



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: JUNE 30, 2023

Investment Performance Review for

Imperial County Employees' Retirement System

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Investment Landscape

TAB I

Investment Performance
Review

TAB II

A decorative geometric pattern of overlapping triangles in shades of blue and green is overlaid on the left side of the image. A large white triangle is positioned to the left of the main text.

**PERSPECTIVES
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**3RD QUARTER 2023
Investment Landscape**

Verus business update

Since our last Investment Landscape webinar:

— Verus hired four employees:

- **Dan Hougard, FSA**, Associate Director | Actuarial Services (Chicago)
- **Chibueze Odoh**, Public Markets Analyst (Seattle)
- **Madison Martin**, Performance Analyst (Seattle)
- **Palmer Pederson**, Performance Analyst (Seattle)

— In addition, we've partnered with Rainier Scholars for a summer internship position. Rainier Scholars is a program that offers a pathway to college graduation for underrepresented communities.

- **Moses Dagmawi**, Summer Intern (Seattle)

Recent Verus research

Visit: verusinvestments.com/research

Annual research

2023 REAL ASSETS OUTLOOK

In our Outlook last year, we said, “We believe inflation will likely begin falling later in 2022.” And though that turned out to be true, we came to that conclusion because we believed the Fed would choke off the pressures of inflation. Coming into 2023, it appeared as though inflation would continue to retreat lower, but unexpected price increases have complicated the picture. There are now banking instability issues, geopolitics, a softening economy, and a dozen other headline issues weighing on investors’ minds.

We believe the Fed will keep policy tight until inflation returns to their target level. We expect rates to stay higher for longer, which could present challenges and opportunities across private markets which have broadly failed to adjust equity values for the new higher-rate environment.

The Verus 2023 Real Assets Outlook includes insights around the following trends:

- Dislocations in Commercial Real Estate
- Elevated valuations in Infrastructure
- Declining interest in Natural Resources

Topics of interest

PRIVATE REAL ESTATE IN TAFT-HARTLEY PORTFOLIOS

Taft-Hartley pension funds in the United States often make allocations to private real estate with the dual objectives of generating robust returns and supporting union workers by investing in “labor-friendly” real estate strategies. There is occasionally a misconception that investing in labor-friendly real estate strategies involves sacrificing performance.

In this Topic of Interest whitepaper, we examine core real estate manager performance over time using the North American Building Trades Report Card to identify whether a performance difference does in fact exist. We conclude, based on the data, that labor-friendly private real estate performance has been competitive with the broader private real estate universe and that significant return was not sacrificed when investing in labor-friendly strategies during the period examined.

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2nd quarter summary

THE ECONOMIC CLIMATE

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

PORTFOLIO IMPACTS

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

THE INVESTMENT CLIMATE

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

ASSET ALLOCATION ISSUES

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

Equity & credit markets performed strongly during Q2

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

What drove the market in Q2?

“U.S. inflation cooled in June for the 12th straight month”

HEADLINE CONSUMER PRICE INFLATION (YEAR-OVER-YEAR)

Jan	Feb	Mar	Apr	May	Jun
6.4%	6.0%	5.0%	4.9%	4.1%	3.0%

Article Source: CNN, July 12th, 2023

“Top U.S. banks raise dividends after sailing through Fed stress tests”

KBW REGIONAL BANKING INDEX (MONTHLY RETURN)

Jan	Feb	Mar	Apr	May	June
2.9%	0.5%	-20.6%	-3.6%	-8.7%	7.1%

Article Source: Reuters, June 30th, 2023

“This classic recession indicator just hit its lowest level since 1981”

10-YEAR U.S. TREASURY YIELD MINUS 2-YEAR U.S. TREASURY YIELD

Jan	Feb	Mar	Apr	May	Jun
-0.68%	-0.79%	-0.64%	-0.56%	-0.56%	-0.89%

Article Source: CNBC, July 7th, 2023

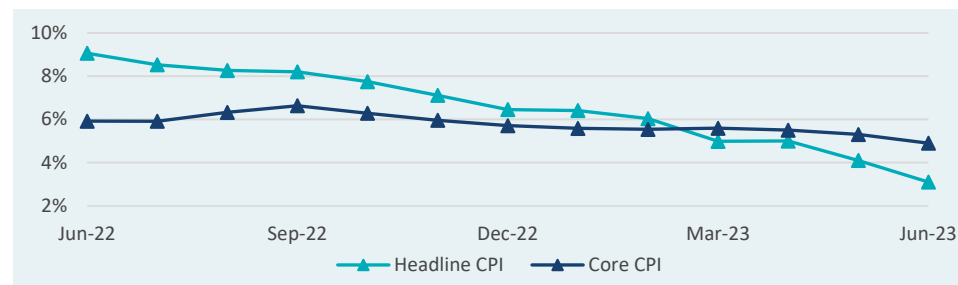
“Fed pauses interest rate hikes, signals two more increases likely...”

FED FUNDS TARGET RATE – UPPER BOUND

Q1 22	Q2 22	Q3 22	Q4 22	Q1 23	Q2 23
0.50%	1.75%	3.25%	4.50%	5.00%	5.25%

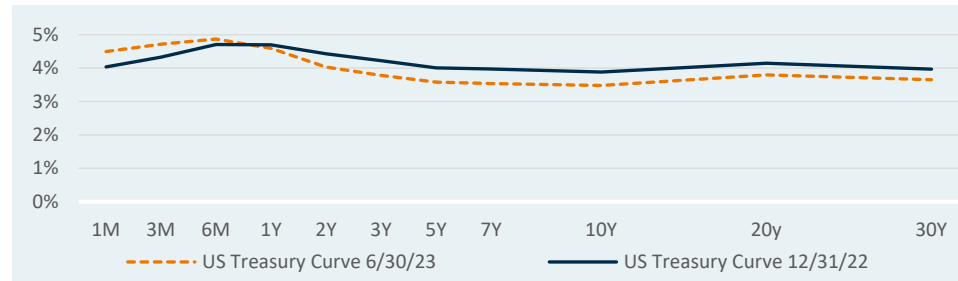
Article Source: USA Today, June 14th, 2023

U.S. HEADLINE VS. CORE INFLATION (YEAR-OVER-YEAR)



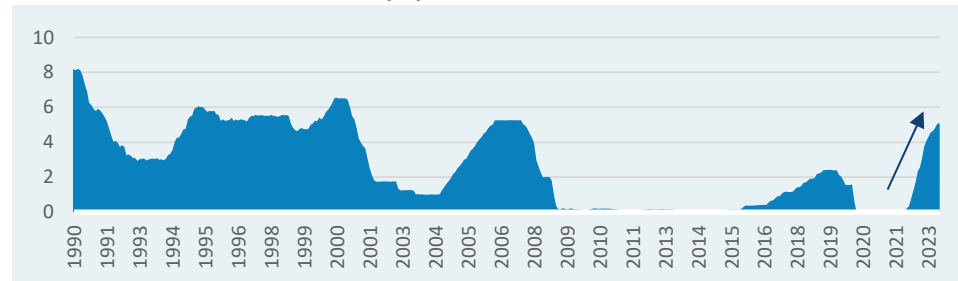
Source: FRED, as of 6/30/23

DEEP U.S. YIELD CURVE INVERSION



Source: Bloomberg, as of 6/30/23

EFFECTIVE FED FUNDS RATE (%)



Source: FRED, as of 6/30/23

Economic environment

U.S. economics summary

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

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

GDP growth

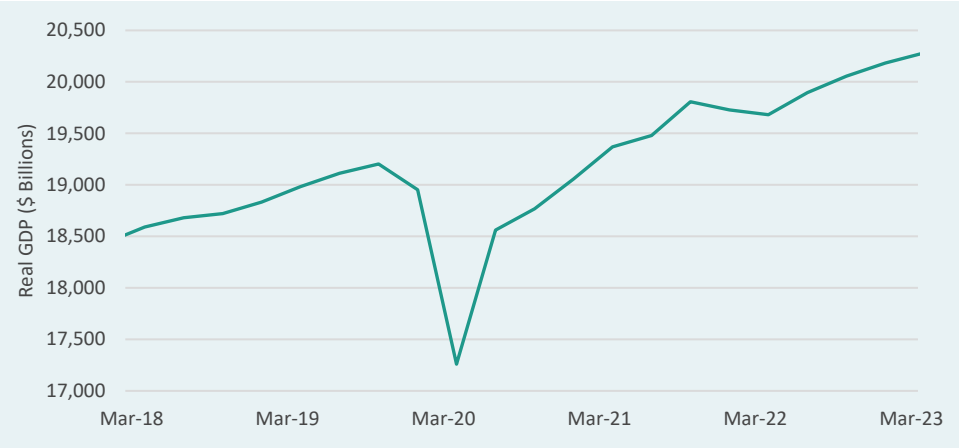
Real GDP increased at a 2.0% rate in the first quarter of 2023 (1.8% growth year-over-year). The slowdown from the prior quarter reflected weaker inventory buildups and slower business investment. An upturn in consumer spending was the greatest support to economic growth, as consumption has ticked along at a steady rate despite higher costs of borrowing. Second quarter GDP growth is expected to be 2.3%, according to the Atlanta Fed GDPNow forecast, as of July 10th.

Growth varied across industries, with service-producing industries producing 2.6% growth, government-related growing 2.7%, and goods-producing industry growth falling by -0.7%.

The economy has increasingly shown signs of resilience, casting doubt on whether a recession is imminent. Markets seem to be interpreting this resilience as a negative development, due to implications for even tighter monetary policy and a more aggressive Federal Reserve in the fight against inflation. This *bad news is good news* dynamic was illustrated on July 6th when ADP’s National Employment Report indicated that 497,000 private sector jobs were added in June—double the expected number. This strong report sent bond yields higher and equity markets lower.

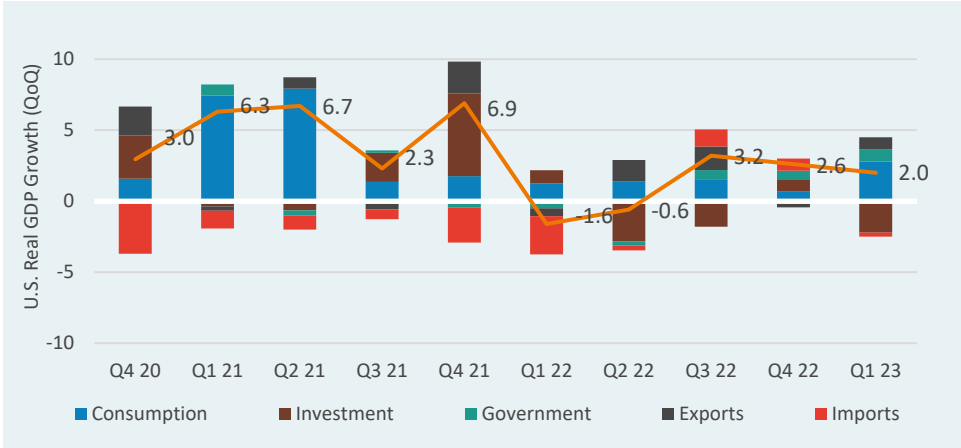
The U.S. economy continues to show resilience despite aggressive monetary tightening & low consumer confidence

U.S. REAL GROSS DOMESTIC PRODUCT



Source: FRED, as of 3/31/23

U.S. REAL GDP COMPONENTS (QOQ)



Source: FRED, as of 3/31/23

Inflation

Inflation has continued to move lower in the U.S., with June CPI coming in at a surprisingly low 3% year-over-year and Core CPI (ex-food & energy) at 4.8%. Weaker energy prices have had a significant impact on overall inflation levels, as well as *base effects* as larger price moves of 2022 begin to fall out of the official twelve-month inflation calculation. In recent months, prices appear to also be softening across many other types of goods and services, suggesting milder inflation is not solely an energy story. Inflation concerns are now centered on core inflation (ex-food & energy) which remains stubbornly high and has shown fewer signs of abating.

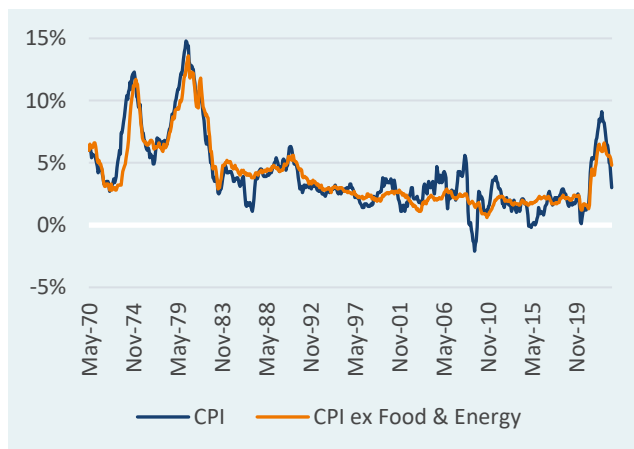
Earlier in the U.S. inflationary cycle business input costs were

rising faster than wages which contributed to an environment where real household incomes were falling (wages not keeping up with goods and services prices). Recently this trend has reversed. This may lead to an environment in which households are benefiting from inflation as wages rise faster than inflation in the prices of goods and services.

In past editions of this document, we predicted that inflation (CPI) was very likely to fall to around 4% in Q2 for technical reasons related to the twelve-month window with which inflation is calculated. These effects have played out as expected.

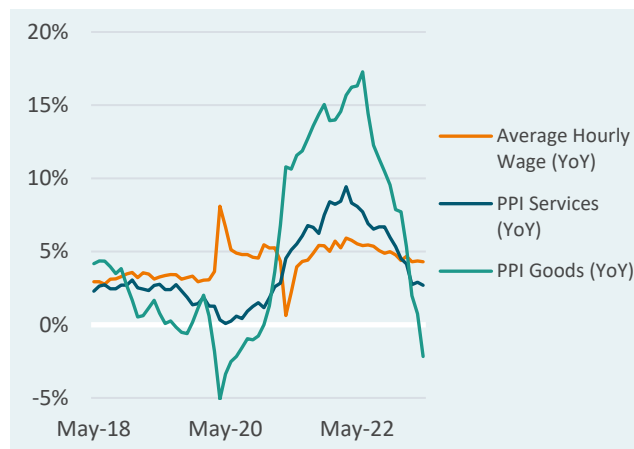
U.S. inflation continues to fall, though persistent monthly core inflation (ex-food & energy) is a concern

U.S. CPI (YOY)



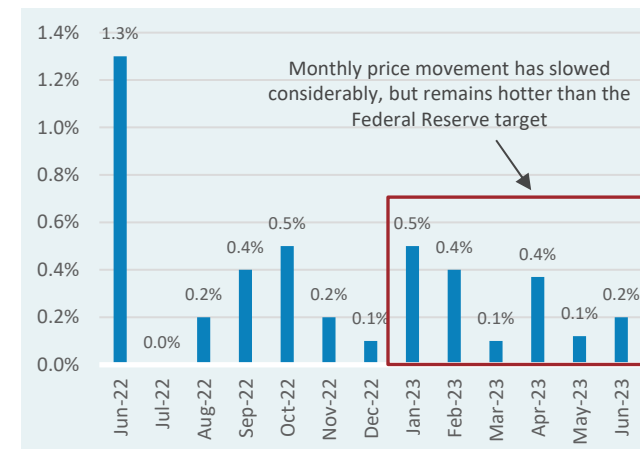
Source: BLS, as of 6/30/23

HIGHER PRICES MAY NOW BENEFIT CONSUMERS



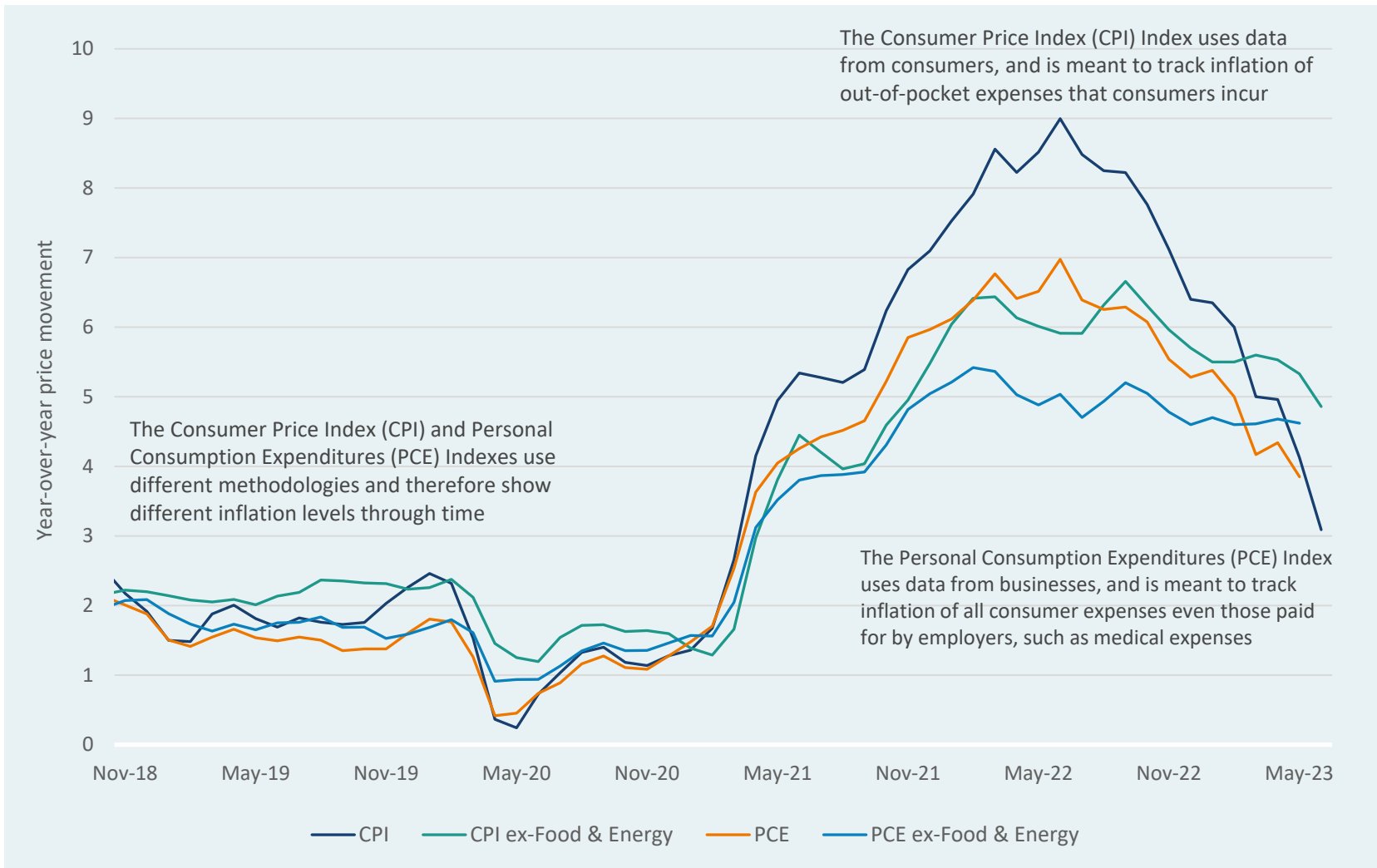
Source: FRED, BLS, as of 5/31/23

MONTHLY PRICE MOVEMENT



Source: BLS, as of 6/30/23

How are inflation conditions evolving?



U.S. inflation continues to fall, though persistent monthly core inflation (ex-food & energy) is a concern

Source: FRED, Verus, PCE data as of 5/31/23, CPI data as of 6/30/23

Labor market

The unemployment rate remained very tight at 3.6% in June, despite far higher interest rates, liquidity withdrawal from the Federal Reserve, and concerns of a possible recession.

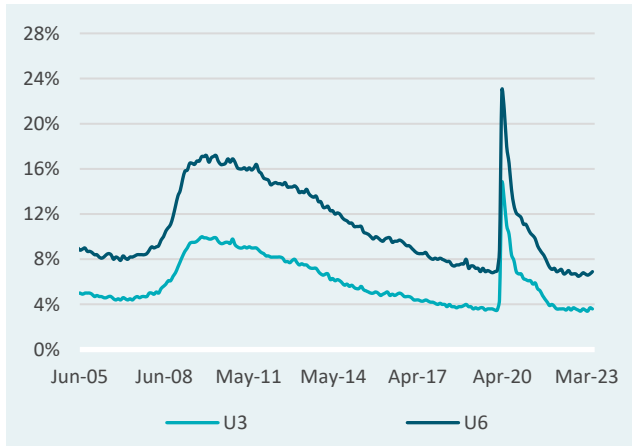
Labor participation rates further recovered over the quarter as many workers who had left the labor force during the pandemic are once again seeking employment. This recovery has been highly concentrated in the core age cohort (25-54 years). In fact, the labor participation rate of this age group has surpassed the pre-pandemic level. Workers aged 55 and older have overall not been returning to the workforce. Participation of these workers has actually declined slightly

over the past year.

Overall, the workforce appears to be experiencing a healthy, and possibly relatively low pain, rebalancing of resources. Many workers are returning to the workforce at the same time that fewer job openings are posted. Both of those effects reduce the mismatch between the number of *workers available* and the *available jobs*. These unique dynamics could allow for a reduction in labor market tightness without a major cycle of layoffs, while potentially also helping ease inflation pressure if a looser labor market helps dampen wage growth.

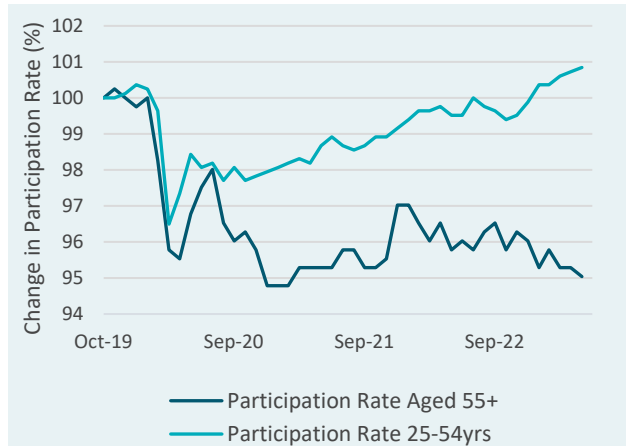
Many workers who left the labor force during the pandemic are returning to the job market, helping to rebalance labor conditions

U.S. UNEMPLOYMENT



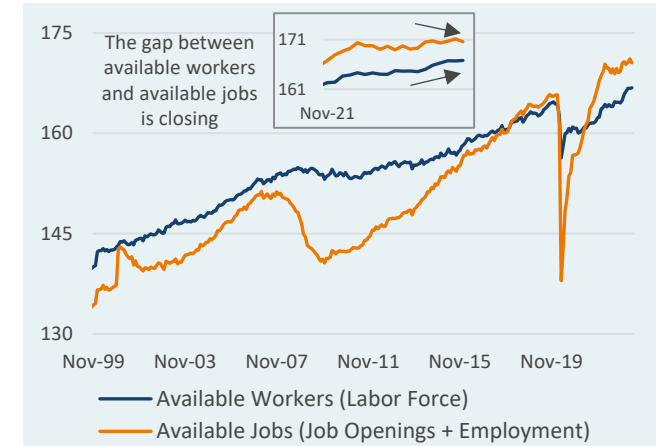
Source: FRED, as of 6/30/23

LABOR FORCE PARTICIPATION RATE



Source: FRED, as of 6/30/23

WORKERS AVAILABLE VS. AVAILABLE JOBS



Source: BLS, as of 5/31/23

The consumer

The U.S. consumer has shown resiliency, with real (inflation-adjusted) personal consumption expenditures moving along at a moderate pace—at 2.1% year-over-year in May. These consumption patterns will be worth watching, as spending is the largest driver of economic growth and is likely the greatest determinant of whether recession occurs in the near-term.

Personal savings rates remain depressed, but this does not seem to be resulting in stronger spending behavior. We suspect lower savings rates are at least partly a product of

high inflation and falling real (inflation-adjusted) incomes.

Household budgets have come under strain due to high inflation in recent years and a sharp increase in interest rates which impacted borrowing costs. However, it is important to contrast this with the fact that Americans have experienced a boom in wealth and prosperity over the past decade, fueled by substantial bull markets in stocks and in residential real estate, among other assets. This wealth may serve as somewhat of a unique buffer against economic weakness.

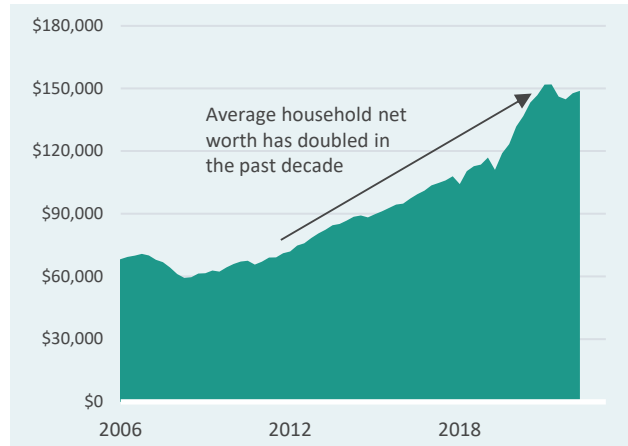
The vast wealth created over the past decade may serve as a unique buffer against economic weakness

REAL PERSONAL SPENDING



Source: FRED, as of 5/31/23

AVERAGE HOUSEHOLD NET WORTH



Source: FRED, as of 1/31/23

PERSONAL SAVINGS RATE



Source: FRED, as of 5/31/23

Sentiment

Consumer sentiment improved slightly during the second quarter by most measures but remains pessimistic. The University of Michigan Consumer Sentiment survey showed that the outlook has brightened due to factors such as the debt ceiling resolution and falling inflation.

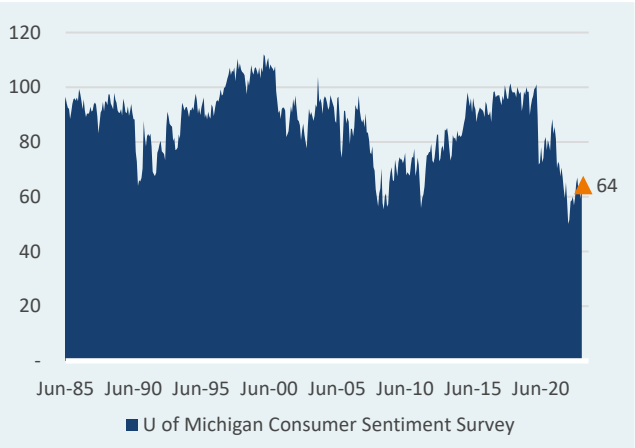
Consumer confidence as indicated by the Conference Board improved materially, although confidence readings reflect levels typically associated with recession within the next year. According to the Conference Board survey, responses suggested a more positive outlook for family finances, better

labor market conditions, and further declines in inflation. Across age cohorts, Americans younger than age 35 expressed the largest gains in optimism.

The NFIB Small Business Optimism index improved slightly but remains at very depressed levels. Difficulties in hiring qualified employees and high inflation were the greatest small business concerns in June. Fewer business owners reported plans to increase prices, perhaps an indication of easing inflation pressure.

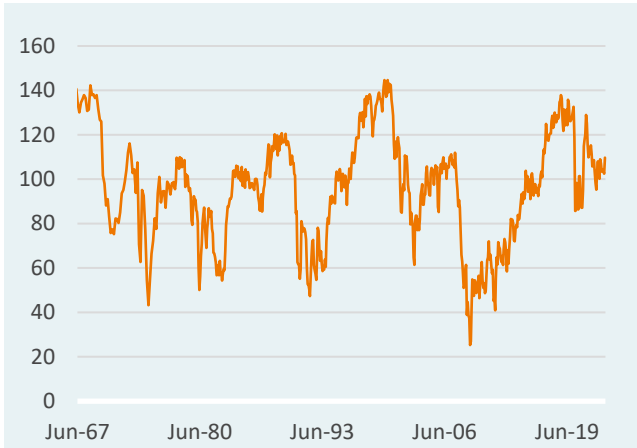
Sentiment improved during Q2 but remains poor by most measures

CONSUMER SENTIMENT



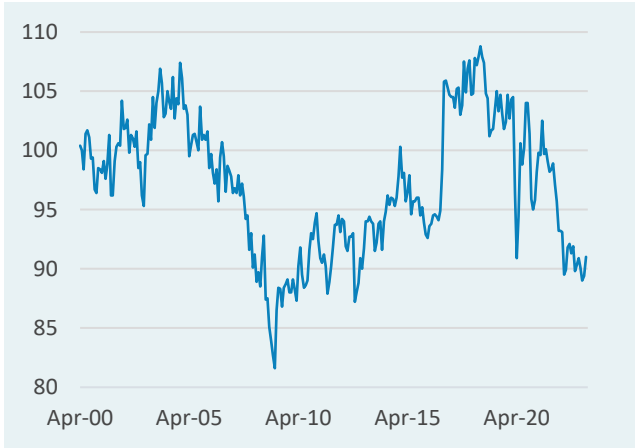
Source: University of Michigan, as of 6/30/23

CONFERENCE BOARD CONSUMER CONFIDENCE



Source: Conference Board, as of 6/30/23

NFIB SMALL BUSINESS SENTIMENT



Source: NFIB, as of 6/30/23

Housing

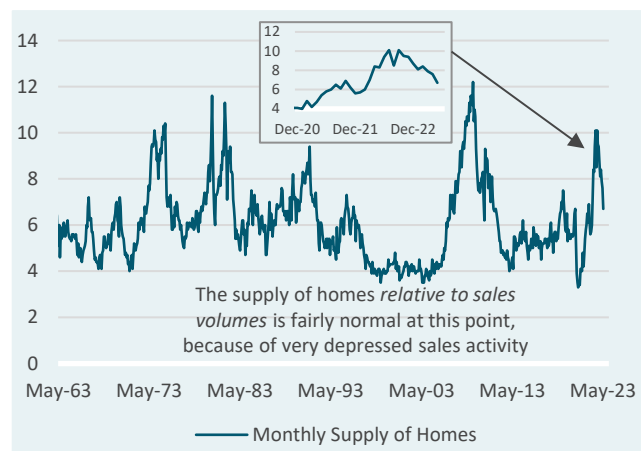
The U.S. housing market continues to face difficult conditions. High mortgage rates and extremely poor affordability have led to the slowest existing home sales activity since the depths of the bear market following the 2008-2009 Housing Crisis. However, conditions are currently very different from that time, as there are few signs of distressed sales. Many sellers are simply refusing to list their homes rather than selling at lower prices—effectively reducing available inventory. Additionally, many potential sellers with very low mortgage interest rates are choosing not to list their homes due to the high financial costs of giving up their low mortgage rate. These dynamics

have contributed to very low housing supply, effectively providing an ongoing support to higher home values.

