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**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

4TH QUARTER 2023
Investment Landscape

Verus business update

Since our last Investment Landscape webinar:

- Verus retained four new clients across the U.S. expanding our coverage in the Pacific, Midwest, Southwest, and Southeast
- Shelly Heier, CFA, CAIA – *President*, was named one of Pensions & Investments' 2023 Influential Women in Institutional Investing
- Eileen Neill, CFA – *Managing Director | Senior Consultant*, was nominated as one of Chief Investment Officer's 2023 Knowledge Brokers
- Christian Reed – *Private Markets Performance Analyst* and Jonah Coffee – *Performance Analyst* recently passed their CFA level II exams
- Recent research, found at verusinvestments.com/research:
 - **2023 Private Equity Outlook**
 - **Hedge funds in 2023: How has the environment changed?**
 - **The rising rate environment's impact on real estate cap rates**
 - **Yield curve inversion: recession signal, but why?**
 - **Credit, distress, default & the long term**



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President



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Recent Verus research

Visit: verusinvestments.com/research

Topics of interest

CREDIT, DISTRESS, DEFAULT & THE LONG TERM

As the environment for credit changes and the risks of defaults increase, investors would be well advised to assess their fixed income positioning. This includes considering other opportunities across the credit spectrum beyond traditional core vehicles.

THE RISING RATE ENVIRONMENT'S IMPACT ON REAL ESTATE CAP RATES

The quickly rising interest rate environment has changed the landscape for commercial real estate so much that investors are questioning how the appraised values of their private real estate assets might change in the future. Our latest whitepaper illuminates this question.

YIELD CURVE INVERSION: RECESSION SIGNAL, BUT WHY?

Predicting future market conditions is an incredibly difficult task. One signal that has been a historically accurate predictor preceding a U.S. recession is the yield curve inversion. We examine what drives curve inversion, allowing investors a framework regarding the implications of this type of event.

HEDGE FUNDS IN 2023: HOW HAS THE ENVIRONMENT CHANGED?

For those clients who are comfortable embracing the complexity of hedge funds, we continue to believe that these strategies can play an important role. We focus on the impact of a “higher rate for longer” scenario on the asset class. We also examine how the rising-rate environment has affected private markets so far.

Annual research

2023 PRIVATE EQUITY OUTLOOK

In the 2023 Private Equity Outlook, we focus on the impact of a “higher rate for longer” scenario on the asset class. We also examine how the rising-rate environment has affected private markets so far.

3rd quarter summary

THE ECONOMIC CLIMATE

- Real GDP increased at a 2.9% pace from a year ago in Q3 (4.9% QoQ annualized rate). The large uptick was driven by consumption, which continues to show resiliency. A combination of pandemic related excess savings and a strong decade of household wealth expansion is likely providing a cushion against an economic slowdown. **p. 10**
- The unemployment rate increased slightly during the quarter from 3.6% to 3.8%, though this appears to be due to more workers rejoining the labor force and seeking employment (a positive rather than negative development). The total size of the U.S. workforce grew by 580,000 in Q3. **p. 12**

PORTFOLIO IMPACTS

- The U.S. consumer has shown resiliency, with ongoing moderate spending activity. However, personal savings rates are nearly the lowest on record. We believe depressed savings activity without a commensurate surge in spending, and very poor sentiment, suggests high inflation is squeezing household budgets. **p. 13**
- The Cboe VIX implied volatility index remained below-average for most of the third quarter, before rising to 17.5 to end September. Market risk has been falling fairly consistently throughout the year, which may be at least partly attributed to the perception that certain risks, such as regional bank contagion and near-term recession, have eased. **p. 34**

THE INVESTMENT CLIMATE

- The 10-year U.S. Treasury yield increased during the quarter to 4.58%—a level not seen since 2007—likely supported by *higher for longer* interest rate expectations. This led to a flattening of the yield curve. **p. 21**
- U.S. headline inflation ticked up from 3.1% to 3.7% year-over-year. Core CPI (ex-food & energy) continued to fall from 4.9% to 4.1%. Shelter costs jumped unexpectedly in September showing the largest rise since May, and along with rising energy prices have generated concerns of renewed inflation. A material weakening of the job market and U.S. economy will likely be needed to bring inflation down to a 2% level. **p. 9**

ASSET ALLOCATION ISSUES

- Nearly all asset classes produced materially negative performance during the quarter, including global equities (-3.4%), U.S. core fixed income (-3.2%) and U.S. Treasuries (-3.1%). Highly correlated markets created difficulties for investors, as diversification produced limited value. **p. 48**
- U.S. investors continue to face a difficult environment for style factor investing. Over the past year, mega cap growth stocks have propelled the U.S. market higher, leading to dramatic outperformance of growth stocks and large cap stocks. However, value investing has delivered exceptional results in international developed markets, outperforming growth stocks by 11.5%. **p. 29**

Nearly all asset classes produced materially negative performance during the quarter

A material weakening of the job market and/or U.S. economy will likely be needed to bring inflation down to a 2% level

What drove the market in Q3?

“Fed Signals Higher-for-Longer Rates with Hikes Almost Finished”

10-YEAR U.S. TREASURY YIELDS

Apr	May	June	July	Aug	Sep
3.42%	3.64%	3.84%	3.96%	4.11%	4.57%

Article Source: Bloomberg, September 20th, 2023

“U.S. Inflation Rises in August as Petrol Prices Jump”

WTI CRUDE OIL PRICES (PER BARREL)

Apr	May	June	July	Aug	Sep
\$76.78	\$68.09	\$70.64	\$81.80	\$83.63	\$90.79

Article Source: Financial Times, September 13th, 2023

“U.S. Growth Trimmed on Inventories; Retains Underlying Momentum”

FEDERAL RESERVE BANK OF ATLANTA Q3 2023 GDPNOW FORECAST

July 28 th	Aug 15 th	Aug 31 st	Sept 15 th	Sept 29 th	Oct 10 th
3.5%	5.0%	5.6%	4.9%	4.9%	5.1%

Article Source: Reuters, August 30th, 2023

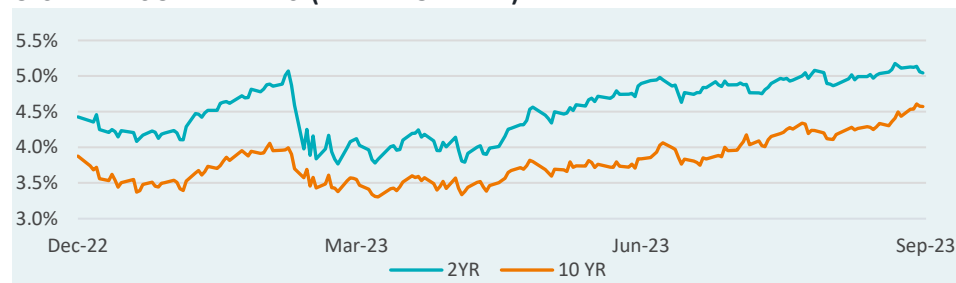
“S&P 500 Q2 2023 Earnings Beat Wall Street Expectations”

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

Q1 22	Q2 22	Q3 22	Q4 22	Q1 23	Q2 23
9.0%	6.0%	2.4%	(4.9%)	(6.6%)	(4.1%)

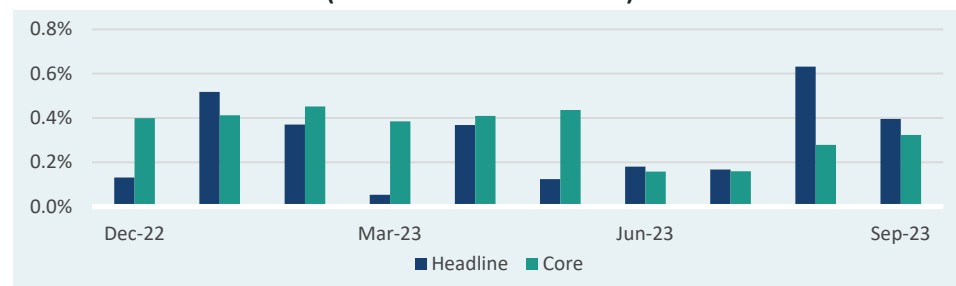
Article Source: Axios, August 18th, 2023

U.S. TREASURY YIELDS (YEAR-TO-DATE)



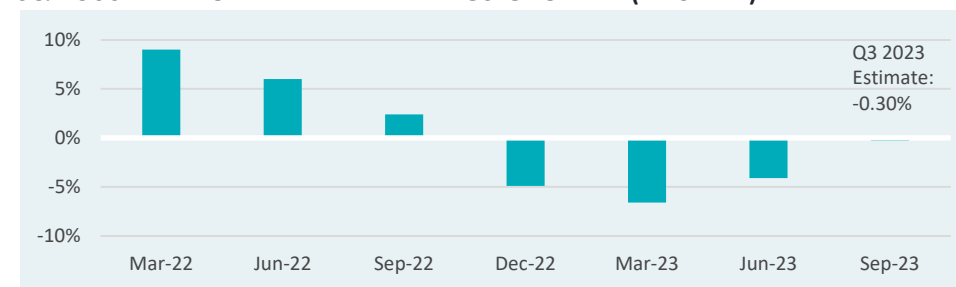
Source: Bloomberg, as of 9/30/23

HEADLINE VS. CORE CPI (MONTH-OVER-MONTH)



Source: BLS, as of 9/30/23

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



Source: FactSet, as of 9/30/23

Economic environment

U.S. economics summary

- Real GDP increased at a 2.9% pace from a year ago in the third quarter (4.9% quarter-over-quarter annualized rate). The large uptick was driven by consumption, which continues to show resiliency. While many investors have expected high inflation and weaker wage growth to impact spending, a combination of pandemic related excess savings and a strong decade of household wealth expansion is likely providing a cushion against an economic slowdown.
- U.S. headline inflation ticked up during the quarter, from 3.1% to 3.7% year-over-year in September. Core CPI (ex-food & energy) continued to fall from 4.9% to 4.1%. Shelter costs jumped unexpectedly in September, which along with rising energy prices have generated fresh concerns of renewed inflation.
- The U.S. consumer has shown resiliency, with continued moderate spending levels. However, personal savings rates are nearly the lowest on record. We believe depressed savings activity, along with mild household spending and very poor sentiment, suggests high inflation is squeezing household budgets.
- The unemployment rate increased slightly during the quarter from 3.6% to 3.8%, though this appears to be due to more workers rejoining the labor force and seeking employment (a positive rather than negative development). The total size of the U.S. workforce grew by 580,000 in Q3.
- Consumer sentiment readings were mixed during Q3 but remain poor. According to the Conference Board survey, the future outlook for income, business, and labor conditions fell very sharply and are now at levels that historically have signaled recession within a year.

	Most Recent	12 Months Prior
Real GDP (YoY)	2.9% 9/30/23	1.7% 9/30/22
Inflation (CPI YoY, Core)	4.1% 9/30/23	8.2% 9/30/22
Expected Inflation (5yr-5yr forward)	2.4% 9/30/23	2.1% 9/30/22
Fed Funds Target Range	5.25–5.50% 9/30/23	3.00–3.25% 9/30/22
10-Year Rate	4.58% 9/30/23	3.83% 9/30/22
U-3 Unemployment	3.8% 9/30/23	3.5% 9/30/22
U-6 Unemployment	7.0% 9/30/23	6.7% 9/30/22

Inflation

U.S. headline inflation ticked up during the quarter, from 3.1% to 3.7% year-over-year in September. Core CPI (ex-food & energy) continued to fall from 4.9% to 4.1%. Shelter costs jumped unexpectedly in September showing the largest rise since May, which along with rising energy prices have generated concerns of renewed inflation. Oil in particular saw material gains over the quarter (+24.3% for Brent, +28.5% for WTI), largely driven by supply dynamics.

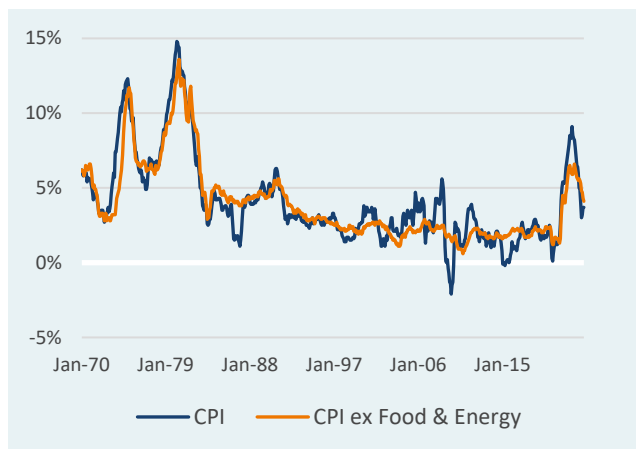
The attack of Hamas on Israel in early October led to upward movement in oil prices on the risk of escalation into a broader conflict involving Iran. Nearly one-fifth of global oil

supply is shipped through the Strait of Hormuz, on Iran's border, which means that a larger conflict would likely have major implications for inflation, and interest rates, and therefore the domestic economy.

Shorter-term inflation trends illustrate that the rate of inflation is still materially higher than the Federal Reserve's 2% target. Inflation appears to be stabilizing at a 3-4% range, and may not reach the Fed's 2% target without a material weakening of the job market and/or the U.S. economy.

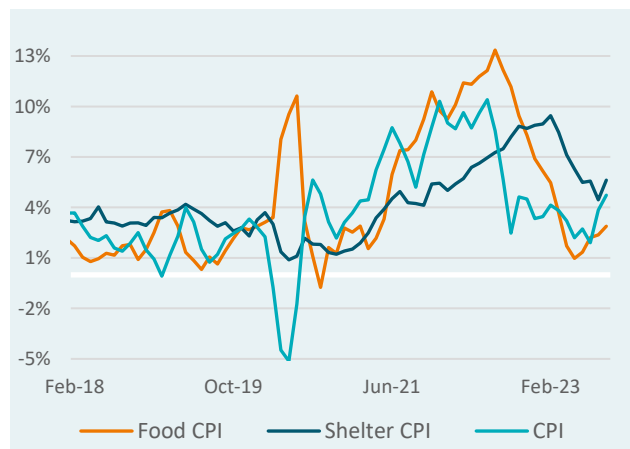
The recent jump in energy prices has reignited inflation concerns

U.S. CPI (YOY)



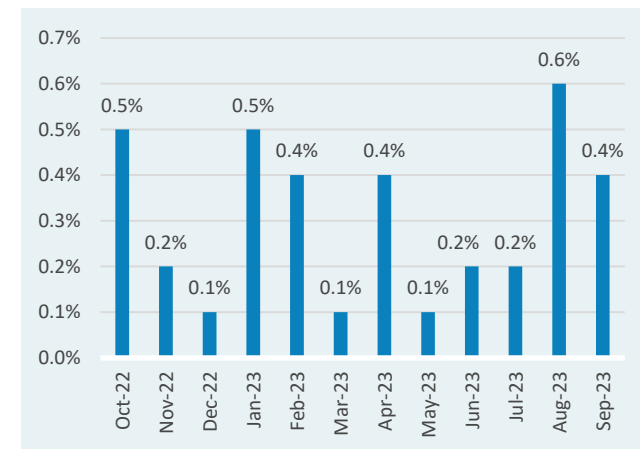
Source: BLS, as of 9/30/23

3-MONTH ANNUALIZED INFLATION RATE



Source: FRED, Verus, as of 9/30/23

MONTHLY PRICE MOVEMENT



Source: BLS, as of 9/30/23

GDP growth

Real GDP increased at a 2.9% pace from a year ago in the third quarter (4.9% quarter-over-quarter annualized rate). The large uptick was driven by consumption, which continues to show resiliency. While many investors have expected high inflation and weaker wage growth to impact spending, a combination of pandemic related excess savings and a strong decade of household wealth expansion is likely providing a cushion against an economic slowdown. Outside of consumption, all major categories, besides net exports, positively contributed to GDP growth.

A strong economy continues to support the *higher for longer*

interest rate narrative. This has also contributed to markets reacting negatively to positive economic news, as strong growth increases the likelihood of Federal Reserve hawkishness.

Despite healthy overall GDP growth, weakness is beginning to appear in the economy. Savings rates remain on the lower end of historical trends at 3.9%, while transitions into delinquency across credit card, auto, and mortgage lending has all moved higher. As savings and debt-driven consumption begins to recede, expectations are for weaker consumption in the fourth quarter.

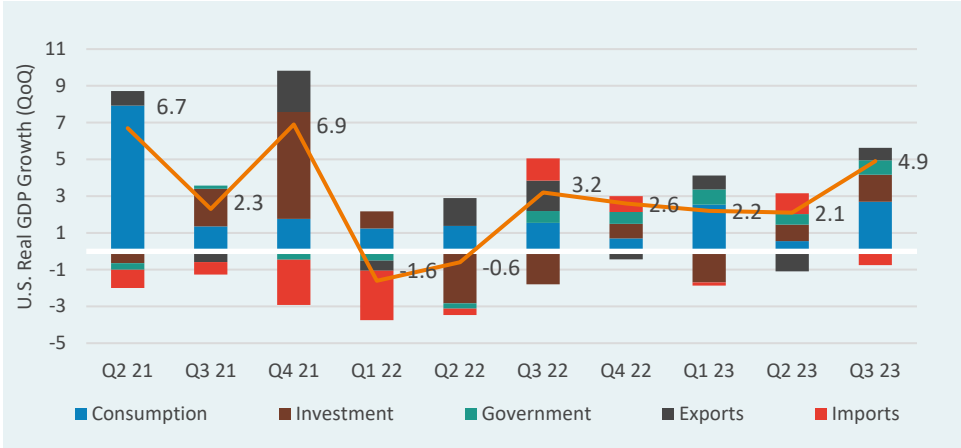
The U.S. economy continues to show resilience despite aggressive monetary tightening & low consumer confidence

U.S. REAL GROSS DOMESTIC PRODUCT



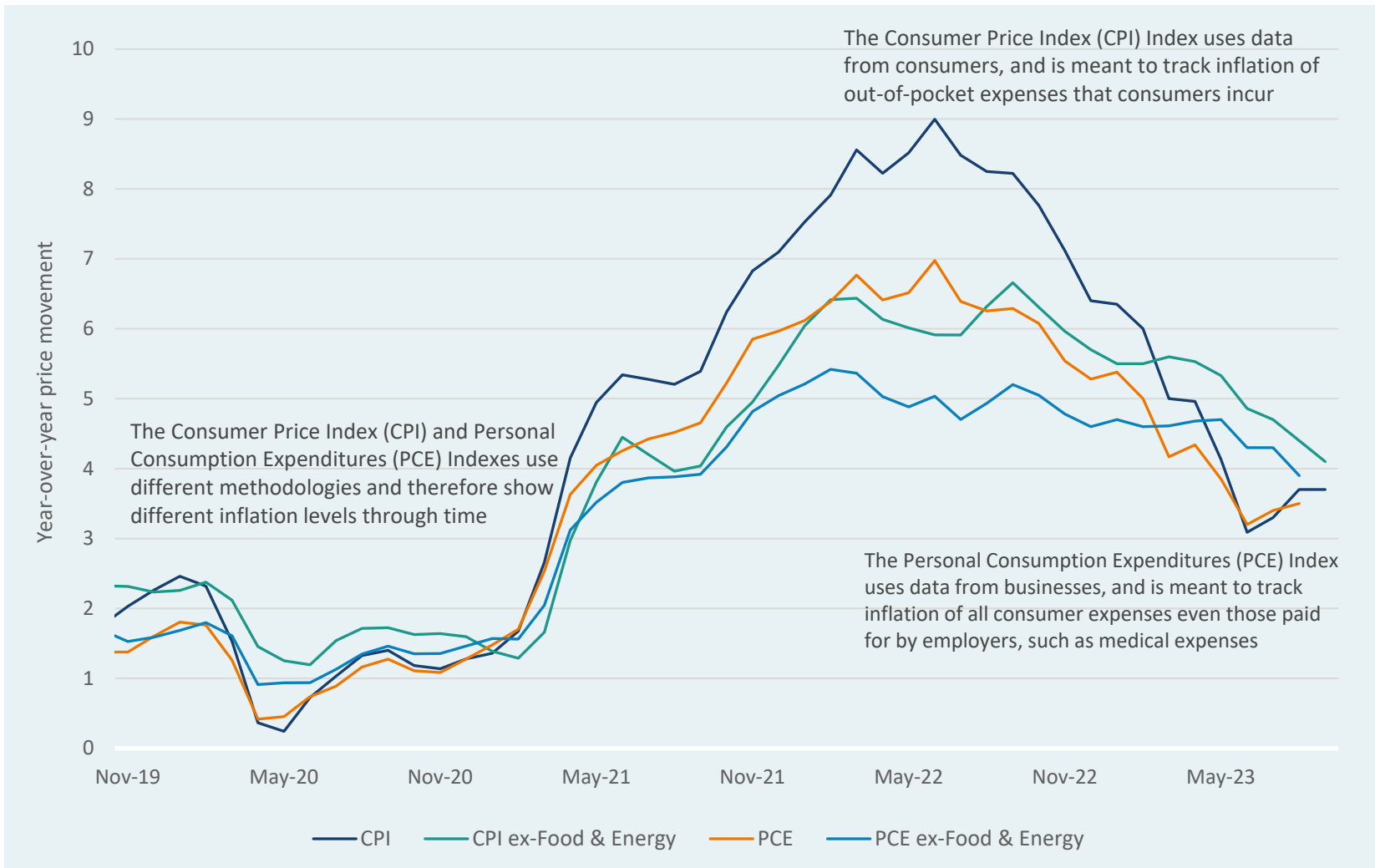
Source: FRED, as of 9/30/23

U.S. REAL GDP COMPONENTS (QOQ)



Source: FRED, as of 9/30/23

How are inflation conditions evolving?



U.S. inflation appears to be stabilizing at a 3-4% level, materially above the Fed's 2% target

The recent jump in energy prices has reignited inflation concerns

Source: FRED, Verus, PCE data as of 8/31/23, CPI data as of 9/30/23

Labor market

The unemployment rate increased slightly during the quarter from 3.6% to 3.8%, though this appears to be due to more workers rejoining the labor force and seeking employment (a positive rather than negative development). The total size of the U.S. workforce grew by 580,000 in Q3.

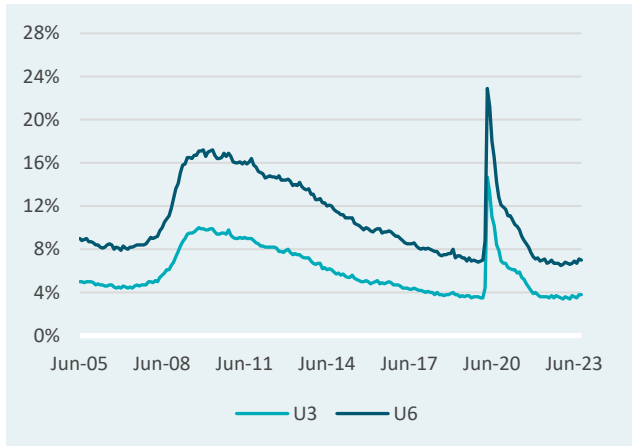
Rebalancing within the labor market continued, though there remains a mismatch between the number of *workers available* and the *available jobs*. The labor participation rate has improved across all age groups, while wage growth slowly receded—at 4.2% year-over-year in September—compared to ~3% pre-pandemic. Deceleration of wage growth is of course

not a welcome development for American workers, but should help to moderate inflation pressures, all else equal.

A short supply of workers relative to demand for staffing has placed more bargaining power with workers. Recent contract negotiations between employers and labor unions have been widely publicized and contentious at times. The United Auto Workers (UAW) strike against General Motors, Ford, and Stellantis serves as a recent example, affecting more than 400,000 workers. With households feeling the damaging effects of inflation on wages and budgets, and a large ongoing mismatch in the labor market regarding supply and demand, these disputes are likely to persist.

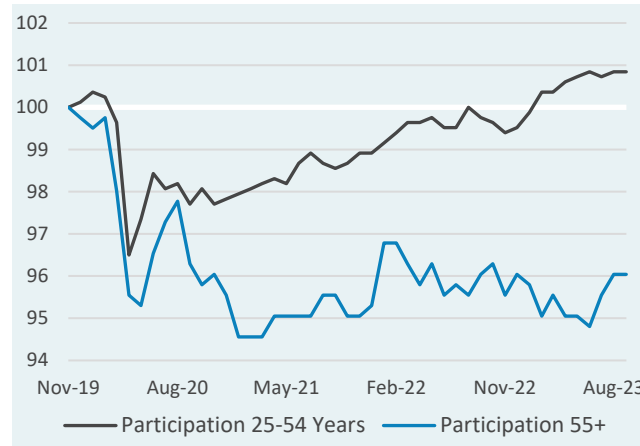
A short supply of workers relative to demand for staffing has placed more bargaining power with workers

U.S. UNEMPLOYMENT



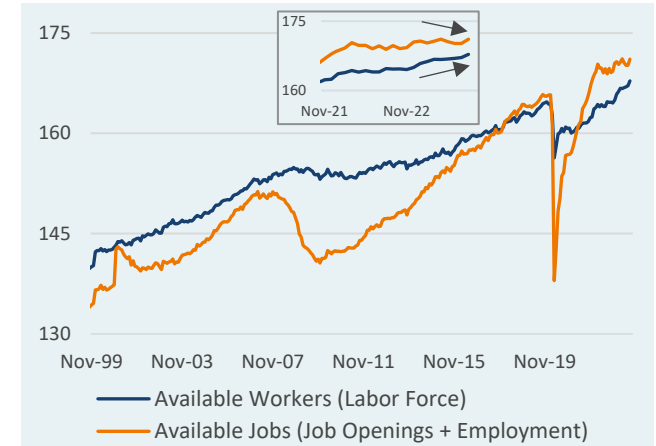
Source: FRED, as of 9/30/23

LABOR FORCE PARTICIPATION RATE BY AGE



Source: FRED, as of 9/30/23

WORKERS AVAILABLE VS. AVAILABLE JOBS



Source: BLS, Verus, as of 8/31/23

The consumer

The U.S. consumer has shown resiliency, with real (inflation-adjusted) personal consumption expenditures moving along at a moderate pace—coming in at 2.3% year-over-year in August. However, much of this resilience appears to have been possible through the spending down of household savings accumulated during the pandemic. Recent estimates seem to suggest that this *excess savings* has now been mostly (or all) spent, which could lead to a downturn in spending in future months.

Personal savings rates have deteriorated further—now at 3.9%—nearly half the pre-pandemic savings level and one of the lowest levels on record. We believe depressed savings activity without a commensurate surge in spending, and very

poor sentiment, suggests high inflation is squeezing household budgets.

As mentioned last quarter, tighter household budgets should be contrasted with the fact that Americans have experienced a vast boom in wealth and prosperity over the past decade, fueled by a substantial bull market in stocks and in residential real estate, among other assets. This wealth may serve as somewhat of a unique buffer against economic weakness. A large portion of this wealth was created by the housing boom during the pandemic, which suggests more economic sensitivity than usual to downward house and asset price moves.

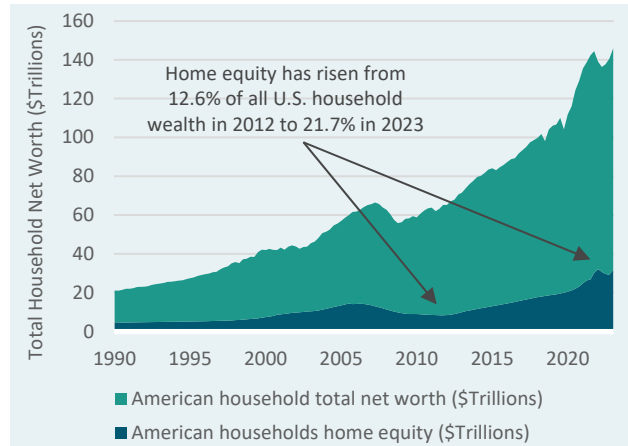
Higher home prices have played a major role in America's booming wealth over the past decade

REAL PERSONAL SPENDING



Source: FRED, as of 8/31/23

AVERAGE HOUSEHOLD NET WORTH



Source: FRED, Verus, as of 6/30/23

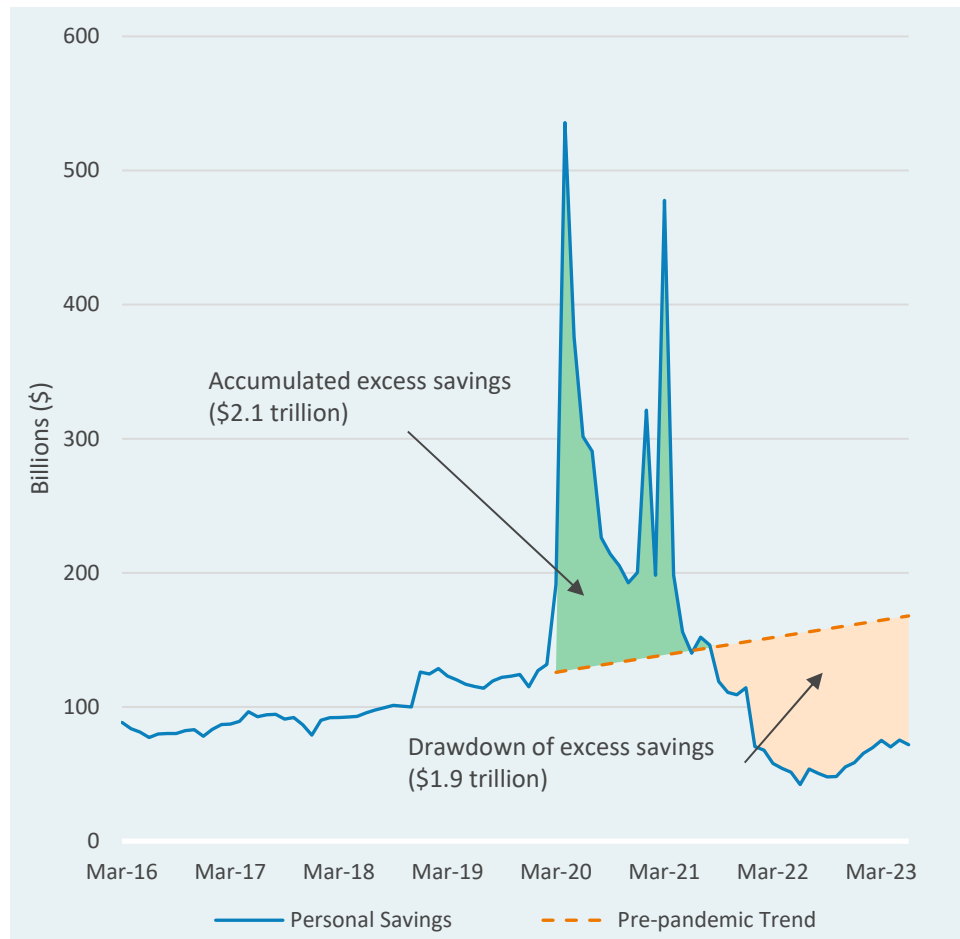
PERSONAL SAVINGS RATE



Source: BEA, as of 8/31/23

The consumer - excess savings wearing off

ACCUMULATED PERSONAL SAVINGS ABOVE PRE-PANDEMIC TREND



Source: BEA and San Francisco Federal Reserve, as of 8/16/23

The resilience of U.S. consumer spending has been driven at least partly by *excess household savings*, which accumulated during the pandemic as Americans were limited in their ability to spend (on vacations and dining, for example). While these excess savings have recently helped to fuel a stronger economy, savings drawdown rates across the past three, six, or even twelve months suggest that these excess savings were fully depleted by the end of Q3.

Above-average inflation continues to be a drag on the domestic consumer, which can be seen in economic data. Second quarter metrics from the New York Fed's Household Debt and Credit report show an uptick in credit delinquencies, which is likely to show an even higher rate at the Q3 2023 release on November 7th if the trend persists. Although delinquency rates have moved higher, these are at average levels relative to history.

Going forward, many expect consumer conditions to worsen, especially under a *higher for longer* interest rate environment. This would likely act as a headwind to future economic growth, and negatively impact markets in a variety of ways, ranging from corporate earnings to mortgage transactions.

Sentiment

Consumer sentiment readings were mixed in the third quarter but by most measures remain pessimistic.

The University of Michigan Consumer Sentiment survey improved, reporting that expectations around personal finances have weakened, though this was offset by better business conditions. Americans feel uncertain about the future of the economy.

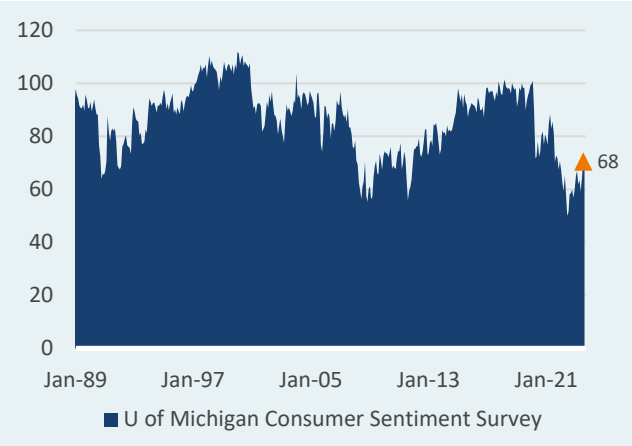
Consumer confidence as indicated by the Conference Board weakened. According to the Conference Board survey, current labor market and business conditions improved moderately,

while the future outlook for income, business, and labor conditions fell very sharply. Consumer expectations are depressed and at levels that historically have signaled recession within one year.

The NFIB Small Business Optimism index was stable during the quarter, but further indicated a dire outlook for business conditions. Sales growth has reportedly slowed, profit margins are being squeezed, inflation continues to be a major concern, and qualified employees are difficult to find. A majority of businesses plan to raise prices, though fewer businesses expect sales revenues to keep up with inflation.

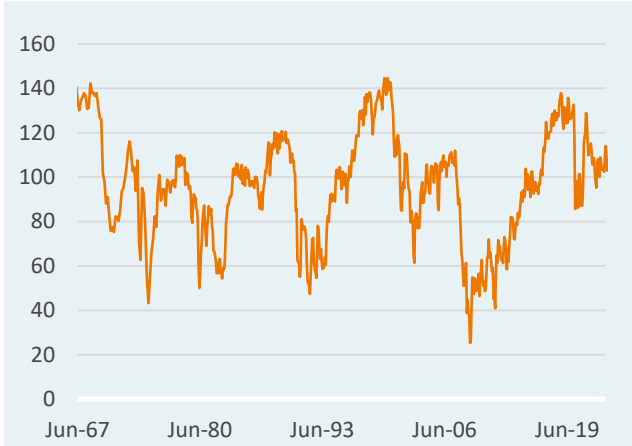
Sentiment was mixed during the quarter but remains poor by most measures

CONSUMER SENTIMENT



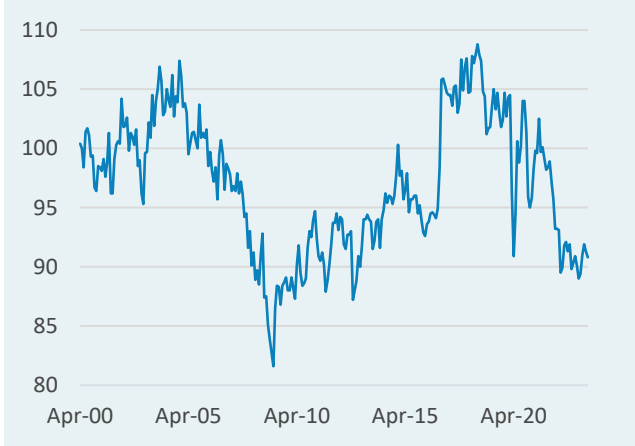
Source: University of Michigan, as of 9/30/23

CONFERENCE BOARD CONSUMER CONFIDENCE



Source: Conference Board, as of 9/30/23

NFIB SMALL BUSINESS SENTIMENT



Source: NFIB, as of 9/30/23

Housing

Housing market conditions have deteriorated even further since last quarter. In late September mortgage rates climbed to a new 23-year high of 7.3%. Existing home sales have fallen -15.3% over the past year, as of August, while affordability remains the worst on record.

Despite higher mortgage rates and extremely poor affordability, home values have held up. This appears to be due to depressed housing inventories resulting from many years of underinvestment in new home construction following the 2000s U.S. housing bubble, an upward trend in U.S. homeownership, and an unwillingness of potential home sellers to sacrifice their existing low mortgage interest rates. Overall,

very low supply seems to be balancing low demand and, for now, providing an ongoing support to elevated prices.

Despite higher interest rates, existing homeowners in this environment are, on average, well-capitalized. Many homeowners refinanced at ultra-low mortgage interest rates in recent years or purchased their homes with a low rate. Mortgage delinquency levels of single-family homeowners were materially below-average at 1.7%, as of Q2. However, borrowers with variable-rate loans, which is a small portion of borrowers overall, may face difficulties in covering much larger monthly mortgage payments.

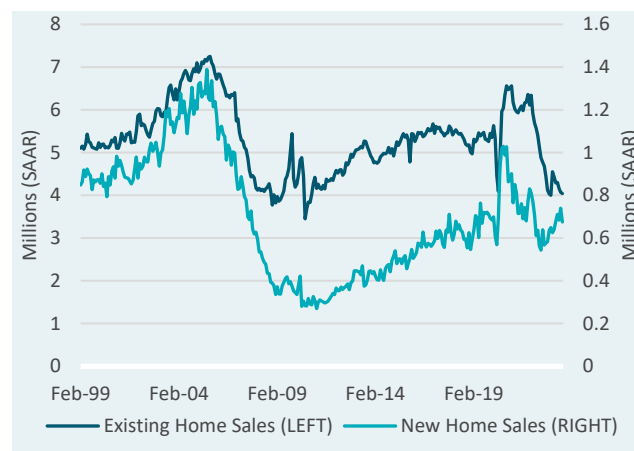
Home sales have slowed to a crawl as affordability is poor, and potential sellers don't want to lose their low interest rates

30-YEAR MORTGAGE RATE



Source: FRED, as of 9/30/23

HOME SALES: NEW & EXISTING (MILLIONS)



Source: FRED, as of 8/31/23

HOUSING AFFORDABILITY



Source: FRED, as of 6/30/23 – Housing affordability is calculated as the cost of a median priced single-family home at the current mortgage rate, as a percentage of the median family income

International economics summary

- Countries struggling to control inflation—primarily advanced economies—face a challenging path. Many central banks are grappling with high prices and slow growth, and the balancing act of fighting inflation but also trying to avoid recession. In contrast, most emerging economies are exceeding growth expectations, outside of China. Some of this strength has come from trade rotation as tensions remain between the U.S. and China and businesses rethink their trade partners.
- The IMF’s October World Economic Outlook was little changed from July Projections, as global growth is still expected to slow in 2024. Regional divergences remained an emphasis, as emerging economies are projected to drive global output. India is expected to outpace all other countries with growth forecasts above 6% for both 2023 and 2024.
- Inflation in the Eurozone and United Kingdom has remained sticky, with inflation in September coming in at 4.3% and 6.7% year-over-year, respectively. Monetary policy is expected to be tighter for both the ECB and BOE, although rate decisions diverged at their respective September meetings, as the ECB raised rates by another 25 bps, while the BOE voted 5-4 to maintain their bank rate at 5.25%.
- Japan was a bright spot amongst developed economies, driven by strong exports in the second quarter. While growth was positive, the potential for an early end to ultra loose Bank of Japan (BOJ) monetary policy presents a potential headwind. A weak Japanese Yen adds to this story, as the currency has been greatly devalued, largely due to the BOJ’s contrarian monetary policy relative to other major central banks.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.9% 9/30/23	3.7% 9/30/23	3.8% 9/30/23
Eurozone	0.5% 6/30/23	4.3% 9/30/23	6.4% 8/31/23
Japan	1.6% 6/30/23	2.8% 9/30/23	2.7% 8/31/23
BRICS Nations	6.1% 6/30/23	1.7% 9/30/23	4.8% 12/31/22
Brazil	3.4% 6/30/23	5.2% 9/30/23	7.8% 8/31/23
Russia	4.9% 6/30/23	6.0% 9/30/23	3.0% 8/31/23
India	7.8% 6/30/23	5.0% 9/30/23	7.1% 9/30/23
China	4.9% 9/30/23	0.0% 9/30/23	5.0% 9/30/23

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

International economics

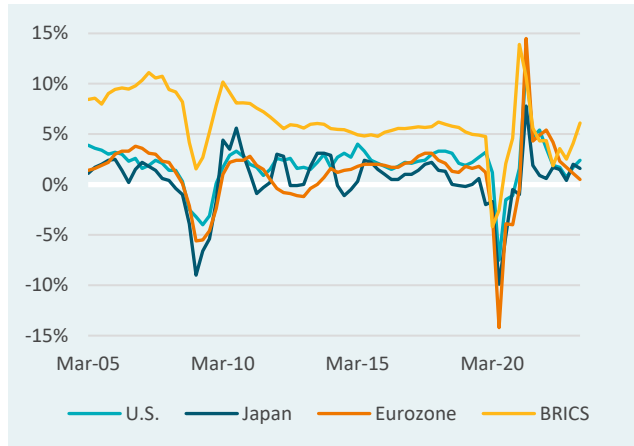
International economies showed signs of slowing during the third quarter. While growth decelerated, economies have shown greater resilience to inflation and higher interest rate headwinds than originally expected.

