



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: June 30, 2023

Investment Performance Review for

San Mateo County Employees' Retirement Association

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2nd quarter summary

THE ECONOMIC CLIMATE

- Real GDP increased at a 2.0% rate in Q1 (1.8% growth year-over-year). The slowdown from the prior quarter reflected weaker inventory buildups and slower business investment. An upturn in consumer spending was the greatest support to economic growth, as consumption has ticked along at a steady rate.
- The unemployment rate remained very tight at 3.6% in June. The workforce appears to be experiencing a healthy, and possibly low pain, rebalancing of resources. Many workers are returning to the workforce while fewer job openings are being posted. Both of these effects reduce the mismatch between *workers available* and *available jobs*.

PORTFOLIO IMPACTS

- The U.S. consumer has shown resiliency. Household budgets have been strained by high inflation and a jump in interest rates; however, the boom in wealth over the past decade, fueled by a substantial bull market in stocks and in residential real estate, may provide a cushion in the next downturn. It remains unclear whether the U.S. will face recession in the near-term.
- The Cboe VIX implied volatility index fell to a surprisingly low level, despite broad expectations of recession, regional bank risks, and other not-yet-known consequences of liquidity withdrawal from the financial system. The index fell from 18.7% to 13.6% during the second quarter.

THE INVESTMENT CLIMATE

- The Fed implemented an additional rate hike to a new range of 5.00–5.25%, but longer-term U.S. interest rates remain anchored. This has resulted in the most deeply inverted U.S. yield curve since the early 1980s at -1.06% (defined as 10-year UST yield minus 2-year UST yield).
- Inflation fell further in the U.S., with June CPI coming in at a surprisingly low 3% year-over-year and Core CPI at 4.8%. Weakening energy prices have had a big impact on overall inflation levels, though prices appear to also be softening across many other types of goods and services, suggesting milder inflation is not solely an energy story.

ASSET ALLOCATION ISSUES

- Global equities persisted in their upward trajectory during Q2 (MSCI ACWI +6.2%). International developed markets underperformed domestic equities (S&P 500 +8.7%, MSCI EAFE +3.0%), as did emerging markets (MSCI EM +0.9%). U.S. equities rallied for a third consecutive quarter. A surge in AI-focused hype helped drive an expansion in the valuations of large tech firms.
- Growth stocks (+12.8%) outpaced value (+4.1%) once again, bringing the year-to-date performance differential to +23.9%. Sector-specific drivers, including product launches and upward adjustments to company guidance among Information Technology (+18.6%) mega-caps, drove growth stocks higher. Over recent years, certain style factors have exhibited some of the wildest swings in history.

Equity & credit markets performed strongly during Q2

A variety of risks hang overhead, though markets appear to be expecting a “soft landing”

U.S. economics summary

- Real GDP increased at a 2.0% rate in the first quarter of 2023 (1.8% growth year-over-year). The slowdown reflected weaker inventory buildups and slower business investment. Despite loftier inflation and higher interest rates, many economic signals are positive and/or improving.
- Inflation fell further in the U.S., with June CPI coming in at a surprisingly low 3% year-over-year and Core CPI at 4.8%. Weaker energy prices have had a large impact on overall inflation levels, though prices appear to also be softening across many other types of goods and services, suggesting milder inflation is not solely an energy story.
- The U.S. consumer has shown resiliency, with spending moving along at a moderate pace—at 2.1% year-over-year in May. These consumption patterns will be worth watching, as spending is the largest driver of economic growth.
- The Fed released its annual banking stress test results, which was applicable to the “too big to fail” class of banks. Results helped ease banking concerns as all 23 banks passed.
- The unemployment rate remained very tight at 3.6% in June. The workforce appears to be experiencing a healthy, and possibly low pain, rebalancing of resources. Many workers are returning to the workforce at the same time that fewer job openings are posted. Both of these effects reduce the mismatch between the total number of workers available relative to available jobs.
- Consumer sentiment improved slightly during the second quarter by most measures but remains pessimistic. The University of Michigan Consumer Sentiment survey showed that the outlook has improved due to factors such as the debt ceiling resolution and falling inflation.

	Most Recent	12 Months Prior
Real GDP (YoY)	1.8% 3/31/23	3.7% 3/31/22
Inflation (CPI YoY, Core)	4.8% 6/30/23	8.9% 6/30/22
Expected Inflation (5yr-5yr forward)	2.3% 6/30/23	2.1% 6/30/22
Fed Funds Target Range	5.00–5.25% 6/30/23	1.50–1.75% 6/30/22
10-Year Rate	3.81% 6/30/23	2.98% 6/30/22
U-3 Unemployment	3.6% 6/30/23	3.6% 6/30/22
U-6 Unemployment	6.9% 6/30/23	6.7% 6/30/22

International economics summary

- Developed-economy growth has slowed materially. Many countries faced heavy risks, including energy crises, inflation uncertainty, contracting government spending, and higher interest rates. However, many areas have fared better than initially feared, helping to boost the performance of international equities. The IMF forecasts a pronounced slowing of growth in developed economies from 2.7% in 2022 to 1.3% in 2023, and a relatively unchanged emerging market growth rate from 4.0% to 3.9%.
- Unlike the Federal Reserve’s recent pause, many central banks have opted for more rate hikes amid backdrops of relative economic strength and persistent inflation. In June, the Bank of England voted 7-2 for a +50bps increase while the European Central Bank and Bank of Canada hiked +25bps. The ECB also raised core inflation projections to 5.4% through year-end and

lowered GDP growth to 0.9% for the year.

- On June 16th, the Bank of Japan announced that they would keep their low-rate policy unchanged. The dovish stance, including expectations for cooling inflation, was negative for the yen. Following the announcement, the yen weakened through month-end to finish -2.5% lower against the dollar.
- Inflation fell further across developed countries and has dropped surprisingly quickly in the emerging markets. China now faces a 0% inflation rate and risks of deflation, while inflation in Brazil has fallen from over 11% in late 2022 to below 4% in May. Further declines in prices could create new market risks as deflation has serious economic implications, especially in heavily debt-burdened nations.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	1.8% 3/31/23	3.0% 6/30/23	3.6% 6/30/23
Eurozone	1.0% 3/31/23	5.5% 6/30/23	6.5% 5/31/23
Japan	1.3% 3/31/23	3.2% 5/31/23	2.6% 5/31/23
BRICS Nations	4.9% 3/31/23	4.2% 3/31/23	4.8% 12/31/22
Brazil	4.0% 3/31/23	3.9% 5/31/23	8.3% 5/31/23
Russia	(1.8%) 3/31/23	2.5% 5/31/23	3.2% 5/31/23
India	6.1% 3/31/23	4.8% 6/30/23	7.7% 5/31/23
China	4.5% 3/31/23	0.0% 6/30/23	5.2% 5/31/23

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

- Global equities persisted in their upward trajectory during Q2 (MSCI ACWI +6.2%). Domestic equities (S&P 500 +8.7%) outperformed both international developed (MSCI EAFE +3.0%) and emerging markets (MSCI EM +0.9%).
- U.S. equities rallied for a third consecutive quarter as mega-cap technology stocks remained top performers. A surge in AI-focused hype helped drive an expansion in the valuations of large tech firms including Nvidia and Apple – which became the first company to exceed \$3 trillion in market cap.
- The effects of currency movements on portfolio performance was mixed during Q2. Varying central bank approaches to inflation have contributed to much uncertainty around the path of the U.S. dollar and therefore heightened volatility for investors with unhedged currency exposure. During the past year, currency movement led to a -2.5% loss for investors with unhedged exposure to international developed equity (MSCI EAFE unhedged +18.8%, MSCI EAFE hedged +21.3%).
- Growth stocks (+12.8%) again outpaced value (+4.1%), bringing the year-to-date performance differential to +23.9%. Over recent years, style factors (ex: small vs large, value vs growth) have exhibited some of the wildest swings in history.
- The Cboe VIX implied volatility index moved to surprisingly low levels, despite broad expectations of recession, ongoing risks of regional bank contagion, and other not-yet-known consequences of central bank liquidity withdrawal from the financial system. The index fell from 18.7% to 13.6% during the second quarter.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	8.7%		19.6%	
U.S. Small Cap (Russell 2000)	5.2%		12.3%	
U.S. Equity (Russell 3000)	8.4%		19.0%	
U.S. Large Value (Russell 1000 Value)	4.1%		11.5%	
US Large Growth (Russell 1000 Growth)	12.8%		27.1%	
Global Equity (MSCI ACWI)	6.2%	6.2%	16.5%	17.5%
International Large (MSCI EAFE)	3.0%	5.0%	18.8%	21.3%
Eurozone (EURO STOXX 50)	4.1%	4.5%	36.3%	34.7%
U.K. (FTSE 100)	2.4%	0.0%	14.0%	10.9%
Japan (TOPIX)	4.2%	16.0%	19.4%	31.2%
Emerging Markets (MSCI Emerging Markets)	0.9%	1.6%	1.8%	3.4%

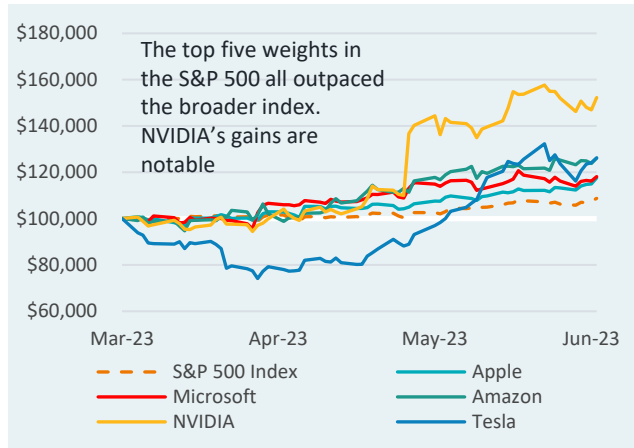
Source: Russell Investments, MSCI, STOXX, FTSE, JPX, as of 6/30/23

Domestic equity

U.S. equities rallied (S&P 500 Index +8.7%) for a third consecutive quarter as mega-cap technology stocks remained top performers. A surge in AI-focused hype helped drive an expansion in the valuations of tech firms such as Apple, which became the first company to exceed \$3 trillion in market cap, and Nvidia, which became the fifth trillion-dollar company in the S&P 500 following its recent ascent. This trend was apparent from the strong overall outperformance of the Information Technology sector. Breadth improved near quarter-end as investors digested a pause in Fed rate hikes and expectations for a U.S. recession eased, providing a tailwind for sectors excluded from the tech rally.

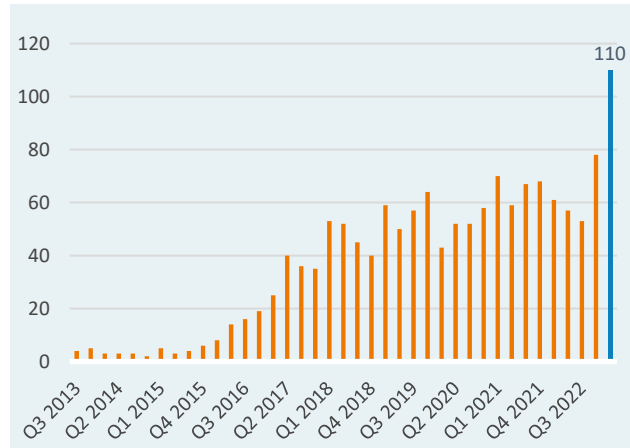
The Financial sector (+5.3%) saw some reprieve in the second quarter and recovered slightly from steep March declines which resulted from the collapse of three mid-sized banks. In its annual stress test, the Federal Reserve found the 23 largest U.S. banks capable of weathering a severe recession while proceeding with their respective lending businesses. Despite the results, the industry faces mounting headwinds including a deeply-inverted yield curve and the prospect of further Fed tightening.

GROWTH OF \$100,000 QUARTER TO DATE



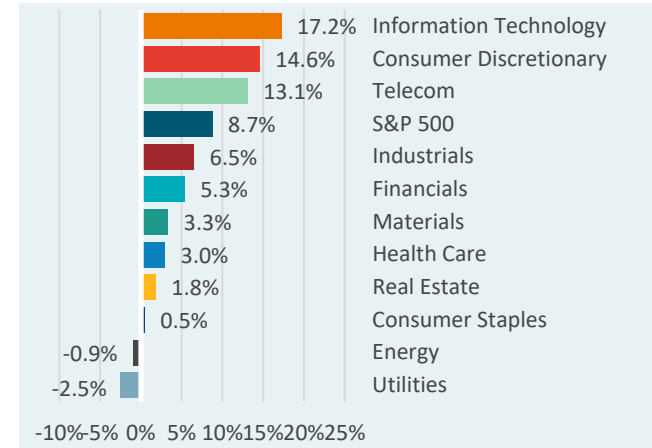
Source: Bloomberg, as of 6/30/23

OF S&P COMPANIES CITING "AI" ON EARNINGS CALLS



Source: FactSet, as of 6/30/23

Q2 2023 SECTOR PERFORMANCE



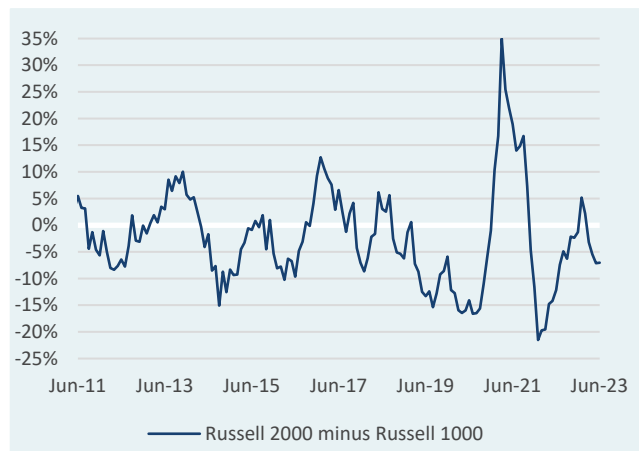
Source: Morningstar, as of 6/30/23

Domestic equity size & style

Growth stocks (+12.8%) continued to outpace value (+4.1%), bringing the year-to-date performance difference to +23.9%. Sector-specific drivers, including product launches and upward adjustments to company guidance among Information Technology (+18.6%) heavyweights, drove growth index performance. Sector behavior has persistently contributed to style factor disparity. This was evident in Q2 alongside large gains in Information Technology (+17.2%) and notable underperformance from Energy and Utilities (-0.9% and -2.5%, respectively).

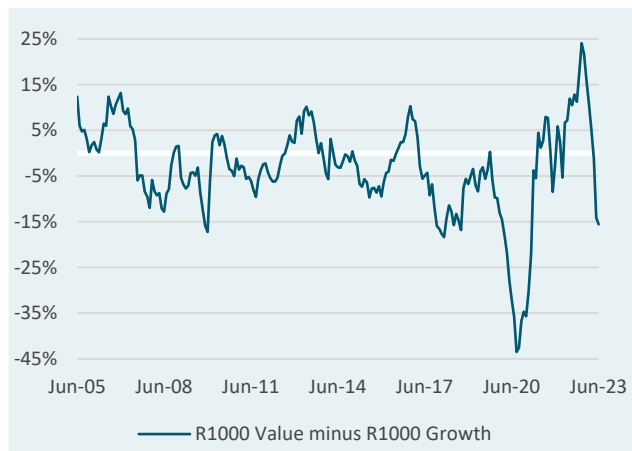
Over recent years, style factors (ex: small vs large, value vs growth) have exhibited some of the wildest swings in history. We maintain our view that factor timing should rarely be pursued for most investors. There are occasions when market mispricing offers a compelling case to tilt into a style factor, though these occasions come along perhaps every few decades rather than every few years. We believe that style investing is most appropriately pursued in a strategic manner based on each individual investor's market beliefs and long-term goals.

SMALL CAP VS LARGE CAP (YOY)



Source: FTSE, as of 6/30/23

VALUE VS GROWTH (YOY)



Source: FTSE, as of 6/30/23

1-YEAR SIZE & STYLE PERFORMANCE

	Value	Core	Growth
Large Cap	11.5%	19.4%	27.1%
Mid Cap	10.5%	14.9%	23.1%
Small Cap	6.0%	12.3%	18.5%

Source: Bloomberg, as of 6/30/23

International developed equity

International developed equities lagged the domestic market but outpaced emerging market equities for a third straight quarter. The MSCI EAFE Index rose +3.0% in unhedged currency terms as both Asian and European equities notched gains. International developed markets have performed very well over the past year despite recession, aggressive central bank interest rate hikes, and a severe energy crisis in Europe, up +18.8% (MSCI EAFE) relative to the global opportunity set at +16.5% (MSCI ACWI). Some of this behavior may relate to Europe's energy crisis turning out less severe than originally feared. We expect that relatively cheap valuations of many

markets may act as somewhat of a floor in the case of near-term equity stress, given that the gap in pricing between U.S. and non-U.S. stocks is at one of the widest levels in history.

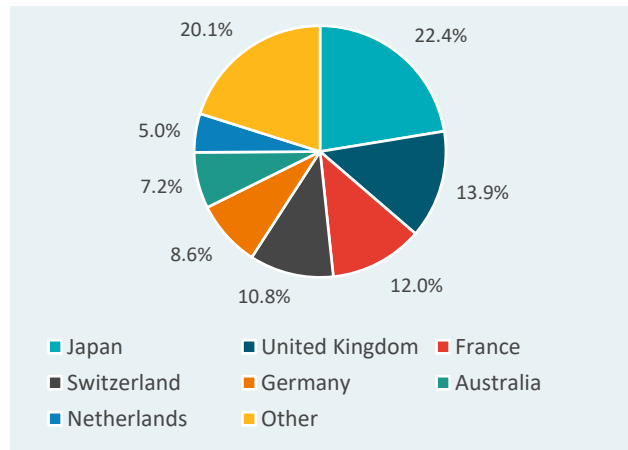
Japanese equities (MSCI Japan +6.4%) saw broad gains after the Bank of Japan held interest rates in negative territory and economic data showed resilience in the face of weakening global demand. Additional factors, including stronger-than-expected earnings from automakers and tech conglomerates, helped boost the Nikkei Index to 33-year highs.

INTERNATIONAL DEVELOPED EQUITY



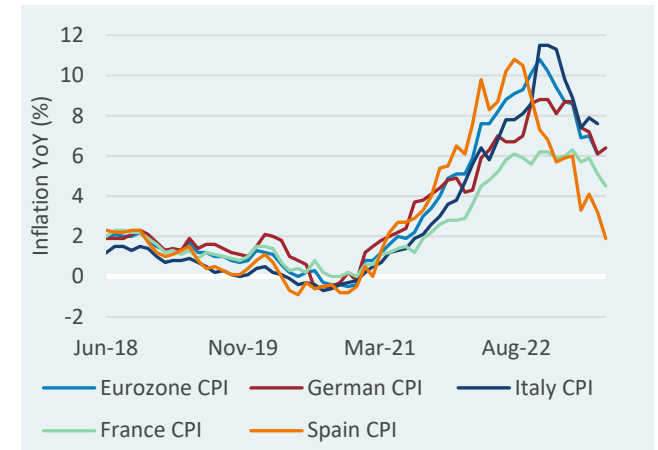
Source: MSCI, as of 6/30/23

MSCI EAFE INDEX COUNTRY DECOMPOSITION



Source: MSCI, as of 6/30/23

EUROZONE INFLATION



Source: Bloomberg, as of 6/30/23 or latest release

Emerging market equity

Emerging market equities lagged other global markets again in the second quarter. The MSCI EM Index finished up +0.9%, while the MSCI EAFE Index rose +3.0% and the S&P 500 gained +8.7%.

There were substantial performance differences across the emerging markets complex in Q2, ranging from Brazil's performance of +20.7% to China's -9.7%. We believe skilled active management is a preferred way to navigate risks and potentially bolster performance in this asset class.

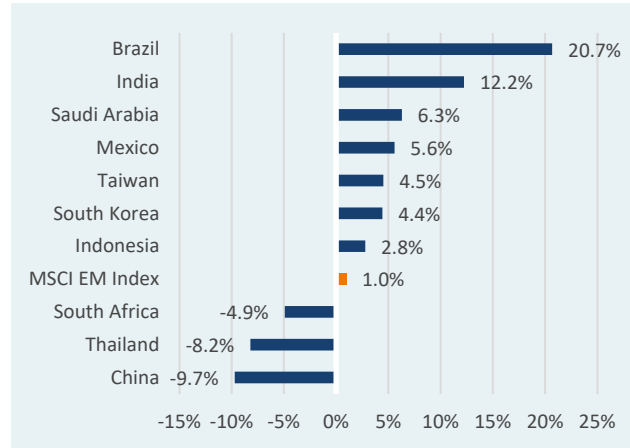
Over the past year, China's reopening provided a significant boost to equities, though not large enough to recover from previous significant losses driven by a mix of the three-year "zero-covid" policy, government crackdowns on large technology names, and knock-on effects from property market stress. Negative China sentiment has been building recently due to developments such as increasing geopolitical tensions with the U.S. (which eased on the margin following Secretary of State Blinken's visit to China), credit issues amongst property and local government financing vehicles, and a very high youth unemployment rate.

EMERGING MARKET EQUITY



Source: MSCI, as of 6/30/23

Q2 2023 MSCI COUNTRY RETURNS (USD)



Source: Bloomberg, MSCI, as of 6/30/23

MSCI CHINA INDEX



Source: MSCI, as of 6/30/23

Fixed income environment

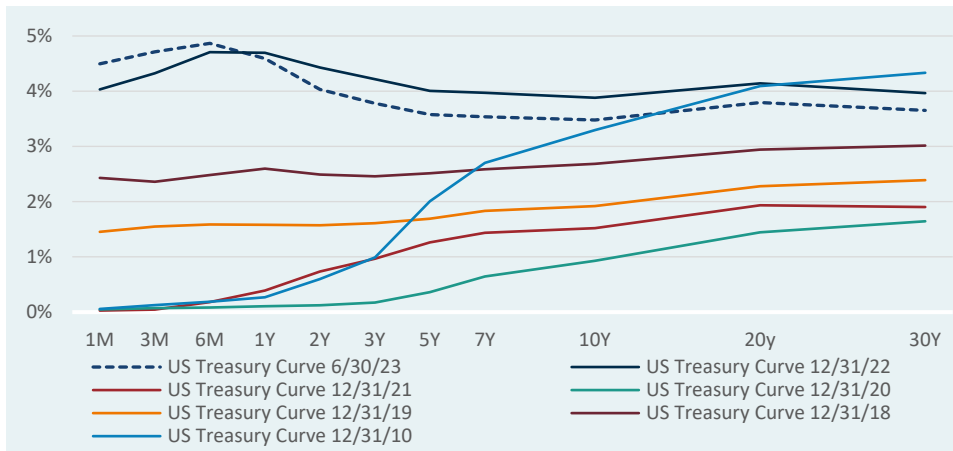
- The 10-year U.S. Treasury yield increased during the quarter from 3.48% to 3.81%, reversing the decline experienced during Q1. Despite an additional rise in short-term interest rates, longer-term interest rates remain anchored. This has resulted in the most deeply inverted yield curve since the early 1980s at -1.06% (10-year Treasury yield minus 2-year Treasury yield).
- The Federal Reserve opted to keep interest rates stable in June, but signaled two more rate hikes were ahead in 2023. Some referred to this messaging as a “hawkish pause”. Despite cooling inflation, the Fed appears concerned about strong ongoing labor market conditions and persistent monthly price rises. Markets are pricing in a high likelihood of a +25bps July hike.
- Historically, equities and bonds have experienced negative correlation (moved in opposite directions through time). In 2022, both equities and bonds suffered losses as the Fed continued tightening monetary policy. Following the failure of SVB, the asset classes seems to have resumed negative correlation behavior.
- During the second quarter, higher quality credit and U.S. Treasuries saw mild losses. Riskier credit performed very well as credit spreads have stayed surprisingly tight. Longer duration investment grade corporate bonds disappointed, returning -0.3%.
- Despite concerns related to the future path of Federal Reserve rate hikes, interest rate volatility declined during the quarter as indicated by the ICE BofA “MOVE” Index, which measures the volatility priced into U.S. Treasury bonds. While inflation has moderated in recent quarters, the market may need to price in additional rate hikes should it remain above the Federal Reserve's target of roughly 2%, which could contribute to further volatility.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	(0.8%)	(0.9%)
Core Plus Fixed Income (Bloomberg U.S. Universal)	(0.6%)	0.0%
U.S. Treasuries (Bloomberg U.S. Treasury)	(1.4%)	(2.1%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	1.7%	9.1%
Bank Loans (S&P/LSTA Leveraged Loan)	3.1%	10.7%
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	2.5%	11.4%
Emerging Market Debt Hard (JPM EMBI Global Diversified)	2.2%	7.4%
Mortgage-Backed Securities (Bloomberg MBS)	(0.6%)	(1.5%)

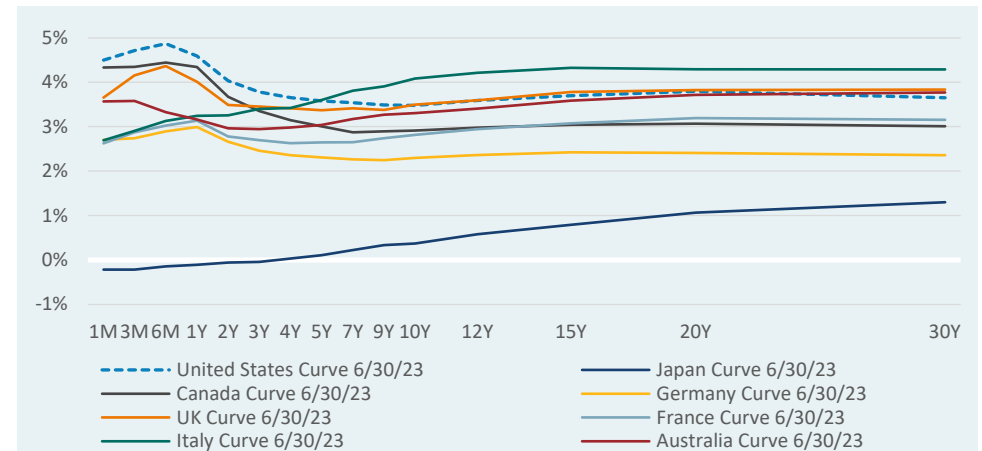
Source: Bloomberg, as of 6/30/23

Yield environment

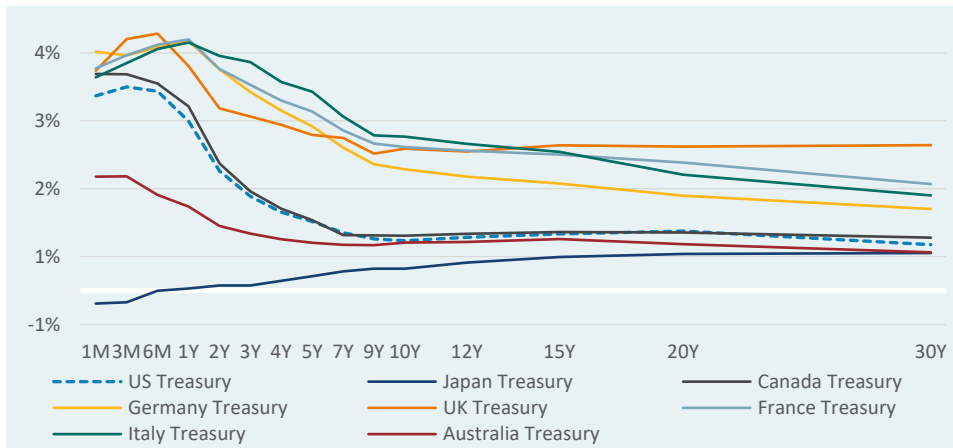
U.S. YIELD CURVE



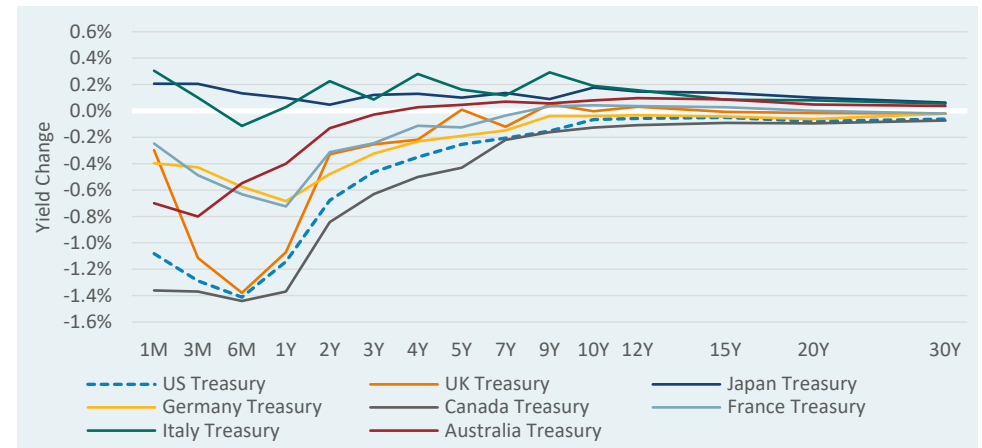
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 6/30/23

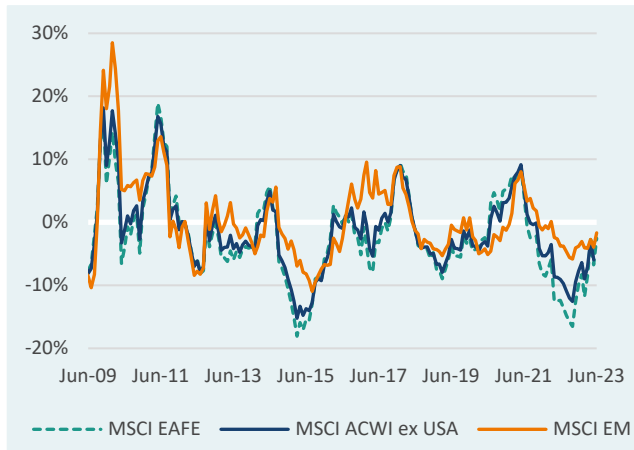
Currency

The effects of currency volatility on portfolio performance was mixed in Q2. Overall, the value of the U.S. dollar was unchanged on a trade-weighted basis. Varying central bank approaches to fighting inflation has contributed to much uncertainty around the path of the U.S. dollar and therefore the volatility generated by currency movement for investors with unhedged currency exposure (what we refer to as “embedded currency”). During the past full year, currency movement led to a -2.5% loss for investors with unhedged exposure to international developed equity (MSCI EAFE unhedged +18.8%, MSCI EAFE hedged +21.3%).

portfolio risk while also increasing long-term expected returns. The MSCI Currency Factor Mix Index—a representation of a passive investment in the currency market—has shown a positive one-year rolling return over most periods with very low volatility. This contrasts to the unhedged currency exposure that most investors own, which has demonstrated high volatility and frequent losses.