Together, very low home inventories and weak sales activity have resulted in a fairly normal supply of homes *relative to demand*. It remains to be seen whether the market will experience a cooling and leveling off in the near-term, or whether price depreciation will need to occur to rebalance the market and incentivize potential buyers to make a purchase.

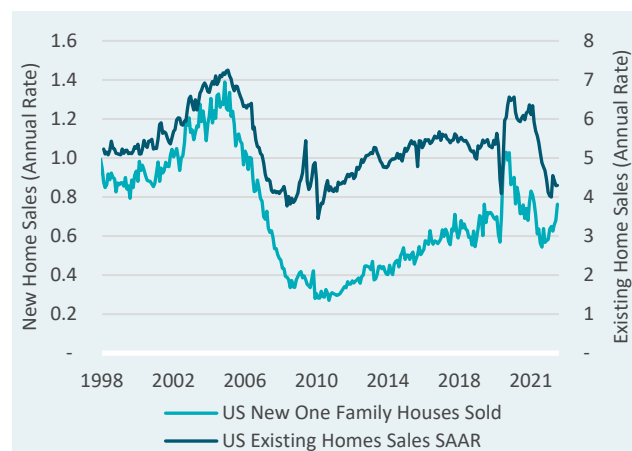
Home sales have slowed to a crawl as affordability is poor, and potential sellers don't want to lose their low interest rates

HOUSING SUPPLY



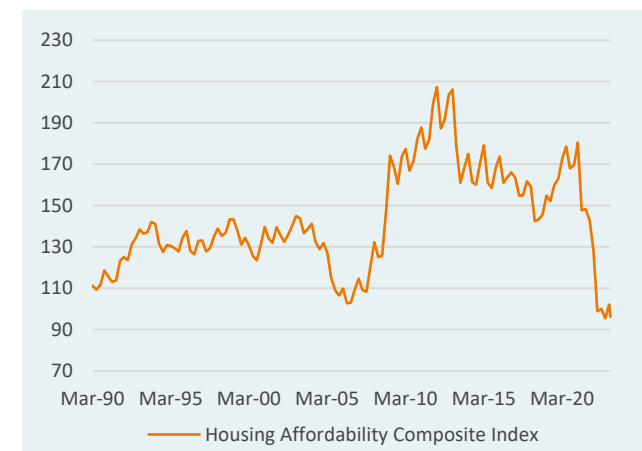
Source: FRED, as of 5/31/23

HOME SALES: NEW & EXISTING (MILLIONS)



Source: FRED, as of 5/31/23

HOUSING AFFORDABILITY



Source: FRED, as of 4/30/23

International economics summary

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

lowered GDP growth to 0.9% for the year.

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

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

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

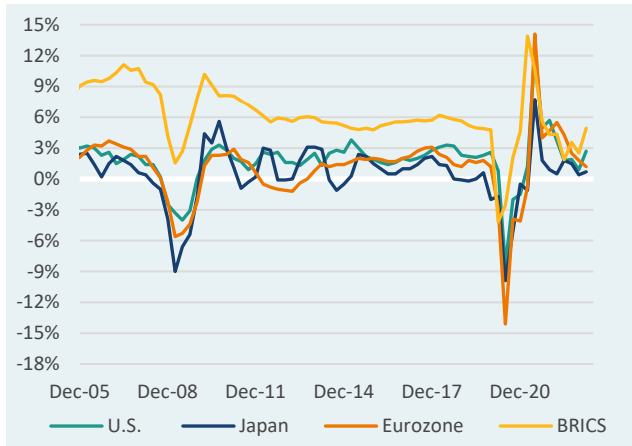
International economics

Developed economies have suffered a material slowdown in growth, though not as dramatic as economists had feared at the beginning of the year. All twenty countries of the Eurozone have now entered a technical recession, on the back of a significant contraction in government spending as well as central bank rate hikes. Meanwhile, as many developed economies cope with stagnating growth, emerging economies have fared better overall, despite the more moderate growth rate of China. The IMF forecasts a pronounced slowing of growth in developed economies from 2.7% in 2022 to 1.3% in 2023, and a relatively unchanged rate of growth of emerging

markets from 4.0% to 3.9%.

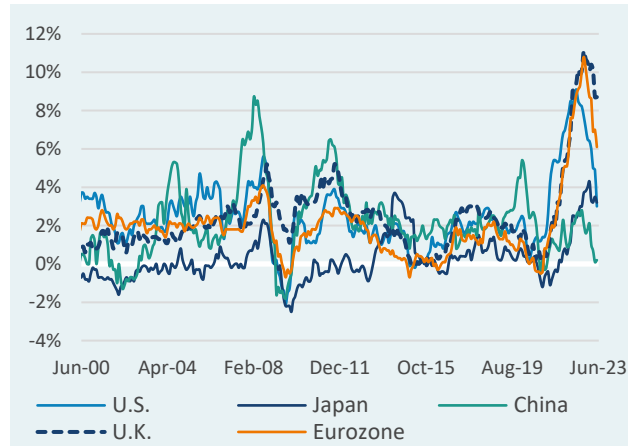
Inflation has subsided in many developed countries and dropped surprisingly quickly across emerging markets. China now faces a 0% inflation rate and risks of deflation, while inflation in Brazil has fallen from over 11% in late 2022 to below 4% in May. Further declines in prices could create new market risks as deflation has serious economic implications, especially in heavily debt-burdened nations. Deflation creates an environment where debt loads are *growing* on an inflation-adjusted basis.

REAL GDP GROWTH (YOY)



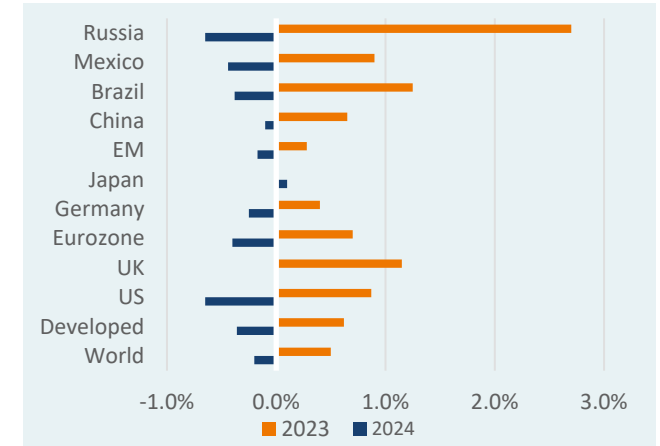
Source: Bloomberg, as of 3/31/23

INFLATION (CPI YOY)



Source: Bloomberg, as of 6/30/23 – or most recent release

GROWTH FORECASTS: CHANGES OVER PAST 6M



Source: Bloomberg median of economist estimates, as of 6/22/23

Fixed income rates & credit

Fixed income environment

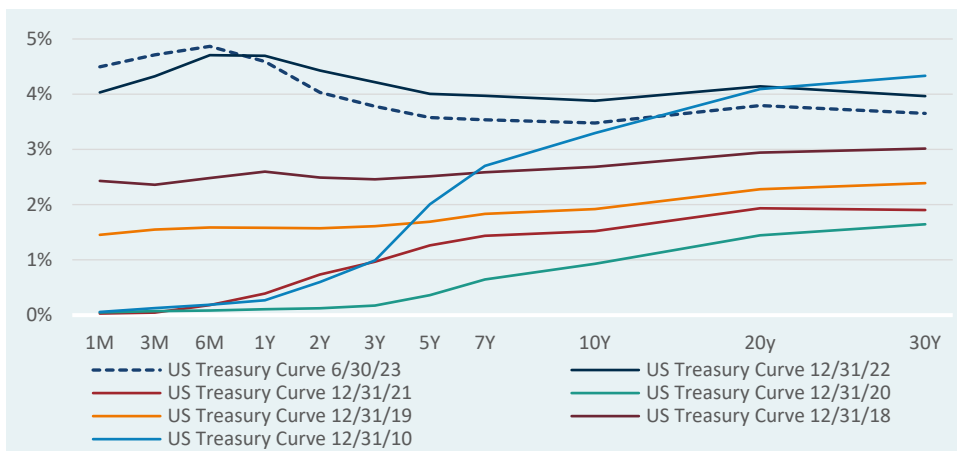
- The 10-year U.S. Treasury yield increased during the quarter from 3.48% to 3.81%, reversing the decline experienced during Q1. Despite an additional rise in short-term interest rates, longer-term interest rates remain anchored. This has resulted in the most deeply inverted yield curve since the early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

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

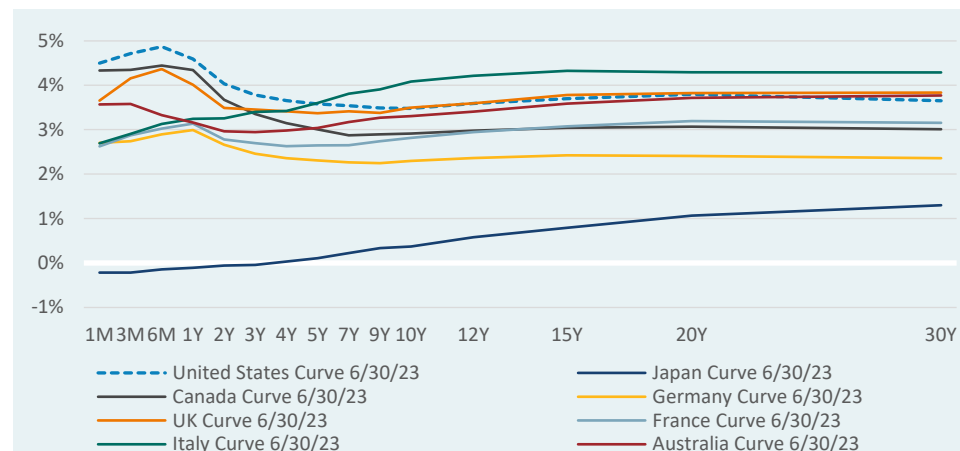
Source: Bloomberg, as of 6/30/23

Yield environment

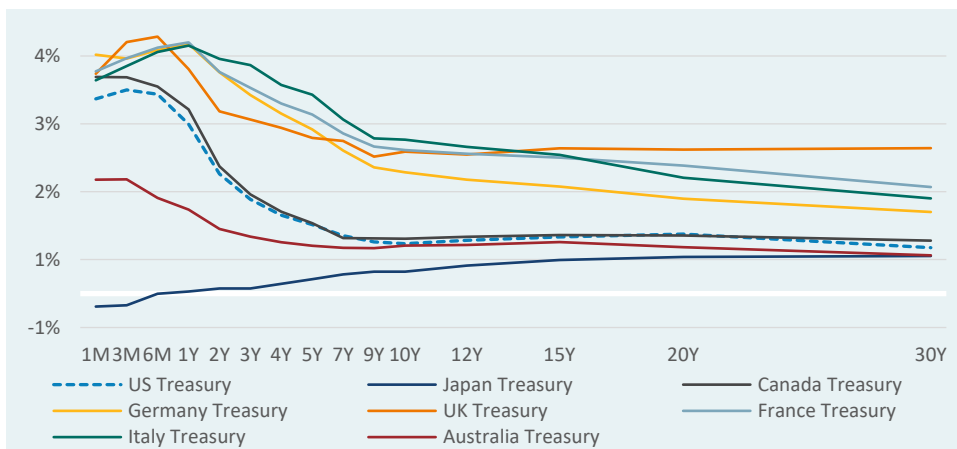
U.S. YIELD CURVE



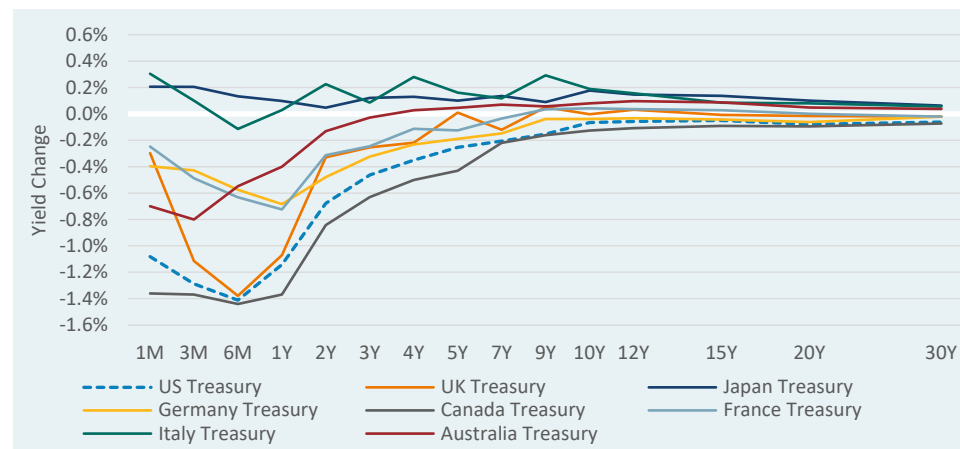
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 6/30/23

Credit environment

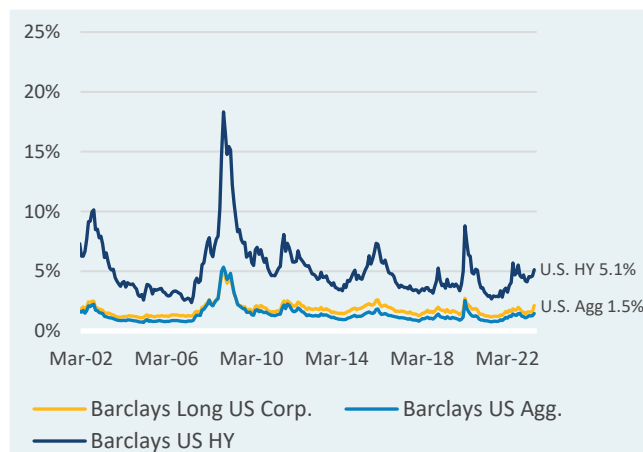
During the second quarter, fixed income markets delivered mixed results with lower-quality credits such as bank loans and high yield bonds outperforming higher-quality credits. Bank loans posted strong returns for the period, delivering 3.1%, followed by high-yield bonds which returned 1.7%. Longer duration investment grade corporate bonds disappointed, returning -0.3%.

Within high-yield bonds, lower quality CCC-rated bonds continued their strong run, outperforming BB- and B-rated bonds. CCC-rated bonds returned 4.7% during the period compared to 1.8% and 0.8% for B-rated and BB-rated bonds, respectively. Bank loans delivered strong returns during the period as investors favored shorter-duration assets given the expectation of interest rate rises. Lower-quality bank loans also

outperformed higher-quality loans, with CCC-rated loans rising 3.3% compared to 2.5% for BB-rated loans.

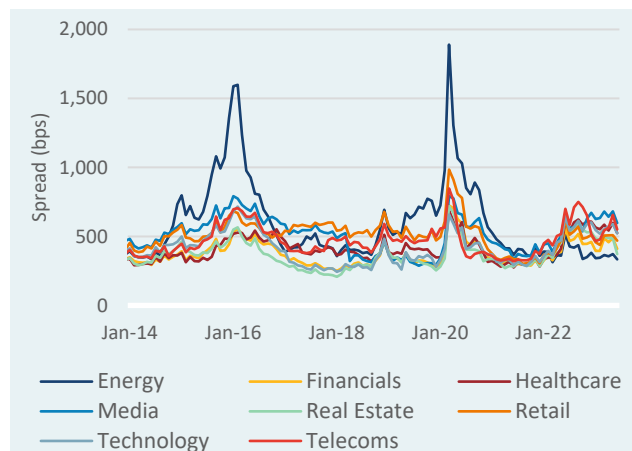
Credit spreads widened during the quarter on fears of an economic slowdown, the effects of higher interest rates, and as heightened credit stress weighed on prices. Lower-quality high-yield bond spreads rose by more than 0.6% during the period to 5.1%, while investment grade spreads increased by roughly 0.2% to 1.5%. Broadly, spreads remain close to their long-term historical averages, which suggests that investors maintain a fairly positive credit outlook. However, if the U.S. economy were to show real signs of weakening, credit spreads would likely move wider.

SPREADS



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

HIGH YIELD SECTOR SPREADS



Source: Bank of America, as of 6/30/23

CREDIT SPREAD (OAS)

Market	6/30/23	6/30/22
Long U.S. Corp	2.1%	1.9%
U.S. Inv Grade Corp	1.3%	1.6%
U.S. High Yield	5.1%	5.7%
U.S. Bank Loans*	5.4%	5.9%

Source: Barclays, Credit Suisse, Bloomberg, as of 6/30/23

*Discount margin (4-year life)

Default & issuance

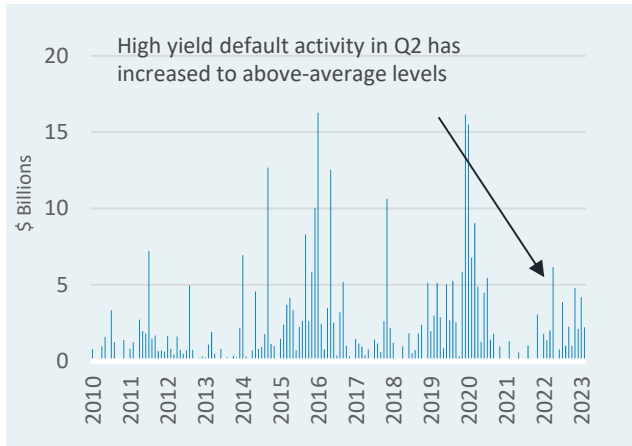
Default activity, while remaining below the long-term trend, increased during the second quarter. Twelve companies defaulted, which were concentrated in the Technology, Industrial, Retail, and Financial-related sectors. A total of \$32.2 billion was affected by default or distressed exchanges during Q2, up from \$20.8 billion in the prior quarter. Notable company defaults included Diebold (Technology), WeWork (Financials), Westco (Industrial) and Bed, Bath & Beyond (Retail).

Past twelve-month default rates for both high-yield bonds and bank loans increased as the cost of borrowing jumped. At the end of the quarter, the trailing one-year default rate of high-yield bonds rose to 2.4%, up from 1.9% in the prior quarter. While defaults have increased, they remain

below the long-term annual average of roughly 3.2% for high-yield bonds. High-yield default recovery rates fell, ending the period at 33.0%, down -11.5% from the previous quarter.

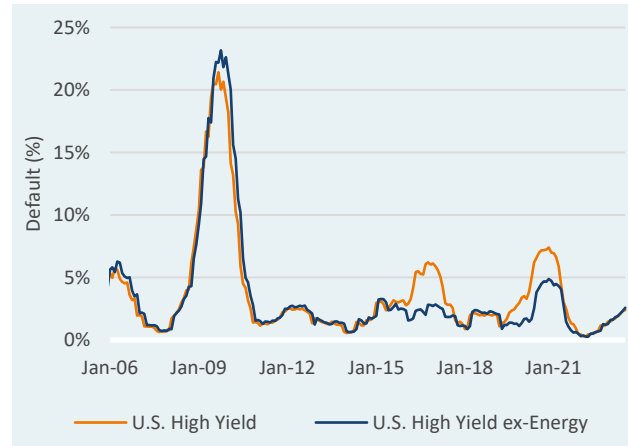
The pace of investment-grade credit issuance slowed, with \$333 billion of issuance compared to \$412 billion in the first quarter. Conditions were different in levered credit, which saw high-yield bond issuance accelerate to \$56 billion—up from \$40.2 billion in Q1. In contrast to prior years, the 2023 level of investment-grade issuance is on track to match 2022, while high-yield issuance is significantly ahead of the pace set during that same period.

U.S. HY MONTHLY DEFAULTS (PAR WEIGHTED)



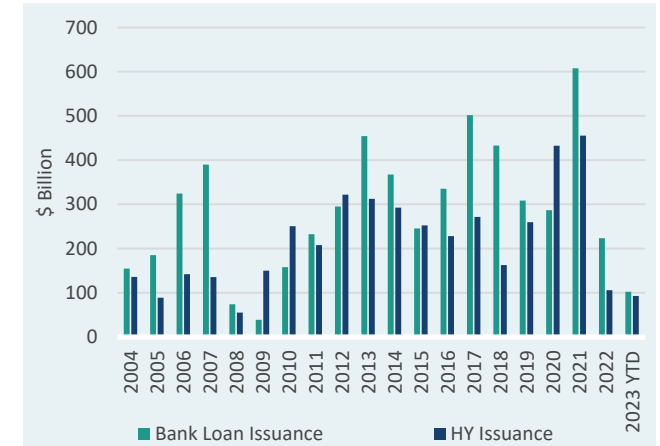
Source: BofA Merrill Lynch, as of 6/30/23

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



Source: BofA Merrill Lynch, as of 6/30/23 – par weighted

DEVELOPED MARKET ISSUANCE (\$ BILLIONS)



Source: BofA Merrill Lynch, all developed markets, as of 6/30/23

Equity

Equity environment

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

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

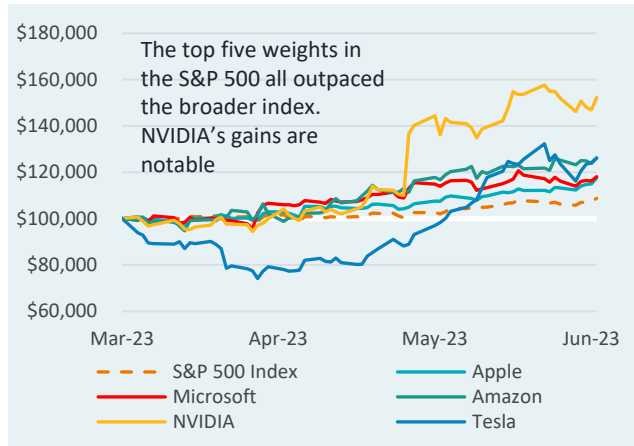
Source: Russell Investments, MSCI, STOXX, FTSE, JPX, as of 6/30/23

Domestic equity

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

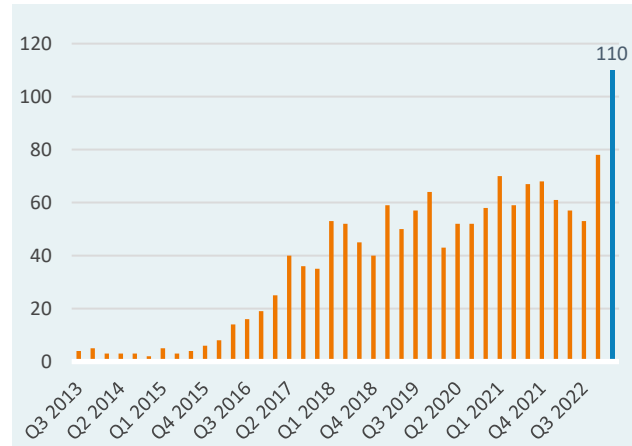
The Financial sector (+5.3%) saw some reprieve in the second quarter and recovered slightly from steep March declines which resulted from the collapse of three mid-sized banks. In its annual stress test, the Federal Reserve found the 23 largest U.S. banks capable of weathering a severe recession while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

GROWTH OF \$100,000 QUARTER TO DATE



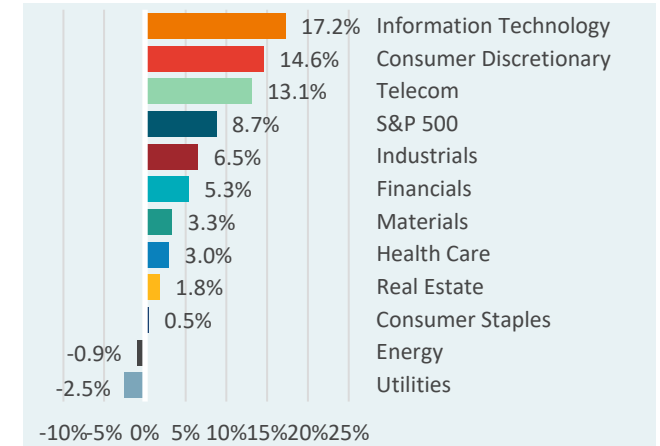
Source: Bloomberg, as of 6/30/23

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



Source: FactSet, as of 6/30/23

Q2 2023 SECTOR PERFORMANCE



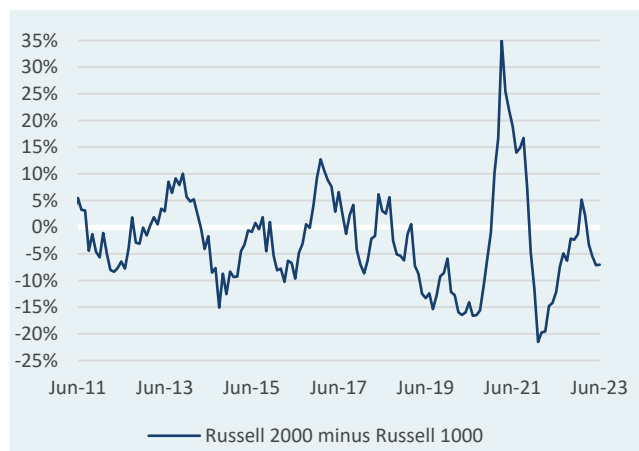
Source: Morningstar, as of 6/30/23

Domestic equity size & style

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

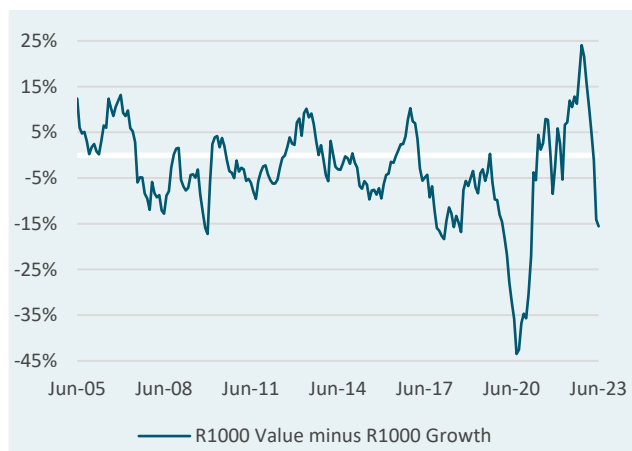
Over recent years, style factors (ex: small vs large, value vs growth) have exhibited some of the wildest swings in history. We maintain our view that factor timing should rarely be pursued for most investors. There are occasions when market mispricing offers a compelling case to tilt into a style factor,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

SMALL CAP VS LARGE CAP (YOY)



Source: FTSE, as of 6/30/23

VALUE VS GROWTH (YOY)



Source: FTSE, as of 6/30/23

1-YEAR SIZE & STYLE PERFORMANCE

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

Source: Bloomberg, as of 6/30/23

International developed equity

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

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

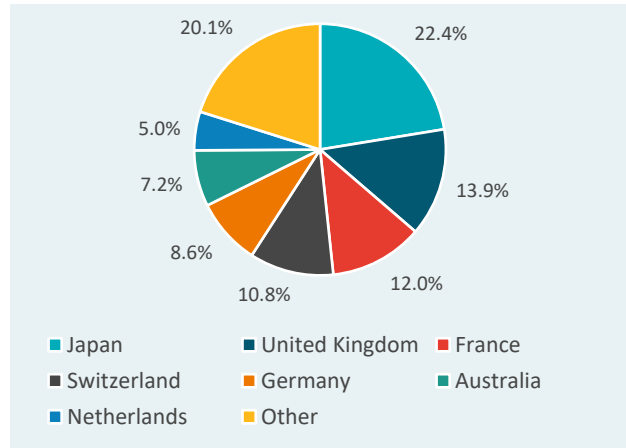
Japanese equities (MSCI Japan +6.4%) saw broad gains after the Bank of Japan held interest rates in negative territory and economic data showed resilience in the face of weakening global demand. Additional factors, including stronger-than-expected earnings from automakers and tech conglomerates, helped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

INTERNATIONAL DEVELOPED EQUITY



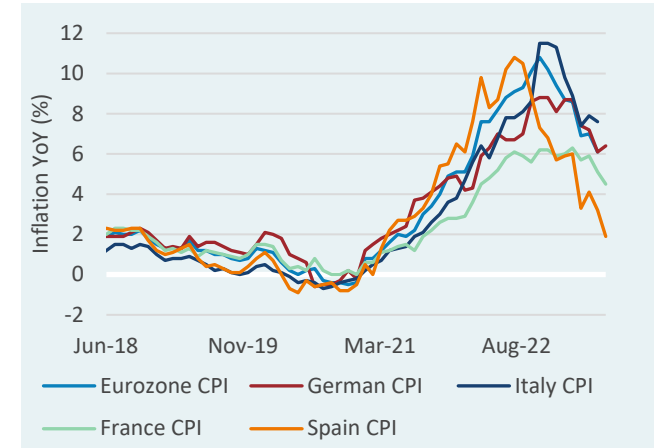
Source: MSCI, as of 6/30/23

MSCI EAFE INDEX COUNTRY DECOMPOSITION



Source: MSCI, as of 6/30/23

EUROZONE INFLATION



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

Emerging market equity

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

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

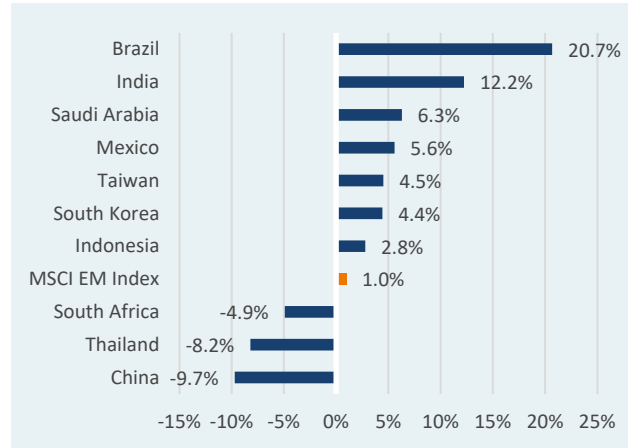
Over the past year, China's reopening provided a significant boost to equities, though not large enough to recover from previous significant losses driven by a mix of the three-year "zero-covid" policy, government crackdowns on large technology names, and knock-on effects from property market stress.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

EMERGING MARKET EQUITY



Source: MSCI, as of 6/30/23

Q2 2023 MSCI COUNTRY RETURNS (USD)



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

MSCI CHINA INDEX



Source: MSCI, as of 6/30/23

Equity valuations

Equity valuation disparities continued to be wide. U.S. equities are priced at a 50% valuation premium (Price/Earnings) over international developed, at 21.0 and 14.2, respectively. Although domestic markets arguably face more attractive conditions on a relative basis, high valuations have historically acted as a material headwind to medium- and longer-term performance.