Countries struggling to control inflation—primarily advanced economies—face a challenging path. Many central banks are grappling with high prices and slow growth, and the balancing act of fighting inflation but also trying to avoid recession. In contrast, most emerging economies are exceeding growth expectations, outside of China. Some of this strength has come

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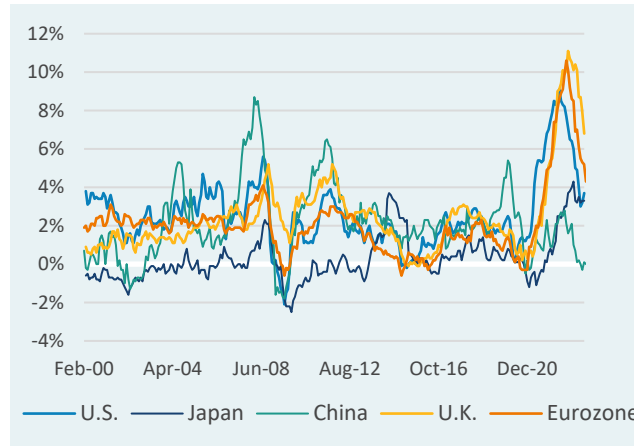
The outlook remains uncertain. Strong growth driven by services has started to wear off, while manufacturing activity remains depressed. Developed economies within the Eurozone and United Kingdom struggle with inflation, while China deals with its own domestic issues. Japan and India showed signs of strength, but are likely unable to buoy global economic growth, especially if the current issues plaguing larger nations persist.

REAL GDP GROWTH (YOY)



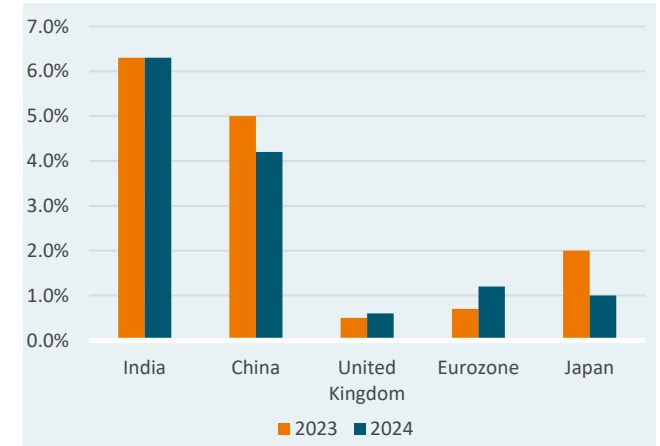
Source: Bloomberg, as of 6/30/23

INFLATION (CPI YOY)



Source: Bloomberg, as of 9/30/23 – or most recent release

IMF WEO REAL GROWTH FORECASTS



Source: IMF World Economic Outlook Oct. 2023, as of 10/10/23

International economics

	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23
Manufacturing													
Global	50.3	49.8	49.4	48.8	48.7	49.1	49.9	49.6	49.6	49.5	48.7	48.6	49.0
Developed	50.2	50.1	48.8	47.8	47.3	48.0	48.1	48.4	48.5	47.6	46.3	47.1	46.8
US	52.9	51.0	50.0	49.0	48.4	47.4	47.7	46.3	47.1	46.9	46.0	46.4	47.6
UK	47.3	48.4	46.2	46.5	45.3	47.0	49.3	47.9	47.8	47.1	46.5	45.3	43.0
Eurozone	49.6	48.4	46.4	47.1	47.8	48.8	48.5	47.3	45.8	44.8	43.4	42.7	43.5
Germany	49.1	47.8	45.1	46.2	47.1	47.3	46.3	44.7	44.5	43.2	40.6	38.8	39.1
Japan	51.5	50.8	50.7	49.0	48.9	48.9	47.7	49.2	49.5	50.6	49.8	49.6	49.6
EM	50.2	49.3	49.8	49.7	49.8	49.9	51.6	50.7	50.5	51.4	51.1	50.2	51.4
Services													
Global	49.3	50.0	49.2	48.1	48.0	50.1	52.6	54.4	55.4	55.5	53.9	52.7	51.1
Developed	46.7	49.6	48.8	47.5	47.2	48.7	51.8	53.4	54.6	54.9	53.6	51.9	50.2
US	56.1	55.9	54.5	55.5	49.2	55.2	55.1	51.2	51.9	50.3	53.9	52.7	54.5
UK	50.9	50.0	48.8	48.8	49.9	48.7	53.5	52.9	55.9	55.2	53.7	51.5	49.5
Eurozone	49.8	48.8	48.6	48.5	49.8	50.8	52.7	55.0	56.2	55.1	52.0	50.9	47.9
Germany	47.7	45.0	46.5	46.1	49.2	50.7	50.9	53.7	56.0	57.2	54.1	52.3	47.3
Japan	49.5	52.2	53.2	50.3	51.1	52.3	54.0	55.0	55.4	55.9	54.0	53.8	54.3
EM	54.9	50.6	49.9	49.2	50.1	53.1	54.5	56.7	57.2	56.7	54.6	54.5	53.1

Service sectors – which have recently driven global strength – are now showing signs of moderation, while manufacturing sectors remains depressed

European markets seem to reflect the weakest future business conditions

Source: Bloomberg, as of 8/31/23 – The Purchasing Managers' Index (PMI) is an index based on a broad survey of supply chain managers across nineteen industries in each country. The survey gauges business sentiment, with a reading of below 50 indicating that businesses expect business conditions to worsen in the near-future. A reading of 50 indicates no expected change in business conditions. A reading above 50 indicates expectations for stronger (expanding) future business conditions.

Fixed income rates & credit

Fixed income environment

- The 10-year U.S. Treasury yield increased during the quarter from 3.81% to 4.58%—a level not seen since 2007—likely supported by *higher for longer* interest rate expectations. This has led to a flattening of the yield curve, though the curve remains inverted at -0.5% (defined as the 10-year Treasury yield minus 2-year Treasury yield).
- Rising interest rates combined with lower inflation have brought real (inflation-adjusted, based on the U.S. TIPS Inflation Breakeven Rate) 10- and 30-year Treasury yields to the highest levels in over a decade. Real yields for 10- and 30-year Treasuries finished the month at 2.24% and 2.33%, respectively. In March of 2022 these rates were negative.
- The Federal Reserve hiked interest rates by 0.25% in July but held rates steady at the September meeting as inflation moderated. Importantly, Chairman Powell signaled that additional rate hikes may be warranted if the economy remains strong and inflation above target.
- During Q3, higher quality bonds and U.S. Treasuries saw mild losses due primarily to their longer duration profile. Riskier credit performed well, with larger coupons and shorter duration contributing to positive performance.
- Longer duration investment grade corporate bonds (Bloomberg U.S. Long Corporate Credit) performed very poorly, falling by -7.3% during the quarter as rising interest rates acted as a headwind.
- With inflation moderating during the quarter, investors expressed optimism that the Federal Reserve would soon pause interest rate hikes. However, interest rate volatility increased during the period as concerns related to the U.S. government's budget deficit and the amount of expected issuance contributed to higher long-term bond yields.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	(3.2%)	0.6%
Core Plus Fixed Income (Bloomberg U.S. Universal)	(2.9%)	1.6%
U.S. Treasuries (Bloomberg U.S. Treasury)	(3.1%)	(0.8%)
U.S. Treasuries: Long (Bloomberg U.S. Treasury 20+)	(13.0%)	(10.7%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	0.5%	10.3%
Bank Loans (S&P/LSTA Leveraged Loan)	3.4%	13.0%
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	(3.3%)	13.1%
Emerging Market Debt Hard (JPM EMBI Global Diversified)	(2.2%)	10.0%
Mortgage-Backed Securities (Bloomberg MBS)	(4.1%)	(0.2%)

Source: Bloomberg, as of 9/30/23

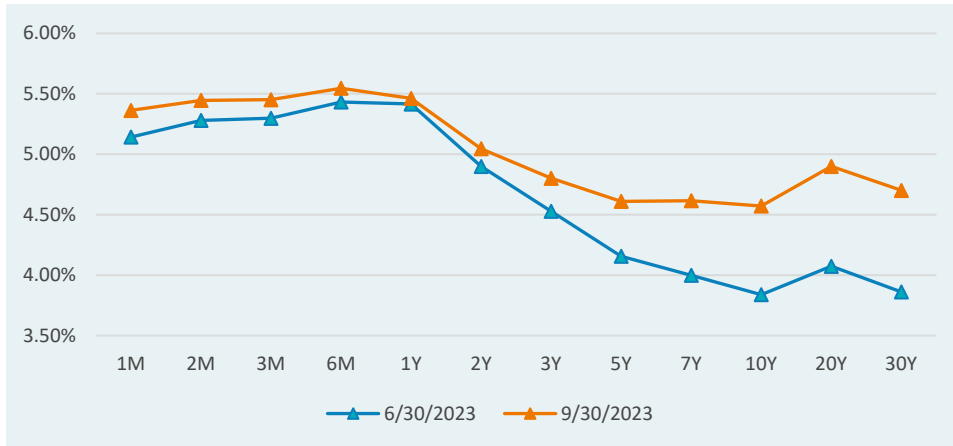
A higher for longer rate environment

The “higher for longer” narrative gained steam throughout the quarter, driven by better-than-expected economic and labor metrics, above target inflation, and rising energy costs. The bond market saw the largest impact, as yields on the 10-year Treasury rose from 3.84% to 4.57% throughout the quarter, resulting in a -13.0% loss for longer-term U.S. Treasuries (Bloomberg U.S. Treasury 20+ Year Index).

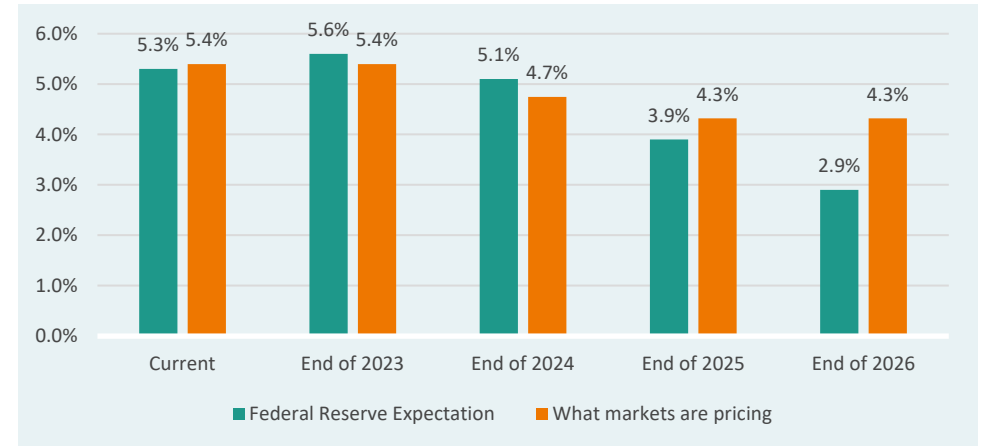
The yield of cash is expected to remain elevated for years into the future

A floor regarding how far inflation can fall, given price dynamics of certain goods and services, has set inflation expectations closer to levels around three to four percent, outpacing the Federal Reserve’s two-percent mandate. This has brought rates higher, while also extending the expected timeline for higher rates. Implied rates on Fed Funds Futures contracts show rates remaining above four percent throughout the start of 2025.

U.S. TREASURY YIELD CURVE – CHANGE THROUGH Q3 2023



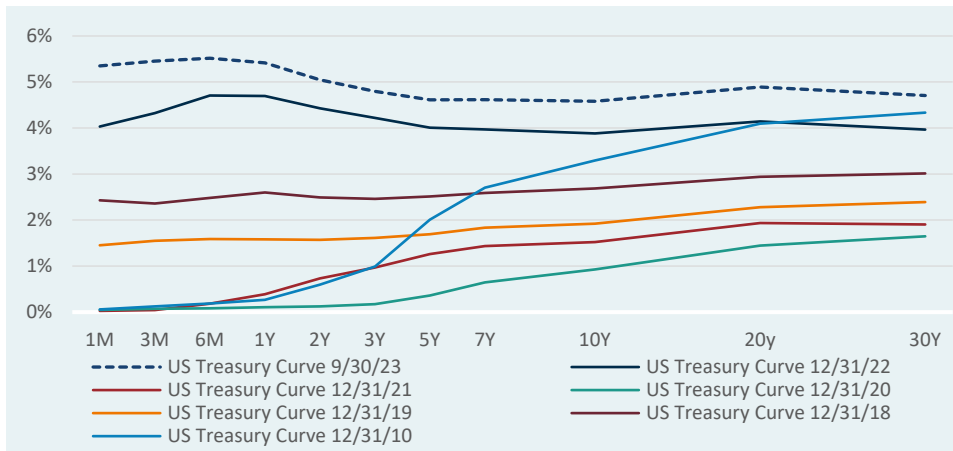
FUTURE EXPECTATIONS FOR THE % YIELD OF CASH



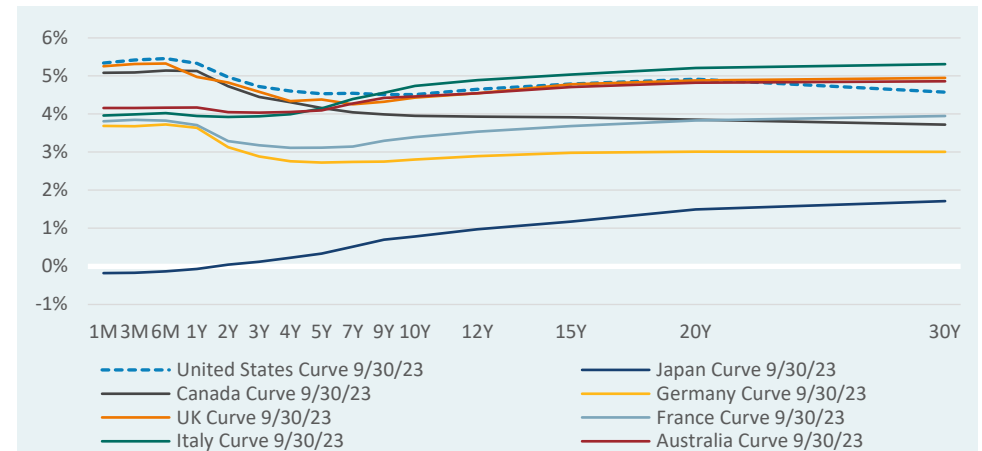
Source: Bloomberg, as of 9/30/23

Yield environment

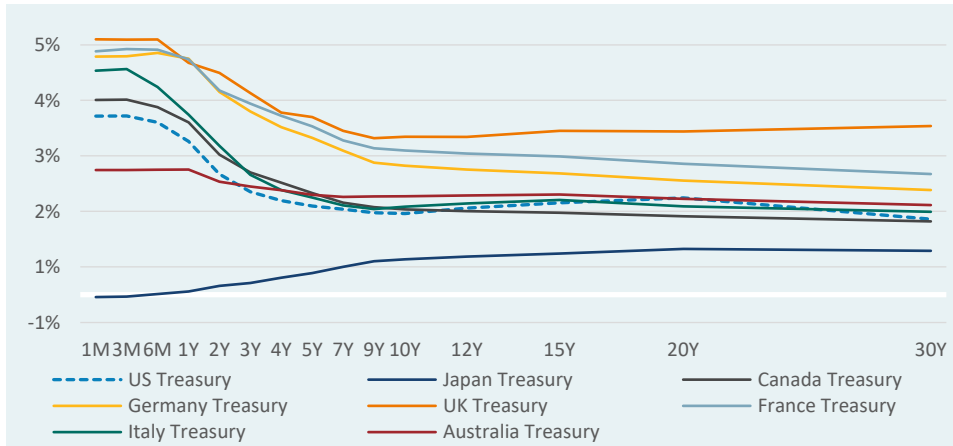
U.S. YIELD CURVE



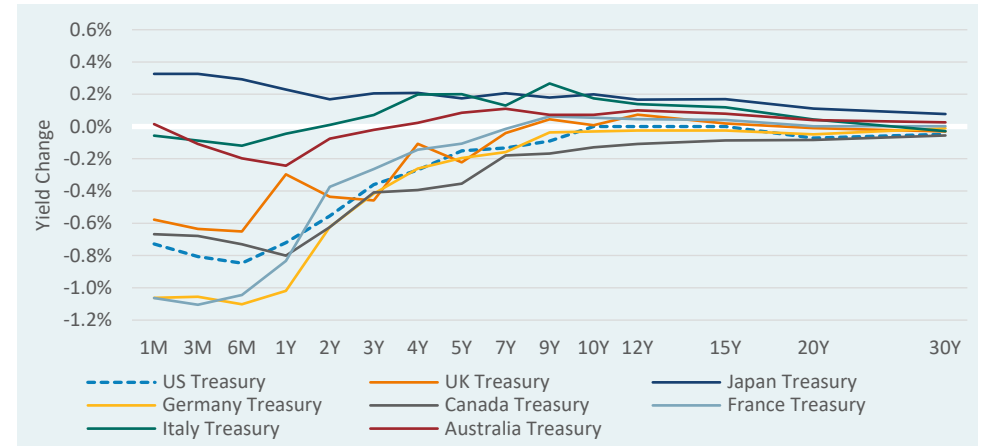
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/23

Credit environment

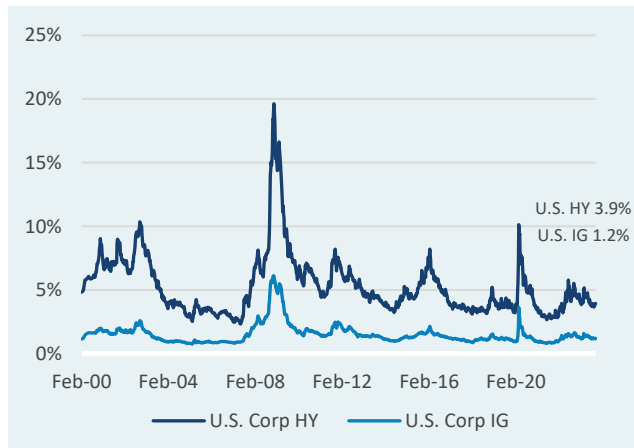
During the third quarter, fixed income markets delivered positive results with lower-quality credits such as high yield bonds and bank loans outperforming higher-quality credits. High yield bonds returned 0.5% (Bbg U.S. Corporate High Yield), while bank loans delivered a stronger 3.4% (CS Leveraged Loans), aided primarily by the lower duration of these bonds. Longer duration investment grade corporate bonds (Bloomberg U.S. Long Corporate Credit) performed poorly, falling by -7.3% during the quarter as rising interest rates acted as a headwind.

Similar to Q2, lower quality CCC-rated bonds outperformed BB- and B-rated bonds during the period. CCC-rated bonds returned 2.8% for the quarter compared to 1.0% and -0.3% for B-rated and BB-rated bonds, respectively. Bank loans also delivered an impressive 3.4% return,

with rising interest rates providing a mild tailwind to performance (floating rate bonds reprice as rates are rising, improving returns).

Credit spreads were broadly unchanged during the quarter despite concerns related to an economic slowdown, the potential for higher interest rates, increased credit stress, and lower equity prices. Lower-quality, CCC-rated high-yield bond spreads fell by 0.2% to 9.2%, while investment grade spreads decreased by roughly 0.1% to 1.3%. Broadly, spreads remain slightly below their long-term historical averages, which suggests that investors remain confident about the ability of those companies to service their debt. That said, should the U.S. economy begin to weaken, credit spreads could move higher as confidence fades.

SPREADS



Source: Barclays, Bloomberg, as of 9/30/23

HIGH YIELD BONDS MONTHLY INCOME RETURN



Source: Bloomberg, as of 9/30/23

CREDIT SPREAD (OAS)

Market	9/30/23	9/30/22
Long U.S. Corp	1.3%	2.0%
U.S. Inv Grade Corp	1.2%	1.6%
U.S. High Yield	3.9%	5.5%
U.S. Bank Loans*	5.2%	6.0%

Source: Barclays, Credit Suisse, Bloomberg, as of 9/30/23

*Discount margin (4-year life)

Default & issuance

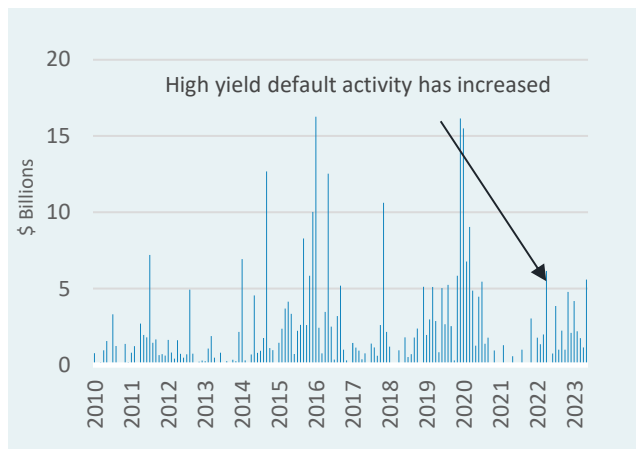
Default activity declined during Q3, to the lowest quarterly levels of 2023. Fourteen companies defaulted, which were concentrated in the Retail, Autos, Media, Technology, and Gaming sectors. A total of \$11.5 billion of bank loans and high yield bonds were affected by default or distressed exchanges, down from \$17.9 billion in the prior quarter. Notable company defaults included Carvana (Autos), Digital Media Solutions (Media), Exela Intermed (Technology), and Maverick (Gaming).

However, year-to-date default rates for both high-yield bonds and bank loans were higher than the first three quarters of 2022, totaling \$63 billion. High yield bond default rates have increased to roughly 2.5%, but are still below the long-term annual average of roughly 3.2%. High-yield

default recovery rates rose slightly to 35%, up from 33% during the previous quarter.

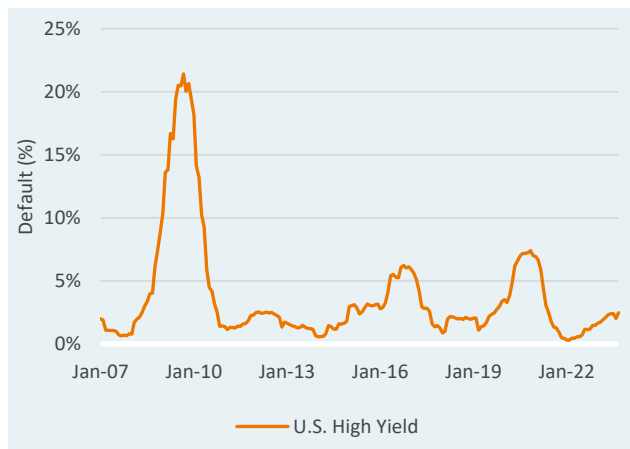
The issuance of investment-grade credit slowed from the prior quarter, down to roughly \$275 billion versus \$333 billion. Similarly, fewer lower quality companies issued new debt. High-yield bond issuance fell to \$40 billion, down from \$56 billion in Q2. As borrowing costs have jumped, the pace of both investment-grade and high yield issuance has been impacted. Although issuance overall remains dampened relative to history, high-yield issuance year-to-date is already greater than the total of 2022, and investment-grade bonds appear on track to match 2022 activity levels. It appears that a significant portion of issuance has moved into the private markets, creating opportunities for private allocations.

U.S. HY MONTHLY DEFAULTS (PAR WEIGHTED)



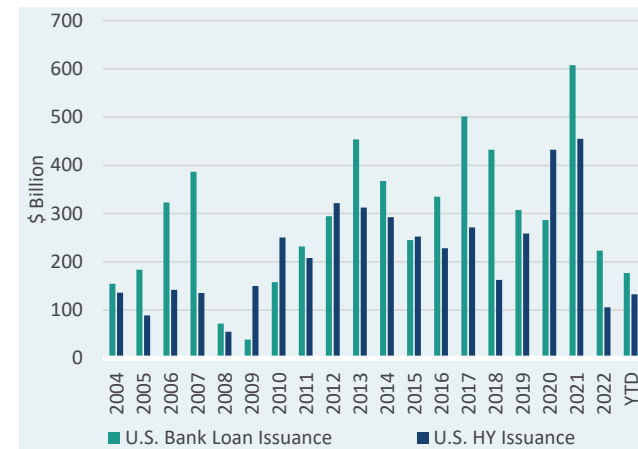
Source: BofA Merrill Lynch, as of 9/30/23

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



Source: BofA Merrill Lynch, as of 9/30/23 – par weighted

DEVELOPED MARKET ISSUANCE (\$ BILLIONS)



Source: BofA Merrill Lynch, all developed markets, as of 9/30/23

Equity

Equity environment

- Global equities delivered negative performance during the quarter (MSCI ACWI -3.4%). Weakness in markets was broad-based, with international developed (MSCI EAFE -4.1%) slightly underperforming domestic and emerging market equities (S&P 500 -3.3%, MSCI EM -2.9%).
- Over the quarter, the valuation gap between domestic and international equities grew even larger. An analysis of international developed Price/Earnings ratios shows that all sectors currently hold a valuation discount relative to U.S. shares, and that those discounts are generally much wider than the historical average.
- Currency movements dragged portfolio performance lower for investors with unhedged foreign currency exposure. Investors with unhedged international developed equity exposure saw losses of -

3.6% due to currency volatility during the quarter.

- U.S. investors continue to face a difficult environment for style factor investing. Over the past year, mega cap growth stocks have propelled the U.S. market higher, leading to dramatic outperformance of growth stocks and large cap stocks. However, value investing has delivered exceptional results in international developed markets, with value stocks outperforming growth by 11.5%.
- The Cboe VIX implied volatility index remained below-average for most of the third quarter, before rising to 17.5% to end September. Market risk has been falling fairly consistently throughout the year.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	(3.3%)		21.6%	
U.S. Small Cap (Russell 2000)	(5.1%)		8.9%	
U.S. Equity (Russell 3000)	(3.3%)		20.5%	
U.S. Large Value (Russell 1000 Value)	(3.2%)		14.4%	
US Large Growth (Russell 1000 Growth)	(3.1%)		27.7%	
Global Equity (MSCI ACWI)	(3.4%)	(2.3%)	20.8%	20.4%
International Large (MSCI EAFE)	(4.1%)	(0.5%)	25.6%	24.1%
Eurozone (EURO STOXX 50)	(7.7%)	(4.3%)	39.4%	33.0%
U.K. (FTSE 100)	(1.9%)	2.2%	25.3%	16.0%
Japan (TOPIX)	(1.0%)	4.0%	25.7%	36.6%
Emerging Markets (MSCI Emerging Markets)	(2.9%)	(1.3%)	11.7%	11.1%

Source: Russell Investments, MSCI, STOXX, FTSE, JPX, as of 9/30/23

Domestic equity

Domestic equities finished lower to end the quarter, breaking the previous three consecutive quarters of gains. The S&P 500 Index ended September down -3.3%, alongside losses across all other regional equity groups. Strong gains in July—influenced by better-than-expected earnings—were pared by losses in August and September as the *higher for longer* narrative raised recession fears while also helping to push Treasury yields significantly higher.

Early Q3 gains were driven by a continued rally across mega-cap technology names and better-than-expected earnings. Second quarter earnings marked the third straight quarter of year-over-year declines, yet the -4.1% fall was much better than the initially feared -7.0% projection

by FactSet. From a sector perspective, equity movements were less concentrated relative to the prior quarter. Energy was an outlier, where the sector’s +12.2% gain was a function of higher oil prices due primarily to supply related issues.

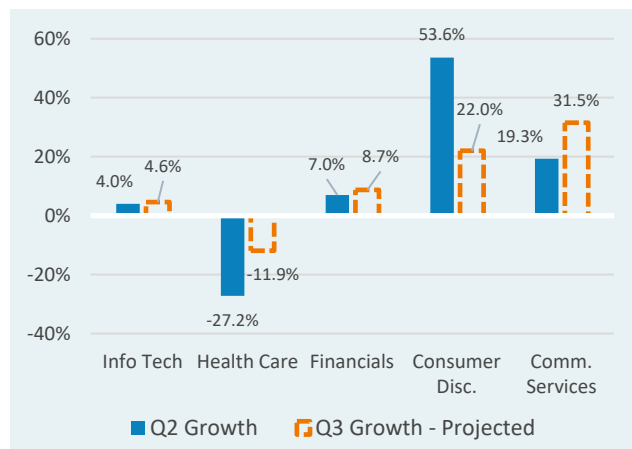
Going forward, domestic equities remain challenged on both the earnings and valuations front. Earnings growth is expected to decline for the fourth straight quarter, although stable expectations amongst the S&P 500’s largest sectors could provide an anchor. Earnings stability of some of the largest index names may also be contributing to higher valuations, which remain expensive relative to international developed and emerging market equities.

S&P 500 PRICE INDEX



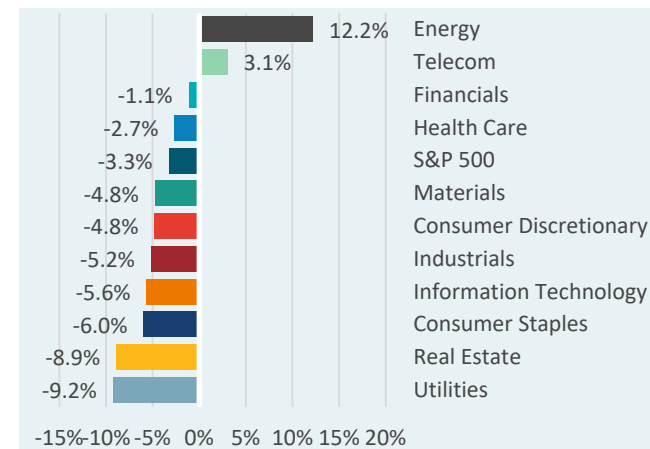
Source: Bloomberg, as of 9/30/23

FIVE LARGEST SECTORS EPS GROWTH YOY



Source: FactSet, as of 9/30/23

Q3 2023 SECTOR PERFORMANCE



Source: Morningstar, as of 9/30/23

Domestic equity size & style

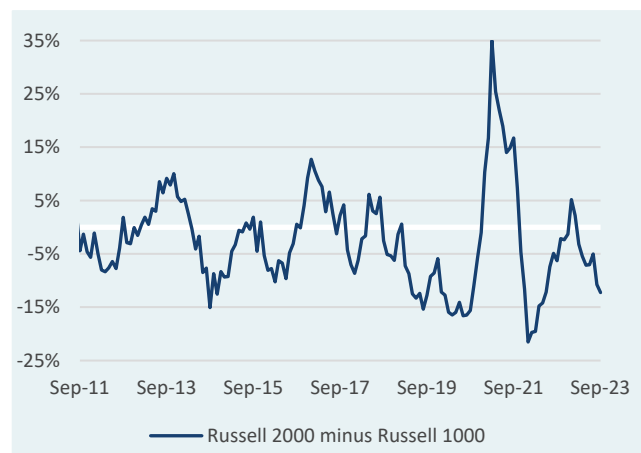
Investors continue to face a difficult environment for style factor investing. Value underperformed growth mildly during the quarter (-3.2% vs. -3.1%), with sector trends appearing to have had less of an impact on value vs. growth stocks during Q2. Small cap equities materially lagged large caps (-5.1% vs -3.3%). *Higher for longer* rate expectations likely contributed to a repricing of growth-focused assets that are more sensitive to interest rate fluctuations.

Over the past year, mega cap growth stocks have propelled the U.S. market higher, leading to dramatic outperformance

of growth stocks and large cap stocks. Many of these market-leading stocks are concentrated in the Information Technology and Telecom sectors, which have outperformed the overall index (+41.1% and 38.5%, respectively).

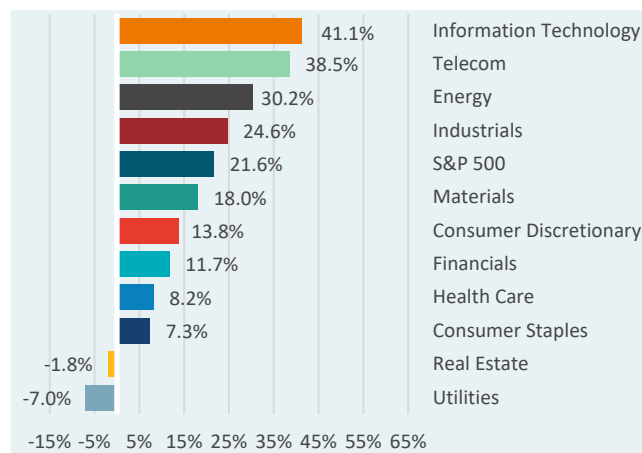
In recent years value stocks have been extremely cheap. Value has rarely been this discounted relative to growth, and during the few historical periods when this was the case, value outperformed significantly. However, value has failed to deliver similar outperformance during the current period.

SMALL CAP VS LARGE CAP (YOY)



Source: FTSE, as of 9/30/23

VALUE VS GROWTH (YOY)



Source: Morningstar, as of 9/30/23

1-YEAR SIZE & STYLE PERFORMANCE

	Value	Core	Growth
Large Cap	14.4%	21.2%	27.7%
Mid Cap	11.0%	13.4%	17.5%
Small Cap	7.8%	8.9%	9.6%

Source: FTSE, as of 9/30/23

International developed equity

International developed shares fell -4.1% during Q3 in unhedged currency terms, underperforming U.S. and emerging markets. However, international developed equities in hedged currency terms were the best performing markets (returning -0.5%), as currency hedging would have avoided the U.S. dollar surge fueled by a *higher for longer* interest rate narrative.

Underperformance within the Eurozone dragged the overall index lower, with the STOXX 50 Index falling -7.7% over the quarter in unhedged terms—the worst performer across regional indices. The broader bloc continues to struggle to bring down inflation, while policymakers also deal with stagnant economic growth. In contrast to weakness seen from European

shares, Japanese equities delivered another quarter of positive performance in unhedged terms (TOPIX -1.0%), and significant outperformance in currency hedged terms (+4.0%). While a weaker Japanese Yen (JPY) hurt performance in U.S. dollar terms, the weak JPY has boosted local corporate earnings. These currency movements combined with meaningful inflation and equity reforms—meant to spark investment in wages, higher growth, and therefore shareholder value—have been a tailwind to strong year-over-year Japanese equity performance.

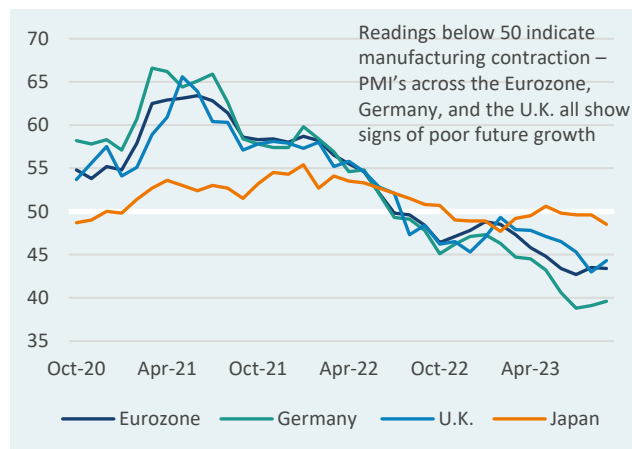
Overall, we believe international developed equities are less attractive in the near-term, specifically due to the economic headwinds facing the U.K. and broader Eurozone.

INTERNATIONAL DEVELOPED EQUITY



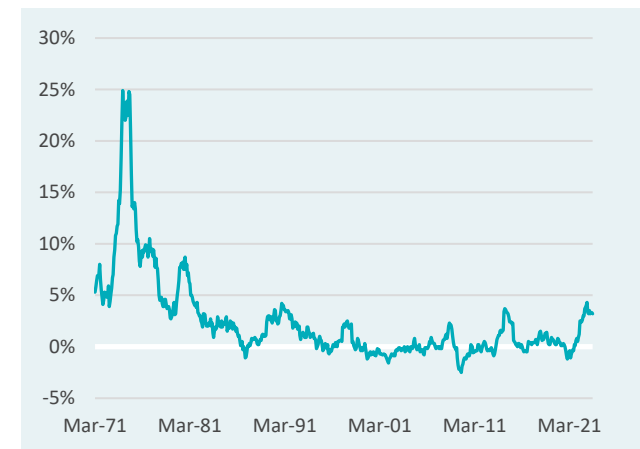
Source: MSCI, as of 9/30/23

MANUFACTURING PMI



Source: S&P Global, as of 9/30/23

JAPANESE CPI



Source: Japan MIC, as of 8/31/23

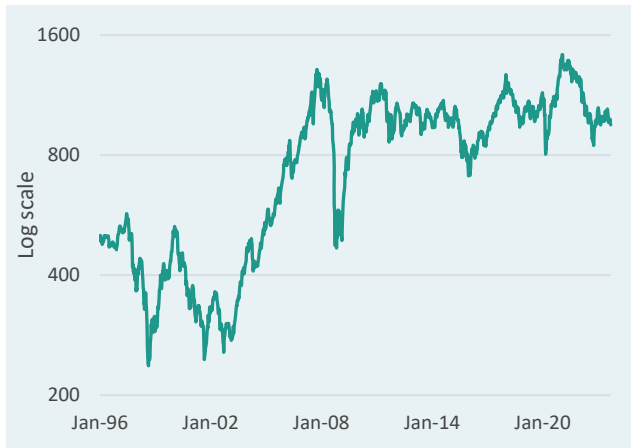
Emerging market equity

Emerging market equities outperformed domestic equities and international developed equities in Q3. The MSCI EM Index fell -2.9%, while the S&P 500 was -3.3% lower and the MSCI EAFE Index dropped -4.1%. Emerging markets have provided only a 2.1% annualized return over the past decade.

From an individual country perspective, the two largest weights in the index—China and India—outperformed, although Chinese equities were still -1.9% lower. This impact counterbalanced losses across other markets, since the combined weight of both countries makes up approximately 45% of the MSCI Emerging Markets Index.

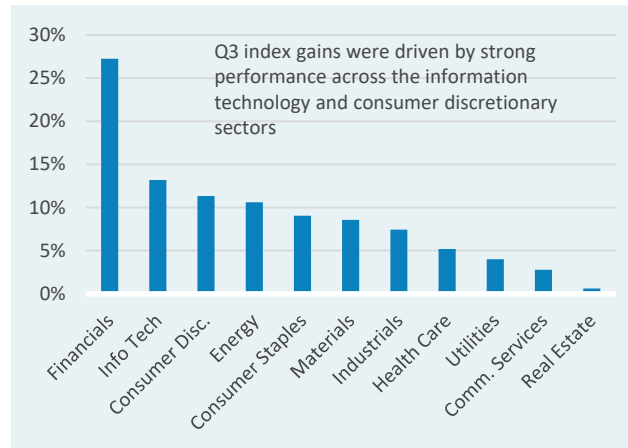
Emerging market equities continue to offer fairly cheap valuations, yet sentiment has grown negative, especially as concerns around China are now mainstream. Outside of geopolitical tensions, the Chinese economy continues to show signs of struggle despite some small government stimulus efforts. The property market remains a large pain point, evidenced by credit stress and falling contracted sales amongst large property developers such as Country Garden and Evergrande.