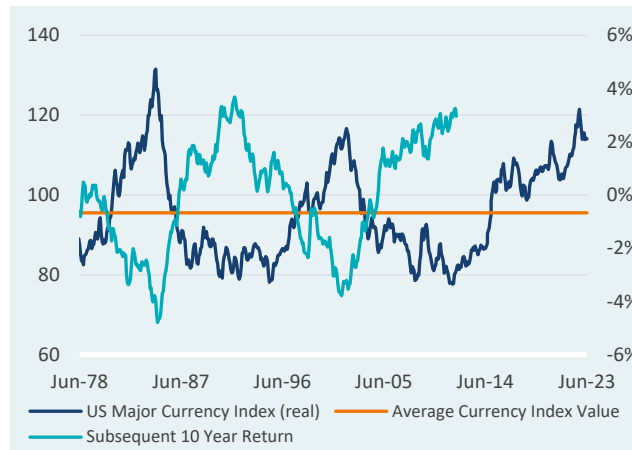
A thoughtful currency program may allow investors to reduce their total

EFFECT OF CURRENCY (1-YEAR ROLLING)



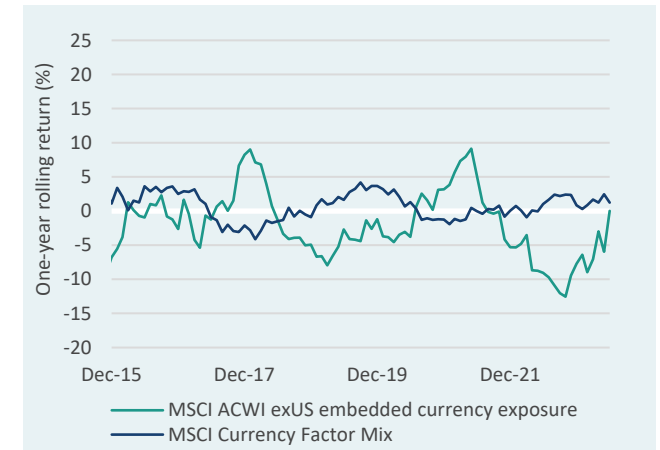
Source: MSCI, as of 6/30/23

BLOOMBERG DOLLAR SPOT INDEX



Source: Federal Reserve, as of 6/30/23

EMBEDDED CURRENCY VS CURRENCY FACTORS



Source: Bloomberg, MSCI, as of 6/30/23

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	6.6	8.7	16.9	19.6	14.6	12.3	12.9
S&P 500 Equal Weighted	7.7	4.0	7.0	13.8	15.8	10.2	11.5
DJ Industrial Average	4.7	4.0	4.9	14.2	12.3	9.6	11.3
Russell Top 200	6.2	9.9	19.4	20.9	14.6	13.2	13.5
Russell 1000	6.8	8.6	16.7	19.4	14.1	11.9	12.6
Russell 2000	8.1	5.2	8.1	12.3	10.8	4.2	8.3
Russell 3000	6.8	8.4	16.2	19.0	13.9	11.4	12.3
Russell Mid Cap	8.3	4.8	9.0	14.9	12.5	8.5	10.3
Style Index							
Russell 1000 Growth	6.8	12.8	29.0	27.1	13.7	15.1	15.7
Russell 1000 Value	6.6	4.1	5.1	11.5	14.3	8.1	9.2
Russell 2000 Growth	8.3	7.1	13.6	18.5	6.1	4.2	8.8
Russell 2000 Value	7.9	3.2	2.5	6.0	15.4	3.5	7.3

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	5.8	6.2	13.9	16.5	11.0	8.1	8.8
MSCI ACWI ex US	4.5	2.4	9.5	12.7	7.2	3.5	4.7
MSCI EAFE	4.6	3.0	11.7	18.8	8.9	4.4	5.4
MSCI EM	3.8	0.9	4.9	1.7	2.3	0.9	3.0
MSCI EAFE Small Cap	2.9	0.6	5.5	10.2	5.7	1.3	6.2
Style Index							
MSCI EAFE Growth	3.5	2.8	14.2	20.2	6.3	5.4	6.4
MSCI EAFE Value	5.6	3.2	9.3	17.4	11.3	2.9	4.1
Regional Index							
MSCI UK	3.9	2.2	8.4	13.2	12.6	2.8	3.9
MSCI Japan	4.1	6.4	13.0	18.1	5.7	3.1	5.2
MSCI Euro	6.4	3.8	19.9	32.7	11.7	5.2	6.2
MSCI EM Asia	2.7	(0.8)	4.0	(0.9)	1.2	1.2	4.7
MSCI EM Latin American	12.0	14.0	18.5	29.8	16.4	4.8	1.1

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
Bloomberg US TIPS	(0.3)	(1.4)	1.9	(1.4)	(0.1)	2.5	2.1
Bloomberg US Treasury Bills	0.4	1.2	2.3	3.6	1.2	1.5	1.0
Bloomberg US Agg Bond	(0.4)	(0.8)	2.1	(0.9)	(4.0)	0.8	1.5
Bloomberg US Universal	(0.2)	(0.6)	2.3	(0.0)	(3.4)	1.0	1.8
Duration							
Bloomberg US Treasury 1-3 Yr	(0.5)	(0.6)	1.0	0.1	(1.1)	0.9	0.8
Bloomberg US Treasury Long	(0.0)	(2.3)	3.7	(6.8)	(12.1)	(0.9)	1.8
Bloomberg US Treasury	(0.8)	(1.4)	1.6	(2.1)	(4.8)	0.4	1.0
Issuer							
Bloomberg US MBS	(0.4)	(0.6)	1.9	(1.5)	(3.7)	0.0	1.1
Bloomberg US Corp. High Yield	1.7	1.7	5.4	9.1	3.1	3.4	4.4
Bloomberg US Agency Interm	(0.5)	(0.4)	1.5	(0.2)	(2.0)	0.7	0.9
Bloomberg US Credit	0.3	(0.3)	3.1	1.4	(3.4)	1.7	2.5

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	4.0	(2.6)	(7.8)	(9.6)	17.8	4.7	(1.0)
Wilshire US REIT	5.4	3.3	6.7	(0.3)	8.6	4.4	6.4
CS Leveraged Loans	2.2	3.1	6.3	10.1	6.2	4.0	4.1
S&P Global Infrastructure	3.0	(0.1)	3.8	4.2	10.6	5.3	6.7
Alerian MLP	4.5	6.2	9.8	31.5	31.2	5.9	0.8
Regional Index							
JPM EMBI Global Div	2.2	2.2	4.1	7.4	(3.1)	0.6	2.8
JPM GBI-EM Global Div	3.3	2.5	7.8	11.4	(1.4)	0.3	(0.6)
Hedge Funds							
HFRI Composite	2.2	2.2	3.5	5.1	8.2	5.0	4.7
HFRI FOF Composite	1.2	1.5	2.3	3.7	5.0	3.3	3.4
Currency (Spot)							
Euro	2.3	0.4	2.2	4.4	(1.0)	(1.4)	(1.7)
Pound Sterling	2.6	2.8	5.7	4.7	1.0	(0.8)	(1.8)
Yen	(3.3)	(7.9)	(8.7)	(6.0)	(9.3)	(5.2)	(3.7)

Source: Morningstar, HFRI, as of 6/30/23.

San Mateo County Employees' Retirement Association

Investment Performance Review

Period Ending: June 30, 2023



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- The Total Fund, net of manager fees, returned 2.1% in the second quarter of 2023 and in the ranked 83rd percentile among other public plans greater than \$1 billion (median of 2.6%). It lagged the policy index return of 2.9%. The Total Fund ex Overlay returned 2.1% for the quarter. The Total Fund one-year return of 5.1% lagged the policy index return of 6.5% and ranked in the 94th percentile of its peer universe. The three-year return of 7.7% (69th percentile) lagged the median large public plan (8.3%) and the policy index (7.9%).

- Second quarter results were enhanced by the following factors:
 1. OGIM Quant Solutions beat the Russell 2000 (7.0% vs 5.2%). All of the factors added value in the second quarter, growth, quality and deep value factors like book to price and sales to price all contributed to relative performance

- Second quarter results were hindered by the following factors:
 1. Both defensive equity managers trailed the Russell 1000 Index due to the sharp rise in equity markets. PanAgora's diversified approach particularly hurt in the quarter as the fund gained 1.3% trailing the Russell 1000 which gained 8.6%.
 2. Baillie Gifford gained 0.4% trailing the MSCI ACWI ex US Growth which gained 2.1%. The slower than expected recovery in China from the COVID reopening contributed to underperformance versus the index.

Total Fund
Performance Summary (Net of Fees)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo Rank	YTD	1 Yr Rank	2 Yrs Rank	3 Yrs Rank	5 Yrs Rank	10 Yrs Rank
Total Fund**	5,990,354,946	100.0	2.1 (83)	5.0 (90)	5.1 (94)	0.3 (43)	7.7 (69)	5.7 (70)	6.8 (53)
Policy Index			2.9 (30)	7.4 (22)	6.5 (75)	0.9 (32)	7.9 (61)	6.4 (44)	7.3 (38)
InvMetrics Public DB > \$1B Median			2.6	6.5	7.6	-0.1	8.3	6.2	6.9
Total Fund ex Overlay	5,970,300,616	99.7	2.1 (83)	4.9 (90)	4.8 (97)	0.3 (43)	7.7 (69)	5.6 (74)	6.7 (59)
Policy Index			2.9 (30)	7.4 (22)	6.5 (75)	0.9 (32)	7.9 (61)	6.4 (44)	7.3 (38)
InvMetrics Public DB > \$1B Median			2.6	6.5	7.6	-0.1	8.3	6.2	6.9
Public Equity	2,486,361,904	41.5	4.6 (90)	11.2 (88)	15.0 (79)	-0.7 (33)	10.8 (57)	7.4 (66)	8.8 (66)
Blended Public Equity Index			5.9 (44)	13.1 (45)	16.6 (47)	-0.1 (24)	11.7 (34)	8.4 (29)	9.4 (34)
InvMetrics All DB Total Equity Median			5.7	12.9	16.3	-1.6	10.9	7.8	9.2
US Equity	1,358,304,363	22.7	6.3 (89)	11.1 (92)	15.7 (85)	2.5 (15)	13.3 (64)	9.9 (76)	11.2 (79)
Blended US Equity Index			8.4 (22)	16.2 (21)	19.0 (27)	1.2 (39)	13.9 (45)	11.4 (20)	12.2 (30)
Russell 3000 Index			8.4 (22)	16.2 (21)	19.0 (27)	1.2 (39)	13.9 (45)	11.4 (20)	12.3 (26)
InvMetrics All DB US Equity Median			7.7	14.9	18.2	0.7	13.8	10.6	11.8
Large Cap Equity	1,240,440,742	20.7	6.2 (54)	11.1 (52)	15.1 (54)	2.5 (42)	12.9 (55)	10.4 (51)	12.0 (40)
Russell 1000 Index			8.6 (32)	16.7 (33)	19.4 (34)	1.9 (51)	14.1 (40)	11.9 (30)	12.6 (30)
eV US Large Cap Equity Median			6.5	11.6	15.9	1.9	13.3	10.5	11.4
Acadian US MGD V	273,973	0.0	5.2 (76)	8.1 (82)	13.4 (71)	3.1 (37)	10.4 (88)	-	-
Russell 1000 Index			8.6 (24)	16.7 (22)	19.4 (26)	1.9 (54)	14.1 (37)	11.9 (-)	12.6 (-)
eV US Large Cap Core Equity Median			7.3	12.9	16.6	2.1	13.4	-	-
BlackRock Russell 1000	793,228,100	13.2	8.6 (24)	16.7 (22)	19.4 (26)	1.9 (54)	14.1 (38)	11.9 (29)	-
Russell 1000 Index			8.6 (24)	16.7 (22)	19.4 (26)	1.9 (54)	14.1 (37)	11.9 (30)	12.6 (-)
eV US Large Cap Core Equity Median			7.3	12.9	16.6	2.1	13.4	10.9	-
DE Shaw	216,525,262	3.6	5.9 (68)	12.3 (54)	16.3 (52)	1.4 (65)	13.1 (56)	10.0 (68)	12.3 (29)
Russell 1000 Index			8.6 (24)	16.7 (22)	19.4 (26)	1.9 (54)	14.1 (37)	11.9 (30)	12.6 (21)
eV US Large Cap Core Equity Median			7.3	12.9	16.6	2.1	13.4	10.9	11.7
PanAgora Defuseq	230,413,407	3.8	1.3 (99)	1.4 (99)	6.7 (97)	3.6 (27)	11.1 (82)	-	-
Russell 1000 Index			8.6 (24)	16.7 (22)	19.4 (26)	1.9 (54)	14.1 (37)	11.9 (-)	12.6 (-)
eV US Large Cap Core Equity Median			7.3	12.9	16.6	2.1	13.4	-	-
Small Cap Equity	115,911,993	1.9	7.0 (16)	10.1 (39)	18.0 (23)	0.0 (23)	16.4 (35)	4.5 (78)	7.4 (86)
Russell 2000 Index			5.2 (38)	8.1 (57)	12.3 (62)	-8.3 (80)	10.8 (72)	4.2 (83)	8.3 (71)
eV US Small Cap Equity Median			4.6	8.8	13.9	-3.4	14.4	6.3	9.3
PGIM Quant Solutions	115,911,993	1.9	7.0 (13)	10.1 (34)	18.0 (26)	0.0 (22)	16.4 (33)	4.5 (85)	-
Russell 2000 Index			5.2 (38)	8.1 (60)	12.3 (66)	-8.3 (94)	10.8 (86)	4.2 (89)	8.3 (-)
eV US Small Cap Core Equity Median			4.7	8.9	14.3	-2.8	14.2	6.5	-
Domestic Equity Overlay	1,951,628	0.0	9.1	18.1	36.4	51.7	53.2	-	-

* Total Fund and asset class aggregates are ranked in InvMetrics universes. Managers are ranked in eVest (eA) manager universes.

** Includes Parametric Minneapolis manager funded in August 2013
See Appendix for Benchmark History

Total Fund
Performance Summary (Net of Fees)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo Rank	YTD	1 Yr Rank	2 Yrs Rank	3 Yrs Rank	5 Yrs Rank	10 Yrs Rank
International Equity with Record	1,128,057,541	18.8	2.9 (49)	11.4 (38)	14.2 (59)	-4.1 (39)	8.0 (46)	4.7 (25)	5.5 (41)
<i>Blended International Equity Index</i>			3.1 (35)	9.9 (73)	13.8 (65)	-1.9 (11)	9.0 (30)	4.7 (24)	5.7 (33)
<i>InvMetrics All DB Global ex-US Equity Median</i>			2.8	10.8	14.5	-4.7	7.7	4.1	5.4
International Equity	1,119,922,205	18.7	2.0 (88)	10.6 (56)	13.3 (70)	-4.5 (43)	7.7 (51)	4.6 (28)	5.5 (44)
<i>Blended International Equity Index</i>			3.1 (35)	9.9 (73)	13.8 (65)	-1.9 (11)	9.0 (30)	4.7 (24)	5.7 (33)
<i>MSCI EAFE Index</i>			3.2 (31)	12.1 (20)	19.4 (6)	-0.6 (5)	9.5 (17)	4.9 (19)	5.9 (23)
<i>InvMetrics All DB Global ex-US Equity Median</i>			2.8	10.8	14.5	-4.7	7.7	4.1	5.4
Baillie Gifford	269,724,321	4.5	0.4 (87)	10.4 (67)	14.3 (61)	-14.2 (80)	1.4 (80)	3.3 (67)	5.9 (70)
<i>MSCI ACWI ex US</i>			2.7 (47)	9.9 (69)	13.3 (66)	-4.2 (23)	7.7 (21)	4.0 (59)	5.5 (86)
<i>MSCI ACWI ex US Growth</i>			2.1 (58)	11.0 (58)	13.7 (66)	-8.0 (43)	4.3 (56)	4.4 (53)	6.2 (63)
<i>eV ACWI ex-US Growth Equity Median</i>			2.3	12.2	15.6	-9.3	4.7	4.5	6.9
Mondrian	270,534,890	4.5	2.9 (48)	11.9 (39)	11.6 (83)	-2.8 (69)	9.0 (82)	2.9 (62)	4.1 (77)
<i>MSCI AC World ex USA Value</i>			3.3 (36)	8.8 (70)	13.0 (68)	-0.3 (40)	11.2 (58)	3.3 (55)	4.3 (72)
<i>MSCI AC World ex USA Index</i>			2.7 (57)	9.9 (54)	13.3 (65)	-4.2 (83)	7.7 (88)	4.0 (40)	5.2 (43)
<i>eV ACWI ex-US Value Equity Median</i>			2.8	10.5	14.8	-1.3	11.7	3.7	5.0
BlackRock MSCI ACWI EX-US IMI	547,880,982	9.1	2.5 (63)	9.4 (77)	12.8 (77)	-4.8 (62)	7.6 (61)	-	-
<i>MSCI AC World ex USA IMI (Net)</i>			2.4 (65)	9.1 (78)	12.5 (78)	-5.1 (66)	7.3 (64)	3.4 (-)	4.9 (-)
<i>eV ACWI ex-US All Cap Core Eq Median</i>			2.9	10.8	15.3	-4.2	8.3	-	-
Int'l Equity Currency Overlay	-	0.0							
International Equity Overlay	31,782,012	0.5	2.3	8.7	10.1	-4.0	3.8	-	-
Record Dynamic Currency Hedge	8,135,336	0.1	2,401.2	-	-	-	-	-	-
Fixed Income	1,328,635,464	22.2	0.6 (10)	3.1 (55)	1.4 (43)	-3.9 (26)	-0.7 (21)	1.8 (22)	2.7 (25)
<i>Blended Fixed Income Index</i>			-0.1 (34)	3.0 (58)	2.7 (25)	-4.2 (32)	-1.7 (35)	1.8 (21)	2.3 (48)
<i>InvMetrics All DB Total Fixed Income Median</i>			-0.4	3.2	1.0	-5.3	-2.1	1.3	2.2
Core Fixed	721,729,389	12.0	-0.7	2.5	-0.6	-5.9	-3.4	0.7	1.8
<i>Bimbg. U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-5.7	-4.0	0.8	1.5
DoubleLine	230,983,635	3.9	-0.6 (57)	3.3 (24)	-0.7 (42)	-6.2 (94)	-3.7 (86)	-	-
<i>Bimbg. U.S. Aggregate Index</i>			-0.8 (76)	2.1 (57)	-0.9 (46)	-5.7 (87)	-4.0 (95)	0.8 (-)	1.5 (-)
<i>eV US Securitized Fixed Inc Median</i>			-0.5	2.3	-1.1	-4.5	-1.8	-	-
FIAM Bond	201,939,887	3.4	-0.4 (11)	2.4 (37)	-0.2 (31)	-5.4 (26)	-3.1 (22)	1.6 (9)	2.2 (8)
<i>Bimbg. U.S. Aggregate Index</i>			-0.8 (73)	2.1 (73)	-0.9 (75)	-5.7 (54)	-4.0 (84)	0.8 (78)	1.5 (78)
<i>eV US Core Fixed Inc Median</i>			-0.7	2.3	-0.5	-5.7	-3.6	1.0	1.7
NISA Core Bond	223,811,559	3.7	-0.8 (72)	2.2 (67)	-0.5 (53)	-5.4 (27)	-3.7 (60)	-	-
<i>Bimbg. U.S. Aggregate Index</i>			-0.8 (73)	2.1 (73)	-0.9 (75)	-5.7 (54)	-4.0 (84)	0.8 (-)	1.5 (-)
<i>eV US Core Fixed Inc Median</i>			-0.7	2.3	-0.5	-5.7	-3.6	-	-

See Appendix for Benchmark History

Total Fund
Performance Summary (Net of Fees)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo Rank	YTD	1 Yr Rank	2 Yrs Rank	3 Yrs Rank	5 Yrs Rank	10 Yrs Rank
NISA Long Treasury	59,883,590	1.0							
<i>Bmbg. U.S. Treasury: Long</i>			-2.3	3.7	-6.8	-12.8	-12.1	-0.9	1.8
Core Fixed Income Overlay	5,110,719	0.1	-2.7	-0.6	-4.5	-4.0	-4.0	-	-
Opportunistic Credit	443,002,126	7.4	2.3	4.0	4.4	-0.4	4.4	3.7	5.2
<i>Bloomberg BA Intermediate HY</i>			0.8	4.3	8.1	-2.1	2.2	3.8	4.1
AG CSF ADF II*	5,707,400	0.1	6.2	10.3	-	-	-	-	-
<i>Bloomberg BA Intermediate HY</i>			0.8	4.3	8.1	-2.1	2.2	3.8	4.1
AG CSF II*	15,984,500	0.3	7.8	10.2	9.3	-	-	-	-
<i>Bloomberg BA Intermediate HY</i>			0.8	4.3	8.1	-2.1	2.2	3.8	4.1
Angelo Gordon Opportunistic*	34,746	0.0	0.0	-5.7	-2.6	3.9	12.3	6.3	-
<i>Bmbg. U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-5.7	-4.0	0.8	1.5
Angelo Gordon Credit Solutions*	13,258,500	0.2	2.8 (7)	4.9 (46)	3.0 (98)	2.4 (2)	12.4 (1)	-	-
<i>Bloomberg BA Intermediate HY</i>			0.8 (91)	4.3 (73)	8.1 (54)	-2.1 (52)	2.2 (84)	3.8 (-)	4.1 (-)
<i>eV US High Yield Fixed Inc Median</i>			1.5	4.8	8.3	-2.0	3.2	-	-
Beach Point Select	112,332,734	1.9	3.2 (4)	5.5 (20)	4.2 (96)	1.9 (3)	9.6 (1)	6.6 (1)	-
<i>Bloomberg BA Intermediate HY</i>			0.8 (91)	4.3 (73)	8.1 (54)	-2.1 (52)	2.2 (84)	3.8 (19)	4.1 (-)
<i>eV US High Yield Fixed Inc Median</i>			1.5	4.8	8.3	-2.0	3.2	3.2	-
Brigade Capital	110,598,813	1.8	3.5 (2)	6.2 (6)	2.0 (99)	-1.3 (34)	7.4 (3)	3.3 (45)	4.1 (46)
<i>Bloomberg BA Intermediate HY</i>			0.8 (91)	4.3 (73)	8.1 (54)	-2.1 (52)	2.2 (84)	3.8 (19)	4.1 (46)
<i>50% Barclays HY/ 50% Bank Loan</i>			2.4 (11)	5.9 (12)	9.6 (13)	0.5 (11)	4.7 (19)	3.7 (23)	4.3 (33)
<i>eV US High Yield Fixed Inc Median</i>			1.5	4.8	8.3	-2.0	3.2	3.2	4.1
PIMCO Diversified	130,536,289	2.2	0.9 (93)	3.5 (95)	5.6 (94)	-5.5 (100)	-1.3 (100)	1.5 (100)	-
<i>Blended PIMCO Diversified Index</i>			-	-	-	-	-	-	-
<i>Bloomberg BA Intermediate HY</i>			0.8 (94)	4.3 (82)	8.1 (70)	-2.1 (72)	2.2 (93)	3.8 (44)	4.1 (-)
<i>eV US High Yield Fixed Inc Median</i>			1.6	5.1	8.8	-1.6	3.6	3.7	-
Franklin Templeton	54,549,144	0.9	-0.5 (75)	0.2 (93)	3.5 (45)	-6.0 (56)	-4.5 (85)	-3.2 (98)	-0.7 (90)
<i>Bmbg. Global Multiverse</i>			-1.4 (85)	1.6 (79)	-0.8 (84)	-8.4 (76)	-4.7 (86)	-0.9 (81)	0.4 (76)
<i>eV All Global Fixed Inc Median</i>			0.4	3.2	2.7	-5.4	-0.8	1.2	2.0

* Preliminary return as of 6/30/2023.
NISA Core Treasury funded 6/15/2023.
See Appendix for Benchmark History