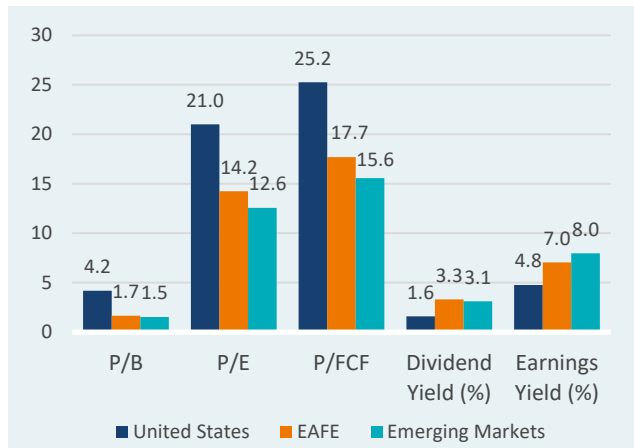
Emerging market equities are now priced near their longer-term average, though valuations differ considerably from country-to-country. For example, Taiwan is cheap by historical standards, with prices likely reflecting a discount for risks

related to China and slowing semiconductor demand. India is richly priced relative to history, perhaps in recognition of the country's high growth and greater potential as Chinese growth has moderated.

Quickly rising interest rates should theoretically result 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 means the yield of equity is now only slightly more than the yield of high-quality bonds. Many investors may find bonds relatively attractive (and stocks relative less unattractive) in the current environment.

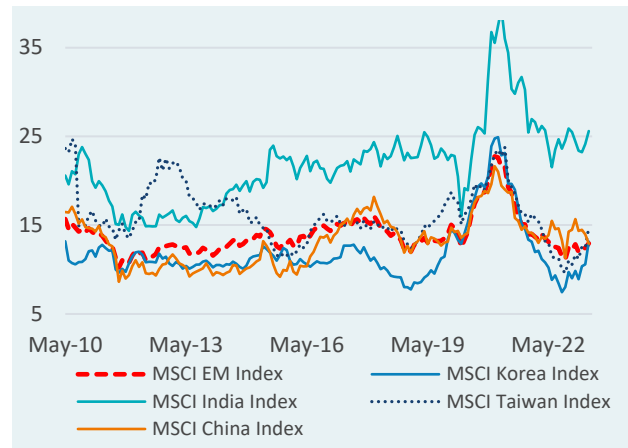
High-quality bonds are yielding nearly as much as equities, increasing the relative attractiveness of bonds

MSCI VALUATION METRICS (3-MONTH AVG)



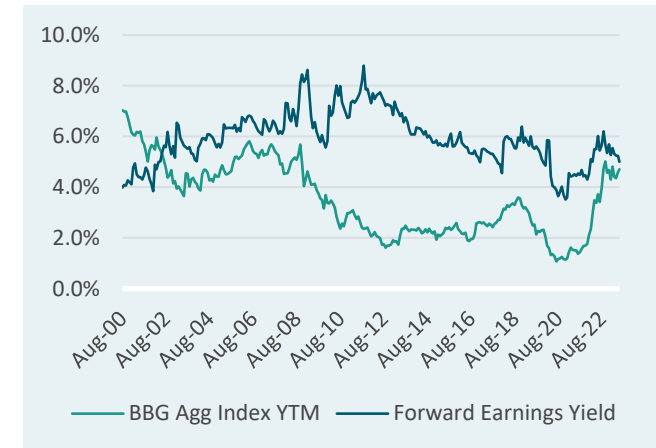
Source: Bloomberg, as of 6/30/23

P/E EMERGING MARKETS



Source: MSCI, Bloomberg, as of 5/31/23

U.S. VALUATIONS: BONDS VS. STOCKS



Source: Bloomberg, Standard & Poor's, as of 6/30/23

Market volatility

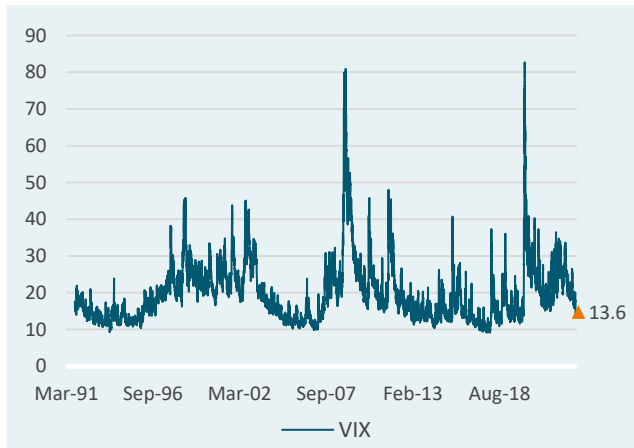
The Cboe VIX implied volatility index has moved to surprisingly low levels, despite broad expectations of recession, ongoing risk of regional bank contagion, and other not-yet-known consequences of central bank liquidity withdrawal from the financial system. The index fell from 18.7% to 13.6% during the second quarter.

The realized volatility of global equity markets has been elevated. Emerging market volatility in recent years has been lower than developed market volatility—an uncommon occurrence historically speaking. This trend has now reversed

as realized risk in emerging markets surpassed most developed economy public markets.

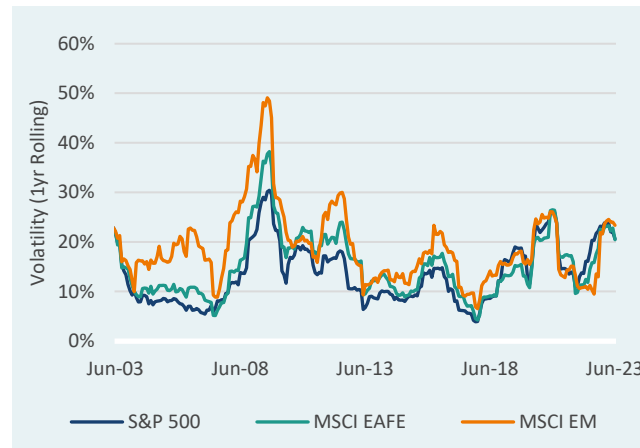
The first half of 2023 has been a truly unique environment for fixed income. Federal Reserve tightening, mass withdrawal of liquidity from the financial system, and a deeply inverted yield curve have led to elevated uncertainty and market volatility. These conditions are captured by the ICE BofA “MOVE” Index, which measures the volatility priced into U.S. Treasury bonds.

U.S. IMPLIED VOLATILITY (VIX)



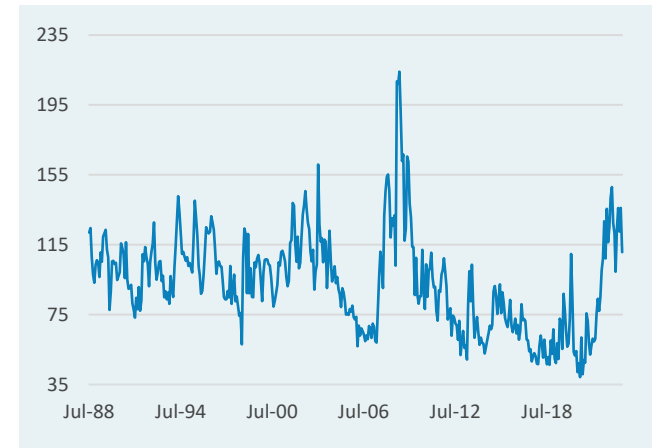
Source: Cboe, as of 6/30/23

REALIZED VOLATILITY



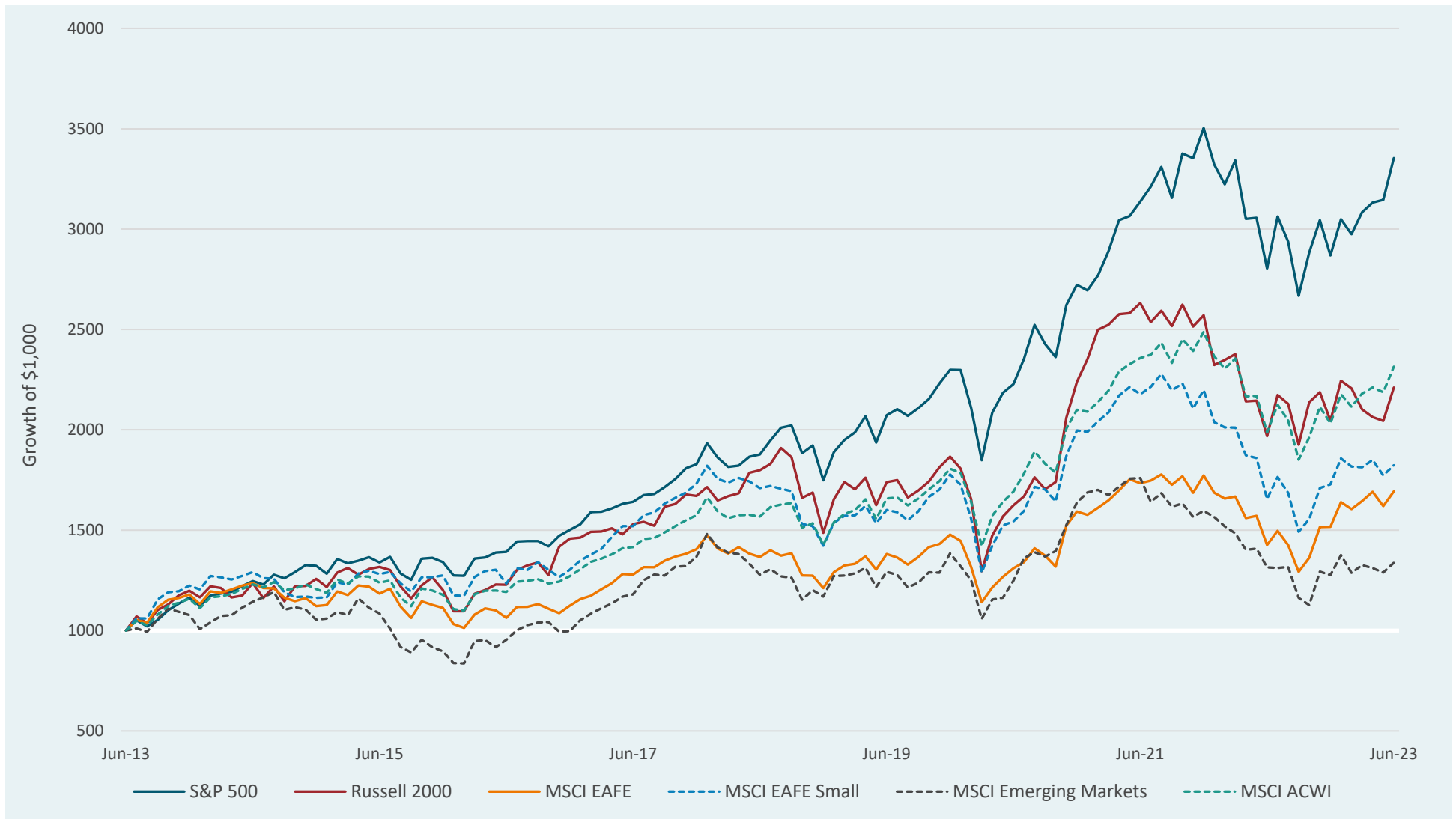
Source: S&P, MSCI, as of 6/30/23

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



Source: Bloomberg, as of 6/30/23

Long-term equity performance



Source: MPI, as of 6/30/23

Other assets

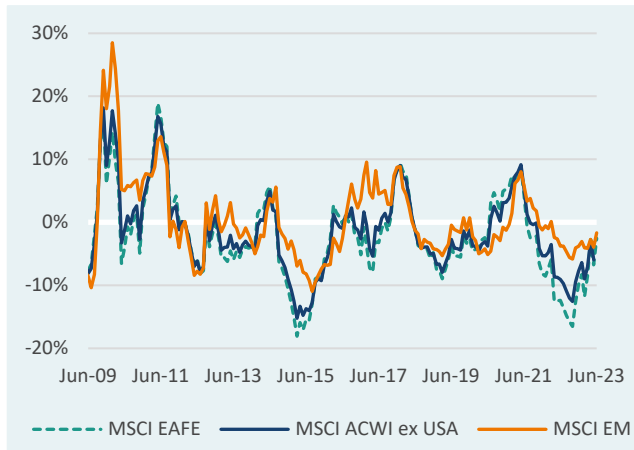
Currency

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

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

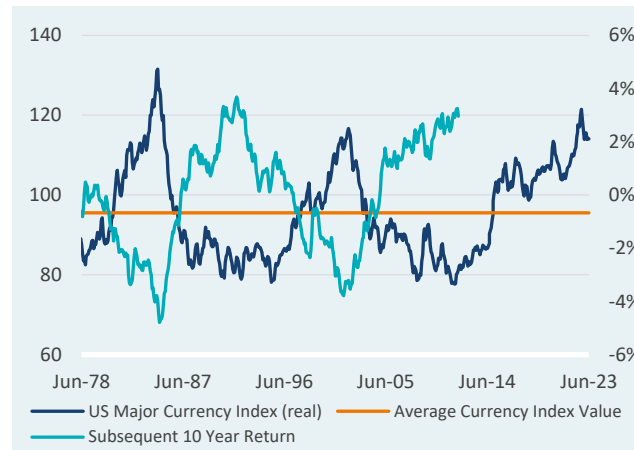
A thoughtful currency program may allow investors to reduce their total

EFFECT OF CURRENCY (1-YEAR ROLLING)



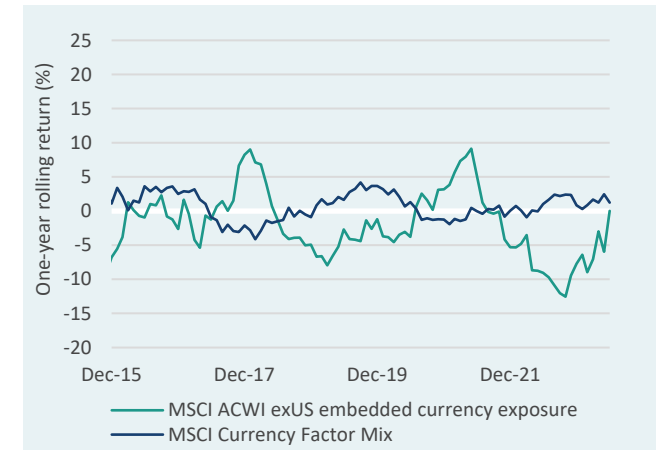
Source: MSCI, as of 6/30/23

BLOOMBERG DOLLAR SPOT INDEX



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

EMBEDDED CURRENCY VS CURRENCY FACTORS



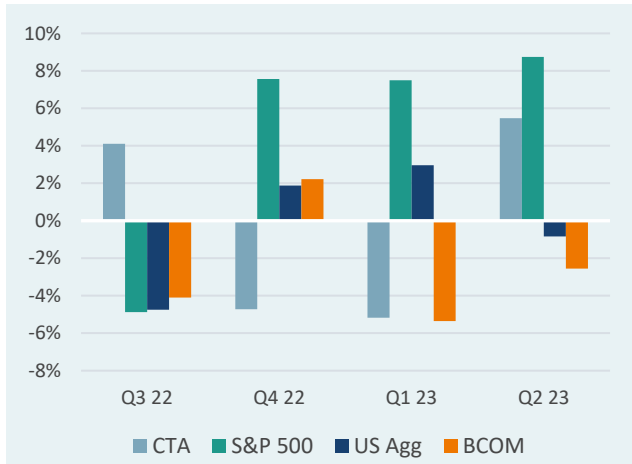
Source: Bloomberg, MSCI, as of 6/30/23

CTAs pivot, merger arbitrage gets hit

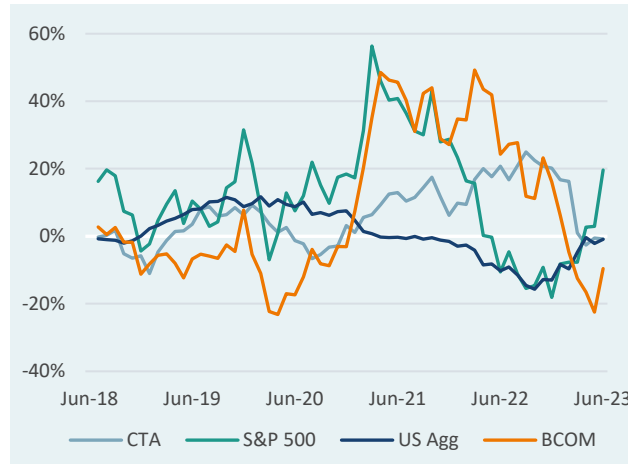
Commodity Trading Advisor (CTA) strategies, as proxied by the SocGen CTA Index, rebounded in Q2 after their worst two consecutive quarters (4Q22 through 1Q23) on record going back to the year 2000. When looking at major asset class returns for each of the last four quarters, it becomes clear that trend following strategies flipped to investing long in the equity markets after two strong quarters in a row for stocks. Trailing twelve-month returns as of the end of the quarter show fixed income at a performance inflection point and commodities bottoming out after a difficult year. Any gains in the near term for CTA strategies will likely depend on whether equity markets continue upward.

An interesting opportunity in merger arbitrage is unfolding, as an aggressive antitrust stance from the Federal Trade Commission and Chairperson Lina Kahn has pushed merger spreads to wide levels while equity markets have enjoyed a period of strong returns over the past year. Average deal spreads have increased to reflect this additional regulatory risk. Prior to this current period, the HFRI Merger Arbitrage index had only posted a negative 12-month return during COVID-19 (2020), the Global Financial Crisis (2008-2009), and the Tech Bubble (2001-2002). Each of those periods involved a recession.

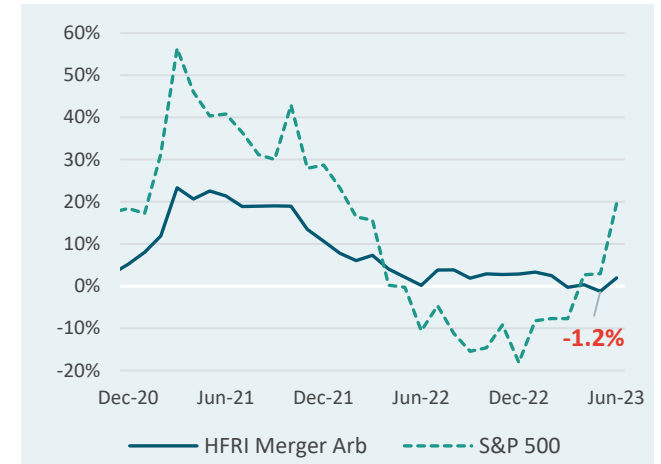
QUARTERLY RETURNS – PAST 4 QUARTERS



CTA 1-YEAR RETURNS, LAST 5 YEARS



MERGER ARB 1-YEAR RETURNS, LAST 3 YEARS



Source: HFR, MPI, Morningstar. SocGen, Data as of 6/30/23

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	29.0	15.1	15.7
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	16.7	11.9	12.6
Small Cap Growth	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	13.6	8.1	9.2
International Equity	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	11.7	6.7	8.8
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	8.8	4.7	8.3
Small Cap Equity	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	8.1	4.6	8.3
Large Cap Value	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	5.1	4.4	7.3
Emerging Markets 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	4.9	4.2	5.5
Small Cap Value	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	2.5	4.2	5.4
Hedge Funds of Funds	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	2.3	3.5	3.4
Cash	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	2.3	3.3	3.0
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	2.1	1.5	1.5
Real Estate	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	-1.8	0.9	0.9
Commodities	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	-7.8	0.8	-1.0

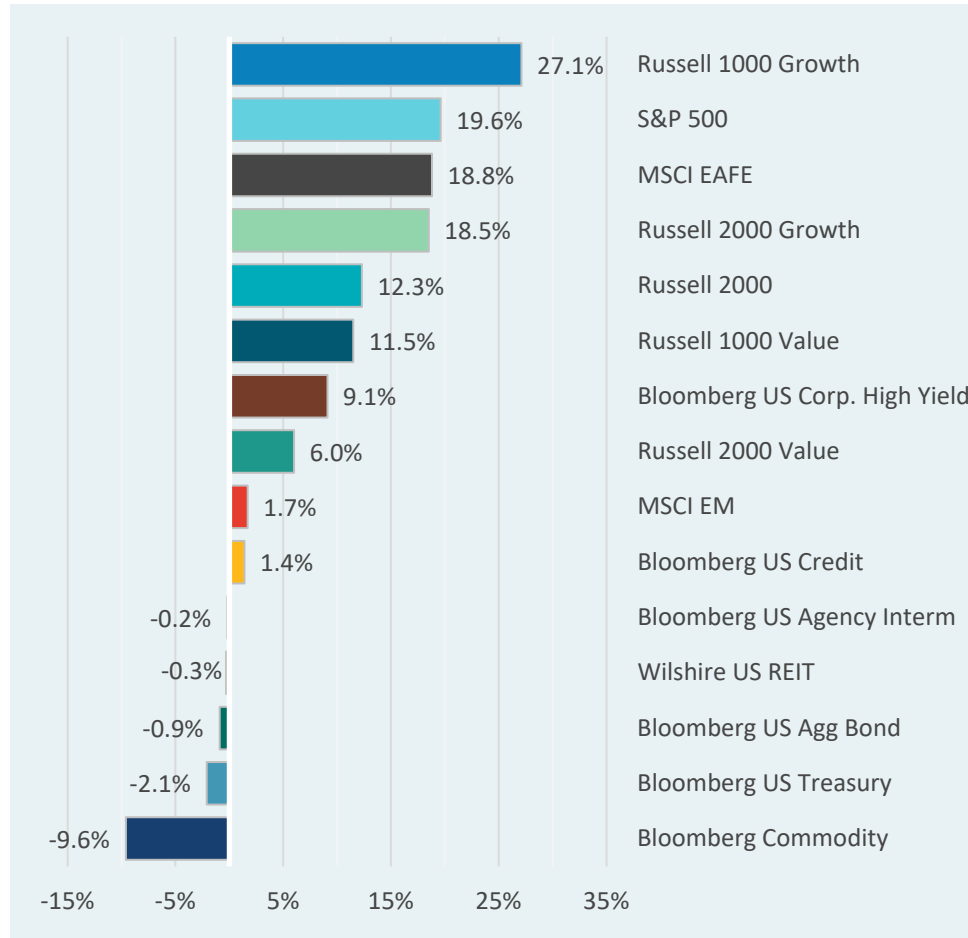
BEST
↑
↓
WORST

 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	

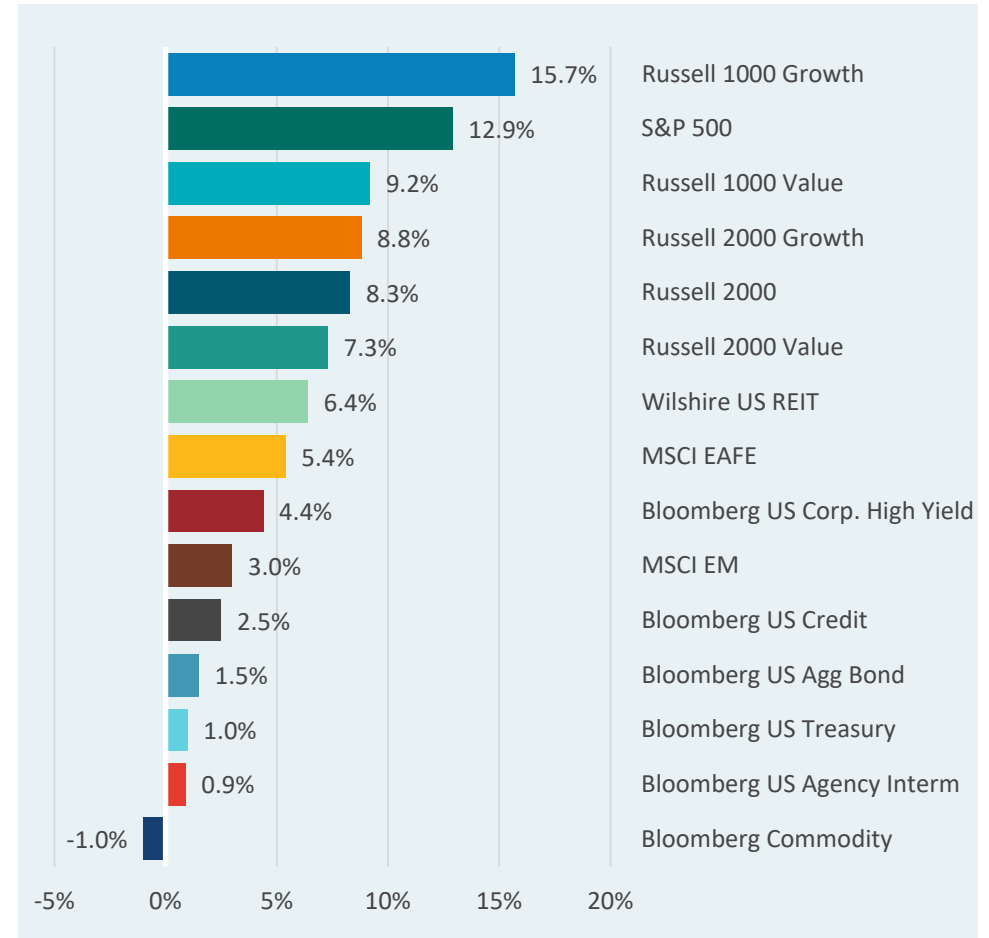
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, Bloomberg Global Bond. NCREIF Property Index performance data as of 3/31/22.

