



**Alameda County Employees' Retirement Association  
BOARD OF RETIREMENT**

**INVESTMENT COMMITTEE/BOARD MEETING**

**ACERA MISSION:**

*To provide ACERA members and employers with flexible, cost-effective, participant-oriented benefits through prudent investment management and superior member services.*

**Wednesday, May 1, 2024  
10:30 a.m.**

<b>LOCATION AND TELECONFERENCE</b>	<b>COMMITTEE MEMBERS</b>	
<p>ACERA C.G. "BUD" QUIST BOARD ROOM 475 14<sup>TH</sup> STREET, 10<sup>TH</sup> FLOOR OAKLAND, CALIFORNIA 94612-1900 MAIN LINE: 510.628.3000 FAX: 510.268.9574</p> <p>The public can observe the meeting and offer public comment by using the below Webinar ID and Passcode after clicking on the below link or calling the below call-in number.</p> <p>Link: <a href="https://zoom.us/join">https://zoom.us/join</a> Call-In: 1 (669) 900-6833 US Webinar ID: 879 6337 8479 Passcode: 699406 For help joining a Zoom meeting, see: <a href="https://support.zoom.us/hc/en-us/articles/201362193">https://support.zoom.us/hc/en-us/articles/201362193</a></p>	<b>JAIME GODFREY CHAIR</b>	<b>APPOINTED</b>
	<b>GEORGE WOOD VICE CHAIR</b>	<b>ELECTED GENERAL</b>
	<b>ROSS CLIPPINGER</b>	<b>ELECTED SAFETY</b>
	<b>OPHELIA BASGAL</b>	<b>APPOINTED</b>
	<b>KEITH CARSON</b>	<b>APPOINTED</b>
	<b>TARRELL GAMBLE</b>	<b>APPOINTED</b>
	<b>ELIZABETH ROGERS</b>	<b>ELECTED RETIRED</b>
	<b>HENRY LEVY</b>	<b>TREASURER</b>
	<b>KELLIE SIMON</b>	<b>ELECTED GENERAL</b>
	<b>CYNTHIA BARON</b>	<b>ALTERNATE RETIRED<sup>1</sup></b>
<b>KEVIN BRYANT</b>	<b>ALTERNATE SAFETY<sup>2</sup></b>	

<sup>1</sup> The Alternate Retired Member votes in the absence of the Elected Retired Member, or, if the Elected Retired Member is present, then votes if both Elected General members, or the Safety Member and an Elected General member, are absent.

<sup>2</sup> The Alternate Safety Member votes in the absence of the Elected Safety, either of the two Elected General Members, or both the Retired and Alternate Retired members.

*Note regarding accommodations:* If you require a reasonable modification or accommodation for a disability, please contact ACERA between 9:00 a.m. and 5:00 p.m. at least 72 hours before the meeting at [accommodation@acera.org](mailto:accommodation@acera.org) or at 510-628-3000.

Public comments are limited to four (4) minutes per person in total. The order of items on the agenda is subject to change without notice.

Board and Committee agendas and minutes and all documents distributed to the Board or a Committee in connection with a public meeting (unless exempt from disclosure) are posted online at [www.acera.org](http://www.acera.org) and also may be inspected at 475 14th Street, 10th Floor, Oakland, CA 94612-1916.

# ***INVESTMENT COMMITTEE/BOARD MEETING***

**NOTICE and AGENDA Wednesday, May 1, 2024**

**Call to Order:** 10:30 a.m.

**Roll Call**

**Public Input (The Chair allows public input on each agenda item at the time the item is discussed)**

**Action Items: Matters for discussion and possible motion by the Committee**

1. Discussion and Possible Motion to Recommend that the Board Approve an up to \$50 million Investment in Heitman Value Partners VI as part of ACERA's Real Estate Portfolio,<sup>3</sup> Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations

10:30 – 11:00

Thomas McCarthy, Heitman LLC  
John Mancuso, Heitman LLC  
Michael Tench, Heitman LLC  
Aaron Quach, Callan LLC  
Avery Robinson, Callan LLC  
John Ta, ACERA  
Betty Tse, ACERA

**Information Items: These items are not presented for Committee action but consist of status updates and cyclical reports**

1. Performance Review for the period ending December 31, 2023 – Total Fund Highlighting Public Markets Asset Classes

11:00 – 11:30

Sam Austin, NEPC  
Julius Cuaresma, ACERA  
Clint Kuboyama, ACERA  
Betty Tse, ACERA

2. Education Session: Presentation of Asset Liability Study Findings and Discussion of Possible Asset Allocation Mixes

11:00 – 12:00

Sam Austin, NEPC  
Rose Dean, NEPC  
Robert Goldthorpe, NEPC  
Betty Tse, ACERA

**Trustee Remarks**

None

**Future Discussion Items**

None

**Establishment of Next Meeting Date**

June 5, 2024, at 10:30 a.m.

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<sup>3</sup> Written materials and investment recommendations from the consultants, fund managers and ACERA Investment Staff relating to this alternative investment are exempt from public disclosure pursuant to CA Gov. Code §7928.710 and §7922.000.



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



PERIOD ENDING: DECEMBER 31, 2023

**Total Fund Review**

**Alameda County Employees' Retirement Association – Non-confidential**

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VERUSINVESTMENTS.COM

SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

PITTSBURGH 412-784-6678

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***Past performance is no guarantee of future results.** This document is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and is not intended for retail investors. Nothing herein constitutes investment, legal, accounting or tax advice, or a recommendation to buy, sell or hold a security or pursue a particular investment vehicle or any trading strategy. This document may include or imply estimates, outlooks, projections and other “forward-looking statements.” No assurance can be given that future results described or implied by any forward looking information will be achieved. Investing entails risks, including possible loss of principal. Verus Advisory Inc. and Verus Investors, LLC (“Verus”) file a single form ADV under the United States Investment Advisors Act of 1940, as amended. Additional information about Verus Advisory, Inc. and Verus Investors, LLC is available on the SEC’s website at [www.adviserinfo.sec.gov](http://www.adviserinfo.sec.gov). Verus – also known as Verus Advisory™ or Verus Investors™.*



# U.S. economics summary

- Real GDP increased at a 2.9% pace year-over-year in Q3 (4.9% quarter-over-quarter annualized rate). The economy has remained relatively strong while inflation appears more likely to fall closer to the Fed’s target in 2024. These expectations contributed to a dovish pivot from the Federal Reserve in December, a sharp drop in interest rates, and a notable market rally as the possibility of a soft landing has risen.
- U.S. headline inflation fell during the quarter, from 3.7% to 3.3% year-over-year. Core CPI (ex-food & energy) declined further from 4.1% to 3.9%. Low inflation numbers in October and November (0.0% and 0.1% month-over-month) were counterbalanced by a surprisingly high inflation number in December (0.3% month-over-month).
- Consumer spending has been stable, with real personal consumption expenditures up +2.7% year-over-year in November, the strongest growth figure since early 2022. However, strong spending appears to be at the expense of a low household savings rate (4.1% in November) and may be partly driven by necessity (higher prices of goods & services) rather than by a positive financial or economic outlook.
- The job market has shown mixed signals, increasing in total size during 2023 but arguably with some weakness around the edges. Unemployment rose during the year but fell slightly in Q4 from 3.8% to 3.7%. This historic mismatch between jobs available and workers available has been slowly closing.
- Consumer sentiment improved slightly but remains incredibly poor. Inflation is a central concern for Americans. Although inflation has fallen considerably, prices of goods and services remain high, placing strain on budgets. Because inflation measures the rate of change of prices, rather than the level of prices, lower inflation has failed to ease the financial pressure that many households face.

	Most Recent	12 Months Prior
Real GDP (YoY)	2.9% 9/30/23	1.7% 9/30/22
Inflation (CPI YoY, Core)	3.9% 12/31/23	6.4% 12/31/22
Expected Inflation (5yr-5yr forward)	2.2% 12/31/23	2.3% 12/31/22
Fed Funds Target Range	5.25–5.50% 12/31/23	4.25–4.50% 12/31/22
10-Year Rate	3.88% 12/31/23	3.88% 12/31/22
U-3 Unemployment	3.7% 12/31/23	3.5% 12/31/22
U-6 Unemployment	7.1% 12/31/23	6.5% 12/31/22

# International economics summary

- The ongoing threat of inflation, and central banks' tightrope act of working to battle that inflation without tipping economies into recession, was expected to be a key risk of 2024. However, in the fourth quarter inflation has fallen more quickly than expected, while economic growth has generally been more resilient. The global growth picture seems to have improved, all else equal, although growth is still expected to slow materially in the coming quarters.
- Conflicts within the Middle East have led to heightened geopolitical tensions, and broader escalation is a notable risk. While military action has been relatively confined, further conflict could have a material impact on global supply chains and energy markets. The war in Ukraine, which played a large part in initially driving inflation across developed economies, is still fresh in many investors' minds.
- Inflation fell significantly in the Eurozone and U.K., helping to take

some pressure off the ECB and BOE (headline inflation receded to 3.4% and 4.0% across the Eurozone and U.K., respectively). Despite the easing of price pressures, interest rates sit at multi-decade highs at both central banks which does little to change expectations for stagnant and potentially even negative economic growth.

- China reported GDP growth of 5.2% in 2023, exceeding the 5% growth target set by the CCP. While the reported figure is slightly above the CCP's target, growth has disappointed investors and economists alike, especially following a nearly three-year COVID-19 lockdown. The country continues to face a variety of challenges including incredibly dire demographic trends, geopolitical tension with the U.S., slowing growth, financial distress amongst the property sector and local government financing vehicles, a heavy national debt burden, and deflation.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.9% 9/30/23	3.4% 12/31/23	3.7% 12/31/23
Eurozone	0.0% 9/30/23	2.9% 12/31/23	6.4% 11/30/23
Japan	1.5% 9/30/23	2.4% 12/31/23	2.4% 11/30/23
BRICS Nations	5.0% 9/30/23	1.5% 12/31/23	4.8% 12/31/22
Brazil	2.0% 9/30/23	4.6% 12/31/23	7.5% 11/30/23
Russia	5.5% 9/30/23	7.4% 12/31/23	2.9% 11/30/23
India	7.6% 9/30/23	5.7% 12/31/23	8.7% 12/31/23
China	5.2% 12/31/23	-0.3% 12/31/23	5.1% 12/31/23

*NOTE: India lacks reliable government unemployment data. Unemployment rate shown above is estimated from the Centre for Monitoring Indian Economy. The Chinese unemployment rate represents the monthly surveyed urban unemployment rate in China.*

# Equity environment

- Domestic equities delivered a strong rally to finish Q4, driven by a combination of better-than-expected Q3 earnings and signals of easing from the Federal Reserve. The S&P 500 Index gained +26.3% during 2023.
- U.S. equities (S&P 500 +11.7%) led international developed equities (MSCI EAFE +10.4%) and emerging market equities (MSCI EM +7.9%) during the quarter. Domestic equities also led non-U.S. equities over the full year, while emerging markets were laggards. Wide sector performance differences contributed to U.S. leadership, given the much heavier tech focus of the domestic market.
- The U.S. dollar fell sharply, as investors reassessed Federal Reserve policy and interest rates retraced lower. This move created a tailwind for investors with unhedged exposure to foreign currencies. On a trade-weighted basis, the value of the U.S. dollar fell -4.3%. However, over the full calendar year investors with unhedged currency exposure saw moderate losses, due to wide fluctuations of the dollar.
- Style factor investing delivered mixed performance for investors in Q4. Over the full year, style investing suffered substantially. Small cap underperformed by -9.6% while value stocks underperformed growth by a whopping -31.2%. Besides an extreme period during 2020, calendar year 2023 was the worst 1-year rolling period in more than two decades.
- The Cboe VIX implied volatility index moved even lower during the fourth quarter, from 17.5 to 12.5 in December. Priced volatility is incredibly low—at a level that has historically tended to coincide with very strong economic and market conditions.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	11.7%		26.3%	
U.S. Small Cap (Russell 2000)	14.0%		16.9%	
U.S. Equity (Russell 3000)	12.1%		26.0%	
U.S. Large Value (Russell 1000 Value)	9.5%		11.5%	
US Large Growth (Russell 1000 Growth)	14.2%		42.7%	
Global Equity (MSCI ACWI)	11.0%	9.7%	22.2%	22.7%
International Large (MSCI EAFE)	10.4%	6.0%	18.2%	19.9%
Eurozone (EURO STOXX 50)	13.3%	9.3%	26.5%	25.6%
U.K. (FTSE 100)	6.9%	2.5%	14.3%	8.8%
Japan (TOPIX)	8.2%	3.6%	19.3%	35.7%
Emerging Markets (MSCI Emerging Markets)	7.9%	5.7%	9.8%	10.1%

Source: Russell Investments, MSCI, STOXX, FTSE, JPX, as of 12/31/23

# Fixed income environment

- The 10-year U.S. Treasury yield reversed its gains from the prior quarter, falling from 4.58% to 3.88% in Q4, as the market reassessed inflation conditions and the Federal Reserve’s likely path. Further signs that inflation is moderating toward target, along with surprisingly upbeat economic news, likely contributed to the Federal Reserve’s “dovish pivot” as it has been referred to. The 10-year yield ended 2023 unchanged.
- During Q4, credit markets delivered strong results, led by lower-quality bonds such as high yield and bank loans. High yield gained +7.2% (Bbg U.S. Corporate High Yield), while bank loans rose +2.8% (S&P/LSTA Leveraged Loan). Longer duration investment grade corporate bonds (Bloomberg U.S. Long Corporate Credit) rose 14.0% during the quarter as both falling interest rates and narrower credit spreads acted as a tailwind.
- The U.S. yield curve has remained inverted for 1.5 years, which is

among the most extended periods in modern history. This is indicated by the 10-year minus 2-year Treasury yield—ending the year at -35bps, up from -44bps in Q3. Unique attributes of the current economic environment suggest that this curve inversion may not coincide with a near-term recession.

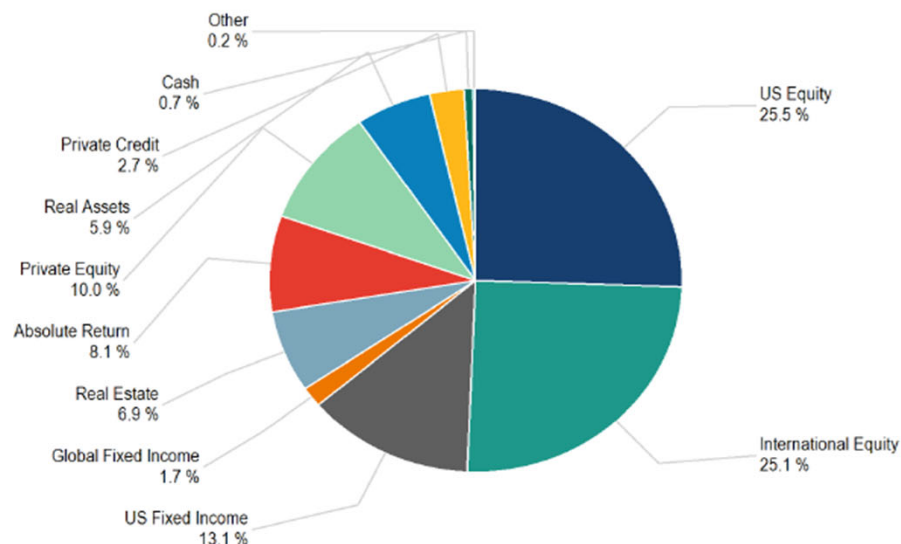
- US interest rates remained steady during the quarter as inflation continued to moderate towards the Federal Reserve Bank's 2.0% target. Importantly, expectations for future rate cuts increased following the statement made by Chairman Powell that future rate hikes may not be required.
- With inflation and economic growth continuing to moderate during the quarter, market expectations for future rate cuts by the Federal Reserve increased. As a result, interest rates across the US Treasury curve declined meaningfully, with shorter-term rates declining more than longer-term rates.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	6.8%	5.5%
Core Plus Fixed Income (Bloomberg U.S. Universal)	6.8%	6.2%
U.S. Treasuries (Bloomberg U.S. Treasury)	5.7%	4.1%
U.S. Treasuries: Long (Bloomberg U.S. Treasury 20+)	13.4%	2.7%
U.S. High Yield (Bloomberg U.S. Corporate HY)	7.2%	13.4%
Bank Loans (S&P/LSTA Leveraged Loan)	2.8%	13.3%
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	8.1%	12.7%
Emerging Market Debt Hard (JPM EMBI Global Diversified)	9.2%	11.1%
Mortgage-Backed Securities (Bloomberg MBS)	7.5%	5.0%

Source: Bloomberg, as of 12/31/23

# Total Fund review

# Asset allocation



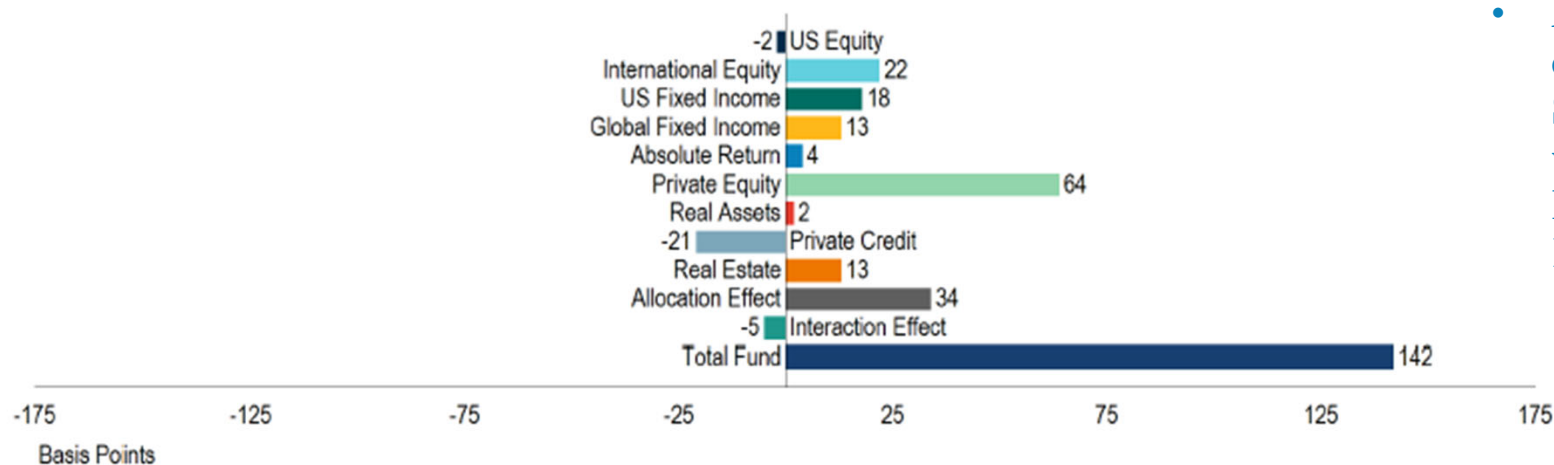
- Public markets comprise ~75% of ACERA's assets
- Majority of public markets assets are invested in equities (~50%)

	Current Balance (\$)	Current Allocation (%)	Policy (%)	Difference (%)	Within IPS Range?
US Equity	2,863,217,336	25.5	24.0	1.5	Yes
International Equity	2,826,631,629	25.1	24.0	1.1	Yes
US Fixed Income	1,478,571,711	13.1	12.0	1.1	Yes
Global Fixed Income	195,676,430	1.7	2.0	-0.3	Yes
Real Estate	781,286,284	6.9	9.0	-2.1	Yes
Absolute Return	908,737,998	8.1	8.0	0.1	Yes
Private Equity	1,119,696,468	10.0	11.0	-1.0	Yes
Real Assets	658,140,755	5.9	6.0	-0.1	Yes
Private Credit	308,463,890	2.7	4.0	-1.3	Yes
Cash	82,723,703	0.7	0.0	0.7	Yes
Other	26,778,419	0.2	0.0	0.2	Yes
<b>Total</b>	<b>11,249,924,621</b>	<b>100.0</b>	<b>100.0</b>		



# Total Fund attribution

## One Year as of 12/31/23



- Main source of value-add: Selection within Private Equity

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	25.83%	25.96%	-0.13%	-0.02%	0.16%	0.00%	0.14%
International Equity	17.18%	16.21%	0.96%	0.22%	-0.01%	0.01%	0.23%
US Fixed Income	6.92%	5.53%	1.39%	0.18%	-0.10%	0.02%	0.10%
Global Fixed Income	10.25%	5.18%	5.07%	0.13%	0.01%	-0.02%	0.12%
Absolute Return	6.72%	6.16%	0.56%	0.04%	-0.05%	-0.02%	-0.02%
Private Equity	9.31%	3.81%	5.51%	0.64%	0.04%	-0.08%	0.60%
Real Assets	4.26%	3.23%	1.04%	0.02%	0.00%	0.00%	0.01%
Private Credit	10.10%	15.28%	-5.18%	-0.21%	-0.06%	0.06%	-0.20%
Real Estate	-10.83%	-12.02%	1.19%	0.13%	0.33%	-0.02%	0.43%
<b>Total</b>	<b>12.71%</b>	<b>11.30%</b>	<b>1.42%</b>	<b>1.13%</b>	<b>0.34%</b>	<b>-0.05%</b>	<b>1.42%</b>

# Total Fund and composite performance

	Market Value (\$)	% of Portfolio	3 Mo (%)	6 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Total Fund</b>	<b>11,249,924,621</b>	<b>100.00</b>	<b>7.10</b>	<b>4.84</b>	<b>12.69</b>	<b>5.08</b>	<b>9.17</b>	<b>8.56</b>	<b>7.21</b>	<b>9.36</b>	<b>Sep-85</b>
<i>Policy Index</i>			6.59	4.45	11.42	5.15	9.18	8.46	7.49	9.62	Sep-85
<b>Total Fund w/o Overlay</b>	<b>11,223,146,202</b>	<b>99.76</b>	<b>7.04</b>	<b>4.82</b>	<b>12.62</b>	<b>5.11</b>	<b>9.19</b>	<b>8.57</b>	<b>7.22</b>	<b>9.36</b>	<b>Sep-85</b>
<b>US Equity</b>	<b>2,863,217,336</b>	<b>25.45</b>	<b>12.43</b>	<b>8.72</b>	<b>25.83</b>	<b>8.59</b>	<b>15.25</b>	<b>13.26</b>	<b>11.26</b>	<b>11.76</b>	<b>Sep-85</b>
<i>Russell 3000</i>			12.07	8.42	25.96	8.54	15.16	12.81	11.48	11.34	Sep-85
<b>International Equity</b>	<b>2,826,631,629</b>	<b>25.13</b>	<b>10.28</b>	<b>5.40</b>	<b>17.18</b>	<b>0.97</b>	<b>8.10</b>	<b>7.71</b>	<b>5.00</b>	<b>7.85</b>	<b>Dec-90</b>
<i>MSCI ACWI ex USA IMI Gross</i>			9.87	6.15	16.21	2.03	7.69	6.88	4.45	6.15	Dec-90
<b>Total Fixed Income</b>	<b>1,674,248,141</b>	<b>14.88</b>	<b>7.86</b>	<b>4.18</b>	<b>7.30</b>	<b>-2.90</b>	<b>2.43</b>	<b>2.72</b>	<b>3.04</b>	<b>6.58</b>	<b>Sep-86</b>
<i>Fixed Income Blend</i>			7.31	3.93	6.36	-3.76	0.96	1.31	1.65	5.60	Sep-86
<b>US Fixed Income</b>	<b>1,478,571,711</b>	<b>13.14</b>	<b>7.18</b>	<b>4.16</b>	<b>6.92</b>	<b>-2.57</b>	<b>2.49</b>	<b>2.63</b>	<b>3.21</b>	<b>6.51</b>	<b>Sep-86</b>
<i>Bloomberg US Aggregate TR</i>			6.82	3.37	5.53	-3.31	1.10	1.29	1.81	5.42	Sep-86
<b>Global Fixed Income</b>	<b>195,676,430</b>	<b>1.74</b>	<b>13.30</b>	<b>4.34</b>	<b>10.25</b>	<b>-5.15</b>	<b>1.25</b>	<b>2.19</b>	<b>1.97</b>	<b>5.82</b>	<b>Nov-01</b>
<i>FTSE WGBI TR</i>			8.08	3.47	5.18	-7.18	-1.39	-0.09	-0.31	3.06	Nov-01

- Total Fund return beat Policy Index return over quarter ended 12/31/23 by 50 bps
- Biggest positive contributors to outperformance for the quarter were Private Equity and public equity and fixed income.

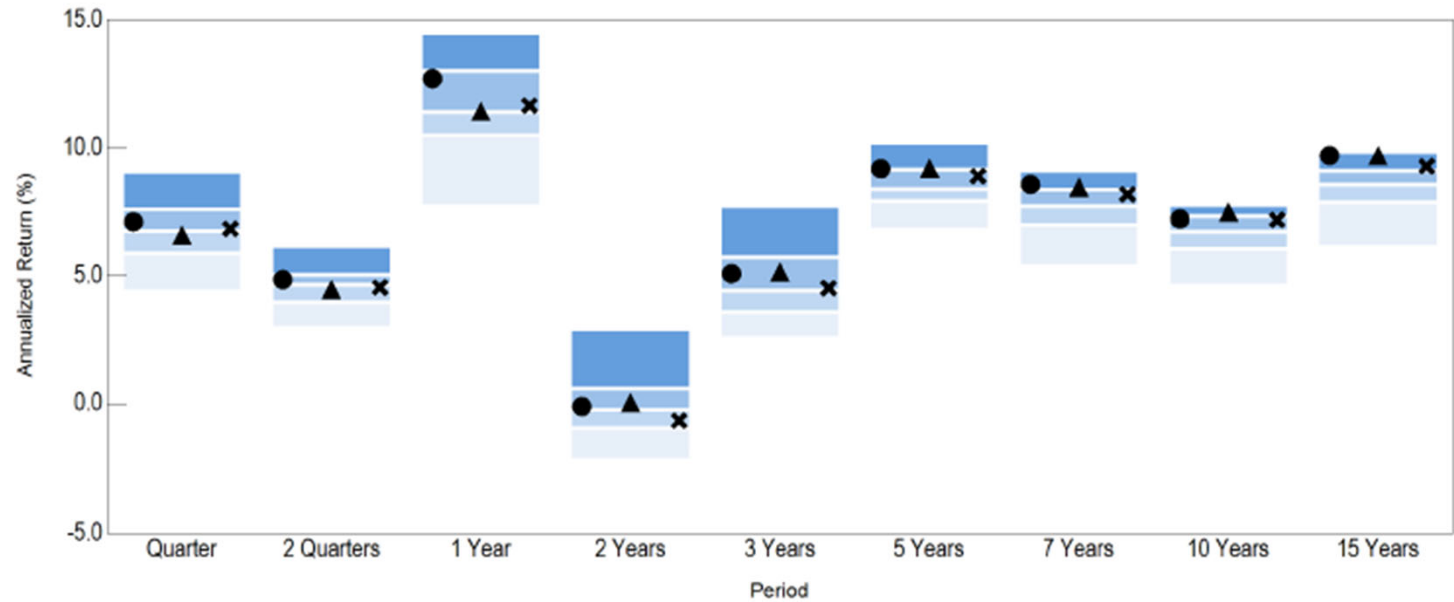
# Total Fund and composite performance (continued)

	Market Value (\$)	% of Portfolio	3 Mo (%)	6 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Absolute Return</b>	908,737,998	8.08	1.47	4.11	6.72	9.19	5.66	4.15	4.18	4.23	Sep-11
<i>Absolute Return Blend</i>			3.39	3.94	6.32	2.25	5.14	3.89	4.02	4.05	Sep-11
<b>Private Equity</b>	1,119,696,468	9.95	1.79	4.79	9.31	17.49	14.73	14.99	15.43	7.13	Nov-08
<i>Private Equity Blend</i>			-0.42	1.04	3.81	14.57	14.04	15.38	14.09	16.61	Nov-08
<b>Real Assets</b>	658,140,755	5.85	4.01	2.96	4.26	9.73	6.71	3.61	-0.09	-0.66	Sep-11
<i>Real Asset Blend</i>			6.58	3.19	3.23	8.75	8.52	6.80	6.31	6.00	Sep-11
<b>Private Credit</b>	308,463,890	2.74	0.31	3.58	10.10	8.53	--	--	--	6.89	Oct-19
<i>S&amp;P/LSTA Leveraged Loan Index +1.75%</i>			3.31	7.34	15.28	7.65	7.67	6.62	6.25	7.31	Oct-19
<b>Cash</b>	82,723,703	0.74	1.36	2.93	5.57	2.47	1.95	1.79	1.30	3.02	Sep-85
<i>91 Day T-Bills</i>			1.37	2.70	5.02	2.15	1.79	1.69	1.21	3.08	Sep-85
<b>Real Estate</b>	781,286,284	6.94	-3.51	-5.19	-10.83	5.16	4.75	5.79	7.98	6.80	Mar-86
<i>Real Estate Blend</i>			-4.83	-6.64	-12.02	4.93	4.25	5.30	7.29	7.44	Mar-86

- The underweight to Real Estate provided a tailwind to performance for the quarter of 17 bps.
- Private Equity outperformance increased total fund relative performance by 26 bps for the quarter versus the policy index.

# Peer universe comparison

InvMetrics Public DB > \$1B Gross Return Comparison

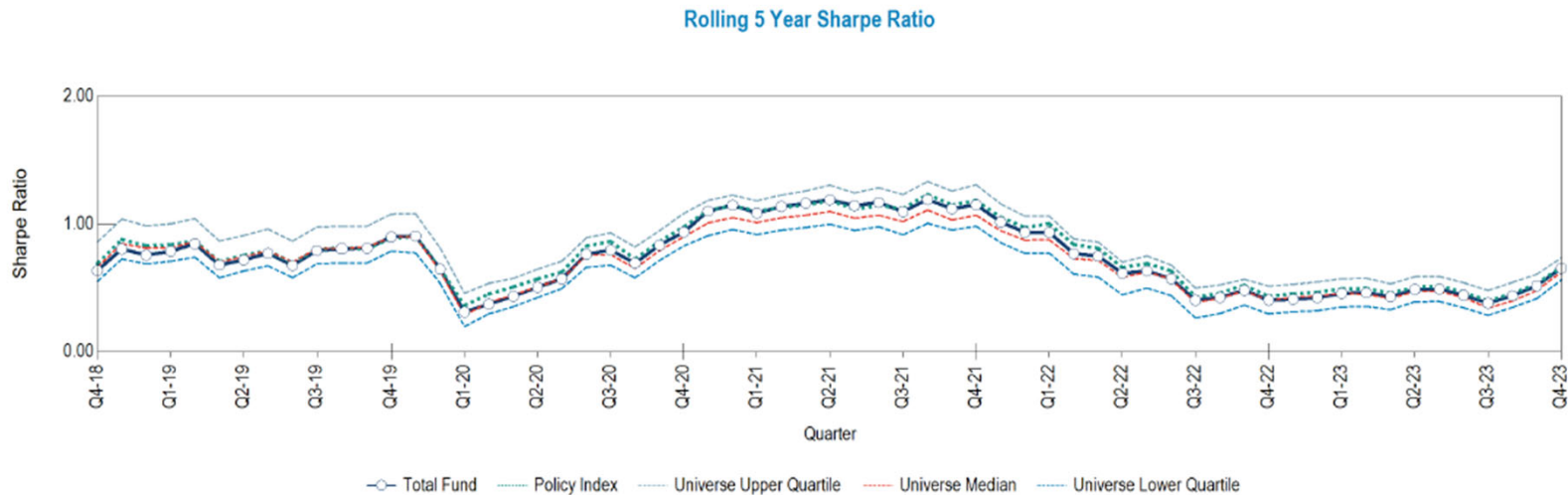


	Return (Rank)								
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years	15 Years
5th Percentile	9.04	6.13	14.47	2.91	7.71	10.17	9.10	7.76	9.82
25th Percentile	7.60	5.05	13.00	0.62	5.73	9.17	8.39	7.35	9.11
Median	6.75	4.65	11.40	-0.22	4.44	8.40	7.73	6.71	8.57
75th Percentile	5.87	3.95	10.49	-0.95	3.60	7.93	7.00	6.07	7.88
95th Percentile	4.41	2.98	7.74	-2.19	2.57	6.80	5.40	4.63	6.16
# of Portfolios	77	77	76	74	73	73	73	70	65
● Total Fund	7.10 (34)	4.84 (46)	12.69 (28)	-0.12 (47)	5.08 (35)	9.17 (25)	8.56 (18)	7.21 (29)	9.69 (7)
▲ Policy Index	6.59 (55)	4.45 (61)	11.42 (50)	0.04 (45)	5.15 (34)	9.18 (25)	8.46 (24)	7.49 (19)	9.69 (7)
✕ Allocation Index	6.83 (50)	4.54 (59)	11.64 (45)	-0.67 (64)	4.51 (49)	8.89 (35)	8.18 (32)	7.17 (32)	9.27 (17)

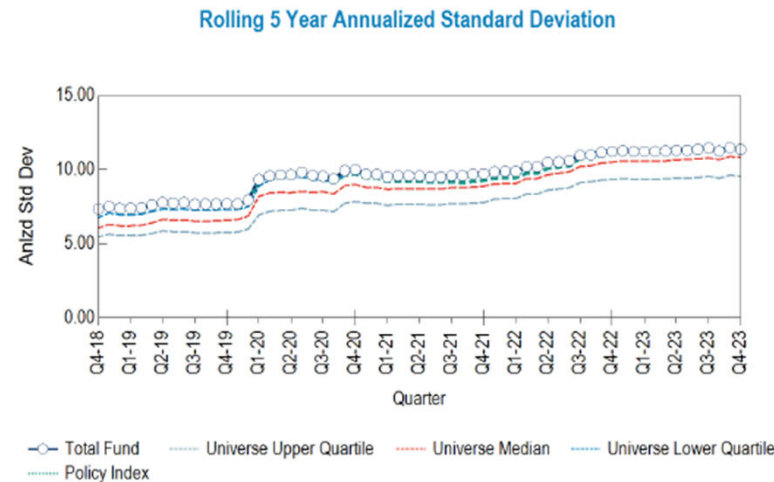
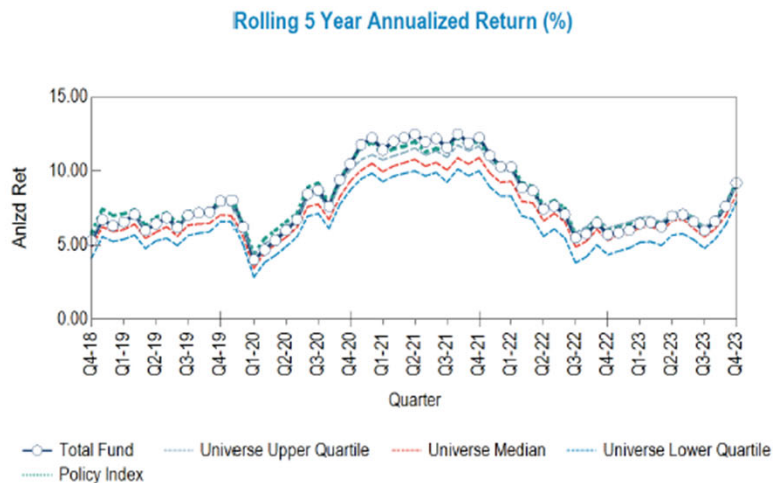
- In most periods, ACERA compares favorably vs. peers (i.e., well above median)

# Risk-adjusted trend vs. peers

- ACERA's risk-adjusted return ratio (Sharpe) has been consistently at, or near, peer median.



Rolling 5-year returns are in the upper quartile of peer returns

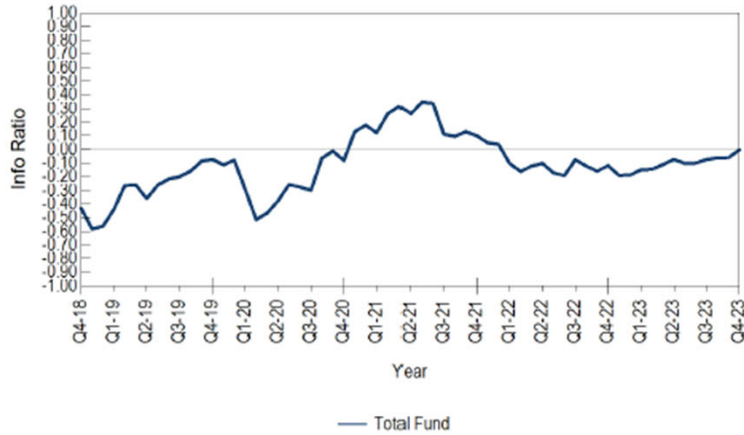


Total fund volatility remains elevated relative to peers

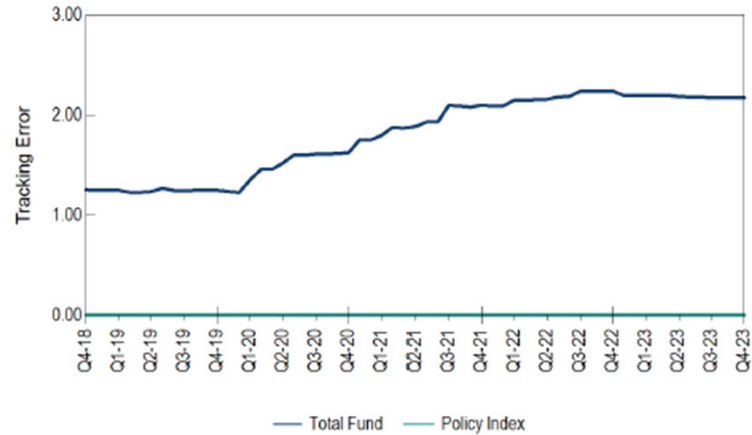


# Trend in risk-adjusted metrics

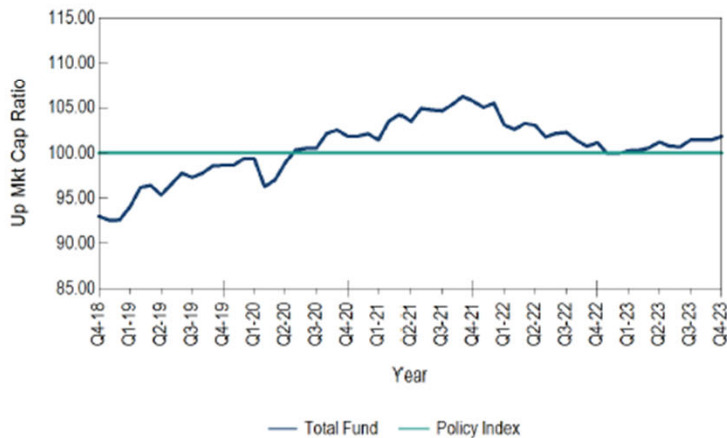
Rolling 5 Year Information Ratio



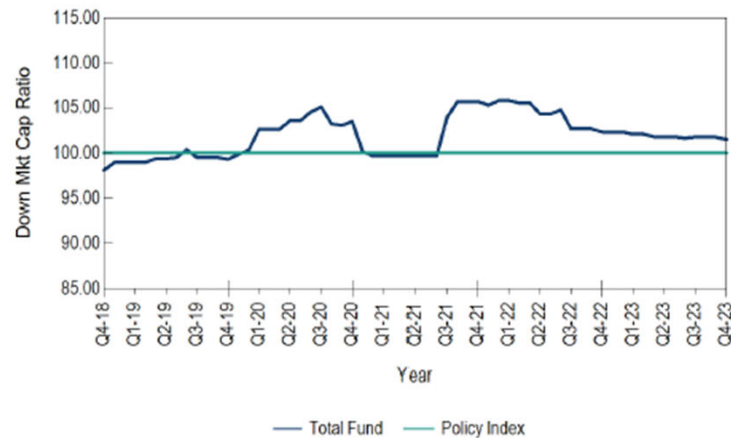
Rolling 5 Year Tracking Error



Rolling 5 Year Up Market Capture Ratio (%)



Rolling 5 Year Down Market Capture Ratio (%)



- Risk-adjusted active returns increased and the current 5-year rolling Information Ratio has been trending upwards since the end of 2021

- The 5-year upside market capture has risen in recent quarters



# Watch List

Manager	Date on Watchlist	Reason	Product Inception Date
Templeton	12/1/22	Organizational Change and Underperformance As of 12/31/23 data, Since inception net return of 5.49% vs benchmark (MSCI ACWI ex-US Small Cap) return of 4.90% and MSCI ACWI ex-US Value return of 4.97%.; 10-year gross-of fees return (4.60%) places Templeton in the 94 <sup>th</sup> percentile of ACWI ex- US Small Cap managers.	April, 2011
TCW	3/1/23	Underperformance and organizational change (recent retirements and team shift). Underperformance vs. Russell 1000 Growth benchmark occurred over 3, and 5-year periods, and in the bottom half of its peer group.	June, 1999

# Appendix

# Glossary

**Active Return (aka Excess Return)** – The difference between the active manager’s return and the return on the manager’s benchmark index.

**Active Risk (aka Tracking Error)** – the volatility (standard deviation) of active return.

**Attribution** – A process by which sources of excess/active return (e.g. active decisions by investment management professionals) are decomposed into the following effects:

- **Allocation** – The amount of excess returns attributable to allocation decisions amongst various asset classes.
- **Selection** – The amount of excess return attributable to selection of individual investments/managers within asset classes.
- **Interaction** – The amount of excess return attributable to both allocation and selection decisions acting in concert with one another.

**Sharpe Ratio** - A measure of that explains the return of an investment compared to its risk. The Sharpe Ratio indicates excess portfolio return for each unit of risk over the risk free rate (usually short-term Treasuries or LIBOR) per unit of volatility. The higher the Sharpe Ratio, the greater its risk-adjusted return.

**Standard Deviation** - A measure of volatility, or risk. Measures risk by indicating how far from the average, or mean, return one is likely to fall in any given time period. The rules of statistics dictate that you will fall within 1 standard deviation of the mean 2/3 of the time and within 2 standard deviations 95% of the time. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

**Time Weighted Return** – A measure of the compound rate of growth in a portfolio, which eliminates the distorting effects of growth rates created by inflows and outflows of money.

# Glossary (cont.)

**Upside Market Capture** – A measure of the manager’s performance in up markets relative to the market itself. A value of 110 suggests the manager performs ten percent better than the market when the market is up during the selected time period. The return for the market for each quarter is considered an up market if it is greater than or equal to zero. The Upside Capture Ratio is calculated by dividing the return of the manager during the up market periods by the return of the market for the same period. Generally, the higher the UMC Ratio, the better (If the manager’s UMC Ratio is negative, it means that during that specific time period, the manager’s return for that period was actually negative).<sup>1</sup>

**Downside Market Capture** - A measure of the manager’s performance in down markets relative to the market itself. A value of 90 suggests the manager’s loss is only nine tenths of the market’s loss during the selected time period. A market is considered down if the return for the benchmark is less than zero. The Downside Capture Ratio is calculated by dividing the return of the manager during the down market periods by the return of the market during the same periods. Generally, the lower the DMC Ratio, the better (If the manager’s DMC Ratio is negative, it means that during that specific time period, the manager’s return for that period was actually positive).<sup>1</sup>

# Glossary (cont.)

**Information Ratio** – the ratio of active return to active risk, i.e., how much excess return an active manager delivers per unit of tracking error. A common basis of comparison in manager searches.

*Active Return* =  $(R_P - R_B)$   The return difference between the portfolio return and the benchmark return

*Active Risk* =  $\sigma(R_P - R_B)$   The volatility of the Active Return

$$\text{Information Ratio} = \frac{\text{Active Return}}{\text{Active Risk}}$$

**Rearranging the formula...**

$$(\text{Information Ratio}) \times (\text{Active Risk}) = \text{Active Return}$$



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: DECEMBER 31, 2023**

Investment Performance Review for

**Alameda County Employees' Retirement Association**



# U.S. economics summary

- Real GDP increased at a 2.9% pace year-over-year in Q3 (4.9% quarter-over-quarter annualized rate). The economy has remained relatively strong while inflation appears more likely to fall closer to the Fed’s target in 2024. These expectations contributed to a dovish pivot from the Federal Reserve in December, a sharp drop in interest rates, and a notable market rally as the possibility of a soft landing has risen.
- U.S. headline inflation fell during the quarter, from 3.7% to 3.3% year-over-year. Core CPI (ex-food & energy) declined further from 4.1% to 3.9%. Low inflation numbers in October and November (0.0% and 0.1% month-over-month) were counterbalanced by a surprisingly high inflation number in December (0.3% month-over-month).
- Consumer spending has been stable, with real personal consumption expenditures up +2.7% year-over-year in November, the strongest growth figure since early 2022. However, strong spending appears to be at the expense of a low household savings rate (4.1% in November) and may be partly driven by necessity (higher prices of goods & services) rather than by a positive financial or economic outlook.
- The job market has shown mixed signals, increasing in total size during 2023 but arguably with some weakness around the edges. Unemployment rose during the year but fell slightly in Q4 from 3.8% to 3.7%. This historic mismatch between jobs available and workers available has been slowly closing.
- Consumer sentiment improved slightly but remains incredibly poor. Inflation is a central concern for Americans. Although inflation has fallen considerably, prices of goods and services remain high, placing strain on budgets. Because inflation measures the rate of change of prices, rather than the level of prices, lower inflation has failed to ease the financial pressure that many households face.

	Most Recent	12 Months Prior
Real GDP (YoY)	2.9% 9/30/23	1.7% 9/30/22
Inflation (CPI YoY, Core)	3.9% 12/31/23	6.4% 12/31/22
Expected Inflation (5yr-5yr forward)	2.2% 12/31/23	2.3% 12/31/22
Fed Funds Target Range	5.25–5.50% 12/31/23	4.25–4.50% 12/31/22
10-Year Rate	3.88% 12/31/23	3.88% 12/31/22
U-3 Unemployment	3.7% 12/31/23	3.5% 12/31/22
U-6 Unemployment	7.1% 12/31/23	6.5% 12/31/22

# International economics summary

- The ongoing threat of inflation, and central banks’ tightrope act of working to battle that inflation without tipping economies into recession, was expected to be a key risk of 2024. However, in the fourth quarter inflation has fallen more quickly than expected, while economic growth has generally been more resilient. The global growth picture seems to have improved, all else equal, although growth is still expected to slow materially in the coming quarters.
- Conflicts within the Middle East have led to heightened geopolitical tensions, and broader escalation is a notable risk. While military action has been relatively confined, further conflict could have a material impact on global supply chains and energy markets. The war in Ukraine, which played a large part in initially driving inflation across developed economies, is still fresh in many investors' minds.
- Inflation fell significantly in the Eurozone and U.K., helping to take

some pressure off the ECB and BOE (headline inflation receded to 3.4% and 4.0% across the Eurozone and U.K., respectively). Despite the easing of price pressures, interest rates sit at multi-decade highs at both central banks which does little to change expectations for stagnant and potentially even negative economic growth.

- China reported GDP growth of 5.2% in 2023, exceeding the 5% growth target set by the CCP. While the reported figure is slightly above the CCP’s target, growth has disappointed investors and economists alike, especially following a nearly three-year COVID-19 lockdown. The country continues to face a variety of challenges including incredibly dire demographic trends, geopolitical tension with the U.S., slowing growth, financial distress amongst the property sector and local government financing vehicles, a heavy national debt burden, and deflation.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.9% 9/30/23	3.4% 12/31/23	3.7% 12/31/23
Eurozone	0.0% 9/30/23	2.9% 12/31/23	6.4% 11/30/23
Japan	1.5% 9/30/23	2.4% 12/31/23	2.4% 11/30/23
BRICS Nations	5.0% 9/30/23	1.5% 12/31/23	4.8% 12/31/22
Brazil	2.0% 9/30/23	4.6% 12/31/23	7.5% 11/30/23
Russia	5.5% 9/30/23	7.4% 12/31/23	2.9% 11/30/23
India	7.6% 9/30/23	5.7% 12/31/23	8.7% 12/31/23
China	5.2% 12/31/23	-0.3% 12/31/23	5.1% 12/31/23

*NOTE: India lacks reliable government unemployment data. Unemployment rate shown above is estimated from the Centre for Monitoring Indian Economy. The Chinese unemployment rate represents the monthly surveyed urban unemployment rate in China.*

# Equity environment

- Domestic equities delivered a strong rally to finish Q4, driven by a combination of better-than-expected Q3 earnings and signals of easing from the Federal Reserve. The S&P 500 Index gained +26.3% during 2023.
- U.S. equities (S&P 500 +11.7%) led international developed equities (MSCI EAFE +10.4%) and emerging market equities (MSCI EM +7.9%) during the quarter. Domestic equities also led non-U.S. equities over the full year, while emerging markets were laggards. Wide sector performance differences contributed to U.S. leadership, given the much heavier tech focus of the domestic market.
- The U.S. dollar fell sharply, as investors reassessed Federal Reserve policy and interest rates retraced lower. This move created a tailwind for investors with unhedged exposure to foreign currencies. On a trade-weighted basis, the value of the U.S. dollar fell -4.3%. However, over the full calendar year investors with unhedged currency exposure saw moderate losses, due to wide fluctuations of the dollar.
- Style factor investing delivered mixed performance for investors in Q4. Over the full year, style investing suffered substantially. Small cap underperformed by -9.6% while value stocks underperformed growth by a whopping -31.2%. Besides an extreme period during 2020, calendar year 2023 was the worst 1-year rolling period in more than two decades.
- The Cboe VIX implied volatility index moved even lower during the fourth quarter, from 17.5 to 12.5 in December. Priced volatility is incredibly low—at a level that has historically tended to coincide with very strong economic and market conditions.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	11.7%		26.3%	
U.S. Small Cap (Russell 2000)	14.0%		16.9%	
U.S. Equity (Russell 3000)	12.1%		26.0%	
U.S. Large Value (Russell 1000 Value)	9.5%		11.5%	
US Large Growth (Russell 1000 Growth)	14.2%		42.7%	
Global Equity (MSCI ACWI)	11.0%	9.7%	22.2%	22.7%
International Large (MSCI EAFE)	10.4%	6.0%	18.2%	19.9%
Eurozone (EURO STOXX 50)	13.3%	9.3%	26.5%	25.6%
U.K. (FTSE 100)	6.9%	2.5%	14.3%	8.8%
Japan (TOPIX)	8.2%	3.6%	19.3%	35.7%
Emerging Markets (MSCI Emerging Markets)	7.9%	5.7%	9.8%	10.1%

Source: Russell Investments, MSCI, STOXX, FTSE, JPX, as of 12/31/23

# Fixed income environment

- The 10-year U.S. Treasury yield reversed its gains from the prior quarter, falling from 4.58% to 3.88% in Q4, as the market reassessed inflation conditions and the Federal Reserve’s likely path. Further signs that inflation is moderating toward target, along with surprisingly upbeat economic news, likely contributed to the Federal Reserve’s “dovish pivot” as it has been referred to. The 10-year yield ended 2023 unchanged.
- During Q4, credit markets delivered strong results, led by lower-quality bonds such as high yield and bank loans. High yield gained +7.2% (Bbg U.S. Corporate High Yield), while bank loans rose +2.8% (S&P/LSTA Leveraged Loan). Longer duration investment grade corporate bonds (Bloomberg U.S. Long Corporate Credit) rose 14.0% during the quarter as both falling interest rates and narrower credit spreads acted as a tailwind.
- The U.S. yield curve has remained inverted for 1.5 years, which is

among the most extended periods in modern history. This is indicated by the 10-year minus 2-year Treasury yield—ending the year at -35bps, up from -44bps in Q3. Unique attributes of the current economic environment suggest that this curve inversion may not coincide with a near-term recession.

