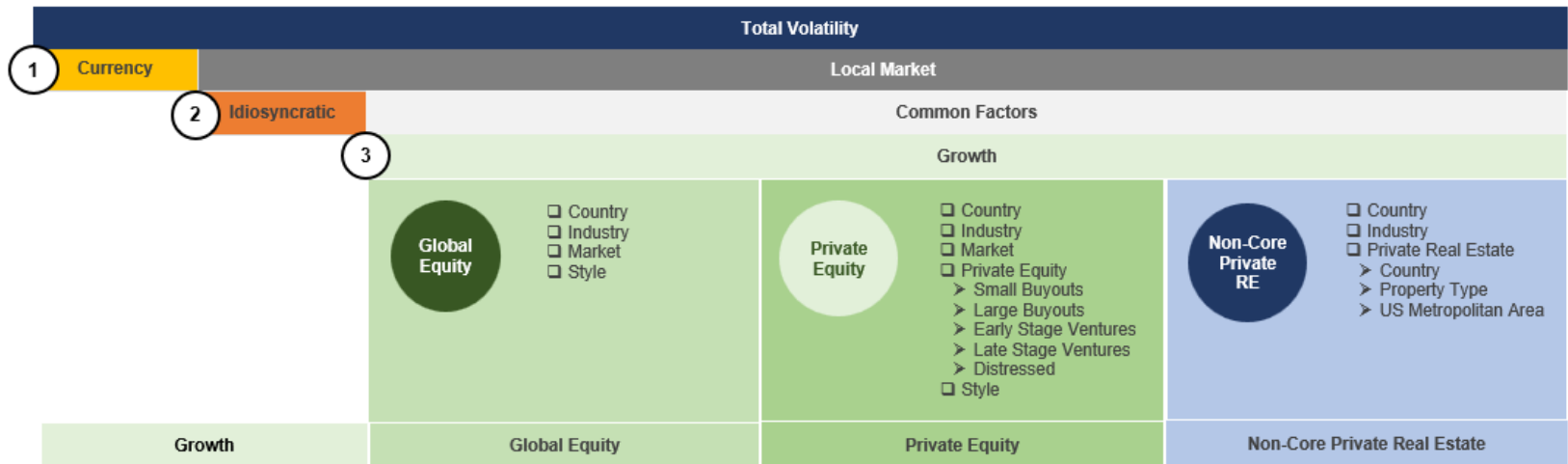
Capital-based versus Risk-based



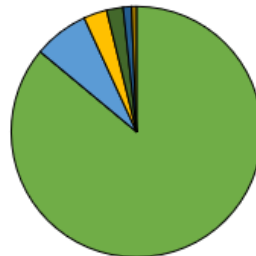
# Growth Risk Summary

for the quarter ended December 31, 2023

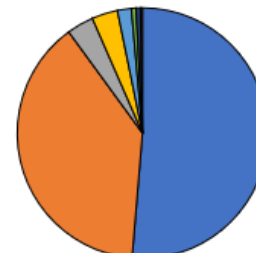
## Decomposition of MSCI Risk Factors



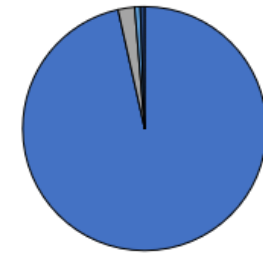
- Market 77.0%
- Private Equity 7.4%
- Currency 6.0%
- Country 3.5%
- Private Real Estate 2.7%
- Style 2.2%
- Industry 0.6%
- Spread 0.3%
- Idiosyncratic 0.3%



- Market 86.0%
- Currency 7.1%
- Country 3.0%
- Style 2.1%
- Industry 1.1%
- Idiosyncratic 0.7%



- Market 51.3%
- Private Equity 38.6%
- Country 3.5%
- Currency 3.3%
- Style 1.8%
- Industry 0.6%
- Spread 0.6%
- Idiosyncratic 0.3%

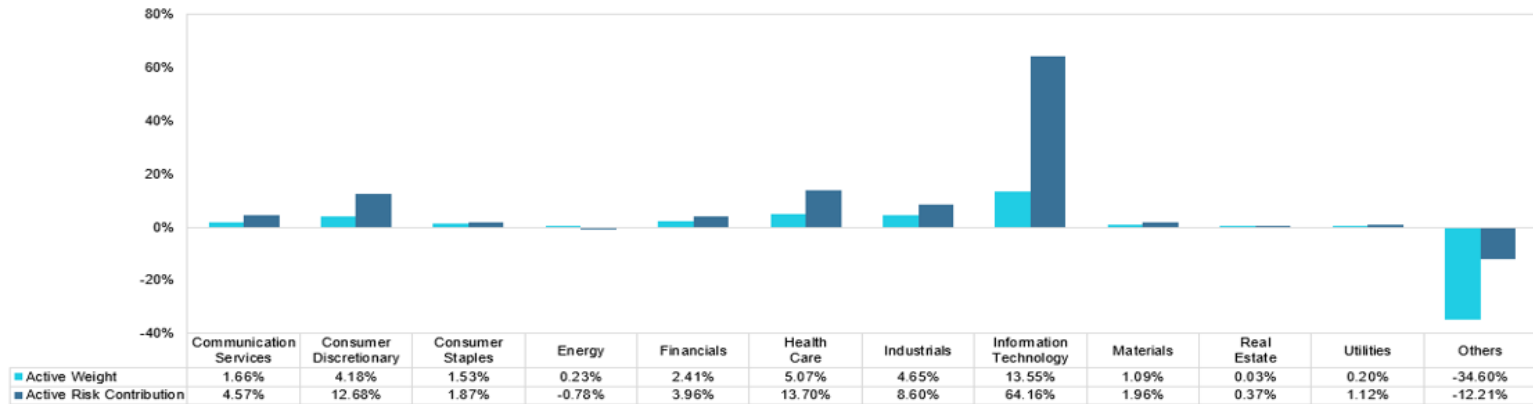


- Private Real Estate 96.5%
- Currency 2.2%
- Idiosyncratic 0.7%
- Industry 0.6%

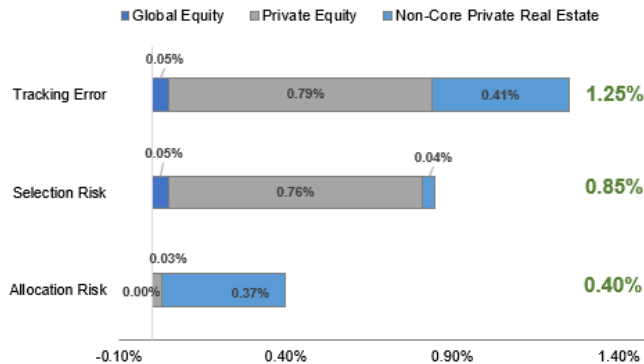
# Growth Risk Summary

for the quarter ended December 31, 2023

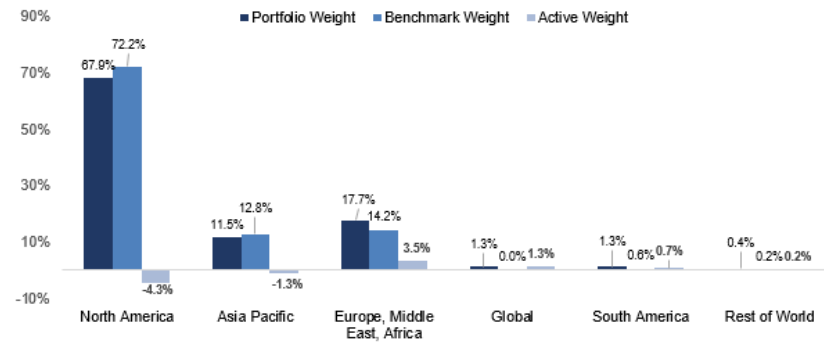
## Portfolio Allocation by GICS Sector



## Subcategory Contributions to Tracking Error



## Portfolio Allocation by Region<sup>1,2</sup>



<sup>1</sup> Global represents investments made in regions where specific country allocations are not available.

<sup>2</sup> Rest of World is sum of countries with weights below 0.5%.

# Growth – Global Equity Acadian Developed Markets

for the quarter ended December 31, 2023

## Strategy

Seeks to capture mispriced opportunities through systematic stock, sector, and country valuation models that are customized to each market. The strategy may be suited to investors looking to gain exposure in non-U.S. developed markets and diversify portfolio through active quantitative investment approach.

Inception Date: April 2006

## Portfolio Characteristics

	Portfolio	Benchmark
Market Cap Wtd Average (mm)	71,067.8	86,378.3
No. Of Issues	685.0	0.0
Dividend Yield	3.3	3.1
Return on Equity	21.6	18.2
Price to Sales	0.9	1.4
Price to Book	1.7	1.8
PE Ratio	11.7	14.9

## Top Holdings (% of assets)

NOVO NORDISK A/S B	3.3%
INDUSTRIA DE DISENO TEXTIL	2.5%
SAP SE	2.5%
STELLANTIS NV	2.4%
WOLTERS KLUWER	2.3%
<b>Top 5 Holdings</b>	<b>13.0%</b>

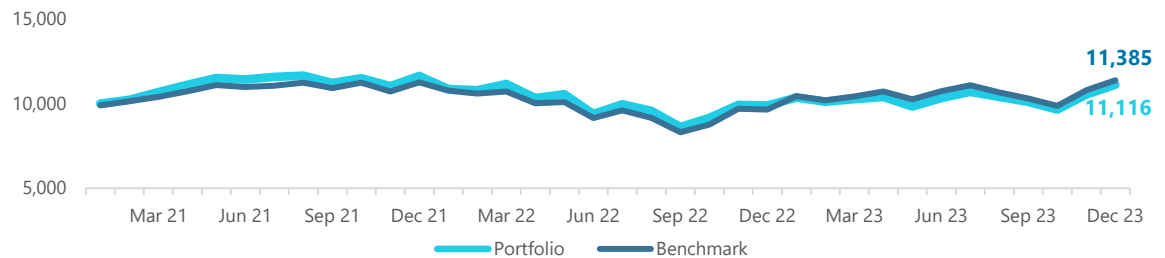
## Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Acadian Developed Markets</b>	<b>629.6</b>	<b>9.9%</b>	<b>12.4%</b>	<b>3.6%</b>	<b>8.7%</b>
MSCI EAFE + Canada Net Index		10.5%	17.9%	4.4%	8.5%
Growth Policy Benchmark		5.8%	19.9%	6.3%	--

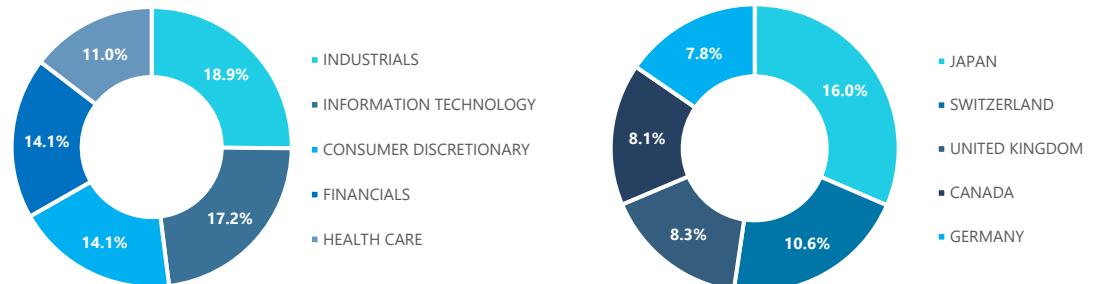
  

Universe data: Int/Global Equity Funds - Core	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Acadian Developed Markets</b>	<b>10.0%</b>	<b>43</b>	<b>12.8%</b>	<b>77</b>	<b>4.0%</b>	<b>57</b>	<b>9.1%</b>	<b>45</b>
Median	9.9%		17.7%		5.4%		8.6%	
No. of Observations	47							

## Growth of \$10,000



## Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Growth Risk Analysis – Global Equity

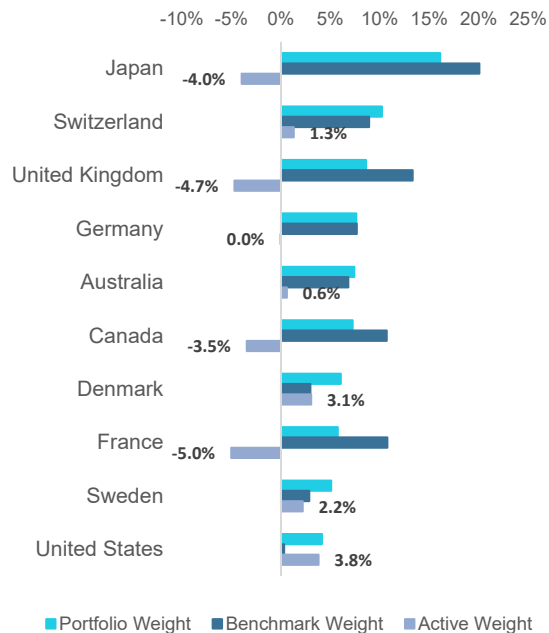
## Acadian Developed Markets

for the quarter ended December 31, 2023

### Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
<b>16.6%</b>	<b>16.6%</b>
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
<b>3.2%</b>	<b>0.98</b>

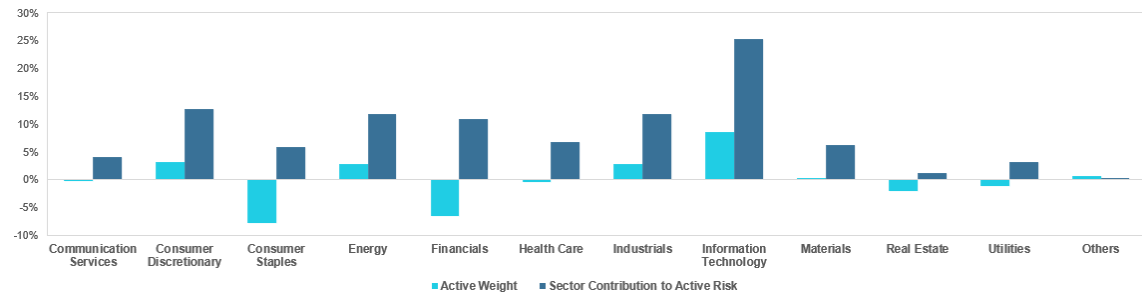
### Top 10 Countries by Weight



### Top 10 Assets by Contribution to Portfolio Active Risk

Asset	Portfolio Weight	Benchmark Weight	Active Weight	Contribution to Portfolio Active Risk
MEG ENERGY CORP	0.87%	0.03%	0.84%	0.11%
NOVO NORDISK A/S	3.36%	1.86%	1.50%	0.10%
BP PLC	2.16%	0.00%	2.16%	0.09%
WOLTERS KLUWER NV	2.27%	0.20%	2.08%	0.09%
WIX.COM LTD	0.95%	0.04%	0.92%	0.08%
ASUSTEK COMPUTER INC	1.04%	0.00%	1.04%	0.08%
LOGITECH INTERNATIONAL SA	1.43%	0.09%	1.35%	0.08%
SPOTIFY TECHNOLOGY SA	1.17%	0.00%	1.17%	0.08%
CHECK POINT SOFTWARE TECHNOLOGIES LTD	1.41%	0.08%	1.33%	0.07%
BLUESCOPE STEEL LTD	1.24%	0.04%	1.20%	0.07%

### Portfolio Allocation by GICS Sector



# Growth – Global Equity BTC Europe Alpha Tilts

for the quarter ended December 31, 2023

## Strategy

Seeks to generate risk-controlled and consistent active returns by using a unique blend of bottom-up stock selection insights and broader top-down thematic insights. The strategy may be suited to investors looking to capture active return opportunities in European region.

Inception Date: January 2007

## Portfolio Characteristics

	Portfolio	Benchmark
Market Cap Wtd Average (mm)	108,274.0	106,405.0
No. Of Issues	156.0	0.0
Dividend Yield	3.6	3.3
Return on Equity	22.3	18.2
Price to Sales	1.1	1.3
Price to Book	1.7	2.0
PE Ratio	13.5	14.8

## Top Holdings (% of assets)

NOVO NORDISK A/S B	4.6%
NESTLE SA REG	4.1%
NOVARTIS AG REG	3.4%
ASML HOLDING NV	3.2%
ASTRAZENECA PLC	3.1%
<b>Top 5 Holdings</b>	<b>18.3%</b>

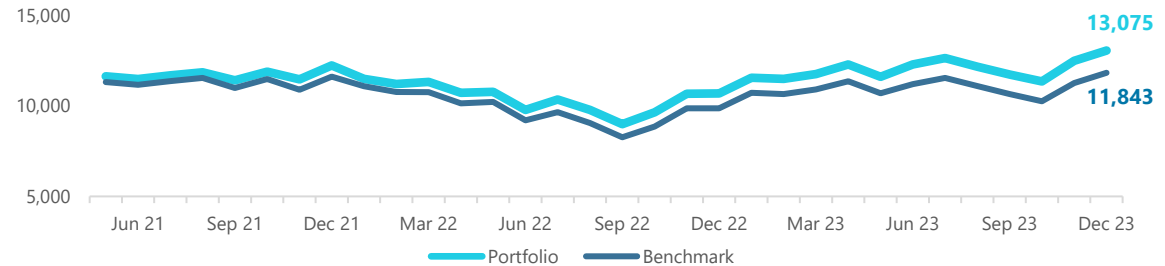
## Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>BTC Euro Tilts</b>	<b>645.2</b>	<b>11.3%</b>	<b>22.2%</b>	<b>9.3%</b>	<b>11.0%</b>
MSCI EUROPE		11.1%	19.9%	5.8%	9.1%
Growth Policy Benchmark		5.8%	19.9%	6.3%	--

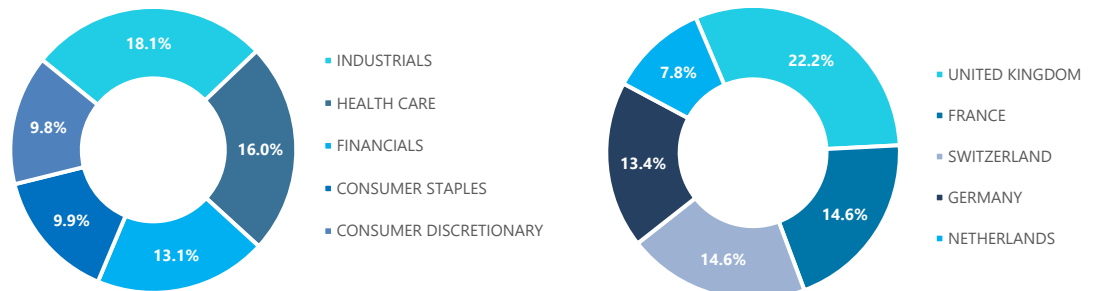
  

Universe data: Intl Equity Developed Mkt Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>BTC Euro Tilts</b>	<b>11.4%</b>	<b>25</b>	<b>22.2%</b>	<b>20</b>	<b>9.7%</b>	<b>19</b>	<b>11.4%</b>	<b>16</b>
Median	10.1%		17.9%		3.7%		8.6%	
No. of Observations	172							

## Growth of \$10,000



## Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Growth Risk Analysis – Global Equity

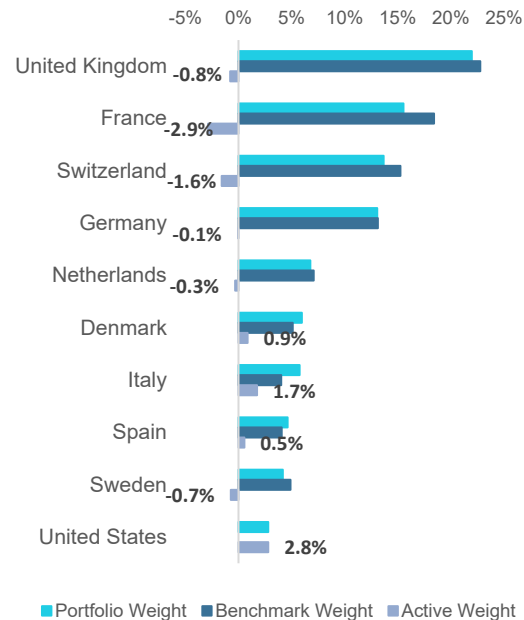
## BTC Europe Alpha Tilts

for the quarter ended December 31, 2023

### Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
17.6%	18.3%
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
1.7%	0.96

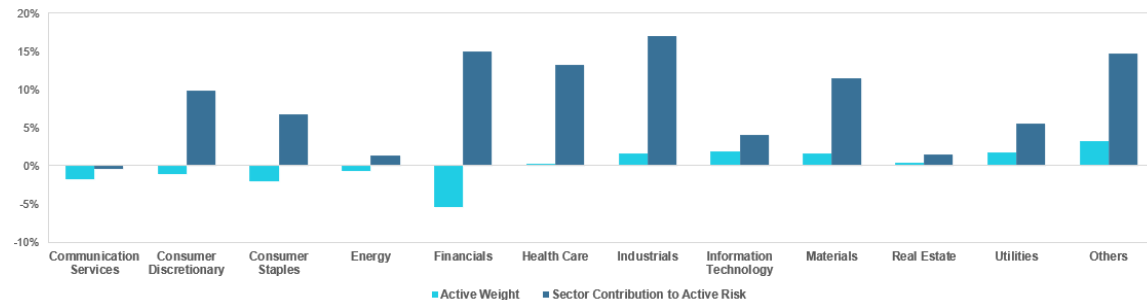
### Top 10 Countries by Weight



### Top 10 Assets by Contribution to Portfolio Active Risk

Asset	Portfolio Weight	Benchmark Weight	Active Weight	Contribution to Portfolio Active Risk
ASML HOLDING NV	0.00%	2.87%	-2.87%	0.19%
NOVO NORDISK A/S	4.56%	3.19%	1.37%	0.12%
NOVARTIS AG	3.36%	1.95%	1.41%	0.10%
LVMH MOET HENNESSY LOUIS VUITTON SE	0.62%	2.11%	-1.49%	0.08%
ENGIE	1.71%	0.30%	1.41%	0.07%
TESCO PLC	1.62%	0.25%	1.37%	0.06%
HOLCIM AG	1.85%	0.39%	1.46%	0.05%
SAP SE	2.92%	1.52%	1.40%	0.05%
BAE SYSTEMS PLC	1.11%	0.41%	0.70%	0.05%
BRITISH AMERICAN TOBACCO PLC	1.73%	0.59%	1.14%	0.04%

### Portfolio Allocation by GICS Sector





# Growth – Global Equity

## Capital Group Developed Markets

for the quarter ended December 31, 2023

### Strategy

Seeks to generate long-term capital appreciation through fundamental research and proprietary models for earnings estimates and valuations. The strategy may be suited to investors looking to gain exposures in non-U.S. developed markets with emphasis on bottom-up, fundamental investment analysis.

Inception Date: October 1987

### Portfolio Characteristics

	Portfolio	Benchmark
Market Cap Wtd Average (mm)	135,716.2	86,378.3
No. Of Issues	156.0	0.0
Dividend Yield	2.0	3.1
Return on Equity	22.3	18.2
Price to Sales	5.1	3.6
Price to Book	6.5	4.7
PE Ratio	22.2	16.0

### Top Holdings (% of assets)

NOVO NORDISK A/S B	4.1%
ASML HOLDING NV	4.1%
SAFRAN SA	3.2%
LONDON STOCK EXCHANGE GROUP	2.2%
ASTRAZENECA PLC	2.1%
<b>Top 5 Holdings</b>	<b>15.7%</b>

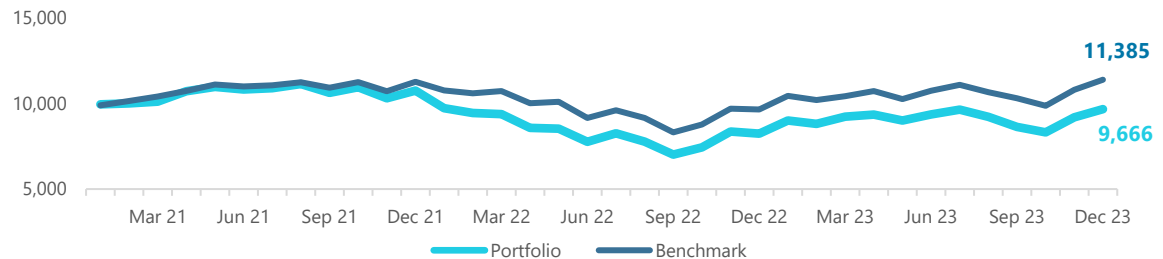
### Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Capital Group Developed Markets</b>	<b>427.2</b>	<b>12.0%</b>	<b>17.3%</b>	<b>-1.1%</b>	<b>9.4%</b>
EAFE Custom Benchmark		10.5%	17.9%	4.4%	8.5%
Growth Policy Benchmark		5.8%	19.9%	6.3%	--

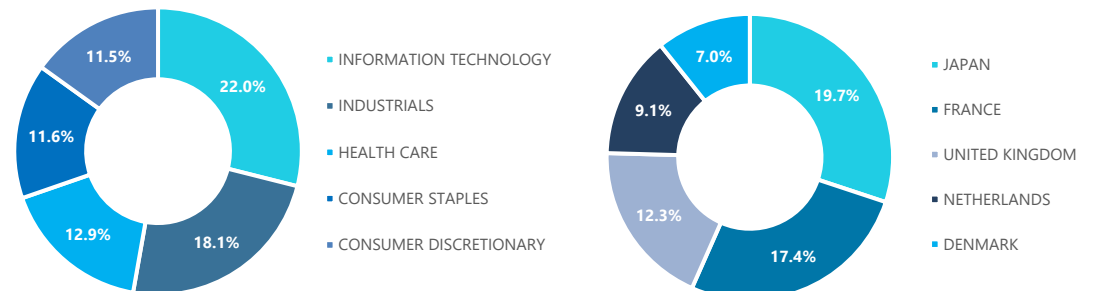
  

Universe data: Intl/Global Equity Funds - Core	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Capital Group Developed Markets</b>	<b>12.1%</b>	<b>15</b>	<b>17.7%</b>	<b>31</b>	<b>-0.8%</b>	<b>71</b>	<b>9.7%</b>	<b>44</b>
Median	9.9%		17.7%		5.4%		8.6%	
No. of Observations		47						

### Growth of \$10,000



### Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

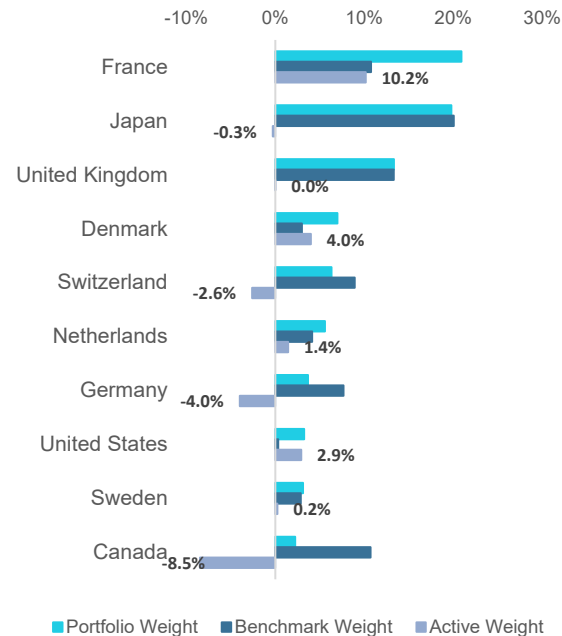
# Growth Risk Analysis – Global Equity Capital Group Developed Markets

for the quarter ended December 31, 2023

## Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
<b>16.9%</b>	<b>16.6%</b>
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
<b>3.5%</b>	<b>0.99</b>

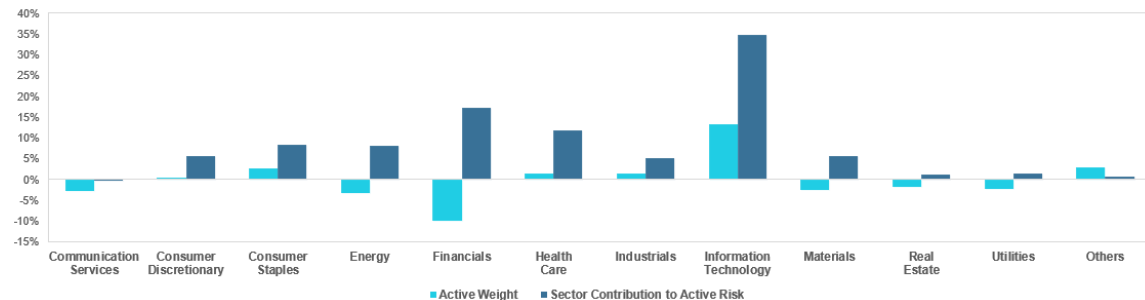
## Top 10 Countries by Weight



## Top 10 Assets by Contribution to Portfolio Active Risk

Asset	Portfolio Weight	Benchmark Weight	Active Weight	Contribution to Portfolio Active Risk
ASML HOLDING NV	4.06%	0.00%	4.06%	0.53%
OCADO GROUP PLC	1.63%	0.03%	1.60%	0.22%
TOKYO ELECTRON LTD	1.86%	0.47%	1.39%	0.20%
NOVO NORDISK A/S	4.11%	1.86%	2.24%	0.16%
KEYENCE CORP	1.93%	0.47%	1.46%	0.14%
SHELL PLC	0.00%	1.20%	-1.20%	0.11%
HAMAMATSU PHOTONICS KK	1.59%	0.03%	1.56%	0.11%
GENMAB A/S	1.37%	0.12%	1.25%	0.10%
EVOLUTION AB	1.85%	0.12%	1.73%	0.10%
CAPGEMINI SE	1.79%	0.18%	1.61%	0.10%

## Portfolio Allocation by GICS Sector



# Growth – Global Equity Cevian Capital II

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Strategy

Seeks to generate long-term returns by researching and investing in European companies that have profitable businesses and significant improvement potential. The strategy may be suited to investors looking to increase portfolio diversification through differentiated investment approach and take advantage of return opportunities in Europe.

Inception Date: October 2016

## Risk Statistics (since inception)

Standard Deviation	16.6%
Benchmark Standard Deviation	17.5%
Sharpe Ratio	0.59
Information Ratio	0.34
Beta	0.79
Tracking Error	10.0%

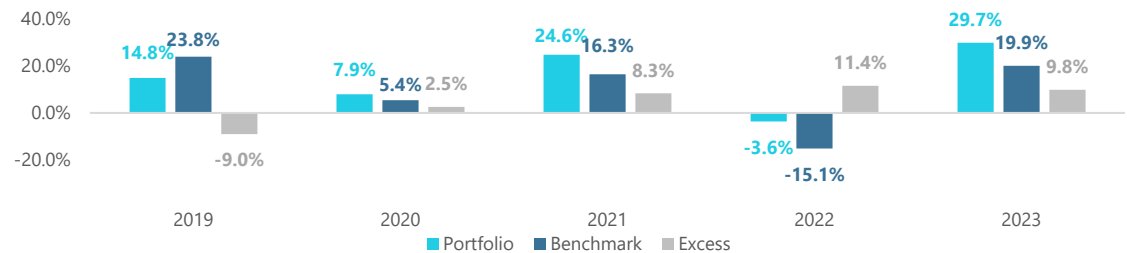
## Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Cevian Capital II - Activist</b>	<b>516.6</b>	<b>13.0%</b>	<b>29.7%</b>	<b>15.9%</b>	<b>14.0%</b>
MSCI EUROPE		11.1%	19.9%	5.8%	9.1%
Growth Policy Benchmark		5.8%	19.9%	6.3%	--

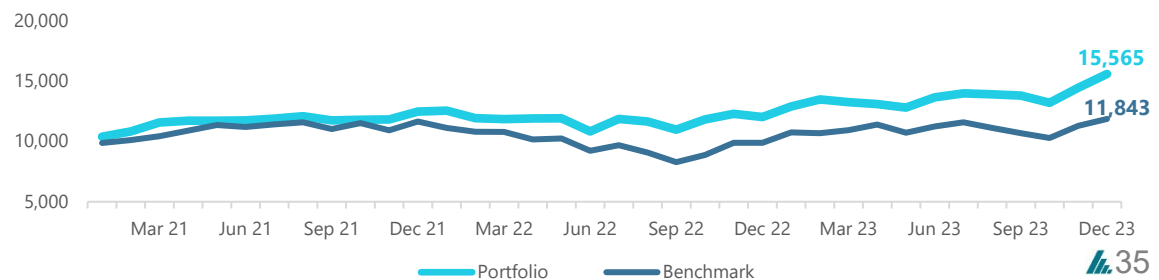
  

Universe data: Intl Equity Developed Mkt Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Cevian Capital II - Activist</b>	<b>13.3%</b>	<b>11</b>	<b>31.1%</b>	<b>3</b>	<b>17.2%</b>	<b>2</b>	<b>15.3%</b>	<b>5</b>
Median	10.1%		17.9%		3.7%		8.6%	
No. of Observations	172							

## Calendar Year Returns



## Growth of \$10,000



Note: Commingled fund account with no position-level transparency.  
<sup>1</sup> Universe data is gross-of-fees.

# Growth Risk Analysis – Global Equity

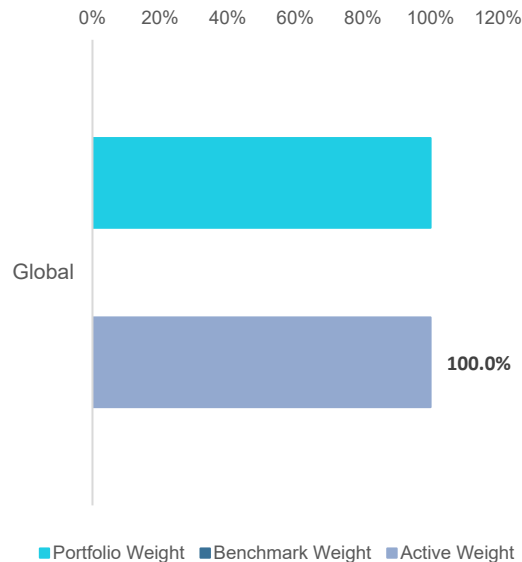
## Cevian Capital II

for the quarter ended December 31, 2023

### Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
<b>20.2%</b>	<b>18.3%</b>
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
<b>8.8%</b>	<b>0.99</b>

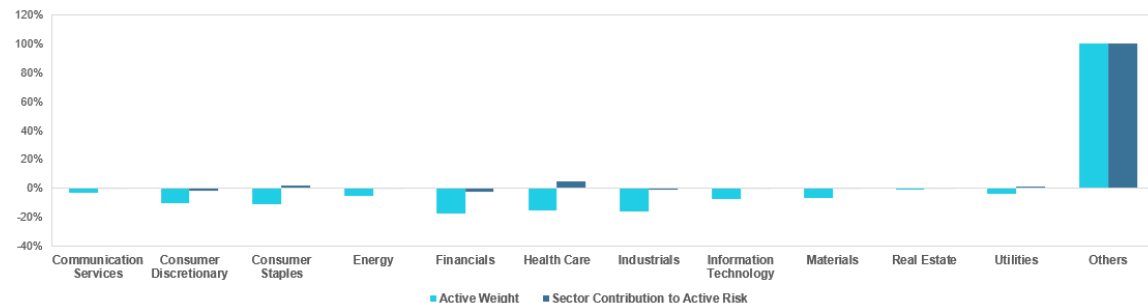
### Top Countries by Weight



### Top 10 Assets by Contribution to Portfolio Active Risk

Asset	Portfolio Weight	Benchmark Weight	Active Weight	Contribution to Portfolio Active Risk
CEVIAN CAPITAL II - ACTIVIST	100.00%	0.00%	100.00%	8.82%
NOVO NORDISK A/S	0.00%	3.19%	-3.19%	0.15%
ASTRAZENECA PLC	0.00%	1.98%	-1.98%	0.07%
NESTLE SA	0.00%	2.92%	-2.92%	0.07%
NOVARTIS AG	0.00%	1.95%	-1.95%	0.06%
ROCHE HOLDING AG	0.00%	1.93%	-1.93%	0.06%
UNILEVER PLC	0.00%	1.14%	-1.14%	0.03%
GSK PLC	0.00%	0.71%	-0.71%	0.03%
SANOFI SA	0.00%	1.07%	-1.07%	0.02%
RELX PLC	0.00%	0.71%	-0.71%	0.02%

### Portfolio Allocation by GICS Sector



Notes: Commingled fund account with no position-level transparency. Global represents investments made in regions where specific country allocations are not available.

# Growth – Global Equity CornerCap US Small Cap

for the quarter ended December 31, 2023

## Strategy

Seeks to exploit small cap market inefficiencies by using proprietary fundamental factors. The strategy may be suited to investors looking to increase U.S. small cap exposure and diversify portfolio through an active quantitative investment approach.

Inception Date: October 2018

## Portfolio Characteristics

	Portfolio	Benchmark
Market Cap Wtd Average (mm)	2,758.6	3,231.2
No. Of Issues	361.0	0.0
Dividend Yield	1.4	1.3
Return on Equity	11.0	10.3
Price to Sales	4.7	4.9
Price to Book	1.7	2.1
PE Ratio	18.4	30.1

## Top Holdings (% of assets)

CHORD ENERGY CORP	0.7%
PACTIV EVERGREEN INC	0.6%
JFROG LTD	0.6%
WESTERN ALLIANCE BANCORP	0.5%
LIVE OAK BANCSHARES INC	0.5%
<b>Top 5 Holdings</b>	<b>3.0%</b>

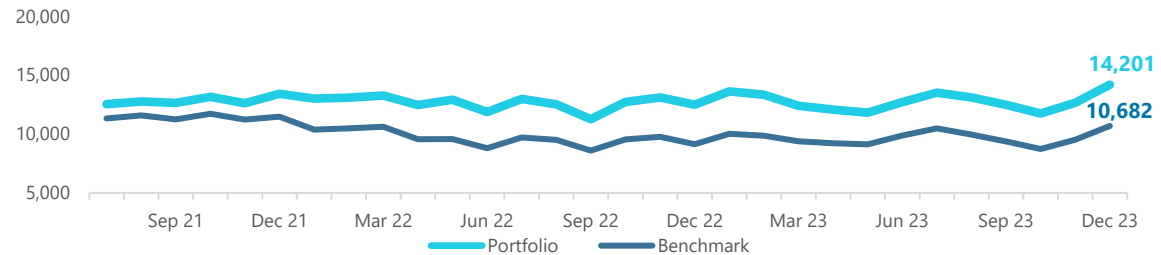
## Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Cornercap US Small Cap - EMP</b>	<b>91.7</b>	<b>13.7%</b>	<b>13.7%</b>	<b>12.4%</b>	<b>13.4%</b>
RUSSELL 2000		14.0%	16.9%	2.2%	10.0%
Growth Policy Benchmark		5.8%	19.9%	6.3%	--

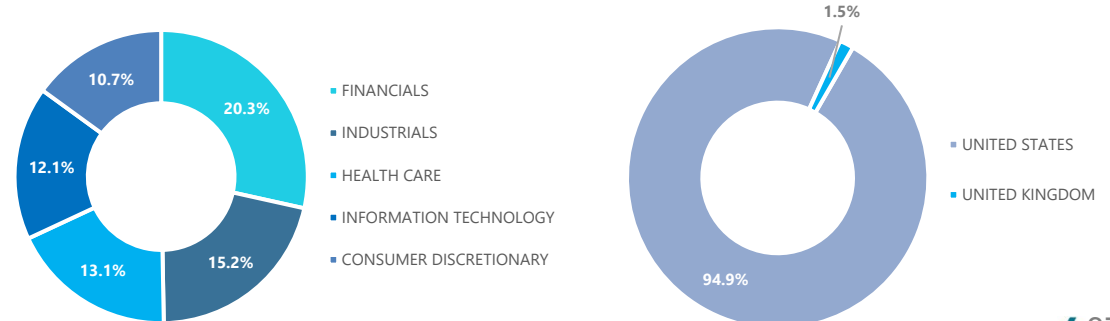
  

Universe data: US Equity Funds - Small Cap	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Cornercap US Small Cap - EMP</b>	<b>13.9%</b>	<b>16</b>	<b>14.3%</b>	<b>71</b>	<b>13.0%</b>	<b>13</b>	<b>0.0%</b>	<b>20</b>
Median	11.7%		16.8%		7.9%		12.6%	
No. of Observations	54							

## Growth of \$10,000



## Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Growth Risk Analysis – Global Equity

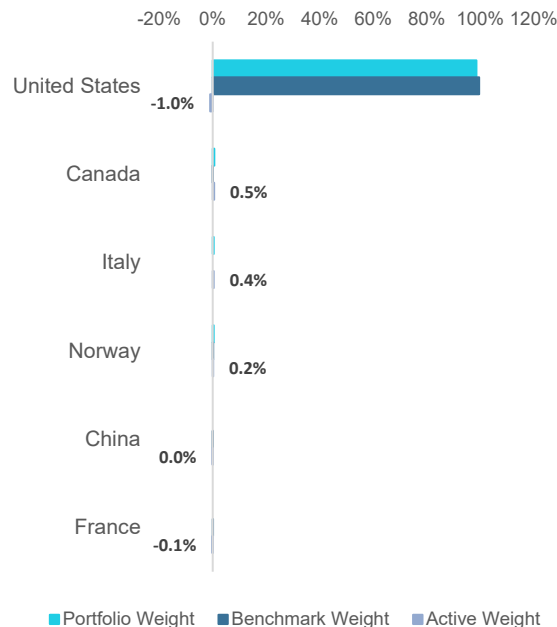
## CornerCap US Small Cap

for the quarter ended December 31, 2023

### Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
23.3%	24.1%
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
3.1%	0.96

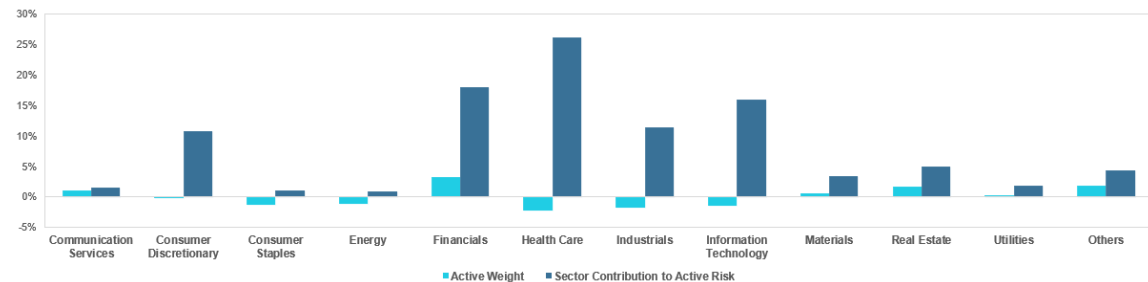
### Top Countries by Weight



### Top 10 Assets by Contribution to Portfolio Active Risk

Asset	Portfolio Weight	Benchmark Weight	Active Weight	Contribution to Portfolio Active Risk
SUPER MICRO COMPUTER INC	0.00%	0.52%	-0.52%	0.08%
MICROSTRATEGY INC	0.00%	0.30%	-0.30%	0.04%
CYTOKINETICS INC	0.00%	0.31%	-0.31%	0.04%
IMMUNOGEN INC	0.00%	0.28%	-0.28%	0.04%
ONTO INNOVATION INC	0.00%	0.30%	-0.30%	0.03%
ELF BEAUTY INC	0.00%	0.31%	-0.31%	0.02%
RAMBUS INC	0.00%	0.29%	-0.29%	0.02%
MARATHON DIGITAL HOLDINGS INC	0.00%	0.20%	-0.20%	0.03%
BLUEPRINT MEDICINES CP	0.00%	0.22%	-0.22%	0.03%
DUOLINGO INC	0.00%	0.26%	-0.26%	0.02%

### Portfolio Allocation by GICS Sector



# Growth – Global Equity

## Frontier US SMID Growth

for the quarter ended December 31, 2023

### Strategy

Seeks to invest in high quality companies at attractive valuations and sustainable secular growth through fundamental analysis. The strategy may be suited to investors looking to increase U.S. mid and small cap exposures and generate returns through stock selection and low turnover.

Inception Date: June 2002

### Portfolio Characteristics

	Portfolio	Benchmark
Market Cap Wtd Average (mm)	8,397.4	6,922.3
No. Of Issues	142.0	0.0
Dividend Yield	0.5	1.2
Return on Equity	9.7	13.1
Price to Sales	3.2	3.1
Price to Book	3.7	3.6
PE Ratio	19.3	18.2

### Top Holdings (% of assets)

JABIL INC	1.9%
ATI INC	1.8%
BEACON ROOFING SUPPLY INC	1.7%
MRC GLOBAL INC	1.7%
BUILDERS FIRSTSOURCE INC	1.5%
<b>Top 5 Holdings</b>	<b>8.6%</b>

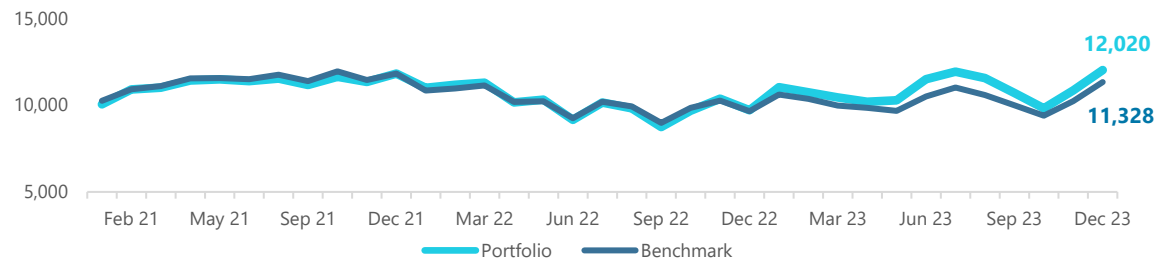
### Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Frontier US SMID Growth</b>	<b>317.4</b>	<b>12.4%</b>	<b>23.9%</b>	<b>6.3%</b>	<b>12.8%</b>
RUSSELL 2500		13.4%	17.4%	4.2%	11.7%
Growth Policy Benchmark		5.8%	19.9%	6.3%	--

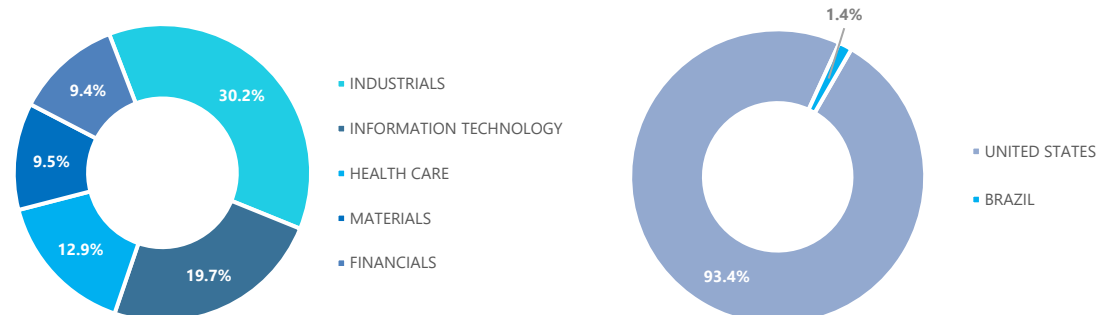
  

Universe data: US Equity Funds - Small Cap	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Frontier US SMID Growth</b>	<b>12.6%</b>	<b>35</b>	<b>24.8%</b>	<b>8</b>	<b>7.1%</b>	<b>87</b>	<b>13.6%</b>	<b>21</b>
Median	11.7%		16.8%		7.9%		12.6%	
No. of Observations	54							

### Growth of \$10,000



### Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

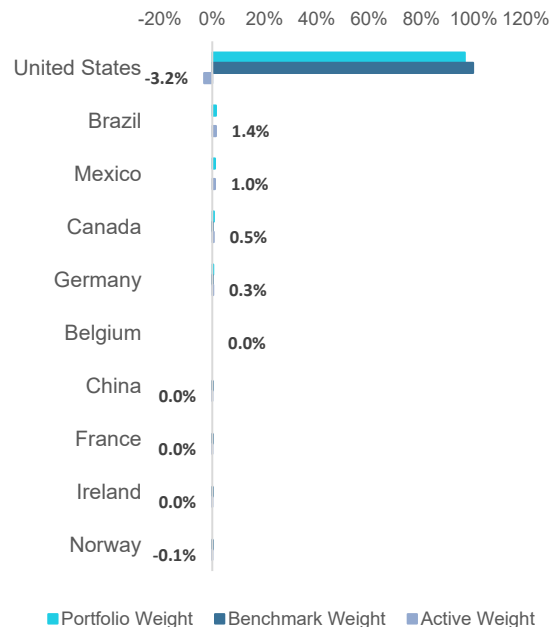
# Growth Risk Analysis – Global Equity Frontier US SMID Growth

for the quarter ended December 31, 2023

## Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
25.8%	22.9%
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
4.8%	1.11

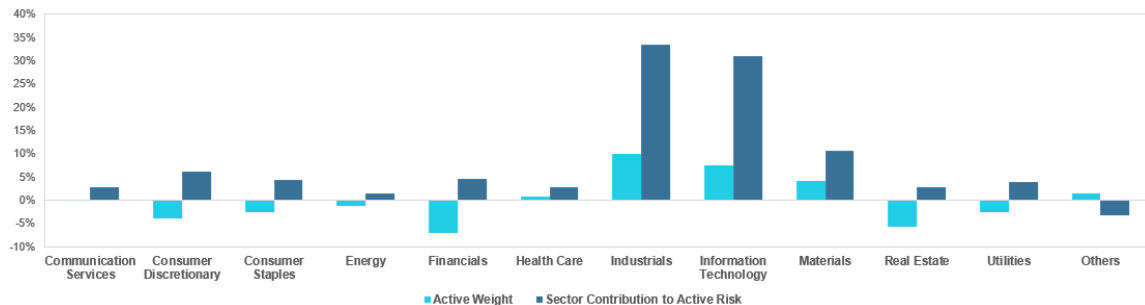
## Top 10 Countries by Weight



## Top 10 Assets by Contribution to Portfolio Active Risk

Asset	Portfolio Weight	Benchmark Weight	Active Weight	Contribution to Portfolio Active Risk
WOLFSPEED INC	1.44%	0.09%	1.34%	0.32%
AZUL SA	1.39%	0.00%	1.39%	0.29%
ARRAY TECHNOLOGIES INC	1.31%	0.04%	1.27%	0.29%
MRC GLOBAL INC	1.68%	0.02%	1.67%	0.13%
CONTROLADORA VUELA	1.04%	0.00%	1.04%	0.20%
ALBEMARLE CORP	1.15%	0.00%	1.15%	0.17%
JABIL INC	1.93%	0.27%	1.66%	0.10%
CAESARS ENTERTAINMENT INC	1.30%	0.00%	1.30%	0.13%
MONOLITHIC POWER SYSTEMS INC	1.03%	0.00%	1.03%	0.15%
SITIME CORPORATION	0.89%	0.04%	0.85%	0.17%

## Portfolio Allocation by GICS Sector





# Growth – Global Equity

## Global Alpha

for the quarter ended December 31, 2023

### Strategy

Seeks to identify mispriced companies with high rates of growth, strong balance sheets, and high insider ownership using a bottom-up, research-based approach coupled with investment themes. The strategy may be suited to investors looking to increase exposure to international small cap stocks.

Inception Date: November 2018

### Portfolio Characteristics

	Portfolio	Benchmark
Market Cap Wtd Average (mm)	2,843.6	2,845.7
No. Of Issues	60.0	0.0
Dividend Yield	2.2	3.0
Return on Equity	12.3	11.8
Price to Sales	11.9	5.6
Price to Book	2.4	4.2
PE Ratio	13.5	13.0

### Top Holdings (% of assets)

MELIA HOTELS INTERNATIONAL	3.9%
SOPRA STERIA GROUP	3.2%
LOOMIS AB	3.1%
SAVILLS PLC	3.1%
INTERNET INITIATIVE JAPAN	3.1%
<b>Top 5 Holdings</b>	<b>16.5%</b>

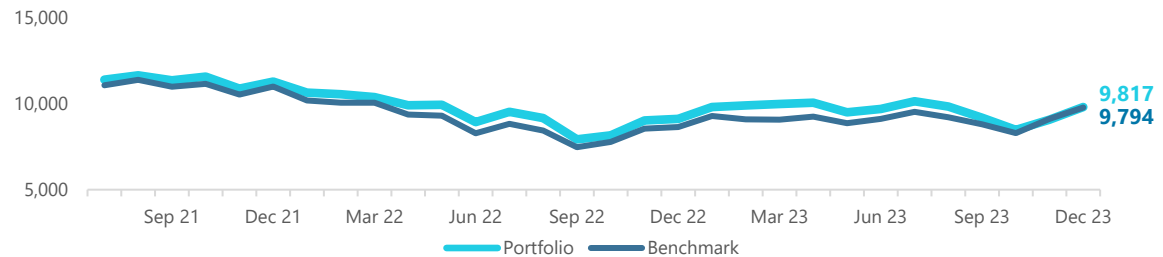
### Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Global Alpha</b>	<b>178.0</b>	<b>6.8%</b>	<b>7.5%</b>	<b>-0.6%</b>	<b>6.3%</b>
MSCI EAFE SMALL CAP NET		11.1%	13.2%	-0.7%	6.6%
Growth Policy Benchmark		5.8%	19.9%	6.3%	--

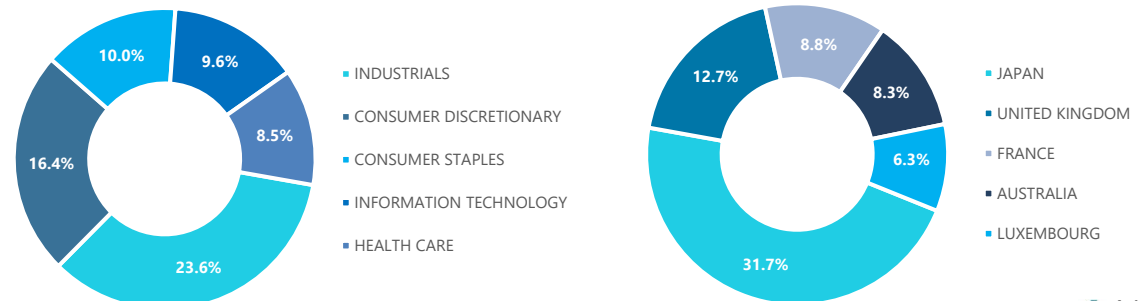
  

Universe data: International Equity Funds Core	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Global Alpha</b>	<b>6.9%</b>	<b>91</b>	<b>8.3%</b>	<b>93</b>	<b>0.1%</b>	<b>70</b>	--	--
Median	9.9%		17.7%		5.4%		--	
No. of Observations	47							

### Growth of \$10,000



### Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Growth Risk Analysis – Global Equity

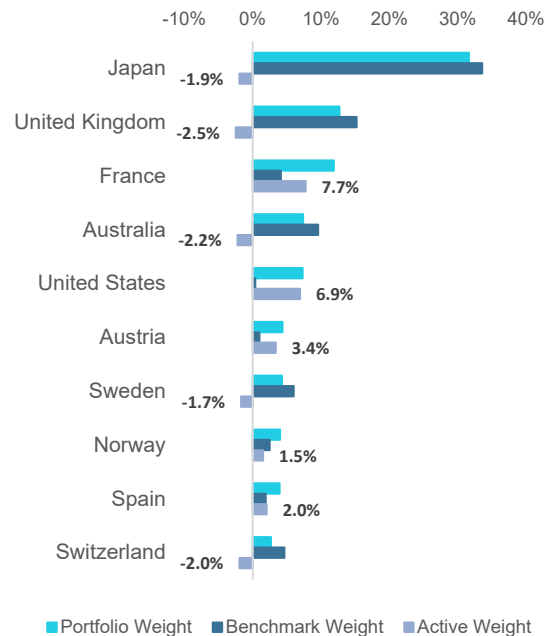
## Global Alpha

for the quarter ended December 31, 2023

### Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
<b>18.0%</b>	<b>18.3%</b>
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
<b>3.9%</b>	<b>0.96</b>

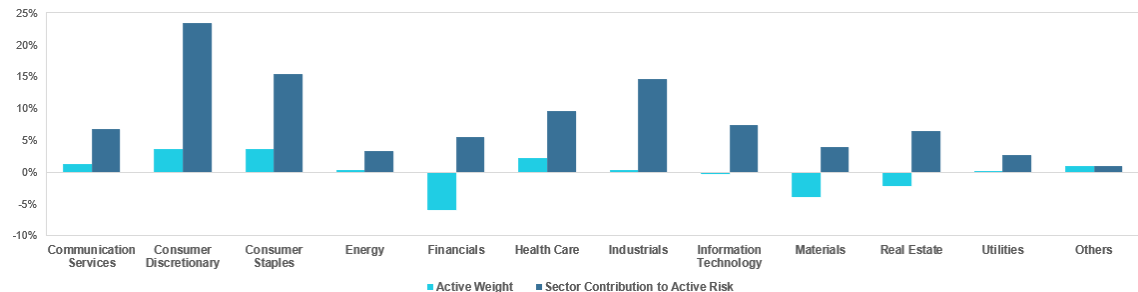
### Top 10 Countries by Weight



### Top 10 Assets by Contribution to Portfolio Active Risk

Asset	Portfolio Weight	Benchmark Weight	Active Weight	Contribution to Portfolio Active Risk
L'OCCITANE INTERNATIONAL SA	3.01%	0.00%	3.01%	0.37%
SAMSONITE INTERNATIONAL SA	2.82%	0.00%	2.82%	0.25%
MELIA HOTELS INTERNATIONAL SA	3.94%	0.03%	3.91%	0.24%
CVS GROUP PLC	2.41%	0.06%	2.35%	0.16%
INTERNET INITIATIVE JAPAN INC	3.08%	0.09%	3.00%	0.17%
ASICS CORP	2.56%	0.19%	2.37%	0.14%
VITASOY INTERNATIONAL HOLDINGS LTD	0.87%	0.03%	0.84%	0.06%
ARIAKE JAPAN	1.78%	0.02%	1.76%	0.10%
RAFFLES MEDICAL GROUP LTD	2.57%	0.03%	2.55%	0.12%
SALMAR ASA	2.49%	0.00%	2.49%	0.12%

### Portfolio Allocation by GICS Sector



# Growth – Global Equity

## JPMorgan Strategic Beta Non-US

for the quarter ended December 31, 2023

### Strategy

Seeks to capture incremental alpha through investing in equity factors that are rule-based, transparent, and academically proven. This strategy may be suited to investors looking to gain equity factor exposures in non-U.S. markets at lower volatility and cost than active strategies.

Inception Date: August 2020

### Portfolio Characteristics

	Portfolio	Benchmark
Market Cap Wtd Average (mm)	80,142.1	79,144.8
No. Of Issues	1,797.0	0.0
Dividend Yield	3.3	3.1
Return on Equity	18.3	17.0
Price to Sales	3.7	4.2
Price to Book	4.4	5.4
PE Ratio	13.4	16.0

### Top Holdings (% of assets)

ISHARES MSCI INDIA ETF	4.6%
TAIWAN SEMICONDUCTOR MANUFAC	1.6%
NOVO NORDISK A/S B	1.2%
ASML HOLDING NV	1.1%
NESTLE SA REG	1.0%
<b>Top 5 Holdings</b>	<b>9.5%</b>

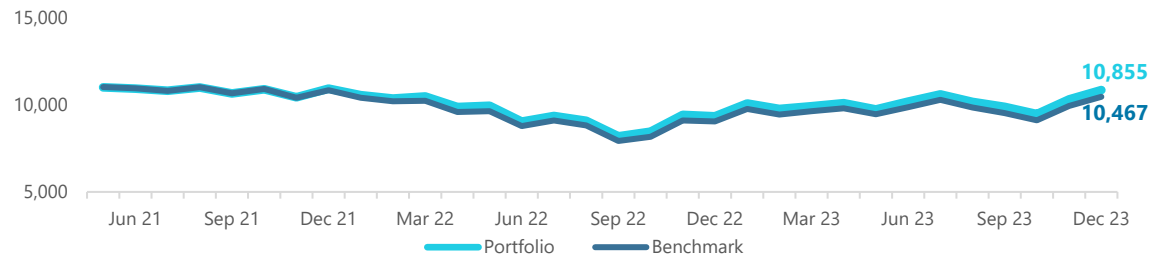
### Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>JPMAM Strategic Beta Non-US</b>	<b>639.2</b>	<b>9.7%</b>	<b>16.1%</b>	<b>2.8%</b>	--
MSCI ACWI ex USA IMI Net		9.8%	15.6%	1.5%	--
Growth Policy Benchmark		5.8%	19.9%	6.3%	--

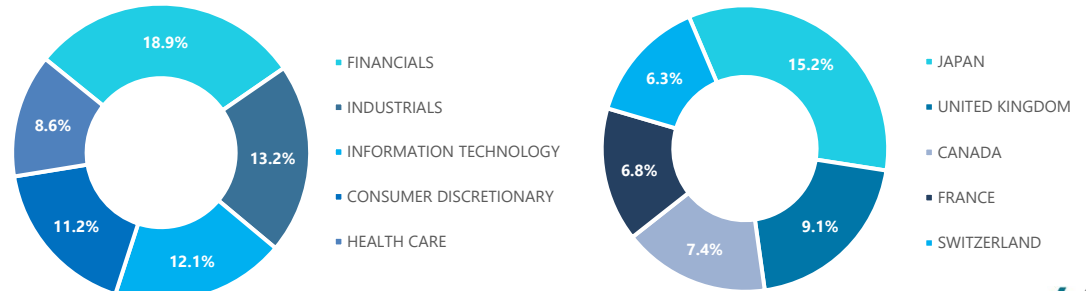
  

Universe data: Intl Equity Developed Mkt Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>JPMAM Strategic Beta Non-US</b>	<b>9.8%</b>	<b>59</b>	<b>16.1%</b>	<b>84</b>	<b>2.7%</b>	<b>55</b>	--	--
Median	10.1%		17.9%		3.7%		--	
No. of Observations	172							

### Growth of \$10,000



### Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Growth Risk Analysis – Global Equity

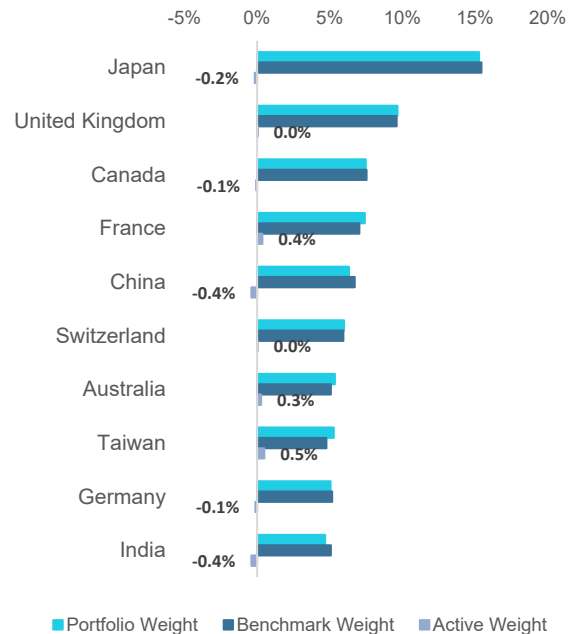
## JPMorgan Strategic Beta Non-US

for the quarter ended December 31, 2023

### Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
<b>16.0%</b>	<b>16.2%</b>
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
<b>0.6%</b>	<b>0.99</b>

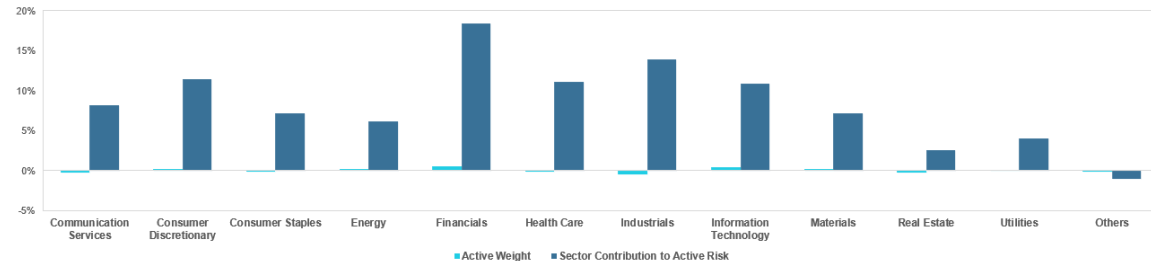
### Top 10 Countries by Weight



### Top 10 Assets by Contribution to Portfolio Active Risk

Asset	Portfolio Weight	Benchmark Weight	Active Weight	Contribution to Portfolio Active Risk
ASML HOLDING NV	0.00%	1.04%	-1.04%	0.06%
ARGENX SE	0.00%	0.08%	-0.08%	0.01%
ADVANTEST CORP	0.00%	0.09%	-0.09%	0.01%
UNILEVER PLC	0.02%	0.41%	-0.40%	-0.01%
MITSUBISHI UFJ FINANCIAL GROUP INC	0.00%	0.34%	-0.33%	-0.01%
SEA LIMITED	0.03%	0.05%	-0.03%	0.01%
EQT AB	0.00%	0.03%	-0.03%	0.00%
NIO INC	0.02%	0.04%	-0.02%	0.01%
MERCEDES-BENZ GROUP AG	0.00%	0.19%	-0.19%	0.00%
ATLAS COPCO AB	0.00%	0.08%	-0.08%	0.00%

### Portfolio Allocation by GICS Sector



# Growth – Global Equity

## JPMorgan Strategic Beta US

for the quarter ended December 31, 2023

### Strategy

Seeks to capture incremental alpha through investing in equity factors that are rule-based, transparent, and academically proven. This strategy may be suited to investors looking to gain equity factor exposures in the U.S. at lower volatility and cost than active strategies.