Major asset class returns

ONE YEAR ENDING JUNE



TEN YEARS ENDING JUNE



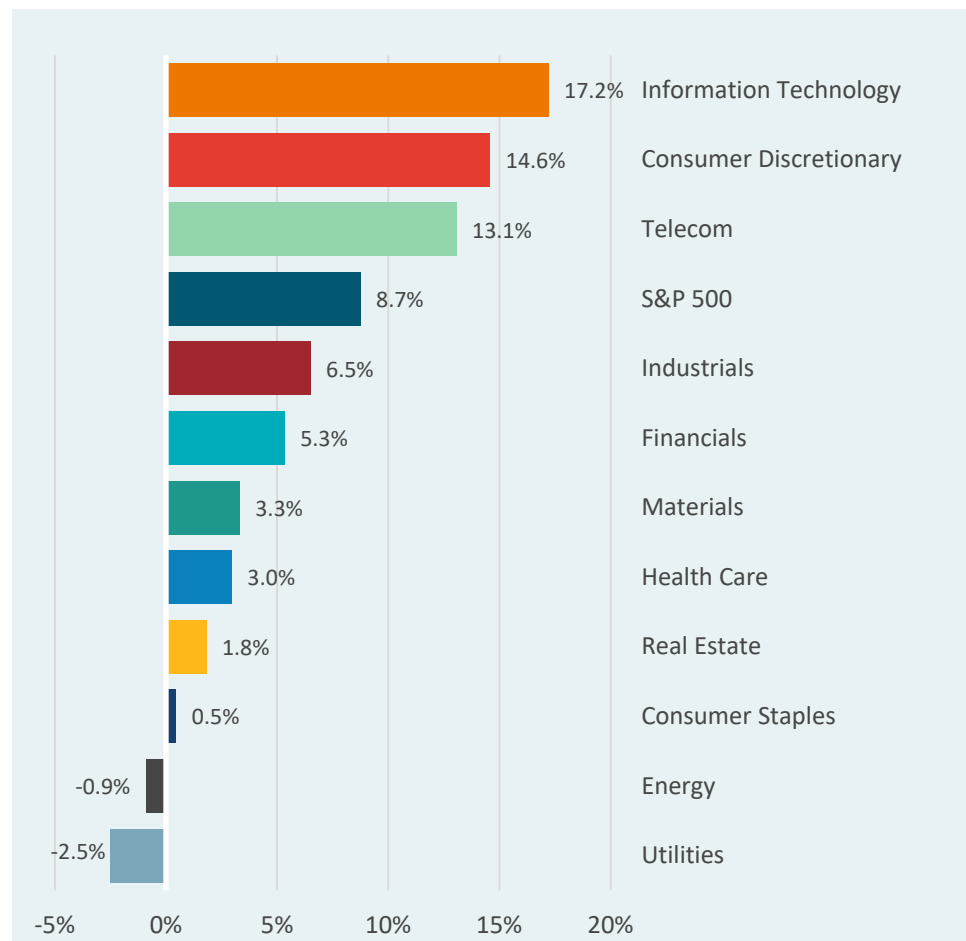
*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 6/30/23

Source: Morningstar, as of 6/30/23

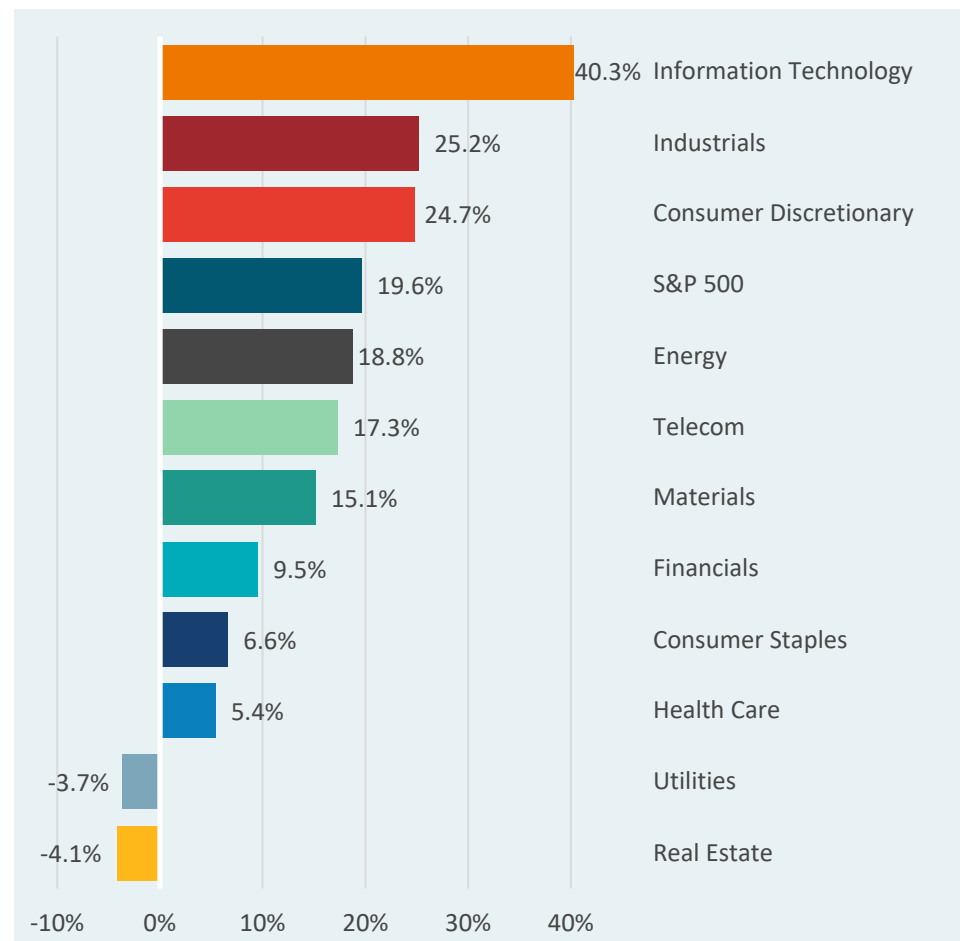
S&P 500 sector returns

QTD



Source: Morningstar, as of 6/30/23

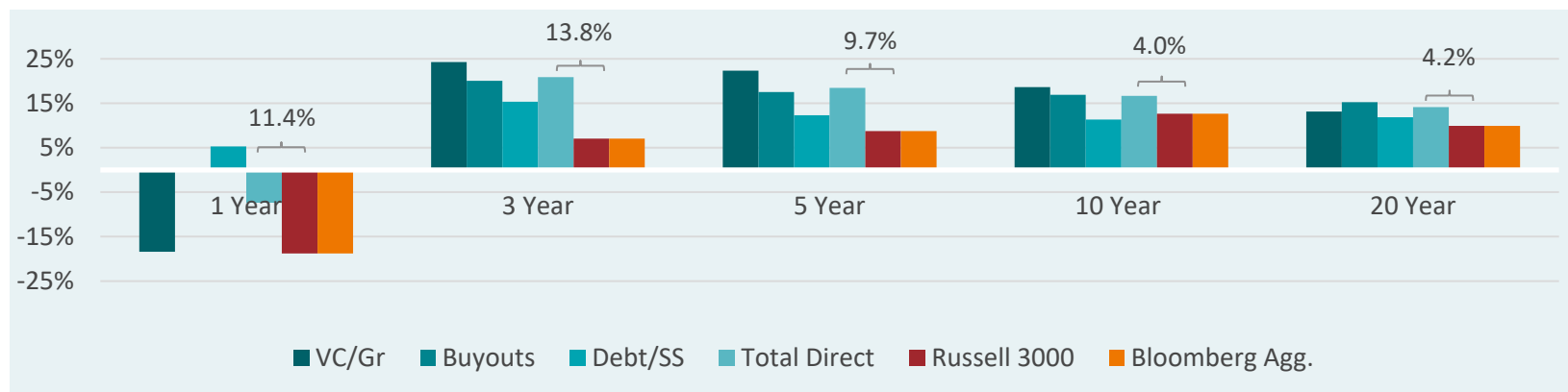
ONE YEAR ENDING JUNE



Source: Morningstar, as of 6/30/23

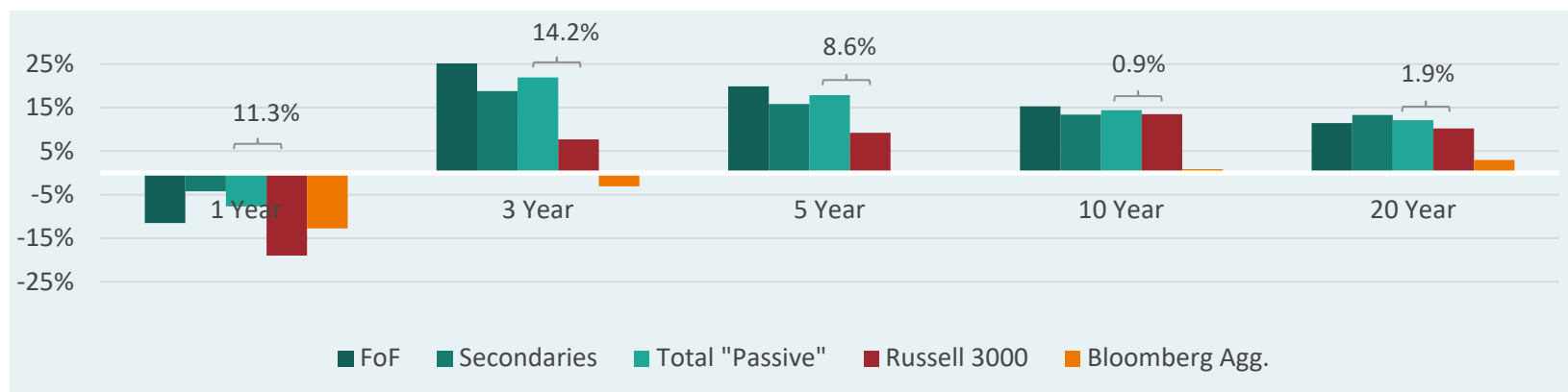
Private equity vs. traditional assets performance

DIRECT PRIVATE EQUITY FUND INVESTMENTS



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

“PASSIVE” STRATEGIES

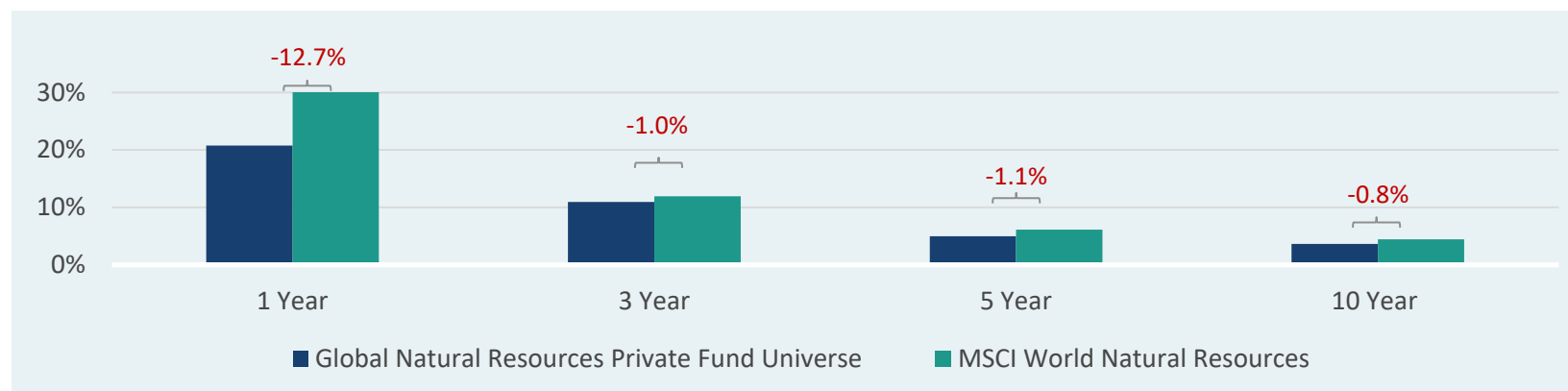


“Passive” strategies outperformed comparable public equities across all time periods.

Sources: Refinitiv PME: U.S. Private Equity Funds sub asset classes as of December 31, 2022. Public Market Equivalent returns resulted from “Total Passive” and Total Direct’s identical cash flows invested into and distributed from respective traditional asset comparable.

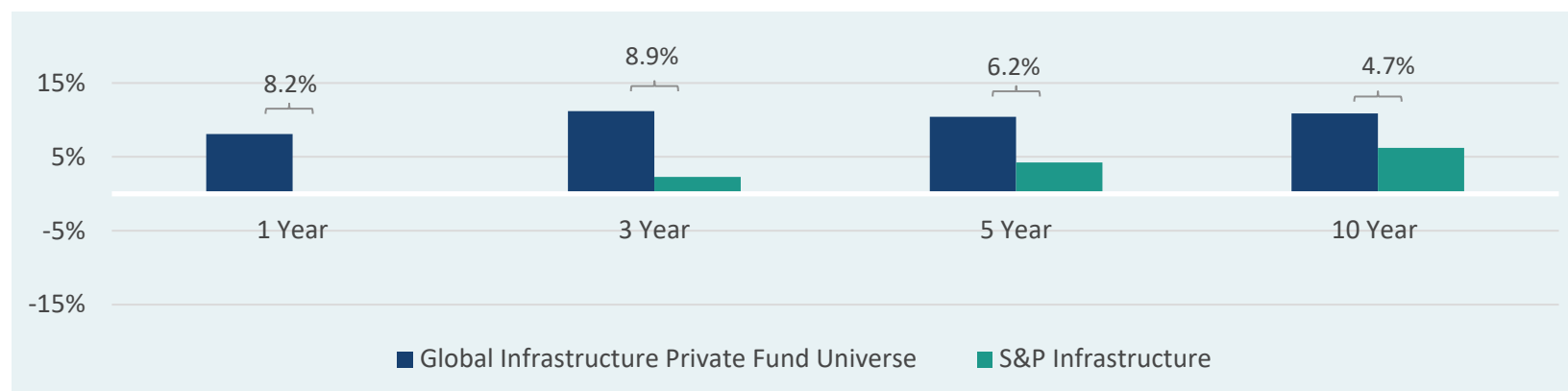
Private vs. liquid real assets performance

GLOBAL NATURAL RESOURCES FUNDS



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

GLOBAL INFRASTRUCTURE FUNDS

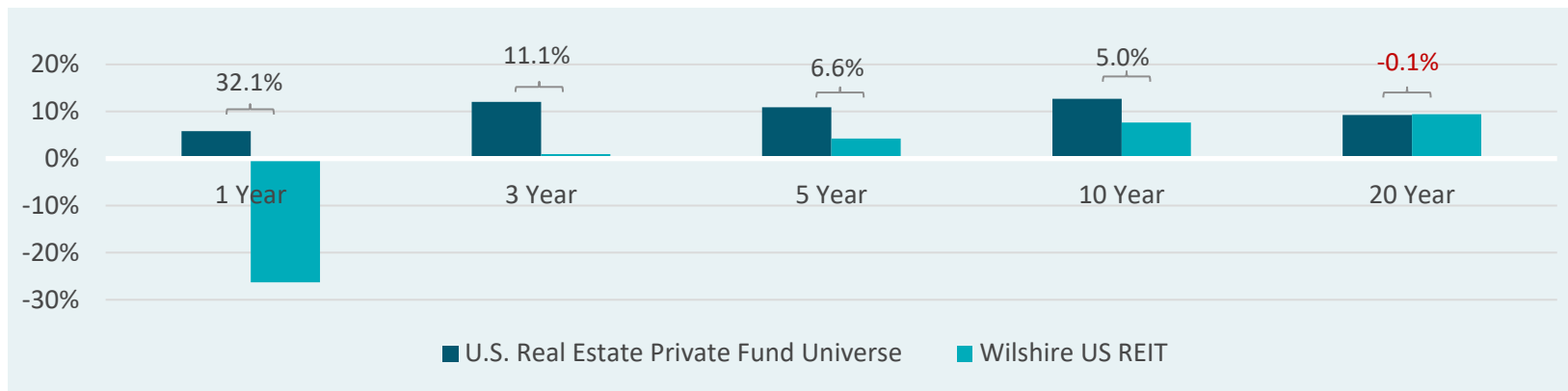


Infra. funds outperformed the S&P Infra. across all periods.

Sources: Refinitiv PME: Global Natural Resources (vintage 1999 and later, inception of MSCI World Natural Resources benchmark) and Global Infrastructure (vintage 2002 and later, inception of S&P Infrastructure benchmark) universes as of December 31, 2022. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

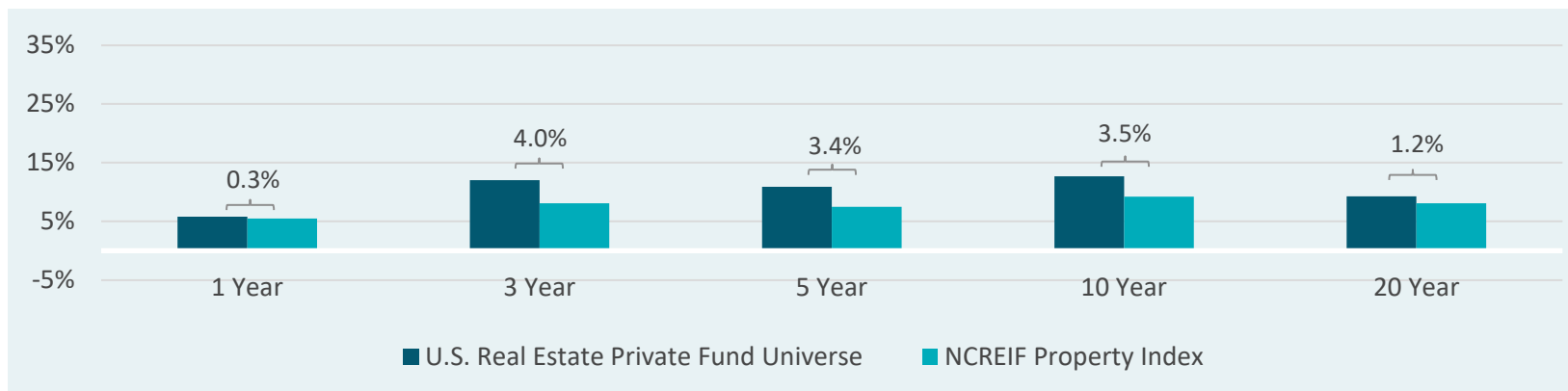
Private vs. liquid and core real estate performance

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



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

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

Detailed index returns

DOMESTIC EQUITY

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

INTERNATIONAL EQUITY

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

FIXED INCOME

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

OTHER

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

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

Definitions

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

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

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

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

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Imperial County Employees' Retirement System

Investment Performance Review

Period Ending: June 30, 2023



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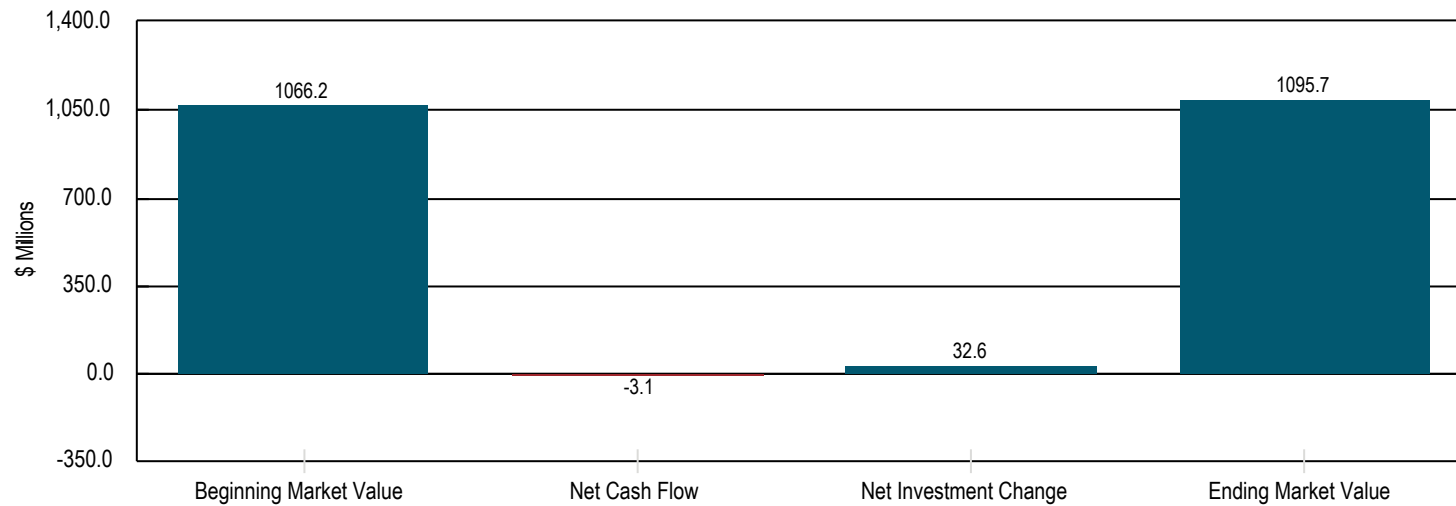
Total Fund
Portfolio Reconciliation

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

Portfolio Reconciliation

	Last Three Months	Fiscal Year-To-Date	One Year
Beginning Market Value	\$1,066,177,970	\$1,031,485,668	\$1,031,485,668
Net Cash Flows	-\$3,140,596	-\$10,775,424	-\$10,775,424
Net Investment Change	\$32,619,578	\$74,946,709	\$74,946,709
Ending Market Value	\$1,095,656,953	\$1,095,656,953	\$1,095,656,953

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)

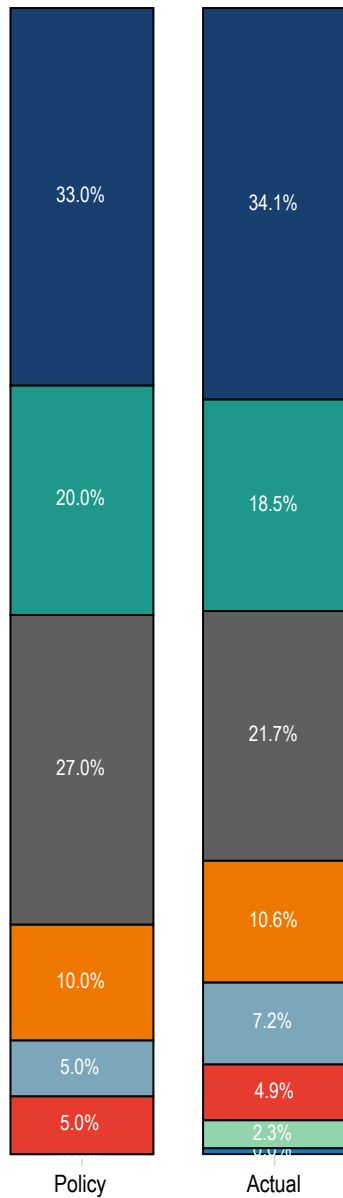
Imperial County Employees' Retirement System
Period Ending: June 30, 2023

	Market Value	% of Portfolio	QTD	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Fund	1,095,656,953	100.0	3.0	7.1	7.2	7.2	8.3	6.8	7.1
<i>Policy Index</i>			3.0	7.7	8.1	8.1	7.5	6.9	7.3
<i>InvMetrics Public DB Rank</i>			64	66	82	82	24	33	48
Total Domestic Equity	373,453,095	34.1	8.4	16.2	19.0	19.0	13.9	11.4	12.1
<i>Russell 3000 Index</i>			8.4	16.2	19.0	19.0	13.9	11.4	12.3
Total International Equity	202,918,344	18.5	3.2	10.8	16.0	16.0	8.7	3.7	5.0
<i>MSCI AC World ex USA Index</i>			2.7	9.9	13.3	13.3	7.7	4.0	5.2
Total Fixed Income	238,185,403	21.7	-0.8	2.4	-0.9	-0.9	-2.8	1.4	2.0
<i>Blmbg. U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-0.9	-4.0	0.8	1.5
Total Real Estate	116,229,446	10.6	-4.1	-7.9	-10.4	-10.4	6.3	5.7	7.8
<i>NCREIF Property Index</i>			-2.0	-3.8	-6.6	-6.6	6.8	5.9	7.8
Total Private Equity	78,570,300	7.2	1.8	2.4	-2.0	-2.0	27.6	19.7	18.1
<i>Private Equity Benchmark</i>			1.8	2.4	-2.0	-2.0	27.6	19.7	19.2
Total Private Credit	54,211,250	4.9	2.7	4.5	6.9	6.9	11.7	9.5	N/A
<i>Private Credit Benchmark</i>			2.7	4.5	6.9	6.9	12.8	10.1	N/A
Total Opportunistic	25,720,779	2.3	5.5	6.8	1.6	1.6	12.9	6.0	9.4
<i>Assumption Rate + 1%</i>			2.1	4.2	8.5	8.5	8.5	8.5	N/A

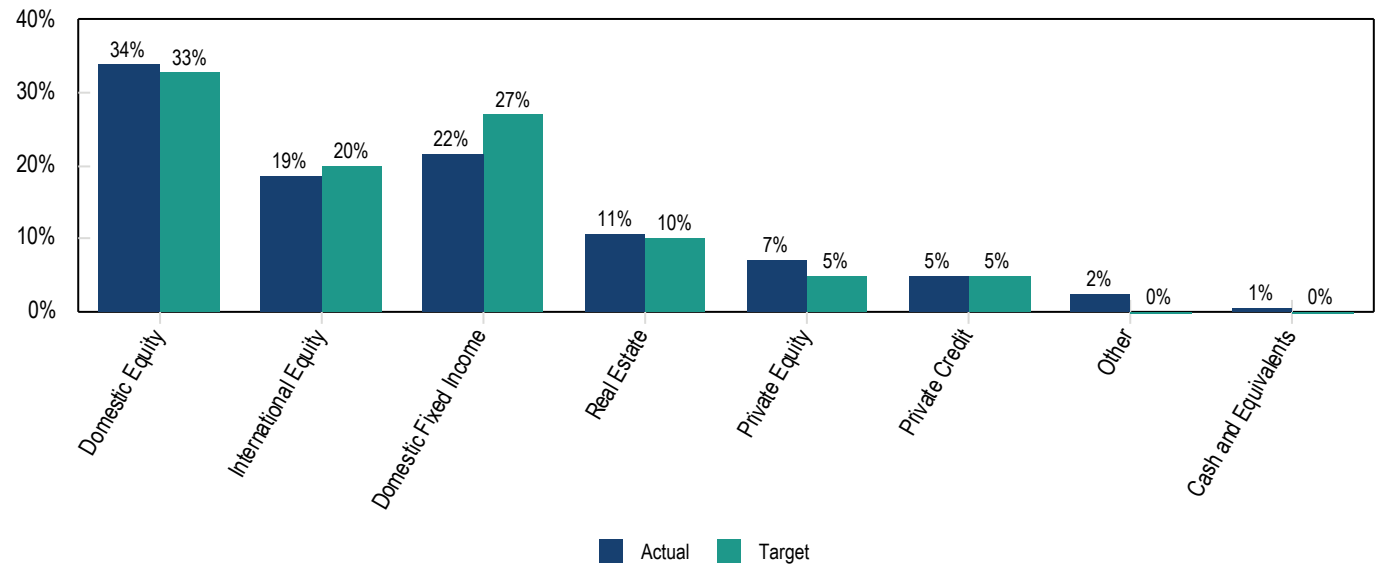
New Policy Index (as of 8/1/2020): 33% Russell 3000, 20% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 10% NCREIF Property, 2% Bloomberg Aggregate, 5% Private Equity Benchmark, 3% Private Credit Benchmark. Prior quarter Private Equity returns, and index data are used. All returns are Net of fees. 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

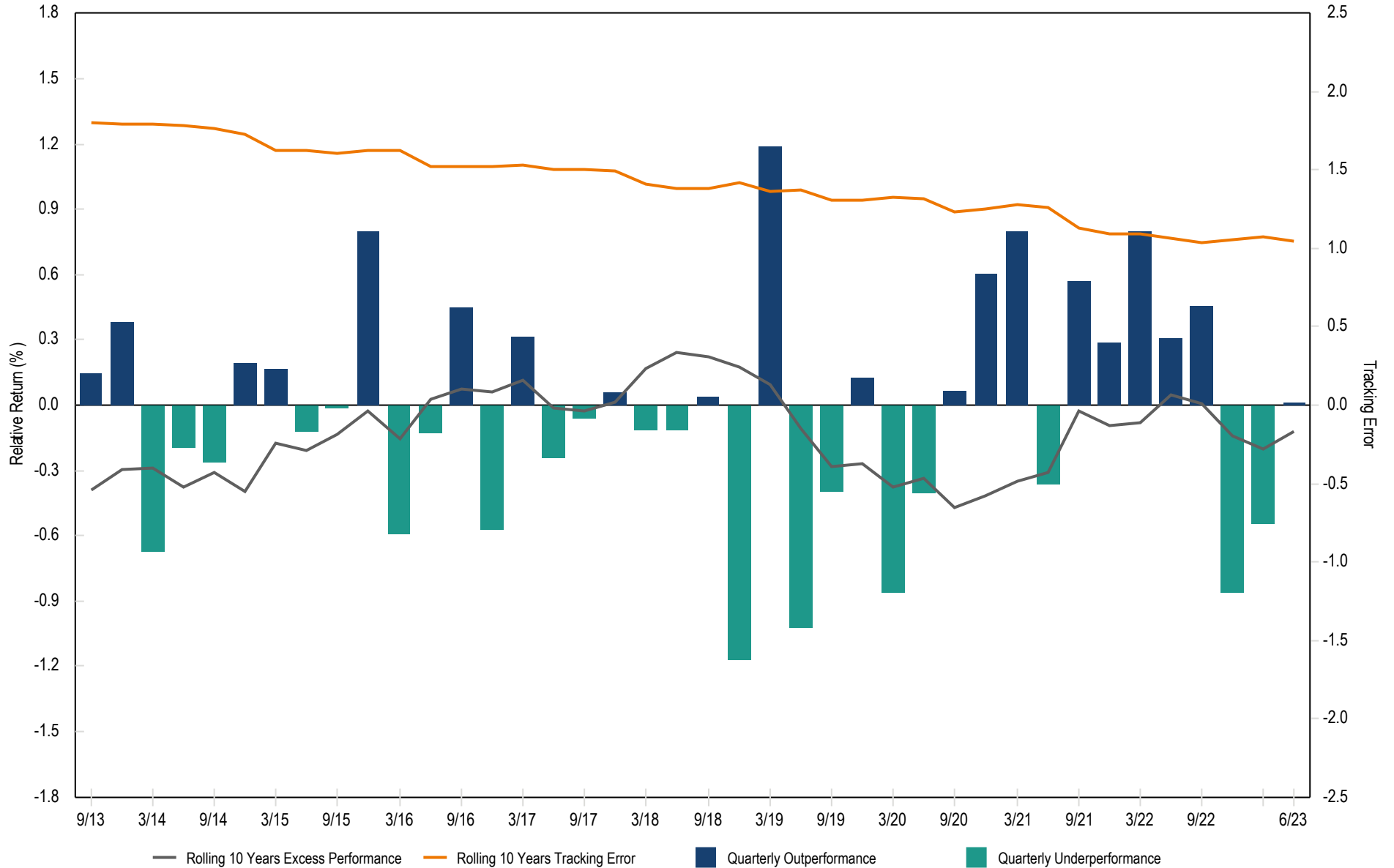
Imperial County Employees' Retirement System
Period Ending: June 30, 2023



	Current Balance (\$)	Current Allocation (%)	Policy Allocation (%)	Excess Allocation (%)	Policy Range (%)	Within IPS Range?
Domestic Equity	373,453,095	34.1	33.0	1.1	23.0 - 43.0	Yes
International Equity	202,918,344	18.5	20.0	-1.5	10.0 - 30.0	Yes
Domestic Fixed Income	238,185,403	21.7	27.0	-5.3	17.0 - 40.0	Yes
Real Estate	116,229,446	10.6	10.0	0.6	5.0 - 15.0	Yes
Private Equity	78,570,300	7.2	5.0	2.2	0.0 - 10.0	Yes
Private Credit	54,211,250	4.9	5.0	-0.1	0.0 - 10.0	Yes
Other	25,720,779	2.3	0.0	2.3	0.0 - 10.0	Yes
Cash and Equivalents	6,368,337	0.6	0.0	0.6	0.0 - 0.0	No
Total	1,095,656,953	100.0	100.0	0.0		



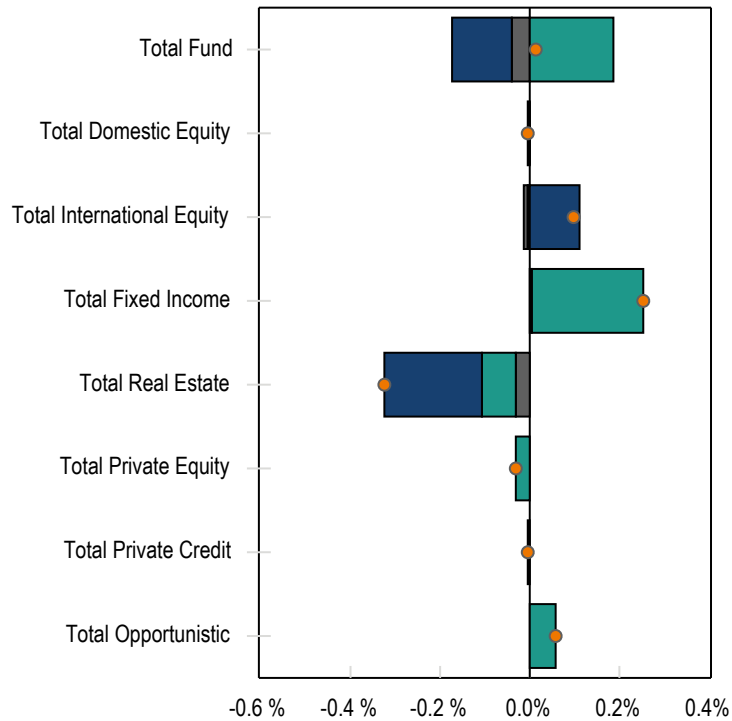
Rolling Annualized Excess Performance and Tracking Error



