



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: JUNE 30, 2024

Investment Performance Review for

Contra Costa County Employees' Retirement Association

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Investment Landscape

TAB I

Investment Performance
Review

TAB II

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

A decorative overlay consisting of a grid of interconnected triangles in various shades of blue and green, with some triangles containing white or blue shapes, is positioned on the left side of the page.

**PERSPECTIVES
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**3RD QUARTER 2024
Investment Landscape**

Verus business update

Since our last Investment Landscape webinar:

- Verus hired Dillon Kuk, Kacey Franich, Nico Caballero, and Sarah Khan as Performance Analysts, and Margie Lane as a Marketing Associate, in our Seattle office.
- The Los Angeles office relocated to N. Continental Blvd., 2 miles from our prior location.
- Verus hired Dawit Ewnetu as a Summer Intern in our Seattle office, in partnership with Rainier Scholars.
- Recent research, found at verusinvestments.com/research:
 - ***2024 Real Assets Outlook***
 - ***Mid-year Capital Markets Update***
 - ***Is the U.S. heading for a recession?***

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Recent Verus research

Visit: verusinvestments.com/research

Thought leadership

REAL ASSETS OUTLOOK

As inflation has moderated and interest rates have stabilized, the market has been eager for the Fed to pivot towards a looser monetary policy. Asset prices are broadly rich, pricing in an economic soft landing and a couple rate cuts by year-end. While we are less bearish this year across real assets, given more positive signs of a soft landing, rich asset valuations temper our enthusiasm.

MID-YEAR CAPITAL MARKETS UPDATE

Equity forecasts fell across U.S., International, and Emerging markets. The cash forecast decreased slightly. High cash rates have mixed impacts, while model changes mitigated some effects. Falling yields and spread compression lowered fixed income forecasts, especially U.S. Treasury and emerging market debt. Real Estate forecasts increased due to rising capitalization rates and higher U.S. real GDP expectations.

IS THE U.S. HEADING FOR A RECESSION?

Many market strategies have been predicting a U.S. recession since the start of 2023. This short video presents our team's analysis of key indicators to determine whether a recession is likely in the coming year.

2nd quarter summary

THE ECONOMY

- U.S. inflation (CPI) fell to 3.0% YoY in June, following two consecutive months of flat prices (0.0% in May and -0.1% in June). The report reflected a slowing in shelter costs, which have been a primary hurdle for inflation reaching the 2% Federal Reserve target. If the slowing of shelter prices persists, inflation could fall rather quickly. Core inflation (ex-Food & Energy) was 3.3% year-over-year in June. **p. 9**
- The U.S. labor market remains strong, but recently some cracks of weakness have appeared. Unemployment jumped unexpectedly to 4.1% in June—a level not seen since 2021. Jobless claims have also been rising. This negative data could prove to be a continuation of the trend towards a more balanced labor market, though it will be important to monitor conditions closely. **p. 12**

EQUITY

- Emerging market equities outperformed during Q2, up +5.0%, despite significant ongoing underperformance of China. U.S. equities were close behind (S&P 500 +4.3%), setting a new all-time-high price level. In contrast, international developed equities were flat. **p. 27**
- Small cap and value style investing underperformed. Small cap lagged large cap by -6.9% while value underperformed growth by -10.5%. The style premia performance gap was even wider over the past year, as small cap underperformed large cap by -13.8% and value underperformed growth by -20.4%. **p. 29**

FIXED INCOME

- The 10-year U.S. Treasury yield increased slightly from 4.20% to 4.36% during Q2, resulting in near-zero or negative performance for high quality fixed income of a longer duration profile. **p. 21**
- Default activity in loans and credit reached a one-year low at the end of Q2. However, the gap between bank loan and high yield default activity has increased to a 10-year high, with total volume of distressed or defaults comprised of loans (80%) to bonds (20%) on pace for a record high. **p. 20**

ASSET ALLOCATION ISSUES

- Many goods and services prices have been falling in areas such as autos, energy, and transportation. This trend has occurred alongside signs of weakness in the job market and consumer spending, and has reignited hopes for lower inflation, which would ease pressures on household budgets and allow for interest rate cuts. It is possible that an economic *soft landing* may be occurring, which would suggest lower rates and further gains for risk assets. **p. 9**
- Market-priced volatility (Cboe VIX Index) remained very low, ending at 12.4% in June. This has raised eyebrows, given a variety of risks that domestic equities face, but low volatility is typical of strongly up trending equity environments. Markets continue to present a unique environment of low equity volatility but high fixed income volatility. This gap has closed somewhat, as bond market implied volatility has receded. **p. 34**

Risk assets delivered moderate returns in Q2, while fixed income was flat to mildly positive, depending on duration profile.

A *soft landing* appears possible for the U.S. economy.

What drove the market in Q2?

“The US Economy is showing clear signs of a slowdown”

Employment change, Non-farm payrolls

January	February	March	April	May	June
256k	236k	240k	108k	218k	206k

Article Source: Bloomberg, July 8th, 2024

“Earnings bolster US stocks, but crucial inflation report looms”

S&P 500 EPS Growth, Year-over-year

Q4 2022	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024
+4.3%	-1.5%	-2.0%	-5.0%	+4.1%	+6.9%

Article Source: Reuters, May 14th, 2024

“Slowing U.S. inflation fuels expectations of interest rate cuts”

Consumer Price Index, Year-over-year change

Jan 23	Feb 24	March 24	April 24	May 24	June 24
3.1%	3.2%	3.5%	3.4%	3.3%	3.0%

Article Source: Wall Street Journal, June 28th, 2024

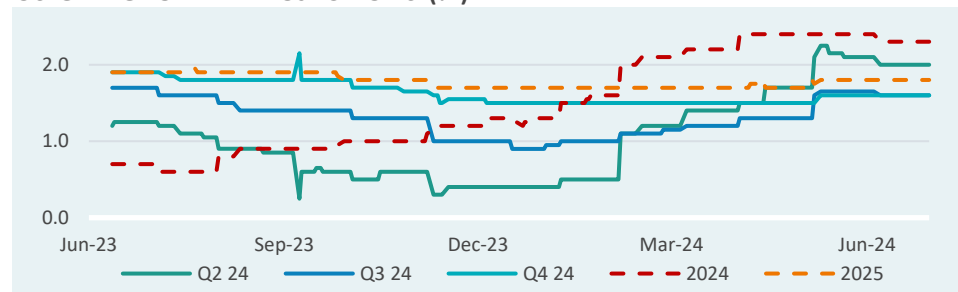
“European Central Bank cuts interest rates for first time in 5 years”

ECB Overnight Rate, Actual and Implied

March 24	June 24	Sep 24 (E)	Dec 24 (E)	March 25 (E)	June 25 (E)
4.0%	3.75%	3.45%	3.20%	2.98%	2.75%

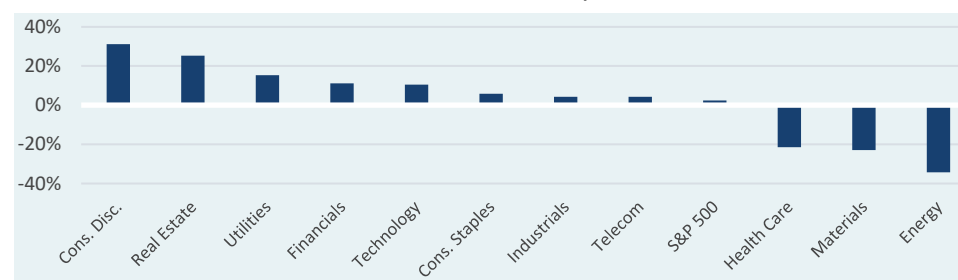
Article Source: Financial Times, June 6th, 2024

US GDP GROWTH PROJECTIONS (%)



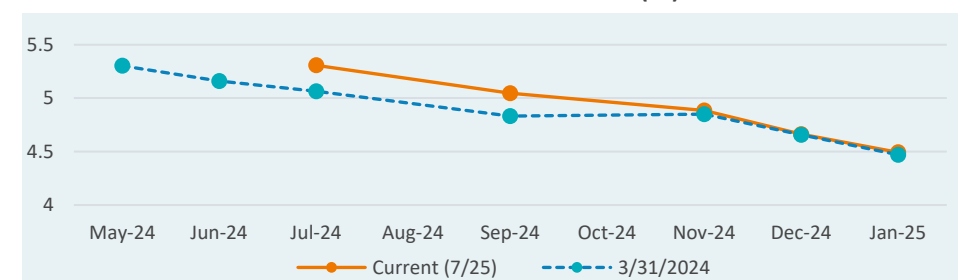
Source: Bloomberg, as of 6/30/24

S&P 500 TRAILING 12M EARNINGS GROWTH, YOY



Source: Bloomberg, as of 6/30/24

U.S. MARKET IMPLIED FUTURE INTEREST RATES (%)



Source: Bloomberg, as of 7/25/24

Economic environment

U.S. economics summary

- Real GDP growth was substantially higher than expected in Q2, rising 2.8% quarter-over-quarter (3.1% year-over-year), beating economist forecasts of a 2.0% increase on the quarter. The GDP release reflected an increase in consumer spending, as well as increased investment in inventories and capital goods. Residential fixed investment detracted from GDP growth, as did the trade deficit.
- U.S. inflation (CPI) fell to 3.0% YoY in June, following two consecutive months of flat prices (0.0% in May and -0.1% in June). The report reflected a slowing in shelter costs, which have been a primary hurdle for inflation reaching the 2% Federal Reserve target. If a slowing of shelter prices persists, inflation could fall rather quickly. Core inflation (e.g., Food & Energy) was 3.3% year-over-year in June.
- Inflation adjusted personal spending growth was 2.6% year-over-year in June, remaining in a 2-3% range for the past two years and suggesting more

moderate economic expansion in line with pre-pandemic conditions. Purchases of goods have been weaker than services, perhaps partly a reflection of higher interest rates, which impact the affordability of big-ticket items such as autos and homes.

- The U.S. labor market remains strong, but in recent months some cracks of weakness have appeared. Unemployment jumped unexpectedly to 4.1% in June—a level not seen since 2021. Jobless claims have also been rising. This negative data could prove to be a continuation of the trend towards a more balanced labor market.
- Consumer sentiment deteriorated in Q2, moving back towards the lows of 2022. The University of Michigan Consumer Sentiment survey dropped from 79.4 to 66.4 on concerns over high goods and services prices and the impacts of inflation on personal income. Household expectations for lower interest rates in the future helped to buoy the index somewhat.

	Most Recent	12 Months Prior
Real GDP (YoY)	3.1% 6/30/24	2.4% 6/30/23
Inflation (CPI YoY, Core)	3.3% 6/30/24	3.1% 6/30/23
Expected Inflation (5yr-5yr forward)	2.3% 6/30/24	2.3% 6/30/23
Fed Funds Target Range	5.25–5.50% 6/30/24	5.00–5.25% 6/30/23
10-Year Rate	4.20% 6/30/24	3.80% 6/30/23
U-3 Unemployment	4.1% 6/30/24	3.6% 6/30/23
U-6 Unemployment	7.4% 6/30/24	6.9% 6/30/23

Inflation

U.S. inflation (CPI) fell to 3.0% year-over-year in June, following two consecutive months of flat prices (0.0% in May and -0.1% in June). The June report was the first which reflected slower shelter cost increases, which have been a large hurdle for inflation falling to the Fed's 2% target. If this slowing in shelter prices persists, inflation could fall much more quickly to the Fed's 2% target. Core inflation (ex-Food & Energy) dropped to 3.3% year-over-year in June. Many goods and services prices have been *falling* in recent months in areas such as automobiles, energy, and transportation services. This trend has occurred alongside

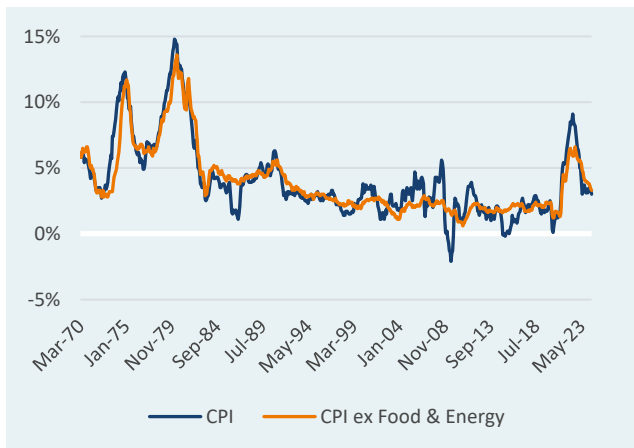
signs of weakness in the job market and other areas of the economy, and has reignited hopes for inflation to normalize, easing pressures on household budgets and allowing for interest rate cuts.

Investors have been watching monthly inflation reports very closely for potential signs of the future inflation path. If monthly inflation reports come in at a 0.2% to 0.3%, we can expect inflation to remain around today's level. However, if additional inflation reports come in at 0.1% or lower, inflation would fall rather quickly to 2%.

Inflation has fluctuated between 3-3.5% over the past year.

Shelter will likely need to slow further for inflation to reach 2%.

U.S. CPI (YOY)



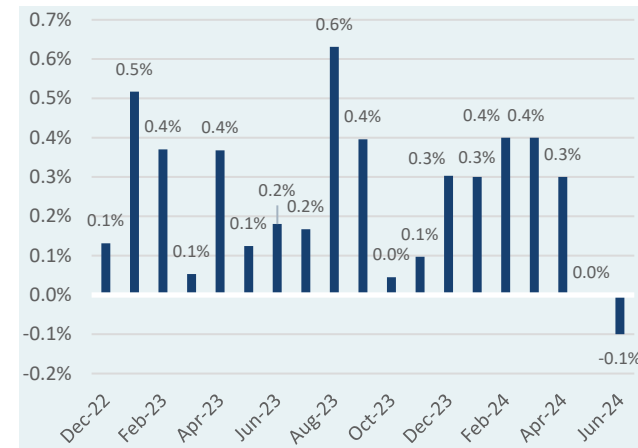
Source: BLS, as of 6/30/24

POTENTIAL INFLATION PATHS



Source: FRED, Verus, of 6/30/24

MONTHLY PRICE MOVEMENT (CPI)



Source: BLS, as of 6/30/24

GDP growth

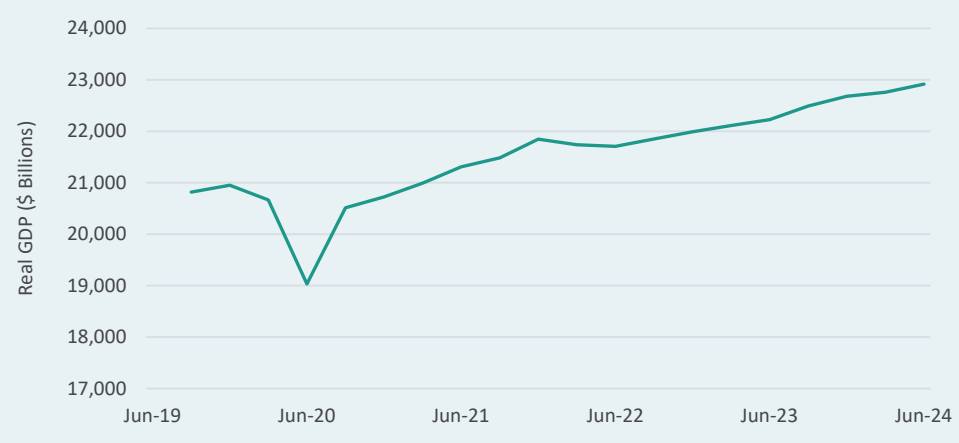
Real GDP growth was substantially higher than expected in Q2, rising 2.8% quarter-over-quarter (3.1% year-over-year), beating economist forecasts of a 2.0% increase on the quarter. The GDP release reflected an increase in consumer spending, as well as increased investment in inventories and capital goods. Residential fixed investment detracted from GDP growth, as did the trade deficit.

While consumption increased this quarter, economists are wary of the sustainability of consumer spending growth. Much of the increase in spending was concentrated in necessities, and with a cooling labor market and low savings rate, consumer spending could slow if these issues persist.

Recent economic data seems to reaffirm the idea that the U.S. economy is moving towards a more moderate growth phase after many quarters of surprisingly hot growth and spending. Unlike past periods of economic weakening, many trends today could reasonably be summarized as a *return to normalcy*. For example, following the pandemic, the domestic labor market was experiencing a historic mismatch between the number of jobs available and the number of workers available. Resolving that mismatch required a material weakening in the labor market from *extreme tightness* to *relatively strong*, but not a move (yet) towards anything that suggests recession.

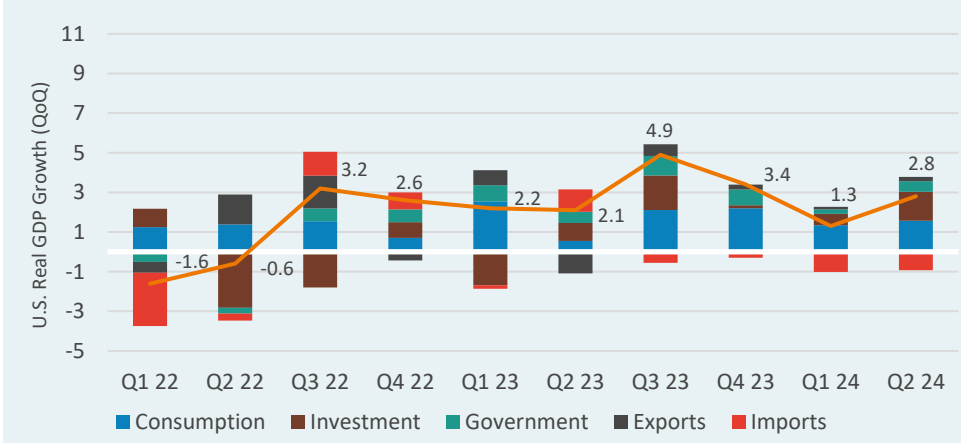
U.S. growth picked up in Q2, but concerns remain regarding the strength of the consumer.

U.S. REAL GROSS DOMESTIC PRODUCT



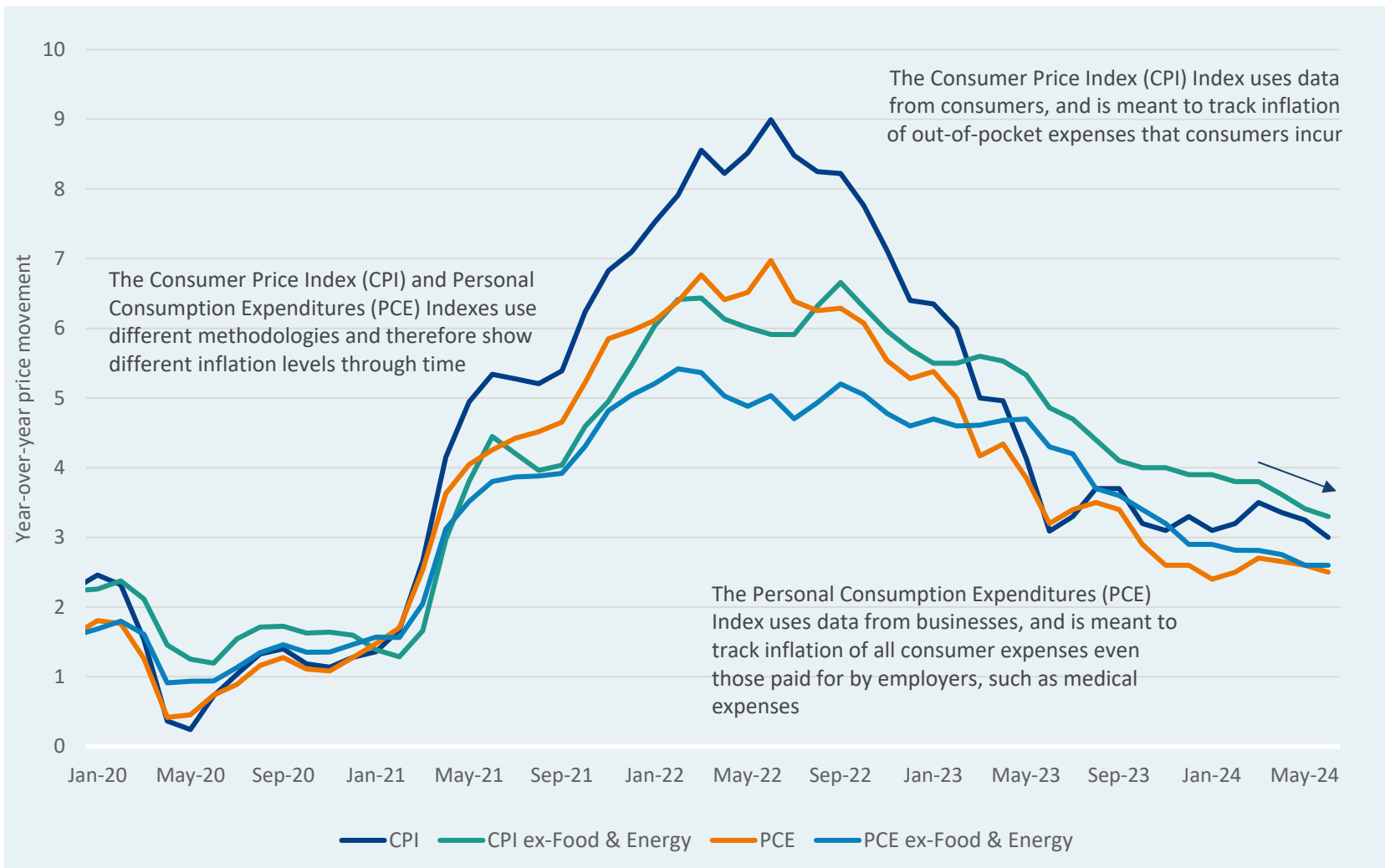
Source: FRED, as of 6/30/24

U.S. REAL GDP COMPONENTS (QOQ)



Source: FRED, as of 6/30/24

Inflation conditions are normalizing



Moderating price pressures in recent months have helped to push year-over-year CPI inflation to 3.0%.

Source: FRED, Verus, as of 6/30/24

Labor market

The U.S. labor market remains strong relative to history, but in recent months some cracks of weakness have appeared. The rate of unemployment jumped unexpectedly to 4.1% in June—a level not seen since 2021. Jobless claims have also been rising throughout the year. This negative data could prove to be a continuation of the trend towards a more balanced labor market, though it will be important to monitor conditions closely.

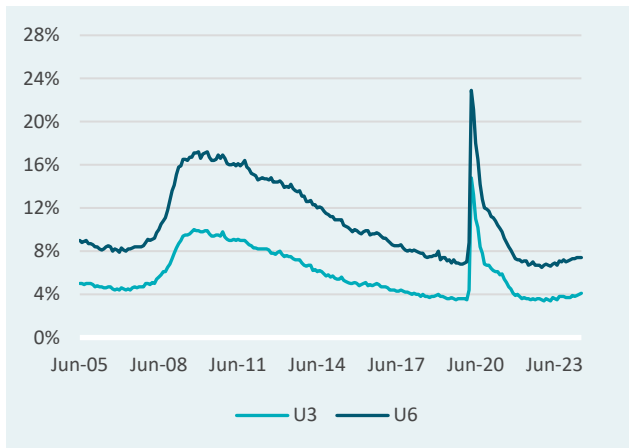
Average hourly earnings growth was 3.9% year-over-year in June, slightly outpacing the rate of inflation. As inflation has fallen, wage growth has also slowed, likely a reflection of a

more normal balance between jobs available and workers available, as well as less urgency for cost-of-living adjustments.

In many past instances of increasing unemployment, job losses were quick and accelerating, which often preceded recession. In contrast, more recently the rate of unemployment has more gradually moved up. Recessions have rarely occurred without a sharper downtrend in employment, which given current conditions might suggest we are seeing a moderation of economic growth rather than a move towards something worse.

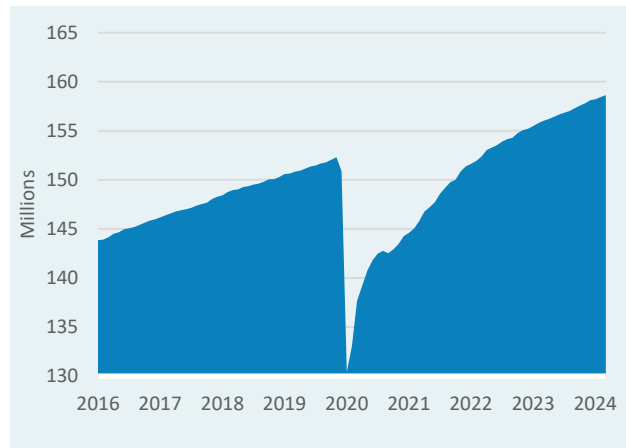
The labor market remains strong by historical standards, though conditions have moved in a weaker direction.

U.S. UNEMPLOYMENT



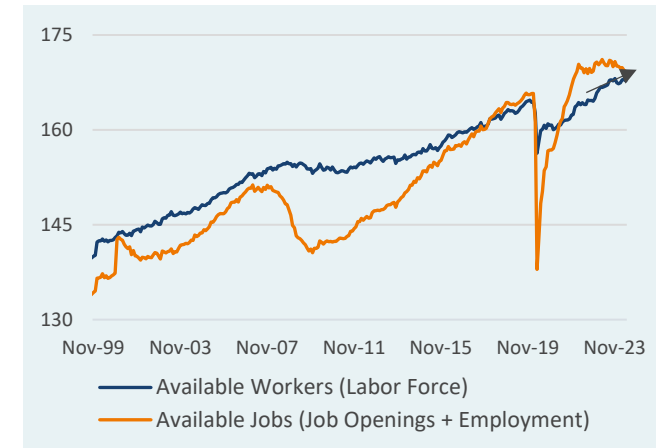
Source: FRED, as of 6/30/24

TOTAL U.S. EMPLOYMENT



Source: FRED, as of 6/30/24

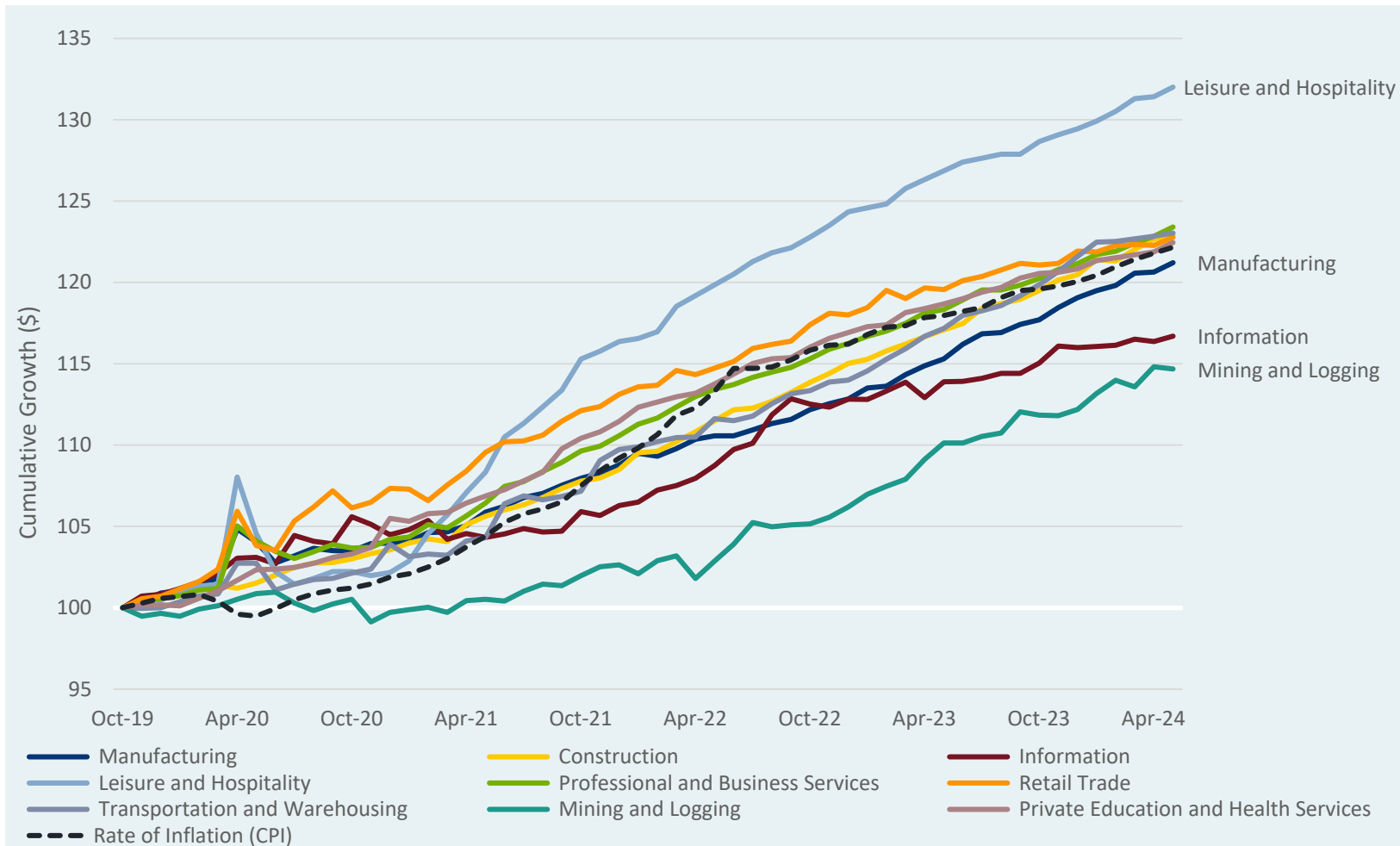
WORKERS AVAILABLE VS. AVAILABLE JOBS



Source: BLS, Verus, as of 5/31/24

Wage gains vs. rate of inflation

AVERAGE HOURLY EARNINGS



Over the past few years, inflation has eaten into wallets and resulted in shrinking pay for many types of work.

If inflation were to move higher, many households do not have much room to maneuver financially.

Source: FRED, Verus, as of 6/30/24

The consumer

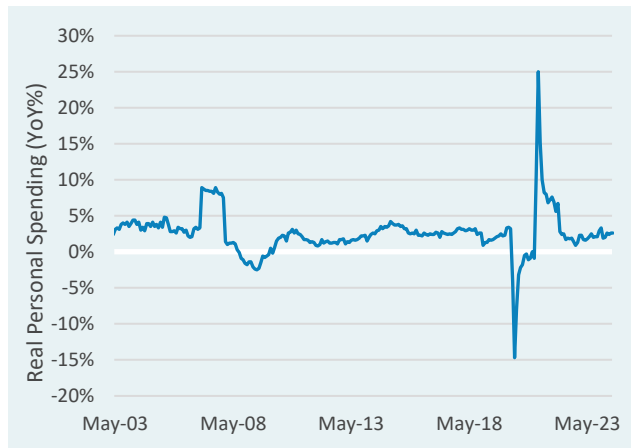
Inflation adjusted personal spending growth was 2.6% year-over-year in June, and has remained in a 2-3% range for the past two years. This rate indicates moderate economic expansion in line with pre-pandemic rates of growth. Purchases of goods have been much weaker than purchases of services, perhaps partly a reflection of higher interest rates which have impacted the affordability of big ticket items such as automobiles and homes.

Many Americans continue to spend rather freely despite higher costs of goods and services taking up a greater portion of take-home income,

and extreme discontent around inflation. However, certain non-essential spending such as for vacations has been robust. Total traveler volumes at U.S. airports in late June reached a record level.

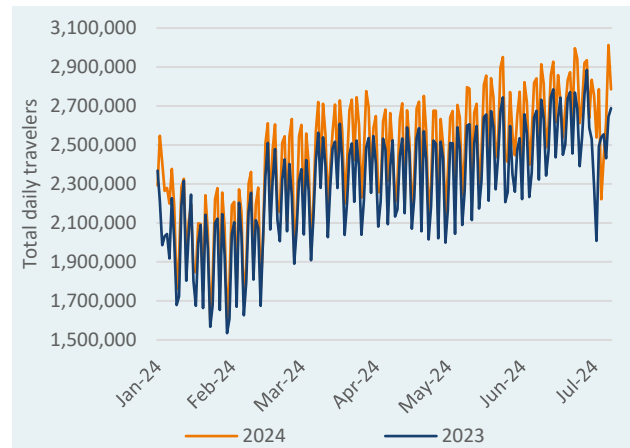
Personal savings rates improved slightly over the quarter, from 3.5% to 3.9%. It seems reasonable to assume that savings rates should improve if wage gains continue to outpace the rate of inflation, all else equal.

REAL PERSONAL SPENDING



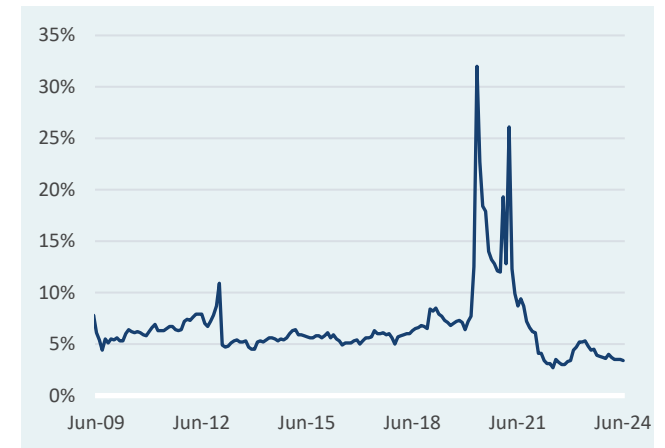
Source: FRED, as of 6/30/24

U.S. TSA AIRPORT ACTIVITY



Source: FRED, as of 7/8/24

PERSONAL SAVINGS RATE



Source: FRED, as of 6/30/24

Sentiment

Consumer sentiment deteriorated over the quarter, moving back towards the lows of 2022. The University of Michigan Consumer Sentiment survey dropped from 79.4 to 66.4 on concerns over high goods and services prices and impacts of inflation on personal income. Household expectations for lower interest rates in the future helped to buoy the index somewhat.

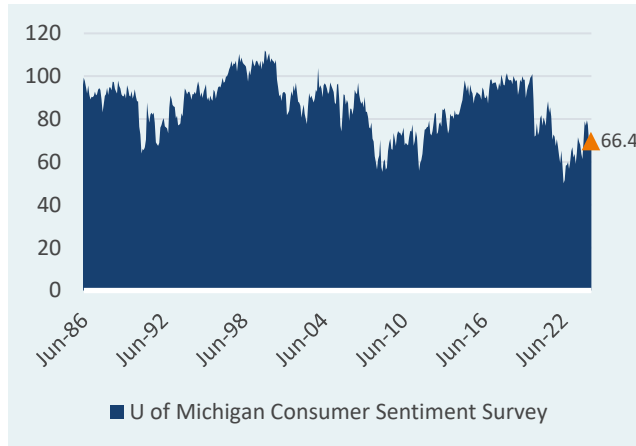
Poor consumer sentiment and the discontent around higher prices can only be partially captured by the rate of inflation. Higher prices of goods and services make life more difficult, but the jump in interest rates further exacerbated the problem, in some cases substantially. The total monthly loan cost of a car or a home has rocketed upward with increased prices for those items

and much higher interest costs baked into payments. For example, if a family had purchased an average home in 2021, the monthly payment would have been \$1,206. In early 2024, if the same family purchased an average home, the monthly payment for that home would be \$2,209 – an 83% increase!

The NFIB Small Business Optimism index was flat during the quarter, continuing to show an extremely poor reading. Inflation remains the top business concern. NFIB Chief Economist Bill Dunkelberg explained that “Increasing compensation costs has led to higher prices all around. Meanwhile, no relief from inflation is in sight for small business owners as they prepare for the uncertain months ahead.”

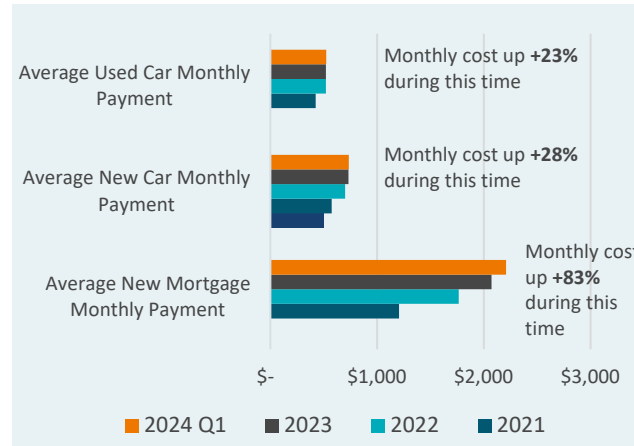
Consumer sentiment weakened during Q2, while small business optimism remained depressed.

CONSUMER SENTIMENT



Source: University of Michigan, as of 6/30/24

INFLATION EATING UP BUDGETS



Source: Edmunds, Verus, as of April 2024

NFIB SMALL BUSINESS SENTIMENT



Source: NFIB, as of 6/30/24

Housing

Imbalances in the U.S. housing market appear to be here to stay, at least for a while, as sharply lower home prices and/or lower mortgage rates (the conditions needed for reasonable affordability) seem unlikely. Affordability is extremely difficult for new homebuyers, currently near record lows, and has worsened as the average home price was up +5.8% year-over-year in May. The other saving grace for potential homebuyers would be lower mortgage rates, but Federal Reserve rate cuts are expected to be moderate and may not have a large impact on the longer end of the yield curve. A driver of ultra-low mortgage rates during the pandemic was government quantitative easing, much of which was focused on mortgage debt and therefore pushed mortgage interest rate spreads to unusually low levels. In short, mortgage rates may fall in the next few years but perhaps only mildly.

Fortunately, rent price growth has slowed considerably, up only 0.8% year-over-year in May, according to Redfin. As the cost of renting versus owning has dramatically shifted, a strong surge in activity towards renting and away from homeownership would not be surprising in the near future.

Depressed home sales activity reflects extreme unaffordability. Monthly home sales are at levels similar to that which followed the 2008-2009 housing bubble. Prior to that crisis, the mid-1990s were the most recent time that compares to this level of sales activity. On the other hand, *new home sales* activity has been fairly robust, which may provide some incremental easing to home prices through increased supply.

30-YEAR MORTGAGE RATE (%)



Source: Freddie Mac, as of 6/30/24

EXISTING HOME SALES



Source: FRED, as of 6/30/24

HOUSING AFFORDABILITY



Source: FRED, as of 3/31/24 – Housing affordability is calculated as the cost of a median priced single-family home at the current mortgage rate, as a percentage of the median family income

International economics summary

- Global economic data continues to paint a picture of slower but positive growth—a move back to pre-pandemic rates of expansion in the United States and across emerging markets, but with concerning weakness in Europe and Japan. Moderating conditions have allowed for rate cut signaling from central banks, which will likely provide an incremental boost to activity in the near-term.
- Inflation has fallen to a 2-3% range for most developed countries. Big inflation trends have tended historically to rhyme across the developed world, as crises often impact prices of global goods and services in similar ways. Recently, pandemic effects such as global supply chain issues, government stimulus, and higher energy prices had resulted in a similar ebb and flow to prices across marketplaces.
- India's economy continues to face uncertainty for this upcoming quarter.

In the last five out of six years, India's real GDP growth rate has fallen short of the Economic Survey projections, but they have seen growth in private investments and infrastructure spending. Annual retail inflation rose to 5.1% in June compared to 4.8% from the previous month, primarily due to food prices. The Reserve Bank of India paused rate hikes, with the goal of not obstructing growth, and bringing inflation to its target rate of 4%.

- China year-over-year inflation was just 0.2% in June, as the country struggles with deflationary pressures, given a real estate slump, a weak job market, and generally poor economic conditions. According to some reports, excess manufacturing capacity and government incentives for overinvestment have created a situation where supply is outstripping demand. A declining population significantly adds to uncertainty around these issues.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	3.1% 6/30/24	3.0% 6/30/24	4.1% 6/30/24
Eurozone	0.4% 3/31/24	2.5% 6/30/24	6.4% 5/31/24
Japan	(0.7%) 3/31/24	2.3% 6/30/24	2.8% 5/31/24
BRICS Nations	5.3% 3/31/24	1.9% 6/30/24	4.8% 12/31/22
Brazil	2.5% 3/31/24	4.2% 6/30/24	7.1% 5/31/24
Russia	5.4% 3/31/24	8.6% 6/30/24	2.6% 5/31/24
India	7.8% 3/31/24	5.1% 6/30/24	9.2% 6/30/24
China	4.7% 6/30/24	0.2% 6/30/24	5.0% 6/30/24

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.

International economics

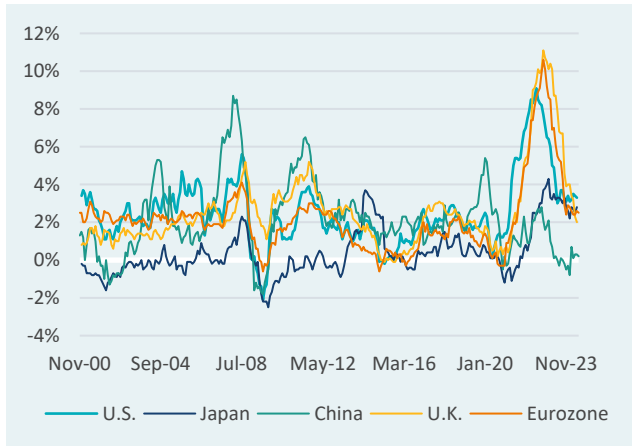
The global narrative appears to remain intact—that many economies are set to slow in 2024 but will likely avoid recession. The United States leads the developed world in growth with a 3.1% YoY real rate of GDP expansion. Europe and Japan have demonstrated anemic economic growth.

Inflation moderation continues, and in much of the world has normalized. Big inflation trends have tended historically to rhyme across developed countries, as crises often impact prices of global goods and services in similar ways. This seems to be at least partially the case recently, as pandemic effects such as global supply chain issues, government stimulus, and higher energy prices have followed global growth outpacing

expectations. This resulted in a similar ebb and flow in prices across most economies. If history is a guide, normal rates of inflation elsewhere may be a good sign for domestic inflation issues.

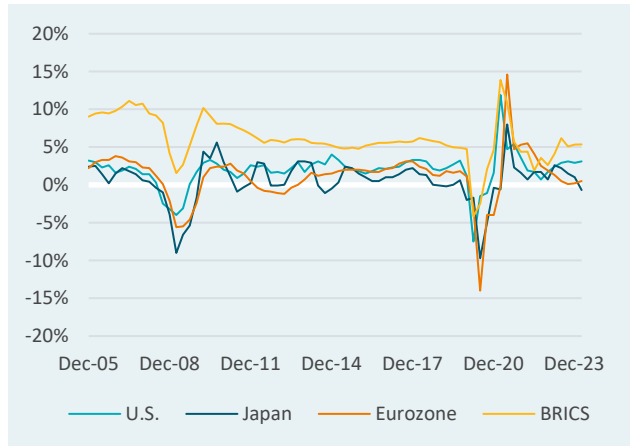
China year-over-year inflation was just 0.2% in June, as the country struggles with deflationary pressures, given a real estate slump, weak job market, and generally poor economic conditions. According to some reports, excess manufacturing capacity and government incentives for overinvestment have created conditions where supply has outstripped demand. A declining population significantly adds to uncertainty around these issues.

INFLATION (CPI YEAR-OVER-YEAR)



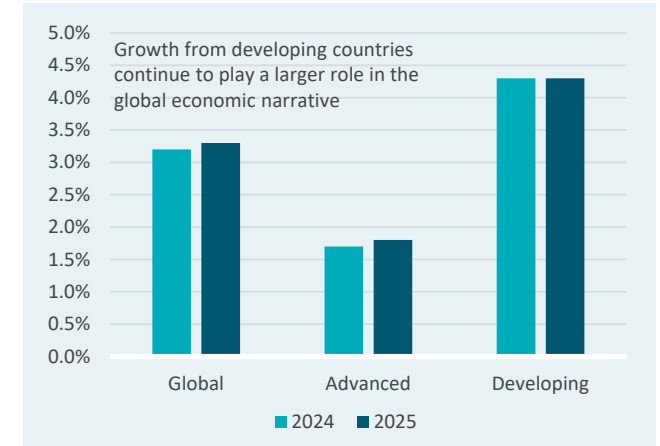
Source: Bloomberg, as of 6/30/24

REAL GDP GROWTH (YEAR-OVER-YEAR)



Source: Bloomberg, as of 6/30/24 – or most recent release

IMF JULY 2024 GDP FORECASTS



Source: IMF April World Economic Outlook, as of 7/17/24

Fixed income rates & credit

Fixed income environment

- The 10-year U.S. Treasury yield initially increased in Q2, rising from 4.20% to a peak of 4.70% before gradually falling to 4.36%, resulting in an overall increase in yields with a downward trend going into Q3. These movements resulted in near-zero performance for short to intermediate duration high quality fixed income and negative performance for longer duration.
- By comparison, most credit indices saw positive returns. High yield gained +1.1% (Bbg U.S. Corporate High Yield), while bank loans rose +1.9% (S&P/LSTA Leveraged Loan). Longer duration investment grade corporate bonds declined by -1.6% (Bloomberg U.S. Long Corporate Credit) as sensitivity to rising yields in April overwhelmed gradual returns in the latter half of the quarter. This reflects a continued concern in the market over inflation and higher-for-longer Fed policy.
- The U.S. yield curve, indicated by the 10-year minus the 2-year Treasury

yield, continues to remain inverted, marking over two years of continuous yield curve inversion (June 6th, 2022). The curve ended the quarter inverted by -35bps. While an inverted yield curve has been a common metric for predicting recessions, the recent continued economic resilience has increased public optimism of a potential soft-landing.

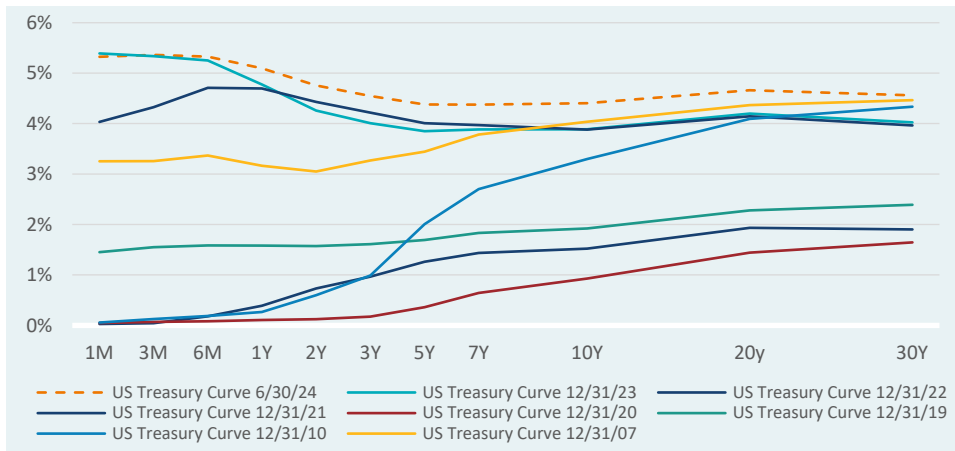
- Default activity in loans and credit reached a one-year low at the end of Q2. However, the gap between bank loan and high yield default activity has increased to a 10-year high, with total volume of distressed or defaults comprised of loans (80%) to bonds (20%) is on pace to be a record high proportion. During the period, a total of \$15.2 billion of bank loan and high yield bonds were impacted by default or distressed exchanges, down from \$20.6 billion in the prior quarter. Notably, default/distressed exchange volume averaged \$17.9 billion quarterly since 2020 and \$14 billion quarterly over the last 17.5 years.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	0.1%	2.6%
Core Plus Fixed Income (Bloomberg U.S. Universal)	0.2%	3.5%
U.S. Treasuries (Bloomberg U.S. Treasury)	0.1%	1.5%
U.S. Treasuries: Long (Bloomberg U.S. Treasury 20+)	(2.2%)	(7.2%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	1.1%	10.4%
Bank Loans (S&P/LSTA Leveraged Loan)	1.9%	11.1%
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	-1.6%	0.7%
Emerging Market Debt Hard (JPM EMBI Global Diversified)	0.3%	9.2%
Mortgage-Backed Securities (Bloomberg MBS)	0.1%	2.1%

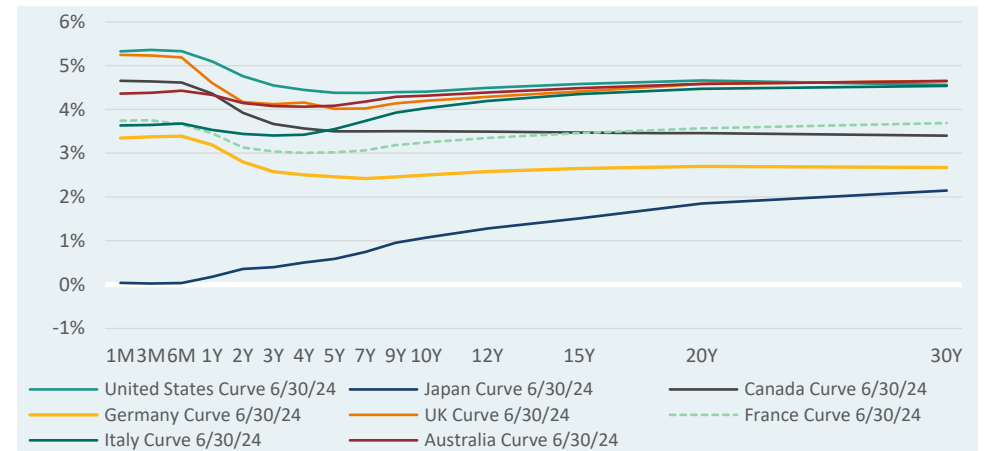
Source: Bloomberg, as of 6/30/24

Yield environment

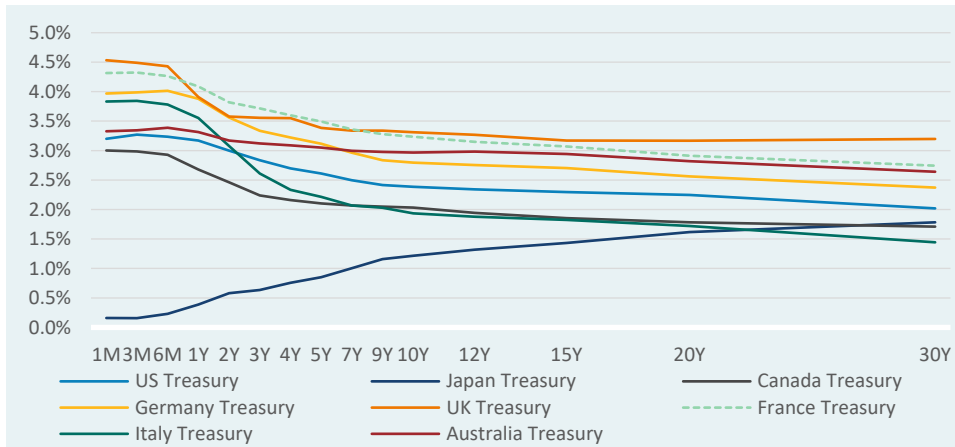
U.S. YIELD CURVE



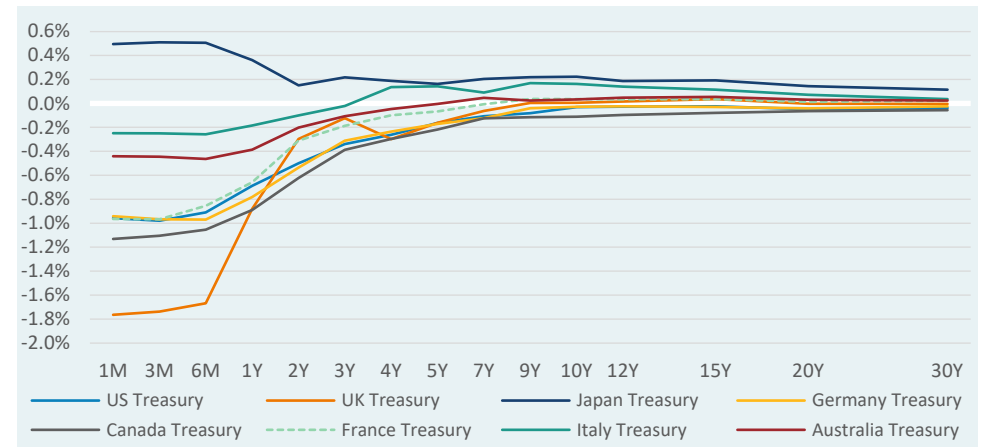
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 6/30/24

Credit environment

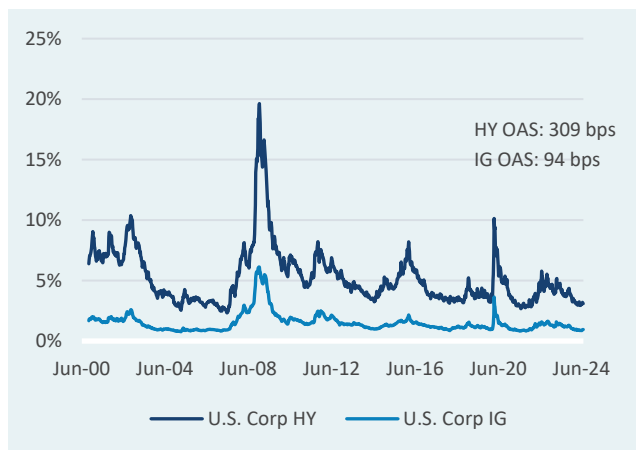
During the second quarter, credit markets delivered mostly positive returns with lower-quality credit such as high yield bonds and bank loans leading. Bank loans rose +1.9% (CS Leveraged Loans), while high yield bonds increased by +1.1% (Bbg U.S. Corporate High Yield). Longer duration investment grade corporate bonds (Bloomberg U.S. Long Corporate Credit) fell by -1.6% as concerns over rising interest rates and higher expected inflation acted as a headwind to performance.

Returns across credit ratings were broadly positive during Q2. Higher-quality BB-rated bonds returned +1.4% compared to +1.1% for B-rated, while non-distressed CCC's led with +2.0% returns. CCC-rated bonds including distressed lagged other credits with +0.2% returns. Higher-quality bank loans outperformed lower quality, with BB- and B- rated

loans returning +1.88% and +2.13%, while CCC-rated loans only returned +0.14%.

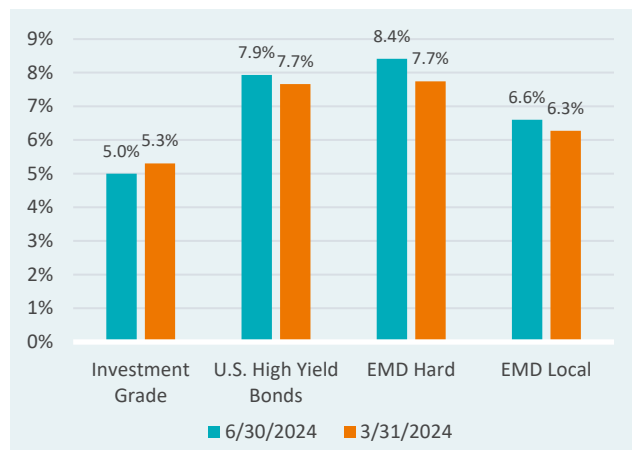
High quality credit spreads declined during the quarter while high yield spreads were mixed as recession concerns contended with further resilience in the corporate sector. Lower-quality high yield bond spreads rose by roughly 0.1% to 3.2%, while investment grade spreads continued to tighten by 0.3% to 0.9%. These trends continue to show spreads below long-term historical averages, suggesting that investors remain confident in the ability of most businesses to service debt. However, widening spreads and lower returns in CCC and distressed suggest that the highest risk credit sectors are beginning to show strain under the continued pressure of higher lending rates.

SPREADS



Source: Barclays, Bloomberg, as of 6/30/24

YIELD TO MATURITY



Source: Bloomberg, J.P. Morgan as of 6/30/24

CREDIT SPREAD (OAS)

Market	6/30/24	6/30/23
Long U.S. Corp	1.2%	1.5%
U.S. Inv Grade Corp	0.9%	1.2%
U.S. High Yield	3.1%	3.9%
U.S. Bank Loans*	3.9%	3.8%

Source: Barclays, Credit Suisse, Bloomberg, as of 6/30/24
*Discount margin (4-year life)

Default & issuance

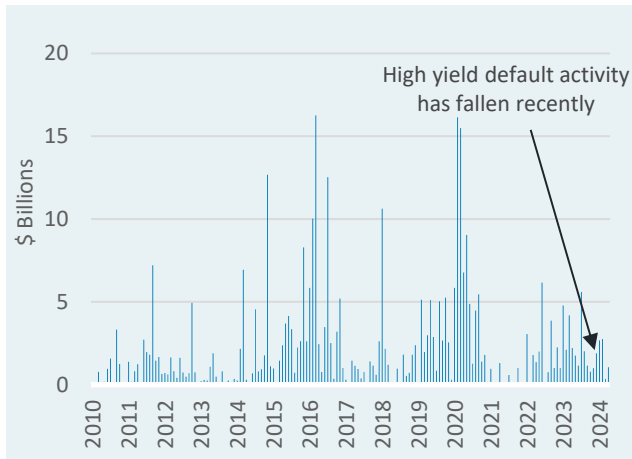
Default activity declined during the quarter as concerns around slowing economic growth abated. During the period, \$15 billion of bank loans and high yield bonds were affected by default or distressed exchanges, down from \$22 billion in the prior quarter. Year-to-date, 19 defaults and 23 distressed exchanges have occurred totaling more than \$37 billion, down roughly -14% from the same period last year.

The bank loan market has shown notable weakness compared to high yield bonds. Year-to-date, roughly 80%, or \$29.6 billion of loans, have either defaulted or resulted in distressed exchanges compared to \$7.5 billion for high yield bonds.

High yield bond default rates declined to roughly 1.8%, down from 2.7% a year ago, and are well below the long-term annual average of roughly 3.4%. High-yield default recovery rates ended the quarter at 38.8%, up significantly from 17.4% at the same time last year.

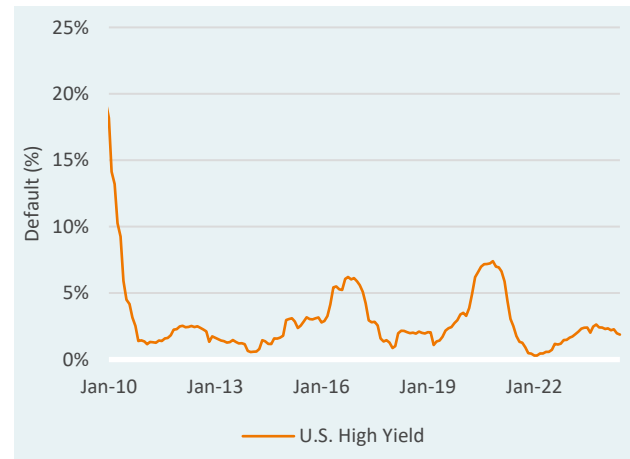
The issuance of investment grade credit declined significantly from the prior quarter, \$343 billion versus \$531 billion. Year-to-date issuance stands at \$874 billion, up 23% compared to last year at the same time. High yield bond issuance declined slightly to \$79.4 billion, down from \$86.6 billion during the previous quarter. Broadly, credit spreads remain near their recent lows, which despite the higher yield environment, allows companies to issue at more competitive rates.

U.S. HY MONTHLY DEFAULTS (PAR WEIGHTED)



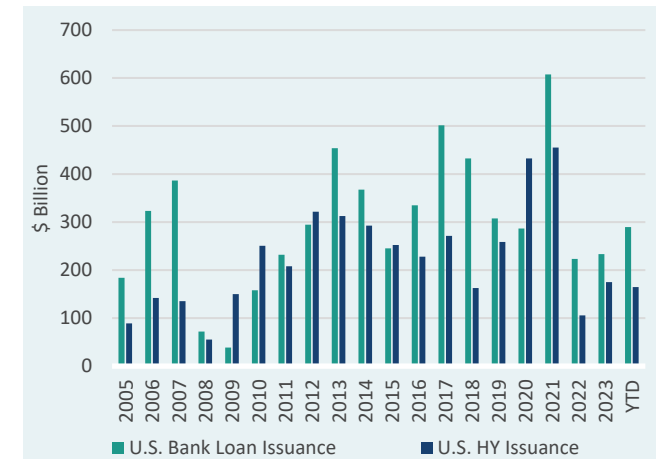
Source: BofA Merrill Lynch, as of 6/30/24

U.S. HY SECTOR DEFAULTS (LAST 12 MONTHS)



Source: BofA Merrill Lynch, as of 6/30/24 – par weighted

DEVELOPED MARKET ISSUANCE (\$ BILLIONS)



Source: BofA Merrill Lynch, all developed markets, as of 6/30/24

Credit hedge funds

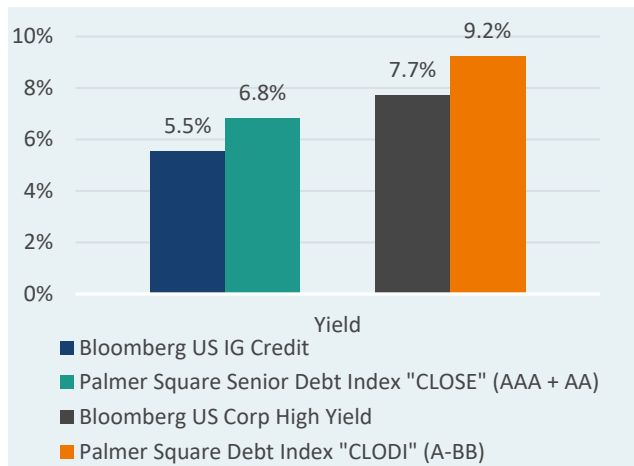
Credit hedge funds have outperformed high yield and leveraged loans through 2Q 2024, benefiting from high total yields and low duration.

Even though headline default numbers imply a benign opportunity set, according to JP Morgan, although default volume is lower year over year, the volume of distressed exchanges is already the third highest annual total since at least 2008. Additionally, the volume of Loan distressed transactions YTD is already the largest annual total on record for loans. Credit hedge funds are a natural participant in these types of transactions and are finding no shortage of actionable ideas even as broad markets are at or near highs.

Hedge funds focused on structured credit continue to take advantage of excess yield in CLO and other securitized markets. In the CLO market, an index of AAA and AA tranches (as proxied by the Palmer Square Indexes) are offering 1.3% excess yield over US Investment Grade Credit and A, BBB, and BB tranches are yielding 1.5% more than the Bloomberg US High Yield index.

