



AGENDA

RETIREMENT BOARD MEETING

REGULAR MEETING

February 22, 2023, 9:00 a.m.

The Board of Retirement will hold its meeting via teleconferencing as permitted by Government Code Section 54953(e). The meeting is accessible telephonically at 669-900-6833, Webinar ID: 885 4618 7290, Passcode: 769757, or via the web at:

<https://us06web.zoom.us/j/88546187290?pwd=SzFDdlQrNzhFY0JrRmtkeFN3QkVDQT09>

Passcode: 769757

Persons who wish to address the Board of Retirement during public comment may call in during the meeting by dialing the phone number and passcode above. Access via Zoom is also available at the weblink above. To indicate you wish to speak during public comment, please select *9 on your phone or “raise your hand” in the Zoom app.

Public comments are limited to any item that is within the subject matter jurisdiction of the Board of Retirement. Comments will be received in real time via telephone or Zoom, subject to a three-minute time limit per speaker.

THE RETIREMENT BOARD MAY DISCUSS AND TAKE ACTION ON THE FOLLOWING:

1. Pledge of Allegiance.
2. Roll Call.
3. Public Comment (3 minutes/speaker).
4. Approve minutes from the January 25, 2023 meeting. (Action Item)
5. Review of total portfolio performance for period ending December 31, 2022. (Presentation Item)
 - a. Presentation from Verus
 - b. Presentation from staff
6. Annual statement of compliance with Board resolutions. (Presentation Item)

The Retirement Board will provide reasonable accommodations for persons with disabilities planning to attend Board meetings who contact the Retirement Office at least 24 hours before a meeting.

7. Consider and take possible action to authorize the CEO to execute an amendment to the pension administration consulting agreement for Segal Consulting. (Action Item)
8. Consider and take possible action to adopt CCCERA's Policy Allowing For the Use and Acceptance of Electronic Signatures. (Action Item)
9. Consider and take possible action to amend CCCERA's Accessibility of Records Policy and Accessibility of Investment Records Policy. (Action Item)
10. Consider and take possible action on SACRS voting proxy form. (Action Item)
11. Consider authorizing the attendance of Board: (Action Item)
 - a. CALAPRS Trustees Roundtable, April 21, 2023, Virtual.
 - b. SACRS Spring Conference, May 9-12, 2023, San Diego, CA.
12. Miscellaneous
 - a. Staff Report
 - b. Outside Professionals' Report
 - c. Trustees' comments

The Retirement Board will provide reasonable accommodations for persons with disabilities planning to attend Board meetings who contact the Retirement Office at least 24 hours before a meeting.



RETIREMENT BOARD MEETING MINUTES

REGULAR MEETING
January 25, 2023
9:00 a.m.

The Board of Retirement meeting was accessible telephonically at (669) 900-6833, Webinar ID 816 6899 4370 Passcode 432209, as permitted by Government Code Section 54953(e).

1. Pledge of Allegiance

The Board and staff joined in the *Pledge of Allegiance*.

2. Roll Call

Present: Candace Andersen, Dennis Chebotarev, Donald Finley, Scott Gordon, Jerry Holcombe, Louie Kroll, Jay Kwon, David MacDonald, John Phillips, Mike Sloan and Russell Watts.

Absent: Samson Wong

Staff: Gail Strohl, Chief Executive Officer; Christina Dunn, Deputy Chief Executive Officer; Karen Levy, General Counsel; Timothy Price, Chief Investment Officer and Tim Hoppe, Retirement Services Manager

Outside Professional Support:	Representing:
Scott Whalen	Verus

3. Accept comments from the public

Carol Nowicki spoke about her husband's experience in 2015 with CCCERA.

Pete Nowicki spoke about his experience with CCCERA through litigation.

4. Verus review of investment performance attribution analysis

Whalen reviewed the investment performance attribution analysis.

5. Update on private equity commitments

Price gave an update on private equity commitments noting CCCERA recently made commitments to three private equity funds: Hellman & Friedman Fund XI \$100 mm, Symphony Technology Group Fund VII \$50 mm and GTCR Fund XIV \$100 mm.

6. Consider and take possible action to adopt a cost-of-living increase for retirees as of April 1, 2023

It was **M/S/C** to adopt a cost-of-living increase for retirees as of April 1, 2023 as stated on Segal's January 17, 2023 letter and exhibits. (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips and Watts).

7. Update on the retirement application process improvement project

Dunn, Hoppe, Jessica Irby and Brianne Wilkins gave an update on the retirement application process improvement project.

8. Consider authorizing the attendance of Board:

- a. It was **M/S/C** to authorize the attendance of 8 Board Members at the CALAPRS General Assembly, March 4-7, 2023, Monterey, CA. (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips and Watts).
- b. There was no action take on this item. IFEBP Portfolio Concepts and Management, May 1-4, 2023, Wharton, PA.

16. Miscellaneous

- a. Staff Report- None
- b. Outside Professionals - None
- c. Trustee' comments – MacDonald reported he attended the NCPERS Legislative Conference in Washington, D.C. noting it was a great conference and encourages other Trustees to attend.

It was **M/S/C** to adjourn the meeting. (Yes: Andersen, Gordon, Holcombe, Kroll, MacDonald, Phillips, Sloan, Watts and Wong)

Scott Gordon, Chairman

Jerry R. Holcombe, Secretary

Verus⁷⁷⁷

Meeting Date
02/22/2023
Agenda Item
#5a.



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: DECEMBER 31, 2022

Investment Performance Review for

Contra Costa County Employees' Retirement Association

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Investment Landscape

TAB I

Investment Performance
Review

TAB II

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

**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

1ST QUARTER 2023
Investment Landscape

Verus business update

Since our last Investment Landscape webinar:

- Verus hired two new employees:
 - **Cholo Villanueva**, Performance Analyst – Seattle office
 - **Demitri Castaneda**, Performance Analyst – Seattle office
- Two employees passed their Level III CFA exams, earning their charters. Verus now has a total of 33 CFA charterholders.
- Verus retained a new client in Alaska, adding a fourth client to the state.
- We celebrated our 37th anniversary. Wurts Johnson & Company (founding name) was established in January 1986.
- We also enhanced our research content management system to improve how we *communicate* our conviction in managers with our new IQ Ratings system. *(details on next page)*

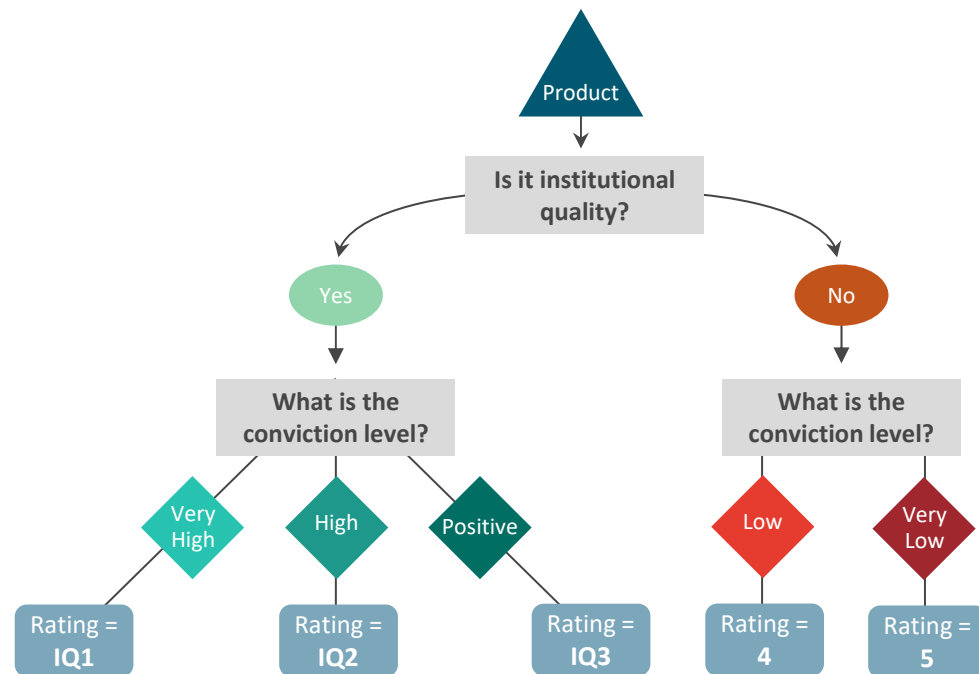
Manager rating system

The IQ Rating System communicates our conviction in investment products

There are two components to the rating:

- Institutional quality** – (IQ) The product meets or exceeds the standards of fiduciary care required by institutional investors and is suitable for use in clients’ portfolios.
- Conviction** – (1 to 5) Represents the conviction of our research teams in the distinguishing qualities of the product relative to its peers, with 1 as the highest rating and 5 the lowest.

PROCESS



Rating process simplified for illustrative purposes only

DEFINITIONS & GUIDELINES

Rating	Institutional Quality?	Conviction Level	Defining Characteristics	Recommendations
IQ1	Yes	Very High	Earns Verus’ highest conviction. Above-average characteristics most likely to achieve the strategy’s desired investment results.	Recommended for use in client portfolios. May be used in Verus discretionary portfolios.
IQ2	Yes	High	Maintains Verus’ high conviction. Above-average characteristics most likely to achieve strategy’s desired investment results.	Recommended for use in client portfolios. May be used in Verus discretionary portfolios.
IQ3	Yes	Positive	Meets institutional quality standards that can achieve desired investment results. Strengths outweigh weaknesses.	While IQ1 or IQ2 rated products are generally preferable, certain client needs may be better addressed by a highly specialized IQ3 product.
4	No	Low	Concerns with the product’s ability to meet institutional-quality standards.	Clients should re-evaluate retention or monitor closely.
5	No	Very Low	Significant issues inhibit the product’s ability to meet institutional-quality standards.	Verus recommends termination, immediately.

Recent Verus research

Visit: <https://www.verusinvestments.com/insights/>

Topics of interest papers

A BRIEF GUIDE TO THE SFA PROGRAM

In this paper, we plan to approach the Special Financial Assistance (SFA) program from an investment perspective. First, we describe the interest rate rules. Next, we offer some ways in which investors may think about their legacy assets relative to their new SFA funds. This section concludes by outlining a strategy in which SFA funds are used to cash flow match expected future liability payments. Overall, the health of a Plan will determine how much SFA funding is available, and the total amount of SFA funding awarded will likely determine the degree to which this program should reasonably impact an investor's total portfolio strategy.

IS PAINLESS DIVERSIFICATION BACK?

Low interest rates over the last few years have caused investors significant asset allocation problems. The 2022 market reversal has begun to reverse these challenges. The implications of this return to more normal conditions for investors include:

- The renewed role of fixed income in portfolios
- Greater flexibility to meet performance objectives through simple portfolio structures
- The ability of certain investors to meet return objectives while taking less market risk
- The potential for pensions to take advantage of higher interest rates and likely stronger funded status by pursuing more liability-aware investment strategies

Annual research

2023 CAPITAL MARKET ASSUMPTIONS

Some important developments occurred in the last year. Capital Market Assumptions guide our advice and recommendations. They reflect the best judgments of our research and investment teams regarding the expected behavior and associated risks of capital markets in the years ahead. During our 2023 Capital Market Assumptions webinar, we discussed:

- A significant increase in our Capital Market Assumptions, and aspects of the environment which have driven this change
- The “building blocks” of market returns and our philosophy around forecasting future asset-class performance
- Implications for investors as markets escape the *low-return environment* of recent years

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Other assets 36

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4th quarter summary

THE ECONOMIC CLIMATE

- Real GDP increased at a 2.9% rate in the fourth quarter (1.0% year-over-year growth), slightly exceeding expectations. Consumer spending, private inventory investment, government expenditures, and nonresidential investment were supportive of growth.
- Unemployment remained near historic lows during the quarter, at 3.5% in December. While this figure suggests a strong and resilient job market, the workforce remains much smaller than pre-pandemic times as more than two million workers remain out of the labor force.

PORTFOLIO IMPACTS

- Inflation fears continue to ease as domestic inflation fell further. Headline inflation was 6.5% year-over-year in December—the lowest since October 2021—while core inflation came in at 5.7%. Prices for most goods and services have moderated with the exception of shelter costs, which increased at a worryingly fast pace of 10.0% annualized in December.
- U.S. real personal spending held steady at 2.0% year-over-year in August. Households focused spending on services over goods, which has removed some stress from supply chains and likely helped to normalize global transportation issues. Relatively strong spending seems to suggest it is possible that inflation moderates without a painful slowdown in the economy.

THE INVESTMENT CLIMATE

- China’s rapid pivot away from a “Zero Covid” policy towards the end of Q4 added a large tailwind to emerging market equity performance and the global growth outlook. Despite this positive news, an uptick in virus cases poses challenges for China’s reopening.
- Credit performed well in the fourth quarter, as resilient U.S. economic growth combined with expectations for the Fed to ease their tightening cycle helped mitigate investor concerns of a near-term cyclical downturn.

ASSET ALLOCATION ISSUES

- Calendar year 2022 proved to be a year of *reversal* regarding asset class performance. Top performing investments of the past decade, such as U.S. growth and small cap stocks, suffered some of the largest losses. Meanwhile, many of the worst performing investments of the past decade, including commodities and value stocks, significantly outperformed.
- Value stocks outperformed markedly during 2022, outpacing growth stocks by 10.2% in Q4 and 21.6% for the year. Energy, industrials, and materials—sectors heavily tilted toward value—showed strong returns, with energy ending the year up 64.6%.

Markets have partially recovered as inflation fears eased

Recession risks and an earnings slowdown may come into focus in 2023

What drove the market in Q4?

“Has Inflation Peaked?”

HEADLINE CONSUMER PRICE INFLATION (YEAR-OVER-YEAR)

Jul	Aug	Sep	Oct	Nov	Dec
8.5%	8.3%	8.2%	7.7%	7.1%	6.5%

Article Source: Financial Times, December 8th, 2022

“The Labor Market is Still Hot”

CHANGE IN U.S. NONFARM PAYROLLS

Jul	Aug	Sep	Oct	Nov	Dec
+537k	+292k	+269k	+284k	+263k	+223k

Article Source: Axios, November 1st, 2022

“Fed Raises Rate by 0.5 Percentage Point, Signals More Increases Likely”

FOMC MEETING RATE HIKE DECISIONS

May	Jun	July	Sep	Nov	Dec
+50 bps	+75 bps	+75 bps	+75 bps	+75 bps	+50 bps

Article Source: Wall Street Journal, December 14th, 2022

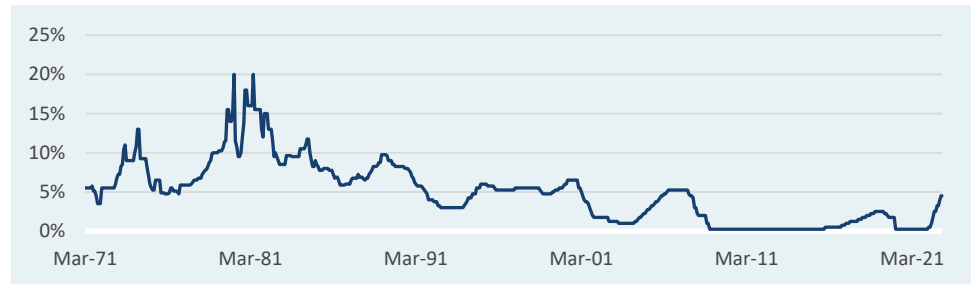
“China’s Covid Pivot Accelerates as Cities Ease Testing Rules”

CHINESE REPORTED NEW CASES (DAILY AVERAGE FOR THE MONTH)

Jul	Aug	Sep	Oct	Nov	Dec
559	1,629	1,158	1,340	18,914	14,748

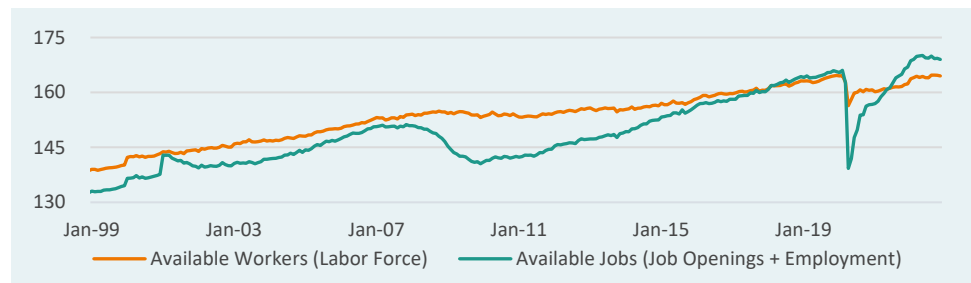
Article Source: Bloomberg, December 5th, 2022. Dataset from Our World in Data

FED FUNDS RATE UPPER BOUND



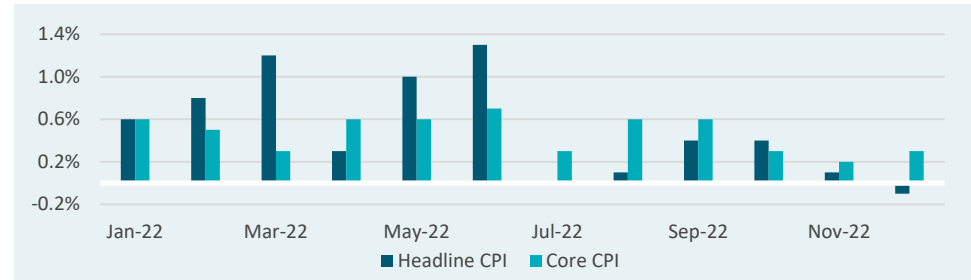
Source: Federal Reserve, as of 12/31/22

U.S. AVAILABLE WORKERS VS. AVAILABLE JOBS (MILLIONS)



Source: Bureau of Labor Statistics, as of 11/30/22

U.S. HEADLINE & CORE CPI (MONTH-OVER-MONTH)



Source: Bureau of Labor Statistics, as of 12/31/22

Economic environment

U.S. economics summary

- Real GDP increased at a 2.9% rate in Q4 (1.0% year-over-year growth). Consumer spending, private inventory investment, government expenditures, and nonresidential investment supported the economy.
- Inflation fears continue to ease as domestic inflation fell further. December headline inflation came in at 6.5% year-over-year while core inflation (excluding food & energy) came in at 5.7%. Most goods and services price rises have slowed, with the exception of shelter costs, which increased at a worryingly fast pace of 10% annualized in December.
- Unemployment remained very low during the quarter, at 3.5% in December. While this official figure suggests a strong and resilient job market, the workforce remains much smaller than pre-pandemic times as more than two million workers are missing from the labor force.
- Consumer spending kept steady though savings rates dropped to 2.3%—a depressed level not seen since the mid-2000s. A low household savings rate is sometimes seen as an indicator of strong consumer confidence and spending, though we suspect household budgets are currently being hit hard by higher costs.
- Consumer sentiment improved during Q4 but is still very downbeat. In the most recent University of Michigan survey, respondents showed less concern around inflation, reported better business conditions and long-term outlook, but were pessimistic over personal finances.
- U.S. home prices peaked in June 2022 and have been falling since then, according to S&P CoreLogic. Significantly higher mortgage interest rates have led to the worst home affordability on record, according to the National Association of Realtors.

	Most Recent	12 Months Prior
Real GDP (YoY)	1.0% 12/31/22	5.7% 12/31/21
Inflation (CPI YoY, Core)	5.7% 12/31/22	5.5% 12/31/21
Expected Inflation (5yr-5yr forward)	2.2% 12/31/22	2.3% 12/31/21
Fed Funds Target Range	4.25% – 4.50% 12/31/22	0.00% – 0.25% 12/31/21
10-Year Rate	3.87% 12/31/22	1.51% 12/31/21
U-3 Unemployment	3.5% 12/31/22	3.9% 12/31/21
U-6 Unemployment	6.5% 12/31/22	7.3% 12/31/21

GDP growth

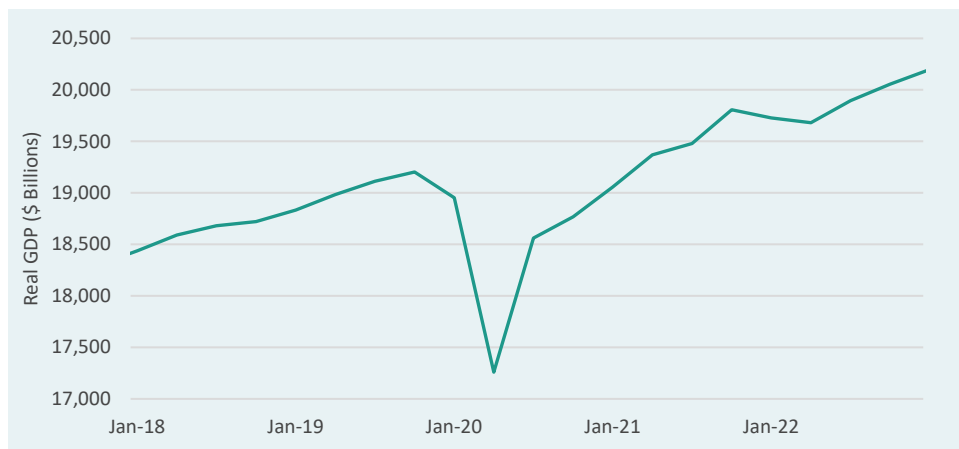
Real GDP increased at a 2.9% rate in the fourth quarter (1.0% growth year-over-year), slightly exceeding expectations of 2.8%. Consumer spending supported growth, along with gains in private inventory investment, government expenditures, and nonresidential investment. Residential fixed investment saw an extreme drop of -26.7% during the quarter as the housing market weakened. Declining exports also acted as a drag on growth.

Investors appear unsure about how to interpret the recent string of strong U.S. economic data. Although consumer sentiment is very poor by most measures, spending remains positive and the job market remains surprisingly resilient. Were the economy to avoid recession, this would be positive for businesses and for corporate

earnings, but might also lead to further aggressive Federal Reserve action and interest rate hikes, which are negative for equity prices.

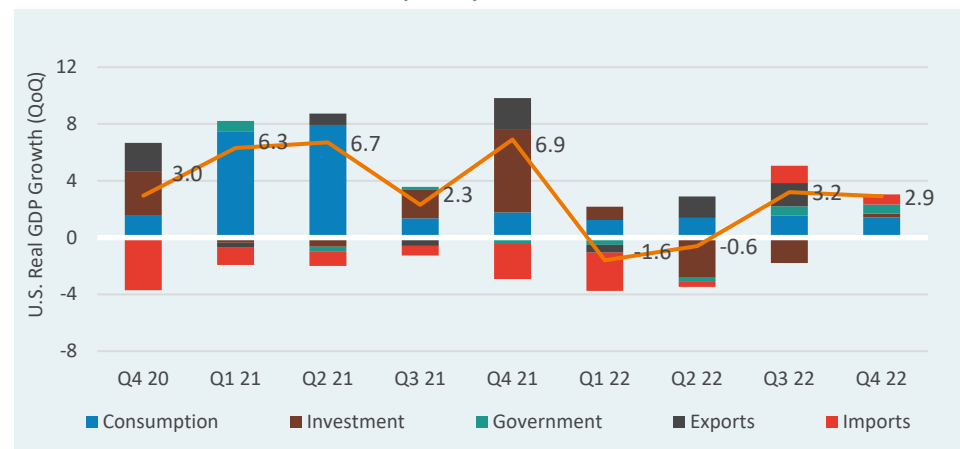
The inflation environment following the COVID-19 pandemic is unlike many past inflation cycles. Much of the price pressure has been fueled by factors *other than* a strong economy, such as an unprecedented shift in consumer spending behavior towards goods and away from services, port and international transportation issues related to lockdowns, and Russia's invasion of Ukraine. Because many of these variables are outside of the Federal Reserve's control, we believe it is possible that inflation continues to fall despite a relatively strong U.S. economy.

U.S. REAL GROSS DOMESTIC PRODUCT



Source: FRED, as of 12/31/22

U.S. REAL GDP COMPONENTS (QOQ)



Source: FRED, as of 12/31/22

Inflation

The inflation picture continued to improve in the United States, as both headline and core inflation figures declined further. December headline inflation came in at 6.5% year-over-year—the lowest since October 2021—while core inflation came in at 5.7%. Most goods and services prices have moderated with the exception of shelter, which increased at a worryingly fast pace of 10% annualized in December. Food inflation has been a large contributor to high inflation, but food price rises reassuringly slowed in December, increasing at a 3.7% annualized rate.

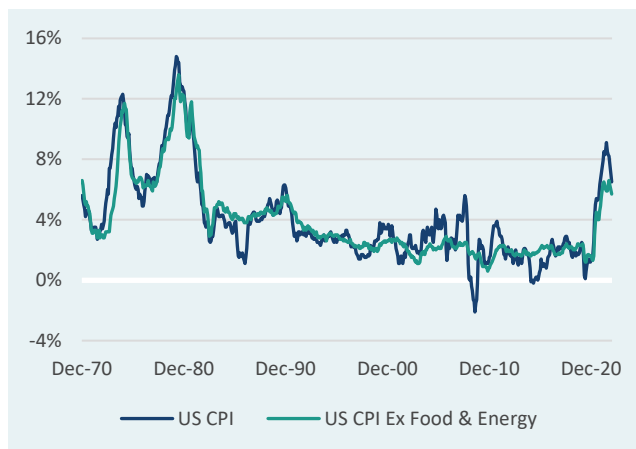
Strong increases in U.S. hourly wages over recent years have

been a welcome development for workers who are feeling the squeeze of higher prices on household budgets. But wage rises can also act as a key risk to the inflation environment. Accelerating wages might sustain higher spending and therefore persistently elevated rates of inflation. However, government data now indicates that wage growth is slowing, which mitigates the risk of a *wage-price spiral*.

Overall, we believe inflation is falling and will likely be much less of a perceived market risk in 2023. Certain persistent price pressures suggest that an inflation level of 3-4% is more likely than the 1-2% experienced throughout much of the 2010s.

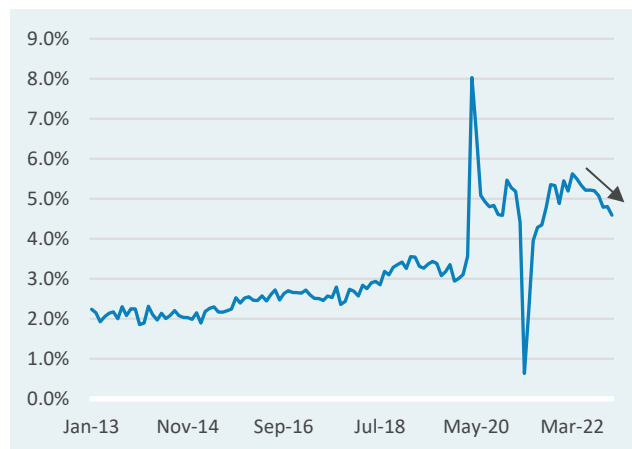
Price pressures continue to ease, adding to optimism that inflation will fall to more normal levels

U.S. CPI (YOY)



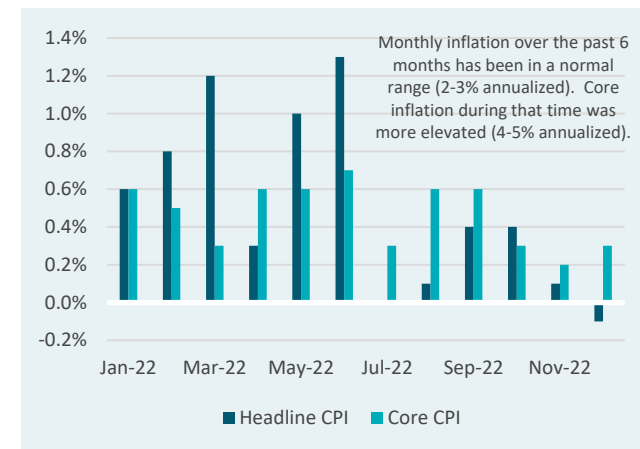
Source: BLS, as of 12/31/22

AVERAGE HOURLY EARNINGS



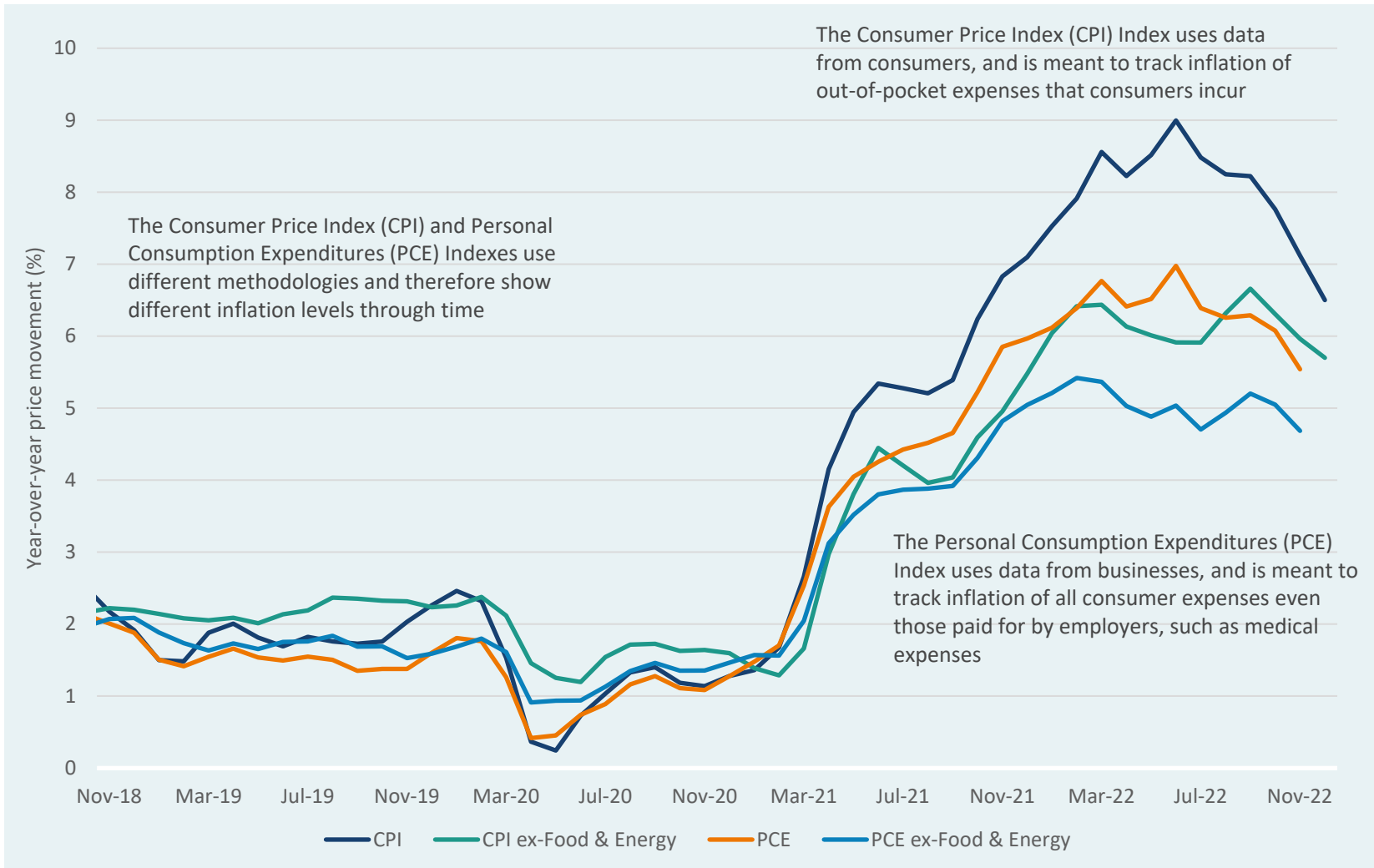
Source: BLS, as of 12/31/22

MONTHLY PRICE MOVEMENT



Source: BLS, as of 12/31/22

How are inflation conditions evolving?



Price rises have slowed considerably in recent months, which is bringing down official year-over-year inflation figures

Source: FRED, Verus, PCE data as of 11/30/22, CPI data as of 12/31/22

Labor market

Unemployment remained very low during the quarter, at 3.5% in December. This official figure suggests a strong and resilient job market for those workers who seek employment, although this data contrasts with media reports of fairly widespread layoff activity.

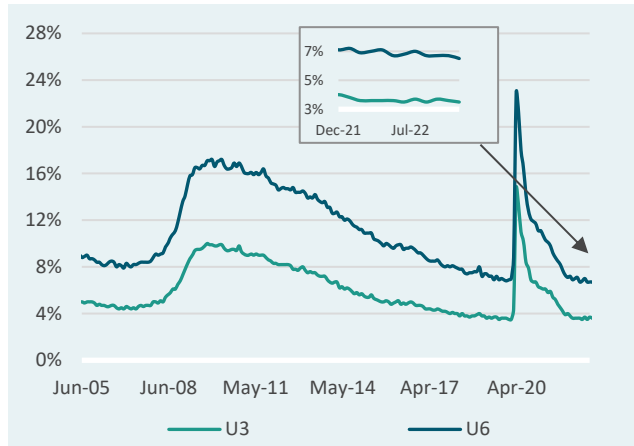
The labor participation rate also remained unchanged during the quarter. Low labor participation paints a different and much weaker picture of the job market, because this figure takes into account the workers *who are not seeking employment*. More than two million workers remain out of the labor force, relative to the pre-pandemic job market. Survey

and government-reported data suggests that much of this effect is due to “Long Covid” health troubles. Other variables such as early retirements, and parents taking time off to care for children, have also likely had a material impact on the size of the workforce.

The result of millions of Americans dropping out of the workforce has been a historically large mismatch regarding the number of jobs available and the number of workers available to fill those jobs. This gap remains wide, but has been closing recently as job openings have fallen.

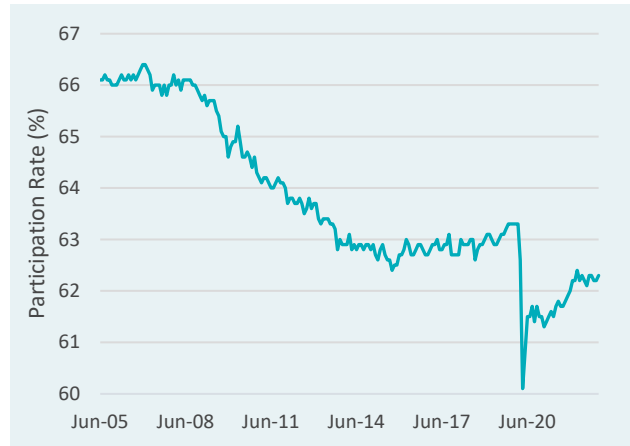
The labor market remains tight, though the size of workforce is much smaller relative to pre-pandemic times

U.S. UNEMPLOYMENT



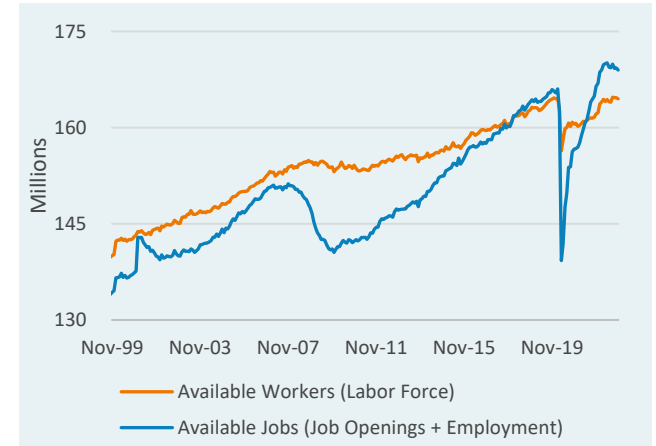
Source: FRED, as of 12/31/22

LABOR FORCE PARTICIPATION RATE



Source: FRED, as of 12/31/22

WORKERS AVAILABLE VS. AVAILABLE JOBS



Source: BLS, as of 11/30/22

The consumer

U.S. real (inflation-adjusted) personal consumption expenditures held steady in August, at 2.0% year-over-year. Households have focused spending on services rather than goods, which removed some stress from supply chains and likely helped to normalize transportation issues. Relatively strong spending seems to suggest it is possible that inflation moderates without a painful slowdown in the economy.

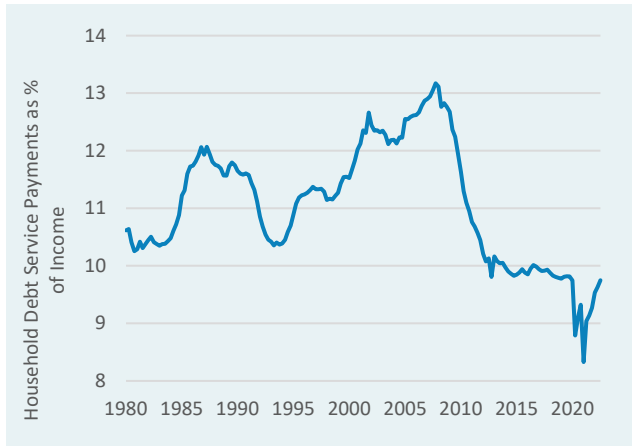
Spending has slowed but savings rates have also dropped to 2.3%—a depressed level not seen since the mid-2000s. A low household savings rate is sometimes seen as an indicator of

strong consumer confidence and spending, though in the current environment we suspect that household budgets are being hit hard by inflation and higher living costs.

Big ticket items such as automobiles have seen falling sales as higher interest rates make purchases less affordable and household budgets come under strain. The pressure of higher interest rates is reflected in *average debt payments relative to average income*—a metric which has risen towards pre-pandemic levels.

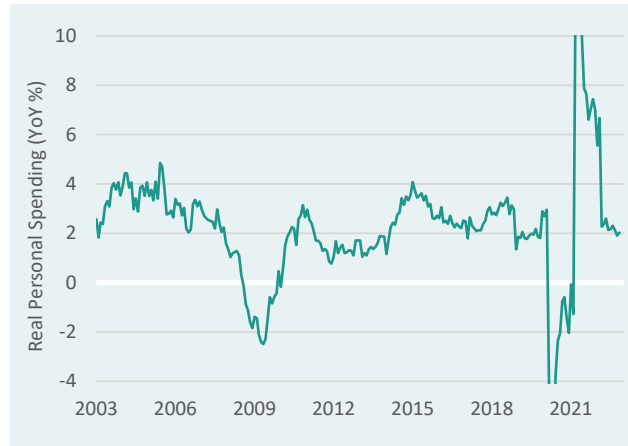
Household spending remains strong, though a very low savings rate may suggest budgets are being squeezed

DEBT SERVICE AS % HOUSEHOLD INCOME



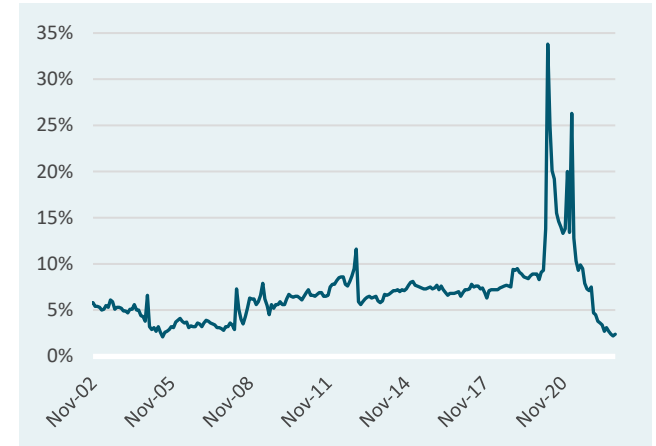
Source: FRED, as of 9/30/22

REAL PERSONAL CONSUMPTION



Source: FRED, as of 11/30/22

PERSONAL SAVINGS RATE



Source: FRED, as of 11/30/22

Sentiment

Consumer sentiment improved again during the fourth quarter, but remains very downbeat, according to the University of Michigan. In the most recent survey, respondents expressed less concerns over inflation, reported better business conditions and long-term outlook, though pessimism around current and future personal finances remained.

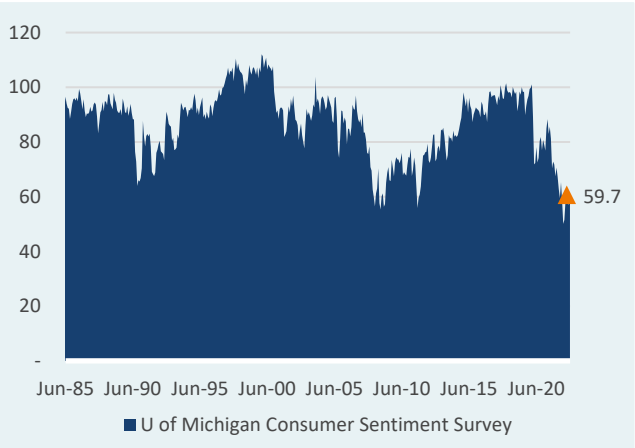
Consumer confidence measured by the Conference Board improved slightly in the fourth quarter—at the highest level since April. According to the Conference Board, views around

current conditions and future conditions improved as households were more upbeat regarding the economy and jobs. Inflation expectations continued to fall (improve), driven by lower gas prices in particular.

The NFIB Small Business Optimism index deteriorated slightly during the quarter, reflecting a very poor business outlook. Thirty-two percent of business owners expressed inflation as their greatest concern for business operations. Other concerns included difficulties in filling open job positions and an inability to raise prices to keep up with inflation.

Sentiment, by most measures, remains very poor

CONSUMER SENTIMENT



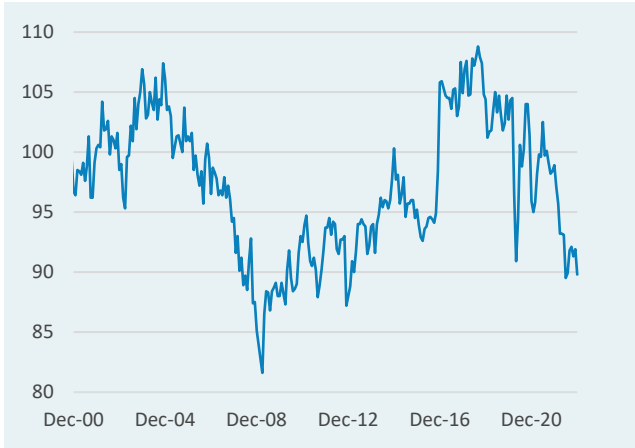
Source: University of Michigan, as of 12/31/22

CONFERENCE BOARD CONSUMER CONFIDENCE



Source: Conference Board, as of 12/31/22

NFIB SMALL BUSINESS SENTIMENT



Source: NFIB, as of 12/31/22

Housing

U.S. home prices peaked in June 2022 and have been falling since that time, according to the S&P CoreLogic Case-Shiller U.S. National Index. Significantly higher mortgage interest rates have led to the worst home affordability on record, as indicated by the National Association of Realtors.

Higher home prices and interest rates have also resulted in a sharp slowdown in sales activity—a notable change from the frothy environment that had occurred post-pandemic. Existing home sales activity has now fallen to a rate not seen since the real estate market was recovering from the housing

crisis during the early 2010s.

Conditions in housing today appear to be helping to *rebalance* the housing market, as suggested by the monthly supply of homes. Weaker sales volumes and worse affordability has meant that potential buyers have much more inventory to select from. The monthly supply of homes is now at 8.6 months, up from an all-time-low of 3.3 months in August 2020. As homes sit on the market unsold for longer, prices may need to fall further to attract buyers.

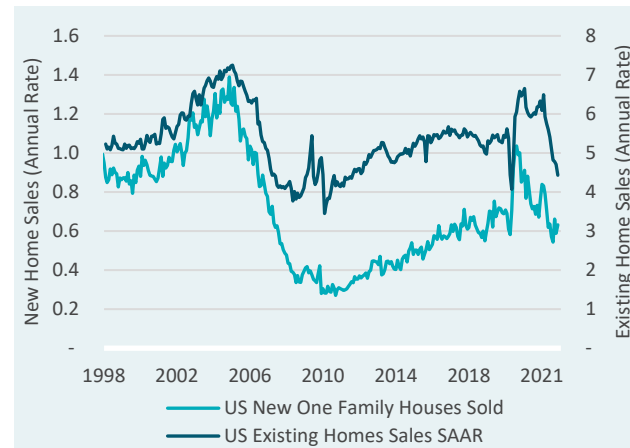
HOUSING AFFORDABILITY INDEX



Source: NAR, as of 11/30/22

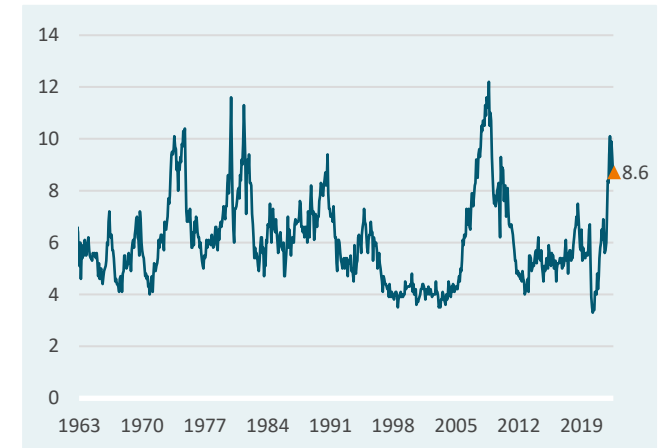
The Monthly Housing Affordability Index measures whether or not a typical family earns enough income to qualify for a mortgage loan on a typical home at the national and regional levels based on the most recent monthly price and income data

HOME SALES: NEW & EXISTING (MILLIONS)



Source: FRED, as of 10/31/22

MONTHLY SUPPLY OF HOMES



Source: FRED, as of 11/30/22

International economics summary

- Economic growth expectations continued to weaken, although the GDP outlook for emerging economies is starting to paint a more optimistic picture. Developed economies, specifically across the Eurozone and United Kingdom, are still facing the negative growth impacts of tighter financial conditions as inflation remains elevated.
- Inflation in both the Eurozone and U.K. has reinforced tighter policies from the ECB and BOE. While U.K. inflation fell to 10.7% from the 11.1% peak in October, interest rates are expected to be raised further (but in smaller increments). Eurozone inflation has shown signs of moving past its peak, although core inflation hit a new high of 5.2%, stoking fears that inflation may be spreading to core goods and services.
- Unemployment rates have remained stable over the quarter.

India stood out as an exception, where unemployment jumped from 6.4% to 8.3%.

- The war in Ukraine carried on despite temporary “ceasefires” declared by Russia. The fighting has intensified in Eastern Ukraine around Kharkiv, with a supporting effort in Southern Ukraine, as Russian forces attempt to secure frontline positioning in the Kherson Oblast.
- China’s rapid pivot away from a “Zero Covid” policy towards the end of the quarter added a large tailwind to the global growth outlook. Despite this positive news, a rapid uptick in COVID-19 cases challenges the timeline of the reopening story. Additionally, many wonder how a large uptick in global demand might impact inflation pressures at a time when advanced economies struggle specifically to reign in spending.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	1.0% 12/31/22	6.5% 12/31/22	3.5% 12/31/22
Eurozone	2.3% 9/30/22	9.2% 12/31/22	6.5% 11/30/22
Japan	1.5% 9/30/22	4.0% 12/31/22	2.4% 11/30/22
BRICS Nations	3.6% 9/30/22	3.5% 12/31/22	5.2% 12/31/21
Brazil	3.6% 9/30/22	5.8% 12/31/22	8.3% 10/31/22
Russia	(3.7%) 9/30/22	11.9% 12/31/22	3.7% 11/30/22
India	6.3% 9/30/22	5.7% 12/31/22	8.3% 12/31/22
China	3.9% 9/30/22	1.8% 12/31/22	5.7% 11/30/22

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

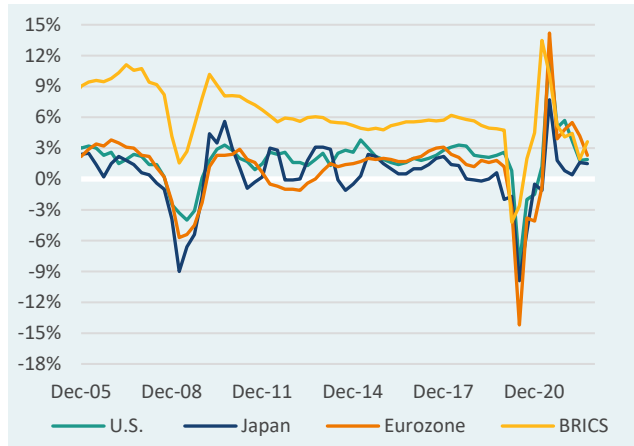
Growth expectations outside of the U.S. contracted over the quarter, with the largest moves coming from developed economies. The IMF cut its GDP forecast by 0.7% and 0.2% for the Eurozone and U.K. in their October outlook (now expecting 2023 GDP of 0.5% and 0.3%, respectively) as the European Central Bank and Bank of England struggle to rein in record high inflation. Japan saw a smaller downward revision of 0.1%, with 2023 growth expectations now at 1.6%.

The outlook for emerging markets is much more optimistic. Most countries have avoided the high inflation seen in developed markets. A rapid reopening of the Chinese economy

is likely providing a tailwind to growth, although the timing remains unclear due to another wave of COVID-19 infections. The 2023 GDP forecast for emerging economies per Bloomberg ticked down from 4.3% to 3.9% over the quarter, but emerging economy growth is still expected to far exceed that of developed economies (developed economy 2023 GDP expectations sit at 0.4%, according to the IMF).

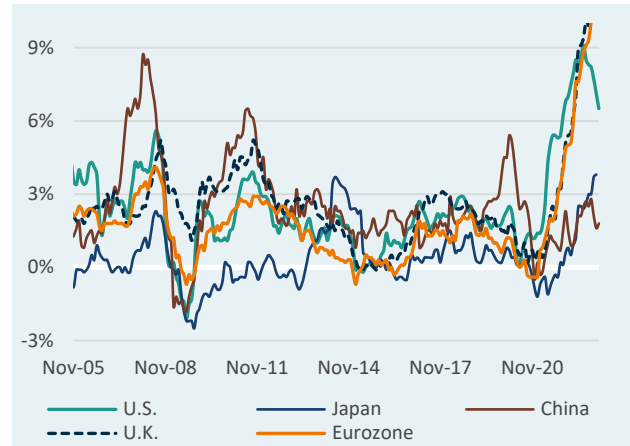
Despite the slowdown in economic growth, employment remains stable amongst the regions we track. India stood out as an exception, where unemployment jumped from 6.4% to 8.3% during Q4.

REAL GDP GROWTH (YOY)



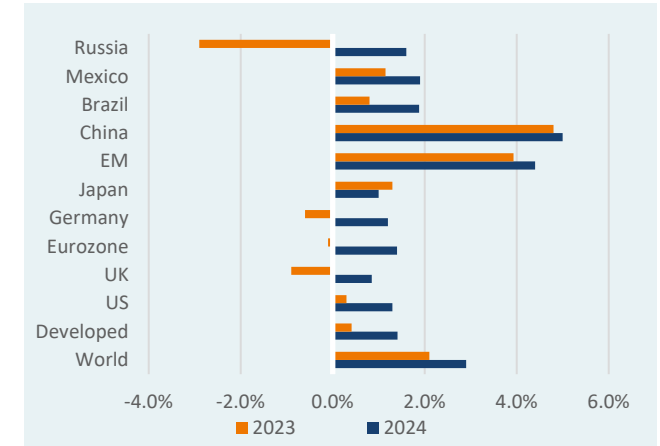
Source: Bloomberg, as of 9/30/22

INFLATION (CPI YOY)



Source: Bloomberg, as of 12/31/22 – or most recent release

ECONOMIC GROWTH FORECASTS



Source: Bloomberg, as of 12/31/22 – or most recent release

Fixed income rates & credit

Fixed income environment

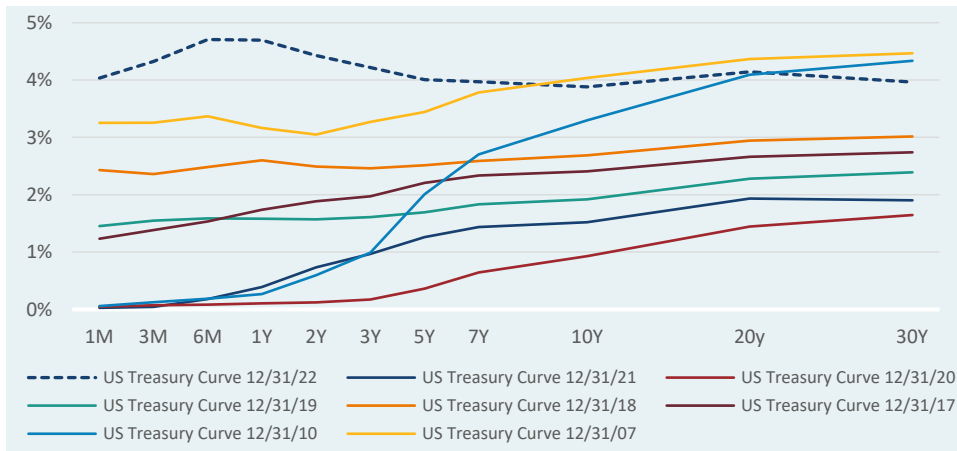
- The 10-year U.S. Treasury yield ended the quarter unchanged at 3.8%. It is possible that long-term interest rates have already reached a cyclical peak, assuming inflation continues to fall and the Federal Reserve becomes less aggressive.
- Credit performance was positive during the fourth quarter, with riskier exposures such as U.S. high yield and emerging market debt (both local and hard currency) leading the pack. Expectations for a slowdown in Federal Reserve rate hikes, and a rosier U.S. economic environment, have provided a tailwind to the credit space.
- Default activity in high yield bonds and bank loans remained subdued during Q4. Throughout the year, 17 companies defaulted totaling \$26.3 billion, with large defaults concentrated in the Healthcare sector which accounted for over 36% of total dollar volume. Default rates for par-weighted U.S. high yield and bank loans remained very low at 0.8% and 1.0%, respectively.
- The U.S. yield curve inversion reached historically negative levels, with the 10-year 2-year yield spread seeing its widest inversion since 1981 (short-term interest rates being higher than long-term interest rates). The negative spread bottomed out at ~81 bps on December 5th before gradually easing during the latter half of the month.
- Derivative markets are beginning to clash with Federal Reserve projections, as investors are pricing in a shorter tightening cycle relative to that indicated by comments from Federal Reserve officials. Federal Funds futures reflect a target interest rate of approximately 4.6% by the end of 2023, which compares to 5.1% indicated by the Federal Reserve's December Summary of Economic Projections.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	1.9%	(13.0%)
Core Plus Fixed Income (Bloomberg U.S. Universal)	2.2%	(13.0%)
U.S. Treasuries (Bloomberg U.S. Treasury)	0.7%	(12.5%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	4.2%	(11.2%)
Bank Loans (S&P/LSTA Leveraged Loan)	2.7%	(0.6%)
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	8.5%	(11.7%)
Emerging Market Debt Hard (JPM EMBI Global Diversified)	8.1%	(17.8%)
Mortgage-Backed Securities (Bloomberg MBS)	2.1%	(11.8%)

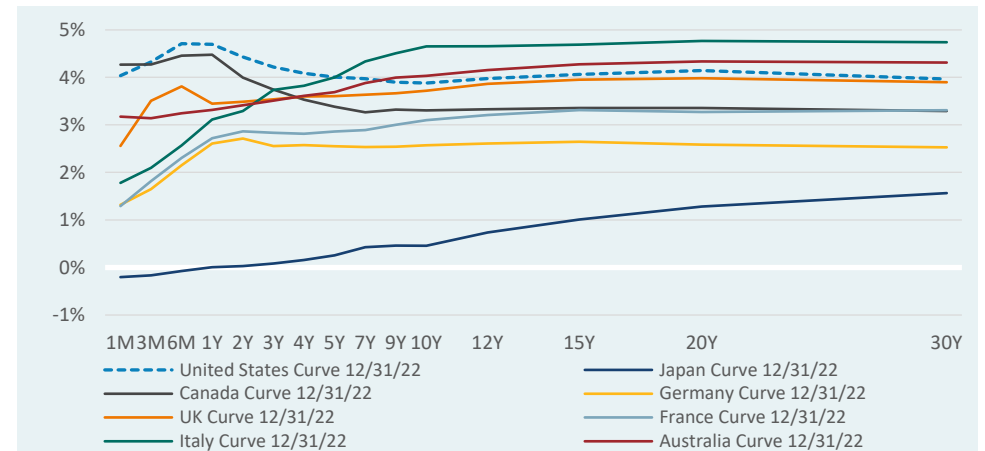
Source: Bloomberg, as of 12/31/22

Yield environment

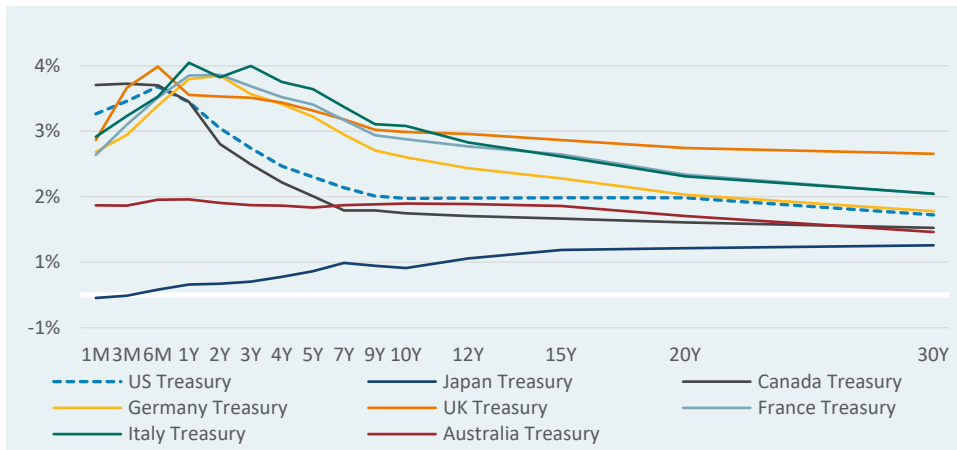
U.S. YIELD CURVE



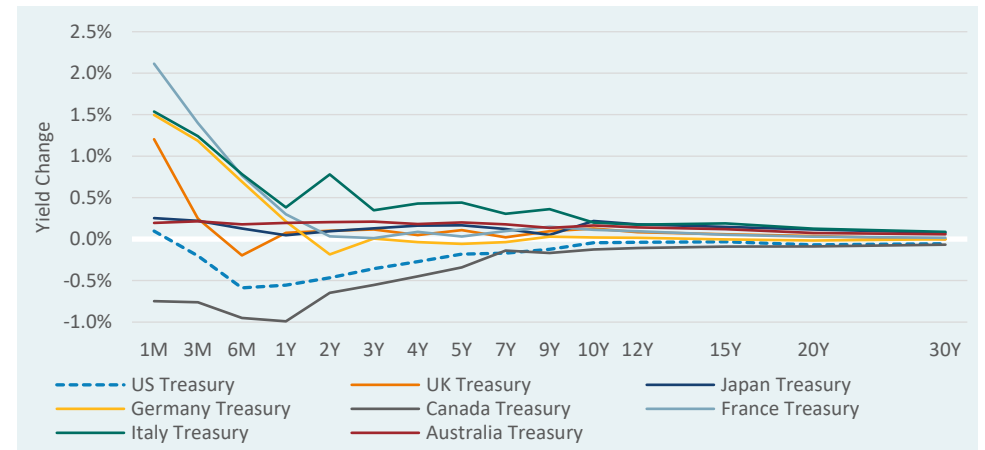
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



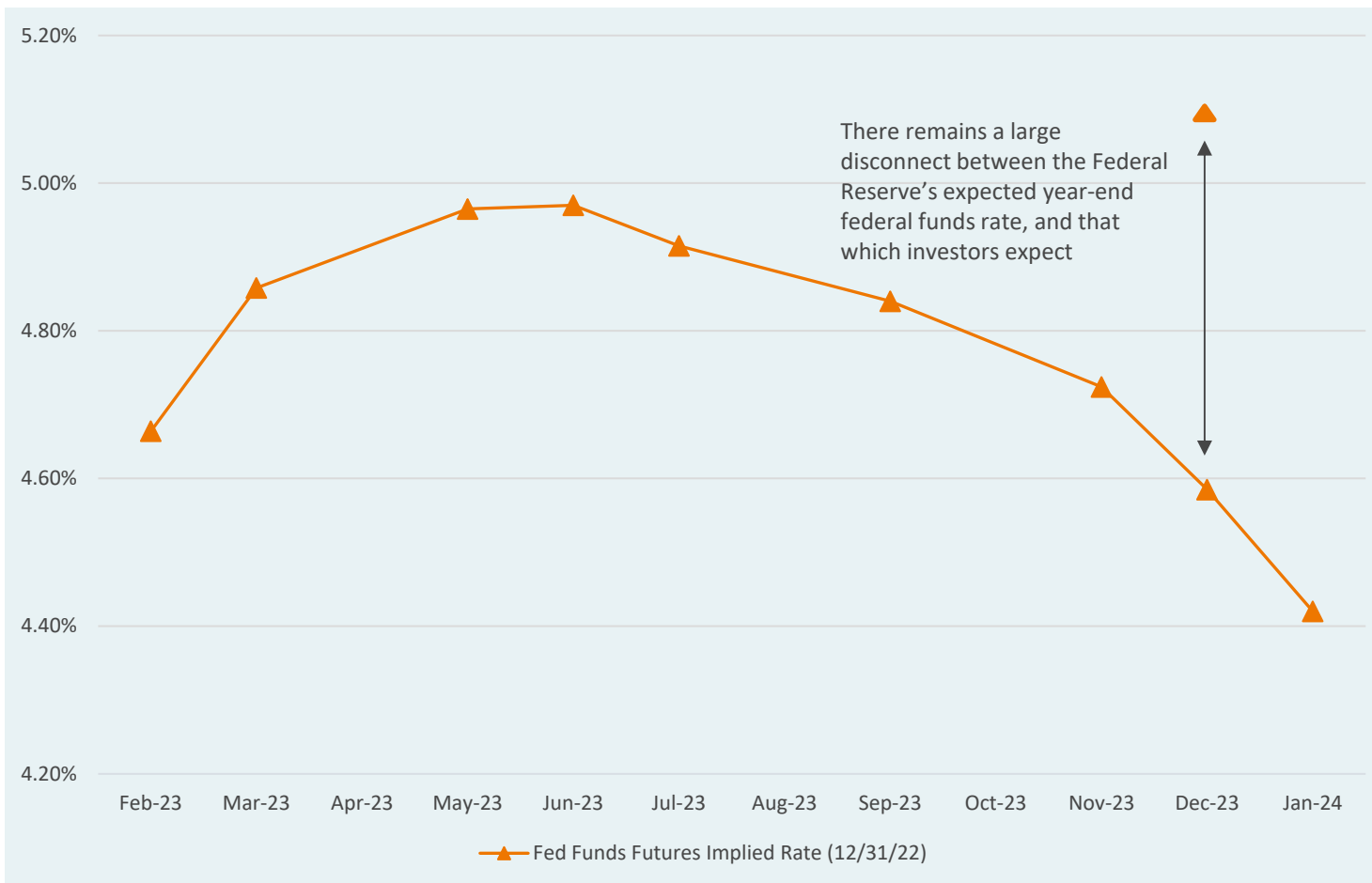
IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 12/31/22

Markets more optimistic than the Fed

FED FUNDS FUTURES IMPLIED FED RATE



Markets expected the federal funds rate to rise to a peak of near 5.0% in Spring of 2023, followed by rate cuts throughout the remainder of the year

This contrasts sharply with forecasts from the Federal Reserve, which indicates a federal funds rate projection for the end of 2023 of **5.1%**

Source: Bloomberg, as of 12/31/22

Credit environment

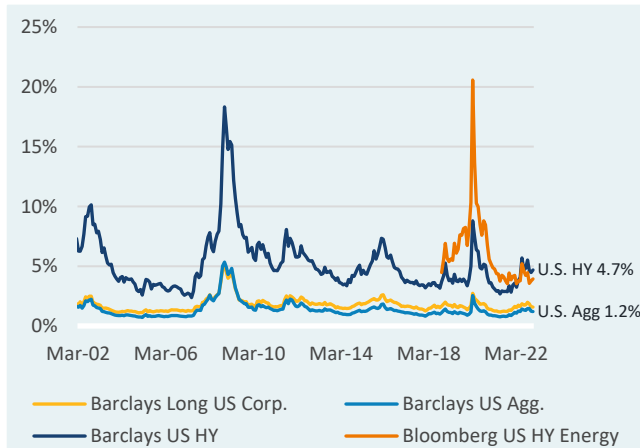
During the fourth quarter, markets began pricing in an eventual end to the Federal Reserve rate hiking cycle. This supported the performance of credit assets, as well as stronger-than-expected U.S. economic data which helped alleviate recession fears. High yield credit returns led the way with 4.2%, followed by 3.6% from investment grade credit and 2.3% from bank loans.

Credit spreads broadly tightened, with investment grade spreads falling to 130 bps from their high of 165 bps in Q3. High yield spreads compressed further, moving from 552 bps to 469 bps over the quarter. Despite calendar year returns of investment grade credit being the worst on record at -15.8%, and two consecutive years of negative returns, spreads have

widened less than anticipated. This suggests spreads could expand from these levels if conditions deteriorate.

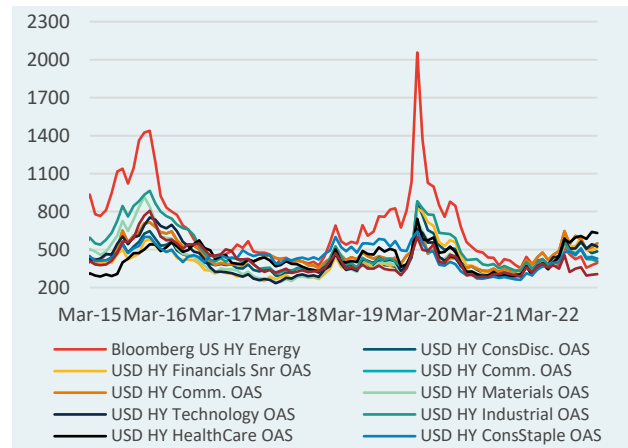
The total yield of high yield credit declined modestly throughout Q4, ending the quarter at 9.0%, which was 71 bps below Q3 yields but still elevated far above yields to start 2022. The Bloomberg US Corporate Investment Grade Index saw similar movement, with yields declining to 5.4% from 5.7% during the quarter, though still significantly higher than 2.4% to start the year. More attractive yield levels have the potential to drive demand for fixed income broadly, though concerns around growth and recession may act as headwinds to the spread-sensitive performance of higher risk credit.

SPREADS



Source: Barclays, Bloomberg, as of 12/31/22

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 12/31/22

Market	Credit Spread (OAS)	
	12/31/22	12/31/21
Long U.S. Corp	1.6%	1.3%
U.S. Inv Grade Corp	1.3%	0.9%
U.S. High Yield	4.7%	2.8%
U.S. Bank Loans*	5.9%	4.3%

Source: Barclays, Credit Suisse, Bloomberg, as of 12/31/22

*Discount margin (4-year life)

Default & issuance

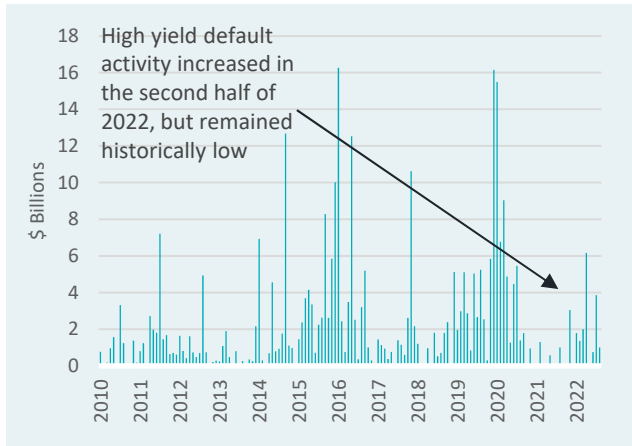
Default activity in high yield bonds and bank loans remained subdued during Q4. Throughout the year, 17 companies defaulted totaling \$26.3 billion, with large defaults concentrated in the Healthcare sector which accounted for over 36% of total dollar volume. Default rates for par-weighted U.S. high yield and bank loans remained very low at 0.8% and 1.0%, respectively. While these levels are well below long-term historical averages, defaults are widely expected to increase amid sustained higher interest rates, tighter financial conditions, and weaker economic growth.