EMERGING MARKET EQUITY



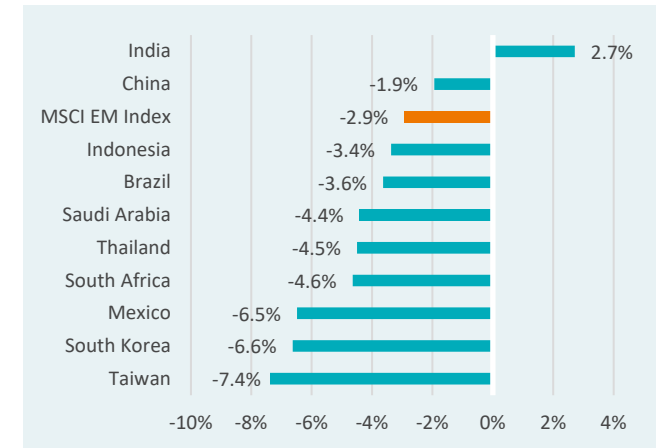
Source: MSCI, as of 9/30/23

MSCI INDIA SECTOR WEIGHTS



Source: MSCI, as of 9/30/23

Q3 2023 MSCI EM COUNTRY RETURNS (USD)



Source: Bloomberg, MSCI, as of 9/30/23

Equity valuations

Equity valuation disparities have grown even wider. U.S. equities are now priced at more than a 60% valuation premium (Price/Earnings) over international developed, averaging 22.5 and 13.8, respectively, during the quarter. Some of this gap can be explained by the greater concentration of U.S. markets in the technology sector, which tends to command higher valuations. However, as we see on the next slide, nearly all sectors are materially more expensive in U.S. markets relative to international developed markets.

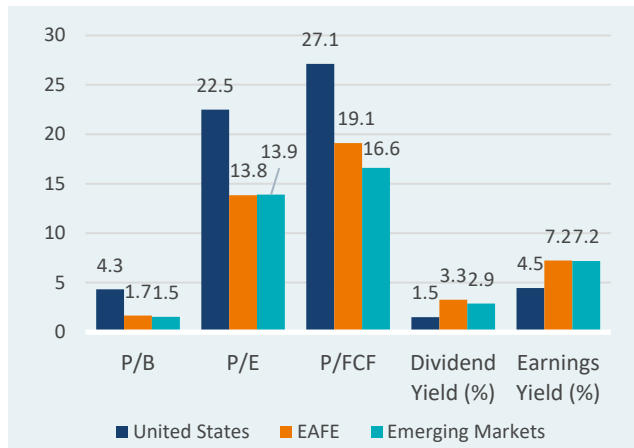
Despite very large valuation differences, we believe international developed equities currently provide lower

growth potential and unique challenges which may lead to further near-term underperformance relative to U.S. equities.

Core fixed income now offers a yield greater than U.S. equities for the first time in more than two decades. Quickly rising interest rates should have theoretically resulted in a sharp fall in equity valuations in order to maintain the “equity risk premium” of stock returns over bond returns. This effect has not yet occurred, which may lead many investors to view bonds as relatively attractive (and stocks relatively less attractive) in the current environment.

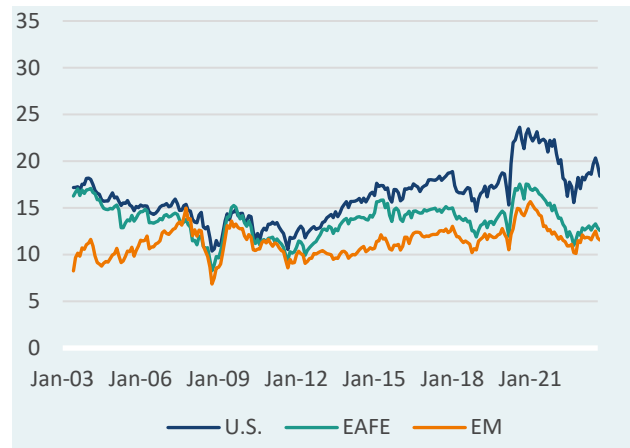
Core fixed income is yielding more than equities for the first time in two decades

MSCI VALUATION METRICS (3-MONTH AVG)



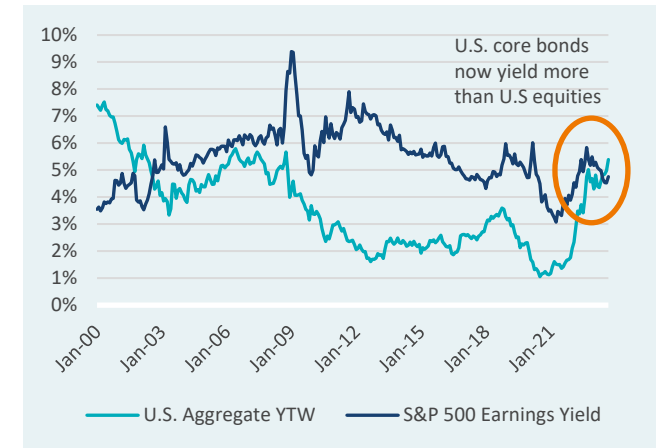
Source: Bloomberg, as of 9/30/23

FORWARD PRICE/EARNINGS RATIO



Source: MSCI, Bloomberg, as of 9/30/23

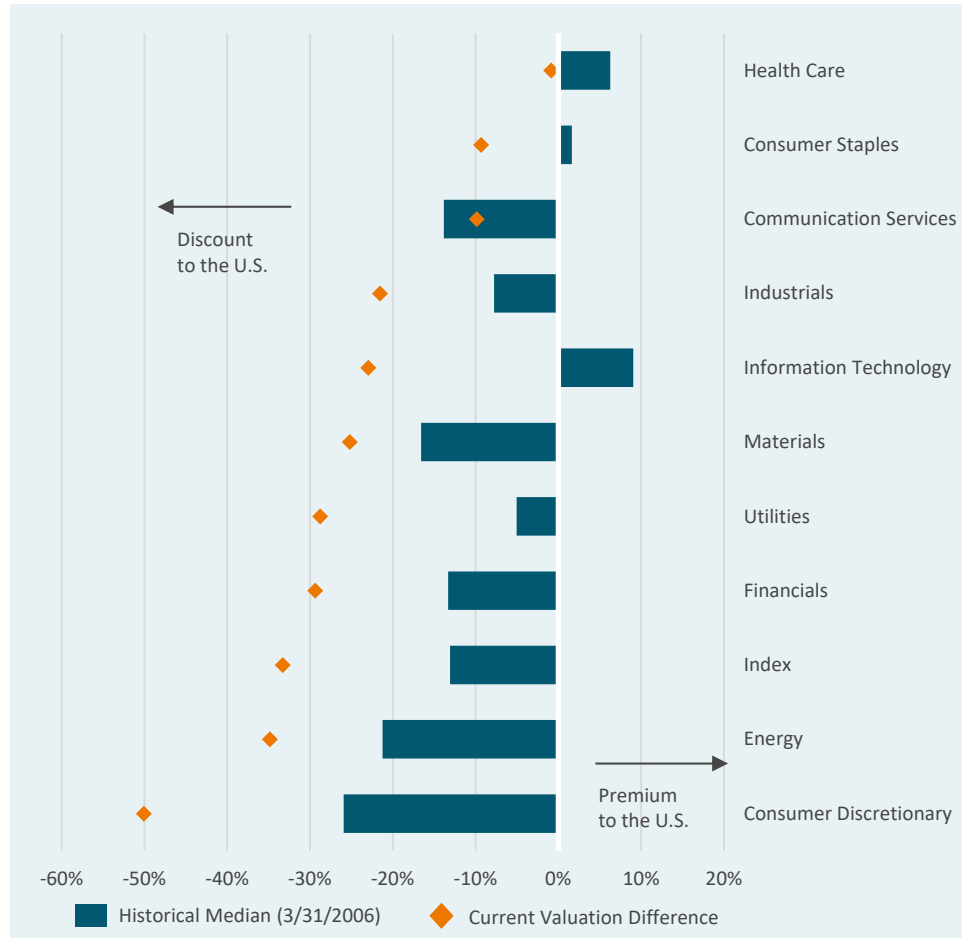
U.S. VALUATIONS: BONDS VS. STOCKS



Source: Bloomberg, Standard & Poor's, as of 9/30/23

International developed valuations

MSCI EAFE VALUATIONS RELATIVE TO U.S. VALUATIONS



Source: Bloomberg, MSCI, as of 9/30/23

Over the quarter, the valuation gap between domestic and international equities grew even larger. Sector weightings play a large role when evaluating the broader indices, as the U.S. holds a larger weight in growth-focused sectors such as Information Technology which tends to command a higher valuation.

The valuation disparity between U.S. and international developed equities has been a topic of interest recently, since historically these markets have shown a much smaller discount relative to one another.

An analysis of international developed Price/Earnings ratios shows that all sectors currently hold a valuation discount relative to U.S. shares, and that those discounts are generally much wider than the historical average.

Despite very large valuation differences, we believe international developed equities currently provide lower growth potential and unique challenges which may lead to further near-term underperformance relative to U.S. equities. Specifically, stagnant economic growth and higher inflation in the Eurozone and U.K. may result in headwinds.

Market volatility

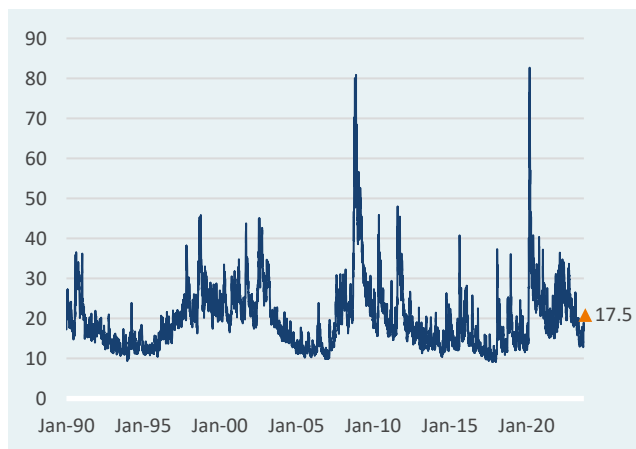
The Cboe VIX implied volatility index remained below-average for most of the third quarter, before rising to 17.5 to end September. Market risk has been falling fairly consistently throughout the year, which may be at least partly attributed to the perception that certain risks, such as regional bank contagion and near-term recession, seem to have eased.

Realized volatility of global equity markets has moderated, and is around average on a one-year basis. Emerging markets are an exception, displaying persistent elevated volatility. In contrast to recent years when emerging market volatility was

lower than that of developed markets—an uncommon occurrence historically speaking—this trend has now reversed.

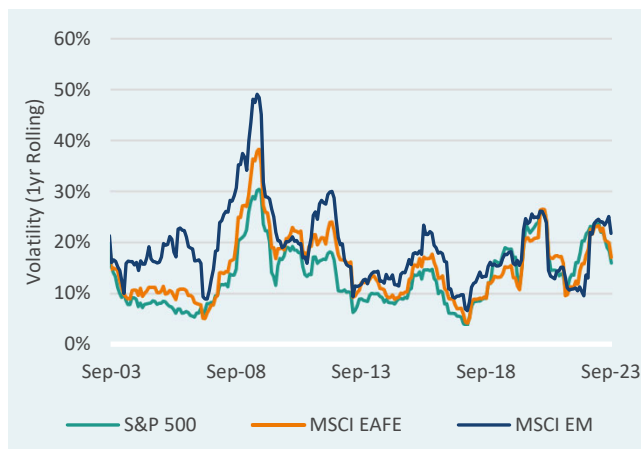
Bond markets have shown some shakiness, as indicated by the “MOVE” Index—which calculates the implied volatility of U.S. Treasury securities. This index has risen to levels not seen since the 2020 COVID-19 market selloff. Uncertainty around the Federal Reserve’s interest rate path, potential recession, and the worsening U.S. fiscal situation, are likely contributing to greater Treasury market volatility.

U.S. IMPLIED VOLATILITY (VIX)



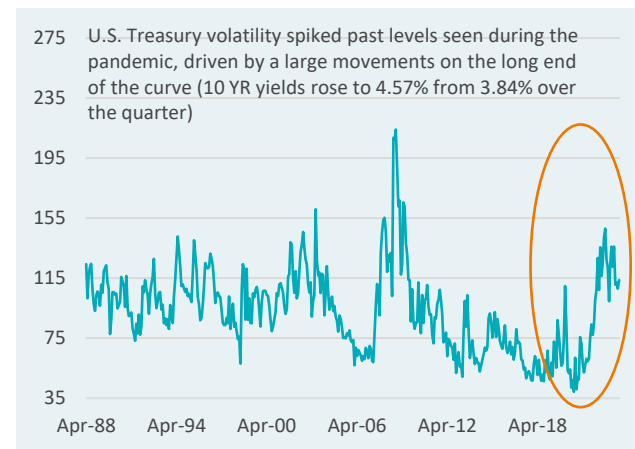
Source: Cboe, as of 9/30/23

REALIZED VOLATILITY



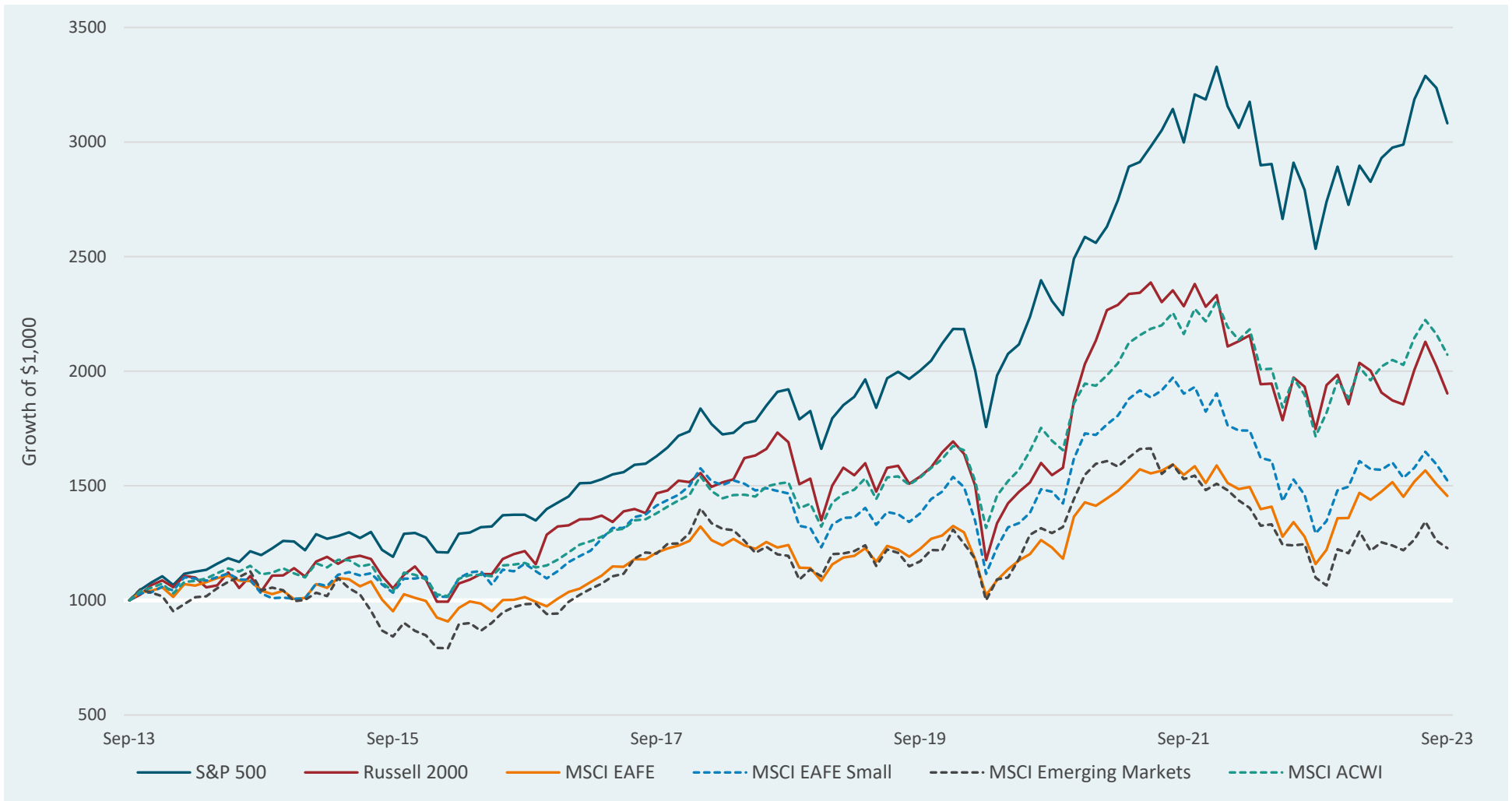
Source: S&P, MSCI, as of 9/30/23

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



Source: Bloomberg, as of 9/30/23

Long-term equity performance



Source: MPI, as of 9/30/23

Other assets

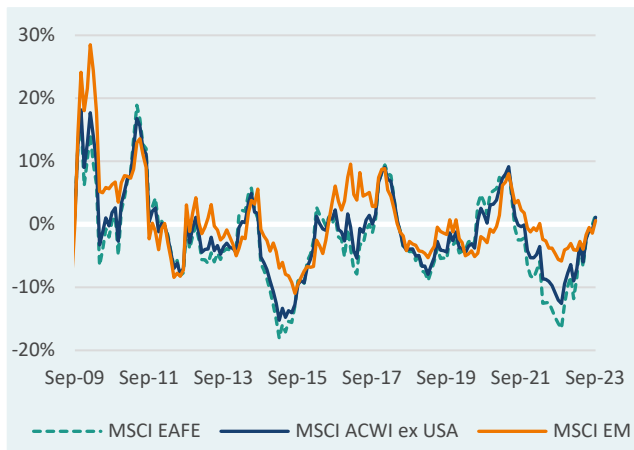
Currency

Currency movements dragged portfolio performance lower for investors with unhedged foreign exposure. On a trade-weighted basis, the value of the U.S. dollar shot higher as investors questioned the falling inflation story and bond yields rose on the *higher for longer* interest rate narrative.

Investors with unhedged international developed equity exposure saw losses of -3.6% due to currency movements in Q3. After recently experiencing deep losses over multiple years from unhedged foreign currency exposure, along with ongoing volatility, many investors may be interested in exploring more thoughtful approaches to currency. A currency hedging program can reduce the uncompensated risk of unhedged foreign

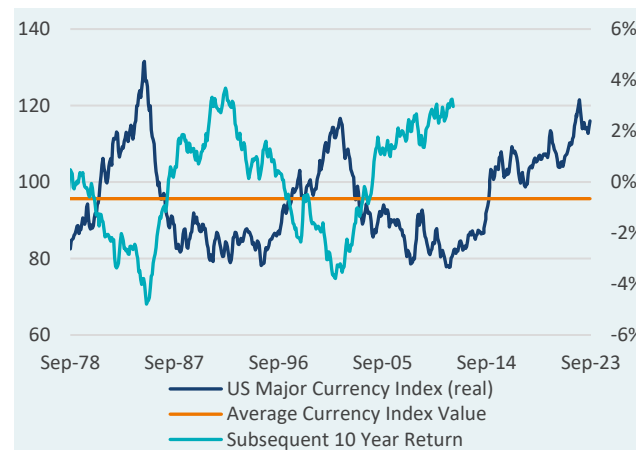
currency exposure (what we call “embedded currency” risk). Additionally, the MSCI Currency Factor Mix Index—a representation of a passive investment in the currency market, by investing in currencies with higher interest rates, currencies that are undervalued, and currencies that are showing positive price momentum—has shown a positive one-year rolling return over most periods with low volatility. This is an approach to thoughtfully gain exposure to the currency market with the objective of generating a moderate positive return. A currency hedging program along with a passive investment in the currency market may allow investors to reduce overall portfolio risk while moderately increasing total portfolio expected returns.

EFFECT OF CURRENCY (1-YEAR ROLLING)



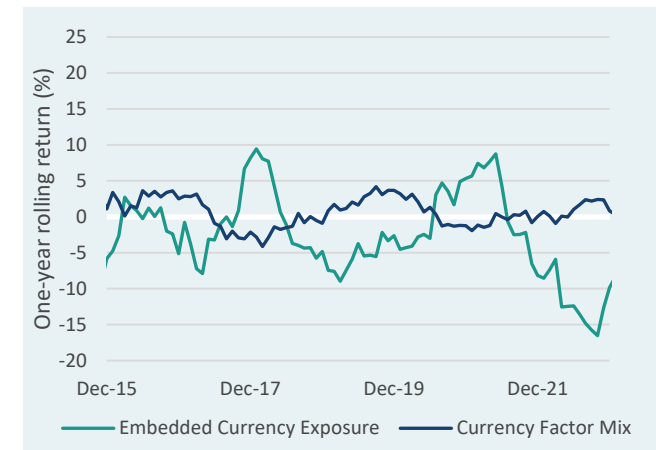
Source: MSCI, as of 9/30/23

BLOOMBERG DOLLAR SPOT INDEX



Source: Bloomberg, as of 9/30/23

EMBEDDED CURRENCY VS CURRENCY FACTORS



Source: Bloomberg, MSCI, as of 9/30/23

Commodities

Data pointing towards resilient economic growth was widely viewed as the initial driver of the “higher for longer” rate environment. Adding to this narrative in the third quarter was a tick up in energy costs due to supply side dynamics. This brought an increased focus to energy prices, as the four-decade high inflation experienced during 2022 was partly fueled by a rapid spike in oil and natural gas prices. As inflation has moderated back to levels closer to target, energy price movements have raised concerns of another potential catalyst for higher inflation, and therefore higher rates.

Oil was the largest contributor, as WTI and Brent Crude prices rose 24.3% and 28.5%, respectively. These significant price increases were driven by a combination of supply cuts by Saudi Arabia and Russia. A slowing economic outlook provides little motivation for oil companies to increase production.

From a performance standpoint, the outsized gain of the Bloomberg Commodity Energy Index (+19.6%) lifted the broader index, with the Bloomberg Commodity Index finishing the quarter up 4.7%.

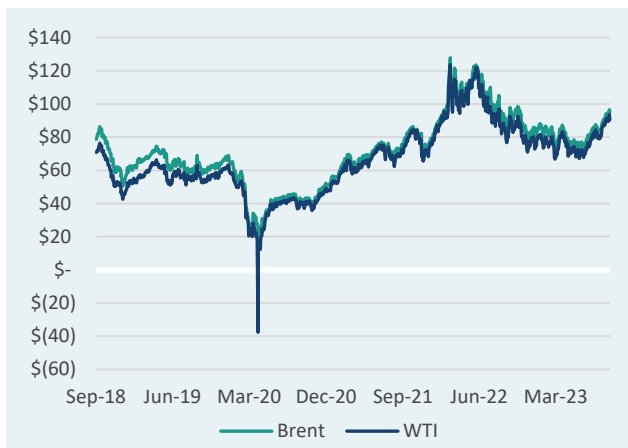
A large jump in energy prices – specifically oil – has raised concerns over potentially higher inflation

ENERGY YEAR-OVER-YEAR CPI CHANGES



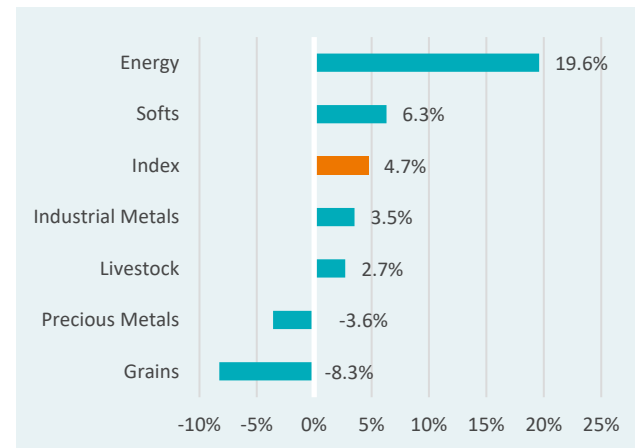
Source: BLS, as of 9/30/23

BRENT AND WTI CRUDE OIL PRICES



Source: Bloomberg, as of 9/30/23

BCOM SECTOR PERFORMANCE – Q3 2023



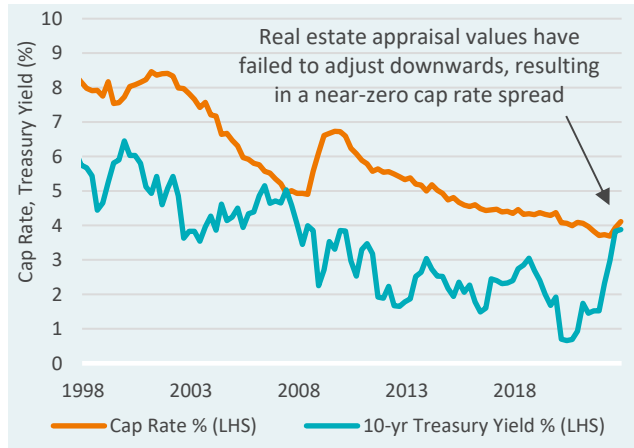
Source: Bloomberg, as of 9/30/23

Private real estate stalemate?

As summer ends, the real estate market looks much like it did as it began. Real estate transaction activity continues to be frozen, as buyers and sellers disagree about pricing, leading to a very large bid-ask spread. Private valuations remain higher than public, and write-downs should continue over the next several quarters. While movement has been slow thus far, opportunities may pick up as a wall of low interest rate loan maturities will be coming due and asset owners will need to either refinance at much higher rates, provide additional capital, and/or sell assets.

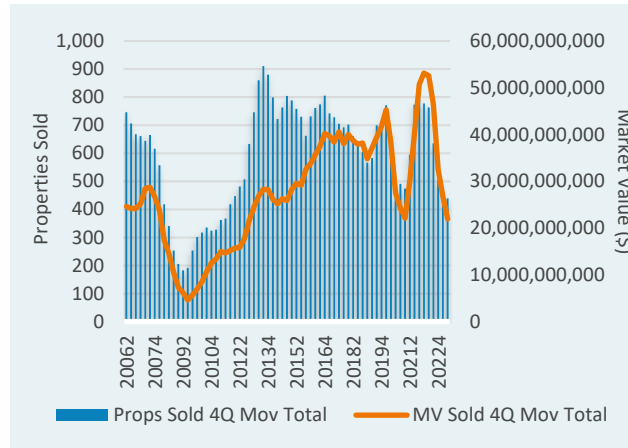
New capital should find a compelling environment to deploy in over the next several years at lower entry pricing. We are favoring managers experienced with investing in stressed and distressed environments and those with flexibility to invest across the debt and equity capital spectrum.

REAL ESTATE CAP RATE VS U.S. TREASURY YIELD



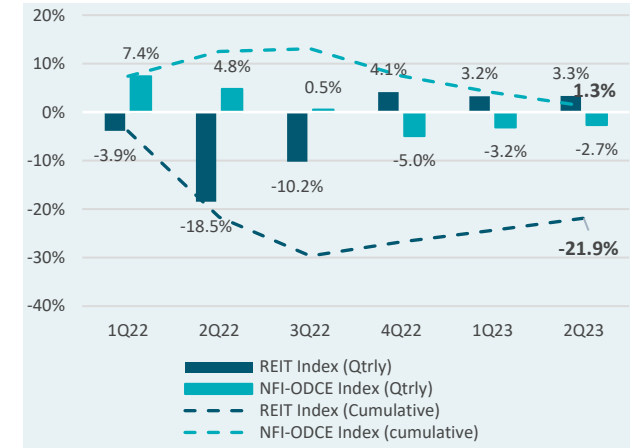
Source: NCREIF trends Report Q2

PROPERTY SALES (ANNUALIZED)



Source: NCREIF trends Report Q2 2023

PUBLIC VS PRIVATE REAL ESTATE PERFORMANCE



Source: NCREIF, Wilshire REIT Index

Hedge funds outperform, CTAs shine again

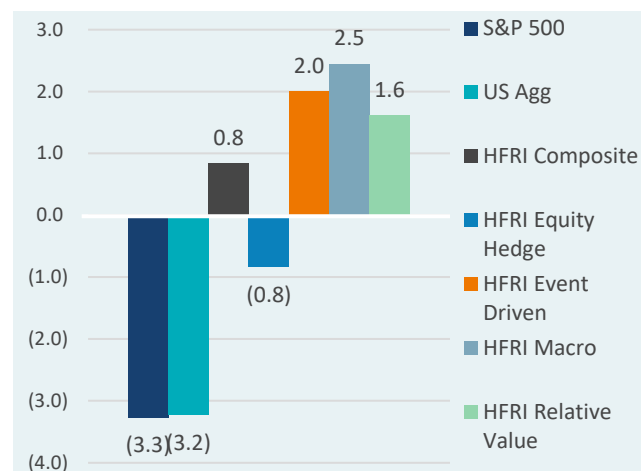
Hedge funds enjoyed broad outperformance vs markets in the third quarter as both stocks and bonds declined more than 3%. Most hedge fund strategies were actually positive on the quarter, reflected in the 0.8% return from the HFRI Composite Index.

Gains were led by Macro strategies while Event Driven was buoyed by a very strong quarter from Merger Arbitrage, rebounding after seeing spreads widen out earlier in the year. Popular Macro trades like short bonds and yield curve steepener paid off handsomely. Four of the last 7 quarters

have seen simultaneous declines in the S&P 500 and the Bloomberg US Aggregate – in all of those, including the most recent one, CTAs have been positive.

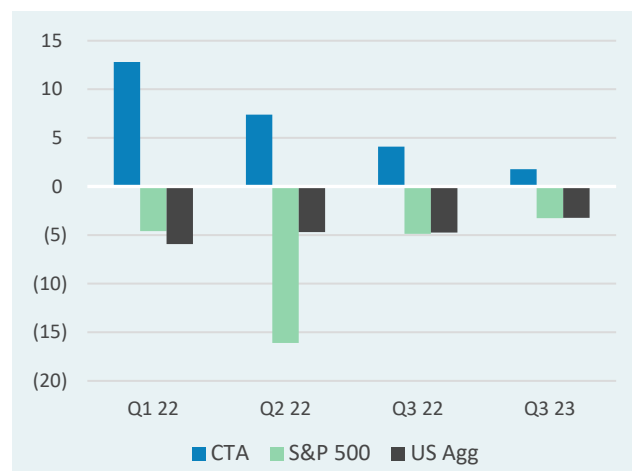
Credit-focused strategies also outperformed high yield as duration impacts were hedged and higher, typically floating rate coupons in areas like asset-backed offset any credit deterioration.

3Q 2023 QUARTERLY RETURNS



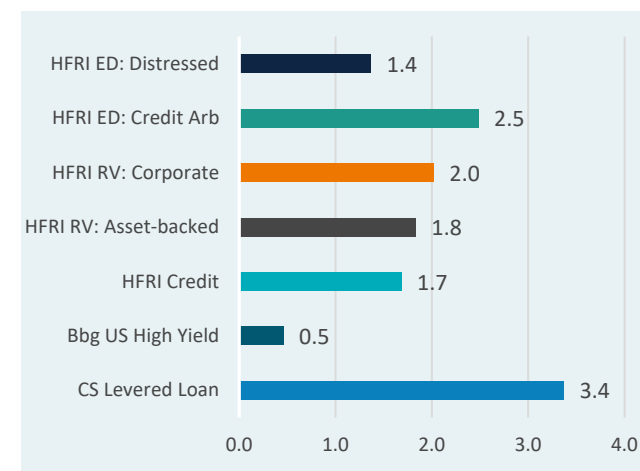
Source: HFR, MPI, as of 9/30/23

CTAS VS STOCKS/BONDS WHEN BOTH DECLINE



Source: MPI, SocGen. as of 9/30/23

3Q RETURNS FOR CREDIT STRATEGIES



Source: HFR, MPI, as of 9/30/23

Appendix

Periodic table of returns

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	YTD	5-Year	10-Year
Large Cap Growth	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	38.5	28.3	16.1	25.0	12.4	14.5
Large Cap Equity	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	31.4	34.6	27.6	9.4	13.0	9.6	11.6
International Equity	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	28.5	21.0	27.1	1.5	7.1	6.2	8.4
Small Cap Growth	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	26.5	20.0	26.5	-4.7	5.2	6.1	7.8
60/40 Global Portfolio	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	25.5	18.3	25.2	-7.5	5.1	5.9	6.7
Cash	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	22.4	14.0	17.7	-13.0	3.6	3.5	6.6
Hedge Funds of Funds	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	22.0	10.3	14.8	-14.5	3.0	3.4	6.2
Small Cap Equity	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	18.6	7.8	11.3	-14.5	2.5	3.2	4.5
Emerging Markets Equity	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	18.4	7.5	8.9	-17.3	1.8	2.6	3.8
Large Cap Value	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	8.7	4.6	6.5	-19.1	1.8	2.4	3.3
Small Cap Value	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	7.8	2.8	2.8	-20.1	-0.5	1.6	2.1
US Bonds	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	7.7	0.5	0.0	-20.4	-1.2	1.6	1.1
Commodities	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	6.4	0.5	-1.5	-26.4	-3.4	0.6	1.1
Real Estate	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	2.1	-3.1	-2.5	-29.1	-3.8	0.1	-0.7

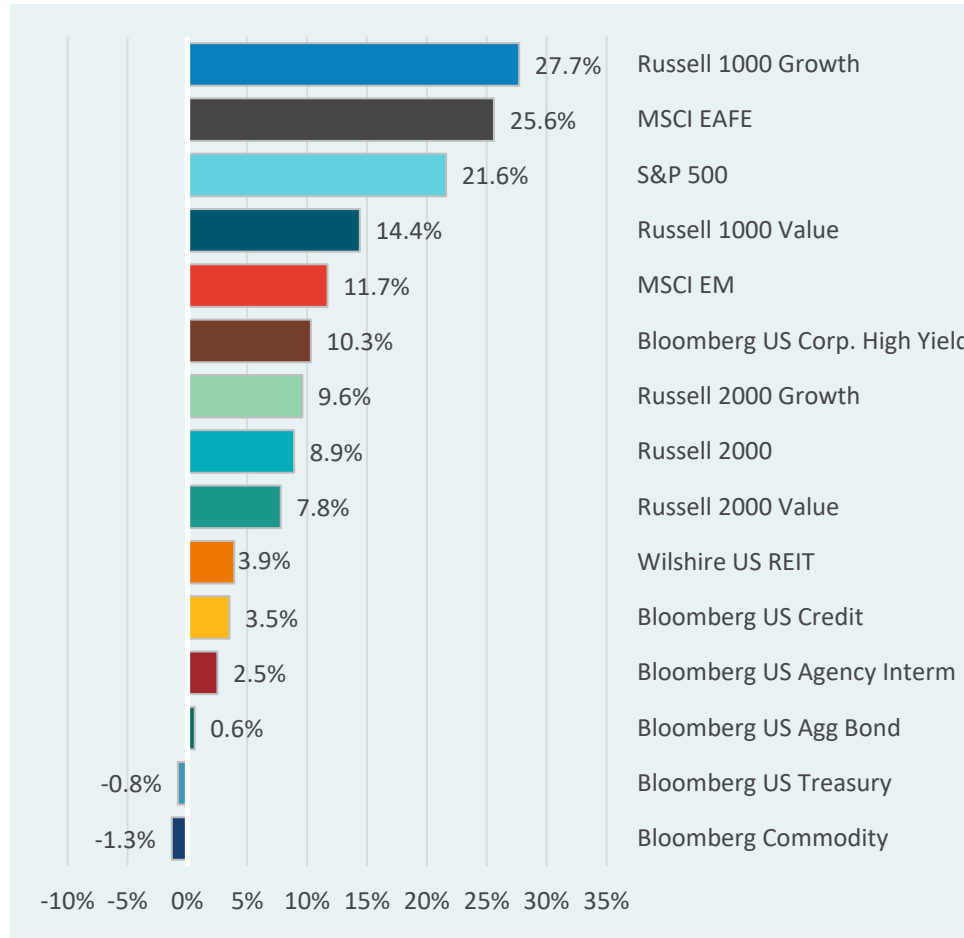
BEST
↑
WORST
↓

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

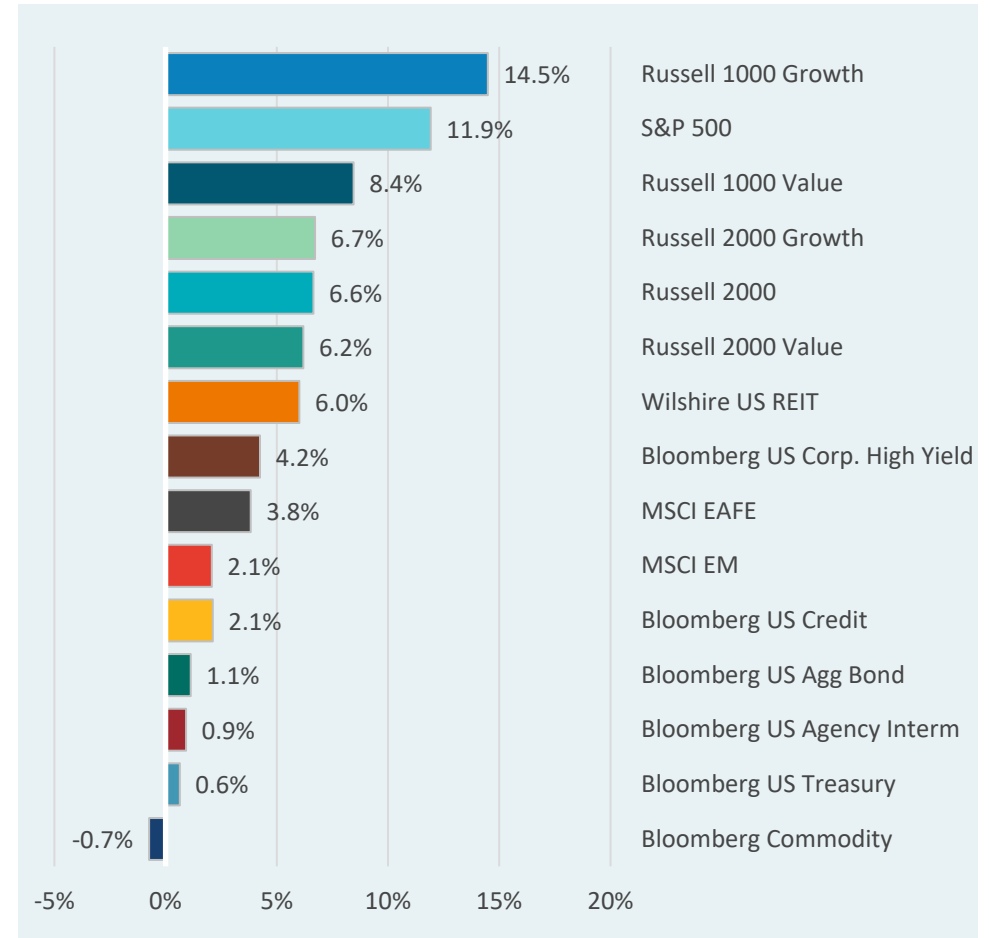
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, Bloomberg Global Bond. NCREIF Property Index performance data as of 6/30/23.