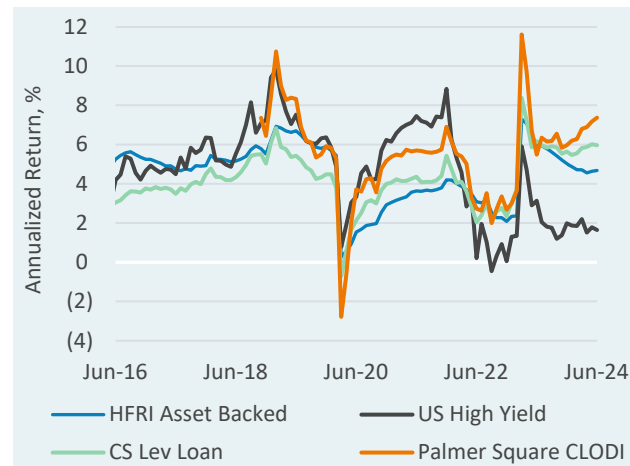
Distressed funds should continue to benefit from elevated levels of capital market activity in credit markets, with strong issuance in both HY and Loan markets set against a backdrop of tight credit spreads and low defaults.

CLO VS CORPORATE BOND YIELDS AS OF JUNE 30



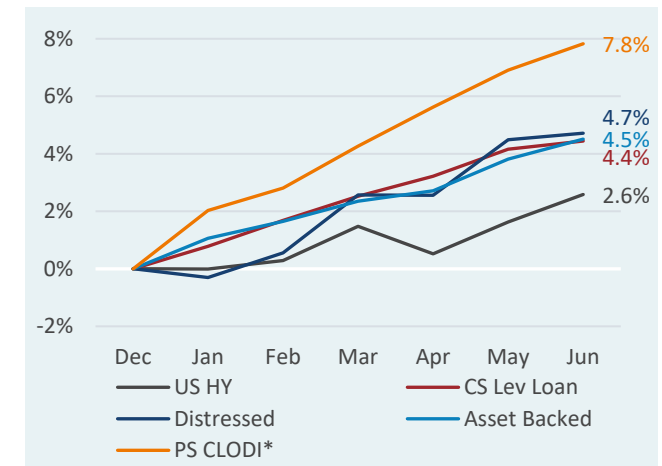
Source: MPI, Bloomberg, Palmer Square. As of 6/30/2024

3 YEAR ROLLING RETURN



Source: CS, HFR, Bloomberg, Palmer Square, MPI

YTD RETURN



Source: Bloomberg, Palmer Square, HFR, MPI

Equity

Equity environment

- Emerging market equities outperformed during Q2, up +5.0% (MSCI Emerging Markets), despite ongoing poor returns from China. U.S. equities were close behind (S&P 500 +4.3%), setting a new all-time-high price level. In contrast, international developed equities were relatively rangebound (MSCI EAFE -0.4%).
- Blended S&P 500 year-over-year Q2 earnings growth was +9.3% as of July 12th. If total reported earnings growth ends at this +9.3% rate, it would mark the largest year-over-year earnings growth rate since Q1 of 2022.
- The U.S. dollar rose moderately in value during Q2, resulting in losses for U.S. investors with unhedged foreign currency exposure. Given that the Federal Reserve is expected to engage in similar rate cuts as other developed economies, it is unclear the extent to which the global rate cutting path will impact relative currency

valuations. Unexpected central bank actions will likely have the greatest directional impact in the future.

- Small cap and value style investing drastically underperformed during Q1. Small cap lagged large cap by -6.9% (Russell 2000 -3.3% vs. Russell 1000 +3.6%), while value underperformed growth by -10.5% (Russell 1000 Value -2.2% vs. Russell 1000 Growth +8.3%). The style premia performance gap was even wider over the last year, as small cap underperformed large cap by -13.8% and value underperformed growth by -20.4%.
- Markets continue to present a unique environment of low equity volatility but high fixed income volatility. This gap has closed somewhat, as bond market implied volatility has moved a bit back towards normal levels since reaching a nearly all-time high 2023.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	4.3%		24.6%	
U.S. Small Cap (Russell 2000)	(3.3%)		10.1%	
U.S. Equity (Russell 3000)	3.2%		23.1%	
U.S. Large Value (Russell 1000 Value)	(2.2%)		13.1%	
US Large Growth (Russell 1000 Growth)	8.3%		33.5%	
Global Equity (MSCI ACWI)	2.9%	3.5%	19.4%	21.6%
International Large (MSCI EAFE)	(0.4%)	1.7%	11.5%	18.5%
Eurozone (EURO STOXX 50)	(2.8%)	(1.7%)	12.0%	16.3%
U.K. (FTSE 100)	3.8%	3.8%	12.1%	13.2%
Japan (TOPIX)	(4.3%)	3.0%	12.7%	32.5%
Emerging Markets (MSCI Emerging Markets)	5.0%	6.3%	12.5%	15.8%

Source: Russell Investments, MSCI, STOXX, FTSE, JPX, as of 6/30/24

Domestic equity

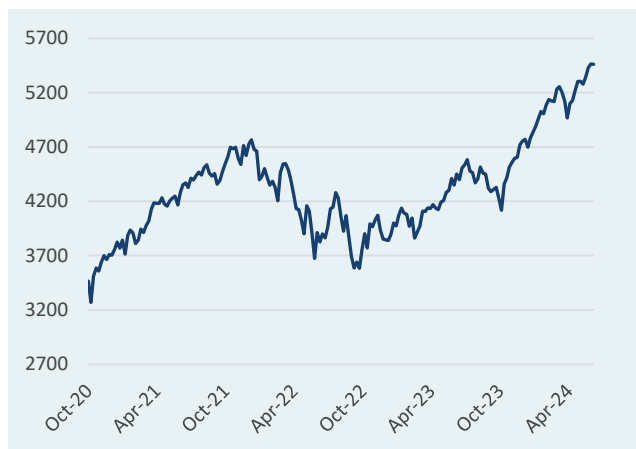
U.S. equities further outperformed international developed equities, but lagged emerging market shares, with the S&P 500 finishing up +4.3% during the quarter. The artificial intelligence boom provided a tailwind to earnings of chip manufacturers and has likely helped to lift valuations more broadly. Signs of cooling in the labor market, as well as surprisingly weak inflation figures, helped reignite investor hopes for an economic *soft landing* and interest rate cuts.

Blended S&P 500 year-over-year Q2 earnings growth was +9.3% as of July 12th. If total reported earnings growth ends at this +9.3% rate, it would mark the largest year-over-year earnings growth rate since Q1 of 2022. Communication Services (+18.4%) and Information Technology

(+16.4%) were the earnings leaders, while Materials (-11.8%) and Industrials (-3.7%) lagged.

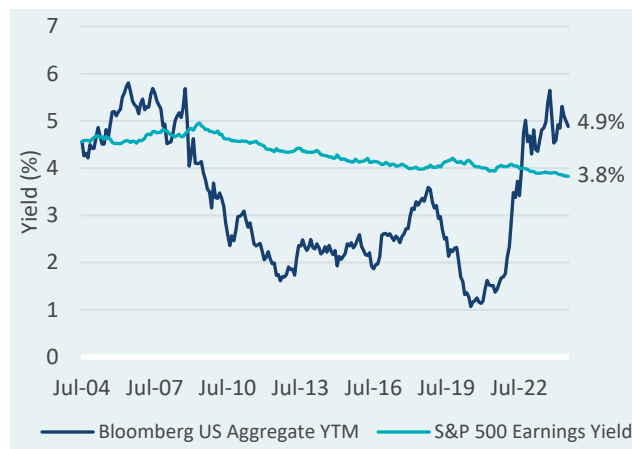
Strong price gains have moved valuations towards the richer side of the historical range. This effect, alongside higher interest rates and more attractive bond yields, has resulted in a regime shift regarding the attractiveness of equity and fixed income. Expensive equity prices have pushed total U.S. equity yield to below 4%, at a time when holding cash yields materially more than 5% and core fixed income yields 5%. This new regime is captured in institutional capital market assumptions which now tend to reflect mild future domestic equity returns and robust fixed income returns.

S&P 500 PRICE INDEX



Source: Bloomberg, as of 6/30/24

RELATIVE YIELD: EQUITY VS FIXED INCOME



Source: Bloomberg, Standard & Poor's, Verus, as of 6/30/24

S&P 500 EPS GROWTH (YEAR-OVER-YEAR)



Source: Bloomberg, Factset, Verus, as of 7/19/24

Domestic equity size & style

Small cap and value style investing drastically underperformed during Q1. Small cap lagged large cap by -6.9% (Russell 2000 -3.3% vs. Russell 1000 +3.6%), while value underperformed growth by -10.5% (Russell 1000 Value -2.2% vs. Russell 1000 Growth +8.3%). The style premia performance gap was even wider over the last year, as small cap underperformed large cap by -13.8% and value underperformed growth by -20.4%.

Much of the difference in style performance is driven by sector differences. Growth has a much greater exposure to mega cap technology companies, which continued to overshadow all other sectors in the second quarter. Nvidia extended its historic run, while Apple and Tesla bounced back from a poor first quarter. Technology and Communication companies led earnings

growth and this is expected to persist going forward. Per Factset, Communication Services and Technology companies within the S&P 500 are expected to provide earnings growth of 21% and 18.7%, respectively, leading all other sectors. This has translated into volatility between sectors, where Technology (+13.8%) and Communications (+9.4%) led the S&P 500 in Q2, while six out of eleven sectors declined in value over the quarter.

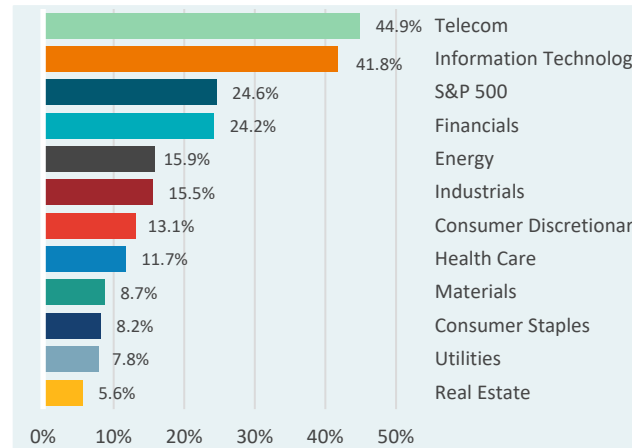
Unusually large disparities in style performance has been apparent, driven by sector trends and mega cap stock dominance. Market behavior continues to support our stance that short-term factor timing decisions should in most circumstances be pursued only in the rare occasion of obvious market mispricing and with a clear catalyst for price correction.

VALUE VS. GROWTH 1-YR ROLLING



Source: FTSE, Bloomberg, as of 6/30/24

S&P 500 SECTOR RETURNS (1 YEAR ROLLING)



Source: FTSE, Bloomberg, as of 6/30/24

1-YEAR SIZE & STYLE PERFORMANCE

	Value	Core	Growth
Large Cap	13.1%	23.9%	33.5%
Mid Cap	12.0%	12.9%	15.1%
Small Cap	10.9%	10.1%	9.1%

Source: FTSE, Bloomberg, as of 6/30/24

International developed equity

International developed shares had a weak second quarter, trailing domestic and emerging markets equities. The MSCI EAFE Index returned +1.7% in U.S. dollar terms, while losing value (-0.4%) if the exposure remained unhedged. The ECB cut rates for the first time in five years in June, with the intention of stimulating a set of economies that had been otherwise stagnant, especially in comparison to the U.S. economy. The dollar's advance was likely fueled by this ECB rate cut, which increased the interest rate differential between the U.S. dollar and the Euro, providing a headwind for unhedged investors.

Some of the discrepancy in performance between U.S. and international developed equities can be attributed to sector

differences. U.S. equities are heavily concentrated in technology companies, while developed markets have a more diversified sector breakdown, with Financials and Industrials – two sectors that tilt towards value – more heavily weighted in developed markets. This lower exposure to technology companies has not helped developed equity performance over the past couple of years, but if richly valued U.S. tech companies have a pullback, it would provide a material boost.

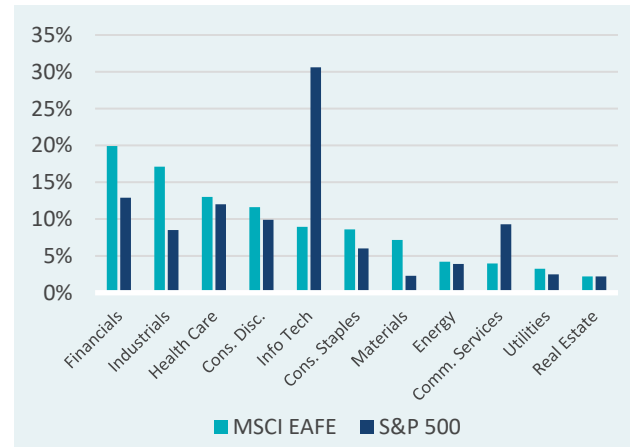
Markets will continue to watch the effect of adjustments to rate cut expectations, as European economies attempt to stimulate growth that has been lackluster this year without reigniting inflation.

INTERNATIONAL DEVELOPED EQUITY



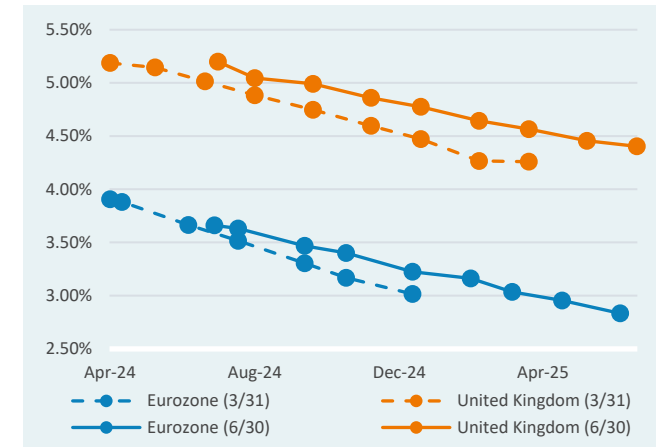
Source: MSCI, as of 6/30/24

MSCI EAFE VS. S&P 500 SECTOR DISTRIBUTION



Source: MSCI, S&P, as of 5/31/24

ECB & BOE RATE EXPECTATIONS VS Q1



Source: Bloomberg, as of 6/30/24

Emerging market equity

Emerging market equities were the highest performing equity market in portfolios (MSCI EM +5.0%), outpacing the domestic market (S&P 500 +4.3%) and international developed equities (MSCI EAFE -0.4%).

Sector differences played out in Emerging Markets, much as they did in the U.S., with Info Tech (+11.9%) being the best performing sector in the MSCI EM Index. This growth was bolstered by Taiwan Semiconductor Manufacturing Company (TSMC), who reported earnings growth of +36% in Q2. TSMC works directly with several domestic mega cap tech companies and makes up nearly 10% of the MSCI EM index.

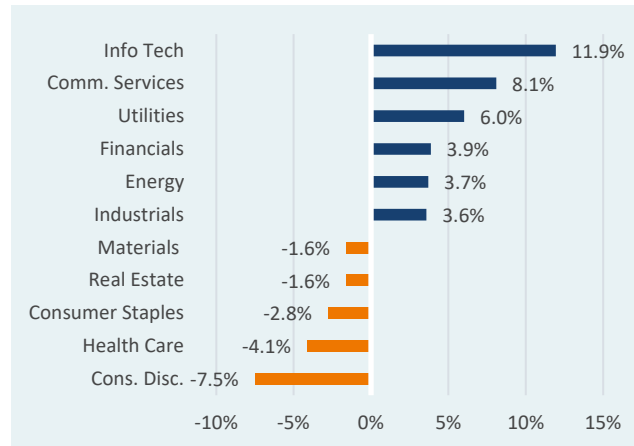
Chinese equities continue to be cheap from a valuation perspective but face serious structural issues which could further act as a drag on performance. Real estate market shakiness has come back to the forefront of many investors' minds. A large inventory of real estate sits empty, China's population is in decline and that decline is expected to accelerate, and a large portion of the economic boom has only been possible through ongoing real estate construction. It is difficult to imagine how these woes are resolved without a serious downward resetting of prices which would be incredibly painful for Chinese citizens who, on average, hold a large portion of their wealth in real estate.

EMERGING MARKET EQUITY



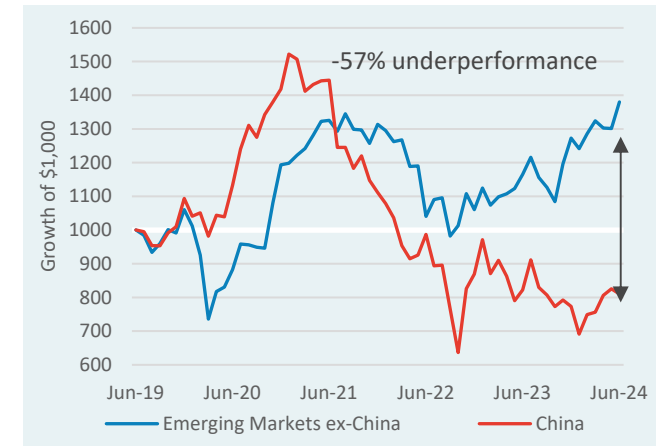
Source: MSCI, as of 6/30/24

MSCI EM Q2 2024 SECTOR RETURNS (USD)



Source: MSCI, J.P. Morgan, as of 6/30/24

SUBSTANTIAL CHINA UNDERPERFORMANCE



Source: MSCI, as of 6/30/24

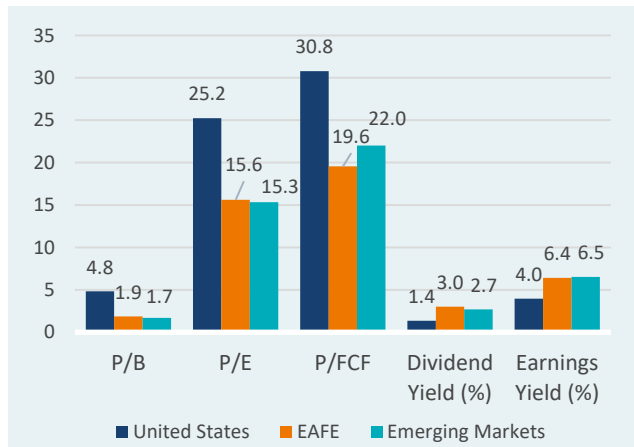
Equity valuations

Valuations moved higher in Q2 across each market. The S&P 500 traded at a Forward P/E of 21.4 at the end of June and a Trailing P/E of 25.2. High valuations have pushed the U.S. dividend yield to a nearly all-time historic low of 1.4%.

Lofty prices, along with a much more attractive environment for fixed income, suggest to us that the next decade may look much different than the past decade of unusually strong U.S. equity performance. The past decade was made possible by a very low equity valuation starting point, the impressive rise of mega cap tech / social media / online

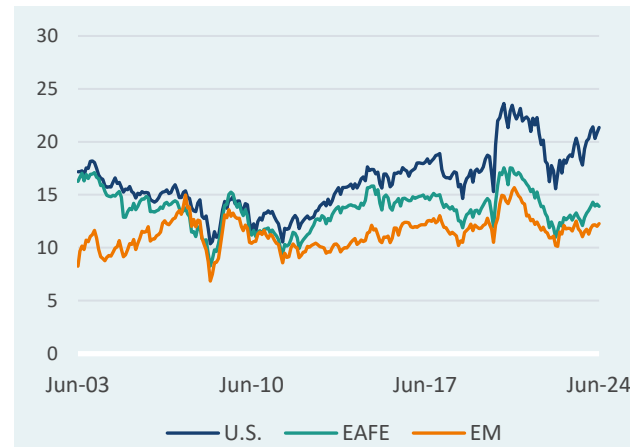
retailing businesses, extreme government stimulus pumped into the system, corporate tax cuts, and financial engineering following ultra low interest rates which contributed to a very large gain in corporate profit margins. Now, looking at the next 10 years, we are starting with high valuations, already high corporate profit margins, large debt burdens across many segments of the economy, and arguably a lower chance of future debt-driven stimulus. Fixed income may be very competitive with equity in terms of yields and prospective return over the next ten years. We believe this change in regime is noteworthy and may reasonably act as a theme for institutional asset allocation.

MSCI VALUATION METRICS (3-MONTH AVG)



Source: Bloomberg, as of 6/30/24 – Trailing P/E

FORWARD PRICE/EARNINGS RATIO



Source: MSCI, Bloomberg, as of 6/30/24

S&P 500 HISTORICAL DIVIDEND YIELD



Source: S&P, Bloomberg, as of 6/30/24

U.S. valuations & expected earnings



If projected earnings growth rates hold over the next two years, and the market increases in price at a more moderate rate, then valuations will come down toward historical averages.

Source: Bloomberg, Verus, as of 7/19/24 – here we assume that both: a) the S&P 500 delivers earnings growth over the next two years in line with current estimates (11% in 2024 and 14.7% in 2025), and b) The S&P 500 delivers a total return in those years equivalent to the Verus 2024 CMA return estimate. If both of things occur, the S&P 500 Price/Earnings ratio will move back towards the historical average.

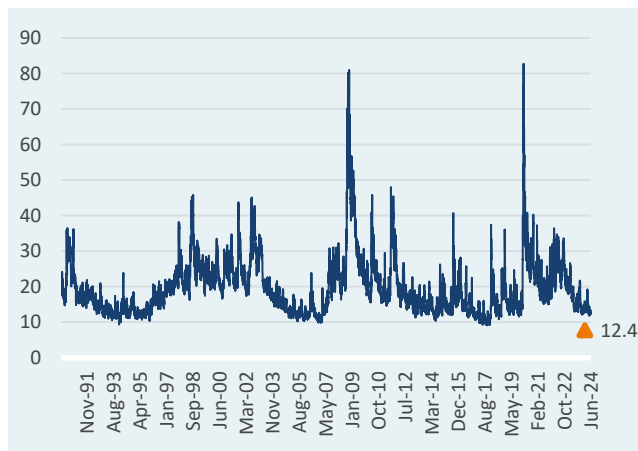
Market volatility

Market-priced volatility (Cboe VIX Index) remained very low during the second quarter, ending at 12.4% in June. This has reasonably raised eyebrows, given a variety of risks that domestic equities face, but low volatility is typical of strongly up trending equity environments.

Recent realized one-year volatility has also been fairly mild across global markets, relative to history. Domestic, international developed, and emerging market equities have all delivered between 14.6% and 15.8% volatility during that time, with emerging markets marking the upper end of the range.

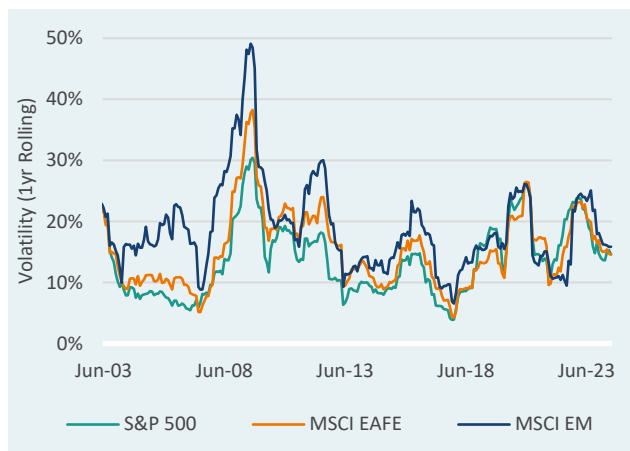
This asset allocation environment is unique in terms of low equity volatility but high fixed income volatility. This gap has closed somewhat, as bond market implied volatility has moved a bit back towards normal levels since reaching a nearly all time high in 2023. Bond characteristics are captured by the “MOVE” Index—which calculates the implied volatility of U.S. Treasury securities. As further clarity is gained around the path of the Federal Reserve, we would expect that bond volatility will further moderate.

U.S. IMPLIED VOLATILITY (VIX)



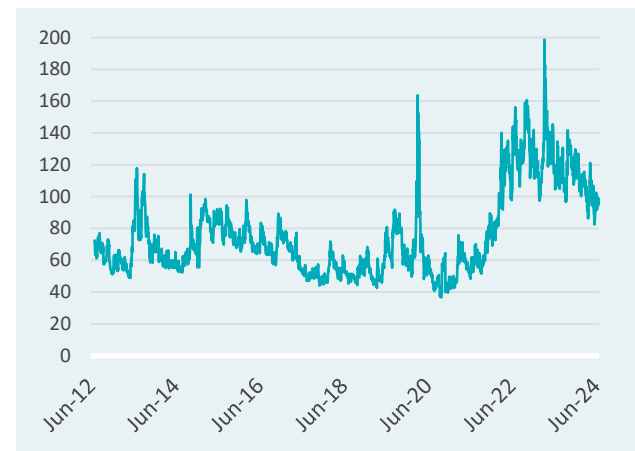
Source: Cboe, as of 6/30/24

REALIZED VOLATILITY



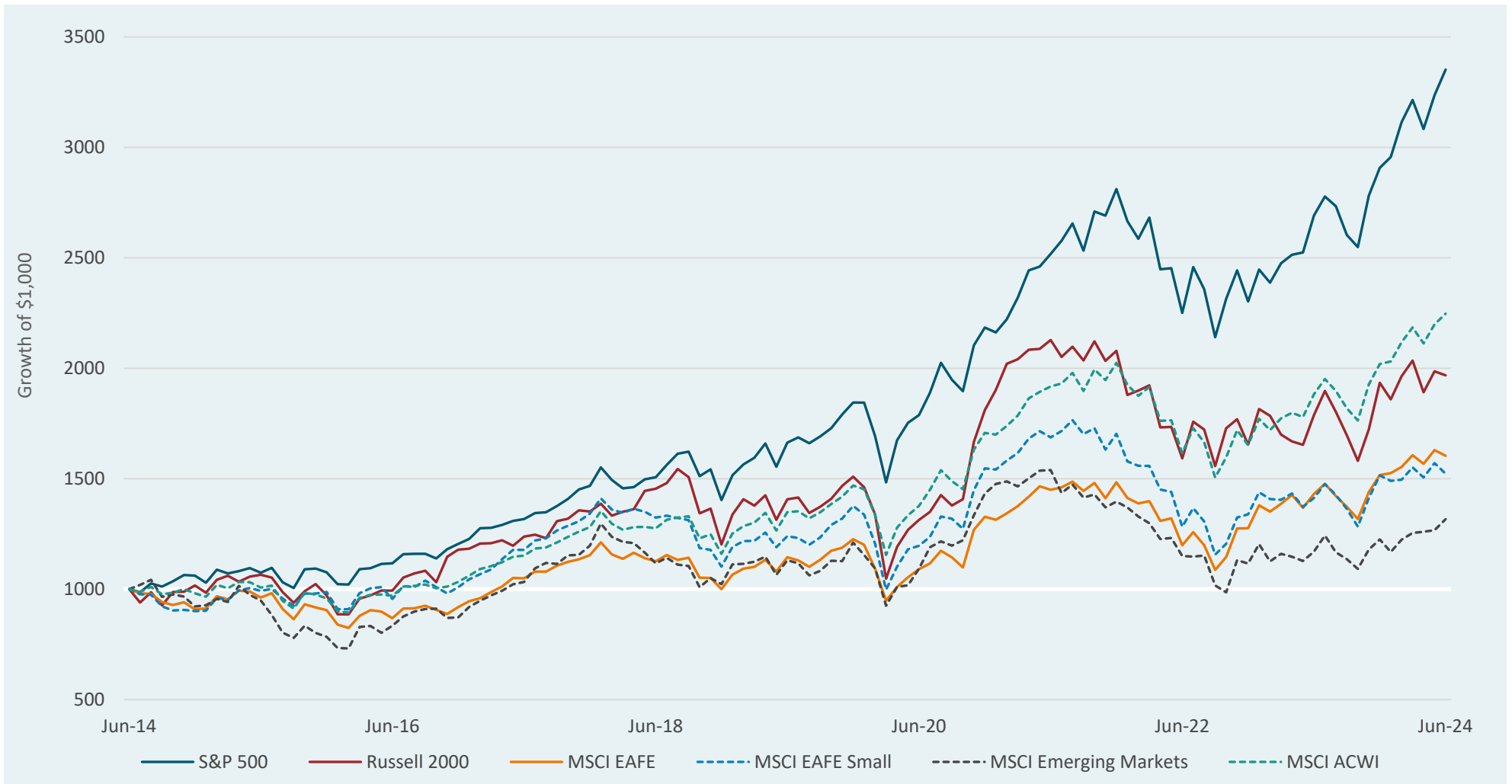
Source: S&P, MSCI, as of 6/30/24

U.S. TREASURY IMPLIED VOL (“MOVE” INDEX)



Source: Bloomberg, as of 6/30/24

Long-term equity performance



Source: MPI, as of 6/30/24

Other assets

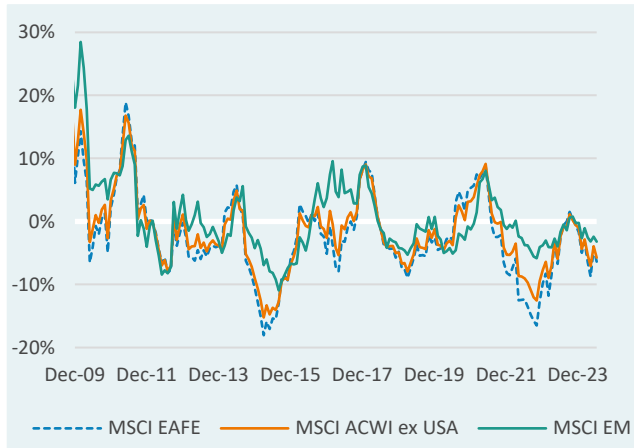
Currency

The U.S. dollar rose modestly in value during Q2, resulting in losses for investors with unhedged foreign currency exposure. Given that the Federal Reserve is expected to engage in similar sized rate cuts as other developed central banks, it is unclear the extent to which the *rate cutting path* will impact relative currency valuations. Unexpected central bank actions will likely have the greatest directional impact in the future.

Investors without a currency hedging program lost -1.2% from their international developed equity exposure (MSCI EAFE) during Q2 due to currency movements and -7.0% over the past year. Losses from unhedged Japanese currency exposure have once again been extreme (-7.3% over the quarter, -19.8% over the past year, based on the TOPIX Index), while unhedged European equity exposure losses due to currency were milder (-1.1% over the quarter, -4.3% over the past year, EURO Stoxx 50 Index).

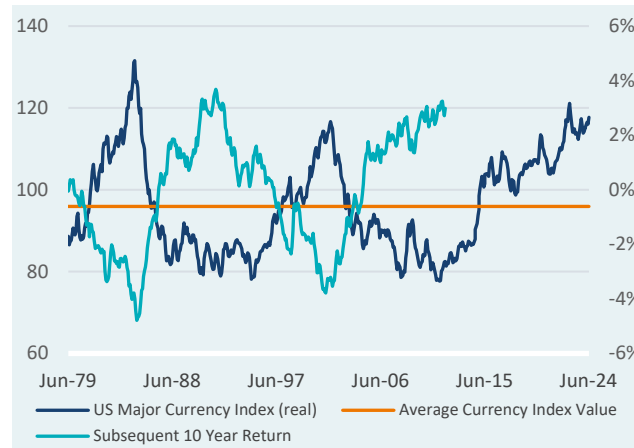
A more thoughtful portfolio approach to currency exposure has provided the dual benefit of lower portfolio volatility and also higher returns—a rare proposition in markets. This approach involves reducing the uncompensated risk of unhedged foreign currency exposure, and instead of unhedged exposure, making a passive investment in the currency market by investing in currencies with higher interest rates, currencies that are undervalued, and currencies that are showing positive price momentum. This approach, represented by the MSCI Currency Factor Mix Index—has offered a positive one-year rolling return over most periods with far lower volatility than the unhedged currency exposure that many investors hold. The past year is testament to this approach, this program would have far outperformed unhedged currency exposure, and with much less volatility.

EFFECT OF CURRENCY (1-YEAR ROLLING)



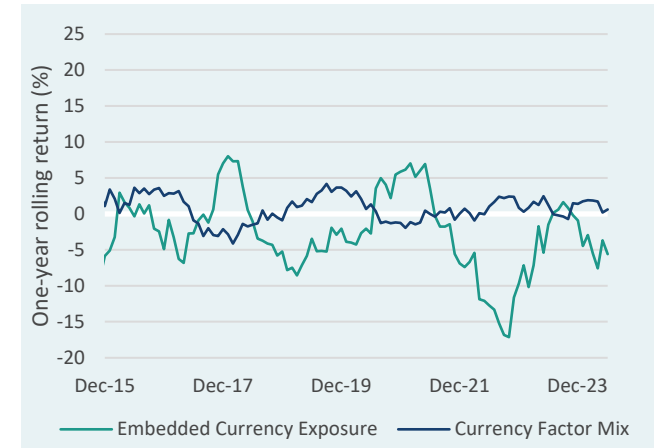
Source: MSCI, as of 6/30/24

U.S. DOLLAR MAJOR CURRENCY INDEX



Source: Bloomberg, as of 6/30/24

EMBEDDED CURRENCY VS CURRENCY FACTORS



Source: Bloomberg, MSCI, as of 6/30/24

Appendix

Periodic table of returns

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	5-Year	10-Year
Large Cap Growth	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	38.5	28.3	16.1	42.7	20.7	19.3	16.3
Large Cap Equity	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	31.4	34.6	27.6	9.4	26.5	14.2	14.6	12.5
Emerging Markets Equity	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	28.5	21.0	27.1	1.5	18.7	7.5	9.0	8.2
Large Cap Value	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	26.5	20.0	26.5	-4.7	18.2	6.6	7.2	7.4
International Equity	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	25.5	18.3	25.2	-7.5	16.9	5.3	7.1	7.0
60/40 Global Portfolio	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	22.4	14.0	17.7	-13.0	15.4	5.3	6.9	6.4
Commodities	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	22.0	10.3	14.8	-14.5	14.6	5.1	6.5	6.2
Hedge Funds of Funds	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	18.6	7.8	11.3	-14.5	11.5	4.6	6.2	5.0
Small Cap Growth	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	18.4	7.5	8.9	-17.3	9.8	4.4	5.7	4.3
Cash	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	8.7	4.6	6.5	-19.1	6.3	2.6	4.8	3.5
Small Cap Equity	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	7.8	2.8	2.8	-20.1	5.5	1.7	3.8	2.8
US Bonds	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	7.7	0.5	0.0	-20.4	5.0	-0.7	3.1	1.5
Small Cap Value	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	6.4	0.5	-1.5	-26.4	-7.9	-0.8	2.1	1.3
Real Estate	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	2.1	-3.1	-2.5	-29.1	-7.9	-1.0	-0.2	-1.3

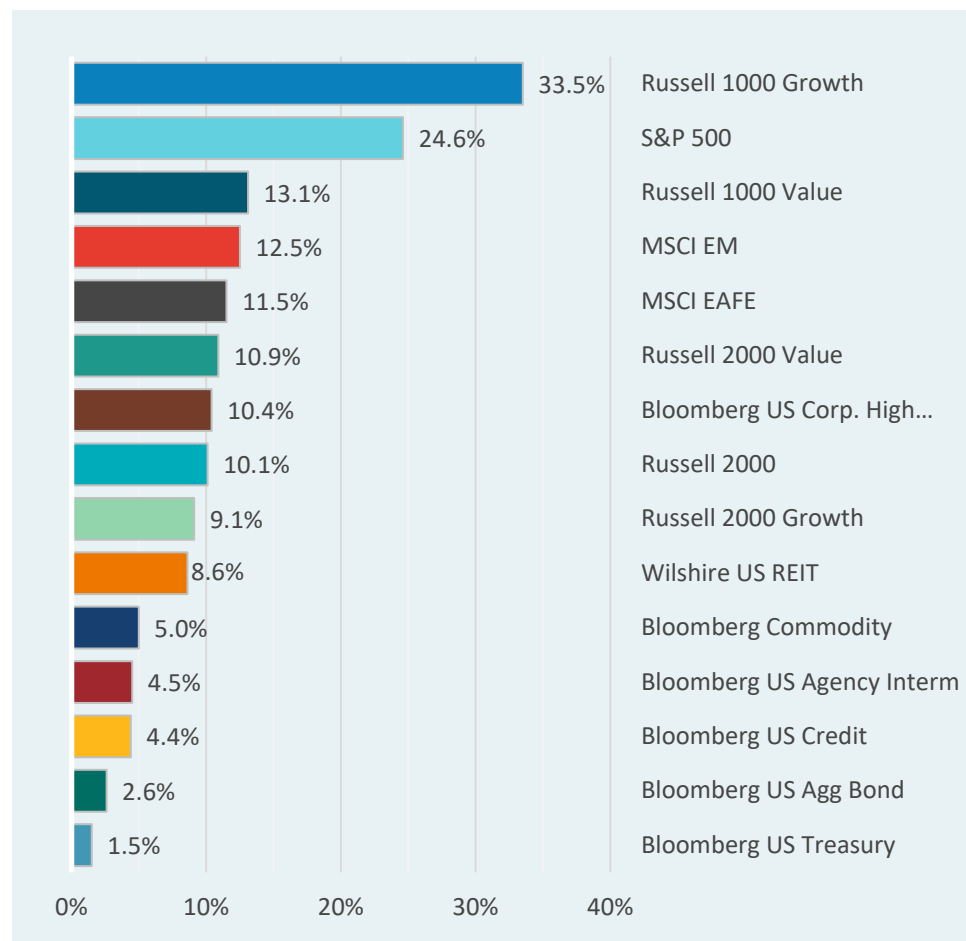
BEST
↑
↓
WORST

 Large Cap Equity	 Small Cap Growth	 Commodities
 Large Cap Value	 International Equity	 Real Estate
 Large Cap Growth	 Emerging Markets Equity	 Hedge Funds of Funds
 Small Cap Equity	 US Bonds	 60% MSCI ACWI/40% Bloomberg Global Bond
 Small Cap Value	 Cash	

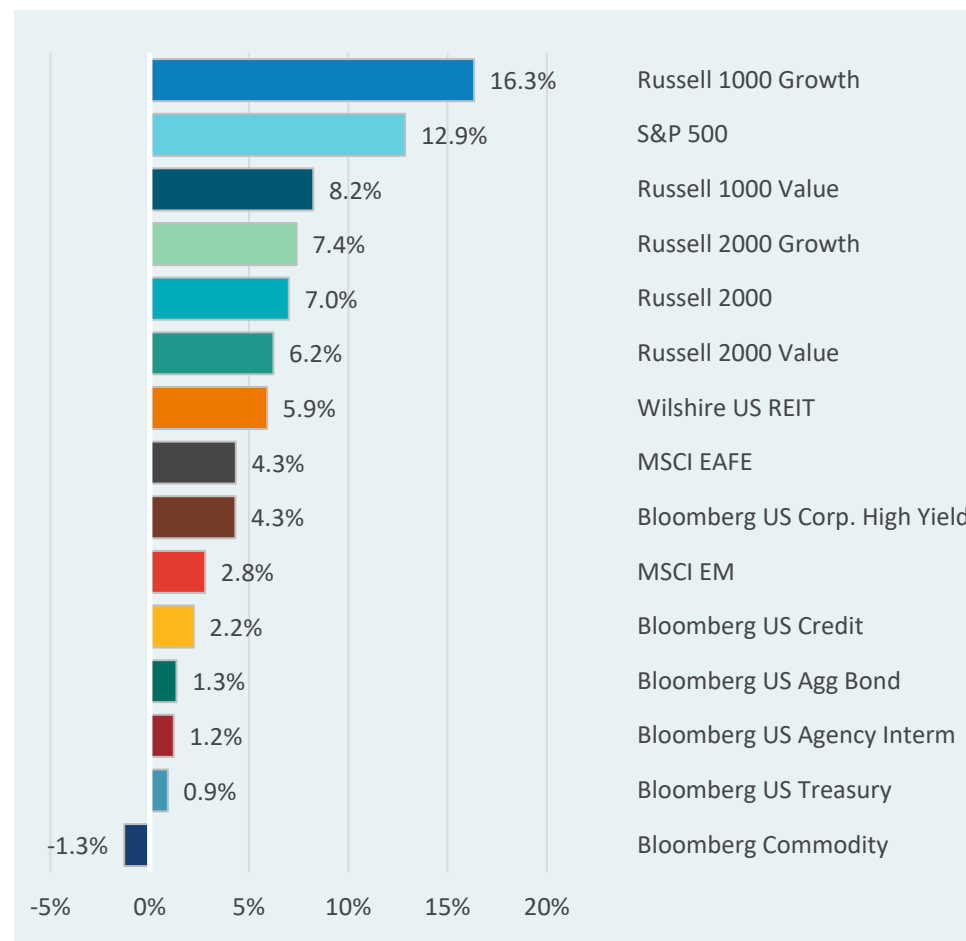
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, Bloomberg Global Bond. NCREIF Property Index performance data as of 12/31/23.

Major asset class returns

ONE YEAR ENDING JUNE



TEN YEARS ENDING JUNE



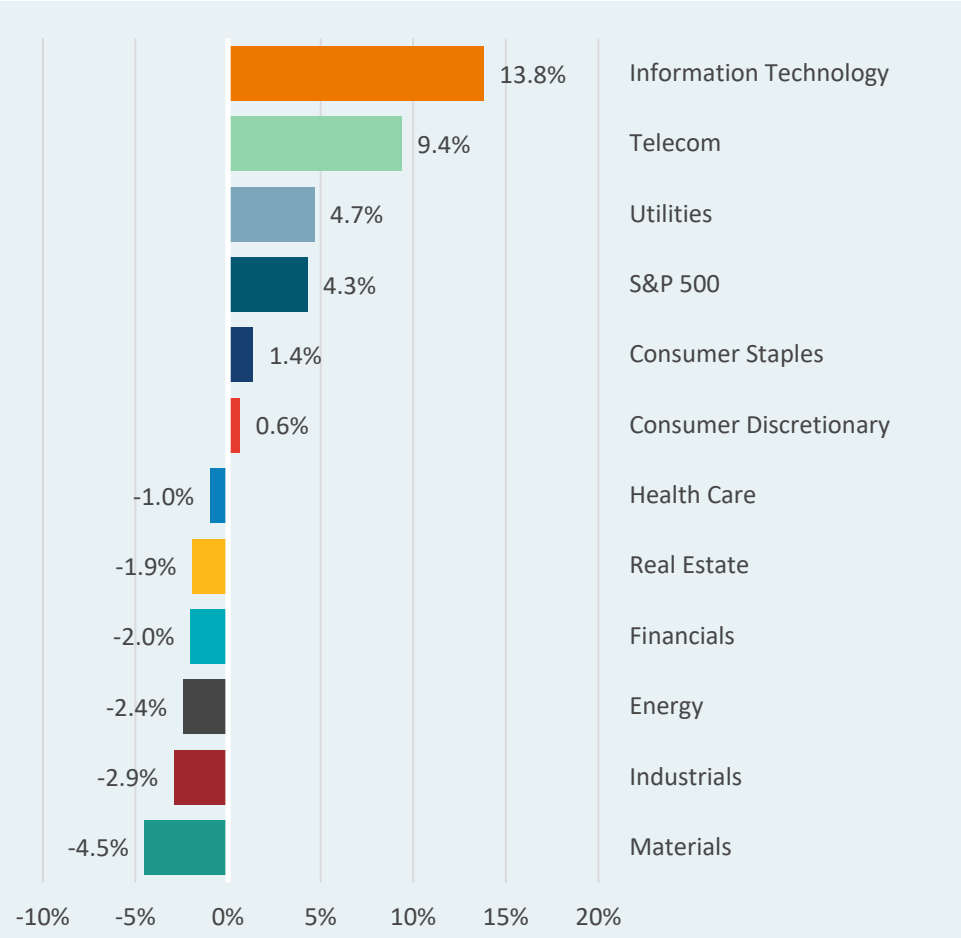
*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 6/30/24

Source: Morningstar, as of 6/30/24

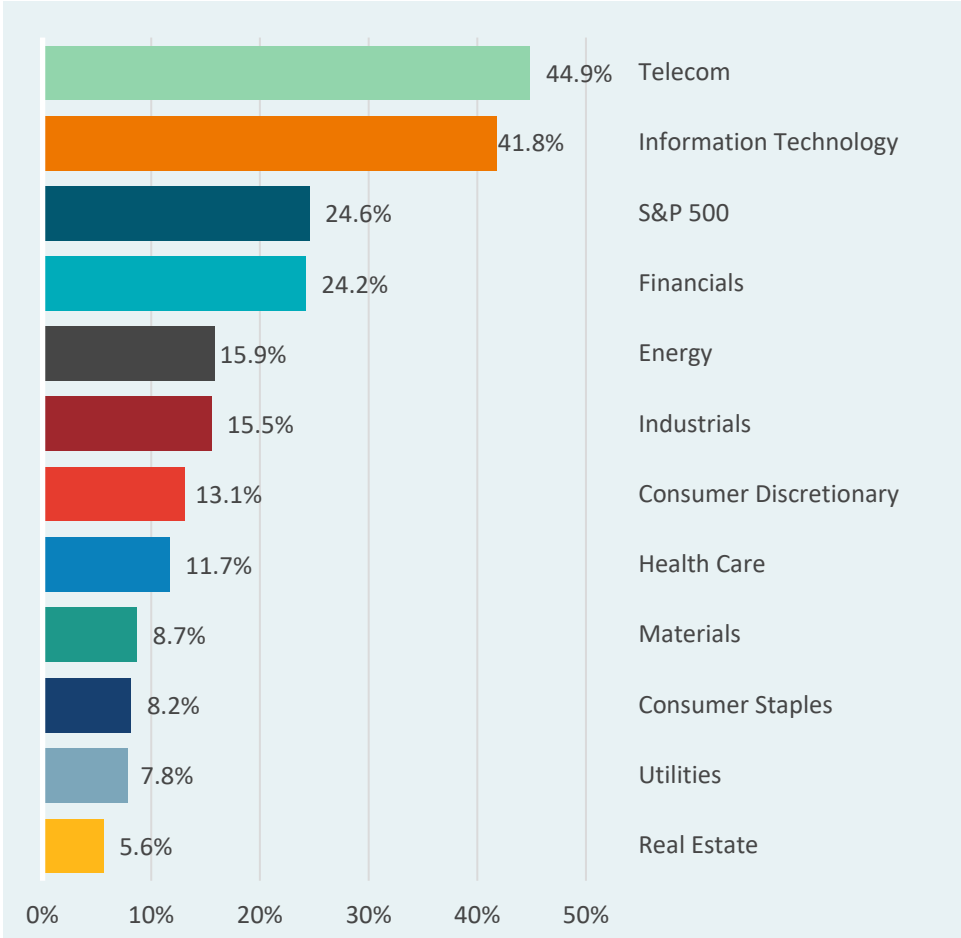
S&P 500 sector returns

QTD



Source: Morningstar, as of 6/30/24

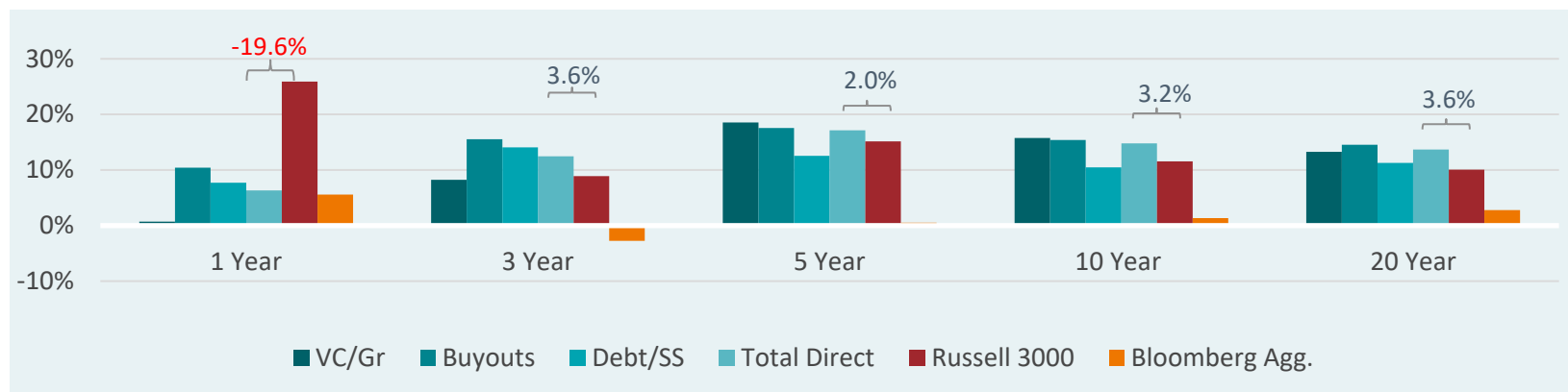
ONE YEAR ENDING JUNE



Source: Morningstar, as of 6/30/24

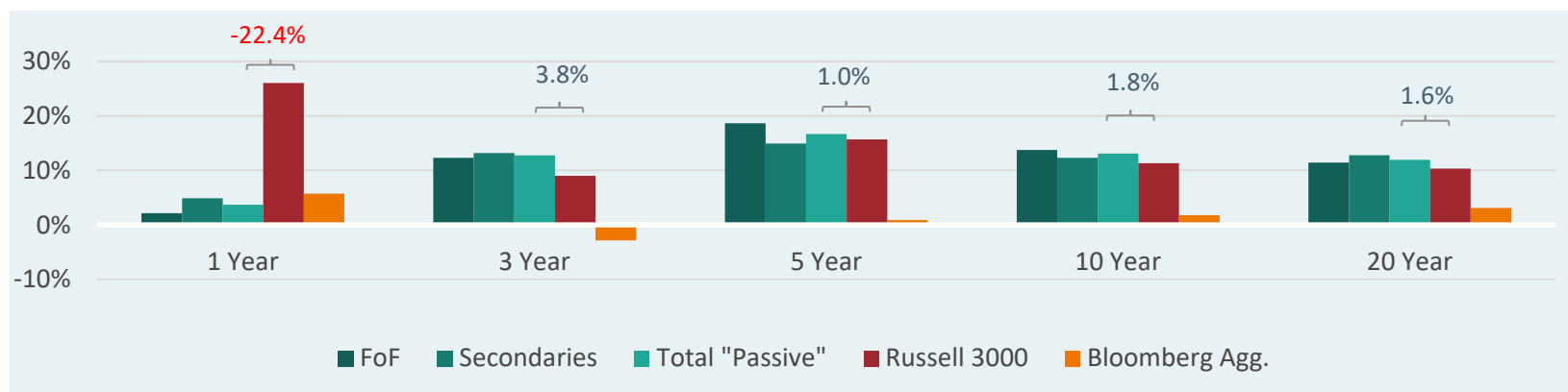
Private equity vs. traditional assets performance

DIRECT PRIVATE EQUITY FUND INVESTMENTS



Direct P.E Fund Investments outperformed comparable public equities across all time periods, aside from the 1-year.

"PASSIVE" STRATEGIES

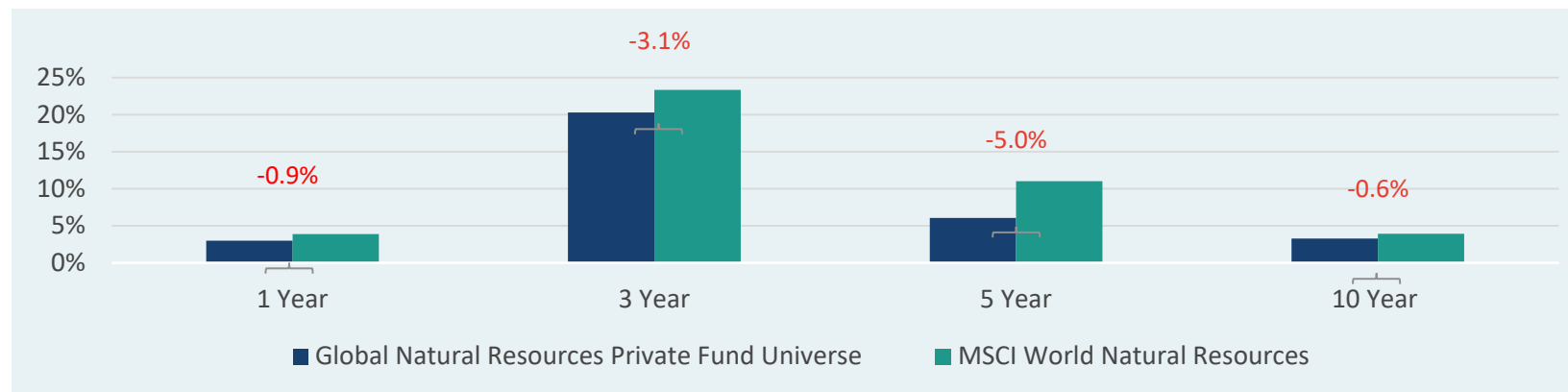


"Passive" strategies outperformed comparable public equities across all time periods, aside from the 1-year.

Sources: Refinitiv PME: U.S. Private Equity Funds sub asset classes as of September 30, 2023. Public Market Equivalent returns resulted from "Total Passive" and Total Direct's identical cash flows invested into and distributed from respective traditional asset comparable.

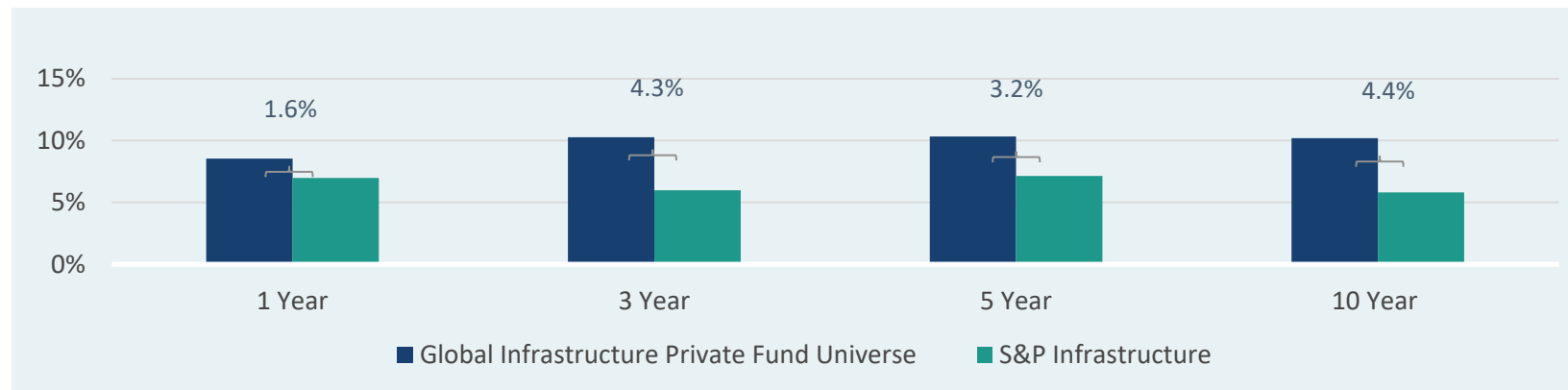
Private vs. liquid real assets performance

GLOBAL NATURAL RESOURCES FUNDS



N.R. funds underperformed the MSCI World Natural Resources benchmark across all periods.

GLOBAL INFRASTRUCTURE FUNDS

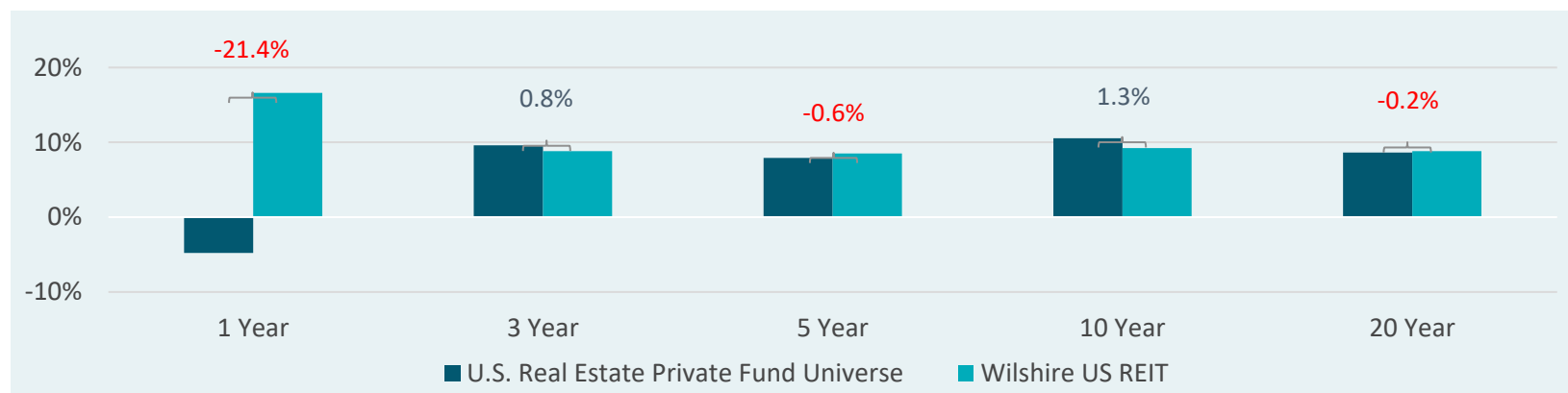


Infra. funds outperformed the S&P Infra. across all periods.

Sources: Refinitiv PME: Global Natural Resources (vintage 1999 and later, inception of MSCI World Natural Resources benchmark) and Global Infrastructure (vintage 2002 and later, inception of S&P Infrastructure benchmark) universes as of September 30, 2023. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

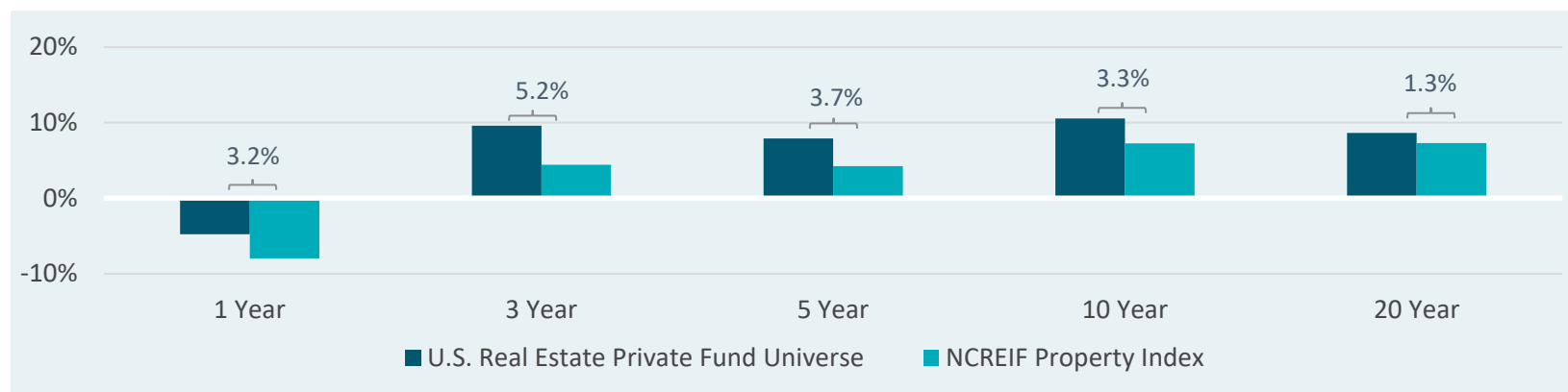
Private vs. liquid and core real estate performance

U.S. PRIVATE REAL ESTATE FUNDS VS. LIQUID UNIVERSE



U.S. Private R.E. fund performance vs. the Wilshire U.S. REIT Index has been mixed.

U.S. PRIVATE REAL ESTATE FUNDS VS. CORE FUNDS



U.S. Private R.E. Funds outperformed the NCREIF Property Index across all time periods.

Sources: Refinitiv PME: U.S. Real Estate universes as of September 30, 2023. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real estate universes.