Total Fund
Performance Summary (Net of Fees)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo Rank	YTD	1 Yr Rank	2 Yrs Rank	3 Yrs Rank	5 Yrs Rank	10 Yrs Rank
Private Credit	163,903,949	2.7	1.8	2.0	4.3	4.3	6.4	6.3	-
Cliffwater Direct Lending Index			2.1	4.2	8.2	7.9	10.3	8.2	8.7
Blackrock DL Feeder IX-U	40,352,869	0.7	4.0 (1)	4.1 (81)	6.9 (87)	6.0 (1)	6.9 (6)	-	-
Cliffwater Direct Lending Index			2.1 (16)	4.2 (77)	8.2 (51)	7.9 (1)	10.3 (1)	8.2 (-)	8.7 (-)
eV US High Yield Fixed Inc Median			1.5	4.8	8.3	-2.0	3.2	-	-
PIMCO Private Income*	51,307,548	0.9	1.9 (23)	4.2 (78)	3.1 (98)	3.7 (1)	8.7 (2)	-	-
Bloomberg BA Intermediate HY			0.8 (91)	4.3 (73)	8.1 (54)	-2.1 (52)	2.2 (84)	3.8 (-)	4.1 (-)
Cliffwater Direct Lending Index			2.1 (16)	4.2 (77)	8.2 (51)	7.9 (1)	10.3 (1)	8.2 (-)	8.7 (-)
eV US High Yield Fixed Inc Median			1.5	4.8	8.3	-2.0	3.2	-	-
TCP Direct Lending VIII*	14,189,606	0.2	3.3 (3)	4.5 (64)	6.6 (91)	4.8 (1)	6.2 (9)	6.1 (1)	-
Cliffwater Direct Lending Index			2.1 (16)	4.2 (77)	8.2 (51)	7.9 (1)	10.3 (1)	8.2 (1)	8.7 (-)
eV US High Yield Fixed Inc Median			1.5	4.8	8.3	-2.0	3.2	3.2	-
White Oak Yield**	29,366,554	0.5	0.0 (98)	1.1 (99)	1.2 (100)	3.4 (1)	4.4 (23)	5.1 (4)	-
Cliffwater Direct Lending Index			2.1 (16)	4.2 (77)	8.2 (51)	7.9 (1)	10.3 (1)	8.2 (1)	8.7 (-)
eV US High Yield Fixed Inc Median			1.5	4.8	8.3	-2.0	3.2	3.2	-
White Oak YSF V**	28,687,372	0.5	0.0 (98)	-11.0 (100)	-1.7 (100)	0.5 (12)	-	-	-
Cliffwater Direct Lending Index			2.1 (16)	4.2 (77)	8.2 (51)	7.9 (1)	10.3 (-)	8.2 (-)	8.7 (-)
eV US High Yield Fixed Inc Median			1.5	4.8	8.3	-2.0	-	-	-
Alternatives	738,306,803	12.3	1.7	1.5	-4.0	2.3	15.7	10.7	8.8
Blended Alternatives Index			5.0	10.4	1.6	5.4	13.3	9.7	9.0
Private Equity***	389,947,007	6.5	2.7 (17)	3.4 (29)	-6.4 (86)	0.8 (94)	23.7 (27)	20.6 (4)	18.7 (13)
Blended Private Equity Index			7.9 (1)	16.5 (1)	-5.6 (84)	4.2 (83)	21.6 (40)	13.5 (56)	14.5 (41)
InvMetrics All DB Private Equity Median			1.5	2.3	-0.5	9.4	20.4	14.6	13.9
Hedge Fund/Absolute Return	348,359,797	5.8	0.7 (70)	-0.6 (89)	-2.5 (91)	3.0 (28)	4.6 (75)	-1.2 (85)	1.4 (82)
Absolute Return Custom Index			2.1 (31)	4.3 (24)	7.9 (17)	6.1 (11)	5.4 (64)	5.6 (22)	5.1 (15)
InvMetrics All DB Hedge Funds Median			1.2	3.1	4.9	1.2	6.6	3.9	3.7
Acadian MAAR Fund LLC	80,414,565	1.3	-1.2 (80)	-2.1 (81)	-2.6 (79)	-0.9 (59)	-	-	-
Absolute Return Custom Index			2.1 (39)	4.3 (29)	7.9 (25)	6.1 (23)	5.4 (-)	5.6 (-)	5.1 (-)
eV Alt All Multi-Strategy Median			1.2	2.3	3.1	0.9	-	-	-
CFM Systematic Global Macro	83,076,771	1.4	-3.3 (90)	-5.7 (92)	-4.8 (85)	2.4 (42)	-	-	-
Absolute Return Custom Index			2.1 (39)	4.3 (29)	7.9 (25)	6.1 (23)	5.4 (-)	5.6 (-)	5.1 (-)
eV Alt All Multi-Strategy Median			1.2	2.3	3.1	0.9	-	-	-

* Preliminary return as of 6/30/2023.

** Market value as of 3/31/2023.

*** Returns are one-quarter lag, excludes EnCap Energy Capital Fund and Sheridan Production Partners
See Appendix for Benchmark History

Total Fund
Performance Summary (Net of Fees)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo Rank	YTD	1 Yr Rank	2 Yrs Rank	3 Yrs Rank	5 Yrs Rank	10 Yrs Rank
Graham Quant Macro	92,322,699	1.5	2.5 (35)	2.9 (44)	-2.9 (79)	6.4 (23)	7.7 (44)	-	-
<i>Absolute Return Custom Index</i>			2.1 (39)	4.3 (29)	7.9 (25)	6.1 (23)	5.4 (62)	5.6 (-)	5.1 (-)
<i>eV Alt All Multi-Strategy Median</i>			1.2	2.3	3.1	0.9	7.0	-	-
PIMCO MAARS Fund LP	92,545,762	1.5	4.5 (13)	2.1 (51)	3.0 (51)	12.3 (8)	8.5 (39)	-	-
<i>Absolute Return Custom Index</i>			2.1 (39)	4.3 (29)	7.9 (25)	6.1 (23)	5.4 (62)	5.6 (-)	5.1 (-)
<i>eV Alt All Multi-Strategy Median</i>			1.2	2.3	3.1	0.9	7.0	-	-
Inflation Hedge	1,019,003,468	17.0	-0.8	-1.8	-2.4	6.9	10.0	4.1	-
<i>Blended Inflation Hedge Index</i>			-0.9	0.2	-5.5	7.9	12.1	6.6	-
Real Estate	527,324,265	8.8	-1.1 (57)	-3.1 (64)	-4.8 (53)	7.2 (16)	7.3 (48)	6.3 (1)	8.4 (1)
NCREIF ODCE			-2.7 (72)	-5.8 (76)	-10.0 (78)	8.0 (9)	8.0 (44)	6.5 (1)	8.7 (1)
<i>InvMetrics All DB Real Estate Public Median</i>			-0.7	-1.8	-3.8	4.4	6.9	4.8	5.2
Harrison Street Core Property	97,075,458	1.6	0.2	-0.3	1.1	7.6	7.3	-	-
Invesco*	273,572,907	4.6	-2.6	-6.6	-10.0	6.8	7.1	5.7	8.2
NCREIF ODCE			-2.7	-5.8	-10.0	8.0	8.0	6.5	8.7
Invesco US Val IV	600,150	0.0	-1.4	-31.6	-58.4	-34.8	-22.1	-11.2	-
Invesco US Val V	30,646,122	0.5	-0.6	0.4	-5.6	5.8	10.4	-	-
NCREIF ODCE			-2.7	-5.8	-10.0	8.0	8.0	6.5	8.7
NCREIF-ODCE + 2%			-2.2	-4.8	-8.2	10.1	10.2	8.6	10.9
Invesco US Val VI**	21,519,075	0.4	0.0	2.6	-	-	-	-	-
NCREIF ODCE			-2.7	-5.8	-10.0	8.0	8.0	6.5	8.7
PGIM RE US Debt Fund	75,266,251	1.3	1.8	3.5	6.9	6.1	5.8	5.9	-
Stockbridge Value IV**	28,644,302	0.5	0.0	0.5	6.2	18.0	-	-	-
NCREIF ODCE			-2.7	-5.8	-10.0	8.0	8.0	6.5	8.7
Private Real Asset***	317,940,299	5.3	0.9	0.5	0.8	12.1	17.0	6.7	-
<i>Blended Private Real Asset Index</i>			3.2	15.4	-2.7	9.3	21.0	7.9	-
<i>Blended Secondary CA Private RA Index</i>			1.1	4.7	7.4	16.1	17.3	7.8	-
Public Real Assets	173,738,904	2.9	-2.0	-1.8	-0.4	4.0	11.8	0.7	-
<i>Blended Public Real Asset Index</i>			-2.2	-2.1	-0.6	3.8	11.7	3.6	-
SSgA Custom Real Asset	173,738,904	2.9	-2.0	-1.8	-0.4	4.0	11.8	3.7	-
<i>SSgA Custom Real Asset Index</i>			-2.2	-2.1	-0.6	3.8	11.7	3.6	-

* Preliminary return as of 6/30/2023.
 ** Market value as of 3/31/2023.
 *** Returns are one-quarter lag.
 See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo Rank	YTD	1 Yr Rank	2 Yrs Rank	3 Yrs Rank	5 Yrs Rank	10 Yrs Rank
Liquidity	456,891,666	7.6	0.8	2.0	3.1	-	-	-	-
<i>Blended Liquidity Index</i>			<i>-0.1</i>	<i>1.3</i>	<i>1.5</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>
Cash Flow-Matched Liquidity	305,931,467	5.1	0.4	1.6	2.2	-	-	-	-
<i>Blmbg. 1-3 Year Gov/Credit index</i>			<i>-0.4</i>	<i>1.1</i>	<i>0.5</i>	<i>-1.5</i>	<i>-0.9</i>	<i>1.1</i>	<i>1.0</i>
<i>Blmbg. 1-3 Year Credit</i>			<i>0.1</i>	<i>1.4</i>	<i>1.4</i>	<i>-1.2</i>	<i>-0.4</i>	<i>1.6</i>	<i>1.5</i>
Insight Investment*	293,678,575	4.9	0.3	1.7	-	-	-	-	-
<i>Blmbg. 1-3 Year Credit</i>			<i>0.1</i>	<i>1.4</i>	<i>1.4</i>	<i>-1.2</i>	<i>-0.4</i>	<i>1.6</i>	<i>1.5</i>
County Treasury Pool**	12,252,892	0.2	2.7	3.0	3.5	2.3	2.0	2.4	1.8
<i>90 Day U.S. Treasury Bill</i>			<i>1.2</i>	<i>2.3</i>	<i>3.6</i>	<i>1.9</i>	<i>1.3</i>	<i>1.6</i>	<i>1.0</i>
Cash & Cash Overlay	150,960,200	2.5	1.5	2.7	4.3	2.3	1.7	1.5	1.1
<i>90 Day U.S. Treasury Bill</i>			<i>1.2</i>	<i>2.3</i>	<i>3.6</i>	<i>1.9</i>	<i>1.3</i>	<i>1.6</i>	<i>1.0</i>
General Account	130,816,742	2.2	1.3	2.6	4.2	2.4	1.7	2.5	1.9
<i>90 Day U.S. Treasury Bill</i>			<i>1.2</i>	<i>2.3</i>	<i>3.6</i>	<i>1.9</i>	<i>1.3</i>	<i>1.6</i>	<i>1.0</i>
Currency Hedge Cash Overlay	438	0.0	0.0	0.7	1.9	0.9	0.5	-	-

* Funded July 2022.

** Moved from Cash & Cash Overlay to Cash Flow-Matched Liquidity in July 2022. Reflects linked historical returns up to June 2022.

See Appendix for Benchmark History

Total Fund
Performance Summary (Net of Fees)

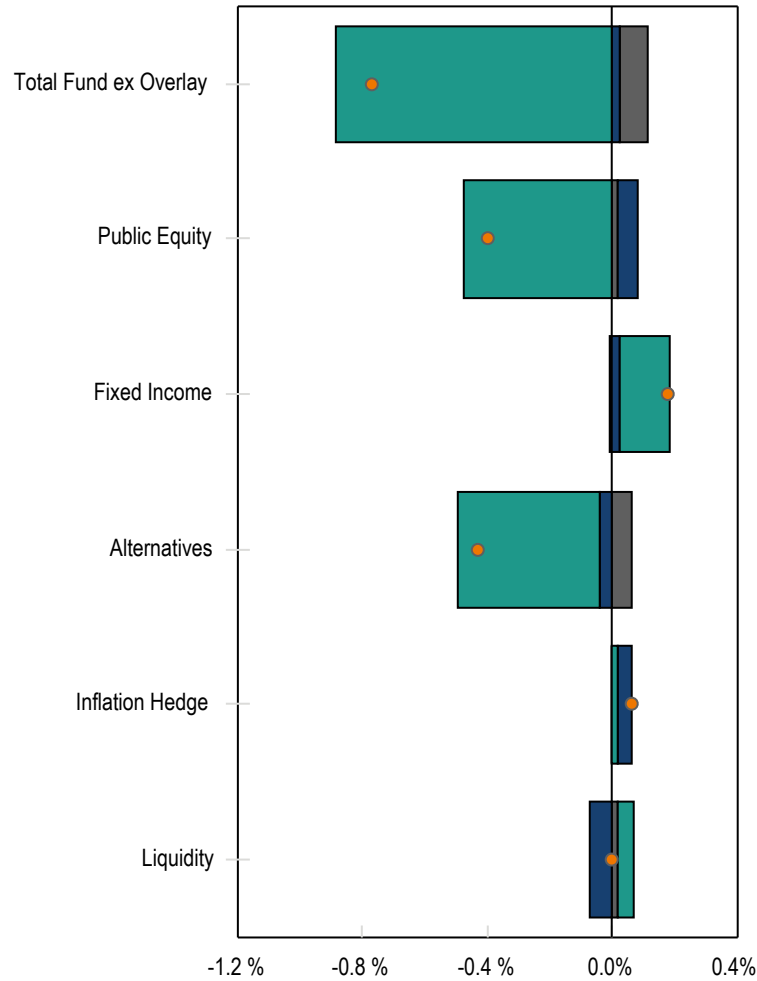
San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo Rank	YTD	1 Yr Rank
Total Fund	5,990,354,946	100.0	2.1 (83)	5.0 (90)	5.1 (94)
Implementation Benchmark Return			2.8 (30)	7.4 (22)	6.6 (75)
Simple Benchmark			2.7 (40)	6.8 (39)	7.1 (63)
InvMetrics Public DB > \$1B Median			2.6	6.5	7.6
Total Fund ex Overlay	5,970,300,616	99.7	2.1 (83)	4.9 (90)	4.8 (97)
Implementation Benchmark Return			2.8 (30)	7.4 (22)	6.6 (75)
Simple Benchmark			2.7 (40)	6.8 (39)	7.1 (63)
InvMetrics Public DB > \$1B Median			2.6	6.5	7.6
Growth Portfolio	3,483,214,985	58.1	4.0	8.9	10.2
Blended Growth Index			5.3	12.1	12.5
MSCI ACWI IMI NR			5.9	13.2	16.1
Diversifying Portfolio	1,070,089,186	17.9	-0.2	1.5	-1.4
Blended Diversifying Index			0.2	2.9	2.1
Blmbg. U.S. Aggregate Index			-0.8	2.1	-0.9
Inflation Hedge Portfolio	1,019,003,468	17.0	-0.8	-1.8	-2.4
Blended Inflation Hedge Index			-0.9	0.2	-5.5
NCREIF-ODCE Net			-2.9	-6.2	-10.7
Liquidity Portfolio	456,891,666	7.6	0.8	2.0	3.1
Blended Liquidity Index			-0.1	1.3	1.5
Blmbg. 1-3 Year Gov/Credit index			-0.4	1.1	0.5

Total Fund ex-Overlay
Performance Attribution

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Attribution Effects
Last Three Months



■ Selection Effect ■ Allocation Effect
■ Interaction Effect ● Total Effects

Performance Attribution

	3 Mo
Wtd. Actual Return	2.1
Wtd. Index Return	2.9
Excess Return	-0.8
Selection Effect	-0.9
Allocation Effect	0.0
Interaction Effect	0.1

Attribution Summary
Last Three Months

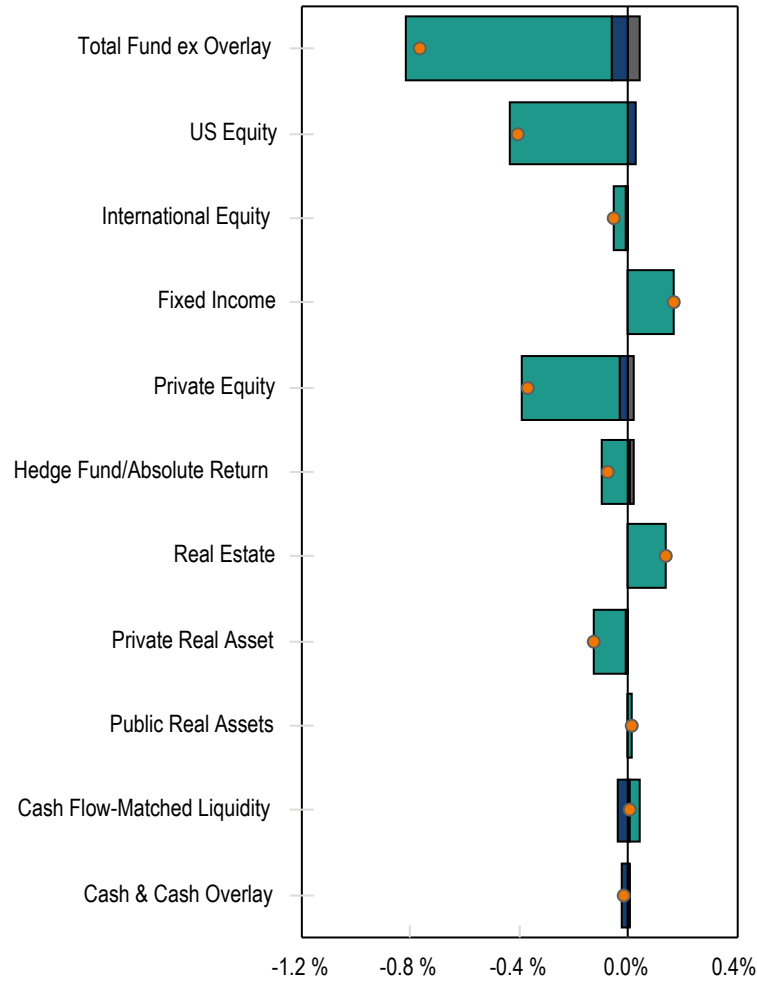
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Public Equity	4.6	5.9	-1.2	-0.5	0.1	0.0	-0.4
Fixed Income	0.6	-0.1	0.7	0.2	0.0	0.0	0.2
Alternatives	1.7	5.0	-3.3	-0.5	0.0	0.1	-0.4
Inflation Hedge	-0.8	-0.9	0.1	0.0	0.0	0.0	0.1
Liquidity	0.8	-0.1	0.9	0.0	-0.1	0.0	0.0
Total Fund ex Overlay	2.1	2.9	-0.8	-0.7	0.0	0.1	-0.8

Attribution does not include the impact of the Parametric Minneapolis Strategy
* Interaction Effects include Residual Effects

Total Fund ex-Overlay
Performance Attribution

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Attribution Effects
Last Three Months



■ Selection Effect ■ Allocation Effect
■ Interaction Effect ● Total Effects

Performance Attribution

	3 Mo
Wtd. Actual Return	2.1
Wtd. Index Return	2.9
Excess Return	-0.8
Selection Effect	-0.8
Allocation Effect	-0.1
Interaction Effect	0.0

Attribution Summary
Last Three Months

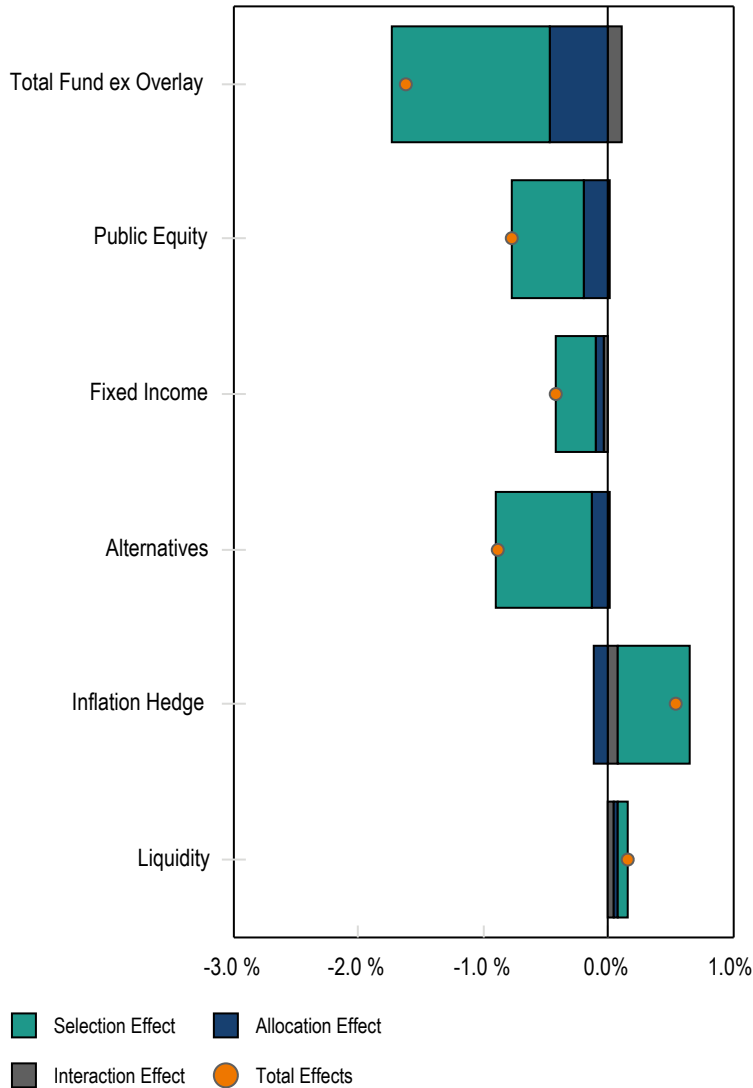
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	6.2	8.4	-2.2	-0.4	0.0	0.0	-0.4
International Equity	2.9	3.1	-0.3	0.0	0.0	0.0	-0.1
Fixed Income	0.6	-0.1	0.7	0.2	0.0	0.0	0.2
Private Equity	2.7	7.9	-5.3	-0.4	0.0	0.0	-0.4
Hedge Fund/Absolute Return	0.7	2.1	-1.4	-0.1	0.0	0.0	-0.1
Real Estate	-1.1	-2.7	1.6	0.1	0.0	0.0	0.1
Private Real Asset	0.9	3.2	-2.2	-0.1	0.0	0.0	-0.1
Public Real Assets	-2.0	-2.2	0.3	0.0	0.0	0.0	0.0
Cash Flow-Matched Liquidity	0.4	-0.4	0.8	0.0	0.0	0.0	0.0
Cash & Cash Overlay	1.6	1.2	0.4	0.0	0.0	0.0	0.0
Total Fund ex Overlay	2.1	2.9	-0.8	-0.7	-0.1	0.0	-0.8

Attribution does not include the impact of the Parametric Minneapolis Strategy
* Interaction Effects include Residual Effects

Total Fund ex-Overlay
Performance Attribution (1 Year)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Attribution Effects
One Year



Performance Attribution

	1 Yr
Wtd. Actual Return	4.9
Wtd. Index Return	6.5
Excess Return	-1.6
Selection Effect	-1.3
Allocation Effect	-0.5
Interaction Effect	0.1

Attribution Summary
One Year

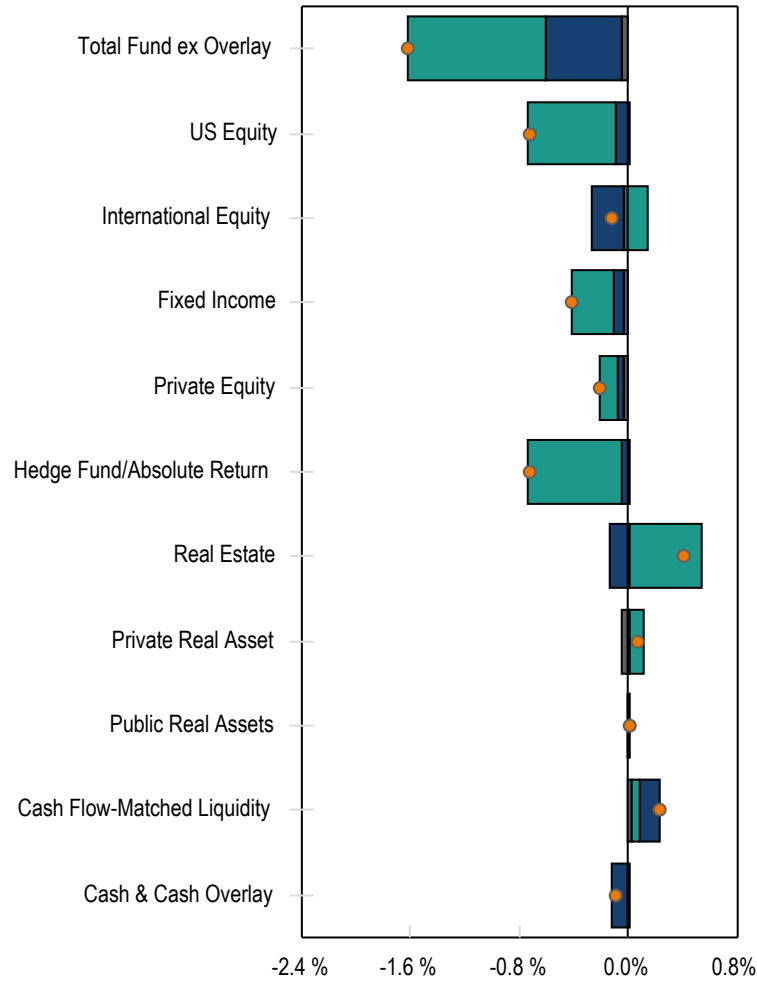
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Public Equity	15.0	16.6	-1.7	-0.6	-0.2	0.0	-0.8
Fixed Income	1.4	2.7	-1.3	-0.3	-0.1	0.0	-0.4
Alternatives	-4.0	1.6	-5.5	-0.8	-0.1	0.0	-0.9
Inflation Hedge	-2.4	-5.5	3.1	0.6	-0.1	0.1	0.5
Liquidity	3.1	1.5	1.6	0.1	0.0	0.0	0.2
Total Fund ex Overlay	4.9	6.5	-1.6	-1.0	-0.5	0.1	-1.6

Attribution does not include the impact of the Parametric Minneapolis Strategy
* Interaction Effects include Residual Effects

Total Fund ex-Overlay
Performance Attribution (1 Year)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Attribution Effects
One Year



■ Selection Effect ■ Allocation Effect
■ Interaction Effect ● Total Effects

Performance Attribution

	1 Yr
Wtd. Actual Return	4.9
Wtd. Index Return	6.5
Excess Return	-1.6
Selection Effect	-1.0
Allocation Effect	-0.6
Interaction Effect	0.0