Major asset class returns

ONE YEAR ENDING SEPTEMBER



TEN YEARS ENDING SEPTEMBER



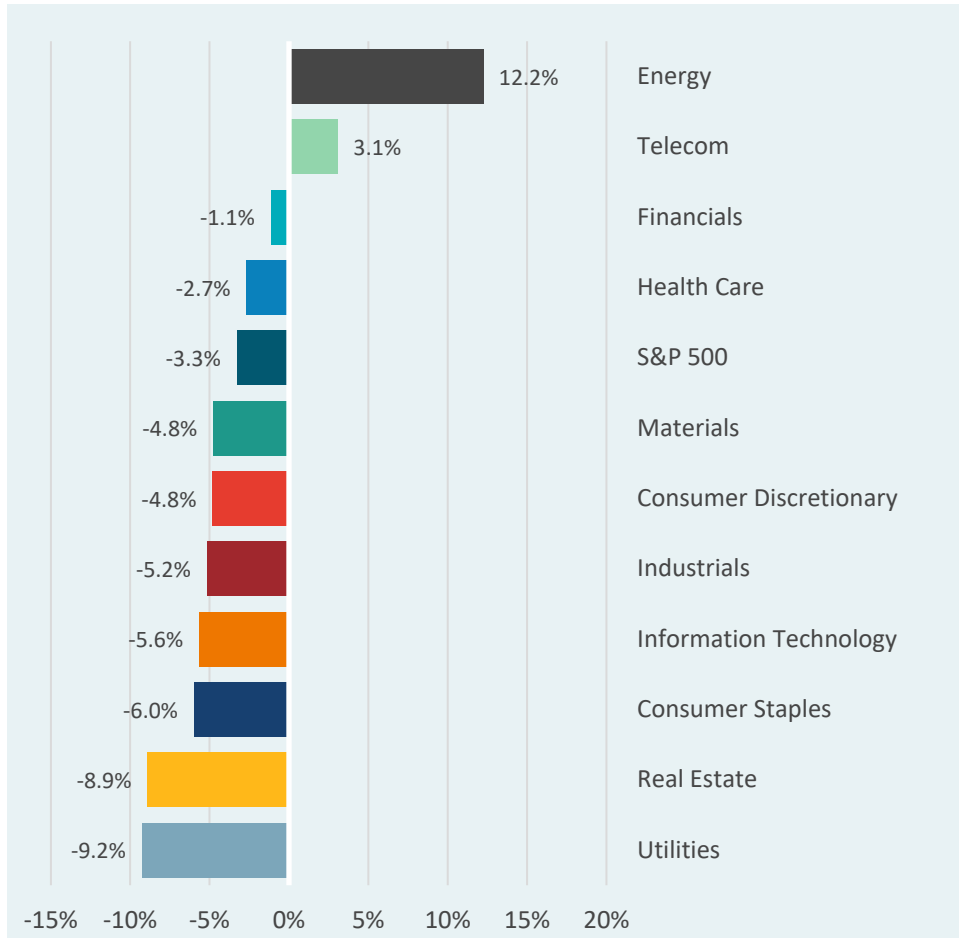
*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 9/30/23

Source: Morningstar, as of 9/30/23

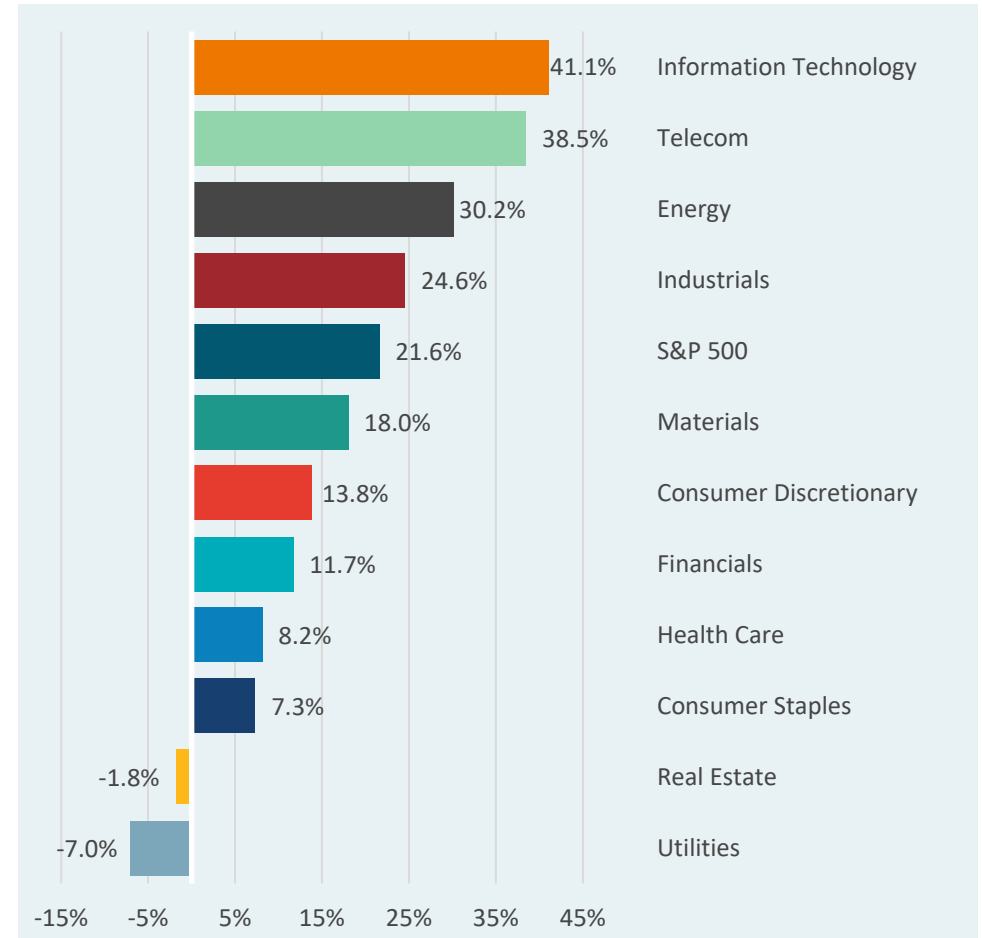
S&P 500 sector returns

QTD



Source: Morningstar, as of 9/30/23

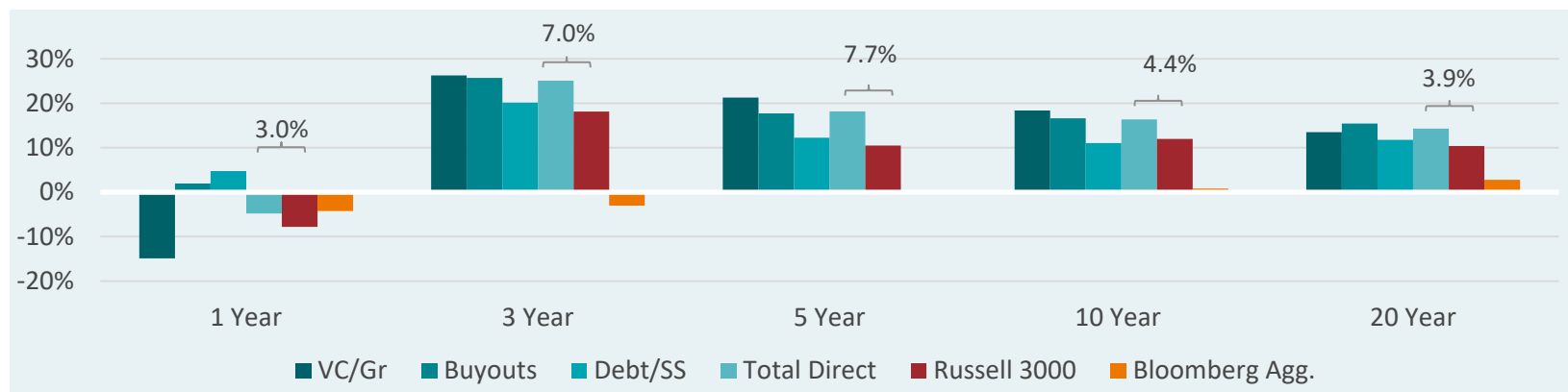
ONE YEAR ENDING AUGUST



Source: Morningstar, as of 9/30/23

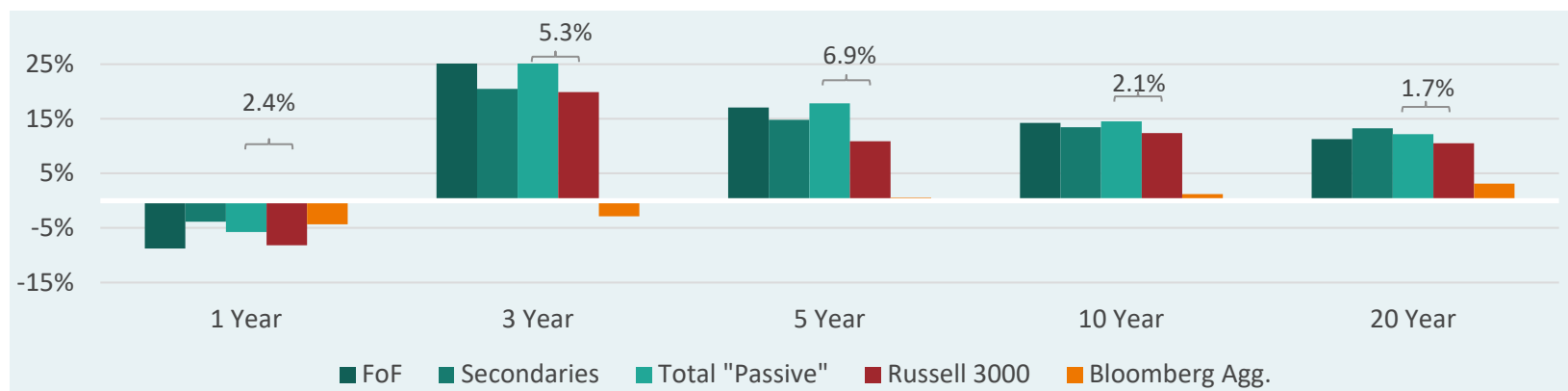
Private equity vs. traditional assets performance

DIRECT PRIVATE EQUITY FUND INVESTMENTS



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

“PASSIVE” STRATEGIES

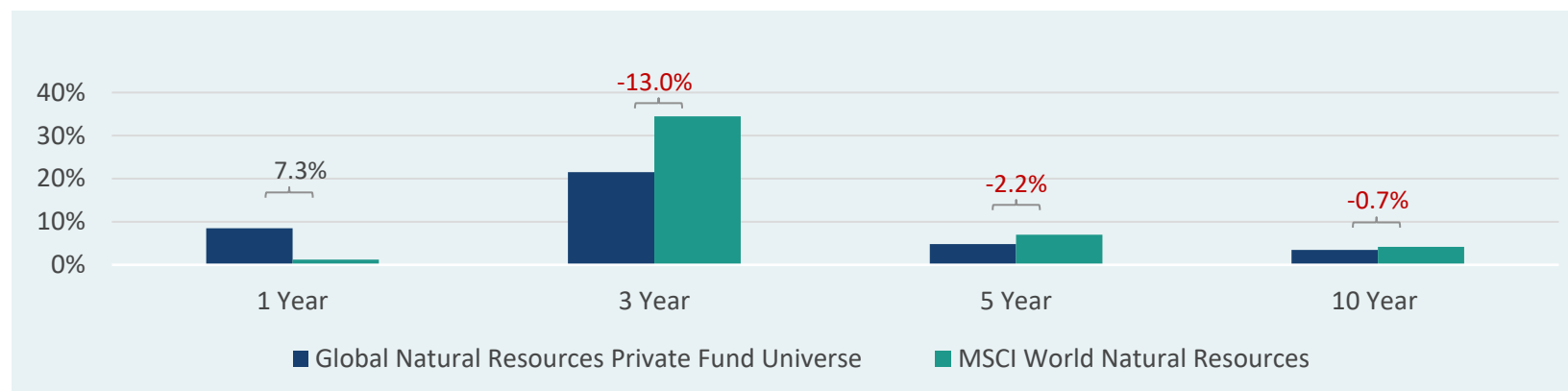


“Passive” strategies outperformed comparable public equities across all time periods.

Sources: Refinitiv PME: U.S. Private Equity Funds sub asset classes as of March 31, 2023. Public Market Equivalent returns resulted from “Total Passive” and Total Direct’s identical cash flows invested into and distributed from respective traditional asset comparable.

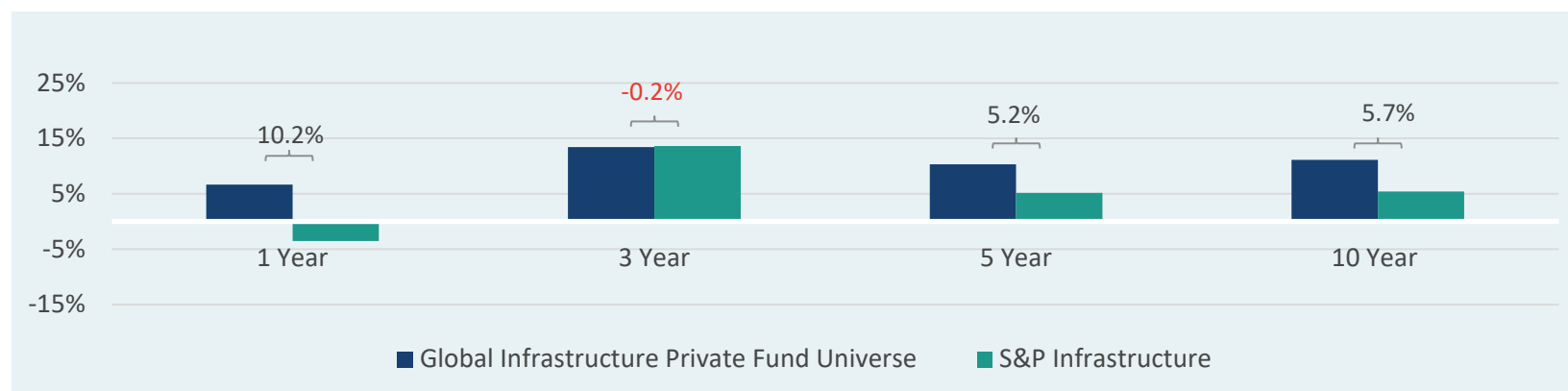
Private vs. liquid real assets performance

GLOBAL NATURAL RESOURCES FUNDS



N.R. funds underperformed the MSCI World Natural Resources benchmark across all periods, aside the 1-year basis.

GLOBAL INFRASTRUCTURE FUNDS

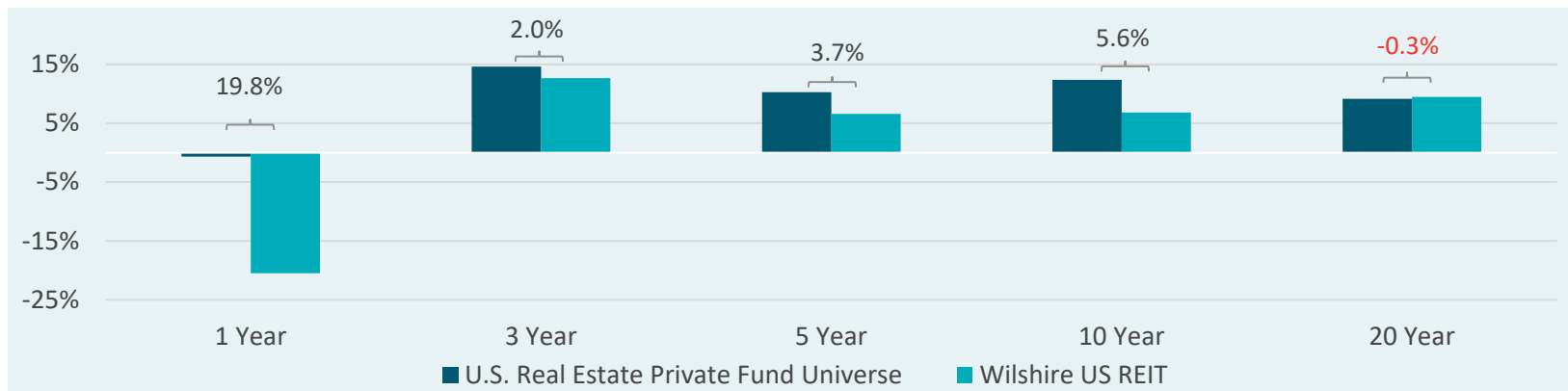


Infra. funds outperformed the S&P Infra. across all periods, aside the 3-year basis.

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, 2023. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

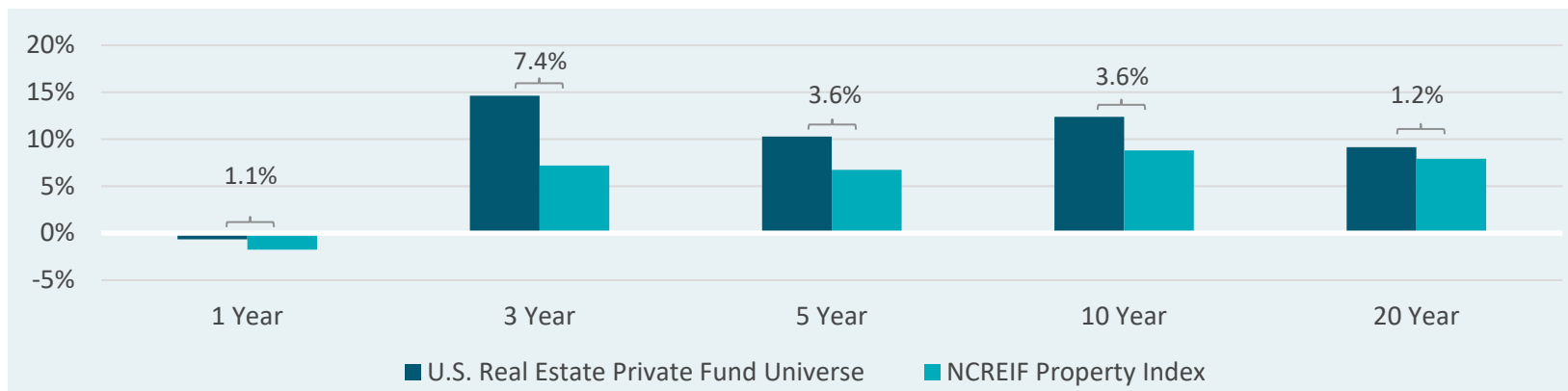
Private vs. liquid and core real estate performance

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



U.S. Private R.E. funds have underperformed the Wilshire U.S. REIT Index over the past 20 years, but outperformed more recently

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



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

Sources: Refinitiv PME: U.S. Real Estate universes as of March 31, 2023. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real estate universes.

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	(4.8)	(3.3)	13.1	21.6	10.2	9.9	11.9
S&P 500 Equal Weighted	(5.1)	(4.9)	1.8	13.6	11.4	8.0	10.2
DJ Industrial Average	(3.4)	(2.1)	2.7	19.2	8.6	7.1	10.8
Russell Top 200	(4.6)	(2.7)	16.3	23.9	10.0	10.8	12.6
Russell 1000	(4.7)	(3.1)	13.0	21.2	9.5	9.6	11.6
Russell 2000	(5.9)	(5.1)	2.5	8.9	7.2	2.4	6.6
Russell 3000	(4.8)	(3.3)	12.4	20.5	9.4	9.1	11.3
Russell Mid Cap	(5.0)	(4.7)	3.9	13.4	8.1	6.4	9.0
Style Index							
Russell 1000 Growth	(5.4)	(3.1)	25.0	27.7	8.0	12.4	14.5
Russell 1000 Value	(3.9)	(3.2)	1.8	14.4	11.1	6.2	8.4
Russell 2000 Growth	(6.6)	(7.3)	5.2	9.6	1.1	1.6	6.7
Russell 2000 Value	(5.2)	(3.0)	(0.5)	7.8	13.3	2.6	6.2

INTERNATIONAL EQUITY

Broad Index							
MSCI ACWI	(4.1)	(3.4)	10.1	20.8	6.9	6.5	7.6
MSCI ACWI ex US	(3.2)	(3.8)	5.3	20.4	3.7	2.6	3.3
MSCI EAFE	(3.4)	(4.1)	7.1	25.6	5.8	3.2	3.8
MSCI EM	(2.6)	(2.9)	1.8	11.7	(1.7)	0.6	2.1
MSCI EAFE Small Cap	(4.4)	(3.5)	1.8	17.9	1.1	0.8	4.3
Style Index							
MSCI EAFE Growth	(6.0)	(8.6)	4.3	20.0	0.4	3.2	4.4
MSCI EAFE Value	(0.8)	0.6	9.9	31.5	11.1	2.8	3.0
Regional Index							
MSCI UK	(0.8)	(1.5)	6.8	24.9	12.1	2.9	2.5
MSCI Japan	(2.1)	(1.6)	11.2	25.9	2.8	2.1	4.4
MSCI Euro	(5.4)	(7.5)	10.9	36.4	7.3	3.7	3.8
MSCI EM Asia	(2.6)	(2.9)	1.0	11.9	(3.5)	1.0	3.8
MSCI EM Latin American	(2.3)	(4.7)	12.9	19.4	15.1	2.8	0.2

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
Bloomberg US TIPS	(1.8)	(2.6)	(0.8)	1.2	(2.0)	2.1	1.7
Bloomberg US Treasury Bills	0.4	1.3	3.6	4.6	1.7	1.7	1.1
Bloomberg US Agg Bond	(2.5)	(3.2)	(1.2)	0.6	(5.2)	0.1	1.1
Bloomberg US Universal	(2.4)	(2.9)	(0.6)	1.6	(4.7)	0.3	1.4
Duration							
Bloomberg US Treasury 1-3 Yr	(0.0)	0.7	1.7	2.4	(0.9)	1.0	0.8
Bloomberg US Treasury Long	(7.3)	(11.8)	(8.6)	(9.1)	(15.7)	(2.8)	0.8
Bloomberg US Treasury	(2.2)	(3.1)	(1.5)	(0.8)	(5.8)	(0.1)	0.6
Issuer							
Bloomberg US MBS	(3.2)	(4.1)	(2.3)	(0.2)	(5.1)	(0.8)	0.6
Bloomberg US Corp. High Yield	(1.2)	0.5	5.9	10.3	1.8	3.0	4.2
Bloomberg US Agency Interim	(0.3)	0.2	1.6	2.5	(2.0)	0.7	0.9
Bloomberg US Credit	(2.6)	(3.0)	0.0	3.5	(4.8)	0.9	2.1

OTHER

Index							
Bloomberg Commodity	(0.7)	4.7	(3.4)	(1.3)	16.2	6.1	(0.7)
Wilshire US REIT	(6.5)	(6.4)	(0.2)	3.9	5.7	2.9	6.0
CS Leveraged Loans	0.9	3.4	9.9	12.5	5.9	4.3	4.3
S&P Global Infrastructure	(4.7)	(7.3)	(3.7)	6.9	7.3	4.1	5.1
Alerian MLP	2.4	9.4	20.2	32.7	43.5	6.4	1.7
Regional Index							
JPM EMBI Global Div	(2.6)	(2.2)	1.8	10.0	(4.6)	(0.4)	2.5
JPM GBI-EM Global Div	(3.4)	(3.3)	4.3	13.1	(2.7)	(0.0)	(0.8)
Hedge Funds							
HFRI Composite	(0.2)	0.8	4.3	6.7	6.9	5.0	4.6
HFRI FOF Composite	(0.2)	0.7	3.0	4.8	3.8	3.4	3.3
Currency (Spot)							
Euro	(2.5)	(3.0)	(0.8)	8.1	(3.4)	(1.8)	(2.4)
Pound Sterling	(3.7)	(4.0)	1.5	9.3	(1.9)	(1.3)	(2.8)
Yen	(2.4)	(3.1)	(11.6)	(3.0)	(10.9)	(5.3)	(4.1)

Source: Morningstar, HFRI, as of 9/30/23.

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.

Notices & disclosures

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Imperial County Employees' Retirement System

Investment Performance Review
Period Ending: September 30, 2023



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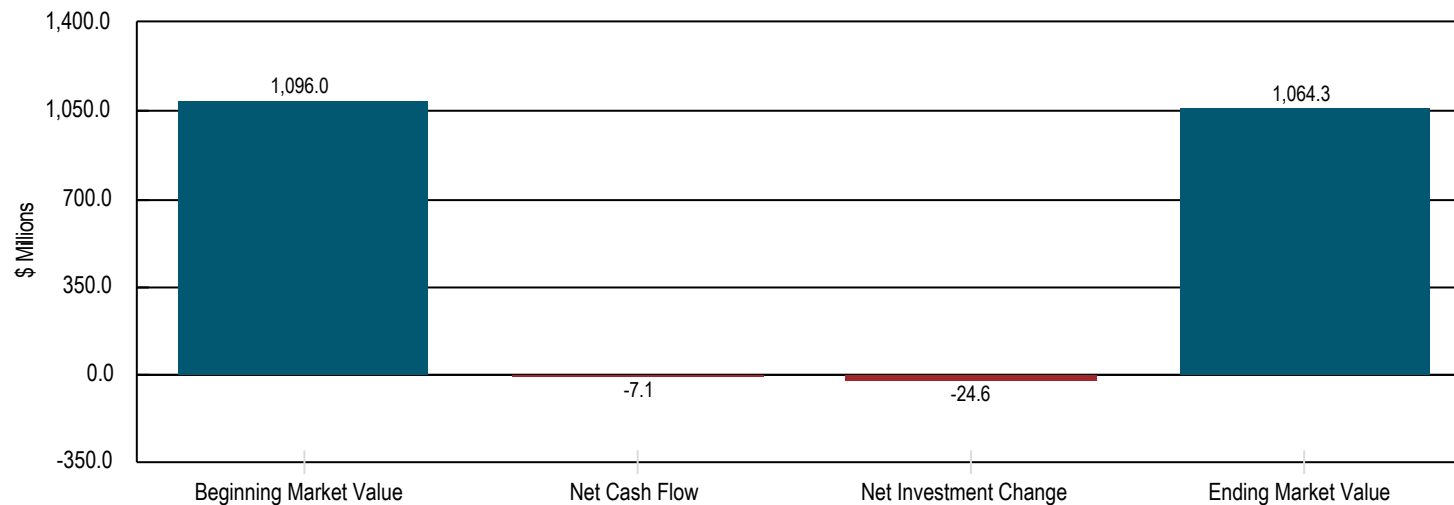
Total Fund
Portfolio Reconciliation

Imperial County Employees' Retirement System
Period Ending: September 30, 2023

Portfolio Reconciliation

	Last Three Months	Fiscal Year-To-Date	One Year
Beginning Market Value	\$1,095,987,714	\$1,095,987,714	\$986,640,236
Net Cash Flows	-\$7,092,008	-\$7,092,008	-\$17,893,925
Net Investment Change	-\$24,573,381	-\$24,573,381	\$95,576,014
Ending Market Value	\$1,064,322,325	\$1,064,322,325	\$1,064,322,325

Change in Market Value
Last Three Months



Contributions and withdrawals may include intra-account transfers between managers/funds. Fee transactions are excluded from Portfolio Reconciliation.

Total Fund
Executive Summary (Net of Fees)

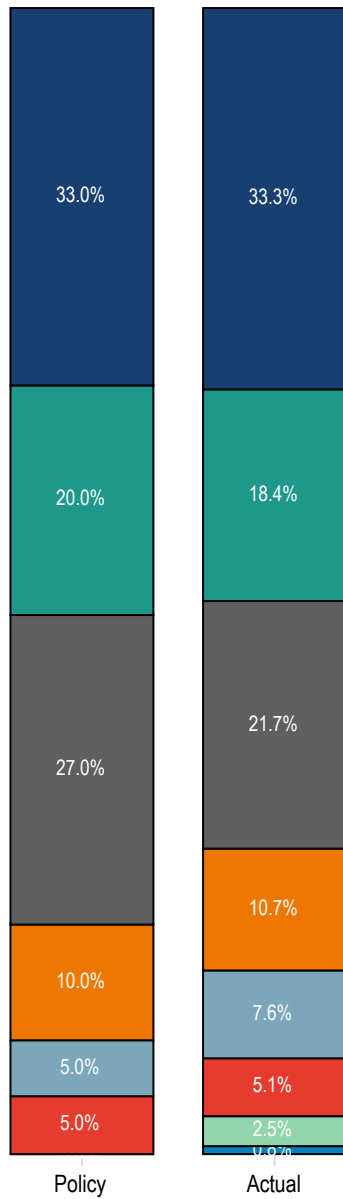
Imperial County Employees' Retirement System
Period Ending: September 30, 2023

	Market Value	% of Portfolio	QTD	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Fund	1,064,322,325	100.0	-2.3	4.8	-2.3	9.6	5.7	5.7	6.4
<i>Policy Index</i>			-2.6	4.9	-2.6	10.7	5.1	6.0	6.6
<i>InvMetrics Public DB Rank</i>			23	52	23	73	20	20	43
Total Domestic Equity	354,500,530	33.3	-3.2	12.4	-3.2	20.5	9.4	9.2	11.0
<i>Russell 3000 Index</i>			-3.3	12.4	-3.3	20.5	9.4	9.1	11.3
Total International Equity	195,554,363	18.4	-3.7	6.8	-3.7	23.5	5.4	2.8	3.6
<i>MSCI AC World ex USA Index</i>			-3.7	5.8	-3.7	21.0	4.2	3.1	3.8
Total Fixed Income	230,847,457	21.7	-2.5	-0.2	-2.5	1.5	-4.2	0.8	1.7
<i>Blmbg. U.S. Aggregate Index</i>			-3.2	-1.2	-3.2	0.6	-5.2	0.1	1.1
Total Real Estate	113,712,751	10.7	-2.1	-9.8	-2.1	-13.4	5.4	4.9	7.2
<i>NCREIF Property Index</i>			-1.4	-5.1	-1.4	-8.4	6.0	5.3	7.4
Total Private Equity	81,033,491	7.6	1.9	4.5	1.9	3.5	23.0	18.7	18.2
<i>Private Equity Benchmark</i>			1.9	4.5	1.9	3.5	23.0	18.7	19.1
Total Private Credit	53,985,851	5.1	1.4	6.4	1.4	9.0	11.6	9.5	N/A
<i>Private Credit Benchmark</i>			1.4	6.4	1.4	9.0	12.7	10.2	N/A
Total Opportunistic	26,538,969	2.5	3.6	10.6	3.6	10.9	14.8	6.6	9.3
<i>Assumption Rate + 1%</i>			2.1	6.3	2.1	8.5	8.5	8.5	N/A

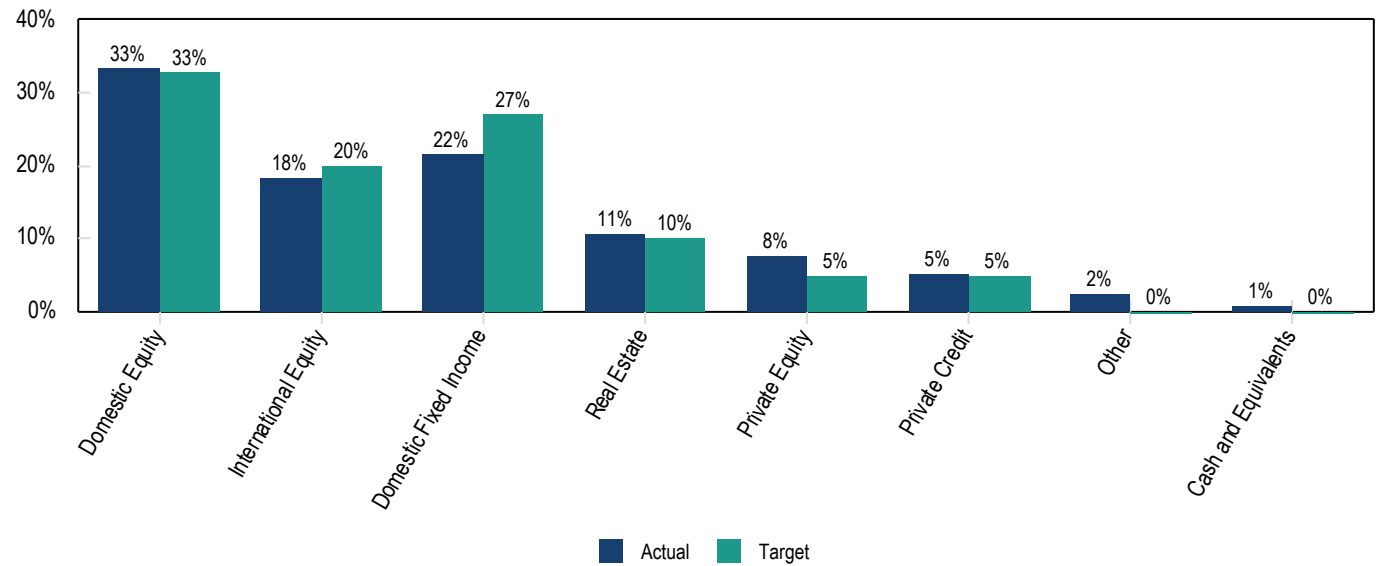
New Policy Index (as of 8/1/2020): 33% Russell 3000, 20% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 10% NCREIF Property, 5% Private Equity Benchmark, 5% Private Credit Benchmark. Prior quarter Private Equity returns, and index data are used. All returns are Net of fees. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. As of 10/1/20 the SAA Target for equity changed to 33% Russell 3000 + 20% ACWI ex-US (see Exhibit B attached).

Total Fund
Asset Allocation vs. Policy

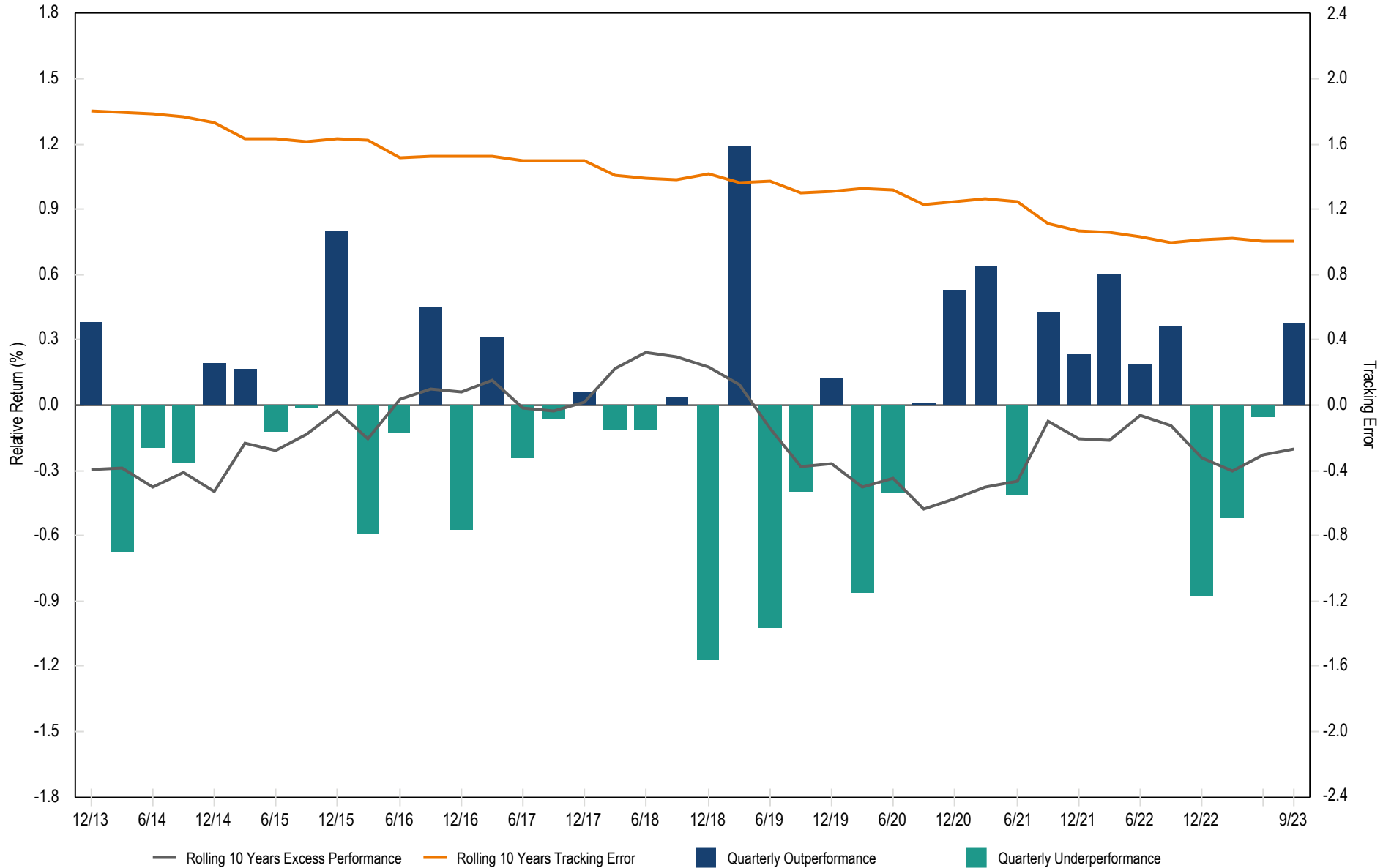
Imperial County Employees' Retirement System
Period Ending: September 30, 2023



	Current Balance (\$)	Current Allocation (%)	Policy Allocation (%)	Excess Allocation (%)	Policy Range (%)	Within IPS Range?
Domestic Equity	354,500,530	33.3	33.0	0.3	23.0 - 43.0	Yes
International Equity	195,554,363	18.4	20.0	-1.6	10.0 - 30.0	Yes
Domestic Fixed Income	230,847,457	21.7	27.0	-5.3	17.0 - 40.0	Yes
Real Estate	113,712,751	10.7	10.0	0.7	5.0 - 15.0	Yes
Private Equity	81,033,491	7.6	5.0	2.6	0.0 - 10.0	Yes
Private Credit	53,985,851	5.1	5.0	0.1	0.0 - 10.0	Yes
Other	26,538,969	2.5	0.0	2.5	0.0 - 10.0	Yes
Cash and Equivalents	8,148,914	0.8	0.0	0.8	0.0 - 0.0	No
Total	1,064,322,325	100.0	100.0	0.0		



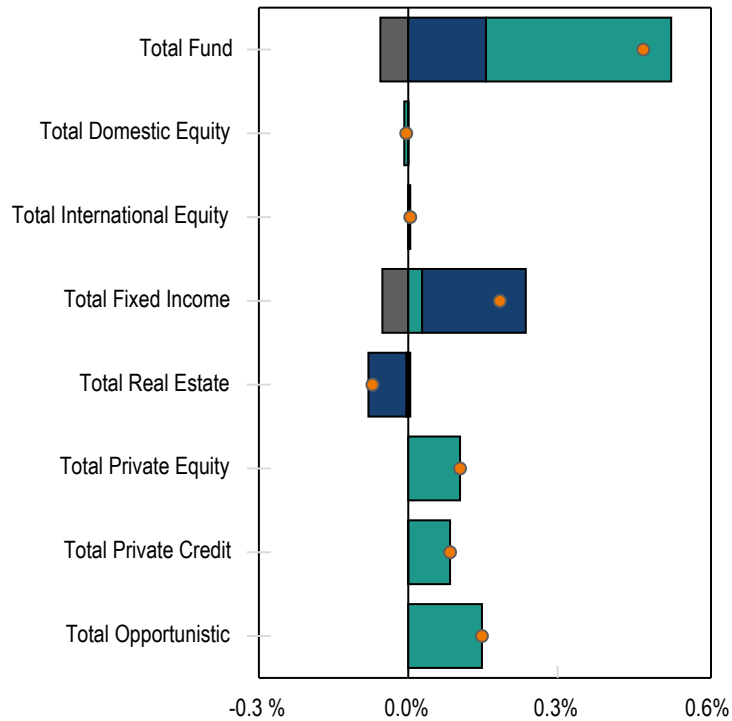
Rolling Annualized Excess Performance and Tracking Error



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

Imperial County Employees' Retirement System
 Period Ending: September 30, 2023

Attribution Effects
 Last Three Months



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

Performance Attribution

	Quarter	YTD
Wtd. Actual Return	-2.3	4.8
Wtd. Index Return	-2.7	4.8
Excess Return	0.5	0.0
Selection Effect	0.2	-0.1
Allocation Effect	0.4	0.2
Interaction Effect	-0.1	-0.2

Attribution Summary
 Last Three Months

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Domestic Equity	-3.2	-3.3	0.0	0.0	0.0	0.0	0.0
Total International Equity	-3.7	-3.7	0.0	0.0	0.0	0.0	0.0
Total Fixed Income	-2.5	-3.2	0.7	0.2	0.0	-0.1	0.2
Total Real Estate	-2.1	-1.4	-0.7	-0.1	0.0	0.0	-0.1
Total Private Equity	1.9	1.9	0.0	0.0	0.1	0.0	0.1
Total Private Credit	1.4	1.4	0.0	0.0	0.1	0.0	0.1
Total Opportunistic	3.6	2.1	1.5	0.0	0.1	0.0	0.1
Total Fund	-2.3	-2.7	0.5	0.2	0.4	-0.1	0.5

Weighted returns shown in attribution analysis may differ from actual returns.