Default recovery rates of high yield and bank loans remained strong for a second consecutive year. High yield recovery rates ended the year at 55% (above the long-term average of 40%) while the recovery rate of bank loans

ended the year at 58% (below the long-term average of 64%).

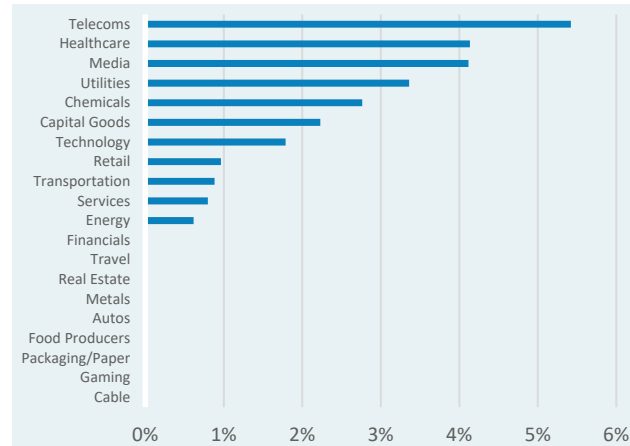
Investment grade credit issuance remained light, with \$195 billion of issuance in Q4 being the lowest quarter of the year. During 2022, \$1.2 trillion of investment grade bond issuance was 12% lower than 2021 but still in line with the past five-year average. Levered credit also saw quarterly lows of issuance, with \$16.5 billion and \$47.6 billion in the high yield and levered loan spaces, respectively. The year-over-year declines in issuance within high yield and bank loans have been dramatic, down around 70% since 2021.

U.S. HY MONTHLY DEFAULTS (PAR WEIGHTED)



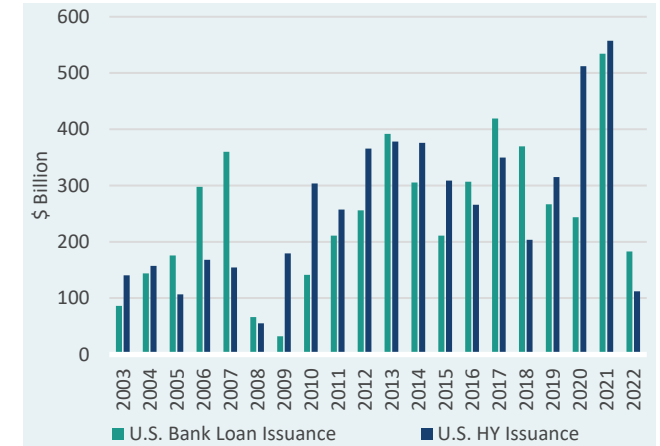
Source: BofA Merrill Lynch, as of 12/31/22

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



Source: BofA Merrill Lynch, as of 12/31/22 – par weighted

U.S. ISSUANCE (\$ BILLIONS)



Source: BofA Merrill Lynch, as of 12/31/22

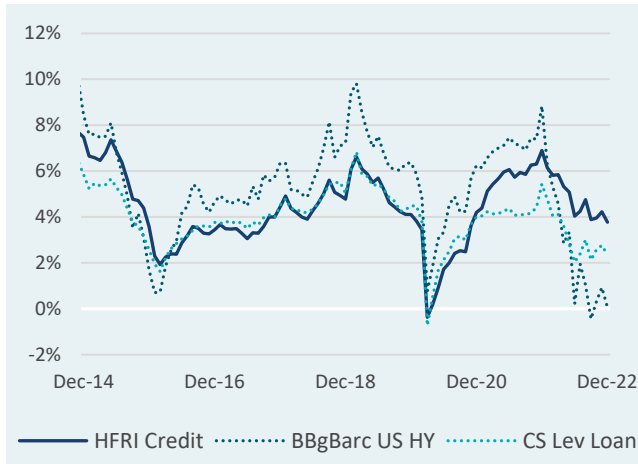
Alternative credit

Credit hedge fund strategies held up well in 2022 despite continued pressure on high yield and duration-sensitive assets. The HFRI Credit Index, which typically delivers performance between that of high yield and bank loans, only lost -2.6% for the year despite widening credit spreads and exposure to duration (which has been very painful for traditional credit).

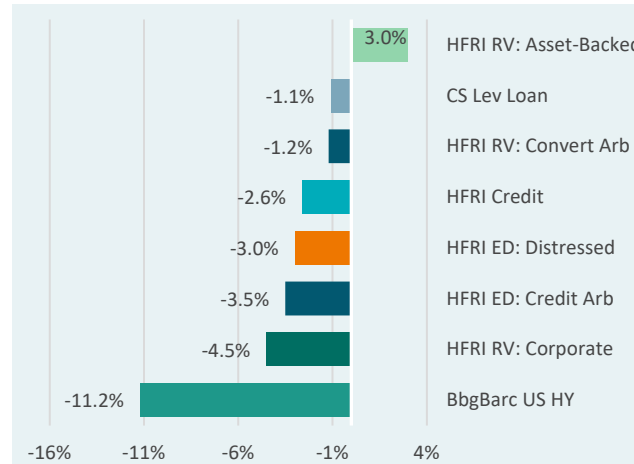
Looking more closely at hedge fund credit, asset-backed strategies were the strongest performers throughout the year. These strategies gained 3% while most other alternative credit funds were modestly negative, in line with bank loans.

We believe asset-backed and distressed strategies remain the most interesting in the space. Asset-backed funds have found attractive yields in off-the-run securitized credit markets, while distressed funds benefited from value investing coming back into favor, and increasing corporate stress which provides new trading opportunities.

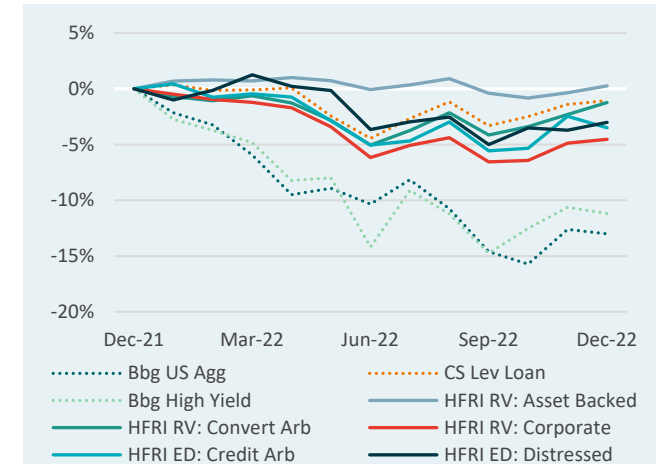
3-YEAR ROLLING RETURN



2022 RETURN



2022 CUMULATIVE RETURN



Source: MPI, Morningstar, HFR, Bloomberg, as of 12/31/22

Equity

Equity environment

- U.S. equities delivered their only positive quarterly return of 2022 during Q4 (S&P 500 +7.6%), helping to dampen the index’s worst calendar year performance since 2008 (-18.1% loss in 2022). Higher interest rates and recession fears contributed to poor returns.
- U.S. corporate earnings in Q3 grew 2.4% from the year prior, marking the slowest rate of growth since Q3 2020. Per FactSet, earnings are projected to decline by -4.1% in Q4, which would mark the first decline in U.S. earnings since 2020.
- Many equity markets now trade at valuation levels near historical averages as rising rates and growth concerns have contributed to more attractive pricing. The S&P 500 forward P/E ratio of 18.3 (as of November 30th) is under the five-year average of 18.6 and the ten-year average of 20.2.
- Currency movements continued to create portfolio volatility for investors with unhedged exposure to foreign currencies. The U.S. dollar depreciated sharply during Q4 which resulted in a large gain of 7.6% for investors with unhedged foreign currency exposure (+17.3% MSCI EAFE unhedged, +9.7% MSCI EAFE hedged).
- Value stocks outpaced growth stocks by 10.2% in Q4 and by 21.6% for the year. Energy, industrials, and materials—sectors which are heavily tilted toward value—showed strong returns, with energy ending the year up 64.6%.
- Implied volatility fell significantly over the quarter, as the Cboe VIX Index moved from 31.6 to 21.7. Equity markets advanced on cooling inflation, potential for less aggressive central bank action, and perhaps optimism around China’s reopening.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	7.6%		(18.1%)	
U.S. Small Cap (Russell 2000)	6.2%		(20.4%)	
U.S. Equity (Russell 3000)	7.2%		(19.2%)	
U.S. Large Value (Russell 1000 Value)	12.4%		(7.5%)	
US Large Growth (Russell 1000 Growth)	2.2%		(29.1%)	
Global Equity (MSCI ACWI)	9.8%	7.6%	(18.4%)	(15.5%)
International Large (MSCI EAFE)	17.3%	9.7%	(14.5%)	(4.6%)
Eurozone (EURO STOXX 50)	24.8%	15.7%	(15.1%)	(7.0%)
U.K. (FTSE 100)	17.1%	9.3%	(7.0%)	5.9%
Japan (NIKKEI 225)	11.3%	1.4%	(18.9%)	(5.2%)
Emerging Markets (MSCI Emerging Markets)	9.7%	6.7%	(20.1%)	(16.3%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 12/31/22

Domestic equity

U.S. equities notched their only positive quarterly return for the year during Q4 (S&P 500 +7.6%), helping to dampen the index's worst annual performance since 2008 (-18.1% loss in 2022). Domestic shares were negatively impacted by higher interest rates and growing recession fears due to tightening from the Federal Reserve. While performance over the quarter was positive, U.S. equities trailed emerging market and international developed equities.

Earnings in the third quarter grew 2.4% from the year prior, marking the slowest rate of growth since Q3 2020. Energy dominated the narrative,

as earnings grew an incredible 137% from the previous year. U.S. energy companies experienced margin expansion due to materially higher commodity prices, specifically within oil and natural gas. Per FactSet, earnings are projected to decline by -4.1% in Q4, which would mark the first decline in U.S. earnings since 2020. A potential recession could pose challenges for the earnings outlook.

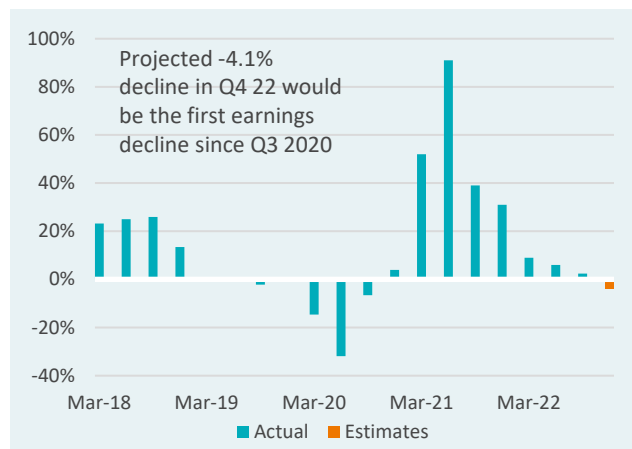
Energy dominated sector performance in the quarter (+22.8), leading the positive performance seen in most sectors, while telecommunications (-1.4%) and consumer discretionary (-10.2%) saw negative returns.

S&P 500 PRICE INDEX



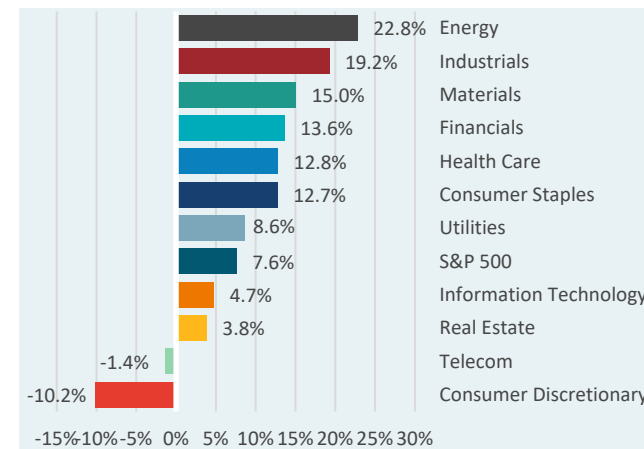
Source: Standard & Poor's, as of 12/31/22

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



Source: FactSet, as of 12/31/22

Q4 SECTOR PERFORMANCE



Source: Morningstar, as of 12/31/22

Domestic equity size & style

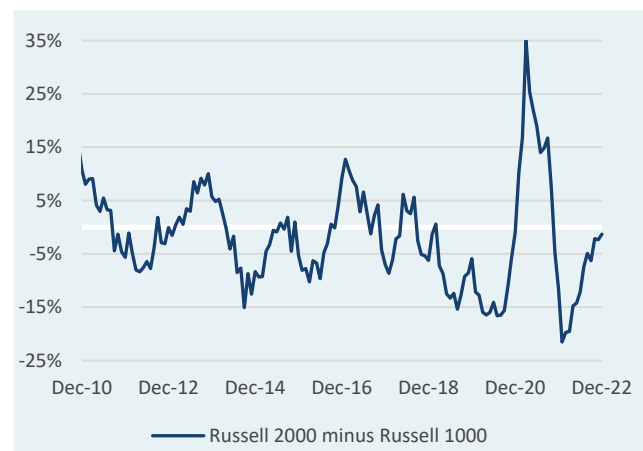
Value stocks outpaced growth stocks by 10.2% in Q4 and by 21.6% for the year. Energy, industrials, and materials —sectors which are heavily tilted toward value—showed strong returns, with the energy sector ending the year up 64.6%.

Markets adjusted to Federal Reserve rate hikes in the fourth quarter and throughout the year. Profitless and high-growth companies suffered the most as investors favored higher yielding fixed income and preferred stocks with strong fundamentals.

Small capitalization stocks underperformed large capitalization stocks (Russell 2000 +6.2%, Russell 1000 +7.2%), and remain relatively rich in valuations despite recent performance pain.

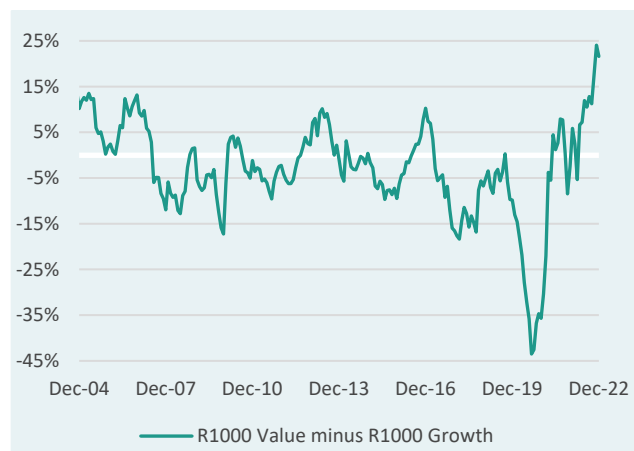
Domestic equities made a modest recovery in Q4 as inflation appears to have peaked and the end of the Fed’s hiking cycle is in sight. These dynamics will likely help determine the relative performance of style factors in the near-term.

SMALL CAP VS LARGE CAP (YOY)



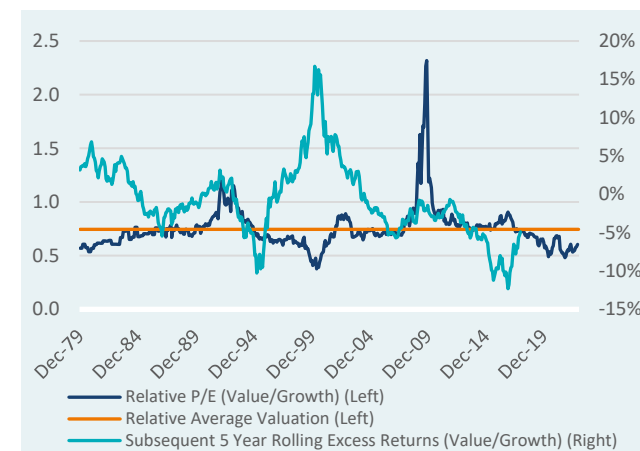
Source: FTSE, as of 12/31/22

VALUE VS GROWTH (YOY)



Source: FTSE, as of 12/31/22

VALUE VS. GROWTH RELATIVE VALUATIONS



Source: FTSE, Bloomberg, as of 12/31/22

International developed equity

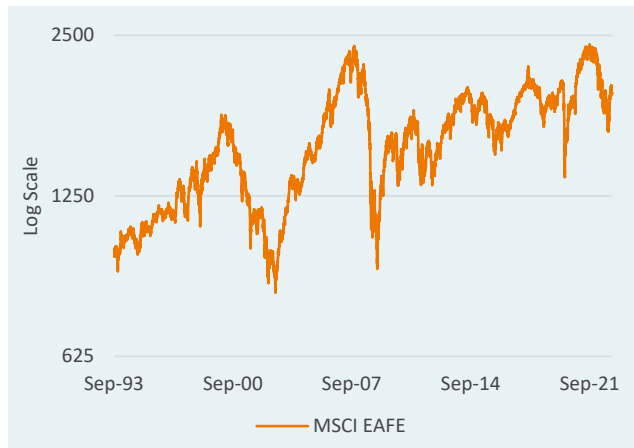
International developed equities rallied significantly in the fourth quarter, driven by strong gains from Eurozone equities and favorable currency movements. The MSCI EAFE Index finished the quarter up 17.3% on an unhedged currency basis, handily outperforming emerging market and U.S. equities.

A bounce back from European shares helped drive the double-digit returns seen from the MSCI EAFE Index. Investors showed preference towards larger names, as the EURO STOXX 50—a gauge of the largest companies in the

Eurozone—rose 24.8%, outpacing the 19.7% gain from the broader EURO STOXX 600 Index. Both indices were trading at 2022 lows at the start of the fourth quarter.

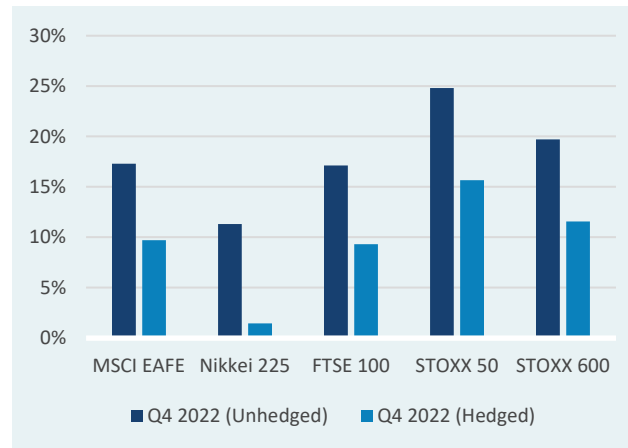
Currency movements played a large role in unhedged Eurozone performance and also boosted the unhedged returns of Japan and the United Kingdom. The U.S. dollar sharply pivoted on market views that the Federal Reserve may follow a shorter tightening cycle. As a result, exchange rates for the Euro, Pound, and Yen appreciated relative to the greenback.

INTERNATIONAL DEVELOPED EQUITY



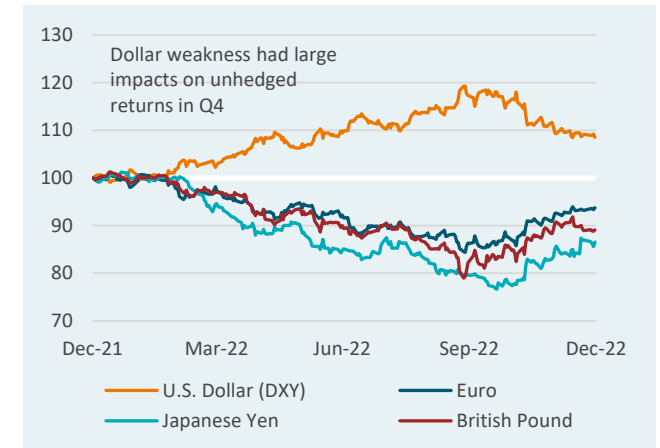
Source: MSCI, as of 12/31/22

Q4 2022 REGIONAL INDEX RETURNS



Source: MSCI, STOXX, FTSE, Nikkei, as of 12/31/22

2022 CURRENCY MOVEMENTS (BASE OF 100)



Source: Bloomberg, as of 12/31/22

Emerging market equity

Emerging market equities advanced alongside global equities as the MSCI EM Index finished the quarter up 9.7%. Performance was volatile over the quarter, as losses in October were pared by a 13.2% rally over November and December. Despite the rally to close out the year, the index still ended down -20.1%, underperforming both international developed and U.S. equity benchmarks.

Returns in the fourth quarter were driven by gains in Chinese equities, which jumped following a rapid pivot away from the Chinese Communist Party’s “Zero Covid” policy. While

Chinese shares still dominate the index (around 30%), strong performance from countries with smaller weights also played a large role.

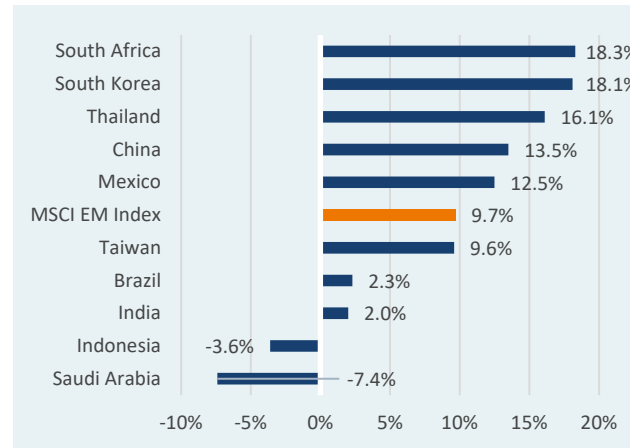
Indian shares, which hold the second largest weight in the index, acted as a drag on returns during the quarter but still ended in positive territory. Despite a modest 2.0% quarterly gain, the Indian market was one of the best performers of 2022, finishing the year down -8.0%. This compared to double-digit losses from other regional indices.

EMERGING MARKET EQUITY



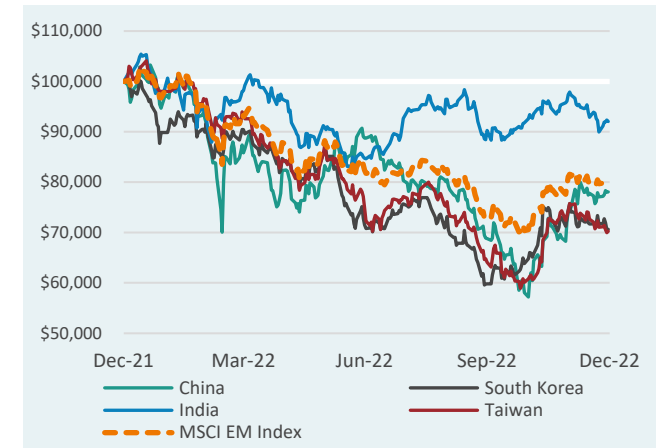
Source: MSCI, as of 12/31/22

Q4 2022 MSCI COUNTRY RETURNS (USD)



Source: Bloomberg, MSCI, as of 12/31/22

GROWTH OF \$100K IN 2022 (EM WEIGHTS >10%)



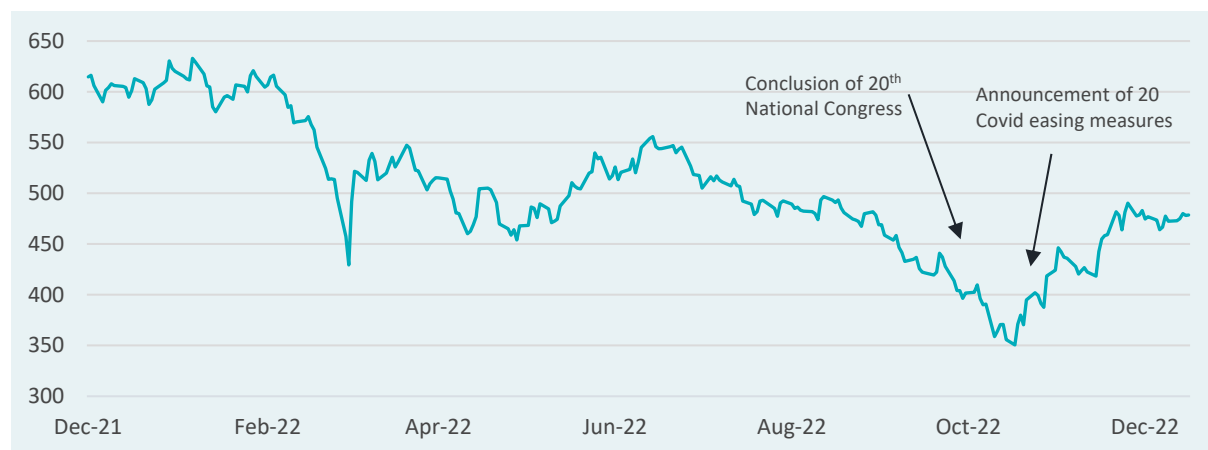
Source: Bloomberg, MSCI, as of 12/31/22 - performance in USD

Recent developments in China

China has continued to make global headlines, though two stories seemed to dominate the narrative. First, the 20th National Congress of the Chinese Communist Party (CCP) resulted in greater concentration of power and an unprecedented third-term for CCP General Secretary Xi Jinping. Second, China communicated a sharp reversal of its “Zero Covid” policy, as the government swiftly reopened major cities from stringent lockdowns, which has contributed to a new wave of COVID-19 cases.

Chinese equity markets dropped sharply following the 20th National Congress, but quickly reversed course following a string of economic reopening announcements. Markets moved even higher during the latter half of the quarter, fueled by the reopening story and prospects for easier monetary and fiscal policy relative to the rest of the world. While the reopening of the world’s largest economy presents a tailwind to economic growth, concerns remain around the timeline of recovery, the net impact of eased supply chains and increased global demand, as well as the new concentration of power within the government.

MSCI CHINA INDEX (USD)



Source: Bloomberg, as of 12/31/22

CHINESE LEADERSHIP SINCE MAO ZEDONG

Leader	Electing Central Committee
Mao Zedong	6th (1928 - 1945)
	7th
	8th
	9th
	10th (1973 - 1977)
Hua Guofeng	11th (1977 - 1982)
Hu Yaobang	11th (1977 - 1982)
	12th (1982 - 1987)
Zhao Ziyang	12th (1982 - 1987)
	13th (1987 - 1992)
Jiang Zemin	13th (1987 - 1992)*
	14th (1992 - 1997)
	15th (1997 - 2002)
Hu Jintao	16th (2002 - 2007)
	17th (2007 - 2012)
Xi Jinping	18th (2012 - 2017)
	19th (2017 - 2022)
	20th (2022 - 2027)

*Replaced Zhao Ziyang mid-term in 1989

First third-term election since Mao Zedong

Equity valuations

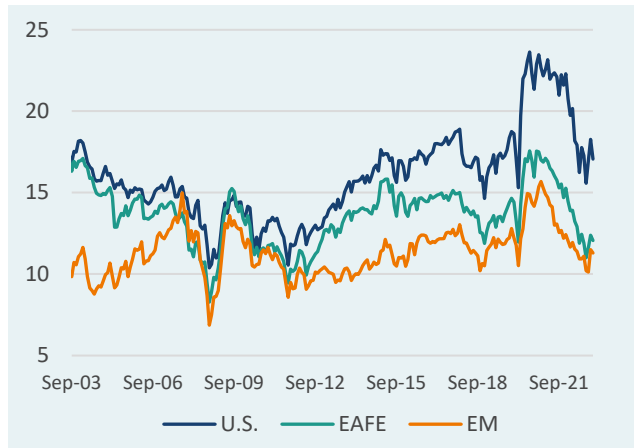
Many markets now trade at valuation levels near their historical average as inflation and rising interest rates have brought prices down. The S&P 500 forward P/E ratio of 17.1 is below the five- and ten-year averages of 18.6 and 20.2, respectively. The Federal Reserve remains in focus for U.S. investors as valuations over the past decade have been lifted by low interest rates. International equity valuations are depressed but may be further challenged by inflation and recession. Emerging market equities appear to be poised for a strong recovery, given a more positive growth outlook, and

as China's reopening could improve fundamentals and bring the asset class back into favor.

International developed equities remain inexpensive relative to U.S. equities, but developed markets face significant long-term headwinds. In Q4, gains in the Euro and Yen and an easing energy crisis boosted international developed equity returns, but high inflation, high debt and low growth in Japan, poor demographics, and a hawkish ECB make for a challenged long-term outlook.

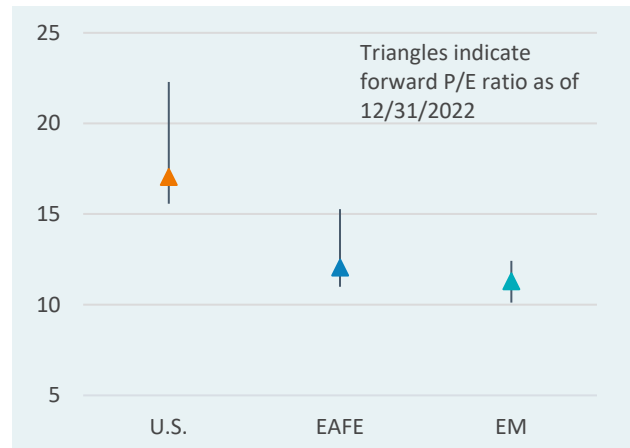
International developed equities remain extremely cheap relative to U.S. markets

FORWARD P/E RATIOS



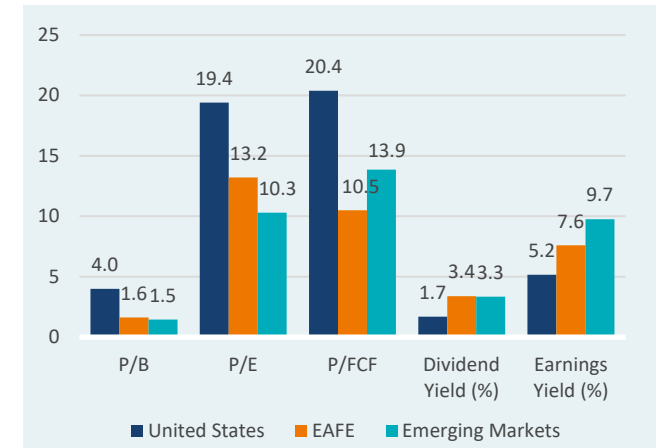
Source: MSCI, 12m forward P/E, as of 12/31/22

FORWARD P/E RATIO RANGES (DURING 2022)



Source: MSCI, 12m forward P/E, as of 12/31/22

VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI, as of 12/31/22 - trailing P/E

Equity volatility

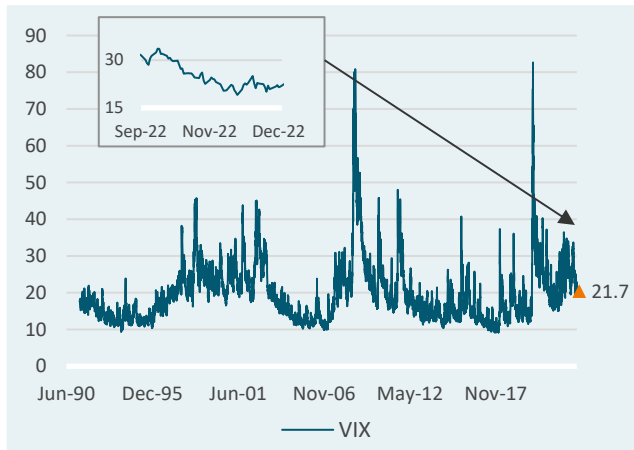
Implied volatility fell significantly over the quarter. The Cboe VIX Index moved from 31.6 to 21.7. Equity markets advanced on cooling inflation, potential for less aggressive central bank action, and perhaps optimism around China’s reopening.

In contrast, realized volatility increased from the prior quarter. Volatility rose across S&P 500, MSCI EAFE, and MSCI EM Indices. Realized volatility in the domestic market remained the highest—a trend consistent with last quarter—as markets swung around inflation prints, two Federal

Reserve interest rate decisions, and growing concerns over a potential 2023 recession.

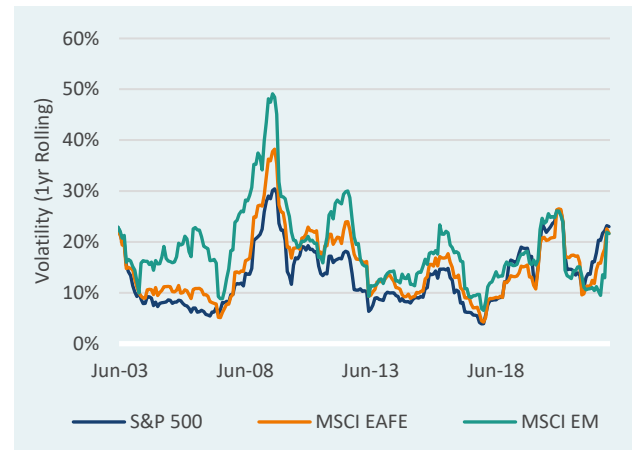
Historically speaking, the S&P 500 delivered exceptionally poor performance in line with some of the worst of the index’s history. Looking all the way back to 1929, this year was the seventh worst in the index’s history and the worst calendar year performance since 2008.

U.S. IMPLIED VOLATILITY (VIX)



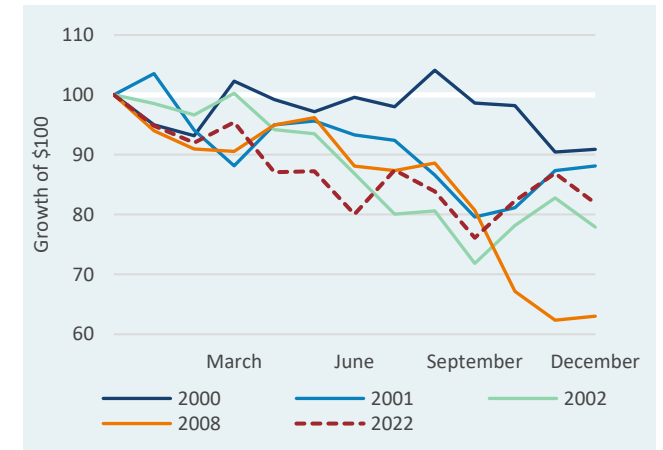
Source: Cboe, as of 12/31/22

REALIZED VOLATILITY



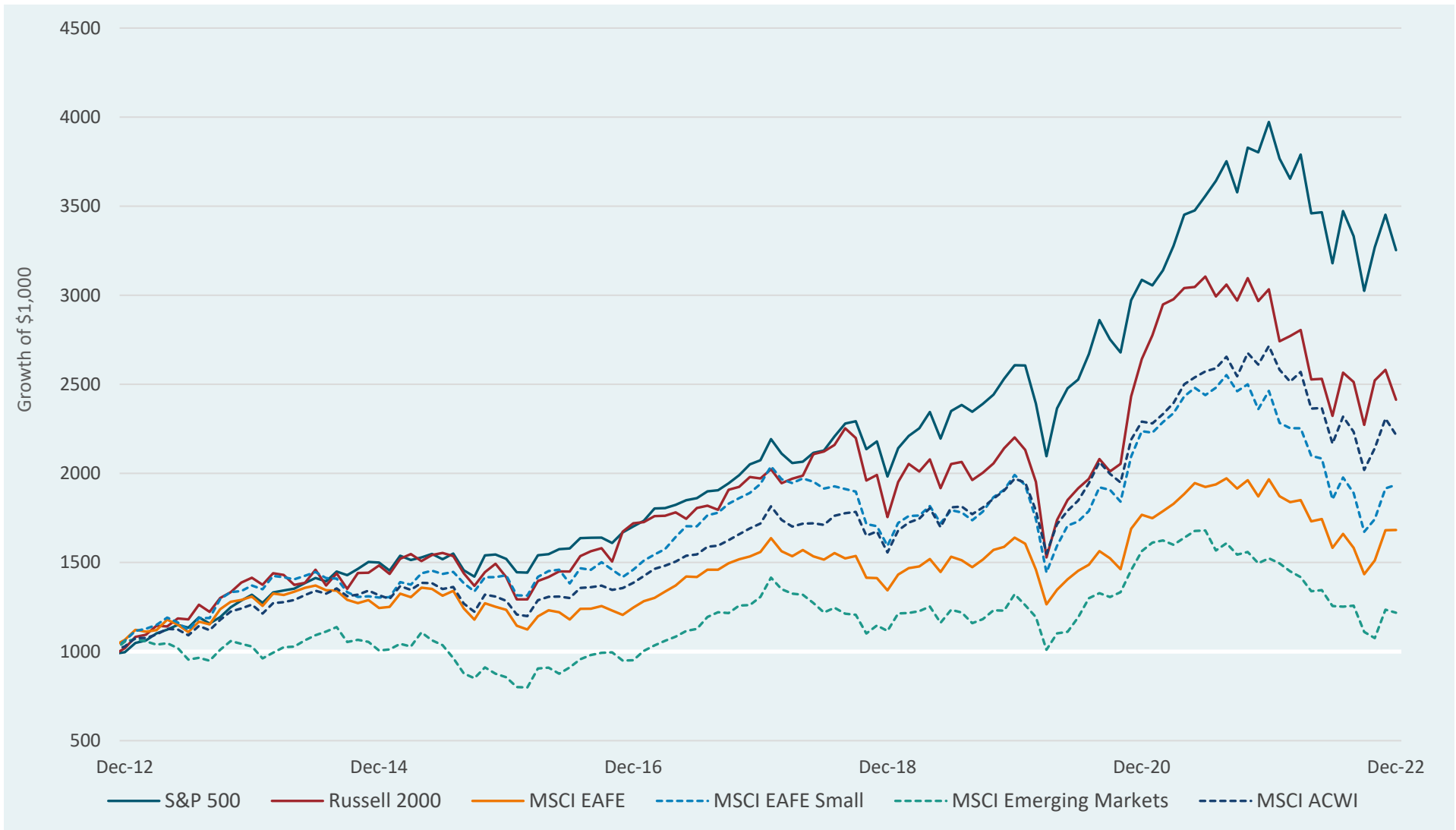
Source: S&P, MSCI, as of 12/31/22

S&P 500 FIVE WORST YEARS SINCE 1988



Source: S&P, Bloomberg, as of 12/31/22 – since 1988

Long-term equity performance



Source: MPI, as of 12/31/22

Other assets

Currency

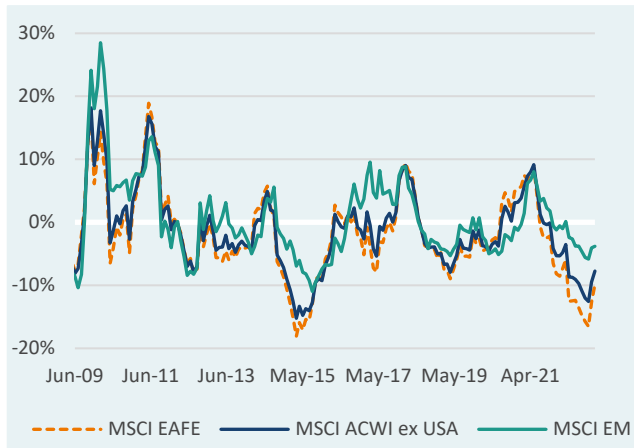
Currency volatility has translated to much higher portfolio volatility for investors with unhedged exposure to foreign currencies. The U.S. dollar depreciated relative to major currencies during the fourth quarter which resulted in large gains for investors with unhedged foreign currency exposure. These currency gains amounted to 7.6% for investors with unhedged exposure to the MSCI EAFE Index (+17.3% MSCI EAFE unhedged, +9.7% MSCI EAFE hedged).

U.S. dollar strength of 2022 was reversed in Q4 as markets began pricing in a shorter Federal Reserve tightening cycle. Expectations for lower rates in the U.S., combined with an ongoing struggle to control high inflation (and therefore tighter financial policies from respective central banks)

within developed economies, likely played a major role in the U.S. dollar sell-off.

Despite currency gains seen this quarter, we believe that a thoughtful currency program may allow an investor to reduce their total portfolio risk while also increasing long-term expected returns. The MSCI Currency Factor Mix Index—a representation of a passive investment in the currency market—has shown a positive one-year rolling return over most periods with very low volatility. This contrasts to the unhedged currency exposure (what we refer to as “embedded currency”) that most investors own, which has shown high volatility and frequent losses.

EFFECT OF CURRENCY (1-YEAR ROLLING)



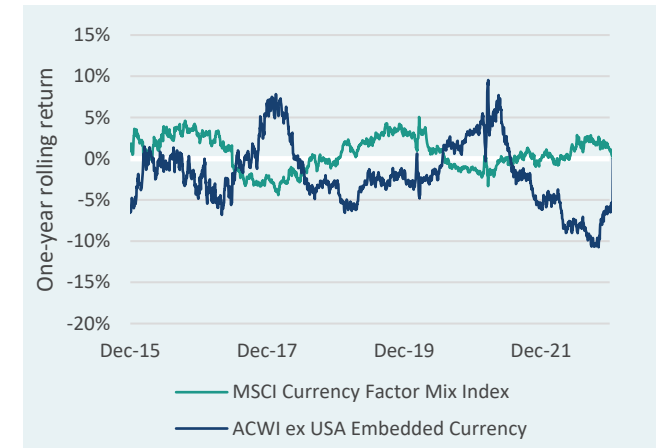
Source: MSCI, as of 12/31/22

BLOOMBERG DOLLAR SPOT INDEX



Source: Bloomberg, as of 12/31/22

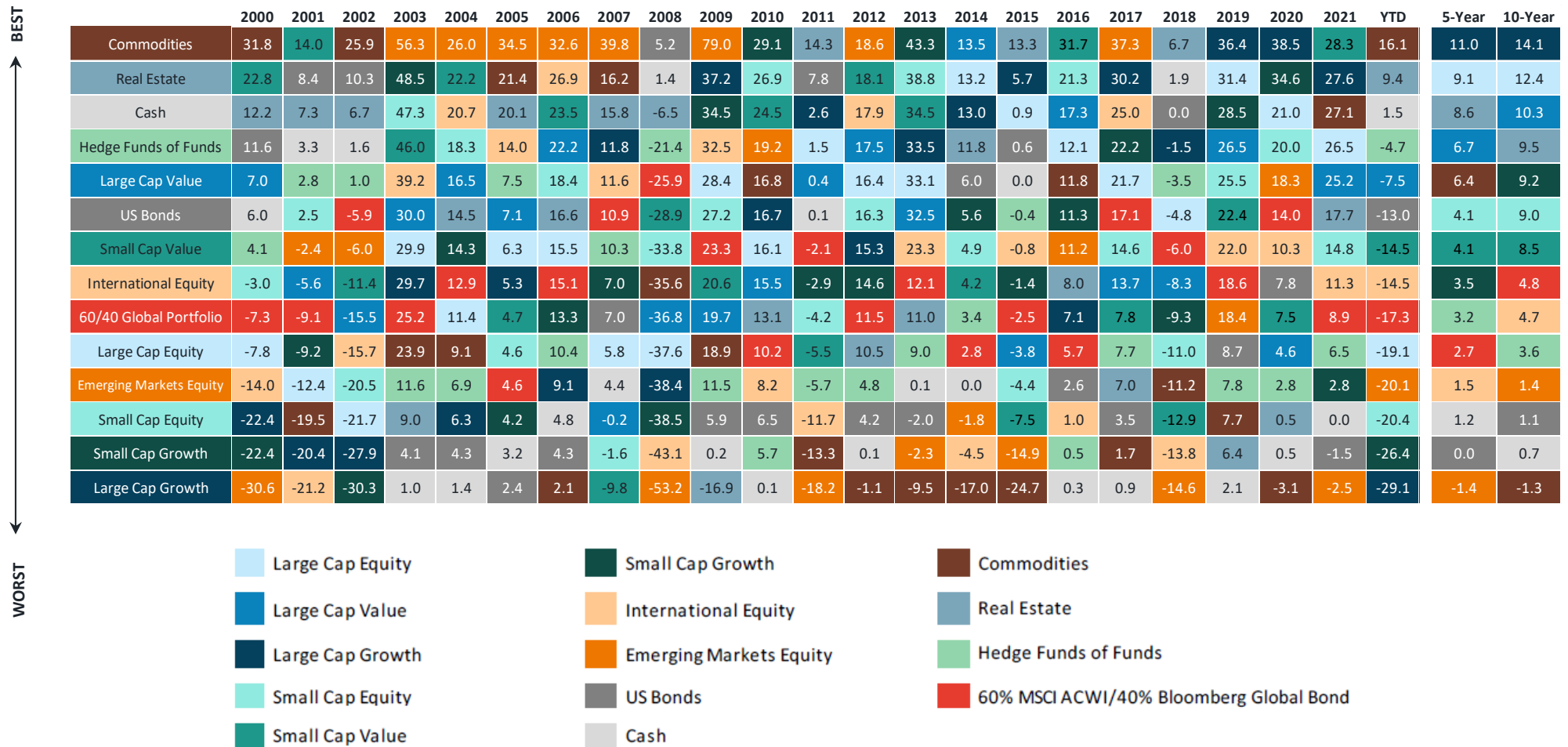
EMBEDDED CURRENCY VS CURRENCY FACTORS



Source: Bloomberg, as of 12/31/22

Appendix

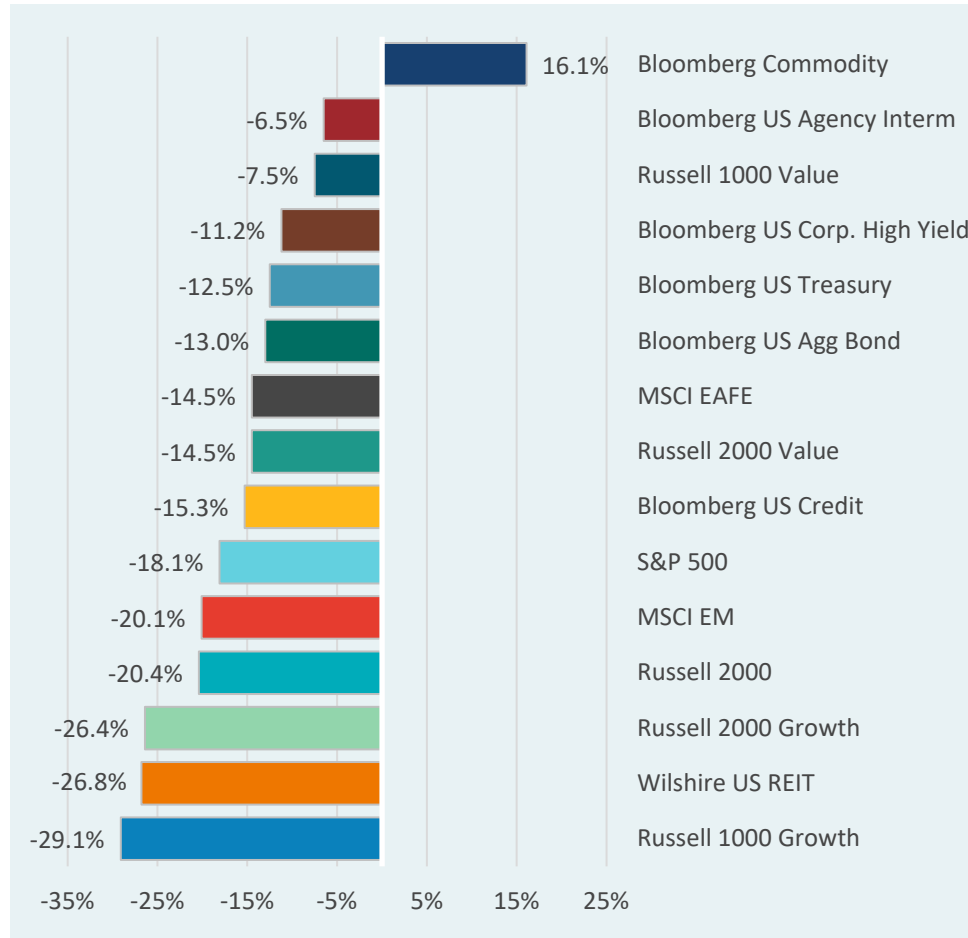
Periodic table of returns



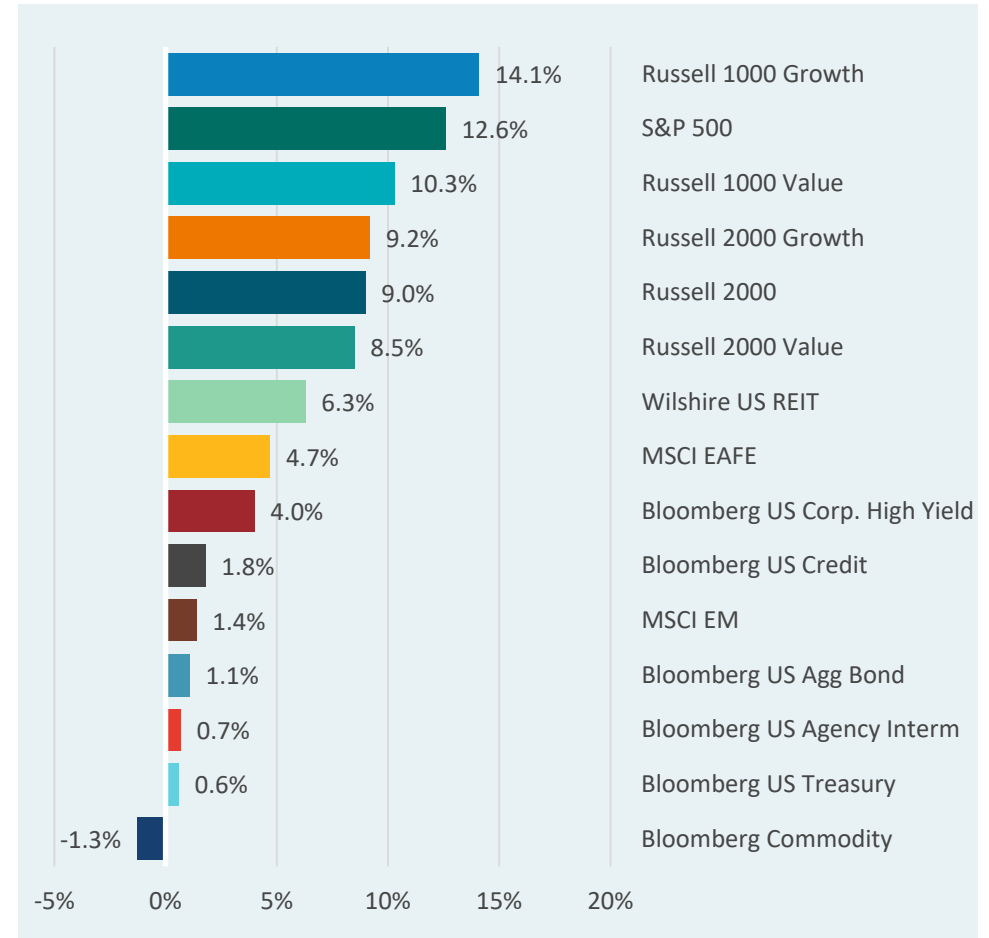
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, Bloomberg Global Bond as of 12/31/22. NCREIF Property Index performance data as of 9/30/22.

Major asset class returns

ONE YEAR ENDING DECEMBER



TEN YEARS ENDING DECEMBER



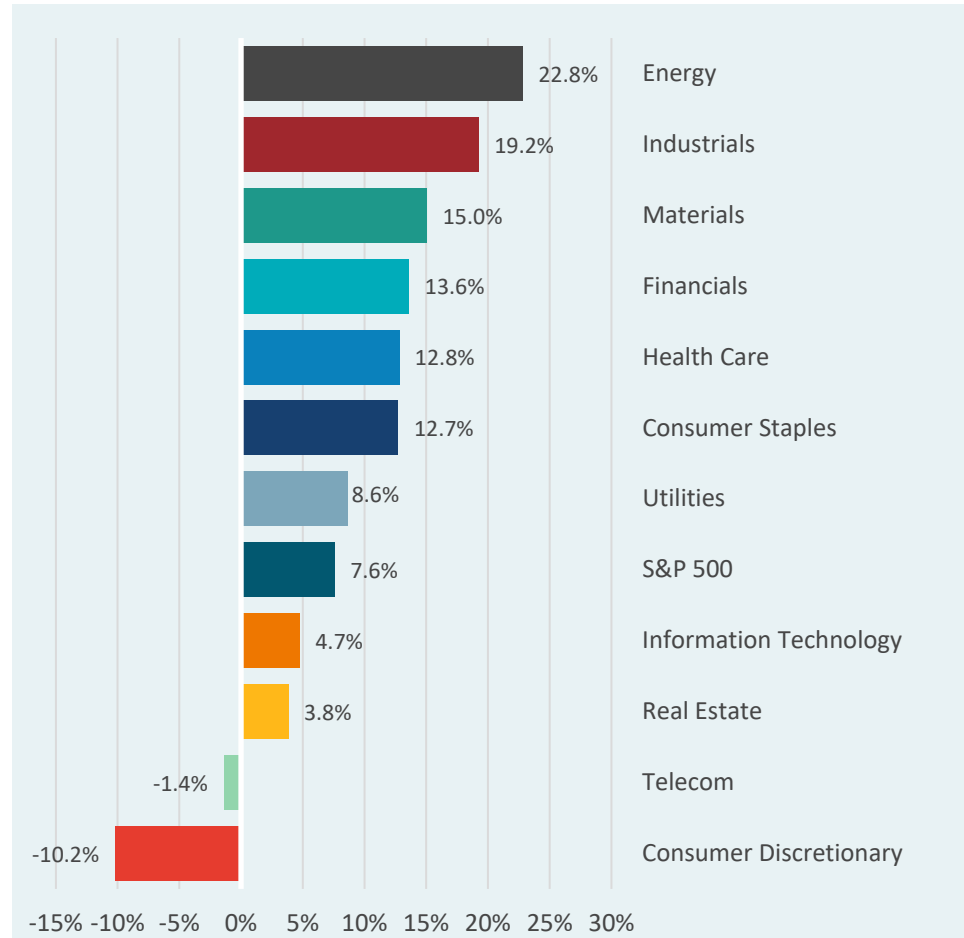
*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 12/31/22

Source: Morningstar, as of 12/31/22

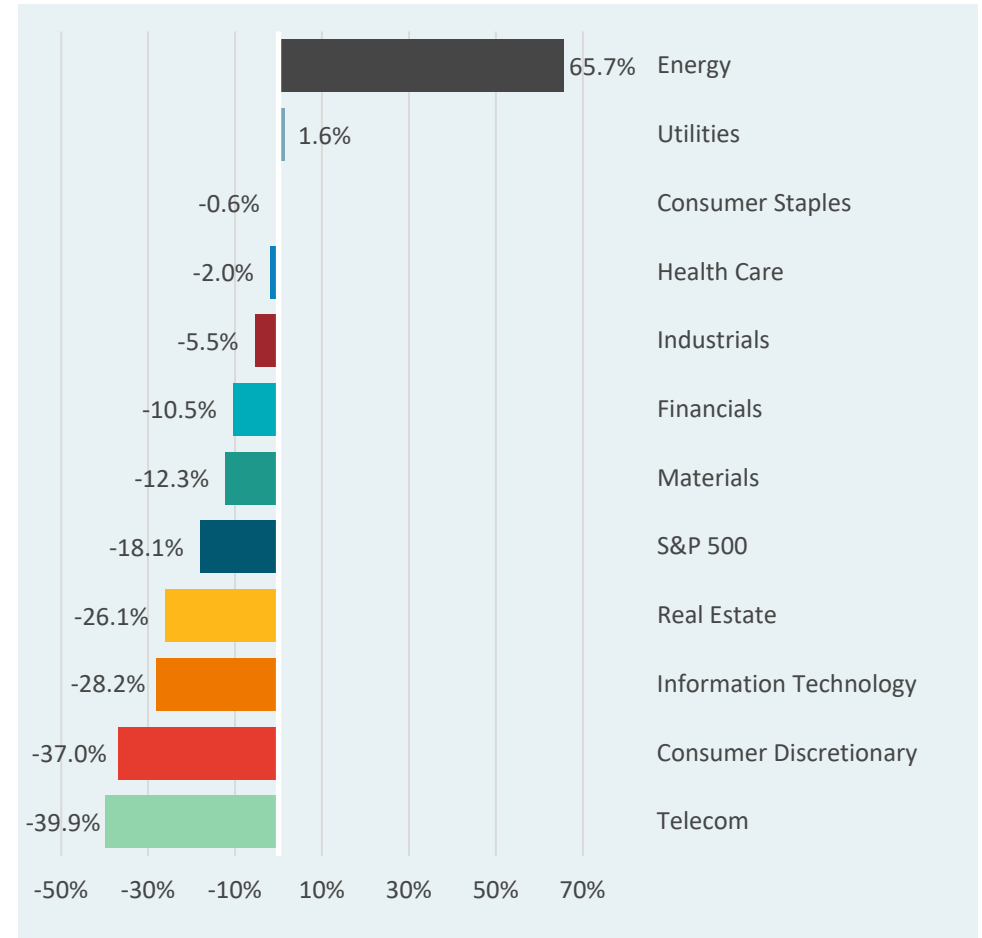
S&P 500 sector returns

QTD



Source: Morningstar, as of 12/31/22

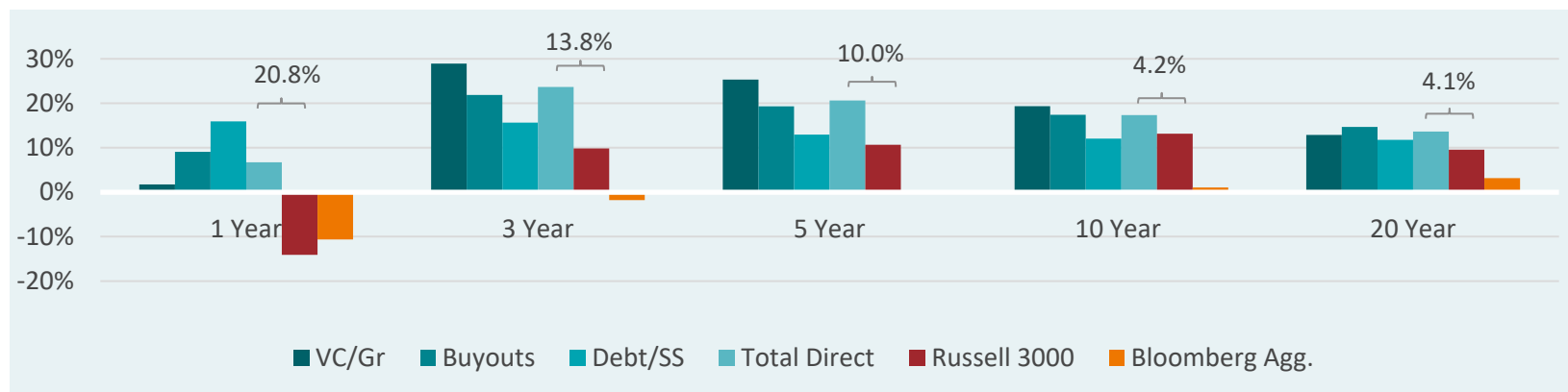
ONE YEAR ENDING DECEMBER



Source: Morningstar, as of 12/31/22

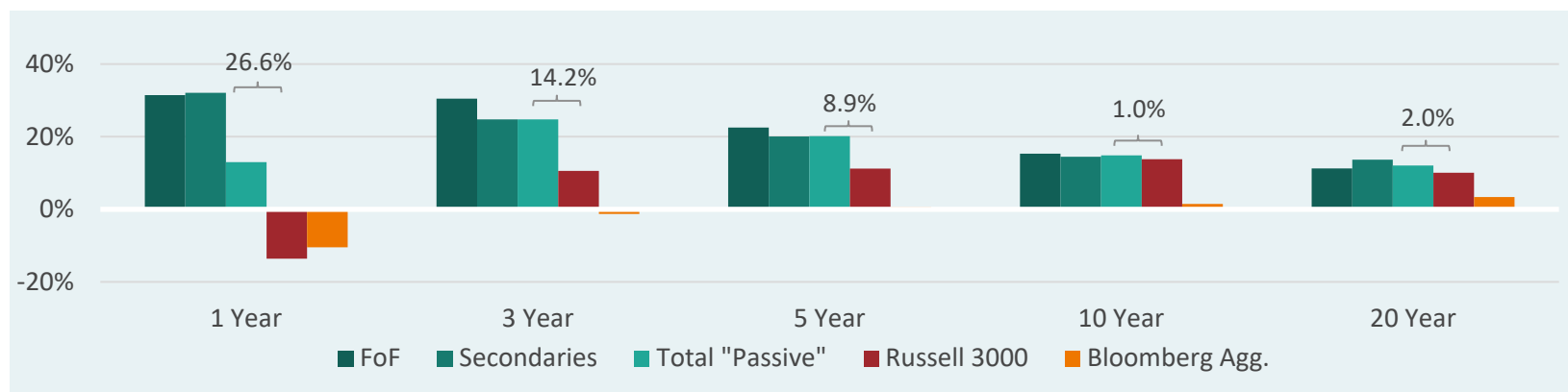
Private equity vs. traditional assets performance

DIRECT PRIVATE EQUITY FUND INVESTMENTS



Direct P.E Fund Investments outperformed over all time periods, though elevated short-term outperformance may be transitory due to appraisal lags

"PASSIVE" STRATEGIES

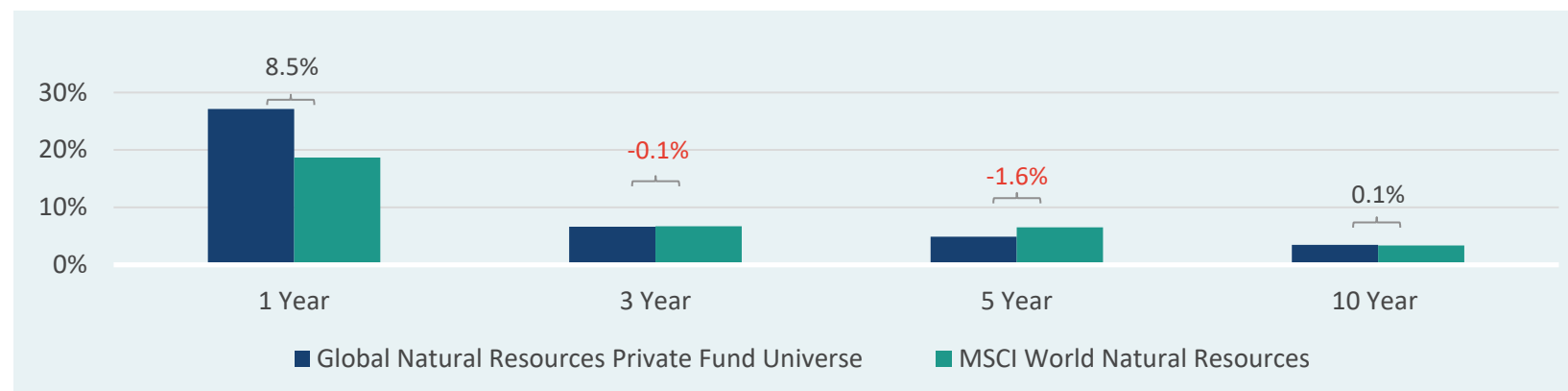


"Passive" strategies outperformed over all periods

Sources: Refinitiv PME: U.S. Private Equity Funds sub asset classes as of June 30, 2022. Public Market Equivalent returns resulted from "Total Passive" and Total Direct's identical cash flows invested into and distributed from respective traditional asset comparable.