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	3.6	4.3	15.3	24.6	10.0	15.0	12.9
S&P 500 Equal Weighted	(0.5)	(2.6)	5.1	11.8	4.8	10.9	10.0
DJ Industrial Average	1.2	(1.3)	4.8	16.0	6.4	10.3	11.3
Russell Top 200	4.5	5.7	17.2	27.4	10.9	16.4	13.8
Russell 1000	3.3	3.6	14.2	23.9	8.7	14.6	12.5
Russell 2000	(0.9)	(3.3)	1.7	10.1	(2.6)	6.9	7.0
Russell 3000	3.1	3.2	13.6	23.1	8.1	14.1	12.1
Russell Mid Cap	(0.7)	(3.3)	5.0	12.9	2.4	9.5	9.0
Style Index							
Russell 1000 Growth	6.7	8.3	20.7	33.5	11.3	19.3	16.3
Russell 1000 Value	(0.9)	(2.2)	6.6	13.1	5.5	9.0	8.2
Russell 2000 Growth	(0.2)	(2.9)	4.4	9.1	(4.9)	6.2	7.4
Russell 2000 Value	(1.7)	(3.6)	(3.6)	10.9	(0.5)	7.1	6.2

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	2.2	2.9	11.3	19.4	5.4	10.8	8.4
MSCI ACWI ex US	(0.1)	1.0	5.7	11.6	0.5	5.5	3.8
MSCI EAFE	(1.6)	(0.4)	5.3	11.5	2.9	6.5	4.3
MSCI EM	3.9	5.0	7.5	12.5	(5.1)	3.1	2.8
MSCI EAFE Small Cap	(3.0)	(1.8)	0.5	7.8	(3.4)	4.2	4.3
Style Index							
MSCI EAFE Growth	(0.4)	(0.8)	6.2	9.4	0.1	6.5	5.4
MSCI EAFE Value	(2.8)	0.0	4.5	13.7	5.5	6.1	3.0
Regional Index							
MSCI UK	(1.8)	3.7	6.9	12.5	6.9	5.7	2.7
MSCI Japan	(0.7)	(4.3)	6.3	13.1	2.3	6.6	5.5
MSCI Euro	(3.3)	(2.8)	5.4	10.1	3.6	7.2	4.1
MSCI EM Asia	5.0	7.4	11.0	15.1	(5.5)	4.6	4.5
MSCI EM Latin American	(6.1)	(12.2)	(15.7)	(5.6)	0.9	0.1	(0.3)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
Bloomberg US TIPS	0.8	0.8	0.7	2.7	(1.3)	2.1	1.9
Bloomberg US Treasury Bills	0.4	1.3	2.6	5.5	3.0	2.2	1.5
Bloomberg US Agg Bond	0.9	0.1	(0.7)	2.6	(3.0)	(0.2)	1.3
Bloomberg US Universal	0.9	0.2	(0.3)	3.5	(2.7)	0.1	1.6
Duration							
Bloomberg US Treasury 1-3 Yr	0.6	0.9	1.2	4.5	0.3	1.0	1.1
Bloomberg US Treasury Long	1.7	(1.8)	(5.0)	(5.6)	(10.5)	(4.3)	0.6
Bloomberg US Treasury	1.0	0.1	(0.9)	1.5	(3.3)	(0.7)	0.9
Issuer							
Bloomberg US MBS	1.2	0.1	(1.0)	2.1	(2.9)	(0.8)	0.9
Bloomberg US Corp. High Yield	0.9	1.1	2.6	10.4	1.6	3.9	4.3
Bloomberg US Agency Interim	0.7	0.8	1.0	4.5	(0.5)	0.6	1.2
Bloomberg US Credit	0.7	(0.0)	(0.5)	4.4	(2.9)	0.5	2.2

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	(1.5)	2.9	5.1	5.0	5.7	7.2	(1.3)
Wilshire US REIT	3.0	(0.2)	(0.3)	8.6	0.3	4.0	5.9
CS Leveraged Loans	0.3	1.9	4.4	11.0	6.0	5.4	4.6
S&P Global Infrastructure	(2.9)	2.7	4.0	7.0	5.6	4.3	4.6
Alerian MLP	4.7	3.8	19.2	34.2	22.3	11.1	1.9
Regional Index							
JPM EMBI Global Div	0.6	0.3	2.3	9.2	(3.5)	0.6	3.2
JPM GBI-EM Global Div	(1.1)	(1.6)	0.7	0.7	(3.3)	(1.3)	(0.9)
Hedge Funds							
HFRI Composite	(0.2)	0.4	4.8	9.6	2.8	6.6	4.8
HFRI FOF Composite	0.1	0.4	4.6	8.4	2.0	4.8	3.5
Currency (Spot)							
Euro	(1.3)	(1.8)	(3.0)	(1.8)	(3.3)	(1.2)	(2.4)
Pound Sterling	(0.7)	0.3	(0.8)	(0.6)	(2.9)	(0.1)	(3.0)
Yen	(2.3)	(10.1)	(12.4)	(10.2)	(11.6)	(7.7)	(4.5)

Source: Morningstar, HFRI, as of 6/30/24

Definitions

Bloomberg US Weekly Consumer Comfort Index - tracks the public's economic attitudes each week, providing a high-frequency read on consumer sentiment. The index, based on cell and landline telephone interviews with a random, representative national sample of U.S. adults, tracks Americans' ratings of the national economy, their personal finances and the buying climate on a weekly basis, with views of the economy's direction measured separately each month. (www.lanqerresearch.com)

University of Michigan Consumer Sentiment Index - A survey of consumer attitudes concerning both the present situation as well as expectations regarding economic conditions conducted by the University of Michigan. For the preliminary release approximately three hundred consumers are surveyed while five hundred are interviewed for the final figure. The level of consumer sentiment is related to the strength of consumer spending. (www.Bloomberg.com)

NFIB Small Business Outlook - Small Business Economic Trends (SBET) is a monthly assessment of the U.S. small-business economy and its near-term prospects. Its data are collected through mail surveys to random samples of the National Federal of Independent Business (NFIB) membership. The survey contains three broad question types: recent performance, near-term forecasts, and demographics. The topics addressed include: outlook, sales, earnings, employment, employee compensation, investment, inventories, credit conditions, and single most important problem. (<http://www.nfib-sbet.org/about/>)

NAHB Housing Market Index - the housing market index is a weighted average of separate diffusion indices for three key single-family indices: market conditions for the sale of new homes at the present time, market conditions for the sale of new homes in the next six months, and the traffic of prospective buyers of new homes. The first two series are rated on a scale of Good, Fair, and Poor and the last is rated on a scale of High/Very High, Average, and Low/Very Low. A diffusion index is calculated for each series by applying the formula $(\text{Good-Poor} + 100)/2$ to the present and future sales series and $(\text{High/Very High-Low/Very Low} + 100)/2$ to the traffic series. Each resulting index is then seasonally adjusted and weighted to produce the HMI. Based on this calculation, the HMI can range between 0 and 100.

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Contra Costa County Employees Retirement Association

Investment Performance Review

Period Ending: June 30, 2024



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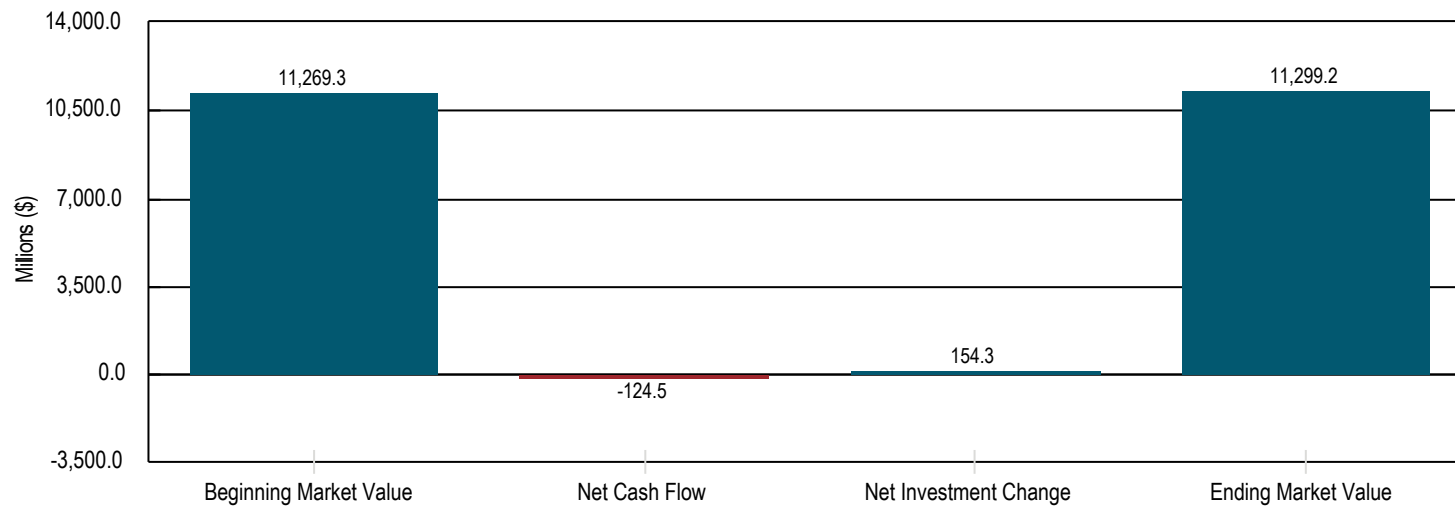
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Portfolio Reconciliation

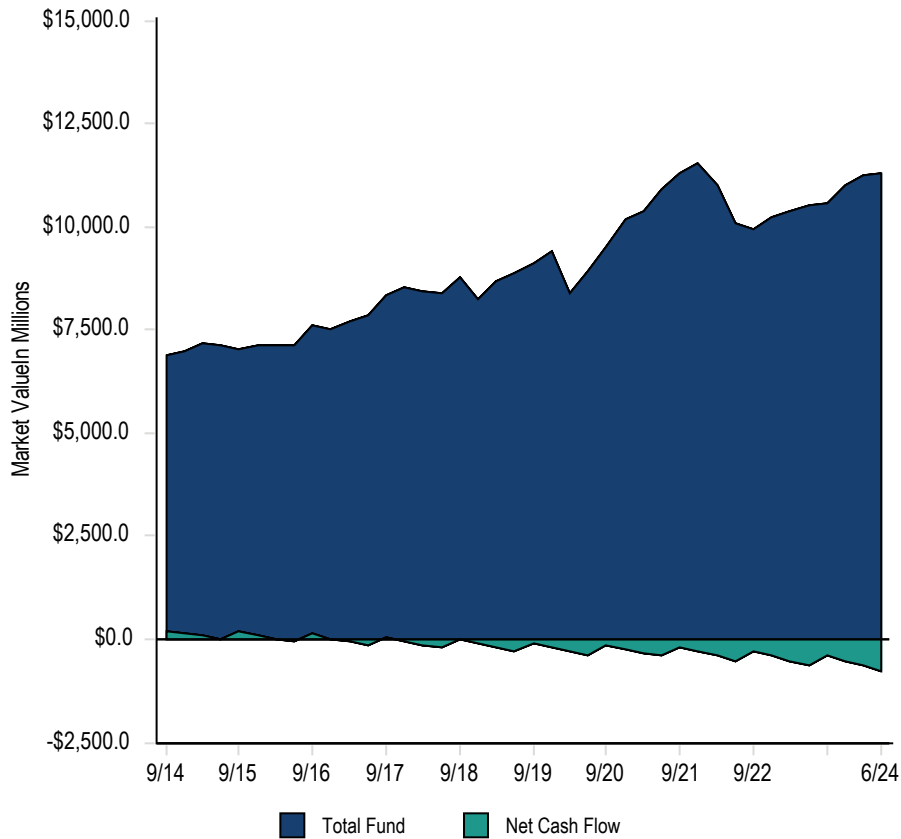
	Last Three Months	YTD
Beginning Market Value	\$11,269,310,629	\$11,026,356,498
Net Cash Flow	-\$124,457,589	-\$244,923,950
Net Investment Change	\$154,347,027	\$517,767,519
Ending Market Value	\$11,299,200,066	\$11,299,200,066

Change in Market Value
Last Three Months

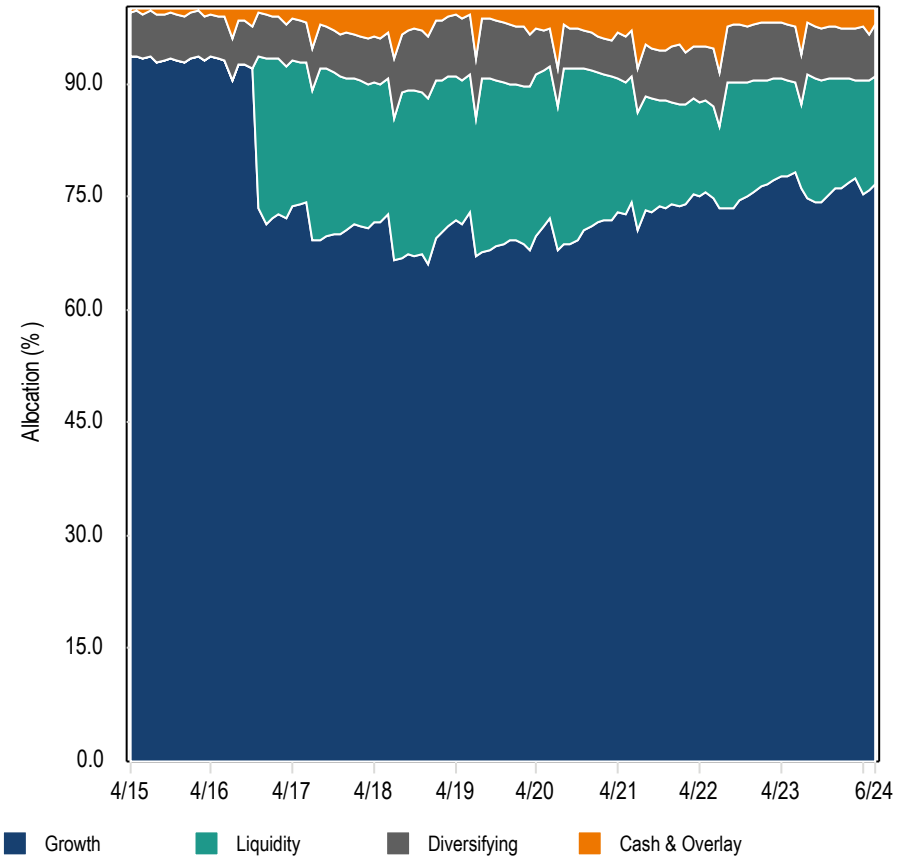


Contributions and withdrawals may include intra-account transfers between managers/funds.

Market Value History
Cumulative Cash Flows

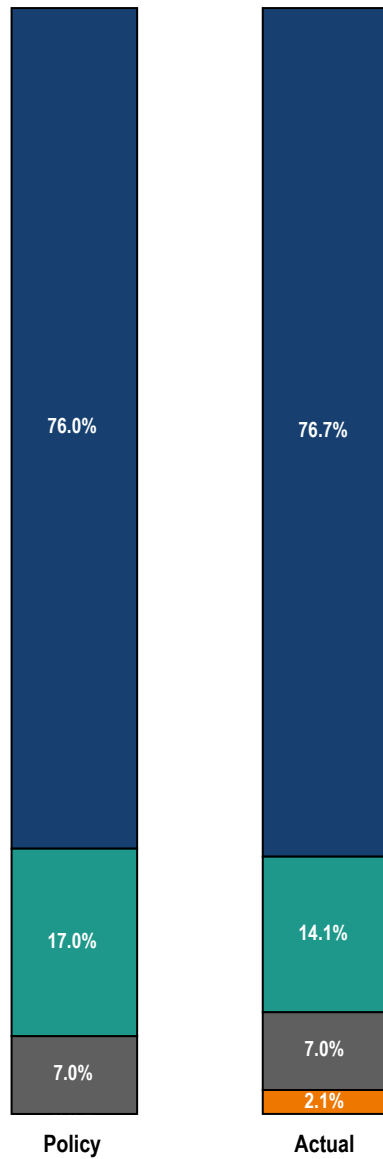


Asset Allocation History



Total Fund
Asset Allocation vs. Policy Target

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024



	Current Balance	Current Allocation	Policy Target	Difference
Growth	\$8,670,043,057	76.7	76.0	\$82,651,006
Liquidity	\$1,597,360,040	14.1	17.0	-\$323,503,972
Diversifying	\$789,772,989	7.0	7.0	-\$1,171,016
Cash & Overlay	\$242,023,982	2.1	0.0	\$242,023,982
Total	\$11,299,200,066	100.0	100.0	

Policy Targets approved July 2023.

Total Fund
Executive Summary (Net of Fees)

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

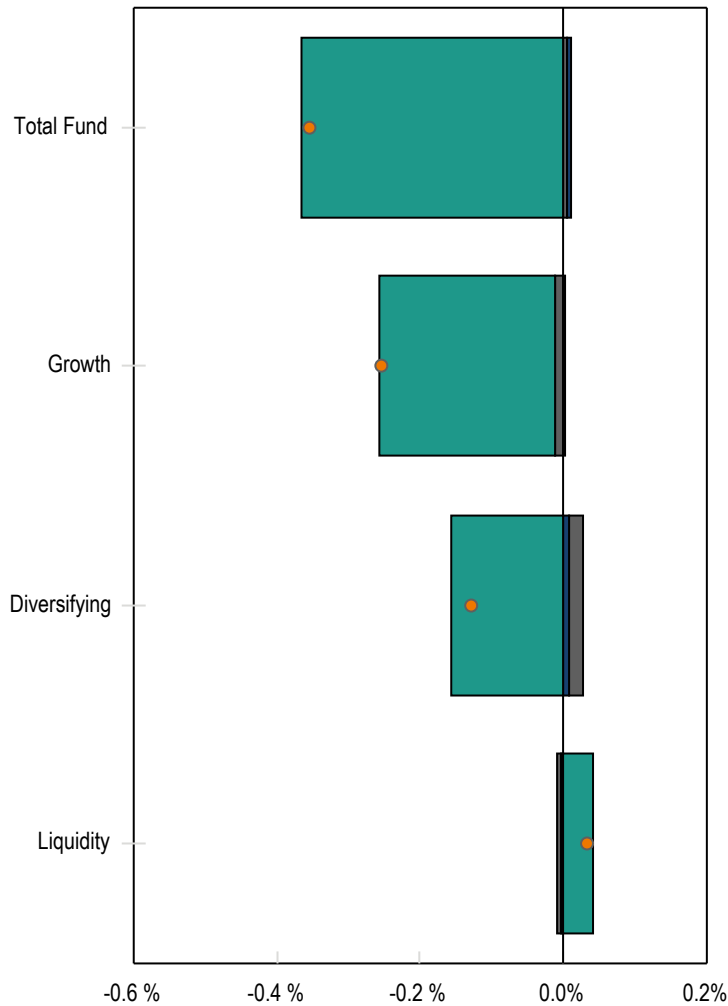
	% of Portfolio	QTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019
Total Fund	100.0	1.4	4.7	8.6	2.2	5.8	6.0	9.0	-10.6	13.9	9.2	14.6
Policy Index		1.7	4.3	8.4	3.8	7.2	6.8	9.9	-8.4	15.3	10.8	14.6
Implementation Benchmark		1.6	3.9	8.0	3.0	6.0	6.1	9.0	-8.7	14.2	8.7	13.6
Growth	76.7	1.6	5.7	9.7	3.1	7.7	7.6	10.1	-11.7	19.2	12.0	18.3
Custom Growth Benchmark		2.0	5.3	9.4	4.5	9.3	8.5	11.2	-10.3	21.6	13.8	19.3
Diversifying	7.0	-1.1	0.0	1.1	-1.2	-0.3	0.0	2.2	-5.7	1.7	-1.7	6.8
Custom Diversifying Benchmark		0.9	1.2	5.4	1.2	2.1	2.9	7.4	-5.7	1.6	4.7	6.1
Liquidity	14.1	1.2	2.0	5.6	1.1	1.6	-	5.4	-3.5	-0.3	3.4	4.8
Bloomberg U.S. Gov/Credit 1-3 Year Index		1.0	1.4	4.9	0.6	1.2	-	4.6	-3.7	-0.5	3.3	4.0

*Correlation between the Growth and Diversifying composites is .82, .62, and .64 over the previous 1, 3, and 5 year periods respectively.

Total Fund
 Attribution Analysis - Asset Class Level (Net of Fees)

Contra Costa County Employees' Retirement Association
 Period Ending: June 30, 2024

Attribution Effects
 3 Months Ending June 30, 2024



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

Performance Attribution

	3 Mo
Wtd. Actual Return	1.4
Wtd. Index Return	1.7
Excess Return	-0.4
Selection Effect	-0.4
Allocation Effect	0.0
Interaction Effect	0.0

Attribution Summary
 Last 3 Months

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Growth	1.6	2.0	-0.3	-0.2	0.0	0.0	-0.3
Diversifying	-1.1	0.9	-1.9	-0.2	0.0	0.0	-0.1
Liquidity	1.2	1.0	0.3	0.0	0.0	0.0	0.0
Total Fund	1.4	1.7	-0.4	-0.4	0.0	0.0	-0.4

Performance attribution calculated from benchmark returns and weightings of each component.

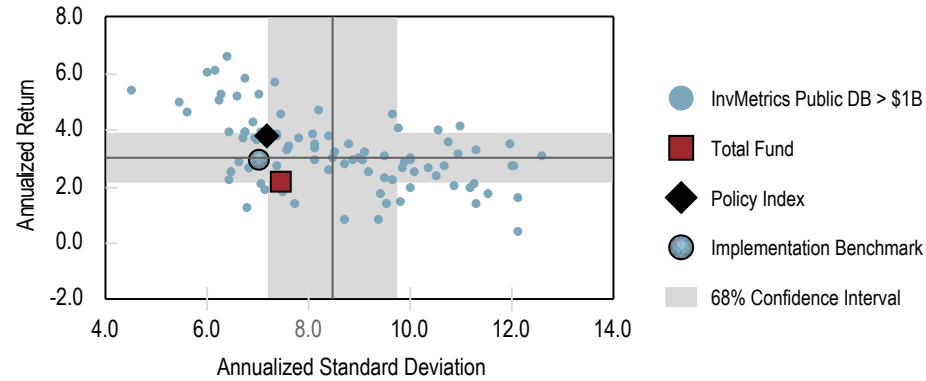
Total Fund
Executive Summary (Net of Fees)

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

3 Years

	Anlzd Return	Ann Excess Performance	Anlzd Standard Deviation	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
Total Fund	2.21	-0.76	7.46	-0.87	1.05	1.10	0.98	-0.08	-0.65	99.53	113.99

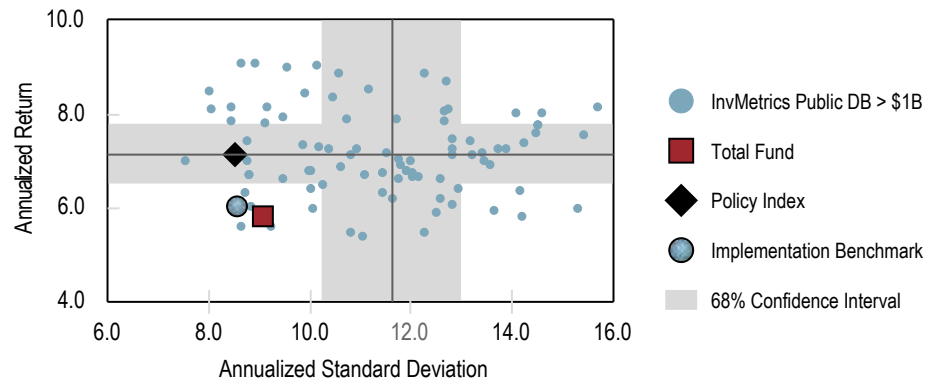
Risk vs. Return



5 Years

	Anlzd Return	Ann Excess Performance	Standard Deviation	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
Total Fund	5.85	-0.20	9.06	-0.47	1.05	1.12	0.99	0.44	-0.13	103.14	110.45

Risk vs. Return



Total Fund
Performance Summary (Gross of Fees)

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019	Inception	Inception Date
Total Fund	11,299,200,066	100.0	1.4	4.8	8.8	2.5	6.1	6.3	9.2	-10.4	14.2	9.5	14.9		
Policy Index			1.7	4.3	8.4	3.8	7.2	6.8	9.9	-8.4	15.3	10.8	14.6		
Implementation Benchmark			1.6	3.9	8.0	3.0	6.0	6.1	9.0	-8.7	14.2	8.7	13.6		
InvMetrics Public DB > \$1B Rank			24	61	75	78	90	68	85	51	65	80	87		
Total Fund ex Overlay & Cash	11,057,176,085	97.9	1.4	4.8	8.8	2.7	6.3	6.4	9.1	-9.9	14.6	9.7	14.7		
Policy Index			1.7	4.3	8.4	3.8	7.2	6.8	9.9	-8.4	15.3	10.8	14.6		
Implementation Benchmark			1.6	3.9	8.0	3.0	6.0	6.1	9.0	-8.7	14.2	8.7	13.6		
InvMetrics Public DB > \$1B Rank			24	61	76	70	85	57	86	44	60	76	88		
Growth	8,670,043,057	76.7	1.7	5.8	9.9	3.3	8.0	8.0	10.3	-11.4	19.6	12.4	18.7		
Custom Growth Benchmark			2.0	5.3	9.4	4.5	9.3	8.5	11.2	-10.3	21.6	13.8	19.3		
Total Domestic Equity	2,136,542,782	18.9	2.1	11.8	21.2	5.5	11.9	11.0	21.6	-18.3	20.6	22.2	26.7		
Russell 3000 Index			3.2	13.6	23.1	8.1	14.1	12.1	26.0	-19.2	25.7	20.9	31.0		
InvMetrics Public DB US Equity Rank			39	52	56	79	92	81	77	52	98	15	99		
BlackRock Russell 1000 Index	1,286,476,554	11.4	3.6	14.2	23.9	8.8	14.6	-	26.6	-19.1	26.5	21.0	31.4	13.9	May-17
Russell 1000 Index			3.6	14.2	23.9	8.7	14.6	-	26.5	-19.1	26.5	21.0	31.4	13.9	
eV US Large Cap Equity Rank			34	39	40	44	39	-	34	70	56	35	40		
Boston Partners	426,935,345	3.8	-1.3	10.6	21.5	9.7	12.7	10.2	14.7	-3.8	31.3	3.0	24.3	10.9	Jun-95
Russell 1000 Value Index			-2.2	6.6	13.1	5.5	9.0	8.2	11.5	-7.5	25.2	2.8	26.5	9.3	
eV US Large Cap Value Equity Rank			55	20	14	16	26	31	39	36	19	64	79		
Emerald Advisers	223,153,822	2.0	3.4	9.4	14.9	-0.5	8.6	10.4	19.2	-23.8	5.5	39.0	30.3	12.6	Apr-03
Russell 2000 Growth Index			-2.9	4.4	9.1	-4.9	6.2	7.4	18.7	-26.4	2.8	34.6	28.5	10.2	
eV US Small Cap Growth Equity Rank			5	21	21	30	47	41	41	27	77	57	48		
Ceredex	199,977,061	1.8	-1.1	3.0	12.2	5.8	8.3	7.5	16.0	-8.5	28.4	2.3	18.4	10.3	Nov-11
Russell 2000 Value Index			-3.6	-0.8	10.9	-0.5	7.1	6.2	14.6	-14.5	28.3	4.6	22.4	9.2	
eV US Small Cap Value Equity Rank			17	40	52	29	76	65	61	28	59	70	88		

Individual closed end funds are not shown in performance summary table.

Total Fund
Performance Summary (Gross of Fees)

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019	Inception	Inception Date
Total International Equity	1,505,041,786	13.3	1.6	6.3	11.9	-1.1	6.3	4.7	15.4	-18.2	8.3	15.8	23.7		Sep-88
MSCI AC World ex USA Index			1.2	6.0	12.2	1.0	6.1	4.3	16.2	-15.6	8.3	11.1	22.1		
MSCI EAFE Index			-0.2	5.7	12.1	3.4	7.0	4.8	18.9	-14.0	11.8	8.3	22.7		
InvMetrics Public DB Global ex-US Equity Rank			20	40	44	90	45	43	82	64	54	29	43		
International Equity	968,878,094	8.6	-0.5	3.6	8.1	-0.3	6.7	5.2	15.6	-18.1	9.0	19.0	27.0	6.3	Oct-10
MSCI AC World ex USA Index			1.2	6.0	12.2	1.0	6.1	4.3	16.2	-15.6	8.3	11.1	22.1	5.1	
InvMetrics Public DB Global ex-US Equity Rank			92	95	92	74	37	30	79	61	43	15	16		
Pyrford	492,099,248	4.4	0.5	2.2	6.9	3.3	5.8	4.4	15.2	-7.0	7.6	4.7	22.1	4.6	May-14
MSCI AC World ex USA Value			1.3	4.7	13.5	3.5	5.3	2.8	17.3	-8.6	10.5	-0.8	15.7	3.1	
eV ACWI ex-US Value Equity Rank			54	75	92	58	84	58	83	21	84	47	38		
William Blair	476,778,846	4.2	-1.5	5.1	9.3	-3.7	7.4	5.8	16.2	-27.7	10.5	33.3	32.0	6.8	Nov-10
MSCI AC World ex USA Growth			0.7	6.7	9.9	-2.6	5.5	4.7	14.0	-23.1	5.1	22.2	27.3	5.3	
eV ACWI ex-US Growth Equity Rank			72	45	45	62	40	68	59	56	41	36	38		
Emerging Markets Equity	536,163,692	4.7	5.8	11.7	18.2	-1.8	5.9	-	14.4	-18.4	7.6	11.4	19.4	5.6	Feb-17
MSCI Emerging Markets			5.0	7.5	12.5	-5.1	3.1	-	9.8	-20.1	-2.5	18.3	18.4	4.5	
InvMetrics Public DB Emerging Markets Equity Rank			35	13	42	37	10	-	60	36	20	76	26		
PIMCO RAE Emerging Markets	273,873,447	2.4	5.5	10.3	22.4	5.8	8.9	-	23.1	-9.7	17.1	2.1	14.6	7.7	Mar-17
MSCI Emerging Markets Value			5.1	6.5	14.1	-1.1	2.9	-	14.2	-15.8	4.0	5.5	12.0	3.9	
eV Emg Mkts All Cap Value Equity Rank			17	13	5	7	5	-	11	34	8	85	78		
TT Emerging Markets	262,290,245	2.3	6.0	13.2	14.2	-8.8	2.9	-	5.8	-26.4	-0.2	20.8	24.8	2.9	Aug-17
MSCI Emerging Markets			5.0	7.5	12.5	-5.1	3.1	-	9.8	-20.1	-2.5	18.3	18.4	2.7	
eV Emg Mkts Equity Rank			24	9	41	94	79	-	91	90	58	39	24		
Total Global Equity	1,240,758,085	11.0	1.5	10.6	16.9	3.9	10.6	9.4	19.0	-18.8	14.1	25.3	28.9		Dec-03
MSCI AC World Index			2.9	11.3	19.4	5.4	10.8	8.4	22.2	-18.4	18.5	16.3	26.6	7.9	
InvMetrics Public DB Global Equity Rank			36	13	65	74	43	1	65	58	47	1	10		
Artisan Partners	634,593,849	5.6	1.7	12.9	21.3	2.0	12.2	11.9	24.5	-29.6	15.0	41.7	37.0	12.8	Oct-12
MSCI ACWI Growth NR USD			6.2	16.3	24.7	5.5	13.8	11.1	33.2	-28.6	17.1	33.6	32.7	12.1	
eV Global Growth Equity Rank			44	29	27	43	26	20	37	61	56	33	12		
First Eagle	606,164,236	5.4	1.4	8.1	12.4	5.9	8.5	7.2	13.7	-5.6	13.0	8.5	21.0	8.3	Jan-11
MSCI ACWI Value NR USD			-0.6	6.2	13.9	4.8	7.0	5.4	11.8	-7.5	19.6	-0.3	20.6	6.6	
eV Global Value Equity Rank			17	19	49	29	46	26	67	22	87	33	64		

Individual closed end funds are not shown in performance summary table.

Total Fund
Performance Summary (Gross of Fees)

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019	Inception	Inception Date
Private Credit	1,167,689,299	10.3	5.4	5.6	10.3	9.4	8.7	9.1	9.1	10.5	10.0	4.0	7.7		
Total High Yield	161,940,512	1.4	1.6	3.0	9.9	1.7	3.7	3.8	12.4	-10.6	5.3	5.2	15.3		
ICE BofA U.S. High Yield Index			1.1	2.6	10.4	1.6	3.7	4.2	13.5	-11.2	5.4	6.2	14.4		
eV US High Yield Fixed Inc Rank			21	56	72	78	83	92	63	74	55	73	36		
Voya Global Investors	161,940,512	1.4	1.6	3.0	9.9	1.7	3.7	3.8	12.4	-10.6	5.3	5.2	15.3	6.3	May-00
ICE BofA U.S. High Yield Index			1.1	2.6	10.4	1.6	3.7	4.2	13.5	-11.2	5.4	6.2	14.4	6.5	
eV US High Yield Fixed Inc Rank			21	56	72	78	83	92	63	74	55	73	36		
Total Real Estate	786,042,923	7.0	-1.7	-7.8	-13.3	-4.8	-2.1	3.8	-10.6	-5.2	19.2	-5.9	8.1		
Real Estate Benchmark			-1.8	-8.4	-14.4	-4.8	-0.8	3.6	-11.3	-4.5	19.3	0.6	7.5		
NCREIF-ODCE			-0.4	-2.8	-9.3	1.9	3.2	6.4	-12.0	7.5	22.2	1.2	5.3		
NCREIF Property Index			-0.3	-1.2	-5.5	2.3	3.4	6.1	-7.9	5.5	17.7	1.6	6.4		
Total Core Real Estate	212,316,052	1.9	-0.4	-0.8	6.9	0.3	4.9	6.7	12.8	-24.8	48.3	-4.6	28.2		
Adelante	97,762,527	0.9	-0.4	0.4	8.6	1.1	5.4	7.0	17.2	-26.7	48.3	-4.6	28.2	9.5	Oct-01
Wilshire U.S. REIT Index			-0.2	-0.3	8.6	0.3	4.0	5.9	16.2	-26.8	46.2	-7.9	25.8	8.9	
Invesco US Fundamental Beta	114,553,525	1.0	-0.3	-1.8	5.5	-	-	-	9.4	-	-	-	-	-3.8	Mar-22
Wilshire U.S. REIT Index			-0.2	-0.3	8.6	-	-	-	16.2	-	-	-	-	-2.5	
Total Private Real Estate	573,726,872	5.1	-2.2	-10.4	-19.7	-6.6	-3.7	3.1	-17.6	1.3	15.3	-6.1	6.2		
Private Equity	1,321,162,932	11.7	0.8	0.9	1.0	8.9	12.7	11.8	-1.0	-0.5	60.4	8.7	8.4		
Risk Parity	350,864,737	3.1	0.3	3.3	5.7	-4.2	1.5	-	4.9	-21.5	9.7	10.0	18.1		
60% MSCI ACWI Net/40% Blmbg. Global Aggregate			1.3	5.3	11.7	1.1	5.7	-	15.4	-17.3	8.8	14.0	18.6		
AQR Global Risk Premium-EL	183,416,932	1.6	0.3	3.7	7.8	-1.3	2.9	-	7.0	-16.3	10.7	6.2	18.7	4.8	Jan-19
HFR Risk Parity Vol 10 Index			0.3	4.5	10.4	-1.2	1.8	-	10.5	-18.3	6.8	3.6	18.4	3.9	
PanAgora Risk Parity Multi Asset	167,447,805	1.5	0.2	2.9	3.4	-7.0	0.2	-	2.8	-26.1	8.7	14.0	-	1.8	Mar-19
HFR Risk Parity Vol 10 Index			0.3	4.5	10.4	-1.2	1.8	-	10.5	-18.3	6.8	3.6	-	2.9	

Individual closed end funds are not shown in performance summary table.

Total Fund
Performance Summary (Gross of Fees)

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019	Inception	Inception Date
Diversifying	789,772,989	7.0	-1.0	0.2	1.5	-0.8	0.1	0.3	2.6	-5.4	2.0	-1.3	7.1		
Custom Diversifying Benchmark			0.9	1.2	5.4	1.2	2.1	2.9	7.4	-5.7	1.6	4.7	6.1		
Diversifying Fixed Income	219,913,834	1.9	0.7	0.5	3.8	-2.8	-1.0	0.8	5.5	-13.3	-0.7	1.6	8.6		
Blmbg. U.S. Aggregate Index			0.1	-0.7	2.6	-3.0	-0.2	1.3	5.5	-13.0	-1.5	7.5	8.7		
eV US Core Fixed Inc Rank			10	16	35	77	100	100	84	75	33	100	79		
AFL-CIO	219,866,759	1.9	0.7	0.5	3.8	-2.8	-0.2	1.5	5.5	-13.3	-0.7	6.6	8.2	5.1	Jul-91
Blmbg. U.S. Aggregate Index			0.1	-0.7	2.6	-3.0	-0.2	1.3	5.5	-13.0	-1.5	7.5	8.7	4.8	
eV US Core Fixed Inc Rank			10	16	35	79	94	90	85	75	33	94	85		
Diversifying Multi-Asset	569,859,154	5.0	-1.6	0.1	0.6	-0.1	-	-	1.4	-1.9	2.8	-	-		
Custom Diversifying Multi-Asset Benchmark			1.5	2.6	7.4	3.1	-	-	8.7	-3.1	4.1	-	-		
Sit LLCAR	372,820,504	3.3	0.2	2.0	5.5	2.0	-	-	6.9	-3.3	-	-	-	3.0	Apr-21
Blmbg. U.S. Aggregate Index +1%			0.3	-0.2	3.7	-2.0	-	-	6.6	-12.1	-	-	-	-1.3	
BH-DG Systematic	197,038,650	1.7	-	-	-	-	-	-	-	-	-	-	-	-3.0	Apr-24
SG Trend Index			-3.2	-	-	-	-	-	-	-	-	-	-	-4.3	
Liquidity	1,597,360,040	14.1	1.2	2.1	5.7	1.2	1.7	-	5.5	-3.4	-0.2	3.5	4.9	2.2	Nov-16
Blmbg. 1-3 Year Gov/Credit Index			1.0	1.4	4.9	0.6	1.2	-	4.6	-3.7	-0.5	3.3	4.0	1.5	
eV US Short Duration Fixed Inc Rank			22	32	43	43	54	-	44	49	46	74	39	26	
DFA Short Credit	367,733,492	3.3	1.4	2.9	6.2	0.7	1.3	-	5.4	-5.3	-0.4	2.9	5.2	1.8	Dec-16
ICE BofA 1-5 Year U.S. Corp/Govt Index			0.9	1.1	4.8	-0.2	1.1	-	4.9	-5.5	-0.9	4.6	5.1	1.5	
eV US Short Duration Fixed Inc Rank			10	11	29	72	82	-	47	90	68	88	26		
Insight Short Duration	599,621,524	5.3	1.3	2.2	5.8	2.2	2.4	-	5.7	-1.1	0.1	3.2	4.7	2.4	Dec-16
Bloomberg U.S. Gov/Credit 1-3 Year Index			1.0	1.4	4.9	0.6	1.2	-	4.6	-3.7	-0.5	3.3	4.0	1.5	
eV US Short Duration Fixed Inc Rank			17	25	39	10	17	-	33	6	33	84	48		
Sit Short Duration	630,005,024	5.6	1.1	1.5	5.2	0.3	1.3	-	5.4	-4.8	-0.3	4.6	4.9	1.9	Dec-16
Blmbg. 1-3 Year Govt Index			0.9	1.2	4.5	0.3	1.0	-	4.3	-3.8	-0.6	3.1	3.6	1.3	
eV US Short Duration Fixed Inc Rank			54	74	68	85	84	-	50	79	59	30	40		
Total Cash	111,025,031	1.0	1.4	2.8	5.7	3.6	2.8	1.9	5.5	2.4	0.4	1.3	3.3		
90 Day U.S. Treasury Bill			1.3	2.6	5.4	3.0	2.2	1.5	5.0	1.5	0.0	0.7	2.3		
Cash	111,020,415	1.0	1.4	2.8	5.7	3.7	2.9	2.0	6.1	2.2	0.4	1.3	3.4	17.2	Apr-98
Northern Trust Transition	4,617	0.0	4.4	5.8	8.7	-80.5	-56.9	-	-99.2	-4.8	-6.1	104.1	-		

Individual closed end funds are not shown in performance summary table. Effective 3/1/2019 the custodian of record switched from State Street to Northern Trust. Wellington Real Total Return was liquidated 4/30/2020. \$47,075.25 in residual value is reflected in the Diversifying Fixed Income composite.

Total Fund
Performance Summary (Net of Fees)

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019	Inception	Inception Date
Total Fund	11,299,200,066	100.0	1.4	4.7	8.6	2.2	5.8	6.0	9.0	-10.6	13.9	9.2	14.6		
Policy Index			1.7	4.3	8.4	3.8	7.2	6.8	9.9	-8.4	15.3	10.8	14.6		
Implementation Benchmark			1.6	3.9	8.0	3.0	6.0	6.1	9.0	-8.7	14.2	8.7	13.6		
Total Fund ex Overlay & Cash	11,057,176,085	97.9	1.4	4.7	8.6	2.5	6.1	6.1	8.9	-10.1	14.3	9.4	14.3		
Policy Index			1.7	4.3	8.4	3.8	7.2	6.8	9.9	-8.4	15.3	10.8	14.6		
Implementation Benchmark			1.6	3.9	8.0	3.0	6.0	6.1	9.0	-8.7	14.2	8.7	13.6		
Growth	8,670,043,057	76.7	1.6	5.7	9.7	3.1	7.7	7.6	10.1	-11.7	19.2	12.0	18.3		
Custom Growth Benchmark			2.0	5.3	9.4	4.5	9.3	8.5	11.2	-10.3	21.6	13.8	19.3		
Total Domestic Equity	2,136,542,782	18.9	2.0	11.6	20.9	5.3	11.6	10.6	21.4	-18.5	20.2	21.8	26.1	-	Sep-82
Russell 3000 Index			3.2	13.6	23.1	8.1	14.1	12.1	26.0	-19.2	25.7	20.9	31.0	11.9	
BlackRock Russell 1000 Index	1,286,476,554	11.4	3.6	14.2	23.9	8.7	14.6	-	26.6	-19.1	26.5	20.9	31.4	13.9	May-17
Russell 1000 Index			3.6	14.2	23.9	8.7	14.6	-	26.5	-19.1	26.5	21.0	31.4	13.9	
Boston Partners	426,935,345	3.8	-1.3	10.4	21.1	9.3	12.3	9.8	14.3	-4.1	31.0	2.6	23.8	10.8	Jun-95
Russell 1000 Value Index			-2.2	6.6	13.1	5.5	9.0	8.2	11.5	-7.5	25.2	2.8	26.5	9.3	
Emerald Advisers	223,153,822	2.0	3.3	9.0	14.4	-1.1	7.9	9.7	18.6	-24.2	4.9	38.2	29.4	12.2	Apr-03
Russell 2000 Growth Index			-2.9	4.4	9.1	-4.9	6.2	7.4	18.7	-26.4	2.8	34.6	28.5	10.1	
Ceredex	199,977,061	1.8	-1.3	2.7	11.7	5.2	7.8	6.9	15.5	-9.0	27.7	1.7	17.7	9.7	Nov-11
Russell 2000 Value Index			-3.6	-0.8	10.9	-0.5	7.1	6.2	14.6	-14.5	28.3	4.6	22.4	9.2	
Total International Equity	1,505,041,786	13.3	1.6	6.2	11.7	-1.5	5.8	4.3	15.1	-18.6	7.8	15.2	23.2		
MSCI AC World ex USA Index			1.2	6.0	12.2	1.0	6.1	4.3	16.2	-15.6	8.3	11.1	22.1		
MSCI EAFE Index			-0.2	5.7	12.1	3.4	7.0	4.8	18.9	-14.0	11.8	8.3	22.7		
International Equity	968,878,094	8.6	-0.6	3.5	7.7	-0.7	6.3	4.8	15.2	-18.4	8.6	18.5	26.5		
MSCI AC World ex USA Index			1.2	6.0	12.2	1.0	6.1	4.3	16.2	-15.6	8.3	11.1	22.1		
Pyrford	492,099,248	4.4	0.4	2.0	6.4	2.8	5.3	4.0	14.7	-7.4	7.1	4.2	21.6	4.2	May-14
MSCI AC World ex USA Value			1.3	4.7	13.5	3.5	5.3	2.8	17.3	-8.6	10.5	-0.8	15.7	3.1	
William Blair	476,778,846	4.2	-1.6	5.0	9.1	-4.0	7.0	5.4	15.8	-28.0	10.1	32.8	31.5	6.4	Nov-10
MSCI AC World ex USA Growth			0.7	6.7	9.9	-2.6	5.5	4.7	14.0	-23.1	5.1	22.2	27.3	5.3	
Emerging Markets Equity	536,163,692	4.7	5.8	11.7	18.2	-2.1	5.4	-	14.4	-18.9	7.0	10.7	18.7		
MSCI Emerging Markets			5.0	7.5	12.5	-5.1	3.1	-	9.8	-20.1	-2.5	18.3	18.4	4.5	
PIMCO RAE Emerging Markets	273,873,447	2.4	5.5	10.3	22.4	5.5	8.5	-	23.0	-10.1	16.5	1.6	14.0	7.3	Mar-17
MSCI Emerging Markets Value			5.1	6.5	14.1	-1.1	2.9	-	14.2	-15.8	4.0	5.5	12.0	3.9	
TT Emerging Markets	262,290,245	2.3	6.0	13.2	14.2	-9.1	2.4	-	5.8	-26.8	-0.9	20.0	24.0	2.3	Aug-17
MSCI Emerging Markets			5.0	7.5	12.5	-5.1	3.1	-	9.8	-20.1	-2.5	18.3	18.4	2.7	

Individual closed end funds are not shown in performance summary table.

Total Fund
Performance Summary (Net of Fees)

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019	Inception	Inception Date
Total Global Equity	1,240,758,085	11.0	1.3	10.2	16.1	3.1	9.7	8.6	18.2	-19.4	13.2	24.4	27.9		
MSCI AC World Index			2.9	11.3	19.4	5.4	10.8	8.4	22.2	-18.4	18.5	16.3	26.6		
Artisan Partners	634,593,849	5.6	1.5	12.5	20.4	1.2	11.4	11.1	23.6	-30.1	14.1	40.6	36.0	12.0	Oct-12
MSCI ACWI Growth NR USD			6.2	16.3	24.7	5.5	13.8	11.1	33.2	-28.6	17.1	33.6	32.7	12.1	
First Eagle	606,164,236	5.4	1.2	7.7	11.5	5.1	7.7	6.4	12.9	-6.3	12.1	7.7	20.1	7.6	Jan-11
MSCI ACWI Value NR USD			-0.6	6.2	13.9	4.8	7.0	5.4	11.8	-7.5	19.6	-0.3	20.6	6.6	
Private Credit	1,167,689,299	10.3	5.4	5.6	10.3	9.4	8.7	8.8	9.1	10.5	10.0	4.0	7.7		
Total High Yield	161,940,512	1.4	1.5	2.8	9.3	1.3	3.2	3.3	11.8	-10.9	4.9	4.7	14.7		
ICE BofA US High Yield Master II			1.1	2.6	10.5	1.6	3.7	4.2	13.5	-11.2	5.3	6.1	14.4	6.4	
Voya Global Investors	161,940,512	1.4	1.5	2.8	9.3	1.3	3.2	3.3	11.8	-10.9	4.9	4.7	14.7	6.1	May-00
ICE BofA US High Yield Master II			1.1	2.6	10.5	1.6	3.7	4.2	13.5	-11.2	5.3	6.1	14.4	6.5	
Total Real Estate	786,042,923	7.0	-1.7	-8.0	-13.6	-4.9	-2.2	3.5	-10.7	-5.3	19.2	-6.0	8.1		
Real Estate Benchmark			-1.8	-8.4	-14.4	-4.8	-0.8	3.6	-11.3	-4.5	19.3	0.6	7.5		
NCREIF-ODCE			-0.4	-2.8	-9.3	1.9	3.2	6.4	-12.0	7.5	22.2	1.2	5.3		
NCREIF Property Index			-0.3	-1.2	-5.5	2.3	3.4	6.1	-7.9	5.5	17.7	1.6	6.4		
Total Core Real Estate	212,316,052	1.9	-0.4	-1.0	6.6	-0.1	4.5	6.2	12.4	-25.1	47.5	-5.2	27.5		
Adelante	97,762,527	0.9	-0.5	0.1	8.0	0.5	4.8	6.5	16.5	-27.2	47.5	-5.2	27.5	9.2	Oct-01
Wilshire U.S. REIT Index			-0.2	-0.3	8.6	0.3	4.0	5.9	16.2	-26.8	46.2	-7.9	25.8	8.9	
Invesco US Fundamental Beta	114,553,525	1.0	-0.4	-1.9	5.3	-	-	-	9.2	-	-	-	-	-3.9	Mar-22
Wilshire U.S. REIT Index			-0.2	-0.3	8.6	-	-	-	16.2	-	-	-	-	-2.5	
Total Private Real Estate	573,726,872	5.1	-2.2	-10.7	-20.0	-6.7	-3.8	2.8	-17.6	1.3	15.3	-6.1	6.2		
Private Equity	1,321,162,932	11.7	0.8	0.9	1.0	8.9	12.7	11.5	-1.0	-0.5	60.4	8.7	8.4		
Risk Parity	350,864,737	3.1	0.2	3.2	5.5	-4.5	1.2	-	4.7	-21.8	9.3	9.6	17.7		
60% MSCI ACWI Net/40% Blmbg. Global Aggregate			1.3	5.3	11.7	1.1	5.7	-	15.4	-17.3	8.8	14.0	18.6		
AQR Global Risk Premium-EL	183,416,932	1.6	0.3	3.7	7.8	-1.5	2.6	-	6.8	-16.6	10.3	5.8	18.3	4.5	Jan-19
HFR Risk Parity Vol 10 Index			0.3	4.5	10.4	-1.2	1.8	-	10.5	-18.3	6.8	3.6	18.4	3.9	
PanAgora Risk Parity Multi Asset	167,447,805	1.5	0.2	2.7	3.1	-7.3	-0.2	-	2.4	-26.3	8.3	13.6	-	1.4	Mar-19
HFR Risk Parity Vol 10 Index			0.3	4.5	10.4	-1.2	1.8	-	10.5	-18.3	6.8	3.6	-	2.9	

Individual closed end funds are not shown in performance summary table.

Total Fund
Performance Summary (Net of Fees)

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019	Inception	Inception Date
Diversifying	789,772,989	7.0	-1.1	0.0	1.1	-1.2	-0.3	0.0	2.2	-5.7	1.7	-1.7	6.8		
<i>Custom Diversifying Benchmark</i>			0.9	1.2	5.4	1.2	2.1	2.9	7.4	-5.7	1.6	4.7	6.1		
Diversifying Fixed Income	219,913,834	1.9	0.6	0.3	3.5	-3.1	-1.3	0.5	5.2	-13.5	-1.0	1.2	8.3		
<i>Blmbg. U.S. Aggregate Index</i>			0.1	-0.7	2.6	-3.0	-0.2	1.3	5.5	-13.0	-1.5	7.5	8.7		
AFL-CIO	219,866,759	1.9	0.6	0.3	3.5	-3.1	-0.5	1.1	5.2	-13.6	-1.0	6.2	7.8	4.8	Jul-91
<i>Blmbg. U.S. Aggregate Index</i>			0.1	-0.7	2.6	-3.0	-0.2	1.3	5.5	-13.0	-1.5	7.5	8.7	4.8	
Diversifying Multi-Asset	569,859,154	5.0	-1.7	-0.1	0.2	-0.5	-	-	0.9	-2.3	2.4	-	-		
<i>Custom Diversifying Multi-Asset Benchmark</i>			1.5	2.6	7.4	3.1	-	-	8.7	-3.1	4.1	-	-		
Sit LLCAR	372,820,504	3.3	0.1	1.8	5.1	1.7	-	-	6.5	-3.7	-	-	-	2.7	Apr-21
<i>Blmbg. U.S. Aggregate +1%</i>			0.3	-0.2	3.7	-2.0	-	-	6.6	-12.1	-	-	-	-1.3	
BH-DG Systematic	197,038,650	1.7	-	-	-	-	-	-	-	-	-	-	-	-3.0	Apr-24
<i>SG Trend Index</i>			-3.2	-	-	-	-	-	-	-	-	-	-	-4.3	
Liquidity	1,597,360,040	14.1	1.2	2.0	5.6	1.1	1.6	-	5.4	-3.5	-0.3	3.4	4.8		
<i>Blmbg. 1-3 Year Gov/Credit Index</i>			1.0	1.4	4.9	0.6	1.2	-	4.6	-3.7	-0.5	3.3	4.0		
DFA Short Credit	367,733,492	3.3	1.4	2.8	6.1	0.6	1.2	-	5.3	-5.4	-0.5	2.8	5.2	1.7	Dec-16
<i>ICE BofA 1-5 Year U.S. Corp/Govt</i>			0.9	1.1	4.8	-0.2	1.1	-	4.9	-5.5	-0.9	4.6	5.1	1.5	
Insight Short Duration	599,621,524	5.3	1.3	2.2	5.8	2.1	2.3	-	5.7	-1.2	0.0	3.1	4.6	2.3	Dec-16
<i>Bloomberg U.S. Gov/Credit 1-3 Year Index</i>			1.0	1.4	4.9	0.6	1.2	-	4.6	-3.7	-0.5	3.3	4.0	1.5	
Sit Short Duration	630,005,024	5.6	1.0	1.4	5.1	0.2	1.2	-	5.2	-5.0	-0.5	4.4	4.7	1.8	Dec-16
<i>Blmbg. 1-3 Year Govt Index</i>			0.9	1.2	4.5	0.3	1.0	-	4.3	-3.8	-0.6	3.1	3.6	1.3	
Total Cash	111,025,031	1.0	1.4	2.8	5.7	3.6	2.8	1.9	5.5	2.4	0.4	1.3	3.3		
<i>90 Day U.S. Treasury Bill</i>			1.3	2.6	5.4	3.0	2.2	1.5	5.0	1.5	0.0	0.7	2.3		
Cash	111,020,415	1.0	1.4	2.8	5.7	3.7	2.9	2.0	6.1	2.2	0.4	1.3	3.4		
Northern Trust Transition	4,617	0.0	4.4	5.8	8.7	-80.5	-56.9	-	-99.2	-4.8	-6.1	104.1	-		

Individual closed end funds are not shown in performance summary table. Effective 3/1/2019 the custodian of record switched from State Street to Northern Trust. Wellington Real Total Return was liquidated 4/30/2020. \$47,075.25 in residual value is reflected in the Diversifying Fixed Income composite.

Total Fund
Closed End Funds - Investment Summary

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

StepStone Group Analysis (*)

Closing Date	Manager Name/Fund Name	Estimated Market Value as of 6/30/2024 ¹	Total Commitment	Total % Called	Contributed Capital	Current Qtr. Change in Contributed Capital	Current Qtr. Change in Distributed Capital	Total Distributions	Remaining Commitment	Distrib./Paid-In (DPI) ²	Tot. Value/Paid-In (TVPI) ³	Latest Valuation
Private Equity & Venture Capital												
2/11/2004	Adams Street Partners	\$107,867,712	\$210,000,000	93%	\$195,823,407	\$0	\$4,157,988	\$288,204,328	\$14,176,593	1.47	2.02	3/31/2024
1/15/2009	Adams Street Partners II	\$3,223,082	\$30,000,000	95%	\$28,365,000	\$0	\$0	\$45,661,555	\$1,635,000	1.61	1.72	3/31/2024
9/21/2012	Adams Street Partners - Fund 5	\$10,173,649	\$40,000,000	77%	\$30,845,875	\$0	\$0	\$32,286,795	\$9,154,125	1.05	1.38	3/31/2024
1/18/1996	Adams Street Partners - BPF	\$472,566	\$59,565,614	97%	\$57,517,409	\$0	\$0	\$103,896,144	\$2,024,035	1.81	1.81	3/31/2024
3/31/2016	Adams Street Venture Innovation	\$157,150,606	\$75,000,000	92%	\$69,280,251	\$0	\$2,004,021	\$41,627,212	\$5,719,749	0.60	2.87	3/31/2024
5/18/2018	AE Industrial Partners Fund II, LP	\$37,297,774	\$35,000,000	105%	\$36,649,120	\$0	\$1,126,741	\$21,850,706	\$7,831,761	0.60	1.61	3/31/2024
11/27/2013	Aether Real Assets III	\$15,341,278	\$25,000,000	107%	\$26,707,255	\$54,323	\$637,590	\$8,507,323	\$796,512	0.32	0.89	3/31/2024
11/30/2013	Aether Real Assets III Surplus	\$36,490,193	\$50,000,000	107%	\$53,550,511	\$89,189	\$606,704	\$15,779,909	\$353,806	0.29	0.98	3/31/2024
1/30/2016	Aether Real Assets IV	\$46,719,938	\$50,000,000	102%	\$51,178,527	\$59,500	\$837,610	\$12,584,299	\$5,367,254	0.25	1.16	3/31/2024
6/29/2009	Bay Area Equity Fund II ⁴	\$13,078,593	\$10,000,000	100%	\$10,000,000	\$0	\$0	\$3,684,910	\$0	0.37	1.68	3/31/2024
6/30/2013	Commonfund	\$35,042,524	\$50,000,000	95%	\$47,749,993	\$0	\$828,435	\$36,231,577	\$2,250,007	0.76	1.49	3/31/2024
7/15/2005	EIF US Power Fund II ⁴	\$18,111	\$50,000,000	130%	\$65,029,556	\$0	\$0	\$76,092,655	\$0	1.17	1.17	12/31/2023
5/31/2007	EIF US Power Fund III ⁴	\$2,302,288	\$65,000,000	110%	\$71,409,097	\$0	\$0	\$93,077,887	\$0	1.30	1.34	3/31/2024
11/28/2011	EIF US Power Fund IV	\$17,689,654	\$50,000,000	130%	\$64,917,547	\$0	\$0	\$50,464,797	\$4	0.78	1.05	12/31/2023
11/28/2016	EIF US Power Fund V	\$31,720,231	\$50,000,000	143%	\$71,633,870	\$0	\$0	\$65,340,271	\$3,888,697	0.91	1.35	3/31/2024
3/31/2023	EQT X, L.P.	\$13,763,327	\$100,000,000	18%	\$18,000,288	-\$562,535	-\$213,947	\$2,471,665	\$84,353,094	0.14	0.90	3/31/2024
12/31/2023	EQT Infrastructure VI	\$18,529,925	\$125,000,000	20%	\$25,306,137	\$18,279,381	-\$17,398	\$881,061	\$100,420,675	0.03	0.77	3/31/2024
2/21/2019	Genstar Capital Partners IX, L.P.	\$70,351,040	\$50,000,000	98%	\$49,105,305	\$148,447	\$441,001	\$27,740,646	\$7,016,726	0.56	2.00	3/31/2024
4/1/2021	Genstar Capital Partners X, L.P.	\$41,426,199	\$42,500,000	95%	\$40,255,778	\$161,205	\$0	\$181,283	\$2,425,505	0.00	1.03	3/31/2024
6/30/2023	Genstar Capital Partners XI, L.P.	\$347,970	\$75,000,000	1%	\$594,094	\$295,883	\$276,405	\$276,405	\$74,682,312	0.47	1.05	3/31/2024
6/30/2023	Green Equity Investors IX	\$20,753,827	\$60,000,000	30%	\$17,866,412	\$6,276,844	\$0	\$640,219	\$42,773,807	0.04	1.20	6/30/2024
10/27/2020	GTCR Fund XIII, L.P.	\$34,718,147	\$50,000,000	65%	\$32,562,753	\$5,985,000	\$0	\$5,556,257	\$17,437,247	0.17	1.24	3/31/2024
6/30/2023	GTCR Fund XIV	\$118,131	\$100,000,000	0%	\$0	\$0	\$0	\$0	\$100,000,000	N/A	N/A	3/31/2024
5/10/2021	Hellman & Friedman Capital Partners X, L.P.	\$58,684,620	\$75,000,000	72%	\$54,291,281	\$0	\$0	\$5,333,316	\$24,705,082	0.10	1.18	3/31/2024
3/31/2023	Jade Equity Investors II, LP	-\$74,050	\$15,000,000	0%	\$0	\$0	\$0	\$0	\$15,000,000	N/A	N/A	6/30/2024
11/18/2009	Oaktree PIF 2009	\$325,151	\$40,000,000	87%	\$34,812,560	\$0	\$0	\$47,032,470	\$6,308,961	1.35	1.36	3/31/2024
5/2/2013	Ocean Avenue Fund II	\$17,008,965	\$30,000,000	90%	\$27,000,000	\$0	\$555,000	\$49,568,249	\$3,000,000	1.84	2.47	3/31/2024
4/15/2016	Ocean Avenue Fund III	\$51,764,703	\$50,000,000	93%	\$46,500,000	\$0	\$0	\$57,709,752	\$3,500,000	1.24	2.35	3/31/2024
11/30/2007	Paladin III	\$6,672,193	\$25,000,000	140%	\$35,078,514	\$0	\$0	\$72,045,990	\$387,482	2.05	2.24	3/31/2024
8/22/2011	Pathway 6	\$23,471,647	\$40,000,000	0%	\$39,706,254	\$41,242	\$1,530,223	\$58,556,530	\$3,678,788	1.47	2.07	12/31/2023
7/10/2013	Pathway 7	\$55,632,528	\$70,000,000	0%	\$69,920,536	\$94,500	\$3,985,806	\$94,936,293	\$5,258,418	1.36	2.15	12/31/2023
11/23/2015	Pathway 8	\$61,757,026	\$50,000,000	0%	\$49,474,302	\$78,888	\$2,394,562	\$47,060,699	\$3,069,662	0.95	2.20	12/31/2023
1/19/1999	Pathway	\$1,610,378	\$125,000,000	0%	\$126,605,914	\$0	\$0	\$190,811,769	\$10,519,913	N/A	N/A	12/31/2023
7/31/2009	Pathway 2008	\$9,546,080	\$30,000,000	0%	\$30,340,170	\$9,357	\$314,309	\$54,013,917	\$2,605,769	1.78	2.09	12/31/2023
6/3/2014	Siguler Guff CCCERA Opportunities	\$81,288,681	\$200,000,000	88%	\$175,083,208	\$0	\$19,389,119	\$260,598,930	\$28,597,500	1.49	1.95	3/31/2024
5/18/2018	Siris Partners IV, L.P.	\$45,876,571	\$35,000,000	111%	\$38,773,895	\$417,352	\$0	\$6,375,168	\$525,878	0.16	1.35	3/31/2024
6/30/2023	Symphony Technology Group VII	\$4,832,800	\$50,000,000	12%	\$6,068,399	\$0	\$0	\$0	\$43,931,601	0.00	0.80	3/31/2024
5/27/2021	TA XIV-A, L.P.	\$44,756,834	\$50,000,000	94%	\$47,000,000	\$5,250,000	\$0	\$1,500,000	\$4,500,000	0.03	0.98	3/31/2024
6/30/2023	TA XV-A, L.P.	\$0	\$90,000,000	0%	\$0	\$0	\$0	\$0	\$90,000,000	N/A	N/A	N/A
6/28/2019	TPG Healthcare Partners, L.P.	\$24,622,200	\$24,000,000	99%	\$23,653,717	\$0	\$287,916	\$6,599,452	\$3,098,020	0.28	1.32	3/31/2024
3/31/2023	TPG Healthcare Partners II	\$15,211,913	\$60,000,000	23%	\$13,790,105	\$0	\$0	\$0	\$46,233,847	0.00	1.10	3/31/2024
3/31/2023	TPG Partners IX	\$20,395,229	\$65,000,000	29%	\$19,102,674	\$1,848,862	\$0	\$26,805	\$45,898,482	0.00	1.07	3/31/2024
9/17/2021	Trident IX, L.P.	\$31,393,290	\$50,000,000	58%	\$28,842,239	\$3,341,854	\$0	\$115,762	\$21,273,524	0.00	1.09	3/31/2024
5/24/2019	Trident VIII, L.P.	\$50,117,112	\$40,000,000	97%	\$38,756,318	\$442,025	\$1,917,304	\$5,709,676	\$4,699,142	0.15	1.44	3/31/2024
12/8/2015	Wastewater Opportunity Fund	\$1,672,297	\$25,000,000	126%	\$31,579,656	\$66,898	\$4,403,832	\$31,480,004	\$521,541	1.00	1.05	3/31/2024
Total Private Equity and Venture Capital		\$1,321,162,932	\$2,691,065,614	74%	\$2,000,727,926	\$42,378,215	\$45,463,220	\$1,922,512,686	\$849,620,520	0.96	1.62	
% of Portfolio (Market Value)		11.7%										

* All Data provided by StepStone Group
¹ Latest valuation + capital calls - distributions
² (DPI) is equal to (capital returned / capital called)
³ (TVPI) is equal to (market value + capital returned) / capital called
⁴ Capital has been fully called and fund is in redemption.