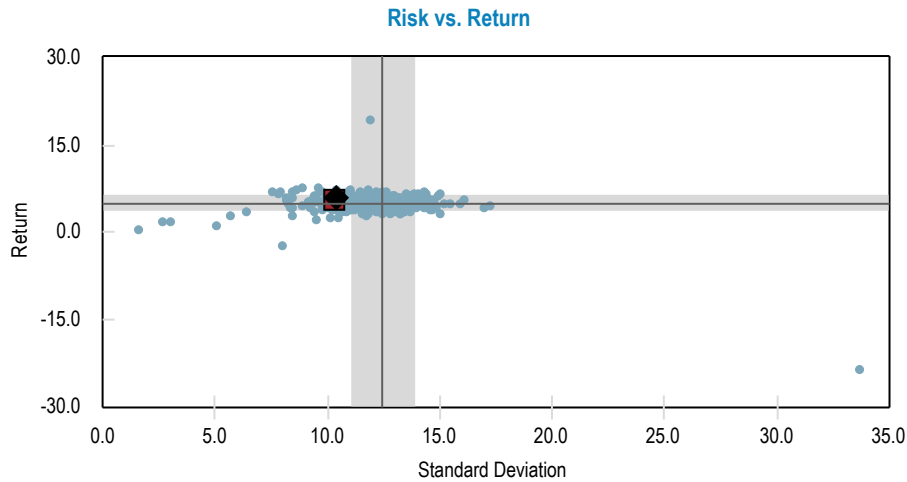
Total Fund

Risk Analysis - 5 Years (Net of Fees)

Imperial County Employees' Retirement System

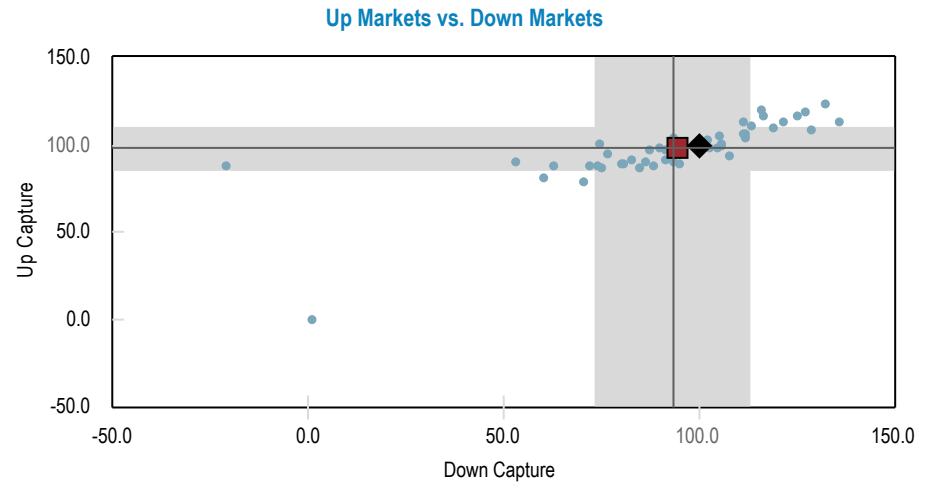
Period Ending: September 30, 2023

	Annualized Return	Annualized Excess Return	Annualized Standard Deviation	Annualized Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
Total Fund	5.71	4.40	10.32	-0.18	0.99	1.09	0.99	0.42	-0.22	98.83	100.20



● InvMetrics Public DB ■ Total Fund

	Return	Standard Deviation
■ Total Fund	5.71	10.32
◆ Policy Index	5.96	10.36
— Median	5.07	12.46
Population	460	460



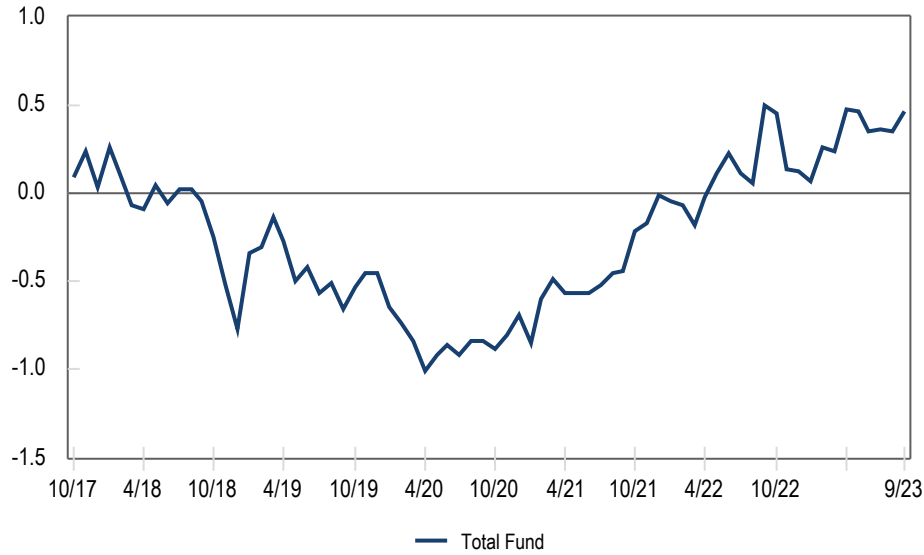
● InveMetrics Public DB ■ Total Fund

	Up Capture	Down Capture
■ Total Fund	98.98	94.55
◆ Policy Index	100.00	100.00
— Median	98.11	93.14
Population	47	47

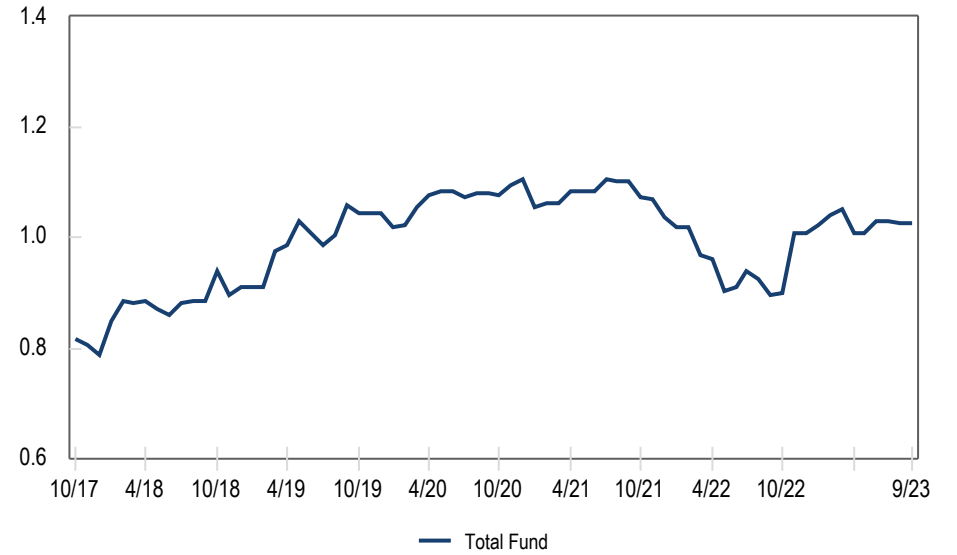
Total Fund
Rolling Risk Statistics

Imperial County Employees' Retirement System
Period Ending: September 30, 2023

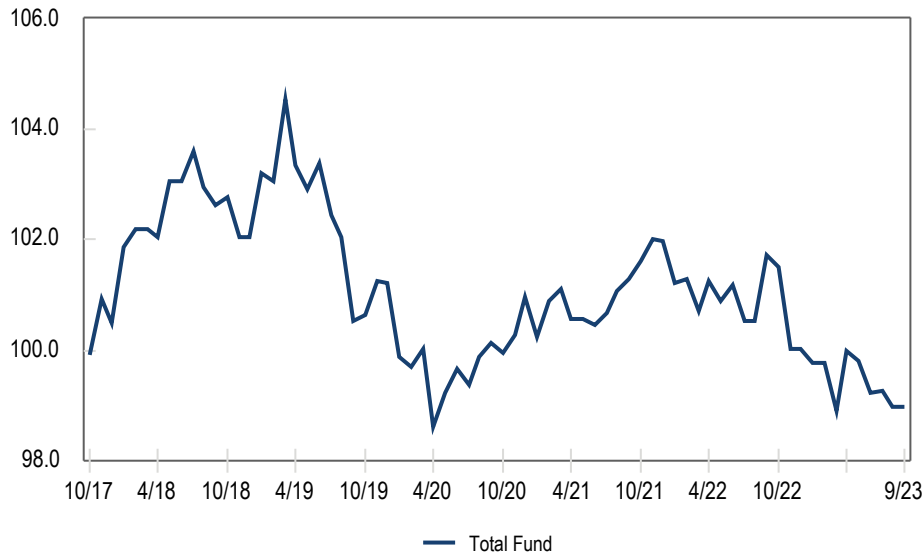
Rolling Information Ratio



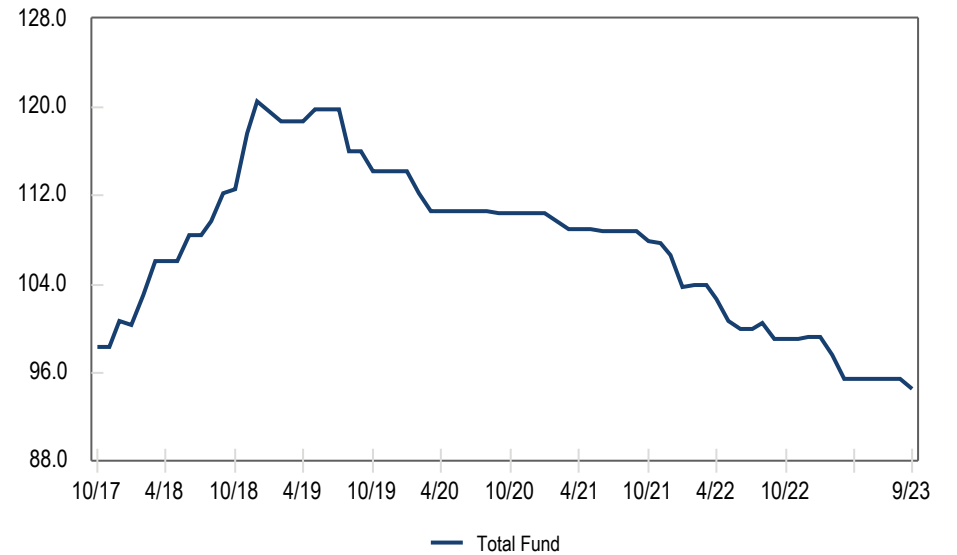
Rolling Tracking Error



Rolling Up Market Capture Ratio (%)



Rolling Down Market Capture Ratio (%)



Total Fund
Manager Summary (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: September 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Total Fund	1,064,322,325	100.0	-2.3	4.8	-2.3	9.6	5.7	5.7	6.4	-11.6	15.8	12.3	17.9	-4.1		Apr-89
<i>Policy Index</i>			-2.6	4.9	-2.6	10.7	5.1	6.0	6.6	-11.9	14.8	13.3	18.0	-2.7		
<i>InvMetrics Public DB Rank</i>			23	52	23	73	20	20	43	23	21	63	75	40		
Total Domestic Equity	354,500,530	33.3	-3.2	12.4	-3.2	20.5	9.4	9.2	11.0	-19.2	25.7	21.0	31.1	-5.2		Mar-89
<i>Russell 3000 Index</i>			-3.3	12.4	-3.3	20.5	9.4	9.1	11.3	-19.2	25.7	20.9	31.0	-5.2		
BlackRock Russell 3000	354,500,530	33.3	-3.2	12.4	-3.2	20.5	9.4	9.2	-	-19.2	25.7	21.0	31.1	-5.2	11.3	Dec-15
<i>Russell 3000 Index</i>			-3.3	12.4	-3.3	20.5	9.4	9.1	-	-19.2	25.7	20.9	31.0	-5.2	11.2	
<i>eV US All Cap Core Equity Rank</i>			46	23	46	37	48	34	-	59	54	42	39	46		
Total International Equity	195,554,363	18.4	-3.7	6.8	-3.7	23.5	5.4	2.8	3.6	-15.4	10.1	8.1	20.7	-14.3		Dec-94
<i>MSCI AC World ex USA Index</i>			-3.7	5.8	-3.7	21.0	4.2	3.1	3.8	-15.6	8.3	11.1	22.1	-13.8		
BlackRock International Equity	150,846,141	14.2	-4.1	7.4	-4.1	26.1	6.2	3.6	4.1	-14.1	11.6	8.1	22.4	-13.5	6.5	Jul-03
<i>MSCI EAFE (Net)</i>			-4.1	7.1	-4.1	25.6	5.8	3.2	3.8	-14.5	11.3	7.8	22.0	-13.8	6.5	
<i>eV All EAFE Equity Rank</i>			50	34	50	33	37	33	48	36	52	52	50	29		
DFA Emerging Markets Value	26,022,823	2.4	0.2	8.7	0.2	19.8	9.7	2.7	3.1	-10.7	12.4	2.7	9.6	-11.9	3.6	Jan-07
<i>MSCI Emerging Markets Value (Net)</i>			-0.8	5.7	-0.8	16.0	4.4	0.4	1.2	-15.8	4.0	5.5	12.0	-10.7	2.8	
<i>eV Emg Mkts All Cap Value Equity Rank</i>			19	33	19	53	31	71	76	38	19	82	93	38		
Harding Loevner Emerging Markets	18,685,400	1.8	-5.4	-0.8	-5.4	9.9	-5.8	-3.1	-	-28.1	-4.3	12.4	24.0	-19.5	0.1	Aug-16
<i>MSCI Emerging Markets Growth Index</i>			-4.9	-1.6	-4.9	8.0	-7.0	0.9	-	-23.7	-8.2	31.6	25.4	-18.0	4.1	
<i>eV Emg Mkts All Cap Growth Equity Rank</i>			62	57	62	39	62	99	-	74	54	96	52	69		
Total Fixed Income	230,847,457	21.7	-2.5	-0.2	-2.5	1.5	-4.2	0.8	1.7	-14.2	0.6	9.8	9.5	-0.8		Jun-94
<i>Blmbg. U.S. Aggregate Index</i>			-3.2	-1.2	-3.2	0.6	-5.2	0.1	1.1	-13.0	-1.5	7.5	8.7	0.0		
Income Research & Management	95,052,643	8.9	-	-	-	-	-	-	-	-	-	-	-	-	-	Sep-23
<i>Blmbg. U.S. Aggregate Index</i>			-	-	-	-	-	-	-	-	-	-	-	-	-2.5	
<i>eV US Core Plus Fixed Inc Rank</i>			-	-	-	-	-	-	-	-	-	-	-	-		
MacKay Shields Core Plus Opportunities	95,259,660	9.0	-2.7	-0.4	-2.7	2.0	-4.7	0.5	-	-14.5	-0.5	9.9	9.7	-1.0	0.8	Mar-15
<i>Blmbg. U.S. Aggregate Index</i>			-3.2	-1.2	-3.2	0.6	-5.2	0.1	-	-13.0	-1.5	7.5	8.7	0.0	0.5	
<i>eV US Core Plus Fixed Inc Rank</i>			30	51	30	39	66	55	-	86	52	22	52	76		
BlackRock US TIPS	40,535,154	3.8	-2.6	-0.6	-2.6	1.3	-2.0	2.2	1.8	-11.9	5.9	11.2	8.5	-1.2	3.3	Apr-07
<i>Blmbg. U.S. TIPS</i>			-2.6	-0.8	-2.6	1.2	-2.0	2.1	1.7	-11.8	6.0	11.0	8.4	-1.3	3.3	
<i>eV US TIPS / Inflation Fixed Inc Rank</i>			69	46	69	59	56	56	23	67	26	32	32	40		

Tortoise is now Ducenta Squared. TSSP Adjacent funded 4/16/2020. Portfolio Advisors, Lone Star XI, Ascribe Opportunities IV, and Crescent Direct Lending market value as of 6/30/2023. PIMCO BRAVO liquidated 12/30/2022. Income Research & Management replaced Ducenta 9/2023.

Total Fund
 Manager Summary (Net of Fees)

Imperial County Employees' Retirement System
 Period Ending: September 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Total Real Estate	113,712,751	10.7	-2.1	-9.8	-2.1	-13.4	5.4	4.9	7.2	8.5	18.4	2.1	5.7	7.5		Dec-06
NCREIF Property Index			-1.4	-5.1	-1.4	-8.4	6.0	5.3	7.4	5.5	17.7	1.6	6.4	6.7	6.4	
NCREIF ODCE Net			-2.1	-8.1	-2.1	-12.9	6.2	4.7	7.2	6.5	21.0	0.3	4.4	7.4	5.0	
ASB Real Estate	26,520,637	2.5	-3.9	-14.9	-3.9	-18.3	2.8	2.6	5.8	10.7	14.2	1.5	3.0	6.6	6.2	Jan-13
NCREIF Property Index			-1.4	-5.1	-1.4	-8.4	6.0	5.3	7.4	5.5	17.7	1.6	6.4	6.7	7.7	
NCREIF ODCE Net			-2.1	-8.1	-2.1	-12.9	6.2	4.7	7.2	6.5	21.0	0.3	4.4	7.4	7.6	
Clarion Lion	30,046,088	2.8	-1.1	-11.6	-1.1	-16.2	6.9	5.9	8.2	9.6	23.6	2.3	6.8	8.6	5.0	Jan-07
NCREIF Property Index			-1.4	-5.1	-1.4	-8.4	6.0	5.3	7.4	5.5	17.7	1.6	6.4	6.7	6.4	
NCREIF ODCE Net			-2.1	-8.1	-2.1	-12.9	6.2	4.7	7.2	6.5	21.0	0.3	4.4	7.4	5.0	
ARA American Strategic Value Realty	55,137,076	5.2	-1.8	-6.4	-1.8	-9.7	6.2	5.9	-	6.8	18.6	2.4	7.8	-	6.3	Jan-18
NCREIF Property Index +2%			-0.9	-3.7	-0.9	-6.6	8.2	7.4	-	7.6	20.0	3.6	8.5	8.9	7.6	
NCREIF ODCE Net			-2.1	-8.1	-2.1	-12.9	6.2	4.7	-	6.5	21.0	0.3	4.4	7.4	5.1	
1221 State St. Corp	2,008,951	0.2	0.0	0.0	0.0	0.0	0.0	1.5	2.4	0.0	0.0	0.0	7.9	0.0	1.3	Jun-08
Total Private Equity	81,033,491	7.6	1.9	4.5	1.9	3.5	23.0	18.7	18.2	-0.8	57.3	23.0	13.3	21.3		Mar-10
Harbourvest Buyout IX	6,135,916	0.6	2.6	7.5	2.6	3.4	19.2	17.7	17.8	-6.0	49.6	21.3	17.6	23.6	-	Jun-11
Harbourvest Credit Ops IX	971,328	0.1	0.7	4.4	0.7	6.5	16.2	11.2	12.1	11.0	32.1	0.3	8.0	14.4	-	Jun-11
Harbourvest International PE VI	1,602,796	0.2	0.1	4.2	0.1	10.5	10.8	9.2	12.9	-16.7	41.2	17.2	6.0	14.8	-	Mar-10
Harbourvest Venture IX	4,913,158	0.5	1.1	-6.5	1.1	-7.6	24.4	24.8	21.3	-15.9	91.1	52.4	24.6	25.9	-	Jun-11
Harbourvest 2017 Global Fund	27,374,319	2.6	2.2	4.5	2.2	2.7	24.3	17.1	-	-1.3	61.6	18.8	8.8	20.9	18.7	Oct-17
Harbourvest 2018 Global Fund	21,602,977	2.0	1.0	5.0	1.0	6.2	19.2	-	-	9.7	37.0	16.0	14.3	-	16.8	Jan-19
Harbourvest 2019 Global Fund	18,432,997	1.7	2.6	6.5	2.6	4.2	26.5	-	-	5.4	49.6	34.6	-	-	23.7	Dec-19
Russell 3000 + 3%			-2.5	14.9	-2.5	24.1	12.7	-	-	-16.8	29.4	24.5	-	-	12.8	
Total Private Credit	53,985,851	5.1	1.4	6.4	1.4	9.0	11.6	9.5	-	8.1	16.1	4.8	9.4	6.7		Oct-17
Portfolio Advisors Credit Strategies Fund	11,779,639	1.1		2.1	0.0	4.5	13.6	10.1	-	7.7	26.8	3.9	8.2	6.6	9.1	Oct-17
Bloomberg High Yield +2% (Lagged)			2.2	11.4	2.2	11.2	5.2	5.4	-	-12.4	13.5	5.3	8.5	5.1	5.1	
Crescent Direct Lending Levered Fund II	2,859,131	0.3		2.3	0.0	8.1	9.3	9.0	-	10.9	11.5	6.0	12.4	-	8.8	Mar-18
Bloomberg High Yield +2% (Lagged)			2.2	11.4	2.2	11.2	5.2	5.4	-	-12.4	13.5	5.3	8.5	-	5.1	
Audax Direct Lending Fund A	5,240,279	0.5	2.9	8.0	2.9	11.6	18.1	17.3	-	15.5	23.1	10.1	16.3	-	17.3	Oct-18
Bloomberg High Yield +2% (Lagged)			2.2	11.4	2.2	11.2	5.2	5.4	-	-12.4	13.5	5.3	8.5	-	5.4	
Ares Capital Europe IV	6,875,446	0.6	1.4	6.4	1.4	8.9	9.3	10.1	-	7.0	11.8	8.2	13.1	-	9.7	Aug-18
Bloomberg High Yield +2% (Lagged)			2.2	11.4	2.2	11.2	5.2	5.4	-	-12.4	13.5	5.3	8.5	-	5.4	
Lone Star XI	3,303,652	0.3		6.9	0.0	10.1	90.5	-	-	13.7	538.0	-62.8	-	-	18.1	Jun-19
Bloomberg High Yield +2% (Lagged)			2.2	11.4	2.2	11.2	5.2	-	-	-12.4	13.5	5.3	-	-	5.0	

Tortoise is now Ducenta Squared. TSSP Adjacent funded 4/16/2020. Portfolio Advisors, Lone Star XI, Ascribe Opportunities IV, and Crescent Direct Lending market value as of 6/30/2023. PIMCO BRAVO liquidated 12/30/2022. Income Research & Management replaced Ducenta 9/2023.

Total Fund
 Manager Summary (Net of Fees)

Imperial County Employees' Retirement System
 Period Ending: September 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Sixth Street Diversified Credit	18,961,608	1.8	2.8	10.4	2.8	11.7	8.6	-	-	13.2	-1.4	-	-	-	5.9	May-20
<i>Bloomberg High Yield +2% (Lagged)</i>			2.2	11.4	2.2	11.2	5.2	-	-	-12.4	13.5	-	-	-	3.6	
Ascribe Opportunities Fund IV	4,966,096	0.5		5.3	0.0	8.2	-202.7	-	-	5.6	-17.3	-	-	-	-198.3	Jul-20
<i>Bloomberg High Yield +2% (Lagged)</i>			2.2	11.4	2.2	11.2	5.2	-	-	-12.4	13.5	-	-	-	6.8	
Total Opportunistic	26,538,969	2.5	3.6	10.6	3.6	10.9	14.8	6.6	9.3	10.4	18.6	0.9	-10.7	32.0		Dec-07
KKR Mezzanine Partners	1,690,253	0.2	5.7	26.0	5.7	20.1	0.2	-3.5	3.1	-31.0	10.5	-15.2	-4.2	25.3	5.5	Jun-11
TSSP Adjacent Opportunities Partners	24,848,716	2.3	3.4	9.7	3.4	10.3	18.9	-	-	16.2	26.1	-	-	-	17.7	Apr-20
Total Cash	8,148,914	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		Sep-07
Cash Account	8,148,914	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	Sep-07
<i>90 Day U.S. Treasury Bill</i>			1.3	3.6	1.3	4.5	1.7	1.7	1.1	1.5	0.0	0.7	2.3	1.9	0.9	

Tortoise is now Ducenta Squared. TSSP Adjacent funded 4/16/2020. Portfolio Advisors, Lone Star XI, Ascribe Opportunities IV, and Crescent Direct Lending market value as of 6/30/2023. PIMCO BRAVO liquidated 12/30/2022. Income Research & Management replaced Ducenta 9/2023.

Investment Manager
Risk Analysis by Manager - 3 Years (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: September 30, 2023

	Annualized Return	Annualized Excess Return	Annualized Standard Deviation	Annualized Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
BlackRock Russell 3000	9.38	8.91	17.90	0.00	1.00	0.02	1.00	0.50	-0.12	99.99	99.99
BlackRock International Equity	6.15	5.89	18.02	0.37	1.00	0.33	1.00	0.33	1.16	101.43	100.10
DFA Emerging Markets Value	9.68	8.98	16.88	5.24	0.96	3.39	0.96	0.53	1.45	106.08	81.84
Harding Loevner Emerging Markets	-5.83	-5.85	19.17	0.78	0.91	8.42	0.81	-0.31	0.15	97.29	93.40
Mackay Shields Core Plus Opportunities	-4.66	-6.23	6.70	1.02	1.08	1.28	0.97	-0.93	0.48	111.65	100.59
BlackRock US TIPS	-1.97	-3.45	6.78	0.01	1.00	0.16	1.00	-0.50	0.04	100.66	100.48
ASB Real Estate	2.78	1.45	8.89	-4.03	1.19	4.22	0.79	0.16	-0.70	107.88	227.17
Clarion Lion	6.89	5.52	10.31	-1.81	1.48	4.37	0.92	0.52	0.25	144.04	198.75
ARA American Strategic Value Realty	6.16	4.55	7.06	-2.15	1.04	1.30	0.97	0.62	-1.43	89.04	125.28
Portfolio Advisors Credit Strategies Fund	13.61	11.43	7.74	13.54	0.06	10.95	0.00	1.44	0.70	71.94	-41.82
Crescent Direct Lending Levered Fund II	9.32	7.37	4.95	10.21	-0.13	10.54	0.05	1.47	0.35	39.46	-45.94
Audax Direct Lending Fund A	18.13	15.44	8.63	16.85	0.27	10.30	0.07	1.76	1.14	98.53	-46.89
Ares Capital Europe IV	9.32	7.42	5.90	8.70	0.14	9.21	0.04	1.24	0.40	56.26	-18.48
Lone Star XI	90.52	90.70	93.94	137.26	0.52	93.92	0.00	0.96	0.93	676.21	-11.39

Investment Manager
Risk Analysis by Manager - 5 Years (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: September 30, 2023

	Annualized Return	Annualized Excess Return	Annualized Standard Deviation	Annualized Alpha	Annualized Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
BlackRock Russell 3000	9.38	8.91	17.90	0.00	1.00	0.02	1.00	0.50	-0.12	99.99	99.99
BlackRock International Equity	6.15	5.89	18.02	0.37	1.00	0.33	1.00	0.33	1.16	101.43	100.10
DFA Emerging Markets Value	9.68	8.98	16.88	5.24	0.96	3.39	0.96	0.53	1.45	106.08	81.84
Harding Loevner Emerging Markets	-5.83	-5.85	19.17	0.78	0.91	8.42	0.81	-0.31	0.15	97.29	93.40
Mackay Shields Core Plus Opportunities	-4.66	-6.23	6.70	1.02	1.08	1.28	0.97	-0.93	0.48	111.65	100.59
BlackRock US TIPS	-1.97	-3.45	6.78	0.01	1.00	0.16	1.00	-0.50	0.04	100.66	100.48
ASB Real Estate	2.78	1.45	8.89	-4.03	1.19	4.22	0.79	0.16	-0.70	107.88	227.17
Clarion Lion	6.89	5.52	10.31	-1.81	1.48	4.37	0.92	0.52	0.25	144.04	198.75
ARA American Strategic Value Realty	6.16	4.55	7.06	-2.15	1.04	1.30	0.97	0.62	-1.43	89.04	125.28
Portfolio Advisors Credit Strategies Fund	13.61	11.43	7.74	13.54	0.06	10.95	0.00	1.44	0.70	71.94	-41.82
Crescent Direct Lending Levered Fund II	9.32	7.37	4.95	10.21	-0.13	10.54	0.05	1.47	0.35	39.46	-45.94
Audax Direct Lending Fund A	18.13	15.44	8.63	16.85	0.27	10.30	0.07	1.76	1.14	98.53	-46.89
Ares Capital Europe IV	9.32	7.42	5.90	8.70	0.14	9.21	0.04	1.24	0.40	56.26	-18.48
Lone Star XI	90.52	90.70	93.94	137.26	0.52	93.92	0.00	0.96	0.93	676.21	-11.39

Private Equity
Non Marketable Securities Overview

Imperial County Employees' Retirement System
Period Ending: September 30, 2023

Vintage	Manager & Fund Name	Estimated 9/30/2023 Market Value ³	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value for IRR	Distrib./ Paid-In (DPI) ¹	Tot. Value/ Paid-In (TVPI) ²	Net IRR Since Inception ⁴	IRR Date		
2011	HarbourVest IX-Buyout	\$6,135,916	\$10,000,000	\$8,525,000	85%	\$1,475,000	\$12,942,182	\$5,953,294	151.8%	223.8%	18.3%	6/30/23		
2011	HarbourVest IX-Credit	\$971,328	\$2,000,000	\$1,641,541	82%	\$358,459	\$1,806,721	\$963,189	110.1%	169.2%	13.3%	12/31/22		
2008	HarbourVest Int'l VI ⁵	\$1,602,796	\$3,712,930	\$2,630,078	71%	\$1,082,852	\$4,184,338	\$1,792,538	159.1%	220.0%	14.5%	12/31/22		
2011	HarbourVest IX-Venture	\$4,913,158	\$4,000,000	\$3,800,000	95%	\$200,000	\$484,502	\$5,553,519	12.8%	142.0%	22.1%	12/31/22		
2017	HarbourVest 2017 Global	\$27,374,319	\$30,000,000	\$19,364,051	65%	\$10,635,949	\$10,767,783	\$24,826,789	55.6%	197.0%	21.8%	12/31/22		
2018	HarbourVest 2018 Global	\$21,602,977	\$20,000,000	\$10,938,043	55%	\$9,061,957	\$3,906,051	\$21,172,519	35.7%	233.2%	23.7%	6/30/23		
2019	HarbourVest 2019 Global	\$18,432,997	\$20,000,000	\$13,075,273	65%	\$6,924,727	\$2,809,888	\$16,756,917	21.5%	162.5%	31.5%	12/31/22		
Total Illiquid Private Equity		\$81,033,491	\$89,712,930	\$59,973,986	67%	\$29,738,944	\$36,901,465	\$77,018,765	61.5%	196.6%				
% of Portfolio (Market Value)		7.6%												
									Management Fee	Admin Fee	Interest Expense	Other Expense	Total Expense⁶	
									HarbourVest IX-Buyout	\$20,196	\$0	\$2,250	\$2,445	\$24,891
									HarbourVest IX-Credit	\$4,037	\$0	\$320	\$962	\$5,319
									HarbourVest Int'l VI	\$2,019	\$0	\$304	\$399	\$2,722
									HarbourVest IX-Venture	\$8,095	\$0	\$1,331	\$483	\$9,909
									HarbourVest 2017 Global	\$66,000	\$0	\$8,385	\$106,941	\$181,326
									HarbourVest 2018 Global	\$43,635	\$0	\$11	\$44,503	\$88,149
									HarbourVest 2019 Global	\$43,878	\$0	\$1,555	\$44,559	\$89,992
										\$187,860	\$0	\$14,156	\$200,292	\$402,308

¹(DPI) is equal to (capital returned / capital called)

²(TVPI) is equal to (market value + capital returned) / capital called

³Last known market value + capital calls - distributions (preliminary MV's as of 9/30/2023)

⁴Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR figure is provided by its HarbourVest.

⁵HarbourVest International Private Equity Partners VI-Partnership Fund L.P. values are originally presented in euros and are calculated to dollars using XE™.

⁶All fees and expenses are for 2Q 2023

Private Credit
Non Marketable Securities Overview

Imperial County Employees' Retirement System
Period Ending: September 30, 2023

Vintage	Manager & Fund Name	Estimated 9/30/2023 Market Value ³	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value for IRR	Distrib./ Paid-In (DPI) ¹	Tot. Value/ Paid-In (TVPI) ²	Net IRR Since Inception ⁴	IRR Date			
2013	Portfolio Advisors Credit Strategies Fund	\$11,779,639	\$11,250,000	\$11,250,000	100%	\$0	\$3,114,163	\$12,166,621	27.7%	132.4%	10.0%	12/31/22			
2017	Crescent Direct Lending Levered Fund II	\$2,859,131	\$7,000,000	\$5,707,507	82%	\$1,292,493	\$4,418,451	\$2,770,407	77.4%	127.5%	9.2%	6/30/23			
2017	Audax Direct Lending Fund A	\$5,240,279	\$7,000,000	\$5,791,026	83%	\$1,208,974	\$2,814,239	\$5,227,810	48.6%	139.1%	15.5%	6/30/23			
2018	Ares Capital Europe IV	\$6,875,446	\$8,000,000	\$6,762,884	85%	\$1,237,116	\$2,287,014	\$6,896,335	33.8%	135.5%	11.4%	3/31/23			
2019	Lone Star Fund XI	\$3,303,652	\$5,750,000	\$4,123,329	72%	\$1,626,671	\$3,075,207	\$3,611,793	74.6%	154.7%	35.6%	6/30/23			
2019	Ascribe Opportunities IV	\$4,966,096	\$6,000,000	\$5,207,450	87%	\$792,550	\$717,773	\$5,351,462	13.8%	109.1%	13.8%	6/30/23			
2020	Sixth Street Diversified Credit	\$18,961,608	\$50,000,000	\$19,299,464	39%	\$30,700,536	\$3,306,085	NA	17.1%	115.4%	NA	NA			
Total Illiquid Private Credit		\$53,985,851	\$95,000,000	\$58,141,660	61.2%	\$36,858,340	\$19,732,932	\$36,024,428	33.9%	126.8%					
% of Portfolio (Market Value)		5.1%													
									Management Fee	Accrued Carried Interest	Admin Fee	Interest Expense	Other Expense	Total Expense⁵	
									Portfolio Advisors CSF	\$0	\$0	\$0	\$0	\$0	\$0
									Crescent Direct Lending II	\$59,107	\$9,858	\$10,094	\$0	\$0	\$79,059
									Audax Direct Lending A	\$28,914	\$0	\$0	\$0	\$16,994	\$45,908
									Ares Capital Europe IV	\$25,438	\$17,258	\$0	\$81,485	\$4,745	\$128,926
									Ascribe Opportunities IV	\$25,263	\$0	\$0	\$0	\$0	\$25,263
									Lone Star Fund XI	\$0	\$0	\$0	\$0	\$0	\$0
									Sixth Street Diversified Credit	\$0	\$0	\$0	\$0	\$0	\$0
										\$138,722	\$27,116	\$10,094	\$81,485	\$21,739	\$279,156

¹(DPI) is equal to (capital returned / capital called)

²(TVPI) is equal to (market value + capital returned) / capital called

³Last known market value + capital calls - distributions (preliminary MV's as of 9/30/2023)

⁴Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR figure is provided by its respective manager.

⁵All fees and expenses are for 2Q 2023

Portfolio Advisors first capital call issued 10/5/2017. Crescent Direct Lending first called 3/13/2018. Ares IV first called 8/13/2018. Audax Direct Lending first called 10/26/2018.

Opportunistic Non Marketable Securities Overview

Imperial County Employees' Retirement System Period Ending: September 30, 2023

Vintage	Manager & Fund Name	Estimated 9/30/2023 Market Value ³	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value for IRR	Distrib./ Paid-In (DPI) ¹	Tot. Value/ Paid-In (TVPI) ²	Net IRR Since Inception ⁵	IRR Date
2010	KKR Mezzanine ⁵	\$1,690,253	\$10,000,000	\$10,000,000	100%	\$0	\$14,153,380	\$1,372,673	141.5%	158.4%	9.2%	6/30/23
2020	TSSP Adjacent Opportunities Partners	\$24,848,716	\$40,000,000	\$22,392,130	56%	\$17,607,870	\$5,599,700	NA	25.0%	136.0%	NA	NA
Total Illiquid Opportunistic		\$26,538,969	\$50,000,000	\$32,392,130	65%	\$17,607,870	\$19,753,080	\$1,386,290	4.3%	65.3%		
% of Portfolio (Market Value)		2.5%										
							Management Fee	Accrued Carried Interest	Admin Fee	Interest Expense	Other Expense	Total Expense⁶
							KKR Mezzanine	\$0	\$0	\$0	\$8,516	\$14,776
							TSSP Adjacent Opportunities Pa	\$0	\$0	\$0	\$0	\$0
							\$6,260	\$0	\$0	\$0	\$8,516	\$14,776

¹(DPI) is equal to (capital returned / capital called)

²(TVPI) is equal to (market value + capital returned) / capital called

³Last known market value + capital calls - distributions (preliminary MV's as of 9/30/2023)

⁴Investment period ended, no further capital to be called.

⁵Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR figure is provided by its respective manager.

⁶All fees and expenses are for 2Q 2023

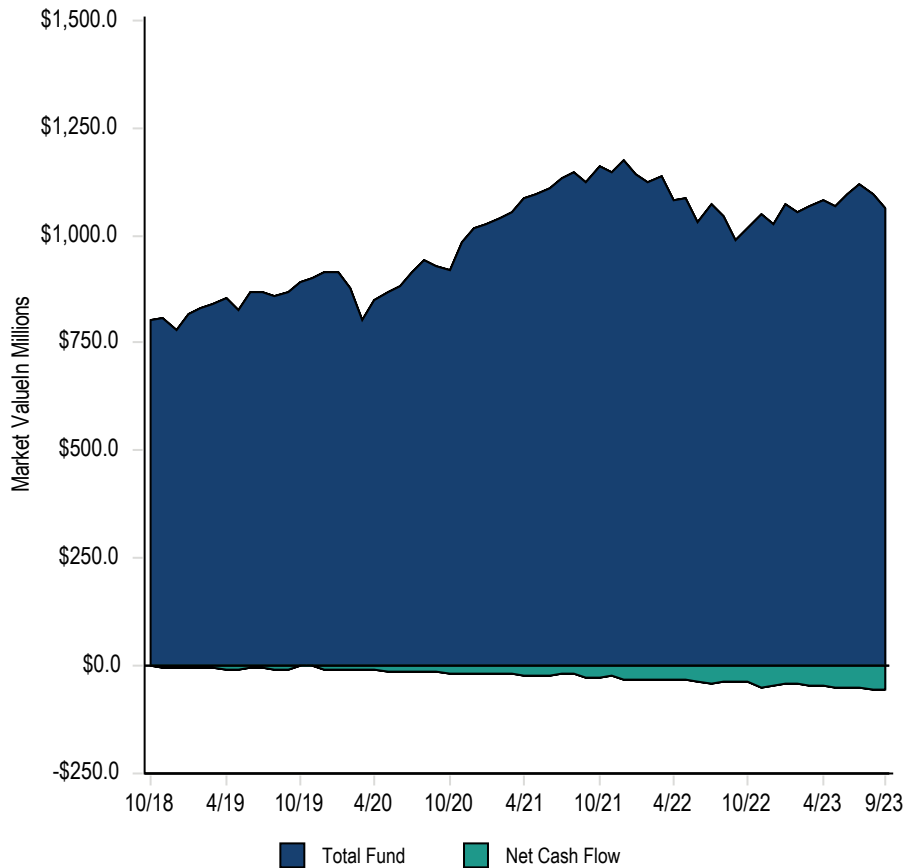
Total Fund
Cash Flow by Manager (Last Three Months)

Imperial County Employees' Retirement System
Period Ending: September 30, 2023

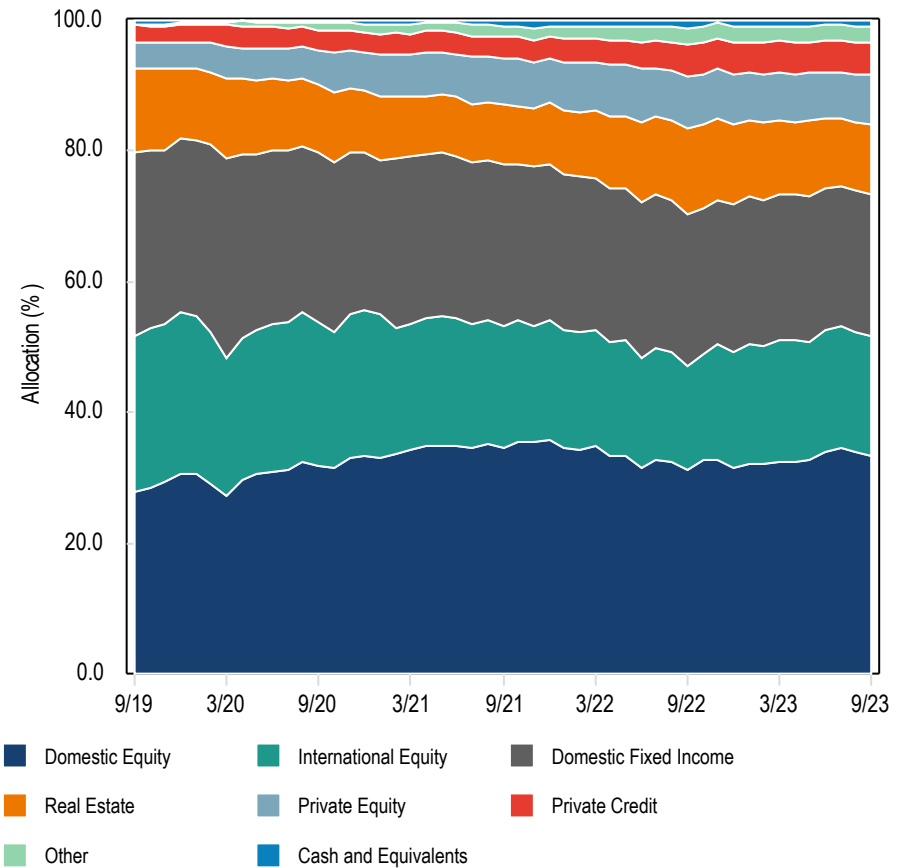
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flows	Capital Appreciation	Ending Market Value
BlackRock Russell 3000	\$373,453,095	\$0	-\$7,000,000	-\$7,000,000	-\$11,952,565	\$354,500,530
BlackRock International Equity	\$157,244,376	\$0	\$0	\$0	-\$6,398,236	\$150,846,141
DFA Emerging Markets Value	\$25,981,888	\$0	\$0	\$0	\$40,935	\$26,022,823
Harding Loevner Emerging Markets	\$19,692,080	\$0	\$0	\$0	-\$1,006,680	\$18,685,400
Ducenta Squared	\$98,678,322	\$0	-\$97,729,258	-\$97,729,258	-\$949,064	\$0
Income Research & Management	\$0	\$96,362,105	\$0	\$96,362,105	-\$1,309,462	\$95,052,643
MacKay Shields Core Plus Opportunities	\$97,905,762	\$0	\$0	\$0	-\$2,646,102	\$95,259,660
BlackRock US TIPS	\$41,601,319	\$0	\$0	\$0	-\$1,066,165	\$40,535,154
ASB Real Estate	\$27,602,011	\$0	\$0	\$0	-\$1,081,374	\$26,520,637
Clarion Lion	\$30,451,834	\$192,858	-\$276,226	-\$83,368	-\$322,378	\$30,046,088
ARA American Strategic Value Realty	\$56,175,865	\$0	\$0	\$0	-\$1,038,790	\$55,137,076
1221 State St. Corp	\$1,999,736	\$18,491	-\$9,525	\$8,966	\$248	\$2,008,951
Harbourvest Buyout IX	\$6,206,635	\$0	-\$234,050	-\$234,050	\$163,331	\$6,135,916
Harbourvest Credit Ops IX	\$923,063	\$41,541	\$0	\$41,541	\$6,724	\$971,328
Harbourvest International PE VI	\$1,665,445	\$0	-\$64,090	-\$64,090	\$1,441	\$1,602,796
Harbourvest Venture IX	\$5,029,033	\$0	-\$173,335	-\$173,335	\$57,460	\$4,913,158
Harbourvest 2017 Global Fund	\$25,164,244	\$1,664,051	\$0	\$1,664,051	\$546,024	\$27,374,319
Harbourvest 2018 Global Fund	\$21,651,129	\$0	-\$275,064	-\$275,064	\$226,912	\$21,602,977
Harbourvest 2019 Global Fund	\$18,070,734	\$0	-\$101,440	-\$101,440	\$463,703	\$18,432,997
Portfolio Advisors Credit Strategies Fund	\$11,986,763	\$0	-\$207,124	-\$207,124	\$0	\$11,779,639
Crescent Direct Lending Levered Fund II	\$2,859,131	\$0	\$0	\$0	\$0	\$2,859,131
Audax Direct Lending Fund A	\$5,227,810	\$0	-\$139,192	-\$139,192	\$151,661	\$5,240,279
Ares Capital Europe IV	\$6,928,113	\$0	-\$150,457	-\$150,457	\$97,790	\$6,875,446
Lone Star XI	\$3,611,793	\$90,334	-\$398,475	-\$308,141	\$0	\$3,303,652
Sixth Street Diversified Credit	\$18,436,956	\$0	\$0	\$0	\$524,652	\$18,961,608
Ascribe Opportunities Fund IV	\$5,351,462	\$0	-\$385,366	-\$385,366	\$0	\$4,966,096
KKR Mezzanine Partners	\$1,599,743	\$0	\$0	\$0	\$90,510	\$1,690,253
TSSP Adjacent Opportunities Partners	\$24,121,036	\$0	-\$98,363	-\$98,363	\$826,043	\$24,848,716
Cash Account	\$6,368,337	\$8,580,190	-\$6,799,613	\$1,780,577	\$0	\$8,148,914
Total Fund	\$1,095,987,714	\$106,949,570	-\$114,041,578	-\$7,092,008	-\$24,573,381	\$1,064,322,325

Harbourvest, KKR Mezzanine, Portfolio Advisors, Crescent Direct Lending, Audax Direct Lending, Ares Capital, Lone Star Fund, Sixth Street Diversified Credit, Ascribe, and Sixth Street TAO Partners market values as of 06/30/2023 +/- 3Q23 calls/distributions.

