



AGENDA

RETIREMENT BOARD MEETING

REGULAR MEETING

November 30, 2022, 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: 834 8358 1707, Passcode: 663171, or via the web at:

<https://us06web.zoom.us/j/83483581707?pwd=bUd4V3BrNjFkWGxnd3c4MVJ4SHJpUT09>

Passcode: 663171

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 October 26, 2022 meeting.

CLOSED SESSION

5. The Board will go into closed session pursuant to Govt. Code Section 54957 to evaluate the performance of the following public employee:

Title: Chief Executive Officer

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.

OPEN SESSION

6. Review of total portfolio performance for period ending September 30, 2022.
 - a. Presentation from Verus
 - b. Presentation from staff
7. Private Equity Review.
 - a. Presentation from staff
 - b. Presentation from StepStone
8. Presentation of alternative investment fees and expense report.
9. Consider and take possible action to authorize the Board to conduct teleconference meetings under Government Code section 54953 (e) and to make related findings.
10. Consider authorizing the attendance of Board:
 - a. 41st Annual Sit Investment Associates Client Workshop, February 16-19, 2023, Dana Point, CA.
11. 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
October 26, 2022
9:00 a.m.

The Board of Retirement meeting was accessible telephonically at (669) 900-6833, Webinar ID 817 3480 6212 Passcode 574719, 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.

Outside Professional Support:	Representing:
Ariel Goldblatt	StepStone
Marcel Schindler	StepStone
Urs von Buren	StepStone

3. Accept comments from the public

Carol Nowicki spoke about her husband's experience in 2015 with CCCERA and provided more information.

Pete Nowicki spoke about his experience with CCCERA through litigation and provided more information.

4. Approve of Minutes

It was **M/S/C** to approve the minutes from the September 28, 2022 meeting. (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips and Watts.)

5. Review of private credit by StepStone

Price reviewed the role of private credit in CCCERA's portfolio, the key participants in the program and their functions also noting this is an annual review by StepStone.

Schindler gave an update on the firm and reviewed the team.

Goldblatt reviewed the private debt program, CCCERA's pacing analysis and the private debt performance.

Von Buren reviewed StepStone's activity with CCCERA over the last 12 months.

6. Miscellaneous

- a. Staff Report- None
- b. Outside Professionals - None
- c. Trustee' comments – Sloan reported he attended the CRCEA Fall Conference. He noted it was very educational and would highly recommend it.

MacDonald reported he attended the IFEBP Conference and attended the Trustees Master's Program during the conference. It is a very good conference and would encourage other Trustees to attend.

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

Scott Gordon, Chairman

Jerry R. Holcombe, Secretary

Meeting Date
11/30/2022
Agenda Item
#6a.

Verus⁷⁷⁷



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: SEPTEMBER 30, 2022

Investment Performance Review for

Contra Costa County Employees' Retirement Association

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Investment Landscape

TAB I

Investment Performance
Review

TAB II



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

4TH QUARTER 2022
Investment Landscape

Verus business update

Since our last Investment Landscape webinar:

- *Chief Investment Officer* has nominated Verus for its **2022 Innovation Awards** in the Diversity category, recognizing Verus President, Shelly Heier's work to progress the [Institutional Investing Diversity Cooperative \(iidcoop.org\)](https://iidcoop.org) mission promote greater diversity in the institutional asset management industry.
- The firm continues to grow with two new clients, located on the West Coast and in the Midwest.
- Verus has hired several new employees. **Colleen Flannery**, Associate Director | Public Markets; **Jason Fajardo**, Performance Analyst; **Sam Geschickter**, Portfolio Management Associate; **Linda Wu, CFA**, Senior Consulting Associate; and **Amanda Schroeder**, Director of Marketing.
- Recent research, found at verusinvestments.com/insights
 - In August, we put out a short video on our *Perspectives on the recession and the economy*
 - In September, we released a whitepaper on *Opportunities in small caps*
 - This month, we shared our **2022 Private Equity Outlook** and a paper called, *Minding the gap: Insights into actuarial assumed rate of return*

Recent Verus research

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

Topics of interest papers

OPPORTUNITIES IN SMALL CAPS

In this Topic of Interest white paper, we first briefly walk through the original small cap premium thesis and research that led to its industry-wide recognition. Forty years have passed since much of this analysis was conducted, so in this section we take a look at whether the small cap effect has remained statistically significant. Next, we discuss active management opportunities in small caps, as these businesses are smaller and less covered by analysts. Last, many U.S. companies are staying private for longer. We cover this trend and its implications for the small cap market, which is directly impacted by the private/public decisions of younger businesses.

MINDING THE GAP: INSIGHTS INTO ACTUARIAL ASSUMED RATE OF RETURN

As consultants, we are often asked “how can we support a strategic asset allocation with an expected return (ER) that is different from the actuarial assumed rate of return (AARR)?” We believe Plan sponsors with a gap between these two metrics should work to bring the ER and AARR in line. Boards may face modest differences for three distinct reasons – each have countervailing reasons for closing the gap they cause. First, it might be argued that these forecasts are built for different purposes. Second, there is variability in ER forecasts as markets fluctuate year-to-year. Third, the timeframe over which the forecasts are used differs. In this paper, we further explain this reasoning and conclude by offering approaches for Plans to reduce any mismatch between ER and AARR to a reasonable level, which we generally believe to be less than 0.5%.

Annual research

2022 PRIVATE EQUITY OUTLOOK

In the 2022 Private Equity Outlook, we focus attention on the rise of GP-led continuation funds and what investors should consider when evaluating such opportunities. The outlook also addresses the following observations:

- Late-stage venture valuations have increased, and involvement of nontraditional investors has shifted
- Private equity deal activity has slowed in the face of rising interest rates and falling public markets
- Venture capital activity has slowed while fundraising remains strong
- Direct lending continues to drive investor interest while distressed debt and special situations credit have received more attention
- As many factors continue to impact the public markets and create volatility, the secondary market continues to grow

New Verus manager rating system

- Ratings are applied to products across all public and private market asset classes based on their distinguishing qualities around five key evaluation areas. 1) Alignment with client interests 2) Investment edge 3) Implementation approach 4) Optimal use of risk 5) Understandable performance
- Our “IQ Ratings” considers the institutional quality of the product plus the conviction of our research teams:
 - **Institutional Quality Rating:** Investment products are rated based on insight gained from using five evaluation criteria: Alignment, Investment Edge, Implementation, Optimal Use of Risk, and Understandable Performance. Products that meet or exceed standards of fiduciary care required by institutional investors are indicated with an IQ symbol.
 - **Conviction Rating:** This second component 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.
- Importantly, our due diligence process has not changed, just how we communicate our relative conviction in products.

- The following table shows the ratings that may be assigned to an investment product, including their respective characteristics and Verus recommendations:

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

- Please reach out to your consultant for further details regarding your portfolio.

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Equity 28

Other assets 37

Appendix 40

3rd quarter summary

THE ECONOMIC CLIMATE

- U.S. real GDP fell in Q2 for a second consecutive quarter, down -0.6% annualized (+1.6% over the past full year). Forecasts suggest a potential growth turnaround in the third quarter; the Atlanta Fed GDPNow forecast indicated a growth rate of 2.8% and economists expected 0.9% as of October 14th.
- The U.S. dollar delivered an impressive rally year-to-date, appreciating approximately 15% relative to major currencies. A stronger dollar may result in slowing U.S. exports as domestic goods become more expensive to foreign buyers, and lower inflation as American businesses and households are able to purchase foreign goods at cheaper prices.

PORTFOLIO IMPACTS

- September inflation figures conveyed two stories: first, U.S. core CPI (excludes food & energy) remained elevated, rising 0.6% during the month to a new 40-year high of 6.6% year-over-year; second, headline inflation (includes all prices) continued to show another more moderate monthly print of 0.4% but remained high at 8.2% year-over-year.
- Credit performance was mixed during Q3, with lower duration exposures faring better than higher duration. Fears of a looming recession remained as the Fed's 75 basis point rate hikes in both July and September reinforced its intention to fight inflation until the "job is done."

THE INVESTMENT CLIMATE

- The Russia Ukraine war may be taking a turn, as Ukraine's counteroffensive gains steam. In a rare admission, Russia's Defense Ministry spokesman Igor Konashenkov acknowledged recent defeats: "With numerically superior tank units in the direction of Zolota Balka and Oleksandrivka, the enemy managed to forge deep into our defenses."
- The broad market selloff increased in intensity as global central banks hiked interest rates, effectively withdrawing liquidity from the financial system. Higher interest rates and central bank balance sheet winddowns mark a major change from the liquidity-driven environment of the past decade.

ASSET ALLOCATION ISSUES

- Markets year-to-date have delivered sharp losses across nearly every asset class, including double digit losses of core fixed income (Bloomberg US Aggregate Bond -10.8%). Historically speaking, these moves have been highly unusual and reflect an environment where diversification has not served investors well.
- Growth stocks outperformed value stocks during the quarter (Russell 1000 Growth -3.6% vs Russell 1000 Value -5.6%), and small capitalization stocks outperformed large capitalization stocks (Russell 2000 -2.2%, Russell 1000 -4.7%).

The broad market selloff has increased in severity, as central banks remove liquidity from the global financial system

What drove the market in Q3?

“U.S. Consumer Prices Rise Sharply Despite Fed Rate Increases”

HEADLINE CONSUMER PRICE INFLATION (YEAR-OVER-YEAR)

Apr	May	Jun	Jul	Aug	Sep
8.3%	8.6%	9.1%	8.5%	8.3%	8.2%

Article Source: Financial Times, October 13th, 2022

“U.S. Job Growth Eases, but Is Too Strong to Suit Investors”

CHANGE IN NON-FARM PAYROLLS

Apr	May	Jun	Jul	Aug	Sep
+368k	+386k	+293k	+526k	+315k	+263k

Article Source: New York Times, October 7th, 2022

“Dollar’s Rise Spells Trouble for Global Economies”

U.S. DOLLAR INDEX PRICE LEVEL

Apr	May	Jun	Jul	Aug	Sep
103.0	101.8	104.7	105.9	108.8	112.1

Article Source: Wall Street Journal, September 19th, 2022

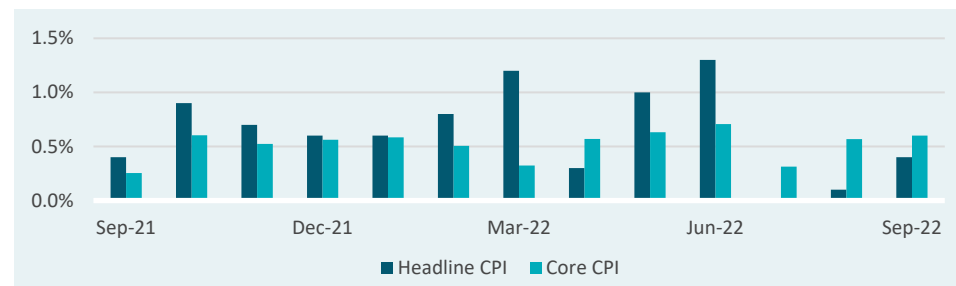
“Mortgage Demand Drops as Rates Top 6%”

FREDDIE MAC U.S. 30-YEAR FIXED RATE MORTGAGE RATE

Sep 2021	May	Jun	Jul	Aug	Sep
3.01%	5.10%	5.70%	5.30%	5.66%	6.70%

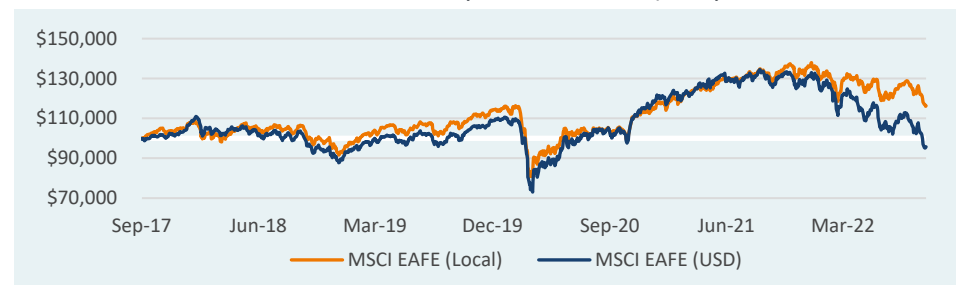
Article Source: CNBC, September 14th, 2022

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



Source: Bureau of Labor Statistics, as of 9/30/22

MSCI EAFE LOCAL VS USD RETURNS, GROWTH OF \$100,000



Source: MSCI, Bloomberg, as of 9/30/22

U.S. EXISTING HOME SALES (YEAR-OVER-YEAR % CHANGE)



Source: National Association of Realtors, as of 8/31/22

Economic environment

U.S. economics summary

- U.S. real GDP fell in Q2 for a second consecutive quarter, down -0.6% annualized (+1.6% over the past full year). Forecasts suggest a potential growth turnaround in the third quarter; the Atlanta Fed GDPNow forecast indicated a growth rate of 2.8% and economists expected 0.9% as of October 14th.
- U.S. core CPI remained elevated in September, rising 0.6% during the month to a new 40-year high of 6.6% year-over-year. Headline inflation continued to show another more moderate monthly print of 0.4% but remained high at 8.2% year-over-year.
- Unemployment fell slightly from 3.6% in June to 3.5% in September, which did not reflect an increase in employment but rather the departure of some Americans from the job market altogether. Weekly initial jobless claims—a measure of the number of workers who filed for unemployment during any given week—moved higher during Q2 to 244,000 in early July but has since fallen to 193,000 in late September.
- The U.S. dollar has appreciated roughly 15% relative to major currencies. A stronger dollar may result in slowing U.S. exports as domestic goods become more expensive to foreign buyers, and lower inflation as American businesses and households are able to purchase foreign goods at cheaper prices.
- Coverage of COVID-19 has tended to focus on the health impacts in a binary way: either the infected individual recovers (and lives) or does not recover (and is deceased). There is a growing body of research by medical experts that suggests a significant portion of survivors face longer-term, often severe, health problems. These issues are known as “long COVID” and may be the primary cause for a severe shrinking of the U.S. labor force.

	Most Recent	12 Months Prior
Real GDP (YoY)	1.6% 6/30/22	12.5% 6/30/21
Inflation (CPI YoY, Core)	6.6% 9/30/22	4.0% 9/30/21
Expected Inflation (5yr-5yr forward)	2.1% 9/30/22	2.2% 9/30/21
Fed Funds Target Range	3.00% – 3.25% 9/30/22	0.00% – 0.25% 9/30/21
10-Year Rate	3.83% 9/30/22	1.49% 9/30/21
U-3 Unemployment	3.5% 9/30/22	4.7% 9/30/21
U-6 Unemployment	6.7% 9/30/22	8.5% 9/30/21

GDP growth

U.S. real GDP fell in Q2 for a second consecutive quarter, down -0.6% annualized (+1.6% over the past full year). Most aspects of economic activity showed decline, including private investment (-2.7%), government spending (-0.3%), and imports (-0.5%). Forecasts suggest a potential growth turnaround in the third quarter; the Atlanta Fed GDPNow forecast indicated a growth rate of 2.8% and economists expected 0.9% as of October 14th.

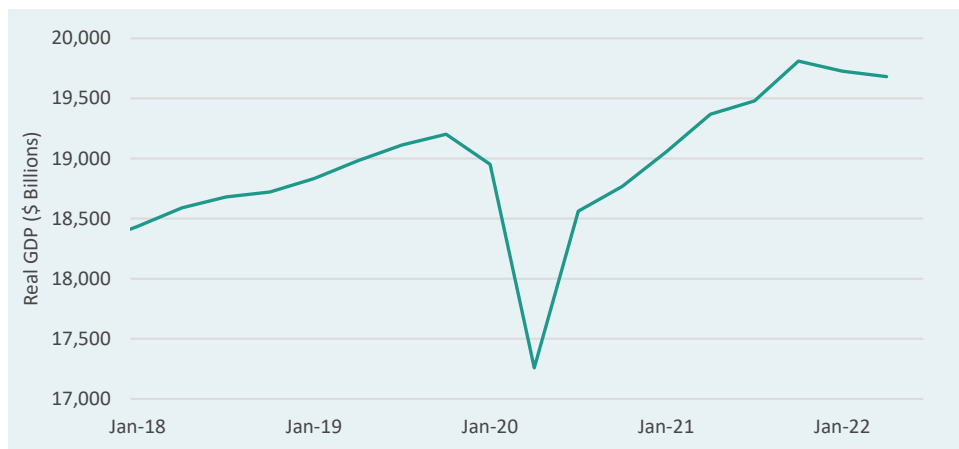
It is possible that the U.S. has avoided technical recession, for now, especially if third quarter GDP growth shows a positive figure. Pundits remain primarily focused on the relatively strong labor market to justify their claims that the U.S. is not in fact

experiencing recession, and slightly positive consumer spending growth during 2022 also adds to their argument.

The U.S. dollar has delivered an impressive rally year-to-date, appreciating approximately 15% relative to other major currencies. Two expected economic impacts of a rising U.S. dollar, all else equal, include: a slowdown in U.S. exports as domestic goods become more expensive to foreign buyers; and lower inflation as American businesses and households are able to purchase foreign goods at cheaper prices. Other countries such as the U.K. may be seeing the opposite of these effects as their domestic currencies fall in value.

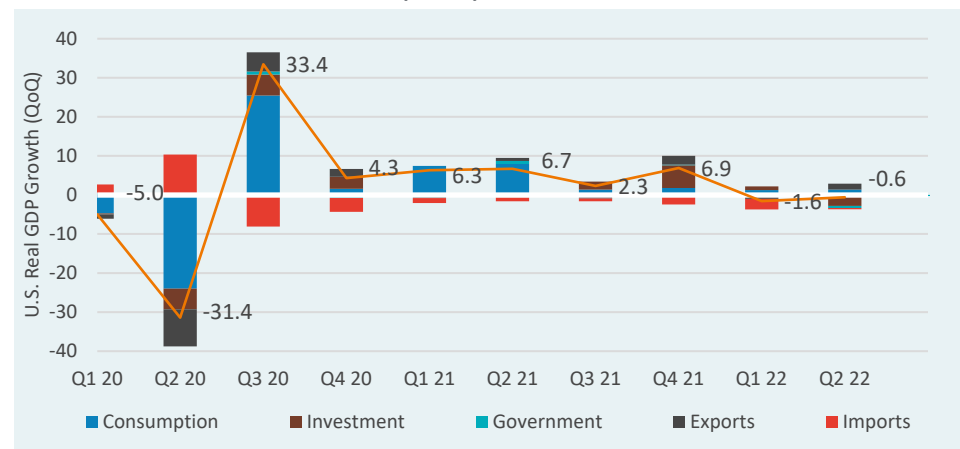
It remains unclear whether the U.S. has entered recession

U.S. REAL GROSS DOMESTIC PRODUCT



Source: FRED, as of 6/30/22

U.S. REAL GDP COMPONENTS (QOQ)



Source: FRED, as of 6/30/22

Inflation

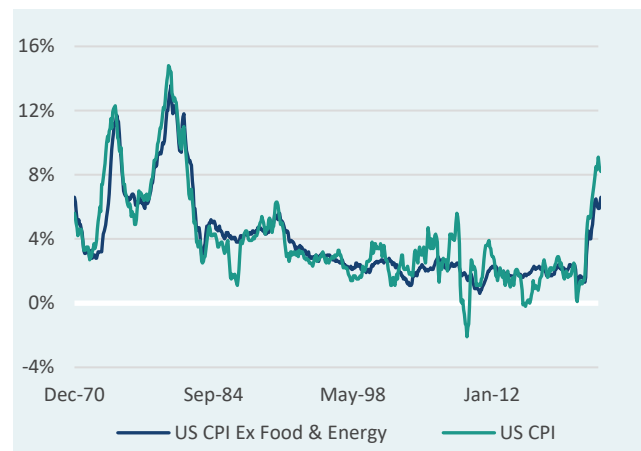
The September inflation print conveyed two separate stories: first, that U.S. core CPI (excludes food & energy) remained elevated, rising 0.6% during the month to a new 40-year high of 6.6% year-over-year; second, headline inflation (includes all prices) continued to show another more moderate monthly print of 0.4%, but remains high at 8.2% year-over-year.

We see a variety of economic developments that suggest inflation is abating, although the level of inflation may not fall to pre-pandemic levels due to the breadth of price movement. These developments include: lower commodity prices,

dramatically lower international shipping costs, and the general slowdown of economic activity on the back of Federal Reserve tightening.

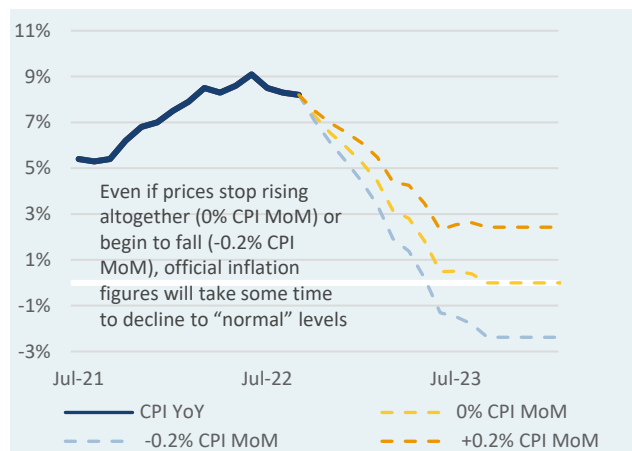
Inflation will take some time to fall back to normal levels, even if *monthly* inflation is 0% in the future. Below we illustrate a few scenarios of *monthly* future price movement. Even if prices stop rising completely (a monthly inflation rate of 0%), the U.S. inflation rate will still likely take until spring of 2023 to fall back to 2%.

U.S. CPI (YOY)



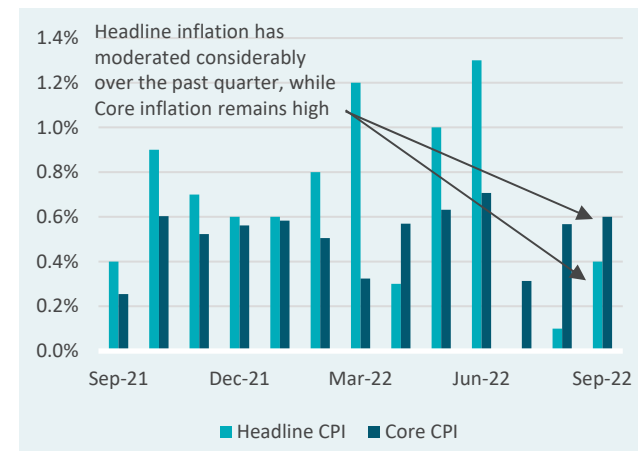
Source: BLS, as of 9/30/22

INFLATION IS A SLOW-MOVING METRIC



Source: Verus, BLS, as of 9/30/22

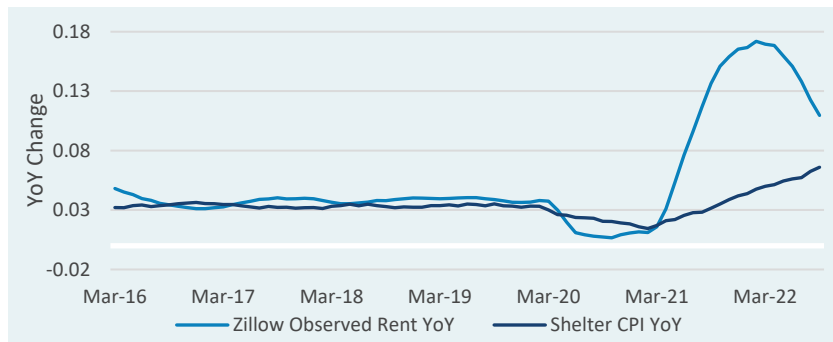
MONTHLY PRICE MOVEMENT



Source: BLS, as of 9/30/22

How are inflation conditions evolving?

CPI SHELTER COSTS (YEAR-OVER-YEAR)



Shelter costs account for approx. 32% of the CPI gauge and have moved considerably higher along with the broader real estate boom. However, only a small portion of these costs have been captured in official data, so far. While there is evidence that home prices and rents have stopped rising, it is not yet clear whether/when the jump in costs of recent years will flow into official CPI data.

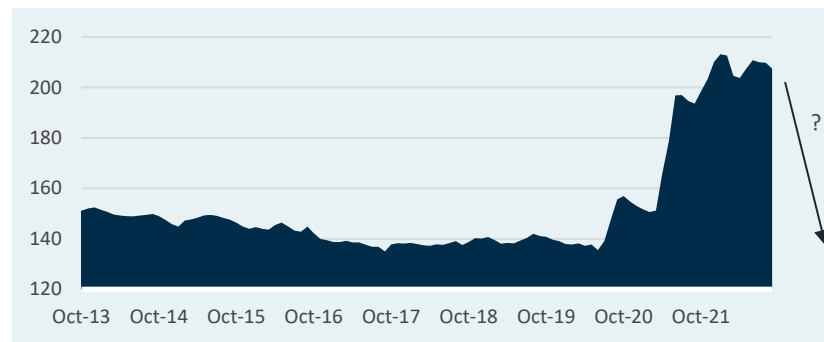
BLOOMBERG COMMODITY SPOT INDEX



Fears of recession and its impact on commodity demand, as well as some potential easing of uncertainty around Ukraine, have likely contributed to a sharp drop in commodity prices. If weaker conditions persist, the reversal in commodity markets should have a deflationary impact on broader consumer prices, though this effect may take time to flow through to broader goods and services prices.

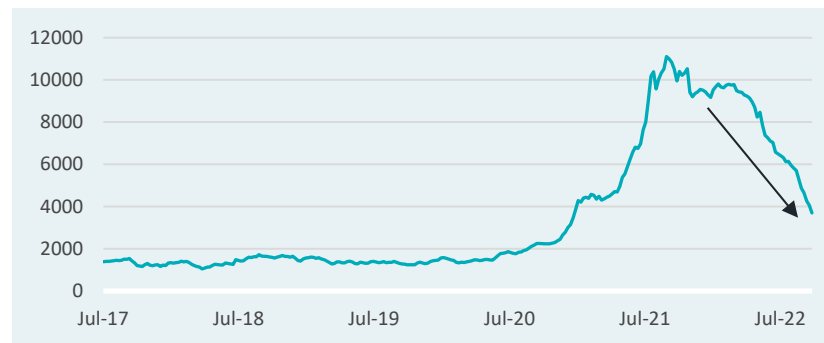
Source: Zillow, FRED, as of 9/30/22 (upper), Bloomberg, as of 9/30/22 (lower)

CPI USED CAR & TRUCK PRICES



Used auto prices have been dropping materially according to the Mannheim Used Auto Value Index, down more than 13% from highs. If falling prices soon are reflected in official CPI statistics, this would place downward pressure on official inflation figures.

FREIGHTOS SHIPPING CONTAINER COST INDEX



Pandemic-related supply and demand complexities initially contributed to many supply shortages and price spikes. These shipping costs are quickly falling back towards pre-pandemic levels. We would expect the mitigation of shipping problems to have a deflationary effect on prices, assuming businesses begin to pass these cost savings on to customers.

Source: FRED, as of 9/30/22 (upper), Freightos, as of 10/7/22 (lower)

Inflation dynamics are complex. This slide shows a few potentially *inflationary* forces and *deflationary* forces

Labor market

The U.S. labor market continues to be strong, which is arguably the biggest factor empowering the Federal Reserve’s aggressive policy stance. However, while employment is strong, high inflation has eaten away at household purchasing power, as demonstrated by the consistent decline in inflation-adjusted weekly earnings since mid-2020.

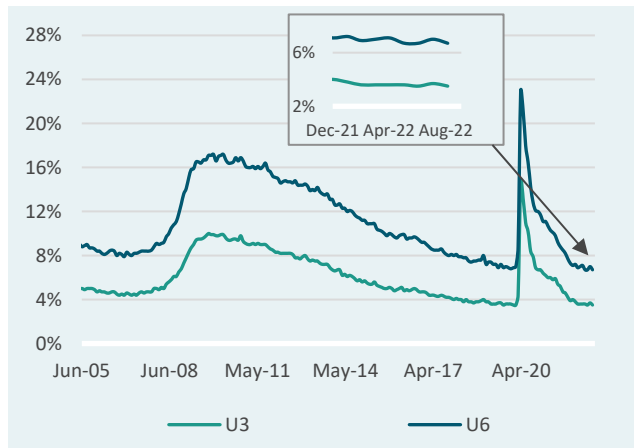
Unemployment fell slightly from 3.6% in June to 3.5% in September, which did not reflect an increase in employment but rather the departure of some Americans from the job market altogether. Weekly *initial jobless claims*—a measure of

the number of workers who filed for unemployment on any given week—moved higher during Q2 to 244,000 in early July but has since fallen to 193,000 in late September.

The gap in labor force participation rates across different age cohorts remains notable, with the age 55+ cohort failing to recover. Previously we had assumed that abnormally early retirements of older workers during the pandemic was likely the main cause for this effect. However, as we propose on the next page, the apparently very widespread health effects of “Long COVID” may be playing a role in this story.

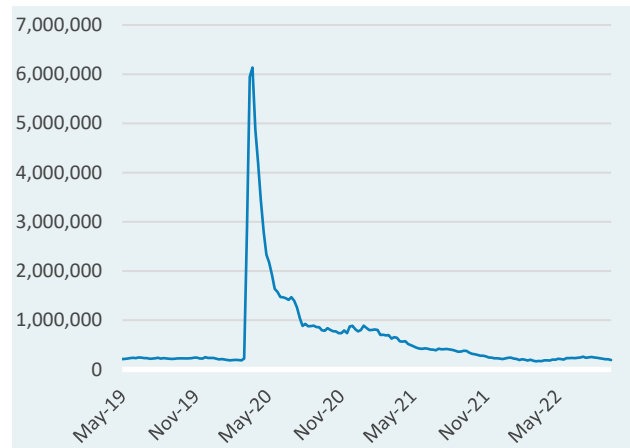
The labor market appears tight according to most metrics, but workers’ wages are falling on an inflation-adjusted basis

U.S. UNEMPLOYMENT



Source: FRED, as of 9/30/22

INITIAL JOBLESS CLAIMS



Source: FRED, as of 9/25/22

U.S. AVERAGE WEEKLY REAL WAGES

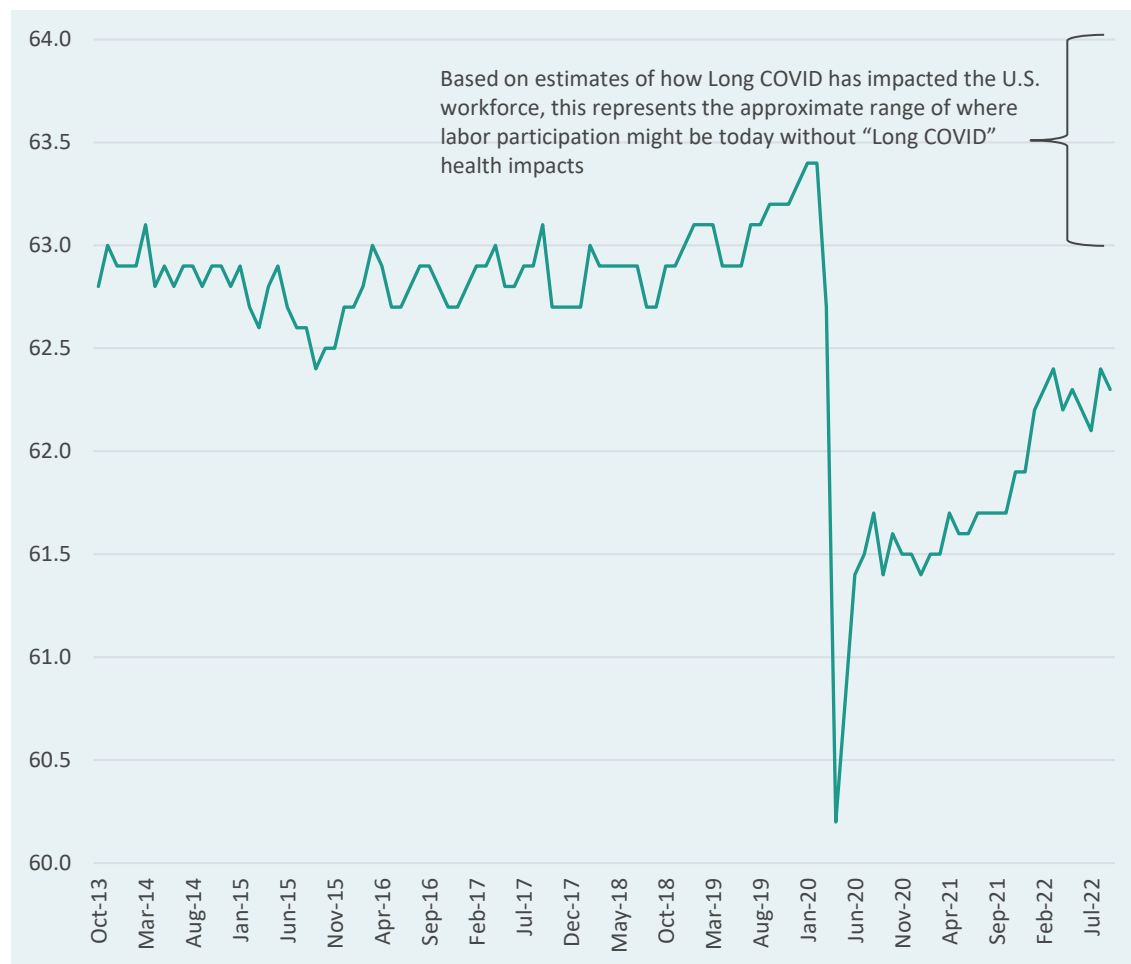


Source: FRED, as of 6/30/22

Labor dynamics: Long COVID-19

- Most coverage of COVID-19 has focused on the health impacts of COVID-19 in a binary way: either the infected individual recovers (and lives) or they do not recover (and is deceased). There is a growing body of research by medical experts that suggests a significant portion of COVID-19 survivors face longer-term, often severe, health problems. These issues are known as “Long COVID”.
- COVID-19 is broadly thought of as a virus that affects the lungs. However, it can severely impact the brain and heart as well. Studies vary in their projections regarding the number of Americans who are unable to work due to Long COVID health issues. We have observed estimates between half a million and 4 million workers. This chart illustrates that Long COVID could in fact be the primary reason for a shrunken American workforce and the unusual number of unfilled job openings.
- This topic should be seen as important to investors, because: a) the size of the U.S. labor force determines the productive capacity of the country and therefore the rate of economic growth, the direction of wage pressures, and likely also the actions of the Federal Reserve (as decided by metrics such as labor market tightness and household income/spending).
- We are continuing to closely follow these dynamics. Depending on the persistence of Long COVID, future expectations could vary from *permanently reduced U.S. workforce and commensurately reduced U.S. growth prospects* to *continued inflow of previously ill workers back into the workforce*.

LABOR PARTICIPATION RATE (%)



Source: FRED, Verus, as of 9/30/22

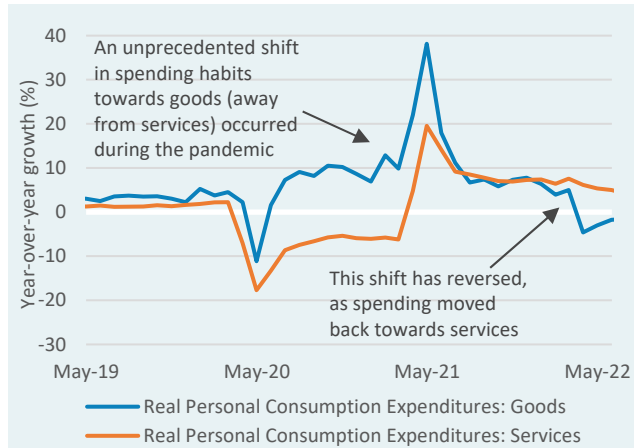
The consumer

U.S. real (inflation-adjusted) personal consumption expenditures slowed further to 1.8% year-over-year in August. The purchases of goods have fallen as consumers move back towards pre-pandemic spending habits (sales of goods have been consistently falling year-to-date, after adjusting for inflation). A moderation of goods purchased means less shipping volume and has likely helped mitigate overburdened supply chains and high international shipping costs, which have been easing materially.

Spending has slowed while savings rates have dropped to 3.5%—a level not seen since 2008—which seems to imply that household budgets are being hit hard by inflation and higher living costs.

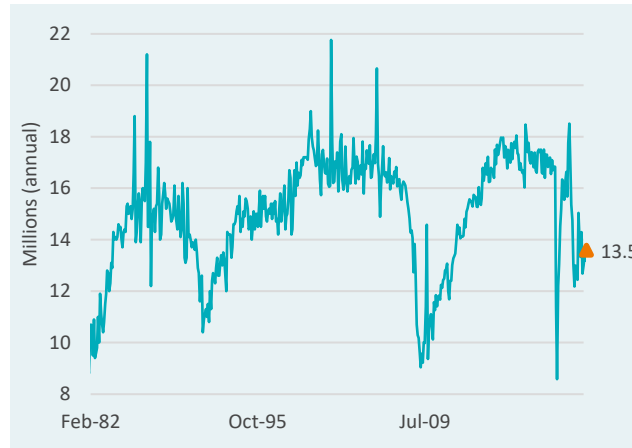
Auto sales activity remains very weak, although automakers have reported improvements in computer chip supplies that will allow production to rise. On the other hand, higher interest rates, diminished household budgets, and high car prices may constrain a recovery in auto sales activity despite new inventory coming online.

REAL PERSONAL CONSUMPTION EXPENDITURES



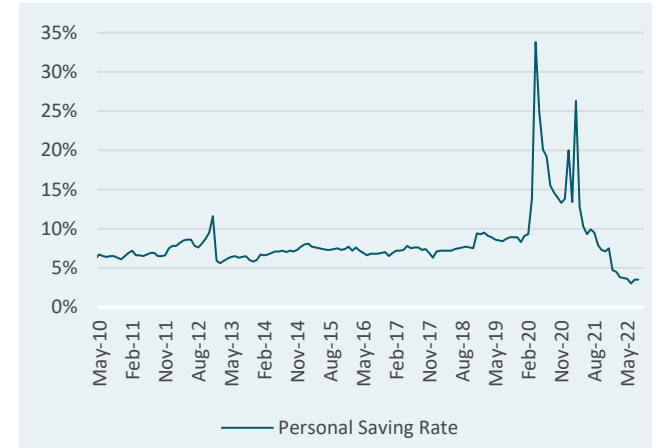
Source: FRED, as of 8/31/22

AUTO SALES



Source: Federal Reserve, as of 9/30/22

PERSONAL SAVINGS RATE



Source: FRED, as of 8/31/22

Sentiment

Consumer sentiment improved slightly from extremely depressed levels, according to the University of Michigan survey. In this survey, respondents mentioned better buying conditions for durable goods and a more optimistic one-year outlook, though this brighter sentiment was generally offset by a deteriorating outlook for business conditions.

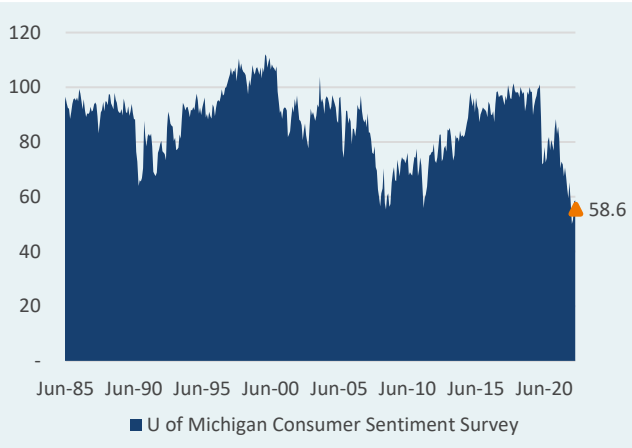
Consumer confidence measured by the Conference Board ticked up in the third quarter, as inflation expectations lessened, and more specifically as households saw prices at the pump materially contract. Consumers' assessments of current conditions and the short-term outlook improved, although

recession risks remain material. While improved confidence could bode well for spending in the fourth quarter of 2022, continued higher prices and global economic slowdowns will likely act as major headwinds.

The NFIB Small Business Optimism index improved slightly from very depressed levels. According to NFIB's Chief Economist Bill Dunkelberg, "Inflation and worker shortages continue to be the hardest challenges facing small business owners". Slightly more businesses expect healthier business conditions six months in the future (though overall sentiment is very negative on this topic), and more expect difficulties in filling open job postings.

Sentiment, by most measures, is extremely poor

CONSUMER SENTIMENT



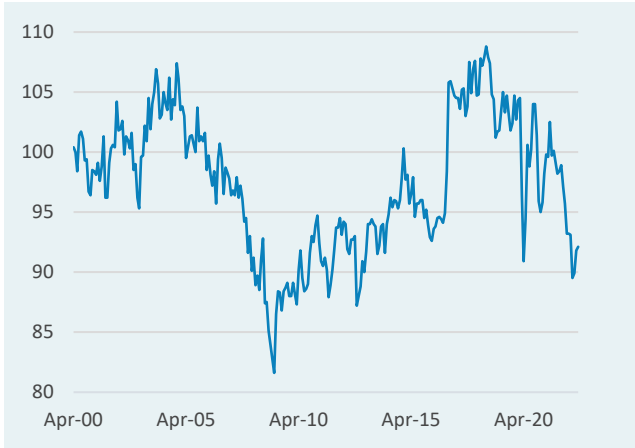
Source: University of Michigan, as of 9/30/22

CONFERENCE BOARD CONSUMER CONFIDENCE



Source: Conference Board, as of 9/30/22

NFIB SMALL BUSINESS SENTIMENT



Source: NFIB, as of 9/30/22

Housing

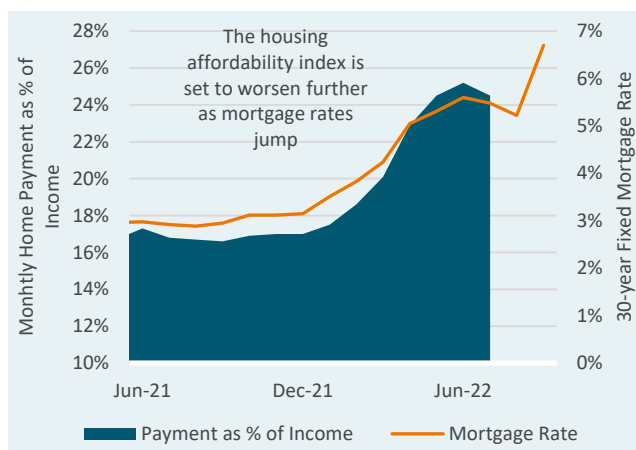
U.S. home prices fell -0.3% from June to July, according to the S&P CoreLogic Case-Shiller U.S. National Index, which might signal a reversal of the remarkable upward march in real estate values. The index suggested home prices were 15.8% higher over the past full year. Sales volumes have dropped precipitously since the beginning of 2022 which has coincided with a notable jump in monthly inventory levels.

Higher home prices and much higher mortgage interest rates have translated to the average monthly home payment rising from 16% of an average family's income to more than 24% in July, according to the National Association of Realtors. Further

increases in mortgage rates since July suggest that affordability has likely deteriorated further.

The housing market may be in the midst of a material slowdown as mortgage rates have more than doubled during 2022, from 3.1% at the beginning of the year to 6.7% at the end of the third quarter. Spiking mortgage rates in the past have coincided with a softening of the real estate market and placed downward pressure on home values. In recent years, low home inventories have been a support to markets, but this may be receding as inventories are now above average.

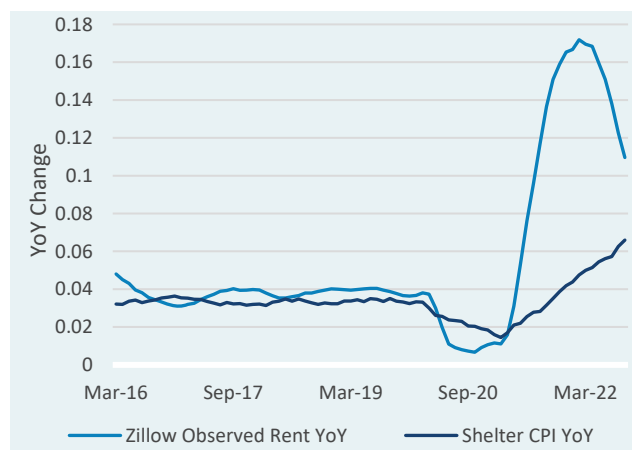
CHANGE IN HOUSING AFFORDABILITY



Source: NAR, as of 7/31/22, FRED as of 9/30/22

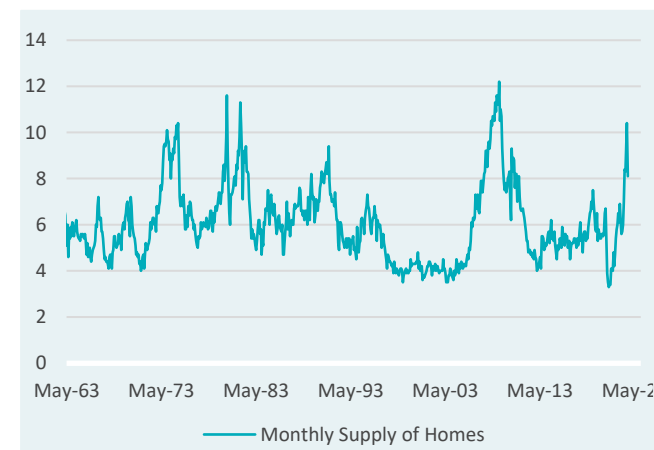
Census Bureau median family income is compared here to the monthly cost (principal + interest) of an average priced home

HOUSING & RENT COSTS



Source: Zillow, FRED, as of 9/30/22

SUPPLY OF HOMES



Source: FRED, as of 8/31/22

International economics summary

- Economic growth expectations continue to weaken around the world, and recession appears possible in some developed countries. High inflation has placed central banks in a corner, requiring a choice between tightening (lower inflation with possible recession) or accommodation (stronger economic activity with possibly continued high inflation).
 - Multi-decade high inflation continues to spread across Europe, as consumer prices in September rose 10% from the prior year. Food and energy were major drivers, although the core inflation number is also elevated at 4.8%. Inflation remains a challenge in Europe and the U.S., as prices have been relatively stable in the Asia-pacific region.
 - Unemployment rates have been stable and tight in most markets, though this may now be seen as a problem as central bankers work to
- slow economies and weaken labor markets in order to fight inflation.
- The Russia Ukraine war may be taking a turn, as Ukraine’s counteroffensive gains steam. In a rare admission, Russia’s Defense Ministry spokesman Igor Konashenkov acknowledged recent defeats: “With numerically superior tank units in the direction of Zolata Balka and Oleksandrivka, the enemy managed to forge deep into our defenses.”
 - Still dealing with the highest inflation seen in four-decades, the U.K. economy continues to struggle, especially as the Bank of England tightens economic conditions in the face of a recession. The situation worsened following newly elected Prime Minister Liz Truss’ new growth plan announcement, which introduced a large tax cut initiatives without additional funding sources secured.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	1.8% 6/30/22	8.2% 9/30/22	3.5% 9/30/22
Eurozone	4.1% 6/30/22	10.0% 9/30/22	6.6% 8/31/22
Japan	1.6% 6/30/22	2.8% 9/30/22	2.5% 8/31/22
BRICS Nations	1.9% 6/30/22	4.5% 9/30/22	5.2% 12/31/21
Brazil	3.2% 6/30/22	7.2% 9/30/22	8.9% 8/31/22
Russia	(4.1)% 6/30/22	13.7% 9/30/22	3.8% 8/31/22
India	13.5% 6/30/22	7.4% 9/30/22	6.4% 9/30/22
China	0.4% 6/30/22	2.8% 9/30/22	5.3% 8/31/22

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

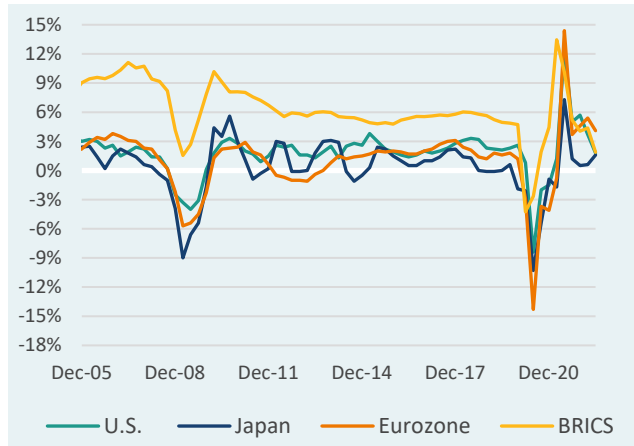
Growth expectations have further weakened around the world, and recession appears possible in some developed countries. Throughout 2022, headline inflation remained stubbornly high in many places such as the United States and Europe. Other areas, such as Japan, had avoided the initial wave of inflation but are now seeing larger price rises in recent months.

Many central banks are walking a tightrope in their fight against inflation since overly aggressive monetary policy could quickly send an economy into recession. Inflation has

become a lightning rod for political leaders, as rising prices squeeze household budgets and standards of living. This is perhaps evident most recently in the U.K., where Prime Minister Liz Truss came under harsh scrutiny for a proposal to cut tax rates and spend which seemed to conflict with Bank of England efforts to combat inflation.

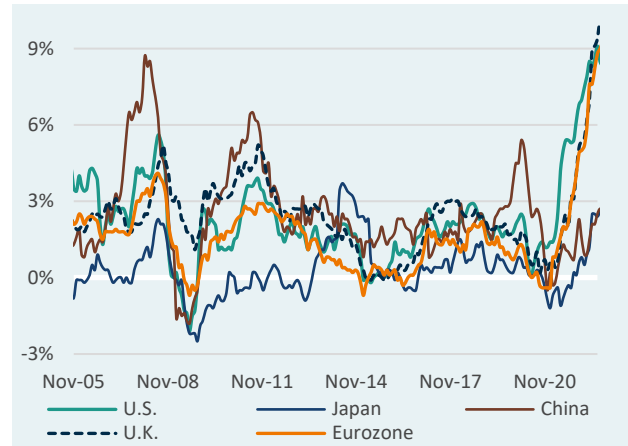
Unemployment rates are stable and tight in most markets, though central bankers may now see this as a problem standing in the way of efforts to slow economies and fight rising prices.

REAL GDP GROWTH (YOY)



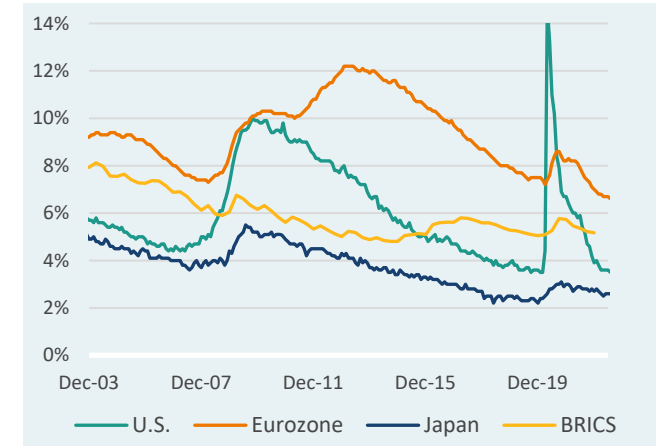
Source: Bloomberg, as of 6/30/22

INFLATION (CPI YOY)



Source: Bloomberg, as of 9/30/22 – or most recent release

UNEMPLOYMENT



Source: Bloomberg, as of 9/30/22 – or most recent release

U.K. flash crash

Inflationary pressures have continued within the broader European complex, as a dependence on imported energy has pushed up local energy prices dramatically. Within the U.K., the Bank of England has been forced into a difficult position. The central bank increased rates at every meeting since December 2021, but headline inflation still sits at 9.9% year-over-year.

More recently, newly elected Prime Minister Liz Truss and the Chancellor of the Exchequer Kwasi Kwarteng unveiled a plan with to reignite growth and spur economic productivity through tax cuts, guarantees regarding household energy prices, and supply side reforms including infrastructure projects.

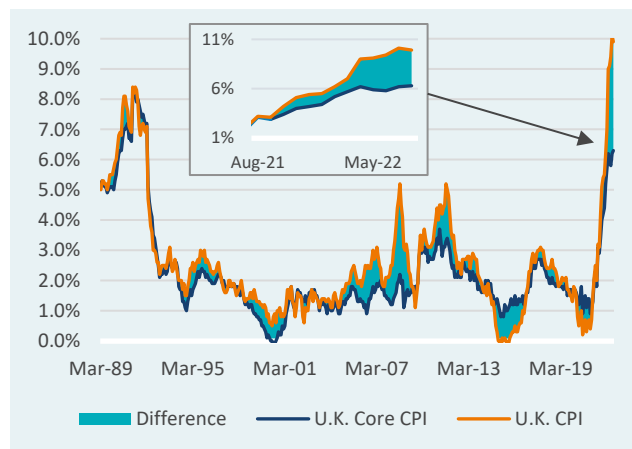
Markets reacted very poorly to the announcement. U.K. Gilt (U.K. treasury bond) yields soared, and the British pound sold off to its lowest level against the dollar in history. Markets stabilized following a commitment from the Bank of England to purchase long-dated bonds, given that many U.K. pension funds were facing margin calls on their liability-driven investment (LDI) derivative positions. The Bank of England also suspended its plans to reduce the balance sheet by selling Gilt holdings. The U.K. government then announced it would scrap its original plan to cut the top income tax rate, leading to increased volatility for the pound and U.K. sovereign debt.

U.K. BASELOAD ELECTRICITY FORWARD PRICES



Source: Bloomberg, as of 10/4/22

U.K. INFLATION (CPI YOY)



Source: U.K. Office for National Statistics, as of 8/31/22

VALUE OF 1 GBP IN USD



Source: Bloomberg, as of 9/30/22

Fixed income rates & credit

Fixed income environment

- The 10-year U.S. Treasury yield rose materially from 2.89% to 3.83% as the Federal Reserve reaffirmed its aggressive stance and markets questioned whether interest rates might be held at higher levels for longer than previously anticipated.
- Credit performance was mixed over Q3 with lower duration exposures faring better than higher duration exposures. Fears of a looming recession remained as the Fed’s 75 basis point rate hikes in July and September reinforced its intention to fight inflation until the “job is done.” Leveraged loans performed the best, returning 1.2%, followed by high yield credit and investment grade credit which returned -0.6% and -4.9%, respectively.
- Default activity continued to pick up in the third quarter with seven companies defaulting on loans and bonds totaling \$16.5 billion. This was the highest quarterly total seen since the second quarter of 2020.

Activity represented a significant jump from the \$1.6 billion and \$10.4 billion shown in Q1 and Q2, respectively.

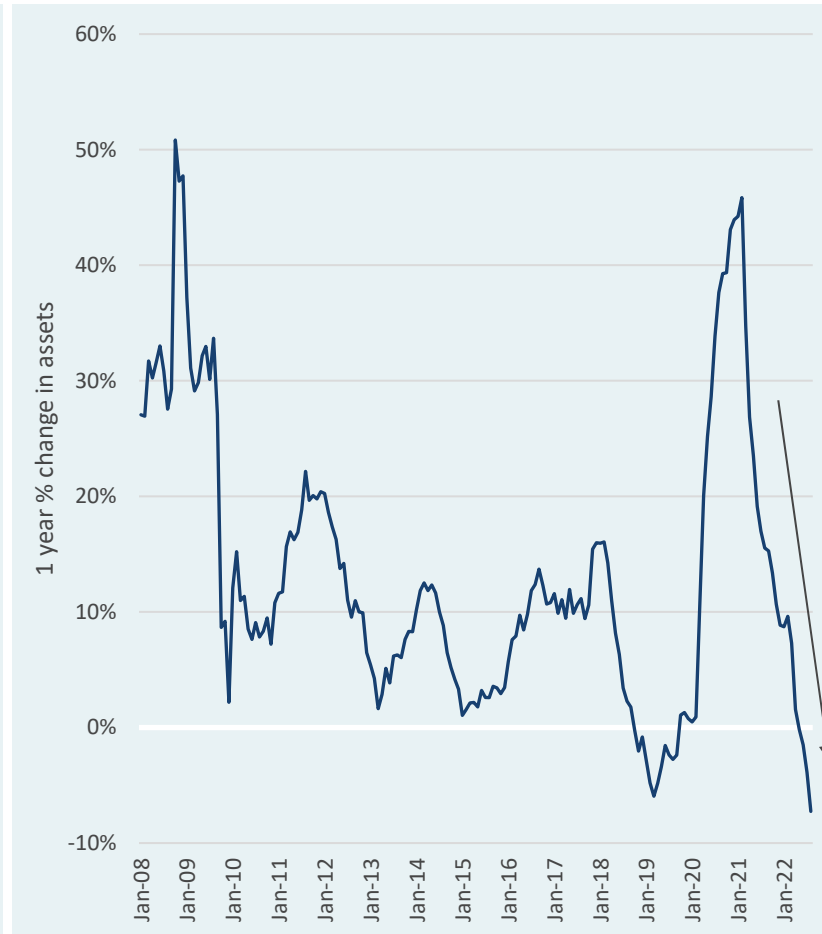
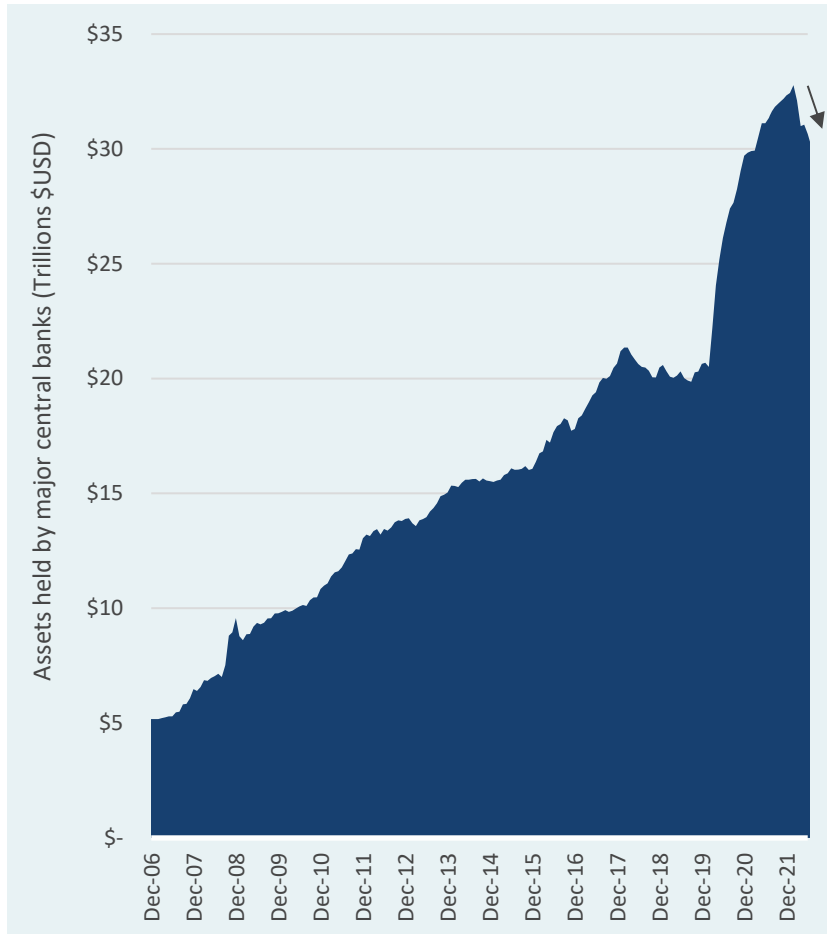
- The U.S. Yield Curve inverted during the quarter, with the 10-year 2-year spread falling from 0.1% to -0.4%. An inverted curve has historically suggested recession within two years or so.
- Throughout the third quarter, the Federal Reserve continued its path to reduce the balance sheet, beginning in June with the paced redemption of maturing securities. The initial June monthly redemption caps of \$30 billion for Treasuries and \$17.5 billion for agency MBS were increased to \$60 billion and \$35 billion in September. Markets have seemingly digested the reduction well, although the total drawdown has been relatively small so far, around \$200 billion against the peak size of \$8.97 trillion in April 2022.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	(4.8%)	(14.6%)
Core Plus Fixed Income (Bloomberg U.S. Universal)	(4.5%)	(14.9%)
U.S. Treasuries (Bloomberg U.S. Treasury)	(4.3%)	(12.9%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	(0.6%)	(14.1%)
Bank Loans (S&P/LSTA Leveraged Loan)	(1.4%)	(2.5%)
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	(4.7%)	(20.6%)
Emerging Market Debt Hard (JPM EMBI Global Diversified)	(4.6%)	(24.3%)
Mortgage-Backed Securities (Bloomberg MBS)	(5.3%)	(9.0%)

Source: Bloomberg, as of 9/30/22

The great liquidity withdrawal

Central banks are planning to remove substantial liquidity from the global financial system



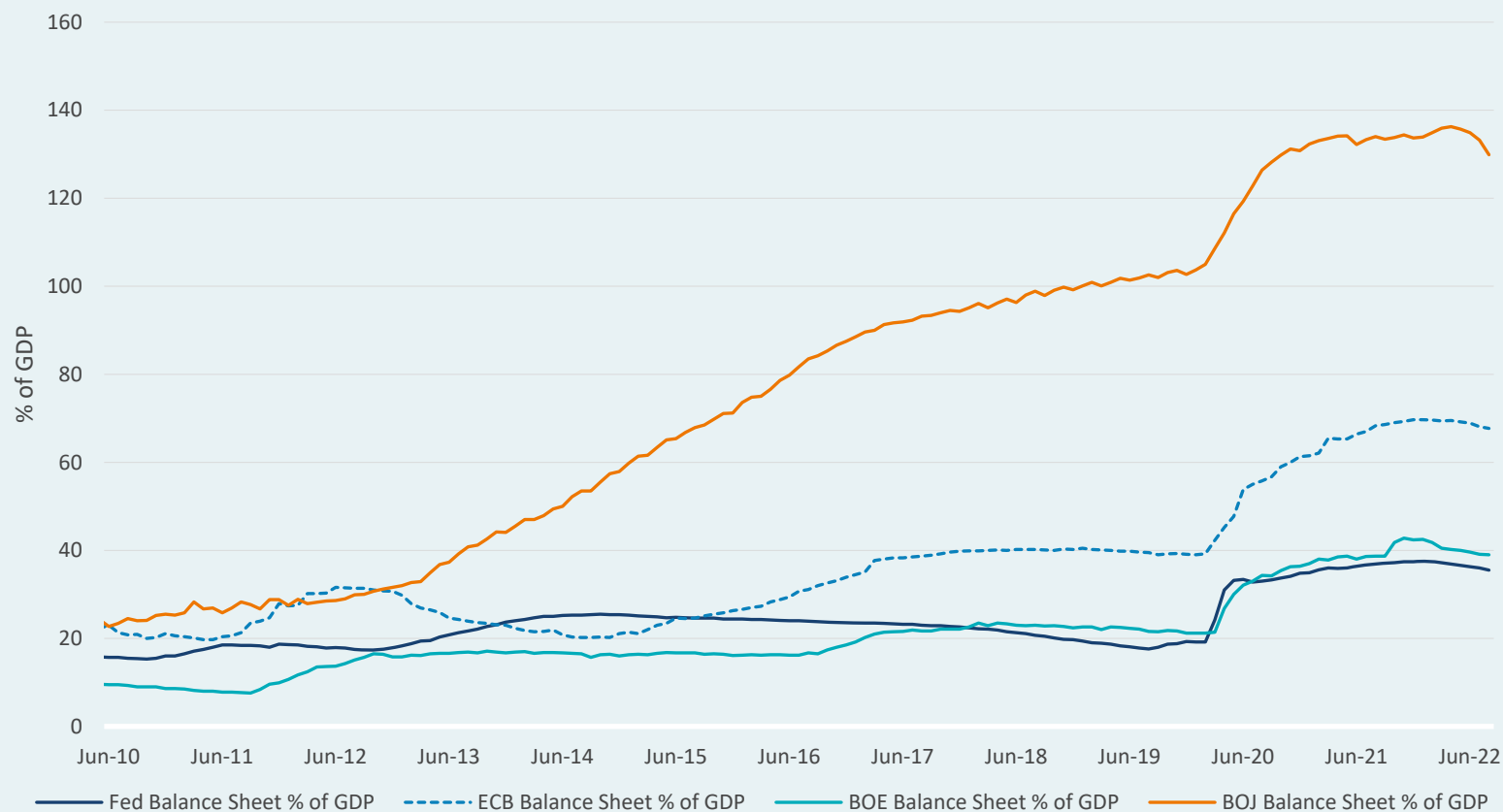
Markets are entering an unusual time of mass central bank asset roll-off

Source: Bloomberg, Verus, as of 9/30/22 – includes Fed, BOE, ECB, BoJ, PBOC

The great liquidity withdrawal (continued)

CENTRAL BANK ASSETS AS % OF GDP

U.S. DOLLAR DENOMINATED



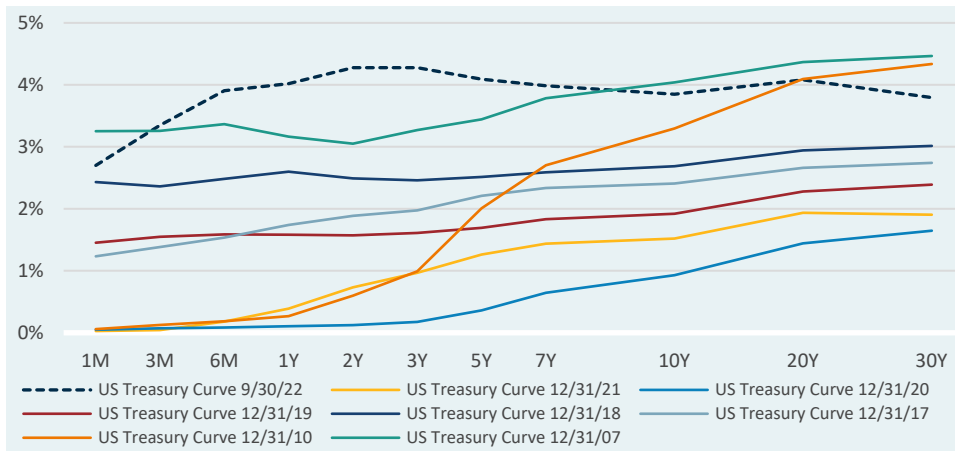
Central banks have accumulated very large balance sheets

Surprisingly, the U.S. Federal Reserve balance sheet is more moderate in size, relative to GDP

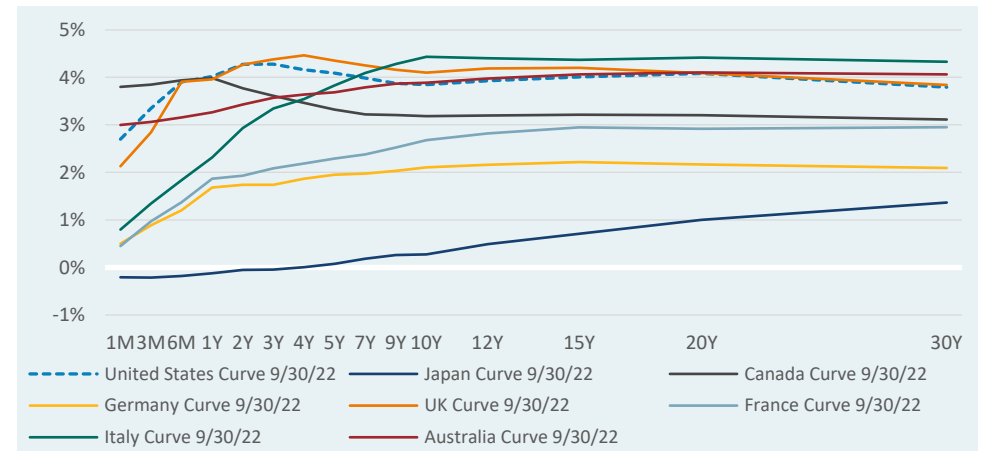
Source: Bloomberg, Verus, as of 9/30/22

Yield environment

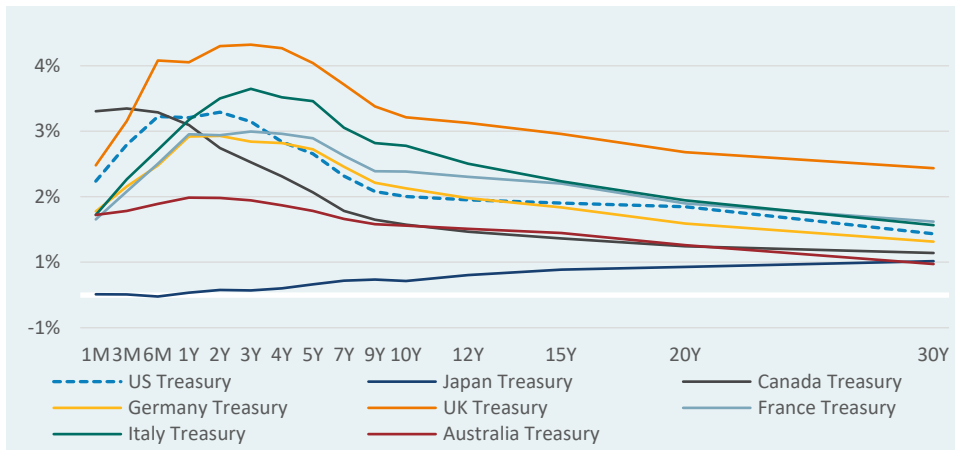
U.S. YIELD CURVE



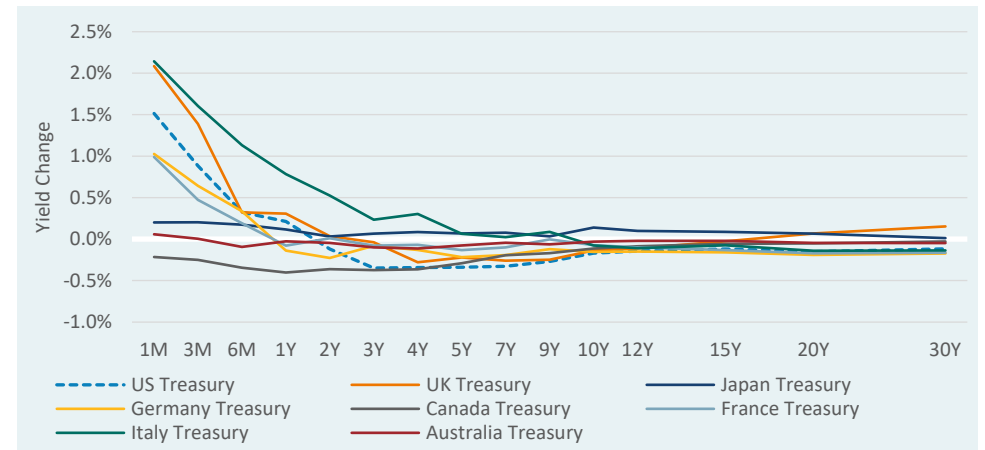
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/22

Credit environment

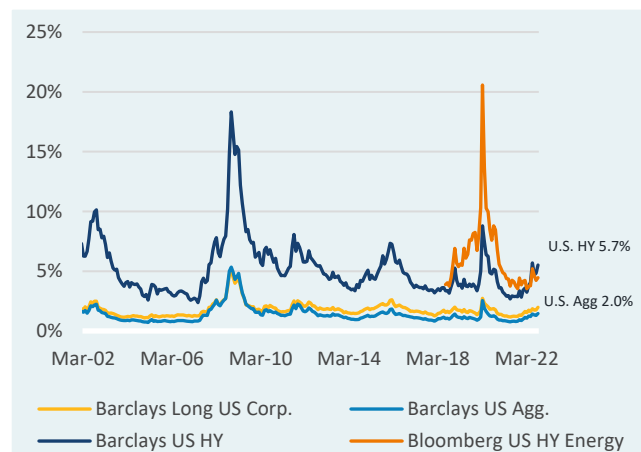
Credit market performance was mixed over the third quarter, with lower duration exposures faring better than higher duration exposures. Fears of a looming recession remained as the Fed's 75 basis point rate hikes in July and September reinforced its intention to fight inflation until the "job is done." Leveraged loans performed the best, returning 1.2%, followed by high yield corporate credit and investment grade credit which returned -0.6% and -4.9%, respectively.

Volatility and outflows contributed to investment grade credit spreads widening during the quarter. After reaching a 2022 high of 164 basis points in mid-September, investment grade credit spreads finished the third quarter at 159 basis points, an increase of 4 basis points from the

previous quarter's end. High yield spreads decreased by 17 basis points throughout the quarter to 552 basis points, though remaining above the long term non-recessionary average of 454 bps. Despite this recent decline, high yield spreads remain up 269 basis points year-to-date.

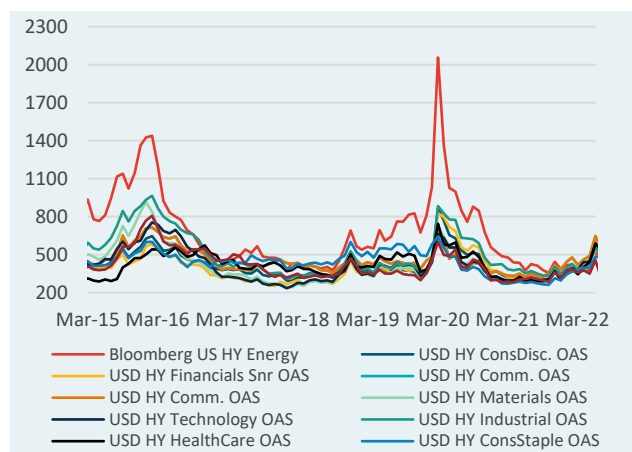
Over the course of the year, total yields have risen significantly within credit markets with the Bloomberg US High Yield Index now at 9.7%—almost double the levels of 4.9% seen at the start the year. Similarly, the yield of the Bloomberg US Corporate Investment Grade Index was 5.7%, up from 2.4% at the start of the year.