Inception Date: July 2020

### Portfolio Characteristics

	Portfolio	Benchmark
Market Cap Wtd Average (mm)	622,289.0	627,283.0
No. Of Issues	886.0	0.0
Dividend Yield	1.4	1.4
Return on Equity	23.4	21.5
Price to Sales	2.4	2.4
Price to Book	4.0	3.9
PE Ratio	22.1	23.0

### Top Holdings (% of assets)

APPLE INC	6.4%
MICROSOFT CORP	5.7%
AMAZON.COM INC	3.0%
NVIDIA CORP	2.6%
ALPHABET INC CL A	1.7%
<b>Top 5 Holdings</b>	<b>19.4%</b>

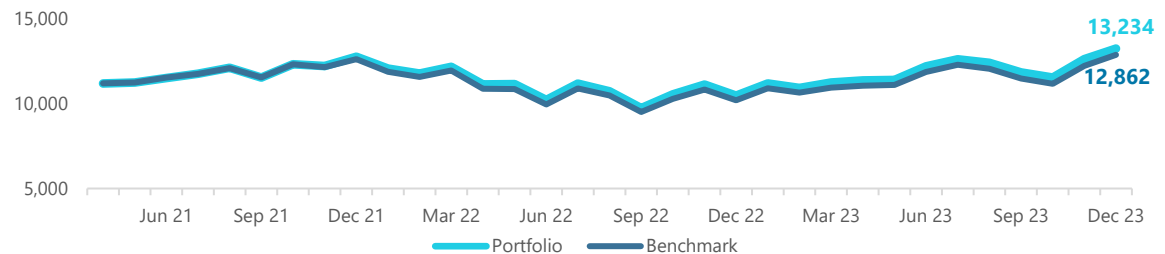
### Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>JPMAM Strategic Beta US</b>	<b>4,999.1</b>	<b>11.9%</b>	<b>26.5%</b>	<b>9.8%</b>	--
MSCI USA IMI Gross		12.1%	26.2%	8.8%	--
Growth Policy Benchmark		5.8%	19.9%	6.3%	--

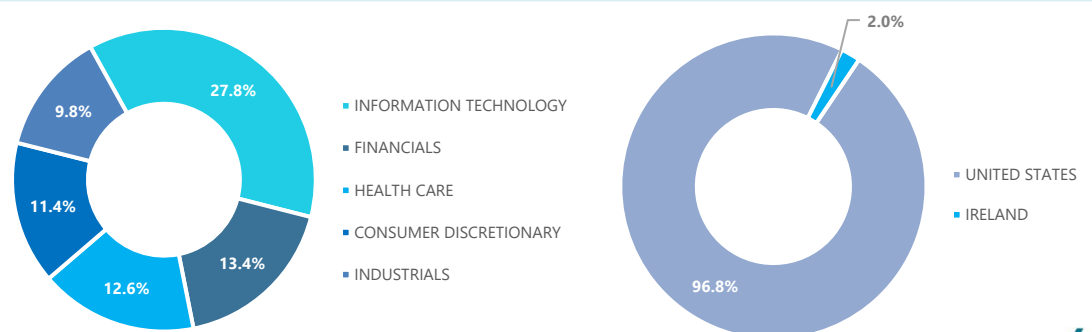
  

Universe data: U.S. Equities Total Large Cap	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>JPMAM Strategic Beta US</b>	<b>11.9%</b>	<b>41</b>	<b>26.5%</b>	<b>40</b>	<b>9.8%</b>	<b>58</b>	--	--
Median	11.7%		26.3%		9.9%		--	
No. of Observations	78							

### Growth of \$10,000



### Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Growth Risk Analysis – Global Equity

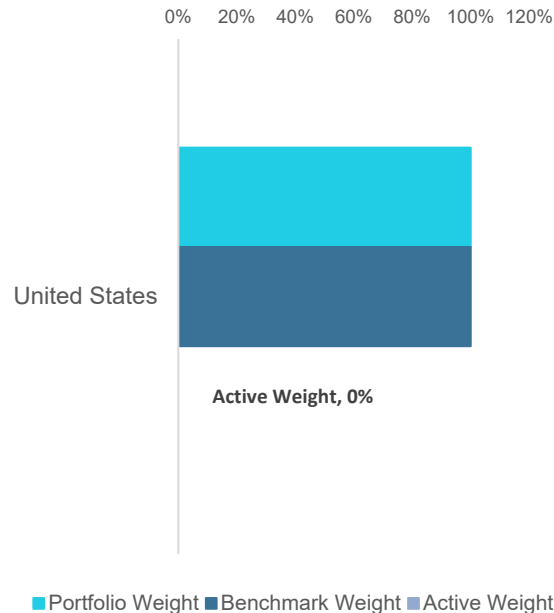
## JPMorgan Strategic Beta US

for the quarter ended December 31, 2023

### Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility <hr/> <b>18.1%</b>	<b>BENCHMARK</b> Forecast Volatility <hr/> <b>18.4%</b>
<b>PORTFOLIO</b> Forecast Tracking Error <hr/> <b>0.6%</b>	<b>PORTFOLIO</b> Beta <hr/> <b>0.98</b>

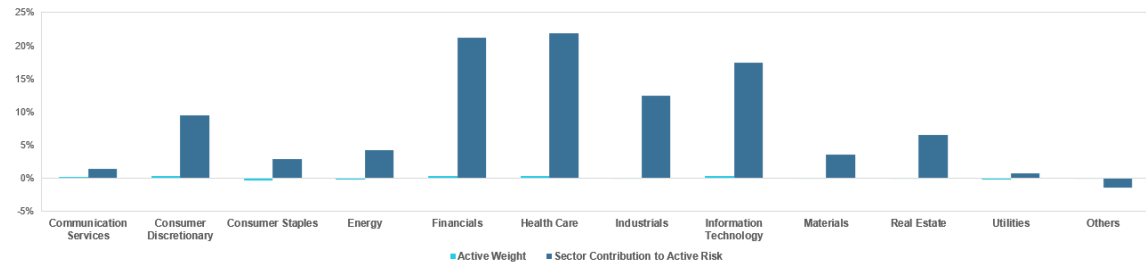
### Top Country by Weight



### Top 10 Assets by Contribution to Portfolio Active Risk

Asset	Portfolio Weight	Benchmark Weight	Active Weight	Contribution to Portfolio Active Risk
JPMORGAN CHASE & CO	0.00%	1.06%	-1.06%	0.03%
COINBASE GLOBAL INC	0.00%	0.06%	-0.06%	0.01%
MODERNA INC	0.01%	0.07%	-0.05%	0.01%
BLOCK INC	0.04%	0.09%	-0.06%	0.01%
ILLUMINA INC	0.00%	0.05%	-0.05%	0.01%
RIVIAN AUTOMOTIVE INC	0.00%	0.03%	-0.03%	0.01%
ENPHASE ENERGY INC	0.00%	0.04%	-0.04%	0.01%
SNOWFLAKE INC	0.07%	0.12%	-0.05%	0.01%
CLOUDFLARE INC	0.01%	0.05%	-0.04%	0.01%
MONGODB INC	0.02%	0.06%	-0.04%	0.01%

### Portfolio Allocation by GICS Sector



# Growth – Global Equity Lazard Emerging Markets

for the quarter ended December 31, 2023

## Strategy

Seeks to provide long-term capital appreciation by investing in funds trading at a discount to their estimated net asset value, sum of the parts valuation, and/or underlying investments/businesses. The strategy may be suited to investors looking to capture growth opportunities in emerging markets and increase portfolio diversification.

Inception Date: February 2013

## Portfolio Characteristics

	Portfolio	Benchmark
Market Cap Wtd Average (mm)	37,385.5	104,519.1
No. Of Issues	48.0	0.0
Dividend Yield	2.4	2.9
Return on Equity	11.9	11.9
Price to Sales	1.4	1.2
Price to Book	1.6	1.6
PE Ratio	13.3	13.7

## Top Holdings (% of assets)

PROSUS NV	7.6%
TEMPLETON EMERGING MARKETS INV	6.4%
JPMORGAN EMERGING MARKETS INVE	6.3%
CITIC SECURITIES CO LTD H	6.0%
FIDELITY CHINA SPECIAL SITUATI	5.0%
<b>Top 5 Holdings</b>	<b>31.2%</b>

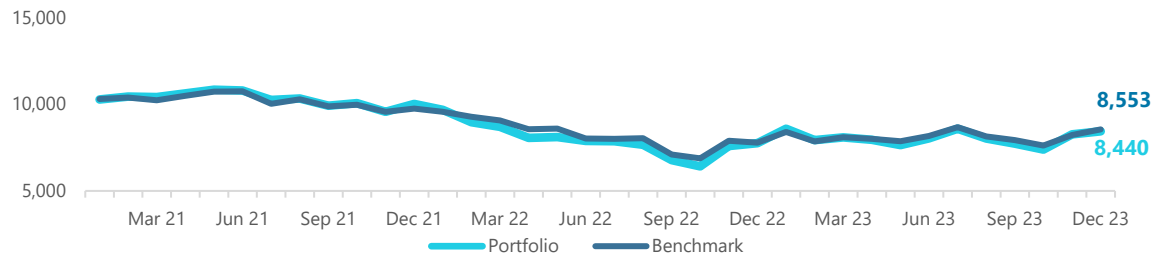
## Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Lazard Emerging Markets</b>	<b>400.5</b>	<b>9.2%</b>	<b>8.8%</b>	<b>-5.5%</b>	<b>5.6%</b>
MSCI EMERGING MARKETS		7.9%	9.8%	-5.1%	3.7%
Growth Policy Benchmark		5.8%	19.9%	6.3%	--

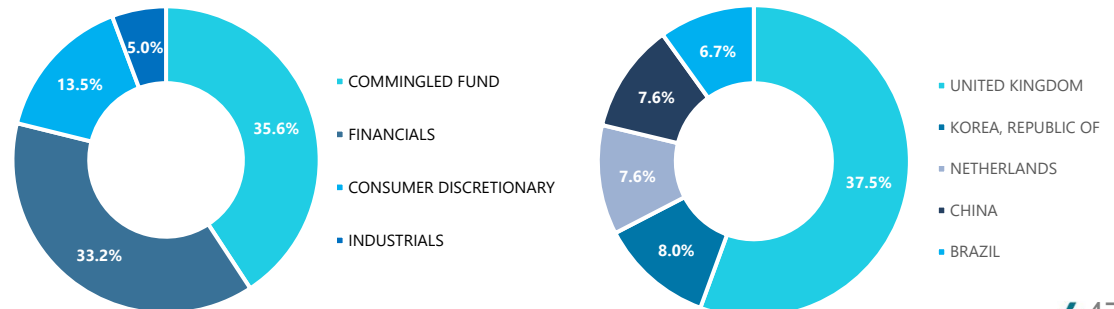
  

Universe data: Intl Equity Emerging Mkt Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Lazard Emerging Markets</b>	<b>9.4%</b>	<b>32</b>	<b>9.5%</b>	<b>72</b>	<b>-4.9%</b>	<b>70</b>	<b>6.3%</b>	<b>55</b>
Median	8.1%		14.0%		-0.6%		6.6%	
No. of Observations	85							

## Growth of \$10,000



## Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Growth Risk Analysis – Global Equity

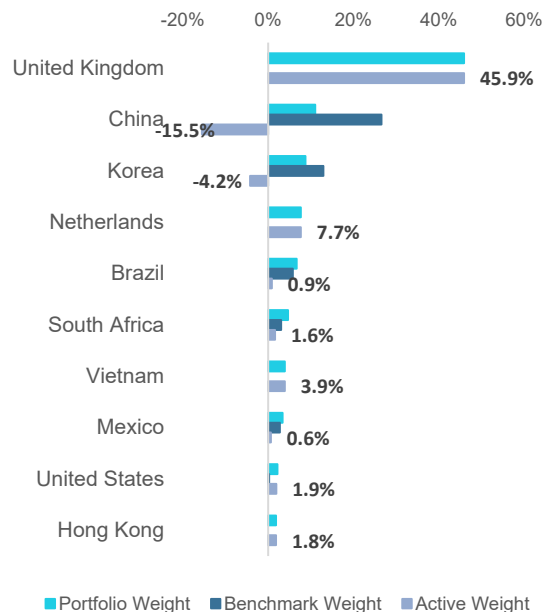
## Lazard Emerging Markets

for the quarter ended December 31, 2023

### Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
<b>18.6%</b>	<b>16.5%</b>
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
<b>9.4%</b>	<b>0.97</b>

### Top 10 Countries by Weight

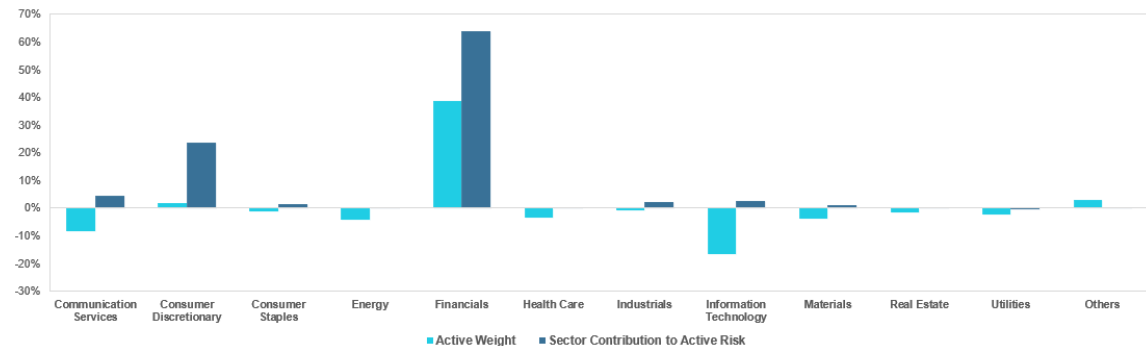


### Top 10 Assets<sup>1</sup> by Contribution to Portfolio Active Risk

Asset	Portfolio Weight	Benchmark Weight	Active Weight	Contribution to Portfolio Active Risk
PROSUS NV	7.65%	0.00%	7.65%	1.32%
JPMORGAN EM INVESTMENT TRUST PLC	6.29%	0.00%	6.29%	0.90%
FIDELITY CHINA SPECIAL SITUATIONS PLC	4.99%	0.00%	4.99%	0.85%
TEMPLETON EM INVESTMENT TRUST PLC	6.29%	0.00%	6.29%	0.85%
NASPERS	4.64%	0.45%	4.19%	0.55%
TENCENT HOLDINGS LTD	0.16%	3.55%	-3.39%	0.35%
UTILICO EMERGING MARKETS TRUST PLC	3.28%	0.00%	3.28%	0.39%
ASIA DRAGON TRUST PLC	2.91%	0.00%	2.91%	0.38%
FIDELITY EMERGING MARKETS LTD	2.59%	0.00%	2.59%	0.36%
SCHRODER ASIAPACIFIC FUND PLC	2.78%	0.00%	2.78%	0.34%

Note: Weights represent country of domicile of closed-end fund and not country of underlying fund holdings.

### Portfolio Allocation by GICS Sector





# Growth – Global Equity

## SSGA MSCI ACWI IMI

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

### Strategy

Seeks to provide global equity market exposure and passive index returns. This strategy may be suited to investors looking to gain passive, global equity exposures with low tracking error.

Inception Date: January 2020

### Portfolio Characteristics

	Portfolio	Benchmark
Market Cap Wtd Average (mm)	416,996.5	415,580.2
No. Of Issues	6,363.0	0.0
Dividend Yield	1.9	1.9
Return on Equity	24.7	24.6
Price to Sales	5.9	5.9
Price to Book	5.1	5.0
PE Ratio	21.2	21.5

### Top Holdings (% of assets)

APPLE INC	4.0%
MICROSOFT CORP	3.5%
AMAZON.COM INC	1.8%
NVIDIA CORP	1.6%
ALPHABET INC CL A	1.1%
<b>Top 5 Holdings</b>	<b>12.0%</b>

### Performance (net)<sup>1</sup>

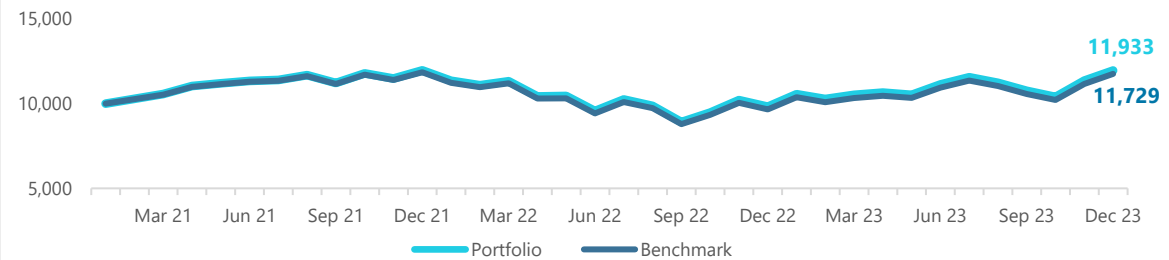
	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>SSGA MSCI ACWI IMI</b>	<b>16,170.5</b>	<b>11.2%</b>	<b>21.7%</b>	<b>6.1%</b>	<b>--</b>
MSCI ACWI IMI Net		11.1%	21.6%	5.5%	--
Growth Policy Benchmark		5.8%	19.9%	6.3%	--

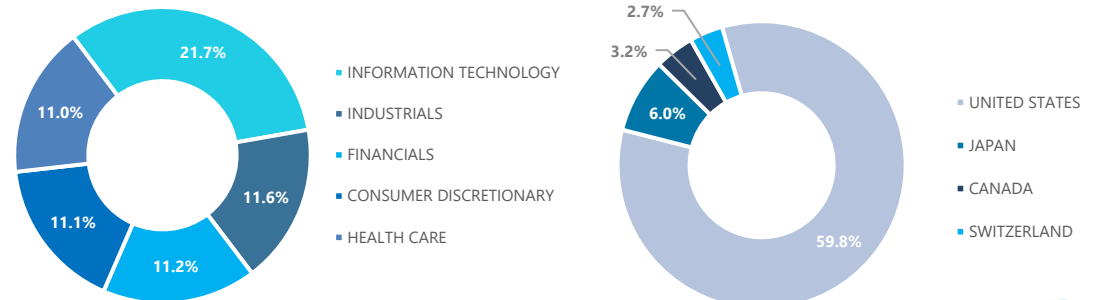
Universe data: Global Equity Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>SSGA MSCI ACWI IMI</b>	<b>11.2%</b>	<b>33</b>	<b>21.7%</b>	<b>27</b>	<b>6.1%</b>	<b>46</b>	<b>--</b>	<b>--</b>
Median	10.4%		17.8%		5.8%		--	--

No. of Observations 112

### Growth of \$10,000



### Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Growth Risk Analysis – Global Equity

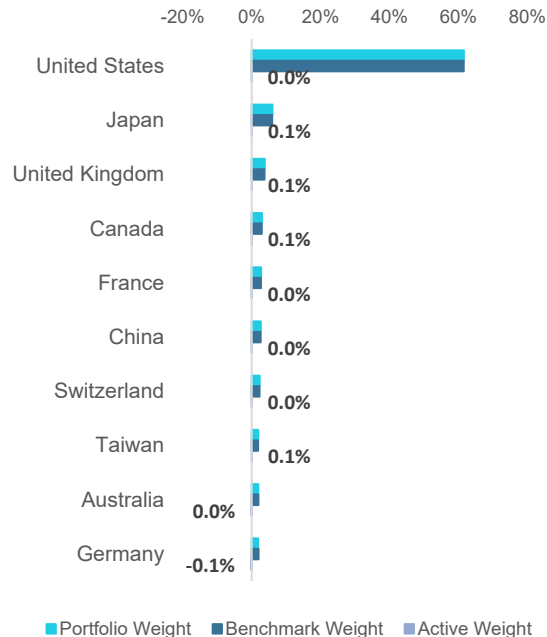
## SSGA MSCI ACWI IMI

for the quarter ended December 31, 2023

### Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
17.0%	17.0%
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
0.2%	1.00

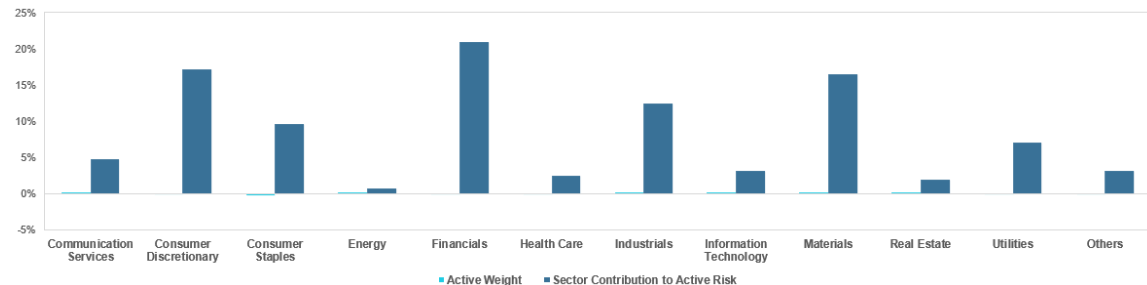
### Top 10 Countries by Weight



### Top 10 Assets by Contribution to Portfolio Active Risk

Asset	Portfolio Weight	Benchmark Weight	Active Weight	Contribution to Portfolio Active Risk
ASML HOLDING NV COMMON STOCK EUR.09	0.39%	0.00%	0.39%	0.01%
RELIANCE INDUSTRIES LTD	0.00%	0.12%	-0.12%	0.01%
HDFC BANK LTD	0.00%	0.08%	-0.08%	0.01%
VALE SA COMMON STOC	0.07%	0.00%	0.07%	0.00%
DAIMLER AG	0.08%	0.00%	0.08%	0.00%
ATLAS COPCO AB	0.09%	0.03%	0.06%	0.00%
AXIS BANK LTD	0.00%	0.04%	-0.04%	0.01%
LARSEN & TOUBRO LTD	0.00%	0.04%	-0.04%	0.01%
ICICI BANK LTD	0.00%	0.08%	-0.08%	0.01%
BAJAJ FINANCE LTD	0.00%	0.03%	-0.03%	0.00%

### Portfolio Allocation by GICS Sector



# Growth – Global Equity Systematic US Small Cap Value

for the quarter ended December 31, 2023

## Strategy

Seeks to identify high quality small cap companies capable of generating high rates of return with attractive valuations. The strategy may be suited for investors looking to increase U.S. small cap exposure with defensive characteristics.

Inception Date: July 2018

## Portfolio Characteristics

	Portfolio	Benchmark
Market Cap Wtd Average (mm)	4,914.9	3,231.2
No. Of Issues	155.0	0.0
Dividend Yield	1.3	1.3
Return on Equity	10.7	4.7
Price to Sales	2.1	2.0
Price to Book	2.4	2.2
PE Ratio	13.8	14.0

## Top Holdings (% of assets)

FIRST CITIZENS BCSHS CL A	2.8%
MAGNOLIA OIL + GAS CORP A	1.9%
EMCOR GROUP INC	1.5%
MUELLER INDUSTRIES INC	1.5%
COMFORT SYSTEMS USA INC	1.5%
<b>Top 5 Holdings</b>	<b>9.1%</b>

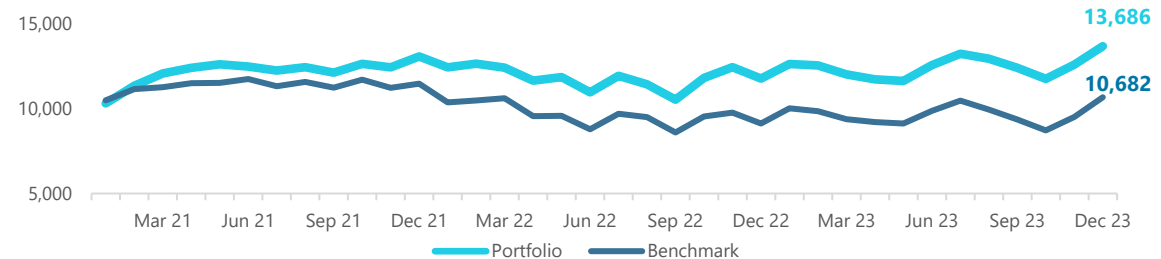
## Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Systematic US Small Cap Value</b>	<b>216.5</b>	<b>10.2%</b>	<b>16.2%</b>	<b>11.0%</b>	<b>12.2%</b>
RUSSELL 2000		14.0%	16.9%	2.2%	10.0%
Growth Policy Benchmark		5.8%	19.9%	6.3%	--

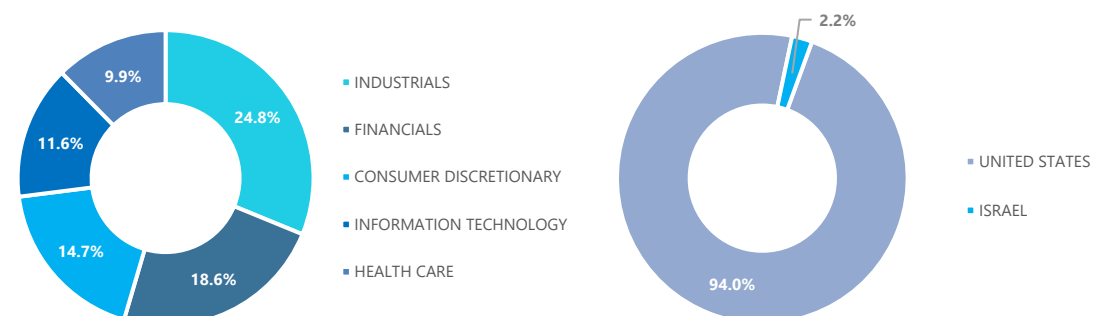
  

Universe data: US Equity Funds - Small Cap	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Systematic US Small Cap Value</b>	<b>10.4%</b>	<b>84</b>	<b>16.8%</b>	<b>51</b>	<b>11.6%</b>	<b>14</b>	<b>12.9%</b>	<b>33</b>
Median	11.7%		16.8%		7.9%		12.6%	
No. of Observations	54							

## Growth of \$10,000



## Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

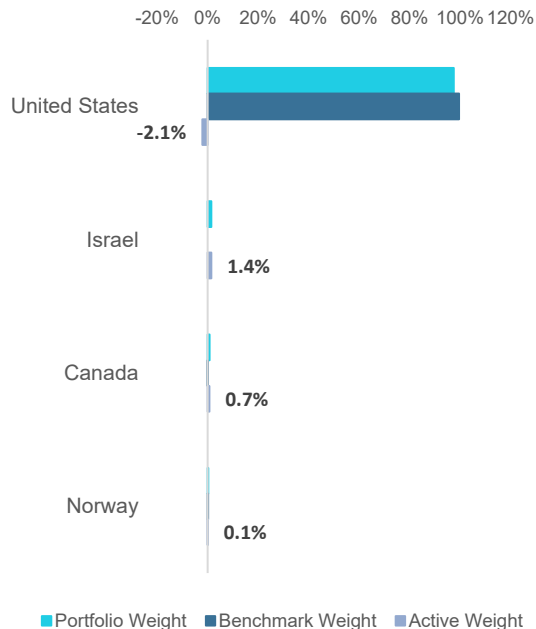
# Growth Risk Analysis – Global Equity Systematic US Small Cap Value

for the quarter ended December 31, 2023

## Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility <hr/> <b>21.3%</b>	<b>BENCHMARK</b> Forecast Volatility <hr/> <b>24.1%</b>
<b>PORTFOLIO</b> Forecast Tracking Error <hr/> <b>5.0%</b>	<b>PORTFOLIO</b> Beta <hr/> <b>0.87</b>

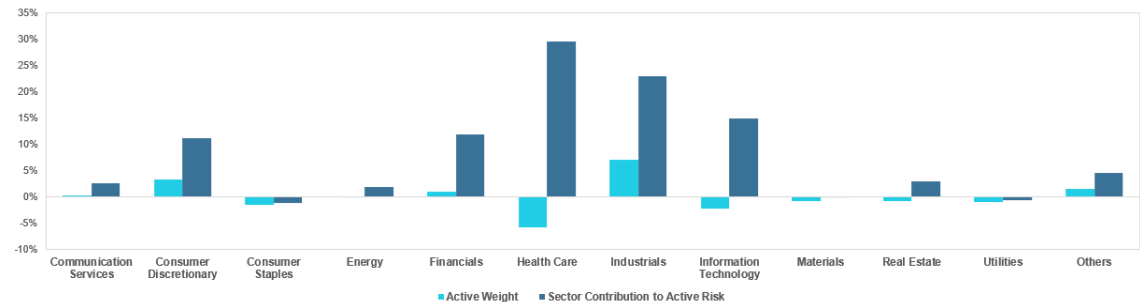
## Top Countries by Weight



## Top 10 Assets by Contribution to Portfolio Active Risk

Asset	Portfolio Weight	Benchmark Weight	Active Weight	Contribution to Portfolio Active Risk
SUPER MICRO COMPUTER INC	0.00%	0.52%	-0.52%	0.05%
MICROSTRATEGY INC	0.00%	0.30%	-0.30%	0.04%
CYTOKINETICS INC	0.00%	0.31%	-0.31%	0.04%
MARATHON DIGITAL HOLDINGS INC	0.00%	0.20%	-0.20%	0.04%
IMMUNOGEN INC	0.00%	0.28%	-0.28%	0.03%
CARVANA CO	0.00%	0.20%	-0.20%	0.03%
BRIDGEBIO PHARMA INC	0.00%	0.18%	-0.18%	0.03%
BLUEPRINT MEDICINES CP	0.00%	0.22%	-0.22%	0.02%
DUOLINGO INC	0.00%	0.26%	-0.26%	0.02%
CHART INDUSTRIES INC	0.00%	0.23%	-0.23%	0.02%

## Portfolio Allocation by GICS Sector

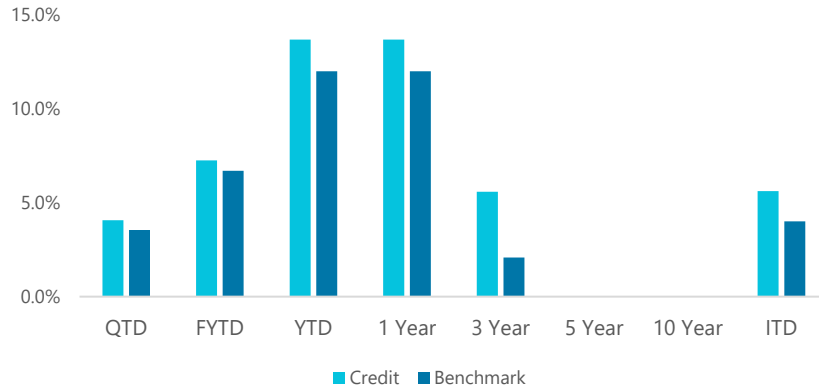


credit

# Summary

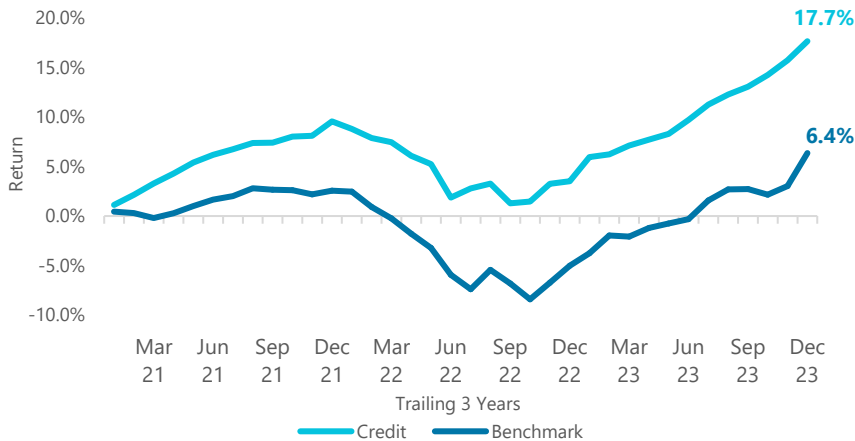
for the quarter ended December 31, 2023

## Performance (net)



	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD
<b>Credit</b>	<b>4.1%</b>	<b>7.2%</b>	<b>13.7%</b>	<b>13.7%</b>	<b>5.6%</b>	--	--	<b>5.6%</b>
Benchmark	3.5%	6.7%	12.0%	12.0%	2.1%	--	--	4.0%
Excess	0.5%	0.6%	1.7%	1.7%	3.5%	--	--	1.6%

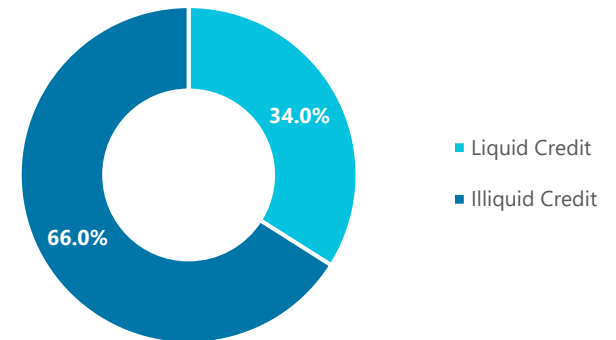
## Cumulative Return



## Functional Category

	QTD	FYTD	YTD	1 Year	3 Year
<b>Liquid Credit</b>	<b>5.3%</b>	<b>7.3%</b>	<b>13.8%</b>	<b>13.8%</b>	--
Liquid Credit Policy Benchmark	5.6%	6.8%	12.8%	12.8%	--
Excess	-0.2%	0.5%	1.0%	1.0%	--
<b>Illiquid Credit</b>	<b>3.4%</b>	<b>7.3%</b>	<b>13.4%</b>	<b>13.4%</b>	<b>11.7%</b>
Illiquid Credit Policy Benchmark	2.4%	6.6%	11.4%	11.4%	1.9%
Excess	1.0%	0.7%	2.0%	2.0%	9.8%

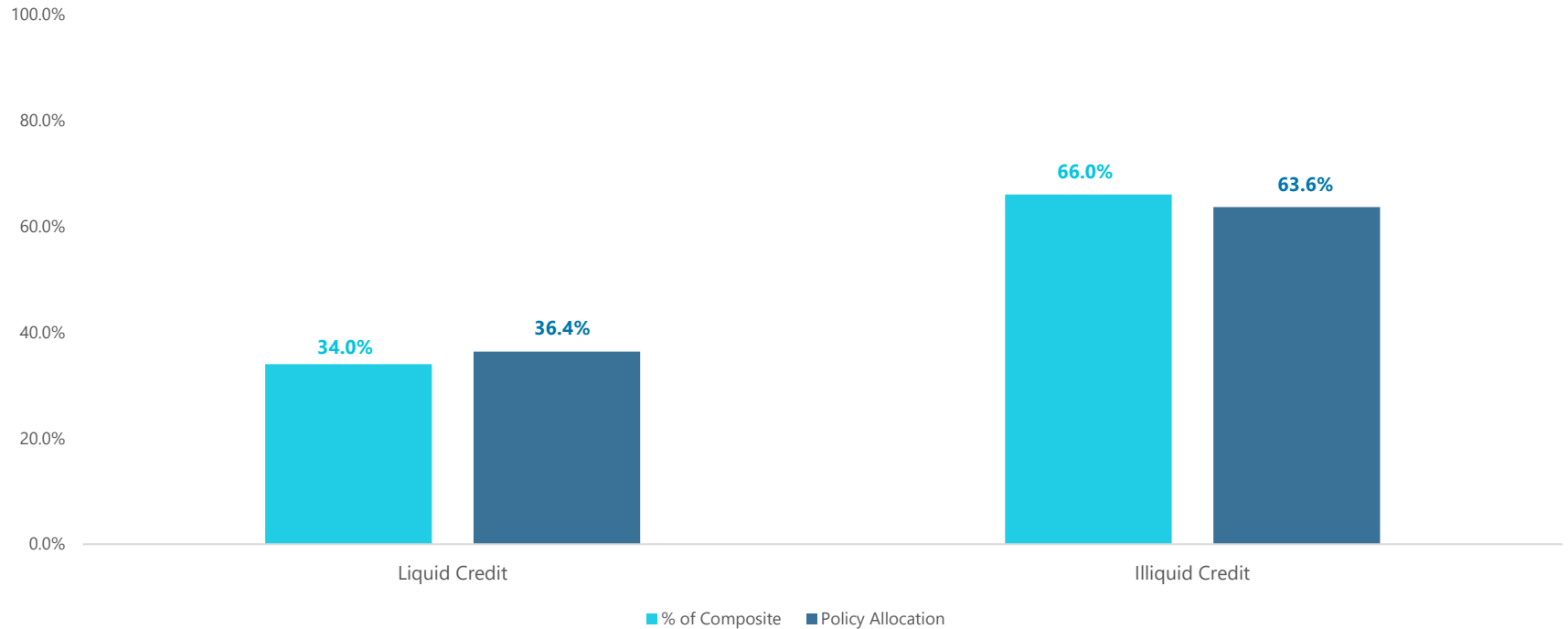
## Exposure



# Asset Allocation

for the quarter ended December 31, 2023

## Actual vs. Policy

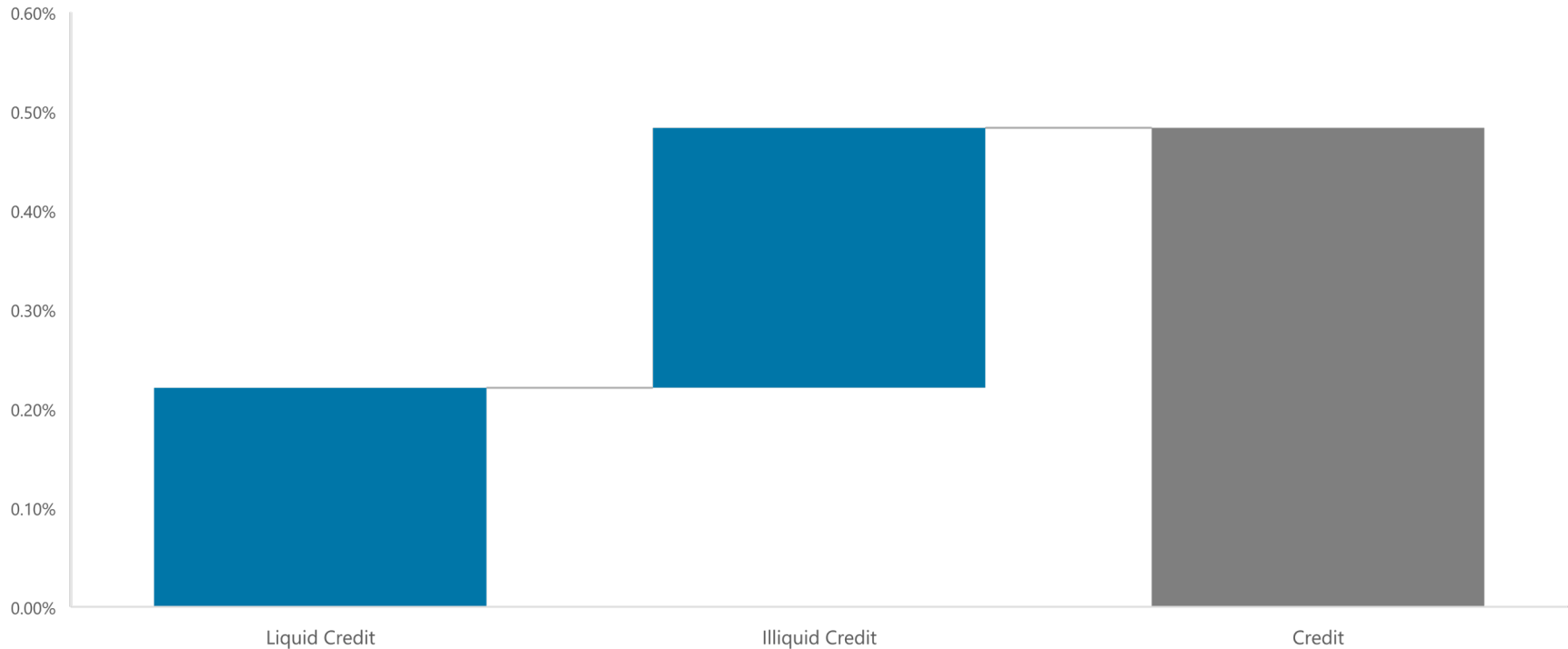


	Ending Market Value (mm)	% of Composite	Policy Allocation	Over / Under (%)	Over / Under (mm)
<b>Credit</b>	<b>8,883</b>	<b>100.0%</b>	<b>100.0%</b>		
Liquid Credit	3,019	34.0%	36.4%	-2.4%	-211
Illiquid Credit	5,864	66.0%	63.6%	2.4%	211

# Contribution to Return

for the quarter ended December 31, 2023

## QTD Contribution to Return



Functional Category	Contributors	Detractors
Liquid Credit	0.22% Magnetar	0.11%
Illiquid Credit	0.26% Napier Park	0.05%
Credit	0.48% Pinebridge Investments	0.05%
	Ashmore Investment Management	0.04%
	Brigade Cap Mgmt	0.04%



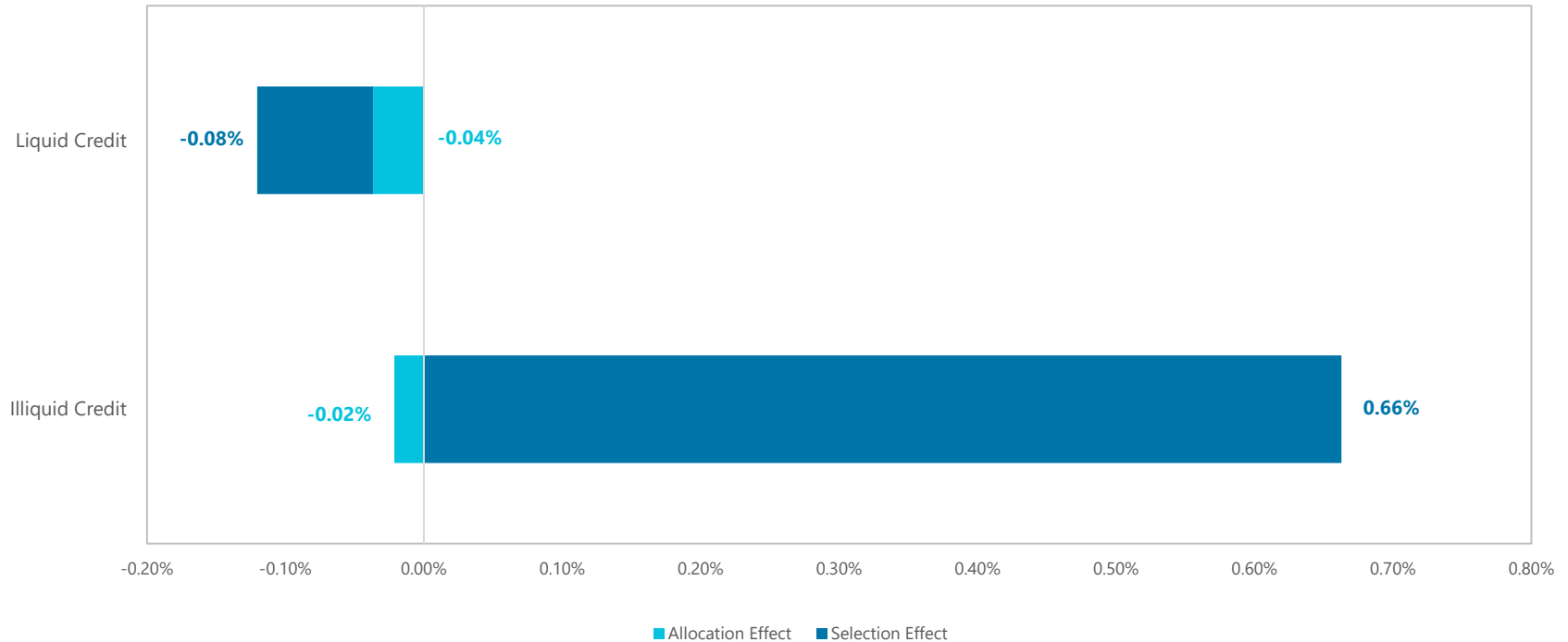
# Return Attribution

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## QTD Performance Attribution<sup>1</sup>



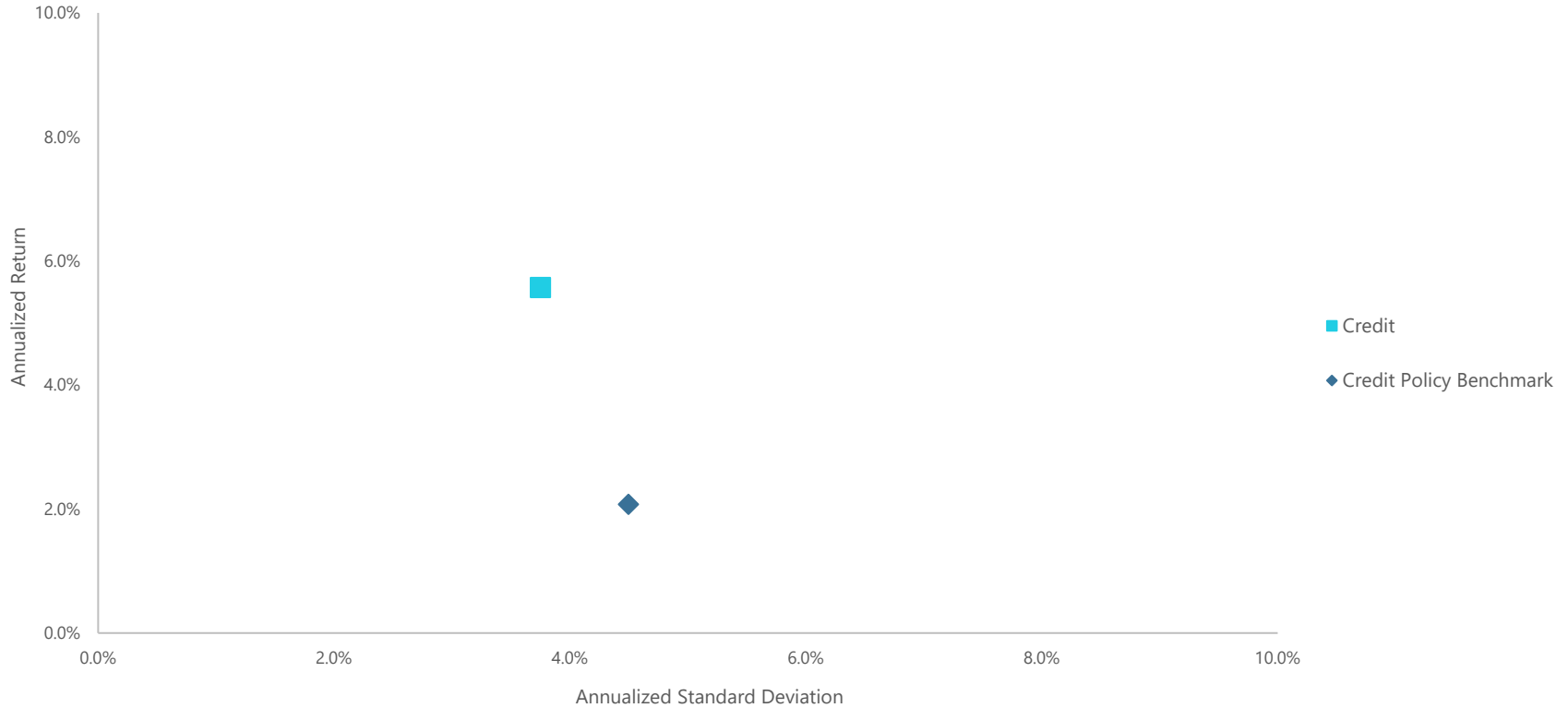
	Ending Market Value (mm)	% of Composite	Policy Allocation	Portfolio Return	Benchmark Return	Allocation Effect	Selection Effect	Total Value Add
<b>Credit</b>	<b>8,883</b>	<b>100.0%</b>	<b>100.0%</b>	<b>4.1%</b>	<b>3.5%</b>	<b>-0.06%</b>	<b>0.58%</b>	<b>0.52%</b>
Liquid Credit	3,019	34.0%	36.4%	5.3%	5.6%	-0.04%	-0.08%	-0.12%
Illiquid Credit	5,864	66.0%	63.6%	3.4%	2.4%	-0.02%	0.66%	0.64%

<sup>1</sup> Total Value Add column includes Interaction Effect.

# Risk vs. Return

for the quarter ended December 31, 2023

## 3 Year (Annualized)



	Annualized Return	Standard Deviation	Sharpe Ratio	Information Ratio	Beta	Tracking Error
<b>Credit</b>	<b>5.6%</b>	<b>3.8%</b>	<b>0.90</b>	<b>1.01</b>	<b>0.55</b>	<b>3.3%</b>
Credit Policy Benchmark	2.1%	4.5%				

# Performance Detail

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

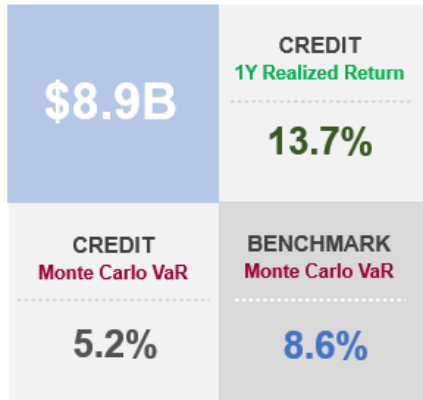
## Annualized Net Returns

	% of Composite	Ending Market Value (mm)	Prior Quarter Ending MV (mm)	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date
<b>Credit</b>	<b>100.0%</b>	<b>8,883</b>	<b>8,351</b>	<b>4.1%</b>	<b>7.2%</b>	<b>13.7%</b>	<b>13.7%</b>	<b>5.6%</b>	--	--	<b>5.6%</b>	<b>Apr-2019</b>
Credit Policy Benchmark				3.5%	6.7%	12.0%	12.0%	2.1%	--	--	4.0%	Apr-2019
<b>Liquid Credit</b>	<b>34.0%</b>	<b>3,019</b>	<b>3,089</b>	<b>5.3%</b>	<b>7.3%</b>	<b>13.8%</b>	<b>13.8%</b>	--	--	--	<b>2.0%</b>	<b>Oct-2021</b>
Liquid Credit Policy Benchmark				5.6%	6.8%	12.8%	12.8%	--	--	--	1.8%	
abrdn	3.0%	263	240	9.2%	7.1%	14.3%	14.3%	-2.5%	2.3%	--	1.3%	Jul-2017
Ashmore Investment Management	3.2%	281	251	11.8%	9.8%	14.7%	14.7%	-3.6%	0.1%	--	0.0%	Jun-2017
Bain Capital	4.7%	420	461	3.1%	6.7%	14.2%	14.2%	6.5%	6.3%	--	4.5%	Jun-2014
Beach Point	3.6%	320	302	5.6%	6.7%	13.9%	13.9%	1.7%	5.0%	--	4.9%	Mar-2014
Brigade Cap Mgmt	5.6%	495	469	5.5%	7.5%	12.7%	12.7%	3.6%	4.9%	4.2%	6.1%	Jul-2010
Credit Suisse Bank Loans	3.6%	318	434	2.7%	6.4%	13.8%	13.8%	5.9%	--	--	8.2%	Apr-2020
Crescent Capital	4.9%	435	477	1.9%	5.5%	12.8%	12.8%	4.5%	5.7%	--	4.0%	May-2014
Pinebridge Investments	5.5%	487	454	7.2%	8.3%	14.3%	14.3%	--	--	--	0.9%	Sep-2021
<b>Illiquid Credit</b>	<b>66.0%</b>	<b>5,864</b>	<b>5,262</b>	<b>3.4%</b>	<b>7.3%</b>	<b>13.4%</b>	<b>13.4%</b>	<b>11.7%</b>	--	--	<b>10.2%</b>	<b>Apr-2019</b>
Illiquid Credit Policy Benchmark				2.4%	6.6%	11.4%	11.4%	1.9%	--	--	5.3%	
Beach Point - Fund II	0.1%	11	11	--	--	--	--	--	--	--	--	Jun-2014
Beach Point - Fund III	1.2%	107	108	1.7%	5.9%	3.1%	3.1%	9.0%	9.2%	--	8.9%	Jun-2017
BlackRock/Tennenbaum	6.6%	588	602	2.4%	5.6%	10.2%	10.2%	8.5%	7.5%	--	7.4%	Nov-2014
Grosvenor OPCRD 2 HFOF	0.2%	20	21	--	--	--	--	--	--	--	--	Mar-2016
Lake Cascade	10.0%	887	702	1.2%	4.7%	--	--	--	--	--	5.8%	Jan-2023
Lake Cottage	8.9%	790	688	2.2%	3.7%	9.0%	9.0%	--	--	--	7.7%	Nov-2022
Lake Vineyard	7.6%	674	560	2.0%	5.3%	11.2%	11.2%	--	--	--	5.6%	Apr-2022
Magnetar	12.9%	1,144	1,000	7.4%	12.1%	18.7%	18.7%	18.6%	--	--	18.3%	Aug-2020
Napier Park	11.5%	1,017	981	3.7%	10.7%	19.9%	19.9%	9.7%	--	--	16.2%	Apr-2020
PIMCO Tac Opps	2.8%	253	234	8.0%	11.2%	15.9%	15.9%	8.7%	7.6%	--	7.3%	Nov-2018
Private Equity - Credit	2.3%	205	227	2.9%	2.5%	15.1%	15.1%	26.1%	14.0%	--	14.0%	Jan-2019
Real Estate - Credit	0.7%	62	62	0.3%	5.1%	12.4%	12.4%	11.1%	10.1%	9.1%	9.3%	Oct-2011
Stable Asset Management – IC	1.2%	106	65	-1.3%	0.7%	0.7%	0.7%	--	--	--	0.6%	Nov-2022

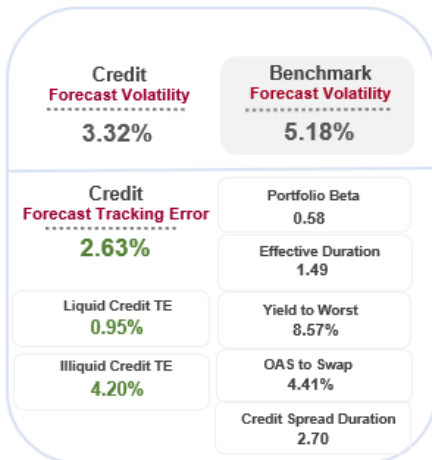
# Credit Risk Summary

for the quarter ended December 31, 2023

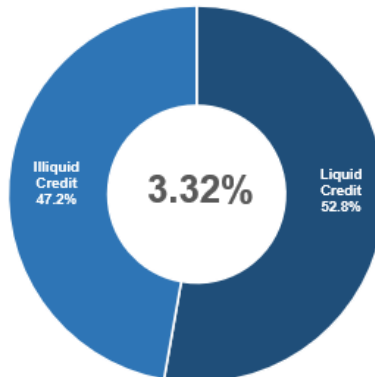
## Realized (Ex-Post) Risks



## Projected (Ex-Ante) Risks

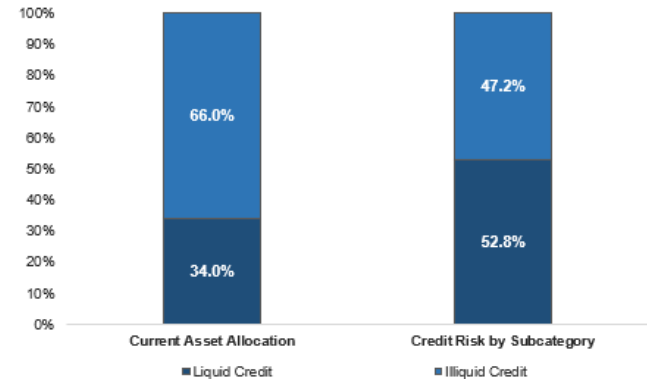


## Subcategory Contributions to Credit Risk



## Credit Asset Allocation

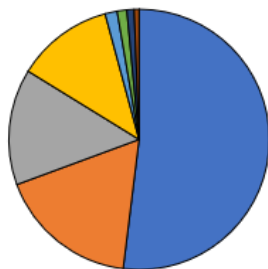
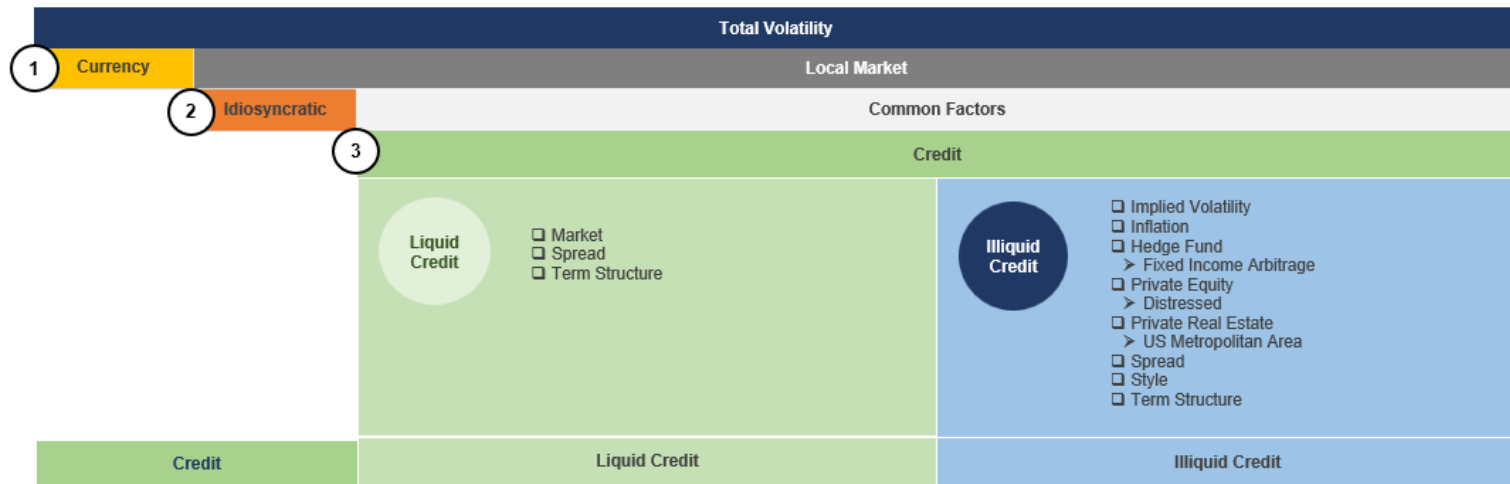
Capital-based versus Risk-based



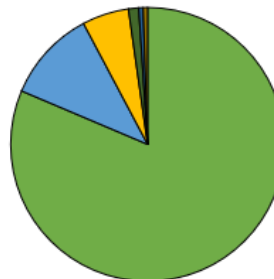
# Credit Risk Summary

for the quarter ended December 31, 2023

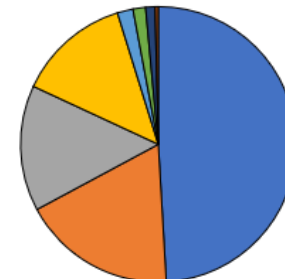
## Decomposition of MSCI Risk Factors



- Spread 52.0%
- Term Structure 17.4%
- Idiosyncratic 14.4%
- Currency 5.5%
- Inflation 1.5%
- Private Real Estate 1.2%
- Implied Volatility 0.9%
- Private Equity 0.6%



- Spread 81.4%
- Term Structure 10.9%
- Currency 5.5%
- Implied Volatility 1.2%
- Market 0.5%
- Idiosyncratic 0.5%



- Idiosyncratic 49.4%
- Term Structure 18.2%
- Currency 14.9%
- Spread 13.4%
- Private Real Estate 1.9%
- Private Equity 1.5%
- Inflation 1.1%
- Style -0.4%

# Liquid Credit Risk Summary

for the quarter ended December 31, 2023

## Realized (Ex-Post) Risks

\$3.0B	LIQUID CREDIT 1Y Realized Return
	13.8%
LIQUID CREDIT Monte Carlo VaR	BENCHMARK Monte Carlo VaR
8.8%	8.6%

**Liquid Credit**

**Value at Risk VARIABLES**

95% Confidence Interval  
1Y Time Horizon  
1,000 Simulations

With 95% confidence, LACERA would not lose more than **\$261M** in 1Y.

versus

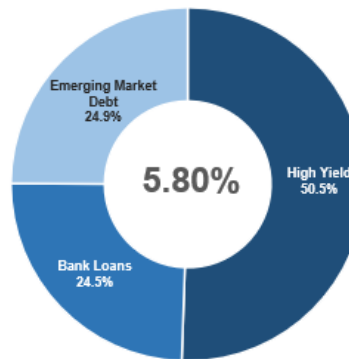
With 95% confidence, the Benchmark would not lose more than **\$254M** in 1Y.



## Projected (Ex-Ante) Risks

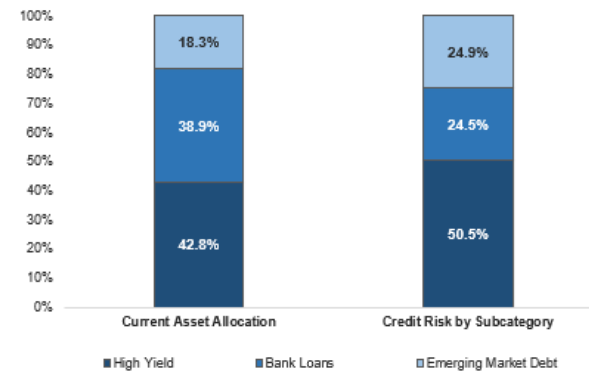
<b>Liquid Credit Forecast Volatility</b> 5.80%	<b>Benchmark Forecast Volatility</b> 5.18%
<b>Liquid Credit Forecast Tracking Error</b> 0.95%	Portfolio Beta 1.11
	Effective Duration 2.40
	Yield to Worst 8.57%
	OAS to Swap 4.41%
	Credit Spread Duration 2.70

## Subcategory Contributions to Liquid Credit Risk



## Credit Asset Allocation

Capital-based versus Risk-based



# Credit – Liquid Credit abrdn

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Strategy

An emerging market debt strategy that invests in sovereigns, quasi-sovereigns, and corporate bonds denominated in US Dollar or local currencies.

Inception Date: July 2017

## Risk Statistics (since inception)

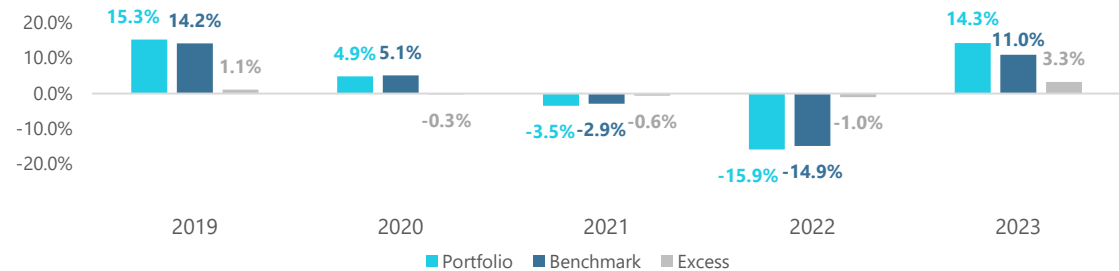
Standard Deviation	11.1%
Benchmark Standard Deviation	9.5%
Sharpe Ratio	0.00
Information Ratio	-0.08
Beta	1.15
Tracking Error	2.7%

## Performance (net)<sup>1</sup>

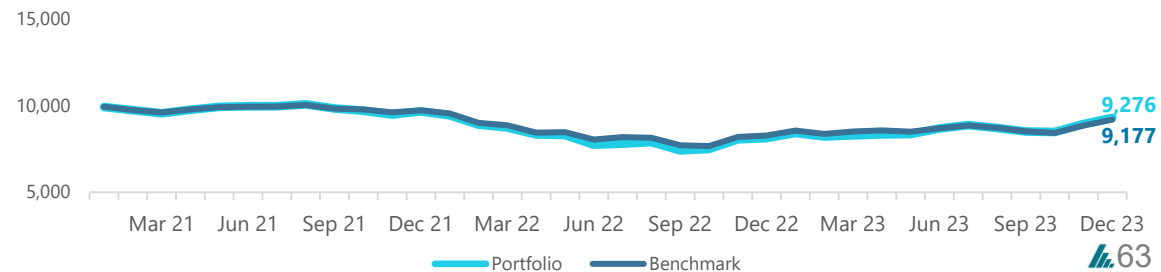
	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>abrdn</b>	<b>262.5</b>	<b>9.2%</b>	<b>14.3%</b>	<b>-2.5%</b>	<b>2.3%</b>
EMD Custom Benchmark		8.0%	11.0%	-2.8%	2.0%
Credit Policy Benchmark		3.5%	12.0%	2.1%	--

Universe data: US Fixed Income Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>abrdn</b>	<b>9.3%</b>	<b>14</b>	<b>14.7%</b>	<b>10</b>	<b>-2.1%</b>	<b>67</b>	<b>2.7%</b>	<b>40</b>
Median	4.7%		6.0%		-0.3%		2.1%	
No. of Observations	755							

## Calendar Year Returns



## Growth of \$10,000

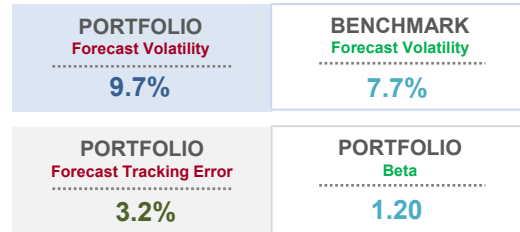


Note: Commingled fund account with no position-level transparency.  
<sup>1</sup> Universe data is gross-of-fees.