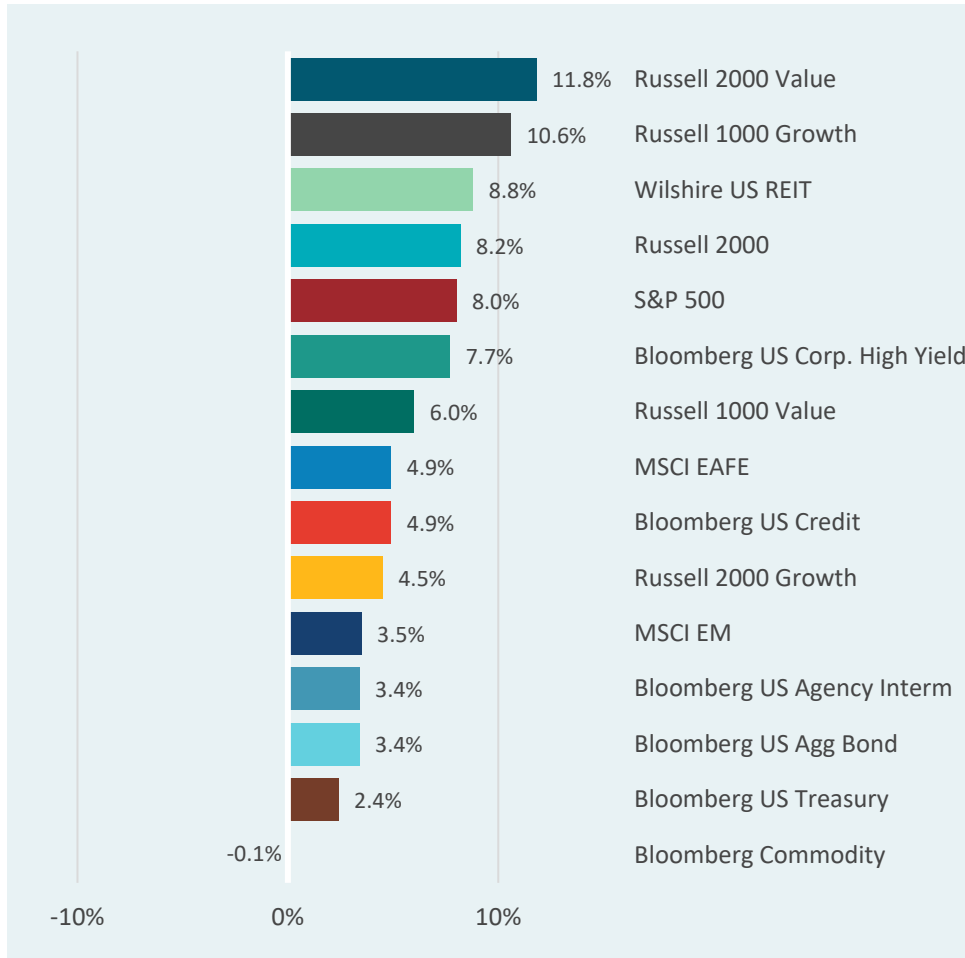
- US interest rates remained steady during the quarter as inflation continued to moderate towards the Federal Reserve Bank's 2.0% target. Importantly, expectations for future rate cuts increased following the statement made by Chairman Powell that future rate hikes may not be required.
- With inflation and economic growth continuing to moderate during the quarter, market expectations for future rate cuts by the Federal Reserve increased. As a result, interest rates across the US Treasury curve declined meaningfully, with shorter-term rates declining more than longer-term rates.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	6.8%	5.5%
Core Plus Fixed Income (Bloomberg U.S. Universal)	6.8%	6.2%
U.S. Treasuries (Bloomberg U.S. Treasury)	5.7%	4.1%
U.S. Treasuries: Long (Bloomberg U.S. Treasury 20+)	13.4%	2.7%
U.S. High Yield (Bloomberg U.S. Corporate HY)	7.2%	13.4%
Bank Loans (S&P/LSTA Leveraged Loan)	2.8%	13.3%
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	8.1%	12.7%
Emerging Market Debt Hard (JPM EMBI Global Diversified)	9.2%	11.1%
Mortgage-Backed Securities (Bloomberg MBS)	7.5%	5.0%

Source: Bloomberg, as of 12/31/23

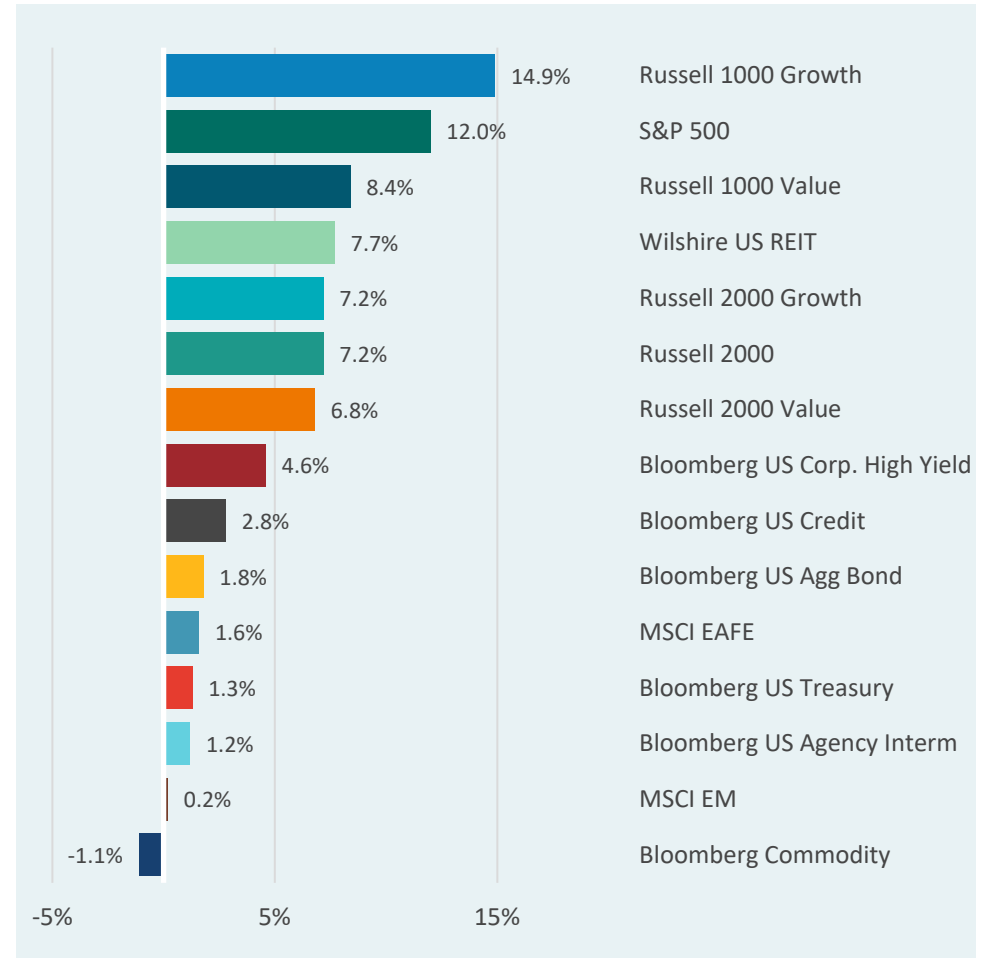
# Major asset class returns

SIX MONTHS ENDING DECEMBER



Source: Bloomberg, as of 12/31/23

TEN YEARS ENDING DECEMBER



Source: Bloomberg, as of 12/31/23. Annualized returns

Total Fund  
 Manager Allocation Analysis (One Quarter)

Period Ending: December 31, 2023

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Absolute Return <sup>1</sup>	\$897,392,357	-\$1,883,111	\$13,228,751	\$908,737,998
Alta	\$0	\$3,619	-\$47	\$3,572
Applied Research Investments	\$0	\$24,760	\$1,220	\$25,980
AQR	\$1,345,984	\$0	\$77,947	\$1,423,931
Arga Investment Management	\$68,111,086	\$0	\$5,096,863	\$73,207,949
Aristotle	\$154,184,639	-\$158,140	\$22,040,466	\$176,066,965
Baird Advisors	\$1,118,615,858	-\$197,364	\$78,372,908	\$1,196,791,402
Bivium Cash	\$52,604	-\$44,228	\$501	\$8,877
BlackRock MSCI Emerging Mkts	\$340,634,439	\$0	\$25,485,062	\$366,119,501
BlackRock MSCI World ex-US Index Fd A	\$852,412,262	\$0	\$89,323,780	\$941,736,042
BlackRock Russell 1000 Index Fund	\$2,096,548,711	-\$120,000,000	\$245,042,223	\$2,221,590,934
Brandywine	\$172,963,200	-\$278,840	\$22,992,070	\$195,676,430
Capital Group	\$368,548,475	-\$161,547	\$45,706,278	\$414,093,205
Cash Account	\$96,495,773	-\$14,933,689	\$1,161,619	\$82,723,703
Cedar Street	\$9,583,779	\$27,346	\$976,083	\$10,587,208
Denali Advisors	\$58,871,642	\$0	\$4,638,561	\$63,510,203
Dundas Partners	\$65,389,983	-\$400,000	\$11,467,802	\$76,457,786
Global Alpha Capital Management	\$9,899,851	\$0	\$734,050	\$10,633,901
Haven Global Partners	\$48,778,293	\$0	\$5,648,050	\$54,426,342
Huber	\$0	\$1,651	\$0	\$1,651
Kennedy	\$141,691,133	-\$304,291	\$18,826,772	\$160,213,613
Loomis Sayles	\$261,269,279	-\$219,357	\$20,730,388	\$281,780,309
Mondrian	\$5,249,621	-\$1,569,751	\$235,030	\$3,914,900
Newton Emerging Mkt	\$9	\$0	\$0	\$9
Overlay	\$38,182,564	-\$20,030,000	\$8,625,855	\$26,778,419
Promethos Capital	\$48,508,852	\$0	\$5,293,654	\$53,802,506
Private Credit <sup>1</sup>	\$306,581,389	\$907,958	\$974,543	\$308,463,890
Private Equity	\$1,050,127,855	\$50,813,654	\$18,754,958	\$1,119,696,468
Radin Capital Partners	\$41,202	-\$27,346	-\$104	\$13,752
Redwood	\$8	\$1,831	\$222	\$2,060
Redwood DM	\$56,354,202	\$0	\$5,361,310	\$61,715,512
RVX Asset Management	\$0	\$3,011	\$2,941	\$5,951
Real Assets <sup>1</sup>	\$632,969,548	-\$168,977	\$25,340,184	\$658,140,755
Real Estate	\$785,943,071	\$23,488,879	-\$28,145,668	\$781,286,284
Sec. Lending	\$0	-\$194,558	\$194,558	\$0
TCW	\$137,326,556	-\$156,425	\$22,640,444	\$159,810,576
Templeton	\$257,193,420	\$292	\$27,822,556	\$285,016,268
Intl Transition	\$459,601	-\$462,660	\$9,444	\$6,385
William Blair Emerging Mkts Growth	\$374,164,675	-\$16,846	\$35,784,407	\$409,932,237
William Blair Small Cap Growth	\$130,890,779	-\$271,404	\$14,901,773	\$145,521,148
<b>Total</b>	<b>\$10,586,782,700</b>	<b>-\$86,205,533</b>	<b>\$749,347,454</b>	<b>\$11,249,924,621</b>

<sup>1</sup> Preliminary ending market value



Bivium

Manager Allocation Analysis (One Quarter)

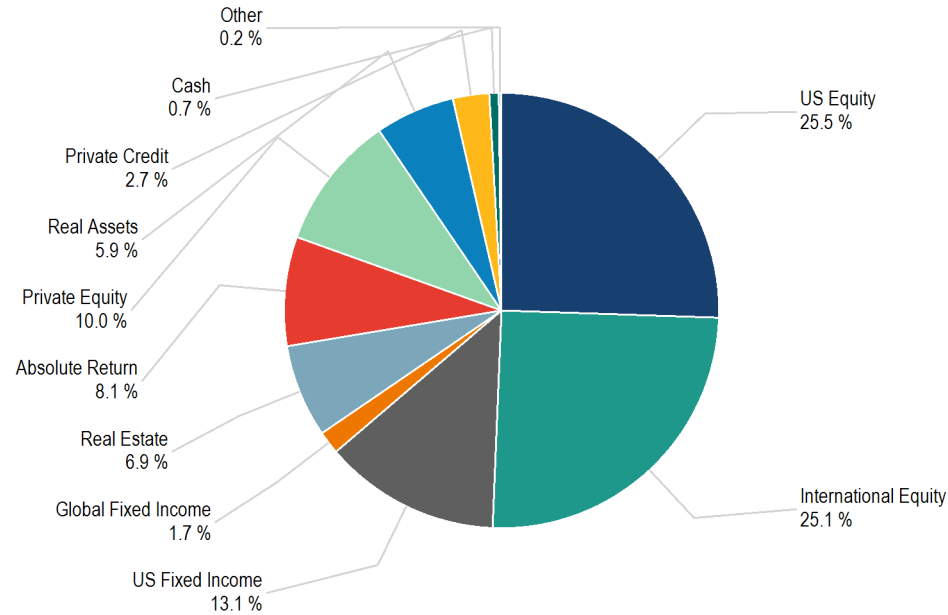
Period Ending: December 31, 2023

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Alta	\$0	\$3,619	-\$47	\$3,572
Bivium Cash	\$52,604	-\$44,228	\$501	\$8,877
Huber	\$0	\$1,651	\$0	\$1,651
<b>Total</b>	<b>\$52,604</b>	<b>-\$38,958</b>	<b>\$454</b>	<b>\$14,100</b>

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Applied Research Investments	\$0	\$24,760	\$1,220	\$25,980
Arga Investment Management	\$68,111,086	\$0	\$5,096,863	\$73,207,949
Cedar Street	\$9,583,779	\$27,346	\$976,083	\$10,587,208
Denali Advisors	\$58,871,642	\$0	\$4,638,561	\$63,510,203
Dundas Partners	\$65,389,983	-\$400,000	\$11,467,802	\$76,457,786
Global Alpha Capital Management	\$9,899,851	\$0	\$734,050	\$10,633,901
Haven Global Partners	\$48,778,293	\$0	\$5,648,050	\$54,426,342
Promethos Capital	\$48,508,852	\$0	\$5,293,654	\$53,802,506
Radin Capital Partners	\$41,202	-\$27,346	-\$104	\$13,752
Redwood	\$8	\$1,831	\$222	\$2,060
Redwood DM	\$56,354,202	\$0	\$5,361,310	\$61,715,512
RVX Asset Management	\$0	\$3,011	\$2,941	\$5,951
<b>Total</b>	<b>\$365,538,898</b>	<b>-\$370,399</b>	<b>\$39,220,651</b>	<b>\$404,389,151</b>

Total Fund  
Asset Allocation Compliance

Period Ending: December 31, 2023



	Current Balance (\$)	Current Allocation (%)	Policy (%)	Difference (%)	Within IPS Range?
US Equity	2,863,217,336	25.5	24.0	1.5	Yes
International Equity	2,826,631,629	25.1	24.0	1.1	Yes
US Fixed Income	1,478,571,711	13.1	12.0	1.1	Yes
Global Fixed Income	195,676,430	1.7	2.0	-0.3	Yes
Real Estate	781,286,284	6.9	9.0	-2.1	Yes
Absolute Return	908,737,998	8.1	8.0	0.1	Yes
Private Equity	1,119,696,468	10.0	11.0	-1.0	Yes
Real Assets	658,140,755	5.9	6.0	-0.1	Yes
Private Credit	308,463,890	2.7	4.0	-1.3	Yes
Cash	82,723,703	0.7	0.0	0.7	Yes
Other	26,778,419	0.2	0.0	0.2	Yes
<b>Total</b>	<b>11,249,924,621</b>	<b>100.0</b>	<b>100.0</b>		

# Total Fund Performance Summary

Period Ending: December 31, 2023

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Total Fund (Gross)</b>	7.10	34	4.84	46	12.69	28	5.08	35	9.17	25	8.56	18	7.21	29	9.36	Sep-85
<b>Total Fund (Net)</b>	7.07	39	4.78	48	12.55	30	4.93	41	9.01	33	8.38	26	6.98	42	9.17	
<i>Policy Index<sup>1</sup></i>	6.59	55	4.45	61	11.42	50	5.15	34	9.18	25	8.46	24	7.49	19	9.62	Sep-85
<i>Allocation Index</i>	6.83	50	4.54	59	11.64	45	4.51	49	8.89	35	8.18	32	7.17	32	--	Sep-85
<i>InvMetrics Public DB &gt; \$1B Gross Median</i>	6.75		4.65		11.40		4.44		8.40		7.73		6.71		8.33	Sep-85
<b>Total Fund w/o Overlay (Gross)</b>	7.04	--	4.82	--	12.62	--	5.11	--	9.19	--	8.57	--	7.22	--	9.36	Sep-85
<b>Total Fund w/o Overlay (Net)</b>	7.01	--	4.76	--	12.49	--	4.96	--	9.03	--	8.39	--	6.99	--	9.17	
<b>US Equity (Gross)</b>	12.43	20	8.72	31	25.83	28	8.59	52	15.25	21	13.26	15	11.26	28	11.76	Sep-85
<b>US Equity (Net)</b>	12.40	21	8.64	33	25.66	30	8.44	56	15.09	29	13.07	20	11.01	44	--	
<i>Russell 3000</i>	12.07	47	8.42	47	25.96	25	8.54	53	15.16	26	12.81	31	11.48	19	11.34	Sep-85
<i>InvMetrics All DB US Eq Gross Median</i>	12.04		8.36		24.18		8.62		14.72		12.34		10.89		10.77	Sep-85
BlackRock Russell 1000 Index Fund (Gross)	12.00	40	8.49	44	26.60	29	9.00	64	15.56	40	--	--	--	--	12.71	Apr-18
BlackRock Russell 1000 Index Fund (Net)	12.00	40	8.48	44	26.59	29	8.99	64	15.54	40	--	--	--	--	12.70	
<i>Russell 1000</i>	11.96	41	8.44	44	26.53	29	8.97	65	15.52	41	13.21	47	11.80	43	12.67	Apr-18
<b>Large Cap Active Equity (Gross)</b>	15.33	--	11.82	--	30.89	--	7.49	--	12.86	--	11.34	--	9.92	--	8.25	Mar-00
<b>Large Cap Active Equity (Net)</b>	15.22	--	11.56	--	30.39	--	7.02	--	12.34	--	10.85	--	9.45	--	7.80	
<i>Russell 1000</i>	11.96	--	8.44	--	26.53	--	8.97	--	15.52	--	13.21	--	11.80	--	7.09	Mar-00
Aristotle (Gross)	14.29	5	11.15	7	20.33	15	9.23	75	--	--	--	--	--	--	13.90	Oct-20
Aristotle (Net)	14.19	5	10.85	9	19.89	17	8.75	81	--	--	--	--	--	--	13.43	
<i>Russell 1000 Value</i>	9.50	62	6.03	73	11.46	62	8.86	79	10.90	81	8.32	89	8.40	85	14.12	Oct-20
TCW (Gross)	16.49	9	12.58	11	44.91	20	5.70	68	17.54	46	17.37	27	13.23	61	8.78	Jun-99
TCW (Net)	16.37	10	12.35	13	44.32	25	5.24	73	16.98	57	16.87	38	12.79	71	--	
<i>Russell 1000 Growth</i>	14.16	43	10.59	42	42.68	31	8.86	28	19.50	16	17.68	24	14.86	14	7.52	Jun-99

Total Fund and asset class composites are ranked against InvestorForce universes. Managers are ranked against eVestment Alliance style universes.

Ranking of 1 is a top ranking and a ranking of 100 is a bottom ranking. The InvestorForce Public DB> \$1B Gross universe consists of 77 members with a total market value of \$788.6 Billion.

Effective 1/1/2017, only traditional asset class (public equity, public fixed income, public real estate) investment management fees will be included in the gross of fee return calculation.

1. See Policy Index and Benchmark History.

# Total Fund Performance Summary

Period Ending: December 31, 2023

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Small Cap Equity (Gross)</b>	<b>12.37</b>	<b>--</b>	<b>6.90</b>	<b>--</b>	<b>15.10</b>	<b>--</b>	<b>5.80</b>	<b>--</b>	<b>14.52</b>	<b>--</b>	<b>11.74</b>	<b>--</b>	<b>9.21</b>	<b>--</b>	<b>13.14</b>	<b>Jul-85</b>
<b>Small Cap Equity (Net)</b>	<b>12.16</b>	<b>--</b>	<b>6.50</b>	<b>--</b>	<b>14.12</b>	<b>--</b>	<b>4.94</b>	<b>--</b>	<b>13.64</b>	<b>--</b>	<b>10.83</b>	<b>--</b>	<b>8.31</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>Russell 2000</i>	<i>14.03</i>	<i>--</i>	<i>8.18</i>	<i>--</i>	<i>16.93</i>	<i>--</i>	<i>2.22</i>	<i>--</i>	<i>9.97</i>	<i>--</i>	<i>7.33</i>	<i>--</i>	<i>7.16</i>	<i>--</i>	<i>9.21</i>	<i>Jul-85</i>
Kennedy (Gross)	13.29	43	8.56	65	12.84	82	9.35	72	11.90	65	7.22	73	7.83	67	11.02	Sep-10
Kennedy (Net)	13.07	46	8.15	73	11.96	87	8.49	76	11.03	79	6.35	86	6.95	88	10.14	
<i>Russell 2000 Value</i>	<i>15.26</i>	<i>16</i>	<i>11.85</i>	<i>34</i>	<i>14.65</i>	<i>71</i>	<i>7.94</i>	<i>80</i>	<i>10.00</i>	<i>88</i>	<i>6.10</i>	<i>92</i>	<i>6.76</i>	<i>89</i>	<i>9.50</i>	<i>Sep-10</i>
William Blair Small Cap Growth (Gross)	11.38	45	5.14	35	17.69	52	2.49	22	--	--	--	--	--	--	12.06	Oct-19
William Blair Small Cap Growth (Net)	11.18	49	4.75	41	16.60	60	1.63	28	--	--	--	--	--	--	11.23	
<i>Russell 2000 Growth</i>	<i>12.75</i>	<i>29</i>	<i>4.50</i>	<i>43</i>	<i>18.66</i>	<i>46</i>	<i>-3.50</i>	<i>62</i>	<i>9.22</i>	<i>86</i>	<i>8.07</i>	<i>96</i>	<i>7.16</i>	<i>95</i>	<i>6.70</i>	<i>Oct-19</i>
<b>International Equity (Gross)</b>	<b>10.28</b>	<b>28</b>	<b>5.40</b>	<b>48</b>	<b>17.18</b>	<b>35</b>	<b>0.97</b>	<b>67</b>	<b>8.10</b>	<b>45</b>	<b>7.71</b>	<b>28</b>	<b>5.00</b>	<b>31</b>	<b>7.85</b>	<b>Dec-90</b>
<b>International Equity (Net)</b>	<b>10.22</b>	<b>31</b>	<b>5.25</b>	<b>53</b>	<b>16.88</b>	<b>44</b>	<b>0.68</b>	<b>71</b>	<b>7.76</b>	<b>53</b>	<b>7.38</b>	<b>38</b>	<b>4.65</b>	<b>45</b>	<b>--</b>	<b>--</b>
<i>MSCI ACWI ex USA IMI Gross<sup>1</sup></i>	<i>9.87</i>	<i>53</i>	<i>6.15</i>	<i>23</i>	<i>16.21</i>	<i>56</i>	<i>2.03</i>	<i>47</i>	<i>7.69</i>	<i>57</i>	<i>6.88</i>	<i>59</i>	<i>4.45</i>	<i>56</i>	<i>6.15</i>	<i>Dec-90</i>
<i>InvMetrics All DB ex-US Eq Gross Median</i>	<i>9.92</i>		<i>5.30</i>		<i>16.51</i>		<i>1.87</i>		<i>7.90</i>		<i>7.05</i>		<i>4.57</i>		<i>--</i>	<i>Dec-90</i>
Bivium Intl Equity (Gross)*	10.73	37	6.88	35	18.96	36	2.76	72	9.34	32	--	--	--	--	7.89	Oct-18
Bivium Intl Equity (Net)*	10.73	37	6.66	36	18.38	44	1.85	79	8.59	54	--	--	--	--	7.18	
<i>MSCI World ex USA Gross<sup>1</sup></i>	<i>10.57</i>	<i>46</i>	<i>6.27</i>	<i>44</i>	<i>16.75</i>	<i>63</i>	<i>2.20</i>	<i>76</i>	<i>7.70</i>	<i>75</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>6.69</i>	<i>Oct-18</i>
BlackRock MSCI World ex-US Index Fd A (Gross)	10.48	46	6.01	48	18.41	42	4.88	36	--	--	--	--	--	--	7.83	May-19
BlackRock MSCI World ex-US Index Fd A (Net)	10.47	46	6.00	48	18.38	42	4.86	37	--	--	--	--	--	--	7.81	
<i>MSCI World ex US Gross</i>	<i>10.57</i>	<i>43</i>	<i>6.12</i>	<i>45</i>	<i>18.60</i>	<i>39</i>	<i>4.97</i>	<i>35</i>	<i>9.02</i>	<i>44</i>	<i>7.51</i>	<i>50</i>	<i>4.84</i>	<i>63</i>	<i>7.91</i>	<i>May-19</i>
Capital Group (Gross)	12.40	56	4.61	40	17.37	59	-2.72	70	8.23	83	8.86	62	5.35	73	8.12	Dec-90
Capital Group (Net)	12.36	57	4.52	40	17.21	61	-2.86	72	7.99	86	8.65	66	5.10	87	--	
<i>MSCI ACWI ex USA Gross</i>	<i>9.82</i>	<i>98</i>	<i>5.78</i>	<i>26</i>	<i>16.21</i>	<i>65</i>	<i>2.04</i>	<i>30</i>	<i>7.60</i>	<i>89</i>	<i>6.84</i>	<i>99</i>	<i>4.32</i>	<i>99</i>	<i>6.14</i>	<i>Dec-90</i>
<i>MSCI ACWI ex USA Growth Gross</i>	<i>11.17</i>	<i>84</i>	<i>3.10</i>	<i>59</i>	<i>14.40</i>	<i>85</i>	<i>-2.37</i>	<i>68</i>	<i>7.83</i>	<i>87</i>	<i>7.50</i>	<i>95</i>	<i>4.91</i>	<i>93</i>	<i>--</i>	<i>Dec-90</i>

1. See Policy Index and Benchmark History.

\* Effective 9/1/23, mandate transitioned to Developed World ex USA from MSCI ACWI ex US. Redwood EME and RVX Asset Management liquidated in August 2023. Haven and Redwood DM were funded in September 2023.

# Total Fund Performance Summary

Period Ending: December 31, 2023

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Templeton (Gross)	10.81	61	6.84	59	17.13	49	0.48	49	6.90	84	6.45	93	4.60	94	5.49	Apr-11
Templeton (Net)	10.64	63	6.35	65	16.43	59	-0.14	53	6.25	95	5.80	97	3.93	99	4.81	
MSCI ACWI ex US Small Cap Gross	10.20	65	8.46	45	16.23	59	1.96	42	8.36	63	7.14	71	5.30	76	4.90	Apr-11
MSCI ACWI ex US Small Cap Value GD	10.17	65	10.72	23	18.02	44	5.59	34	8.43	62	7.01	74	5.22	78	4.97	Apr-11
BlackRock MSCI Emerging Mkts (Gross)	7.48	66	--	--	--	--	--	--	--	--	--	--	--	--	7.48	Sep-23
BlackRock MSCI Emerging Mkts (Net)	7.48	66	--	--	--	--	--	--	--	--	--	--	--	--	7.48	
MSCI Emerging Markets Gross	7.93	55	4.92	50	10.26	64	-4.71	63	4.08	81	5.37	77	3.05	82	7.93	Sep-23
eV Emg Mkts Equity Gross Median	8.11		4.87		12.94		-2.81		5.78		6.46		4.16		8.11	Sep-23
William Blair Emerging Mkts Growth (Gross)	9.56	23	5.30	45	11.45	59	--	--	--	--	--	--	--	--	6.85	Nov-22
William Blair Emerging Mkts Growth (Net)	9.44	24	5.03	48	10.92	60	--	--	--	--	--	--	--	--	6.38	
MSCI Emerging Markets Gross	7.93	55	4.92	50	10.26	64	-4.71	63	4.08	81	5.37	77	3.05	82	8.07	Nov-22
eV Emg Mkts Equity Gross Median	8.11		4.87		12.94		-2.81		5.78		6.46		4.16		10.08	Nov-22
<b>Total Fixed Income (Gross)</b>	<b>7.86</b>	<b>19</b>	<b>4.18</b>	<b>42</b>	<b>7.30</b>	<b>43</b>	<b>-2.90</b>	<b>78</b>	<b>2.43</b>	<b>46</b>	<b>2.72</b>	<b>29</b>	<b>3.04</b>	<b>30</b>	<b>6.58</b>	<b>Sep-86</b>
<b>Total Fixed Income (Net)</b>	<b>7.82</b>	<b>20</b>	<b>4.11</b>	<b>45</b>	<b>7.15</b>	<b>46</b>	<b>-3.04</b>	<b>81</b>	<b>2.25</b>	<b>49</b>	<b>2.53</b>	<b>40</b>	<b>2.85</b>	<b>41</b>	<b>--</b>	<b>--</b>
Fixed Income Blend <sup>1</sup>	7.31	25	3.93	54	6.36	70	-3.76	89	0.96	97	1.31	96	1.65	92	5.60	Sep-86
InvMetrics All DB Total Fix Inc Gross Median	6.68		4.00		7.00		-1.65		2.22		2.31		2.67		6.17	Sep-86
<b>US Fixed Income (Gross)</b>	<b>7.18</b>	<b>22</b>	<b>4.16</b>	<b>30</b>	<b>6.92</b>	<b>42</b>	<b>-2.57</b>	<b>64</b>	<b>2.49</b>	<b>37</b>	<b>2.63</b>	<b>30</b>	<b>3.21</b>	<b>20</b>	<b>6.51</b>	<b>Sep-86</b>
<b>US Fixed Income (Net)</b>	<b>7.15</b>	<b>22</b>	<b>4.10</b>	<b>31</b>	<b>6.80</b>	<b>45</b>	<b>-2.70</b>	<b>66</b>	<b>2.35</b>	<b>42</b>	<b>2.48</b>	<b>38</b>	<b>3.06</b>	<b>24</b>	<b>--</b>	<b>--</b>
Bloomberg US Aggregate TR	6.82	38	3.37	80	5.53	81	-3.31	81	1.10	94	1.29	95	1.81	92	5.42	Sep-86
InvMetrics All DB US Fix Inc Gross Median	6.46		3.74		6.57		-2.06		2.09		2.10		2.50		--	Sep-86
Baird Advisors (Gross)	7.01	33	3.78	32	6.61	21	-2.89	51	1.83	37	2.00	24	2.71	8	4.23	Oct-01
Baird Advisors (Net)	6.99	35	3.75	34	6.54	24	-2.95	59	1.75	44	1.92	33	2.63	12	4.14	
Bloomberg US Aggregate TR	6.82	53	3.37	77	5.53	85	-3.31	90	1.10	97	1.29	97	1.81	96	3.40	Oct-01
Loomis Sayles (Gross)	7.93	5	5.78	2	8.24	6	-1.56	19	4.09	2	4.07	1	4.34	2	7.19	Dec-00
Loomis Sayles (Net)	7.85	5	5.61	3	7.90	17	-1.89	24	3.75	7	3.72	3	4.00	3	6.84	
Bloomberg US Credit BAA TR	8.81	3	5.67	3	9.41	2	-2.88	75	3.14	20	2.85	22	3.30	16	5.37	Dec-00

1. See Policy Index and Benchmark History.

# Total Fund Performance Summary

Period Ending: December 31, 2023

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Global Fixed Income (Gross)</b>	13.30	--	4.34	--	10.25	--	-5.15	--	1.25	--	2.19	--	1.97	--	5.82	Nov-01
<b>Global Fixed Income (Net)</b>	13.13	--	4.18	--	9.93	--	-5.45	--	0.93	--	1.88	--	1.67	--	5.51	
<i>FTSE WGBI TR</i>	8.08	--	3.47	--	5.18	--	-7.18	--	-1.39	--	-0.09	--	-0.31	--	3.06	Nov-01
<b>Brandywine (Gross)</b>	13.30	2	4.34	75	10.25	35	-5.15	81	1.25	73	2.19	60	1.97	59	5.95	Dec-01
<b>Brandywine (Net)</b>	13.13	3	4.18	77	9.93	38	-5.45	84	0.93	77	1.88	68	1.67	62	5.64	
<i>Bloomberg Global Aggregate TR</i>	8.10	37	4.22	77	5.71	84	-5.51	85	-0.32	92	0.62	92	0.38	86	3.44	Dec-01
<i>FTSE WGBI TR</i>	8.08	37	3.47	87	5.18	89	-7.18	95	-1.39	97	-0.09	97	-0.31	95	3.20	Dec-01
<b>Absolute Return (Gross)*</b>	1.47	76	4.11	61	6.72	70	9.19	10	5.66	72	4.15	80	4.18	60	4.23	Sep-11
<b>Absolute Return (Net)*</b>	1.47	76	4.11	61	6.72	70	9.19	10	5.66	72	4.15	80	4.18	60	4.23	
<i>Absolute Return Blend<sup>1</sup></i>	3.39	49	3.94	68	6.32	72	2.25	84	5.14	77	3.89	80	4.02	64	4.05	Sep-11
<i>HFRI Fund of Funds Composite Index</i>	3.39	49	3.94	68	6.32	72	2.25	84	5.14	77	4.15	80	3.25	80	3.72	Sep-11
<i>InvMetrics All DB Hedge Funds Gross Median</i>	3.31		4.43		9.06		5.25		7.01		5.63		4.31		5.61	Sep-11
<b>Private Equity (Gross)**</b>	1.79	--	4.79	--	9.31	--	17.49	--	14.73	--	14.99	--	15.43	--	7.13	Nov-08
<b>Private Equity (Net)**</b>	1.79	--	4.79	--	9.31	--	17.49	--	14.73	--	14.99	--	15.43	--	7.13	
<i>Private Equity Blend<sup>1</sup></i>	-0.42	--	1.04	--	3.81	--	14.57	--	14.04	--	15.38	--	14.09	--	16.61	Nov-08
<i>Refinitiv CJA Global All Private Equity 1Q Lagged</i>	-0.42	--	1.04	--	3.81	--	14.57	--	14.04	--	14.72	--	13.85	--	11.53	Nov-08
<b>Real Assets (Gross)***</b>	4.01	--	2.96	--	4.26	--	9.73	--	6.71	--	3.61	--	-0.09	--	-0.66	Sep-11
<b>Real Assets (Net)***</b>	3.99	--	2.93	--	4.18	--	9.61	--	6.61	--	3.54	--	-0.13	--	-0.69	
<i>Real Asset Blend<sup>1</sup></i>	6.58	--	3.19	--	3.23	--	8.75	--	8.52	--	6.80	--	6.31	--	6.00	Sep-11
<b>Private Credit (Gross)****</b>	0.31	--	3.58	--	10.10	--	8.53	--	--	--	--	--	--	--	6.89	Oct-19
<b>Private Credit (Net)****</b>	0.31	--	3.58	--	10.10	--	8.53	--	--	--	--	--	--	--	6.89	
<i>S&amp;P/LSTA Leveraged Loan Index +1.75%</i>	3.31	--	7.34	--	15.28	--	7.65	--	7.67	--	6.62	--	6.25	--	7.31	Oct-19

1. See Policy Index and Benchmark History.

\* As of 12/31 with the exception of Dyal and AG OWL. Dyal and AG OWL 9/30 market values rolled forward and includes any cash flows from Q4 to derive 12/31 market values.

\*\* Private Equity is one quarter lagged. 9/30 market values rolled forward and includes any cash flows from Q4 to derive 12/31 market value.

\*\*\* As of 12/31 with the exception of Private Real Assets, Vision Ridge, CIM, ISquare, Quantum, and Tiger. 9/30 market values rolled forward and includes any cash flows from Q4 to derive 12/31 market values.

\*\*\*\* As of 12/31 with the exception of Ares Senior DL, Monroe, BlackRock and Blue Owl. 9/30 market value rolled forward and includes any cash flows from Q4 to derive 12/31 market values.

# Total Fund Performance Summary

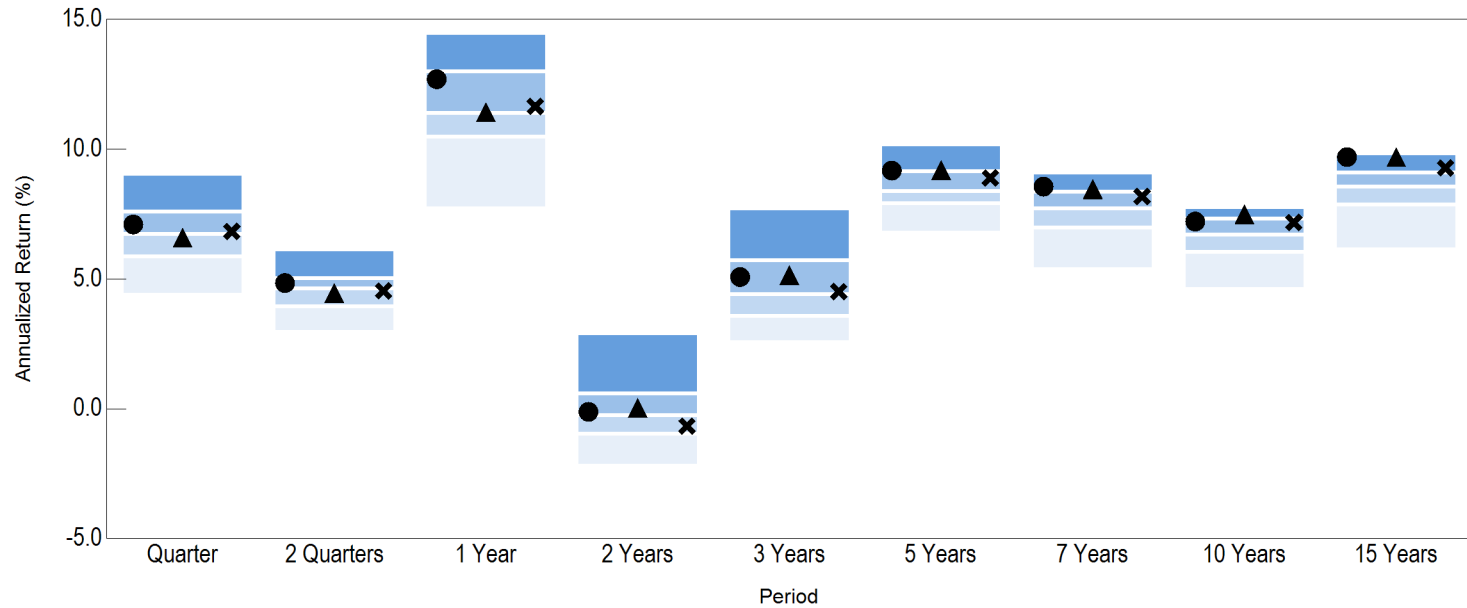
Period Ending: December 31, 2023

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Cash (Gross)	1.36	--	2.93	--	5.57	--	2.47	--	1.95	--	1.79	--	1.30	--	3.02	Sep-85
Cash (Net)	1.36	--	2.93	--	5.57	--	2.47	--	1.95	--	1.79	--	1.30	--	3.02	
91 Day T-Bills	1.37	--	2.70	--	5.02	--	2.15	--	1.79	--	1.69	--	1.21	--	3.08	Sep-85
Real Estate (Gross)	-3.51	51	-5.19	47	-10.83	58	5.16	45	4.75	42	5.79	36	7.98	25	6.80	Mar-86
Real Estate (Net)	-3.51	51	-5.19	47	-10.83	58	5.16	45	4.75	42	5.79	36	7.69	34	5.87	
Real Estate Blend <sup>1</sup>	-4.83	74	-6.64	72	-12.02	61	4.93	48	4.25	52	5.30	52	7.29	51	7.44	Mar-86
NCREIF-ODCE	-4.83	74	-6.64	72	-12.02	61	4.93	48	4.25	52	5.30	52	7.29	51	6.92	Mar-86
InvMetrics All DB Real Estate Pub+Priv Gross Median	-3.49		-5.34		-9.92		4.73		4.38		5.37		7.29		--	Mar-86

1. See Policy Index and Benchmark History.



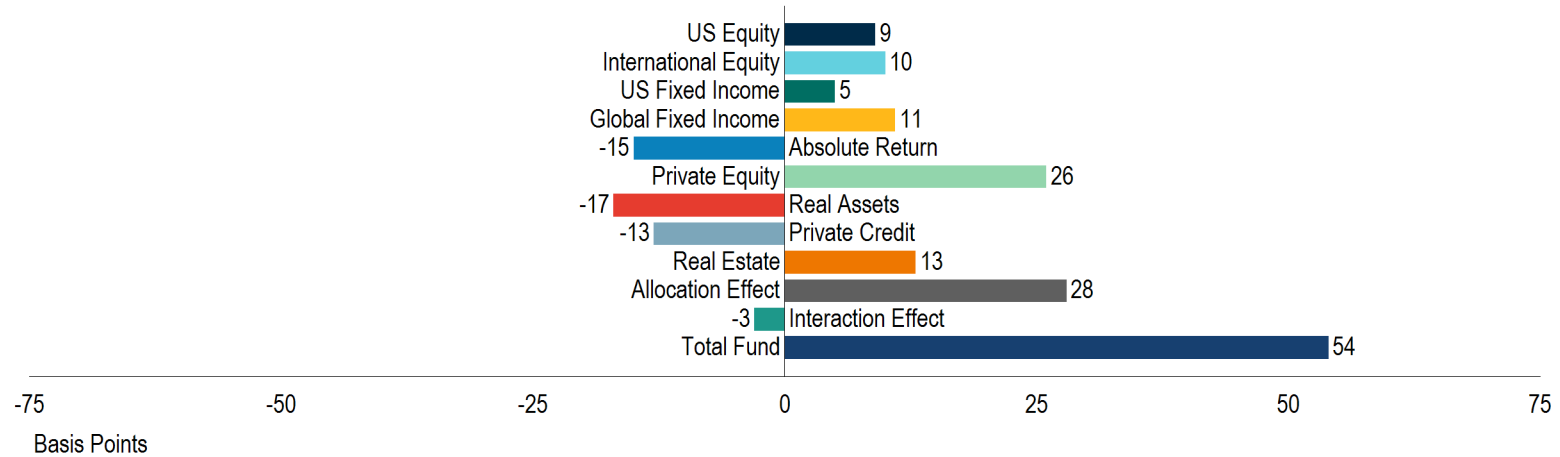
InvMetrics Public DB > \$1B Gross Return Comparison



	Return (Rank)								
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years	15 Years
5th Percentile	9.04	6.13	14.47	2.91	7.71	10.17	9.10	7.76	9.82
25th Percentile	7.60	5.05	13.00	0.62	5.73	9.17	8.39	7.35	9.11
Median	6.75	4.65	11.40	-0.22	4.44	8.40	7.73	6.71	8.57
75th Percentile	5.87	3.95	10.49	-0.95	3.60	7.93	7.00	6.07	7.88
95th Percentile	4.41	2.98	7.74	-2.19	2.57	6.80	5.40	4.63	6.16
# of Portfolios	77	77	76	74	73	73	73	70	65
● Total Fund	7.10 (34)	4.84 (46)	12.69 (28)	-0.12 (47)	5.08 (35)	9.17 (25)	8.56 (18)	7.21 (29)	9.69 (7)
▲ Policy Index	6.59 (55)	4.45 (61)	11.42 (50)	0.04 (45)	5.15 (34)	9.18 (25)	8.46 (24)	7.49 (19)	9.69 (7)
✕ Allocation Index	6.83 (50)	4.54 (59)	11.64 (45)	-0.67 (64)	4.51 (49)	8.89 (35)	8.18 (32)	7.17 (32)	9.27 (17)

Total Fund  
Performance Attribution (One Quarter)

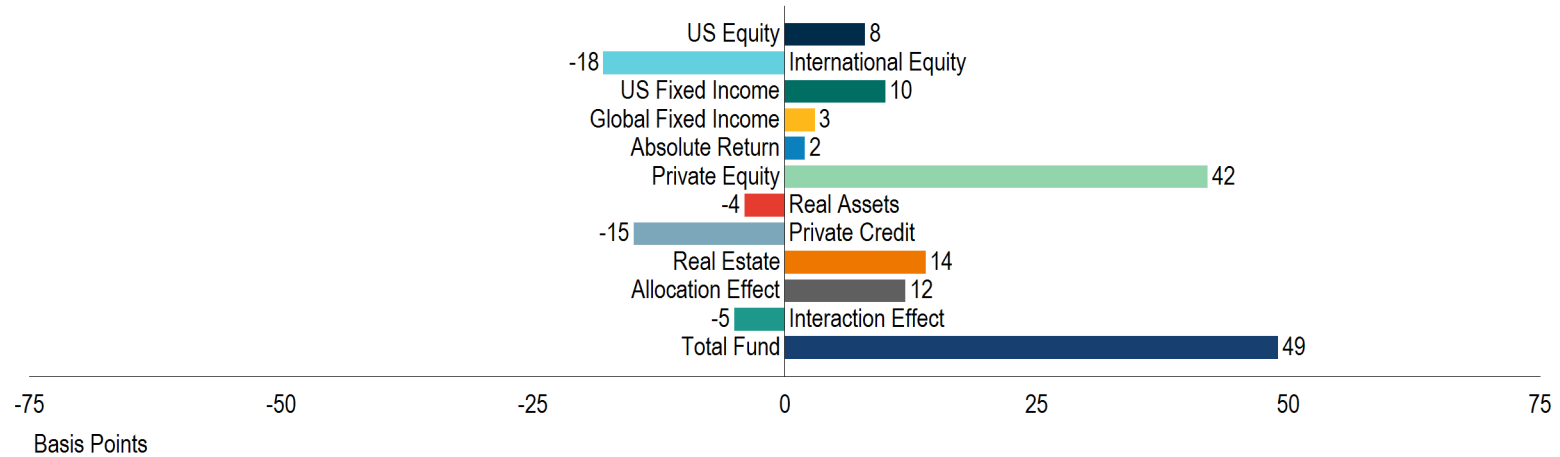
Period Ending: December 31, 2023



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	12.43%	12.07%	0.36%	0.09%	0.07%	0.00%	0.16%
International Equity	10.28%	9.87%	0.41%	0.10%	0.01%	0.00%	0.10%
US Fixed Income	7.18%	6.82%	0.37%	0.05%	0.00%	0.00%	0.05%
Global Fixed Income	13.30%	8.08%	5.22%	0.11%	0.00%	-0.02%	0.09%
Absolute Return	1.47%	3.23%	-1.76%	-0.15%	-0.02%	-0.01%	-0.18%
Private Equity	1.79%	-0.42%	2.20%	0.26%	0.03%	-0.02%	0.27%
Real Assets	4.01%	6.58%	-2.56%	-0.17%	0.00%	0.00%	-0.17%
Private Credit	0.31%	3.31%	-3.00%	-0.13%	0.03%	0.03%	-0.06%
Real Estate	-3.51%	-4.83%	1.32%	0.13%	0.17%	-0.02%	0.27%
<b>Total</b>	<b>7.09%</b>	<b>6.55%</b>	<b>0.54%</b>	<b>0.29%</b>	<b>0.28%</b>	<b>-0.03%</b>	<b>0.54%</b>

Total Fund  
Performance Attribution (6 Months)

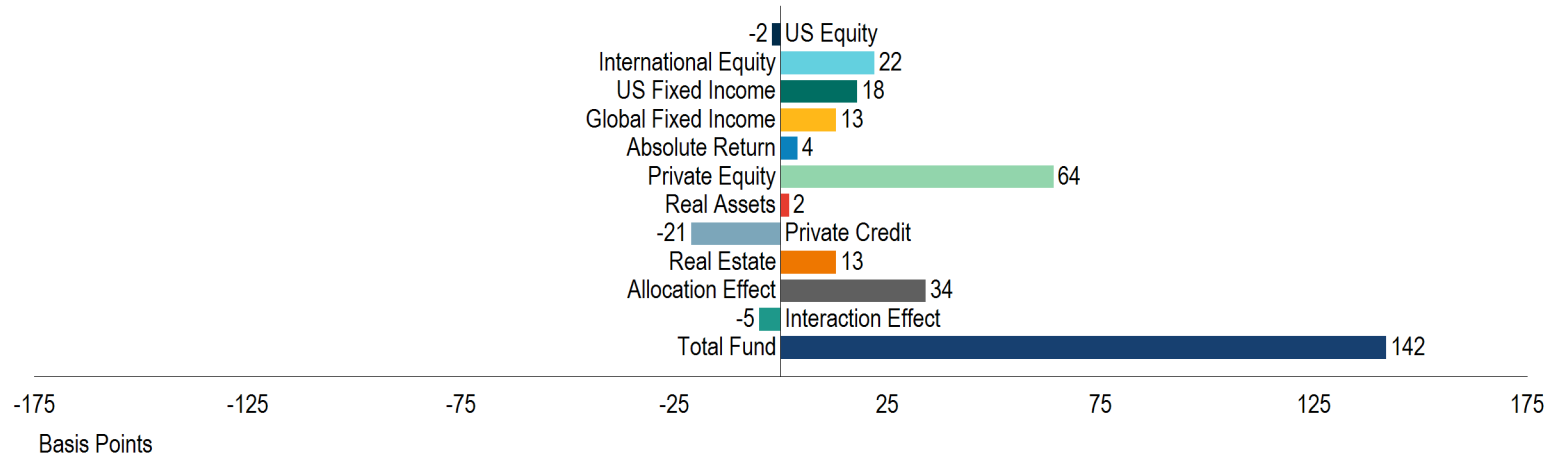
Period Ending: December 31, 2023



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	8.72%	8.42%	0.29%	0.08%	0.05%	0.00%	0.12%
International Equity	5.40%	6.15%	-0.75%	-0.18%	-0.01%	-0.01%	-0.20%
US Fixed Income	4.16%	3.37%	0.79%	0.10%	-0.02%	0.01%	0.09%
Global Fixed Income	4.34%	3.47%	0.87%	0.03%	0.00%	-0.01%	0.03%
Absolute Return	4.11%	3.79%	0.32%	0.02%	-0.02%	-0.01%	-0.01%
Private Equity	4.79%	1.04%	3.74%	0.42%	-0.01%	-0.05%	0.37%
Real Assets	2.96%	3.19%	-0.23%	-0.04%	0.00%	0.00%	-0.04%
Private Credit	3.58%	7.34%	-3.76%	-0.15%	-0.04%	0.04%	-0.15%
Real Estate	-5.19%	-6.64%	1.45%	0.14%	0.16%	-0.03%	0.28%
<b>Total</b>	<b>4.87%</b>	<b>4.38%</b>	<b>0.49%</b>	<b>0.42%</b>	<b>0.12%</b>	<b>-0.05%</b>	<b>0.49%</b>

Total Fund  
Performance Attribution (One Year)

Period Ending: December 31, 2023

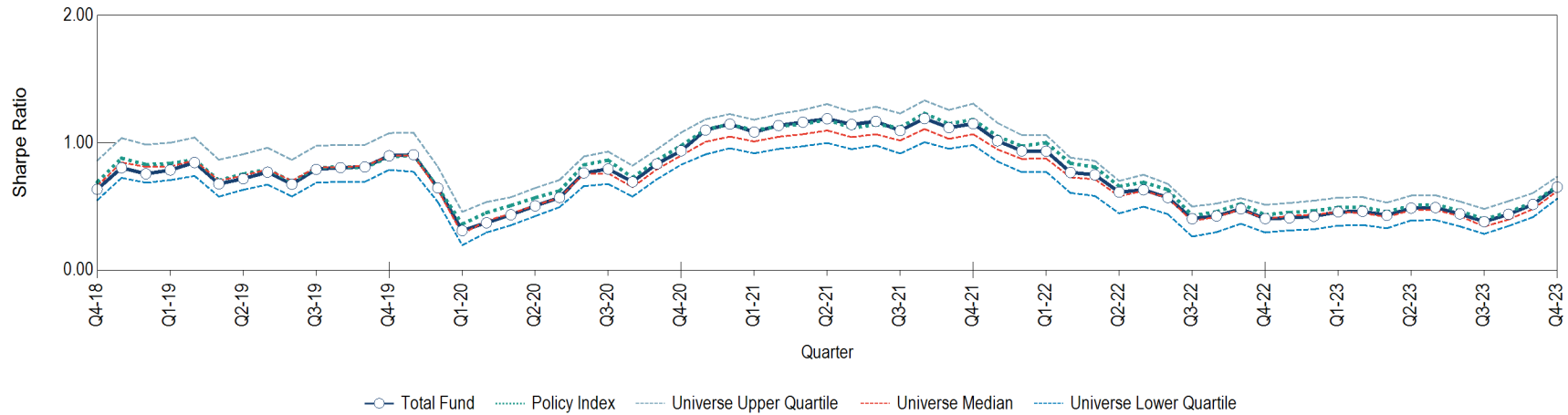


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	25.83%	25.96%	-0.13%	-0.02%	0.16%	0.00%	0.14%
International Equity	17.18%	16.21%	0.96%	0.22%	-0.01%	0.01%	0.23%
US Fixed Income	6.92%	5.53%	1.39%	0.18%	-0.10%	0.02%	0.10%
Global Fixed Income	10.25%	5.18%	5.07%	0.13%	0.01%	-0.02%	0.12%
Absolute Return	6.72%	6.16%	0.56%	0.04%	-0.05%	-0.02%	-0.02%
Private Equity	9.31%	3.81%	5.51%	0.64%	0.04%	-0.08%	0.60%
Real Assets	4.26%	3.23%	1.04%	0.02%	0.00%	0.00%	0.01%
Private Credit	10.10%	15.28%	-5.18%	-0.21%	-0.06%	0.06%	-0.20%
Real Estate	-10.83%	-12.02%	1.19%	0.13%	0.33%	-0.02%	0.43%
<b>Total</b>	<b>12.71%</b>	<b>11.30%</b>	<b>1.42%</b>	<b>1.13%</b>	<b>0.34%</b>	<b>-0.05%</b>	<b>1.42%</b>