SPREADS



Source: Barclays, Bloomberg, as of 9/30/22

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 9/30/22

Market	Credit Spread (OAS)	
	9/30/22	9/30/21
Long U.S. Corp	2.0%	1.2%
U.S. Inv Grade Corp	1.6%	0.8%
U.S. High Yield	5.5%	2.9%
U.S. Bank Loans*	6.0%	4.3%

Source: Barclays, Credit Suisse, Bloomberg, as of 9/30/22

*Discount margin (4-year life)

Default & issuance

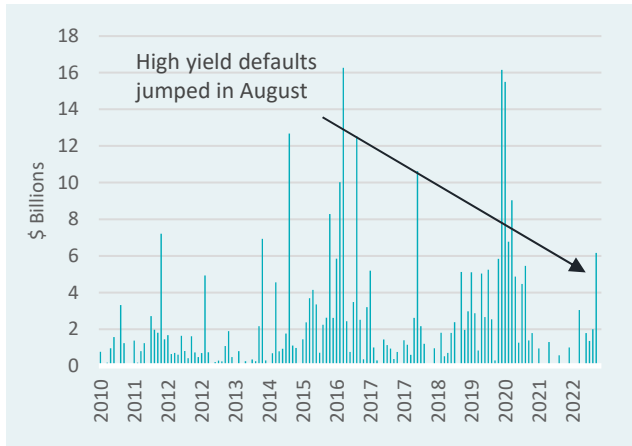
Default activity continued to pick up in the third quarter with seven companies defaulting on loans and bonds totaling \$16.5 billion. This was the highest quarterly total seen since the second quarter of 2020. Activity represented a significant jump from the \$1.6 billion and \$10.4 billion shown in Q1 and Q2, respectively.

Default rates for par-weighted US high yield and bank loans ended the quarter at 0.8% and 1.0%, respectively. While default rates reached a 15-month high, both values were well below the long-term historical averages of 3.2% and 3.1% for the high yield and loan markets. Given the prospects of tighter financial conditions and lower growth, default rates are expected to rise over the remainder of the year and into 2023 while

remaining well below the previously stated long-term historical averages.

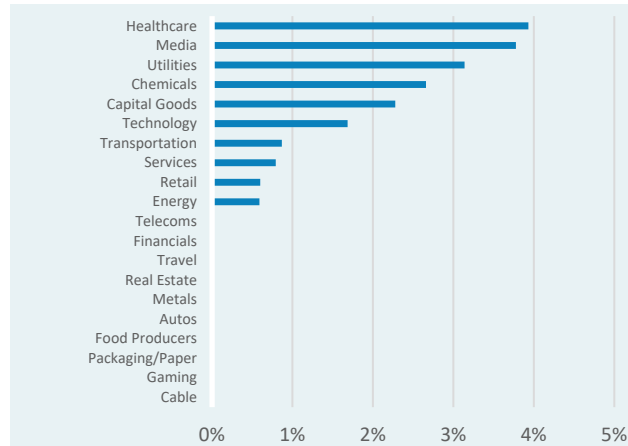
Leveraged credit issuance remained very light, which was consistent with the weaker trend of 2022. The third quarter total of \$18.9 billion issued in high yield bonds marked the lightest issuance since the first quarter of 2009. A similar effect was observed in the bank loans market, which totaled \$24 billion over the third quarter, down from \$120.5 billion and \$60.6 billion in the first and second quarters of this year. Additionally, the 2022 year-to-date loan issuance total of \$205.0 billion was down 69% on a year-over-year basis.

U.S. HY MONTHLY DEFAULTS (PAR WEIGHTED)



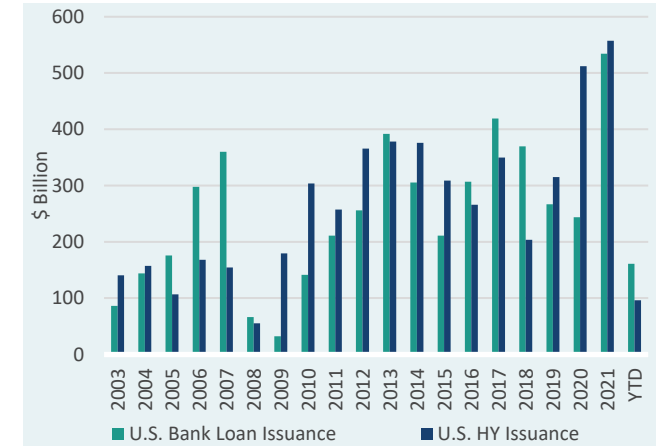
Source: BofA Merrill Lynch, as of 9/30/22

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



Source: BofA Merrill Lynch, as of 9/30/22 – par weighted

U.S. ISSUANCE (\$ BILLIONS)



Source: BofA Merrill Lynch, as of 9/30/22

Equity

Equity environment

— Equity markets saw further losses during Q3, extending the selloff deeper into bear market territory. Emerging market equities (MSCI Emerging Markets -11.6%) experienced the greatest drawdown, on an unhedged currency basis, followed by international developed (MSCI EAFE -9.4%) and domestic equities (S&P 500 -4.9%).

— Many markets now trade at valuation levels below their historical average. According to FactSet, the S&P 500 sat at a forward price/earnings of 15.4 as of September 30th, below the five-year average of 18.6 and 10-year average of 17.1. Interestingly, earnings expectations have been fairly resilient at 7.4% for calendar year 2022 and 7.9% for 2023.

— Investors with unhedged foreign currency exposure have seen extreme losses recently. A U.S. investor with an international developed equity investment

(MSCI EAFE) suffered a loss of -15.7% over the past year from currency movements. Investors in non-US equity (MSCI ACWI ex-US) saw a -12.0% loss. Currency risk is typically the second largest risk in institutional portfolios and is not expected to be compensated over the long term. We continue to believe that more forward-thinking currency solutions can materially improve portfolio outcomes.

— Value stocks underperformed growth stocks mildly during the quarter (Russell 1000 Value -5.6% vs Russell 1000 Growth -3.6%), and small capitalization stocks outperformed large capitalization stocks (Russell 2000 -2.2%, Russell 1000 -4.7%).

— Volatility remained elevated as the Cboe VIX Index rose further from 28.7% to 31.6%. Risk assets sold-off on concerns of Federal Reserve tightening and liquidity being broadly removed from the global financial system.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	(4.9%)		(15.5%)	
U.S. Small Cap (Russell 2000)	(2.2%)		(23.5%)	
U.S. Equity (Russell 3000)	(4.5%)		(17.6%)	
U.S. Large Value (Russell 1000 Value)	(5.6%)		(11.4%)	
US Large Growth (Russell 1000 Growth)	(3.6%)		(22.6%)	
Global Equity (MSCI ACWI)	(6.8%)	(4.6%)	(20.7%)	(15.9%)
International Large (MSCI EAFE)	(9.4%)	(2.8%)	(25.1%)	(9.4%)
Eurozone (Euro Stoxx 50)	(9.8%)	(3.1%)	(28.9%)	(14.1%)
U.K. (FTSE 100)	(10.6%)	(2.3%)	(16.5%)	1.8%
Japan (NIKKEI 225)	(7.2%)	0.2%	(31.0%)	(8.5%)
Emerging Markets (MSCI Emerging Markets)	(11.6%)	(8.2%)	(28.1%)	(22.5%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/22

Domestic equity

U.S. equities experienced further losses during the quarter (S&P 500 -4.9%), while outperforming international (MSCI EAFE -9.4%) and emerging markets (MSCI Emerging Markets -11.6%).

Earnings expectations have been fairly resilient at 7.4% for calendar year 2022 and 7.9% for 2023, though these forecasts have been consistently revised lower for three consecutive quarters. The energy sector continues to lift the earnings growth of the S&P 500, as overall growth would have been negative in recent quarters if energy sector profits were excluded. According to corporate earnings calls, an increasing number of

businesses reported labor costs & shortages as a significant issue, followed by supply chain disruptions & costs, and FX movement. During Q2, businesses with more than 50% of revenues from outside of the U.S. generated 13.3% earnings growth, while those with less than 50% of revenues from outside the U.S. saw only a 2.1% growth rate.

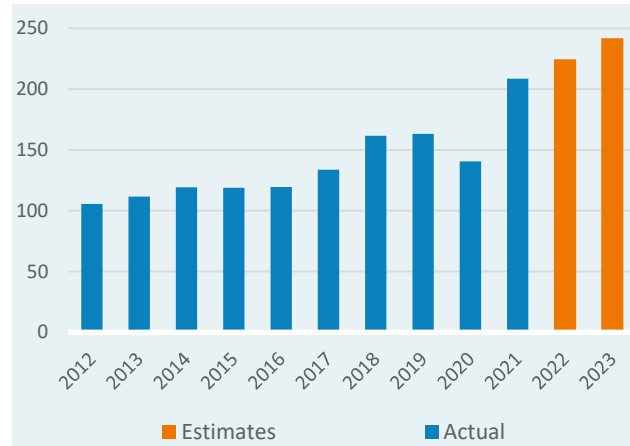
Sector performance during Q3 was disparate. Consumer discretionary (4.4%) and energy (2.3%) sectors lifted the overall index while all other sectors were in the red.

S&P 500 PRICE INDEX



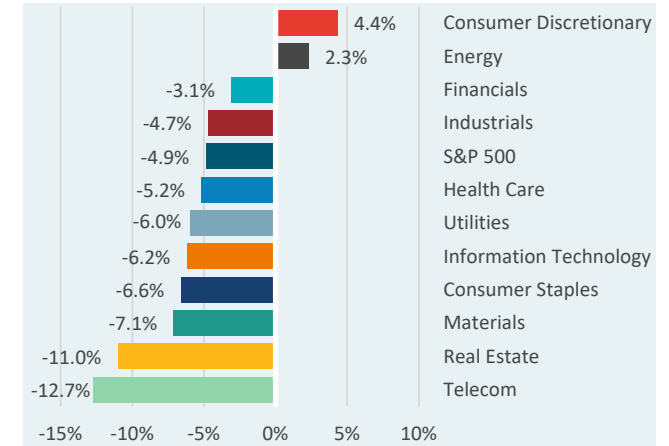
Source: Standard & Poor's, as of 9/30/22

S&P BOTTOM-UP EARNINGS & ESTIMATES



Source: FactSet, as of 9/30/22

Q3 SECTOR PERFORMANCE



Source: Morningstar, as of 9/30/22

Domestic equity size & style

Reversing the trend from last quarter, growth stocks outperformed value stocks, although the divergence was relatively mild (Russell 1000 Growth -3.6% vs. Russell 1000 Value -5.6%). Growth outperformed despite struggles within the Telecommunications and Information Technology sectors (-12.7% and -6.2%), fueled by positive returns from Consumer Discretionary +4.4% (with Amazon and Tesla being the largest weights).

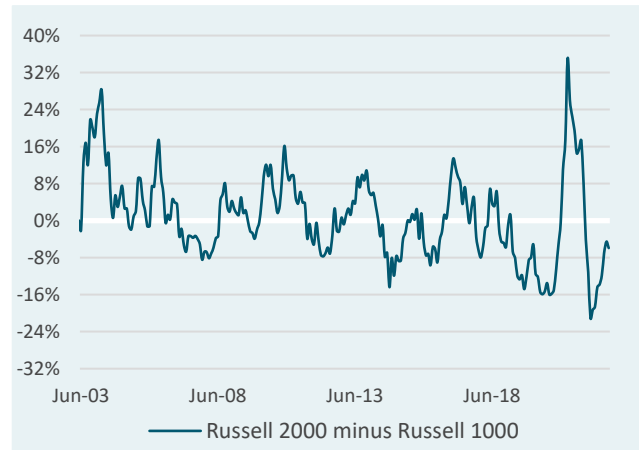
Despite this quarter, value has outperformed significantly over the past year. The Russell 1000 Value Index is down -17.8%, while the growth equivalent has lost -30.7%. With the Federal

Reserve continuing to tighten conditions and hike rates, companies with cash flows further out in the future (those with higher durations) have seen larger negative impacts to their multiples.

Looking at size, small capitalization stocks outperformed large capitalization stocks (Russell 2000 -2.2%, Russell 1000 -4.7%), diverging from the trend seen in the second quarter of 2022.

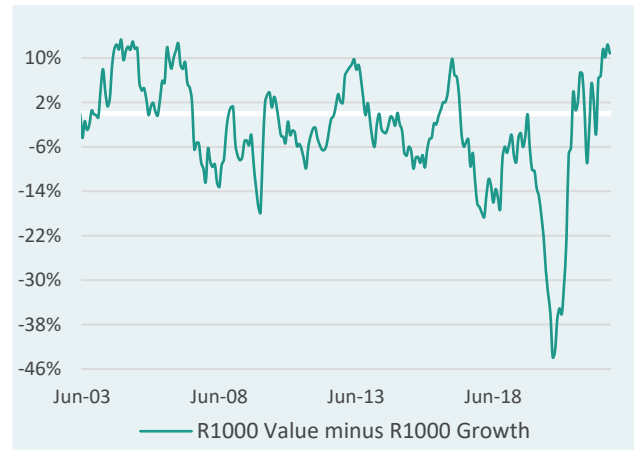
Domestic equities have continued to be challenged regardless of size and style, as investors weigh the impacts of a tighter economic environment on company earnings.

SMALL CAP VS LARGE CAP (YOY)



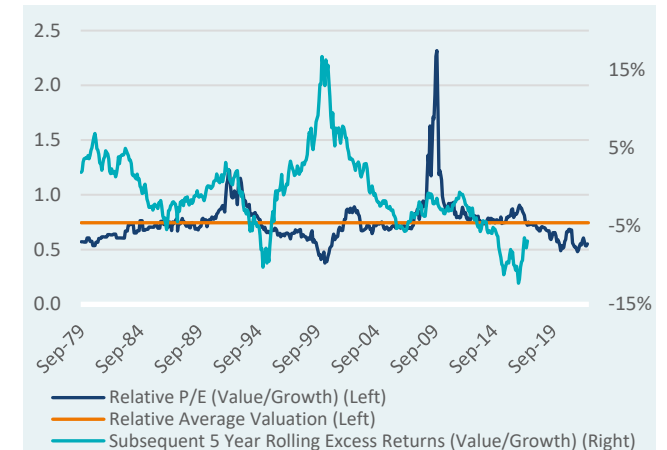
Source: FTSE, as of 9/30/22

VALUE VS GROWTH (YOY)



Source: FTSE, as of 9/30/22

VALUE VS. GROWTH RELATIVE VALUATIONS



Source: Standard & Poor's, as of 9/30/22

International developed equity

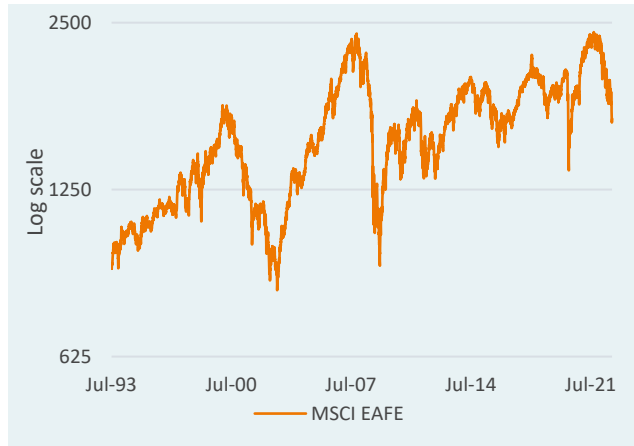
International developed equities fell alongside the global opportunity set in the third quarter. The MSCI EAFE Index dropped -9.4% in U.S. dollar terms, although most of those losses can be attributed to currency impacts, with hedged returns only experiencing a -2.8% loss. The Federal Reserve continues to set the tone for global central bank rate hikes, which has pushed the dollar higher.

Looking at sub-regional performance, Japanese equities were the best performing markets in local terms, being one of the few asset classes with positive Q3 return (+0.2%). Despite strong local returns, diverging rate policy between the BOJ

and Federal Reserve has crushed the Japanese yen, resulting in a seven percent spread between hedged and unhedged equity outcomes.

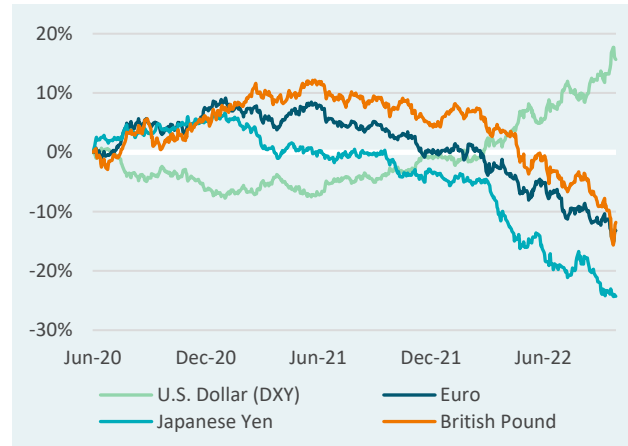
European equities also saw losses over the quarter, although local returns were strong relative to U.S. and Emerging market equities. The flash crash of the British pound had a material impact on FTSE 100 performance in U.S. dollar terms, with U.K. equities closing the quarter down -10.6%, lagging the broader European benchmark (Euro Stoxx 50 - 9.8%)

INTERNATIONAL DEVELOPED EQUITY



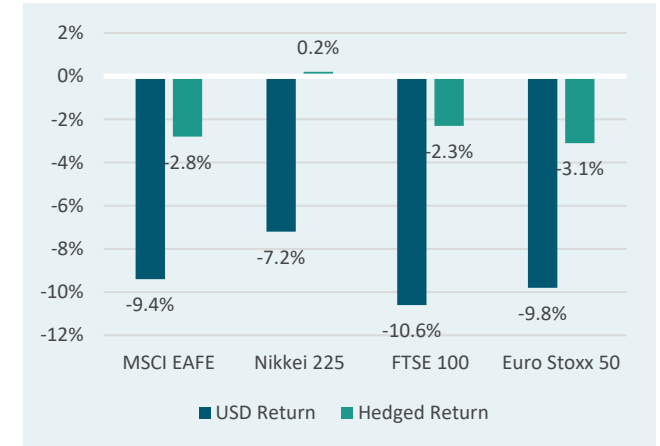
Source: MSCI, as of 9/30/22

FX MOVEMENTS RELATIVE TO THE U.S. DOLLAR



Source: Bloomberg, as of 9/30/22

Q3 2022 SUBREGIONAL INDEX RETURNS



Source: MSCI, STOXX, FTSE, Nikkei, as of 9/30/22

Emerging market equity

Emerging market equities fell during the third quarter, dragged lower by a steep Chinese equity bear market (-22.5%). The MSCI EM index ended the quarter down -11.6% in U.S. dollar terms, bringing one-year total losses to -28.1%. A strong dollar had a -3.4% impact in the third quarter; significant, but not to the same extent seen in the International developed space.

Growing risks of a global recession hit equities across the board, though emerging markets have suffered more than their developed counterparts. China faces its own set of

unique problems, including the continuation of its zero-COVID policy, a property crisis, and geopolitical risks with Taiwan (though we view an invasion as highly unlikely). Despite these headwinds, the People's Bank of China is one of the few central banks implementing accommodative policy, which should provide a tailwind to the local economy.

Performance variability has significantly changed some country weights. China's weight in the index fell by 3.7%, while India moved up 2.6%, replacing Taiwan as the second largest weight.

EMERGING MARKET EQUITY



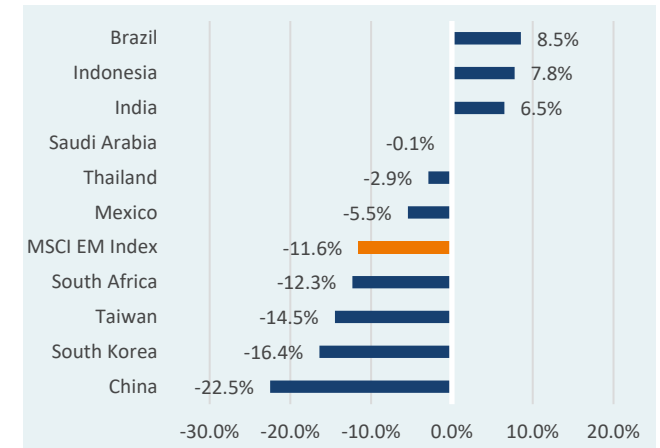
Source: MSCI, as of 9/30/22

MSCI EM INDEX TOP 10 COUNTRY WEIGHTS

Country	9/30/2022	6/30/2022	Rank Change
1. China	29.5%	33.2%	
2. India	15.3%	12.7%	↑
3. Taiwan	13.7%	14.3%	↓
4. South Korea	10.6%	11.3%	
5. Brazil	5.8%	4.9%	
6. Saudi Arabia	4.8%	4.3%	
7. South Africa	3.4%	3.5%	
8. Mexico	2.2%	2.1%	
9. Indonesia	2.2%	1.8%	
10. Thailand	2.1%	1.9%	

Source: Bloomberg, MSCI as of 9/30/22

Q3 2022 MSCI COUNTRY RETURNS (USD)



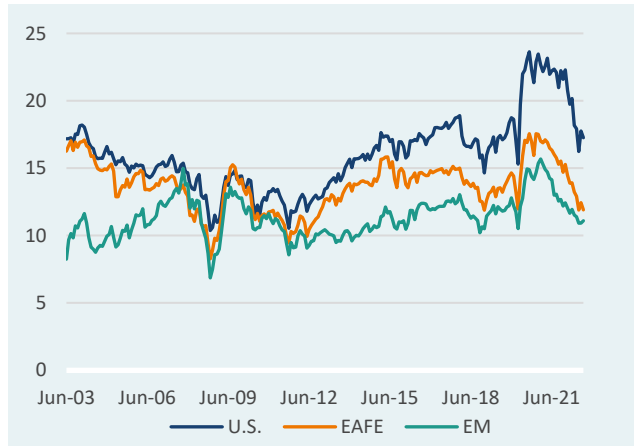
Source: Bloomberg, MSCI as of 9/30/22, performance in USD terms

Equity valuations

Many markets now trade at valuation levels below their historical average as inflation and rising rate concerns have translated to more attractive pricing. According to FactSet, the S&P 500 traded at a forward price/earnings of 15.4 as of September 30th, which was below the five-year average of 18.6 and 10-year average of 17.1. Valuations have continued to drop within the International and Emerging market space as well, although we believe International developed equities may have further to fall, given more acute inflation and energy issues in Europe. Emerging market valuations have reached very low levels, which may act as a floor to further losses, assuming healthy earnings.

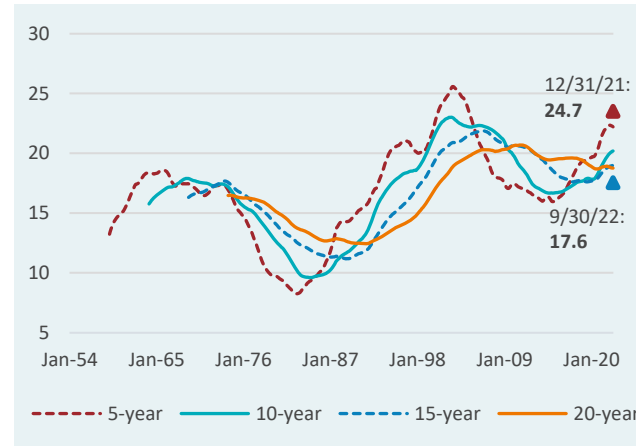
Domestic earnings were challenged in the second quarter. Businesses faced higher costs, large currency impacts, and a more budget-constrained consumer. While blended earnings grew at a 6.7% clip from the previous year, excluding the energy sector would bring that earnings figure down to -3.7%, per FactSet. While valuations have moved more in line with historical averages, all eyes are on third quarter earnings, which will likely help determine the market's direction from this point.

FORWARD P/E RATIOS



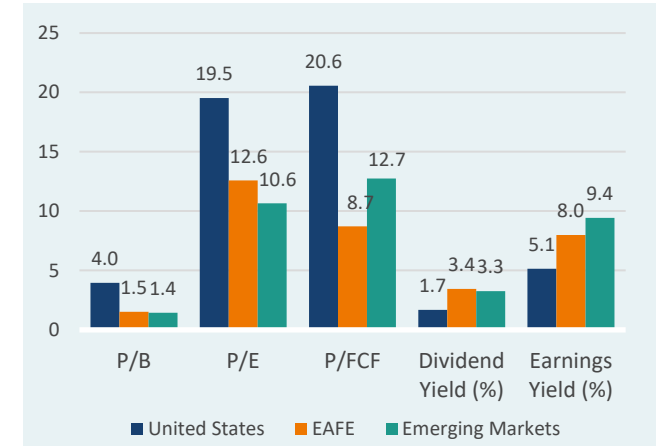
Source: MSCI, 12m forward P/E, as of 8/31/22

S&P 500 AVERAGE TRAILING P/E RATIOS



Source: Bloomberg, as of 9/30/22

VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 9/30/22 - trailing P/E

Equity volatility

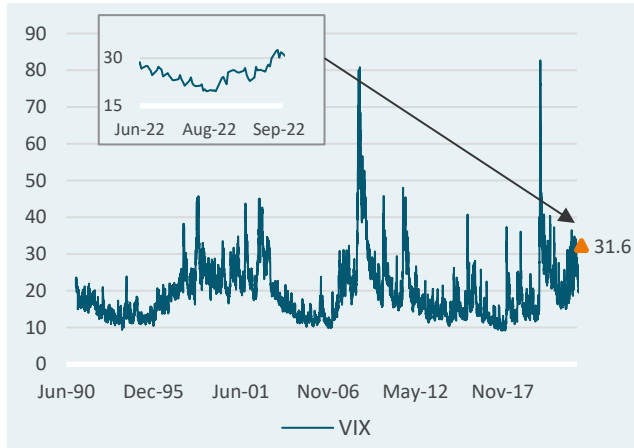
Volatility remained elevated through the quarter as the Cboe VIX Index rose further from 28.7% to 31.6%. Risk assets sold-off into a deeper bear market and concerns focused on Federal Reserve tightening and liquidity being removed from the global financial system. Inflation and Fed actions seem to exist as the greatest risk to markets, although potential for recession or a corporate earnings drawdown are also likely contributing to choppiness.

Realized volatility of equity markets over the past year has picked up from low levels. U.S. markets have shown

materially more volatility than developed or emerging markets, which has been rare historically.

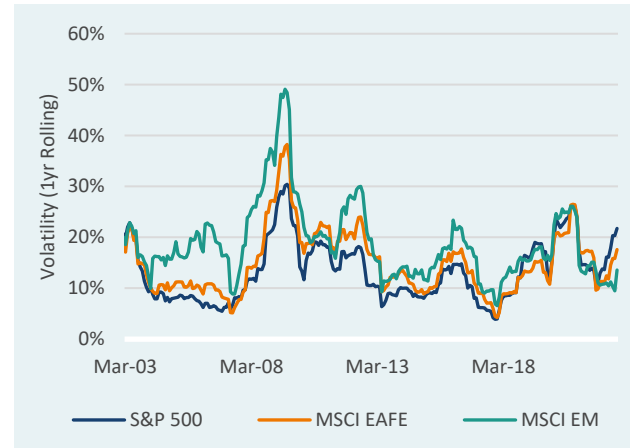
The current bear market has been particularly painful given the broadness of the selloff across equity fixed income, and real assets. Currency markets also moved against investors, with U.S. dollar appreciation delivering large losses for those with unhedged international asset exposure. Commodities remain a lone bright spot regarding 2022 year-to-date performance.

U.S. IMPLIED VOLATILITY (VIX)



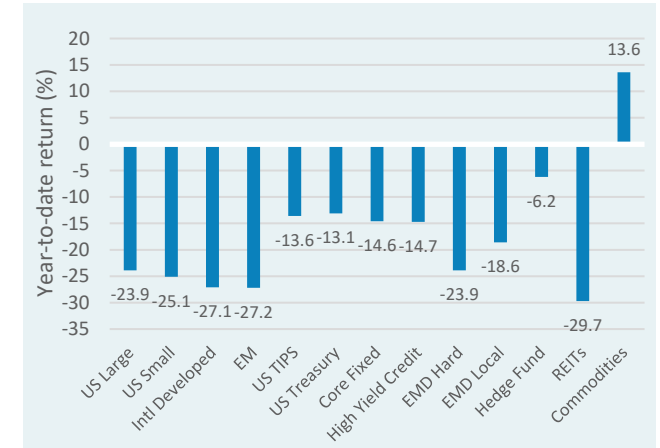
Source: Cboe, as of 9/30/22

REALIZED VOLATILITY



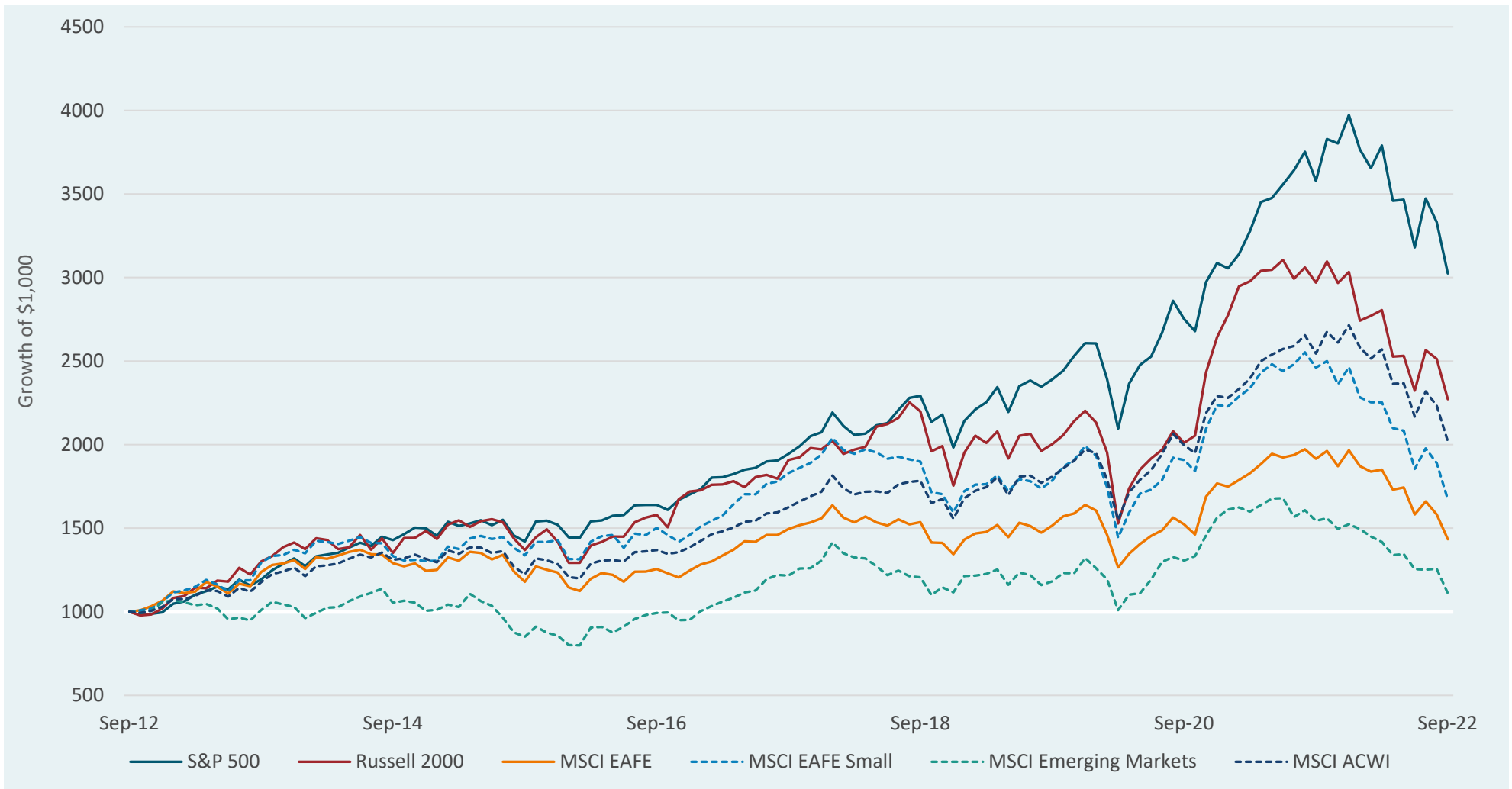
Source: Standard & Poor's, MSCI, as of 9/30/22

BROAD SELLOFF



Source: MPI, as of 9/30/22

Long-term equity performance



Source: Morningstar, as of 9/30/22

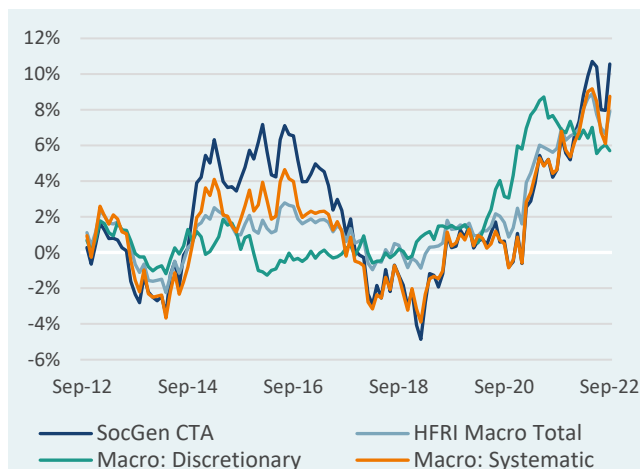
Other assets

Asymmetric macro strategies

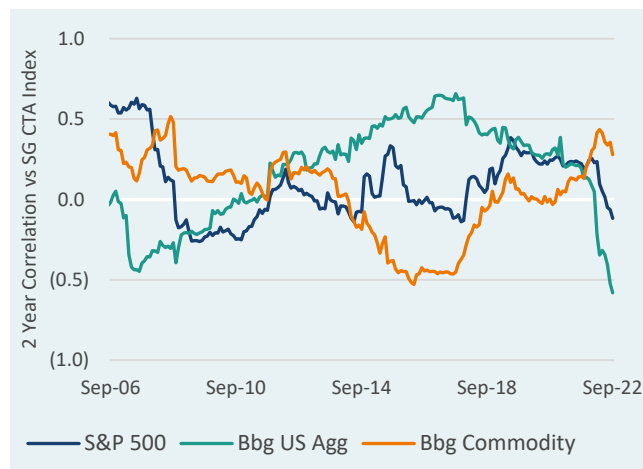
Macro strategies have been the top performing hedge fund strategy since 2021. Both parts of the Macro universe—Discretionary and Systematic—have done extremely well over the last 12-18 months. Systematic strategies have benefitted from strong trend following performance, which has returned to favor after a period of mediocre returns from 2016 to 2020. This periodicity is typical of trend following/CTA type strategies. Discretionary macro strategies have done well to capture the move in interest rates by shorting bonds as central banks reacted to high inflation by consistently hiking interest rates from ultra-low post-COVID levels.

Trend following funds can and have offered significant diversification from traditional asset classes due to their ability to go long or short markets depending on the current trends. As evidenced in the middle chart below, CTA funds had maintained long bond, short commodity positions for several years following the global financial crisis, though that changed significantly over the past year. Discretionary funds struggled when interest rates were zero-bound in the mid-2010s but have shown once again that they can perform well when central banks are taking action—either hiking or cutting rates—by taking positions based on fundamental economic data.

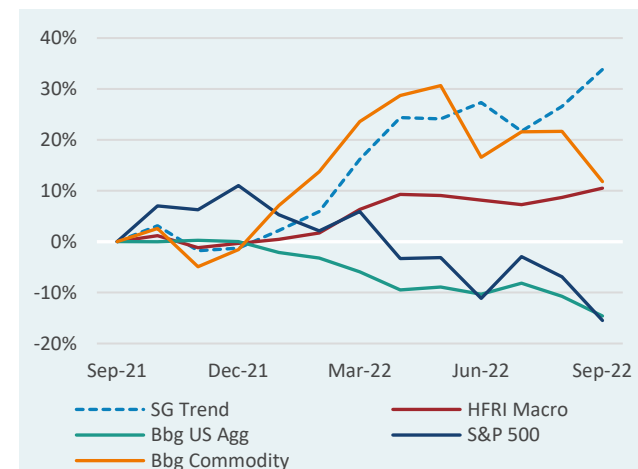
3 YEAR ROLLING RETURN FOR MACRO FUNDS



CTA FUNDS CORRELATION TO MARKETS



CUMULATIVE RETURN LAST 12 MONTHS



Source: HFR, MPI, Morningstar, SocGen, data as of 9/30/22

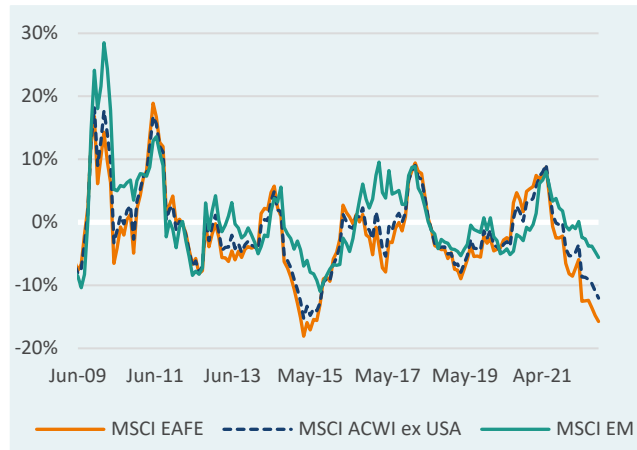
Currency

Investors with unhedged foreign currency exposure have seen extreme losses over recent periods. For example, a U.S. investor with an international developed equity investment (MSCI EAFE) suffered a loss of -15.7% over the past year *just from currency movements*. An investor in non-US equity (MSCI ACWI ex-US) would have seen a -12.0% loss. Currency risk is typically the second largest risk in institutional portfolios, and is not expected to be compensated over the long term.

We continue to believe that forward-thinking currency solutions can materially improve portfolio outcomes. Specifically, a currency program may allow an investor to reduce their portfolio risk while also increasing the

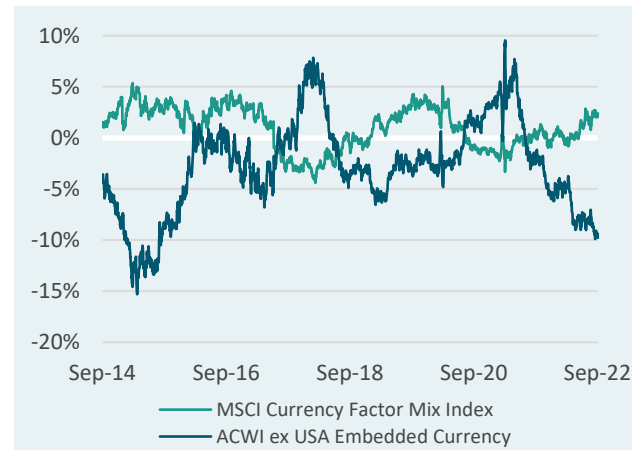
expected return of the portfolio. These characteristics are demonstrated below by comparing the unhedged currency exposure that most investors own (we refer to this as “embedded” currency) to the MSCI Currency Factor Mix Index which represents a passive investment in the currency market. This program aims to systematically capture the *return premia* within currency markets. Over the past 10 years, an unhedged exposure to foreign currencies has resulted in 5.8% portfolio volatility and a return of -4.4% per year. Meanwhile, a passive allocation the MSCI Currency Factor Mix Index has resulted in less than half of that volatility (2.5%) and with an average return of +1.2% per year.

EFFECT OF CURRENCY (1-YEAR ROLLING)



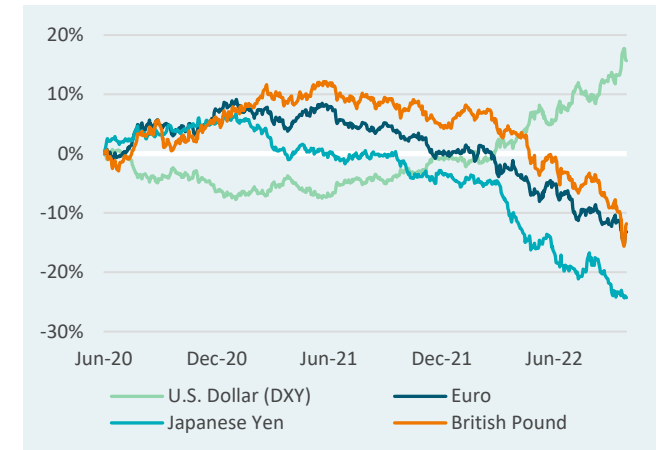
Source: MSCI, as of 9/30/22

UNHEDGED CURRENCY VS CURRENCY FACTOR MIX



Source: MSCI, as of 9/30/22

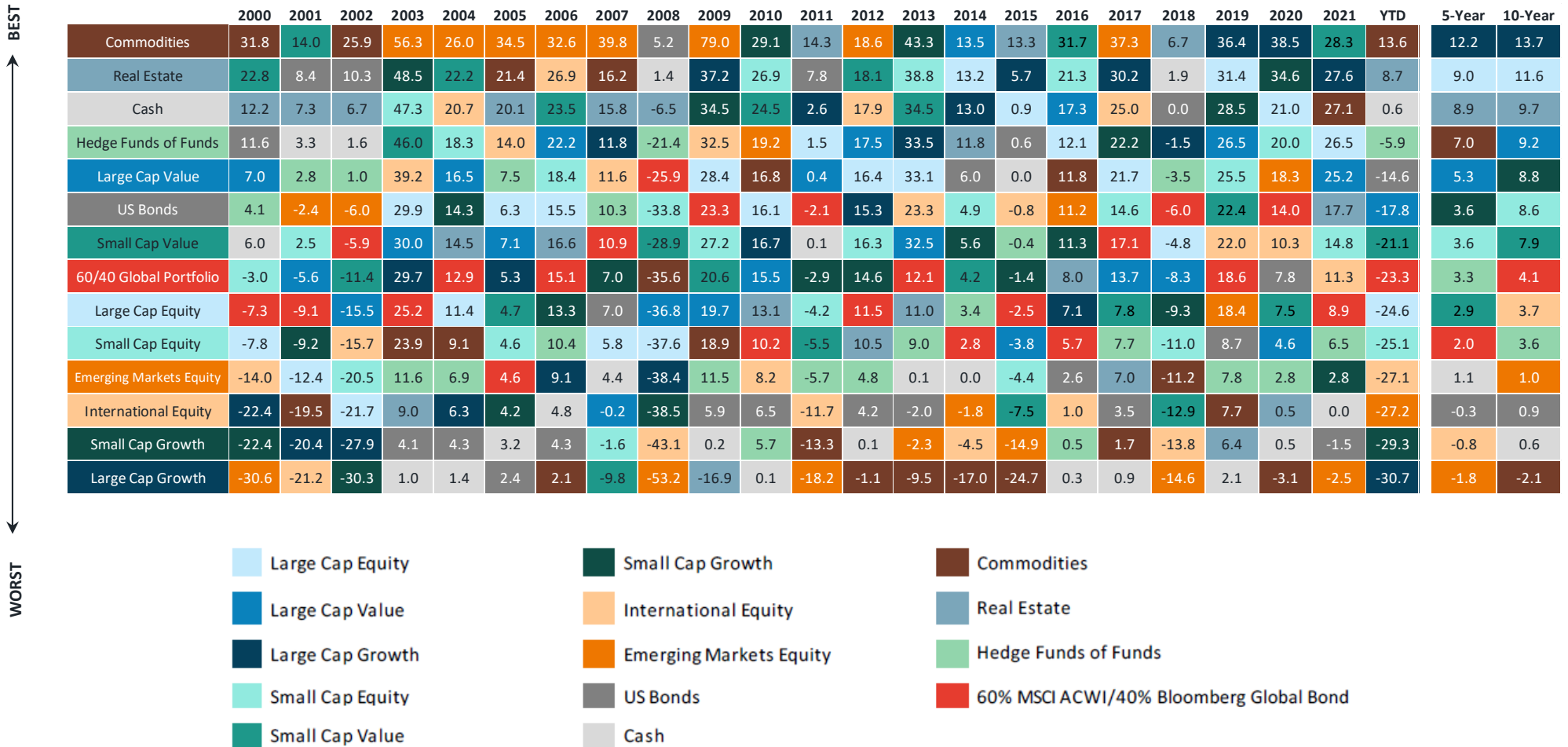
FOREIGN CURRENCY MOVEMENT



Source: Bloomberg, as of 9/30/22

Appendix

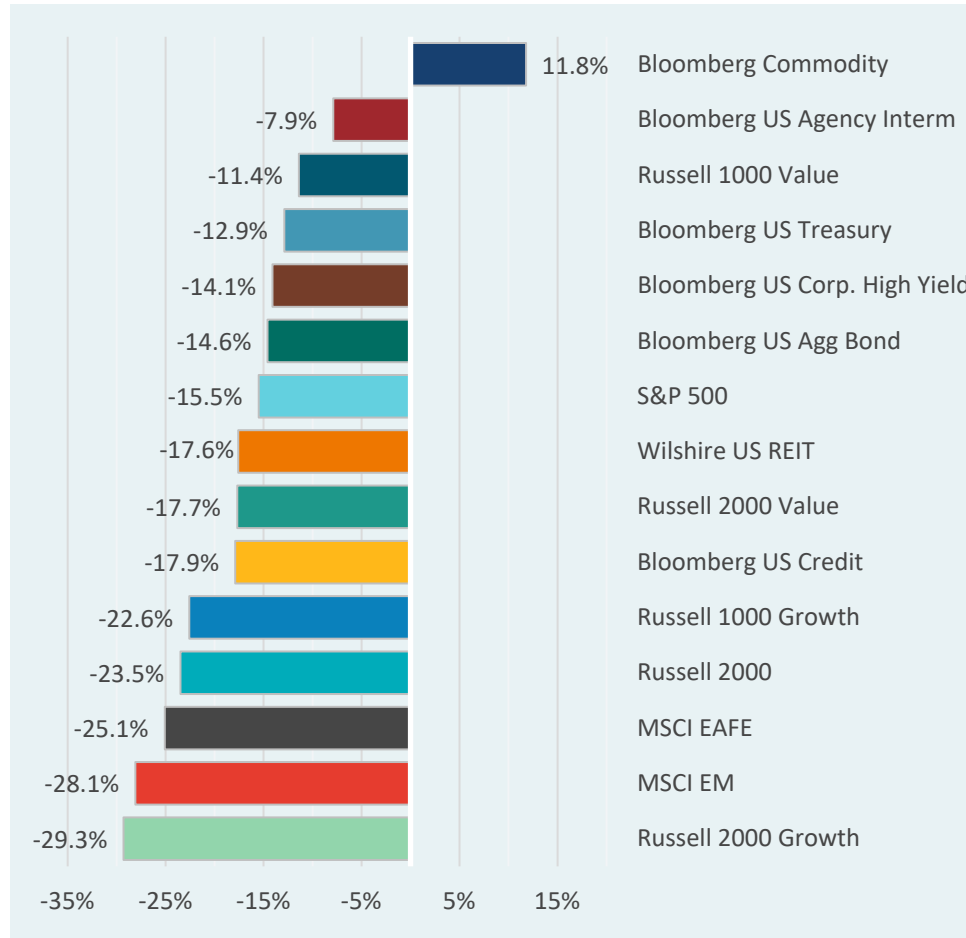
Periodic table of returns



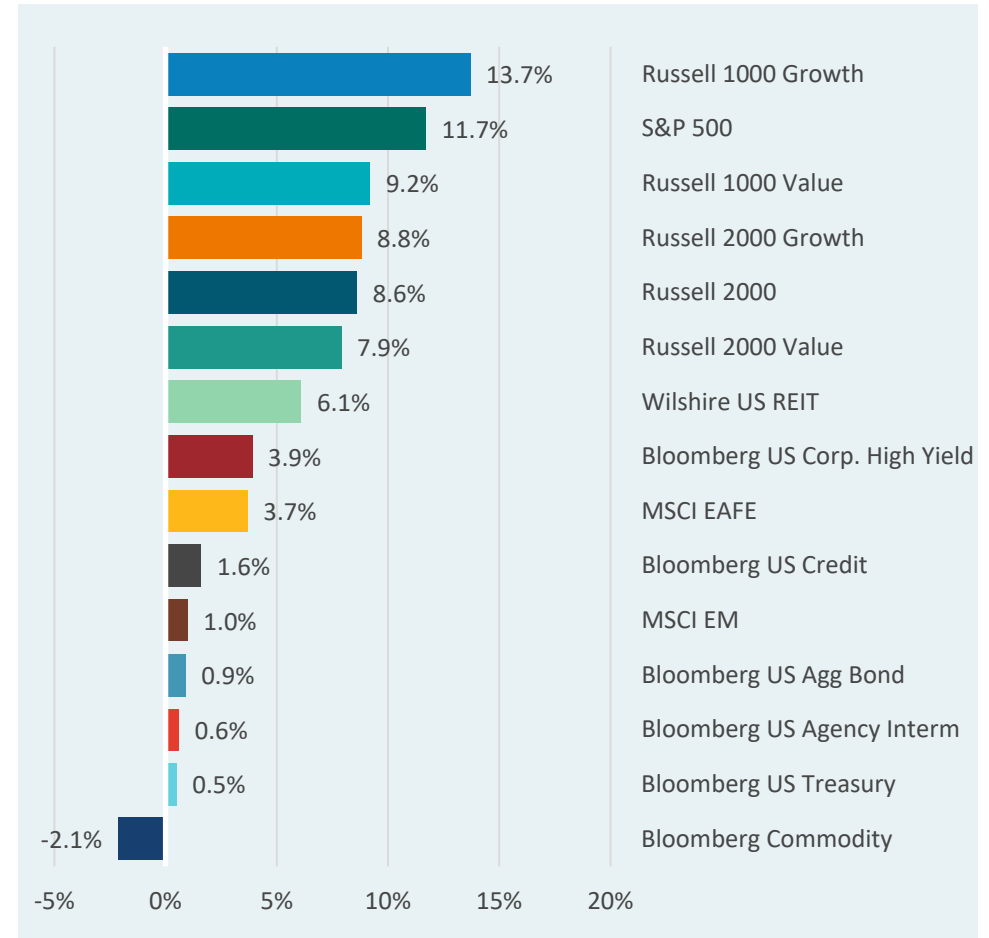
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, Bloomberg Global Bond. NCREIF Property Index performance data as of 6/30/22.

Major asset class returns

ONE YEAR ENDING SEPTEMBER



TEN YEARS ENDING SEPTEMBER



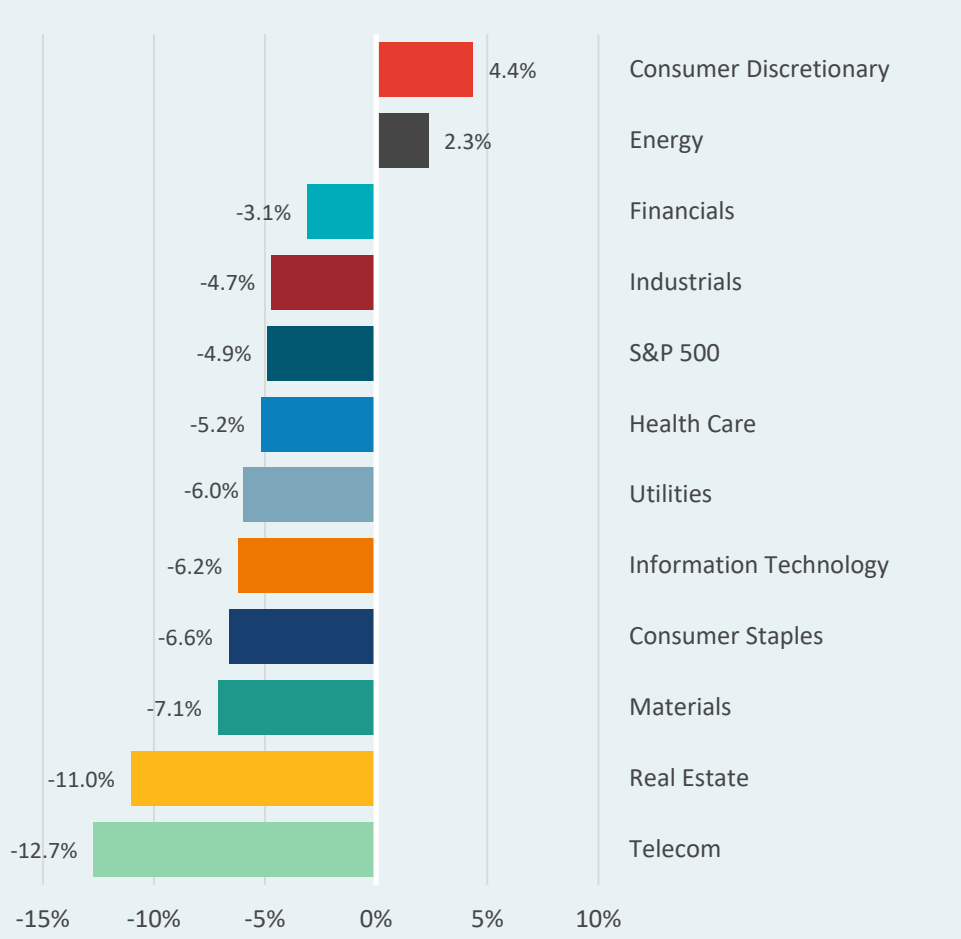
*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 9/30/22

Source: Morningstar, as of 9/30/22

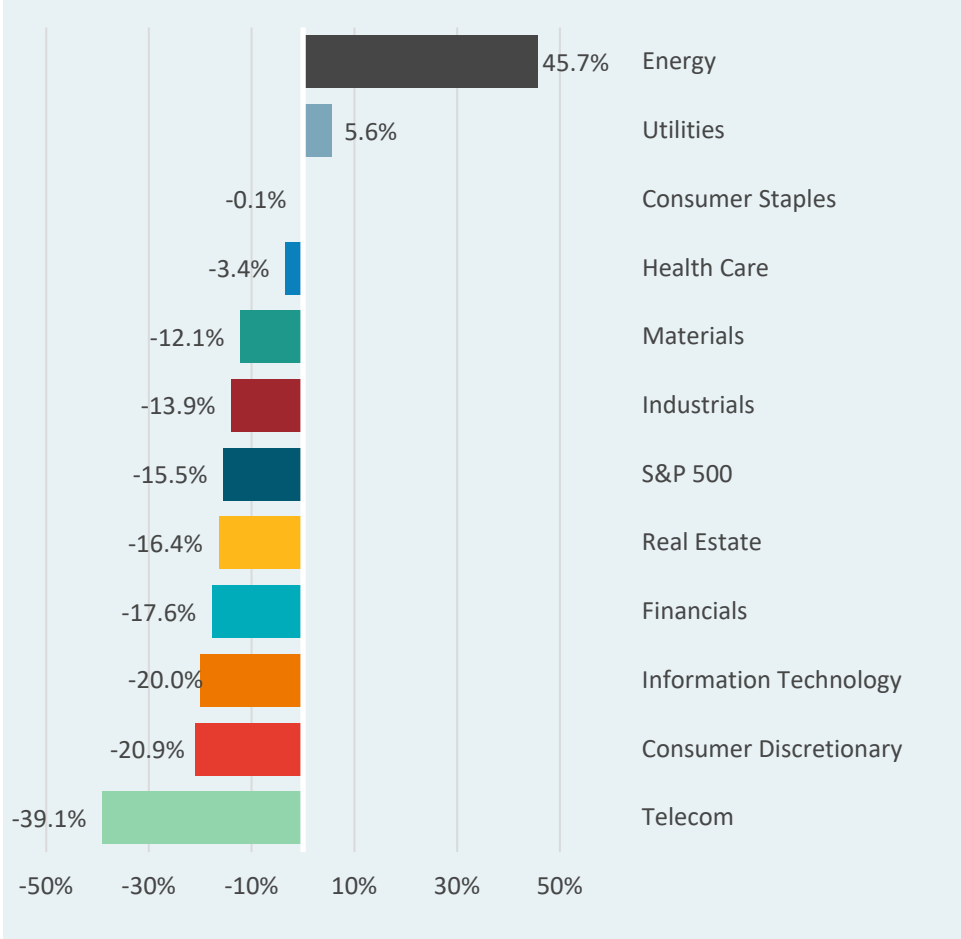
S&P 500 sector returns

QTD



Source: Morningstar, as of 9/30/22

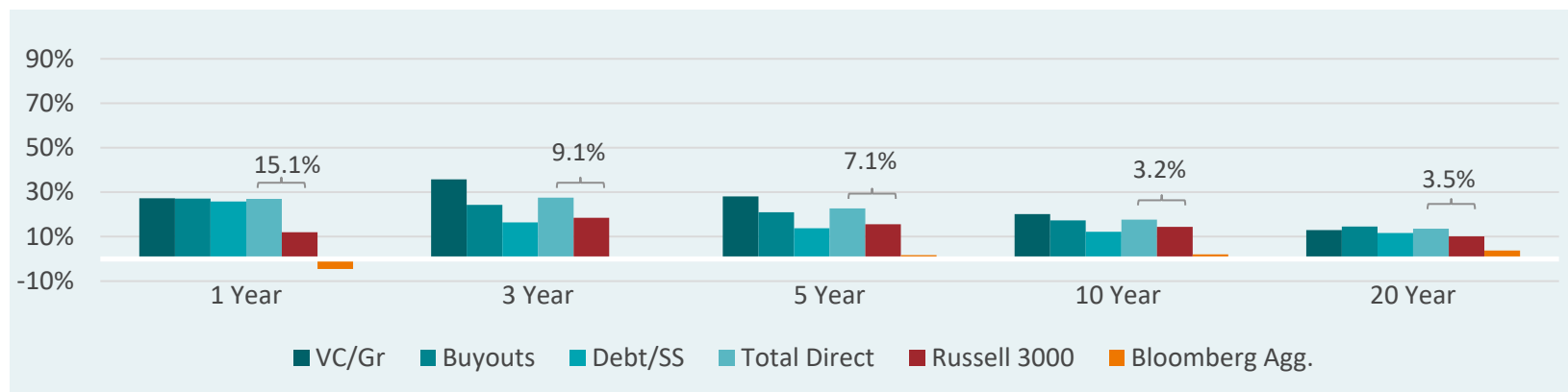
ONE YEAR ENDING SEPTEMBER



Source: Morningstar, as of 9/30/22

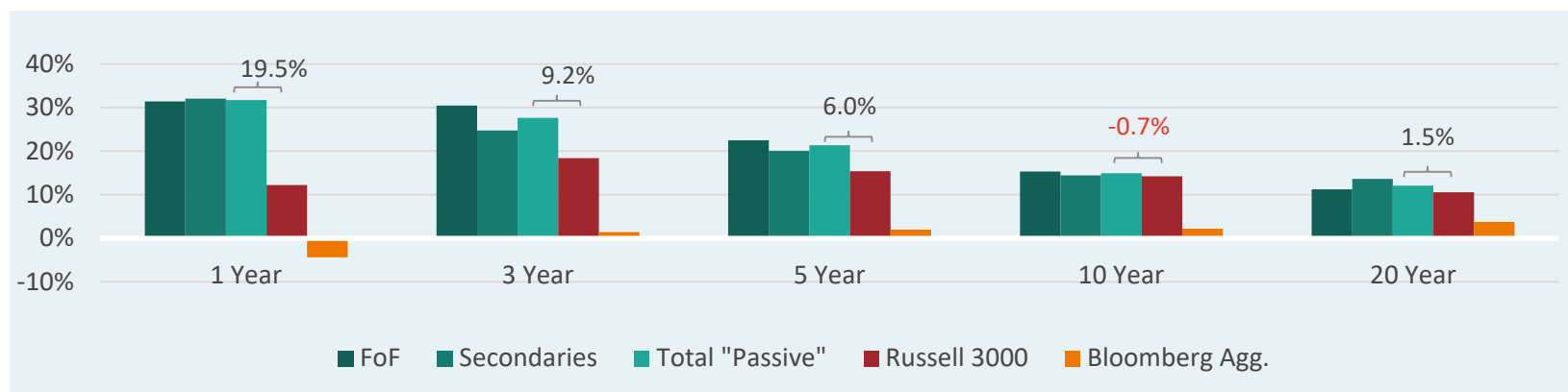
Private equity vs. traditional assets performance

DIRECT PRIVATE EQUITY FUND INVESTMENTS



Direct P.E Fund Investments outperformed comparable public equities across all time periods.

"PASSIVE" STRATEGIES

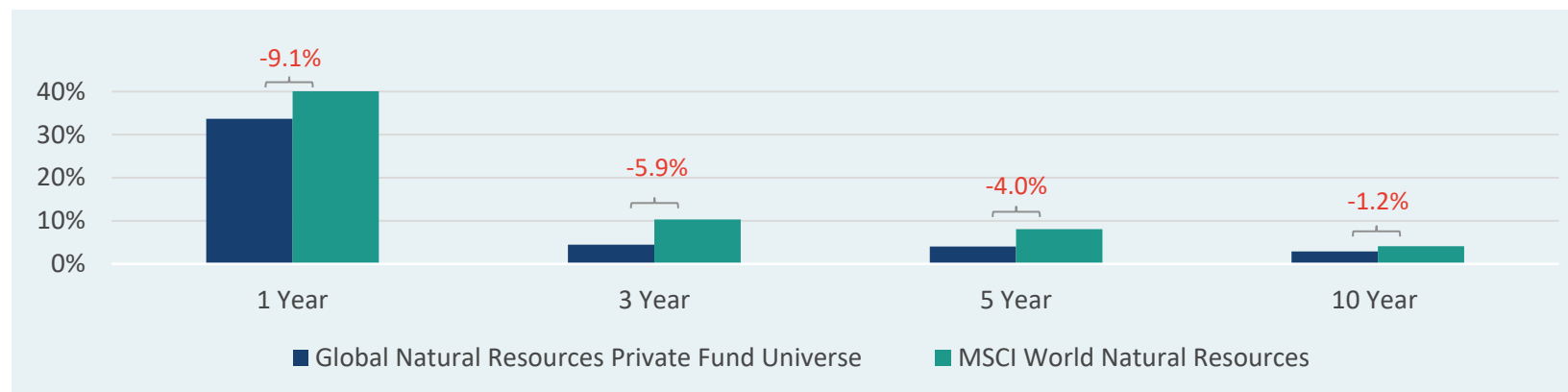


"Passive" strategies outperformed comparable public equities across all time periods, aside from the 10-year basis.

Sources: Refinitiv PME: U.S. Private Equity Funds sub asset classes as of March 31, 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.

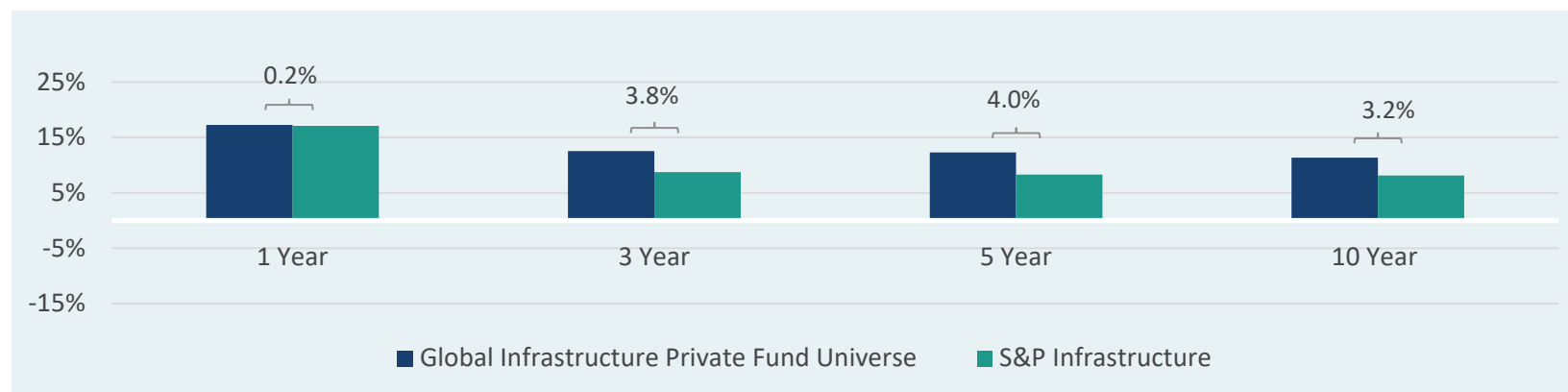
Private vs. liquid real assets performance

GLOBAL NATURAL RESOURCES FUNDS (N.R.)



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

GLOBAL INFRASTRUCTURE FUNDS

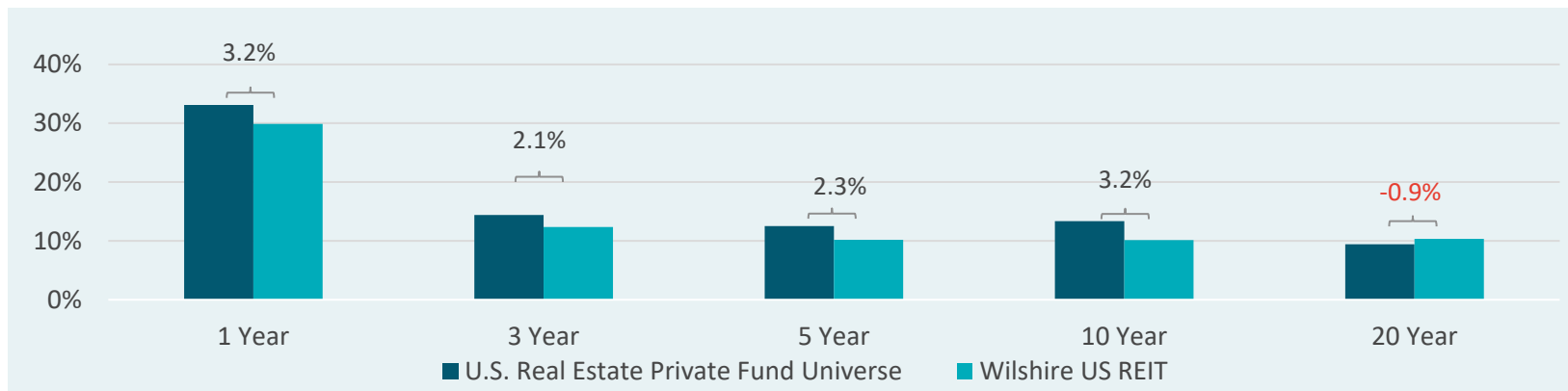


Infra. funds outperformed the S&P Infra. across all periods.

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 March 31, 2022. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

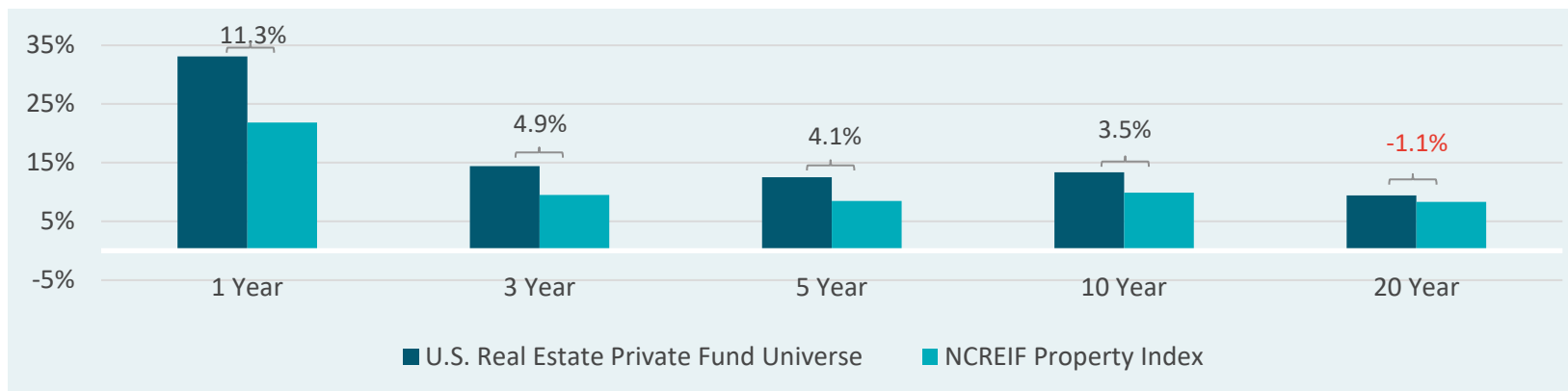
Private vs. liquid and core real estate performance

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



U.S. Private R.E. funds underperformed the Wilshire U.S. REIT Index across all time periods, aside on a 20-year basis.

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



U.S. Private R.E. Funds outperformed the NCREIF Property Index across all time periods, aside a 20-year basis.

Sources: Refinitiv PME: U.S. Real Estate universes as of March 31, 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	(9.2)	(4.9)	(23.9)	(15.5)	8.2	9.2	11.7
S&P 500 Equal Weighted	(9.2)	(4.8)	(20.7)	(13.5)	7.7	8.0	11.5
DJ Industrial Average	(8.8)	(6.2)	(19.7)	(13.4)	4.4	7.4	10.5
Russell Top 200	(9.2)	(5.0)	(24.7)	(16.4)	9.0	10.0	12.1
Russell 1000	(9.3)	(4.6)	(24.6)	(17.2)	7.9	9.0	11.6
Russell 2000	(9.6)	(2.2)	(25.1)	(23.5)	4.3	3.6	8.6
Russell 3000	(9.3)	(4.5)	(24.6)	(17.6)	7.7	8.6	11.4
Russell Mid Cap	(9.3)	(3.4)	(24.3)	(19.4)	5.2	6.5	10.3
Style Index							
Russell 1000 Growth	(9.7)	(3.6)	(30.7)	(22.6)	10.7	12.2	13.7
Russell 1000 Value	(8.8)	(5.6)	(17.8)	(11.4)	4.4	5.3	9.2
Russell 2000 Growth	(9.0)	0.2	(29.3)	(29.3)	2.9	3.6	8.8
Russell 2000 Value	(10.2)	(4.6)	(21.1)	(17.7)	4.7	2.9	7.9

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	(9.6)	(6.8)	(25.6)	(20.7)	3.7	4.4	7.3
MSCI ACWI ex US	(10.0)	(9.9)	(26.5)	(25.2)	(1.5)	(0.8)	3.0
MSCI EAFE	(9.4)	(9.4)	(27.1)	(25.1)	(1.8)	(0.8)	3.7
MSCI EM	(11.7)	(11.6)	(27.2)	(28.1)	(2.1)	(1.8)	1.0
MSCI EAFE Small Cap	(11.5)	(9.8)	(32.1)	(32.1)	(2.2)	(1.8)	5.3
Style Index							
MSCI EAFE Growth	(9.7)	(8.5)	(33.0)	(30.3)	(1.5)	0.7	4.7
MSCI EAFE Value	(9.0)	(10.2)	(21.1)	(20.2)	(2.8)	(2.7)	2.4
Regional Index							
MSCI UK	(8.8)	(10.8)	(18.7)	(14.1)	(1.7)	(1.1)	1.9
MSCI Japan	(10.4)	(7.7)	(26.4)	(29.3)	(2.6)	(0.6)	4.8
MSCI Euro	(8.4)	(10.0)	(32.7)	(30.0)	(3.8)	(3.2)	3.2
MSCI EM Asia	(13.2)	(14.0)	(28.8)	(29.5)	(0.8)	(1.1)	3.1
MSCI EM Latin American	(3.3)	3.6	3.0	0.2	(3.4)	(2.6)	(2.3)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
Bloomberg US TIPS	(6.6)	(5.1)	(13.6)	(11.6)	0.8	2.0	1.0
Bloomberg US Treasury Bills	0.2	0.4	0.4	0.4	0.6	1.1	0.7
Bloomberg US Agg Bond	(4.3)	(4.8)	(14.6)	(14.6)	(3.3)	(0.3)	0.9
Bloomberg US Universal	(4.3)	(4.5)	(14.9)	(14.9)	(3.1)	(0.2)	1.2
Duration							
Bloomberg US Treasury 1-3 Yr	(1.2)	(1.5)	(4.5)	(5.1)	(0.5)	0.5	0.6
Bloomberg US Treasury Long	(7.9)	(9.6)	(28.8)	(26.6)	(8.5)	(1.6)	0.6
Bloomberg US Treasury	(3.5)	(4.3)	(13.1)	(12.9)	(3.1)	(0.2)	0.5
Issuer							
Bloomberg US MBS	(5.1)	(5.3)	(13.7)	(14.0)	(3.7)	(0.9)	0.5
Bloomberg US Corp. High Yield	(4.0)	(0.6)	(14.7)	(14.1)	(0.5)	1.6	3.9
Bloomberg US Agency Interm	(1.8)	(2.4)	(7.2)	(7.9)	(1.4)	0.2	0.6
Bloomberg US Credit	(5.1)	(4.9)	(18.1)	(17.9)	(3.6)	(0.0)	1.6

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	(8.1)	(4.1)	13.6	11.8	13.5	7.0	(2.1)
Wilshire US REIT	(12.3)	(10.2)	(29.7)	(17.6)	(2.2)	2.9	6.1
CS Leveraged Loans	(2.2)	1.2	(3.3)	(2.6)	2.1	3.0	3.7
S&P Global Infrastructure	(11.8)	(9.6)	(10.1)	(6.0)	(0.1)	2.1	5.7
Alerian MLP	(7.5)	8.4	19.0	20.0	3.1	1.2	1.7
Regional Index							
JPM EMBI Global Div	(6.4)	(4.6)	(23.9)	(24.3)	(7.2)	(2.6)	1.1
JPM GBI-EM Global Div	(4.9)	(4.7)	(18.6)	(20.6)	(7.1)	(3.9)	(2.4)
Hedge Funds							
HFRI Composite	(2.3)	(0.6)	(6.2)	(5.8)	6.2	4.5	4.6
HFRI FOF Composite	(0.6)	0.7	(5.9)	(5.5)	4.5	3.3	3.6
Currency (Spot)							
Euro	(2.6)	(3.9)	(13.9)	(15.5)	(3.5)	(3.7)	(2.7)
Pound Sterling	(4.1)	(8.3)	(17.6)	(17.2)	(3.2)	(3.6)	(3.6)
Yen	(4.2)	(7.7)	(20.4)	(22.9)	(9.3)	(4.9)	(6.0)

Source: Morningstar, HFRI, as of 9/30/22.