# Credit Risk Analysis – Liquid Credit abrdn

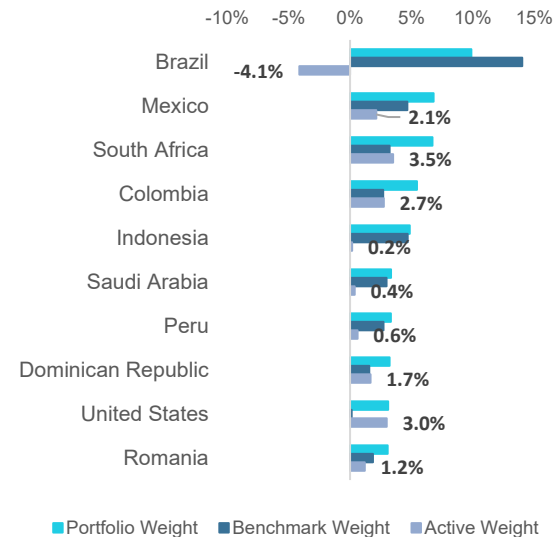
for the quarter ended December 31, 2023

## Portfolio Risk Summary

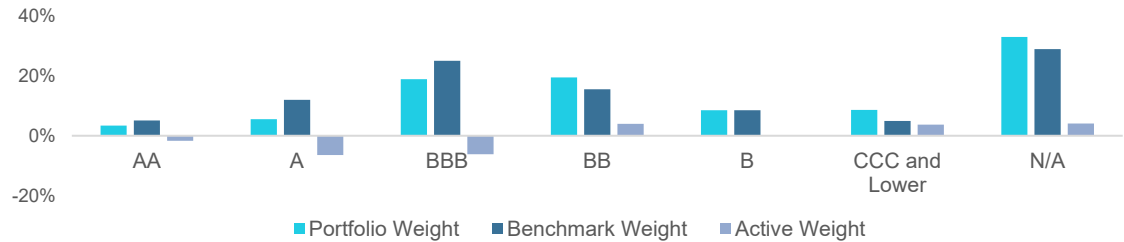


Effective Duration	Credit Spread Duration	Yield to Worst
5.6	4.1	9.2%

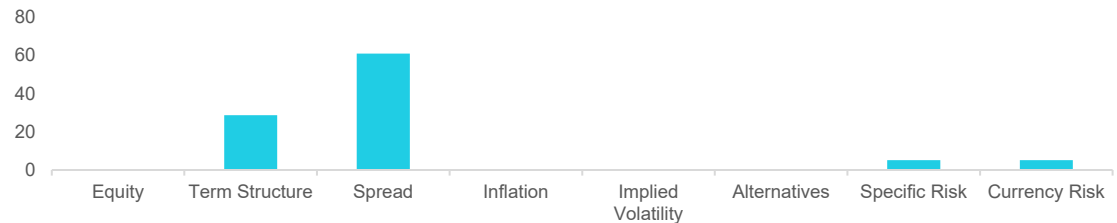
## Top 10 Countries by Weight



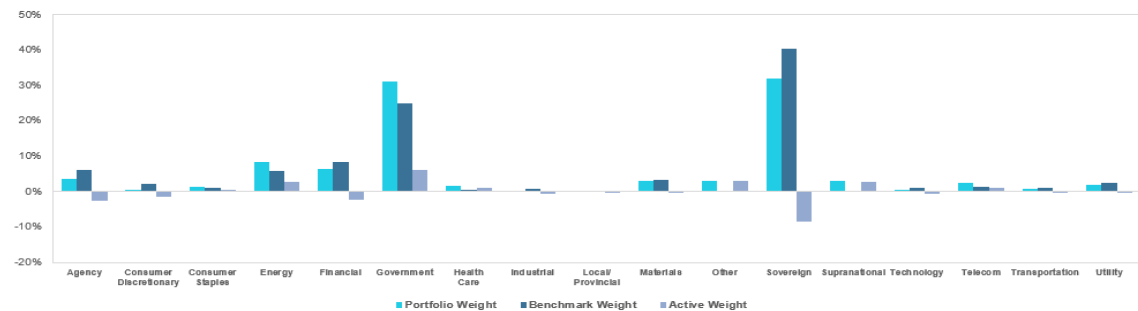
## Allocation by S&P Rating



## Active Risk from Common Factors



## Portfolio Allocation by Bond Sector





# Credit – Liquid Credit Ashmore

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Strategy

A value-driven emerging market debt strategy that applies a macro, top-down approach to build a well-diversified portfolio that adds value through asset rotation, security selection, and currency positioning utilizing a committee driven, systematic risk mitigating process.

Inception Date: June 2017

## Risk Statistics (since inception)

Standard Deviation	13.0%
Benchmark Standard Deviation	9.5%
Sharpe Ratio	-0.06
Information Ratio	-0.30
Beta	1.33
Tracking Error	4.5%

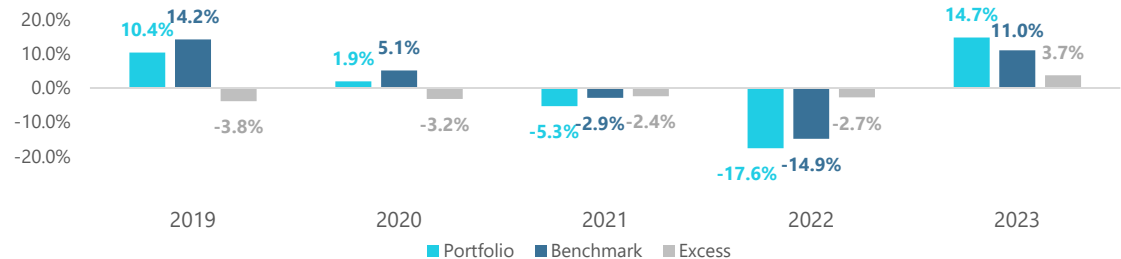
## Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Ashmore Investment Management</b>	<b>281.0</b>	<b>11.8%</b>	<b>14.7%</b>	<b>-3.6%</b>	<b>0.1%</b>
EMD Custom Benchmark		8.0%	11.0%	-2.8%	2.0%
Credit Policy Benchmark		3.5%	12.0%	2.1%	--

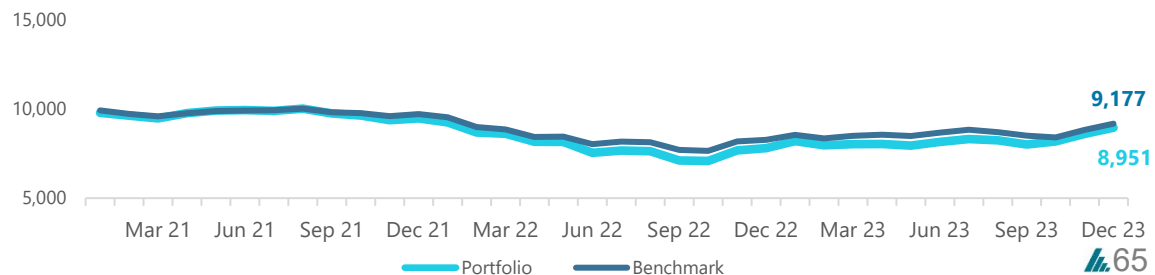
  

Universe data: US Fixed Income Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Ashmore Investment Management</b>	<b>12.0%</b>	<b>10</b>	<b>15.3%</b>	<b>9</b>	<b>3.2%</b>	<b>81</b>	<b>0.7%</b>	<b>90</b>
Median	4.1%		6.0%		-0.3%		2.1%	
No. of Observations	755							

## Calendar Year Returns



## Growth of \$10,000

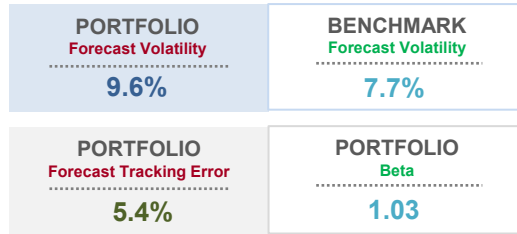


Note: Commingled fund account with no position-level transparency.  
<sup>1</sup> Universe data is gross-of-fees.

# Credit Risk Analysis – Liquid Credit Ashmore

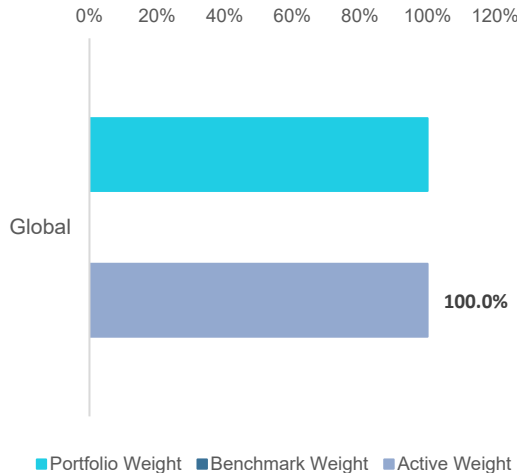
for the quarter ended December 31, 2023

## Portfolio Risk Summary

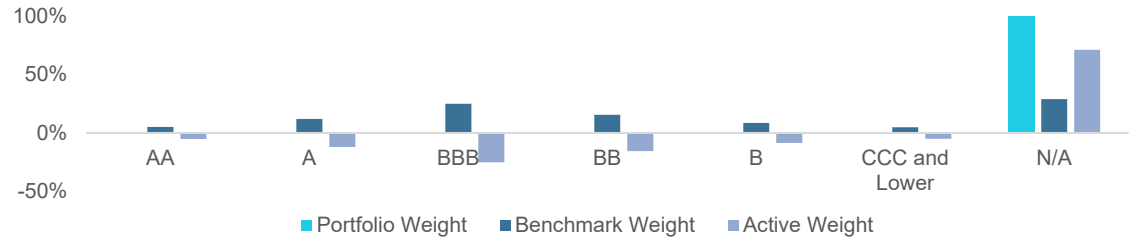


Effective Duration 5.5	Credit Spread Duration 1.8	Yield to Worst 0.0%
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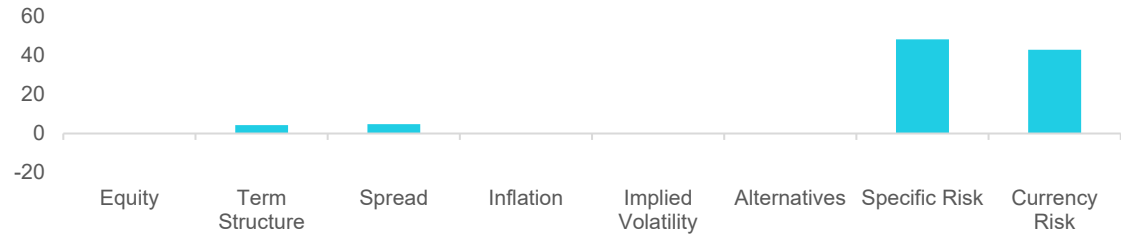
## Top Countries by Weight



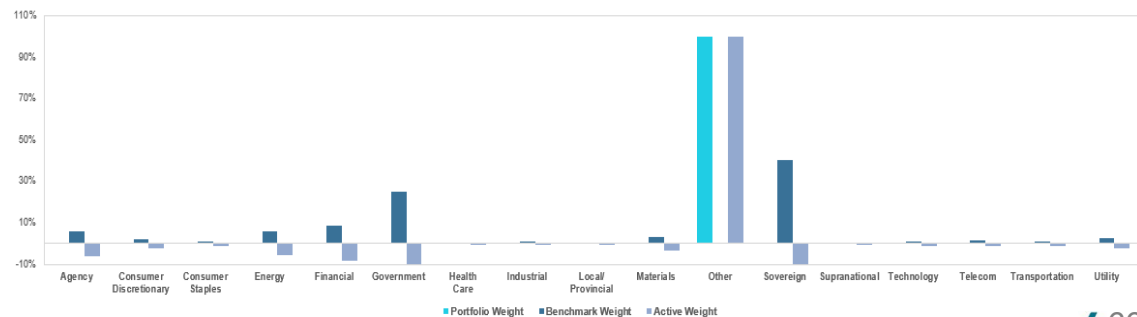
## Allocation by S&P Rating



## Active Risk from Common Factors



## Portfolio Allocation by Bond Sector



Notes: Commingled fund account with no position-level transparency. Global represents investments made in regions where specific country allocations are not available.

# Credit – Liquid Credit Bain Capital

for the quarter ended December 31, 2023

## Strategy

A long-only strategy designed to provide exposure to senior secured, floating-rate bank loans. The strategy takes a fundamental, active, and global approach to investing, capitalizing on opportunities in an inefficient asset class. The return objective is to outperform the Index through strong credit selection and active portfolio management.

Inception Date: June 2014

## Portfolio Characteristics

	Portfolio	Benchmark
No. of Issues	514.0	0.0
Effective Duration	0.2	-0.2
Convexity	0.0	3.2
Coupon Rate	8.6	6.1
Yield to Maturity	7.0	7.6
Current Yield	8.7	6.5
Rating – Moody's	B-2	B-1
Rating – S & P	B	B+

## Top Holdings (% of assets)

CPS GROUP HOLDINGS INC	0.9%
CHAMBER BIDCO LIMITED	0.6%
MEDLINE BORROWER, LP	0.6%
MIDAS INTERMEDIATE HLD CO II LLC	0.6%
VIBRANT CLO LTD	0.6%
<b>Top 5 Holdings</b>	<b>3.1%</b>

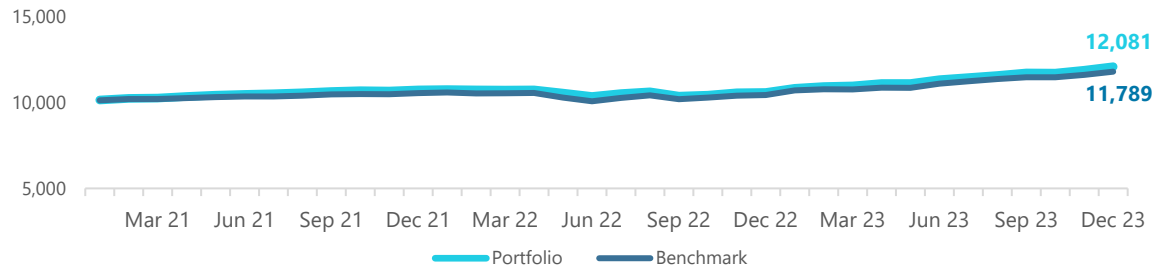
## Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Bain Capital</b>	<b>420.4</b>	<b>3.1%</b>	<b>14.2%</b>	<b>6.5%</b>	<b>6.3%</b>
Bank Loans Custom Benchmark		2.9%	13.0%	5.6%	6.2%
Credit Policy Benchmark		3.5%	12.0%	2.1%	--

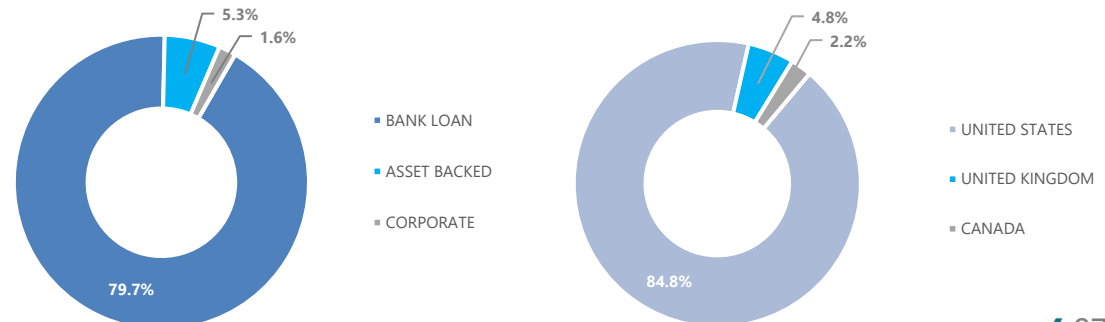
  

Universe data: US Fixed Income Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Bain Capital</b>	<b>3.3%</b>	<b>61</b>	<b>14.9%</b>	<b>10</b>	<b>7.1%</b>	<b>20</b>	<b>7.0%</b>	<b>15</b>
Median	4.7%		6.0%		-0.3%		2.1%	
No. of Observations	755							

## Growth of \$10,000



## Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Credit Risk Analysis – Liquid Credit Bain Capital

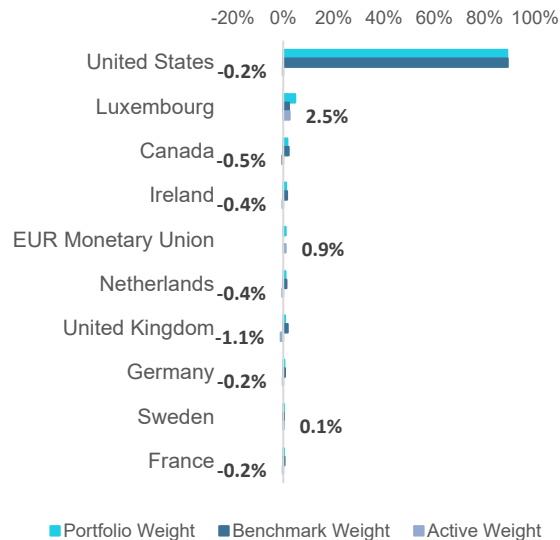
for the quarter ended December 31, 2023

## Portfolio Risk Summary

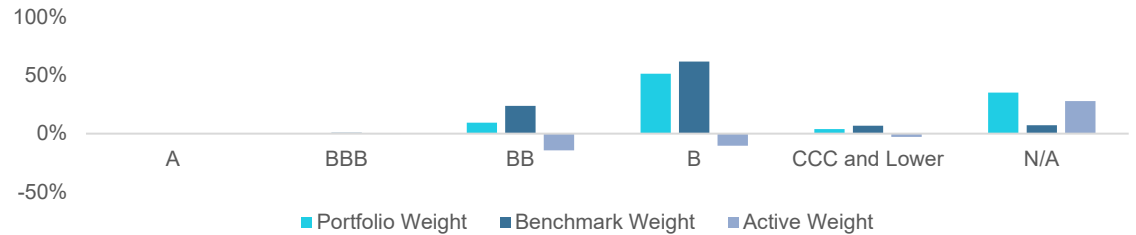
<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
3.4%	4.7%
<b>PORTFOLIO</b> Forecast Volatility	<b>PORTFOLIO</b> Beta
1.5%	0.72

Effective Duration	Credit Spread Duration	Yield to Worst
0.3	1.8	6.5%

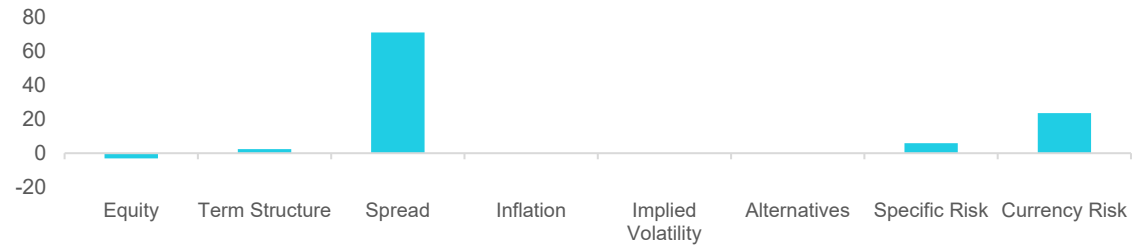
## Top 10 Countries by Weight



## Allocation by S&P Rating



## Active Risk from Common Factors



## Portfolio Allocation by Bond Sector



# Credit – Liquid Credit Beach Point

for the quarter ended December 31, 2023

## Strategy

A fundamental, value oriented high yield bond strategy that utilizes legal skills to identify market anomalies in bond covenants and indentures. The primary investment goal is to generate superior returns while controlling risk to minimize the possibility of capital impairment.

Inception Date: June 2014

## Portfolio Characteristics

	Portfolio	Benchmark
No. of Issues	273.0	0.0
Effective Duration	2.9	-0.2
Convexity	-0.1	3.2
Coupon Rate	6.4	6.1
Yield to Maturity	7.8	7.6
Current Yield	6.8	6.5
Rating – Moody's	B-1	B-1
Rating – S & P	B+	B+

## Top Holdings (% of assets)

MPH ACQUISITION HOLDINGS	1.6%
DEALER TIRE LLC/DT ISSR	1.5%
COMPASS GROUP DIVERSIFIE	1.3%
AMWINS GROUP INC	1.0%
FORD MOTOR CREDIT CO LLC	1.0%
<b>Top 5 Holdings</b>	<b>6.5%</b>

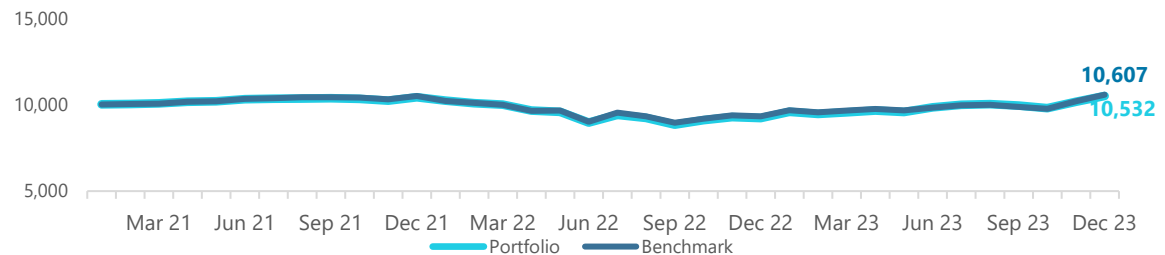
## Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Beach Point</b>	<b>319.5</b>	<b>5.6%</b>	<b>13.9%</b>	<b>1.7%</b>	<b>5.0%</b>
Beachpoint Custom Benchmark		7.2%	13.4%	2.0%	4.7%
Credit Policy Benchmark		3.5%	12.0%	2.1%	--

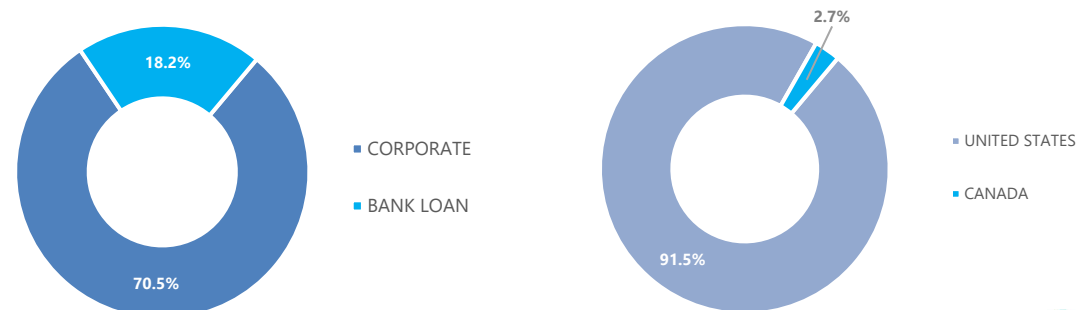
  

Universe data: US Fixed Income Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Beach Point</b>	<b>5.8%</b>	<b>42</b>	<b>14.4%</b>	<b>10</b>	<b>2.2%</b>	<b>32</b>	<b>5.5%</b>	<b>20</b>
Median	4.7%		6.0%		-0.3%		2.1%	
No. of Observations	755							

## Growth of \$10,000



## Top Exposures (% of assets)<sup>2</sup>



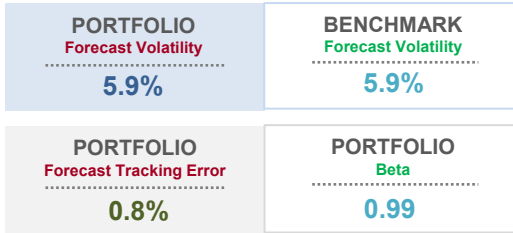
<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Credit Risk Analysis – Liquid Credit Beach Point

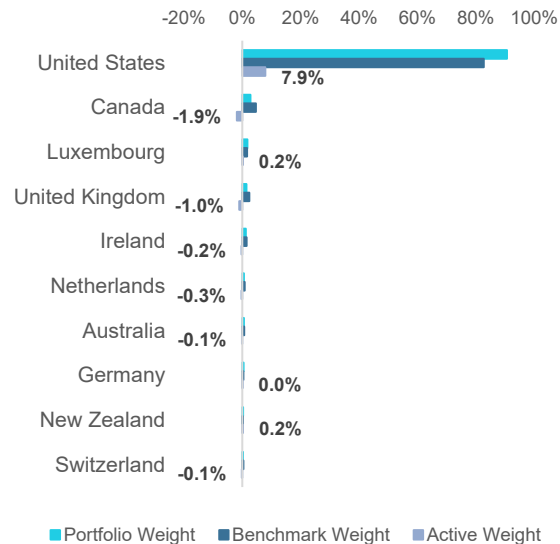
for the quarter ended December 31, 2023

## Portfolio Risk Summary

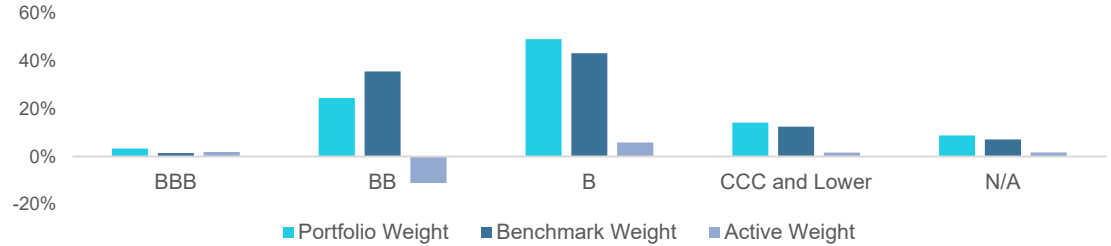


Effective Duration	Credit Spread Duration	Yield to Worst
2.9	3.3	7.4%

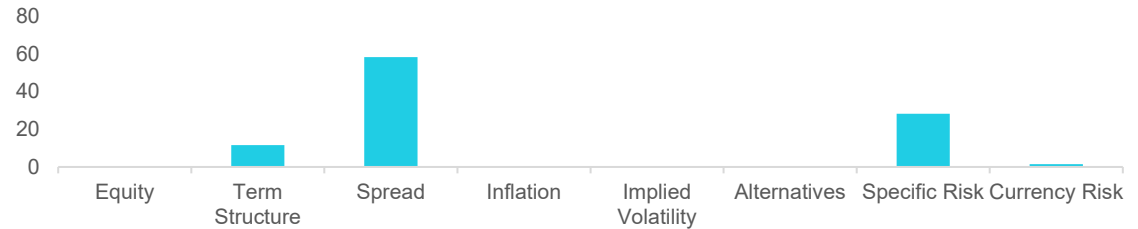
## Top 10 Countries by Weight



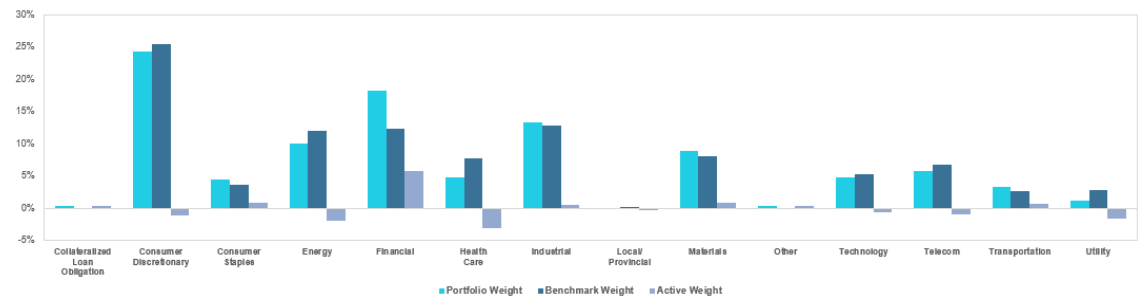
## Allocation by S&P Rating



## Active Risk from Common Factors



## Portfolio Allocation by Bond Sector



# Credit – Liquid Credit Brigade Capital

for the quarter ended December 31, 2023

## Strategy

A strategy that focuses on identifying attractive companies within the high yield bond marketplace. The strategy invests in companies that have a lower likelihood of default or are better able to recover from economic downturns because of their substantial asset value relative to debt.

Inception Date: July 2010

## Portfolio Characteristics

	Portfolio	Benchmark
No. of Issues	252.0	0.0
Effective Duration	2.8	-0.2
Convexity	0.0	3.2
Coupon Rate	6.9	6.1
Yield to Maturity	11.0	7.6
Current Yield	8.1	6.5
Rating – Moody's	B-2	B-1
Rating – S & P	B-	B+

## Top Holdings (% of assets)

CORNERSTONE CHEMICAL CO	2.6%
GLOBAL MEDICAL RESPONSE	2.6%
RP ESCROW ISSUER LLC	2.1%
LIFESCAN GLOBAL CORPORATION	1.6%
CMG MEDIA CORPORATION	1.3%
<b>Top 5 Holdings</b>	<b>10.1%</b>

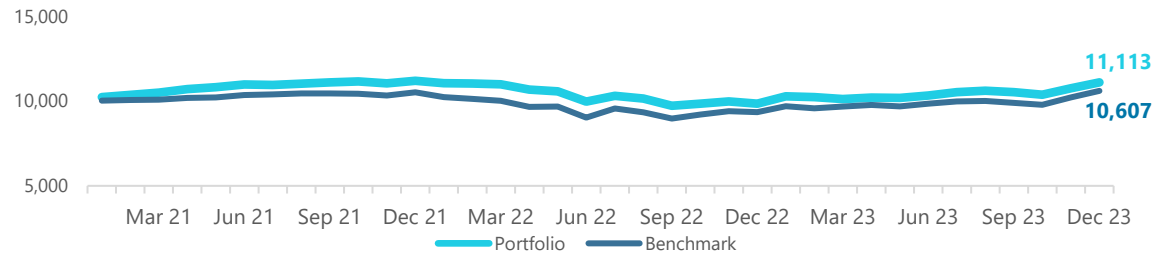
## Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Brigade Cap Mgmt</b>	<b>494.8</b>	<b>5.5%</b>	<b>12.7%</b>	<b>3.6%</b>	<b>4.9%</b>
Brigade Custom Benchmark		7.2%	13.4%	2.0%	5.0%
Credit Policy Benchmark		3.5%	12.0%	2.1%	--

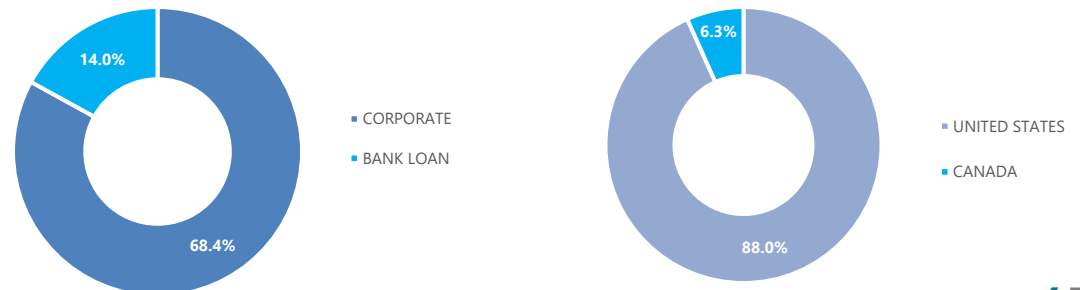
  

Universe data: US Fixed Income Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Brigade Cap Mgmt</b>	<b>5.6%</b>	<b>44</b>	<b>13.2%</b>	<b>12</b>	<b>3.9%</b>	<b>25</b>	<b>5.4%</b>	<b>20</b>
Median	4.7%		6.0%		-0.3%		2.1%	
No. of Observations	755							

## Growth of \$10,000



## Top Exposures (% of assets)<sup>2</sup>



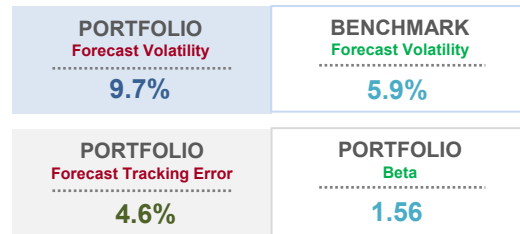
<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Credit Risk Analysis – Liquid Credit Brigade Capital

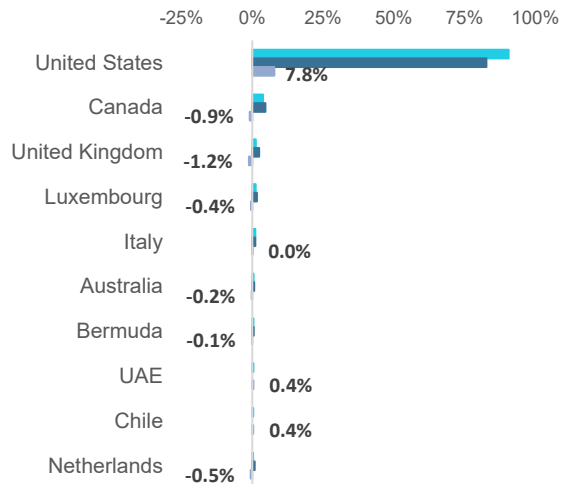
for the quarter ended December 31, 2023

## Portfolio Risk Summary



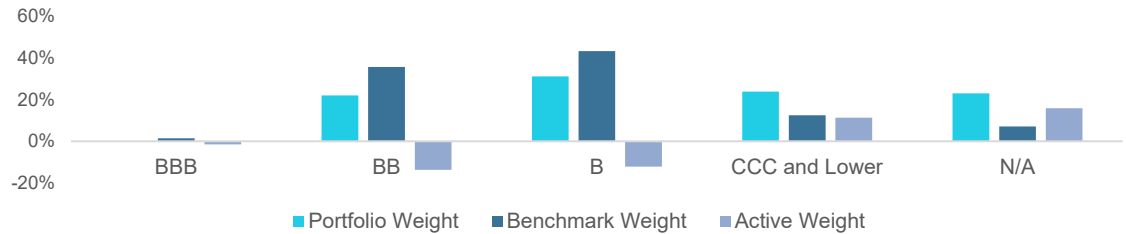
Effective Duration 2.8	Credit Spread Duration 3.1	Yield to Worst 11.1%
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## Top 10 Countries by Weight

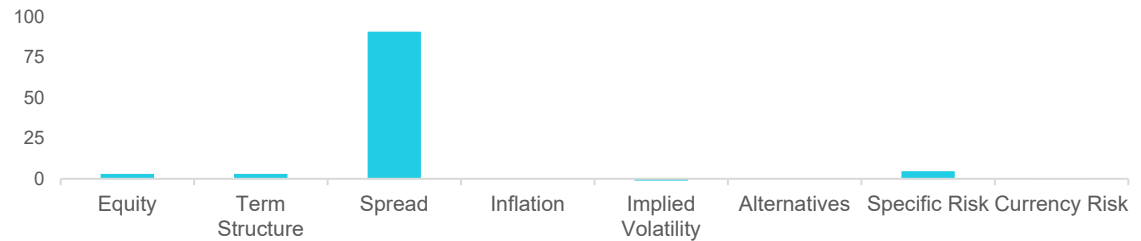


■ Portfolio Weight ■ Benchmark Weight ■ Active Weight

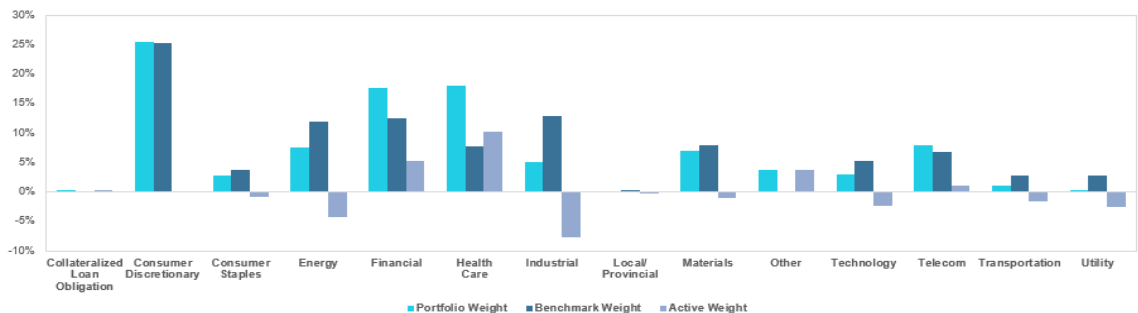
## Allocation by S&P Rating



## Active Risk from Common Factors



## Portfolio Allocation by Bond Sector





# Credit – Liquid Credit

## Credit Suisse

for the quarter ended December 31, 2023

### Strategy

A bank loan strategy that invests in senior floating rate loans whose primary performance objective is to generate alpha while mitigating loss, utilizing bottom-up, fundamental credit analysis emphasizing a relative value approach.

Inception Date: April 2020

### Portfolio Characteristics

	Portfolio	Benchmark
No. of Issues	349.0	0.0
Effective Duration	0.2	-0.2
Convexity	0.0	3.2
Coupon Rate	9.2	6.1
Yield to Maturity	8.5	7.6
Current Yield	9.7	6.5
Rating – Moody's	B-2	B-1
Rating – S & P	B	B+

### Top Holdings (% of assets)

CERIDIAN HCM HLDG INC	2.2%
WILLIAM MORRIS ENDEAVOR ENTMT	1.3%
VIRTUSA CORP	1.2%
WRENCH GROUP LLC	1.2%
ELECTRICAL COMPONENTS INTL INC	1.1%
<b>Top 5 Holdings</b>	<b>7.0%</b>

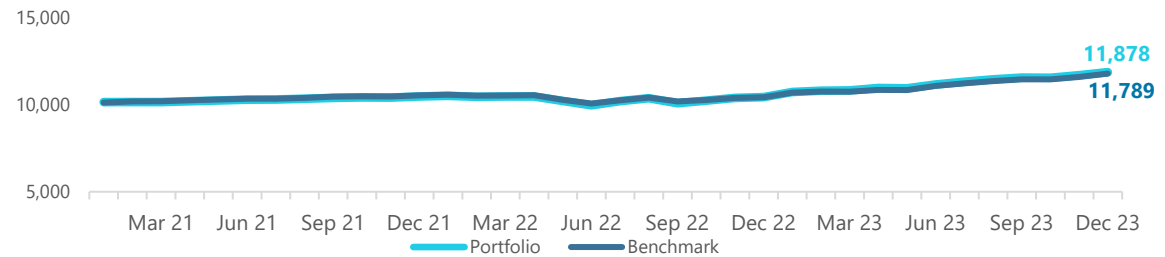
### Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Credit Suisse Bank Loans</b>	<b>318.4</b>	<b>2.7%</b>	<b>13.8%</b>	<b>5.9%</b>	--
CS Leveraged Loan Index		2.9%	13.0%	5.6%	--
Credit Policy Benchmark		3.5%	12.0%	2.1%	--

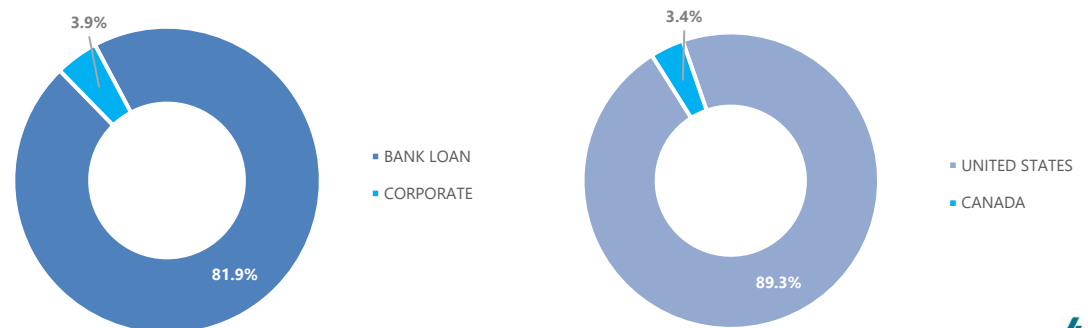
  

Universe data: US Fixed Income Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Credit Suisse Bank Loans</b>	<b>2.8%</b>	<b>65</b>	<b>14.0%</b>	<b>11</b>	<b>6.1%</b>	<b>21</b>	--	--
Median	4.7%		6.0%		-0.3%		--	
No. of Observations	755							

### Growth of \$10,000



### Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Credit Risk Analysis – Liquid Credit

## Credit Suisse

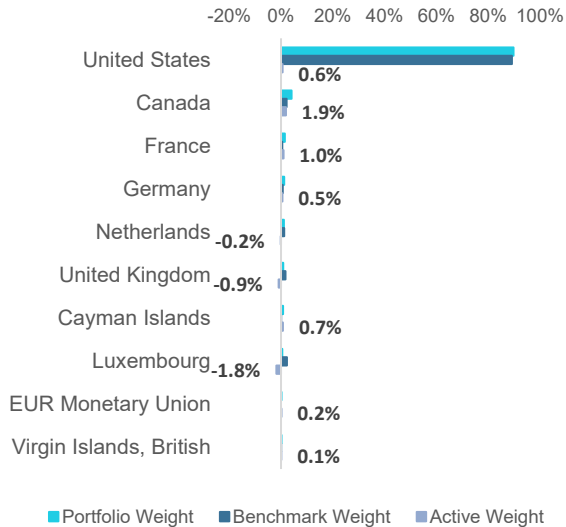
for the quarter ended December 31, 2023

### Portfolio Risk Summary

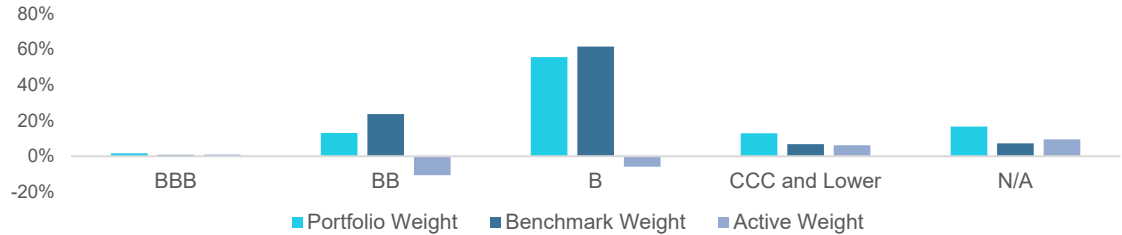
<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
4.0%	4.7%
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
0.9%	0.84

Effective Duration	Credit Spread Duration	Yield to Worst
0.4	1.9	6.2%

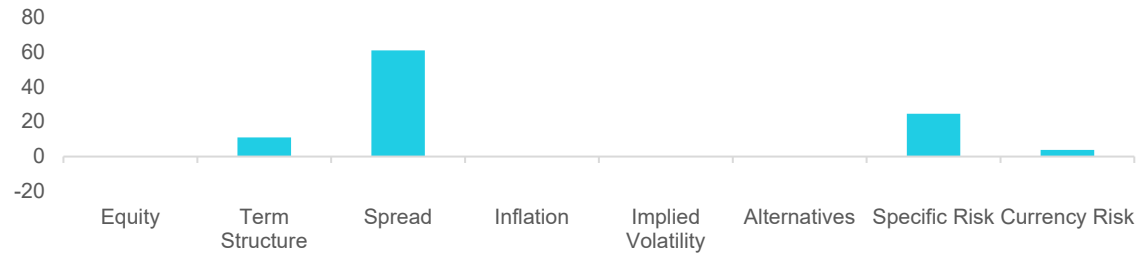
### Top 10 Countries by Weight



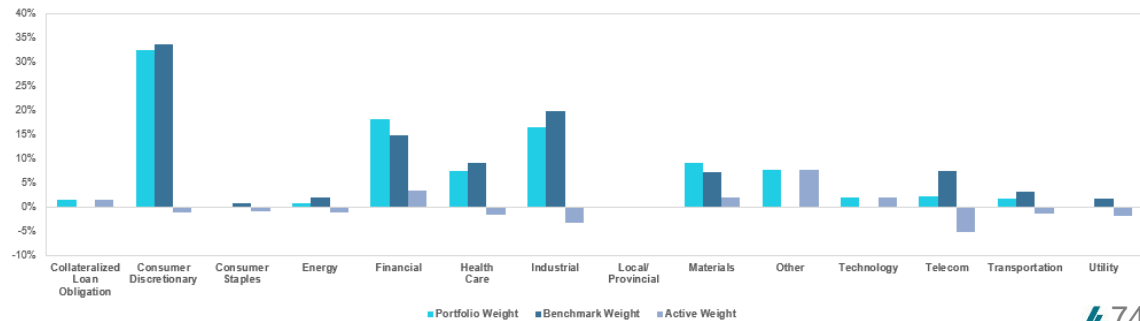
### Allocation by S&P Rating



### Active Risk from Common Factors



### Portfolio Allocation by Bond Sector



# Credit – Liquid Credit Crescent Capital

for the quarter ended December 31, 2023

## Strategy

A bank loan strategy that invests in privately negotiated, below investment grade, secured corporate debt. The primary target is U.S. based middle market companies whose EBITDA falls between \$30M to \$100M. The strategy's bottom-up credit research process emphasizes high current income and principal preservation.

Inception Date: May 2014

## Portfolio Characteristics

	Portfolio	Benchmark
No. of Issues	148.0	0.0
Effective Duration	0.2	-0.2
Convexity	0.0	3.2
Coupon Rate	10.2	6.1
Yield to Maturity	9.4	7.6
Current Yield	10.6	6.5
Rating – Moody's	B-2	B-1
Rating – S & P	B-	B+

## Top Holdings (% of assets)

MAGNATE WORLDWIDE LLC	1.8%
CTC HOLDINGS LP	1.7%
LASERAWAY INTERM HOLD II LLC	1.6%
LIFEMILES LTD	1.6%
ZEST ACQUISITION CORP.	1.6%
<b>Top 5 Holdings</b>	<b>8.3%</b>

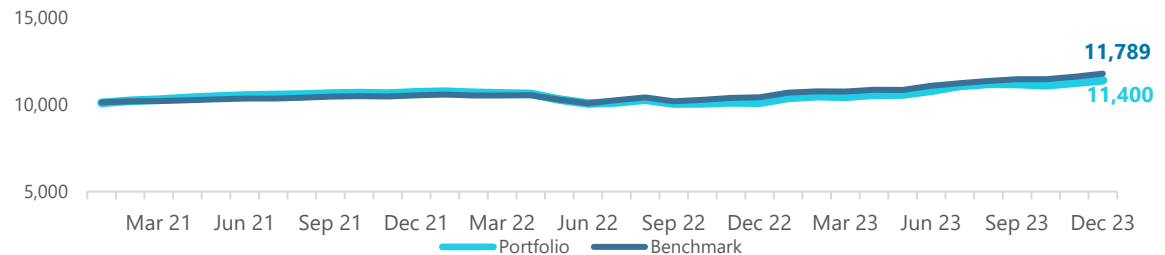
## Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Crescent Capital</b>	<b>435.5</b>	<b>1.9%</b>	<b>12.8%</b>	<b>4.5%</b>	<b>5.7%</b>
Bank Loans Custom Benchmark		2.9%	13.0%	5.6%	6.2%
Credit Policy Benchmark		3.5%	12.0%	2.1%	--

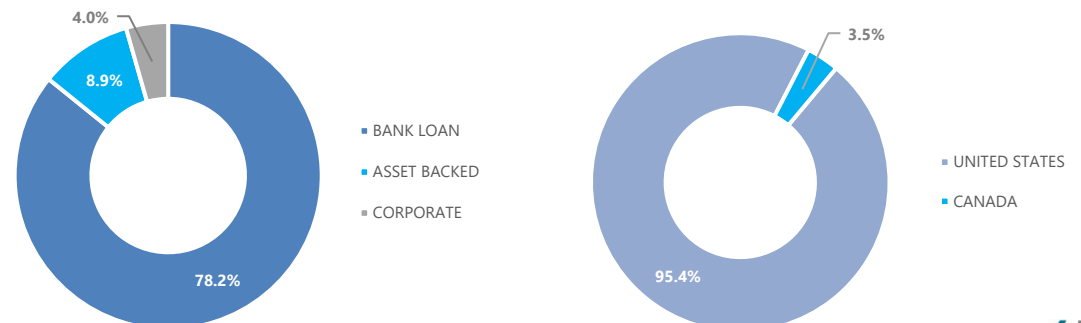
  

Universe data: US Fixed Income Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Crescent Capital</b>	<b>2.0%</b>	<b>70</b>	<b>13.3%</b>	<b>12</b>	<b>5.0%</b>	<b>29</b>	<b>6.2%</b>	<b>17</b>
Median	4.7%		6.0%		-0.3%		2.1%	
No. of Observations	755							

## Growth of \$10,000



## Top Exposures (% of assets)<sup>2</sup>



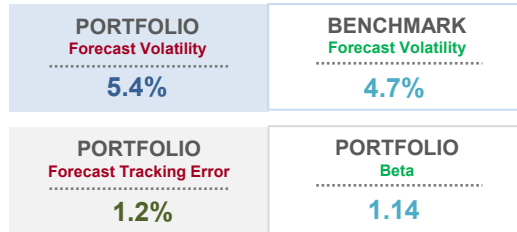
<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Credit Risk Analysis – Liquid Credit Crescent Capital

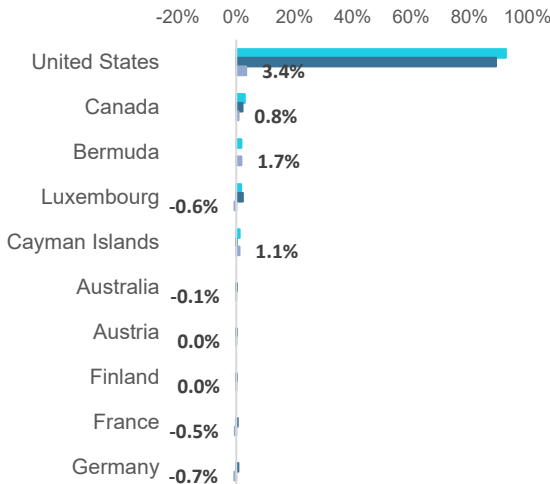
for the quarter ended December 31, 2023

## Portfolio Risk Summary

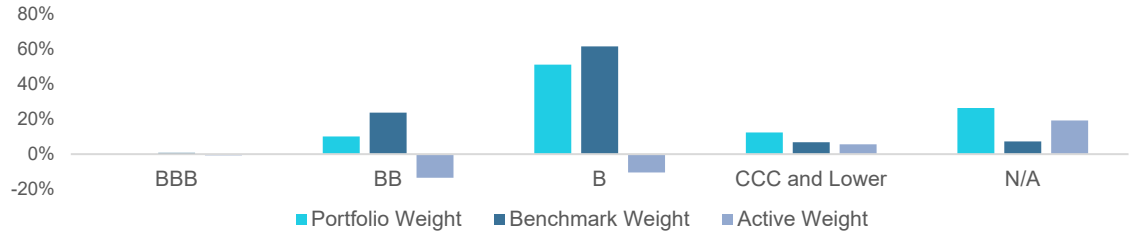


Effective Duration	Credit Spread Duration	Yield to Worst
0.2	2.1	1.0%

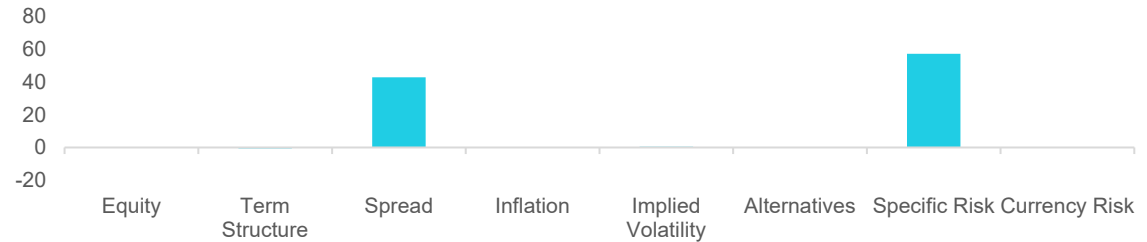
## Top 10 Countries by Weight



## Allocation by S&P Rating



## Active Risk from Common Factors



## Portfolio Allocation by Bond Sector



# Credit – Liquid Credit Pinebridge

for the quarter ended December 31, 2023

## Strategy

Active manager of a broadly diversified portfolio primarily of U.S. dollar denominated high yield securities.

Inception Date: August 2021

## Portfolio Characteristics

	Portfolio	Benchmark
No. of Issues	241.0	0.0
Effective Duration	3.3	-0.2
Convexity	-0.2	3.2
Coupon Rate	5.9	6.1
Yield to Maturity	7.4	7.6
Current Yield	6.3	6.5
Rating – Moody's	B-1	B-1
Rating – S & P	B+	B+

## Top Holdings (% of assets)

CARNIVAL CORP	1.2%
CHS/COMMUNITY HEALTH SYS	1.2%
CCO HLDGS LLC/CAP CORP	0.9%
SIRIUS XM RADIO INC	0.8%
HAT HOLDINGS I LLC/HAT	0.8%
<b>Top 5 Holdings</b>	<b>4.8%</b>

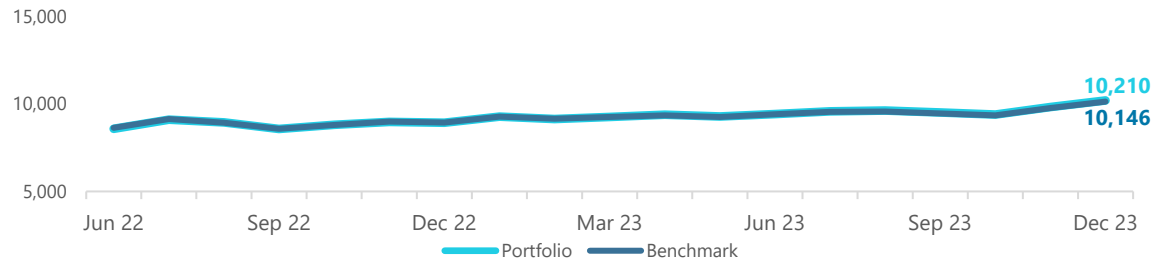
## Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Pinebridge Investments</b>	<b>486.8</b>	<b>7.2%</b>	<b>14.3%</b>	--	--
BBG BARC US Corp HY Idx		7.2%	13.4%	--	--
Credit Policy Benchmark		3.5%	12.0%	2.1%	--

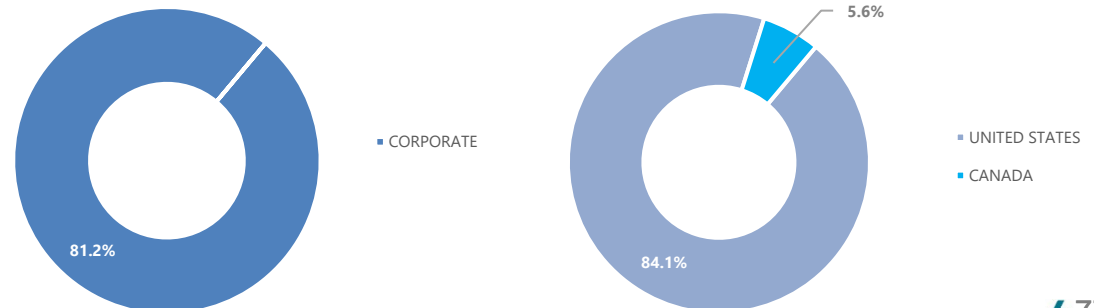
  

Universe data: US Fixed Income Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Pinebridge Investments</b>	<b>7.3%</b>	<b>23</b>	<b>14.7%</b>	<b>10</b>	--	--	--	--
Median	4.7%		6.0%		--	--	--	
No. of Observations	755							

## Growth of \$10,000



## Top Exposures (% of assets)



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Credit Risk Analysis – Liquid Credit Pinebridge

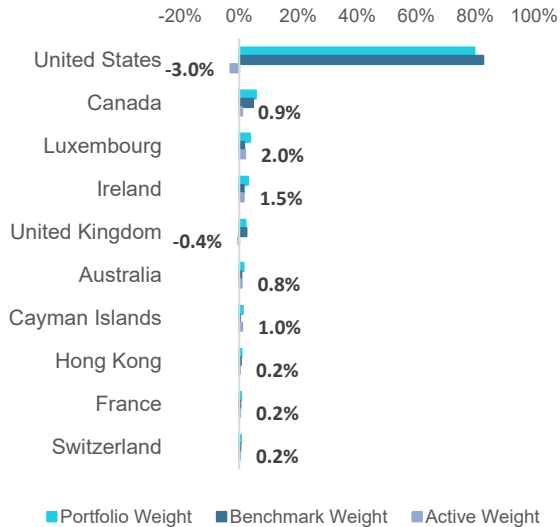
for the quarter ended December 31, 2023

## Portfolio Risk Summary

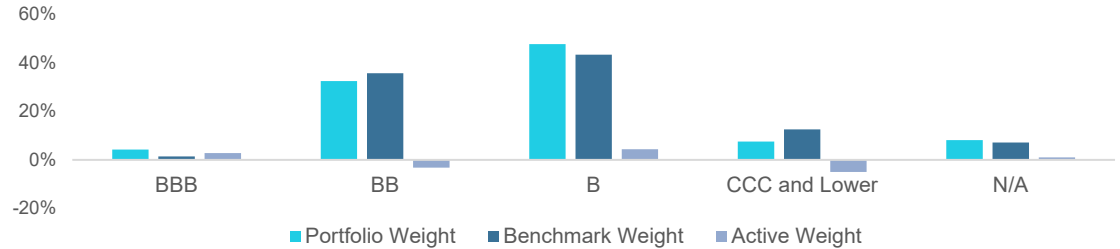
<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
5.7%	5.9%
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
0.6%	0.96

Effective Duration	Credit Spread Duration	Yield to Worst
3.2	3.3	7.5%

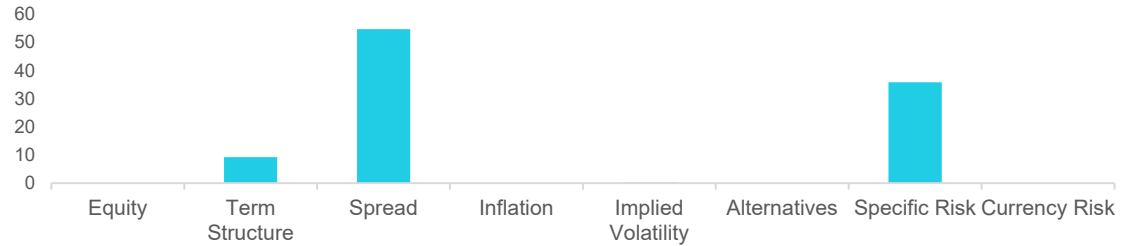
## Top 10 Countries by Weight



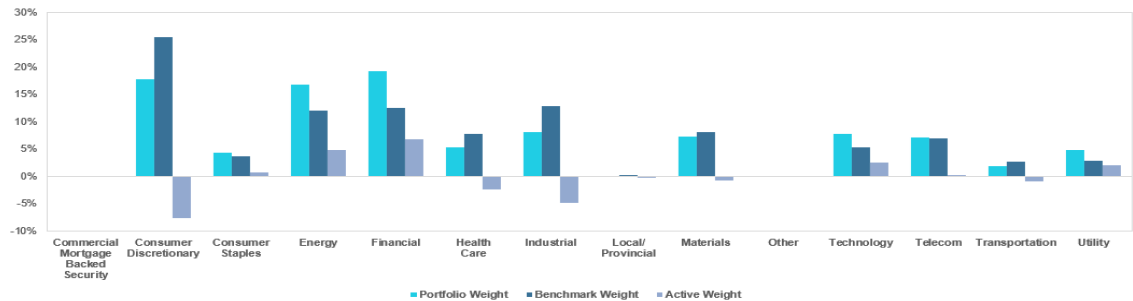
## Allocation by S&P Rating



## Active Risk from Common Factors



## Portfolio Allocation by Bond Sector

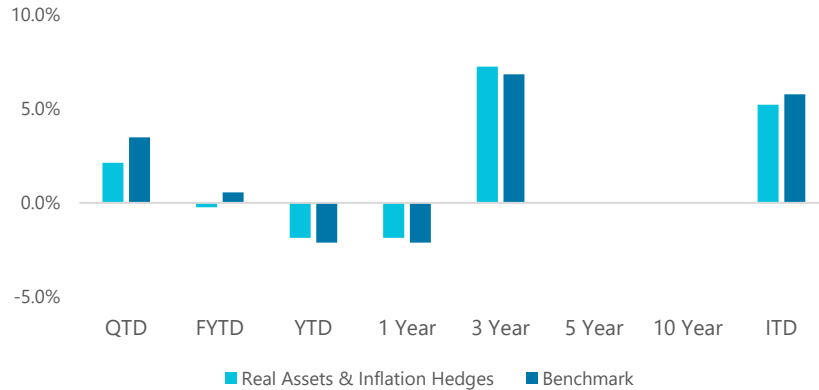


# real assets & inflation hedges

# Summary

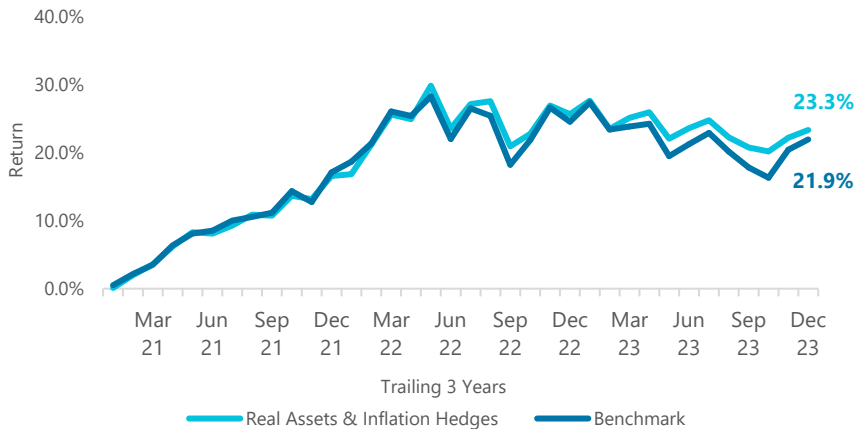
for the quarter ended December 31, 2023

## Performance (net)



	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD
<b>Real Assets &amp; Inflation Hedges</b>	<b>2.1%</b>	<b>-0.2%</b>	<b>-1.9%</b>	<b>-1.9%</b>	<b>7.2%</b>	--	--	<b>5.2%</b>
Benchmark	3.5%	0.6%	-2.1%	-2.1%	6.8%	--	--	5.8%
Excess	-1.4%	-0.8%	0.3%	0.3%	0.4%	--	--	-0.6%

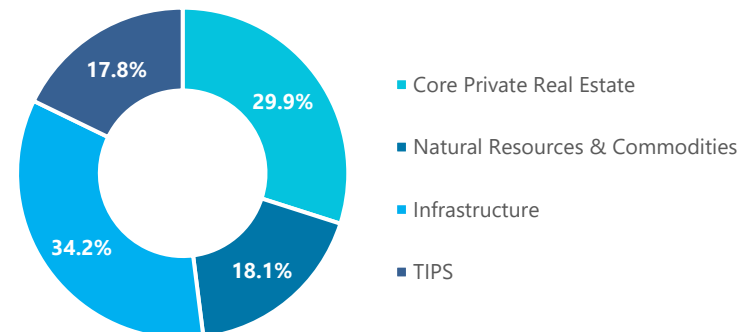
## Cumulative Return



## Functional Category

	QTD	FYTD	YTD	1 Year	3 Year
<b>Core Private Real Estate</b>	<b>-2.5%</b>	<b>-6.5%</b>	<b>-13.9%</b>	<b>-13.9%</b>	<b>6.2%</b>
Core Private RE Policy Benchmark	-2.1%	-4.9%	-12.9%	-12.9%	6.3%
Excess	-0.4%	-1.5%	-1.0%	-1.0%	-0.1%
<b>Natural Resources &amp; Commodities</b>	<b>-1.1%</b>	<b>2.3%</b>	<b>2.6%</b>	<b>2.6%</b>	<b>13.7%</b>
Nat Res & Comm Policy Benchmark	0.8%	4.8%	-0.3%	-0.3%	12.8%
Excess	-1.9%	-2.5%	2.9%	2.9%	0.9%
<b>Infrastructure</b>	<b>7.5%</b>	<b>3.7%</b>	<b>6.5%</b>	<b>6.5%</b>	<b>7.2%</b>
DJ Brookfield Global Infra Comp	11.2%	3.5%	6.2%	6.2%	6.7%
Excess	-3.7%	0.3%	0.3%	0.3%	0.5%
<b>TIPS</b>	<b>4.4%</b>	<b>1.7%</b>	<b>3.6%</b>	<b>3.6%</b>	<b>-1.1%</b>
Bloomberg U.S. Treasury: U.S. TIPS	4.7%	2.0%	3.9%	3.9%	-1.0%
Excess	-0.3%	-0.3%	-0.2%	-0.2%	-0.1%