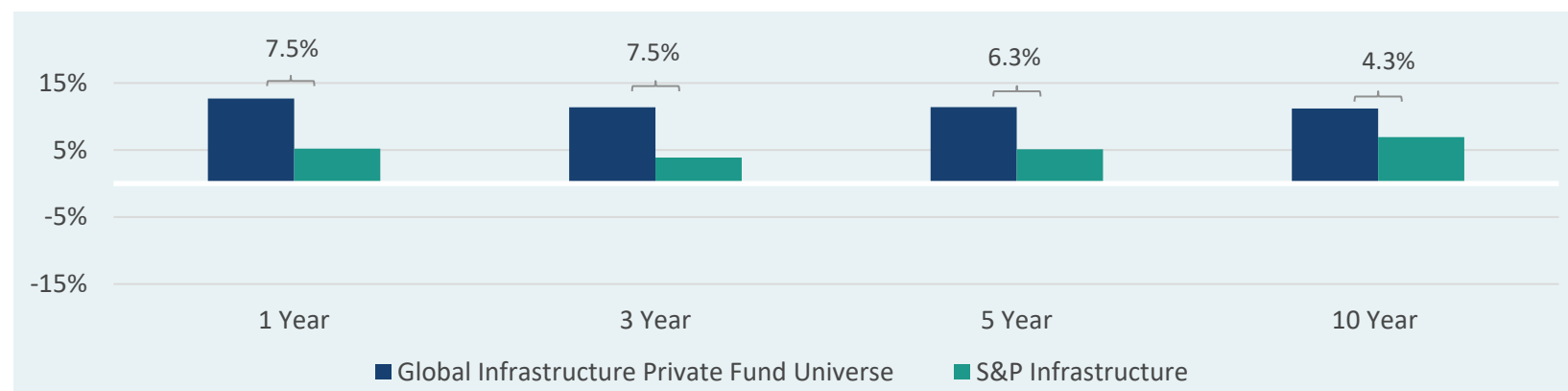
Private vs. liquid real assets performance

GLOBAL NATURAL RESOURCES FUNDS



N.R. funds outperformed the MSCI World Natural Resources benchmark across 1- and 10-year periods

GLOBAL INFRASTRUCTURE FUNDS

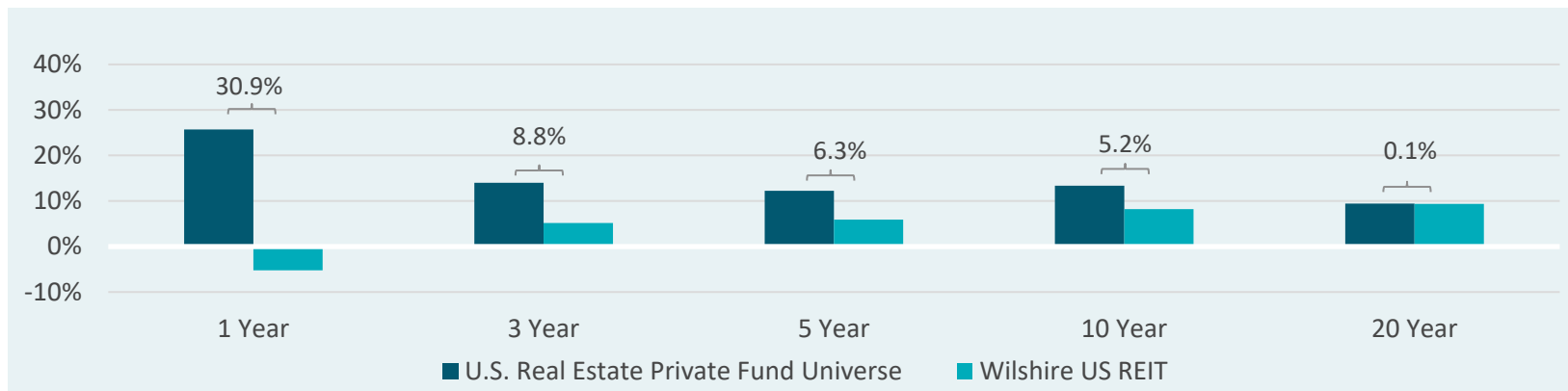


Infra. funds outperformed the S&P Infra. across all periods

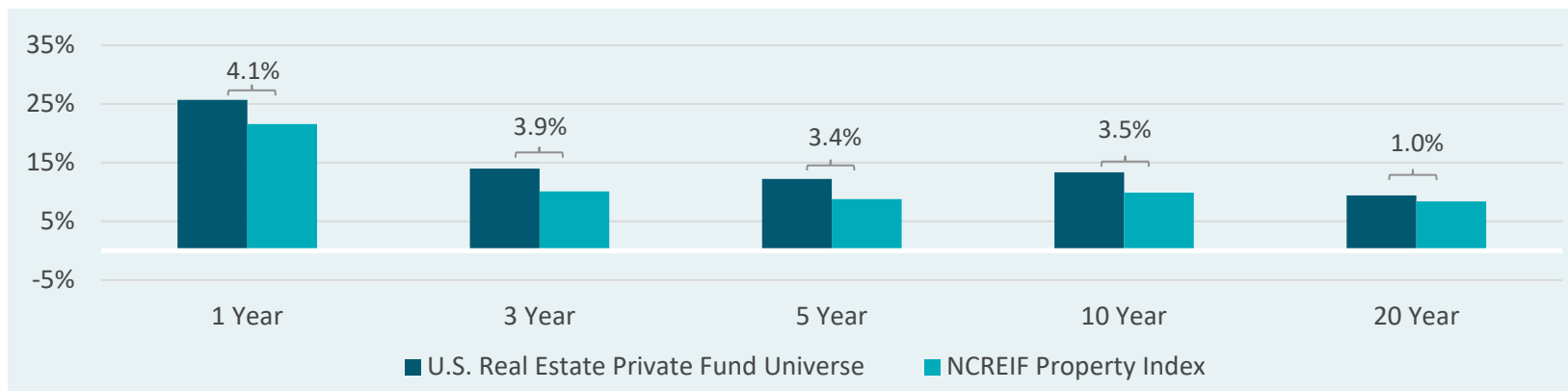
Sources: Refinitiv PME: Global Natural Resources (vintage 1999 and later, inception of MSCI World Natural Resources benchmark) and Global Infrastructure (vintage 2002 and later, inception of S&P Infrastructure benchmark) universes as of June 30, 2022. Public Market Equivalent returns resulted from identical 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 REAL ESTATE FUNDS VS. CORE FUNDS



U.S. Private R.E. funds outperformed the Wilshire U.S. REIT Index across all time periods, though short-term outperformance may be transitory due to appraisal lags

U.S. Private R.E. Funds outperformed across all periods

Sources: Refinitiv PME: U.S. Real Estate universes as of June 30, 2022. 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	(5.8)	7.6	(18.1)	(18.1)	7.7	9.4	12.6
S&P 500 Equal Weighted	(4.7)	11.6	(11.4)	(11.4)	9.0	9.1	12.4
DJ Industrial Average	(4.1)	16.0	(6.9)	(6.9)	7.3	8.4	12.3
Russell Top 200	(6.0)	6.6	(19.8)	(19.8)	7.9	9.9	12.9
Russell 1000	(5.8)	7.2	(19.1)	(19.1)	7.3	9.1	12.4
Russell 2000	(6.5)	6.2	(20.4)	(20.4)	3.1	4.1	9.0
Russell 3000	(5.9)	7.2	(19.2)	(19.2)	7.1	8.8	12.1
Russell Mid Cap	(5.4)	9.2	(17.3)	(17.3)	5.9	7.1	11.0
Style Index							
Russell 1000 Growth	(7.7)	2.2	(29.1)	(29.1)	7.8	11.0	14.1
Russell 1000 Value	(4.0)	12.4	(7.5)	(7.5)	6.0	6.7	10.3
Russell 2000 Growth	(6.4)	4.1	(26.4)	(26.4)	0.6	3.5	9.2
Russell 2000 Value	(6.6)	8.4	(14.5)	(14.5)	4.7	4.1	8.5

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	(3.9)	9.8	(18.4)	(18.4)	4.0	5.2	8.0
MSCI ACWI ex US	(0.7)	14.3	(16.0)	(16.0)	0.1	0.9	3.8
MSCI EAFE	0.1	17.3	(14.5)	(14.5)	0.9	1.5	4.7
MSCI EM	(1.4)	9.7	(20.1)	(20.1)	(2.7)	(1.4)	1.4
MSCI EAFE Small Cap	1.1	15.8	(21.4)	(21.4)	(0.9)	(0.0)	6.2
Style Index							
MSCI EAFE Growth	(1.1)	15.0	(22.9)	(22.9)	0.5	2.5	5.6
MSCI EAFE Value	1.3	19.6	(5.6)	(5.6)	0.6	0.2	3.5
Regional Index							
MSCI UK	(0.4)	17.0	(4.8)	(4.8)	0.3	1.0	3.1
MSCI Japan	0.3	13.2	(16.6)	(16.6)	(1.0)	0.2	5.6
MSCI Euro	(0.5)	23.0	(17.2)	(17.2)	0.5	0.8	4.3
MSCI EM Asia	(0.8)	10.8	(21.1)	(21.1)	(1.3)	(0.6)	3.6
MSCI EM Latin American	(4.0)	5.7	8.9	8.9	(4.8)	(1.1)	(2.1)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
Bloomberg US TIPS	(1.0)	2.0	(11.8)	(11.8)	1.2	2.1	1.1
Bloomberg US Treasury Bills	0.4	0.9	1.3	1.3	0.7	1.2	0.8
Bloomberg US Agg Bond	(0.5)	1.9	(13.0)	(13.0)	(2.7)	0.0	1.1
Bloomberg US Universal	(0.3)	2.2	(13.0)	(13.0)	(2.5)	0.2	1.3
Duration							
Bloomberg US Treasury 1-3 Yr	0.2	0.7	(3.8)	(3.8)	(0.5)	0.7	0.7
Bloomberg US Treasury Long	(1.7)	(0.6)	(29.3)	(29.3)	(7.4)	(2.2)	0.6
Bloomberg US Treasury	(0.5)	0.7	(12.5)	(12.5)	(2.6)	(0.1)	0.6
Issuer							
Bloomberg US MBS	(0.4)	2.1	(11.8)	(11.8)	(3.2)	(0.5)	0.7
Bloomberg US Corp. High Yield	(0.6)	4.2	(11.2)	(11.2)	0.0	2.3	4.0
Bloomberg US Agency Interm	0.0	0.8	(6.5)	(6.5)	(1.3)	0.4	0.7
Bloomberg US Credit	(0.4)	3.4	(15.3)	(15.3)	(2.9)	0.4	1.8

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	(2.4)	2.2	16.1	16.1	12.7	6.4	(1.3)
Wilshire US REIT	(5.6)	4.0	(26.8)	(26.8)	(0.5)	3.4	6.3
CS Leveraged Loans	0.4	2.3	(1.1)	(1.1)	2.3	3.2	3.8
S&P Global Infrastructure	(2.2)	11.0	(0.2)	(0.2)	1.7	3.9	6.5
Alerian MLP	(4.7)	10.5	31.4	31.4	8.3	3.6	2.1
Regional Index							
JPM EMBI Global Div	0.3	8.1	(17.8)	(17.8)	(5.3)	(1.3)	1.6
JPM GBI-EM Global Div	2.2	8.5	(11.7)	(11.7)	(6.1)	(2.5)	(2.0)
Hedge Funds							
HFRI Composite	(0.4)	2.2	(4.3)	(4.3)	5.7	4.4	4.7
HFRI FOF Composite	0.9	2.4	(4.7)	(4.7)	3.9	3.2	3.6
Currency (Spot)							
Euro	3.7	8.9	(6.2)	(6.2)	(1.7)	(2.3)	(2.1)
Pound Sterling	1.0	7.8	(11.2)	(11.2)	(3.2)	(2.3)	(3.0)
Yen	5.8	9.7	(12.7)	(12.7)	(6.3)	(3.1)	(4.1)

Source: Morningstar, HFRI, as of 12/31/22.

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: December 31, 2022



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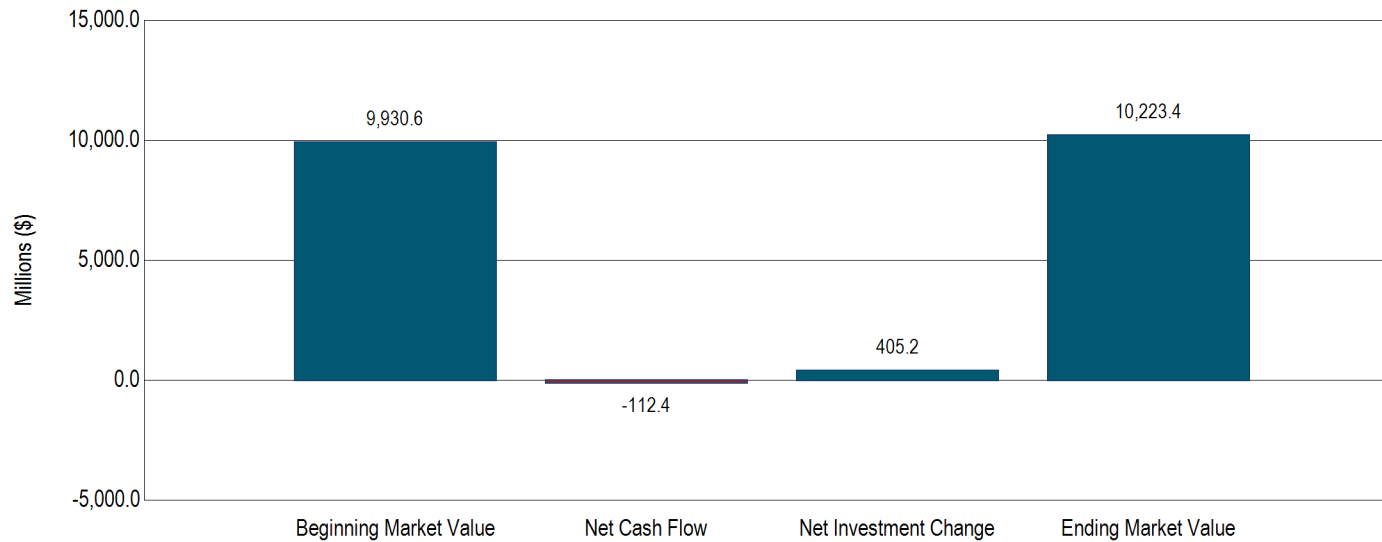
LOS ANGELES 310.297.1777

SAN FRANCISCO 415.362.3484

Portfolio Reconciliation

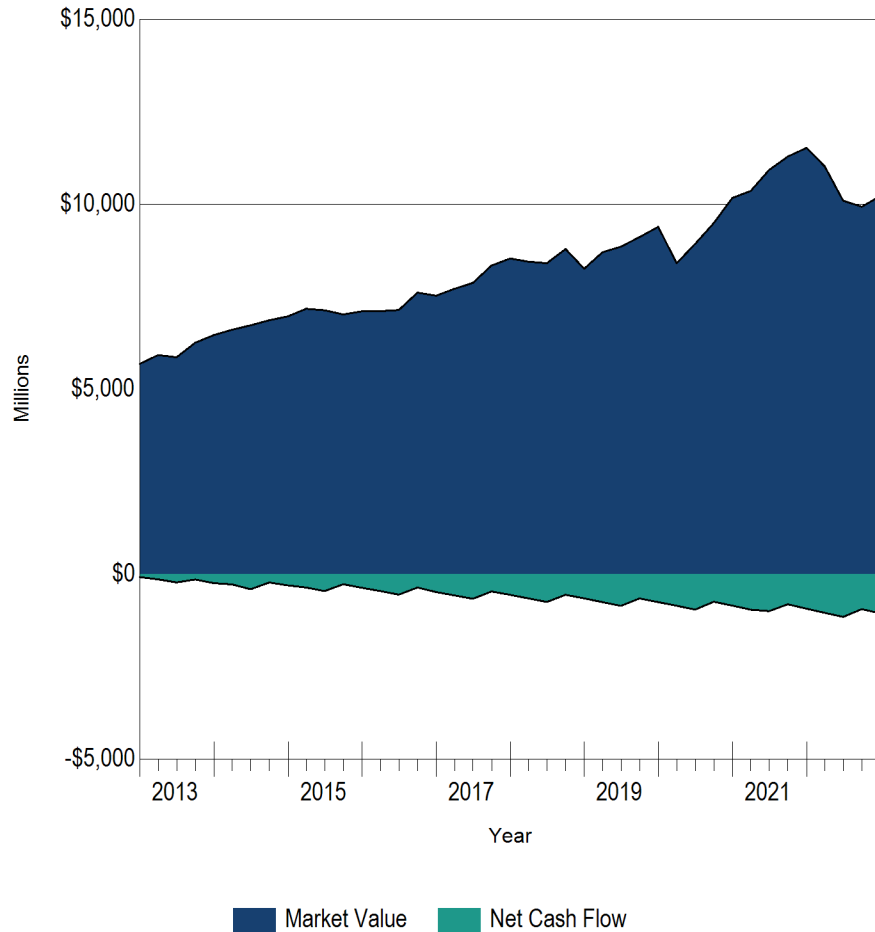
	Last Three Months	Year-To-Date
Beginning Market Value	\$9,930,641,665	\$11,520,465,270
Net Cash Flow	-\$112,417,383	-\$103,043,665
Net Investment Change	\$405,173,844	-\$1,194,023,478
Ending Market Value	\$10,223,398,127	\$10,223,398,127

Change in Market Value
Last Three Months

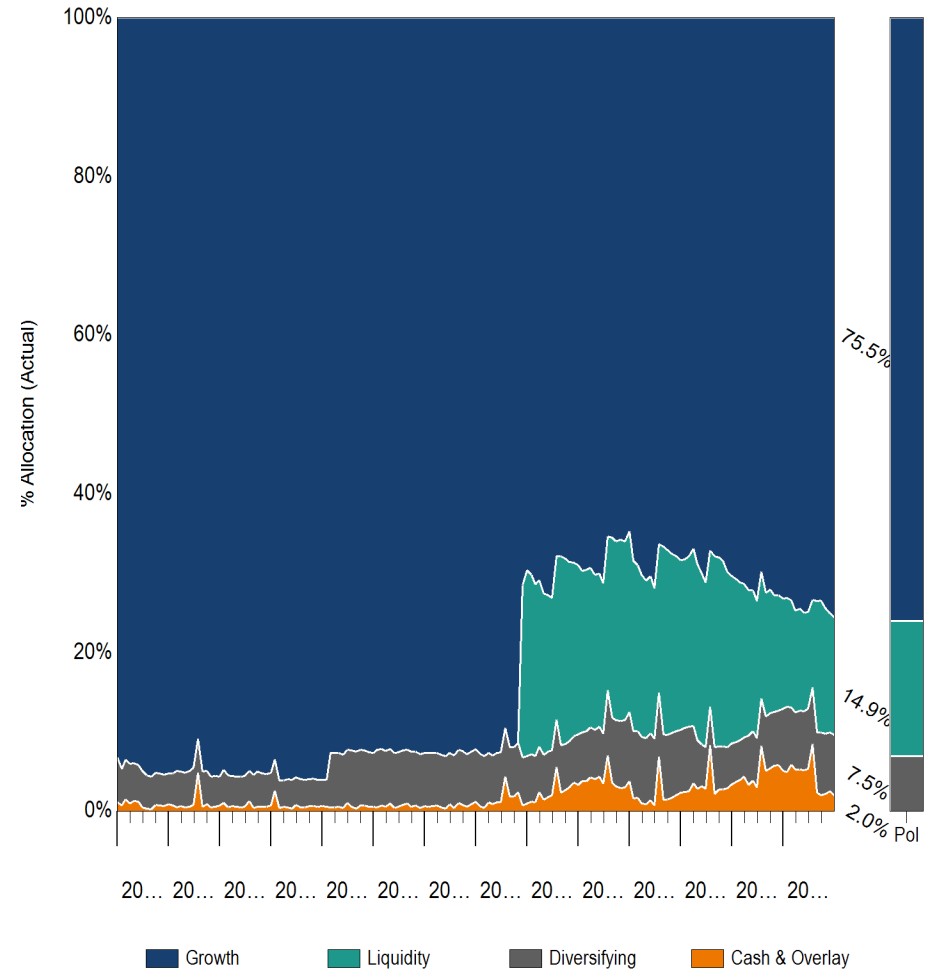


Contributions and withdrawals may include intra-account transfers between managers/funds.

Market Value History
Cumulative Cash Flows



Asset Allocation History

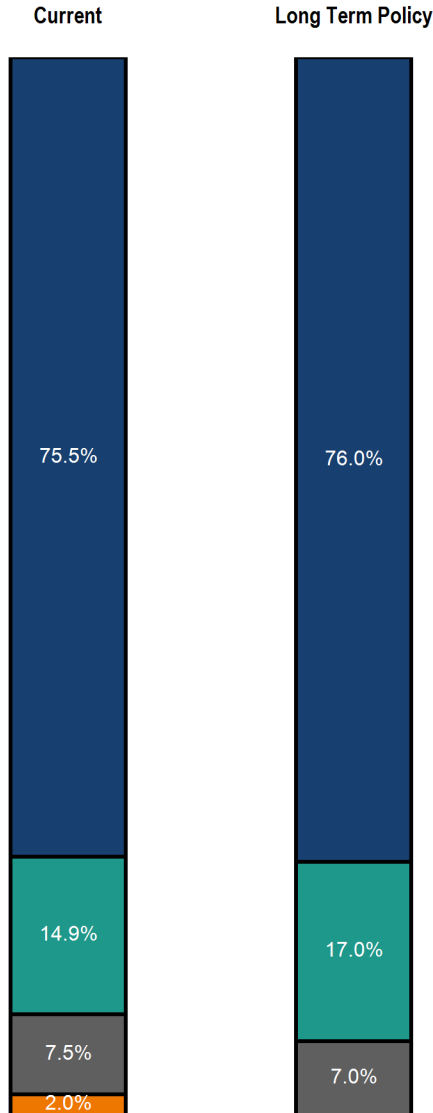


Policy reflects Long-Term Asset Allocation approved July 2022.

Total Fund

Asset Allocation vs. Long Term Target Policy

Period Ending: December 31, 2022



Allocation vs. Long Term Target

	Current Balance	Current Allocation	Long Term Target	Difference
Growth	\$7,722,293,524	75.5%	76.0%	-\$47,334,018
Liquidity	\$1,524,746,733	14.9%	17.0%	-\$213,196,269
Diversifying	\$769,903,968	7.5%	7.0%	\$54,280,379
Cash & Overlay	\$206,249,909	2.0%	--	\$206,249,909
Total	\$10,223,194,134	100.0%	100.0%	

Allocation vs. Current Targets

	Current Balance	Current Allocation	Current Target	Difference
Growth	\$7,722,293,524	75.5%	75.5%	\$3,781,953
Liquidity	\$1,524,746,733	14.9%	17.0%	-\$213,196,269
Diversifying	\$769,903,968	7.5%	7.5%	\$3,164,408
Cash & Overlay	\$206,249,909	2.0%	--	\$206,249,909
Total	\$10,223,194,134	100.0%	100.0%	

Current and Long-Term Policy Targets approved July 2022.

Total Fund
Executive Summary (Net of Fees)

Period Ending: December 31, 2022

	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
Total Fund	100.0	4.1	-10.6	3.6	4.4	6.7	-10.6	13.9	9.2	14.6	-2.7
Policy Index		4.5	-8.3	5.4	5.9	7.6	-8.3	15.3	10.8	14.6	-0.9
Policy Index (Adjusted)		4.5	-8.3	4.7	5.2	7.1	-8.3	15.3	8.5	14.1	-1.5
Growth	75.5	5.2	-11.6	5.7	6.1	8.3	-11.6	19.2	12.0	18.3	-3.9
Custom Growth Benchmark		5.5	-10.2	7.5	7.7	9.2	-10.2	21.6	13.8	19.3	-2.1
Diversifying	7.5	-1.5	-5.7	-2.0	-0.3	0.0	-5.7	1.7	-1.7	6.8	-2.3
Custom Diversifying Benchmark		2.1	-5.4	0.2	1.6	2.3	-5.4	1.6	4.7	6.1	1.4
Liquidity	14.9	1.1	-3.5	-0.2	1.2	--	-3.5	-0.3	3.4	4.8	1.7
Bloomberg US Govt/Credit 1-3 Yr. TR		0.9	-3.7	-0.3	0.9	--	-3.7	-0.5	3.3	4.0	1.6

*Correlation between the Growth and Diversifying composites is .43, .65 and .55 over the previous 1, 3 and 5 year periods respectively.

Policy Index (7/1/2022-Present): 16% Russell 3000, 15% MSCI ACWI ex-US (Gross), 9% MSCI ACWI (Net), 1.5% ICE BofA High Yield Master II, 2% Wilshire REIT, 8% Private Real Estate composite returns, 13% Private Equity composite returns, 8% Private Credit composite returns, 17% Bloomberg 1-3 Yr Gov/Credit, 2.5% Bloomberg US Aggregate, 3% 60% MSCI ACWI Net/40% Bloomberg Global Aggregate, 2.5% FTSE 3-month T-bill +5%, 2.5% Bloomberg US Aggregate TR +1%. Adjusted policy index reflects current approach to private markets throughout history.

Attribution Effects
 3 Months Ending December 31, 2022



Performance Attribution

	Quarter
Wtd. Actual Return	3.93%
Wtd. Index Return *	4.43%
Excess Return	-0.50%
Selection Effect	-0.46%
Allocation Effect	0.00%
Interaction Effect	-0.04%

*Calculated from benchmark returns and weightings of each component.

Attribution Summary
 Last Three Months

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Growth	5.2%	5.5%	-0.3%	-0.2%	0.0%	0.0%	-0.3%
Diversifying	-1.5%	2.1%	-3.6%	-0.3%	0.0%	0.0%	-0.3%
Liquidity	1.1%	0.9%	0.2%	0.0%	0.0%	0.0%	0.1%
Total	3.9%	4.4%	-0.5%	-0.5%	0.0%	0.0%	-0.5%

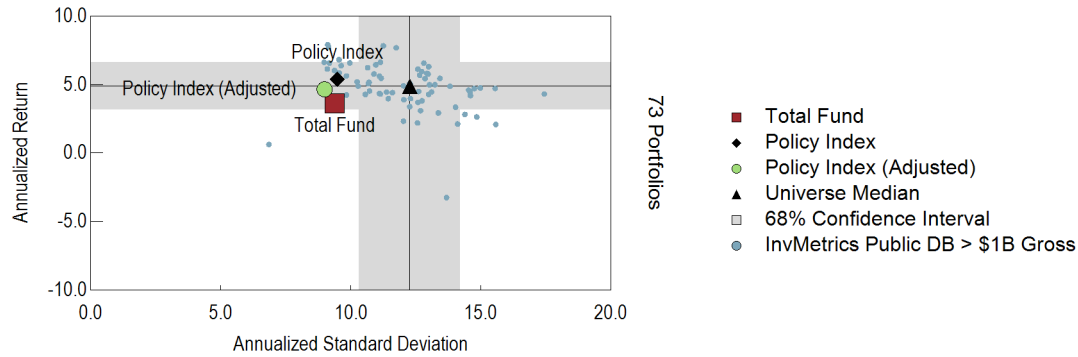
Total Fund Executive Summary (Net of Fees)

Period Ending: December 31, 2022

3 Years

	Anlzd Return	Ann Excess BM Return	Anlzd Standard Deviation	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Total Fund	3.62%	-1.78%	9.38%	-1.60%	0.97	2.05%	0.95	0.32	-0.87	93.69%	107.11%

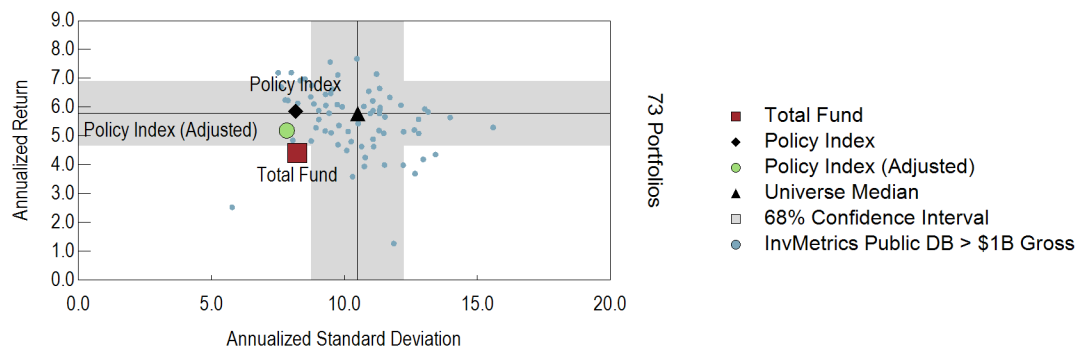
Risk vs. Return



5 Years

	Anlzd Return	Ann Excess BM Return	Anlzd Standard Deviation	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Total Fund	4.40%	-1.45%	8.23%	-1.34%	0.98	1.91%	0.95	0.39	-0.76	93.51%	106.52%

Risk vs. Return



Total Fund
Performance Summary (Gross of Fees)

Period Ending: December 31, 2022

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Total Fund	10,223,398,127	100.0	4.2	-10.4	3.9	4.7	7.2	-10.4	14.2	9.5	14.9	-2.5		
Policy Index			4.5	-8.3	5.4	5.9	7.6	-8.3	15.3	10.8	14.6	-0.9		
Policy Index (Adjusted)			4.5	-8.3	4.7	5.2	7.1	-8.3	15.3	8.5	14.1	-1.5		
InvMetrics Public DB > \$1B Gross Rank			87	42	81	83	70	42	62	78	83	25		
Total Fund ex Overlay & Cash	10,017,148,219	98.0	4.0	-9.8	4.3	5.0	7.3	-9.8	14.6	9.7	14.7	-2.1		
Policy Index			4.5	-8.3	5.4	5.9	7.6	-8.3	15.3	10.8	14.6	-0.9		
Policy Index (Adjusted)			4.5	-8.3	4.7	5.2	7.1	-8.3	15.3	8.5	14.1	-1.5		
InvMetrics Public DB > \$1B Gross Rank			89	37	71	76	65	37	55	72	85	20		
Growth	7,722,497,517	75.5	5.2	-11.4	6.0	6.4	8.7	-11.4	19.6	12.4	18.7	-3.6		
Custom Growth Benchmark			5.5	-10.2	7.5	7.7	9.2	-10.2	21.6	13.8	19.3	-2.1		
Total Domestic Equity	1,658,713,573	16.2	9.2	-18.3	6.4	7.2	11.6	-18.3	20.6	22.2	26.7	-7.2		
Russell 3000			7.2	-19.2	7.1	8.8	12.1	-19.2	25.7	20.9	31.0	-5.2		
InvMetrics Public DB US Eq Gross Rank			9	69	78	93	68	69	97	10	87	78		
BlackRock Russell 1000 Index	871,082,993	8.5	7.2	-19.1	7.4	9.1	--	-19.1	26.5	21.0	31.4	-4.8	10.5	Apr-17
Russell 1000			7.2	-19.1	7.3	9.1	--	-19.1	26.5	21.0	31.4	-4.8	10.5	Apr-17
eV US Large Cap Equity Gross Rank			69	68	57	51	--	68	55	36	39	47		
Boston Partners	399,005,510	3.9	12.7	-3.8	9.2	8.1	11.7	-3.8	31.3	3.0	24.3	-8.7	10.6	Jun-95
Russell 1000 Value			12.4	-7.5	6.0	6.7	10.3	-7.5	25.2	2.8	26.5	-8.3	9.1	Jun-95
eV US Large Cap Value Equity Gross Rank			53	36	29	53	40	36	17	61	77	55		
Emerald Advisers	195,522,418	1.9	6.6	-23.8	3.8	5.5	12.0	-23.8	5.5	39.0	30.3	-10.1	12.1	Apr-03
Russell 2000 Growth			4.1	-26.4	0.6	3.5	9.2	-26.4	2.8	34.6	28.5	-9.3	9.8	Apr-03
eV US Small Cap Growth Equity Gross Rank			23	25	66	83	49	25	76	57	45	85		
Ceredex	193,019,137	1.9	14.1	-8.5	6.3	4.8	9.4	-8.5	28.4	2.3	18.4	-11.3	10.0	Nov-11
Russell 2000 Value			8.4	-14.5	4.7	4.1	8.5	-14.5	28.3	4.6	22.4	-12.9	9.3	Nov-11
eV US Small Cap Value Equity Gross Rank			14	28	63	72	71	28	60	69	87	25		

Individual closed end funds are not shown in performance summary table. Jackson Square has a residual balance of \$83,514.15.

Total Fund
Performance Summary (Gross of Fees)

Period Ending: December 31, 2022

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Total International Equity	1,505,546,963	14.7	12.8	-18.2	0.8	1.7	4.9	-18.2	8.3	15.8	23.7	-14.3		
MSCI ACWI ex USA Gross			14.4	-15.6	0.5	1.4	4.3	-15.6	8.3	11.1	22.1	-13.8		
MSCI EAFE Gross			17.4	-14.0	1.3	2.0	5.2	-14.0	11.8	8.3	22.7	-13.4		
InvMetrics Public DB ex-US Eq Gross Rank			89	73	32	34	42	73	45	23	28	44		
International Equity	843,243,833	8.2	13.7	-18.1	2.1	3.1	5.6	-18.1	9.0	19.0	27.0	-13.6		
MSCI ACWI ex USA Gross			14.4	-15.6	0.5	1.4	4.3	-15.6	8.3	11.1	22.1	-13.8		
InvMetrics Public DB ex-US Eq Gross Rank			76	71	15	10	16	71	32	13	7	21		
Pyrford	436,308,732	4.3	15.2	-7.0	1.6	2.8	--	-7.0	7.6	4.7	22.1	-10.1	3.4	May-14
MSCI ACWI ex USA Value			15.7	-8.6	0.1	-0.1	--	-8.6	10.5	-0.8	15.7	-14.0	1.2	May-14
eV ACWI ex-US Value Equity Gross Rank			84	20	55	20	--	20	84	33	35	5		
William Blair	406,935,101	4.0	12.1	-27.7	2.1	3.2	6.1	-27.7	10.5	33.3	32.0	-16.8	5.9	Oct-10
MSCI ACWI ex USA Growth			12.9	-23.1	-0.4	1.5	4.7	-23.1	5.1	22.2	27.3	-14.4	4.2	Oct-10
eV ACWI ex-US Growth Equity Gross Rank			67	60	44	46	63	60	44	30	39	69		
Emerging Markets Equity	662,303,130	6.5	11.8	-18.4	-0.8	-0.2	--	-18.4	7.6	11.4	19.4	-15.3		
MSCI Emerging Markets			9.7	-20.1	-2.7	-1.4	--	-20.1	-2.5	18.3	18.4	-14.6		
InvMetrics Public DB Emg Mkt Eq Gross Rank			4	29	26	69	--	29	2	81	31	51		
PIMCO RAE Emerging Markets	348,122,745	3.4	15.0	-9.7	2.6	1.7	--	-9.7	17.1	2.1	14.6	-12.3	4.2	Feb-17
MSCI Emerging Markets Value NR			9.8	-15.8	-2.6	-1.6	--	-15.8	4.0	5.5	12.0	-10.7	1.5	Feb-17
eV Emg Mkts All Cap Value Equity Gross Rank			13	33	19	30	--	33	6	85	72	44		
TT Emerging Markets	314,180,385	3.1	8.5	-26.4	-3.9	-2.0	--	-26.4	-0.2	20.8	24.8	-18.4	0.3	Jul-17
MSCI Emerging Markets			9.7	-20.1	-2.7	-1.4	--	-20.1	-2.5	18.3	18.4	-14.6	0.4	Jul-17
eV Emg Mkts Equity Gross Rank			75	88	87	89	--	88	58	39	24	83		
Total Global Equity	957,701,783	9.4	9.4	-18.8	5.1	6.6	9.3	-18.8	14.1	25.3	28.9	-7.8	4.7	Jun-07
MSCI ACWI			9.8	-18.4	4.0	5.2	8.0	-18.4	18.5	16.3	26.6	-9.4	4.8	Jun-07
InvMetrics Public DB Glbl Eq Gross Rank			99	93	35	24	85	93	88	2	3	60		
Artisan Partners	464,457,135	4.5	5.7	-29.6	4.7	7.7	11.3	-29.6	15.0	41.7	37.0	-7.9	11.1	Oct-12
MSCI ACWI Growth NR USD			5.3	-28.6	3.8	6.4	9.2	-28.6	17.1	33.6	32.7	-8.1	9.2	Oct-12
eV All Global Equity Gross Rank			92	90	57	26	15	90	80	9	7	40		
First Eagle	493,124,169	4.8	13.1	-5.6	5.0	5.3	7.5	-5.6	13.0	8.5	21.0	-7.6	7.5	Jan-11
MSCI ACWI Value NR USD			14.2	-7.5	3.3	3.5	6.4	-7.5	19.6	-0.3	20.6	-10.8	5.9	Jan-11
eV All Global Equity Gross Rank			27	10	51	63	77	10	85	70	82	38		

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

Total Fund
Performance Summary (Gross of Fees)

Period Ending: December 31, 2022

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Private Credit	1,028,772,515	10.1	1.7	10.5	8.1	8.1	10.4	10.5	10.0	4.0	7.7	8.3		
Total High Yield	139,937,548	1.4	4.6	-10.6	-0.3	2.0	3.6	-10.6	5.3	5.2	15.3	-3.2		
<i>ICE BofAML High Yield Master II</i>			4.0	-11.2	-0.2	2.1	3.9	-11.2	5.4	6.2	14.4	-2.3		
<i>eV US High Yield Fixed Inc Gross Rank</i>			21	74	87	90	85	74	51	74	31	88		
Allianz Global Investors	139,937,548	1.4	4.6	-10.6	-0.3	2.0	3.6	-10.6	5.3	5.2	15.3	-3.2	6.1	Apr-00
<i>ICE BofAML High Yield Master II</i>			4.0	-11.2	-0.2	2.1	3.9	-11.2	5.4	6.2	14.4	-2.3	6.2	Apr-00
<i>eV US High Yield Fixed Inc Gross Rank</i>			21	74	87	90	85	74	51	74	31	88		
Total Real Estate	773,960,795	7.6	-1.7	-4.8	2.2	4.4	8.2	-4.8	19.2	-5.9	8.1	7.4		
<i>Real Estate Benchmark</i>			-1.8	-4.1	4.8	5.7	7.6	-4.1	19.3	0.6	7.5	6.8		
<i>NCREIF-ODCE</i>			-5.0	7.5	9.9	8.7	10.1	7.5	22.2	1.2	5.3	8.3		
<i>NCREIF Property Index</i>			-3.5	5.5	8.1	7.5	8.8	5.5	17.7	1.6	6.4	6.7		
Total Core RE	189,707,985	1.9	3.6	-24.8	2.1	5.3	7.7	-24.8	48.3	-4.6	28.2	-5.0		
Adelante	83,134,119	0.8	2.6	-26.7	1.2	4.8	7.5	-26.7	48.3	-4.6	28.2	-5.0	9.3	Sep-01
<i>Wilshire REIT</i>			4.0	-26.8	-0.5	3.4	6.3	-26.8	46.2	-7.9	25.8	-4.8	8.8	Sep-01
Invesco US Fundamental Beta	106,573,866	1.0	4.4	--	--	--	--	--	--	--	--	--	-15.0	Mar-22
<i>Wilshire REIT</i>			4.0	--	--	--	--	--	--	--	--	--	-18.6	Mar-22
Total Private Real Estate	584,252,810	5.7	-3.3	1.9	3.3	5.0	8.7	1.9	15.3	-6.1	6.2	8.8		
Private Equity	1,333,129,938	13.0	-2.3	-0.5	20.2	16.1	14.5	-0.5	60.4	8.7	8.4	12.1		
Risk Parity	324,734,402	3.2	3.2	-21.5	-1.8	--	--	-21.5	9.7	10.0	--	--		
<i>60% MSCI ACWI Net/40% Bloomberg Global Aggregate</i>			7.7	-17.3	0.8	--	--	-17.3	8.8	14.0	--	--		
AQR Global Risk Premium-EL	165,496,345	1.6	2.6	-16.3	-0.5	--	--	-16.3	10.7	6.2	--	--	4.0	Jan-19
<i>HFR Risk Parity Vol 10 Index</i>			3.1	-18.3	-3.3	--	--	-18.3	6.8	3.6	--	--	1.7	Jan-19
PanAgora Risk Parity Multi Asset	159,238,057	1.6	3.9	-26.1	-2.9	--	--	-26.1	8.7	14.0	--	--	1.0	Feb-19
<i>HFR Risk Parity Vol 10 Index</i>			3.1	-18.3	-3.3	--	--	-18.3	6.8	3.6	--	--	0.2	Feb-19

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

Total Fund

Performance Summary (Gross of Fees)

Period Ending: December 31, 2022

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Diversifying	769,903,968	7.5	-1.4	-5.3	-1.6	0.0	0.3	-5.3	2.0	-1.3	7.1	-2.0		
<i>Custom Diversifying Benchmark</i>			2.1	-5.4	0.2	1.6	2.3	-5.4	1.6	4.7	6.1	1.4		
Diversifying Fixed Income	220,472,703	2.2	1.0	-13.3	-4.4	-1.4	0.5	-13.3	-0.7	1.6	8.6	-1.7		
<i>Bloomberg US Aggregate TR</i>			1.9	-13.0	-2.7	0.0	1.1	-13.0	-1.5	7.5	8.7	0.0		
<i>eV US Core Fixed Inc Gross Rank</i>			96	76	99	99	99	76	30	99	80	99		
AFL-CIO	220,337,258	2.2	1.0	-13.3	-2.8	0.0	1.2	-13.3	-0.7	6.6	8.2	0.6	5.3	Jun-91
<i>Bloomberg US Aggregate TR</i>			1.9	-13.0	-2.7	0.0	1.1	-13.0	-1.5	7.5	8.7	0.0	4.9	Jun-91
<i>eV US Core Fixed Inc Gross Rank</i>			96	77	95	96	93	77	30	95	88	16		
Diversifying Multi-Asset	549,431,265	5.4	-2.4	-1.9	--	--	--	-1.9	2.8	--	--	--		
<i>Custom Diversifying Multi-Asset Benchmark</i>			2.1	-3.1	--	--	--	-3.1	4.1	--	--	--		
Acadian Multi-Asset Absolute Return Fund	254,025,032	2.5	-3.6	-0.1	--	--	--	-0.1	1.7	--	--	--	1.4	Aug-20
<i>FTSE 3-Month T-bill +5%</i>			2.1	6.6	--	--	--	6.6	5.0	--	--	--	5.7	Aug-20
Sit LLCAR	295,406,233	2.9	-1.4	-3.3	--	--	--	-3.3	--	--	--	--	0.6	Apr-21
<i>Bloomberg US Aggregate Index + 100 bps</i>			2.1	-12.1	--	--	--	-12.1	--	--	--	--	-5.7	Apr-21
Liquidity	1,524,746,733	14.9	1.1	-3.4	-0.1	1.3	--	-3.4	-0.2	3.5	4.9	1.8		
<i>Bloomberg US Govt/Credit 1-3 Yr. TR</i>			0.9	-3.7	-0.3	0.9	--	-3.7	-0.5	3.3	4.0	1.6		
<i>eV US Short Duration Fixed Inc Gross Rank</i>			48	51	62	50	--	51	40	77	34	24		
DFA Short Credit	343,235,798	3.4	1.6	-5.3	-1.0	0.7	--	-5.3	-0.4	2.9	5.2	1.2	0.9	Nov-16
<i>ICE BofA 1-5 Yrs US Corp & Govt TR</i>			1.2	-5.5	-0.7	0.9	--	-5.5	-0.9	4.6	5.1	1.4	0.9	Nov-16
<i>eV US Short Duration Fixed Inc Gross Rank</i>			10	91	99	97	--	91	64	90	21	93		
Insight Short Duration	559,011,052	5.5	1.1	-1.1	0.7	1.7	--	-1.1	0.1	3.2	4.7	1.7	1.6	Nov-16
<i>Bloomberg US Govt/Credit 1-3 Yr. TR</i>			0.9	-3.7	-0.3	0.9	--	-3.7	-0.5	3.3	4.0	1.6	0.9	Nov-16
<i>eV US Short Duration Fixed Inc Gross Rank</i>			52	4	9	15	--	4	25	86	45	38		
Sit Short Duration	622,499,883	6.1	0.9	-4.8	-0.3	1.3	--	-4.8	-0.3	4.6	4.9	2.5	1.3	Nov-16
<i>Bloomberg US Govt 1-3 Yr TR</i>			0.7	-3.8	-0.5	0.7	--	-3.8	-0.6	3.1	3.6	1.6	0.7	Nov-16
<i>eV US Short Duration Fixed Inc Gross Rank</i>			80	80	74	45	--	80	55	26	35	1		
Total Cash	107,482,318	1.1	1.3	2.4	1.3	1.8	1.6	2.4	0.4	1.3	3.3	1.7		
<i>91 Day T-Bills</i>			0.8	1.5	0.6	1.2	0.7	1.5	0.0	0.5	2.1	1.9		
Cash	106,907,199	1.0	1.3	2.2	1.3	1.8	1.7	2.2	0.4	1.3	3.4	1.7		
Northern Trust Transition	575,119	0.0	9.0	2,807.6	281.9	--	--	2,807.6	-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. \$135,445.27 in residual value is reflected in the Diversifying Fixed Income composite.

Total Fund Performance Summary (Net of Fees)

Period Ending: December 31, 2022

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Total Fund	10,223,398,127	100.0	4.1	-10.6	3.6	4.4	6.7	-10.6	13.9	9.2	14.6	-2.7		
Policy Index			4.5	-8.3	5.4	5.9	7.6	-8.3	15.3	10.8	14.6	-0.9		
Policy Index (Adjusted)			4.5	-8.3	4.7	5.2	7.1	-8.3	15.3	8.5	14.1	-1.5		
Total Fund ex Overlay & Cash	10,017,148,219	98.0	3.9	-10.1	4.0	4.7	6.9	-10.1	14.3	9.4	14.3	-2.4		
Policy Index			4.5	-8.3	5.4	5.9	7.6	-8.3	15.3	10.8	14.6	-0.9		
Policy Index (Adjusted)			4.5	-8.3	4.7	5.2	7.1	-8.3	15.3	8.5	14.1	-1.5		
Growth	7,722,497,517	75.5	5.2	-11.6	5.7	6.1	8.3	-11.6	19.2	12.0	18.3	-3.9		
Custom Growth Benchmark			5.5	-10.2	7.5	7.7	9.2	-10.2	21.6	13.8	19.3	-2.1		
Total Domestic Equity	1,658,713,573	16.2	9.1	-18.5	6.1	6.8	11.2	-18.5	20.3	21.8	26.1	-7.6		
Russell 3000			7.2	-19.2	7.1	8.8	12.1	-19.2	25.7	20.9	31.0	-5.2		
BlackRock Russell 1000 Index	871,082,993	8.5	7.2	-19.1	7.3	9.1	--	-19.1	26.5	20.9	31.4	-4.8	10.4	Apr-17
Russell 1000			7.2	-19.1	7.3	9.1	--	-19.1	26.5	21.0	31.4	-4.8	10.5	Apr-17
Boston Partners	399,005,510	3.9	12.6	-4.1	8.8	7.8	11.3	-4.1	31.0	2.6	23.8	-8.9	10.2	Jun-95
Russell 1000 Value			12.4	-7.5	6.0	6.7	10.3	-7.5	25.2	2.8	26.5	-8.3	9.1	Jun-95
Emerald Advisers	195,522,418	1.9	6.4	-24.2	3.2	4.9	11.3	-24.2	4.9	38.2	29.4	-10.7	11.4	Apr-03
Russell 2000 Growth			4.1	-26.4	0.6	3.5	9.2	-26.4	2.8	34.6	28.5	-9.3	9.8	Apr-03
Ceredex	193,019,137	1.9	14.0	-9.0	5.7	4.2	8.8	-9.0	27.7	1.7	17.7	-11.8	9.4	Nov-11
Russell 2000 Value			8.4	-14.5	4.7	4.1	8.5	-14.5	28.3	4.6	22.4	-12.9	9.3	Nov-11
Total International Equity	1,505,546,963	14.7	12.7	-18.6	0.3	1.2	4.4	-18.6	7.8	15.2	23.2	-14.7		
MSCI ACWI ex USA Gross			14.4	-15.6	0.5	1.4	4.3	-15.6	8.3	11.1	22.1	-13.8		
MSCI EAFE Gross			17.4	-14.0	1.3	2.0	5.2	-14.0	11.8	8.3	22.7	-13.4		
International Equity	843,243,833	8.2	13.6	-18.4	1.6	2.7	5.2	-18.4	8.6	18.5	26.5	-13.9		
MSCI ACWI ex USA Gross			14.4	-15.6	0.5	1.4	4.3	-15.6	8.3	11.1	22.1	-13.8		
Pyrford	436,308,732	4.3	15.1	-7.4	1.1	2.4	--	-7.4	7.1	4.2	21.6	-10.5	3.0	May-14
MSCI ACWI ex USA Value			15.7	-8.6	0.1	-0.1	--	-8.6	10.5	-0.8	15.7	-14.0	1.2	May-14
William Blair	406,935,101	4.0	12.0	-28.0	1.7	2.8	5.7	-28.0	10.1	32.8	31.5	-17.1	5.5	Oct-10
MSCI ACWI ex USA Growth			12.9	-23.1	-0.4	1.5	4.7	-23.1	5.1	22.2	27.3	-14.4	4.2	Oct-10
Emerging Markets Equity	662,303,130	6.5	11.6	-18.9	-1.4	-0.8	--	-18.9	7.0	10.7	18.7	-15.7		
MSCI Emerging Markets			9.7	-20.1	-2.7	-1.4	--	-20.1	-2.5	18.3	18.4	-14.6		
PIMCO RAE Emerging Markets	348,122,745	3.4	14.8	-10.1	2.1	1.2	--	-10.1	16.5	1.6	14.0	-12.6	3.6	Feb-17
MSCI Emerging Markets Value NR			9.8	-15.8	-2.6	-1.6	--	-15.8	4.0	5.5	12.0	-10.7	1.5	Feb-17
TT Emerging Markets	314,180,385	3.1	8.3	-26.8	-4.5	-2.6	--	-26.8	-0.9	20.0	24.0	-18.9	-0.4	Jul-17
MSCI Emerging Markets			9.7	-20.1	-2.7	-1.4	--	-20.1	-2.5	18.3	18.4	-14.6	0.4	Jul-17

Individual closed end funds are not shown in performance summary table. Jackson Square has a residual market value of \$83,514.15.

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2022

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Total Global Equity	957,701,783	9.4	9.2	-19.4	4.3	5.8	8.6	-19.4	13.2	24.4	27.9	-8.5		
<i>MSCI ACWI</i>			9.8	-18.4	4.0	5.2	8.0	-18.4	18.5	16.3	26.6	-9.4		
Artisan Partners	464,457,135	4.5	5.5	-30.1	3.9	6.9	10.4	-30.1	14.1	40.6	36.0	-8.6	10.3	Oct-12
<i>MSCI ACWI Growth NR USD</i>			5.3	-28.6	3.8	6.4	9.2	-28.6	17.1	33.6	32.7	-8.1	9.2	Oct-12
First Eagle	493,124,169	4.8	12.9	-6.3	4.2	4.5	6.7	-6.3	12.1	7.7	20.1	-8.3	6.7	Jan-11
<i>MSCI ACWI Value NR USD</i>			14.2	-7.5	3.3	3.5	6.4	-7.5	19.6	-0.3	20.6	-10.8	5.9	Jan-11
Private Credit	1,028,772,515	10.1	1.7	10.5	8.1	8.1	9.7	10.5	10.0	4.0	7.7	8.3		
Total High Yield	139,937,548	1.4	4.6	-10.9	-0.7	1.6	3.2	-10.9	4.9	4.7	14.7	-3.6		
<i>ICE BofAML High Yield Master II</i>			4.0	-11.2	-0.2	2.1	3.9	-11.2	5.4	6.2	14.4	-2.3		
Allianz Global Investors	139,937,548	1.4	4.6	-10.9	-0.7	1.6	3.2	-10.9	4.9	4.7	14.7	-3.6	5.6	Apr-00
<i>ICE BofAML High Yield Master II</i>			4.0	-11.2	-0.2	2.1	3.9	-11.2	5.4	6.2	14.4	-2.3	6.2	Apr-00
Total Real Estate	773,960,795	7.6	-1.7	-4.9	2.1	4.3	7.7	-4.9	19.2	-6.0	8.1	7.4		
<i>Real Estate Benchmark</i>			-1.8	-4.1	4.8	5.7	7.6	-4.1	19.3	0.6	7.5	6.8		
<i>NCREIF-ODCE</i>			-5.0	7.5	9.9	8.7	10.1	7.5	22.2	1.2	5.3	8.3		
<i>NCREIF Property Index</i>			-3.5	5.5	8.1	7.5	8.8	5.5	17.7	1.6	6.4	6.7		
Total Core RE	189,707,985	1.9	3.5	-25.1	1.6	4.8	7.2	-25.1	47.5	-5.2	27.5	-5.5		
Adelante	83,134,119	0.8	2.5	-27.2	0.6	4.2	6.9	-27.2	47.5	-5.2	27.5	-5.5	8.8	Sep-01
<i>Wilshire REIT</i>			4.0	-26.8	-0.5	3.4	6.3	-26.8	46.2	-7.9	25.8	-4.8	8.8	Sep-01
Invesco US Fundamental Beta	106,573,866	1.0	4.3	--	--	--	--	--	--	--	--	--	-15.0	Mar-22
<i>Wilshire REIT</i>			4.0	--	--	--	--	--	--	--	--	--	-18.6	Mar-22
Total Private Real Estate	584,252,810	5.7	-3.3	1.9	3.3	5.0	8.2	1.9	15.3	-6.1	6.2	8.8		
Private Equity	1,333,129,938	13.0	-2.3	-0.5	20.2	16.1	13.9	-0.5	60.4	8.7	8.4	12.1		
Risk Parity	324,734,402	3.2	3.1	-21.8	-2.2	--	--	-21.8	9.3	9.6	--	--		
<i>60% MSCI ACWI Net/40% Bloomberg Global Aggregate</i>			7.7	-17.3	0.8	--	--	-17.3	8.8	14.0	--	--		
AQR Global Risk Premium-EL	165,496,345	1.6	2.5	-16.6	-0.9	--	--	-16.6	10.3	5.8	--	--	3.6	Jan-19
<i>HFR Risk Parity Vol 10 Index</i>			3.1	-18.3	-3.3	--	--	-18.3	6.8	3.6	--	--	1.7	Jan-19
PanAgora Risk Parity Multi Asset	159,238,057	1.6	3.8	-26.3	-3.2	--	--	-26.3	8.3	13.6	--	--	0.7	Feb-19
<i>HFR Risk Parity Vol 10 Index</i>			3.1	-18.3	-3.3	--	--	-18.3	6.8	3.6	--	--	0.2	Feb-19

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

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2022

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Diversifying	769,903,968	7.5	-1.5	-5.7	-2.0	-0.3	0.0	-5.7	1.7	-1.7	6.8	-2.3		
<i>Custom Diversifying Benchmark</i>			2.1	-5.4	0.2	1.6	2.3	-5.4	1.6	4.7	6.1	1.4		
Diversifying Fixed Income	220,472,703	2.2	0.9	-13.5	-4.7	-1.7	0.1	-13.5	-1.0	1.2	8.3	-2.0		
<i>Bloomberg US Aggregate TR</i>			1.9	-13.0	-2.7	0.0	1.1	-13.0	-1.5	7.5	8.7	0.0		
AFL-CIO	220,337,258	2.2	0.9	-13.6	-3.1	-0.4	0.8	-13.6	-1.0	6.2	7.8	0.2	4.9	Jun-91
<i>Bloomberg US Aggregate TR</i>			1.9	-13.0	-2.7	0.0	1.1	-13.0	-1.5	7.5	8.7	0.0	4.9	Jun-91
Diversifying Multi-Asset	549,431,265	5.4	-2.5	-2.3	--	--	--	-2.3	2.4	--	--	--		
<i>Custom Diversifying Multi-Asset Benchmark</i>			2.1	-3.1	--	--	--	-3.1	4.1	--	--	--		
Acadian Multi-Asset Absolute Return Fund	254,025,032	2.5	-3.7	-0.6	--	--	--	-0.6	1.1	--	--	--	0.8	Aug-20
<i>FTSE 3-Month T-bill +5%</i>			2.1	6.6	--	--	--	6.6	5.0	--	--	--	5.7	Aug-20
Sit LLCAR	295,406,233	2.9	-1.5	-3.7	--	--	--	-3.7	--	--	--	--	0.2	Apr-21
<i>Bloomberg US Aggregate Index + 100 bps</i>			2.1	-12.1	--	--	--	-12.1	--	--	--	--	-5.7	Apr-21
Liquidity	1,524,746,733	14.9	1.1	-3.5	-0.2	1.2	--	-3.5	-0.3	3.4	4.8	1.7		
<i>Bloomberg US Govt/Credit 1-3 Yr. TR</i>			0.9	-3.7	-0.3	0.9	--	-3.7	-0.5	3.3	4.0	1.6		
DFA Short Credit	343,235,798	3.4	1.6	-5.4	-1.1	0.6	--	-5.4	-0.5	2.8	5.2	1.1	0.8	Nov-16
<i>ICE BofA 1-5 Yrs US Corp & Govt TR</i>			1.2	-5.5	-0.7	0.9	--	-5.5	-0.9	4.6	5.1	1.4	0.9	Nov-16
Insight Short Duration	559,011,052	5.5	1.1	-1.2	0.6	1.6	--	-1.2	0.0	3.1	4.6	1.7	1.6	Nov-16
<i>Bloomberg US Govt/Credit 1-3 Yr. TR</i>			0.9	-3.7	-0.3	0.9	--	-3.7	-0.5	3.3	4.0	1.6	0.9	Nov-16
Sit Short Duration	622,499,883	6.1	0.9	-5.0	-0.4	1.1	--	-5.0	-0.5	4.4	4.7	2.3	1.1	Nov-16
<i>Bloomberg US Govt 1-3 Yr TR</i>			0.7	-3.8	-0.5	0.7	--	-3.8	-0.6	3.1	3.6	1.6	0.7	Nov-16
Total Cash	107,482,318	1.1	1.3	2.4	1.3	1.8	1.6	2.4	0.4	1.3	3.3	1.7		
91 Day T-Bills			0.8	1.5	0.6	1.2	0.7	1.5	0.0	0.5	2.1	1.9		
Cash	106,907,199	1.0	1.3	2.2	1.3	1.8	1.7	2.2	0.4	1.3	3.4	1.7		
Northern Trust Transition	575,119	0.0	9.0	2,807.6	281.9	--	--	2,807.6	-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. \$135,445.27 in residual value is reflected in the Diversifying Fixed Income composite.

Total Fund
Closed End Funds - Investment Summary

Period Ending: December 31, 2022

StepStone Group Analysis (*)												
Closing Date	Manager Name/Fund Name	Estimated Market Value as of 9/30/2022 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	\$135,098,421	\$210,000,000	0%	\$194,765,257	\$0	\$4,242,724	\$264,764,008	\$15,234,743	1.36	2.05	9/30/2022
1/15/2009	Adams Street Partners II	\$3,657,493	\$30,000,000	0%	\$28,365,000	\$0	\$262,174	\$45,385,528	\$1,635,000	1.60	1.73	9/30/2022
9/21/2012	Adams Street Partners - Fund 5	\$11,344,803	\$40,000,000	0%	\$30,845,875	\$0	\$0	\$30,186,904	\$9,154,125	0.98	1.35	9/30/2022
1/18/1996	Adams Street Partners - BPF	\$494,603	\$59,565,614	0%	\$57,517,409	\$0	\$85,897	\$103,896,144	\$2,048,205	1.81	1.81	9/30/2022
3/31/2016	Adams Street Venture Innovation	\$182,872,622	\$75,000,000	0%	\$66,037,500	\$0	\$0	\$30,786,690	\$8,962,500	0.47	3.24	9/30/2022
5/18/2018	AE Industrial Partners Fund II, LP	\$41,247,713	\$35,000,000	0%	\$32,397,781	\$0	\$0	\$9,140,470	\$11,133,248	0.28	1.56	9/30/2022
11/27/2013	Aether Real Assets III	\$18,408,257	\$25,000,000	1%	\$25,856,373	\$174,157	\$961,461	\$6,638,065	\$1,416,913	0.26	0.97	9/30/2022
11/30/2013	Aether Real Assets III Surplus	\$42,985,151	\$50,000,000	0%	\$52,464,173	\$219,755	\$1,571,296	\$13,469,751	\$1,150,292	0.26	1.08	9/30/2022
1/30/2016	Aether Real Assets IV	\$58,082,394	\$50,000,000	1%	\$50,036,488	\$281,149	\$1,328,439	\$5,392,364	\$4,516,236	0.11	1.27	9/30/2022
4/30/2004	Bay Area Equity Fund I ⁴	4,533	10,000,000	0%	10,000,000	0	0	37,018,019	0	3.70	3.70	9/30/2022
6/29/2009	Bay Area Equity Fund II ⁴	20,002,593	10,000,000	0%	10,000,000	0	0	3,684,910	0	0.37	2.37	9/30/2022
6/30/2013	Commonfund	\$38,323,141	\$50,000,000	1%	\$47,524,993	\$250,000	\$5,853,569	\$29,371,587	\$2,475,007	0.62	1.42	9/30/2022
7/15/2005	EIF US Power Fund II ⁴	\$37,627	\$50,000,000	0%	\$65,029,556	\$0	\$0	\$76,092,655	\$0	1.17	1.17	9/30/2022
5/31/2007	EIF US Power Fund III ⁴	3,114,379	65,000,000	0%	\$71,409,097	\$0	\$137,203	\$92,933,824	\$0	1.30	1.35	9/30/2022
11/28/2011	EIF US Power Fund IV	24,741,104	50,000,000	0%	\$64,917,547	\$0	\$845,564	\$46,284,331	\$4	0.71	1.09	9/30/2022
11/28/2016	EIF US Power Fund V	\$32,691,643	\$50,000,000	0%	\$69,328,438	\$0	\$2,497,927	\$59,851,077	\$6,194,129	0.86	1.33	9/30/2022
2/21/2019	Genstar Capital Partners IX, L.P.	\$64,468,236	\$50,000,000	1%	\$47,421,994	\$391,686	\$63,008	\$20,982,839	\$7,684,319	0.44	1.80	9/30/2022
4/1/2021	Genstar Capital Partners X, L.P.	\$21,937,398	\$42,500,000	8%	\$21,272,011	\$3,241,563	\$0	\$0	\$21,227,989	0.00	1.03	9/30/2022
10/27/2020	GTCR Fund XIII, L.P.	\$24,360,986	\$50,000,000	14%	\$25,572,753	\$7,247,753	\$3,637,753	\$5,446,907	\$24,427,247	0.21	1.17	9/30/2022
5/10/2021	Hellman & Friedman Capital Partners X, L.P.	36,794,136	75,000,000	0%	\$40,882,181	\$0	\$0	\$0	\$34,117,819	0.00	0.90	9/30/2022
11/18/2009	Oaktree PIF 2009	\$410,257	\$40,000,000	0%	\$34,812,560	\$0	\$0	\$47,032,470	\$6,308,961	1.35	1.36	12/31/2022
5/2/2013	Ocean Avenue Fund II	\$29,593,786	\$30,000,000	0%	\$27,000,000	\$0	\$0	\$43,184,220	\$3,000,000	1.60	2.70	9/30/2022
4/15/2016	Ocean Avenue Fund III	\$50,758,432	\$50,000,000	0%	\$46,500,000	\$0	\$1,729,876	\$54,209,752	\$3,500,000	1.17	2.26	9/30/2022
11/30/2007	Paladin III	\$7,105,218	\$25,000,000	0%	\$34,836,639	\$0	\$0	\$71,182,958	\$387,482	2.04	2.25	9/30/2022
8/22/2011	Pathway 6	\$31,985,819	\$40,000,000	0%	\$39,401,701	\$54,000	\$859,383	\$49,683,560	\$3,693,746	1.26	2.07	9/30/2022
7/10/2013	Pathway 7	\$68,863,336	\$70,000,000	0%	\$69,277,586	\$126,000	\$1,663,908	\$80,161,813	\$5,253,584	1.16	2.15	9/30/2022
11/23/2015	Pathway 8	\$71,497,550	\$50,000,000	1%	\$47,951,625	\$337,985	\$794,780	\$31,763,975	\$4,006,022	0.66	2.15	9/30/2022
1/19/1999	Pathway	\$3,923,720	\$125,000,000	0%	\$126,122,772	\$75,500	\$362,346	\$188,445,935	\$10,503,340	1.49	1.53	9/30/2022
7/31/2009	Pathway 2008	\$14,179,674	\$30,000,000	0%	\$30,101,981	\$26,560	\$477,473	\$50,325,860	\$2,717,846	1.67	2.14	6/30/2022
6/3/2014	Siguler Guff CCCERA Opportunities	\$145,130,998	\$200,000,000	1%	\$175,083,208	\$1,000,000	\$3,611,121	\$202,362,111	\$28,597,500	1.16	1.98	9/30/2022
5/18/2018	Siris Partners IV, L.P.	\$39,886,406	\$35,000,000	2%	\$29,431,510	\$754,625	\$35,075	\$4,165,217	\$8,126,210	0.14	1.50	9/30/2022
5/27/2021	TA XIV-A, L.P.	\$26,789,323	\$50,000,000	20%	\$29,000,000	\$10,000,000	\$0	\$0	\$21,000,000	0.00	0.92	9/30/2022
6/28/2019	TPG Healthcare Partners, L.P.	\$19,619,197	\$24,000,000	8%	\$20,062,184	\$1,914,025	\$0	\$6,221,617	\$6,689,553	0.31	1.29	9/30/2022
9/17/2021	Trident IX, L.P.	\$8,574,215	\$50,000,000	10%	\$10,057,320	\$4,826,395	\$0	\$0	\$39,942,680	-	-	9/30/2022
5/24/2019	Trident VIII, L.P.	\$46,300,891	\$40,000,000	2%	\$37,584,994	\$699,013	\$334,755	\$2,942,939	\$5,062,283	0.08	1.31	9/30/2022
12/8/2015	Wastewater Opportunity Fund	\$7,843,885	\$25,000,000	8%	\$31,512,759	\$2,102,283	\$13,753,482	\$26,646,664	\$521,541	0.85	1.09	9/30/2022
Total Private Equity and Venture Capital		\$1,333,129,938	\$1,961,065,614	92%	\$1,800,381,264	\$33,722,447	\$45,109,214	\$1,739,655,165	\$300,688,524	0.97	1.71	

% of Portfolio (Market Value) 13.0%

* 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 - IRR Summary

Period Ending: December 31, 2022

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	12.4%	-	-	12.1%	9/30/2022
Adams Street Partners II	12/31/2008	17.7%	-	-	14.0%	9/30/2022
Adams Street Partners - Fund 5	12/31/2008	9.5%	-	-	6.5%	9/30/2022
Adams Street Partners Venture	1/18/1996	41.8%	45.4%	-	43.0%	9/30/2022
Adams Street Partners - BPF	3/31/2016	14.3%	-	-	11.6%	9/30/2022
AE Industrial Partners Fund II, LP	5/18/2018	32.0%	-	30.2%	-	9/30/2022
Aether Real Assets III	11/27/2013	1.0%	-	-0.6%	-	9/30/2022
Aether Real Assets III Surplus	11/30/2013	2.4%	-	1.4%	-	9/30/2022
Aether Real Assets IV	1/30/2016	8.6%	-	6.8%	-	9/30/2022
Bay Area Equity Fund I ⁹	11/26/2003	31.3%	31.3%	22.9%	22.9%	9/30/2022
Bay Area Equity Fund II ⁹	11/26/2003	14.3%	14.3%	9.8%	9.8%	9/30/2022
CommonFund	6/30/2013	-	-	-	8.0%	6/30/2022
Energy Investor Fund II ⁹	7/15/2005	5.7%	5.3%	2.9%	2.6%	6/30/2022
Energy Investor Fund III ⁹	5/31/2007	6.8%	6.7%	4.3%	4.3%	6/30/2022
Energy Investor Fund IV	8/31/2010	4.3%	4.4%	1.2%	1.1%	6/30/2022
Energy Investor Fund V	11/28/2016	15.8%	13.6%	12.2%	10.0%	6/30/2022
Genstar Capital Partners IX, L.P.	2/21/2019	40.8%	-	39.9%	-	9/30/2022
Oaktree PIF 2009	2/28/2010	6.8%	-	6.6%	-	12/31/2022
Ocean Avenue II	8/15/2013	-	-	20.9%	-	9/30/2022
Ocean Avenue III	4/15/2016	-	-	27.2%	-	9/30/2022
Paladin III	11/30/2007	20.4%	-	-	-	6/30/2022
Pathway 6	8/22/2011	17.0%	17.0%	14.9%	14.9%	9/30/2022
Benchmark ⁴		12.7%	-	-	-	9/30/2022
Pathway 7	7/10/2013	19.3%	19.3%	17.3%	17.3%	9/30/2022
Benchmark ⁵		13.0%	-	-	-	9/30/2022
Pathway 8	11/23/2015	22.5%	23.4%	21.2%	21.5%	9/30/2022
Benchmark ⁶		15.8%	-	-	-	9/30/2022
Pathway Private Equity Fund	1/19/1999	10.2%	10.2%	8.4%	8.4%	9/30/2022
Benchmark ⁷		-0.5%	-	-	-	9/30/2022
Pathway Private Equity Fund 2008	7/31/2009	16.8%	16.8%	14.5%	14.5%	9/30/2022
Benchmark ⁸		8.5%	-	-	-	9/30/2022
Siguler Guff CCCERA Opportunities	6/3/2014	19.5%	20.3%	19.0%	17.8%	9/30/2022
Siguler Guff Secondary Opportunities ⁹	8/31/2013	55.3%	118.4%	49.5%	69.0%	9/30/2020
Siris Partners IV, L.P.	5/18/2018	25.0%	25.0%	21.0%	21.0%	9/30/2022
TPG Healthcare Partners, L.P.	6/28/2019	35.0%	-	-	31.0%	9/30/2022
Trident VIII, L.P. ¹	5/24/2019	25.2%	-	20.1%	-	9/30/2022
Wastewater Opportunity Fund	12/8/2015	7.0%	-	3.9%	-	9/30/2022

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, 2021.

⁵Private IQ global all private equity median pooled return for vintage years 2012-2016, as of September 30, 2021.

⁶Private IQ global all private equity median pooled return for vintage years 2015-2018, as of September 30, 2021.

⁷Private IQ global all private equity median pooled return for vintage years 1999-2011, as of September 30, 2021.

⁸Private IQ global all private equity median pooled return for vintage years 2008-2014, as of September 30, 2021.