Attribution Summary
One Year

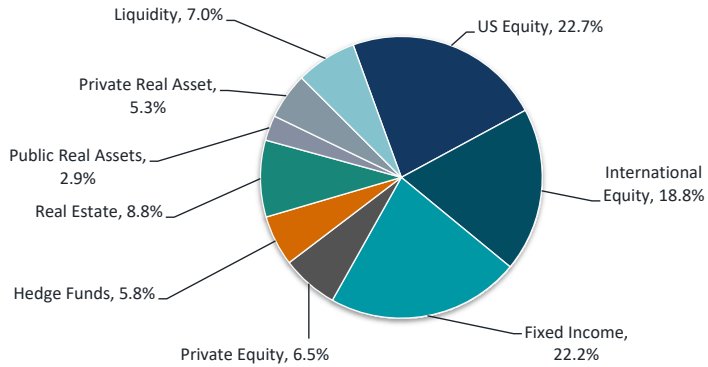
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	15.6	19.0	-3.3	-0.7	-0.1	0.0	-0.7
International Equity	14.2	13.8	0.4	0.1	-0.2	0.0	-0.1
Fixed Income	1.4	2.7	-1.3	-0.3	-0.1	0.0	-0.4
Private Equity	-6.4	-5.6	-0.8	-0.1	0.0	0.0	-0.2
Hedge Fund/Absolute Return	-2.5	7.9	-10.4	-0.7	0.0	0.0	-0.7
Real Estate	-4.8	-10.0	5.2	0.5	-0.1	0.0	0.4
Private Real Asset	0.8	-2.7	3.5	0.1	0.0	0.0	0.1
Public Real Assets	-0.4	-0.6	0.2	0.0	0.0	0.0	0.0
Cash Flow-Matched Liquidity	2.2	0.5	1.7	0.1	0.2	0.0	0.2
Cash & Cash Overlay	4.3	3.6	0.7	0.0	-0.1	0.0	-0.1
Total Fund ex Overlay	4.9	6.5	-1.6	-0.9	-0.6	0.0	-1.6

Attribution does not include the impact of the Parametric Minneapolis Strategy
* Interaction Effects include Residual Effects

Total Fund
Asset Allocation Analysis

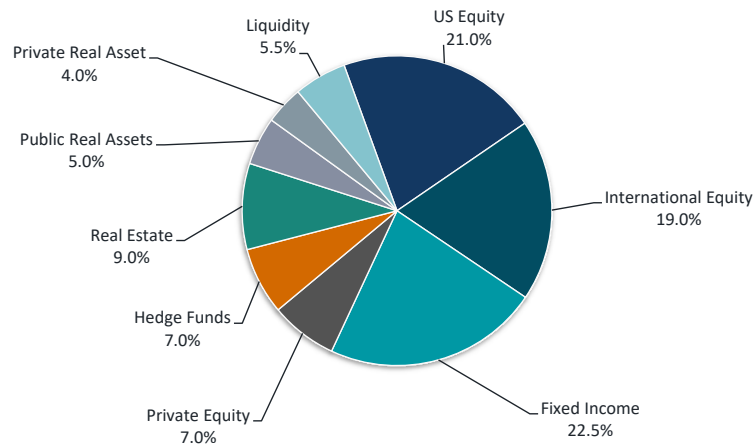
San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Current w/ Overlay



ASSET ALLOCATION	MARKET VALUE W/ OVERLAY	W/ OVERLAY	W/O OVERLAY
US Equity	1,358,304,363	22.7%	22.6%
International Equity	1,128,057,541	18.8%	18.3%
Fixed Income	1,328,635,464	22.2%	22.1%
Private Equity	389,947,007	6.5%	6.5%
Hedge Funds	348,359,797	5.8%	5.8%
Real Estate	527,324,265	8.8%	8.8%
Public Real Assets	173,738,904	2.9%	2.9%
Private Real Asset	317,940,299	5.3%	5.3%
Liquidity	418,047,307	7.0%	7.6%
TOTAL	5,990,354,946	100.0%	100.0%

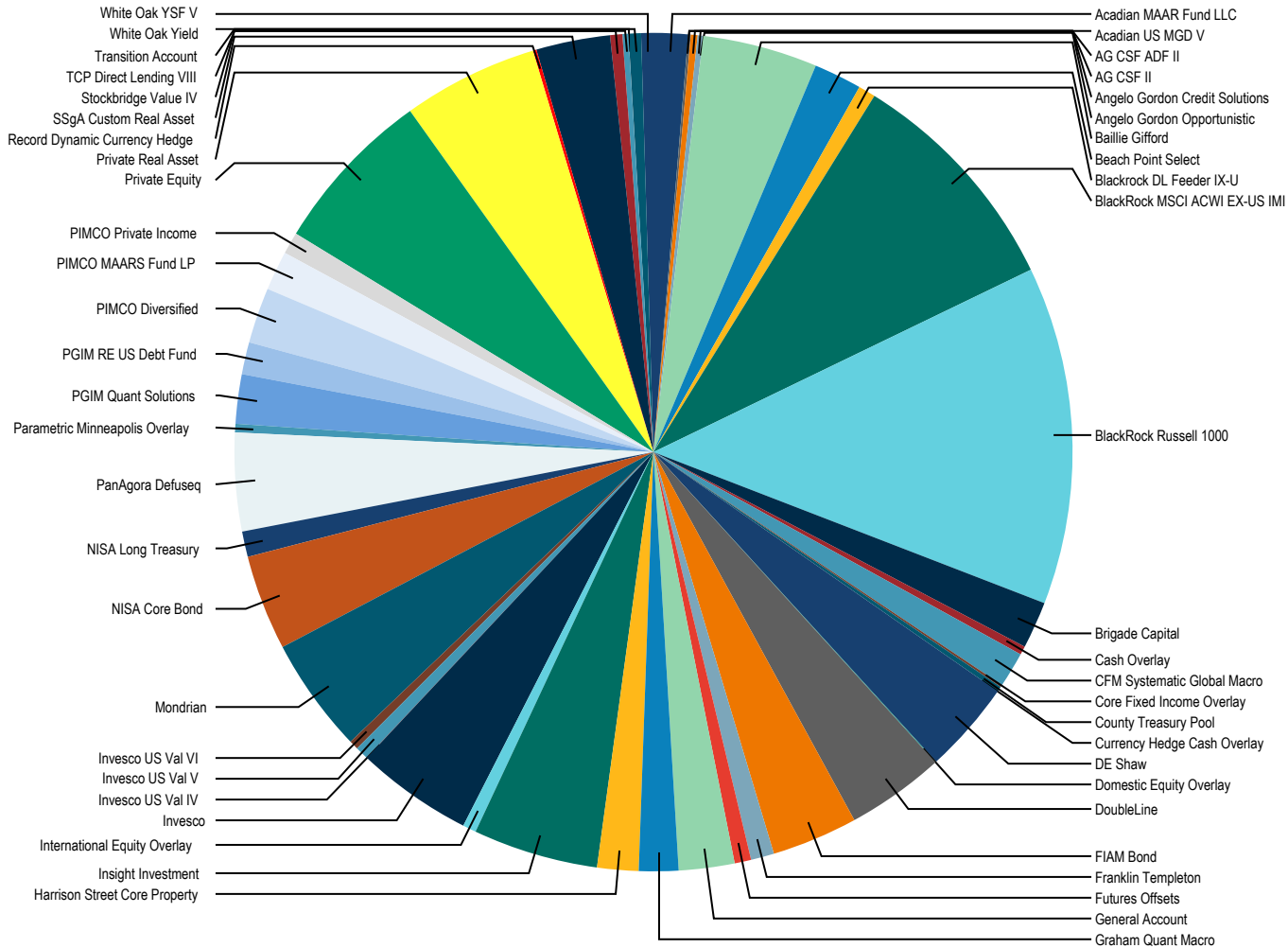
Target



ASSET ALLOCATION	W/ OVERLAY	TARGET	DIFF
US Equity	22.7%	21.0%	1.7%
International Equity	18.8%	19.0%	-0.2%
Fixed Income	22.2%	22.5%	-0.3%
Private Equity	6.5%	7.0%	-0.5%
Hedge Funds	5.8%	7.0%	-1.2%
Real Estate	8.8%	9.0%	-0.2%
Public Real Assets	2.9%	5.0%	-2.1%
Private Real Asset	5.3%	4.0%	1.3%
Liquidity	7.0%	5.5%	1.5%
TOTAL	100.0%	100.0%	0.0%

Total Fund
 Manager Allocation Analysis

San Mateo County Employees' Retirement Association
 Period Ending: June 30, 2023



Total Fund
 Manager Allocation Analysis

San Mateo County Employees' Retirement Association
 Period Ending: June 30, 2023

Name	Market Value	% of Portfolio
Acadian US MGD V	\$273,973	0.0
BlackRock Russell 1000	\$793,228,100	13.2
DE Shaw	\$216,525,262	3.6
PanAgora Defuseq	\$230,413,407	3.8
PGIM Quant Solutions	\$115,911,993	1.9
Domestic Equity Overlay	\$1,951,628	0.0
Baillie Gifford	\$269,724,321	4.5
Mondrian	\$270,534,890	4.5
BlackRock MSCI ACWI EX-US IMI	\$547,880,982	9.1
International Equity Overlay	\$31,782,012	0.5
DoubleLine	\$230,983,635	3.9
FIAM Bond	\$201,939,887	3.4
NISA Core Bond	\$223,811,559	3.7
NISA Long Treasury	\$59,883,590	1.0
Core Fixed Income Overlay	\$5,110,719	0.1
AG CSF ADF II	\$5,707,400	0.1
AG CSF II	\$15,984,500	0.3
Angelo Gordon Opportunistic	\$34,746	0.0
Angelo Gordon Credit Solutions	\$13,258,500	0.2
Beach Point Select	\$112,332,734	1.9
Brigade Capital	\$110,598,813	1.8
PIMCO Diversified	\$130,536,289	2.2
Franklin Templeton	\$54,549,144	0.9
Blackrock DL Feeder IX-U	\$40,352,869	0.7
PIMCO Private Income	\$51,307,548	0.9
TCP Direct Lending VIII	\$14,189,606	0.2
White Oak Yield	\$29,366,554	0.5
White Oak YSF V	\$28,687,372	0.5
Private Equity	\$389,947,007	6.5

Total Fund
 Manager Allocation Analysis

San Mateo County Employees' Retirement Association
 Period Ending: June 30, 2023

Name	Market Value	% of Portfolio
Acadian MAAR Fund LLC	\$80,414,565	1.3
CFM Systematic Global Macro	\$83,076,771	1.4
Graham Quant Macro	\$92,322,699	1.5
PIMCO MAARS Fund LP	\$92,545,762	1.5
Harrison Street Core Property	\$97,075,458	1.6
Invesco	\$273,572,907	4.6
Invesco US Val IV	\$600,150	0.0
Invesco US Val V	\$30,646,122	0.5
Invesco US Val VI	\$21,519,075	0.4
PGIM RE US Debt Fund	\$75,266,251	1.3
Stockbridge Value IV	\$28,644,302	0.5
Private Real Asset	\$317,940,299	5.3
SSgA Custom Real Asset	\$173,738,904	2.9
Insight Investment	\$293,678,575	4.9
County Treasury Pool	\$12,252,892	0.2
General Account	\$130,816,742	2.2
Currency Hedge Cash Overlay	\$438	0.0
Cash Overlay	\$20,054,330	0.3
Transition Account	\$88,690	0.0
Futures Offsets	-\$38,844,359	-0.6
Total Fund	\$5,990,354,946	100.0

Total Fund
Risk vs. Return

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Statistics Summary
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Total Fund	7.7 (69)	7.7 (8)	0.8 (28)	-0.1 (74)	2.4 (3)
Policy Index	7.9 (61)	8.8 (28)	0.8 (41)	-	0.0
Policy Index II	7.6 (72)	9.2 (37)	0.7 (58)	-0.4 (97)	0.6 (1)
InvMetrics Public DB > \$1B Median	8.3	9.7	0.7	0.1	3.0

Statistics Summary
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Total Fund	5.7 (70)	8.8 (16)	0.5 (44)	-0.3 (86)	2.2 (2)
Policy Index	6.4 (44)	9.2 (22)	0.6 (30)	-	0.0
Policy Index II	-	-	-	-	-
InvMetrics Public DB > \$1B Median	6.2	10.4	0.5	0.0	3.0

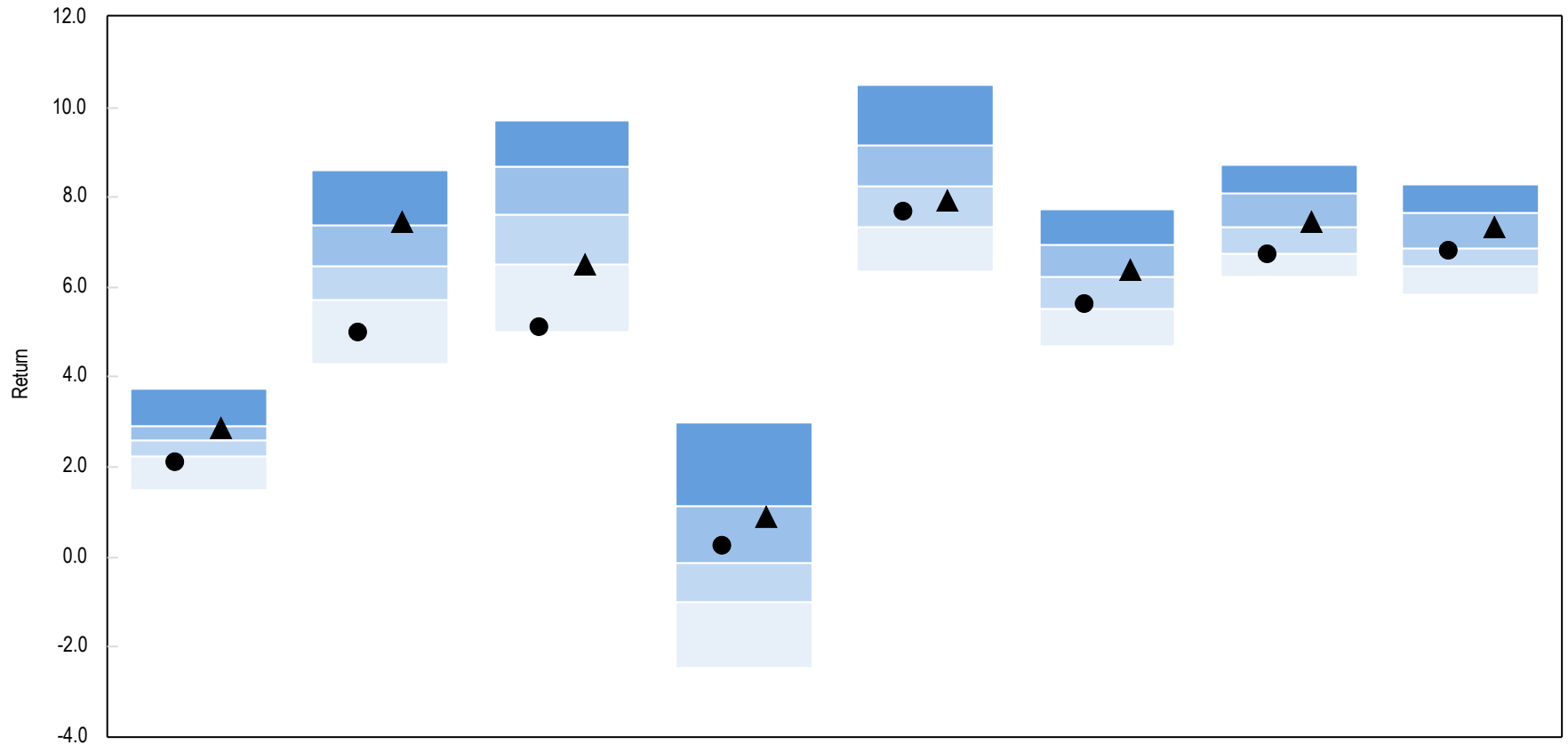
Statistics Summary
10 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Total Fund	6.8 (53)	7.5 (19)	0.8 (38)	-0.3 (72)	1.7 (1)
Policy Index	7.3 (38)	7.9 (34)	0.8 (32)	-	0.0
Policy Index II	-	-	-	-	-
InvMetrics Public DB > \$1B Median	6.9	8.5	0.7	-0.1	2.4

Total Fund
Peer Universe Comparison

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

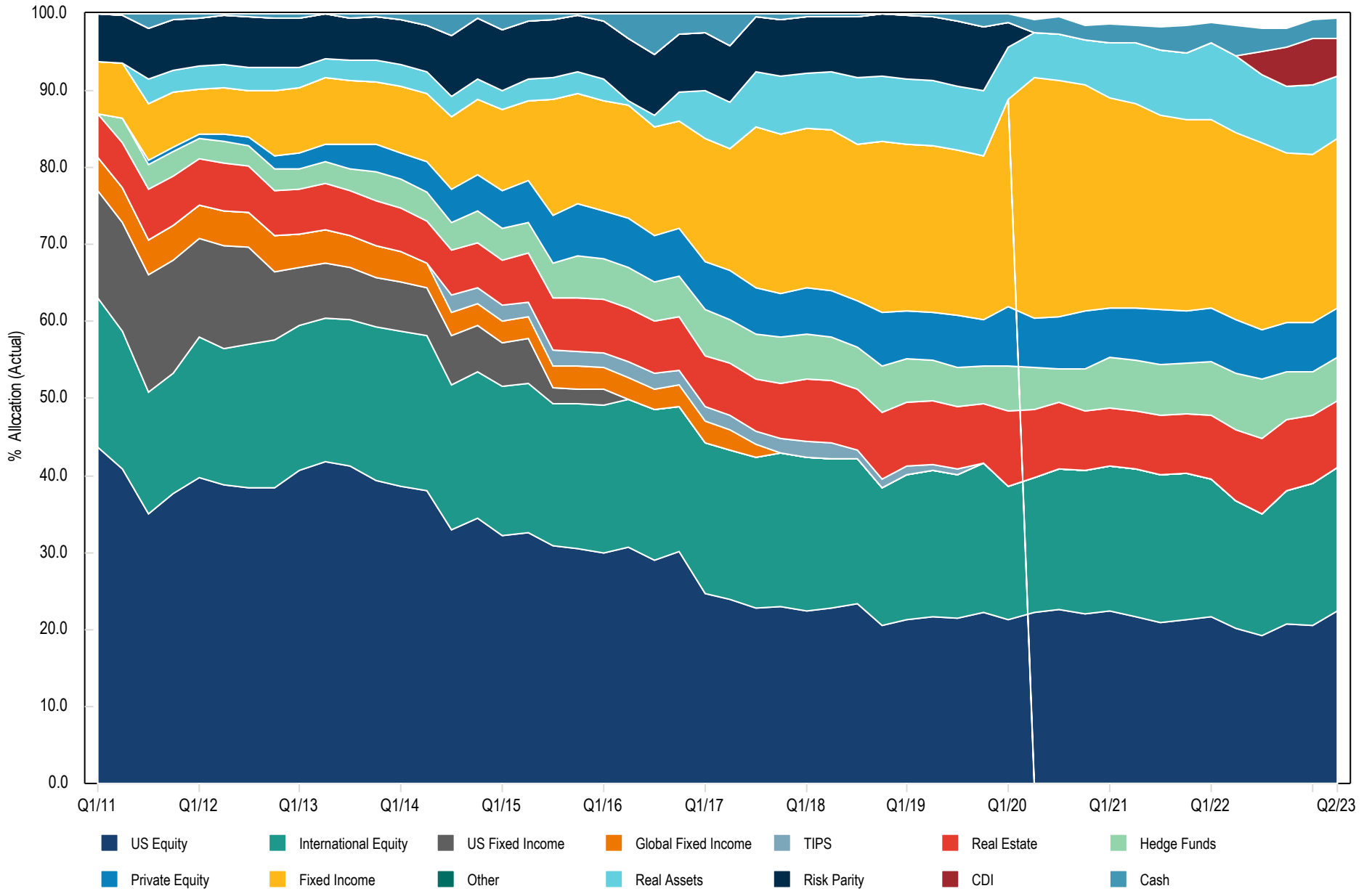
InvMetrics Public DB >\$1B Net Return Comparison



	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Total Fund	2.1 (83)	5.0 (90)	5.1 (94)	0.3 (43)	7.7 (69)	5.7 (70)	6.8 (72)	6.8 (53)
▲ Policy Index	2.9 (30)	7.4 (22)	6.5 (75)	0.9 (32)	7.9 (61)	6.4 (44)	7.5 (47)	7.3 (38)
5th Percentile	3.7	8.6	9.7	3.0	10.5	7.7	8.7	8.3
1st Quartile	2.9	7.4	8.7	1.1	9.2	6.9	8.1	7.7
Median	2.6	6.5	7.6	-0.1	8.3	6.2	7.3	6.9
3rd Quartile	2.2	5.7	6.5	-1.0	7.3	5.5	6.7	6.5
95th Percentile	1.5	4.3	5.0	-2.5	6.3	4.7	6.2	5.8
Population	93	90	88	80	78	77	76	73

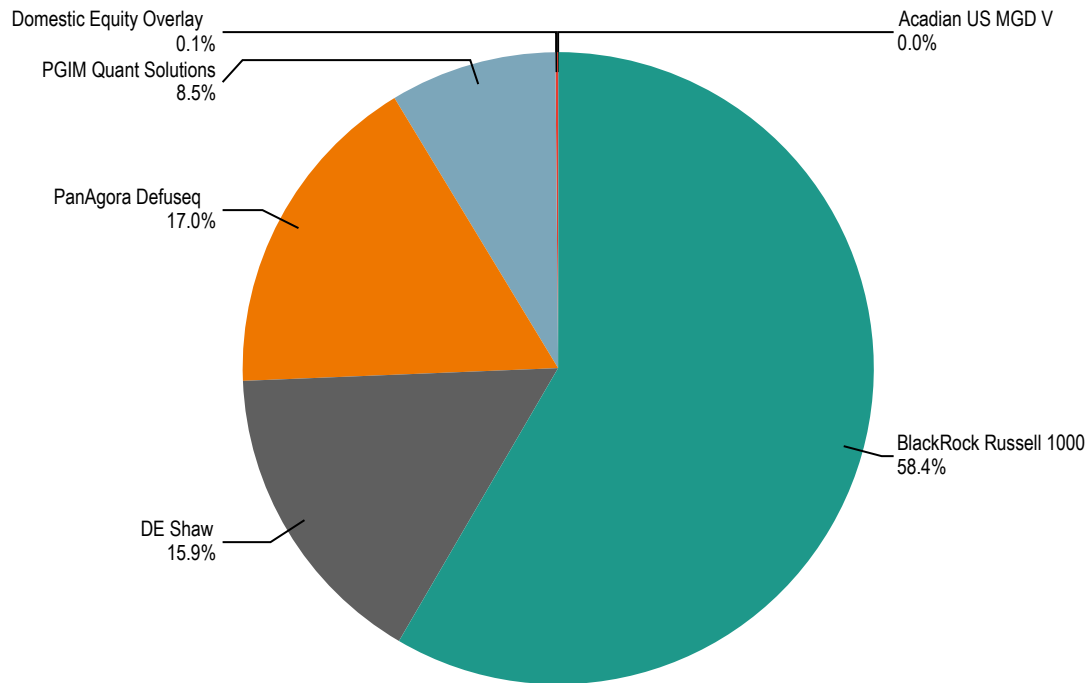
Total Fund
Asset Allocation History

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023



US Equity
 Manager Allocation Analysis

San Mateo County Employees' Retirement Association
 Period Ending: June 30, 2023



	Actual \$	Actual %	Manager Contribution to Excess Return %
Acadian US MGD V	\$273,973	0.0%	-0.8%
BlackRock Russell 1000	\$793,228,100	58.4%	0.0%
DE Shaw	\$216,525,262	15.9%	-0.2%
PanAgora Defuseq	\$230,413,407	17.0%	-1.4%
PGIM Quant Solutions	\$115,911,993	8.5%	0.0%
Domestic Equity Overlay	\$1,951,628	0.1%	0.0%
Actual vs. Policy Weight Difference			0.3%
Total	\$1,358,304,363	100.0%	-2.1%

US Equity
 Risk vs. Return (3 Years)

San Mateo County Employees' Retirement Association
 Period Ending: June 30, 2023

Statistics Summary
 3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	13.3	16.7	0.8	-0.3	2.8
Blended US Equity Index	13.9	18.2	0.7	-	0.0
Russell 3000 Index	13.9	18.2	0.7	-	0.0

US Equity
Risk vs. Return (3 Years)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Statistics Summary
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	12.9	16.6	0.7	-0.5	2.9
Russell 1000 Index	14.1	18.2	0.8	-	0.0
Acadian US MGD V	10.4	15.1	0.6	-0.6	6.5
Russell 1000 Index	14.1	18.2	0.8	-	0.0
BlackRock Russell 1000	14.1	18.2	0.8	-0.2	0.0
Russell 1000 Index	14.1	18.2	0.8	-	0.0
DE Shaw	13.1	18.3	0.7	-0.2	3.4
Russell 1000 Index	14.1	18.2	0.8	-	0.0
PanAgora Defuseq	11.1	14.9	0.7	-0.4	8.6
Russell 1000 Index	14.1	18.2	0.8	-	0.0
Small Cap Equity	16.4	21.7	0.8	0.9	5.3
Russell 2000 Index	10.8	21.6	0.5	-	0.0
PGIM Quant Solutions	16.4	21.7	0.8	0.9	5.3
Russell 2000 Index	10.8	21.6	0.5	-	0.0

US Equity
Risk vs. Return (5 Years)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Statistics Summary
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	9.9	18.3	0.5	-0.7	2.3
Blended US Equity Index	11.4	19.2	0.6	-	0.0
Russell 3000 Index	11.4	19.2	0.6	-	0.0

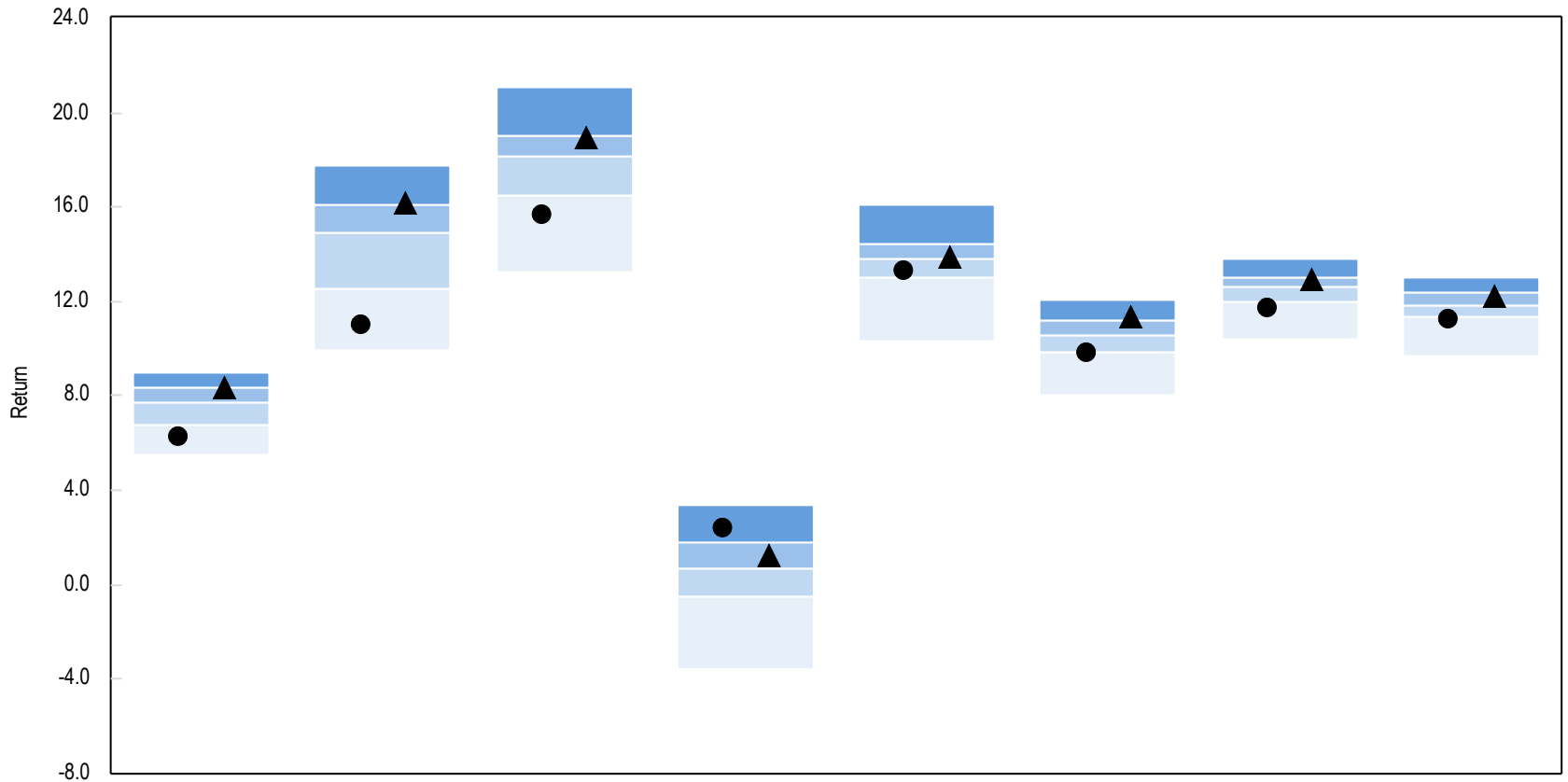
US Equity
Risk vs. Return (5 Years)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