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

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

Attribution Effects
Last Three Months



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

Performance Attribution

	Quarter	YTD
Wtd. Actual Return	3.0	7.1
Wtd. Index Return	3.0	7.7
Excess Return	0.0	-0.5
Selection Effect	-0.1	-0.2
Allocation Effect	0.2	-0.2
Interaction Effect	0.0	-0.1

Attribution Summary
Last Three Months

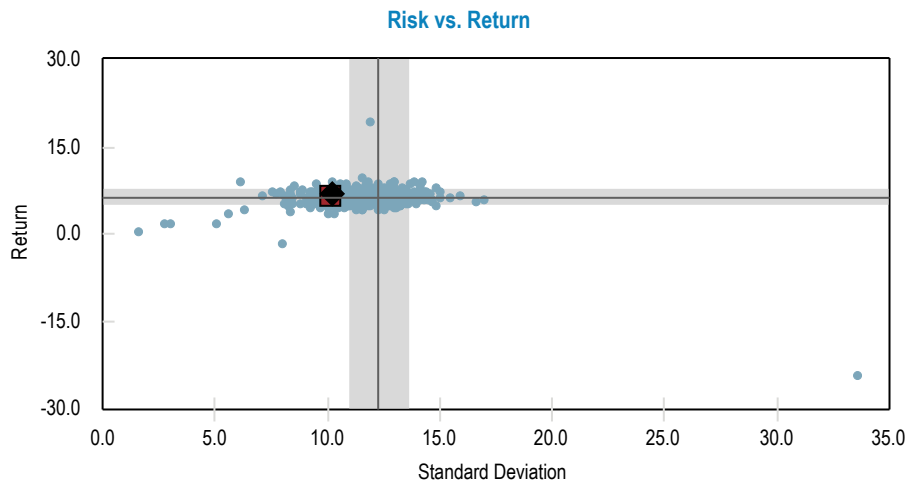
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Domestic Equity	8.4	8.4	0.0	0.0	0.0	0.0	0.0
Total International Equity	3.2	2.7	0.5	0.1	0.0	0.0	0.1
Total Fixed Income	-0.8	-0.8	0.0	0.0	0.3	0.0	0.3
Total Real Estate	-4.1	-2.0	-2.2	-0.2	-0.1	0.0	-0.3
Total Private Equity	1.8	1.8	0.0	0.0	0.0	0.0	0.0
Total Private Credit	2.7	2.7	0.0	0.0	0.0	0.0	0.0
Total Opportunistic	5.5	2.1	3.4	0.0	0.1	0.0	0.1
Total Fund	3.0	3.0	0.0	-0.1	0.2	0.0	0.0

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

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

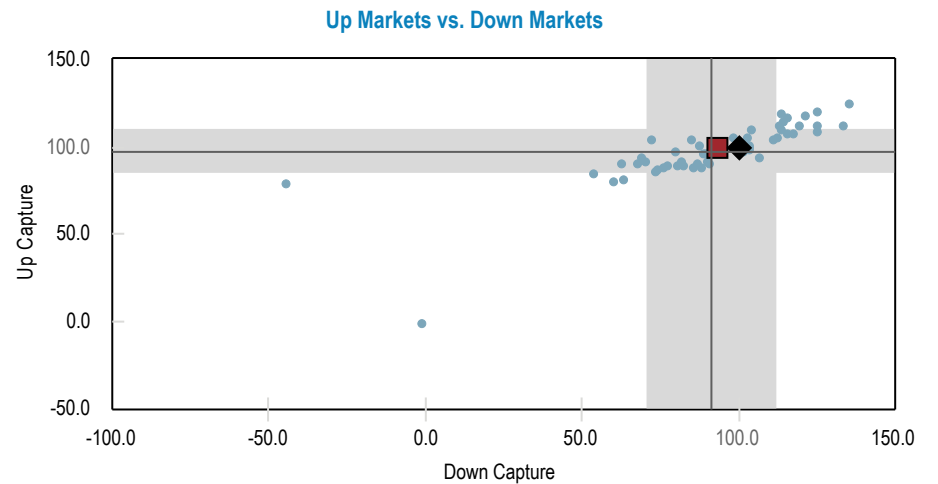
Imperial County Employees' Retirement System
Period Ending: June 30, 2023

	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	6.78	5.55	10.16	-0.01	0.99	1.17	0.99	0.54	-0.09	99.10	99.48



● InvMetrics Public DB ■ Total Fund

	Return	Standard Deviation
■ Total Fund	6.78	10.16
◆ Policy Index	6.88	10.23
— Median	6.40	12.29
Population	553	553



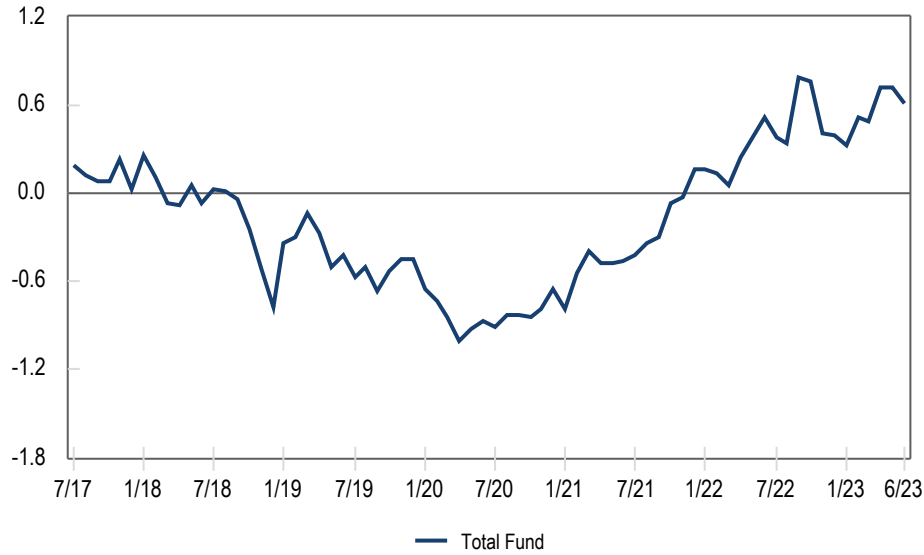
● InveMetrics Public DB ■ Total Fund

	Up Capture	Down Capture
■ Total Fund	99.66	93.34
◆ Policy Index	100.00	100.00
— Median	97.92	91.37
Population	56	56

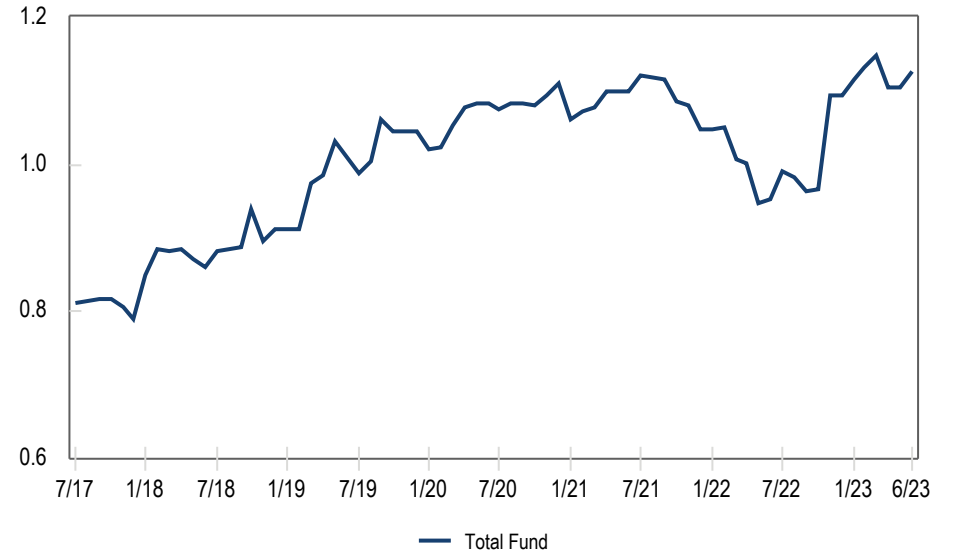
Total Fund
Rolling Risk Statistics

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

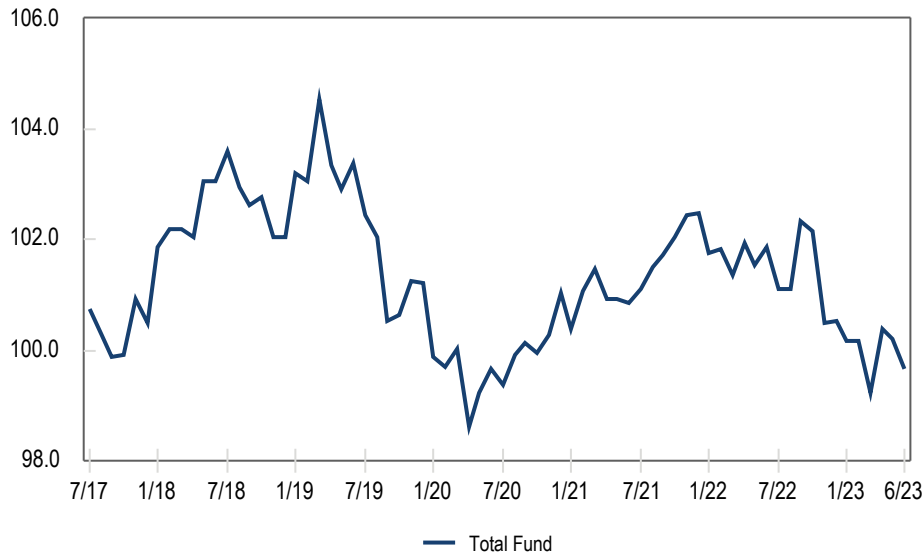
Rolling Information Ratio



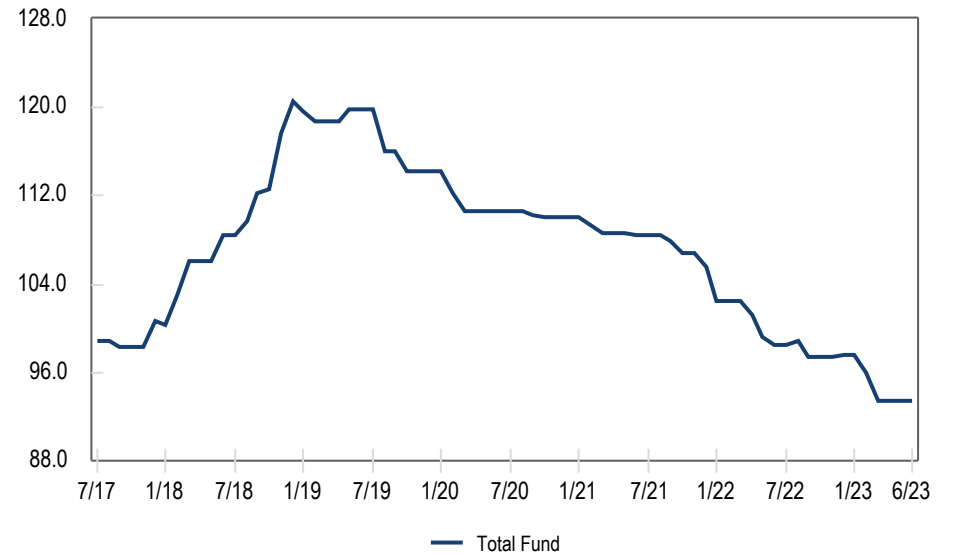
Rolling Tracking Error



Rolling Up Market Capture Ratio (%)



Rolling Down Market Capture Ratio (%)



Total Fund
Executive Summary (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: June 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	1,095,656,953	100.0	3.0	7.1	7.2	7.2	8.3	6.8	7.1	-11.6	15.8	12.3	17.9	-4.1	8.6	Apr-89
<i>Policy Index</i>			3.0	7.7	8.1	8.1	7.5	6.9	7.3	-12.3	14.4	13.2	18.0	-2.7	-	
<i>InvMetrics Public DB Rank</i>			64	66	82	82	24	33	48	22	21	63	75	40		
Total Domestic Equity	373,453,095	34.1	8.4	16.2	19.0	19.0	13.9	11.4	12.1	-19.2	25.7	21.0	31.1	-5.2		Mar-89
<i>Russell 3000 Index</i>			8.4	16.2	19.0	19.0	13.9	11.4	12.3	-19.2	25.7	20.9	31.0	-5.2	10.5	
BlackRock Russell 3000	373,453,095	34.1	8.4	16.2	19.0	19.0	13.9	11.4	-	-19.2	25.7	21.0	31.1	-5.2	12.2	Dec-15
<i>Russell 3000 Index</i>			8.4	16.2	19.0	19.0	13.9	11.4	-	-19.2	25.7	20.9	31.0	-5.2	12.0	
<i>eV US All Cap Core Equity Rank</i>			30	26	39	39	45	35	-	60	54	42	39	45		
Total International Equity	202,918,344	18.5	3.2	10.8	16.0	16.0	8.7	3.7	5.0	-15.4	10.1	8.1	20.7	-14.3		Dec-94
<i>MSCI AC World ex USA Index</i>			2.7	9.9	13.3	13.3	7.7	4.0	5.2	-15.6	8.3	11.1	22.1	-13.8	5.5	
BlackRock International Equity	157,244,376	14.4	3.2	12.0	19.2	19.2	9.3	4.7	5.7	-14.1	11.6	8.1	22.4	-13.5	6.8	Jul-03
<i>MSCI EAFE (Net)</i>			3.0	11.7	18.8	18.8	8.9	4.4	5.4	-14.5	11.3	7.8	22.0	-13.8	6.8	
<i>eV All EAFE Equity Rank</i>			33	36	23	23	38	31	46	35	52	52	50	29		
DFA Emerging Markets Value	25,981,888	2.4	4.6	8.5	7.9	7.9	11.3	3.1	3.8	-10.7	12.4	2.7	9.6	-11.9	3.7	Jan-07
<i>MSCI Emerging Markets Value (Net)</i>			2.5	6.5	4.1	4.1	6.3	1.2	2.0	-15.8	4.0	5.5	12.0	-10.7	2.9	
<i>eV Emg Mkts All Cap Value Equity Rank</i>			30	52	74	74	34	74	75	36	19	82	93	34		
Harding Loevner Emerging Markets	19,692,080	1.8	1.7	4.8	3.3	3.3	-1.3	-3.1	-	-28.1	-4.3	12.4	24.0	-19.5	0.9	Aug-16
<i>MSCI Emerging Markets Growth Index</i>			-0.6	3.4	-0.2	-0.2	-1.1	0.8	-	-23.7	-8.2	31.6	25.4	-18.0	5.0	
<i>eV Emg Mkts All Cap Growth Equity Rank</i>			29	44	42	42	76	100	-	77	52	96	53	70		
Total Fixed Income	238,185,403	21.7	-0.8	2.4	-0.9	-0.9	-2.8	1.4	2.0	-14.2	0.6	9.8	9.5	-0.8		Jun-94
<i>Blmbg. U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-0.9	-4.0	0.8	1.5	-13.0	-1.5	7.5	8.7	0.0	4.6	
Ducenta Squared	98,678,322	9.0	-0.6	2.5	-1.2	-1.2	-3.7	1.0	2.2	-14.9	-0.6	9.1	9.9	-0.1	5.2	Mar-93
<i>Blmbg. U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-0.9	-4.0	0.8	1.5	-13.0	-1.5	7.5	8.7	0.0	4.4	
<i>eV US Core Plus Fixed Inc Rank</i>			59	60	88	88	86	74	39	91	53	38	43	27		
MacKay Shields Core Plus Opportunities	97,905,762	8.9	-0.8	2.4	-0.5	-0.5	-3.2	1.1	-	-14.5	-0.5	9.9	9.7	-1.0	1.1	Mar-15
<i>Blmbg. U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-0.9	-4.0	0.8	-	-13.0	-1.5	7.5	8.7	0.0	0.9	
<i>eV US Core Plus Fixed Inc Rank</i>			77	68	77	77	69	60	-	86	51	22	52	76		
BlackRock US TIPS	41,601,319	3.8	-1.4	2.1	-1.3	-1.3	-0.1	2.5	2.1	-11.9	5.9	11.2	8.5	-1.2	3.5	Apr-07
<i>Blmbg. U.S. TIPS</i>			-1.4	1.9	-1.4	-1.4	-0.1	2.5	2.1	-11.8	6.0	11.0	8.4	-1.3	3.5	
<i>eV US TIPS / Inflation Fixed Inc Rank</i>			43	17	59	59	58	39	18	67	26	32	32	40		

Tortoise is now Ducenta Squared. TSSP Adjacent funded 4/16/2020. Portfolio Advisors market value as of 3/31/2023. PIMCO BRAVO liquidated 12/30/2022.

Total Fund
Executive Summary (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: June 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	116,229,446	10.6	-4.1	-7.9	-10.4	-10.4	6.3	5.7	7.8	8.5	18.4	2.1	5.7	7.5		Dec-06
<i>NCREIF Property Index</i>			-2.0	-3.8	-6.6	-6.6	6.8	5.9	7.8	5.5	17.7	1.6	6.4	6.7	6.6	
<i>NCREIF ODCE Net</i>			-2.9	-6.2	-10.7	-10.7	7.0	5.6	7.8	6.5	21.0	0.3	4.4	7.4	5.3	
ASB Real Estate	27,602,011	2.5	-6.2	-11.4	-13.0	-13.0	4.1	3.8	6.7	10.7	14.2	1.5	3.0	6.6	6.8	Jan-13
<i>NCREIF Property Index</i>			-2.0	-3.8	-6.6	-6.6	6.8	5.9	7.8	5.5	17.7	1.6	6.4	6.7	8.0	
<i>NCREIF ODCE Net</i>			-2.9	-6.2	-10.7	-10.7	7.0	5.6	7.8	6.5	21.0	0.3	4.4	7.4	8.0	
Clarion Lion	30,451,834	2.8	-5.9	-10.7	-14.8	-14.8	7.5	6.5	8.6	9.6	23.6	2.3	6.8	8.6	5.2	Jan-07
<i>NCREIF Property Index</i>			-2.0	-3.8	-6.6	-6.6	6.8	5.9	7.8	5.5	17.7	1.6	6.4	6.7	6.6	
<i>NCREIF ODCE Net</i>			-2.9	-6.2	-10.7	-10.7	7.0	5.6	7.8	6.5	21.0	0.3	4.4	7.4	5.3	
ARA American Strategic Value Realty	56,175,865	5.1	-2.2	-4.6	-6.6	-6.6	7.0	6.6	-	6.8	18.6	2.4	7.8	-	7.0	Jan-18
<i>NCREIF Property Index +2%</i>			-1.5	-2.8	-4.7	-4.7	8.9	8.0	-	7.6	20.0	3.6	8.5	8.9	8.2	
<i>NCREIF ODCE Net</i>			-2.9	-6.2	-10.7	-10.7	7.0	5.6	-	6.5	21.0	0.3	4.4	7.4	5.8	
1221 State St. Corp	1,999,736	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	78,570,300	7.2	1.8	2.4	-2.0	-2.0	27.6	19.7	18.1	-0.8	57.3	23.0	13.3	21.3		Mar-10
Harbourvest Buyout IX	6,206,635	0.6	4.3	4.7	-3.3	-3.3	22.8	18.6	17.6	-6.0	49.6	21.3	17.6	23.6	-	Jun-11
Harbourvest Credit Ops IX	923,063	0.1	1.6	3.6	-0.4	-0.4	20.1	11.8	12.3	11.0	32.1	0.3	8.0	14.4	-	Jun-11
Harbourvest International PE VI	1,525,462	0.1	0.1	-5.9	-0.7	-0.7	11.6	8.0	11.9	-15.1	41.2	17.2	6.0	14.8	-	Mar-10
Harbourvest Venture IX	5,029,033	0.5	0.6	-7.6	-21.0	-21.0	29.7	26.1	21.8	-15.9	91.1	52.4	24.6	25.9	-	Jun-11
Harbourvest 2017 Global Fund	25,164,244	2.3	2.2	2.3	-6.2	-6.2	27.8	18.5	-	-1.3	61.6	18.8	8.8	20.9	19.2	Oct-17
Harbourvest 2018 Global Fund	21,651,129	2.0	1.7	3.9	10.6	10.6	24.6	-	-	9.7	37.0	16.0	14.3	-	17.5	Jan-19
Harbourvest 2019 Global Fund	18,070,734	1.6	1.1	3.8	-2.2	-2.2	40.2	-	-	5.4	49.6	34.6	-	-	24.7	Dec-19
<i>Russell 3000 + 3%</i>			9.2	17.9	22.5	22.5	17.3	-	-	-16.8	29.4	24.5	-	-	14.6	
Total Private Credit	54,211,250	4.9	2.7	4.5	6.9	6.9	11.7	9.5	-	8.1	16.1	4.8	9.4	6.7		Oct-17
Portfolio Advisors Credit Strategies Fund	11,795,985	1.1	0.0	0.5	1.0	1.0	14.1	10.1	-	7.7	26.8	3.9	8.2	6.6	9.2	Oct-17
<i>Bloomberg High Yield +2% (Lagged)</i>			4.1	8.9	-1.4	-1.4	8.0	5.3	-	-12.4	13.5	5.3	8.5	5.1	5.0	
Crescent Direct Lending Levered Fund II	2,859,131	0.3	3.2	2.3	9.3	9.3	10.6	9.6	-	10.9	11.5	6.0	12.4	-	9.2	Mar-18
<i>Bloomberg High Yield +2% (Lagged)</i>			4.1	8.9	-1.4	-1.4	8.0	5.3	-	-12.4	13.5	5.3	8.5	-	4.9	
Audax Direct Lending Fund A	5,227,810	0.5	2.5	4.9	11.5	11.5	17.8	-	-	15.5	23.1	10.1	16.3	-	17.6	Oct-18
<i>Bloomberg High Yield +2% (Lagged)</i>			4.1	8.9	-1.4	-1.4	8.0	-	-	-12.4	13.5	5.3	8.5	-	5.2	
Ares Capital Europe IV	6,928,113	0.6	2.6	4.9	9.7	9.7	8.9	-	-	7.0	11.8	8.2	13.1	-	9.9	Aug-18
<i>Bloomberg High Yield +2% (Lagged)</i>			4.1	8.9	-1.4	-1.4	8.0	-	-	-12.4	13.5	5.3	8.5	-	5.2	
Lone Star XI	3,611,793	0.3	4.9	6.9	15.2	15.2	81.2	-	-	13.7	538.0	-62.8	-	-	19.3	Jun-19
<i>Bloomberg High Yield +2% (Lagged)</i>			4.1	8.9	-1.4	-1.4	8.0	-	-	-12.4	13.5	5.3	-	-	4.8	

Tortoise is now Ducenta Squared. TSSP Adjacent funded 4/16/2020. Portfolio Advisors market value as of 3/31/2023. PIMCO BRAVO liquidated 12/30/2022.

Total Fund
Executive Summary (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: June 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	18,436,956	1.7	5.4	7.3	4.6	4.6	5.7	-	-	13.2	-1.4	-	-	-	5.4	May-20
<i>Bloomberg High Yield +2% (Lagged)</i>			4.1	8.9	-1.4	-1.4	8.0	-	-	-12.4	13.5	-	-	-	3.2	
Ascribe Opportunities Fund IV	5,351,462	0.5	0.3	5.3	9.3	9.3	-	-	-	5.6	-17.3	-	-	-	-198.2	Jul-20
<i>Bloomberg High Yield +2% (Lagged)</i>			4.1	8.9	-1.4	-1.4	8.0	-	-	-12.4	13.5	-	-	-	6.6	
Total Opportunistic	25,720,779	2.3	5.5	6.8	1.6	1.6	12.9	6.0	9.4	10.4	18.6	0.9	-10.7	32.0		Dec-07
KKR Mezzanine Partners	1,599,743	0.1	16.5	19.2	-23.2	-23.2	-8.2	-4.2	3.0	-31.0	10.5	-15.2	-4.2	25.3	5.1	Jun-11
TSSP Adjacent Opportunities Partners	24,121,036	2.2	4.8	6.1	4.2	4.2	19.5	-	-	16.2	26.1	-	-	-	17.9	Apr-20
Total Cash	6,368,337	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		Sep-07
Cash Account	6,368,337	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	Sep-07
<i>90 Day U.S. Treasury Bill</i>			1.2	2.3	3.6	3.6	1.3	1.6	1.0	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 market value as of 3/31/2023. PIMCO BRAVO liquidated 12/30/2022.

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

Imperial County Employees' Retirement System
Period Ending: June 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	13.88	13.45	18.20	-0.01	1.00	0.02	1.00	0.74	-0.34	99.99	100.01
BlackRock International Equity	9.33	9.27	17.92	0.35	1.00	0.33	1.00	0.52	1.12	101.37	100.18
DFA Emerging Markets Value	11.33	10.84	16.46	5.04	0.96	3.49	0.96	0.66	1.33	105.88	81.66
Harding Loevner Emerging Markets	-1.28	-0.71	19.27	-0.10	0.89	8.61	0.81	-0.04	-0.02	94.37	94.92
Ducenta Squared	-3.67	-4.83	5.96	0.15	0.96	1.09	0.97	-0.82	0.27	98.14	95.94
Mackay Shields Core Plus Opportunities	-3.19	-4.27	6.78	1.22	1.09	1.41	0.96	-0.63	0.60	116.26	101.69
BlackRock US TIPS	-0.11	-1.14	6.86	0.01	1.00	0.16	1.00	-0.16	0.09	100.68	100.53
ASB Real Estate	4.11	3.14	8.55	-3.42	1.16	4.02	0.79	0.35	-0.60	104.55	216.04
Clarion Lion	7.51	6.52	10.27	-2.38	1.50	4.37	0.92	0.62	0.22	142.62	221.60
ARA American Strategic Value Realty	7.03	5.78	6.92	-2.02	1.03	1.27	0.97	0.81	-1.38	88.32	120.29
Portfolio Advisors Credit Strategies Fund	14.09	12.28	7.81	14.23	0.02	11.67	0.00	1.54	0.46	63.52	-43.16
Crescent Direct Lending Levered Fund II	10.64	9.02	5.20	11.97	-0.13	11.24	0.05	1.73	0.19	41.07	-47.40
Audax Direct Lending Fund A	17.83	15.60	8.59	16.20	0.22	10.88	0.05	1.79	0.80	81.74	-48.38
Ares Capital Europe IV	8.94	7.50	5.89	8.28	0.10	9.91	0.02	1.26	0.06	45.44	-19.07
Lone Star XI	81.20	86.46	94.65	130.40	0.16	94.94	0.00	0.91	0.84	542.98	-11.76

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

Imperial County Employees' Retirement System
Period Ending: June 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	13.88	13.45	18.20	-0.01	1.00	0.02	1.00	0.74	-0.34	99.99	100.01
BlackRock International Equity	9.33	9.27	17.92	0.35	1.00	0.33	1.00	0.52	1.12	101.37	100.18
DFA Emerging Markets Value	11.33	10.84	16.46	5.04	0.96	3.49	0.96	0.66	1.33	105.88	81.66
Harding Loevner Emerging Markets	-1.28	-0.71	19.27	-0.10	0.89	8.61	0.81	-0.04	-0.02	94.37	94.92
Ducenta Squared	-3.67	-4.83	5.96	0.15	0.96	1.09	0.97	-0.82	0.27	98.14	95.94
Mackay Shields Core Plus Opportunities	-3.19	-4.27	6.78	1.22	1.09	1.41	0.96	-0.63	0.60	116.26	101.69
BlackRock US TIPS	-0.11	-1.14	6.86	0.01	1.00	0.16	1.00	-0.16	0.09	100.68	100.53
ASB Real Estate	4.11	3.14	8.55	-3.42	1.16	4.02	0.79	0.35	-0.60	104.55	216.04
Clarion Lion	7.51	6.52	10.27	-2.38	1.50	4.37	0.92	0.62	0.22	142.62	221.60
ARA American Strategic Value Realty	7.03	5.78	6.92	-2.02	1.03	1.27	0.97	0.81	-1.38	88.32	120.29
Portfolio Advisors Credit Strategies Fund	14.09	12.28	7.81	14.23	0.02	11.67	0.00	1.54	0.46	63.52	-43.16
Crescent Direct Lending Levered Fund II	10.64	9.02	5.20	11.97	-0.13	11.24	0.05	1.73	0.19	41.07	-47.40

Private Equity
Non Marketable Securities Overview

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

Vintage	Manager & Fund Name	Estimated 6/30/2023 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	\$6,206,635	\$10,000,000	\$8,525,000	85%	\$1,475,000	\$12,708,132	\$5,953,294	149.1%	221.9%	18.4%	3/31/23	
2011	HarbourVest IX-Credit	\$923,063	\$2,000,000	\$1,600,000	80%	\$400,000	\$1,806,721	\$963,189	112.9%	170.6%	13.3%	12/31/22	
2008	HarbourVest Int'l VI ⁵	\$1,525,462	\$3,712,930	\$2,630,078	71%	\$1,082,852	\$4,120,248	\$1,792,538	156.7%	214.7%	14.5%	12/31/22	
2011	HarbourVest IX-Venture	\$5,029,033	\$4,000,000	\$3,800,000	95%	\$200,000	\$311,167	\$5,553,519	8.2%	140.5%	22.1%	12/31/22	
2017	HarbourVest 2017 Global	\$25,164,244	\$30,000,000	\$17,700,000	59%	\$12,300,000	\$10,767,783	\$24,826,789	60.8%	203.0%	21.8%	12/31/22	
2018	HarbourVest 2018 Global	\$21,651,129	\$20,000,000	\$10,938,043	55%	\$9,061,957	\$3,630,987	\$21,172,519	33.2%	231.1%	25.4%	3/31/23	
2019	HarbourVest 2019 Global	\$18,070,734	\$20,000,000	\$13,075,273	65%	\$6,924,727	\$2,708,448	\$16,756,917	20.7%	158.9%	31.5%	12/31/22	
Total Illiquid Private Equity		\$78,570,300	\$89,712,930	\$58,268,394	65%	\$31,444,536	\$36,053,486	\$77,018,765	61.9%	196.7%			
% of Portfolio (Market Value)		7.2%											
								Management Fee	Admin Fee	Interest Expense	Other Expense	Total Expense⁶	
								HarbourVest IX-Buyout	\$20,184	\$0	\$2,624	\$1,561	\$24,369
								HarbourVest IX-Credit	\$4,034	\$0	\$492	\$921	\$5,447
								HarbourVest Int'l VI	\$2,019	\$0	\$220	\$207	\$2,446
								HarbourVest IX-Venture	\$8,090	\$0	\$1,413	\$708	\$10,211
								HarbourVest 2017 Global	\$66,000	\$0	\$323	\$83,969	\$150,292
								HarbourVest 2018 Global	\$43,557	\$0	\$579	\$34,918	\$79,054
								HarbourVest 2019 Global	\$43,344	\$0	\$5,707	\$43,742	\$92,793
									\$187,228	\$0	\$11,358	\$166,026	\$364,612