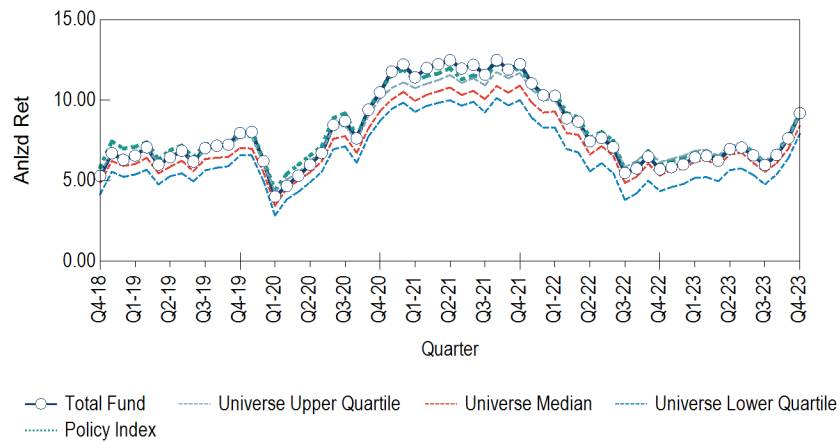
Total Fund  
Rolling Risk Statistics (5 Years)

Period Ending: December 31, 2023

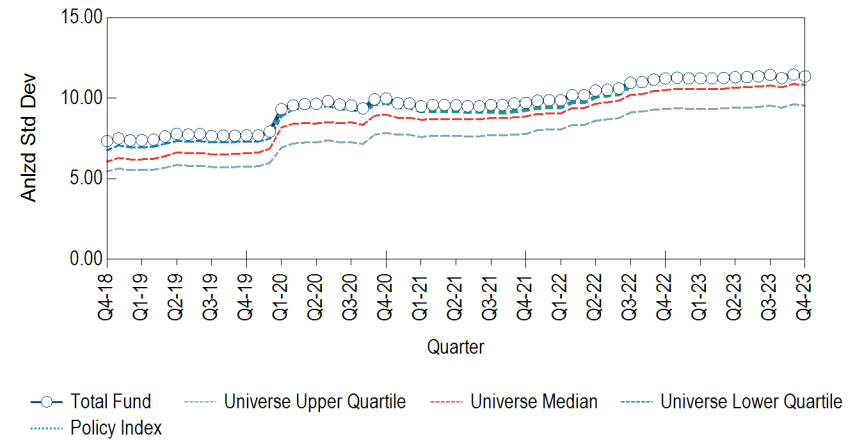
Rolling 5 Year Sharpe Ratio



Rolling 5 Year Annualized Return (%)



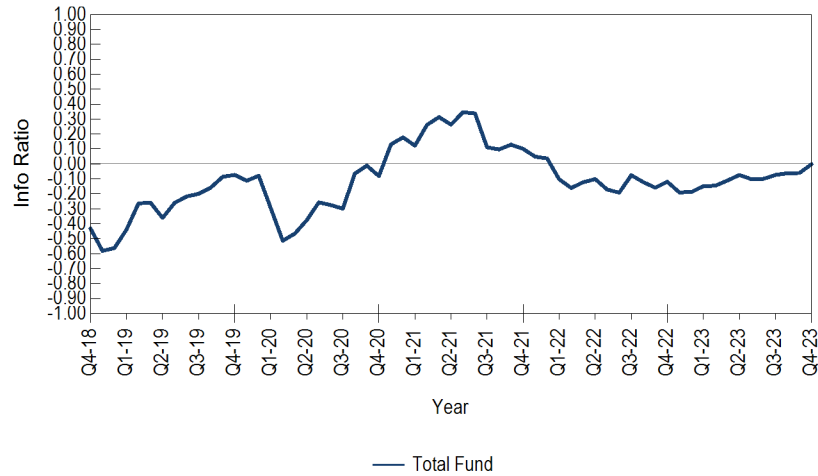
Rolling 5 Year Annualized Standard Deviation



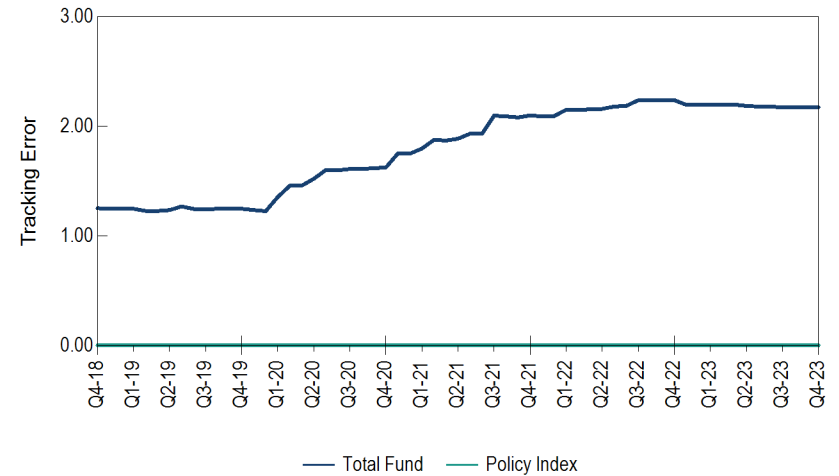
Total Fund  
Rolling Risk Statistics (5 Years)

Period Ending: December 31, 2023

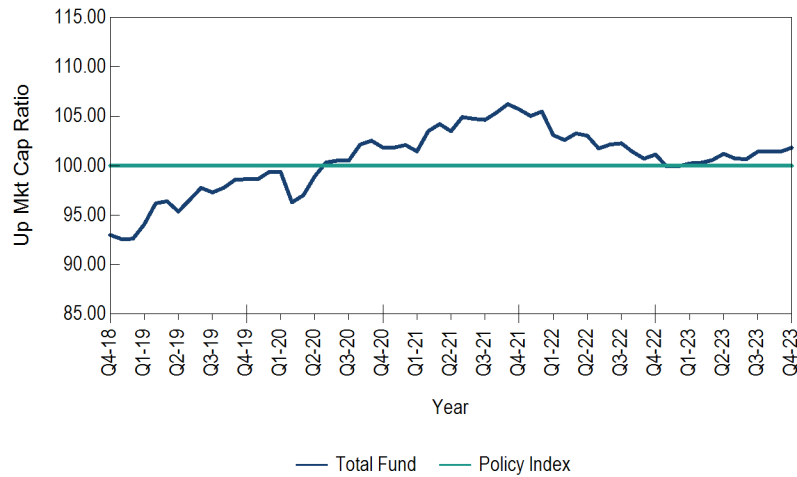
Rolling 5 Year Information Ratio



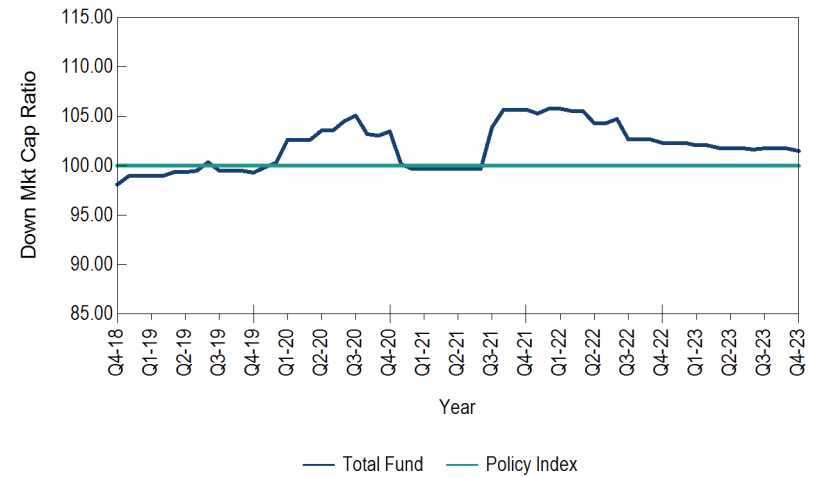
Rolling 5 Year Tracking Error



Rolling 5 Year Up Market Capture Ratio (%)

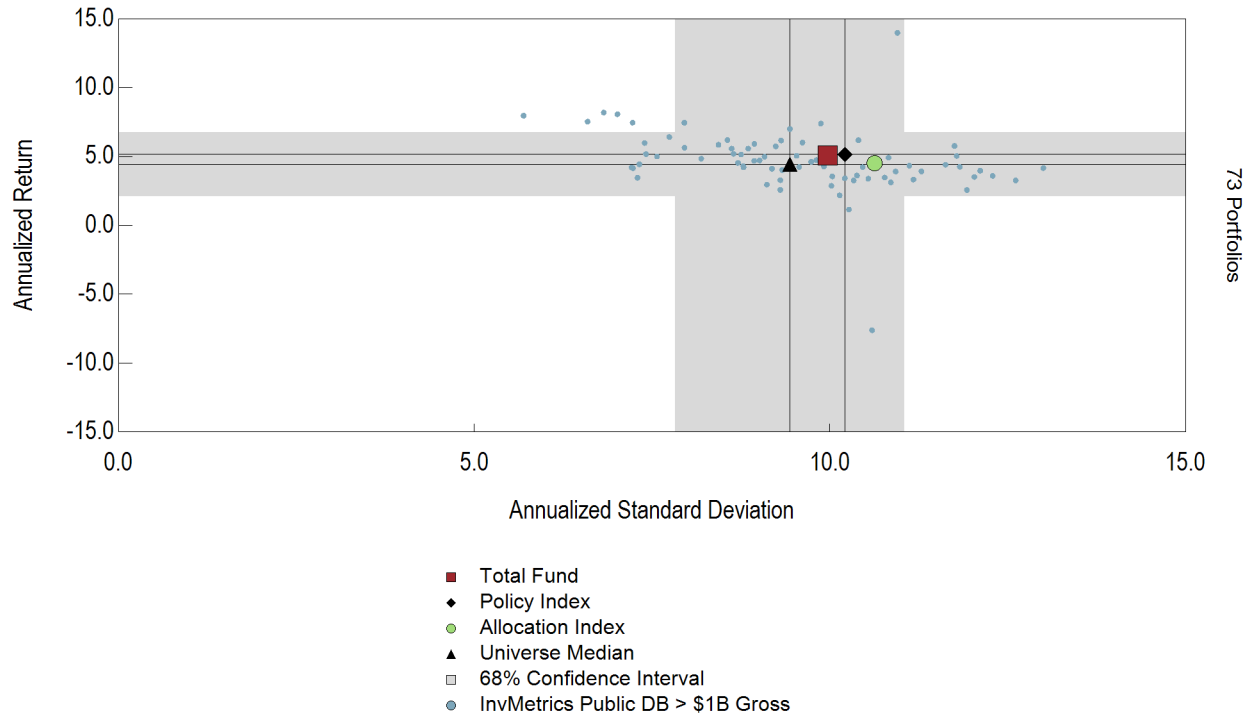


Rolling 5 Year Down Market Capture Ratio (%)



Total Fund  
Risk vs. Return (3 Years)

Period Ending: December 31, 2023

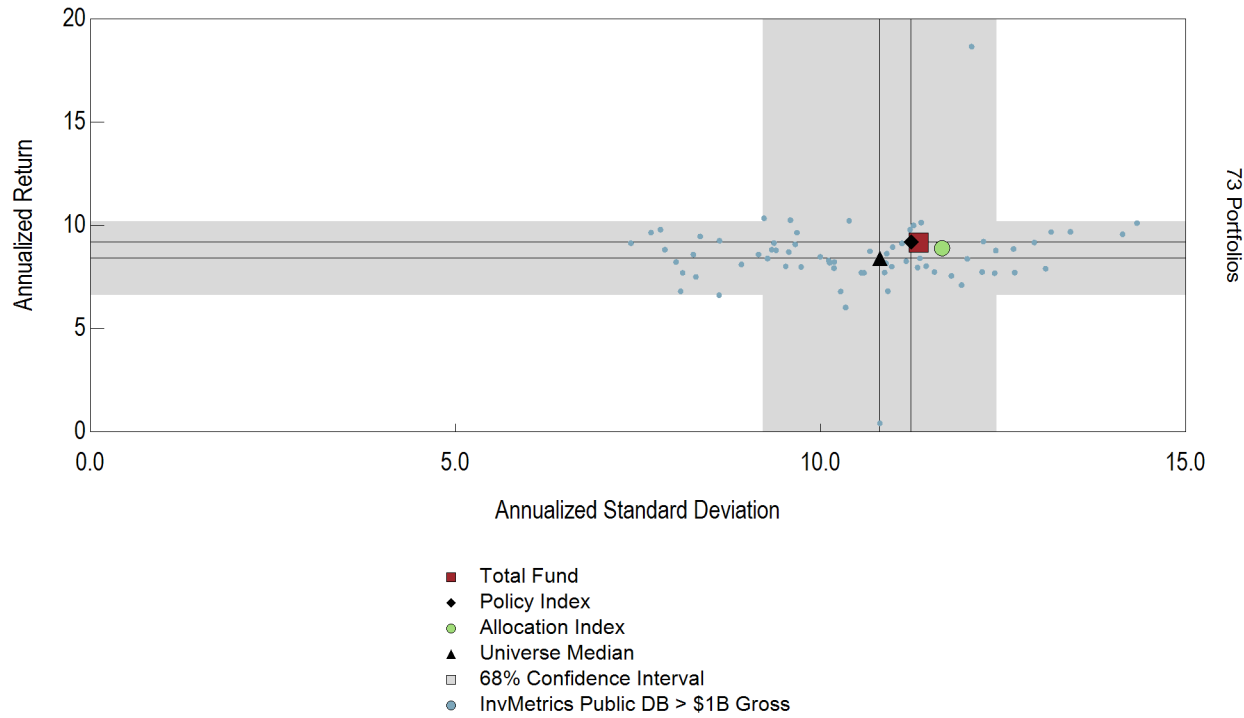


	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	5.08%	35	9.97%	61	0.29	42	-0.03	89	2.24%	91
Policy Index	5.15%	34	10.21%	66	0.29	42	--	--	0.00%	1
Allocation Index	4.51%	49	10.63%	76	0.22	57	-0.87	99	0.73%	1
InvMetrics Public DB > \$1B Gross Median	4.44%	--	9.44%	--	0.26	--	0.42	--	1.43%	--

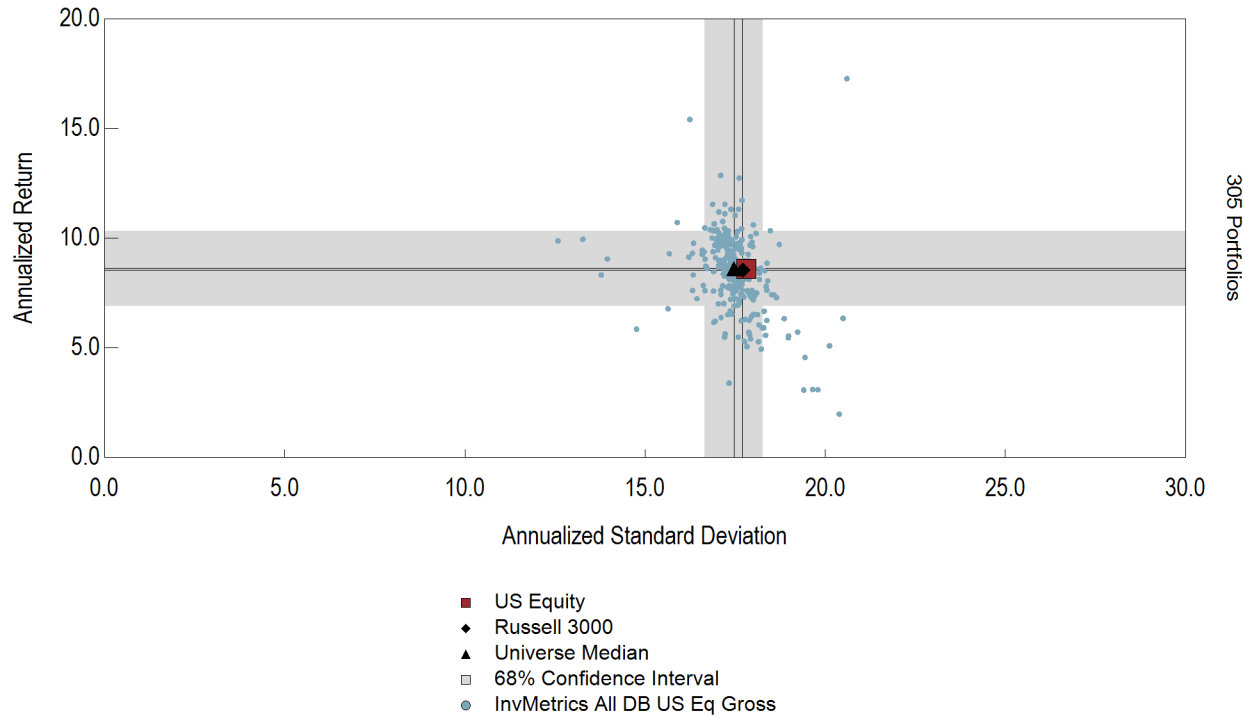


Total Fund  
Risk vs. Return (5 Years)

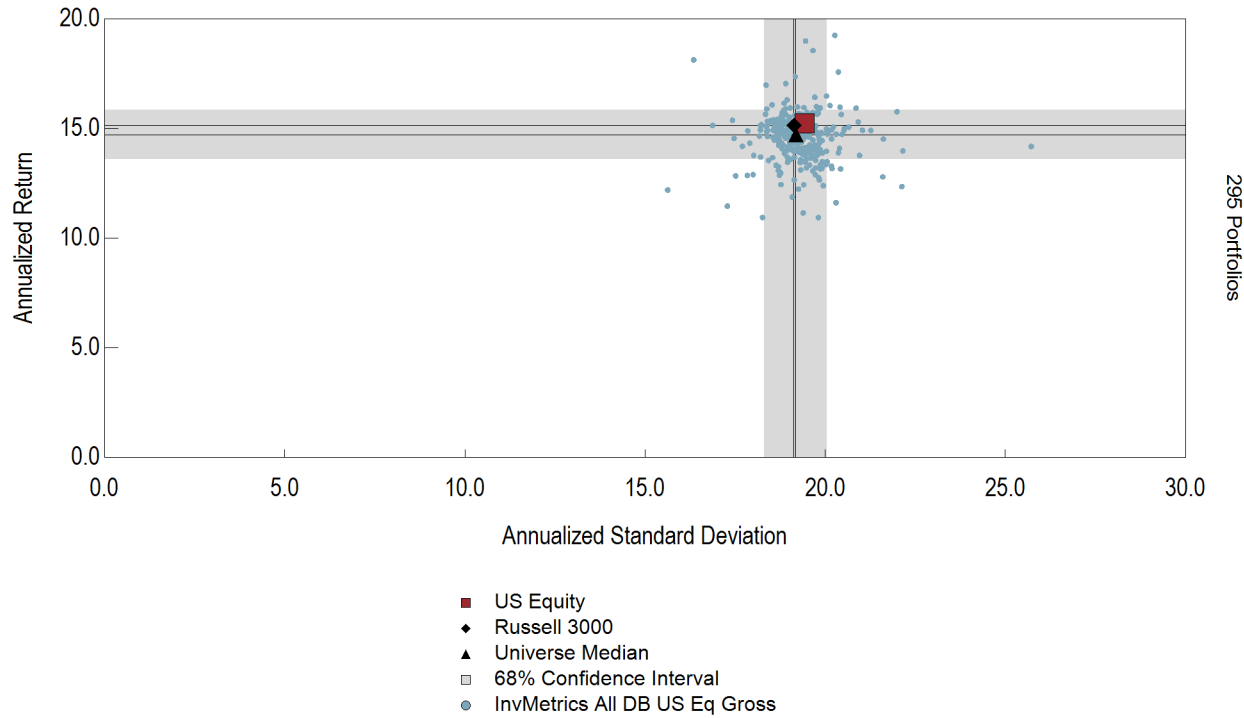
Period Ending: December 31, 2023



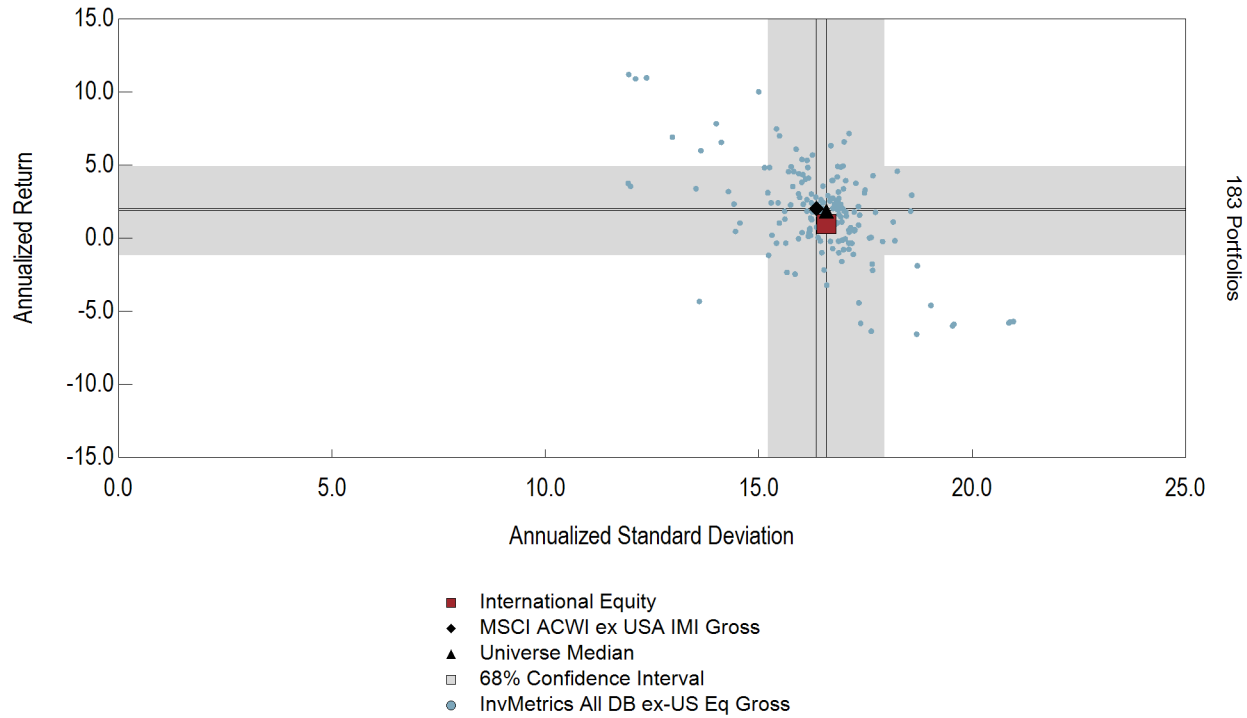
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	9.17%	25	11.34%	72	0.65	44	0.00	89	2.17%	81
Policy Index	9.18%	25	11.24%	68	0.66	40	--	--	0.00%	1
Allocation Index	8.89%	35	11.67%	78	0.61	55	-0.43	99	0.69%	1
InvMetrics Public DB > \$1B Gross Median	8.40%	--	10.81%	--	0.63	--	0.27	--	1.51%	--



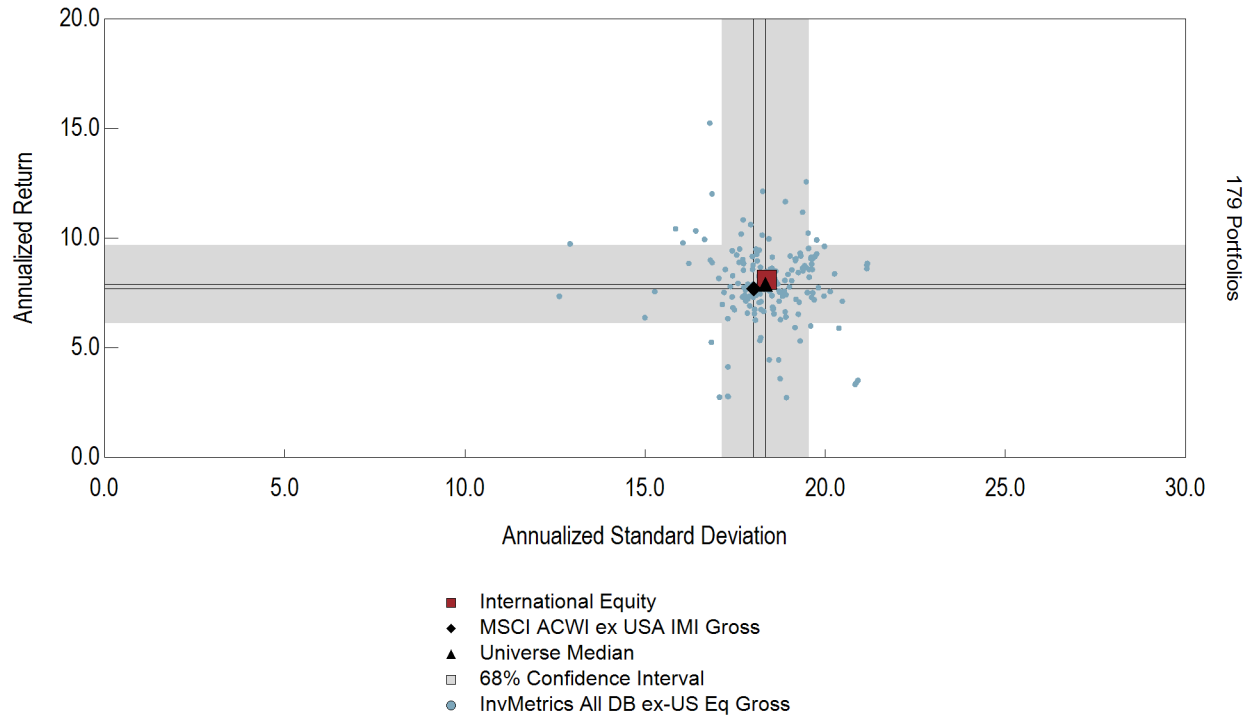
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	8.59%	52	17.82%	77	0.36	54	0.08	40	0.64%	5
Russell 3000	8.54%	53	17.71%	74	0.36	54	--	--	0.00%	1
InvMetrics All DB US Eq Gross Median	8.62%	--	17.47%	--	0.37	--	-0.14	--	2.47%	--



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	15.25%	21	19.42%	65	0.69	35	0.11	9	0.81%	5
Russell 3000	15.16%	26	19.13%	48	0.70	32	--	--	0.00%	1
InvMetrics All DB US Eq Gross Median	14.72%	--	19.19%	--	0.67	--	-0.30	--	2.73%	--



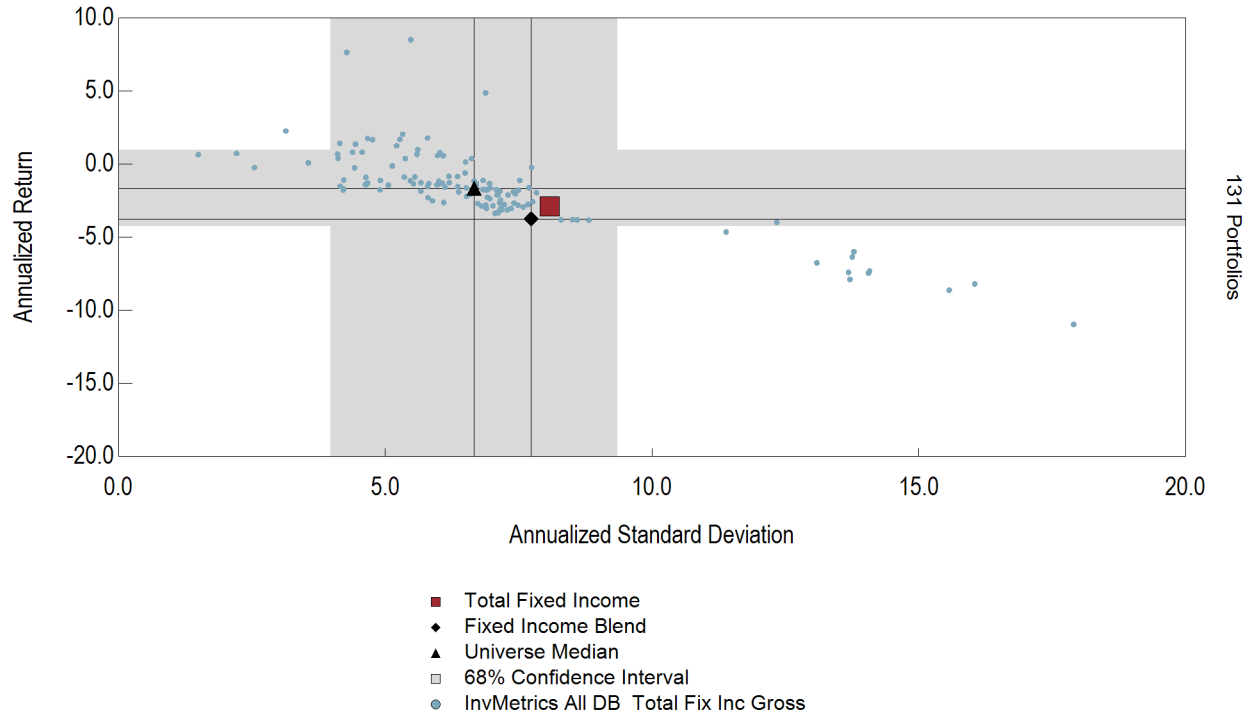
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	0.97%	67	16.59%	51	-0.07	66	-0.55	80	1.92%	9
MSCI ACWI ex USA IMI Gross	2.03%	47	16.35%	38	-0.01	47	--	--	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	1.87%	--	16.59%	--	-0.02	--	-0.01	--	2.96%	--



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	8.10%	45	18.39%	52	0.34	44	0.22	38	1.84%	3
MSCI ACWI ex USA IMI Gross	7.69%	57	18.01%	33	0.33	54	--	--	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	7.90%	--	18.34%	--	0.33	--	0.14	--	2.94%	--

Total Fixed Income  
Risk vs. Return (3 Years)

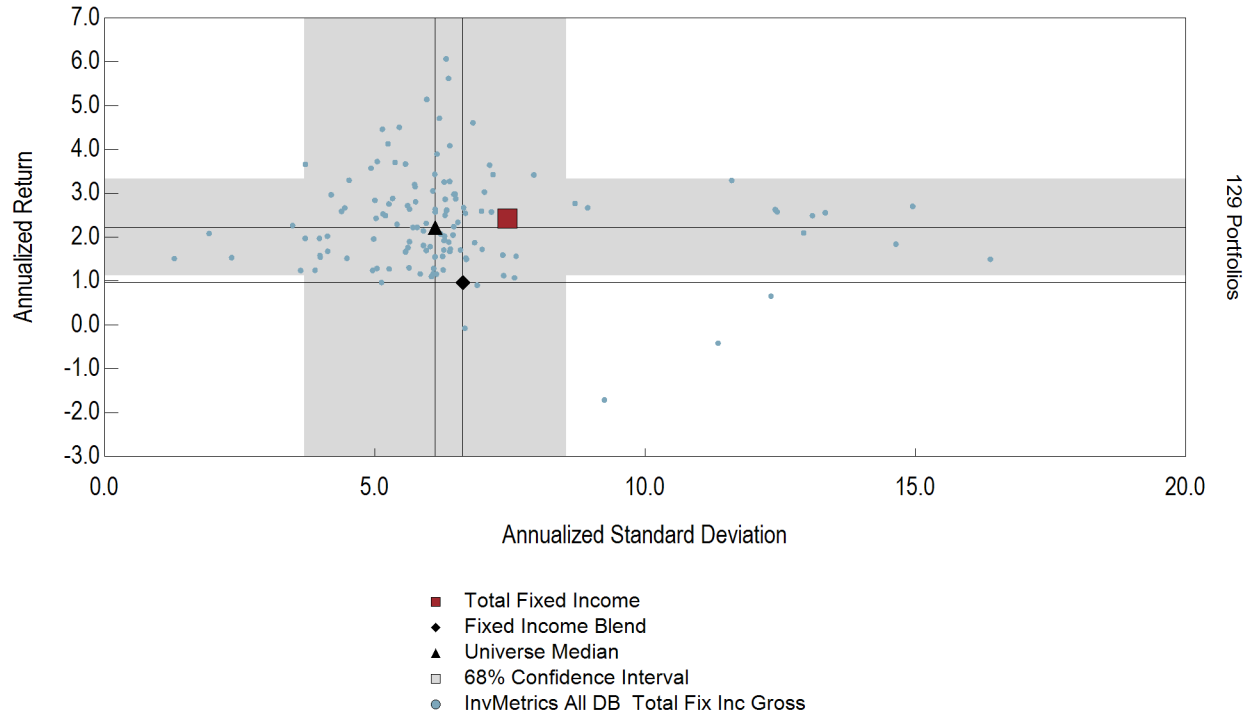
Period Ending: December 31, 2023



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fixed Income	-2.90%	78	8.08%	89	-0.62	54	0.77	57	1.11%	43
Fixed Income Blend	-3.76%	89	7.74%	87	-0.76	90	--	--	0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	-1.65%	--	6.67%	--	-0.60	--	0.93	--	1.44%	--

Total Fixed Income  
Risk vs. Return (5 Years)

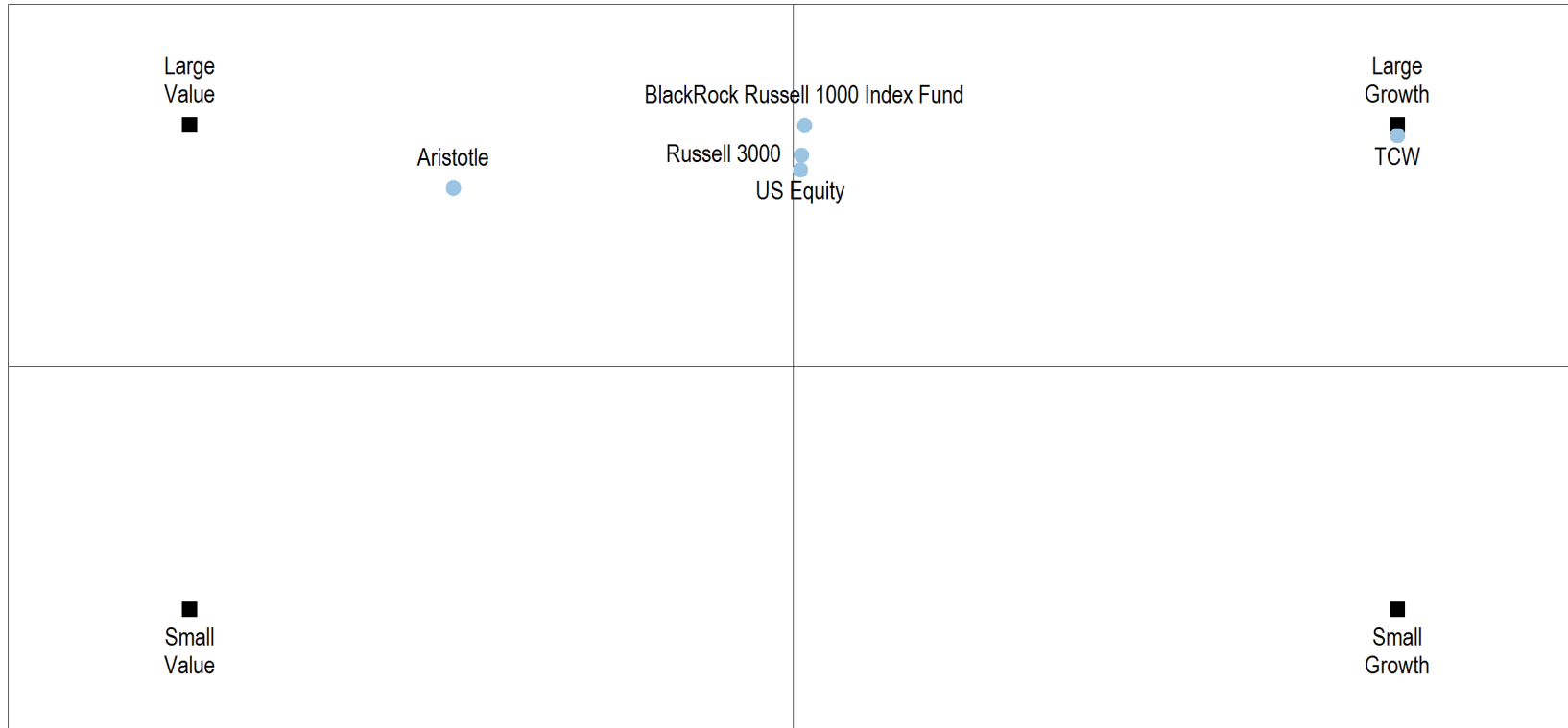
Period Ending: December 31, 2023



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fixed Income	2.43%	46	7.45%	87	0.09	45	0.69	21	2.14%	53
Fixed Income Blend	0.96%	97	6.63%	75	-0.13	95	--	--	0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	2.22%	--	6.12%	--	0.06	--	0.45	--	2.02%	--



US Effective Style Map



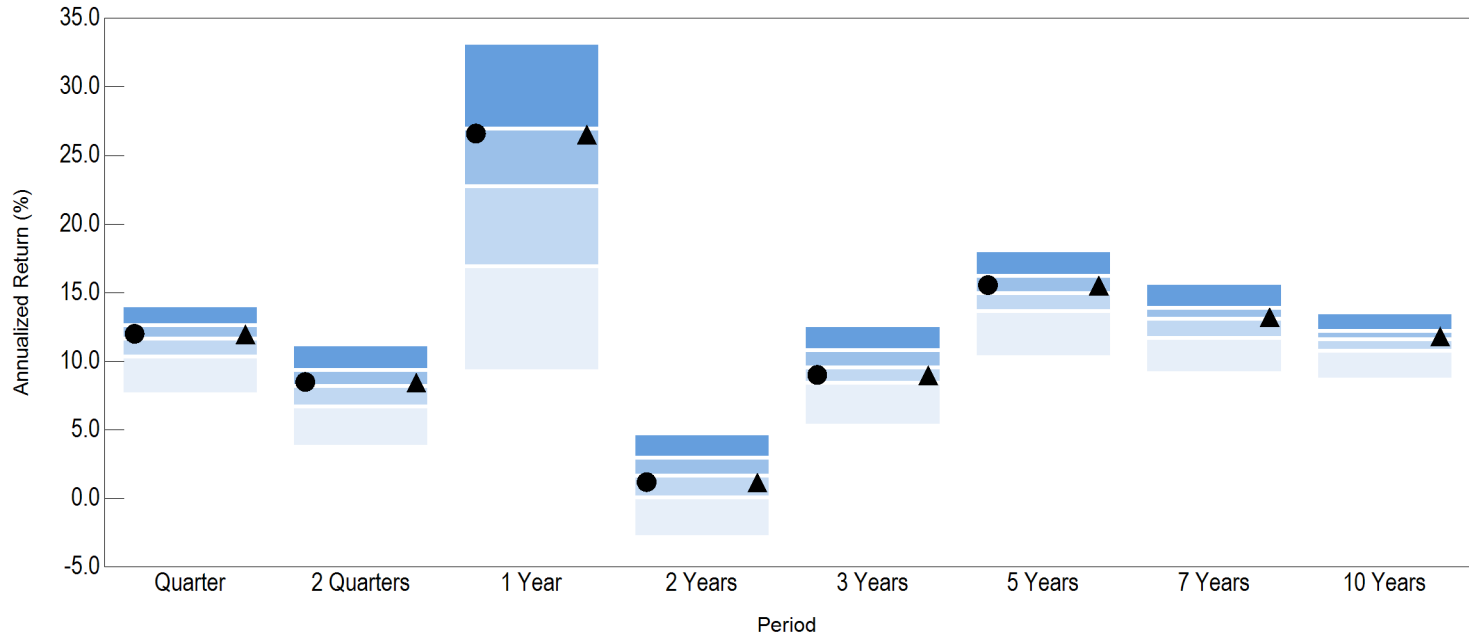
	US Equity	BlackRock Russell 1000 Index Fund	Aristotle	TCW	Russell 3000
Risk Free	0.00	0.00	0.00	0.00	0.00
Large Growth	0.47	0.51	0.22	0.98	0.48
Large Value	0.43	0.49	0.65	0.00	0.46
Small Growth	0.03	0.00	0.00	0.02	0.02
Small Value	0.06	0.00	0.13	0.00	0.04

US Effective Style Map



	US Equity	Kennedy	William Blair Small Cap Growth	Russell 3000
Risk Free	0.00	0.00	0.00	0.00
Large Growth	0.47	0.03	0.03	0.48
Large Value	0.43	0.15	0.22	0.46
Small Growth	0.03	0.00	0.74	0.02
Small Value	0.06	0.82	0.00	0.04

eV US Large Cap Core Equity Gross Return Comparison



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	14.07	11.21	33.17	4.74	12.59	18.07	15.70	13.53								
<b>25th Percentile</b>	12.63	9.40	26.99	2.98	10.84	16.24	13.92	12.26								
<b>Median</b>	11.66	8.21	22.80	1.69	9.60	15.01	13.10	11.65								
<b>75th Percentile</b>	10.37	6.71	16.96	0.10	8.44	13.67	11.75	10.77								
<b>95th Percentile</b>	7.62	3.81	9.31	-2.77	5.34	10.30	9.15	8.68								
<b># of Portfolios</b>	339	339	339	336	329	312	290	260								
<b>● BlackRock Russell 1000 Index Fund</b>	12.00 (40)	8.49 (44)	26.60 (29)	1.19 (61)	9.00 (64)	15.56 (40)	-- (--)	-- (--)								
<b>▲ Russell 1000</b>	11.96 (41)	8.44 (44)	26.53 (29)	1.16 (61)	8.97 (65)	15.52 (41)	13.21 (47)	11.80 (43)								

Characteristics

	Portfolio	Russell 1000
Number of Holdings	1,008	1,006
Weighted Avg. Market Cap. (\$B)	663.5	664.3
Median Market Cap. (\$B)	14.6	14.6
Price To Earnings	23.9	24.1
Price To Book	4.3	4.3
Price To Sales	2.7	2.7
Return on Equity (%)	26.0	26.1
Yield (%)	1.5	1.5
Beta	1.0	1.0

Top Holdings

APPLE INC	6.5%
MICROSOFT CORP	6.4%
AMAZON.COM INC	3.1%
NVIDIA CORPORATION	2.7%
ALPHABET INC	1.9%
META PLATFORMS INC	1.8%
ALPHABET INC	1.6%
TESLA INC	1.6%
BERKSHIRE HATHAWAY INC	1.5%
ELI LILLY AND CO	1.1%

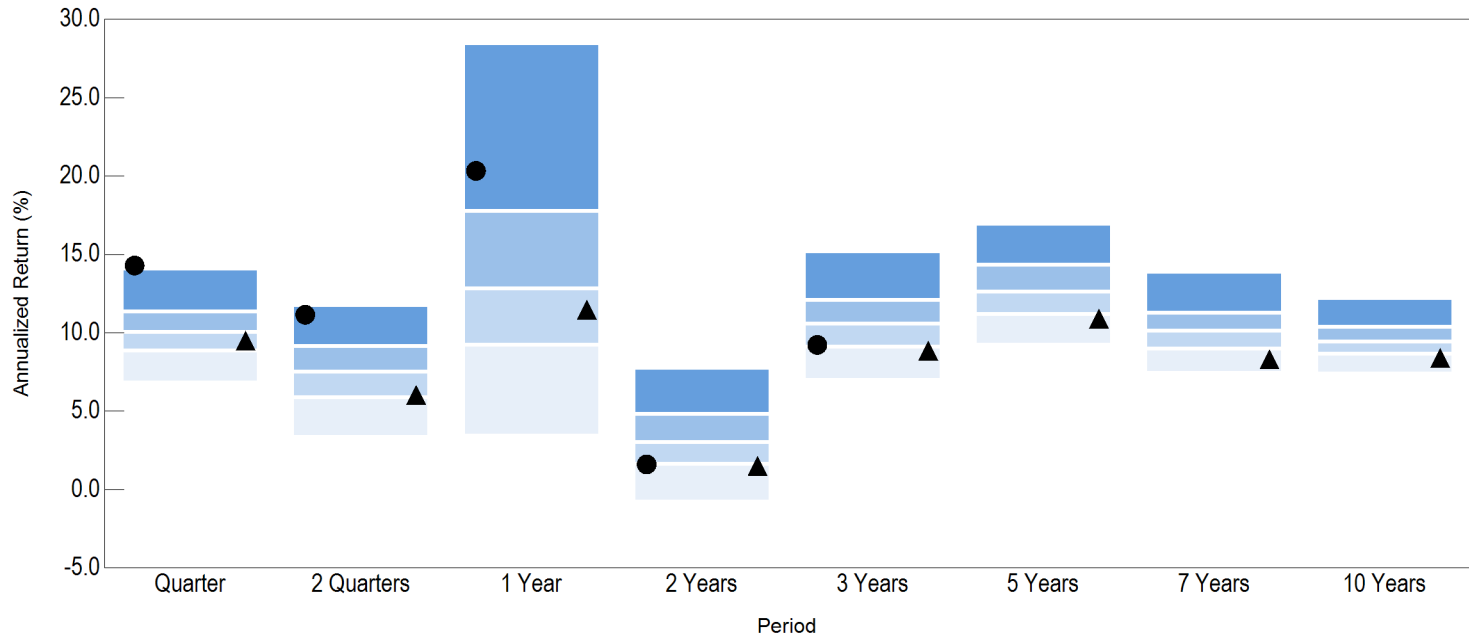
Best Performers

	Return %
COINBASE GLOBAL INC CL A	131.6%
AFFIRM HOLDINGS INC (AFRM)	131.0%
GAP INC (GPS)	99.6%
SPIRIT AEROSYSTEMS HOLDINGS INC (SPR)	96.9%
KARUNA THERAPEUTICS INC (KRTX)	87.2%
Rocket Cos Inc (RKT)	77.0%
BLOCK INC (SQ)	74.8%
MACY'S INC (M)	74.8%
SENTINELONE INC CL A COM CL A COM	62.8%
Frontier Communications Parent Inc (FYBR)	61.9%

Worst Performers

	Return %
ChargePoint Holdings Inc (CHPT)	-52.9%
PLUG POWER INC (PLUG)	-40.8%
MARAVAI LIFESCIENCES HLDGS INC CL A CL A (MRVI)	-34.5%
R1 RCM INC (RCM)	-29.9%
AGILON HEALTH INC COMMON STOCK USD.01	-29.3%
BILL HOLDINGS INC (BILL)	-24.8%
LUCID GROUP INC COMMON STOCK USD.0001	-24.7%
AMC ENTERTAINMENT HOLDINGS INC (AMC)	-23.4%
PET ACQUISITION LLC (WOOF)	-22.7%
HASBRO INC. (HAS)	-21.6%

eV US Large Cap Value Equity Gross Return Comparison



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	14.09	11.74	28.45	7.76	15.20	16.95	13.88	12.21								
<b>25th Percentile</b>	11.39	9.17	17.79	4.86	12.13	14.37	11.32	10.41								
<b>Median</b>	10.07	7.54	12.86	3.07	10.59	12.65	10.18	9.49								
<b>75th Percentile</b>	8.88	5.90	9.26	1.65	9.13	11.22	9.04	8.68								
<b>95th Percentile</b>	6.87	3.40	3.46	-0.76	7.01	9.25	7.47	7.44								
<b># of Portfolios</b>	359	359	359	356	353	340	328	307								
<b>● Aristotle</b>	14.29	(5)	11.15	(7)	20.33	(15)	1.61	(76)	9.23	(75)	--	(--)	--	(--)	--	(--)
<b>▲ Russell 1000 Value</b>	9.50	(62)	6.03	(73)	11.46	(62)	1.52	(78)	8.86	(79)	10.90	(81)	8.32	(89)	8.40	(85)

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	44	845
Weighted Avg. Market Cap. (\$B)	209.1	142.0
Median Market Cap. (\$B)	51.0	13.6
Price To Earnings	21.3	17.3
Price To Book	3.4	2.4
Price To Sales	2.8	1.8
Return on Equity (%)	23.8	15.1
Yield (%)	1.9	2.3
Beta	1.0	1.0

Top Holdings

MICROSOFT CORP	4.6%
ADOBE INC	3.9%
PARKER-HANNIFIN CORP	3.7%
LENNAR CORP	3.6%
AMERIPRISE FINANCIAL INC	3.3%
ANSYS INC	3.1%
MICROCHIP TECHNOLOGY INC	3.1%
MARTIN MARIETTA MATERIALS INC.	3.1%
AMGEN INC	2.8%
SONY GROUP CORPORATION	2.8%

Best Performers

	Return %
CAPITAL ONE FINANCIAL CORP. (COF)	35.9%
LENNAR CORP (LEN)	33.2%
U.S. BANCORP (USB)	32.4%
QUALCOMM INC. (QCOM)	31.0%
THE PNC FINANCIAL SERVICES GROUP INC (PNC)	27.8%
CROWN CASTLE INC (CCI)	26.9%
XYLEM INC (XYL)	26.0%
BLACKSTONE INC (BX)	23.3%
ANSYS INC (ANSS)	22.0%
MARTIN MARIETTA MATERIALS INC. (MLM)	21.7%

Worst Performers

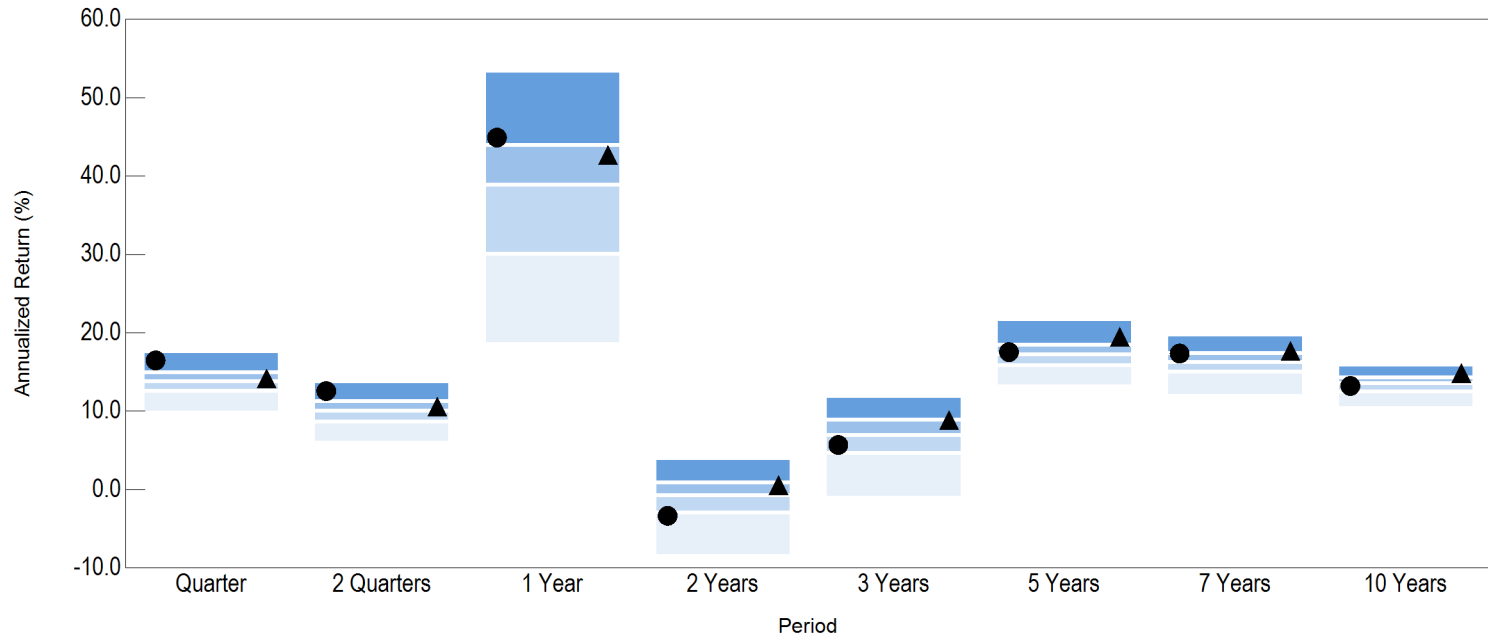
	Return %
CORTEVA INC (CTVA)	-6.0%
COTERRA ENERGY INC (CTRA)	-5.0%
CONSTELLATION BRANDS INC (STZ)	-3.5%
VERALTO CORP	-2.6%
PROCTER & GAMBLE CO (THE) (PG)	1.1%
ALCON INC (ALC)	1.4%
MITSUBISHI UFJ FINANCIAL GROUP (MUFG)	1.4%
DANAHER CORP (DHR)	5.6%
MEDTRONIC PLC (MDT)	6.0%
COCA-COLA CO (THE) (KO)	6.1%