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: September 30, 2022



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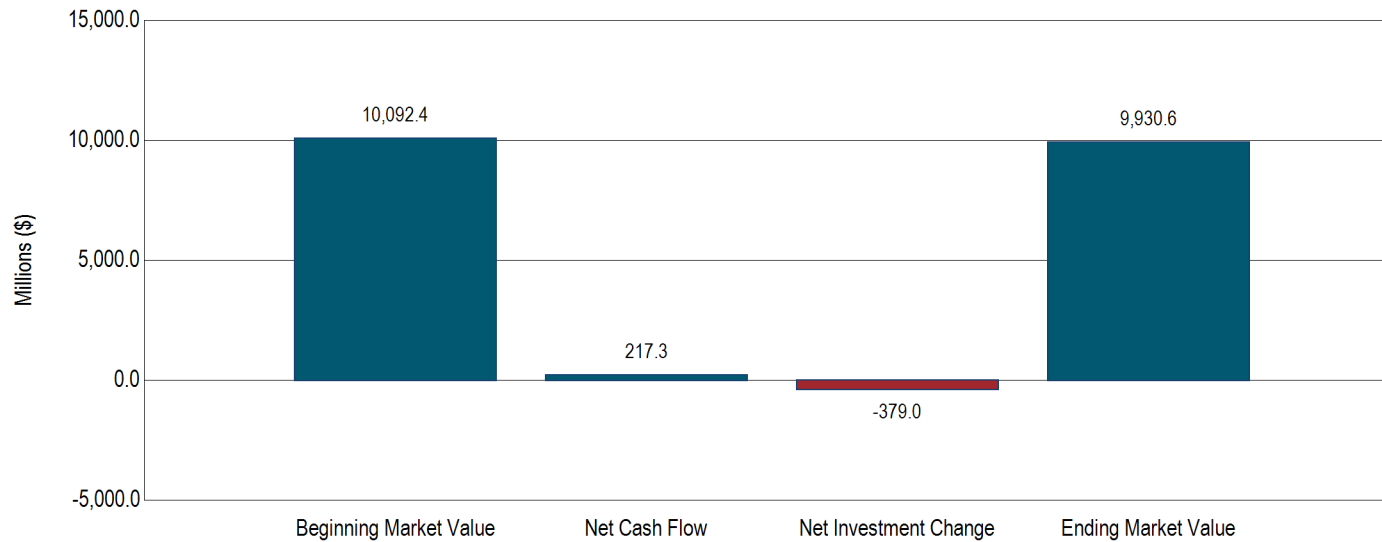
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SAN FRANCISCO 415.362.3484

Portfolio Reconciliation

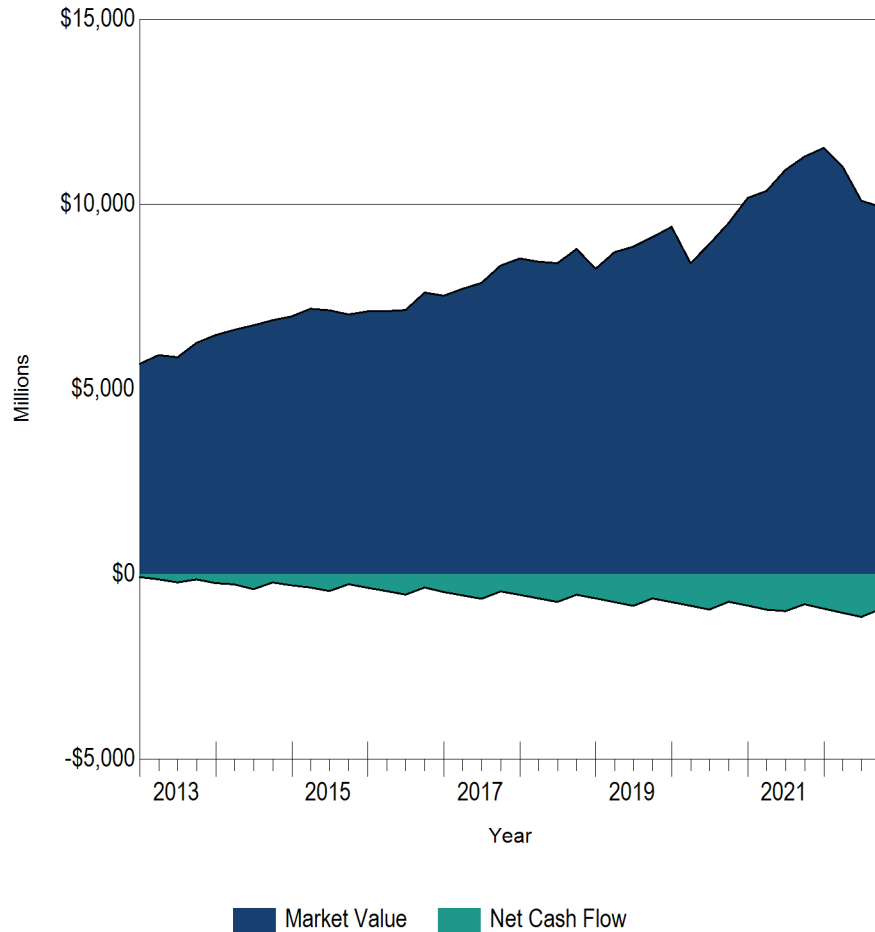
	Last Three Months	Year-To-Date
Beginning Market Value	\$10,092,351,763	\$11,520,465,270
Net Cash Flow	\$217,263,597	\$9,273,844
Net Investment Change	-\$379,023,631	-\$1,599,147,386
Ending Market Value	\$9,930,591,728	\$9,930,591,728

Change in Market Value
Last Three Months

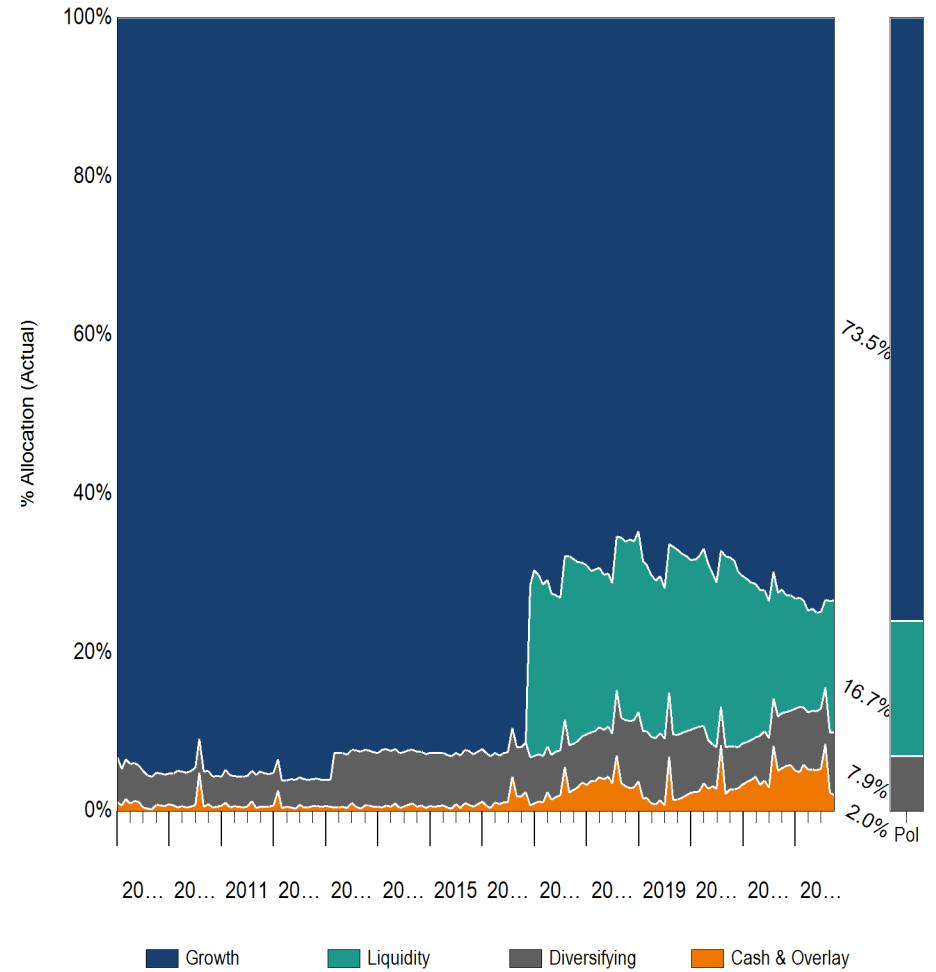


Contributions and withdrawals may include intra-account transfers between managers/funds.

Market Value History
Cumulative Cash Flows



Asset Allocation History

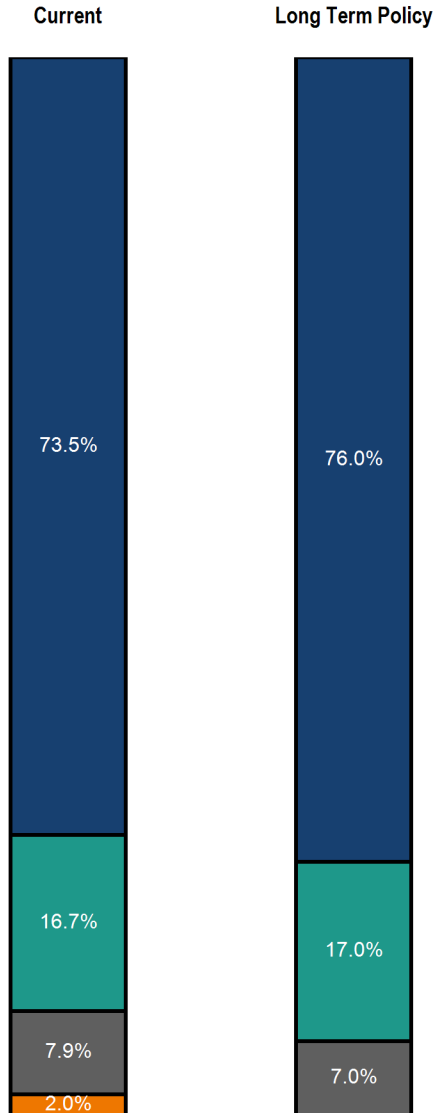


Policy reflects Long-Term Asset Allocation approved July 2022.

Total Fund

Asset Allocation vs. Long Term Target Policy

Period Ending: September 30, 2022



Allocation vs. Long Term Target

	Current Balance	Current Allocation	Long Term Target	Difference
Growth	\$7,294,846,584	73.5%	76.0%	-\$252,259,611
Liquidity	\$1,653,756,303	16.7%	17.0%	-\$34,412,188
Diversifying	\$782,939,407	7.9%	7.0%	\$87,811,205
Cash & Overlay	\$198,860,594	2.0%	--	\$198,860,594
Total	\$9,930,402,888	100.0%	100.0%	

Allocation vs. Current Targets

	Current Balance	Current Allocation	Current Target	Difference
Growth	\$7,294,846,584	73.5%	75.5%	-\$202,607,597
Liquidity	\$1,653,756,303	16.7%	17.0%	-\$34,412,188
Diversifying	\$782,939,407	7.9%	7.5%	\$38,159,191
Cash & Overlay	\$198,860,594	2.0%	--	\$198,860,594
Total	\$9,930,402,888	100.0%	100.0%	

Current and Long-Term Policy Targets approved July 2022.

Total Fund
Executive Summary (Net of Fees)

Period Ending: September 30, 2022

	% of Portfolio	QTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
Total Fund	100.0	-3.6	-14.1	-11.5	3.6	4.2	6.5	13.9	9.2	14.6	-2.7	13.9
Policy Index		-3.7	-12.3	-8.5	5.3	5.6	7.4	15.3	10.8	14.6	-0.9	13.7
Policy Index (Adjusted)		-3.7	-12.3	-8.5	4.6	4.9	6.9	15.3	8.5	14.1	-1.5	13.5
Growth	73.5	-4.3	-16.0	-12.5	5.8	5.9	7.9	19.2	12.0	18.3	-3.9	18.7
Custom Growth Benchmark		-4.3	-14.9	-10.0	7.7	7.6	8.8	21.6	13.8	19.3	-2.1	19.3
Diversifying	7.9	-0.8	-4.2	-4.5	-1.3	0.0	0.1	1.7	-1.7	6.8	-2.3	2.6
Custom Diversifying Benchmark		-2.5	-7.3	-6.8	-0.3	1.3	2.1	1.6	4.7	6.1	1.4	4.7
Liquidity	16.7	-1.5	-4.6	-5.0	-0.4	0.9	--	-0.3	3.4	4.8	1.7	1.4
Bloomberg US Govt/Credit 1-3 Yr. TR		-1.5	-4.5	-5.1	-0.4	0.7	--	-0.5	3.3	4.0	1.6	0.8

*Correlation between the Growth and Diversifying composites is .55, .70 and .58 over the previous 1, 3 and 5 year periods respectively.

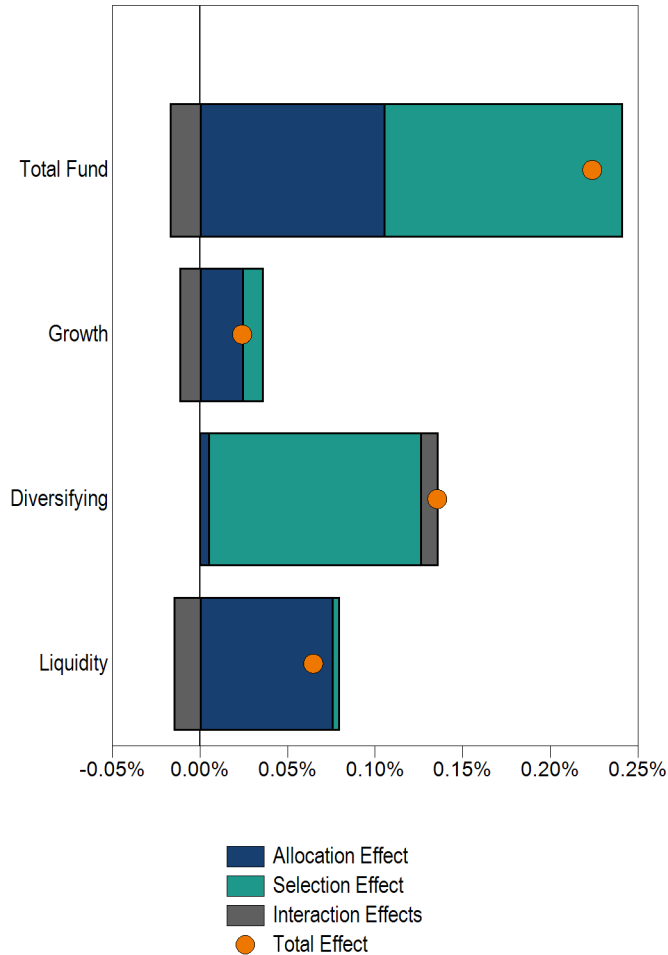
Policy Index (7/1/2022-Present): 16% Russell 3000, 15% MSCI ACWI ex-US (Gross), 9% MSCI ACWI (Net), 1.5% ICE BofA High Yield Master II, 2% Wilshire REIT, 8% Private Real Estate composite returns, 13% Private Equity composite returns, 8% Private Credit composite returns, 17% Bloomberg 1-3 Yr Gov/Credit, 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.

Total Fund

Attribution Analysis - Asset Class Level (Net of Fees)

Period Ending: September 30, 2022

Attribution Effects
3 Months Ending September 30, 2022



Performance Attribution

	Quarter
Wtd. Actual Return	-3.44%
Wtd. Index Return *	-3.67%
Excess Return	0.22%
Selection Effect	0.14%
Allocation Effect	0.11%
Interaction Effect	-0.02%

*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	-4.3%	-4.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Diversifying	-0.8%	-2.5%	1.7%	0.1%	0.0%	0.0%	0.1%
Liquidity	-1.5%	-1.5%	0.0%	0.0%	0.1%	0.0%	0.1%
Total	-3.4%	-3.7%	0.2%	0.1%	0.1%	0.0%	0.2%

Total Fund

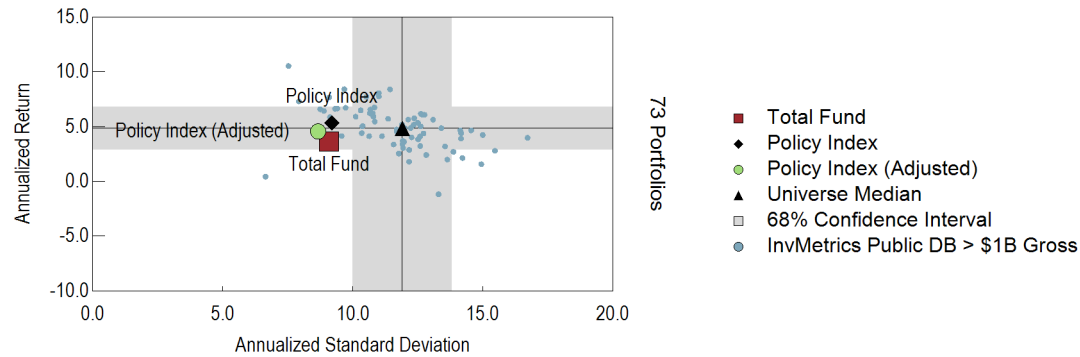
Executive Summary (Net of Fees)

Period Ending: September 30, 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	3.61%	-1.72%	9.09%	-1.53%	0.96	2.06%	0.95	0.34	-0.84	93.58%	107.23%

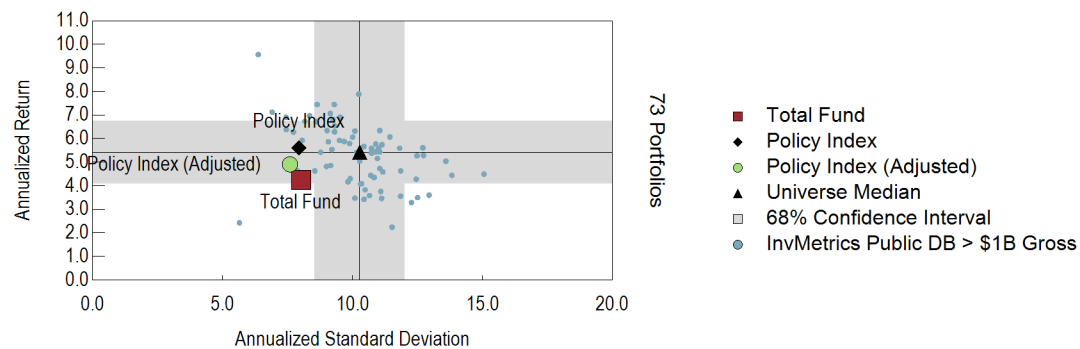
Risk vs. Return



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	4.24%	-1.36%	8.01%	-1.25%	0.98	1.92%	0.94	0.39	-0.71	93.87%	106.61%

Risk vs. Return



Total Fund
Performance Summary (Gross of Fees)

Period Ending: September 30, 2022

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
Total Fund	9,930,591,728	100.0	-3.5	-13.9	-11.2	3.9	4.5	7.0	14.2	9.5	14.9	-2.5	14.2		
Policy Index			-3.7	-12.3	-8.5	5.3	5.6	7.4	15.3	10.8	14.6	-0.9	13.7		
Policy Index (Adjusted)			-3.7	-12.3	-8.5	4.6	4.9	6.9	15.3	8.5	14.1	-1.5	13.5		
InvMetrics Public DB > \$1B Gross Rank			21	35	44	74	72	59	62	78	83	25	83		
Total Fund ex Overlay & Cash	9,731,731,134	98.0	-3.4	-13.3	-10.5	4.3	4.8	7.1	14.6	9.7	14.7	-2.1	14.1		
Policy Index			-3.7	-12.3	-8.5	5.3	5.6	7.4	15.3	10.8	14.6	-0.9	13.7		
Policy Index (Adjusted)			-3.7	-12.3	-8.5	4.6	4.9	6.9	15.3	8.5	14.1	-1.5	13.5		
InvMetrics Public DB > \$1B Gross Rank			15	28	41	62	64	58	55	72	85	20	84		
Growth	7,295,035,424	73.5	-4.2	-15.8	-12.2	6.1	6.3	8.4	19.6	12.4	18.7	-3.6	19.1		
Custom Growth Benchmark			-4.3	-14.9	-10.0	7.7	7.6	8.8	21.6	13.8	19.3	-2.1	19.3		
Total Domestic Equity	1,519,053,111	15.3	-4.0	-25.1	-20.4	5.8	6.6	10.7	20.6	22.2	26.7	-7.2	23.9		
Russell 3000			-4.5	-24.6	-17.6	7.7	8.6	11.4	25.7	20.9	31.0	-5.2	21.1		
InvMetrics Public DB US Eq Gross Rank			12	86	90	88	92	69	97	10	87	78	6		
BlackRock Russell 1000 Index	812,251,018	8.2	-4.6	-24.6	-17.2	7.9	9.0	--	26.5	21.0	31.4	-4.8	--	9.6	Apr-17
Russell 1000			-4.6	-24.6	-17.2	7.9	9.0	--	26.5	21.0	31.4	-4.8	--	9.6	Apr-17
eV US Large Cap Equity Gross Rank			43	65	66	42	45	--	55	36	39	47	--		
Boston Partners	354,136,574	3.6	-4.8	-14.6	-6.5	7.7	7.0	10.5	31.3	3.0	24.3	-8.7	20.1	10.2	Jun-95
Russell 1000 Value			-5.6	-17.8	-11.4	4.4	5.3	9.2	25.2	2.8	26.5	-8.3	13.7	8.7	Jun-95
eV US Large Cap Value Equity Gross Rank			36	32	24	28	48	38	17	61	77	55	23		
Emerald Advisers	183,462,408	1.8	0.0	-28.5	-28.2	5.2	5.8	11.2	5.5	39.0	30.3	-10.1	28.8	11.9	Apr-03
Russell 2000 Growth			0.2	-29.3	-29.3	2.9	3.6	8.8	2.8	34.6	28.5	-9.3	22.2	9.7	Apr-03
eV US Small Cap Growth Equity Gross Rank			40	35	44	68	81	62	76	57	45	85	26		
Ceredex	169,124,837	1.7	-2.8	-19.8	-14.0	2.6	3.5	8.6	28.4	2.3	18.4	-11.3	11.4	8.9	Nov-11
Russell 2000 Value			-4.6	-21.1	-17.7	4.7	2.9	7.9	28.3	4.6	22.4	-12.9	7.8	8.7	Nov-11
eV US Small Cap Value Equity Gross Rank			17	50	48	87	70	72	60	69	87	25	48		

Individual closed end funds are not shown in performance summary table. Jackson Square has a residual balance of \$78,274.15.

Total Fund
Performance Summary (Gross of Fees)

Period Ending: September 30, 2022

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
Total International Equity	1,335,091,570	13.4	-9.3	-27.5	-27.2	0.2	0.4	4.3	8.3	15.8	23.7	-14.3	25.5		
MSCI ACWI ex USA Gross			-9.8	-26.2	-24.8	-1.1	-0.3	3.5	8.3	11.1	22.1	-13.8	27.8		
MSCI EAFE Gross			-9.3	-26.8	-24.7	-1.4	-0.4	4.2	11.8	8.3	22.7	-13.4	25.6		
InvMetrics Public DB ex-US Eq Gross Rank			31	59	64	20	20	30	45	23	28	44	90		
International Equity	741,739,630	7.5	-9.0	-27.9	-26.6	0.8	1.4	4.9	9.0	19.0	27.0	-13.6	25.3		
MSCI ACWI ex USA Gross			-9.8	-26.2	-24.8	-1.1	-0.3	3.5	8.3	11.1	22.1	-13.8	27.8		
InvMetrics Public DB ex-US Eq Gross Rank			20	66	52	9	12	13	32	13	7	21	93		
Pyrford	378,667,612	3.8	-10.5	-19.3	-17.3	-0.5	0.7	--	7.6	4.7	22.1	-10.1	19.8	1.8	May-14
MSCI ACWI ex USA Value			-10.4	-21.0	-20.0	-2.1	-2.1	--	10.5	-0.8	15.7	-14.0	22.7	-0.5	May-14
eV ACWI ex-US Value Equity Gross Rank			44	7	8	53	20	--	84	33	35	5	84		
William Blair	363,072,018	3.7	-7.3	-35.5	-34.6	1.7	1.8	5.5	10.5	33.3	32.0	-16.8	30.9	5.0	Oct-10
MSCI ACWI ex USA Growth			-9.4	-31.8	-30.2	-1.4	0.2	4.0	5.1	22.2	27.3	-14.4	32.0	3.3	Oct-10
eV ACWI ex-US Growth Equity Gross Rank			21	56	59	34	48	54	44	30	39	69	81		
Emerging Markets Equity	593,351,940	6.0	-9.8	-27.0	-28.0	-0.6	-0.8	--	7.6	11.4	19.4	-15.3	--		
MSCI Emerging Markets			-11.6	-27.2	-28.1	-2.1	-1.8	--	-2.5	18.3	18.4	-14.6	--		
InvMetrics Public DB Emg Mkt Eq Gross Rank			38	68	68	38	71	--	2	81	31	51	--		
PIMCO RAE Emerging Markets	303,223,241	3.1	-6.3	-21.4	-21.0	1.5	0.2	--	17.1	2.1	14.6	-12.3	--	1.8	Feb-17
MSCI Emerging Markets Value NR			-11.0	-23.3	-23.6	-2.6	-2.1	--	4.0	5.5	12.0	-10.7	--	-0.1	Feb-17
eV Emg Mkts All Cap Value Equity Gross Rank			15	36	36	21	32	--	6	85	72	44	--		
TT Emerging Markets	290,128,699	2.9	-13.2	-32.1	-34.0	-2.3	-1.7	--	-0.2	20.8	24.8	-18.4	--	-1.3	Jul-17
MSCI Emerging Markets			-11.6	-27.2	-28.1	-2.1	-1.8	--	-2.5	18.3	18.4	-14.6	--	-1.4	Jul-17
eV Emg Mkts Equity Gross Rank			94	87	88	72	69	--	58	39	24	83	--		
Total Global Equity	876,267,631	8.8	-5.6	-25.8	-22.5	4.4	5.6	8.6	14.1	25.3	28.9	-7.8	23.7	4.2	Jun-07
MSCI ACWI			-6.8	-25.6	-20.7	3.7	4.4	7.3	18.5	16.3	26.6	-9.4	24.0	4.2	Jun-07
InvMetrics Public DB Glbl Eq Gross Rank			10	92	95	33	6	82	88	2	3	60	79		
Artisan Partners	440,119,455	4.4	-3.6	-33.4	-30.2	6.0	7.4	10.7	15.0	41.7	37.0	-7.9	32.9	10.7	Oct-12
MSCI ACWI Growth NR USD			-5.9	-32.2	-27.5	5.4	6.6	8.9	17.1	33.6	32.7	-8.1	30.0	8.9	Oct-12
eV All Global Equity Gross Rank			9	87	87	27	19	13	80	9	7	40	11		
First Eagle	436,037,610	4.4	-7.5	-16.5	-13.2	2.4	3.5	6.4	13.0	8.5	21.0	-7.6	15.1	6.5	Jan-11
MSCI ACWI Value NR USD			-7.7	-19.1	-14.0	1.3	1.7	5.4	19.6	-0.3	20.6	-10.8	18.3	4.9	Jan-11
eV All Global Equity Gross Rank			66	8	14	72	70	79	85	70	82	38	89		

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

Total Fund
Performance Summary (Gross of Fees)

Period Ending: September 30, 2022

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
Private Credit	948,812,692	9.6	1.4	8.7	11.6	8.1	8.2	10.4	10.0	4.0	7.7	8.3	10.4		
Total High Yield	133,744,651	1.3	-0.8	-14.6	-13.8	-0.9	1.1	3.5	5.3	5.2	15.3	-3.2	6.5		
ICE BofAML High Yield Master II			-0.7	-14.6	-14.1	-0.7	1.4	3.9	5.4	6.2	14.4	-2.3	7.5		
eV US High Yield Fixed Inc Gross Rank			77	80	79	89	95	86	51	74	31	88	74		
Allianz Global Investors	133,744,651	1.3	-0.8	-14.6	-13.8	-0.9	1.1	3.5	5.3	5.2	15.3	-3.2	6.5	6.0	Apr-00
ICE BofAML High Yield Master II			-0.7	-14.6	-14.1	-0.7	1.4	3.9	5.4	6.2	14.4	-2.3	7.5	6.1	Apr-00
eV US High Yield Fixed Inc Gross Rank			77	80	79	89	95	86	51	74	31	88	74		
Total Real Estate	791,612,813	8.0	-3.0	-3.2	3.0	3.1	5.3	8.8	19.2	-5.9	8.1	7.4	11.1		
Real Estate Benchmark			-2.3	-2.4	4.6	5.9	6.5	8.1	19.3	0.6	7.5	6.8	7.1		
NCREIF-ODCE			0.5	13.1	22.1	12.4	10.2	10.9	22.2	1.2	5.3	8.3	7.6		
NCREIF Property Index			0.6	9.4	16.1	9.9	8.6	9.5	17.7	1.6	6.4	6.7	7.0		
Total Core RE	183,116,752	1.8	-10.2	-27.4	-15.2	0.6	5.0	7.6	48.3	-4.6	28.2	-5.0	7.8		
Adelante	80,998,301	0.8	-9.8	-28.6	-16.6	0.1	4.7	7.4	48.3	-4.6	28.2	-5.0	7.8	9.3	Sep-01
Wilshire REIT			-10.2	-29.7	-17.6	-2.2	2.9	6.1	46.2	-7.9	25.8	-4.8	4.2	8.7	Sep-01
Invesco US Fundamental Beta	102,118,451	1.0	-10.5	--	--	--	--	--	--	--	--	--	--	-18.5	Mar-22
Wilshire REIT			-10.2	--	--	--	--	--	--	--	--	--	--	-21.8	Mar-22
Total Private Real Estate	608,496,061	6.1	-0.5	5.4	10.3	4.9	6.2	9.5	15.3	-6.1	6.2	8.8	11.4		
Private Equity	1,375,634,408	13.9	-1.7	1.9	9.4	22.2	17.4	15.0	60.4	8.7	8.4	12.1	11.9		
Risk Parity	314,818,547	3.2	-8.5	-24.0	-21.8	-2.3	--	--	9.7	10.0	--	--	--		
60% MSCI ACWI Net/40% Bloomberg Global Aggregate			-6.8	-23.3	-20.4	0.1	--	--	8.8	14.0	--	--	--		
AQR Global Risk Premium-EL	161,441,691	1.6	-6.4	-18.4	-15.8	-0.2	--	--	10.7	6.2	--	--	--	3.5	Jan-19
HFR Risk Parity Vol 10 Index			-4.6	-19.3	-17.1	-2.9	--	--	6.8	3.6	--	--	--	1.5	Jan-19
PanAgora Risk Parity Multi Asset	153,376,856	1.5	-10.8	-28.9	-27.0	-4.2	--	--	8.7	14.0	--	--	--	0.0	Feb-19
HFR Risk Parity Vol 10 Index			-4.6	-19.3	-17.1	-2.9	--	--	6.8	3.6	--	--	--	-0.1	Feb-19

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

Total Fund

Performance Summary (Gross of Fees)

Period Ending: September 30, 2022

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
Diversifying	782,939,407	7.9	-0.7	-4.0	-4.2	-0.9	0.4	0.5	2.0	-1.3	7.1	-2.0	2.8		
Custom Diversifying Benchmark			-2.5	-7.3	-6.8	-0.3	1.3	2.1	1.6	4.7	6.1	1.4	4.7		
Diversifying Fixed Income	219,989,996	2.2	-4.9	-14.1	-14.2	-4.5	-1.5	0.4	-0.7	1.6	8.6	-1.7	2.8		
Bloomberg US Aggregate TR			-4.8	-14.6	-14.6	-3.3	-0.3	0.9	-1.5	7.5	8.7	0.0	3.5		
eV US Core Fixed Inc Gross Rank			90	35	38	99	99	99	30	99	80	99	96		
AFL-CIO	219,904,488	2.2	-4.9	-14.1	-14.2	-3.2	-0.1	1.1	-0.7	6.6	8.2	0.6	3.6	5.3	Jun-91
Bloomberg US Aggregate TR			-4.8	-14.6	-14.6	-3.3	-0.3	0.9	-1.5	7.5	8.7	0.0	3.5	4.9	Jun-91
eV US Core Fixed Inc Gross Rank			91	36	40	93	91	85	30	95	88	16	76		
Diversifying Multi-Asset	562,949,411	5.7	1.0	0.5	-0.2	--	--	--	2.8	--	--	--	--		
Custom Diversifying Multi-Asset Benchmark			-1.4	-5.1	-4.4	--	--	--	4.1	--	--	--	--		
Acadian Multi-Asset Absolute Return Fund	263,416,872	2.7	3.1	3.5	2.4	--	--	--	1.7	--	--	--	--	3.2	Aug-20
FTSE 3-Month T-bill +5%			1.7	4.4	5.7	--	--	--	5.0	--	--	--	--	5.3	Aug-20
Sit LLCAR	299,532,539	3.0	-0.7	-2.0	-2.3	--	--	--	--	--	--	--	--	1.6	Apr-21
Bloomberg US Aggregate Index + 100 bps			-4.5	-14.0	-13.7	--	--	--	--	--	--	--	--	-7.9	Apr-21
Liquidity	1,653,756,303	16.7	-1.4	-4.5	-4.9	-0.3	1.0	--	-0.2	3.5	4.9	1.8	1.5		
Bloomberg US Govt/Credit 1-3 Yr. TR			-1.5	-4.5	-5.1	-0.4	0.7	--	-0.5	3.3	4.0	1.6	0.8		
eV US Short Duration Fixed Inc Gross Rank			65	49	49	62	50	--	40	77	34	24	50		
DFA Short Credit	369,862,227	3.7	-1.4	-6.8	-7.4	-1.3	0.3	--	-0.4	2.9	5.2	1.2	1.9	0.6	Nov-16
ICE BofA 1-5 Yrs US Corp & Govt TR			-2.2	-6.7	-7.3	-0.9	0.6	--	-0.9	4.6	5.1	1.4	1.3	0.8	Nov-16
eV US Short Duration Fixed Inc Gross Rank			64	94	94	99	99	--	64	90	21	93	26	96	Nov-16
Insight Short Duration	607,485,194	6.1	-0.7	-2.2	-2.5	0.6	1.5	--	0.1	3.2	4.7	1.7	1.5	1.5	Nov-16
Bloomberg US Govt/Credit 1-3 Yr. TR			-1.5	-4.5	-5.1	-0.4	0.7	--	-0.5	3.3	4.0	1.6	0.8	0.8	Nov-16
eV US Short Duration Fixed Inc Gross Rank			13	3	4	8	11	--	25	86	45	38	50	17	Nov-16
Sit Short Duration	676,408,882	6.8	-2.1	-5.7	-6.2	-0.6	1.1	--	-0.3	4.6	4.9	2.5	1.3	1.2	Nov-16
Bloomberg US Govt 1-3 Yr TR			-1.5	-4.5	-5.1	-0.5	0.5	--	-0.6	3.1	3.6	1.6	0.4	0.6	Nov-16
eV US Short Duration Fixed Inc Gross Rank			93	75	75	80	41	--	55	26	35	1	68	50	Nov-16
Total Cash	122,390,525	1.2	0.6	1.0	1.0	1.1	1.6	1.6	0.4	1.3	3.3	1.7	0.9		
91 Day T-Bills			0.5	0.6	0.6	0.5	1.1	0.6	0.0	0.5	2.1	1.9	0.9		
Cash	121,862,679	1.2	0.6	0.9	0.9	1.1	1.6	1.6	0.4	1.3	3.4	1.7	0.9		
Northern Trust Transition	527,846	0.0	-6.3	2,568.6	2,552.1	274.5	--	--	-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. \$85,508.16 in residual value is reflected in the Diversifying Fixed Income composite.

Total Fund Performance Summary (Net of Fees)

Period Ending: September 30, 2022

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
Total Fund	9,930,591,728	100.0	-3.6	-14.1	-11.5	3.6	4.2	6.5	13.9	9.2	14.6	-2.7	13.9		
Policy Index			-3.7	-12.3	-8.5	5.3	5.6	7.4	15.3	10.8	14.6	-0.9	13.7		
Policy Index (Adjusted)			-3.7	-12.3	-8.5	4.6	4.9	6.9	15.3	8.5	14.1	-1.5	13.5		
Total Fund ex Overlay & Cash	9,731,731,134	98.0	-3.4	-13.5	-10.8	4.0	4.5	6.7	14.3	9.4	14.3	-2.4	13.8		
Policy Index			-3.7	-12.3	-8.5	5.3	5.6	7.4	15.3	10.8	14.6	-0.9	13.7		
Policy Index (Adjusted)			-3.7	-12.3	-8.5	4.6	4.9	6.9	15.3	8.5	14.1	-1.5	13.5		
Growth	7,295,035,424	73.5	-4.3	-16.0	-12.5	5.8	5.9	7.9	19.2	12.0	18.3	-3.9	18.7		
Custom Growth Benchmark			-4.3	-14.9	-10.0	7.7	7.6	8.8	21.6	13.8	19.3	-2.1	19.3		
Total Domestic Equity	1,519,053,111	15.3	-4.0	-25.3	-20.6	5.4	6.2	10.3	20.3	21.8	26.1	-7.6	23.5		
Russell 3000			-4.5	-24.6	-17.6	7.7	8.6	11.4	25.7	20.9	31.0	-5.2	21.1		
BlackRock Russell 1000 Index	812,251,018	8.2	-4.6	-24.6	-17.2	7.9	9.0	--	26.5	20.9	31.4	-4.8	--	9.5	Apr-17
Russell 1000			-4.6	-24.6	-17.2	7.9	9.0	--	26.5	21.0	31.4	-4.8	--	9.6	Apr-17
Boston Partners	354,136,574	3.6	-4.9	-14.8	-6.8	7.3	6.7	10.2	31.0	2.6	23.8	-8.9	19.7	9.9	Jun-95
Russell 1000 Value			-5.6	-17.8	-11.4	4.4	5.3	9.2	25.2	2.8	26.5	-8.3	13.7	8.7	Jun-95
Emerald Advisers	183,462,408	1.8	-0.1	-28.8	-28.6	4.6	5.1	10.5	4.9	38.2	29.4	-10.7	28.0	11.2	Apr-03
Russell 2000 Growth			0.2	-29.3	-29.3	2.9	3.6	8.8	2.8	34.6	28.5	-9.3	22.2	9.7	Apr-03
Ceredex	169,124,837	1.7	-2.9	-20.1	-14.4	2.1	2.9	8.0	27.7	1.7	17.7	-11.8	10.7	8.3	Nov-11
Russell 2000 Value			-4.6	-21.1	-17.7	4.7	2.9	7.9	28.3	4.6	22.4	-12.9	7.8	8.7	Nov-11
Total International Equity	1,335,091,570	13.4	-9.4	-27.8	-27.5	-0.2	0.0	3.8	7.8	15.2	23.2	-14.7	25.0		
MSCI ACWI ex USA Gross			-9.8	-26.2	-24.8	-1.1	-0.3	3.5	8.3	11.1	22.1	-13.8	27.8		
MSCI EAFE Gross			-9.3	-26.8	-24.7	-1.4	-0.4	4.2	11.8	8.3	22.7	-13.4	25.6		
International Equity	741,739,630	7.5	-9.1	-28.2	-26.9	0.4	1.0	4.5	8.6	18.5	26.5	-13.9	24.8		
MSCI ACWI ex USA Gross			-9.8	-26.2	-24.8	-1.1	-0.3	3.5	8.3	11.1	22.1	-13.8	27.8		
Pyrford	378,667,612	3.8	-10.6	-19.5	-17.7	-0.9	0.3	--	7.1	4.2	21.6	-10.5	19.3	1.4	May-14
MSCI ACWI ex USA Value			-10.4	-21.0	-20.0	-2.1	-2.1	--	10.5	-0.8	15.7	-14.0	22.7	-0.5	May-14
William Blair	363,072,018	3.7	-7.4	-35.7	-34.9	1.4	1.4	5.1	10.1	32.8	31.5	-17.1	30.4	4.6	Oct-10
MSCI ACWI ex USA Growth			-9.4	-31.8	-30.2	-1.4	0.2	4.0	5.1	22.2	27.3	-14.4	32.0	3.3	Oct-10
Emerging Markets Equity	593,351,940	6.0	-9.9	-27.4	-28.4	-1.1	-1.4	--	7.0	10.7	18.7	-15.7	--		
MSCI Emerging Markets			-11.6	-27.2	-28.1	-2.1	-1.8	--	-2.5	18.3	18.4	-14.6	--		
PIMCO RAE Emerging Markets	303,223,241	3.1	-6.4	-21.7	-21.4	0.9	-0.3	--	16.5	1.6	14.0	-12.6	--	1.3	Feb-17
MSCI Emerging Markets Value NR			-11.0	-23.3	-23.6	-2.6	-2.1	--	4.0	5.5	12.0	-10.7	--	-0.1	Feb-17
TT Emerging Markets	290,128,699	2.9	-13.3	-32.4	-34.5	-3.0	-2.3	--	-0.9	20.0	24.0	-18.9	--	-1.9	Jul-17
MSCI Emerging Markets			-11.6	-27.2	-28.1	-2.1	-1.8	--	-2.5	18.3	18.4	-14.6	--	-1.4	Jul-17

Individual closed end funds are not shown in performance summary table. Jackson Square has a residual market value of \$78,274.15.

Total Fund
Performance Summary (Net of Fees)

Period Ending: September 30, 2022

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
Total Global Equity	876,267,631	8.8	-5.8	-26.2	-23.1	3.6	4.8	7.9	13.2	24.4	27.9	-8.5	22.8		
<i>MSCI ACWI</i>			-6.8	-25.6	-20.7	3.7	4.4	7.3	18.5	16.3	26.6	-9.4	24.0		
Artisan Partners	440,119,455	4.4	-3.7	-33.8	-30.7	5.2	6.6	9.9	14.1	40.6	36.0	-8.6	31.9	9.9	Oct-12
<i>MSCI ACWI Growth NR USD</i>			-5.9	-32.2	-27.5	5.4	6.6	8.9	17.1	33.6	32.7	-8.1	30.0	8.9	Oct-12
First Eagle	436,037,610	4.4	-7.6	-17.0	-13.9	1.6	2.7	5.6	12.1	7.7	20.1	-8.3	14.3	5.8	Jan-11
<i>MSCI ACWI Value NR USD</i>			-7.7	-19.1	-14.0	1.3	1.7	5.4	19.6	-0.3	20.6	-10.8	18.3	4.9	Jan-11
Private Credit	948,812,692	9.6	1.4	8.7	11.6	8.1	8.2	9.7	10.0	4.0	7.7	8.3	10.4		
Total High Yield	133,744,651	1.3	-1.0	-14.9	-14.2	-1.4	0.7	3.1	4.9	4.7	14.7	-3.6	6.1		
<i>ICE BofAML High Yield Master II</i>			-0.7	-14.6	-14.1	-0.7	1.4	3.9	5.4	6.2	14.4	-2.3	7.5		
Allianz Global Investors	133,744,651	1.3	-1.0	-14.9	-14.2	-1.4	0.7	3.1	4.9	4.7	14.7	-3.6	6.1	5.5	Apr-00
<i>ICE BofAML High Yield Master II</i>			-0.7	-14.6	-14.1	-0.7	1.4	3.9	5.4	6.2	14.4	-2.3	7.5	6.1	Apr-00
Total Real Estate	791,612,813	8.0	-3.1	-3.2	2.9	3.0	5.2	8.2	19.2	-6.0	8.1	7.4	11.0		
<i>Real Estate Benchmark</i>			-2.3	-2.4	4.6	5.9	6.5	8.1	19.3	0.6	7.5	6.8	7.1		
<i>NCREIF-ODCE</i>			0.5	13.1	22.1	12.4	10.2	10.9	22.2	1.2	5.3	8.3	7.6		
<i>NCREIF Property Index</i>			0.6	9.4	16.1	9.9	8.6	9.5	17.7	1.6	6.4	6.7	7.0		
Total Core RE	183,116,752	1.8	-10.3	-27.7	-15.6	0.1	4.5	7.0	47.5	-5.2	27.5	-5.5	7.2		
Adelante	80,998,301	0.8	-10.0	-28.9	-17.1	-0.5	4.1	6.9	47.5	-5.2	27.5	-5.5	7.2	8.8	Sep-01
<i>Wilshire REIT</i>			-10.2	-29.7	-17.6	-2.2	2.9	6.1	46.2	-7.9	25.8	-4.8	4.2	8.7	Sep-01
Invesco US Fundamental Beta	102,118,451	1.0	-10.5	--	--	--	--	--	--	--	--	--	--	-18.5	Mar-22
<i>Wilshire REIT</i>			-10.2	--	--	--	--	--	--	--	--	--	--	-21.8	Mar-22
Total Private Real Estate	608,496,061	6.1	-0.5	5.4	10.3	4.9	6.2	9.0	15.3	-6.1	6.2	8.8	11.4		
Private Equity	1,375,634,408	13.9	-1.7	1.9	9.4	22.2	17.4	14.3	60.4	8.7	8.4	12.1	11.9		
Risk Parity	314,818,547	3.2	-8.6	-24.2	-22.1	-2.6	--	--	9.3	9.6	--	--	--		
<i>60% MSCI ACWI Net/40% Bloomberg Global Aggregate</i>			-6.8	-23.3	-20.4	0.1	--	--	8.8	14.0	--	--	--		
AQR Global Risk Premium-EL	161,441,691	1.6	-6.5	-18.6	-16.1	-0.6	--	--	10.3	5.8	--	--	--	3.1	Jan-19
<i>HFR Risk Parity Vol 10 Index</i>			-4.6	-19.3	-17.1	-2.9	--	--	6.8	3.6	--	--	--	1.5	Jan-19
PanAgora Risk Parity Multi Asset	153,376,856	1.5	-10.9	-29.0	-27.2	-4.5	--	--	8.3	13.6	--	--	--	-0.3	Feb-19
<i>HFR Risk Parity Vol 10 Index</i>			-4.6	-19.3	-17.1	-2.9	--	--	6.8	3.6	--	--	--	-0.1	Feb-19

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

Total Fund
Performance Summary (Net of Fees)

Period Ending: September 30, 2022

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
Diversifying	782,939,407	7.9	-0.8	-4.2	-4.5	-1.3	0.0	0.1	1.7	-1.7	6.8	-2.3	2.6		
<i>Custom Diversifying Benchmark</i>			-2.5	-7.3	-6.8	-0.3	1.3	2.1	1.6	4.7	6.1	1.4	4.7		
Diversifying Fixed Income	219,989,996	2.2	-5.0	-14.3	-14.5	-4.8	-1.8	0.0	-1.0	1.2	8.3	-2.0	2.6		
<i>Bloomberg US Aggregate TR</i>			-4.8	-14.6	-14.6	-3.3	-0.3	0.9	-1.5	7.5	8.7	0.0	3.5		
AFL-CIO	219,904,488	2.2	-5.0	-14.3	-14.5	-3.6	-0.5	0.7	-1.0	6.2	7.8	0.2	3.2	4.9	Jun-91
<i>Bloomberg US Aggregate TR</i>			-4.8	-14.6	-14.6	-3.3	-0.3	0.9	-1.5	7.5	8.7	0.0	3.5	4.9	Jun-91
Diversifying Multi-Asset	562,949,411	5.7	0.9	0.2	-0.6	--	--	--	2.4	--	--	--	--		
<i>Custom Diversifying Multi-Asset Benchmark</i>			-1.4	-5.1	-4.4	--	--	--	4.1	--	--	--	--		
Acadian Multi-Asset Absolute Return Fund	263,416,872	2.7	3.0	3.2	1.9	--	--	--	1.1	--	--	--	--	2.7	Aug-20
<i>FTSE 3-Month T-bill +5%</i>			1.7	4.4	5.7	--	--	--	5.0	--	--	--	--	5.3	Aug-20
Sit LLCAR	299,532,539	3.0	-0.8	-2.3	-2.6	--	--	--	--	--	--	--	--	1.3	Apr-21
<i>Bloomberg US Aggregate Index + 100 bps</i>			-4.5	-14.0	-13.7	--	--	--	--	--	--	--	--	-7.9	Apr-21
Liquidity	1,653,756,303	16.7	-1.5	-4.6	-5.0	-0.4	0.9	--	-0.3	3.4	4.8	1.7	1.4		
<i>Bloomberg US Govt/Credit 1-3 Yr. TR</i>			-1.5	-4.5	-5.1	-0.4	0.7	--	-0.5	3.3	4.0	1.6	0.8		
DFA Short Credit	369,862,227	3.7	-1.4	-6.9	-7.5	-1.4	0.2	--	-0.5	2.8	5.2	1.1	1.8	0.5	Nov-16
<i>ICE BofA 1-5 Yrs US Corp & Govt TR</i>			-2.2	-6.7	-7.3	-0.9	0.6	--	-0.9	4.6	5.1	1.4	1.3	0.8	Nov-16
Insight Short Duration	607,485,194	6.1	-0.7	-2.2	-2.5	0.5	1.4	--	0.0	3.1	4.6	1.7	1.5	1.5	Nov-16
<i>Bloomberg US Govt/Credit 1-3 Yr. TR</i>			-1.5	-4.5	-5.1	-0.4	0.7	--	-0.5	3.3	4.0	1.6	0.8	0.8	Nov-16
Sit Short Duration	676,408,882	6.8	-2.1	-5.8	-6.3	-0.7	0.9	--	-0.5	4.4	4.7	2.3	1.1	1.0	Nov-16
<i>Bloomberg US Govt 1-3 Yr TR</i>			-1.5	-4.5	-5.1	-0.5	0.5	--	-0.6	3.1	3.6	1.6	0.4	0.6	Nov-16
Total Cash	122,390,525	1.2	0.6	1.0	1.0	1.1	1.6	1.6	0.4	1.3	3.3	1.7	0.9		
<i>91 Day T-Bills</i>			0.5	0.6	0.6	0.5	1.1	0.6	0.0	0.5	2.1	1.9	0.9		
Cash	121,862,679	1.2	0.6	0.9	0.9	1.1	1.6	1.6	0.4	1.3	3.4	1.7	0.9		
Northern Trust Transition	527,846	0.0	-6.3	2,568.6	2,552.1	274.5	--	--	-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. \$85,508.16 in residual value is reflected in the Diversifying Fixed Income composite.

Total Fund
Closed End Funds - Investment Summary

Period Ending: September 30, 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	\$144,267,177	\$210,000,000	0%	\$194,765,257	\$719,993	\$5,940,298	\$260,521,284	\$15,234,743	1.34	2.08	6/30/2022
1/15/2009	Adams Street Partners II	\$3,921,820	\$30,000,000	0%	\$28,365,000	\$0	\$0	\$45,123,354	\$1,635,000	1.59	1.73	6/30/2022
9/21/2012	Adams Street Partners - Fund 5	\$11,756,602	\$40,000,000	0%	\$30,845,875	\$0	\$968,904	\$30,186,904	\$9,154,125	0.98	1.36	6/30/2022
1/18/1996	Adams Street Partners - BPF	\$585,836	\$59,565,614	0%	\$57,517,409	\$0	\$0	\$103,810,247	\$2,048,205	1.80	1.82	6/30/2022
3/31/2016	Adams Street Venture Innovation	\$188,271,396	\$75,000,000	0%	\$66,037,500	\$0	\$0	\$30,786,690	\$8,962,500	0.47	3.32	6/30/2022
5/18/2018	AE Industrial Partners Fund II, LP	\$43,562,185	\$35,000,000	8%	\$32,397,781	\$2,882,204	\$4,905,380	\$9,140,470	\$11,133,248	0.28	1.63	6/30/2022
11/27/2013	Aether Real Assets III	\$19,262,376	\$25,000,000	0%	\$25,682,216	\$77,700	\$397,165	\$5,676,604	\$1,547,643	0.22	0.97	6/30/2022
11/30/2013	Aether Real Assets III Surplus	\$43,637,579	\$50,000,000	0%	\$52,244,418	\$0	\$0	\$11,898,455	\$1,370,047	0.23	1.06	6/30/2022
1/30/2016	Aether Real Assets IV	\$64,730,867	\$50,000,000	2%	\$49,755,339	\$1,024,870	\$389,377	\$4,063,925	\$3,468,001	0.08	1.38	6/30/2022
4/30/2004	Bay Area Equity Fund I ⁴	1,236,397	10,000,000	0%	10,000,000	0	0	37,018,019	0	3.70	3.83	6/30/2022
6/29/2009	Bay Area Equity Fund II ⁴	20,000,401	10,000,000	0%	10,000,000	0	0	3,684,910	0	0.37	2.37	6/30/2022
6/30/2013	Commonfund	\$42,181,754	\$50,000,000	0%	\$47,274,993	\$0	\$2,293,633	\$23,518,018	\$2,725,007	0.50	1.39	6/30/2022
7/15/2005	EIF US Power Fund II ⁴	\$33,193	\$50,000,000	0%	\$65,029,556	\$0	\$0	\$76,092,655	\$0	1.17	1.17	6/30/2022
5/31/2007	EIF US Power Fund III ⁴	3,251,582	65,000,000	0%	\$71,409,097	\$0	\$100,844	\$92,796,621	\$0	1.30	1.35	9/30/2022
11/28/2011	EIF US Power Fund IV	25,586,668	50,000,000	0%	\$64,917,547	\$0	\$730,567	\$45,438,768	\$4	0.70	1.09	6/30/2022
11/28/2016	EIF US Power Fund V	\$35,189,570	\$50,000,000	0%	\$69,328,438	\$0	\$3,746,890	\$57,353,150	\$6,194,129	0.83	1.33	9/30/2022
2/21/2019	Genstar Capital Partners IX, L.P.	\$64,299,336	\$50,000,000	1%	\$47,030,308	\$353,690	\$14,624,494	\$20,919,831	\$8,076,005	0.44	1.81	9/30/2022
4/1/2021	Genstar Capital Partners X, L.P.	\$18,695,835	\$42,500,000	22%	\$18,030,448	\$9,307,138	\$0	\$0	\$24,469,552	0.00	1.04	9/30/2022
10/27/2020	GTCR Fund XIII, L.P.	\$21,718,122	\$50,000,000	12%	\$18,325,000	\$5,895,000	\$0	\$1,809,154	\$31,675,000	0.10	1.28	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	\$435,558	\$40,000,000	0%	\$34,812,560	\$0	\$0	\$47,032,470	\$6,308,961	1.35	1.36	9/30/2022
5/2/2013	Ocean Avenue Fund II	\$29,593,786	\$30,000,000	0%	\$27,000,000	\$0	\$1,803,750	\$43,184,220	\$3,000,000	1.60	2.70	9/30/2022
4/15/2016	Ocean Avenue Fund III	\$52,508,432	\$50,000,000	1%	\$46,500,000	\$500,000	\$4,520,124	\$52,520,124	\$3,500,000	1.13	2.26	9/30/2022
11/30/2007	Paladin III	\$9,648,960	\$25,000,000	0%	\$34,836,639	\$0	\$0	\$71,182,958	\$387,482	2.04	2.32	6/30/2022
8/22/2011	Pathway 6	\$33,944,702	\$40,000,000	0%	\$39,347,701	\$54,000	\$1,531,097	\$48,824,177	\$3,717,642	1.24	2.10	6/30/2022
7/10/2013	Pathway 7	\$72,666,026	\$70,000,000	0%	\$69,151,586	\$126,000	\$3,908,694	\$78,497,906	\$5,297,850	1.14	2.19	6/30/2022
11/23/2015	Pathway 8	\$73,936,259	\$50,000,000	0%	\$47,613,640	\$204,860	\$1,735,905	\$30,969,195	\$4,328,106	0.65	2.20	6/30/2022
1/19/1999	Pathway	\$4,090,368	\$125,000,000	0%	\$126,047,272	\$70,258	\$0	\$188,083,589	\$10,550,380	1.49	1.52	6/30/2022
7/31/2009	Pathway 2008	\$15,603,424	\$30,000,000	0%	\$30,075,421	\$85,530	\$740,307	\$49,848,386	\$2,728,009	1.66	2.18	6/30/2022
6/3/2014	Siguler Guff CCCERA Opportunities	147,902,119	200,000,000	0.0%	174,083,208	0	5,891,183	198,750,989	29,597,500	1.14	1.99	6/30/2022
5/18/2018	Siris Partners IV, L.P.	\$39,414,011	\$35,000,000	0%	\$28,676,885	\$0	\$0	\$4,130,142	\$8,845,760	0.14	1.52	6/30/2022
5/27/2021	TA XIV-A, L.P.	\$17,630,820	\$50,000,000	11%	\$19,000,000	\$5,500,000	\$0	\$0	\$31,000,000	0.00	0.93	6/30/2022
6/28/2019	TPG Healthcare Partners, L.P.	\$17,954,900	\$24,000,000	17%	\$18,148,159	\$4,105,272	\$0	\$6,221,617	\$8,603,578	0.34	1.33	9/30/2022
9/17/2021	Trident IX, L.P.	\$4,456,786	\$50,000,000	1%	\$5,230,925	\$550,055	\$0	\$0	\$44,769,075	-	-	6/30/2022
5/24/2019	Trident VIII, L.P.	\$47,126,170	\$40,000,000	0%	\$36,885,981	\$0	\$0	\$2,608,184	\$5,426,540	0.07	1.35	6/30/2022
12/8/2015	Wastewater Opportunity Fund	\$19,739,255	\$25,000,000	1%	\$29,410,476	\$167,891	\$0	\$12,893,182	\$1,036,884	0.44	1.11	6/30/2022
Total Private Equity and Venture Capital		\$1,375,634,408	\$1,961,065,614	90%	\$1,766,658,816	\$31,624,461	\$54,228,612	\$1,694,586,200	\$330,908,795	0.96	1.74	

% of Portfolio (Market Value) 13.9%

* 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: September 30, 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%	14.3%	-	12.3%	6/30/2022
Adams Street Partners II	12/31/2008	16.5%	16.5%	-	14.0%	6/30/2022
Adams Street Partners - Fund 5	12/31/2008	9.4%	9.3%	-	6.8%	6/30/2022
Adams Street Partners Venture	1/18/1996	49.9%	49.8%	-	47.3%	6/30/2022
Adams Street Partners - BPF	3/31/2016	14.2%	14.2%	-	11.6%	6/30/2022
AE Industrial Partners Fund II, LP	5/18/2018	39.4%	-	38.6%	-	6/30/2022
Aether Real Assets III	11/27/2013	1.1%	-	-0.6%	-	6/30/2022
Aether Real Assets III Surplus	11/30/2013	2.3%	-	1.2%	-	6/30/2022
Aether Real Assets IV	1/30/2016	12.0%	-	9.8%	-	6/30/2022
Bay Area Equity Fund I ⁹	11/26/2003	31.3%	31.3%	23.0%	23.0%	6/30/2022
Bay Area Equity Fund II ⁹	11/26/2003	14.7%	14.7%	10.0%	10.0%	6/30/2022
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%	-	9/30/2022
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	17.5%	17.5%	15.4%	15.4%	6/30/2022
Benchmark ⁴		13.0%	-	-	-	6/30/2022
Pathway 7	7/10/2013	20.0%	20.0%	18.0%	18.0%	6/30/2022
Benchmark ⁵		12.7%	-	-	-	6/30/2022
Pathway 8	11/23/2015	24.1%	24.9%	22.7%	22.9%	6/30/2022
Benchmark ⁶		16.8%	-	-	-	6/30/2022
Pathway Private Equity Fund	1/19/1999	10.2%	10.2%	8.4%	8.4%	6/30/2022
Benchmark ⁷		-0.5%	-	-	-	6/30/2022
Pathway Private Equity Fund 2008	7/31/2009	17.1%	17.1%	14.9%	14.9%	6/30/2022
Benchmark ⁸		8.7%	-	-	-	6/30/2022
Siguler Guff CCCERA Opportunities	6/3/2014	20.3%	21.0%	19.8%	18.4%	6/30/2022
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	27.5%	27.5%	23.1%	23.1%	6/30/2022
TPG Healthcare Partners, L.P.	6/28/2019	34.0%	-	-	28.0%	6/30/2022
Trident VIII, L.P. ¹	5/24/2019	32.3%	-	26.7%	-	6/30/2022
Wastewater Opportunity Fund	12/8/2015	7.4%	-	4.2%	-	6/30/2022

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 June 30, 2022.

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

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

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

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

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

Total Fund
Closed End Funds - Investment Summary

Period Ending: September 30, 2022

StepStone Group Analysis (*)												
Closing Date	Manager Name/Fund Name	Estimated Market Value as of 9/30/2022 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	\$1,648,343	\$16,500,000		\$18,750,000	\$0	\$1,580,466	\$20,410,032	\$2,319,783	1.09	1.18	6/30/2022
12/18/2017	Stepstone CC Opportunities Fund	\$931,151,565	\$1,170,000,000	5%	\$889,100,220	\$53,591,541	\$17,870,539	\$165,082,795	\$373,259,480	0.19	1.23	6/30/2022
8/1/2012	Torchlight IV	\$7,718,786	\$60,000,000		\$84,866,971	\$0	\$0	\$106,146,627	\$0		1.34	9/30/2022
3/12/2015	Torchlight V	\$8,293,998	\$75,000,000		\$60,000,000	\$0	\$0	\$70,797,953	\$15,000,000		1.32	9/30/2022
Total Private Credit		\$948,812,692										
% of Portfolio (Market Value)		9.6%										

*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: September 30, 2022

Verus Internal Analysis												
Inception Date	Manager Name/Fund Name	Estimated Market Value as of 9/30/2022 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	\$13,102,108	\$80,000,000	94%	\$75,401,855	\$0	\$0	\$101,711,550	\$12,334,302	1.35	1.52	6/30/2022
12/8/2014	Angelo Gordon Realty Fund IX	\$32,821,946	\$65,000,000	93%	\$60,125,000	\$0	\$6,500,000	\$53,950,001	\$7,572,500	0.90	1.44	6/30/2022
6/23/2005	DLJ RECP III	\$15,768,258	\$75,000,000	134%	\$100,709,313 ⁴	\$85,454	\$0	\$69,364,915	\$4,031,338	0.69	0.85	6/30/2022
2/11/2008	DLJ RECP IV	\$56,213,427	\$100,000,000	130%	\$130,117,329 ⁵	\$224,724	\$0	\$99,841,735	\$1,876,084	0.77	1.20	6/30/2022
7/1/2014	DLJ RECP V	\$31,636,442	\$75,000,000	132%	\$98,684,517 ⁶	\$0	\$0	\$97,880,214	\$15,567,682	0.99	1.31	6/30/2022
3/19/2019	DLJ RECP VI	\$20,586,054	\$50,000,000	60%	\$30,103,770	\$0	\$1,686,242	\$13,276,083	\$21,267,080	0.44	1.12	6/30/2022
6/30/2014	Invesco Real Estate IV ⁴	\$1,861,617	\$35,000,000	87%	\$30,546,401	\$0	\$0	\$38,913,181	\$4,453,599	1.27	1.33	6/30/2022
2/20/2019	Invesco Real Estate V	\$75,431,606	\$75,000,000	79%	\$58,980,934	\$0	\$2,101,540	\$9,319,462	\$16,019,066	0.16	1.44	6/30/2022
9/27/2022	Invesco Real Estate VI	\$33,126,592	\$100,000,000	33%	\$33,126,592	\$33,126,592	\$0	\$0	\$66,873,408	0.00	1.00	N/A
7/16/2013	LaSalle Income & Growth VI ⁴	\$18,764,926	\$75,000,000	95%	\$71,428,571	\$0	\$0	\$84,535,301	\$3,571,429	1.18	1.45	6/30/2022
2/28/2017	LaSalle Income & Growth VII	\$51,372,039	\$75,000,000	107%	\$79,936,634	\$0	\$8,643,628	\$61,623,058	\$5,859,353	0.77	1.41	6/30/2022
7/3/2013	Long Wharf Fund IV ⁴	\$1,361,121	\$25,000,000	100%	\$25,000,000	\$0	\$73,979	\$34,898,768	\$0	1.40	1.45	9/30/2022
9/30/2016	Long Wharf Fund V ⁴	\$30,948,992	\$50,000,000	100%	\$50,000,000	\$0	\$1,142,465	\$37,244,373	\$0	0.74	1.36	9/30/2022
6/27/2019	Long Wharf Fund VI	\$33,209,484	\$50,000,000	83%	\$41,704,657	\$8,632,309	\$5,054,509	\$18,830,524	\$8,295,343	0.45	1.25	9/30/2022
12/31/2011	Oaktree REOF V ⁴	\$1,247,195	\$50,000,000	101%	\$50,315,673	\$0	\$0	\$78,780,733	\$5,000,000 ⁹	1.57	1.59	9/30/2022
9/30/2013	Oaktree REOF VI ⁴	\$25,514,799	\$80,000,000	100%	\$80,000,000	\$0	\$0	\$84,010,175	\$18,400,000 ⁹	1.05	1.37	9/30/2022
4/1/2015	Oaktree REOF VII	\$49,209,862	\$65,000,000	100%	\$65,000,000	\$0	\$0	\$42,829,688	\$18,915,000 ⁹	0.66	1.42	9/30/2022
11/10/2013	Paulson Real Estate Fund II ⁴	\$15,346,147	\$20,000,000	97%	\$19,345,623	\$0	\$1,345,664	\$24,069,538	\$654,377	1.24	2.04	6/30/2022
4/28/2022	PCCP IX	\$33,631,049	\$75,000,000	44%	\$32,801,564	\$9,000,000	\$0	\$0	\$42,198,436	0.00	1.03	9/30/2022
1/25/2012	Siguler Guff DREOF	\$20,397,978	\$75,000,000	93%	\$69,375,000	\$0	\$614,990	\$104,386,101	\$5,625,000	1.50	1.80	6/30/2022
8/31/2013	Siguler Guff DREOF II	\$34,173,607	\$70,000,000	89%	\$61,985,000	\$0	\$2,621,193	\$58,312,979	\$8,015,000	0.94	1.49	6/30/2022
1/27/2016	Siguler Guff DREOF II Co-Inv	\$12,770,812	\$25,000,000	82%	\$20,537,862	\$0	\$287,091	\$13,871,261	\$4,462,138	0.68	1.30	6/30/2022
Total Closed End Real Estate		\$608,496,061	\$1,450,000,000	92%	\$1,337,551,182	\$51,069,079	\$30,071,302	\$1,202,703,748	\$273,604,711	0.90	1.35	
% of Portfolio (Market Value)		6.1%										

¹Latest valuation + capital calls - distributions

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

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

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

⁵Total distributions may include recallable distributions

⁶Remianing commitment includes recallable distributions

Total Fund
Closed End Funds - IRR Summary

Period Ending: September 30, 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	-	-	-	6.7%	6/30/2022
Stepstone CC Opportunities Fund	2/2/2018	-	-	-	13.9%	3/31/2022
Torchlight IV	8/1/2012	11.5%	12.0%	9.3%	10.0%	9/30/2022
Torchlight V	3/12/2015	15.1%	15.1%	10.6%	10.6%	6/30/2022

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	-	-	-	12.8%	6/30/2022
Angelo Gordon IX	12/8/2014	-	-	-	9.0%	6/30/2022
DLJ RECP III	6/23/2005	-1.0%	-1.0%	-3.0%	-3.0%	6/30/2022
DLJ RECP IV	2/11/2008	5.0%	5.0%	2.0%	3.0%	6/30/2022
DLJ RECP V	7/1/2014	17.0%	17.0%	10.0%	10.0%	6/30/2022
DLJ RECP VI ¹	3/19/2019	10.0%	10.0%	4.0%	4.0%	6/30/2022
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	11.3%	11.3%	9.3%	9.3%	9/30/2022
LaSalle Income & Growth VII	2/28/2017	12.9%	13.0%	10.8%	10.9%	9/30/2022
Long Wharf IV ⁴	7/3/2013	16.2%	15.6%	11.7%	11.7%	9/30/2022
Long Wharf V ⁴	9/30/2016	11.7%	12.2%	9.1%	9.4%	9/30/2022
Long Wharf VI	6/27/2019	44.8%	51.0%	28.2%	31.3%	9/30/2022
Oaktree REOF V ⁴	12/31/2011	16.7%	-	12.3%	-	9/30/2022
Oaktree REOF VI ⁴	9/30/2013	11.3%	-	7.6%	-	9/30/2022
Oaktree REOF VII	4/1/2015	23.4%	-	15.6%	-	9/30/2022
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	1.9%	15.6%	11.4%	12.9%	9/30/2022
Siguler Guff II	8/31/2013	10.8%	10.9%	9.6%	8.7%	9/30/2022
Siguler Guff DREOF II Co-Inv	1/27/2016	7.2%	7.5%	6.3%	6.0%	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: September 30, 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	7.93%	-0.01%	20.80%	-0.01%	1.00	0.01%	1.00	0.36	-0.90	99.94%	100.00%	
Boston Partners	7.34%	2.98%	21.38%	2.83%	1.03	3.12%	0.98	0.32	0.96	108.76%	96.90%	
Emerald Advisers	4.60%	1.67%	24.92%	1.86%	0.94	5.78%	0.95	0.16	0.29	101.14%	97.45%	
Ceredex	2.05%	-2.67%	23.88%	-2.07%	0.87	7.01%	0.93	0.07	-0.38	71.69%	91.34%	
Pyrford	-0.90%	1.25%	15.64%	0.65%	0.72	7.67%	0.89	-0.09	0.16	75.25%	84.33%	
William Blair	1.35%	2.73%	21.08%	2.92%	1.14	5.30%	0.95	0.04	0.52	132.69%	106.17%	
PIMCO RAE Emerging Markets	0.93%	3.50%	23.08%	3.86%	1.14	6.50%	0.93	0.02	0.54	131.72%	103.44%	
TT Emerging Markets	-2.96%	-0.89%	23.42%	-0.50%	1.19	6.53%	0.95	-0.15	-0.14	131.77%	113.82%	
Artisan Partners	5.18%	-0.17%	20.94%	0.05%	0.96	5.12%	0.94	0.22	-0.03	89.85%	95.07%	
First Eagle	1.62%	0.35%	15.01%	0.67%	0.75	6.11%	0.94	0.07	0.06	74.71%	84.64%	
Allianz Global Investors	-1.37%	-0.70%	10.18%	-0.76%	0.90	1.91%	0.98	-0.18	-0.37	86.36%	95.40%	
Adelante	-0.47%	1.70%	21.79%	1.61%	0.96	1.56%	1.00	-0.04	1.09	100.86%	96.97%	
AQR Global Risk Premium-EL	-0.60%	2.27%	10.71%	2.16%	0.96	2.34%	0.95	-0.10	0.97	105.69%	91.61%	
PanAgora Risk Parity Multi Asset	-4.50%	-1.63%	14.57%	-0.83%	1.28	5.18%	0.92	-0.34	-0.31	128.71%	121.08%	
AFL-CIO	-3.58%	-0.33%	4.87%	-0.69%	0.89	1.17%	0.96	-0.84	-0.28	75.71%	91.04%	
DFA Short Credit	-1.39%	-0.49%	2.73%	-0.49%	1.01	1.31%	0.77	-0.69	-0.38	81.81%	101.74%	
Insight Short Duration	0.53%	0.94%	2.13%	0.81%	0.67	1.88%	0.28	0.01	0.50	91.05%	51.36%	
Sit Short Duration	-0.71%	-0.18%	2.51%	-0.02%	1.30	1.22%	0.81	-0.48	-0.14	146.43%	140.02%	

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: September 30, 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	8.98%	-0.02%	18.45%	-0.02%	1.00	0.02%	1.00	0.43	-1.45	99.88%	100.00%	
Boston Partners	6.69%	1.41%	18.95%	1.22%	1.03	3.01%	0.98	0.30	0.47	107.88%	99.47%	
Emerald Advisers	5.13%	1.54%	23.12%	1.69%	0.96	5.53%	0.94	0.18	0.28	104.25%	98.70%	
Ceredex	2.90%	0.03%	21.79%	0.32%	0.90	6.27%	0.93	0.08	0.00	82.02%	94.84%	
Pyrford	0.27%	2.39%	13.71%	1.80%	0.72	6.73%	0.89	-0.06	0.35	70.25%	82.80%	
William Blair	1.40%	1.23%	18.40%	1.21%	1.11	4.44%	0.95	0.02	0.28	122.59%	103.88%	
PIMCO RAE Emerging Markets	-0.30%	1.83%	20.44%	2.07%	1.11	5.31%	0.94	-0.07	0.34	124.42%	102.42%	
TT Emerging Markets	-2.33%	-0.53%	20.85%	-0.27%	1.14	5.70%	0.94	-0.16	-0.09	133.20%	108.62%	
Artisan Partners	6.65%	0.01%	18.55%	0.23%	0.97	4.34%	0.95	0.30	0.00	91.67%	96.68%	
First Eagle	2.74%	1.03%	13.16%	1.47%	0.74	5.45%	0.94	0.13	0.19	68.84%	82.82%	
Allianz Global Investors	0.71%	-0.70%	8.50%	-0.59%	0.92	1.55%	0.97	-0.04	-0.45	89.19%	98.13%	
Adelante	4.13%	1.25%	18.89%	1.37%	0.96	1.62%	0.99	0.16	0.77	97.95%	96.71%	
AFL-CIO	-0.53%	-0.26%	4.41%	-0.28%	0.91	0.99%	0.96	-0.36	-0.26	81.78%	90.19%	
DFA Short Credit	0.20%	-0.37%	2.35%	-0.36%	0.97	1.07%	0.79	-0.37	-0.35	85.45%	98.77%	
Insight Short Duration	1.42%	0.72%	1.75%	0.94%	0.69	1.48%	0.35	0.20	0.49	92.34%	42.96%	
Sit Short Duration	0.92%	0.38%	2.42%	0.15%	1.41	1.17%	0.84	-0.07	0.32	164.11%	152.28%	

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

Total Fund Investment Fund Fee Analysis

Period Ending: September 30, 2022

Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
BlackRock Russell 1000 Index	Growth	0.03% of Assets	\$812,251,018	\$243,675	0.03%
Boston Partners	Growth	0.50% of First 25.0 Mil, 0.30% Thereafter	\$354,136,574	\$1,112,410	0.31%
Emerald Advisers	Growth	0.75% of First 10.0 Mil, 0.60% Thereafter	\$183,462,408	\$1,115,774	0.61%
Ceredex	Growth	0.85% of First 10.0 Mil, 0.68% of Next 40.0 Mil, 0.51% Thereafter	\$169,124,837	\$964,537	0.57%
Pyrford	Growth	0.70% of First 50.0 Mil, 0.50% of Next 50.0 Mil, 0.35% Thereafter	\$378,667,612	\$1,575,337	0.42%
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	\$363,072,018	\$1,504,216	0.41%
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	\$303,223,241	\$1,677,005	0.55%
TT Emerging Markets	Growth	0.70% of First 100.0 Mil, 0.65% of Next 100.0 Mil, 0.60% Thereafter	\$290,128,699	\$1,890,772	0.65%
Artisan Partners	Growth	0.75% of Assets	\$440,119,455	\$3,300,896	0.75%
First Eagle	Growth	0.75% of Assets	\$436,037,610	\$3,270,282	0.75%
Allianz Global Investors	Growth	0.50% of First 50.0 Mil, 0.40% of Next 50.0 Mil, 0.35% Thereafter	\$133,744,651	\$568,106	0.42%
Invesco US Fundamental Beta	Growth	0.15% of Assets	\$102,118,451	\$153,178	0.15%
AQR Global Risk Premium-EL	Growth	0.38% of Assets	\$161,441,691	\$613,478	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: September 30, 2022