Total Fund
Closed End Funds - IRR Summary

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

Private Equity & Venture Capital	Closing Date	Fund Level (G) ²	CCCERA (G)	Fund Level (N) ^{2,3}	CCCERA (N) ³	IRR Date
Adams Street Partners	2/11/2004	14.7%	14.7%	-	12.6%	12/31/2023
Adams Street Partners II	12/31/2008	16.3%	13.2%	-	10.5%	12/31/2023
Adams Street Partners - Fund 5	12/31/2008	9.1%	8.1%	-	6.7%	12/31/2023
Adams Street Partners Venture	1/18/1996	31.5%	31.4%	-	29.5%	12/31/2023
Adams Street Partners - BPF	3/31/2016	14.2%	14.2%	-	11.6%	12/31/2023
AE Industrial Partners Fund II, LP	5/18/2018	24.2%	-	21.3%	-	3/31/2024
Aether Real Assets III ¹	11/27/2013	-0.4%	-	-1.9%	-	3/31/2024
Aether Real Assets III Surplus ¹	11/30/2013	0.7%	-	-0.4%	-	3/31/2024
Aether Real Assets IV ¹	1/30/2016	4.7%	-	3.1%	-	3/31/2024
Bay Area Equity Fund II ⁹	11/26/2003	9.0%	9.0%	5.3%	5.3%	3/31/2024
CommonFund ¹	6/30/2013	-	-	-	6.7%	12/31/2023
Energy Investor Fund II ⁹	7/15/2005	5.6%	5.3%	2.9%	2.6%	3/31/2024
Energy Investor Fund V	11/28/2016	17.3%	-	12.1%	-	3/31/2024
Genstar Capital Partners IX, L.P.	2/21/2019	40.4%	-	32.1%	-	3/31/2024
Oaktree PIF 2009	2/28/2010	6.8%	-	6.5%	-	3/31/2024
Ocean Avenue II	8/15/2013	-	-	17.9%	-	3/31/2024
Ocean Avenue III	4/15/2016	-	-	23.2%	-	3/31/2024
Paladin III	11/30/2007	19.9%	-	13.0%	-	3/31/2024
Pathway 6	8/22/2011	16.6%	16.6%	13.8%	13.8%	3/31/2024
Benchmark ⁴		14.2%	-	-	-	3/31/2024
Pathway 7	7/10/2013	15.7%	15.7%	18.4%	18.4%	3/31/2024
Benchmark ⁵		14.7%	-	-	-	3/31/2024
Pathway 8	11/23/2015	20.1%	20.1%	18.1%	18.1%	3/31/2024
Benchmark ⁶		15.6%	-	-	-	3/31/2024
Pathway Private Equity Fund	1/19/1999	10.8%	10.8%	8.3%	8.3%	3/31/2024
Benchmark ⁷		10.3%	-	-	-	3/31/2024
Pathway Private Equity Fund 2008	7/31/2009	16.9%	16.9%	13.8%	13.8%	3/31/2024
Benchmark ⁸		13.2%	-	-	-	3/31/2024
Siguler Guff CCCERA Opportunities	6/3/2014	17.5%	18.3%	17.0%	15.8%	3/31/2024
Siguler Guff Secondary Opportunities ⁹	8/31/2013	55.3%	118.4%	49.5%	69.0%	9/30/2020
Siris Partners IV, L.P. ¹	5/18/2018	19.9%	-	19.0%	-	3/31/2023
TPG Healthcare Partners, L.P.	6/28/2019	-	-	-	16.4%	12/31/2023
Trident VIII, L.P.	5/24/2019	14.0%	-	-	12.8%	12/31/2023
Wastewater Opportunity Fund ¹	12/8/2015	-	-	3.7%	-	9/30/2023

¹Manager has yet to report IRR figure.

²Fund level data includes CCCERA and all other fund investors.

³Net IRR calculated after deductions of management fees and carried interest to the General Partner.

⁴Private iQ global all private equity median pooled return for vintage years 2011-2014, as of September 30, 2022.

⁵Private iQ global all private equity median pooled return for vintage years 2012-2016, as of September 30, 2022.

⁶Private iQ global all private equity median pooled return for vintage years 2015-2018, as of September 30, 2022.

⁷Private iQ global all private equity median pooled return for vintage years 1999-2011, as of September 30, 2022.

⁸Private iQ global all private equity median pooled return for vintage years 2008-2014, as of September 30, 2022.

⁹Capital has been fully called and fund is in redemption.

Total Fund
Closed End Funds - Investment Summary

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

StepStone Group Analysis (*)													
Closing Date	Manager Name/Fund Name	Estimated Market Value as of 6/30/2024 ¹	Total Commitment	% Called	Contributed Capital	Current Qtr. Change in Contributed Capital	Current Qtr. Change in Distributed Capital	Total Distributions	Remaining Commitment	Distrib./ Paid-In (DPI) ²	Tot. Value/ Paid-In (TVPI) ³	Latest Valuation	
Private Credit													
8/31/2015	Angelo Gordon Energy Credit Opp. ⁴	\$328,410	\$16,500,000	114%	\$18,750,000	\$0	\$2,250,126	\$22,660,158	\$2,319,783	1.21	1.23	3/31/2024	
12/18/2017	Stepstone CC Opportunities Fund	\$1,156,385,574	\$1,170,000,000	88%	\$1,024,707,278	\$0	\$0	\$252,622,836	\$254,868,860	0.25	1.38	3/31/2024	
8/1/2012	Torchlight IV	\$3,450,275	\$60,000,000	141%	\$84,866,971	\$0	\$0	\$109,589,365	\$0	1.29	1.33	6/30/2024	
3/12/2015	Torchlight V	\$7,525,040	\$75,000,000	80%	\$60,000,000	\$0	\$0	\$71,460,214	\$15,000,000	1.19	1.32	3/31/2024	
Total Private Credit		\$1,167,689,299											
% of Portfolio (Market Value)		10.3%											

*All Data provided by StepStone Group

¹Latest valuation + capital calls - distributions

²(DPI) is equal to (capital returned / capital called)

³(TVPI) is equal to (market value + capital returned) / capital called

⁴Capital has been fully called and fund is in redemption.

Total Fund
Closed End Funds - Investment Summary

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

Verus Internal Analysis												
Inception Date	Manager Name/Fund Name	Estimated Market Value as of 6/30/2024 ¹	Total Commitment	Total % Called	Capital Called	Current Qtr. Capital Called	Current Qtr. Distributions	Total Distributions ⁵	Remaining Commitment	Distrib./Paid-In (DPI) ²	Tot. Value/Paid-In (TVPI) ³	Latest Valuation
Real Estate												
1/23/2012	Angelo Gordon Realty Fund VIII ⁴	\$8,618,767	\$80,000,000	94%	\$75,401,855	\$0	\$0	\$101,711,550	\$12,334,302	1.35	1.46	3/31/2024
12/8/2014	Angelo Gordon Realty Fund IX	\$16,277,597	\$65,000,000	93%	\$60,125,000	\$0	\$1,300,000	\$59,312,501	\$7,572,500	0.99	1.26	3/31/2024
3/24/2023	BlackStone Strategic Partners Real Estate VIII	\$17,619,730	\$80,000,000	21%	\$16,656,030	\$8,935,285	\$0	\$0	\$63,343,970	0.00	1.06	3/31/2024
3/24/2023	Blackstone Real Estate Partners X	\$24,377,636	\$100,000,000	25%	\$25,244,264	\$18,770,635	\$0	\$0	\$74,755,736	0.00	0.97	3/31/2024
12/14/2023	Cross Lake RE IV	\$411,560	\$60,000,000	3%	\$1,880,326	\$0	\$0	\$0	\$58,119,674	0.00	0.22	3/31/2024
3/18/2024	Cross Lake RE IV SRO AIV	\$1,607,871	\$8,975,352	17%	\$1,495,894	\$0	\$0	\$0	\$7,479,458	0.00	1.07	3/31/2024
6/23/2005	DLJ RECP III	\$11,272,264	\$75,000,000	95%	\$70,968,662	\$0	\$0	\$77,985,055	\$4,031,338	1.10	1.26	3/31/2024
2/11/2008	DLJ RECP IV	\$35,422,822	\$100,000,000	119%	\$118,794,333	\$0	\$0	\$99,841,735	\$1,876,084	0.84	1.14	3/31/2024
7/1/2014	DLJ RECP V	\$12,259,819	\$75,000,000	146%	\$109,393,496	\$0	\$0	\$100,933,448	\$1,766,747	0.92	1.03	3/31/2024
3/19/2019	DLJ RECP VI	\$15,080,536	\$50,000,000	88%	\$43,951,508	\$5,454,749	\$0	\$11,369,099	\$15,396,028	0.26	0.60	3/31/2024
12/14/2023	EQT Exeter Industrial Value Fund VI	\$13,862,806	\$60,000,000	25%	\$15,000,000	\$9,000,000	\$0	\$0	\$45,000,000	0.00	0.92	3/31/2024
N/A	EQT Multifamily Value II	\$0	\$40,000,000	0%	\$0	\$0	\$0	\$0	\$40,000,000	N/A	N/A	N/A
6/30/2014	Invesco Real Estate IV ⁴	\$110,579	\$35,000,000	87%	\$30,546,401	\$0	\$209,179	\$39,986,504	\$4,453,599	1.31	1.31	3/31/2024
2/20/2019	Invesco Real Estate V	\$57,133,237	\$75,000,000	87%	\$65,318,898	\$0	\$0	\$9,319,462	\$9,681,102	0.14	1.02	6/30/2024
9/27/2022	Invesco Real Estate VI	\$47,545,781	\$100,000,000	57%	\$56,734,047	\$841,121	\$0	\$2,230,131	\$66,873,408	0.04	0.88	3/31/2024
11/10/2023	KSL Capital Partners VI, L.P.	\$8,343,536	\$50,000,000	25%	\$12,266,048	\$499,235	\$822,835	\$0	\$37,733,952	0.00	0.68	3/31/2024
7/16/2013	LaSalle Income & Growth VI ⁴	\$11,502,890	\$75,000,000	95%	\$71,428,571	\$0	\$0	\$84,541,423	\$0	1.18	1.34	3/31/2024
2/28/2017	LaSalle Income & Growth VII	\$22,868,035	\$75,000,000	114%	\$85,708,742	\$0	\$0	\$61,623,058	\$2,845,685	0.72	0.99	3/31/2024
7/3/2013	Long Wharf Fund IV ⁴	\$107,880	\$25,000,000	100%	\$25,000,000	\$0	\$0	\$34,948,087	\$0	1.40	1.40	6/30/2024
9/30/2016	Long Wharf Fund V ⁴	\$25,046,517	\$50,000,000	100%	\$50,000,000	\$0	\$456,986	\$37,701,359	\$0	0.75	1.25	6/30/2024
6/27/2019	Long Wharf Fund VI	\$33,431,828	\$50,000,000	100%	\$49,999,998	\$0	\$991,080	\$28,047,570	\$2	0.56	1.23	6/30/2024
5/30/2023	Long Wharf Fund VII	\$13,675,575	\$50,000,000	32%	\$16,241,774	\$5,242,718	\$0	\$0	\$33,758,226	0.00	0.84	6/30/2024
12/31/2011	Oaktree REOF V ⁴	\$391,098	\$50,000,000	101%	\$50,315,673	\$0	\$0	\$78,780,733	\$5,000,000	1.57	1.57	6/30/2024
9/30/2013	Oaktree REOF VI ⁴	\$16,756,778	\$80,000,000	100%	\$80,000,000	\$0	\$0	\$84,810,175	\$18,400,000	1.06	1.27	6/30/2024
4/1/2015	Oaktree REOF VII	\$37,717,749	\$65,000,000	139%	\$90,407,856	\$28,928	\$0	\$26,277,174	\$18,915,000	0.29	0.71	6/30/2024
11/10/2013	Paulson Real Estate Fund II ⁴	\$12,566,601	\$20,000,000	97%	\$19,345,623	\$0	\$0	\$25,449,660	\$654,377	1.32	1.97	3/31/2024
4/28/2022	PCCP IX	\$67,717,532	\$75,000,000	83%	\$62,051,564	\$1,875,000	\$0	\$0	\$12,948,436	0.00	1.09	3/31/2024
1/25/2012	Siguler Guff DREOF	\$11,181,174	\$75,000,000	93%	\$69,375,000	\$0	\$7,759	\$103,778,870	\$5,625,000	1.50	1.66	3/31/2024
8/31/2013	Siguler Guff DREOF II	\$24,738,654	\$70,000,000	89%	\$61,985,000	\$0	\$13,107	\$55,704,893	\$8,015,000	0.90	1.30	3/31/2024
1/27/2016	Siguler Guff DREOF II Co-Inv	\$11,620,699	\$25,000,000	85%	\$21,277,862	\$0	\$0	\$13,871,261	\$3,722,138	0.65	1.20	3/31/2024
6/26/2024	Stockbridge Value Fund I	\$14,459,322	\$60,000,000	24%	\$14,459,322	\$14,459,322	\$0	\$0	\$45,540,678	0.00	1.00	3/31/2024
Total Closed End Real Estate		\$573,726,872	\$1,858,975,352	78%	\$1,441,914,426	\$65,106,992	\$3,800,947	\$1,138,223,748	\$565,842,440	0.79	1.19	
% of Portfolio (Market Value)		5.1%										

¹Latest valuation + capital calls - distributions

²(DPI) is equal to (capital returned / capital called)

³(TVPI) is equal to (market value + capital returned) / capital called

⁴Capital has been fully called and fund is in redemption.

⁵Total distributions may include callable distributions

⁶Remaining commitment includes callable distributions

Total Fund
Closed End Funds - IRR Summary

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

Private Credit	Inception	Fund Level (G) ²	CCCERA (G)	Fund Level (N) ^{2,3}	CCCERA (N) ³	IRR Date
Angelo Gordon Energy Cred Opp. ⁴	9/24/2015	-	-	-	7.6%	3/31/2024
Stepstone CC Opportunities Fund ¹	2/2/2018	-	9.9%	-	9.2%	12/31/2023
Torchlight IV	8/1/2012	11.0%	11.6%	8.8%	9.7%	3/31/2024
Torchlight V	3/12/2015	14.0%	14.1%	10.1%	10.1%	3/31/2024
Real Estate	Inception	Fund Level (G) ²	CCCERA (G)	Fund Level (N) ^{2,3}	CCCERA (N) ³	IRR Date
Angelo Gordon VIII ⁴	1/23/2012	-	-	-	11.8%	3/31/2024
Angelo Gordon IX	12/8/2014	-	-	-	5.2%	3/31/2024
Blackstone Real Estate Partners X ¹	3/24/2023	-	-	-	-	N/A
BlackStone Strategic Partners Real Estate VIII ¹	3/25/2022	-	-	-	-	N/A
Cross Lake RE IV ¹	12/14/2023	-	-	-	-	N/A
DLJ RECP III	6/23/2005	-1.0%	-1.0%	-3.0%	-3.0%	9/30/2023
DLJ RECP IV	2/11/2008	4.0%	4.0%	1.0%	2.0%	9/30/2023
DLJ RECP V	7/1/2014	11.0%	11.0%	5.0%	5.0%	9/30/2023
DLJ RECP VI	3/19/2019	11.0%	11.0%	2.0%	3.0%	9/30/2023
EQT Exeter Industrial Value Fund VI ¹	12/14/2023	-	-	-	-	N/A
EQT Industrial Value VI ¹	12/31/2023	-	-	-	-	N/A
EQT Multifamily Value II ¹	N/A	-	-	-	-	N/A
Invesco Fund IV ⁴	6/30/2014	12.6%	-	10.1%	-	3/31/2024
Invesco Fund V	2/20/2019	2.4%	-	-2.4%	-	3/31/2024
Invesco Fund VI	9/27/2022	-	-	-	-	N/A
KSL Capital Partners VI ¹	11/10/2023	-	-	-	-	N/A
LaSalle Income & Growth VI ⁴	7/16/2013	9.7%	9.7%	7.6%	7.7%	6/30/2024
LaSalle Income & Growth VII	2/28/2017	1.7%	1.6%	-0.3%	-0.4%	6/30/2024
Long Wharf IV ⁴	7/3/2013	14.5%	14.3%	11.0%	10.9%	6/30/2024
Long Wharf V ⁴	9/30/2016	6.3%	8.6%	5.7%	5.9%	6/30/2024
Long Wharf VI	6/27/2019	22.7%	23.8%	13.8%	14.4%	6/30/2024
Long Wharf VII	5/1/2023	0.5%	0.5%	-17.4%	-17.1%	6/30/2024
Oaktree REOF V ⁴	12/31/2011	16.6%	-	12.2%	-	6/30/2024
Oaktree REOF VI ⁴	9/30/2013	10.2%	-	6.3%	-	6/30/2024
Oaktree REOF VII	4/1/2015	14.8%	-	9.4%	-	6/30/2024
Paulson ⁴	11/10/2013	-	-	12.0%	-	12/31/2023
PCCP IX	5/27/2021	9.9%	-	6.6%	-	3/31/2024
Siguler Guff I	1/25/2012	12.1%	14.8%	10.5%	12.1%	3/31/2024
Siguler Guff II	8/31/2013	8.2%	8.4%	7.0%	6.8%	3/31/2024
Siguler Guff DREOF II Co-Inv	1/27/2016	-2.4%	5.1%	-2.5%	3.7%	3/31/2024

¹Manager has yet to report IRR figure.

²Fund level data includes CCCERA and all other fund investors.

³Net IRR calculated after deductions of management fees and carried interest to the General Partner.

⁴Capital has been fully called and fund is in redemption.

Total Fund
Risk Analysis - 3 Years (Net of Fees)

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

3 Years

	Anlzd Return	Anlzd Excess Performance	Anlzd Standard Deviation	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
BlackRock Russell 1000 Index	8.74	0.00	17.75	0.00	1.00	0.02	1.00	0.40	-0.04	99.99	99.99
Boston Partners	9.34	3.82	15.99	3.85	0.96	3.05	0.97	0.45	1.15	101.40	85.34
Emerald Advisers	-1.09	3.77	22.25	3.82	0.97	4.33	0.96	-0.07	0.88	106.73	94.48
Ceredex	5.22	5.75	19.24	5.56	0.85	6.63	0.91	0.21	0.78	94.30	77.69
Pyrford	2.85	-0.70	13.50	-0.17	0.83	5.02	0.90	0.05	-0.19	85.57	87.11
William Blair	-3.98	-1.36	19.06	-1.13	1.02	5.72	0.91	-0.28	-0.20	102.88	107.22
PIMCO RAE Emerging Markets	5.55	6.64	16.74	6.88	0.96	6.83	0.83	0.23	0.98	114.46	83.06
TT Emerging Markets	-9.14	-4.07	19.41	-3.70	1.07	5.11	0.93	-0.56	-0.79	105.37	120.22
Artisan Partners	1.21	-4.29	19.54	-3.80	0.96	5.05	0.94	0.01	-0.83	87.83	100.65
First Eagle	5.07	0.28	12.76	1.00	0.82	4.20	0.94	0.22	-0.01	80.98	75.52
Voya Global Investors	1.27	-0.38	8.42	-0.36	1.00	1.12	0.98	-0.17	-0.33	96.98	100.17
Adelante	0.50	0.16	20.69	0.10	0.96	1.54	1.00	-0.02	-0.01	96.28	96.01
AQR Global Risk Premium-EL	-1.50	-0.26	10.38	-0.46	0.88	2.32	0.97	-0.38	-0.17	87.30	89.99
PanAgora Risk Parity Multi Asset	-7.34	-6.10	14.86	-5.61	1.25	4.53	0.94	-0.64	-1.30	103.87	137.87
AFL-CIO	-3.13	-0.10	7.04	-0.26	0.95	1.00	0.98	-0.86	-0.13	94.17	96.69
DFA Short Credit	0.57	0.74	2.77	0.70	0.76	1.59	0.75	-0.96	0.46	86.78	70.92
Insight Short Duration	2.13	1.58	1.80	1.83	0.56	1.64	0.48	-0.56	0.95	75.62	17.35
Sit Short Duration	0.18	-0.16	3.67	-0.30	1.49	1.90	0.82	-0.78	-0.06	149.42	159.70

Performance Analysis excludes closed end funds and those funds without 3 years of performance.

Total Fund
Risk Analysis - 5 Years (Net of Fees)

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

5 Years

	Anlzd Return	Anlzd Excess Performance	Standard Deviation	Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
BlackRock Russell 1000 Index	14.60	-0.01	18.32	-0.01	1.00	0.02	1.00	0.72	-0.56	99.97	100.00
Boston Partners	12.30	3.30	18.81	2.97	1.02	2.98	0.98	0.60	1.04	105.02	92.38
Emerald Advisers	7.94	1.78	23.18	1.99	0.95	5.24	0.95	0.35	0.29	101.81	96.82
Ceredex	7.76	0.68	21.73	1.49	0.85	7.00	0.92	0.36	0.00	86.53	81.88
Pyrford	5.34	0.04	14.49	1.14	0.75	6.72	0.89	0.28	-0.09	82.67	79.86
William Blair	7.00	1.51	18.86	1.37	1.06	5.14	0.93	0.34	0.34	111.00	106.15
PIMCO RAE Emerging Markets	8.52	5.60	20.30	5.64	1.06	6.37	0.90	0.40	0.91	116.11	92.54
TT Emerging Markets	2.44	-0.66	21.85	-0.63	1.15	6.09	0.94	0.12	0.01	116.48	119.68
Artisan Partners	11.41	-2.44	18.46	-1.28	0.93	5.14	0.93	0.56	-0.45	89.79	93.60
First Eagle	7.75	0.72	13.57	2.15	0.75	5.60	0.93	0.46	0.01	81.15	72.86
Voya Global Investors	3.21	-0.52	8.65	-0.21	0.91	1.69	0.97	0.16	-0.33	91.93	94.63
Adelante	4.85	0.81	19.98	0.88	0.95	1.65	1.00	0.23	0.35	97.74	95.03
AFL-CIO	-0.52	-0.29	5.82	-0.31	0.93	1.07	0.97	-0.43	-0.29	88.43	92.30
DFA Short Credit	1.24	0.18	2.46	0.44	0.75	1.59	0.65	-0.37	0.11	79.61	65.90
Insight Short Duration	2.31	1.06	2.03	1.57	0.60	1.87	0.29	0.08	0.56	83.32	14.10
Sit Short Duration	1.16	0.13	3.06	-0.29	1.43	1.62	0.79	-0.31	0.10	146.50	163.96

Performance Analysis excludes closed end funds and those funds without 5 years of performance.

Total Fund
Investment Fund Fee Analysis

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Expense Fee (%)
BlackRock Russell 1000 Index	Growth	0.03 % of Assets	\$1,286,476,554	\$385,943	0.03
Boston Partners	Growth	0.50 % of First \$25 M 0.30 % Thereafter	\$426,935,345	\$1,330,806	0.31
Emerald Advisers	Growth	0.75 % of First \$10 M 0.60 % Thereafter	\$223,153,822	\$1,353,923	0.61
Ceredex	Growth	0.85 % of First \$10 M 0.68 % of Next \$40 M 0.51 % Thereafter	\$199,977,061	\$1,121,883	0.56
Pyrford	Growth	0.70 % of First \$50 M 0.50 % of Next \$50 M 0.35 % Thereafter	\$492,099,248	\$1,972,347	0.40
William Blair	Growth	0.80 % of First \$20 M 0.60 % of Next \$30 M 0.50 % of Next \$50 M 0.45 % of Next \$50 M 0.40 % of Next \$50 M 0.30 % Thereafter	\$476,778,846	\$1,845,337	0.39
PIMCO RAE Emerging Markets	Growth	0.75 % of First \$50 M 0.68 % of Next \$50 M 0.50 % of Next \$100 M 0.45 % Thereafter	\$273,873,447	\$1,544,931	0.56
TT Emerging Markets	Growth	0.70 % of First \$100 M 0.65 % of Next \$100 M 0.60 % Thereafter	\$262,290,245	\$1,723,741	0.66
Artisan Partners	Growth	0.75 % of Assets	\$634,593,849	\$4,759,454	0.75
First Eagle	Growth	0.75 % of Assets	\$606,164,236	\$4,546,232	0.75
Voya Global Investors	Growth	0.50 % of First \$50 M 0.40 % of Next \$50 M 0.35 % Thereafter	\$161,940,512	\$666,792	0.41
Invesco US Fundamental Beta	Growth	0.15 % of Assets	\$114,553,525	\$171,830	0.15
AQR Global Risk Premium-EL	Growth	0.38 % of Assets	\$183,416,932	\$696,984	0.38

Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus.

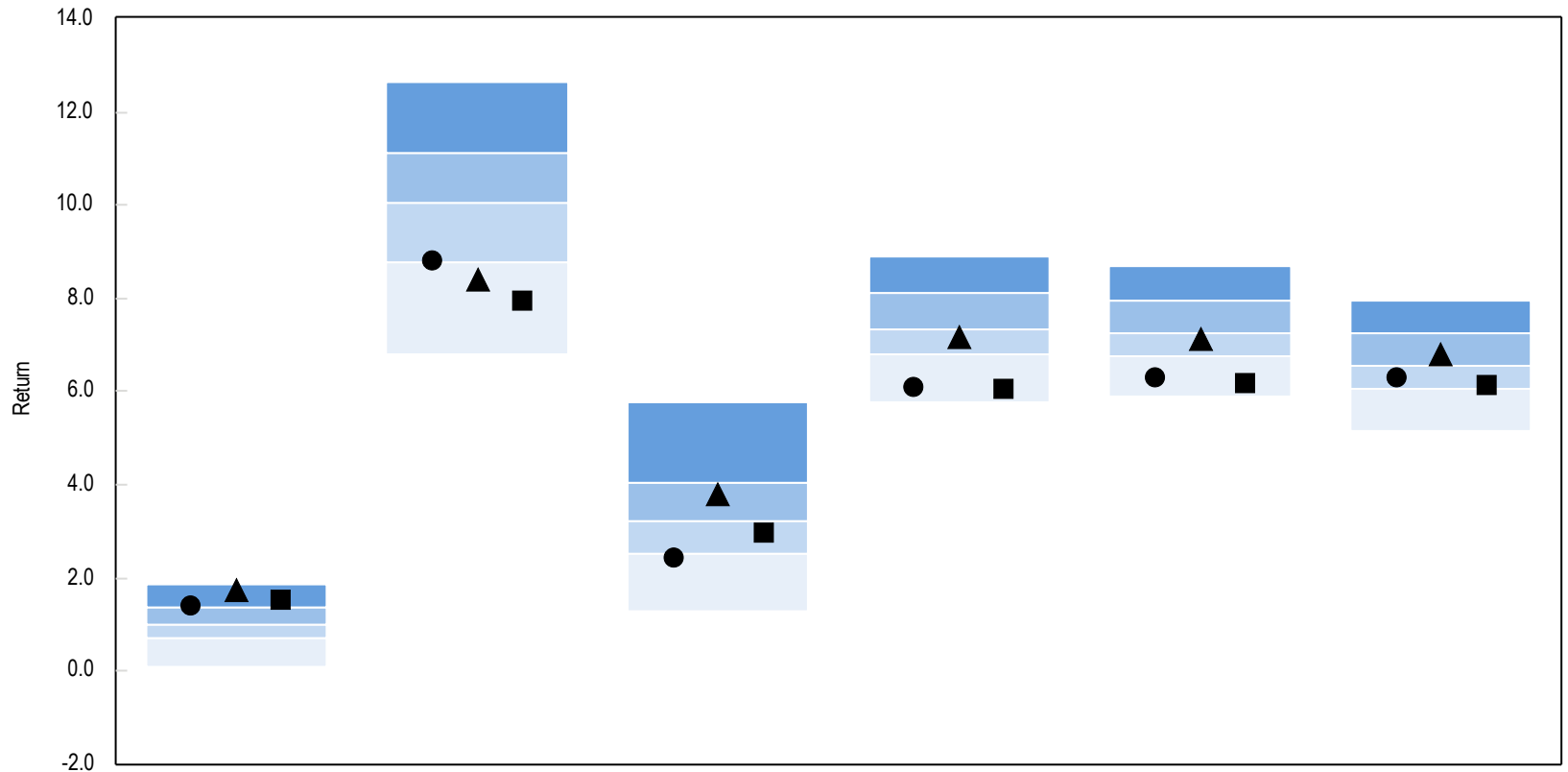
Total Fund
Investment Fund Fee Analysis

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Expense Fee (%)
PanAgora Risk Parity Multi Asset	Growth	0.35 % of Assets	\$167,447,805	\$586,067	0.35
AFL-CIO	Diversifying	0.32 % of Assets	\$219,866,759	\$703,574	0.32
Sit LLCAR	Diversifying	0.39 % of First \$200 M 0.35 % Thereafter	\$372,820,504	\$1,416,718	0.38
DFA Short Credit	Liquidity	0.20 % of First \$25 M 0.10 % Thereafter	\$367,733,492	\$392,733	0.11
Insight Short Duration	Liquidity	0.06 % of First \$500 M 0.05 % of Next \$500 M 0.04 % Thereafter	\$599,621,524	\$349,811	0.06
Sit Short Duration	Liquidity	0.15 % of Assets	\$630,005,024	\$945,008	0.15

Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus.

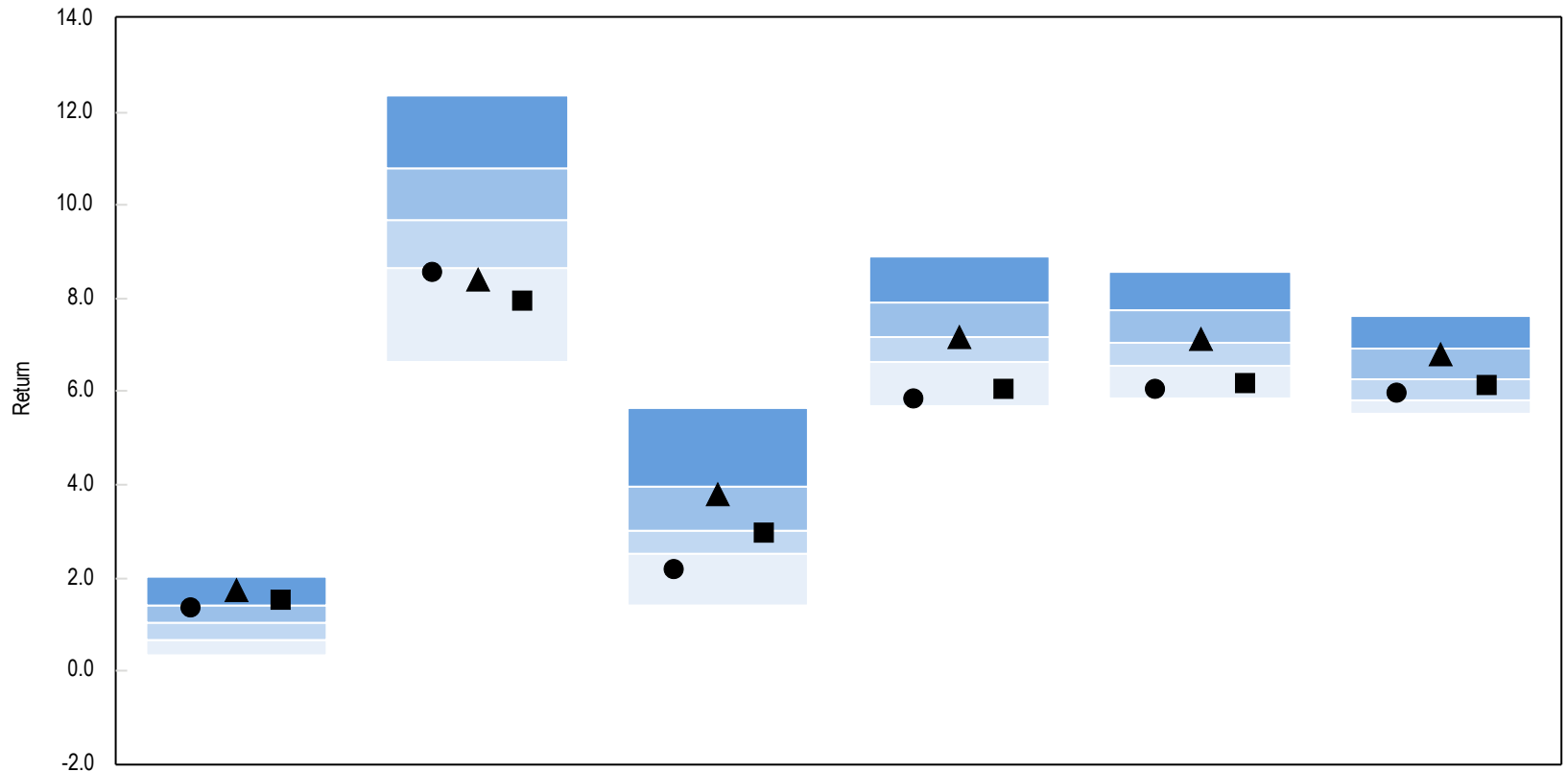
Total Fund Cumulative Performance vs. InvMetrics Public DB >\$1B Gross



	3 Mo	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Total Fund	1.42 (24)	8.80 (75)	2.45 (78)	6.11 (90)	6.33 (86)	6.31 (68)
▲ Policy Index	1.73 (9)	8.40 (82)	3.81 (32)	7.16 (56)	7.14 (57)	6.81 (45)
■ Implementation Benchmark	1.55 (19)	7.97 (83)	2.97 (63)	6.05 (91)	6.20 (87)	6.13 (73)
5th Percentile	1.87	12.64	5.77	8.90	8.71	7.95
1st Quartile	1.38	11.11	4.06	8.12	7.94	7.24
Median	0.99	10.03	3.21	7.33	7.26	6.57
3rd Quartile	0.70	8.79	2.52	6.80	6.76	6.05
95th Percentile	0.09	6.80	1.29	5.78	5.88	5.16
Population	103	103	99	98	95	95

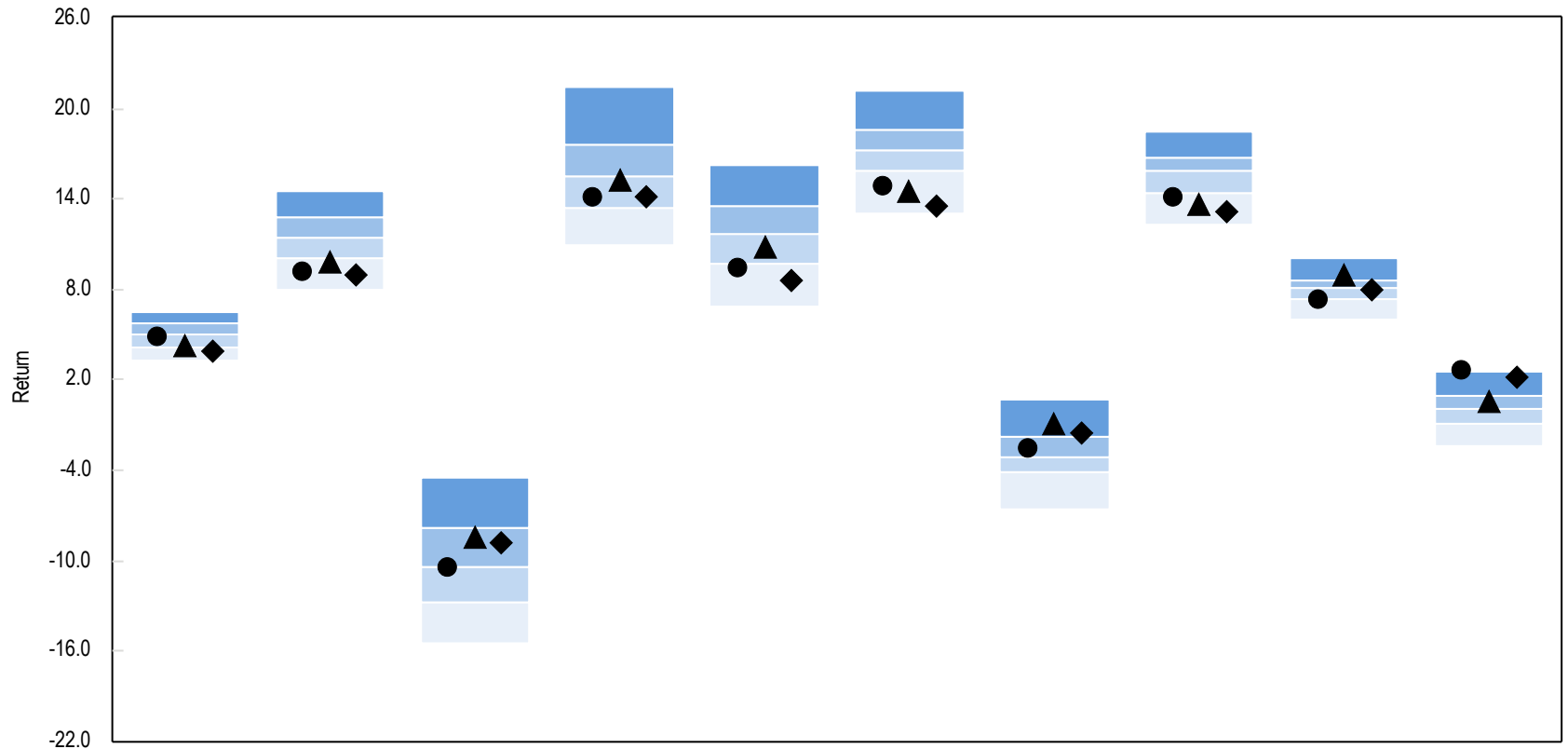
Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

Total Fund Cumulative Performance vs. InvMetrics Public DB >\$1B Net



	3 Mo	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Total Fund	1.36 (29)	8.57 (77)	2.21 (80)	5.85 (95)	6.05 (90)	5.97 (70)
▲ Policy Index	1.73 (10)	8.40 (78)	3.81 (29)	7.16 (49)	7.14 (47)	6.81 (30)
■ Implementation Benchmark	1.55 (17)	7.97 (82)	2.97 (57)	6.05 (89)	6.20 (88)	6.13 (62)
5th Percentile	2.05	12.36	5.63	8.89	8.56	7.64
1st Quartile	1.42	10.80	3.96	7.89	7.73	6.91
Median	1.03	9.68	3.03	7.16	7.06	6.28
3rd Quartile	0.66	8.64	2.51	6.63	6.58	5.82
95th Percentile	0.35	6.63	1.40	5.70	5.86	5.54
Population	94	94	89	87	84	82

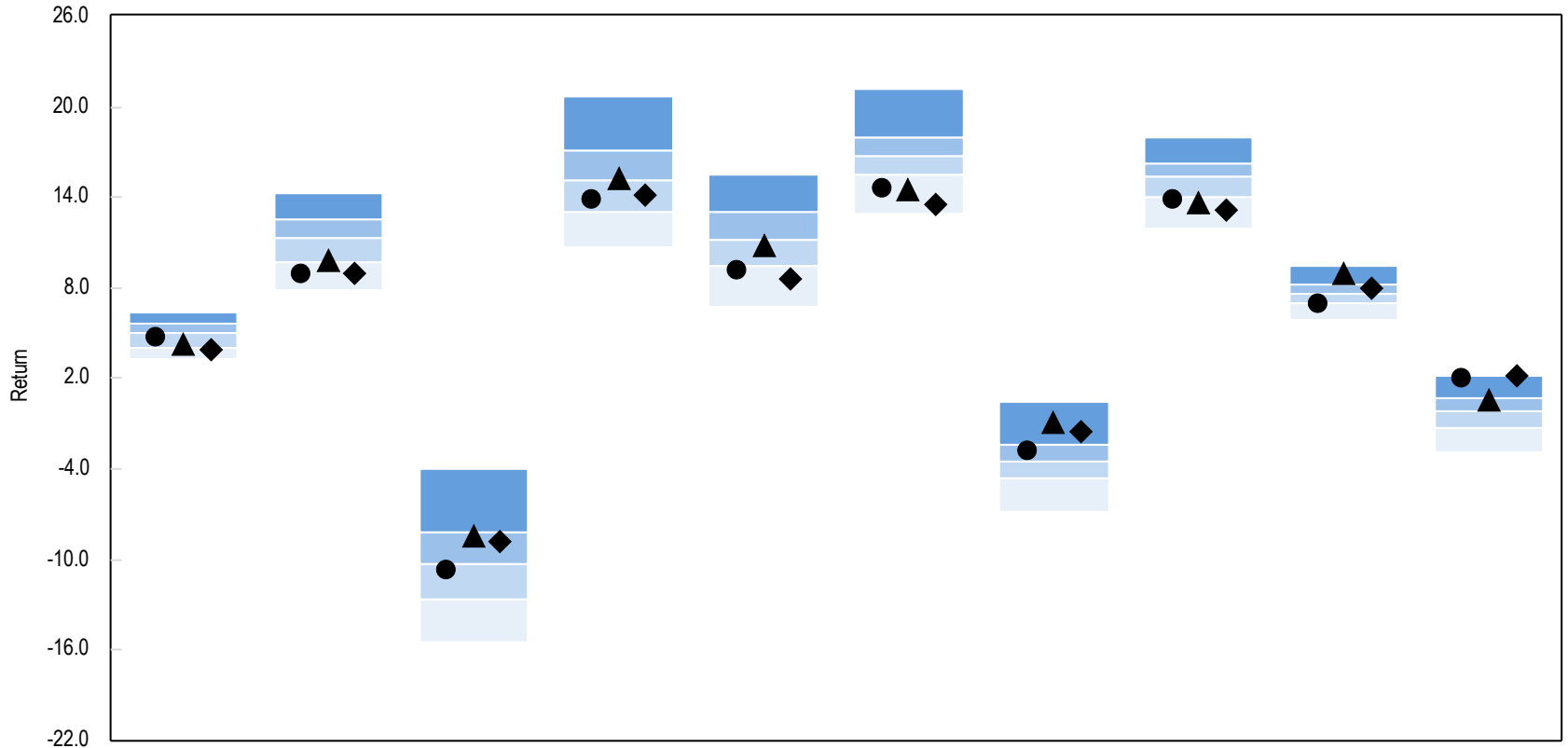
Total Fund Consecutive Periods vs. InvMetrics Public DB >\$1B Gross



	YTD	2023	2022	2021	2020	2019	2018	2017	2016	2015
● Total Fund	4.84 (61)	9.23 (85)	-10.39 (51)	14.21 (65)	9.52 (80)	14.92 (87)	-2.46 (35)	14.18 (78)	7.43 (71)	2.70 (3)
▲ Policy Index	4.34 (73)	9.85 (78)	-8.38 (29)	15.29 (54)	10.81 (64)	14.58 (88)	-0.94 (14)	13.69 (87)	8.93 (16)	0.58 (33)
◆ Implementation Benchmark	3.88 (86)	8.99 (87)	-8.74 (32)	14.17 (66)	8.66 (89)	13.59 (94)	-1.52 (18)	13.21 (90)	8.00 (55)	2.18 (10)
5th Percentile	6.48	14.55	-4.49	21.42	16.27	21.23	0.71	18.42	10.06	2.54
1st Quartile	5.77	12.76	-7.81	17.63	13.54	18.55	-1.75	16.78	8.57	1.00
Median	5.04	11.42	-10.38	15.54	11.74	17.18	-3.15	15.90	8.07	0.11
3rd Quartile	4.16	10.11	-12.74	13.47	9.75	15.89	-4.14	14.36	7.34	-0.89
95th Percentile	3.27	8.00	-15.51	10.90	6.83	13.00	-6.63	12.35	5.95	-2.44
Population	103	183	188	222	232	192	168	177	178	173

Effective 1/01/2017, only traditional asset class (public equity, fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

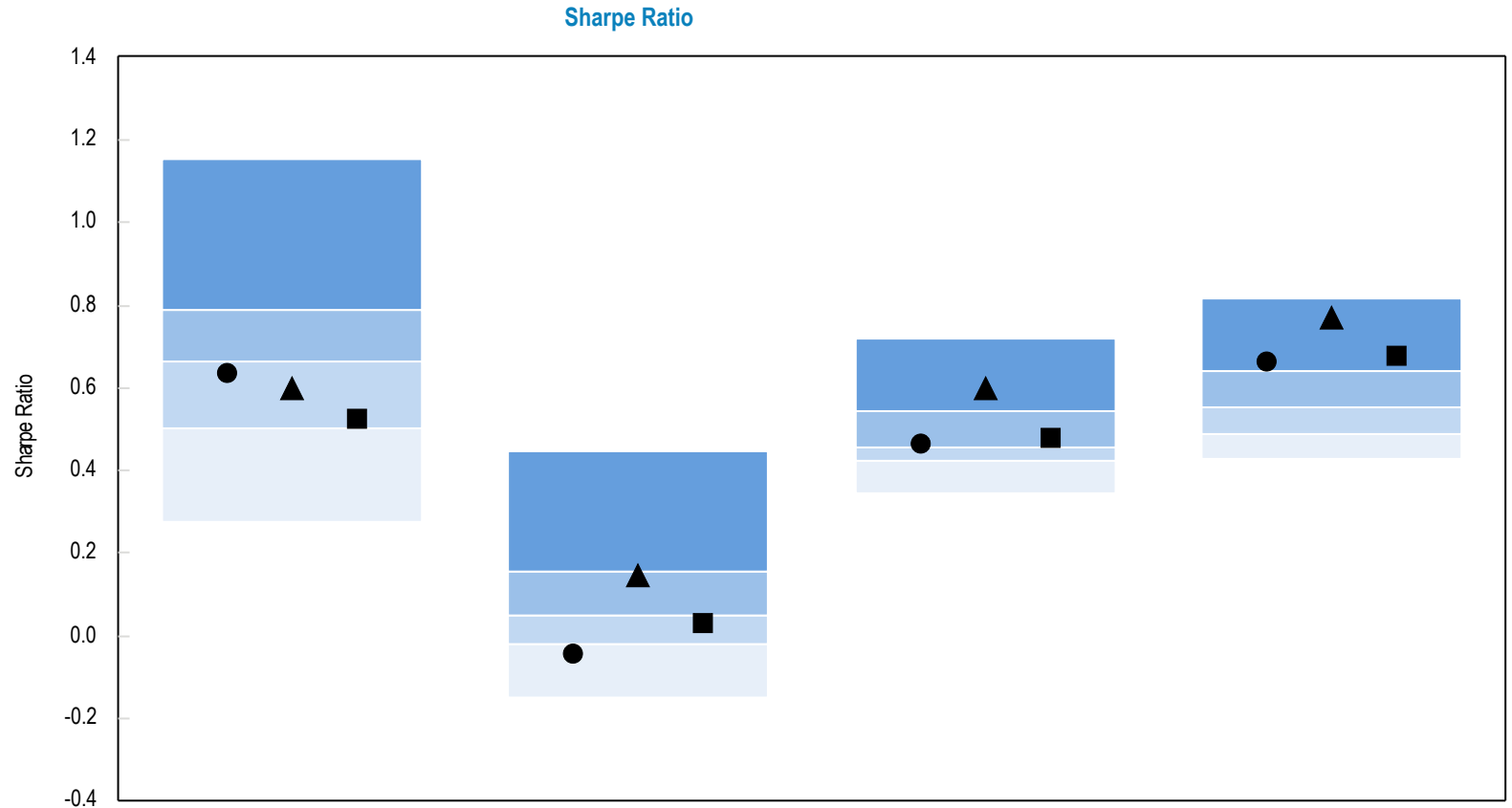
Total Fund Consecutive Periods vs. InvMetrics Public DB >\$1B Net



	YTD	2023	2022	2021	2020	2019	2018	2017	2016	2015
● Total Fund	4.72 (61)	9.01 (85)	-10.61 (55)	13.90 (63)	9.23 (77)	14.61 (88)	-2.72 (34)	13.86 (80)	6.94 (76)	2.09 (8)
▲ Policy Index	4.34 (73)	9.85 (75)	-8.38 (29)	15.29 (50)	10.81 (60)	14.58 (88)	-0.94 (10)	13.69 (85)	8.93 (11)	0.58 (26)
◆ Implementation Benchmark	3.88 (84)	8.99 (85)	-8.74 (30)	14.17 (61)	8.66 (86)	13.59 (92)	-1.52 (13)	13.21 (90)	8.00 (36)	2.18 (6)
5th Percentile	6.42	14.26	-4.02	20.71	15.55	21.20	0.48	17.98	9.52	2.24
1st Quartile	5.66	12.51	-8.18	17.17	13.03	17.93	-2.33	16.31	8.20	0.74
Median	5.05	11.26	-10.32	15.18	11.24	16.79	-3.52	15.40	7.62	-0.19
3rd Quartile	4.08	9.70	-12.57	12.99	9.41	15.54	-4.55	14.08	7.00	-1.26
95th Percentile	3.24	7.89	-15.50	10.67	6.81	12.87	-6.78	11.98	5.84	-2.87
Population	94	171	171	201	212	188	165	175	170	166

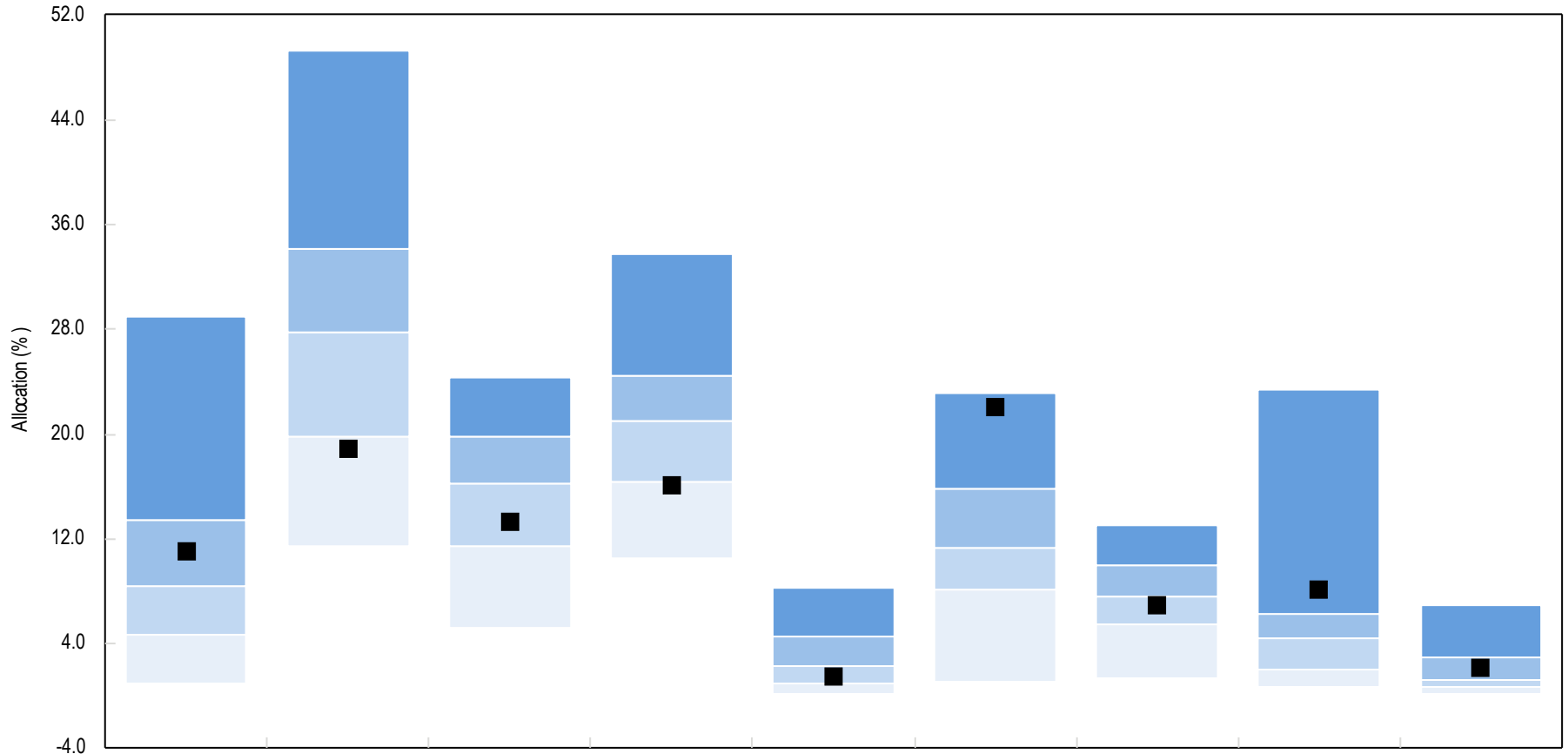
Total Fund
Sharpe Ratio Ranking (Gross of Fees)

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024



	1 Yr	3 Yrs	5 Yrs	10 Yrs
● Total Fund	0.64 (58)	-0.04 (82)	0.46 (46)	0.66 (23)
▲ Policy Index	0.60 (66)	0.15 (28)	0.60 (19)	0.77 (12)
■ Implementation Benchmark	0.53 (74)	0.03 (63)	0.48 (44)	0.68 (21)
5th Percentile	1.16	0.45	0.72	0.82
1st Quartile	0.79	0.16	0.54	0.64
Median	0.66	0.05	0.46	0.55
3rd Quartile	0.50	-0.02	0.43	0.49
95th Percentile	0.27	-0.15	0.35	0.43
Population	94	89	87	82

Total Fund vs. InvMetrics Public DB > \$1B



	Global Equity	US Equity	Global ex-US Equity	US Fixed	Global ex-US Fixed	Private Equity	Total Real Estate	Multi-Asset	Cash & Equivalents
■ Total Fund	11.0 (29)	18.9 (78)	13.3 (68)	16.1 (78)	1.4 (68)	22.0 (8)	7.0 (59)	8.1 (19)	2.1 (36)
5th Percentile	29.0	49.3	24.4	33.8	8.2	23.1	13.0	23.4	6.9
1st Quartile	13.4	34.1	19.9	24.5	4.5	15.9	10.0	6.2	3.0
Median	8.4	27.8	16.3	21.1	2.3	11.3	7.6	4.4	1.3
3rd Quartile	4.7	19.8	11.4	16.4	1.0	8.2	5.4	2.0	0.7
95th Percentile	0.9	11.5	5.2	10.6	0.1	1.0	1.3	0.7	0.1
Population	38	94	95	96	39	83	83	26	91

Domestic Equity Managers

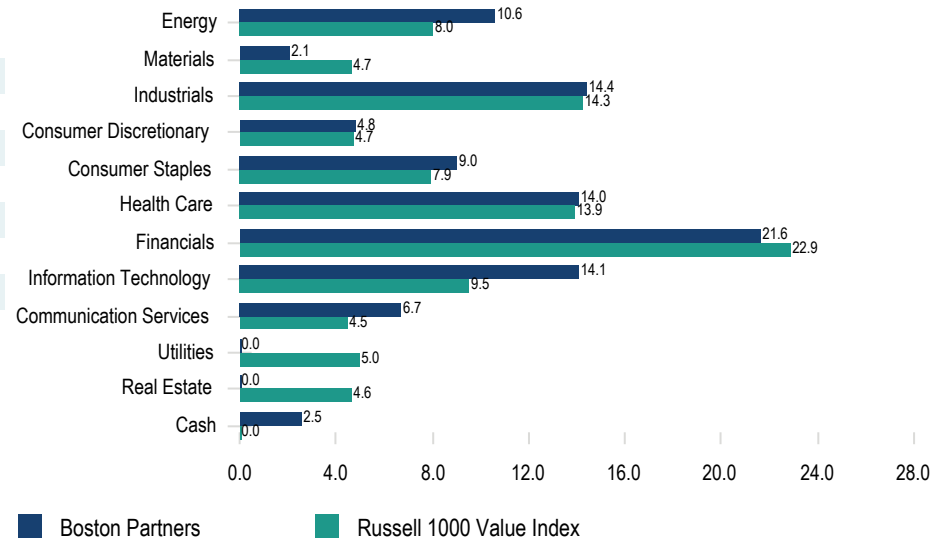
Boston Partners
 Manager Portfolio Overview

Contra Costa County Employees' Retirement Association
 Period Ending: June 30, 2024

Characteristics

	Portfolio	Benchmark
Number of Stocks	90	846
Wtd. Avg. Mkt. Cap \$M	201,620.41	160,113.85
Median Mkt. Cap \$M	45,106.35	12,594.63
Price/Earnings ratio	19.07	19.03
Price/Book ratio	2.87	2.56
Return on Equity (%)	-5.85	1.51
Current Yield (%)	1.74	2.24
Beta (5 Years, Monthly)	1.02	1.00

Sector Allocation (%) vs. Russell 1000 Value Index



Largest Holdings

	End Weight (%)	Quarterly Return (%)
JPMorgan Chase & Co	4.79	1.57
Alphabet Inc	3.82	20.82
Oracle Corp	2.45	12.78
Morgan Stanley	2.32	4.17
Wells Fargo & Co	2.01	3.05
Micron Technology Inc.	1.97	11.57
Philip Morris International Inc	1.97	12.04
Walmart Inc	1.96	12.92
Dell Technologies Inc	1.95	21.32
AutoZone Inc	1.74	-5.95

Top Contributors

	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
Alphabet Inc	3.09	20.82	0.64
Dell Technologies Inc	1.57	21.32	0.34
Oracle Corp	2.12	12.78	0.27
Walmart Inc	1.70	12.92	0.22
Philip Morris International Inc	1.73	12.04	0.21
Applied Materials Inc	1.39	14.64	0.20
Micron Technology Inc.	1.72	11.57	0.20
Howmet Aerospace Inc	1.01	13.51	0.14
Amgen Inc	1.27	10.68	0.14
Leidos Holdings Inc	1.00	11.58	0.12

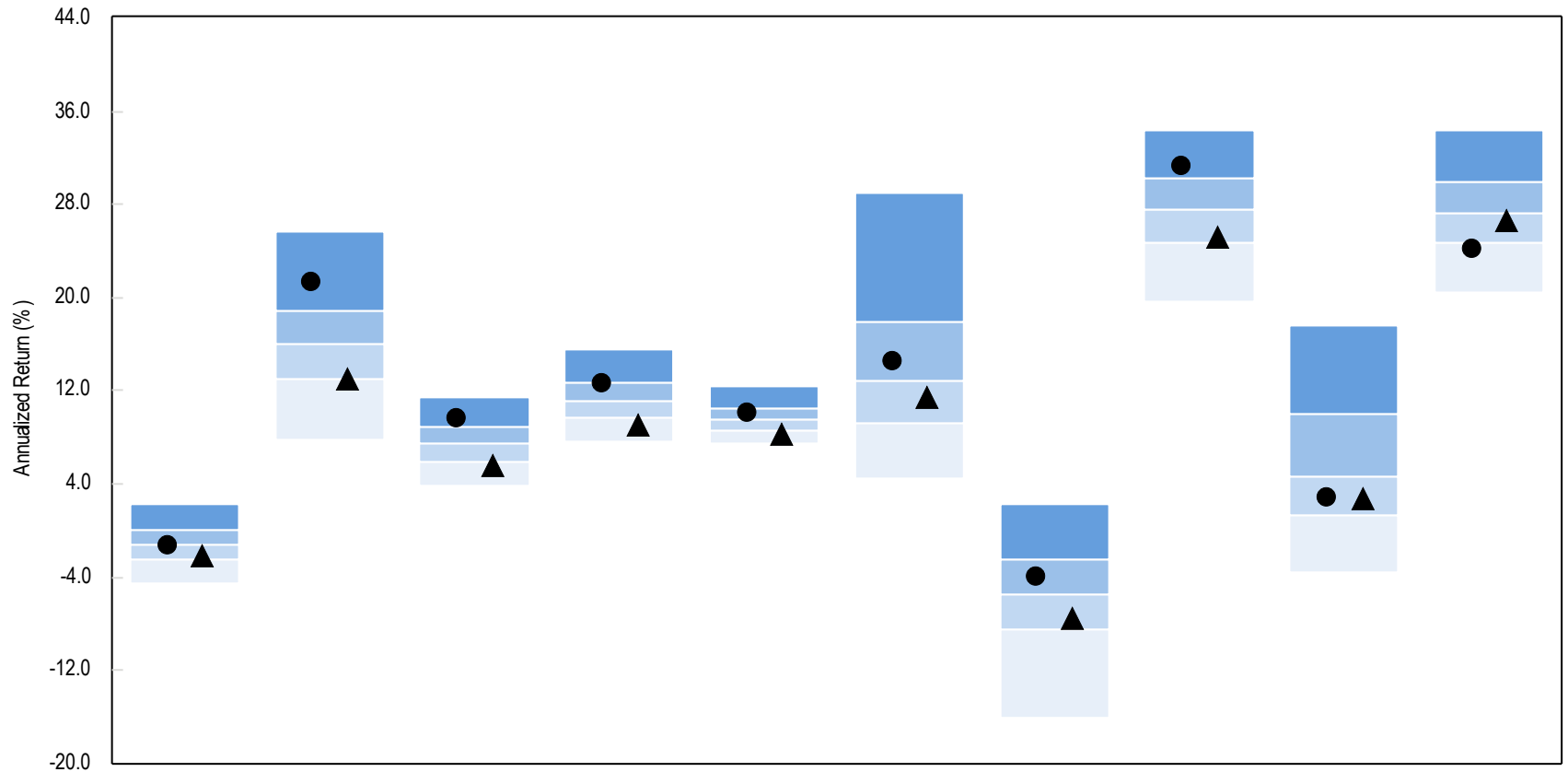
Top Detractors

	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
Global Payments Inc	1.29	-27.46	-0.35
Bristol-Myers Squibb Co	1.22	-22.52	-0.27
Marathon Petroleum Corp	1.78	-13.49	-0.24
Schlumberger Ltd	1.46	-13.37	-0.20
Phillips 66	1.50	-12.90	-0.19
CRH PLC	1.46	-12.70	-0.19
Centene Corp	1.17	-15.52	-0.18
Norfolk Southern Corp	1.17	-15.28	-0.18
NICE Ltd	0.53	-34.01	-0.18
Builders FirstSource Inc	0.53	-33.63	-0.18

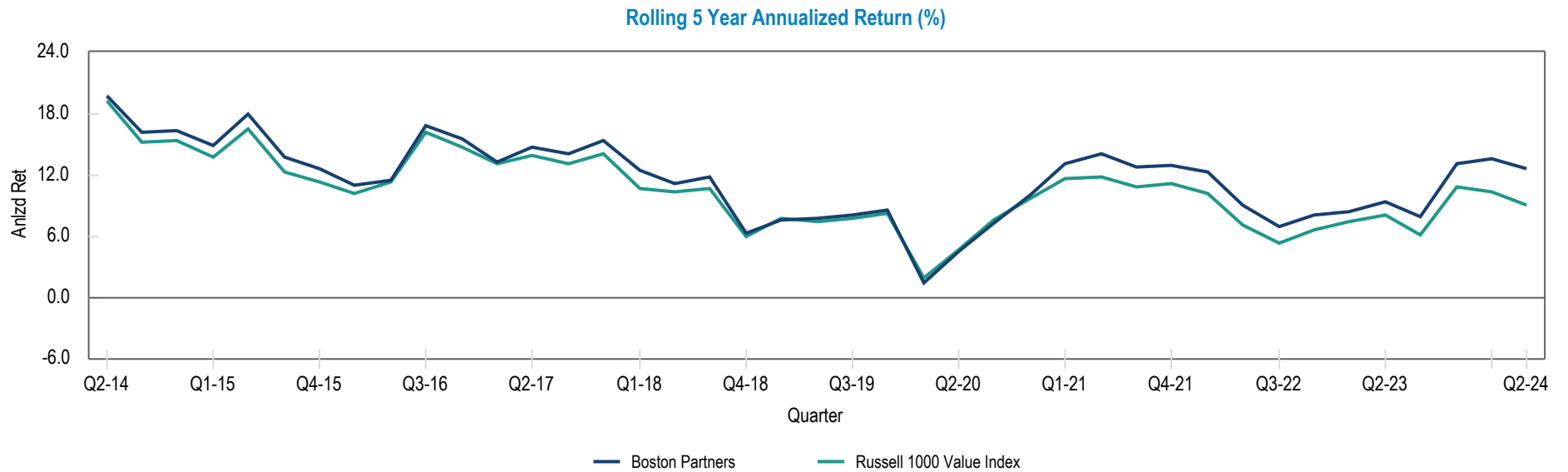
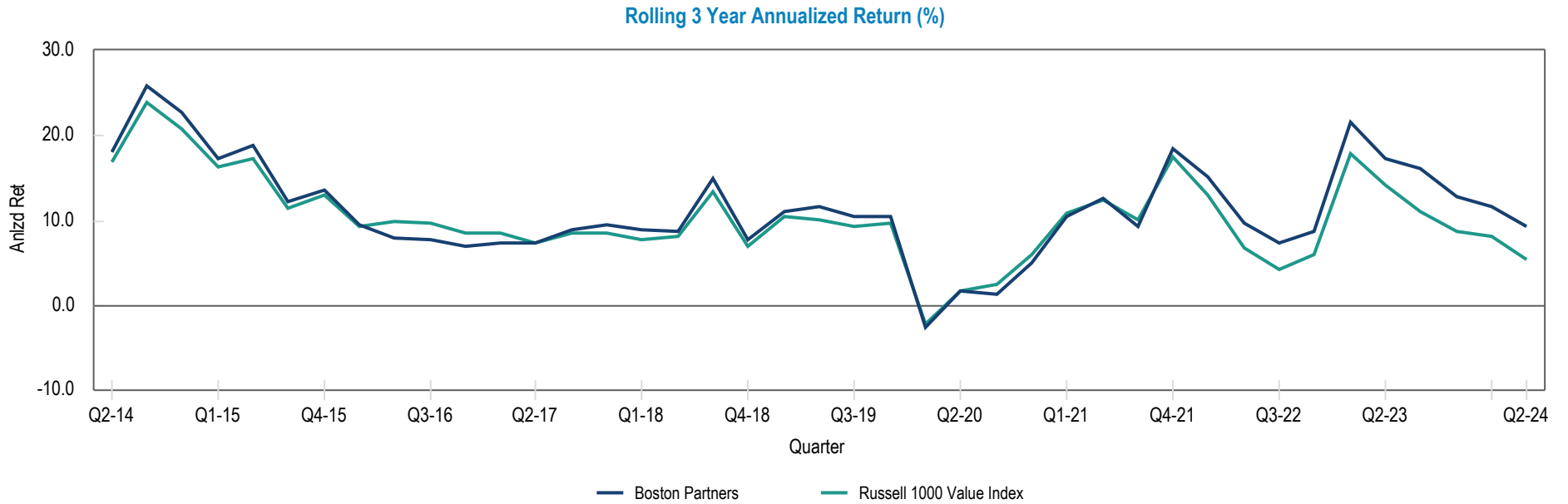
% of Portfolio 16.60 2.47 % of Portfolio 12.11 -2.16

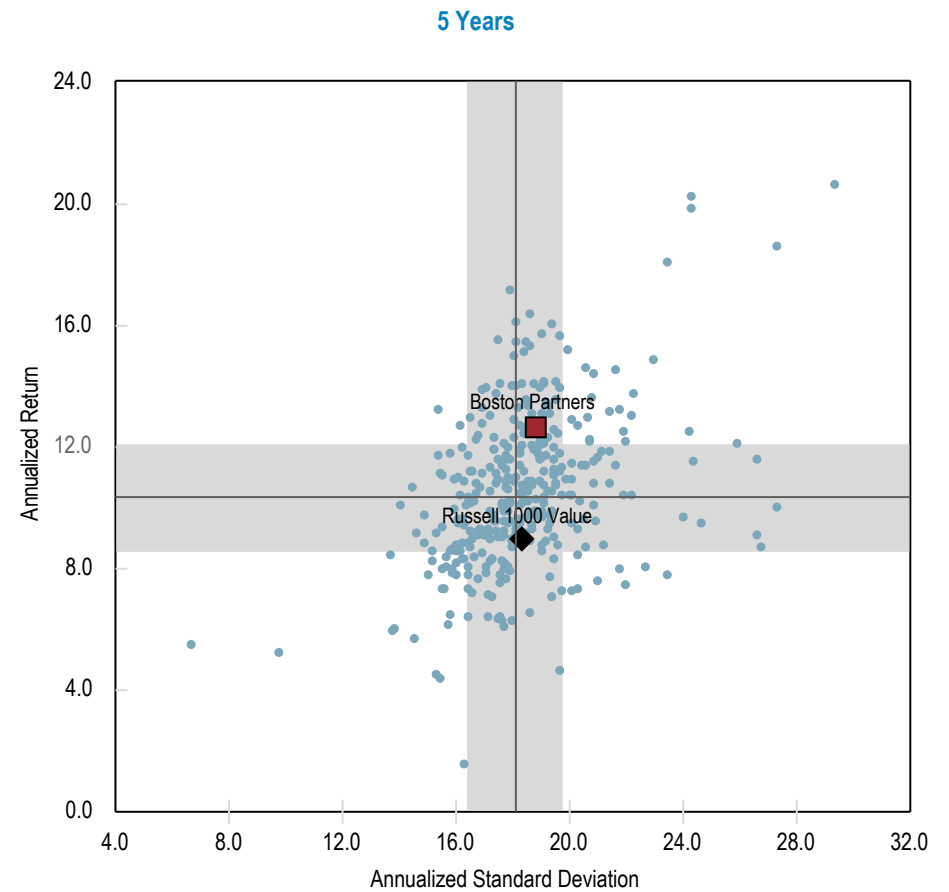
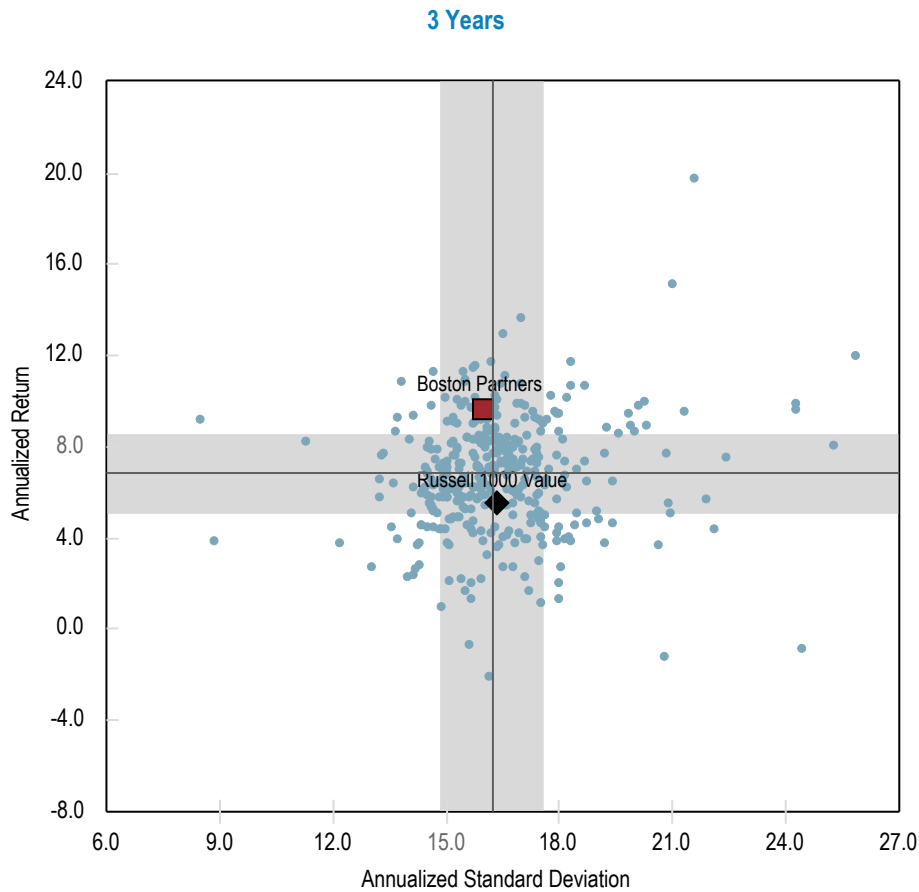
Domestic equity large cap value portfolio exhibiting low turnover in companies with low valuations relative to intrinsic value. Primary personnel include Mark Donovan and David Pyle.