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 6/30/2023)

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 1Q 2023

Private Credit
Non Marketable Securities Overview

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

Vintage	Manager & Fund Name	Estimated 6/30/2023 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	\$11,795,985	\$11,250,000	\$11,250,000	100%	\$0	\$2,907,039	\$12,166,621	25.8%	130.7%	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%	9.1%	3/31/23		
2017	Audax Direct Lending Fund A	\$5,227,810	\$7,000,000	\$5,791,026	83%	\$1,208,974	\$2,675,047	\$5,227,810	46.2%	136.5%	15.5%	6/30/23		
2018	Ares Capital Europe IV	\$6,928,113	\$8,000,000	\$6,762,884	85%	\$1,237,116	\$2,136,557	\$6,896,335	31.6%	134.0%	11.4%	3/31/23		
2019	Lone Star Fund XI	\$3,611,793	\$5,750,000	\$4,032,995	70%	\$1,717,005	\$2,676,732	\$3,611,793	66.4%	155.9%	39.7%	6/30/23		
2019	Ascribe Opportunities IV	\$5,351,462	\$6,000,000	\$5,207,450	87%	\$792,550	\$332,407	\$5,351,462	6.4%	109.1%	13.8%	3/31/23		
2020	Sixth Street Diversified Credit	\$18,436,956	\$50,000,000	\$19,299,464	39%	\$30,700,536	\$3,306,085	NA	17.1%	112.7%	NA	NA		
Total Illiquid Private Credit		\$54,211,250	\$95,000,000	\$58,051,326	61.1%	\$36,948,674	\$18,452,318	\$36,024,428	31.8%	125.2%				
% of Portfolio (Market Value)		4.9%												
								Management Fee	Accrued Carried Interest	Admin Fee	Interest Expense	Other Expense	Total Expense⁵	
								Portfolio Advisors CSF	\$0	\$0	\$0	\$0	\$0	
								Crescent Direct Lending II	\$42,318	\$0	\$4,762	\$0	\$47,080	
								Audax Direct Lending A	\$28,914	\$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	
								Sixth Street Diversified Credit	\$0	\$0	\$0	\$0	\$0	
									\$121,933	\$17,258	\$4,762	\$81,485	\$21,739	\$247,177

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 6/30/2023)

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 except Crescent Direct Lending II 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: June 30, 2023

Vintage	Manager & Fund Name	Estimated 6/30/2023 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 ⁶	\$1,599,743	\$10,000,000	\$10,000,000	100%	\$0	\$14,153,380	\$1,372,673	141.5%	157.5%	9.1%	3/31/23	
2020	TSSP Adjacent Opportunities Partners	\$24,121,036	\$40,000,000	\$22,392,130	56%	\$17,607,870	\$5,501,337	NA	24.6%	132.3%	NA	NA	
Total Illiquid Opportunistic		\$25,720,779	\$50,000,000	\$32,392,130	65%	\$17,607,870	\$19,654,717	\$1,386,290	4.3%	65.0%			
% of Portfolio (Market Value)		2.3%											
							Management Fee	Accrued Carried Interest	Admin Fee	Interest Expense	Other Expense	Total Expense⁶	
							KKR Mezzanine	\$6,260	\$0	\$0	\$0	\$8,516	\$14,776
							TSSP Adjacent Opportunities Pa	\$0	\$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 6/30/2023)

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: June 30, 2023

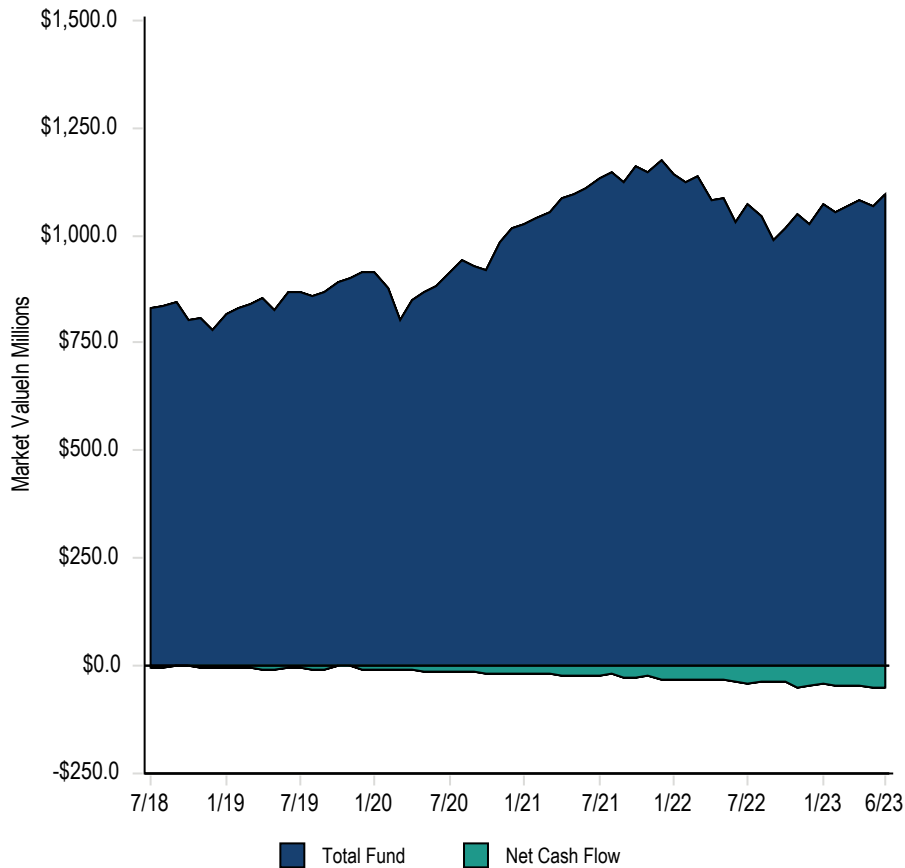
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flows	Capital Appreciation	Ending Market Value
BlackRock Russell 3000	\$346,500,390	\$0	-\$2,000,000	-\$2,000,000	\$28,952,705	\$373,453,095
BlackRock International Equity	\$152,359,540	\$0	\$0	\$0	\$4,884,836	\$157,244,376
DFA Emerging Markets Value	\$24,838,539	\$0	\$0	\$0	\$1,143,349	\$25,981,888
Harding Loevner Emerging Markets	\$19,321,198	\$0	\$0	\$0	\$370,882	\$19,692,080
Ducenta Squared	\$99,282,844	\$0	\$0	\$0	-\$604,523	\$98,678,322
MacKay Shields Core Plus Opportunities	\$98,699,592	\$0	\$0	\$0	-\$793,831	\$97,905,762
BlackRock US TIPS	\$42,189,208	\$0	\$0	\$0	-\$587,889	\$41,601,319
ASB Real Estate	\$29,431,431	\$0	\$0	\$0	-\$1,829,420	\$27,602,011
Clarion Lion	\$32,475,274	\$0	-\$277,454	-\$277,454	-\$1,745,986	\$30,451,834
ARA American Strategic Value Realty	\$57,456,822	\$0	\$0	\$0	-\$1,280,957	\$56,175,865
1221 State St. Corp	\$1,990,640	\$17,963	-\$9,094	\$8,869	\$228	\$1,999,736
Harbourvest Buyout IX	\$5,953,294	\$0	\$0	\$0	\$253,341	\$6,206,635
Harbourvest Credit Ops IX	\$908,711	\$0	\$0	\$0	\$14,352	\$923,063
Harbourvest International PE VI	\$1,613,176	\$0	-\$90,034	-\$90,034	\$2,320	\$1,525,462
Harbourvest Venture IX	\$5,001,167	\$0	\$0	\$0	\$27,866	\$5,029,033
Harbourvest 2017 Global Fund	\$24,730,818	\$0	-\$101,816	-\$101,816	\$535,242	\$25,164,244
Harbourvest 2018 Global Fund	\$21,172,519	\$400,000	-\$285,556	\$114,444	\$364,166	\$21,651,129
Harbourvest 2019 Global Fund	\$17,206,084	\$900,000	-\$220,919	\$679,081	\$185,569	\$18,070,734
Portfolio Advisors Credit Strategies Fund	\$12,006,089	\$0	-\$210,104	-\$210,104	\$0	\$11,795,985
Crescent Direct Lending Levered Fund II	\$2,770,407	\$0	\$0	\$0	\$88,724	\$2,859,131
Audax Direct Lending Fund A	\$4,661,263	\$541,525	-\$101,751	\$439,774	\$126,773	\$5,227,810
Ares Capital Europe IV	\$6,896,335	\$0	-\$144,679	-\$144,679	\$176,457	\$6,928,113
Lone Star XI	\$5,703,878	\$144,425	-\$2,402,780	-\$2,258,356	\$166,271	\$3,611,793
Sixth Street Diversified Credit	\$15,163,826	\$2,449,450	\$0	\$2,449,450	\$823,680	\$18,436,956
Ascribe Opportunities Fund IV	\$5,351,462	\$286,983	-\$305,498	-\$18,515	\$18,515	\$5,351,462
KKR Mezzanine Partners	\$1,372,673	\$0	\$0	\$0	\$227,070	\$1,599,743
TSSP Adjacent Opportunities Partners	\$22,866,410	\$154,787	\$0	\$154,787	\$1,099,839	\$24,121,036
Cash Account	\$8,254,379	\$10,192,970	-\$12,079,012	-\$1,886,042	\$0	\$6,368,337
Total Fund	\$1,066,177,970	\$15,088,101	-\$18,228,697	-\$3,140,596	\$32,619,578	\$1,095,656,953

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 03/31/2023 +/- 2Q23 calls/distributions.

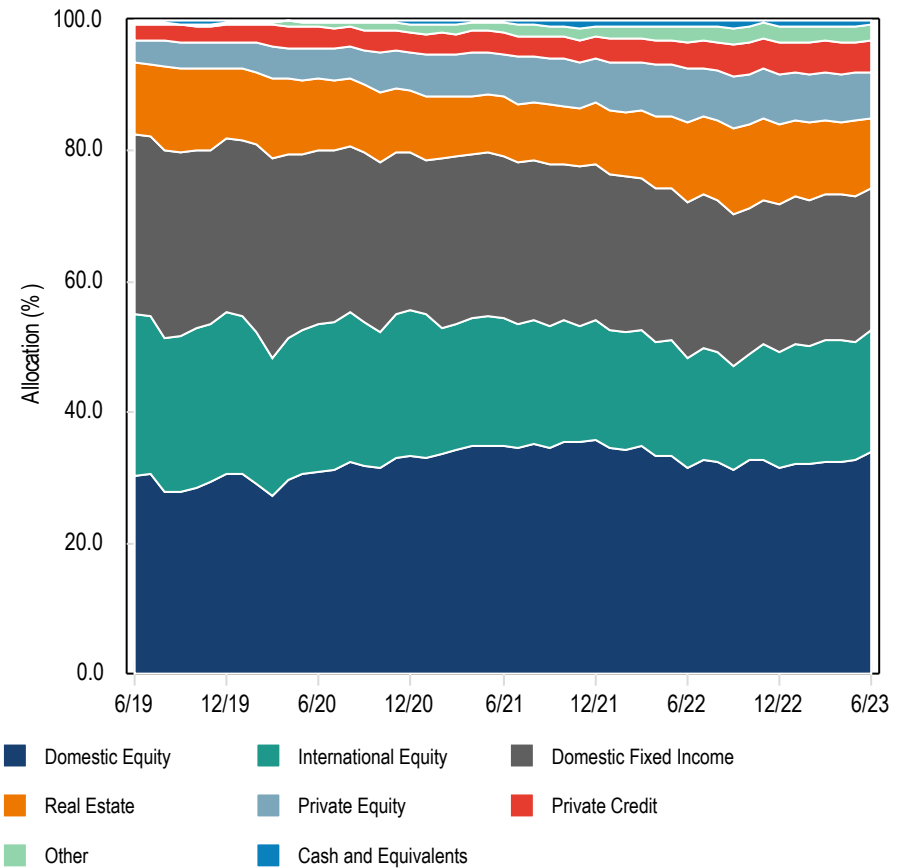
Total Fund
Asset Allocation History

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

Market Value History



Asset Allocation History



Total Fund Investment Fund Fee Analysis

Imperial County Employees' Retirement System Period Ending: June 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	56,175,865	5.13	641,759	1.14
Ares Capital Europe IV	1.38 % of Assets	6,928,113	0.63	95,608	1.38
ASB Real Estate	1.25 % of First \$5 M 1.00 % of Next \$10 M 0.75 % Thereafter	27,602,011	2.52	257,015	0.93
Ascribe Opportunities Fund IV	1.50 % of Assets	5,351,462	0.49	80,272	1.50
Audax Direct Lending Fund A	0.85 % of Assets	5,227,810	0.48	44,436	0.85
BlackRock International Equity	0.15 % of First \$50 M 0.10 % of Next \$50 M 0.00 % Thereafter	157,244,376	14.35	125,000	0.08
BlackRock Russell 3000	0.03 % of Assets	373,453,095	34.08	112,036	0.03
BlackRock US TIPS	0.07 % of Assets	41,601,319	3.80	29,121	0.07
Cash Account		6,368,337	0.58	-	-
Clarion Lion	1.25 % of First \$10 M 1.00 % of Next \$15 M 0.85 % Thereafter	30,451,834	2.78	321,341	1.06
Crescent Direct Lending Levered Fund II	Minimum Fee: \$25,280	2,859,131	0.26	25,280	0.88
DFA Emerging Markets Value	0.44 % of Assets	25,981,888	2.37	114,320	0.44
Ducenta Squared	0.29 % of First \$100 M 0.25 % of Next \$100 M 0.00 % Thereafter	98,678,322	9.01	281,233	0.29
Harbourvest 2017 Global Fund	Minimum Fee: \$262,500	25,164,244	2.30	262,500	1.04
Harbourvest 2018 Global Fund	Minimum Fee: \$138,000	21,651,129	1.98	138,000	0.64
Harbourvest 2019 Global Fund	0.45 % of Assets	18,070,734	1.65	81,318	0.45
Harbourvest Buyout IX	Minimum Fee: \$100,000	6,206,635	0.57	100,000	1.61
Harbourvest Credit Ops IX	Minimum Fee: \$20,000	923,063	0.08	20,000	2.17
Harbourvest International PE VI	Minimum Fee: \$35,000	1,525,462	0.14	35,000	2.29
Harbourvest Venture IX	Minimum Fee: \$40,000	5,029,033	0.46	40,000	0.80
Harding Loevner Emerging Markets	1.05 % of Assets	19,692,080	1.80	206,767	1.05
KKR Mezzanine Partners	Minimum Fee: \$150,000	1,599,743	0.15	150,000	9.38
Lone Star XI	0.71 % of Assets	3,611,793	0.33	25,608	0.71
MacKay Shields Core Plus Opportunities	0.35 % of Assets	97,905,762	8.94	342,670	0.35
Portfolio Advisors Credit Strategies Fund	Minimum Fee: \$180,000	11,795,985	1.08	180,000	1.53
Sixth Street Diversified Credit	1.35 % of Assets	18,436,956	1.68	248,899	1.35

*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

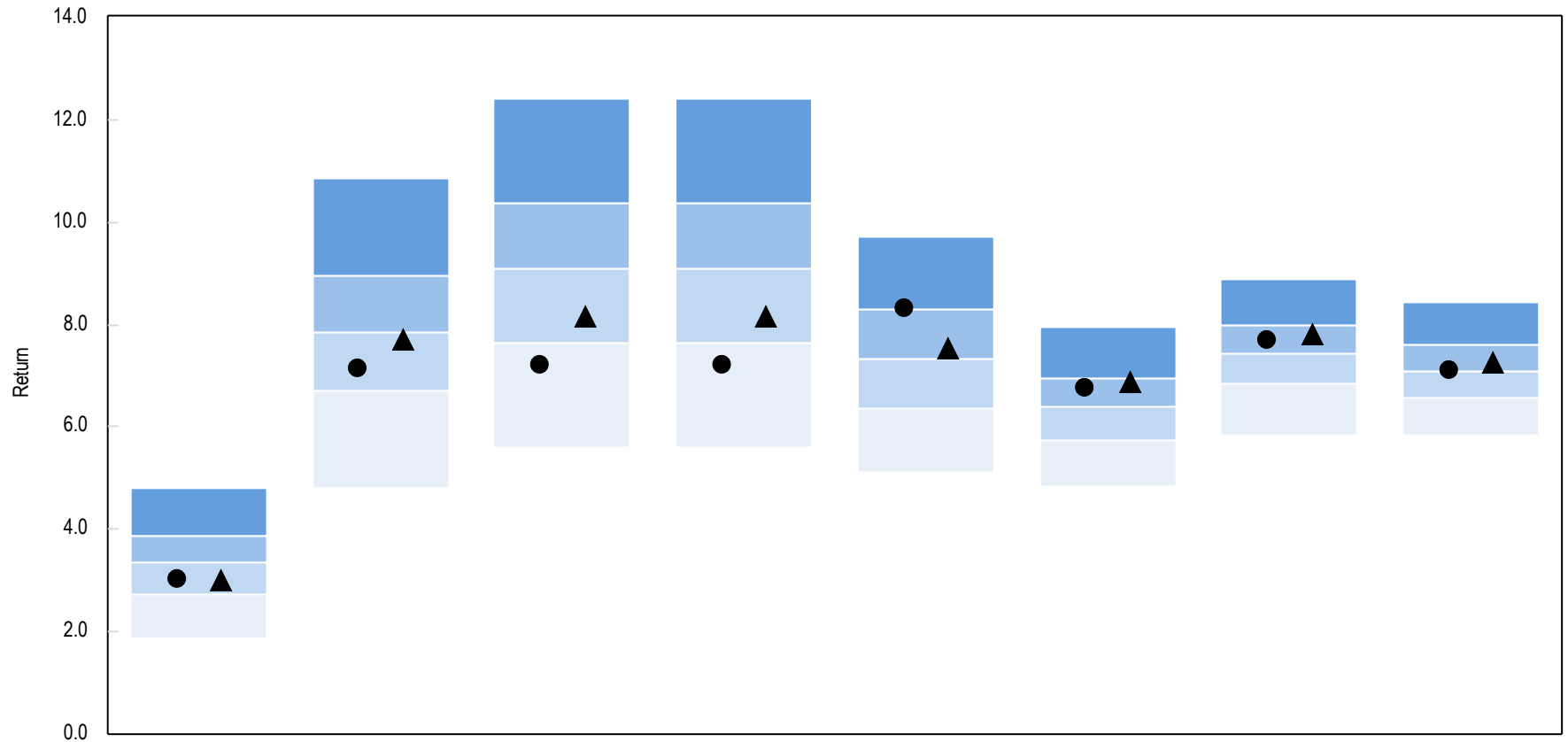
Imperial County Employees' Retirement System
Period Ending: June 30, 2023

Account	Fee Schedule	Market Value	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
TSSP Adjacent Opportunities Partners		24,121,036	2.20	-	-
Investment Management Fee		1,095,656,953	100.00	3,958,183	0.36



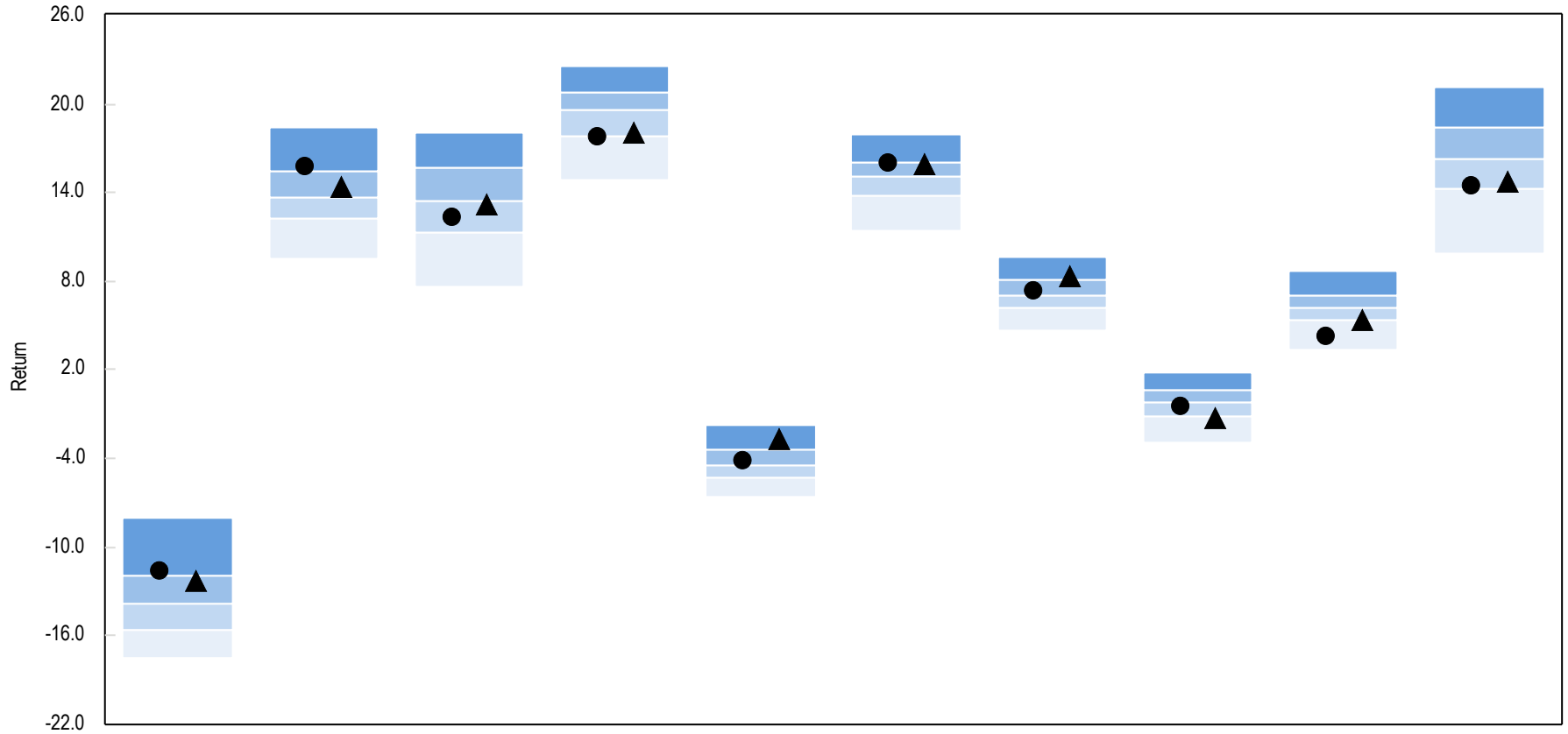
*HarbourVest and KKR fees are estimated gross management fees only and do not include incentive allocations or offsetting cash flows received by the fund.
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 *Verus advisory fee shown for disclosure purposes only and is not included in total investment 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	3.04 (64)	7.15 (66)	7.23 (82)	7.23 (82)	8.33 (24)	6.78 (33)	7.70 (37)	7.14 (48)
▲ Policy Index	3.02 (64)	7.70 (54)	8.14 (69)	8.14 (69)	7.54 (46)	6.88 (28)	7.83 (33)	7.26 (40)
5th Percentile	4.82	10.86	12.40	12.40	9.70	7.95	8.87	8.42
1st Quartile	3.88	8.97	10.36	10.36	8.31	6.96	8.00	7.61
Median	3.36	7.83	9.08	9.08	7.34	6.40	7.44	7.10
3rd Quartile	2.73	6.69	7.64	7.64	6.38	5.75	6.84	6.57
95th Percentile	1.87	4.80	5.61	5.61	5.13	4.83	5.86	5.85
Population	617	608	598	598	570	553	533	464

Total Fund vs. InvMetrics Public DB Net

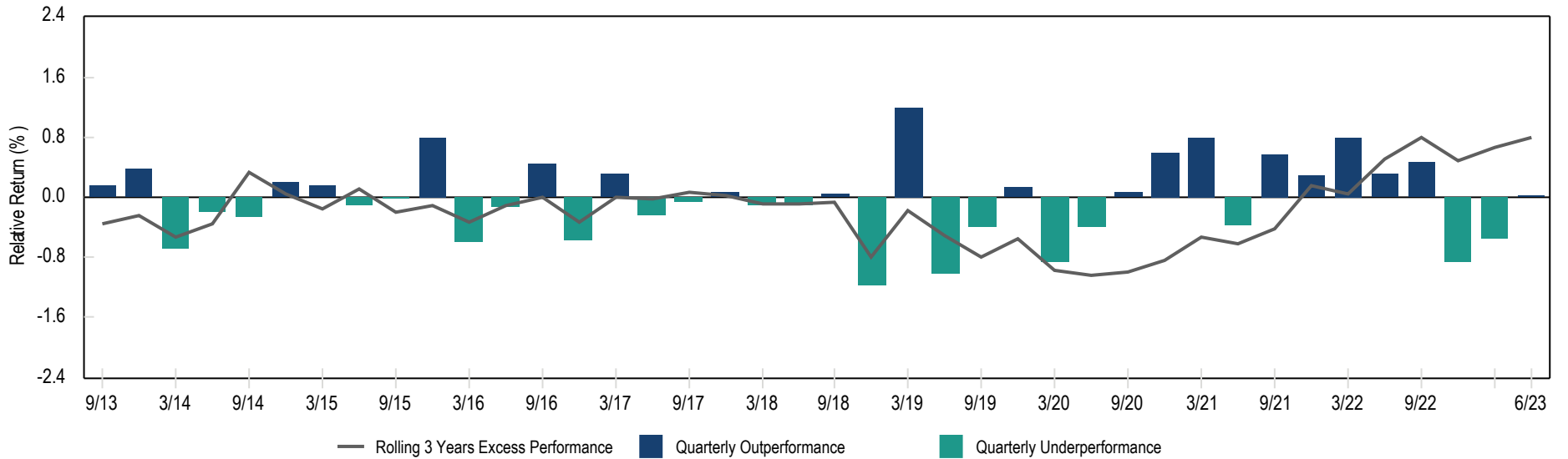


	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Total Fund	-11.60 (22)	15.84 (21)	12.33 (63)	17.85 (75)	-4.12 (40)	16.02 (27)	7.45 (40)	-0.41 (58)	4.37 (89)	14.48 (74)
▲ Policy Index	-12.33 (31)	14.38 (39)	13.15 (53)	18.03 (73)	-2.73 (13)	15.93 (30)	8.36 (20)	-1.22 (77)	5.33 (76)	14.71 (72)
5th Percentile	-7.96	18.40	18.01	22.61	-1.68	17.89	9.70	1.83	8.64	21.15
1st Quartile	-11.90	15.48	15.64	20.84	-3.42	16.10	8.06	0.65	7.09	18.42
Median	-13.87	13.73	13.40	19.61	-4.46	15.07	7.06	-0.19	6.21	16.29
3rd Quartile	-15.60	12.30	11.36	17.80	-5.27	13.77	6.16	-1.11	5.34	14.28
95th Percentile	-17.47	9.47	7.60	14.85	-6.55	11.37	4.67	-2.91	3.32	9.87
Population	783	972	1,018	929	882	879	865	809	765	740

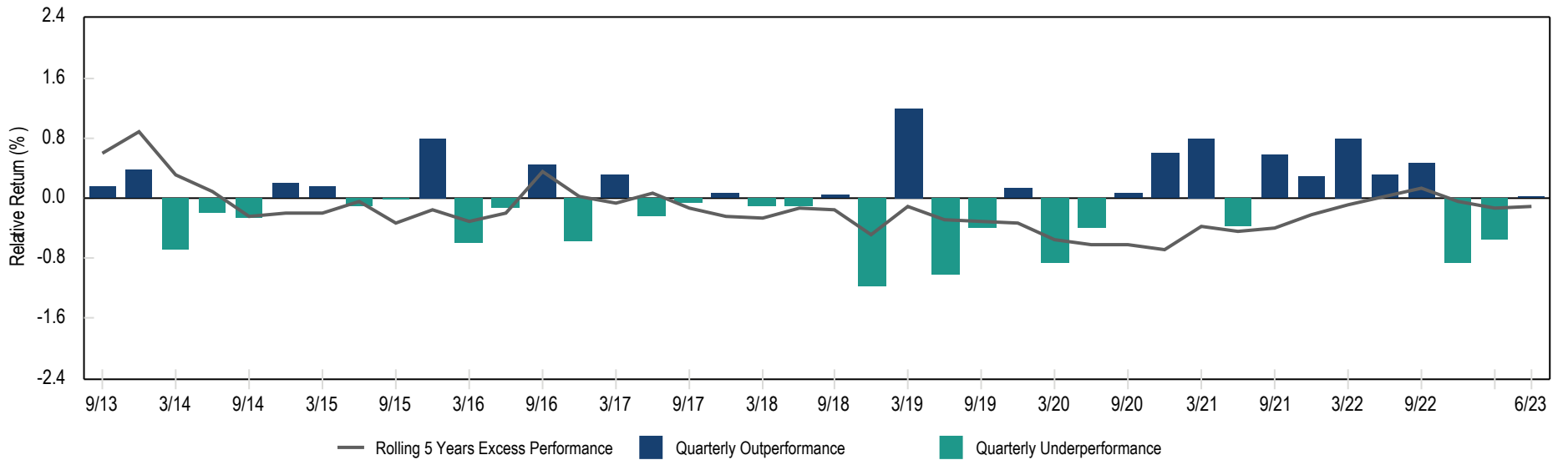
Total Fund
Rolling Return Analysis (Net of Fees)