**Aristotle Performance Attribution vs. Russell 1000 Value**

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	1.12%	0.98%	0.47%	-0.33%	3.75%	-7.61%	5.25%	8.10%			
Materials	0.20%	0.12%	-0.03%	0.12%	11.45%	9.08%	9.91%	4.87%			
Industrials	0.36%	0.54%	-0.09%	-0.09%	18.32%	13.91%	11.09%	13.37%			
Consumer Discretionary	0.74%	0.37%	0.16%	0.22%	22.55%	14.09%	7.54%	4.77%			
Consumer Staples	0.12%	0.08%	0.05%	0.00%	3.51%	2.76%	7.89%	8.41%			
Health Care	0.36%	0.21%	0.23%	-0.08%	5.51%	4.48%	11.88%	15.57%			
Financials	0.67%	1.40%	-0.35%	-0.39%	21.91%	15.66%	15.79%	20.91%			
Information Technology	1.41%	0.38%	0.56%	0.47%	18.72%	14.10%	20.39%	9.25%			
Communication Services	-0.05%	--	-0.05%	--	--	10.87%	0.00%	5.08%			
Utilities	0.06%	0.05%	0.02%	-0.01%	9.69%	8.55%	4.37%	4.93%			
Real Estate	-0.12%	0.02%	-0.11%	-0.02%	18.11%	17.17%	3.13%	4.74%			
Cash	-0.27%	0.00%	-0.27%	0.00%	1.37%	--	2.77%	0.00%			
<b>Portfolio</b>	<b>4.61%</b>	<b>=</b>	<b>4.15%</b>	<b>+</b>	<b>0.58%</b>	<b>+</b>	<b>-0.12%</b>	<b>14.29%</b>	<b>9.67%</b>	<b>100.00%</b>	<b>100.00%</b>



eV US Large Cap Growth Equity Gross Return Comparison



Return (Rank)

5th Percentile	17.65	13.82	53.41	3.97	11.92	21.70	19.72	15.95
25th Percentile	15.04	11.35	44.05	0.97	9.02	18.56	17.48	14.37
Median	13.89	10.15	38.95	-0.66	7.04	17.28	16.33	13.63
75th Percentile	12.65	8.75	30.12	-2.89	4.75	15.94	15.09	12.57
95th Percentile	9.89	6.07	18.61	-8.45	-0.97	13.24	12.01	10.41
# of Portfolios	249	249	249	248	247	242	224	203
● TCW	16.49 (9)	12.58 (11)	44.91 (20)	-3.34 (81)	5.70 (68)	17.54 (46)	17.37 (27)	13.23 (61)
▲ Russell 1000 Growth	14.16 (43)	10.59 (42)	42.68 (31)	0.55 (31)	8.86 (28)	19.50 (16)	17.68 (24)	14.86 (14)

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	30	441
Weighted Avg. Market Cap. (\$B)	672.9	1,105.8
Median Market Cap. (\$B)	136.2	19.6
Price To Earnings	44.5	34.7
Price To Book	11.1	11.4
Price To Sales	6.3	4.8
Return on Equity (%)	39.5	46.3
Yield (%)	0.5	0.8
Beta	1.1	1.0

Top Holdings

NVIDIA CORPORATION	8.6%
MICROSOFT CORP	7.8%
SERVICENOW INC	7.0%
ALPHABET INC	6.9%
AMAZON.COM INC	6.2%
VISA INC	4.9%
S&P GLOBAL INC	3.8%
COSTCO WHOLESALE CORP	3.6%
MASTERCARD INC	3.6%
CROWDSTRIKE HOLDINGS INC	3.2%

Best Performers

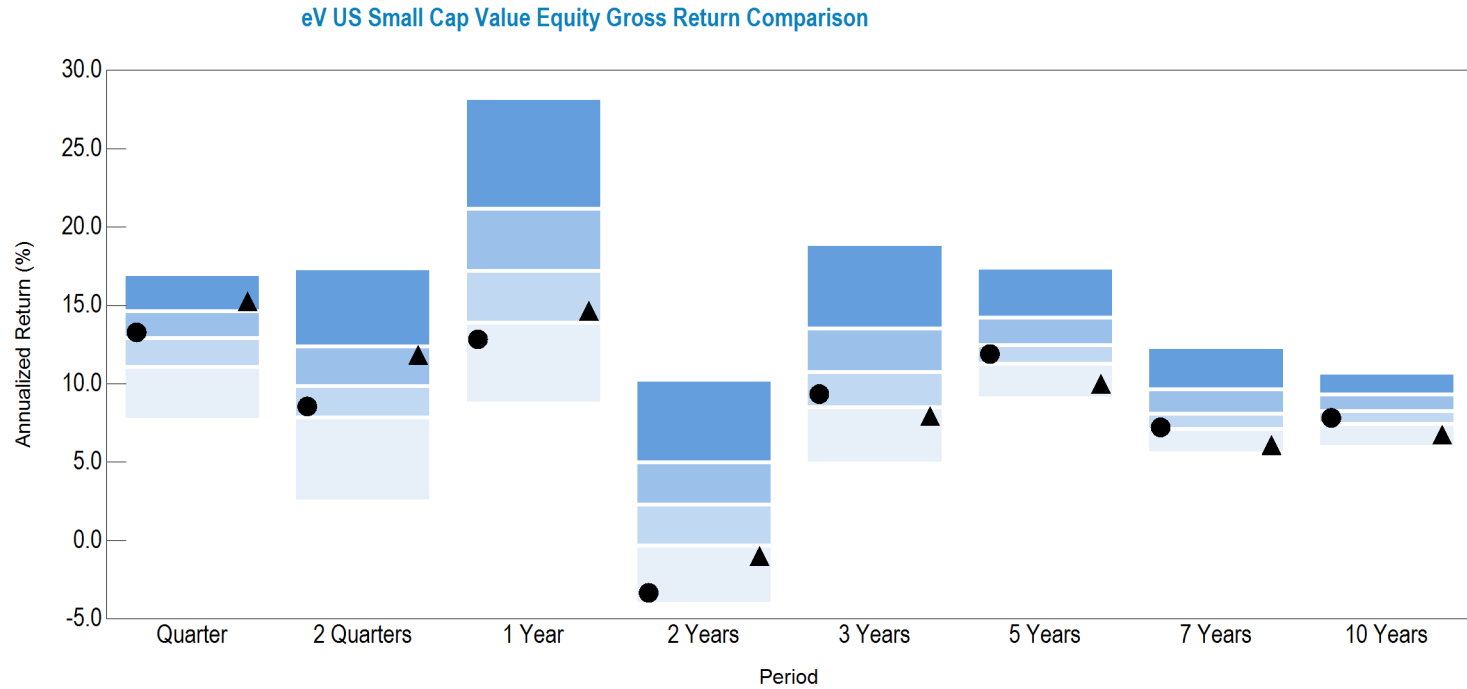
	Return %
CROWDSTRIKE HOLDINGS INC (CRWD)	52.5%
AMERICAN TOWER CORP (AMT)	33.7%
DEXCOM INC (DXCM)	33.0%
GARTNER INC (IT)	31.3%
SNOWFLAKE INC (SNOW)	30.3%
SALESFORCE INC (CRM)	29.8%
ASML HOLDING NV (ASML)	28.9%
SERVICENOW INC (NOW)	26.4%
SCHWAB (CHARLES) CORP (SCHW)	25.9%
PALO ALTO NETWORKS INC (PANW)	25.8%

Worst Performers

	Return %
ALIGN TECHNOLOGY INC (ALGN)	-10.3%
TRADE DESK INC (THE) (TTD)	-7.9%
O'REILLY AUTOMOTIVE INC (ORLY)	4.5%
UNITEDHEALTH GROUP INCORPORATED (UNH)	4.8%
PAYPAL HOLDINGS INC (PYPL)	5.0%
ALPHABET INC (GOOG)	6.9%
MASTERCARD INC (MA)	7.9%
BOSTON SCIENTIFIC CORP (BSX)	9.5%
ENPHASE ENERGY INC (ENPH)	10.0%
WASTE CONNECTIONS INC. (WCN)	11.4%

TCW Performance Attribution vs. Russell 1000 Growth

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.08%	--	0.08%	--	--	-1.72%	0.00%	0.47%			
Materials	-0.02%	--	-0.02%	--	--	17.66%	0.00%	0.68%			
Industrials	0.01%	-0.08%	0.04%	0.05%	11.39%	13.06%	2.00%	5.96%			
Consumer Discretionary	0.69%	0.86%	0.07%	-0.23%	18.18%	12.62%	11.84%	15.97%			
Consumer Staples	0.35%	0.41%	0.03%	-0.09%	19.68%	10.28%	3.41%	4.30%			
Health Care	0.13%	0.30%	-0.20%	0.04%	11.52%	9.09%	16.22%	11.33%			
Financials	0.17%	0.16%	-0.17%	0.19%	14.34%	11.95%	14.82%	6.56%			
Information Technology	1.71%	2.12%	-0.17%	-0.24%	22.77%	17.76%	37.64%	42.14%			
Communication Services	-0.71%	-0.96%	0.06%	0.19%	3.19%	11.29%	9.57%	11.66%			
Utilities	0.00%	--	0.00%	--	--	23.91%	0.00%	0.05%			
Real Estate	0.37%	0.08%	0.15%	0.14%	33.66%	23.98%	2.40%	0.88%			
Cash	-0.49%	0.00%	-0.49%	0.00%	1.37%	--	2.10%	0.00%			
<b>Portfolio</b>	<b>2.29%</b>	<b>=</b>	<b>2.89%</b>	<b>+</b>	<b>-0.64%</b>	<b>+</b>	<b>0.04%</b>	<b>16.48%</b>	<b>14.19%</b>	<b>100.00%</b>	<b>100.00%</b>



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>5th Percentile</b>	16.96	17.36	28.19	10.26	18.90	17.39	12.32	10.67
<b>25th Percentile</b>	14.65	12.43	21.17	5.00	13.56	14.26	9.69	9.33
<b>Median</b>	12.92	9.87	17.24	2.31	10.78	12.51	8.13	8.29
<b>75th Percentile</b>	11.09	7.87	13.94	-0.30	8.53	11.32	7.13	7.48
<b>95th Percentile</b>	7.73	2.51	8.79	-4.01	4.92	9.09	5.60	6.00
<b># of Portfolios</b>	201	201	201	200	199	193	185	172
<b>● Kennedy</b>	13.29 (43)	8.56 (65)	12.84 (82)	-3.33 (93)	9.35 (72)	11.90 (65)	7.22 (73)	7.83 (67)
<b>▲ Russell 2000 Value</b>	15.26 (16)	11.85 (34)	14.65 (71)	-0.98 (84)	7.94 (80)	10.00 (88)	6.10 (92)	6.76 (89)

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	250	1,428
Weighted Avg. Market Cap. (\$B)	3.8	2.7
Median Market Cap. (\$B)	2.3	0.9
Price To Earnings	15.8	12.4
Price To Book	1.9	1.6
Price To Sales	1.2	1.0
Return on Equity (%)	7.8	5.0
Yield (%)	1.6	2.3
Beta	0.9	1.0

Top Holdings

SOUTHSTATE CORPORATION	1.2%
HOME BANCSHARES INC	1.1%
FG ANNUITIES	1.1%
COLUMBIA BANKING SYSTEM INC -OLD	1.1%
BARRETT BUSINESS SERVICES INC	1.1%
MR. COOPER GROUP INC	1.0%
CASELLA WASTE SYSTEMS INC	1.0%
WINTRUST FINANCIAL CORP.	1.0%
BANCORP INC (THE)	1.0%
LITHIA MOTORS INC.	0.9%

Best Performers

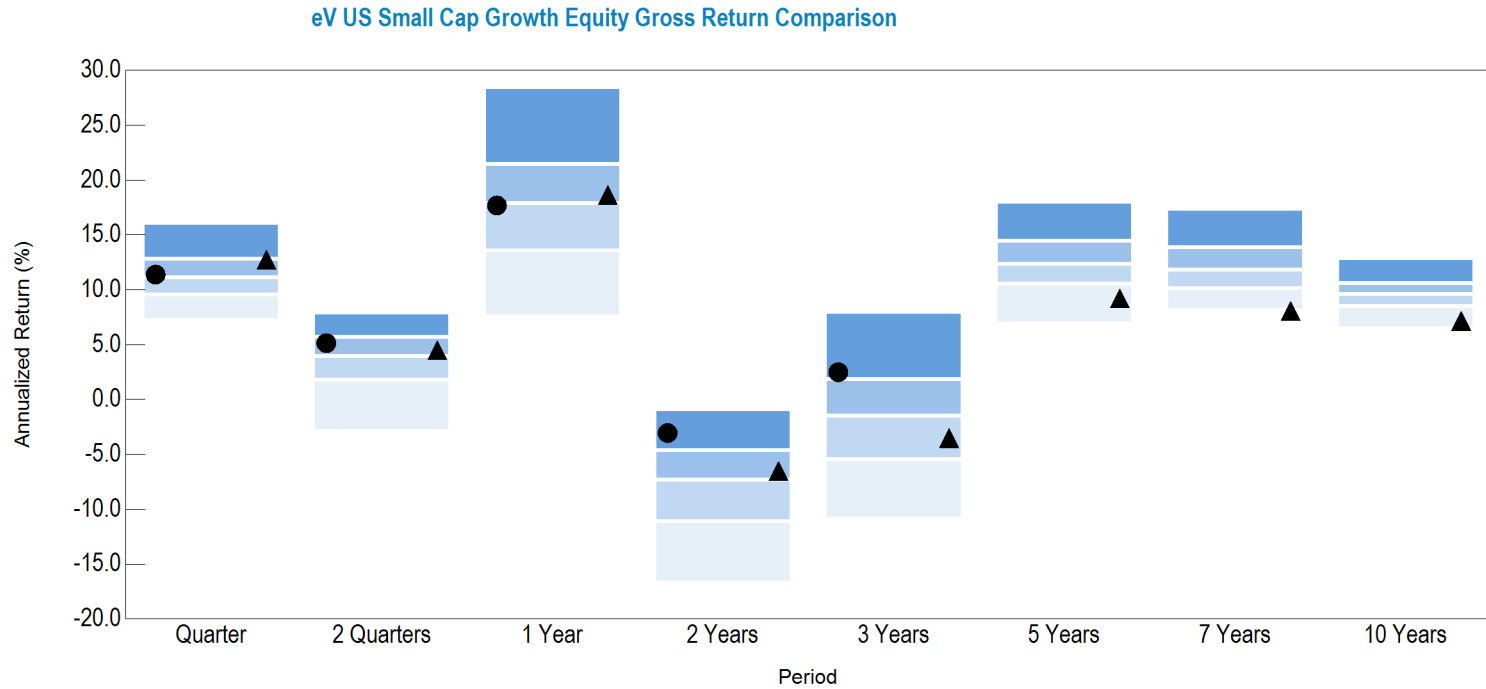
	Return %
ALTIMMUNE INC (ALT)	332.7%
ANNEXON INC (ANNX)	92.4%
ZimVie Inc (ZIMVV)	88.6%
MANITEX INTERNATIONAL INC (MNTX)	87.2%
IMMUNOGEN INC (IMGN)	86.8%
OPTIMIZERX CORP (OPRX)	83.9%
ASPEN AEROGELS INC (ASPN)	83.5%
APPLIED OPTOELECTRONICS INC (AAOI)	76.1%
MACY'S INC (M)	74.8%
BIOHAVEN LTD COMMON STOCK	64.6%

Worst Performers

	Return %
FREYR Battery (FREY)	-61.8%
ASSERTIO HOLDINGS INC (ASRT)	-58.2%
ESTABLISHMENT LABS HOLDINGS INC (ESTA)	-47.2%
B. RILEY FINANCIAL INC (RILY)	-46.5%
AMTECH SYSTEMS INC (ASYS)	-44.9%
Cogent Biosciences Inc (COGT)	-39.7%
MARAVAI LIFESCIENCES HLDGS INC CL A CL A (MRVI)	-34.5%
GEN RESTAURANT GROUP INC	-32.7%
COMPUTER PROGRAMS AND SYSTEMS INC (CPSI)	-29.7%
DESIGNER BRANDS INC (DBI)	-29.5%

**Kennedy Performance Attribution vs. Russell 2000 Value**

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.66%	-0.11%	0.73%	0.04%	-6.27%	-5.23%	7.39%	11.01%			
Materials	-0.08%	-0.06%	-0.01%	-0.01%	12.91%	14.07%	5.91%	4.88%			
Industrials	-1.33%	-0.86%	-0.01%	-0.46%	8.93%	14.95%	21.83%	14.22%			
Consumer Discretionary	-0.44%	-0.43%	-0.11%	0.10%	15.21%	19.45%	7.82%	10.26%			
Consumer Staples	0.05%	0.05%	-0.02%	0.01%	14.10%	12.04%	2.92%	2.42%			
Health Care	-1.12%	-1.16%	-0.01%	0.05%	3.86%	17.65%	8.03%	8.43%			
Financials	-1.16%	-0.93%	-0.41%	0.17%	20.18%	23.78%	20.89%	25.61%			
Information Technology	0.00%	0.01%	-0.01%	0.00%	14.00%	13.83%	6.79%	5.88%			
Communication Services	0.24%	0.24%	0.06%	-0.06%	14.72%	5.71%	2.03%	2.66%			
Utilities	0.26%	0.26%	0.03%	-0.02%	13.70%	7.52%	3.82%	4.16%			
Real Estate	-0.02%	0.00%	-0.02%	0.00%	16.27%	16.24%	8.69%	10.48%			
Cash	-0.53%	0.00%	-0.53%	0.00%	1.37%	--	3.86%	0.00%			
<b>Portfolio</b>	<b>-3.46%</b>	<b>=</b>	<b>-2.99%</b>	<b>+</b>	<b>-0.31%</b>	<b>+</b>	<b>-0.17%</b>	<b>11.62%</b>	<b>15.08%</b>	<b>100.00%</b>	<b>100.00%</b>



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	16.09	7.91	28.45	-0.89	7.95	17.98	17.37	12.87								
<b>25th Percentile</b>	12.87	5.75	21.48	-4.56	1.88	14.49	13.93	10.62								
<b>Median</b>	11.16	4.00	17.93	-7.27	-1.45	12.38	11.85	9.63								
<b>75th Percentile</b>	9.61	1.85	13.64	-11.08	-5.37	10.60	10.17	8.55								
<b>95th Percentile</b>	7.26	-2.84	7.60	-16.66	-10.83	6.96	8.18	6.52								
<b># of Portfolios</b>	143	143	143	142	142	138	134	124								
<b>● William Blair Small Cap Growth</b>	11.38 (45)	5.14 (35)	17.69 (52)	-3.05 (15)	2.49 (22)	-- (--)	-- (--)	-- (--)								
<b>▲ Russell 2000 Growth</b>	12.75 (29)	4.50 (43)	18.66 (46)	-6.52 (44)	-3.50 (62)	9.22 (86)	8.07 (96)	7.16 (95)								

Characteristics

	Portfolio	Russell 2000 Growth
Number of Holdings	4,600	1,070
Weighted Avg. Market Cap. (\$B)	340.8	3.9
Median Market Cap. (\$B)	10.1	1.3
Price To Earnings	19.4	23.4
Price To Book	3.3	4.0
Price To Sales	1.9	1.9
Return on Equity (%)	19.7	3.4
Yield (%)	2.0	0.7
Beta		1.0

Top Holdings

BRINK'S CO (THE)	2.6%
CASELLA WASTE SYSTEMS INC	2.3%
ENCOMPASS HEALTH CORP	2.1%
BWX TECHNOLOGIES INC	1.9%
E L F BEAUTY INC	1.9%
SKYLINE CHAMPION CORP	1.8%
MERIT MEDICAL SYSTEMS INC	1.8%
WESTERN ALLIANCE BANCORPORATION	1.7%
ALBANY INTERNATIONAL CORP.	1.7%
AMICUS THERAPEUTICS INC	1.6%

Best Performers

	Return %
BLUEPRINT MEDICINES CORP (BPMC)	83.7%
TWIST BIOSCIENCE CORP (TWST)	81.9%
SIGNET JEWELERS LTD (SIG)	49.9%
VARONIS SYSTEMS INC (VRNS)	48.3%
INSTALLED BUILDING PRODUCTS INC (IBP)	46.6%
WESTERN ALLIANCE BANCORPORATION (WAL)	44.2%
QUINSTREET INC (QNST)	42.9%
JFROG LTD COMMON STOCK (FROG)	36.5%
VITAL FARMS INC (VITL)	35.5%
COLLIERS INTERNATIONAL GROUP INC (CIGI)	33.0%

Worst Performers

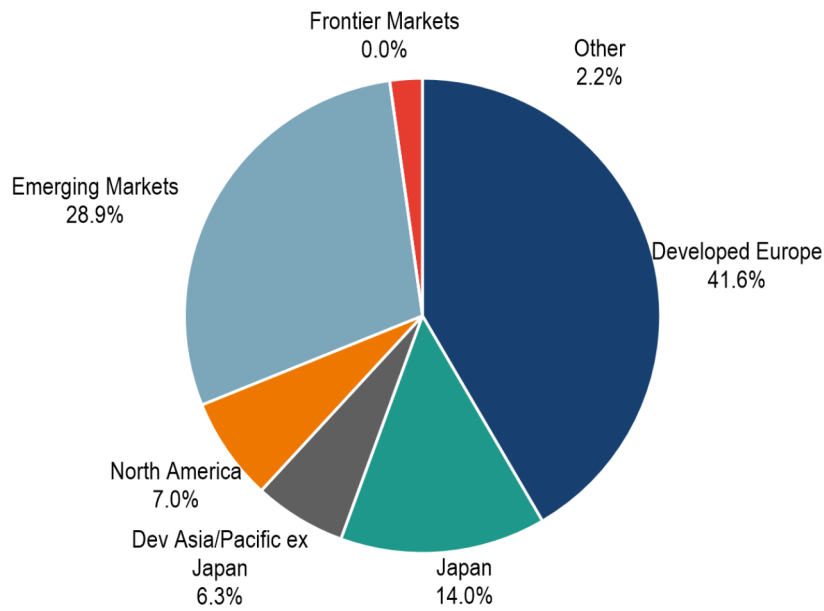
	Return %
FOX FACTORY HOLDING CORP (FOXF)	-31.9%
FLYWIRE CORP	-27.4%
VERADIGM INC (MDRX)	-20.2%
CHART INDUSTRIES INC (GTLS)	-19.4%
WHITECAP RESOURCES INC (SPGYF)	-18.8%
CHAMPIONX CORP (CHX)	-17.8%
GREEN PLAINS INC (GPPE)	-16.2%
GOGO INC (GOGO)	-15.1%
SHOALS TECHNOLOGIES GROUP INC CL A CL A (SHLS)	-14.9%
ENERGY RECOVERY INC (ERII)	-11.2%



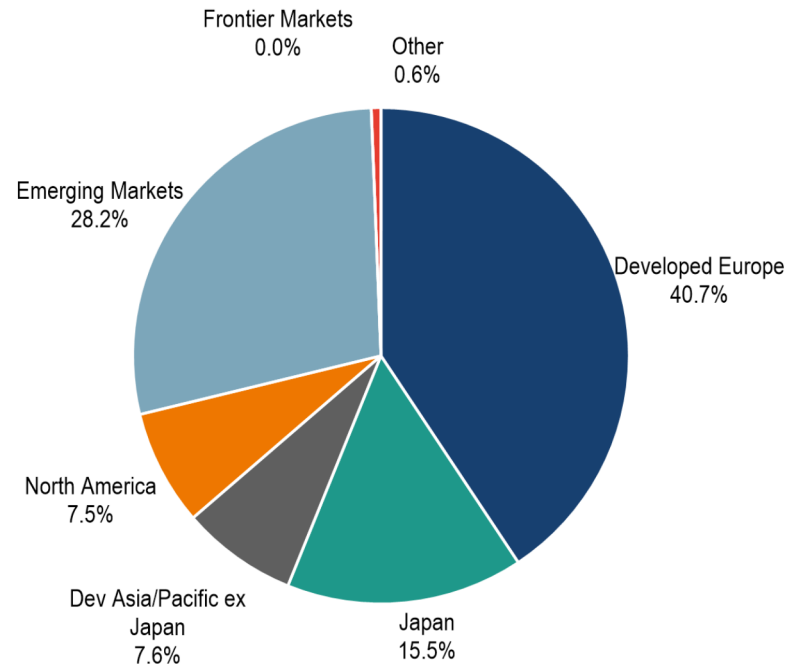
William Blair Small Cap Growth Performance Attribution vs. Russell 2000 Growth

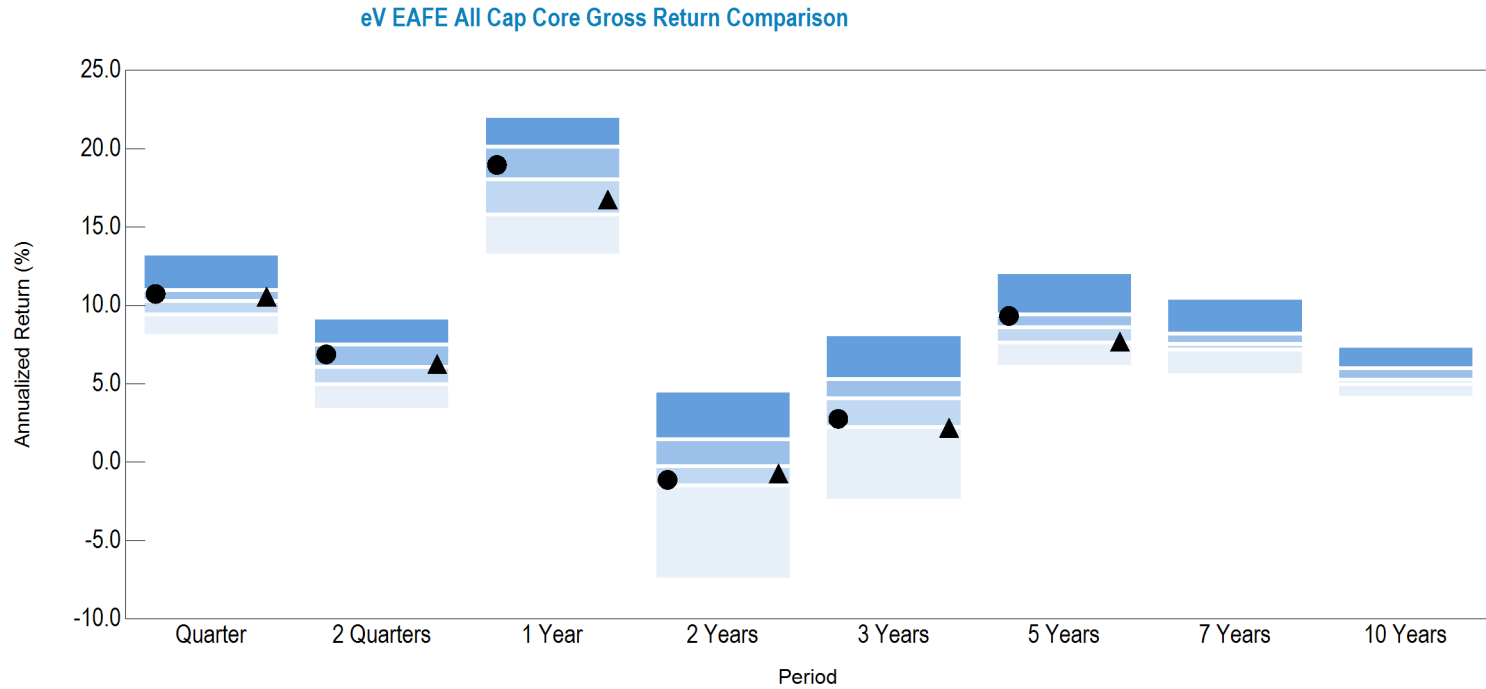
	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.21%	-0.06%	-0.12%	-0.03%	-9.18%	-7.34%	6.08%	5.87%			
Materials	0.22%	0.29%	0.00%	-0.07%	20.51%	13.25%	3.20%	4.21%			
Industrials	-1.40%	-1.37%	0.01%	-0.04%	5.79%	12.76%	20.95%	19.98%			
Consumer Discretionary	0.41%	0.44%	0.01%	-0.04%	18.59%	14.21%	10.27%	10.99%			
Consumer Staples	0.57%	1.06%	0.03%	-0.53%	37.63%	13.53%	3.49%	4.52%			
Health Care	-0.67%	-0.61%	0.05%	-0.12%	12.46%	15.33%	22.48%	21.62%			
Financials	0.16%	0.15%	0.01%	0.00%	14.70%	12.26%	6.77%	6.45%			
Information Technology	0.07%	0.17%	-0.06%	-0.04%	14.42%	13.80%	17.84%	21.20%			
Communication Services	0.02%	-0.02%	0.03%	0.01%	14.20%	15.78%	2.74%	2.03%			
Utilities	0.07%	--	0.07%	--	--	8.52%	0.00%	1.57%			
Real Estate	-0.02%	-0.05%	0.04%	0.00%	17.70%	21.13%	2.10%	1.57%			
Cash	-0.35%	0.00%	-0.35%	0.00%	1.37%	--	3.08%	0.00%			
Unclassified	-0.27%	0.00%	-0.27%	0.00%	-0.04%	--	1.00%	0.00%			
<b>Portfolio</b>	<b>-1.40%</b>	<b>=</b>	<b>0.00%</b>	<b>+</b>	<b>-0.55%</b>	<b>+</b>	<b>-0.86%</b>	<b>11.30%</b>	<b>12.70%</b>	<b>100.00%</b>	<b>100.00%</b>

International Equity



MSCI ACWI ex US IMI





	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>5th Percentile</b>	13.29	9.21	22.08	4.55	8.16	12.12	10.49	7.40
<b>25th Percentile</b>	11.02	7.51	20.16	1.47	5.33	9.46	8.23	6.01
<b>Median</b>	10.32	6.08	18.09	-0.23	4.09	8.64	7.56	5.30
<b>75th Percentile</b>	9.44	4.99	15.80	-1.43	2.26	7.67	7.19	4.99
<b>95th Percentile</b>	8.05	3.36	13.20	-7.45	-2.42	6.09	5.59	4.14
<b># of Portfolios</b>	56	56	56	56	55	52	50	41
<b>● Bivium Intl Equity</b>	10.73 (37)	6.88 (35)	18.96 (36)	-1.12 (73)	2.76 (72)	9.34 (32)	-- (--)	-- (--)
<b>▲ MSCI World ex USA Gross</b>	10.57 (46)	6.27 (44)	16.75 (63)	-0.72 (62)	2.20 (76)	7.70 (75)	-- (--)	-- (--)

Characteristics

	Portfolio	MSCI World ex USA
Number of Holdings	378	869
Weighted Avg. Market Cap. (\$B)	55.8	85.6
Median Market Cap. (\$B)	10.0	13.6
Price To Earnings	11.9	14.7
Price To Book	2.4	2.5
Price To Sales	1.0	1.3
Return on Equity (%)	15.0	15.1
Yield (%)	3.3	3.2
Beta	1.0	1.0

Top Holdings

UBS GROUP AG	1.7%
NOVO NORDISK A/S	1.6%
PRUDENTIAL PLC	1.4%
LOREAL SA	1.4%
SAGE GROUP PLC	1.3%
ATLAS COPCO AB	1.2%
3I GROUP PLC	1.2%
ITOCHU CORP	1.2%
ACCOR SA	1.2%
ESSILORLUXOTTICA	1.1%

Best Performers

	Return %
FASTIGHETS BALDER AB	57.2%
DE LONGHI (I:DLG)	54.6%
JEOL (J:HZ@N)	47.1%
HORIBA LTD	46.8%
FORTESCUE LTD	46.5%
ELDERS LTD	42.0%
NEMETSCHEK SE	41.6%
WPG HOLDINGS	41.4%
ANGLO AMERICAN PLATINUM LTD	40.9%
HEXAGON AB	40.4%

Worst Performers

	Return %
OXFORD BIOMEDICA PLC	-24.8%
SEGA SAMMY HOLDINGS INC	-24.3%
YUM CHINA HOLDINGS INC (YUMC)	-23.6%
BURBERRY GROUP (UKIR:BRBY)	-21.6%
VITASOY INTERNATIONAL HOLDINGS LTD	-17.6%
SCHOELLER-BLECKMANN OILFIELD EQUIPMENT AG	-17.3%
HEXAGON PURUS HOLDING AS	-15.7%
BAPCOR LTD	-13.9%
CHINA TAIPING IN.HDG. (K:CINS)	-13.6%
CRITEO SA (CRTO)	-13.3%

**Bivium Intl Equity Performance Attribution vs. MSCI World ex USA**

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.22%	0.12%	0.23%	-0.12%	3.60%	1.09%	5.03%	6.30%			
Materials	0.11%	0.01%	0.03%	0.07%	15.45%	15.12%	7.99%	7.83%			
Industrials	-0.16%	-0.33%	0.07%	0.11%	12.16%	14.04%	19.24%	15.61%			
Consumer Discretionary	-0.55%	-0.38%	0.00%	-0.17%	3.82%	8.17%	11.57%	11.18%			
Consumer Staples	0.07%	0.17%	0.15%	-0.25%	6.65%	5.55%	6.39%	9.24%			
Health Care	0.68%	0.55%	-0.13%	0.26%	9.62%	4.90%	13.75%	11.97%			
Financials	-0.35%	-0.23%	-0.03%	-0.10%	10.17%	11.04%	16.09%	20.80%			
Information Technology	0.60%	0.08%	0.32%	0.20%	23.51%	22.21%	10.23%	7.79%			
Communication Services	0.01%	0.09%	0.01%	-0.10%	11.37%	9.33%	2.48%	3.83%			
Utilities	-0.28%	-0.30%	-0.05%	0.06%	5.64%	13.89%	2.17%	3.33%			
Real Estate	-0.14%	-0.11%	0.00%	-0.03%	8.50%	14.83%	2.11%	2.14%			
Cash	-0.04%	0.00%	-0.04%	0.00%	1.37%	--	2.03%	0.00%			
Unclassified	0.15%	0.00%	0.07%	0.08%	17.53%	--	0.92%	0.00%			
<b>Portfolio</b>	<b>0.34%</b>	<b>=</b>	<b>-0.34%</b>	<b>+</b>	<b>0.65%</b>	<b>+</b>	<b>0.02%</b>	<b>10.96%</b>	<b>10.62%</b>	<b>100.00%</b>	<b>100.00%</b>

**Bivium Intl Equity Performance Attribution vs. MSCI World ex USA**

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Europe</b>									
Austria	0.25%	9.70%	1.30%	0.17%	-0.02%	0.00%	0.05%	-0.11%	-0.07%
Belgium	10.14%	8.71%	0.18%	0.88%	0.01%	0.01%	-0.03%	-0.01%	-0.02%
Denmark	15.91%	12.51%	3.44%	2.92%	0.10%	0.01%	0.03%	0.02%	0.15%
Finland	5.23%	7.86%	0.82%	0.78%	-0.03%	0.00%	0.02%	0.00%	-0.02%
France	12.40%	10.48%	12.50%	10.78%	0.21%	0.01%	0.08%	0.03%	0.33%
Germany	13.58%	13.13%	4.08%	7.44%	0.03%	-0.10%	-0.16%	-0.01%	-0.24%
Hungary*	7.40%	16.96%	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Ireland	11.06%	6.48%	0.69%	0.48%	0.04%	-0.01%	-0.01%	0.02%	0.03%
Italy	14.76%	13.49%	1.59%	2.33%	0.03%	-0.02%	-0.03%	-0.01%	-0.04%
Luxembourg	11.91%	10.62%	1.00%	0.00%	0.00%	0.00%	0.04%	0.02%	0.07%
Netherlands	10.32%	19.95%	5.73%	3.83%	-0.34%	0.18%	0.05%	-0.17%	-0.27%
Norway	5.66%	3.90%	1.36%	0.65%	0.01%	-0.05%	0.04%	0.01%	0.01%
Poland*	24.84%	38.03%	0.06%	0.00%	0.00%	0.01%	0.01%	-0.01%	0.01%
Portugal	--	14.96%	0.00%	0.19%	--	-0.01%	-0.01%	--	-0.02%
Spain	8.23%	12.73%	2.76%	2.36%	-0.10%	0.01%	0.01%	-0.02%	-0.09%
Sweden	24.18%	21.84%	5.66%	2.81%	0.06%	0.20%	0.28%	0.06%	0.60%
Switzerland	16.40%	9.90%	10.01%	8.89%	0.56%	-0.05%	0.12%	0.07%	0.70%
United Kingdom	9.92%	6.82%	11.07%	13.72%	0.41%	0.08%	-0.11%	-0.08%	0.31%

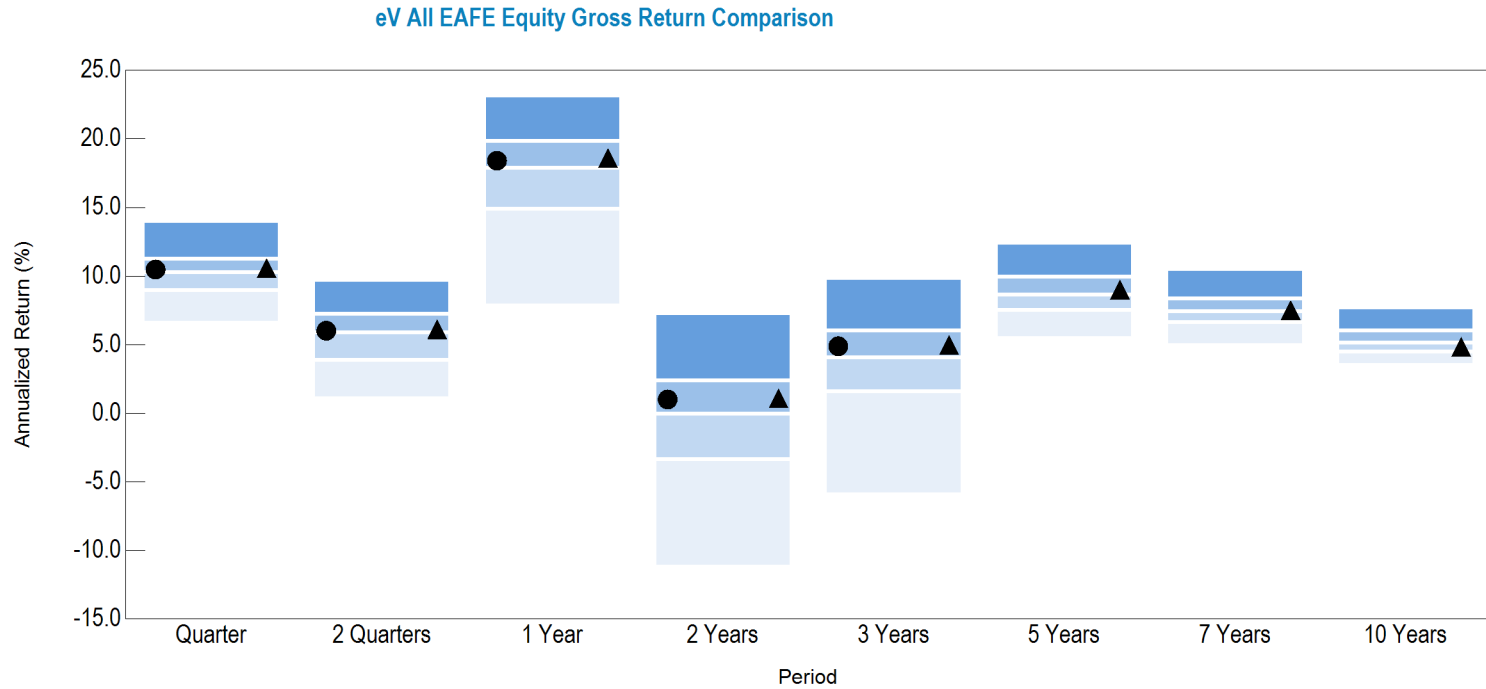
**Bivium Intl Equity Performance Attribution vs. MSCI World ex USA**

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>AsiaPacific</b>									
Australia	23.09%	15.10%	1.88%	6.50%	0.49%	-0.17%	-0.28%	-0.35%	-0.30%
China*	-5.69%	-4.22%	0.42%	0.00%	0.00%	-0.04%	0.00%	-0.01%	-0.05%
Hong Kong	-2.60%	3.23%	4.53%	2.06%	-0.12%	-0.06%	0.00%	-0.14%	-0.32%
India*	10.38%	12.15%	0.10%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%
Indonesia*	-3.01%	2.28%	0.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Japan	8.64%	8.29%	18.75%	20.52%	0.07%	0.06%	-0.10%	-0.01%	0.01%
Korea*	18.54%	13.50%	0.99%	0.00%	0.00%	0.04%	0.01%	0.08%	0.13%
New Zealand	16.55%	14.62%	0.18%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%
Singapore	3.06%	4.47%	3.05%	1.31%	-0.02%	-0.07%	0.06%	-0.03%	-0.06%
Taiwan*	24.49%	17.28%	0.12%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%
<b>Americas</b>									
Brazil*	12.02%	17.84%	0.41%	0.00%	0.00%	0.04%	0.01%	-0.02%	0.03%
Canada	3.73%	11.38%	3.87%	10.59%	-0.79%	-0.23%	-0.19%	0.50%	-0.70%
Mexico*	36.36%	18.60%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
United States	7.97%	11.81%	0.16%	0.00%	0.00%	0.01%	0.00%	-0.01%	0.00%

**Bivium Intl Equity Performance Attribution vs. MSCI World ex USA**

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Other</b>									
Israel	4.80%	9.49%	1.01%	0.62%	-0.04%	0.00%	0.04%	-0.03%	-0.03%
South Africa*	40.39%	12.60%	0.06%	0.00%	0.00%	0.00%	0.00%	0.02%	0.02%
United Arab Emirates*	1.80%	-3.11%	0.06%	0.00%	0.00%	-0.01%	0.00%	0.00%	0.00%
<b>Totals</b>									
Americas	4.79%	11.38%	4.45%	10.59%	-0.66%	-0.21%	-0.18%	0.38%	-0.66%
Europe	13.11%	11.20%	62.29%	58.23%	0.96%	0.01%	0.39%	0.07%	1.43%
Asia/Pacific	7.51%	9.27%	30.07%	30.56%	-0.27%	0.01%	-0.30%	0.00%	-0.55%
Other	6.47%	9.49%	1.13%	0.62%	-0.03%	0.00%	0.04%	-0.03%	-0.01%
Cash	1.37%	--	2.05%	0.00%	0.00%	-0.08%	0.00%	0.00%	-0.08%
<b>Total</b>	<b>10.74%</b>	<b>10.62%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>0.00%</b>	<b>-0.26%</b>	<b>-0.04%</b>	<b>0.43%</b>	<b>0.12%</b>
<b>Totals</b>									
Developed	10.89%	10.62%	95.64%	100.00%	0.12%	0.00%	-0.08%	-0.01%	0.04%
Emerging*	12.77%	--	2.30%	0.00%	0.00%	0.00%	0.04%	0.13%	0.17%
Cash	1.37%	--	2.05%	0.00%	0.00%	-0.08%	0.00%	0.00%	-0.08%





	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	13.99	9.71	23.15	7.28	9.85	12.41	10.49	7.70								
<b>25th Percentile</b>	11.27	7.30	19.88	2.41	6.07	9.98	8.40	6.06								
<b>Median</b>	10.30	5.91	17.94	0.01	4.09	8.70	7.46	5.17								
<b>75th Percentile</b>	9.01	3.94	14.91	-3.33	1.61	7.56	6.66	4.53								
<b>95th Percentile</b>	6.61	1.10	7.88	-11.18	-5.88	5.50	5.00	3.53								
<b># of Portfolios</b>	383	383	383	380	369	343	323	263								
<b>● BlackRock MSCI World ex-US Index Fd A</b>	10.48 (46)	6.01 (48)	18.41 (42)	1.00 (38)	4.88 (36)	-- (--)	-- (--)	-- (--)								
<b>▲ MSCI World ex US Gross</b>	10.57 (43)	6.12 (45)	18.60 (39)	1.09 (37)	4.97 (35)	9.02 (44)	7.51 (50)	4.84 (63)								

Characteristics

	Portfolio	MSCI World ex USA
Number of Holdings	869	869
Weighted Avg. Market Cap. (\$B)	85.4	85.6
Median Market Cap. (\$B)	13.4	13.6
Price To Earnings	14.9	14.7
Price To Book	2.5	2.5
Price To Sales	1.3	1.3
Return on Equity (%)	15.1	15.1
Yield (%)	3.2	3.2
Beta	1.0	1.0

Top Holdings

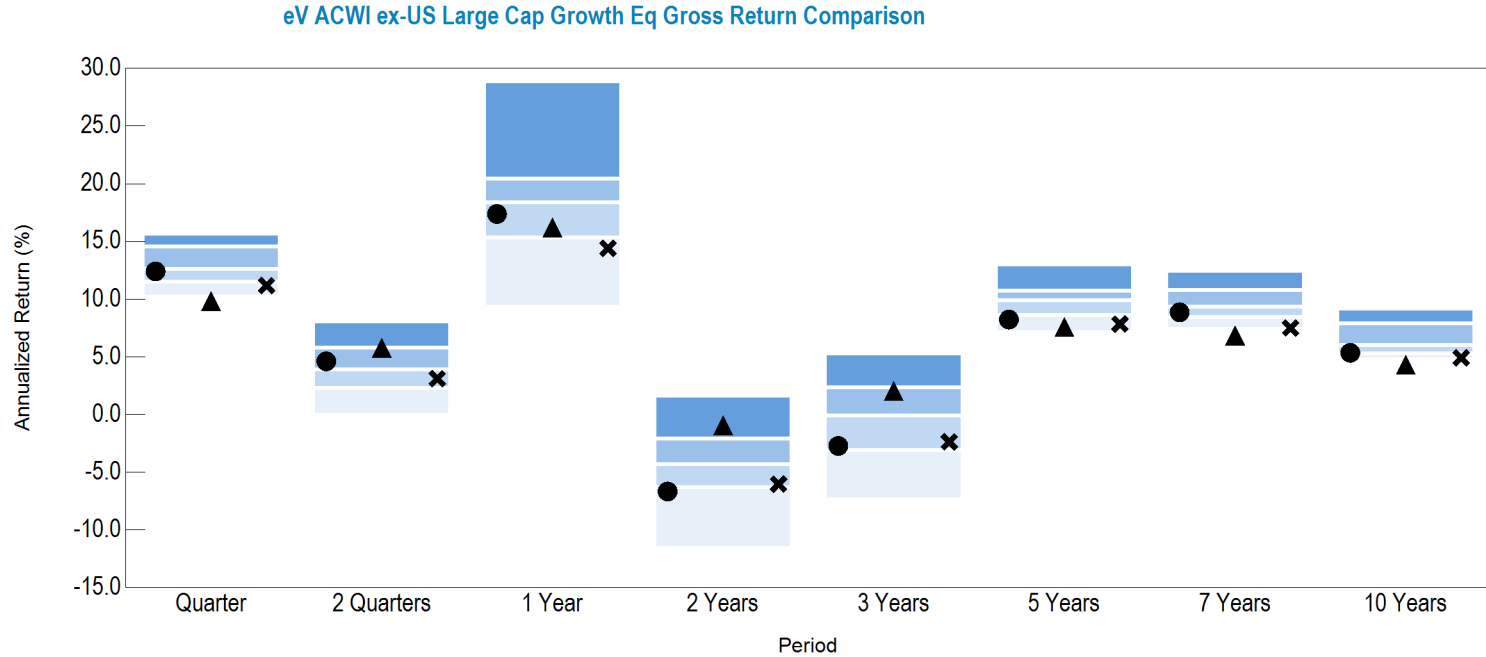
NOVO NORDISK A/S	1.9%
ASML HOLDING NV	1.7%
NESTLE SA, CHAM UND VEVEY	1.6%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.2%
SHELL PLC	1.2%
ASTRAZENECA PLC	1.2%
TOYOTA MOTOR CORP	1.1%
NOVARTIS AG	1.1%
ROCHE HOLDING AG	1.1%
BHP GROUP LTD	1.0%

Best Performers

	Return %
NUVEI CORP COM	75.9%
ADYEN N.V	72.6%
LASERTEC CORP	69.6%
FASTIGHETS BALDER AB	57.2%
BE SEMICONDUCTOR INDUSTRIES NV	53.2%
UNIBAIL-RODAMCO-WESTFIELD SE	49.5%
SOLVAY SA, BRUXELLES	48.2%
VESTAS WIND SYSTEMS A/S	47.8%
LATOUR INVESTMENT AB	47.5%
FORTESCUE LTD	46.5%

Worst Performers

	Return %
FIRST QUANTUM MINERALS LTD (FM.)	-65.4%
HELLOFRESH SE	-47.2%
ALSTOM	-43.7%
WORLDLINE	-38.6%
RENTOKIL INITIAL PLC	-24.6%
INDEPENDENCE GROUP (A:IGOX)	-24.5%
BAYER AG	-22.7%
ARGEN-X SE	-22.1%
BURBERRY GROUP (UKIR:BRBY)	-21.6%
KOEI TECMO HOLDINGS (J:KOIH)	-19.8%



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	15.65	8.07	28.83	1.63	5.27	12.99	12.43	9.13
25th Percentile	14.60	5.80	20.48	-2.07	2.41	10.76	10.80	7.96
Median	12.64	3.93	18.44	-4.26	-0.08	9.94	9.39	6.03
75th Percentile	11.53	2.30	15.37	-6.25	-3.05	8.66	8.47	5.31
95th Percentile	10.27	-0.01	9.36	-11.52	-7.32	7.17	7.41	4.84
# of Portfolios	43	43	43	42	42	37	34	25
● Capital Group	12.40 (56)	4.61 (40)	17.37 (59)	-6.67 (79)	-2.72 (70)	8.23 (83)	8.86 (62)	5.35 (73)
▲ MSCI ACWI ex USA Gross	9.82 (98)	5.78 (26)	16.21 (65)	-0.95 (19)	2.04 (30)	7.60 (89)	6.84 (99)	4.32 (99)
✕ MSCI ACWI ex USA Growth Gross	11.17 (84)	3.10 (59)	14.40 (85)	-6.02 (68)	-2.37 (68)	7.83 (87)	7.50 (95)	4.91 (93)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	163	2,305
Weighted Avg. Market Cap. (\$B)	105.4	93.1
Median Market Cap. (\$B)	34.8	10.0
Price To Earnings	21.9	14.1
Price To Book	3.5	2.5
Price To Sales	2.0	1.2
Return on Equity (%)	18.4	15.1
Yield (%)	1.9	3.1
Beta	1.1	1.0

Top Holdings

ASML HOLDING NV	4.9%
NOVO NORDISK A/S	4.2%
SAFRAN SA	2.8%
NESTLE SA, CHAM UND VEVEY	2.7%
AIRBUS SE	2.6%
ASTRAZENECA PLC	2.4%
KEYENCE CORP	2.2%
LONDON STOCK EXCHANGE GROUP PLC	2.1%
EVOLUTION AB (PUBL)	2.0%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.9%

Best Performers

	Return %
ASCENTIAL PLC	46.5%
SHIN-ETSU CHEMICAL CO LTD	44.4%
SHOPIFY INC (SHOP)	42.8%
ROLLS ROYCE HOLDINGS PLC	41.6%
NEMETSCHEK SE	41.6%
REPLY SPA, TORINO	40.2%
RYANAIR HOLDINGS PLC (RYAAY)	37.2%
IMCD NV	37.1%
RECRUIT HOLDINGS CO LTD	37.1%
LOGITECH INTERNATIONAL SA, APPLES	36.9%

Worst Performers

	Return %
WORLDLINE	-38.6%
JULIUS BAER GRUPPE AG	-13.0%
JARDINE MATHESON HOLDINGS LTD	-11.2%
CAPCOM CO LTD	-10.3%
GENMAB A/S	-10.2%
EISAI CO LTD	-10.0%
NOKIA OYJ	-9.8%
LONZA GROUP AG	-9.7%
HONG KONG EXCHANGES AND CLEARING LTD	-8.2%
BP PLC	-7.3%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.12%	-0.07%	0.18%	0.01%	3.58%	2.48%	3.09%	6.01%			
Materials	0.20%	0.85%	-0.11%	-0.54%	26.05%	12.75%	3.74%	7.81%			
Industrials	0.52%	0.02%	0.15%	0.36%	13.15%	12.85%	19.36%	13.10%			
Consumer Discretionary	0.66%	0.44%	0.00%	0.22%	11.28%	5.72%	11.89%	11.90%			
Consumer Staples	0.46%	0.25%	-0.12%	0.33%	9.77%	5.68%	11.09%	8.38%			
Health Care	0.17%	0.15%	-0.17%	0.19%	6.53%	5.09%	12.70%	9.65%			
Financials	-0.73%	-0.41%	-0.10%	-0.22%	8.55%	10.25%	9.40%	21.22%			
Information Technology	1.43%	-0.02%	0.85%	0.60%	20.41%	19.76%	20.35%	11.32%			
Communication Services	0.17%	0.45%	0.14%	-0.42%	12.78%	4.66%	1.77%	5.45%			
Utilities	-0.14%	0.01%	-0.08%	-0.07%	15.02%	13.63%	1.21%	3.13%			
Real Estate	-0.08%	0.22%	-0.03%	-0.26%	18.31%	11.22%	0.28%	2.03%			
Cash	-0.21%	0.00%	-0.21%	0.00%	1.37%	--	5.12%	0.00%			
<b>Portfolio</b>	<b>2.58%</b>	<b>=</b>	<b>1.88%</b>	<b>+</b>	<b>0.49%</b>	<b>+</b>	<b>0.21%</b>	<b>12.37%</b>	<b>9.80%</b>	<b>100.00%</b>	<b>100.00%</b>