Boston Partners vs. eV US Large Cap Value Equity Gross Universe



	Quarter	1 Year	3 Years	5 Years	10 Years	2023	2022	2021	2020	2019
● Boston Partners	-1.26 (55)	21.46 (14)	9.67 (16)	12.65 (26)	10.17 (31)	14.67 (39)	-3.82 (36)	31.34 (19)	2.96 (64)	24.26 (79)
▲ Russell 1000 Value Index	-2.17 (71)	13.06 (75)	5.52 (80)	9.01 (86)	8.23 (85)	11.46 (62)	-7.54 (69)	25.16 (72)	2.80 (65)	26.54 (57)
5th Percentile	2.23	25.70	11.39	15.59	12.35	28.99	2.35	34.34	17.56	34.33
1st Quartile	0.10	18.89	8.98	12.66	10.55	17.98	-2.41	30.18	10.09	29.98
Median	-1.12	16.02	7.54	11.17	9.60	12.86	-5.42	27.59	4.71	27.19
3rd Quartile	-2.52	12.99	5.99	9.66	8.67	9.26	-8.50	24.70	1.32	24.74
95th Percentile	-4.45	7.81	3.88	7.66	7.54	4.44	-16.05	19.63	-3.51	20.41
Population	384	382	376	358	323	406	421	429	435	461





	3 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
Boston Partners	9.7	16.0	0.5
Russell 1000 Value Index	5.5	16.4	0.2
eV US Large Cap Value Equity Median	7.5	16.3	0.3
Population	376	376	376

	5 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
Boston Partners	12.7	18.8	0.6
Russell 1000 Value Index	9.0	18.3	0.4
eV US Large Cap Value Equity Median	11.2	18.1	0.6
Population	358	358	358

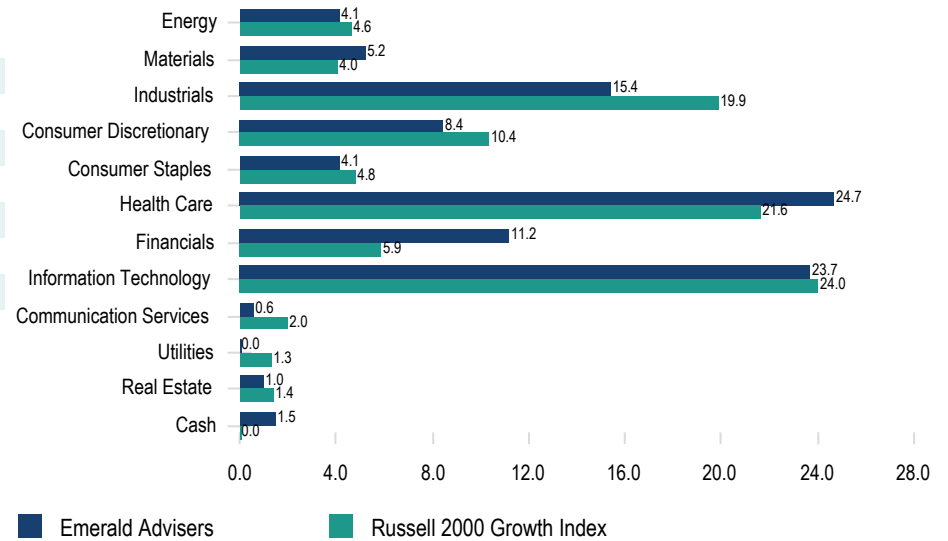
Emerald Advisers
Manager Portfolio Overview

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

Characteristics

	Portfolio	Benchmark
Number of Stocks	114	1,054
Wtd. Avg. Mkt. Cap \$M	5,764.42	5,874.95
Median Mkt. Cap \$M	3,003.46	1,162.61
Price/Earnings ratio	24.03	22.65
Price/Book ratio	4.31	4.10
Return on Equity (%)	0.99	1.52
Current Yield (%)	0.46	0.64
Beta (5 Years, Monthly)	0.95	1.00

Sector Allocation (%) vs. Russell 2000 Growth Index



Largest Holdings

	End Weight (%)	Quarterly Return (%)
FTAI Aviation Ltd	3.62	53.97
TransMedics Group Inc	3.14	103.71
Super Micro Computer Inc	3.03	-18.88
Freshpet Inc	2.86	11.68
Carpenter Technology Corp	2.78	53.82
Varonis Systems Inc	1.95	1.70
Credo Technology Group Holding Ltd	1.90	50.73
Blueprint Medicines Corp	1.77	13.62
Churchill Downs Inc	1.75	12.81
Insmed Inc	1.67	146.96

Top Contributors

	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
TransMedics Group Inc	1.58	103.71	1.63
FTAI Aviation Ltd	2.42	53.97	1.30
Insmed Inc	0.69	146.96	1.02
Carpenter Technology Corp	1.85	53.82	1.00
Credo Technology Group Holding Ltd	1.29	50.73	0.65
Deciphera Pharmaceuticals Inc	0.69	62.68	0.43
FormFactor Inc	1.09	32.65	0.35
Freshpet Inc	2.63	11.68	0.31
RadNet Inc	1.37	21.08	0.29
Onto Innovation Inc	1.17	21.25	0.25

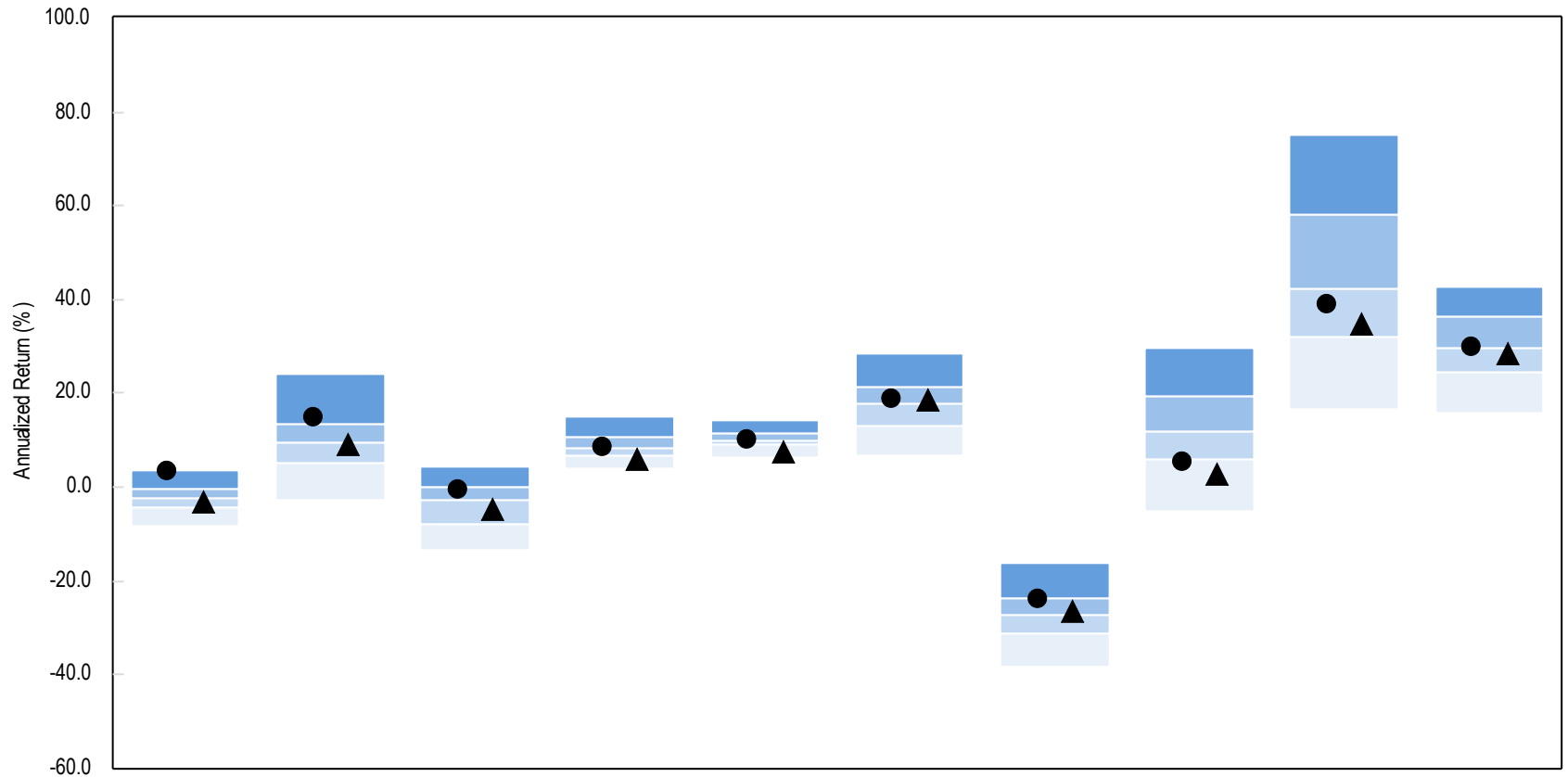
Top Detractors

	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
Super Micro Computer Inc	3.83	-18.88	-0.72
Treace Medical Concepts Inc	0.85	-49.04	-0.42
Viking Therapeutics Inc	1.05	-35.35	-0.37
TriNet Group Inc	1.45	-24.52	-0.36
Savers Value Village Inc	0.97	-36.51	-0.36
National Vision Holdings Inc	0.81	-40.93	-0.33
Quanterix Corp	0.70	-43.93	-0.31
Chart Industries Inc	1.65	-12.37	-0.20
Tenable Holdings Inc	1.70	-11.83	-0.20
Collegium Pharmaceutical Inc	1.09	-17.05	-0.19

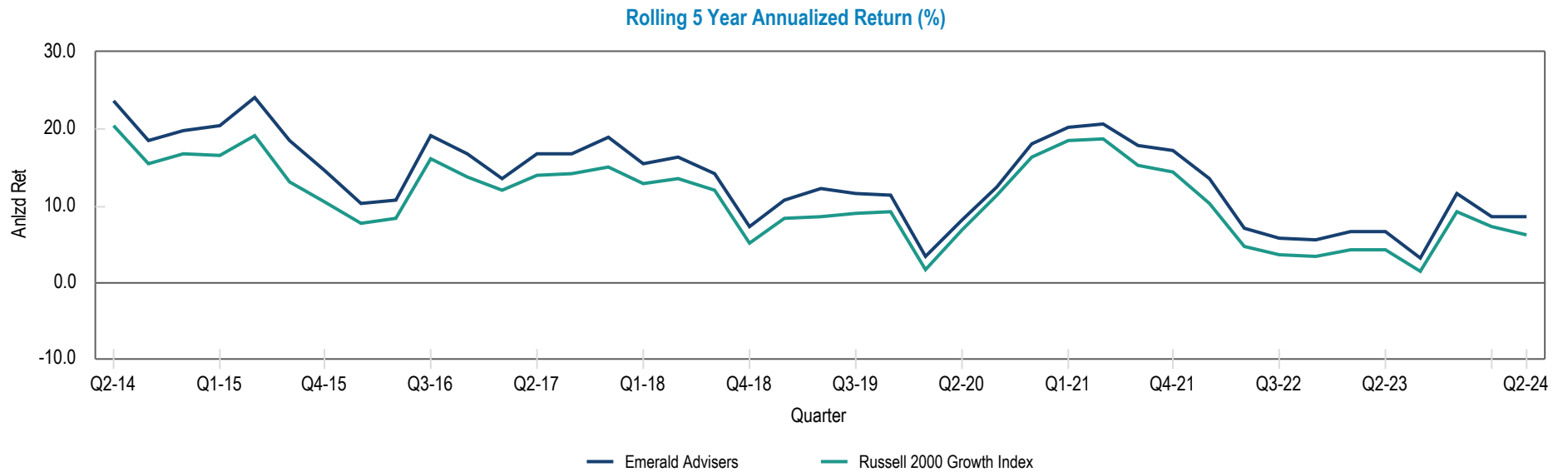
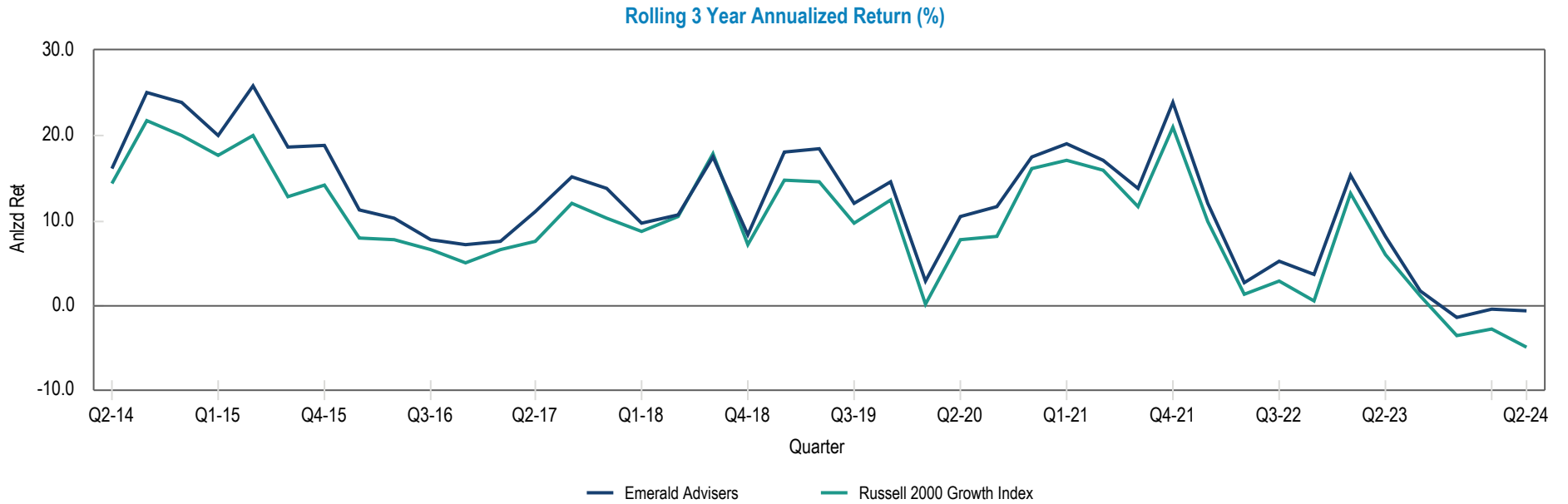
% of Portfolio	14.78	7.24	% of Portfolio	14.10	-3.46
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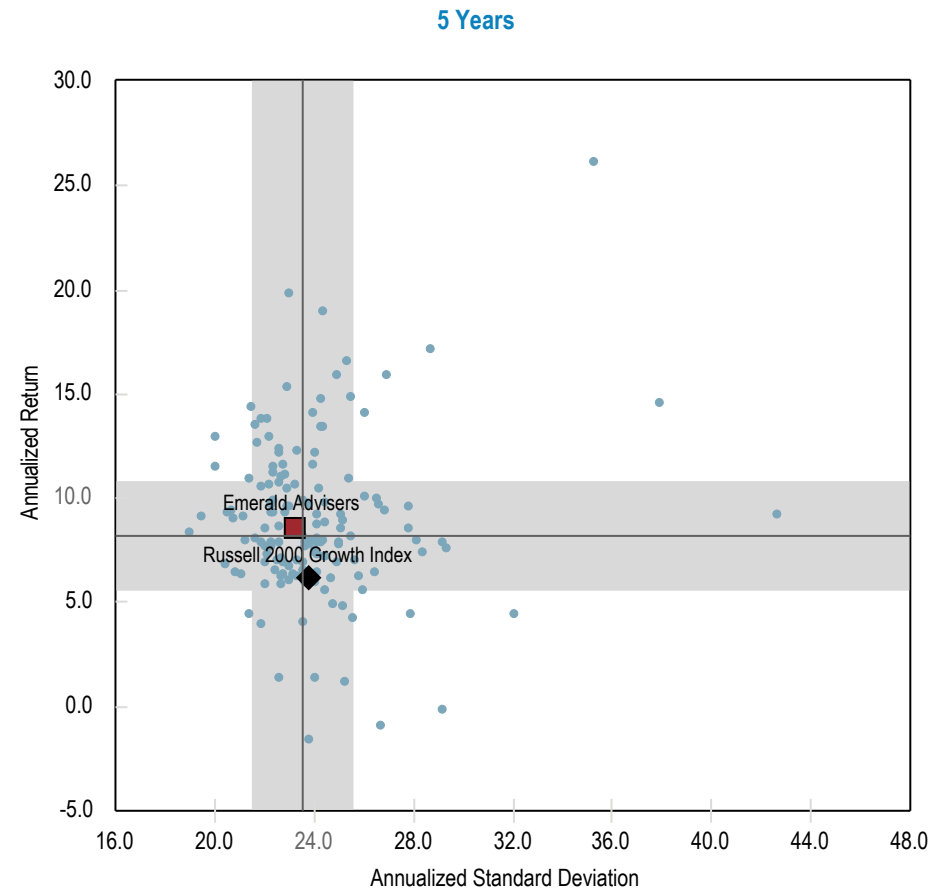
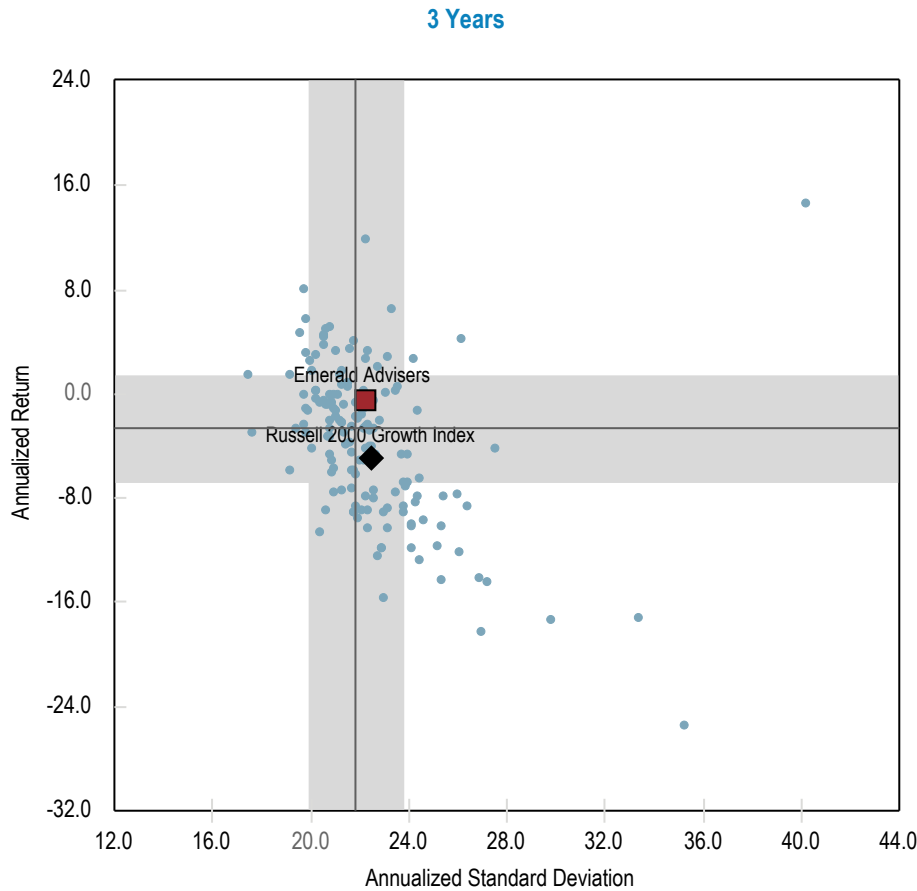
Domestic equity small cap growth portfolio of companies with significantly high growth rates. Primary personnel include Kenneth Mertz, Joseph Garner, and Stacey Sears.

Emerald Advisers vs. eV US Small Cap Growth Equity Gross Universe



	Quarter	1 Year	3 Years	5 Years	10 Years	2023	2022	2021	2020	2019
● Emerald Advisers	3.44 (5)	14.95 (21)	-0.53 (30)	8.58 (47)	10.39 (41)	19.15 (41)	-23.75 (27)	5.53 (77)	38.96 (57)	30.26 (48)
▲ Russell 2000 Growth Index	-2.92 (58)	9.14 (54)	-4.86 (63)	6.17 (86)	7.39 (93)	18.66 (45)	-26.36 (44)	2.83 (85)	34.63 (67)	28.48 (53)
5th Percentile	3.43	24.19	4.56	15.16	14.31	28.63	-16.20	29.85	74.95	42.60
1st Quartile	-0.46	13.43	0.04	10.65	11.56	21.33	-23.57	19.36	58.30	36.52
Median	-2.34	9.47	-2.69	8.20	10.09	17.72	-27.20	11.86	42.23	29.57
3rd Quartile	-4.47	5.24	-7.73	6.96	8.95	13.28	-31.12	5.92	31.96	24.74
95th Percentile	-8.18	-2.53	-13.23	4.15	6.55	6.73	-38.40	-4.98	16.49	15.94
Population	155	155	154	150	136	160	171	182	183	190





3 Years

	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
Emerald Advisers	-0.5	22.2	0.0
Russell 2000 Growth Index	-4.9	22.5	-0.2
eV US Small Cap Growth Equity Median	-2.7	21.9	-0.2
Population	154	154	154

5 Years

	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
Emerald Advisers	8.6	23.2	0.4
Russell 2000 Growth Index	6.2	23.8	0.3
eV US Small Cap Growth Equity Median	8.2	23.6	0.4
Population	150	150	150

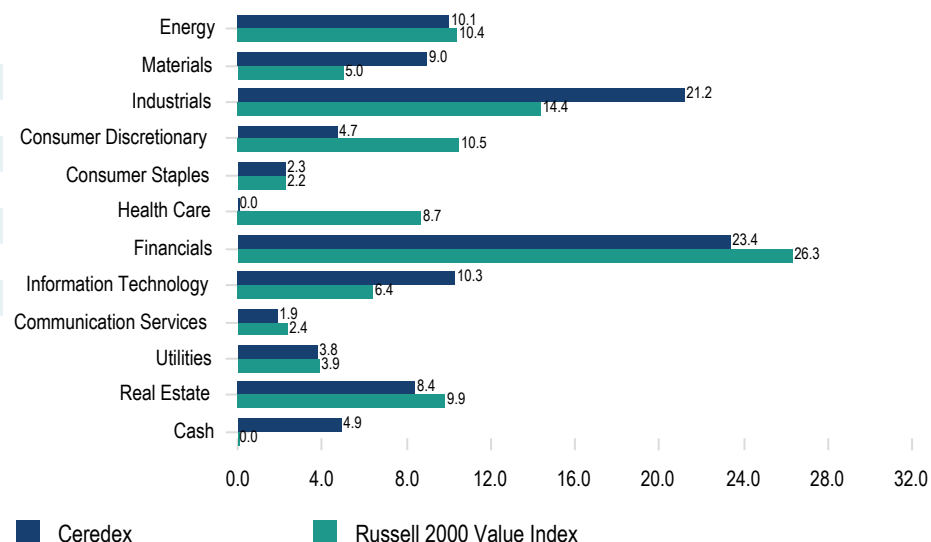
Ceredex
Manager Portfolio Overview

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

Characteristics

	Portfolio	Benchmark
Number of Stocks	73	1,402
Wtd. Avg. Mkt. Cap \$M	5,396.22	2,979.56
Median Mkt. Cap \$M	5,313.26	766.20
Price/Earnings ratio	16.70	12.76
Price/Book ratio	2.19	1.67
Return on Equity (%)	2.73	0.94
Current Yield (%)	2.43	2.31
Beta (5 Years, Monthly)	0.85	1.00

Sector Allocation (%) vs. Russell 2000 Value Index



Largest Holdings

	End Weight (%)	Quarterly Return (%)
Camden Property Trust	2.45	11.93
Valmont Industries Inc	2.30	20.49
Schneider National Inc	2.29	7.17
KBR Inc	2.01	0.99
OGE Energy Corp	1.94	5.37
Carpenter Technology Corp	1.87	53.82
Cactus Inc	1.87	5.54
IDACORP Inc.	1.84	1.15
Progress Software Corp	1.83	2.14
Belden Inc	1.81	1.34

Top Contributors

	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
Carpenter Technology Corp	1.19	53.82	0.64
Valmont Industries Inc	1.88	20.49	0.38
Hudbay Minerals Inc	1.01	29.28	0.30
Camden Property Trust	2.17	11.93	0.26
Schneider National Inc	2.10	7.17	0.15
Agree Realty Corp	1.43	9.80	0.14
Perella Weinberg Partners	0.88	15.51	0.14
Element Solutions Inc	1.35	8.93	0.12
OGE Energy Corp	1.82	5.37	0.10
Helios Technologies Inc	1.38	7.07	0.10

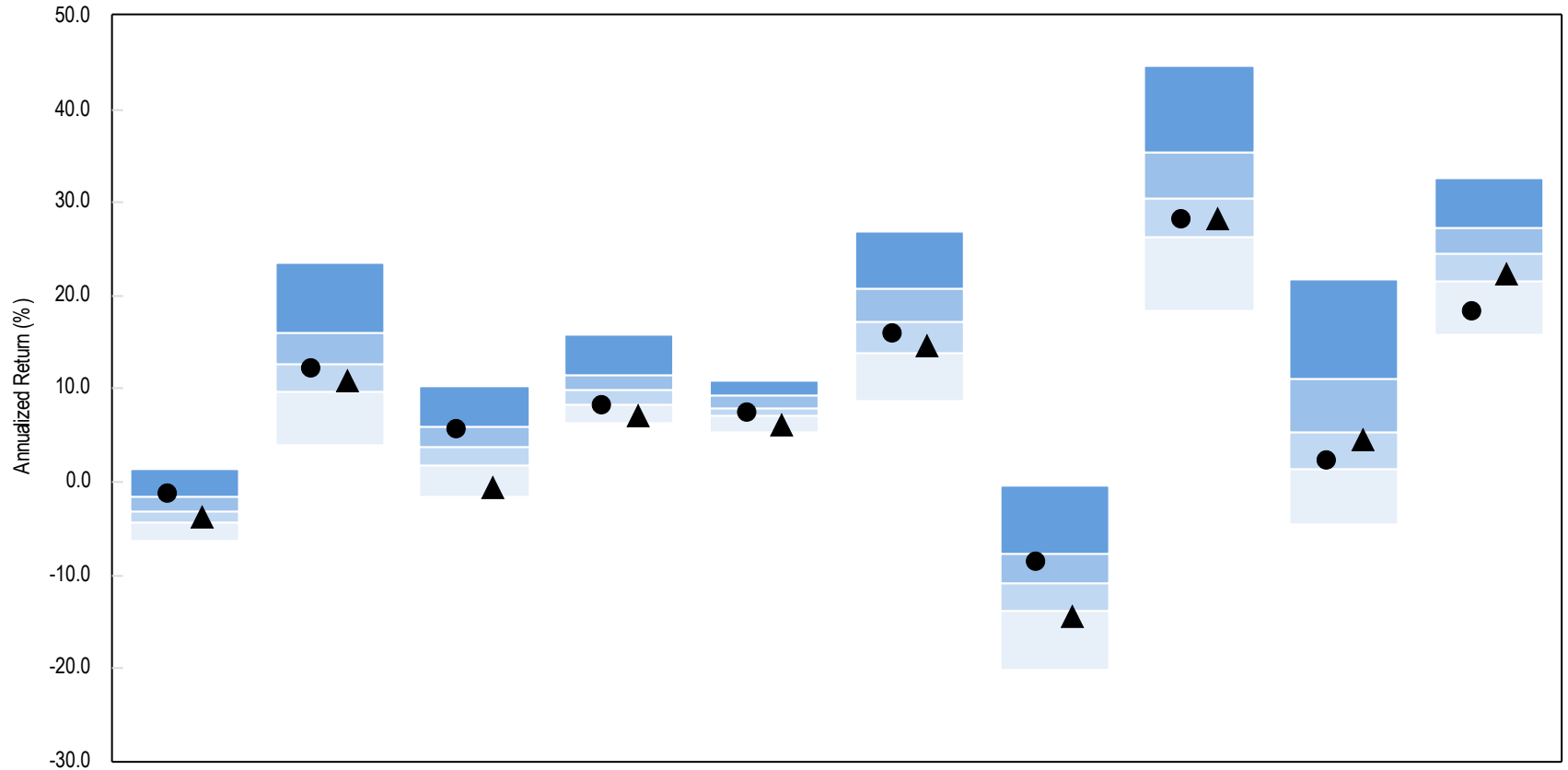
Top Detractors

	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
MSC Industrial Direct Co Inc.	1.64	-17.55	-0.29
Vail Resorts Inc.	1.58	-18.15	-0.29
Atkore Inc	0.95	-28.97	-0.27
Herc Holdings Inc	1.32	-20.44	-0.27
Hexcel Corp	1.48	-14.09	-0.21
Matador Resources Co	1.93	-10.45	-0.20
Huntington Ingalls Industries Inc	1.26	-15.05	-0.19
Autoliv Inc	1.38	-10.68	-0.15
Cogent Communications	1.19	-12.18	-0.15
First American Financial Corp	1.35	-10.74	-0.15

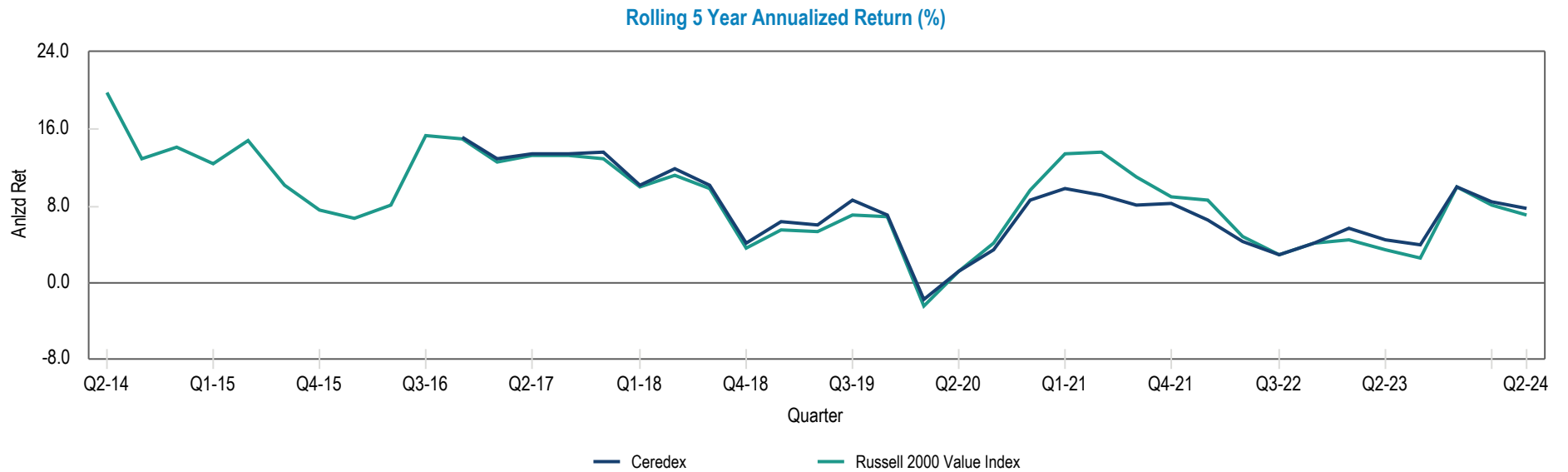
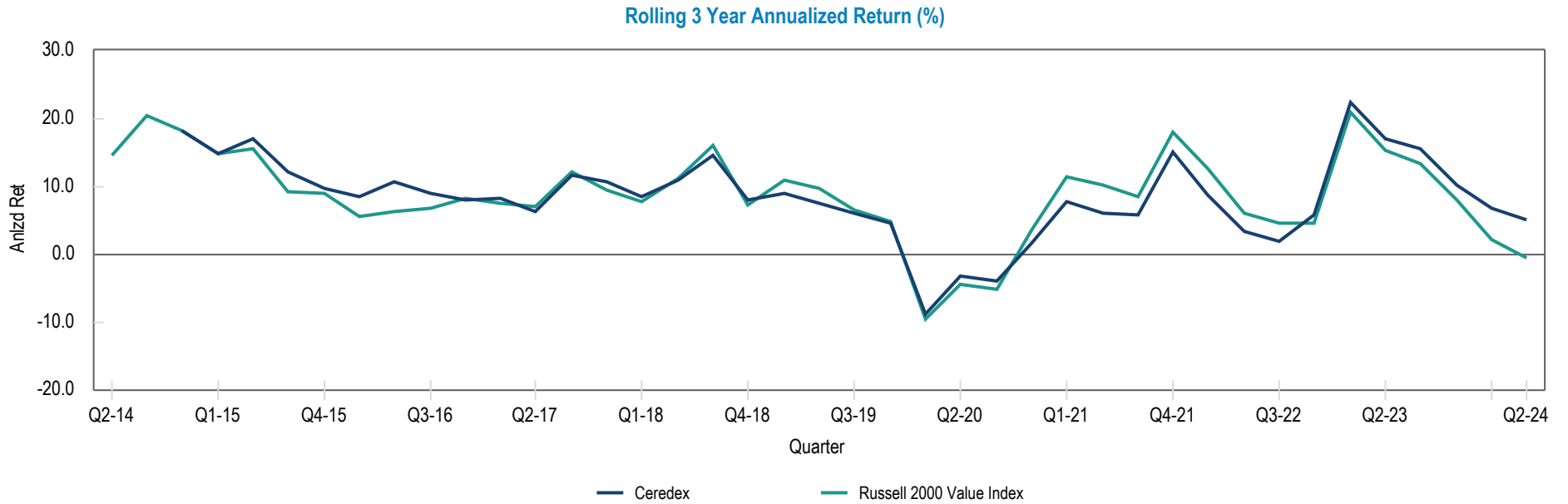
% of Portfolio 15.21 2.33 % of Portfolio 14.08 -2.16

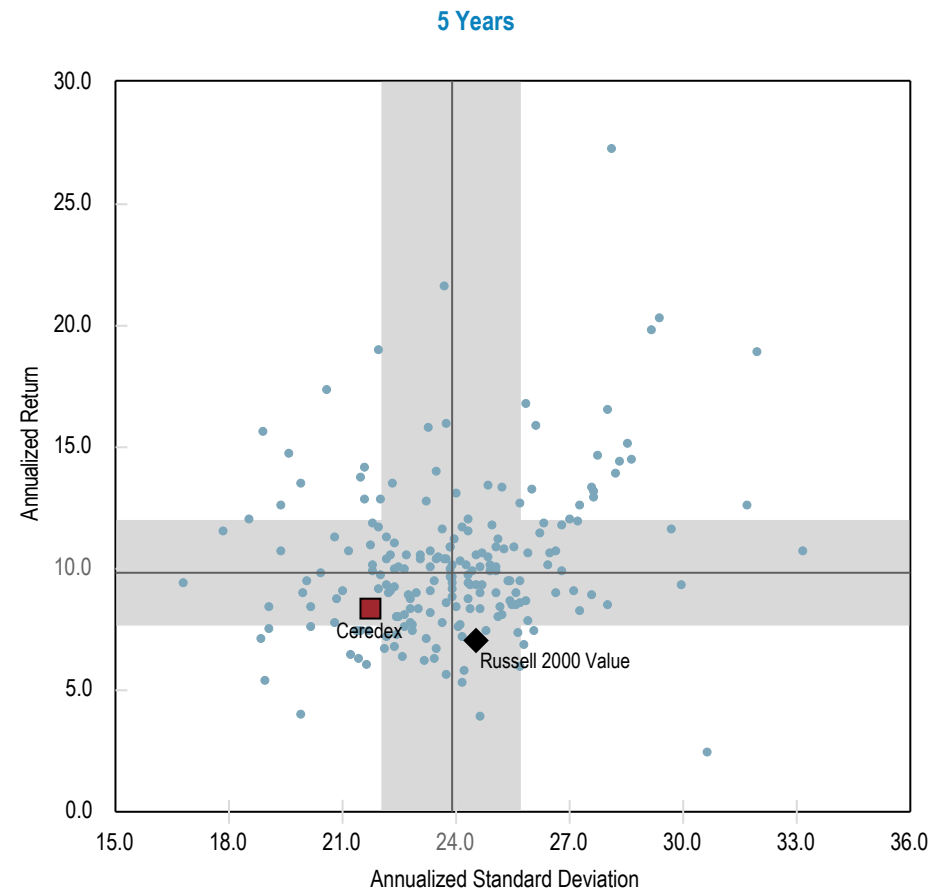
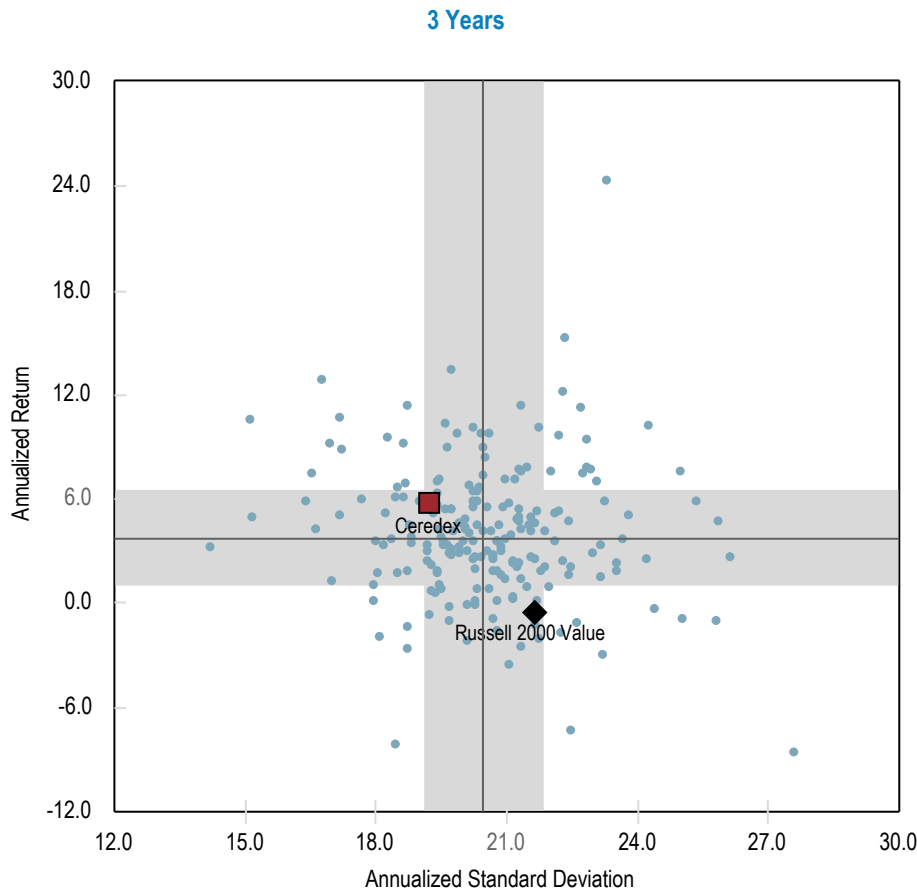
Domestic equity small cap value portfolio of companies with dividend yields and low valuations. Primary personnel include Brett Barner and David Maynard.

Ceredex vs. eV US Small Cap Value Equity Gross Universe



	Quarter	1 Year	3 Years	5 Years	10 Years	2023	2022	2021	2020	2019
● Ceredex	-1.09 (17)	12.25 (52)	5.78 (29)	8.34 (76)	7.49 (65)	16.02 (61)	-8.46 (28)	28.37 (59)	2.32 (70)	18.36 (88)
▲ Russell 2000 Value Index	-3.64 (64)	10.90 (64)	-0.53 (91)	7.07 (92)	6.23 (93)	14.65 (71)	-14.48 (79)	28.27 (60)	4.63 (55)	22.39 (70)
5th Percentile	1.32	23.52	10.36	15.89	10.89	26.82	-0.42	44.60	21.68	32.72
1st Quartile	-1.54	15.94	5.96	11.54	9.24	20.70	-7.72	35.33	11.03	27.36
Median	-3.08	12.69	3.73	9.85	7.96	17.29	-10.93	30.49	5.40	24.42
3rd Quartile	-4.29	9.80	1.84	8.38	7.23	13.94	-13.88	26.23	1.38	21.58
95th Percentile	-6.33	3.96	-1.61	6.29	5.35	8.80	-20.04	18.40	-4.57	15.75
Population	209	209	207	202	177	214	222	234	248	256





	3 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
Ceredex	5.8	19.2	0.2
Russell 2000 Value Index	-0.5	21.6	-0.1
eV US Small Cap Value Equity Median	3.7	20.5	0.1
Population	207	207	207

	5 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
Ceredex	8.3	21.7	0.4
Russell 2000 Value Index	7.1	24.5	0.3
eV US Small Cap Value Equity Median	9.9	23.9	0.4
Population	202	202	202

International Equity Managers

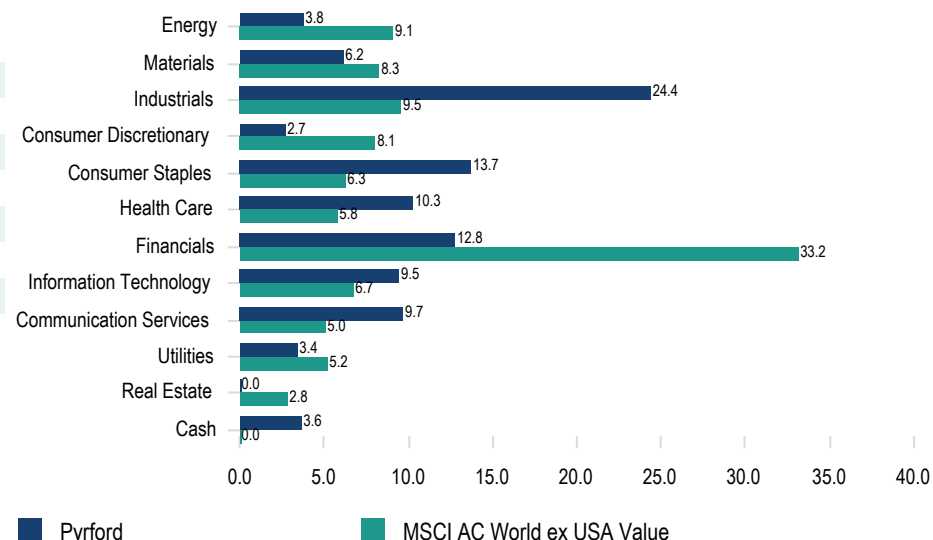
Pyrford Manager Portfolio Overview

Contra Costa County Employees' Retirement Association Period Ending: June 30, 2024

Characteristics

	Portfolio	Benchmark
Number of Stocks	79	1,242
Wtd. Avg. Mkt. Cap \$M	68,424.02	70,390.72
Median Mkt. Cap \$M	21,736.99	9,477.38
Price/Earnings ratio	18.59	12.06
Price/Book ratio	2.30	1.78
Return on Equity (%)	3.87	3.16
Current Yield (%)	4.06	4.43
Beta (5 Years, Monthly)	0.75	1.00

Sector Allocation (%) vs. MSCI AC World ex USA Value



Largest Holdings

	End Weight (%)	Quarterly Return (%)
Japan Tobacco Inc	2.68	3.15
United Overseas Bank Ltd	2.61	9.41
Mitsubishi Electric Corp	2.47	-3.84
SAP SE	2.42	5.51
Roche Holding AG	2.28	8.87
Novartis AG	2.23	10.33
Nestle SA, Cham Und Vevey	2.12	-0.92
Brambles Ltd	2.10	-7.90
Telenor ASA	2.08	6.79
Taiwan Semiconductor Man.	2.04	22.80

Top Contributors

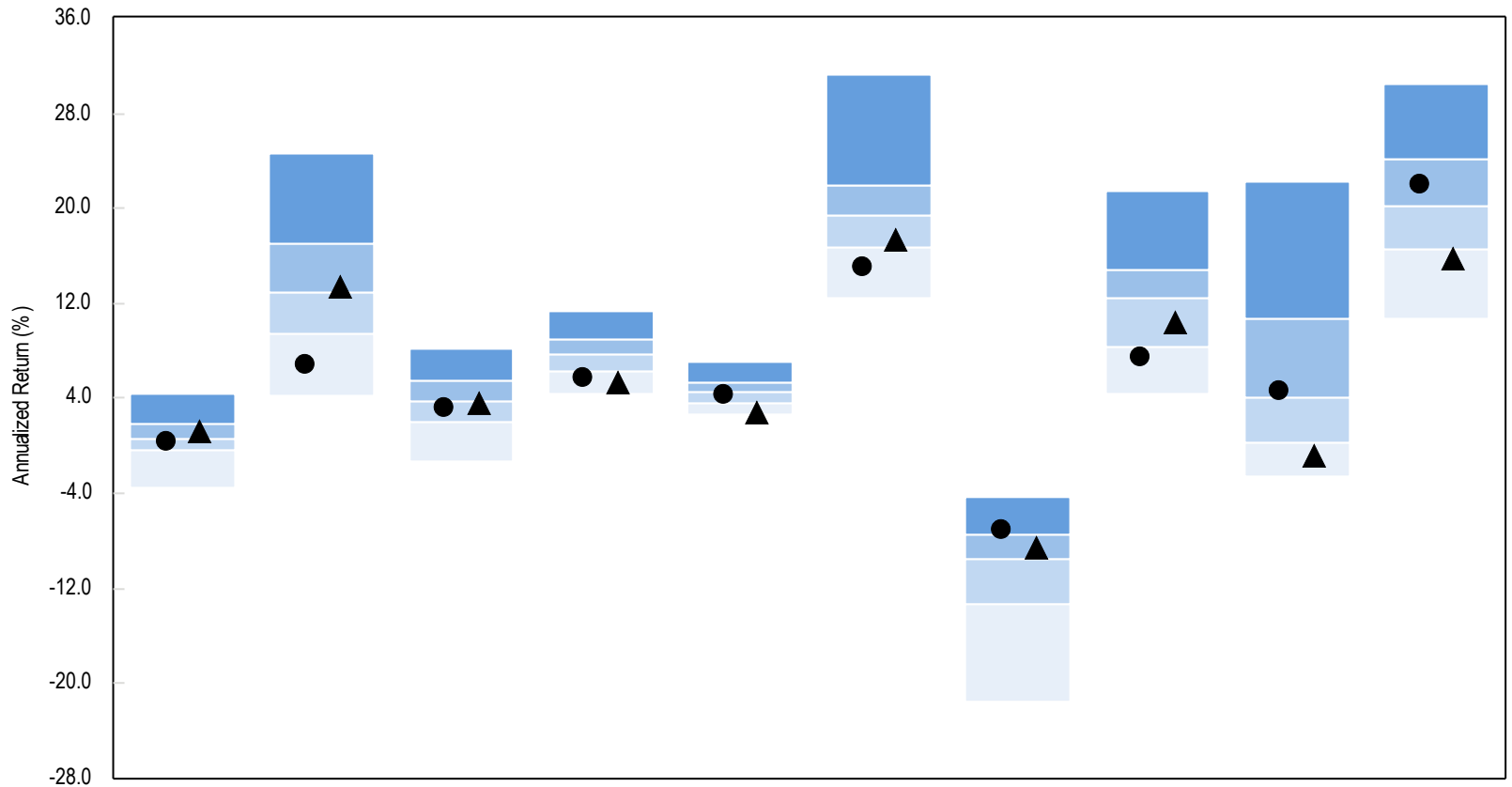
	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
Taiwan Semiconductor Man.	1.62	22.80	0.37
VTech Holdings Ltd	1.13	23.38	0.26
United Overseas Bank Ltd	2.39	9.41	0.22
Novartis AG	1.97	10.33	0.20
Koninklijke Philips NV	0.62	30.12	0.19
Roche Holding AG	2.04	8.87	0.18
Unilever PLC	1.73	10.33	0.18
Imperial Brands PLC	1.05	15.75	0.17
Nihon Kohden Corp	1.59	9.22	0.15
Singapore Telecommunications	1.72	8.24	0.14
% of Portfolio	15.86		2.06

Top Detractors

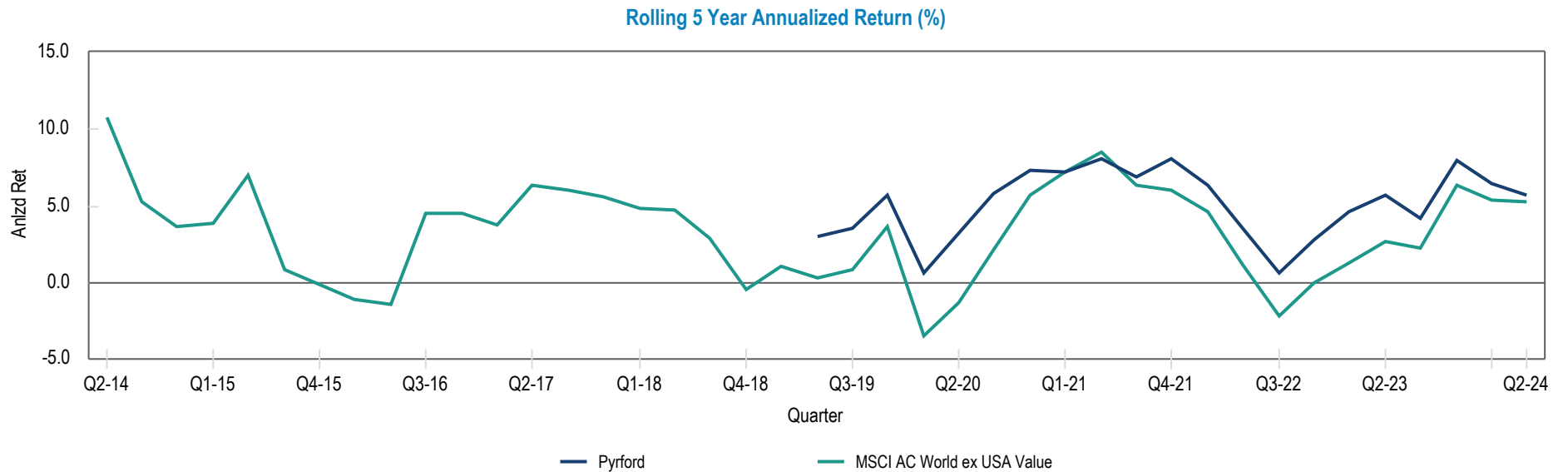
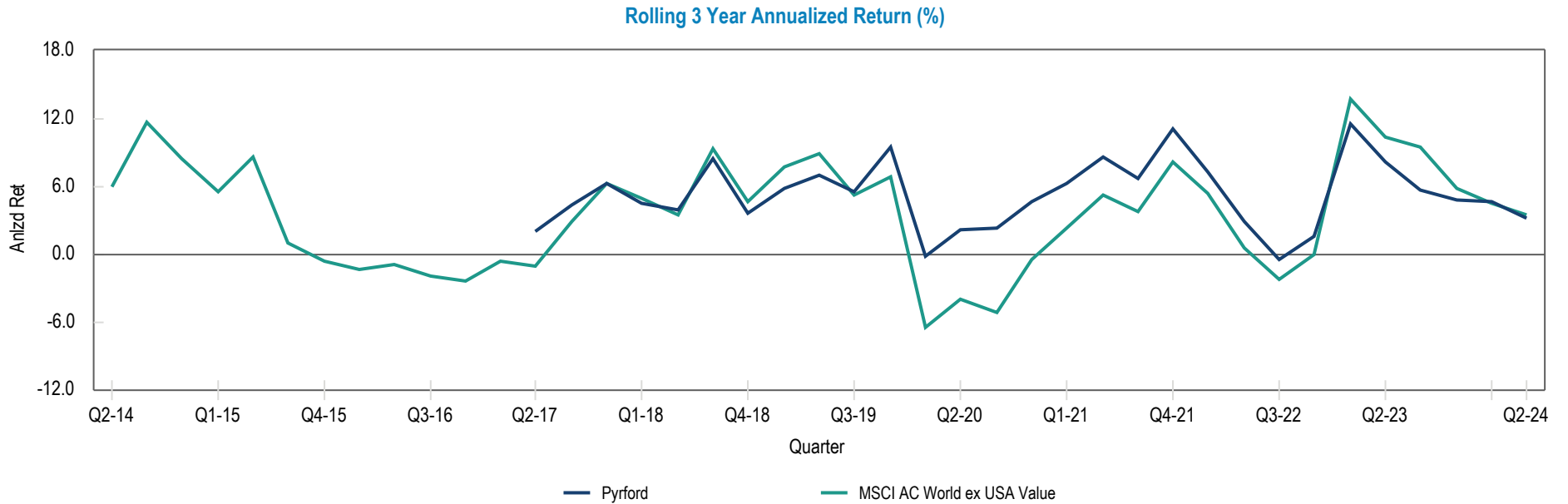
	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
PT Bank Rakyat Indonesia (Persero) Tbk	1.52	-26.38	-0.40
Brenntag SE	1.67	-17.40	-0.29
Kddi Corp	2.03	-10.70	-0.22
Brambles Ltd	2.23	-7.90	-0.18
L'Air Liquide SA	2.20	-7.13	-0.16
Sumitomo Rubber Industries Ltd	0.83	-18.26	-0.15
GSK plc	1.53	-9.67	-0.15
Nissan Chemical Corp	0.78	-16.24	-0.13
Rubis	0.86	-14.60	-0.13
Bureau Veritas SA	1.32	-9.26	-0.12
% of Portfolio	14.97		-1.92

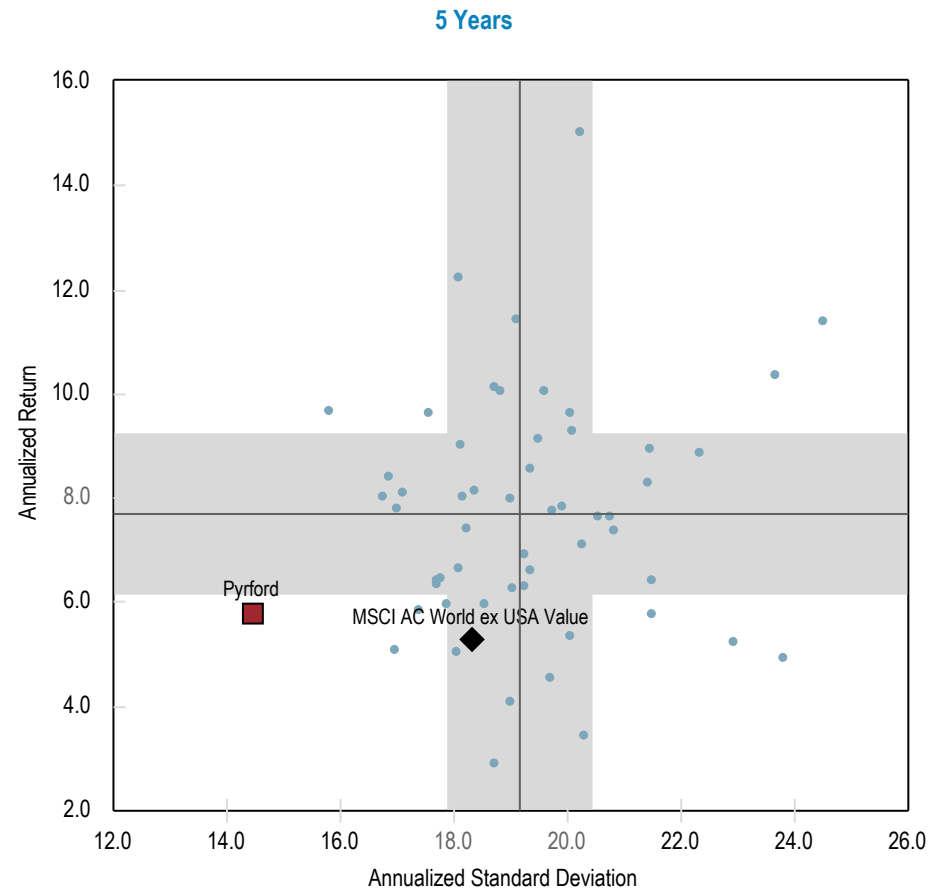
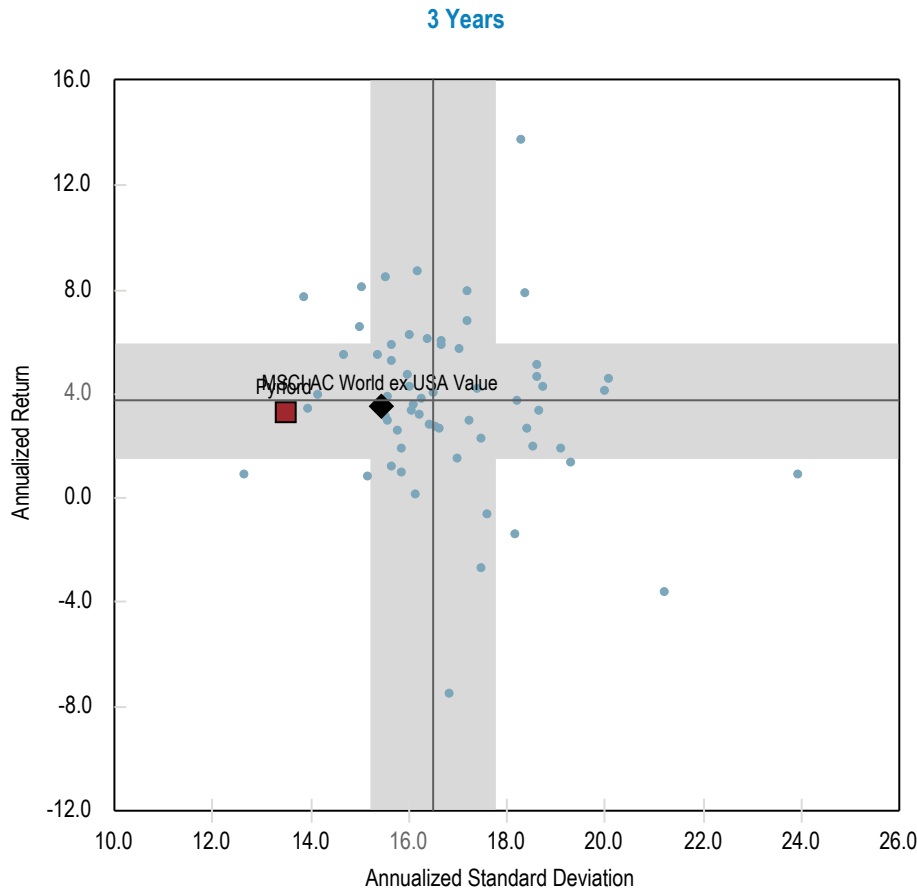
International equity value portfolio of non-US companies with low valuations at the country and stock level. Primary personnel include Tony Cousins, Daniel McDonagh, and Paul Simons.