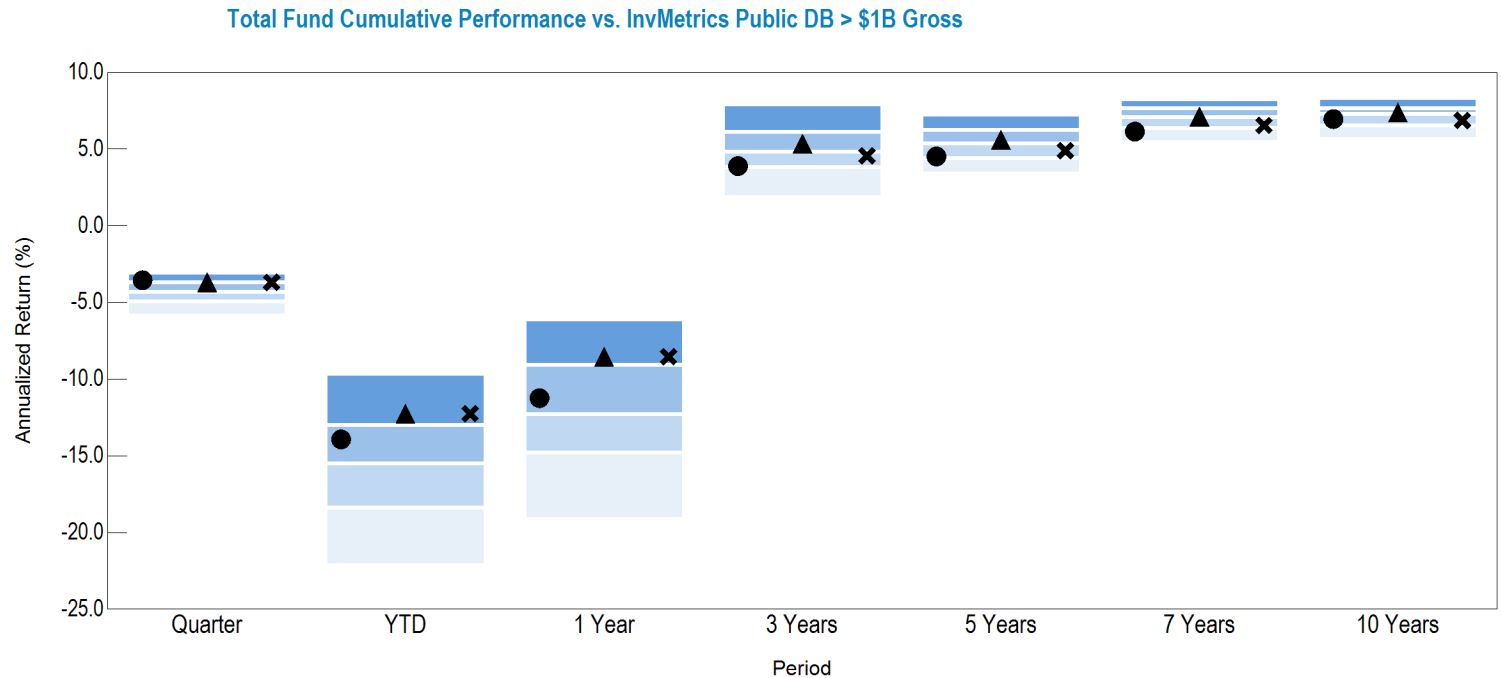
Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
PanAgora Risk Parity Multi Asset	Growth	0.35% of Assets	\$153,376,856	\$536,819	0.35%
AFL-CIO	Diversifying	0.32% of Assets	\$219,904,488	\$703,694	0.32%
Acadian Multi-Asset Absolute Return Fund	Diversifying	0.50% of Assets	\$263,416,872	\$1,317,084	0.50%
Sit LLCAR	Diversifying	0.39% of First 200.0 Mil, 0.35% Thereafter	\$299,532,539	\$1,128,364	0.38%
DFA Short Credit	Liquidity	0.20% of First 25.0 Mil, 0.10% Thereafter	\$369,862,227	\$394,862	0.11%
Insight Short Duration	Liquidity	0.06% of First 500.0 Mil, 0.05% of Next 500.0 Mil, 0.04% Thereafter	\$607,485,194	\$353,743	0.06%
Sit Short Duration	Liquidity	0.15% of Assets	\$676,408,882	\$1,014,613	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: September 30, 2022



	Return (Rank)													
	Quarter		YTD		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	-3.1	(21)	-9.7	(35)	-6.1	(44)	7.9	(74)	7.2	(72)	8.2	(81)	8.3	(59)
25th Percentile	-3.7	(26)	-13.0	(18)	-9.0	(18)	6.2	(41)	6.3	(41)	7.7	(50)	7.7	(45)
Median	-4.3	(26)	-15.5	(18)	-12.3	(18)	4.9	(57)	5.4	(63)	7.1	(67)	7.3	(64)
75th Percentile	-4.9	(26)	-18.3	(18)	-14.7	(18)	3.8	(57)	4.4	(63)	6.4	(67)	6.6	(64)
95th Percentile	-5.8	(26)	-22.1	(18)	-19.1	(18)	1.9	(57)	3.4	(63)	5.5	(67)	5.7	(64)
# of Portfolios	75		75		75		73		73		72		69	
● Total Fund	-3.5	(21)	-13.9	(35)	-11.2	(44)	3.9	(74)	4.5	(72)	6.1	(81)	7.0	(59)
▲ Policy Index	-3.7	(26)	-12.3	(18)	-8.5	(18)	5.3	(41)	5.6	(41)	7.1	(50)	7.4	(45)
✕ Policy Index (Adjusted)	-3.7	(26)	-12.3	(18)	-8.5	(18)	4.6	(57)	4.9	(63)	6.5	(67)	6.9	(64)

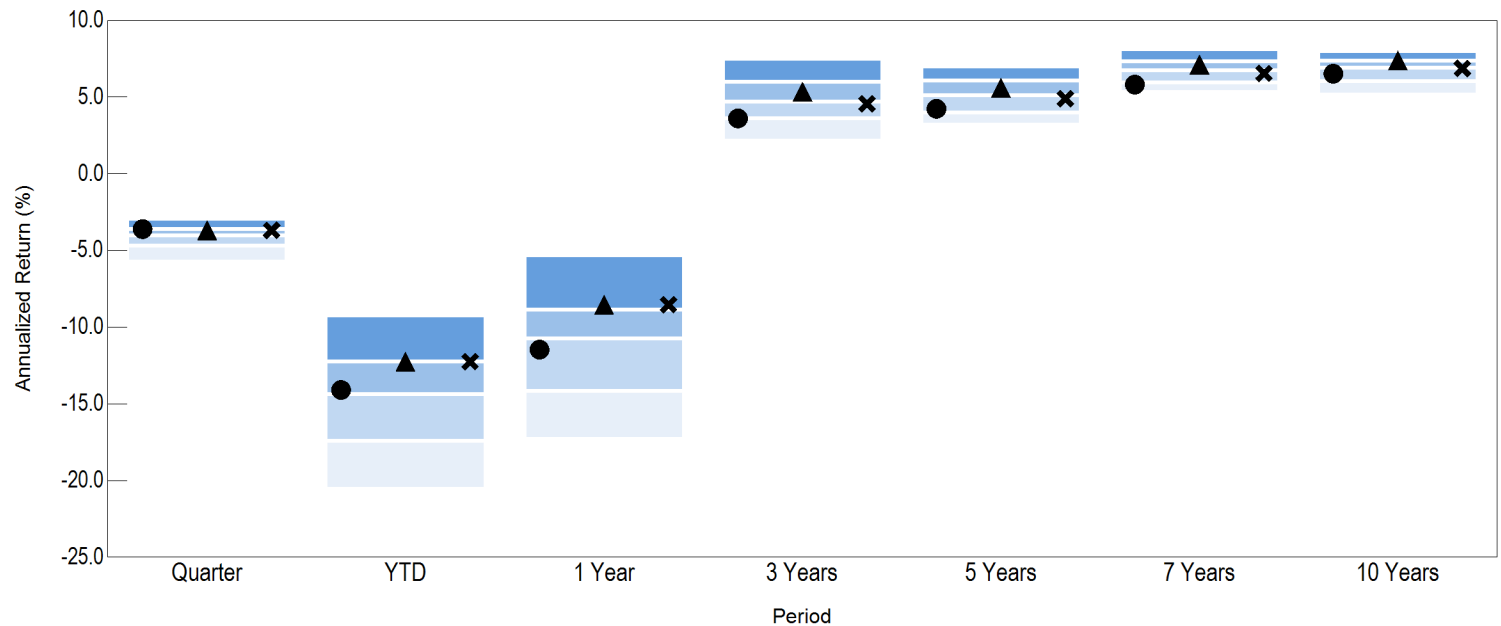
Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

Total Fund

Peer Universe Comparison: Cumulative Performance (Net of Fees)

Period Ending: September 30, 2022

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



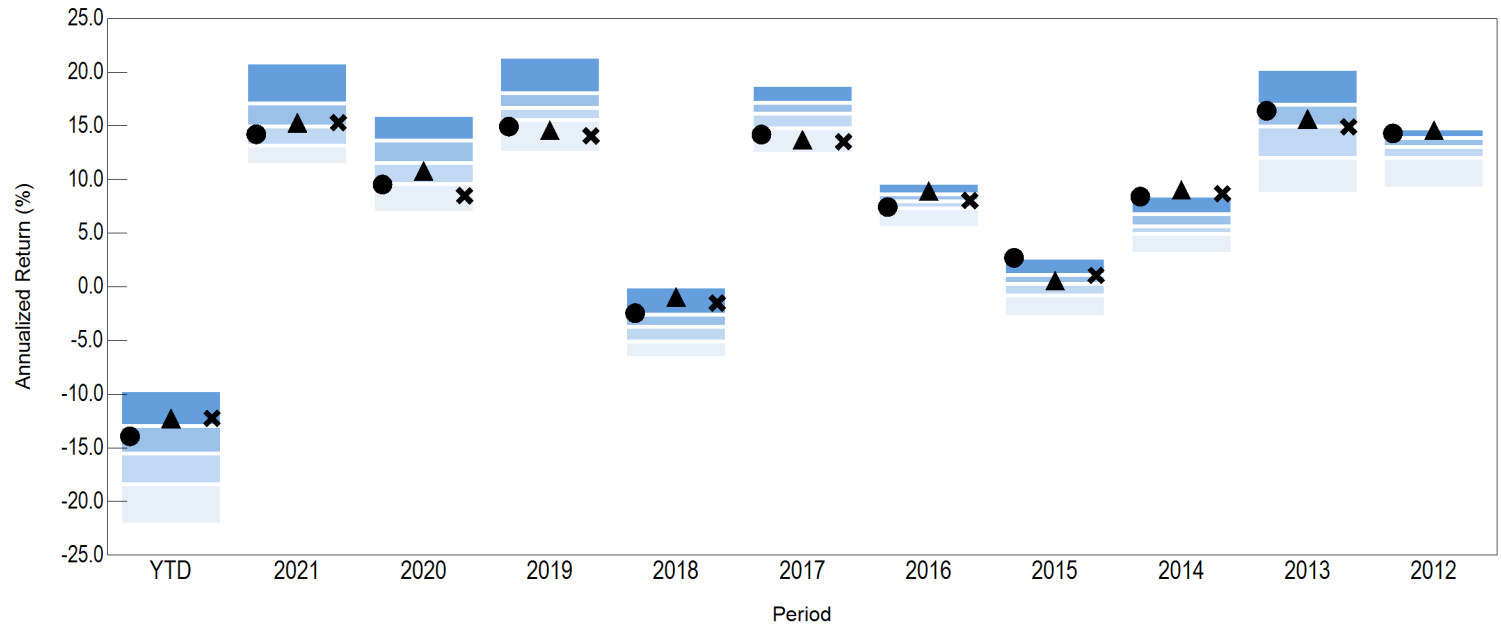
	Return (Rank)													
	Quarter		YTD		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	-2.9	(28)	-9.3	(46)	-5.3	(53)	7.5	(76)	7.0	(73)	8.1	(78)	8.0	(61)
25th Percentile	-3.6	(35)	-12.2	(26)	-8.8	(20)	6.0	(41)	6.1	(32)	7.4	(37)	7.4	(25)
Median	-4.0	(35)	-14.4	(26)	-10.7	(20)	4.7	(53)	5.1	(59)	6.8	(62)	7.0	(53)
75th Percentile	-4.7	(35)	-17.4	(26)	-14.1	(20)	3.6	(53)	4.0	(59)	6.0	(62)	6.1	(53)
95th Percentile	-5.7	(35)	-20.5	(26)	-17.3	(20)	2.2	(53)	3.2	(59)	5.4	(62)	5.2	(53)
# of Portfolios	59		59		59		57		57		57		54	
● Total Fund	-3.6	(28)	-14.1	(46)	-11.5	(53)	3.6	(76)	4.2	(73)	5.8	(78)	6.5	(61)
▲ Policy Index	-3.7	(35)	-12.3	(26)	-8.5	(20)	5.3	(41)	5.6	(32)	7.1	(37)	7.4	(25)
✕ Policy Index (Adjusted)	-3.7	(35)	-12.3	(26)	-8.5	(20)	4.6	(53)	4.9	(59)	6.5	(62)	6.9	(53)

Total Fund

Peer Universe Comparison: Consecutive Periods (Gross of Fees)

Period Ending: September 30, 2022

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



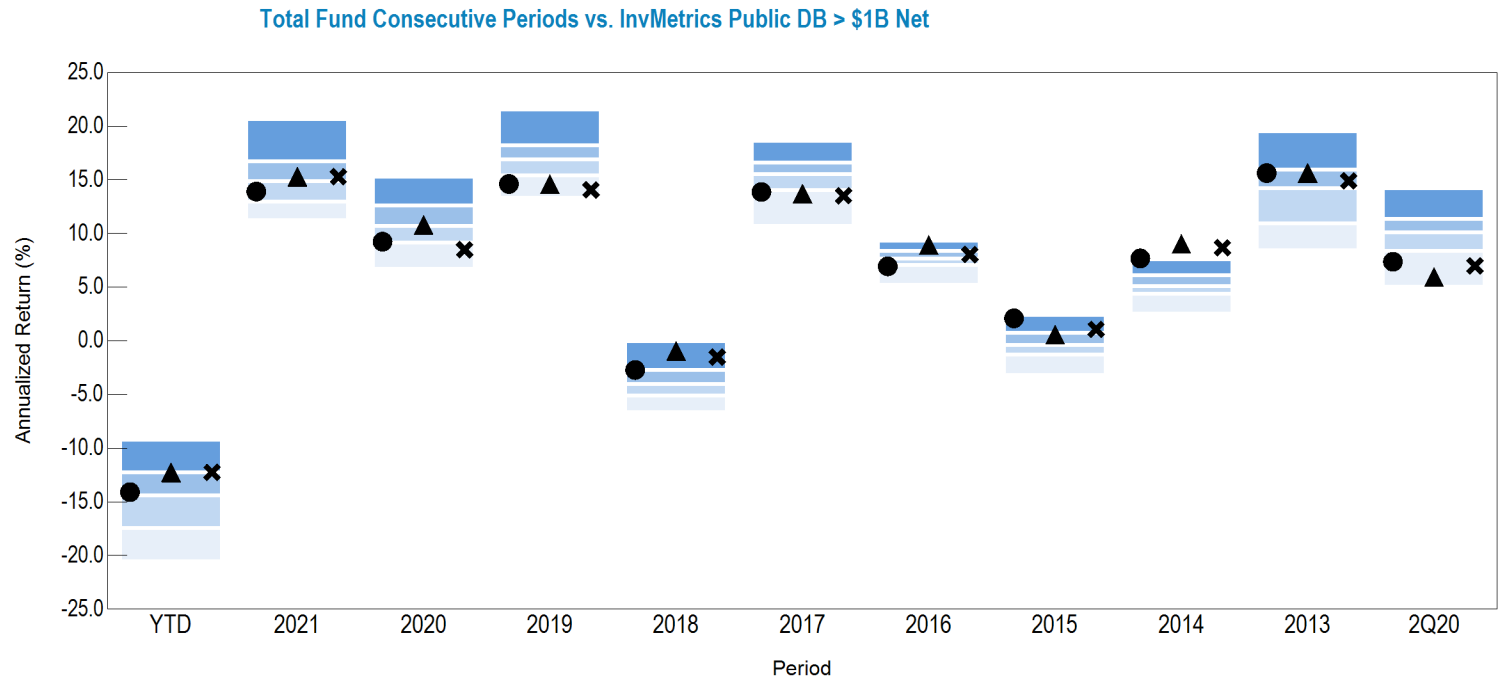
	Return (Rank)											
	YTD	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	
5th Percentile	-9.7	20.9	16.0	21.4	0.0	18.8	9.7	2.7	8.5	20.2	14.7	
25th Percentile	-13.0	17.1	13.6	18.1	-2.6	17.2	8.6	1.1	6.8	17.0	13.9	
Median	-15.5	14.9	11.5	16.7	-3.7	16.2	8.0	0.3	5.7	15.0	13.0	
75th Percentile	-18.3	13.2	9.6	15.6	-5.1	14.8	7.4	-0.7	4.9	12.0	12.1	
95th Percentile	-22.1	11.4	6.9	12.5	-6.6	12.4	5.5	-2.8	3.1	8.7	9.2	
# of Portfolios	75	84	94	81	71	98	92	98	79	67	74	
● Total Fund	-13.9 (35)	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)	14.3 (13)	
▲ Policy Index	-12.3 (18)	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)	14.6 (8)	
✕ Policy Index (Adjusted)	-12.3 (18)	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: September 30, 2022

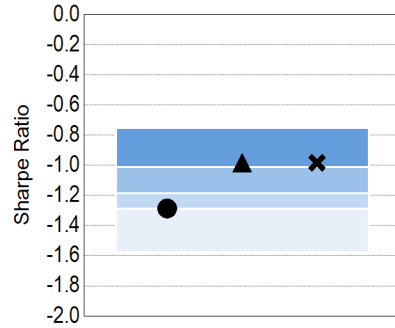


	Return (Rank)										
	YTD	2021	2020	2019	2018	2017	2016	2015	2014	2013	2Q20
5th Percentile	-9.3	20.6	15.2	21.5	-0.1	18.6	9.3	2.4	7.6	19.5	14.2
25th Percentile	-12.2	16.7	12.7	18.2	-2.7	16.6	8.4	0.8	6.1	16.0	11.4
Median	-14.4	14.9	10.8	17.0	-4.0	15.6	7.7	-0.4	5.1	14.3	10.1
75th Percentile	-17.4	13.0	9.2	15.4	-5.1	14.1	7.1	-1.3	4.4	11.0	8.4
95th Percentile	-20.5	11.3	6.8	13.4	-6.6	10.7	5.3	-3.2	2.6	8.5	5.0
# of Portfolios	59	74	80	69	63	61	62	57	55	48	71
● Total Fund	-14.1 (46)	13.9 (62)	9.2 (73)	14.6 (92)	-2.7 (27)	13.9 (81)	6.9 (78)	2.1 (12)	7.7 (5)	15.6 (33)	7.4 (86)
▲ Policy Index	-12.3 (26)	15.3 (45)	10.8 (49)	14.6 (92)	-0.9 (8)	13.7 (85)	8.9 (13)	0.6 (29)	9.0 (2)	15.6 (33)	5.9 (91)
✕ Policy Index (Adjusted)	-12.3 (26)	15.3 (45)	8.5 (86)	14.1 (95)	-1.5 (10)	13.5 (86)	8.0 (37)	1.1 (21)	8.7 (3)	14.9 (39)	7.0 (87)

Total Fund Sharpe Ratio Ranking (Gross of Fees)

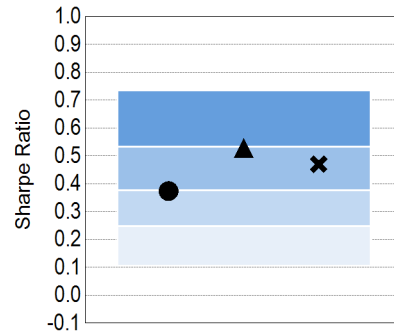
Period Ending: September 30, 2022

Sharpe Ratio
1 Year



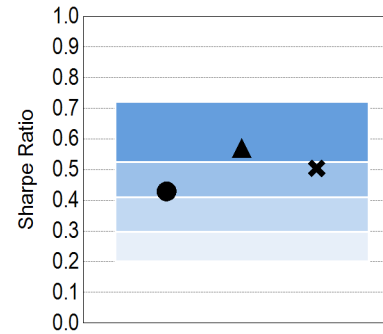
● Total Fund	
Value	-1.3
Rank	77
▲ Policy Index	
Value	-1.0
Rank	21
✕ Policy Index (Adjusted)	
Value	-1.0
Rank	21
Universe	
5th %tile	-0.8
25th %tile	-1.0
Median	-1.2
75th %tile	-1.3
95th %tile	-1.6

Sharpe Ratio
3 Year



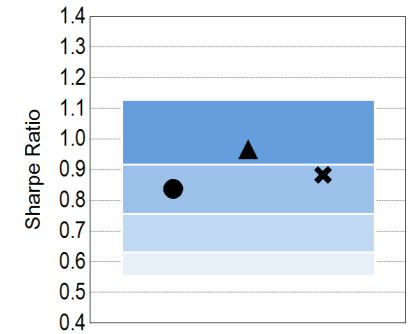
● Total Fund	
Value	0.4
Rank	51
▲ Policy Index	
Value	0.5
Rank	27
✕ Policy Index (Adjusted)	
Value	0.5
Rank	29
Universe	
5th %tile	0.7
25th %tile	0.5
Median	0.4
75th %tile	0.2
95th %tile	0.1

Sharpe Ratio
5 Year



● Total Fund	
Value	0.4
Rank	43
▲ Policy Index	
Value	0.6
Rank	23
✕ Policy Index (Adjusted)	
Value	0.5
Rank	29
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	16
✕ Policy Index (Adjusted)	
Value	0.9
Rank	31
Universe	
5th %tile	1.1
25th %tile	0.9
Median	0.8
75th %tile	0.6
95th %tile	0.6

Domestic Equity Managers

Boston Partners Manager Portfolio Overview

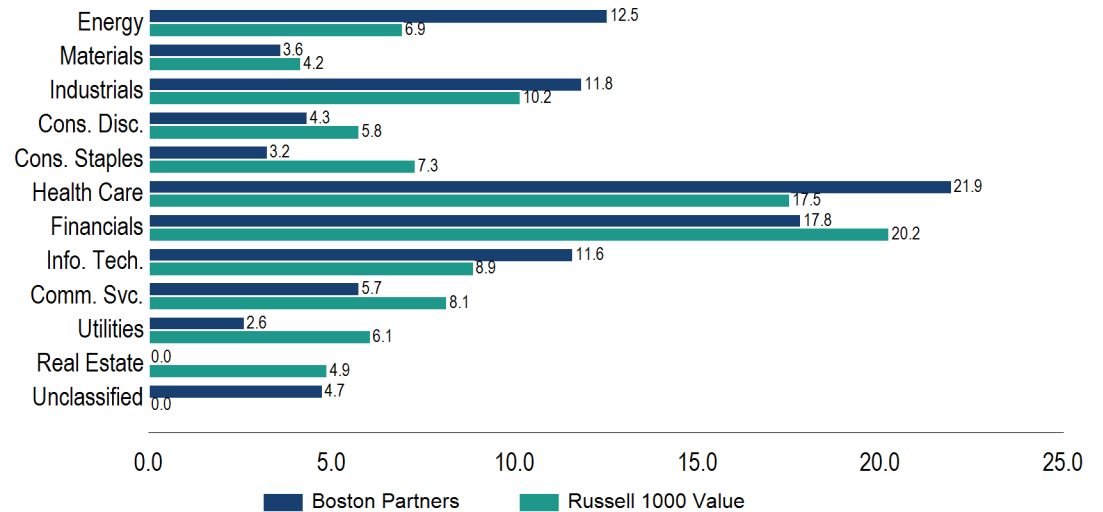
Period Ending: September 30, 2022

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	855
Weighted Avg. Market Cap. (\$B)	154.48	135.38
Median Market Cap. (\$B)	49.53	11.48
Price To Earnings	14.06	14.13
Price To Book	2.30	2.26
Price To Sales	1.23	1.62
Return on Equity (%)	21.36	16.95
Yield (%)	2.19	2.52
Beta	1.09	1.00

Sector Allocation (%) vs Russell 1000 Value



Largest Holdings

	End Weight	Return
JOHNSON & JOHNSON	3.97	-7.35
CONOCOPHILLIPS	3.72	16.03
JPMORGAN CHASE & CO	3.20	-6.38
BERKSHIRE HATHAWAY INC	3.13	-2.20
AUTOZONE INC	2.54	-0.34
ALPHABET INC	2.39	-12.22
SCHWAB (CHARLES) CORP	2.33	14.10
CVS HEALTH CORP	2.30	3.53
CIGNA CORP	2.19	5.71
WELLS FARGO & CO	2.09	3.40

Top Contributors

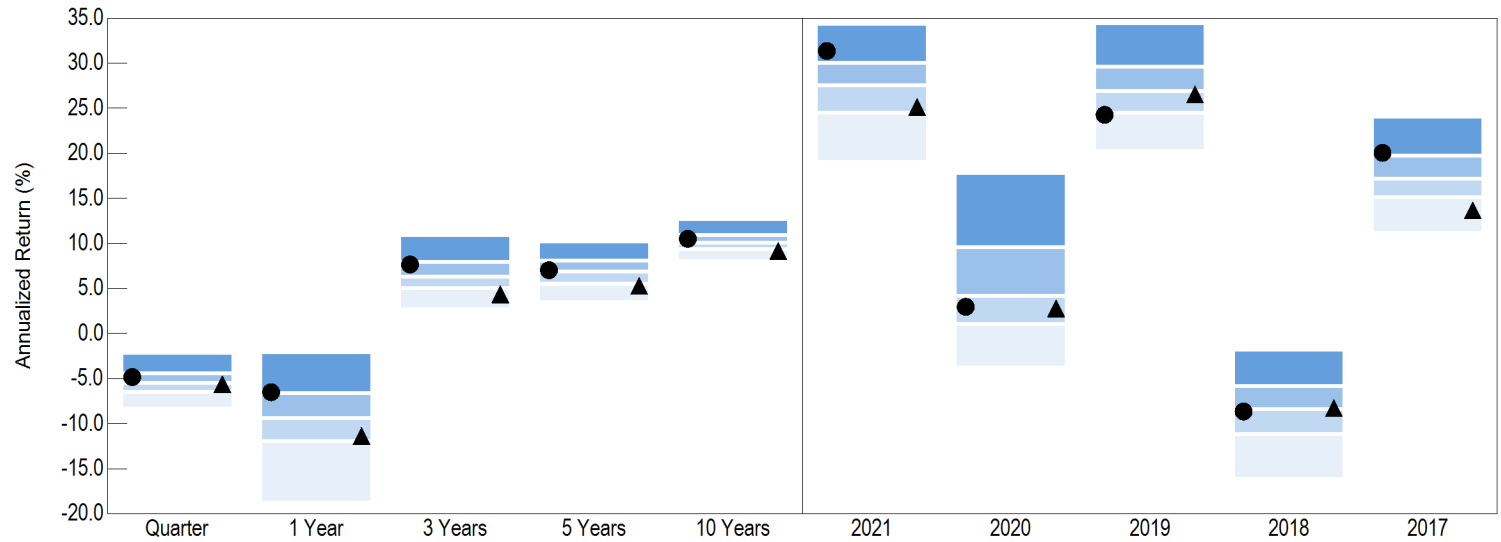
	Avg Wgt	Return	Contribution
CONOCOPHILLIPS	1.02	16.03	0.16
MARATHON PETROLEUM CORP	0.54	21.55	0.12
SCHWAB (CHARLES) CORP	0.43	14.10	0.06
DEERE & COMPANY	0.40	11.86	0.05
CIGNA CORP	0.74	5.71	0.04
DEVON ENERGY CORP	0.31	11.58	0.04
UNITED RENTALS INC.	0.28	11.20	0.03
EATON CORP PLC	0.35	6.42	0.02
WELLS FARGO & CO	0.65	3.40	0.02
TJX COMPANIES INC (THE)	0.18	11.75	0.02

Bottom Contributors

	Avg Wgt	Return	Contribution
SANOFI	0.68	-24.01	-0.16
AVANTOR INC	0.37	-36.98	-0.14
JOHNSON & JOHNSON	1.37	-7.35	-0.10
ALPHABET INC	0.81	-12.22	-0.10
PROCTER & GAMBLE CO (THE)	0.76	-11.63	-0.09
FIDELITY NATIONAL INFORMATION SERVICES INC	0.46	-17.11	-0.08
MOHAWK INDUSTRIES INC.	0.27	-26.51	-0.07
ABBVIE INC	0.60	-11.55	-0.07
META PLATFORMS INC	0.41	-15.86	-0.06
QUALCOMM INC.	0.58	-11.06	-0.06

Unclassified sector allocation includes cash allocations.

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

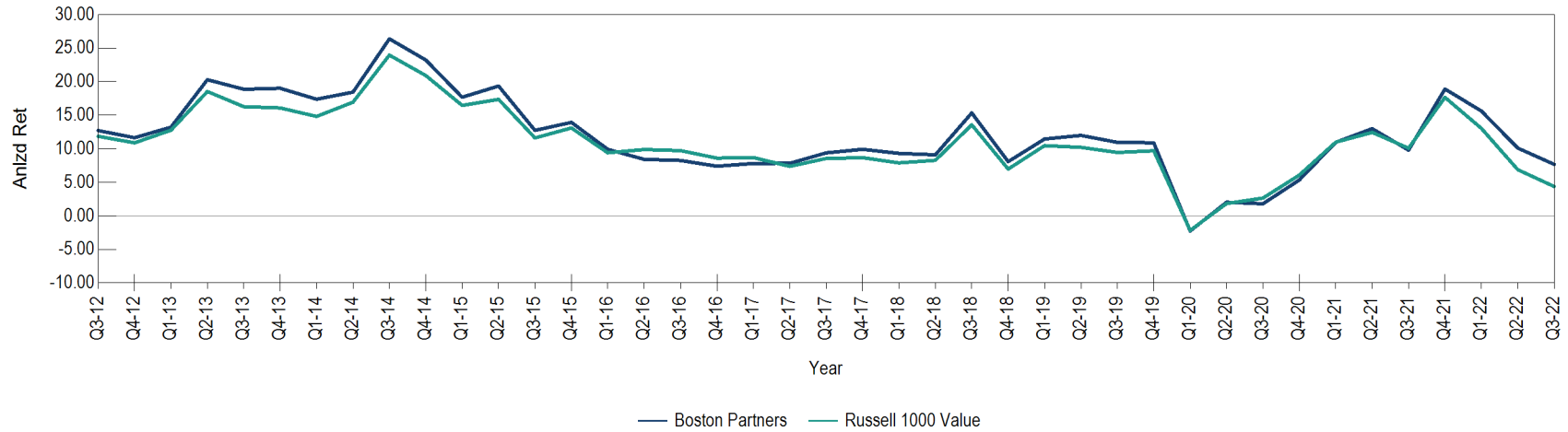


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
5th Percentile	-2.2	-2.1	10.9	10.2	12.6	34.4	17.8	34.4	-1.8	24.0
25th Percentile	-4.4	-6.6	8.0	8.1	11.0	30.0	9.6	29.6	-5.8	19.8
Median	-5.4	-9.3	6.4	6.9	10.1	27.6	4.2	26.9	-8.3	17.2
75th Percentile	-6.4	-11.9	5.1	5.5	9.4	24.5	1.1	24.5	-11.1	15.1
95th Percentile	-8.3	-18.7	2.7	3.5	8.1	19.1	-3.8	20.3	-16.1	11.2
# of Portfolios	340	340	330	319	290	337	326	331	336	342
● Boston Partners	-4.8 (36)	-6.5 (24)	7.7 (28)	7.0 (48)	10.5 (38)	31.3 (17)	3.0 (61)	24.3 (77)	-8.7 (55)	20.1 (23)
▲ Russell 1000 Value	-5.6 (55)	-11.4 (69)	4.4 (84)	5.3 (80)	9.2 (81)	25.2 (72)	2.8 (62)	26.5 (54)	-8.3 (50)	13.7 (87)

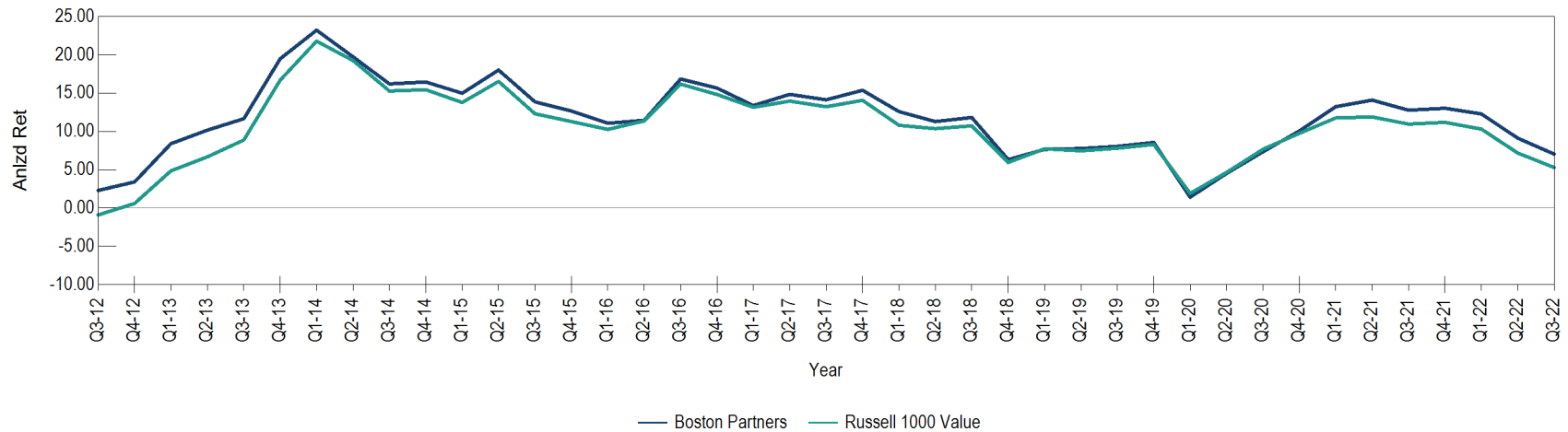
Boston Partners
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2022

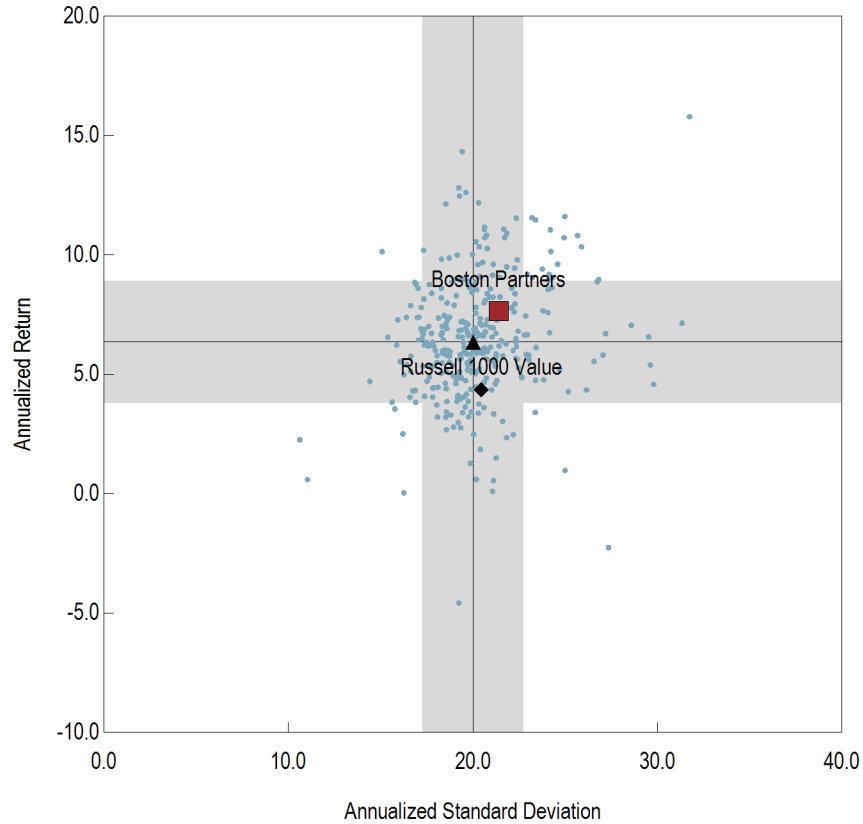
Rolling 3 Year Annualized Return (%)



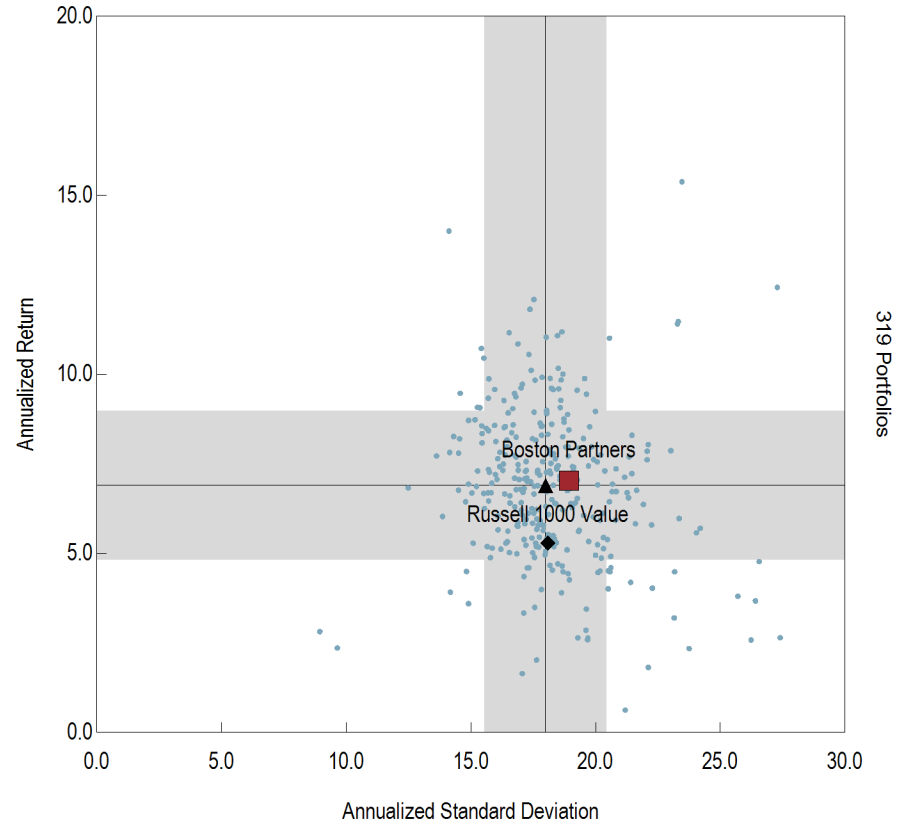
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Boston Partners	7.7%	21.4%	0.3
Russell 1000 Value	4.4%	20.5%	0.2
eV US Large Cap Value Equity Gross Median	6.4%	20.0%	0.3

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Boston Partners	7.0%	18.9%	0.3
Russell 1000 Value	5.3%	18.1%	0.2
eV US Large Cap Value Equity Gross Median	6.9%	18.0%	0.3

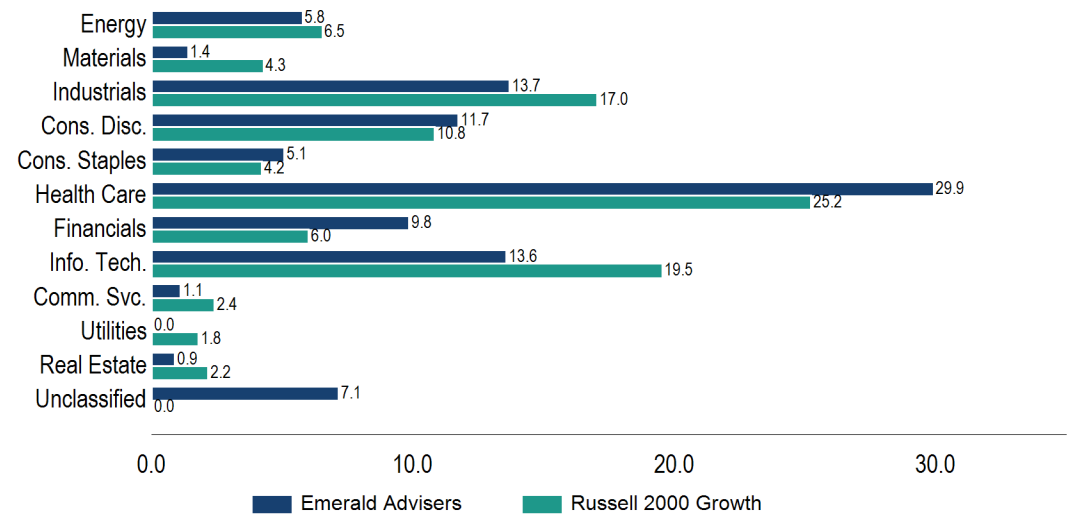
Emerald Advisers Manager Portfolio Overview

Period Ending: September 30, 2022

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

	Portfolio	2000 Growth
Number of Holdings	113	1,121
Weighted Avg. Market Cap. (\$B)	2.94	3.03
Median Market Cap. (\$B)	2.40	1.22
Price To Earnings	20.70	15.39
Price To Book	3.32	3.46
Price To Sales	2.40	1.63
Return on Equity (%)	0.79	2.86
Yield (%)	0.52	0.85
Beta	0.96	1.00

Sector Allocation (%) vs Russell 2000 Growth



Largest Holdings

	End Weight	Return
CHART INDUSTRIES INC	2.43	10.14
PALOMAR HOLDINGS INC	2.20	30.00
SIMPLY GOOD FOODS CO (THE)	1.95	-15.30
MACOM TECHNOLOGY SOLUTIONS HOLDINGS INC	1.91	12.34
SUPER MICRO COMPUTER INC	1.75	36.48
NV5 GLOBAL INC	1.71	6.06
EVERI HOLDINGS INC	1.66	-0.55
CHURCHILL DOWNS INC	1.64	-3.85
PACIFIC PREMIER BANCORP INC	1.63	6.93
BRP GROUP INC	1.58	9.11

Top Contributors

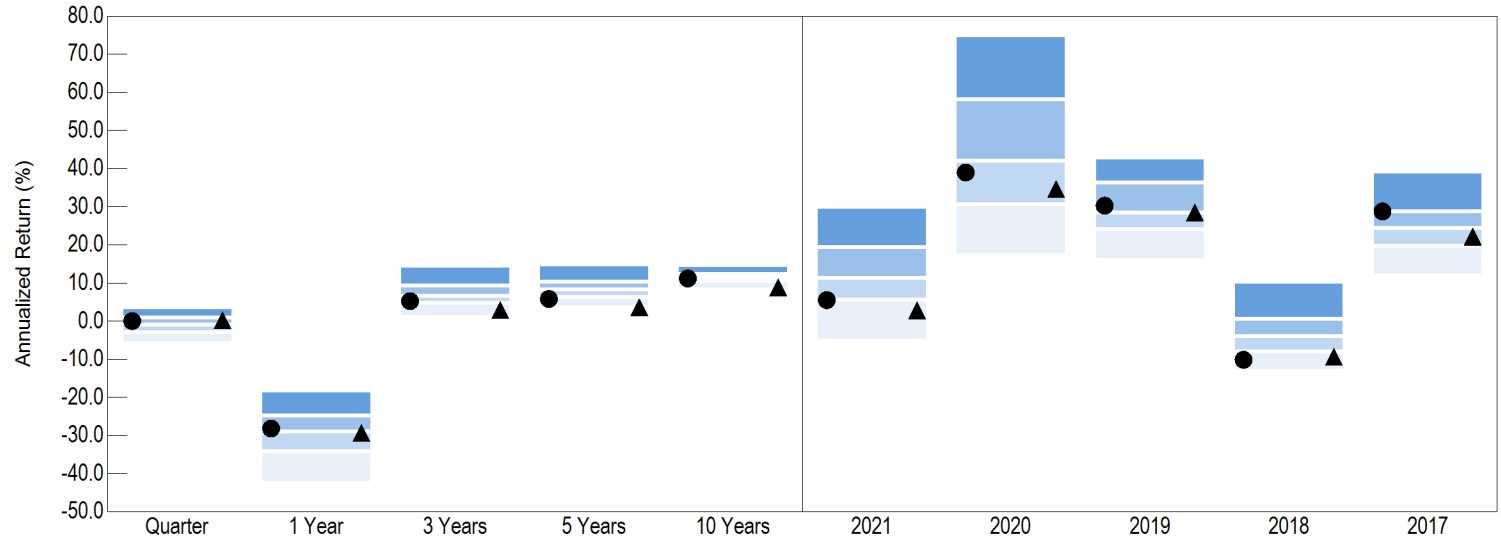
	Avg Wgt	Return	Contribution
KARUNA THERAPEUTICS INC	0.26	77.80	0.20
SUPER MICRO COMPUTER INC	0.50	36.48	0.18
PALOMAR HOLDINGS INC	0.56	30.00	0.17
TREACE MEDICAL CONCEPTS INC	0.27	53.91	0.14
PING IDENTITY HOLDING CORP	0.25	54.74	0.14
GOSSAMER BIO INC	0.27	43.13	0.12
MODEL N INC	0.31	33.82	0.11
CHART INDUSTRIES INC	0.99	10.14	0.10
SHIFT4 PAYMENTS INC	0.27	34.94	0.09
JACK IN THE BOX INC.	0.28	32.79	0.09

Bottom Contributors

	Avg Wgt	Return	Contribution
RAPID7 INC	0.61	-35.78	-0.22
PERFICIENT INC	0.62	-29.09	-0.18
ALKERMES PLC	0.54	-25.04	-0.14
AVIENT CORP	0.54	-23.93	-0.13
SIMPLY GOOD FOODS CO (THE)	0.79	-15.30	-0.12
FORMFACTOR INC	0.34	-35.32	-0.12
KRATOS DEFENSE & SECURITY SOLUTIONS INC	0.40	-26.80	-0.11
SEMTECH CORP	0.22	-46.50	-0.10
YETI HOLDINGS INC	0.27	-34.09	-0.09

Unclassified sector allocation includes cash allocations.

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

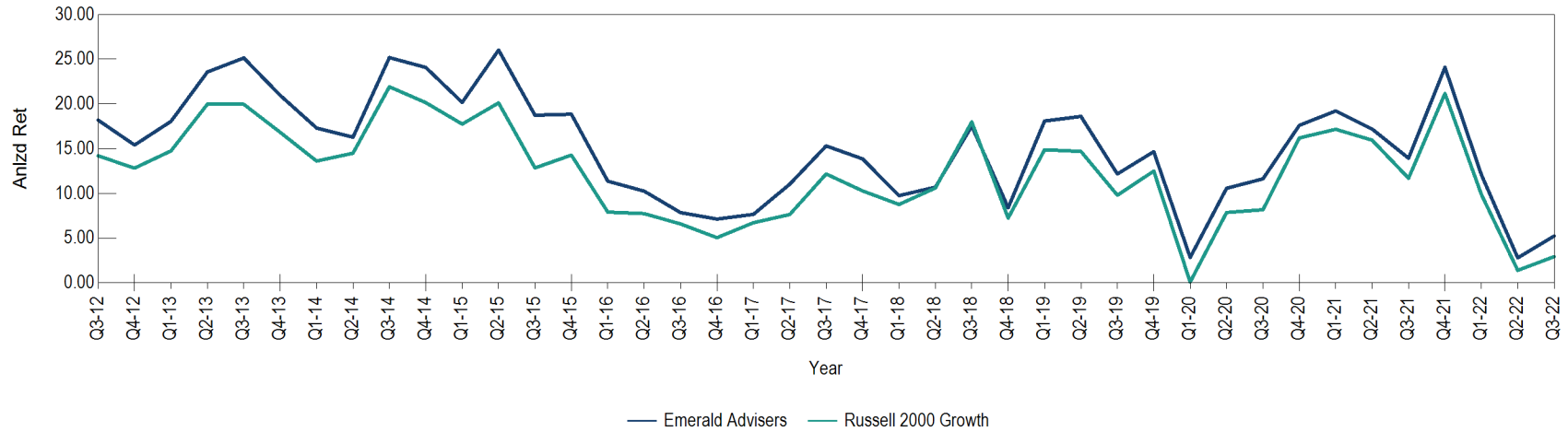


	Quarter		1 Year		3 Years		5 Years		10 Years		2021		2020		2019		2018		2017	
5th Percentile	3.6	-18.2	14.4	14.8	14.6	29.8	75.0	42.8	10.2	39.2										
25th Percentile	1.0	-24.6	9.4	10.5	12.5	19.5	58.3	36.4	0.7	28.9										
Median	-0.8	-28.8	6.7	8.4	11.4	11.5	42.2	28.5	-3.9	24.6										
75th Percentile	-2.8	-34.0	4.8	6.5	10.6	5.7	30.8	24.2	-7.9	19.8										
95th Percentile	-5.6	-42.3	1.2	3.7	8.5	-5.1	17.4	16.2	-12.8	12.1										
# of Portfolios	151	151	148	146	125	158	161	157	164	174										
● Emerald Advisers	0.0 (40)	-28.2 (44)	5.2 (68)	5.8 (81)	11.2 (62)	5.5 (76)	39.0 (57)	30.3 (45)	-10.1 (85)	28.8 (26)										
▲ Russell 2000 Growth	0.2 (36)	-29.3 (54)	2.9 (90)	3.6 (96)	8.8 (94)	2.8 (84)	34.6 (66)	28.5 (51)	-9.3 (80)	22.2 (62)										

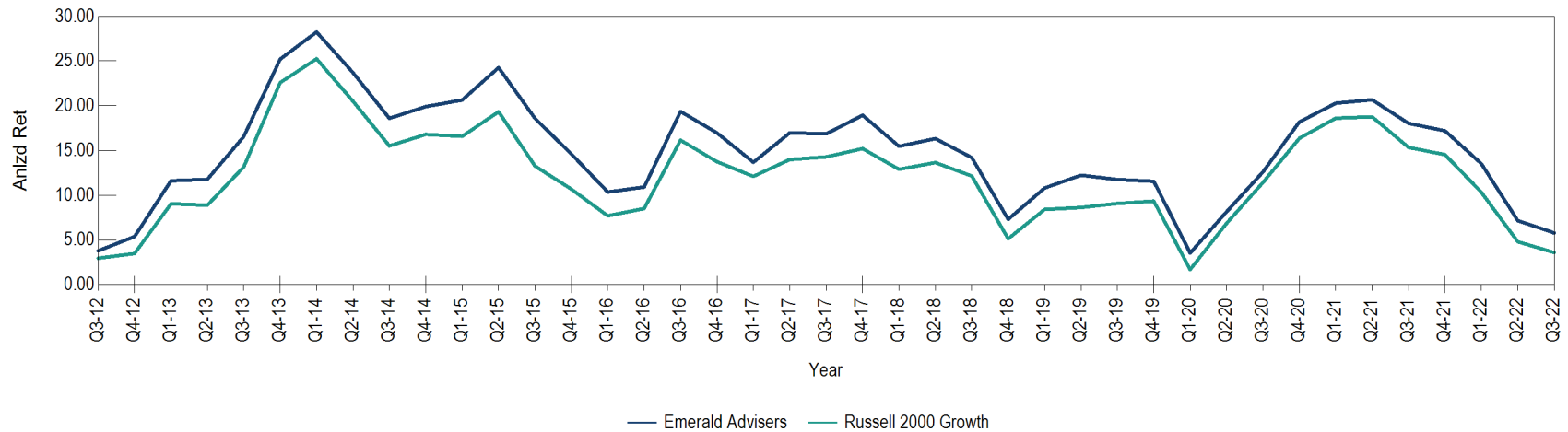
Emerald Advisers
Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2022

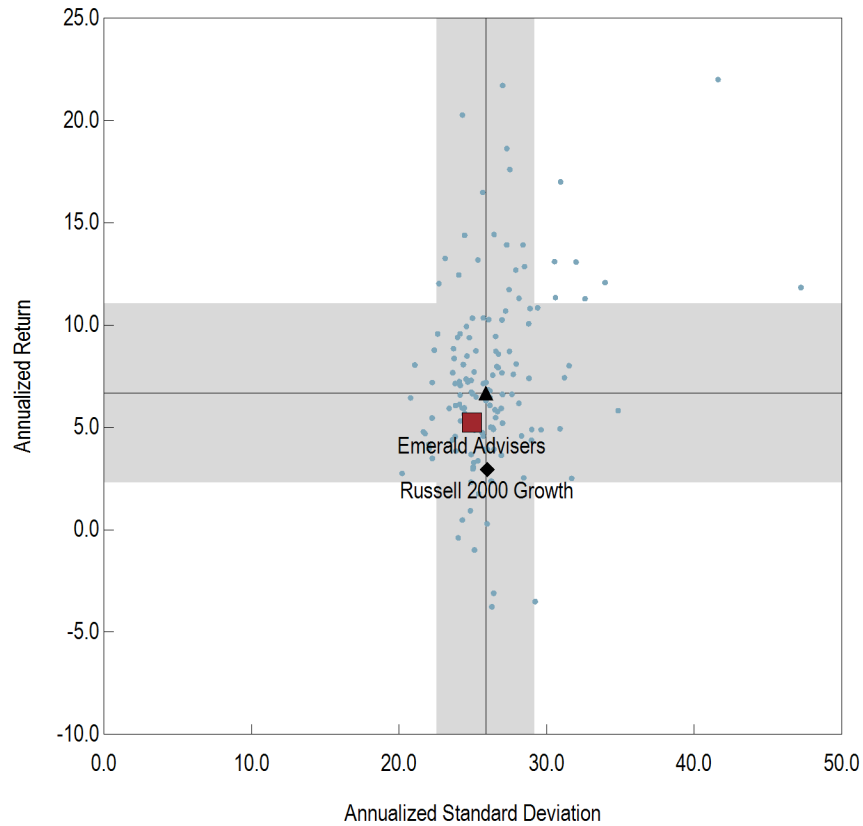
Rolling 3 Year Annualized Return (%)



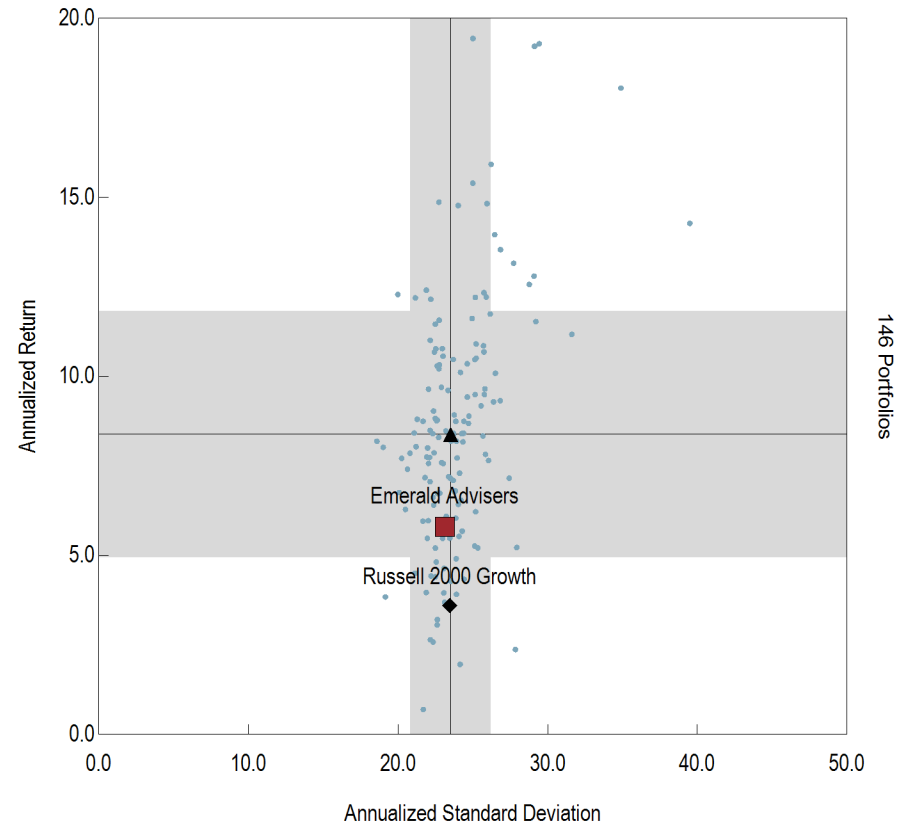
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	5.2%	24.9%	0.2
Russell 2000 Growth	2.9%	26.0%	0.1
eV US Small Cap Growth Equity Gross Median	6.7%	25.9%	0.2

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	5.8%	23.1%	0.2
Russell 2000 Growth	3.6%	23.5%	0.1
eV US Small Cap Growth Equity Gross Median	8.4%	23.5%	0.3

Ceredex Manager Portfolio Overview

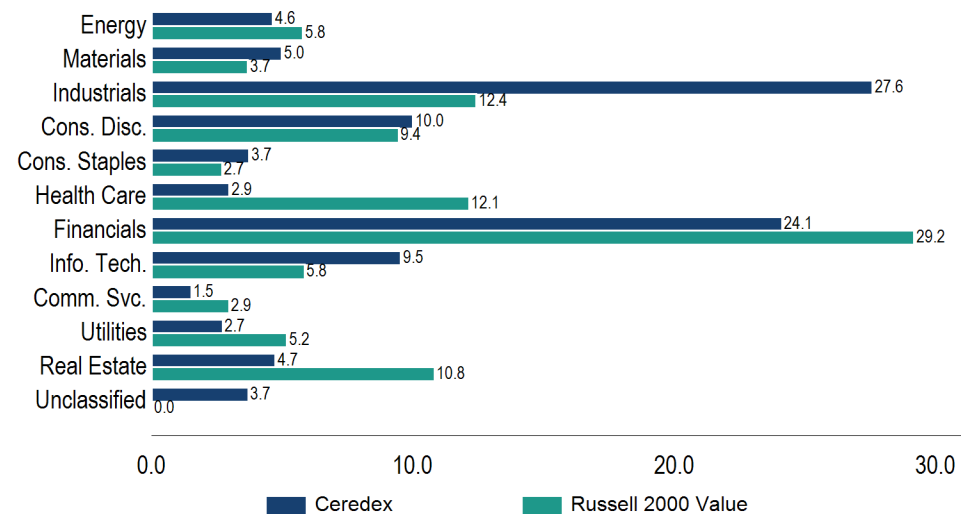
Period Ending: September 30, 2022

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	81	1,394
Weighted Avg. Market Cap. (\$B)	5.06	2.21
Median Market Cap. (\$B)	3.71	0.86
Price To Earnings	13.20	9.54
Price To Book	2.19	1.48
Price To Sales	1.07	1.04
Return on Equity (%)	17.03	5.88
Yield (%)	2.39	2.49
Beta	0.85	1.00

Sector Allocation (%) vs Russell 2000 Value



Largest Holdings

	End Weight	Return
LENNOX INTERNATIONAL INC.	3.24	8.26
EMCOR GROUP INC.	3.00	12.30
FIRST CITIZENS BANCSHARES INC	2.92	22.04
OVINTIV INC	2.59	4.58
POWER INTEGRATIONS INC	2.51	-14.04
AGCO CORP	2.25	-2.35
STANTEC INC	2.15	0.39
ACADEMY SPORTS OUTDOORS INC	2.12	18.87
ARMSTRONG WORLD INDUSTRIES INC	2.09	5.97
SLM CORP	2.01	-11.58

Top Contributors

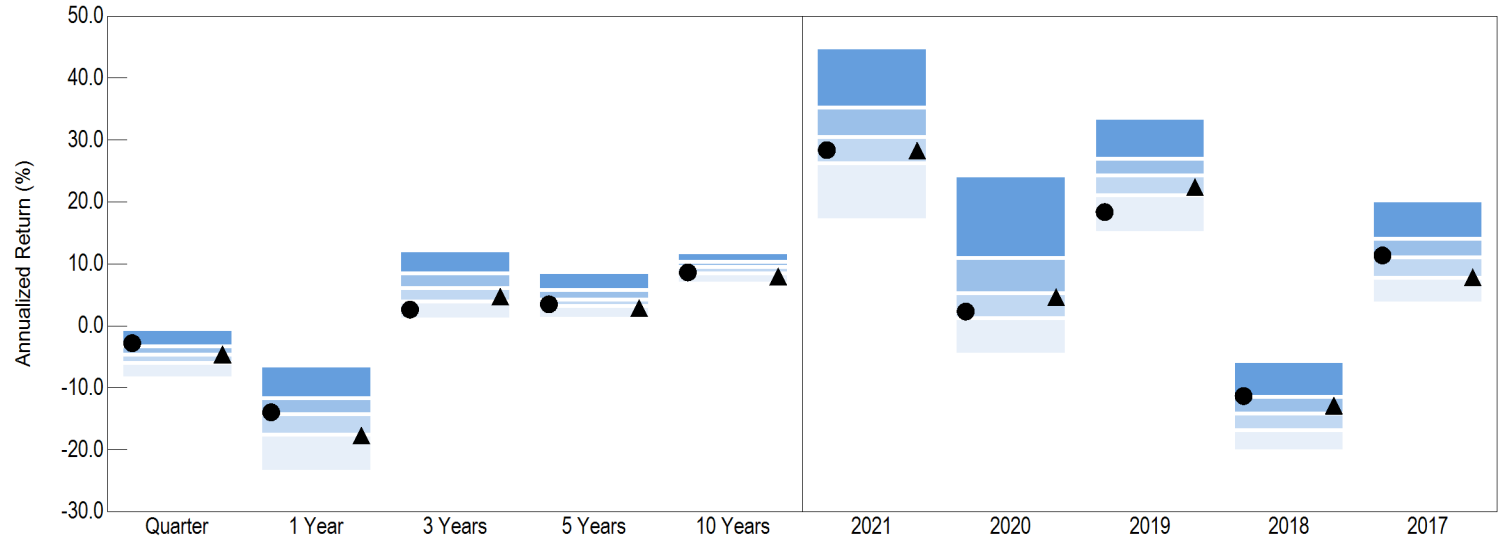
	Avg Wgt	Return	Contribution
FIRST CITIZENS BANCSHARES INC	0.78	22.04	0.17
ACADEMY SPORTS OUTDOORS INC	0.58	18.87	0.11
EMCOR GROUP INC.	0.87	12.30	0.11
NATIONAL INSTRUMENTS CORPORATION	0.39	21.70	0.08
FOOT LOCKER INC.	0.33	25.33	0.08
LENNOX INTERNATIONAL INC.	0.98	8.26	0.08
TORO CO (THE)	0.51	14.10	0.07
CULLEN/FROST BANKERS INC	0.34	14.30	0.05
HERC HOLDINGS INC	0.29	15.77	0.05

Bottom Contributors

	Avg Wgt	Return	Contribution
PATTERSON COS INC	0.74	-20.06	-0.15
POWER INTEGRATIONS INC	0.95	-14.04	-0.13
MILLERKNOLL INC	0.29	-40.19	-0.12
LITTELFUSE INC	0.54	-21.59	-0.12
COLLIERS INTERNATIONAL GROUP INC	0.69	-15.79	-0.11
MKS INSTRUMENTS INC	0.50	-19.33	-0.10
INTERFACE INC	0.34	-28.24	-0.10
MINERALS TECHNOLOGIES INC.	0.49	-19.39	-0.09
SLM CORP	0.74	-11.58	-0.09
AVIENT CORP	0.30	-23.93	-0.07

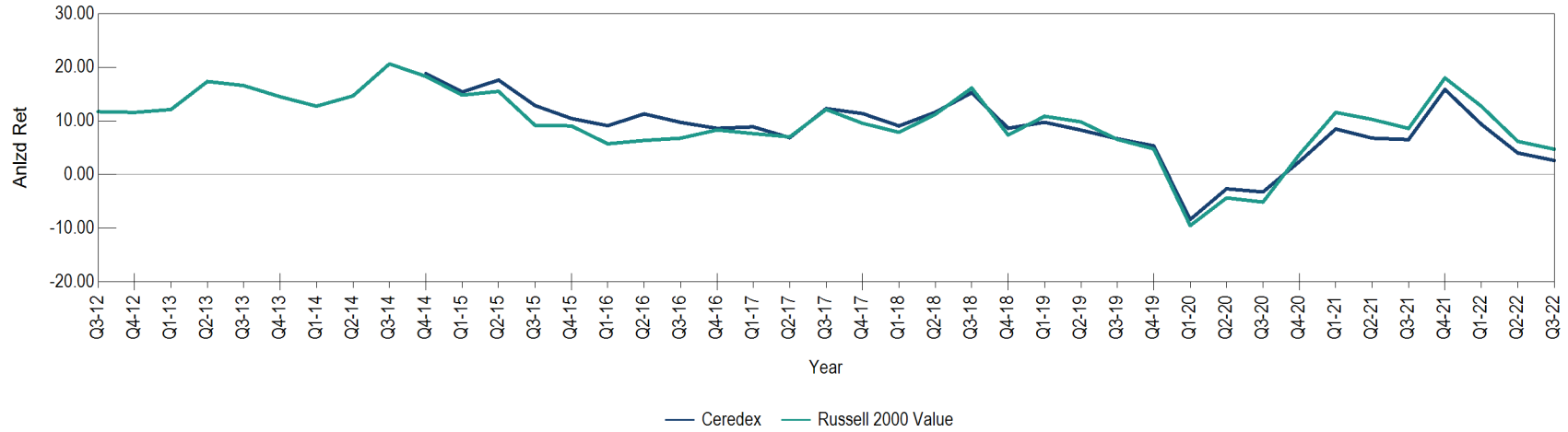
Unclassified sector allocation includes cash allocations.

Ceredex vs. eV US Small Cap Value Equity Gross Universe

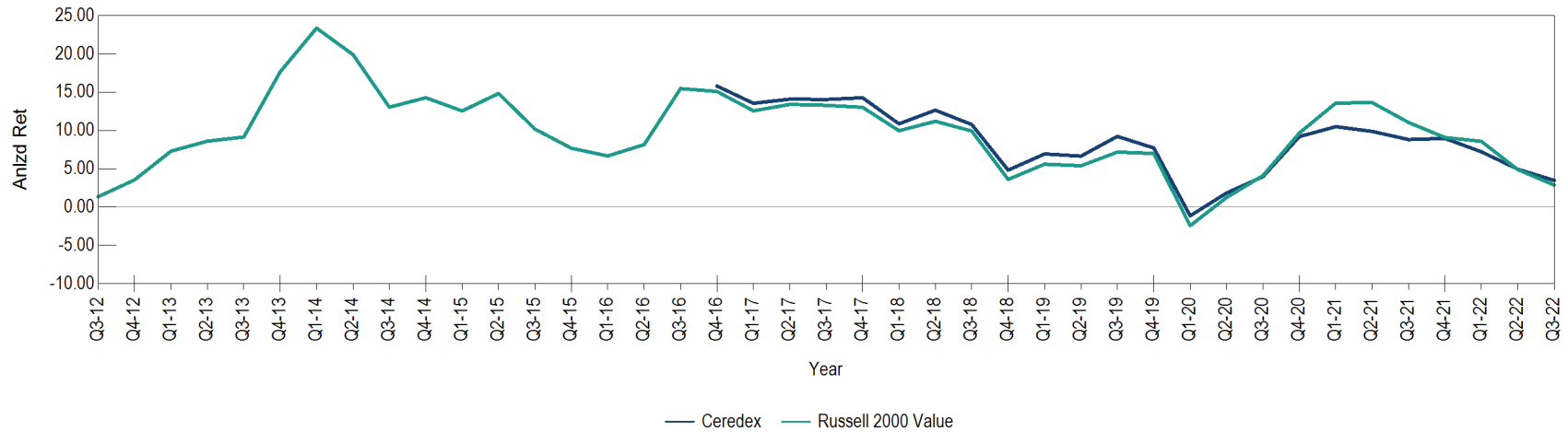


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
5th Percentile	-0.5	-6.5	12.2	8.7	11.8	44.9	24.2	33.6	-5.7	20.2
25th Percentile	-3.2	-11.6	8.5	5.8	10.4	35.3	11.1	27.0	-11.4	14.1
Median	-4.6	-14.1	6.1	4.3	9.6	30.5	5.3	24.4	-14.0	11.1
75th Percentile	-5.9	-17.5	4.0	3.2	8.6	26.3	1.3	21.2	-16.7	7.8
95th Percentile	-8.4	-23.5	1.1	1.2	6.8	17.1	-4.6	15.0	-20.2	3.7
# of Portfolios	206	206	202	191	173	210	219	217	220	224
● Ceredex	-2.8 (17)	-14.0 (48)	2.6 (87)	3.5 (70)	8.6 (72)	28.4 (60)	2.3 (69)	18.4 (87)	-11.3 (25)	11.4 (48)
▲ Russell 2000 Value	-4.6 (50)	-17.7 (76)	4.7 (70)	2.9 (81)	7.9 (85)	28.3 (60)	4.6 (53)	22.4 (69)	-12.9 (39)	7.8 (75)

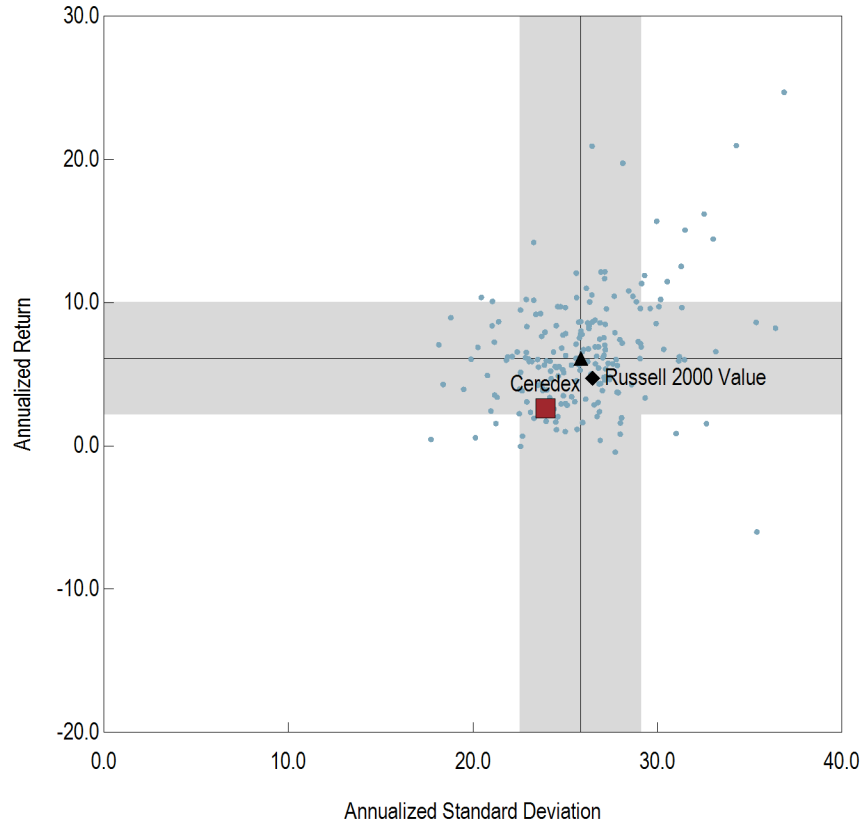
Rolling 3 Year Annualized Return (%)



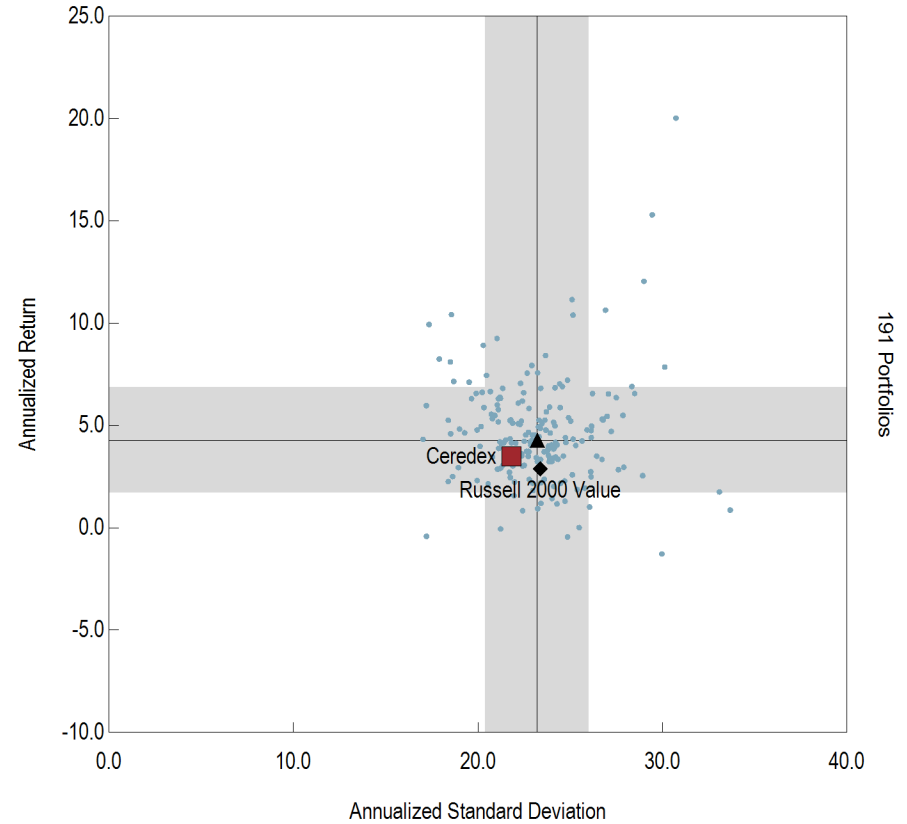
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	2.6%	23.9%	0.1
Russell 2000 Value	4.7%	26.5%	0.2
eV US Small Cap Value Equity Gross Median	6.1%	25.8%	0.2

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	3.5%	21.8%	0.1
Russell 2000 Value	2.9%	23.4%	0.1
eV US Small Cap Value Equity Gross Median	4.3%	23.2%	0.1

International Equity Managers

Pyrford Manager Portfolio Overview

Period Ending: September 30, 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.