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

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: June 30, 2023

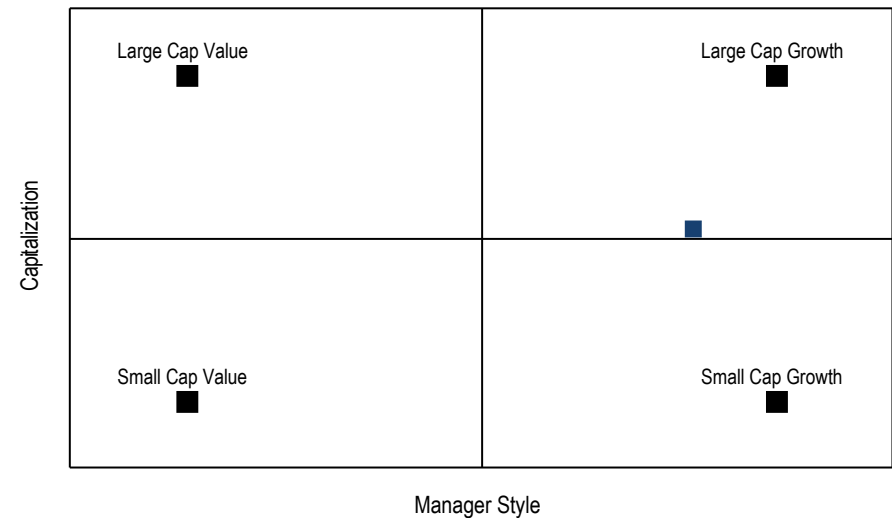
	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
Total Domestic Equity	373,453,095	100.0	8.4	16.2	19.0	19.0	13.9	11.4	12.1	-19.2	25.7	21.0	31.1	-5.2
<i>Russell 3000 Index</i>			8.4	16.2	19.0	19.0	13.9	11.4	12.3	-19.2	25.7	20.9	31.0	-5.2
BlackRock Russell 3000	373,453,095	100.0	8.4	16.2	19.0	19.0	13.9	11.4	-	-19.2	25.7	21.0	31.1	-5.2
<i>Russell 3000 Index</i>			8.4	16.2	19.0	19.0	13.9	11.4	-	-19.2	25.7	20.9	31.0	-5.2
<i>eV US All Cap Core Equity Rank</i>			30	26	39	39	45	35	-	60	54	42	39	

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



■ BlackRock Russell 3000

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



■ BlackRock Russell 3000

Total International Equity Asset Class Overview (Net of Fees)

Imperial County Employees' Retirement System Period Ending: June 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	202,918,344	100.0	3.2	10.8	16.0	16.0	8.7	3.7	5.0	-15.4	10.1	8.1	20.7	-14.3
MSCI AC World ex USA Index			2.7	9.9	13.3	13.3	7.7	4.0	5.2	-15.6	8.3	11.1	22.1	-13.8
BlackRock International Equity	157,244,376	77.5	3.2	12.0	19.2	19.2	9.3	4.7	5.7	-14.1	11.6	8.1	22.4	-13.5
MSCI EAFE (Net)			3.0	11.7	18.8	18.8	8.9	4.4	5.4	-14.5	11.3	7.8	22.0	-13.8
eV All EAFE Equity Rank			33	36	23	23	38	31	46	35	52	52	50	
DFA Emerging Markets Value	25,981,888	12.8	4.6	8.5	7.9	7.9	11.3	3.1	3.8	-10.7	12.4	2.7	9.6	-11.9
MSCI Emerging Markets Value (Net)			2.5	6.5	4.1	4.1	6.3	1.2	2.0	-15.8	4.0	5.5	12.0	-10.7
eV Emg Mkts All Cap Value Equity Rank			30	52	74	74	34	74	75	36	19	82	93	
Harding Loevner Emerging Markets	19,692,080	9.7	1.7	4.8	3.3	3.3	-1.3	-3.1	-	-28.1	-4.3	12.4	24.0	-19.5
MSCI Emerging Markets Growth Index			-0.6	3.4	-0.2	-0.2	-1.1	0.8	-	-23.7	-8.2	31.6	25.4	-18.0
eV Emg Mkts All Cap Growth Equity Rank			29	44	42	42	76	100	-	77	52	96	53	

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



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

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

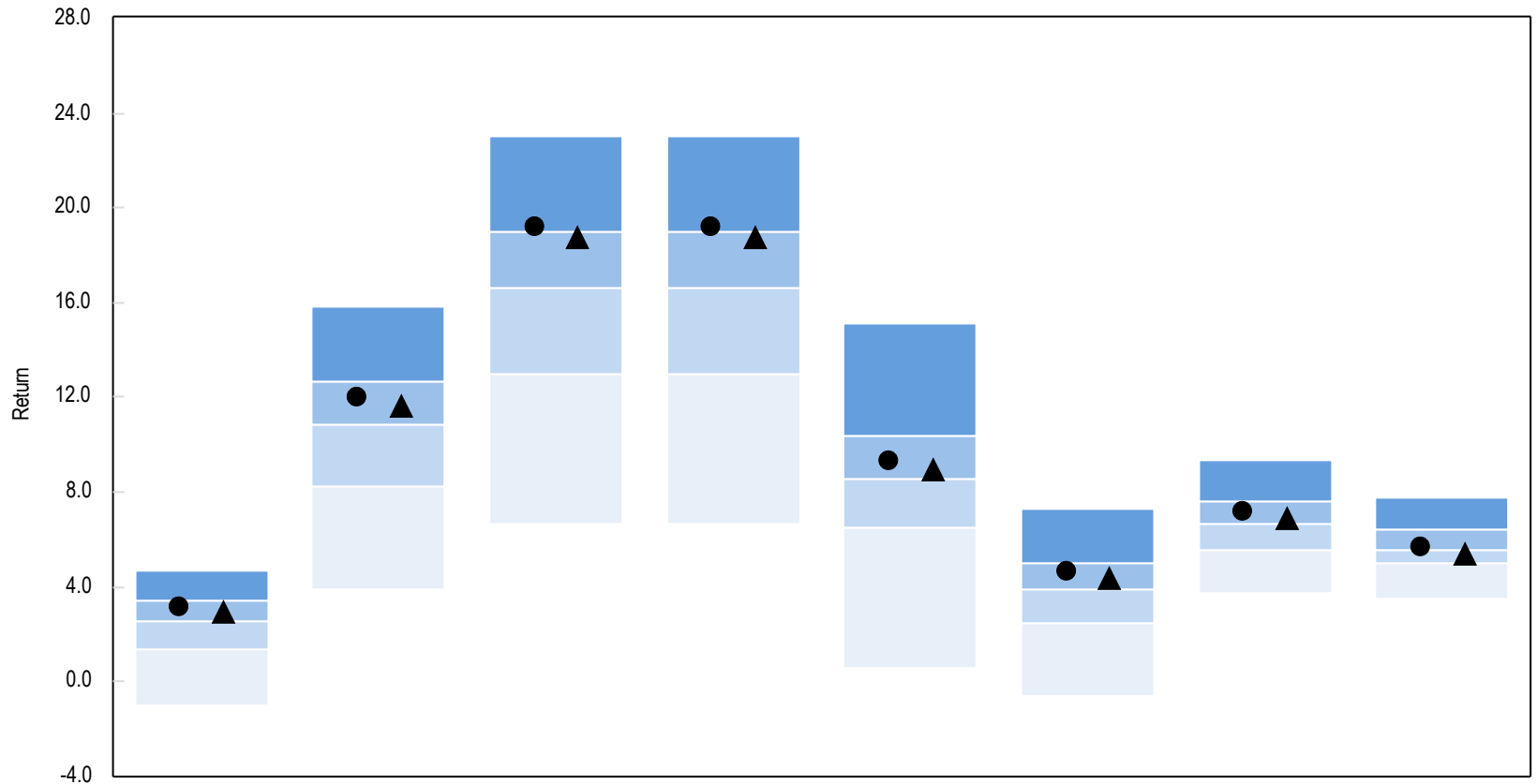


- BlackRock International Equity
- DFA Emerging Markets Value
- Harding Loevner Emerging Markets
- Total International Equity

BlackRock International Equity
 Cumulative Performance Comparison (Net of Fees)

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

BlackRock International Equity vs. eV All EAFE Equity

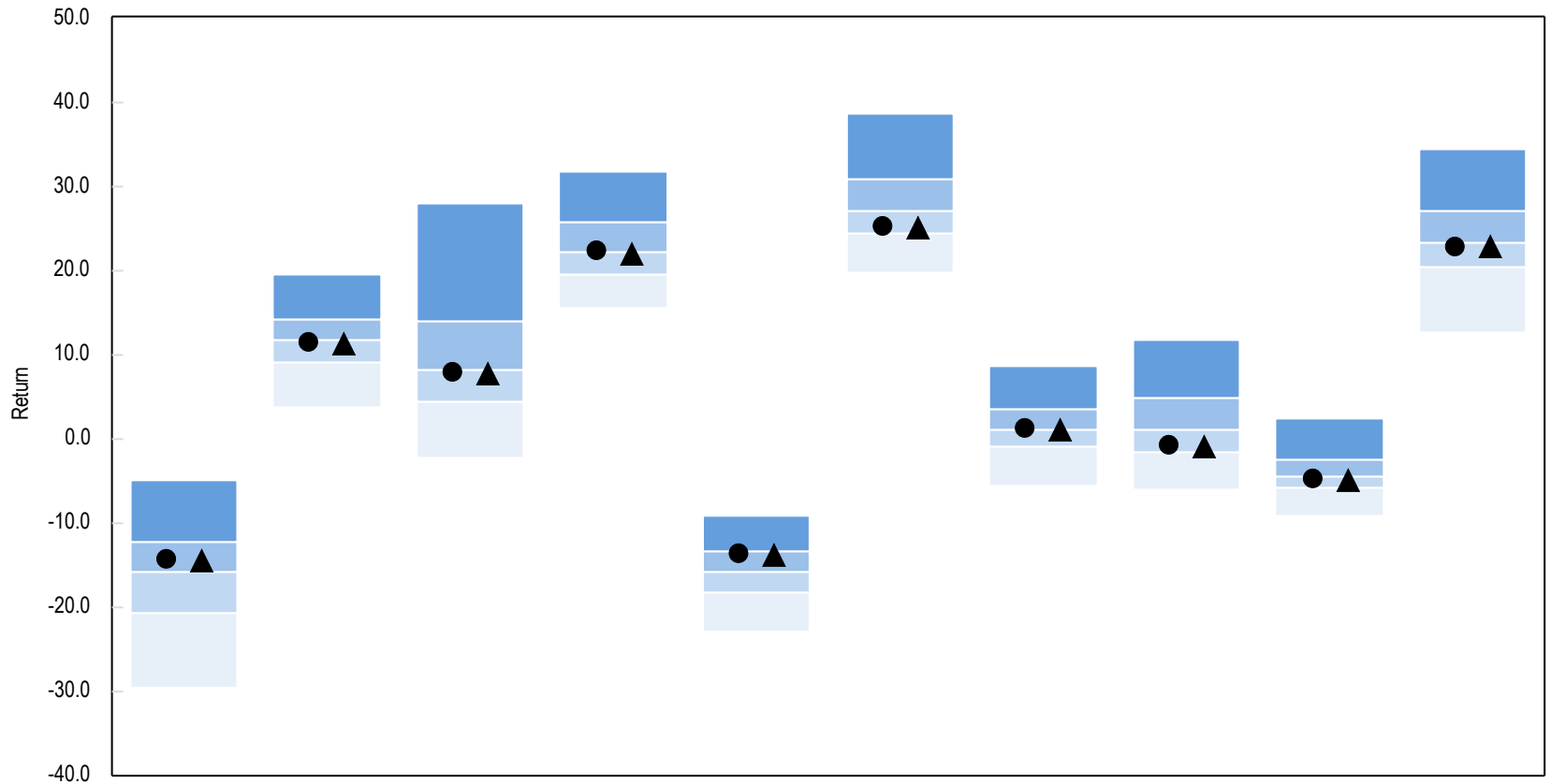


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● BlackRock International Equity	3.19 (33)	12.02 (36)	19.23 (23)	19.23 (23)	9.33 (38)	4.72 (31)	7.22 (33)	5.70 (46)
▲ MSCI EAFE (Net)	2.95 (43)	11.67 (40)	18.77 (28)	18.77 (28)	8.93 (46)	4.39 (41)	6.88 (44)	5.41 (60)
5th Percentile	4.70	15.81	23.03	23.03	15.11	7.33	9.39	7.77
1st Quartile	3.44	12.66	19.00	19.00	10.40	5.01	7.61	6.41
Median	2.60	10.89	16.63	16.63	8.58	3.89	6.66	5.60
3rd Quartile	1.34	8.22	13.01	13.01	6.48	2.45	5.58	4.98
95th Percentile	-1.02	3.93	6.70	6.70	0.55	-0.56	3.77	3.49
Population	410	410	408	408	392	364	333	269

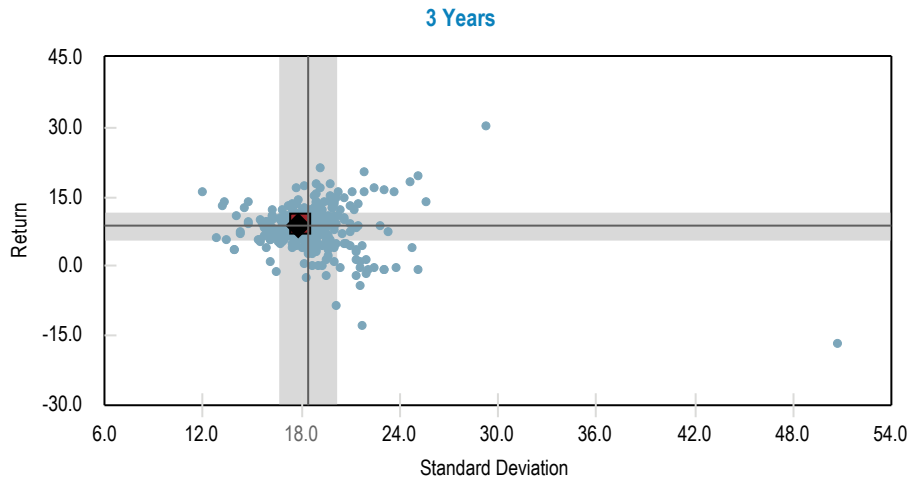
BlackRock International Equity
 Consecutive Performance Comparison (Net of Fees)

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

BlackRock International Equity vs. eV All EAFE Equity

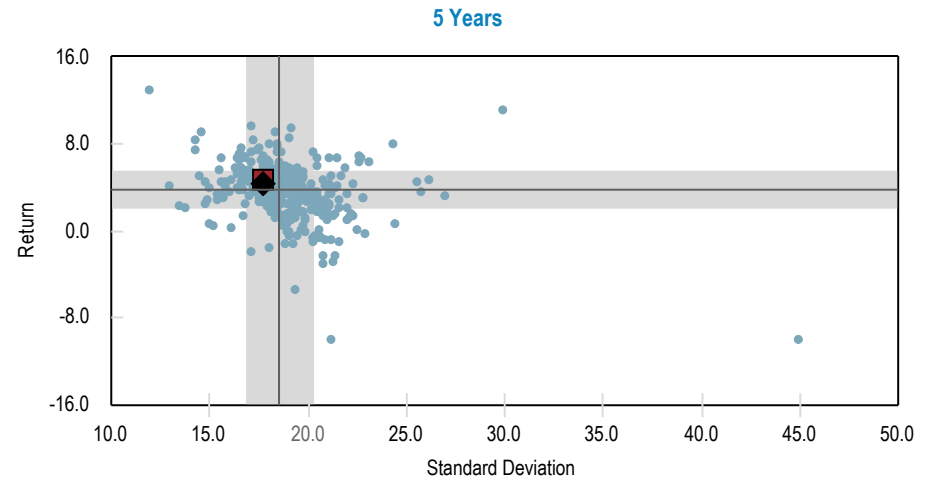


	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● BlackRock International Equity	-14.12 (35)	11.62 (52)	8.07 (52)	22.40 (50)	-13.52 (29)	25.42 (64)	1.34 (46)	-0.63 (65)	-4.77 (57)	22.94 (55)
▲ MSCI EAFE (Net)	-14.45 (41)	11.26 (58)	7.82 (55)	22.01 (54)	-13.79 (34)	25.03 (68)	1.00 (52)	-0.81 (68)	-4.90 (61)	22.78 (56)
5th Percentile	-4.89	19.51	28.03	31.71	-9.07	38.66	8.70	11.70	2.50	34.55
1st Quartile	-12.28	14.16	14.09	25.84	-13.28	30.82	3.47	4.95	-2.40	27.08
Median	-15.83	11.79	8.18	22.26	-15.75	27.02	1.08	1.18	-4.40	23.36
3rd Quartile	-20.73	9.09	4.48	19.64	-18.23	24.41	-1.00	-1.55	-5.82	20.53
95th Percentile	-29.46	3.69	-2.25	15.63	-22.92	19.75	-5.47	-5.99	-9.10	12.59
Population	440	451	459	467	475	470	456	443	435	403



eV All EAFE Equity

	Return	Standard Deviation
■ BlackRock International Equity	9.33	17.92
◆ MSCI EAFE (Net)	8.93	17.87
— Median	8.58	18.42
Population	392	392



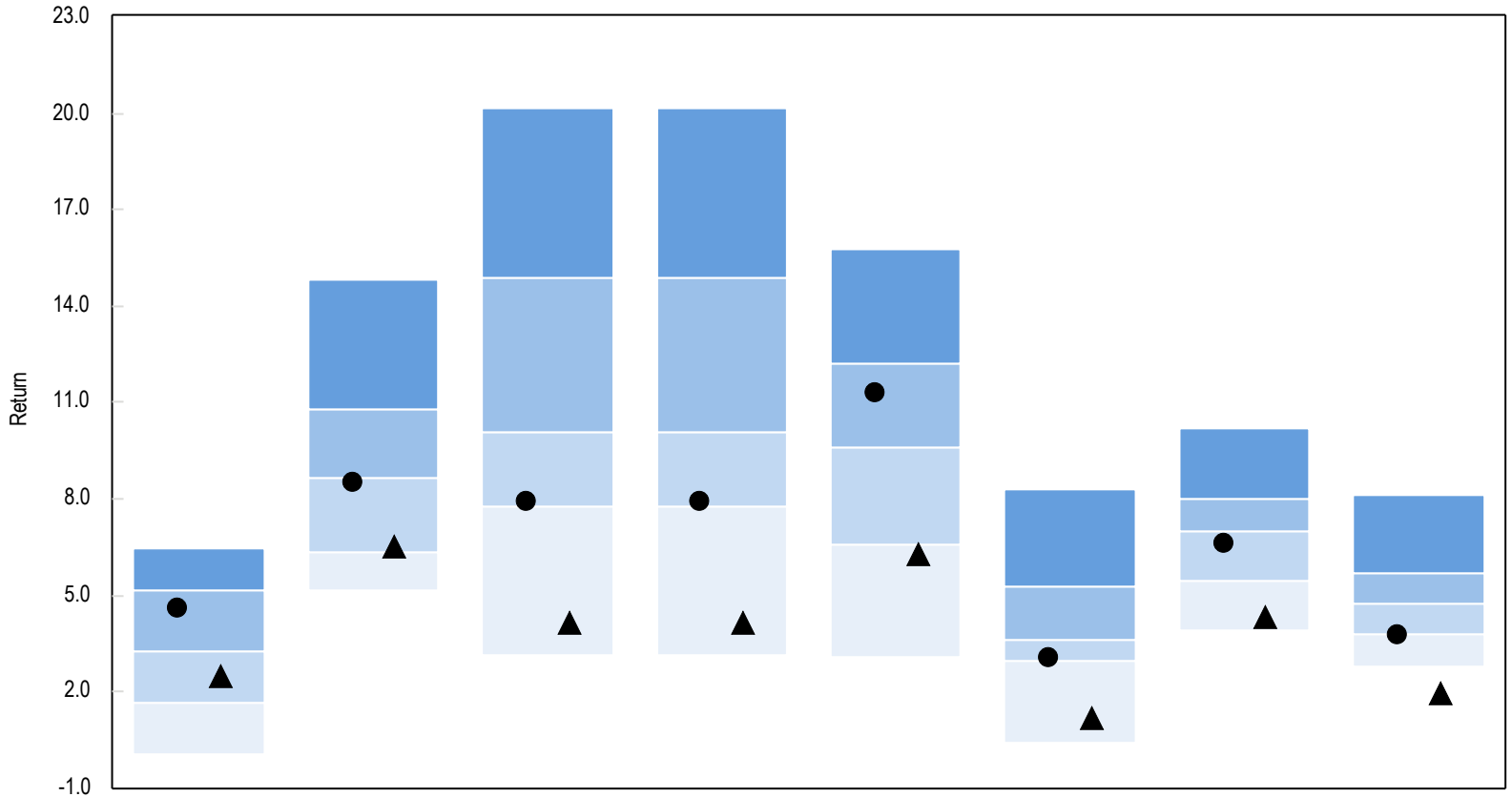
eV All EAFE Equity

	Return	Standard Deviation
■ BlackRock International Equity	4.72	17.70
◆ MSCI EAFE (Net)	4.39	17.67
— Median	3.89	18.55
Population	364	364

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

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

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

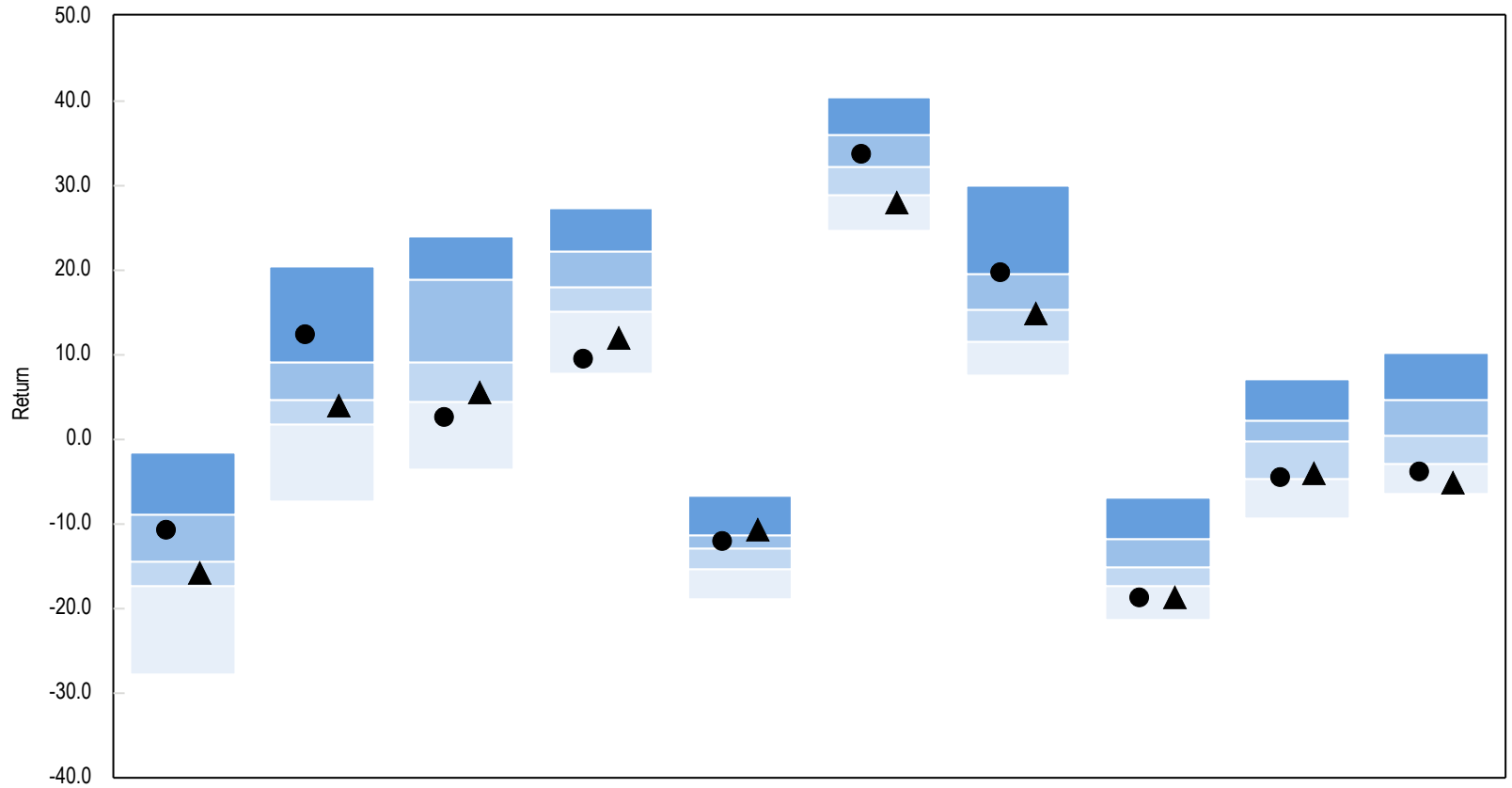


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● DFA Emerging Markets Value	4.60 (30)	8.52 (52)	7.93 (74)	7.93 (74)	11.33 (34)	3.08 (74)	6.66 (56)	3.82 (75)
▲ MSCI Emerging Markets Value (Net)	2.53 (63)	6.53 (74)	4.13 (91)	4.13 (91)	6.27 (78)	1.22 (91)	4.34 (89)	1.99 (100)
5th Percentile	6.48	14.82	20.15	20.15	15.75	8.30	10.23	8.10
1st Quartile	5.17	10.80	14.86	14.86	12.20	5.31	8.01	5.69
Median	3.27	8.65	10.07	10.07	9.61	3.60	6.98	4.77
3rd Quartile	1.68	6.35	7.78	7.78	6.58	2.98	5.45	3.78
95th Percentile	0.08	5.19	3.17	3.17	3.09	0.43	3.91	2.76
Population	55	55	55	55	49	44	36	30

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

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

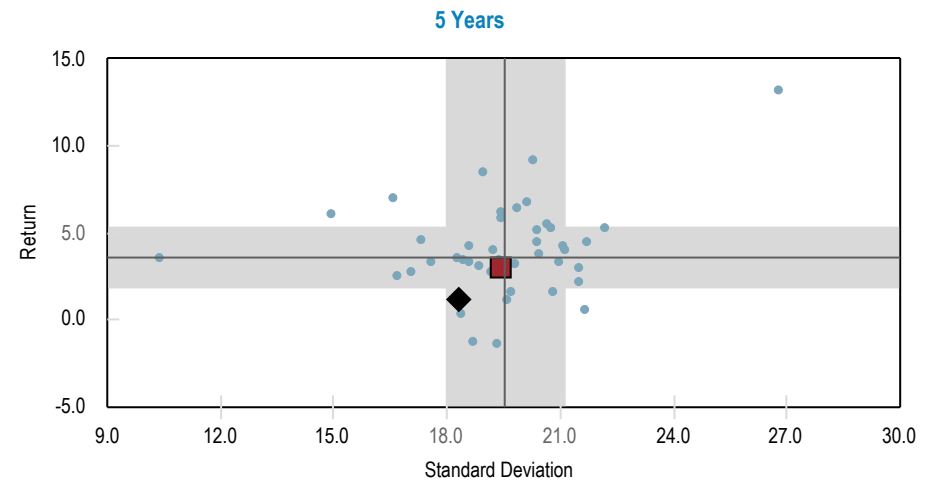
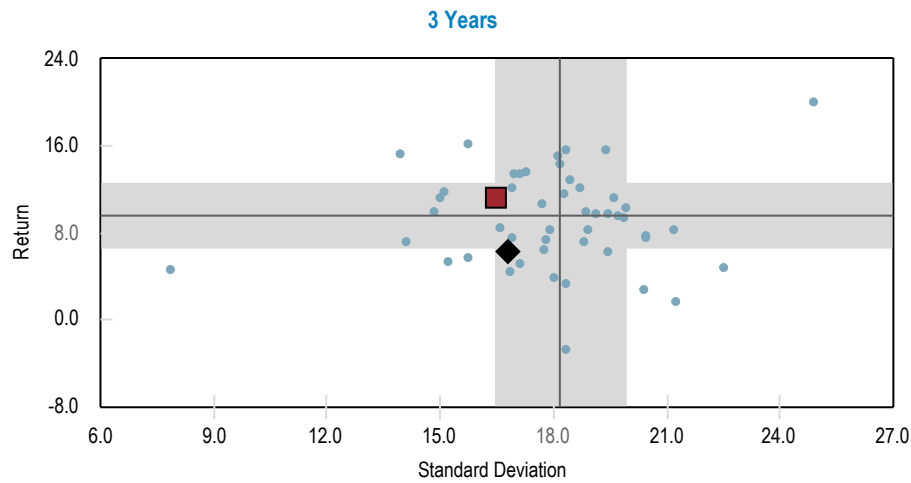
DFA Emerging Markets Value vs. eV Emg Mkts All Cap Value Equity



	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● DFA Emerging Markets Value	-10.74 (36)	12.41 (19)	2.73 (82)	9.64 (93)	-11.93 (34)	33.76 (40)	19.84 (23)	-18.77 (88)	-4.41 (73)	-3.80 (81)
▲ MSCI Emerging Markets Value (Net)	-15.83 (56)	4.00 (60)	5.48 (72)	11.96 (91)	-10.74 (21)	28.07 (83)	14.90 (54)	-18.57 (88)	-4.08 (72)	-5.11 (89)
5th Percentile	-1.45	20.40	23.96	27.29	-6.64	40.40	30.07	-6.89	7.11	10.19
1st Quartile	-8.91	9.02	18.86	22.23	-11.35	36.00	19.65	-11.68	2.23	4.64
Median	-14.46	4.68	9.21	18.02	-12.83	32.24	15.39	-15.19	-0.27	0.42
3rd Quartile	-17.33	1.74	4.50	15.01	-15.36	28.82	11.51	-17.28	-4.73	-2.79
95th Percentile	-27.73	-7.27	-3.63	7.68	-18.81	24.60	7.47	-21.30	-9.35	-6.40
Population	58	56	59	60	57	53	49	47	51	51