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

Total Fund
Closed End Funds - Investment Summary

Period Ending: December 31, 2022

StepStone Group Analysis (*)												
Closing Date	Manager Name/Fund Name	Estimated Market Value as of 12/31/2022 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	\$1,854,643	\$16,500,000	0%	\$18,750,000	\$0	\$0	\$20,410,032	\$2,319,783	1.09	1.19	9/30/2022
12/18/2017	Stepstone CC Opportunities Fund	\$1,015,672,419	\$1,170,000,000	8%	\$960,385,255	\$94,051,061	\$27,315,996	\$165,082,795	\$301,974,445	0.17	1.23	9/30/2022
8/1/2012	Torchlight IV	\$5,916,812	\$60,000,000	0%	\$84,866,971	\$0	\$2,115,017	\$108,261,644	\$0		1.35	12/31/2022
3/12/2015	Torchlight V	\$7,631,737	\$75,000,000	0%	\$60,000,000	\$0	\$662,261	\$71,460,214	\$15,000,000		1.32	9/30/2022
Total Private Credit		\$1,031,075,611										
% of Portfolio (Market Value)		10.1%										

*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

Period Ending: December 31, 2022

Verus Internal Analysis												
Inception Date	Manager Name/Fund Name	Estimated Market Value as of 12/31/2022 ¹	Total Commitment	Total % Called	Capital Called	Current Qtr. Capital Called	Current Qtr. Distributions	Total Distributions ⁸	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	\$12,654,479	\$80,000,000	94%	\$75,401,855	\$0	\$0	\$101,711,550	\$12,334,302	1.35	1.52	9/30/2022
12/8/2014	Angelo Gordon Realty Fund IX	\$31,461,369	\$65,000,000	93%	\$60,125,000	\$0	\$0	\$53,950,001	\$7,572,500	0.90	1.42	9/30/2022
6/23/2005	DLJ RECP III	\$11,711,727	\$75,000,000	134%	\$100,709,313 ⁴	\$0	\$3,645,944	\$69,364,915	\$4,031,338	0.69	0.81	9/30/2022
2/11/2008	DLJ RECP IV	\$52,153,148	\$100,000,000	130%	\$130,117,329 ⁵	\$0	\$0	\$99,841,735	\$1,876,084	0.77	1.17	9/30/2022
7/1/2014	DLJ RECP V	\$30,272,207	\$75,000,000	132%	\$98,684,517 ⁶	\$0	\$0	\$97,880,214	\$15,567,682	0.99	1.30	9/30/2022
3/19/2019	DLJ RECP VI	\$22,181,968	\$50,000,000	60%	\$30,103,770	\$0	\$0	\$13,276,083	\$22,649,572	0.44	1.18	9/30/2022
6/30/2014	Invesco Real Estate IV ⁴	\$976,002	\$35,000,000	87%	\$30,546,401	\$0	\$864,144	\$39,777,325	\$4,453,599	1.30	1.33	12/31/2022
2/20/2019	Invesco Real Estate V	\$70,918,241	\$75,000,000	79%	\$58,980,934	\$0	\$0	\$9,319,462	\$16,019,066	0.16	1.36	12/31/2022
9/27/2022	Invesco Real Estate VI	\$34,420,390	\$100,000,000	33%	\$33,126,592	\$0	\$0	\$2,230,131	\$66,873,408	0.07	1.11	N/A
7/16/2013	LaSalle Income & Growth VI ⁴	\$14,586,380	\$75,000,000	95%	\$71,428,571	\$0	\$0	\$84,535,301	\$0	1.18	1.39	9/30/2022
2/28/2017	LaSalle Income & Growth VII	\$53,179,316	\$75,000,000	110%	\$82,873,358	\$2,936,724	\$0	\$61,623,058	\$2,922,629	0.74	1.39	9/30/2022
7/3/2013	Long Wharf Fund IV ⁴	\$1,259,888	\$25,000,000	100%	\$25,000,000	\$0	\$49,319	\$34,948,087	\$0	1.40	1.45	12/31/2022
9/30/2016	Long Wharf Fund V ⁴	\$30,826,546	\$50,000,000	100%	\$50,000,000	\$0	\$0	\$37,244,373	\$0	0.74	1.36	12/31/2022
6/27/2019	Long Wharf Fund VI	\$29,861,210	\$50,000,000	88%	\$44,063,428	\$8,810,704	\$6,045,589	\$24,876,113	\$5,936,572	0.56	1.24	12/31/2022
12/31/2011	Oaktree REOF V ⁴	\$1,020,660	\$50,000,000	101%	\$50,315,673	\$0	\$0	\$78,780,733	\$5,000,000 ⁹	1.57	1.59	12/31/2022
9/30/2013	Oaktree REOF VI ⁴	\$23,764,467	\$80,000,000	100%	\$80,000,000	\$0	\$0	\$84,010,175	\$18,400,000 ⁹	1.05	1.35	12/31/2022
4/1/2015	Oaktree REOF VII	\$47,247,708	\$65,000,000	100%	\$65,000,000	\$0	\$0	\$42,829,688	\$18,915,000 ⁹	0.66	1.39	12/31/2022
11/10/2013	Paulson Real Estate Fund II ⁴	\$15,348,670	\$20,000,000	97%	\$19,345,623	\$0	\$0	\$24,069,538	\$654,377	1.24	2.04	9/30/2022
4/28/2022	PCCP IX	\$39,256,049	\$75,000,000	61%	\$45,926,564	\$5,625,000	\$0	\$0	\$29,073,436	0.00	0.85	9/30/2022
1/25/2012	Siguler Guff DREOF	\$17,896,774	\$75,000,000	93%	\$69,375,000	\$0	\$1,465,883	\$105,236,994	\$5,625,000	1.52	1.77	9/30/2022
8/31/2013	Siguler Guff DREOF II	\$30,246,004	\$70,000,000	89%	\$61,985,000	\$0	\$2,299,191	\$57,990,977	\$8,015,000	0.94	1.42	9/30/2022
1/27/2016	Siguler Guff DREOF II Co-Inv	\$12,566,248	\$25,000,000	82%	\$20,537,862	\$0	\$0	\$13,871,261	\$4,462,138	0.68	1.29	9/30/2022
Total Closed End Real Estate		\$583,809,451	\$1,450,000,000	94%	\$1,355,971,677	\$17,372,428	\$14,370,070	\$1,212,421,822	\$252,995,280	0.89	1.32	
% of Portfolio (Market Value)		5.7%										

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 recallable distributions

⁶Remianing commitment includes recallable distributions

Total Fund
Closed End Funds - IRR Summary

Period Ending: December 31, 2022

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	-	-	-	6.9%	9/30/2022
Stepstone CC Opportunities Fund	2/2/2018	-	10.0%	-	9.1%	9/30/2022
Torchlight IV	8/1/2012	11.5%	12.0%	9.3%	10.0%	9/30/2022
Torchlight V	3/12/2015	14.9%	14.9%	10.5%	10.5%	9/30/2022
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	-	-	-	12.6%	9/30/2022
Angelo Gordon IX	12/8/2014	-	-	-	8.5%	9/30/2022
DLJ RECP III	6/23/2005	-1.0%	-1.0%	-3.0%	-3.0%	9/30/2022
DLJ RECP IV	2/11/2008	5.0%	5.0%	2.0%	2.0%	9/30/2022
DLJ RECP V	7/1/2014	16.0%	16.0%	9.0%	9.0%	9/30/2022
DLJ RECP VI ¹	3/19/2019	7.0%	7.0%	1.0%	2.0%	9/30/2022
Hearthstone II ⁴	6/17/1998	-	30.3%	-	30.3%	3/31/2020
Invesco Fund III ⁴	6/30/2013	16.6%	-	13.6%	-	12/31/2020
Invesco Fund IV ⁴	6/30/2014	13.8%	-	10.8%	-	9/30/2022
Invesco Fund V	2/20/2019	21.4%	-	15.4%	-	9/30/2022
Invesco Fund VI	9/27/2022	-	-	-	-	N/A
LaSalle Income & Growth VI ⁴	7/16/2013	11.0%	11.0%	9.0%	9.0%	12/31/2022
LaSalle Income & Growth VII	2/28/2017	11.4%	11.4%	9.6%	9.6%	12/31/2022
Long Wharf IV ⁴	7/3/2013	11.4%	11.9%	8.7%	9.1%	12/31/2022
Long Wharf V ⁴	9/30/2016	16.1%	15.5%	11.7%	11.6%	12/31/2022
Long Wharf VI	6/27/2019	39.7%	44.2%	24.8%	27.1%	12/31/2022
Oaktree REOF V ⁴	12/31/2011	16.6%	-	12.3%	-	12/31/2022
Oaktree REOF VI ⁴	9/30/2013	11.1%	-	7.3%	-	12/31/2022
Oaktree REOF VII	4/1/2015	21.4%	-	14.1%	-	12/31/2022
Paulson ⁴	11/10/2013	18.0%	-	12.0%	-	12/31/2021
PCCP IX	5/27/2021	22.4%	-	24.8%	-	9/30/2022
Siguler Guff I	1/25/2012	12.7%	15.4%	11.2%	12.4%	9/30/2022
Siguler Guff II	8/31/2013	10.3%	10.4%	9.0%	8.3%	9/30/2022
Siguler Guff DREOF II Co-Inv	1/27/2016	6.9%	7.1%	5.9%	569.0%	9/30/2022

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
Performance Analysis - 3 Years (Net of Fees)

Period Ending: December 31, 2022

3 Years

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
BlackRock Russell 1000 Index	7.34%	-0.01%	21.62%	-0.01%	1.00	0.01%	1.00	0.31	-0.84	99.95%	100.00%
Boston Partners	8.83%	2.87%	22.56%	2.66%	1.04	3.23%	0.98	0.36	0.89	108.08%	97.38%
Emerald Advisers	3.18%	2.53%	25.72%	2.56%	0.95	5.69%	0.95	0.10	0.44	104.32%	97.37%
Ceredex	5.74%	1.04%	25.02%	1.63%	0.87	7.32%	0.93	0.20	0.14	81.90%	90.27%
Pyrford	1.13%	1.07%	16.68%	1.08%	0.74	7.65%	0.90	0.03	0.14	75.66%	84.33%
William Blair	1.69%	2.08%	21.79%	2.12%	1.09	6.13%	0.93	0.05	0.34	130.49%	107.22%
PIMCO RAE Emerging Markets	2.05%	4.67%	23.71%	4.93%	1.10	7.13%	0.92	0.06	0.66	127.15%	99.06%
TT Emerging Markets	-4.51%	-1.82%	24.13%	-1.44%	1.14	6.50%	0.94	-0.21	-0.28	127.48%	113.60%
Artisan Partners	3.89%	0.14%	21.68%	0.27%	0.97	5.15%	0.94	0.15	0.03	91.39%	95.61%
First Eagle	4.19%	0.89%	15.82%	1.71%	0.75	6.26%	0.95	0.22	0.14	76.18%	83.67%
Allianz Global Investors	-0.72%	-0.49%	10.44%	-0.51%	0.92	1.95%	0.97	-0.13	-0.25	89.32%	95.78%
Adelante	0.63%	1.11%	22.23%	1.09%	0.95	1.82%	1.00	0.00	0.61	97.70%	97.07%
AQR Global Risk Premium-EL	-0.90%	2.38%	10.96%	2.12%	0.92	2.25%	0.97	-0.14	1.06	99.10%	88.85%
PanAgora Risk Parity Multi Asset	-3.23%	0.06%	15.52%	1.03%	1.29	4.77%	0.95	-0.25	0.01	143.36%	118.50%
AFL-CIO	-3.15%	-0.43%	5.44%	-0.68%	0.91	1.21%	0.96	-0.70	-0.36	80.14%	93.04%
DFA Short Credit	-1.10%	-0.43%	2.89%	-0.41%	1.03	1.32%	0.79	-0.60	-0.32	88.37%	103.32%
Insight Short Duration	0.65%	0.97%	2.17%	0.87%	0.69	1.89%	0.30	0.00	0.51	93.79%	53.01%
Sit Short Duration	-0.42%	0.04%	2.70%	0.21%	1.37	1.36%	0.80	-0.39	0.03	163.35%	144.03%

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

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

Period Ending: December 31, 2022

	5 Years											
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio	
BlackRock Russell 1000 Index	9.11%	-0.02%	19.04%	-0.02%	1.00	0.02%	1.00	0.42	-1.37	99.89%	100.00%	
Boston Partners	7.77%	1.10%	19.77%	0.86%	1.04	3.03%	0.98	0.33	0.36	105.93%	99.65%	
Emerald Advisers	4.88%	1.38%	23.70%	1.51%	0.96	5.49%	0.95	0.16	0.25	102.47%	98.63%	
Ceredex	4.18%	0.05%	22.41%	0.49%	0.89	6.39%	0.93	0.13	0.01	81.55%	94.86%	
Pyrford	2.39%	2.44%	14.55%	2.43%	0.74	6.71%	0.90	0.08	0.36	71.67%	82.80%	
William Blair	2.76%	1.27%	19.02%	1.16%	1.08	5.02%	0.94	0.08	0.25	124.65%	104.51%	
PIMCO RAE Emerging Markets	1.16%	2.75%	21.00%	2.88%	1.08	5.77%	0.93	0.00	0.48	121.23%	99.91%	
TT Emerging Markets	-2.63%	-1.24%	21.50%	-1.09%	1.11	5.63%	0.94	-0.18	-0.22	125.63%	108.03%	
Artisan Partners	6.86%	0.49%	19.14%	0.65%	0.97	4.32%	0.95	0.30	0.11	94.63%	96.98%	
First Eagle	4.48%	1.02%	13.75%	1.90%	0.75	5.59%	0.94	0.24	0.18	68.32%	82.36%	
Allianz Global Investors	1.60%	-0.52%	8.70%	-0.37%	0.93	1.62%	0.97	0.05	-0.32	91.98%	98.30%	
Adelante	4.19%	0.84%	19.18%	1.00%	0.95	1.75%	0.99	0.16	0.48	95.68%	97.00%	
AFL-CIO	-0.39%	-0.41%	4.78%	-0.41%	0.92	1.03%	0.96	-0.33	-0.40	83.79%	93.26%	
DFA Short Credit	0.56%	-0.31%	2.45%	-0.30%	0.99	1.08%	0.81	-0.26	-0.29	88.95%	99.12%	
Insight Short Duration	1.63%	0.71%	1.78%	0.99%	0.70	1.49%	0.37	0.25	0.48	93.85%	44.17%	
Sit Short Duration	1.13%	0.39%	2.53%	0.05%	1.45	1.27%	0.83	-0.02	0.30	164.81%	159.20%	

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

Total Fund Investment Fund Fee Analysis

Period Ending: December 31, 2022

Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
BlackRock Russell 1000 Index	Growth	0.03% of Assets	\$871,082,993	\$261,325	0.03%
Boston Partners	Growth	0.50% of First 25.0 Mil, 0.30% Thereafter	\$399,005,510	\$1,247,017	0.31%
Emerald Advisers	Growth	0.75% of First 10.0 Mil, 0.60% Thereafter	\$195,522,418	\$1,188,135	0.61%
Ceredex	Growth	0.85% of First 10.0 Mil, 0.68% of Next 40.0 Mil, 0.51% Thereafter	\$193,019,137	\$1,086,398	0.56%
Pyrford	Growth	0.70% of First 50.0 Mil, 0.50% of Next 50.0 Mil, 0.35% Thereafter	\$436,308,732	\$1,777,081	0.41%
William Blair	Growth	0.80% of First 20.0 Mil, 0.60% of Next 30.0 Mil, 0.50% of Next 50.0 Mil, 0.45% of Next 50.0 Mil, 0.40% of Next 50.0 Mil, 0.30% Thereafter	\$406,935,101	\$1,635,805	0.40%
PIMCO RAE Emerging Markets	Growth	0.75% of First 50.0 Mil, 0.68% of Next 50.0 Mil, 0.50% of Next 100.0 Mil, 0.45% Thereafter	\$348,122,745	\$1,879,052	0.54%
TT Emerging Markets	Growth	0.70% of First 100.0 Mil, 0.65% of Next 100.0 Mil, 0.60% Thereafter	\$314,180,385	\$2,035,082	0.65%
Artisan Partners	Growth	0.75% of Assets	\$464,457,135	\$3,483,429	0.75%
First Eagle	Growth	0.75% of Assets	\$493,124,169	\$3,698,431	0.75%
Allianz Global Investors	Growth	0.50% of First 50.0 Mil, 0.40% of Next 50.0 Mil, 0.35% Thereafter	\$139,937,548	\$589,781	0.42%
Invesco US Fundamental Beta	Growth	0.15% of Assets	\$106,573,866	\$159,861	0.15%
AQR Global Risk Premium-EL	Growth	0.38% of Assets	\$165,496,345	\$628,886	0.38%

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

Total Fund Investment Fund Fee Analysis

Period Ending: December 31, 2022

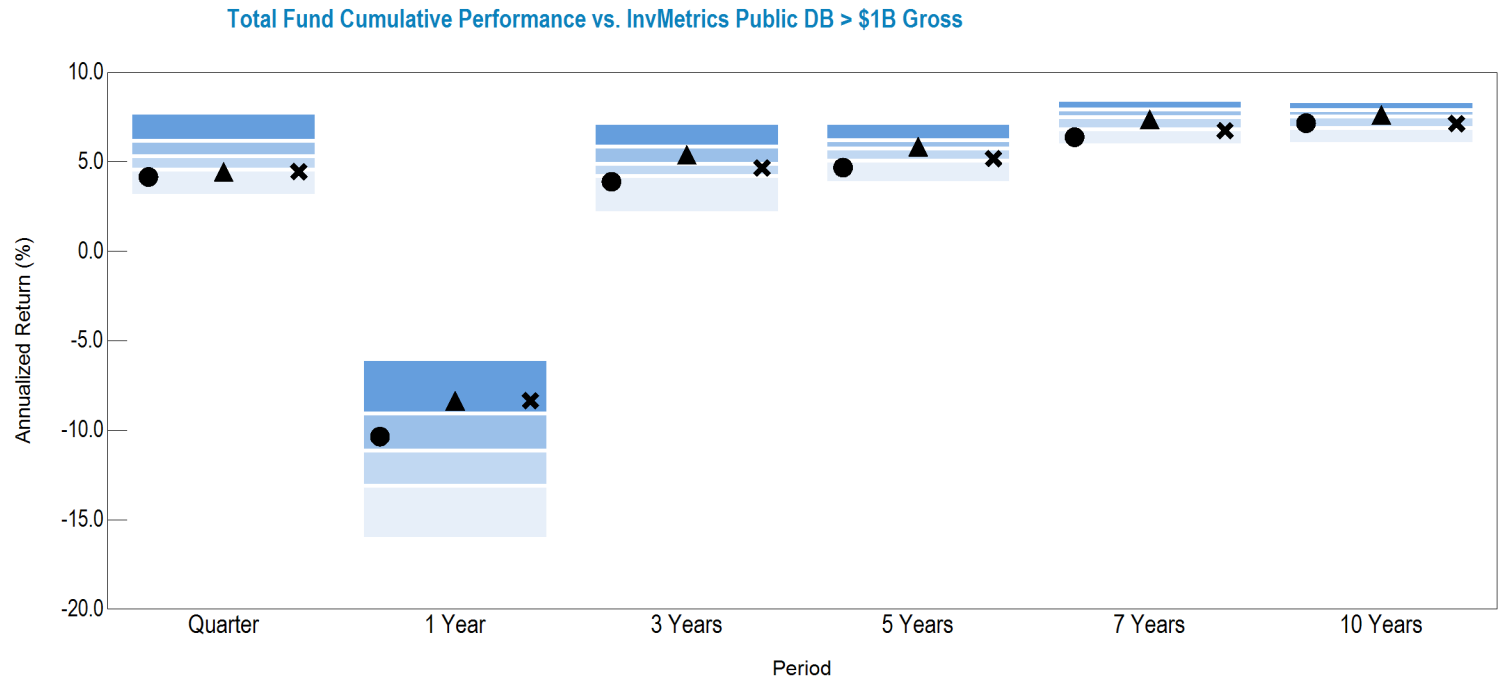
Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
PanAgora Risk Parity Multi Asset	Growth	0.35% of Assets	\$159,238,057	\$557,333	0.35%
AFL-CIO	Diversifying	0.32% of Assets	\$220,337,258	\$705,079	0.32%
Acadian Multi-Asset Absolute Return Fund	Diversifying	0.50% of Assets	\$254,025,032	\$1,270,125	0.50%
Sit LLCAR	Diversifying	0.39% of First 200.0 Mil, 0.35% Thereafter	\$295,406,233	\$1,113,922	0.38%
DFA Short Credit	Liquidity	0.20% of First 25.0 Mil, 0.10% Thereafter	\$343,235,798	\$368,236	0.11%
Insight Short Duration	Liquidity	0.06% of First 500.0 Mil, 0.05% of Next 500.0 Mil, 0.04% Thereafter	\$559,011,052	\$329,506	0.06%
Sit Short Duration	Liquidity	0.15% of Assets	\$622,499,883	\$933,750	0.15%

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

Total Fund

Peer Universe Comparison: Cumulative Performance (Gross of Fees)

Period Ending: December 31, 2022



	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	7.7	-6.0	7.2	7.2	8.4	8.4						
25th Percentile	6.2	-9.0	5.9	6.2	7.9	7.9						
Median	5.3	-11.1	4.9	5.8	7.5	7.6						
75th Percentile	4.6	-13.1	4.2	5.1	6.8	6.9						
95th Percentile	3.1	-16.1	2.2	3.8	5.9	6.0						
# of Portfolios	75	75	73	73	73	68						
● Total Fund	4.2	(87)	-10.4	(42)	3.9	(81)	4.7	(83)	6.4	(89)	7.2	(70)
▲ Policy Index	4.5	(79)	-8.3	(20)	5.4	(38)	5.9	(44)	7.4	(55)	7.6	(46)
✕ Policy Index (Adjusted)	4.5	(79)	-8.3	(20)	4.7	(57)	5.2	(67)	6.7	(81)	7.1	(71)

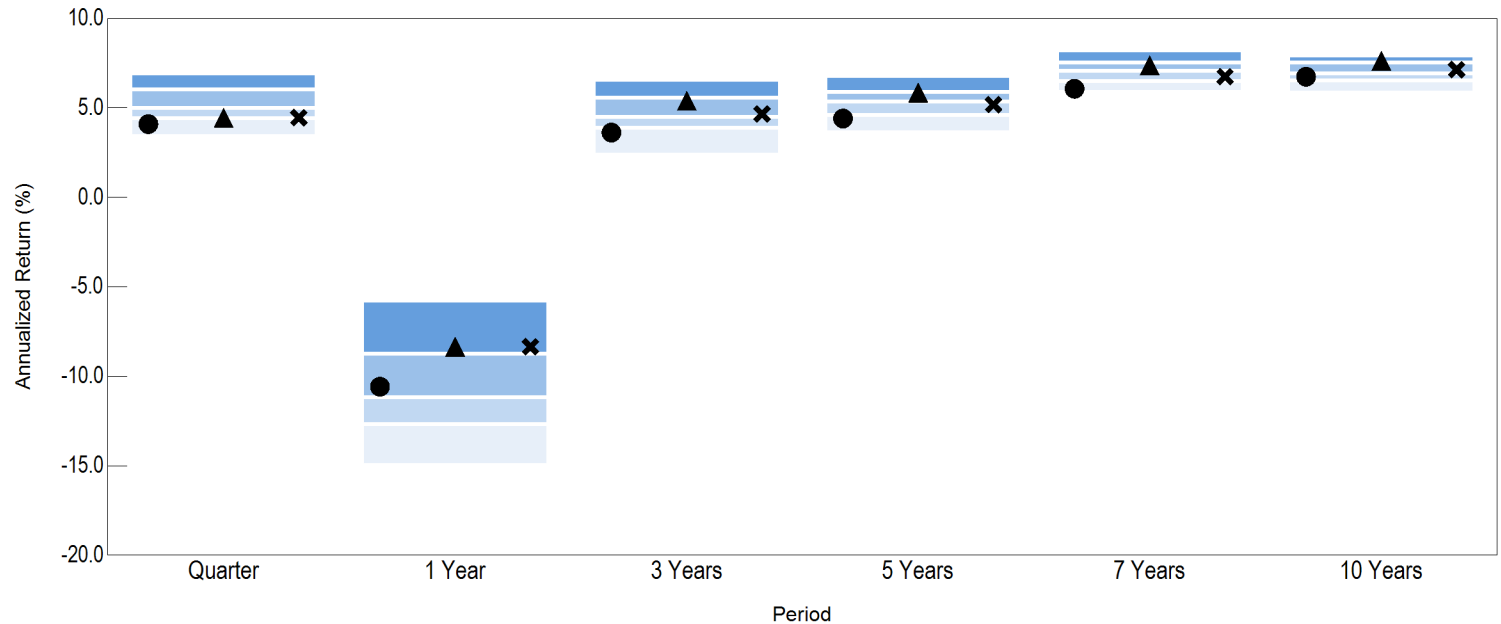
Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

Total Fund

Peer Universe Comparison: Cumulative Performance (Net of Fees)

Period Ending: December 31, 2022

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



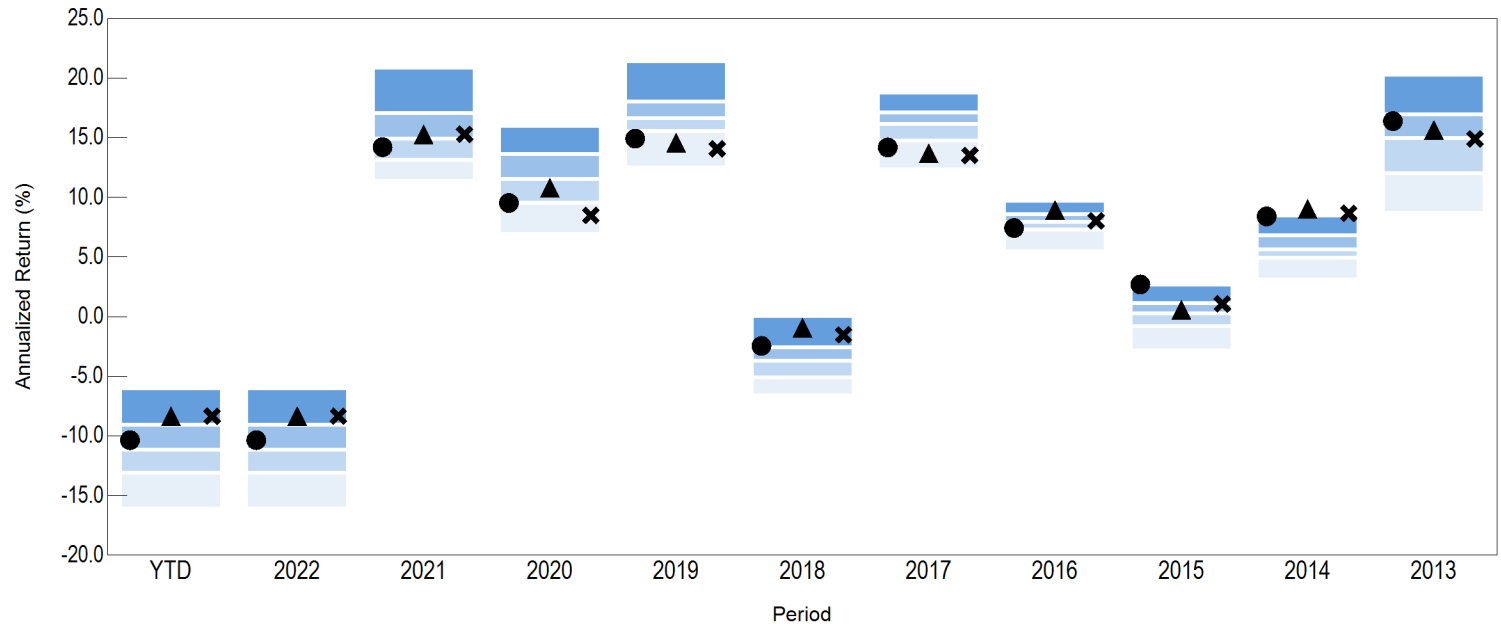
	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	6.9	-5.8	6.6	6.8	8.2	7.9						
25th Percentile	6.0	-8.7	5.6	5.9	7.6	7.5						
Median	5.0	-11.1	4.5	5.4	7.1	6.9						
75th Percentile	4.4	-12.7	3.9	4.6	6.5	6.6						
95th Percentile	3.5	-15.0	2.4	3.7	5.9	5.9						
# of Portfolios	59	59	57	57	57	54						
● Total Fund	4.1	(83)	-10.6	(48)	3.6	(82)	4.4	(85)	6.1	(88)	6.7	(62)
▲ Policy Index	4.5	(75)	-8.3	(23)	5.4	(31)	5.9	(26)	7.4	(35)	7.6	(20)
✕ Policy Index (Adjusted)	4.5	(75)	-8.3	(23)	4.7	(46)	5.2	(57)	6.7	(61)	7.1	(46)

Total Fund

Peer Universe Comparison: Consecutive Periods (Gross of Fees)

Period Ending: December 31, 2022

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



	Return (Rank)											
	YTD	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	
5th Percentile	-6.0	-6.0	20.9	16.0	21.4	0.0	18.8	9.7	2.7	8.5	20.2	
25th Percentile	-9.0	-9.0	17.1	13.6	18.1	-2.6	17.2	8.6	1.1	6.8	17.0	
Median	-11.1	-11.1	14.9	11.5	16.7	-3.7	16.2	8.0	0.3	5.7	15.0	
75th Percentile	-13.1	-13.1	13.2	9.6	15.6	-5.1	14.8	7.4	-0.7	4.9	12.0	
95th Percentile	-16.1	-16.1	11.4	6.9	12.5	-6.6	12.4	5.5	-2.8	3.1	8.7	
# of Portfolios	75	75	84	94	81	71	98	92	98	79	67	
● Total Fund	-10.4 (42)	-10.4 (42)	14.2 (62)	9.5 (78)	14.9 (83)	-2.5 (25)	14.2 (83)	7.4 (74)	2.7 (5)	8.4 (6)	16.4 (33)	
▲ Policy Index	-8.3 (20)	-8.3 (20)	15.3 (47)	10.8 (60)	14.6 (87)	-0.9 (8)	13.7 (89)	8.9 (15)	0.6 (40)	9.0 (2)	15.6 (43)	
✕ Policy Index (Adjusted)	-8.3 (20)	-8.3 (20)	15.3 (47)	8.5 (89)	14.1 (89)	-1.5 (10)	13.5 (89)	8.0 (46)	1.1 (31)	8.7 (5)	14.9 (54)	

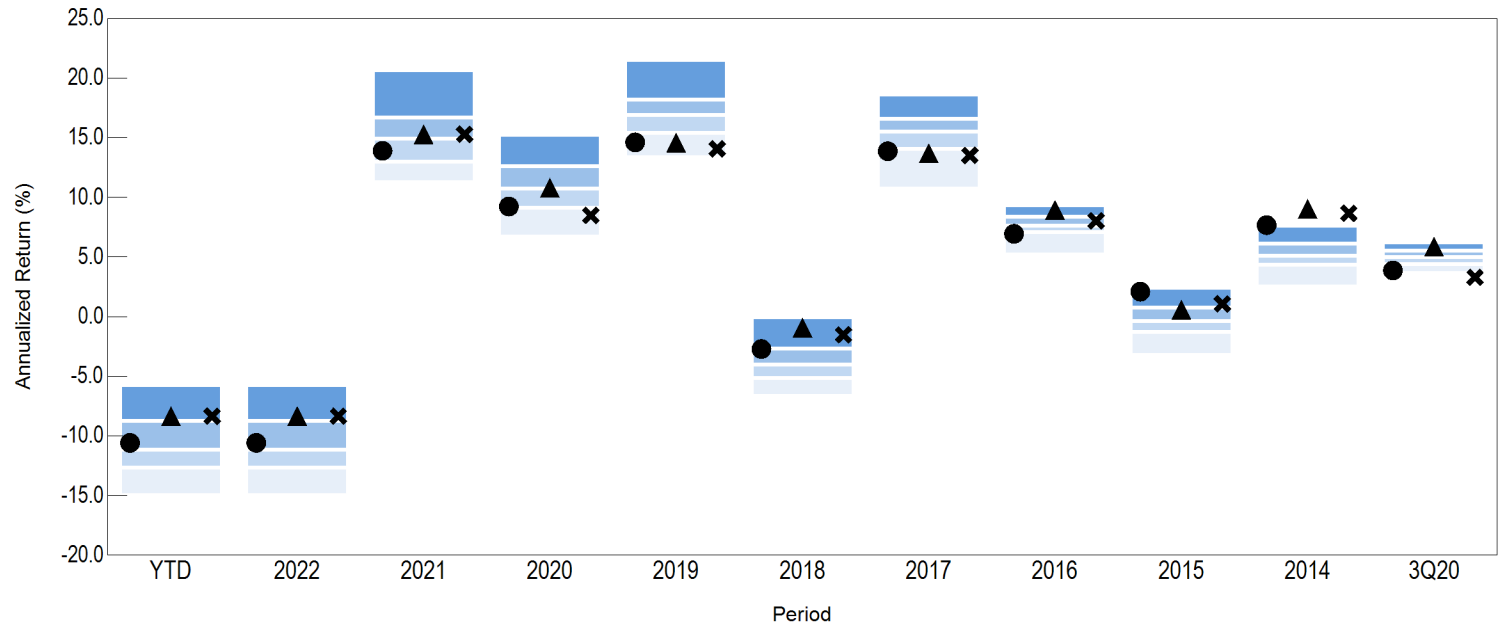
Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

Total Fund

Peer Universe Comparison: Consecutive Periods (Net of Fees)

Period Ending: December 31, 2022

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

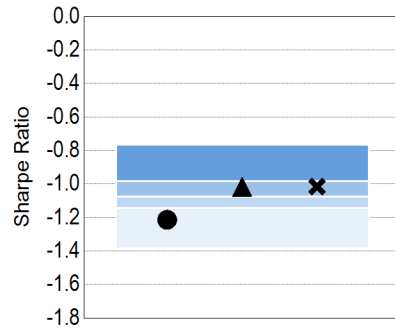


	Return (Rank)										
	YTD	2022	2021	2020	2019	2018	2017	2016	2015	2014	3Q20
5th Percentile	-5.8	-5.8	20.6	15.2	21.5	-0.1	18.6	9.3	2.4	7.6	6.2
25th Percentile	-8.7	-8.7	16.7	12.7	18.2	-2.7	16.6	8.4	0.8	6.1	5.5
Median	-11.1	-11.1	14.9	10.8	17.0	-4.0	15.6	7.7	-0.4	5.1	5.0
75th Percentile	-12.7	-12.7	13.0	9.2	15.4	-5.1	14.1	7.1	-1.3	4.4	4.4
95th Percentile	-15.0	-15.0	11.3	6.8	13.4	-6.6	10.7	5.3	-3.2	2.6	3.7
# of Portfolios	59	59	74	80	69	63	61	62	57	55	77
● Total Fund	-10.6 (48)	-10.6 (48)	13.9 (62)	9.2 (73)	14.6 (92)	-2.7 (27)	13.9 (81)	6.9 (78)	2.1 (12)	7.7 (5)	3.9 (90)
▲ Policy Index	-8.3 (23)	-8.3 (23)	15.3 (45)	10.8 (49)	14.6 (92)	-0.9 (8)	13.7 (85)	8.9 (13)	0.6 (29)	9.0 (2)	5.9 (13)
✕ Policy Index (Adjusted)	-8.3 (23)	-8.3 (23)	15.3 (45)	8.5 (86)	14.1 (95)	-1.5 (10)	13.5 (86)	8.0 (37)	1.1 (21)	8.7 (3)	3.3 (98)

Total Fund Sharpe Ratio Ranking (Gross of Fees)

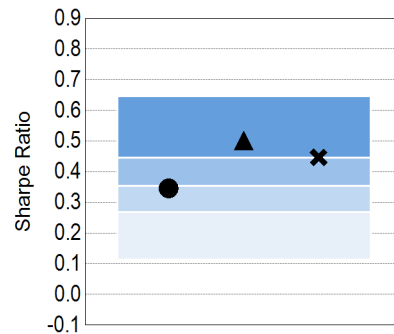
Period Ending: December 31, 2022

Sharpe Ratio
1 Year



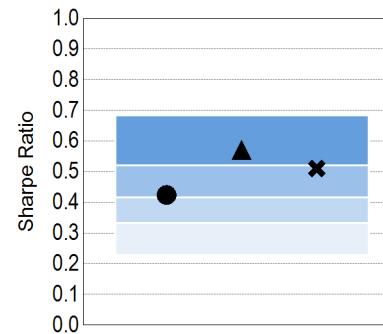
● Total Fund	
Value	-1.2
Rank	90
▲ Policy Index	
Value	-1.0
Rank	30
✕ Policy Index (Adjusted)	
Value	-1.0
Rank	30
Universe	
5th %tile	-0.8
25th %tile	-1.0
Median	-1.1
75th %tile	-1.1
95th %tile	-1.4

Sharpe Ratio
3 Year



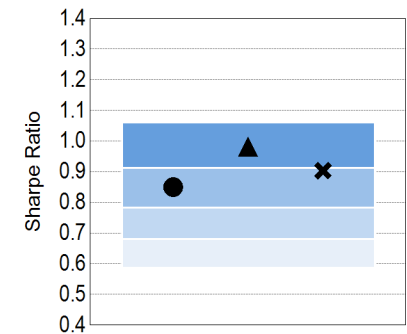
● Total Fund	
Value	0.3
Rank	53
▲ Policy Index	
Value	0.5
Rank	22
✕ Policy Index (Adjusted)	
Value	0.4
Rank	26
Universe	
5th %tile	0.6
25th %tile	0.4
Median	0.4
75th %tile	0.3
95th %tile	0.1

Sharpe Ratio
5 Year



● Total Fund	
Value	0.4
Rank	47
▲ Policy Index	
Value	0.6
Rank	18
✕ Policy Index (Adjusted)	
Value	0.5
Rank	28
Universe	
5th %tile	0.7
25th %tile	0.5
Median	0.4
75th %tile	0.3
95th %tile	0.2

Sharpe Ratio
10 Year



● Total Fund	
Value	0.8
Rank	38
▲ Policy Index	
Value	1.0
Rank	14
✕ Policy Index (Adjusted)	
Value	0.9
Rank	30
Universe	
5th %tile	1.1
25th %tile	0.9
Median	0.8
75th %tile	0.7
95th %tile	0.6

Domestic Equity Managers

Boston Partners Manager Portfolio Overview

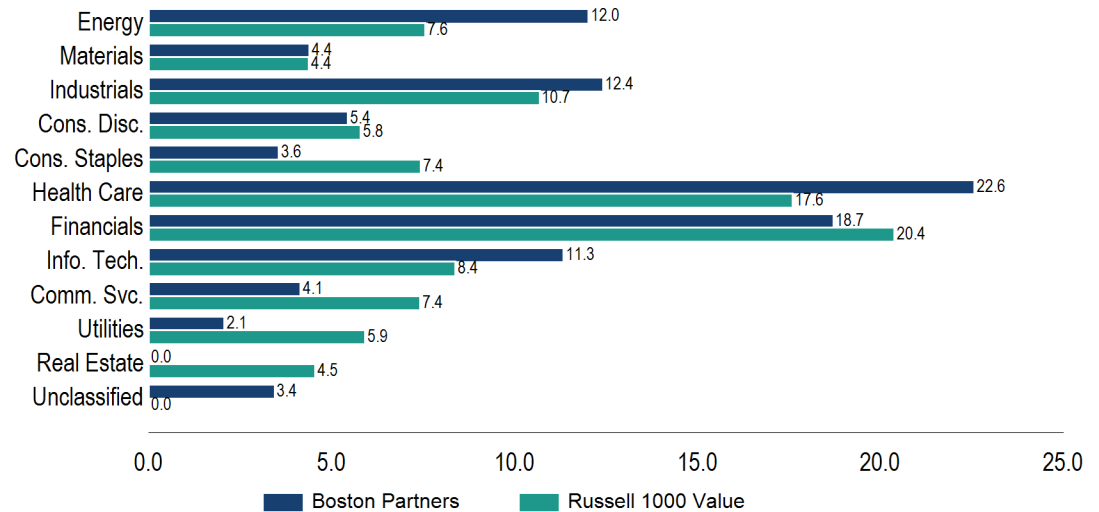
Period Ending: December 31, 2022

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.

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	81	852
Weighted Avg. Market Cap. (\$B)	161.84	152.32
Median Market Cap. (\$B)	50.50	11.90
Price To Earnings	15.73	15.56
Price To Book	2.50	2.46
Price To Sales	1.54	1.84
Return on Equity (%)	21.03	16.74
Yield (%)	2.00	2.29
Beta	1.08	1.00

Sector Allocation (%) vs Russell 1000 Value



Largest Holdings

	End Weight	Return
JOHNSON & JOHNSON	3.81	8.83
JPMORGAN CHASE & CO	3.64	29.49
BERKSHIRE HATHAWAY INC	3.55	15.68
BRISTOL-MYERS SQUIBB CO	2.70	1.99
SANOFI	2.57	27.38
CONOCOPHILLIPS	2.48	16.44
SCHWAB (CHARLES) CORP	2.40	16.17
AUTOZONE INC	2.34	15.14
CIGNA CORP	2.32	19.82
CVS HEALTH CORP	2.31	-1.70

Top Contributors

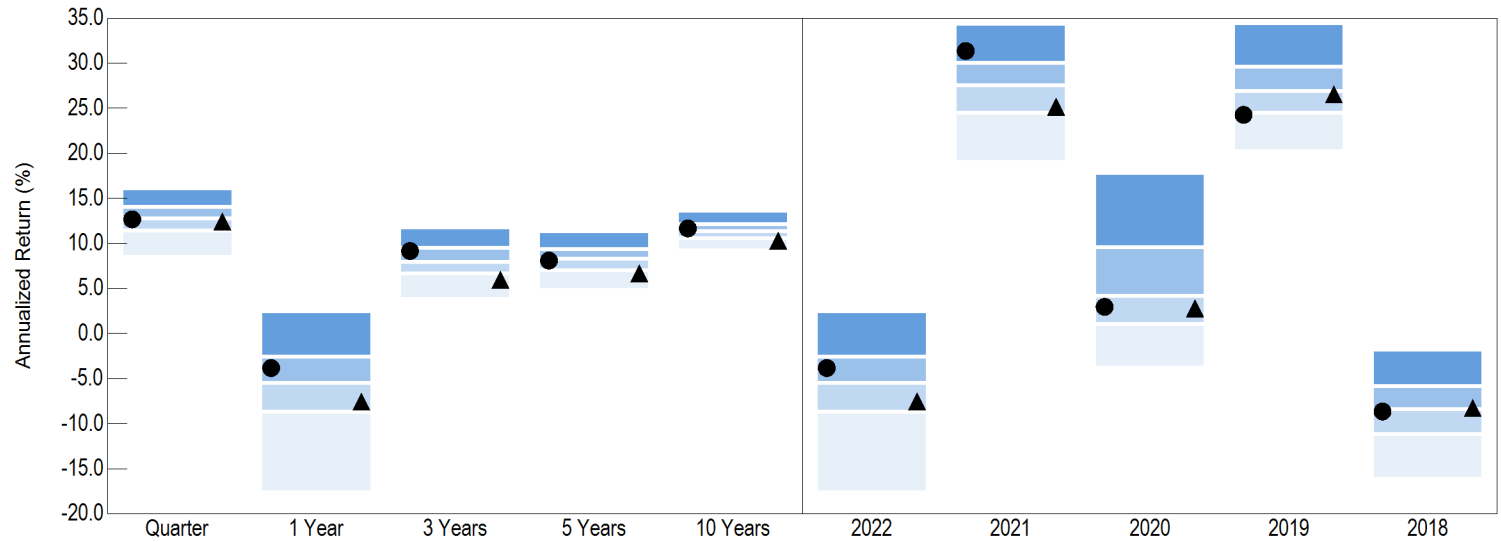
	Avg Wgt	Return	Contribution
JPMORGAN CHASE & CO	1.07	29.49	0.31
CONOCOPHILLIPS	1.24	16.44	0.20
SCHLUMBERGER LTD	0.41	49.43	0.20
SANOFI	0.68	27.38	0.19
DUPONT DE NEMOURS INC	0.47	36.82	0.17
BERKSHIRE HATHAWAY INC	1.04	15.68	0.16
CIGNA CORP	0.73	19.82	0.14
AUTOZONE INC	0.85	15.14	0.13
ABBVIE INC	0.58	21.60	0.13
SCHWAB (CHARLES) CORP	0.78	16.17	0.13

Bottom Contributors

	Avg Wgt	Return	Contribution
ALPHABET INC	0.80	-7.76	-0.06
META PLATFORMS INC	0.51	-11.31	-0.06
FIDELITY NATIONAL INFORMATION SERVICES INC	0.40	-9.61	-0.04
DOMINION ENERGY INC	0.31	-10.29	-0.03
GLOBAL PAYMENTS INC	0.30	-7.84	-0.02
CVS HEALTH CORP	0.77	-1.70	-0.01
QUALCOMM INC.	0.54	-2.11	-0.01
KEURIG DR PEPPER INC	0.65	-0.45	0.00
COGNIZANT TECHNOLOGY SOLUTIONS CORP	0.30	0.02	0.00
TRUIST FINANCIAL CORP	0.29	0.03	0.00

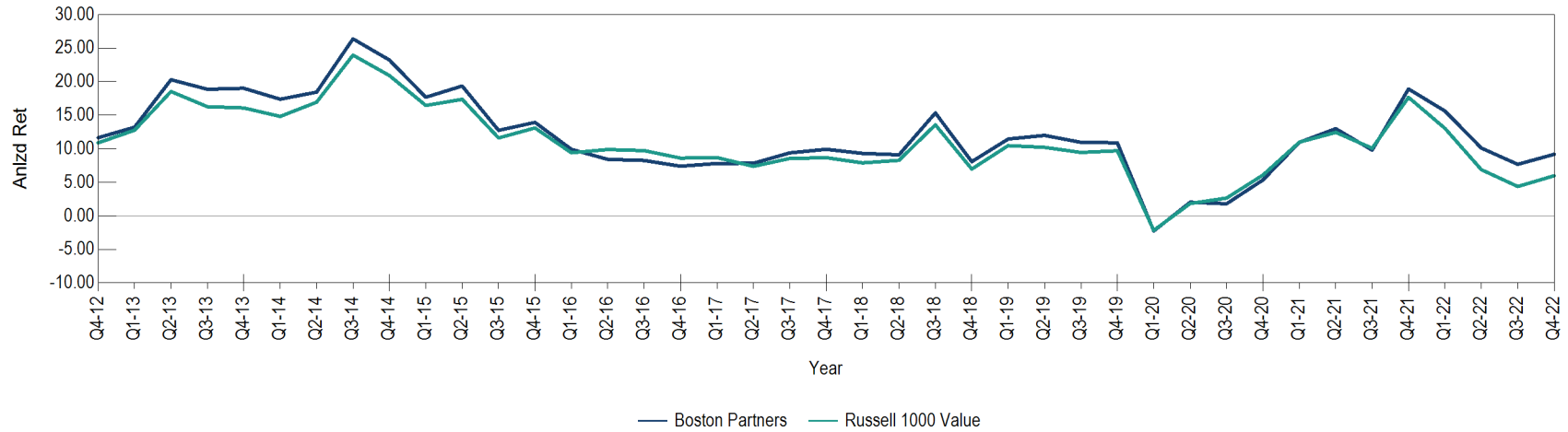
Unclassified sector allocation includes cash allocations.

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

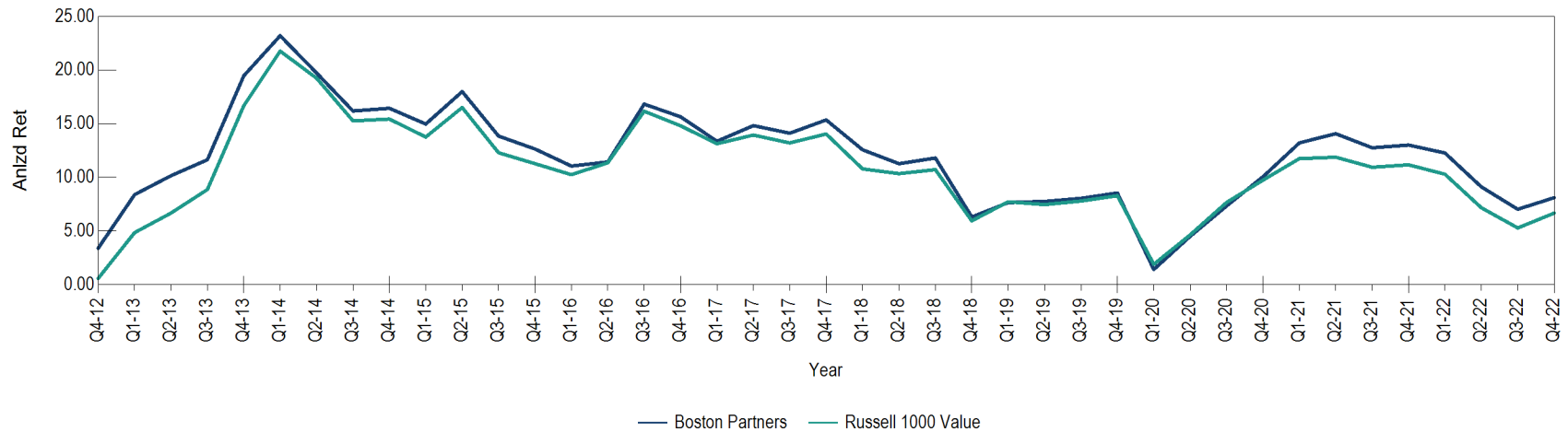


	Quarter	1 Year	3 Years	5 Years	10 Years	2022	2021	2020	2019	2018
5th Percentile	16.1	2.4	11.7	11.3	13.6	2.4	34.4	17.8	34.4	-1.8
25th Percentile	14.1	-2.5	9.6	9.4	12.2	-2.5	30.0	9.6	29.6	-5.8
Median	12.8	-5.4	8.0	8.3	11.4	-5.4	27.6	4.2	26.9	-8.3
75th Percentile	11.5	-8.6	6.7	7.0	10.6	-8.6	24.5	1.1	24.5	-11.1
95th Percentile	8.5	-17.6	3.9	4.9	9.3	-17.6	19.1	-3.8	20.3	-16.1
# of Portfolios	353	352	343	332	299	352	337	326	331	336
● Boston Partners	12.7 (53)	-3.8 (36)	9.2 (29)	8.1 (53)	11.7 (40)	-3.8 (36)	31.3 (17)	3.0 (61)	24.3 (77)	-8.7 (55)
▲ Russell 1000 Value	12.4 (57)	-7.5 (69)	6.0 (85)	6.7 (80)	10.3 (84)	-7.5 (69)	25.2 (72)	2.8 (62)	26.5 (54)	-8.3 (50)

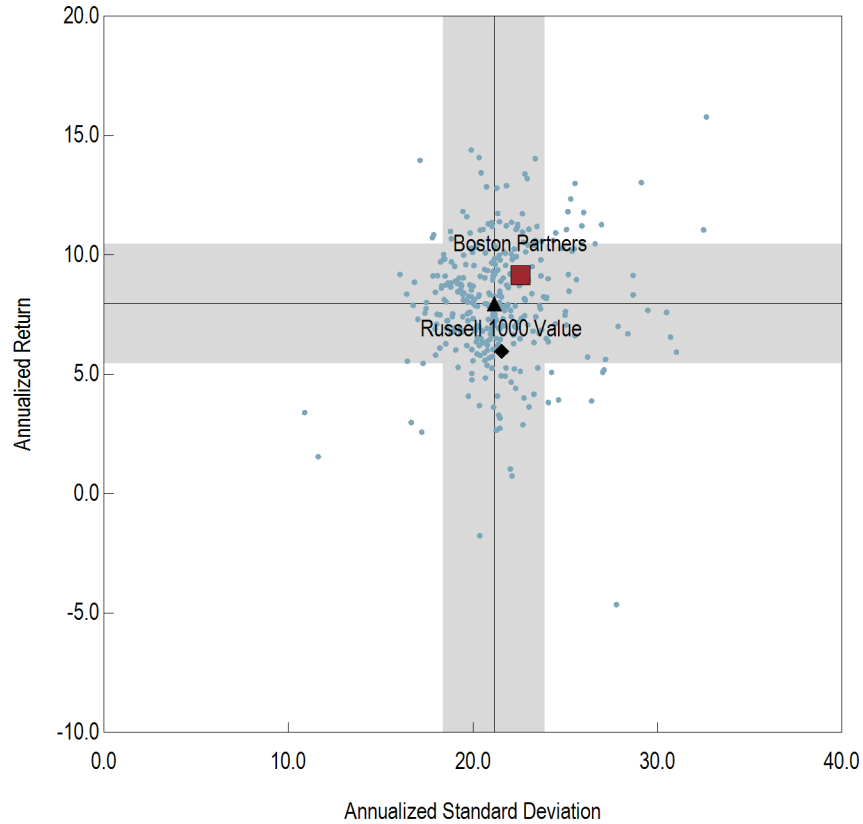
Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Boston Partners	9.2%	22.6%	0.4
Russell 1000 Value	6.0%	21.6%	0.2
eV US Large Cap Value Equity Gross Median	8.0%	21.2%	0.4

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Boston Partners	8.1%	19.8%	0.3
Russell 1000 Value	6.7%	18.9%	0.3
eV US Large Cap Value Equity Gross Median	8.3%	18.8%	0.4

Emerald Advisers Manager Portfolio Overview

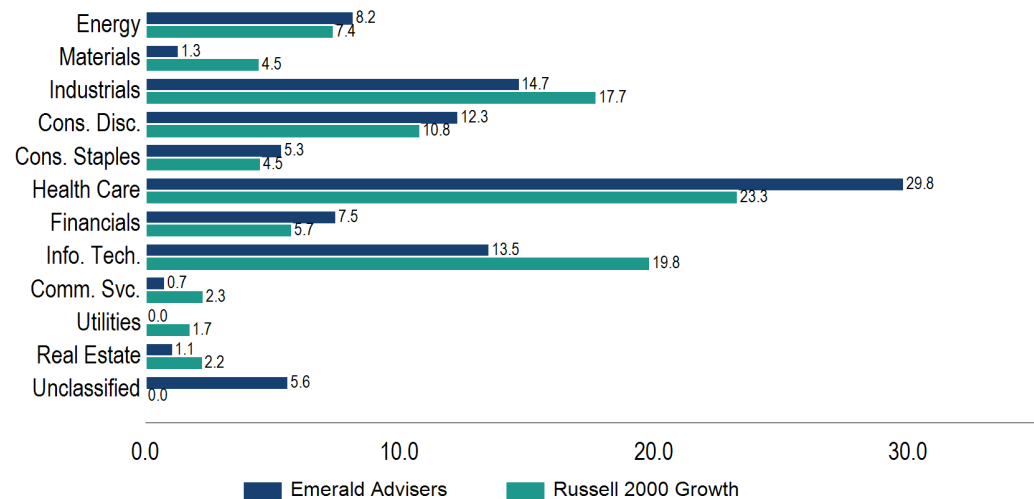
Period Ending: December 31, 2022

Domestic equity small cap growth portfolio of companies with significantly high growth rates. Primary personnel include Kenneth Mertz, Joseph Garner, and Stacey Sears.

Characteristics

	Portfolio	Russell 2000 Growth
Number of Holdings	112	1,109
Weighted Avg. Market Cap. (\$B)	3.22	3.18
Median Market Cap. (\$B)	2.61	1.27
Price To Earnings	18.76	14.75
Price To Book	3.39	3.48
Price To Sales	2.61	1.67
Return on Equity (%)	-6.89	3.94
Yield (%)	0.52	0.90
Beta	0.96	1.00

Sector Allocation (%) vs Russell 2000 Growth



Largest Holdings

	End Weight	Return
SIMPLY GOOD FOODS CO (THE)	2.02	18.88
SUPER MICRO COMPUTER INC	2.00	49.08
MACOM TECHNOLOGY SOLUTIONS HOLDINGS INC	1.90	21.61
MERIT MEDICAL SYSTEMS INC	1.80	24.97
CHURCHILL DOWNS INC	1.78	15.18
TRANSMEDICS GROUP INC	1.72	47.87
NV5 GLOBAL INC	1.71	6.86
CACTUS INC	1.71	31.06
REPLIMUNE GROUP INC	1.63	57.50
PLANET FITNESS INC	1.61	36.66

Top Contributors

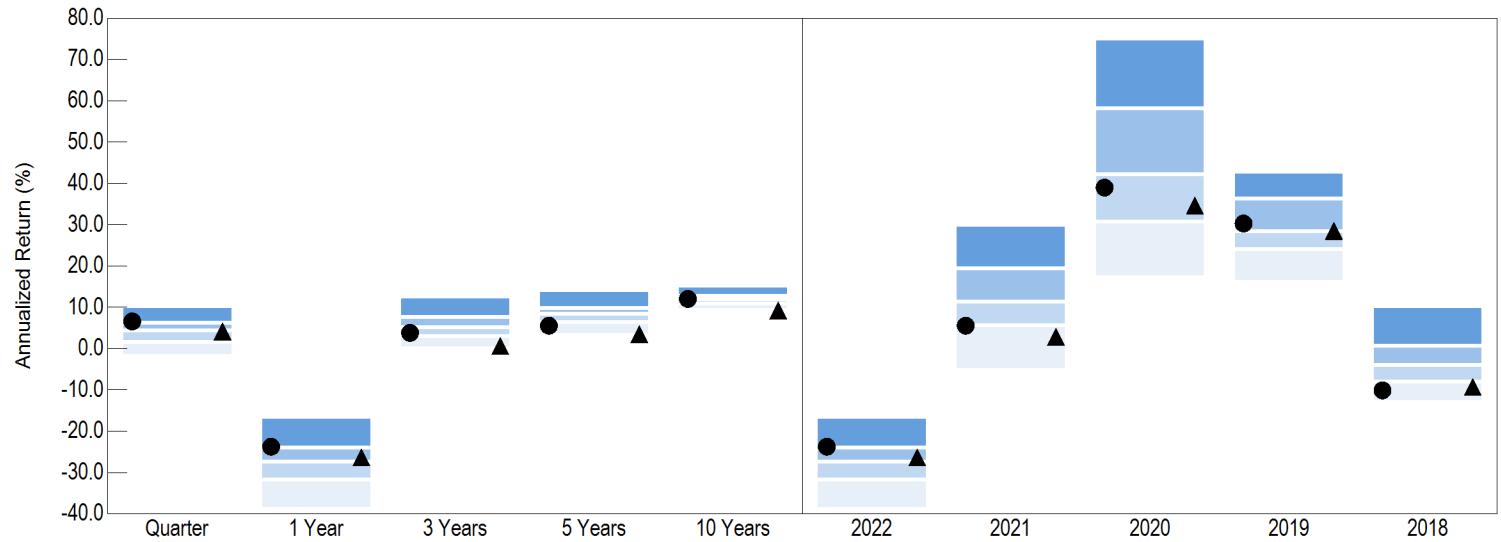
	Avg Wgt	Return	Contribution
IMAGO BIOSCIENCES INC	0.23	138.87	0.31
SUPER MICRO COMPUTER INC	0.58	49.08	0.29
PROFRAC HOLDING CORP	0.32	65.68	0.21
REPLIMUNE GROUP INC	0.35	57.50	0.20
TRANSMEDICS GROUP INC	0.37	47.87	0.18
PLANET FITNESS INC	0.42	36.66	0.15
CACTUS INC	0.46	31.06	0.14
MANNKIND CORP	0.20	70.55	0.14
MACOM TECHNOLOGY SOLUTIONS HOLDINGS INC	0.64	21.61	0.14

Bottom Contributors

	Avg Wgt	Return	Contribution
PALOMAR HOLDINGS INC	0.73	-46.06	-0.34
CHART INDUSTRIES INC	0.81	-37.49	-0.30
SILVERGATE CAPITAL CORPORATION	0.17	-76.91	-0.13
LANTHEUS HOLDINGS INC	0.46	-27.54	-0.13
PACIRA BIOSCIENCES INC	0.46	-27.41	-0.13
BLUEPRINT MEDICINES CORP	0.37	-33.51	-0.12
GOSSAMER BIO INC	0.13	-81.89	-0.11
PRIVIA HEALTH GROUP INC COMMON STOCK USD.01	0.28	-33.32	-0.09

Unclassified sector allocation includes cash allocations.

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

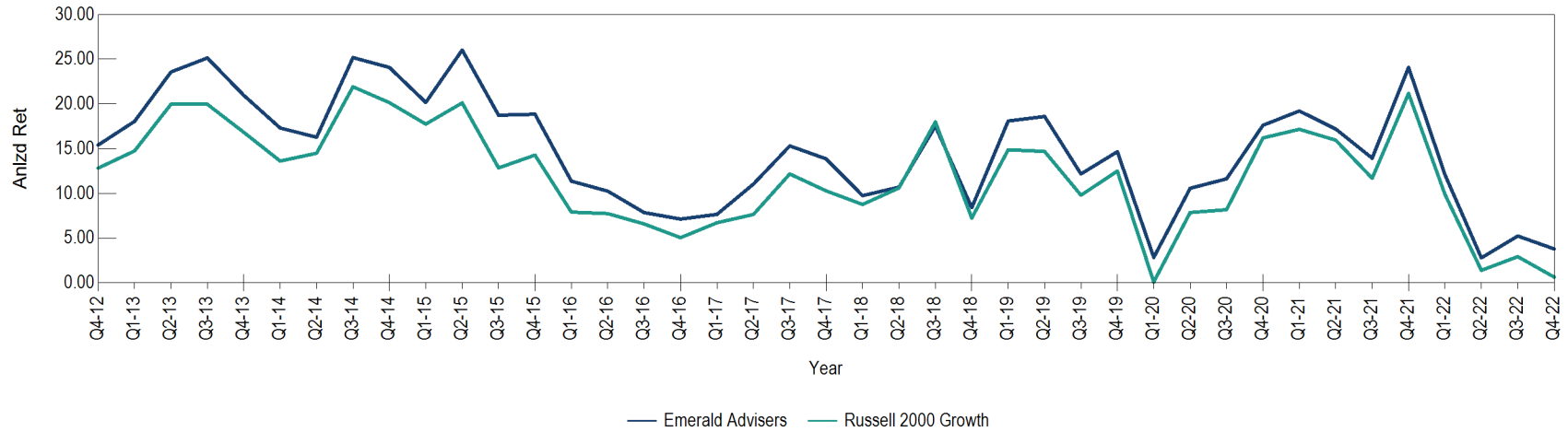


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2022	2021	2020	2019	2018
5th Percentile	10.1	-16.6	12.5	14.0	15.1	-16.6	29.8	75.0	42.8	10.2
25th Percentile	6.3	-23.8	7.7	10.0	12.9	-23.8	19.5	58.3	36.4	0.7
Median	4.5	-27.3	5.3	8.4	12.0	-27.3	11.5	42.2	28.5	-3.9
75th Percentile	1.7	-31.7	3.1	6.5	11.0	-31.7	5.7	30.8	24.2	-7.9
95th Percentile	-1.7	-38.8	0.2	3.4	9.4	-38.8	-5.1	17.4	16.2	-12.8
# of Portfolios	149	149	146	144	123	149	158	161	157	164
● Emerald Advisers	6.6 (23)	-23.8 (25)	3.8 (66)	5.5 (83)	12.0 (49)	-23.8 (25)	5.5 (76)	39.0 (57)	30.3 (45)	-10.1 (85)
▲ Russell 2000 Growth	4.1 (55)	-26.4 (42)	0.6 (94)	3.5 (95)	9.2 (96)	-26.4 (42)	2.8 (84)	34.6 (66)	28.5 (51)	-9.3 (80)

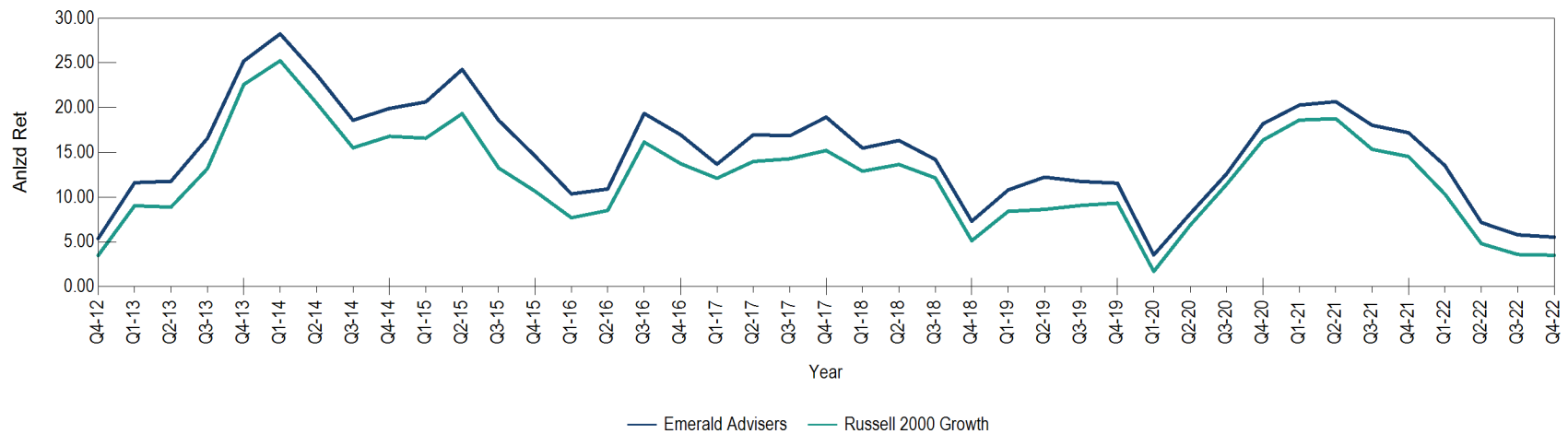
Emerald Advisers
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

Period Ending: December 31, 2022

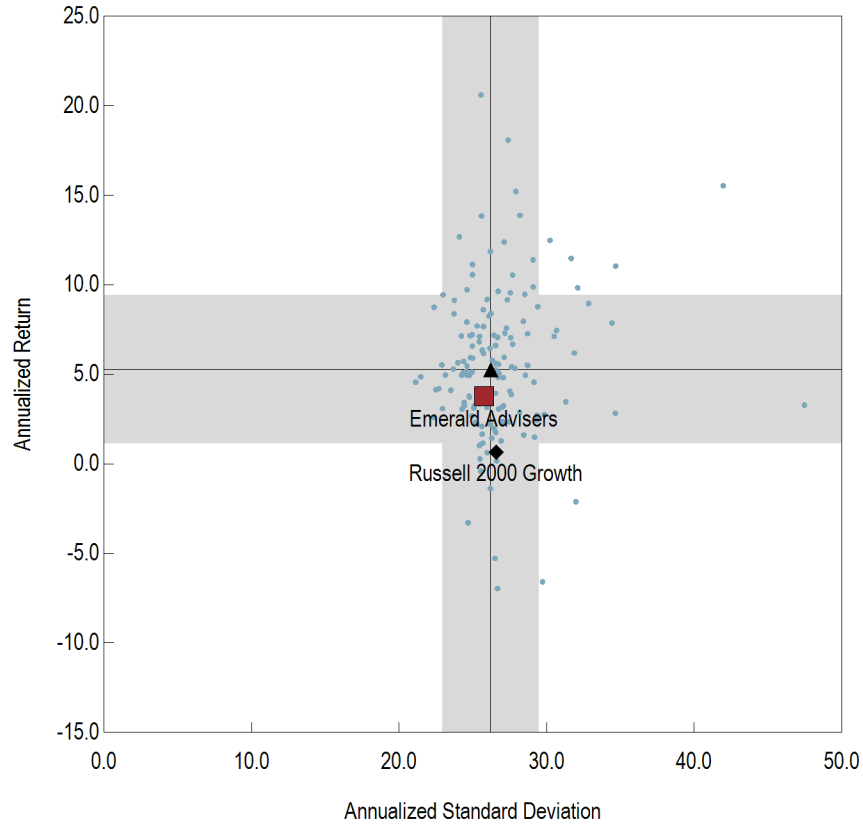
Rolling 3 Year Annualized Return (%)



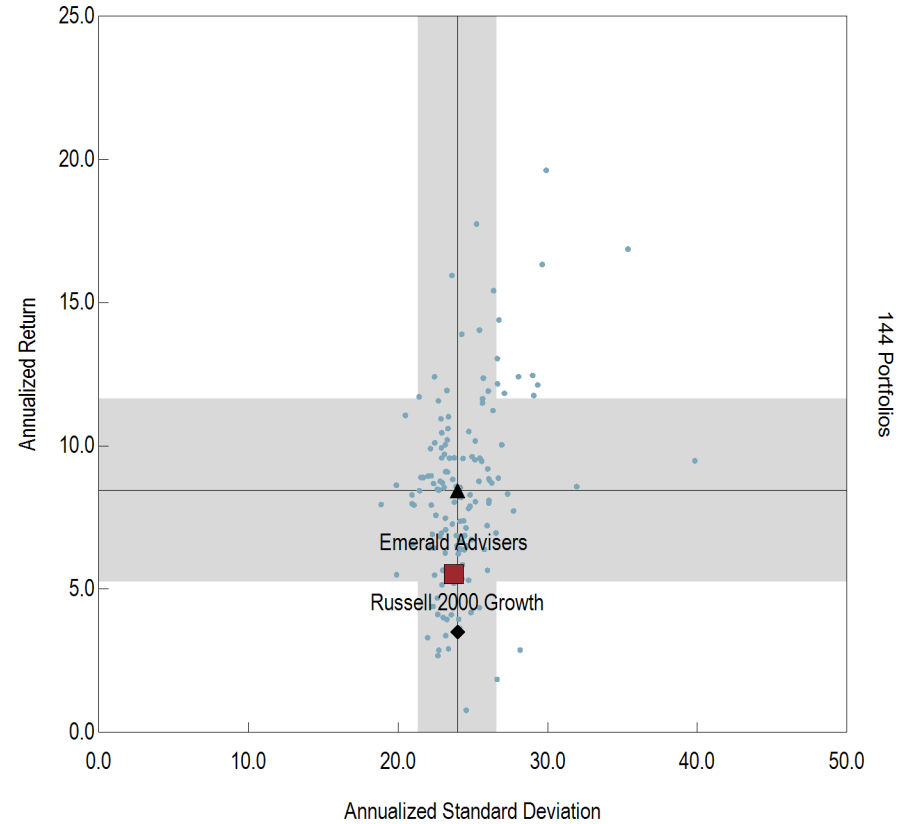
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	3.8%	25.8%	0.1
Russell 2000 Growth	0.6%	26.6%	0.0
eV US Small Cap Growth Equity Gross Median	5.3%	26.2%	0.2

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	5.5%	23.7%	0.2
Russell 2000 Growth	3.5%	24.0%	0.1
eV US Small Cap Growth Equity Gross Median	8.4%	24.0%	0.3

Ceredex Manager Portfolio Overview

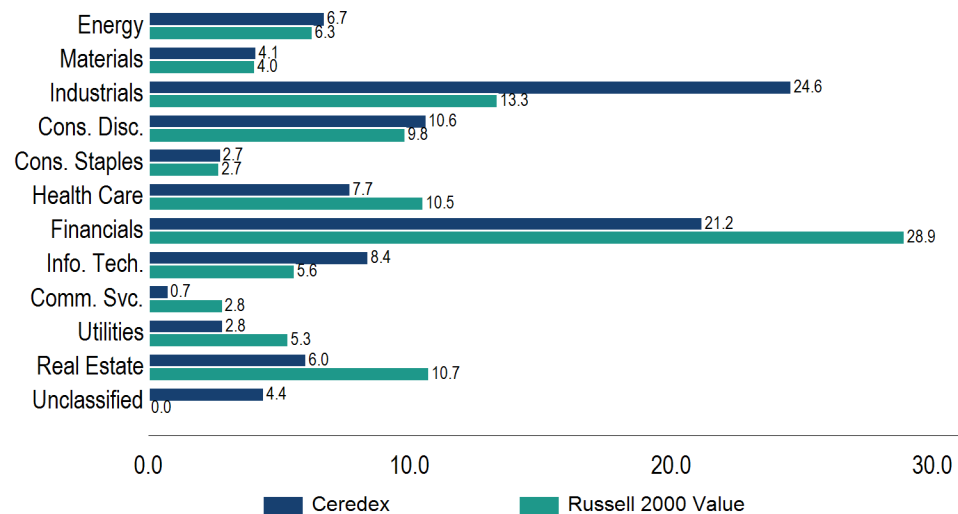
Period Ending: December 31, 2022

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

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	82	1,383
Weighted Avg. Market Cap. (\$B)	5.53	2.42
Median Market Cap. (\$B)	4.70	0.92
Price To Earnings	15.78	10.50
Price To Book	2.50	1.57
Price To Sales	1.28	1.09
Return on Equity (%)	16.12	5.57
Yield (%)	2.42	2.34
Beta	0.87	1.00

Sector Allocation (%) vs Russell 2000 Value



Largest Holdings

	End Weight	Return
PERRIGO CO PLC	3.25	-3.63
OVINTIV INC	2.41	10.79
ACADEMY SPORTS OUTDOORS INC	2.32	24.74
STANTEC INC	2.07	9.68
RITCHIE BROS AUCTIONEERS INC	2.05	-6.98
POWER INTEGRATIONS INC	1.96	11.77
DOLBY LABORATORIES INC	1.87	8.68
FIRST CITIZENS BANCSHARES INC	1.85	-4.81
EMCOR GROUP INC.	1.76	28.41
AGCO CORP	1.67	44.49

Top Contributors

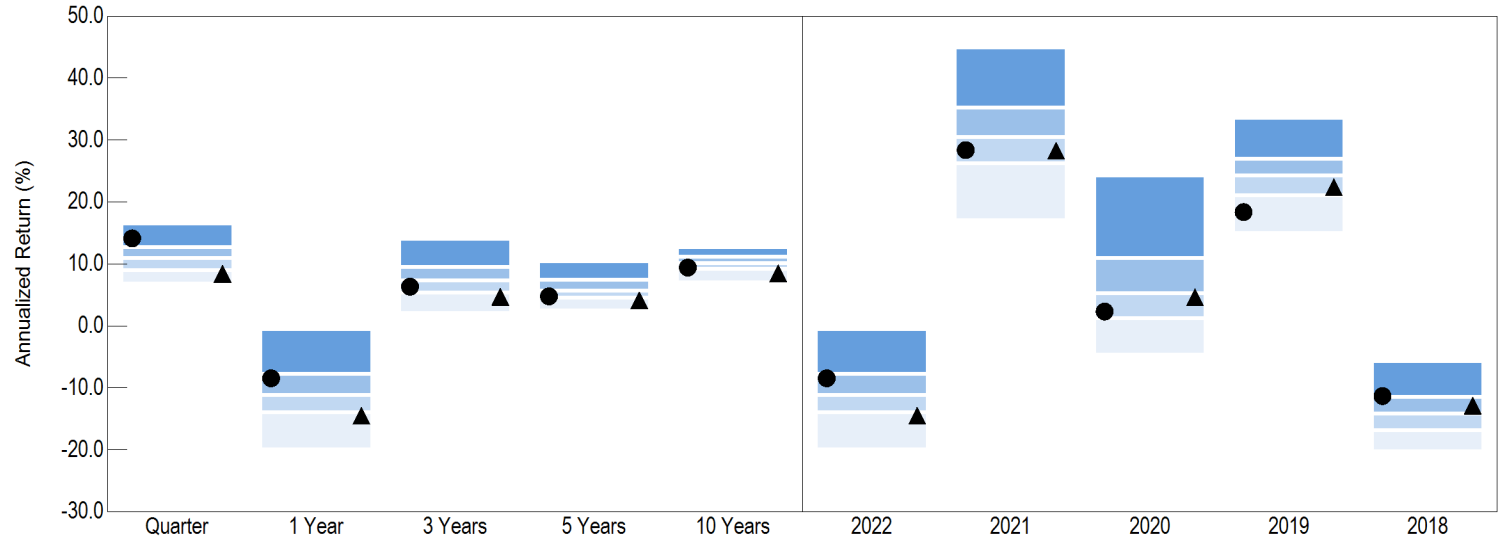
	Avg Wgt	Return	Contribution
AGCO CORP	0.75	44.49	0.33
EMCOR GROUP INC.	1.00	28.41	0.28
MANCHESTER UNITED PLC	0.28	75.81	0.21
TORO CO (THE)	0.59	31.71	0.19
ACADEMY SPORTS OUTDOORS INC	0.71	24.74	0.18
CHAMPIONX CORP	0.35	48.64	0.17
AAON INC	0.39	40.22	0.16
ENERGIZER HOLDINGS INC	0.41	34.66	0.14
SLM CORP	0.67	19.41	0.13
SEI INVESTMENTS CO	0.64	19.73	0.13

Bottom Contributors

	Avg Wgt	Return	Contribution
ALGONQUIN POWER & UTILITIES CORP	0.29	-38.59	-0.11
ARMSTRONG WORLD INDUSTRIES INC	0.70	-13.13	-0.09
FIRST CITIZENS BANCSHARES INC	0.97	-4.81	-0.05
FIRST INTERSTATE BANCSYSTEM INC	0.61	-3.22	-0.02
COMERICA INCORPORATED	0.35	-5.00	-0.02
LEMAITRE VASCULAR INC	0.14	-8.95	-0.01
NATIONAL INSTRUMENTS CORPORATION	0.48	-1.49	-0.01
PHYSICIANS RFAI TY			

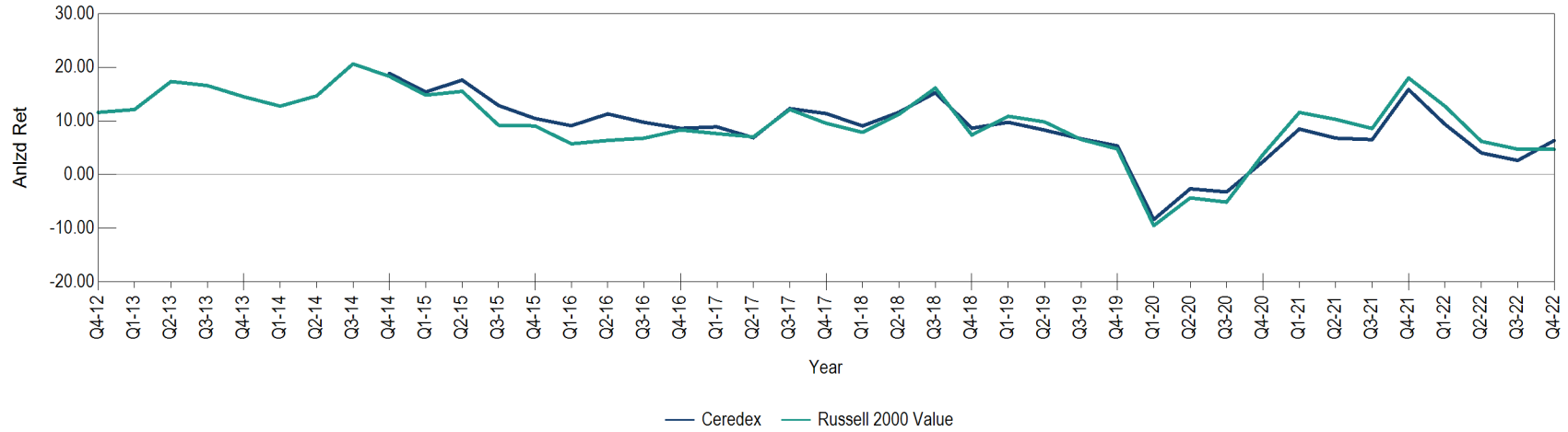
Unclassified sector allocation includes cash allocations.