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Europe</b>									
Austria	--	9.70%	0.00%	0.12%	--	0.00%	-0.01%	--	-0.01%
Belgium	17.51%	8.71%	1.32%	0.63%	0.05%	-0.01%	0.04%	0.06%	0.14%
Czech Republic*	--	4.79%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Denmark	4.77%	12.51%	8.01%	2.10%	-0.16%	0.13%	0.27%	-0.44%	-0.20%
Finland	-9.78%	7.86%	0.35%	0.56%	-0.09%	0.00%	-0.01%	0.04%	-0.07%
France	11.67%	10.48%	16.49%	7.73%	0.09%	0.03%	0.42%	0.10%	0.64%
Germany	16.73%	13.13%	3.82%	5.33%	0.18%	-0.04%	-0.07%	-0.05%	0.02%
Greece*	--	13.41%	0.00%	0.13%	--	0.00%	-0.01%	--	-0.01%
Hungary*	--	17.16%	0.00%	0.07%	--	0.00%	0.00%	--	-0.01%
Ireland	23.54%	6.48%	0.77%	0.35%	0.07%	-0.01%	0.00%	0.08%	0.14%
Italy	17.82%	13.49%	0.82%	1.67%	0.07%	-0.03%	-0.04%	-0.04%	-0.03%
Luxembourg	13.67%	9.80%	1.23%	0.00%	0.00%	0.00%	0.02%	0.08%	0.10%
Netherlands	20.75%	19.95%	9.98%	2.74%	0.02%	0.69%	0.38%	0.04%	1.13%
Norway	--	3.90%	0.00%	0.46%	--	0.03%	-0.02%	--	0.01%
Poland*	--	38.18%	0.00%	0.22%	--	-0.04%	-0.03%	--	-0.07%
Portugal	--	14.96%	0.00%	0.14%	--	-0.01%	-0.01%	--	-0.01%
Spain	18.35%	12.73%	1.95%	1.69%	0.09%	0.01%	0.02%	0.01%	0.13%
Sweden	13.85%	21.84%	3.54%	2.01%	-0.15%	0.11%	0.12%	-0.11%	-0.03%
Switzerland	11.12%	9.90%	8.02%	6.37%	0.08%	-0.07%	0.14%	0.02%	0.17%
United Kingdom	13.48%	6.82%	10.96%	9.83%	0.64%	-0.04%	0.07%	0.07%	0.75%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>AsiaPacific</b>									
Australia	--	15.10%	0.00%	4.66%	--	-0.16%	-0.29%	--	-0.45%
China*	--	-4.15%	0.00%	8.50%	--	0.87%	-0.05%	--	0.82%
Hong Kong	6.81%	3.23%	1.85%	1.48%	0.05%	-0.01%	0.00%	0.01%	0.06%
India*	--	12.15%	0.00%	4.46%	--	-0.31%	0.01%	--	-0.30%
Indonesia*	--	2.28%	0.00%	0.56%	--	0.02%	0.00%	--	0.02%
Japan	14.10%	8.29%	20.00%	14.70%	0.81%	-0.17%	0.39%	0.29%	1.31%
Korea*	--	13.50%	0.00%	3.45%	--	-0.13%	-0.14%	--	-0.28%
Malaysia*	--	4.75%	0.00%	0.39%	--	0.01%	-0.01%	--	0.00%
New Zealand	--	14.62%	0.00%	0.12%	--	0.00%	-0.01%	--	-0.01%
Philippines*	--	6.52%	0.00%	0.18%	--	0.00%	0.00%	--	0.00%
Singapore	3.79%	4.47%	1.37%	0.94%	-0.01%	-0.02%	0.02%	0.00%	-0.01%
Taiwan*	--	17.28%	0.00%	4.17%	--	-0.26%	-0.23%	--	-0.49%
Thailand*	--	3.58%	0.00%	0.53%	--	0.04%	-0.03%	--	0.01%
<b>Americas</b>									
Brazil*	--	17.88%	0.00%	1.53%	--	-0.14%	-0.05%	--	-0.19%
Canada	11.02%	11.38%	2.61%	7.59%	0.00%	-0.16%	-0.14%	0.00%	-0.31%
Chile*	--	6.09%	0.00%	0.14%	--	0.00%	0.00%	--	0.00%
Colombia*	--	16.95%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Mexico*	--	19.67%	0.00%	0.71%	--	-0.08%	-0.02%	--	-0.10%
Peru*	--	23.41%	0.00%	0.07%	--	-0.01%	0.00%	--	-0.01%
United States	19.73%	11.81%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

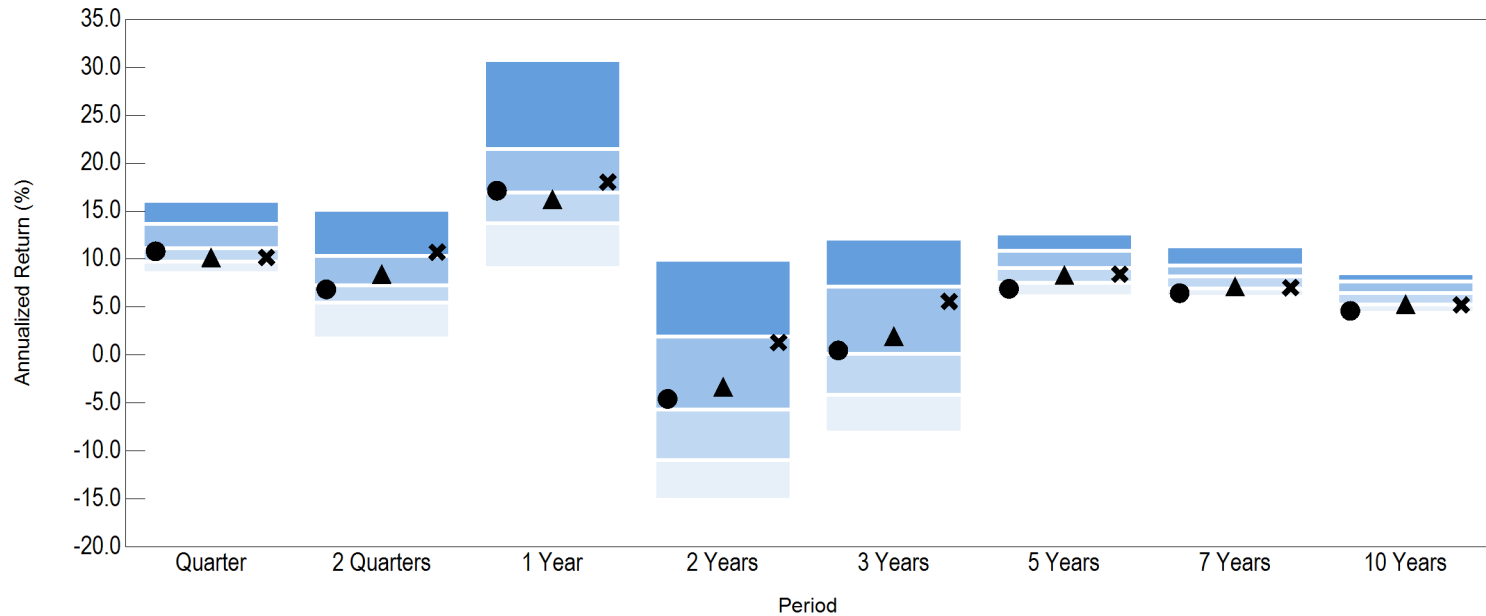
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Other</b>									
Egypt*	--	22.55%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	8.13%	9.49%	0.89%	0.44%	-0.01%	0.00%	0.02%	-0.01%	0.01%
Kuwait*	--	-0.31%	0.00%	0.23%	--	0.01%	0.00%	--	0.01%
Qatar*	--	4.75%	0.00%	0.26%	--	0.00%	0.00%	--	0.00%
Saudi Arabia*	--	8.84%	0.00%	1.17%	--	-0.04%	0.00%	--	-0.04%
South Africa*	--	12.93%	0.00%	0.86%	--	-0.03%	-0.03%	--	-0.06%
Turkey*	--	-12.06%	0.00%	0.21%	--	0.02%	0.01%	--	0.04%
United Arab Emirates*	--	-3.11%	0.00%	0.40%	--	0.03%	0.00%	--	0.03%
<b>Totals</b>									
Americas	11.02%	12.98%	2.61%	10.07%	-0.15%	-0.35%	-0.22%	0.11%	-0.61%
Europe	13.22%	11.34%	68.13%	42.19%	0.85%	0.09%	1.35%	0.52%	2.81%
Asia/Pacific	12.91%	7.86%	23.22%	44.14%	1.38%	0.30%	-0.36%	-0.65%	0.67%
Other	8.13%	6.56%	0.89%	3.60%	-0.04%	-0.01%	0.00%	0.03%	-0.02%
Cash	1.37%	--	5.14%	0.00%	0.00%	-0.21%	0.00%	0.00%	-0.21%
<b>Total</b>	<b>12.43%</b>	<b>9.80%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>2.04%</b>	<b>-0.19%</b>	<b>0.77%</b>	<b>0.01%</b>	<b>2.64%</b>
<b>Totals</b>									
Developed	13.07%	10.62%	94.00%	71.67%	1.66%	-0.01%	1.30%	0.52%	3.47%
Emerging*	8.73%	7.72%	0.86%	28.33%	-1.58%	-0.04%	-0.53%	1.53%	-0.62%
Cash	1.37%	--	5.14%	0.00%	0.00%	-0.21%	0.00%	0.00%	-0.21%



ACWI ex-US Small Cap Equity  
Peer Universe Comparison

Period Ending: December 31, 2023

eV ACWI ex-US Small Cap Equity Gross Return Comparison



	Return (Rank)															
5th Percentile	16.05	15.09	30.71	9.88	12.08	12.65	11.29	8.53								
25th Percentile	13.68	10.33	21.49	1.98	7.20	10.92	9.37	7.69								
Median	11.19	7.31	16.97	-5.63	0.17	9.08	8.20	6.47								
75th Percentile	9.76	5.50	13.76	-10.93	-4.12	7.54	6.94	5.31								
95th Percentile	8.56	1.73	9.08	-15.05	-8.05	6.13	6.12	4.45								
# of Portfolios	60	60	60	60	58	48	39	30								
● Templeton	10.81	(61)	6.84	(59)	17.13	(49)	-4.57	(46)	0.48	(49)	6.90	(84)	6.45	(93)	4.60	(94)
▲ MSCI ACWI ex US Small Cap Gross	10.20	(65)	8.46	(45)	16.23	(59)	-3.31	(43)	1.96	(42)	8.36	(63)	7.14	(71)	5.30	(76)
✕ MSCI ACWI ex US Small Cap Value GD	10.17	(65)	10.72	(23)	18.02	(44)	1.30	(28)	5.59	(34)	8.43	(62)	7.01	(74)	5.22	(78)

Characteristics

	Portfolio	MSCI ACWI ex US Small Cap Gross
Number of Holdings	113	4,332
Weighted Avg. Market Cap. (\$B)	2.6	2.6
Median Market Cap. (\$B)	1.5	1.1
Price To Earnings	16.9	14.2
Price To Book	2.4	2.2
Price To Sales	1.2	0.9
Return on Equity (%)	13.6	10.2
Yield (%)	2.9	3.0
Beta	1.0	1.0

Top Holdings

TECHNOGYM SPA	2.1%
SANLORENZO SPA	2.1%
ONESPAWORLD HOLDINGS LIMITED	1.9%
INTERPUMP GROUP SPA, SANT'ILARIO (RE)	1.8%
CANADIAN WESTERN BANK	1.7%
TECHTRONIC INDUSTRIES CO LTD	1.7%
MEITEC GROUP HOLDINGS INC	1.7%
TECHNOPRO HOLDINGS INC	1.7%
MAN GROUP PLC	1.7%
CHICONY ELECTRONICS CO LTD	1.6%

Best Performers

	Return %
SHIN ZU SHING (TW:SZS)	61.7%
CHICONY ELECTRONICS CO LTD	59.1%
NAN PAO RESINS CHEMICAL CO LTD	42.2%
PROSHARES ULTRA SEMICONDUCTORS (USD)	41.4%
DOMETIC GROUP AB	41.0%
IDOM INC	41.0%
WATCHES OF SWITZERLAND GROUP PLC	38.2%
LOGITECH INTERNATIONAL SA, APPLES (LOGI)	37.9%
DO & CO AG	35.2%
BUNKA SHUTTER (J:WX@N)	34.3%

Worst Performers

	Return %
XTEP INTERNATIONAL HOLDINGS LTD	-39.1%
IMAX CORP (IMAX)	-22.3%
NAYAX LTD	-17.5%
KK SHOEI	-14.8%
SECO SPA COMSTK	-13.6%
DUERR AG, STUTTGART	-13.1%
NONGSHIM (KO:NHS)	-10.7%
TETHYS OIL AB	-10.6%
ZOJIRUSHI (J:ZOJR)	-10.4%
SHIMA SEIKI MNFG. (J:SHMA)	-9.7%

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Total Effects	Attribution Effects				Returns		Sector Weights					
		Selection Effect	Allocation Effect	Currency Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark				
Energy	0.05%	-0.28%	0.23%	-0.04%	0.14%	-5.29%	-0.81%	2.18%	4.47%				
Materials	0.22%	0.42%	-0.02%	-0.03%	-0.15%	15.63%	10.25%	7.45%	11.47%				
Industrials	1.24%	0.78%	0.00%	0.35%	0.10%	15.04%	10.25%	23.26%	20.61%				
Consumer Discretionary	1.57%	0.62%	-0.26%	0.61%	0.61%	13.42%	7.87%	23.66%	11.91%				
Consumer Staples	-0.04%	0.03%	0.01%	-0.08%	0.00%	6.97%	7.54%	5.89%	6.32%				
Health Care	-0.13%	-0.29%	0.00%	0.19%	-0.04%	7.94%	10.14%	7.92%	7.01%				
Financials	-0.39%	-0.25%	0.00%	-0.18%	0.04%	7.04%	10.36%	9.08%	10.91%				
Information Technology	-0.20%	-0.34%	0.18%	0.11%	-0.15%	10.55%	14.36%	16.70%	11.67%				
Communication Services	-0.48%	-0.54%	0.00%	-0.06%	0.11%	-4.91%	9.82%	3.05%	3.86%				
Utilities	-0.13%	--	-0.01%	-0.11%	--	--	10.05%	0.00%	2.92%				
Real Estate	-0.76%	0.17%	-0.36%	-0.41%	-0.16%	16.87%	14.91%	0.53%	8.86%				
Cash	-0.01%	0.00%	-0.01%	0.00%	0.00%	1.37%	--	0.27%	0.00%				
Unclassified	0.00%	--	--	--	--	--	--	0.00%	0.00%				
<b>Portfolio</b>	<b>0.93%</b>	<b>=</b>	<b>0.33%</b>	<b>+</b>	<b>-0.26%</b>	<b>+</b>	<b>0.35%</b>	<b>+</b>	<b>0.51%</b>	<b>11.11%</b>	<b>10.18%</b>	<b>100.00%</b>	<b>100.00%</b>

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

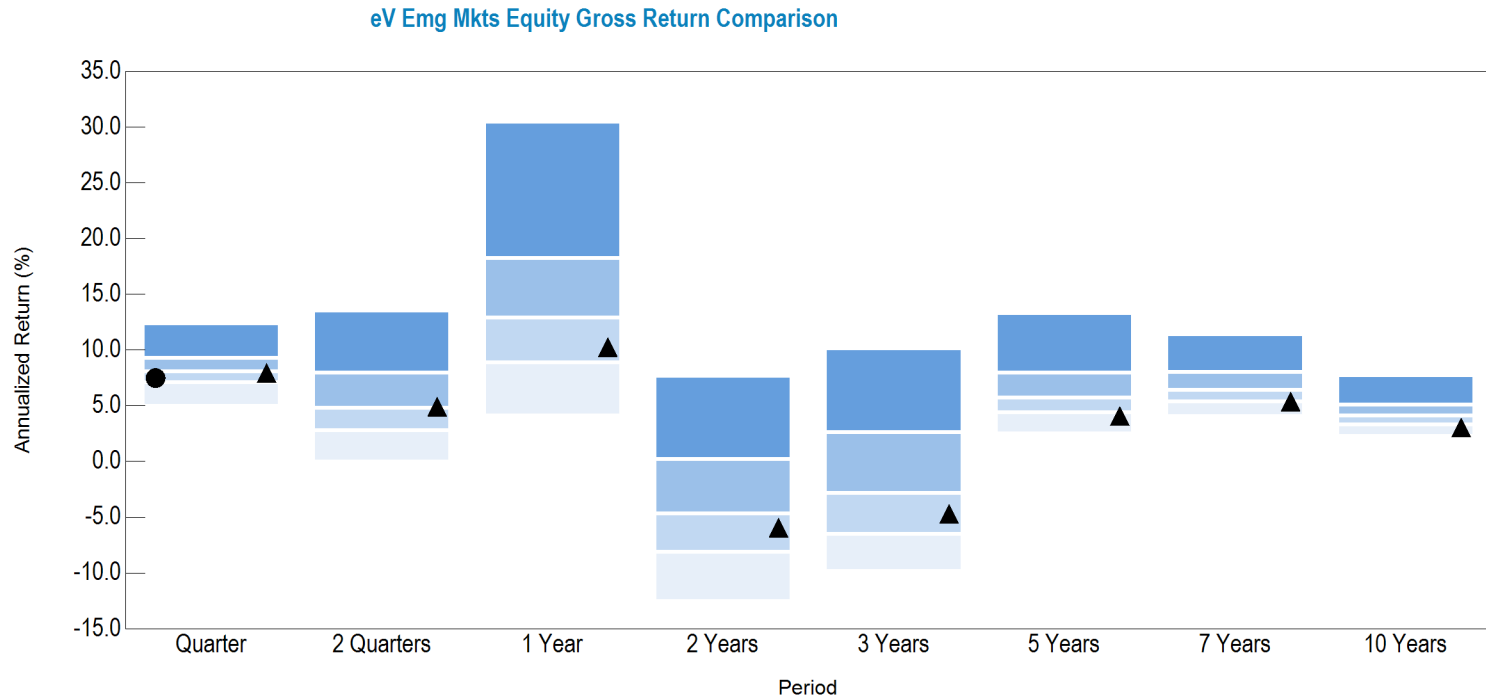
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Europe</b>									
Austria	19.30%	18.89%	1.30%	0.60%	0.00%	0.06%	0.04%	0.00%	0.10%
Belgium	-3.79%	15.15%	2.71%	0.88%	-0.16%	0.08%	0.07%	-0.33%	-0.34%
Czech Republic*	--	-4.49%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Denmark	23.63%	9.93%	0.75%	1.30%	0.17%	0.00%	-0.02%	-0.07%	0.08%
Finland	17.78%	18.78%	2.22%	0.76%	-0.01%	0.12%	0.07%	-0.01%	0.17%
France	13.90%	8.23%	0.32%	2.53%	0.13%	0.04%	-0.10%	-0.12%	-0.04%
Germany	12.16%	12.49%	4.29%	3.05%	-0.01%	0.03%	0.06%	0.00%	0.07%
Greece*	6.82%	13.02%	0.57%	0.13%	-0.01%	0.01%	0.02%	-0.03%	0.00%
Hungary*	--	34.11%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Ireland	--	11.86%	0.00%	0.19%	--	0.00%	-0.01%	--	-0.01%
Italy	18.83%	15.26%	9.27%	2.27%	0.08%	0.33%	0.36%	0.24%	1.00%
Luxembourg	21.70%	10.18%	1.01%	0.00%	0.00%	0.00%	0.05%	0.11%	0.16%
Netherlands	6.51%	13.40%	0.44%	0.96%	-0.07%	-0.02%	-0.02%	0.04%	-0.07%
Norway	-4.19%	9.96%	1.86%	1.57%	-0.21%	0.00%	0.00%	-0.04%	-0.25%
Poland*	--	28.65%	0.00%	0.31%	--	-0.03%	-0.04%	--	-0.07%
Portugal	-0.93%	7.89%	0.64%	0.21%	-0.02%	-0.01%	0.02%	-0.04%	-0.05%
Spain	--	10.86%	0.00%	1.27%	--	-0.01%	-0.06%	--	-0.07%
Sweden	16.19%	28.51%	4.33%	3.32%	-0.38%	0.13%	0.06%	-0.11%	-0.30%
Switzerland	18.37%	13.66%	5.38%	2.85%	0.17%	-0.03%	0.17%	0.15%	0.45%
United Kingdom	13.38%	13.19%	10.69%	9.53%	0.02%	0.03%	0.06%	0.00%	0.11%

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>AsiaPacific</b>									
Australia	--	12.46%	0.00%	6.24%	--	-0.05%	-0.37%	--	-0.42%
China*	-39.11%	-2.63%	1.30%	2.21%	-0.80%	0.08%	0.00%	0.33%	-0.40%
Hong Kong	12.15%	-0.68%	4.02%	1.11%	0.14%	-0.19%	0.01%	0.37%	0.33%
India*	--	12.33%	0.00%	7.68%	--	-0.53%	0.02%	--	-0.51%
Indonesia*	--	-4.24%	0.00%	0.63%	--	0.07%	0.00%	--	0.06%
Japan	5.71%	7.60%	21.21%	21.41%	-0.38%	0.01%	-0.03%	0.00%	-0.41%
Korea*	6.69%	7.89%	5.03%	4.07%	-0.05%	-0.02%	0.04%	-0.01%	-0.04%
Malaysia*	--	5.70%	0.00%	0.71%	--	0.02%	-0.02%	--	0.00%
New Zealand	--	5.05%	0.00%	0.54%	--	0.03%	-0.03%	--	0.00%
Philippines*	12.96%	0.61%	1.25%	0.24%	0.03%	-0.07%	0.03%	0.12%	0.10%
Singapore	--	7.40%	0.00%	1.29%	--	0.02%	-0.04%	--	-0.02%
Taiwan*	21.10%	13.49%	10.48%	6.28%	0.46%	0.10%	0.27%	0.31%	1.13%
Thailand*	6.35%	1.04%	0.67%	0.99%	0.05%	0.03%	-0.02%	-0.02%	0.05%
<b>Americas</b>									
Brazil*	15.76%	14.98%	2.82%	1.47%	0.01%	0.08%	0.04%	0.01%	0.15%
Canada	8.47%	5.73%	5.27%	6.89%	0.21%	0.04%	-0.05%	-0.05%	0.14%
Chile*	--	13.55%	0.00%	0.22%	--	-0.01%	0.00%	--	-0.02%
Mexico*	--	20.06%	0.00%	0.67%	--	-0.07%	-0.02%	--	-0.10%
United States	-9.47%	11.81%	0.74%	0.00%	0.00%	0.05%	0.02%	-0.18%	-0.11%

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Other</b>									
Egypt*	--	12.29%	0.00%	0.09%	--	-0.01%	0.00%	--	-0.01%
Israel	-17.46%	6.75%	1.16%	1.93%	-0.46%	0.03%	-0.05%	0.18%	-0.29%
Kuwait*	--	-1.52%	0.00%	0.28%	--	0.02%	0.00%	--	0.02%
Qatar*	--	-0.90%	0.00%	0.21%	--	0.01%	0.00%	--	0.01%
Saudi Arabia*	--	11.29%	0.00%	1.05%	--	-0.06%	0.00%	--	-0.06%
South Africa*	--	10.76%	0.00%	0.94%	--	-0.02%	-0.03%	--	-0.05%
Turkey*	--	-23.40%	0.00%	0.73%	--	0.17%	0.04%	--	0.21%
United Arab Emirates*	--	-2.90%	0.00%	0.34%	--	0.03%	0.00%	--	0.03%
<b>Totals</b>									
Americas	9.29%	8.43%	8.83%	9.26%	0.08%	0.00%	-0.01%	0.00%	0.06%
Europe	13.88%	14.55%	45.77%	31.75%	-0.14%	0.43%	0.71%	-0.06%	0.94%
Asia/Pacific	8.98%	8.62%	43.95%	53.41%	-0.10%	0.13%	-0.17%	0.02%	-0.12%
Other	-17.46%	3.12%	1.16%	5.58%	-1.31%	0.18%	-0.04%	1.04%	-0.13%
Cash	1.37%	--	0.27%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%
<b>Total</b>	<b>10.92%</b>	<b>10.18%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>-1.48%</b>	<b>0.74%</b>	<b>0.49%</b>	<b>0.99%</b>	<b>0.74%</b>
<b>Totals</b>									
Developed	10.55%	10.69%	77.61%	70.70%	0.08%	-0.03%	0.18%	0.01%	0.24%
Emerging*	12.34%	8.95%	22.11%	29.30%	0.36%	-0.07%	0.31%	-0.09%	0.52%
Cash	1.37%	--	0.27%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%



	Return (Rank)															
<b>5th Percentile</b>	12.35	13.52	30.44	7.66	10.12	13.31	11.42	7.72								
<b>25th Percentile</b>	9.35	8.03	18.28	0.23	2.65	8.01	8.06	5.13								
<b>Median</b>	8.11	4.87	12.94	-4.61	-2.81	5.78	6.46	4.16								
<b>75th Percentile</b>	7.12	2.82	8.95	-8.07	-6.46	4.46	5.41	3.35								
<b>95th Percentile</b>	5.01	0.03	4.19	-12.48	-9.78	2.55	4.10	2.33								
<b># of Portfolios</b>	397	397	397	388	373	341	303	247								
<b>● BlackRock MSCI Emerging Mkts</b>	7.48	(66)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
<b>▲ MSCI Emerging Markets Gross</b>	7.93	(55)	4.92	(50)	10.26	(64)	-5.92	(61)	-4.71	(63)	4.08	(81)	5.37	(77)	3.05	(82)

Characteristics

	Portfolio	MSCI Emerging Markets Gross
Number of Holdings	1,404	1,436
Weighted Avg. Market Cap. (\$B)	113.1	113.9
Median Market Cap. (\$B)	7.3	7.5
Price To Earnings	13.1	13.0
Price To Book	2.5	2.5
Price To Sales	1.1	1.1
Return on Equity (%)	14.3	14.2
Yield (%)	2.9	2.9
Beta		1.0

Top Holdings

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	6.7%
SAMSUNG ELECTRONICS CO LTD	4.1%
TENCENT HOLDINGS LTD	3.5%
ALIBABA GROUP HOLDING LTD	2.2%
RELIANCE INDUSTRIES LTD	1.4%
PDD HOLDINGS INC	1.2%
ICICI BANK	0.9%
INFOSYS LTD	0.9%
H D F C BANK LTD	0.8%
SK HYNIX INC	0.8%

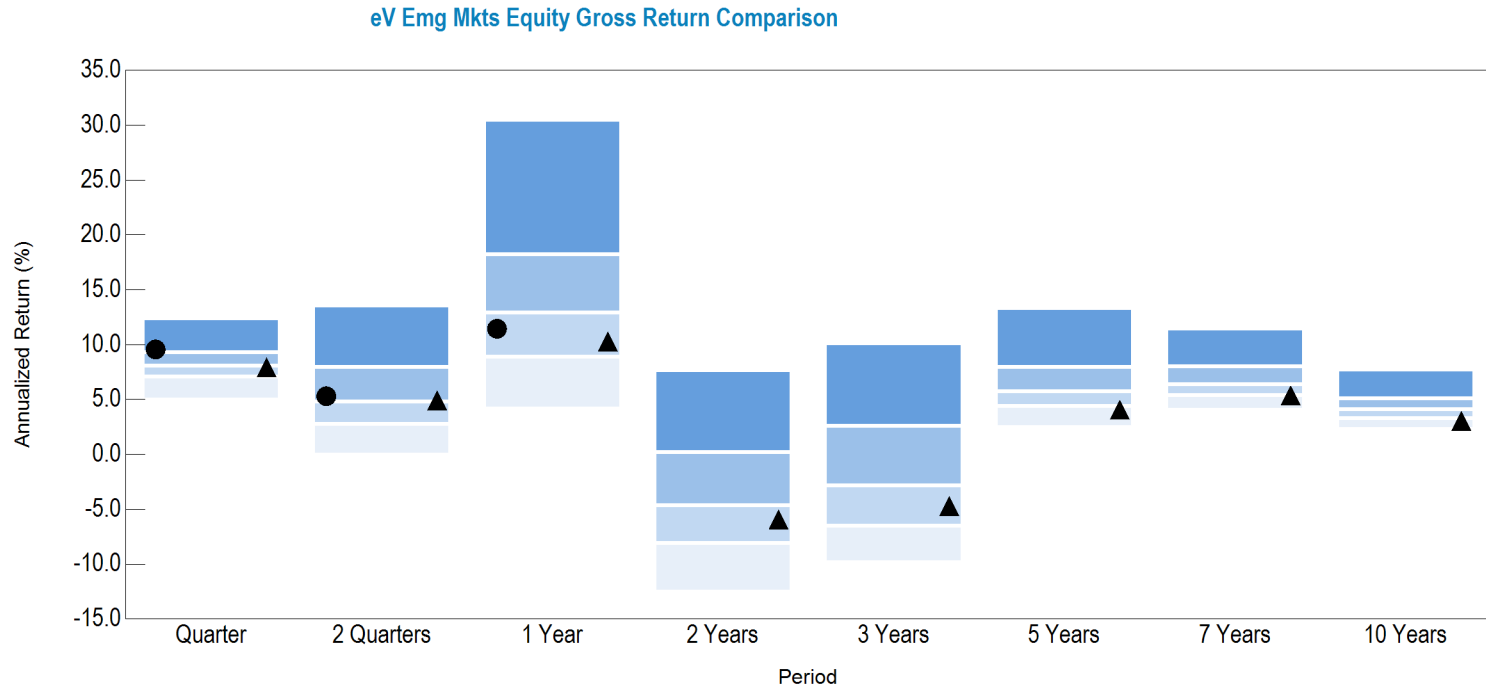
Best Performers

	Return %
COMPANIA DE MINAS BUENAVENTURA SAA (BVN)	78.9%
ISOFTSTONE HOLDINGS LIMITED	78.9%
HLB CO LTD	75.4%
HARMONY GOLD MINING CO LTD	75.2%
COMPANHIA SIDERURGICA NACIONAL	74.6%
AAC TECHNOLOGIES HOLDINGS INC	73.6%
SILERGY CORP	72.5%
OPERADORA DE SITES MEXICANOS S	69.7%
BANK POLSKA KASA OPIEKI -GRUPA PEKAO S.A., WARSZAWA	67.4%
ADANI GREEN ENERGY LIMITED	61.5%

Worst Performers

	Return %
JIUMAOJIU INTERNATIONAL HOLDINGS LTD	-42.6%
XTEP INTERNATIONAL HOLDINGS LTD	-39.1%
SANY HEAVY EQUIPMENT INTERNATIONAL HOLDINGS CO LTD	-38.9%
KOZA ALTIN ISLEMELERI AS	-37.1%
BEIJING CAPITAL INTERNATIONAL AIRPORT CO LTD	-36.8%
LI NING COMPANY LIMITED	-36.4%
WUXI BIOLOGICS (CAYMAN) INC	-35.0%
GEMDALE CORP	-34.2%
TOFAS TURK OTOM.FABK. (TK:TOA)	-34.1%
CHINA OVERSEAS PROPERTY HOLDINGS LTD	-33.5%





	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	12.35	9.35	13.52	8.03	30.44	18.28	7.66	0.23	10.12	2.65	13.31	8.01	11.42	8.06	7.72	5.13
<b>25th Percentile</b>	9.35	8.11	8.03	4.87	18.28	12.94	0.23	-4.61	2.65	-2.81	8.01	5.78	8.06	6.46	5.13	4.16
<b>Median</b>	8.11	7.12	4.87	2.82	12.94	8.95	-4.61	-8.07	-2.81	-6.46	5.78	4.46	6.46	5.41	4.16	3.35
<b>75th Percentile</b>	7.12	5.01	2.82	0.03	8.95	4.19	-8.07	-12.48	-6.46	-9.78	4.46	2.55	5.41	4.10	3.35	2.33
<b>95th Percentile</b>	5.01	397	0.03	397	4.19	397	-12.48	388	-9.78	373	2.55	341	4.10	303	2.33	247
<b># of Portfolios</b>	397		397		397		388		373		341		303		247	
● William Blair Emerging Mkts Growth	9.56	(23)	5.30	(45)	11.45	(59)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ MSCI Emerging Markets Gross	7.93	(55)	4.92	(50)	10.26	(64)	-5.92	(61)	-4.71	(63)	4.08	(81)	5.37	(77)	3.05	(82)

Characteristics

	Portfolio	MSCI Emerging Markets Gross
Number of Holdings	138	1,436
Weighted Avg. Market Cap. (\$B)	123.1	113.9
Median Market Cap. (\$B)	9.9	7.5
Price To Earnings	25.0	13.0
Price To Book	3.9	2.5
Price To Sales	3.6	1.1
Return on Equity (%)	20.3	14.2
Yield (%)	1.6	2.9
Beta		1.0

Top Holdings

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	7.1%
SAMSUNG ELECTRONICS CO LTD	5.8%
TENCENT HOLDINGS LTD	4.0%
MERCADOLIBRE INC	2.9%
PT BANK CENTRAL ASIA TBK	2.8%
H D F C BANK LTD	2.7%
PDD HOLDINGS INC	2.5%
RELIANCE INDUSTRIES LTD	2.4%
PT BANK RAKYAT INDONESIA TBK	2.3%
SK HYNIX INC	2.1%

Best Performers

	Return %
ASMEDIA TECHNOLOGY INC	65.1%
PDD HOLDINGS INC (PDD)	49.2%
TRENT LTD	46.6%
MEDIATEK INCORPORATION	45.1%
DINO POLSKA SA	44.2%
LEEJAM SPORTS COMPANY	43.0%
PROSHARES ULTRA SEMICONDUCTORS (USD)	41.4%
FIBRA PROLOGIS	40.1%
LOTES (TW:LTS)	36.6%
CENTRAL DEPOSITORY SERVICES LTD	33.9%

Worst Performers

	Return %
LI NING COMPANY LIMITED	-36.4%
MEITUAN	-28.4%
AMERICANA RESTAURANTS INTERNAT	-23.7%
CHROMA ATE (TW:CMA)	-18.9%
WUXI APTEC CO LTD	-15.0%
ANTA SPORTS PRODUCTS LIMITED	-13.9%
NETEASE INC	-11.2%
AIRPORTS OF THAILAND PCL	-10.3%
ALIBABA GROUP HOLDING LTD	-10.3%
BUMRUNGRAD HOSPITAL PUBLIC CO LTD	-10.2%

William Blair Emerging Mkts Growth Performance Attribution vs. MSCI Emerging Markets Gross

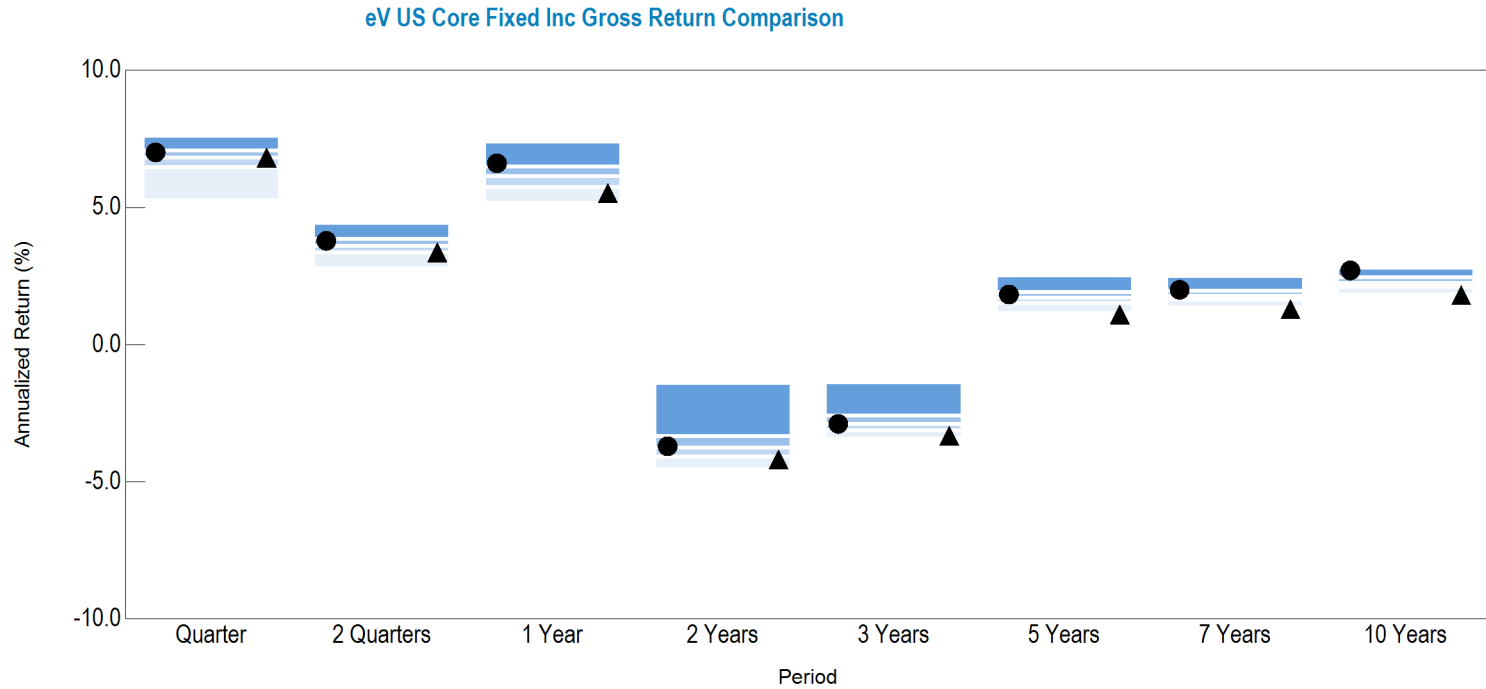
	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.07%	0.32%	0.01%	-0.25%	10.80%	6.73%	2.98%	5.25%			
Materials	-0.16%	-0.13%	0.05%	-0.08%	2.92%	6.97%	1.65%	7.97%			
Industrials	-0.02%	0.06%	-0.10%	0.02%	6.15%	5.89%	10.75%	6.74%			
Consumer Discretionary	0.70%	0.81%	0.11%	-0.22%	5.73%	0.67%	12.45%	13.70%			
Consumer Staples	0.68%	0.34%	-0.09%	0.42%	11.77%	6.15%	11.62%	6.18%			
Health Care	-0.12%	-0.16%	0.01%	0.03%	3.60%	6.81%	3.63%	3.77%			
Financials	-0.12%	0.28%	-0.06%	-0.34%	8.52%	8.32%	17.28%	22.25%			
Information Technology	1.24%	0.34%	0.59%	0.31%	18.11%	17.38%	27.42%	20.22%			
Communication Services	-0.42%	-0.63%	0.16%	0.05%	-7.34%	-0.06%	6.19%	9.56%			
Utilities	0.03%	0.42%	-0.09%	-0.30%	27.23%	12.77%	0.88%	2.61%			
Real Estate	0.47%	0.27%	-0.11%	0.31%	16.98%	-0.52%	3.03%	1.74%			
Cash	0.01%	0.00%	0.01%	0.00%	0.92%	--	0.22%	0.00%			
Unclassified	0.11%	0.00%	0.11%	0.00%	4.85%	--	1.90%	0.00%			
<b>Portfolio</b>	<b>2.47%</b>	<b>=</b>	<b>1.92%</b>	<b>+</b>	<b>0.61%</b>	<b>+</b>	<b>-0.05%</b>	<b>10.20%</b>	<b>7.73%</b>	<b>100.00%</b>	<b>100.00%</b>

William Blair Emerging Mkts Growth Performance Attribution vs. MSCI Emerging Markets Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Europe</b>									
Czech Republic*	--	4.79%	0.00%	0.16%	--	0.01%	-0.01%	--	0.00%
Greece*	--	13.41%	0.00%	0.44%	--	-0.01%	-0.02%	--	-0.03%
Hungary*	--	17.16%	0.00%	0.24%	--	-0.01%	-0.02%	--	-0.03%
Luxembourg	20.28%	7.72%	0.43%	0.00%	0.00%	0.00%	0.00%	0.06%	0.06%
Poland*	44.20%	38.18%	0.29%	0.76%	0.04%	-0.09%	-0.06%	-0.03%	-0.14%
<b>AsiaPacific</b>									
China*	-7.16%	-4.15%	10.70%	29.99%	-1.11%	2.00%	-0.04%	0.71%	1.56%
Hong Kong	-5.05%	3.42%	6.58%	0.00%	0.00%	-0.16%	0.02%	-0.55%	-0.70%
India*	13.62%	12.15%	24.87%	15.73%	0.23%	0.62%	-0.02%	0.13%	0.97%
Indonesia*	8.08%	2.28%	5.85%	1.98%	0.11%	-0.14%	0.02%	0.22%	0.21%
Korea*	17.61%	13.50%	8.22%	12.17%	0.48%	-0.15%	-0.15%	-0.16%	0.02%
Malaysia*	--	4.75%	0.00%	1.39%	--	0.04%	-0.03%	--	0.01%
Philippines*	4.38%	6.52%	1.17%	0.63%	-0.01%	-0.01%	0.01%	-0.01%	-0.02%
Taiwan*	15.81%	17.28%	19.49%	14.72%	0.08%	0.29%	-0.13%	0.03%	0.27%
Thailand*	-0.49%	3.58%	2.03%	1.86%	-0.07%	-0.01%	0.01%	-0.01%	-0.09%
<b>Americas</b>									
Argentina*	23.95%	35.68%	2.58%	0.00%	0.00%	0.78%	0.00%	-0.30%	0.47%
Brazil*	16.48%	17.88%	5.18%	5.41%	-0.04%	-0.02%	-0.04%	0.00%	-0.10%
Chile*	--	6.09%	0.00%	0.51%	--	0.01%	-0.01%	--	0.00%
Colombia*	--	16.95%	0.00%	0.10%	--	-0.01%	-0.01%	--	-0.01%
Mexico*	19.37%	19.67%	5.18%	2.49%	0.02%	0.28%	0.04%	0.02%	0.36%
Peru*	17.16%	23.41%	0.34%	0.26%	-0.02%	0.01%	0.00%	-0.01%	-0.01%
United States	5.27%	11.81%	2.29%	0.00%	0.00%	0.14%	0.01%	-0.16%	-0.01%

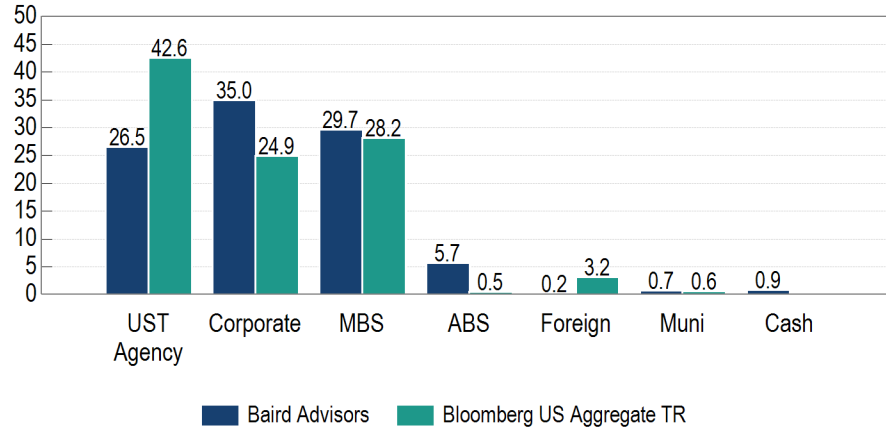
William Blair Emerging Mkts Growth Performance Attribution vs. MSCI Emerging Markets Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Other</b>									
Egypt*	--	22.55%	0.00%	0.09%	--	-0.02%	0.00%	--	-0.02%
Kuwait*	--	-0.31%	0.00%	0.82%	--	0.05%	0.00%	--	0.05%
Qatar*	-6.98%	4.75%	0.23%	0.92%	-0.11%	0.01%	0.00%	0.08%	-0.02%
Saudi Arabia*	17.05%	8.84%	2.24%	4.14%	0.34%	-0.06%	0.00%	-0.16%	0.12%
South Africa*	6.84%	12.93%	1.34%	3.03%	-0.18%	-0.07%	-0.06%	0.10%	-0.21%
Turkey*	--	-12.06%	0.00%	0.75%	--	0.08%	0.05%	--	0.13%
United Arab Emirates*	-1.48%	-3.11%	0.77%	1.41%	0.02%	0.05%	0.00%	-0.01%	0.07%
<b>Totals</b>									
Americas	17.05%	17.86%	15.56%	8.77%	0.05%	0.62%	0.00%	0.04%	0.71%
Europe	29.90%	24.89%	0.72%	1.60%	0.14%	-0.09%	-0.11%	-0.07%	-0.13%
Asia/Pacific	9.29%	6.46%	78.92%	78.47%	2.56%	-0.01%	-0.33%	0.01%	2.24%
Other	9.74%	6.15%	4.58%	11.16%	0.35%	0.00%	-0.01%	-0.21%	0.13%
Cash	1.37%	--	0.22%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%
<b>Total</b>	<b>10.65%</b>	<b>7.72%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>3.10%</b>	<b>0.51%</b>	<b>-0.45%</b>	<b>-0.23%</b>	<b>2.93%</b>
<b>Totals</b>									
Developed	-1.35%	--	9.29%	0.00%	0.00%	0.00%	0.02%	-0.67%	-0.64%
Emerging*	11.90%	7.72%	90.49%	100.00%	4.48%	0.00%	-0.48%	-0.43%	3.58%
Cash	1.37%	--	0.22%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%

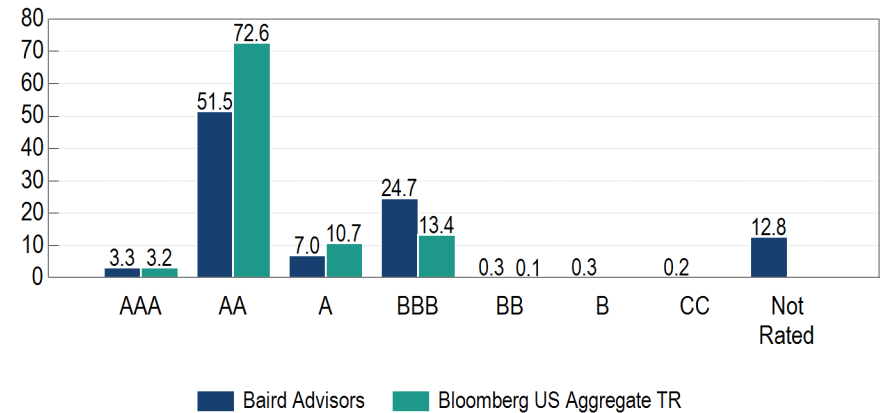


	Return (Rank)															
	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	7.60		4.42		7.40		-1.41		-1.39		2.51		2.48		2.79	
25th Percentile	7.08		3.88		6.51		-3.32		-2.57		1.93		1.98		2.47	
Median	6.84		3.61		6.16		-3.74		-2.88		1.72		1.80		2.27	
75th Percentile	6.48		3.38		5.75		-4.06		-3.11		1.54		1.65		2.12	
95th Percentile	5.26		2.79		5.18		-4.53		-3.41		1.15		1.37		1.84	
# of Portfolios	207		207		207		206		202		194		188		179	
● Baird Advisors	7.01	(33)	3.78	(32)	6.61	(21)	-3.70	(45)	-2.89	(51)	1.83	(37)	2.00	(24)	2.71	(8)
▲ Bloomberg US Aggregate TR	6.82	(53)	3.37	(77)	5.53	(85)	-4.19	(86)	-3.31	(90)	1.10	(97)	1.29	(97)	1.81	(96)

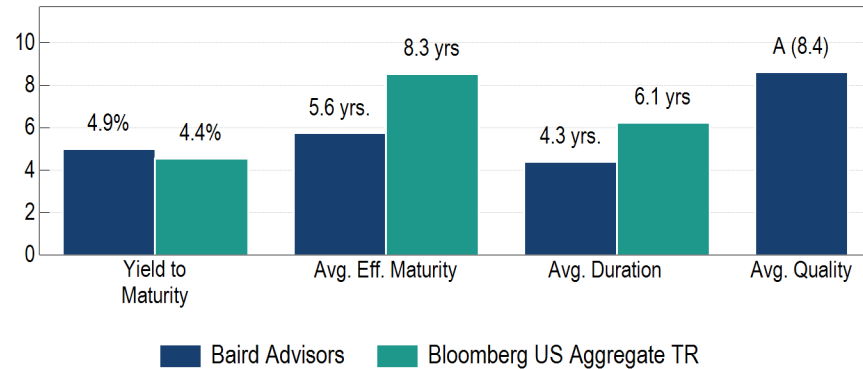
US Sector Allocation  
Baird Advisors



Credit Quality Allocation  
Baird Advisors



Characteristics  
Baird Advisors



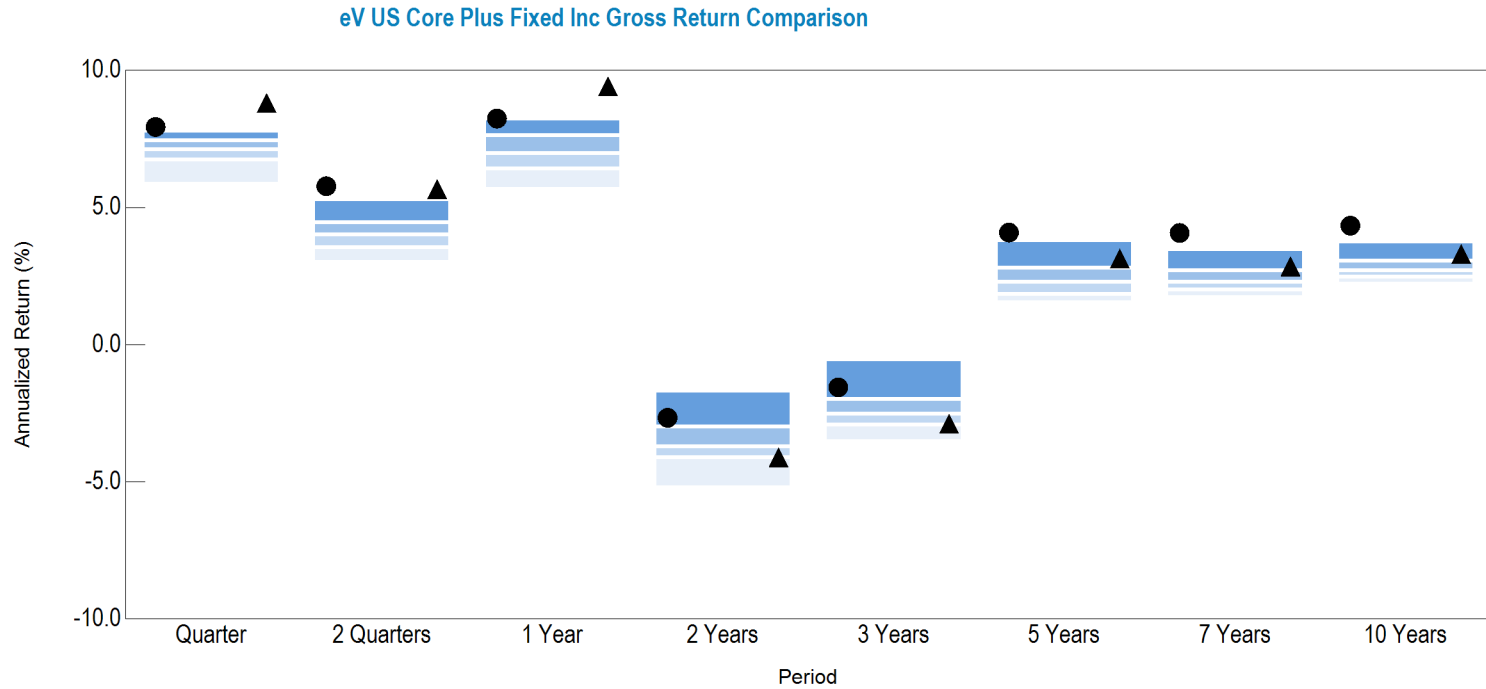
**PERFORMANCE BY QUALITY**

	<u>NUMBER OF ISSUES</u>	<u>FINAL MARKET VALUE (\$000)</u>	<u>FINAL MARKET VALUE %</u>	<u>QUARTERLY RETURN %</u>	<u>QUARTERLY CONTRIBUTION TO TOTAL RETURN %</u>
Cash & Equiv	1	10,771	0.9	1.40	0.02
Govt & Agency	177	613,954	51.3	8.29	4.09
AAA	45	130,450	10.9	4.16	0.47
AA	6	3,590	0.3	11.53	0.04
A	46	134,041	11.2	6.55	0.77
BAA	111	295,607	24.7	6.75	1.70
Below BAA	5	5,984	0.5	9.28	0.05
Other	5	2,393	0.2	3.48	0.01
<b>Total Account</b>	<b>396</b>	<b>\$1,196,791</b>	<b>100.0</b>	<b>7.01</b>	<b>7.15</b>