Market Value History



Asset Allocation History



Total Fund
Investment Fund Fee Analysis

Imperial County Employees' Retirement System
Period Ending: September 30, 2023

Account	Fee Schedule	Market Value	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
ARA American Strategic Value Realty	1.25 % of First \$10 M 1.20 % of Next \$15 M 1.10 % of Next \$25 M 1.00 % Thereafter	55,137,076	5.18	631,371	1.15
Ares Capital Europe IV	1.38 % of Assets	6,875,446	0.65	94,881	1.38
ASB Real Estate	1.25 % of First \$5 M 1.00 % of Next \$10 M 0.75 % Thereafter	26,520,637	2.49	248,905	0.94
Ascribe Opportunities Fund IV	1.50 % of Assets	4,966,096	0.47	74,491	1.50
Audax Direct Lending Fund A	0.85 % of Assets	5,240,279	0.49	44,542	0.85
BlackRock International Equity	0.15 % of First \$50 M 0.10 % of Next \$50 M 0.00 % Thereafter	150,846,141	14.17	125,000	0.08
BlackRock Russell 3000	0.03 % of Assets	354,500,530	33.31	106,350	0.03
BlackRock US TIPS	0.07 % of Assets	40,535,154	3.81	28,375	0.07
Cash Account		8,148,914	0.77	-	-
Clarion Lion	1.25 % of First \$10 M 1.00 % of Next \$15 M 0.85 % Thereafter	30,046,088	2.82	317,892	1.06
Crescent Direct Lending Levered Fund II	Minimum Fee: \$25,280	2,859,131	0.27	25,280	0.88
DFA Emerging Markets Value	0.44 % of Assets	26,022,823	2.45	114,500	0.44
Income Research & Management	0.20 % of First \$100 M 0.17 % Thereafter	95,052,643	8.93	190,105	0.20
Harbourvest 2017 Global Fund	Minimum Fee: \$262,500	27,374,319	2.57	262,500	0.96
Harbourvest 2018 Global Fund	Minimum Fee: \$138,000	21,602,977	2.03	138,000	0.64
Harbourvest 2019 Global Fund	0.45 % of Assets	18,432,997	1.73	82,948	0.45
Harbourvest Buyout IX	Minimum Fee: \$100,000	6,135,916	0.58	100,000	1.63
Harbourvest Credit Ops IX	Minimum Fee: \$20,000	971,328	0.09	20,000	2.06
Harbourvest International PE VI	Minimum Fee: \$35,000	1,602,796	0.15	35,000	2.18
Harbourvest Venture IX	Minimum Fee: \$40,000	4,913,158	0.46	40,000	0.81
Harding Loevner Emerging Markets	1.05 % of Assets	18,685,400	1.76	196,197	1.05
KKR Mezzanine Partners	Minimum Fee: \$150,000	1,690,253	0.16	150,000	8.87
Lone Star XI	0.71 % of Assets	3,303,652	0.31	23,423	0.71
MacKay Shields Core Plus Opportunities	0.35 % of Assets	95,259,660	8.95	333,409	0.35

*HarbourVest and KKR fees are estimated gross management fees only and do not include incentive allocations or offsetting cash flows received by the fund.

*HarbourVest International Private Equity VI fees are based on committed Euros, actual US Dollar amount will fluctuate based on exchange rates.

*Verus advisory fee shown for disclosure purposes only and is not included in total investment management fee calculations.

*Portfolio Advisors fee is 0.20% on committed capital and 1.00% on invested capital.

Total Fund
Investment Fund Fee Analysis

Imperial County Employees' Retirement System
Period Ending: September 30, 2023

Account	Fee Schedule	Market Value	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Portfolio Advisors Credit Strategies Fund	Minimum Fee: \$180,000	11,779,639	1.11	180,000	1.53
Sixth Street Diversified Credit	1.35 % of Assets	18,961,608	1.78	255,982	1.35
TSSP Adjacent Opportunities Partners		24,848,716	2.33	-	-
Investment Management Fee		1,064,322,325	100.00	3,819,151	0.36

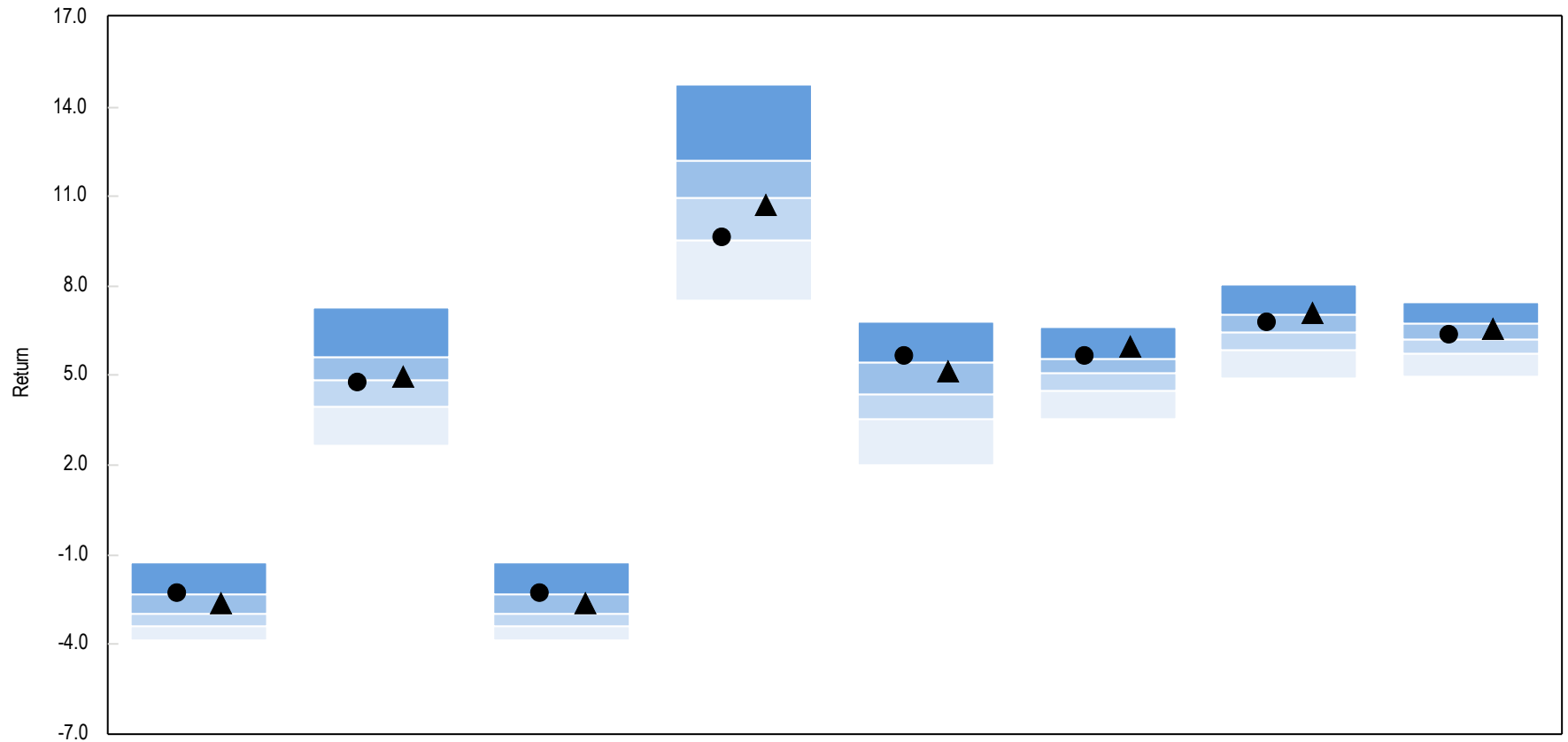
*HarbourVest and KKR fees are estimated gross management fees only and do not include incentive allocations or offsetting cash flows received by the fund.

*HarbourVest International Private Equity VI fees are based on committed Euros, actual US Dollar amount will fluctuate based on exchange rates.

*Verus advisory fee shown for disclosure purposes only and is not included in total investment management fee calculations.

*Portfolio Advisors fee is 0.20% on committed capital and 1.00% on invested capital.

Total Fund vs. InvMetrics Public DB Net

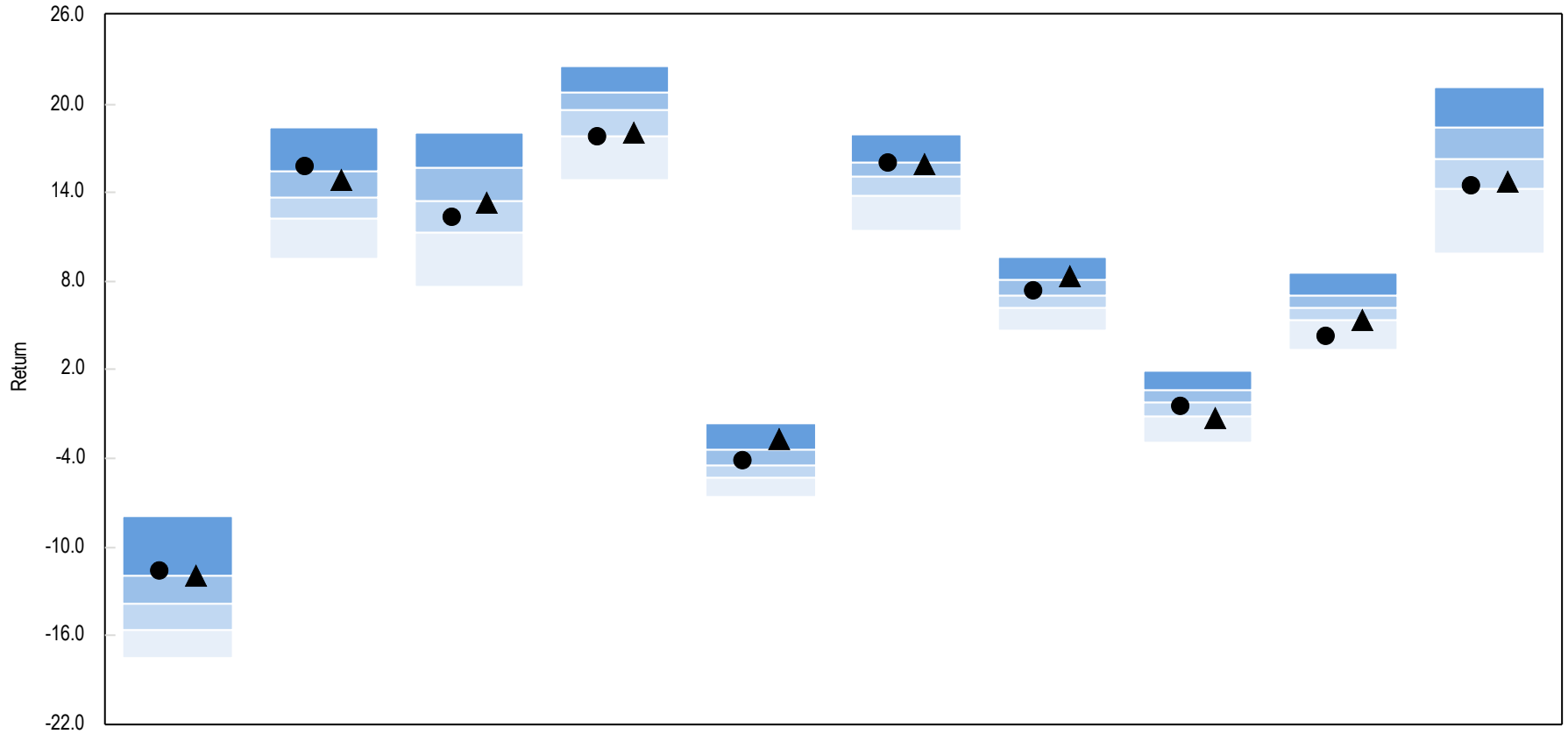


	Quarter	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Total Fund	-2.25 (23)	4.77 (52)	-2.25 (23)	9.63 (73)	5.69 (20)	5.71 (20)	6.81 (35)	6.37 (43)
▲ Policy Index	-2.63 (39)	4.95 (46)	-2.63 (39)	10.73 (54)	5.14 (32)	5.96 (13)	7.09 (23)	6.57 (34)
5th Percentile	-1.24	7.25	-1.24	14.76	6.78	6.62	8.04	7.43
1st Quartile	-2.34	5.63	-2.34	12.22	5.44	5.54	7.03	6.76
Median	-2.94	4.85	-2.94	10.93	4.36	5.07	6.46	6.23
3rd Quartile	-3.38	3.99	-3.38	9.52	3.53	4.48	5.86	5.73
95th Percentile	-3.84	2.63	-3.84	7.51	2.03	3.54	4.91	4.98
Population	521	504	521	497	478	460	436	383

Total Fund
Peer Universe Comparison: Consecutive Periods (Net of Fees)

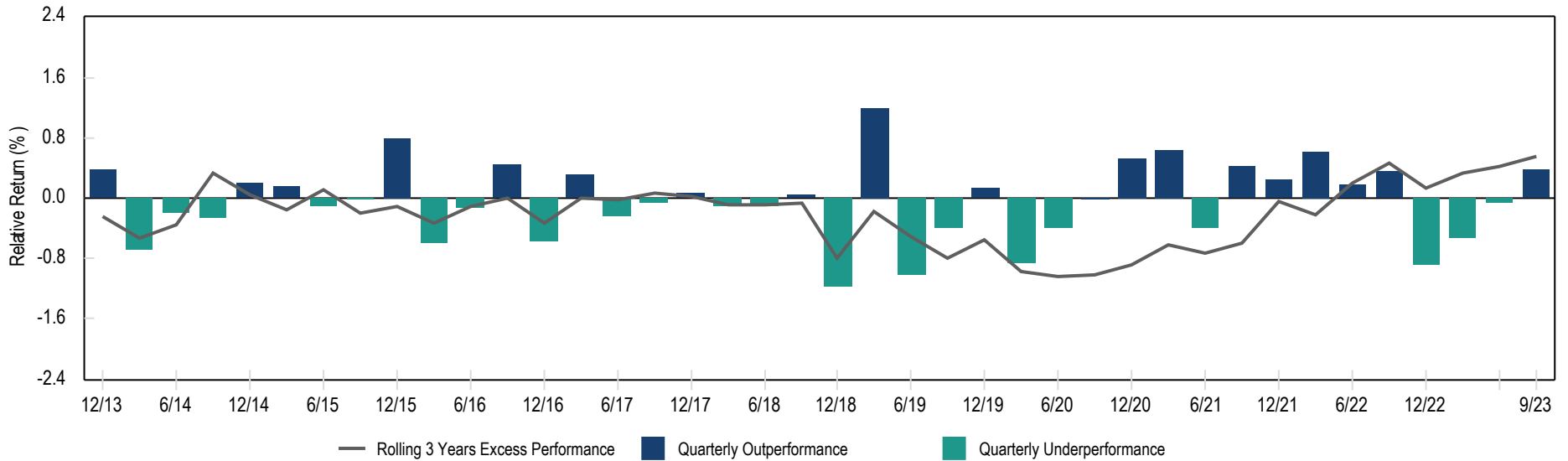
Imperial County Employees' Retirement System
Period Ending: September 30, 2023

Total Fund vs. InvMetrics Public DB Net

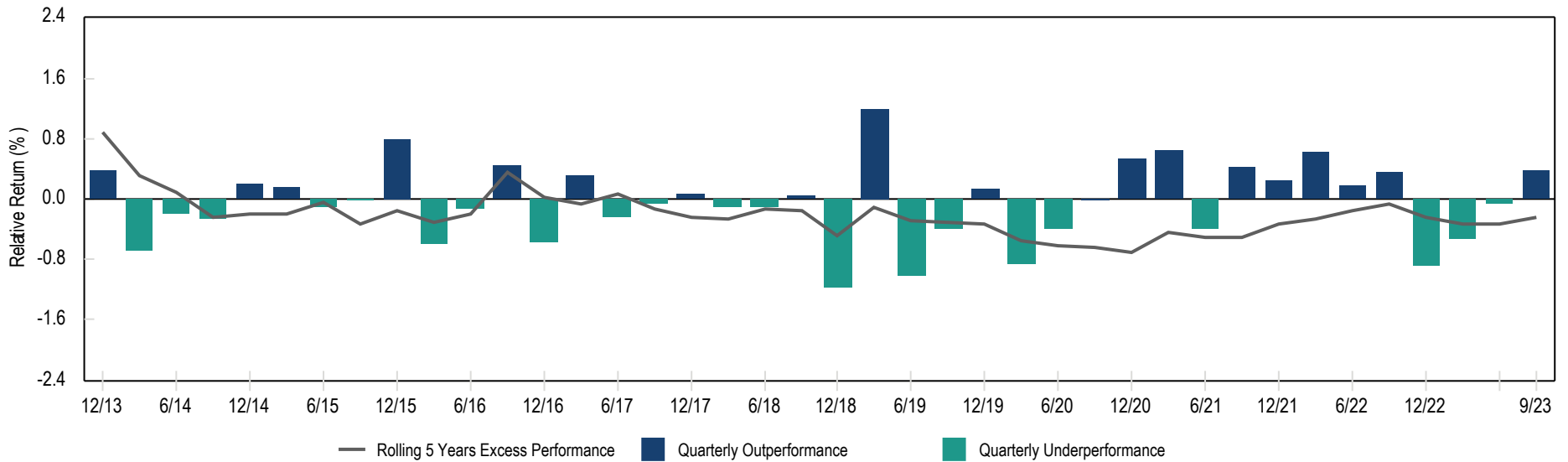


	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Total Fund	-11.60 (23)	15.84 (21)	12.33 (63)	17.85 (75)	-4.12 (40)	16.02 (27)	7.45 (41)	-0.41 (58)	4.37 (89)	14.48 (74)
▲ Policy Index	-11.93 (26)	14.83 (33)	13.29 (52)	18.03 (73)	-2.73 (13)	15.93 (29)	8.36 (20)	-1.22 (77)	5.33 (76)	14.71 (72)
5th Percentile	-7.87	18.40	18.02	22.61	-1.67	17.88	9.68	1.90	8.59	21.15
1st Quartile	-11.89	15.48	15.63	20.82	-3.41	16.09	8.05	0.66	7.08	18.42
Median	-13.87	13.73	13.40	19.56	-4.46	15.07	7.06	-0.19	6.20	16.31
3rd Quartile	-15.59	12.30	11.36	17.78	-5.28	13.78	6.16	-1.10	5.34	14.29
95th Percentile	-17.47	9.48	7.65	14.85	-6.55	11.39	4.67	-2.92	3.32	9.87
Population	786	973	1,017	928	880	877	863	807	764	740

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



Total Domestic Equity

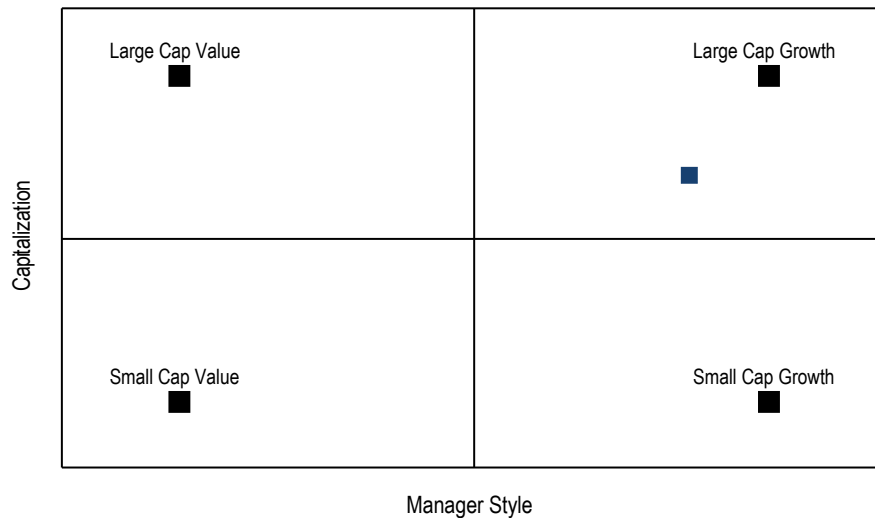
Asset Class Overview (Net of Fees)

Imperial County Employees' Retirement System

Period Ending: September 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
Total Domestic Equity	354,500,530	100.0	-3.2	12.4	-3.2	20.5	9.4	9.2	11.0	-19.2	25.7	21.0	31.1	-5.2
<i>Russell 3000 Index</i>			-3.3	12.4	-3.3	20.5	9.4	9.1	11.3	-19.2	25.7	20.9	31.0	-5.2
BlackRock Russell 3000	354,500,530	100.0	-3.2	12.4	-3.2	20.5	9.4	9.2	-	-19.2	25.7	21.0	31.1	-5.2
<i>Russell 3000 Index</i>			-3.3	12.4	-3.3	20.5	9.4	9.1	-	-19.2	25.7	20.9	31.0	-5.2
<i>eV US All Cap Core Equity Rank</i>			46	23	46	37	48	34	-	59	54	42	39	46

U.S. Effective Style Map
3 Years Ending: September 30, 2023



■ BlackRock Russell 3000

U.S. Effective Style Map
5 Years Ending: September 30, 2023



■ BlackRock Russell 3000

Total International Equity Asset Class Overview (Net of Fees)

Imperial County Employees' Retirement System Period Ending: September 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
Total International Equity	195,554,363	100.0	-3.7	6.8	-3.7	23.5	5.4	2.8	3.6	-15.4	10.1	8.1	20.7	-14.3
MSCI AC World ex USA Index			-3.7	5.8	-3.7	21.0	4.2	3.1	3.8	-15.6	8.3	11.1	22.1	-13.8
BlackRock International Equity	150,846,141	77.1	-4.1	7.4	-4.1	26.1	6.2	3.6	4.1	-14.1	11.6	8.1	22.4	-13.5
MSCI EAFE (Net)			-4.1	7.1	-4.1	25.6	5.8	3.2	3.8	-14.5	11.3	7.8	22.0	-13.8
eV All EAFE Equity Rank			50	34	50	33	37	33	48	36	52	52	50	29
DFA Emerging Markets Value	26,022,823	13.3	0.2	8.7	0.2	19.8	9.7	2.7	3.1	-10.7	12.4	2.7	9.6	-11.9
MSCI Emerging Markets Value (Net)			-0.8	5.7	-0.8	16.0	4.4	0.4	1.2	-15.8	4.0	5.5	12.0	-10.7
eV Emg Mkts All Cap Value Equity Rank			19	33	19	53	31	71	76	38	19	82	93	38
Harding Loevner Emerging Markets	18,685,400	9.6	-5.4	-0.8	-5.4	9.9	-5.8	-3.1	-	-28.1	-4.3	12.4	24.0	-19.5
MSCI Emerging Markets Growth Index			-4.9	-1.6	-4.9	8.0	-7.0	0.9	-	-23.7	-8.2	31.6	25.4	-18.0
eV Emg Mkts All Cap Growth Equity Rank			62	57	62	39	62	99	-	74	54	96	52	69

MSCI Effective Style Map
3 Years Ending: September 30, 2023



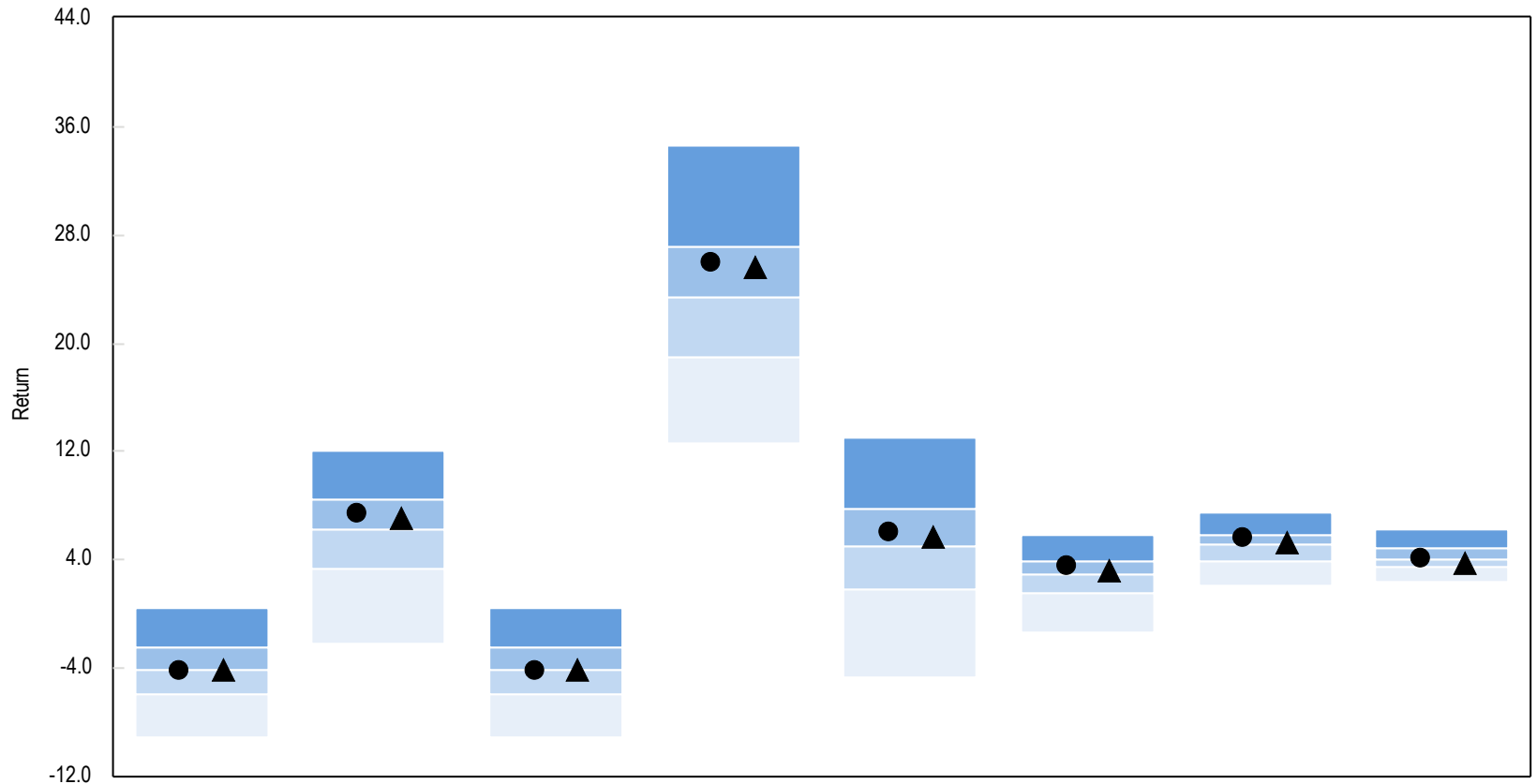
- BlackRock International Equity
- DFA Emerging Markets Value
- Harding Loevner Emerging Markets
- Total International Equity

MSCI Effective Style Map
5 Years Ending: September 30, 2023



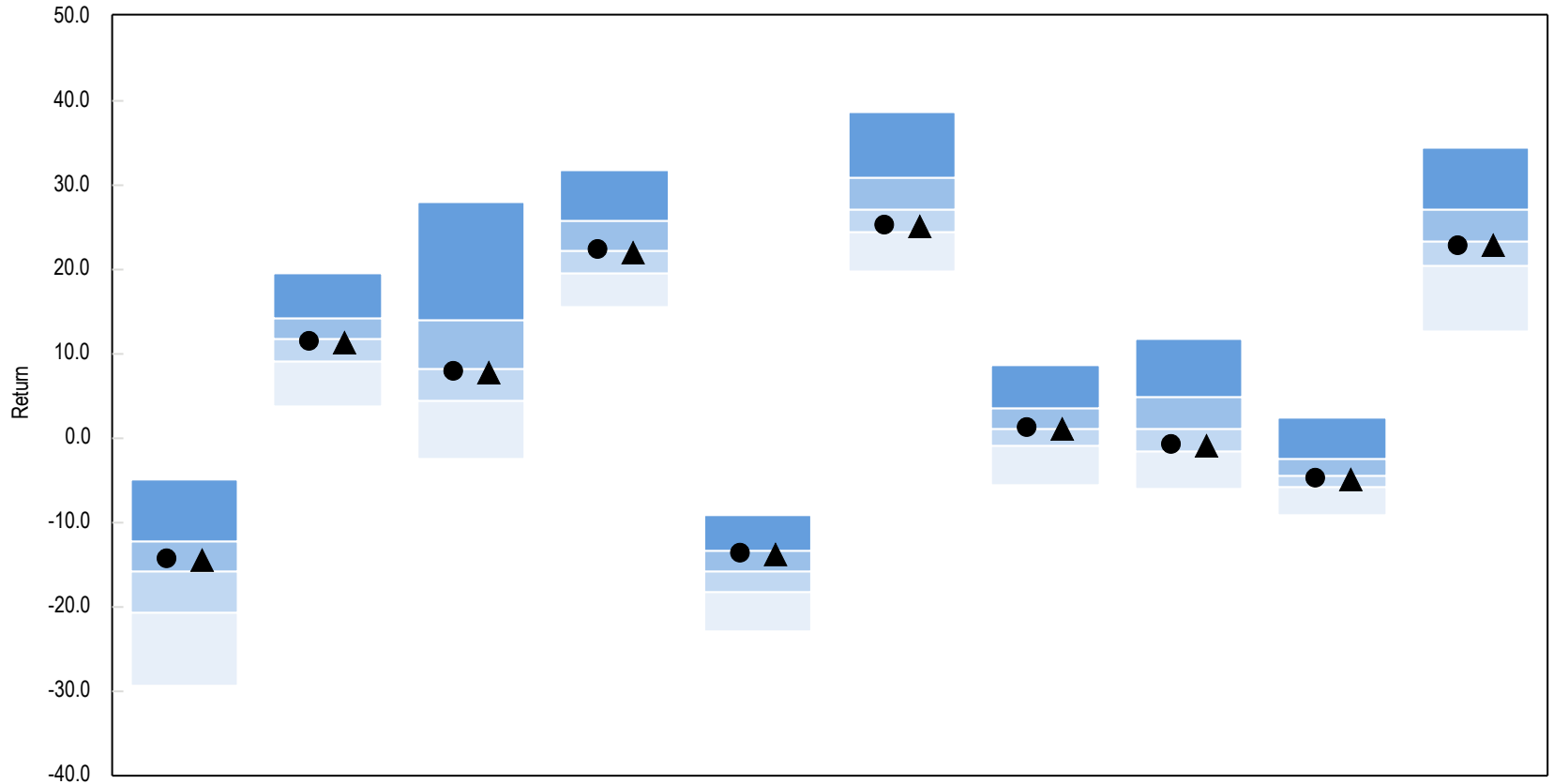
- BlackRock International Equity
- DFA Emerging Markets Value
- Harding Loevner Emerging Markets
- Total International Equity

BlackRock International Equity vs. eV All EAFE Equity

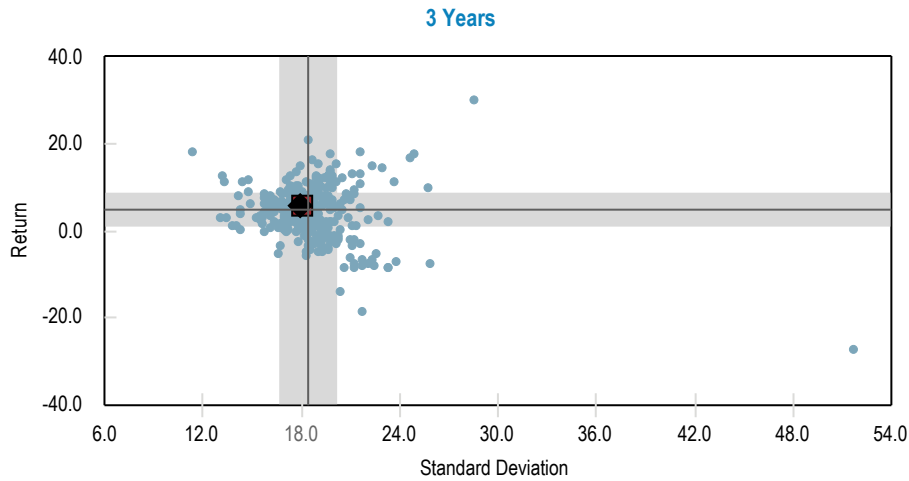


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● BlackRock International Equity	-4.09 (50)	7.44 (34)	-4.09 (50)	26.08 (33)	6.15 (37)	3.57 (33)	5.64 (31)	4.12 (48)
▲ MSCI EAFE (Net)	-4.11 (51)	7.08 (38)	-4.11 (51)	25.65 (36)	5.75 (42)	3.24 (42)	5.29 (43)	3.82 (63)
5th Percentile	0.42	12.02	0.42	34.58	13.06	5.90	7.51	6.23
1st Quartile	-2.42	8.46	-2.42	27.16	7.74	3.95	5.85	4.84
Median	-4.09	6.22	-4.09	23.42	4.99	2.93	5.10	4.06
3rd Quartile	-5.85	3.39	-5.85	18.97	1.90	1.57	3.97	3.49
95th Percentile	-9.11	-2.13	-9.11	12.55	-4.61	-1.41	2.12	2.33
Population	417	412	417	412	393	366	336	281

BlackRock International Equity vs. eV All EAFE Equity

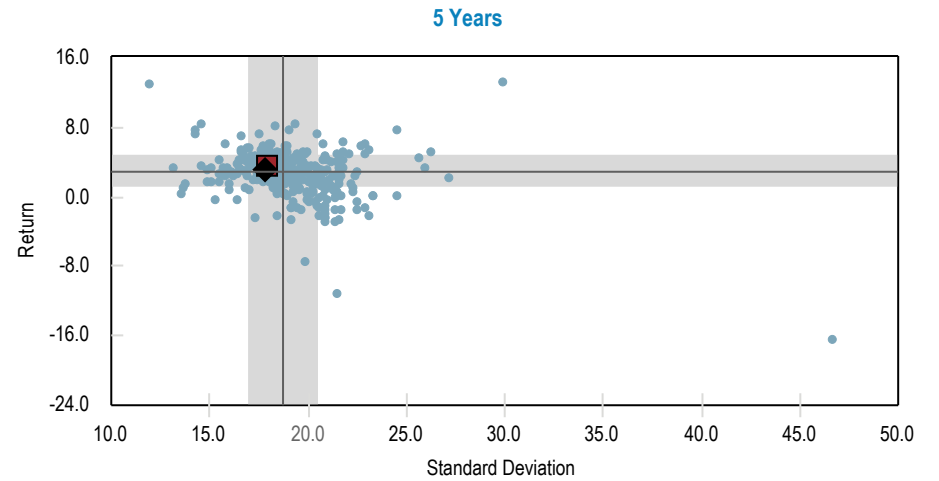


	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● BlackRock International Equity	-14.12 (36)	11.62 (52)	8.07 (52)	22.40 (50)	-13.52 (29)	25.42 (64)	1.34 (46)	-0.63 (65)	-4.77 (58)	22.94 (55)
▲ MSCI EAFE (Net)	-14.45 (41)	11.26 (58)	7.82 (55)	22.01 (54)	-13.79 (34)	25.03 (68)	1.00 (52)	-0.81 (68)	-4.90 (61)	22.78 (56)
5th Percentile	-4.83	19.61	27.97	31.70	-9.07	38.66	8.70	11.70	2.50	34.55
1st Quartile	-12.17	14.16	14.04	25.83	-13.30	30.82	3.47	4.95	-2.40	27.08
Median	-15.76	11.77	8.18	22.28	-15.75	27.02	1.07	1.18	-4.40	23.36
3rd Quartile	-20.62	9.07	4.41	19.65	-18.23	24.41	-1.00	-1.55	-5.82	20.53
95th Percentile	-29.41	3.71	-2.48	15.63	-22.92	19.75	-5.47	-5.99	-9.10	12.59
Population	444	454	462	468	475	470	456	443	435	403



eV All EAFE Equity

	Return	Standard Deviation
■ BlackRock International Equity	6.15	18.02
◆ MSCI EAFE (Net)	5.75	17.97
— Median	4.99	18.41
Population	393	393