Ceredex vs. eV US Small Cap Value Equity Gross Universe

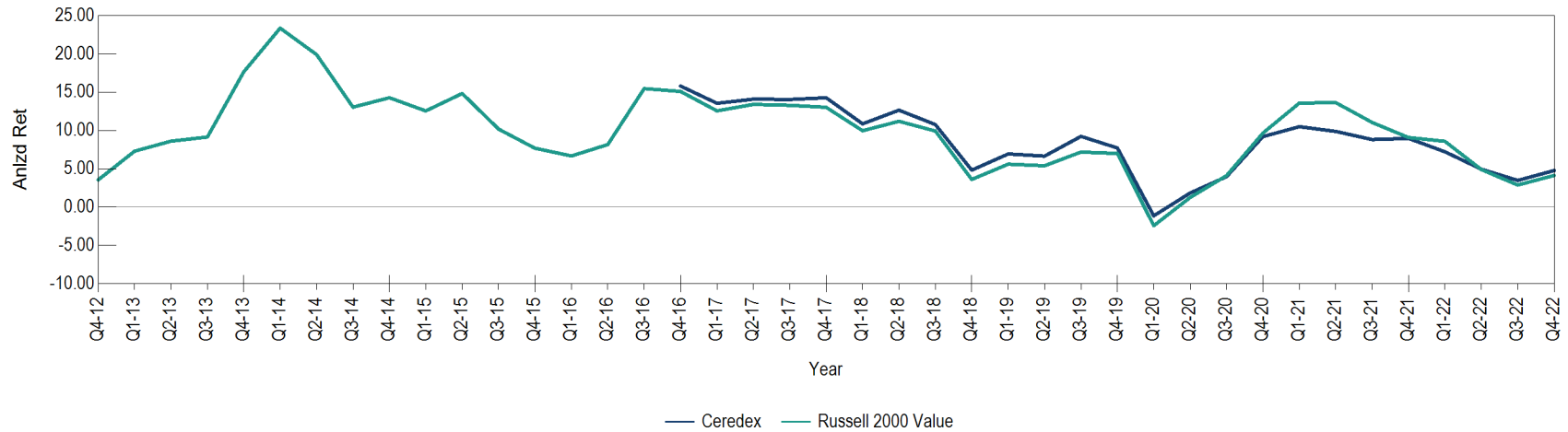


	Return (Rank)										
5th Percentile	16.5	-0.5	14.0	10.4	12.6	-0.5	44.9	24.2	33.6	-5.7	
25th Percentile	12.7	-7.7	9.6	7.5	11.2	-7.7	35.3	11.1	27.0	-11.4	
Median	11.1	-11.0	7.4	5.7	10.2	-11.0	30.5	5.3	24.4	-14.0	
75th Percentile	9.1	-13.9	5.4	4.6	9.3	-13.9	26.3	1.3	21.2	-16.7	
95th Percentile	6.9	-19.9	2.1	2.6	7.1	-19.9	17.1	-4.6	15.0	-20.2	
# of Portfolios	210	210	206	195	175	210	210	219	217	220	
● Ceredex	14.1 (14)	-8.5 (28)	6.3 (63)	4.8 (72)	9.4 (71)	-8.5 (28)	28.4 (60)	2.3 (69)	18.4 (87)	-11.3 (25)	
▲ Russell 2000 Value	8.4 (83)	-14.5 (79)	4.7 (81)	4.1 (83)	8.5 (88)	-14.5 (79)	28.3 (60)	4.6 (53)	22.4 (69)	-12.9 (39)	

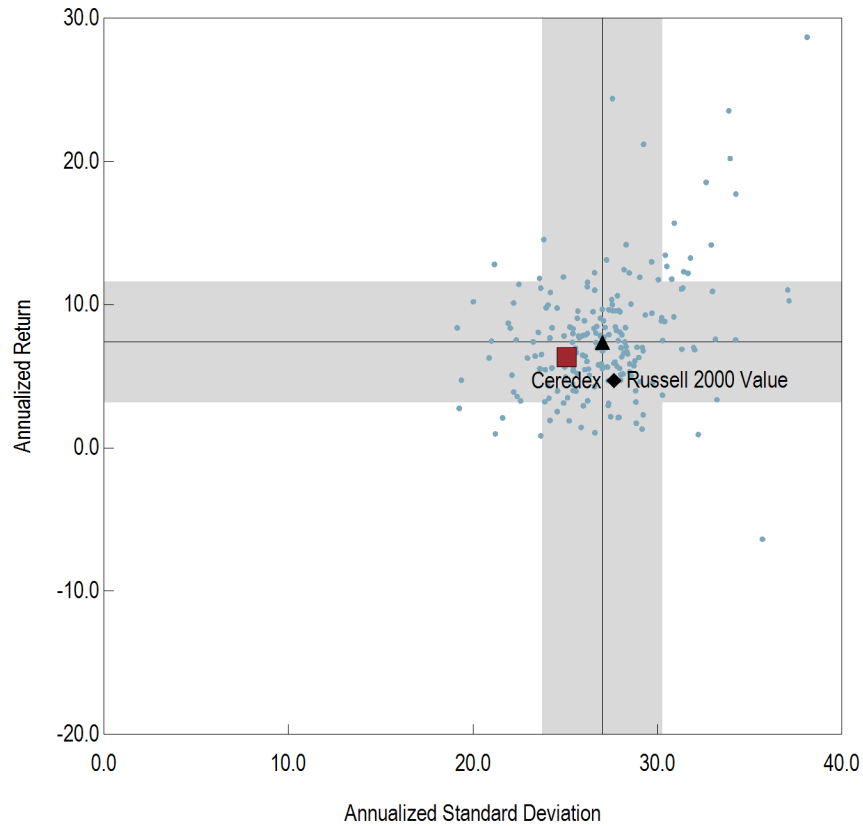
Rolling 3 Year Annualized Return (%)



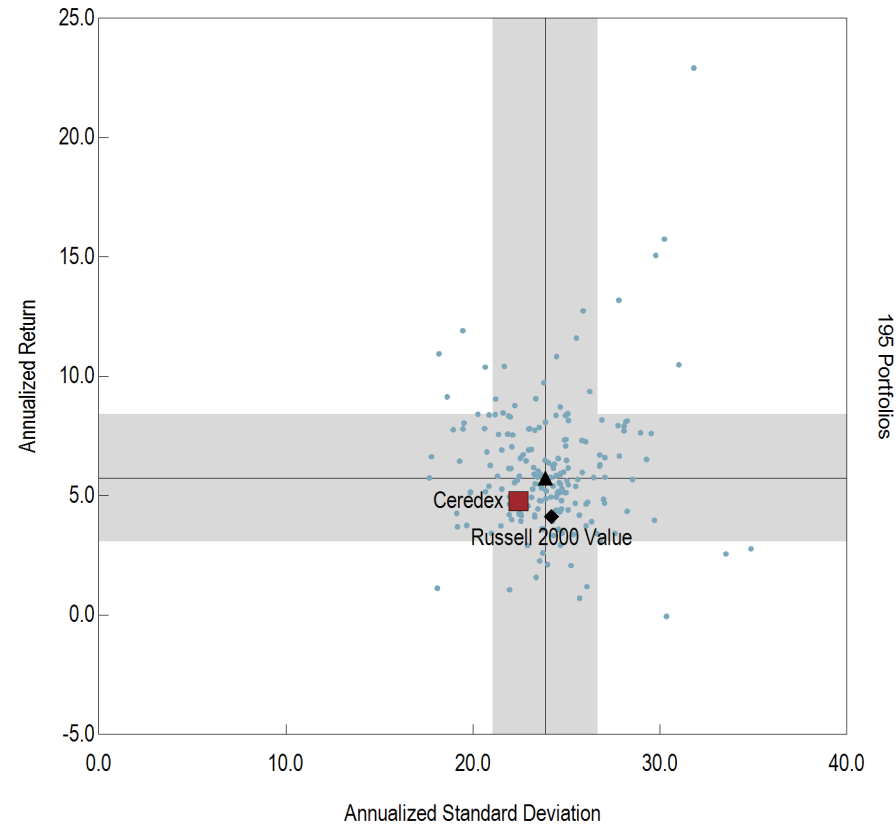
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	6.3%	25.1%	0.2
Russell 2000 Value	4.7%	27.7%	0.1
eV US Small Cap Value Equity Gross Median	7.4%	27.0%	0.2

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	4.8%	22.4%	0.2
Russell 2000 Value	4.1%	24.2%	0.1
eV US Small Cap Value Equity Gross Median	5.7%	23.9%	0.2

International Equity Managers

Pyrford Manager Portfolio Overview

Period Ending: December 31, 2022

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.

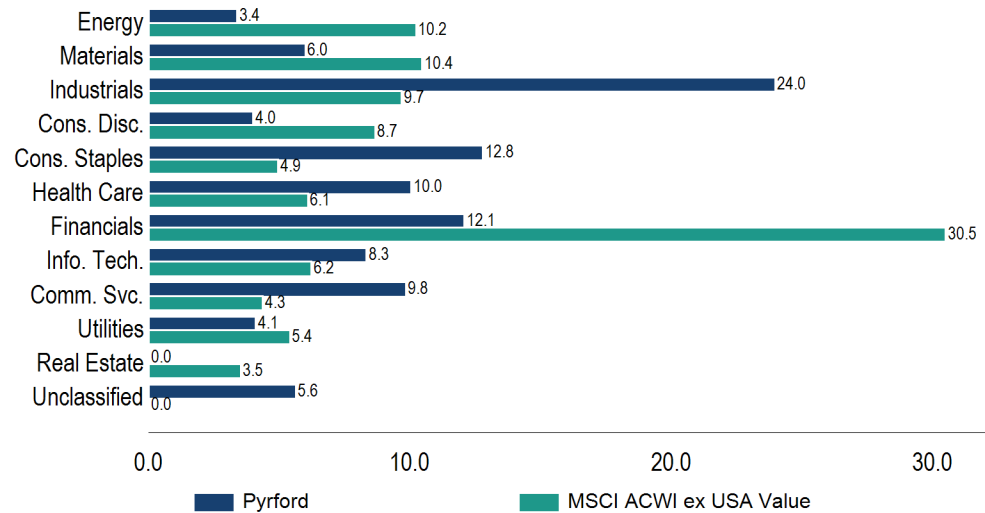
Characteristics

	MSCI ACWI Portfolio	MSCI ACWI ex USA Value
Number of Holdings	71	1,343
Weighted Avg. Market Cap. (\$B)	57.34	60.39
Median Market Cap. (\$B)	22.64	8.52
Price To Earnings	15.45	9.32
Price To Book	2.27	1.70
Price To Sales	1.62	0.86
Return on Equity (%)	15.65	11.94
Yield (%)	4.04	4.95
Beta	0.73	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	87.6%	72.4%
Emerging*	7.8%	27.6%
Top 10 Largest Countries		
Japan	14.7%	14.5%
Germany	11.4%	6.6%
United Kingdom	10.8%	12.6%
Switzerland	10.3%	4.2%
Australia	8.5%	5.3%
France	7.8%	6.3%
Singapore	6.0%	1.0%
Hong Kong	4.9%	1.8%
Cash	4.6%	0.0%
Sweden	3.7%	2.2%
Total-Top 10 Largest Countries	82.9%	54.4%

Sector Allocation (%) vs MSCI ACWI ex USA Value



Top Contributors

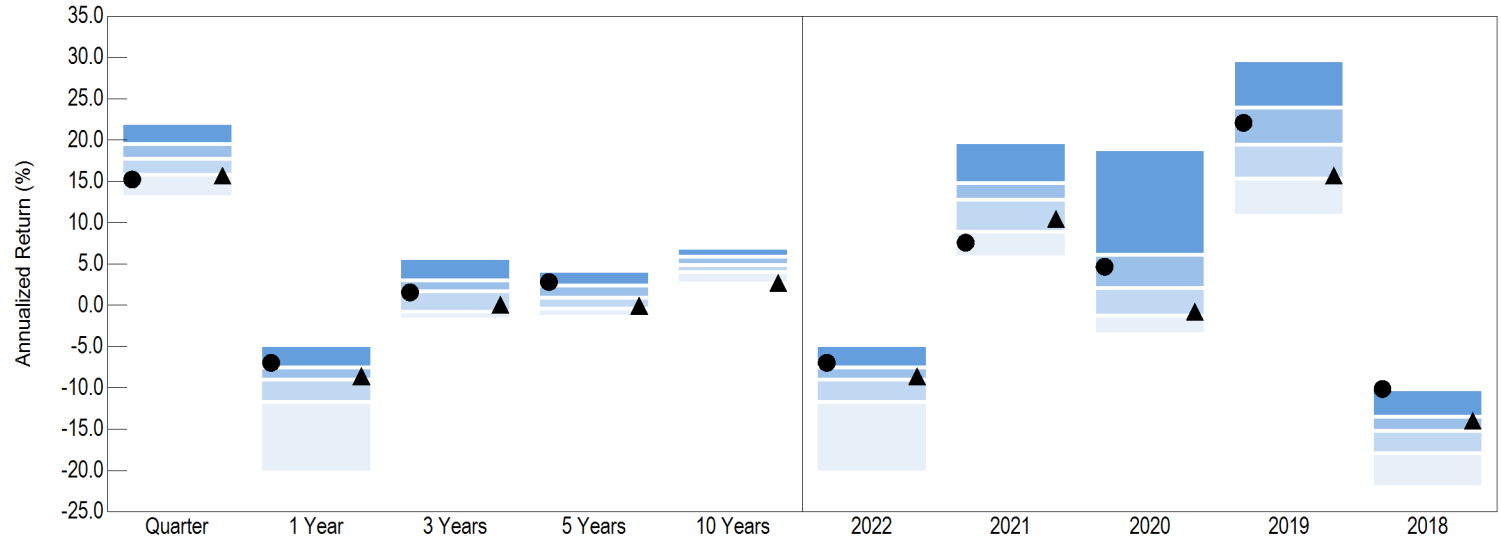
	Avg Wgt	Return	Contribution
JAPAN TOBACCO INC	3.43	28.17	0.97
FUCHS PETROLUB SE	1.80	37.25	0.67
KONINKLIJKE VOPAK NV	1.03	61.74	0.64
ABC-MART INC	1.89	31.55	0.60
AIA GROUP LTD	1.64	33.52	0.55
SAP SE	2.09	24.89	0.52
UNITED OVERSEAS BANK LTD	1.95	25.58	0.50
SANOFI	1.84	24.90	0.46
L'AIR LIQUIDE SA	1.94	22.75	0.44
NOVARTIS AG	2.47	17.47	0.43

Bottom Contributors

	Avg Wgt	Return	Contribution
TELEKOMUNIKASI INDONESIA	1.08	-17.55	-0.19
ROCHE HOLDING AG	2.87	-4.67	-0.13
VODAFONE GROUP PUBLIC LIMITED COMPANY	1.27	-6.17	-0.08
KONINKLIJKE PHILIPS NV	0.63	-4.60	-0.03
ENDEAVOUR GROUP LIMITED NPV	0.84	-3.25	-0.03
MERIDA INDUSTRY	0.10	-4.26	0.00
COMFORTDELGRO CORPORATION LTD	1.39	-0.28	0.00
GIVAUDAN SA	0.56	0.13	0.00
SINGAPORE TECHNOLOGIES ENGINEERING LTD	0.75	1.32	0.01

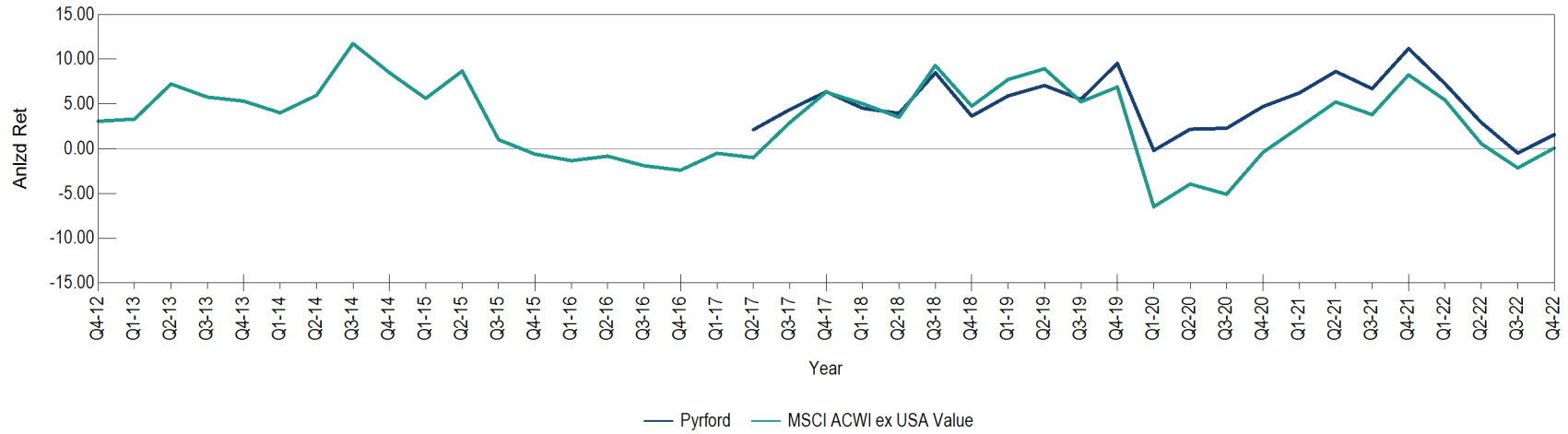
Unclassified sector allocation includes cash allocations.

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

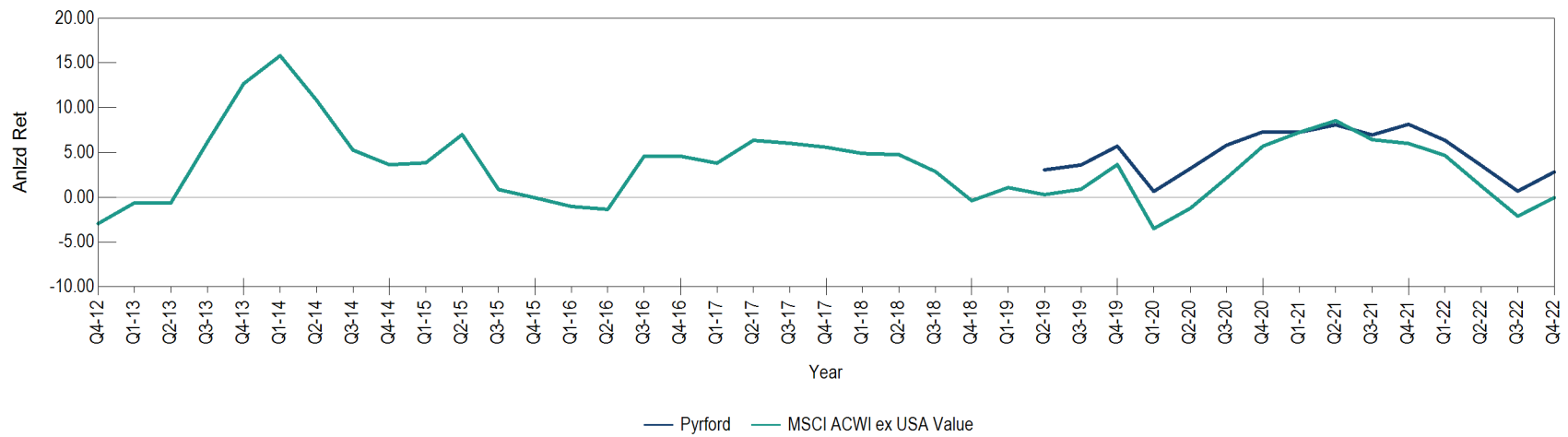


	Quarter	1 Year	3 Years	5 Years	10 Years	2022	2021	2020	2019	2018
5th Percentile	22.0	-4.8	5.7	4.1	6.9	-4.8	19.7	18.8	29.6	-10.2
25th Percentile	19.6	-7.5	3.1	2.4	5.9	-7.5	14.8	6.2	24.0	-13.4
Median	17.7	-8.9	1.7	1.0	4.9	-8.9	12.8	2.1	19.5	-15.2
75th Percentile	15.8	-11.7	-0.8	-0.4	4.1	-11.7	8.9	-1.2	15.4	-17.9
95th Percentile	13.1	-20.2	-1.7	-1.4	2.7	-20.2	5.8	-3.5	10.8	-21.9
# of Portfolios	49	49	45	40	33	49	46	49	52	54
● Pyrford	15.2 (84)	-7.0 (20)	1.6 (55)	2.8 (20)	-- (--)	-7.0 (20)	7.6 (84)	4.7 (33)	22.1 (35)	-10.1 (5)
▲ MSCI ACWI ex USA Value	15.7 (80)	-8.6 (41)	0.1 (69)	-0.1 (73)	2.7 (94)	-8.6 (41)	10.5 (69)	-0.8 (73)	15.7 (74)	-14.0 (32)

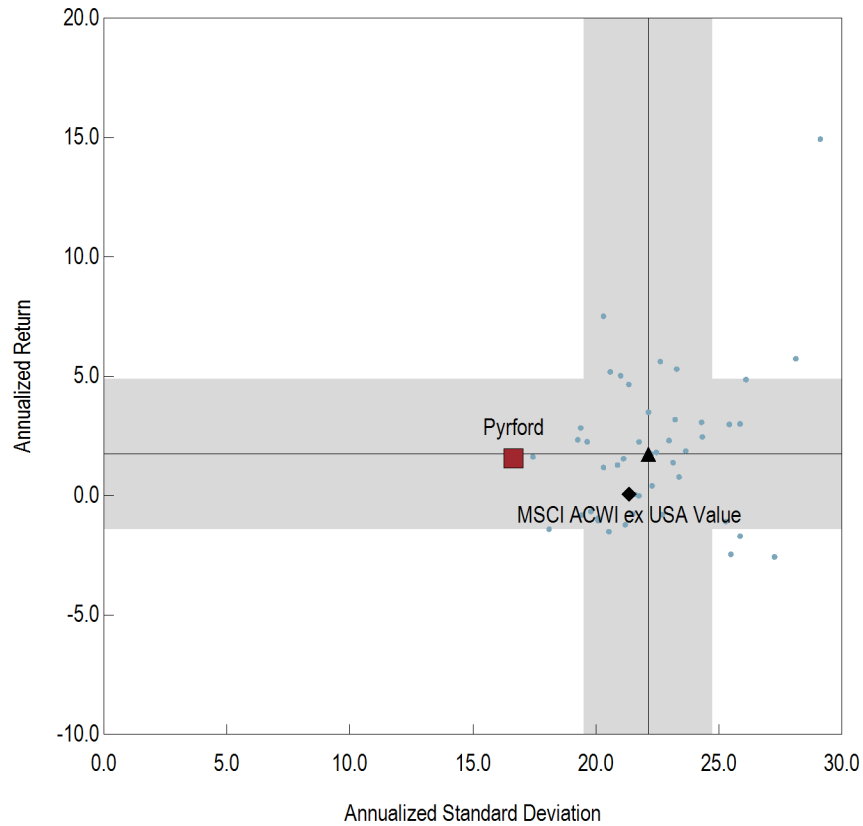
Rolling 3 Year Annualized Return (%)



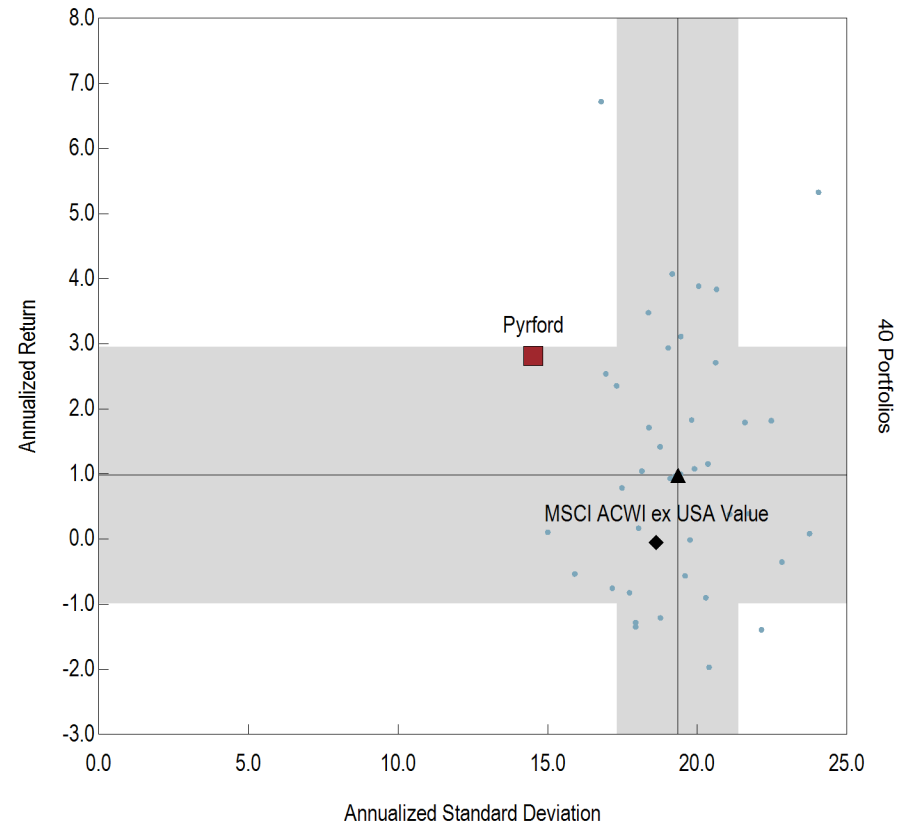
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Pyrford	1.6%	16.7%	0.1
MSCI ACWI ex USA Value	0.1%	21.3%	0.0
eV ACWI ex-US Value Equity Gross Median	1.7%	22.1%	0.1

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Pyrford	2.8%	14.5%	0.1
MSCI ACWI ex USA Value	-0.1%	18.6%	-0.1
eV ACWI ex-US Value Equity Gross Median	1.0%	19.4%	0.0

William Blair Manager Portfolio Overview

Period Ending: December 31, 2022

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.

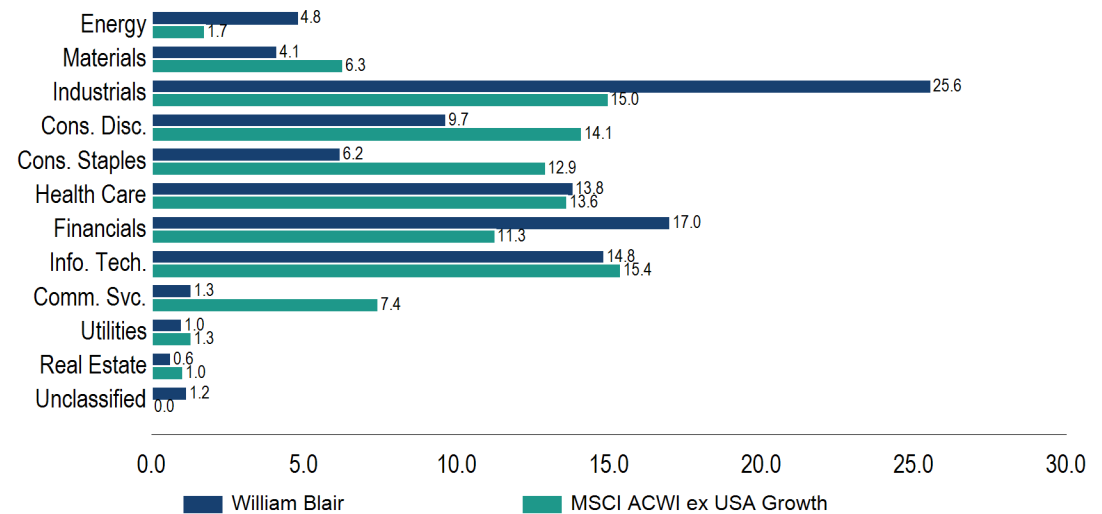
Characteristics

	Portfolio	MSCI ACWI ex USA Growth
Number of Holdings	180	1,241
Weighted Avg. Market Cap. (\$B)	63.43	101.44
Median Market Cap. (\$B)	11.12	9.21
Price To Earnings	22.85	20.00
Price To Book	3.61	3.34
Price To Sales	2.97	2.55
Return on Equity (%)	18.69	18.66
Yield (%)	1.85	1.86
Beta	1.14	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	83.0%	70.8%
Emerging*	16.0%	29.2%
Top 10 Largest Countries		
United Kingdom	14.6%	6.9%
France	10.8%	8.9%
Canada	9.1%	7.8%
Japan	8.4%	13.5%
India*	6.6%	4.0%
Switzerland	6.4%	8.8%
Denmark	4.6%	3.4%
Netherlands	4.1%	3.9%
Sweden	3.6%	2.0%
Germany	3.3%	3.8%
Total-Top 10 Largest Countries	71.7%	63.1%

Sector Allocation (%) vs MSCI ACWI ex USA Growth



Top Contributors

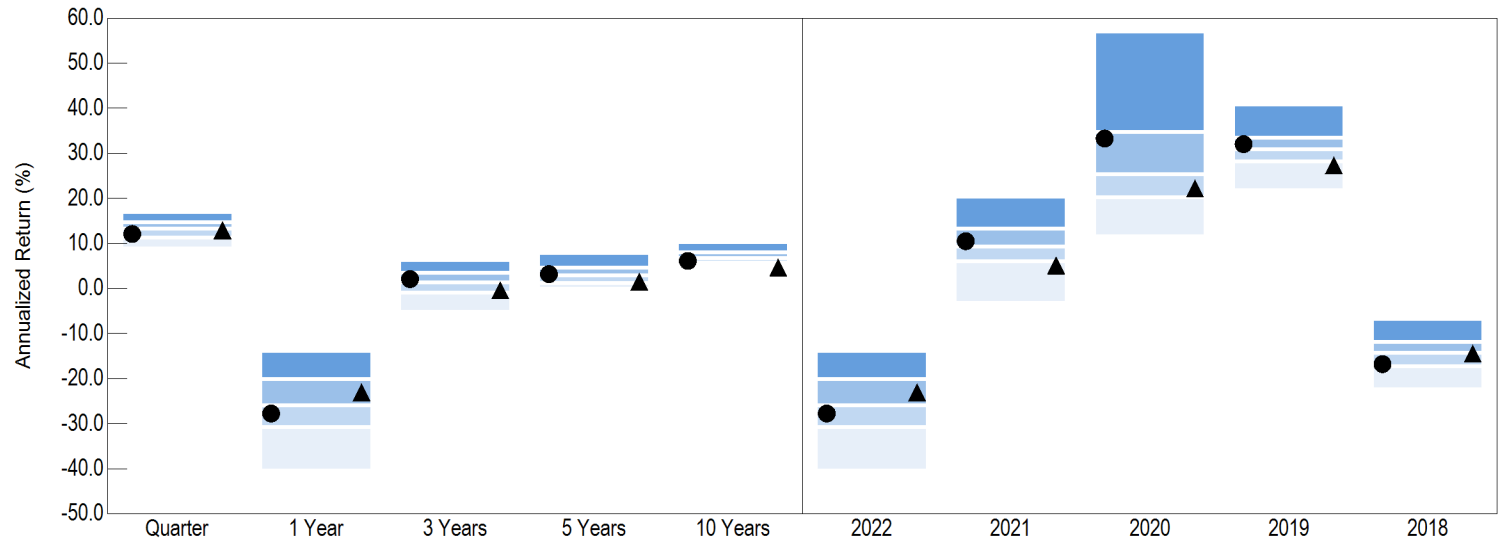
	Avg Wgt	Return	Contribution
NOVO NORDISK 'B'	1.57	34.34	0.54
AIRBUS SE	1.17	36.13	0.42
MTU AERO ENGINES AG	0.98	42.88	0.42
VINCI SA	1.76	23.54	0.41
KBC GROUP SA	1.05	37.21	0.39
AIA GROUP LTD	1.17	33.52	0.39
SAFRAN SA	0.98	35.56	0.35
LINDE PLC	1.59	21.41	0.34
ZURICH INSURANCE GROUP AG	1.78	18.85	0.34
ASTRAZENECA PLC	1.47	21.98	0.32

Bottom Contributors

	Avg Wgt	Return	Contribution
ATLISSIAN CORP	0.49	-38.90	-0.19
OLYMPUS CORP	1.39	-7.12	-0.10
TELEKOMUNIKASI INDONESIA	0.40	-17.55	-0.07
HAVELL'S INDIA	0.32	-19.80	-0.06
TELEPERFORMANCE	0.75	-6.96	-0.05
CCL INDUSTRIES INC	0.43	-12.02	-0.05
CROMPTON GREAVES CONSUMER	0.25	-19.69	-0.05
ELECTRICALS LTD			
LOCAWEB SERVICOS DE INTERNET SA	0.16	-25.92	-0.04
GLOBAL SA	0.34	-10.11	-0.03

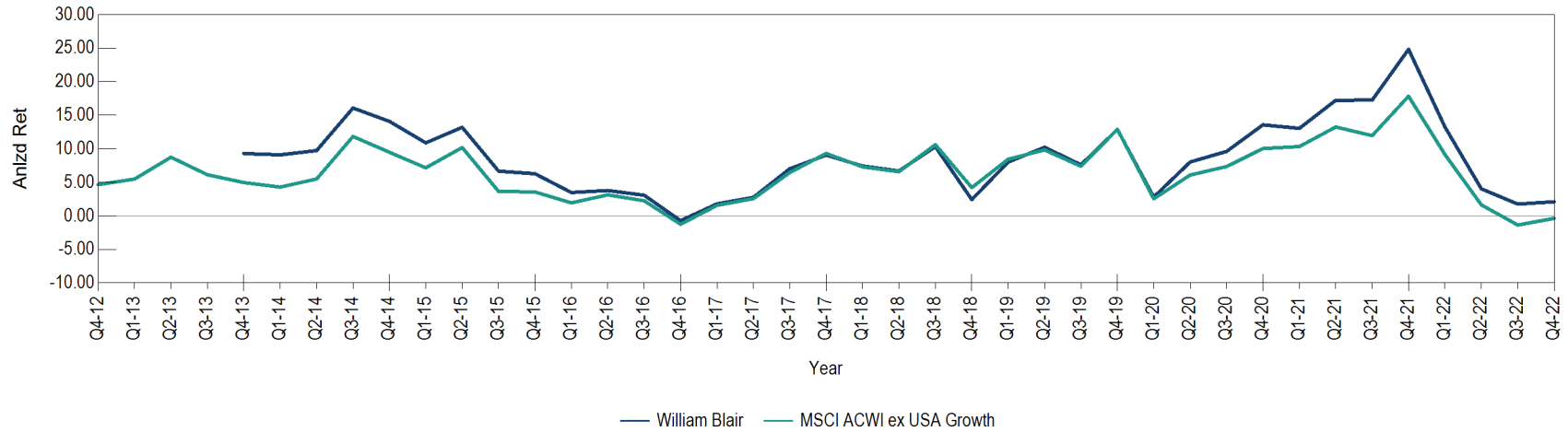
Unclassified sector allocation includes cash allocations.

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

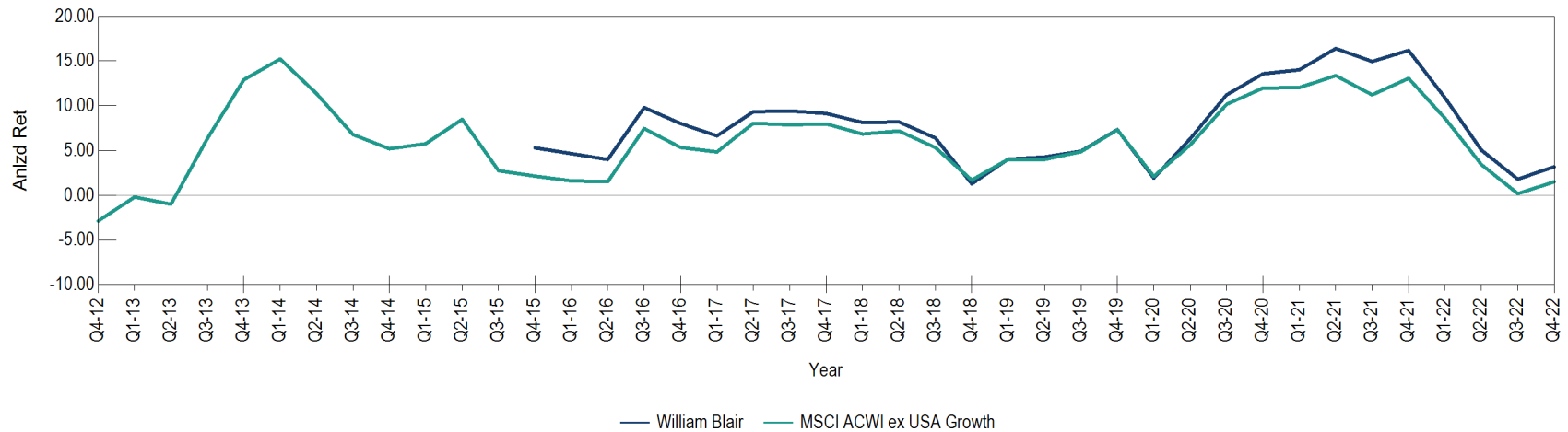


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2022	2021	2020	2019	2018
5th Percentile	16.9	-13.9	6.3	7.8	10.2	-13.9	20.3	57.0	40.8	-6.8
25th Percentile	14.7	-20.1	3.5	4.7	8.0	-20.1	13.4	34.8	33.6	-11.7
Median	13.3	-25.8	1.5	3.0	6.8	-25.8	9.3	25.4	31.0	-14.3
75th Percentile	11.3	-30.6	-0.9	1.3	5.8	-30.6	6.1	20.3	28.3	-17.2
95th Percentile	9.0	-40.4	-5.1	0.0	4.9	-40.4	-3.1	11.6	21.8	-22.3
# of Portfolios	103	103	96	85	61	103	102	95	93	82
● William Blair	12.1 (67)	-27.7 (60)	2.1 (44)	3.2 (46)	6.1 (63)	-27.7 (60)	10.5 (44)	33.3 (30)	32.0 (39)	-16.8 (69)
▲ MSCI ACWI ex USA Growth	12.9 (59)	-23.1 (34)	-0.4 (72)	1.5 (72)	4.7 (97)	-23.1 (34)	5.1 (78)	22.2 (64)	27.3 (80)	-14.4 (51)

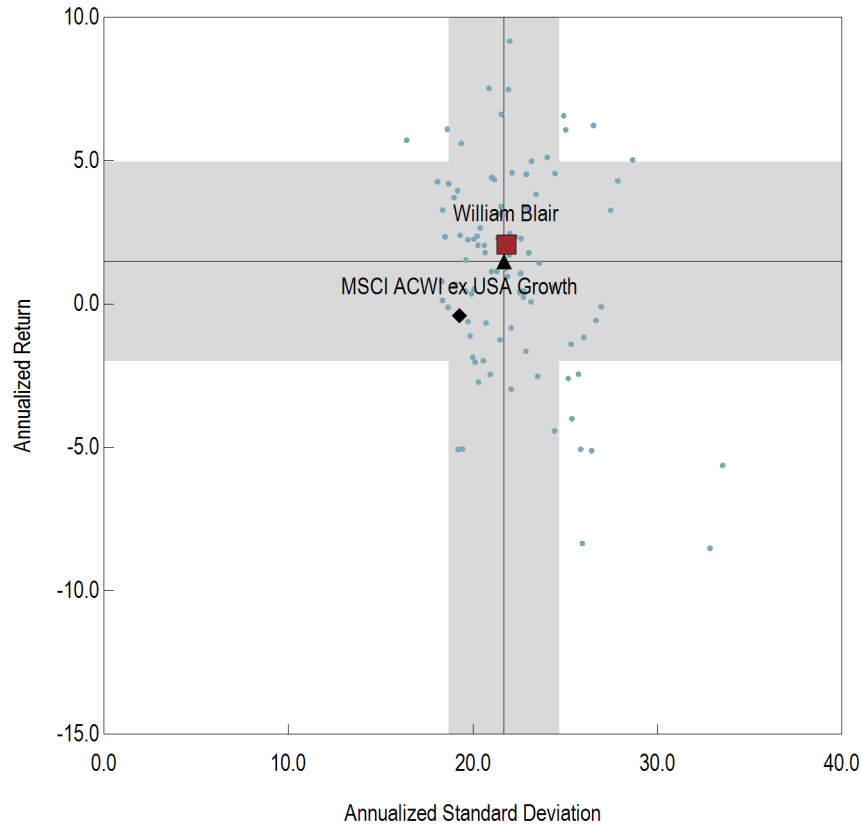
Rolling 3 Year Annualized Return (%)



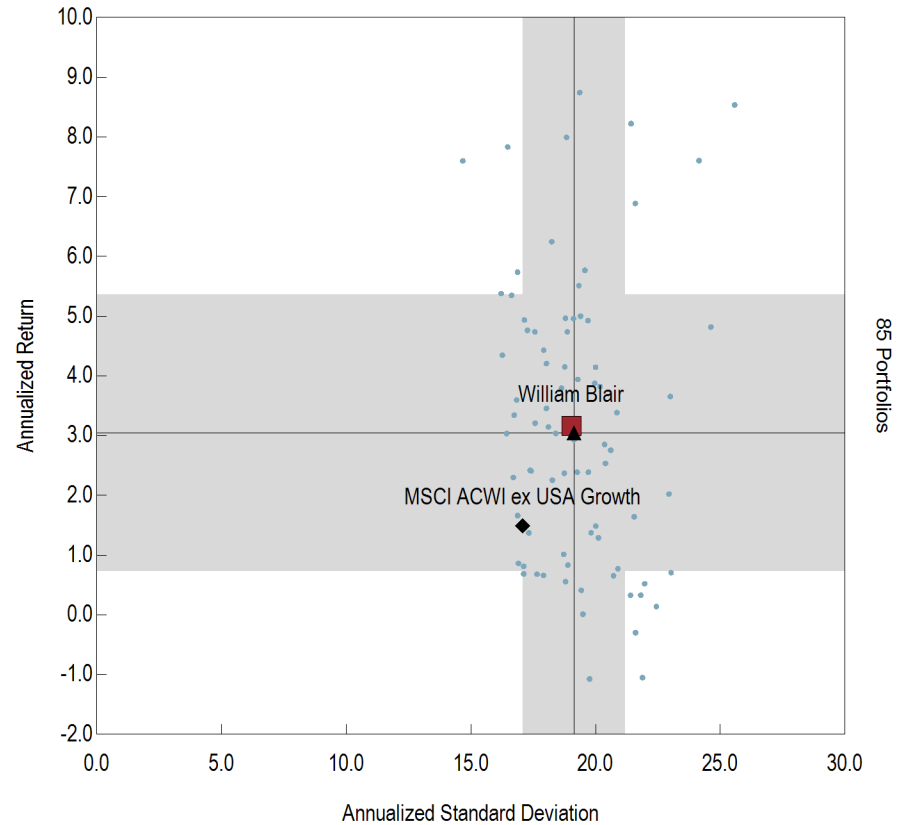
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	2.1%	21.8%	0.1
MSCI ACWI ex USA Growth	-0.4%	19.3%	-0.1
eV ACWI ex-US Growth Equity Gross Median	1.5%	21.7%	0.0

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	3.2%	19.0%	0.1
MSCI ACWI ex USA Growth	1.5%	17.1%	0.0
eV ACWI ex-US Growth Equity Gross Median	3.0%	19.1%	0.1

PIMCO RAE Emerging Markets Manager Portfolio Overview

Period Ending: December 31, 2022

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.

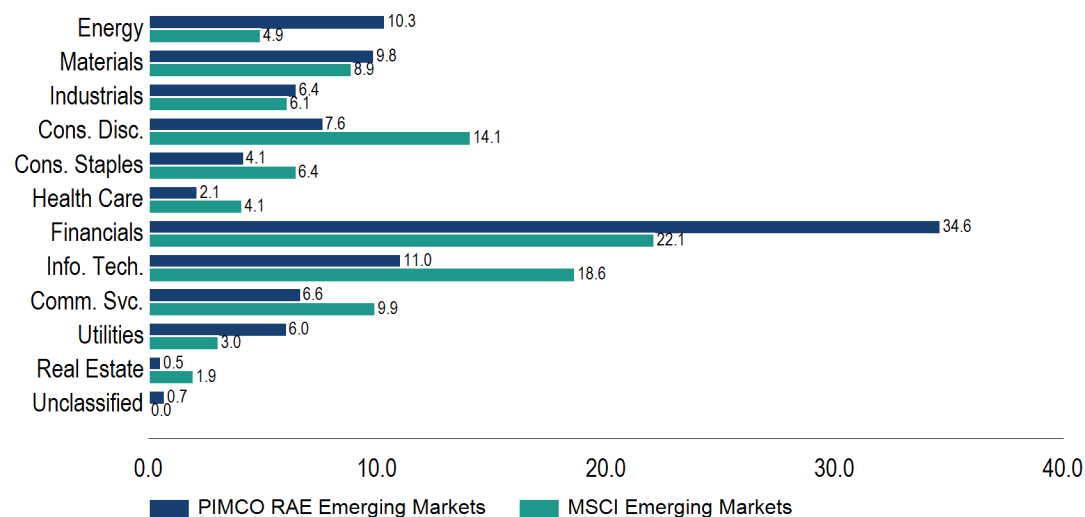
Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	359	1,375
Weighted Avg. Market Cap. (\$B)	17.92	95.69
Median Market Cap. (\$B)	3.62	6.46
Price To Earnings	5.66	11.40
Price To Book	1.75	2.60
Price To Sales	0.34	1.08
Return on Equity (%)	12.67	14.40
Yield (%)	5.64	3.39
Beta	1.14	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	4.7%	0.0%
Emerging*	95.1%	100.0%
Top 10 Largest Countries		
China*	18.6%	32.3%
Korea*	14.6%	11.3%
India*	13.5%	14.4%
Thailand*	8.7%	2.2%
Taiwan*	8.4%	13.8%
Turkey*	6.4%	0.7%
South Africa*	6.1%	3.7%
Brazil*	5.9%	5.3%
Hong Kong	4.4%	0.0%
Indonesia*	4.2%	1.9%
Total-Top 10 Largest Countries	90.9%	85.6%

Sector Allocation (%) vs MSCI Emerging Markets



Top Contributors

	End Weight	Return	Contribution
HACI OMER SABANCI HOLDING AS	1.62	73.11	1.18
TURKIYE IS BANKASI AS	1.44	68.11	0.98
AKBANK	0.97	71.43	0.69
POSCO HOLDINGS INC	1.33	49.63	0.66
VIPSHOP HOLDINGS LIMITED	1.01	62.19	0.63
IS YATIRIM MENKUL DEGERLER A.S.	0.43	133.32	0.58
VEDANTA LTD	2.13	18.80	0.40
BANK OF CHINA LTD	3.41	11.25	0.38
YAPI VE KREDI BANKASI AS	0.58	65.37	0.38
CHINA CONSTRUCTION BANK CORP	4.26	8.44	0.36

Bottom Contributors

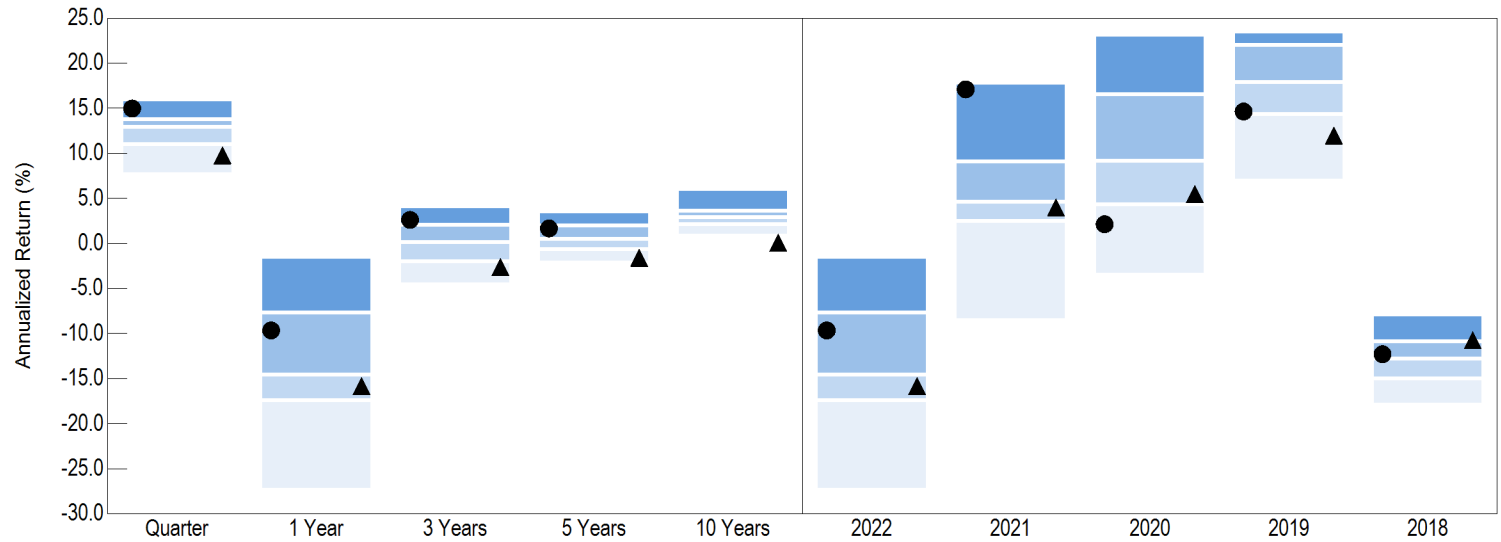
	End Weight	Return	Contribution
TELEKOMUNIKASI INDONESIA	0.54	-17.55	-0.09
KIA CORPORATION	1.13	-5.83	-0.07
ASTRA INTERNATIONAL	0.37	-14.46	-0.05
CIELO SA	1.62	-3.17	-0.05
TELKOM SA SOC LTD	0.15	-31.44	-0.05
BANCO DO ESTADO DO RIO GRANDE DO SUL B PN	0.23	-17.00	-0.04
PICC PROPERTY AND CASUALTY COMPANY LIMITED	0.43	-8.35	-0.04
PT ADARO ENERGY INDONESIA TBK	0.66	-4.66	-0.03
VIBRA ENERGIA S.A.	0.29	-8.95	-0.03

Unclassified sector allocation includes cash allocations.

PIMCO RAE Emerging Markets
 Manager Performance Comparisons (Gross of Fees)

Period Ending: December 31, 2022

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



	Return (Rank)										
5th Percentile	16.0	-1.5	4.1	3.5	6.0	-1.5	17.8	23.1	23.5	-7.9	
25th Percentile	13.8	-7.6	2.1	2.0	3.7	-7.6	9.1	16.6	22.1	-10.8	
Median	13.0	-14.5	0.2	0.5	3.0	-14.5	4.6	9.2	18.0	-12.7	
75th Percentile	11.0	-17.3	-1.9	-0.6	2.2	-17.3	2.5	4.3	14.4	-14.9	
95th Percentile	7.7	-27.3	-4.5	-2.1	0.9	-27.3	-8.5	-3.4	7.0	-17.8	
# of Portfolios	41	41	37	31	21	41	35	37	33	36	
● PIMCO RAE Emerging Markets	15.0 (13)	-9.7 (33)	2.6 (19)	1.7 (30)	-- (--)	-9.7 (33)	17.1 (6)	2.1 (85)	14.6 (72)	-12.3 (44)	
▲ MSCI Emerging Markets Value NR	9.8 (91)	-15.8 (55)	-2.6 (87)	-1.6 (88)	0.1 (99)	-15.8 (55)	4.0 (61)	5.5 (73)	12.0 (86)	-10.7 (25)	

TT Emerging Markets Manager Portfolio Overview

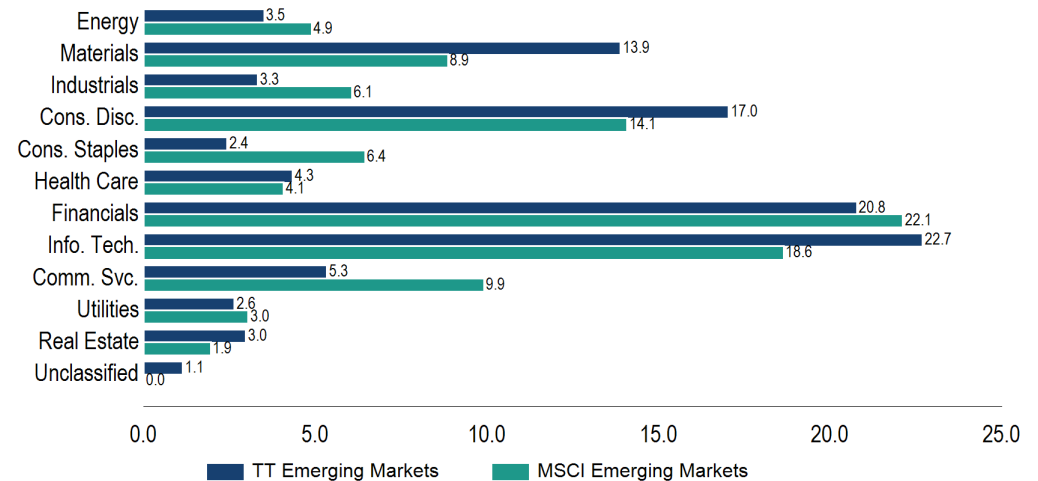
Period Ending: December 31, 2022

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.

Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	67	1,375
Weighted Avg. Market Cap. (\$B)	110.73	95.69
Median Market Cap. (\$B)	22.31	6.46
Price To Earnings	13.07	11.40
Price To Book	2.46	2.60
Price To Sales	1.30	1.08
Return on Equity (%)	13.63	14.40
Yield (%)	2.07	3.39
Beta	1.17	1.00

Sector Allocation (%) vs MSCI Emerging Markets



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	23.5%	0.0%
Emerging*	75.8%	100.0%
Frontier**	0.7%	0.0%
Top 10 Largest Countries		
China*	23.7%	32.3%
Korea*	12.4%	11.3%
Taiwan*	11.5%	13.8%
India*	10.6%	14.4%
United Kingdom	8.6%	0.0%
Hong Kong	6.0%	0.0%
Brazil*	6.0%	5.3%
Mexico*	3.3%	2.3%
United Arab Emirates*	3.0%	1.3%
South Africa*	2.6%	3.7%
Total-Top 10 Largest Countries	88.9%	84.5%

Top Contributors

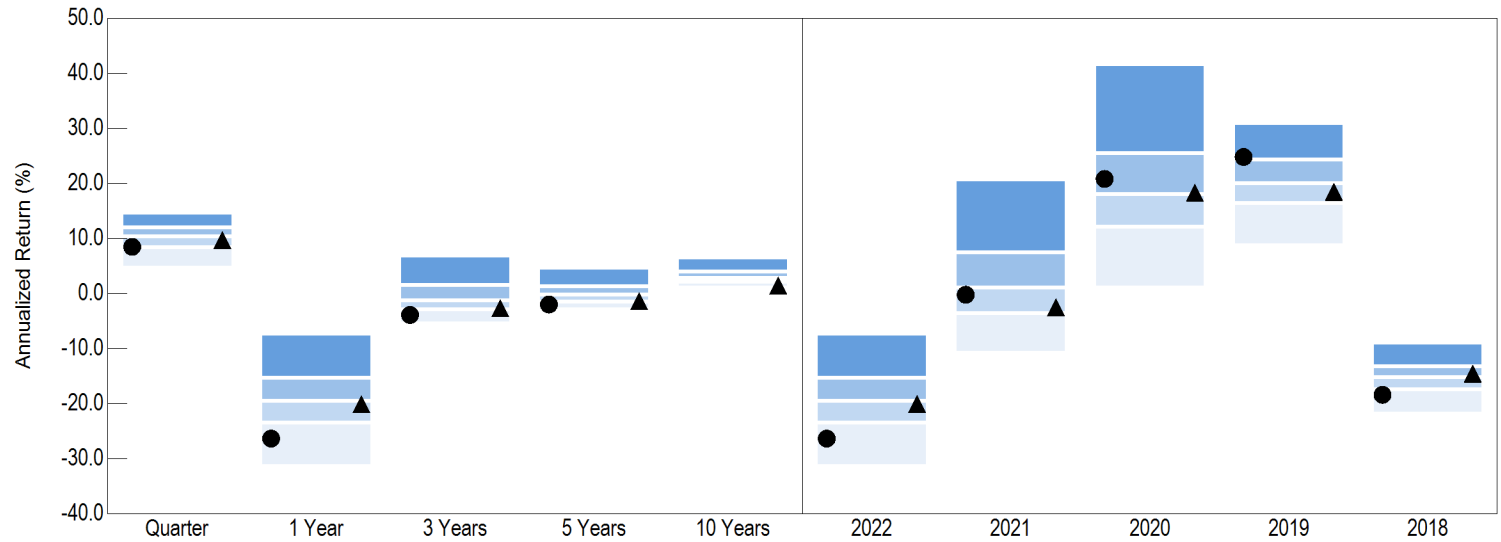
	End Weight	Return	Contribution
POLYMETAL INTERNATIONAL PLC	6.85	36.13	2.48
360 DIGITECH INC	3.14	60.23	1.89
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	8.61	10.60	0.91
KB FINANCIAL GROUP INC	3.00	26.73	0.80
SAMSUNG ELECTRONICS CO LTD	3.87	18.92	0.73
PING AN INSURANCE GROUP	1.93	32.65	0.63
TENCENT HOLDINGS LTD	2.40	26.22	0.63
AXIS BANK	2.30	25.22	0.58
CIE FINANCIERE RICHEMONT AG, ZUG	1.58	34.98	0.55

Bottom Contributors

	End Weight	Return	Contribution
LOJAS RENNER SA	1.86	-29.01	-0.54
HAPVIDA PARTICIPACOES E INVESTIMENTOS SA	1.11	-36.67	-0.41
GLOBANT SA	1.59	-10.11	-0.16
XP INC	0.75	-19.31	-0.14
THE SAUDI NATIONAL BANK	0.64	-19.99	-0.13
PVR	1.33	-5.43	-0.07
CENTRAIS ELETRICAS BRASILEIRAS SA-ELETROBRAS	2.10	-2.47	-0.05
DIAGNOSTICOS DA AMERICA SA	0.17	-28.81	-0.05
SABIC AGRI-NUTRIENTS COMPANY	0.63	-7.50	-0.05

Unclassified sector allocation includes cash allocations.