**PERFORMANCE BY DURATION**

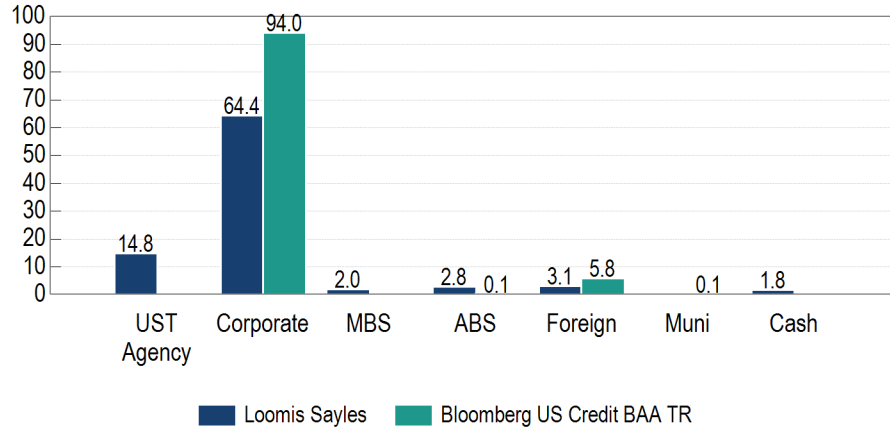
	<u>NUMBER OF ISSUES</u>	<u>FINAL MARKET VALUE (\$000)</u>	<u>FINAL MARKET VALUE %</u>	<u>QUARTERLY RETURN %</u>	<u>QUARTERLY CONTRIBUTION TO TOTAL RETURN %</u>
Under 1 Year	12	37,100	3.1	1.82	0.08
1 - 3 Years	74	259,704	21.7	3.41	0.74
3 - 6 Years	186	448,797	37.5	6.40	2.38
Over 6 Years	124	451,190	37.7	10.72	3.95
<b>Total Account</b>	<b>396</b>	<b>\$1,196,791</b>	<b>100.0</b>	<b>7.01</b>	<b>7.15</b>



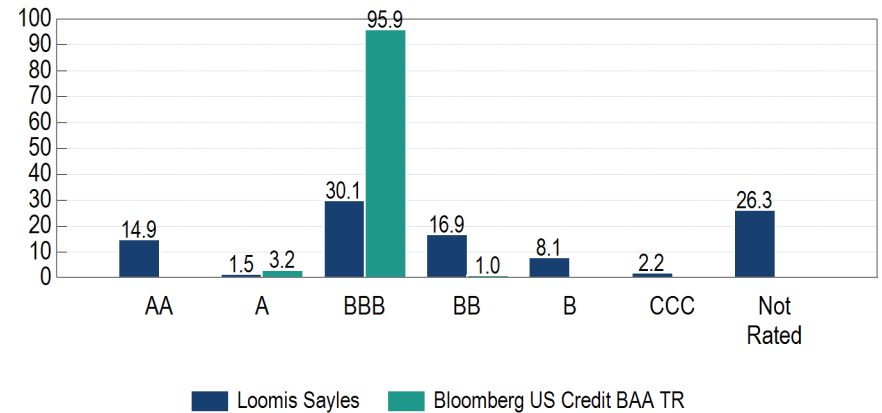


	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	7.78	5.29	8.24	-1.69	-0.53	3.79	3.47	3.76
25th Percentile	7.46	4.48	7.66	-2.97	-1.96	2.81	2.72	3.07
Median	7.14	4.03	7.00	-3.70	-2.49	2.29	2.30	2.73
75th Percentile	6.76	3.56	6.43	-4.08	-2.89	1.86	2.02	2.49
95th Percentile	5.88	3.03	5.70	-5.18	-3.50	1.56	1.74	2.24
# of Portfolios	122	122	122	121	118	114	110	101
● Loomis Sayles	7.93 (5)	5.78 (2)	8.24 (6)	-2.67 (16)	-1.56 (19)	4.09 (2)	4.07 (1)	4.34 (2)
▲ Bloomberg US Credit BAA TR	8.81 (3)	5.67 (3)	9.41 (2)	-4.10 (76)	-2.88 (75)	3.14 (20)	2.85 (22)	3.30 (16)

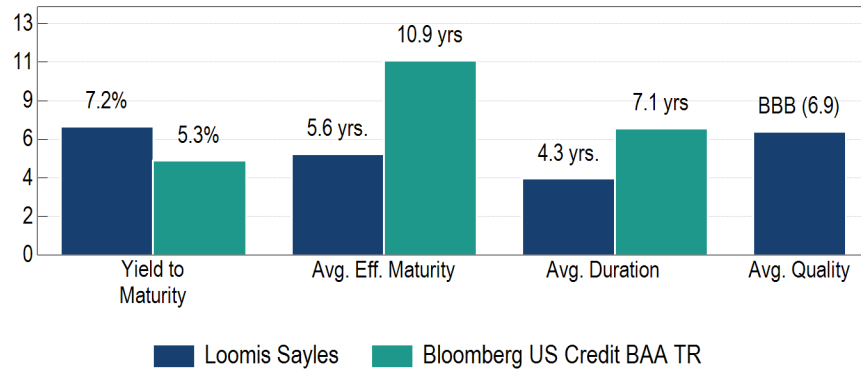
US Sector Allocation  
Loomis Sayles



Credit Quality Allocation  
Loomis Sayles



Characteristics  
Loomis Sayles



**Summary**

Account Return	7.98
Benchmark Return	8.81
Excess Return	-0.83
Sector Allocation	-0.48
Security Selection	-0.30
Trading	-0.04
Pricing Differences	-0.01
Compounding	0.00

**Details**

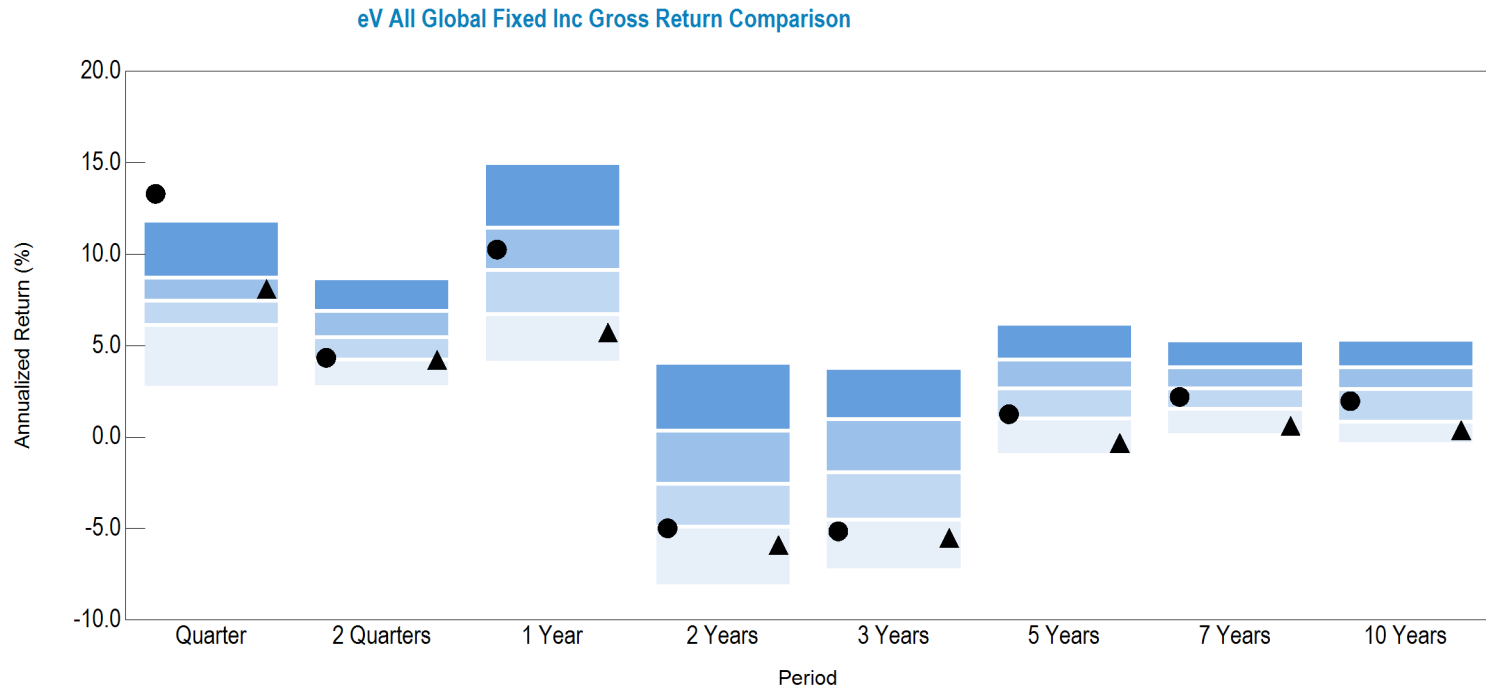
Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
Total	100.00	100.00	8.02	8.80	8.02	8.80	-0.48	-0.30	-0.78	-0.78
CASH	1.50	0.00	1.33	8.80	0.02	0.00	0.00	-0.12	-0.12	-0.12
AAA	0.84	0.00	2.40	8.80	0.05	0.00	0.00	-0.01	-0.01	-0.01
AA	14.75	0.00	1.59	8.80	2.15	0.00	0.00	0.84	0.84	0.84
A	3.18	0.02	6.10	7.20	0.17	0.00	0.04	-0.11	-0.08	-0.08
BAA	40.12	99.96	8.40	8.80	3.30	8.79	0.00	-0.16	-0.16	-0.16
BA	18.02	0.02	8.03	3.28	1.49	0.00	-0.51	0.37	-0.14	-0.14
B	9.83	0.00	4.63	8.80	0.46	0.00	0.00	-0.42	-0.42	-0.42
CAA	3.75	0.00	-0.11	8.80	-0.02	0.00	0.00	-0.35	-0.35	-0.35
CA	0.10	0.00	4.61	8.80	0.00	0.00	0.00	0.00	0.00	0.00
C	0.30	0.00	1.76	8.80	0.01	0.00	0.00	-0.02	-0.02	-0.02
NR	7.62	0.00	4.43	8.80	0.38	0.00	0.00	-0.30	-0.30	-0.30

Summary	
Account Return	7.98
Benchmark Return	8.81
Excess Return	-0.83
Sector Allocation	-0.09
Security Selection	-0.69
Trading	-0.04
Pricing Differences	-0.01
Compounding	0.00

## Details

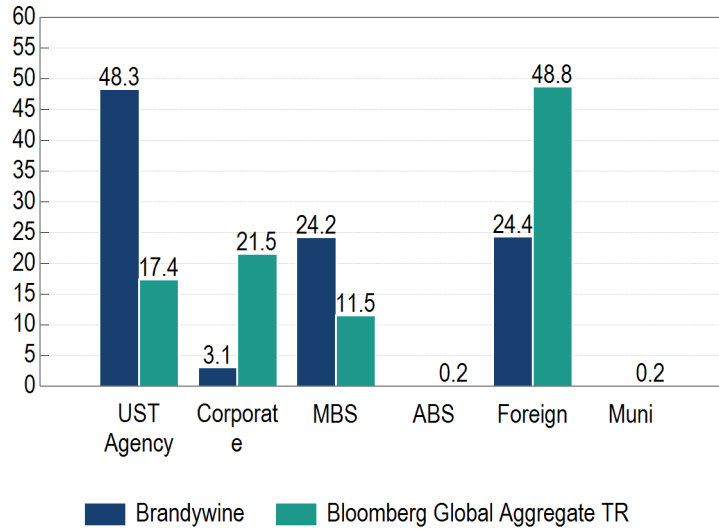
Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
Total	100.00	100.00	8.02	8.80	8.02	8.80	-0.09	-0.69	-0.78	-0.78
Less than 0.5	-24.22	0.13	0.39	2.03	0.34	0.00	1.34	0.68	2.02	2.02
0.5 - 1.0	2.05	1.13	3.21	2.22	0.07	0.03	-0.08	0.02	-0.06	-0.06
1.0 - 1.5	3.22	6.24	3.02	2.80	0.09	0.17	0.19	0.01	0.20	0.20
1.5 - 2.0	29.71	4.96	1.60	3.30	0.36	0.17	-1.06	-0.52	-1.58	-1.58
2.0 - 2.5	3.44	5.35	2.70	3.72	0.09	0.20	0.08	-0.05	0.03	0.03
2.5 - 3.0	8.96	4.84	2.90	4.55	0.24	0.23	-0.14	-0.17	-0.31	-0.31
3.0 - 3.5	5.35	5.52	5.13	5.26	0.25	0.28	0.02	-0.01	0.00	0.00
3.5 - 4.0	8.57	6.47	5.10	5.80	0.36	0.38	0.03	-0.02	0.01	0.01
4.0 - 4.5	10.91	4.48	5.67	6.47	0.69	0.30	-0.13	-0.13	-0.26	-0.26
4.5 - 5.0	5.04	3.59	7.30	7.21	0.31	0.25	0.00	-0.02	-0.02	-0.02
5.0 - 5.5	5.55	4.89	9.07	7.66	0.56	0.39	-0.01	0.09	0.08	0.08
5.5 - 6.0	15.52	3.95	6.69	8.29	1.01	0.31	-0.06	-0.26	-0.32	-0.32
6.0 - 6.5	5.71	4.16	10.00	9.10	0.53	0.37	0.01	0.05	0.05	0.05
6.5 - 7.0	5.78	7.02	10.48	9.75	0.56	0.68	-0.01	0.04	0.03	0.03
7.0 - 7.5	6.65	4.25	10.20	9.49	0.72	0.42	0.02	0.05	0.06	0.06
7.5 - 8.0	-11.41	1.40	-4.73	9.08	-0.55	0.12	-0.03	0.41	0.38	0.38
8.0 - 8.5	0.34	1.60	10.72	10.90	0.04	0.16	-0.02	0.00	-0.02	-0.02
8.5 - 9.0	0.27	1.34	8.75	10.60	0.02	0.14	-0.02	-0.01	-0.03	-0.03
9.0 - 9.5	0.21	1.25	13.96	11.61	0.04	0.15	-0.03	0.01	-0.02	-0.02

Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
9.5 - 10.0	0.05	1.21	12.03	11.59	0.00	0.12	-0.03	0.00	-0.03	-0.03
10.0 - 10.5	0.62	1.15	7.17	12.75	0.04	0.14	-0.02	-0.03	-0.05	-0.05
10.5 - 11.0	0.50	1.16	13.99	13.34	0.04	0.13	-0.03	0.00	-0.03	-0.03
11.0 - 11.5	5.78	1.91	12.75	13.30	1.23	0.19	0.43	-0.09	0.34	0.34
11.5 - 12.0	4.01	2.86	14.74	13.57	-0.53	0.30	-0.37	-0.08	-0.45	-0.45
12.0 - 12.5	0.41	3.40	13.90	14.54	0.09	0.39	-0.11	-0.01	-0.11	-0.11
12.5 - 13.0	0.34	3.47	7.94	14.09	-0.01	0.46	-0.21	0.03	-0.18	-0.18
13.0 - 13.5	0.99	3.30	13.71	15.13	0.11	0.50	-0.12	-0.06	-0.18	-0.18
13.5 - 14.0	0.40	2.62	13.04	15.29	0.11	0.49	-0.18	0.01	-0.17	-0.17
14.0 - 14.5	0.11	2.18	7.08	15.78	0.03	0.34	-0.12	-0.01	-0.13	-0.13
14.5 - 15.0	0.09	1.66	0.67	16.39	0.01	0.31	-0.15	-0.01	-0.16	-0.16
15.0 - 15.5	0.00	1.14	0.00	16.82	0.00	0.29	-0.15	0.00	-0.15	-0.15
15.5 - 16.0	0.73	0.67	-4.35	19.22	-0.01	0.19	-0.03	-0.10	-0.14	-0.14
16.0 - 16.5	2.45	0.41	10.43	17.18	0.69	0.10	0.53	-0.31	0.22	0.22
16.5 - 17.0	1.81	0.14	8.92	25.88	0.45	0.05	0.37	-0.20	0.17	0.17
17.0 - 17.5	0.04	0.08	1.69	20.20	0.05	0.02	0.02	0.00	0.01	0.01
17.5 - 18.0	0.00	0.03	0.00	14.38	0.00	0.01	0.00	0.00	0.00	0.00
18.0 - 18.5	0.00	0.03	0.00	14.57	0.00	0.01	-0.01	0.00	-0.01	-0.01
18.5 - 19.0	0.00	0.01	0.00	6.56	0.00	0.00	0.00	0.00	0.00	0.00
19.0 - 19.5	0.00	0.01	0.00	7.12	0.00	0.00	0.00	0.00	0.00	0.00
19.5 - 20.0	0.00	0.00	0.00	4.28	0.00	0.00	0.00	0.00	0.00	0.00

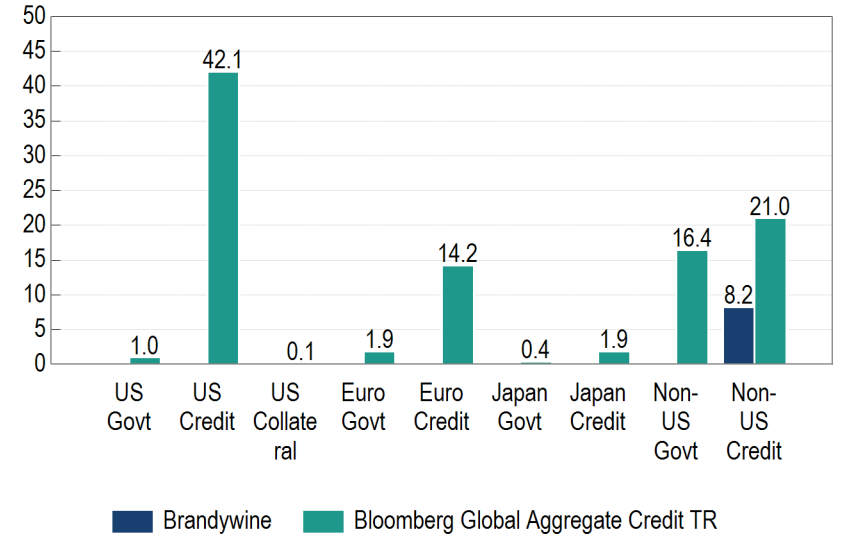


	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>Return (Rank)</b>																
5th Percentile	11.81		8.68		14.97		4.05		3.75		6.19		5.28		5.32	
25th Percentile	8.75		6.91		11.47		0.36		1.01		4.24		3.84		3.83	
Median	7.49		5.47		9.17		-2.52		-1.91		2.69		2.67		2.64	
75th Percentile	6.14		4.26		6.75		-4.86		-4.49		1.05		1.56		0.85	
95th Percentile	2.73		2.74		4.10		-8.12		-7.27		-0.96		0.14		-0.38	
# of Portfolios	542		542		542		531		517		477		438		360	
● Brandywine	13.30	(2)	4.34	(75)	10.25	(35)	-4.99	(76)	-5.15	(81)	1.25	(73)	2.19	(60)	1.97	(59)
▲ Bloomberg Global Aggregate TR	8.10	(37)	4.22	(77)	5.71	(84)	-5.91	(84)	-5.51	(85)	-0.32	(92)	0.62	(92)	0.38	(86)

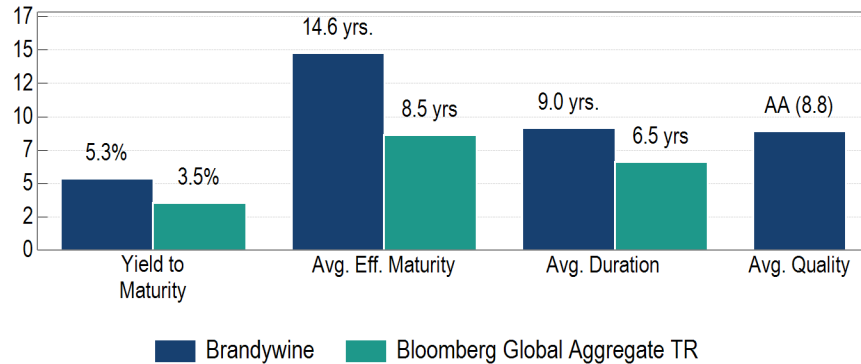
US Sector Allocation



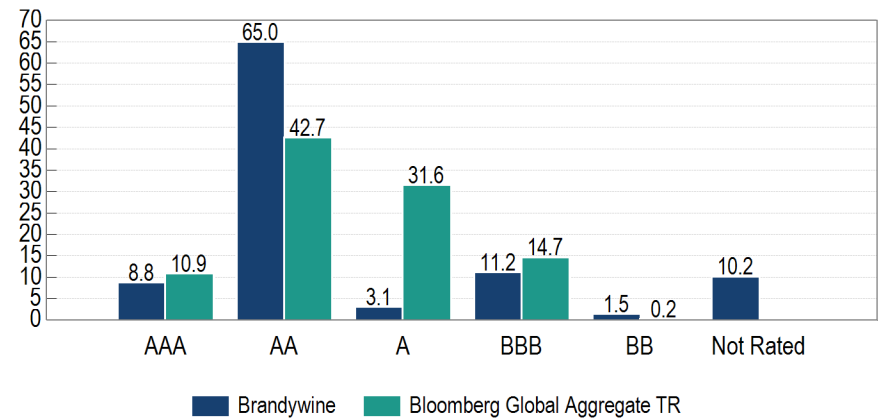
Global Sector Allocation



Characteristics  
Brandywine

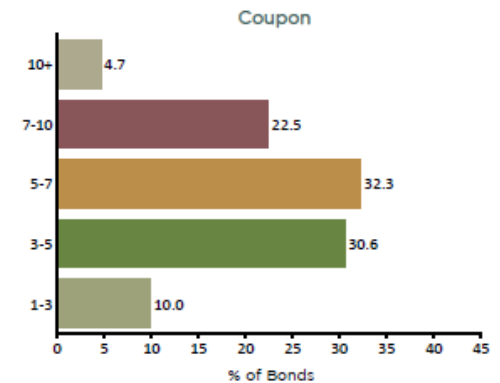
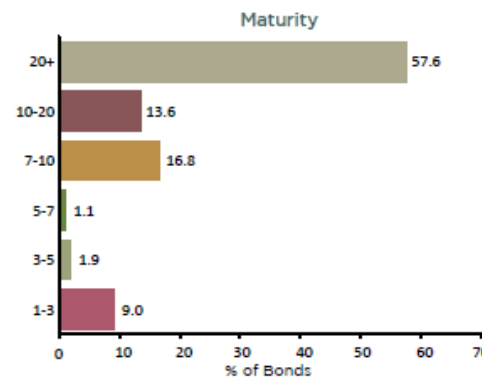


Credit Quality Allocation  
Brandywine



**Portfolio Characteristics**

	Portfolio	Primary Benchmark	Secondary Benchmark
Yield to Maturity (%)	5.47	3.18	3.51
Yield to Worst (%)	5.47	3.18	3.51
Modified Duration	9.49	7.34	6.66
Effective Duration	8.38	7.43	6.70
Average Maturity	20.54	9.70	8.53
Average Market Price	90.68	-	95.60
Average Coupon (%)	5.46	2.23	2.69
Current Yield (%)	5.20	-	2.76
# of Issues	40	1,247	29,477



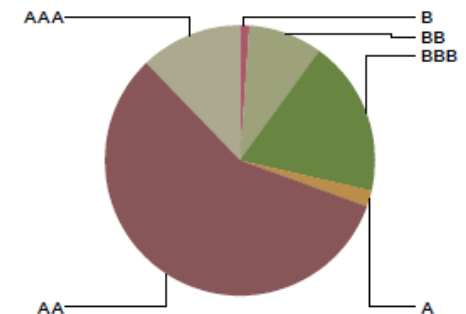
**Sector Breakdown**

	Market Value (%)	Duration Contribution (In Years)
Government Sovereign	56.38	5.99
Mortgage Backed Securities	23.54	0.86
Corporate Bond - Investment Grade	5.62	0.10
Government Owned - No Guarantee	1.00	0.09
Cash	11.26	-
Derivatives	2.20	1.34
<b>Total:</b>	<b>100.00</b>	<b>8.38</b>

**Portfolio Credit Quality (Blended Weighted Average Rating)**

Combined Rating	%	Cumulative %
AAA	12.3	12.3
AA	57.2	69.5
A	1.8	71.3
BBB	18.9	90.1
BB	8.9	99.0
B	1.0	100.0

Average Quality: AA-



PRIMARY BENCHMARK is FTSE WGBI (USD)

All Averages are US DOLLAR - weighted by the net market value. Average Market Price includes accrued interest. The "Blended Weighted Average Rating" is determined as follows: in line with the methodology used by Barclays Global indices, the middle rating from the three major NRSROs (S & P, Moody's, and Fitch) will be assigned to each security. In the event that ratings are provided by only two agencies, the lowest rating will be assigned. If only one agency assigns a rating, that rating will be applied. If the security is not rated by one of the three major agencies, U.S. treasuries and certain U.S. agencies are given the U.S. issuer rating. Sovereign treasuries are given the sovereign issuer rating. All other unrated securities are given a rating equivalent to a defaulted bond. The equivalent numerical rating is assigned to each security based on the Security Level scale. A Portfolio Level scale is applied on the weighted average calculation to round for fractional numerical ratings and then converted to an alpha weighted average rating. Cash is included and received the highest rating. Derivatives market value represents the unrealized profit/loss of all derivatives in the portfolio.



Brandywine  
Country & Currency Allocation

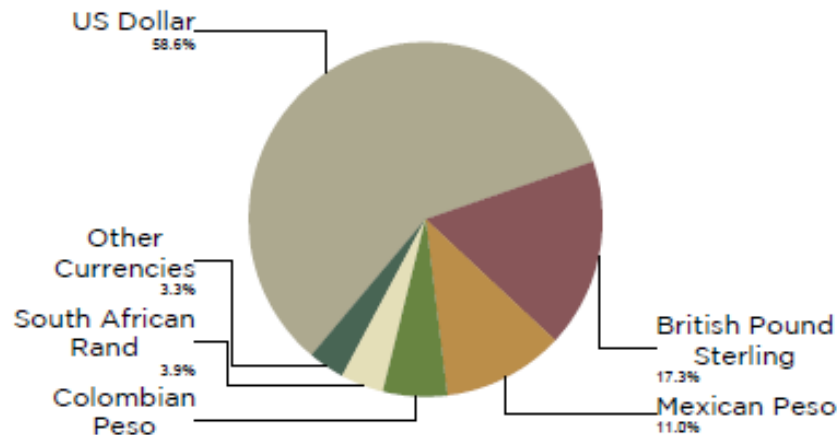
Period Ending: December 31, 2023

Country Allocation	12/31/2023			9/30/2023	
	Portfolio	Index	Active	Portfolio	Change
United States	63.97	41.39	22.57	58.97	5.00
Japan	-	11.82	(11.82)	-	-
*Mexico	11.00	0.77	10.23	14.44	(3.44)
France	-	7.38	(7.38)	-	-
*China	-	6.96	(6.96)	-	-
*Colombia	6.52	-	6.52	6.13	0.39
Italy	-	6.50	(6.50)	-	-
Germany	-	5.74	(5.74)	-	-
*South Africa	4.62	-	4.62	4.60	0.02
Spain	-	4.32	(4.32)	-	-
*Brazil	4.04	-	4.04	4.11	(0.07)
Canada	-	1.81	(1.81)	-	-
Belgium	-	1.58	(1.58)	-	-
Netherlands	-	1.33	(1.33)	-	-
Austria	-	1.05	(1.05)	-	-
Australia	1.95	1.25	0.70	2.19	(0.24)
New Zealand	0.76	0.22	0.54	0.70	0.06
Ireland	-	0.51	(0.51)	-	-
*Poland	-	0.47	(0.47)	-	-
Finland	-	0.46	(0.46)	-	-
*Malaysia	-	0.45	(0.45)	-	-
Singapore	-	0.37	(0.37)	-	-
Israel	-	0.29	(0.29)	-	-
Denmark	-	0.25	(0.25)	-	-
United Kingdom	4.94	4.73	0.22	9.79	(4.85)
Sweden	-	0.19	(0.19)	-	-
Norway	-	0.16	(0.16)	-	-
Russian Federation	-	-	-	0.19	(0.19)
Derivative P/L	2.20	-	2.20	(1.11)	3.31
<b>Total:</b>	<b>100.00</b>	<b>100.00</b>	<b>-</b>	<b>100.00</b>	<b>-</b>

Currency Allocation	12/31/2023			9/30/2023	
	Portfolio	Index	Active	Portfolio	Change
US Dollar	15.73	41.39	(25.67)	30.37	(14.64)
Euro	7.93	28.88	(20.95)	11.66	(3.73)
Norwegian Krone	9.87	0.16	9.71	7.40	2.46
Japanese Yen	21.36	11.82	9.55	23.35	(1.99)
Australian Dollar	10.00	1.25	8.75	4.88	5.12
*Mexican Peso	7.97	0.77	7.20	5.85	2.12
*Chinese Yuan Renminbi	-	6.96	(6.96)	-	-
*Colombian Peso	5.21	-	5.21	2.33	2.88
*Chilean Peso	4.51	-	4.51	-	4.51
*Brazilian Real	4.04	-	4.04	2.89	1.15
*Indian Rupee	2.84	-	2.84	3.19	(0.35)
*Malaysian Ringgit	2.91	0.45	2.46	3.19	(0.29)
New Zealand Dollar	2.20	0.22	1.98	0.22	1.97
Canadian Dollar	-	1.81	(1.81)	-	-
*Polish Zloty	-	0.47	(0.47)	-	-
*South African Rand	0.39	-	0.39	4.04	(3.65)
Singapore Dollar	-	0.37	(0.37)	-	-
British Pound Sterling	5.06	4.73	0.33	0.43	4.63
Israeli Shekel	-	0.29	(0.29)	-	-
Danish Krone	-	0.25	(0.25)	-	-
Swedish Krona	-	0.19	(0.19)	-	-
Russian Ruble	-	-	-	0.19	(0.19)
<b>Total:</b>	<b>100.00</b>	<b>100.00</b>	<b>-</b>	<b>100.00</b>	<b>-</b>

\*Emerging Markets are defined as any country and currency included in the JP Morgan Government Bond Index-Emerging Market or the JP Morgan Emerging Market Bond Index Global indices.

**Source of Portfolio Duration by Currency Denomination**



**Effective Duration Contribution by Currency (In Years)**

Currency	12/31/2023				9/30/2023	
	0-3	>3-10	>10-20	>20+	Total	Total Change
US Dollar	0.10	1.78	-	3.03	4.91	(0.50)
British Pound Sterling	-	0.43	-	1.02	1.45	(0.37)
*Mexican Peso	-	-	0.50	0.42	0.92	(0.11)
*Colombian Peso	-	0.08	0.34	0.06	0.49	0.06
*South African Rand	-	-	0.13	0.20	0.33	0.00
*Brazilian Real	-	0.15	-	-	0.15	(0.01)
New Zealand Dollar	-	-	-	0.13	0.13	0.02
Russian Ruble	-	-	-	-	-	(0.01)
<b>Total</b>	<b>0.10</b>	<b>2.44</b>	<b>0.97</b>	<b>4.86</b>	<b>8.38</b>	<b>(0.92)</b>

**Effective Duration Contribution by Country vs. FTSE WGBI (USD)**

Country	12/31/2023				Total	Index	9/30/2023	
	0-3	>3-10	>10-20	>20+			Active	Total Change
United States	0.08	1.78	-	2.94	4.80	2.55	2.25	(0.50)
Japan	-	-	-	-	-	1.49	(1.49)	-
United Kingdom	-	0.43	-	1.02	1.45	0.47	0.98	(0.37)
*Mexico	-	-	0.50	0.51	1.01	0.04	0.97	(0.11)
France	-	-	-	-	-	0.56	(0.56)	-
*Colombia	-	0.08	0.34	0.06	0.49	-	0.49	0.06
Germany	-	-	-	-	-	0.43	(0.43)	-
Italy	-	-	-	-	-	0.42	(0.42)	-
*China	-	-	-	-	-	0.40	(0.40)	-
*South Africa	-	-	0.13	0.20	0.33	-	0.33	0.00
Spain	-	-	-	-	-	0.30	(0.30)	-
*Brazil	-	0.15	-	-	0.15	-	0.15	(0.01)
Belgium	-	-	-	-	-	0.14	(0.14)	-
Canada	-	-	-	-	-	0.13	(0.13)	-
New Zealand	-	-	-	0.13	0.13	0.01	0.12	0.02
Netherlands	-	-	-	-	-	0.11	(0.11)	-
Austria	-	-	-	-	-	0.09	(0.09)	-
Australia	0.02	-	-	-	0.02	0.09	(0.06)	(0.01)
Ireland	-	-	-	-	-	0.04	(0.04)	-
Finland	-	-	-	-	-	0.04	(0.04)	-
*Malaysia	-	-	-	-	-	0.03	(0.03)	-
Singapore	-	-	-	-	-	0.03	(0.03)	-
Denmark	-	-	-	-	-	0.02	(0.02)	-
*Poland	-	-	-	-	-	0.02	(0.02)	-
Israel	-	-	-	-	-	0.02	(0.02)	-
Sweden	-	-	-	-	-	0.01	(0.01)	-
Norway	-	-	-	-	-	0.01	(0.01)	-
Russian Federation	-	-	-	-	-	-	-	(0.01)
<b>Total</b>	<b>0.10</b>	<b>2.44</b>	<b>0.97</b>	<b>4.86</b>	<b>8.38</b>	<b>7.43</b>	<b>0.95</b>	<b>(0.92)</b>

\*Emerging Markets are defined as any country and currency included in the JP Morgan Government Bond Index-Emerging Market or the JP Morgan Emerging Market Bond Index Global indices.

Total Plan Policy Index	As of:																
	7/1/21	1/1/21	7/1/19	10/1/17	7/1/16	1/1/13	10/1/11	4/1/11	1/1/09	7/1/06	4/1/03	6/1/01	10/1/97	1/1/96	10/1/94	1/1/92	1/1/80
91-day US T-Bill													1%	1%	1%	1%	2%
Bloomberg US Aggregate	9%	11.40%	11.40%	11.25%	11.25%	11.25%	15%	18%	18%	21%	23%	26%	33%	29%	32%	37%	30%
Bloomberg US High Yield	1.2%	1.6%	1.6%	1.5%	1.5%	1.5%	2.0%	2.4%	2.4%	3%	3%	3%					
Bloomberg Commodity	0.3%	0.25%	0.75%	0.75%	0.75%												
FTSE WGBI ex US	3.8%	3.00%	3.00%	2.25%	2.25%	2.25%	3%	3.6%	3.6%	4%	4%	5%					
CPI-U +3% (RR)						5.00%	5%										
MSCI ACWI ex US									23%	22%	22%	22%					
MSCI ACWI ex US IMI	24%	25%	25%	26%	26%	27%	25%	23%									
MSCI EAFE													10%	10%	10%	10%	
MSCI Emg Mkts Free ex Malaysia													3%				
MSCI World net																	10%
NCREIF								6%	6%	9%	9%	9%					
NCREIF ODCE	9%	8%	8%	8%	8%	6%	6%										
Russell 3000	24%	25%	25%	28%	28%	32%	34%	37%	37%	41%	39%	35%	42%	49%	47%	40%	
HFRI FoF Composite	8%	9%	9%	9%													
Refinitiv CJA Global All Private Equity 1Q Lagged	11%	8%	8%	9%													
Russell 3000 +1% (PE)					18.00%	15.00%	10%										
Russell 3000 +1.5% (PE)								10%	10%								
Russell 3000 +4% (AI)													2%				
S&P 500																	55%
S&P Global Infrastructure	3.6%	3%	1.75%	1.75%	1.75%												
S&P Global Large Mid Commodity & Resource	2.1%	1.75%	2.50%	2.50%	2.50%												
S&P/LSTA Leveraged Loan+1.75%	4%	4%	4%														
Wilshire RE													9%	11%	10%	12%	3%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

US Equity Benchmark	As of:	
	1/1/92	1/1/80
Russell 3000	100%	0%
S&P 500	0%	100%
	<b>100.0%</b>	<b>100.0%</b>

International Equity Benchmark	As of:				
	4/1/11	6/1/01	10/1/97	1/1/92	1/1/80
MSCI ACWI ex US		100%			
MSCI ACWI ex US IMI	100%				
MSCI EAFE			77%	100%	
MSCI Emg Mkts Free ex Malaysia			23%		
MSCI World net					100%
	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Fixed Income Benchmark	As of:			
	7/1/21	6/1/19	6/1/01	1/1/80
Bloomberg US Aggregate	75.00%	71.25%	75%	100%
Bloomberg US High Yield	10.00%	10.00%	10%	
FTSE WGBI ex US	15.00%	18.75%	15%	
	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Absolute Return Benchmark	As of:	
	10/1/17	10/1/11
HFRI Fund of Funds Composite Index	100%	
LIBOR 1M +4%		100%
	<b>100.0%</b>	<b>100.0%</b>

Private Equity Benchmark	As of:	
	10/1/17	12/1/08
Refinitiv CJA Global All Private Equity 1Q Lagged	100%	
Russell 3000 +2.5%		100%
	<b>100.0%</b>	<b>100.0%</b>

Real Assets Benchmark	As of:		
	1/1/21	7/1/16	10/1/11
CPI-U +3%			100%
Bloomberg Commodity	5%	15%	
S&P Global Infrastructure	60%	35%	
S&P Global Large Mid Commodity & Resource	35%	50%	
	<b>100.00%</b>	<b>100.00%</b>	<b>100.0%</b>

Private Credit Benchmark	As of:
	11/1/19
S&P/LTSA Leveraged Loan Index +1.75%	100%
	<b>100.0%</b>

Real Estate Blend	As of:		
	10/1/11	6/1/01	4/1/86
NCREIF ODCE	100%		
NCREIF Property		100%	
Wilshire RE			100%
	<b>0.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Bivium	As of:	
	9/1/23	11/1/18
MSCI World ex USA Gross	100%	
MSCI ACWI ex USA Gross		100%
	<b>0.0%</b>	<b>100.0%</b>

# Glossary

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**Allocation Effect:** An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

**Alpha:** The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as:  $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$ .

**Benchmark R-squared:** Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

**Beta:** A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

**Book-to-Market:** The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

**Capture Ratio:** A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

**Correlation:** A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

**Excess Return:** A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

**Information Ratio:** A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: excess return divided by tracking error.

**Interaction Effect:** An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

**Portfolio Turnover:** The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

**Price-to-Earnings Ratio (P/E):** Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

**R-Squared:** Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

**Selection Effect:** An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

**Sharpe Ratio:** A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as:  $\text{Portfolio Excess Return} / \text{Portfolio Standard Deviation}$ .

**Sortino Ratio:** Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

**Standard Deviation:** A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

**Style Analysis:** A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

**Style Map:** A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

## Disclaimer

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**ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

475-14th Street, Suite 1000, Oakland, CA 94612 800/838-1932 510/628-3000 fax: 510/268-9574 [www.acera.org](http://www.acera.org)

TO: Members of the Investment Committee

FROM: Betty Tse, Chief Investment Officer 

DATE: May 1, 2024

SUBJECT: Education Session: Presentation of Asset Liability Study Findings and Discussion of Possible Asset Allocation Mixes

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In preparation of the subject matter and per the Investment Committee Chair's suggestion, please find the following two items for your reference from the April 18, 2024 Board Meeting Agenda under New Business:

1. Education Session: Asset Liability Study Overview and Methodology. Kindly click BoardEffect link which will direct you to download the presentation material  
<https://acera.boardeffect.com/downloads/vfile/19143341>
2. NEPC's Consultant Sam Austin's audio clip/oral presentation at the April 18 Board Meeting. Kindly click BoardEffect link which will direct you to download, click the file and access the audio through a media player <https://acera.boardeffect.com/downloads/vfile/19083455>

In addition, and per the Board Chair's suggestion, Staff has saved all of NEPC's presentation materials (oral and written) related to the Total Fund's Asset Liability Study and its Asset Allocation Review in BoardEffect for your perusal. We will continue to save these materials in BoardEffect until NEPC has completed its educational sessions on these two topics. Link to the BoardEffect library  
<https://acera.boardeffect.com/workrooms/99021/resources/1183168>

Please let us know if you have any questions.





# ASSET-LIABILITY STUDY

ALAMEDA COUNTY EMPLOYEES'  
RETIREMENT ASSOCIATION

MAY 1, 2024

Sam Austin, Partner

Robert Goldthorpe, ASA, Investment Director





# EXECUTIVE SUMMARY

## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

- **ACERA remains in a healthy funded position and is on track to achieve full funding in the next 10-15 years**
  - December 31, 2022 Segal reported funded status:
    - Valuation Basis: 86.9%
  - December 31, 2023 NEPC estimated funded status:
    - Valuation Basis: 87.4%
- **ACERA has taken steps to reduce overall plan risk while improving funded status over the last decade**
  - Steadily lowering the investment return assumption in-line with public fund median from 8.00% in 2008 to 7.00% in 2020
  - Improves financial stability due to less reliance on investment returns and reduced potential of future funded status and contribution volatility
  - Plan has improved funded status over this same time horizon from 84% in 2008 to 87% in 2023
- **Market environment has shifted significantly**
  - Economic resiliency in the U.S. despite higher interest rates and above target inflation
  - From low rates/low growth/low expected returns...
  - To higher inflation, higher growth, and tightening monetary policy
- ***NEPC is recommending incremental changes to the policy mix***
  - Hold public equity target at 48%, but shift region and market cap exposures to be closer to MSCI ACWI IMI
  - Increase Private Debt and Multi-Sector Credit, eliminate Global Gov Bond
  - Restructure Core Fixed Income and Real Assets allocations
  - Results are portfolios with marginally higher expected returns and Sharpe ratios, with slightly higher asset volatility

Notes: December 31, 2022 Segal reported funded status based on December 31, 2022 valuation report produced by Segal; December 31, 2023 NEPC estimated funded status based on roll-forward of December 31, 2022 valuation incorporating actual investment return experience during 2023, planned demographic and economic assumption changes assumed to take effect as of December 31, 2022 as well as recent plan changes approved by the Board



# PURPOSE & METHODOLOGY OF AI STUDY

# PURPOSE OF ASSET-LIABILITY STUDY

- **Review the current/projected financial status of the plan over long-term horizon**
- **Determine appropriateness of current asset allocation with consideration of:**
  - Expected progress of liabilities and cash flows/liquidity needs
  - Path of funded status
- **Test sensitivity of plan (Assets and Liabilities) to various range of outcomes**
  - Market performance across range of economic environments
  - Contribution volatility
  - Range of liquidity environments
- **Consider appropriate asset mixes and expected return on assets**
  - Assess return target against tradeoff of volatility/range of outcomes
  - Analyze inclusion/exclusion of various asset classes/strategies

# FIRST PRINCIPLES

- **The funding of pension benefits is made possible through the combination of member and employer contributions and returns on investment**
- **The long-term expected return on assets drives the selection of an appropriate discount rate for public pension liabilities**
- **Expected return on assets is based on assumptions – actual experience will likely depart from those assumptions**
- **Long-term nature of pension obligations positions well-funded pension plans to take advantage of long-term investment opportunities**
- **It is critical and healthy for pension trustees to regularly review fundamental characteristics of the pension plan:**
  - Risk tolerance
  - Viability of long-term investment return
- **Risk is multi-dimensional and should be considered from different perspectives – Risk is not just volatility!**
  - Volatility, potential for drawdowns, illiquidity, exposure to economic factors, etc.
- **Return expectations are generally lower than historical returns, forcing many investors to reconsider both return expectations and appropriate levels of risk**

# BALANCING THE PENSION EQUATION

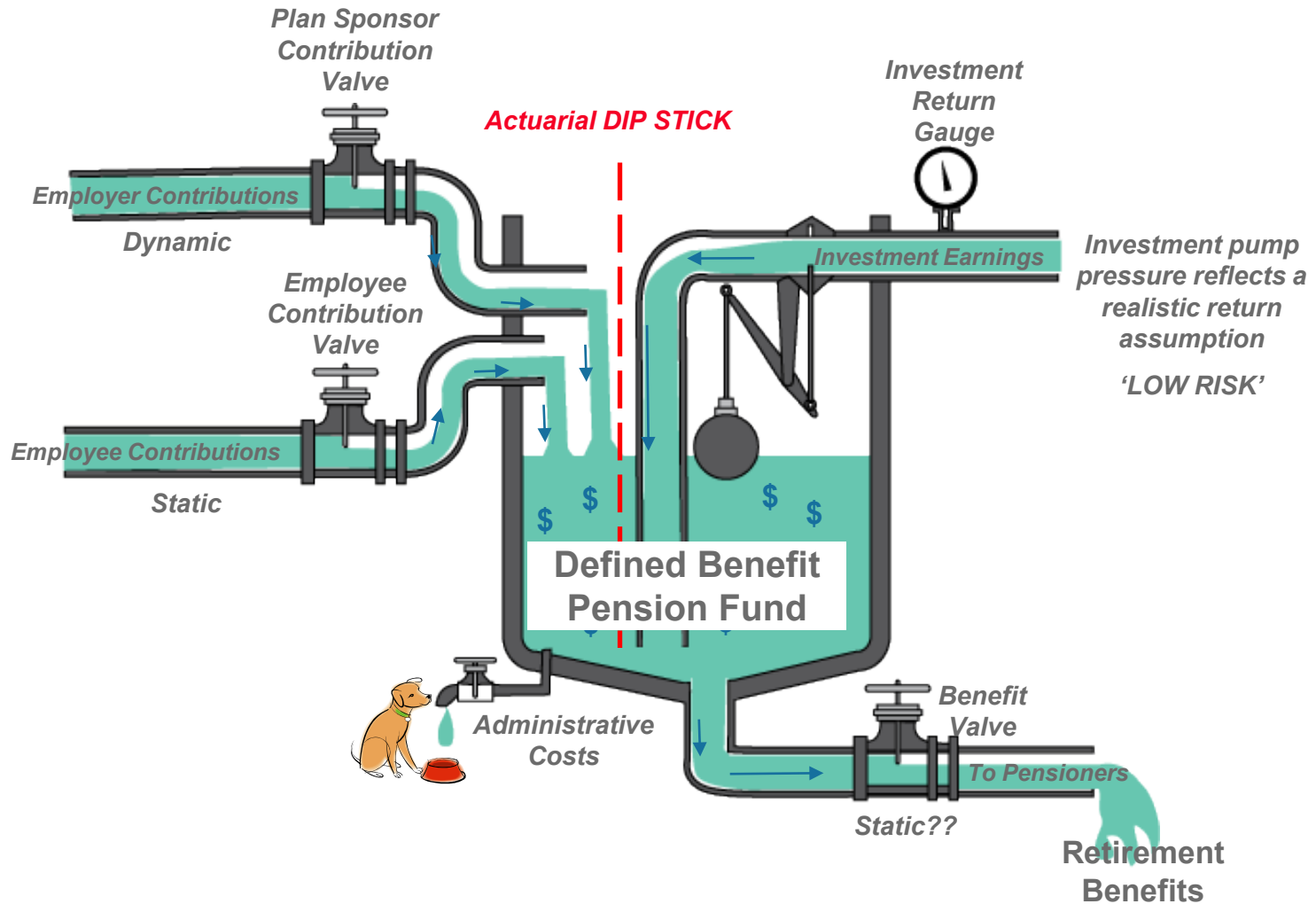
- All the complexities of pension plans boil down to the classic equation:

$$C + I = B + E$$

- Contributions (C), Investment Earnings (I), Benefits (B), and Expenses (E)

Plan Factor	Flexibility/Constraint
(C) Contributions	ACERA contribution model offers adequate flexibility to balance equation: <ul style="list-style-type: none"> <li>Dynamic employer contribution rates</li> <li>Layered amortizations of annual gains/loss designed to fully fund the plan within 20 years</li> <li>Recommended employer and employee contribution obligations are assumed to be made each year</li> </ul>
(I) Investment Return	Investment pool can be restructured to maintain target return <ul style="list-style-type: none"> <li>Increase risk and/or portfolio efficiency</li> <li>Expected return (and risk level) could be scaled down over time as funded status improves allowing for maintenance of long-term plan stability</li> <li>Low annual returns (below expectations) require adjusting other levers               <ul style="list-style-type: none"> <li>Higher Contributions</li> <li>Higher Investment Returns in later years</li> </ul> </li> </ul>
(B + E) Benefits & Expenses	Lower "C" and/or "I" can be offset with an equivalent reduction in outflows: <ul style="list-style-type: none"> <li>Vested benefits generally cannot be reduced</li> <li>Non-vested benefits can be reduced, but challenging on many levels</li> <li>Political, paternal, generational equity, etc.</li> </ul>

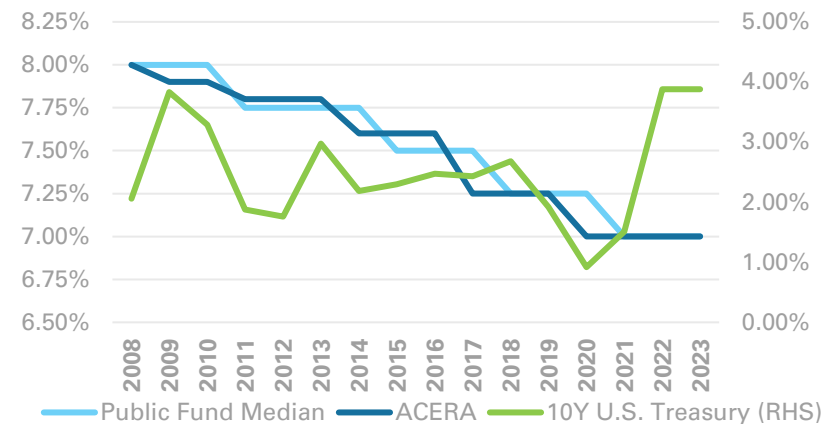
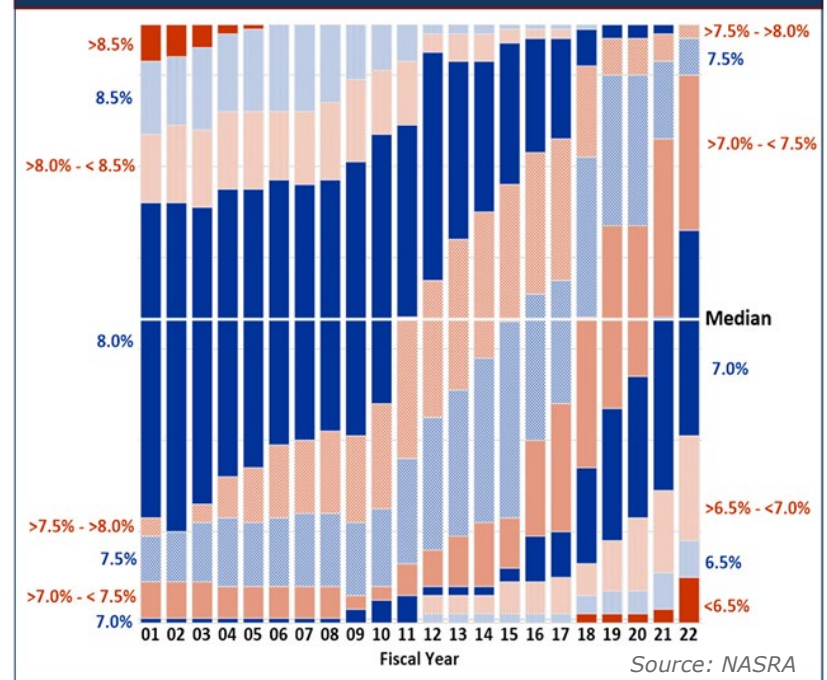
# ➤ ILLUSTRATION: $C+I=B+E$



# EXPECTED RETURN

- **Expected return and liability discount rate are closely linked for public pension plans**
  - Corporate DB: stringent regulations
  - Going-concern of government entities has historically provided comfort in public plans taking longer term approach
  - Expected returns are forward-looking
- **Historical market environment has led to downward trend in EROAs for public pensions**
  - Median 2023 EROA = 7.0%
- **Low expected returns put pressure on assumptions and outcomes but...**
  - Market re-pricing and higher inflation may push return expectations higher looking forward

Figure 4: Change in Distribution of Public Pension Investment Return Assumptions, FY 01 to FY 22