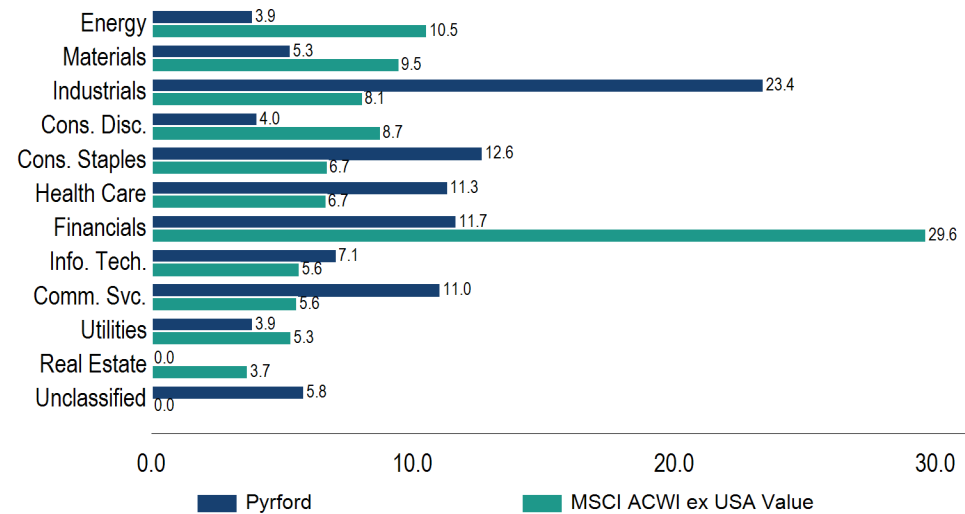
Characteristics

	MSCI ACWI Portfolio	MSCI ACWI ex USA Value
Number of Holdings	70	1,308
Weighted Avg. Market Cap. (\$B)	55.04	60.35
Median Market Cap. (\$B)	19.64	7.37
Price To Earnings	14.42	8.51
Price To Book	2.15	1.69
Price To Sales	1.51	0.80
Return on Equity (%)	17.12	12.04
Yield (%)	4.28	5.38
Beta	0.71	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	87.3%	71.3%
Emerging*	8.1%	28.7%
Top 10 Largest Countries		
Japan	14.9%	14.4%
Switzerland	12.0%	4.2%
United Kingdom	11.8%	13.7%
Germany	9.7%	6.3%
Australia	9.0%	5.0%
France	7.6%	5.4%
Singapore	6.5%	1.1%
Cash	4.6%	0.0%
Hong Kong	4.3%	1.9%
Netherlands	4.1%	1.3%
Total-Top 10 Largest Countries	84.6%	53.2%

Sector Allocation (%) vs MSCI ACWI ex USA Value



Top Contributors

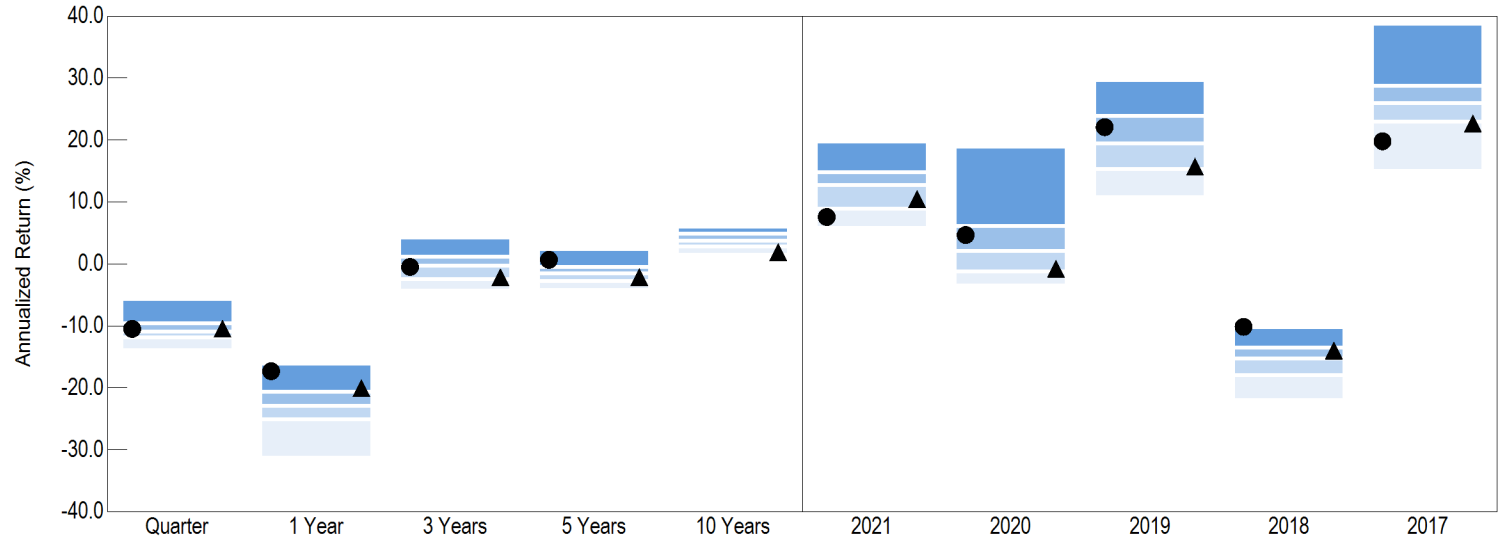
	Avg Wgt	Return	Contribution
TELEKOMUNIKASI INDONESIA	1.17	9.36	0.11
SINGAPORE TELECOMMUNICATIONS LTD	2.14	3.85	0.08
NIHON KOHDEN CORP	1.55	4.98	0.08
PT BANK RAKYAT INDONESIA TBK	1.04	6.11	0.06
BRAMBLES LTD	2.50	1.08	0.03
WOLTERS KLUWER NV	1.12	1.88	0.02
ATLAS COPCO AB	0.29	1.19	0.00
EUROAPI SASU	0.01	6.18	0.00
ABC-MART INC	1.76	-0.99	-0.02
SAMPO PLC	1.84	-1.14	-0.02

Bottom Contributors

	Avg Wgt	Return	Contribution
TELENOR ASA	2.11	-30.80	-0.65
SANOFI	1.98	-23.66	-0.47
VODAFONE GROUP PUBLIC LIMITED COMPANY	1.70	-26.79	-0.46
FIELMANN AG, HAMBURG	1.38	-32.44	-0.45
AIA GROUP LTD	1.96	-22.65	-0.44
MITSUBISHI ELECTRIC CORP	2.55	-14.66	-0.37
NATIONAL GRID PLC	1.98	-18.84	-0.37
KONINKLIJKE VOPAK NV	1.31	-27.16	-0.36
DEUTSCHE POST AG	1.70	-18.34	-0.31
L'AIR LIQUIDE SA	1.91	-13.93	-0.27

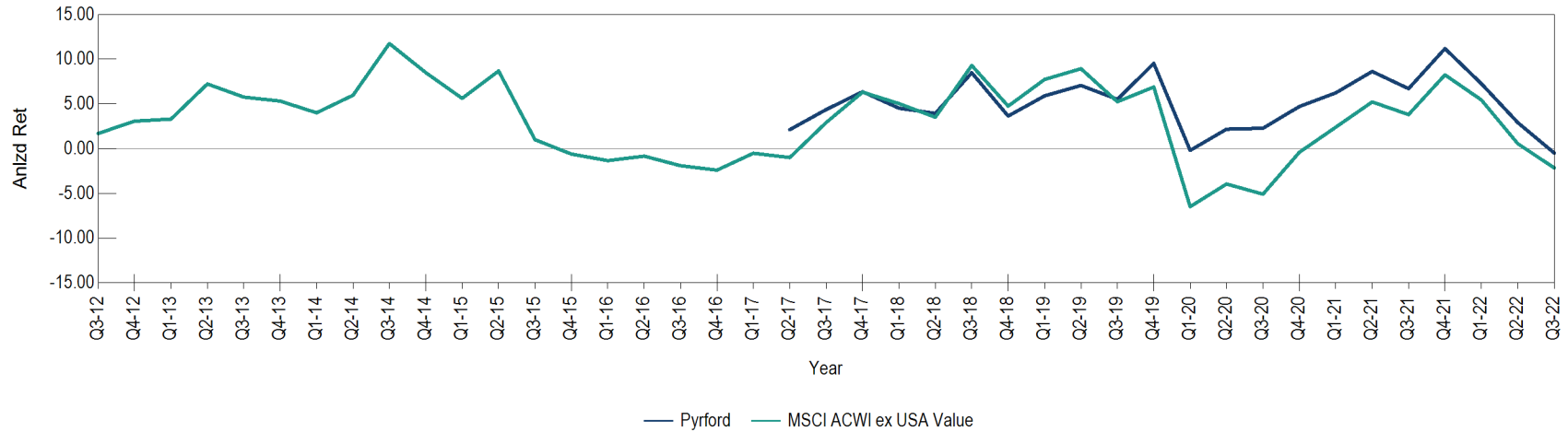
Unclassified sector allocation includes cash allocations.

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

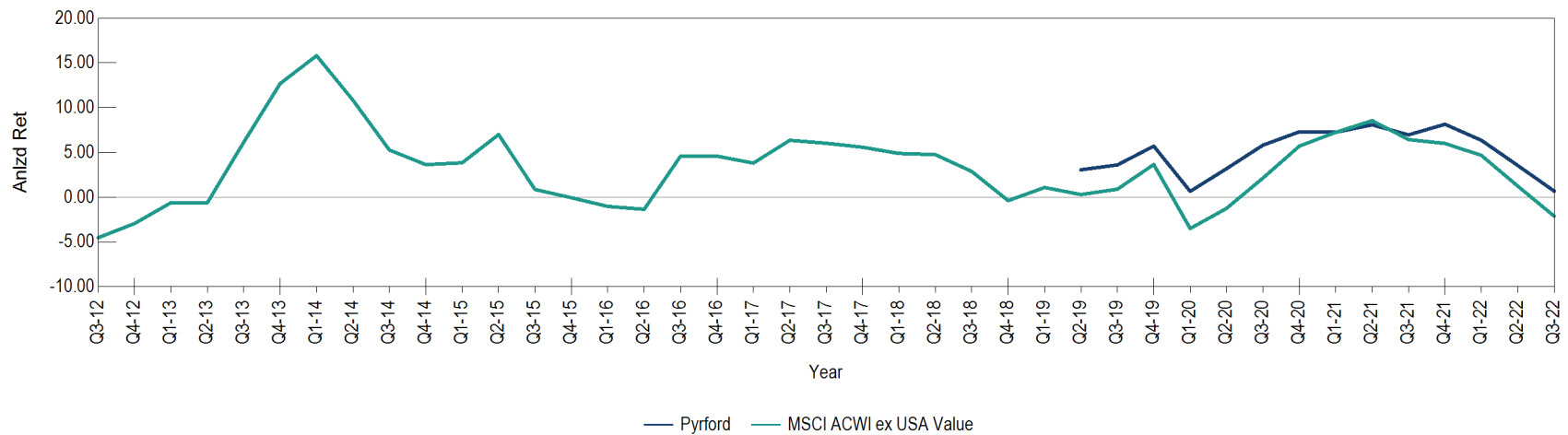


	Quarter		1 Year		3 Years		5 Years		10 Years		2021		2020		2019		2018		2017	
5th Percentile	-5.7	-16.2	4.2	2.4	6.0	19.7	18.8	29.6	-10.2	38.8										
25th Percentile	-9.6	-20.5	1.2	-0.4	4.9	14.8	6.2	24.0	-13.4	28.8										
Median	-10.9	-22.9	-0.2	-1.5	3.8	12.8	2.1	19.5	-15.2	26.0										
75th Percentile	-11.8	-25.0	-2.4	-2.7	2.8	8.9	-1.2	15.4	-17.9	23.0										
95th Percentile	-13.9	-31.3	-4.2	-4.2	1.6	5.8	-3.5	10.8	-21.9	15.0										
# of Portfolios	46	46	45	41	31	46	49	52	54	56										
● Pyrford	-10.5 (44)	-17.3 (8)	-0.5 (53)	0.7 (20)	-- (--)	7.6 (84)	4.7 (33)	22.1 (35)	-10.1 (5)	19.8 (84)										
▲ MSCI ACWI ex USA Value	-10.4 (44)	-20.0 (20)	-2.1 (71)	-2.1 (66)	1.9 (91)	10.5 (69)	-0.8 (73)	15.7 (74)	-14.0 (32)	22.7 (77)										

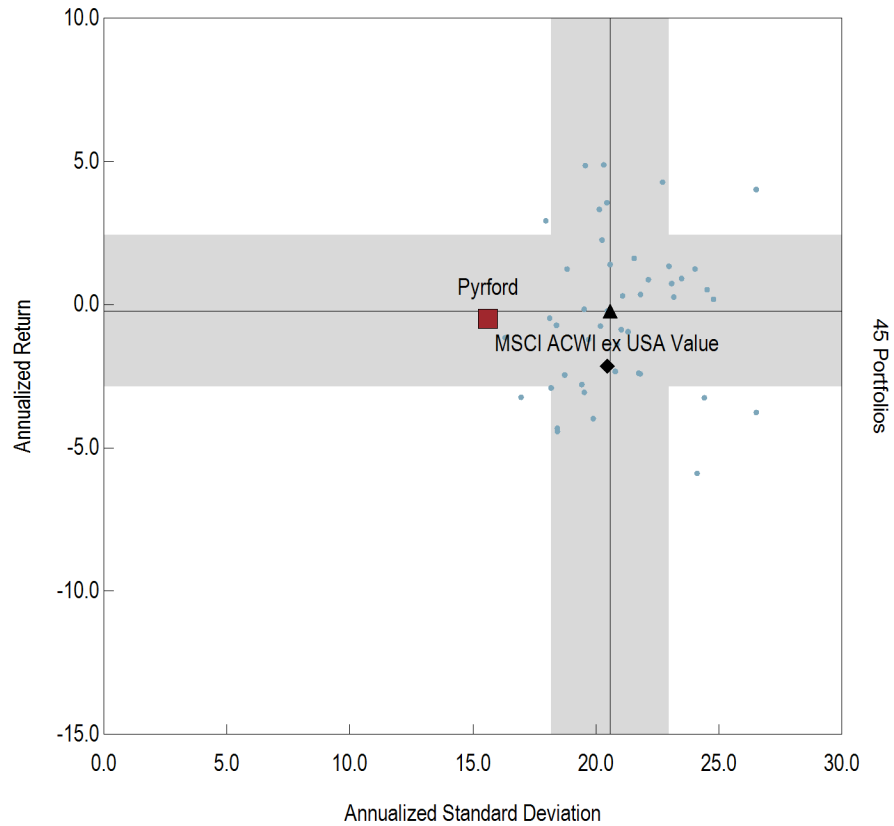
Rolling 3 Year Annualized Return (%)



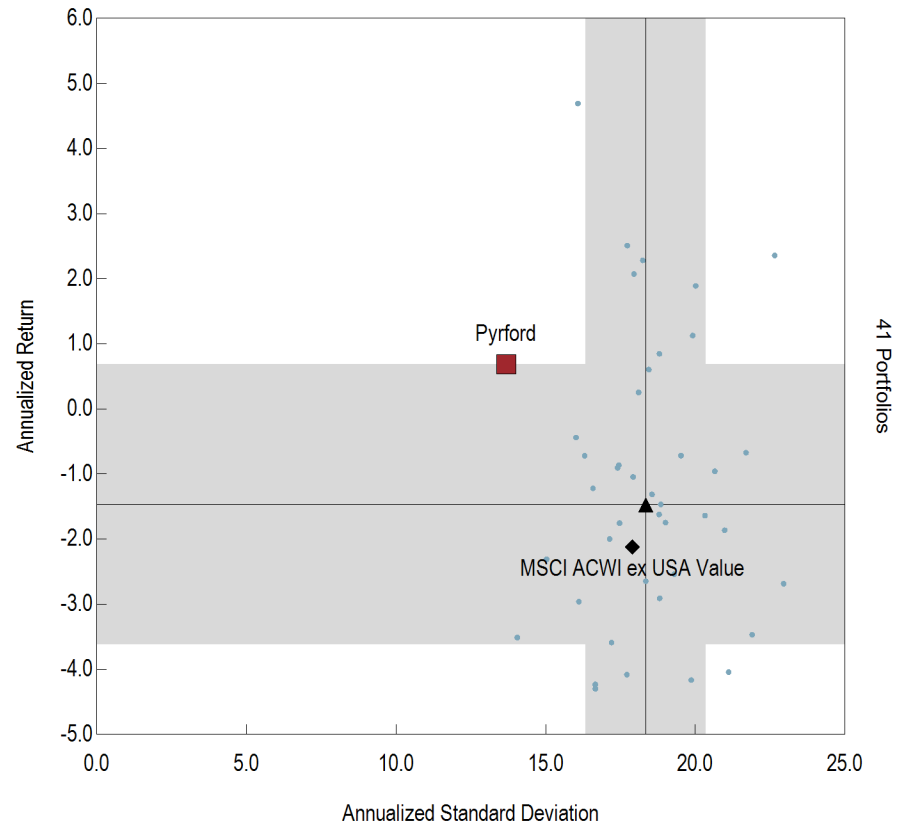
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Pyrford	-0.5%	15.6%	-0.1
MSCI ACWI ex USA Value	-2.1%	20.5%	-0.1
eV ACWI ex-US Value Equity Gross Median	-0.2%	20.6%	0.0

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Pyrford	0.7%	13.7%	0.0
MSCI ACWI ex USA Value	-2.1%	17.9%	-0.2
eV ACWI ex-US Value Equity Gross Median	-1.5%	18.3%	-0.1

William Blair Manager Portfolio Overview

Period Ending: September 30, 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.

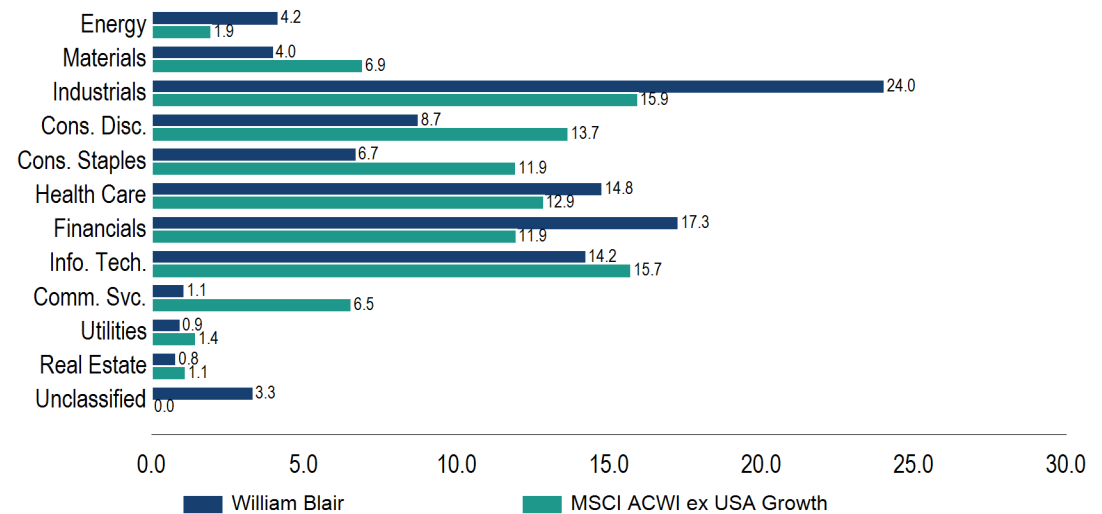
Characteristics

	Portfolio	MSCI ACWI ex USA Growth
Number of Holdings	186	1,314
Weighted Avg. Market Cap. (\$B)	52.41	81.70
Median Market Cap. (\$B)	9.91	8.09
Price To Earnings	21.47	17.02
Price To Book	3.58	3.11
Price To Sales	2.90	2.16
Return on Equity (%)	17.99	18.35
Yield (%)	1.97	2.03
Beta	1.17	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	79.8%	70.1%
Emerging*	16.9%	29.9%
Top 10 Largest Countries		
United Kingdom	13.8%	5.8%
France	10.4%	8.7%
Canada	10.2%	8.1%
Japan	9.2%	13.9%
India*	7.3%	4.6%
Switzerland	6.3%	9.1%
Denmark	4.3%	2.9%
Netherlands	3.7%	3.8%
Sweden	3.4%	2.6%
Cash	3.3%	0.0%
Total-Top 10 Largest Countries	72.0%	59.5%

Sector Allocation (%) vs MSCI ACWI ex USA Growth



Top Contributors

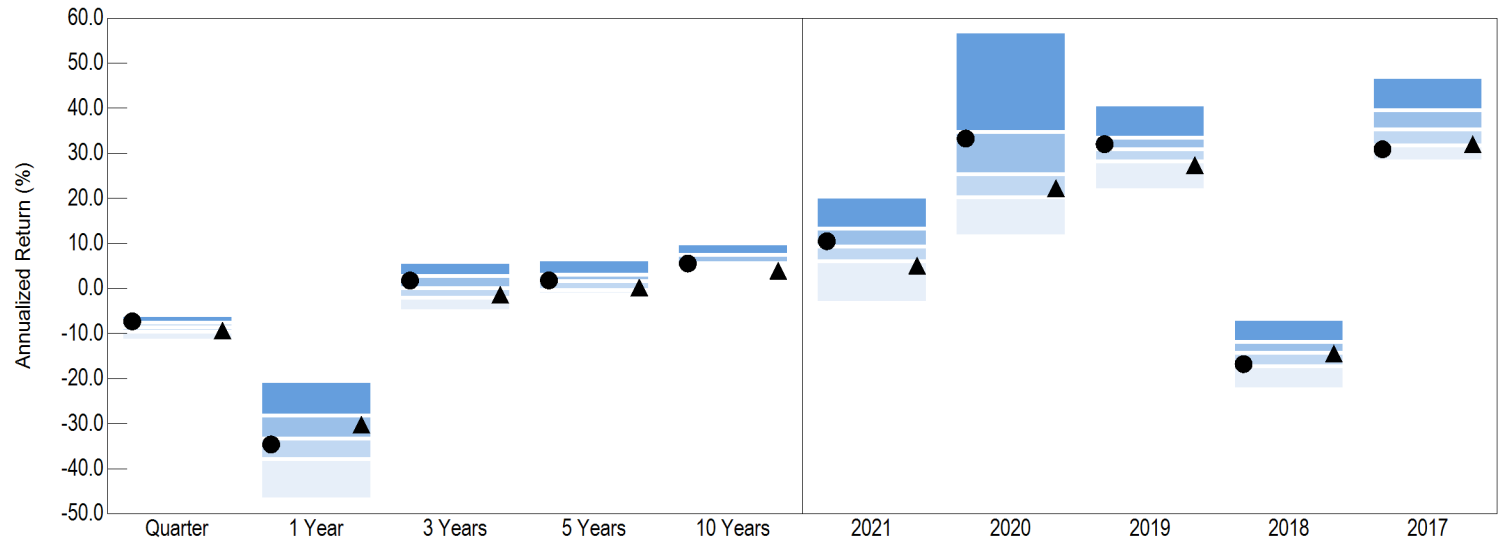
	Avg Wgt	Return	Contribution
PT BANK CENTRAL ASIA TBK	1.71	15.67	0.27
MERCADOLIBRE INC	0.35	29.98	0.10
ATLISSIAN CORP	0.66	12.37	0.08
HOYA CORP	0.63	12.53	0.08
DBS GROUP HOLDINGS LTD	0.74	10.28	0.08
ASHTREAD GROUP PLC	0.73	10.31	0.08
PIDILITE INDUSTRIES LTD	0.23	25.54	0.06
LOCAWEB SERVICOS DE INTERNET SA	0.10	54.79	0.05
TECAN GROUP AG	0.25	20.39	0.05
HAVELL'S INDIA	0.25	19.25	0.05

Bottom Contributors

	Avg Wgt	Return	Contribution
AIA GROUP LTD	2.62	-22.65	-0.59
ASTRAZENECA PLC	1.86	-14.95	-0.28
MTU AERO ENGINES AG	1.62	-16.70	-0.27
RELIANCE INDUSTRIES LTD	2.40	-10.78	-0.26
ICON PLC	1.61	-15.19	-0.24
AMADEUS IT GROUP SA	1.58	-15.46	-0.24
MEDIATEK INCORPORATION	0.98	-20.77	-0.20
LI NING COMPANY LIMITED	1.09	-17.35	-0.19
AIRBUS SE	1.73	-9.81	-0.17
TAIWAN SEMICONDUCTOR	1.08	-15.65	-0.17

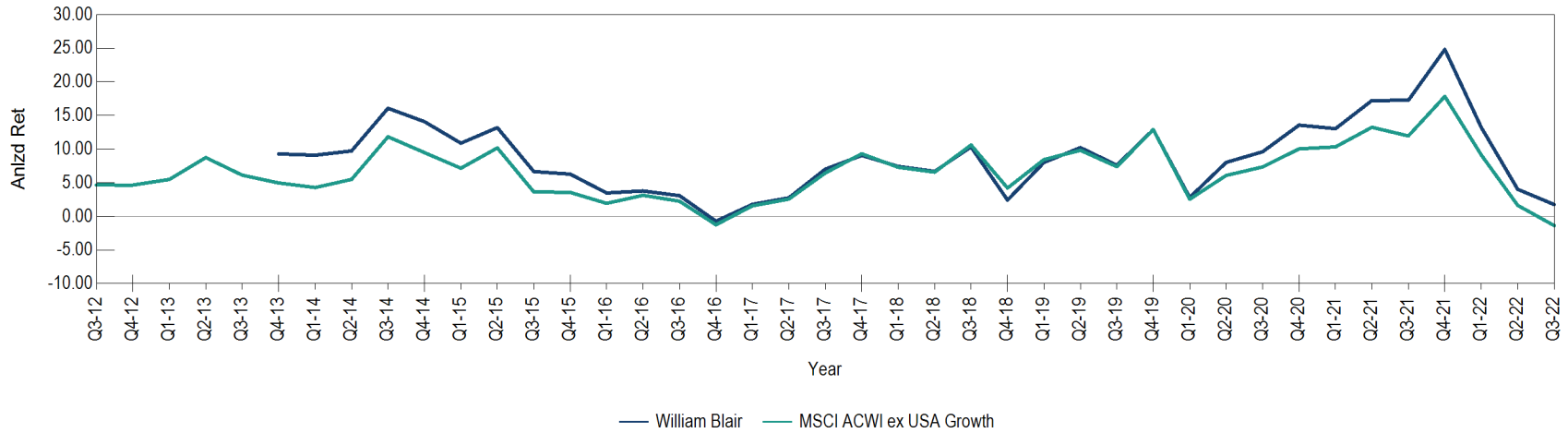
Unclassified sector allocation includes cash allocations.

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

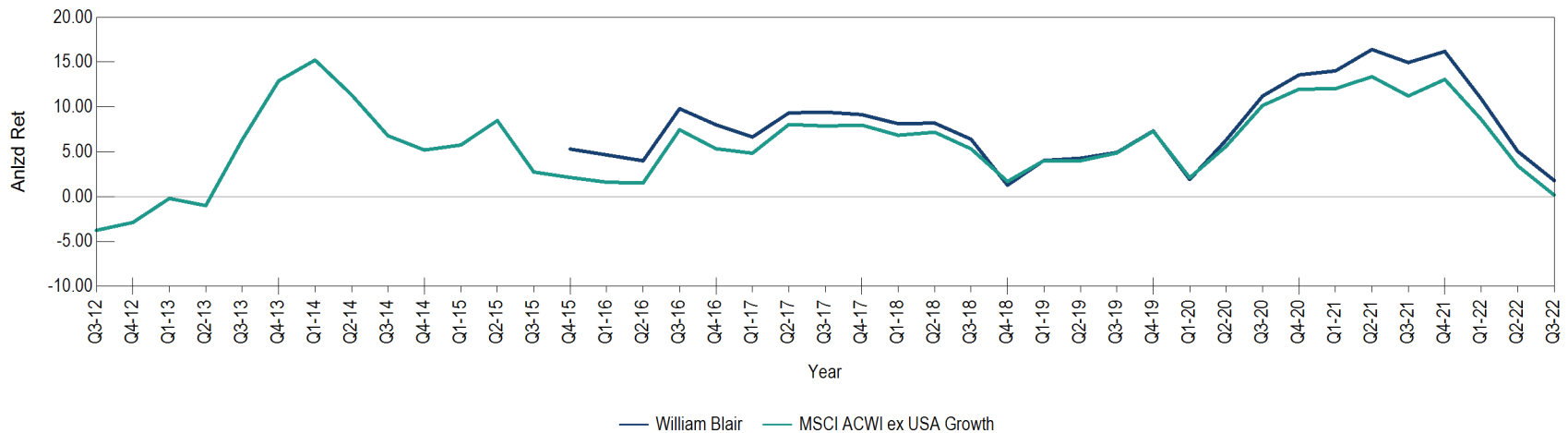


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
5th Percentile	-6.0	-20.6	5.8	6.4	9.9	20.3	57.0	40.8	-6.8	46.8
25th Percentile	-7.5	-28.1	2.9	3.1	7.5	13.4	34.8	33.6	-11.7	39.6
Median	-8.6	-33.3	0.2	1.7	5.7	9.3	25.4	31.0	-14.3	35.3
75th Percentile	-9.5	-37.8	-1.9	-0.2	4.9	6.1	20.3	28.3	-17.2	31.8
95th Percentile	-11.6	-46.8	-5.0	-1.3	4.1	-3.1	11.6	21.8	-22.3	28.3
# of Portfolios	103	103	94	85	61	102	95	93	82	94
● William Blair	-7.3 (21)	-34.6 (59)	1.7 (34)	1.8 (48)	5.5 (54)	10.5 (44)	33.3 (30)	32.0 (39)	-16.8 (69)	30.9 (81)
▲ MSCI ACWI ex USA Growth	-9.4 (73)	-30.2 (34)	-1.4 (69)	0.2 (72)	4.0 (96)	5.1 (78)	22.2 (64)	27.3 (80)	-14.4 (51)	32.0 (75)

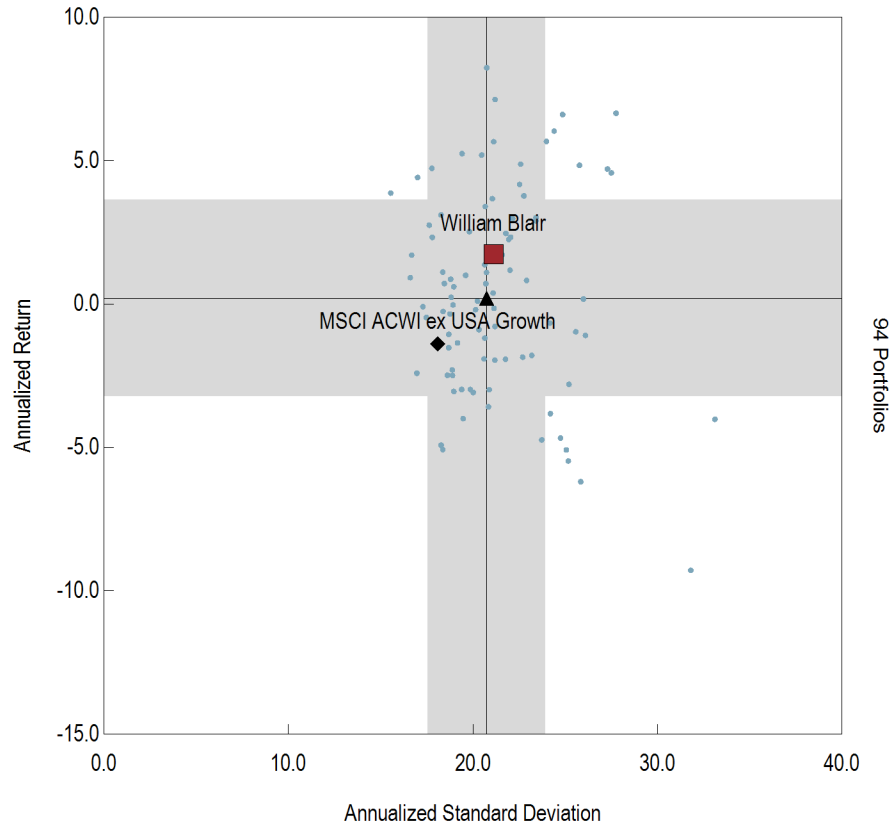
Rolling 3 Year Annualized Return (%)



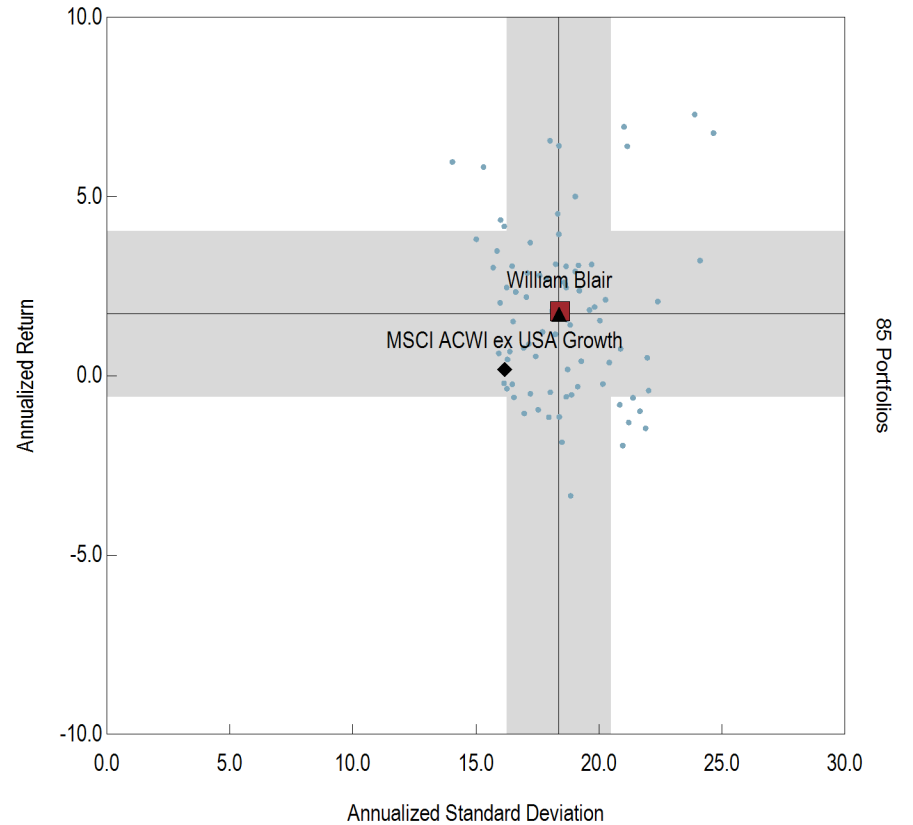
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	1.7%	21.1%	0.1
MSCI ACWI ex USA Growth	-1.4%	18.1%	-0.1
eV ACWI ex-US Growth Equity Gross Median	0.2%	20.7%	0.0

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	1.8%	18.4%	0.0
MSCI ACWI ex USA Growth	0.2%	16.2%	-0.1
eV ACWI ex-US Growth Equity Gross Median	1.7%	18.4%	0.0

PIMCO RAE Emerging Markets Manager Portfolio Overview

Period Ending: September 30, 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.

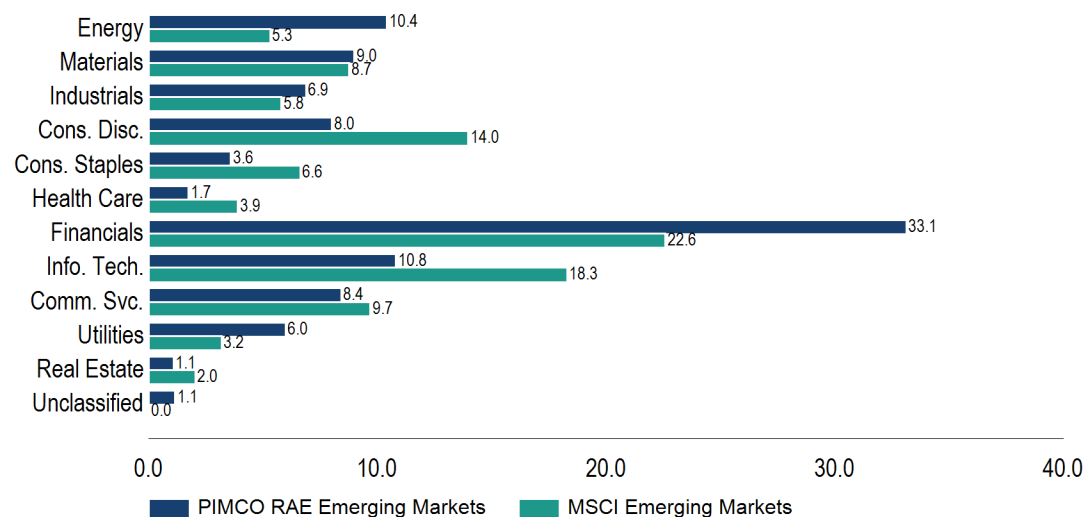
Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	346	1,384
Weighted Avg. Market Cap. (\$B)	17.27	86.85
Median Market Cap. (\$B)	3.10	5.52
Price To Earnings	5.35	10.09
Price To Book	1.65	2.48
Price To Sales	0.29	0.97
Return on Equity (%)	12.85	14.64
Yield (%)	6.77	3.77
Beta	1.10	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	5.2%	0.0%
Emerging*	94.1%	100.0%
Top 10 Largest Countries		
China*	17.1%	31.4%
India*	13.2%	15.3%
Korea*	12.8%	10.7%
Thailand*	9.5%	2.1%
Brazil*	8.4%	5.8%
Taiwan*	7.6%	13.8%
South Africa*	6.6%	3.5%
Turkey*	5.5%	0.4%
Hong Kong	5.0%	0.0%
Mexico*	4.8%	2.2%
Total-Top 10 Largest Countries	90.4%	85.1%

Sector Allocation (%) vs MSCI Emerging Markets



Top Contributors

	End Weight	Return	Contribution
CIELO SA	1.85	41.45	0.77
VEDANTA LTD	2.34	27.10	0.63
TURKIYE IS BANKASI AS	0.95	54.76	0.52
BANCO DO BRASIL ON	2.89	14.41	0.42
PT ADARO ENERGY INDONESIA TBK	0.78	35.80	0.28
HACI OMER SABANCI HOLDING AS	1.06	22.89	0.24
PT INDO TAMBANGRAYA MEGAH	0.67	32.45	0.22
YAPI VE KREDI BANKASI AS	0.38	47.18	0.18
AKBANK	0.63	26.89	0.17
EMLAK KONUT REIT	0.45	32.14	0.15

Bottom Contributors

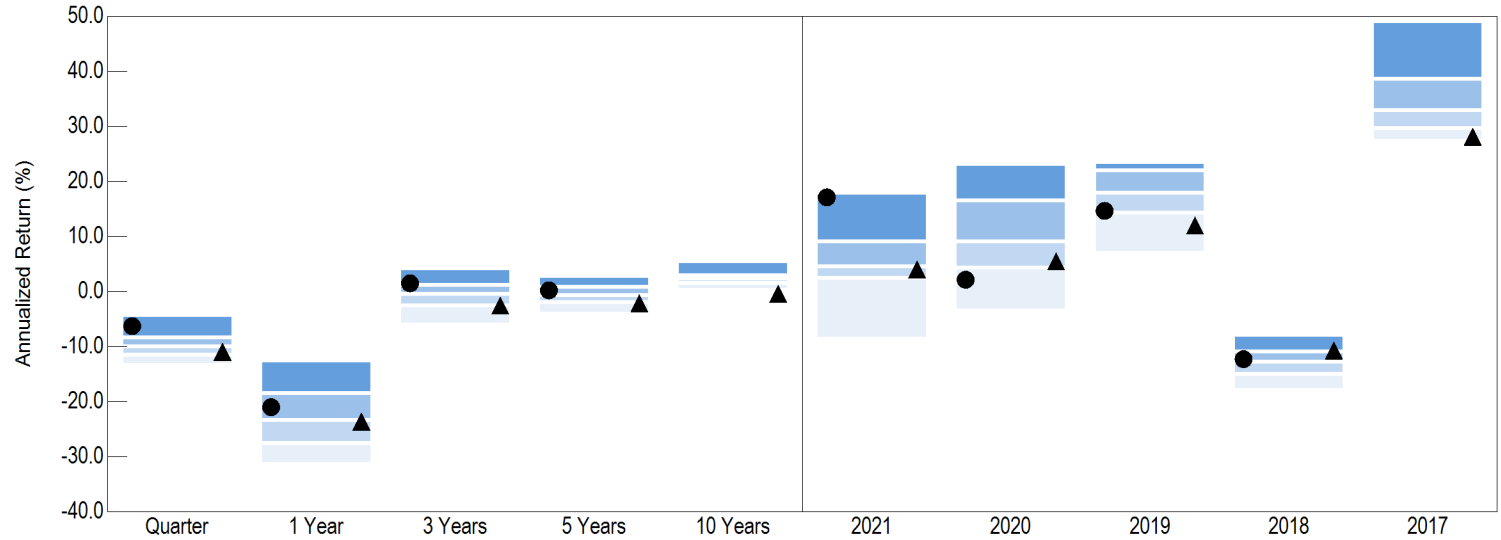
	End Weight	Return	Contribution
CHINA CONSTRUCTION BANK CORP	3.86	-13.88	-0.54
BANK OF CHINA LTD	3.22	-10.54	-0.34
LENOVO GROUP LTD	1.33	-22.41	-0.30
INDUSTRIAL AND COMMERCIAL BANK OF CHINA LIMITED	1.88	-14.81	-0.28
KASIKORNBANK PUBLIC CO LTD	2.82	-9.72	-0.27
KIA CORPORATION	1.66	-16.08	-0.27
AMERICA MOVIL SA DE CV, MEXICO	1.42	-16.85	-0.24
KOREA ELECTRIC POWER CORP	1.18	-19.57	-0.23
CHINA RESOURCES POWER HOLDINGS CO LTD	0.94	-23.71	-0.22

Unclassified sector allocation includes cash allocations.

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

Period Ending: September 30, 2022

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



	Return (Rank)														
5th Percentile	-4.3	-12.5	4.1	2.7	5.4	17.8	23.1	23.5	-7.9	49.0					
25th Percentile	-8.3	-18.4	1.2	0.9	3.1	9.1	16.6	22.1	-10.8	38.6					
Median	-9.9	-23.3	-0.4	-0.6	2.4	4.6	9.2	18.0	-12.7	33.0					
75th Percentile	-11.4	-27.4	-2.5	-1.8	1.6	2.5	4.3	14.4	-14.9	29.8					
95th Percentile	-13.3	-31.3	-5.9	-3.9	0.3	-8.5	-3.4	7.0	-17.8	27.4					
# of Portfolios	37	37	34	29	19	35	37	33	36	37					
● PIMCO RAE Emerging Markets	-6.3 (15)	-21.0 (36)	1.5 (21)	0.2 (32)	-- (--)	17.1 (6)	2.1 (85)	14.6 (72)	-12.3 (44)	-- (--)					
▲ MSCI Emerging Markets Value NR	-11.0 (70)	-23.6 (54)	-2.6 (76)	-2.1 (80)	-0.4 (99)	4.0 (61)	5.5 (73)	12.0 (86)	-10.7 (25)	28.1 (90)					

TT Emerging Markets Manager Portfolio Overview

Period Ending: September 30, 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.

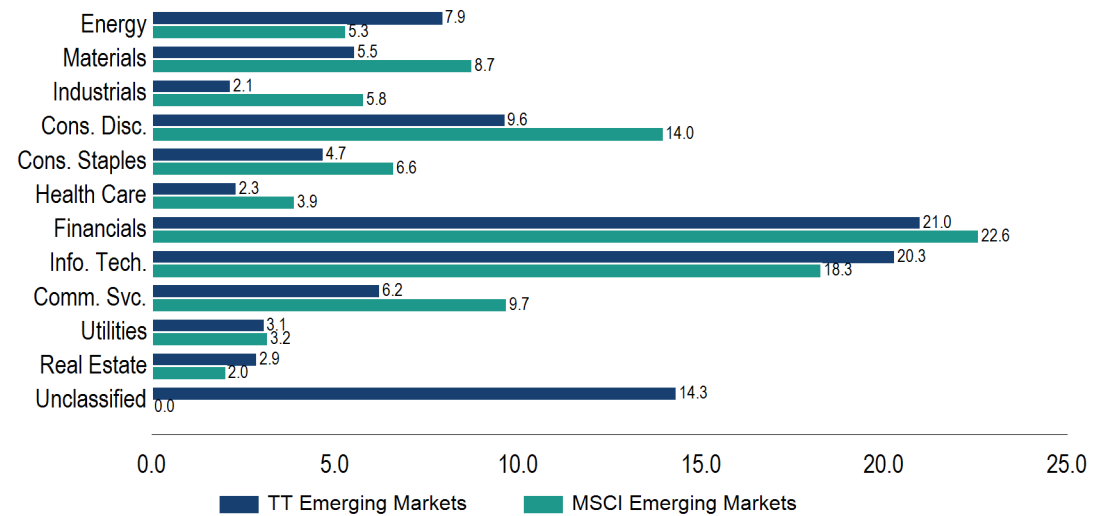
Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	67	1,384
Weighted Avg. Market Cap. (\$B)	112.08	86.85
Median Market Cap. (\$B)	20.02	5.52
Price To Earnings	9.84	10.09
Price To Book	2.31	2.48
Price To Sales	1.26	0.97
Return on Equity (%)	16.85	14.64
Yield (%)	3.38	3.77
Beta	1.19	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	21.5%	0.0%
Emerging*	70.9%	100.0%
Frontier**	0.7%	0.0%
Top 10 Largest Countries		
China*	20.0%	31.4%
Taiwan*	11.8%	13.8%
India*	11.3%	15.3%
Korea*	10.5%	10.7%
Cash	6.9%	0.0%
Netherlands	5.2%	0.0%
Brazil*	5.0%	5.8%
United States	4.8%	0.0%
Hong Kong	4.6%	0.0%
Saudi Arabia*	3.8%	4.8%
Total-Top 10 Largest Countries	84.0%	81.7%

Sector Allocation (%) vs MSCI Emerging Markets



Bottom Contributors

	End Weight	Return	Contribution
GPO FINANCE BANORTE	2.34	15.69	0.37
INDUSIND BANK(INDIA)	0.54	46.03	0.25
EMAAR PROPERTIES	2.15	11.34	0.24
SENDAS DISTRIBUIDORA SA COMMON STOCK	1.08	18.87	0.20
PETROLEO BRASILEIRO S.A.- PETROBRAS	0.67	25.74	0.17
BHARTI AIRTEL LTD	1.04	13.90	0.14
DIAGNOSTICOS DA AMERICA SA	0.62	19.23	0.12
ABSA GROUP LTD	1.22	7.60	0.09
AXIS BANK	0.76	11.98	0.09
H D F C BANK LTD	1.34	6.30	0.08

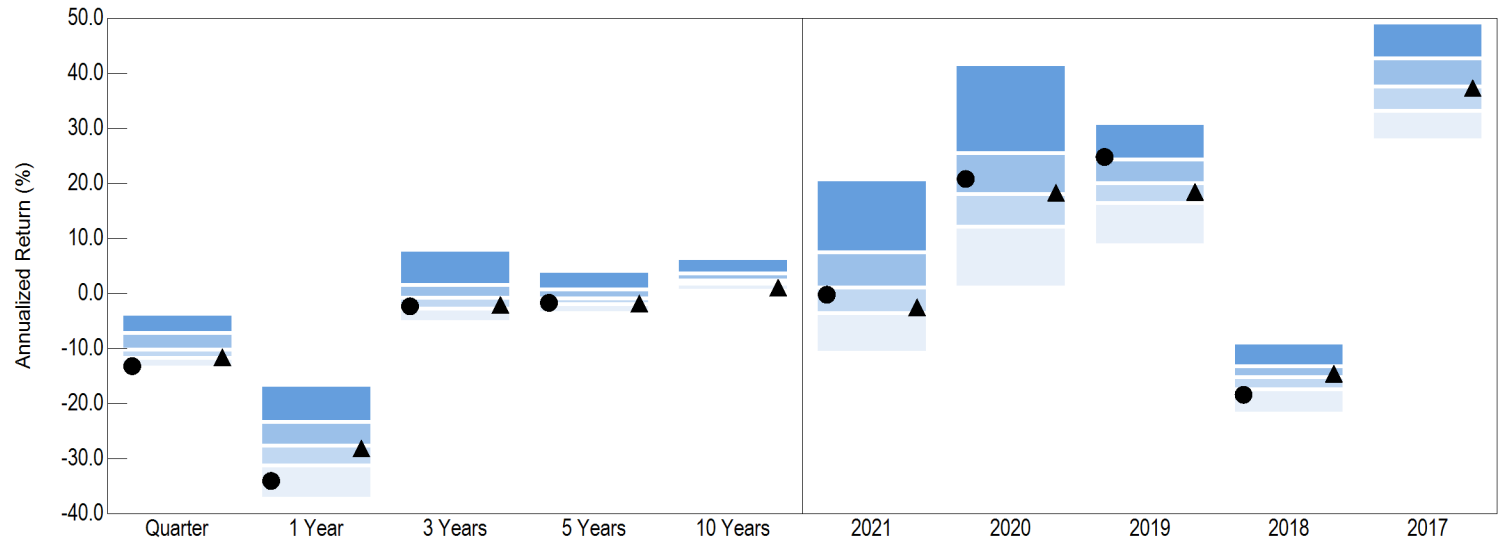
	End Weight	Return	Contribution
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	8.68	-16.53	-1.43
ALIBABA GROUP HOLDING LTD	4.64	-30.36	-1.41
TENCENT HOLDINGS LTD	3.90	-24.85	-0.97
KRANESHARES CSI CHINA INTERNET ETF	3.17	-24.79	-0.78
ALIBABA GROUP HOLDING LTD	2.14	-29.64	-0.63
360 DIGITECH INC	2.35	-24.96	-0.59
YIBIN WULIANGYE CO LTD	2.15	-21.08	-0.45
KB FINANCIAL GROUP INC	2.42	-18.11	-0.44

Unclassified sector allocation includes cash allocations.

TT Emerging Markets
 Manager Performance Comparisons (Gross of Fees)

Period Ending: September 30, 2022

TT Emerging Markets vs. eV Emg Mkts Equity Gross Universe



	Quarter		1 Year		3 Years		5 Years		10 Years		2021		2020		2019		2018		2017	
5th Percentile	-3.7	-16.7	7.9	4.0	6.4	20.7	41.6	30.9	-9.0	49.2										
25th Percentile	-7.1	-23.3	1.7	0.8	3.7	7.5	25.5	24.4	-13.2	42.8										
Median	-10.2	-27.5	-0.8	-0.8	2.5	1.2	18.2	20.1	-15.2	37.6										
75th Percentile	-11.7	-31.2	-2.7	-1.8	1.8	-3.5	12.2	16.5	-17.4	33.2										
95th Percentile	-13.3	-37.3	-5.2	-3.5	0.6	-10.7	1.2	8.8	-21.8	27.8										
# of Portfolios	405	405	366	324	221	391	391	386	355	343										
● TT Emerging Markets	-13.2 (94)	-34.0 (88)	-2.3 (72)	-1.7 (69)	-- (--)	-0.2 (58)	20.8 (39)	24.8 (24)	-18.4 (83)	-- (--)										
▲ MSCI Emerging Markets	-11.6 (74)	-28.1 (57)	-2.1 (68)	-1.8 (74)	1.0 (90)	-2.5 (71)	18.3 (49)	18.4 (63)	-14.6 (43)	37.3 (53)										

Global Equity Managers

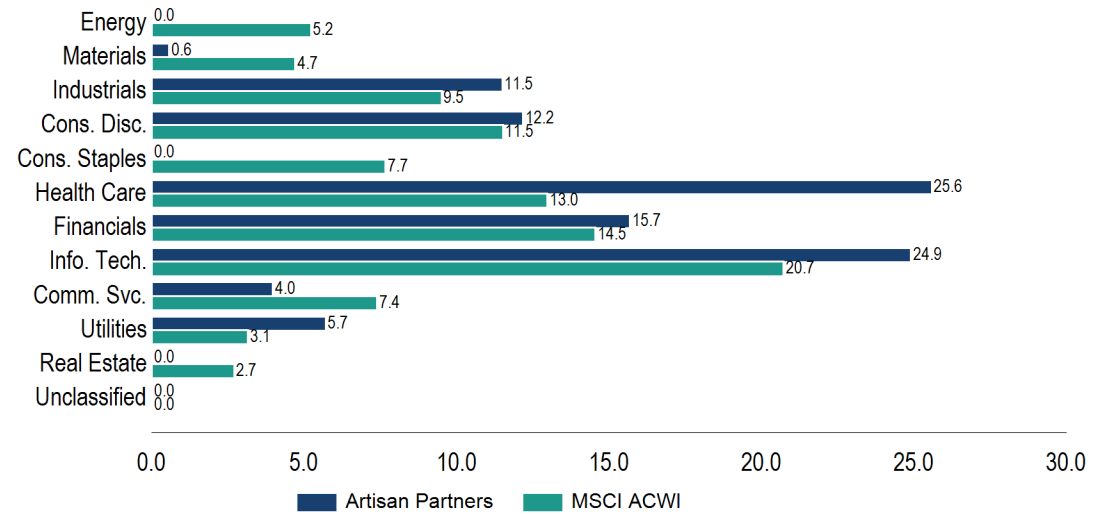
Artisan Partners Manager Portfolio Overview

Period Ending: September 30, 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	44	2,895
Weighted Avg. Market Cap. (\$B)	144.43	306.81
Median Market Cap. (\$B)	40.63	10.73
Price To Earnings	22.37	14.89
Price To Book	3.74	3.12
Price To Sales	2.66	1.51
Return on Equity (%)	14.57	22.39
Yield (%)	1.09	2.52
Beta	1.02	1.00

Sector Allocation (%) vs MSCI ACWI



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	98.9%	88.9%
Emerging*	1.1%	11.1%
Top 10 Largest Countries		
United States	53.0%	62.0%
United Kingdom	8.4%	3.7%
Switzerland	7.5%	2.6%
Hong Kong	6.6%	0.7%
Denmark	5.3%	0.6%
Australia	4.1%	1.9%
Sweden	4.1%	0.8%
Japan	3.9%	5.4%
Canada	2.3%	3.1%
Netherlands	1.7%	1.0%
Total-Top 10 Largest Countries	96.8%	81.8%

Top Contributors

	Avg Wgt	Return	Contribution
ON SEMICONDUCTOR CORP	2.34	23.89	0.56
ATLISSIAN CORP	3.22	12.37	0.40
SCHWAB (CHARLES) CORP	2.73	14.10	0.38
ARISTA NETWORKS INC	1.80	20.43	0.37
AIRBNB INC	1.76	17.92	0.32
CHIPOTLE MEXICAN GRILL INC	1.87	14.96	0.28
HOYA CORP	1.35	12.53	0.17
NU HOLDINGS LTD	0.89	17.65	0.16
BOSTON SCIENTIFIC CORP	3.88	3.92	0.15

Bottom Contributors

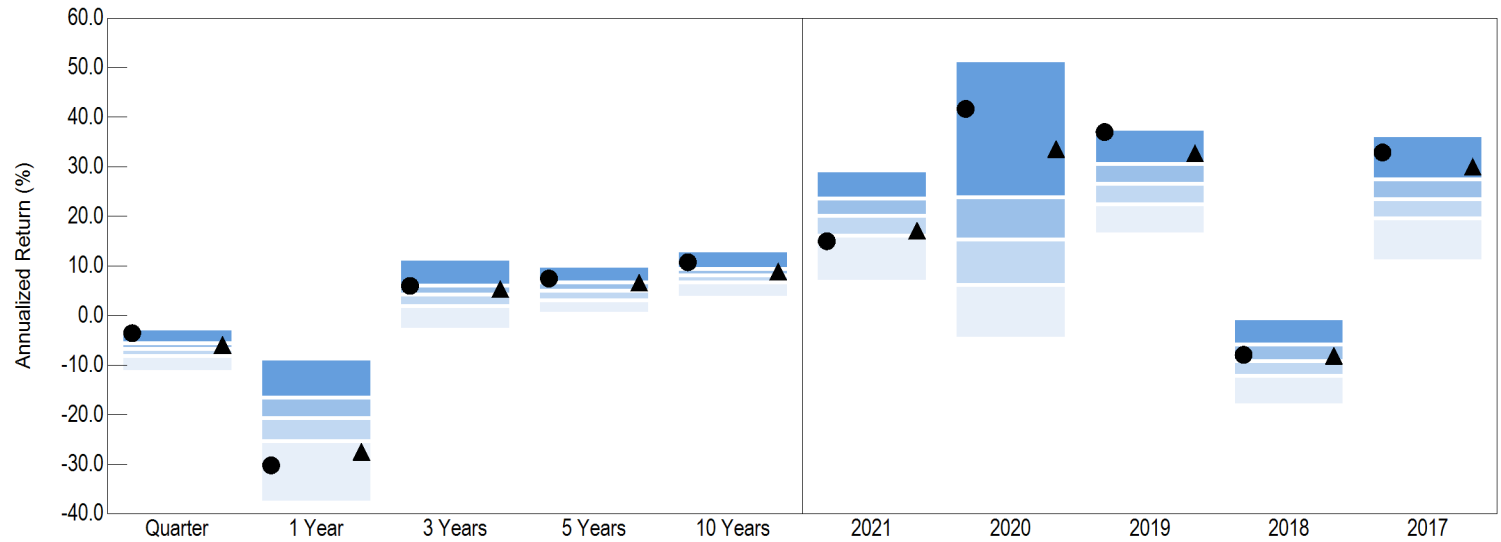
	Avg Wgt	Return	Contribution
ADVANCED MICRO DEVICES INC	5.50	-17.14	-0.94
VEEVA SYSTEMS INC	5.52	-16.74	-0.92
FIDELITY NATIONAL INFORMATION SERVICES INC	3.07	-17.11	-0.53
AIA GROUP LTD	2.21	-22.65	-0.50
TELEFONAKTIEBOLAGET LM ERICSSON	2.59	-19.24	-0.50
ALPHABET INC	3.99	-12.22	-0.49
ASTRAZENECA PLC	2.91	-14.95	-0.43
UBS GROUP AG	4.46	-8.49	-0.38
TECHTRONIC INDUSTRIES CO LTD	4.69	-6.43	-0.30

Unclassified sector allocation includes cash allocations.

Artisan Partners
 Manager Performance Comparisons (Gross of Fees)

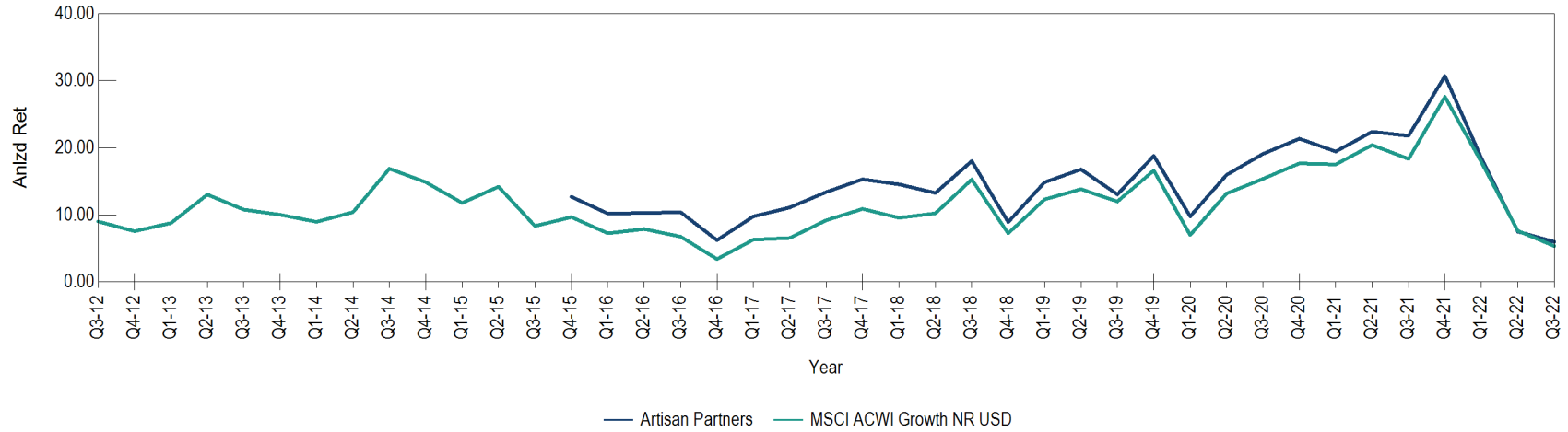
Period Ending: September 30, 2022

Artisan Partners vs. eV All Global Equity Gross Universe

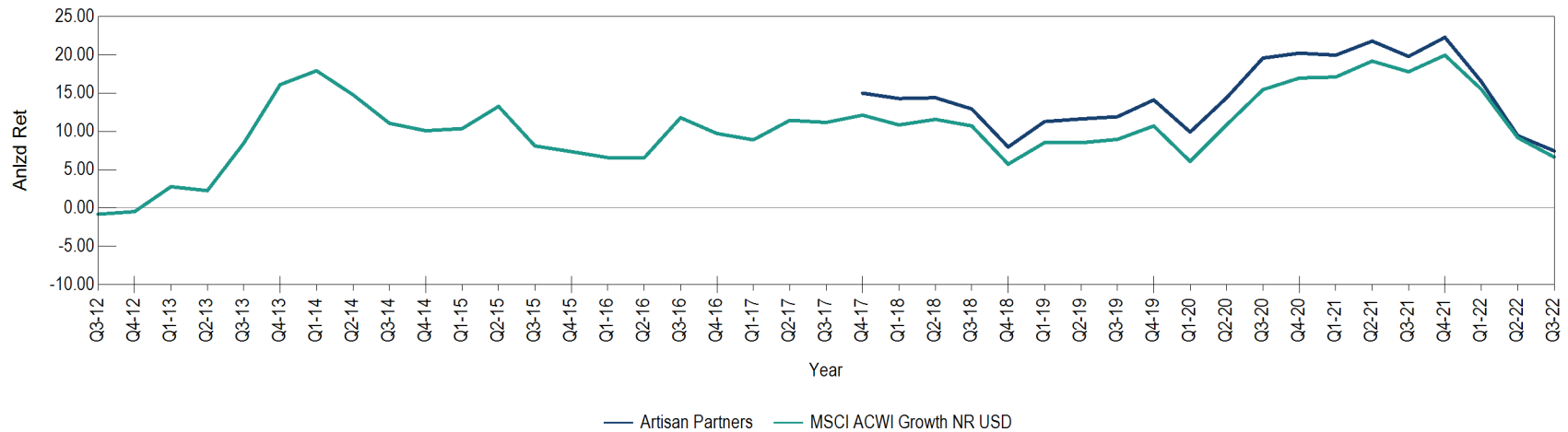


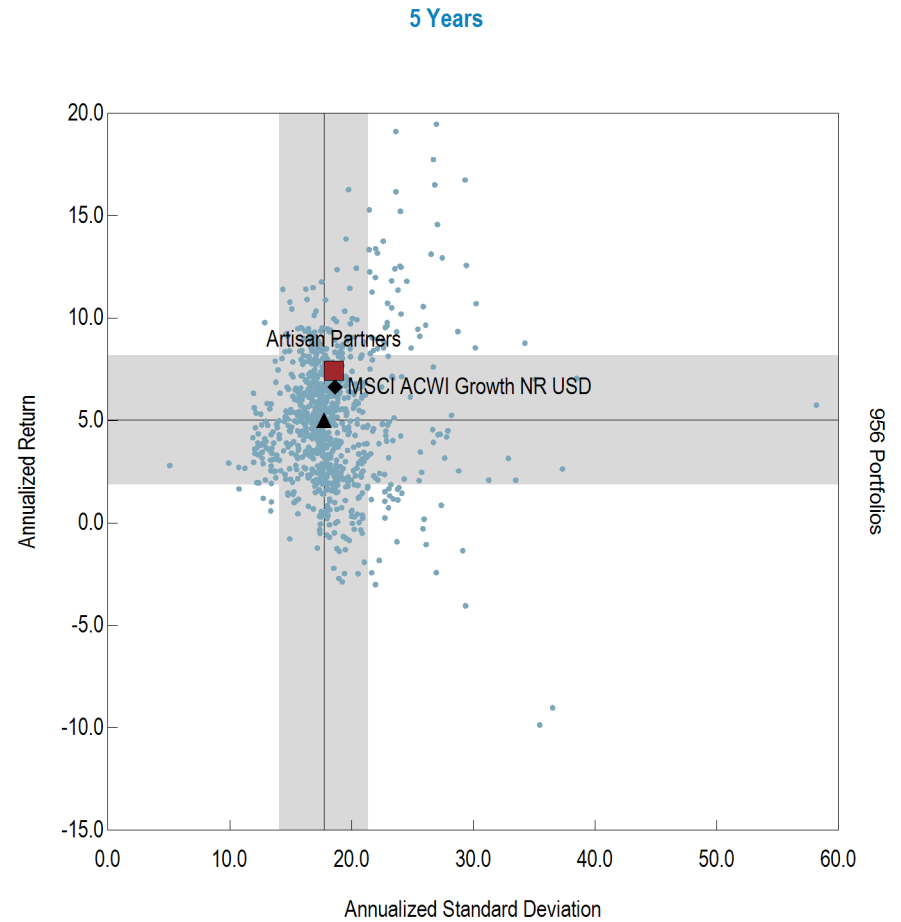
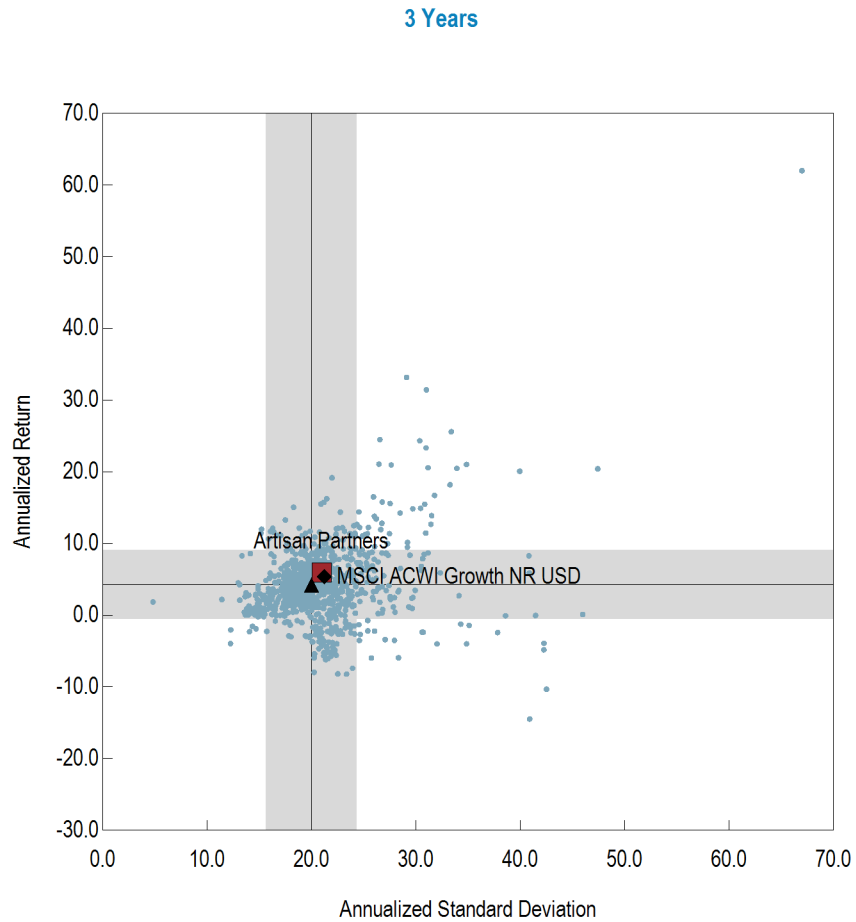
	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
5th Percentile	-2.6	-8.8	11.5	9.9	13.1	29.2	51.5	37.6	-0.7	36.3
25th Percentile	-5.5	-16.5	6.1	6.8	9.5	23.7	24.0	30.7	-5.8	27.6
Median	-6.7	-20.7	4.2	5.0	8.2	20.2	15.4	26.6	-9.1	23.5
75th Percentile	-8.1	-25.3	1.9	3.1	6.7	16.2	6.3	22.6	-12.2	19.6
95th Percentile	-11.3	-37.6	-2.8	0.4	3.7	6.9	-4.7	16.5	-18.1	11.0
# of Portfolios	1,184	1,183	1,086	956	645	1,141	1,093	989	920	880
● Artisan Partners	-3.6 (9)	-30.2 (87)	6.0 (27)	7.4 (19)	10.7 (13)	15.0 (80)	41.7 (9)	37.0 (7)	-7.9 (40)	32.9 (11)
▲ MSCI ACWI Growth NR USD	-5.9 (35)	-27.5 (82)	5.4 (34)	6.6 (27)	8.9 (35)	17.1 (71)	33.6 (14)	32.7 (17)	-8.1 (42)	30.0 (17)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





	3 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Artisan Partners	6.0%	21.0%	0.3
MSCI ACWI Growth NR USD	5.4%	21.2%	0.2
eV All Global Equity Gross Median	4.2%	20.0%	0.2

	5 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Artisan Partners	7.4%	18.6%	0.3
MSCI ACWI Growth NR USD	6.6%	18.7%	0.3
eV All Global Equity Gross Median	5.0%	17.7%	0.2

First Eagle Manager Portfolio Overview

Period Ending: September 30, 2022

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

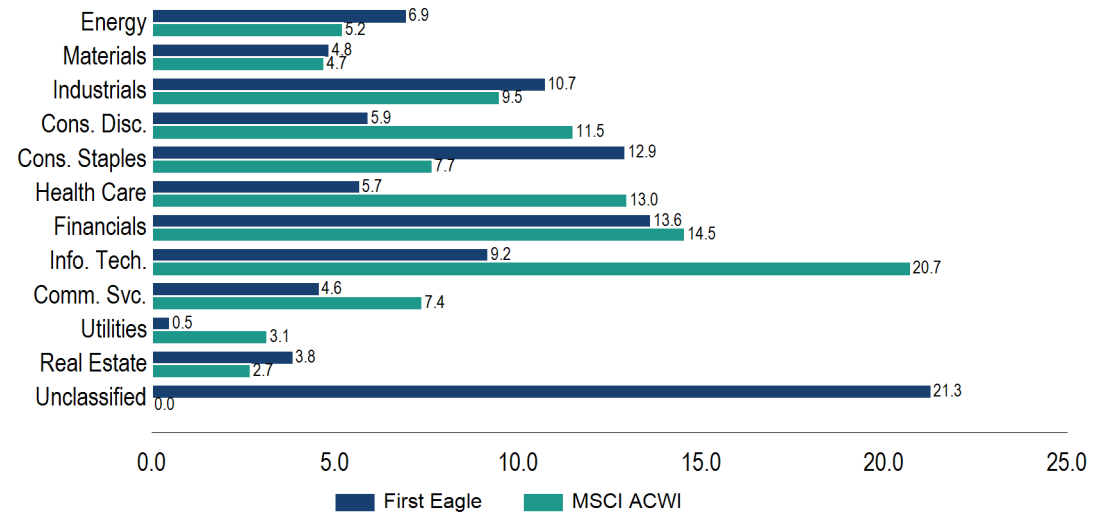
Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	142	2,895
Weighted Avg. Market Cap. (\$B)	114.58	306.81
Median Market Cap. (\$B)	23.89	10.73
Price To Earnings	14.02	14.89
Price To Book	2.13	3.12
Price To Sales	1.36	1.51
Return on Equity (%)	16.32	22.39
Yield (%)	2.45	2.52
Beta	0.74	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	93.7%	88.9%
Emerging*	6.0%	11.1%
Top 10 Largest Countries		
United States	61.5%	62.0%
Japan	7.3%	5.4%
United Kingdom	7.2%	3.7%
Canada	4.5%	3.1%
France	3.4%	2.7%
Switzerland	2.8%	2.6%
Korea*	1.6%	1.2%
Hong Kong	1.6%	0.7%
Brazil*	1.4%	0.6%
Mexico*	1.3%	0.2%
Total-Top 10 Largest Countries	93.8%	82.2%

Sector Allocation (%) vs MSCI ACWI



Top Contributors

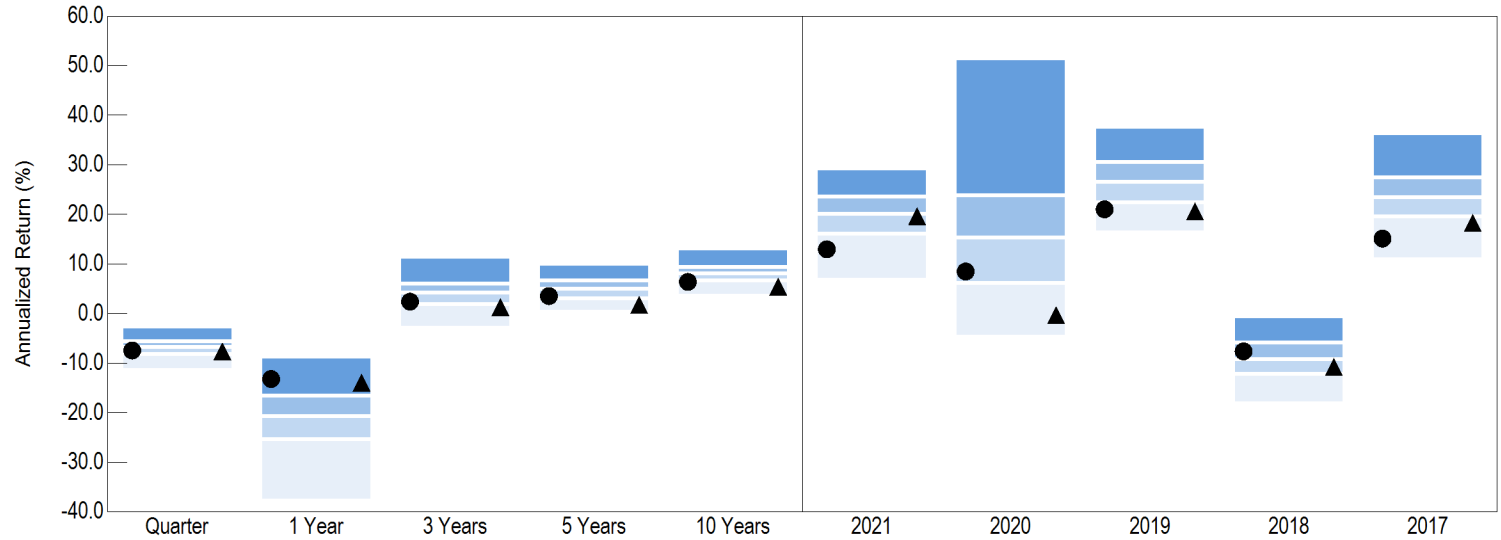
	End Weight	Return	Contribution
HCA HEALTHCARE INC	1.37	9.65	0.13
AMBEV SA	0.93	12.75	0.12
ROSS STORES INC	0.53	20.42	0.11
EXXON MOBIL CORP	3.04	2.91	0.09
SCHWAB (CHARLES) CORP	0.51	14.10	0.07
DEERE & COMPANY	0.53	11.86	0.06
ITAUSA INVESTIMENTOS	0.45	13.77	0.06
ITAU PN			
SODEXO	0.70	7.93	0.06
NUTRIEN LTD	0.84	5.23	0.04
CUMMINS INC.	0.71	5.87	0.04