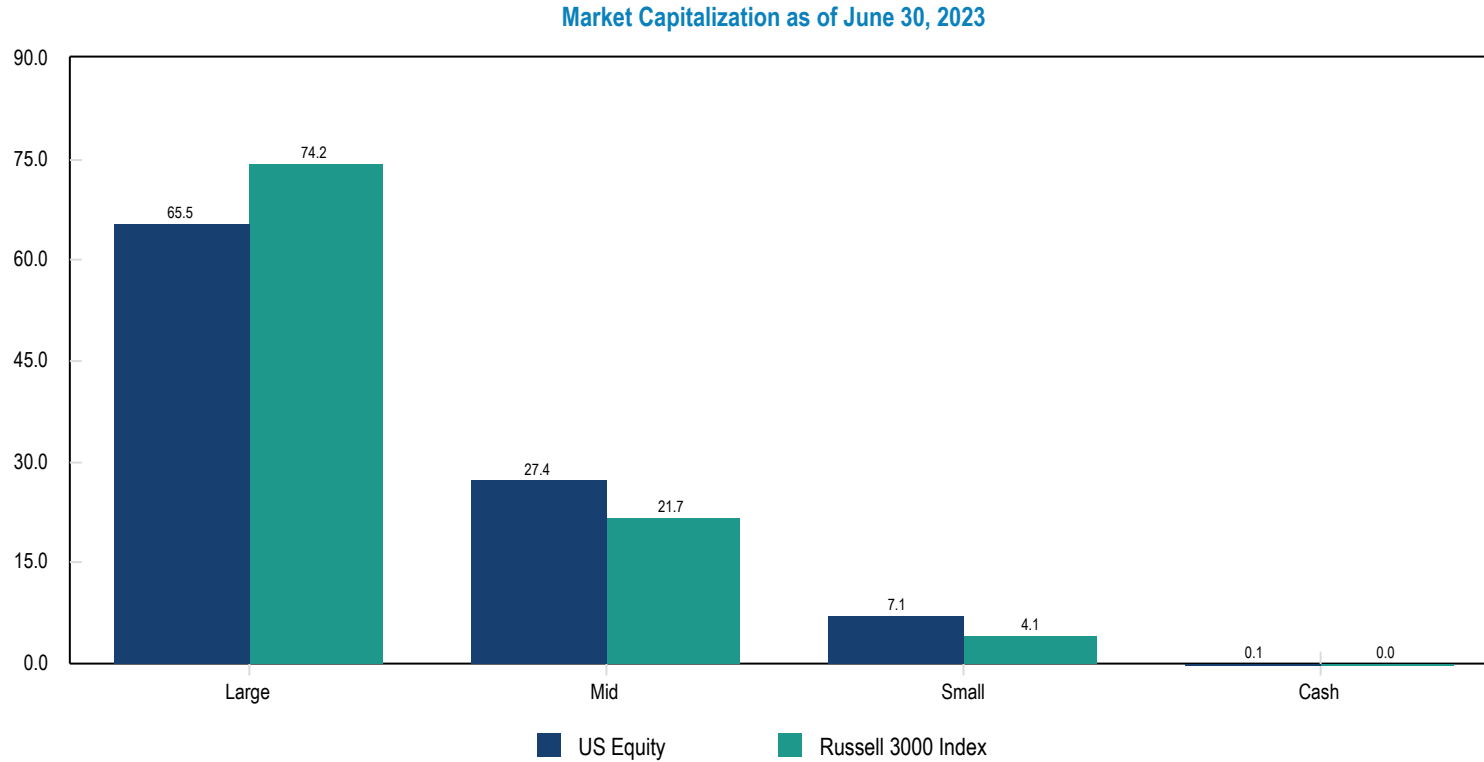
Statistics Summary
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	10.4	17.8	0.6	-0.7	2.4
Russell 1000 Index	11.9	19.0	0.6	-	0.0
BlackRock Russell 1000	11.9	19.0	0.6	0.2	0.0
Russell 1000 Index	11.9	19.0	0.6	-	0.0
DE Shaw	10.0	19.1	0.5	-0.6	3.0
Russell 1000 Index	11.9	19.0	0.6	-	0.0
Small Cap Equity	4.5	25.2	0.2	0.1	5.1
Russell 2000 Index	4.2	23.8	0.2	-	0.0
PGIM Quant Solutions	4.5	25.2	0.2	0.1	5.1
Russell 2000 Index	4.2	23.8	0.2	-	0.0

InvMetrics All DB US Eq Net Return Comparison



	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● US Equity	6.3 (89)	11.1 (92)	15.7 (85)	2.5 (15)	13.3 (64)	9.9 (76)	11.7 (80)	11.2 (79)
▲ Blended US Equity Index	8.4 (22)	16.2 (21)	19.0 (27)	1.2 (39)	13.9 (45)	11.4 (20)	12.9 (34)	12.2 (30)
5th Percentile	9.0	17.8	21.1	3.3	16.1	12.1	13.8	13.0
1st Quartile	8.4	16.1	19.0	1.8	14.5	11.2	13.1	12.3
Median	7.7	14.9	18.2	0.7	13.8	10.6	12.6	11.8
3rd Quartile	6.7	12.6	16.5	-0.5	13.0	9.9	12.0	11.4
95th Percentile	5.5	9.9	13.2	-3.6	10.3	8.0	10.4	9.7
Population	237	233	221	186	183	177	158	125



US Equity
Equity Only Summary Statistics

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Characteristics

	Portfolio	Benchmark
Number of Stocks	2,297	3,010
Wtd. Avg. Mkt. Cap \$M	472,051.9	580,224.8
Median Mkt. Cap \$M	3,193.4	1,972.7
Price/Earnings ratio	19.9	22.0
Current Yield (%)	1.6	1.5
Beta (5 Years, Monthly)	0.9	1.0
Price/Book ratio	3.9	4.2
Return on Equity (%)	1.6	4.2

Top Holdings

Best Performers

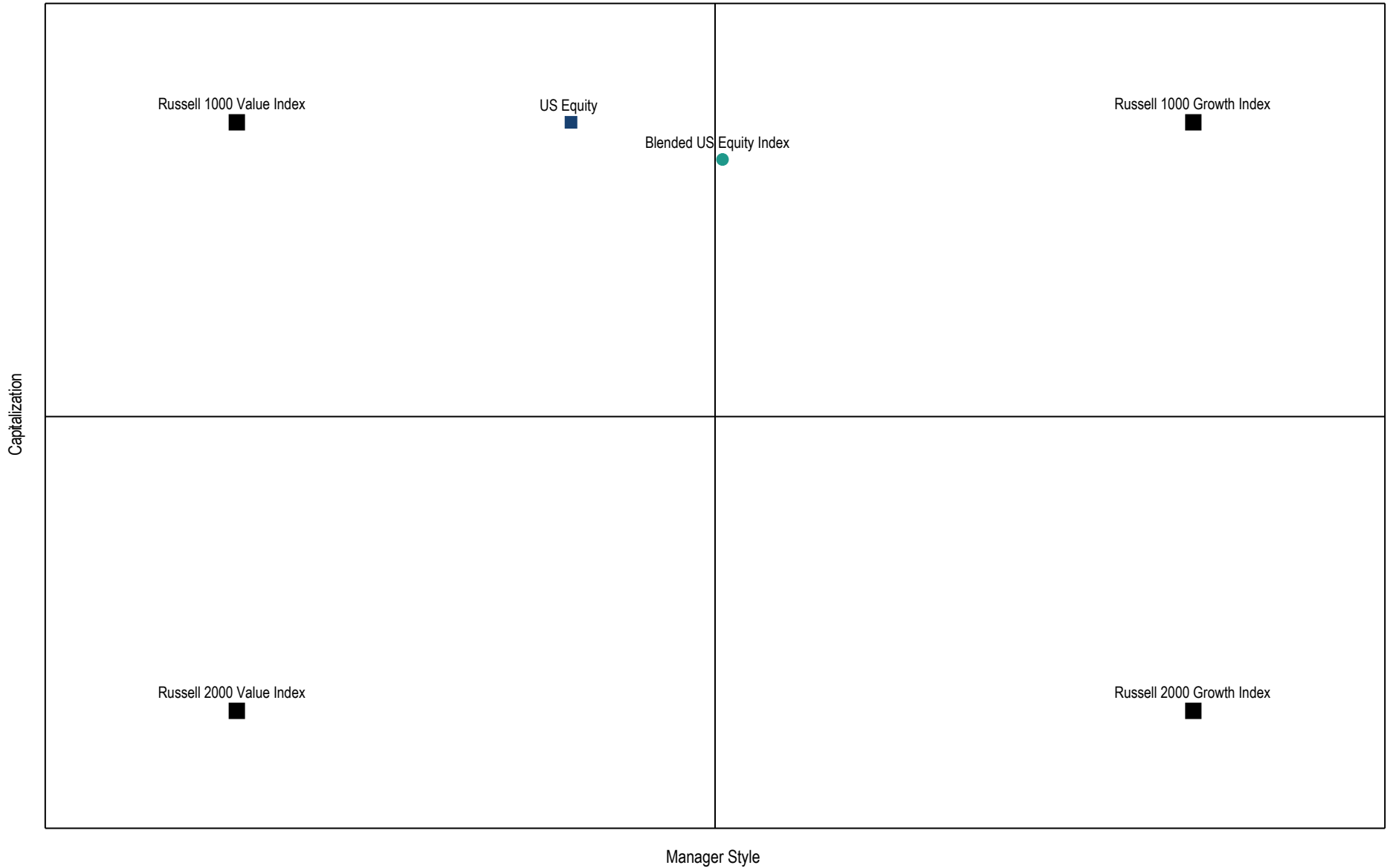
Worst Performers

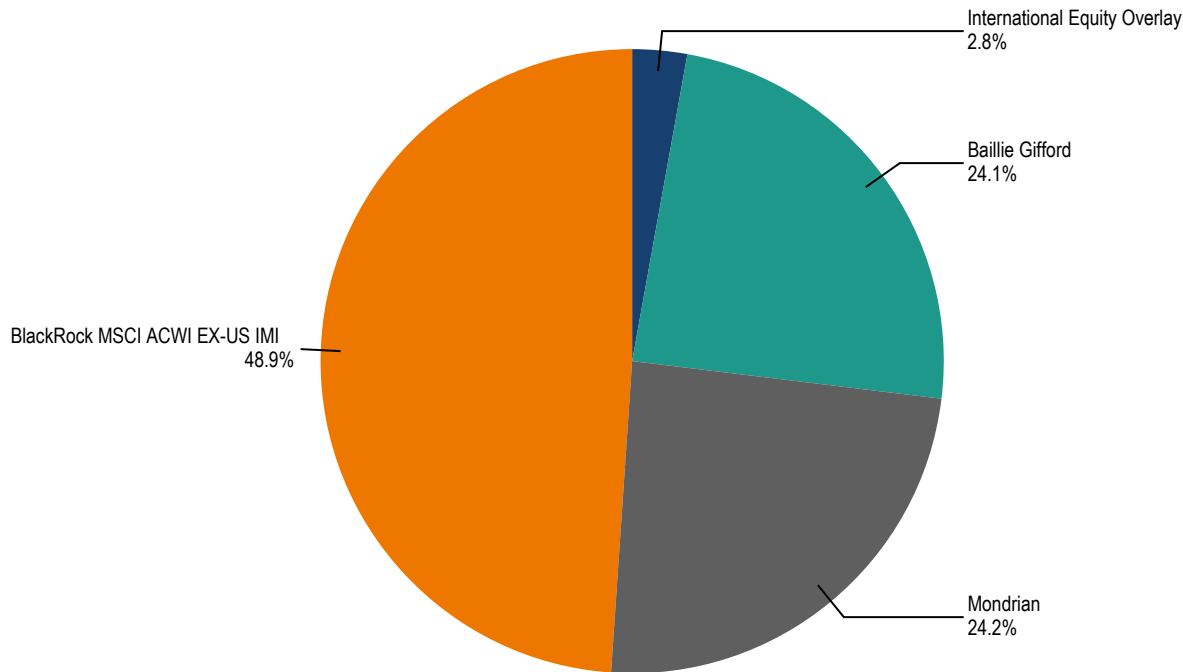
	(%)		Return (%)		Return (%)
Apple Inc	5.5	ImmunoGen Inc	391.4	ViewRay Inc	-89.8
Microsoft Corp	4.7	EyePoint Pharmaceuticals Inc	195.9	FibroGen Inc	-85.5
NVIDIA Corporation	2.1	Bioventus Inc	170.1	Wheels Up Experience Inc	-81.5
Amazon.com Inc	1.8	Lifecore Biomedical Inc	156.2	Cue Health Inc	-79.7
Tesla Inc	1.6	Joby Aviation Inc	136.4	CalAmp Corp	-70.5
Alphabet Inc	1.3	Super Micro Computer Inc	133.9	Tupperware Brands Corp	-68.0
Unitedhealth Group Inc	1.1	Opendoor Technologies Inc	128.4	HomeStreet Inc	-66.6
Berkshire Hathaway Inc	1.0	Amneal Pharmaceuticals Inc	123.0	Yellow Corp	-66.1
Meta Platforms Inc	0.9	IonQ Inc	120.0	BioXcel Therapeutics Inc	-64.3
Alphabet Inc	0.9	Aurora Innovation Inc	111.5	Enviva Inc	-62.4

US Equity Performance Attribution vs. Russell 3000 Index

	Attribution Effects				Performance		Sector Weights	
	Total Effects	Selection Effect	Allocation Effect	Interaction Effect	Portfolio	Benchmark	Portfolio	Benchmark
Energy	0.0	0.0	0.0	0.0	0.1	-0.5	4.6	4.7
Materials	0.0	0.0	0.0	0.0	2.7	2.7	3.8	3.0
Industrials	0.0	0.0	0.0	0.0	8.3	8.1	10.5	9.8
Consumer Discretionary	-0.4	-0.4	0.0	0.0	9.1	12.8	9.8	10.3
Consumer Staples	-0.3	0.0	-0.3	0.0	0.3	0.5	10.3	6.6
Health Care	-0.2	-0.2	0.0	0.0	2.1	3.3	14.3	14.1
Financials	-0.1	-0.1	0.0	0.0	3.7	4.9	9.7	10.9
Information Technology	-1.0	-0.8	-0.3	0.1	12.8	15.6	22.9	27.2
Communication Services	-0.4	-0.4	0.0	0.0	7.5	12.2	7.1	7.6
Utilities	-0.1	0.0	-0.1	0.0	-3.4	-2.8	3.9	2.8
Real Estate	0.0	-0.1	0.0	0.0	-1.4	1.5	2.5	3.1
Other	0.0	0.0	0.0	0.0	8.7	0.0	0.1	0.0
Cash	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
Total	-2.5	-1.9	-0.8	0.2	5.9	8.3	100.0	100.0

U.S. Effective Style Map





	Actual \$	Actual %	Manager Contribution to Excess Return %
Baillie Gifford	\$269,724,321	24.1%	0.9%
Mondrian	\$270,534,890	24.2%	1.1%
BlackRock MSCI ACWI EX-US IMI	\$547,880,982	48.9%	0.0%
International Equity Overlay	\$31,782,012	2.8%	0.0%
Actual vs. Policy Weight Difference			-3.2%
Total	\$1,119,922,205	100.0%	-1.1%

International Equity
Risk vs. Return (3 Years)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Statistics Summary
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	7.7	16.3	0.5	-0.3	3.0
Blended International Equity Index	9.0	14.5	0.6	-	0.0
Baillie Gifford	1.4	21.4	0.1	-0.6	8.7
MSCI ACWI ex US	7.7	16.8	0.5	-	0.0
Mondrian	9.0	17.3	0.5	-0.6	3.4
MSCI AC World ex USA Value	11.2	17.6	0.6	-	0.0

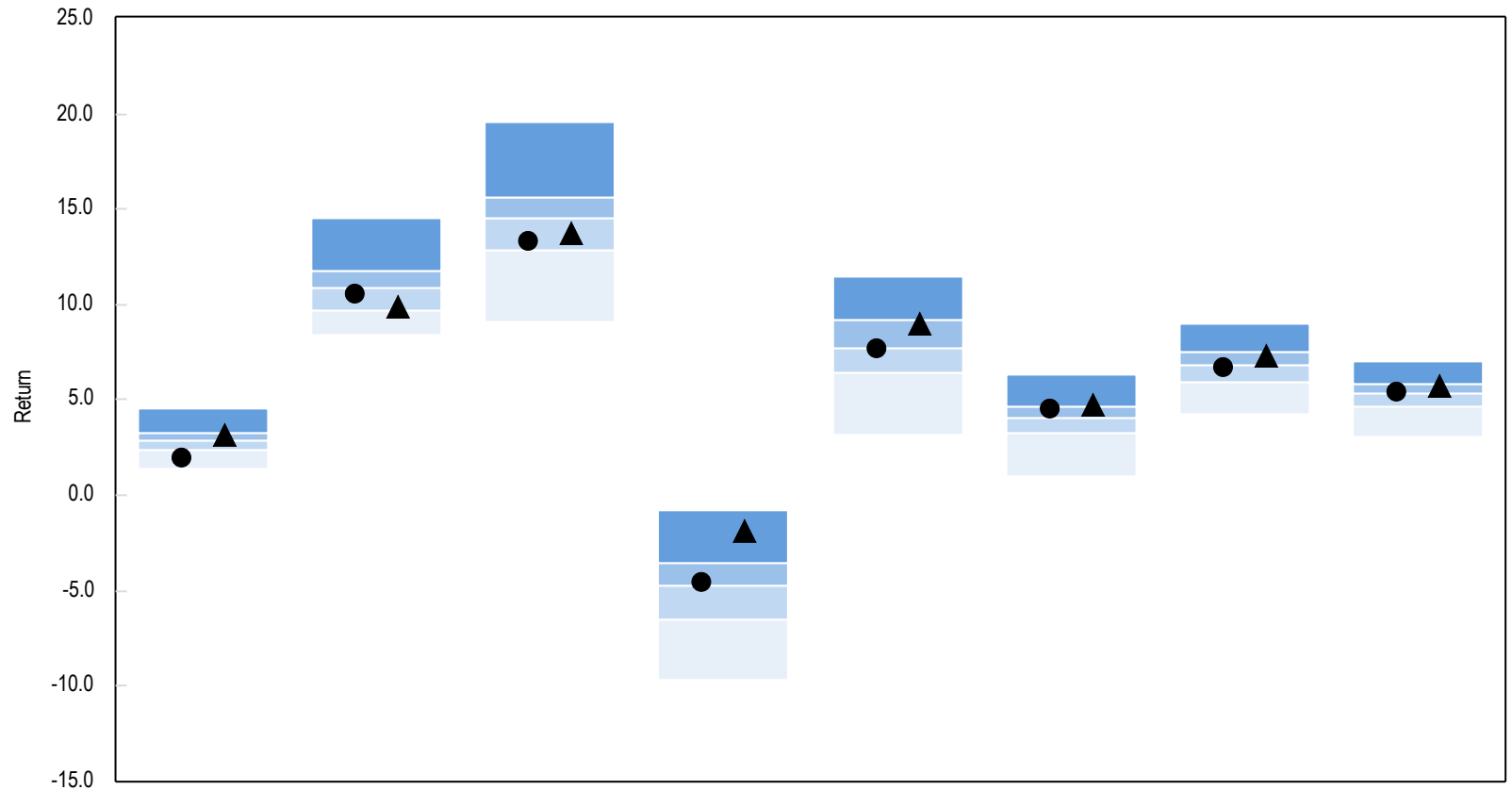
International Equity
Risk vs. Return (5 Years)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Statistics Summary
5 Years

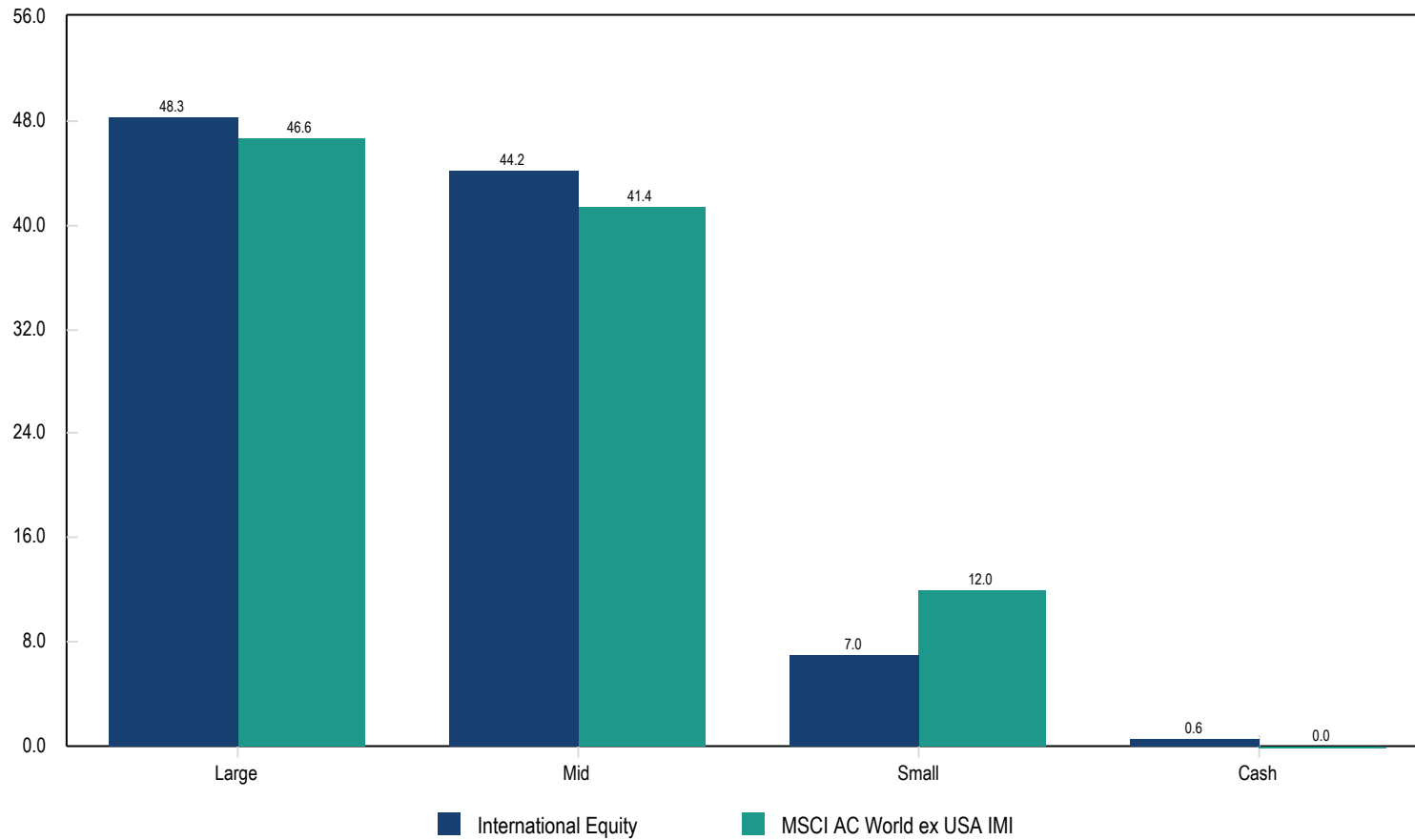
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	4.6	16.7	0.3	0.0	2.5
Blended International Equity Index	4.7	15.8	0.3	-	0.0
Baillie Gifford	3.3	20.7	0.2	0.0	8.1
MSCI ACWI ex US	4.0	17.3	0.2	-	0.0
Mondrian	2.9	18.1	0.2	-0.2	3.1
MSCI AC World ex USA Value	3.3	18.6	0.2	-	0.0

InvMetrics All DB Global ex-US Equity Net Return Comparison



	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● International Equity	2.0 (88)	10.6 (56)	13.3 (70)	-4.5 (43)	7.7 (51)	4.6 (28)	6.7 (55)	5.5 (44)
▲ Blended International Equity Index	3.1 (35)	9.9 (73)	13.8 (65)	-1.9 (11)	9.0 (30)	4.7 (24)	7.4 (30)	5.7 (33)
5th Percentile	4.6	14.6	19.5	-0.7	11.4	6.3	9.0	7.0
1st Quartile	3.3	11.7	15.6	-3.6	9.2	4.7	7.5	5.9
Median	2.8	10.8	14.5	-4.7	7.7	4.1	6.9	5.4
3rd Quartile	2.4	9.7	12.8	-6.5	6.4	3.2	6.0	4.7
95th Percentile	1.4	8.4	9.1	-9.6	3.1	1.0	4.2	3.1
Population	166	164	158	142	140	137	132	109

Market Capitalization as of June 30, 2023



See appendix for the market capitalization breakpoints.