## Exposure

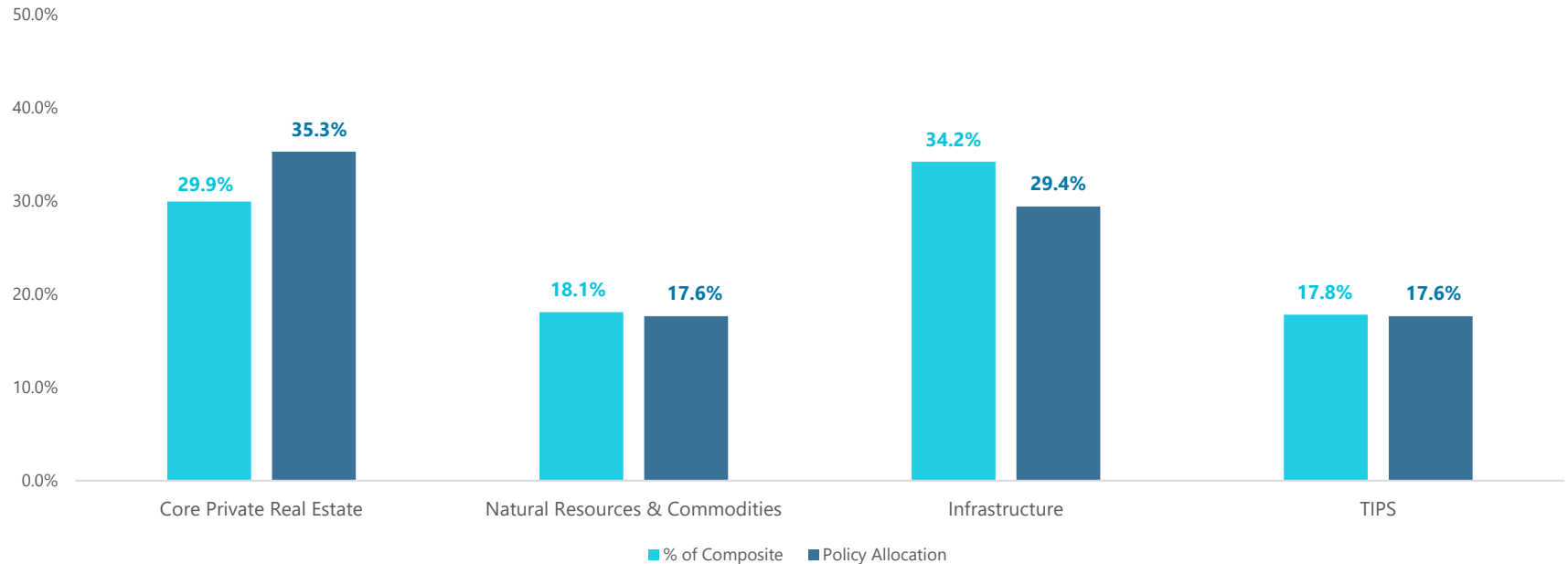




# Asset Allocation

for the quarter ended December 31, 2023

## Actual vs. Policy

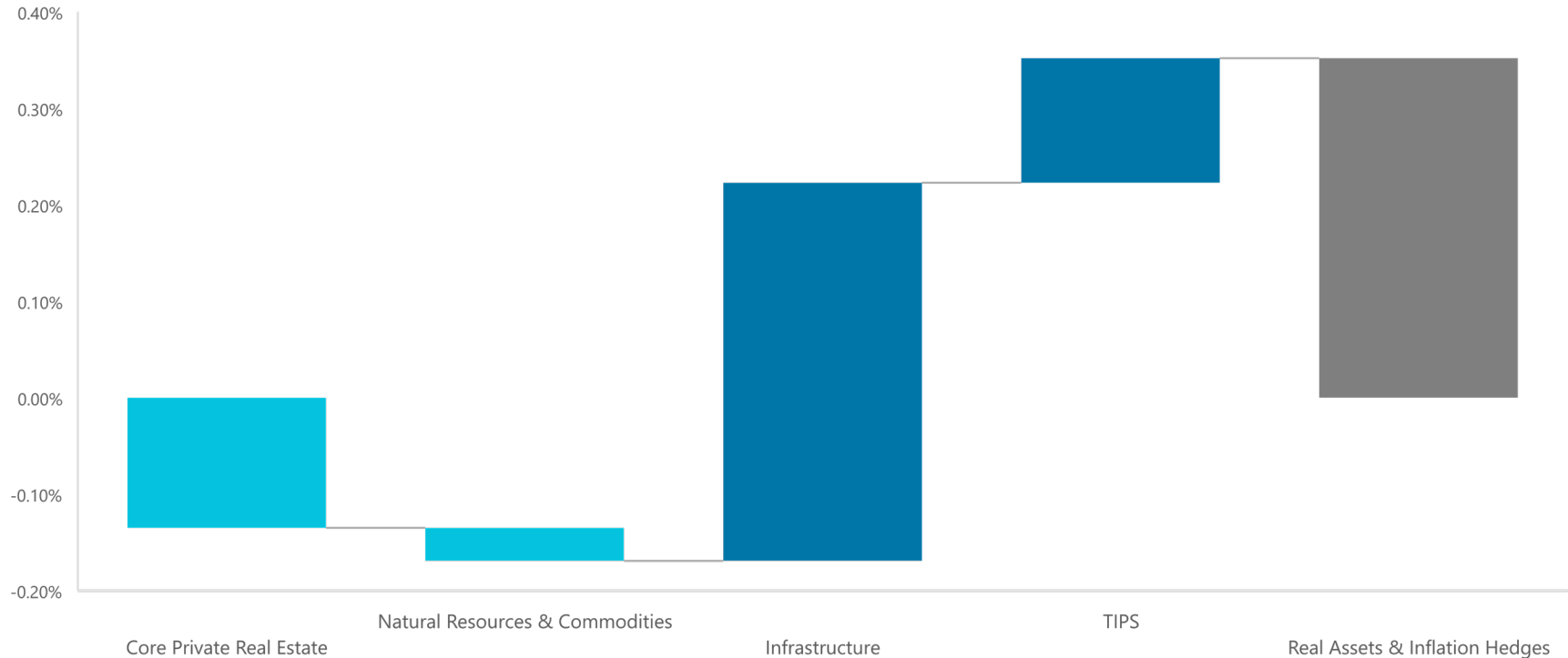


	Ending Market Value (mm)	% of Composite	Policy Allocation	Over / Under (%)	Over / Under (mm)
<b>Real Assets &amp; Inflation Hedges</b>	<b>12,020</b>	<b>100.0%</b>	<b>100.0%</b>		
Core Private Real Estate	3,597	29.9%	35.3%	-5.4%	-645
Natural Resources & Commodities	2,172	18.1%	17.6%	0.4%	51
Infrastructure	4,111	34.2%	29.4%	4.8%	576
TIPS	2,140	17.8%	17.6%	0.2%	19

# Contribution to Return

for the quarter ended December 31, 2023

## QTD Contribution to Return



Functional Category	Contributors	Detractors
Core Private Real Estate	-0.13% DWS Infrastructure	0.29% Real Estate - Real Assets
Natural Resources & Commodities	-0.03% BlackRock TIPS	0.13% Credit Suisse Commodity
Infrastructure	0.39% MGIF	0.03% Orion Mine Finance Fund III
TIPS	0.13% DWS Natural Resources	0.02% TIAA-CREF Global Agriculture I
Real Assets & Inflation Hedges	0.35% KKR DCIF	0.02%

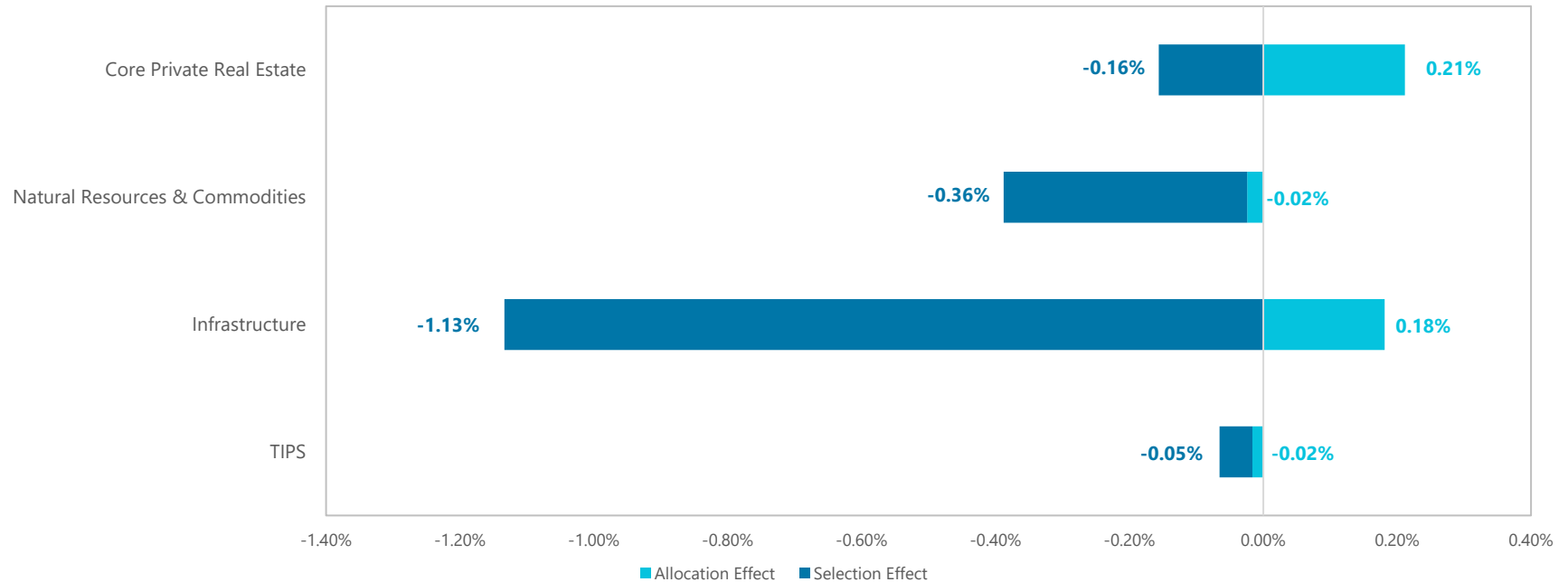
# Return Attribution

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## QTD Performance Attribution<sup>1</sup>



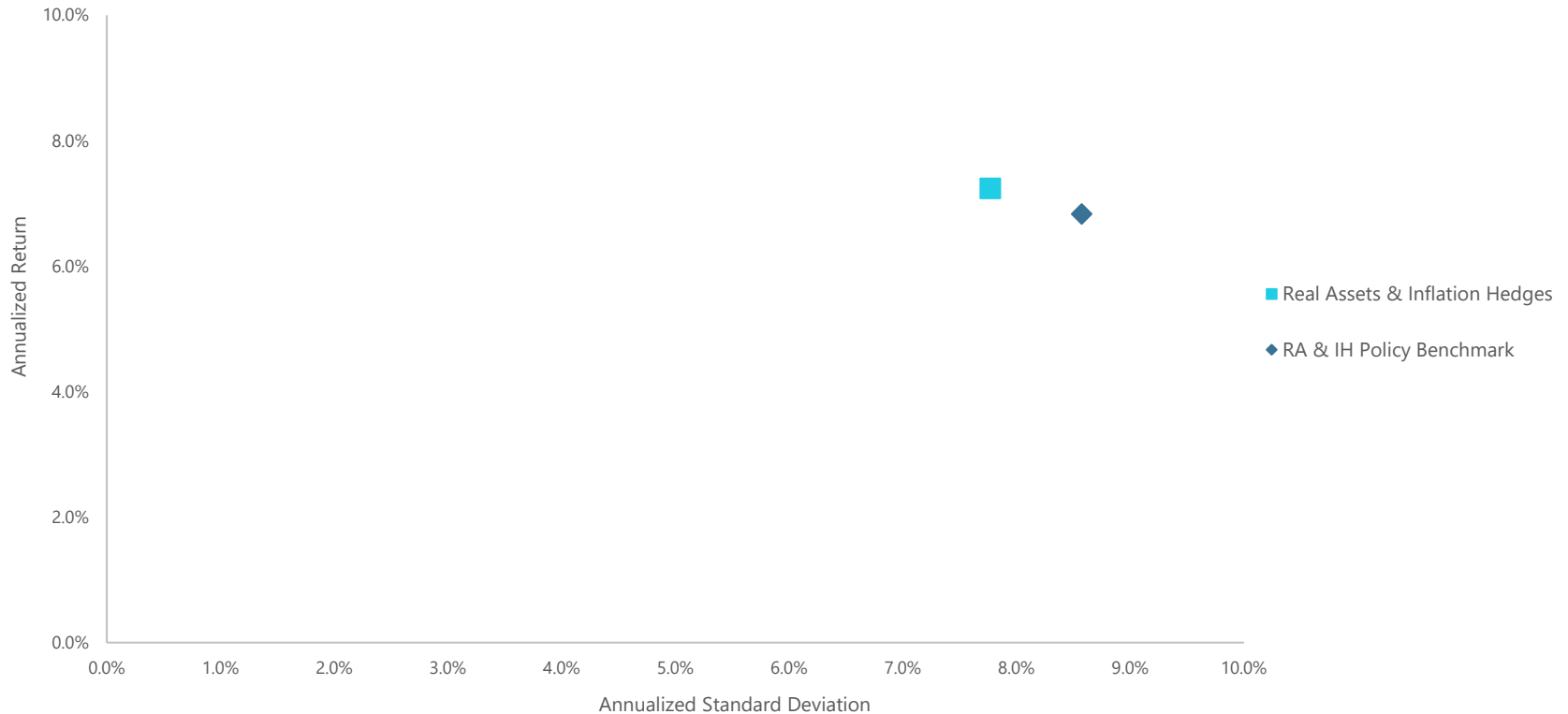
	Ending Market Value (mm)	% of Composite	Policy Allocation	Portfolio Return	Benchmark Return	Allocation Effect	Selection Effect	Total Value Add
<b>Real Assets &amp; Inflation Hedges</b>	<b>12,020</b>	<b>100.0%</b>	<b>100.0%</b>	<b>2.1%</b>	<b>3.5%</b>	<b>0.35%</b>	<b>-1.70%</b>	<b>-1.35%</b>
Core Private Real Estate	3,597	29.9%	35.3%	-2.5%	-2.1%	0.21%	-0.16%	0.06%
Natural Resources & Commodities	2,172	18.1%	17.6%	-1.1%	0.8%	-0.02%	-0.36%	-0.39%
Infrastructure	4,111	34.2%	29.4%	7.5%	11.2%	0.18%	-1.13%	-0.95%
TIPS	2,140	17.8%	17.6%	4.4%	4.7%	-0.02%	-0.05%	-0.07%

<sup>1</sup> Total Value Add column includes Interaction Effect.

# Risk vs. Return

for the quarter ended December 31, 2023

## 3 Year (Annualized)



	Annualized Return	Standard Deviation	Sharpe Ratio	Information Ratio	Beta	Tracking Error
<b>Real Assets &amp; Inflation Hedges</b>	<b>7.2%</b>	<b>7.8%</b>	<b>0.67</b>	<b>0.11</b>	<b>0.86</b>	<b>2.8%</b>
RA & IH Policy Benchmark	6.8%	8.6%				

# Performance Detail

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Annualized Net Returns<sup>1</sup>

	% of Composite	Ending Market Value (mm)	Prior Quarter Ending MV (mm)	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date
<b>Real Assets &amp; Inflation Hedges</b>	<b>100.0%</b>	<b>12,020</b>	<b>11,912</b>	<b>2.1%</b>	<b>-0.2%</b>	<b>-1.9%</b>	<b>-1.9%</b>	<b>7.2%</b>	--	--	<b>5.2%</b>	<b>Apr-2019</b>
RA & IH Policy Benchmark				3.5%	0.6%	-2.1%	-2.1%	6.8%	--	--	5.8%	
<b>Core Private Real Estate</b>	<b>29.9%</b>	<b>3,597</b>	<b>3,920</b>	<b>-2.5%</b>	<b>-6.5%</b>	<b>-13.9%</b>	<b>-13.9%</b>	<b>6.2%</b>	<b>3.9%</b>	<b>6.6%</b>	<b>6.8%</b>	<b>Oct-1985</b>
Core Private RE Policy Benchmark				-2.1%	-4.9%	-12.9%	-12.9%	6.3%	5.0%	7.6%	6.6%	
<b>Natural Resources &amp; Commodities</b>	<b>18.1%</b>	<b>2,172</b>	<b>2,179</b>	<b>-1.1%</b>	<b>2.3%</b>	<b>2.6%</b>	<b>2.6%</b>	<b>13.7%</b>	<b>9.5%</b>	<b>0.4%</b>	<b>-0.7%</b>	<b>Jul-2007</b>
Nat Res & Comm Policy Benchmark				0.8%	4.8%	-0.3%	-0.3%	12.8%	9.4%	-0.1%	-1.6%	
Appian Fund III	0.0%	3	2	-28.7%	-57.9%	--	--	--	--	--	-57.6%	Jun-2023
Ara Fund III	0.1%	13	0	--	--	--	--	--	--	--	-24.0%	Oct-2023
Cibus Enterprise II	0.0%	4	4	-0.8%	-1.7%	1.4%	1.4%	--	--	--	-6.7%	Jun-2022
Cibus Fund II	0.2%	28	29	-3.8%	-4.7%	-8.7%	-8.7%	--	--	--	-13.1%	Jun-2022
Co-Investments - Natural Resources	0.2%	25	24	3.3%	2.9%	2.8%	2.8%	--	--	--	2.3%	Oct-2022
Credit Suisse Commodity	2.4%	286	298	-3.9%	-0.1%	-8.4%	-8.4%	11.1%	7.9%	-0.7%	-2.5%	Mar-2011
DWS Natural Resources	3.8%	452	485	2.8%	6.0%	-0.5%	-0.5%	11.5%	--	--	10.1%	Jun-2019
HiTecVision New Energy	0.9%	107	99	6.3%	10.1%	34.0%	34.0%	--	--	--	33.3%	Sep-2022
Neuberger Berman/Gresham	2.8%	339	356	-4.8%	0.3%	-7.5%	-7.5%	11.2%	7.4%	-0.6%	-1.1%	Jul-2007
Orion Mine Finance Fund III	1.2%	145	150	-4.3%	5.9%	21.5%	21.5%	--	--	--	12.9%	Sep-2021
Orion Mining Royalty Fund I	0.3%	37	28	-0.3%	5.5%	2.6%	2.6%	--	--	--	0.5%	Sep-2021
Private Equity - Real Assets	0.7%	80	81	-0.3%	-1.0%	0.6%	0.6%	7.0%	-6.9%	--	-6.9%	Jan-2019
Sprott	0.4%	51	44	5.2%	6.3%	--	--	--	--	--	4.5%	Mar-2023
TIAA-CREF Global Agriculture I	2.4%	294	302	-1.3%	1.1%	17.2%	17.2%	--	--	--	14.8%	Dec-2021
TIAA-CREF Global Agriculture II	2.6%	307	277	-0.7%	1.0%	10.8%	10.8%	--	--	--	10.3%	Dec-2021
<b>Infrastructure</b>	<b>34.2%</b>	<b>4,111</b>	<b>3,966</b>	<b>7.5%</b>	<b>3.7%</b>	<b>6.5%</b>	<b>6.5%</b>	<b>7.2%</b>	--	--	<b>7.1%</b>	<b>Jun-2019</b>
DJ Brookfield Global Infra Comp				11.2%	3.5%	6.2%	6.2%	6.7%	--	--	4.1%	
Antin Mid Cap	0.4%	54	49	4.0%	1.7%	7.3%	7.3%	--	--	--	-2.0%	Dec-2021
Axium Infrastructure	2.3%	273	268	2.4%	4.3%	8.4%	8.4%	--	--	--	5.1%	Dec-2021
Axium Infrastructure Canada	1.3%	155	150	4.5%	5.1%	9.9%	9.9%	--	--	--	-100.0%	Nov-2021
Co-Investments - Infrastructure	0.4%	42	35	12.8%	14.3%	--	--	--	--	--	15.5%	Mar-2023
DIF CIF III	0.5%	58	46	8.5%	9.8%	6.0%	6.0%	--	--	--	6.7%	Jun-2022
DIF Infrastructure VI	1.2%	139	123	7.4%	7.5%	7.3%	7.3%	--	--	--	17.2%	Mar-2021
DWS Infrastructure	17.7%	2,130	2,076	11.2%	3.6%	5.1%	5.1%	6.4%	--	--	6.6%	Jun-2019
Grain Communications Opportunity III	0.3%	38	41	-1.4%	-8.8%	-4.8%	-4.8%	--	--	--	-100.0%	Feb-2021
Grain Spectrum Holdings III	0.6%	71	71	-0.2%	-0.3%	38.1%	38.1%	10.6%	--	--	10.0%	Nov-2020
KKR DCIF	4.3%	521	515	2.3%	4.4%	7.1%	7.1%	--	--	--	5.1%	Apr-2022
MGIF	3.6%	435	414	5.2%	--	--	--	--	--	--	5.2%	Aug-2023
Pan-European Infrastructure Fund III	0.6%	77	75	6.9%	6.4%	13.5%	13.5%	5.2%	--	--	6.2%	Nov-2020
Partners Grp Direct Infra 2020	1.0%	119	104	2.6%	5.5%	16.4%	16.4%	--	--	--	10.9%	Jan-2022
<b>TIPS</b>	<b>17.8%</b>	<b>2,140</b>	<b>1,847</b>	<b>4.4%</b>	<b>1.7%</b>	<b>3.6%</b>	<b>3.6%</b>	<b>-1.1%</b>	--	--	<b>2.5%</b>	<b>May-2019</b>
Bloomberg U.S. Treasury: U.S. TIPS				4.7%	2.0%	3.9%	3.9%	-1.0%	--	--	2.6%	
Blackrock TIPS	17.8%	2,140	1,847	4.4%	1.7%	3.6%	3.6%	-1.1%	--	--	2.5%	May-2019

<sup>1</sup> Private natural resources and infrastructure funds reflect early-stage life cycle performance.

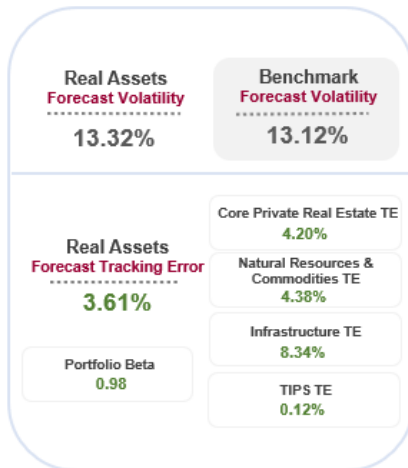
# Real Assets & Inflation Hedges Risk Summary

for the quarter ended December 31, 2023

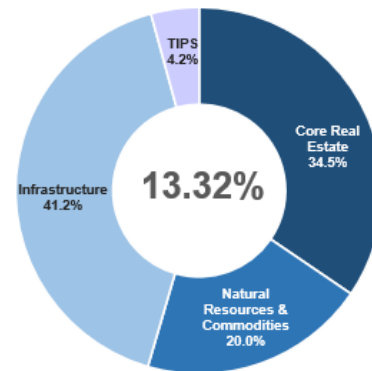
## Realized (Ex-Post) Risks



## Projected (Ex-Ante) Risks

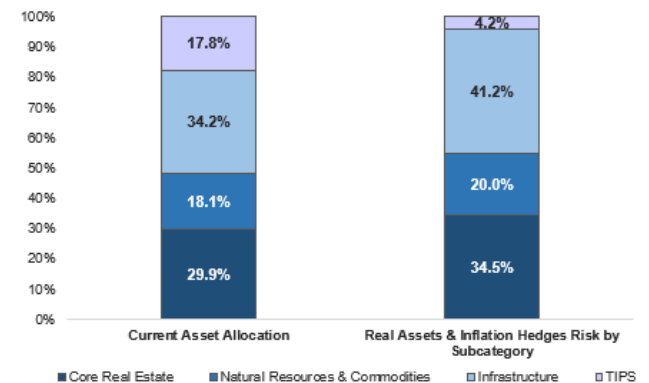


## Subcategory Contributions to Real Assets and Inflation Hedges Risk



## Real Assets and Inflation Hedges Asset Allocation

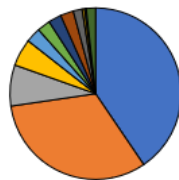
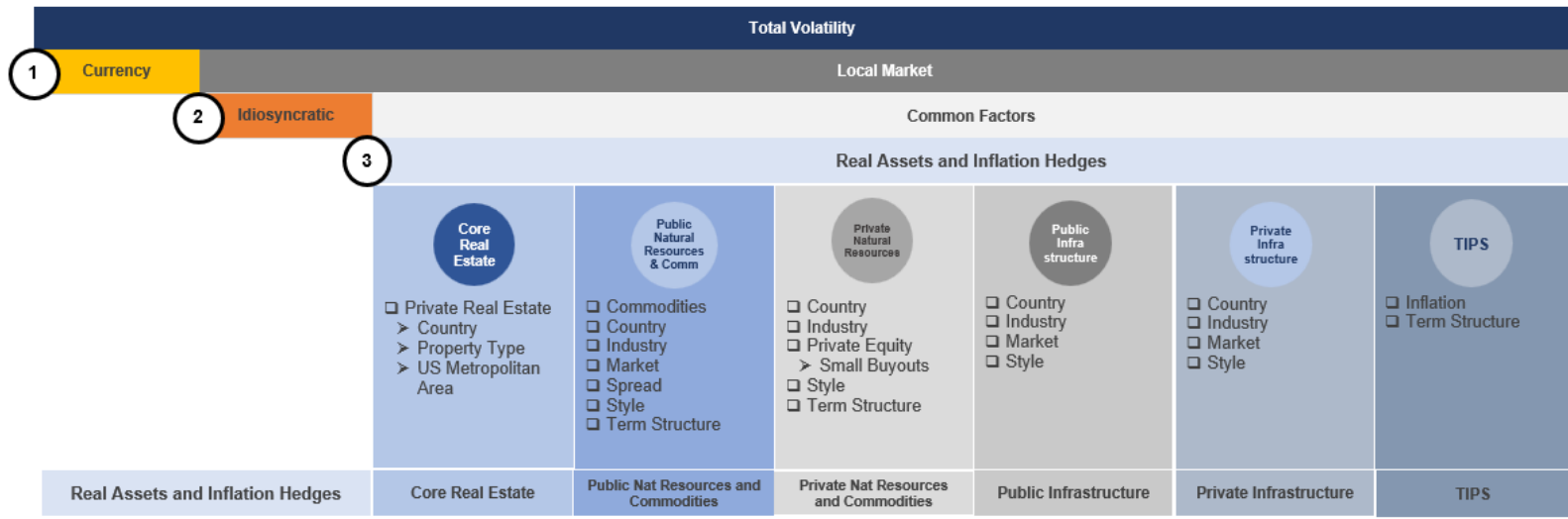
Capital-based versus Risk-based



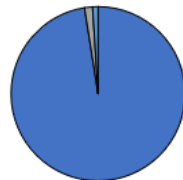
# Real Assets & Inflation Hedges Risk Summary

for the quarter ended December 31, 2023

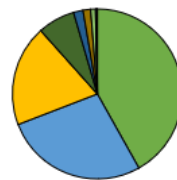
## Decomposition of MSCI Risk Factors



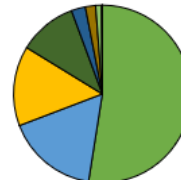
- Market 42.0%
- Private Real Estate 33.3%
- Currency 8.0%
- Private Equity 5.3%
- Industry 2.9%
- Country 2.6%
- Inflation 2.6%
- Commodities 2.6%
- Term Structure 1.7%
- Idiosyncratic 0.5%
- Spread 0.3%
- Style -1.8%



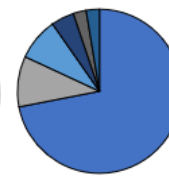
- Private Real Estate 97.5%
- Currency 1.5%
- Idiosyncratic 1.0%



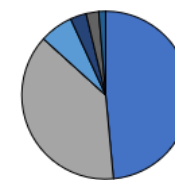
- Commodities 42.0%
- Market 27.3%
- Industry 19.3%
- Currency 7.1%
- Style 1.8%
- Country 1.5%
- Idiosyncratic 0.9%
- Spread 0.2%
- Term Structure -0.1%



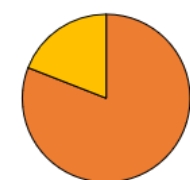
- Market 53.3%
- Industry 17.0%
- Currency 14.8%
- Private Equity 10.8%
- Country 2.6%
- Spread 1.9%
- Idiosyncratic 1.1%
- Implied Volatility 0.1%
- Inflation 0.1%



- Market 75.9%
- Industry 10.5%
- Currency 8.9%
- Country 4.8%
- Idiosyncratic 2.7%
- Style -2.8%



- Private Equity 49.8%
- Market 39.2%
- Currency 6.6%
- Country 3.2%
- Idiosyncratic 2.5%
- Style -1.4%

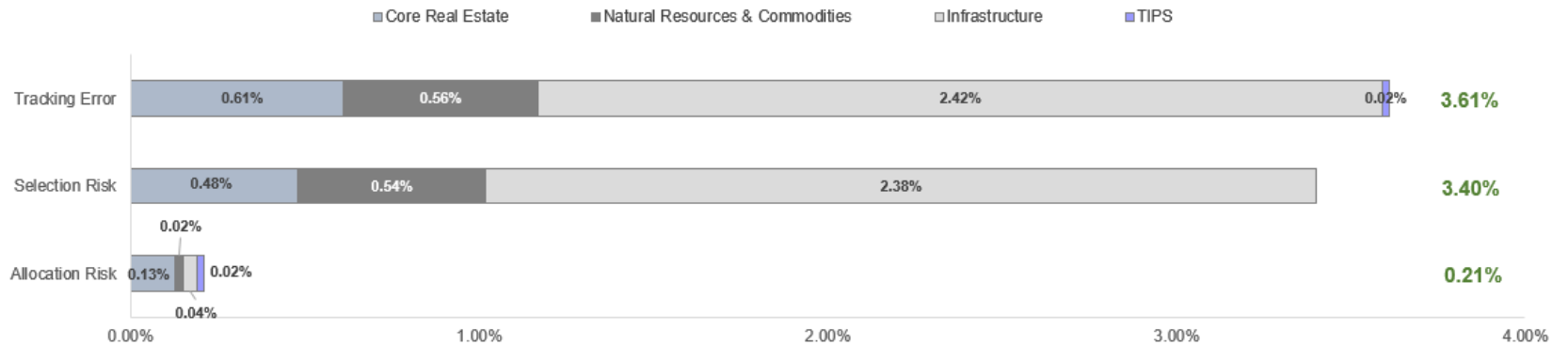


- Term Structure 80.9%
- Inflation 19.1%

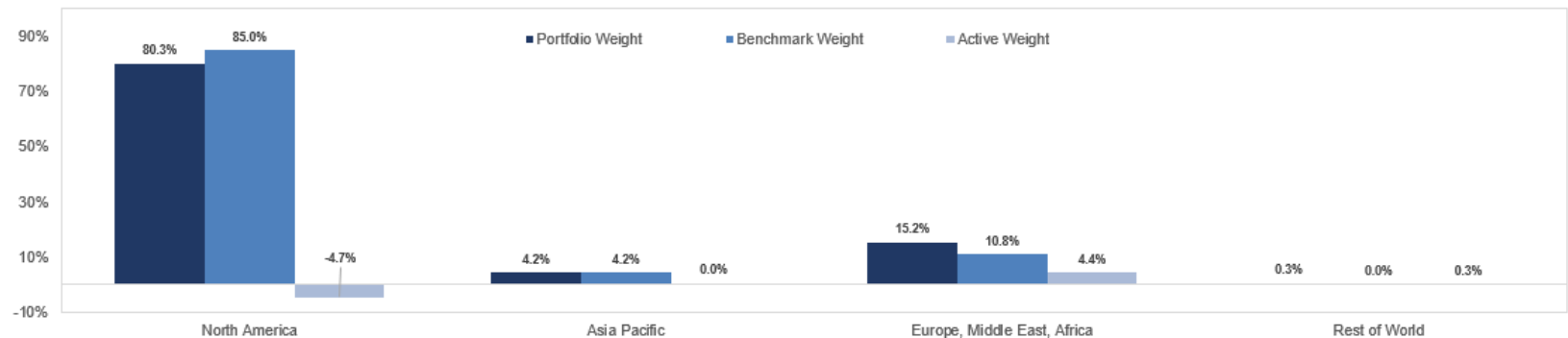
# Real Assets & Inflation Hedges Risk Summary

for the quarter ended December 31, 2023

## Subcategory Contributions to Tracking Error



## Portfolio Allocation by Region<sup>1</sup>



<sup>1</sup> Rest of World is sum of countries with weights below 0.5%.



# Real Assets & Inflation Hedges

## Natural Resources & Commodities

### Credit Suisse

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

#### Strategy

Seeks to provide a hedge against inflation and exposure to commodities markets such as energy, agriculture and timber, and metals and mining.

Inception Date: March 2011

#### Risk Statistics (since inception)

Standard Deviation	15.2%
Benchmark Standard Deviation	15.5%
Sharpe Ratio	0.22
Information Ratio	0.48
Beta	0.98
Tracking Error	1.0%

#### Top Holdings (% of assets)

GOLD 100 OZ FUTR APR24	16.2%
US TREASURY FRN	13.4%
US TREASURY FRN	11.8%
US TREASURY FRN	11.3%
US TREASURY FRN	8.6%
<b>Top 5 Holdings</b>	<b>61.3%</b>

#### Performance (net)<sup>1</sup>

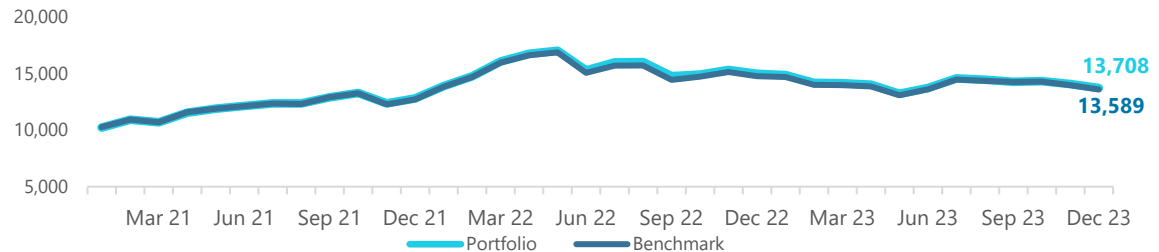
	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Credit Suisse Commodity</b>	<b>286.0</b>	<b>-3.9%</b>	<b>-8.4%</b>	<b>11.1%</b>	<b>7.9%</b>
Bloomberg Commodity Index Total Return		-4.6%	-7.9%	10.8%	7.2%
Real Assets & Inflation Hedges Policy BM		3.5%	-2.1%	6.8%	--

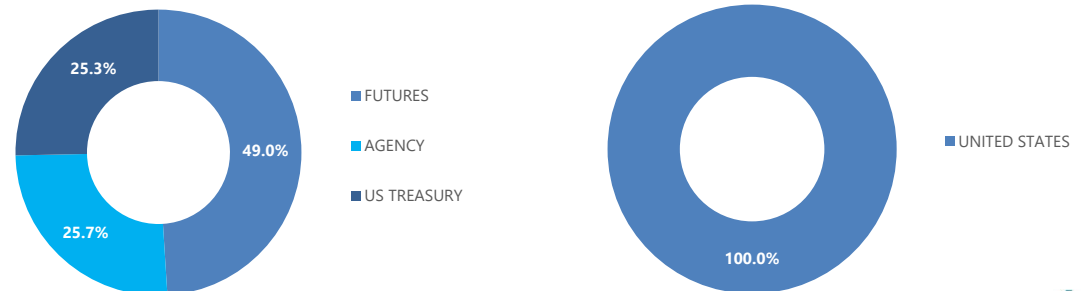
Universe data: Commodity Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Credit Suisse Commodity</b>	<b>-3.9%</b>	<b>100</b>	<b>-8.2%</b>	<b>100</b>	<b>11.4%</b>	<b>47</b>	<b>8.2%</b>	<b>62</b>
Median	-0.4%		0.0%		10.4%		9.3%	

No. of Observations 10

#### Growth of \$10,000



#### Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Real Assets & Inflation Hedges Risk Analysis

## Natural Resources & Commodities

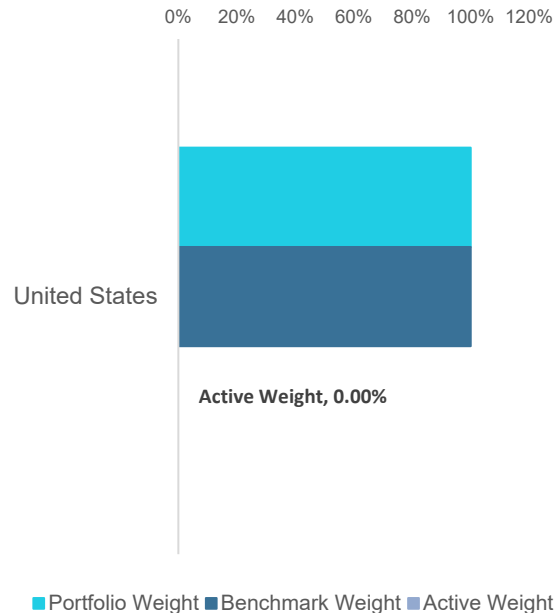
### Credit Suisse

for the quarter ended December 31, 2023

### Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility <hr/> <b>12.5%</b>	<b>BENCHMARK</b> Forecast Volatility <hr/> <b>13.7%</b>
<b>PORTFOLIO</b> Forecast Tracking Error <hr/> <b>3.5%</b>	<b>PORTFOLIO</b> Beta <hr/> <b>0.88</b>

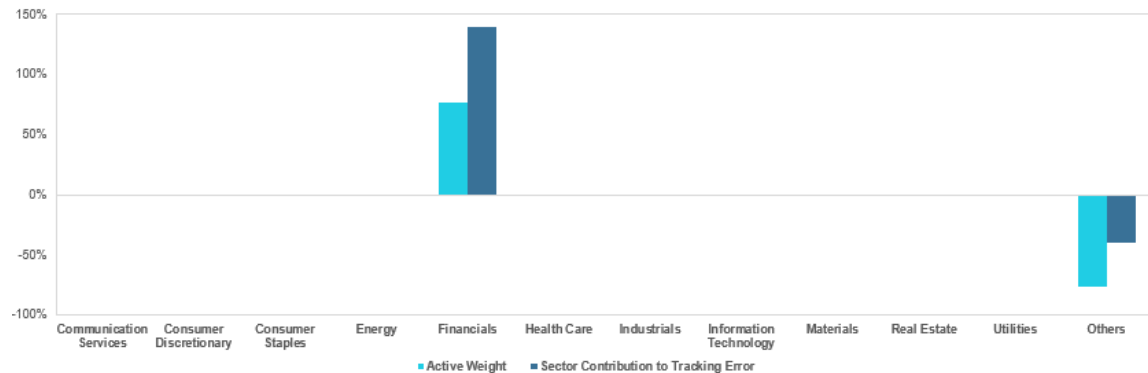
### Top Country by Weight



### Top 10 Assets by Contribution to Portfolio Active Risk

Asset	Portfolio Weight	Benchmark Weight	Active Weight	Contribution to Portfolio Active Risk
NYMEX CRUDE OIL FEB24	0.00%	0.00%	0.00%	3.09%
ISSUER 1.66% APR24	13.35%	0.00%	13.35%	0.85%
COMEX GOLD APR24	0.00%	0.00%	0.00%	0.83%
ISSUER 0.36% APR24	11.74%	0.00%	11.74%	0.75%
ISSUER 4.99% JUL24	11.21%	0.00%	11.21%	0.71%
NYMEX NATURAL GAS FEB24	0.00%	0.00%	0.00%	0.69%
ICE GAS OIL FEB24	0.00%	0.00%	0.00%	0.59%
UNITED STATES TREASURY 5.45% JUL25	8.51%	0.00%	8.51%	0.54%
NYMEX GASOLINE FEB24	0.00%	0.00%	0.00%	0.48%
NYMEX HEATING OIL FEB24	0.00%	0.00%	0.00%	0.48%

### Portfolio Allocation by GICS Sector



# Real Assets & Inflation Hedges

## Natural Resources & Commodities

### DWS

for the quarter ended December 31, 2023

#### Strategy

Seeks to provide capital appreciation and a hedge to inflation. A diversified approach within infrastructure to gain exposure to infrastructure related to telecommunication, transportation, utilities, waste and energy.

Inception Date: June 2019

#### Risk Statistics (since inception)

Standard Deviation	23.6%
Benchmark Standard Deviation	23.6%
Sharpe Ratio	0.45
Information Ratio	-0.26
Beta	0.98
Tracking Error	4.1%

#### Top Holdings (% of assets)

TOTALENERGIES SE	9.1%
RIO TINTO LTD	6.9%
NUTRIEN LTD	6.6%
AGNICO EAGLE MINES LTD	5.9%
NEWMONT CORP	5.8%
<b>Top 5 Holdings</b>	<b>34.4%</b>

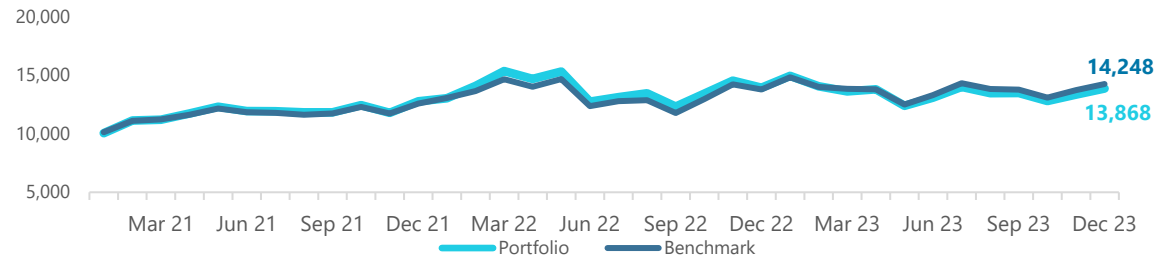
#### Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>DWS Natural Resources</b>	<b>451.7</b>	<b>2.8%</b>	<b>-0.5%</b>	<b>11.5%</b>	--
DWS NR Custom Benchmark		3.4%	3.4%	12.5%	--
Real Assets & Inflation Hedges Policy BM		3.5%	-2.1%	6.8%	--

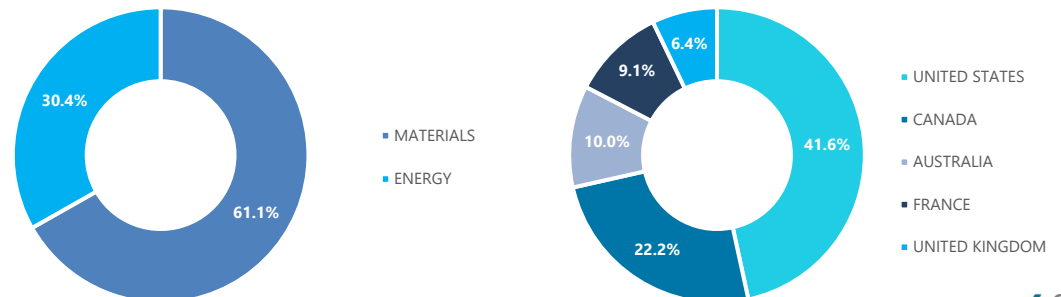
  

Universe data: Commodity Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>DWS Natural Resources</b>	<b>2.9%</b>	<b>14</b>	<b>-0.4%</b>	<b>59</b>	<b>11.7%</b>	<b>48</b>	--	--
Median	-0.4%		0.0%		10.4%		--	
No. of Observations		10						

#### Growth of \$10,000



#### Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Real Assets & Inflation Hedges Risk Analysis

## Natural Resources & Commodities

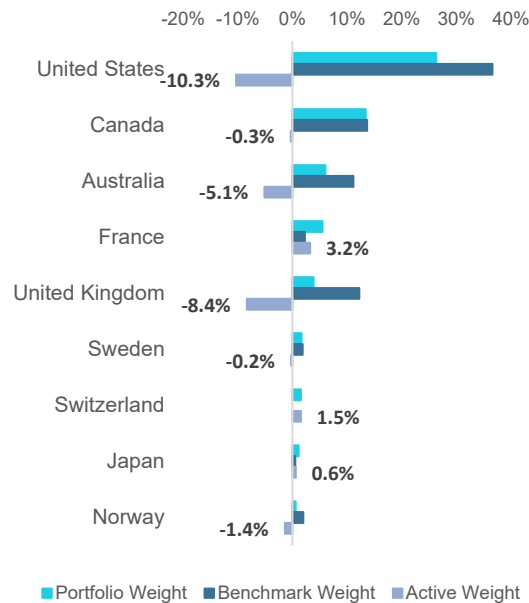
### DWS

for the quarter ended December 31, 2023

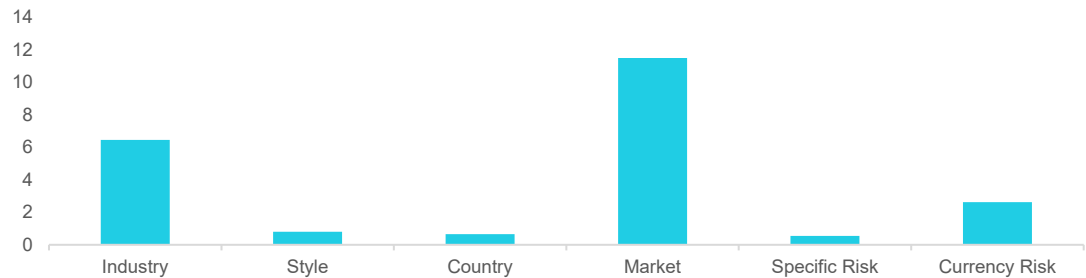
#### Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
22.6%	21.1%
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
4.1%	1.05

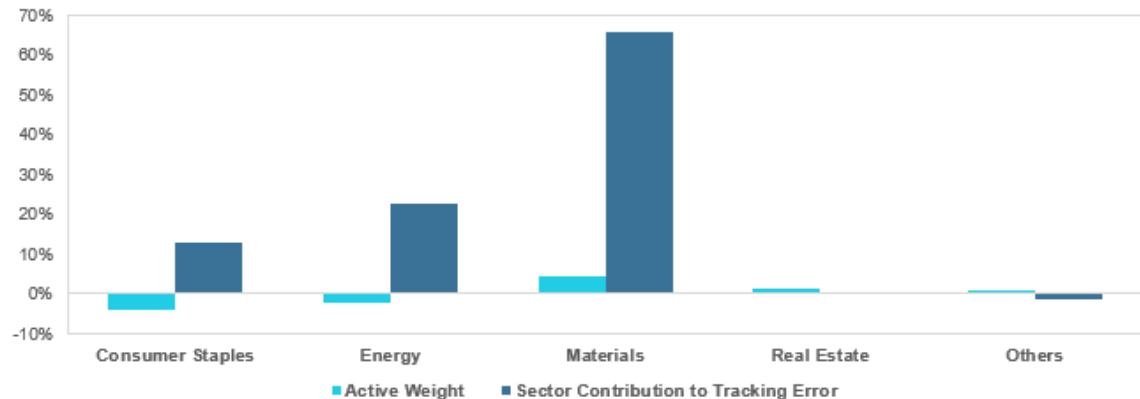
#### Top Countries by Weight



#### Portfolio Active Risk from Common Factors



#### Portfolio Allocation by GICS Sector



# Real Assets & Inflation Hedges

## Natural Resources & Commodities

### Neuberger Berman / Gresham

for the quarter ended December 31, 2023

### Strategy

Seeks to provide a hedge against inflation and exposure to commodities markets such as energy, agriculture and timber, and metals and mining. The collateral portfolio provides income with conservative fixed income exposure.

Inception Date: July 2007

### Risk Statistics (since inception)

Standard Deviation	18.1%
Benchmark Standard Deviation	16.7%
Sharpe Ratio	0.13
Information Ratio	0.48
Beta	1.04
Tracking Error	4.8%

### Top Holdings (% of assets)

GOLD 100 OZ FUTR FEB24	16.6%
WTI CRUDE FUTURE MAR24	7.3%
NATURAL GAS FUTR MAR24	5.8%
BRENT CRUDE FUTR MAR24	5.0%
SOYBEAN FUTURE MAR24	4.9%
<b>Top 5 Holdings</b>	<b>39.6%</b>

### Performance (net)<sup>1</sup>

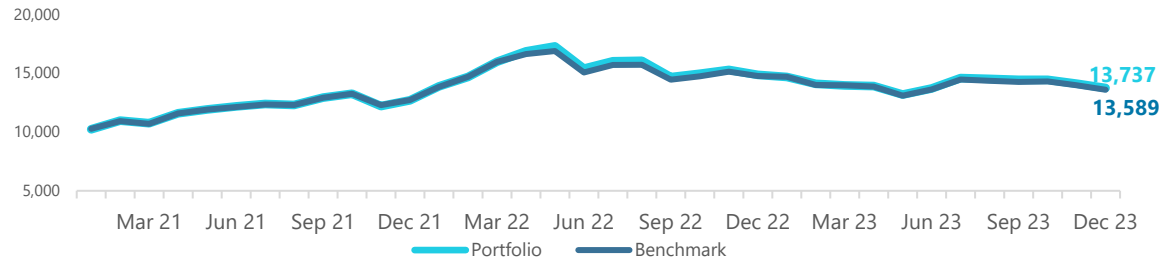
	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Neuberger Berman/Gresham</b>	<b>338.9</b>	<b>-4.8%</b>	<b>-7.5%</b>	<b>11.2%</b>	<b>7.4%</b>
Bloomberg Commodity Index Total Return		-4.6%	-7.9%	10.8%	7.2%
Real Assets & Inflation Hedges Policy BM		3.5%	-2.1%	6.8%	--

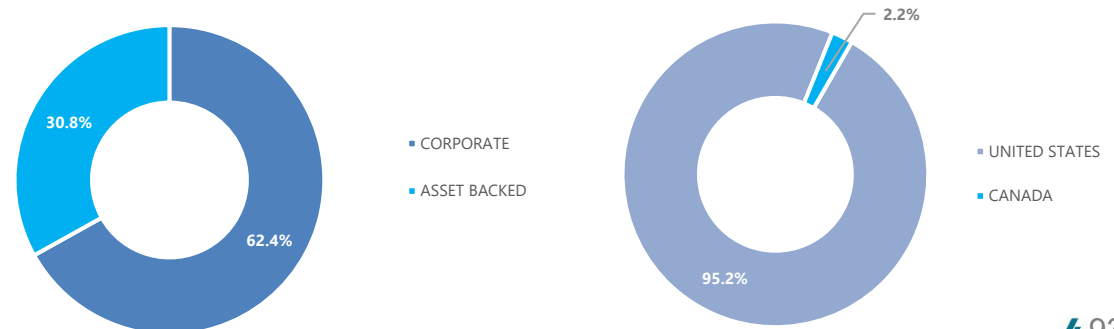
Universe data: Commodity Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Neuberger Berman/Gresham</b>	<b>-4.7%</b>	<b>100</b>	<b>-7.2%</b>	<b>100</b>	<b>11.6%</b>	<b>46</b>	<b>7.8%</b>	<b>86</b>
Median	-0.4%		0.0%		10.4%		9.3%	

No. of Observations 10

### Growth of \$10,000



### Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Real Assets & Inflation Hedges Risk Analysis

Natural Resources & Commodities

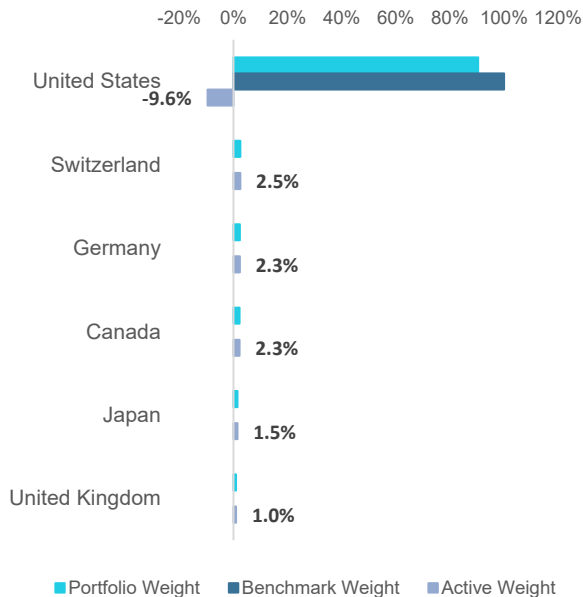
Neuberger Berman / Gresham

for the quarter ended December 31, 2023

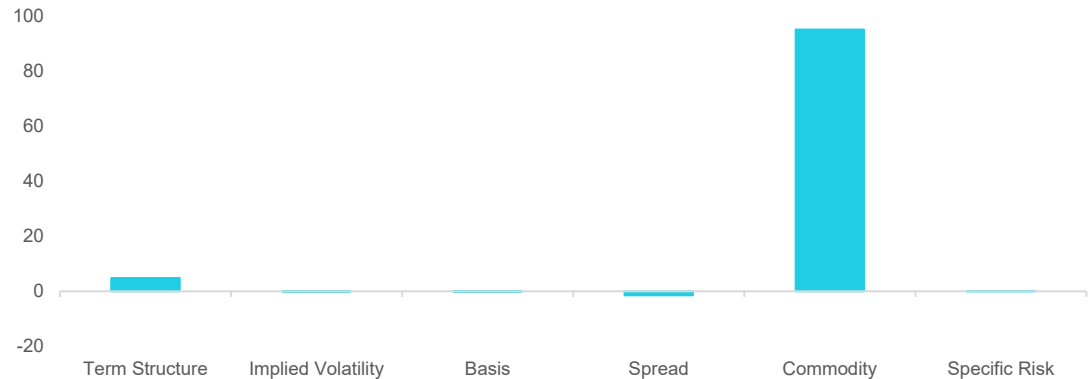
## Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
12.4%	15.2%
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
3.3%	0.81

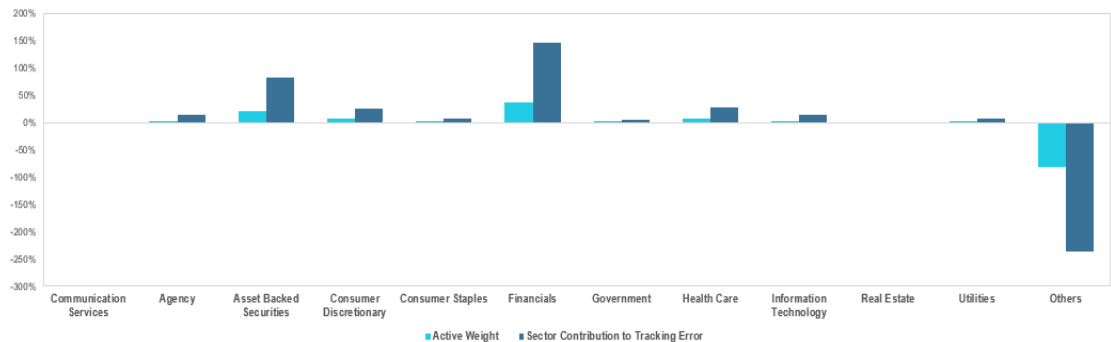
## Top Countries by Weight



## Portfolio Active Risk from Common Factors



## Portfolio Allocation by GICS Sector



# Real Assets & Inflation Hedges

## Infrastructure

### DWS

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

### Strategy

Seeks to provide capital appreciation and income with global infrastructure securities. The strategy takes a diversified approach within infrastructure to gain exposure to infrastructure related to telecommunication, transportation, utilities, waste and energy.

Inception Date: June 2019

### Portfolio Characteristics

	Portfolio	Benchmark
Market Cap Wtd Average (mm)	42,429.4	38,276.4
No. Of Issues	59.0	0.0
Dividend Yield	3.9	4.4
Return on Equity	14.2	13.5
Price to Sales	3.3	3.9
Price to Book	3.9	4.3
PE Ratio	22.3	27.6

### Top Holdings (% of assets)

NATIONAL GRID PLC	6.5%
AMERICAN TOWER CORP	6.4%
VINCI SA	6.0%
ENBRIDGE INC	5.4%
SEMPRA	4.4%
<b>Top 5 Holdings</b>	<b>28.9%</b>

<sup>1</sup> Peer rankings not shown; comparable public market infrastructure universe not available.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

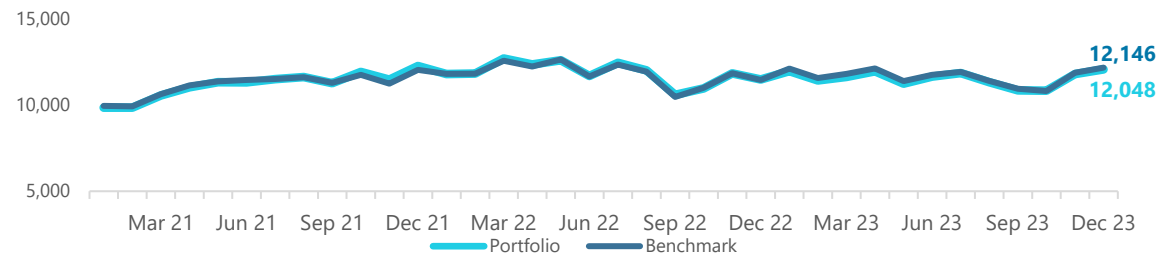
### Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>DWS Infrastructure</b>	<b>2,130.0</b>	<b>11.2%</b>	<b>5.1%</b>	<b>6.4%</b>	--
DJ Brookfield Global Infra Comp		11.2%	6.2%	6.7%	--
Real Assets & Inflation Hedges Policy BM		3.5%	-2.1%	6.8%	--

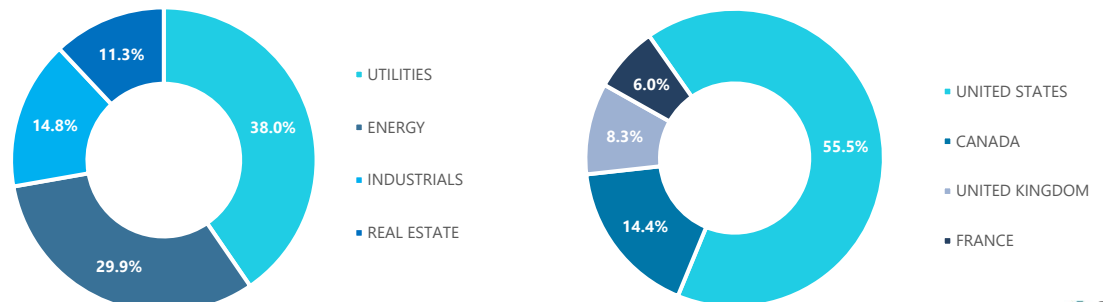
  

Universe data: Infrastructure	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>DWS Infrastructure</b>	<b>11.3%</b>	<b>11</b>	<b>5.3%</b>	<b>54</b>	<b>6.6%</b>	<b>80</b>	--	--
Median	20.0%		6.8%		9.7%		--	
No. of Observations		12						

### Growth of \$10,000



### Top Exposures (% of assets)<sup>2</sup>



# Real Assets & Inflation Hedges Risk Analysis

## Infrastructure

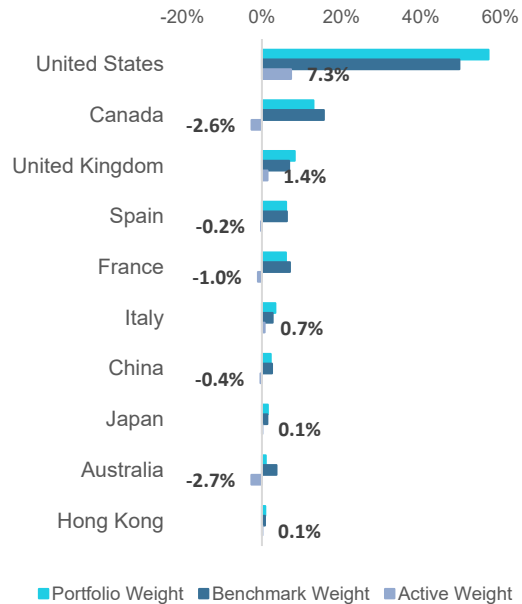
### DWS

for the quarter ended December 31, 2023

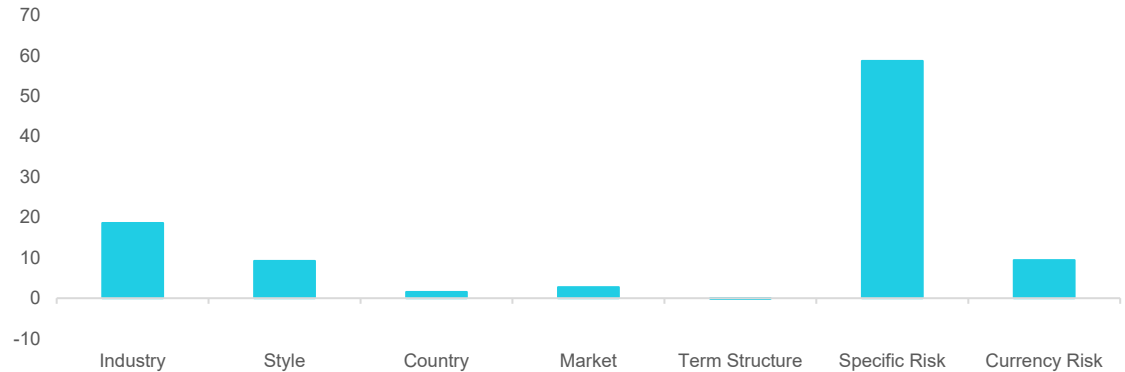
#### Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
16.7%	17.4%
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
2.1%	0.96

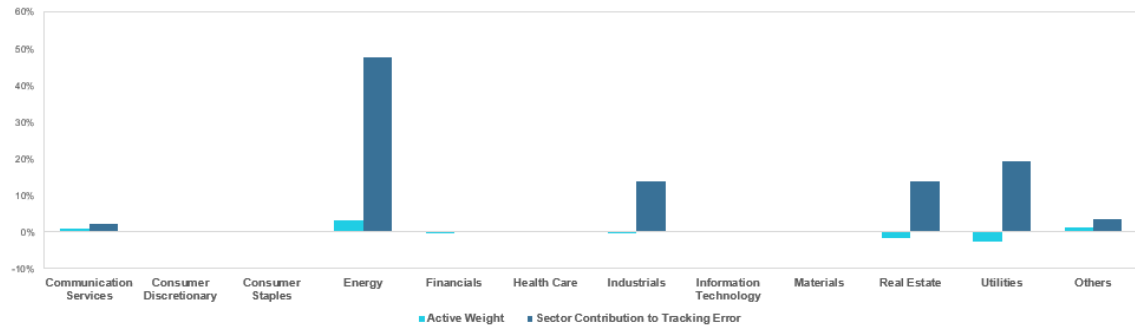
#### Top 10 Countries by Weight



#### Portfolio Active Risk from Common Factors



#### Portfolio Allocation by GICS Sector





# Real Assets & Inflation Hedges

TIPS

BlackRock

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Strategy

Seeks to provide income and a hedge against inflation with passive TIPS exposure.