Bottom Contributors

	End Weight	Return	Contribution
SPDR GOLD TRUST	9.62	-8.19	-0.79
COMCAST CORP	1.57	-24.75	-0.39
ORACLE CORP	2.90	-12.20	-0.35
NEWMONT CORPORATION	0.84	-28.65	-0.24
BRITISH AMERICAN TOBACCO PLC	1.74	-13.15	-0.23
PHILIP MORRIS INTERNATIONAL INC	1.54	-14.70	-0.23
ALIBABA GROUP HOLDING LTD	0.68	-30.36	-0.21
META PLATFORMS INC	1.25	-15.86	-0.20
SANOFI	0.79	-23.66	-0.19
DANONE	1.23	-14.46	-0.18

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

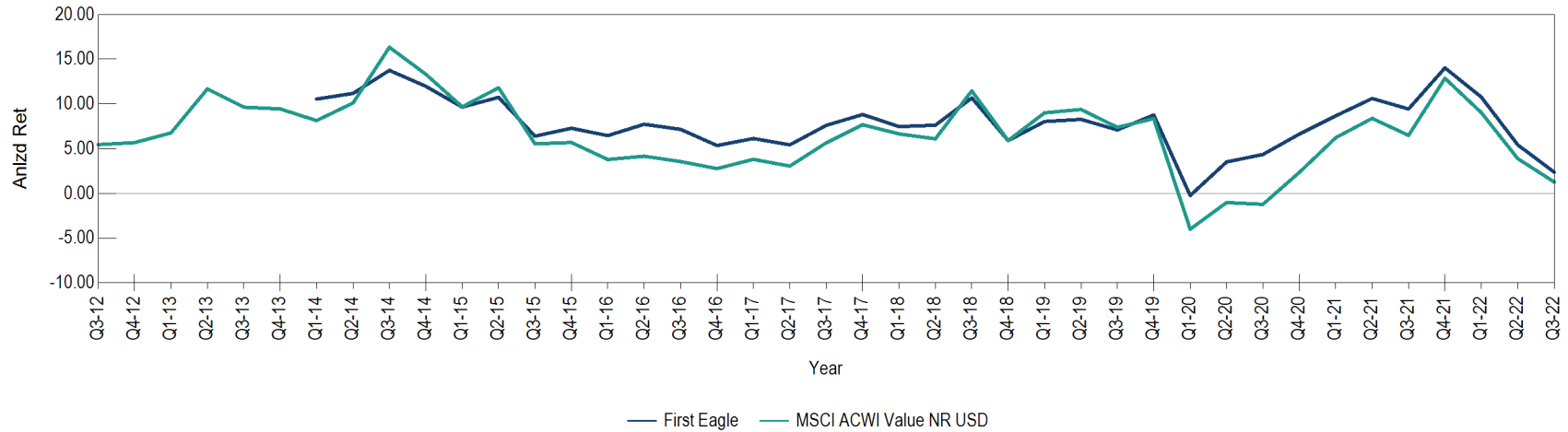


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
5th Percentile	-2.6	-8.8	11.5	9.9	13.1	29.2	51.5	37.6	-0.7	36.3
25th Percentile	-5.5	-16.5	6.1	6.8	9.5	23.7	24.0	30.7	-5.8	27.6
Median	-6.7	-20.7	4.2	5.0	8.2	20.2	15.4	26.6	-9.1	23.5
75th Percentile	-8.1	-25.3	1.9	3.1	6.7	16.2	6.3	22.6	-12.2	19.6
95th Percentile	-11.3	-37.6	-2.8	0.4	3.7	6.9	-4.7	16.5	-18.1	11.0
# of Portfolios	1,184	1,183	1,086	956	645	1,141	1,093	989	920	880
● First Eagle	-7.5 (66)	-13.2 (14)	2.4 (72)	3.5 (70)	6.4 (79)	13.0 (85)	8.5 (70)	21.0 (82)	-7.6 (38)	15.1 (89)
▲ MSCI ACWI Value NR USD	-7.7 (69)	-14.0 (16)	1.3 (80)	1.7 (89)	5.4 (88)	19.6 (55)	-0.3 (89)	20.6 (83)	-10.8 (65)	18.3 (81)

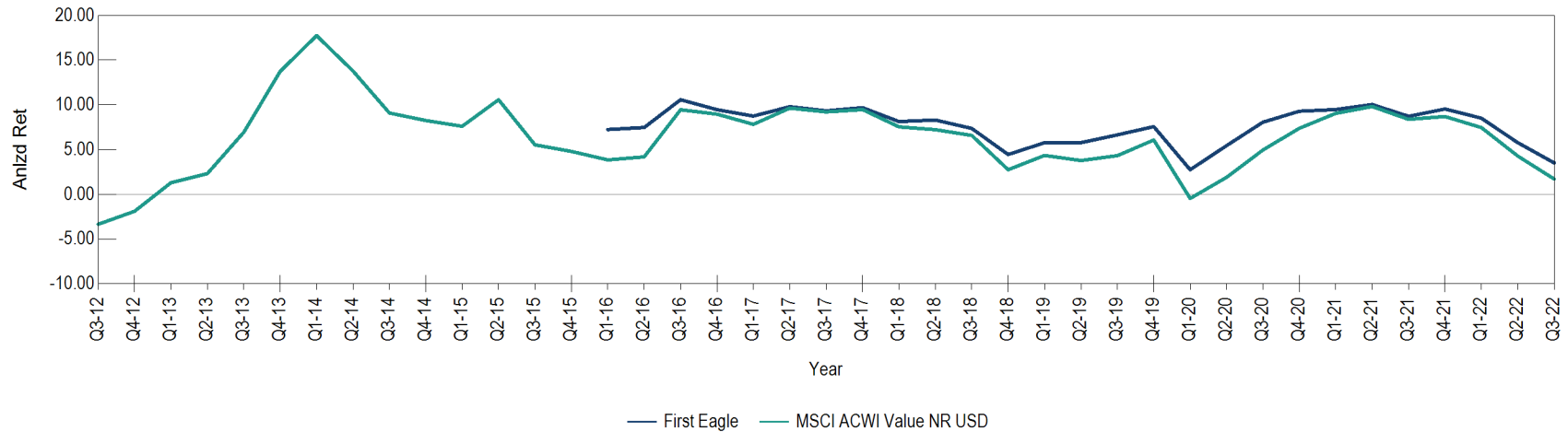
First Eagle
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2022

Rolling 3 Year Annualized Return (%)



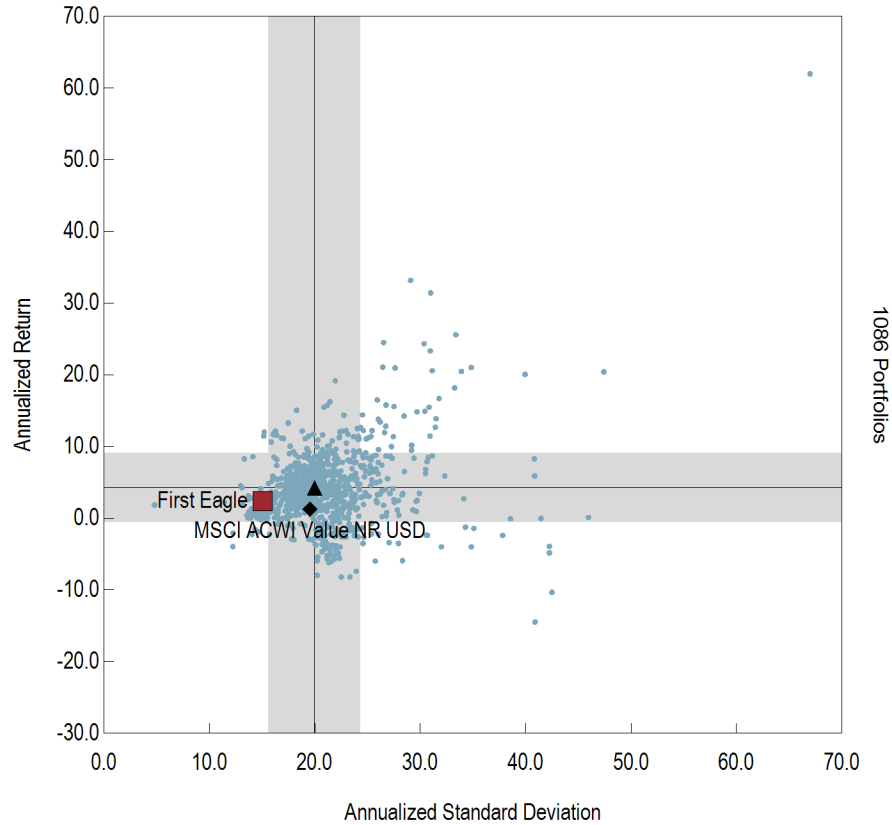
Rolling 5 Year Annualized Return (%)



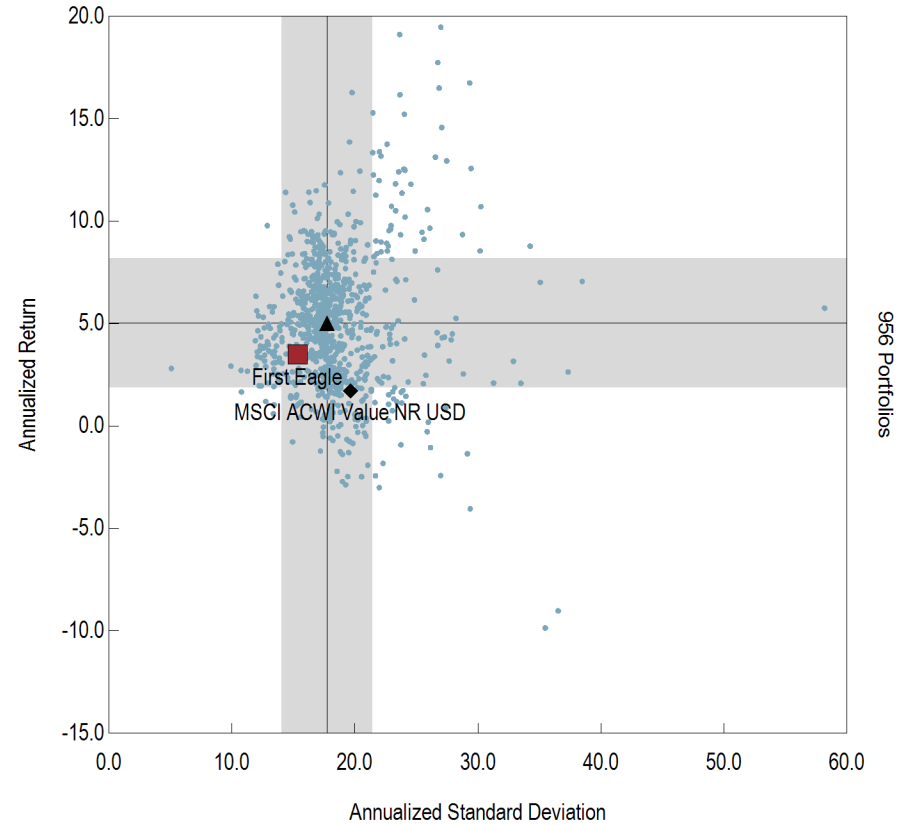
First Eagle
Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2022

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	2.4%	15.1%	0.1
MSCI ACWI Value NR USD	1.3%	19.6%	0.0
eV All Global Equity Gross Median	4.2%	20.0%	0.2

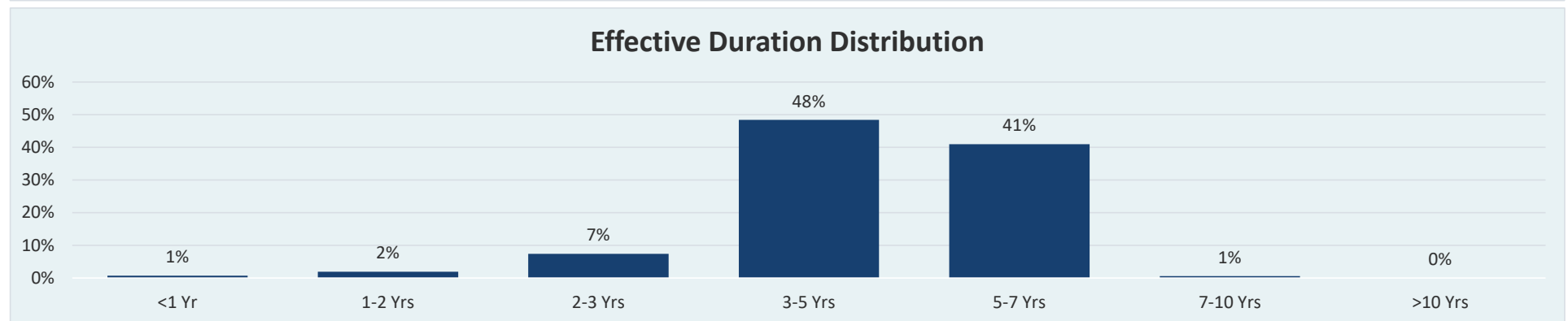
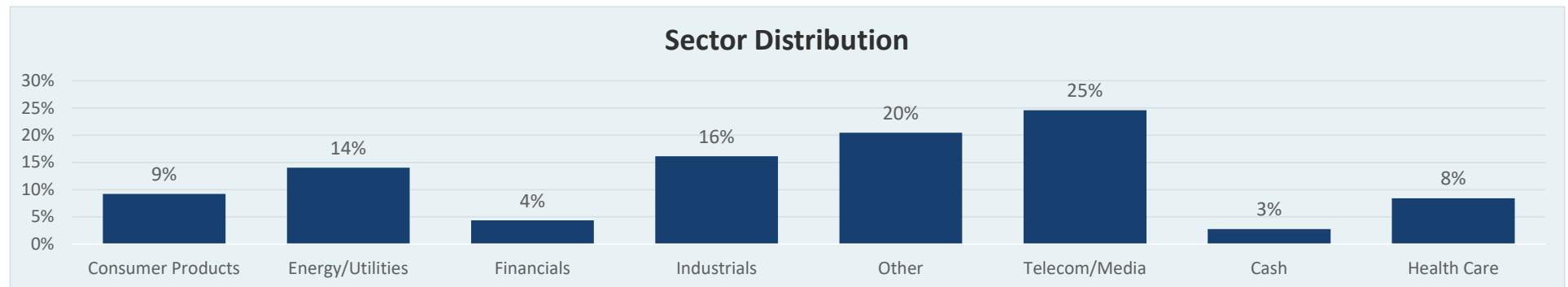
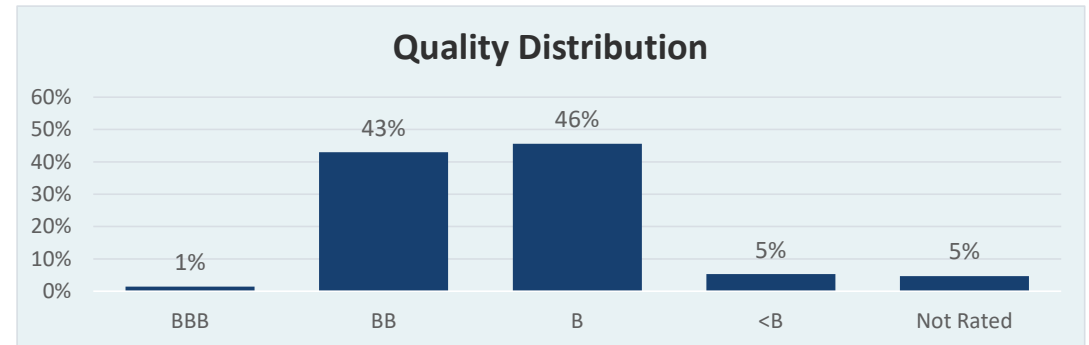
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	3.5%	13.2%	0.2
MSCI ACWI Value NR USD	1.7%	17.2%	0.0
eV All Global Equity Gross Median	5.0%	17.7%	0.2

High Yield Managers

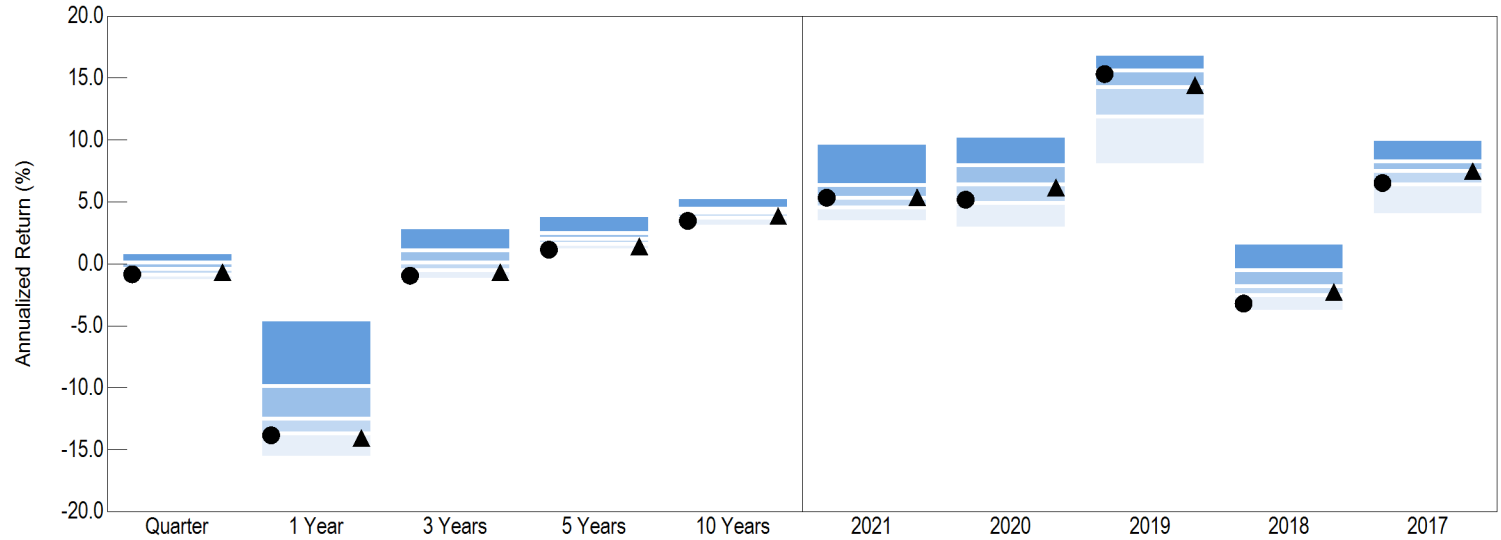
Domestic high yield fixed income portfolio with a focus on security selection. Primary personnel include Douglas Forsyth, Justin Kass, William Stickney, and Michael Yee.

	Allianz	ICE BofAML HY Master II
Effective Duration	4.40	4.43
Yield to Maturity	8.80	9.40
Average Quality	B1	B2
Average Coupon	6.2%	5.8%



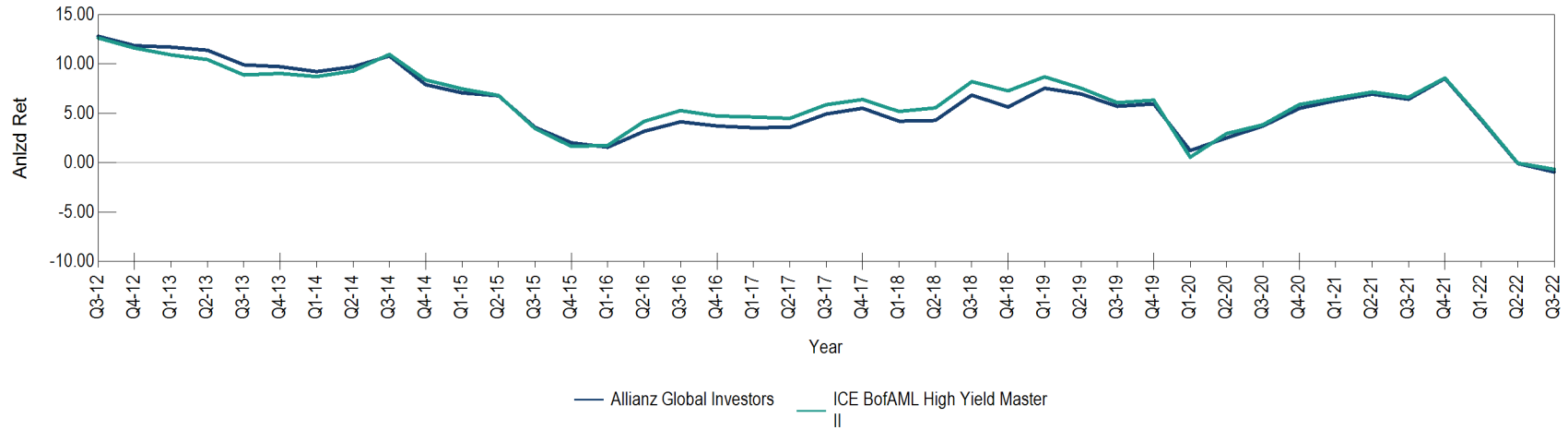
Quality distribution excludes cash.

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

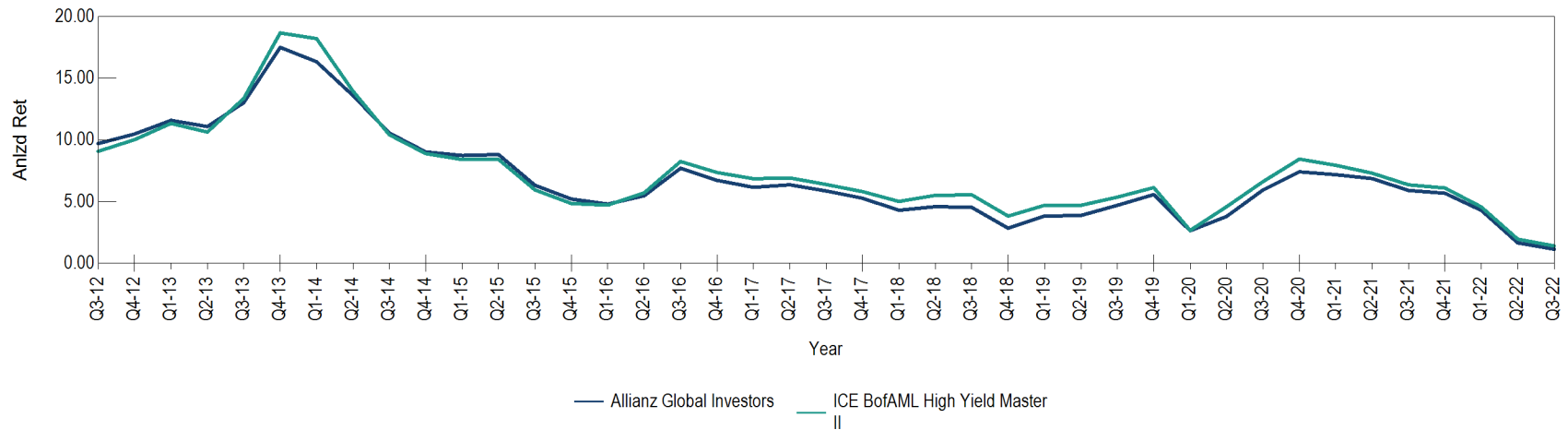


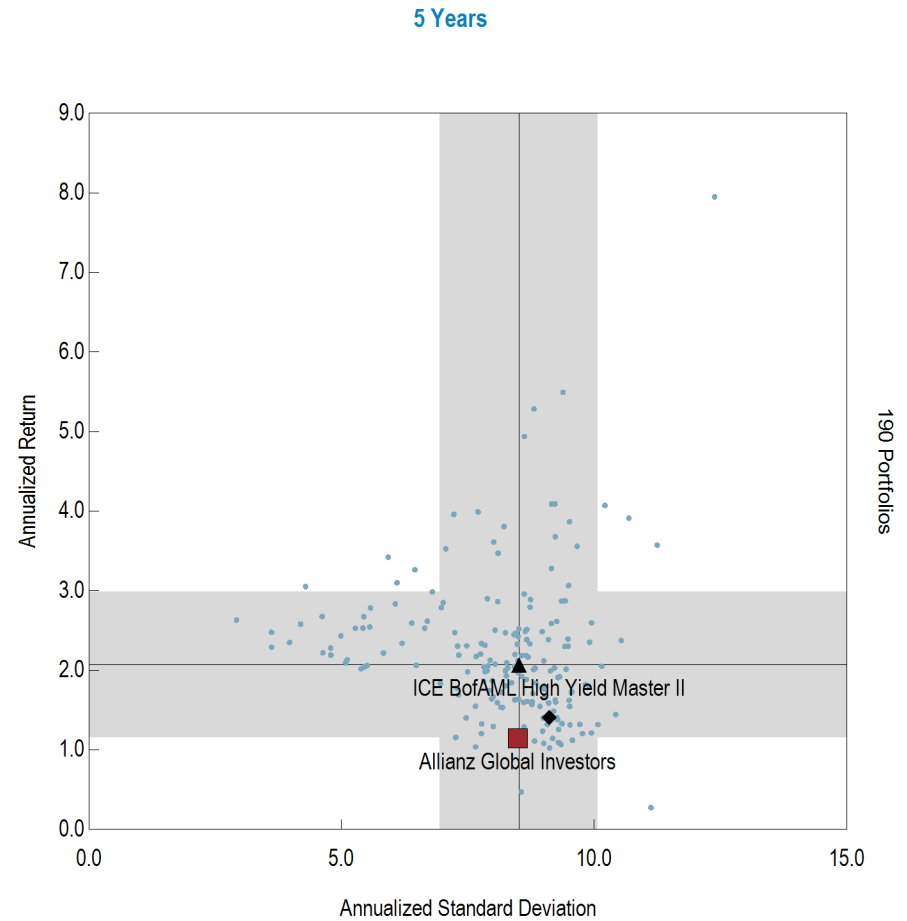
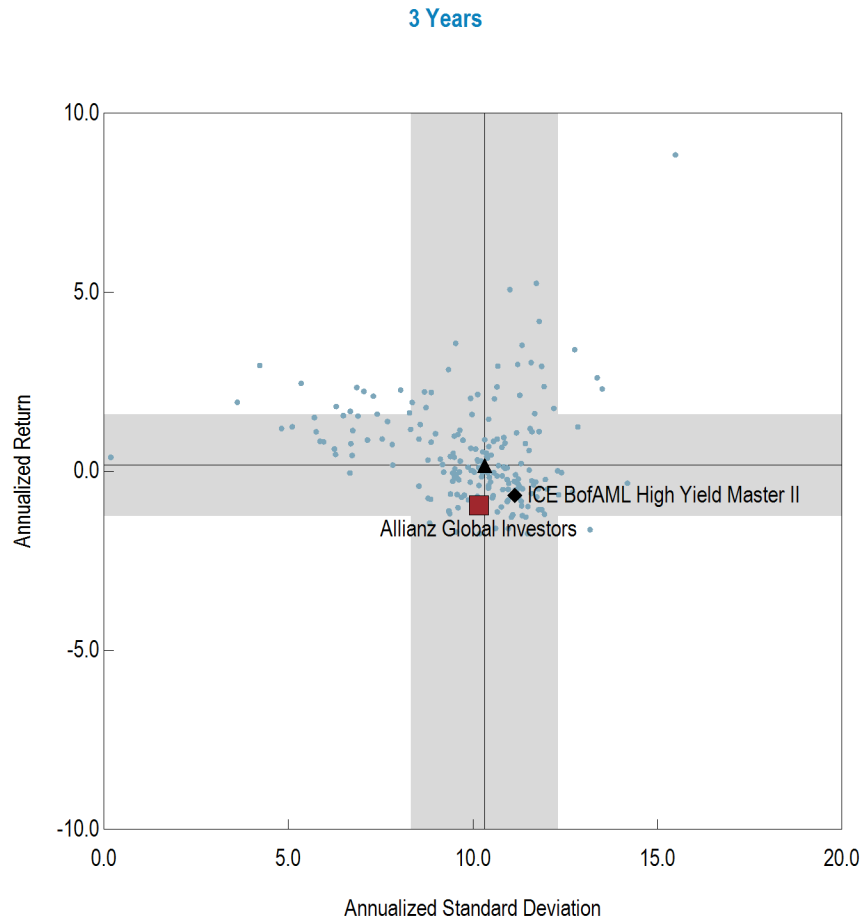
	Return (Rank)										
5th Percentile	0.9	-4.5	2.9	3.9	5.3	9.7	10.3	16.9	1.7	10.0	
25th Percentile	0.2	-9.8	1.1	2.5	4.5	6.4	8.0	15.6	-0.5	8.3	
Median	-0.4	-12.5	0.2	2.1	4.2	5.4	6.4	14.3	-1.8	7.5	
75th Percentile	-0.8	-13.7	-0.5	1.6	3.8	4.6	5.0	11.9	-2.5	6.5	
95th Percentile	-1.3	-15.6	-1.2	1.1	3.0	3.4	2.9	8.0	-3.8	4.0	
# of Portfolios	201	201	199	190	150	211	217	226	210	198	
● Allianz Global Investors	-0.8 (77)	-13.8 (79)	-0.9 (89)	1.1 (95)	3.5 (86)	5.3 (51)	5.2 (74)	15.3 (31)	-3.2 (88)	6.5 (74)	
▲ ICE BofAML High Yield Master II	-0.7 (71)	-14.1 (82)	-0.7 (82)	1.4 (85)	3.9 (66)	5.4 (50)	6.2 (55)	14.4 (49)	-2.3 (69)	7.5 (53)	

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





	3 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Allianz Global Investors	-0.9%	10.2%	-0.1
ICE BofAML High Yield Master II	-0.7%	11.1%	-0.1
eV US High Yield Fixed Inc Gross Median	0.2%	10.3%	0.0

	5 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Allianz Global Investors	1.1%	8.5%	0.0
ICE BofAML High Yield Master II	1.4%	9.1%	0.0
eV US High Yield Fixed Inc Gross Median	2.1%	8.5%	0.1

Real Estate Managers

Adelante Manager Portfolio Overview

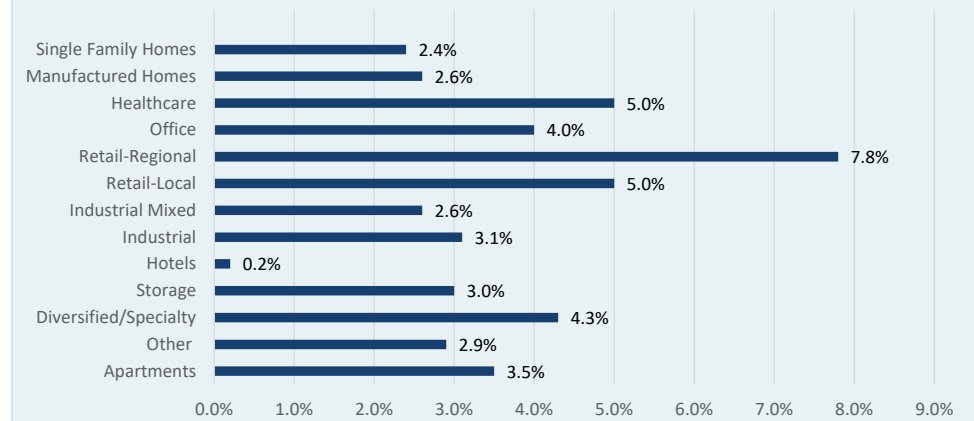
Period Ending: September 30, 2022

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

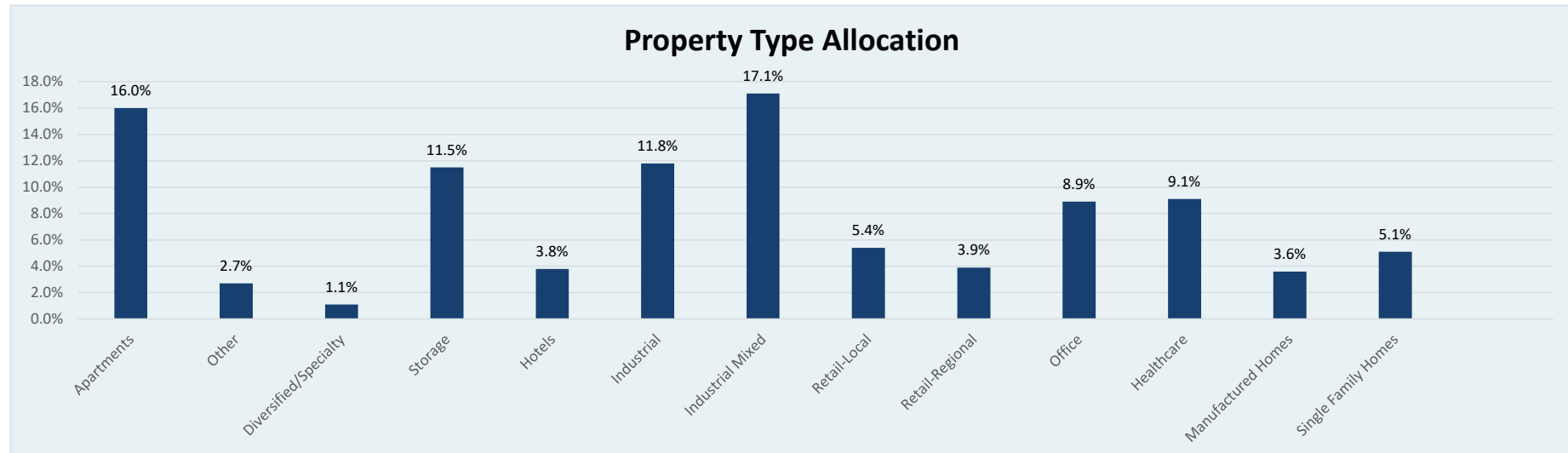
Top Five Holdings

Company	Property Type	Allocation
ProLogis Inc.	Industrial	9.5%
Equinix Inc	Industrial Mixed	7.8%
Public Storage	Storage	6.6%
Equity Residential	Apartments	6.2%
Duke Realty	Industrial Mixed	5.4%

Dividend Yield by Property Type



Property Type Allocation



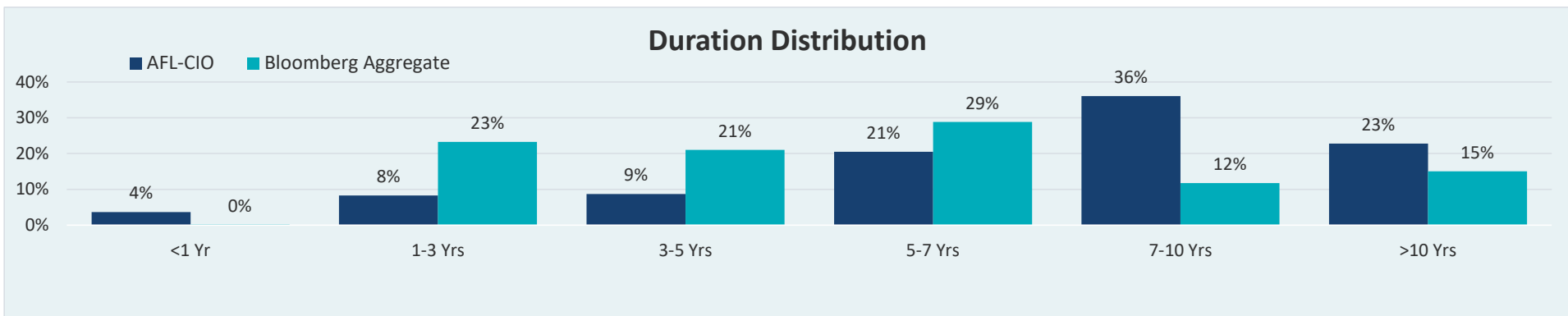
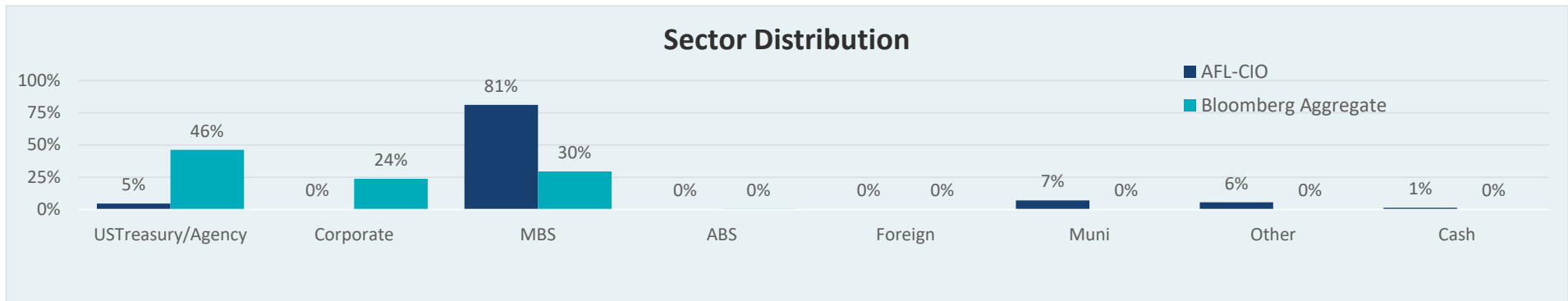
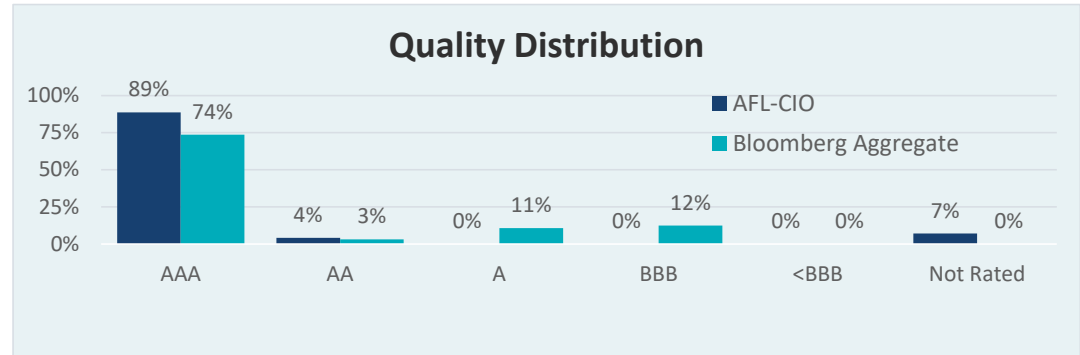
Diversifying Fixed Income Managers

AFL-CIO Manager Portfolio Overview

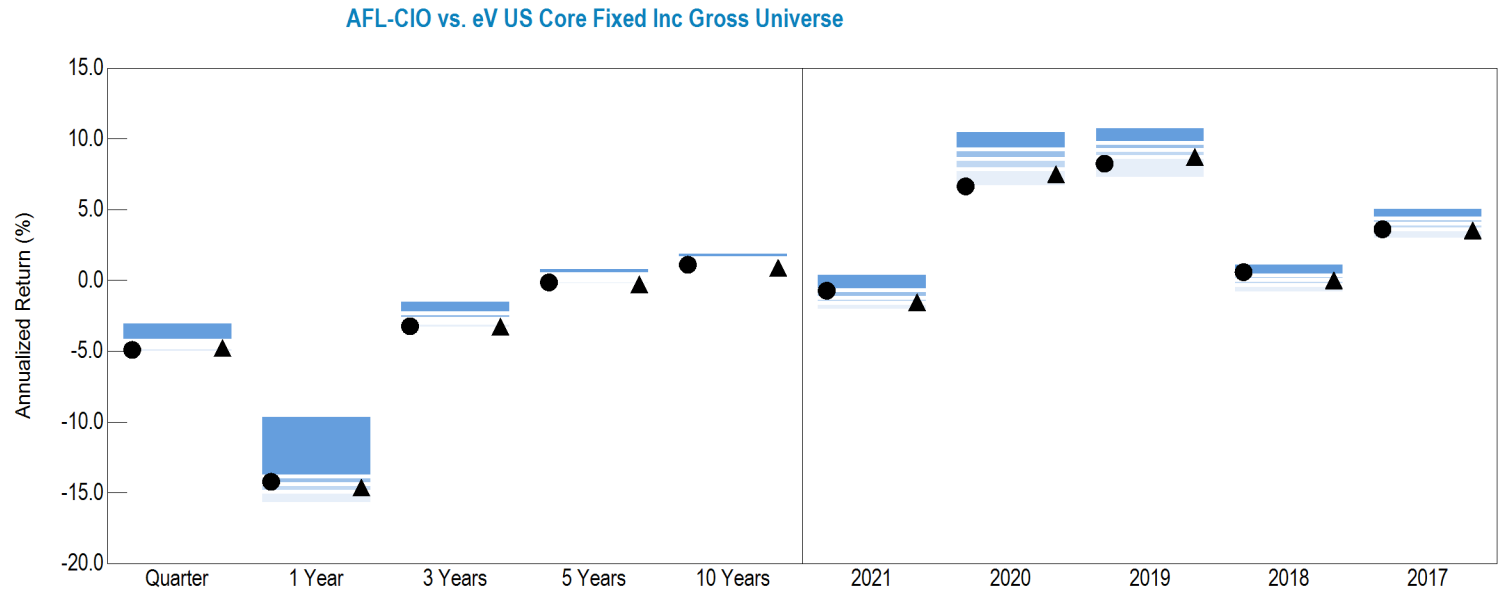
Period Ending: September 30, 2022

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	6.07	6.21
Yield to Maturity	3.19	4.69
Average Quality	AAA	AA
Average Coupon	2.8%	2.6%

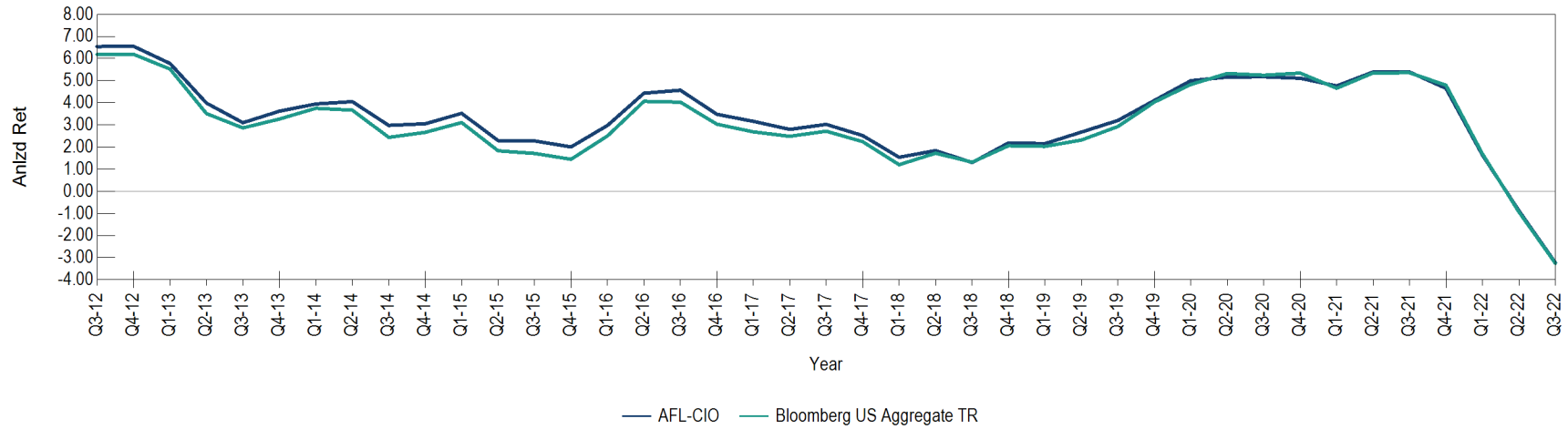


Duration and Quality distributions exclude cash.

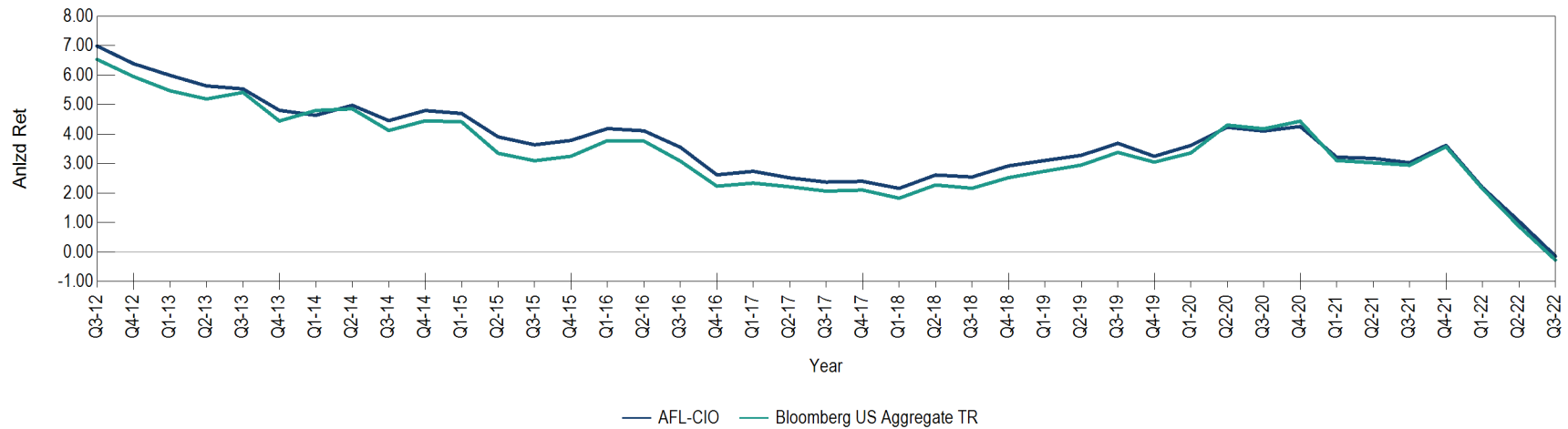


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
5th Percentile	-2.9	-9.5	-1.4	0.9	2.0	0.5	10.6	10.9	1.2	5.2
25th Percentile	-4.2	-13.8	-2.3	0.5	1.6	-0.7	9.3	9.8	0.4	4.4
Median	-4.5	-14.4	-2.7	0.2	1.4	-1.2	8.6	9.3	0.0	4.0
75th Percentile	-4.7	-14.9	-3.0	0.0	1.2	-1.5	7.9	8.7	-0.3	3.6
95th Percentile	-5.1	-15.7	-3.4	-0.3	0.9	-2.1	6.6	7.2	-0.9	2.9
# of Portfolios	215	215	206	203	196	217	225	228	240	233
● AFL-CIO	-4.9 (91)	-14.2 (40)	-3.2 (93)	-0.1 (91)	1.1 (85)	-0.7 (30)	6.6 (95)	8.2 (88)	0.6 (16)	3.6 (76)
▲ Bloomberg US Aggregate TR	-4.8 (82)	-14.6 (63)	-3.3 (93)	-0.3 (95)	0.9 (96)	-1.5 (76)	7.5 (85)	8.7 (77)	0.0 (54)	3.5 (79)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)

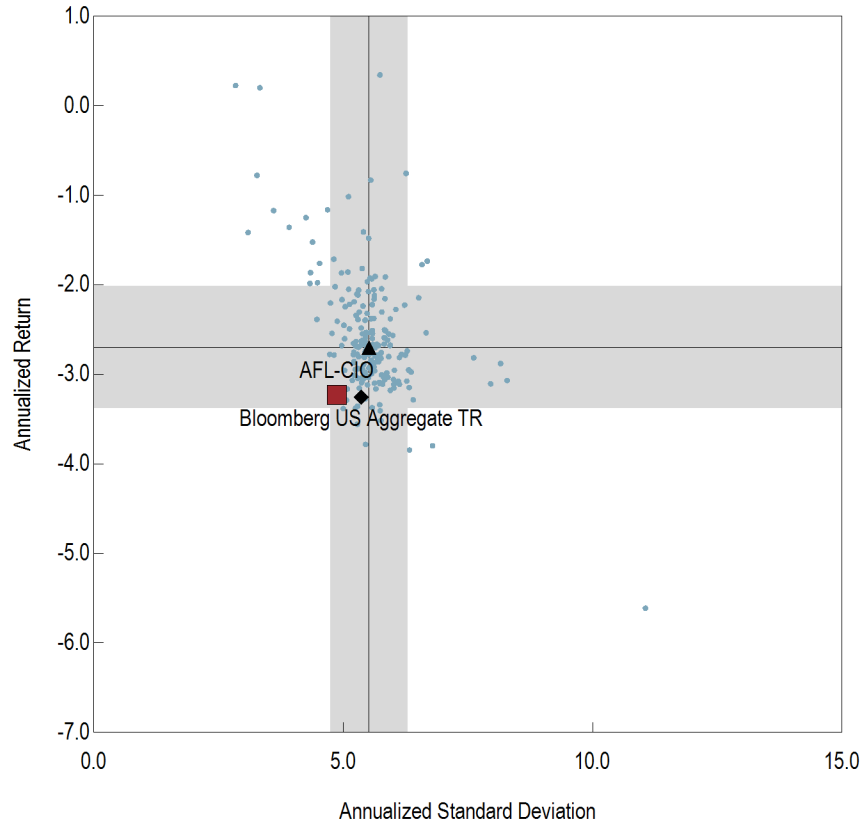


AFL-CIO

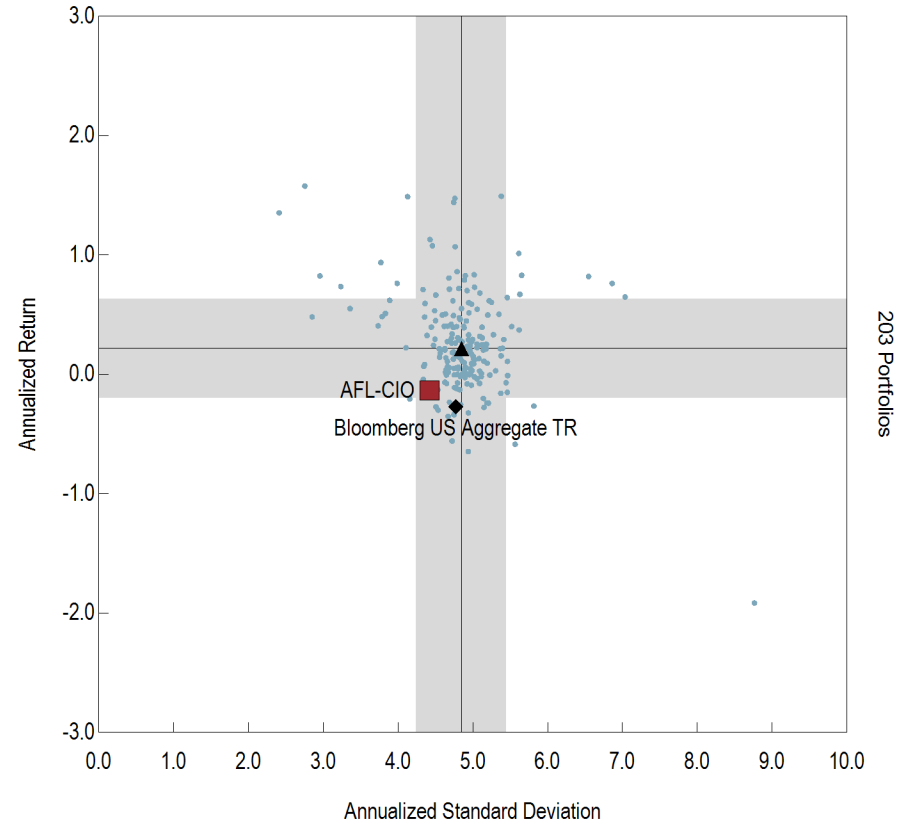
Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2022

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
AFL-CIO	-3.2%	4.9%	-0.8
Bloomberg US Aggregate TR	-3.3%	5.4%	-0.7
eV US Core Fixed Inc Gross Median	-2.7%	5.5%	-0.6

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
AFL-CIO	-0.1%	4.4%	-0.3
Bloomberg US Aggregate TR	-0.3%	4.8%	-0.3
eV US Core Fixed Inc Gross Median	0.2%	4.8%	-0.2

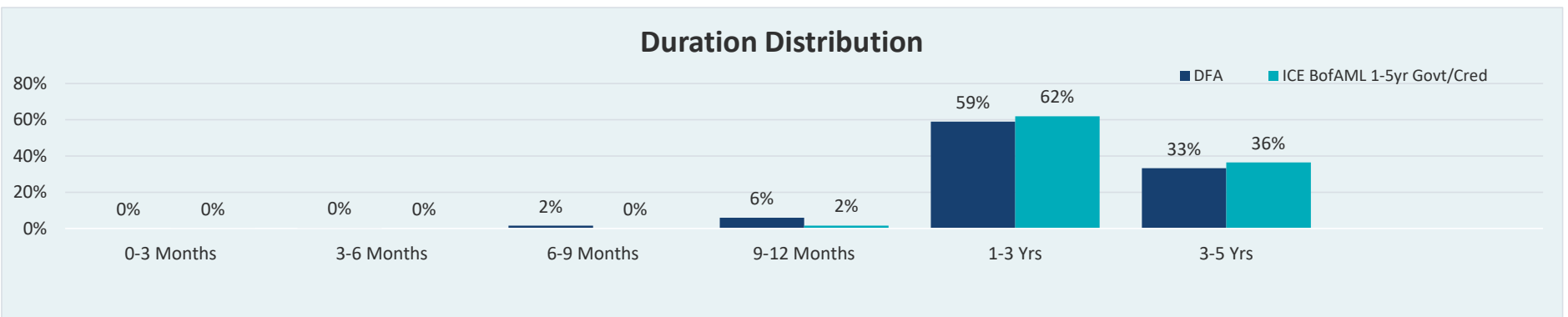
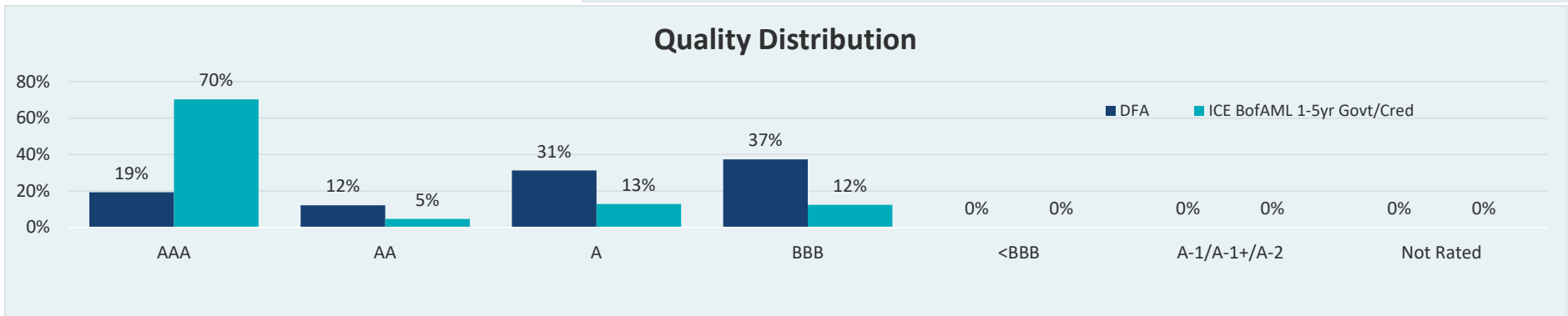
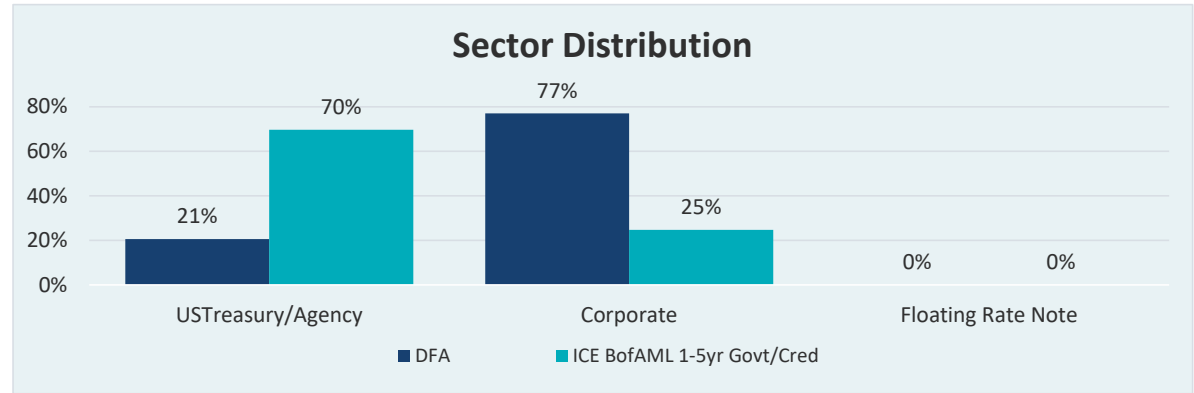
Liquidity Managers

DFA Short Credit Manager Portfolio Overview

Period Ending: September 30, 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	2.32	2.59
Yield to Maturity	5.36	4.59
Average Quality	A	AA+
Average Coupon	2.48%	2.08%

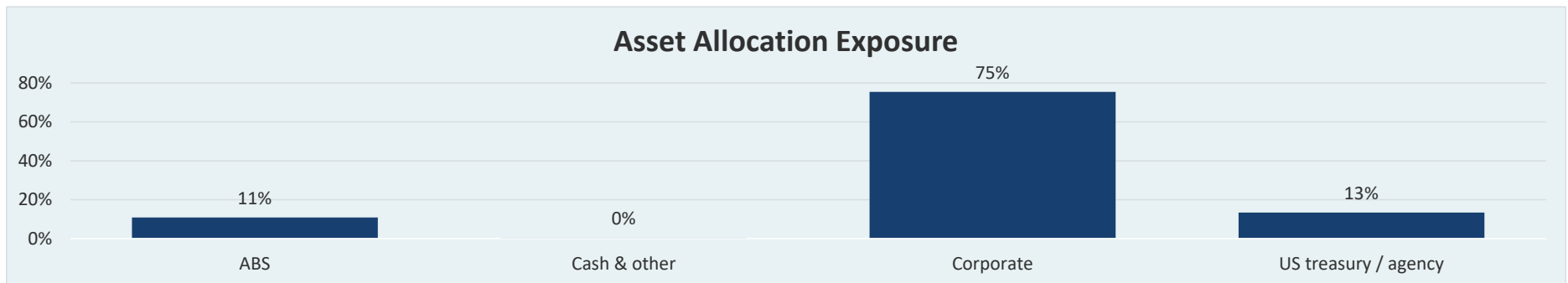
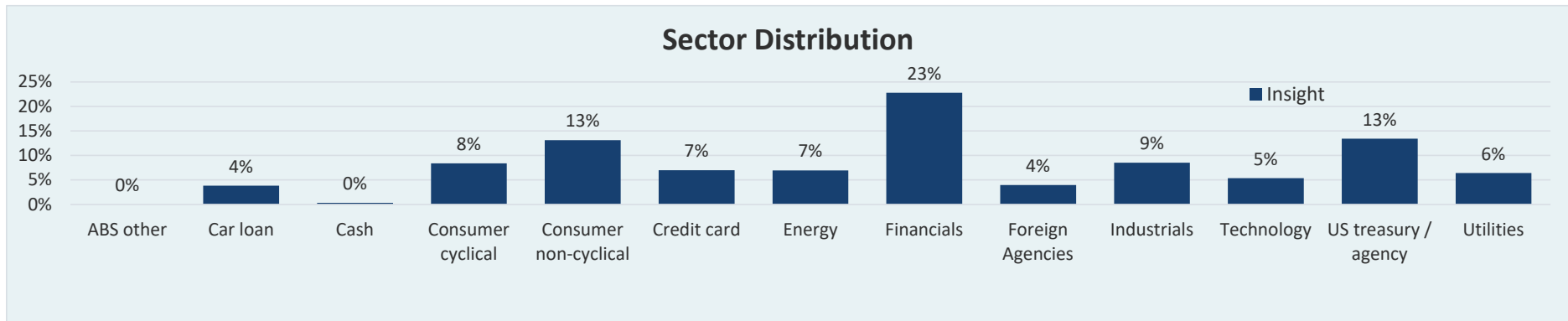
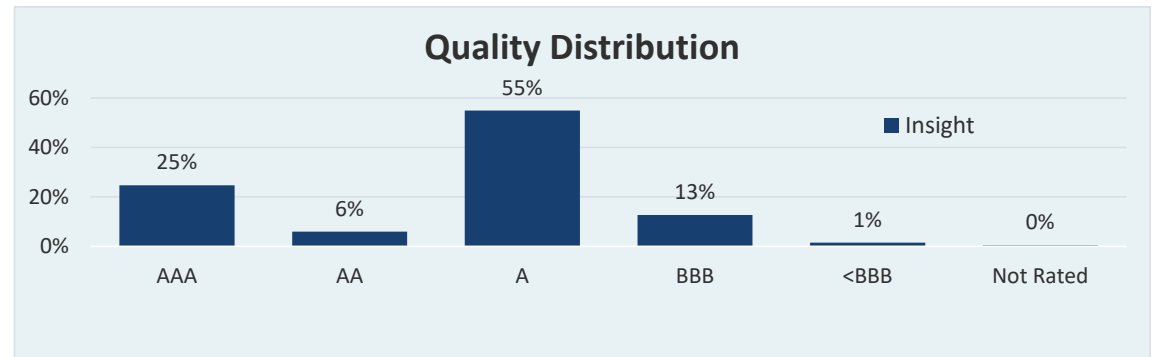


Insight Short Duration Manager Portfolio Overview

Period Ending: September 30, 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	1.29	1.88
Yield to Maturity	4.14	1.95
Average Quality	A+	AAA
Average Coupon	2.69%	1.66%

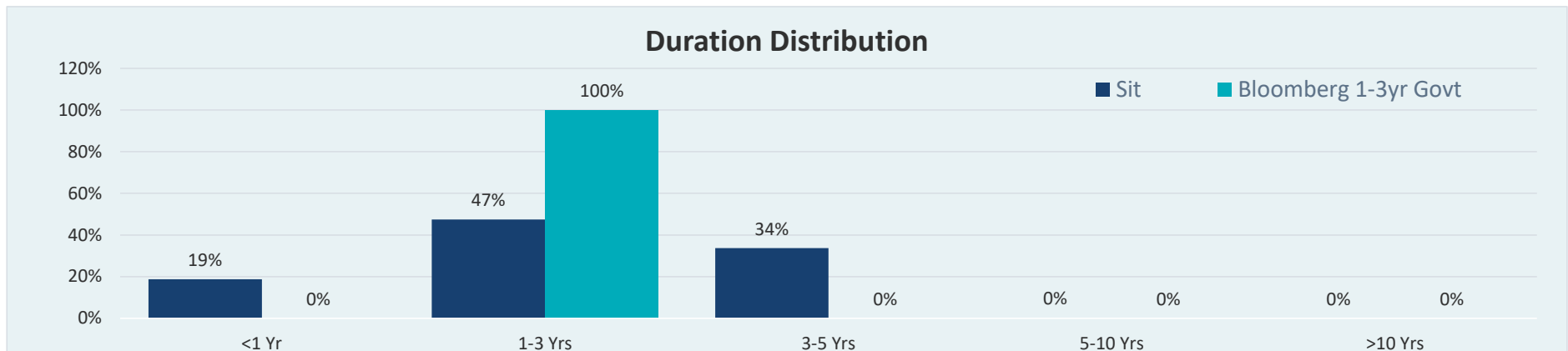
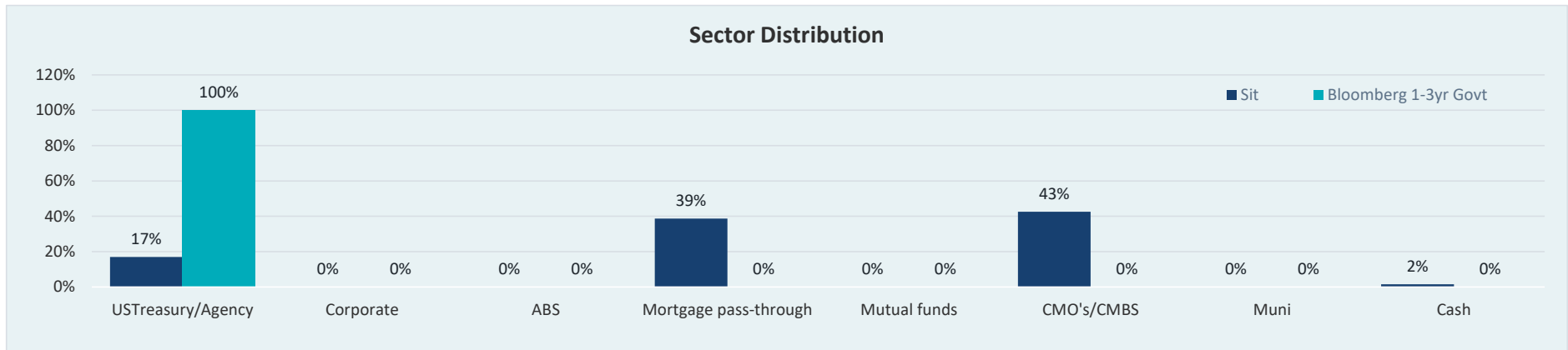
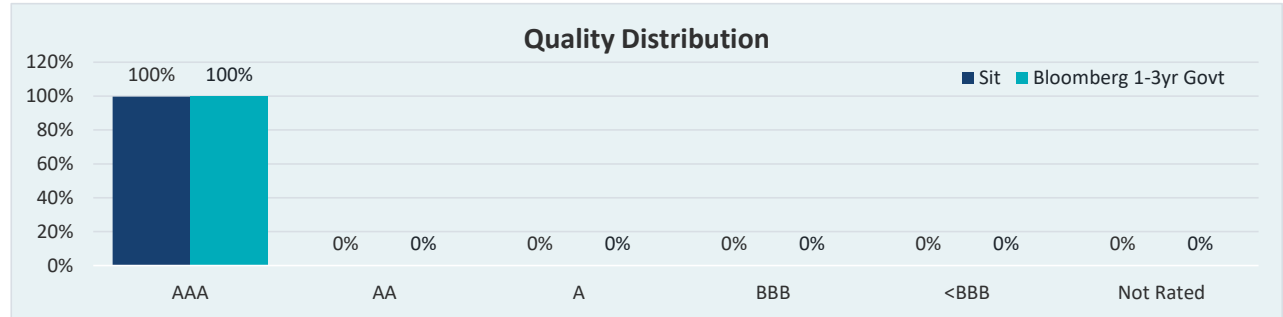


Sit Short Duration Manager Portfolio Overview

Period Ending: September 30, 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	2.60	1.88
Yield to Maturity	5.40	1.95
Average Quality	AAA	AAA
Average Coupon	5.60%	1.66%



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.

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Memorandum

Date: November 30, 2022

To: CCCERA Board of Retirement Trustees

From: Timothy Price, Chief Investment Officer

Subject: Investment Staff Report – Q3 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 third 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 2.0 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 September 30, 2022, the Growth portfolio returned 5.9% relative to the index return of 4.4%, for a relative outperformance of 1.5%. Over this period, the Growth program produced a superior Sharpe ratio of 0.4 relative to the index's 0.2. During the third quarter of 2022, the MSCI ACWI Index returned -6.8% relative to CCCERA's Growth sub-portfolio return of -4.3%.

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 0.8, similar to what it was in June 2022. The trailing real (net of inflation) return over the past five years is -3.8%, 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	2.0 years	Meeting Expectations
Appropriately Sized	Months of Benefit Payments Invested	34 Months	Meeting Expectations

Growth

Objective	Measurement	Current Period Data	Status
Growth of Plan Assets	Absolute Returns	Trailing 5 yr return: 5.9%	Meeting Expectations
	Benchmark Relative Returns	1.5% 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	0.8 over trailing 5 years	Below Expectations
Positive Real Returns	Returns	5 yr real return: -3.8% 5 yr nominal return: 0.0%	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	14%	-32%	N
Sit	Good	-10%	-12%	N
DFA	Good	3%	-17%	N

Performance

	Portfolio Average Credit Quality	Portfolio Average Duration	Portfolio Average Yield	1 Year Total Return
Insight	A+	1.3	4.1	-4.5%
Sit	AAA	2.6	5.4	-6.2%
DFA	A	2.3	5.4	-7.2%

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	-10%	-15%	N
BlackRock Index Fund	Good	-26%	-16%	N
Emerald Advisors	Good	-38%	-38%	N
Ceredex	Good	-36%	-30%	N
Pyrford	Good	-32%	-29%	N
William Blair	Good	-43%	-33%	N
First Eagle	Good	-18%	3%	N
Artisan Global	Good	-33%	-31%	N
PIMCO/RAE EM	Good	-15%	-23%	N
TT EM	Good	-4%	-38%	N
Adelante	Good	-36%	-27%	N
Invesco REIT	Good	-14%	-9%	N
Allianz	Good	-9%	22%	N
AQR	Good	-41%	-30%	N
PanAgora	Good	-23%	-26%	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	-21%	4%	7%		
Boston Partners	-3%	9%	12%	Y	04/30/1995
BlackRock Index Fund	-13%	11%	12%	Y	03/31/2017
Emerald Advisors	-30%	6%	11%	Y	03/31/2003
Ceredex	-11%	4%	9%	Y	09/30/2011
Total Domestic Equity	-17%	9%	12%	Y	
Pyrford	-10%	3%	3%	Y	03/31/2014
William Blair	-30%	5%	7%	Y	09/30/2010
PIMCO/RAE EM	-19%	3%	2%	N	01/31/2017
TT EM	-33%	1%	4%	N	06/30/2017
Total International Equity	-23%	3%	6%	Y	
First Eagle	-9%	5%	7%	Y	12/31/2010
Artisan Global	-27%	8%	10%	Y	11/30/2012
Total Global Equity	-18%	7%	9%	Y	
Adelante	-6%	7%	8%	Y	07/31/2001
Invesco REIT	N/A	N/A	N/A	Y	02/28/2022
Allianz	-13%	1%	4%	Y	04/30/2000
AQR	-10%	3%	2%	Y	12/31/2018
PanAgora	-18%	1%	4%	Y	02/28/2019
Private Equity	9%	17%	14%	Y	
Private Credit	12%	8%	10%	Y	
Real Estate	3%	5%	8%	Y	

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

Manager Notes:

The third quarter of 2022 was quite difficult as major equity markets continued the decline triggered earlier in the year by concerns around high inflation, higher interest rates, geopolitical tension and focus on the slower growth and the possibility of a recession.

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.

Allianz High Yield Fixed Income: Domestic high yield fixed income portfolio with a focus on security selection. Allianz will focus on the higher quality segment of the high yield universe. Allianz 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	-14%	-14%	N
Acadian	Good	-3%	-26%	N
Sit	Good	---	---	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	0.7	0.3	-10%	1%	100%
Acadian	-0.6	-0.5	1%	N/A	100%
Sit	0.2	N/A	-1%	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.

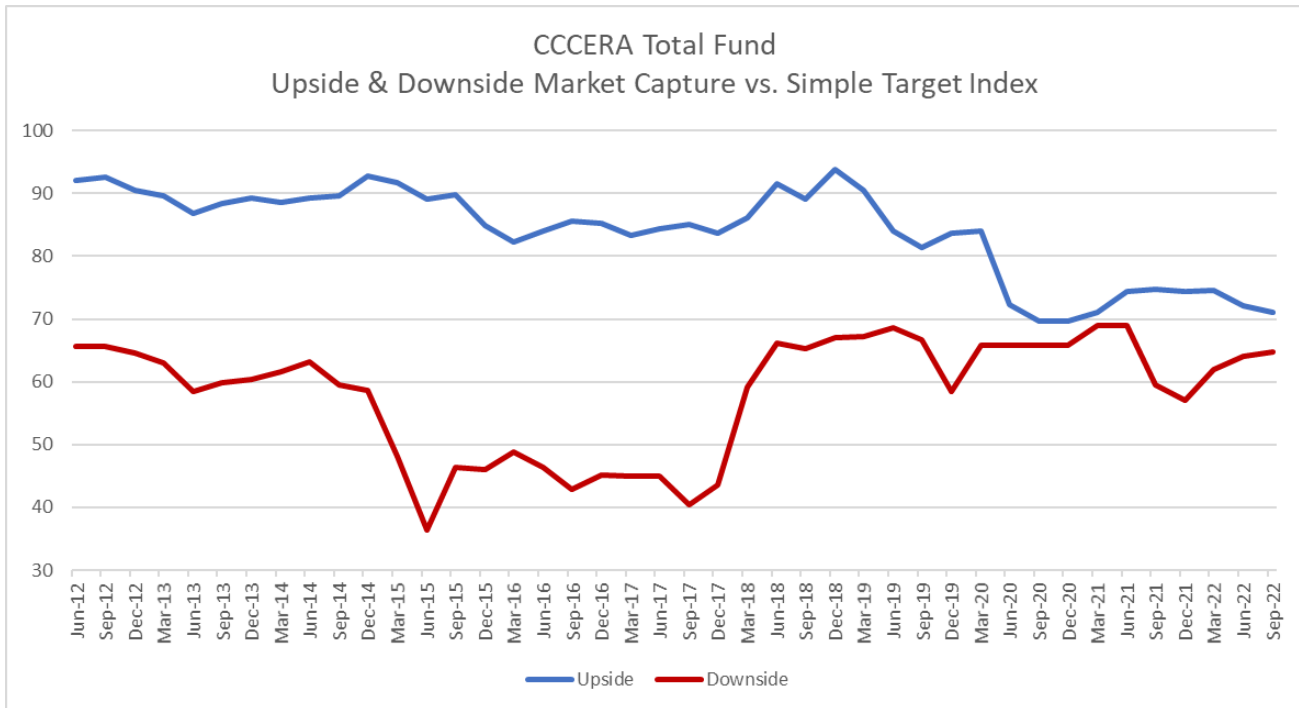
AFL-CIO: Portfolio of domestic, high quality fixed income securities which are backed by commercial and residential mortgages.