International Equity
Equity Only Summary Statistics

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Characteristics

	Portfolio	Benchmark
Number of Stocks	6,817	6,710
Wtd. Avg. Mkt. Cap \$M	82,534.4	76,170.4
Median Mkt. Cap \$M	1,576.8	1,554.5
Price/Earnings ratio	13.4	13.1
Current Yield (%)	3.1	3.2
Beta (5 Years, Monthly)	0.9	1.0
Price/Book ratio	2.5	2.4
Return on Equity (%)	0.1	5.2

Top Holdings

Best Performers

Worst Performers

	(%)		Return (%)		Return (%)
Taiwan Semiconductor Man.	2.9	Lunit Inc.	286.5	PT Berkah Beton Sadaya Tbk	-91.6
Alibaba Group Holding Ltd	1.9	YDUQS Participacoes SA	189.6	Daesung Holdings	-89.4
Housing Development Finance Corp Ltd	1.7	EV Advanced Material Co Ltd	180.4	Seoul City Gas Co Ltd	-86.7
Samsung Electronics Co Ltd	1.6	Nano X Imaging Ltd	168.5	Sun Kwang Co Ltd	-86.5
Ping An Insurance Group	1.2	Aekyungchemical Co Ltd	140.5	JS Global Lifestyle Co Ltd	-83.1
ASML Holding NV	1.2	Zhongji Innolight Co Ltd	137.3	Samchully Co Ltd	-79.2
Taiwan Semiconductor Man.	1.0	Youngpoong Paper Mfg Co Ltd	133.7	Canopy Growth Corp	-78.0
LVMH Moet Hennessy Louis V	1.0	Abivax SA	125.4	Viaplay Group AB publ	-77.5
Cie Financiere Richemont	0.8	Sanyang Motor Co Ltd	124.4	Imas Makina Sanayi Anonim Sirketi	-77.2
Reliance Industries Ltd	0.8	Lake Materials Co Ltd	120.3	Niit Ltd	-74.0

International Equity Performance Attribution vs. MSCI AC World ex USA IMI

	Attribution Effects				Performance		Sector Weights	
	Total Effects	Selection Effect	Allocation Effect	Interaction Effect	Portfolio	Benchmark	Portfolio	Benchmark
Energy	0.0	0.1	0.0	0.0	4.7	3.4	4.3	5.3
Materials	0.2	0.1	0.2	0.0	-1.1	-2.0	5.3	8.8
Industrials	0.2	0.2	0.0	0.0	6.2	5.0	14.5	13.8
Consumer Discretionary	-0.6	-0.5	0.0	-0.1	-1.7	2.2	15.6	11.9
Consumer Staples	0.0	0.0	0.0	0.0	-0.4	-0.4	9.6	8.6
Health Care	-0.2	-0.2	0.0	0.0	-0.3	1.8	10.5	9.2
Financials	-0.3	-0.3	-0.1	0.0	3.9	5.4	16.1	18.6
Information Technology	0.2	0.1	0.1	0.0	6.7	6.1	13.6	11.7
Communication Services	0.0	0.0	0.0	0.0	-3.8	-4.0	5.9	5.7
Utilities	0.0	0.0	0.0	0.0	5.6	4.4	3.4	3.2
Real Estate	0.1	0.0	0.1	0.0	-2.4	-2.3	1.0	3.1
Cash	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Total	-0.4	-0.5	0.2	-0.2	2.2	2.6	100.0	100.0

International Equity vs. MSCI AC World ex USA IMI

	Weights		Performance		Attribution Effects			
	Portfolio	Benchmark	Portfolio	Benchmark	Selection Effects	Country Effects	Interaction Effects	Total Effects
Australia	2.5	4.9	1.7	0.2	0.1	0.1	0.0	0.1
Austria	0.1	0.2	3.0	3.1	0.0	0.0	0.0	0.0
Belgium	0.7	0.6	-11.8	-6.2	0.0	0.0	0.0	0.0
Brazil	1.6	1.4	21.7	21.5	0.0	0.0	0.0	0.0
Canada	4.0	7.5	7.2	3.3	0.3	0.0	-0.1	0.1
Chile	0.1	0.2	7.8	7.8	0.0	0.0	0.0	0.0
China	8.6	7.2	-10.9	-9.8	-0.1	-0.2	0.0	-0.3
Colombia	0.0	0.0	12.3	12.4	0.0	0.0	0.0	0.0
Czech Republic	0.0	0.0	-0.7	-0.6	0.0	0.0	0.0	0.0
Denmark	0.8	1.9	3.6	2.0	0.0	0.0	0.0	0.0
Egypt	0.0	0.0	7.0	7.3	0.0	0.0	0.0	0.0
Finland	0.3	0.8	-5.3	-5.3	0.0	0.0	0.0	0.0
France	5.8	6.8	1.5	4.0	-0.2	0.0	0.0	-0.2
Germany	5.7	5.2	-0.2	3.3	-0.2	0.0	0.0	-0.2
Greece	0.0	0.1	24.7	25.0	0.0	0.0	0.0	0.0
Hong Kong	2.8	2.3	-1.5	-6.1	0.1	0.0	0.0	0.1
Hungary	0.0	0.0	24.0	24.1	0.0	0.0	0.0	0.0
India	3.8	3.9	12.3	13.4	0.0	0.0	0.0	-0.1
Indonesia	0.4	0.5	9.7	2.9	0.0	0.0	0.0	0.0
Ireland	0.6	0.8	11.6	4.8	0.1	0.0	0.0	0.0
Israel	0.2	0.6	-1.6	-1.5	0.0	0.0	0.0	0.0
Italy	2.3	1.5	6.8	8.7	0.0	0.1	0.0	0.0
Japan	18.0	14.9	3.7	5.4	-0.3	0.1	-0.1	-0.2
Korea	2.5	3.4	6.1	3.6	0.1	0.0	0.0	0.1
Kuwait	0.1	0.2	0.3	0.1	0.0	0.0	0.0	0.0
Malaysia	0.2	0.5	-7.6	-7.6	0.0	0.0	0.0	0.0
Malta	0.0	0.0	2.7	2.7	0.0	0.0	0.0	0.0
Mexico	0.7	0.7	4.6	5.7	0.0	0.0	0.0	0.0
Netherlands	4.7	3.4	5.0	4.4	0.0	0.0	0.0	0.1
New Zealand	0.4	0.2	26.7	2.2	0.1	0.0	0.0	0.1
Norway	0.2	0.5	-0.9	-0.9	0.0	0.0	0.0	0.0
Peru	0.2	0.0	11.3	8.3	0.0	0.0	0.0	0.0
Philippines	0.1	0.2	-1.5	-1.5	0.0	0.0	0.0	0.0

International Equity
Equity Performance Attribution

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

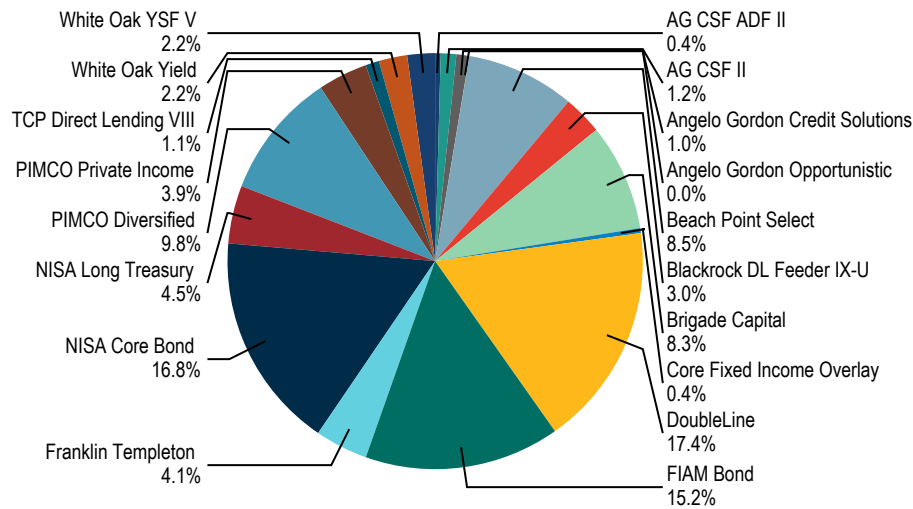
	Weights		Performance		Attribution Effects			Total Effects
	Portfolio	Benchmark	Portfolio	Benchmark	Selection Effects	Country Effects	Interaction Effects	
Poland	0.1	0.2	24.9	25.0	0.0	0.0	0.0	0.0
Portugal	0.5	0.1	18.6	1.3	0.0	0.0	0.1	0.1
Qatar	0.1	0.2	-1.7	-1.7	0.0	0.0	0.0	0.0
Russia	0.0	0.0	-13.2	0.0	0.0	0.0	0.0	0.0
Saudi Arabia	0.5	1.1	7.6	7.6	0.0	0.0	0.0	0.0
Singapore	1.9	0.9	-4.5	-1.2	0.0	0.0	0.0	-0.1
South Africa	0.3	1.0	-5.1	-5.1	0.0	0.0	0.0	0.0
Spain	1.4	1.6	2.6	5.3	0.0	0.0	0.0	0.0
Sweden	2.9	2.3	-0.4	-1.8	0.0	0.0	0.0	0.0
Switzerland	3.9	6.2	5.3	4.3	0.1	0.0	0.0	0.0
Taiwan	4.3	4.4	6.3	5.5	0.0	0.0	0.0	0.0
Thailand	0.4	0.6	-7.0	-9.0	0.0	0.0	0.0	0.0
Turkey	0.1	0.2	-10.9	-11.0	0.0	0.0	0.0	0.0
United Arab Emirates	0.1	0.3	6.1	6.2	0.0	0.0	0.0	0.0
United Kingdom	13.1	9.4	1.1	1.8	-0.1	0.0	0.0	-0.1
United States	1.0	0.2	-10.3	-15.8	0.0	-0.2	0.0	-0.1
Other	1.7	0.5	-2.4	-3.3	0.0	-0.1	0.0	-0.1
Cash	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	2.2	2.6	0.0	-0.3	-0.2	-0.4

International Equity vs. MSCI AC World ex USA IMI

	Weights		Performance		Attribution Effects			Total Effects
	Portfolio	Benchmark	Portfolio	Benchmark	Selection Effects	Region Effects	Interaction Effects	
Americas	7.6	10.0	7.9	5.8	0.2	-0.1	-0.1	0.1
Asia Pacific	45.9	44.1	1.4	1.8	-0.1	0.0	0.0	-0.2
EMEA	44.6	45.5	2.2	2.9	-0.3	0.0	0.0	-0.3
Other	1.7	0.5	-2.4	-3.3	0.0	-0.1	0.0	-0.1
Cash	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	2.2	2.6	-0.2	-0.2	0.0	-0.4

Fixed Income
 Manager Allocation Analysis

San Mateo County Employees' Retirement Association
 Period Ending: June 30, 2023



	Actual \$	Actual %	Manager Contribution to Excess Return %
AG CSF ADF II	\$5,707,400	0.4%	0.0%
AG CSF II	\$15,984,500	1.2%	-0.1%
Angelo Gordon Credit Solutions	\$13,258,500	1.0%	0.0%
Angelo Gordon Opportunistic	\$34,746	0.0%	0.0%
Beach Point Select	\$112,332,734	8.5%	-0.1%
Blackrock DL Feeder IX-U	\$40,352,869	3.0%	-0.1%
Brigade Capital	\$110,598,813	8.3%	-0.1%
DoubleLine	\$230,983,635	17.4%	0.2%
FIAM Bond	\$201,939,887	15.2%	0.0%
Franklin Templeton	\$54,549,144	4.1%	-0.1%
NISA Core Bond	\$223,811,559	16.8%	0.0%
NISA Long Treasury	\$59,883,590	4.5%	0.0%
PIMCO Diversified	\$130,536,289	9.8%	0.0%
PIMCO Private Income	\$51,307,548	3.9%	-0.1%
TCP Direct Lending VIII	\$14,189,606	1.1%	0.0%
White Oak Yield	\$29,366,554	2.2%	0.0%
White Oak YSF V	\$28,687,372	2.2%	0.0%
Core Fixed Income Overlay	\$5,110,719	0.4%	0.0%
Actual vs. Policy Weight Difference			1.2%
Total	\$1,328,635,464	100.0%	0.7%

Fixed Income
Risk vs. Return (3 Years)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Statistics Summary
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	-0.7	4.8	-0.4	0.4	2.3
Blended Fixed Income Index	-1.7	6.3	-0.4	-	0.0
Core Fixed	-3.4	5.7	-0.8	0.5	1.0
Blmbg. U.S. Aggregate Index	-4.0	6.1	-0.8	-	0.0
FIAM Bond	-3.1	6.1	-0.7	1.4	0.7
Blmbg. U.S. Aggregate Index	-4.0	6.1	-0.8	-	0.0
Opportunistic Credit	4.4	4.5	0.7	0.4	5.0
Bloomberg BA Intermediate HY	2.2	8.0	0.2	-	0.0
Angelo Gordon Opportunistic	12.3	13.6	0.8	1.1	15.3
Blmbg. U.S. Aggregate Index	-4.0	6.1	-0.8	-	0.0
Beach Point Select	9.6	5.8	1.4	1.1	6.1
Bloomberg BA Intermediate HY	2.2	8.0	0.2	-	0.0
Brigade Capital	7.4	6.3	1.0	0.8	6.2
Bloomberg BA Intermediate HY	2.2	8.0	0.2	-	0.0
PIMCO Diversified	-1.3	7.8	-0.3	-	-
Blended PIMCO Diversified Index	-	-	-	-	-
Franklin Templeton	-4.5	10.2	-0.5	0.1	6.5
Blmbg. Global Multiverse	-4.7	7.9	-0.7	-	0.0
Private Credit	6.4	2.7	1.8	-1.6	2.3
Cliffwater Direct Lending Index	10.3	4.5	1.9	-	0.0
PIMCO Private Income	8.7	5.3	1.4	0.7	9.2
Bloomberg BA Intermediate HY	2.2	8.0	0.2	-	0.0
TCP Direct Lending VIII	6.2	2.6	1.9	-0.9	4.3
Cliffwater Direct Lending Index	10.3	4.5	1.9	-	0.0
White Oak Yield	4.4	2.4	1.2	-1.8	3.1
Cliffwater Direct Lending Index	10.3	4.5	1.9	-	0.0

Fixed Income
Risk vs. Return (5 Years)

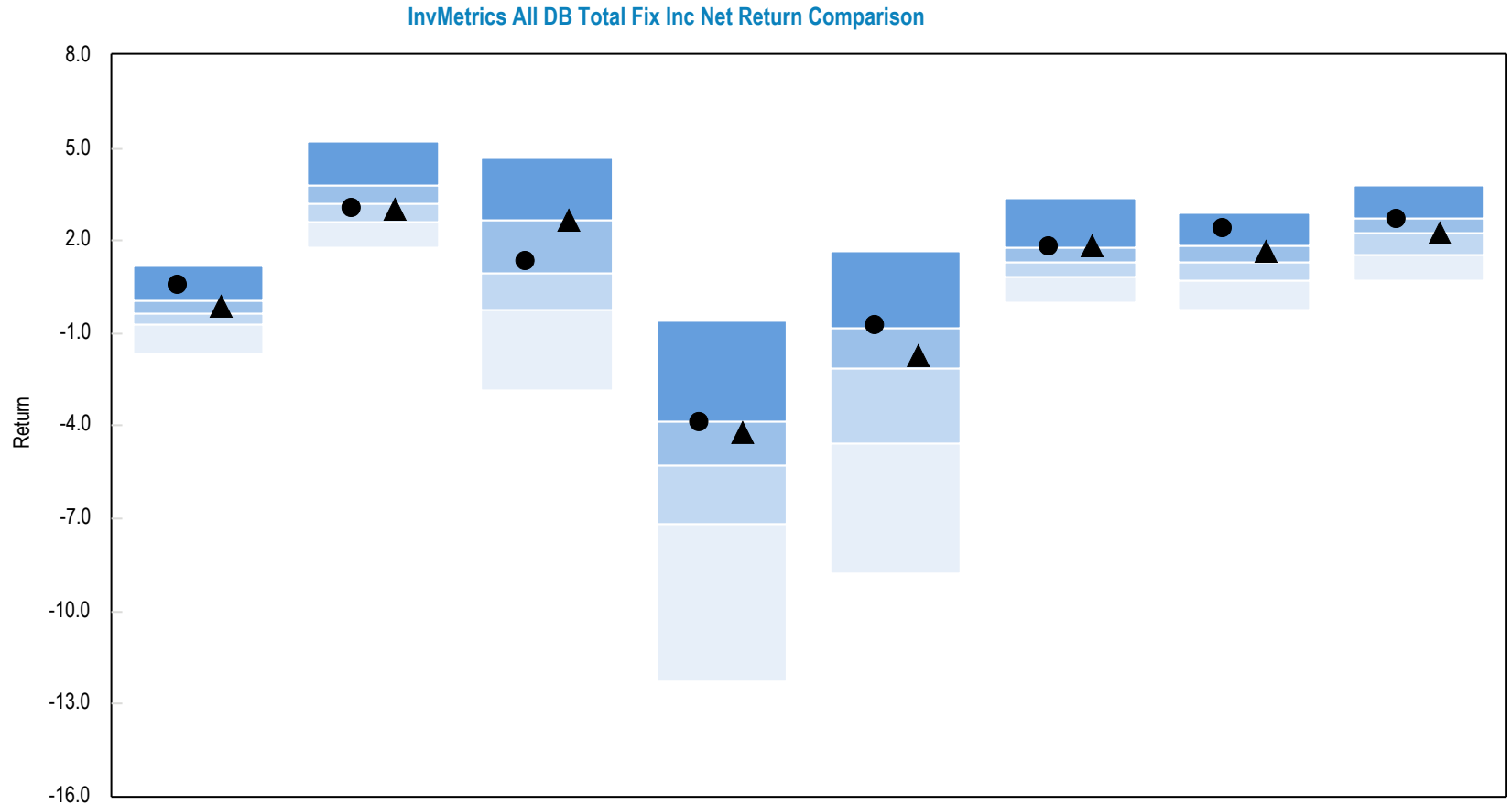
San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Statistics Summary
5 Years

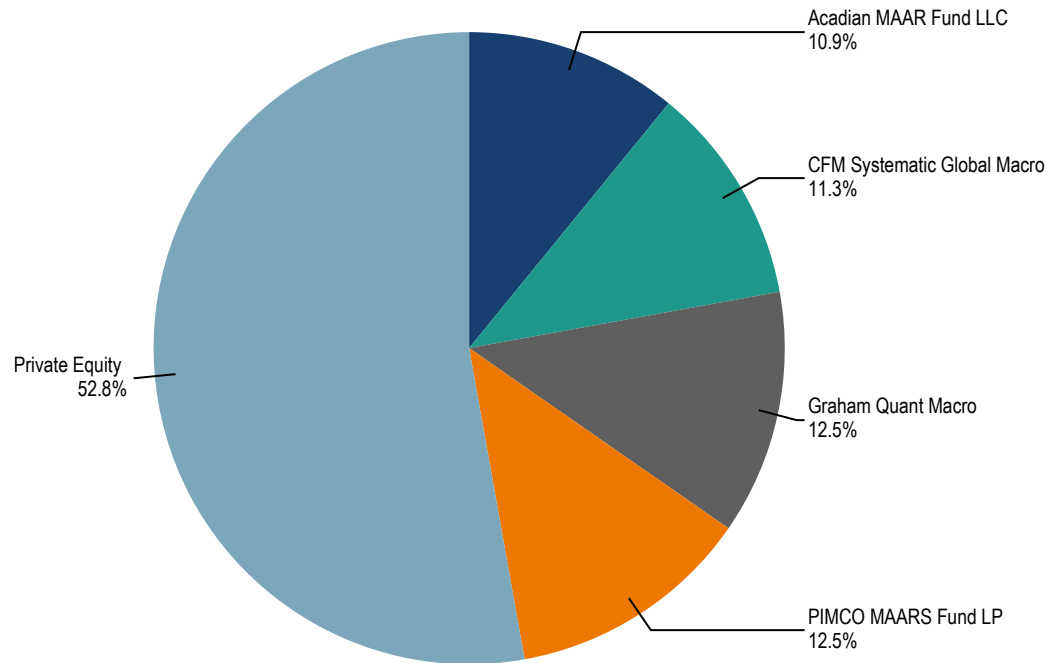
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	1.8	4.6	0.1	0.0	2.2
Blended Fixed Income Index	1.8	5.7	0.1	-	0.0
Core Fixed	0.7	5.0	-0.1	-0.1	1.4
Blmbg. U.S. Aggregate Index	0.8	5.4	-0.1	-	0.0
FIAM Bond	1.6	5.6	0.0	0.6	1.3
Blmbg. U.S. Aggregate Index	0.8	5.4	-0.1	-	0.0
Opportunistic Credit	3.7	6.0	0.4	-0.1	4.8
Bloomberg BA Intermediate HY	3.8	8.4	0.3	-	0.0
Angelo Gordon Opportunistic	6.3	16.0	0.4	0.4	17.0
Blmbg. U.S. Aggregate Index	0.8	5.4	-0.1	-	0.0
Beach Point Select	6.6	7.7	0.7	0.5	5.7
Bloomberg BA Intermediate HY	3.8	8.4	0.3	-	0.0
Brigade Capital	3.3	10.0	0.2	0.0	7.0
Bloomberg BA Intermediate HY	3.8	8.4	0.3	-	0.0
PIMCO Diversified	1.5	7.8	0.0	-	-
Blended PIMCO Diversified Index	-	-	-	-	-
Franklin Templeton	-3.2	9.3	-0.5	-0.3	7.4
Blmbg. Global Multiverse	-0.9	6.8	-0.3	-	0.0
Private Credit	6.3	3.5	1.3	-0.8	2.2
Cliffwater Direct Lending Index	8.2	4.8	1.3	-	0.0
TCP Direct Lending VIII	6.1	3.0	1.5	-0.5	4.2
Cliffwater Direct Lending Index	8.2	4.8	1.3	-	0.0
White Oak Yield	5.1	2.8	1.2	-0.9	3.2
Cliffwater Direct Lending Index	8.2	4.8	1.3	-	0.0

Fixed Income
Peer Universe Comparison

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023



	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Fixed Income	0.6 (10)	3.1 (55)	1.4 (43)	-3.9 (26)	-0.7 (21)	1.8 (22)	2.5 (9)	2.7 (25)
▲ Blended Fixed Income Index	-0.1 (34)	3.0 (58)	2.7 (25)	-4.2 (32)	-1.7 (35)	1.8 (21)	1.6 (30)	2.3 (48)
5th Percentile	1.2	5.2	4.7	-0.6	1.7	3.4	2.9	3.8
1st Quartile	0.1	3.8	2.7	-3.9	-0.8	1.8	1.8	2.7
Median	-0.4	3.2	1.0	-5.3	-2.1	1.3	1.3	2.2
3rd Quartile	-0.7	2.6	-0.2	-7.2	-4.6	0.8	0.7	1.6
95th Percentile	-1.7	1.8	-2.8	-12.3	-8.8	0.0	-0.2	0.7
Population	137	134	124	89	88	81	74	57



	Actual \$	Actual %	Manager Contribution to Excess Return %
Acadian MAAR Fund LLC	\$80,414,565	10.9%	-0.3%
CFM Systematic Global Macro	\$83,076,771	11.3%	-0.5%
Graham Quant Macro	\$92,322,699	12.5%	-0.2%
PIMCO MAARS Fund LP	\$92,545,762	12.5%	-0.5%
Private Equity	\$389,947,007	52.8%	-3.7%
Actual vs. Policy Weight Difference			2.0%
Total	\$738,306,803	100.0%	-3.3%

Alternatives
Risk vs. Return (3 Years)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Statistics Summary
3 Years

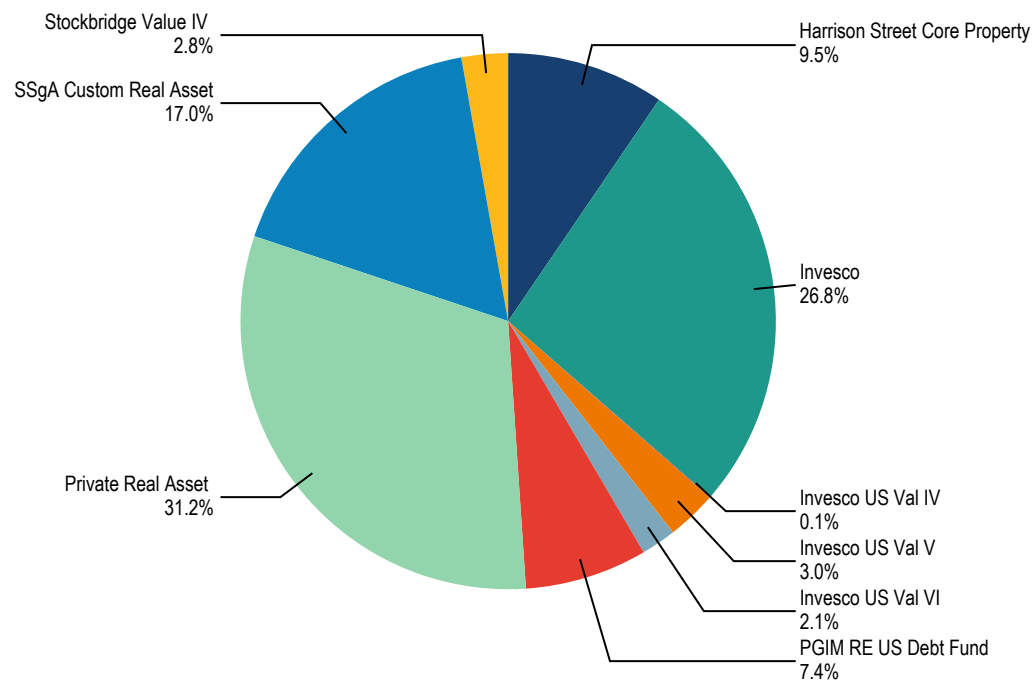
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	15.7	14.1	1.0	0.2	13.6
Blended Alternatives Index	13.3	9.1	1.3	-	0.0
Private Equity	23.7	24.6	0.9	0.1	24.4
Blended Private Equity Index	21.6	18.7	1.1	-	0.0
Hedge Fund/Absolute Return	4.6	6.3	0.5	-0.1	6.5
Absolute Return Custom Index	5.4	0.5	24.8	-	0.0

Alternatives
Risk vs. Return (5 Years)

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Statistics Summary
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	10.7	12.2	0.8	0.1	12.7
Blended Alternatives Index	9.7	9.1	0.9	-	0.0
Private Equity	20.6	21.0	0.9	0.3	22.5
Blended Private Equity Index	13.5	18.5	0.7	-	0.0
Hedge Fund/Absolute Return	-1.2	6.9	-0.4	-0.9	7.0
Absolute Return Custom Index	5.6	0.4	23.1	-	0.0



	Actual \$	Actual %	Manager Contribution to Excess Return %
Harrison Street Core Property	\$97,075,458	9.5%	0.3%
Invesco	\$273,572,907	26.8%	-0.3%
Invesco US Val IV	\$600,150	0.1%	0.0%
Invesco US Val V	\$30,646,122	3.0%	0.1%
Invesco US Val VI	\$21,519,075	2.1%	0.1%
PGIM RE US Debt Fund	\$75,266,251	7.4%	0.4%
Stockbridge Value IV	\$28,644,302	2.8%	0.1%
Private Real Asset	\$317,940,299	31.2%	-3.0%
SSgA Custom Real Asset	\$173,738,904	17.0%	0.0%
Actual vs. Policy Weight Difference			2.5%
Total	\$1,019,003,468	100.0%	0.1%

Statistics Summary
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Inflation Hedge	10.0	5.3	1.5	-0.4	4.9
Blended Inflation Hedge Index	12.1	7.7	1.3	-	0.0
Real Estate	7.3	6.1	0.9	-0.3	3.1
NCREIF ODCE	8.0	8.8	0.8	-	0.0
Invesco	7.1	8.5	0.7	-0.5	1.8
NCREIF ODCE	8.0	8.8	0.8	-	0.0
Invesco US Val IV	-22.1	28.3	-0.7	-1.0	27.5
NCREIF ODCE	8.0	8.8	0.8	-	0.0
Invesco US Val V	10.4	9.5	0.9	0.3	7.0
NCREIF ODCE	8.0	8.8	0.8	-	0.0
PGIM RE US Debt Fund	5.8	0.9	4.7	-0.3	8.8
NCREIF ODCE	8.0	8.8	0.8	-	0.0
Private Real Asset	17.0	11.8	1.3	-0.2	19.8
Blended Private Real Asset Index	21.0	17.2	1.1	-	0.0
Public Real Assets	11.8	13.1	0.8	0.3	0.4
Blended Public Real Asset Index	11.7	13.1	0.8	-	0.0
SSgA Custom Real Asset	11.8	13.1	0.8	0.3	0.4
SSgA Custom Real Asset Index	11.7	13.1	0.8	-	0.0