Inception Date: May 2019

## Risk Statistics (since inception)

Standard Deviation	6.3%
Benchmark Standard Deviation	6.4%
Sharpe Ratio	0.13
Information Ratio	-0.14
Beta	0.99
Tracking Error	0.8%

## Top Holdings (% of assets)

TSY INFL IX N/B	4.2%
TSY INFL IX N/B	3.9%
TSY INFL IX N/B	3.8%
TSY INFL IX N/B	3.8%
TSY INFL IX N/B	3.7%
<b>Top 5 Holdings</b>	<b>19.5%</b>

## Performance (net)<sup>1</sup>

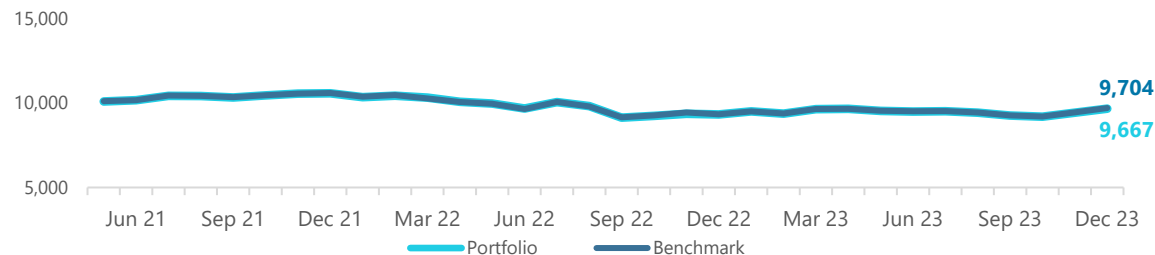
	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>BlackRock TIPS</b>	<b>2,139.9</b>	<b>4.4%</b>	<b>3.6%</b>	<b>-1.1%</b>	--
Bloomberg U.S. Treasury: U.S. TIPS		4.7%	3.9%	-1.0%	--
Real Assets & Inflation Hedges Policy BM		3.5%	-2.1%	6.8%	--

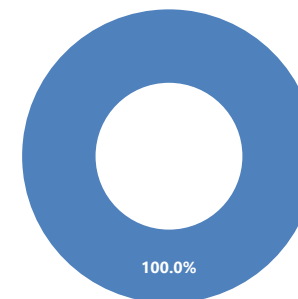
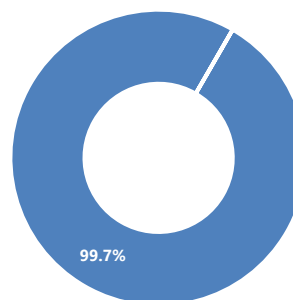
Universe data: Inflation Linked Bond Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>BlackRock TIPS</b>	<b>4.4%</b>	--	<b>3.7%</b>	--	<b>-1.1%</b>	--	--	--
Median	--	--	--	--	--	--	--	--

No. of Observations

## Growth of \$10,000



## Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Comparable TIPS universe not available.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Real Assets & Inflation Hedges Risk Analysis

TIPS  
BlackRock

for the quarter ended December 31, 2023

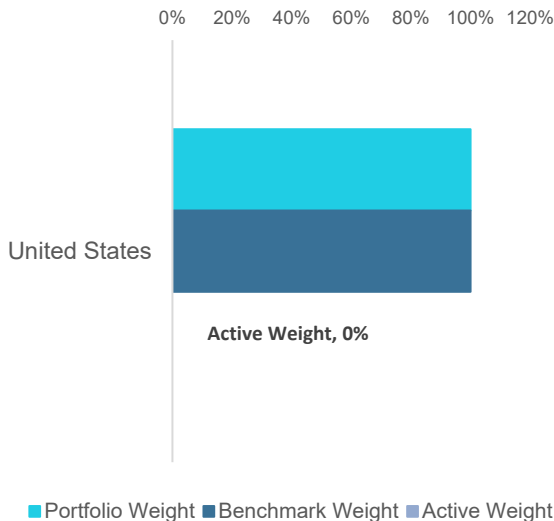


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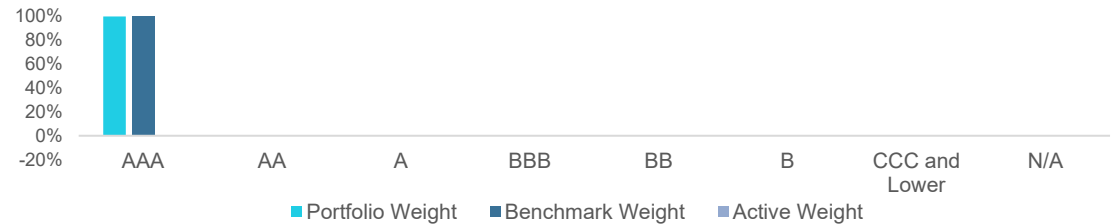
## Portfolio Risk Summary

<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
6.5%	6.6%
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
0.1%	0.98
Effective Duration 6.58	Yield to Worst 4.7%

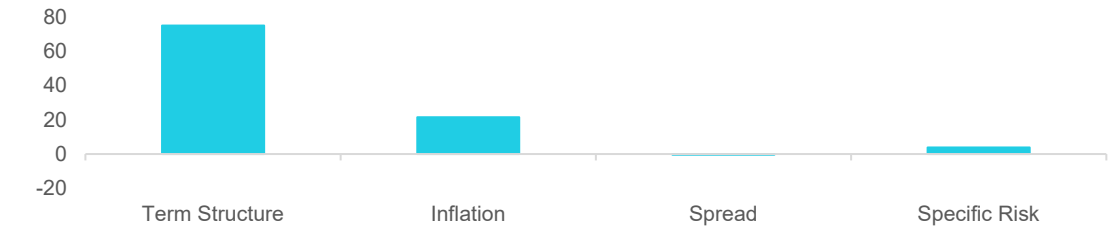
## Top Country by Weight



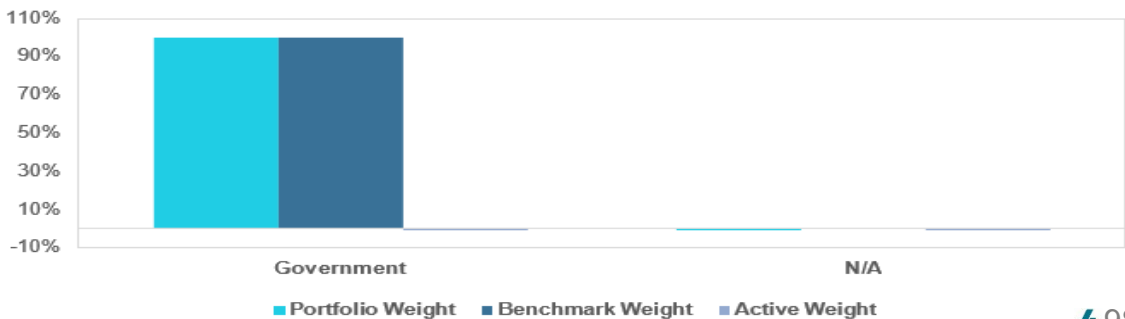
## Allocation by S&P Rating



## Active Risk from Common Factors



## Portfolio Allocation by Bond Sector

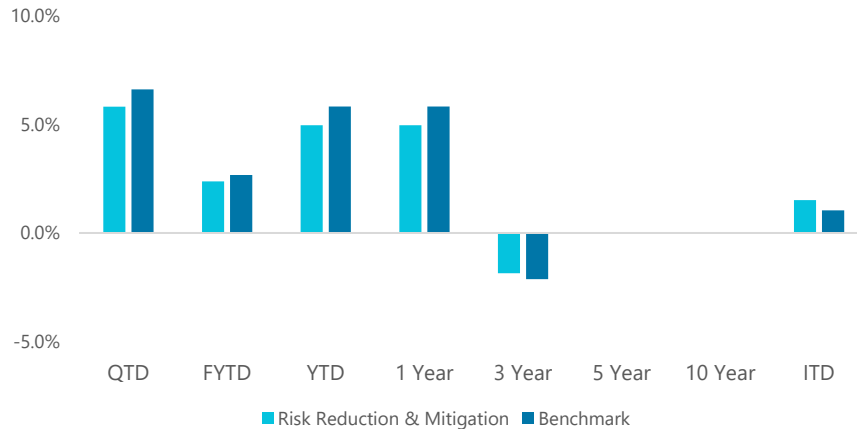


# risk reduction & mitigation

# Summary

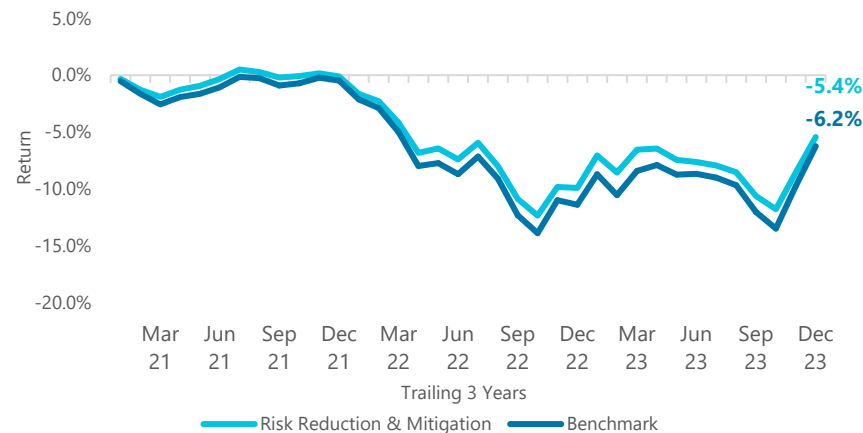
for the quarter ended December 31, 2023

## Performance (net)



	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD
<b>Risk Reduction &amp; Mitigation</b>	<b>5.8%</b>	<b>2.4%</b>	<b>5.0%</b>	<b>5.0%</b>	<b>-1.9%</b>	--	--	<b>1.5%</b>
Benchmark	6.6%	2.7%	5.8%	5.8%	-2.1%	--	--	1.0%
Excess	-0.8%	-0.3%	-0.9%	-0.9%	0.3%	--	--	0.5%

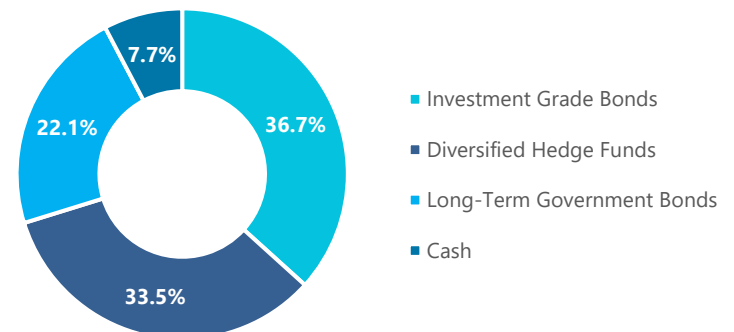
## Cumulative Return



## Functional Category

	QTD	FYTD	YTD	1 Year	3 Year
<b>Investment Grade Bonds</b>	<b>6.8%</b>	<b>3.4%</b>	<b>5.8%</b>	<b>5.8%</b>	<b>-3.3%</b>
BBG BC Aggregate Bond Index	6.8%	3.4%	5.5%	5.5%	-3.3%
Excess	0.0%	0.0%	0.3%	0.3%	0.0%
<b>Diversified Hedge Funds</b>	<b>1.8%</b>	<b>3.4%</b>	<b>5.3%</b>	<b>5.3%</b>	<b>6.5%</b>
Diversified Hedge Funds Policy Benchmark	2.0%	4.0%	7.7%	7.7%	4.6%
Excess	-0.2%	-0.6%	-2.4%	-2.4%	1.9%
<b>Long-Term Government Bonds</b>	<b>12.3%</b>	<b>-1.1%</b>	<b>2.5%</b>	<b>2.5%</b>	--
Bloomberg U.S. Treasury: Long	12.7%	-0.6%	3.1%	3.1%	--
Excess	-0.4%	-0.5%	-0.5%	-0.5%	--
<b>Cash</b>	<b>1.8%</b>	<b>2.4%</b>	<b>5.6%</b>	<b>5.6%</b>	<b>3.2%</b>
Cash Policy Benchmark	1.4%	2.8%	5.3%	5.3%	2.2%
Excess	0.4%	-0.4%	0.4%	0.4%	1.0%

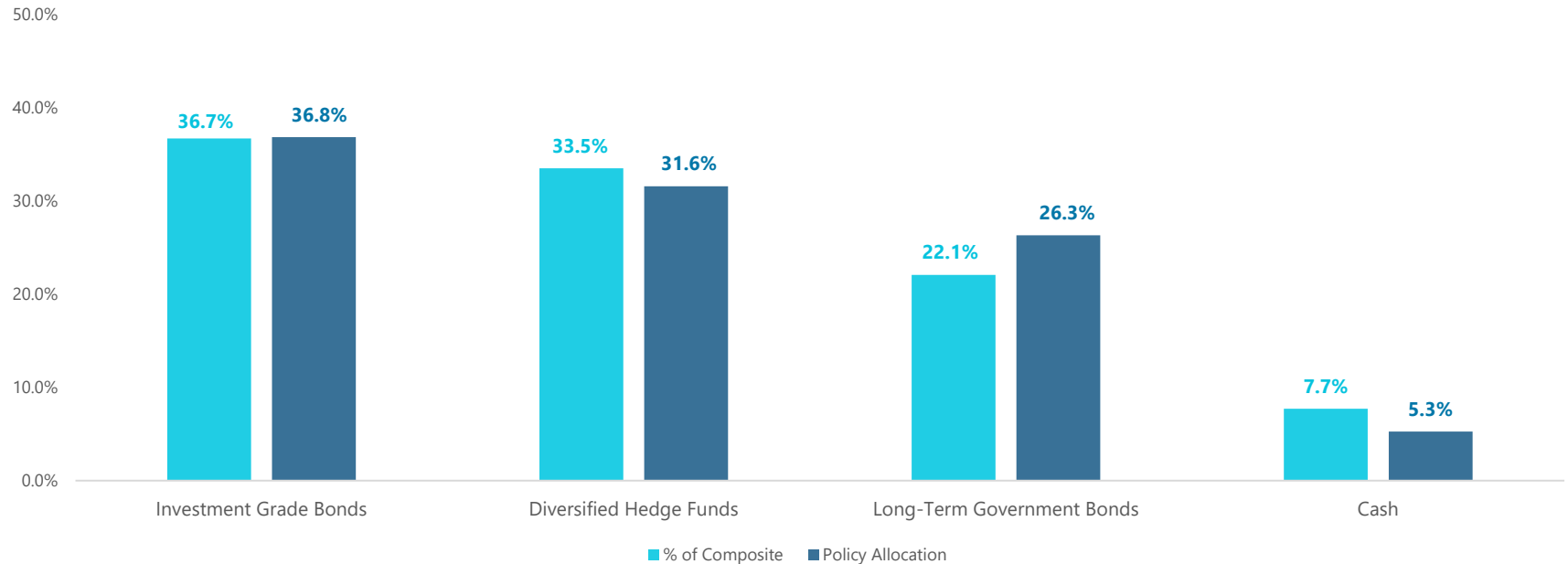
## Exposure



# Asset Allocation

for the quarter ended December 31, 2023

## Actual vs. Policy

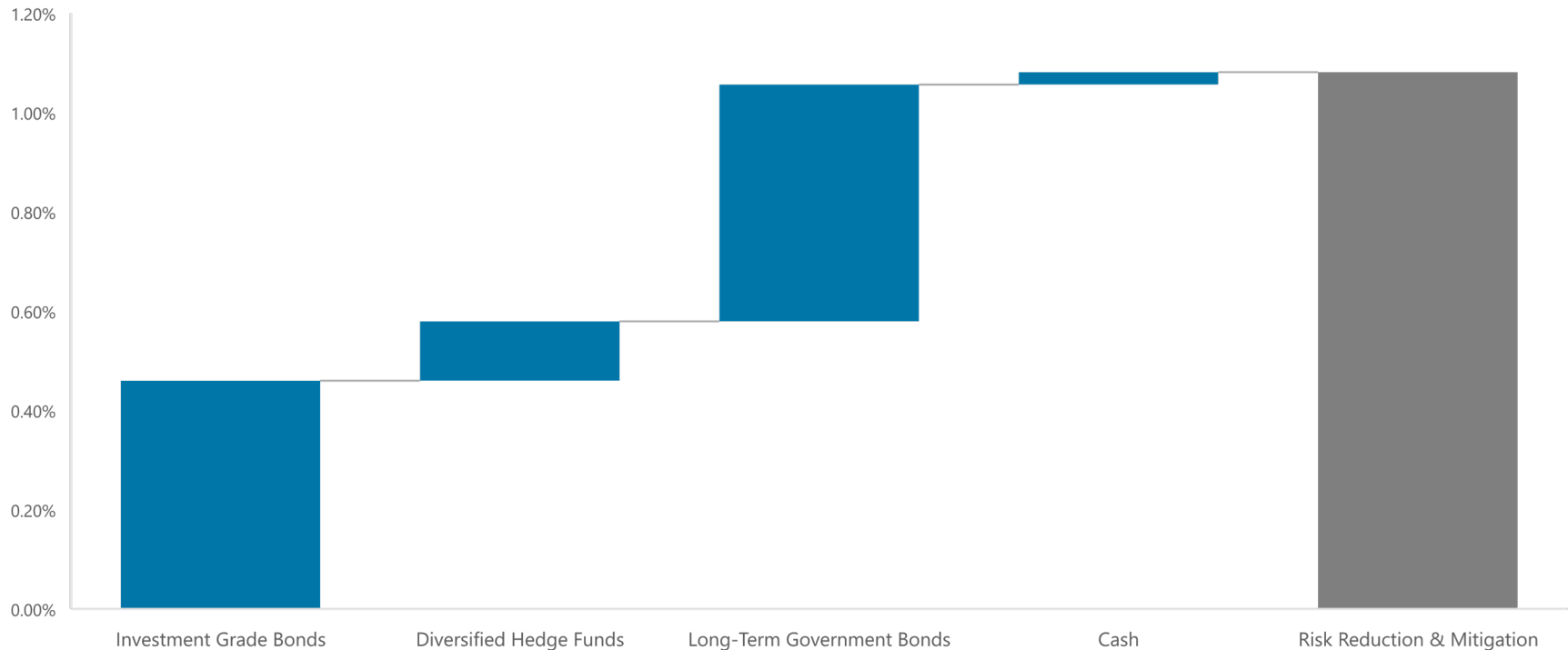


	Ending Market Value (mm)	% of Composite	Policy Allocation	Over / Under (%)	Over / Under (mm)
<b>Risk Reduction &amp; Mitigation</b>	<b>14,202</b>	<b>100.0%</b>	<b>100.0%</b>		
Investment Grade Bonds	5,213	36.7%	36.8%	-0.8%	-110
Diversified Hedge Funds	4,759	33.5%	31.6%	1.3%	191
Long-Term Government Bonds	3,135	22.1%	26.3%	-4.6%	-658
Cash	1,095	7.7%	5.3%	2.3%	329

# Contribution to Return

for the quarter ended December 31, 2023

## QTD Contribution to Return



Functional Category	Contributors	Detractors
Investment Grade Bonds	0.46% BlackRock Long Treasury Bonds	0.48%
Diversified Hedge Funds	0.12% BTC US Debt Index Fund	0.26%
Long-Term Government Bonds	0.48% Allspring/Wells	0.12%
Cash	0.03% Pugh Capital Mgmt	0.08%
Risk Reduction & Mitigation	1.08% Capula GRV	0.03%

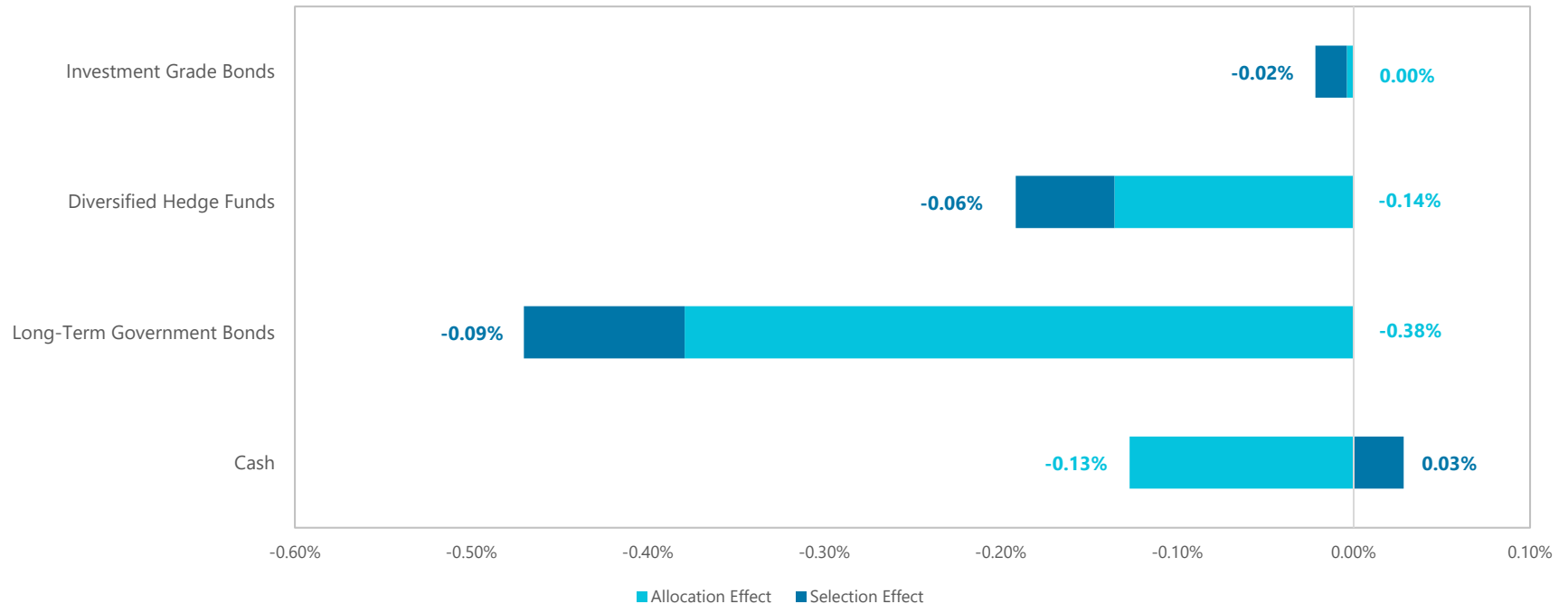
# Return Attribution

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## QTD Performance Attribution<sup>1</sup>



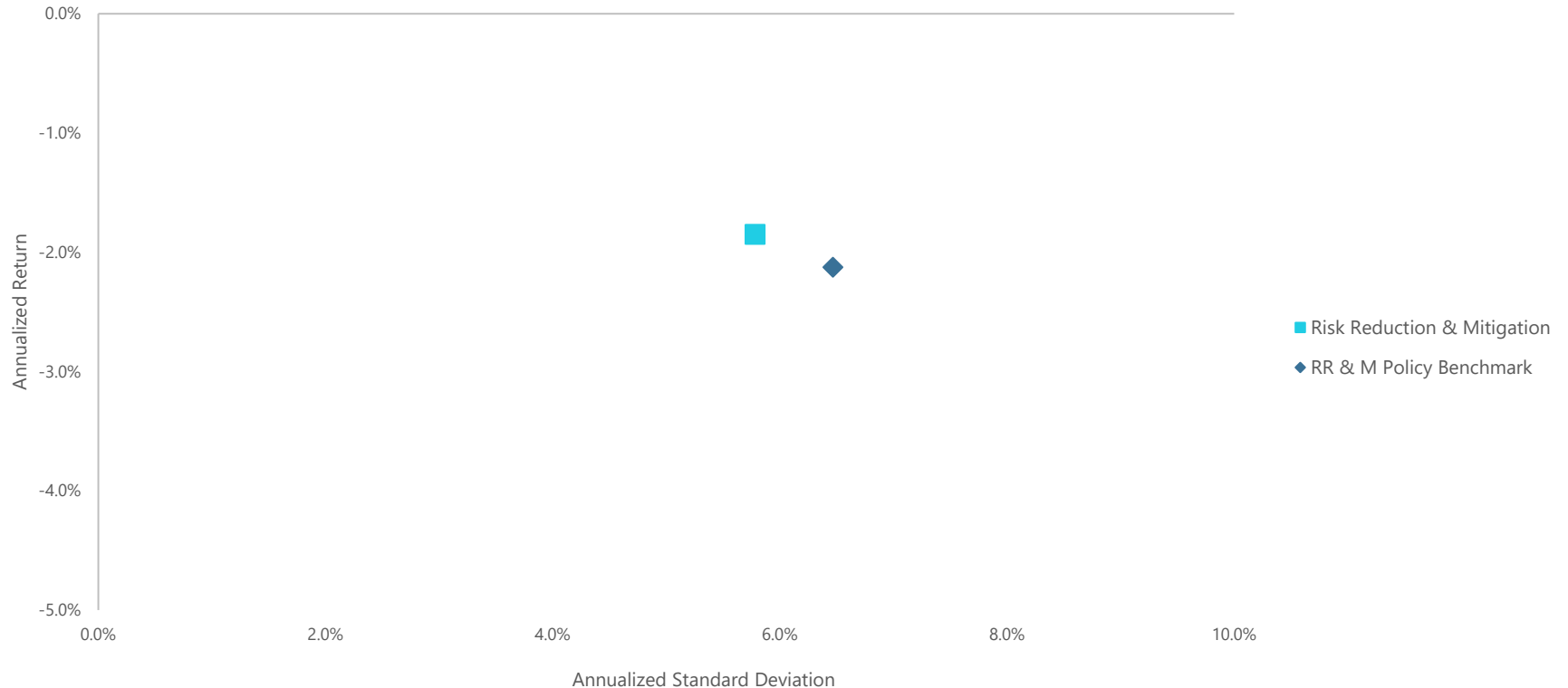
	Ending Market Value (mm)	% of Composite	Policy Allocation	Portfolio Return	Benchmark Return	Allocation Effect	Selection Effect	Total Value Add
<b>Risk Reduction &amp; Mitigation</b>	<b>14,202</b>	<b>100.0%</b>	<b>100.0%</b>	<b>5.8%</b>	<b>6.6%</b>	<b>-0.65%</b>	<b>-0.14%</b>	<b>-0.78%</b>
Investment Grade Bonds	5,213	36.7%	36.8%	6.8%	6.8%	0.00%	-0.02%	-0.02%
Diversified Hedge Funds	4,759	33.5%	31.6%	1.8%	2.0%	-0.14%	-0.06%	-0.19%
Long-Term Government Bonds	3,135	22.1%	26.3%	12.3%	12.7%	-0.38%	-0.09%	-0.47%
Cash	1,095	7.7%	5.3%	1.8%	1.4%	-0.13%	0.03%	-0.10%

<sup>1</sup> Total Value Add column includes Interaction Effect.

# Risk vs. Return

for the quarter ended December 31, 2023

## 3 Year (Annualized)



	Annualized Return	Standard Deviation	Sharpe Ratio	Information Ratio	Beta	Tracking Error
<b>Risk Reduction &amp; Mitigation</b>	<b>-1.9%</b>	<b>5.8%</b>	<b>-0.66</b>	<b>0.26</b>	<b>0.89</b>	<b>0.9%</b>
RR & M Policy Benchmark	-2.1%	6.5%				



# Performance Detail

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Annualized Net Returns

	% of Composite	Ending Market Value (mm)	Prior Quarter Ending MV (mm)	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date
<b>Risk Reduction &amp; Mitigation</b>	<b>100.0%</b>	<b>14,202</b>	<b>13,267</b>	<b>5.8%</b>	<b>2.4%</b>	<b>5.0%</b>	<b>5.0%</b>	<b>-1.9%</b>	<b>--</b>	<b>--</b>	<b>1.5%</b>	<b>Apr-2019</b>
RR & M Policy Benchmark				6.6%	2.7%	5.8%	5.8%	-2.1%	--	--	1.0%	
<b>Investment Grade Bonds</b>	<b>36.7%</b>	<b>5,213</b>	<b>4,883</b>	<b>6.8%</b>	<b>3.4%</b>	<b>5.8%</b>	<b>5.8%</b>	<b>-3.3%</b>	<b>1.3%</b>	<b>2.1%</b>	<b>5.2%</b>	<b>Nov-1994</b>
BBG BC Aggregate Bond Index				6.8%	3.4%	5.5%	5.5%	-3.3%	1.1%	1.8%	4.7%	
Allspring/Wells	9.4%	1,329	1,243	6.9%	3.6%	6.2%	6.2%	-3.1%	1.6%	2.2%	3.9%	Mar-2004
BTC US Debt Index Fund	21.1%	2,993	2,804	6.7%	3.3%	5.7%	5.7%	-3.3%	1.1%	1.9%	3.9%	Nov-1999
MHLP	0.1%	9	9	-0.6%	0.6%	3.2%	3.2%	4.5%	4.8%	5.5%	5.3%	Apr-2005
Pugh Capital Mgmt	6.2%	883	827	6.8%	3.3%	5.7%	5.7%	-3.4%	1.3%	1.9%	3.3%	Jul-2005
<b>Diversified Hedge Funds</b>	<b>33.5%</b>	<b>4,759</b>	<b>4,676</b>	<b>1.8%</b>	<b>3.4%</b>	<b>5.3%</b>	<b>5.3%</b>	<b>6.5%</b>	<b>--</b>	<b>--</b>	<b>6.4%</b>	<b>Apr-2019</b>
Diversified Hedge Funds Policy Benchmark				2.0%	4.0%	7.7%	7.7%	4.6%	--	--	4.4%	
AM Asia Strategies	1.7%	234	230	1.9%	-4.5%	8.0%	8.0%	--	--	--	1.5%	Jun-2021
Brevar Howard Master Fund	4.5%	640	631	1.5%	2.5%	-1.5%	-1.5%	--	--	--	5.3%	Apr-2021
Capula GRV	5.0%	713	694	2.7%	5.6%	11.1%	11.1%	8.1%	7.6%	--	7.4%	Dec-2018
Caxton Global Investments	2.1%	296	283	4.3%	4.9%	-0.4%	-0.4%	--	--	--	6.3%	Feb-2021
DK Institutional Partners	3.6%	513	506	1.4%	3.3%	5.6%	5.6%	4.3%	5.2%	--	4.8%	May-2018
Grosvenor HFOF	0.1%	16	20	--	--	--	--	--	--	--	--	Nov-2011
HBK Multi-strategy	4.4%	621	604	2.8%	6.0%	7.4%	7.4%	7.0%	6.2%	--	5.8%	Jun-2018
Hudson Bay	4.9%	693	684	1.2%	3.2%	6.6%	6.6%	8.9%	--	--	9.5%	Jul-2020
Polar	3.5%	494	491	0.6%	2.1%	5.8%	5.8%	5.1%	--	--	9.1%	May-2020
Stable Asset Management	3.8%	539	532	1.3%	3.7%	4.4%	4.4%	--	--	--	1.7%	Aug-2021
<b>Long-Term Government Bonds</b>	<b>22.1%</b>	<b>3,135</b>	<b>2,792</b>	<b>12.3%</b>	<b>-1.1%</b>	<b>2.5%</b>	<b>2.5%</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-13.6%</b>	<b>Nov-2021</b>
Bloomberg U.S. Treasury: Long				12.7%	-0.6%	3.1%	3.1%	--	--	--	-14.1%	Nov-2021
BlackRock Long Treasury Bonds	22.1%	3,135	2,792	12.3%	-1.1%	2.5%	2.5%	--	--	--	-13.6%	Nov-2021
<b>Cash</b>	<b>7.7%</b>	<b>1,095</b>	<b>916</b>	<b>1.8%</b>	<b>2.4%</b>	<b>5.6%</b>	<b>5.6%</b>	<b>3.2%</b>	<b>2.6%</b>	<b>1.8%</b>	<b>2.0%</b>	<b>Jun-2001</b>
Cash Policy Benchmark				1.4%	2.8%	5.3%	5.3%	2.2%	1.9%	1.3%	1.6%	

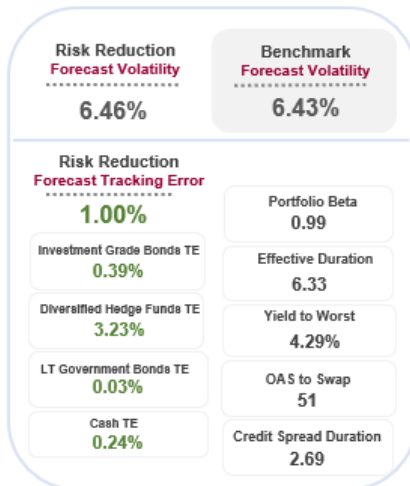
# Risk Reduction & Mitigation Risk Summary

for the quarter ended December 31, 2023

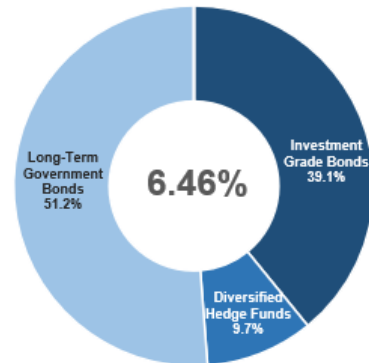
## Realized (Ex-Post) Risks



## Projected (Ex-Ante) Risks

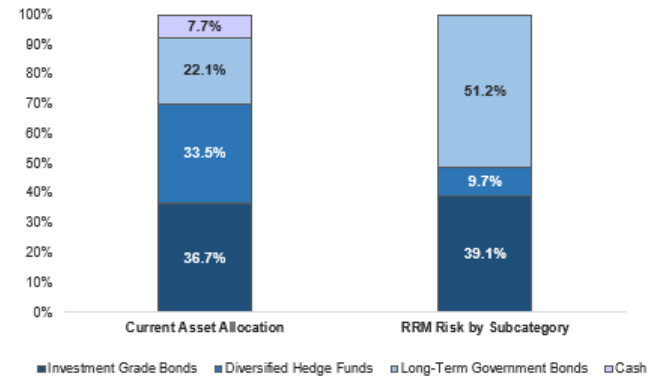


## Subcategory Contributions to Risk Reduction & Mitigation (RRM) Risk



## Risk Reduction & Mitigation Asset Allocation

Capital-based versus Risk-based

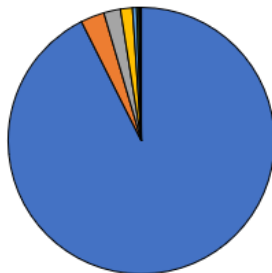
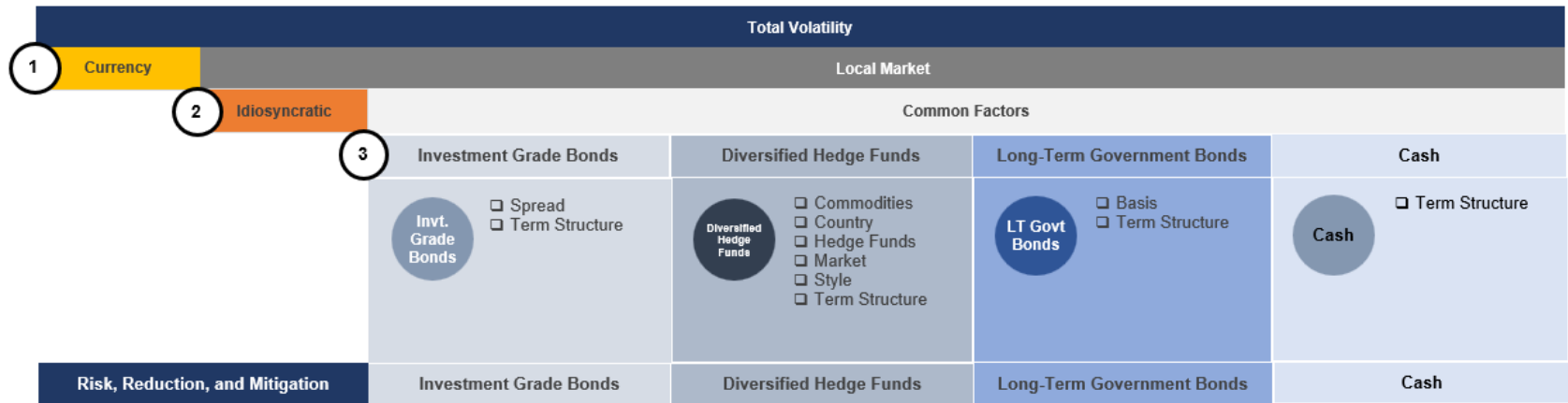


# Risk Reduction & Mitigation

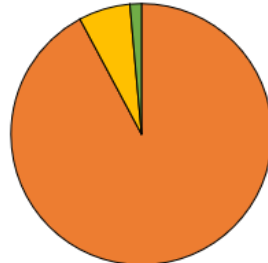
## Risk Summary

for the quarter ended December 31, 2023

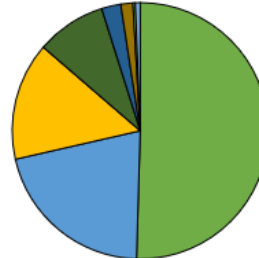
### Decomposition of MSCI Risk Factors



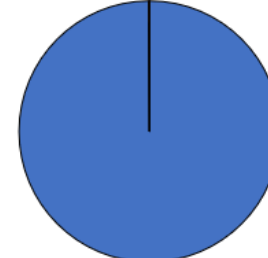
- Term Structure 92.9%
- Currency 2.9%
- Spread 2.0%
- Idiosyncratic 1.5%
- Implied Volatility 0.5%
- Hedge Funds 0.3%
- Market 0.1%
- Industry -0.1%
- Country -0.1%



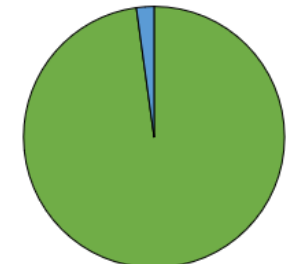
- Term Structure 92.2%
- Spread 6.4%
- Implied Volatility 1.4%



- Idiosyncratic 51.1%
- Currency 21.2%
- Term Structure 15.1%
- Hedge Funds 8.9%
- Commodities 2.5%
- Market 1.5%
- Style 0.3%
- Country -0.6%



- Term Structure 100.1%
- Basis -0.1%



- Term Structure 97.8%
- Idiosyncratic 2.2%

# Risk Reduction & Mitigation

## Investment Grade Bonds

### Allspring/Wells

for the quarter ended December 31, 2023

#### Strategy

A core fixed income strategy focusing on bottom-up quantitative and qualitative security selection and comprehensive risk management. Value is added primarily through security selection and sector rotation.

Inception Date: June 2004

#### Portfolio Characteristics

	Portfolio	Benchmark
No. of Issues	939.0	0.0
Effective Duration	6.2	6.2
Convexity	0.6	0.6
Coupon Rate	3.7	3.2
Yield to Maturity	4.5	4.4
Current Yield	3.9	3.4
Rating – Moody's	AA-1	AA-2
Rating – S & P	AA	AA-

#### Top Holdings (% of assets)

US TREASURY N/B	3.1%
US TREASURY N/B	2.0%
US TREASURY N/B	1.7%
US TREASURY N/B	1.5%
US TREASURY N/B	1.4%
<b>Top 5 Holdings</b>	<b>9.6%</b>

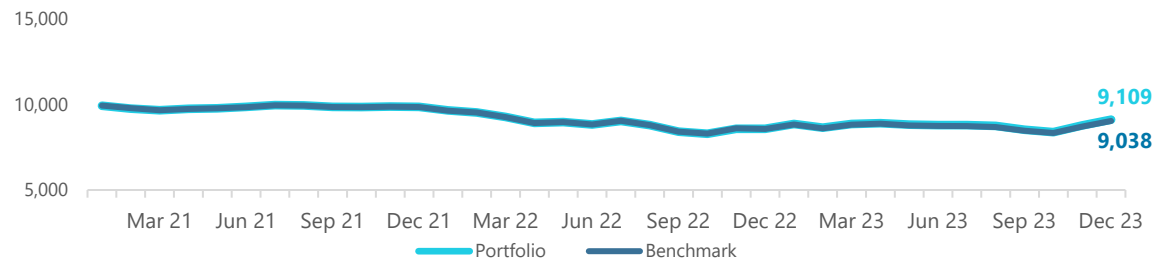
#### Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Allspring/Wells</b>	<b>1,328.7</b>	<b>6.9%</b>	<b>6.2%</b>	<b>-3.1%</b>	<b>1.6%</b>
BBG BC Aggregate Bond Index		6.8%	5.5%	-3.3%	1.1%
Risk Reduction & Mitigation Policy BM		6.6%	5.8%	-2.1%	--

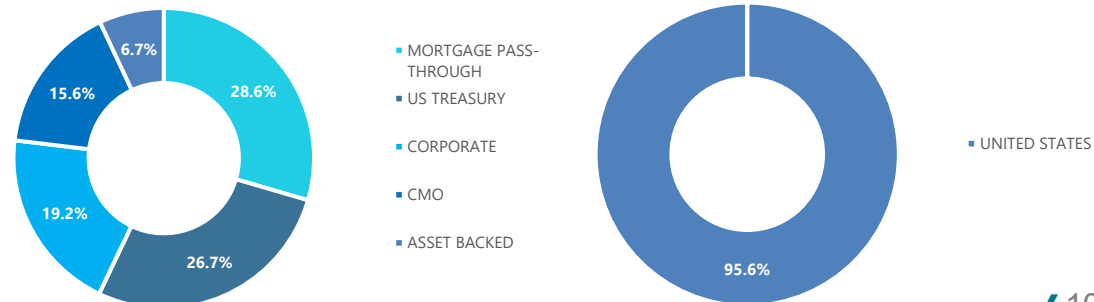
  

Universe data: US Fixed Income Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Allspring/Wells</b>	<b>7.0%</b>	<b>26</b>	<b>6.3%</b>	<b>46</b>	<b>-3.0%</b>	<b>79</b>	<b>1.7%</b>	<b>66</b>
Median	4.7%		6.0%		-0.3%		2.1%	
No. of Observations	755							

#### Growth of \$10,000



#### Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Risk Reduction & Mitigation Risk Analysis

## Investment Grade Bonds

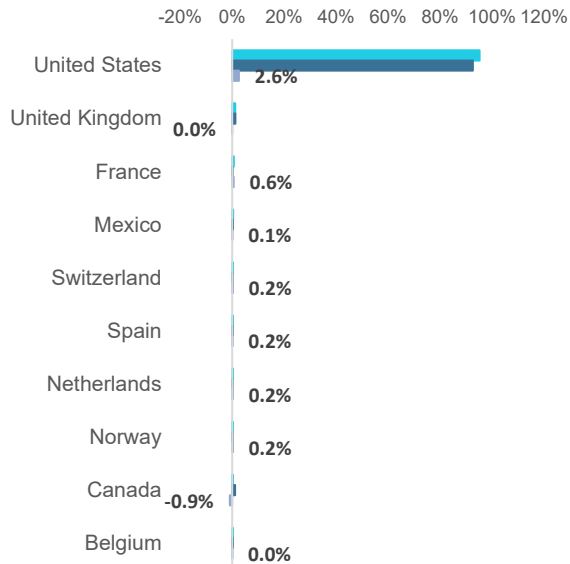
### Allspring/Wells

for the quarter ended December 31, 2023

### Portfolio Risk Summary

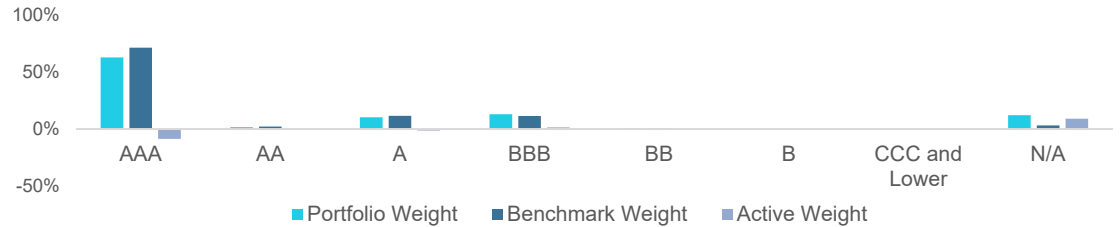
<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
7.2%	6.7%
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
0.6%	1.07

Effective Duration	Credit Spread Duration	Yield to Worst
6.8	4.3	4.5%

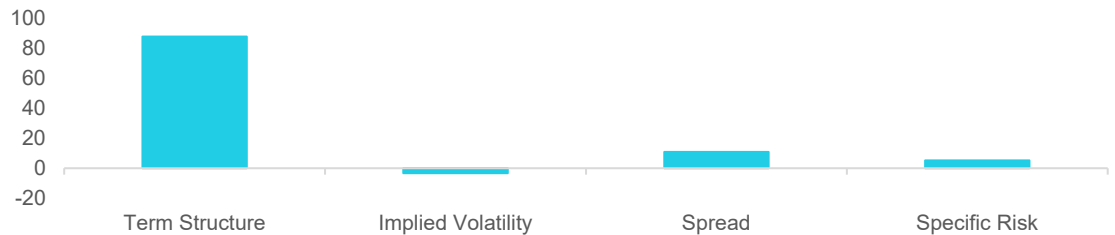


■ Portfolio Weight ■ Benchmark Weight ■ Active Weight

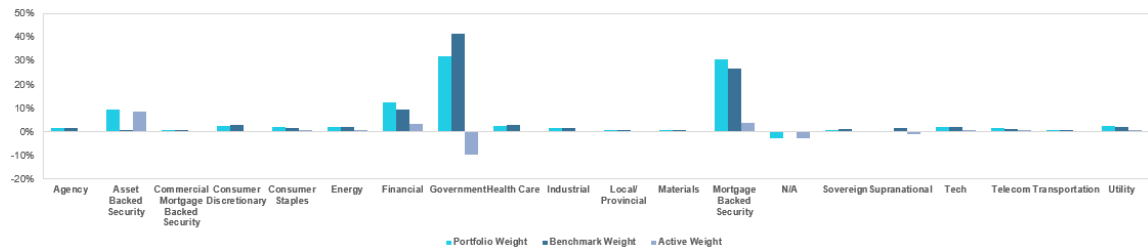
### Allocation by S&P Rating



### Active Risk from Common Factors



### Portfolio Allocation by Bond Sector



# Risk Reduction & Mitigation

## Investment Grade Bonds

### Pugh Capital

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

### Strategy

A core fixed income strategy that invests in investment-grade securities, with an emphasis on higher credit quality and mortgage-backed securities. The strategy seeks to add value relative to the Index by minimizing downside risk across the portfolio while adding incremental return through issue selection.

Inception Date: July 2005

### Portfolio Characteristics

	Portfolio	Benchmark
No. of Issues	316.0	0.0
Effective Duration	6.2	6.2
Convexity	0.6	0.6
Coupon Rate	3.9	3.2
Yield to Maturity	4.5	4.4
Current Yield	4.0	3.4
Rating – Moody's	AA-2	AA-2
Rating – S & P	AA-	AA-

### Top Holdings (% of assets)

US TREASURY N/B	2.2%
US TREASURY N/B	2.0%
US TREASURY N/B	1.7%
FORD CREDIT AUTO OWNER TRUST/F	1.6%
GNMA II POOL MA8151	1.5%
<b>Top 5 Holdings</b>	<b>8.9%</b>

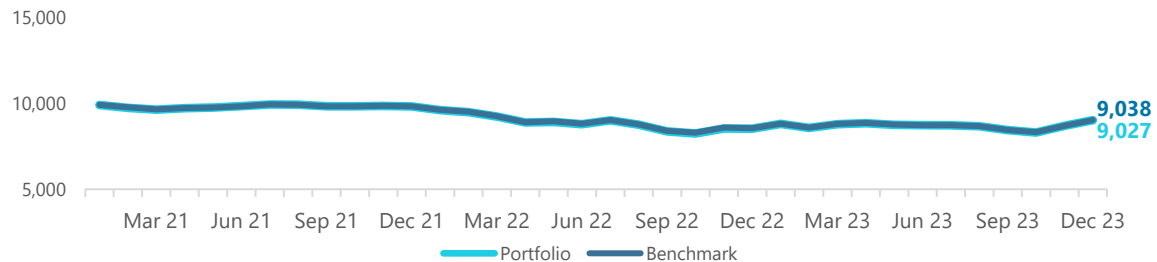
### Performance (net)<sup>1</sup>

	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>Pugh Capital Mgmt</b>	<b>882.8</b>	<b>6.8%</b>	<b>5.7%</b>	<b>-3.4%</b>	<b>1.3%</b>
BBG BC Aggregate Bond Index		6.8%	5.5%	-3.3%	1.1%
Risk Reduction & Mitigation Policy BM		6.6%	5.8%	-2.1%	--

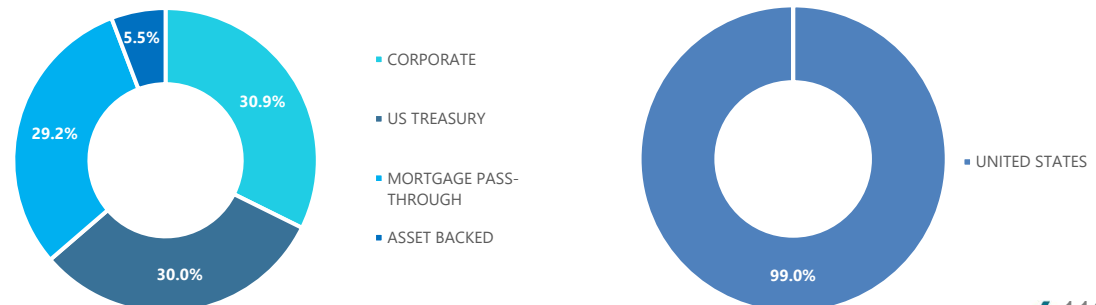
  

Universe data: US Fixed Income Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>Pugh Capital Mgmt</b>	<b>6.8%</b>	<b>30</b>	<b>5.8%</b>	<b>52</b>	<b>-3.2%</b>	<b>81</b>	<b>1.4%</b>	<b>77</b>
Median	4.7%		6.0%		-0.3%		2.1%	
No. of Observations		755						

### Growth of \$10,000



### Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.

# Risk Reduction & Mitigation Risk Analysis

## Investment Grade Bonds

### Pugh Capital

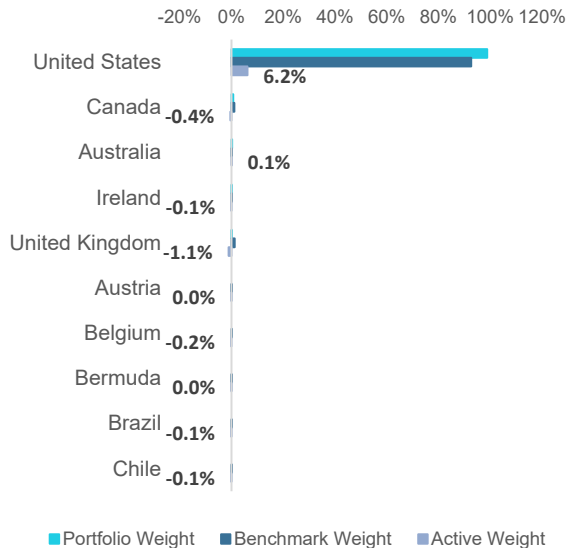
for the quarter ended December 31, 2023

### Portfolio Risk Summary

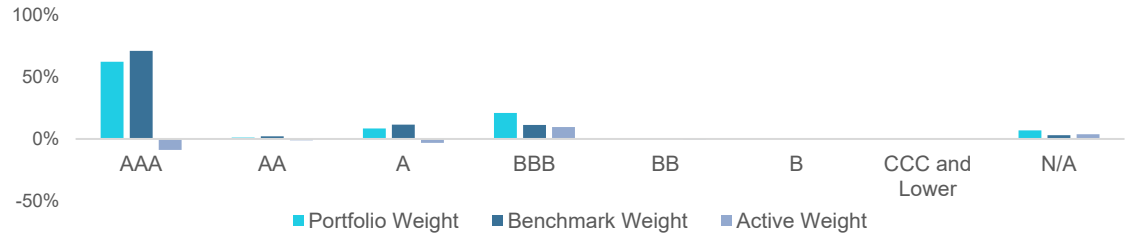
<b>PORTFOLIO</b> Forecast Volatility	<b>BENCHMARK</b> Forecast Volatility
7.0%	6.7%
<b>PORTFOLIO</b> Forecast Tracking Error	<b>PORTFOLIO</b> Beta
0.4%	1.05

Effective Duration	Credit Spread Duration	Yield to Worst
6.4	4.3	4.5%

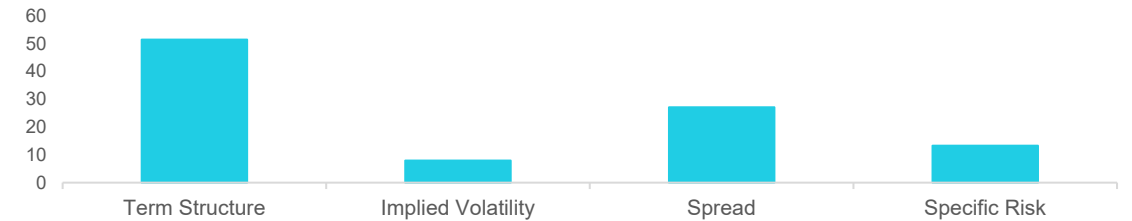
### Top 10 Countries by Weight



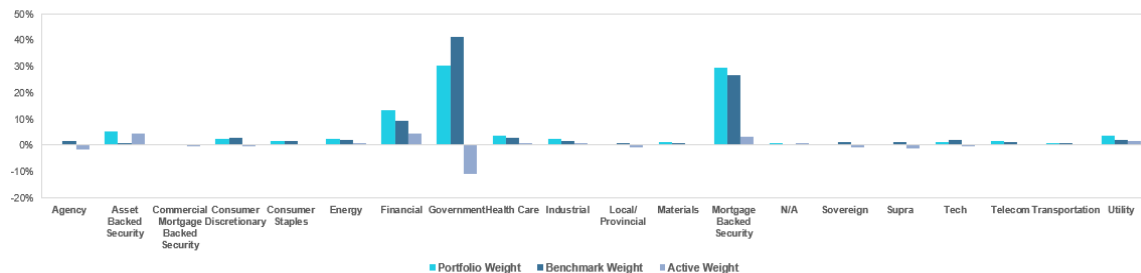
### Allocation by S&P Rating



### Active Risk from Common Factors



### Portfolio Allocation by Bond Sector



# Risk Reduction & Mitigation

## Long-term Government Bonds

### BlackRock

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

#### Strategy

Seeks investment results that correspond generally to the price and yield performance of long duration U.S. government bonds.

Inception Date: Nov 2021

#### Risk Statistics (since inception)

Standard Deviation	17.3%
Benchmark Standard Deviation	17.4%
Sharpe Ratio	-0.92
Information Ratio	-0.35
Beta	0.99
Tracking Error	1.1%

#### Top Holdings (% of assets)

US TREASURY N/B	2.5%
US TREASURY N/B	2.5%
US TREASURY N/B	2.4%
US TREASURY N/B	2.4%
US TREASURY N/B	2.3%
<b>Top 5 Holdings</b>	<b>12.1%</b>

#### Performance (net)<sup>1</sup>

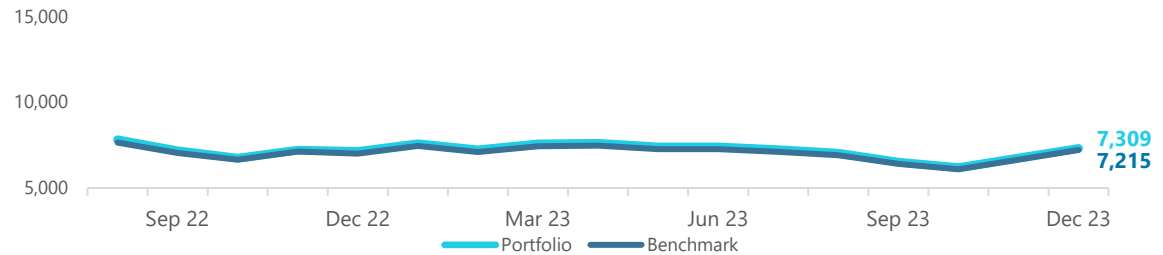
	Ending Market Value (mm)	QTD	1 Year	3 Year	5 Year
<b>BlackRock Long Treasury Bonds</b>	<b>3,134.7</b>	<b>12.3%</b>	<b>2.5%</b>	--	--
Bloomberg U.S. Treasury: Long		12.7%	3.1%	--	--
Risk Reduction & Mitigation Policy BM		6.6%	5.8%	-2.1%	--

Universe data: US Fixed Income Funds	QTD	Rank	1 Year	Rank	3 Year	Rank	5 Year	Rank
<b>BlackRock Long Treasury Bonds</b>	<b>12.3%</b>	<b>10</b>	<b>2.6%</b>	<b>81</b>	--	--	--	--
Median	4.7%		6.0%		--	--	--	

No. of Observations: 755

#### Growth of \$10,000



#### Top Exposures (% of assets)<sup>2</sup>



<sup>1</sup> Universe data is gross-of-fees.

<sup>2</sup> Charts display top exposures and may not add up to 100%.



# Risk Reduction & Mitigation Risk Analysis

## Long-term Government Bonds

### BlackRock

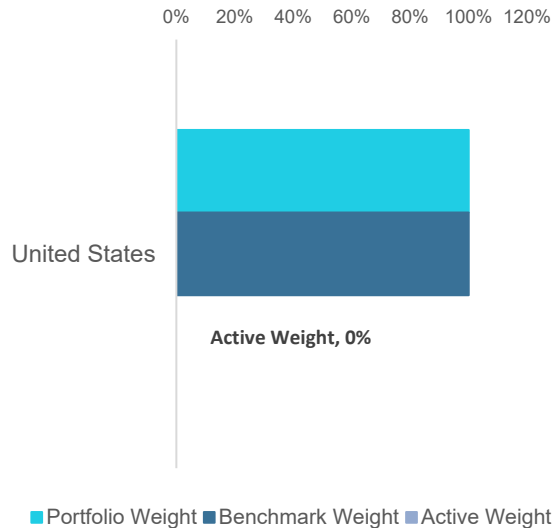
for the quarter ended December 31, 2023

#### Portfolio Risk Summary

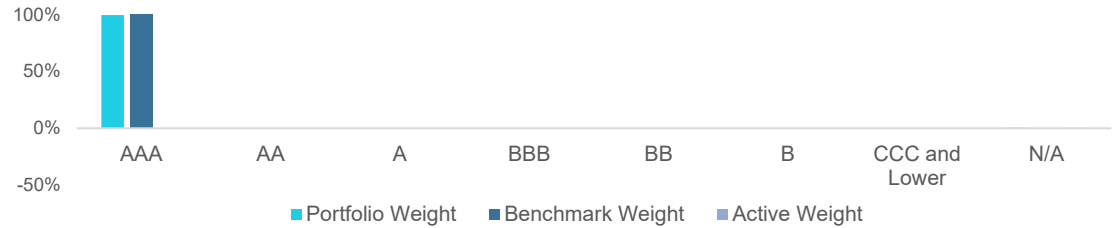
<b>PORTFOLIO</b> Forecast Volatility <b>15.3%</b>	<b>BENCHMARK</b> Forecast Volatility <b>15.3%</b>
<b>PORTFOLIO</b> Forecast Tracking Error <b>0.03%</b>	<b>PORTFOLIO</b> Beta <b>1.00</b>

Effective Duration 15.8	Credit Spread Duration 0.0	Yield to Worst 4.1%
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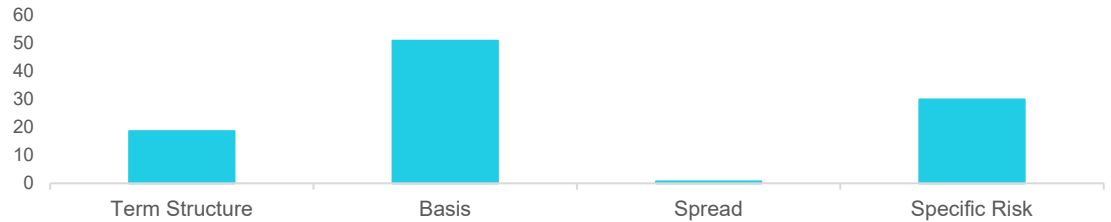
#### Top Country by Weight



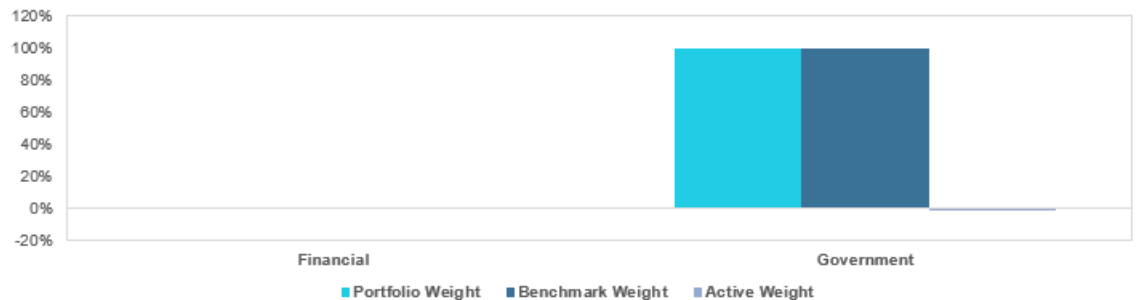
#### Allocation by S&P Rating



#### Active Risk from Common Factors



#### Portfolio Allocation by Bond Sector



# overlays & hedges

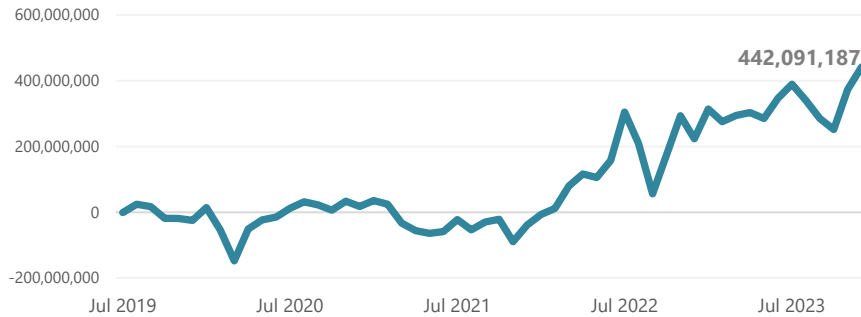
# Total Fund Cash Overlay

for the quarter ended December 31, 2023



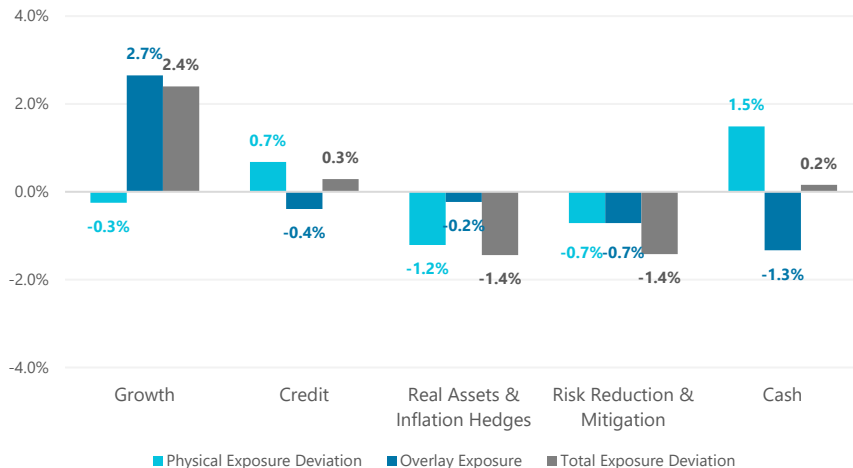
Los Angeles County Employees Retirement Association

## Cumulative Gain / Loss



	Total Gain / Loss (in \$)
QTD	156,609,251
FYTD	95,031,559
YTD	218,646,901
Since Inception	442,091,187

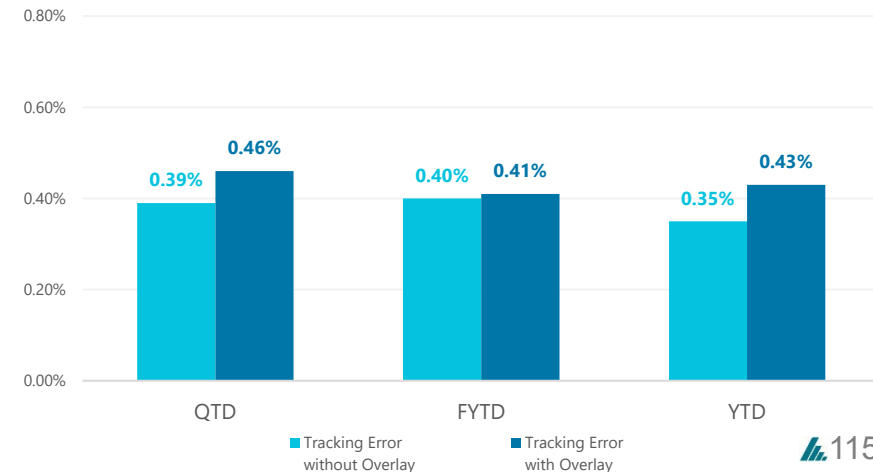
## Total Exposure



## Gain / Loss Attribution

(in \$)	QTD	FYTD	YTD	Since Inception
Domestic Equity	114,700,675	64,867,012	139,913,151	-19,273,792
International Equity	71,338,007	33,111,181	82,649,553	-95,995,834
Fixed Income	-40,973,399	-15,458,025	-12,484,221	116,343,795
Commodities	10,151,379	10,043,918	4,027,502	434,178,089
<b>Security Only Subtotal</b>	<b>155,216,662</b>	<b>92,564,086</b>	<b>214,105,985</b>	<b>435,252,258</b>
Interest	1,392,589	2,467,473	4,540,916	6,838,929
<b>Total Program</b>	<b>156,609,251</b>	<b>95,031,559</b>	<b>218,646,901</b>	<b>442,091,187</b>

## Tracking Error



# Global Equity Overlay

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

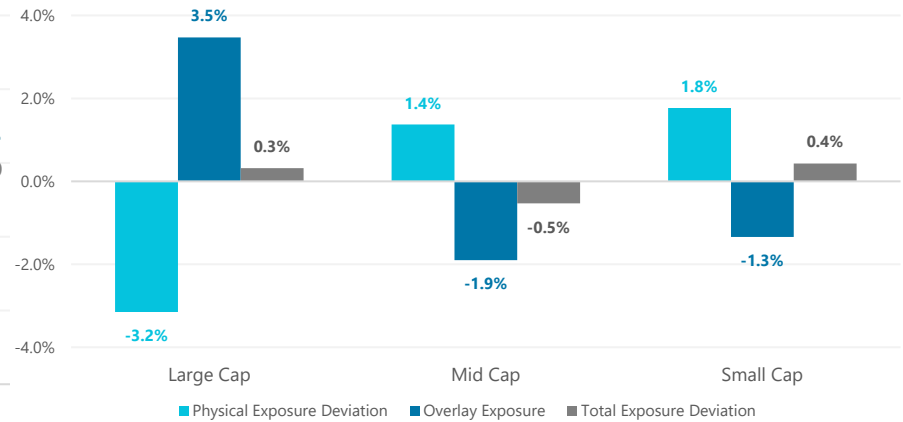
## Market Cap<sup>1</sup>

### Cumulative Gain / Loss

(in \$)



### Total Exposure



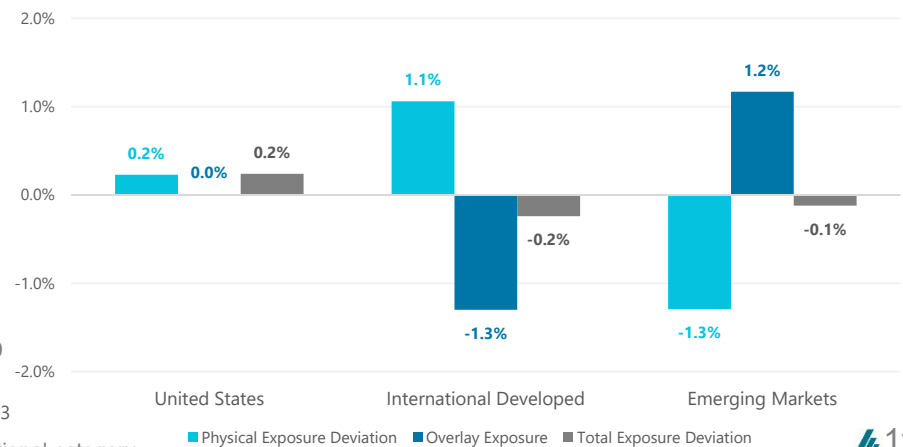
## Region<sup>1</sup>

### Cumulative Gain / Loss

(in \$)



### Total Exposure



<sup>1</sup> Global Equity Market Cap and Region Overlay accounts are part of the Growth functional category.