TT Emerging Markets vs. eV Emg Mkts Equity Gross Universe



	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2022	2021	2020	2019	2018
5th Percentile	14.6	-7.3	6.9	4.6	6.5	-7.3	20.7	41.6	30.9	-9.0
25th Percentile	12.0	-15.2	1.6	1.4	4.1	-15.2	7.5	25.5	24.4	-13.2
Median	10.4	-19.5	-1.2	-0.1	2.9	-19.5	1.2	18.2	20.1	-15.2
75th Percentile	8.4	-23.4	-2.8	-1.4	2.1	-23.4	-3.5	12.2	16.5	-17.4
95th Percentile	4.8	-31.2	-5.4	-2.8	1.1	-31.2	-10.7	1.2	8.8	-21.8
# of Portfolios	416	415	378	332	232	415	391	391	386	355
● TT Emerging Markets	8.5 (75)	-26.4 (88)	-3.9 (87)	-2.0 (89)	-- (--)	-26.4 (88)	-0.2 (58)	20.8 (39)	24.8 (24)	-18.4 (83)
▲ MSCI Emerging Markets	9.7 (60)	-20.1 (56)	-2.7 (73)	-1.4 (77)	1.4 (90)	-20.1 (56)	-2.5 (71)	18.3 (49)	18.4 (63)	-14.6 (43)

Global Equity Managers

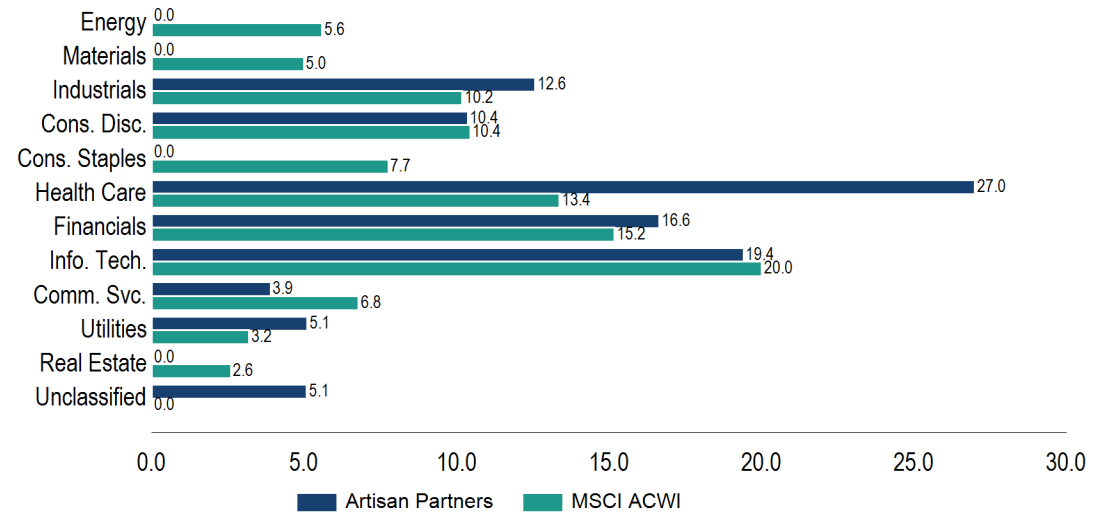
Artisan Partners Manager Portfolio Overview

Period Ending: December 31, 2022

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

Number of Holdings	45	2,883
Weighted Avg. Market Cap. (\$B)	118.32	274.21
Median Market Cap. (\$B)	40.93	11.87
Price To Earnings	26.10	16.13
Price To Book	3.76	3.19
Price To Sales	4.28	1.85
Return on Equity (%)	13.67	21.99
Yield (%)	0.92	2.40
Beta	1.00	1.00

Sector Allocation (%) vs MSCI ACWI



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	93.9%	88.8%
Emerging*	1.0%	11.2%
Top 10 Largest Countries		
United States	47.6%	60.4%
United Kingdom	9.6%	3.9%
Switzerland	7.4%	2.6%
Hong Kong	7.3%	0.8%
Denmark	6.6%	0.8%
Cash	5.1%	0.0%
Japan	4.0%	5.6%
Sweden	3.7%	0.8%
Canada	2.4%	3.1%
Australia	2.3%	2.0%
Total-Top 10 Largest Countries	96.0%	79.8%

Top Contributors

	Avg Wgt	Return	Contribution
CNH INDUSTRIAL N.V.	2.40	40.25	0.97
NOVO NORDISK 'B'	2.55	34.34	0.88
BOSTON SCIENTIFIC CORP	4.13	19.47	0.80
UBS GROUP AG	2.97	26.16	0.78
TECHTRONIC INDUSTRIES CO LTD	4.73	15.61	0.74
VESTAS WIND SYSTEMS A/S	1.29	55.61	0.72
AIA GROUP LTD	1.87	33.52	0.63
ASTRAZENECA PLC	2.81	21.98	0.62
SCHWAB (CHARLES) CORP	3.20	16.17	0.52
INGERSOLL RAND INC	2.38	20.83	0.50

Bottom Contributors

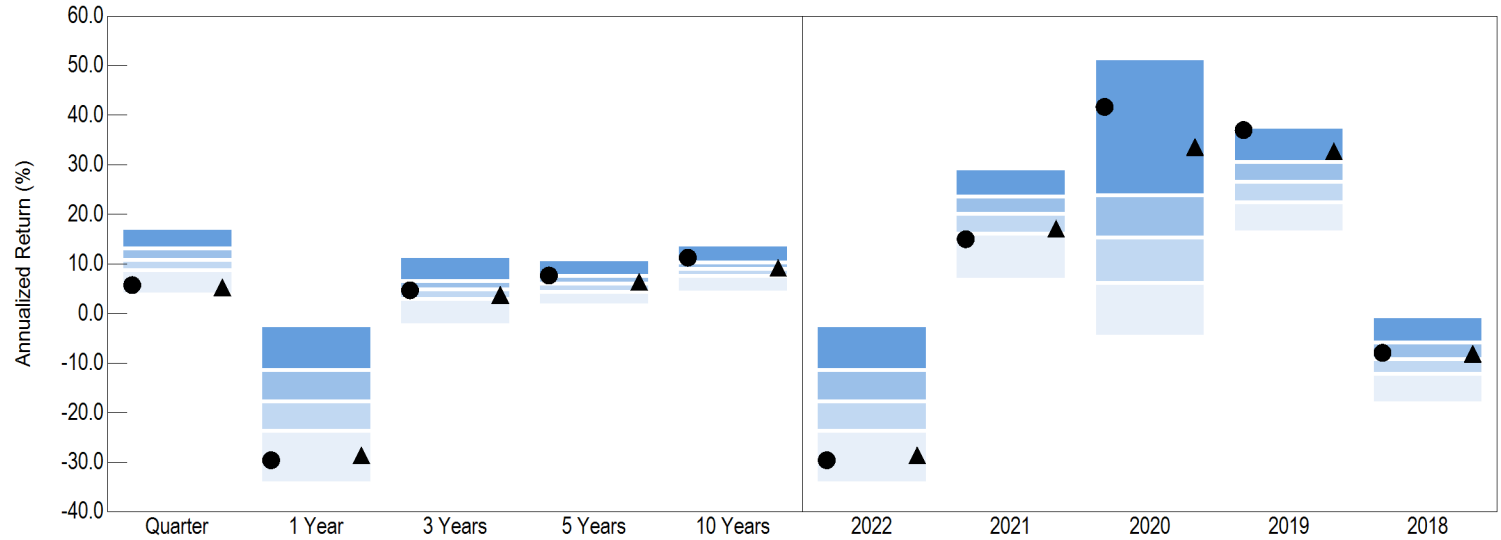
	Avg Wgt	Return	Contribution
ATLISSIAN CORP	4.11	-38.90	-1.60
TESLA INC	1.26	-53.56	-0.67
AIRBNB INC	2.26	-18.60	-0.42
SVB FINANCIAL GROUP	1.09	-31.46	-0.34
ALPHABET INC	3.96	-7.76	-0.31
GENERAC HOLDINGS INC	0.68	-43.49	-0.30
CHIPOTLE MEXICAN GRILL INC	2.57	-7.67	-0.20
FIDELITY NATIONAL INFORMATION SERVICES INC	1.72	-9.61	-0.17
VEEVA SYSTEMS INC	5.20	-2.12	-0.11
NU HOLDINGS LTD/CAYMAN ISLANDS	1.08	-7.50	-0.08

Unclassified sector allocation includes cash allocations.

Artisan Partners
 Manager Performance Comparisons (Gross of Fees)

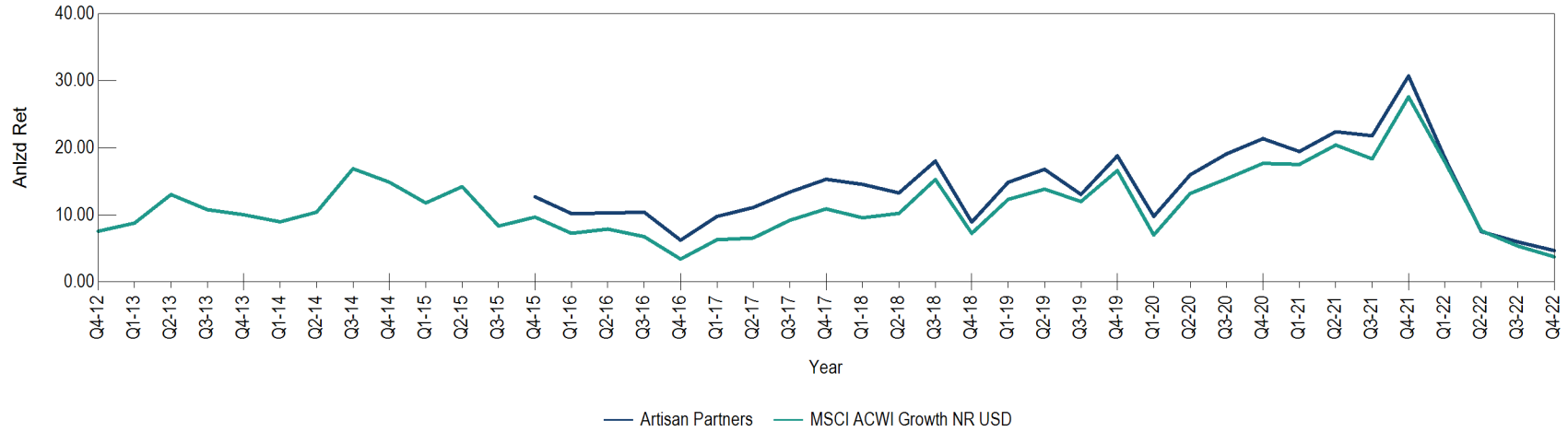
Period Ending: December 31, 2022

Artisan Partners vs. eV All Global Equity Gross Universe

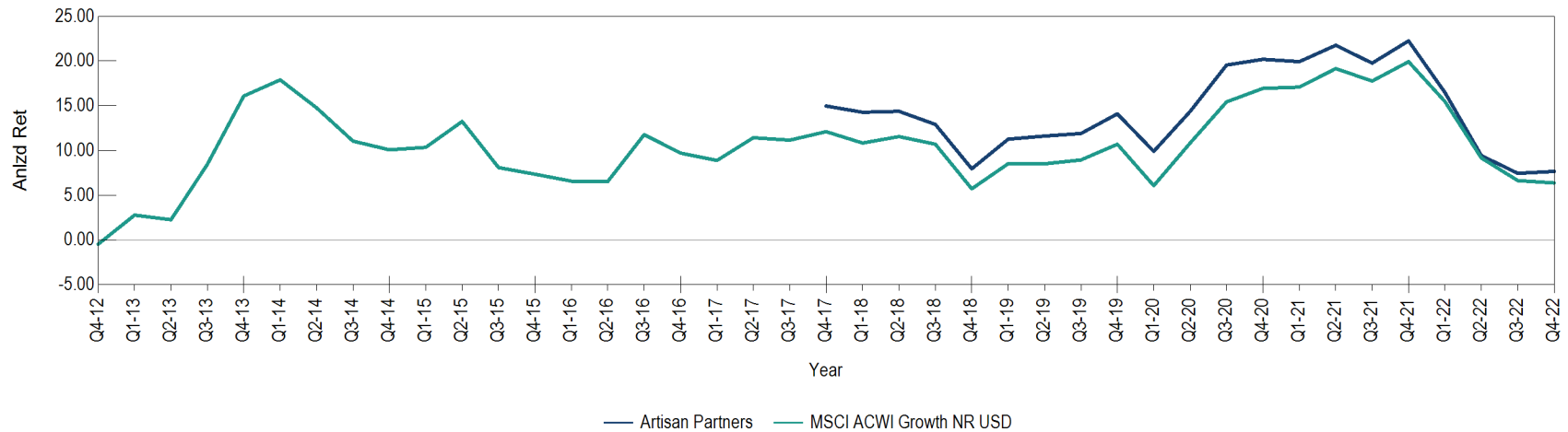


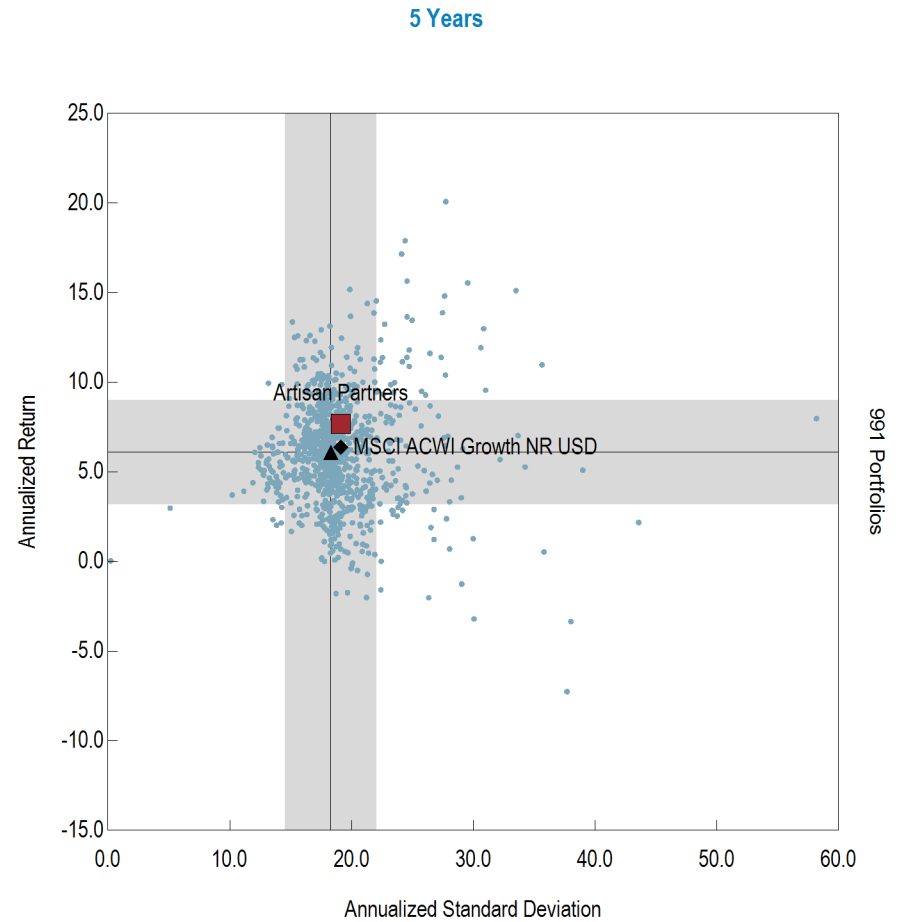
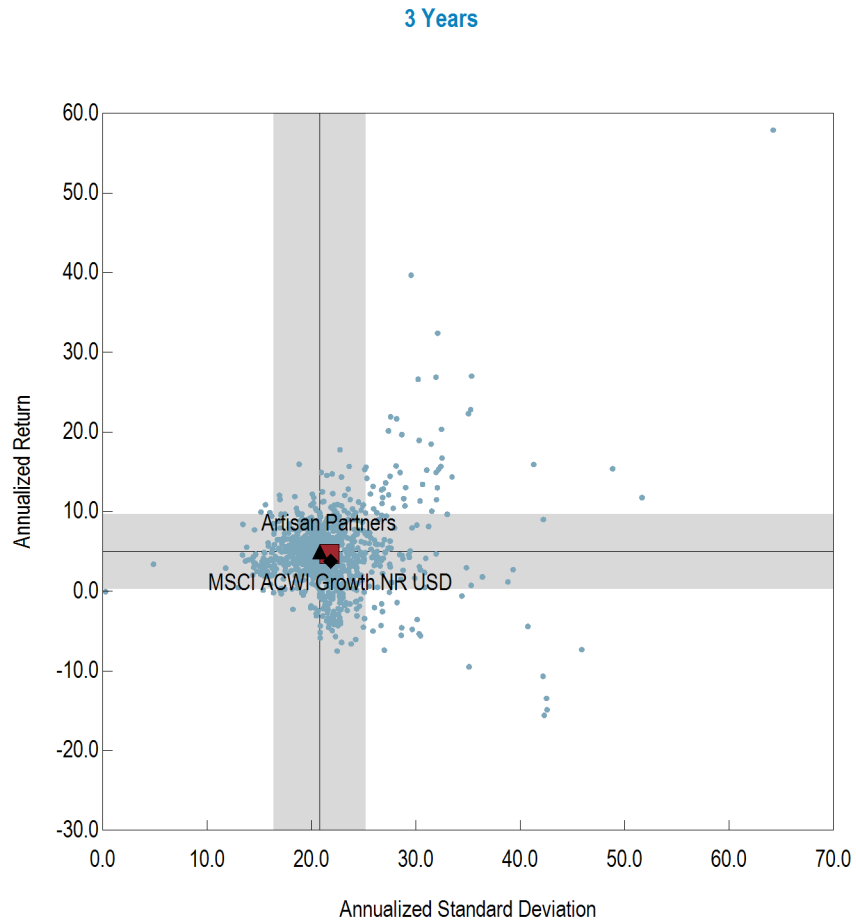
	Return (Rank)									
5th Percentile	17.2	-2.4	11.5	10.9	13.8	-2.4	29.2	51.5	37.6	-0.7
25th Percentile	13.3	-11.4	6.6	7.7	10.3	-11.4	23.7	24.0	30.7	-5.8
Median	10.9	-17.7	5.0	6.1	9.0	-17.7	20.2	15.4	26.6	-9.1
75th Percentile	8.7	-23.5	3.0	4.4	7.7	-23.5	16.2	6.3	22.6	-12.2
95th Percentile	3.9	-34.2	-2.3	1.7	4.2	-34.2	6.9	-4.7	16.5	-18.1
# of Portfolios	1,216	1,214	1,125	991	657	1,214	1,141	1,093	989	920
● Artisan Partners	5.7 (92)	-29.6 (90)	4.7 (57)	7.7 (26)	11.3 (15)	-29.6 (90)	15.0 (80)	41.7 (9)	37.0 (7)	-7.9 (40)
▲ MSCI ACWI Growth NR USD	5.3 (94)	-28.6 (88)	3.8 (69)	6.4 (45)	9.2 (48)	-28.6 (88)	17.1 (71)	33.6 (14)	32.7 (17)	-8.1 (42)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





	3 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Artisan Partners	4.7%	21.7%	0.2
MSCI ACWI Growth NR USD	3.8%	21.8%	0.1
eV All Global Equity Gross Median	5.0%	20.8%	0.2

	5 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Artisan Partners	7.7%	19.2%	0.3
MSCI ACWI Growth NR USD	6.4%	19.1%	0.3
eV All Global Equity Gross Median	6.1%	18.3%	0.3

First Eagle Manager Portfolio Overview

Period Ending: December 31, 2022

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

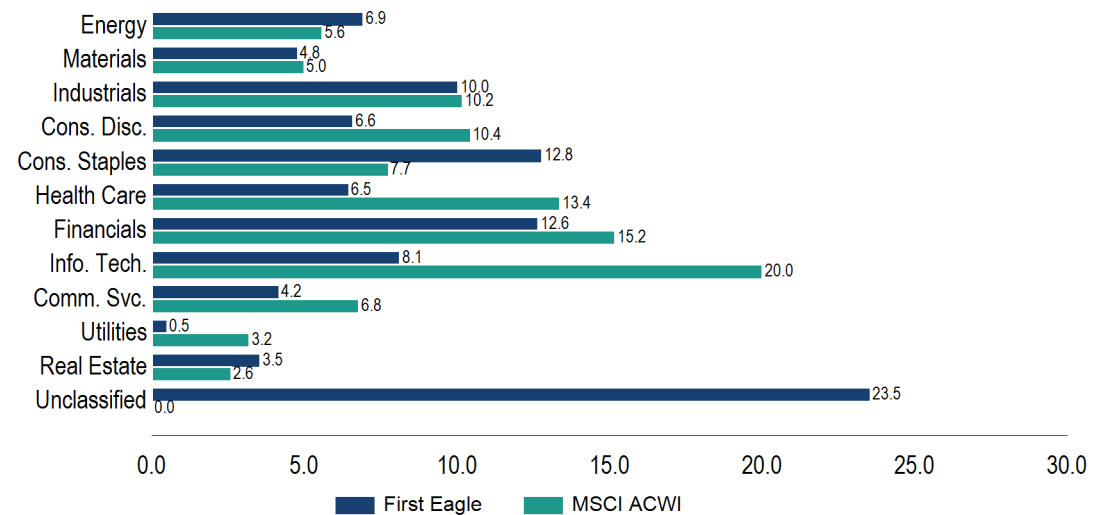
Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	142	2,883
Weighted Avg. Market Cap. (\$B)	118.11	274.21
Median Market Cap. (\$B)	28.39	11.87
Price To Earnings	16.21	16.13
Price To Book	2.15	3.19
Price To Sales	1.57	1.85
Return on Equity (%)	15.54	21.99
Yield (%)	2.20	2.40
Beta	0.78	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	93.8%	88.8%
Emerging*	6.2%	11.2%
Top 10 Largest Countries		
United States	61.5%	60.4%
United Kingdom	7.3%	3.9%
Japan	6.8%	5.6%
Canada	4.4%	3.1%
France	3.6%	3.0%
Switzerland	3.0%	2.6%
Korea*	2.0%	1.3%
Hong Kong	1.6%	0.8%
Mexico*	1.4%	0.3%
Brazil*	1.2%	0.6%
Total-Top 10 Largest Countries	93.7%	81.3%

Sector Allocation (%) vs MSCI ACWI



Top Contributors

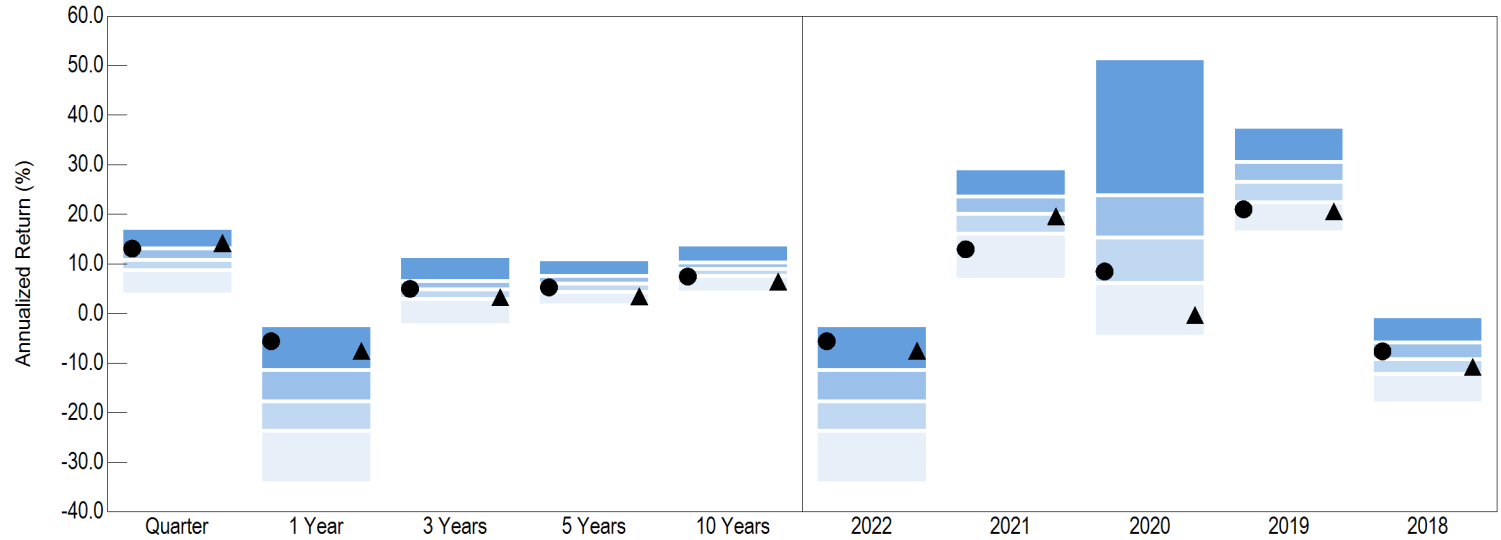
	End Weight	Return	Contribution
SCHLUMBERGER LTD	2.30	49.43	1.14
ORACLE CORP	2.65	34.53	0.92
SPDR GOLD TRUST	9.25	9.68	0.90
EXXON MOBIL CORP	2.33	27.35	0.64
UNIVERSAL HEALTH SERVICES INC.	1.01	60.02	0.61
CIE FINANCIERE RICHEMONT AG, ZUG	1.40	34.98	0.49
HCA HEALTHCARE INC	1.59	30.86	0.49
PHILIP MORRIS INTERNATIONAL INC	1.51	23.47	0.35
COMCAST CORP	1.65	20.27	0.33
NOV INC	1.09	29.43	0.32

Bottom Contributors

	End Weight	Return	Contribution
META PLATFORMS INC	1.06	-11.31	-0.12
NUTRIEN LTD	0.65	-11.85	-0.08
EQUITY RESIDENTIAL	0.65	-11.31	-0.07
ALPHABET INC	0.90	-7.72	-0.07
C.H. ROBINSON WORLDWIDE INC.	1.51	-4.35	-0.07
BOSTON PROPERTIES INC	0.38	-8.55	-0.03
DOUGLAS EMMETT INC	0.28	-11.50	-0.03
SALESFORCE INC	0.39	-7.82	-0.03
ALPHABET INC	0.36	-7.76	-0.03
BROWN & BROWN INC	0.42	-5.62	-0.02

Unclassified sector allocation includes cash allocations and Gold allocations (8.55% as of 6/30/2021).

First Eagle vs. eV All Global Equity Gross Universe

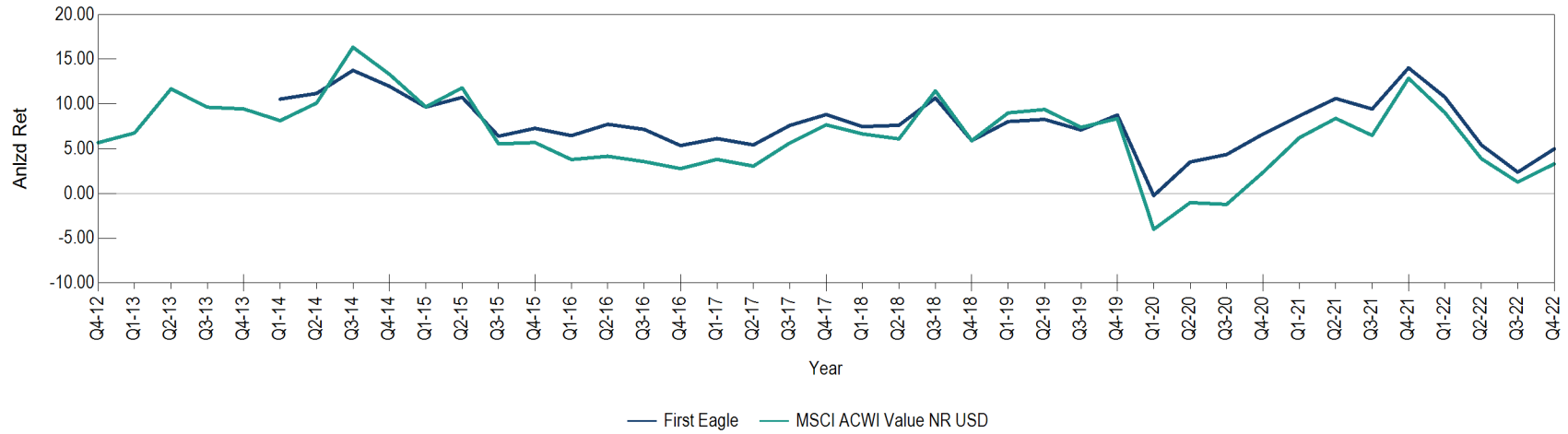


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2022	2021	2020	2019	2018
5th Percentile	17.2	-2.4	11.5	10.9	13.8	-2.4	29.2	51.5	37.6	-0.7
25th Percentile	13.3	-11.4	6.6	7.7	10.3	-11.4	23.7	24.0	30.7	-5.8
Median	10.9	-17.7	5.0	6.1	9.0	-17.7	20.2	15.4	26.6	-9.1
75th Percentile	8.7	-23.5	3.0	4.4	7.7	-23.5	16.2	6.3	22.6	-12.2
95th Percentile	3.9	-34.2	-2.3	1.7	4.2	-34.2	6.9	-4.7	16.5	-18.1
# of Portfolios	1,216	1,214	1,125	991	657	1,214	1,141	1,093	989	920
● First Eagle	13.1 (27)	-5.6 (10)	5.0 (51)	5.3 (63)	7.5 (77)	-5.6 (10)	13.0 (85)	8.5 (70)	21.0 (82)	-7.6 (38)
▲ MSCI ACWI Value NR USD	14.2 (18)	-7.5 (14)	3.3 (73)	3.5 (85)	6.4 (86)	-7.5 (14)	19.6 (55)	-0.3 (89)	20.6 (83)	-10.8 (65)

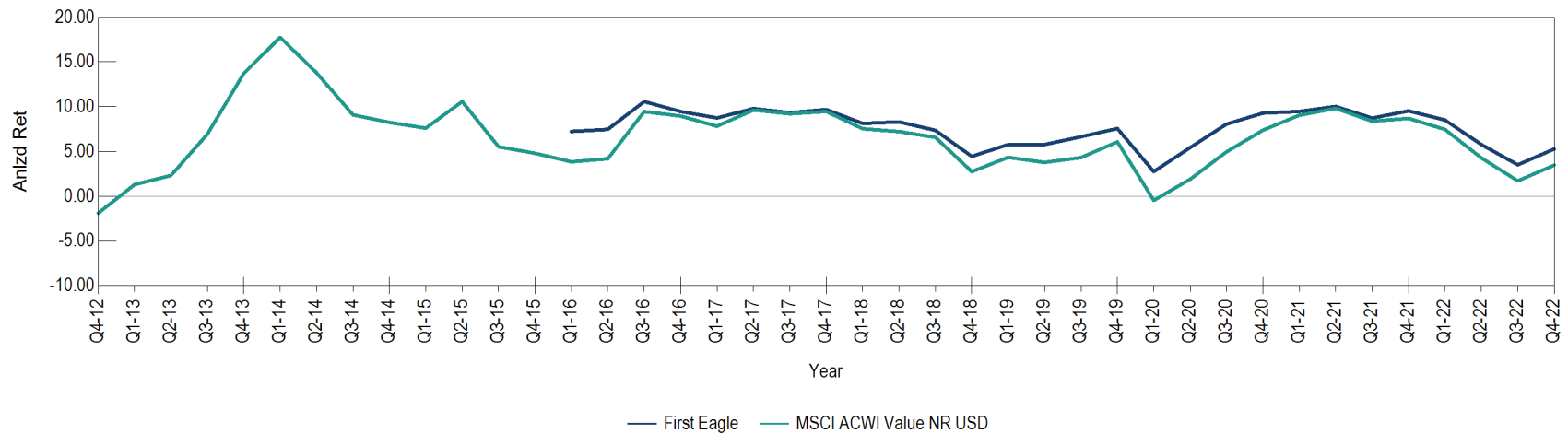
First Eagle
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

Period Ending: December 31, 2022

Rolling 3 Year Annualized Return (%)



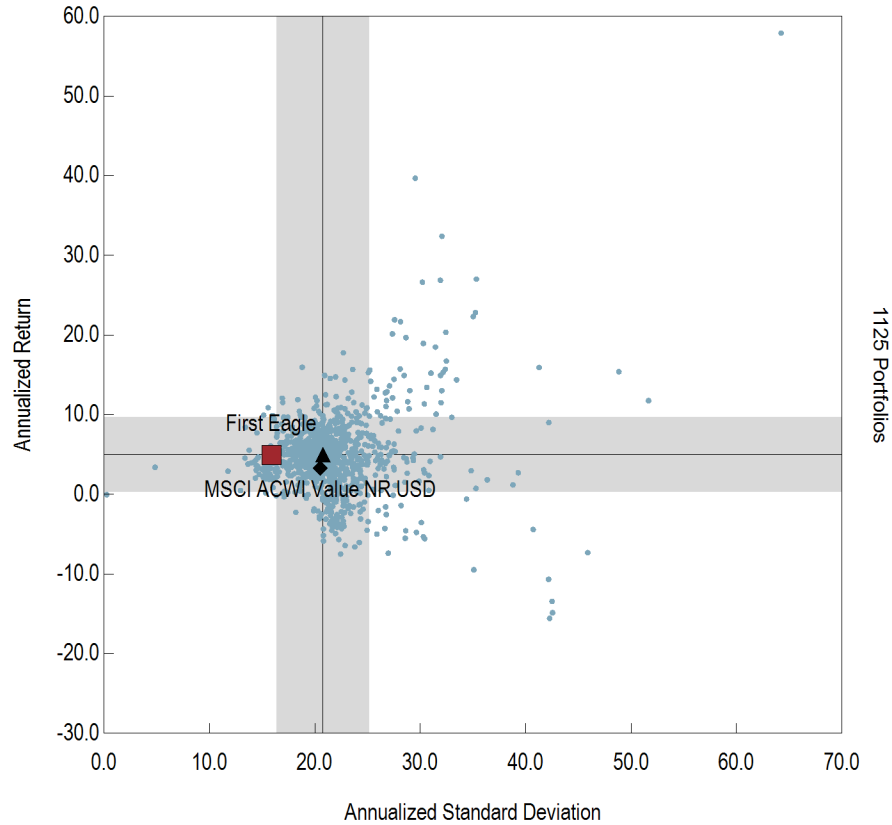
Rolling 5 Year Annualized Return (%)



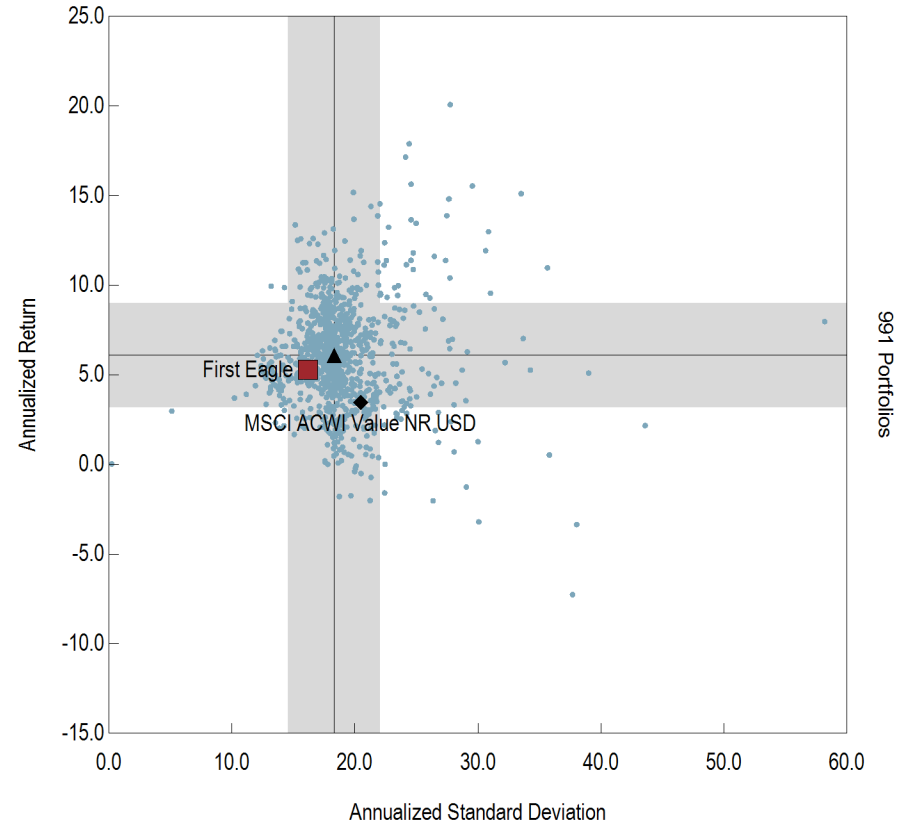
First Eagle
Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: December 31, 2022

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	5.0%	15.9%	0.3
MSCI ACWI Value NR USD	3.3%	20.5%	0.1
eV All Global Equity Gross Median	5.0%	20.8%	0.2

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	5.3%	13.8%	0.3
MSCI ACWI Value NR USD	3.5%	17.9%	0.1
eV All Global Equity Gross Median	6.1%	18.3%	0.3

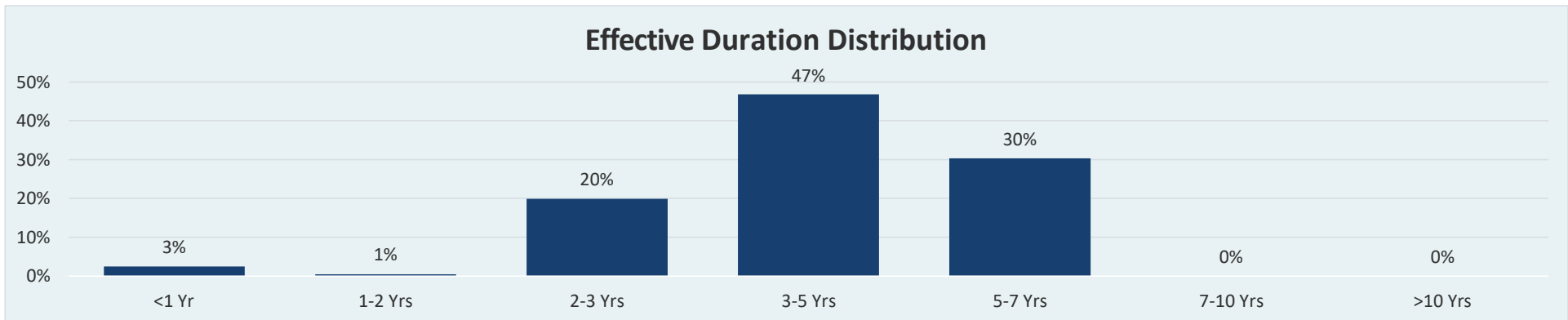
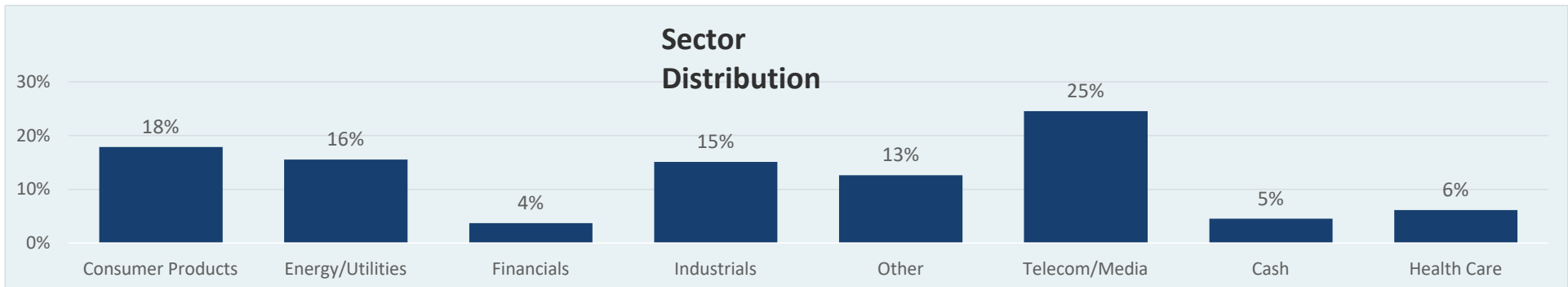
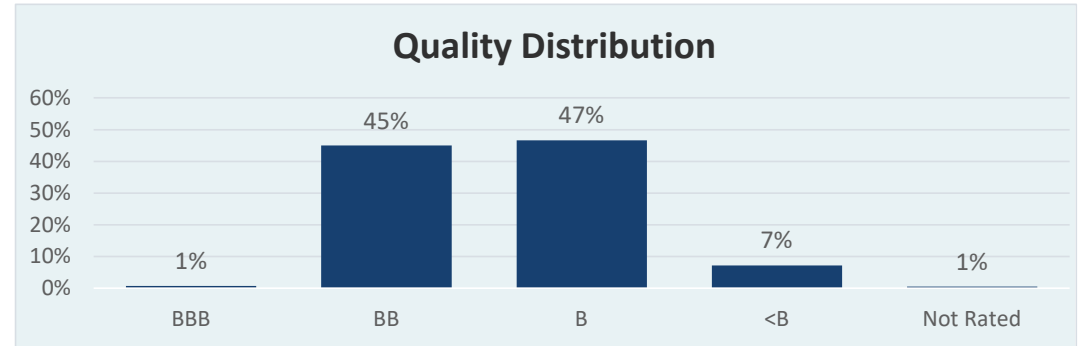
High Yield Managers

Allianz Global Investors Manager Portfolio Overview

Period Ending: December 31, 2022

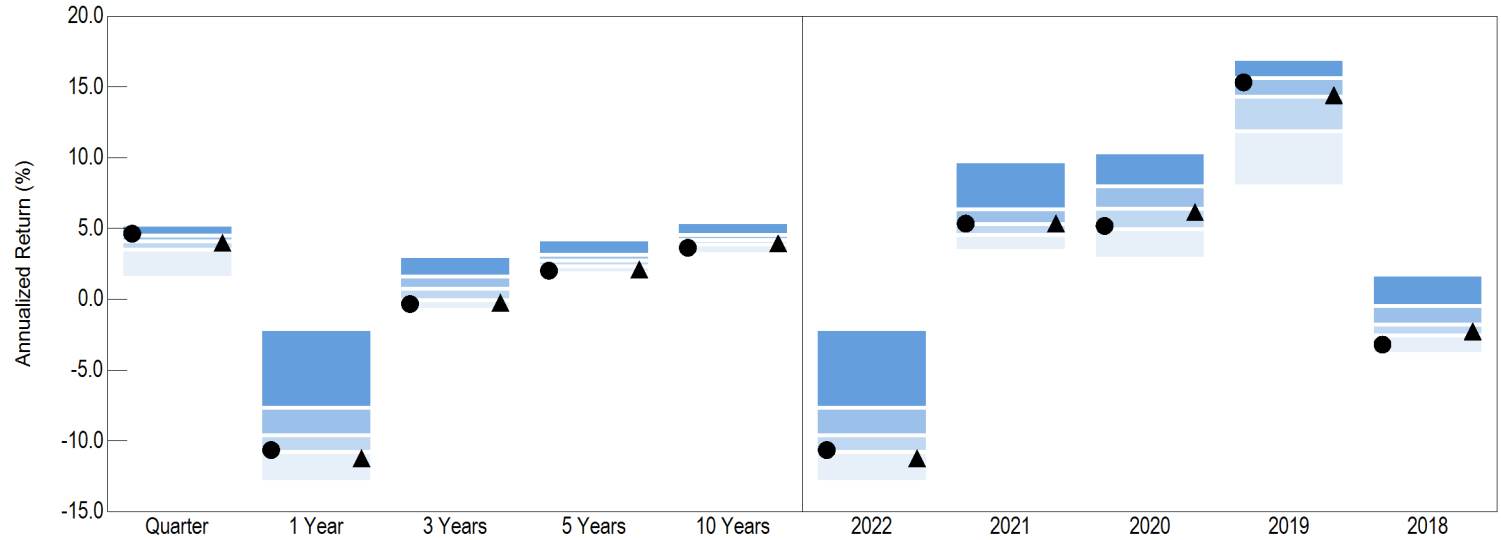
Domestic high yield fixed income portfolio with a focus on security selection. Primary personnel include Douglas Forsyth, Justin Kass, William Stickney, and Michael Yee.

	Allianz	ICE BofAML HY Master II
Effective Duration	4.10	4.00
Yield to Maturity	8.10	9.00
Average Quality	B1	B1
Average Coupon	6.4%	5.8%



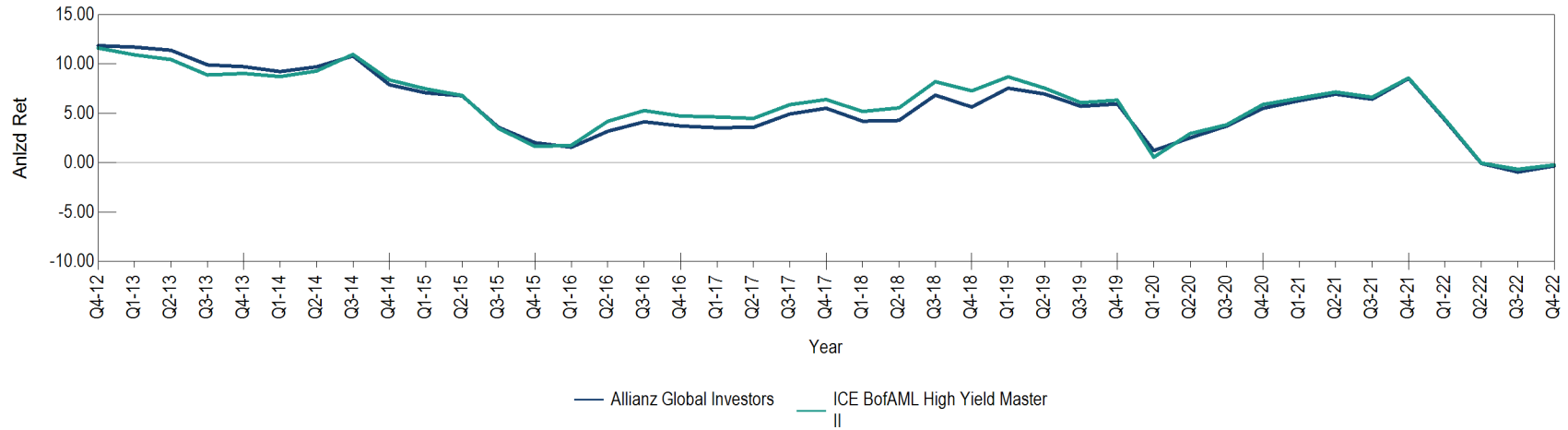
Quality distribution excludes cash.

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

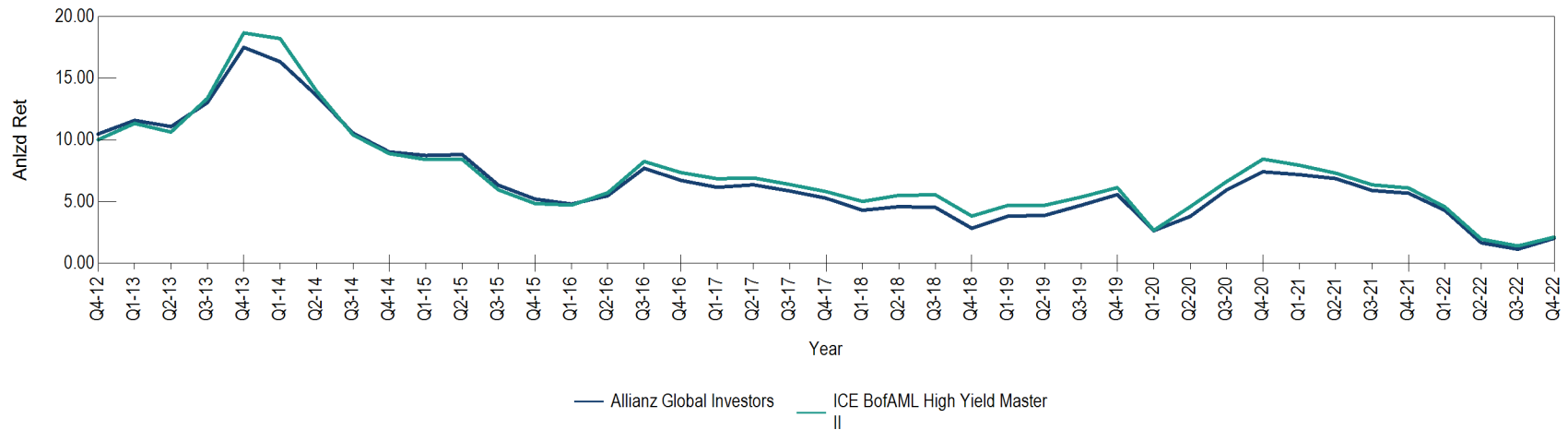


	Return (Rank)													
5th Percentile	5.2	-2.1	3.0	4.2	5.4	-2.1	9.7	10.3	16.9	1.7				
25th Percentile	4.5	-7.6	1.6	3.2	4.6	-7.6	6.4	8.0	15.6	-0.5				
Median	4.1	-9.6	0.8	2.7	4.2	-9.6	5.4	6.4	14.3	-1.8				
75th Percentile	3.5	-10.8	0.0	2.4	3.9	-10.8	4.6	5.0	11.9	-2.5				
95th Percentile	1.5	-12.9	-0.7	1.9	3.2	-12.9	3.4	2.9	8.0	-3.8				
# of Portfolios	205	205	204	195	157	205	211	217	226	210				
● Allianz Global Investors	4.6 (21)	-10.6 (74)	-0.3 (87)	2.0 (90)	3.6 (85)	-10.6 (74)	5.3 (51)	5.2 (74)	15.3 (31)	-3.2 (88)				
▲ ICE BofAML High Yield Master II	4.0 (58)	-11.2 (83)	-0.2 (84)	2.1 (87)	3.9 (70)	-11.2 (83)	5.4 (50)	6.2 (55)	14.4 (49)	-2.3 (69)				

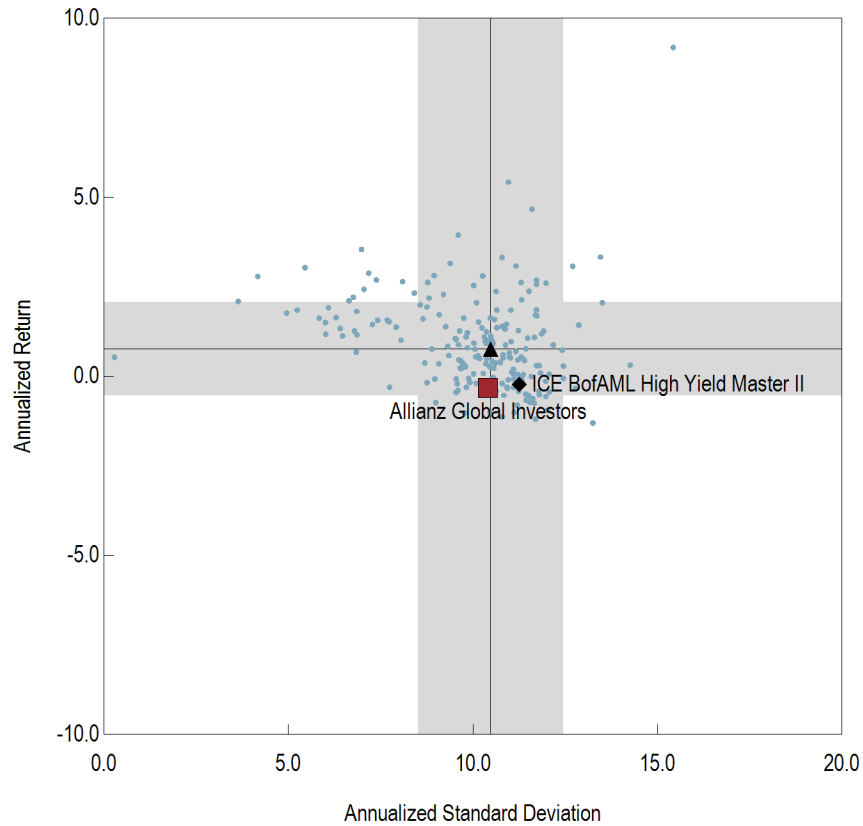
Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)

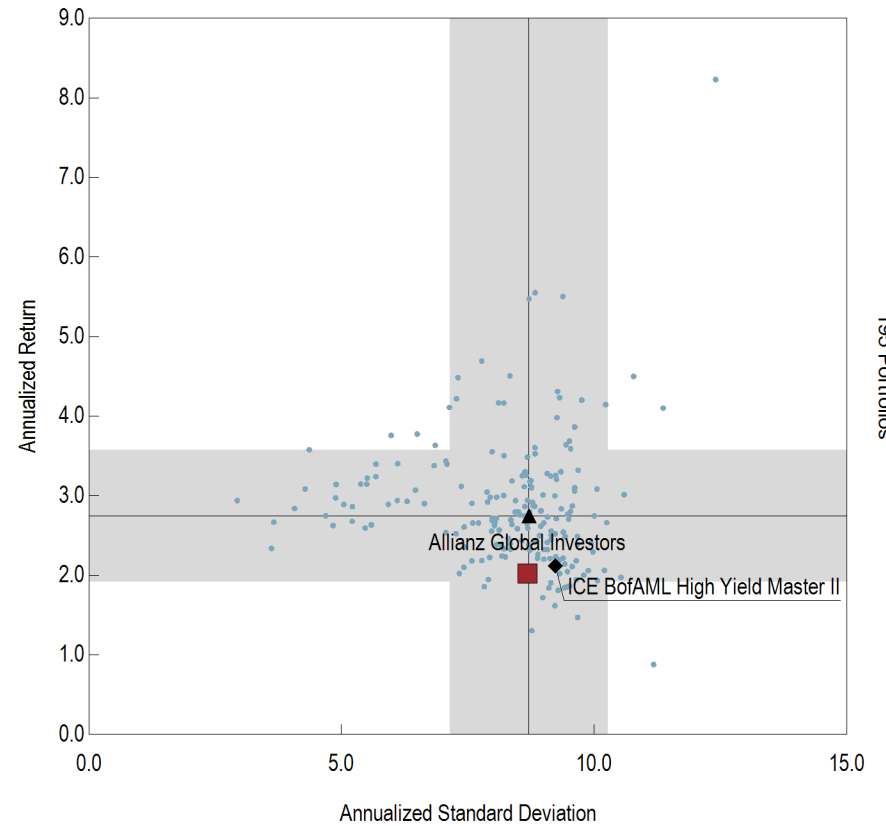


3 Years



204 Portfolios

5 Years



195 Portfolios

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Allianz Global Investors	-0.3%	10.4%	-0.1
ICE BofAML High Yield Master II	-0.2%	11.3%	-0.1
eV US High Yield Fixed Inc Gross Median	0.8%	10.5%	0.0

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Allianz Global Investors	2.0%	8.7%	0.1
ICE BofAML High Yield Master II	2.1%	9.2%	0.1
eV US High Yield Fixed Inc Gross Median	2.7%	8.7%	0.2

Real Estate Managers

Adelante Manager Portfolio Overview

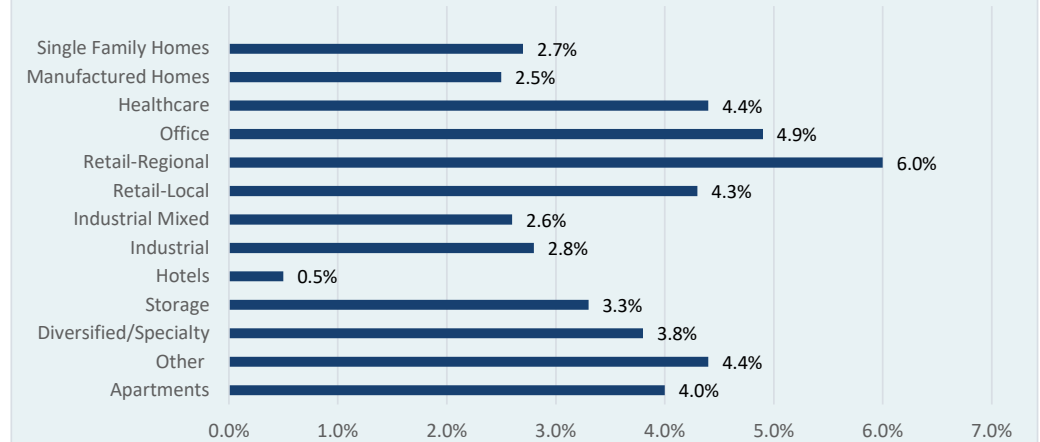
Period Ending: December 31, 2022

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

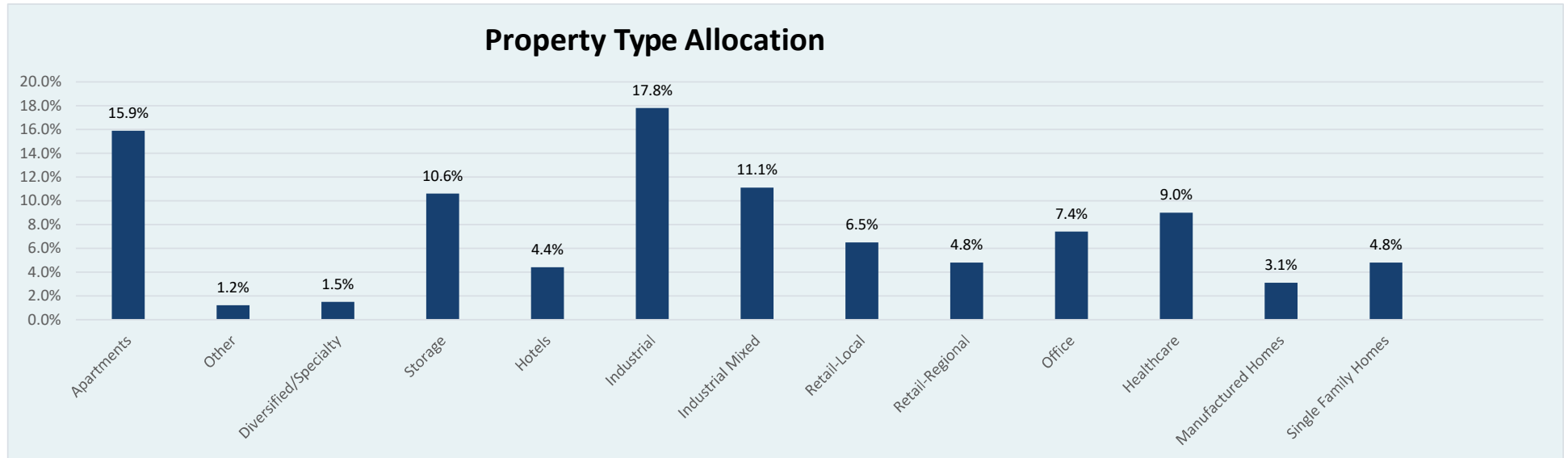
Top Five Holdings

Company	Property Type	Allocation
ProLogis Inc.	Industrial	15.0%
Equinix Inc	Industrial Mixed	7.3%
Public Storage	Storage	6.3%
Equity Residential	Apartments	5.5%
Welltower Inc.	Industrial Mixed	5.1%

Dividend Yield by Property Type



Property Type Allocation



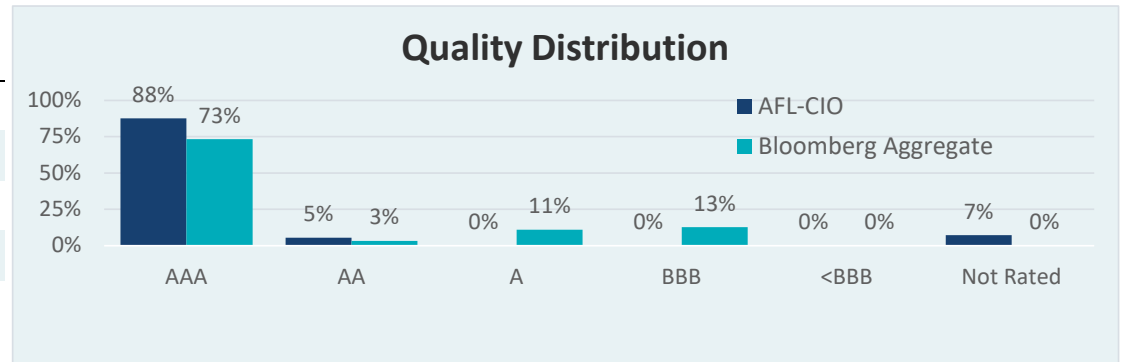
Diversifying Fixed Income Managers

AFL-CIO Manager Portfolio Overview

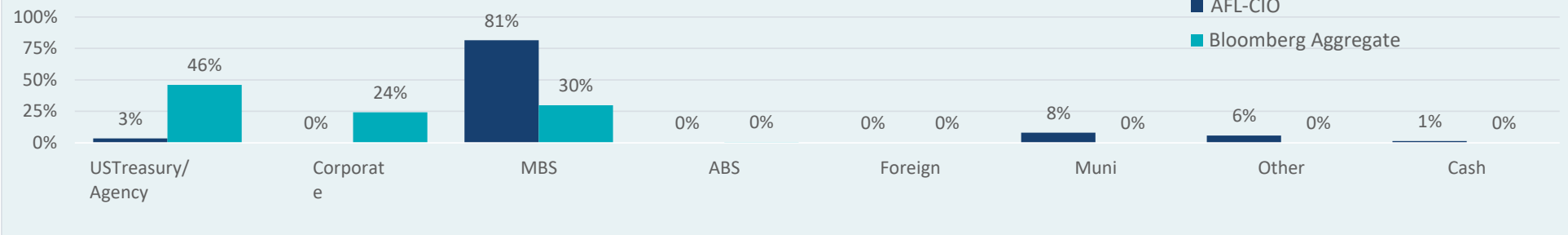
Period Ending: December 31, 2022

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

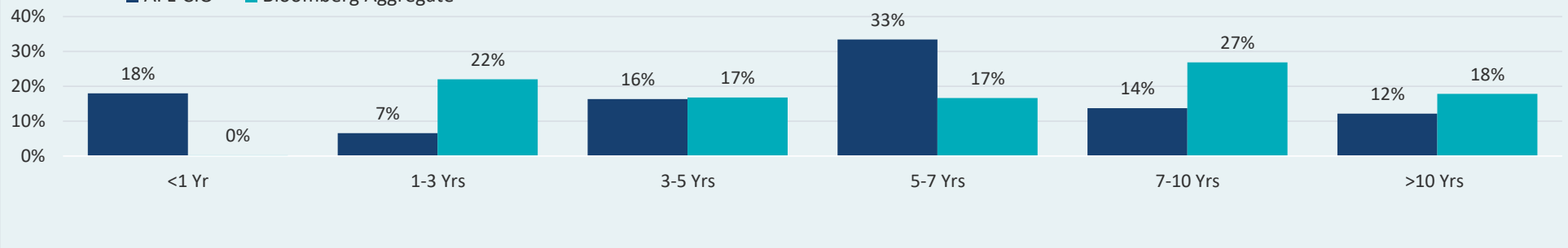
	AFL-CIO	Bloomberg Aggregate
Effective Duration	5.97	6.12
Yield to Maturity	3.49	4.63
Average Quality	AAA	AA
Average Coupon	3.1%	2.7%



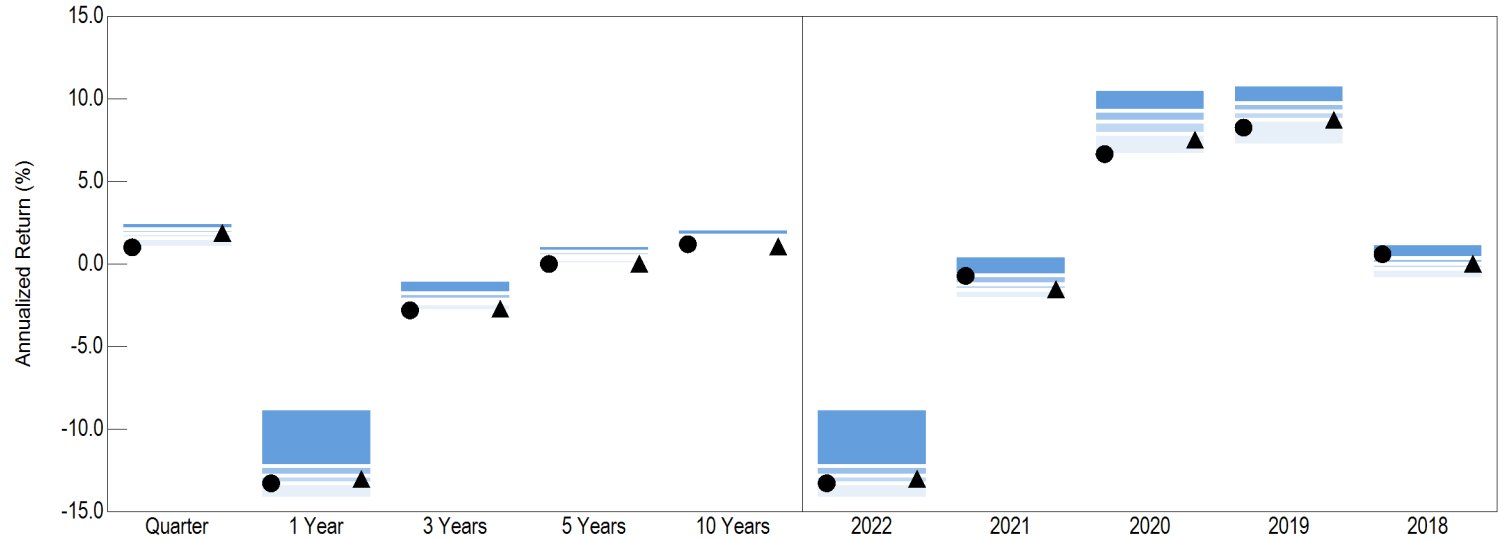
Sector Distribution



Duration Distribution

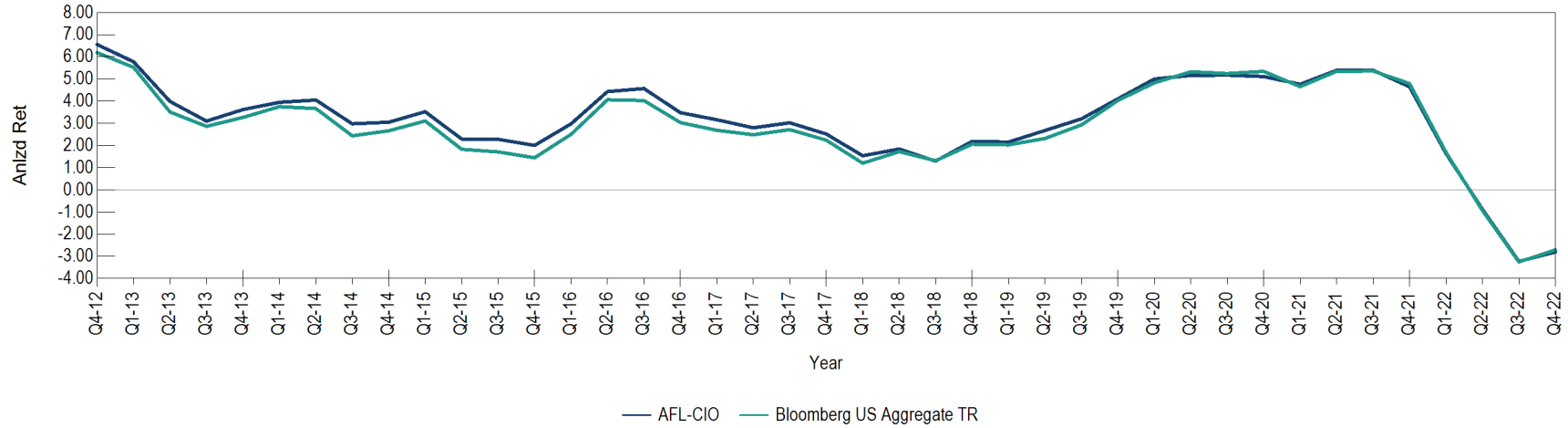


AFL-CIO vs. eV US Core Fixed Inc Gross Universe

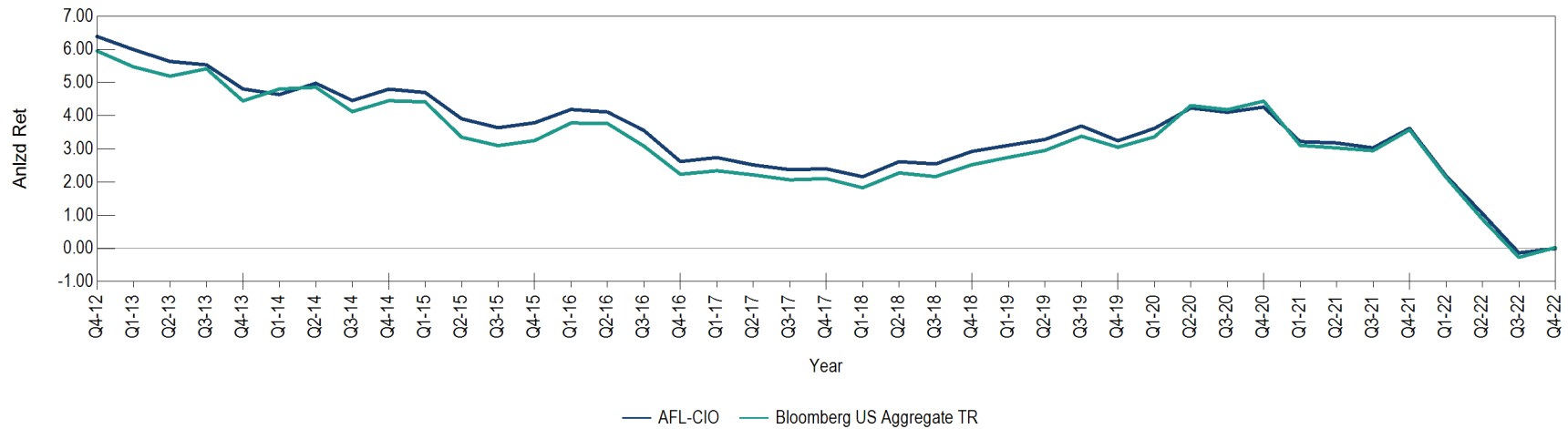


	Quarter	1 Year	3 Years	5 Years	10 Years	2022	2021	2020	2019	2018
5th Percentile	2.5	-8.8	-1.0	1.1	2.1	-8.8	0.5	10.6	10.9	1.2
25th Percentile	2.1	-12.2	-1.7	0.7	1.7	-12.2	-0.7	9.3	9.8	0.4
Median	1.9	-12.8	-2.1	0.5	1.5	-12.8	-1.2	8.6	9.3	0.0
75th Percentile	1.6	-13.3	-2.4	0.3	1.4	-13.3	-1.5	7.9	8.7	-0.3
95th Percentile	1.0	-14.2	-2.9	0.0	1.1	-14.2	-2.1	6.6	7.2	-0.9
# of Portfolios	209	209	201	197	187	209	217	225	228	240
● AFL-CIO	1.0 (96)	-13.3 (77)	-2.8 (95)	0.0 (96)	1.2 (93)	-13.3 (77)	-0.7 (30)	6.6 (95)	8.2 (88)	0.6 (16)
▲ Bloomberg US Aggregate TR	1.9 (50)	-13.0 (66)	-2.7 (94)	0.0 (95)	1.1 (96)	-13.0 (66)	-1.5 (76)	7.5 (85)	8.7 (77)	0.0 (54)