Pyrford vs. eV ACWI ex-US Value Equity Gross Universe



	Quarter	1 Year	3 Years	5 Years	10 Years	2023	2022	2021	2020	2019
● Pyrford	0.50 (54)	6.85 (92)	3.27 (58)	5.77 (84)	4.41 (58)	15.17 (83)	-6.97 (21)	7.57 (84)	4.66 (47)	22.07 (38)
▲ MSCI AC World ex USA Value (Net)	1.26 (40)	13.45 (49)	3.55 (53)	5.29 (87)	2.76 (94)	17.30 (68)	-8.59 (41)	10.46 (66)	-0.77 (80)	15.72 (78)
5th Percentile	4.40	24.60	8.14	11.42	7.15	31.22	-4.22	21.44	22.18	30.55
1st Quartile	1.93	17.08	5.51	9.03	5.31	21.96	-7.46	14.88	10.71	24.23
Median	0.65	12.87	3.74	7.72	4.58	19.46	-9.43	12.53	4.15	20.24
3rd Quartile	-0.28	9.48	1.99	6.30	3.63	16.69	-13.27	8.35	0.31	16.63
95th Percentile	-3.56	4.31	-1.37	4.40	2.61	12.47	-21.52	4.34	-2.63	10.68
Population	63	63	61	54	38	64	67	69	71	69





	3 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
Pyrford	3.3	13.5	0.1
MSCI AC World ex USA Value (Net)	3.5	15.4	0.1
eV ACWI ex-US Value Equity Median	3.7	16.5	0.1
Population	61	61	61

	5 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
Pyrford	5.8	14.5	0.3
MSCI AC World ex USA Value (Net)	5.3	18.3	0.3
eV ACWI ex-US Value Equity Median	7.7	19.2	0.4
Population	54	54	54

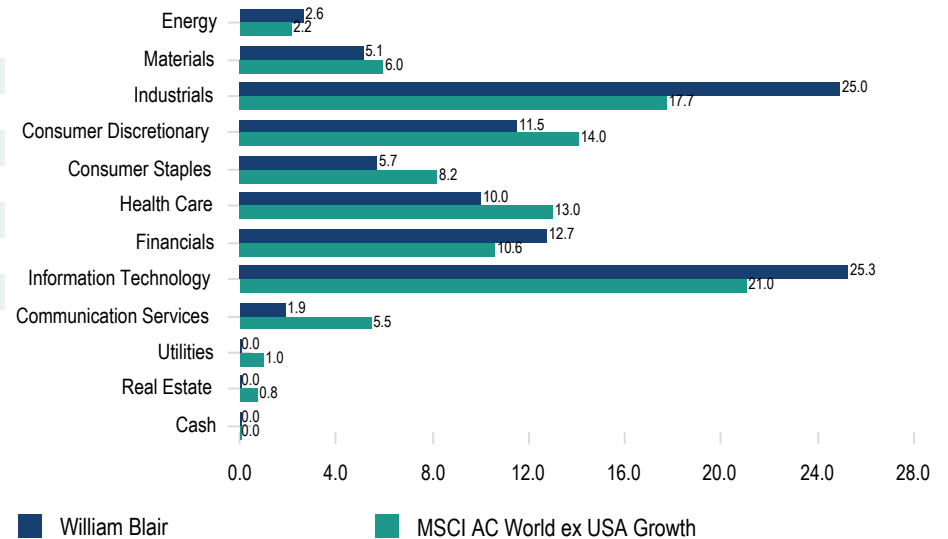
William Blair
 Manager Portfolio Overview

Contra Costa County Employees' Retirement Association
 Period Ending: June 30, 2024

Characteristics

	Portfolio	Benchmark
Number of Stocks	173	1,227
Wtd. Avg. Mkt. Cap \$M	117,131.63	152,710.63
Median Mkt. Cap \$M	17,603.88	8,852.77
Price/Earnings ratio	28.09	23.43
Price/Book ratio	4.38	3.76
Return on Equity (%)	6.85	2.62
Current Yield (%)	1.50	1.67
Beta (5 Years, Monthly)	1.06	1.00

Sector Allocation (%) vs. MSCI AC World ex USA Growth



Largest Holdings

	End Weight (%)	Quarterly Return (%)
Taiwan Semiconductor Man.	3.89	28.16
Novo Nordisk A/S	2.85	13.26
ASML Holding NV	2.75	7.46
London Stock Exchange Group	1.53	-0.01
Safran SA	1.49	-5.78
Reliance Industries Ltd	1.47	5.37
Keyence Corp	1.45	-4.55
Tokio Marine Holdings Inc	1.43	20.13
SK Hynix Inc	1.35	26.39
Samsung Electronics Co Ltd	1.35	-3.27

Top Contributors

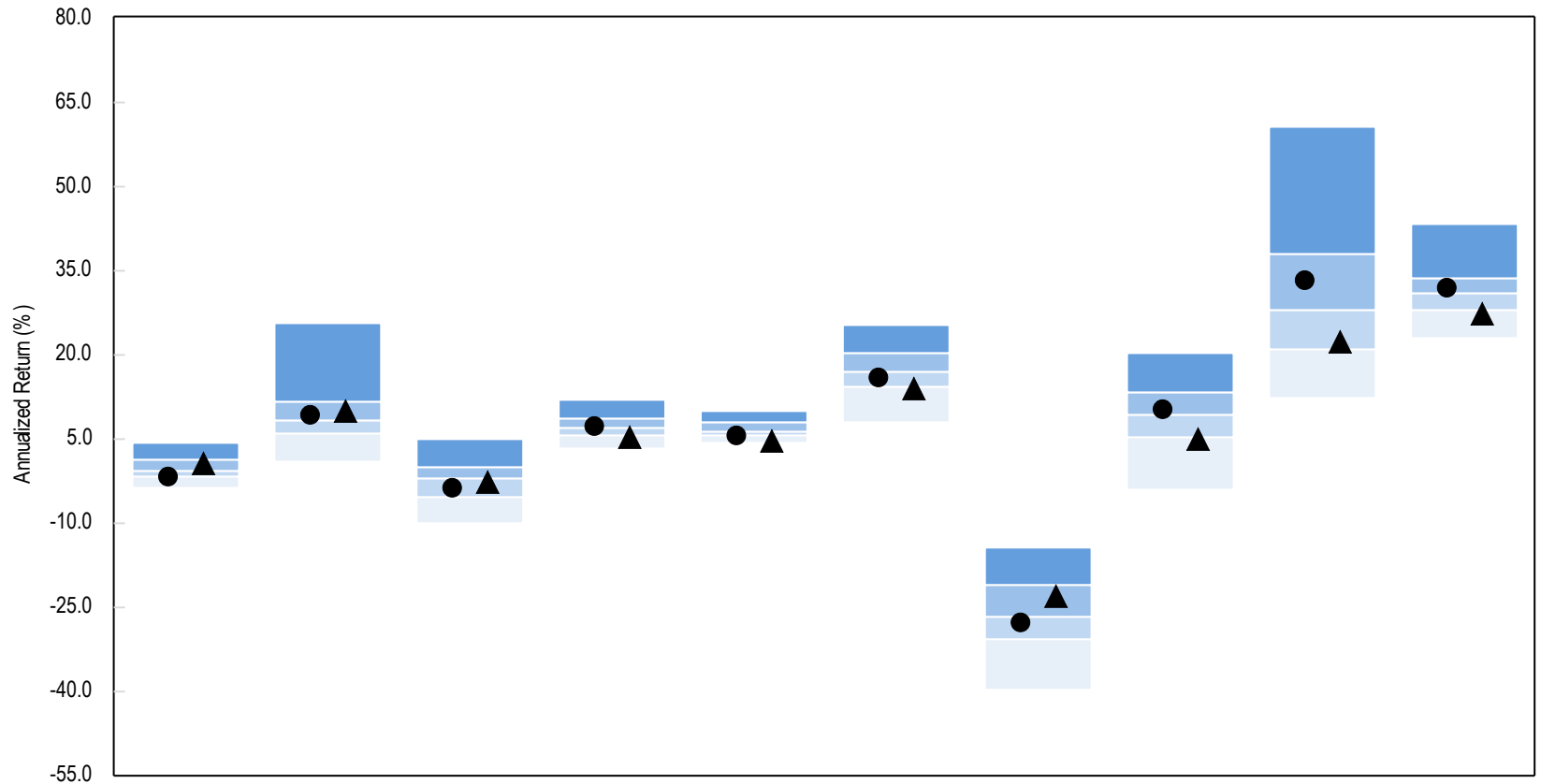
	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
Taiwan Semiconductor Man.	2.96	28.16	0.83
Novo Nordisk A/S	2.45	13.26	0.32
SK Hynix Inc	1.04	26.39	0.27
Tokio Marine Holdings Inc	1.15	20.13	0.23
Mahindra & Mahindra Ltd	0.43	49.23	0.21
Dollarama Inc	0.98	19.81	0.19
ASML Holding NV	2.49	7.46	0.19
Mediatek Incorporation	0.97	15.57	0.15
HDFC Bank Limited	0.81	17.89	0.14
Pro Medicus Ltd	0.34	41.35	0.14
% of Portfolio	13.62		2.69

Top Detractors

	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
Airbus SE	1.68	-24.13	-0.41
Tokyo Electron Ltd	1.36	-17.02	-0.23
Ryanair Holdings PLC	0.98	-20.02	-0.20
NICE Ltd	0.55	-34.01	-0.19
Dassault Systemes SE	1.26	-14.14	-0.18
Lasertec Corp	0.83	-18.49	-0.15
LVMH Moet Hennessy Louis V	1.07	-14.26	-0.15
SCREEN Holdings Co Ltd	0.46	-31.67	-0.14
Lululemon Athletica Inc	0.61	-23.54	-0.14
Canadian Pacific Kansas City Ltd	1.30	-10.55	-0.14
% of Portfolio	10.10		-1.93

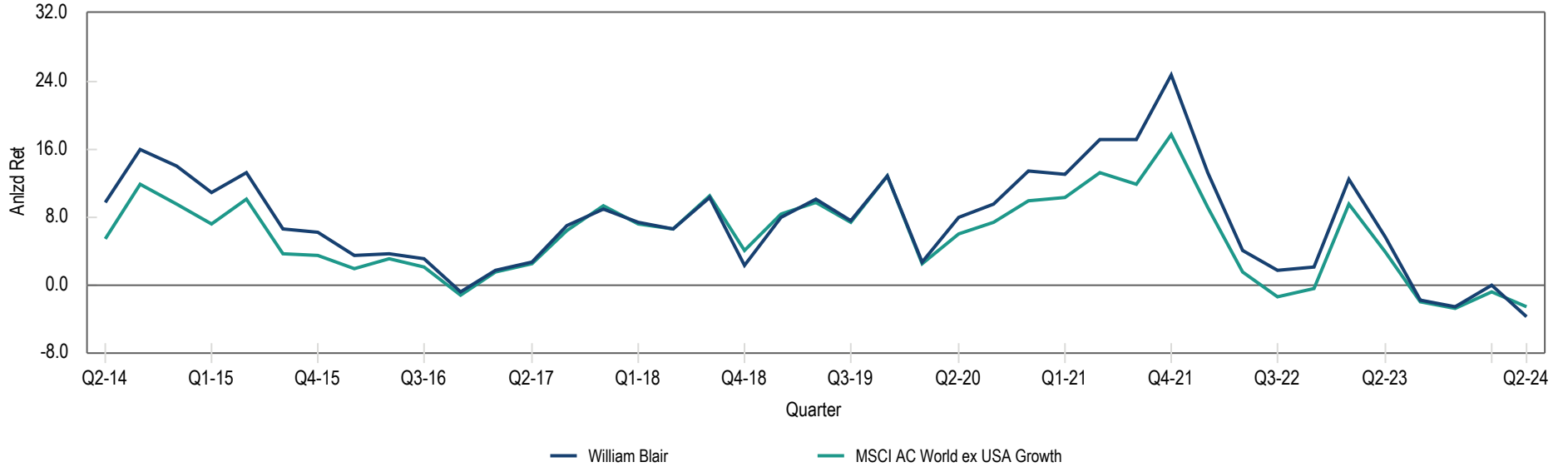
International equity growth portfolio of non-US companies with high growth rates constructed from the security level. Primary personnel include Simon Fennell and Kenneth McAtamney.

William Blair vs. eV ACWI ex-US Growth Equity Gross Universe

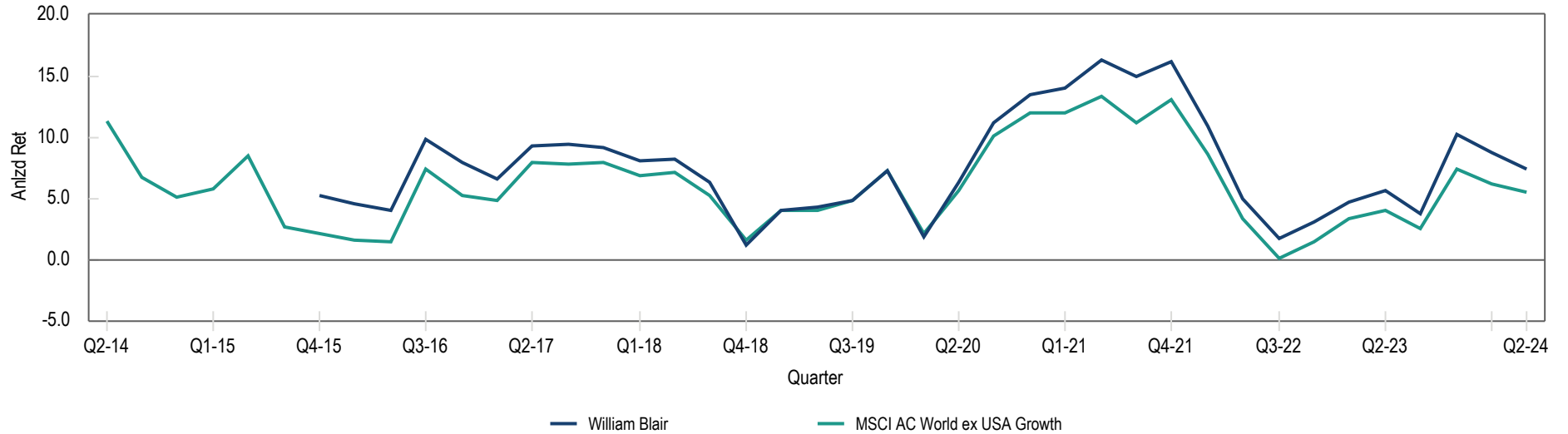


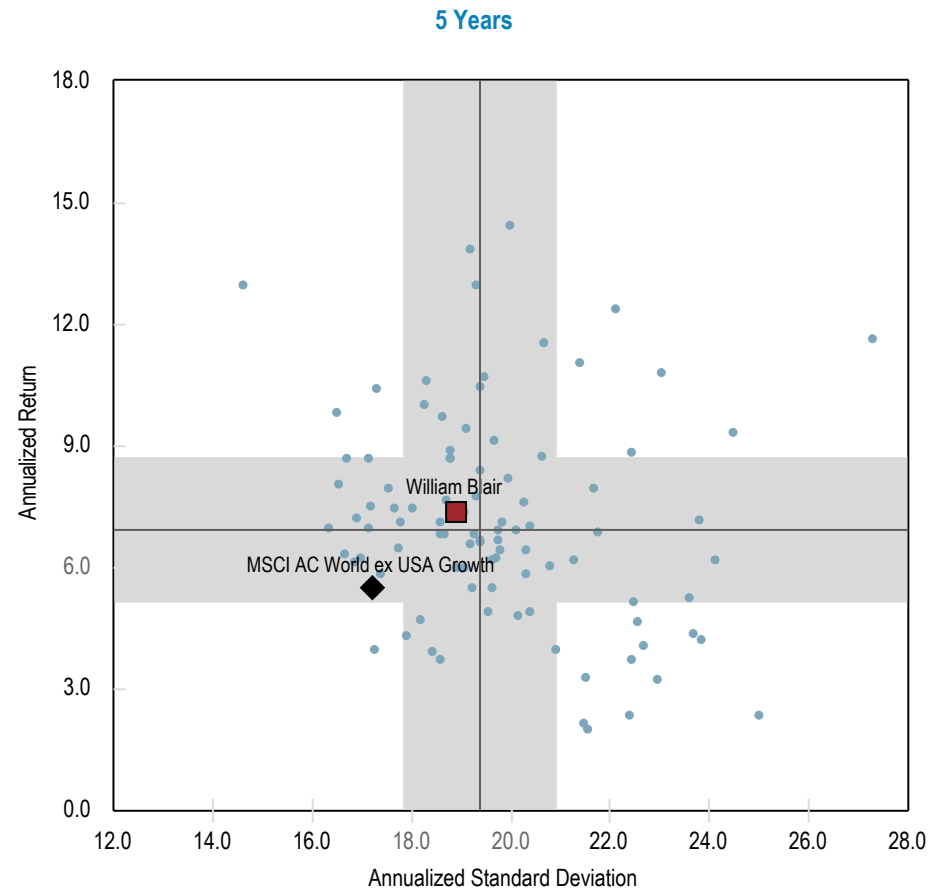
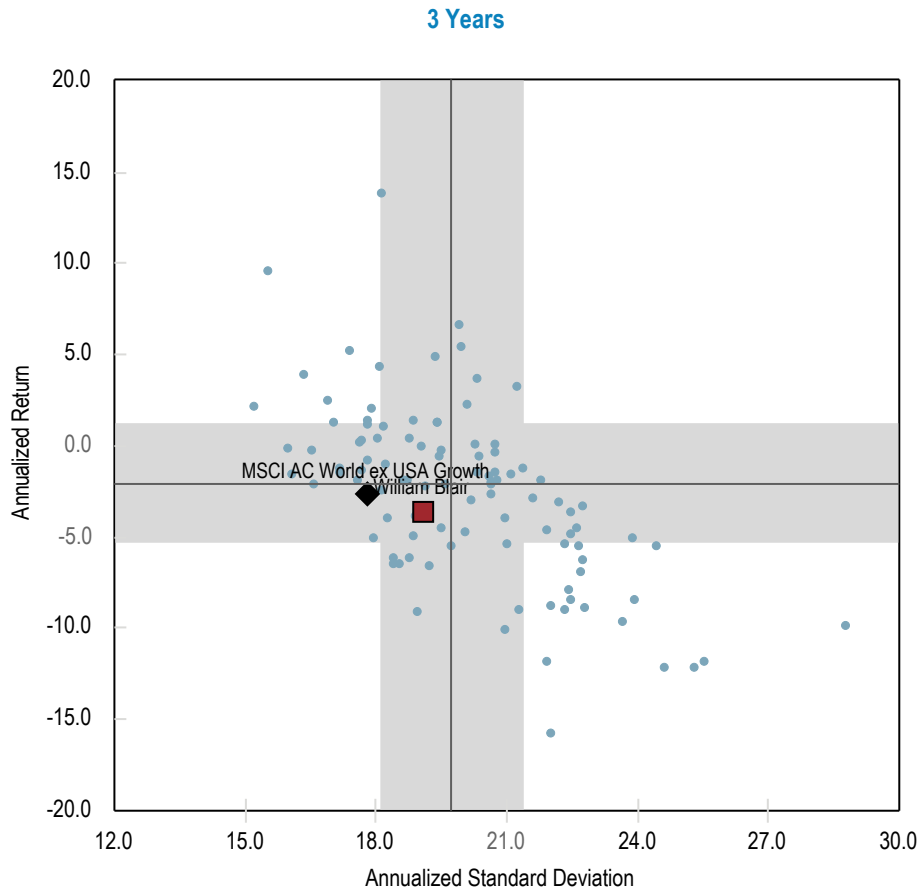
	Quarter	1 Year	3 Years	5 Years	10 Years	2023	2022	2021	2020	2019
● William Blair	-1.51 (72)	9.30 (45)	-3.66 (62)	7.38 (40)	5.81 (68)	16.15 (59)	-27.75 (56)	10.48 (41)	33.25 (36)	32.01 (38)
▲ MSCI AC World ex USA Growth	0.72 (32)	9.88 (40)	-2.62 (55)	5.49 (77)	4.74 (90)	14.03 (77)	-23.05 (31)	5.09 (76)	22.20 (73)	27.34 (78)
5th Percentile	4.23	25.76	4.91	11.85	9.99	25.47	-14.29	20.35	60.75	43.36
1st Quartile	1.21	11.59	0.08	8.72	8.04	20.18	-20.98	13.39	37.97	33.67
Median	-0.59	8.44	-2.02	6.94	6.28	17.08	-26.60	9.33	28.13	30.96
3rd Quartile	-1.76	5.97	-5.42	5.68	5.56	14.18	-30.77	5.17	21.13	27.84
95th Percentile	-3.81	0.86	-10.08	3.29	4.41	7.96	-39.81	-3.97	12.38	23.07
Population	104	104	103	95	71	111	115	118	113	111

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





	3 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
William Blair	-3.7	19.1	-0.3
MSCI AC World ex USA Growth (Net)	-2.6	17.8	-0.2
eV ACWI ex-US Growth Equity Median	-2.0	19.7	-0.2
Population	103	103	103

	5 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
William Blair	7.4	18.9	0.4
MSCI AC World ex USA Growth (Net)	5.5	17.2	0.3
eV ACWI ex-US Growth Equity Median	6.9	19.4	0.3
Population	95	95	95

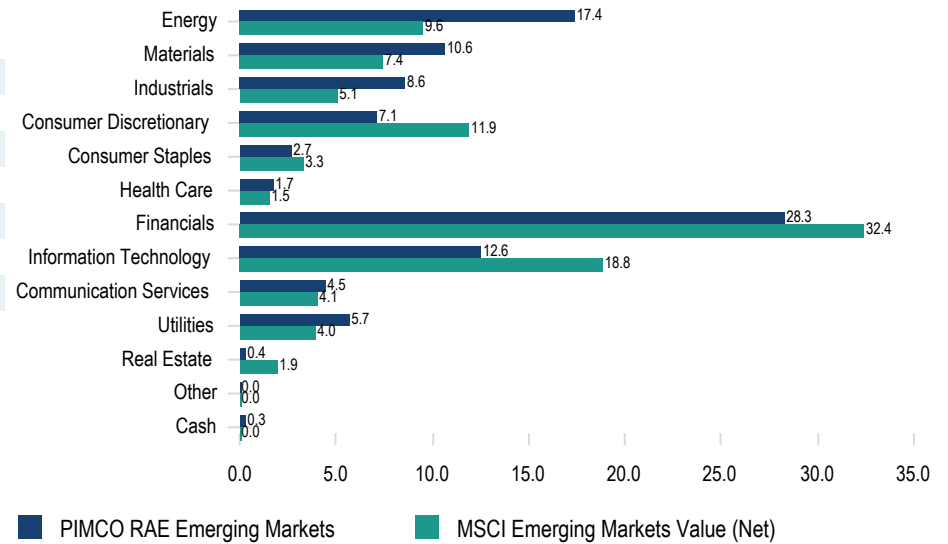
PIMCO RAE Emerging Markets Manager Portfolio Overview

Contra Costa County Employees' Retirement Association Period Ending: June 30, 2024

Characteristics

	Portfolio	Benchmark
Number of Stocks	335	733
Wtd. Avg. Mkt. Cap \$M	28,487.88	69,960.00
Median Mkt. Cap \$M	4,351.51	7,389.02
Price/Earnings ratio	8.63	11.26
Price/Book ratio	1.83	1.93
Return on Equity (%)	3.06	3.40
Current Yield (%)	5.47	4.08
Beta (5 Years, Monthly)	1.06	1.00

Sector Allocation (%) vs. MSCI Emerging Markets Value (Net)



Largest Holdings

	End Weight (%)	Quarterly Return (%)
China Construction Bank Corp	5.03	22.54
PetroChina Company Limited	3.49	22.48
Petroleo Brasileiro S.A	3.46	1.31
China Petroleum & Chemical	3.04	14.24
Bank of China Ltd	3.01	19.49
Industrial & Comm. Bank of China	2.82	18.05
Vedanta Ltd	2.15	71.15
POSCO Holdings Inc	2.15	-15.87
Quanta Computer Inc	1.84	8.35
Power Finance Corp Ltd	1.77	24.33

Top Contributors

	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
China Construction Bank Corp	4.13	22.54	0.93
Vedanta Ltd	1.30	71.15	0.92
PetroChina Company Limited	2.97	22.48	0.67
Hon Hai Precision Industry	1.21	40.74	0.49
Bank of China Ltd	2.54	19.49	0.49
Industrial & Comm. Bank of China	2.41	18.05	0.44
China Petroleum & Chemical	2.68	14.24	0.38
Power Finance Corp Ltd	1.43	24.33	0.35
Lenovo Group Ltd	1.14	21.79	0.25
Bharat Heavy Electricals Ltd	1.03	21.68	0.22

% of Portfolio 20.84 5.15

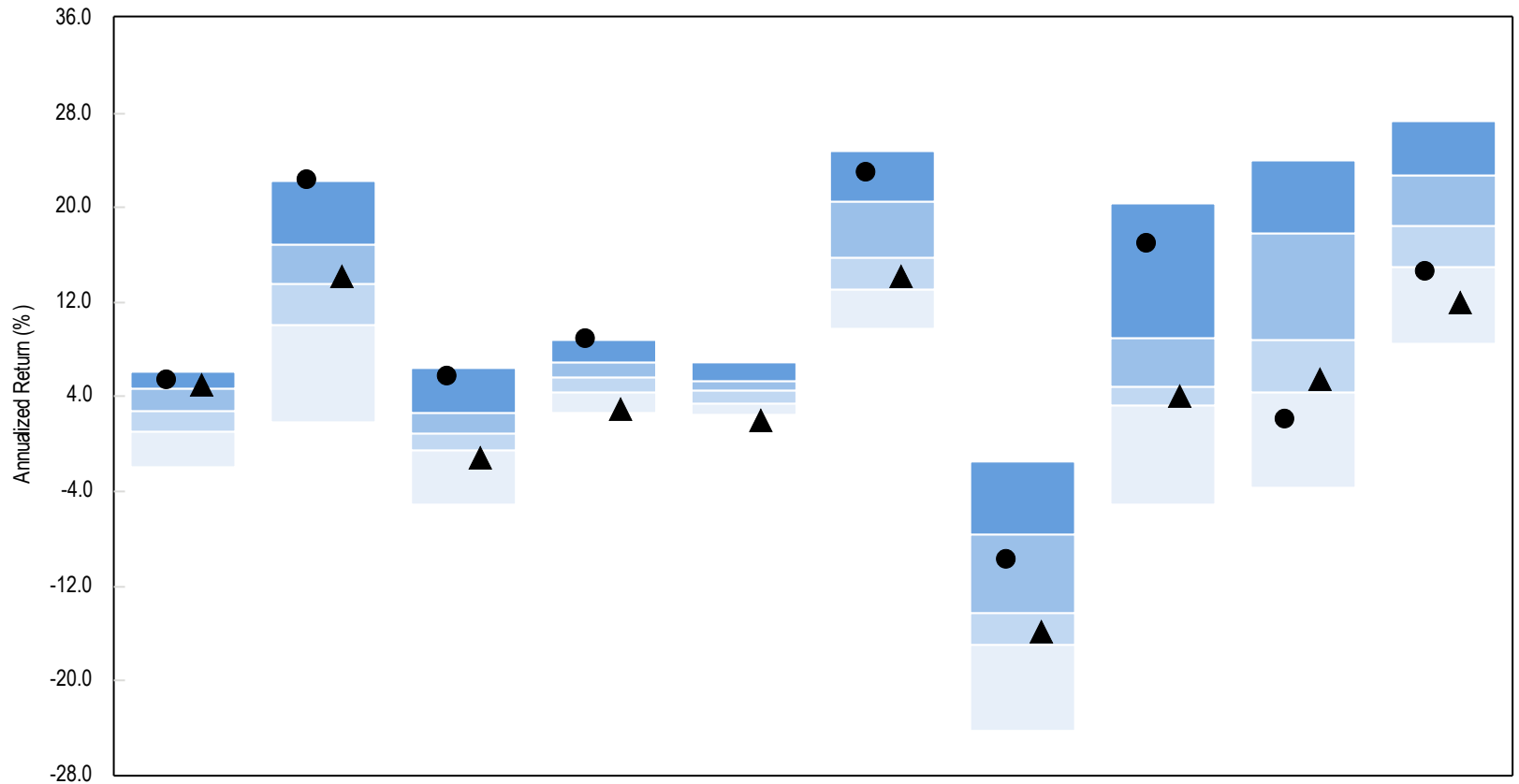
Top Detractors

	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
CEMEX SAB de CV	1.91	-27.21	-0.52
POSCO Holdings Inc	2.57	-15.87	-0.41
Vipshop Holdings Limited	1.58	-21.33	-0.34
CEMEX SAB de CV	0.43	-28.85	-0.12
Korea Electric Power Corp	0.80	-13.00	-0.10
PT Bank Mandiri TBK	0.51	-17.87	-0.09
Banco Bradesco S A	0.45	-18.93	-0.08
Vale SA	1.06	-7.82	-0.08
Cielo SA	1.11	-6.04	-0.07
Chicony Electronics Co Ltd	0.30	-20.63	-0.06

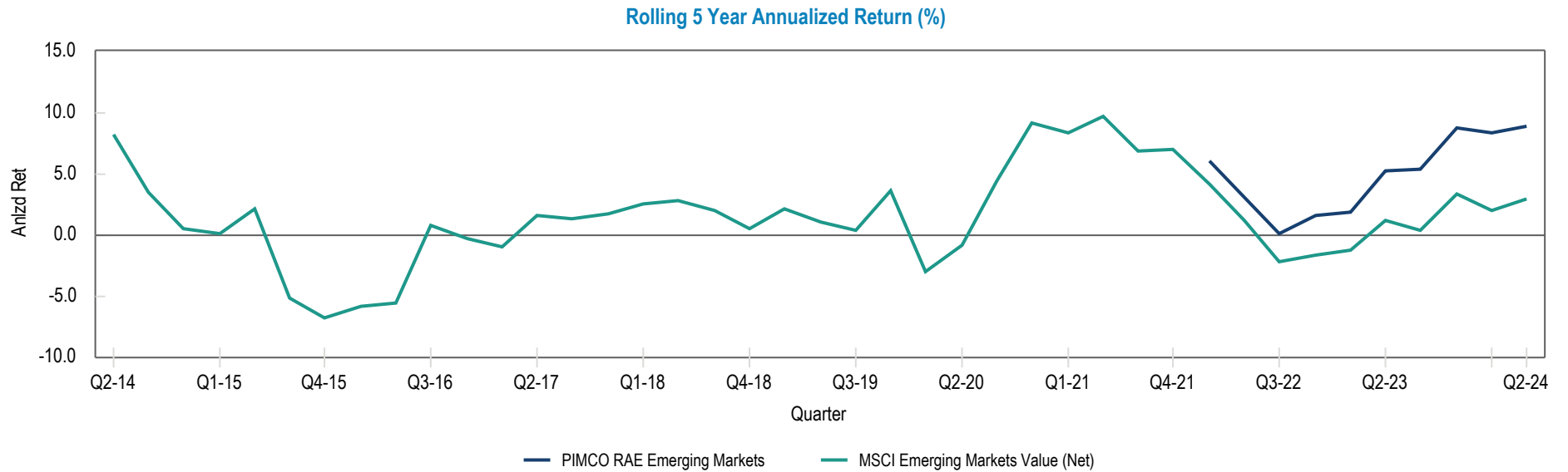
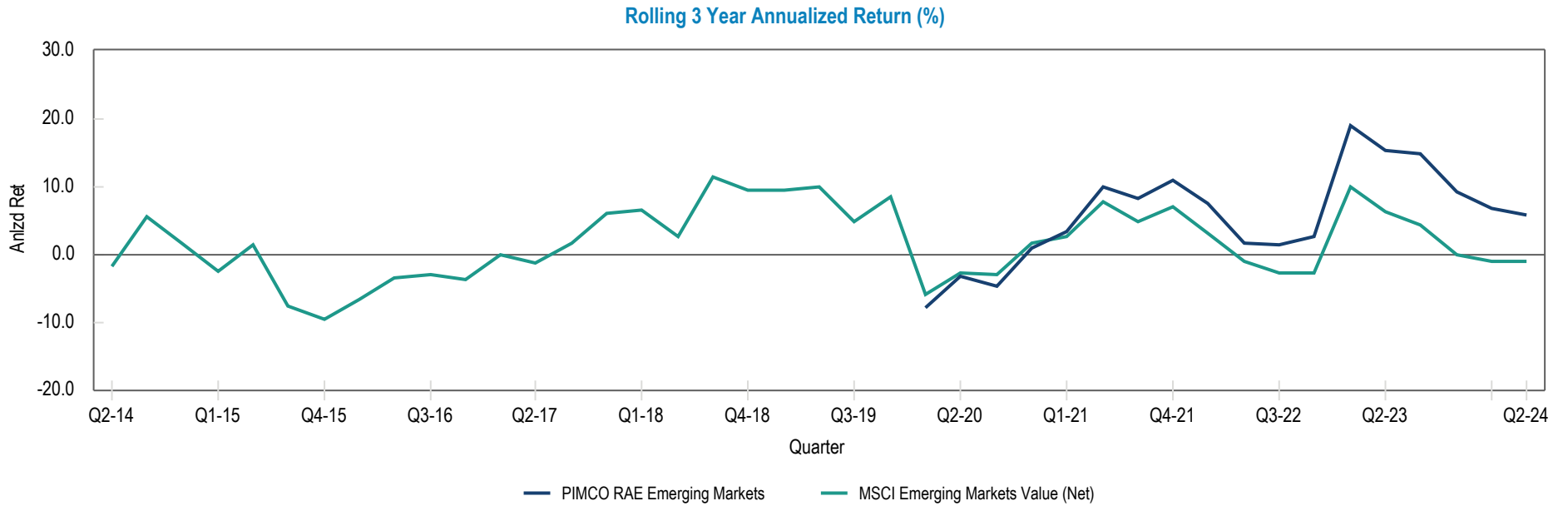
% of Portfolio 10.72 -1.88

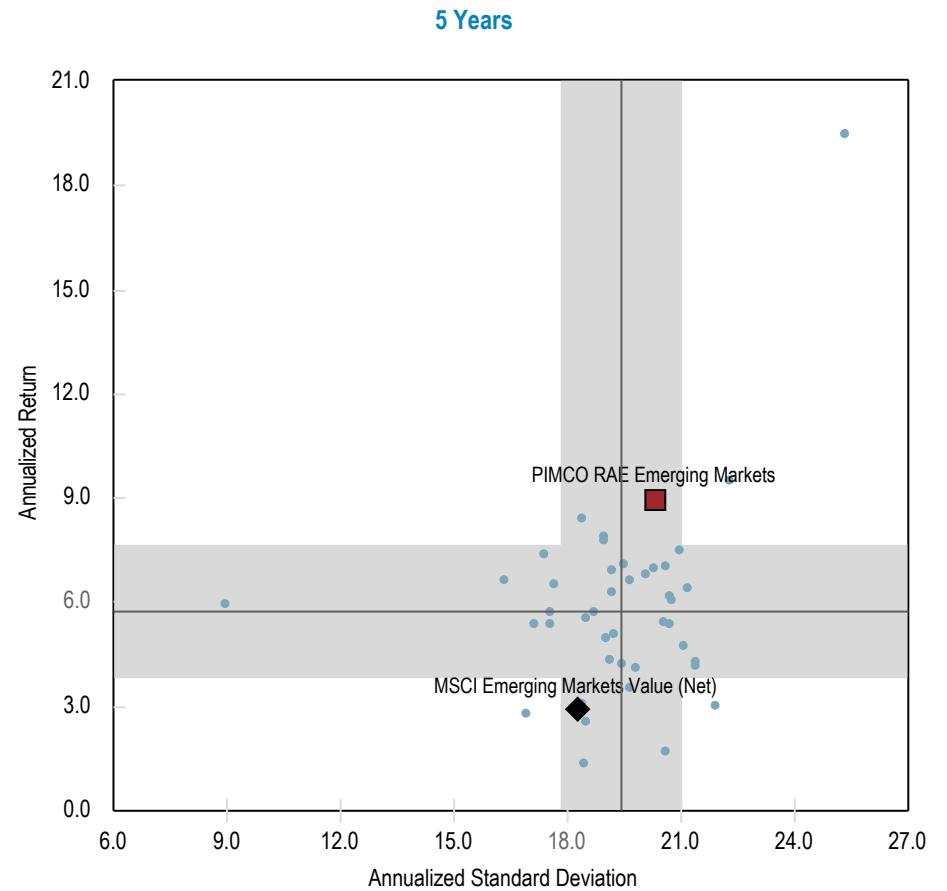
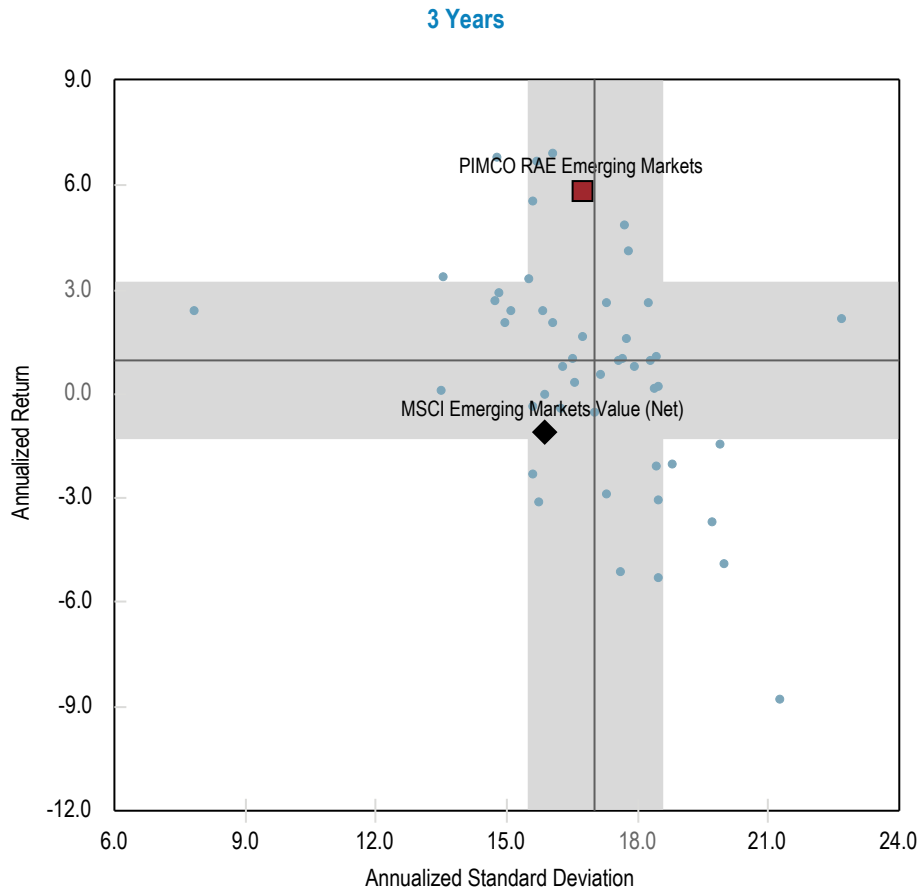
The PIMCO RAE Emerging Markets seeks to invest 80% of its assets in investments that are economically tied to emerging market countries. The portfolio is sub-advised by Research Affiliates, LLC.

PIMCO RAE Emerging Markets vs. eV Emg Mkts All Cap Value Equity Gross Universe



	Quarter	1 Year	3 Years	5 Years	10 Years	2023	2022	2021	2020	2019
● PIMCO RAE Emerging Markets	5.55 (17)	22.36 (5)	5.85 (7)	8.94 (5)	-	23.09 (11)	-9.66 (34)	17.08 (8)	2.13 (85)	14.63 (78)
▲ MSCI Emerging Markets Value NR	5.08 (22)	14.13 (44)	-1.09 (77)	2.91 (92)	1.96 (100)	14.21 (67)	-15.83 (62)	4.00 (68)	5.48 (71)	11.96 (93)
5th Percentile	6.20	22.26	6.42	8.86	6.85	24.78	-1.44	20.40	23.96	27.36
1st Quartile	4.72	16.94	2.61	6.98	5.32	20.53	-7.67	9.02	17.81	22.69
Median	2.78	13.61	0.96	5.73	4.53	15.78	-14.26	4.86	8.90	18.43
3rd Quartile	1.14	10.15	-0.53	4.32	3.49	13.03	-16.88	3.26	4.47	14.93
95th Percentile	-1.88	1.79	-5.03	2.59	2.47	9.79	-24.26	-5.01	-3.71	8.58
Population	52	52	49	43	30	52	57	56	58	59





3 Years

	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
PIMCO RAE Emerging Markets	5.8	16.7	0.2
MSCI Emerging Markets Value (Net)	-1.1	15.9	-0.2
eV Emg Mkts All Cap Value Equity Median	1.0	17.0	0.0
Population	49	49	49

5 Years

	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
PIMCO RAE Emerging Markets	8.9	20.3	0.4
MSCI Emerging Markets Value (Net)	2.9	18.2	0.1
eV Emg Mkts All Cap Value Equity Median	5.7	19.4	0.3
Population	43	43	43

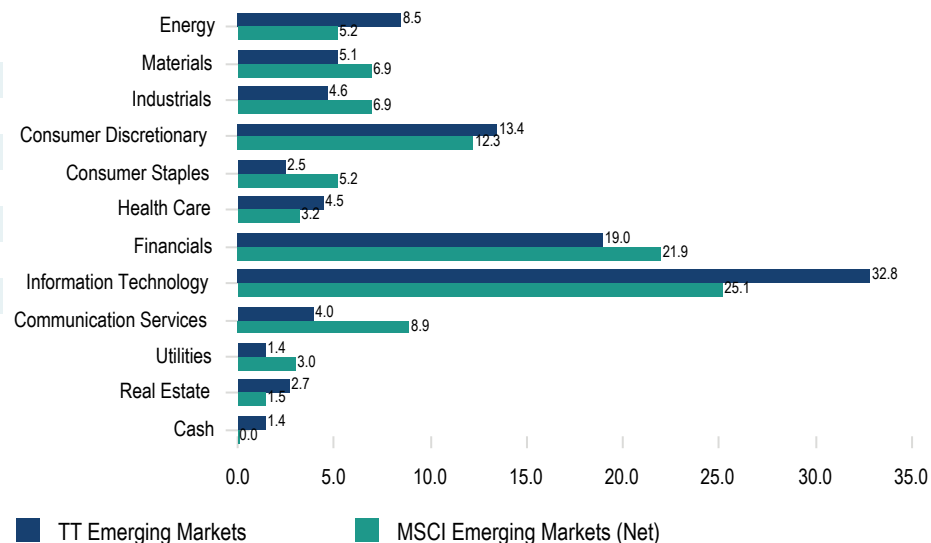
TT Emerging Markets Manager Portfolio Overview

Contra Costa County Employees' Retirement Association Period Ending: June 30, 2024

Characteristics

	Portfolio	Benchmark
Number of Stocks	61	1,330
Wtd. Avg. Mkt. Cap \$M	174,929.76	152,426.25
Median Mkt. Cap \$M	18,156.21	7,007.92
Price/Earnings ratio	14.61	15.38
Price/Book ratio	2.62	2.62
Return on Equity (%)	4.37	4.35
Current Yield (%)	2.18	2.75
Beta (5 Years, Monthly)	1.15	1.00

Sector Allocation (%) vs. MSCI Emerging Markets (Net)



Largest Holdings

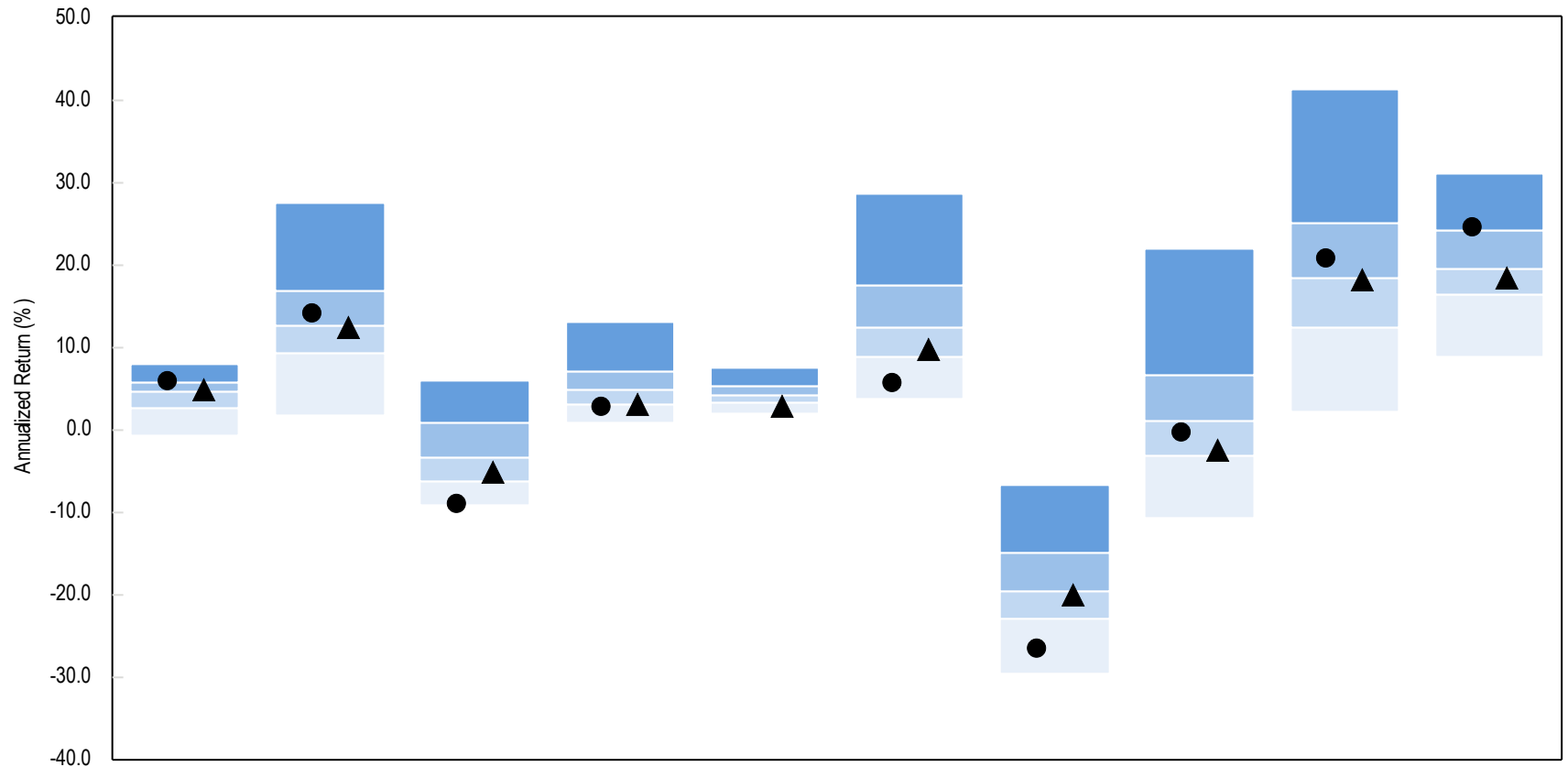
Top Contributors

Top Detractors

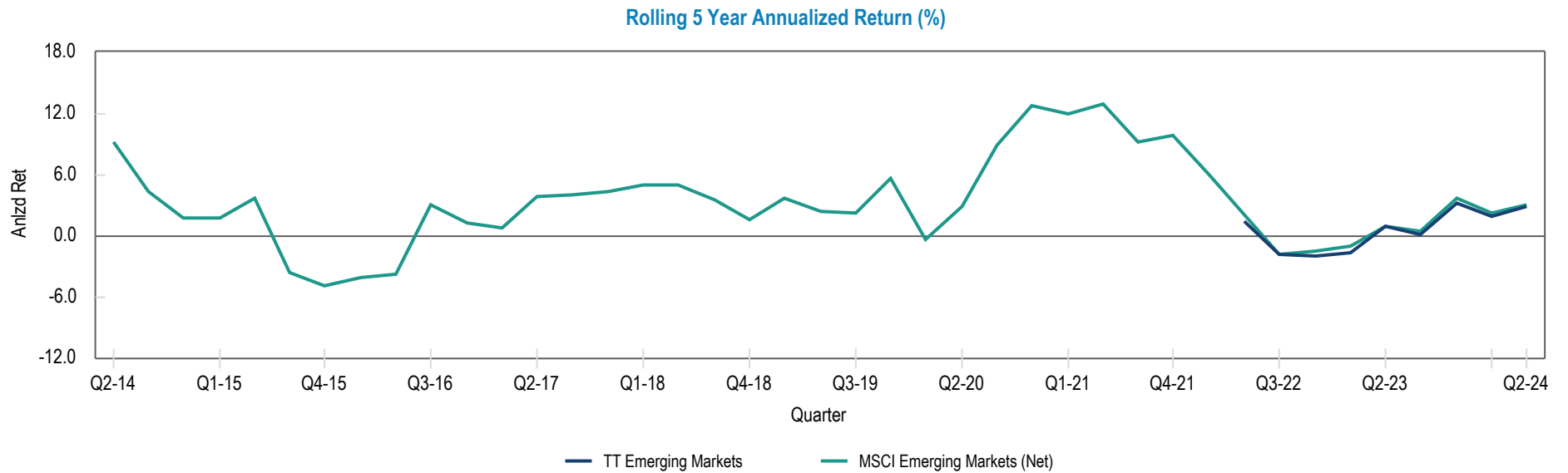
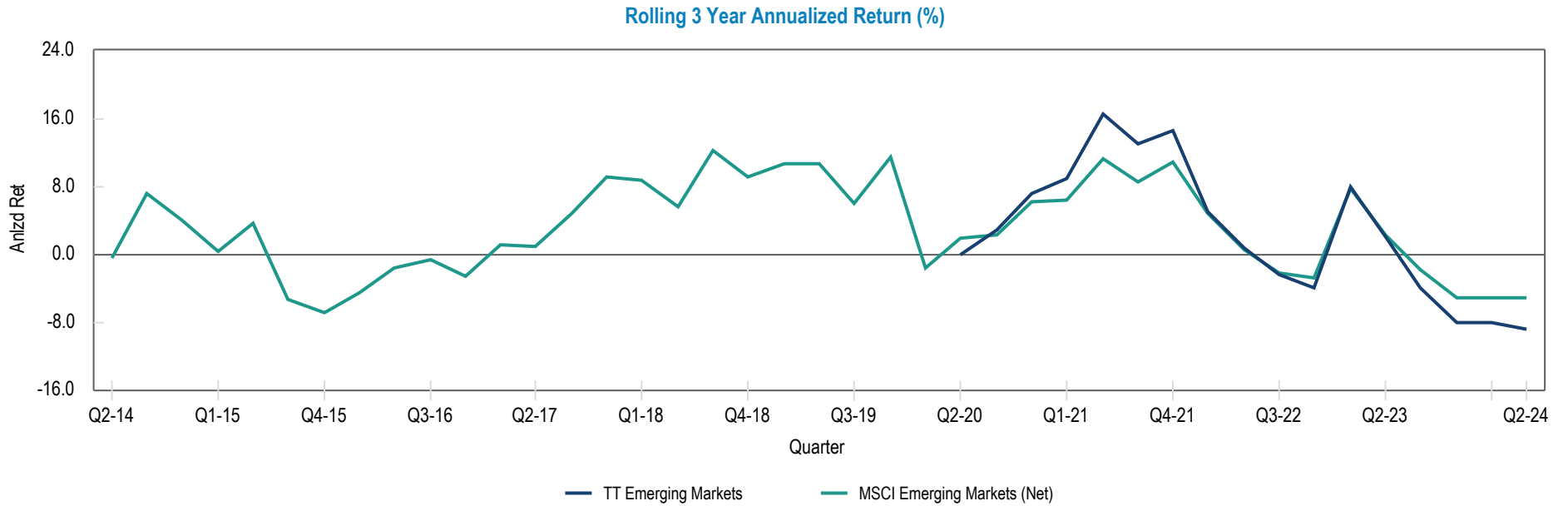
	End Weight (%)	Quarterly Return (%)		Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)		Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
Taiwan Semiconductor Man.	13.10	22.80	Taiwan Semiconductor Man.	11.26	22.80	2.57	Grupo Financiero Banorte	3.61	-21.85	-0.79
Axis Bank Ltd	4.41	20.84	Axis Bank Ltd	3.84	20.84	0.80	Sendas Distribuidora S.A.	1.53	-36.65	-0.56
Nova Ljubljanska Banka d.d	3.52	19.73	Mahindra & Mahindra Ltd	1.57	49.23	0.77	Samsung Electronics Co Ltd	4.01	-8.53	-0.34
Samsung Electronics Co Ltd	3.49	-8.53	SK Hynix Inc	2.60	26.39	0.69	PT Bank Mandiri TBK	1.81	-17.87	-0.32
Samsung Electronics Co Ltd	3.29	-3.27	Nova Ljubljanska Banka d.d	3.23	19.73	0.64	Regional SAB de CV	1.20	-22.35	-0.27
Icici Bank Ltd	3.16	9.74	Tencent Holdings LTD	2.51	23.94	0.60	Vamos Locacao	1.43	-18.30	-0.26
SK Hynix Inc	3.13	26.39	Ypf Sociedad Anonima	2.74	17.25	0.47	Equatorial Energia SA	1.78	-13.72	-0.24
Ypf Sociedad Anonima	3.06	17.25	KLA Corp	2.00	18.26	0.36	Localiza Rent A Car SA	0.78	-29.48	-0.23
Tencent Holdings LTD	2.93	23.94	Delta Electronics Inc	2.24	14.17	0.32	Delhivery Limited	2.05	-10.17	-0.21
Emaar Properties	2.68	6.85	Kia Corporation	2.09	14.75	0.31	Unimicron Technology Corp	2.41	-7.03	-0.17
			% of Portfolio	34.08		7.53	% of Portfolio	20.61		-3.40

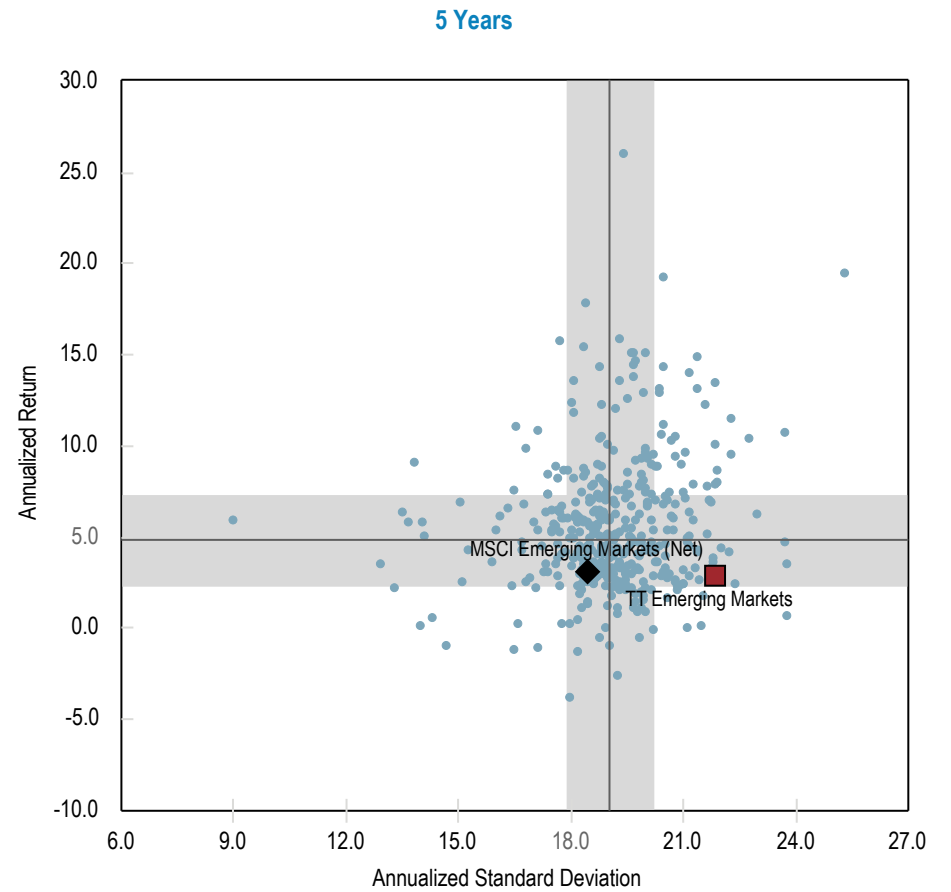
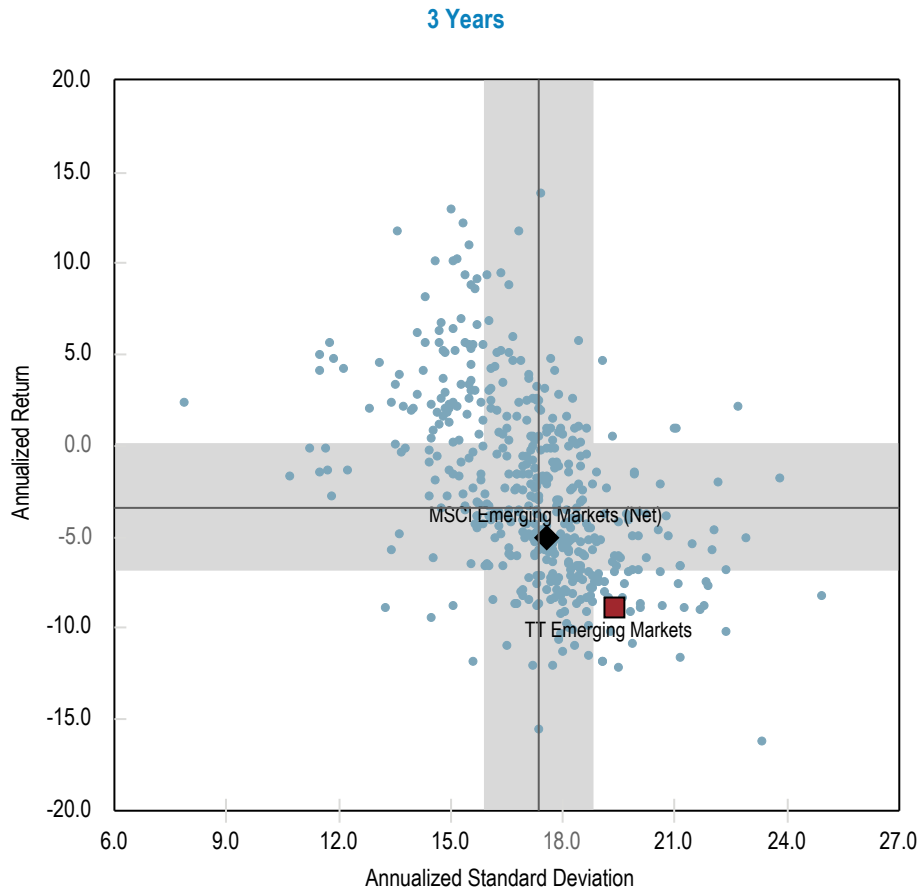
The Emerging Markets Unconstrained strategy aims to outperform its benchmark, MSCI Emerging Markets Index by 5% per annum over a three-year rolling period. It targets high returns and long term capital growth by investing in a focused portfolio of primarily equity and equity-related securities traded in the Emerging Markets.