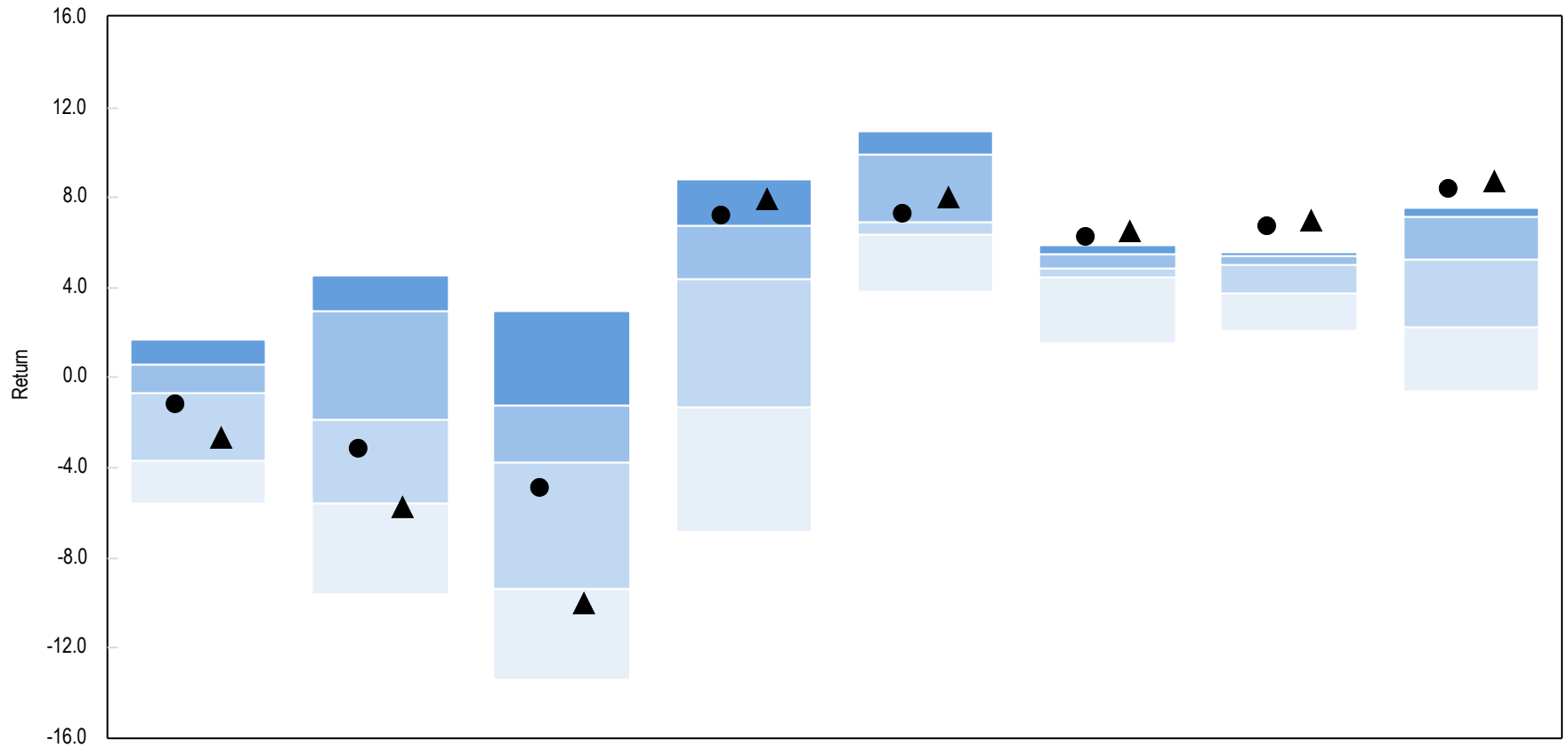
Inflation Hedge
Risk vs. Return

San Mateo County Employees' Retirement Association
Period Ending: June 30, 2023

Statistics Summary
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Inflation Hedge	4.1	6.6	0.4	-0.6	4.1
Blended Inflation Hedge Index	6.6	7.4	0.7	-	0.0
Real Estate	6.3	5.3	0.9	-0.1	2.5
NCREIF ODCE	6.5	7.0	0.7	-	0.0
Invesco	5.7	7.2	0.6	-0.3	2.0
NCREIF ODCE	6.5	7.0	0.7	-	0.0
Invesco US Val IV	-11.2	22.7	-0.4	-0.7	21.9
NCREIF ODCE	6.5	7.0	0.7	-	0.0
PGIM RE US Debt Fund	5.9	1.7	2.5	-0.1	6.9
NCREIF ODCE	6.5	7.0	0.7	-	0.0
Private Real Asset	6.7	11.7	0.5	-0.1	19.8
Blended Private Real Asset Index	7.9	18.6	0.4	-	0.0
Public Real Assets	0.7	17.5	0.0	-0.7	3.4
Blended Public Real Asset Index	3.6	15.4	0.2	-	0.0
SSgA Custom Real Asset	3.7	15.3	0.2	0.1	0.7
SSgA Custom Real Asset Index	3.6	15.4	0.2	-	0.0

InvMetrics All DB Real Estate Public Net Return Comparison



	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Real Estate	-1.1 (57)	-3.1 (64)	-4.8 (53)	7.2 (16)	7.3 (48)	6.3 (1)	6.8 (1)	8.4 (1)
▲ NCREIF ODCE	-2.7 (72)	-5.8 (76)	-10.0 (78)	8.0 (9)	8.0 (44)	6.5 (1)	7.0 (1)	8.7 (1)
5th Percentile	1.7	4.6	3.0	8.8	10.9	5.9	5.6	7.5
1st Quartile	0.6	3.0	-1.2	6.8	9.9	5.5	5.4	7.1
Median	-0.7	-1.8	-3.8	4.4	6.9	4.8	5.0	5.2
3rd Quartile	-3.7	-5.5	-9.4	-1.3	6.4	4.4	3.8	2.3
95th Percentile	-5.6	-9.6	-13.4	-6.9	3.8	1.5	2.1	-0.6
Population	14	12	11	10	9	7	7	4

Acadian Asset Management – Acadian U.S. Managed Volatility

Acadian's goal is to build a portfolio focused on absolute return and risk with the aim of achieving an absolute return similar to or better than that of a domestic equity index but with lower volatility over the long term. Acadian targets absolute risk to be 25-35% less than a typical capitalization-weighted benchmark. That said, tracking error is not a major consideration and can appear relatively high due in part to Acadian's comfort with carrying large sector variations versus the benchmark. Acadian seeks to combine the values of all of the security-level factors to determine a peer-relative return forecast for each stock. Separately they make a top-down forecast for the stock's peer group, and then add that forecast to the stock's score. Acadian's managed volatility strategies utilize the same alpha forecasts as Acadian's active equity strategies but with risk being the initial consideration when constructing portfolios. Alpha forecasts play a modest role relative to the importance of risk estimates but are important to the goal of achieving a higher risk-adjusted return. Incorporation of alpha forecasts generally results in higher exposure to value, size and quality.

Acadian Asset Management – MAARS Fund

Acadian Multi-Asset Absolute Return (MAARS) strategy was inceptioned in November 2017. MAARS targets a volatility of 6%-8% and a return of cash plus 5%. This is a multi-factor strategy that aims to exploit behavioral inefficiencies within and across global markets and is designed to be diversifying, dynamic and defensive. It is market neutral, implemented using long and short positions across five primary asset classes (equity, fixed income, currency, commodities, and volatility) and over 100 underlying assets with a focus on liquid instruments. Return forecasts incorporate asset-specific and macroeconomic insights and are utilized to harvest active returns from within and across asset classes through market selection and directional positioning. The strategy integrates risk and return across asset classes. Avoidance of downside events is highlighted in the approach with a greater weighting in their models allocated to down market beneficiaries, such as quality factors, and asymmetric positioning which reduces positions when risk rises. Differentiated attributes of this are its approach and weighting to commodities and its volatility sleeve which can incorporate long volatility.

Angelo, Gordon & Co. – AG Opportunistic Whole Loan Fund

The Angelo Gordon Opportunistic Whole Loan (OWL) Fund was established to make investments primarily in a portfolio of non-performing loans (NPLs) and re-performing loans (RPLs). AG sees a lot of operational inefficiency in the market place. By acquiring these loans at a discounted price and replacing original servicers with better-focused special servicers, AG believes it can improve operational efficiency and generate attractive returns. In addition, OWL may also include investments in new residential mortgage loans and excess mortgage servicing rights. Opportunistic investments in commercial mortgage loans and other mortgage related investments may also be included in the Fund's portfolio. OWL is towards the end of its fund life and is continuing to sell down the fund's holdings and distribute proceeds to LPs.

Angelo, Gordon & Co. – Credit Solutions

The Angelo Gordon (AG) Credit Solutions Fund (CSF) expects to hold concentrated positions of 5-8% of NAV (averaging 30 positions over the life of the Fund with recycling). The Fund is targeting a net 15% IRR with a 5-7% current yield. The Fund should be 70% concentrated in the U.S. with the balance in Europe. Finally, while the opportunities can be sourced from both the public markets and the private markets, AG is finding compelling sources of return at this time through structuring new privately placed secured term loans out of public investments made by the firm. CSF will address corporate credit-based opportunities created in three main areas: 1) trading-based price dislocations that reduce creation multiples (price through the debt that must be repaid before value accrues to other stakeholders) while generating high current income; 2) opportunities in issuers tied to industries directly impacted by COVID-19 where the market's perception of the impact differs from the actual impact; and 3) corporate debt issuers that will be materially impacted by the pandemic and will need to restructure, but whose creation value is materially lower than the issuer's intrinsic value.

Angelo, Gordon & Co. – CSF (Annex) Dislocation II

The Angelo Gordon Annex Dislocation Fund II (ADFII)'s investment aim is to target senior securities of world-class businesses with irreplaceable assets and strong cash flow profiles which, because of market stress, can be purchased at a material discount to what they believe is a company's long-term intrinsic value. ADFII will invest opportunistically in securities or claims of companies in North America and Europe for which prices have, in Angelo Gordon's view, dislocated from long term fundamentals due to situational market volatility and stress.

Angelo, Gordon & Co. – Credit Solutions II

Like its predecessor funds, the Angelo Gordon (AG) Credit Solutions Fund II (CSF II) is an all-weather, solutions-based strategy that targets net returns of 14+% with 5-7% current yield. The Fund will invest in single-name opportunities where price movements and credit documents afford creative financing solutions. This could include companies with upcoming debt maturities, working capital issues, or inefficient capital structures that are inflating financing costs. In these cases, AG will seek to work with management and other creditors to structure a bespoke transaction that avoids bankruptcy and solves the issue for the company in exchange for debt securities with conservative attachment points and healthy yield. While the opportunities are likely to be sourced 75% from the public markets and 25% from the private markets, the "solutions" will likely be private products. During periods of dislocation, the Fund can pivot towards trading-oriented strategies where there is not a need for additional financing, such as sourcing debt in the secondary markets at discounts to intrinsic value. CSF II expects to hold concentrated positions of 5-8% of NAV (averaging 30 positions over the life of the Fund with recycling). The fund should be 70% concentrated in the U.S. with the balance in Europe.

Baillie Gifford – ACWI ex US Focus Equities

ACWI ex US Focus is a fundamental growth strategy. Research is organized primarily by regional teams, with each member of the ACWI ex US Focus Portfolio Construction Group representing a regional team. Four global sector groups also contribute research. Baillie Gifford conducts approximately 2000 company meetings annually both in Edinburgh and onsite. Companies are evaluated on their growth opportunity relative to the average company, their ability to execute on that opportunity, and the degree to which probability of future success is already valued by the market. Baillie Gifford's basic philosophy is that share prices ultimately follow earnings. They believe that the stock market has a recurring tendency to under-appreciate the value of long-term compound growth. The process seeks to add value through use of proprietary fundamental research to identify companies exhibiting some combination of sustained above average growth, and attractive financial characteristics. The portfolio generally holds 60-90 stocks, with country and sector weights +/-10% relative to the index and stock weights +/- 5% relative to the index.

Beach Point Capital Management, L.P. - Beach Point Select Fund

Beach Point Select Fund is a commingled fund vehicle within the firm's Opportunistic Credit strategy. This fund focuses on off-the-run, complex, and less-liquid securities. It is a best ideas portfolio of distressed debt, special situations, private/direct loans, catalyst-driven high yield bonds and bank loans, and credit-informed equities with a North American and European focus. The Select Fund differs from other funds and accounts in the Opportunistic Credit strategy by pursuing a more concentrated portfolio and emphasizing a higher percentage of less-liquid/private investments. Beach Point invests up and down the entire capital structure and it constructs portfolios with a bottom-up, research-driven approach that also takes into account top-down macro considerations. Its investment process includes idea generation, detailed credit analysis, relative value decision making and investment selection, portfolio construction and on-going monitoring. The ultimate goal of its investment process is to produce a well-diversified investment portfolio with limited downside risk and substantial upside potential.

BlackRock – MSCI ACWI ex US IMI Index

The ACWI ex US IMI Index Fund seeks to replicate the return of the MSCI ACWI ex US IMI Index. This index represents the developed equity markets outside of North America, including small cap equity. BlackRock monitors their funds daily to ensure that additions and deletions to the indexes, mergers and acquisitions, restructurings and other capitalization changes are made to the fund in such a way as to minimize tracking error and transactions costs.

BlackRock – Russell 1000 Index

The Russell 1000 Index Fund tracks large U.S. companies and achieve broad diversification with low costs by fully replicating the Russell 1000 Index. BlackRock monitors their funds daily to ensure that additions and deletions to the indexes, mergers and acquisitions, restructurings and other capitalization changes are made to the fund in such a way as to minimize tracking error and transactions costs.

BlackRock (formerly Tennenbaum Capital Partners) - Direct Lending Funds VIII and IX

TCP Direct Lending Fund VIII is a private investment fund managed by Tennenbaum Capital Partners ("TCP"). The Fund is designed to continue TCP's successful strategy of investing in privately-originated, performing senior secured debt primarily in North America-based companies with target enterprise values between \$100 million and \$1.5 billion. The Fund will include positions in 1st lien, 2nd lien and unitranche debt, with a preference for floating-rate debt, which TCP believes provides better flexibility to adapt to market conditions. TCP's direct lending strategy has generated attractive investment opportunities across market cycles, as evidenced by the Firm's prior direct lending track record. Fund VIII targets an unlevered annual yield of approximately 9-12%, with its return primarily driven by current income. SamCERA committed \$35 million to DLF VIII in June 2016 in its unlevered fund sleeve and \$35 million to the DLF IX in June 2019.

Brigade – Opportunistic Credit

Opportunistic Credit is a fundamental, bottom-up strategy focused on high yield corporate bonds and bank loans with tactical allocations to structured securities, convertibles, and other sectors of the bond markets as they become attractive on a relative value basis. While performing credits represent the majority, Brigade will invest up to 35% of the portfolio in distressed securities and restructuring situations if these types of opportunities are attractive on a risk-adjusted basis and the timing is right with respect to the credit cycle. The portfolio is comprised of mostly North American issuers, but they are not restricted geographically and expect to have a moderate allocation to Europe over time. Although the portfolio is generally long-only, Brigade has the ability to implement a limited amount of tactical macro hedges.

CFM - Systematic Global Macro

Capital Fund Management (CFM) Systematic Global Macro (SCM) is a directional strategy that takes long and short positions in liquid future and forwards across 130+ markets and across equities, bonds, currencies, and commodities. It is a new strategy that draws on model signals from existing strategies at the firm – Discus (diversified CTA), CFM ISTrends (trend following) and CFM ISTrend Equity Capped (defensive trend following) - and SamCERA is a seed investor with an attractive fee. SGM's objective is to provide absolute returns that are uncorrelated with traditional asset classes over a long time horizon with an annualized volatility target between 8% and 12%. SGM uses a diverse set of trading strategies that are based on factors (momentum, value, carry, macro and sentiment) across asset classes. These technical and fundamental factors operate at different time scales and can have varying degrees of influence on performance depending on market and economic conditions. An additional global macro defensive overlay is combined with these outputs in constructing the final portfolio. CFM uses a form of portfolio construction known as agnostic risk parity to ensure that the SGM portfolio is diversified on an out-of-sample basis. The goal of SGM is to generate consistent returns while limiting drawdowns.

DE Shaw – DE Shaw US Broad Market Core Alpha Extension Fund

The D. E. Shaw group believes that there exist some market inefficiencies that may be identified through quantitative analysis, advanced technology, and the insight of practitioners. Identifying these inefficiencies involves a process of hypothesis formulation, testing, and validation. Importantly, to avoid data-mining, the hypothesis formulation precedes the analysis of the historical data. D.E. Shaw's Structured Equity strategies rely largely on quantitative and computational investment techniques developed by the D. E. Shaw over the last two decades in the course of research conducted for purposes of managing the firm's hedge funds. D.E. Shaw's investment process involves a suite of quantitative models, each designed to capitalize on a distinct and uncorrelated set of market inefficiencies. Some of these models are technical in nature and involve price and volume inputs. Other models rely on fundamental data, such as figures gleaned from corporate balance sheets or income statements. Still others, again quantitative, anticipate or react to a particular corporate event or set of events. These models typically operate with forecast horizons of a few weeks to many months. The ability to trade on shorter-term signals distinguishes D.E. Shaw from many of its long only and 130/30 peers. Portfolio construction involves the use of a proprietary optimizer which runs dynamically throughout the trading day. The portfolio is broadly diversified with several hundred long and short positions. Over- and under-weighting of sectors and industries relative to the benchmark will be quite modest, with the intention that most of the alpha be generated by security selection. The US Broad Market Core Alpha Extension Fund is a 130/30 strategy which maintains a beta that is approximately neutral to the Russell 1000 Index.

DoubleLine – Securitized Income

The DoubleLine Securitized Income strategy is an actively managed, liquid, long only, intermediate-term fixed income product. The primary objective of the strategy is to seek and maximize current income and total return by utilizing a combination of Agency MBS and structured credit. The DoubleLine Structured Products team aims to offer clients investment grade exposure to both interest rate duration and credit spread to provide a more attractive total return profile compared to the benchmark. Securitized Income seeks to maximize income and total return by investing across the structured products universe, focusing on agency mortgage-backed securities (MBS) and investment grade securitized credit. DoubleLine takes a barbelled approach to investing in the securitized market, and they will separate rates from credit and will adjust the allocations to both at the based on the economic cycle and opportunities. Duration positioning is achieved through Agency MBS, Agency CMBS, and treasuries while credit exposure is attained through all areas of structured credit.

Fidelity (FIAM) – Broad Market Duration Commingled Pool

Pyramis' Broad Market Duration (BMD) investment strategy seeks to achieve absolute and risk-adjusted returns in excess of the BC U.S. Aggregate Index, focusing its investments in US Treasuries, agencies, investment grade corporate bonds, mortgage-backed and asset-backed securities. The BMD commingled pool can also hold small, opportunistic positions in out-of-benchmark securities, such as inflation-linked bonds. The investable universe includes all US dollar denominated, investment grade debt securities. The BMD investment approach emphasizes issuer and sector valuation and individual security selection. Through the integration of fundamental and quantitative research and trading, the BMD strategy is implemented in a team environment. Risk management technology is utilized to explicitly quantify benchmark exposures on a daily basis, and Pyramis uses the same analytical framework to assess both index and portfolio risk. Tracking error should range between 40 and 60 basis points per annum over the benchmark, and stringent portfolio construction risk control rules are strictly adhered to.

Franklin Templeton Investments – Global Fixed Income

Franklin Templeton manages the global bond mandate in an unconstrained fashion using a top-down, fundamental framework. In the short term and on a country-by-country basis there are often inefficiencies in global bond and currency markets, however, over the longer term the market will generally price to fundamentals. Thus, FT focuses on fundamental research to identify long-term opportunities and uses short-term market inefficiencies to build positions in such investments. The investment and portfolio construction process begin with the determination of the Fund's or institutional client's investment objectives, resulting in a set of risk-return parameters and exposure limits within which the portfolio is managed. Next the firm's global economic outlook for the industrialized countries is developed, with a focus on interest rate and exchange rate forecasts. The portfolio's interest rate outlook is a function of global general equilibrium macroeconomic analysis as well as country-specific research. Macroeconomic conditions in the G-3 economies are analyzed first, primarily with respect to how current and projected growth and inflation dynamics are expected to influence monetary policy. This analysis is then extended out to the rest of the industrialized countries (G-13) as well as emerging markets, which results in broad targets for cash, duration, currencies and the developed/emerging market mix. Using the firm's interest rate and exchange rate outlook, probability-weighted horizon returns for bonds of various countries are then calculated. This analysis is used to establish specific country weights and duration targets based on risk-adjusted expected total return measured in the portfolio's base currency. Analysis of emerging markets includes sovereign credit analysis along with greater emphasis on capital flows, inter-market dynamics and trends in the level of risk aversion in the market.

Graham – Quant Macro Fund

Graham Quant Macro ("GQM") is a directional, long and short strategy that utilizes fundamental and price-based indicators to establish return forecasts across global interest rates, foreign exchange, stock indices and commodities. The strategy incorporates a variety of submodels that generate macro fundamental forecasts, assess yield and earnings differentials, compare current valuations relative to historic fair value, and analyze directional price trends across markets. Quantitative risk management and portfolio construction techniques are used to diversify risk across the portfolio and enhance risk-adjusted returns. Historically, the average holding period has been approximately eight to ten weeks, although the sub-models will make daily adjustments to positions. The strategy is designed to have low correlation to traditional markets and other alternative strategies and has the potential to provide significant portfolio diversification benefits.

Harrison Street Core Property

Based in Chicago, Harrison Street's exclusive focus since inception in 2005 has been investing in non-core property sectors of the real estate market. The Harrison Street Core Fund is an open-end fund that invests primarily in stabilized education, healthcare, and self-storage real estate assets in the United States using modest leverage with an emphasis on generating current income. The focus on these alternative property types is intended to concentrate on areas of the real estate market that are less GDP sensitive with demand drivers that are more demographic driven such as aging populations, education growth and healthcare delivery. Each of these areas tend to be less tied to the business cycle, have fragmented ownership and more operationally intensive. The fund acts as a diversifier within real estate portfolios with sector exposures that are not a typical focus of other core ODCE funds.

INVESCO Realty Advisors – INVESCO Core Equity, LLC

SamCERA is a founding member of INVESCO's open-end Core Equity real estate fund and rolled its separate account properties into the fund. INVESCO Core Equity, LLC (the "Fund") is a perpetual life, open-end vehicle which invests in a diversified portfolio of institutional quality office, retail, industrial and multifamily residential real estate assets. The Fund buys core properties that are located within the United States, typically requiring an investment of \$10 million or more. The portfolio cannot be more than 30% leveraged.

INVESCO Realty Advisors – INVESCO US Val IV, V, & VI

Invesco has provided SamCERA with Core Real Estate exposure since 2004 through the Invesco Core Equity Fund. The Invesco real estate team manages around \$62B in assets with investments and offices around the globe. Invesco Value Fund's looks to acquire fundamentally sound but broken "core" assets that can be repositioned into institutional-quality, income producing properties. Investments are limited to direct equity interests in office, multi-family, retail and industrial properties across the US. The Fund is expected to be geographically concentrated in U.S. gateway cities and top 25 Metropolitan Statistical Areas (MSA's). Invesco Value Fund's provide a complement to the more conservative Invesco Core Fund and offers the potential of enhanced returns to the SamCERA Real Estate portfolio.

Insight Investments – Cash Flow Matched Liquidity

Insight is the fixed income sleeve of Mellon Capital. The strategy seeks to invest in short duration fixed income securities that match the negative cash flows of the Plan (similar to an LDI plan). Insight receives estimates of three years of cash flows from the actuarial report. Once a year, if market conditions allow, SamCERA will re-invest "year 3" net cash flows. Insight uses their credit analysis team for analyzing all credits or potential investments to the fund.

Mondrian Investment Partners – International Equity

Mondrian is a value-oriented, defensive manager whose investment philosophy is based on the principle that investments must be evaluated for their fundamental long-term value. The firm's philosophy involves three stated investment objectives: 1) provide a rate of return meaningfully greater than the client's domestic rate of inflation, 2) structure client portfolios that preserve capital during protracted international market declines, and 3) provide portfolio performance that is less volatile than benchmark indices and other international managers. Mondrian applies typical value screening criteria to a universe of 1,500 stocks, from which 500 are selected for more detailed work. Through fundamental research, and the deliberations of the Investment Committee, the universe is further reduced to a list of 150 stocks. The investment team conducts detailed fundamental analysis on the remaining stocks, a process which includes applying the firm's dividend discount model consistently across all markets and industries. Mondrian also uses a purchasing power parity model to give an accurate currency comparison of the value of the stocks under consideration. The firm will only consider buying stocks in countries with good investor protection practices and relatively simple repatriation procedures. A computer-based optimization program is employed in the portfolio construction process. Mondrian's portfolio holds 80-125 issues.

NISA – Core Bond

NISA applies a risk-controlled approach to all of its fixed income portfolios. This approach does not permit large bets or positions that generate significant tracking error versus the benchmark. Instead, NISA invests in a large number of small, diversified, active positions which seek tight tracking error to the chosen benchmark. Benchmark weight is a significant consideration when constructing and managing portfolios. The investment strategy is comprised of strategic (top-down) and tactical (bottom-up) decisions. Strategic decisions include sector selection and yield curve positioning while tactical decisions include industry and security selection and trading activity. Review of both strategic and tactical decisions is continual. The amount of portfolio risk budget devoted to one aspect versus the other will change as market conditions warrant. In general, strategic decisions change relatively infrequently, while tactical decisions, especially security selection, will change fairly often as market conditions provide opportunities. Over a typical market cycle, the bottom-up is expected to contribute to 70% of value-added while top-down is roughly 30%.

PanAgora Asset Management – Defensive U.S. Equity Low Volatility

PanAgora's Defensive Equity strategy seeks to harness the 'low-volatility premium' through a systematic, factor-based investment approach focused on achieving market-like returns with less risk. This is accomplished by leveraging PanAgora's proprietary Risk Parity portfolio construction methodology, which seeks to efficiently capture the equity premium associated with low volatility, while taking minimal unintended risks. Since the firm's inception, PanAgora has been using quantitative techniques to integrate fundamental insights with large amounts of dynamic market data. They score individual securities on a factor basis and also on a diversification basis, in the context of a broadly diversified portfolio. The portfolio construction process optimizes the portfolio around the intended factor exposure (volatility) while maintaining equal risk contribution across sectors (ex., overweight utilities and consumer staples, underweight financials and technology). Shorter term volatility and longer term correlation analysis is combined in the approach. The result for the US Defensive Equity strategy is a portfolio expected to have lower volatility (beta around 0.65-0.75), and similar returns relative to the capitalization-weighted benchmark over a full market cycle. PanAgora expects the strategy to participate in approximately 75% of up markets and 55% in down markets.