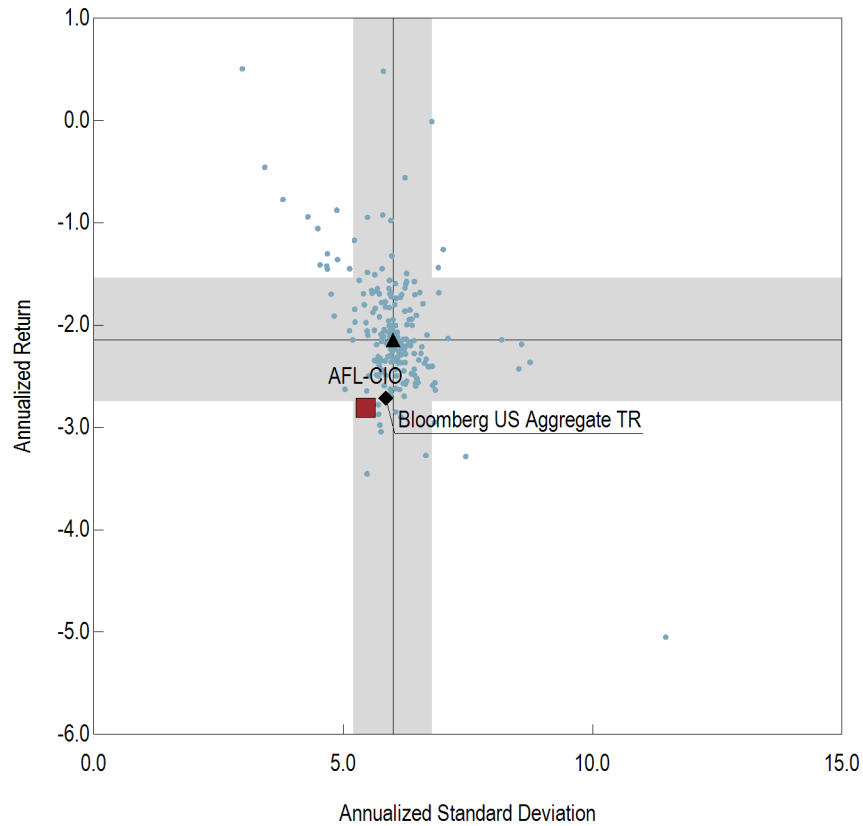
Rolling 3 Year Annualized Return (%)



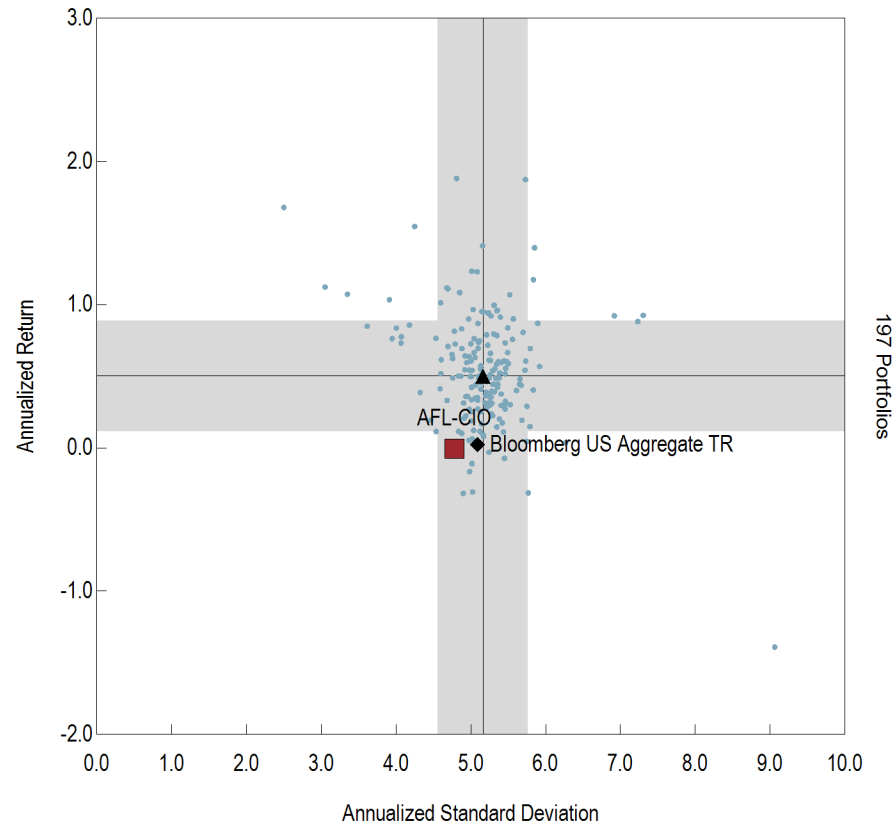
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
AFL-CIO	-2.8%	5.4%	-0.6
Bloomberg US Aggregate TR	-2.7%	5.9%	-0.6
eV US Core Fixed Inc Gross Median	-2.1%	6.0%	-0.5

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
AFL-CIO	0.0%	4.8%	-0.2
Bloomberg US Aggregate TR	0.0%	5.1%	-0.2
eV US Core Fixed Inc Gross Median	0.5%	5.2%	-0.1

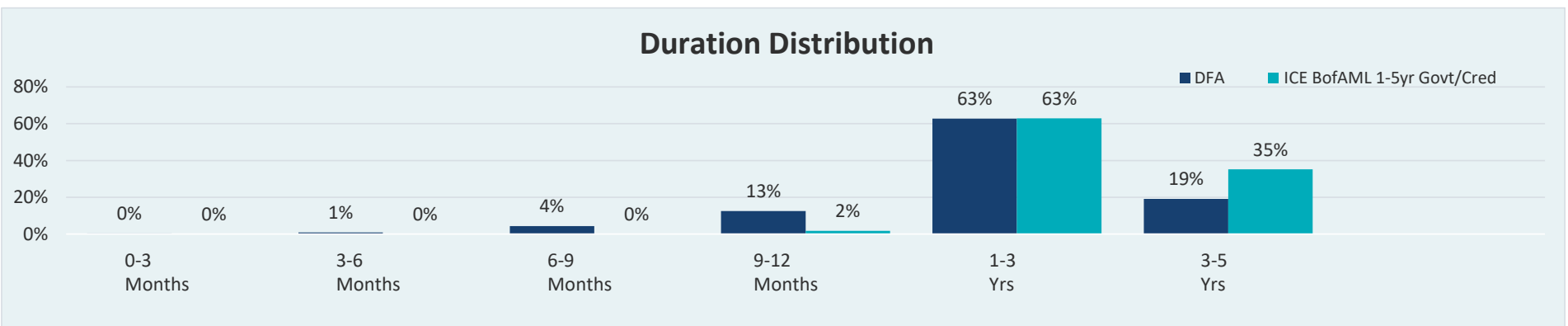
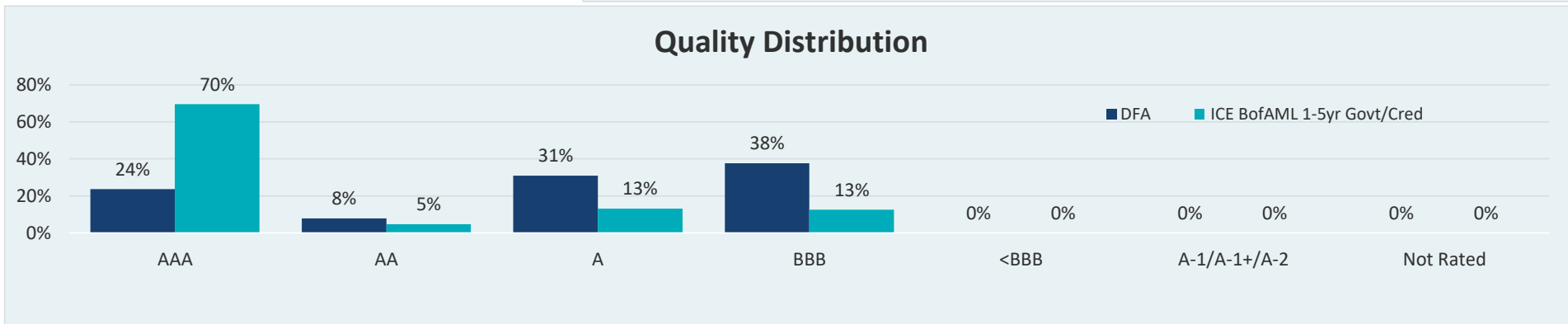
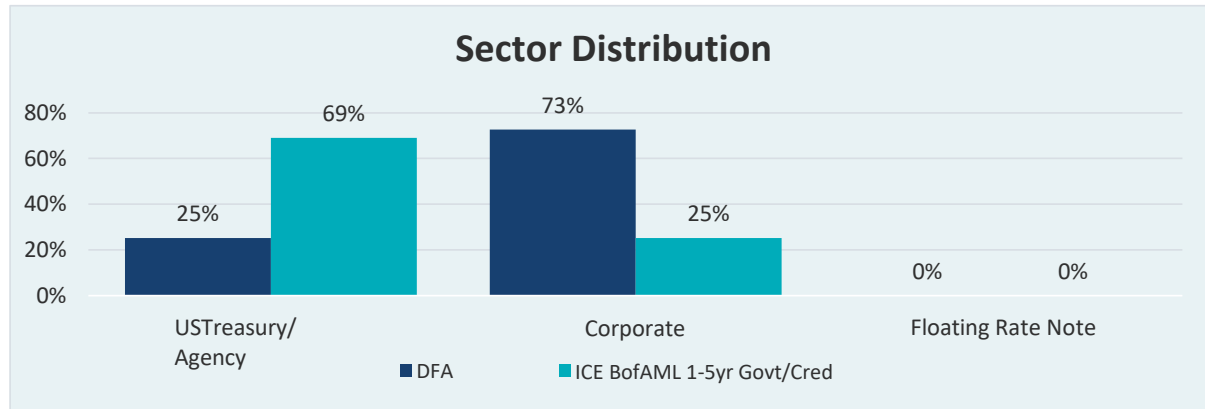
Liquidity Managers

DFA Short Credit Manager Portfolio Overview

Period Ending: December 31, 2022

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	2.02	2.56
Yield to Maturity	5.32	4.64
Average Quality	A	AA+
Average Coupon	2.39%	2.25%

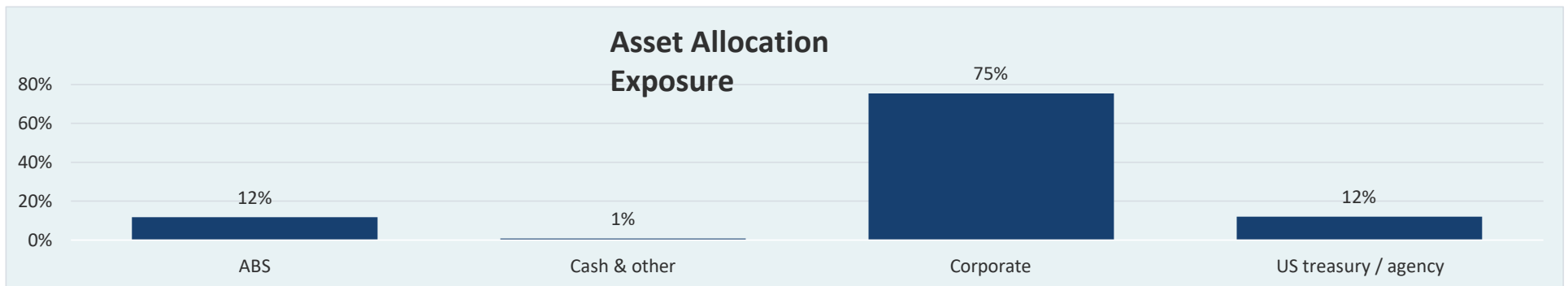
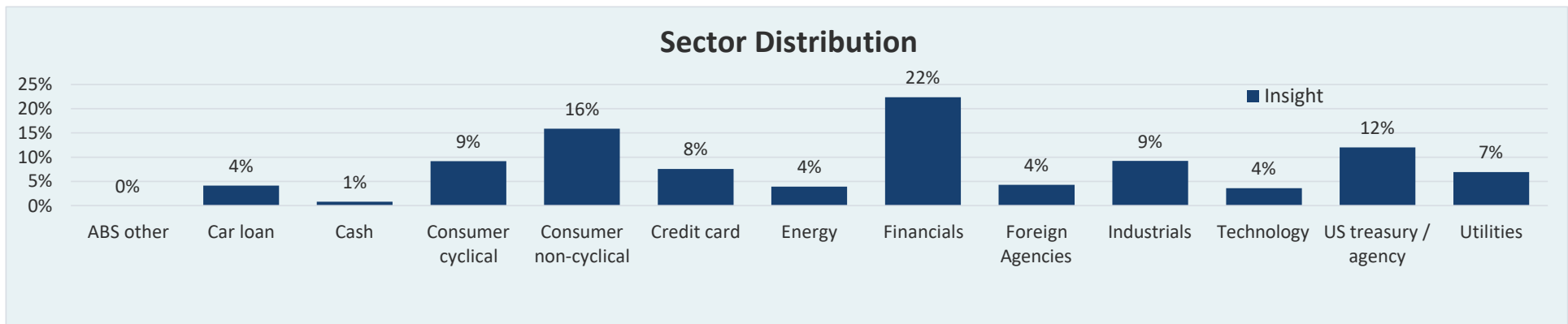
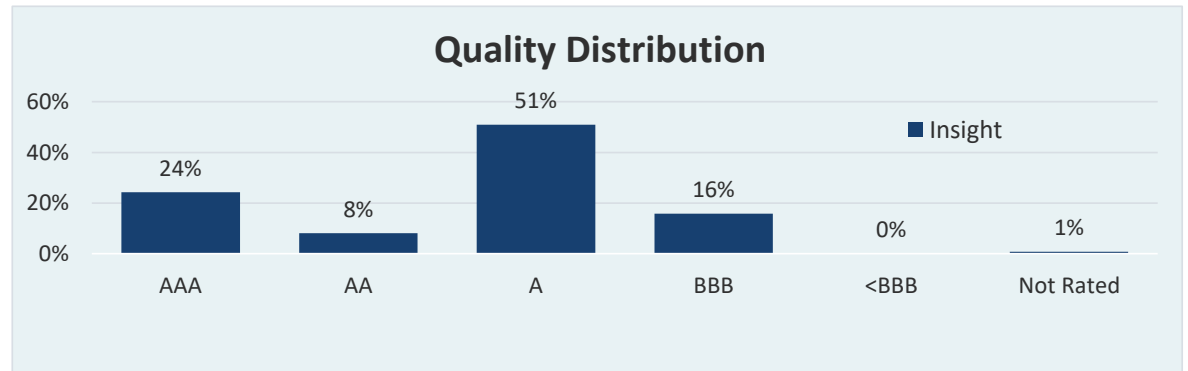


Insight Short Duration Manager Portfolio Overview

Period Ending: December 31, 2022

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	BBgBarc 1-3yr Govt
Effective Duration	1.18	1.88
Yield to Maturity	5.22	4.44
Average Quality	A+	AAA
Average Coupon	2.75%	1.89%

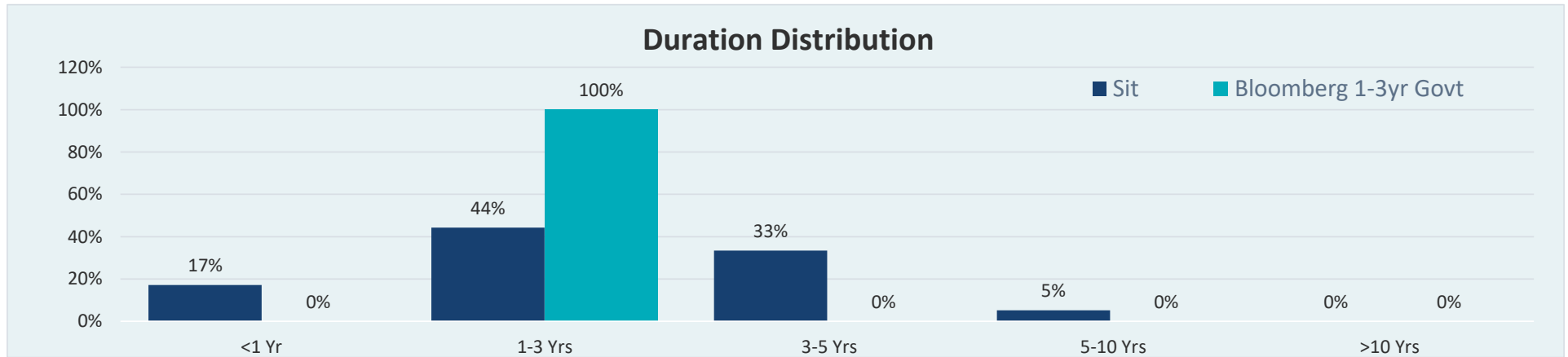
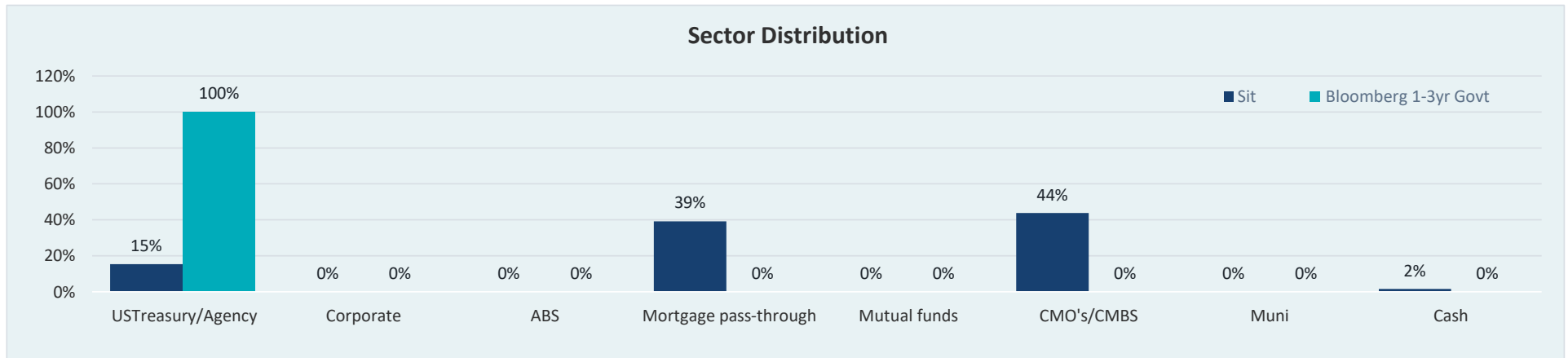
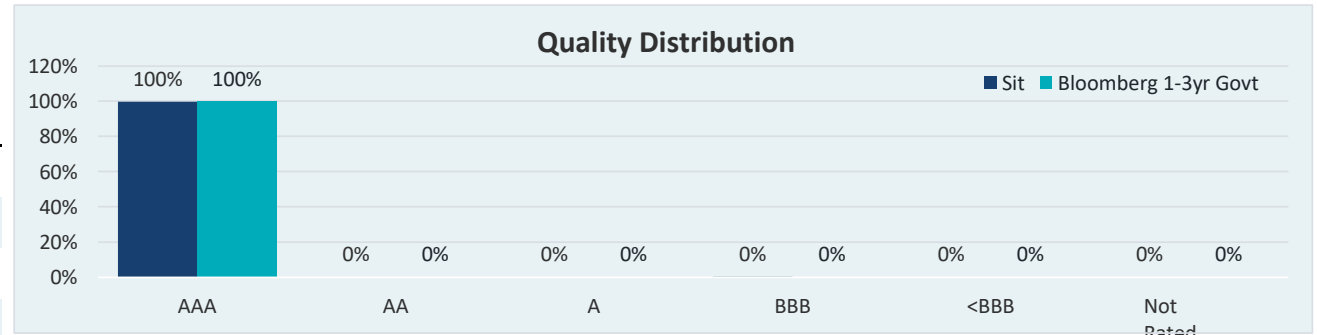


Sit Short Duration Manager Portfolio Overview

Period Ending: December 31, 2022

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	BBgBarc 1-3yr Govt
Modified Duration	2.90	1.88
Yield to Maturity	5.40	4.44
Average Quality	AAA	AAA
Average Coupon	5.80%	1.89%



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 (7/1/2022 - present)	16% Russell 3000, 15% MSCI ACWI ex-US (Gross), 9% MSCI ACWI (Net), 1.5% ICE BofA High Yield Master II, 2% Wilshire REIT, 8% Private Real Estate composite returns, 13% Private Equity composite returns, 8% Private Credit composite returns, 17% Bloomberg 1-3 Yr Gov/Credit, 2.5% Bloomberg US Aggregate, 3% 60% MSCI ACWI Net/40% Bloomberg Global Aggregate 2.5% FTSE 3-month T-Bill +5%, 2.5% Bloomberg US Aggregate +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.

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	Northern Trust	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
DLJ RECP III	6/23/2005	DLJ	Pathway 6	5/24/2011	StepStone Group
DLJ RECP IV	2/11/2008	DLJ	Pathway 7	2/7/2013	StepStone Group
DLJ RECP V	7/1/2014	DLJ	Pathway 8	11/23/2015	StepStone Group
DLJ RECP VI	3/19/2019	DLJ	Pathway	11/9/1998	StepStone Group
LaSalle Income & Growth VI	7/16/2013	LaSalle	Pathway 2008	12/26/2008	StepStone Group
LaSalle Income & Growth VII	2/28/2017	LaSalle	Siguler Guff CCCERA Opps	6/3/2014	StepStone Group
Hearthstone II	6/17/1998	Hearthstone	Siguler Guff Secondary Opps	11/30/2016	StepStone Group
Long Wharf Fund IV	7/3/2013	Long Wharf	Siris Partners IV	3/15/2019	StepStone Group
Long Wharf Fund V	9/30/2016	Long Wharf	TPG Healthcare Partners, L.P.	6/28/2019	StepStone Group
Long Wharf Fund VI	2/5/2020	Long Wharf	Trident VIII, L.P.	5/24/2019	StepStone Group
Invesco Real Estate IV	6/30/2014	Invesco	Wastewater Opp. Fund	12/8/2015	StepStone Group
Invesco Real Estate V	2/20/2019	Invesco			

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.

Disclaimer

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Meeting Date
02/22/2023
Agenda Item
#5b.

Memorandum

Date: February 22, 2023
To: CCCERA Board of Retirement Trustees
From: Timothy Price, Chief Investment Officer
Subject: Investment Staff Report – Q4 2022

Overview

On a quarterly basis CCCERA’s Board receives a report which details critical elements of CCCERA’s Functionally Focused Portfolio’s sub-portfolios. The purpose of the report is to highlight elements of the sub-portfolios which are good indicators to the Board of the program’s efficient and effective operation.

Summary

In the wake of some extraordinary market behavior over the past three years, CCCERA’s Total Fund is performing as expected, exhibiting returns above expectations for the amount of risk taken. This is measured by the Sharpe Ratio (risk-adjusted return), and a comparison to the Simple Target Index. The Simple Target Index is the most basic index which could replicate CCCERA’s Total Fund, and is made up of 75.5% MSCI ACWI, 17% Bloomberg 1-3 Year Gov/Credit, and 7.5% 3-Month Treasury Bills (please see the Total Fund pages in the appendix for additional details). CCCERA’s portfolio is much more complex, especially as it relates to allocations to private equity, private credit, and real estate.

CCCERA has been rewarded for implementing a more complex portfolio and has outperformed the Simple Target Index over the trailing ten years and all shorter periods, while experiencing less risk (volatility). Details on performance relative to this index are included in the appendix. It is worth noting that CCCERA’s Total Fund return is an aggregate of the performance of the Liquidity, Growth, and Risk Diversifying sub-portfolios.

1) Liquidity

The purpose of the liquidity program is to match three years of benefit payments with high credit quality, low duration assets. The liquidity sub-portfolio is made up of three fixed income managers, all of whom pursue a high quality, low duration investment approach. In the fourth quarter of 2022, all managers held high quality (as measured by credit ratings), low duration portfolios. The average credit quality for the entire liquidity program is AA- (AAA is the highest rating), and the duration is 1.9 years, which is considered short.

2) Growth

The Growth portfolio is designed to take advantage of capital appreciation and income opportunities globally. To achieve this, the Growth portfolio includes a variety of assets, from stocks and growth-oriented bonds to private equity, real estate, and private credit.

For the trailing five-year period ending December 31, 2022, the Growth portfolio returned 6.1% relative to the index return of 5.2%, for a relative outperformance of 0.8%. Over this period, the Growth program produced a superior Sharpe ratio of 0.4 relative to the index's 0.2. During the fourth quarter of 2022, CCCERA's Growth sub-portfolio return of 5.2% relative to MSCI ACWI Index return of 9.8%.

3) Risk Diversifying

The Risk Diversifying mandate holds assets that are expected to diversify the growth portfolio's volatility while offering moderate growth. The mandate as a whole seeks to be highly liquid, have a low beta to the growth market, and produce positive real returns. In the third quarter, the Risk Diversifying mandate fulfilled two of these goals. The entire mandate can be liquidated within 90 days, meeting the requirement of high liquidity. The correlation of the mandate to growth markets is 0.7, slightly lower than what it was in September 2022. The trailing real (net of inflation) return over the past five years is -4.2%, remaining below expectations. Recent changes to diversify this portion of the portfolio away from fixed income have been beneficial over the past year.

By and large, the product teams and asset managers across all managers are stable, and we have no significant organizational concerns with our investment managers. CCCERA's Total Fund in aggregate is performing in line with expectations, having a similar or higher risk-adjusted return but a lower level of volatility compared to the Simple Target Index. Enclosed are additional details on CCCERA's Total Fund, sub-portfolios, and individual investment strategies.

CCCERA Portfolio Report Card

Below we have itemized those elements of each of CCCERA’s sub-portfolios and Total Fund which we believe the Board should pay particular attention to. Additional details on each of the sub-portfolios are available in the appendix. All CCCERA performance is stated on a net of fees basis.

Liquidity

Objective	Measurement	Current Period Data	Status
High Quality	Credit Quality	AA-	Meeting Expectations
Low Risk	Duration	1.9 years	Meeting Expectations
Appropriately Sized	Months of Benefit Payments Invested	31 Months	Meeting Expectations

Growth

Objective	Measurement	Current Period Data	Status
Growth of Plan Assets	Absolute Returns	Trailing 5 yr return: 6.1%	Meeting Expectations
	Benchmark Relative Returns	0.8% relative to ACWI over trailing 5 years	Meeting Expectations
Efficient Capital Deployment	Sharpe Ratio	CCCERA: 0.4 MSCI ACWI: 0.2 (over trailing 5 years)	Meeting Expectations

Risk Diversifying

Objective	Measurement	Current Period Data	Status
Offset Volatility in Growth Portfolio	Correlation	0.7 over trailing 5 years	Below Expectations
Positive Real Returns	Returns	5 yr real return: -4.2% 5 yr nominal return: -0.3%	Below Expectations
High Liquidity	% of Portfolio that can be liquidated within 90 days	100%	Meeting Expectations

Total Fund

Objective	Component/Measurement	Status
Store 3 Years of Benefit Payments	Liquidity Sub-portfolio	Meeting Expectations
Participate in Growth Opportunities	Growth Sub-portfolio	Meeting Expectations
Provide an offset to Growth volatility	Risk Diversifying Sub-portfolio	Below Expectations
Produce superior risk adjusted returns	Total Fund Sharpe Ratio	Meeting Expectations

Appendix – Liquidity Sub-Portfolio

Manager Reviews

Organizational Stability

	Portfolio Management Assessment	1 Year Product Asset Growth	1 Year Firm Asset Growth	Regulatory Action in Last Year?
Insight	Good	-15%	-33%	N
Sit	Good	-9%	-12%	N
DFA	Good	-7%	-14%	N

Performance

	Portfolio Average Credit Quality	Portfolio Average Duration	Portfolio Average Yield	1 Year Total Return
Insight	A+	1.2	5.2	-3.2%
Sit	AAA	2.9	5.4	-4.8%
DFA	A	2.0	5.3	-5.2%

Manager Notes:

Fixed income securities have continued to trade off as rates have risen across all fixed income durations. The shorter duration of CCCERA's mandates have provided relative protection, as has the buy and maintain bias of the portfolio.

Manager Theses:

The Liquidity Portfolio is a combination of three managers which work together to match three years of CCCERA's liabilities. The portfolio is refreshed every year during the annual funding plan.

Insight: Insight plays a completion role in the liquidity program, matching out liabilities with short duration government and corporate fixed income securities.

DFA: Dimensional Fund Advisors runs a strategy that focuses on obtaining fixed income exposures via the most liquid securities available. DFA contributes to the Liquidity Program by selling securities at regular intervals to pay a portion of CCCERA's monthly benefit payment.

Sit: Sit invests in high yielding government backed mortgages. The cash flow from these securities is harvested monthly to make up a portion of CCCERA's monthly benefit payment.

Appendix – Growth Sub-Portfolio

Manager Reviews

Organizational Stability

	Portfolio Management Assessment	1 Year Product Asset Growth	1 Year Firm Asset Growth	Regulatory Action in Last Year?
Boston Partners	Good	-6%	-9%	N
BlackRock Index Fund	Good	-25%	-14%	N
Emerald Advisors	Good	-32%	-34%	N
Ceredex	Good	-30%	-29%	N
Pyrford	Good	-26%	-29%	N
William Blair	Good	-37%	-30%	N
First Eagle	Good	-12%	10%	N
Artisan Global	Good	-32%	-27%	N
PIMCO/RAE EM	Good	11%	-21%	N
TT EM	Good	-37%	-31%	N
Adelante	Good	-44%	-35%	N
Invesco REIT	Good	25%	-13%	N
Voya	Good	-14%	18%	N
AQR	Good	-26%	-23%	N
PanAgora	Good	-36%	-27%	N
Private Equity	Good	--	--	N
Private Credit	Good	--	--	N
Real Estate	Good	--	--	N

Performance

	Trailing 1-Yr Return	Trailing 5-yr Return	Trailing 10-yr Return	Performance in Line with Expectations?	Inception Date
MSCI ACWI-ND	-18%	5%	8%		
Boston Partners	-4%	8%	11%	Y	04/30/1995
BlackRock Index Fund	-19%	9%	12%	Y	03/31/2017
Emerald Advisors	-25%	4%	11%	Y	03/31/2003
Ceredex	-10%	4%	8%	Y	09/30/2011
Total Domestic Equity	-18%	7%	11%	Y	
Pyrford	-8%	2%	4%	N	03/31/2014
William Blair	-29%	2%	5%	N	09/30/2010
PIMCO/RAE EM	-10%	1%	3%	N	01/31/2017
TT EM	-27%	-3%	4%	N	06/30/2017
Total International Equity	-19%	1%	4%	Y	
First Eagle	-6%	5%	7%	Y	12/31/2010
Artisan Global	-30%	7%	10%	Y	11/30/2012
Total Global Equity	-19%	6%	9%	Y	
Adelante	-27%	4%	7%	Y	07/31/2001
Invesco REIT	N/A	N/A	N/A	Y	02/28/2022
Voya	-11%	1%	2%	N	04/30/2000
AQR	-16%	2%	3%	N	12/31/2018
PanAgora	-26%	1%	4%	N	02/28/2019
Private Equity	0%	16%	14%	Y	
Private Credit	11%	8%	10%	Y	
Real Estate	-5%	4%	8%	Y	

For periods longer than inception date within CCCERA's Total Fund, the return is from a representative composite account.

Manager Notes:

Manager Theses:

The growth portfolio includes all managers in public and private equity, real estate, and private credit. These managers grow CCCERA's assets for future benefit payments (beyond the three years already covered by the Liquidity program).

Boston Partners: Large cap domestic equity which follows a value discipline. Boston Partners will buy out of favor companies and sell them when their intrinsic values are reflected in the market. Expected to outperform in flat to falling markets.

BlackRock Index Fund: Large cap domestic equity portfolio which should follow the Russell 1000 Index.

Emerald Advisors: Small cap growth equity seeking companies with high growth rates. Expected to produce strong returns in rising markets, and weak returns in falling markets.

Ceredex: Domestic equity small cap value portfolio of companies with dividend yields and low valuations. This portfolio should outperform flat markets.

Pyrford (Columbia): International equity value portfolio of non-US companies with low valuations at the country and stock level. This portfolio should outperform in flat markets.

William Blair: International equity growth portfolio of non-US companies with high growth rates constructed from the security level. This portfolio should outperform in rapidly rising markets.

First Eagle: Global equity portfolio that is benchmark agnostic comprised of companies with low valuations.

Artisan Global Opportunities: Global equity portfolio of companies that is benchmark agnostic with accelerating profit cycles and a focus on capital allocation.

PIMCO/RAE Emerging Markets: Quantitative equity with a value orientation. This portfolio follows the fundamental indexing approach (ranking companies by metrics other than market capitalization), resulting in a diversified, low turnover portfolio. This portfolio underperforms in momentum driven markets.

TT International Emerging Markets: Concentrated, growth oriented manager which invests in small and mid-cap emerging market companies. TT employs both a top-down and a bottom-up research approach, and seeks to outperform by identifying companies that have a catalyst to drive future growth.

Adelante: Diversified portfolio of U.S. REITs with a focus on the underlying real estate assets. Adelante is a public market proxy of the core real estate market.

INVESCO Fundamental Beta REIT: Invesco invests in US REITs following a sector neutral strategy that allocates to the securities that INVESCO believes have the strongest financial conditions.

Voya High Yield Fixed Income: Domestic high yield fixed income portfolio with a focus on security selection. Voya will focus on the higher quality segment of the high yield universe. Voya should provide a steady income stream, and provide downside protection in falling markets.

Private Equity: CCCERA invests in private equity to generate returns above those available in the public equity markets.

Private Credit: CCCERA invests in private credit to generate cash flow streams above those available in the public debt markets.

Real Estate: CCCERA invests in value-add, distressed, and opportunistic real estate to generate returns from the capital appreciation and cash flow associated with commercial real estate investment.

Risk Parity: Multi-asset approach that strives for balanced contributions to total portfolio risk from multiple asset classes.

Appendix – Risk Diversifying Sub-Portfolio

Organizational Stability

	Portfolio Management Assessment	1 Year Product Asset Growth	1 Year Firm Asset Growth	Regulatory Action in Last Year?
AFL-CIO	Good	-15%	-15%	N
Acadian	Good	0%	-19%	N
Sit	Good	23%	-12%	N

Performance

	Trailing 1 Year Correlation to Growth	Trailing 3 Year Correlation to Growth	1 Year Return	5 Year Return	% of Portfolio Liquid in 90 Days
AFL-CIO	0.8	0.3	-14%	0%	100%
Acadian	-0.8	-0.5	0%	3%	100%
Sit	0.2	N/A	-4%	N/A	100%

Manager Notes:

The Sit LLCAR was funded in the third quarter of 2021. As it is a custom strategy, we have only one year of data to measure at this time.

Manager Theses:

Managers in the risk diversifying allocation seek to have a low correlation with the growth portfolio, positive returns in flat and falling equity markets, and a high degree of liquidity. These managers work together to offset some of the risks in the growth portfolio.

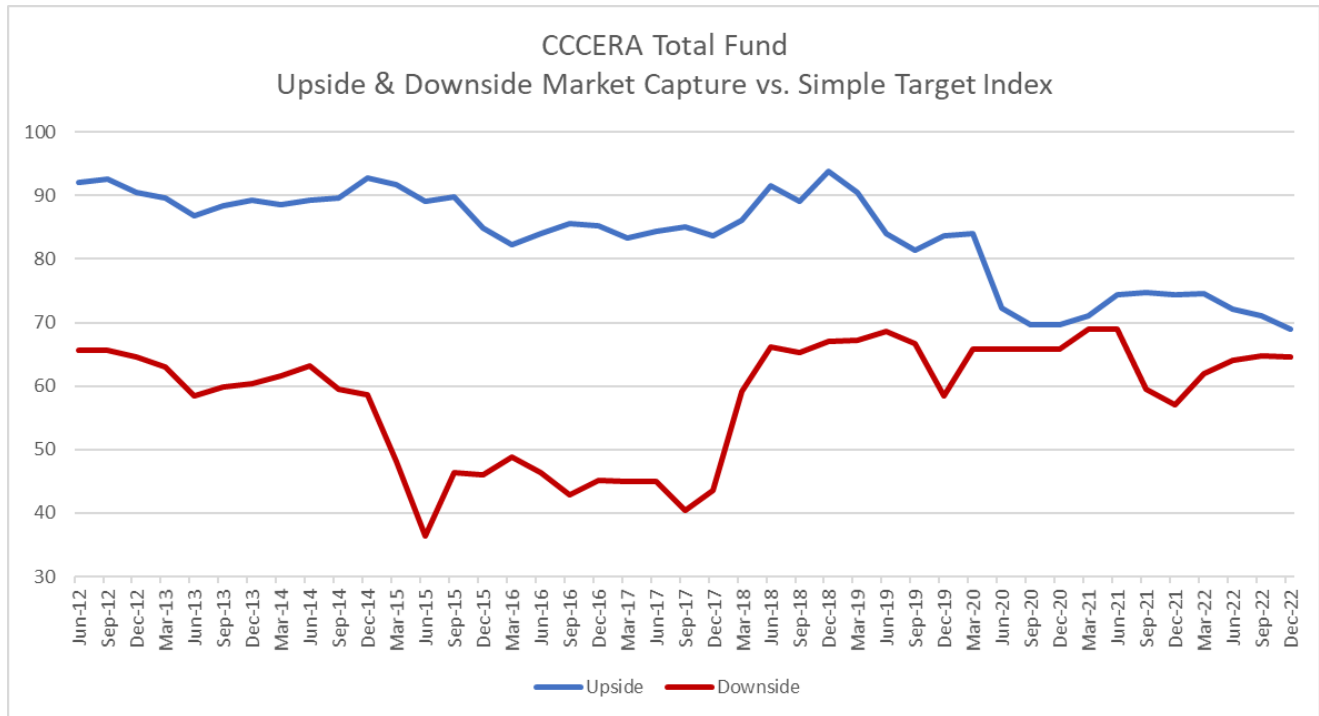
AFL-CIO: Portfolio of domestic, high quality fixed income securities which are backed by commercial and residential mortgages.

Acadian: Quantitatively managed multi-asset absolute return strategy that uses various models to capture pricing dislocations.

Sit LLCAR: Multiple fixed income strategies (closed end funds, mortgages, Treasuries) actively managed to target a modest positive return in most market environments

Appendix Data – Total Fund

Rolling 3-Year Total Fund Upside/Downside Market Capture



*The composition of the Simple Target Index has mirrored changes in CCCERA's asset allocation over time: from 2008 to 2012 the benchmark was 73% MSCI ACWI, 23% Bloomberg 1-3 Year Gov/Credit, and 4% 3-Month Treasury Bills. From 2012 to 2016 the composition was 74% MSCI ACWI, 18% Bloomberg 1-3 Year Gov/Credit, and 9% 3-Month Treasury Bills. From 2016 to 2017 the composition was 63% MSCI ACWI, 25% Bloomberg 1-3 Year Gov/Credit, and 12% 3-Month Treasury Bills, from 2017 to June 2018 the composition was 61% MSCI ACWI, 27% Bloomberg 1-3 Year Gov/Credit, and 12% 3-Month Treasury Bills, from July 2018 to June 2019 the composition is 69% MSCI ACWI, 23% Bloomberg 1-3 Year Gov/Credit, and 8% 3-Month Treasury Bills, from July 2019 to June 2020 the composition is 68% MSCI ACWI, 24% Bloomberg 1-3 Year Gov/Credit, and 8% 3-Month Treasury Bills, from July 2020 to June 2021 the composition is 68.5% MSCI ACWI, 25% Bloomberg 1-3 Year Gov/Credit, and 6.5% 3-Month Treasury Bills; from July 2021 to June 2022 the composition is 75% MSCI ACWI, 18% Bloomberg 1-3 Year Gov/Credit, and 7% 3-Month Treasury Bills; from July 2022 to present the composition is 75.5% MSCI ACWI, 17% Bloomberg 1-3 Year Gov/Credit, and 7.5% 3-Month Treasury Bills.

Total Fund Quarterly Attribution

	CCCERA Total Fund			Simple Target Index			Analysis		
	Allocation	Return	Return Contribution	Allocation	Return	Return Contribution	Allocation Difference	Return Difference	Total Effect
Liquidity	17.9%	1.1%	0.2%	17.0%	0.9%	0.2%	0.9%	0.2%	0.0%
Growth	73.5%	5.2%	3.8%	75.5%	9.8%	7.4%	-2.0%	-4.6%	-3.6%
Risk Diversifying	7.9%	-1.5%	-0.1%	7.5%	0.8%	0.1%	0.4%	-2.4%	-0.2%
Overlay	0.8%	29.1%	0.2%	0%	0%	0%	0.8%	29.1%	0.2%
Total Fund	100%		4.1%	100%		7.6%	-0.1%		-3.5%

CCCERA Total Fund Performance vs. Simple Target Index

	One Year		Three Years		Five Years		Ten Years	
	CCCERA	STI	CCCERA	STI	CCCERA	STI	CCCERA	STI
Return	-10.5	-14.3	3.6	3.1	4.4	4.2	6.7	5.8
Volatility	9.8	16.2	11.6	17.1	9.7	14.4	7.6	10.9
Sharpe	-1.2	-1.0	0.3	0.1	0.3	0.2	0.8	0.5

The Simple Target Index is made up of 75.5% MSCI ACWI, 17% Bloomberg 1-3 Year Gov/Credit, and 7.5% 3-Month Treasury Bill. This purpose of this index is to examine whether CCCERA is being rewarded for pursuing a more nuanced portfolio versus a very simple representative portfolio.

CCCERA's Total Fund has produced strong risk adjusted over all trailing time periods and has produced a strong absolute return over the past ten years. This indicates that CCCERA has been rewarded over time for engaging in more complex investments which target outperformance versus investing passively in the publicly traded market even though these more complex structures.

The Sharpe ratio is a measure of risk adjusted returns which shows the amount of return a portfolio earns above the risk free rate per unit of volatility. The Total Fund has exceeded the Sharpe ratio relative to the Simple Target Index over all trailing time periods, indicating that CCCERA is being favorably rewarded for the level of risk taken in the portfolio.



MEMORANDUM

Date: February 22, 2023
To: CCCERA Board of Retirement
From: Timothy Price, Chief Investment Officer
Subject: Annual Statement of Compliance with Board Resolutions

Overview

As part of the CCCERA investment procedures, staff is required to report annually on compliance with all Board Resolutions in effect for the prior year.

The Board adopted one investment-related resolution over the course of 2022 and one resolution from 2021 remained in effect at the beginning of 2022. These resolutions are noted below and included with the memo as Appendix 1.

RESOLUTION	CONTENT	DATE ADOPTED
2021-4	Asset Allocation Targets and Ranges	4/28/2021
2022-2	Asset Allocation Targets and Ranges	7/27/2022

Compliance

CCCERA Investment staff provided a monthly report to the Board as part of the consent items showing month-end allocation for each sub-portfolio and investment manager. These reports are included with this memo as Appendix 2.

Appendix 1

**RESOLUTION OF THE BOARD OF RETIREMENT
CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

INVESTMENT ASSET ALLOCATION TARGETS AND RANGES

WHEREAS, Article XVI, §17 of the Constitution of the State of California vests the Board of Retirement (Board) with "plenary authority and fiduciary responsibility for the investment of moneys and the administration of the system"; and

WHEREAS, the Board has exclusive control of the investment of CCCERA and may, in its discretion and subject to applicable law, invest, or delegate the authority to invest, the assets of the fund through the purchase, holding or sale or any form or type of investment, financial instrument, or financial transaction when prudent in the informed decision of the board, pursuant to the County Employees Retirement Law of 1937 (CERL), Government Code Section 31595; and

WHEREAS, the Board has adopted an Investment Policy Statement ("IPS"), pursuant to which the Board is to periodically set, review and revise its asset allocation targets.

NOW, THEREFORE BE IT RESOLVED that it shall be the policy of CCCERA to invest assets in the following manner:

Asset Allocation

Section 6.B of the Investment Policy Statement ("IPS"), adopted March 24, 2021, provides that "annually the Board shall review the relative size and composition of [the] sub-portfolios and revise them as necessary through Investment Resolutions." During this annual review, the CIO will recommend the targets, weightings, and the rationale for any deviation to an under-weight or over-weight across the asset allocation. The Board will consider and take action to adopt or revise asset allocation targets. Under the direction of the Board of Retirement, investment staff will administer the asset allocation per the Board's action.

As of 2021 the long-term asset allocation targets determined by the Board are as follows:

	Long Term	Current Target
Liquidity:	17%	18%
Growth:	76%	75%
Diversifying:	7%	7%

Over the course of the following 12 months, the Liquidity sub-portfolio will be used to pay benefits and expenses. As a result, and aside from market fluctuations, the funds in the Liquidity sub-portfolio will decline from the targeted allocation and, therefore, the relative allocations to the Growth and Diversifying sub-portfolios will increase proportionately.

Current Targets

Sub-Portfolio Strategy	Current Target	Range
Growth	75.0%	65-85%
Jackson Square	4.0%	
Boston Partners	4.0%	
Emerald	1.5%	
Ceredex	1.5%	
BlackRock Index Fund	5.0%	
Pyrford	4.0%	
William Blair	4.0%	
Artisan	4.5%	
First Eagle	4.5%	
TT Emerging Markets	4.0%	
PIMCO/RAE Emerging Markets	4.0%	
Adelante	2.0%	
Allianz	2.0%	
Private Real Estate	8.0%	
Private Equity	11.0%	
Private Credit	8.0%	
Risk Parity	3.0%	
Liquidity	18.0%	11-22%
Insight	7.0%	
DFA	4.0%	
Sit	7.0%	
Risk Diversifying	7.0%	0-10%
AFL-CIO HIT	2.5%	
Parametric Defensive Equity	1.5%	
Acadian MAARS	1.5%	
Sit LLCAR	1.5%	
Total	100.0%	

THIS RESOLUTION WAS ADOPTED BY THE AFFIRMATIVE VOTE OF THE BOARD OF RETIREMENT OF THE CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION THIS 28TH DAY OF APRIL, 2021.

AYES: Finley, Gordon, Holcombe, MacDonald, Phillips, Watts, Kwon, Sloan

NOES: None

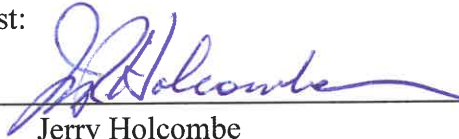
ABSTAIN: None

ABSENT: Andersen, Kroll, Powell



Scott Gordon
Chairperson of the Board of Retirement

Attest:



Jerry Holcombe
Secretary of the Board of Retirement

**RESOLUTION OF THE BOARD OF RETIREMENT
CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

INVESTMENT ASSET ALLOCATION TARGETS AND RANGES

WHEREAS, Article XVI, §17 of the Constitution of the State of California vests the Board of Retirement (Board) with "plenary authority and fiduciary responsibility for the investment of moneys and the administration of the system"; and

WHEREAS, the Board has exclusive control of the investment of CCCERA and may, in its discretion and subject to applicable law, invest, or delegate the authority to invest, the assets of the fund through the purchase, holding or sale or any form or type of investment, financial instrument, or financial transaction when prudent in the informed decision of the board, pursuant to the County Employees Retirement Law of 1937 (CERL), Government Code Section 31595; and

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As of 2022-2 the long-term asset allocation targets determined by the Board are as follows:

	Long Term	Current Target
Liquidity:	17%	17%
Growth:	76%	75.5%
Diversifying:	7%	7.5%

Over the course of the following 12 months, the Liquidity sub-portfolio will be used to pay benefits and expenses. As a result, and aside from market fluctuations, the funds in the

Liquidity sub-portfolio will decline from the targeted allocation and, therefore, the relative allocations to the Growth and Diversifying sub-portfolios will increase proportionately.

Current Targets

Sub-Portfolio Strategy	Current Target	Range
Growth	75.5%	65-85%
BlackRock Index Fund	9.0%	
Boston Partners	4.0%	
Emerald	1.5%	
Ceredex	1.5%	
Pyrford	4.0%	
William Blair	4.0%	
Artisan	4.5%	
First Eagle	4.5%	
TT Emerging Markets	3.5%	
PIMCO/RAE Emerging Markets	3.5%	
Adelante REIT	1.0%	
INVESCO REIT	1.0%	
Allianz	1.5%	
Private Real Estate	8.0%	
Private Equity	13.0%	
Private Credit	8.0%	
Risk Parity	3.0%	
Liquidity	17.0%	11-22%
Insight	6.5%	
DFA	4.0%	
Sit	6.5%	
Risk Diversifying	7.5%	0-10%
AFL-CIO HIT	2.5%	
Acadian MAARS	2.5%	
Sit LLCAR	2.5%	
Total	100.0%	

THIS RESOLUTION WAS ADOPTED BY THE AFFIRMATIVE VOTE OF THE BOARD OF RETIREMENT OF THE CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION THIS 27TH DAY OF JULY, 2022.

AYES: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips and Watts

NOES: None

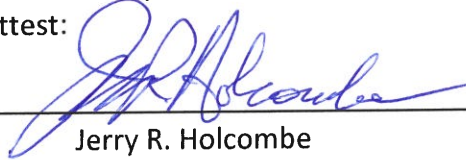
ABSTAIN: None

ABSENT: None



Scott Gordon
Chairperson of the Board of Retirement

Attest:



Jerry R. Holcombe
Secretary of the Board of Retirement

Appendix 2

Contra Costa County Employees' Retirement Association
Asset Allocation as of January 31, 2022

	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Liquidity						
Sit	550,995,306	4.9%	7.0%	-2.1%		
Dimensional Fund Advisors	297,485,595	2.7%	4.0%	-1.3%		
Insight	653,896,535	5.9%	7.0%	-1.1%		
Total Liquidity	1,502,377,437	13.5%	18.0%	-4.5%	17.0%	-3.5%
		Range				
			11-22%			
Growth						
Domestic Equity						
Boston Partners	415,203,771	3.7%	4.0%	-0.3%		
Jackson Square	300,740,843	2.7%	4.0%	-1.3%		
BlackRock Index Fund	609,301,899	5.5%	5.0%	0.5%		
Emerald Advisers	221,502,209	2.0%	1.5%	0.5%		
Ceredex	199,969,528	1.8%	1.5%	0.3%		
Total Domestic Equity	1,746,718,249	15.7%	16.0%	-0.3%	13.0%	2.7%
Global & International Equity						
Pyrford (BMO)	490,245,085	4.4%	4.0%	0.4%		
William Blair	494,145,644	4.4%	4.0%	0.4%		
First Eagle	519,711,580	4.7%	4.5%	0.2%		
Artisan Global Opportunities	564,914,656	5.1%	4.5%	0.6%		
PIMCO/RAE Emerging Markets	394,047,884	3.5%	4.0%	-0.5%		
TT Emerging Markets	412,842,527	3.7%	4.0%	-0.3%		
Total Global & International Equity	2,875,907,376	25.8%	25.0%	0.8%	19.0%	6.8%
Private Equity**						
Private Credit	1,396,939,425	12.5%	11.0%	1.5%	18.0%	-5.5%
Real Estate - Value Add	855,917,800	7.7%	8.0%	-0.3%	13.0%	-5.3%
Real Estate - Opportunistic & Distressed	208,878,644	1.9%	4.0%	-2.1%	5.0%	-3.1%
Real Estate - REIT (Adelante)	352,969,890	3.2%	4.0%	-0.8%	5.0%	-1.8%
High Yield (Allianz)	105,381,274	0.9%	2.0%	-1.1%	0.0%	0.9%
Risk Parity	178,611,366	1.6%	2.0%	-0.4%	0.0%	1.6%
AQR GRP EL	218,279,556	2.0%	3.0%	1.3%	3.0%	1.3%
PanAgora	263,423,494	2.4%				
Total Other Growth Assets	3,580,401,450	32.1%	34.0%	-1.9%	44.0%	-11.9%
Total Growth Assets	8,203,027,075	73.6%	75.0%	-1.4%	76.0%	-2.4%
		Range				
			65-85%			
Risk Diversifying						
AFL-CIO	256,610,065	2.3%	2.5%	-0.2%	2.5%	-0.2%
Parametric Defensive Equity	116,503,214	1.0%	1.5%	-0.5%	1.5%	-0.5%
Acadian MAARS	250,163,161	2.2%	1.5%	0.7%	1.5%	0.7%
Sit LLCAR	279,831,117	2.5%	1.5%		1.5%	
Wellington Real Total Return	132,391	0.0%	0.0%			
Total Risk Diversifying	903,239,947	8.1%	7.0%	1.1%	7.0%	1.1%
		Range				
			0% - 10%			
Cash and Overlay						
Overlay (Parametric)	132,461,969	1.2%		1.2%		
Cash	397,916,565	3.6%		3.6%		
Total Cash and Overlay	530,378,533	4.8%	0.0%	4.8%	0.0%	4.8%
Total Fund	11,139,022,992	100%	100%		100%	

*Current targets and ranges reflect asset allocation targets accepted by the Board on April 28, 2021 (BOR Resolution 2021-4).

**Private Equity long-term target includes Real Assets/Infrastructure (see Asset Allocation Mix 5 adopted December 9, 2020).

Contra Costa County Employees' Retirement Association
Asset Allocation as of February 28, 2022

	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Liquidity						
Sit	541,488,903	4.9%	7.0%	-2.1%		
Dimensional Fund Advisors	291,901,160	2.7%	4.0%	-1.3%		
Insight	617,939,120	5.6%	7.0%	-1.4%		
Total Liquidity	1,451,329,183	13.2%	18.0%	-4.8%	17.0%	-3.8%
		Range				
			11-22%			
Growth						
Domestic Equity						
Boston Partners	411,998,571	3.8%	4.0%	-0.2%		
Jackson Square	291,489,165	2.7%	4.0%	-1.3%		
BlackRock Index Fund	592,595,625	5.4%	5.0%	0.4%		
Emerald Advisers	225,874,170	2.1%	1.5%	0.6%		
Ceredex	200,691,689	1.8%	1.5%	0.3%		
Total Domestic Equity	1,722,649,220	15.7%	16.0%	-0.3%	13.0%	2.7%
Global & International Equity						
Pyrford (BMO)	488,797,605	4.4%	4.0%	0.4%		
William Blair	477,945,382	4.4%	4.0%	0.4%		
First Eagle	517,195,386	4.7%	4.5%	0.2%		
Artisan Global Opportunities	546,109,042	5.0%	4.5%	0.5%		
PIMCO/RAE Emerging Markets	372,709,445	3.4%	4.0%	-0.6%		
TT Emerging Markets	388,914,276	3.5%	4.0%	-0.5%		
Total Global & International Equity	2,791,671,136	25.4%	25.0%	0.4%	19.0%	6.4%
Private Equity**						
Private Credit	1,435,584,150	13.1%	11.0%	2.1%	18.0%	-4.9%
Real Estate - Value Add	855,917,800	7.8%	8.0%	-0.2%	13.0%	-5.2%
Real Estate - Opportunistic & Distressed	210,973,760	1.9%	4.0%	-2.1%	5.0%	-3.1%
Real Estate - REIT (Adelante)	347,388,759	3.2%	4.0%	-0.8%	5.0%	-1.8%
High Yield (Allianz)	102,408,320	0.9%	2.0%	-1.1%	0.0%	0.9%
Risk Parity	177,586,287	1.6%	2.0%	-0.4%	0.0%	1.6%
AQR GRP EL			3.0%	1.4%	3.0%	1.4%
PanAgora	219,052,211	2.0%				
	261,964,874	2.4%				
Total Other Growth Assets	3,610,876,161	32.9%	34.0%	-1.1%	44.0%	-11.1%
Total Growth Assets	8,125,196,517	74.0%	75.0%	-1.0%	76.0%	-2.0%
		Range				
			65-85%			
Risk Diversifying						
AFL-CIO	252,941,405	2.3%	2.5%	-0.2%	2.5%	-0.2%
Parametric Defensive Equity	3,962	0.0%	1.5%	-1.5%	1.5%	-1.5%
Acadian MAARS	243,413,869	2.2%	1.5%	0.7%	1.5%	0.7%
Sit LLCAR	281,441,041	2.6%	1.5%		1.5%	
Wellington Real Total Return	114,127	0.0%	0.0%			
Total Risk Diversifying	777,914,403	7.1%	7.0%	0.1%	7.0%	0.1%
		Range				
			0% - 10%			
Cash and Overlay						
Overlay (Parametric)	117,596,330	1.1%		1.1%		
Cash	512,431,545	4.7%		4.7%		
Total Cash and Overlay	630,027,875	5.7%	0.0%	5.7%	0.0%	5.7%
Total Fund	10,984,467,977	100%	100%		100%	

*Current targets and ranges reflect asset allocation targets accepted by the Board on April 28, 2021 (BOR Resolution 2021-4).

**Private Equity long-term target includes Real Assets/Infrastructure (see Asset Allocation Mix 5 adopted December 9, 2020).

Contra Costa County Employees' Retirement Association
Asset Allocation as of March 31, 2022

	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Liquidity						
Sit	521,186,119	4.8%	7.0%	-2.2%		
Dimensional Fund Advisors	281,621,981	2.6%	4.0%	-1.4%		
Insight	579,542,761	5.3%	7.0%	-1.7%		
Total Liquidity	1,382,350,861	12.7%	18.0%	-5.3%	17.0%	-4.3%
		Range				
			11-22%			
Growth						
Domestic Equity						
Boston Partners	417,910,620	3.8%	4.0%	-0.2%		
Jackson Square	291,974,099	2.7%	4.0%	-1.3%		
BlackRock Index Fund	612,596,798	5.6%	5.0%	0.6%		
Emerald Advisers	229,413,749	2.1%	1.5%	0.6%		
Ceredex	197,625,614	1.8%	1.5%	0.3%		
Total Domestic Equity	1,749,520,880	16.1%	16.0%	0.1%	13.0%	3.1%
Global & International Equity						
Pyrford (BMO)	487,895,895	4.5%	4.0%	0.5%		
William Blair	479,112,229	4.4%	4.0%	0.4%		
First Eagle	526,400,117	4.8%	4.5%	0.3%		
Artisan Global Opportunities	547,750,802	5.0%	4.5%	0.5%		
PIMCO/RAE Emerging Markets	372,890,359	3.4%	4.0%	-0.6%		
TT Emerging Markets	376,885,999	3.5%	4.0%	-0.5%		
Total Global & International Equity	2,790,935,403	25.7%	25.0%	0.7%	19.0%	6.7%
Private Equity**						
Private Credit	1,433,327,782	13.2%	11.0%	2.2%	18.0%	-4.8%
Real Estate - Value Add	867,110,612	8.0%	8.0%	-0.0%	13.0%	-5.0%
Real Estate - Opportunistic & Distressed	206,518,808	1.9%	4.0%	-2.1%	5.0%	-3.1%
Real Estate - REIT (Adelante)	344,666,139	3.2%	4.0%	-0.8%	5.0%	-1.8%
High Yield (Allianz)	109,454,839	1.0%	2.0%	-1.0%	0.0%	1.0%
Risk Parity	175,881,035	1.6%	2.0%	-0.4%	0.0%	1.6%
AQR GRP EL	216,916,803	2.0%	3.0%	1.4%	3.0%	1.4%
PanAgora	258,421,100	2.4%				
Total Other Growth Assets	3,612,297,119	33.3%	34.0%	-0.7%	44.0%	-10.7%
Total Growth Assets	8,152,753,401	75.0%	75.0%	0.0%	76.0%	-1.0%
		Range				
			65-85%			
Risk Diversifying						
AFL-CIO	243,910,485	2.2%	2.5%	-0.3%	2.5%	-0.3%
Acadian MAARS	248,052,861	2.3%	1.5%	0.8%	1.5%	0.8%
Sit LLCAR	279,209,030	2.6%	1.5%		1.5%	
Wellington Real Total Return	114,127	0.0%	0.0%			
Total Risk Diversifying	771,286,503	7.1%	7.0%	0.1%	5.5%	1.6%
		Range				
			0% - 10%			
Cash and Overlay						
Overlay (Parametric)	111,350,575	1.0%		1.0%		
Cash	445,580,523	4.1%		4.1%		
Total Cash and Overlay	556,931,099	5.1%	0.0%	5.1%	0.0%	5.1%
Total Fund	10,863,321,864	100%	100%		99%	

*Current targets and ranges reflect asset allocation targets accepted by the Board on April 28, 2021 (BOR Resolution 2021-4).

**Private Equity long-term target includes Real Assets/Infrastructure (see Asset Allocation Mix 5 adopted December 9, 2020).

Contra Costa County Employees' Retirement Association
Asset Allocation as of April 30, 2022

	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Liquidity						
Sit	507,888,938	4.8%	7.0%	-2.2%		
Dimensional Fund Advisors	273,478,547	2.6%	4.0%	-1.4%		
Insight	543,530,934	5.2%	7.0%	-1.8%		
Total Liquidity	1,324,898,419	12.6%	18.0%	-5.4%	17.0%	-4.4%
		Range				
			11-22%			
Growth						
Domestic Equity						
Boston Partners	395,573,352	3.8%	4.0%	-0.2%		
Jackson Square	247,469,348	2.3%	4.0%	-1.7%		
BlackRock Index Fund	557,985,172	5.3%	5.0%	0.3%		
Emerald Advisers	206,287,805	2.0%	1.5%	0.5%		
Ceredex	183,544,008	1.7%	1.5%	0.2%		
Total Domestic Equity	1,590,859,685	15.1%	16.0%	-0.9%	13.0%	2.1%
Global & International Equity						
Pyrford (Columbia)	471,905,811	4.5%	4.0%	0.5%		
William Blair	436,950,032	4.1%	4.0%	0.1%		
First Eagle	499,386,487	4.7%	4.5%	0.2%		
Artisan Global Opportunities	481,931,155	4.6%	4.5%	0.1%		
PIMCO/RAE Emerging Markets	352,486,866	3.3%	4.0%	-0.7%		
TT Emerging Markets	353,470,954	3.4%	4.0%	-0.6%		
Total Global & International Equity	2,596,131,305	24.6%	25.0%	-0.4%	19.0%	5.6%
Private Equity**						
Private Credit	1,435,020,163	13.6%	11.0%	2.6%	18.0%	-4.4%
Real Estate - Value Add	892,958,193	8.5%	8.0%	0.5%	13.0%	-4.5%
Real Estate - Opportunistic & Distressed	213,805,741	2.0%	4.0%	-2.0%	5.0%	-3.0%
Real Estate - REIT	357,673,826	3.4%	4.0%	-0.6%	5.0%	-1.6%
Adelante	104,765,939	1.0%	2.0%	-0.1%	0.0%	1.9%
Invesco	100,820,671	1.0%				
High Yield (Allianz)	169,483,332	1.6%	2.0%	-0.4%	0.0%	1.6%
Risk Parity			3.0%	1.3%	3.0%	1.3%
AQR GRP EL	207,597,788	2.0%				
PanAgora	244,462,182	2.3%				
Total Other Growth Assets	3,726,587,835	35.3%	34.0%	1.3%	44.0%	-8.7%
Total Growth Assets	7,913,578,825	75.0%	75.0%	0.0%	76.0%	-1.0%
		Range				
			65-85%			
Risk Diversifying						
AFL-CIO	236,134,463	2.2%	2.5%	-0.3%	2.5%	-0.3%
Acadian MAARS	257,217,804	2.4%	1.5%	0.9%	1.5%	0.9%
Sit LLCAR	279,049,410	2.6%	1.5%		1.5%	
Wellington Real Total Return	114,127	0.0%	0.0%			
Total Risk Diversifying	772,515,804	7.3%	7.0%	0.3%	7.0%	0.3%
		Range				
			0% - 10%			
Cash and Overlay						
Overlay (Parametric)	72,949,237	0.7%		0.7%		
Cash	463,040,475	4.4%		4.4%		
Total Cash and Overlay	535,989,712	5.1%	0.0%	5.1%	0.0%	5.1%
Total Fund	10,546,982,759	100%	100%		100%	

*Current targets and ranges reflect asset allocation targets accepted by the Board on April 28, 2021 (BOR Resolution 2021-4).

**Private Equity long-term target includes Real Assets/Infrastructure (see Asset Allocation Mix 5 adopted December 9, 2020).

Contra Costa County Employees' Retirement Association
Asset Allocation as of May 31, 2022

	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Liquidity						
Sit	501,981,503	4.7%	7.0%	-2.3%		
Dimensional Fund Advisors	270,795,241	2.6%	4.0%	-1.4%		
Insight	510,618,815	4.8%	7.0%	-2.2%		
Total Liquidity	1,283,395,558	12.1%	18.0%	-5.9%	17.0%	-4.9%
		Range				
			11-22%			
Growth						
Domestic Equity						
Boston Partners	409,223,094	3.9%	4.0%	-0.1%		
Jackson Square	238,128,290	2.3%	4.0%	-1.7%		
BlackRock Index Fund	557,125,508	5.3%	5.0%	0.3%		
Emerald Advisers	200,779,374	1.9%	1.5%	0.4%		
Ceredex	191,297,033	1.8%	1.5%	0.3%		
Total Domestic Equity	1,596,553,298	15.1%	16.0%	-0.9%	13.0%	2.1%
Global & International Equity						
Pyrford (Columbia)	475,916,044	4.5%	4.0%	0.5%		
William Blair	427,983,555	4.0%	4.0%	0.0%		
First Eagle	505,977,956	4.8%	4.5%	0.3%		
Artisan Global Opportunities	479,095,388	4.5%	4.5%	0.0%		
PIMCO/RAE Emerging Markets	361,799,876	3.4%	4.0%	-0.6%		
TT Emerging Markets	355,042,649	3.4%	4.0%	-0.6%		
Total Global & International Equity	2,605,815,468	24.7%	25.0%	-0.3%	19.0%	5.7%
Private Equity**	1,453,051,289	13.7%	11.0%	2.7%	18.0%	-4.3%
Private Credit	911,672,586	8.6%	8.0%	0.6%	13.0%	-4.4%
Real Estate - Value Add	222,011,503	2.1%	4.0%	-1.9%	5.0%	-2.9%
Real Estate - Opportunistic & Distressed	363,651,630	3.4%	4.0%	-0.6%	5.0%	-1.6%
Real Estate - REIT			2.0%	0.1%	0.0%	2.1%
Adelante	97,233,060	0.9%				
Invesco	122,997,600	1.2%				
High Yield (Allianz)	170,204,473	1.6%	2.0%	-0.4%	0.0%	1.6%
Risk Parity			3.0%	1.2%	3.0%	1.2%
AQR GRP EL	206,470,022	2.0%				
PanAgora	239,069,406	2.3%				
Total Other Growth Assets	3,786,361,569	35.8%	34.0%	1.8%	44.0%	-8.2%
Total Growth Assets	7,988,730,335	75.6%	75.0%	0.6%	76.0%	-0.4%
		Range				
			65-85%			
Risk Diversifying						
AFL-CIO	236,777,658	2.2%	2.5%	-0.3%	2.5%	-0.3%
Acadian MAARS	259,200,882	2.5%	1.5%	1.0%	1.5%	1.0%
Sit LLCAR	276,031,076	2.6%	1.5%		1.5%	
Wellington Real Total Return	114,127	0.0%	0.0%			
Total Risk Diversifying	772,123,742	7.3%	7.0%	0.3%	7.0%	0.3%
		Range				
			0% - 10%			
Cash and Overlay						
Overlay (Parametric)	78,518,567	0.7%		0.7%		
Cash	447,907,852	4.2%		4.2%		
Total Cash and Overlay	526,426,418	5.0%	0.0%	5.0%	0.0%	5.0%
Total Fund	10,570,676,053	100%	100%		100%	

*Current targets and ranges reflect asset allocation targets accepted by the Board on April 28, 2021 (BOR Resolution 2021-4).