TT Emerging Markets vs. eV Emg Mkts Equity Gross Universe



	Quarter	1 Year	3 Years	5 Years	10 Years	2023	2022	2021	2020	2019
● TT Emerging Markets	5.97 (24)	14.19 (41)	-8.85 (94)	2.90 (79)	-	5.80 (91)	-26.36 (90)	-0.23 (58)	20.79 (39)	24.77 (24)
▲ MSCI Emerging Markets	5.00 (44)	12.55 (53)	-5.07 (65)	3.10 (74)	2.79 (84)	9.83 (66)	-20.09 (57)	-2.54 (72)	18.31 (51)	18.42 (62)
5th Percentile	8.03	27.45	5.99	13.02	7.63	28.71	-6.73	22.04	41.39	31.07
1st Quartile	5.81	16.84	0.95	7.09	5.40	17.56	-14.93	6.76	25.15	24.31
Median	4.71	12.75	-3.34	4.82	4.31	12.49	-19.51	1.02	18.37	19.56
3rd Quartile	2.72	9.31	-6.12	3.05	3.30	8.95	-22.91	-3.12	12.38	16.49
95th Percentile	-0.66	1.82	-9.05	0.97	2.07	3.74	-29.48	-10.71	2.18	8.98
Population	517	517	481	432	304	539	571	580	578	601





3 Years

	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
TT Emerging Markets	-8.8	19.4	-0.5
MSCI Emerging Markets (Net)	-5.1	17.6	-0.4
eV Emg Mkts Equity Median	-3.3	17.3	-0.3
Population	481	481	481

5 Years

	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
TT Emerging Markets	2.9	21.9	0.1
MSCI Emerging Markets (Net)	3.1	18.4	0.1
eV Emg Mkts Equity Median	4.8	19.1	0.2
Population	432	432	432

Global Equity Managers

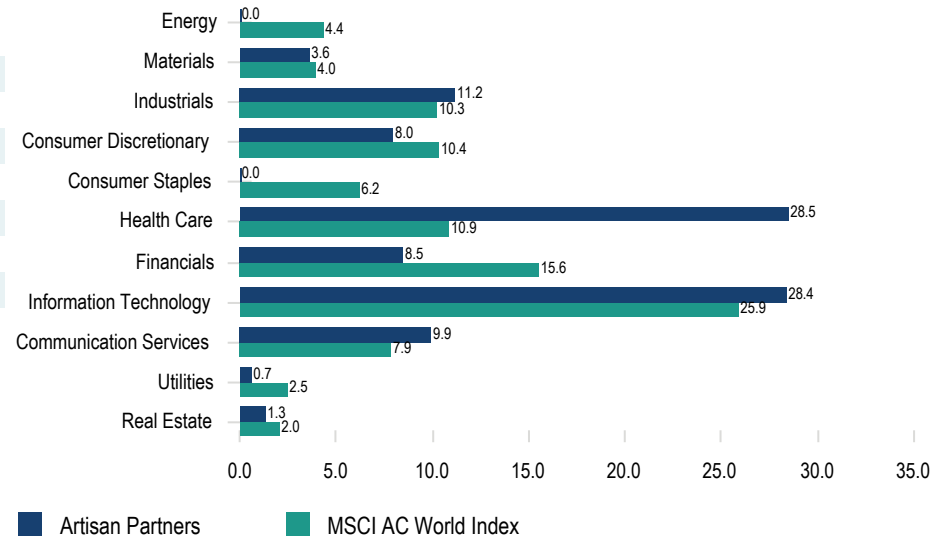
Artisan Partners
Manager Portfolio Overview

Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

Characteristics

	Portfolio	Benchmark
Number of Stocks	43	2,760
Wtd. Avg. Mkt. Cap \$M	425,841.61	659,033.17
Median Mkt. Cap \$M	84,921.12	11,877.45
Price/Earnings ratio	42.89	22.38
Price/Book ratio	6.13	3.87
Return on Equity (%)	6.36	7.30
Current Yield (%)	0.56	1.94
Beta (5 Years, Monthly)	0.98	1.00

Sector Allocation (%) vs. MSCI AC World Index



Largest Holdings

	End Weight (%)	Quarterly Return (%)
Novo Nordisk A/S	7.03	13.26
Boston Scientific Corp	5.89	12.44
Advanced Micro Devices Inc	4.91	-10.13
Netflix Inc	4.60	11.12
Taiwan Semiconductor Man.	4.43	28.16
Intuit Inc.	3.95	1.25
Amazon.com Inc	3.72	7.13
Microsoft Corp	3.65	6.42
Alphabet Inc	3.52	20.82
Techtronic Industries Co Ltd	3.42	-14.95

Top Contributors

	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
Taiwan Semiconductor Man.	3.37	28.16	0.95
Novo Nordisk A/S	6.03	13.26	0.80
Boston Scientific Corp	5.09	12.44	0.63
Alphabet Inc	2.84	20.82	0.59
Netflix Inc	4.02	11.12	0.45
Arista Networks Inc	1.64	20.86	0.34
Tencent Holdings LTD	1.41	23.94	0.34
Chipotle Mexican Grill Inc	3.69	7.77	0.29
Amazon.com Inc	3.38	7.13	0.24
Microsoft Corp	3.33	6.42	0.21

Top Detractors

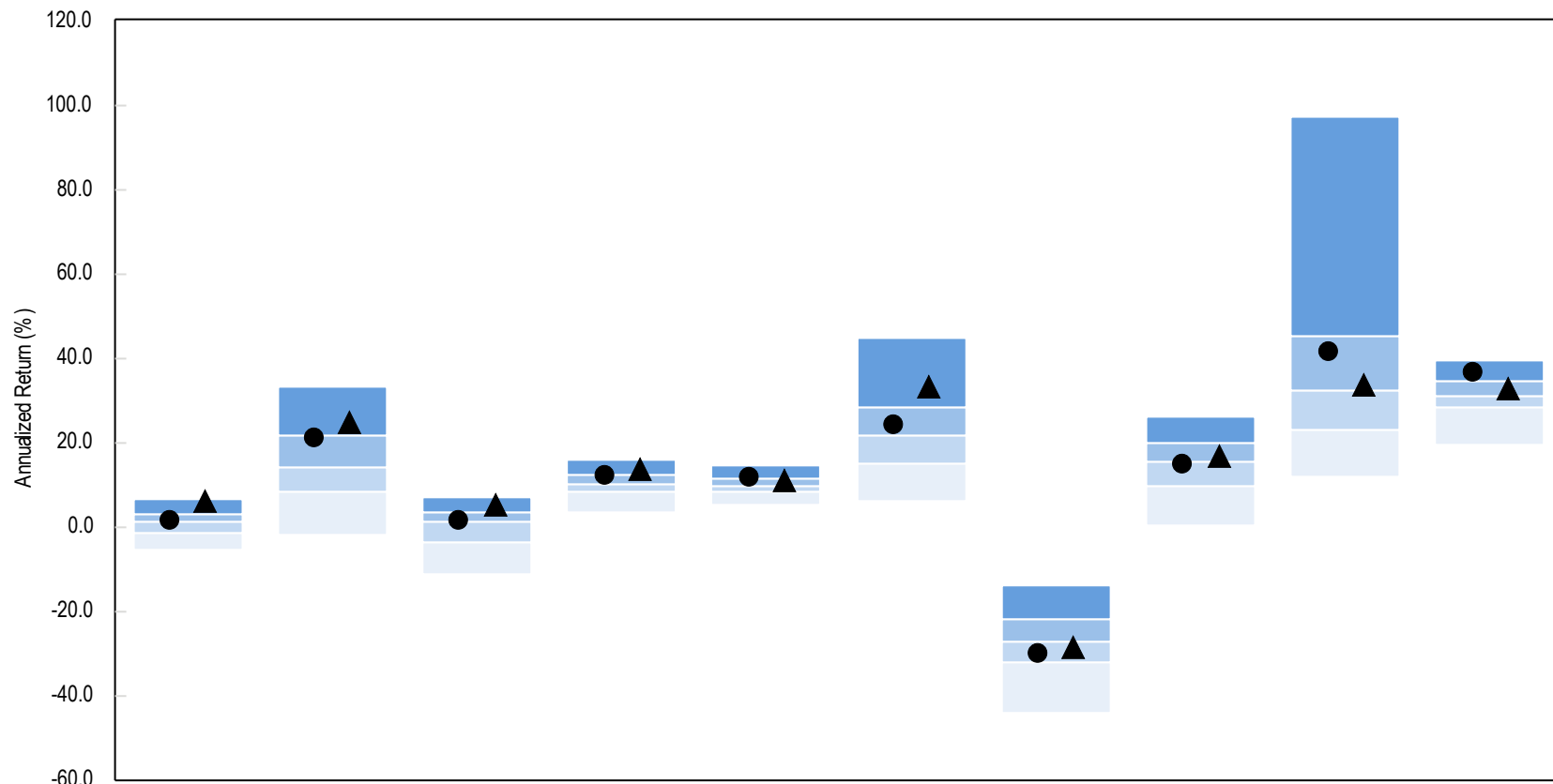
	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
Veeva Systems Inc	3.36	-21.01	-0.71
Techtronic Industries Co Ltd	3.94	-14.95	-0.59
Advanced Micro Devices Inc	5.31	-10.13	-0.54
CoStar Group Inc	1.65	-23.25	-0.38
DexCom Inc	1.83	-18.26	-0.33
Atlassian Corp	3.02	-9.34	-0.28
West Pharmaceutical Services Inc.	1.55	-16.72	-0.26
Vestas Wind Systems A/S	1.37	-17.07	-0.23
LONZA GROUP AG	2.63	-8.30	-0.22
Shopify Inc	1.42	-14.41	-0.21

% of Portfolio 34.80 4.84

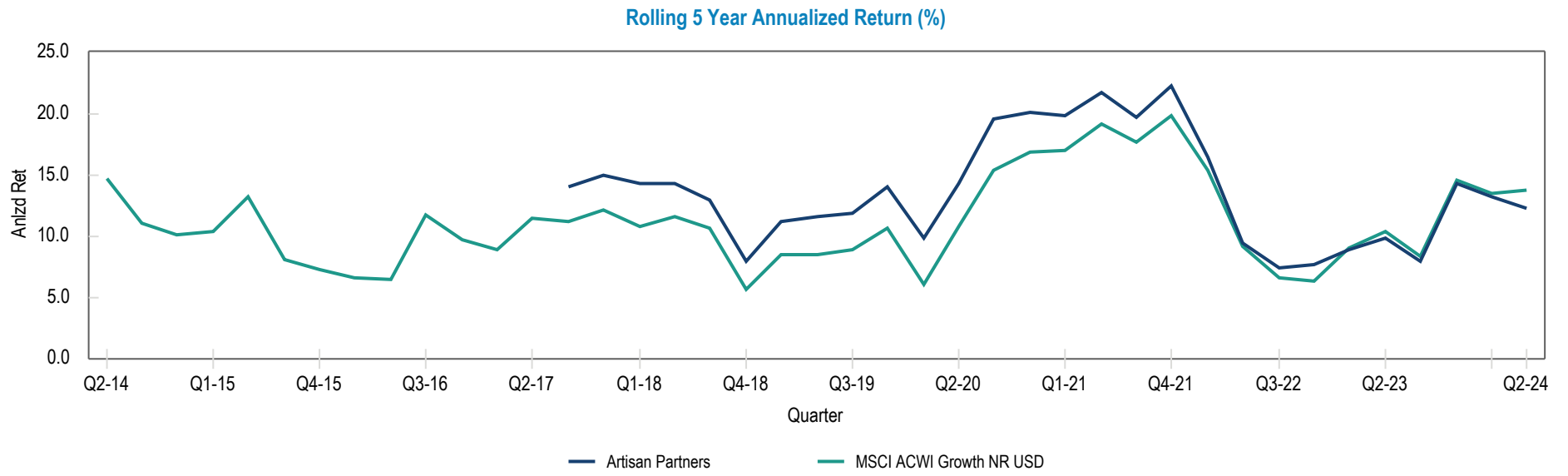
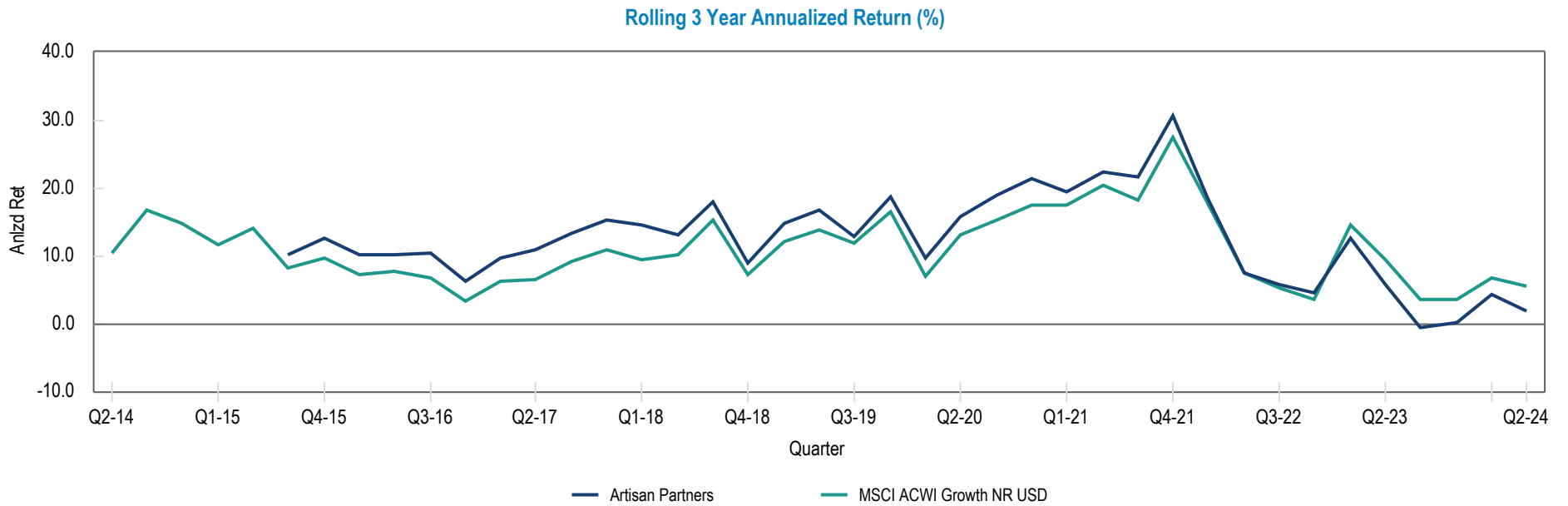
% of Portfolio 26.08 -3.75

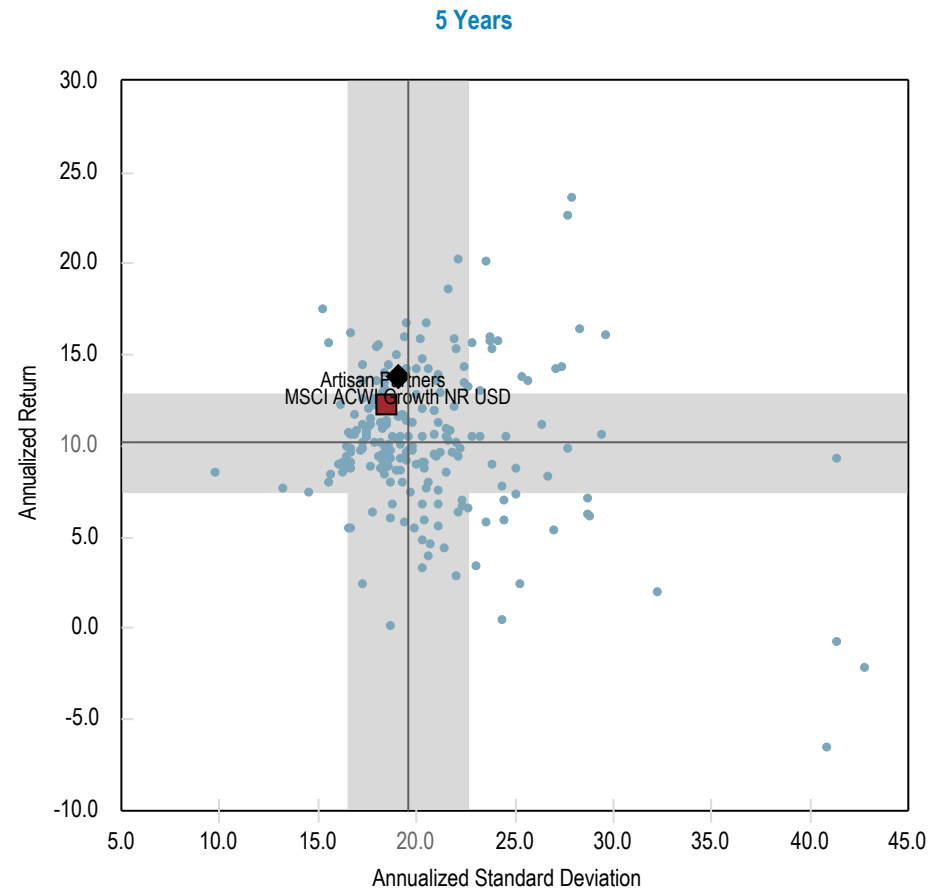
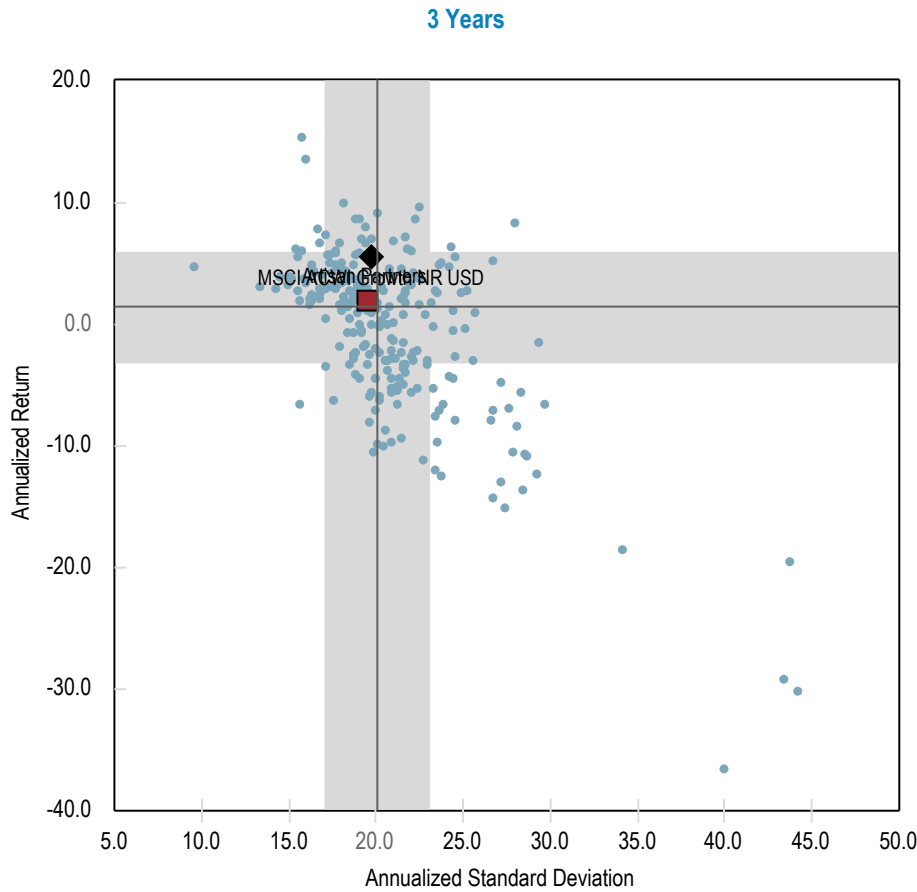
Global equity portfolio of companies that is benchmark agnostic with accelerating profit cycles and a focus on capital allocation. Primary personnel include James Hamel, Craigh Cepukenas, and Matthew Kamm.

Artisan Partners vs. eV Global Growth Equity Gross Universe



	Quarter	1 Year	3 Years	5 Years	10 Years	2023	2022	2021	2020	2019
● Artisan Partners	1.65 (44)	21.34 (27)	1.97 (43)	12.24 (26)	11.93 (20)	24.54 (37)	-29.59 (61)	14.99 (56)	41.66 (33)	37.00 (12)
▲ MSCI ACWI Growth NR USD	6.20 (7)	24.70 (20)	5.50 (13)	13.85 (17)	11.15 (28)	33.22 (16)	-28.61 (57)	17.10 (43)	33.60 (48)	32.72 (37)
5th Percentile	6.80	33.15	7.22	16.07	14.50	44.88	-13.85	26.09	97.21	39.49
1st Quartile	3.24	21.90	3.73	12.33	11.35	28.41	-21.81	19.82	45.27	34.63
Median	1.12	14.37	1.40	10.17	9.56	21.64	-26.91	15.66	32.23	31.28
3rd Quartile	-1.12	8.62	-3.52	8.55	8.54	15.31	-31.79	9.96	23.24	28.33
95th Percentile	-5.49	-1.82	-11.06	3.65	5.24	6.13	-43.97	0.23	12.21	19.44
Population	270	268	247	209	121	288	294	281	265	249





	3 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
Artisan Partners	2.0	19.5	0.0
MSCI ACWI Growth NR USD	5.5	19.8	0.2
eV Global Growth Equity Median	1.4	20.1	0.0
Population	247	247	247

	5 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
Artisan Partners	12.2	18.5	0.6
MSCI ACWI Growth NR USD	13.8	19.1	0.7
eV Global Growth Equity Median	10.2	19.6	0.5
Population	209	209	209

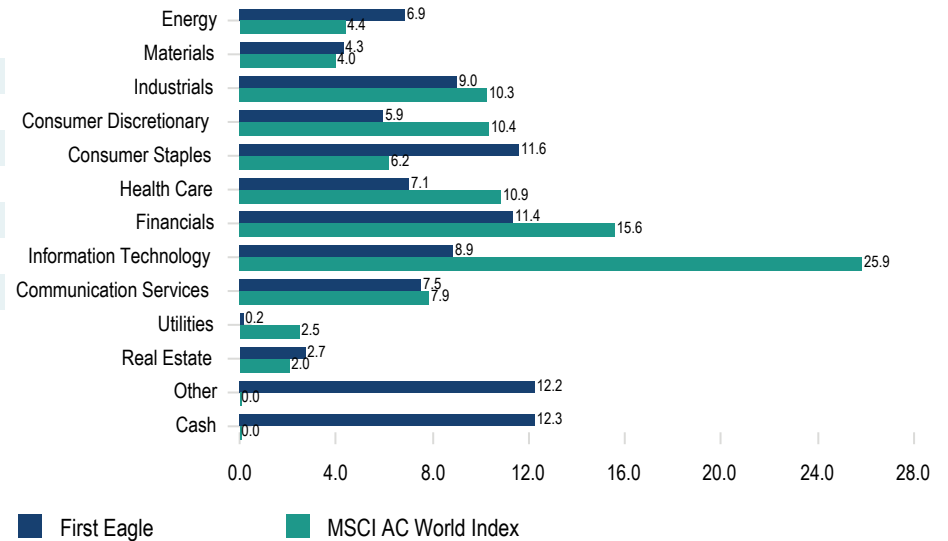
First Eagle Manager Portfolio Overview

Contra Costa County Employees' Retirement Association Period Ending: June 30, 2024

Characteristics

	Portfolio	Benchmark
Number of Stocks	123	2,760
Wtd. Avg. Mkt. Cap \$M	187,092.66	659,033.17
Median Mkt. Cap \$M	28,780.60	11,877.45
Price/Earnings ratio	18.84	22.38
Price/Book ratio	2.53	3.87
Return on Equity (%)	7.80	7.30
Current Yield (%)	2.09	1.94
Beta (5 Years, Monthly)	0.75	1.00

Sector Allocation (%) vs. MSCI AC World Index



Largest Holdings

	End Weight (%)	Quarterly Return (%)
SPDR Gold Trust	12.22	4.52
Oracle Corp	2.82	12.78
Meta Platforms Inc	2.55	3.94
Exxon Mobil Corp	2.12	-0.16
Alphabet Inc	1.97	20.60
Schlumberger Ltd	1.82	-13.37
HCA Healthcare Inc	1.82	-3.48
Comcast Corp	1.63	-9.00
Taiwan Semiconductor Man.	1.53	28.16
Philip Morris International Inc	1.46	12.04

Top Contributors

	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
SPDR Gold Trust	11.77	4.52	0.53
Taiwan Semiconductor Man.	1.20	28.16	0.34
Alphabet Inc	1.64	20.60	0.34
Oracle Corp	2.53	12.78	0.32
MS&AD Insurance Group	0.93	24.07	0.22
C.H. Robinson Worldwide Inc.	1.21	16.55	0.20
Analog Devices Inc	1.01	15.86	0.16
Philip Morris International Inc	1.32	12.04	0.16
Prosus NV	0.97	13.52	0.13
Unilever PLC	1.25	10.33	0.13

Top Detractors

	Portfolio Weight (%)	Quarterly Return (%)	Contribution to Return (%)
Schlumberger Ltd	2.13	-13.37	-0.28
Fomento Economico Mexican	1.25	-16.29	-0.20
Secom Co Ltd	0.98	-18.47	-0.18
Comcast Corp	1.81	-9.00	-0.16
Weyerhaeuser Co	0.68	-20.41	-0.14
Walt Disney Co (The)	0.69	-18.85	-0.13
Ambev SA	0.71	-17.34	-0.12
SALESFORCE INC	0.77	-14.64	-0.11
DENTSPLY SIRONA Inc	0.43	-24.46	-0.10
Medtronic PLC	1.06	-8.88	-0.09

% of Portfolio

23.83

2.54

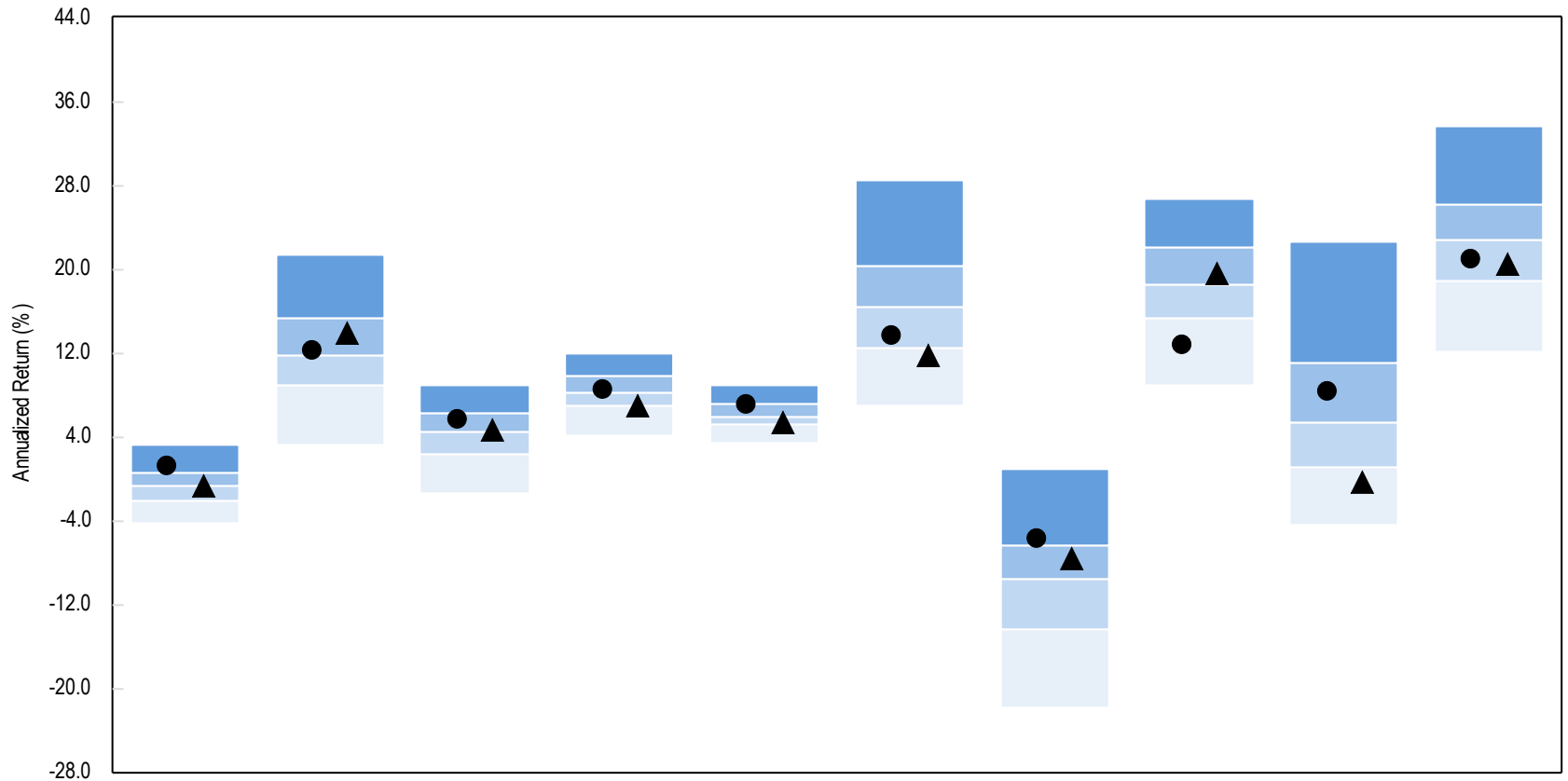
% of Portfolio

10.51

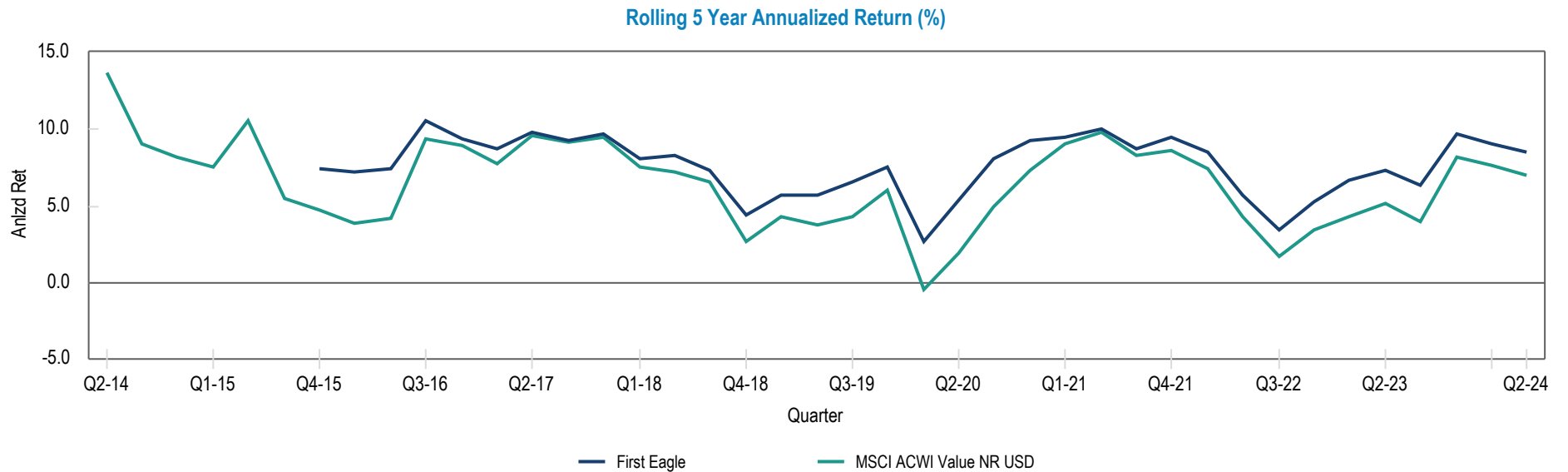
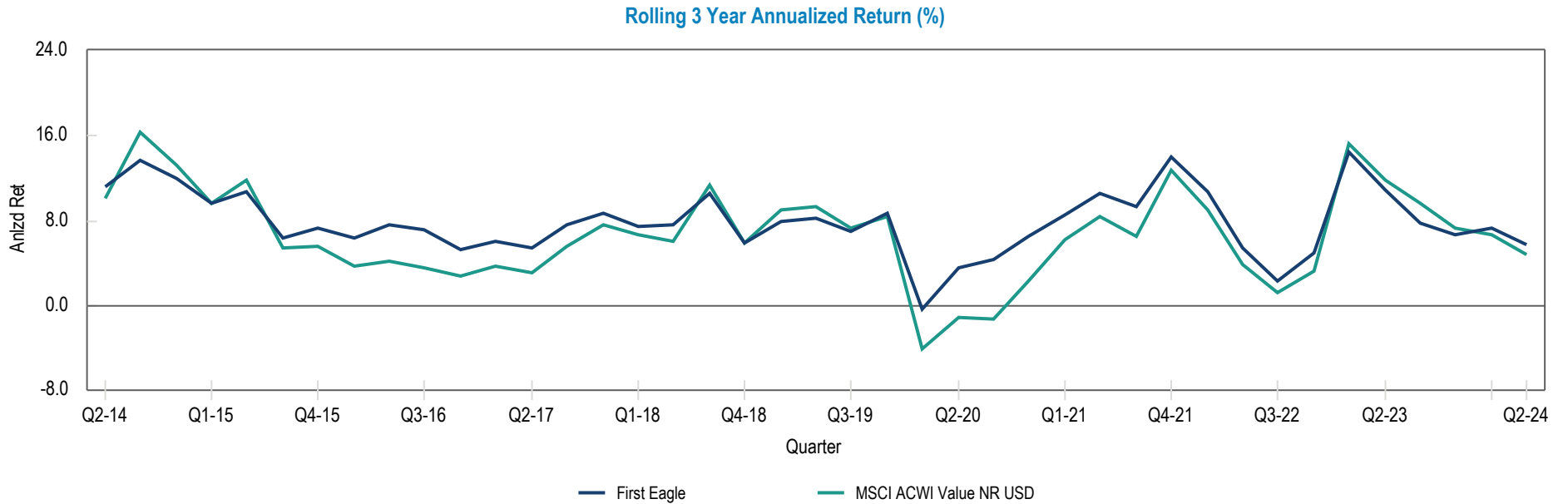
-1.53

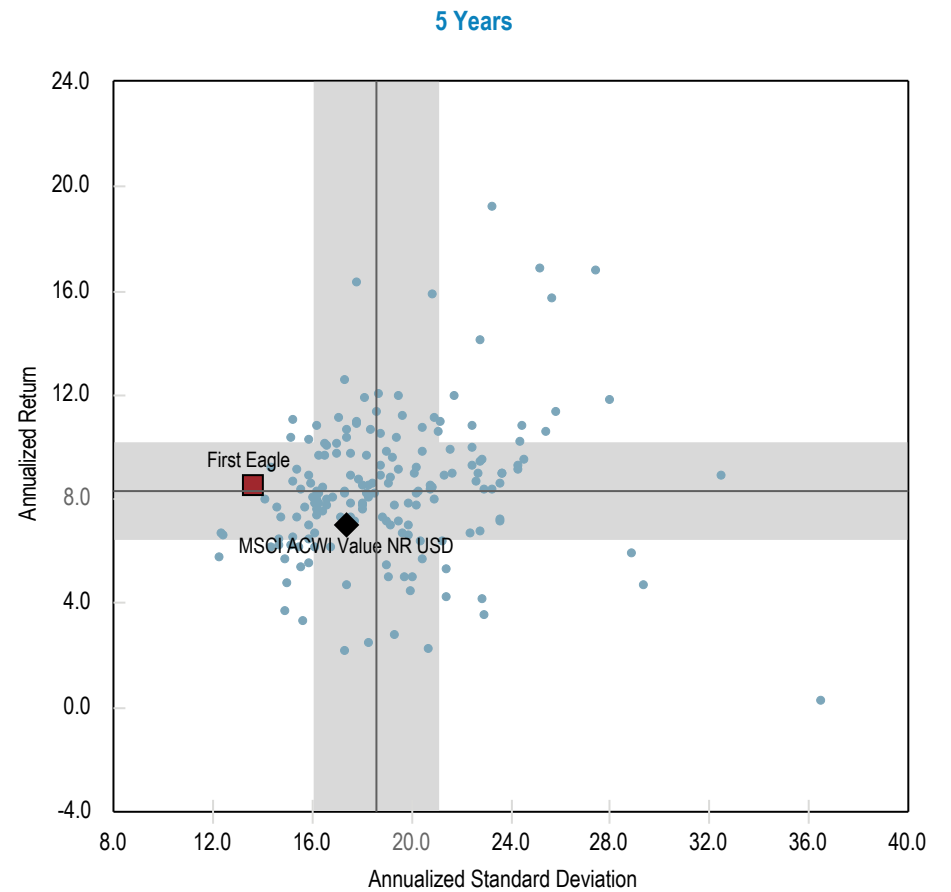
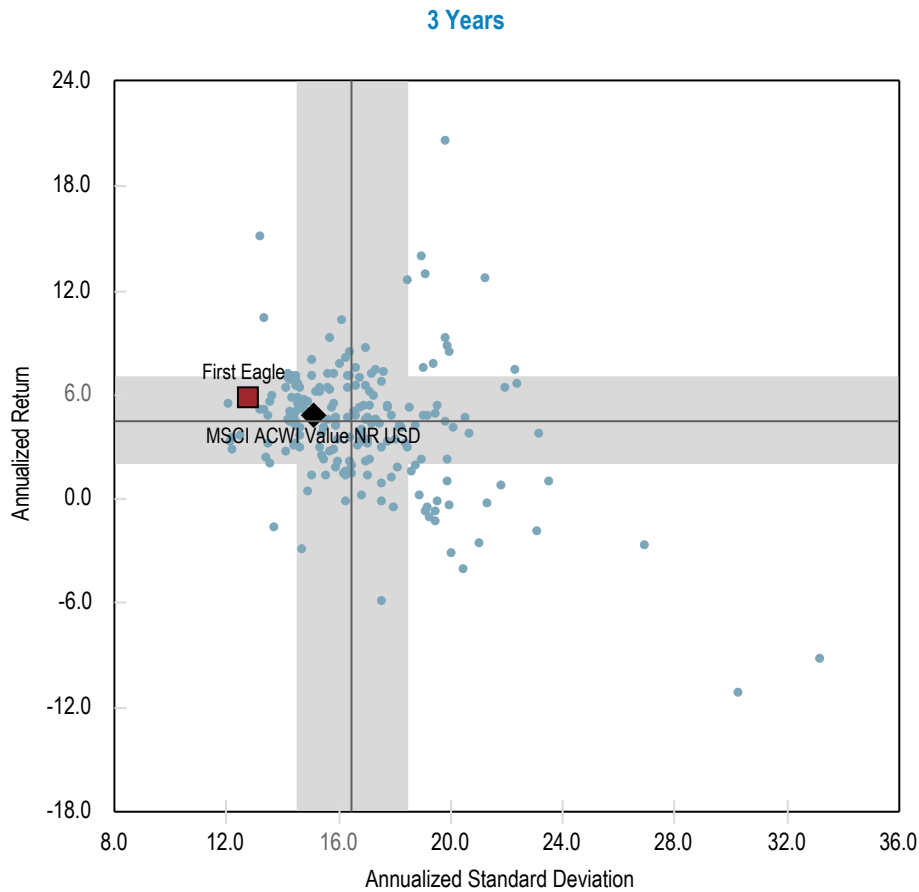
Global equity portfolio that is benchmark agnostic comprised of companies with low valuations. Primary personnel include Matt McLennan and Kimball Brooker.

First Eagle vs. eV Global Value Equity Gross Universe



	Quarter	1 Year	3 Years	5 Years	10 Years	2023	2022	2021	2020	2019
● First Eagle	1.38 (17)	12.36 (49)	5.85 (29)	8.55 (46)	7.15 (26)	13.75 (67)	-5.61 (22)	12.95 (87)	8.47 (33)	21.01 (64)
▲ MSCI ACWI Value NR USD	-0.59 (50)	13.92 (34)	4.79 (43)	7.03 (75)	5.39 (72)	11.81 (81)	-7.55 (35)	19.62 (41)	-0.33 (81)	20.59 (66)
5th Percentile	3.28	21.37	8.93	12.01	9.05	28.50	0.93	26.73	22.61	33.76
1st Quartile	0.64	15.41	6.32	9.78	7.19	20.42	-6.24	22.12	11.04	26.19
Median	-0.60	11.87	4.55	8.34	6.04	16.40	-9.44	18.62	5.41	22.80
3rd Quartile	-2.06	9.02	2.43	7.02	5.18	12.57	-14.39	15.33	1.08	18.96
95th Percentile	-4.13	3.21	-1.37	4.26	3.47	7.05	-21.82	9.04	-4.34	12.20
Population	216	213	196	175	127	224	227	230	237	233





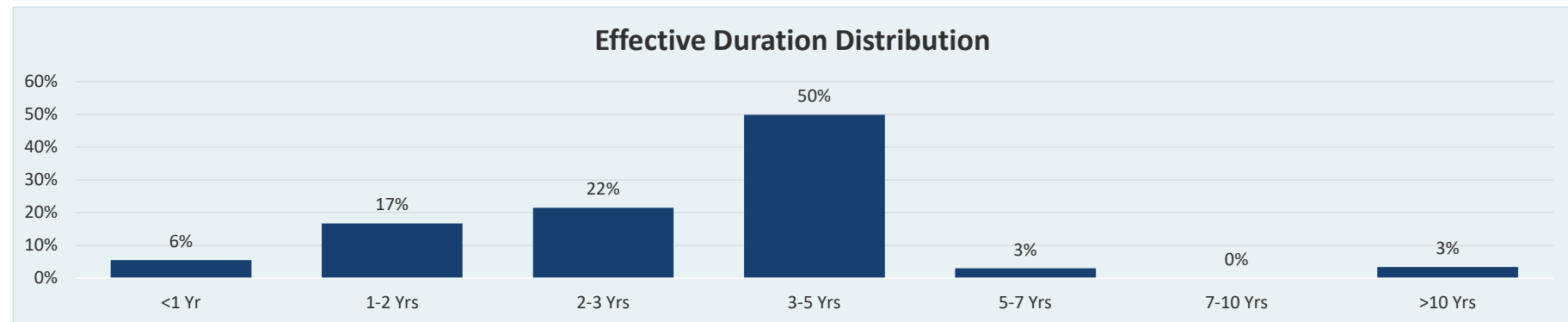
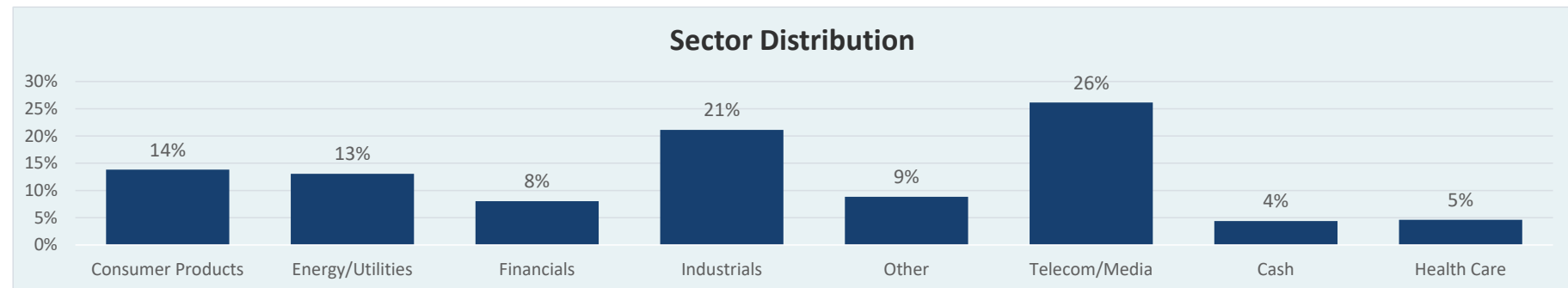
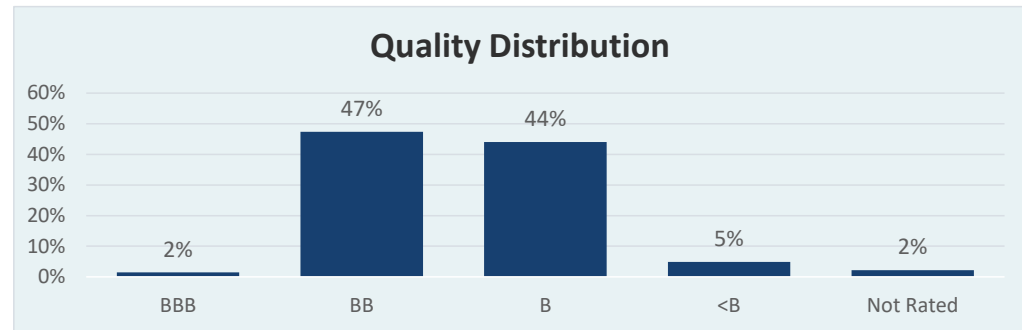
	3 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
First Eagle	5.9	12.8	0.3
MSCI ACWI Value NR USD	4.8	15.1	0.2
eV Global Value Equity Median	4.5	16.5	0.2
Population	196	196	196

	5 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
First Eagle	8.5	13.6	0.5
MSCI ACWI Value NR USD	7.0	17.4	0.4
eV Global Value Equity Median	8.3	18.6	0.4
Population	175	175	175

High Yield Managers

Domestic high yield fixed income portfolio with a focus on security selection. Primary personnel include Douglas Forsyth, Justin Kass, William Stickney, and Michael Yee.

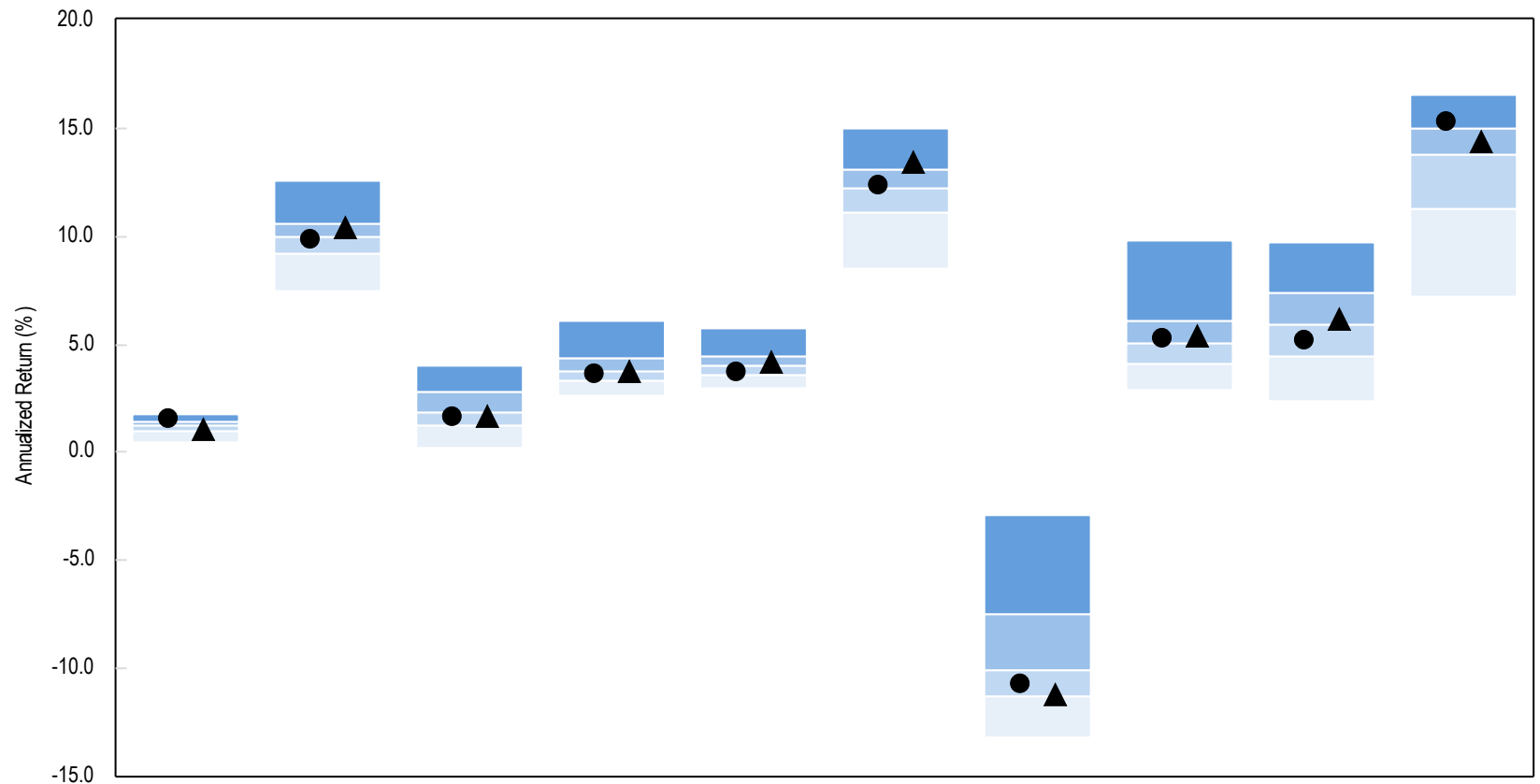
	Voya	ICE BofAML HY Master II
Effective Duration	3.10	3.30
Yield to Maturity	7.0%	8.1%
Average Quality	B+	B1
Average Coupon	6.8%	6.3%



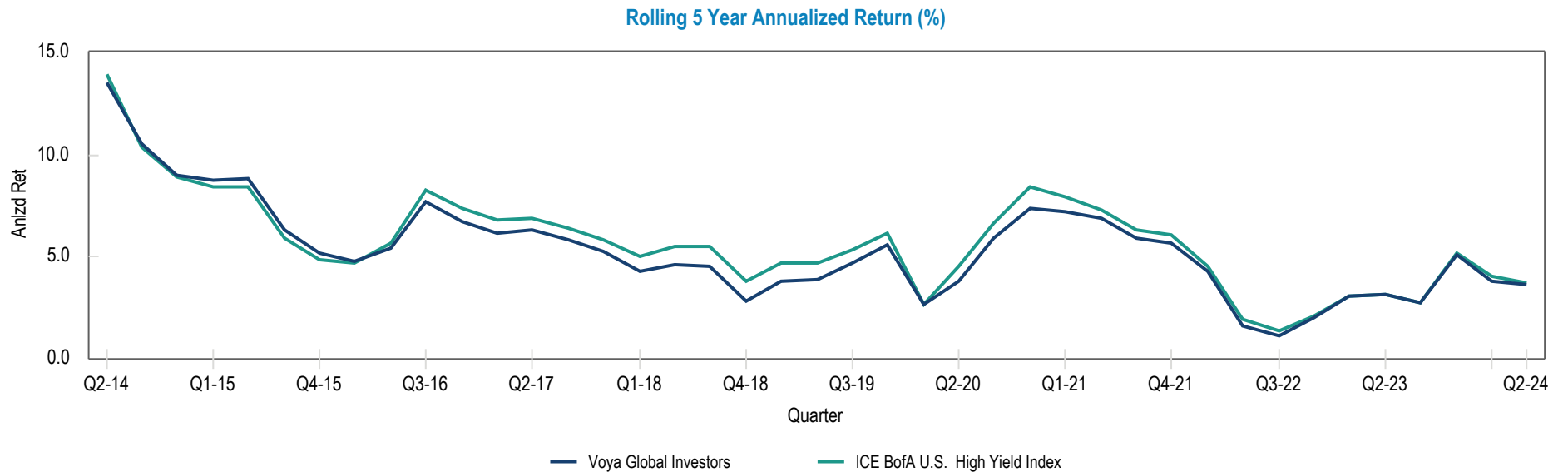
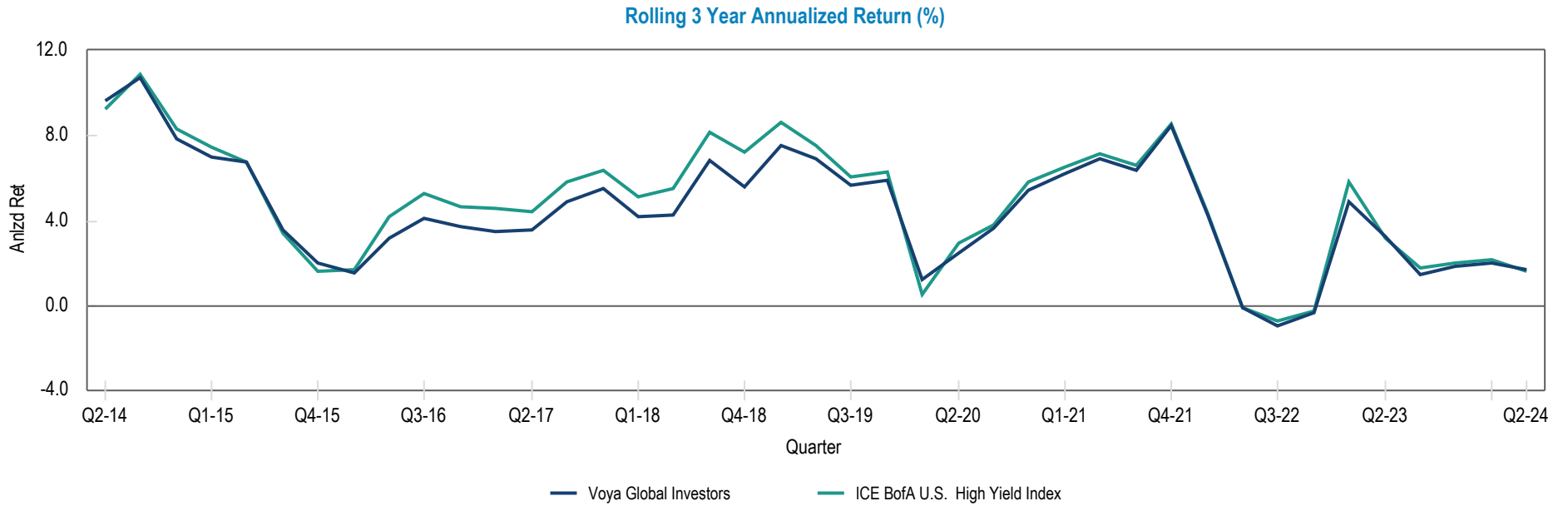
Quality distributions exclude cash.

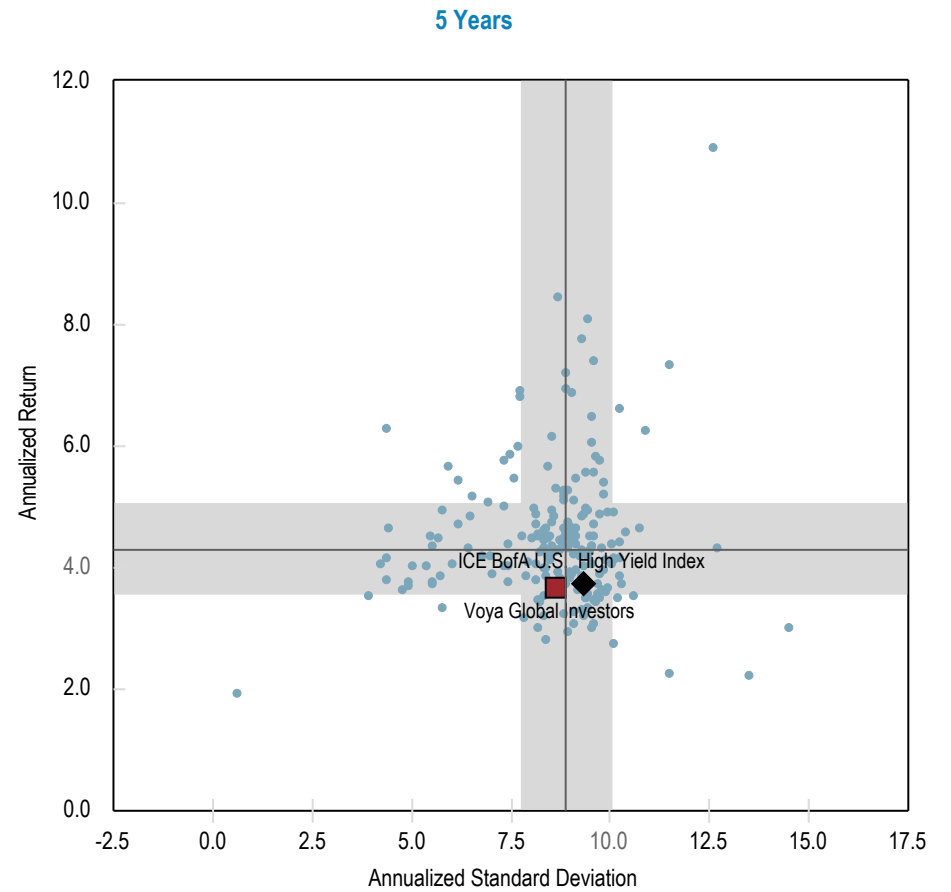
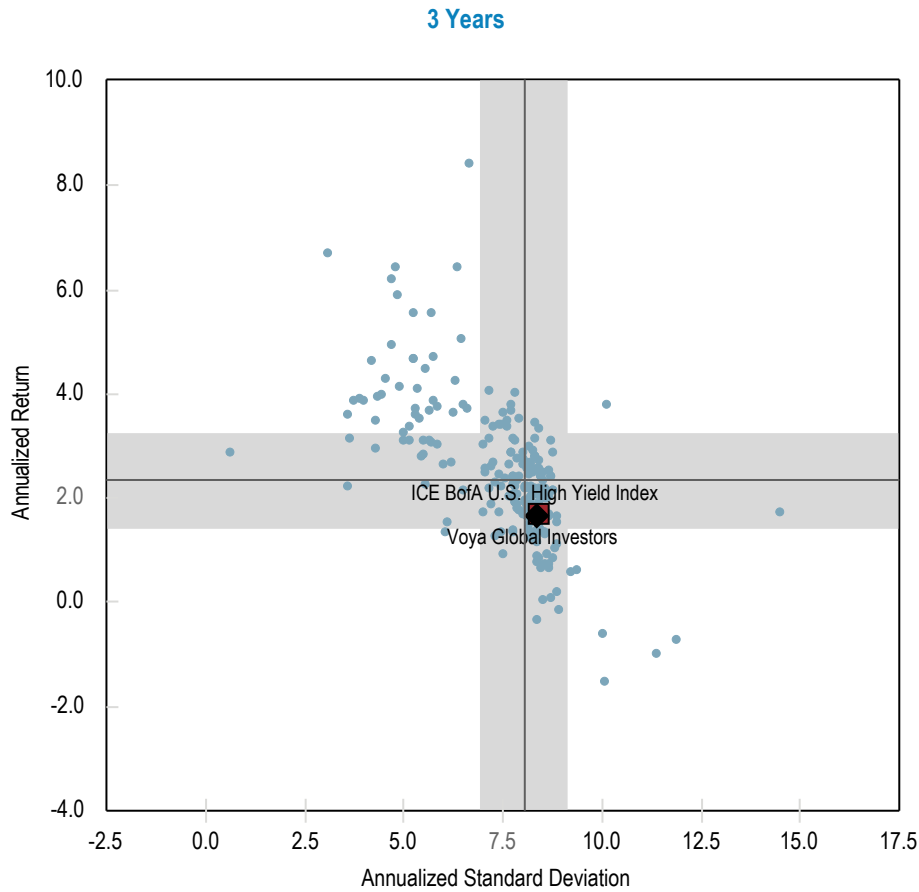
Voya Financial acquired Allianz Global Investors in 2022.