# Currency Hedge

for the quarter ended December 31, 2023

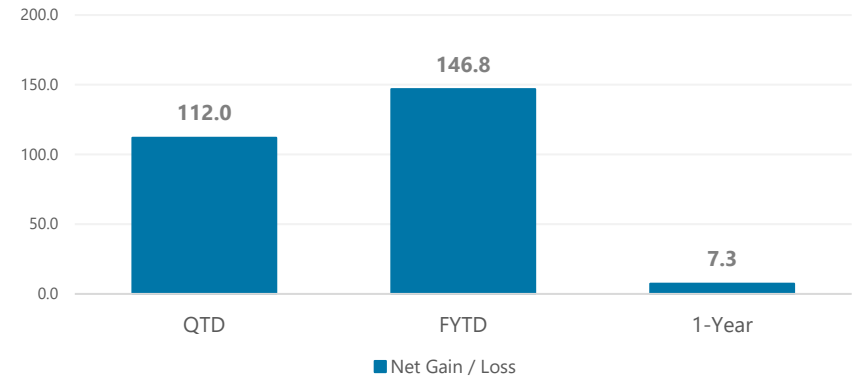


Los Angeles County Employees Retirement Association

## Fund Information

Total fund value	\$7.35 billion
Number of issues in fund	3,256
Benchmark	MSCI World ex US IMI Index 50% Hedged to USD
Number of issues in benchmark	3,256

## Gain / Loss Summary

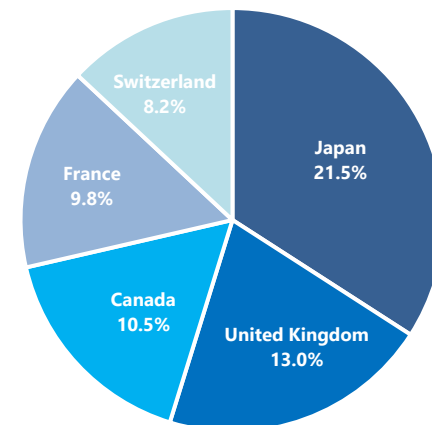


(in \$ mm)	QTD	FYTD	1-Year	Since Inception
Net Gain / Loss	112.0	146.8	7.3	1,505.6

## Top Holdings

	Country	Weight (%)
NOVO NORDISK CLASS B	Denmark	1.6%
NESTLE SA	Switzerland	1.5%
ASML HOLDING NV	Netherlands	1.5%
LVMH	France	1.1%
SHELL PLC	United Kingdom	1.0%
<b>Top 5 Holdings</b>		<b>6.6%</b>

## Top Countries



# private markets

# Summary

## Private Equity

for the quarter ended December 31, 2023



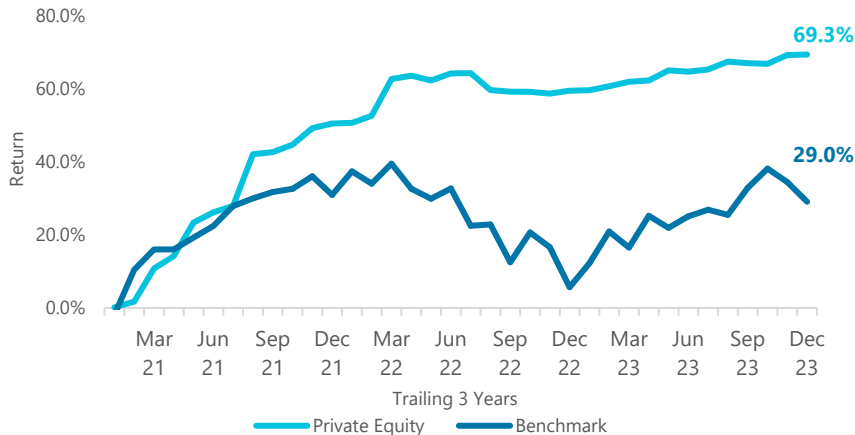
Los Angeles County Employees Retirement Association

### Performance (net)



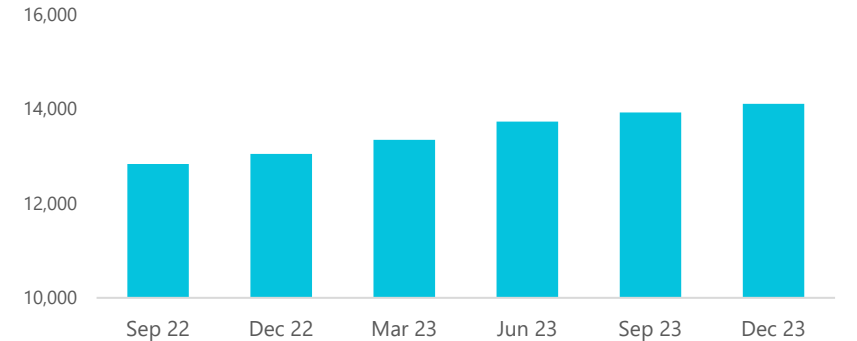
	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD
<b>Private Equity</b>	<b>1.4%</b>	<b>2.8%</b>	<b>6.2%</b>	<b>6.2%</b>	<b>19.2%</b>	<b>16.5%</b>	<b>15.7%</b>	<b>15.0%</b>
Benchmark	-2.9%	3.2%	22.1%	22.1%	8.9%	12.0%	12.8%	--
Excess	4.3%	-0.3%	-15.9%	-15.9%	10.3%	4.5%	2.9%	--

### Cumulative Return

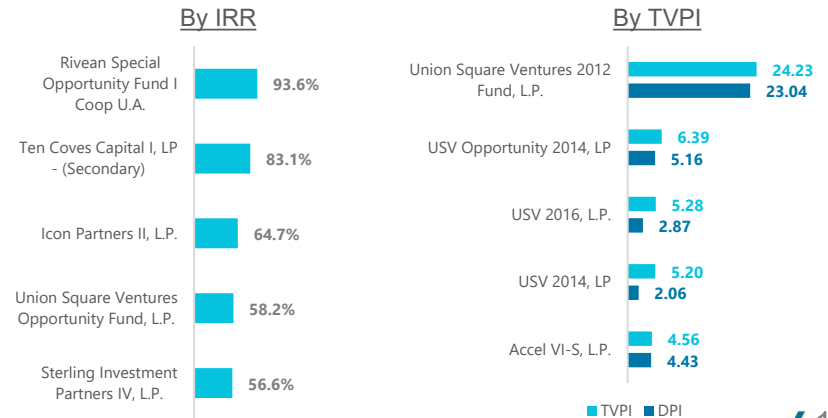


### Asset Growth (mm)

	QTD	FYTD	1 Year	3 Year
Beginning Market Value	13,933	13,933	13,054	8,166
Net Cash Flow	-18	-16	237	392
Gain/Loss	198	390	822	5,556
<b>Ending Market Value</b>	<b>14,113</b>	<b>14,113</b>	<b>14,113</b>	<b>14,113</b>



### Top Performing Investments (since inception)

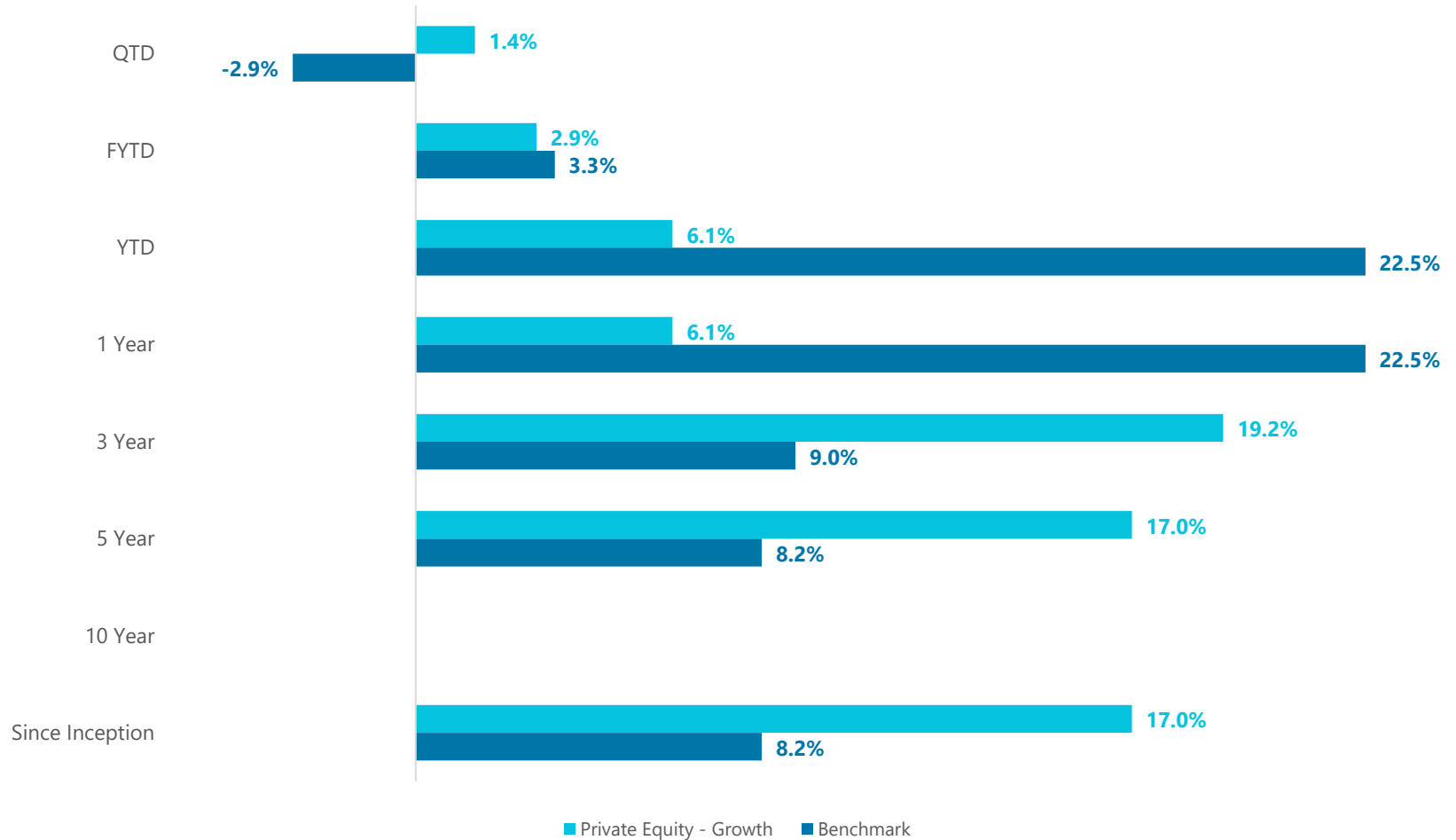


# Historical Returns

## Private Equity – Growth

for the quarter ended December 31, 2023

### Time-Weighted Returns (net)



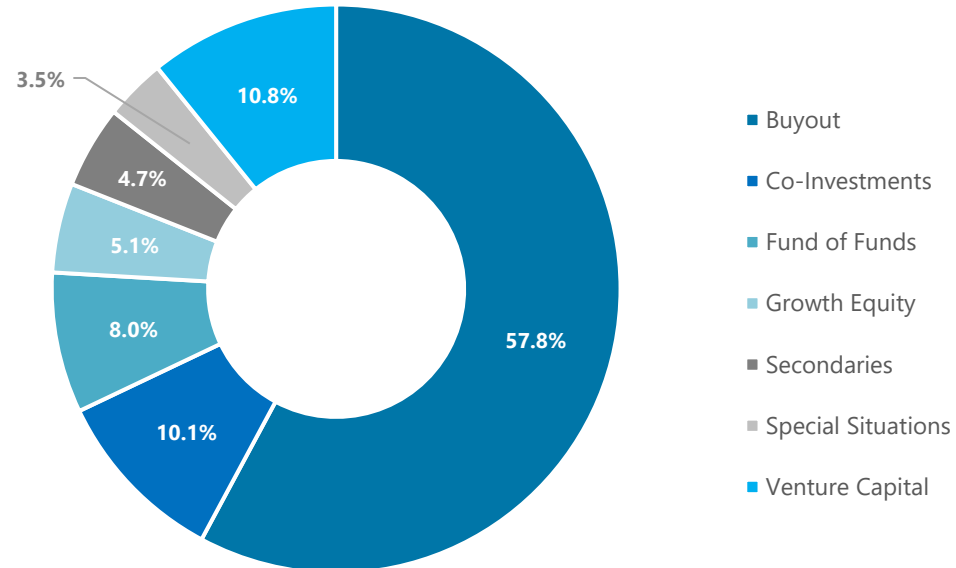


# Performance by Strategy

## Private Equity – Growth

for the quarter ended December 31, 2023

### By Strategy<sup>1,2</sup>



	Number of Investments	Commitments (mm)	Cumulative Contributions (mm)	Cumulative Distributions (mm)	Market Value (mm)	Total Value (mm)	Total Gain / Loss (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME
Buyout	212	15,833.4	13,939.8	15,258.8	8,010.2	23,269.0	9,329.2	1.09x	1.67x	13.9%	1.53
Co-Investments	34	1,579.1	1,557.0	1,035.9	1,397.4	2,433.3	876.3	0.67x	1.56x	18.0%	1.38
Fund of Funds	103	1,826.3	1,398.0	1,650.3	1,106.3	2,756.6	1,358.6	1.18x	1.97x	13.4%	1.39
Growth Equity	23	1,347.7	1,218.8	1,537.1	704.4	2,241.5	1,022.8	1.26x	1.84x	86.9%	1.65
Secondarys	21	940.9	762.5	427.1	649.4	1,076.5	314.0	0.56x	1.41x	17.5%	1.28
Special Situations	21	1,125.3	1,066.1	1,069.0	482.5	1,551.6	485.5	1.00x	1.46x	9.7%	1.16
Venture Capital	108	2,365.2	2,011.6	2,686.9	1,497.4	4,184.3	2,172.7	1.34x	2.08x	21.7%	1.92
<b>Total Private Equity - Growth</b>	<b>522</b>	<b>25,017.8</b>	<b>21,953.6</b>	<b>23,665.2</b>	<b>13,847.6</b>	<b>37,512.8</b>	<b>15,559.1</b>	<b>1.08x</b>	<b>1.71x</b>	<b>16.2%</b>	<b>1.63</b>

<sup>1</sup> Based on best available cash flow adjusted market values.

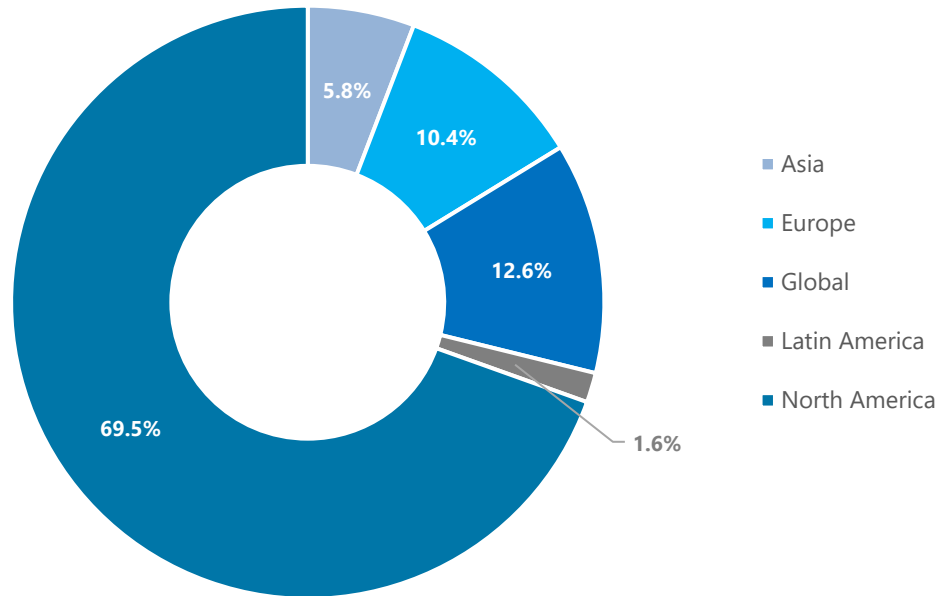
<sup>2</sup> Investment counts for Co-Investments and Fund of Funds do not include underlying funds.

# Performance by Geography

## Private Equity – Growth

for the quarter ended December 31, 2023

### By Geography<sup>1,2</sup>



	Number of Investments	Commitments (mm)	Cumulative Contributions (mm)	Cumulative Distributions (mm)	Market Value (mm)	Total Value (mm)	Total Gain / Loss (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME
Asia	20	836.0	759.4	503.0	806.0	1,309.0	549.5	0.66x	1.72x	13.9%	1.22
Europe	43	2,699.9	2,485.2	2,470.2	1,444.0	3,914.2	1,429.0	0.99x	1.57x	15.7%	1.34
Global	32	2,705.6	1,901.1	937.3	1,744.5	2,681.9	780.8	0.49x	1.41x	15.0%	1.21
Latin America	2	200.0	201.6	58.5	224.5	283.0	81.4	0.29x	1.40x	10.4%	1.05
North America	425	18,576.3	16,606.3	19,696.1	9,628.6	29,324.7	12,718.4	1.19x	1.77x	16.3%	1.68
<b>Total Private Equity - Growth</b>	<b>522</b>	<b>25,017.8</b>	<b>21,953.6</b>	<b>23,665.2</b>	<b>13,847.6</b>	<b>37,512.8</b>	<b>15,559.1</b>	<b>1.08x</b>	<b>1.71x</b>	<b>16.2%</b>	<b>1.63</b>

<sup>1</sup> Based on best available cash flow adjusted market values.

<sup>2</sup> Investment counts for Co-Investments and Fund of Funds do not include underlying funds.

# Performance by Vintage Year

## Private Equity – Growth

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

### By Vintage Year<sup>1,2,3</sup>

	Number of Investments	Commitments (mm)	Cumulative Contributions (mm)	Cumulative Distributions (mm)	Market Value (mm)	Total Value (mm)	Total Gain / Loss (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME	Quartile Ranking
1986	3	80.0	80.0	267.5	0.0	267.5	187.5	3.34x	3.34x	15.7%	--	1st
1987	1	25.0	25.0	40.3	0.0	40.3	15.3	1.61x	1.61x	7.3%	--	3rd
1988	2	200.0	216.6	466.9	0.0	466.9	250.3	2.16x	2.16x	15.5%	89.91	2nd
1989	0	--	--	--	--	--	--	--	--	--	--	--
1990	1	7.5	7.5	16.7	0.0	16.7	9.2	2.22x	2.22x	13.0%	9.13	3rd
1991	0	--	--	--	--	--	--	--	--	--	--	--
1992	10	116.0	111.0	242.5	0.0	242.5	131.6	2.19x	2.19x	29.1%	3.78	2nd
1993	8	68.0	64.8	239.5	0.0	239.5	174.7	3.70x	3.70x	39.7%	3.22	1st
1994	5	56.9	58.8	237.6	0.0	237.6	178.8	4.04x	4.04x	54.1%	2.82	1st
1995	7	100.5	102.3	362.6	0.0	362.6	260.2	3.54x	3.54x	43.2%	2.58	1st
1996	12	222.9	225.2	608.8	0.0	608.8	383.6	2.70x	2.70x	37.5%	2.15	1st
1997	11	397.5	410.4	606.4	0.0	606.4	196.0	1.48x	1.48x	7.7%	1.20	3rd
1998	22	644.4	655.2	945.3	0.5	945.8	290.6	1.44x	1.44x	7.3%	1.19	2nd
1999	21	363.5	369.7	436.6	0.0	436.6	66.9	1.18x	1.18x	3.4%	0.96	2nd
2000	25	375.4	387.3	575.0	0.1	575.1	187.9	1.48x	1.49x	8.7%	1.07	2nd
2001	15	412.5	442.7	836.1	2.4	838.5	395.8	1.89x	1.89x	21.7%	1.38	1st
2002	8	220.4	230.3	537.4	0.0	537.4	307.1	2.33x	2.33x	19.0%	1.64	2nd
2003	8	310.4	339.2	701.6	0.3	701.9	362.7	2.07x	2.07x	21.3%	1.60	1st
2004	7	350.5	392.2	747.0	0.5	747.5	355.3	1.90x	1.91x	19.5%	1.58	1st
2005	15	507.1	506.5	1,041.8	2.3	1,044.1	537.7	2.06x	2.06x	13.4%	1.64	2nd
2006	28	1,522.7	1,608.0	2,563.4	8.0	2,571.3	963.3	1.59x	1.60x	8.8%	1.24	2nd
2007	11	517.4	462.9	796.7	22.2	819.0	356.1	1.72x	1.77x	11.5%	1.20	2nd
2008	10	643.4	701.3	1,238.6	23.7	1,262.3	561.0	1.77x	1.80x	13.2%	1.21	2nd
2009	0	--	--	--	--	--	--	--	--	--	--	--
2010	23	450.0	475.9	751.0	217.0	968.0	492.1	1.58x	2.03x	15.2%	1.38	2nd
2011	7	390.3	424.1	828.2	138.2	966.4	542.3	1.95x	2.28x	18.2%	1.46	2nd
2012	7	435.0	582.0	1,071.8	89.7	1,161.5	579.5	1.84x	2.00x	21.4%	1.64	2nd
2013	10	897.8	995.3	1,333.1	454.1	1,787.3	792.0	1.34x	1.80x	14.6%	1.28	2nd
2014	29	1,249.2	1,410.7	1,600.6	1,206.1	2,806.7	1,396.0	1.13x	1.99x	16.9%	1.39	2nd
2015	10	1,087.0	1,283.6	1,472.2	1,258.2	2,730.4	1,446.8	1.15x	2.13x	20.5%	1.53	2nd
2016	12	1,132.8	1,318.0	1,258.6	1,176.7	2,435.3	1,117.3	0.95x	1.85x	17.2%	1.31	3rd
2017	26	594.0	602.8	462.1	639.5	1,101.7	498.9	0.77x	1.83x	18.1%	1.33	3rd
2018	39	1,265.9	1,227.9	510.9	1,467.0	1,977.8	750.0	0.42x	1.61x	18.3%	1.31	2nd
2019	30	2,117.7	1,982.2	443.0	2,453.2	2,896.2	914.0	0.22x	1.46x	15.6%	1.18	2nd
2020	16	1,160.7	1,008.8	203.3	1,205.8	1,409.2	400.4	0.20x	1.40x	18.6%	1.27	2nd
2021	39	3,024.2	2,032.5	136.6	2,264.9	2,401.5	369.1	0.07x	1.18x	11.0%	1.08	2nd
2022	22	1,542.1	932.0	85.5	933.9	1,019.4	87.4	0.09x	1.09x	8.0%	0.96	1st
2023	21	2,279.0	280.9	--	283.0	--	--	0.00x	1.01x	1.5%	0.91	1st
2024	1	250.0	--	--	0.0	--	--	--	--	--	--	--
<b>Total Private Equity - Growth</b>	<b>522</b>	<b>25,017.8</b>	<b>21,953.6</b>	<b>23,665.2</b>	<b>13,847.6</b>	<b>37,512.8</b>	<b>15,559.1</b>	<b>1.08x</b>	<b>1.71x</b>	<b>16.2%</b>	<b>1.63</b>	

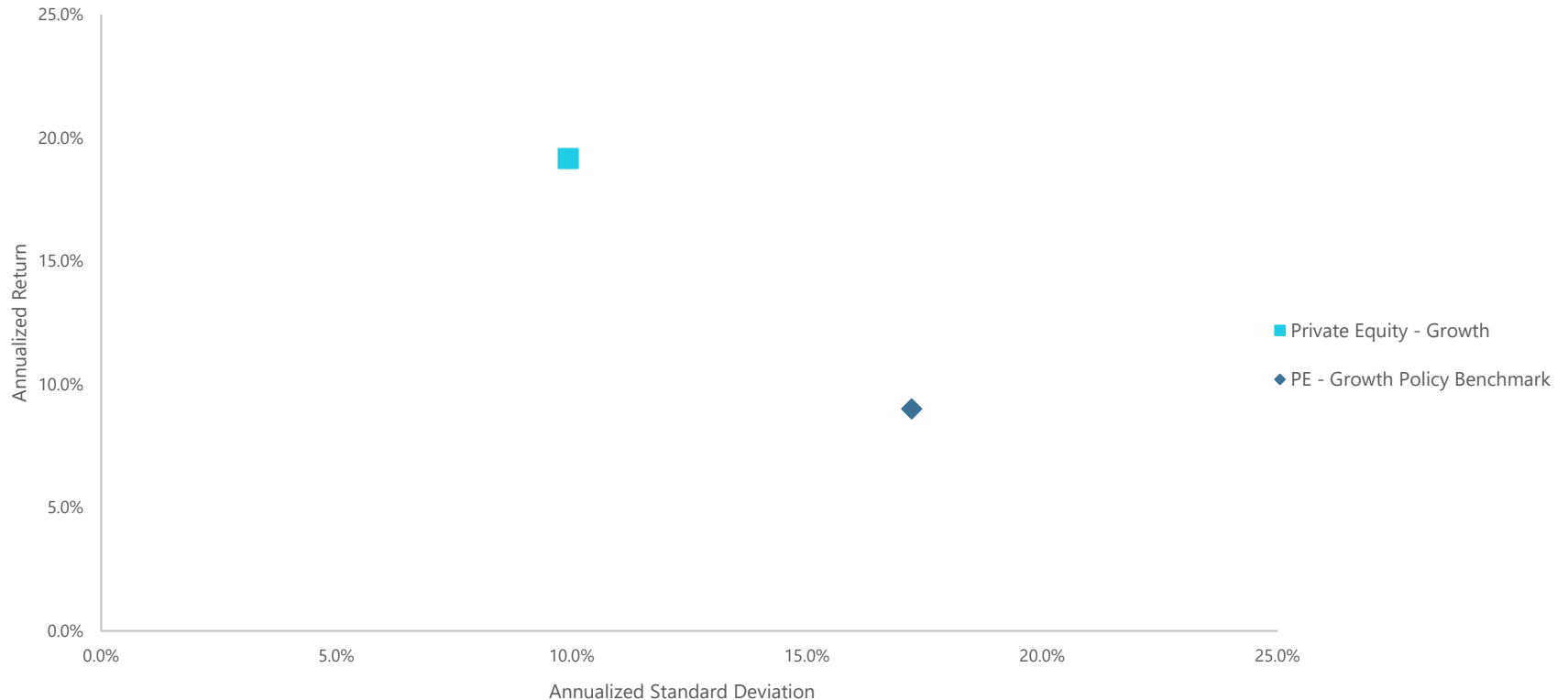
1. Based on best available cash flow adjusted market values.
2. Investment counts for Co-Investments and Fund of Funds do not include underlying funds.
3. Benchmark data used is latest available by Burgiss Private IQ.

# Risk vs. Return

## Private Equity – Growth

for the quarter ended December 31, 2023

### 3 Year (Annualized)



	Annualized Return	Standard Deviation	Sharpe Ratio	Information Ratio	Beta	Tracking Error
<b>Private Equity - Growth</b>	<b>19.2%</b>	<b>9.9%</b>	<b>1.61</b>	<b>0.44</b>	<b>0.13</b>	<b>18.1%</b>
PE - Growth Policy Benchmark	9.0%	17.2%				

# Annual Cash Flow Activity

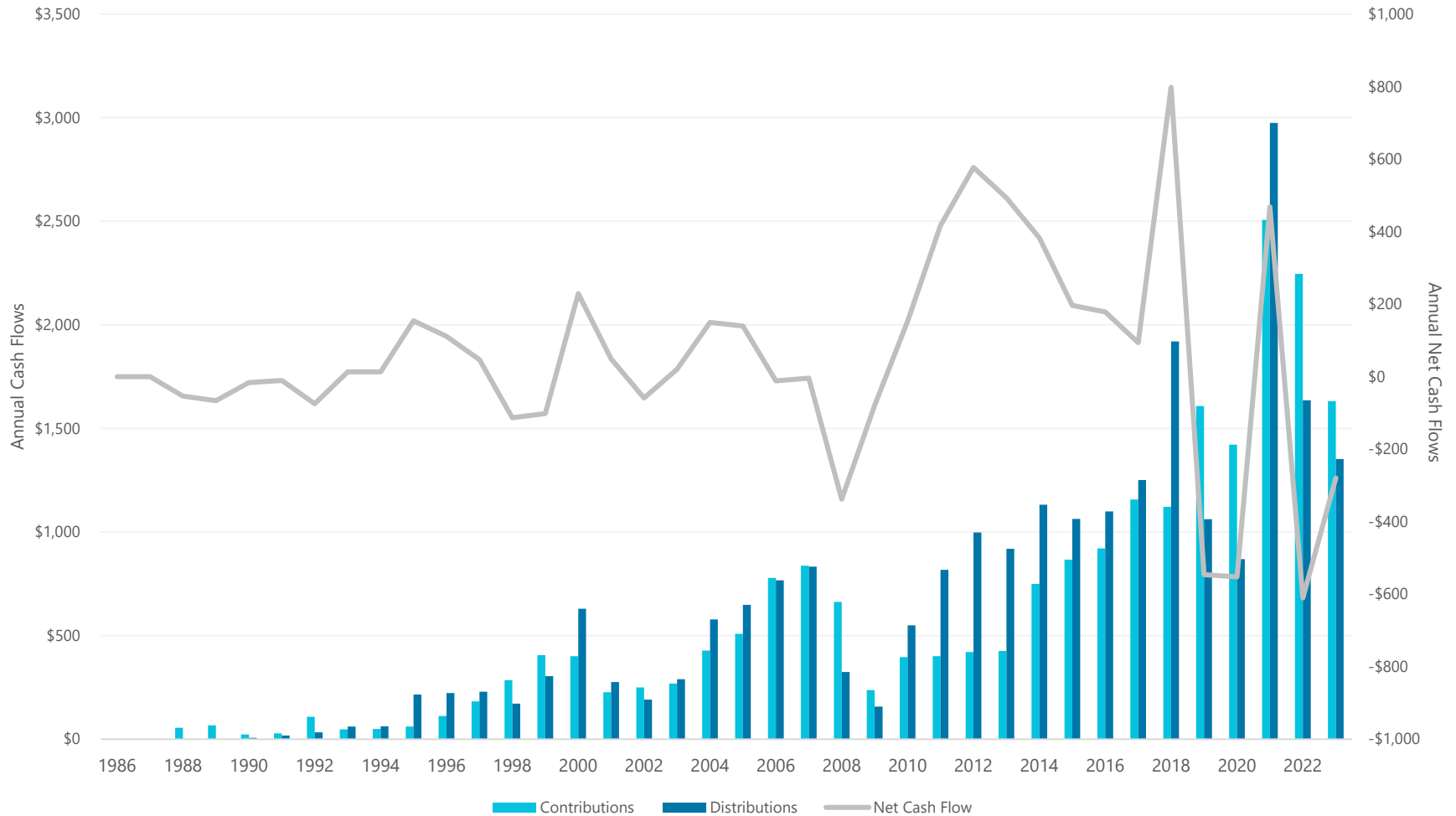
## Private Equity

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

### By Year (mm)



# Summary

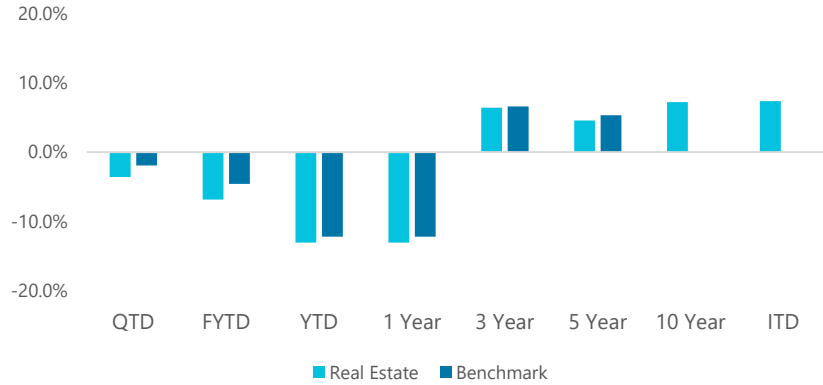
## Real Estate

for the quarter ended December 31, 2023



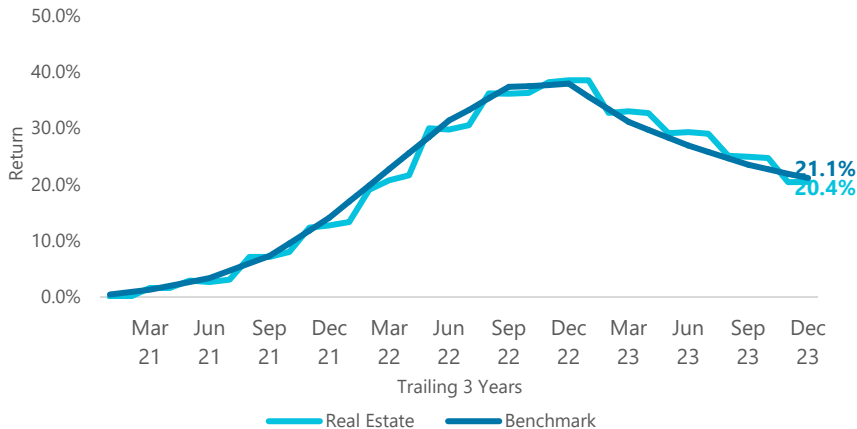
Los Angeles County Employees Retirement Association

### Performance (net)



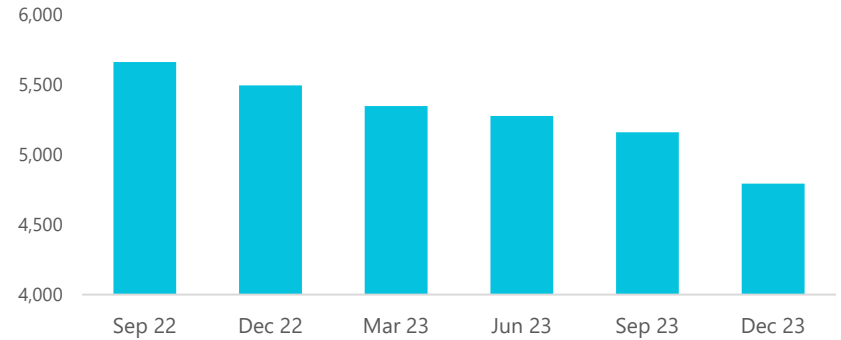
	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD
<b>Real Estate</b>	<b>-3.6%</b>	<b>-6.8%</b>	<b>-13.0%</b>	<b>-13.0%</b>	<b>6.4%</b>	<b>4.6%</b>	<b>7.2%</b>	<b>7.3%</b>
Benchmark	-1.9%	-4.6%	-12.2%	-12.2%	6.6%	5.3%	--	--
Excess	-1.7%	-2.3%	-0.9%	-0.9%	-0.2%	-0.8%	--	--

### Cumulative Return

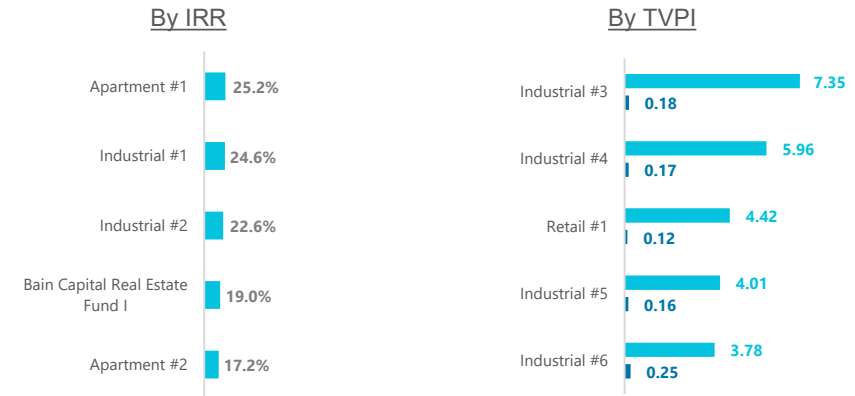


### Asset Growth (mm)

	QTD	FYTD	1 Year	3 Year
Beginning Market Value	5,159	5,275	5,493	5,300
Net Cash Flow	-186	-124	27	-1,525
Gain/Loss	-181	-360	-729	1,016
<b>Ending Market Value</b>	<b>4,791</b>	<b>4,791</b>	<b>4,791</b>	<b>4,791</b>



### Top Performing Investments (since inception)<sup>1</sup>



<sup>1</sup> Property names removed due to confidentiality.

TVPI DPI

# Historical Returns

## Real Estate

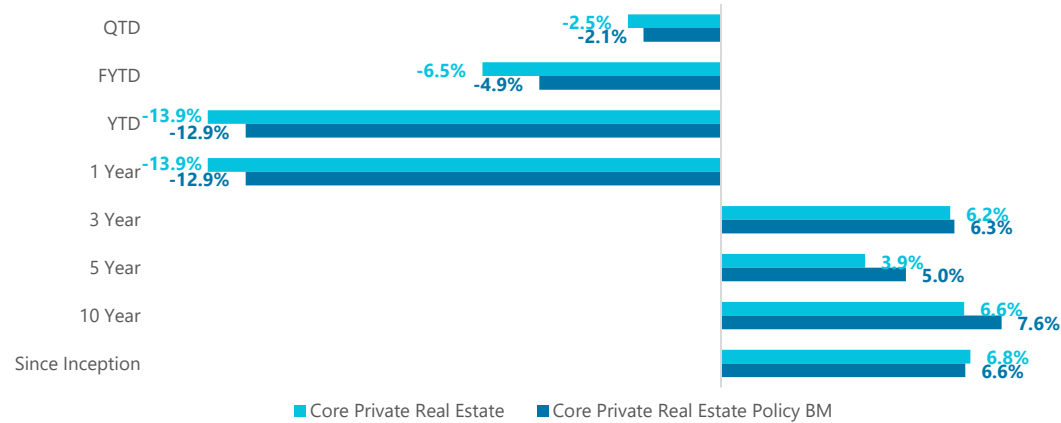
for the quarter ended December 31, 2023



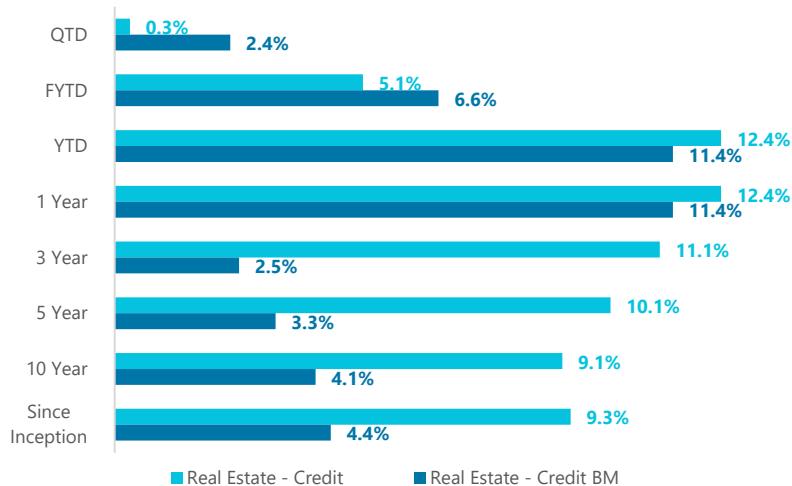
Los Angeles County Employees Retirement Association

### Time-Weighted Returns (net)

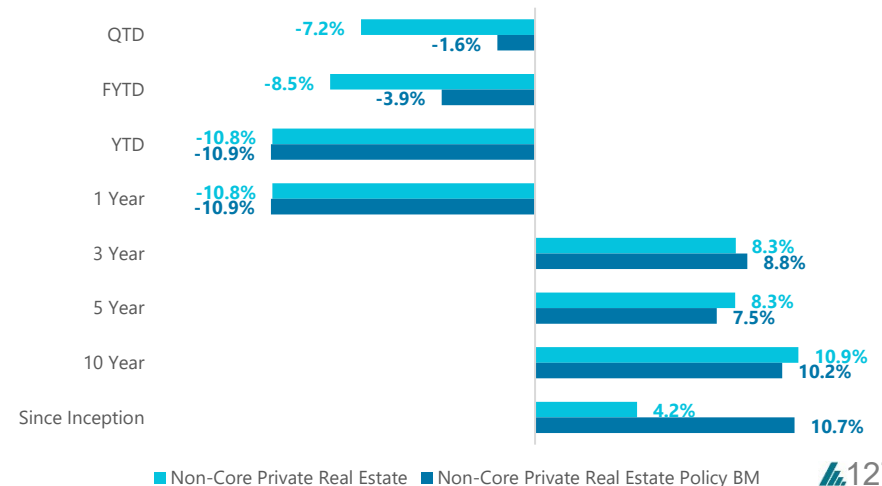
#### Core



#### Debt



#### Non-Core

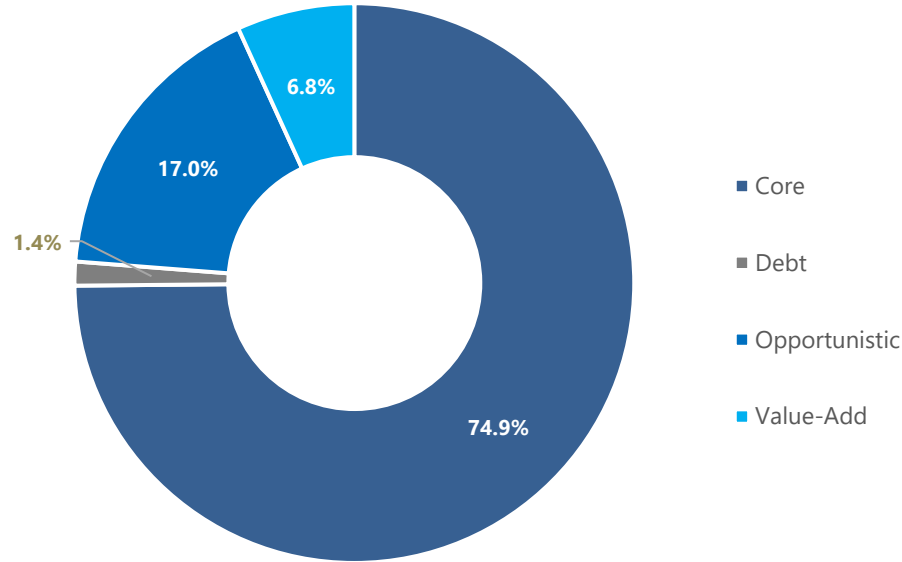


# Performance by Strategy

## Real Estate

for the quarter ended December 31, 2023

### By Strategy<sup>1,2</sup>



	Number of Investments	Commitments (mm)	Cumulative Contributions (mm)	Cumulative Distributions (mm)	Market Value (mm)	Total Value (mm)	Total Gain / (Loss) (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME
Core	82	1,655.5	7,691.6	7,218.3	3,435.4	10,653.7	2,962.1	0.94x	1.39x	7.6%	1.07
Debt	7	0.0	158.6	140.7	63.3	204.0	45.5	0.89x	1.29x	8.7%	1.17
Opportunistic	19	2,032.0	1,328.3	812.3	778.4	1,590.6	262.3	0.61x	1.20x	4.7%	0.89
Value-Add	12	474.5	650.2	241.0	312.3	553.4	(96.8)	0.37x	0.85x	-3.6%	0.58
<b>Total Real Estate</b>	<b>120</b>	<b>4,161.9</b>	<b>9,828.8</b>	<b>8,412.4</b>	<b>4,589.4</b>	<b>13,001.7</b>	<b>3,173.0</b>	<b>0.86x</b>	<b>1.32x</b>	<b>6.8%</b>	<b>1.01</b>

<sup>1</sup> Based on best available cash flow adjusted market values and includes only active investments and sold assets with balance sheet residuals.

<sup>2</sup> Commitment amounts reflect only commingled fund investments.



# Performance by Property Type

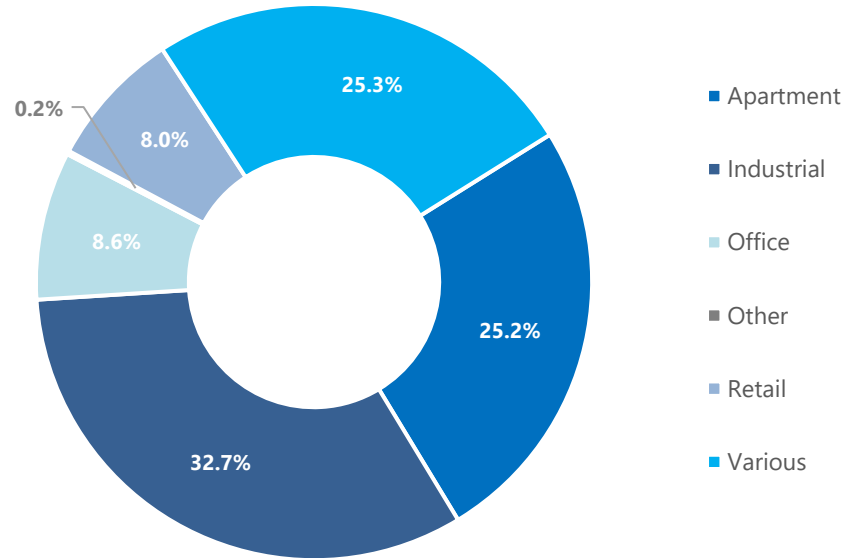
## Real Estate

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

### By Property Type<sup>1,2,3</sup>



	Number of Investments	Commitments (mm)	Cumulative Contributions (mm)	Cumulative Distributions (mm)	Market Value (mm)	Total Value (mm)	Total Gain / (Loss) (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME
Apartment	36	404.1	3,110.1	2,704.9	1,157.4	3,862.3	752.2	0.87x	1.24x	5.8%	0.98
Industrial	21	235.5	1,698.9	1,705.1	1,498.9	3,204.0	1,505.1	1.00x	1.89x	12.4%	1.55
Office	19	0.0	2,020.2	2,018.1	395.8	2,413.9	393.7	1.00x	1.19x	4.8%	1.00
Other	4	100.0	170.8	199.0	9.3	208.3	37.5	1.17x	1.22x	4.2%	0.76
Retail	15	0.0	1,281.4	1,289.7	366.9	1,656.6	375.2	1.01x	1.29x	6.0%	0.81
Various	25	3,422.4	1,547.4	495.7	1,161.0	1,656.7	109.3	0.32x	1.07x	1.8%	0.79
<b>Total Real Estate</b>	<b>120</b>	<b>4,161.9</b>	<b>9,828.8</b>	<b>8,412.4</b>	<b>4,589.4</b>	<b>13,001.7</b>	<b>3,173.0</b>	<b>0.86x</b>	<b>1.32x</b>	<b>6.8%</b>	<b>1.01</b>

<sup>1</sup> Based on best available cash flow adjusted market values and includes only active investments and sold assets with balance sheet residuals.

<sup>2</sup> Commitment amounts reflect only commingled fund investments.

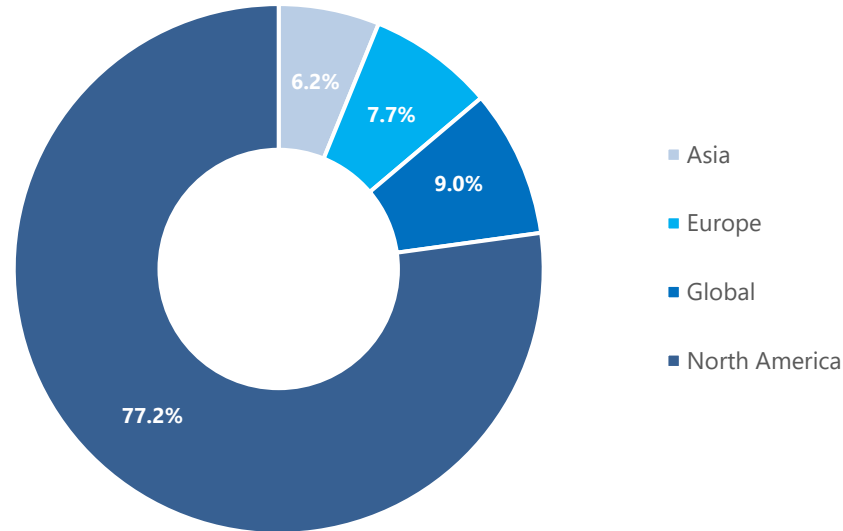
<sup>3</sup> Various refers to commingled fund investments with more than one property type; Other refers to hotel and fund level market values for the debt program.

# Performance by Geography

## Real Estate

for the quarter ended December 31, 2023

### By Geography (non-US)<sup>1,2</sup>



	Number of Investments	Commitments (mm)	Cumulative Contributions (mm)	Cumulative Distributions (mm)	Market Value (mm)	Total Value (mm)	Total Gain / (Loss) (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME
Asia	4	300.0	314.6	130.6	282.6	413.2	98.6	0.42x	1.31x	5.6%	1.00
Europe	11	664.1	636.8	385.9	352.1	738.0	101.1	0.61x	1.16x	3.4%	0.80
Global	8	1,218.8	524.4	232.9	412.6	645.5	121.0	0.44x	1.23x	10.1%	1.01
North America	97	1,979.1	8,352.9	7,663.0	3,542.1	11,205.1	2,852.2	0.92x	1.34x	7.0%	1.03
<b>Total Real Estate</b>	<b>120</b>	<b>4,161.9</b>	<b>9,828.8</b>	<b>8,412.4</b>	<b>4,589.4</b>	<b>13,001.7</b>	<b>3,173.0</b>	<b>0.86x</b>	<b>1.32x</b>	<b>6.8%</b>	<b>1.01</b>

<sup>1</sup> Based on best available cash flow adjusted market values and includes only active investments and sold assets with balance sheet residuals.

<sup>2</sup> Commitment amounts reflect only commingled fund investments.

# Performance by Geography

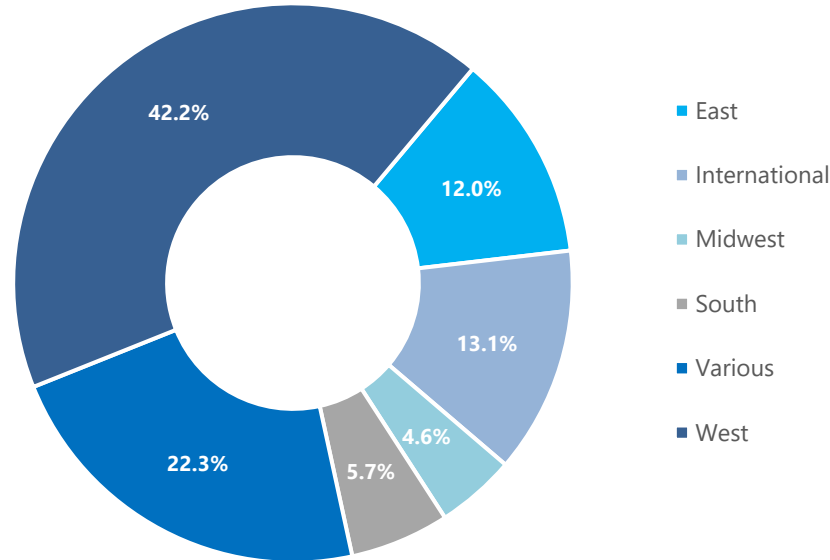
## Real Estate

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

### By Geography (US NCREIF)<sup>1,2</sup>



	Number of Investments	Commitments (mm)	Cumulative Contributions (mm)	Cumulative Distributions (mm)	Market Value (mm)	Total Value (mm)	Total Gain / (Loss) (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME
East	26	0.0	2,477.5	2,370.8	552.3	2,923.1	445.5	0.96x	1.18x	4.8%	0.84
International	14	908.9	908.9	516.4	601.9	1,118.3	209.5	0.57x	1.23x	4.4%	0.87
Midwest	10	0.0	593.4	504.3	210.8	715.1	121.7	0.85x	1.21x	4.2%	0.79
South	11	0.0	1,199.4	1,326.9	263.6	1,590.5	391.1	1.11x	1.33x	7.5%	0.95
Various	16	2,849.0	1,147.5	377.7	1,025.5	1,403.2	255.6	0.33x	1.22x	5.5%	0.92
West	43	404.1	3,502.1	3,316.2	1,935.4	5,251.6	1,749.5	0.95x	1.50x	8.4%	1.28
<b>Total Real Estate</b>	<b>120</b>	<b>4,161.9</b>	<b>9,828.8</b>	<b>8,412.4</b>	<b>4,589.4</b>	<b>13,001.7</b>	<b>3,173.0</b>	<b>0.86x</b>	<b>1.32x</b>	<b>6.8%</b>	<b>1.01</b>

<sup>1</sup> Based on best available cash flow adjusted market values and includes only active investments and sold assets with balance sheet residuals.

<sup>2</sup> Commitment amounts reflect only commingled fund investments.

# Performance by Vintage Year

## Real Estate

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

### By Vintage Year<sup>1,2,3</sup>

	Number of Investments	Commitments (mm)	Cumulative Contributions (mm)	Cumulative Distributions (mm)	Market Value (mm)	Total Value (mm)	Total Gain / (Loss) (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME	Quartile Ranking
1990	1	0.0	249.9	306.9	95.6	402.5	152.6	1.23x	1.61x	6.0%	4.43	--
1991	3	0.0	33.2	179.1	49.2	228.3	195.1	5.40x	6.88x	12.4%	13.82	--
1992	0	0.0	--	--	--	--	--	--	--	--	--	--
1993	0	0.0	--	--	--	--	--	--	--	--	--	--
1994	1	0.0	15.5	68.5	35.5	104.0	88.5	4.42x	6.70x	12.8%	1.42	--
1995	1	0.0	67.3	115.2	89.1	204.3	137.0	1.71x	3.04x	11.4%	1.18	--
1996	1	0.0	24.2	39.6	22.3	61.9	37.8	1.64x	2.56x	7.0%	0.75	--
1997	1	0.0	18.5	69.9	71.9	141.8	123.3	3.78x	7.66x	15.7%	2.07	--
1998	1	0.0	48.9	112.7	(0.5)	112.2	63.2	2.30x	2.29x	6.1%	0.69	--
1999	0	0.0	--	--	--	--	--	--	--	--	--	--
2000	0	0.0	--	--	--	--	--	--	--	--	--	--
2001	1	0.0	143.8	81.1	76.1	157.2	13.4	0.56x	1.09x	2.5%	0.64	--
2002	0	0.0	--	--	--	--	--	--	--	--	--	--
2003	1	0.0	142.9	134.0	53.7	187.7	44.7	0.94x	1.31x	3.7%	0.67	--
2004	0	0.0	--	--	--	--	--	--	--	--	--	--
2005	0	0.0	--	--	--	--	--	--	--	--	--	--
2006	0	0.0	--	--	--	--	--	--	--	--	--	--
2007	3	38.3	454.6	402.3	0.1	402.4	(52.2)	0.88x	0.89x	-5.5%	0.54	4th
2008	1	150.0	150.0	96.0	0.0	96.0	(53.9)	0.64x	0.64x	-5.7%	0.34	4th
2009	1	19.1	22.5	28.8	0.2	29.0	6.4	1.28x	1.29x	8.1%	0.84	3rd
2010	1	100.0	97.1	152.0	6.1	158.2	61.0	1.57x	1.63x	9.6%	0.92	3rd
2011	4	17.7	222.5	123.7	2.8	126.5	(96.0)	0.56x	0.57x	-16.4%	0.23	4th
2012	3	134.1	447.3	190.3	84.2	274.5	(172.8)	0.43x	0.61x	-13.2%	0.48	4th
2013	7	100.0	477.1	583.0	70.4	653.3	176.2	1.22x	1.37x	7.4%	0.94	3rd
2014	15	265.7	999.2	882.5	528.6	1,411.1	412.0	0.88x	1.41x	7.1%	1.05	3rd
2015	9	20.0	956.1	773.5	642.5	1,415.9	459.9	0.81x	1.48x	10.3%	1.28	2nd
2016	7	150.0	499.9	237.0	458.5	695.5	195.6	0.47x	1.39x	8.3%	1.15	3rd
2017	12	180.2	1,344.0	942.5	723.3	1,665.9	321.9	0.70x	1.24x	6.9%	1.05	3rd
2018	10	150.0	380.8	220.7	230.7	451.4	70.6	0.58x	1.19x	5.6%	1.01	4th
2019	25	414.0	2,431.1	2,577.4	831.8	3,409.3	978.1	1.06x	1.40x	8.3%	0.99	2nd
2020	2	0.0	71.8	82.8	(1.6)	81.2	9.4	1.15x	1.13x	5.2%	1.13	3rd
2021	2	182.8	98.9	4.4	101.3	105.7	6.8	0.04x	1.07x	4.6%	1.04	3rd
2022	3	710.0	215.9	7.6	212.7	220.3	4.4	0.04x	1.02x	3.1%	0.96	2nd
2023	3	1,350.0	215.8	0.8	204.8	205.6	(10.2)	0.00x	0.95x	-5.1%	0.88	2nd
2024	1	180.0	0.0	0.0	0.0	0.0	0.0	--	--	--	--	--
<b>Total Real Estate</b>	<b>120</b>	<b>4,161.9</b>	<b>9,828.8</b>	<b>8,412.4</b>	<b>4,589.4</b>	<b>13,001.7</b>	<b>3,173.0</b>	<b>0.86x</b>	<b>1.32x</b>	<b>6.8%</b>	<b>1.01</b>	

1. Based on best available cash flow adjusted market values.
2. Commitment amounts reflect only commingled fund investments.
3. Benchmark data used is latest available by Burgiss Private IQ. IRR quartile rankings exclude IMAs and Core Funds.

# Leverage Exposure

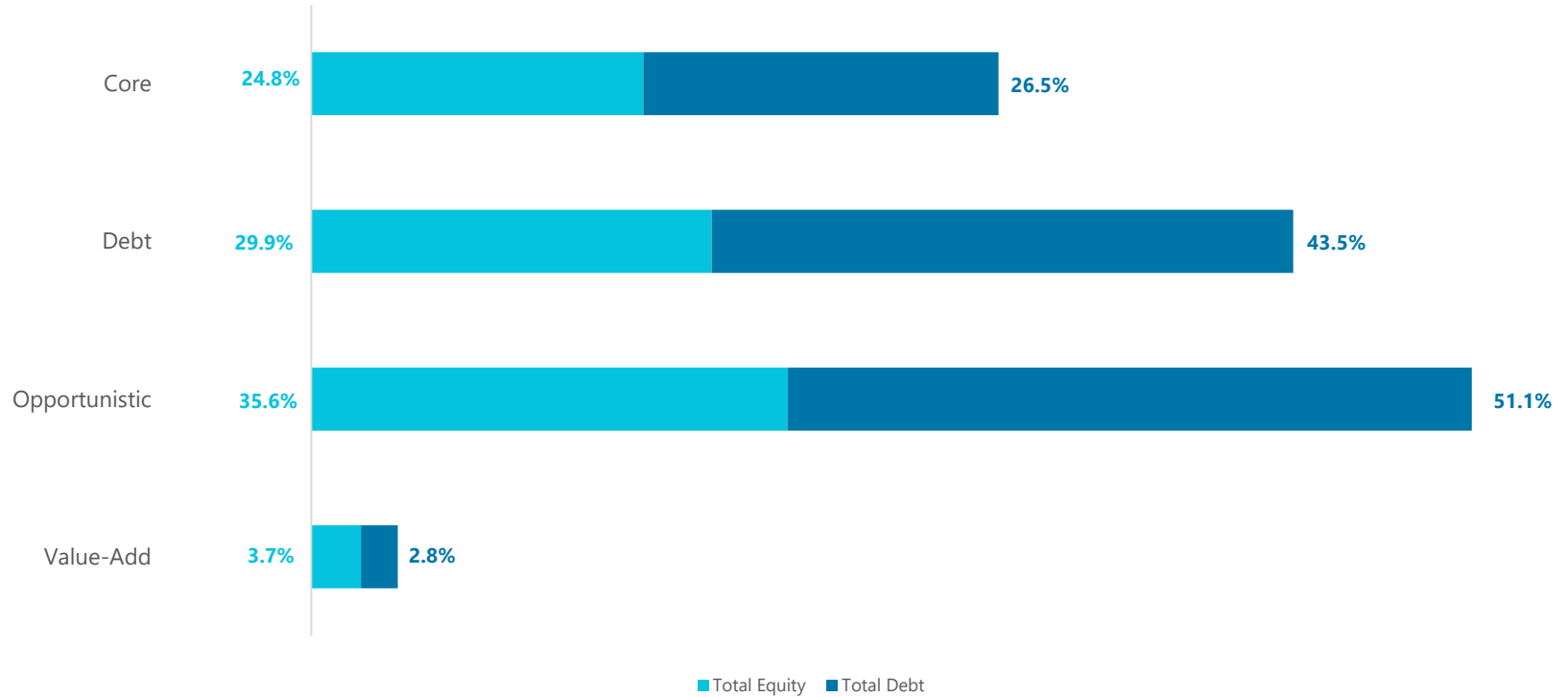
## Real Estate

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

### Leverage Exposure<sup>1,2</sup>



	Number of Investments	Commitments (mm)	Cumulative Contributions (mm)	Cumulative Distributions (mm)	Market Value (mm)	Total Value (mm)	Total Gain / (Loss) (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME	Total Debt Fund Level (mm)	Total Equity Fund Level (mm)	Total Debt Fund Level (%)	Total Equity Fund Level (%)
Core	82	1,655.5	7,691.6	7,218.3	3,435.4	10,653.7	2,962.1	0.94x	1.39x	7.6%	1.07	9,520.4	8,900.5	26.5%	24.8%
Debt	7	0.0	158.6	140.7	63.3	204.0	45.5	0.89x	1.29x	8.7%	1.17	109.3	75.2	43.5%	29.9%
Opportunistic	19	2,032.0	1,328.3	812.3	778.4	1,590.6	262.3	0.61x	1.20x	4.7%	0.89	15,890.1	11,068.6	51.1%	35.6%
Value-Add	12	474.5	650.2	241.0	312.3	553.4	(96.8)	0.37x	0.85x	-3.6%	0.58	4,110.8	5,541.7	2.8%	3.7%
<b>Total Real Estate</b>	<b>120</b>	<b>4,161.9</b>	<b>9,828.8</b>	<b>8,412.4</b>	<b>4,589.4</b>	<b>13,001.7</b>	<b>3,173.0</b>	<b>0.86x</b>	<b>1.32x</b>	<b>6.8%</b>	<b>1.01</b>	<b>29,630.6</b>	<b>25,586.1</b>	<b>13.7%</b>	<b>11.8%</b>

<sup>1</sup> Based on best available cash flow adjusted market values and includes only active investments and sold assets with balance sheet residuals.