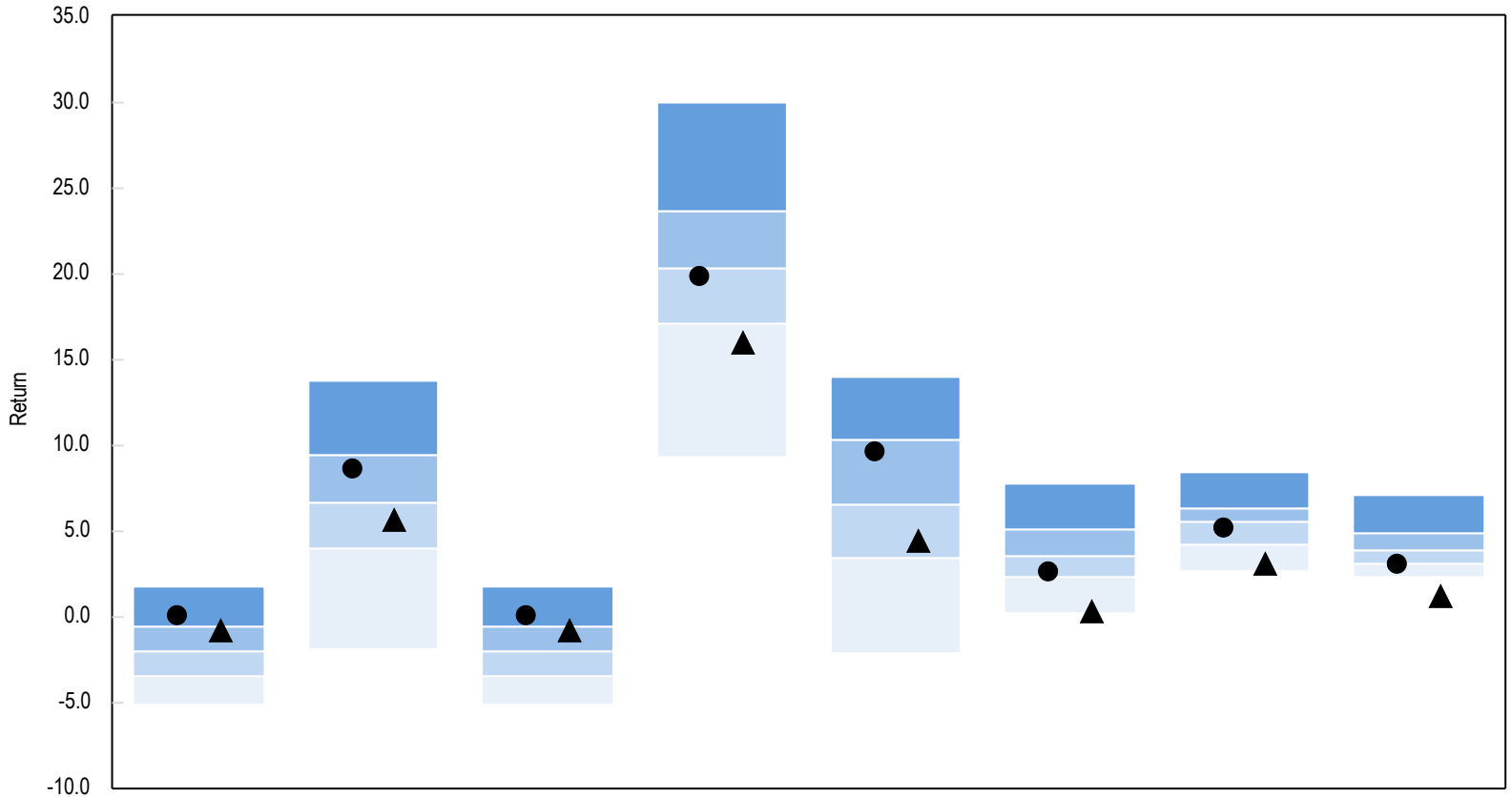
eV All EAFE Equity

	Return	Standard Deviation
■ BlackRock International Equity	3.57	17.88
◆ MSCI EAFE (Net)	3.24	17.84
— Median	2.93	18.75
Population	366	366

DFA Emerging Markets Value
Cumulative Performance Comparison (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: September 30, 2023

DFA Emerging Markets Value vs. eV Emg Mkts All Cap Value Equity

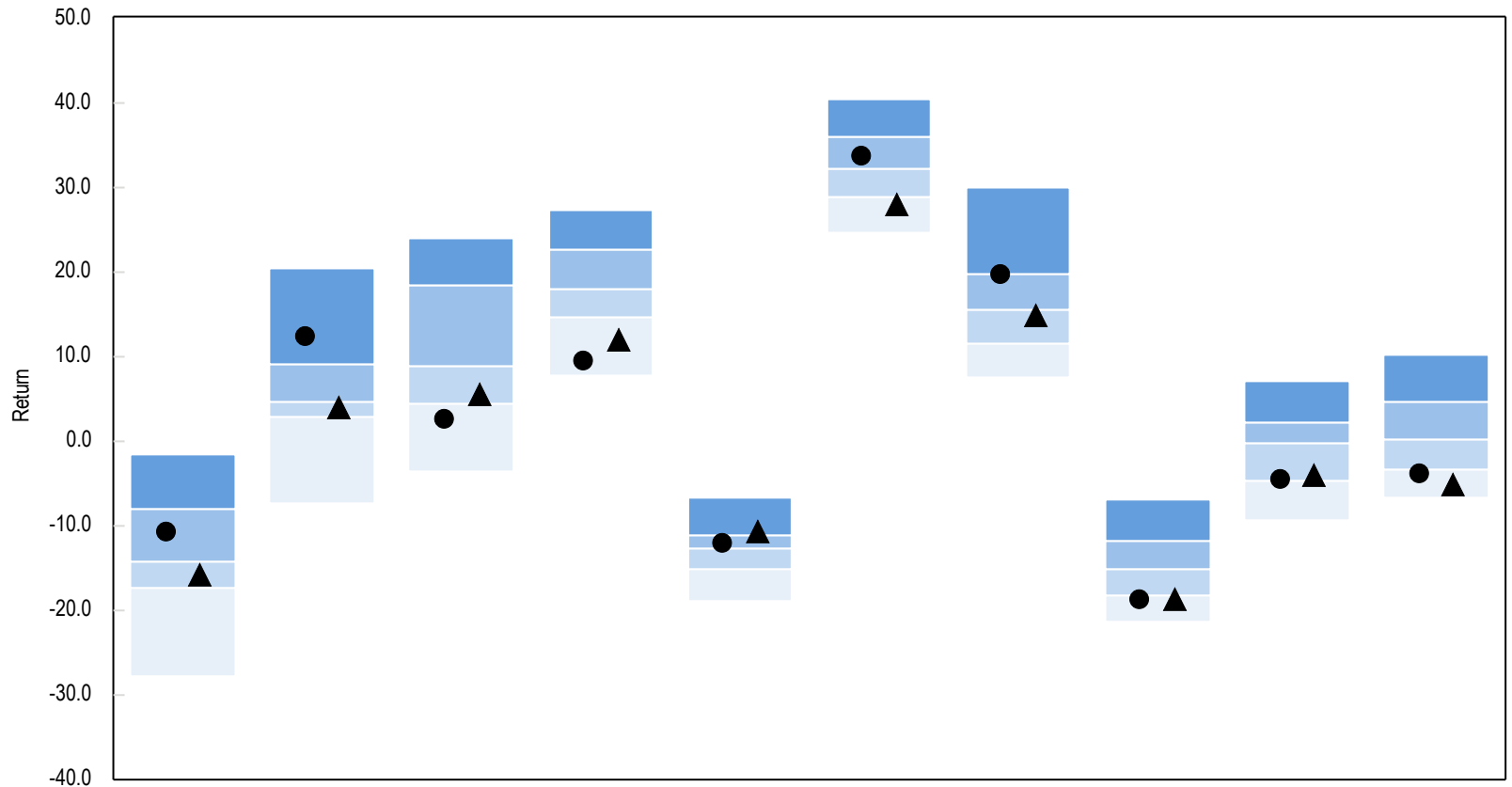


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● DFA Emerging Markets Value	0.16 (19)	8.69 (33)	0.16 (19)	19.85 (53)	9.68 (31)	2.66 (71)	5.28 (53)	3.12 (76)
▲ MSCI Emerging Markets Value (Net)	-0.78 (31)	5.70 (60)	-0.78 (31)	16.03 (83)	4.40 (71)	0.38 (95)	3.07 (88)	1.21 (100)
5th Percentile	1.73	13.75	1.73	29.97	13.96	7.75	8.45	7.14
1st Quartile	-0.57	9.44	-0.57	23.71	10.31	5.16	6.34	4.90
Median	-1.96	6.62	-1.96	20.28	6.54	3.56	5.58	3.92
3rd Quartile	-3.43	3.98	-3.43	17.07	3.48	2.38	4.21	3.15
95th Percentile	-5.15	-1.88	-5.15	9.31	-2.06	0.27	2.65	2.31
Population	56	56	56	56	49	43	35	30

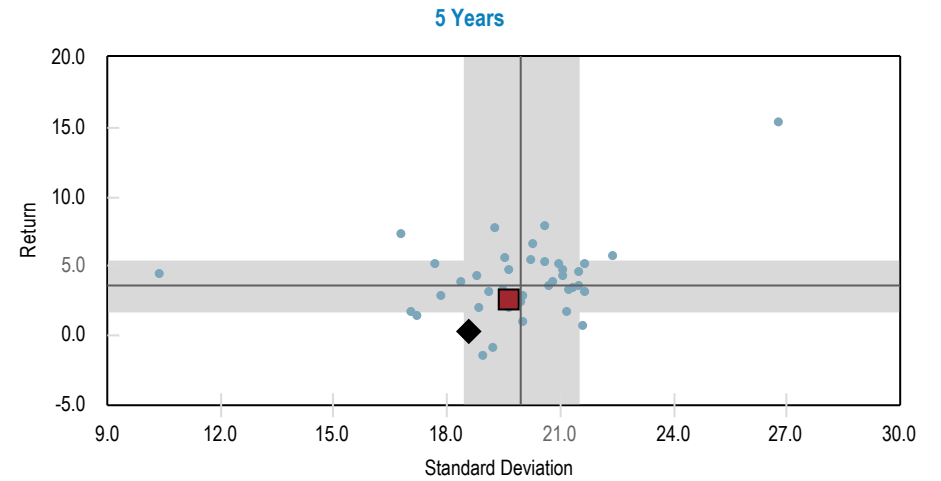
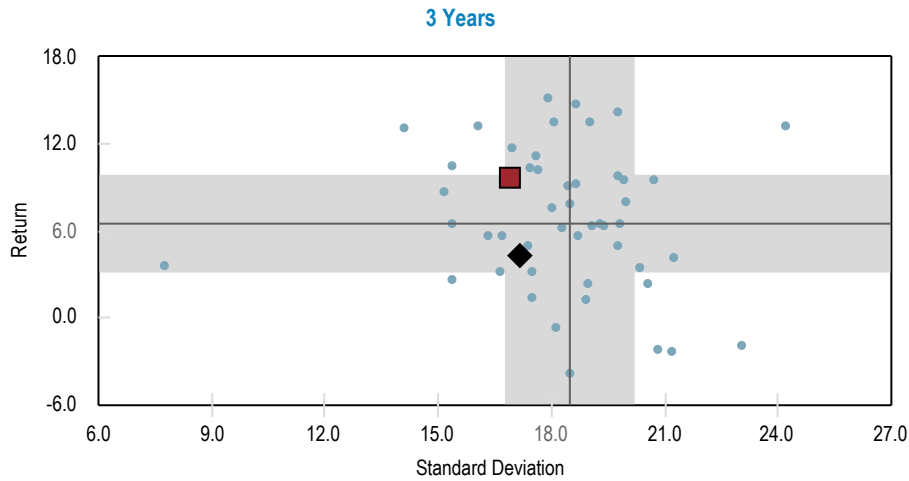
DFA Emerging Markets Value
Consecutive Performance Comparison (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: September 30, 2023

DFA Emerging Markets Value vs. eV Emg Mkts All Cap Value Equity



	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● DFA Emerging Markets Value	-10.74 (38)	12.41 (19)	2.73 (82)	9.64 (93)	-11.93 (38)	33.76 (38)	19.84 (25)	-18.77 (84)	-4.41 (73)	-3.80 (77)
▲ MSCI Emerging Markets Value (Net)	-15.83 (60)	4.00 (64)	5.48 (72)	11.96 (91)	-10.74 (23)	28.07 (81)	14.90 (54)	-18.57 (83)	-4.08 (71)	-5.11 (87)
5th Percentile	-1.45	20.40	23.96	27.29	-6.64	40.40	30.07	-6.89	7.11	10.19
1st Quartile	-7.92	9.02	18.49	22.65	-11.18	35.95	19.73	-11.68	2.23	4.64
Median	-14.28	4.76	8.93	17.98	-12.63	32.23	15.49	-15.20	-0.27	0.22
3rd Quartile	-17.26	2.87	4.50	14.73	-15.20	28.80	11.51	-18.15	-4.73	-3.34
95th Percentile	-27.73	-7.27	-3.63	7.68	-18.81	24.60	7.47	-21.30	-9.35	-6.58
Population	58	56	59	60	57	53	49	47	51	51

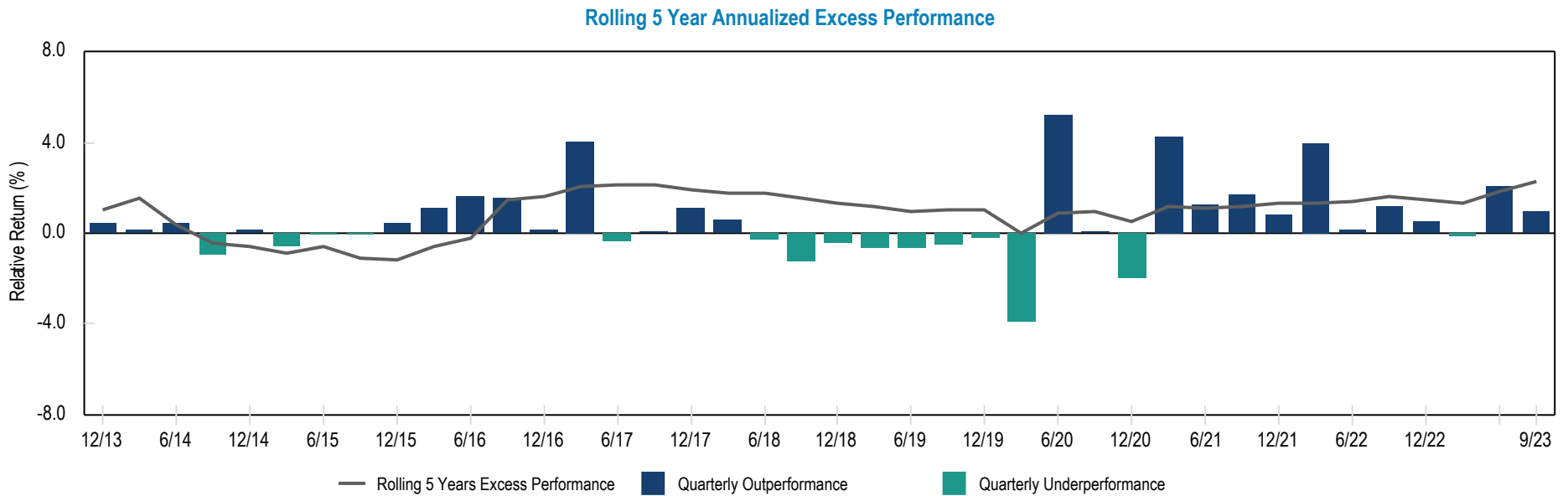
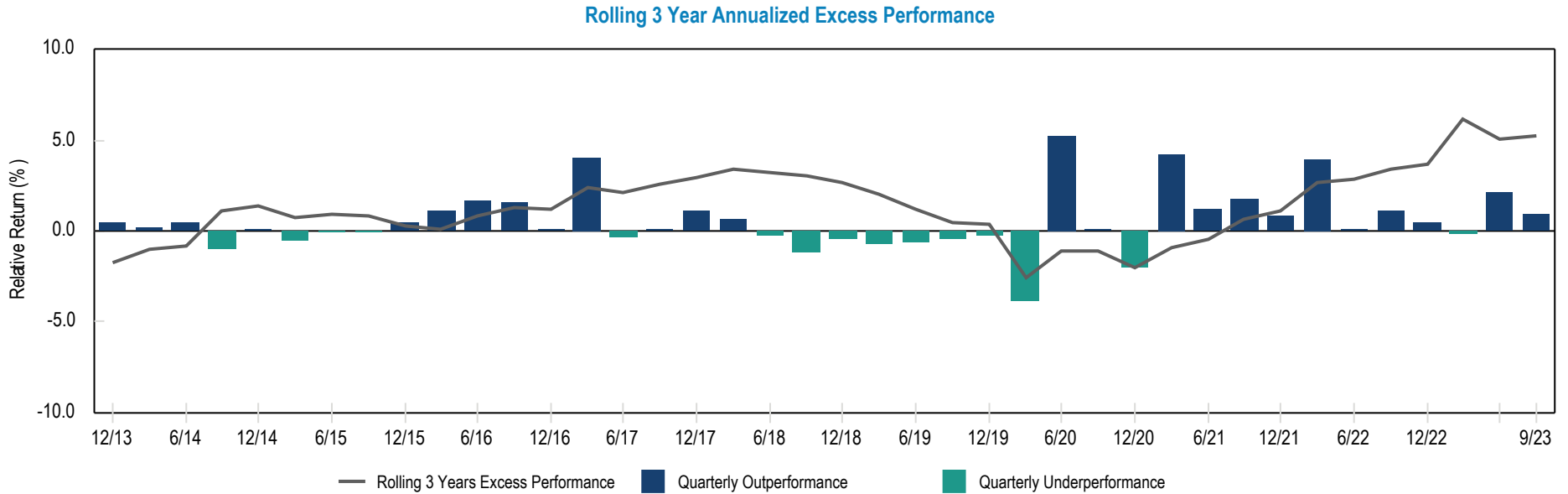


eV Emg Mkts All Cap Value Equity

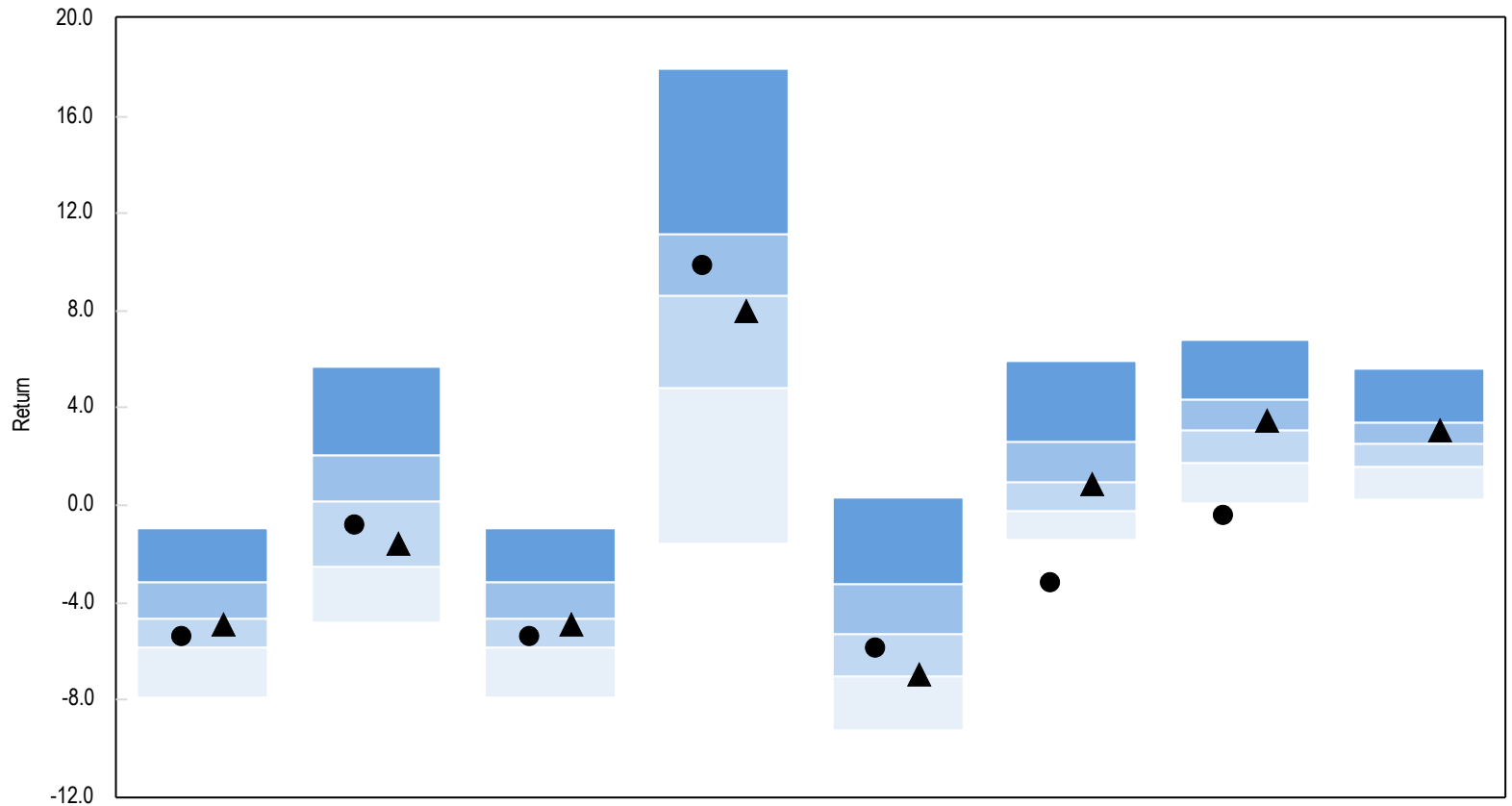
	Return	Standard Deviation
■ DFA Emerging Markets Value	9.68	16.88
◆ MSCI Emerging Markets Value (Net)	4.40	17.15
— Median	6.54	18.49
Population	49	49

eV Emg Mkts All Cap Value Equity

	Return	Standard Deviation
■ DFA Emerging Markets Value	2.66	19.65
◆ MSCI Emerging Markets Value (Net)	0.38	18.60
— Median	3.56	19.97
Population	43	43

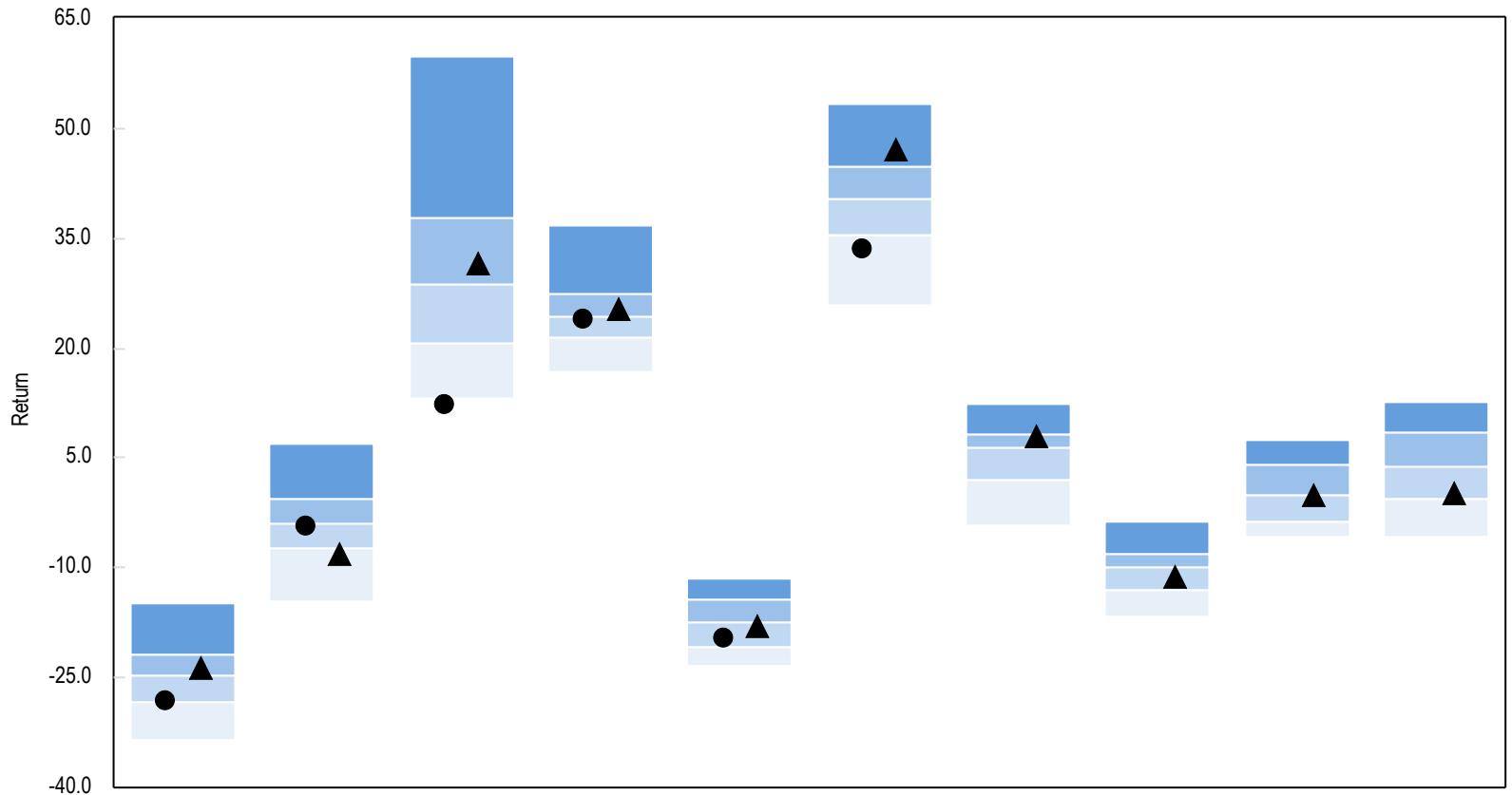


Harding Loevner Emerging Markets vs. eV Emg Mkts All Cap Growth Equity

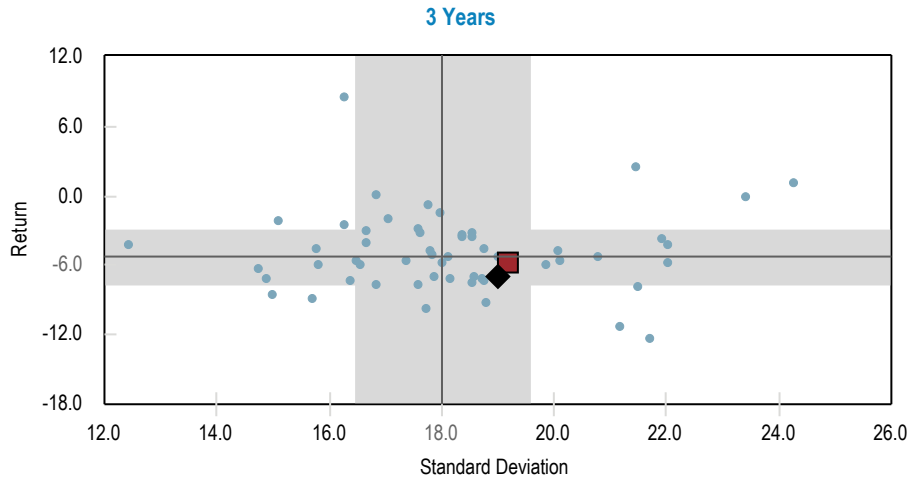


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● Harding Loevner Emerging Markets	-5.37 (62)	-0.79 (57)	-5.37 (62)	9.87 (39)	-5.83 (62)	-3.12 (99)	-0.39 (97)	-
▲ MSCI Emerging Markets Growth Index	-4.86 (54)	-1.58 (65)	-4.86 (54)	7.97 (56)	-6.98 (72)	0.86 (54)	3.52 (44)	3.08 (35)
5th Percentile	-0.97	5.72	-0.97	17.98	0.35	5.92	6.77	5.60
1st Quartile	-3.17	2.10	-3.17	11.12	-3.26	2.63	4.32	3.40
Median	-4.61	0.18	-4.61	8.66	-5.31	0.95	3.07	2.51
3rd Quartile	-5.84	-2.53	-5.84	4.84	-7.06	-0.25	1.79	1.59
95th Percentile	-7.88	-4.84	-7.88	-1.55	-9.27	-1.45	0.08	0.28
Population	62	62	62	61	57	50	41	34

Harding Loevner Emerging Markets vs. eV Emg Mkts All Cap Growth Equity

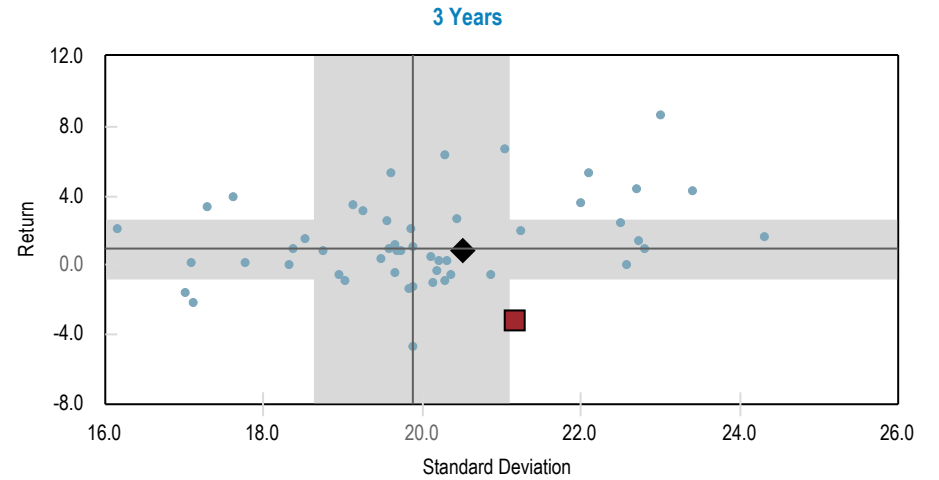


	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Harding Loevner Emerging Markets	-28.07 (74)	-4.27 (54)	12.36 (96)	24.04 (52)	-19.48 (69)	33.62 (85)	-	-	-	-
▲ MSCI Emerging Markets Growth Index	-23.74 (42)	-8.24 (81)	31.58 (39)	25.44 (39)	-18.04 (59)	47.12 (14)	7.87 (32)	-11.12 (59)	-0.09 (47)	0.07 (72)
5th Percentile	-14.78	6.80	59.88	36.76	-11.60	53.37	12.37	-3.60	7.40	12.70
1st Quartile	-21.91	-0.51	37.76	27.45	-14.44	44.84	8.21	-8.15	4.04	8.38
Median	-24.64	-3.91	28.80	24.32	-17.39	40.41	6.34	-9.92	-0.16	3.72
3rd Quartile	-28.34	-7.26	20.61	21.54	-20.81	35.33	1.88	-13.09	-3.64	-0.64
95th Percentile	-33.39	-14.63	13.12	16.69	-23.52	25.93	-4.16	-16.71	-5.70	-5.77
Population	63	64	62	63	60	60	60	60	51	48



eV Emg Mkts All Cap Growth Equity

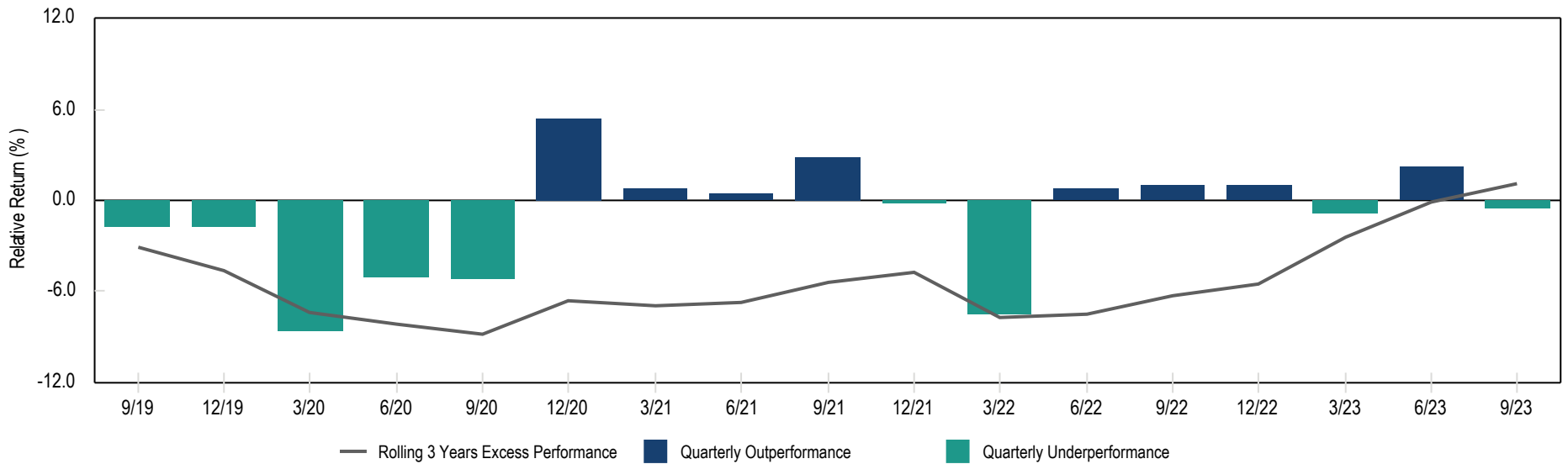
	Return	Standard Deviation
■ Harding Loevner Emerging Markets	-5.83	19.17
◆ MSCI Emerging Markets Growth Index	-6.98	18.99
— Median	-5.31	18.02
Population	57	57



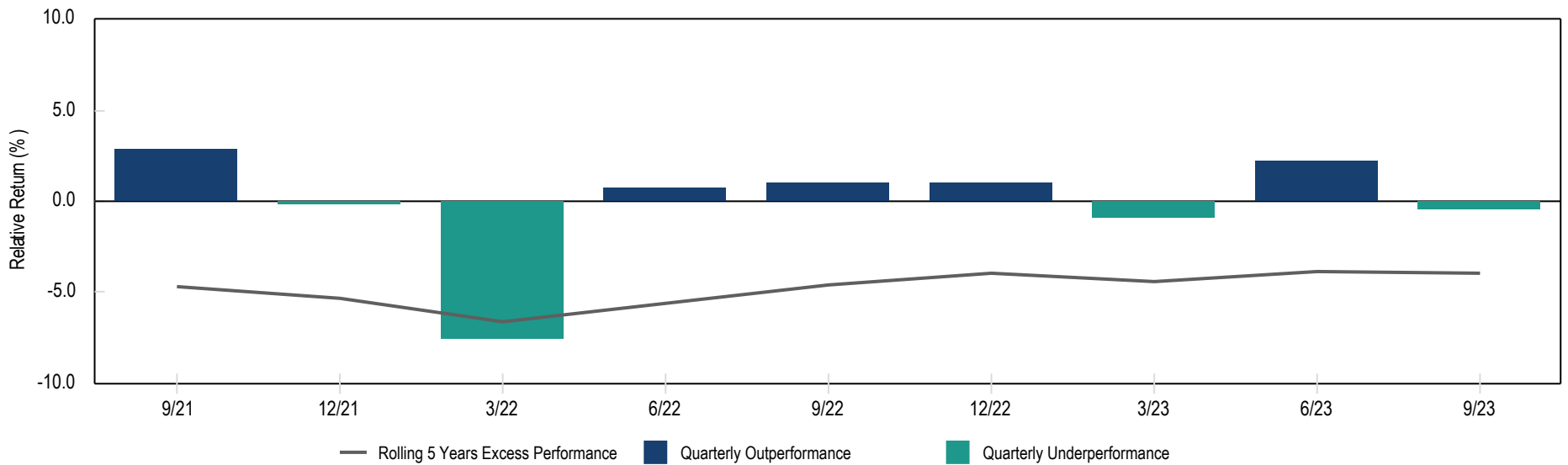
eV Emg Mkts All Cap Growth Equity

	Return	Standard Deviation
■ Harding Loevner Emerging Markets	-3.12	21.16
◆ MSCI Emerging Markets Growth Index	0.86	20.52
— Median	0.95	19.87
Population	50	50

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



Total Fixed Income Asset Class Overview (Net of Fees)

Imperial County Employees' Retirement System Period Ending: September 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2013
Total Fixed Income	230,847,457	100.0	-2.5	-0.2	-2.5	1.5	-4.2	0.8	1.7	-14.2	0.6	9.8	9.5	-2.0
<i>Blmbg. U.S. Aggregate Index</i>			-3.2	-1.2	-3.2	0.6	-5.2	0.1	1.1	-13.0	-1.5	7.5	8.7	-2.0
Income Research & Management	95,052,643	41.2	-	-	-	-	-	-	-	-	-	-	-	-
<i>Blmbg. U.S. Aggregate Index</i>			-	-	-	-	-	-	-	-	-	-	-	-
<i>eV US Core Plus Fixed Inc Rank</i>			-	-	-	-	-	-	-	-	-	-	-	-
MacKay Shields Core Plus Opportunities	95,259,660	41.3	-2.7	-0.4	-2.7	2.0	-4.7	0.5	-	-14.5	-0.5	9.9	9.7	-
<i>Blmbg. U.S. Aggregate Index</i>			-3.2	-1.2	-3.2	0.6	-5.2	0.1	-	-13.0	-1.5	7.5	8.7	-
<i>eV US Core Plus Fixed Inc Rank</i>			30	51	30	39	66	55	-	86	52	22	52	-
BlackRock US TIPS	40,535,154	17.6	-2.6	-0.6	-2.6	1.3	-2.0	2.2	1.8	-11.9	5.9	11.2	8.5	-8.6
<i>Blmbg. U.S. TIPS</i>			-2.6	-0.8	-2.6	1.2	-2.0	2.1	1.7	-11.8	6.0	11.0	8.4	-8.6
<i>eV US TIPS / Inflation Fixed Inc Rank</i>			69	46	69	59	56	56	23	67	26	32	32	55

**Fixed Income Style Map
3 Years Ending September 30, 2023**



- Total Fixed Income
- MacKay Shields Core Plus Opportunities
- ▲ BlackRock US TIPS

**Fixed Income Style Map
5 Years Ending September 30, 2023**



- Total Fixed Income
- MacKay Shields Core Plus Opportunities
- ▲ BlackRock US TIPS

Income Research & Management replaced Duenta 9/2023.