# CURRENT POLICY





# PLAN CHARACTERISTICS

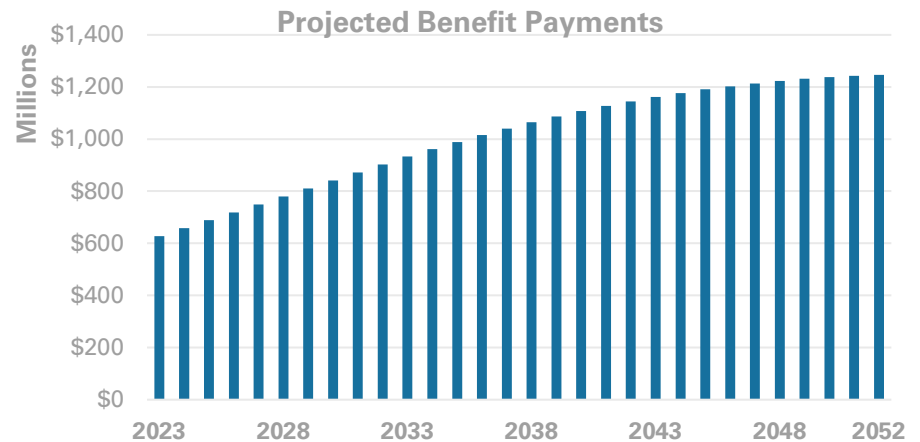
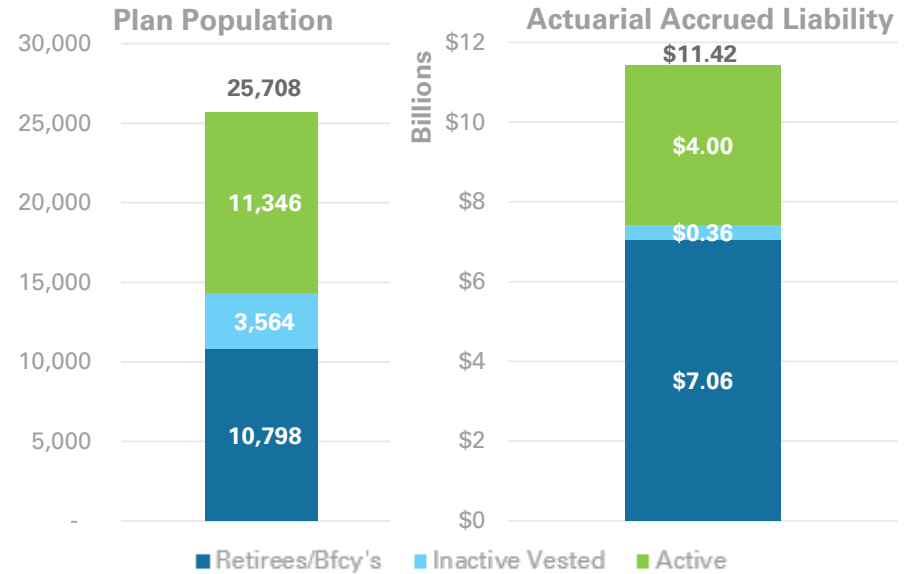
## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

- **Employer contributions rates remain elevated in order to close the gap to full funding within the next ~10 years**

  - Timeline will depend heavily on investment return experience
  
- **Once full funding is achieved, employer contribution rates will return to ~10% of payroll**

  - Employers and member share roughly 50/50 of benefit accrual costs
  
- **Current Policy allocation is expected to achieve the investment return assumption set by the Board**

  - 7.00% investment return assumption
  - 10-yr expected return of 6.2%
  - 30-yr expected return of 7.5%



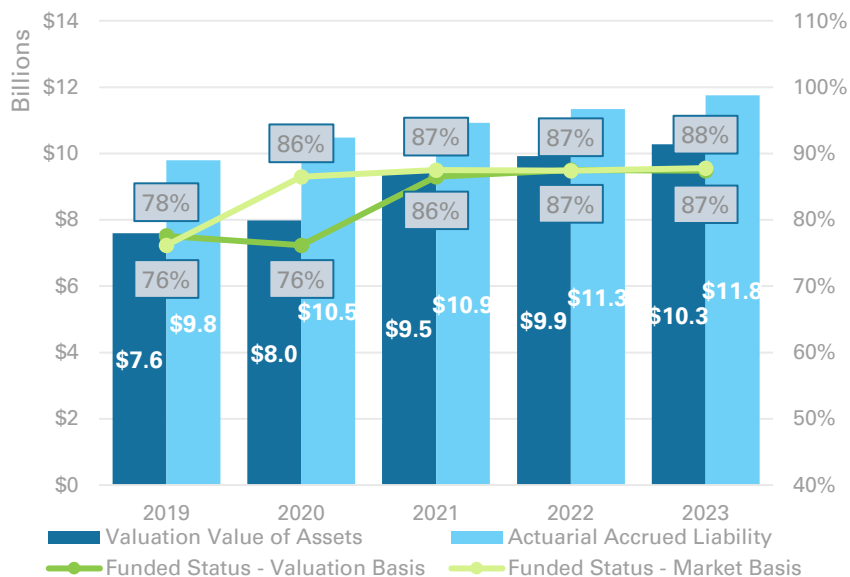
Notes: Participant count, liabilities, and projected benefit payments as of December 21, 2022; expected returns based on NEPC's 12/31/2023 capital market assumptions; projected benefit payments reflect only pension benefits



# ASSET-LIABILITY PROFILE

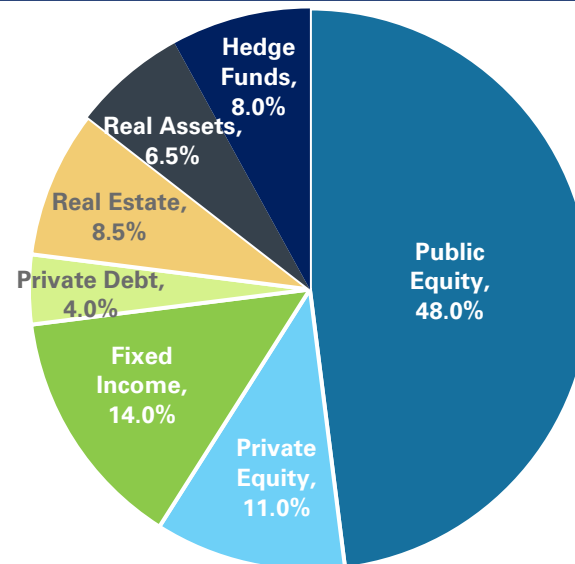
## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

### Funded Status History



<b>Investment Return Assumption/Liability Discount Rate</b>	<b>7.00%</b>
<b>Funded Ratio – Actuarial Basis</b>	<b>87.4%</b>
<b>Funded Ratio – Market Basis</b>	<b>87.8%</b>

### Asset Allocation

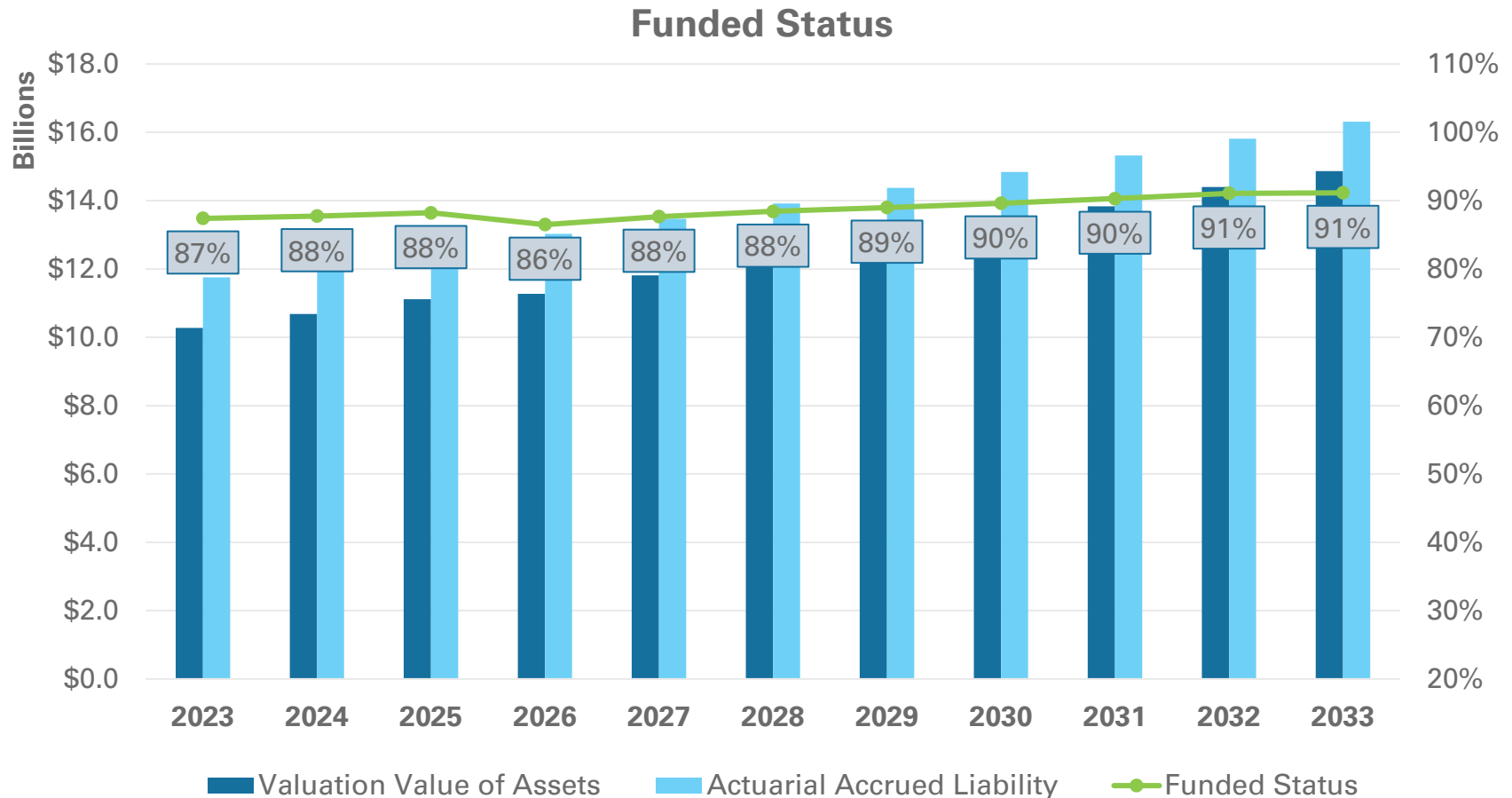


<b>10-Year Expected Return</b>	<b>6.2%</b>
<b>30-Year Expected Return</b>	<b>7.5%</b>
<b>Asset Volatility</b>	<b>14.2%</b>

Notes: 2022 actuarial accrued liability and funded status reflect approved demographic and economic assumption changes as well as recent plan changes assumed to take effect as of 12/31/2022; portfolio mean/variance assumptions based on NEPC's 12/31/2023 capital market assumptions for the Current Policy allocation

# 10-YEAR FUNDED STATUS PROJECTION

## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

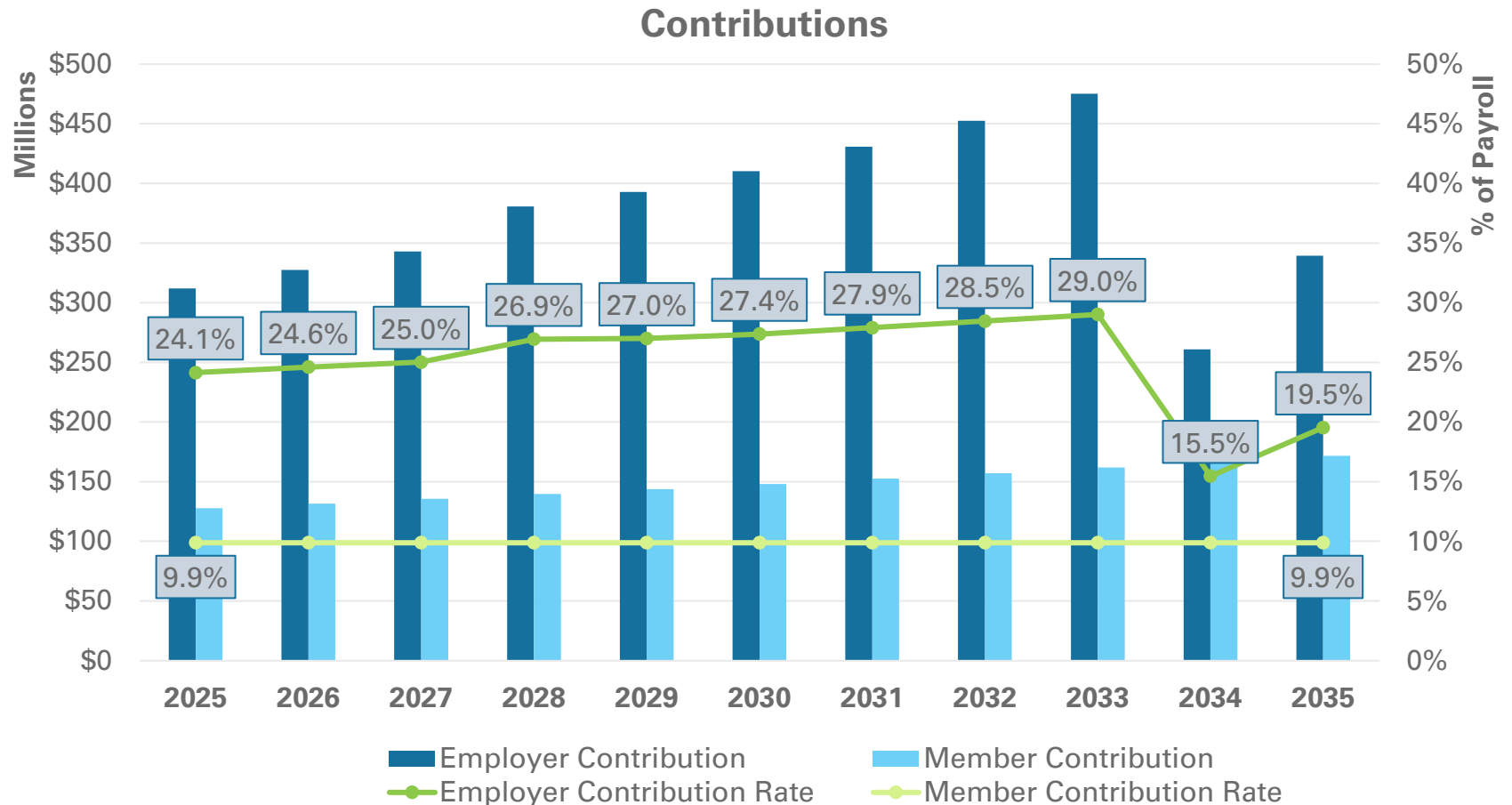


Notes: As of December 31; reflects Current Policy 10-year expected return of 6.2% per annum



# 10-YEAR CONTRIBUTION PROJECTION

## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

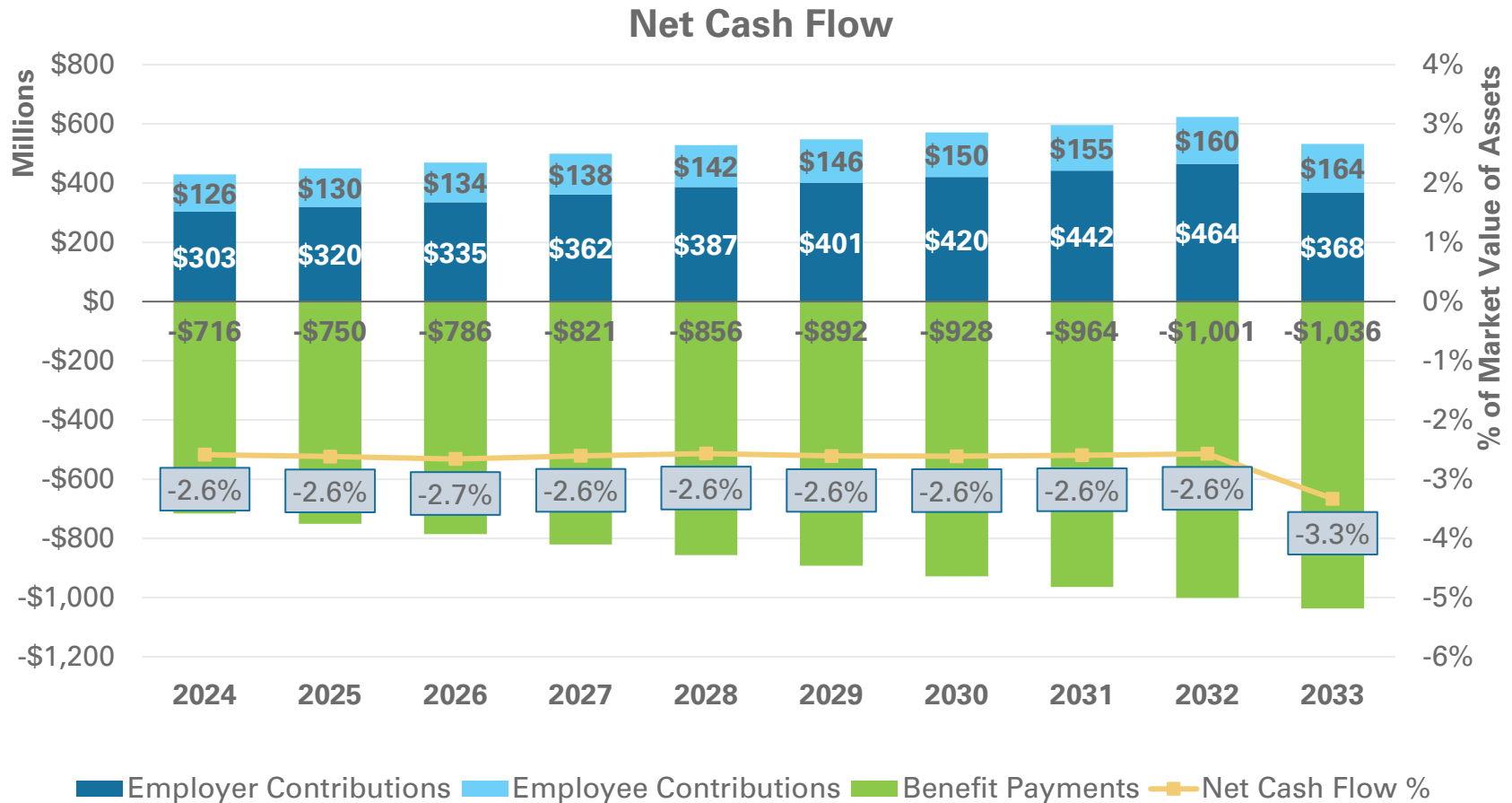


Notes: For the fiscal year ending June 30; reflects Current Policy 10-year expected return of 6.2% per annum thereafter; contribution rates represent aggregate rate across all member groups



# 10-YEAR NET CASH FLOW PROJECTION

## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION



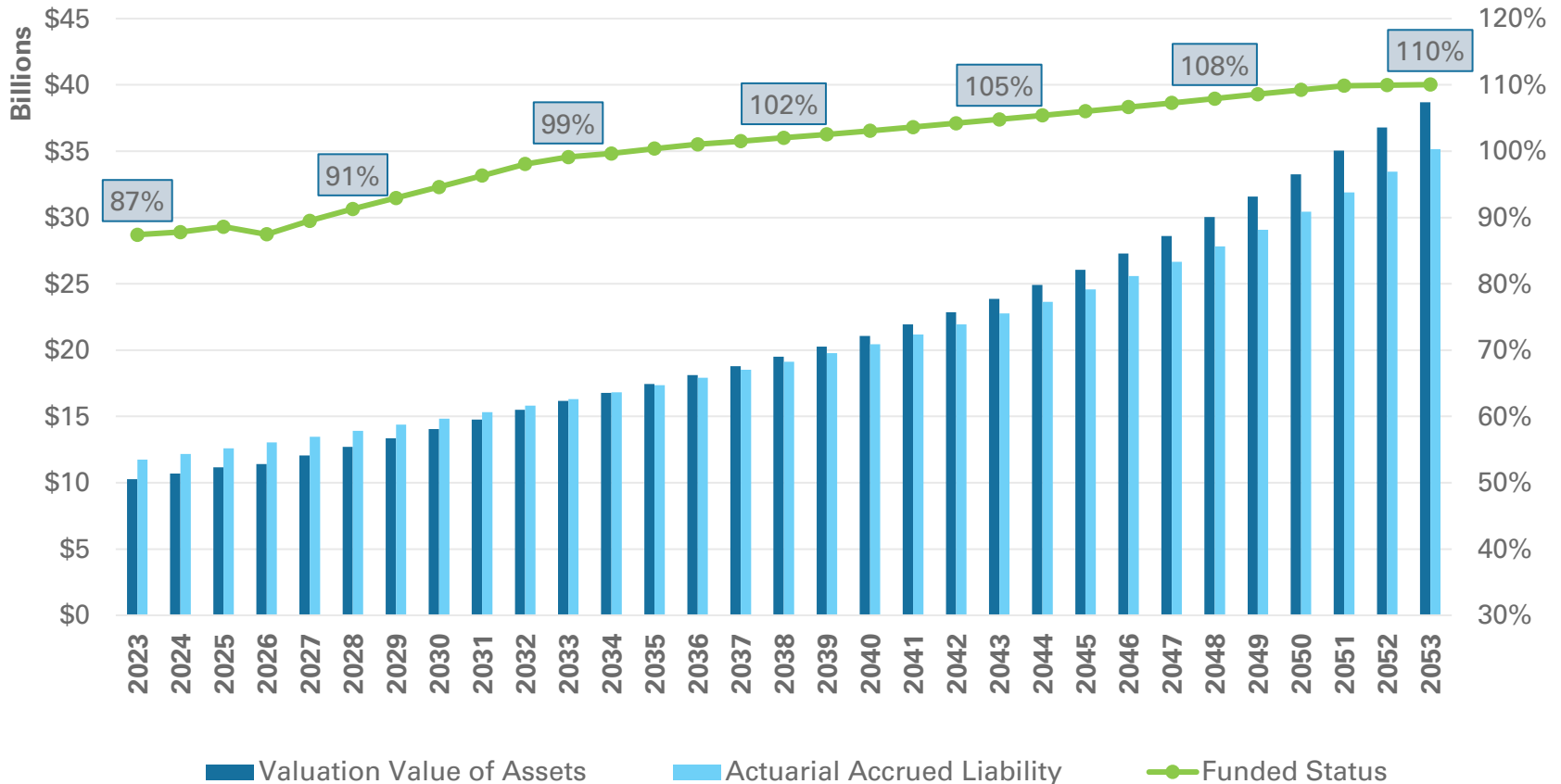
Notes: For the year ending December 31; reflects Current Policy 10-year expected return of 6.2% per annum



# 30-YEAR FUNDED STATUS PROJECTION

## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

### Funded Status



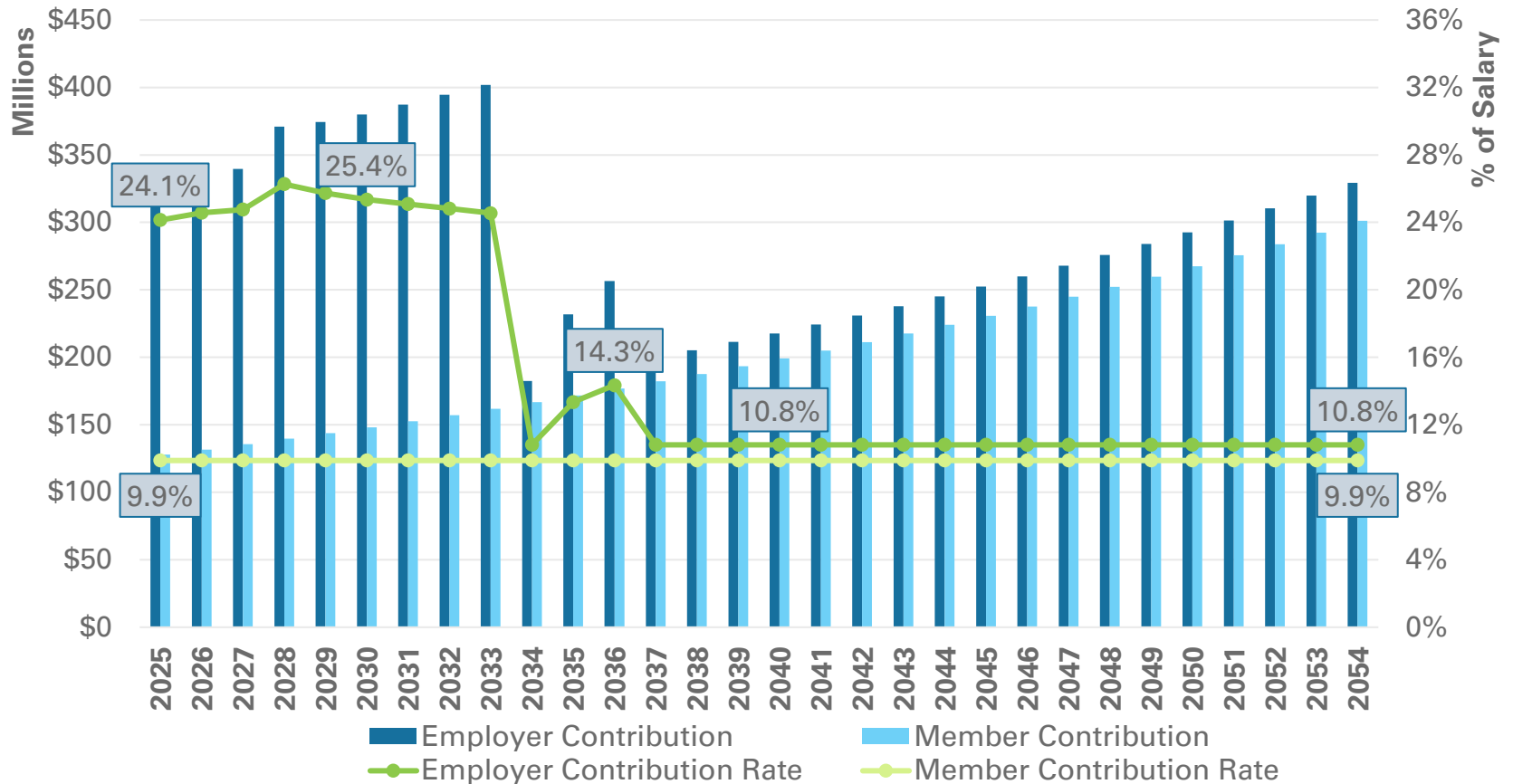
Notes: As of December 31; reflects Current Policy 30-year expected return of 7.5% per annum



# 30-YEAR CONTRIBUTION PROJECTION

## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

### Contributions

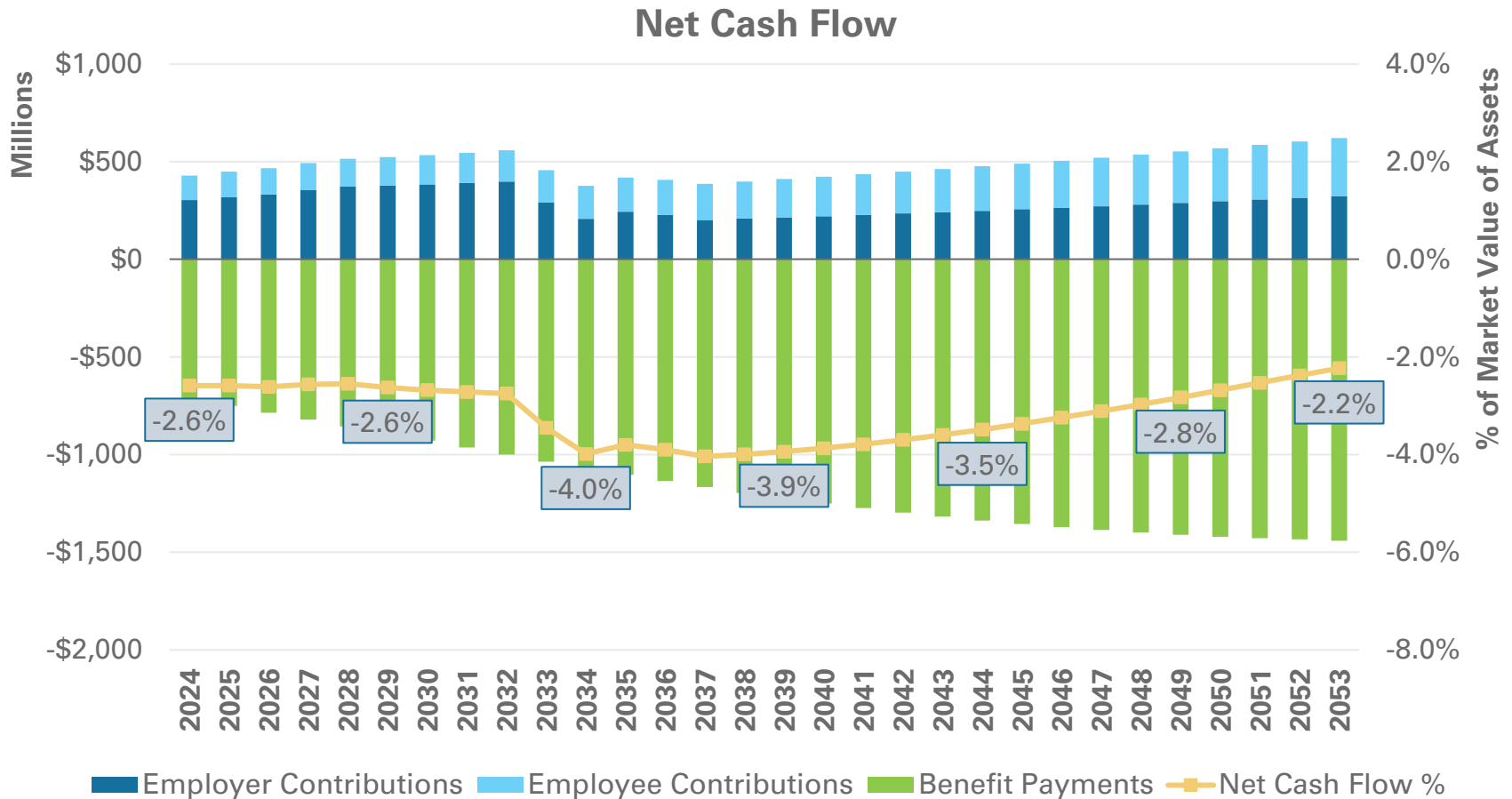


Notes: For the fiscal year ending June 30; reflects Current Policy 30-year expected return of 7.5% per annum thereafter; contribution rates represent aggregate rate across all member groups



# 30-YEAR NET CASH FLOW PROJECTION

## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION



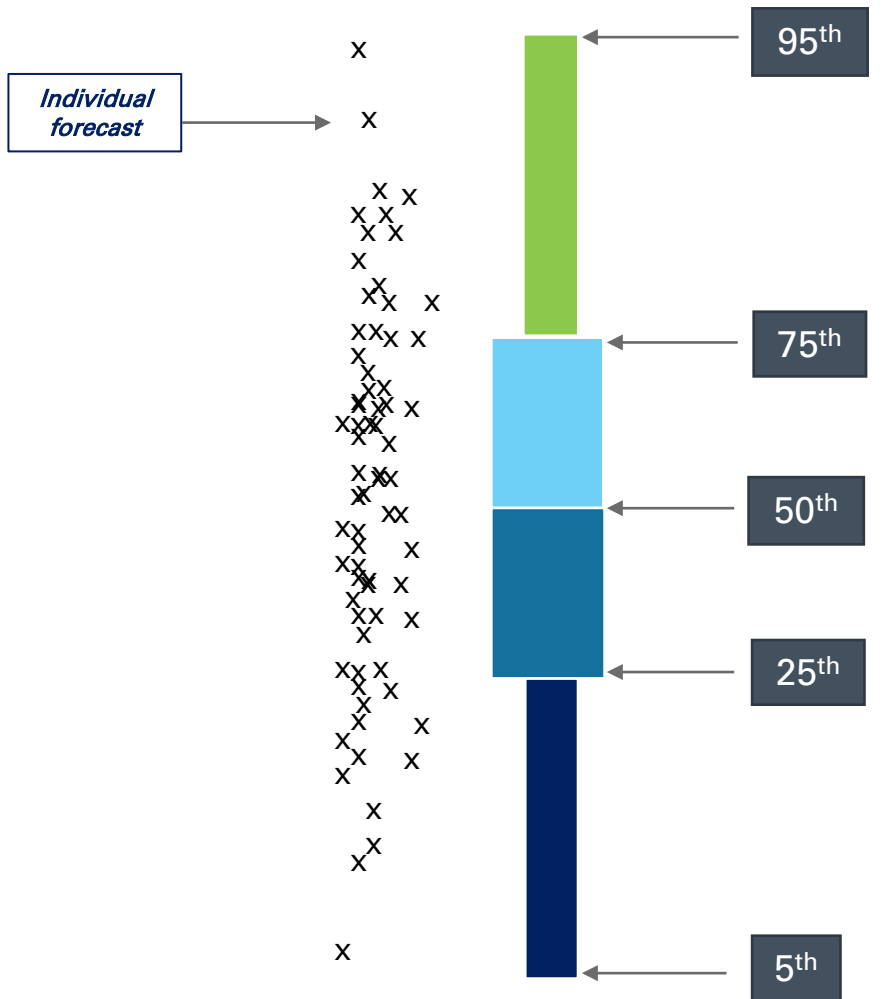
Notes: For the year ending December 31; reflects Current Policy 30-year expected return of 7.5% per annum





# INTERPRETING STOCHASTIC RESULTS

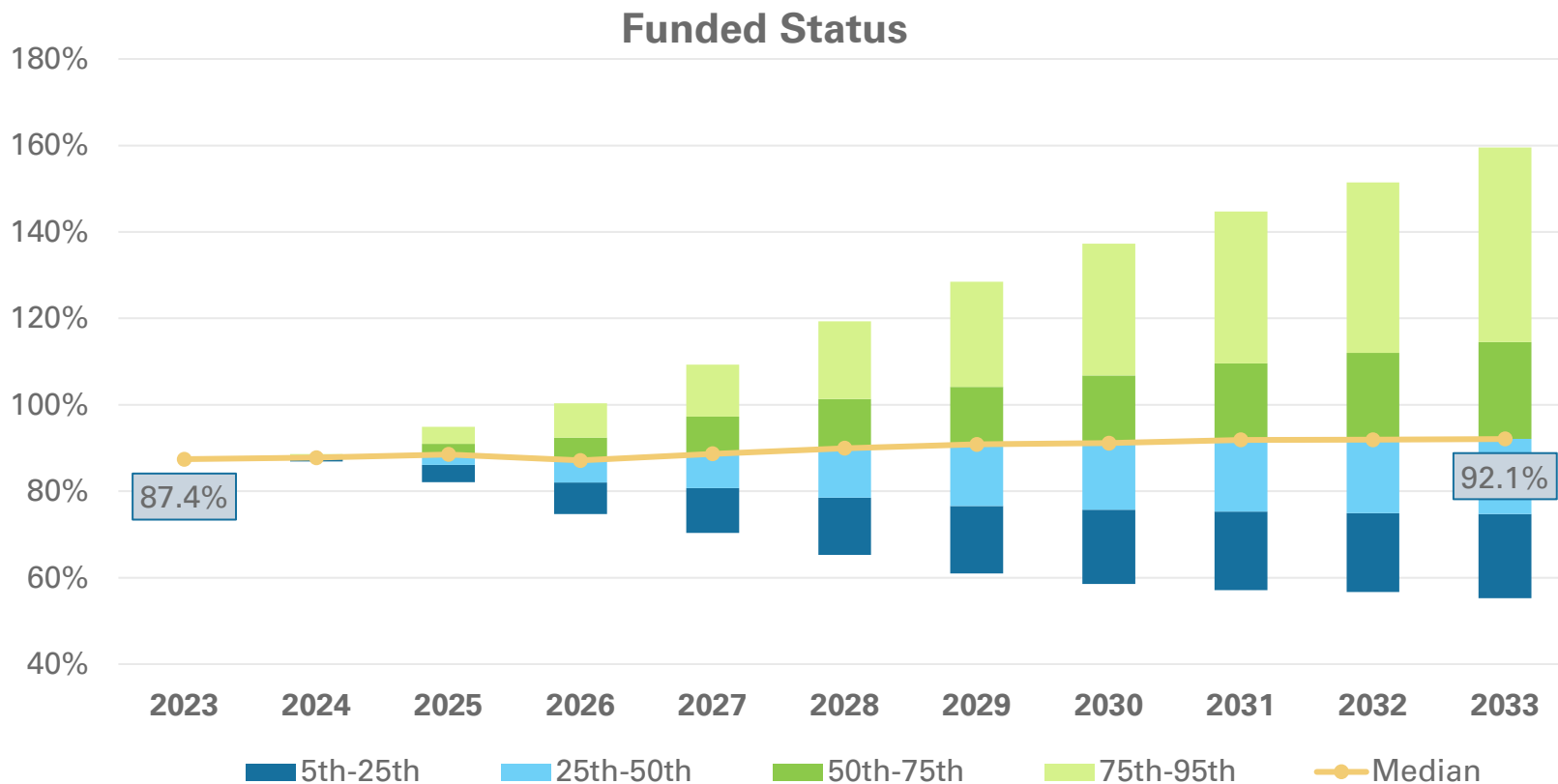
Model ranks 10,000 forecasts each year



- **95<sup>th</sup> percentile**
  - Exceeds 95% of all forecasts
  - Overly optimistic outcome
- **75<sup>th</sup> percentile**
  - Exceeds 75% of all forecasts
  - Optimistic outcome
- **50<sup>th</sup> percentile**
  - Exceeds 50% of all forecasts
  - Median outcome
- **25<sup>th</sup> percentile**
  - Exceeds 25% of all forecasts
  - Pessimistic outcome
- **5<sup>th</sup> percentile**
  - Exceeds 5% of all forecasts
  - Overly pessimistic outcome

# 10-YEAR STOCHASTIC FUNDED STATUS PROJECTION

## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION



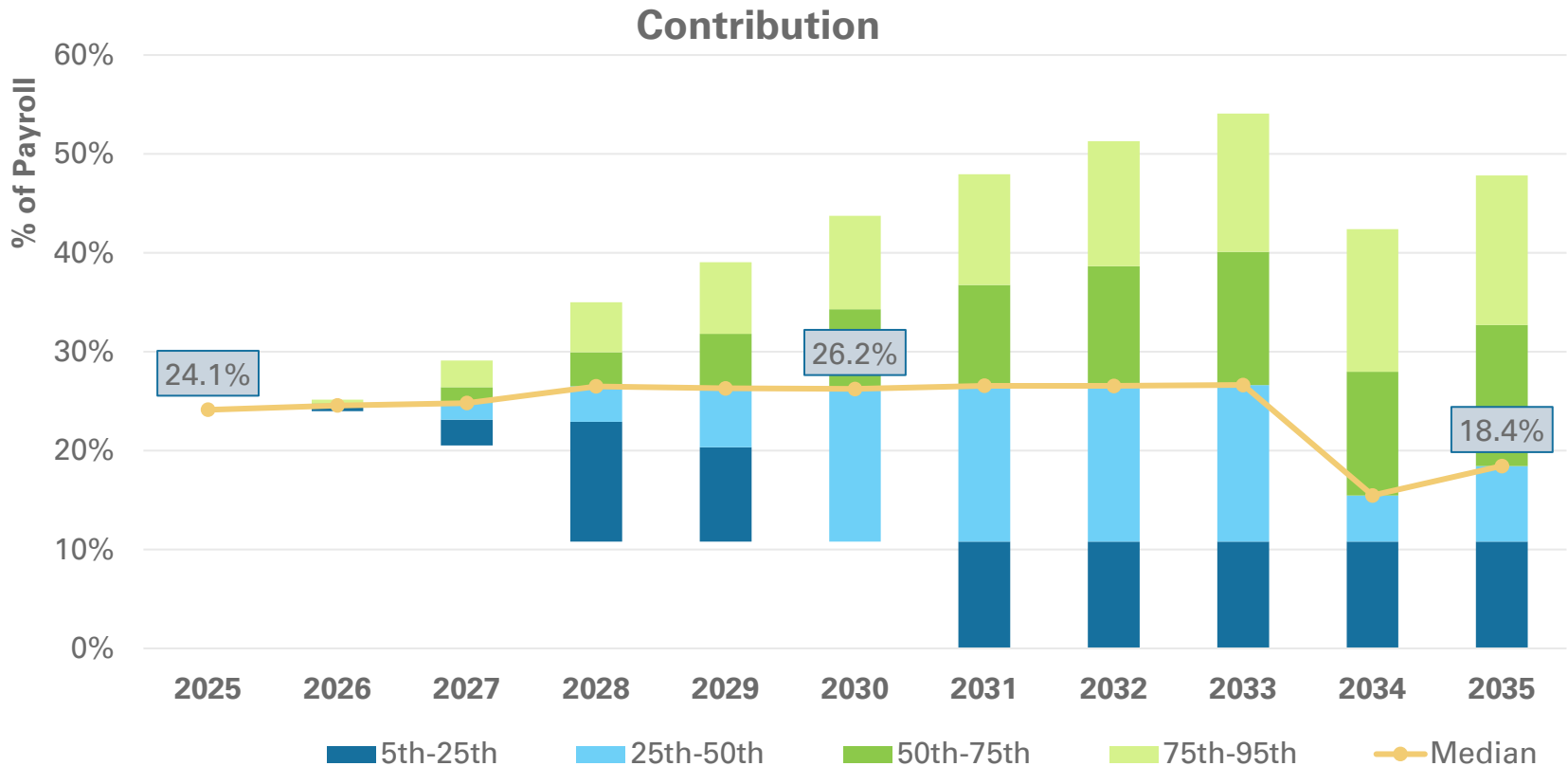
- **Probability of funded status below 80% anytime in next 10 years is 45.0%**
- **Probability of 2033 funded status above 100% is 39.5%**

Notes: As of December 31; reflects simulated returns based on Current Policy 10-year mean arithmetic return of 7.0% with 14.2% volatility



# 10-YEAR STOCHASTIC CONTRIBUTION PROJECTION

## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION



- **Probability of contribution rate above 35% anytime in next 10 years is 38.6%**
- **Probability of FY 3025 contribution rate below 20% is 53.1%**

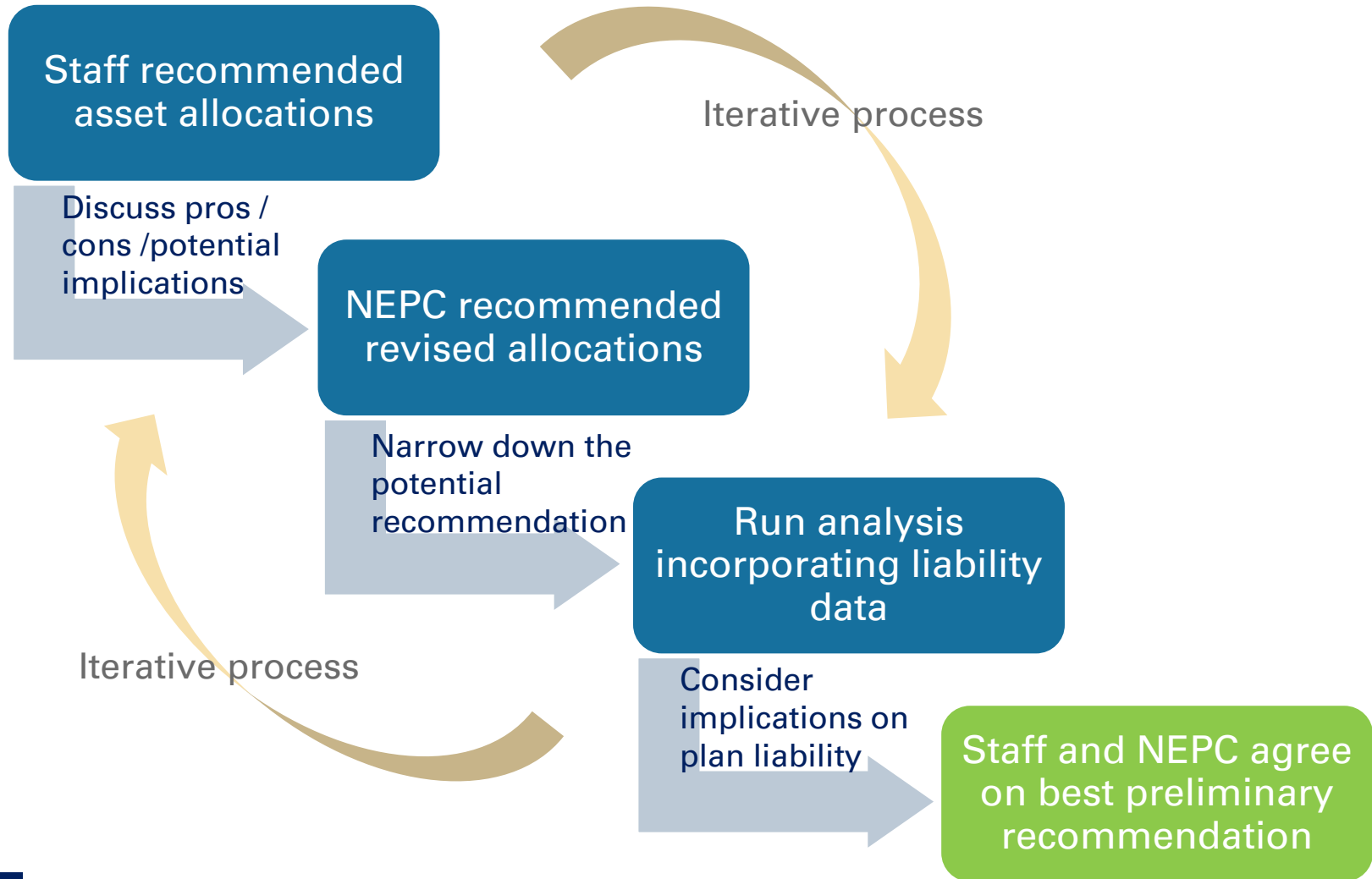
Notes: For fiscal year ending June 30; reflects simulated returns based on Current Policy 10-year mean arithmetic return of 7.0% with 14.2% volatility; contribution rates represent aggregate rate across all member groups



# ALTERNATIVE PORTFOLIOS



# PROCESS FOR PRELIMINARY RECOMMENDATION



# ASSET ALLOCATION PROFILES

	Current Policy	Mix A	Mix B	Mix C
US Large-Cap Equity	22%	22%	22%	22%
US Small/Mid-Cap Equity	2%	4%	2%	4%
Non-US Developed Equity	19%	16%	19%	16%
Non-US Developed Small-Cap Equity	2%	2%	2%	2%
Emerging Market Equity	2%	2%	2%	2%
Emerging Market Small-Cap Equity	0%	2%	0%	2%
Private Equity	11%	11%	11%	11%
<b>Total Equity</b>	<b>59%</b>	<b>59%</b>	<b>59%</b>	<b>59%</b>
US TIPS	0%	0%	0%	5%
US Treasury Bond	0%	0%	0%	5%
US Aggregate Bond	11%	11%	11%	0%
Global Government Bond	2%	2%	0%	0%
Global Multi-Sector Fixed Income	2%	2%	4%	4%
Private Debt	4%	4%	8%	8%
<b>Total Fixed Income</b>	<b>18%</b>	<b>18%</b>	<b>22%</b>	<b>22%</b>
Public Real Assets (Multi-Asset)	2%	2%	2%	0%
Real Estate - Core	6%	6%	4%	3%
Real Estate - Non-Core	3%	3%	3%	3%
Private Debt - Real Estate	1%	1%	1%	2%
Private Real Assets - Natural Resources	2%	2%	2%	2%
Private Real Assets - Infrastructure	3%	3%	3%	5%
<b>Total Real Assets</b>	<b>15%</b>	<b>15%</b>	<b>13%</b>	<b>13%</b>
Hedge Fund	8%	8%	6%	6%
<b>Total Multi Asset</b>	<b>8%</b>	<b>8%</b>	<b>6%</b>	<b>6%</b>
<b>Expected Return 10 year</b>	<b>6.2%</b>	<b>6.3%</b>	<b>6.3%</b>	<b>6.5%</b>
<b>Expected Return 30 year</b>	<b>7.5%</b>	<b>7.6%</b>	<b>7.6%</b>	<b>7.7%</b>
<b>Asset Volatility</b>	<b>14.2%</b>	<b>14.5%</b>	<b>14.3%</b>	<b>14.4%</b>
<b>Sharpe Ratio 10 year</b>	<b>0.16</b>	<b>0.17</b>	<b>0.17</b>	<b>0.18</b>
<b>Sharpe Ratio 30 year</b>	<b>0.29</b>	<b>0.29</b>	<b>0.29</b>	<b>0.30</b>



Notes: Shading reflects change in allocation relative to Current Policy; asset class allocation may not show change and/or totals may not sum correctly due to rounding

# ASSET ALLOCATION PROFILES

## DESCRIPTION OF MIXES

### ▪ **Mix A**

- Shifts Public Equity allocation closer to MSCI ACWI IMI by shifting region and market cap exposures
- Total Public Equity target remains at 48%
- Increases US Small/Mid Cap Equity, adds Emerging Market Small Cap Equity, reduces Non-US Developed Equity

### ▪ **Mix B**

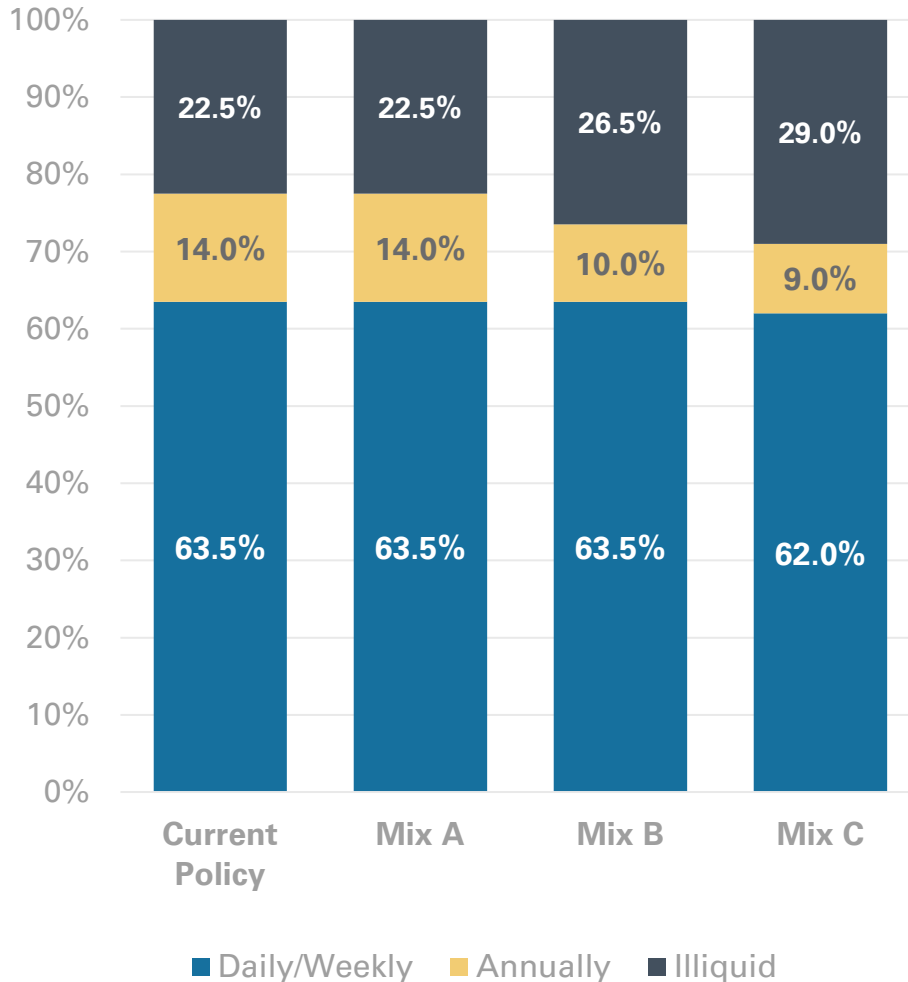
- Expands allocations to Private Debt and Multi-Sector Credit
- Takes advantage of improved opportunity set and higher interest rates
- Eliminates Global Government Bond, reduces Core Real Estate and Hedge Fund

### ▪ **Mix C**

- Incorporates changes from Mixes A and B
- In addition, shifts Core Bonds to explicit safe-haven segments by adding U.S. TIPS and U.S. Treasury, eliminates US Aggregate allocation
- Increases exposure to Real Estate Debt and Private Infrastructure and eliminates Public Real Assets