Parametric Overlay – Cash Overlay and Currency Hedge

Parametric's cash overlay program is an efficient way for SamCERA to maintain its target asset allocation in a systematic fashion through cash securitization at the fund and manager level transition/reallocation support and asset class rebalancing back to target within defined bands. The cash overlay program is invested synthetically using liquid futures with cash balances reviewed daily. A combination of large and small cap futures implementation is the proxy for private equity. SamCERA's investment guidelines initially allowed only for cash overlay. Rebalancing was added to the SamCERA program in January 2014. Cash overlay and rebalancing is expected to add 10-20 bps to the portfolio over time. An additional currency overlay hedge placed on half of the notional value of developed international equities. The addition of currency hedging started in September 2018 and was fully implemented on 10/1/2019. The purpose of the currency is first and foremost to lower portfolio risk and secondarily to add incremental performance.

PIMCO Diversified

PIMCO's Diversified Income (DI) Fund is a multi-sector strategy that invests across a broad spectrum of global credit market sectors, including investment grade and high yield corporate debt, as well as emerging markets. The allocation among these will vary based on PIMCO's assessment of global trends and relative valuations. This active and dynamic approach allows for increased responsiveness in asset allocation to changing economic and market conditions while remaining anchored by PIMCO's investment process and longer-term orientation. The ability to invest globally helps to improve diversification and may allow investors to benefit from differences in business cycles across regions and credit quality trends across credit sectors. PIMCO's DI investment strategy seeks to provide high yield-like returns with lower volatility against a blended index (1/3 Bloomberg Barclays Global Agg Credit ex-EM; 1/3 BofA Merrill Lynch BB-B rated Developed Markets High Yield; 1/3 JPMorgan EMBI Global). The fund allows for a duration band of 3-8 years. The team focuses its investments into these groups: credit strategies (investment grade, high yield, emerging markets and non-core credits including MBS, municipals and other govt-related sectors); duration strategies (U.S. and non-U.S. duration) and currencies (tactical non-USD exposure).

PIMCO – MAARS

PIMCO MAARS is an alternative risk premia strategy that looks for risks associated with: (1) Supply and Demand Constraints, (2) Behavioral Biases, and (3) Asymmetric Risks (event risk). As reflected in the design of the MAARS strategies, PIMCO believes that alternative risk premia strategies are best implemented using a systematic approach that minimizes the discretionary inputs in day-to-day portfolio management. MAARS places a greater emphasis and weighting on global interest rates, currencies and commodities and a lesser emphasis on equities than many of its Alt Beta peers. Relative to Alt Beta peers, the strategy's rates and currency (FX) models are particularly robust, reflective of PIMCO's core competency and long history managing these asset classes using derivative instruments.

PIMCO Private Income Fund

PIMCO Private Income Fund (PIF) uses an opportunistic and flexible approach to global private credit. PIF provides a total return oriented global credit exposure utilizing both top-down sector relative value and bottom up security selection. The strategy invests across private residential, commercial, corporate and specialty finance markets. PIMCO's Private Income Fund (PIF) is targeting 8-12% net returns with income providing most of the fund's returns. The Private Income Investment Committee (IC) identifies market themes and direction for their relative value framework, and sector specialists provide recommendations to the PM team within that construct. PIF has the ability to invest throughout the capitalization structure. The fund can use a moderate amount of leverage to enhance portfolio returns (1.5 times with a hard cap of 2 times).

PGIM RE Debt

PGIM Real Estate US Debt Fund (PREDS) focuses on a loan origination strategy with a mix of 20% senior long duration loans on stable assets, 60% senior short/medium duration loans on stable and transitional assets, and 20% mezzanine mid/long duration debt. SamCERA was a founding investor in the PREDS strategy which invests in US commercial real estate debt in an open-ended vehicle with a return target of 7-8% (gross) coming from stable current income. The fund makes investments in first lien mortgages and mezzanine debt. First lien mortgages can be floating rate or fixed rate, but only floating rate loans will use leverage. Subordinate investments (mezzanine debt and preferred equity) will be limited by design. The fund can source and invest in secondary loans through a variety of Prudential real estate professionals, but the primary focus will be on direct origination through the real estate finance team.

Quantitative Management Associates – QMA Small-Cap Core

Quantitative Management Associates (QMA) utilizes a bottom-up quantitative framework in order provide a diversified exposure to core U.S. small-cap stocks, while attempting to produce consistent outperformance versus the benchmark with moderate tracking error levels. QMA uses an adaptive, systematic investment process to exploit opportunities created by mispriced securities to consistently add value over long time periods. Bottom-up stock selection drives exposure to key sources of alpha (valuation, growth, and quality). The QMA stock selection model adapts to changes in company growth rates and market environments by putting more emphasis on valuation for slowly growing companies, and more emphasis on future growth projections for companies with higher projected growth rates.

State Street Global Advisors (SSgA) Custom Real Asset

SSgA Custom Real Asset portfolio uses a portfolio of liquid real assets to proxy private real assets. The portfolio is comprised of equal weightings of the Bloomberg Roll Select Commodity Index, S&P Global Mid-Large Cap Natural Resources Index, S&P Global Infrastructure Index, and Bloomberg Barclays TIPS Index. SSgA provides beta exposure through these underlying liquid components which can be customized to changing client needs (ex., TIPS was added in May 2020 with the other three parts of the portfolio reduced pro-rata). The portfolio is used to fund upcoming private real asset mandates.

Stockbridge Value IV

Stockbridge Value IV will implement a value-added strategy that will seek to own assets that are undervalued, underutilized, and/or not operating to their full potential. The manager will add value with their internal asset management team through active strategies including additional capital investment, leasing, recapitalization, renovation and/or development. The fund will target three to five year holding periods for investments, with disposition taking place after the completion of the value-add strategy. The fund will target 15 to 25 mid-sized investments, diversified by geography and property type. The strategy will target 21 markets in the United States in which the firm has boots on the ground coverage with dedicated acquisitions professionals and asset managers responsible for knowing each market extensively with a vast network of relationships.

White Oak - White Oak Yield Spectrum Fund

The White Oak Yield Spectrum Fund's objective is to earn substantial current income by originating, extending, and/or investing in a diversified portfolio of primarily senior secured corporate credit and debt instruments consisting of term loans, asset-based loans and equipment leases and loans issued by small to middle-market companies located primarily in the United States and Canada. It focuses on providing self-originated deals for predominantly non-sponsored, privately-held borrowers.

White Oak - White Oak Yield Spectrum Fund V

The White Oak Yield Spectrum Fund's objective is to earn substantial current income by originating, extending, and/or investing in a diversified portfolio of primarily senior secured corporate credit and debt instruments consisting of term loans, asset-based loans and equipment leases and loans issued by small to middle-market companies located primarily in the United States and Canada. It focuses on providing self-originated deals for predominantly non-sponsored, privately-held borrowers.

Total Plan Policy Index	As of															
	3/1/23	10/1/22	7/1/22	2/1/21	1/1/21	7/1/20	4/1/20	10/1/19	7/1/19	4/1/19	1/1/19	10/1/18	4/1/18	10/1/17	2/1/17	
10 Year Treasury +2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
60/40 MSCI World/Bloomberg Global Aggregate (RP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	
60/40 Russell 3000/Bloomberg US Aggregate (RP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
91 Day T-Bills	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Bloomberg US Govt/Credit 1-3 Yr. TR	4.5%	4.5%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Bloomberg Aggregate	12.5%	13.5%	16.5%	18.0%	21.0%	21.0%	18.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	12.0%	
Bloomberg BA Intermediate HY	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	8.0%	8.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	6.0%	
Bloomberg BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Bloomberg Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Bloomberg Multiverse	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	
Bloomberg TIPS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
Bloomberg Commodity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Citigroup non-US WGBI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
CPI + 5% (RA)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Blended Public Real Asset	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	0.0%	0.0%	
Blended Private Real Asset	5.0%	4.0%	4.0%	4.0%	3.0%	3.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	8.0%	7.0%	
Libor +4% (HF)	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	
SOFR +4% (HF)	7.0%	7.0%	7.0%	7.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
MSCI ACWI ex-US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
MSCI ACWI ex US IMI 100% Hedged (Net)	9.5%	9.5%	9.5%	9.5%	9.0%	9.0%	9.0%	9.0%	7.6%	5.7%	3.8%	1.9%	0.0%	0.0%	0.0%	
MSCI ACWI ex-US IMI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	19.0%	
MSCI ACWI ex-US IMI (Net)	9.5%	9.5%	9.5%	9.5%	9.0%	9.0%	9.0%	9.0%	11.4%	13.3%	15.2%	17.1%	19.0%	19.0%	0.0%	
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
NCREIF ODCE	9.0%	9.0%	9.0%	9.0%	10.0%	10.0%	9.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	7.0%	
NCREIF Property	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Russell 1000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Russell 1000 Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Russell 2000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Russell 3000	21.0%	21.0%	21.0%	22.0%	21.0%	21.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	21.0%	21.0%	23.0%	
Russell 3000 +3% (PE)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	7.0%	
Russell 3000 +3% 1Q Lag (PE)	7.0%	7.0%	7.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	7.0%	0.0%	0.0%	
S&P 500	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	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%	

Total Plan Policy Index	As of:														
	10/1/16	9/1/16	1/1/16	7/1/14	1/1/14	2/1/13	1/1/11	10/1/10	1/1/09	5/1/07	6/1/00	3/1/99	9/1/98	7/1/96	
10 Year Treasury +2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.0%	10.0%	10.0%
60/40 MSCI World/Bloomberg Global Aggregate (RP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
60/40 Russell 3000/Bloomberg US Aggregate (RP)	8.0%	8.0%	8.0%	8.0%	8.0%	6.0%	6.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
91 Day T-Bills	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg US Govt/Credit 1-3 Yr. TR	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Aggregate	10.0%	10.0%	10.0%	10.0%	9.3%	11.0%	11.0%	12.9%	27.0%	27.0%	29.0%	25.0%	21.0%	21.0%	21.0%
Bloomberg BA Intermediate HY	6.0%	5.0%	5.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Multiverse	3.0%	3.0%	3.0%	3.0%	3.8%	4.4%	4.4%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg TIPS	2.0%	2.0%	2.0%	2.0%	2.0%	3.1%	3.3%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Commodity	0.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Citigroup non-US WGBI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	9.0%	9.0%	9.0%
CPI + 5% (RA)	0.0%	2.0%	2.0%	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Blended Public Real Asset	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Blended Private Real Asset	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Libor +4% (HF)	5.0%	5.0%	5.0%	4.0%	4.0%	3.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SOFR +4% (HF)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US	0.0%	0.0%	0.0%	0.0%	0.0%	18.0%	18.0%	18.0%	21.0%	21.0%	15.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI	19.0%	20.0%	20.0%	20.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI (Net)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	20.0%	20.0%	20.0%
NCREIF ODCE	7.0%	7.0%	7.0%	6.0%	6.0%	5.0%	5.0%	5.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
NCREIF Property	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%	6.0%	0.0%	0.0%	0.0%	0.0%
Russell 1000	0.0%	0.0%	24.0%	24.0%	24.0%	28.0%	28.0%	28.0%	37.0%	37.0%	40.0%	22.0%	20.0%	20.0%	20.0%
Russell 1000 Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	5.0%	5.0%	5.0%
Russell 2000	0.0%	0.0%	4.0%	6.0%	6.0%	7.0%	7.0%	7.0%	9.0%	9.0%	10.0%	15.0%	15.0%	15.0%	15.0%
Russell 3000	28.0%	28.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000 +3% (PE)	7.0%	7.0%	7.0%	7.0%	7.0%	8.0%	8.0%	8.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000 +3% 1Q Lag (PE)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
S&P 500	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%
	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%

Public Equity Benchmark	As of:																			
	7/1/22	2/1/21	7/1/20	10/1/19	7/1/19	4/1/19	1/1/19	10/1/18	10/1/17	2/1/17	10/1/16	9/1/16	1/1/16	1/1/14	10/1/10	5/1/07	6/1/00	3/1/99	9/1/98	1/1/96
MSCI ACWI ex-US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	34.0%	31.3%	23.1%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	23.8%	23.2%	23.1%	22.5%	18.5%	13.9%	9.3%	4.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	47.5%	45.2%	40.4%	41.7%	41.7%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI (Net)	23.8%	23.2%	23.1%	22.5%	27.8%	32.4%	37.0%	41.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	32.3%	33.3%	33.3%
Russell 1000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	48.0%	52.8%	55.2%	61.5%	35.5%	33.3%	33.3%
Russell 1000 Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.0%	8.4%	0.0%
Russell 2000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.3%	12.0%	13.2%	13.5%	15.4%	24.2%	25.0%	25.0%
Russell 3000	52.5%	53.7%	53.9%	55.0%	53.7%	53.7%	53.7%	53.7%	52.5%	54.8%	59.6%	58.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
S&P 500	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.4%
	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%	100.0%	100.0%	100.0%

US Equity Benchmark	As of:						
	9/1/16	1/1/16	6/1/00	3/1/99	9/1/98	7/1/96	1/1/95
Russell 1000	0.0%	85.7%	80.0%	52.0%	50.0%	50.0%	69.0%
Russell 1000 Value	0.0%	0.0%	0.0%	12.0%	12.5%	0.0%	0.0%
Russell 2000	0.0%	14.3%	20.0%	36.0%	37.5%	37.5%	14.0%
Russell 3000	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
S & P 500	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	17.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

International Equity Benchmark	As of:								
	10/1/19	7/1/19	4/1/19	1/1/19	10/1/18	10/1/17	1/1/14	6/1/00	1/1/96
MSCI ACWI ex US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	50.0%	40.0%	30.0%	20.0%	10.0%	0.0%	0.0%	100.0%	0.0%
MSCI ACWI ex US IMI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
MSCI ACWI ex US IMI (Net)	50.0%	60.0%	70.0%	80.0%	90.0%	100.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Fixed Income Benchmark	As of:																			
	3/1/23	10/1/22	7/1/22	2/1/21	7/1/20	4/1/20	10/1/19	10/1/17	2/1/17	10/1/16	4/1/16	7/1/14	1/1/14	2/1/13	1/1/11	10/1/10	6/1/00	3/1/99	7/1/96	
Bloomberg Aggregate	55.6%	57.5%	62.3%	64.3%	67.7%	69.2%	63.6%	66.7%	57.1%	52.6%	55.5%	50.0%	46.3%	50.0%	50.0%	58.6%	100.0%	83.3%	70.0%	
Bloomberg BA Intermediate HY	44.4%	42.6%	37.7%	35.7%	32.3%	30.8%	36.4%	33.3%	28.6%	31.6%	27.8%	25.0%	25.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Bloomberg BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.3%	0.0%	0.0%	0.0%	
Bloomberg Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.0%	15.0%	0.0%	0.0%	0.0%	0.0%	
Bloomberg Multiverse	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	14.3%	15.8%	16.7%	15.0%	18.8%	20.0%	20.0%	20.5%	0.0%	0.0%	0.0%	
Bloomberg TIPS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0%	10.0%	14.0%	15.0%	13.6%	0.0%	0.0%	0.0%	
Citigroup non-US WGBI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.7%	30.0%	
	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%	100.0%	100.0%	100.0%	

Opportunistic Credit Benchmark	As of:	
	1/1/14	12/1/09
Bloomberg BA Intermediate HY	100.0%	0.0%
Bloomberg Credit BAA	0.0%	100.0%
	100.0%	100.0%

Alternatives Benchmark	As of:									
	7/1/22	2/1/21	1/1/21	10/1/18	4/1/18	2/1/17	4/1/16	1/1/16	1/1/14	1/1/11
60/40 Russell 3000/Bloomberg US Aggregate (RP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	30.0%
Bloomberg Commodity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.7%	18.8%	15.0%
CPI + 5% (RA)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.8%	12.5%	0.0%
Libor +4% (HF)	0.0%	0.0%	0.0%	50.0%	46.2%	46.2%	41.7%	29.4%	25.0%	15.0%
SOFR +4% (HF)	50.0%	53.8%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000 +3% (PE)	0.0%	0.0%	0.0%	0.0%	0.0%	53.8%	58.3%	41.2%	43.8%	40.0%
Russell 3000 +3% 1Q Lag (PE)	50.0%	46.2%	50.0%	50.0%	53.8%	0.0%	0.0%	0.0%	0.0%	0.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Policy Index & Benchmark History

San Mateo County Employees' Retirement Association Period Ending: June 30, 2023

Private Equity Benchmark

As of:	4/1/18	10/1/10
Russell 3000 +3% 1Q Lag	100.0%	0.0%
Russell 3000 +3%	0.0%	100.0%
	100.0%	100.0%

Hedge Fund Benchmark

As of:	1/1/21	10/1/10
Libor +4%	0.00%	100.00%
SOFR +4%	100.0%	0.0%
	100.0%	0.0%

Inflation Hedge Benchmark

As of:	3/1/23	2/1/21	7/1/20	4/1/20	10/1/19	4/1/18	2/1/17	10/1/16	4/1/16
Bloomberg TIPS	0.00%	0.00%	0.00%	0.00%	0.00%	11.1%	12.5%	14.3%	14.3%
Bloomberg Commodity	0.00%	0.00%	0.00%	0.00%	0.00%	0.0%	0.0%	0.0%	21.4%
CPI + 5% (RA)	0.00%	0.00%	0.00%	0.00%	0.00%	0.0%	0.0%	0.0%	14.3%
Blended Public Real Asset	22.22%	23.53%	23.53%	35.29%	35.29%	33.3%	0.0%	0.0%	0.0%
Blended Private Real Asset	27.78%	23.53%	17.65%	11.77%	11.77%	11.1%	43.8%	35.7%	0.0%
NCREIF ODCE	50.00%	52.94%	58.82%	52.94%	47.06%	44.4%	43.8%	50.0%	50.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Public Real Asset Benchmark

As of:	5/1/20	10/1/16	1/1/14
Bloomberg Roll Select Commodity	25.0%	34.0%	0.0%
S&P Global Large-MidCap Commodity and Resources	25.0%	33.0%	0.0%
S&P Global Infrastructure	25.0%	33.0%	0.0%
CPI + 5%	0.0%	0.0%	100.0%
Bloomberg TIPS	25.0%	0.0%	0.0%
	100.0%	100.0%	100.0%

Private Real Asset Benchmark

As of:	1/1/21	4/1/18	10/1/16	1/1/14
Bloomberg Roll Select Commodity	0.00%	0.00%	34.00%	0.0%
S&P Global Large-MidCap Commodity and Resources	0.00%	0.00%	33.00%	0.0%
S&P Global Infrastructure	0.00%	0.00%	33.00%	0.0%
50/50 S&P Global Infra & Lrg-MidCap Com & Resources +2% 1QL	0.00%	100.00%	0.00%	0.0%
75/25 S&P Global Infra & Lrg-MidCap Com & Resources +2% 1QL	100.00%	0.00%	0.00%	0.0%
CPI + 5%	0.00%	0.00%	0.00%	100.0%
	100.0%	100.0%	100.0%	100.0%

Private RA Secondary Benchmark

As of:	9/1/14
Cambridge Associates Private Natural Resources 1 Qtr Lag	50.0%
Cambridge Associates Private Infrastructure 1 Qtr Lag	50.0%
	100.0%

Real Estate Benchmark

As of:	1/1/09	6/1/00	7/1/96
10 Year Treasury +2%	0.0%	0.0%	100.0%
NCREIF ODCE	100.0%	0.0%	0.0%
NCREIF Property	0.0%	100.0%	0.0%
	100.0%	100.0%	100.0%

Liquidity Benchmark

As of:	10/1/22	7/1/22
Bloomberg US Govt/Credit 1-3 Yr. TR	81.8%	60.0%
91 Day T-Bills	18.2%	40.0%
	100.0%	100.0%

Baillie Gifford Benchmark	As of:	
	1/1/14	5/1/12
MSCI ACWI ex-US	100.0%	0.0%
MSCI EAFE	0.0%	100.0%
	100.0%	100.0%

Baillie Gifford Secondary Benchmark	As of:	
	1/1/14	5/1/12
MSCI ACWI ex-US Growth	100.0%	0.0%
MSCI EAFE Growth	0.0%	100.0%
	100.0%	100.0%

Brigade Secondary Benchmark	As of:	
	8/1/10	
Bloomberg High Yield	50.0%	
Credit Suisse Leveraged Loans	50.0%	
	100.0%	

PIMCO Diversified	As of:	
	9/1/17	
JPMorgan EMBI Global	33.333%	
BofAMLBB-BRatedDvlpdMktsHYHdgdUSD	33.333%	
Global Agg Credit Ex EM USD hedged	33.334%	
	100.0%	

SSgA Custom Real Asset	As of:	
	5/1/20	11/1/16
Bloomberg Roll Select Commodity	25.00%	33.33%
S&P Global Large-MidCap Commodity and Resources	25.00%	33.33%
S&P Global Infrastructure	25.00%	33.34%
Bloomberg TIPS	25.00%	0.00%
	100.0%	100.0%

Acadian Asset Management

First \$50 million:	0.27% per annum
Next \$50 million:	0.225% per annum
Thereafter:	0.18% per annum

Baillie Gifford

First \$25 million:	0.60% per annum
Next \$75 million:	0.50% per annum
Next \$300 million:	0.40% per annum
Thereafter:	0.30% per annum

BlackRock-Russell 1000 Index Fund

On All Assets:	0.01% per annum
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BlackRock-MSCI ACWI ex US IMI Index Fund

On All Assets:	0.045% per annum
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DoubleLine

On All Assets:	0.30% per annum
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NISA

First \$500 million:	0.15% per annum
Next \$1 billion:	0.125% per annum
Next \$1 billion:	0.105% per annum
Next \$1.5 billion	0.085% per annum
Thereafter:	0.065% per annum

Franklin Templeton Investment

First \$50 million:	0.40% per annum
Next \$50 million:	0.30% per annum
Thereafter:	0.25% per annum

FIAM Bond

First \$50 million:	0.25% per annum
Next \$50 million:	0.20% per annum
Next \$100 million:	0.125% per annum
Thereafter:	0.10% per annum

PanAgora Asset Management

First \$50 million:	0.25% per annum
Next \$50 million:	0.15% per annum
Thereafter:	0.10% per annum

Parametric Overlay

First \$50 million:	0.12% per annum
Next \$100 million:	0.10% per annum
Thereafter:	0.05% per annum
Plus monthly reporting fee of \$1500	

Parametric Currency Overlay

First \$250 million:	0.05% per annum
Thereafter:	0.03% per annum

PIMCO Diversified

On All Assets:	0.75% per annum
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QMA

First \$100 million:	0.55% per annum
Next \$100 million:	0.53% per annum
Thereafter:	0.49% per annum

Western Asset Management

On All Assets:	0.25% per annum
Performance Fee:	20.00%

Mondrian Investment Partners

First \$50 million:	1.00% per annum
Next \$150 million:	0.19% per annum
Thereafter:	0.33% per annum

Insight Investment

First \$200 million:	0.09% per annum
Next \$300 million:	0.08% per annum
Thereafter:	0.06% per annum

Manager Compliance (Net)

Fund Name	Benchmark	Rule 1	Rule 2	Rule 3
Acadian US MGD V	Russell 1000 Index	-	-	-
DE Shaw	Russell 1000 Index	⚠	⚠	⚠
PanAgora Defuseq	Russell 1000 Index	-	-	-
PGIM Quant Solutions	Russell 2000 Index	✓	⚠	✓
Baillie Gifford	MSCI ACWI ex US	⚠	⚠	⚠
Mondrian	MSCI AC World ex USA Value	⚠	⚠	⚠
DoubleLine	Blmbg. U.S. Aggregate Index	-	-	-
FIAM Bond	Blmbg. U.S. Aggregate Index	✓	✓	✓
NISA Core Bond	Blmbg. U.S. Aggregate Index	-	-	-
NISA Long Treasury	Blmbg. U.S. Treasury: Long	-	-	-
AG CSF ADF II	Bloomberg BA Intermediate HY	-	-	-
AG CSF II	Bloomberg BA Intermediate HY	-	-	-
Angelo Gordon Opportunistic	Blmbg. U.S. Aggregate Index	✓	-	✓
Angelo Gordon Credit Solutions	Bloomberg BA Intermediate HY	-	-	-
Beach Point Select	Bloomberg BA Intermediate HY	✓	✓	✓
Brigade Capital	Bloomberg BA Intermediate HY	⚠	✓	⚠
PIMCO Diversified	Blended PIMCO Diversified Index	-	⚠	-
Franklin Templeton	Blmbg. Global Multiverse	⚠	⚠	⚠
Blackrock DL Feeder IX-U	Cliffwater Direct Lending Index	-	-	-
PIMCO Private Income	Bloomberg BA Intermediate HY	-	-	-
TCP Direct Lending VIII	Cliffwater Direct Lending Index	⚠	✓	✓
White Oak Yield	Cliffwater Direct Lending Index	⚠	✓	⚠
White Oak YSF V	Cliffwater Direct Lending Index	-	-	-
Acadian MAAR Fund LLC	Absolute Return Custom Index	-	-	-
CFM Systematic Global Macro	Absolute Return Custom Index	-	-	-
Graham Quant Macro	Absolute Return Custom Index	-	-	-
PIMCO MAARS Fund LP	Absolute Return Custom Index	-	-	-

Rule 1 - Manager has underperformed the benchmark index for the five year period.

Rule 2 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period

Rule 3 - Excess 5 Year Sharpe Ratio vs. Benchmark is positive.

Manager Compliance (Gross)

Fund Name	Benchmark	Rule 1	Rule 2	Rule 3
Acadian US MGD V	Russell 1000 Index	-	-	-
DE Shaw	Russell 1000 Index	⚠	⚠	⚠
PanAgora Defuseq	Russell 1000 Index	-	-	-
PGIM Quant Solutions	Russell 2000 Index	✓	⚠	✓
Baillie Gifford	MSCI ACWI ex US	⚠	⚠	⚠
Mondrian	MSCI AC World ex USA Value	⚠	⚠	⚠
DoubleLine	Blmbg. U.S. Aggregate Index	-	-	-
FIAM Bond	Blmbg. U.S. Aggregate Index	✓	✓	✓
NISA Core Bond	Blmbg. U.S. Aggregate Index	-	-	-
NISA Long Treasury	Blmbg. U.S. Treasury: Long	-	-	-
AG CSF ADF II	Bloomberg BA Intermediate HY	-	-	-
AG CSF II	Bloomberg BA Intermediate HY	-	-	-
Angelo Gordon Opportunistic	Blmbg. U.S. Aggregate Index	✓	-	✓
Angelo Gordon Credit Solutions	Bloomberg BA Intermediate HY	-	-	-
Beach Point Select	Bloomberg BA Intermediate HY	✓	✓	✓
Brigade Capital	Bloomberg BA Intermediate HY	⚠	⚠	⚠
PIMCO Diversified	Blended PIMCO Diversified Index	-	⚠	-
Franklin Templeton	Blmbg. Global Multiverse	⚠	⚠	⚠
Blackrock DL Feeder IX-U	Cliffwater Direct Lending Index	-	-	-
PIMCO Private Income	Bloomberg BA Intermediate HY	-	-	-
TCP Direct Lending VIII	Cliffwater Direct Lending Index	⚠	✓	✓
White Oak Yield	Cliffwater Direct Lending Index	⚠	✓	⚠
White Oak YSF V	Cliffwater Direct Lending Index	-	-	-
Acadian MAAR Fund LLC	Absolute Return Custom Index	-	-	-
CFM Systematic Global Macro	Absolute Return Custom Index	-	-	-
Graham Quant Macro	Absolute Return Custom Index	-	-	-
PIMCO MAARS Fund LP	Absolute Return Custom Index	-	-	-

Rule 1 - Manager has underperformed the benchmark index for the five year period.

Rule 2 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period

Rule 3 - Excess 5 Year Sharpe Ratio vs. Benchmark is positive.

Glossary

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.

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