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	16.5%	-1.5%	-0.2%	17.0%	-1.5%	-0.3%	-0.5%	0.0%	0.0%
Growth	74.9%	-4.3%	-3.2%	75.5%	-6.8%	-5.1%	-0.6%	2.5%	1.9%
Risk Diversifying	7.6%	-0.8%	-0.1%	7.5%	0.5%	0.0%	0.1%	-1.3%	-0.1%
Overlay	1.0%	-52.3%	-0.5%	0%	0%	0%	1.0%	-52.3%	-0.5%
Total Fund	100%		-4.1%	100%		-5.4%	-0.1%		1.3%

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	-11.4	-16.4	3.6	2.7	4.2	3.4	6.5	5.2
Volatility	8.9	13.8	11.6	16.9	9.7	14.2	7.5	10.7
Sharpe	-1.4	-1.2	0.3	0.1	0.3	0.2	0.8	0.4

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.

Meeting Date
11/30/2022
Agenda Item
#7a.



Contra Costa County Employees'
Retirement Association

Brian Long, CFA

Senior Investment Officer

Private Equity Review

November 30, 2022

Overview

- CCCERA Private Equity Program
- CCCERA Private Equity Strategy
- Key Takeaways

CCCERA Private Equity Program

Role of Private Equity in CCCERA Portfolio

CCCERA Long-Term Asset Allocation Targets

Growth
(76%)

Range = 65-85%

Liquidity
(17%)

Range = 11-22%

Risk Diversifying
(7%)

Range = 0-10%

Public Equity (32%)

Public Debt (17%)

Low Beta
Strategies
(7%)

Private Equity (15%)

Private Credit (13%)

Real Estate (10%)

Real Assets (3%)

Risk Parity (3%)

CCCERA Private Equity Program – Key Participants

CCCERA

Manages the Private Equity Program – top-down strategy selection, bottom-up investment manager evaluation, and monitoring of investment managers

Managers (General Partners)

Source, evaluate, execute, and manage private equity investments primarily within commingled drawdown funds

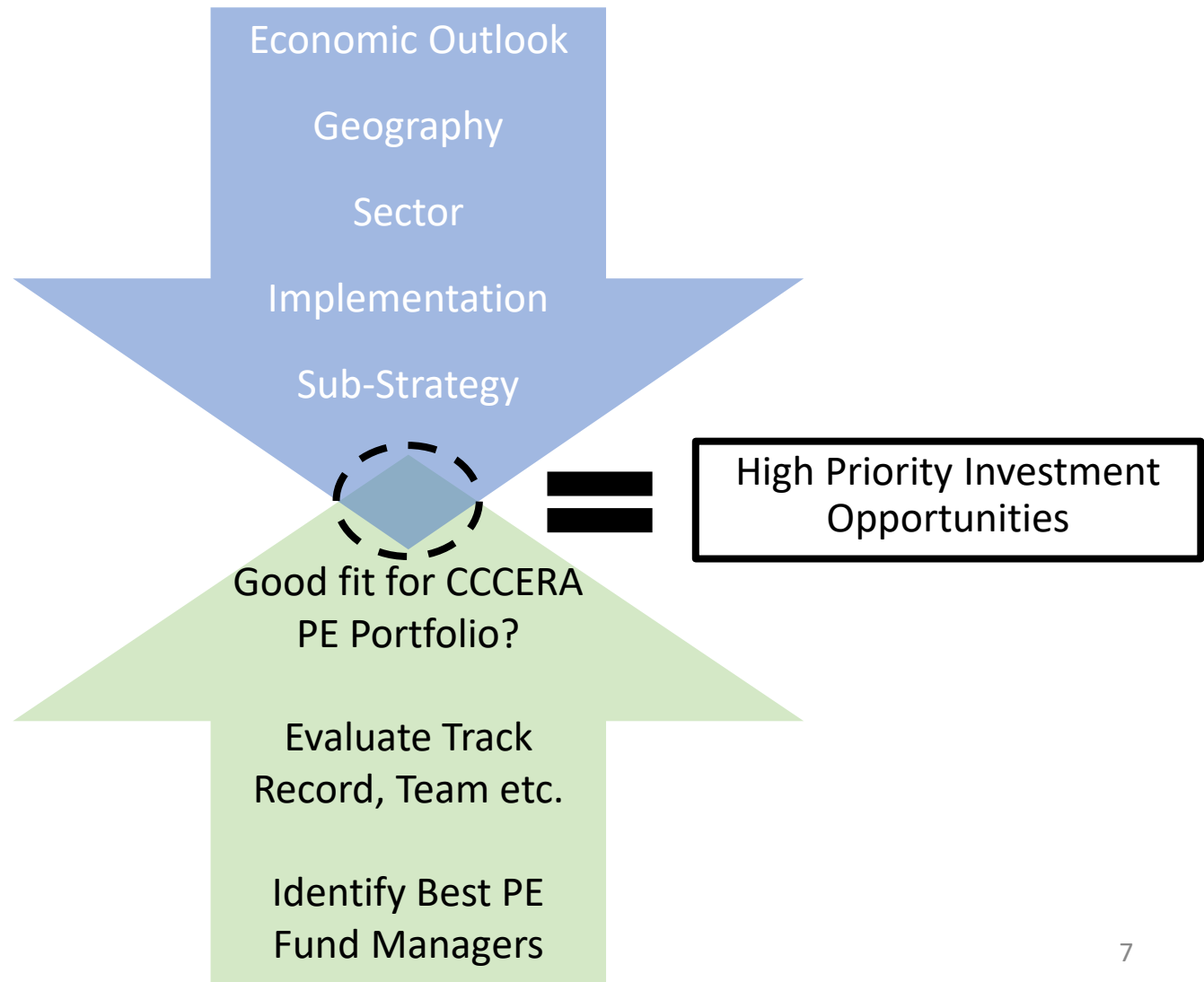
Stepstone

Provides advice and resources to CCCERA on Private Equity - responsible for pacing analysis, portfolio monitoring, and reporting




CCCERA Private Equity Strategy

CCCERA Approach to Private Equity Investing

Investment Pacing Plan



Opportunity Set

Geography	 North America	Europe	Asia	Rest of World
Sector	IT	Healthcare	Financial Services	
	Industrials	Business Services	Consumer etc.	
Implementation	Fund of Funds	 Primary Funds	Secondaries	
	Co-investments	Direct Investments		
Sub-Strategy	 Buyouts	Growth Equity	Venture	Other

2022 Activity

Closed Funds:

TPG Fund IX	\$65 million	
TPG Healthcare Partners II	\$35 million	
Green Equity Investors IX	\$60 million	
Jade Equity Investors II	<u>\$15 million</u>	
Total Closed		\$175 million

Current Active Diligence:

3 Funds Under Review		
Fund A	~\$100 million	
Fund B	~\$100 million	
Fund C	<u>~\$50 million</u>	
Potential Total		<u>\$250 million</u>

Total 2022 Commitments (Projected) ~\$425 million

2023 Projected

- Re-Up Activity
 - Anticipate ~3 of our existing General Partners will launch their next Fund
- Continued Sourcing of New Relationships/GP's
 - Potentially 1-2 new relationships
- Projected Pacing Commitment - \$350-\$450 million

Key Takeaways

- Consistent and disciplined PE investment strategy
- Proactive, multi-year approach to relationship-building and sourcing

Meeting Date
11/30/2022
Agenda Item
#7b.



CCCERA Board Presentation
Private Equity Update
NOVEMBER 2022



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On September 20, 2021, StepStone Group Inc. acquired Greenspring Associates, Inc. (“Greenspring”). Upon the completion of this acquisition, the management agreement of each Greenspring vehicle was assigned to StepStone Group LP

The presentation is being made based on the understanding that each recipient has sufficient knowledge and experience to evaluate the merits and risks of investing in private market products. All expressions of opinion are intended solely as general market commentary and do not constitute investment advice or a guarantee of returns. All expressions of opinion are as of the date of this document, are subject to change without notice and may differ from views held by other businesses of StepStone.

All valuations are based on current values calculated in accordance with StepStone’s Valuation Policies and may include both realized and unrealized investments. Due to the inherent uncertainty of valuation, the stated value may differ significantly from the value that would have been used had a ready market existed for all of the portfolio investments, and the difference could be material. The long-term value of these investments may be lesser or greater than the valuations provided.

StepStone Group LP, its affiliates and employees are not in the business of providing tax, legal or accounting advice. Any tax-related statements contained in these materials are provided for illustration purposes only and cannot be relied upon for the purpose of avoiding tax penalties. Any taxpayer should seek advice based on the taxpayer’s particular circumstances from an independent tax advisor.

Prospective investors should inform themselves and take appropriate advice as to any applicable legal requirements and any applicable taxation and exchange control regulations in the countries of their citizenship, residence or domicile which might be relevant to the subscription, purchase, holding, exchange, redemption or disposal of any investments. Each prospective investor is urged to discuss any prospective investment with its legal, tax and regulatory advisors in order to make an independent determination of the suitability and consequences of such an investment.

An investment involves a number of risks and there are conflicts of interest. Please refer to the risks and conflicts disclosed herein.

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PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. ACTUAL PERFORMANCE MAY VARY.



TOM KECK, PARTNER, HEAD OF RESEARCH, LA JOLLA

Mr. Keck leads StepStone's global research activities and the development of SPI. He is also involved in the Firm's ESG and risk management initiatives.

Prior to co-founding StepStone, Mr. Keck was a managing director at Pacific Corporate Group, a private equity investment firm that oversaw over US\$15 billion of private equity commitments for institutional investors. Before that he was a principal with Blue Capital, a middle-market buyout firm.

Mr. Keck graduated cum laude with a BA from the George Washington University and received his MBA with high honors from the University of Chicago Booth School of Business. He served in the US Navy as a Naval Flight Officer, receiving numerous decorations flying EA-6Bs off the USS Nimitz (CVN-68).



JOSE FERNANDEZ, PARTNER, CO-COO, LA JOLLA

Mr. Fernandez is the Co-COO of StepStone Group and a member of the private equity team where he focuses on US-based small-market managers and Latin American investments. He is also involved in the Firm's ESG and diversity initiatives, as well as various investment activities.

Prior to co-founding StepStone, Mr. Fernandez was a managing director of Pacific Corporate Group, a private equity investment firm for institutional investors. Mr. Fernandez previously worked with Latham and Watkins LLP's private equity/investment fund group, a practice focused on joint ventures and the structuring, negotiation and operation of pooled investment vehicles such as private equity funds.

Mr. Fernandez received his BA from the University of Michigan, Ann Arbor and JD from Stanford Law School.



NATALIE WALKER, PARTNER, LA JOLLA

Ms. Walker is a member of the private equity team, focusing on US-based small-market managers and secondary investments.

Prior to StepStone, Ms. Walker was a research analyst at Oppenheimer & Co., a leading national investment bank and full-service investment firm offering investment banking, financial advisory services, capital markets services, asset management, wealth management, and related products and services worldwide. Ms. Walker was a member of Oppenheimer's private equity team, where she conducted due diligence and research on private equity funds, secondary investments and co-investments. Before that she worked for a private equity backed start-up and Women-owned Business Enterprise, Sundance Energy.

Ms. Walker received her BA from Georgetown University McDonough School of Business.

Agenda



- I. Market Update
- II. Pacing Analysis
- III. Portfolio Performance

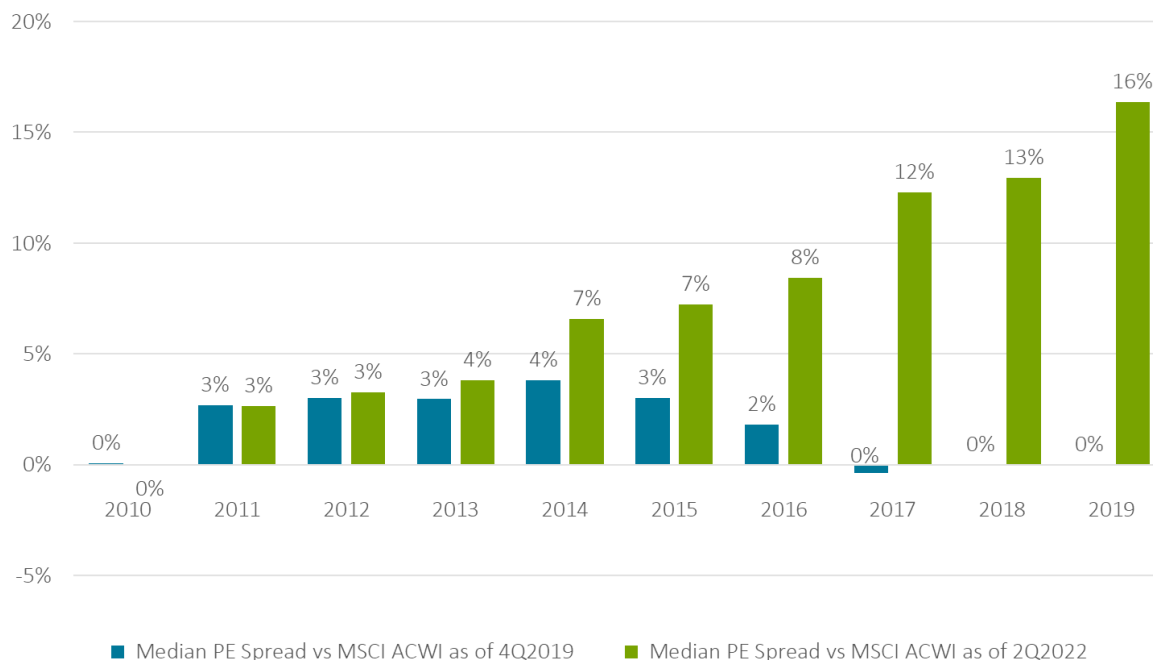
I. MARKET UPDATE

Private Markets Have Outperformed for a Long Time



Private market alpha has improved since the fourth quarter of 2019.

PRIVATE EQUITY DIRECT ALPHA

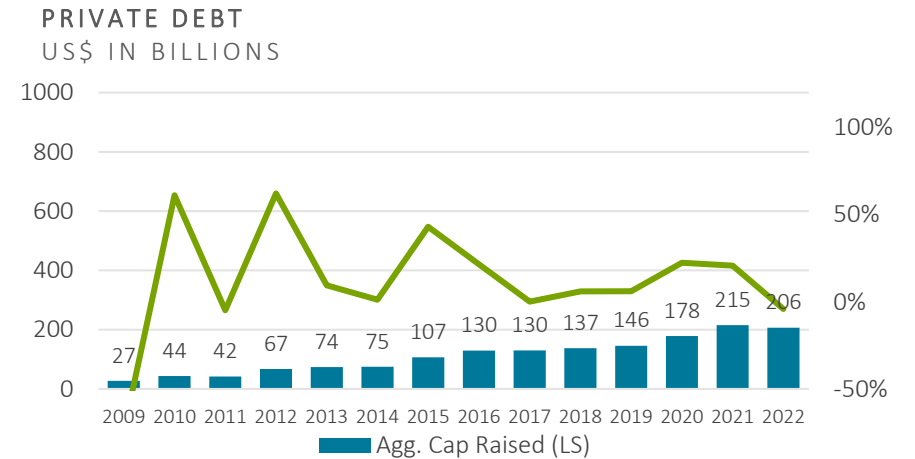
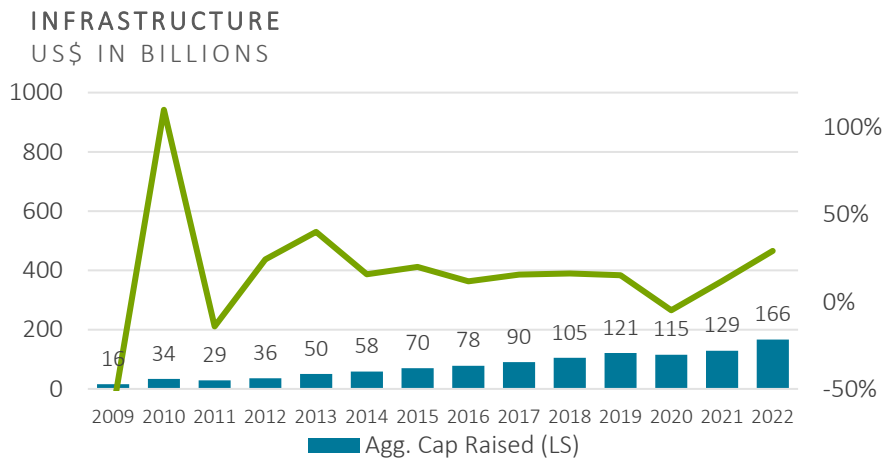
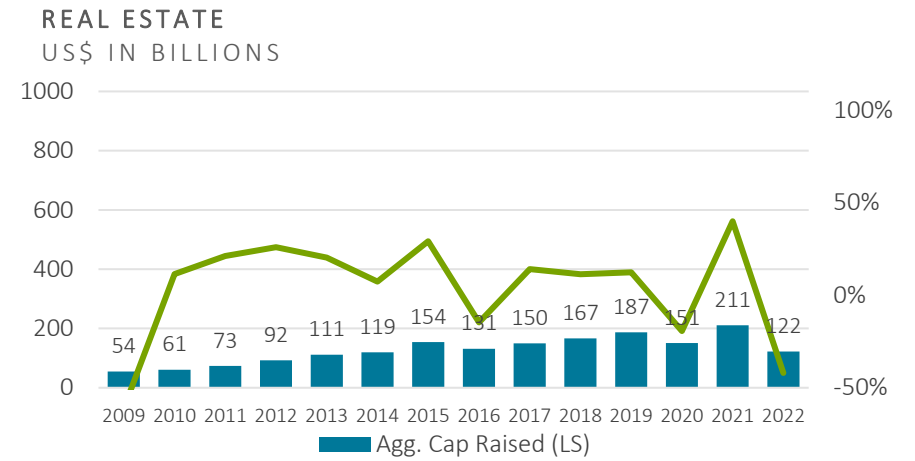
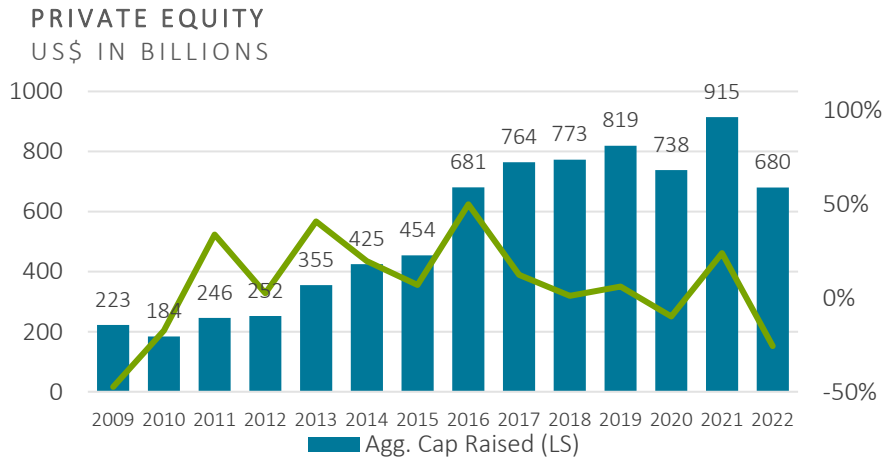


AVERAGE SPREAD OVER PUBLIC, VY 2010-2019

AS OF	MEDIAN Q
2Q22	7.4%
4Q19	2.1%
Change in bps	523 bps

Private IQ, as of 06/30/22; PE Returns includes Generalists, Equity, and Distressed Funds. The Direct Alpha method formalizes the calculation of the exact alpha (in a continuous time log-return sense) that a PE portfolio has generated relative to the chosen reference benchmark; The referenced indices are shown for general market comparisons and are not meant to represent any particular fund. An investor cannot directly invest in an index. Moreover, indices do not reflect commissions or fees that may be charged to an investment product based on the index, which may materially affect the performance data presented.

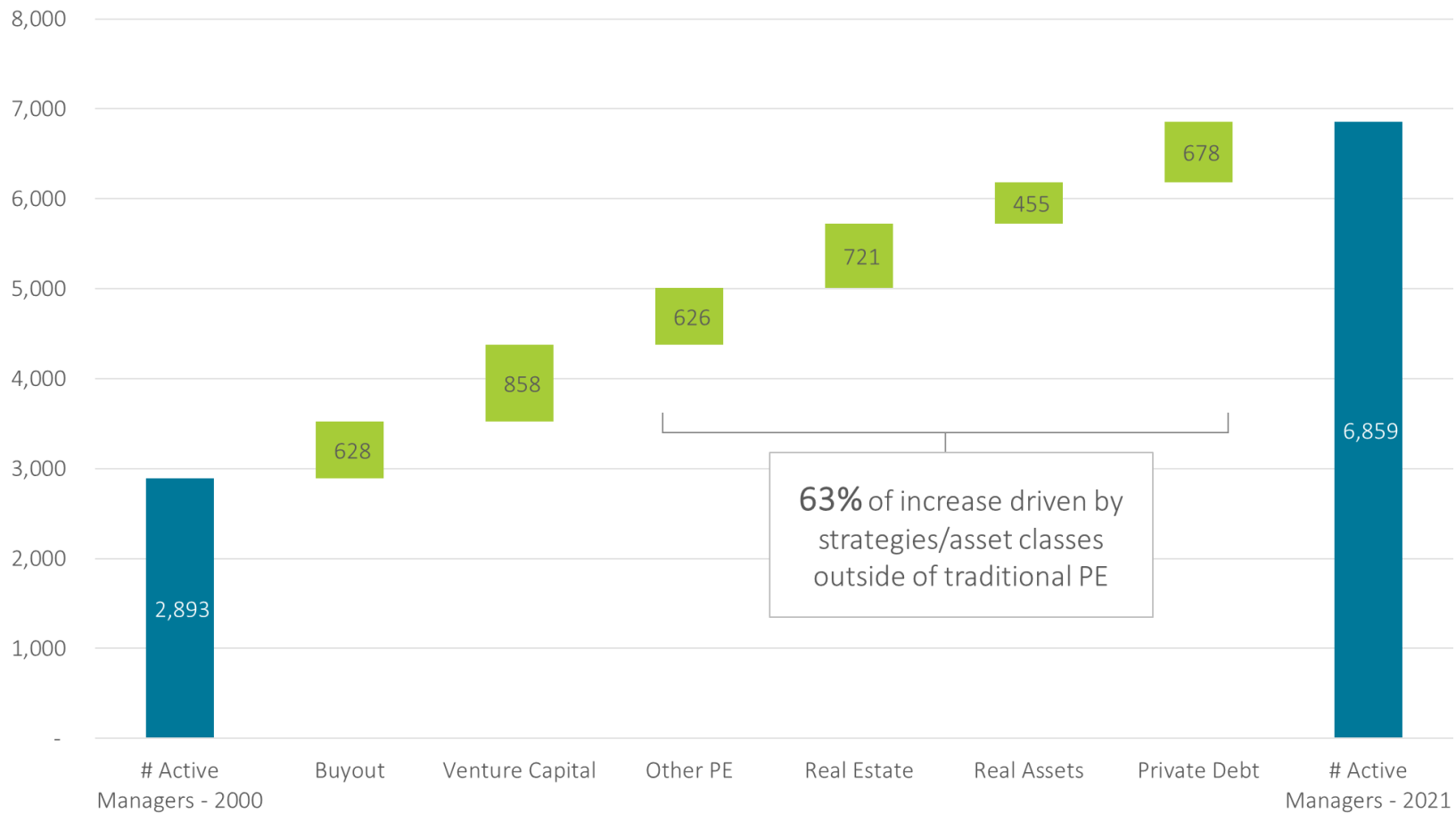
Fundraising has Grown



Source: Preqin as of 10/03/22. Annualized metrics in 2022 based on existing data.

The Number of GPs Has Grown

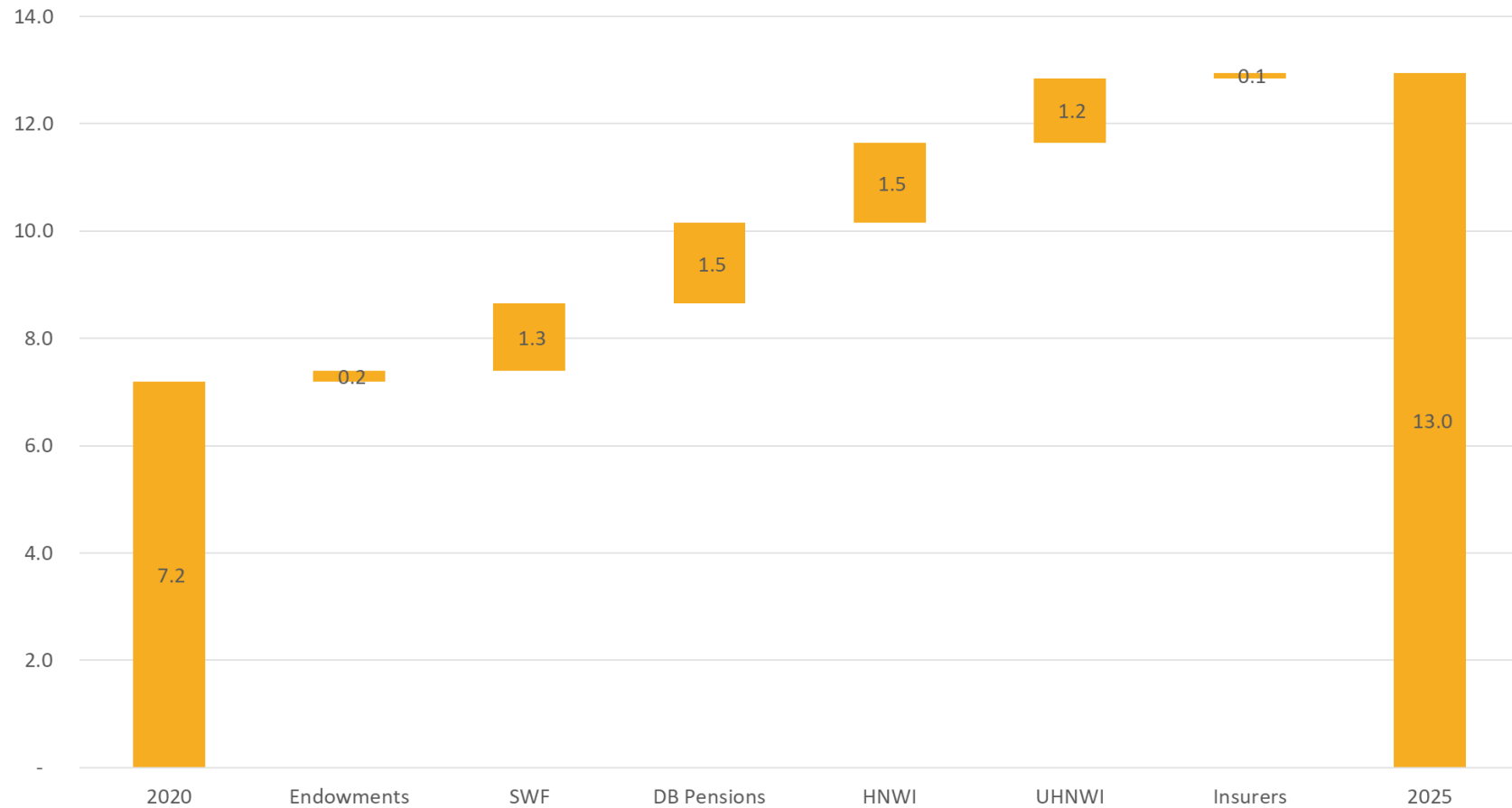
GROWTH IN ACTIVE GPS BY STRATEGY



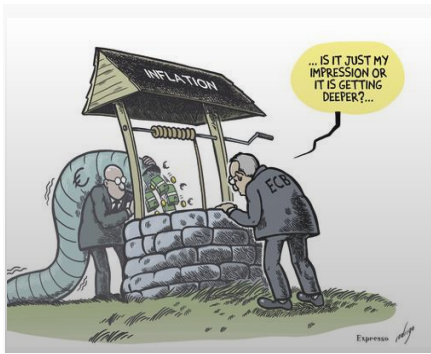
Source: StepStone Private Markets Intelligence (SPI). Data as of 2021.

Growth is Projected to Continue

PRIVATE MARKET AUM, 2020-2025
US\$ IN TRILLIONS



Source: Morgan Stanley Research; Oliver Wyman; October 2021.



01 RISING INFLATION



02 DEBT LEVELS



03 COVID



04 VALUATIONS



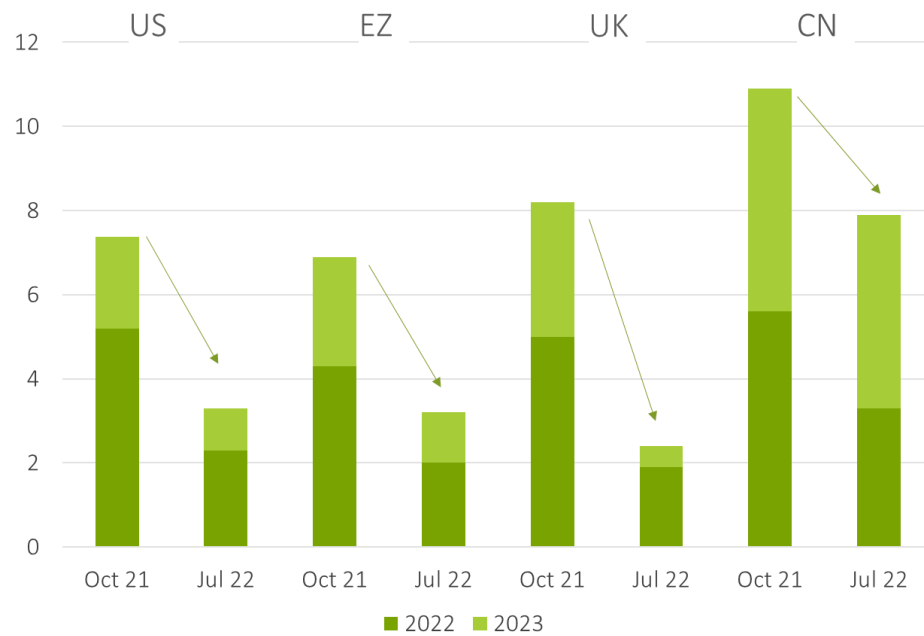
05 GEO-POLITICAL RISK



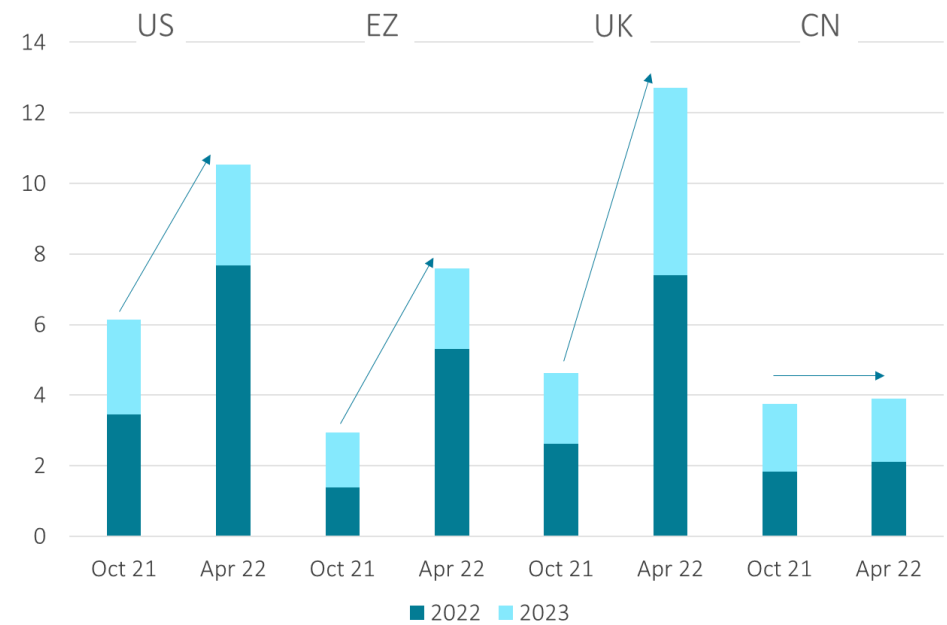
06 FX RISK

Macro Forecasts are Getting Bleaker

GDP GROWTH

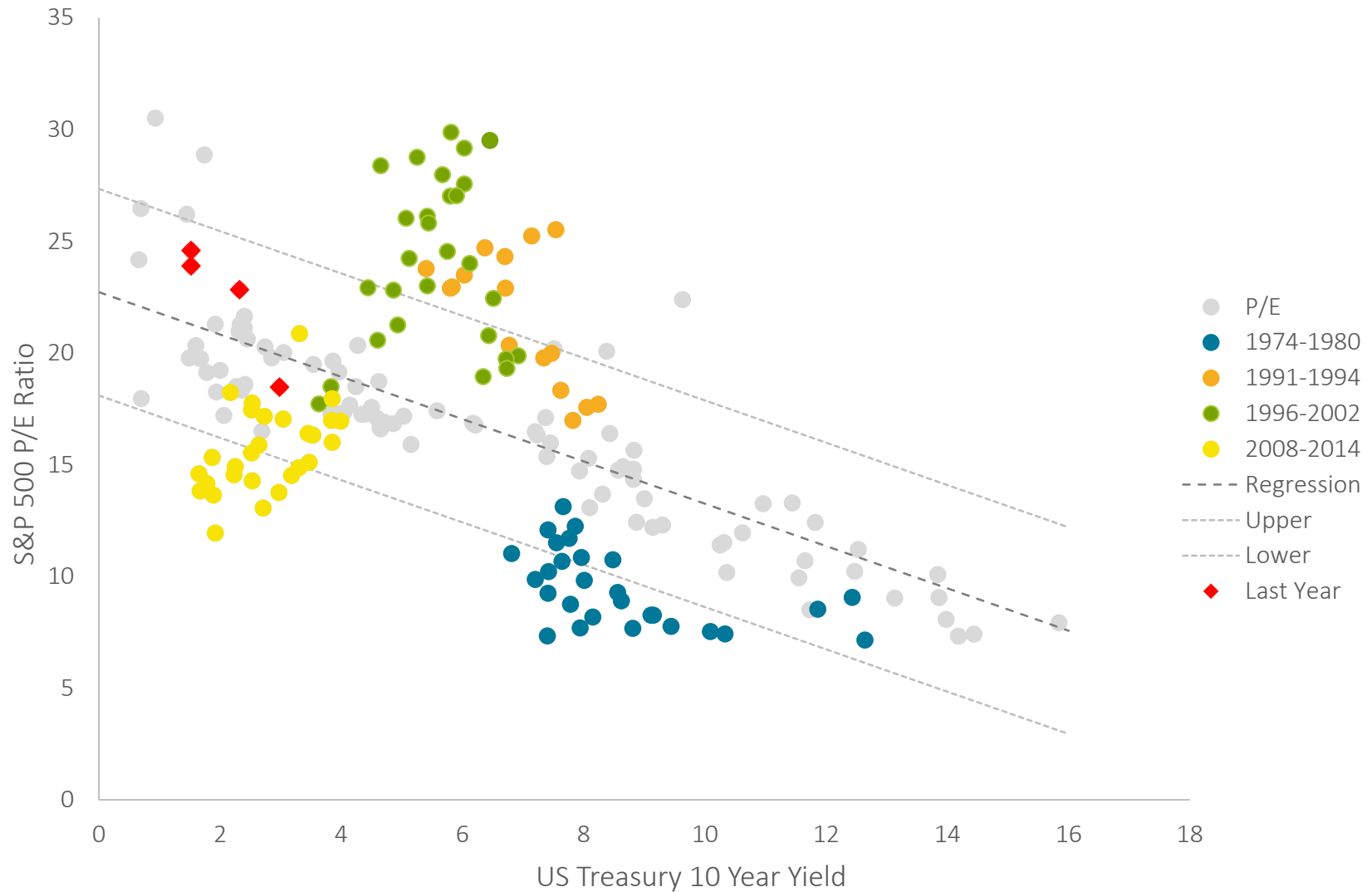


INFLATION



For illustrative purposes only.
Source: IMF, as August 2022.

Higher Rates Will Remove a Tailwind for Equities



Source: Bloomberg, as of June 2022. Stepstone calculations for the "bands".

Adding Stability to Your Portfolio

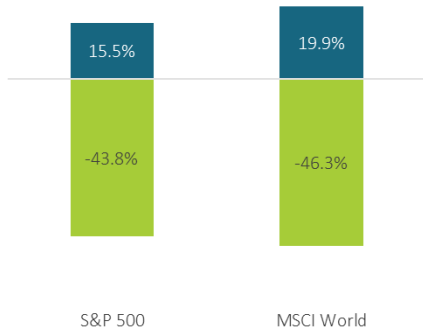
Q2 2022 PERFORMANCE



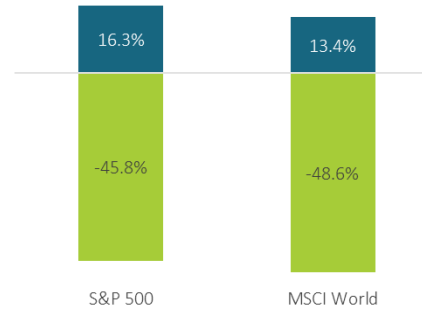
Source: Burgiss, StepStone SPAR Analytics, as of September 2022.

Asymmetric Risk Capture of Private Markets

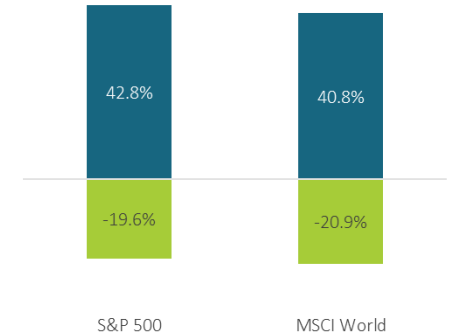
DOT-COM BUBBLE



GLOBAL FINANCIAL CRISIS



COVID-19



74%

AVG. DOWNSIDE CAPTURE

124%

AVG. UPSIDE CAPTURE

62%

AVG. DOWNSIDE CAPTURE

100%

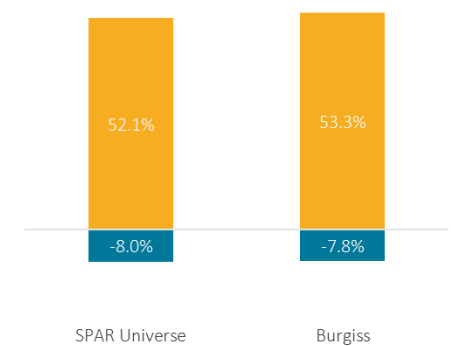
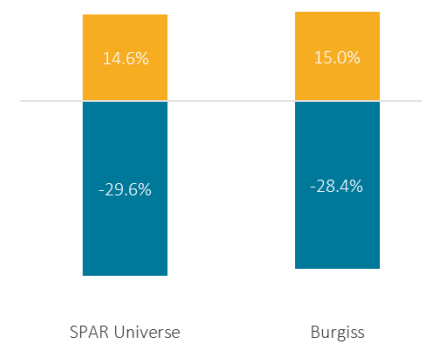
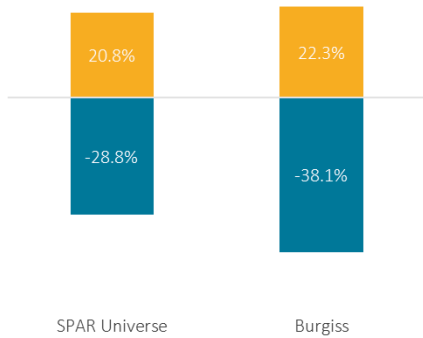
AVG. UPSIDE CAPTURE

39%

AVG. DOWNSIDE CAPTURE

126%

AVG. UPSIDE CAPTURE

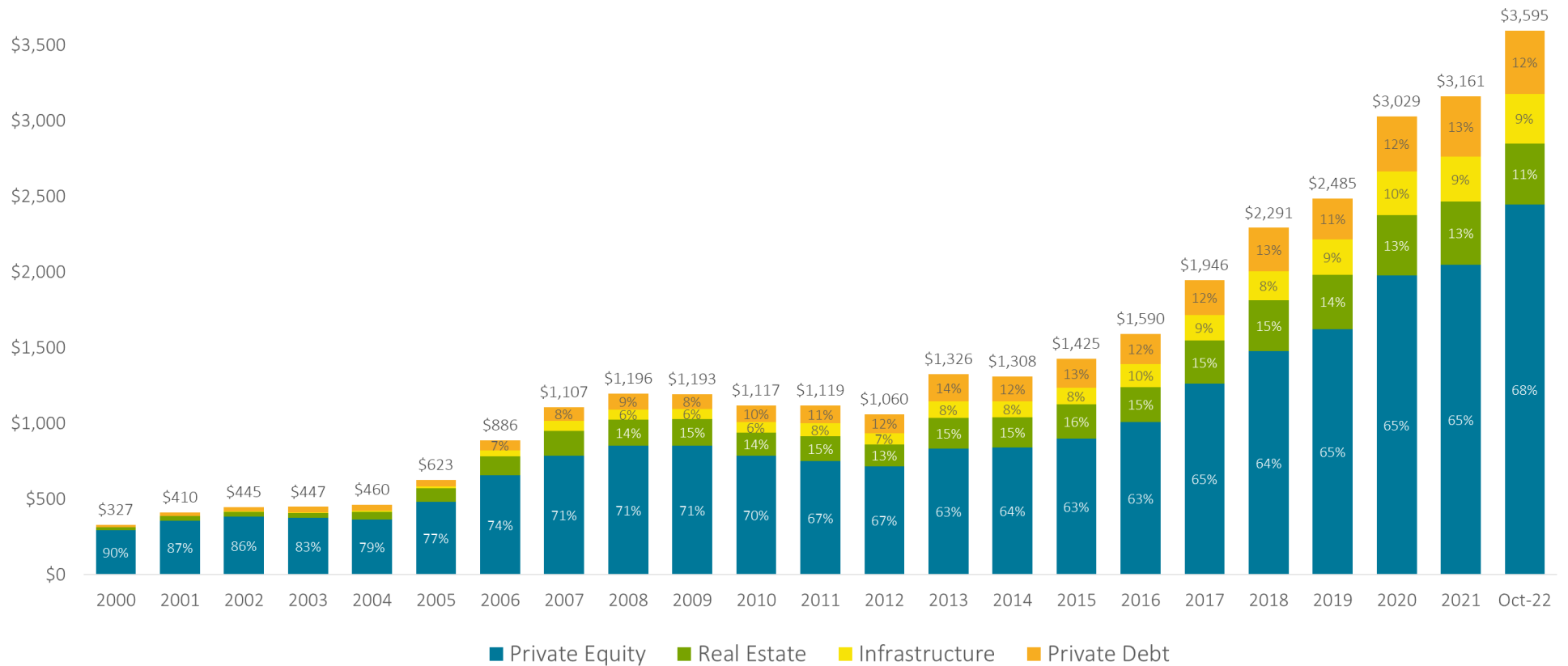


Source: CapIQ, Burgiss, StepStone SPAR Analytics, as of June 2022.

Downside is defined as the max drawdown between the peak and trough during a crisis. Upside is the annualized return between the trough of the previous crisis and the peak of the next crisis. Dot-com peak 3/31/2000, trough 9/30/2002; GFC peak 9/30/2007, trough 3/31/2009; COVID peak 12/31/2019, through 3/31/2020; Post-COVID peak 09/30/2021.

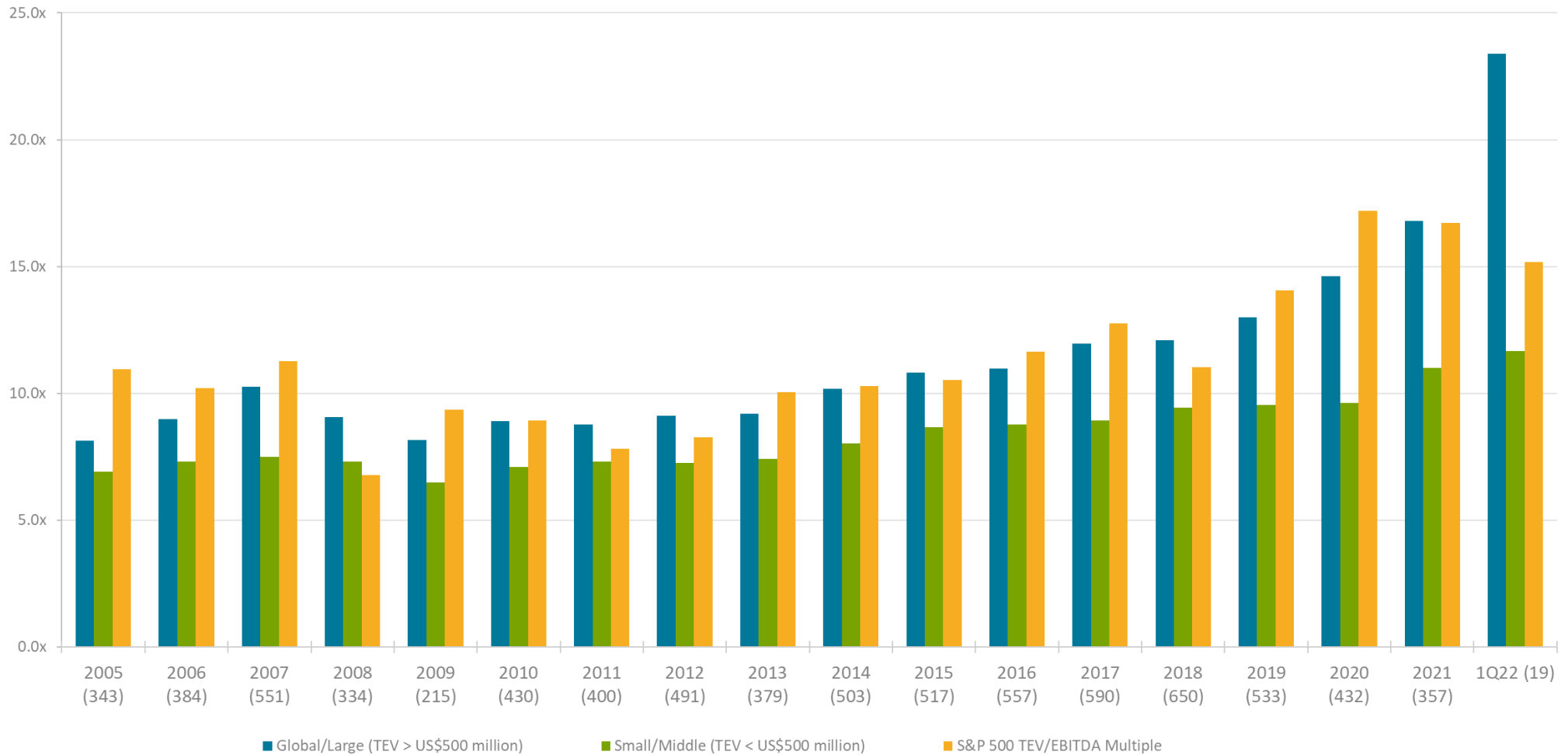
Is There Too Much Capital?

DRY POWDER – BY ASSET CLASS US\$ IN BILLIONS



Source: Preqin. Data as of October 2022 and in USD billions.

Are Private Market Valuations About to Fall?



SPI, StepStone analysis; latest available data in SPI as of Q1 2022; SPI data is continuously updated, and historical values are subject to change.

TARGET	ACQUIRER/INVESTOR	SIZE	COMMENT
eFront	BlackRock	\$1.3 billion acquisition	Expand PM presence
eVestment	NASDAQ	\$705 million acquisition	Expand PM presence
Burgiss	MSCI	\$190 million minority investment	Expand PM presence
iCapital	Multiple VCs, strategic investors	~\$900 million invested, \$6.2 billion valuation	HNW Channel
Yieldstreet	Multiple VCs	>\$200 million invested, \$950 million valuation	HNW Channel

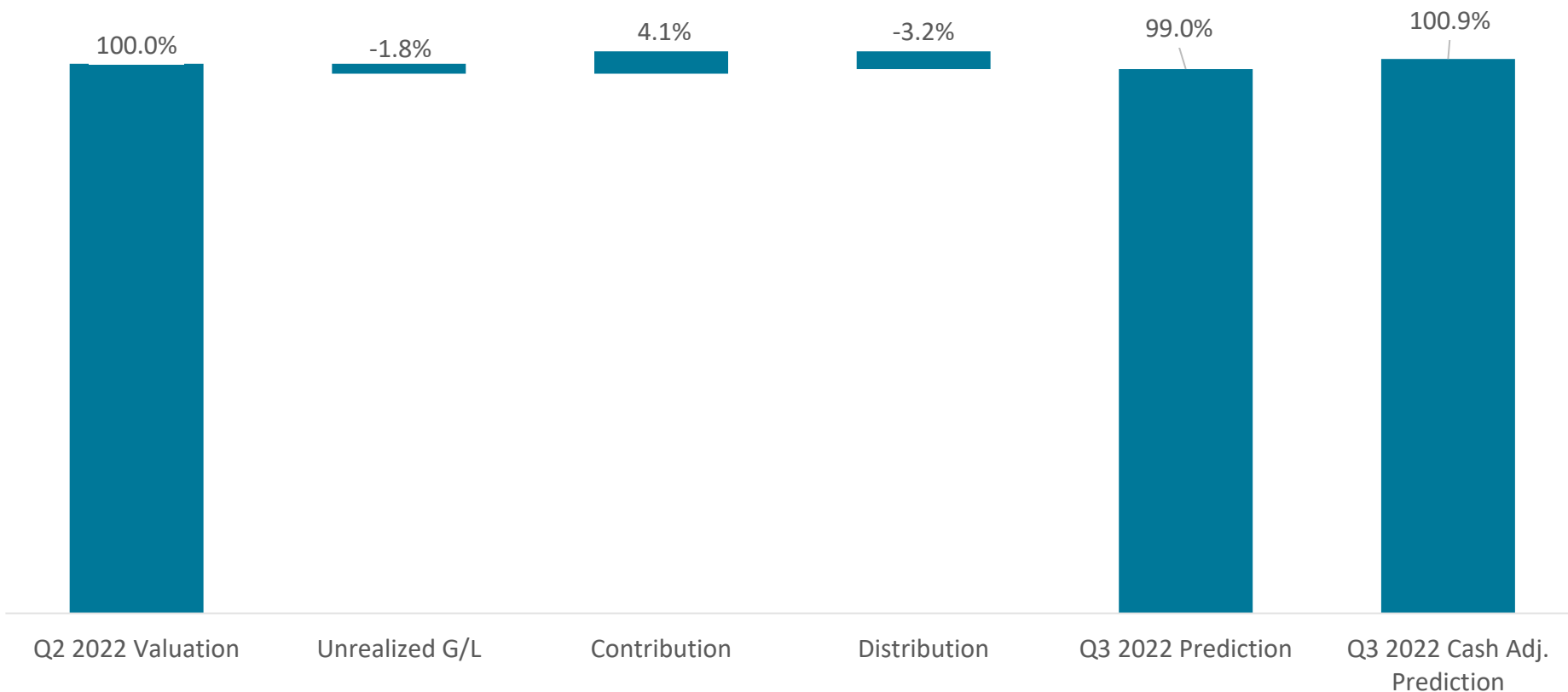
Valuing Your Portfolio Accurately

Q3 2022 PRIVATE EQUITY ESTIMATION

1.9%
Model
Error

4.4%
Cash Adj
Error

MSCI World Index -6.1%



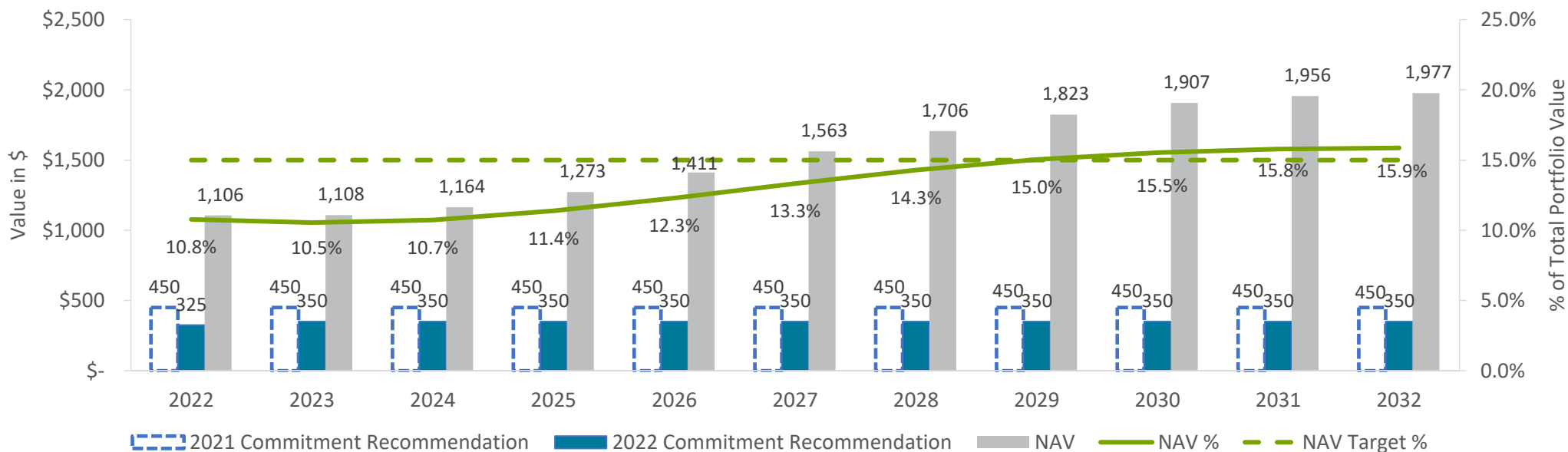
StepStone analysis, as of October 2022. Certain assumptions have been made for modeling purposes and are unlikely to be realized. No representations and warranties are made as to the reasonableness of the assumptions. For illustrative purposes only.. The roll forward estimates determined by StepStone herein reflect the latest relevant data as of September 30, 2022. The SSG roll forward has been computed across 2379 funds. The referenced indices/benchmarks are shown for general market comparisons and are not meant to represent any particular fund. An investor cannot directly invest in an index. Moreover, indices do not reflect commissions or fees that may be charged to an investment product based on the index, which may materially affect the performance data presented. This represents model criteria and is not indicative of future results of investments. Use of alternative assumptions may result in substantial differences, and not all investments will necessarily follow this model. The referenced indices/benchmarks are shown for general market comparisons and are not meant to represent any particular fund. An investor cannot directly invest in an index. Moreover, indices do not reflect commissions or fees that may be charged to an investment product based on the index, which may materially affect the performance data presented.

II. PACING ANALYSIS

Private Equity Pacing Analysis

- StepStone updated its pacing analysis for CCCERA’s private equity portfolio based on a starting total portfolio FMV of \$9.9 billion and a private equity FMV of \$1.1 billion, as of September 30, 2022¹
- CCCERA increased its target private equity allocation from 11.0% to 15.0% in 2021
 - To achieve a target allocation of 15.0% over 10 years, StepStone recommends committing \$350 million (+/- 20%) per annum based on market opportunities and conditions
 - The decrease in annual commitments reflects the i) year-over-year decrease in total portfolio FMV; and (ii) continued strong performance of the private equity portfolio

CCCERA PE Annual Pacing Plan - 15% Target (Base Case)



¹ Private equity FMV reflects June 30, 2022 valuations cash flow adjusted for contributions and distributions through September 30, 2022.

While Stepstone currently believes that the assumptions on which the analysis are based are reasonable under the circumstances, there is no guarantee that the conditions on which such assumptions are based will materialize or otherwise be applicable. Plan level projections provided by CCCERA.

Target returns are hypothetical and are neither guarantees nor predictions or projections of future performance. Future performance indications and financial market scenarios are no guarantee of current or future performance. There can be no assurance that such target net IRRs will be achieved or that the investment will be able to implement its investment strategy, achieve its investment objectives or avoid substantial losses. Further information regarding target net IRR calculations is available upon request.

III. PORTFOLIO PERFORMANCE

Private Equity Performance Summary



- CCCERA private equity portfolio (the “PE Portfolio”) includes \$1.8 billion in commitments to 58 primary and fund-of-funds investments
 - The market value of the PE Portfolio was \$1.1 billion as of June 30, 2022
- Over the twelve-month period ended June 30, 2022, the PE Portfolio drew \$152.2 million and received \$267.8 million in distributions
- The PE Portfolio generated a net gain of \$91.5 million year-over-year, leading to a 1-year IRR of 8.38%
- The PE Portfolio generated a since-inception¹ IRR of 13.5% as of June 30, 2022

US\$ in millions

	INCEPTION TO JUNE 30, 2022	INCEPTION TO MARCH 31, 2022	INCEPTION TO JUNE 30, 2021	QUARTERLY CHANGE	ANNUAL CHANGE
Number of Managers	18	17	17	1	1
Number of Investments	58	54	53	4	5
Committed Capital	\$1,816.1	\$1,641.1	\$1,591.1	\$175.0	\$225.0
Contributed Capital ²	1,345.5	1,322.1	1,193.4	23.4	152.2
Distributed Capital	1,424.0	1,388.5	1,156.2	35.5	267.8
Market Value	1,134.2	1,195.3	1,158.4	(61.1)	(24.2)
Total Value	\$2,558.2	\$2,583.8	\$2,314.6	(25.6)	\$243.6
Total Gain/(Loss)	1,212.7	1,261.7	1,121.2	(49.1)	91.5
Unfunded Commitment	513.6	358.4	430.2	155.2	83.4
Total Exposure	1,647.8	1,553.7	1,588.6	94.1	59.2
DPI ³	1.06x	1.05x	0.97x	0.01x	0.09x
TVPI ⁴	1.90x	1.95x	1.94x	(0.05)x	(0.04)x
NET IRR ⁵	13.5%	13.9%	13.8%	-39 bps	-27 bps

1. Inception represents date of first capital call on 3/18/1996.

2. Total Gross Contributed represents total contributions to underlying investments including capitalized legal and other transaction fees and expenses.

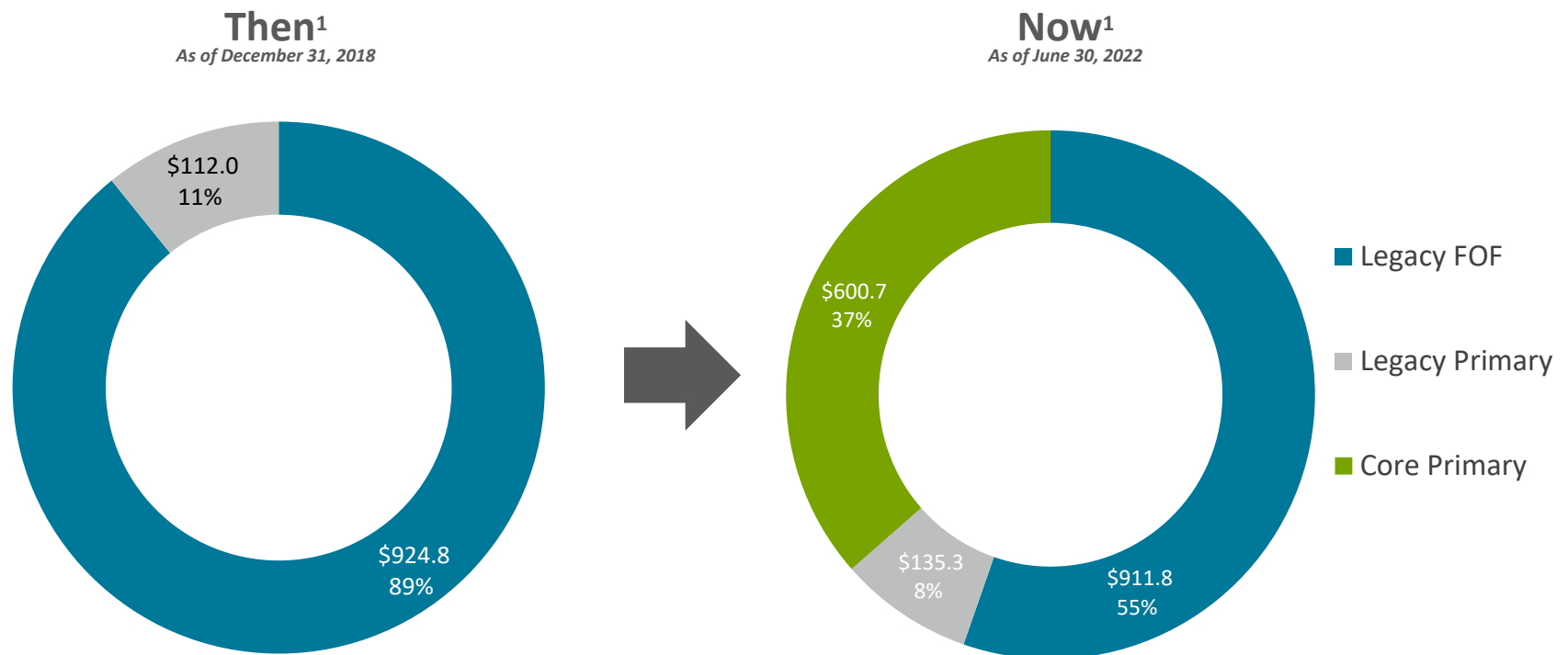
3. Distributions to Paid-in Capital (DPI) represents total gross distributions received by the Fund from underlying investments (including distributions used to offset drawdowns for investments) divided by total gross contributions.

4. Total Value to Paid in Multiple (TVPI) is net of management fees and expenses related to the underlying investments, and represent the aggregate net asset value of underlying investments plus gross distributions received by the Fund from those investments, divided by total gross contributions.

5. Internal Rate of Return (IRR) is calculated based on the Portfolio's daily cash flows and market value as of quarter-end. IRR is net of manager's fees, expenses and carried interest, but not net of StepStone Advisory fees. IRR net of StepStone fees is 13.8% since inception.

Private Equity Exposure by Sub-Portfolio

- Since 2017, CCCERA has pursued direct primary commitments to private equity funds (the “Core Primary Fund Portfolio”)
- Historical private equity investments include legacy fund-of-funds (the “Legacy FOF Portfolio”) and legacy primary funds (the “Legacy Primary Fund Portfolio”)



1. Breakdown based on exposure, calculated as market value plus unfunded commitment.

Private Equity Performance by Sub-Portfolio



- Although early in the Core Primary Fund Portfolio development, performance has been strong, generating a since-inception¹ IRR of 30.6%⁵. Over time, anticipate the Core Primary Fund Portfolio’s IRR to moderate and the Total Value to Paid in Multiple (“TVPI”) and the Distributions to Paid-In Capital (“DPI”) to increase
- As the size of the Core Primary Fund Portfolio increases, the Legacy FOF and Legacy Primary Fund Portfolios should be less meaningful drivers of CCCERA’s total PE Portfolio performance

As of June 30, 2021 (US\$ in millions)

	NO. OF FUNDS	COMMITTED CAPITAL	CONTRIBUTED CAPITAL	DISTRIBUTED CAPITAL	UNFUNDED COMMITMENT	MARKET VALUE	TOTAL EXPOSURE	TOTAL VALUE	TVPI	DPI	NET IRR
CCCERA PE Portfolio											
Legacy FOF Portfolio	39	1,099.6	1,007.3	1,223.9	107.8	804.0	911.8	2,027.9	2.01x	1.21x	13.6%
Legacy Primary Fund Portfolio	7	160.0	160.4	183.2	19.0	116.3	135.3	299.6	1.87x	1.14x	11.7%
Core Primary Fund Portfolio	12	556.5	177.8	16.9	386.9	213.8	600.7	230.7	1.30x	0.10x	30.6%
Total	58	1,816.1	1,345.5	1,424.0	513.6	1,134.2	1,647.8	2,558.2	1.90x	1.06x	13.5%

1. Inception represents date of first capital call on 2/21/2019.

2. Total Gross Contributed represents total contributions to underlying investments including capitalized legal and other transaction fees and expenses.

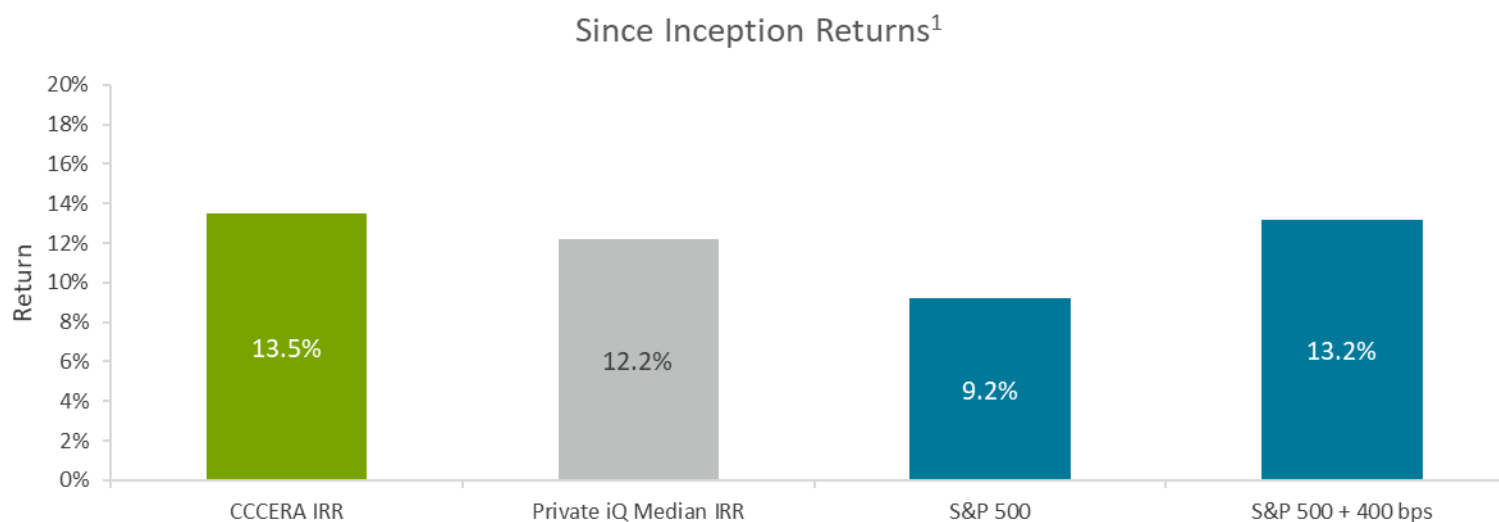
3. Distributions to Paid-in Capital (DPI) represents total gross distributions received by the Fund from underlying investments (including distributions used to offset drawdowns for investments) divided by total gross contributions.

4. Total Value to Paid in Multiple (TVPI) is net of management fees and expenses related to the underlying investments, and represent the aggregate net asset value of underlying investments plus gross distributions received by the Fund from those investments, divided by total gross contributions.

5. Internal Rate of Return (IRR) is calculated based on the Portfolio’s daily cash flows and market value as of quarter-end. IRR is net of manager’s fees, expenses and carried interest, but not net of StepStone Advisory fees. IRR net of StepStone fees is 13.8% since inception.

Private Equity Performance versus Benchmarks

- PE Portfolio performance is measured against three benchmarks: (i) Burgiss Private iQ, (ii) the S&P 500 index, and (iii) the S&P 500 index + 400 basis points (“bps”) as a liquidity premium
- The PE Portfolio’s overall since inception IRR of 13.5% outperformed the median private market benchmark, the S&P 500 index, and the S&P 500 index +400bps by 130 bps, 432 bps, and 32 bps, respectively

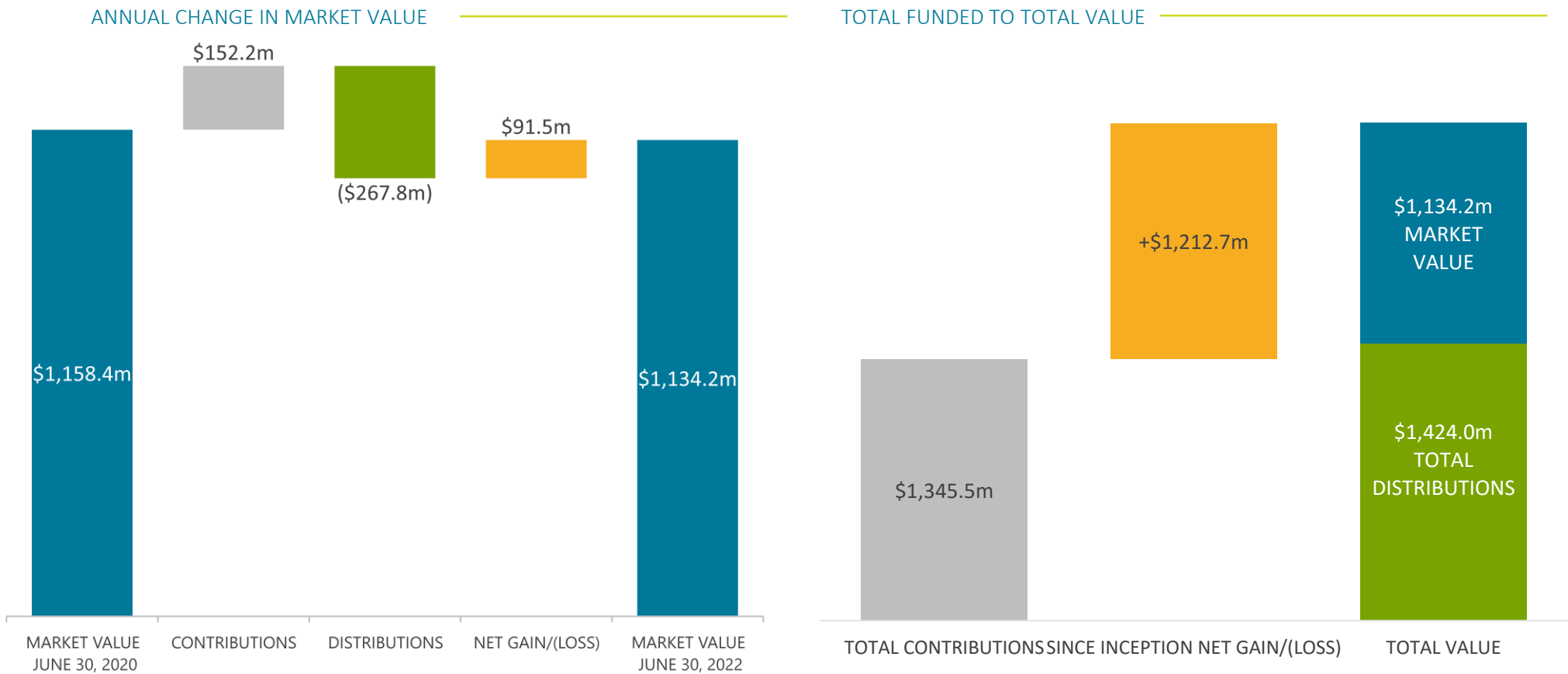


<i>Period ending June 30, 2022</i>	QTD	1-Year	3-Year	5-Year	10-Year	Since Inception
CCCERA PE Portfolio IRR ²	(4.1%)	8.4%	26.3%	22.7%	17.2%	13.5%
Private iQ Median IRR Benchmark ^{1,3}	(0.8%)	7.5%	13.1%	13.4%	13.4%	12.2%
S&P 500 Index ⁴	(16.1%)	(10.6%)	10.6%	11.3%	12.9%	9.2%
S&P 500 Index + 400 bps ⁴	(15.1%)	(6.6%)	14.6%	15.3%	16.9%	13.2%

1. Primary fund benchmark data includes CCCERA specific vintage years and strategies. Please note that CCCERA’s Fund-of-Funds include a double layer of fees and compose a majority of commitments CCCERA has made to date.
2. IRR Performance is net of underlying partnership fees, but not net of StepStone Advisory fees. IRR and TVPI for certain vehicles may have been impacted by Stepstone’s or the underlying GPs’ use of subscription-backed credit facilities by such vehicles. Reinvested/recycled amounts increase contributed capital.
3. Published by Burgiss Private iQ, All Private Equity Median IRRs, for Vintages 1996 - 2005, 2007- 2009, & 2011-2021, as of June 30, 2022. This benchmark data is continuously updated and therefore subject to change.
4. S&P 500 Total Return (TR) index is shown for general market comparison and is not meant to represent any particular fund. An investor cannot directly invest in an index. Moreover, indices do not reflect commissions or fees that may be charged to an investment product based on the index, which may materially affect the performance data presented. Returns under one year are unannualized. QTD includes +100 bps premium (400 bps / 4).

Private Equity Valuation Bridge

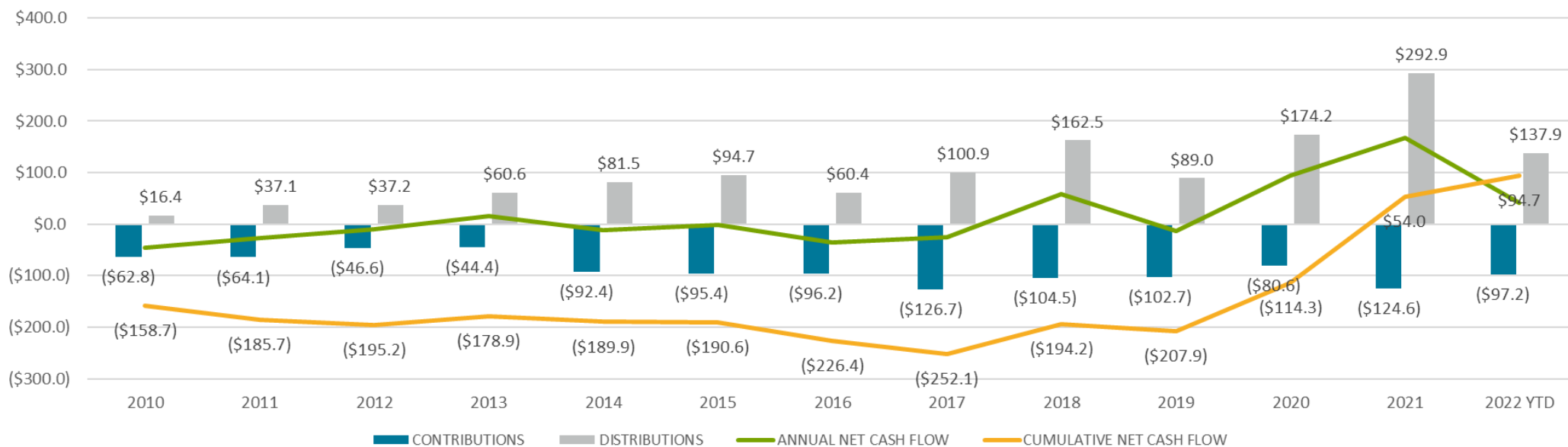
- For the twelve months ended June 30, 2022, the PE Portfolio recorded a gain of \$91.5 million, representing 7.9% of since-inception gains
- Since-inception net gain through June 30, 2022 was \$1.2 billion



Private Equity Cash Flow Analysis

- Year-to-date, the PE portfolio is cash flow positive, receiving \$137.9 million in distributions compared to \$97.2 million in contributions as of September 30, 2022
- The PE Portfolio received record annual distributions and net cash flows in 2021. Net cash flows for 2022 are expected to be positive, but down year over year.