**Private Equity long-term target includes Real Assets/Infrastructure (see Asset Allocation Mix 5 adopted December 9, 2020).

Contra Costa County Employees' Retirement Association
Asset Allocation as of June 30, 2022

	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Liquidity						
Dimensional Fund Advisors	263,008,267	2.6%	4.0%	-1.4%		
Insight	473,746,543	4.7%	7.0%	-2.3%		
Sit	491,628,584	4.9%	7.0%	-2.1%		
	1,228,383,394	12.2%	18.0%	-5.8%	17.0%	-4.8%

**Range
11-22%**

	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Growth						
Domestic Equity						
Boston Partners	372,114,916	3.7%	4.0%	-0.3%		
Jackson Square	125,323	0.0%	4.0%	-4.0%		
BlackRock Index Fund	735,558,302	7.3%	5.0%	2.3%		
Emerald Advisers	183,413,674	1.8%	1.5%	0.3%		
Ceredex	173,993,462	1.7%	1.5%	0.2%		
Total Domestic Equity	1,465,205,678	14.5%	16.0%	-1.5%	13.0%	1.5%

Global & International Equity

Pyrford (Columbia)	447,803,732	4.4%	4.0%	0.4%		
William Blair	391,648,898	3.9%	4.0%	-0.1%		
First Eagle	471,188,220	4.7%	4.5%	0.2%		
Artisan Global Opportunities	434,618,620	4.3%	4.5%	-0.2%		
PIMCO/RAE Emerging Markets	324,030,742	3.2%	4.0%	-0.8%		
TT Emerging Markets	334,738,918	3.3%	4.0%	-0.7%		
Total Global & International Equity	2,404,029,130	23.8%	25.0%	-1.2%	19.0%	4.8%

Private Equity**

Private Credit	892,590,325	8.8%	8.0%	0.8%	13.0%	-4.2%
Real Estate - Value Add	223,152,921	2.2%	4.0%	-1.8%	5.0%	-2.8%
Real Estate - Opportunistic & Distressed	358,397,295	3.6%	4.0%	-0.4%	5.0%	-1.4%
Real Estate - REIT			2.0%	0.0%	0.0%	2.0%
Adelante	89,840,083	0.9%				
Invesco	114,127,181	1.1%				
High Yield (Allianz)	158,440,530	1.6%	2.0%	-0.4%	0.0%	1.6%
Risk Parity			3.0%	1.1%	3.0%	1.1%
AQR GRP EL	196,593,496	1.9%				
PanAgora	218,706,568	2.2%				
Total Other Growth Assets	3,687,254,832	36.6%	34.0%	2.6%	44.0%	-7.4%

Total Growth Assets	7,556,489,640	74.9%	75.0%	-0.1%	76.0%	-1.1%
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**Range
65-85%**

	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Risk Diversifying						
AFL-CIO	232,861,395	2.3%	2.5%	-0.2%	2.5%	-0.2%
Acadian MAARS	255,461,747	2.5%	1.5%	1.0%	1.5%	1.0%
Sit LLCAR	277,032,339	2.7%	1.5%		1.5%	
Wellington Real Total Return	114,127	0.0%	0.0%			
Total Risk Diversifying	765,469,607	7.6%	7.0%	0.6%	7.0%	0.6%

**Range
0% - 10%**

	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Cash and Overlay						
Overlay (Parametric)	93,694,209	0.9%		0.9%		
Cash	443,752,652	4.4%		4.4%		
Total Cash and Overlay	537,446,861	5.3%	0.0%	5.3%	0.0%	5.3%

Total Fund	10,087,789,502	100%	100%		100%	
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*Current targets and ranges reflect asset allocation targets accepted by the Board on April 28, 2021 (BOR Resolution 2021-4).

**Private Equity long-term target includes Real Assets/Infrastructure (see Asset Allocation Mix 5 adopted December 9, 2020).

Contra Costa County Employees' Retirement Association
Asset Allocation as of July 31, 2022

	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Liquidity						
Dimensional Fund Advisors	261,414,330	2.4%	4.0%	-1.6%		
Insight	440,763,820	4.1%	6.5%	-2.4%		
Sit	488,571,982	4.6%	6.5%	-1.9%		
Total Liquidity	1,190,750,132	11.1%	17.0%	-5.9%	17.0%	-5.9%
		Range				
				11-22%		
Growth						
Domestic Equity						
Boston Partners	394,739,592	3.7%	4.0%	-0.3%		
Jackson Square	80,408	0.0%	0.0%	0.0%		
BlackRock Index Fund	805,821,481	7.5%	9.0%	-1.5%		
Emerald Advisers	200,723,651	1.9%	1.5%	0.4%		
Ceredex	192,167,073	1.8%	1.5%	0.3%		
Total Domestic Equity	1,593,532,205	14.9%	16.0%	-1.1%	13.0%	1.9%
Global & International Equity						
Pyrford (Columbia)	457,135,720	4.3%	4.0%	0.3%		
William Blair	425,199,527	4.0%	4.0%	-0.0%		
First Eagle	488,423,980	4.6%	4.5%	0.1%		
Artisan Global Opportunities	480,438,647	4.5%	4.5%	-0.0%		
PIMCO/RAE Emerging Markets	328,706,927	3.1%	3.5%	-0.4%		
TT Emerging Markets	328,740,818	3.1%	3.5%	-0.4%		
Total Global & International Equity	2,508,645,618	23.4%	24.0%	-0.6%	19.0%	4.4%
Private Equity**						
Private Credit	902,185,815	8.4%	8.0%	0.4%	13.0%	-4.6%
Real Estate - Value Add	223,152,921	2.1%	4.0%	-1.9%	5.0%	-2.9%
Real Estate - Opportunistic & Distressed	358,397,295	3.3%	4.0%	-0.7%	5.0%	-1.7%
Real Estate - REIT			2.0%	0.1%	0.0%	2.1%
Adelante	97,647,974	0.9%				
Invesco	123,404,904	1.2%				
High Yield (Allianz)	168,089,918	1.6%	1.5%	0.1%	0.0%	1.6%
Risk Parity			3.0%	1.1%	3.0%	1.1%
AQR GRP EL	205,134,817	1.9%				
PanAgora	231,286,347	2.2%				
Total Other Growth Assets	3,740,424,168	34.9%	35.5%	-0.6%	44.0%	-9.1%
Total Growth Assets	7,842,601,991	73.2%	75.5%	-2.3%	76.0%	-2.8%
		Range				
				65-85%		
Risk Diversifying						
AFL-CIO	237,571,302	2.2%	2.5%	-0.3%	2.5%	-0.3%
Acadian MAARS	252,605,753	2.4%	2.5%	-0.1%	1.5%	0.9%
Sit LLCAR	280,917,034	2.6%	2.5%		1.5%	
Wellington Real Total Return	114,127	0.0%	0.0%			
Total Risk Diversifying	771,208,216	7.2%	7.5%	-0.3%	7.0%	0.2%
		Range				
				0% - 10%		
Cash and Overlay						
Overlay (Parametric)	116,677,345	1.1%		1.1%		
Cash	799,961,839	7.5%		7.5%		
Total Cash and Overlay	916,639,184	8.5%	0.0%	8.5%	0.0%	8.5%
Total Fund	10,721,199,523	100%	100%		100%	

*Current targets and ranges reflect asset allocation targets accepted by the Board on July 27, 2022 (BOR Resolution 2022-2).

**Private Equity long-term target includes Real Assets/Infrastructure (see Asset Allocation Mix 5 adopted December 9, 2020).

Contra Costa County Employees' Retirement Association
Asset Allocation as of August 31, 2022

	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Liquidity						
Dimensional Fund Advisors	387,114,761	3.7%	4.0%	-0.3%		
Insight	630,763,047	6.0%	6.5%	-0.5%		
Sit	709,715,709	6.8%	6.5%	0.3%		
Total Liquidity	1,727,593,516	16.5%	17.0%	-0.5%	17.0%	-0.5%
		Range				
			11-22%			
Growth						
Domestic Equity						
Boston Partners	384,788,995	3.7%	4.0%	-0.3%		
Jackson Square	79,704	0.0%	0.0%	0.0%		
BlackRock Index Fund	895,063,974	8.6%	9.0%	-0.4%		
Emerald Advisers	200,203,330	1.9%	1.5%	0.4%		
Ceredex	185,653,619	1.8%	1.5%	0.3%		
Total Domestic Equity	1,665,789,622	15.9%	16.0%	-0.1%	13.0%	2.9%
Global & International Equity						
Pyrford (Columbia)	412,250,662	3.9%	4.0%	-0.1%		
William Blair	401,197,961	3.8%	4.0%	-0.2%		
First Eagle	471,558,135	4.5%	4.5%	0.0%		
Artisan Global Opportunities	491,778,143	4.7%	4.5%	0.2%		
PIMCO/RAE Emerging Markets	335,837,458	3.2%	3.5%	-0.3%		
TT Emerging Markets	329,093,647	3.1%	3.5%	-0.4%		
Total Global & International Equity	2,441,716,006	23.3%	24.0%	-0.7%	19.0%	4.3%
Private Equity**	1,395,005,918	13.3%	13.0%	0.3%	18.0%	-4.7%
Private Credit	929,026,883	8.9%	8.0%	0.9%	13.0%	-4.1%
Real Estate - Value Add	210,791,242	2.0%	4.0%	-2.0%	5.0%	-3.0%
Real Estate - Opportunistic & Distressed	360,898,592	3.4%	4.0%	-0.6%	5.0%	-1.6%
Real Estate - REIT			2.0%	-0.0%	0.0%	2.0%
Adelante	91,970,518	0.9%				
Invesco	116,436,381	1.1%				
High Yield (Allianz)	139,192,275	1.3%	1.5%	-0.2%	0.0%	1.3%
Risk Parity			3.0%	0.3%	3.0%	0.3%
AQR GRP EL	172,440,130	1.6%				
PanAgora	173,226,366	1.7%				
Total Other Growth Assets	3,588,988,305	34.3%	35.5%	-1.2%	44.0%	-9.7%
Total Growth Assets	7,696,493,934	73.6%	75.5%	-1.9%	76.0%	-2.4%
		Range				
			65-85%			
Risk Diversifying						
AFL-CIO	229,930,069	2.2%	2.5%	-0.3%	2.5%	-0.3%
Acadian MAARS	257,602,173	2.5%	2.5%	-0.0%	1.5%	1.0%
Sit LLCAR	307,251,612	2.9%	2.5%		1.5%	
Wellington Real Total Return	64,189	0.0%	0.0%			
Total Risk Diversifying	794,848,044	7.6%	7.5%	0.1%	7.0%	0.6%
		Range				
			0% - 10%			
Cash and Overlay						
Overlay (Parametric)	101,606,196	1.0%		1.0%		
Cash	142,137,664	1.4%		1.4%		
Total Cash and Overlay	243,743,861	2.3%	0.0%	2.3%	0.0%	2.3%
Total Fund	10,462,679,355	100%	100%		100%	

*Current targets and ranges reflect asset allocation targets accepted by the Board on July 27, 2022 (BOR Resolution 2022-2).

**Private Equity long-term target includes Real Assets/Infrastructure (see Asset Allocation Mix 5 adopted December 9, 2020).

Contra Costa County Employees' Retirement Association
Asset Allocation as of September 30, 2022

	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Liquidity						
Dimensional Fund Advisors	369,862,227	3.7%	4.0%	-0.3%		
Insight	607,485,194	6.1%	6.5%	-0.4%		
Sit	676,408,882	6.8%	6.5%	0.3%		
Total Liquidity	1,653,756,303	16.7%	17.0%	-0.3%	17.0%	-0.3%
			Range 11-22%			
Growth						
Domestic Equity						
Boston Partners	354,136,574	3.6%	4.0%	-0.4%		
BlackRock Index Fund	812,251,026	8.2%	9.0%	-0.8%		
Emerald Advisers	183,462,408	1.8%	1.5%	0.3%		
Ceredex	169,124,837	1.7%	1.5%	0.2%		
Total Domestic Equity	1,518,974,845	15.3%	16.0%	-0.7%	13.0%	2.3%
Global & International Equity						
Pyrford (Columbia)	378,677,612	3.8%	4.0%	-0.2%		
William Blair	363,072,018	3.7%	4.0%	-0.3%		
First Eagle	436,037,610	4.4%	4.5%	-0.1%		
Artisan Global Opportunities	440,119,455	4.4%	4.5%	-0.1%		
PIMCO/RAE Emerging Markets	303,223,241	3.1%	3.5%	-0.4%		
TT Emerging Markets	290,122,031	2.9%	3.5%	-0.6%		
Total Global & International Equity	2,211,251,967	22.3%	24.0%	-1.7%	19.0%	3.3%
Private Equity**						
Private Credit	1,377,118,510	13.9%	13.0%	0.9%	18.0%	-4.1%
Real Estate - Value Add	943,924,700	9.5%	8.0%	1.5%	13.0%	-3.5%
Real Estate - Opportunistic & Distressed	247,172,786	2.5%	4.0%	-1.5%	5.0%	-2.5%
Real Estate - REIT	366,057,692	3.7%	4.0%	-0.3%	5.0%	-1.3%
Adelante	80,998,301	0.8%	2.0%	-0.2%	0.0%	1.8%
Invesco	102,118,451	1.0%				
High Yield (Allianz)	133,744,651	1.3%	1.5%	-0.2%	0.0%	1.3%
Risk Parity			3.0%	0.2%	3.0%	0.2%
AQR GRP EL	161,441,691	1.6%				
PanAgora	153,376,857	1.5%				
Total Other Growth Assets	3,565,953,639	35.9%	35.5%	0.4%	44.0%	-8.1%
Total Growth Assets	7,296,180,451	73.5%	75.5%	-2.0%	76.0%	-2.5%
			Range 65-85%			
Risk Diversifying						
AFL-CIO	220,018,206	2.2%	2.5%	-0.3%	2.5%	-0.3%
Acadian MAARS	263,416,878	2.7%	2.5%	0.2%	1.5%	1.2%
Sit LLCAR	299,532,539	3.0%	2.5%		1.5%	
Total Risk Diversifying	782,967,623	7.9%	7.5%	0.4%	7.0%	0.9%
			Range 0% - 10%			
Cash and Overlay						
Overlay (Parametric)	76,470,069	0.8%		0.8%		
Cash	121,862,679	1.2%		1.2%		
Total Cash and Overlay	198,332,748	2.0%	0.0%	2.0%	0.0%	2.0%
Total Fund	9,931,237,125	100%	100%		100%	

*Current targets and ranges reflect asset allocation targets accepted by the Board on July 27, 2022 (BOR Resolution 2022-2).

**Private Equity long-term target includes Real Assets/Infrastructure (see Asset Allocation Mix 5 adopted December 9, 2020).

Contra Costa County Employees' Retirement Association
Asset Allocation as of October 31, 2022

	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Liquidity						
Dimensional Fund Advisors	358,123,460	3.5%	4.0%	-0.5%		
Insight	588,584,452	5.8%	6.5%	-0.7%		
Sit	652,969,820	6.4%	6.5%	-0.1%		
Total Liquidity	1,599,677,732	15.8%	17.0%	-1.2%	17.0%	-1.2%
		Range				
				11-22%		
Growth						
Domestic Equity						
Boston Partners	394,799,214	3.9%	4.0%	-0.1%		
BlackRock Index Fund	877,407,770	8.7%	9.0%	-0.3%		
Emerald Advisers	203,500,796	2.0%	1.5%	0.5%		
Ceredex	188,232,962	1.9%	1.5%	0.4%		
Total Domestic Equity	1,663,940,742	16.4%	16.0%	0.4%	13.0%	3.4%
Global & International Equity						
Pyrford (Columbia)	395,830,837	3.9%	4.0%	-0.1%		
William Blair	384,545,693	3.8%	4.0%	-0.2%		
First Eagle	463,081,284	4.6%	4.5%	0.1%		
Artisan Global Opportunities	452,366,804	4.5%	4.5%	-0.0%		
PIMCO/RAE Emerging Markets	312,951,140	3.1%	3.5%	-0.4%		
TT Emerging Markets	281,814,501	2.8%	3.5%	-0.7%		
Total Global & International Equity	2,290,590,259	22.6%	24.0%	-1.4%	19.0%	3.6%
Private Equity**						
Private Credit	1,371,030,683	13.5%	13.0%	0.5%	18.0%	-4.5%
Real Estate - Value Add	957,285,414	9.5%	8.0%	1.5%	13.0%	-3.5%
Real Estate - Opportunistic & Distressed	245,847,062	2.4%	4.0%	-1.6%	5.0%	-2.6%
Real Estate - REIT	364,991,201	3.6%	4.0%	-0.4%	5.0%	-1.4%
Adelante	83,387,042	0.8%	2.0%	-0.1%	0.0%	1.9%
Invesco	105,738,639	1.0%				
High Yield (Allianz)	138,854,115	1.4%	1.5%	-0.1%	0.0%	1.4%
Risk Parity			3.0%	0.2%	3.0%	0.2%
AQR GRP EL	164,203,007	1.6%				
PanAgora	156,617,235	1.5%				
Total Other Growth Assets	3,587,954,398	35.4%	35.5%	-0.1%	44.0%	-8.6%
Total Growth Assets	7,542,485,398	74.5%	75.5%	-1.0%	76.0%	-1.5%
		Range				
				65-85%		
Risk Diversifying						
AFL-CIO	215,144,046	2.1%	2.5%	-0.4%	2.5%	-0.4%
Acadian MAARS	259,669,977	2.6%	2.5%	0.1%	1.5%	1.1%
Sit LLCAR	294,895,800	2.9%	2.5%		1.5%	
Total Risk Diversifying	769,709,823	7.6%	7.5%	0.1%	7.0%	0.6%
		Range				
				0% - 10%		
Cash and Overlay						
Overlay (Parametric)	84,422,664	0.8%		0.8%		
Cash	128,517,915	1.3%		1.3%		
Total Cash and Overlay	212,940,579	2.1%	0.0%	2.1%	0.0%	2.1%
Total Fund	10,124,813,532	100%	100%		100%	

*Current targets and ranges reflect asset allocation targets accepted by the Board on July 27, 2022 (BOR Resolution 2022-2).

**Private Equity long-term target includes Real Assets/Infrastructure (see Asset Allocation Mix 5 adopted December 9, 2020).

Contra Costa County Employees' Retirement Association
Asset Allocation as of November 30, 2022

	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Liquidity						
Dimensional Fund Advisors	353,113,787	3.4%	4.0%	-0.6%		
Insight	574,886,839	5.5%	6.5%	-1.0%		
Sit	643,416,628	6.1%	6.5%	-0.4%		
Total Liquidity	1,571,417,254	15.0%	17.0%	-2.0%	17.0%	-2.0%
		Range				
				11-22%		
Growth						
Domestic Equity						
Boston Partners	416,987,086	4.0%	4.0%	-0.0%		
BlackRock Index Fund	924,873,006	8.8%	9.0%	-0.2%		
Emerald Advisers	207,708,129	2.0%	1.5%	0.5%		
Ceredex	200,334,542	1.9%	1.5%	0.4%		
Total Domestic Equity	1,749,902,763	16.7%	16.0%	0.7%	13.0%	3.7%
Global & International Equity						
Pyrford (Columbia)	436,645,007	4.2%	4.0%	0.2%		
William Blair	419,803,904	4.0%	4.0%	0.0%		
First Eagle	496,892,129	4.7%	4.5%	0.2%		
Artisan Global Opportunities	492,249,194	4.7%	4.5%	0.2%		
PIMCO/RAE Emerging Markets	350,041,846	3.3%	3.5%	-0.2%		
TT Emerging Markets	318,861,593	3.0%	3.5%	-0.5%		
Total Global & International Equity	2,514,493,674	24.0%	24.0%	0.0%	19.0%	5.0%
Private Equity**						
Private Credit	1,360,398,934	13.0%	13.0%	-0.0%	18.0%	-5.0%
Real Estate - Value Add	957,491,714	9.1%	8.0%	1.1%	13.0%	-3.9%
Real Estate - Opportunistic & Distressed	246,811,049	2.4%	4.0%	-1.6%	5.0%	-2.6%
Real Estate - REIT	358,779,009	3.4%	4.0%	-0.6%	5.0%	-1.6%
Adelante	87,664,781	0.8%	2.0%	-0.1%	0.0%	1.9%
Invesco	112,156,470	1.1%				
High Yield (Allianz)	141,179,450	1.3%	1.5%	-0.2%	0.0%	1.3%
Risk Parity			3.0%	0.2%	3.0%	0.2%
AQR GRP EL	170,077,997	1.6%				
PanAgora	167,865,387	1.6%				
Total Other Growth Assets	3,602,424,790	34.4%	35.5%	-1.1%	44.0%	-9.6%
Total Growth Assets	7,866,821,227	75.1%	75.5%	-0.4%	76.0%	-0.9%
		Range				
				65-85%		
Risk Diversifying						
AFL-CIO	222,172,101	2.1%	2.5%	-0.4%	2.5%	-0.4%
Acadian MAARS	253,120,205	2.4%	2.5%	-0.1%	2.5%	-0.1%
Sit LLCAR	299,222,131	2.9%	2.5%	0.4%	2.0%	0.9%
Total Risk Diversifying	774,514,438	7.4%	7.5%	-0.1%	7.0%	0.4%
		Range				
				0% - 10%		
Cash and Overlay						
Overlay (Parametric)	108,058,171	1.0%		1.0%		
Cash	147,826,909	1.4%		1.4%		
Total Cash and Overlay	255,885,080	2.4%	0.0%	2.4%	0.0%	2.4%
Total Fund	10,468,637,999	100%	100%		100%	

*Current targets and ranges reflect asset allocation targets accepted by the Board on July 27, 2022 (BOR Resolution 2022-2).

**Private Equity long-term target includes Real Assets/Infrastructure (see Asset Allocation Mix 5 adopted December 9, 2020).

Contra Costa County Employees' Retirement Association
Asset Allocation as of December 31, 2022

	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Liquidity						
Dimensional Fund Advisors	343,235,798	3.3%	4.0%	-0.7%		
Insight	559,011,052	5.5%	6.5%	-1.0%		
Sit	622,499,883	6.1%	6.5%	-0.4%		
Total Liquidity	1,524,746,733	14.9%	17.0%	-2.1%	17.0%	-2.1%
		Range				
		11-22%				
Growth						
Domestic Equity						
Boston Partners	399,005,510	3.9%	4.0%	-0.1%		
BlackRock Index Fund	871,082,993	8.5%	9.0%	-0.5%		
Emerald Advisers	195,522,418	1.9%	1.5%	0.4%		
Ceredex	193,019,137	1.9%	1.5%	0.4%		
Total Domestic Equity	1,658,630,058	16.2%	16.0%	0.2%	13.0%	3.2%
Global & International Equity						
Pyrford (Columbia)	436,308,732	4.3%	4.0%	0.3%		
William Blair	406,935,101	4.0%	4.0%	-0.0%		
First Eagle	493,124,169	4.8%	4.5%	0.3%		
Artisan Global Opportunities	464,457,135	4.5%	4.5%	0.0%		
PIMCO/RAE Emerging Markets	348,122,745	3.4%	3.5%	-0.1%		
TT Emerging Markets	314,178,584	3.1%	3.5%	-0.4%		
Total Global & International Equity	2,463,126,466	24.0%	24.0%	0.0%	19.0%	5.0%
Private Equity**	1,352,305,197	13.2%	13.0%	0.2%	18.0%	-4.8%
Private Credit	1,030,762,568	10.1%	8.0%	2.1%	13.0%	-2.9%
Real Estate - Value Add	240,210,810	2.3%	4.0%	-1.7%	5.0%	-2.7%
Real Estate - Opportunistic & Distressed	354,211,558	3.5%	4.0%	-0.5%	5.0%	-1.5%
Real Estate - REIT			2.0%	-0.1%	0.0%	1.9%
Adelante	83,134,119	0.8%				
Invesco	106,573,866	1.0%				
High Yield	139,937,548	1.4%	1.5%	-0.1%	0.0%	1.4%
Risk Parity			3.0%	0.2%	3.0%	0.2%
AQR GRP EL	165,496,345	1.6%				
PanAgora	159,238,057	1.6%				
Total Other Growth Assets	3,631,870,068	35.4%	35.5%	-0.1%	44.0%	-8.6%
Total Growth Assets	7,753,626,592	75.6%	75.5%	0.1%	76.0%	-0.4%
		Range				
		65-85%				
Risk Diversifying						
AFL-CIO	220,337,258	2.1%	2.5%	-0.4%	2.5%	-0.4%
Acadian MAARS	254,025,032	2.5%	2.5%	-0.0%	2.5%	-0.0%
Sit LLCAR	295,406,233	2.9%	2.5%	0.4%	2.0%	0.9%
Total Risk Diversifying	769,768,523	7.5%	7.5%	0.0%	7.0%	0.5%
		Range				
		0% - 10%				
Cash and Overlay						
Overlay (Parametric)	98,767,591	1.0%		1.0%		
Cash	106,907,199	1.0%		1.0%		
Total Cash and Overlay	205,674,790	2.0%	0.0%	2.0%	0.0%	2.0%
Total Fund	10,253,816,638	100%	100%		100%	

*Current targets and ranges reflect asset allocation targets accepted by the Board on July 27, 2022 (BOR Resolution 2022-2).

**Private Equity long-term target includes Real Assets/Infrastructure (see Asset Allocation Mix 5 adopted December 9, 2020).



Meeting Date
02/22/2023
Agenda Item
#7

MEMORANDUM

Date: February 22, 2023
To: CCCERA Board of Retirement
From: Gail Strohl, Chief Executive Officer
Subject: Consider and take possible action to authorize the CEO to execute an amendment to the pension administration system consulting agreement for Segal Consulting.

Background

On October 23, 2019, the Board of Retirement approved LRWL Inc. (later becoming part of Segal Consulting) as the pension administration system consultant. Since that time, system requirements, request for proposals for a pension administration vendor and data cleansing vendor have been issued, vendors have been selected, contracts negotiated, a project timeline was developed and then later re-baselined. The originally approved cost for phase two of the agreement consisting of the end-to-end project phase through system implementation was \$1,404,000. The phase two amount remaining as of January 31, 2023 is \$422,630.

In looking at the re-baselined schedule, recent experience, and realistic costs of the remaining project, an additional up to and not to exceed cost of \$350,000 is requested. It is estimated that this amount would extend the services provided by Segal Consulting through April 30, 2024. This date would be 45 days after the anticipated self-service go-live date of February 14, 2024.

Recommendation

Consider and take possible action to authorize the CEO to execute an amendment to the pension administration system consulting agreement for Segal Consulting for an additional up to and not to exceed amount of \$350,000.



MEMORANDUM

Date: February 22, 2023
To: CCCERA Board of Retirement
From: Karen Levy, General Counsel
Subject: Consider and take possible action to adopt CCCERA's Policy Allowing For the Use and Acceptance of Electronic Signatures.

Background

The CCCERA Board has plenary authority and fiduciary responsibility for the administration of the CCCERA system. (California Constitution, Article XVI, Sec. 17.) Pursuant to Government Code section 31527(i), the Board adopted regulations which provide that the Board may use and accept a document requiring a signature that is submitted by a member using an electronic signature, if the document and electronic signature are submitted using technology the Board deems sufficient, as set forth in a policy adopted by the Board, to ensure its integrity, security, and authenticity. A document submitted pursuant to the Board-adopted policy shall be given the same force as a signed, valid original document. The proposed Policy Allowing For the Use and Acceptance of Electronic Signatures requires a determination that the software and processes used by CCCERA with regard to electronic signatures satisfy the criteria of integrity, security, and authenticity.

Recommendation

Consider and take possible action to adopt CCCERA's Policy Allowing For the Use and Acceptance of Electronic Signatures.

CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
BOARD OF RETIREMENT

**POLICY ALLOWING FOR THE USE AND ACCEPTANCE OF ELECTRONIC
SIGNATURES**

I. PURPOSE

This policy is intended to establish guidelines by which the Contra Costa County Employees' Retirement Association (CCCERA) will accept documents from members containing electronic signatures.

II. APPLICABLE LAW

The CCCERA Board has plenary authority and fiduciary responsibility for the administration of the CCCERA system. (California Constitution, Article XVI, Sec. 17.) Pursuant to Government Code section 31527(i), the Board adopted regulations which provide that the Board may use and accept a document requiring a signature that is submitted by a member using an electronic signature, if the document and electronic signature are submitted using technology the Board deems sufficient, as set forth in a policy adopted by the Board, to ensure its integrity, security, and authenticity. A document submitted pursuant to the Board-adopted policy shall be given the same force as a signed, valid original document.

III. POLICY

For those transactions where the Chief Executive Officer (CEO) determines the use and acceptance of documents from a member containing an electronic signature is appropriate, the CEO shall oversee the development, maintenance and application technology designed and capable of ensuring the integrity, authenticity and security of such transactions.

The technology used by CCCERA shall remain proprietary and confidential in an effort to protect and enhance the security of such system. The CEO will determine that the software and processes used by CCCERA with regard to any electronic signature transaction shall satisfy the following criteria:

- a. Integrity
 - Discreet logging of electronic signature transactions
 - Printable e-signed documents provided to the member
 - E-signed documents stored as part of the member record

- b. Security
 - Encrypted communication utilizing Secure Sockets Layer (SSL), authentication certificates, or comparable cipher and secure data communication techniques
 - Data security systems including but not limited to firewalls, anti-hacking, anti-virus, intruder detection, and intruder prevention

c. Authenticity

- Multi-factor member authentication
- Extended Validation (EV) site certificate or comparable site authentication technique
- Confirmation communication

Each transaction involving a document submitted to CCCERA containing an electronic signature shall be confirmed by a communication to the member.

VI. REVIEW

This policy shall be reviewed by the Board at least every three (3) years and may be amended at any time.

VII. HISTORY

Adopted: [DATE]



Meeting Date
02/22/2023
Agenda Item
#9

MEMORANDUM

Date: February 22, 2023
To: CCCERA Board of Retirement
From: Karen Levy, General Counsel
Subject: Consider and take possible action to amend CCCERA's Accessibility of Records Policy and Accessibility of Investment Records Policy.

Background

The Board of Retirement has adopted an Accessibility of Records Policy and an Accessibility of Investment Records Policy. These policies contain guidelines and procedures for handling requests for records.

As a public entity, CCCERA is subject to the California Public Records Act (CPRA), which governs handling such requests. Assembly Bill 473 reorganized and renumbered the CPRA, effective January 1, 2023. The bill expressly states that the Legislature intended the reorganization to make no substantive change to the CPRA. The Accessibility of Records Policy and the Accessibility of Investment Records Policy should therefore be updated to reflect the new statutory citations. In addition, some formatting changes are included for consistency with the format of other policies. Redlines reflecting all suggested changes are enclosed.

Recommendation

Consider and take possible action to amend CCCERA's Accessibility of Records Policy and Accessibility of Investment Records Policy.

CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

ACCESSIBILITY OF RECORDS POLICY

I. PURPOSE

The Board of Retirement ("Board") of the Contra Costa County Employees' Retirement Association ("CCCERA") adopts this policy to establish guidelines and procedures for making determinations concerning the disclosure of information in CCCERA's files, records or other information when responding to requests made under the Public Records Act ("PRA").

The Board recognizes that it has an obligation to balance its members' right to privacy with the public's right to information regarding public business. There are no "bright line" standards available to the Board for knowing how that balance should tip in each instance. Nevertheless, the Board has determined that it would be useful to establish guidelines for CCCERA to follow when a request is made under the PRA, and to publish those guidelines for the benefit of its members and their beneficiaries, and the public at large.

All staff should be familiar with these guidelines so that the process of responding to requests is efficient, consistent and compliant with the applicable laws. In many circumstances, these guidelines will enable staff to respond to requests without the need for substantial analysis or the assistance of legal counsel. However, given the complexities of the law, situations will likely arise where a simple application of the general guidelines will not provide a definitive answer. When such a situation arises, the Administrator should refer any questions to legal counsel.

In addition, to the extent that any requests made to CCCERA under the PRA pertain to CCCERA's investment records, responses to such requests should follow the additional guidelines set forth in CCCERA's Policy and Guidelines for Accessibility of Investment Records.

II. GENERAL PRINCIPLES

A request to inspect CCCERA records may be made by a telephone call, an in-person oral request, a written request, a subpoena or a court order. The person making a request for records may be a member, a beneficiary, an employee organization, a government agency or member of the press or general public. Staff should always be aware that a request, no matter how informal it may appear, must be analyzed under the principles outlined in this Policy (or analyzed by legal counsel in more complicated situations). The general principles of the policy may be summarized as follows:

1. Confidentiality of an individual member's records must be protected unless those records relate to the conduct of the public's business, or unless the member has authorized the disclosure in writing.
2. An individual (member or beneficiary) generally must be permitted access to his or her own records.

3. The public – i.e., any person, for any reason - has a right to inspect records that relate to CCCERA's operation and that are neither confidential nor protected from disclosure by the applicable laws.
4. Generally, CCCERA must respond to any request for information within 10 calendar days of receipt of the request. The response need not contain the actual requested information or production of the sought records, but must (at a minimum) provide a response as to whether CCCERA will produce the requested records or provide a basis for rejecting the request. If CCCERA is unable to formulate a response within 10 calendar days, it may extend the time for a response by as much as 14 calendar days, but may only do so with good cause.
5. Subpoenas or court orders requiring the production of records and/or information should be referred to legal counsel immediately upon receipt.
6. Even if a request seeks disclosable records, under California case law, a request may be objectionable if it is unreasonably burdensome. Additionally, the PRA only requires CCCERA to disclose its existing records; it does not require CCCERA to conduct studies, reorganize information or summarize data for the requesting party. Thus, when confronted with a request that will substantially disrupt CCCERA's operations, the Administrator should consult legal counsel.¹
7. When a request is made for information regarding an individual member that appears to be of a personal or private nature, CCCERA should seek the advice of legal counsel.

¹ Although CCCERA does not have to conduct studies, reorganize information or summarize data, it may have to invest substantial energy sifting through existing data. The amount of time or energy spent sifting through CCCERA's existing data is not, alone, a valid ground for withholding records or information.

III. APPLICABLE LAW

A. Public Records Act (PRA)

The PRA generally requires CCCERA to disclose "public records" unless the particular information is exempt from disclosure. Under the PRA and interpreting case law, "public records" include information in virtually any format "relating to the conduct of the public's business prepared, owned, used or retained by any state or local agency." Although certain exemptions allow CCCERA to withhold some records, case law is clear that the policy in California generally favors disclosure.

The PRA sets forth an extensive list of records that are exempt from required disclosure.² Many of the statutory exemptions are inapplicable to CCCERA and others may be applicable only in rare instances. The following exemptions are the most important exemptions for CCCERA:

1. Preliminary drafts, notes, or interagency or intra-agency memoranda that are not retained by the public agency in the ordinary course of business, provided that the public interest in withholding those records clearly outweighs the public interest in disclosure.
2. Records pertaining to pending litigation to which the public agency is a party until the pending litigation or claim has been finally adjudicated or otherwise settled.
3. Personnel, medical, or similar files, the disclosure of which would constitute an unwarranted invasion of personal privacy.
4. Records, the disclosure of which is exempted or prohibited pursuant to federal or state law, including, but not limited to, provisions of the Evidence Code relating to privilege.
5. Additionally, Government Code Section 7922.00 provides a "catch all" provision whereby CCCERA can justify withholding any record by demonstrating that "on the facts of the particular case the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record."³

² According to California case law, the listed exemptions permit CCCERA to withhold records; they do not prohibit disclosure. In other words, these exemptions provide CCCERA with discretion to disclose certain records and information. However, due to (a) the possibly sensitive nature of the records covered by the exemptions and (b) the fact that disclosure may constitute a waiver of future rights to withhold information, CCCERA is encouraged to consult legal counsel before disclosing any records that fall under an exemption.

³ Generally, California law favors disclosure, and if a court disagrees with CCCERA's determination, CCCERA may be liable for the requesting parties' attorney fees and costs associated with obtaining disclosure. Thus, the "catch all" provision should be used sparingly, and only with the benefit of legal counsel.

B. Member Records

Government Code section 31532 provides as follows: "Sworn statements and individual records of members shall be confidential and shall not be disclosed to anyone except insofar as may be necessary for the administration of this chapter [the '37 Act] or upon order of a court of competent jurisdiction, or upon written authorization by the member."

Based upon section 31532 and applicable court rulings, the CCCERA Board hereby adopts the following interpretation of Government Code section 31532 as it pertains to the confidentiality of member records:

Subject to the provisions of this section, data filed by any member or beneficiary with CCCERA is confidential, and no individual record shall be divulged by any official or employee having access to it to any person other than the member to whom the information relates or his or her authorized representative or the county or participating agency by which he or she is employed. The information shall be used by CCCERA for the sole purpose of carrying into effect the provisions of this part. Any information that is requested for retirement purposes by any such public agency shall be treated as confidential by the agency.

Except as provided by this section, the following information is not public information and shall not be disclosed: a member's, beneficiary's or annuitant's social security number, date of birth, address, telephone and facsimile numbers, email addresses, age at entry into service, spouse's and/or beneficiary's names, disability application, medical records, or other personal information provided by the member or beneficiary (excluding the public information listed below).

The following information is public information and shall be released in response to a valid request: member's and benefit recipient's names, member's date of hire, category of service (e.g., general or safety), employment tier, date of hire, applicable benefit formula, date of retirement, election of retirement options, type of retirement allowance (e.g., service, service connected disability, non-service connected disability), years of credited service, age factor for calculation of benefit, final average compensation (including the elements of compensation earnable) and total retirement allowance.

IV. PROCEDURE FOR RESPONDING TO PUBLIC RECORDS REQUESTS

A. Initial Review

Upon receiving a request for records, CCCERA must first determine whether the request seeks disclosable "public records."⁴ To make this determination, CCCERA should proceed as follows:

1. Determine if the records are prepared, owned, used, or retained by CCCERA.
2. If the records are prepared, owned, used, or retained by CCCERA, then determine if the requested records relate to the conduct of the public's business.
3. Determine if the requested records fit under one of the exemptions discussed above (e.g., preliminary drafts, records related to litigation or personnel files).
4. Always consider whether there is a good public policy reason to withhold the records. If so, the request should be referred to legal counsel for a case-by- case determination.
5. Determine whether the requested records will reveal information regarding a member that is of a personal or private nature. Generally, records or information that relate to a member's official responsibilities, his or her actions as a public employee, information that is within the public domain (e.g. formula used to calculate pension allowances) or information that is provided to the county auditor/controller (e.g., the member's salary, bonuses) or information provided by other similarly situated retirement systems (e.g., the gross amount of any benefit or any refund of a member contribution) is non-confidential, public information and should be disclosed. However, requests for more personal information (e.g., addresses, telephone numbers, social security numbers, disability and medical records and investigations, marital status, designated beneficiary, etc.) ordinarily should not be disclosed, unless the member has consented to disclosure, and the request should be referred to legal counsel for further handling.
6. Determine whether otherwise disclosable records need to be reorganized or redacted such that confidential information is not included in the disclosed material.
7. If, for any reason, CCCERA believes that certain records should not be disclosed, or questions whether certain records should be disclosed, legal counsel should be consulted.

⁴ It is important to remember that a request may be partially acceptable and partially objectionable. CCCERA should disclose all records that are properly sought, even if the person making the request has sought other records that need not be disclosed.

B. Preparing the Response Letter

Under normal circumstances, within 10 calendar days⁵ after receipt of the request, CCCERA must notify - in writing -- the person making the request whether some or all of the records will be disclosed. The response letter should also contain the following:

1. If any records will not be disclosed, CCCERA must explain why those records are being withheld. If some of the requested records will be disclosed while others will not, it is important that CCCERA clearly delineate which records will be disclosed (and which will not) and explain the reasons for the distinctions.
2. If some or all of the requested records will be disclosed, CCCERA must state the estimated date and time when the records will be made available. In general, CCCERA should provide the relevant information or make the records available at the earliest practicable date. Unless special circumstances exist, CCCERA should endeavor to produce the information or records within 10 days after the response letter is sent (i.e., within 20 days after the original request).
3. If some or all of the requested records will not be disclosed, because "the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record," (pursuant to Govt. Code Section 6255) CCCERA must set forth the names and titles or positions of each person responsible for the denial.

C. Producing the Records

The logistics of providing the requested records should be worked out on a case- by-case basis in cooperation with the person making the request. If practicable, the information should be communicated by letter. If, however, the request seeks review of specific records, or if the requested information is too voluminous for inclusion in a letter, CCCERA should send copies of the relevant records to the person making the request. If the production requires substantial copying, CCCERA should not release the copies until the requesting party pays CCCERA for copying at the rate of \$.10 per page. If the requested information is particularly voluminous (or

⁵ Under "unusual circumstances," if CCCERA cannot reasonably make a determination within 10 days, the Administrator "or his or her designee" should, within the 10 days, send a letter to the person making the request explaining when a response is expected (but in no case more than 24 days after the initial request) and setting forth the reason(s) for the extension. Extensions should not be used simply to postpone the response, but rather should only be used when "unusual circumstances" exist. "Unusual circumstances" includes: (1) the need to search for and collect the requested records from other locations; (2) the need to search for, "sift through" and examine voluminous records; (3) the need for consultation with another agency or department; or (4) the need to compile data, to write programming language or a computer program, or to construct a computer report to extract more limited data that CCCERA seeks to provide in response to a PRA request.

the person requesting the information does not want to pay for copy charges) arrangements should be made so that he or she can view the records at CCCERA's offices.

V. MISCELLANEOUS

A. Availability Of This Policy

A copy of this policy statement shall be posted in a visible location of the CCCERA office, shall be made available to any member of the public upon request, and shall be made available on CCCERA's website.

B. Responsible Individual

For consistency and efficiency, the Administrator shall be the responsible individual for requests under the PRA. Staff shall promptly refer all requests to the Administrator, or his or her designee(s).

C. Record Keeping

A separate file shall be maintained for all documents relating to requests for records under the PRA. All communications relating to requests for records under the PRA shall either be in writing or memorialized by a writing that is appropriately filed.

VI. REVIEW

This policy shall be reviewed by the Board at least every three (3) years and may be amended at any time.

VII. HISTORY

Adopted: May 19, 2004

Amended: December 12, 2007; November 24, 2009; _____, 2023

CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

ACCESSIBILITY OF RECORDS POLICY

~~(Adopted 5/19/04)~~

~~Amended December 12, 2007; November 24, 2009~~

I. PURPOSE

The Board of Retirement ("Board") of the Contra Costa County Employees' Retirement Association ("CCCERA") adopts this policy to establish guidelines and procedures for making determinations concerning the disclosure of information in CCCERA's files, records or other information when responding to requests made under the Public Records Act ("PRA").

The Board recognizes that it has an obligation to balance its members' right to privacy with the public's right to information regarding public business. There are no "bright line" standards available to the Board for knowing how that balance should tip in each instance. Nevertheless, the Board has determined that it would be useful to establish guidelines for CCCERA to follow when a request is made under the PRA, and to publish those guidelines for the benefit of its members and their beneficiaries, and the public at large.

All staff should be familiar with these guidelines so that the process of responding to requests is efficient, consistent and compliant with the applicable laws. In many circumstances, these guidelines will enable staff to respond to requests without the need for substantial analysis or the assistance of legal counsel. However, given the complexities of the law, situations will likely arise where a simple application of the general guidelines will not provide a definitive answer. When such a situation arises, the Administrator should refer any questions to legal counsel.

In addition, to the extent that any requests made to CCCERA under the PRA pertain to CCCERA's investment records, responses to such requests should follow the additional guidelines set forth in CCCERA's Policy and Guidelines for Accessibility of Investment Records.

II. GENERAL PRINCIPLES

A request to inspect CCCERA records may be made by a telephone call, an in-person oral request, a written request, a subpoena or a court order. The person making a request for records may be a member, a beneficiary, an employee organization, a government agency or member of the press or general public. Staff should always be aware that a request, no matter how informal it may appear, must be analyzed under the principles outlined in this Policy (or analyzed by legal counsel in more complicated situations). The general principles of the policy may be summarized as follows:

1. Confidentiality of an individual member's records must be protected unless those records relate to the conduct of the public's business, or unless the member has authorized the disclosure in writing.
2. An individual (member or beneficiary) generally must be permitted access to his or her own records.
3. The public – i.e., any person, for any reason - has a right to inspect records that relate to CCCERA's operation and that are neither confidential nor protected from disclosure by the applicable laws.
4. Generally, CCCERA must respond to any request for information within 10 calendar days of receipt of the request. The response need not contain the actual requested information or production of the sought records, but must (at a minimum) provide a response as to whether CCCERA will produce the requested records or provide a basis for rejecting the request. If CCCERA is unable to formulate a response within 10 calendar days, it may extend the time for a response by as much as 14 calendar days, but may only do so with good cause.
5. Subpoenas or court orders requiring the production of records and/or information should be referred to legal counsel immediately upon receipt.
6. Even if a request seeks disclosable records, under California case law, a request may be objectionable if it is unreasonably burdensome. Additionally, the PRA only requires CCCERA to disclose its existing records; it does not require CCCERA to conduct studies, reorganize information or summarize data for the requesting party. Thus, when confronted with a request that will substantially disrupt CCCERA's operations, the Administrator should consult legal counsel.¹
7. When a request is made for information regarding an individual member that appears to be of a personal or private nature, CCCERA should seek the advice of legal counsel.

¹ Although CCCERA does not have to conduct studies, reorganize information or summarize data, it may have to invest substantial energy sifting through existing data. The amount of time or energy spent sifting through CCCERA's existing data is not, alone, a valid ground for withholding records or information.

III. APPLICABLE LAW

A. Public Records Act (PRA)

The PRA generally requires CCCERA to disclose "public records" unless the particular information is exempt from disclosure. Under the PRA and interpreting case law, "public records" include information in virtually any format "relating to the conduct of the public's business prepared, owned, used or retained by any state or local agency." Although certain exemptions allow CCCERA to withhold some records, case law is clear that the policy in California generally favors disclosure.

The PRA sets forth an extensive list of records that are exempt from required disclosure.² Many of the statutory exemptions are inapplicable to CCCERA and others may be applicable only in rare instances. The following exemptions are the most important exemptions for CCCERA:

1. Preliminary drafts, notes, or interagency or intra-agency memoranda that are not retained by the public agency in the ordinary course of business, provided that the public interest in withholding those records clearly outweighs the public interest in disclosure.
2. Records pertaining to pending litigation to which the public agency is a party until the pending litigation or claim has been finally adjudicated or otherwise settled.
3. Personnel, medical, or similar files, the disclosure of which would constitute an unwarranted invasion of personal privacy.
4. Records, the disclosure of which is exempted or prohibited pursuant to federal or state law, including, but not limited to, provisions of the Evidence Code relating to privilege.

5. Additionally, Government Code Section 7922.00 provides a "catch all" provision whereby CCCERA can justify withholding any record by demonstrating that "on the facts of the particular case the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record."³

~~5.~~

² According to California case law, the listed exemptions permit CCCERA to withhold records; they do not prohibit disclosure. In other words, these exemptions provide CCCERA with discretion to disclose certain records and information. However, due to (a) the possibly sensitive nature of the records covered by the exemptions and (b) the fact that disclosure may constitute a waiver of future rights to withhold information, CCCERA is encouraged to consult legal counsel before disclosing any records that fall under an exemption.

³ Generally, California law favors disclosure, and if a court disagrees with CCCERA's determination, CCCERA may be liable for the requesting parties' attorney fees and costs associated with obtaining disclosure. Thus, the "catch all" provision should be used sparingly, and only with the benefit of legal counsel.

B. Member Records

Government Code section 31532 provides as follows: "Sworn statements and individual records of members shall be confidential and shall not be disclosed to anyone except insofar as may be necessary for the administration of this chapter [the '37 Act] or upon order of a court of competent jurisdiction, or upon written authorization by the member."

Based upon section 31532 and applicable court rulings, the CCCERA Board hereby adopts the following interpretation of Government Code section 31532 as it pertains to the confidentiality of member records:

Subject to the provisions of this section, data filed by any member or beneficiary with CCCERA is confidential, and no individual record shall be divulged by any official or employee having access to it to any person other than the member to whom the information relates or his or her authorized representative or the county or participating agency by which he or she is employed. The information shall be used by CCCERA for the sole purpose of carrying into effect the provisions of this part. Any information that is requested for retirement purposes by any such public agency shall be treated as confidential by the agency.

Except as provided by this section, the following information is not public information and shall not be disclosed: a member's, beneficiary's or annuitant's social security number, date of birth, address, telephone and facsimile numbers, email addresses, age at entry into service, spouse's and/or beneficiary's names, disability application, medical records, or other personal information provided by the member or beneficiary (excluding the public information listed below).

The following information is public information and shall be released in response to a valid request: member's and benefit recipient's names, member's date of hire, category of service (e.g., general or safety), employment tier, date of hire, applicable benefit formula, date of retirement, election of retirement options, type of retirement allowance (e.g., service, service connected disability, non-service connected disability), years of credited service, age factor for calculation of benefit, final average compensation (including the elements of compensation earnable) and total retirement allowance.

IV. PROCEDURE FOR RESPONDING TO PUBLIC RECORDS REQUESTS

A. Initial Review

Upon receiving a request for records, CCCERA must first determine whether the request seeks disclosable "public records."⁴ To make this determination, CCCERA should proceed as follows:

1. Determine if the records are prepared, owned, used, or retained by CCCERA.
2. If the records are prepared, owned, used, or retained by CCCERA, then determine if the requested records relate to the conduct of the public's business.
3. Determine if the requested records fit under one of the exemptions discussed above (e.g., preliminary drafts, records related to litigation or personnel files).
4. Always consider whether there is a good public policy reason to withhold the records. If so, the request should be referred to legal counsel for a case-by- case determination.
5. Determine whether the requested records will reveal information regarding a member that is of a personal or private nature. Generally, records or information that relate to a member's official responsibilities, his or her actions as a public employee, information that is within the public domain (e.g. formula used to calculate pension allowances) or information that is provided to the county auditor/controller (e.g., the member's salary, bonuses) or information provided by other similarly situated retirement systems (e.g., the gross amount of any benefit or any refund of a member contribution) is non-confidential, public information and should be disclosed. However, requests for more personal information (e.g., addresses, telephone numbers, social security numbers, disability and medical records and investigations, marital status, designated beneficiary, etc.) ordinarily should not be disclosed, unless the member has consented to disclosure, and the request should be referred to legal counsel for further handling.
6. Determine whether otherwise disclosable records need to be reorganized or redacted such that confidential information is not included in the disclosed material.
7. If, for any reason, CCCERA believes that certain records should not be disclosed, or questions whether certain records should be disclosed, legal counsel should be consulted.

⁴ It is important to remember that a request may be partially acceptable and partially objectionable. CCCERA should disclose all records that are properly sought, even if the person making the request has sought other records that need not be disclosed.

B. Preparing the Response Letter

Under normal circumstances, within 10 calendar days⁵ after receipt of the request, CCCERA must notify - in writing -- the person making the request whether some or all of the records will be disclosed. The response letter should also contain the following:

1. If any records will not be disclosed, CCCERA must explain why those records are being withheld. If some of the requested records will be disclosed while others will not, it is important that CCCERA clearly delineate which records will be disclosed (and which will not) and explain the reasons for the distinctions.
2. If some or all of the requested records will be disclosed, CCCERA must state the estimated date and time when the records will be made available. In general, CCCERA should provide the relevant information or make the records available at the earliest practicable date. Unless special circumstances exist, CCCERA should endeavor to produce the information or records within 10 days after the response letter is sent (i.e., within 20 days after the original request).
3. If some or all of the requested records will not be disclosed, because "the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record," (pursuant to Govt. Code Section 6255) CCCERA must set forth the names and titles or positions of each person responsible for the denial.

C. Producing the Records

The logistics of providing the requested records should be worked out on a case- by-case basis in cooperation with the person making the request. If practicable, the information should be communicated by letter. If, however, the request seeks review of specific records, or if the requested information is too voluminous for inclusion in a letter, CCCERA should send copies of the relevant records to the person making the request. If the production requires substantial copying, CCCERA should not release the copies until the requesting party pays CCCERA for copying at the rate of \$.10 per page. If the requested information is particularly voluminous (or

⁵ Under "unusual circumstances," if CCCERA cannot reasonably make a determination within 10 days, the Administrator "or his or her designee" should, within the 10 days, send a letter to the person making the request explaining when a response is expected (but in no case more than 24 days after the initial request) and setting forth the reason(s) for the extension. Extensions should not be used simply to postpone the response, but rather should only be used when "unusual circumstances" exist. "Unusual circumstances" includes: (1) the need to search for and collect the requested records from other locations; (2) the need to search for, "sift through" and examine voluminous records; (3) the need for consultation with another agency or department; or (4) the need to compile data, to write programming language or a computer program, or to construct a computer report to extract more limited data that CCCERA seeks to provide in response to a PRA request.

the person requesting the information does not want to pay for copy charges) arrangements should be made so that he or she can view the records at CCCERA's offices.

V. MISCELLANEOUS

A. Availability Of This Policy

A copy of this policy statement shall be posted in a visible location of the CCCERA office, shall be made available to any member of the public upon request, and shall be made available on CCCERA's website.

B. Responsible Individual

For consistency and efficiency, the Administrator shall be the responsible individual for requests under the PRA. Staff shall promptly refer all requests to the Administrator, or his or her designee(s).

C. Record Keeping

A separate file shall be maintained for all documents relating to requests for records under the PRA. All communications relating to requests for records under the PRA shall either be in writing or memorialized by a writing that is appropriately filed.

VI. REVIEW

This policy shall be reviewed by the Board at least every three (3) years and may be amended at any time.

VII. HISTORY

Adopted: May 19, 2004

Amended: December 12, 2007; November 24, 2009; _____, 2023

CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

ACCESSIBILITY OF INVESTMENT RECORDS POLICY

I. PURPOSE

The Board of Retirement ("Board") of the Contra Costa County Employees' Retirement Association ("CCCERA") adopts this policy to establish guidelines and procedures for making determinations concerning the disclosure of investment records when responding to requests made under the Public Records Act ("PRA").

All staff should be familiar with these guidelines so that the process of responding to requests is efficient, consistent and compliant with the applicable laws. In many circumstances, these guidelines will enable staff to respond to requests without the need for substantial analysis or the assistance of legal counsel. However, given the complexities of the law, situations will likely arise where a simple application of the general guidelines will not provide a definitive answer. When such a situation arises, the Chief Executive Officer should refer any questions to legal counsel.

II. GUIDELINES

Records pertaining to CCCERA's investments that are in CCCERA's possession are generally accessible to the public, with the exception of records that are exempt from public disclosure pursuant to the California Public Records Act, Government Code section 7920.000, *et seq.*, as it may be amended from time to time. The following list of exemptions is not exhaustive.

A. Investment Records Exempt From Disclosure

The following records pertaining to investments are exempt from disclosure:

1. Records pertaining to pending litigation: This exemption extends only to pending litigation in which CCCERA is a named party or a real party in interest.
2. Records pertaining to communications by and between CCCERA staff or its Board and CCCERA's attorneys: This exemption extends to all records reflecting communications with in-house counsel or attorneys who have been retained to represent CCCERA.
3. Preliminary drafts, notes or CCCERA-related memoranda: This exemption extends to preliminary drafts, notes or CCCERA-related memoranda that are not retained by CCCERA in the ordinary course of business, so long as the public interest in withholding such records clearly outweighs the public interest in disclosure. (Government Code Section 7927.500.)
4. Real estate: The contents of real estate appraisals or engineering or feasibility estimates and evaluations made for or by the state or local agency relative to the acquisition of property, or

to prospective public supply and construction contracts, until all of the property has been acquired or all of the contract agreement obtained.

5. Confidential or privileged records. Records, the disclosure of which is exempted or prohibited pursuant to federal or state law, including but not limited to provisions of the Evidence Code relating to privilege.

6. Records of which the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record. (Sections 7927.705, *et seq.* and 7930.205 of the Government Code; Section 3426.1(d) of the Civil Code.)

7. Records pertaining to “alternative investments”: “Alternative investments” are defined as “investment in private equity fund, venture fund, hedge fund, or absolute return fund,” Government Code section 7928.710 specifies what is and is not subject to public disclosure. As to alternative investments, the following are exempt from disclosure:

- (1) Due diligence materials that are proprietary to CCCERA or the alternative investment vehicle.
- (2) Quarterly and annual financial statements of alternative investment vehicles.
- (3) Meeting materials of alternative investment vehicles.
- (4) Records pertaining to information regarding the portfolio positions in which alternative investment funds invest.
- (5) Capital call and distribution notices.
- (6) Alternative investment agreements and all related documents.

8. Trade secrets. This exemption extends to trade secrets, defined as information, including a formula, pattern, compilation, program, device, method, technique, or process, that:

- (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and
- (2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

B. Investment Records Subject to Disclosure

As to “alternative investments,” the following information is subject to disclosure:

1. The name, address, and vintage year of each alternative investment vehicle.
2. The dollar amount of the commitment made to each alternative investment vehicle by the public investment fund since inception.
3. The dollar amount of cash contributions made by the public investment fund to each alternative investment vehicle since inception.

4. The dollar amount, on a fiscal yearend basis, of cash distributions received by the public investment fund from each alternative investment vehicle.
5. The dollar amount, on a fiscal yearend basis, of cash distributions received by the public investment fund plus remaining value of partnership assets attributable to the public investment fund's investment in each alternative investment vehicle.
6. The net internal rate of return of each alternative investment vehicle since inception.
7. The investment multiple of each alternative investment vehicle since inception.
8. The dollar amount of the total management fees and costs paid on an annual fiscal yearend basis, by the public investment fund to each alternative investment vehicle.
9. The dollar amount of cash profit received by public investment funds from each alternative investment vehicle on a fiscal year-end basis.

C. Annual Disclosure Of Alternative Investments Information

Annual disclosure pertaining to “alternative investments”: Government Code section 7514.7 requires CCCERA to disclose the following information at least once annually in a report presented at a meeting open to the public:

1. The fees and expenses that CCCERA pays directly to the alternative investment vehicle, the fund manager, or related parties.
2. CCCERA's pro rata share of fees and expenses not included in paragraph (1) that are paid from the alternative investment vehicle to the fund manager or related parties. CCCERA may independently calculate this information based on information contractually required to be provided by the alternative investment vehicle to the public investment fund. If CCCERA independently calculates this information, then the alternative investment vehicle shall not be required to provide the information identified in this paragraph.
3. CCCERA's pro rata share of carried interest distributed to the fund manager or related parties.
4. CCCERA's pro rata share of aggregate fees and expenses paid by all of the portfolio companies held within the alternative investment vehicle to the fund manager or related parties.
5. Any additional information described in subdivision (b) of Section 7928.710.
6. The gross and net rate of return of each alternative investment vehicle, since inception, in which CCCERA participates.

III. REVIEW

This policy shall be reviewed by the Board at least every three (3) years and may be amended at any time.

IV. HISTORY

Adopted: May 19, 2004

Amended: September 26, 2018, _____, 2023

CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

ACCESSIBILITY OF INVESTMENT RECORDS POLICY

I. PURPOSE

The Board of Retirement ("Board") of the Contra Costa County Employees' Retirement Association ("CCCERA") adopts this policy to establish guidelines and procedures for making determinations concerning the disclosure of investment records when responding to requests made under the Public Records Act ("PRA").

All staff should be familiar with these guidelines so that the process of responding to requests is efficient, consistent and compliant with the applicable laws. In many circumstances, these guidelines will enable staff to respond to requests without the need for substantial analysis or the assistance of legal counsel. However, given the complexities of the law, situations will likely arise where a simple application of the general guidelines will not provide a definitive answer. When such a situation arises, the Chief Executive Officer should refer any questions to legal counsel.

II. GUIDELINES

Records pertaining to CCCERA's investments that are in CCCERA's possession are generally accessible to the public, with the exception of records that are exempt from public disclosure pursuant to the California Public Records Act, Government Code section [7920.0006250](#), *et seq.*, as it may be amended from time to time. The following list of exemptions is not exhaustive.

A. Investment Records Exempt From Disclosure

The following records pertaining to investments are exempt from disclosure:

1. Records pertaining to pending litigation: This exemption extends only to pending litigation in which CCCERA is a named party or a real party in interest.
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4. Real estate: The contents of real estate appraisals or engineering or feasibility estimates and evaluations made for or by the state or local agency relative to the acquisition of property, or

to prospective public supply and construction contracts, until all of the property has been acquired or all of the contract agreement obtained.

5. Confidential or privileged records. Records, the disclosure of which is exempted or prohibited pursuant to federal or state law, including but not limited to provisions of the Evidence Code relating to privilege.

6. Records of which the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record. (Sections ~~7927.7056254~~, *et seq.* and ~~7930.2056276.44~~ of the Government Code; Section 3426.1(d) of the Civil Code.)

7. Records pertaining to “alternative investments”: “Alternative investments” are defined as “investment in private equity fund, venture fund, hedge fund, or absolute return fund,” Government Code section ~~7928.7106254.26~~ specifies what is and is not subject to public disclosure. As to alternative investments, the following are exempt from disclosure:

- (1) Due diligence materials that are proprietary to CCCERA or the alternative investment vehicle.
- (2) Quarterly and annual financial statements of alternative investment vehicles.
- (3) Meeting materials of alternative investment vehicles.
- (4) Records pertaining to information regarding the portfolio positions in which alternative investment funds invest.
- (5) Capital call and distribution notices.
- (6) Alternative investment agreements and all related documents.

8. Trade secrets. This exemption extends to trade secrets, defined as information, including a formula, pattern, compilation, program, device, method, technique, or process, that:

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5. The dollar amount, on a fiscal yearend basis, of cash distributions received by the public investment fund plus remaining value of partnership assets attributable to the public investment fund's investment in each alternative investment vehicle.
6. The net internal rate of return of each alternative investment vehicle since inception.
7. The investment multiple of each alternative investment vehicle since inception.
8. The dollar amount of the total management fees and costs paid on an annual fiscal yearend basis, by the public investment fund to each alternative investment vehicle.
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1. The fees and expenses that CCCERA pays directly to the alternative investment vehicle, the fund manager, or related parties.
2. CCCERA's pro rata share of fees and expenses not included in paragraph (1) that are paid from the alternative investment vehicle to the fund manager or related parties. CCCERA may independently calculate this information based on information contractually required to be provided by the alternative investment vehicle to the public investment fund. If CCCERA independently calculates this information, then the alternative investment vehicle shall not be required to provide the information identified in this paragraph.
3. CCCERA's pro rata share of carried interest distributed to the fund manager or related parties.
4. CCCERA's pro rata share of aggregate fees and expenses paid by all of the portfolio companies held within the alternative investment vehicle to the fund manager or related parties.
5. Any additional information described in subdivision (b) of Section [7928.7106254.26](#).
6. The gross and net rate of return of each alternative investment vehicle, since inception, in which CCCERA participates.

III. REVIEW

This policy shall be reviewed by the Board at least every three (3) years and may be amended at any time.

IV. HISTORY

Adopted: May 19, 2004

Amended: September 26, 2018, , 2023



Meeting Date
02/22/2023
Agenda Item
#10

SACRS VOTING PROXY FORM

The following are authorized by the _____ County Retirement Board to vote on behalf of the County Retirement System at the upcoming SACRS Conference

(If you have more than one alternate, please attach the list of alternates in priority order):

_____ Voting Delegate

_____ Alternate Voting Delegate

These delegates were approved by the Retirement Board on ____ / ____ / ____.

The person authorized to fill out this form and submit electronically on behalf of the Retirement Board:

Signature: _____

Print Name: _____

Position: _____

Date: _____

Please send your system's voting proxy by April 28, 2023 to Sulema H. Peterson, SACRS Executive Director at Sulema@sacrs.org.

Meeting Date
02/22/2023
Agenda Item
#11a.



California Association of Public Retirement Systems

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Virtual Trustees Round Table

Register Tell a Friend



4/21/2023

Register

When: Friday, April 21, 2023
8:30 AM - 12:30 PM

Online registration is available until: 4/21/2023

Where: Online - zoom link to be sent out upon registration

Contact: CALAPRS
register@calaprs.org
415-764-4860

TUESDAY, MAY 9

Time	Session Title
3 pm – 5 pm	ETHICS TRAINING FOR TRUSTEES AND STAFF
3 pm – 5 pm	SEXUAL HARASSMENT PREVENTION TRAINING FOR LOCAL AGENCY OFFICIALS
4 pm – 5 pm	IN SOLIDARITY - LABOR AND LABOR ALLIES NETWORKING
5:30 pm – 6:30 pm	SACRS NETWORKING RECEPTION

WEDNESDAY, MAY 10

Time	Session Title
7 am – 8 am	SACRS WELLNESS SESSION – YOGA
8:45 am – 9 am	SACRS WELCOME - VIVIAN GRAY, SACRS PRESIDENT
9 am – 10 am	KEYNOTE GENERAL SESSION
10 am – 10:30 am	SACRS NETWORKING BREAK
10:30 am – 11:30 am	GENERAL SESSION
11:30 am – 12:30 pm	GENERAL SESSION
12:30 pm – 1:30 pm	SACRS LUNCH
2:00 pm – 4:30 pm	SACRS BREAKOUTS
2:00 pm – 4:30 pm	ADMINISTRATORS BREAKOUT
2:00 pm – 4:30 pm	AFFILIATE BREAKOUT
2:00 pm – 4:30 pm	ATTORNEYS BREAKOUT
2:00 pm – 4:30 pm	INTERNAL AUDITORS' BREAKOUT
2:00 pm – 4:30 pm	INVESTMENT BREAKOUT
2:00 pm – 4:30 pm	OPERATIONS/BENEFITS BREAKOUT
2:00 pm – 4:30 pm	SAFETY BREAKOUT
2:00 pm – 4:30 pm	TRUSTEE BREAKOUT
6:30 pm – 9:30 pm	SACRS ANNUAL WEDNESDAY NIGHT EVENT

Thursday, May 11

Time	Session Title
7 am – 8 am	SACRS FUN RUN
7:30 am – 8:30 am	SACRS BREAKFAST
8:45 am – 9 am	SACRS WELCOME – VIVIAN GRAY, SACRS PRESIDENT
9 am – 10 am	GENERAL SESSION
10 am – 10:30 am	SACRS NETWORKING BREAK
10:30 am – 11:30 am	GENERAL SESSION
11:30 am – 12:30 pm	GENERAL SESSION
12:30 pm – 1:30 pm	SACRS LUNCH
2 pm – 3 pm	SACRS CONCURRENT SESSIONS
2 pm – 3 pm	CONCURRENT SESSION A
2 pm – 3 pm	CONCURRENT SESSION B
2 pm – 3 pm	CONCURRENT SESSION C
3 pm – 3:30 pm	SACRS NETWORKING BREAK
3:30 pm – 4:30 pm	CONCURRENT SESSION A
3:30 pm – 4:30 pm	CONCURRENT SESSION B
3:30 pm – 4:30 pm	CONCURRENT SESSION C
4:30 pm – 5:30 pm	SACRS EDUCATION COMMITTEE MEETING
4:30 pm – 5:30 pm	SACRS NOMINATING COMMITTEE MEETING
5:30 pm – 6:30 pm	SACRS RECEPTION

FRIDAY, MAY 12

Time	Session Title
7:30 am – 8:30 am	SACRS BREAKFAST
9 am – 10 am	GENERAL SESSION
10 am – 10:15 am	SACRS NETWORKING BREAK
10:15 am – 11:30 am	SACRS ANNUAL BUSINESS MEETING