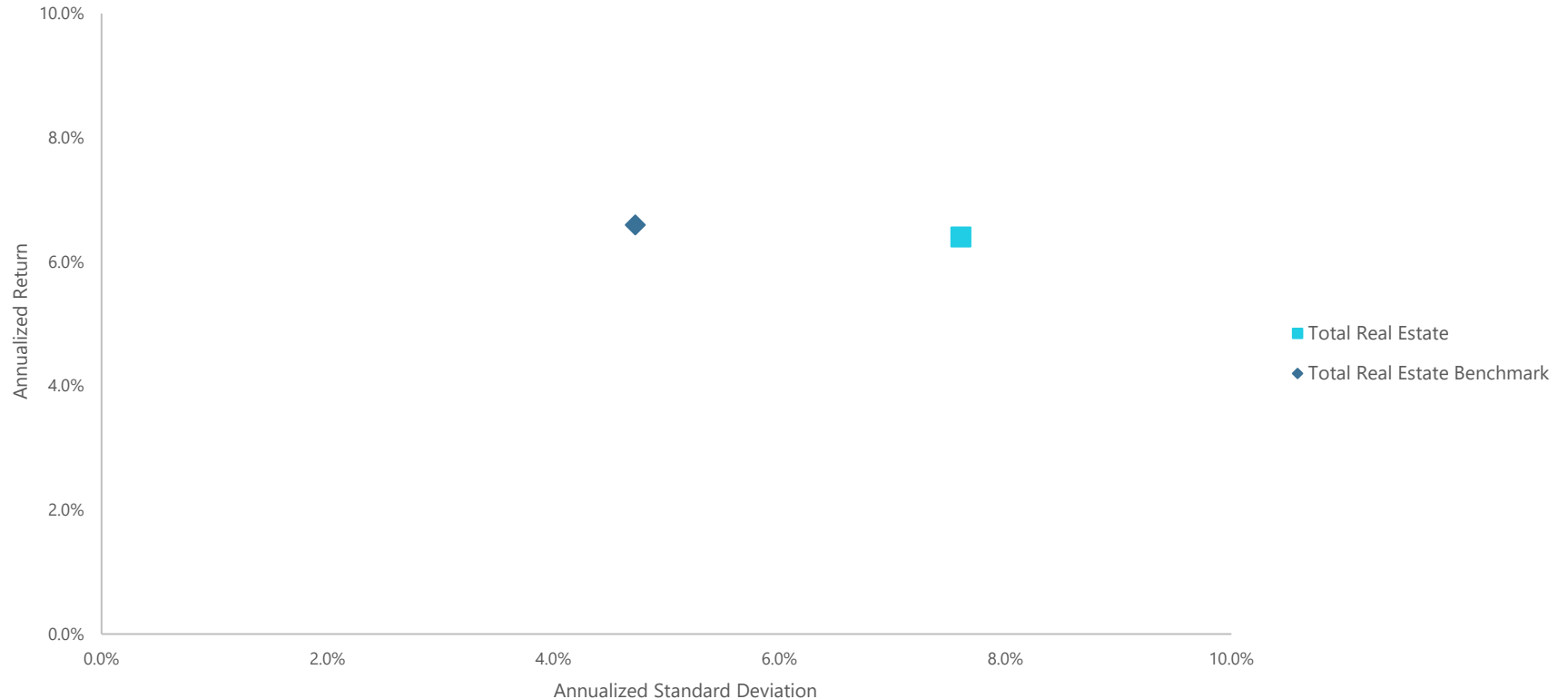
<sup>2</sup> Commitment amounts reflect only commingled fund investments.

# Risk vs. Return

## Real Estate

for the quarter ended December 31, 2023

### 3 Year (Annualized)



	Annualized Return	Standard Deviation	Sharpe Ratio	Information Ratio	Beta	Tracking Error
<b>Total Real Estate</b>	<b>6.4%</b>	<b>7.6%</b>	<b>0.57</b>	<b>-0.03</b>	<b>0.98</b>	<b>20.9%</b>
Total Real Estate Benchmark	6.6%	4.7%				

# Annual Cash Flow Activity

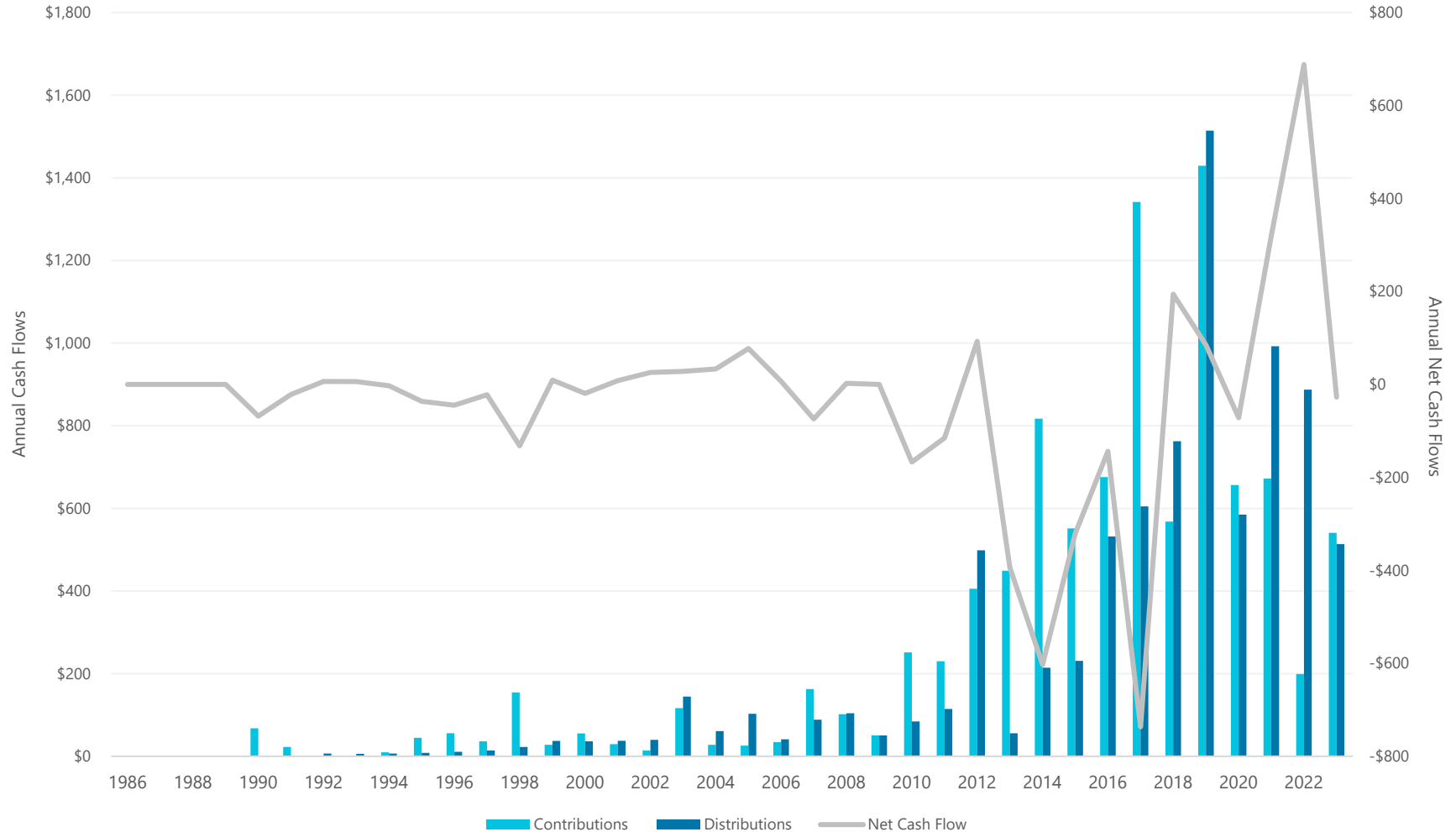
## Real Estate

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

### By Year (mm)



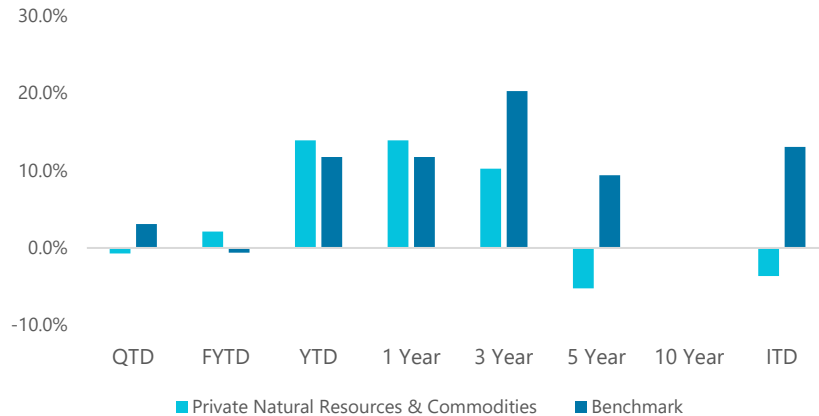
# Summary

Private Real Assets ex. Real Estate  
for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Performance (net)<sup>1</sup>



	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD
Private Natural Resources & Commodities	-0.7%	2.1%	13.9%	13.9%	10.2%	-5.2%	--	-3.6%
Benchmark	3.1%	-0.6%	11.8%	11.8%	20.3%	9.4%	--	13.1%
Excess	-3.8%	2.7%	2.2%	2.2%	-10.0%	-14.6%	--	-16.7%

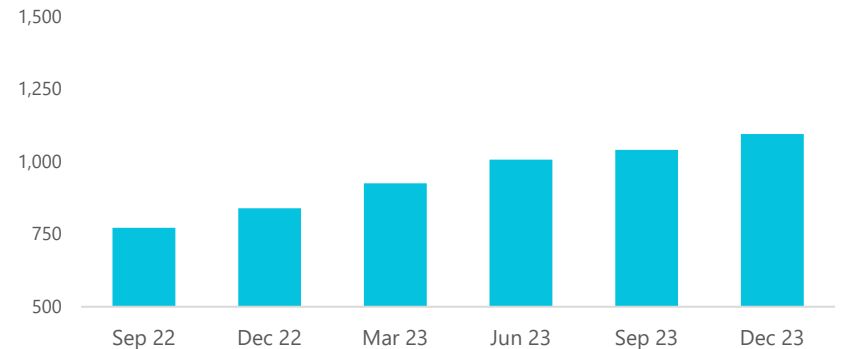
## Cumulative Return<sup>1</sup>



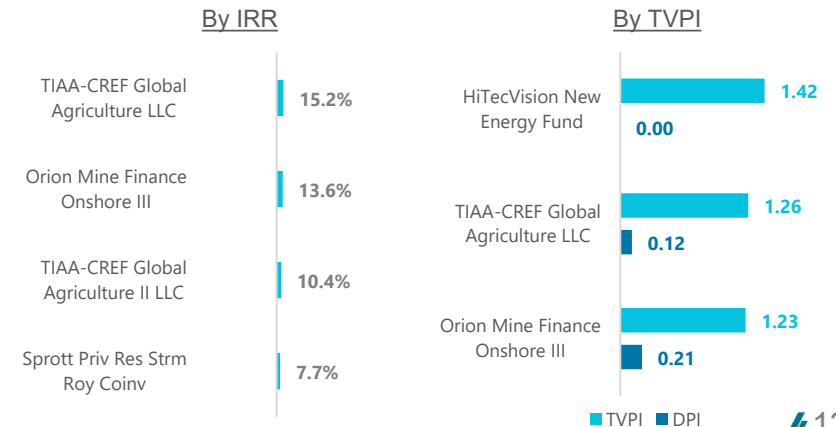
<sup>1</sup> Private natural resources & commodities funds reflect early-stage life cycle performance.

## Asset Growth (mm)

	QTD	FYTD	1 Year	3 Year
Beginning Market Value	1,040	1,007	839	71
Net Cash Flow	62	67	135	828
Gain/Loss	-8	20.9	120.9	195.4
<b>Ending Market Value</b>	<b>1,095</b>	<b>1,095</b>	<b>1,095</b>	<b>1,095</b>



## Top Performing Investments (since inception)<sup>1</sup>



■ TVPI ■ DPI



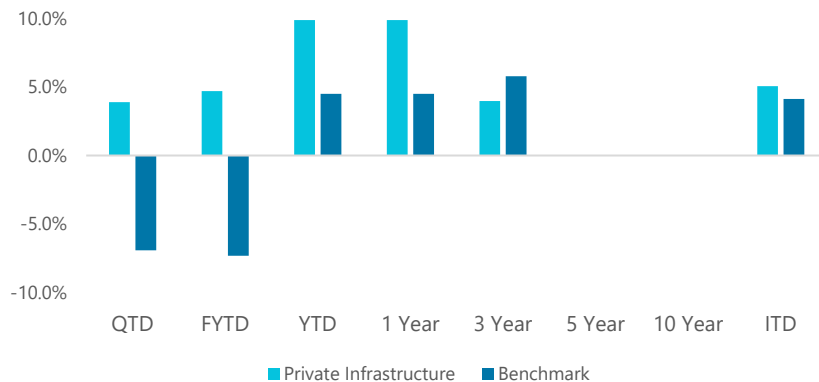
# Summary

Private Real Assets ex. Real Estate  
for the quarter ended December 31, 2023



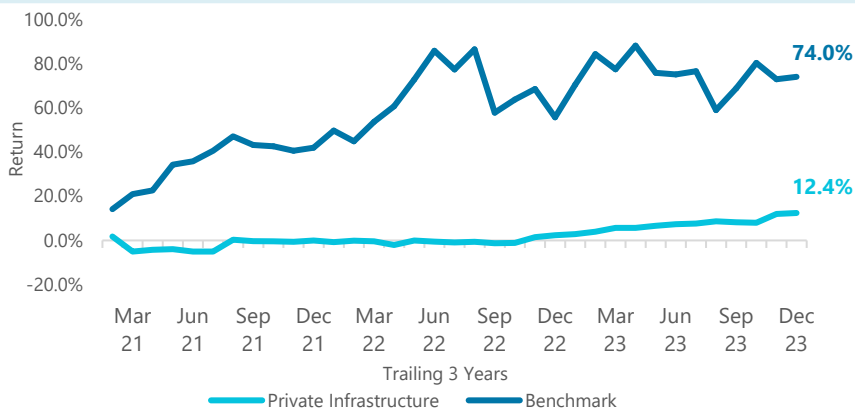
Los Angeles County Employees Retirement Association

## Performance (net)<sup>1</sup>



	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD
<b>Private Infrastructure</b>	<b>3.9%</b>	<b>4.7%</b>	<b>9.9%</b>	<b>9.9%</b>	<b>4.0%</b>	--	--	<b>5.1%</b>
Benchmark	-6.9%	-7.3%	4.5%	4.5%	5.8%	--	--	4.1%
Excess	10.8%	12.0%	5.4%	5.4%	-1.8%	--	--	0.9%

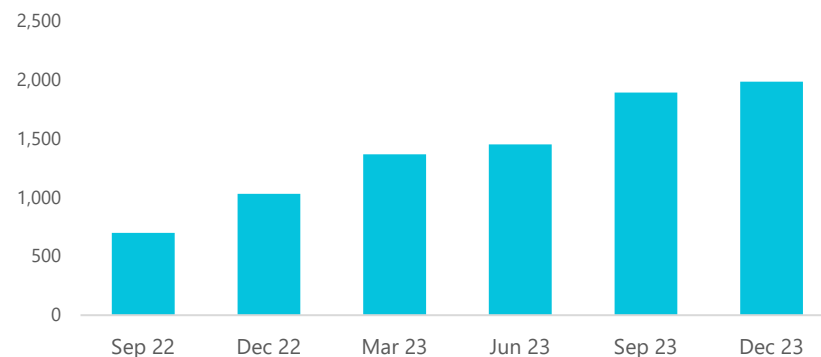
## Cumulative Return<sup>1</sup>



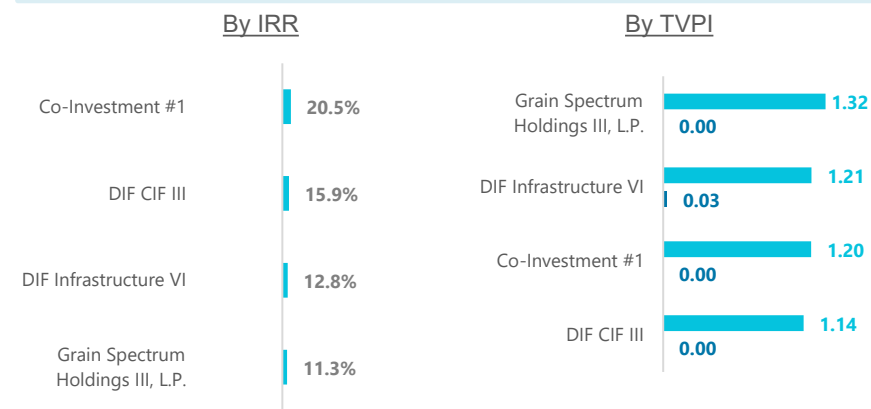
<sup>1</sup> Private infrastructure funds reflect early-stage life cycle performance.

## Asset Growth (mm)

	QTD	FYTD	1 Year	3 Year
Beginning Market Value	1,890	1,449	1,030	--
Net Cash Flow	18	444	798	--
Gain/Loss	73	88	153	--
<b>Ending Market Value</b>	<b>1,981</b>	<b>1,981</b>	<b>1,981</b>	--



## Top Performing Investments (since inception)<sup>1,2</sup>



<sup>2</sup> Asset name removed due to confidentiality.

■ TVPI ■ DPI

# Historical Returns

## Private Real Assets ex. Real Estate

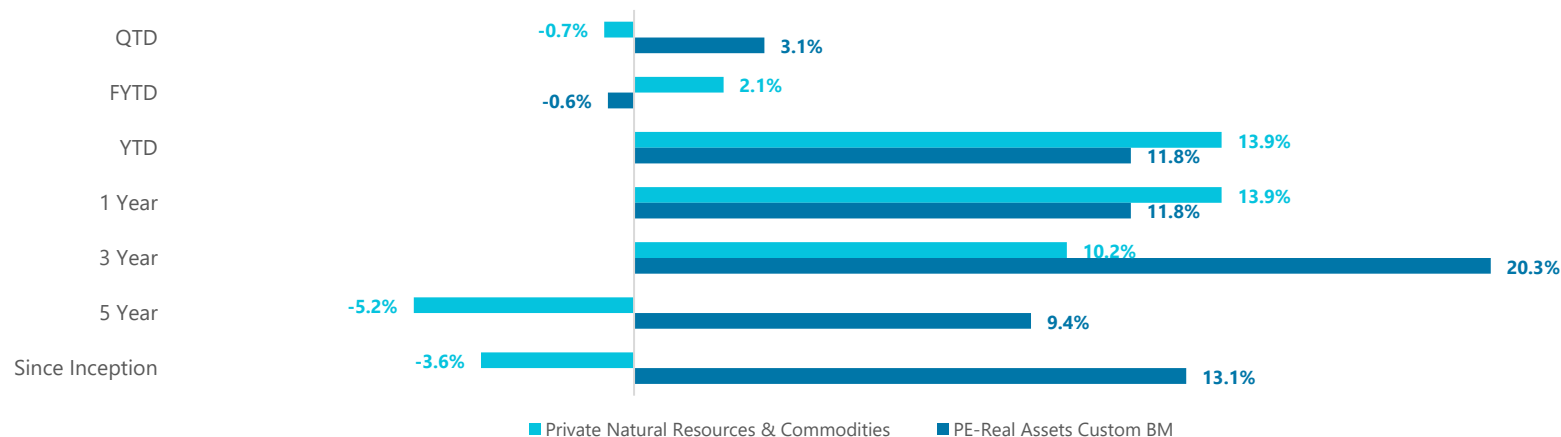
for the quarter ended December 31, 2023



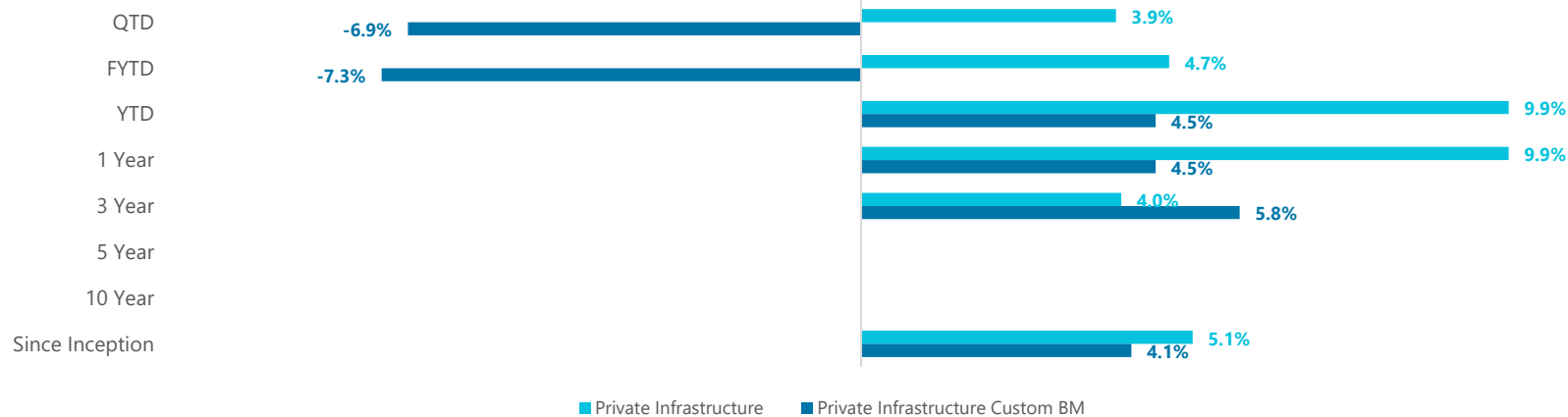
Los Angeles County Employees Retirement Association

### Time-Weighted Returns (net)<sup>1</sup>

#### Private Natural Resources & Commodities



#### Private Infrastructure



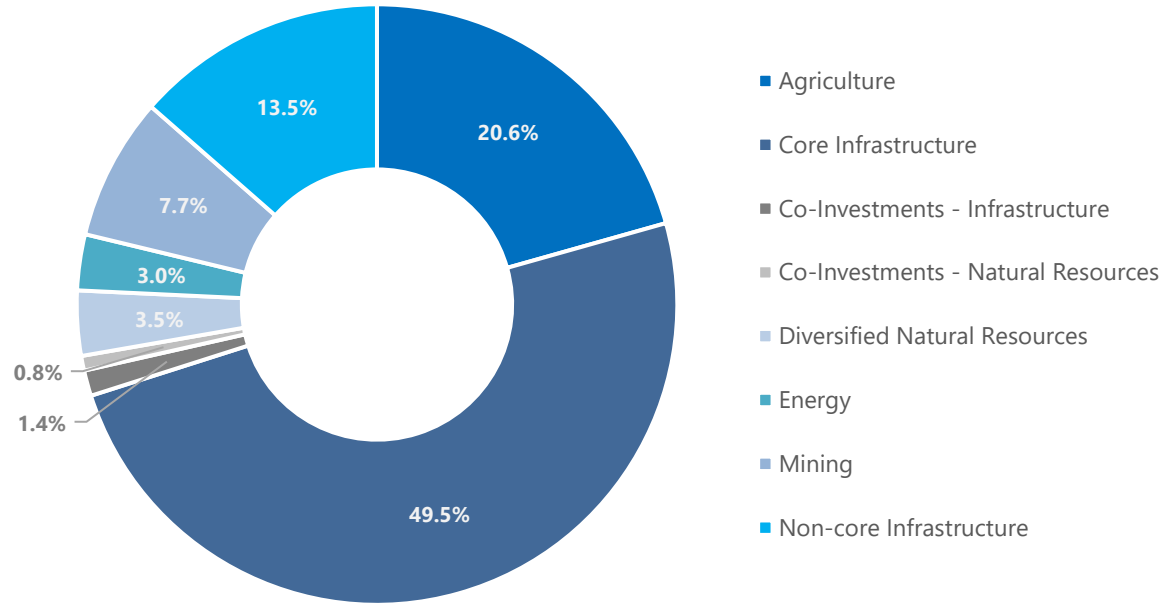
<sup>1</sup> Private natural resources and infrastructure funds reflect early-stage life cycle performance.

# Performance by Strategy

## Private Real Assets ex. Real Estate

for the quarter ended December 31, 2023

### By Strategy<sup>1</sup>



	Number of Investments	Commitments (mm)	Cumulative Contributions (mm)	Cumulative Distributions (mm)	Market Value (mm)	Total Value (mm)	Total Gain / Loss (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME
Agriculture	4	750.0	610.4	92.5	633.7	726.2	115.8	0.15x	1.19x	11.6%	1.08
Core Infrastructure	5	1,667.4	1,488.5	67.7	1,519.4	1,587.0	98.5	0.05x	1.07x	6.3%	1.02
Co-Investments - Infrastructure	3	96.0	37.4	0.0	42.3	42.3	5.0	0.00x	1.13x	15.2%	1.10
Co-Investments - Natural Resources	3	140.1	24.4	0.0	24.3	24.3	(0.1)	0.00x	1.00x	-0.5%	0.89
Diversified Natural Resources	1	138.1	75.5	0.0	107.5	107.5	31.9	0.00x	1.42x	34.7%	1.29
Energy	3	325.0	221.7	120.9	92.5	213.4	(8.3)	0.55x	0.96x	-1.2%	0.74
Mining	4	425.0	233.8	30.8	236.1	266.9	33.2	0.13x	1.14x	10.4%	1.03
Non-core Infrastructure	7	814.1	400.1	30.0	416.2	446.3	46.1	0.08x	1.12x	7.4%	0.99
<b>Total Private Real Assets ex. Real Estate</b>	<b>30</b>	<b>4,355.6</b>	<b>3,091.9</b>	<b>342.0</b>	<b>3,072.0</b>	<b>3,414.0</b>	<b>322.1</b>	<b>0.11x</b>	<b>1.10x</b>	<b>7.1%</b>	<b>1.01</b>

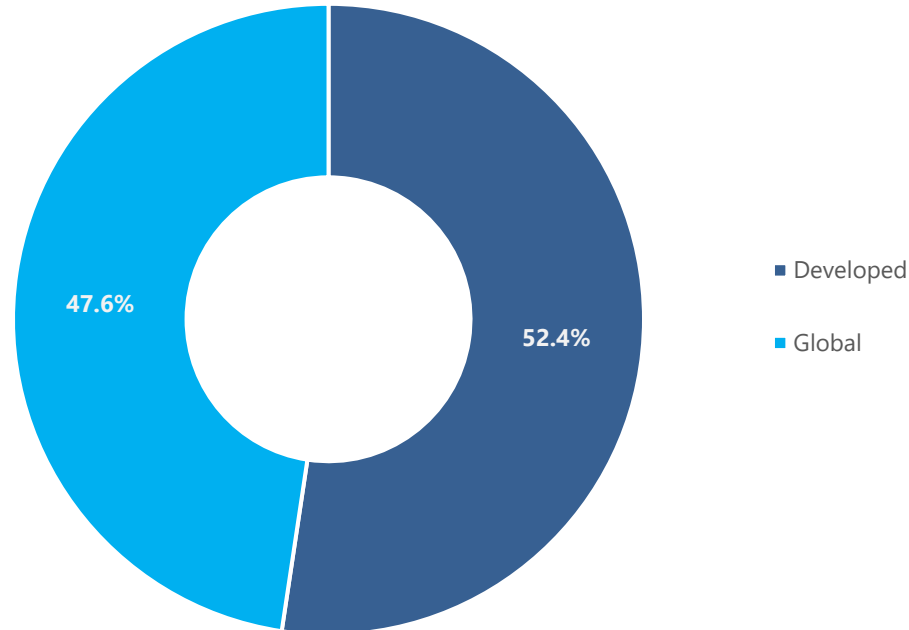
<sup>1</sup> Based on best available cash flow adjusted market values.

# Performance by Geography

## Private Real Assets ex. Real Estate

for the quarter ended December 31, 2023

### By Geography<sup>1</sup>



	Number of Investments	Commitments (mm)	Cumulative Contributions (mm)	Cumulative Distributions (mm)	Market Value (mm)	Total Value (mm)	Total Gain / Loss (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME
Developed	14	2,095.2	1,718.3	251.9	1,608.9	1,860.8	142.5	0.15x	1.08x	5.5%	0.97
Global	16	2,260.4	1,373.6	90.1	1,463.1	1,553.2	179.5	0.07x	1.13x	9.3%	1.05
<b>Total Private Real Assets ex. Real Estate</b>	<b>30</b>	<b>4,355.6</b>	<b>3,091.9</b>	<b>342.0</b>	<b>3,072.0</b>	<b>3,414.0</b>	<b>322.1</b>	<b>0.11x</b>	<b>1.10x</b>	<b>7.1%</b>	<b>1.01</b>

<sup>1</sup> Based on best available cash flow adjusted market values.

# Performance by Vintage Year

## Private Real Assets ex. Real Estate

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

### By Vintage Year<sup>1,2</sup>

#### Private Natural Resources & Commodities

	Number of Investments	Commitments (mm)	Cumulative Contributions (mm)	Cumulative Distributions (mm)	Market Value (mm)	Total Value (mm)	Total Gain / Loss (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME	Quartile Ranking
2004	1	50.0	50.0	91.4	0.0	91.4	41.4	1.83x	1.83x	31.1%	1.40	1st
2011	1	350.0	256.9	29.7	294.3	324.0	67.2	0.12x	1.26x	15.2%	1.14	1st
2014	2	450.0	473.3	92.4	387.2	479.6	6.2	0.20x	1.01x	0.4%	0.79	4th
2021	2	250.0	180.0	30.8	182.1	212.9	32.9	0.17x	1.18x	11.3%	1.07	3rd
2022	4	253.1	127.3	0.0	154.5	154.5	27.2	0.00x	1.21x	17.7%	1.13	1st
2023	5	425.0	78.4	0.0	75.9	75.9	(2.5)	0.00x	0.97x	-4.8%	0.91	4th
<b>Total Private Natural Resources &amp; Commodities</b>	<b>15</b>	<b>1,778.1</b>	<b>1,165.9</b>	<b>244.2</b>	<b>1,094.1</b>	<b>1,338.3</b>	<b>172.4</b>	<b>0.21x</b>	<b>1.15x</b>	<b>7.3%</b>	<b>0.99</b>	

1. Based on best available cash flow adjusted market values.

2. Benchmark data used to generate IRR quartile rankings is latest available by Burgiss Private IQ.

#### Private Infrastructure

	Number of Investments	Commitments (mm)	Cumulative Contributions (mm)	Cumulative Distributions (mm)	Market Value (mm)	Total Value (mm)	Total Gain / Loss (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME	Quartile Ranking
2020	3	336.2	259.3	26.8	285.9	312.7	53.4	0.10x	1.21x	10.9%	1.04	3rd
2021	6	1,179.6	971.6	49.6	951.6	1,001.1	29.5	0.05x	1.03x	3.5%	0.99	3rd
2022	4	965.7	657.7	21.3	698.1	719.5	61.7	0.03x	1.09x	7.3%	1.04	2nd
2023	2	96.0	37.4	0.0	42.3	42.3	5.0	0.00x	1.13x	15.2%	1.10	1st
<b>Total Private Infrastructure</b>	<b>15</b>	<b>2,577.5</b>	<b>1,926.0</b>	<b>97.7</b>	<b>1,977.9</b>	<b>2,075.6</b>	<b>149.6</b>	<b>0.05x</b>	<b>1.08x</b>	<b>6.8%</b>	<b>1.02</b>	

1. Based on best available cash flow adjusted market values.

2. Benchmark data used to generate IRR quartile rankings is latest available by Burgiss Private IQ.

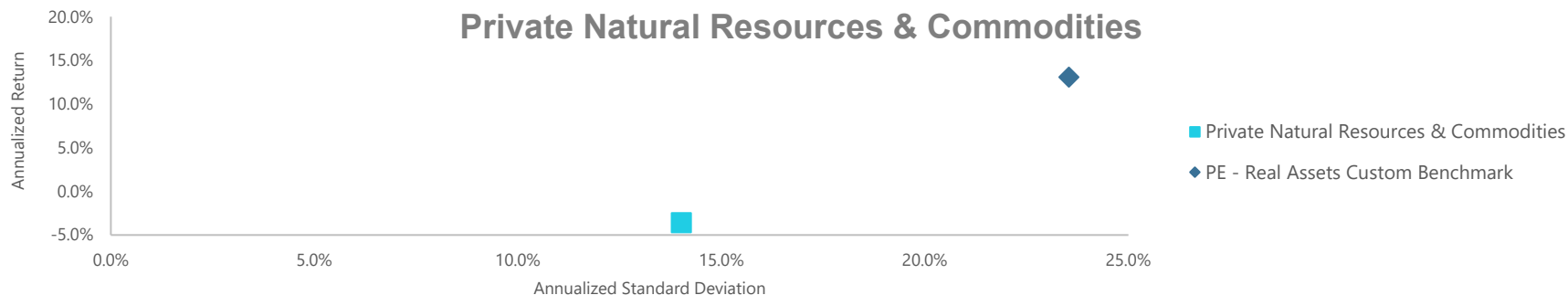
# Risk vs. Return

## Private Real Assets ex. Real Estate

for the quarter ended December 31, 2023

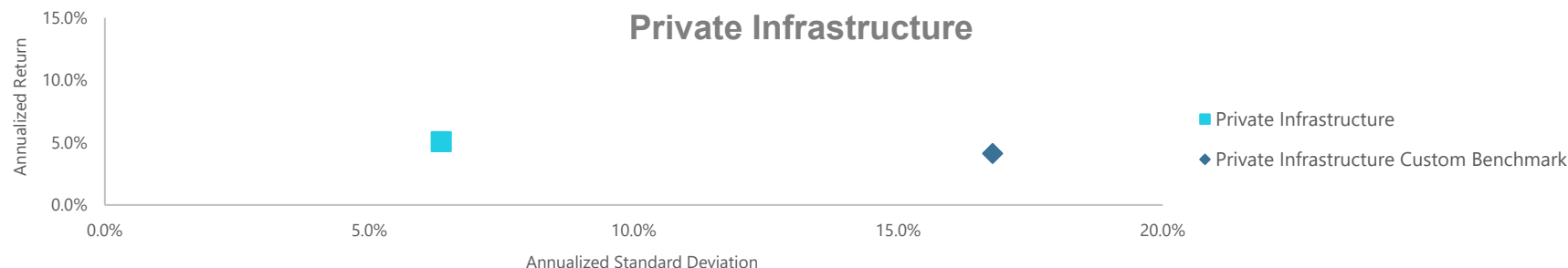
### Since Inception (Annualized)

#### Private Natural Resources & Commodities



	Annualized Return	Standard Deviation	Sharpe Ratio	Information Ratio	Beta	Tracking Error
<b>Private Natural Resources &amp; Commodities</b>	<b>-3.6%</b>	<b>14.0%</b>	<b>-0.32</b>	<b>-0.66</b>	<b>0.11</b>	<b>25.3%</b>
PE - Real Assets Custom Benchmark	13.1%	23.5%				

#### Private Infrastructure



	Annualized Return	Standard Deviation	Sharpe Ratio	Information Ratio	Beta	Tracking Error
<b>Private Infrastructure</b>	<b>5.1%</b>	<b>6.4%</b>	<b>0.45</b>	<b>0.05</b>	<b>-0.06</b>	<b>19.0%</b>
Private Infrastructure Custom Benchmark	4.1%	16.8%				

# Annual Cash Flow Activity

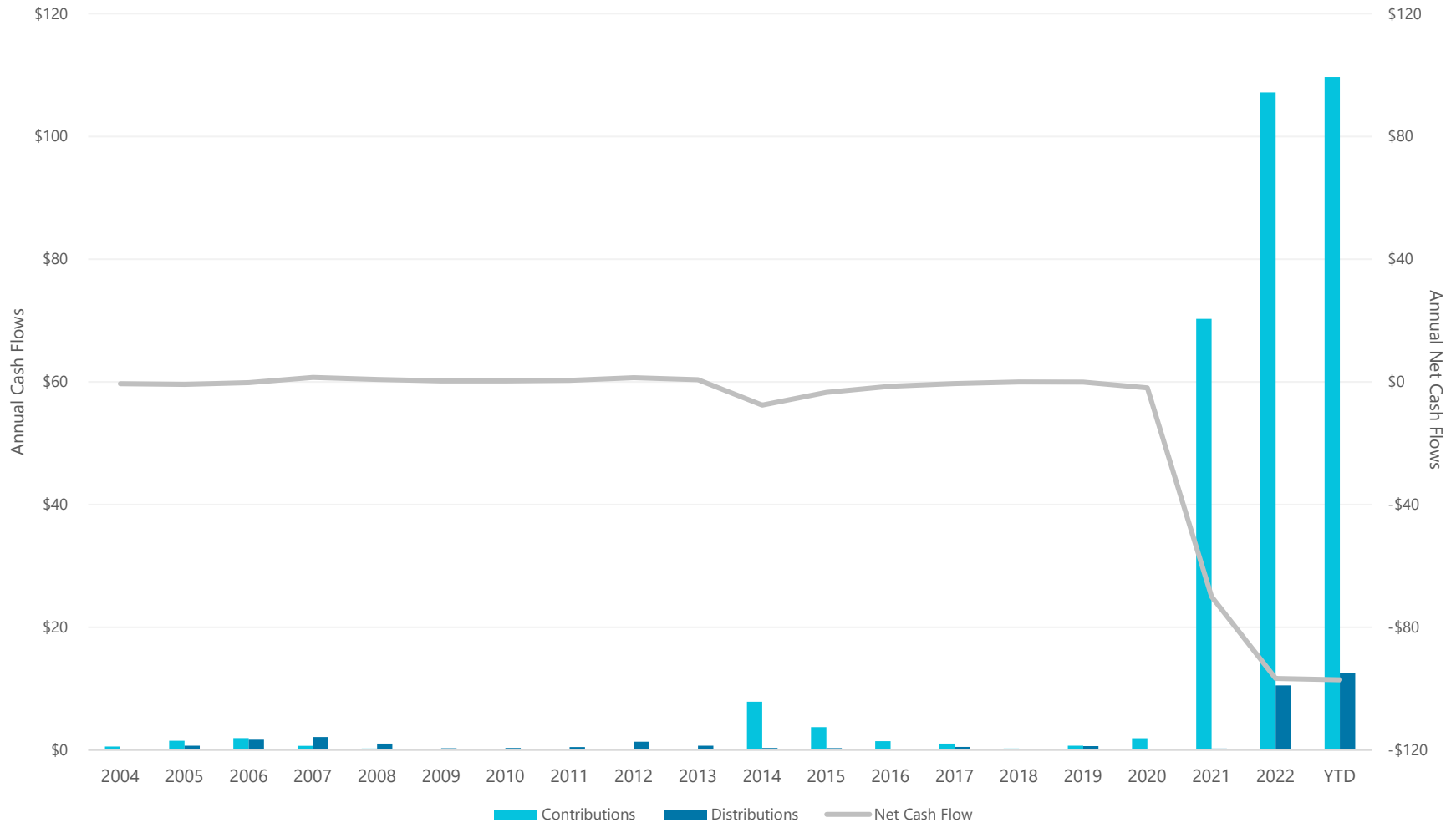
## Private Real Assets ex. Real Estate

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

### By Year (mm)



# Summary

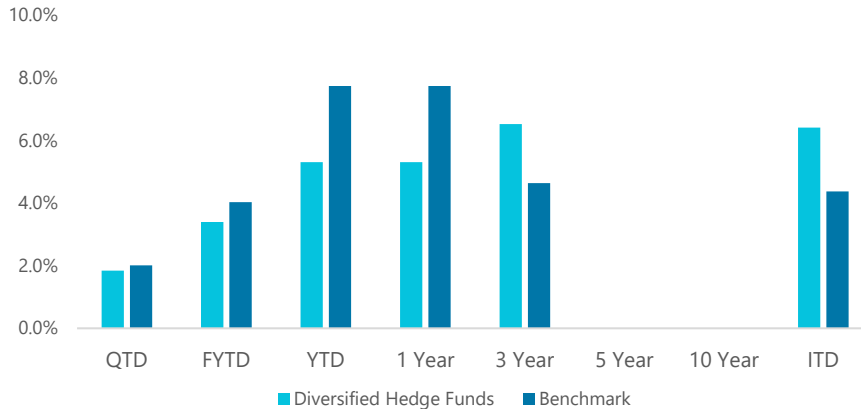
## Diversified Hedge Funds

for the quarter ended December 31, 2023



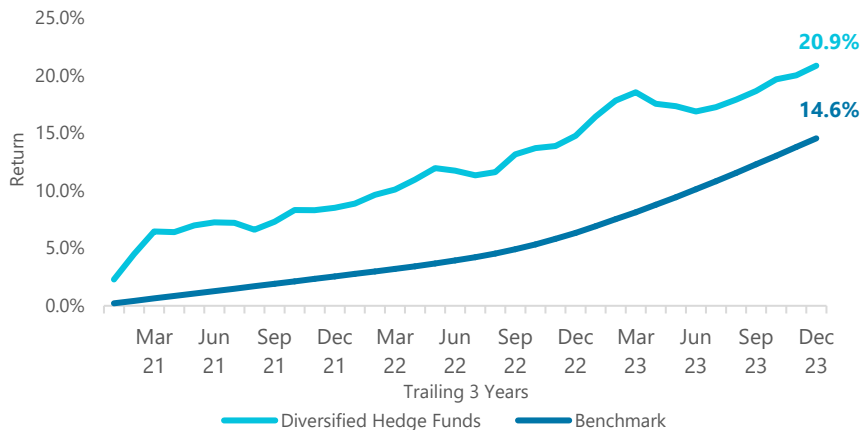
Los Angeles County Employees Retirement Association

### Performance (net)



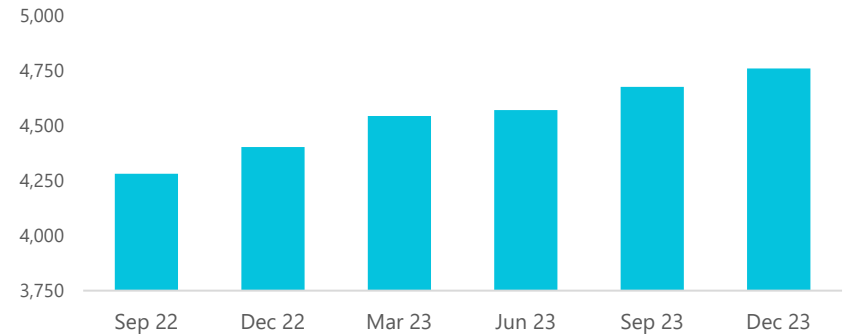
	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD
<b>Diversified Hedge Funds</b>	<b>1.8%</b>	<b>3.4%</b>	<b>5.3%</b>	<b>5.3%</b>	<b>6.5%</b>	--	--	<b>6.4%</b>
Benchmark	2.0%	4.0%	7.7%	7.7%	4.6%	--	--	4.4%
Excess	-0.2%	-0.6%	-2.4%	-2.4%	1.9%	--	--	2.0%

### Cumulative Return

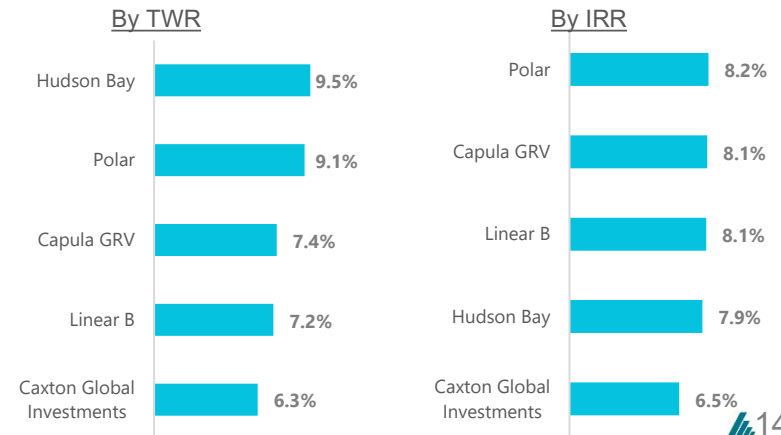


### Asset Growth (mm)

	QTD	FYTD	1 Year	3 Year
Beginning Market Value	4,676	4,570	4,402	1,678
Net Cash Flow	-3	34	121	2,437
Gain/Loss	86	156	236	644
<b>Ending Market Value</b>	<b>4,759</b>	<b>4,759</b>	<b>4,759</b>	<b>4,759</b>



### Top Performing Investments (since inception)



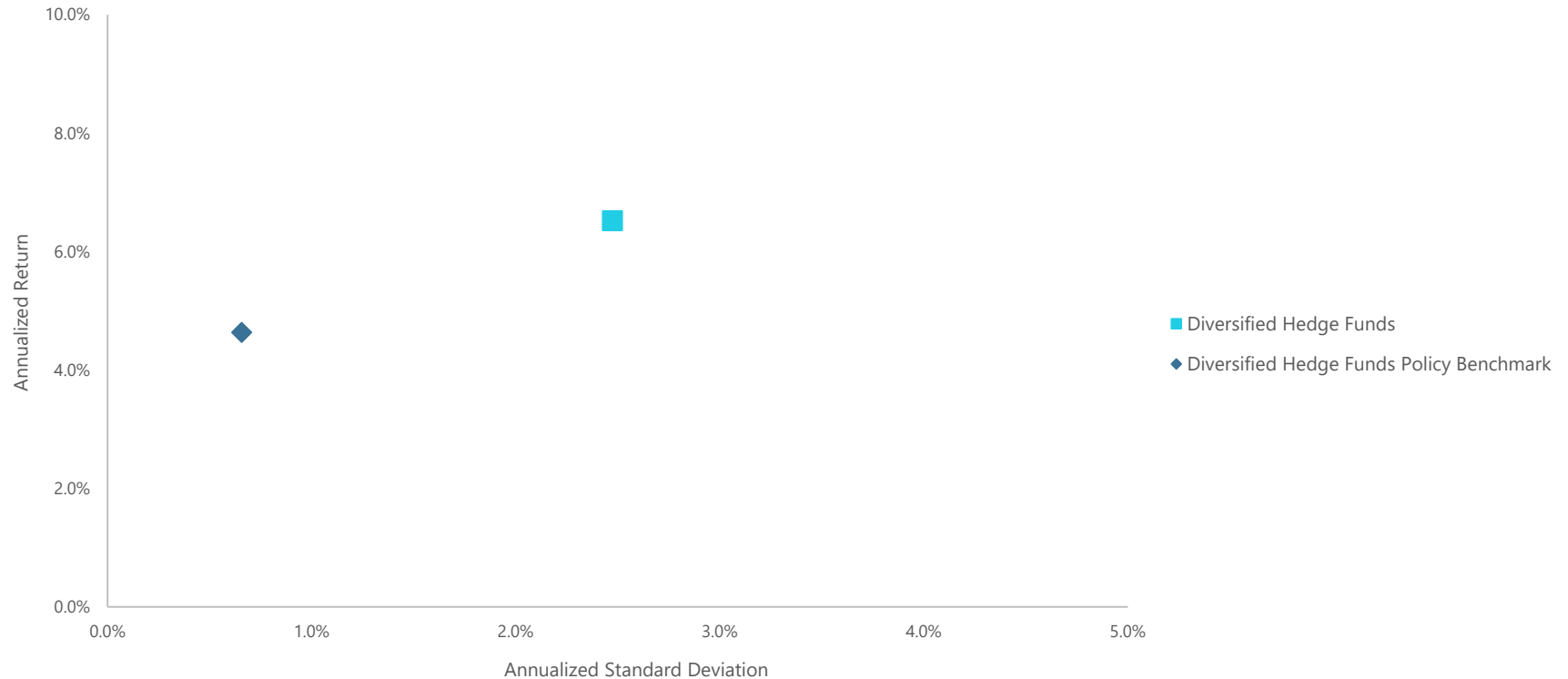


# Risk vs. Return

## Diversified Hedge Funds

for the quarter ended December 31, 2023

### 3 Year (Annualized)



	Annualized Return	Standard Deviation	Sharpe Ratio	Information Ratio	Beta	Tracking Error
<b>Diversified Hedge Funds</b>	<b>6.5%</b>	<b>2.5%</b>	<b>1.71</b>	<b>0.69</b>	<b>-3.04</b>	<b>2.6%</b>
Diversified Hedge Funds Policy Benchmark	4.6%	0.7%				

# Performance Detail

## Diversified Hedge Funds

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

### Annualized Net Returns

	% of Composite	Ending Market Value (mm)	Prior Quarter Ending MV (mm)	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date
<b>Diversified Hedge Funds</b>	<b>100.0%</b>	<b>4,759</b>	<b>4,676</b>	<b>1.8%</b>	<b>3.4%</b>	<b>5.3%</b>	<b>5.3%</b>	<b>6.5%</b>	--	--	<b>6.4%</b>	<b>Apr-2019</b>
Diversified Hedge Funds Policy Benchmark				2.0%	4.0%	7.7%	7.7%	4.6%	--	--	4.4%	
<b>LACERA HF Direct</b>	<b>88.4%</b>	<b>4,205</b>	<b>4,125</b>	<b>1.9%</b>	<b>3.4%</b>	<b>5.5%</b>	<b>5.5%</b>	<b>6.7%</b>	<b>6.4%</b>	--	<b>5.2%</b>	<b>May-2018</b>
Custom Hedge Fund Benchmark				2.0%	4.0%	7.7%	7.7%	4.6%	4.5%	--	4.8%	
AM Asia Strategies	4.9%	234	230	1.9%	-4.5%	8.0%	8.0%	--	--	--	1.5%	Jun-2021
Brevan Howard Master Fund	13.5%	640	631	1.5%	2.5%	-1.5%	-1.5%	--	--	--	5.3%	Apr-2021
Capula GRV	15.0%	713	694	2.7%	5.6%	11.1%	11.1%	8.1%	7.6%	--	7.4%	Dec-2018
Caxton Global Investments	6.2%	296	283	4.3%	4.9%	-0.4%	-0.4%	--	--	--	6.3%	Feb-2021
DK Institutional Partners	10.8%	513	506	1.4%	3.3%	5.6%	5.6%	4.3%	5.2%	--	4.8%	May-2018
HBK Multi-strategy	13.0%	621	604	2.8%	6.0%	7.4%	7.4%	7.0%	6.2%	--	5.8%	Jun-2018
Hudson Bay	14.6%	693	684	1.2%	3.2%	6.6%	6.6%	8.9%	--	--	9.5%	Jul-2020
Polar	10.4%	494	491	0.6%	2.1%	5.8%	5.8%	5.1%	--	--	9.1%	May-2020
<b>HF Emerging Managers Program</b>	<b>11.3%</b>	<b>539</b>	<b>532</b>	<b>1.3%</b>	<b>3.7%</b>	<b>4.4%</b>	<b>4.4%</b>	--	--	--	<b>1.7%</b>	<b>Aug-2021</b>
Custom Hedge Fund Benchmark				2.0%	4.0%	7.7%	7.7%	--	--	--	5.1%	
Stable Asset Management	11.3%	539	532	1.3%	3.7%	4.4%	4.4%	--	--	--	1.7%	Aug-2021

# emerging manager program

# Emerging Manager Program

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Annualized Net Returns

	Ending Market Value (mm)	QTD	FYTD	YTD	1 Year	3 Year	5 Year	ITD TWR	ITD IRR	Inception Date
<b>Growth</b>										
<b>Global Equity</b>										
Cornercap	91.7	13.7%	11.7%	13.7%	13.7%	12.4%	13.4%	8.4%	8.4%	Oct-2018
Global Equity Policy Benchmark		11.1%	7.4%	21.6%	21.6%	5.5%	--	9.4%	9.4%	
<b>Private Equity</b>										
Hamilton Lane Emerging Managers Program	8.2	5.9%	1.1%	--	--	--	--	95.7%	51.2%	Mar-2023
J.P. Morgan Emerging Managers Program	58.8	0.2%	-3.4%	-3.2%	-3.2%	20.1%	19.6%	24.5%	22.4%	Jan-2010
J.P. Morgan Emerging Managers Program II	63.0	0.5%	-6.7%	-15.4%	-15.4%	8.4%	4.7%	23.8%	35.3%	Apr-2014
J.P. Morgan Emerging Managers Program III	100.4	0.1%	2.6%	3.9%	3.9%	19.1%	22.4%	25.0%	28.0%	Jan-2017
J.P. Morgan Emerging Managers Program IV	270.2	1.0%	4.7%	9.8%	9.8%	17.2%	18.6%	18.0%	15.6%	Nov-2018
Total Private Equity Custom Benchmark		-2.9%	3.2%	22.1%	22.1%	8.9%	12.0%	13.5%	13.5%	
<b>Non-Core Private Real Estate</b>										
Cityview Bay Area Fund II	23.4	-0.8%	-74.9%	-75.6%	-75.6%	-36.1%	-23.6%	--	3.7%	Nov-2012
Cityview Western Fund I, LP	185.5	-12.3%	-16.4%	-15.8%	-15.8%	7.5%	7.9%	-46.9%	7.2%	Jul-2016
CVBAF II Union City Co-Invest	5.1	0.1%	-78.2%	-76.1%	-76.1%	-37.4%	-26.1%	-13.4%	-9.0%	Dec-2015
Non-Core Private RE Policy Benchmark		-1.6%	-3.9%	-10.9%	-10.9%	8.8%	7.5%	10.7%	10.7%	
<b>Credit</b>										
<b>Illiquid Credit</b>										
Stable Asset Management - IC	106.3	-1.3%	0.7%	0.7%	0.7%	--	--	0.7%	0.7%	Nov-2022
Illiquid Credit Policy Benchmark		2.4%	6.6%	11.4%	0.7%	--	--	19.1%	19.1%	
<b>Real Assets &amp; Inflation Hedges</b>										
<b>Core Private Real Estate</b>										
Cityview Core I.M.A	158.5	-4.9%	-6.3%	-21.7%	-21.7%	-3.6%	-2.3%	1.7%	1.8%	Jun-2014
Core Private RE Policy Benchmark		-2.1%	-4.9%	-12.9%	-12.9%	6.3%	5.0%	6.6%	6.6%	
<b>Risk Reduction &amp; Mitigation</b>										
<b>Hedge Funds</b>										
Stable Asset Management	538.6	1.3%	3.7%	4.4%	4.4%	--	--	1.7%	2.8%	Aug-2021
Custom Hedge Fund Benchmark		2.0%	4.0%	7.7%	7.7%	--	--	5.1%	5.1%	

# compliance monitor

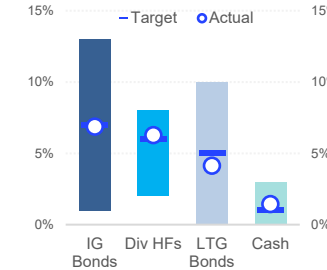
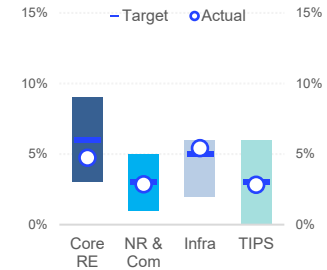
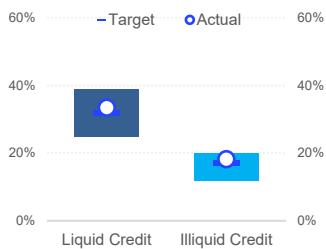
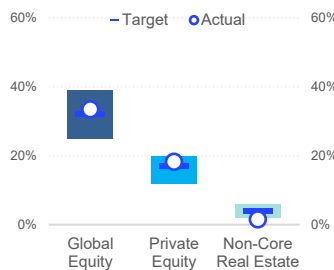
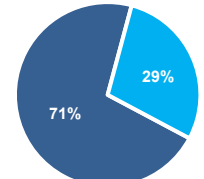
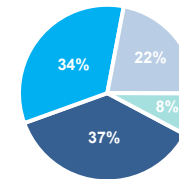
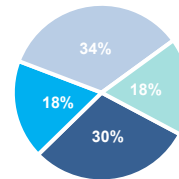
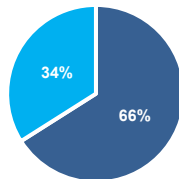
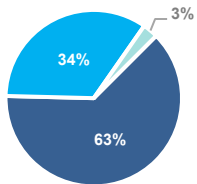
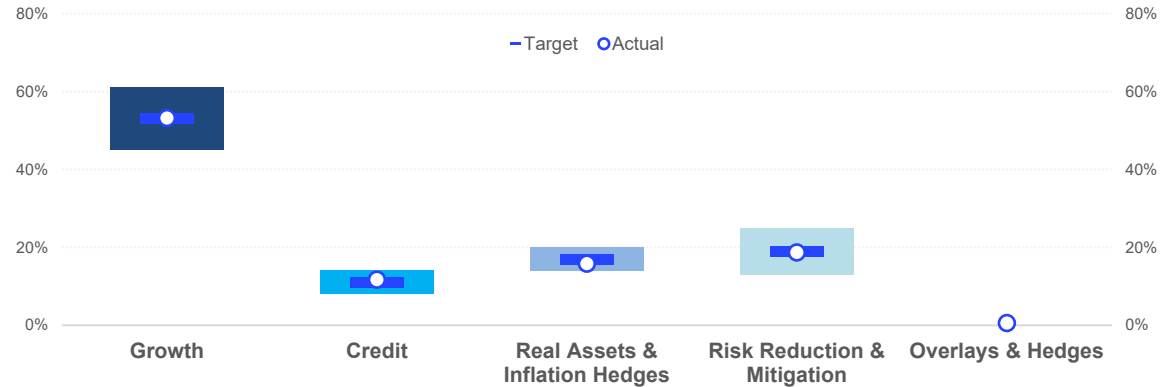
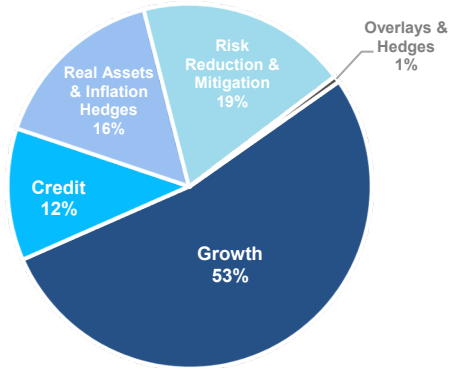
# Compliance Monitor

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Total Fund Asset Allocation, Policy Ranges, and Targets



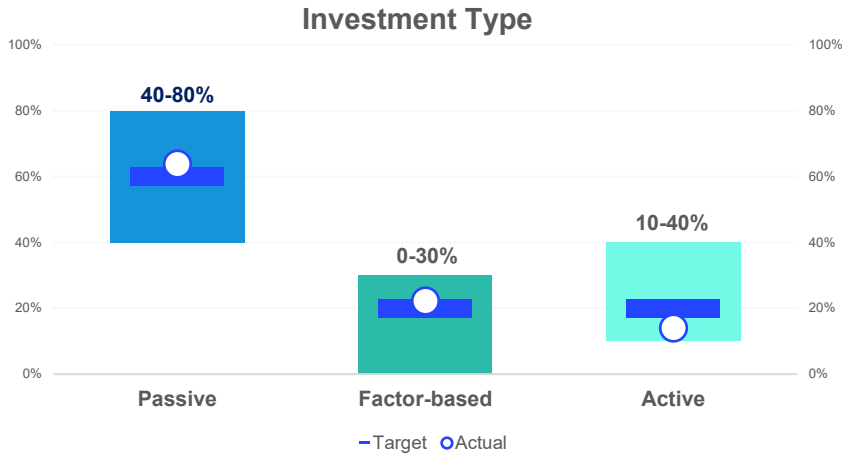
# Compliance Monitor

for the quarter ended December 31, 2023

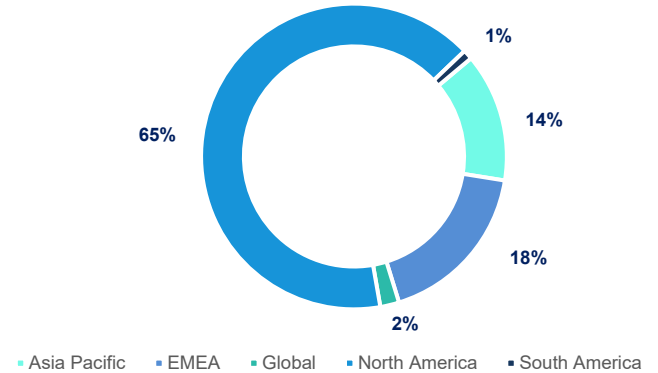


Los Angeles County Employees Retirement Association

## Growth – Global Equity



## Region Exposure



## Compliance Review Status

	No. of Advisory	Advisory Notes
<b>Asset Allocation Compliance</b>		
<b>Program Guideline Compliance</b>		
Emerging Manager Program		
Global Equity Overlay Program		
Market Capitalization		
Region		
Strategy		
<b>Investment Manager Compliance</b>		
Economic Substitution Policy (Iran/Sudan/Tobacco)	<b>18</b>	5 Iran issuers totaling \$6.5 million in market value. 7 Sudan issuers totaling \$32.5 million in market value. 6 Tobacco issuers totaling \$46.1 million in market value.

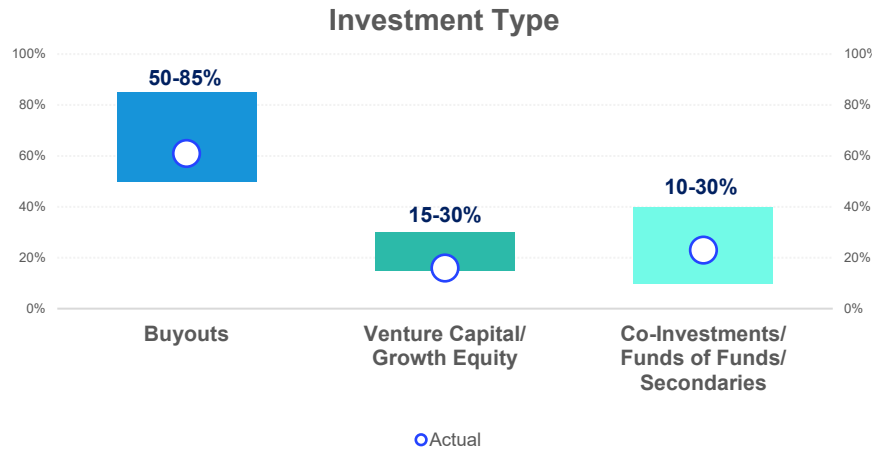
# Compliance Monitor

for the quarter ended December 31, 2023

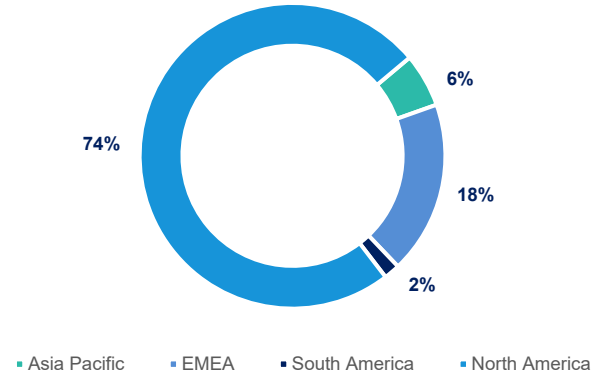


Los Angeles County Employees Retirement Association

## Growth – Private Equity



## Region Exposure



## Compliance Review Status

	No. of Advisory	Advisory Notes
<b>Asset Allocation Compliance</b>		
<b>Program Guideline Compliance</b>		
Co-Investments		
Emerging Manager Program		
Investment Size, Single Partnership, General Partner Limits		
Secondary Purchases and Sales		
Sub-Asset Class and Geography Target Allocation Ranges		
<b>Investment Manager Compliance</b>		
Restricted Investments (Hostile Takeover, Privatization)		



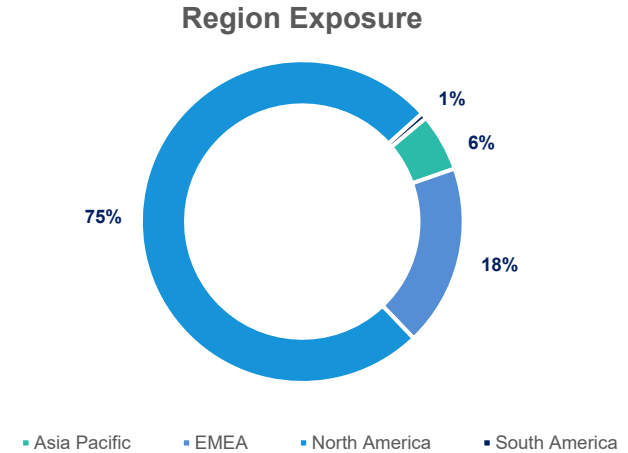
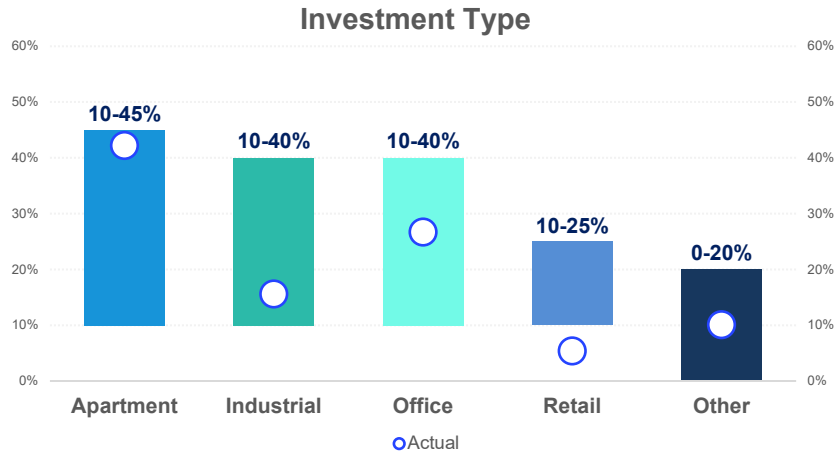
# Compliance Monitor

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Growth – Non-Core Private Real Estate



## Compliance Review Status

	No. of Advisory	Advisory Notes
<b>Asset Allocation Compliance</b>	1	Non-Core Private Real Estate was 0.5% below the target policy range. Actual allocations may fall outside of range as the portfolio makes its Board-approved strategic transition.
<b>Program Guideline Compliance</b>		
Fund Concentration		
Geography		
Leverage		
Manager Diversification		
Property Type	1	Non Core Retail was under target range by 4.6%. Actual allocations may fall outside of range as the portfolio makes its Board-approved strategic transition.
<b>Investment Manager Compliance</b>	1	One non-core manager was 3.9% above the 20% manager concentration limit. Actual allocations may fall outside of the defined limits as the portfolio makes its Board-approved strategic transition.