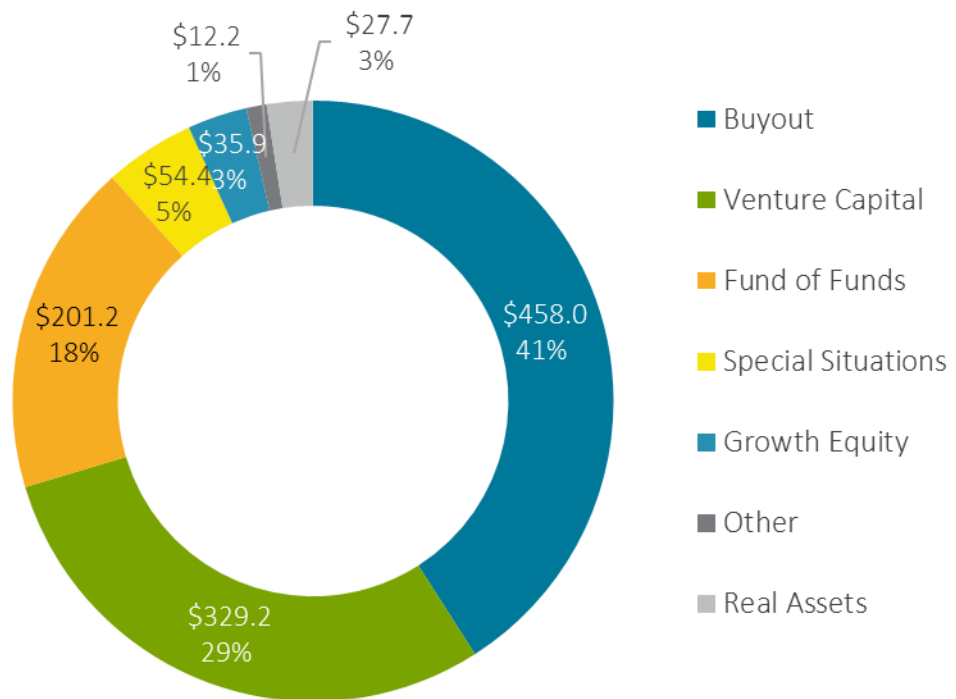
Annual Cash Flow Activity
(\$ in millions)



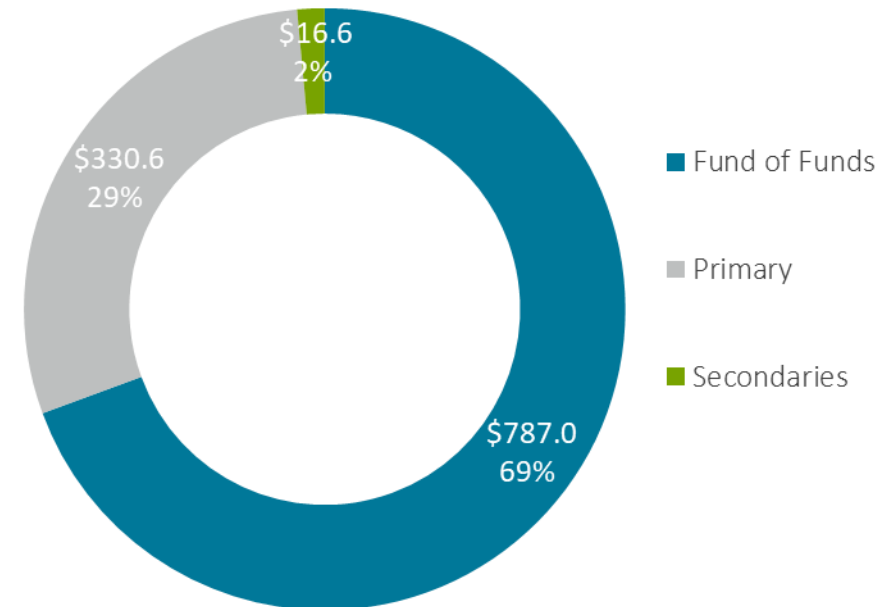
Private Equity Diversification¹

- The PE portfolio has broad exposure by strategy with the largest exposures to Buyout (41%) and Venture Capital (29%)
- The PE Portfolio is highly concentrated in fund-of-funds, but is expected to be weighted towards primary commitments on a go-forward basis

By Strategy²



By Fund Type



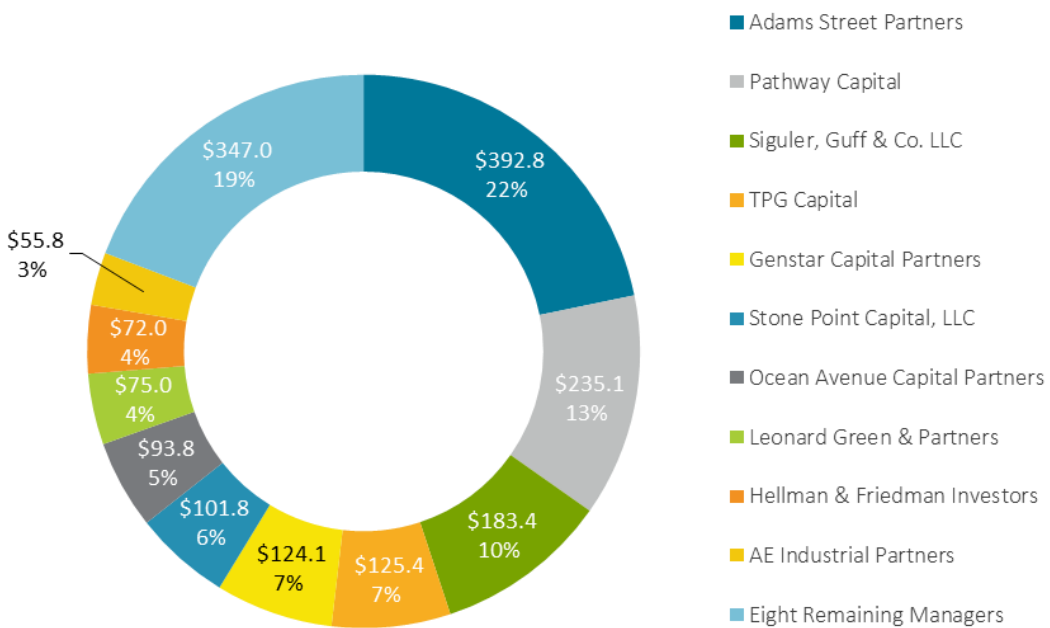
1. Breakdown calculated off market value.

2. Strategy includes look through of Fund of Funds to underlying strategies. Other includes Co-investment, Private Debt and Real Estate strategies.

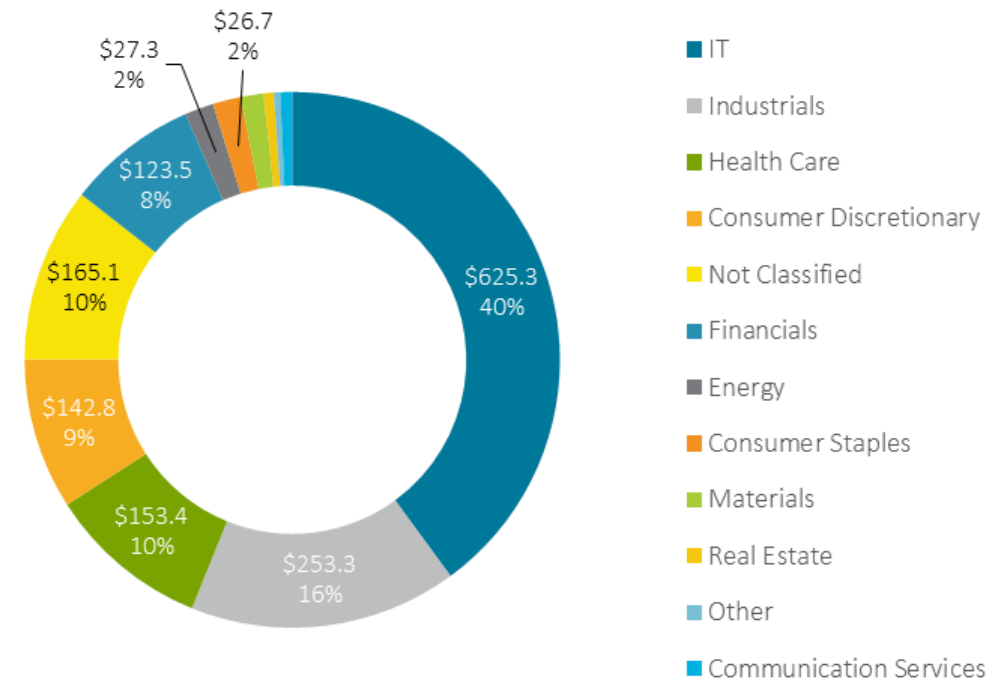
Private Equity Diversification (cont.)

- By Investment Manager, over 45% of the PE Portfolio’s exposure resides with three fund-of-funds managers
- By Industry, the PE Portfolio is balanced with the largest exposures to IT (40%), Industrials (16%) and Health Care (10%)

By Investment Manager¹



By Industry^{2,3}



1. Breakdown based on exposure, calculated as market value plus unfunded commitment.
 2. Not Classified includes Siguler Guff CCCERA Opportunities Fund and Siguler Guff Secondary Opportunities Fund. Other includes undisclosed industry designation by the managers.
 3. Industry graph represents CCCERA’s exposed market value to underlying asset level holdings.

Real Assets Performance Summary



- CCCERA’s real assets portfolio (“RA Portfolio”) includes \$460.0 million in commitments to 11 primary and fund-of-funds investments
 - The market value of CCCERA’s RA Portfolio was \$245.4 million as of June 30, 2022
- Over the twelve-month period ended June 30, 2022, the RA Portfolio drew \$24.4 million and received \$49.8 million in distributions
- The RA Portfolio generated a net gain of \$13.4 million year-over-year, leading to a 1-year IRR of 5.46%
- The RA Portfolio generated a since-inception¹ IRR of 5.0% as of June 30, 2022

US\$ in millions

	INCEPTION TO JUNE 30, 2022	INCEPTION TO MARCH 31, 2022	INCEPTION TO JUNE 30, 2021	QUARTERLY CHANGE	ANNUAL CHANGE
Number of Managers	5	5	5	-	-
Number of Investments	11	11	11	-	-
Committed Capital	\$460.0	\$460.0	\$460.0	\$0.0	\$0.0
Contributed Capital ²	527.7	526.8	503.4	0.9	24.4
Distributed Capital	407.5	392.3	357.7	15.2	49.8
Market Value	245.4	259.5	257.4	(14.1)	(12.0)
Total Value	\$652.9	\$651.8	\$615.1	\$1.1	\$37.8
Total Gain/(Loss)	125.2	125.0	111.8	0.2	13.4
Unfunded Commitment	17.2	18.2	41.0	(0.9)	(23.8)
Total Exposure	262.6	277.7	298.4	(15.1)	(35.8)
DPI ³	0.77x	0.74x	0.71x	0.03x	0.06x
TVPI ⁴	1.24x	1.24x	1.22x	(0.00)x	0.02x
NET IRR ⁵	5.0%	5.0%	4.9%	-8 bps	+4 bps

1. Inception represents date of first capital call on 1/25/1996.

2. Total Gross Contributed represents total contributions to underlying investments including capitalized legal and other transaction fees and expenses.

3. Distributions to Paid-in Capital (DPI) represents total gross distributions received by the Fund from underlying investments (including distributions used to offset drawdowns for investments) divided by total gross contributions.

4. Total Value to Paid in Multiple (TVPI) is net of management fees and expenses related to the underlying investments, and represent the aggregate net asset value of underlying investments plus gross distributions received by the Fund from those investments, divided by total gross contributions.

5. Internal Rate of Return (IRR) is calculated based on the Portfolio’s daily cash flows and market value as of quarter-end. IRR is net of manager’s fees, expenses and carried interest, but not net of StepStone Advisory fees.

Risks and Other Considerations



Risks Associated with Investments. Identifying attractive investment opportunities and the right underlying fund managers is difficult and involves a high degree of uncertainty. There is no assurance that the investments will be profitable and there is a substantial risk that losses and expenses will exceed income and gains.

Restrictions on Transfer and Withdrawal; Illiquidity of Interests; Interests Not Registered. The investment is highly illiquid and subject to transfer restrictions and should only be acquired by an investor able to commit its funds for a significant period of time and to bear the risk inherent in such investment, with no certainty of return. Interests in the investment have not been and will not be registered under the laws of any jurisdiction. Investment has not been recommended by any securities commission or regulatory authority. Furthermore, the aforementioned authorities have not confirmed the accuracy or determined the adequacy of this document.

Limited Diversification of Investments. The investment opportunity does not have fixed guidelines for diversification and may make a limited number of investments.

Reliance on Third Parties. StepStone will require, and rely upon, the services of a variety of third parties, including but not limited to attorneys, accountants, brokers, custodians, consultants and other agents and failure by any of these third parties to perform their duties could have a material adverse effect on the investment.

Reliance on Managers. The investment will be highly dependent on the capabilities of the managers.

Risk Associated with Portfolio Companies. The environment in which the investors directly or indirectly invests will sometimes involve a high degree of business and financial risk. StepStone generally will not seek control over the management of the portfolio companies in which investments are made, and the success of each investment generally will depend on the ability and success of the management of the portfolio company.

Uncertainty Due to Public Health Crisis. A public health crisis, such as the recent outbreak of the COVID-19 global pandemic, can have unpredictable and adverse impacts on global, national and local economies, which can, in turn, negatively impact StepStone and its investment performance. Disruptions to commercial activity (such as the imposition of quarantines or travel restrictions) or, more generally, a failure to contain or effectively manage a public health crisis, have the ability to adversely impact the businesses of StepStone's investments. In addition, such disruptions can negatively impact the ability of StepStone's personnel to effectively identify, monitor, operate and dispose of investments. Finally, the outbreak of COVID-19 has contributed to, and could continue to contribute to, extreme volatility in financial markets. Such volatility could adversely affect StepStone's ability to raise funds, find financing or identify potential purchasers of its investments, all of which could have material and adverse impact on StepStone's performance. The impact of a public health crisis such as COVID-19 (or any future pandemic, epidemic or outbreak of a contagious disease) is difficult to predict and presents material uncertainty and risk with respect to StepStone's performance.

Taxation. An investment involves numerous tax risks. Please consult with your independent tax advisor.

Conflicts of Interest. Conflicts of interest may arise between StepStone and investors. Certain potential conflicts of interest are described below; however, they are by no means exhaustive. There can be no assurance that any particular conflict of interest will be resolved in favor of an investor.

Allocation of Investment Opportunities. StepStone currently makes investments, and in the future will make investments, for separate accounts having overlapping investment objectives. In making investments for separate accounts, these accounts may be in competition for investment opportunities.

Existing Relationships. StepStone and its principals have long-term relationships with many private equity managers. StepStone clients may seek to invest in the pooled investment vehicles and/or the portfolio companies managed by those managers.

Carried Interest. In those instances where StepStone and/or the underlying portfolio fund managers receive carried interest over and above their basic management fees, receipt of carried interest could create an incentive for StepStone and the portfolio fund managers to make investments that are riskier or more speculative than would otherwise be the case. StepStone does not receive any carried interest with respect to advice provided to, or investments made on behalf, of its advisory clients.

Other Activities. Employees of StepStone are not required to devote all of their time to the investment and may spend a substantial portion of their time on matters other than the investment.

Material, Non-Public Information. From time to time, StepStone may come into possession of material, non-public information that would limit their ability to buy and sell investments.

ESG Integration. While StepStone seeks to integrate certain ESG factors into its investment process and firm operations, there is no guarantee that StepStone's ESG strategy will be successfully implemented or that any investments or operations will have a positive ESG impact. Applying ESG factors to investment decisions involves qualitative and subjective decisions and there is no guarantee the criteria used by StepStone to formulate decisions regarding ESG, or StepStone's judgment regarding the same, will be reflected in the beliefs or values of any particular client or investor. There are significant differences in interpretation of what constitutes positive ESG impact and those interpretations are rapidly changing. The description of ESG integration herein is provided to illustrate StepStone's intended approach to investing and firm operations; however, there is no guarantee that the processes will be followed in every circumstance or at all.

Performance Information. No investment decisions may be made in reliance on this document. In considering performance information herein, readers should bear in mind that past performance is not necessarily indicative of future results and that actual results may vary. There can be no assurance that any StepStone fund will be able to successfully implement its investment strategy or avoid losses. Performance shown herein may include investments across different StepStone funds. The aggregate returns are not indicative of the returns an individual investor would receive from these investments. No individual investor received such aggregate returns as the investments were made across multiple funds and accounts over multiple years.



MEMORANDUM

Date: November 30, 2022

To: CCCERA Board of Retirement

From: Brian Long, Senior Investment Officer; Chih-chi Chu, Investment Analyst; Greg Ter-Zakhariants, Investment Analyst

Subject: Alternative Investment Fees and Expense Report - 2021

Overview

California public pension plans are required by law to obtain and publicly disclose certain fee and expense data and information on an annual basis in a public meeting (Government Code Section 7514.7, effective January 1, 2017). The law applies to any private fund that is an alternative investment vehicle whose contract with the pension plan was entered into on or after January 1, 2017, and for any existing contract as of December 31, 2016 for which an additional capital commitment is made on or after January 1, 2017. The law also requires the pension plan to use best efforts to obtain this information from funds entered into prior to January 2017. The intent of the legislation was to increase transparency of the cost of private investment vehicles that are used by public funds.

Code Section 7514.7 Disclosure Requirements

1. The fees and expenses that the California plan pays directly to the alternative investment vehicle, the fund manager, or related parties.
(See Columns E, G, H on the following pages)
2. The California plan'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. The California plan may independently calculate this information based on information contractually required to be provided by the alternative investment vehicle to the public investment fund. If the California plan independently calculates this information, then the alternative investment vehicle shall not be required to provide the information identified in this paragraph.
(Column I)
3. The California plan's pro rata share of carried interest distributed to the fund manager or related parties.

(Column F)

4. The California plan'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.

(Column J)

5. Any additional information described in subdivision (b) of Section 6254.26 of the Code.

(Columns K-V)

Methodology

Beginning in early 2017, we asked all Alternative Investment Managers to use the Institutional Limited Partners Association (ILPA) template to report fees and expenses to CCCERA on a quarterly basis. Though not required for funds where a contract was entered into prior to January 1, 2017, most managers voluntarily provided information using the ILPA template.

This report displays the available data for alternative investment vehicles in which CCCERA was invested as of December 31, 2021. CCCERA Investment Staff will issue a similar report in 2023 when complete data for 2022 is available.

**Contra Costa County Employees' Retirement Association
Government Code Section 7514.7 Disclosure: Private Equity
Calendar Year 2021**

A	B	C	D	E	F	G	H	I	J
Private Equity Fund	Address	Funding Commitment	Remaining Value as of 12/31/2021	Management Fees	Carried Interest Paid	Partnership Expenses	2021 Offsets	Other Expenses	Fees Paid by Portfolio Companies
Adam Street Partners (CCCERA)	Chicago, IL	\$ 210,000,000	\$ 188,950,010	\$ 927,511	\$ 250,555	\$ 107,991	\$ -	\$ -	N/A
Adam Street Partners - Brinson Partnership Fund	Chicago, IL	\$ 59,565,614	\$ 1,658,368	\$ -	\$ -	\$ 6,298	\$ -	\$ -	N/A
Adams Street Global Opportunities Secondary Fund II	Chicago, IL	\$ 30,000,000	\$ 4,677,617	\$ 120,000	\$ 156,915	\$ 9,800	\$ -	\$ -	N/A
Adams Street Global Opportunities Secondary Fund V	Chicago, IL	\$ 40,000,000	\$ 16,148,741	\$ 210,000	\$ -	\$ 11,381	\$ -	\$ -	N/A
Adams Street Venture Innovation Fund	Chicago, IL	\$ 75,000,000	\$ 215,368,647	\$ 742,500	\$ -	\$ 62,369	\$ -	\$ 58,932	N/A
AE Industrial Partners Fund II, LP	Boca Raton, FL	\$ 35,000,000	\$ 39,252,751	\$ 665,000	\$ 399,391	\$ 49,307	\$ -	\$ 135,296	N/A
Bay Area Equity Fund	San Francisco, CA	\$ 10,000,000	\$ 1,241,100	\$ -	\$ -	\$ -	\$ -	\$ 8,423	N/A
Bay Area Equity Fund II	San Francisco, CA	\$ 10,000,000	\$ 18,516,533	\$ 82,962	\$ -	\$ -	\$ -	\$ 8,710	N/A
Genstar Capital Partners IX, L.P.	San Francisco, CA	\$ 50,000,000	\$ 64,448,080	\$ 801,306	\$ 670,722	\$ 43,769	\$ 24,692	\$ 43,769	N/A
Genstar Capital Partners X	San Francisco, CA	\$ 42,500,000	\$ 5,045,762	\$ 286,990	\$ -	\$ 117,421	\$ 8,097	\$ 51,446	N/A
GTCR Fund XIII, L.P.	Chicago, IL	\$ 50,000,000	\$ 7,262,470	\$ 804,762	\$ -	\$ 385,062	\$ -	\$ -	N/A
Hellman & Friedman Capital Partners X, L.P.	San Francisco, CA	\$ 75,000,000	\$ 8,518,355	\$ 741,756	\$ -	\$ 197,507	\$ -	\$ 83,771	N/A
Oaktree Private Investment Fund 2009, L.P.	Los Angeles, CA	\$ 40,000,000	\$ 477,280	\$ -	\$ -	\$ 37,259	\$ -	\$ -	N/A
Ocean Avenue Fund II	Santa Monica, CA	\$ 30,000,000	\$ 31,357,343	\$ 212,209	\$ -	\$ 41,621	\$ -	\$ -	N/A
Ocean Avenue Fund III	Santa Monica, CA	\$ 50,000,000	\$ 47,737,032	\$ 375,000	\$ -	\$ 72,565	\$ -	\$ 9,916	N/A
Paladin III, L.P.	Washington, DC	\$ 25,000,000	\$ 23,922,380	\$ 328,516	\$ -	\$ 36,131	\$ -	\$ -	N/A
Pathway Private Equity Fund, LLC	Irvine, CA	\$ 125,000,000	\$ 6,475,546	\$ 248,742	\$ -	\$ 77,602	\$ -	\$ -	N/A
Pathway Private Equity Fund 2008	Irvine, CA	\$ 30,000,000	\$ 22,012,574	\$ 134,560	\$ -	\$ 7,265	\$ -	\$ -	N/A
Pathway Private Equity Fund 6	Irvine, CA	\$ 40,000,000	\$ 48,298,454	\$ 266,242	\$ -	\$ 15,776	\$ -	\$ -	N/A
Pathway Private Equity Fund 7	Irvine, CA	\$ 70,000,000	\$ 95,321,737	\$ 573,475	\$ -	\$ 22,457	\$ -	\$ -	N/A
Pathway Private Equity Fund 8	Irvine, CA	\$ 50,000,000	\$ 87,280,960	\$ 394,439	\$ -	\$ 17,195	\$ -	\$ 5,883	N/A
Siguler Guff CCCERA Opportunities Fund, LP	New York, NY	\$ 200,000,000	\$ 180,377,378	\$ 710,105	\$ 2,083,471	\$ -	\$ 29,983	\$ 142,924	N/A
Siguler Guff Secondary Opportunities Fund	New York, NY	\$ 50,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A
Siris Partners IV, L.P.	New York, NY	\$ 35,000,000	\$ 31,081,399	\$ 523,423	\$ -	\$ -	\$ -	\$ 224	N/A
TA XIV-A, L.P.	Boston, MA	\$ 50,000,000	\$ 13,165,786	\$ -	\$ -	\$ -	\$ -	\$ -	N/A
TPG Healthcare Partners, L.P.	San Francisco, CA	\$ 24,000,000	\$ 14,221,876	\$ 360,000	\$ 57,390	\$ 178,416	\$ -	\$ 62,729	N/A
Trident VIII, L.P.	Greenwich, CT	\$ 40,000,000	\$ 48,307,304	\$ 513,306	\$ -	\$ 82,703	\$ 17,903	\$ -	N/A
Trident IX, L.P.	Greenwich, CT	\$ 50,000,000	\$ (307,582)	\$ -	\$ -	\$ -	\$ -	\$ -	N/A
United States Power Fund	Los Angeles, CA	\$ 30,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A
USPF II Institutional Fund, L.P.	Los Angeles, CA	\$ 50,000,000	\$ 1,510,236	\$ 77,242	\$ -	\$ 20,265	\$ -	\$ 1	N/A
United States Power Fund III, L.P.	Los Angeles, CA	\$ 65,000,000	\$ 10,579,825	\$ 155,614	\$ -	\$ 6,019	\$ -	\$ -	N/A
Energy Investor Funds USPF IV	Los Angeles, CA	\$ 50,000,000	\$ 29,251,637	\$ 461,226	\$ -	\$ 40,354	\$ -	\$ 1,378,193	N/A
Ares EIF V	Los Angeles, CA	\$ 50,000,000	\$ 27,281,870	\$ 678,814	\$ -	\$ 261,603	\$ -	\$ 7,458	N/A
Real Assets									
Aether Real Assets III	Denver, CO	\$ 25,000,000	\$ 18,819,060	\$ 128,625	\$ -	\$ 24,503	\$ -	\$ 841	N/A
Aether Real Assets III Surplus	Denver, CO	\$ 50,000,000	\$ 41,372,226	\$ 181,588	\$ -	\$ 47,614	\$ -	\$ 438	N/A
Aether Real Assets IV	Denver, CO	\$ 50,000,000	\$ 58,321,495	\$ 361,249	\$ -	\$ 52,856	\$ -	\$ 19,497	N/A
Commonfund Capital Natural Resources IX	Wilton, CT	\$ 50,000,000	\$ 41,654,225	\$ 215,262	\$ -	\$ 29,455	\$ -	\$ -	N/A
Wastewater Opportunity Fund	Portland, OR	\$ 25,000,000	\$ 20,403,896	\$ 318,056	\$ -	\$ 59,789	\$ -	\$ 5,726	N/A

N/A: This information was not available or not provided by the manager.

**Contra Costa County Employees' Retirement Association
Government Code Section 7514.7 Disclosure: Private Equity
Calendar Year 2021**

K	L	M	N	O	P	Q	R	S	T	U	V
Private Equity Fund	Address	Inception Date	Funding Commitment	Since Inception Contributions	Since Inception Distributions	Value as of 12/31/2021	Total Value as of 12/31/2021	Distributed/ Paid in	Total Value/ Paid in	Since Inception Gross IRR	Since Inception Net IRR
Total Adams Street Partnership Program	Chicago, IL	12/22/1995	\$ 210,000,000	\$ 191,780,625	\$ 236,776,107	\$ 188,950,010	\$ 425,726,117	1.23x	2.22x	15.3%	13.3%
Total BPF Trust Program	Chicago, IL	1/18/1996	\$ 59,565,614	\$ 57,517,409	\$ 102,731,103	\$ 1,658,368	\$ 104,389,471	1.79x	1.81x	14.2%	11.6%
Adams Street Global Opportunities Secondary Fund II	Chicago, IL	1/15/2009	\$ 30,000,000	\$ 28,365,000	\$ 44,224,512	\$ 4,677,617	\$ 48,902,129	1.56x	1.72x	17.8%	14.0%
Adams Street Global Opportunities Secondary Fund V	Chicago, IL	9/21/2012	\$ 40,000,000	\$ 30,845,875	\$ 26,391,591	\$ 16,148,741	\$ 42,540,332	0.86x	1.38x	10.4%	7.3%
Adams Street Venture Innovation Fund	Chicago, IL	3/31/2016	\$ 75,000,000	\$ 66,037,500	\$ 27,268,304	\$ 215,368,647	\$ 242,636,951	0.41x	3.67x	63.8%	60.8%
AE Industrial Partners Fund II, LP	Boca Raton, FL	5/18/2018	\$ 35,000,000	\$ 23,956,319	\$ 3,559,451	\$ 39,252,751	\$ 42,812,202	0.15x	1.79x	48.8%	48.2%
Bay Area Equity Fund	San Francisco, CA	4/30/2004	\$ 10,000,000	\$ 10,000,000	\$ 37,018,019	\$ 1,241,100	\$ 38,259,119	3.70x	3.83x	31.3%	23.1%
Bay Area Equity Fund II	San Francisco, CA	6/29/2009	\$ 10,000,000	\$ 10,000,000	\$ 3,684,910	\$ 18,516,533	\$ 22,201,443	0.37x	2.22x	14.5%	9.5%
Genstar Capital Partners IX, L.P.	San Francisco, CA	2/21/2019	\$ 50,000,000	\$ 48,183,753	\$ 6,258,126	\$ 64,448,080	\$ 70,706,206	0.13x	1.47x	66.1%	43.5%
Genstar Capital Partners X	San Francisco, CA	4/1/2021	\$ 42,500,000	\$ 4,732,864	\$ -	\$ 5,045,762	\$ 5,045,762	0.00x	1.07x	NM	NM
GTCR Fund XIII, L.P.	Chicago, IL	10/27/2020	\$ 50,000,000	\$ 5,375,000	\$ 1,809,154	\$ 7,262,470	\$ 9,071,624	0.34x	1.69x	NM	NM
Hellman & Friedman Capital Partners X, L.P.	San Francisco, CA	5/10/2021	\$ 75,000,000	\$ 9,135,072	\$ -	\$ 8,518,355	\$ 8,518,355	0.00x	0.93x	NM	NM
Oaktree Private Investment Fund 2009, L.P.	Los Angeles, CA	11/18/2009	\$ 40,000,000	\$ 34,812,560	\$ 47,032,470	\$ 477,280	\$ 47,509,750	1.35x	1.36x	6.8%	6.6%
Ocean Avenue Fund II	Santa Monica, CA	5/2/2013	\$ 30,000,000	\$ 27,000,000	\$ 36,732,345	\$ 31,357,343	\$ 68,089,689	1.36x	2.52x	21.5%	20.8%
Ocean Avenue Fund III	Santa Monica, CA	4/15/2016	\$ 50,000,000	\$ 44,000,000	\$ 48,000,000	\$ 47,737,032	\$ 95,737,032	1.09x	2.18x	28.1%	27.7%
Paladin III, L.P.	Washington, DC	11/30/2007	\$ 25,000,000	\$ 34,736,206	\$ 67,416,571	\$ 23,922,380	\$ 91,338,951	1.94x	2.63x	21.8%	15.1%
Pathway Private Equity Fund, LLC	Irvine, CA	1/19/1999	\$ 125,000,000	\$ 125,847,854	\$ 186,031,281	\$ 6,475,546	\$ 192,506,827	1.48x	1.53x	10.3%	8.4%
Pathway Private Equity Fund 2008	Irvine, CA	7/31/2009	\$ 30,000,000	\$ 29,883,719	\$ 47,098,961	\$ 22,012,574	\$ 69,111,535	1.58x	2.31x	18.2%	15.9%
Pathway Private Equity Fund 6	Irvine, CA	8/22/2011	\$ 40,000,000	\$ 39,171,460	\$ 42,776,351	\$ 48,298,454	\$ 91,074,805	1.09x	2.33x	19.8%	17.7%
Pathway Private Equity Fund 7	Irvine, CA	7/10/2013	\$ 70,000,000	\$ 68,767,111	\$ 66,608,575	\$ 95,321,737	\$ 161,930,312	0.97x	2.35x	22.5%	20.5%
Pathway Private Equity Fund 8	Irvine, CA	11/23/2015	\$ 50,000,000	\$ 46,129,178	\$ 23,309,896	\$ 87,280,960	\$ 110,590,856	0.51x	2.40x	28.6%	27.3%
Siguler Guff CCCERA Opportunities Fund, LP	New York, NY	6/3/2014	\$ 200,000,000	\$ 174,083,208	\$ 165,271,691	\$ 180,377,378	\$ 345,649,069	0.95x	1.99x	21.8%	19.4%
Siguler Guff Secondary Opportunities Fund	New York, NY	11/30/2016	\$ 50,000,000	\$ 29,999,802	\$ 42,773,166	\$ -	\$ 42,773,166	1.43x	1.43x	118.4%	74.8%
Siris Partners IV, L.P.	New York, NY	5/18/2018	\$ 35,000,000	\$ 22,527,930	\$ 4,030,441	\$ 31,081,399	\$ 35,111,840	0.18x	1.56x	30.1%	25.0%
TA XIV-A, L.P.	Boston, MA	5/27/2021	\$ 50,000,000	\$ 13,500,000	\$ -	\$ 13,165,786	\$ 13,165,786	0.00x	0.98x	NM	NM
TPG Healthcare Partners, L.P.	San Francisco, CA	6/28/2019	\$ 24,000,000	\$ 10,866,175	\$ 1,956,092	\$ 14,221,876	\$ 16,177,968	0.18x	1.49x	90.0%	49.3%
Trident VIII, L.P.	Greenwich, CT	5/24/2019	\$ 40,000,000	\$ 37,182,999	\$ 974,669	\$ 48,307,304	\$ 49,281,974	0.03x	1.33x	48.5%	43.1%
Trident IX, L.P.	Greenwich, CT	9/17/2021	\$ 50,000,000	\$ -	\$ -	\$ (307,582)	\$ (307,582)			NM	NM
United States Power Fund	Los Angeles, CA	11/26/2003	\$ 30,000,000	\$ 38,960,280	\$ 64,468,378	\$ -	\$ 64,468,378	1.65x	1.65x	34.7%	28.3%
USPF II Institutional Fund, L.P.	Los Angeles, CA	7/15/2005	\$ 50,000,000	\$ 65,029,556	\$ 74,001,371	\$ 1,510,236	\$ 75,511,607	1.14x	1.16x	5.2%	2.5%
United States Power Fund III, L.P.	Los Angeles, CA	5/31/2007	\$ 65,000,000	\$ 71,409,097	\$ 85,938,521	\$ 10,579,825	\$ 96,518,346	1.20x	1.35x	7.0%	4.6%
Energy Investor Funds USPF IV	Los Angeles, CA	11/28/2011	\$ 50,000,000	\$ 64,917,547	\$ 41,055,366	\$ 29,251,637	\$ 70,307,003	0.63x	1.08x	5.2%	1.8%
Ares EIF V	Los Angeles, CA	11/28/2016	\$ 50,000,000	\$ 63,083,621	\$ 52,513,417	\$ 27,281,870	\$ 79,795,287	0.83x	1.26x	15.2%	11.5%
Real Assets											
Aether Real Assets III	Denver, CO	11/27/2013	\$ 25,000,000	\$ 25,022,835	\$ 5,064,961	\$ 18,819,060	\$ 23,884,021	0.20x	0.95x	1.8%	-1.0%
Aether Real Assets III Surplus	Denver, CO	11/30/2013	\$ 50,000,000	\$ 51,788,932	\$ 11,632,535	\$ 41,372,226	\$ 53,004,761	0.22x	1.02x	2.1%	0.5%
Aether Real Assets IV	Denver, CO	1/30/2016	\$ 50,000,000	\$ 47,862,005	\$ 3,584,928	\$ 58,321,495	\$ 61,906,423	0.07x	1.29x	12.1%	8.6%
Commonfund Capital Natural Resources IX	Wilton, CT	6/30/2013	\$ 50,000,000	\$ 46,524,993	\$ 16,339,150	\$ 41,654,225	\$ 57,993,375	0.35x	1.25x	6.2%	4.5%
Wastewater Opportunity Fund	Portland, OR	12/8/2015	\$ 25,000,000	\$ 29,242,585	\$ 12,893,182	\$ 20,403,896	\$ 33,297,078	0.44x	1.14x	8.8%	5.1%

NM: This data is not yet meaningful.

**Contra Costa County Employees' Retirement Association
Government Code Section 7514.7 Disclosure: Private Credit
Calendar Year 2021**

A	B	C	D	E	F	G	H	I	J
Private Credit Fund	Address	Funding Commitment	Value as of 12/31/2021	Management Fees	Carried Interest Paid	Partnership Expenses	2021 Offsets	Other Expenses	Fees Paid by Portfolio Companies
Angelo Gordon Energy Credit Opportunities Fund	New York, NY	\$ 16,500,000	\$ 3,546,515	\$ 100,961	\$ -	\$ 48,020	\$ -	\$ -	N/A
StepStone CC Opportunities Fund, LLC - All Series	La Jolla, CA	\$ 1,170,000,000	\$ 848,903,416	\$ 1,500,000	\$ -	\$ 558,831	\$ -	\$ -	N/A
Torchlight Debt Opportunity Fund IV	New York, NY	\$ 60,000,000	\$ 9,064,530	\$ 120,519	\$ -	\$ 97,518	\$ 3,451	\$ -	N/A
Torchlight Debt Opportunity Fund V	New York, NY	\$ 75,000,000	\$ 14,588,827	\$ 235,361	\$ -	\$ 162,129	\$ -	\$ 755	N/A

N/A: This information was not available or not provided by the manager.

**Contra Costa County Employees' Retirement Association
Government Code Section 7514.7 Disclosure: Private Credit
Calendar Year 2021**

K	L	M	N	O	P	Q	R	S	T	U	V
Private Credit Fund	Address	Inception Date	Funding Commitment	Since Inception Contributions	Since Inception Distributions	Value as of 12/31/2021	Total Value as of 12/31/2021	Distributed/ Paid in	Total Value/ Paid in	Since Inception Gross IRR	Since Inception Net IRR
Angelo Gordon Energy Credit Opportunities Fund	New York, NY	8/14/2015	\$ 16,500,000	\$ 18,750,000	\$ 18,829,566	\$ 3,546,515	\$ 22,376,081	1.00x	1.19x	10.5%	7.4%
StepStone CC Opportunities Fund, LLC - All Series	La Jolla, CA	12/18/2017	\$1,170,000,000	\$ 766,356,197	\$ 89,848,226	\$ 848,903,416	\$ 938,751,642	0.12x	1.22x	10.5%	9.8%
Torchlight Debt Opportunity Fund IV	New York, NY	8/1/2012	\$ 60,000,000	\$ 84,866,971	\$ 106,146,627	\$ 9,064,530	\$ 115,211,157	1.25x	1.36x	12.5%	10.4%
Torchlight Debt Opportunity Fund V	New York, NY	3/12/2015	\$ 75,000,000	\$ 60,000,000	\$ 64,410,469	\$ 14,588,827	\$ 78,999,296	1.07x	1.32x	15.5%	10.7%

**Contra Costa County Employees' Retirement Association
Government Code Section 7514.7 Disclosure: Real Estate
Calendar Year 2021**

A	B	C	D	E	F	G	H	I	J
Real Estate Fund	Address	Funding Commitment	Remaining Value as of 12/31/2021	Management Fees	Carried Interest Paid	Partnership Expenses	2021 Offsets	Other Expenses	Fees Paid by Portfolio Companies
AG Realty Fund VIII, L.P.	New York, NY	\$ 80,000,000	\$ 15,334,276	-	\$ -	\$ 75,720	\$ 78,376	\$ -	N/A
AG Realty Fund IX (A), L.P.	New York, NY	\$ 65,000,000	\$ 46,427,426	\$ 836,432	\$ -	\$ 211,152	\$ 24,806	\$ -	N/A
DLJ RECP Fund III, L.P.	New York, NY	\$ 75,000,000	\$ 15,902,346	\$ 176,377	\$ -	\$ 88,402	\$ 15,165	\$ -	N/A
DLJ RECP Fund IV, L.P.	New York, NY	\$ 100,000,000	\$ 55,846,590	\$ 509,467	\$ -	\$ 156,535	\$ 160,542	\$ 2,642	N/A
DLJ RECP Fund V, L.P.	New York, NY	\$ 75,000,000	\$ 48,860,112	\$ 577,315	\$ -	\$ 411,097	\$ 98,461	\$ 90,567	N/A
DLJ RECP Fund VI, L.P.	New York, NY	\$ 50,000,000	\$ 33,456,382	\$ 537,374	\$ -	\$ 391,114	\$ 193,738	\$ 117,762	N/A
Invesco U.S. Value-Add Fund III	Dallas, TX	\$ 35,000,000	\$ 153,777	\$ -	\$ -	\$ 30,366	\$ -	\$ -	N/A
Invesco U.S. Value-Add Fund IV	Dallas, TX	\$ 35,000,000	\$ 5,735,496	\$ 194,764	\$ -	\$ 35,919	\$ -	\$ -	N/A
Invesco U.S. Value-Add Fund V	Dallas, TX	\$ 75,000,000	\$ 70,423,006	\$ 681,447	\$ -	\$ 365,134	\$ -	\$ -	N/A
Invesco U.S. Value-Add Fund VI	Dallas, TX	\$ 100,000,000	\$ (67,331)	\$ 78,902	\$ -	\$ 556,587	\$ -	\$ -	N/A
LaSalle Income & Growth Fund VI	Chicago, IL	\$ 75,000,000	\$ 20,083,092	\$ 149,348	\$ -	\$ 27,115	\$ -	\$ -	N/A
LaSalle Income & Growth Fund VII	Chicago, IL	\$ 75,000,000	\$ 64,584,267	\$ 636,256	\$ -	\$ 77,298	\$ -	\$ -	N/A
Long Wharf Real Estate Partners IV L.P.	Boston, MA	\$ 25,000,000	\$ 1,542,465	\$ 52,808	\$ 295,916	\$ 28,689	\$ -	\$ -	N/A
Long Wharf Real Estate Partners V L.P.	Boston, MA	\$ 50,000,000	\$ 30,750,262	\$ 460,118	\$ -	\$ 66,233	\$ -	\$ -	N/A
Long Wharf Real Estate Partners VI L.P.	Boston, MA	\$ 50,000,000	\$ 21,293,878	\$ 750,000	\$ -	\$ 120,766	\$ -	\$ -	N/A
Oaktree Real Estate Opportunities Fund V, LP	Los Angeles, CA	\$ 50,000,000	\$ 1,487,147	\$ 19,762	\$ 625,000	\$ 16,429	\$ -	\$ -	N/A
Oaktree Real Estate Opportunities Fund VI, LP	Los Angeles, CA	\$ 80,000,000	\$ 26,271,187	\$ 409,425	\$ -	\$ 126,832	\$ -	\$ -	N/A
Oaktree Real Estate Opportunities Fund VII, LP	Los Angeles, CA	\$ 65,000,000	\$ 48,997,153	\$ 630,259	\$ 702	\$ 263,629	\$ -	\$ 66,025	N/A
Paulson Real Estate Fund II LP	New York, NY	\$ 20,000,000	\$ 19,793,693	\$ 183,807	\$ 140,629	\$ 61,127	\$ -	\$ -	N/A
Siguler Guff Distressed Real Estate Opportunities Fund, LP	New York, NY	\$ 75,000,000	\$ 25,170,468	\$ 169,543	\$ 70,612	\$ 44,249	\$ -	\$ -	N/A
Siguler Guff Distressed Real Estate Opportunities Fund II, LP	New York, NY	\$ 70,000,000	\$ 45,303,733	\$ 322,310	\$ -	\$ 59,429	\$ -	\$ -	N/A
Siguler Guff DREOF II Co-Investment Fund	New York, NY	\$ 25,000,000	\$ 12,433,306	\$ 106,918	\$ -	\$ 23,656	\$ -	\$ -	N/A

N/A: This information was not available or not provided by the manager.

**Contra Costa County Employees' Retirement Association
Government Code Section 7514.7 Disclosure: Real Estate
Calendar Year 2021**

K	L	M	N	O	P	Q	R	S	T	U	V
Real Estate Fund	Address	Inception Date	Funding Commitment	Since Inception Contributions	Since Inception Distributions	Remaining Value as of 12/31/2021	Total Value as of 12/31/2021	Distributed/ Paid in	Total Value/ Paid in	Since Inception Gross IRR	Since Inception Net IRR
AG Realty Fund VIII, L.P.	New York, NY	12/13/2010	\$ 80,000,000	\$ 75,401,855	\$ 101,711,550	\$ 15,334,276	\$ 117,045,826	1.35x	1.55x	18.2%	13.3%
AG Realty Fund IX (A), L.P.	New York, NY	12/8/2014	\$ 65,000,000	\$ 60,125,000	\$ 40,137,501	\$ 46,427,426	\$ 86,564,927	0.67x	1.44x	13.2%	9.5%
DLJ RECP Fund III, L.P.	New York, NY	6/6/2005	\$ 75,000,000	\$ 101,043,286	\$ 70,578,848	\$ 15,902,346	\$ 86,481,194	0.70x	0.86x	-0.8%	-2.4%
DLJ RECP Fund IV, L.P.	New York, NY	12/26/2007	\$ 100,000,000	\$ 133,446,096	\$ 101,310,402	\$ 55,846,590	\$ 157,156,992	0.76x	1.18x	4.6%	2.0%
DLJ RECP Fund V, L.P.	New York, NY	7/18/2013	\$ 75,000,000	\$ 101,709,369	\$ 81,052,370	\$ 48,860,112	\$ 129,912,482	0.80x	1.28x	17.6%	9.9%
DLJ RECP Fund VI, L.P.	New York, NY	11/20/2018	\$ 50,000,000	\$ 30,103,770	\$ -	\$ 33,456,382	\$ 33,456,382	0.00x	1.11x	10.6%	4.4%
Invesco U.S. Value-Add Fund III	Dallas, TX	12/2/2011	\$ 35,000,000	\$ 32,386,424	\$ 47,423,063	\$ 153,777	\$ 47,576,840	1.46x	1.47x	17.5%	13.6%
Invesco U.S. Value-Add Fund IV	Dallas, TX	6/30/2014	\$ 35,000,000	\$ 30,546,401	\$ 36,124,620	\$ 5,735,496	\$ 41,860,116	1.18x	1.37x	15.6%	12.0%
Invesco U.S. Value-Add Fund V	Dallas, TX	7/28/2017	\$ 75,000,000	\$ 59,352,270	\$ 7,217,922	\$ 70,423,006	\$ 77,640,929	0.12x	1.31x	27.9%	19.8%
Invesco U.S. Value-Add Fund VI	Dallas, TX	12/30/2020	\$ 100,000,000	\$ -	\$ -	\$ (67,331)	\$ (67,331)	NM	NM	NM	NM
LaSalle Income & Growth Fund VI	Chicago, IL	1/20/2012	\$ 75,000,000	\$ 71,428,571	\$ 84,523,353	\$ 20,083,092	\$ 104,606,446	1.18x	1.46x	12.8%	10.6%
LaSalle Income & Growth Fund VII	Chicago, IL	10/30/2015	\$ 75,000,000	\$ 72,154,315	\$ 39,158,419	\$ 64,584,267	\$ 103,742,686	0.54x	1.44x	14.5%	12.1%
Long Wharf Real Estate Partners IV L.P.	Boston, MA	11/13/2012	\$ 25,000,000	\$ 25,000,000	\$ 35,824,789	\$ 1,542,465	\$ 37,367,254	1.43x	1.49x	16.5%	11.9%
Long Wharf Real Estate Partners V L.P.	Boston, MA	11/20/2015	\$ 50,000,000	\$ 50,000,000	\$ 35,416,429	\$ 30,750,262	\$ 66,166,691	0.71x	1.32x	11.8%	9.0%
Long Wharf Real Estate Partners VI L.P.	Boston, MA	6/27/2019	\$ 50,000,000	\$ 26,243,806	\$ 11,199,207	\$ 21,293,878	\$ 32,493,085	0.43x	1.24x	52.3%	30.9%
Oaktree Real Estate Opportunities Fund V, LP	Los Angeles, CA	2/23/2011	\$ 50,000,000	\$ 50,000,000	\$ 78,512,733	\$ 1,487,147	\$ 79,999,880	1.57x	1.60x	16.7%	12.3%
Oaktree Real Estate Opportunities Fund VI, LP	Los Angeles, CA	9/20/2012	\$ 80,000,000	\$ 80,000,000	\$ 84,010,175	\$ 26,271,187	\$ 110,281,362	1.05x	1.38x	11.6%	7.9%
Oaktree Real Estate Opportunities Fund VII, LP	Los Angeles, CA	4/1/2015	\$ 65,000,000	\$ 65,000,000	\$ 42,892,942	\$ 48,997,153	\$ 91,890,095	0.66x	1.41x	27.1%	18.0%
Paulson Real Estate Fund II LP	New York, NY	12/31/2013	\$ 20,000,000	\$ 19,345,623	\$ 20,947,018	\$ 19,793,693	\$ 40,740,711	1.08x	2.11x	17.5%	12.7%
Siguler Guff Distressed Real Estate Opportunities Fund, LP	New York, NY	9/2/2010	\$ 75,000,000	\$ 69,375,000	\$ 100,626,864	\$ 25,170,468	\$ 125,797,332	1.45x	1.81x	16.4%	12.3%
Siguler Guff Distressed Real Estate Opportunities Fund II, LP	New York, NY	7/5/2013	\$ 70,000,000	\$ 61,985,000	\$ 47,831,312	\$ 45,303,733	\$ 93,135,045	0.77x	1.50x	11.9%	9.0%
Siguler Guff DREOF II Co-Investment Fund	New York, NY	7/7/2015	\$ 25,000,000	\$ 20,537,862	\$ 13,584,170	\$ 12,433,306	\$ 26,017,476	0.66x	1.27x	7.5%	5.8%

NM: This data is not yet meaningful.



MEMORANDUM

Date: November 30, 2022
To: CCCERA Board of Retirement
From: Karen Levy, General Counsel
Subject: Continuing teleconference meetings under Government Code section 54953 (e)

Background

All meetings of the Board of Retirement are open to the general public, as required by the Ralph M. Brown Act, California Government Code sections 54950 *et seq.* Section 54953 (e) of the Brown Act authorizes conducting public meetings via teleconferencing during a state of emergency.¹ The Board has approved conducting its meetings via teleconferencing under Section 54953 (e), finding that in-person meetings of the Board are open to the general public and would risk the health or safety of the public, staff, outside consultants and trustees attending public meetings, in light of the COVID-19 pandemic and related state of emergency. Under the law, if the Board wishes to continue using these special teleconferencing rules it must reconsider the circumstances of the state of emergency and make certain findings.

Proclaimed State of Emergency and Health and Safety Guidance

Currently, the COVID-19 state of emergency proclaimed by the Governor is in effect. On October 17, 2022, the Governor issued a press release advising that the COVID-19 state of emergency will end on February 28, 2023. (See Attachment A, Press Release.) The Press Release states:

With hospitalizations and deaths dramatically reduced due to the state's vaccination and public health efforts, California has the tools needed to continue fighting COVID-19 when the State of Emergency terminates at the end of February, including vaccines and boosters, testing, treatments and other mitigation measures like masking and indoor ventilation.

¹ This change in the Brown Act was enacted under AB 361, which sunsets by its own provisions on January 1, 2024.

The Contra Costa County Health Officer updated its recommendations for safely holding public meetings on November 1, 2022. The recommendations continue to include measures to promote social distancing. (See Attachment B, Health Officer's Recommendations.) The Health Officer has recommended as follows:

Online meetings (i.e. teleconferencing meetings) are encouraged, where practical, as these meetings present the lowest risk of transmission of SARS CoV-2, the virus that causes COVID 19. This is particularly important when community prevalence rates are high. Our current trends as of November 1, 2022 in Covid-19 case rate, test positivity, Covid-19 hospitalizations, and COVID-19 wastewater surveillance have decreased and are stable, but there continues to be COVID-19 in the community at a stable rate and changes in case rate, test positivity, COVID-19 hospitalization and wastewater surveillance may change or increase rapidly. In addition to this, the predominant variant of COVID-19 being identified continues to be the Omicron variant and it's subvariants the impact of which on the spread of COVID-19 has shown to dramatically increase COVID-19 transmission.

Recommendation

Consider and take possible action to authorize the Board and its committee(s) to continue to conduct teleconference meetings for the next 30 days under Government Code section 54953 (e) and make the following findings:

1. The Board has reconsidered the circumstances of the statewide state of emergency proclaimed by the Governor on March 4, 2020 and the countywide local emergency proclaimed by the Contra Costa County Board of Supervisors on March 10, 2020.
2. The following circumstances currently exist:
 - a. The statewide state of emergency and the countywide local emergency continue to directly impact the ability of the Board and its committee(s) to meet safely in person at meetings that are open to the general public because of the COVID-19 pandemic.
 - b. The County Health Officer's recommendations for safely holding public meetings, which encourage virtual meetings and other measures to promote social distancing, are still in effect.

Attachment

A

Governor Newsom to End the COVID-19 State of Emergency

Published: Oct 17, 2022

California's pandemic response saved tens of thousands of lives, protected the economy, distributed nation-leading financial assistance and built up an unprecedented public health infrastructure

The SMARTER Plan will maintain California's operational preparedness to support communities and quickly respond to outbreaks

SACRAMENTO – Today, Governor Gavin Newsom announced that the COVID-19 State of Emergency will end on February 28, 2023, charting the path to phasing out one of the most effective and necessary tools that California has used to combat COVID-19. This timeline gives the health care system needed flexibility to handle any potential surge that may occur after the holidays in January and February, in addition to providing state and local partners the time needed to prepare for this phaseout and set themselves up for success afterwards.

With hospitalizations and deaths dramatically reduced due to the state's vaccination and public health efforts, California has the tools needed to continue fighting COVID-19 when the State of Emergency terminates at the end of February, including vaccines and boosters, testing, treatments and other mitigation measures like masking and indoor ventilation. As the State of Emergency is phased out, the SMARTER Plan continues to guide California's strategy to best protect people from COVID-19.

[SMARTER Plan progress update](#)

“Throughout the pandemic, we've been guided by the science and data – moving quickly and strategically to save lives. The State of Emergency was an effective and necessary tool that we utilized to protect our state, and we wouldn't have gotten to this point without it,” said Governor Newsom. “With the operational preparedness that we've built up and the measures that we'll continue to employ moving forward, California is ready to phase out this tool.”

To maintain California's COVID-19 laboratory testing and therapeutics treatment capacity, the Newsom Administration will be seeking two statutory changes immediately upon the Legislature's return: 1) The continued ability of nurses to dispense COVID-19 therapeutics; and 2) The continued ability of laboratory workers to solely process COVID-19 tests.

“California's response to the COVID-19 pandemic has prepared us for whatever comes next. As we move into this next phase, the infrastructure and processes we've invested in and built up will provide us the tools to manage any ups and downs in the future,” said Secretary of the California Health & Human Services Agency, Dr. Mark Ghaly. “While the threat of this virus is still real, our preparedness and collective work have helped turn this once crisis emergency into a manageable situation.”

Throughout the pandemic, Governor Newsom, the Legislature and state agencies have been guided by the science and data to best protect Californians and save lives – with a focus on those facing the greatest social and health inequities – remaining nimble to adapt mitigation efforts along the way as we learned more about COVID-19. The state's efforts to support Californians resulted in:

- Administration of 81 million vaccinations, distribution of a billion units of PPE throughout the state and processing of 186 million tests.
- Allocation of billions of dollars to support hospitals, community organizations, frontline workers, schools and more throughout the pandemic.
- The nation's largest stimulus programs to support people hardest hit by the pandemic – \$18.5 billion for direct payments to Californians, \$8 billion for rent relief, \$10 billion for small business grants and tax relief, \$2.8 billion to help with overdue utility bills, and more.

California's pandemic response efforts have saved tens of thousands of lives, kept people out of the hospital and protected the economy:

- California's [death rate](#) is the lowest amongst large states. If California had Texas' death rate, 27,000 more people would have died here. If California had Florida's rate, that figure jumps to approximately 56,000 more deaths.
- In only the first ten months of vaccines being available, a study showed that California's efforts [saved 20,000 lives](#), kept 73,000 people out of the hospital and prevented 1.5 million infections.
- California's actions during the pandemic protected the economy and the state continues to lead the nation in creating jobs and new business starts:
 - [“‘Lockdown’ states like California did better economically than ‘looser’ states like Florida, new COVID data shows,”](#) with **California's economy having contracted less** than such states – economic output shrank 3.5% on average for the U.S., compared with 2.8% for California.
 - Since February 2021, **California has created 1,628,300 new jobs** – over 16% of the nation's jobs, by far more than any other state. By comparison, Texas created 1,133,200 jobs (11.3% of the nation's) and Florida created 787,600 jobs (7.9% of the nation's) in that same timeframe.
 - Since the beginning of 2019, data from the [Bureau of Labor Statistics](#) shows that **over 569,000 businesses started in California**, by far more than any other state.

###

Attachment

B

Recommendations for safely holding public meetings

Each local government agency is authorized to determine whether to hold public meetings in person, on-line (teleconferencing only), or via a combination of methods. The following are recommendations from the Contra Costa County Health Officer to minimize the risk of COVID 19 transmission during a public meeting.

1. Online meetings (i.e. teleconferencing meetings) are encouraged, where practical, as these meetings present the lowest risk of transmission of SARS CoV-2, the virus that causes COVID 19. This is particularly important when community prevalence rates are high. Our current trends as of November 1, 2022 in Covid-19 case rate, test positivity, Covid-19 hospitalizations, and Covid-19 wastewater surveillance are have decreased and are stable, but there continues to be COVID-19 in the community at a stable rate and changes in case rate, test positivity, COVID-19 hospitalization and wastewater surveillance may change or increase rapidly. In addition to this, the predominant variant of Covid-19 being identified continues to be the Omicron variant and it's subvariants the impact of which on the spread of Covid-19 has shown to dramatically increase COVID-19 transmission.
2. If a local agency determines to hold in-person meetings, offering the public the opportunity to attend via a call-in option or an internet-based service option is recommended, when possible, to give those at higher risk of and/or higher concern about COVID-19 an alternative to participating in person.
3. A written safety protocol should be developed and followed. It is recommended that the protocol require social distancing, where feasible – i.e. six feet of separation between attendees; and consider requiring or strongly encouraging face masking of all attendees and encouraging attendees to be up-to-date on their COVID-19 vaccine.
4. Seating arrangements should allow for staff and members of the public to easily maintain at least six-foot distance from one another at all practicable times.
5. Consider holding public meetings outdoors. Increasing scientific consensus is that outdoor airflow reduces the risk of COVID-19 transmission compared to indoor spaces. Hosting events outdoors also may make it easier to space staff and members of the public at least 6 feet apart. If unable to host outdoors, consider ways to [increase ventilation and flow](#) of the indoor space to reduce the risk of COVID-19 while indoors.
6. Current evidence is unclear as to the added benefit of temperature checks in addition to symptom checks. We encourage focus on symptom checks as they may screen out individuals with other Covid-19 symptoms besides fever and help reinforce the message to not go out in public if you are not feeling well.
7. Consider a voluntary attendance sheet with names and contact information to assist in contact tracing of any cases linked to a public meeting.

Revised 11-1-2022

Sefanit Mekuria

Sefanit Mekuria, MD, MPH
Deputy Health Officer, Contra Costa County



41ST ANNUAL CLIENT WORKSHOP
THE RITZ-CARLTON LAGUNA NIGUEL, DANA POINT, CA
FEBRUARY 16-19, 2023

SPEAKER BIOS – AS OF 11/15/22

Dr. Walter A. Berbrick – The Arctic and National Security. Associate professor in the War Gaming Department, founding director of the Arctic Studies Group and co-lead scholar of the Newport Arctic Scholars Initiative at the U.S. Naval War College. He has authored many reports and publications on defense and foreign policy issues and is the co-author of the forthcoming book *Newport Manual on Arctic Security*. Most recently, he served as the senior arctic policy advisor to the Secretary of the Navy and special representative for the Arctic region at the U.S. State Department. Dr. Berbrick is an international affairs fellow and member with the Council on Foreign Relations, holds a doctorate from Northeastern University and has served 10 years in the U.S. Navy.

Dr. Jeffrey S. Chamberlain – How the CRISPR (gene editing) Breakthrough Might Revolutionize Modern Medicine. Dr. Chamberlain is a geneticist with expertise in the muscular dystrophies, and is currently a professor of neurology, medicine and biochemistry at the University of Washington School of Medicine and director of the Wellstone Muscular Dystrophy Specialized Research Center in Seattle. He also serves on numerous advisory boards for the National Institutes of Health and the FDA and is currently the President-elect of the American Society for Gene and Cell Therapy. His research focuses on understanding the causes of different types of muscular dystrophy with a focus on developing treatments. Since these dystrophies are all genetic (inherited) disorders, many of the most promising treatments are genetics-based (i.e., gene therapies). Several such gene therapies developed in the Chamberlain lab have advanced into clinical trials using an approach designed to deliver a normal copy of the patient’s mutant gene back into their muscles. However, recent advances in ‘gene editing’ have inspired a new class of gene therapies designed to repair a mutant gene. These gene editing approaches use a system commonly known as CRISPR and appear well suited for treating muscular dystrophy mutations. During his presentation, Chamberlain will provide an update on how the CRISPR breakthrough might revolutionize modern medicine, highlighting the work that the Chamberlain lab is doing in using CRISPR approaches in parallel with gene replacement methods to treat muscular dystrophies.

Mr. Charles E. Cook, Jr. – What Happened in the 2022 Midterm Elections, What Did it Mean for American Politics Today and a Look Ahead at the 2024 Elections. Founder and Contributor - The Cook Political Report with Amy Walter. Charlie is widely regarded as one of the nation’s leading authorities on U.S. elections and political trends. He founded the independent, non-partisan Cook Political Report in 1984, serving as Editor and Publisher until August 1, 2021, when Amy Walter took over those roles, ownership and management of the venerable newsletter. Charlie continues as a contributor to the renamed “Cook Political Report with Amy Walter.” In addition to lecturing, Charlie continues to write his weekly column for *National Journal* and serves as a political analyst for both the *National Journal* and NBC News. Cook is also a co-author of the 2020 and 2022 editions of *The Almanac of American Politics*.

Dr. Adam Frank – The Search for Alien Life: Why Looking for Other Civilizations is Really About Understanding the Future of our Own. Astrophysicist and leading expert on the final stages of evolution for stars like the sun. Dr. Frank’s computational research group at the University of Rochester has developed advanced supercomputer tools for studying how stars form and how planets evolve. His current work focuses on life in the Universe, the search for “technosignatures” of other exo-civilizations along with climate change and the “Astrobiology of the Anthropocene.” A self-described “evangelist of science,” he is committed to showing others the beauty and power of science and exploring the proper context of science in culture. His last book, *Light of the Stars: Alien Worlds and the Fate of the Earth*, received praise from the New York Times, NPR and Scientific American. Dr. Frank is currently finishing his next work *The Little Book of Aliens* to be published by Harper-Collins in the fall of 2023. He is a regular on-air commentator for CNN and has been a commentator on NPR’s *All Things Considered*. He was co-founder of National Public Radio [13.7: Cosmos and Culture blog](#) which ran for 7 years. He is also a contributor to the New York Times, The Atlantic and other media outlets. Dr. Frank has appeared on many popular media outlets and on a variety of national and international science documentaries and has received numerous awards for his scientific and outreach work.

Dr. Daniel J. Garry – The Future of Alternatives in Organ Supplies. Director of the Regenerative Medicine and Sciences Center and the Director of the Neuromuscular Cardiomyopathy and Diseases Program at the University of Minnesota. He is the immediate past Director of the Sheila and Paul Wellstone Muscular Dystrophy Center, Chief of Cardiovascular Medicine, Director of the Lillehei Heart Institute, and Director of the Lillehei Clinical Research Center at the University of Minnesota. He is also a Professor in Medicine, Physiology, Stem Cell Institute, Developmental Biology Center and Masonic Cancer Center. Dr. Garry practices clinically in the fields of advanced heart failure, mechanical circulatory support and cardiac transplantation. He has served in leadership positions with the Sarnoff Cardiovascular Research Foundation to train medical students across the country and has mentored more than 75 trainees, many whom have gone on to academic appointments at outstanding institutions. He has more than 25 years of continuous NIH funding to support research in skeletal muscle regeneration, cardiac regeneration, stem cell biology, cardiac development or advanced heart failure. He currently focuses on reprogramming, computational analyses and the engineering of humanized organs in gene edited pigs. He has participated and led a number of large programmatic initiatives associated with the NIH, the AHA and the Department of Defense. He has published two textbooks focused on clinical cardiovascular medicine and heart failure. Dan has more than 200 publications, more than ten patents and has co-founded NorthStar Genomics, a biotech company focused on engineering human organs for transplantation.

Dr. Shohini Ghose – Quantum Computing: State of the Technology and Potential Applications. Shohini Ghose wanted to be an explorer like Rakesh Sharma, the first Indian to go to space. She hasn't made it to space yet, but she did become an explorer of the quantum world as a physics professor at Wilfrid Laurier University, Canada. She examines how quantum physics can transform computing and communication. She and her colleagues were the first to observe a connection between quantum physics and chaos theory. Her recent article on quantum computing was featured in the Harvard Business Review's Year in Tech 2022. Shohini aims to create an inclusive scientific community in Canada as the Director of the Laurier Centre for Women in Science (WinS) and as the NSERC Chair for Women in Science and Engineering in Ontario. She holds a TED senior fellowship and her TED talks and other online videos have received over 5 million views. In 2017, she was selected to the College of the Royal Society of Canada. In 2019, she was among 25 women scientists worldwide featured in a UNESCO exhibit in Paris, and she is a member of the Scientific Board of the UNESCO International Basic Science Program. She still dreams of going to space.

Dr. Sidney L. Jones – Economic Prospects and Policies. Jones served Presidents Nixon, Ford, Reagan, and Bush -- twice as Assistant Secretary of the Treasury. He also served as Under Secretary of Commerce, Senior Economist at the Council of Economic Advisers, Minister-Counselor to NATO, Deputy Assistant to the President for Economic Policy, and Assistant to the Chairman of the Board of Governors of the Federal Reserve System. He has taught finance and public policy at The University of Michigan and other major universities and has authored several publications dealing with U.S. and international economic policy.

Dr. Michael E. O'Hanlon – The Ongoing/Accelerating Global Arms Race and Geopolitical Risks. Senior fellow and Director of Research in Foreign Policy at the Brookings Institution, where he specializes in U.S. defense strategy, the use of military force, and national security policy. He directs the Center on Security, Strategy and Technology, as well as the Defense Industrial Base working group, and will be the inaugural holder of the Philip H. Knight Chair in Defense and Strategy. He co-directs the Africa Security Initiative as well. He is an adjunct professor at Columbia, Georgetown, and George Washington universities, and a member of the International Institute for Strategic Studies. He was a member of the external advisory board at the Central Intelligence Agency from 2011-12. He received his bachelor, master and doctorate degrees from Princeton University.

Dr. Shannon K. O'Neil – Latin America's Place in the Global World. Vice President of Studies and Nelson and David Rockefeller senior fellow for Latin America Studies at the Council on Foreign Relations. She is an expert on Latin America, global trade, U.S.-Mexico relations, corruption, democracy, and immigration. She is the author of *The Globalization Myth: Why Regions Matter* (Yale University Press, 2022), which chronicles the rise of three main global manufacturing and supply chain hubs and what they mean for U.S. economic competitiveness. She also wrote *Two Nations Indivisible: Mexico, the United States, and the Road Ahead* (Oxford University Press, 2013), which analyzes the political, economic, and social transformations Mexico has undergone over the last three decades and why they matter for the United States. She is a columnist for *Bloomberg Opinion*, and a frequent guest on national broadcast news and radio programs. O'Neil has often testified before Congress, and regularly speaks at global academic, business, and policy conferences. She has lived and worked in Mexico and Argentina, was a Fulbright scholar and a Justice, Welfare, and Economics fellow at Harvard University, and has taught Latin American politics at Columbia University. Before turning to policy, O'Neil worked in the private sector as an equity analyst at Indosuez Capital and Credit Lyonnais Securities. She holds a BA from Yale University,

an MA in international relations from Yale University, and a PhD in government from Harvard University. She is a member of the board of directors of the Tinker Foundation.

Mr. Aviv Ovadya – Avoiding Infocalypse: How AI* May Decimate Society and What We Can Do About It. An internationally recognized expert on the societal implications and governance of emerging technologies, with a focus on internet platforms and artificial intelligence and their impacts on democracy. He was most recently a Technology and Public Purpose fellow at Harvard's Belfer Center and currently consults for civil society organizations, technology companies, and funders. After receiving his BS and MEng degrees in computer science from MIT, Aviv provided engineering, product design, and product management support for companies near San Francisco and internationally. In mid-2016, he transitioned to focusing exclusively on the societal implications of technology and has since collaborated and consulted for organizations including the Partnership on AI, TED, and Meedan, and brought his work on misinformation metrics to the Center for Social Media Responsibility at the University of Michigan, where he served as Chief Technologist. Aviv's work has been covered regularly, including by the BBC, NPR, Yomiuri Shimbun, the Economist, and The New York Times and his writing has been published by the Bloomberg, HBR, MIT Technology Review, and The Washington Post.

Mr. Abhiram Rajendran – The State of Energy Markets and the Path to Energy Transition. Director at Energy Intelligence Research. The major focus areas of Energy Intelligence Research include the energy transition, corporate strategy and competitor intelligence, oil and gas/LNG markets, and aboveground risk. Abhi leads Oil Market Research, which builds on oil fundamental supply, demand and price data, to develop supply, demand and price forecasts out through the 10-year strategic window. He is responsible for identifying and analyzing key trends ranging from upstream to downstream (refining, petrochemicals) subsectors, as well as other areas tied to North America energy, corporate/financial analysis, oil-field services and LNG. He contributes to integrated coverage across other Research areas, as well as bespoke Advisory engagements on oil market analysis and corporate strategy. Prior to joining Energy Intelligence in July 2017, Abhi spent two years as an investor in the following sectors: energy (E&Ps, OFS, infrastructure/MLPs, majors/integrated), renewables, refining and chemicals (petrochemicals, specialty chemicals). He also spent seven years as a sell-side Equity Research Analyst, including five at Credit Suisse where he was a Lead Analyst for the MLP/infrastructure/LNG sectors and also covered the chemicals sector. Abhi earned a BA in computer science and economics from Cornell University and holds a master's degree in information systems management from Carnegie Mellon University.

Mr. Brian Richter – Water Risks and Opportunities in a Rapidly Changing World. Global leader in water science and conservation for more than 30 years. He is the president of Sustainable Waters, a global organization focused on water scarcity challenges, where he promotes sustainable water use with governments, corporations, universities, and local communities. He previously served as Director of the Global Water Program of The Nature Conservancy, an international conservation organization. Brian has consulted on more than 170 water projects worldwide. He serves as a water advisor to some of the world's largest corporations, investment banks, and the United Nations, and has testified before the U.S. Congress on multiple occasions. He teaches Water Sustainability at the University of Virginia. Brian was featured in a BBC documentary with David Attenborough on "How Many People Can Live on Planet Earth?" His latest book, *Chasing Water: A Guide for Moving from Scarcity to Sustainability*, has now been published in five languages.

Mr. David Sacks – The Belt and Road Initiative: China's 'Project of the Century' Hits Headwinds - and What This Means for the World. Research fellow at the Council on Foreign Relations, where his work focuses on U.S.-China relations, U.S.-Taiwan relations, Chinese foreign policy, and cross-Strait relations. He coauthored CFR's Independent Task Force Report on China's Belt and Road Initiative, which was chaired by former Secretary of the Treasury Jack Lew and former Chief of Naval Operations Admiral (ret.) Gary Roughead. He was previously the Special Assistant to the President for Research at the Council on Foreign Relations. Prior to joining CFR, Mr. Sacks worked on political military affairs at the American Institute in Taiwan (AIT), which handles the full breadth of the United States' relationship with Taiwan in the absence of diplomatic ties. Mr. Sacks was also a Princeton in Asia fellow in Hangzhou, China. He received his M.A. in International Relations and International Economics, with honors, from the Johns Hopkins School of Advanced International Studies (SAIS). At SAIS, he was the recipient of the A. Doak Barnett Award, given annually to the most distinguished China Studies graduate. Mr. Sacks received his B.A. in Political Science, Magna Cum Laude, from Carleton College.

Dr. Logan Wright – China's Structural Economic Slowdown. Partner at Rhodium Group and Adjunct Fellow of the Trustee Chair in Chinese Business and Economics at the Center for Strategic and International Studies. Previously, head of China research for Medley Global Advisors and a China analyst with Stone & McCarthy Research Associates, both in Beijing. Dr. Wright's research focuses on China's financial system and credit conditions in shaping outcomes within China's

economy, as well as the policies of China's central bank. He and the China Markets Research team monitor China's real economic conditions, financial market developments, and future policy directions to gauge the influence of China's economy on global financial markets. He is also the author of two reports on China's financial system and the country's longer-term economic trajectory. He holds a Ph.D. from the George Washington University, a Master's in Security Studies and a Bachelor's in Foreign Service from Georgetown University. He is based in Hong Kong, after living and working in Beijing for fourteen years.



REGISTRATION FORM

41st Annual Client Workshop

February 16 – 19, 2023

Ritz-Carlton Laguna Niguel - Dana Point, CA

CLIENT

Please complete and return this form in its entirety to Debbie Beaudet (dkb@sitinvest.com) at your earliest convenience and **no later than Monday, December 19, 2022**. If you have any questions, call Debbie at 612-359-2528. *We ask that you return this form whether or not you are able to attend.*

ATTENDEE INFORMATION

Your Name:		Name of spouse/guest if attending:	
I will be attending		I will NOT be attending	
Organization:		Title:	
Address:			
Email Address:		Business Phone:	
Gift - Insulated Vest Size(s):	Men: S M L XL XXL	Cell Phone:	
	Women: S M L XL		

FLIGHT INFORMATION (Recommended airport is Orange County (SNA))

Arrival Date:	Arrival Airport/Airline/Flight #/Arrival Time:
Departure Date:	Departure Airport/Airline/Flight #/Departure Time:

GROUND TRANSPORTATION (To/From Airport - Please Check One):

I will be driving or renting a car	Estimated arrival time at Resort:
Request ground transportation to/from the airport (Shuttle service will be provided)	

LODGING

Sit Investment will make a room reservation in your name at The Ritz-Carlton
Standard Room Rate: \$377.00 (+ applicable taxes)

Do you need a hotel room?	Yes	No
Room Preference (<i>we will do our best to accommodate your request</i>):		
King	2 Double Beds	Extra Person
If you have any special needs (i.e., dietary), please provide details:		

RECREATIONAL ACTIVITIES

GOLF	Friday (Scramble)		Saturday	
	You	Spouse/Guest	You	Spouse/Guest
Need Rental Clubs? (Yes/No)				
Right- or Left-Handed Rentals (R/L)				
PGA Handicap (please provide)				
Average Score, if no handicap				
Croquet / Corn Hole Biathlon (Saturday)				