Voya Global Investors vs. eV US High Yield Fixed Inc Gross Universe



	Quarter	1 Year	3 Years	5 Years	10 Years	2023	2022	2021	2020	2019
● Voya Global Investors	1.59 (10)	9.88 (53)	1.69 (56)	3.67 (59)	3.77 (63)	12.39 (47)	-10.64 (63)	5.34 (42)	5.18 (66)	15.32 (19)
▲ ICE BofA U.S. High Yield Index	1.09 (68)	10.45 (34)	1.65 (58)	3.73 (53)	4.21 (37)	13.46 (18)	-11.22 (75)	5.36 (41)	6.17 (42)	14.41 (36)
5th Percentile	1.74	12.59	3.98	6.08	5.73	14.98	-2.92	9.80	9.69	16.50
1st Quartile	1.42	10.62	2.80	4.36	4.40	13.11	-7.50	6.11	7.39	14.96
Median	1.24	9.94	1.83	3.76	3.99	12.25	-10.05	5.05	5.87	13.80
3rd Quartile	1.00	9.22	1.26	3.31	3.57	11.14	-11.29	4.07	4.43	11.24
95th Percentile	0.47	7.47	0.25	2.59	2.96	8.53	-13.20	2.88	2.41	7.25
Population	228	225	216	208	176	242	258	253	259	265





	3 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
Voya Global Investors	1.7	8.4	-0.1
ICE BofA U.S. High Yield Index	1.6	8.4	-0.1
eV US High Yield Fixed Inc Median	2.3	8.0	0.0
Population	225	225	225

	5 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
Voya Global Investors	3.7	8.6	0.2
ICE BofA U.S. High Yield Index	3.7	9.3	0.2
eV US High Yield Fixed Inc Median	4.3	8.9	0.3
Population	217	217	217

Real Estate Managers

Adelante Manager Portfolio Overview

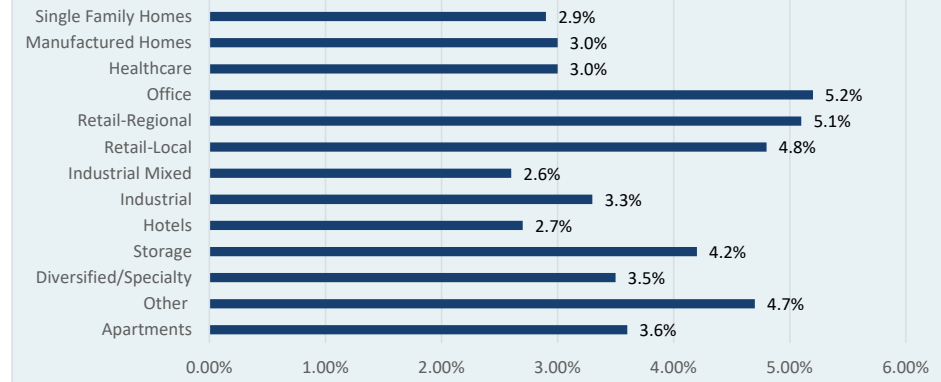
Contra Costa County Employees' Retirement Association
Period Ending: June 30, 2024

Diversified portfolio of U.S. REITs with a focus on the underlying real estate assets

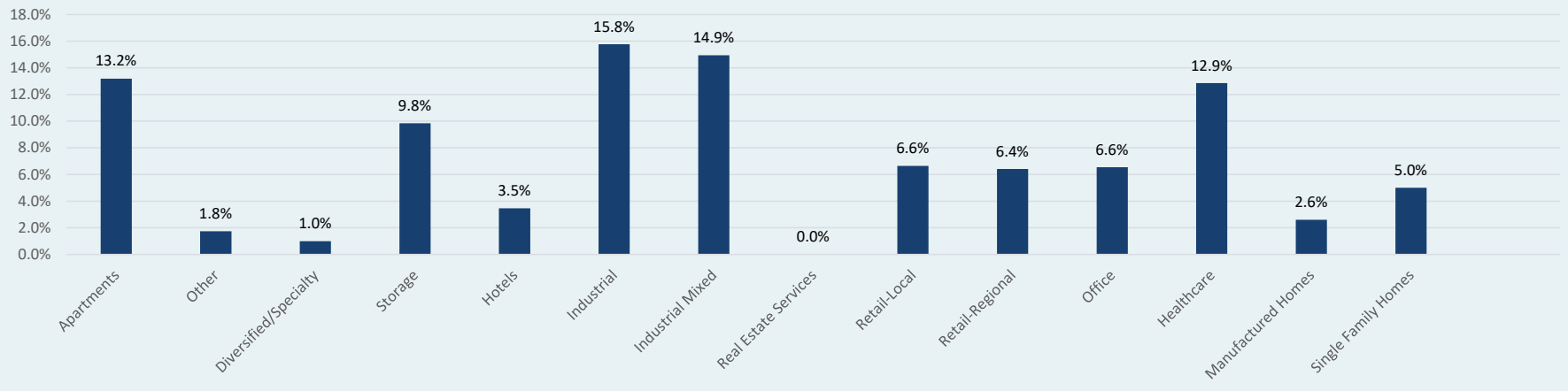
Top Five Holdings

Company	Property Type	Allocation
ProLogis Inc.	Industrial	11.7%
Equinix Inc.	Industrial Mixed	9.4%
Welltower Inc.	Healthcare	8.7%
Public Storage	Storage	6.6%
Simon Property Group	Retail-Regional	6.4%

Dividend Yield by Property Type



Property Type Allocation



1.75% is allocated to Cash and Cash Equivalents.

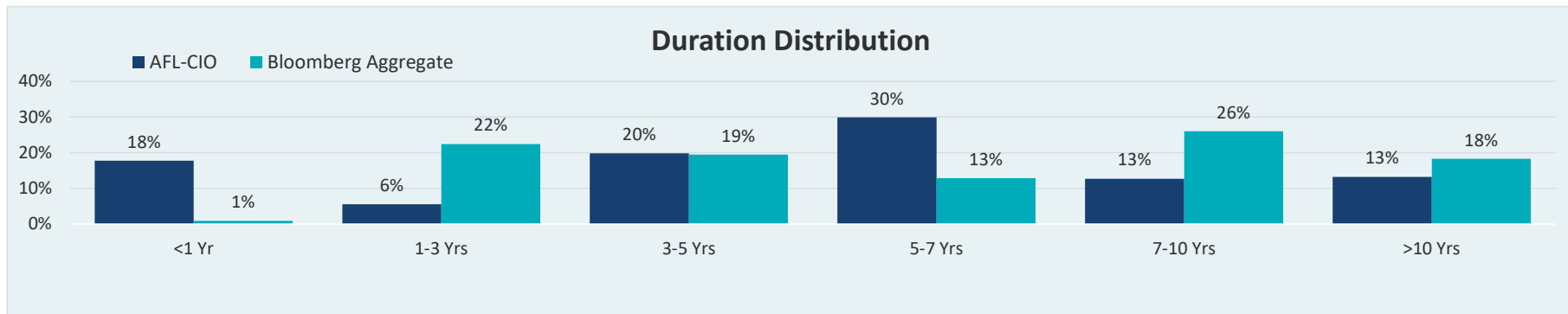
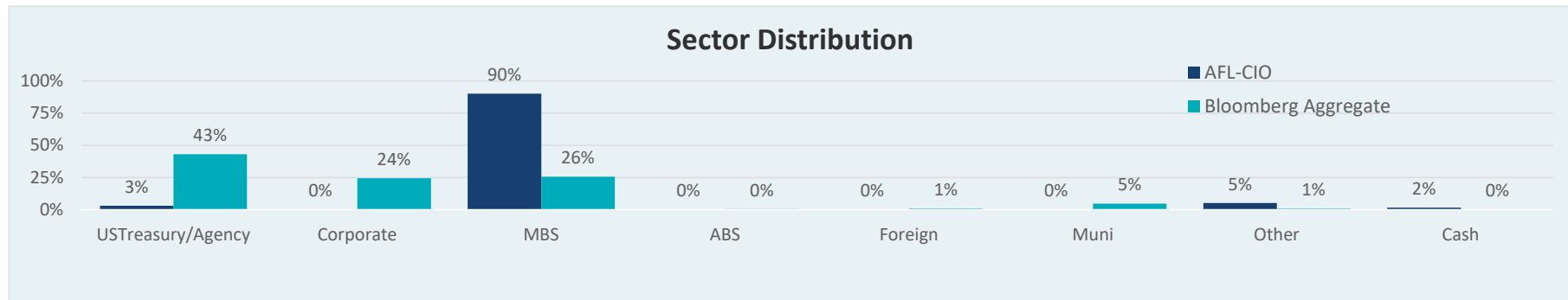
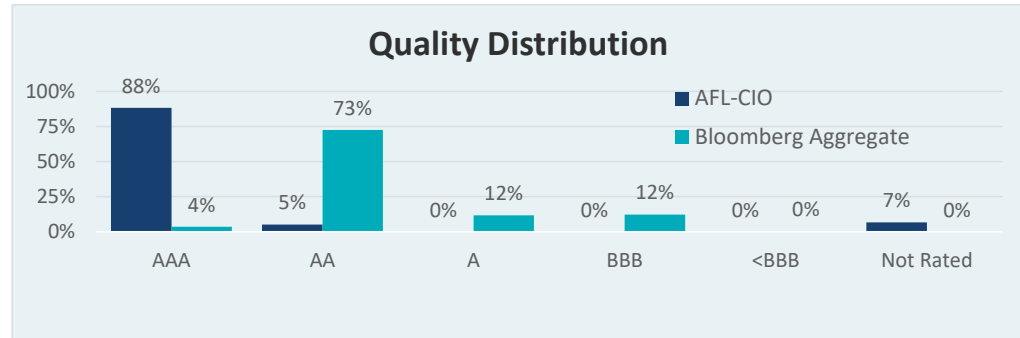
Diversifying Fixed Income Managers

AFL-CIO Manager Portfolio Overview

Contra Costa County Employees' Retirement Association Period Ending: June 30, 2024

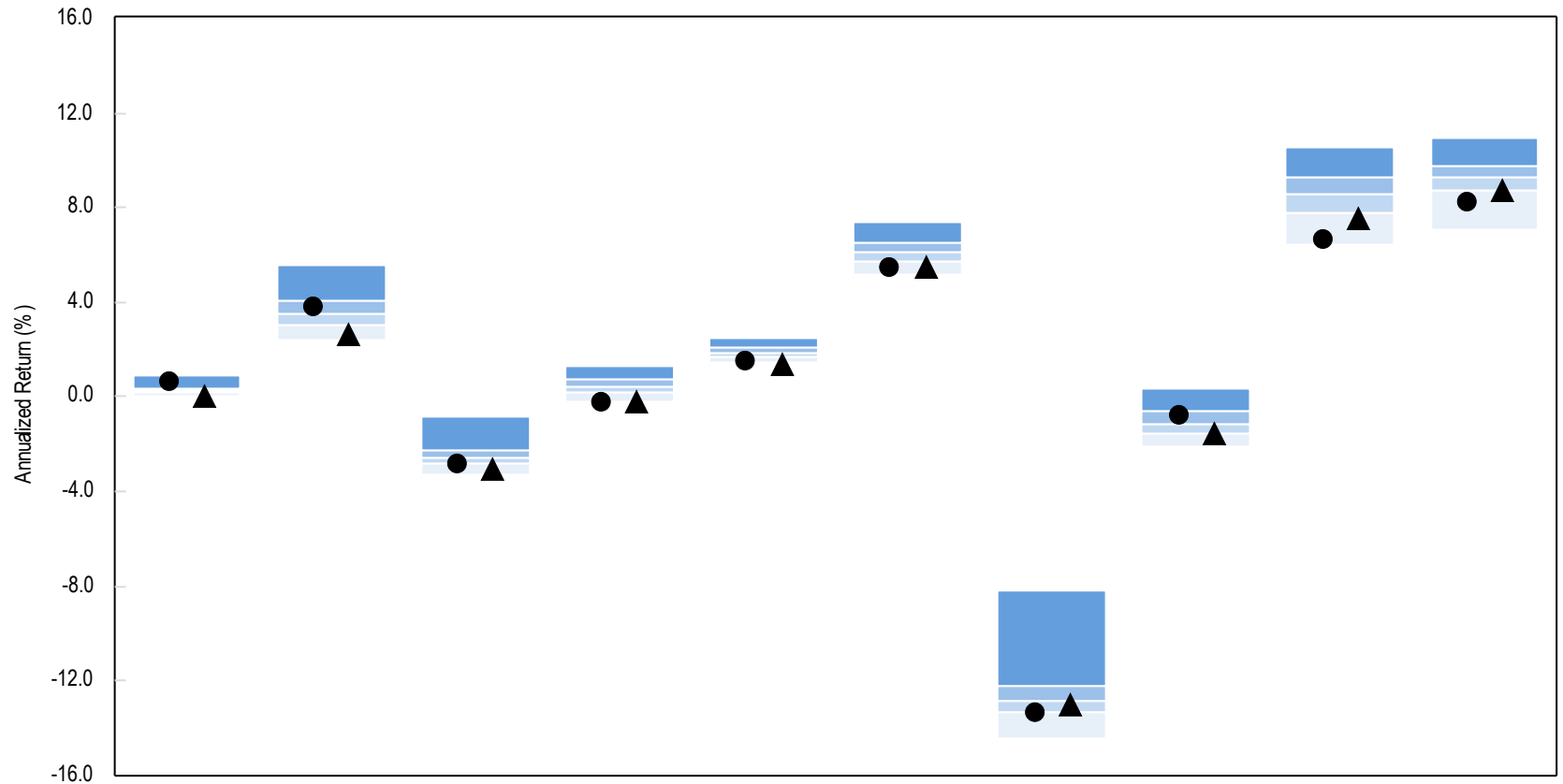
Domestic core fixed income portfolio with an exclusive focus on mortgage-related securities. Primary personnel include Stephen Coyle and Chang Su.

	AFL-CIO	Bloomberg Aggregate
Effective Duration	5.97	6.02
Yield to Maturity	4.1%	3.7%
Average Quality	Aa1	Aa2
Average Coupon	3.7%	3.3%

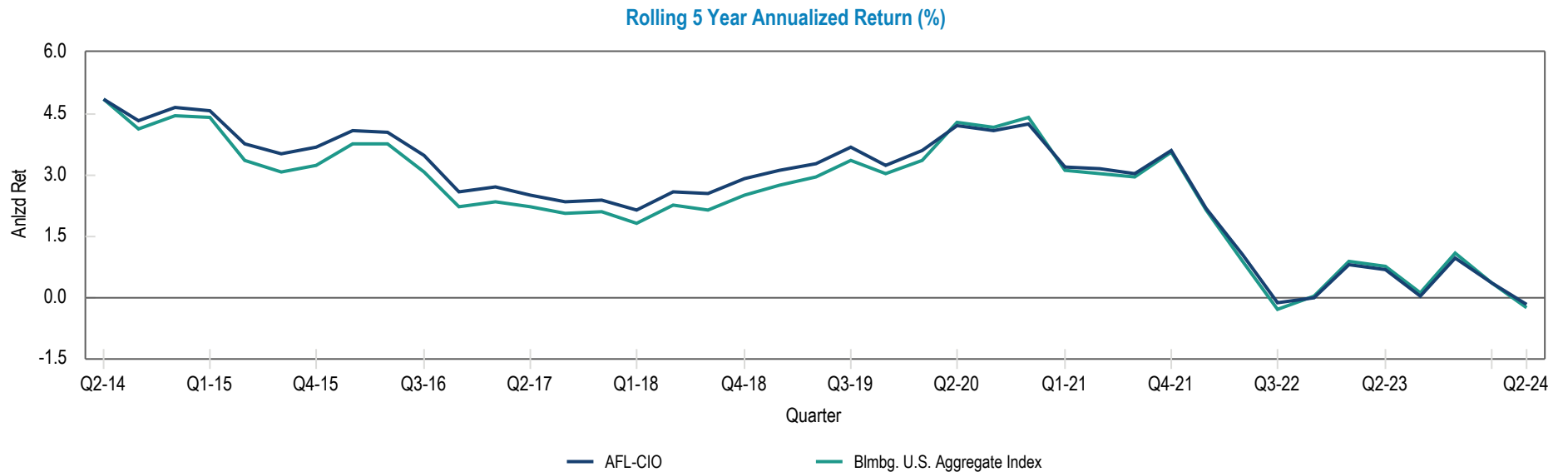
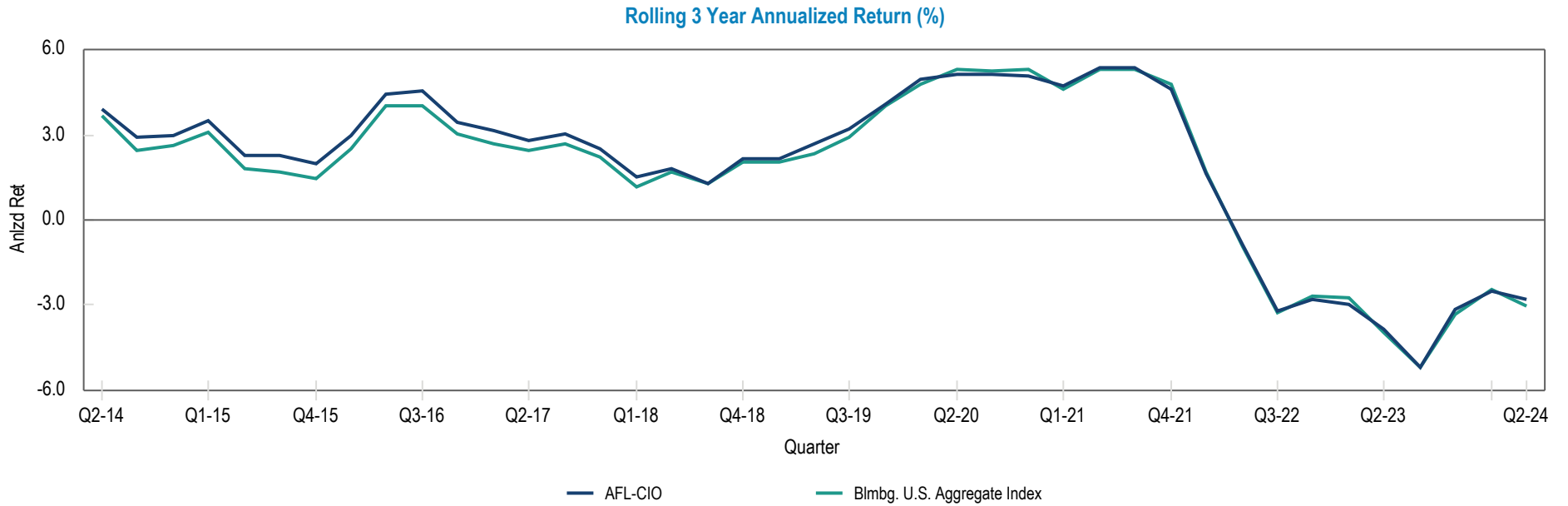


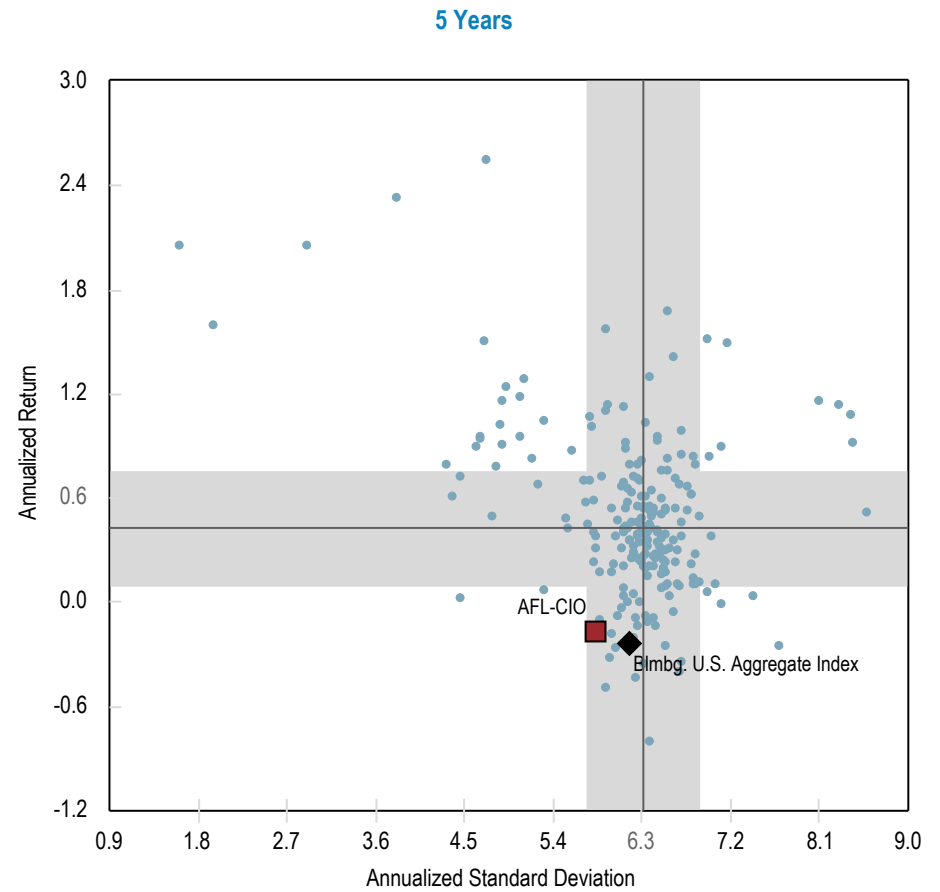
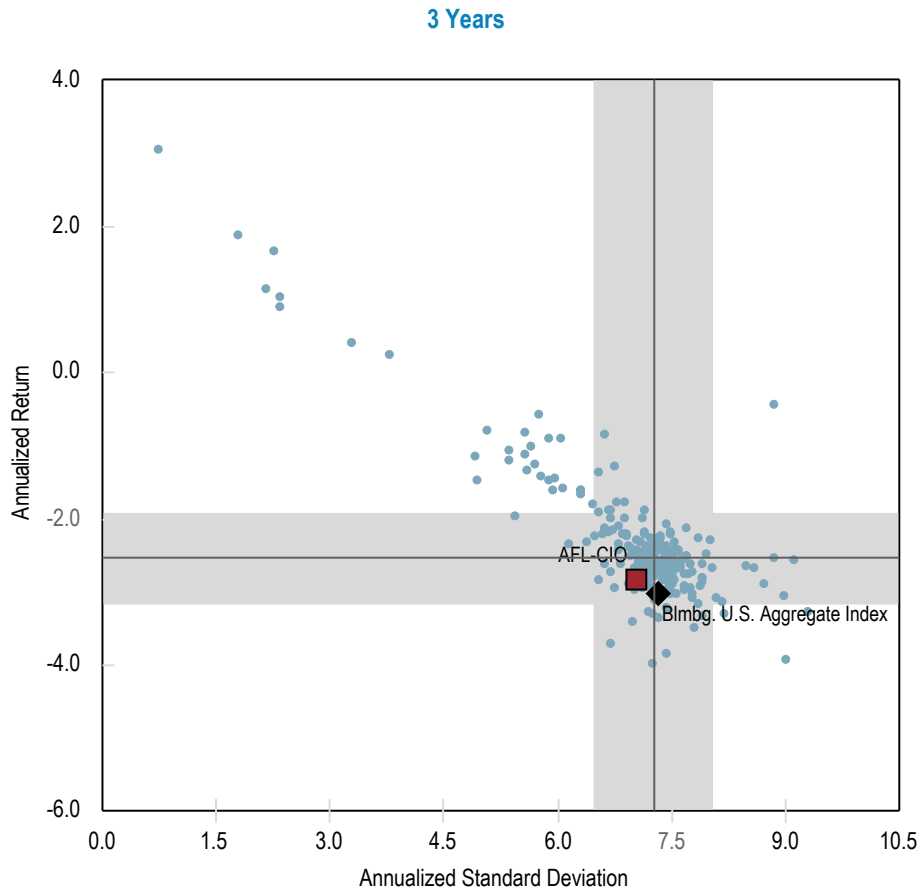
Duration and Quality distributions exclude cash.

AFL-CIO vs. eV US Core Fixed Inc Gross Universe



	Quarter	1 Year	3 Years	5 Years	10 Years	2023	2022	2021	2020	2019
● AFL-CIO	0.66 (10)	3.81 (35)	-2.82 (79)	-0.17 (94)	1.54 (90)	5.51 (85)	-13.27 (75)	-0.73 (33)	6.65 (94)	8.25 (85)
▲ Blmbg. U.S. Aggregate Index	0.07 (94)	2.63 (92)	-3.02 (89)	-0.23 (96)	1.35 (99)	5.53 (84)	-13.01 (63)	-1.55 (77)	7.51 (83)	8.72 (76)
5th Percentile	0.90	5.59	-0.82	1.31	2.48	7.38	-8.18	0.38	10.57	10.95
1st Quartile	0.38	4.08	-2.22	0.72	2.06	6.53	-12.18	-0.61	9.30	9.76
Median	0.27	3.50	-2.54	0.43	1.86	6.14	-12.83	-1.11	8.54	9.30
3rd Quartile	0.18	3.07	-2.79	0.21	1.70	5.72	-13.28	-1.52	7.75	8.74
95th Percentile	0.05	2.42	-3.25	-0.21	1.44	5.17	-14.44	-2.11	6.41	7.04
Population	233	233	229	219	200	245	265	272	277	281





	3 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
AFL-CIO	-2.8	7.0	-0.8
Blmbg. U.S. Aggregate Index	-3.0	7.3	-0.8
eV US Core Fixed Inc Median	-2.5	7.3	-0.7
Population	229	229	229

	5 Years		
	Anlzd Return (%)	Anlzd Standard Deviation (%)	Sharpe Ratio
AFL-CIO	-0.2	5.8	-0.4
Blmbg. U.S. Aggregate Index	-0.2	6.2	-0.4
eV US Core Fixed Inc Median	0.4	6.3	-0.2
Population	219	219	219

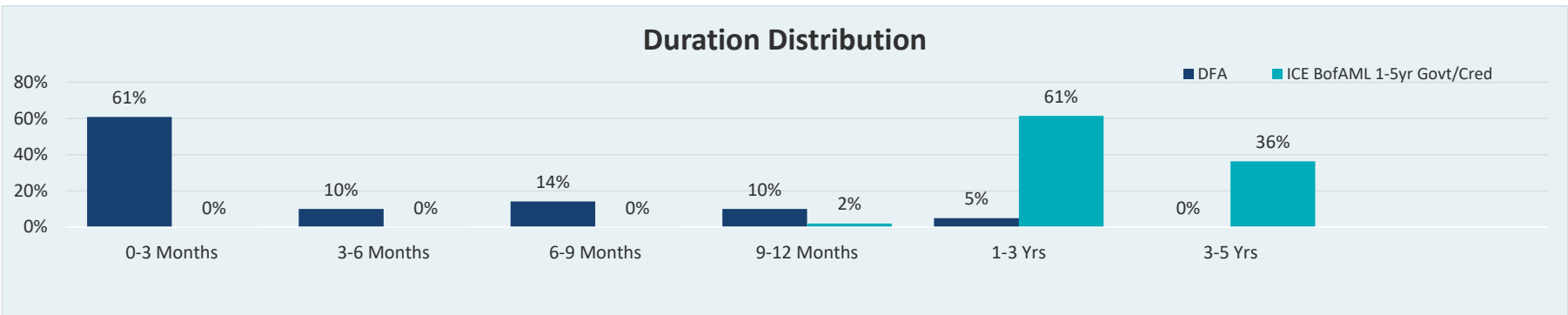
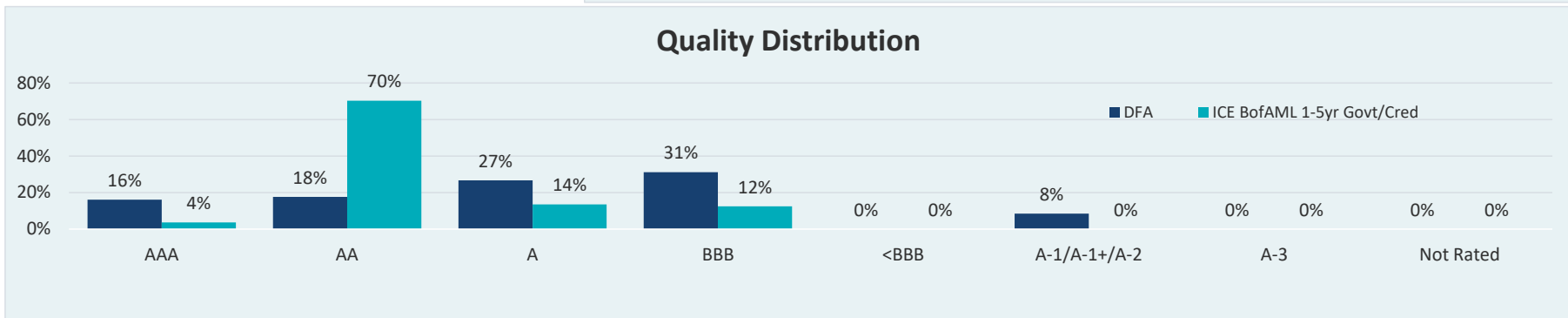
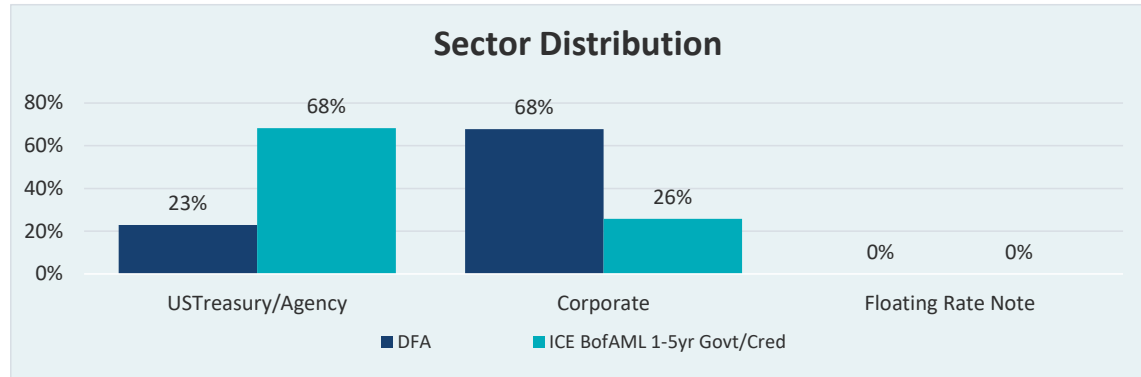
Liquidity Managers

DFA Short Credit
 Manager Portfolio Overview

Contra Costa County Employees' Retirement Association
 Period Ending: June 30, 2024

Domestic short term US credit fixed income portfolio that maximizes total return through income and capital appreciation. Primary personnel include Dave Plecha and Joseph Kolerich.

	DFA	ICE BofAML 1-5yr Govt/Cred
Effective Duration	0.32	2.58
Yield to Maturity	5.79	4.89
Average Quality	A+	Aa2
Average Coupon	3.89%	3.09%

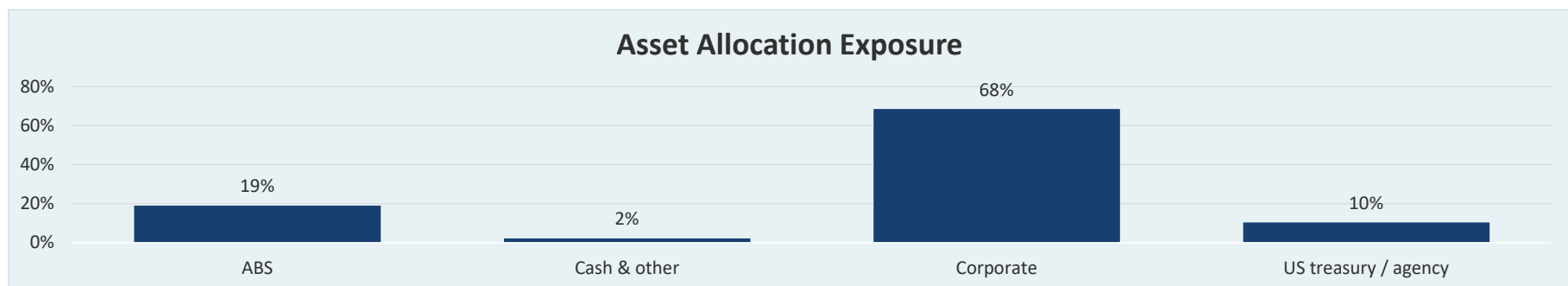
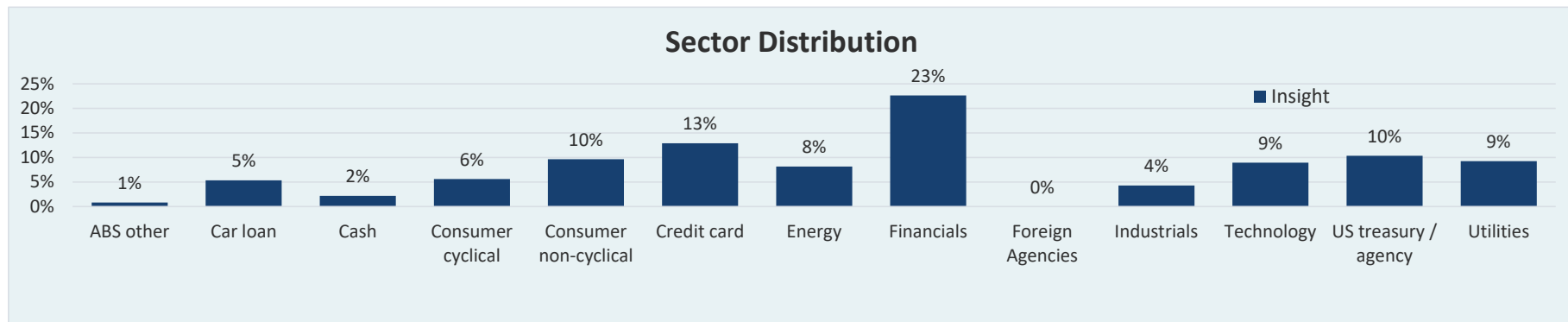
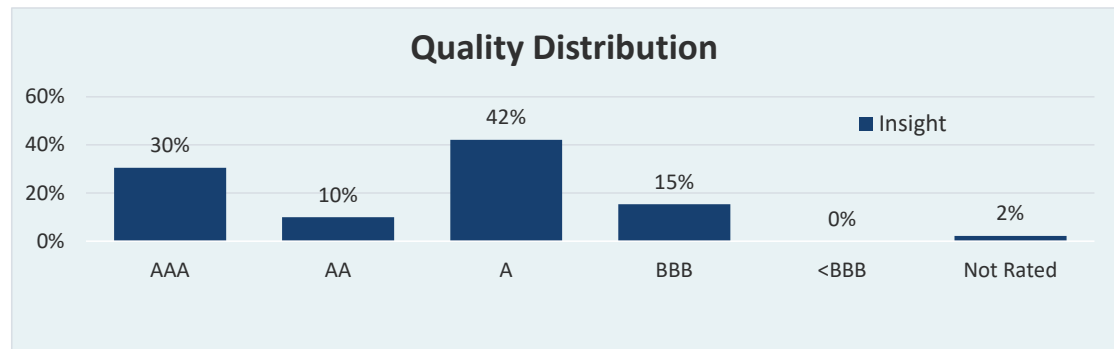


Insight Short Duration Manager Portfolio Overview

Contra Costa County Employees' Retirement Association Period Ending: June 30, 2024

High quality, short duration multi-sector fixed income portfolio comprised of Treasuries, Agencies, investment grade corporates, and ABS designed specifically to meet CCCERA's liabilities. Key personnel include Gerard Berrigan and Jesse Fogarty.

	Insight	Bloomberg 1-3yr Govt
Effective Duration	1.23	1.90
Yield to Maturity	5.34	N/A
Average Quality	A+	AGY/AGY
Average Coupon	3.44%	2.70%

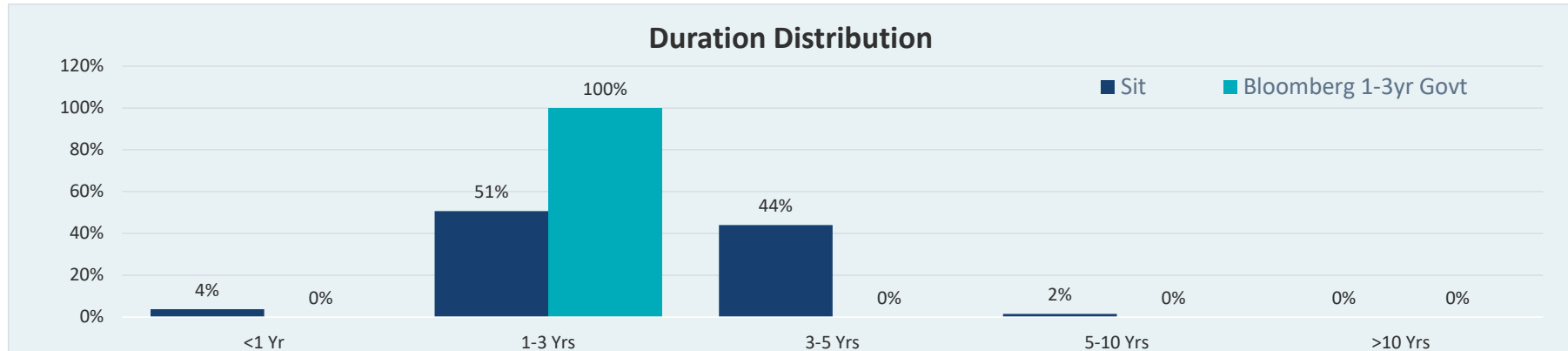
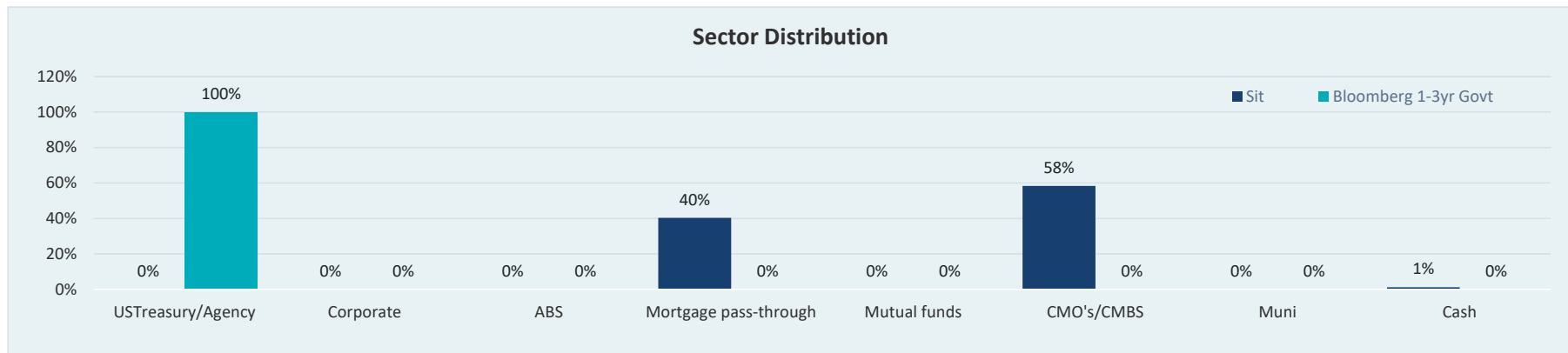
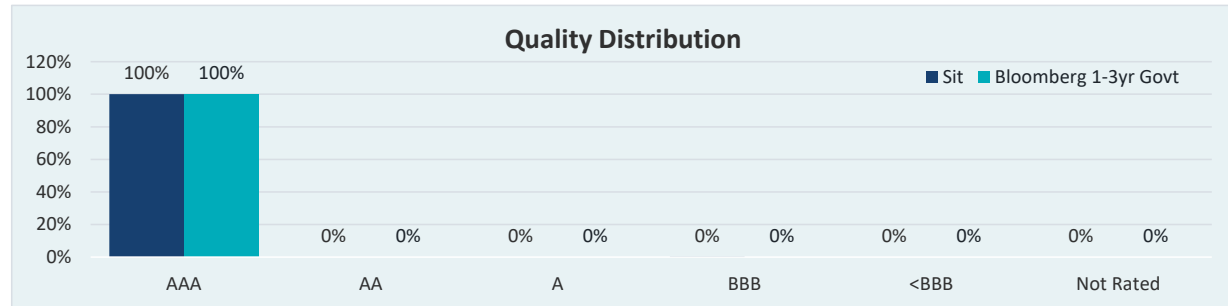


Sit Short Duration Manager Portfolio Overview

Contra Costa County Employees' Retirement Association Period Ending: June 30, 2024

Short duration fixed income portfolio with a focus on earning high levels of interest income. Primary personnel include Bryce Doty, Paul Jungquist and Michael Brilley.

	Sit	Bloomberg 1-3yr Govt
Modified Duration	2.90	1.90
Yield to Maturity	5.90	N/A
Average Quality	AGY/AGY	AGY/AGY
Average Coupon	5.90%	2.70%



Performance Return Calculations

Performance is calculated using Modified Dietz and for time periods with large cash flow (generally greater than 10% of portfolio value), Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year.

Data Source

Verus is an independent third party consulting firm and calculates returns from best source book of record data. Returns calculated by Verus may deviate from those shown by the manager in part, but not limited to, differences in prices and market values reported by the custodian and manager, as well as significant cash flows into or out of an account. It is the responsibility of the manager and custodian to provide insight into the pricing methodologies and any difference in valuation.

Illiquid Alternatives

Due to the inability to receive final valuation prior to report production, closed end funds (including but are not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit) performance is typically reported at a one-quarter lag. Valuation is reported at a one-quarter lag, adjusted for current quarter flow (cash flows are captured real time). Closed end fund performance is calculated using a time-weighted return methodology consistent with all portfolio and total fund performance calculations. For Private Markets, performance reports also include Verus-calculated multiples based on flows and valuations (e.g. DPI and TVPI) and manager-provided IRRs.

Policy & Custom Index Composition

Policy Index (8/1/2023 - present)	16% Russell 3000, 12% MSCI ACWI ex-US (Gross), 10% MSCI ACWI (Net), 2% Wilshire REIT, 8% Private Real Estate composite returns, 2% FTSE 3-month T-bill +5%, 13% Private Equity composite returns, 10% Private Credit composite returns, 2% ICE BofAML High Yield Master II, 17% Bloomberg 1-3 Yr Gov/Credit, 2.5% Bloomberg US Aggregate, 3% 60% MSCI ACWI Net/40% Bloomberg Global Aggregate, 2.5% Bloomberg US Aggregate TR +1%.
Policy Index (7/1/2022 - present)	16% Russell 3000, 15% MSCI ACWI ex-US (Gross), 9% MSCI ACWI (Net), 2% Wilshire REIT, 8% Private Real Estate composite returns, 2.5% FTSE 3-month T-bill +5%, 13% Private Equity composite returns, 8% Private Credit composite returns, 1.5% ICE BofAML High Yield Master II, 17% Bloomberg 1-3 Yr Gov/Credit, 2.5% Bloomberg US Aggregate, 3% 60% MSCI ACWI Net/40% Bloomberg Global Aggregate, 2.5% Bloomberg US Aggregate TR +1%.
Policy Index (7/1/2021 - 6/30/2022)	16% Russell 3000, 16% MSCI ACWI ex-US (Gross), 9% MSCI ACWI (Net), 2% Wilshire REIT, 8% Private Real Estate composite returns, 3% CPI + 4%, 11% Private Equity composite returns, 8% Private Credit composite returns, 2% ICE BofAML High Yield Master II, 18% Bloomberg 1-3 Yr Gov/Credit, 2.5% Bloomberg US Aggregate, 3% 60% MSCI ACWI Net/40% Bloomberg Global Aggregate, 1.5% HFRI EH Equity Market Neutral.
Policy Index (1/1/2021 - 6/30/2021)	9% Russell 3000, 18% MSCI ACWI ex-US (Gross), 11% MSCI ACWI (Net), 1% Wilshire REIT, 8% Private Real Estate composite returns, 1.5% CPI + 4%, 11% Private Equity composite returns, 7% Private Credit composite returns, 1.5% ICE BofAML High Yield Master II, 25% Bloomberg 1-3 Yr Gov/Credit, 3% Bloomberg US Aggregate, 2% Bloomberg Global Aggregate, 2% HFRI EH Equity Market Neutral.
Policy Index (7/1/2020 - 12/31/2020)	9% Russell 3000, 18% MSCI ACWI ex-US (Gross), 11% MSCI ACWI (Net), 1% Wilshire REIT, 1.6% NCREIF Property Index, 6.4% NCREIF ODCE Index, 1.5% CPI + 4%, 11% S&P 500 +4% (Lagged), 7% ICE BofAML High Yield Master II +2%, 1.5% ICE BofAML High Yield Master II, 25% Bloomberg 1-3 Yr Gov/Credit, 3% Bloomberg US Aggregate, 2% Bloomberg Global Aggregate, 2% HFRI EH Equity Market Neutral.
Policy Index (7/1/2019 - 6/30/2020)	10% Russell 3000, 18% MSCI ACWI ex-US (Gross), 11% MSCI ACWI (Net), 1% Wilshire REIT, 1.6% NCREIF Property Index, 6.4% NCREIF ODCE Index, 2% CPI + 4%, 11% S&P 500 +4% (Lagged), 5% ICE BofAML High Yield Master II +2%, 2% ICE BofAML High Yield Master II, 24% Bloomberg 1-3 Yr Gov/Credit, 3.5% Bloomberg US Aggregate, 2% Bloomberg Global Aggregate, 2.5% HFRI EH Equity Market Neutral.
Policy Index (7/1/2018 - 6/30/2019)	11% Russell 3000, 19% MSCI ACWI ex-US (Gross), 11% MSCI ACWI (Net), 1% Wilshire REIT, 1.8% NCREIF Property Index, 7.2% NCREIF ODCE Index, 2% CPI + 4%, 10% S&P 500 +4% (Lagged), 4% ICE BofAML High Yield Master II +2%, 2% ICE BofAML High Yield Master II, 23% Bloomberg 1-3 Yr Gov/Credit, 3.5% Bloomberg US Aggregate, 2% Bloomberg Global Aggregate, 2.5% HFRI EH Equity Market Neutral.
Policy Index (10/1/2017 - 6/30/2018)	16.3% Russell 3000, 18.8% MSCI ACWI ex-US (Gross), 8.6% MSCI ACWI (Net), 1% Wilshire REIT, 1.6% NCREIF Property Index, 6.4% NCREIF ODCE Index, 2.5% CPI + 4%, 10.1% S&P 500 +4% (Lagged), 1.9% ICE BofAML High Yield Master II +2%, 4.3% ICE BofAML High Yield Master II, 25% Bloomberg 1-3 Yr Gov/Credit, 3.5% Bloomberg US Aggregate.
Policy Index (1/1/2017 - 9/30/2017)	22.9% Russell 3000, 11% MSCI ACWI ex-US (Gross), 10.9% MSCI ACWI (Net), 1% Wilshire REIT, 1.7% NCREIF Property Index, 6.8% NCREIF ODCE Index, 3.6% CPI + 4%, 8.1% S&P 500 +4% (Lagged), 1.7% ICE BofAML High Yield Master II +2%, 5.1% ICE BofAML High Yield Master II, 22.4% Bloomberg 1-3 Yr Gov/Credit, 3.2% Bloomberg US Aggregate, 1.6% 91-Day T-Bills.
Policy Index (4/1/2012-12/31/2016)	27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% Bloomberg U.S. Aggregate, 5% ICE BofAML High Yield Master II, 4% Bloomberg Global Aggregate, 13.5% Real Estate Benchmark, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.

Policy & Custom Index Composition (continued)

Policy Index (4/1/2011-3/31/2012)	31% Russell 3000, 10.4% MSCI EAFE (Gross), 9.6% MSCI ACWI (Net), 25% Bloomberg U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% Bloomberg Global Aggregate, 8.4% DJ Wilshire REIT, 3.1% NCREIF, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Policy Index (4/1/2010-3/31/2011)	35.6% Russell 3000, 10.4% MSCI EAFE (Gross), 5% MSCI ACWI (Net), 25% Bloomberg U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% Bloomberg Global Aggregate, 8.4% DJ Wilshire REIT, 3.1% NCREIF, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Policy Index (7/1/2009-3/31/2010)	40.6% Russell 3000, 10.4% MSCI EAFE (Gross), 25% Bloomberg U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% Bloomberg Global Aggregate, 8.4% DJ Wilshire REIT, 3.1% NCREIF, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Custom Growth Benchmark (7/1/2022 - present)	21.2% Russell 3000, 19.9% MSCI ACWI ex-US (Gross), 11.9% MSCI ACWI (Net), 2.6% Wilshire REIT, 10.6% Private Real Estate composite returns, 17.2% Private Equity composite returns, 10.6% Private Credit composite returns, 2.0% ICE BofAML High Yield Master II, 4% 60% MSCI ACWI Net/40% Bloomberg Global Aggregate
Custom Growth Benchmark (7/1/2021 - 6/30/2022)	21.33% Russell 3000, 21.33% MSCI ACWI ex-US (Gross), 12% MSCI ACWI (Net), 2.67% Wilshire REIT, 10.67% Private Real Estate composite returns, 14.67% Private Equity composite returns, 10.67% Private Credit composite returns, 2.67% ICE BofAML High Yield Master II, 4% 60% MSCI ACWI Net/40% Bloomberg Global Aggregate
Custom Growth Benchmark (1/1/2021 - 6/30/2021)	13.14% Russell 3000, 26.28% MSCI ACWI ex-US (Gross), 16.06% MSCI ACWI (Net), 1.46% Wilshire REIT, 11.68 Private Real Estate composite returns%, 16.06% Private Equity composite returns, 10.22% Private Credit composite returns, 2.19% ICE BofAML High Yield Master II, 2.92% Bloomberg Global Bond
Custom Growth Benchmark (7/1/2020 - 12/31/2020)	13.14% Russell 3000, 26.28% MSCI ACWI ex-US (Gross), 16.06% MSCI ACWI (Net), 1.46% Wilshire REIT, 2.34% NCREIF Property Index, 9.33% NCREIF ODCE Index, 16.06% S&P 500 +4% (Lagged), 10.22% ICE BofAML High Yield Master II +2%, 2.19% ICE BofAML High Yield Master II, 2.92% Bloomberg Global Bond
Custom Growth Benchmark (7/1/2019 - 6/30/20)	14.7% Russell 3000, 26.4% MSCI ACWI ex-US (Gross), 16.2% MSCI ACWI (Net), 1.5% Wilshire REIT, 2.4% NCREIF Property Index, 9.4% NCREIF ODCE Index, 16.2% S&P 500 +4% (Lagged), 7.4% ICE BofAML High Yield Master II +2%, 2.9% ICE BofAML High Yield Master II, 2.9% Bloomberg Global Bond
Custom Growth Benchmark (7/1/2018 - 6/30/2019)	16.0% Russell 3000, 27.5% MSCI ACWI ex-US (Gross), 15.9% MSCI ACWI (Net), 1.5% Wilshire REIT, 2.6% NCREIF Property Index, 10.4% NCREIF ODCE Index, 14.5% S&P 500 +4% (Lagged), 5.8% ICE BofAML High Yield Master II +2%, 2.9% ICE BofAML High Yield Master II, 2.9% Bloomberg Global Bond
Custom Growth Benchmark (9/30/2017- 6/30/2018)	23.6% Russell 3000, 27.2% MSCI ACWI ex-US (Gross), 12.5% MSCI ACWI (Net), 1.5% Wilshire REIT, 2.3% NCREIF Property Index, 9.3% NCREIF ODCE Index, 14.6% S&P 500 +4% (Lagged), 2.8% ICE BofAML High Yield Master II +2%, 6.2% ICE BofAML High Yield Master II
Custom Growth Benchmark (1/1/2017-9/30/2017)	32.6% Russell 3000, 15.7% MSCI ACWI ex-US (Gross), 15.5% MSCI ACWI (Net), 1.4% Wilshire REIT, 2.4% NCREIF Property Index, 9.6% NCREIF ODCE Index, 1.6% CPI +4%, 11.5% S&P 500 +4% (Lagged), 2.4% ICE BofAML High Yield Master II +2%, 7.3% ICE BofAML High Yield Master II
Custom Growth Benchmark (Prior to 1/1/2017)	Weighted-average of the benchmarks of the sub-composites that make up the composite.
Custom Diversifying Benchmark (7/1/2021-present)	35.71% Bloomberg US Aggregate, 21.43% FTSE 3-Month T-bill +4%, 21.43 FTSE 3-Month T-bill +5%, 21.43% Bloomberg Barclays US Aggregate +1%
Custom Diversifying Benchmark (8/1/2020 - 6/30/2021)	46.15% Bloomberg US Aggregate, 30.77 FTSE 3-Month T-bill +4%, 23.08 FTSE 3-Month T-bill +5%.
Custom Diversifying Benchmark (7/1/2018 - 7/31/2020)	43.75% Bloomberg US Aggregate, 25% CPI + 4%, 31.25% HFRI EH Equity Market Neutral.
Custom Diversifying Benchmark (10/1/2017 - 6/30/2018)	58.33% Bloomberg US Aggregate, 41.67% CPI + 4%.
Custom Diversifying Benchmark (1/1/2017 - 9/30/2017)	56.1% Bloomberg US Aggregate, 43.9% CPI + 4%.
Custom Diversifying Benchmark (Prior to 1/1/2017)	Weighted-average of the benchmarks of the sub-composites that make up the composite.
Custom Diversifying Multi-Asset Benchmark (current)	50% FTSE 3-Month T-bill +5%, 50% Bloomberg Barclays US Aggregate +1%
Real Estate Benchmark (current)	20% Wilshire REIT, 80% Private Real Estate composite returns.
Real Estate Benchmark (4/1/2012-11/30/2016)	40% Wilshire REIT, 50% NCREIF Property Index, 10% FTSE/EPRA NAREIT Developed ex-US.

Data Sources and Methodology

Period Ending: June 30, 2024

IMPLEMENTATION BENCHMARK WEIGHTS BY INVESTMENT ALLOCATION RESOLUTION (1/1/17 TO CURRENT)

Manager	Benchmark	1/1/17 - 9/30/17	10/1/17 - 6/30/18	7/1/18 - 6/30/19	7/1/19 - 6/30/20	7/1/20 - 6/30/21	7/1/21 - 6/30/22	7/1/22 - 7/31/23	8/1/2023 - current
BlackRock Index Fund	Russell 1000 Index	0.0%	1.0%	1.0%	2.0%	2.0%	5.0%	9.0%	10.0%
Intech Large Cap	S&P 500 Index	3.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pimco Stocks +	S&P 500 Index	4.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Boston Partners	Russell 1000 Value	4.2%	4.5%	3.0%	2.5%	2.0%	4.0%	4.0%	3.0%
Jackson Square	Russell 1000 Growth	4.3%	4.5%	3.0%	2.5%	2.0%	4.0%	0.0%	0.0%
Emerald	Russell 2000 Growth	3.2%	3.3%	2.0%	1.5%	1.5%	1.5%	1.5%	1.5%
Ceredex	Russell 2000 Value	3.0%	3.3%	2.0%	1.5%	1.5%	1.5%	1.5%	1.5%
Pyrford	MSCI AC World ex USA Value	5.5%	5.4%	5.5%	5.0%	5.0%	4.0%	4.0%	4.0%
William Blair	MSCI AC World ex USA Growth	5.5%	5.4%	5.5%	5.0%	5.0%	4.0%	4.0%	4.0%
TT Emerging Markets	MSCI Emerging Markets	0.0%	4.2%	4.0%	4.0%	4.0%	4.0%	3.5%	2.0%
PIMCO/RAE Emerging Markets	MSCI Emerging Markets Value	0.0%	4.2%	4.0%	4.0%	4.0%	4.0%	3.5%	2.0%
Artisan	MSCI ACWI Growth NR USD	4.5%	4.3%	4.0%	4.0%	4.0%	4.5%	4.5%	5.0%
Intech Global Low Vol	MSCI ACWI	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
JP Morgan	MSCI ACWI	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
First Eagle	MSCI ACWI Value NR USD	4.3%	4.3%	4.0%	4.0%	4.0%	4.5%	4.5%	5.0%
Allianz (Voya?)	ICE BofA U.S. High Yield Index	5.1%	5.0%	2.0%	2.0%	1.5%	2.0%	1.5%	2.0%
Adelante REIT	Wilshire U.S. REIT Index	1.0%	1.0%	1.0%	1.0%	1.0%	2.0%	1.0%	1.0%
INVESCO REIT	Wilshire U.S. REIT Index	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	1.0%
Private RE (NPI)	Private RE Composite Returns	1.1%	1.4%	1.8%	1.6%	1.6%	0.0%	0.0%	0.0%
Private RE (ODCE)	Private RE Composite Returns	8.4%	8.2%	7.2%	6.4%	6.4%	0.0%	0.0%	0.0%
Private RE	Private RE Composite Returns	0.0%	0.0%	0.0%	0.0%	0.0%	8.0%	8.0%	8.0%
Private Credit	Private Equity Composite Returns	0.0%	0.0%	4.0%	5.0%	7.0%	8.0%	8.0%	10.0%
Torchlight	Private Equity Composite Returns	1.7%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Private Equity	Private Equity Composite Returns	7.7%	8.2%	10.0%	11.0%	11.0%	11.0%	13.0%	13.0%
Opportunistic	Private Equity Composite Returns	0.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Risk Parity	60% MSCI ACWI (Net) / 40% Bloomberg Global Aggregate	0.0%	0.0%	5.0%	5.0%	5.0%	3.0%	3.0%	3.0%
Insight	Bloomberg 1-3 Yr Gov/Cred	10.5%	10.7%	12.0%	12.0%	13.0%	7.0%	6.5%	6.5%
DFA	ICE BofA 1-5 Year U.S. Corp/Gov't Index	6.0%	5.3%	5.5%	6.0%	6.0%	4.0%	4.0%	4.0%
Cash	3-month Tbills	1.6%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sit	Bloomberg 1-3 Yr Govt index	5.9%	6.0%	5.5%	6.0%	6.0%	7.0%	6.5%	6.5%
AFL-CIO HIT	Bloomberg US Aggregate TR	3.2%	3.5%	3.5%	3.5%	3.0%	2.5%	2.5%	2.5%
Parametric Defensive Equity	CPI + 4%	0.0%	0.0%	2.5%	2.5%	0.0%	1.5%	0.0%	0.0%
Wellington Real TR	Bloomberg Global Aggregate	2.5%	2.5%	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%
Acadian MAARS	FTSE 3-month T-bill + 5%	0.0%	0.0%	0.0%	0.0%	1.5%	1.5%	2.5%	2.0%
Sit AR	Bloomberg US Aggregate TR +100	0.0%	0.0%	0.0%	0.0%	2.0%	1.5%	2.5%	2.5%

Manager Line Up					
Manager	Inception Date	Data Source	Manager	Inception Date	Data Source
BlackRock Russell 1000 Index	4/20/2017	BlackRock	Invesco Real Estate V	9/27/2022	Invesco
Boston Partners	6/1/1995	Northern Trust	Oaktree REOF V	12/31/2011	Oaktree
Emerald Advisors	4/7/2003	Northern Trust	Oaktree REOF VI	9/30/2013	Oaktree
Ceredex	11/6/2011	Northern Trust	Oaktree REOF VII	4/1/2015	Oaktree
Pyrford	4/25/2014	State Street	PCCI IX	4/28/2022	PCCP
William Blair	10/29/2010	William Blair	Siguler Guff DREOF	1/25/2012	Siguler Guff
PIMCO RAE Emerging Markets	2/28/2017	State Street	Siguler Guff DREOF II	8/31/2013	Siguler Guff
TT Emerging Markets	7/27/2017	TT	Siguler Guff DREOF II Co-Inv	1/27/2016	Siguler Guff
Artisan Partners	10/1/2012	SEI Trust	Paulson Real Estate Fund II	11/10/2013	Paulson
First Eagle	1/18/2011	Northern Trust	AE Industrial Partners Fund II	4/8/2019	StepStone Group
Allianz Global Investors	4/25/2000	Northern Trust	Adams Street Partners	3/18/1996	StepStone Group
Adelante	9/30/2001	Northern Trust	Adams Street Partners II	1/16/2009	StepStone Group
AQR Global Risk Premium - EL	1/18/2019	AQR	Adams Street Partners Venture	4/28/2017	StepStone Group
Panagora Risk Parity Multi Asset	3/15/2019	Panagora	Adams Street Partners - BFP	1/18/1996	StepStone Group
AFL-CIO	6/30/1991	AFL-CIO	Adams Street Partners - Fund 5	9/21/2012	StepStone Group
Wellington Real Total Return (in Liquidation)	2/26/2013	Wellington	Aether Real Assets IV	3/16/2016	StepStone Group
Acadian Multi-Asset Absolute Return Fund	8/4/2020	SS&C	Aether Real Assets III	11/27/2013	StepStone Group
Sit LLCAR	4/15/2021	Northern Trust	Aether Real Assets III Surplus	11/30/2013	StepStone Group
Sit Short Duration	11/2/2016	Northern Trust	Bay Area Equity Fund	6/14/2004	StepStone Group
DFA Short Credit	11/21/2016	Northern Trust	Bay Area Equity Fund II	12/7/2009	StepStone Group
Insight Short Duration	11/18/2016	Northern Trust	Commonfund	6/28/2013	StepStone Group
Parametric Overlay	3/29/2017	Northern Trust	EIF US Power Fund II	8/16/2005	StepStone Group
Cash	-	Northern Trust	EIF US Power Fund III	5/30/2007	StepStone Group
Angelo Gordon Energy Credit Opp	9/24/2015	StepStone Group	EIF US Power Fund IV	11/28/2011	StepStone Group
StepStone CC Opportunities Fund	2/1/2018	StepStone Group	EIF US Power Fund V	11/28/2016	StepStone Group
Torchlight II	9/30/2006	StepStone Group	Genstar Capital Partners IX, L.P.	2/21/2019	StepStone Group
Torchlight IV	7/1/2012	StepStone Group	Oaktree PIF 2009	2/28/2010	StepStone Group
Torchlight V	7/1/2012	StepStone Group	Paladin III	11/30/2007	StepStone Group
Angelo Gordon Realty Fund VIII	1/23/2012	Angelo Gordon	Ocean Avenue Fund II	6/11/2014	StepStone Group
Angelo Gordon Realty Fund IX	12/8/2014	Angelo Gordon	Ocean Avenue Fund III	4/15/2016	StepStone Group
Blackstone Real Estate Partners VIII	3/24/2023	Blackstone	Pathway 6	5/24/2011	StepStone Group
DLJ RECP III	6/23/2005	DLJ	Pathway 7	2/7/2013	StepStone Group
DLJ RECP IV	2/11/2008	DLJ	Pathway 8	11/23/2015	StepStone Group
DLJ RECP V	7/1/2014	DLJ	Pathway	11/9/1998	StepStone Group
DLJ RECP VI	3/19/2019	DLJ	Pathway 2008	12/26/2008	StepStone Group
LaSalle Income & Growth VI	7/16/2013	LaSalle	Siguler Guff CCCERA Opps	6/3/2014	StepStone Group
LaSalle Income & Growth VII	2/28/2017	LaSalle	Siguler Guff Secondary Opps	11/30/2016	StepStone Group
Hearthstone II	6/17/1998	Hearthstone	Siris Partners IV	3/15/2019	StepStone Group
Long Wharf Fund IV	7/3/2013	Long Wharf	TPG Healthcare Partners, L.P.	6/28/2019	StepStone Group
Long Wharf Fund V	9/30/2016	Long Wharf	Trident VIII, L.P.	5/24/2019	StepStone Group
Long Wharf Fund VI	2/5/2020	Long Wharf	Wastewater Opp. Fund	12/8/2015	StepStone Group
Long Wharf Fund VII	5/30/2023	Long Wharf	Cross Lake RE IV	12/14/2023	Cross Lake
Invesco Real Estate IV	6/30/2014	Invesco	KSL Capital Partners VI, L.P.	11/10/2023	KSL
Invesco Real Estate V	2/20/2019	Invesco	EQT Infrastructure VI	12/31/2023	StepStone Group

Other Disclosures

All data prior to 12/31/2014 was provided by previous consultant.
 As of 7/1/2018 all Private Equity and Private Credit data is provided by StepStone Group.

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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