Total Fixed Income
Asset Class Overview (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: September 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
Total Fixed Income	230,847,457	100.0	-2.5	-0.2	-2.5	1.5	-4.2	0.8	1.7	-14.2	0.6	9.8	9.5	-0.8
<i>Blmbg. U.S. Aggregate Index</i>			-3.2	-1.2	-3.2	0.6	-5.2	0.1	1.1	-13.0	-1.5	7.5	8.7	0.0
Income Research & Management	95,052,643	41.2	-	-	-	-	-	-	-	-	-	-	-	-
<i>Blmbg. U.S. Aggregate Index</i>			-	-	-	-	-	-	-	-	-	-	-	-
MacKay Shields Core Plus Opportunities	95,259,660	41.3	-2.7	-0.4	-2.7	2.0	-4.7	0.5	-	-14.5	-0.5	9.9	9.7	-1.0
<i>Blmbg. U.S. Aggregate Index</i>			-3.2	-1.2	-3.2	0.6	-5.2	0.1	-	-13.0	-1.5	7.5	8.7	0.0
BlackRock US TIPS	40,535,154	17.6	-2.6	-0.6	-2.6	1.3	-2.0	2.2	1.8	-11.9	5.9	11.2	8.5	-1.2
<i>Blmbg. U.S. TIPS</i>			-2.6	-0.8	-2.6	1.2	-2.0	2.1	1.7	-11.8	6.0	11.0	8.4	-1.3

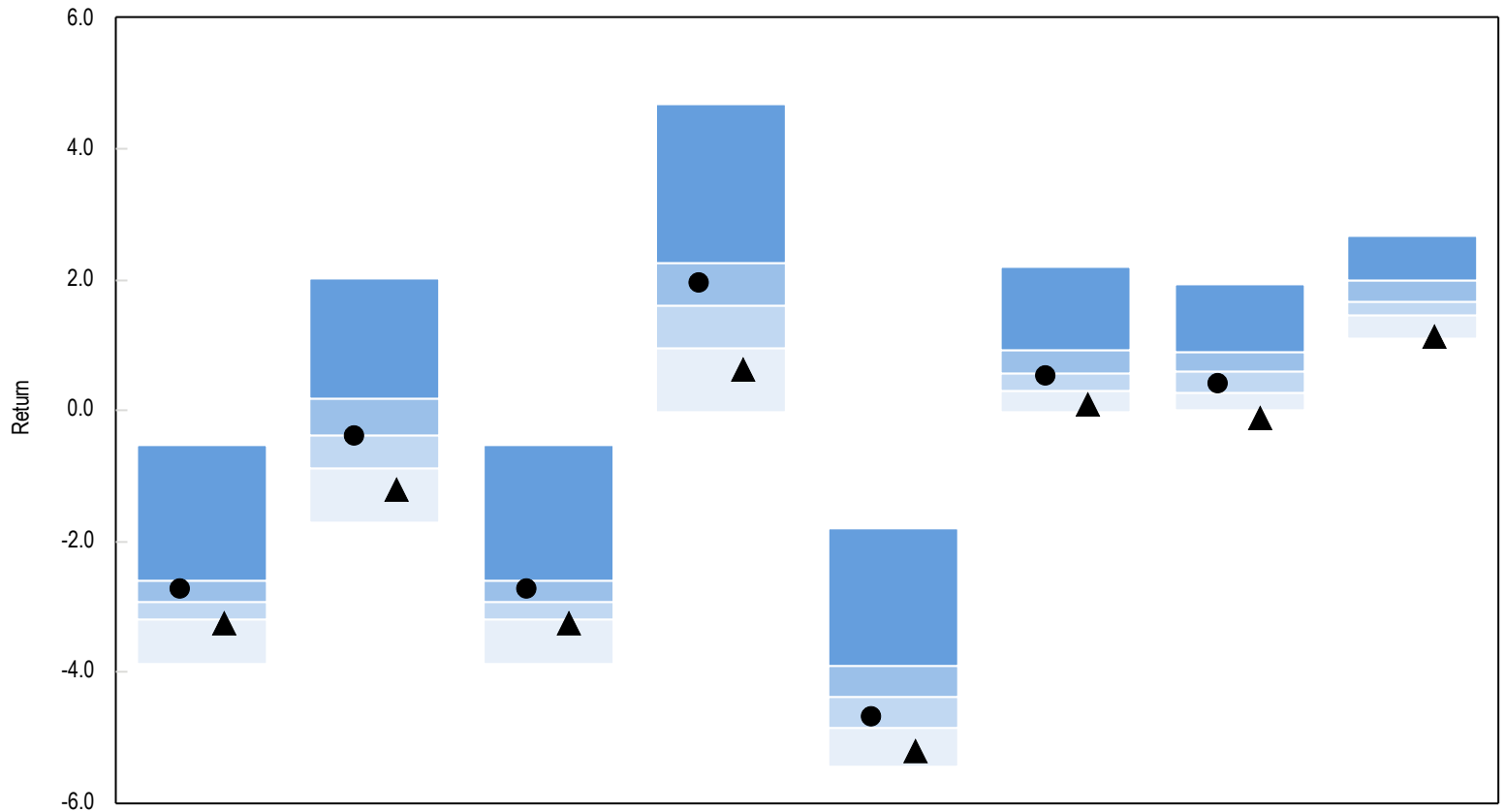
	Total Fixed Income	MacKay Shields Core Plus Opportunities	BlackRock US TIPS	Blmbg. U.S. Aggregate Index
Total Fixed Income	1.00			
MacKay Shields Core Plus Opportunities	0.99	1.00		
BlackRock US TIPS	0.91	0.87	1.00	
Blmbg. U.S. Aggregate Index	0.96	0.96	0.84	1.00

Income Research & Management replaced Duenta 9/2023. Managers need 5 years of history to appear on the Correlation Matrix.

MacKay Shields Core Plus Opportunities
 Cumulative Performance Comparison (Net of Fees)

Imperial County Employees' Retirement System
 Period Ending: September 30, 2023

MacKay Shields Core Plus Opportunities vs. eV US Core Plus Fixed Inc

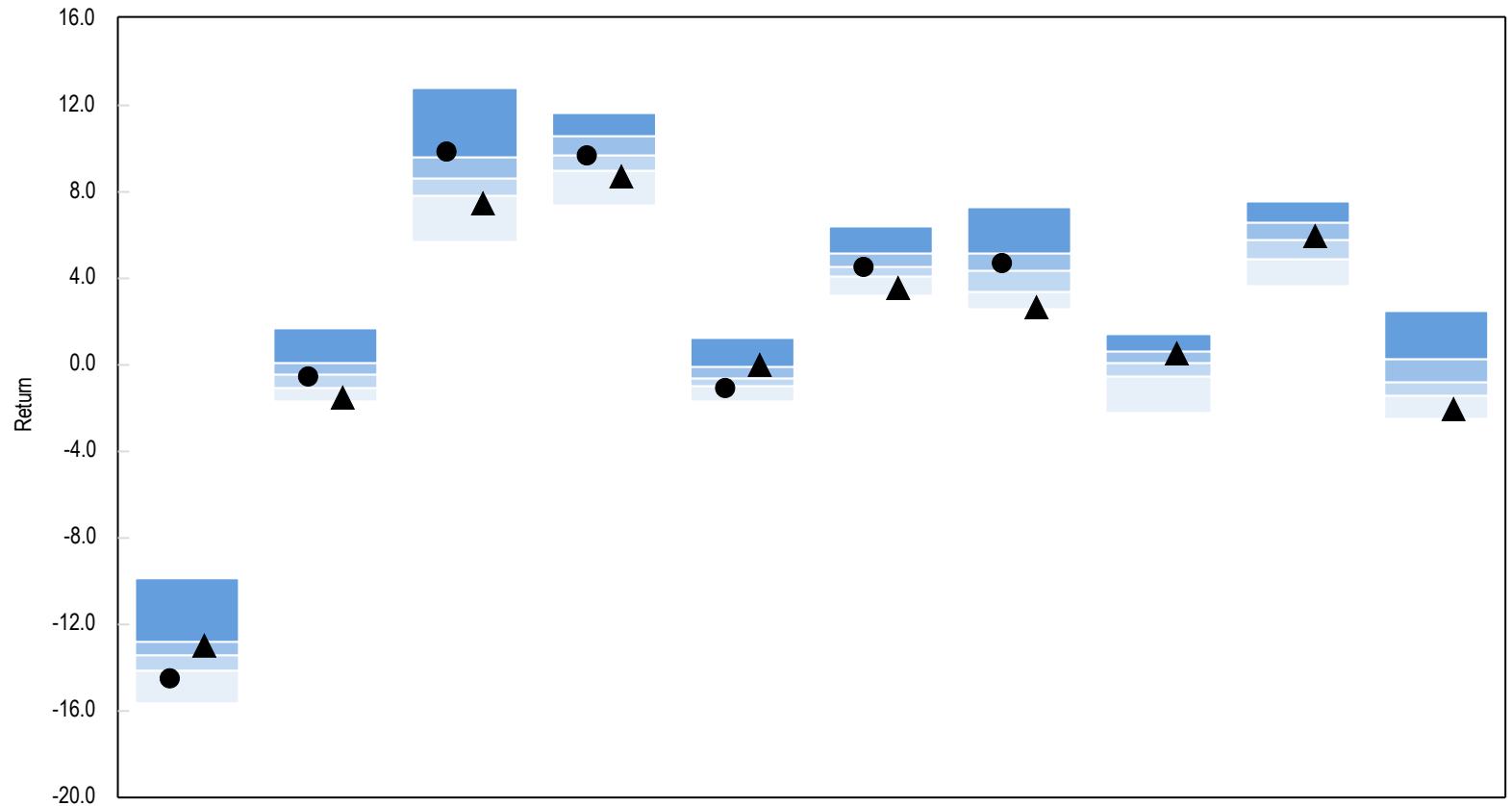


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● MacKay Shields Core Plus Opportunities	-2.70 (30)	-0.37 (51)	-2.70 (30)	1.98 (39)	-4.66 (66)	0.53 (55)	0.43 (66)	-
▲ Blmbg. U.S. Aggregate Index	-3.23 (79)	-1.21 (87)	-3.23 (79)	0.64 (82)	-5.21 (87)	0.10 (89)	-0.09 (98)	1.13 (95)
5th Percentile	-0.52	2.02	-0.52	4.70	-1.78	2.22	1.95	2.69
1st Quartile	-2.60	0.20	-2.60	2.27	-3.91	0.92	0.91	2.00
Median	-2.93	-0.36	-2.93	1.61	-4.38	0.57	0.61	1.68
3rd Quartile	-3.19	-0.86	-3.19	0.96	-4.85	0.30	0.29	1.46
95th Percentile	-3.87	-1.71	-3.87	-0.02	-5.43	-0.01	0.01	1.11
Population	135	133	135	133	127	120	113	103

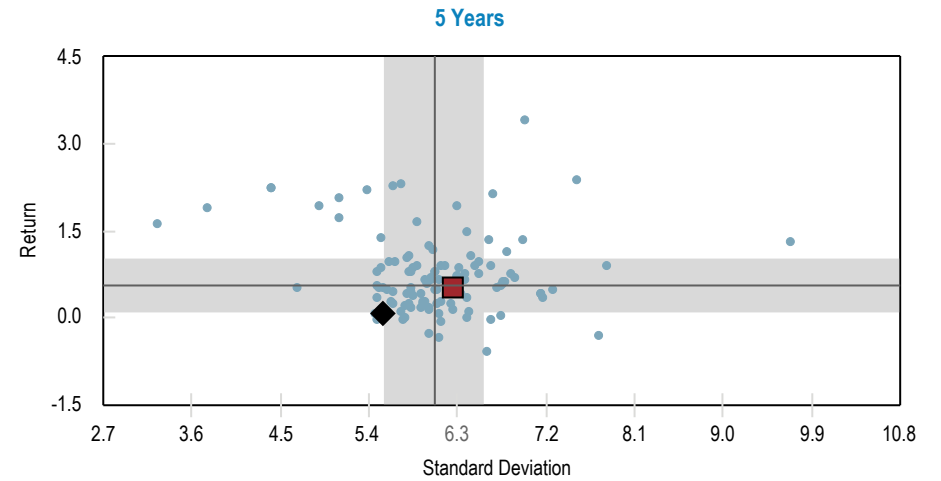
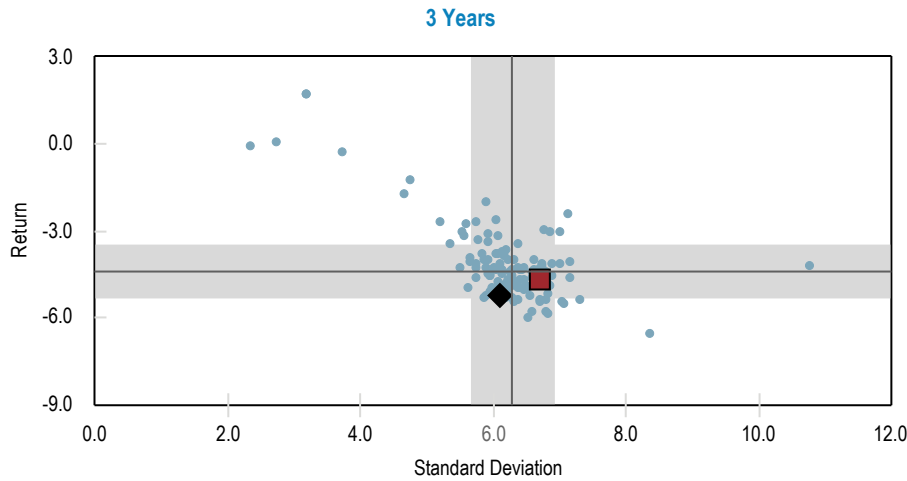
MacKay Shields Core Plus Opportunities
 Consecutive Performance Comparison (Net of Fees)

Imperial County Employees' Retirement System
 Period Ending: September 30, 2023

MacKay Shields Core Plus Opportunities vs. eV US Core Plus Fixed Inc



	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● MacKay Shields Core Plus Opportunities	-14.51 (86)	-0.49 (52)	9.91 (22)	9.67 (52)	-1.03 (76)	4.53 (53)	4.69 (37)	-	-	-
▲ Blmbg. U.S. Aggregate Index	-13.01 (36)	-1.55 (91)	7.51 (82)	8.72 (81)	0.01 (25)	3.54 (91)	2.65 (93)	0.55 (29)	5.97 (41)	-2.02 (92)
5th Percentile	-9.84	1.70	12.80	11.63	1.23	6.44	7.28	1.44	7.53	2.52
1st Quartile	-12.76	0.11	9.63	10.60	-0.07	5.14	5.15	0.64	6.59	0.23
Median	-13.44	-0.42	8.62	9.72	-0.60	4.57	4.34	0.13	5.76	-0.77
3rd Quartile	-14.13	-1.03	7.86	9.00	-1.02	4.13	3.41	-0.51	4.88	-1.38
95th Percentile	-15.62	-1.70	5.65	7.40	-1.67	3.16	2.59	-2.27	3.68	-2.46
Population	142	143	145	146	145	147	143	142	140	138



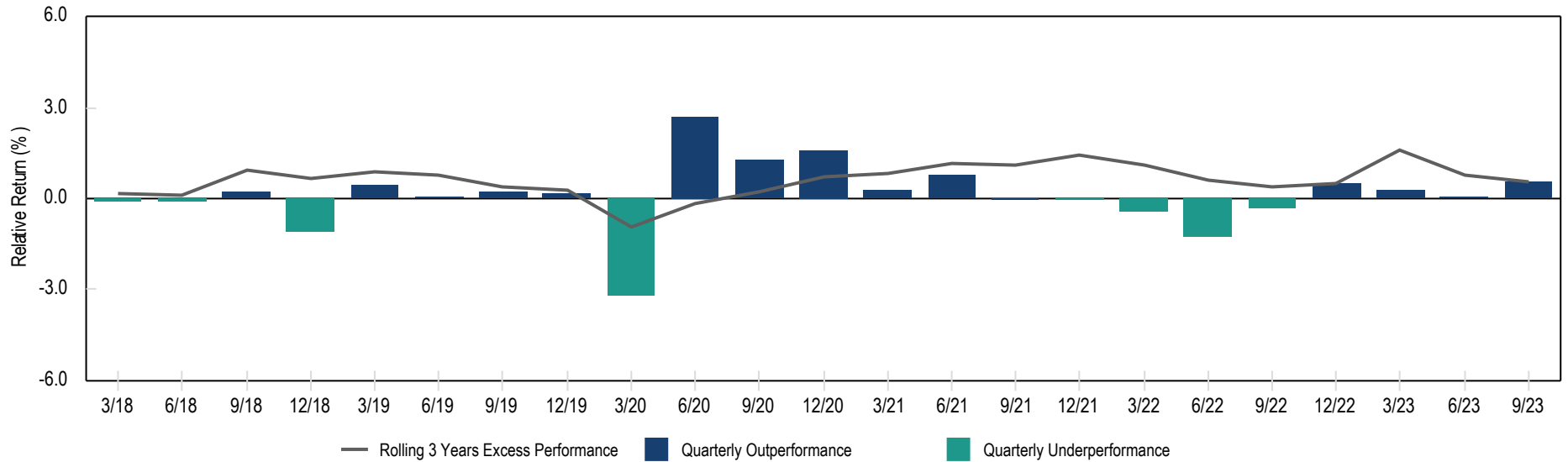
eV US Core Plus Fixed Inc

	Return	Standard Deviation
■ MacKay Shields Core Plus Opportunities	-4.66	6.70
◆ Blmbg. U.S. Aggregate Index	-5.21	6.12
— Median	-4.38	6.30
Population	127	127

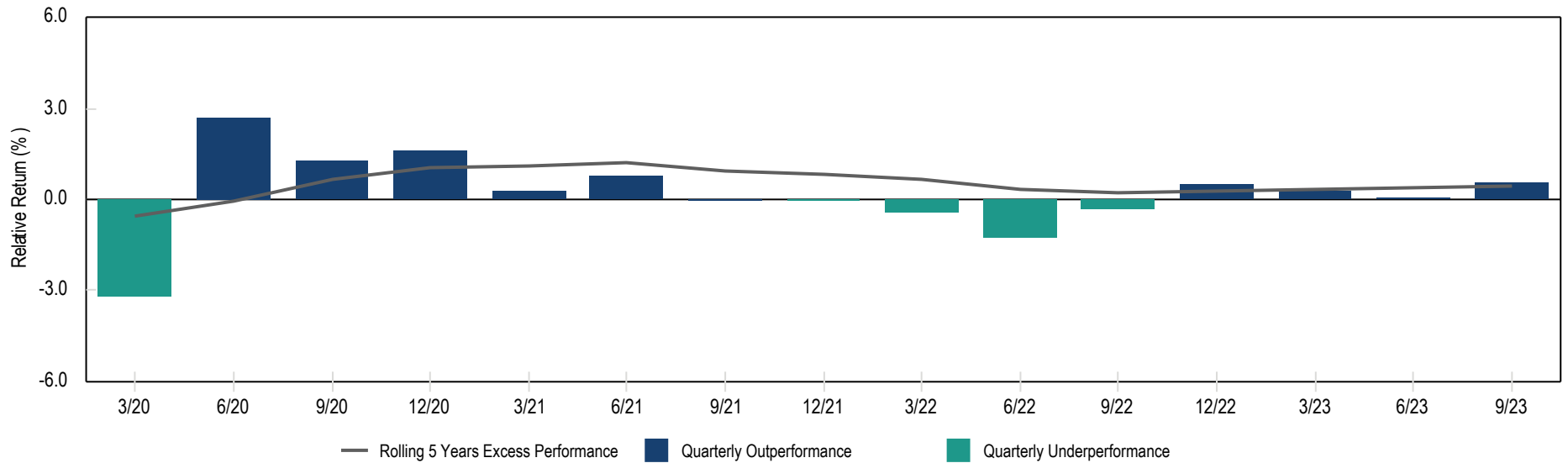
eV US Core Plus Fixed Inc

	Return	Standard Deviation
■ MacKay Shields Core Plus Opportunities	0.53	6.24
◆ Blmbg. U.S. Aggregate Index	0.10	5.55
— Median	0.57	6.06
Population	120	120

Rolling 3 Year Annualized Excess Performance



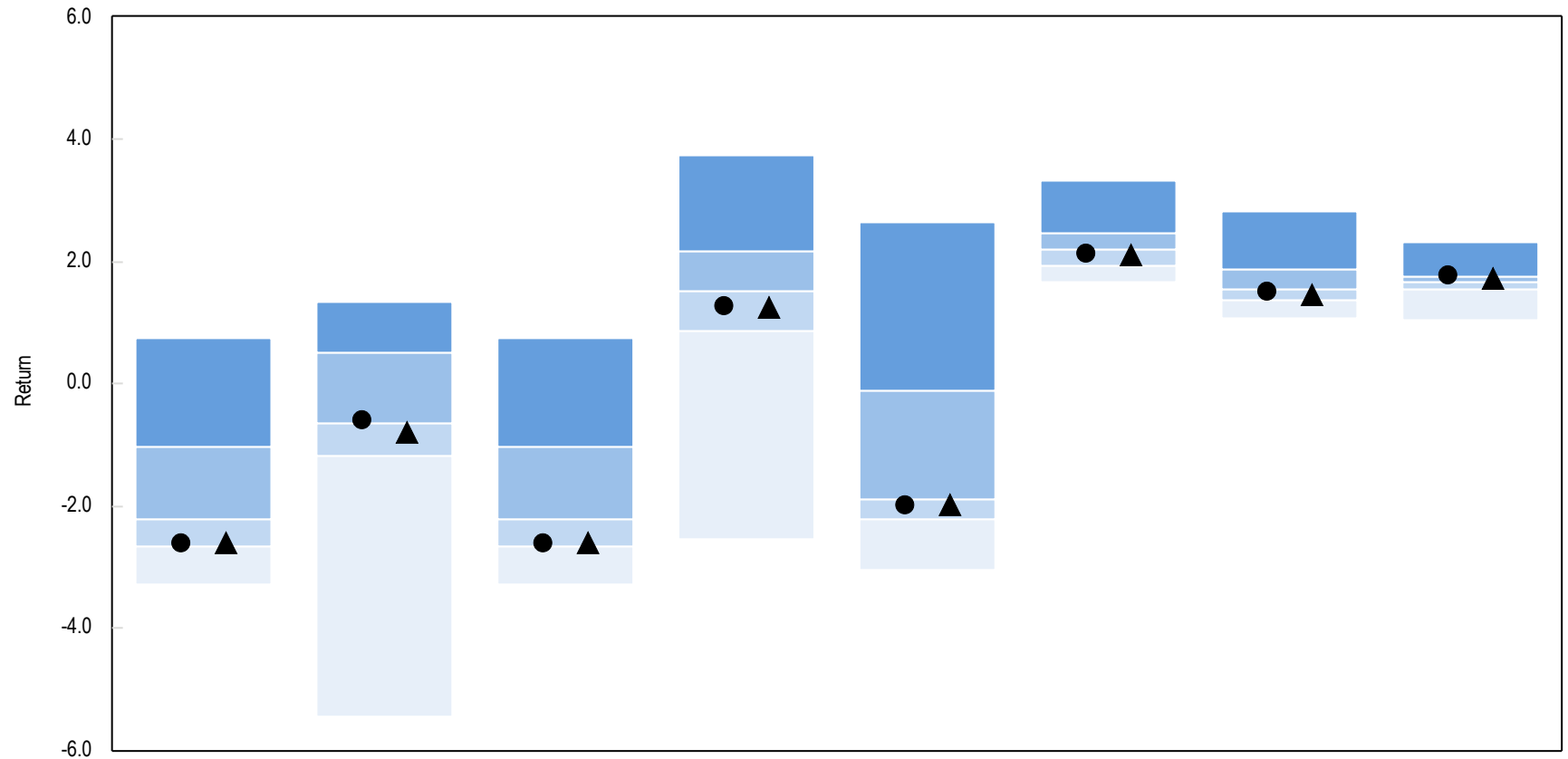
Rolling 5 Year Annualized Excess Performance



BlackRock US TIPS
Cumulative Performance Comparison (Net of Fees)

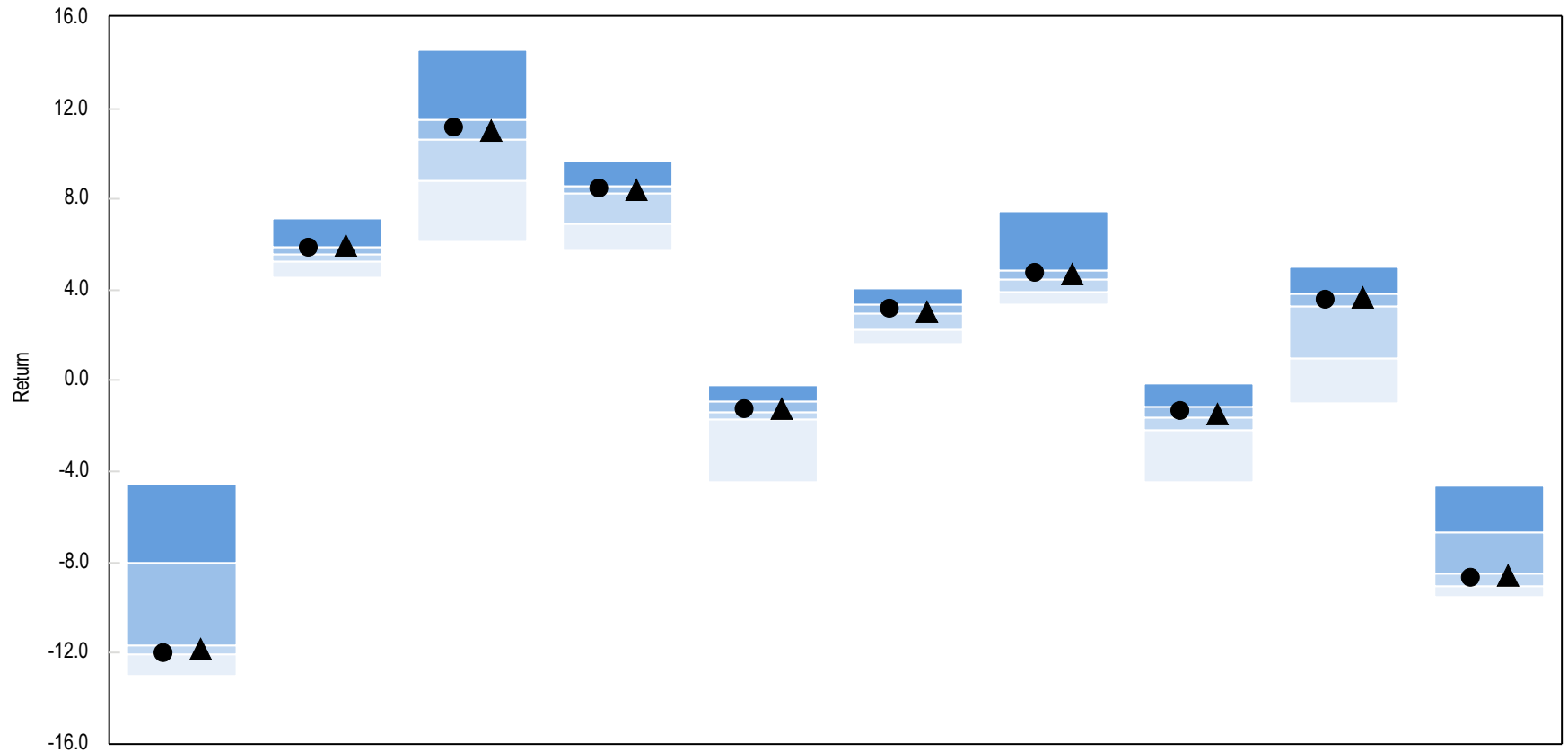
Imperial County Employees' Retirement System
Period Ending: September 30, 2023

BlackRock US TIPS vs. eV US TIPS / Inflation Fixed Inc

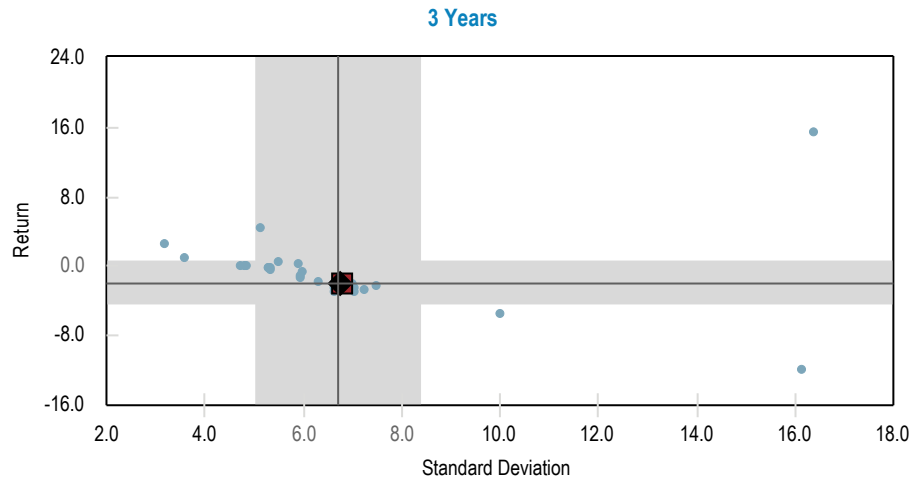


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● BlackRock US TIPS	-2.58 (69)	-0.57 (46)	-2.58 (69)	1.28 (59)	-1.97 (56)	2.16 (56)	1.53 (59)	1.80 (23)
▲ Blmbg. U.S. TIPS	-2.60 (72)	-0.78 (60)	-2.60 (72)	1.25 (62)	-1.98 (56)	2.12 (58)	1.46 (62)	1.74 (32)
5th Percentile	0.77	1.33	0.77	3.75	2.65	3.33	2.83	2.33
1st Quartile	-1.03	0.53	-1.03	2.19	-0.11	2.48	1.89	1.78
Median	-2.22	-0.65	-2.22	1.52	-1.88	2.20	1.56	1.68
3rd Quartile	-2.64	-1.18	-2.64	0.86	-2.20	1.93	1.39	1.55
95th Percentile	-3.28	-5.43	-3.28	-2.54	-3.05	1.68	1.10	1.06
Population	42	40	42	40	40	38	38	35

BlackRock US TIPS vs. eV US TIPS / Inflation Fixed Inc

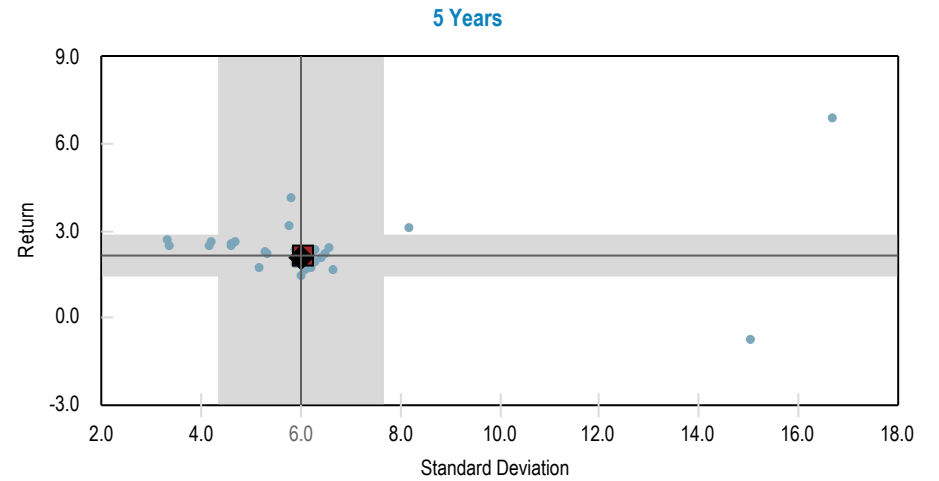


	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● BlackRock US TIPS	-11.94 (67)	5.86 (26)	11.15 (32)	8.46 (32)	-1.19 (40)	3.17 (38)	4.77 (31)	-1.31 (34)	3.56 (37)	-8.61 (55)
▲ Blmbg. U.S. TIPS	-11.85 (60)	5.96 (19)	10.99 (37)	8.43 (33)	-1.26 (43)	3.01 (50)	4.68 (36)	-1.44 (37)	3.64 (32)	-8.61 (55)
5th Percentile	-4.55	7.18	14.56	9.64	-0.22	4.06	7.47	-0.10	5.01	-4.61
1st Quartile	-7.98	5.86	11.53	8.55	-0.91	3.40	4.89	-1.15	3.80	-6.68
Median	-11.67	5.58	10.60	8.30	-1.35	3.00	4.43	-1.61	3.26	-8.51
3rd Quartile	-12.04	5.25	8.80	6.90	-1.68	2.28	3.95	-2.15	0.98	-9.02
95th Percentile	-12.96	4.52	6.15	5.76	-4.43	1.65	3.35	-4.50	-0.95	-9.54
Population	43	45	45	47	52	54	57	59	62	64



eV US TIPS / Inflation Fixed Inc

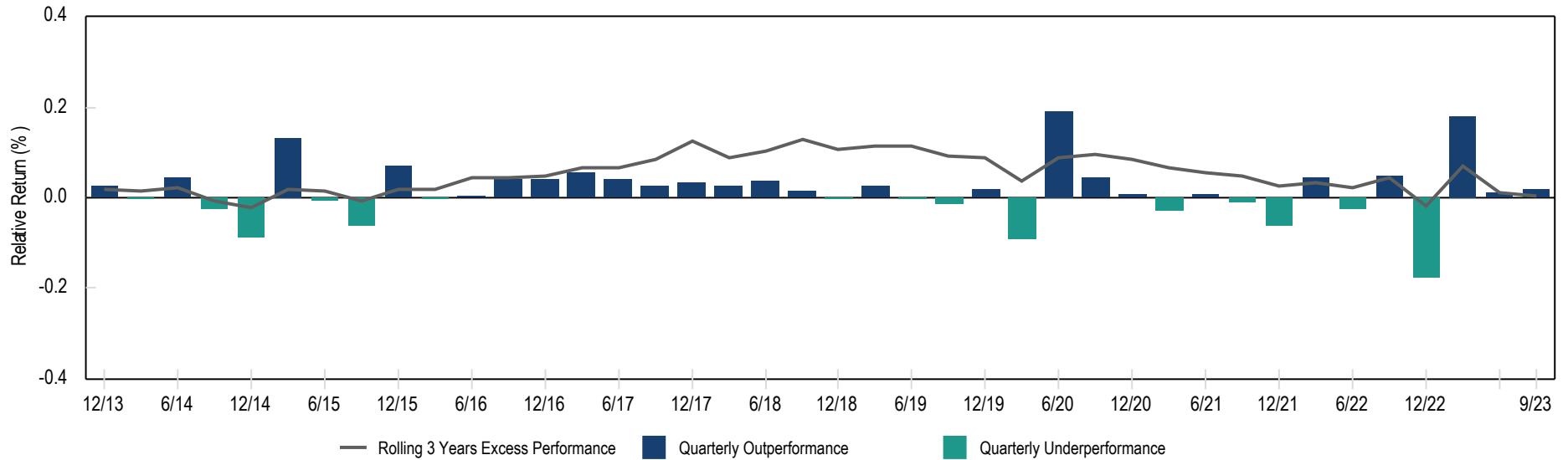
	Return	Standard Deviation
■ BlackRock US TIPS	-1.97	6.78
◆ Blmbg. U.S. TIPS	-1.98	6.76
— Median	-1.88	6.72
Population	40	40



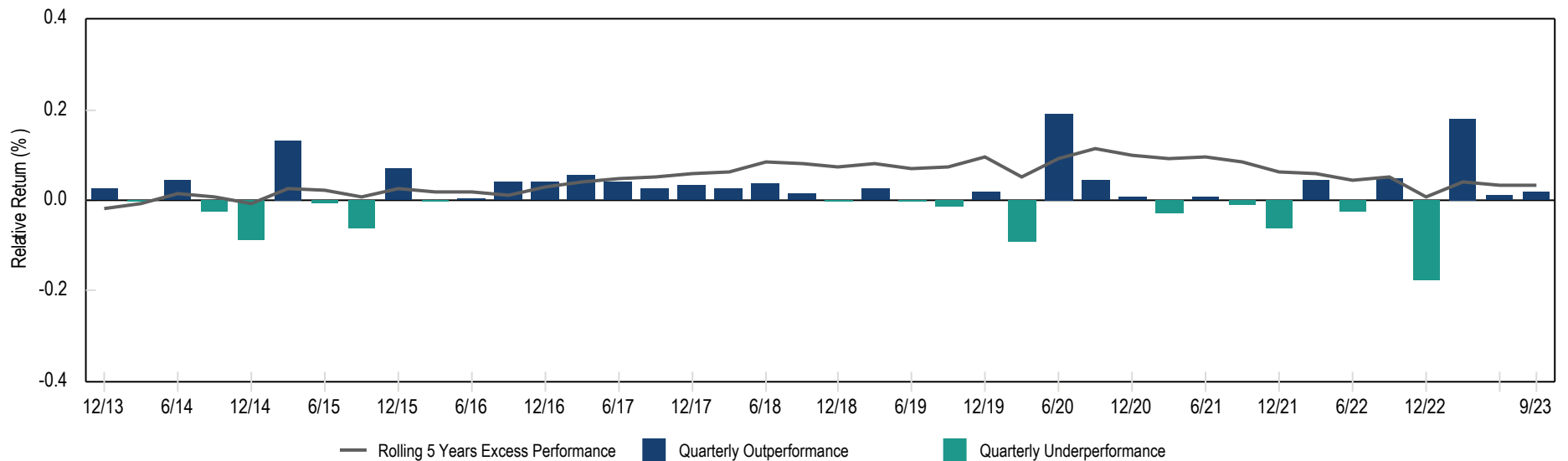
eV US TIPS / Inflation Fixed Inc

	Return	Standard Deviation
■ BlackRock US TIPS	2.16	6.03
◆ Blmbg. U.S. TIPS	2.12	6.00
— Median	2.20	6.01
Population	38	38

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



Total Real Estate
Asset Class Overview (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: September 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
Total Real Estate	113,712,751	100.0	-2.1	-9.8	-2.1	-13.4	5.4	4.9	7.2	8.5	18.4	2.1	5.7	7.5
<i>NCREIF Property Index</i>			-1.4	-5.1	-1.4	-8.4	6.0	5.3	7.4	5.5	17.7	1.6	6.4	6.7
<i>NCREIF ODCE</i>			-1.9	-7.6	-1.9	-12.1	7.1	5.7	7.6	7.5	22.2	1.2	5.3	7.1
ASB Real Estate	26,520,637	23.3	-3.9	-14.9	-3.9	-18.3	2.8	2.6	5.8	10.7	14.2	1.5	3.0	6.6
<i>NCREIF Property Index</i>			-1.4	-5.1	-1.4	-8.4	6.0	5.3	7.4	5.5	17.7	1.6	6.4	6.7
<i>NCREIF ODCE</i>			-1.9	-7.6	-1.9	-12.1	7.1	5.7	7.6	7.5	22.2	1.2	5.3	7.1
Clarion Lion	30,046,088	26.4	-1.1	-11.6	-1.1	-16.2	6.9	5.9	8.2	9.6	23.6	2.3	6.8	8.6
<i>NCREIF Property Index</i>			-1.4	-5.1	-1.4	-8.4	6.0	5.3	7.4	5.5	17.7	1.6	6.4	6.7
<i>NCREIF ODCE</i>			-1.9	-7.6	-1.9	-12.1	7.1	5.7	7.6	7.5	22.2	1.2	5.3	7.1
ARA American Strategic Value Realty	55,137,076	48.5	-1.8	-6.4	-1.8	-9.7	6.2	5.9	-	6.8	18.6	2.4	7.8	-
<i>NCREIF Property Index +2%</i>			-0.9	-3.7	-0.9	-6.6	8.2	7.4	-	7.6	20.0	3.6	8.5	8.9
<i>NCREIF ODCE +2%</i>			-1.4	-6.2	-1.4	-10.4	9.3	7.8	-	9.6	24.6	3.2	7.4	8.9
1221 State St. Corp	2,008,951	1.8	0.0	0.0	0.0	0.0	0.0	1.5	2.4	0.0	0.0	0.0	7.9	0.0

Data Sources & Methodology

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.

Manager Line Up

Manager	Inception Date	Data Source	Manager	Inception Date	Data Source
BlackRock Russell 3000	12/10/2015	J.P. Morgan	1221 State Street Corp	9/30/2008	ICERS/Union Bank
BlackRock International Equity	7/3/2003	J.P. Morgan	Cash	-	J.P. Morgan
DFA Emerging Markets Value	1/11/2007	J.P. Morgan	HarbourVest IX-Buyout	2011 ¹	HarbourVest
Harding Loevner	7/5/2016	Harding Loevner	HarbourVest IX-Credit	2011 ¹	HarbourVest
Bradford & Marzec Fixed (Tortoise Capital)	12/1/1992	J.P. Morgan	HarbourVest International VI	2008 ¹	HarbourVest
MacKay Shields Core Plus Ops	3/2/2015	CITCO	Harbourvest IX-Venture	2011 ¹	HarbourVest
BlackRock US TIPS	4/11/2007	J.P. Morgan	Harbourvest 2017 Global	2017 ¹	HarbourVest
ASB Real Estate	12/31/2012	ASB Real Estate	Harbourvest 2018 Global	2018 ¹	HarbourVest
Clarion Lion	12/31/2006	Clarion Lion	Harbourvest 2019 Global	2019 ¹	HarbourVest
Portfolio Advisors	10/31/2017	Portfolio Advisors	KKR Mezzanine	2010 ¹	KKR
TSSP Adjacent Opportunities Partners	4/16/2020	Sixth Street	ARA American Strategic Value Realty	01/04/2018	ARA
Sixth Street Diversified Credit	5/29/2020	Sixth Street	Income Research & Management	9/1/2023	IR&M

¹Represents fund vintage year.

Policy & Custom Index Composition

Policy Index (8/1/2020- Current)	33% Russell 3000, 20% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 10% NCREIF Property, 5% Private Equity Benchmark, 5% Private Credit Benchmark.
Policy Index (1/1/2020-7/31/2020)	29% Russell 3000, 24% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 10% NCREIF Property, 1% Russell 3000, 2% Bloomberg Aggregate, 4% Private Equity Benchmark, 3% Private Credit Benchmark.
Policy Index (10/1/2018-12/31/2019)	29% Russell 3000, 24% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 10% NCREIF Property, 5% Russell 3000 +3% (Lagged), 5% Bloomberg High Yield +2% (Lagged).
Policy Index (10/1/2016-9/30/2018)	29% Russell 3000, 24% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 5% NCREIF Property, 5% NCREIF Property +2%, 5% Russell 3000 +3% (Lagged), 5% Bloomberg High Yield +2% (Lagged).
Policy Index (7/1/2014-9/30/2016)	29% Russell 3000, 25% MSCI ACWI ex-US (Gross), 30% Barclays U.S. Aggregate, 6% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000 +3% (Lagged).

Private Equity Benchmark and Private Credit Benchmarks are equal to the actual private equity and private credit returns, respectively.

Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Disclaimer

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