# Compliance Monitor

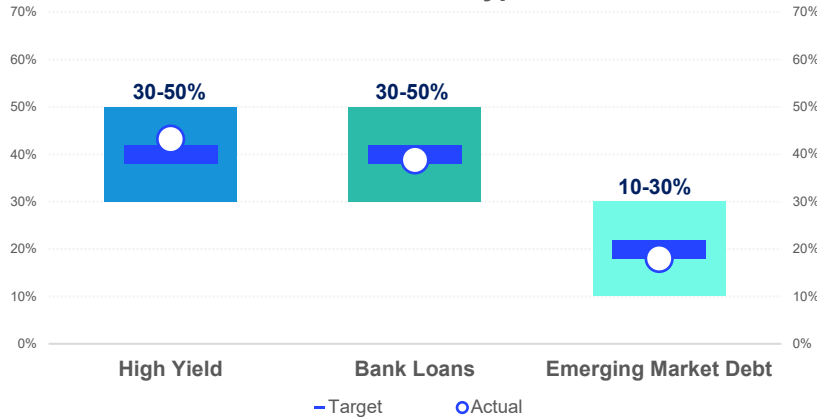
for the quarter ended December 31, 2023



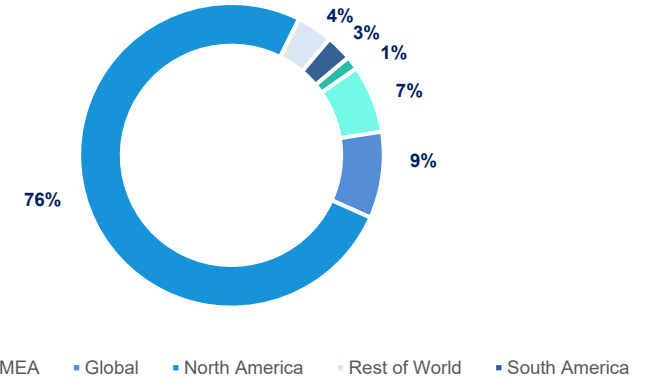
Los Angeles County Employees Retirement Association

## Credit – Liquid Credit

Investment Type



Region Exposure



## Compliance Review Status

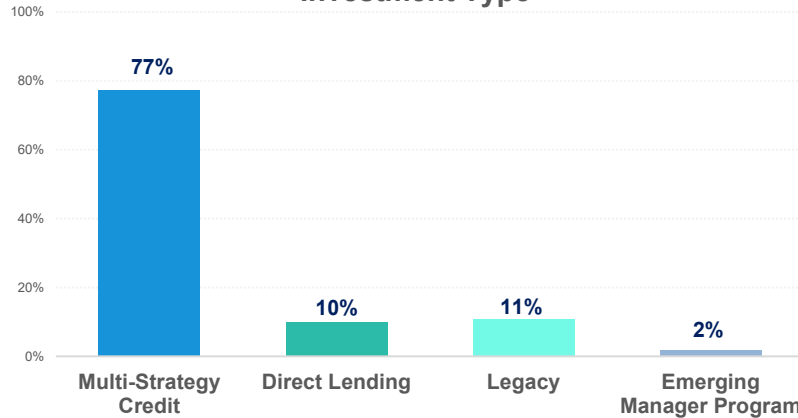
	No. of Advisory	Advisory Notes
<b>Asset Allocation Compliance</b>		
<b>Program Guidelines Compliance</b>		
Credit Quality		
Currency		
Geography		
Leverage (Not Permitted)		
Risk Target		
Sector		
<b>Investment Manager Compliance</b>		
Economic Substitution Policy (Iran/Sudan/Tobacco)		
Restricted Investments (Los Angeles County, District, and Agency)		

# Compliance Monitor

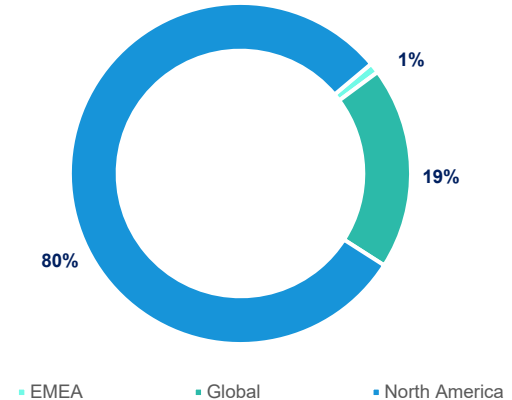
for the quarter ended December 31, 2023

## Credit – Illiquid Credit

Investment Type



Region Exposure



## Compliance Review Status

	No. of Advisory	Advisory Notes
<b>Asset Allocation Compliance</b>		
<b>Program Guideline Compliance</b>		
Currency		
Emerging Manager Program		
Geography		
Manager Count		
<b>Investment Manager Compliance</b>		
Co-Investments		
Contingent Capital (opportunities based on market environment)		
Economic Substitution Policy (Iran/Sudan/Tobacco)		
Restricted Investments (Los Angeles County, District, and Agency)		

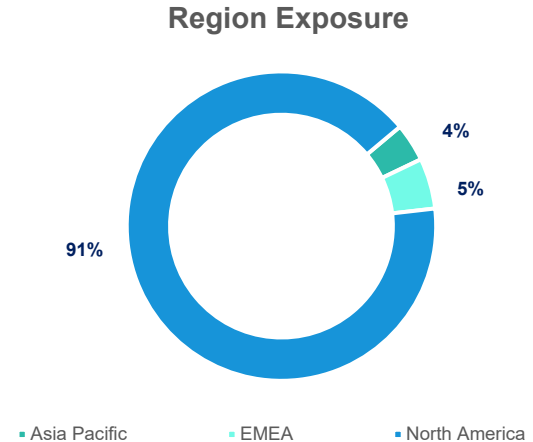
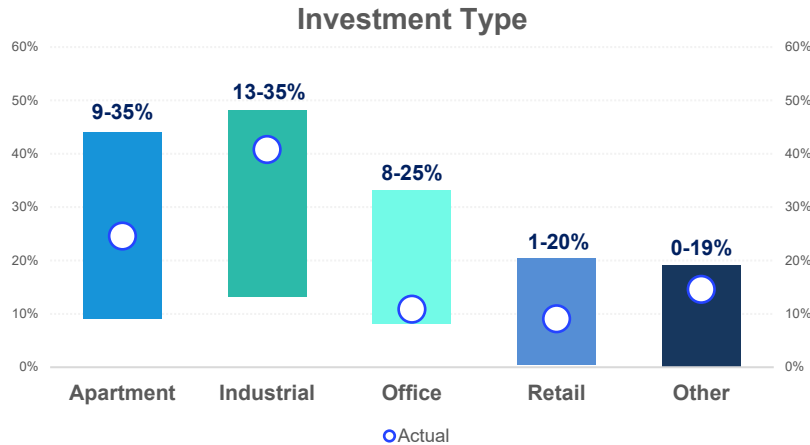
# Compliance Monitor

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Real Assets & Inflation Hedges – Core Private Real Estate



## Compliance Review Status

	No. of Advisory	Advisory Notes
<b>Asset Allocation Compliance</b>		
<b>Program Guideline Compliance</b>		
Property Type		
Geography	2	Allocations to the Eastern and Western regions surpassed the +/- 10% variance of ODCE by 8.1% and 1.8% respectively. Actual allocations may fall outside of the defined limits as the portfolio makes its Board-approved strategic transition.
Leverage		
Manager Diversification	1	One Core manager was 0.2% above the 35% manager concentration limit. Actual allocations may fall outside of the defined limits as the portfolio makes its Board-approved strategic transition.
Fund Concentration		
<b>Investment Manager Compliance</b>		

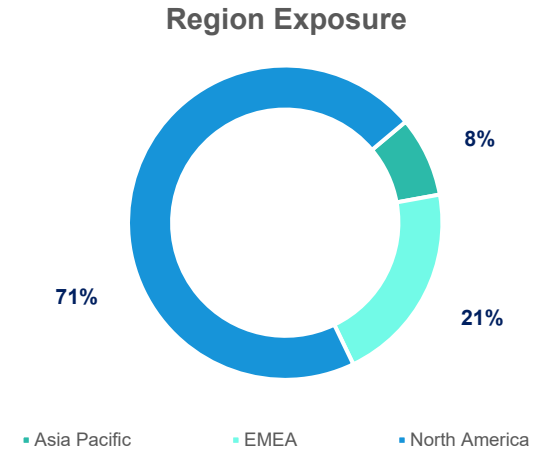
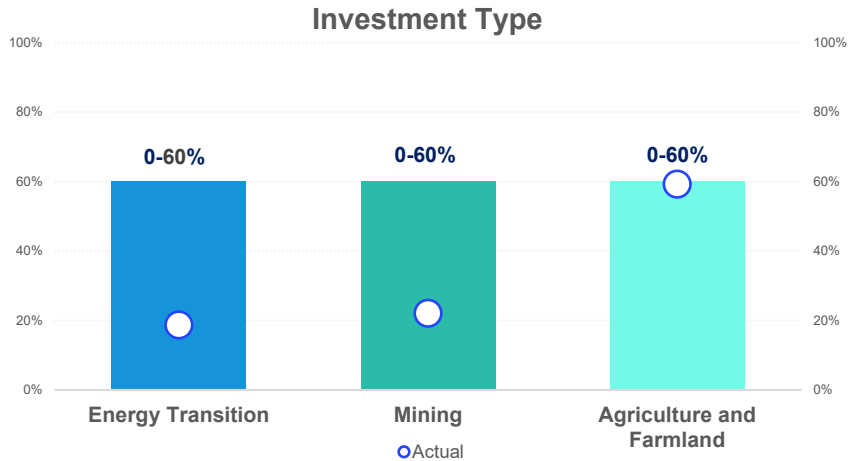
# Compliance Monitor

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Real Assets & Inflation Hedges – Natural Resources & Commodities<sup>1</sup>



## Compliance Review Status

	No. of Advisory	Advisory Notes
<b>Asset Allocation Compliance</b>		
<b>Private Natural Resources &amp; Commodities Program Guideline Compliance</b>		
Alternative Investment Vehicles (Co-investments & Secondaries)		
Fund Concentration		
Geography		
Investment Size Range		
Manager Diversification		
Sector		
<b>Public Natural Resources &amp; Commodities Program Guideline Compliance</b>		
Leverage (Not permitted)		
Tracking Error		
<b>Investment Manager Compliance</b>		
Economic Substitution Policy (Iran/Sudan/Tobacco)		

<sup>1</sup> Graphs represent private investments only.

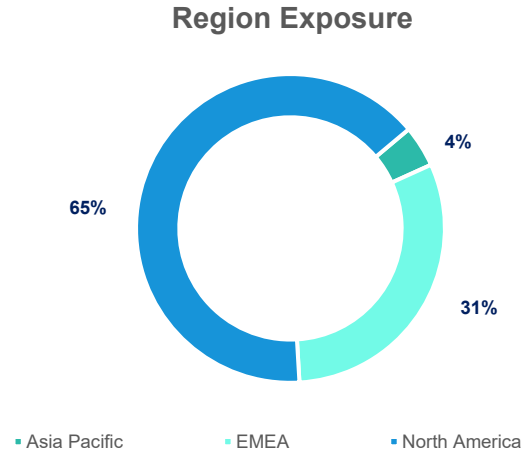
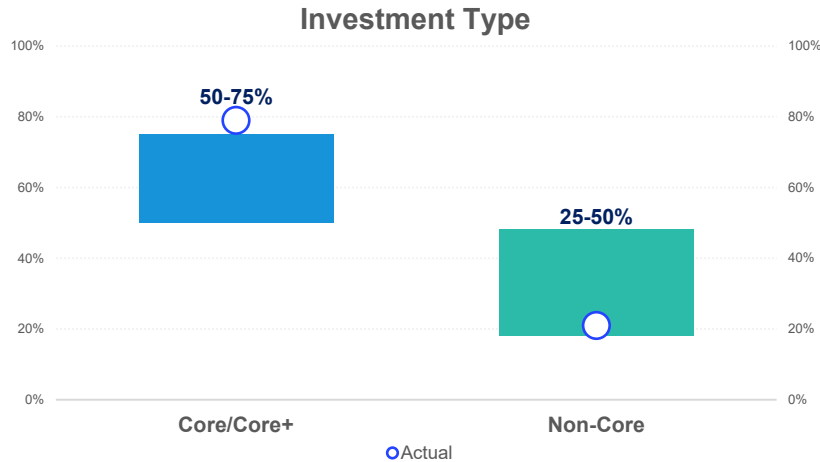
# Compliance Monitor

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Real Assets & Inflation Hedges – Infrastructure<sup>1</sup>



## Compliance Review Status

	No. Advisory	Advisory Notes
<b>Asset Allocation Compliance</b>		
<b>Private Infrastructure Program Guideline Compliance</b>		
Co-Investments		
Fund Concentration		
Geography		
Investment Size Range		
Manager Diversification		
Secondaries		
Sector	1	Allocations may fall outside of defined limits/ranges as capital is actively deployed into private real assets from public markets.
<b>Public Infrastructure Program Guideline Compliance</b>		
Leverage (Not permitted)		
Tracking Error		
<b>Investment Manager Compliance</b>		
Economic Substitution Policy (Iran/Sudan/Tobacco)		

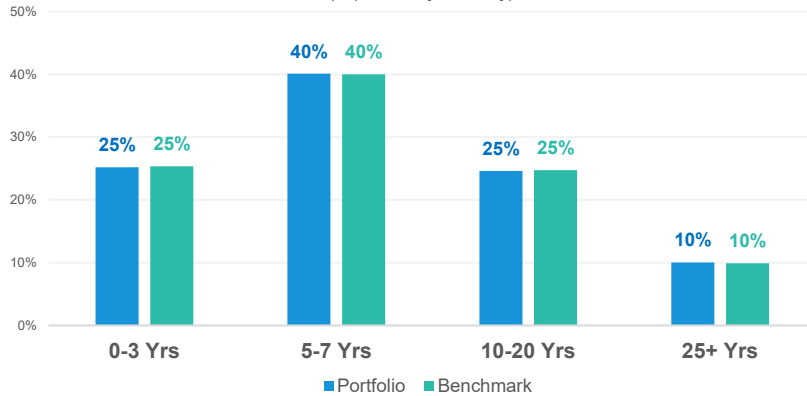
<sup>1</sup> Graphs represent private investments only.

# Compliance Monitor

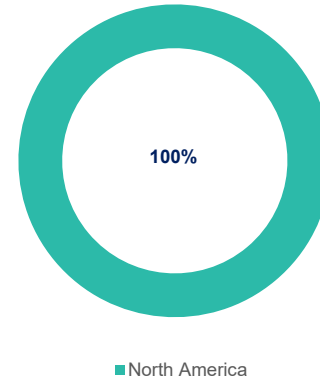
for the quarter ended December 31, 2023

## Real Assets & Inflation Hedges – TIPS

**Investment Type**  
(exposure by maturity)



**Region Exposure**



## Compliance Review Status

	No. Advisory	Advisory Notes
<b>Asset Allocation Compliance</b>		
<b>Program Guideline Compliance</b>		
Aggregate Duration		
<b>Investment Manager Compliance</b>		
Economic Substitution Policy (Iran/Sudan/Tobacco)		
Restricted Investments (Los Angeles County, District, and Agency)		

# Compliance Monitor

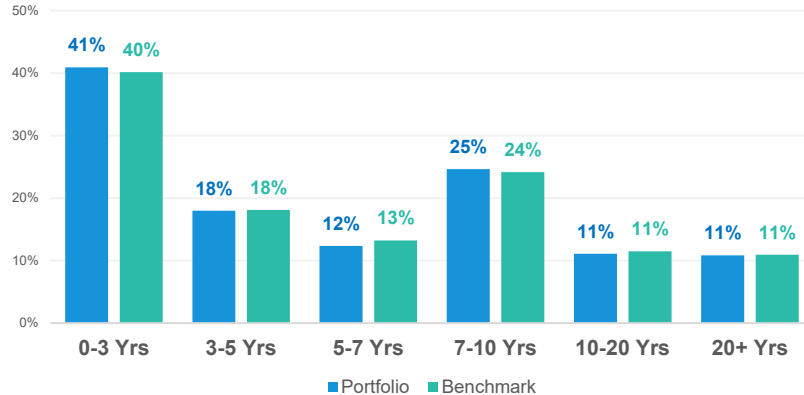
for the quarter ended December 31, 2023



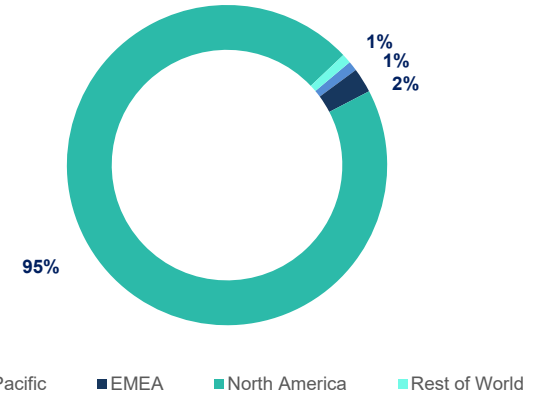
Los Angeles County Employees Retirement Association

## Risk Reduction & Mitigation – Investment Grade Bonds

**Investment Type**  
(exposure by maturity)



**Region Exposure**



## Compliance Review Status

	No. of Advisory	Advisory Notes
<b>Asset Allocation Compliance</b>		
<b>Program Guideline Compliance</b>		
Aggregate Duration		
Currency		
Geography		
Leverage (Not permitted)		
Quality		
Sectors		
<b>Investment Guidelines</b>		
Economic Substitution Policy (Iran/Sudan/Tobacco)	3	1 Iran issuer totaling \$2.0 million in market value. 2 Tobacco issuers totaling \$8.2 million in market value.
Restricted Investments (Los Angeles County, District and Agency)		



# Compliance Monitor

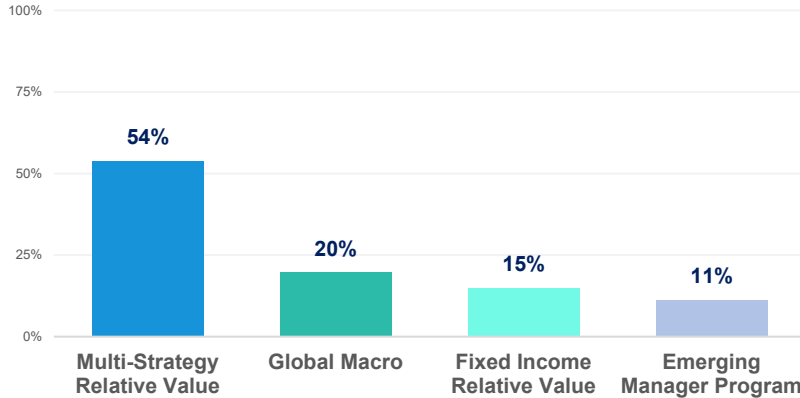
for the quarter ended December 31, 2023



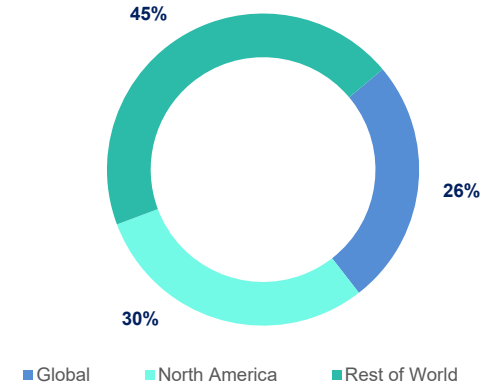
Los Angeles County Employees Retirement Association

## Risk Reduction & Mitigation – Diversified Hedge Funds

Investment Type



Region Exposure



## Compliance Review Status

	No. of Advisory	Advisory Notes
<b>Asset Allocation Compliance</b>		
<b>Program Guideline Compliance</b>		
Emerging Manager Program		
Geography		
Leverage		
Liquidity		
Manager Count		
Market Sensitivity		
Partnership Size Limits		
Risk Target		
Side Pockets		
Transparency		
<b>Investment Manager Guidelines</b>		
Direct Portfolio Manager Guideline Compliance		

# Compliance Monitor

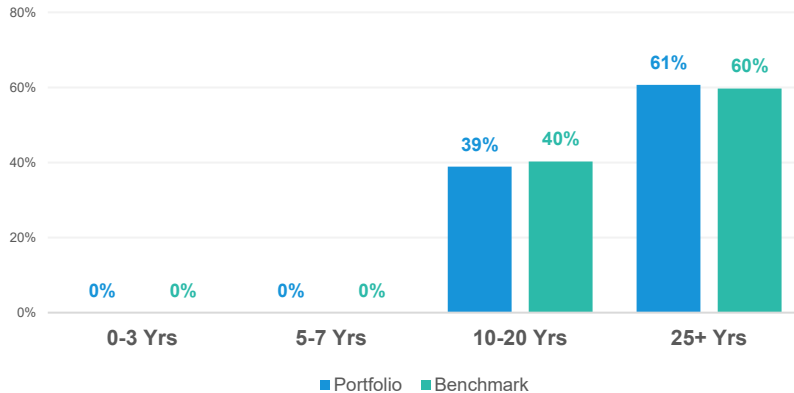
for the quarter ended December 31, 2023



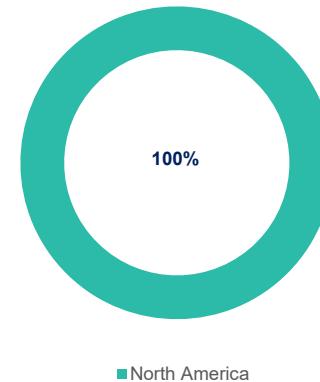
Los Angeles County Employees Retirement Association

## Risk Reduction & Mitigation – Long-Term Government Bonds

**Investment Type**  
(exposure by maturity)



**Region Exposure**



## Compliance Review Status

	No. of Advisory	Advisory Notes
<b>Asset Allocation Compliance</b>		
<b>Program Guideline Compliance</b>		
Aggregate Duration		
Leverage (Not permitted)		
<b>Investment Manager Compliance</b>		
Economic Substitution Policy (Iran/Sudan/Tobacco)		
Restricted Investments (Los Angeles County, District and Agency)		

# Compliance Monitor

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Cash<sup>1</sup>

	No. of Advisory	Advisory Notes
<b>Asset Allocation Compliance</b>		
<b>Program Guideline Compliance</b>		
<b>Investment Manager Compliance</b>		
Economic Substitution Policy (Iran/Sudan/Tobacco)		
Restricted Investments (Los Angeles County, District and Agency)		

<sup>1</sup> Cash is part of the Risk Reduction & Mitigation functional category.

## Overlays & Hedges

	No. of Advisory	Advisory Notes
<b>Asset Allocation Compliance</b>		
<b>Program Guideline Compliance</b>		
Cash Overlay Program		
Currency Hedge Program		
<b>Investment Manager Compliance</b>		

## Securities Lending

	No. of Advisory	Advisory Notes
<b>Program Guideline Compliance</b>		
Amount of Collateralization		
Eligible Collateral		
<b>Investment Manager Compliance</b>		
Economic Substitution Policy (Iran/Sudan/Tobacco)		

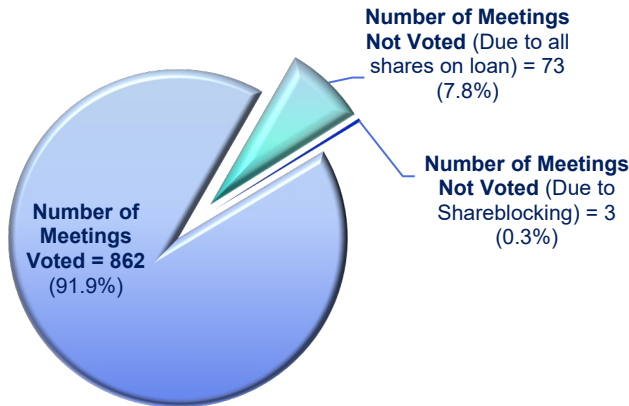
# Compliance Monitor

for the quarter ended December 31, 2023

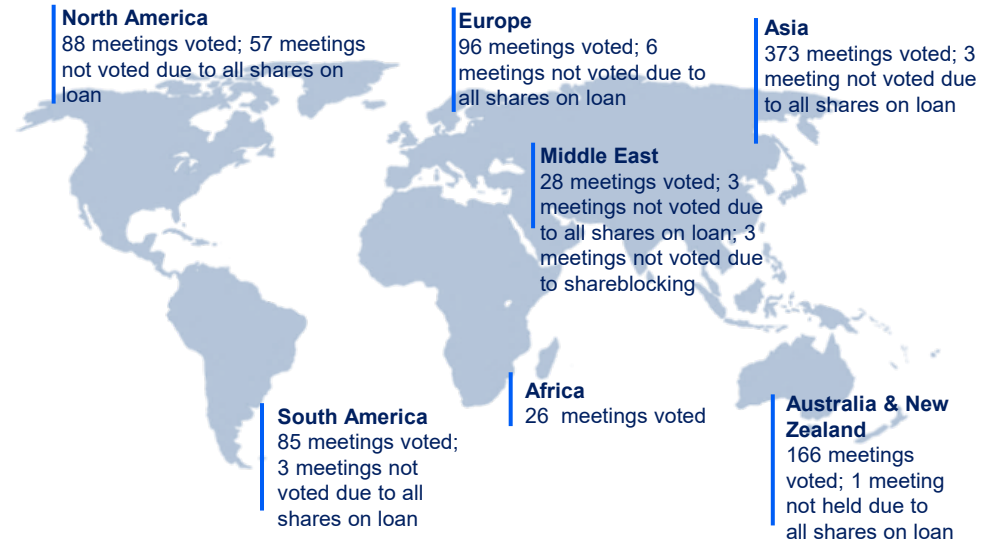
## Special Programs and Investment Operations

### Proxy Voting

#### Meetings Voted vs. Not-Voted



#### Meetings Voted vs. Not-Voted



#### Securities Lending Program

**\$5,674.0 million**  
\$ Value of Cash/ Non-Cash Collaterals

---

**\$5,077.8 million**  
\$ Value on Loan

---

**\$15.2 million**  
Total Income - Calendar YTD

#### Paid Tax Reclaims

**\$7.4 million**  
Calendar YTD Total

#### Pending Tax Reclaims

**\$30.7 million**  
Calendar YTD Total

#### Special Projects

	Annual Contract Compliance	In Progress
	Annual Fee Report – AB 2833 (Section 7514.7)	Complete
	Quarterly Fee Validation	Complete
	Investment Manager Meeting Requests	No Advisory Noted
	Annual Assessment of IC meetings	Complete

# Compliance Monitor

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Reference Guide

### General Information

**Overview and Purpose:** This report is delivered to the Board of Investments every quarter as a means of oversight; ensuring that asset category and investment manager activity align with established guidelines. It is a tool to monitor adherence, ensure transparency, and facilitate communication of investment and operational activities.

### Methodology

- Data collected from multiple sources including: LACERA's custodian, MSCI BarraOne Risk platform, Investment Consultant and Manager reports.
- Analysis period for private market allocations: Private Equity, Private Real Assets and Real Estate (3-month lag), Illiquid Credit (1- and 3-month lag), and Hedge Funds (1-month lag).
- Region Exposure graphs based on country of domicile.

### Terms

- "Advisory" used throughout this report serves as a monitoring measure and does not always equate to a compliance breach or a violation. No advisory indicates there is nothing to share.
- "Asset Allocation Compliance" measures actual asset allocation versus investment policy target weights and ranges.
- "Program Guideline Compliance" assesses asset category level guidelines.
- "Investment Guideline Compliance" measures investment manager guideline compliance as established in investment manager agreements.
- "Rest of World" equates to the sum of all countries with an exposure of less than 0.5%.
- "Global" represents investments allocated to regions where specific country allocations are not available, e.g., securities in the European Union.
- "Economic Substitution Policy" LACERA policy on Iran, Sudan, Tobacco: Manager should refrain from purchasing securities when the same investment goals concerning risk, return, and diversification can be achieved through the purchase of another security.
- For Investment Manager Meeting Requests, an "Advisory" is noted if the CEO or a Board member recommends staff to meet with a specific manager three or more times in a year. The purpose of notifying the activity is to promote transparency and governance best practices designed to preserve the integrity of the decision-making process.

# manager scorecards



Los Angeles County Employees Retirement Association

## PUBLIC MARKETS MANAGER SCORECARD

4th Quarter 2023

			Performance	Organization & Operations	ESG	Partnership	Fees & Terms	
			1 to 5 (with 5 the best)	S+, S, or S-	1 to 5 (with 5 the best)	A, B, or C (with A the best)	1 to 5 (with 5 the best)	
			SCORE	SCORE	SCORE	SCORE	SCORE	
Manager	Market Value (in \$ millions)	% of Total Fund						
<b>GROWTH</b>	<b>GLOBAL EQUITY</b>							
	Acadian Developed Markets	629.6	0.8%	5	S-	3	B	3
	BTC Euro Tilts	645.2	0.9%	5	S	4	A	3
	Capital Group Developed Markets	427.2	0.6%	3	S	2	B	3
	Cevian Capital II - Activist	516.6	0.7%	4	S	4	B	1
	Comercap US SC - EMP	91.7	0.1%	5	S-	1	A	3
	Frontier US SMID Growth	317.4	0.4%	3	S	2	A	1
	Global Alpha	178.0	0.2%	1	S+	3	A	3
	JPMAM Strategic Beta Non-U.S.	639.2	0.8%	3	S	2	B	3
	JPMAM Strategic Beta U.S.	4,999.1	6.6%	3	S	2	B	3
	Lazard Emerging Markets	400.5	0.5%	2	S-	3	B	1
	Parametric GE Cash Overlay	134.6	0.2%	—	S	—	B	5
SSGA MSCI ACWI IMI	16,170.5	21.3%	3	S	—	B	5	
Systematic US Small Cap Value	216.5	0.3%	4	S	2	A	3	
<b>CREDIT</b>	<b>HIGH YIELD</b>							
	Beach Point	319.5	0.4%	5	S	3	A	3
	Brigade Cap Mgmt	494.8	0.7%	3	S	3	B	3
	Pinebridge Investments	486.8	0.6%	* 3	S	3	B	3
	<b>BANK LOANS</b>							
	Bain Capital Credit	420.4	0.6%	4	S	3	B	1
	Credit Suisse Bank Loans	318.4	0.4%	3	S-	3	B	5
	Crescent Capital	435.5	0.6%	2	S-	3	B	3
<b>EMERGING MARKET DEBT</b>								
Aberdeen Asset Management	262.5	0.3%	3	S	3	B	3	
Ashmore Investment Management	281.0	0.4%	1	S	3	B	3	
<b>REAL ASSETS &amp; INFLATION HEDGES</b>	<b>NATURAL RESOURCES &amp; COMMODITIES</b>							
	Credit Suisse Commodity	286.0	0.4%	4	S-	1	A	3
	DWS Natural Resources	451.7	0.6%	2	S-	2	A	5
	Neuberger Berman/Gresham	338.9	0.4%	4	S	1	A	5
	<b>INFRASTRUCTURE</b>							
	DWS Infrastructure	2,130.0	2.8%	3	S-	2	A	5
<b>TIPS</b>								
Blackrock TIPS	2,139.9	2.8%	2	S	—	A	5	

# PUBLIC MARKETS MANAGER SCORECARD

4th Quarter 2023

Performance	Organization & Operations	ESG	Partnership	Fees & Terms
-------------	---------------------------	-----	-------------	--------------

1 to 5 (with 5 the best) | S+, S, or S- (with S+ the best) | 1 to 5 (with 5 the best) | A, B, or C (with A the best) | 1 to 5 (with 5 the best)

SCORE	SCORE	SCORE	SCORE	SCORE
-------	-------	-------	-------	-------

Manager	Market Value (in \$ millions)	% of Total Fund					
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RISK REDUCTION & MITIGATION	<b>INVESTMENT GRADE BONDS</b>								
	Allspring/Wells	1,328.7	1.8%	5	●	S	3	B	5
	BTC US Debt Index Fund	2,992.7	3.9%	4	●	S	—	B	5
	Pugh Capital Mgmt	882.8	1.2%	3	●	S	2	A	3
	<b>LONG-TERM GOVERNMENT BONDS</b>								
	BlackRock	3,134.7	4.1%	* 3	●	S	—	B	5
	<b>CASH</b>								
SSGA Cash	792.1	1.0%	3	●	S	—	A	5	
OVERLAYS & HEDGES	<b>OVERLAYS</b>								
	Parametric Cash Overlay	559.1	0.7%	—		S	—	B	5
	<b>HEDGES</b>								
BTC Passive Currency Hedge	-124.0	-0.2%	—		S	—	B	5	

- Exceeds 3-Year Net Excess Return
- Meets 3-Year Net Excess Return
- Below 3-Year Net Excess Return

- For Organization, ESG, and Partnership**
- Downgrade from the prior quarter
  - Upgrade from the prior quarter

**Footnotes**

Pillar methodologies in refinement and may evolve over time

**Category Descriptions**

**Performance**

Quarterly score based on Sharpe and Information Ratios, which provide insight into a manager's risk-adjusted performance and performance relative to its benchmark, respectively

'\*' denotes a manager with an inception date of less than 3 years, resulting in a neutral score of 3

Circle icons reflect trailing 3-year net excess returns against the manager's benchmark above or below a specified range

**Organization & Operations**

Includes factors such as organization, professional staff, diversity & inclusion, investment philosophy & process, risk management, legal & compliance framework

'S' stands for Satisfactory

**ESG**

Evaluates the extent to which material ESG factors are identified, assessed, and incorporated into risk/return analysis and portfolio construction

'—' denotes passive index funds and cash where ESG scores are not relevant and/or reflect strategies that do not incorporate active decisions, including ESG considerations, in portfolio construction

'+' denotes mandates where ESG scores are currently under review

**Partnership**

Blended score based on:

- Value added services – e.g., providing education, distributing research, and performing analytics on portfolio
- Client service – e.g., responsiveness, timeliness, competency, and approach
- Size of LACERA's investment relative to the firm's assets under management

**Fees & Terms**

Compared to a benchmark of median fees by asset category and/or investment structure





Los Angeles County Employees Retirement Association

## PRIVATE MARKETS MANAGER SCORECARD

4th Quarter 2023

			Performance	Organization & Operations	ESG	Partnership	Fees & Terms
			1 to 5 (with 5 the best)	S+, S, or S- (with S+ the best)	1 to 5 (with 5 the best)	A, B, or C (with A the best)	1 to 5 (with 5 the best)
			SCORE	SCORE	SCORE	SCORE	SCORE
Manager	Market Value (in \$ millions)	% of Total Fund					
<b>GLOBAL/LARGE BUYOUT</b>							
Advent International Group	155.7	0.2%	1	S+	3	C	4
Blackstone Management	201.6	0.3%	2	S	4	B	5
CVC Capital Partners	542.9	0.7%	4	S	4	A	4
Green Equity Investors	377.4	0.5%	5	S+	3	A	4
Hellman & Friedman	510.4	0.7%	1	S+	3	B	4
MBK	317.6	0.4%	5	S	4	A	2
Silver Lake Partners	590.4	0.8%	3	S+	3	A	5
Thoma Bravo LLC	259.2	0.3%	*	S+	3	B	3
Vista Equity Partners	809.3	1.1%	3	S-	3	A	2
<b>MID-MARKET BUYOUT</b>							
Accel-KKR Capital Partners	237.7	0.3%	3	S+	4	A	3
Alpine Investors	0.0	0.0%	*	S+	3	B	2
BlackFin Capital Partners	62.5	0.1%	1	S	3	B	3
Carlyle Group	198.4	0.3%	2	S+	4	B	4
Clearlake Capital	533.9	0.7%	5	S	4	A	4
GHO Capital	117.9	0.2%	*	S	3	A	3
Gilde Partners	34.6	0.0%	5	S	2	A	5
Harvest Partners	44.8	0.1%	5	S	1	C	3
Marlin Equity	24.8	0.0%	1	S-	2	C	3
Novacap	30.4	0.0%	*	S	3	B	3
Onex Partners	329.3	0.4%	2	S	4	A	5
PAI	181.1	0.2%	4	S-	2	C	4
Revelstoke	177.6	0.2%	3	S	4	A	2
Riverside Capital	112.4	0.1%	2	S	3	B	3
Siris Capital Group	170.1	0.2%	1	S	3	B	4
Sterling Partners	122.5	0.2%	4	S	3	A	4
STG Partners	90.1	0.1%	*	S	3	A	3
Triton	161.1	0.2%	4	S-	3	C	5
TSG	17.3	0.0%	*	S+	3	C	2
Veritas Capital	87.4	0.1%	*	S+	3	A	3
Vinci Partners	98.8	0.1%	3	S	4	B	5
Webster Equity Partners	105.1	0.1%	*	S	3	B	3
Wynnchurch Capital	64.0	0.1%	*	S+	3	B	3

PRIVATE EQUITY



Los Angeles County Employees Retirement Association

## PRIVATE MARKETS MANAGER SCORECARD

4th Quarter 2023

			Performance	Organization & Operations	ESG	Partnership	Fees & Terms
			1 to 5 (with 5 the best)	S+, S, or S- (with S+ the best)	1 to 5 (with 5 the best)	A, B, or C (with A the best)	1 to 5 (with 5 the best)
			SCORE	SCORE	SCORE	SCORE	SCORE
Manager	Market Value (in \$ millions)	% of Total Fund					
<b>SMALL BUYOUT</b>							
AE Industrial Partners	130.2	0.2%	4	S+	3	A	3
Atlantic Street Capital	49.3	0.1%	5	S	3	A	3
Clarion	29.8	0.0%	3	S+	2	B	4
Excellere Partners	145.0	0.2%	2	S-	3	A	3
Incline Equity Partners	33.8	0.0%	5	S	2	C	4
Insignia Capital Partners	134.3	0.2%	5	S	1	B	5
Juggernaut Capital Partners	319.7	0.4%	3	S	3	A	4
Lightyear Capital	238.1	0.3%	4	S	3	A	5
Livingbridge	63.5	0.1%	2	S+	4	A	3
Montefiore Investment	29.6	0.0%	*	S+	4	B	4
One Rock Capital Partners	261.8	0.3%	1	S	3	A	4
Palladium Equity Partners	102.5	0.1%	2	S-	4	C	2
<b>GROWTH EQUITY</b>							
Australis Partners	125.9	0.2%	1	S-	4	B	5
Great Hill Partners	15.6	0.0%	*	S	4	A	4
JMI Equity	4.3	0.0%	2	S	3	C	2
RedBird Capital Partners	191.2	0.3%	4	S	4	A	3
Summit Partners	102.0	0.1%	3	S	4	A	4
TA Associates	180.0	0.2%	5	S	4	B	4
Technology Crossover Ventures	2.1	0.0%	5	S	2	B	3
<b>VENTURE CAPITAL</b>							
BlueRun Ventures	129.7	0.2%	2	S	2	B	2
Canaan Partners	169.8	0.2%	4	S	3	A	4
GGV Capital	417.6	0.6%	2	S	3	A	3
Innovation Endeavors	0.0	0.0%	*	S	3	C	3
Institutional Venture Partners	130.2	0.2%	5	S	1	C	5
Joy Capital	86.3	0.1%	1	S-	2	B	4
Lilly Asia Ventures	159.9	0.2%	4	S	4	B	2
Primary Ventures	3.3	0.0%	*	S	2	C	5
Sinovation Ventures	89.1	0.1%	1	S-	2	C	2
Storm Ventures LLC	223.5	0.3%	4	S	3	A	4
Union Square	87.9	0.1%	5	S-	1	B	5
<b>SPECIAL SITUATIONS</b>							
Alchemy Partners	70.3	0.1%	1	S	3	B	4
Black Diamond	173.3	0.2%	5	S	3	B	4
Centerbridge	242.5	0.3%	3	S	4	A	2
<b>FUND OF FUNDS</b>							
Gateway	618.5	0.8%	5	S	3	C	4
Hamilton Lane	4.8	0.0%	*	S+	3	B	4
MS GTB Capital Partners	370.4	0.5%	1	S	4	A	2
J.P. Morgan	486.1	0.6%	3	S+	3	B	4

PRIVATE EQUITY  
(continued)

# PRIVATE MARKETS MANAGER SCORECARD

4th Quarter 2023

			Performance	Organization & Operations	ESG	Partnership	Fees & Terms
			1 to 5 (with 5 the best)	S+, S, or S- (with S+ the best)	1 to 5 (with 5 the best)	A, B, or C (with A the best)	1 to 5 (with 5 the best)
			SCORE	SCORE	SCORE	SCORE	SCORE
Manager	Market Value (in \$ millions)	% of Total Fund					
<b>COMMINGLED FUNDS</b>							
AERMONT Real Estate Fund IV	33.0	0.0%	1	S	4	B	3
AEW Value Investors Asia III	27.2	0.0%	1	S	4	B	4
AG Asia Realty Fund IV	76.3	0.1%	4	S	3	B	3
AG Europe Realty Fund II	42.6	0.1%	1	S	3	B	3
Bain Capital Real Estate Fund I	80.6	0.1%	5	S	3	A	3
Bain Capital Real Estate Fund II	54.5	0.1%	*	S	3	A	3
Blackstone Real Estate Partners Fund X	11.2	0.0%	*	S	3	B	3
Brookfield Strategic Real Estate Partners Fund IV	185.6	0.2%	*	S	3	B	3
CapMan Nordic Real Estate Fund II	40.7	0.1%	1	S	4	A	3
CapMan Nordic Real Estate Fund III	40.0	0.1%	*	S	4	A	3
CBRE US Core Partners	91.7	0.1%	*	S+	3	B	5
CityView Bay Area Fund II	19.2	0.0%	1	S-	3	B	3
CityView Western Fund I, L.P.	224.0	0.3%	2	S-	3	B	3
Clarion Lion Properties Fund	98.0	0.1%	*	S	3	A	5
Core Property Index Fund	111.3	0.1%	4	S	2	A	5
Europa Fund IV	13.7	0.0%	1	S-	3	C	2
Heitman Asia-Pacific Property Investors	31.7	0.0%	2	S	3	B	4
Invesco Real Estate Asia Fund	141.8	0.2%	3	S	4	A	4
Prologis European Logistics Fund (PELF)	182.4	0.2%	3	S	4	A	1
RREEF Core Plus Industrial Fund (CPIF)	285.4	0.4%	5	S-	3	B	5
Starwood Capital Hospitality Fund	6.1	0.0%	4	S	3	C	3
TPG Real Estate Partners III	37.8	0.0%	4	S	2	C	3
TPG Real Estate Partners IV	3.3	0.0%	*	S	2	C	3
<b>SEPARATE ACCOUNTS</b>							
Cityview Core I.M.A.	162.8	0.2%	3	S-	3	B	2
Clarion I.M.A.	460.9	0.6%	5	S	3	A	4
Clarion Takeover Core IMA	289.6	0.4%	*	S	3	A	4
Clarion Takeover Value IMA	4.3	0.0%	*	S	3	A	3
Heitman I.M.A.	375.5	0.5%	4	S	3	B	4
RREEF Core/High Return I.M.A. III	1,056.7	1.4%	3	S-	3	C	5
RREEF Takeover I.M.A.	3.0	0.0%	3	S-	3	C	4
Stockbridge I.M.A.	554.2	0.7%	3	S	2	B	4
Stockbridge High I.M.A. Vintage 2014	35.2	0.0%	*	S	2	B	5
Stockbridge Value I.M.A. Vintage 2014	25.5	0.0%	*	S	2	B	3

REAL ESTATE

## PRIVATE MARKETS MANAGER SCORECARD

4th Quarter 2023

				Performance	Organization & Operations	ESG	Partnership	Fees & Terms
				1 to 5 (with 5 the best)	S+, S, or S- (with S+ the best)	1 to 5 (with 5 the best)	A, B, or C (with A the best)	1 to 5 (with 5 the best)
				SCORE	SCORE	SCORE	SCORE	SCORE
Manager	Market Value (in \$ millions)	% of Total Fund						
<b>NATURAL RESOURCES &amp; COMMODITIES</b>								
Appian III	2.7	0.0%	*	S	3	B	3	
Ara III	12.7	0.0%	*	S	4	B	3	
Cibus Enterprise II	4.4	0.0%	*	S	3	B	3	
Cibus Fund II	27.6	0.0%	*	S	3	B	3	
EMG	79.8	0.1%	2	S	3	B	1	
HiTecVision	107.5	0.1%	*	S	4	A	3	
Orion Mine Finance Onshore III	145.0	0.2%	*	S	4	B	4	
Orion Mineral Royalty Fund I	37.1	0.0%	*	S	4	B	4	
Sprott	51.3	0.1%	*	S	3	B	5	
TIAA-CREF Global Agriculture	294.3	0.4%	5	S+	4	A	5	
TIAA-CREF Global Agriculture II	307.4	0.4%	5	S+	4	A	5	
<b>INFRASTRUCTURE</b>								
Antin Mid Cap	53.5	0.1%	*	S-	3	C	2	
Axiom Infrastructure Canada II	273.1	0.4%	*	S	4	A	3	
Axiom Infrastructure US II	154.6	0.2%	*	S	4	A	3	
DIF CIF III	58.1	0.1%	*	S	3	A	4	
DIF Infrastructure VI	138.5	0.2%	5	S	3	A	2	
Grain Communications Opportunity Fund III	38.2	0.1%	*	S-	3	B	2	
Grain Spectrum Holdings III	70.5	0.1%	3	S-	3	C	2	
Guardian Smart Infrastructure	0.0	0.0%	*	S	3	B	4	
KKR Diversified Core Infrastructure Fund	521.0	0.7%	*	S	3	B	4	
Macquarie Global Infrastructure Fund	435.3	0.6%	*	S-	3	A	4	
Pan-European Infrastructure Fund III	76.9	0.1%	2	S-	3	A	3	
Partners Group Direct Infrastructure 2020	119.0	0.2%	*	S	3	A	3	

PRIVATE REAL ASSETS  
(ex. Real Estate)

# PRIVATE MARKETS MANAGER SCORECARD

4th Quarter 2023

			Performance	Organization & Operations	ESG	Partnership	Fees & Terms
			1 to 5 (with 5 the best)	S+, S, or S- (with S+ the best)	1 to 5 (with 5 the best)	A, B, or C (with A the best)	1 to 5 (with 5 the best)
			SCORE	SCORE	SCORE	SCORE	SCORE
Manager	Market Value (in \$ millions)	% of Total Fund					
<b>DIVERSIFIED HEDGE FUNDS</b>							
AM Asia	234.4	0.3%	3	S	2	A	5
Brevan Howard	640.4	0.8%	5	S	2	A	2
Capula GRV	713.3	0.9%	5	S	2	B	3
Caxton	295.5	0.4%	4	S	3	B	3
DK Institutional Partners	513.4	0.7%	4	S-	2	C	3
HBK Multistrategy	620.9	0.8%	4	S	2	B	3
Hudson Bay	693.0	0.9%	5	S	2	B	3
Polar	494.2	0.7%	4	S	2	B	4
Stable	538.6	0.7%	*	S+	2	A	5
<b>ILLIQUID CREDIT</b>							
Barings	38.0	0.1%	4	S-	3	C	4
Beach Point	437.2	0.6%	2	S	3	B	3
BlackRock/Tennenbaum	588.4	0.8%	1	S-	3	C	4
Glendon	128.8	0.2%	5	S	2	B	2
Magnetar	1,144.5	1.5%	4	S	3	A	3
Napier Park	1,017.2	1.3%	3	S	3	A	3
Oaktree	76.1	0.1%	5	S	2	B	2
PIMCO Tac Opps	253.0	0.3%	2	S-	1	C	3
Quadrant	23.6	0.0%	1	S	2	B	4
Silver Rock	674.2	0.9%	*	S	2	A	4
Stable - IC	106.3	0.1%	*	S+	2	A	4
Varde	789.7	1.0%	*	S	3	A	4
Waterfall	886.9	1.2%	*	S	3	A	4

DIVERSIFIED HEDGE FUNDS & ILLIQUID CREDIT

**For Organization, ESG, and Partnership**  
Downgrade from the prior quarter  
Upgrade from the prior quarter

**Footnotes**

Pillar methodologies in refinement and may evolve over time

**Category Descriptions**

**Performance**

Quarterly score based on risk-adjusted performance metrics over time  
 '\*' denotes a manager with an inception date of less than 3 years

**Organization & Operations**

Includes factors such as organization, professional staff, investment philosophy & process, risk management, legal & compliance framework, diversity & inclusion  
 'S' stands for Satisfactory

**ESG**

Evaluates the extent to which material ESG factors are identified, assessed, and incorporated into risk/return analysis and portfolio construction  
 '+' denotes mandates where ESG scores are currently under review

**Partnership**

Assesses the quality of investment manager relationships both quantitatively and qualitatively

**Fees & Terms**

Compares various fees and terms within each asset category, strategy and/or investment structure

# appendix

# Summary

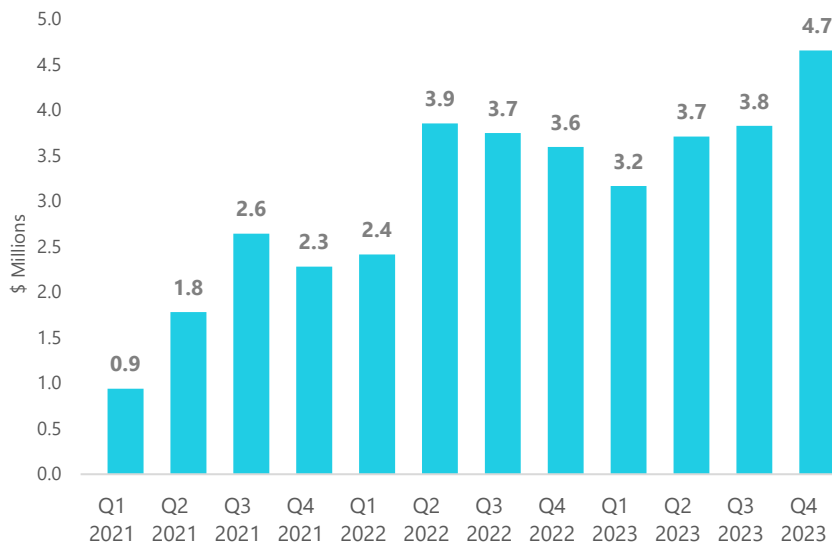
## Securities Lending Income

for the quarter ended December 31, 2023

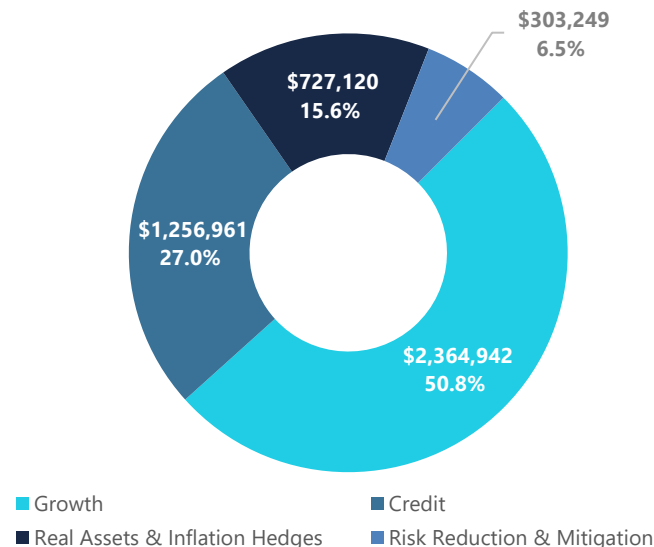


Los Angeles County Employees Retirement Association

### Earnings by Quarter



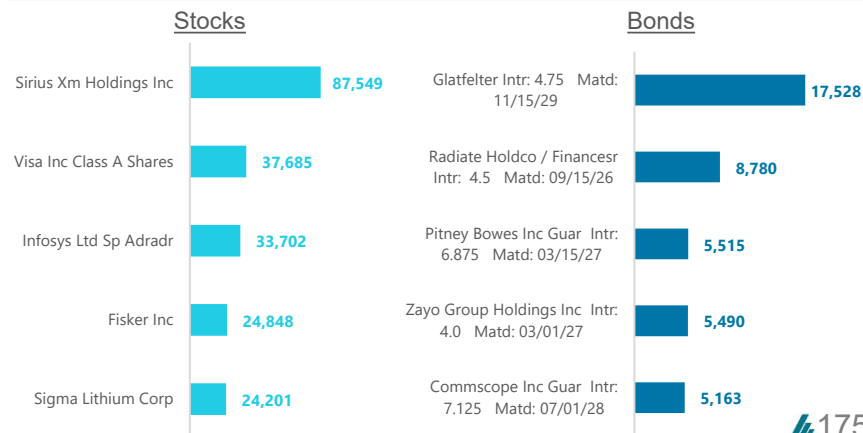
### Earnings by Functional Category



### Top Earning Funds

Fund	% of Total Fund Earnings	Total Earnings	Cash Earnings	Non-Cash Earnings
SSGA MSCI ACWI IMI	35.7%	1,661,334	71%	29%
Blackrock Long Treasury Bonds	23.3%	1,083,137	13%	87%
Blackrock TIPS	14.3%	666,963	16%	84%
JPMAM Strategic Beta U.S.	8.4%	392,299	84%	16%
Allspring/Wells	3.7%	171,122	56%	44%

### Top Earning Securities



# Public Markets Manager Fees

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Growth<sup>1,2</sup>

	Average Market Value (\$ mm)	Fees	Annualized Effective Rate (bps)
<b>Active</b>			
Acadian Asset Management	\$591.0	\$554,655	37.5
BTC Europe Alpha Tilts	\$590.2	\$520,641	35.3
Capital Guardian	\$369.8	\$320,681	34.7
Cevian Capital	\$477.6	\$1,319,014	110.5
CornerCap	\$83.1	\$109,466	52.7
Frontier Capital Management	\$287.7	\$539,453	75.0
Global Alpha	\$165.5	\$296,456	71.6
Lazard Asset Management	\$381.0	\$608,986	63.9
Parametric GE Market Cap	\$960.1	\$61,626	2.6
Parametric GE Region	\$584.6	\$37,523	2.6
Systematic	\$200.7	\$275,955	55.0
<b>Subtotal:</b>	<b>\$4,691.3</b>	<b>\$4,644,457</b>	<b>39.6</b>
<b>Factor-Based</b>			
JPMAM Strategic Beta Non-US	\$601.7	\$50,796	3.4
JPMAM Strategic Beta US	\$4,705.5	\$397,243	3.4
<b>Subtotal:</b>	<b>\$5,307.2</b>	<b>\$448,039</b>	<b>3.4</b>
<b>Passive</b>			
SSGA MSCI ACWI IMI	\$15,230.5	\$282,690	0.7
<b>Subtotal:</b>	<b>\$15,230.5</b>	<b>\$282,690</b>	<b>0.7</b>

<sup>1</sup> Reflects estimated investment management fees.

<sup>2</sup> Parametric GE account average market values represent notional values.



# Public Markets Manager Fees

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Credit<sup>1</sup>

	Average Market Value (\$ mm)	Fees	Annualized Effective Rate (bps)
<b>Liquid Credit</b>			
Aberdeen Standard Investments	\$247.9	\$249,929	40.3
Ashmore Investment Management	\$281.0	\$356,488	50.8
Bain Capital	\$420.4	\$574,088	54.6
Beach Point Capital	\$309.0	\$347,653	45.0
Brigade Capital Management	\$478.6	\$509,846	42.6
Credit Suisse Bank Loan	\$343.5	\$188,912	22.0
Crescent Capital Group	\$474.0	\$555,229	46.9
Pinebridge	\$468.0	\$386,120	33.0
<b>Subtotal:</b>	<b>\$3,022.3</b>	<b>\$3,168,265</b>	<b>41.9</b>

<sup>1</sup> Reflects estimated investment management fees.

# Public Markets Manager Fees

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Real Assets & Inflation Hedges<sup>1</sup>

	Average Market Value (\$ mm)	Fees	Annualized Effective Rate (bps)
<b>Natural Resources &amp; Commodities</b>			
Credit Suisse	\$292.8	\$198,155	27.1
DWS Natural Resources	\$447.2	\$210,252	18.8
Neuberger Berman/Gresham	\$641.8	\$319,551	19.9
<b>Subtotal:</b>	<b>\$1,381.8</b>	<b>\$727,958</b>	<b>21.1</b>
<b>Infrastructure</b>			
DWS Infrastructure	\$2,029.1	\$954,049	18.8
<b>Subtotal:</b>	<b>\$2,029.1</b>	<b>\$954,049</b>	<b>18.8</b>
<b>Treasury Inflation-Protected Securities</b>			
BlackRock TIPS	\$2,087.4	\$52,615	1.0
<b>Subtotal:</b>	<b>\$2,087.4</b>	<b>\$52,615</b>	<b>1.0</b>

<sup>1</sup> Reflects estimated investment management fees.

# Public Markets Manager Fees

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Risk Reduction & Mitigation<sup>1,2</sup>

	Average Market Value (\$ mm)	Fees	Annualized Effective Rate (bps)
<b>Investment Grade Bonds</b>			
Allspring/Wells	\$1,276.8	\$337,094	10.6
Pugh Capital Management	\$848.7	\$283,484	13.4
<b>Subtotal:</b>	<b>\$5,005.2</b>	<b>\$682,278</b>	<b>5.5</b>
<b>Long-Term Government Bonds</b>			
BlackRock	\$2,895.4	\$72,379	1.0
<b>Subtotal:</b>	<b>\$2,895.4</b>	<b>\$72,379</b>	<b>1.0</b>
<b>Cash</b>			
SSGA Cash	\$739.0	\$73,896	4.0
<b>Subtotal:</b>	<b>\$739.0</b>	<b>\$73,896</b>	<b>4.0</b>

<sup>1</sup> Reflects estimated investment management fees.

<sup>2</sup> Investment Grade Bonds includes the BTC US Debt Index account.

# Public Markets Manager Fees

for the quarter ended December 31, 2023



Los Angeles County Employees Retirement Association

## Overlays & Hedges

	Average Market Value (\$ mm)	Fees	Annualized Effective Rate (bps)
<b>Overlays</b>			
Parametric Cash Overlay	\$2,773.6	\$178,019	2.6
<b>Subtotal:</b>	<b>\$2,773.6</b>	<b>\$178,019</b>	<b>2.6</b>
<b>Hedges</b>			
BlackRock Developed Markets Currency Hedge	\$6,701.0	\$253,355	1.5
<b>Subtotal:</b>	<b>\$6,701.0</b>	<b>\$253,355</b>	<b>1.5</b>

<sup>1</sup> Reflects estimated investment management fees.

<sup>2</sup> Parametric Cash Overlay average market value represents notional value.

# Benchmark Definitions

## Current Composition

	Weight	Component
<b>Total Fund</b>		
Total Fund Policy Benchmark		
	53%	Growth Policy Benchmark
	11%	Credit Policy Benchmark
	17%	RA & IH Policy Benchmark
	19%	RR & M Policy Benchmark
<b>Growth</b>		
Growth Policy Benchmark		
	60%	Global Equity Policy Benchmark
	32%	Private Equity – Growth Policy BM
	8%	Non-Core Private RE Policy Benchmark
Global Equity Policy Benchmark		
	100%	MSCI ACWI IMI Net
Private Equity – Growth Policy BM		
	100%	MSCI ACWI IMI Net + 200 bps (3-month lagged)
Non-Core Private RE Policy Benchmark		
	100%	NFI ODCE + 225 bps (3-month lagged)

# Benchmark Definitions

## Current Composition

	Weight	Component
<b>Credit</b>		
Credit Policy Benchmark		
	36%	Liquid Credit Policy Benchmark
	64%	Illiquid Credit Policy Benchmark
Liquid Credit Policy Benchmark		
	40%	Bloomberg U.S. Corporate High Yield
	40%	CS Leveraged Loan Index
	10%	JPMorgan EMBI Global Diversified Index
	5%	JPM GBI-EM Global Diversified Index
	5%	JPM CEMBI Broad Diversified
Illiquid Credit Policy Benchmark		
	100%	Liquid Credit Policy BM + 150 bps (1-month lagged)
Bank Loans Custom Benchmark	100%	CS Leveraged Loan Index
Beachpoint Custom Benchmark	100%	Bloomberg U.S. Corporate High Yield
Brigade Custom Index	100%	Bloomberg U.S. Corporate High Yield
EMD Custom Benchmark		
	50%	JPMorgan EMBI Global Diversified Index
	25%	JPM CEMBI Broad Diversified
	25%	JPM GBI-EM Global Diversified Index

# Benchmark Definitions

## Current Composition

	Weight	Component
<b>Real Assets &amp; Inflation Hedges</b>		
RA & IH Policy Benchmark		
	35%	Core Private RE Policy Benchmark
	18%	Nat Res & Comm Policy Benchmark
	29%	DJ Brookfield Global Infra Comp
	18%	Bloomberg U.S. Treasury: U.S. TIPS
Core Private RE Policy Benchmark		
	100%	NFI ODCE (3-month lagged)
Nat Res & Comm Policy Benchmark		
	33%	Bloomberg Commodity Index Total Return
	66%	S&P Global Natural Resources Index
<hr/>		
Private Equity – Real Assets Custom BM	100%	S&P Glb LargeMidCap Commod & Resources (3-month lagged)
Private Infrastructure Custom BM	100%	DJ Brookfield Global Infra Comp (3-month lagged)
<b>Risk Reduction &amp; Mitigation</b>		
RR & M Policy Benchmark		
	37%	Bloomberg U.S. Aggregate
	32%	Diversified Hedge Funds Policy Benchmark
	26%	Bloomberg U.S. Treasury: Long
	5%	FTSE 3-Month US Treasury Bill
Diversified Hedge Funds Policy Benchmark		
	100%	FTSE 3-Month US Treasury Bill + 250 bps (1-month lagged)
Cash Policy Benchmark		
	100%	FTSE 3-Month US Treasury Bill
<hr/>		
Custom Hedge Fund BM	100%	Diversified Hedge Funds Policy Benchmark

## A

### ANNUAL RETURN

The total return of a security over a specified period, expressed as an annual rate of interest.

### ACTIVE RISK

The expected standard deviation of the differential return between the portfolio and the benchmark. Active total risk arises from active management, and it is the result of active weights (deviations from the benchmark at the asset level) and therefore active exposures; for passively managed portfolios, it is referred to as “total tracking error.”

### ACTIVE RISK CONTRIBUTION

Percent contribution to active total risk (or tracking error). The percent of active total risk that an individual asset or risk source contributes. For example, a % CR to Active Total Risk of 10% indicates that 10% of the portfolio’s active total risk is arising from the active position in that particular asset.

## B

### BASIS POINTS (BPS)

One one-hundredth of one percent. One hundred basis points equal one percent.

### BETA

A measure of the volatility of a stock relative to the overall market. A beta of less than one indicates lower risk than the market; a beta of more than one indicates higher risk than the market.

## D

### DURATION

A measure of the price sensitivity of a bond portfolio to changes in interest rates.

### DISTRIBUTED TO PAID-IN (DPI)

A measure of distributions received relative to contributed capital.



## F

### **FUTURES CONTRACT**

Agreement to buy or sell a specific amount of a commodity or financial instrument at a particular price and a stipulated future date.

## H

### **HIGH YIELD BOND**

A bond with a low investment quality and credit worthiness, usually with a rating of BB or less.

## I

### **INFORMATION RATIO**

The excess return (alpha) per unit of active risk (tracking error).

### **INTERNAL RATE OF RETURN (IRR)**

A total rate of return that gives full weight to the size and timing of cash flows over the period measured and fully reflects unrealized gains and losses in addition to realized gains and losses, interest and dividend income.

## K

### **KAPLAN & SCHOAR PUBLIC MARKET EQUIVALENT (KS-PME)**

A ratio that benchmarks the performance of a fund against an appropriate public market index while accounting for the timing of a fund's cash flows.

## M

### **MC TO TOTAL TRACKING ERROR**

This value represents the change in the active risk of an asset's portfolio or group that would result from a one percent increase in the asset's effective position plus an equal short position in the benchmark.

## S

### **SHARPE RATIO**

Measures the performance of an investment compared to a risk-free asset, after adjusting for its risk. It is the difference between the returns of the investment and the risk-free return, divided by the standard deviation of the investment.

### **STANDARD DEVIATION**

Statistical measure of the degree to which an individual value in a probability distribution tends to vary from the mean of the distribution. The greater the degree of dispersion, the greater the risk.

## T

### TIME-WEIGHTED RATE OF RETURN (TWR)

A measure of the compound rate of growth in a portfolio. Often used to compare the returns of investment managers because it eliminates the distorting effects on growth rates created by inflows and outflows of money.

### TOTAL RISK

The total (gross) risk to an asset (or portfolio), which is the standard deviation of the asset's total return distribution, expressed in percent. Total risk is forecasted using MSCI Barra's multiple factor models. The total risk for an asset depends on the asset's exposures to the risk factors, the factor variance/covariance matrix, and the forecast selection risk of the asset.

### TOTAL RISK CONTRIBUTION

The percent of total risk that an individual asset or risk source contributes. For example, a % CR to Total Risk of 10% indicates that 10% of the portfolio's total risk is arising from the portfolio's position in that particular asset.

### TOTAL VALUE TO PAID-IN (TVPI)

A measure of total value created relative to capital invested.

### TRACKING ERROR

The volatility of a manager's excess return. It is measured by subtracting the benchmark return from the manager's return and calculating the standard deviation.

## Y

### YIELD TO MATURITY

The return a bond earns on the price at which it was purchased if it were held to maturity. It assumes that coupon payments can be reinvested at the yield to maturity.