# LIQUIDITY PROFILE

## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION



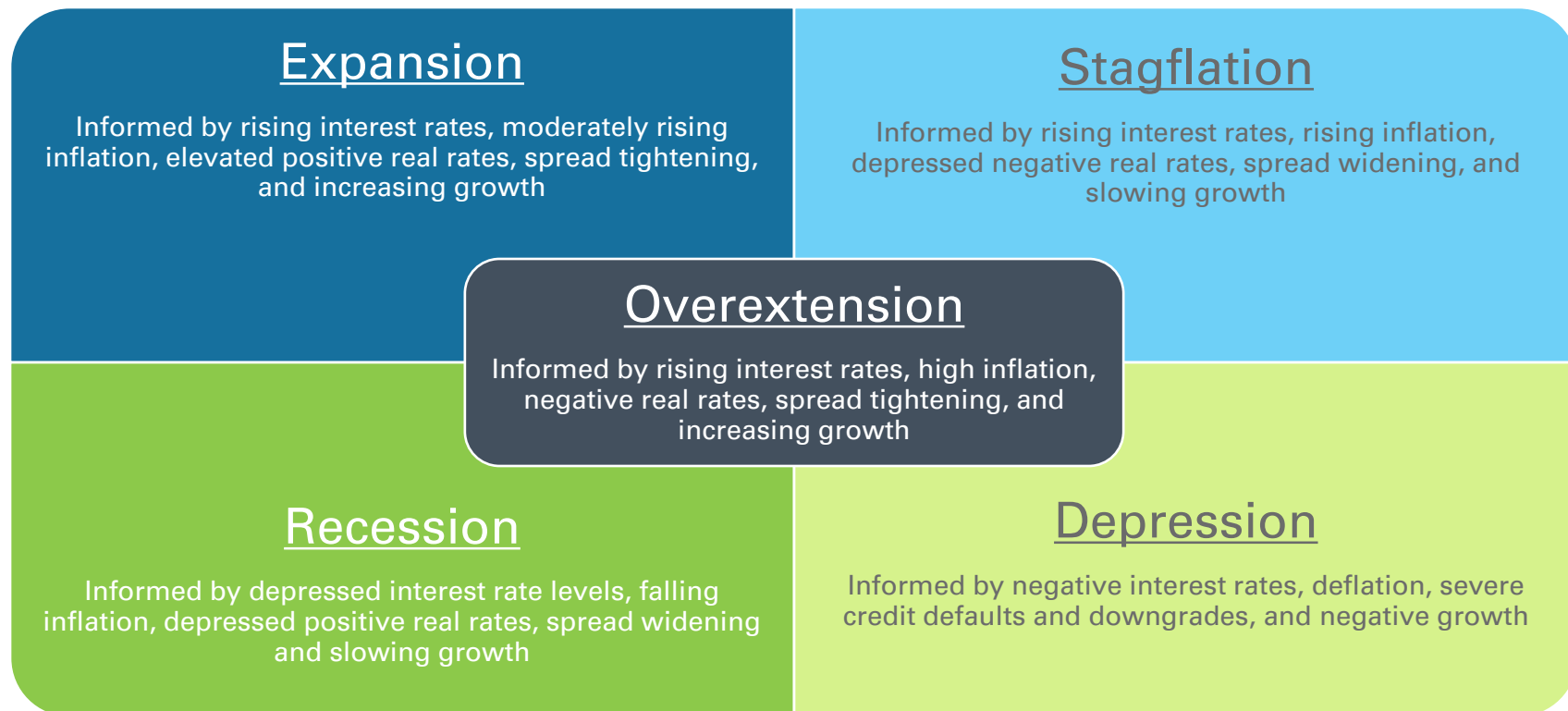
- **Mix A makes no changes to plan liquidity**
- **Mix B trades annual liquidity for illiquidity with the shifts from Core RE and Hedge Funds to Private Debt**
- **Mix C includes changes in Mix B plus additional illiquid allocation sourced from both daily liquidity (Public Real Assets) and annual liquidity (Core RE) with adds to RE Debt and Private Infra**
- **Mix C ends with marginally lower daily/weekly liquidity than Current with noticeably higher illiquids sourced mostly from annual liquid assets**
- **Net cash flow is expected to average -2.7% of assets for next 10 years**
  - Public funds average between -2% and -4% net cash flow
  - Funding policy will trigger contribution increases if needed, providing a backstop to plan liquidity
- **NEPC believes the plan can take on the recommended increase in illiquids with no impact in the plan's ability to meet its benefit obligations**



# SCENARIO ANALYSIS: REGIME CHANGES

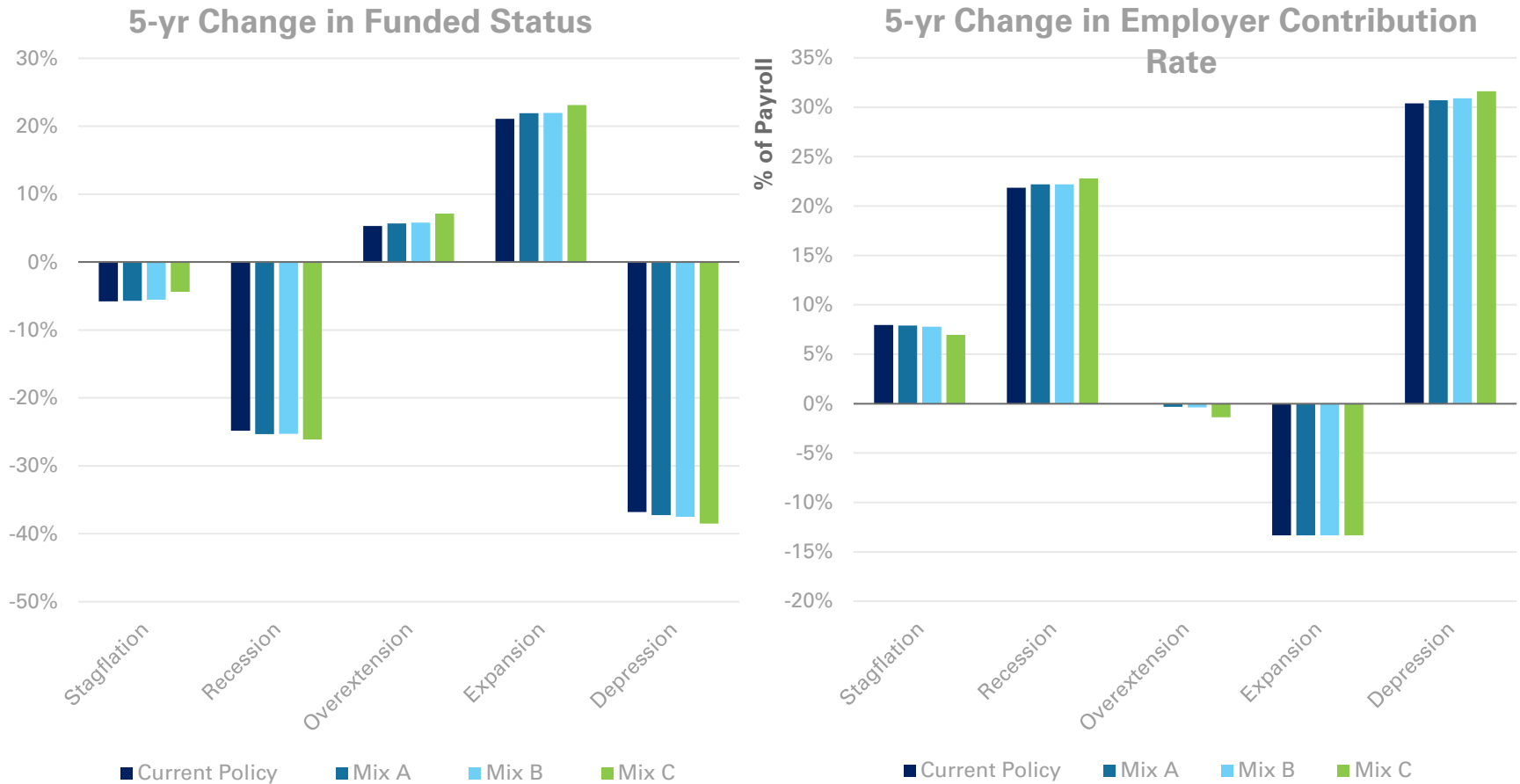
**NEPC scenario analysis highlights the impact of shifting economic and market regimes on the portfolio and potential asset allocation mixes**

- Risk asset returns are informed by credit returns which are based on changes in real rate, inflation, and credit spreads experienced across market regimes



# ECONOMIC SCENARIO ANALYSIS

## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION



Notes: Change in funded status based on 87.4% starting funded status; change in contribution rate based on 24.1% starting contribution rate



# STOCHASTIC ANALYSIS

## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

Funded Status	Current Policy	Mix A	Mix B	Mix C
50th Percentile 2033 Funded Status	92.1%	92.9%	93.0%	93.9%
75th Percentile 2033 Funded Status	114.5%	116.1%	116.0%	117.1%
25th Percentile 2033 Funded Status	74.7%	75.1%	75.3%	75.9%
Probability of Funded Status Below 80% in Next 10 years	45.0%	44.7%	44.4%	43.7%
Probability of 2033 Funded Status Above 100%	39.5%	40.7%	40.8%	42.3%
Funded Status Volatility	3.8%	3.8%	3.8%	3.8%

Funded Status	Current Policy	Mix A	Mix B	Mix C
50th Percentile FY2035 Employer Contribution Rate	18.4%	17.9%	17.8%	17.0%
75th Percentile FY2035 Employer Contribution Rate	32.7%	32.4%	32.3%	31.7%
25th Percentile FY2035 Employer Contribution Rate	10.8%	10.8%	10.8%	10.8%
Probability of Contribution Rate Above 35% in Next 10 Years	38.6%	38.2%	38.1%	37.6%
Probability of FY2035 Contribution Rate Below 20%	53.1%	53.7%	53.9%	55.1%
Employer Contribution Rate Volatility	4.9%	4.9%	4.9%	4.8%

# KEY TAKEAWAYS & NEXT STEPS

## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

### ▪ **Incremental changes to current policy allocation**

- Total equity allocation remains the same
- Total fixed income allocation increases by 4%, while Real Assets and Multi-Assets decrease by 2% each
- Slight improvements to expected returns and Sharpe ratios, with slightly higher asset volatility

### ▪ **Next Steps**

- Board invited to approve asset allocation mix (June 2024)
- Update Investment Policy to reflect new policy allocation (3Q 2024)
- Implementation recommendations where needed (3Q and 4Q 2024)



# APPENDIX

# ASSUMPTIONS AND METHODS

## ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

- **Deterministic and stochastic return projections are based on NEPC's 12/31/2023 capital market assumptions**
  - Projections reflect 12.59% return for 2023 per December 31, 2023 Quarterly Performance Report
  - NEPC's 10-year & 30-year return assumptions thereafter
- **Asset-liability projections follow a roll-forward methodology based on the December 31, 2022 Actuarial Valuation Report produced by Segal**
  - Benefit payment projections provided by Segal
  - Planned demographic and economic assumption changes reflected as of December 31, 2022 and rolled forward to December 31, 2023 based on cost impact analysis produced by Segal
    - Economic assumption change of note is reduction of payroll growth from 3.25% to 3.00% was reflected in future payroll projections and UAAL amortizations
  - Recently approved benefit changes also reflected as of December 31, 2022 and rolled forward based on estimate provided by Segal
  - Other than those described herein, all assumptions remain unchanged from the valuation
  - No experience gains or losses are assumed other than those attributed to investment experience
- **Employer contributions based on stated funded policy**
  - Normal cost less member contributions plus amortization of unfunded liability
  - Amortization of unfunded liability based on level percent of pay layered amortizations of annual gains/losses over 20 years
  - Prior amortizations layers considered fully amortized if surplus exists
  - Employer normal cost not reduced unless surplus exceeds 20%
- **Member contributions assumed to remain level at 9.9% of payroll**

# 12/31/2023 CAPITAL MARKET ASSUMPTIONS

	Asset Class	10-Year Return	30-Year Return	Standard Deviation
<b>MACRO</b>	Inflation	2.6%	2.6%	—
	Cash	3.9%	3.4%	0.6%
	US Leverage Cost	4.1%	3.6%	0.7%
	Non-US Cash	2.2%	2.5%	0.6%
<b>EQUITY</b>	US Large-Cap Equity	4.4%	6.7%	17.2%
	US Small/Mid-Cap Equity	6.0%	7.4%	21.0%
	Non-US Developed Equity	4.6%	6.4%	19.7%
	Non-US Developed Equity (USD Hedge)	4.8%	6.6%	17.7%
	Non-US Developed Small-Cap Equity	6.4%	7.5%	24.2%
	Emerging Market Equity	8.6%	9.2%	28.1%
	Emerging Market Small-Cap Equity	7.9%	9.1%	31.4%
	<i>Global Equity*</i>	<i>5.4%</i>	<i>7.3%</i>	<i>18.2%</i>
	Hedge Fund – Equity	5.5%	6.0%	11.0%
	Private Equity – Buyout	7.4%	8.8%	20.0%
	Private Equity – Growth	8.7%	9.7%	31.5%
	Private Equity – Venture	9.8%	10.6%	46.5%
	Private Equity – Secondary	6.9%	8.2%	20.4%
	Non-US Private Equity	10.3%	10.8%	32.0%
	<i>Private Equity*</i>	<i>9.0%</i>	<i>10.1%</i>	<i>25.9%</i>
China Equity	9.9%	9.5%	30.6%	

\*Calculated as a blend of other asset classes



# 12/31/2023 CAPITAL MARKET ASSUMPTIONS

	Asset Class	10-Year Return	30-Year Return	Standard Deviation
CREDIT	US TIPS	4.6%	4.7%	6.0%
	US Treasury Bond	4.2%	4.3%	5.4%
	US Corporate Bond	5.3%	5.9%	7.7%
	US Mortgage-Backed Securities	4.4%	4.6%	6.5%
	<i>US Aggregate Bond*</i>	4.6%	4.9%	5.8%
	US High Yield Corporate Bond	6.1%	7.1%	11.2%
	US Leveraged Loan	7.2%	6.6%	9.1%
	Emerging Market External Debt	7.1%	7.3%	12.3%
	Emerging Market Local Currency Debt	6.1%	5.5%	12.7%
	Non-US Government Bond	2.4%	2.9%	9.5%
	Non-US Government Bond (USD Hedge)	2.6%	3.2%	4.1%
	<i>Global Government Bond*</i>	3.0%	3.4%	7.7%
	<i>Global Government Bond (USD Hedge)*</i>	3.1%	3.5%	4.2%
	Non-US Inflation-Linked Bond (USD Hedge)	3.2%	3.3%	6.7%
	<i>Global Multi-Sector Fixed Income*</i>	5.7%	6.1%	8.1%
	<i>Absolute Return Fixed Income*</i>	5.6%	5.8%	5.9%
	US Municipal Bond	3.5%	3.8%	6.0%
	US Municipal Bond (1-10 Year)	2.9%	3.5%	4.5%
	US High Yield Municipal Bond	4.5%	4.9%	12.0%
	Hedge Fund - Credit	6.6%	7.0%	9.9%
	Private Debt - Credit Opportunities	7.8%	8.4%	14.5%
	Private Debt – Distressed	8.6%	9.3%	14.4%
Private Debt - Direct Lending	8.1%	8.9%	11.0%	
<i>Private Debt*</i>	8.3%	9.0%	11.8%	

\*Calculated as a blend of other asset classes





# 12/31/2023 CAPITAL MARKET ASSUMPTIONS

	Asset Class	10-Year Return	30-Year Return	Standard Deviation
CREDIT	US Short-Term TIPS (1-3 Year)	4.7%	4.4%	3.3%
	US Short-Term Treasury Bond (1-3 Year)	4.4%	4.2%	2.3%
	US Short-Term Corporate Bond (1-3 Year)	5.4%	5.2%	2.8%
	US Short-Term High Yield Corporate Bond (1-3 Year)	5.5%	5.6%	8.2%
	US Intermediate-Term TIPS (3-10 Year)	4.6%	4.7%	6.0%
	US Intermediate-Term Treasury Bond (3-10 Year)	4.2%	4.4%	5.9%
	US Intermediate-Term Corporate Bond (3-10 Year)	5.6%	6.0%	7.1%
	US Long-Term Treasury Bond (10-30 Year)	4.5%	4.8%	12.4%
	US Long-Term TIPS (10-30 Year)	3.7%	4.3%	11.8%
	US Long-Term Corporate Bond (10-30 Year)	4.7%	6.0%	11.9%
	20+ Year US Treasury STRIPS	3.3%	4.2%	20.7%
	<i>US Long-Term Government/Credit*</i>	4.3%	5.2%	11.0%
	US Corporate Bond - AAA	4.4%	5.1%	6.8%
	US Corporate Bond – AA	4.6%	5.1%	6.6%
	US Corporate Bond – A	5.1%	5.5%	7.6%
	US Corporate Bond – BBB	5.6%	6.1%	8.4%
	US Corporate Bond – BB	6.8%	7.7%	9.7%
	US Corporate Bond – B	6.3%	7.1%	11.6%
	US Corporate Bond - CCC/Below	1.4%	1.9%	20.3%
	US Securitized Bond	5.2%	5.4%	8.0%
	US Collateralized Loan Obligation	5.5%	4.9%	7.7%
	US High Yield Securitized Bond	8.7%	8.3%	11.2%
	US High Yield Collateralized Loan Obligation	7.8%	7.3%	10.4%
	US Taxable Municipal Bond	5.3%	6.0%	7.5%
	10 Year US Treasury Bond	4.2%	4.8%	7.5%
10 Year Non-US Government Bond (USD Hedge)	2.1%	2.8%	5.0%	

\*Calculated as a blend of other asset classes



# 12/31/2023 CAPITAL MARKET ASSUMPTIONS

	Asset Class	10-Year Return	30-Year Return	Standard Deviation
REAL ASSETS	Commodity Futures	4.6%	3.9%	18.5%
	Midstream Energy	5.5%	6.6%	28.2%
	<i>Public Real Assets (Multi-Asset)*</i>	<i>6.1%</i>	<i>6.4%</i>	<i>14.2%</i>
	US REIT	6.0%	7.3%	21.8%
	Global Infrastructure Equity	6.6%	7.0%	19.4%
	Global Natural Resources Equity	6.2%	7.1%	23.3%
	Gold	4.9%	4.8%	16.4%
	Core Real Estate	5.4%	6.1%	15.0%
	Non-Core Real Estate	7.1%	7.8%	24.3%
	Private Debt - Real Estate	6.3%	6.6%	11.9%
	Private Real Assets - Natural Resources	8.2%	8.7%	32.3%
Private Real Assets – Infrastructure	6.8%	7.1%	12.4%	
MULTI-ASSET	Hedge Fund – Macro	5.4%	5.8%	9.4%
	<i>Hedge Fund*</i>	<i>6.1%</i>	<i>6.5%</i>	<i>8.6%</i>
	<i>60% S&amp;P 500 &amp; 40% US Aggregate Bond*</i>	<i>4.8%</i>	<i>6.3%</i>	<i>10.9%</i>
	<i>60% MSCI ACWI &amp; 40% US Aggregate Bond*</i>	<i>5.4%</i>	<i>6.6%</i>	<i>11.5%</i>

\*Calculated as a blend of other asset classes



# PRIVATE MARKETS COMPOSITES

## PUBLIC MARKET BETA INPUTS FOR PRIVATE MARKETS

### PRIVATE EQUITY

**Buyout:** 25% U.S. Large Cap, 75% U.S. Small/Mid Cap

**Secondary:** 25% U.S. Large Cap, 75% U.S. Small/Mid Cap

**Growth:** 50% U.S. Small/Mid Cap, 50% U.S. Microcap

**Early-Stage Venture:** 25% U.S. Small/Mid Cap, 75% U.S. Microcap

**Non-U.S.:** 70% International Small Cap, 30% Emerging Small Cap

**Composite:** 34% Buyout, 34% Growth, 15 % Non-U.S., 8.5% Secondary, 8.5% Early Venture

### PRIVATE CREDIT

**Direct Lending:** 100% Bank Loans

**Distressed:** 20% U.S. Small/Mid Cap, 60% U.S. High Yield, 20% Bank Loans

**Credit Opportunities:** 34% U.S. SMID Cap, 33% U.S. High Yield, 33% Bank Loans

**Composite:** 50% Direct Lending, 25% Credit Opportunities, 25% Distressed

### PRIVATE REAL ASSETS

**Energy:** 30% Comm., 35% Midstream, 35% Public Resource Equity

**Infra/Land:** 30% Commodities, 70% Public Infrastructure

**Private Real Estate Debt:** 50% CMBS, 50% Real Estate – Core

# NEPC DISCLOSURES

Past performance is no guarantee of future results.

NEPC, LLC is an investment consulting firm. We provide asset-liability studies for certain clients but we do not provide actuarial services. Any projections of funded ratio or contributions contained in this report should not be used for budgeting purposes. We recommend contacting the plan's actuary to obtain budgeting estimates.

The goal of this report is to provide a basis for substantiating asset allocation recommendations. The opinions presented herein represent the good faith views of NEPC as of the date of this report and are subject to change at any time.

Information on market indices was provided by sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.

The projection of liabilities in this report uses standard actuarial projection methods and does not rely on actual participant data. Asset and liability information was received from the plan's actuary, and other projection assumptions are stated in the report.

All investments carry some level of risk. Diversification and other asset allocation techniques do not ensure profit or protect against losses.

This report is provided as a management aid for the client's internal use only. This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

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TO: Members of the Investment Committee

FROM: Agnes Ducanes – Administrative Specialist *AK Ducanes*

DATE: May 1, 2024

SUBJECT: Fourth Quarter 2023 Informational Reports (Shadow Items)

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Since last month's Investment Committee Meeting was cancelled, we are redistributing the Informational Reports (Shadow Items) below which are included in your May ICM Packet.

- Directed Brokerage Report
- IPSI Report
- Management Fees
- Rebalancing Report
- Sec Lending Report
- Workplan
- Quarterly Manager Reports and Commentaries

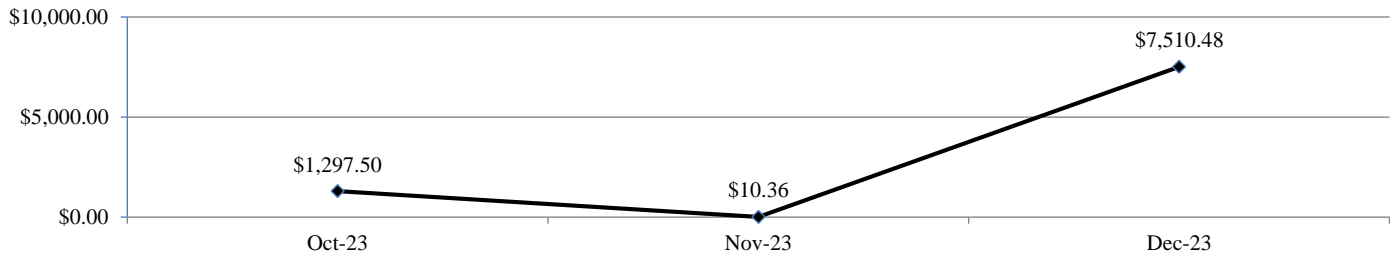


# Alameda County Employees' Retirement Association Fourth Quarter 2023 Directed Brokerage Report

## Quarterly Commentary

In 4Q23, the total recaptured dollar amount for ACERA's Directed Brokerage (DB) Program was **\$8,818.34**. Since inception<sup>1</sup>, ACERA has recaptured \$2,141,647.46. For the quarter, William Blair Investment Management directed the highest percentage (64.74%) of trading volume. Kennedy Capital generated the largest recaptured directed commission dollar amount (\$7,510.48). Virtue (Knight Securities) received 85.17% of ACERA's directed trades among the network of correspondent brokers. On average the program continues to operate in compliance with ACERA's DB Policy; however, participating active management now make up less than 20% and 25% of domestic equity and international equity asset classes, respectively.

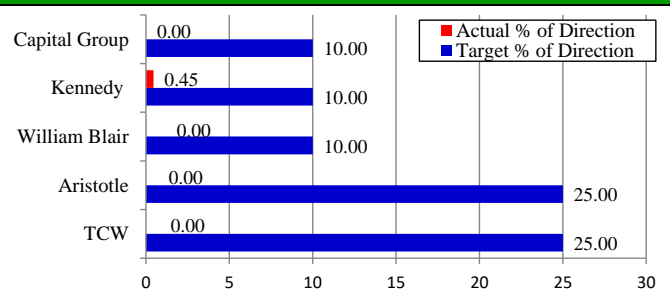
## Monthly Recaptured



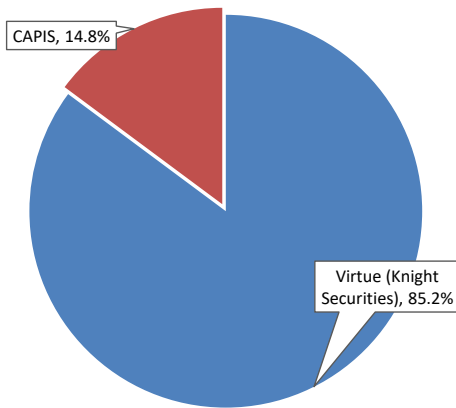
### Directed Commission \$<sup>2</sup>

Manager	4Q2023	YTD
Capital Group	0.00	0.00
Kennedy	7,510.48	22,148.62
William Blair	1,307.86	8,049.99
Aristotle Capital	0.00	0.00
TCW	0.00	66.92
<b>Total</b>	<b>\$8,818.34</b>	<b>\$30,265.53</b>

### Directed %<sup>3</sup>



## Directed % to Correspondent Brokers<sup>4</sup>



- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>Andes Capital Group</li> <li>B. Riley &amp; Co.</li> <li>Barclays (US Algo/DMA)</li> <li>BIDS Trading</li> <li>Bley Investment Group</li> <li>Cabrera Capital Markets</li> <li>CAPIS</li> <li>CAPIS Step Out</li> <li>CF Global Trading</li> <li>Cowen Securities (U.S.)</li> <li>Drexel Hamilton</li> <li>HSBC James Capel</li> <li>ICAP (U.S.)</li> <li>Imperial Capital</li> </ul> | <ul style="list-style-type: none"> <li>Instinet LLC</li> <li>ITG, Inc.</li> <li>LAM Securities</li> <li>Liquidnet</li> <li>Merrill Lynch (U.S.)</li> <li>Mischler Financial Group</li> <li>North South Capital</li> <li>O'Neil Securities</li> <li>Penserra Securities, LLC</li> <li>Pershing, LLC</li> <li>Piper Sandler</li> <li>Societe Generale</li> <li>State Street Global Markets (Europe)</li> <li>Virtue America LLC</li> </ul> |
|--|--|

**Brokers are selected at the discretion of the Investment Managers, pursuant to Best Execution and ACERA's DB Policy.**

1. ACERA's DB Program began in September 2006. Bivium does not participate in Commission Recapture; Blackrock, Franklin Templeton, William Blair EME CIT are comingled accounts and do not participate.  
 2. Data provided by CAPIS. Directed Commission \$ - Dollar amount of commissions from directed trades - this amount is split among ACERA (22.75% for 4Q2023), CAPIS, & the Correspondent Brokers.  
 3. Data provided by Zeno Consulting Group (Zeno). Directed % - Calculated by dividing Manager's directed trading volume by its total trading volume and compared to its assigned target. Target percentages are ranges (e.g. up to 25% for TCW).  
 4. Data provided by CAPIS.



**ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

475 14th Street, Suite 1000, Oakland, CA 94612    800/838-1932    510/628-3000    fax: 510/268-9574    www.acera.org

TO:            Members of the Investment Committee

FROM:        Agnes Ducanes – Administrative Specialist II *ADucanes*

DATE:        April 3, 2024

SUBJECT:    Quarterly Report on ACERA’s Investment Products and Services Introductions (IPSI) Program

In the fourth quarter of 2023, Staff received 24 investment products and services inquiries from prospective providers. We met with 15 managers and service providers who presented through the IPSI process.

The purpose of IPSI is to provide prospective vendors an opportunity to gain a better understanding of ACERA’s investment objectives and for Staff to learn about the vendors’ investment products/services through face-to-face meetings, teleconferences, or video conferences. Staff has designated the morning of the second Wednesday of every month as ACERA’s IPSI day. Each introductory session is approximately 45 minutes.

Below please find a chart depicting the types of IPSI sessions that were held in the fourth quarter of 2023.

<b>ASSET CLASS</b>	<b>Q1 '23</b>	<b>Q2 '23</b>	<b>Q3 '23</b>	<b>Q4'23</b>	<b>TOTAL</b>
<b>U.S. Equities</b>	0	0	0	<b>0</b>	0
<b>Int'l Equities</b>	0	0	0	<b>0</b>	0
<b>Fixed Income</b>	1	0	0	<b>1</b>	2
<b>Real Estate</b>	1	0	0	<b>3</b>	4
<b>Private Equities</b>	2	0	0	<b>0</b>	2
<b>Absolute Return</b>	0	0	0	<b>0</b>	0
<b>Real Assets</b>	1	0	1	<b>1</b>	3
<b>Private Credit</b>	0	1	2	<b>8</b>	11
<b>Other Services</b>	0	0	4	<b>2</b>	6
<b>TOTAL:</b>	5	1	7	<b>15</b>	<b>28</b>



**INVESTMENT MANAGER,  
CONSULTANT, AND CUSTODIAN FEES**  
For Quarter Ending December 31, 2023



**INVESTMENT NET ASSET VALUE AND INVESTMENT MANAGER FEES  
FOR THE QUARTER ENDED December 31, 2023**

For the Quarter Ended December 31, 2023	NAV <sup>2</sup> (\$) As of 3/31/23	Q1 - Total Fees (\$)	bps of NAV	NAV <sup>2</sup> (\$) As of 6/30/23	Q2 - Total Fees (\$)	bps of NAV	NAV <sup>2</sup> (\$) As of 9/30/23	Q3 - Total Fees (\$)	bps of NAV	NAV <sup>2</sup> (\$) As of 12/31/22	Q4 - Total Fees (\$)	bps of NAV	Total Fees (\$)	Total bps of NAV
Name of Fund														
<b>Domestic Equity<sup>1</sup></b>														
Aristotle Capital	152,126,289	146,186	9.61	158,827,595	147,663	9.30	154,184,639	158,140	10.26	176,066,965	157,797	8.96	609,786	34.63
BlackRock R1000 Index Fund	2,086,558,258	44,633	0.21	2,265,742,380	46,750	0.21	2,096,548,710	48,144	0.23	2,221,590,933	46,533	0.21	186,059	0.84
Kennedy Capital	141,877,423	296,624	20.91	148,139,229	278,828	18.82	141,691,133	294,391	20.78	160,213,613	288,501	18.01	1,158,344	72.30
Trust Co. of the West	126,084,050	134,220	10.65	142,248,693	145,611	10.24	137,326,556	137,132	9.99	159,810,576	157,367	9.85	574,330	35.94
William Blair Small Cap Growth	132,832,443	258,602	19.47	138,928,370	258,790	18.63	130,890,779	269,191	20.57	145,521,148	257,282	17.68	1,043,865	17.68
Total Domestic Equity	2,639,478,463	880,264	3.33	2,853,886,267	877,642	3.08	2,660,641,817	906,999	3.41	2,863,203,235	907,480	3.17	3,572,384	12.48
<b>International Equity<sup>1</sup></b>														
BlackRock MSCI World ex-US	721,004,837	44,532	0.62	744,655,239	45,650	0.61	852,412,262	49,580	0.58	941,736,044	55,696	0.59	195,458	2.08
Bivium International Equity	140,888,126	279,968	19.87	144,613,918	294,517	20.37	365,591,043	409,357	11.20	404,398,028	665,033	16.45	1,648,875	40.77
Capital Group	614,055,900	175,920	2.86	625,211,391	183,733	2.94	368,548,475	161,547	4.38	414,093,206	143,724	3.47	664,924	16.06
Franklin Templeton Inv.	263,875,152	391,978	14.85	266,774,101	400,215	15.00	257,193,426	412,408	16.03	285,016,274	402,446	14.12	1,607,047	56.38
Mondrian	708,001,258	593,382	8.38	628,810,842	583,667	9.28	5,249,621	556,114	1,059.34	3,914,900	-	-	1,733,163	4,427.09
William Blair Emerging Market Growth	270,984,819	395,909	14.61	276,192,258	400,464	14.50	374,181,520	445,707	11.91	409,932,237	518,372	12.65	1,760,452	42.94
Total International Equity	2,718,810,092	1,881,689	6.92	2,686,257,749	1,908,246	7.10	2,223,176,347	2,034,713	9.15	2,459,090,689	1,785,271	7.26	7,609,919	30.95
<b>Fixed Income<sup>1</sup></b>														
Baird Advisors	1,160,694,852	193,137	1.66	1,153,559,315	197,082	1.71	1,118,615,857	158,140	1.41	1,196,791,402	196,241	1.64	744,600	6.22
Loomis Sayles	268,567,810	215,199	8.01	266,817,833	217,573	8.15	261,269,278	219,357	8.40	281,780,309	218,399	7.75	870,528	30.89
Brandywine Global FI	185,744,492	134,428	7.24	187,747,853	138,804	7.39	172,963,200	140,035	8.10	195,676,430	134,272	6.86	547,540	27.98
Total Fixed Income	1,615,007,154	542,763	3.36	1,608,125,001	553,459	3.44	1,552,848,335	517,533	3.33	1,674,248,141	548,912	3.28	2,162,668	12.92
<b>Real Estate<sup>4, 5, 6</sup></b>														
Total Real Estate	816,551,541	2,256,955	27.64	779,128,491	2,179,417	27.97	783,120,456	2,157,786	27.55	805,817,375	2,233,895	27.72	8,828,054	109.55
<b>Private Equity<sup>4, 5, 6</sup></b>														
Total Private Equity	1,011,424,321	3,181,595	31.46	1,038,090,134	4,287,000	41.30	1,063,325,975	4,091,597	38.48	984,939,496	3,651,920	37.08	15,212,112	154.45
<b>Absolute Return<sup>4, 5, 6</sup></b>														
Total Absolute Return	855,463,960	1,490,681	17.43	874,819,134	1,499,634	17.14	896,592,159	1,537,224	17.15	854,806,481	1,473,482	17.24	6,001,020	70.20
<b>Real Assets<sup>4, 5, 6</sup></b>														
Total Real Assets	633,344,369	1,051,811	16.61	634,048,737	1,068,673	16.85	645,291,747	1,065,476	16.51	624,494,549	1,040,273	16.66	4,226,233	67.67
<b>Private Credit<sup>4, 5, 6</sup></b>														
Total Private Credit	240,957,300	786,410	32.64	295,349,103	963,901	32.64	306,581,389	769,404	25.10	261,954,333	789,086	30.12	3,308,800	126.31
<b>Cash*</b>	93,369,574			112,029,247			475,031,200			108,114,623*				
<b>TOTAL<sup>7</sup></b>	<b>10,624,406,775</b>	<b>12,102,168</b>	<b>11.39</b>	<b>10,881,733,863</b>	<b>13,367,972</b>	<b>12.28</b>	<b>10,606,609,425</b>	<b>13,110,732</b>	<b>12.36</b>	<b>10,636,668,922</b>	<b>12,430,318</b>	<b>11.69</b>	<b>50,921,191</b>	<b>47.87</b>

Notes:

\*Cash total includes the NAVs for the Parametric Cash Overlay account and the SSGA transition account

1. Domestic, International Equity, and Fixed Income managers' fees are based on staff validated manager invoices.

2. NAVs may use estimates at the time of this report's production.

3. Some accounts contain submanaged funds; the fees shown include all assets in the account.

4. Sometimes fees may be estimates. According to the Limited Partnership Agreements, management fees are based on committed amounts and/or assets under management.

5. Detailed records regarding these investments of public pension funds are exempt from disclosure under California Government Code Section 6254.26

6. As of 1Q 2021, the management fee totals no longer includes estimates for other expenses and carried interest allocations. This additional information will be reported in the annual 7514.7 Alternative Investment Vehicles Information Report presented each December.

7. Previous quarter's amounts may change as estimates are true up to actual amounts. Each true up is made using the most recent information.

**CONSULTANT/CUSTODIAN FEES  
FOR THE QUARTER ENDED December 31, 2023**

	<b>Q1 - Fees (\$)</b>	<b>Q2 - Fees (\$)</b>	<b>Q3 - Fees (\$)</b>	<b>Q4 - Fees (\$)</b>	<b>Total (\$)</b>
<b>Consultant</b>					
NEPC	-	-	-	62,500	62,500
Callan Associates	56,250	56,250	56,250	56,250	225,000
Verus Advisory, Inc.	193,750	193,750	193,750	193,750	775,000
Institutional Shareholders Services	15,675	15,675	15,804	12,500	59,654
Zeno Consulting Group	11,813	11,813	11,813	11,813	47,250
Sub-total Consultant	277,487	277,487	277,616	336,813	1,169,404
<b>Custodian</b>					
State Street Bank	145,483	142,470	142,470	145,651	576,074
<b>TOTAL OF CONSULTANT / CUSTODIAN FEES <sup>1</sup></b>	<b>422,971</b>	<b>419,957</b>	<b>420,086</b>	<b>482,463</b>	<b>1,745,478</b>

Notes:

1. Previous quarter's amounts may change as estimates are trued up to actual amounts. Each true up is made using the most recent information.



To: Members of the Investment Committee  
From: Julius Cuaresma, Investment Analyst *JCC*  
Date: April 3, 2024  
Subject: Summary of Rebalancing and Cash Activities Completed in 4Q23

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**Recommendation:**

Not Applicable – this is an informational report.

**Background/Discussion:**

1. For the quarter ending December 31, 2023 (“4Q23”), there was no Board action required to rebalance the Total Fund. In accordance with ACERA’s General Investment Guidelines, Policies and Procedures, Section V: Asset Allocation and Rebalancing, Schedule IA: Asset Allocation Targets and Schedule IC: Asset Allocation Portfolio Rebalancing, no rebalancing signals were received during the period. The Summary of Rebalancing and Cash Activities are reported to the Investment Committee on a quarterly basis.
2. Regarding significant cash flows for 4Q23, Staff implemented the following activity to manage excess cash, meet supplemental month-end retiree benefits, administrative payroll, capital calls and provide operating funds:
  - a. **Month-end payroll and Total Fund Withdrawals:** Staff withdrew a net \$82.0 million (M) from the ACERA Total Fund Cash Account (HI1A) to supplement month-end payroll for 4Q23. Staff wired out \$42.0 M in October, \$26.0 M in November, and \$30.0 M in December to ACERA’s JP Morgan Bank account. Fiscal Services wired in \$16.0 M to HI1A as subsequent employer contributions (\$14.0 M in October, \$0.0 M in November, and \$2.0 M in December). The reason for noting the incoming wires is not all employer contributions are received before the month-end and administrative payroll for that month.
  - b. **Capital Calls, Distributions:** In general, ACERA wired payments of \$255.2 M in aggregate to meet capital calls and fund ACERA’s privately placed investments. Distributions (e.g., cash, in-kind distributions and return of principal), totaled \$93.6 M. This dollar amount does not include other incidental income from other programs<sup>1</sup>.
  - c. **Other Activity:** To meet cash current and future flow needs, Staff redeemed \$120.0 M from the U.S. Equity Passive Mandate (BlackRock Russell 1000) in November. This cash raise was \$20.0 M larger than normal, as Staff observed upcoming larger than normal capital calls. Staff also continued to implement the Board-Approved Modified International Equity and Phased Implementation Transition Plan. As noted in the 3Q23 Memo, \$20.0 M was temporarily transferred to Parametric (Cash Overlay Manager) in August to maintain target market exposure synthetically; and as expected and planned for, once the temporary exposure was no longer needed, \$20.0 M was returned to HI1A in early October. Due to the Phased Transition Plan and the nature of redeemed (liquidating) strategies, there are residual cash balances (both USD and FX), as well as open receivables – Staff continues to monitor, with plans to transfer available cash to HI1A once activities are settled. During the quarter, Staff enacted such activity, by first repatriating and then transferring \$1.7 M from the Transition Account (HI2E) and Mondrian<sup>2</sup> (HI2L) to HI1A.

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<sup>1</sup> Securities Lending Income, \$153.7 K, Securities Litigation Income, \$46.9 K, and Commission Recapture Income, \$1.8 K, totaled \$202.5 K (dividend and interest income from the traditional managed accounts are re-invested and calculated separately as part of the manager’s performance). This quarter-end data may be relatively different across other Staff reports due to the timing of when these actual cash flows occur.

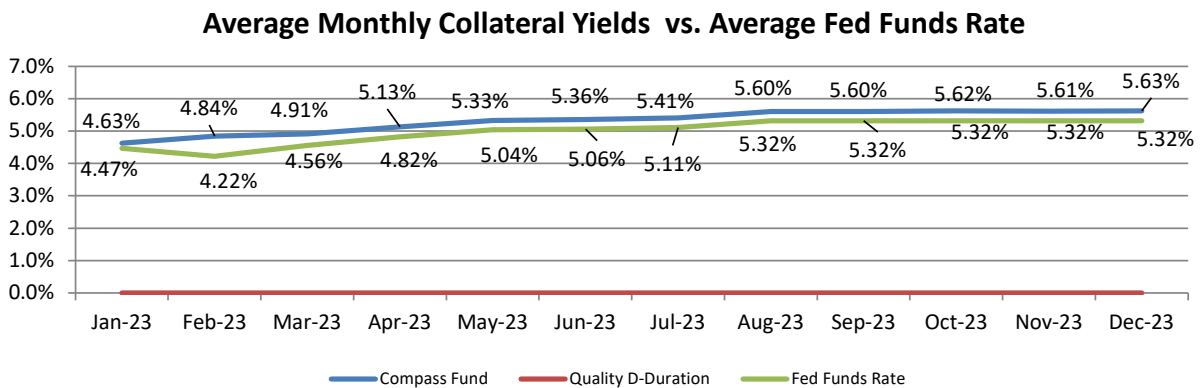
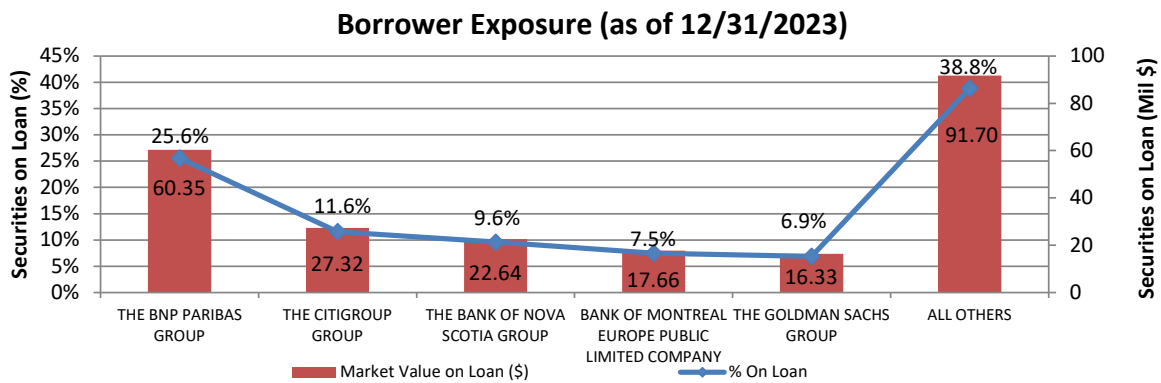
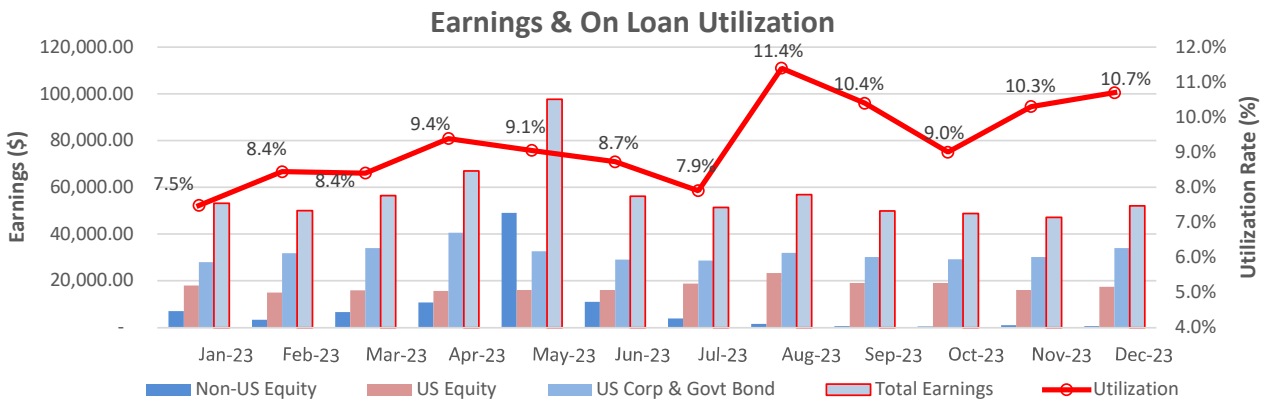
<sup>2</sup> Mondrian was fully liquidated in early September; however, there is a residual balance due to open receivables.

# Alameda County Employees' Retirement Association

## 4th Quarter 2023 Securities Lending Report

### Quarterly Summary

In 4Q2023, ACERA's earnings from Securities Lending activities were \$148,088.57. Fixed Income/Bonds generated the highest earnings of \$93,388.71. The average value of securities on loan was \$223,891,975. The average lendable amount for the same period was \$2.5 billion. The BNP Paribas Group was the largest borrower of ACERA's securities with 25.6% or \$60.35 million.



**Notes:**

- Quality D Liquidity and Quality D Duration Funds are managed by an affiliate of State Street Bank (SSB); these funds are common pools in which many securities lending clients of SSB invest their cash collateral generated from their security lending activities. ACERA invests the cash collateral received from its security lending activities into Quality D Liquidity and Quality D Duration Funds. As of 12/31/2023, ACERA's NAV per unit of the Compass Fund (1.0004). As of 12/31/2023, Compass Fund had 158,812,516.85 units.
- Data represents past performance and is not necessarily indicative of future results.
- Data Source: my.statestreet.com and Securities Finance Business Intelligence
- ACERA's Blackrock passive index funds (R1000 Index, MSCI World ex-US Index, and MSCI Emerging Markets), participate in securities lending. For 4Q2023, Blackrocks average lendable assets was 3,118,086,892. Average assets on loan was 224,591,499. Income generated was \$133,459. Income generated through the securities lending program is reinvested back into the index funds.
- Securities Lending income will be wired into ACERA's unallocated cash account a few days after months end.

*Securities Lending Report Provided by Staff*



## Investment Committee Workplan for 2024

April 3, 2024

### Action Items

### Information Items

Action Items	Information Items
January 3 (Meeting Cancelled)	1. Proposed 2024 Investment Committee Meeting Workplan (draft) – moved to the Board Meeting under “New Business”
February 7	1. Discussion and Possible Motion to Recommend that the Board approve an up to \$50 million Investment in PGIM Real Estate U.S. Debt Fund as part of ACERA’s Real Estate Portfolio, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations  2. 2024 Capital Market Assumptions 3. Investment Committee Work Plan 2024
March 6 (Meeting Cancelled)	
April 3	1. Performance Review for the Period Ending December 31, 2023 – Total Fund Highlighting Public Markets Asset Classes 2. Education session; Asset Liability Study Overview and Methodology 3. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the fourth quarter of 2023</i> 4. <i>Quarterly report on ACERA’s rebalancing activities for the fourth quarter 2023</i> 5. <i>Quarterly report on Investment Products and Services Introductions (IPSI) for the fourth quarter of 2023</i> 6. <i>Updated Investment Committee Work Plan 2024</i>

**Notes:**

1. This is a proposed WorkPlan and is subject to change. Periodic rearrangements of agenda items will be made to the workplan to provide a reasonable length of time for each meeting.
2. The updated WorkPlan will continue to be distributed to the IC on a quarterly basis.
3. Meeting date is assumed to be the first Wednesday of each month.



## Investment Committee Workplan for 2024

April 3, 2024

<b>Action Items</b>	<b>Information Items</b>
<p>May 1</p> <ol style="list-style-type: none"> <li>1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Real Estate Portfolio- (Placeholder)</li> </ol>	<ol style="list-style-type: none"> <li>1. Education Session: Presentation of Asset Liability Study Findings and Discussion of Possible Asset Allocation Mixes</li> </ol>
<p>June 5</p> <ol style="list-style-type: none"> <li>1. Discussion and Possible Motion to Recommend to the Board to Adopt an Asset Allocation Mix</li> <li>2. Discussion and Possible Motion to Recommend to the Board to Adopt an Amended Real Estate Policy (Placeholder)</li> <li>3. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Real Estate Portfolio – (Placeholder)</li> </ol>	<ol style="list-style-type: none"> <li>1. Education Session: Private Credit (Placeholder)</li> <li>2. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the first quarter of 2024</i></li> <li>3. <i>Quarterly report on ACERA’s rebalancing activities for the first quarter of 2024</i></li> <li>4. <i>Quarterly report on Investment Products and Services Introductions (IPSI) for the first quarter of 2024</i></li> <li>5. <i>Updated Investment Committee Work Plan 2024</i></li> </ol>
<p>July 3</p> <ol style="list-style-type: none"> <li>1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Real Assets Portfolio – (Placeholder)</li> <li>2. Discussion of and Possible Motion to Recommend to the Board to Adopt the Proposed timeline, search criteria, and evaluation Matrix for ACERA’s Emerging Markets Manager Search – International Equities (Placeholder)</li> </ol>	<ol style="list-style-type: none"> <li>1. Semiannual Performance Review for the Period Ending December 31, 2023 – Real Estate</li> <li>2. Semiannual Performance Review for the Period Ending December 31, 2023 – Private Equity</li> <li>3. Semiannual Performance Review for the Period Ending December 31, 2023 – Private Credit</li> <li>4. Semiannual Performance Review for the Period Ending December 31, 2023 – Absolute Return</li> <li>5. Semiannual Performance Review for the Period Ending December 31, 2023 – Real Assets</li> <li>6. Review of Private Credit Policy (Placeholder)</li> <li>7. Mid – year update on 2024 pacing plan implementation for Private Equity, Private Credit, Absolute Return, and Real Assets</li> </ol>

**Notes:**

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## Investment Committee Workplan for 2024

April 3, 2024

<b>Action Items</b>	<b>Information Items</b>
<p>August 7</p> <p>1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Private Equity Portfolio – (Placeholder)</p>	
<p>September 4</p> <p>1. Discussion of and Possible Motion to Recommend to the Board to Approve the Finalists for ACERA’s Emerging Market Manager Search – International Equities (Placeholder)</p>	<p>1. Performance Review for the Period Ending June 30, 2024 – Total Fund Highlighting Public Market Asset Classes</p> <p>2. Education Session: ESG (Placeholder)</p> <p>3. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the second quarter of 2024</i></p> <p>4. <i>Quarterly report on ACERA’s rebalancing activities for the second quarter of 2024</i></p> <p>5. <i>Quarterly report on Investment Products and Services Introductions (IPSI) for the second quarter of 2024</i></p> <p>6. <i>Updated Investment Committee Work Plan 2024</i></p>
<p>October 2</p> <p>1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Private Equity Portfolio- (Placeholder)</p>	<p>1. Review of Directed Brokerage Policy (Placeholder)</p>
<p>November 6</p>	<p>1. Review of ESG Policy (Placeholder)</p> <p>2. Review of Placement Agent Policy (Placeholder)</p>
<p>December 4</p> <p>1. Interview of the Finalists for ACERA’s Emerging Markets Manager Search – International Equities and Possible Motion by the Investment Committee to Recommend Finalist (s) to the Board (Placeholder)</p>	<p>1. 2025 Pacing Plans for Private Equity, Private Credit, Absolute Return, and Real Assets (Placeholder)</p> <p>2. Semiannual Performance Review for the Period Ending June 30, 2024 – Real Estate</p>

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3. Meeting date is assumed to be the first Wednesday of each month.



## Investment Committee Workplan for 2024

April 3, 2024

### Action Items

### Information Items

<ol style="list-style-type: none"> <li>2. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Private Equity Portfolio- (Placeholder)</li> <li>3. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Real Estate Portfolio – (Placeholder)</li> <li>4. Discussion of and Possible Motion to Recommend to the Board to Adopt the Proposed timeline, search criteria, and evaluation matrix for ACERA’s Small Cap Manager Search – International Equities (Placeholder)</li> </ol>	<ol style="list-style-type: none"> <li>3. Semiannual Performance Review for the Period Ending June 30, 2024 – Private Equity</li> <li>4. Semiannual Performance Review for the Period Ending June 30, 2024 – Private Credit</li> <li>5. Semiannual Performance Review for the Period Ending June 30, 2024 – Absolute Return</li> <li>6. Semiannual Performance Review for the Period Ending June 30, 2024 – Real Assets</li> <li>7. CA Gov. Code § 7514.7 Information Report</li> <li>8. Annual Update – ESG Implementation (Placeholder)</li> <li>9. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the third quarter of 2024</i></li> <li>10. <i>Quarterly report on ACERA’s rebalancing activities for the third quarter 2024</i></li> <li>11. <i>Quarterly report on Investment Products and Services Introductions (IPSI) for the third quarter of 2024</i></li> <li>12. <i>Updated Investment Committee Work Plan 2024</i></li> </ol>
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**Notes:**

1. This is a proposed WorkPlan and is subject to change. Periodic rearrangements of agenda items will be made to the workplan to provide a reasonable length of time for each meeting.
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