DFA Emerging Markets Value
Risk vs Return Three & Five Year (Net of Fees)

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



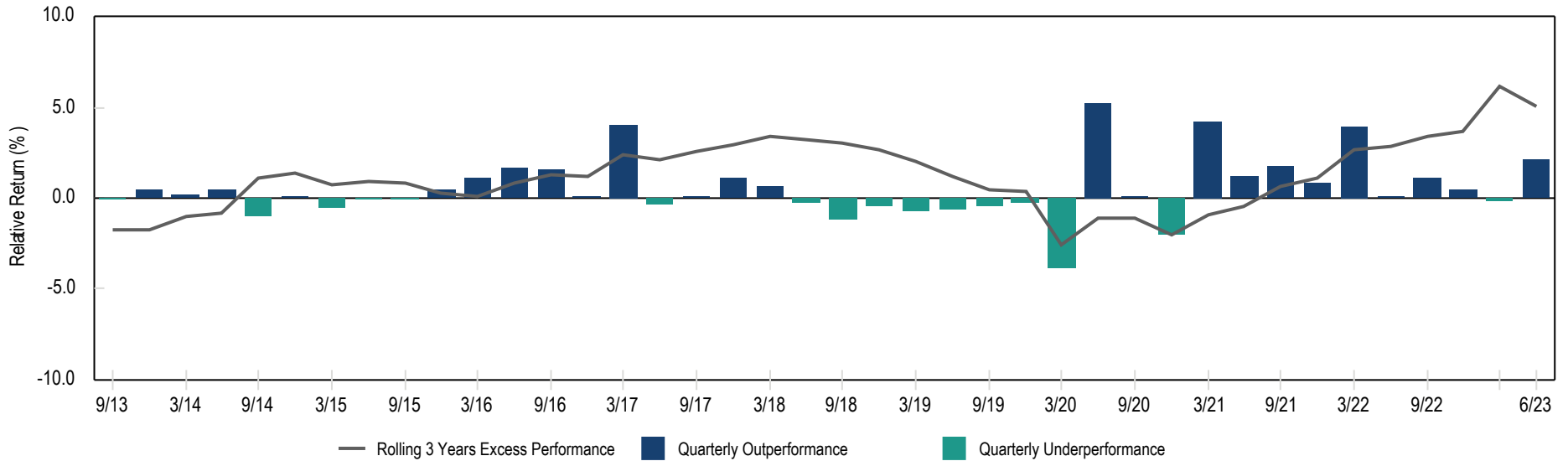
eV Emg Mkts All Cap Value Equity

	Return	Standard Deviation
■ DFA Emerging Markets Value	11.33	16.46
◆ MSCI Emerging Markets Value (Net)	6.27	16.78
— Median	9.61	18.19
Population	49	49

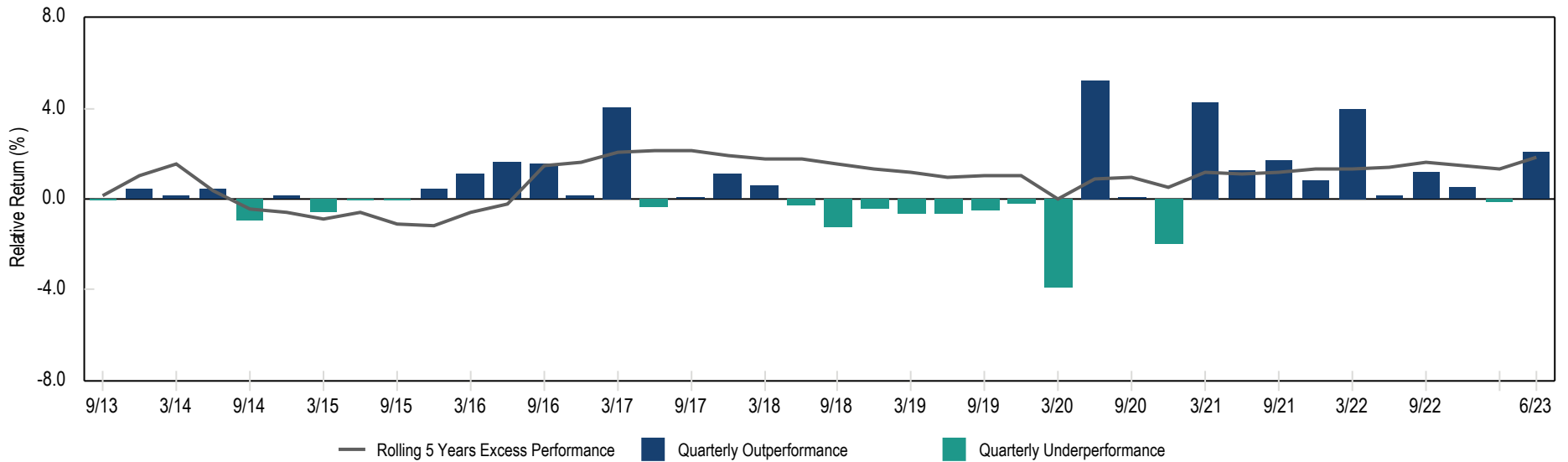
eV Emg Mkts All Cap Value Equity

	Return	Standard Deviation
■ DFA Emerging Markets Value	3.08	19.43
◆ MSCI Emerging Markets Value (Net)	1.22	18.29
— Median	3.60	19.55
Population	44	44

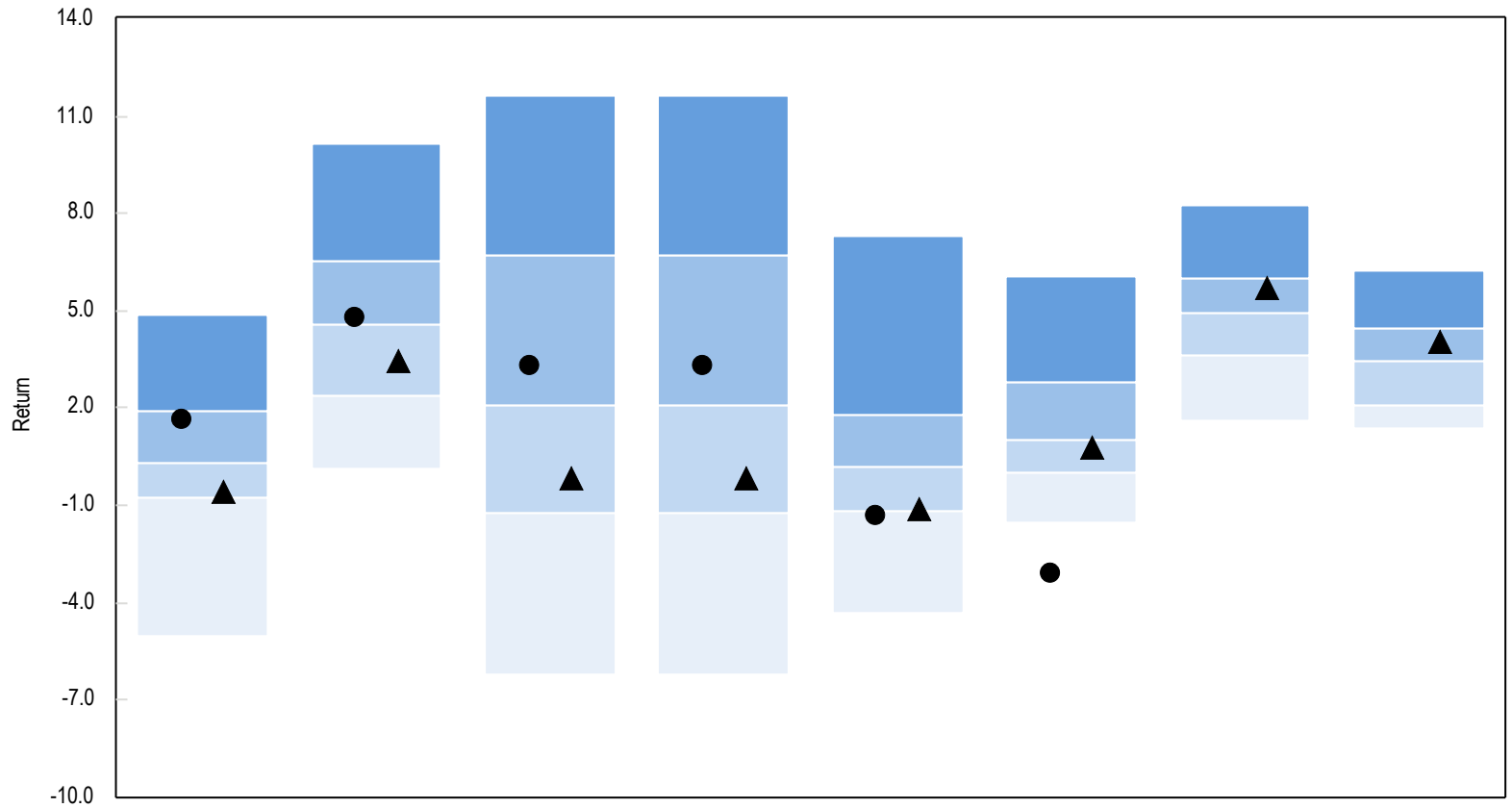
Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance

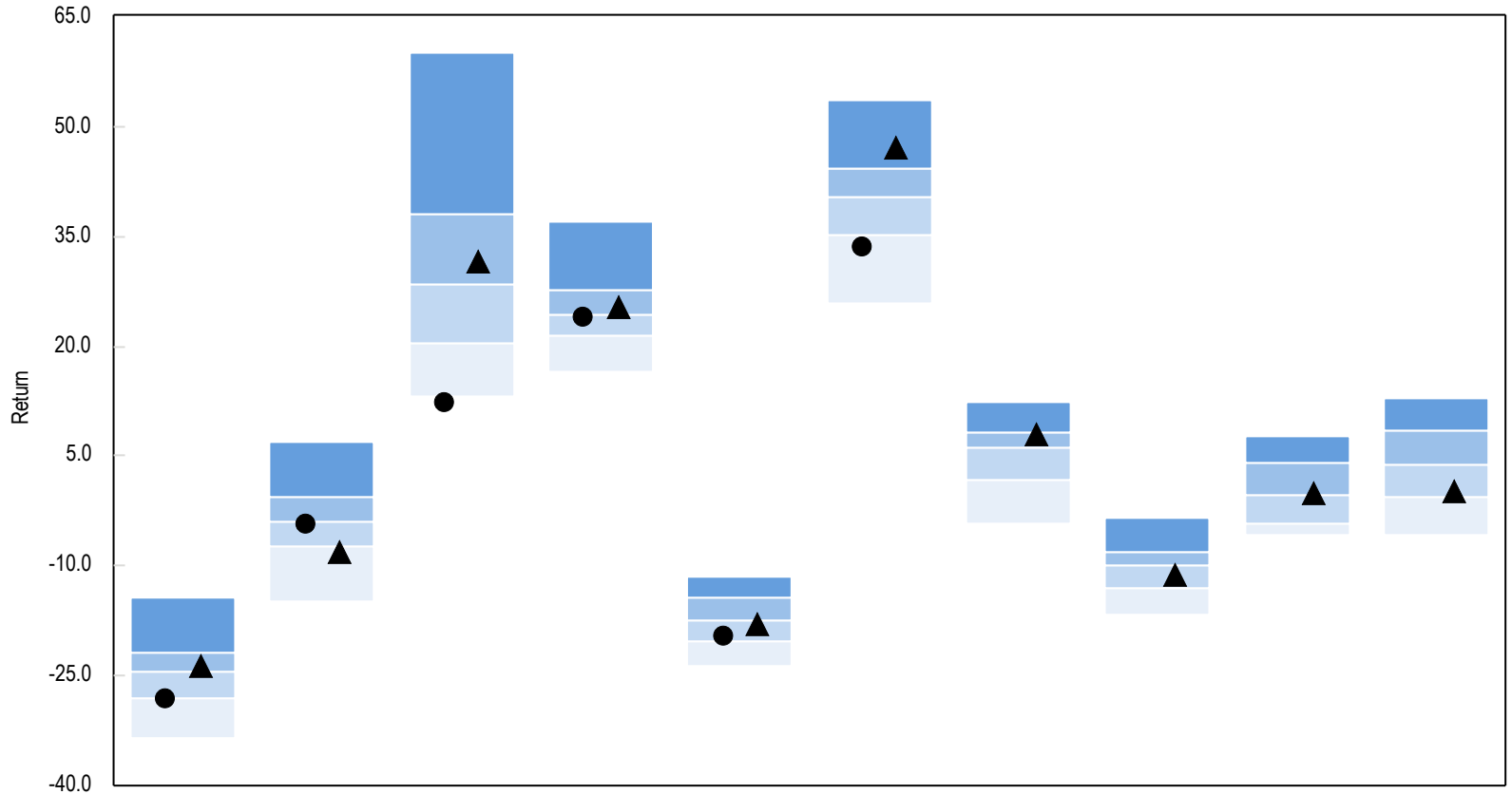


Harding Loevner Emerging Markets vs. eV Emg Mkts All Cap Growth Equity



	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● Harding Loevner Emerging Markets	1.65 (29)	4.84 (44)	3.31 (42)	3.31 (42)	-1.28 (76)	-3.09 (100)	-	-
▲ MSCI Emerging Markets Growth Index	-0.58 (72)	3.45 (64)	-0.19 (67)	-0.19 (67)	-1.13 (75)	0.77 (57)	5.68 (34)	4.04 (34)
5th Percentile	4.86	10.14	11.64	11.64	7.32	6.03	8.26	6.24
1st Quartile	1.88	6.51	6.70	6.70	1.79	2.79	5.98	4.47
Median	0.33	4.57	2.10	2.10	0.22	1.02	4.94	3.48
3rd Quartile	-0.73	2.41	-1.23	-1.23	-1.15	0.04	3.60	2.10
95th Percentile	-5.04	0.15	-6.22	-6.22	-4.32	-1.54	1.61	1.37
Population	61	59	58	58	54	49	40	33

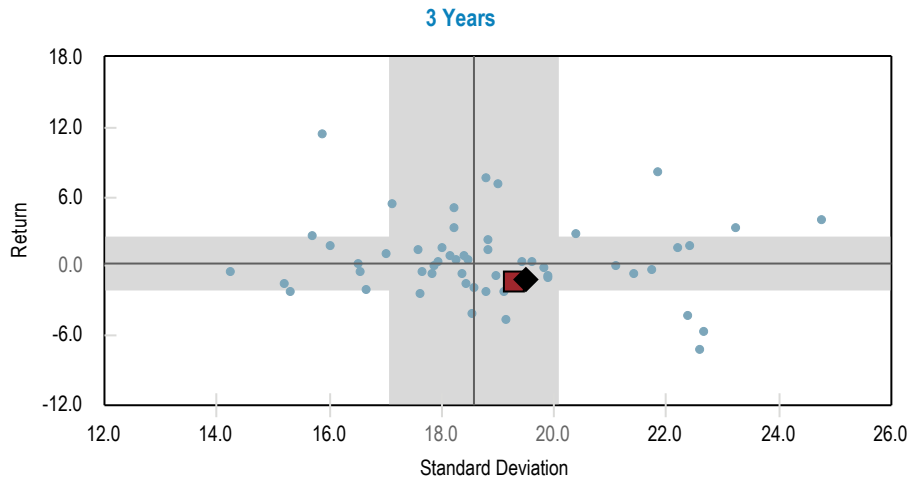
Harding Loevner Emerging Markets vs. eV Emg Mkts All Cap Growth Equity



	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Harding Loevner Emerging Markets	-28.07 (77)	-4.27 (52)	12.36 (96)	24.04 (53)	-19.48 (70)	33.62 (85)	-	-	-	-
▲ MSCI Emerging Markets Growth Index	-23.74 (45)	-8.24 (81)	31.58 (38)	25.44 (40)	-18.04 (60)	47.12 (12)	7.87 (31)	-11.12 (59)	-0.09 (47)	0.07 (70)
5th Percentile	-14.33	6.93	59.96	37.08	-11.59	53.51	12.40	-3.57	7.71	12.82
1st Quartile	-21.90	-0.52	37.92	27.74	-14.40	44.21	8.22	-8.14	4.06	8.42
Median	-24.56	-4.07	28.43	24.40	-17.36	40.39	6.26	-9.96	-0.30	3.72
3rd Quartile	-27.95	-7.37	20.48	21.50	-20.40	35.29	1.78	-13.13	-4.31	-0.65
95th Percentile	-33.40	-14.94	13.10	16.60	-23.69	25.89	-4.17	-16.72	-5.72	-5.78
Population	61	62	61	62	59	59	59	59	49	46

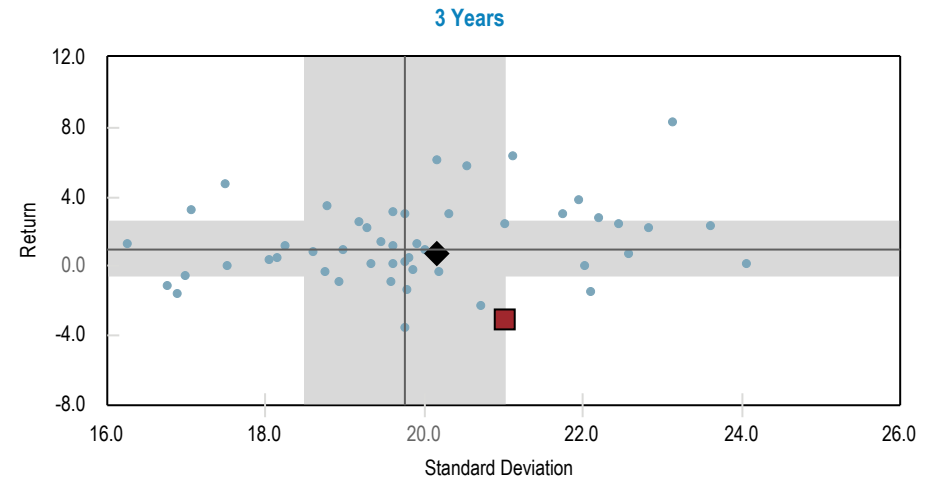
Harding Loevner Emerging Markets
Risk vs Return Three & Five Year (Net of Fees)

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



eV Emg Mkts All Cap Growth Equity

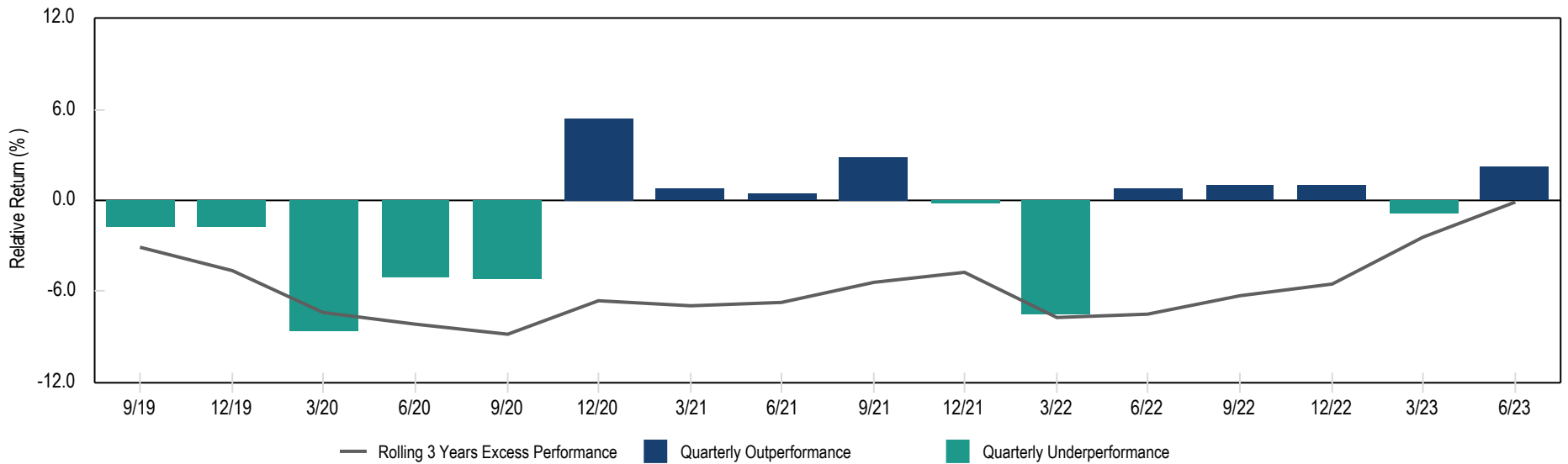
	Return	Standard Deviation
■ Harding Loevner Emerging Markets	-1.28	19.27
◆ MSCI Emerging Markets Growth Index	-1.13	19.49
— Median	0.22	18.57
Population	54	54



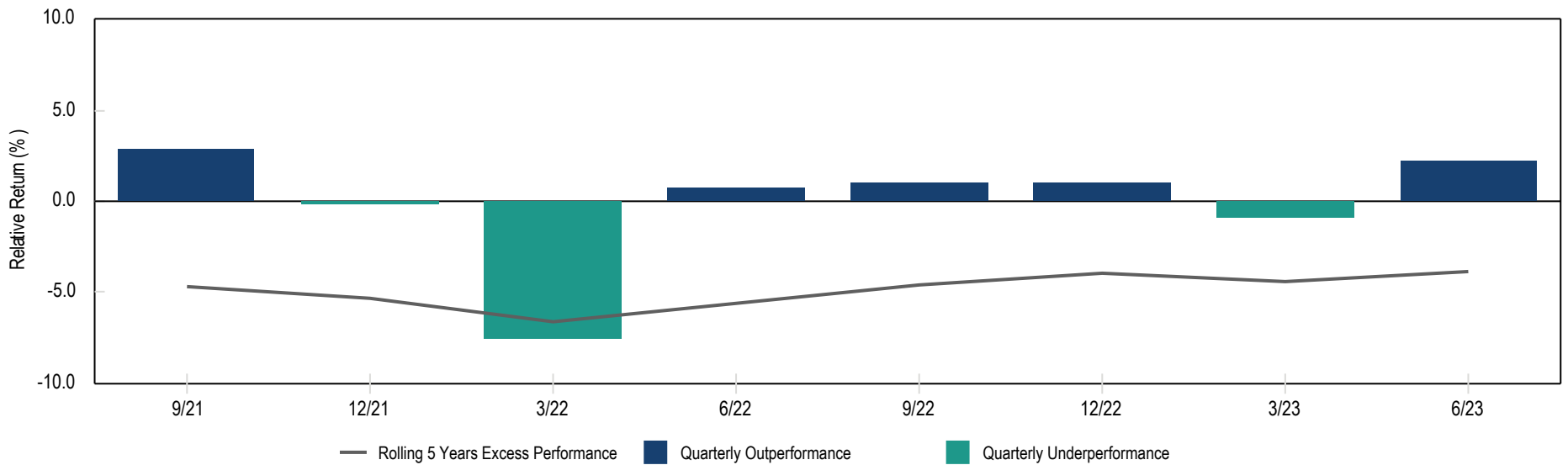
eV Emg Mkts All Cap Growth Equity

	Return	Standard Deviation
■ Harding Loevner Emerging Markets	-3.09	21.01
◆ MSCI Emerging Markets Growth Index	0.77	20.15
— Median	1.02	19.75
Population	49	49

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: June 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	238,185,403	100.0	-0.8	2.4	-0.9	-0.9	-2.8	1.4	2.0	-14.2	0.6	9.8	9.5	-2.0
<i>Blmbg. U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-0.9	-4.0	0.8	1.5	-13.0	-1.5	7.5	8.7	-2.0
Ducenta Squared	98,678,322	41.4	-0.6	2.5	-1.2	-1.2	-3.7	1.0	2.2	-14.9	-0.6	9.1	9.9	-0.8
<i>Blmbg. U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-0.9	-4.0	0.8	1.5	-13.0	-1.5	7.5	8.7	-2.0
<i>eV US Core Plus Fixed Inc Rank</i>			59	60	88	88	86	74	39	91	53	38	43	
MacKay Shields Core Plus Opportunities	97,905,762	41.1	-0.8	2.4	-0.5	-0.5	-3.2	1.1	-	-14.5	-0.5	9.9	9.7	-
<i>Blmbg. U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-0.9	-4.0	0.8	-	-13.0	-1.5	7.5	8.7	-
<i>eV US Core Plus Fixed Inc Rank</i>			77	68	77	77	69	60	-	86	51	22	52	
BlackRock US TIPS	41,601,319	17.5	-1.4	2.1	-1.3	-1.3	-0.1	2.5	2.1	-11.9	5.9	11.2	8.5	-8.6
<i>Blmbg. U.S. TIPS</i>			-1.4	1.9	-1.4	-1.4	-0.1	2.5	2.1	-11.8	6.0	11.0	8.4	-8.6
<i>eV US TIPS / Inflation Fixed Inc Rank</i>			43	17	59	59	58	39	18	67	26	32	32	

Fixed Income Style Map
3 Years Ending June 30, 2023



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

Fixed Income Style Map
5 Years Ending June 30, 2023



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

Total Fixed Income
Asset Class Overview (Net of Fees)

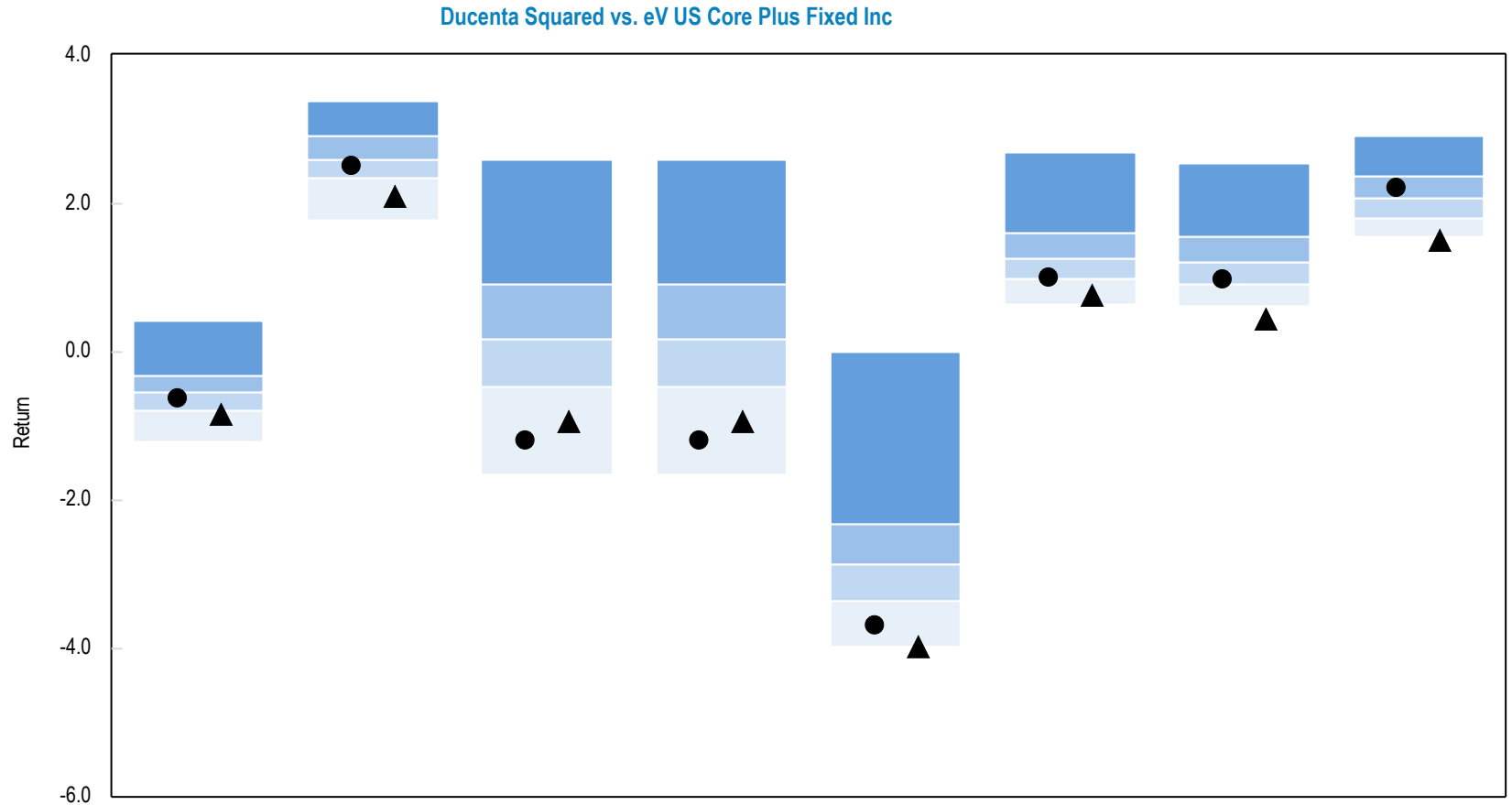
Imperial County Employees' Retirement System
Period Ending: June 30, 2023

	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	238,185,403	100.0	-0.8	2.4	-0.9	-0.9	-2.8	1.4	2.0	-14.2	0.6	9.8	9.5	-0.8
<i>Blmbg. U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-0.9	-4.0	0.8	1.5	-13.0	-1.5	7.5	8.7	0.0
Ducenta Squared	98,678,322	41.4	-0.6	2.5	-1.2	-1.2	-3.7	1.0	2.2	-14.9	-0.6	9.1	9.9	-0.1
<i>Blmbg. U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-0.9	-4.0	0.8	1.5	-13.0	-1.5	7.5	8.7	0.0
MacKay Shields Core Plus Opportunities	97,905,762	41.1	-0.8	2.4	-0.5	-0.5	-3.2	1.1	-	-14.5	-0.5	9.9	9.7	-1.0
<i>Blmbg. U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-0.9	-4.0	0.8	-	-13.0	-1.5	7.5	8.7	0.0
BlackRock US TIPS	41,601,319	17.5	-1.4	2.1	-1.3	-1.3	-0.1	2.5	2.1	-11.9	5.9	11.2	8.5	-1.2
<i>Blmbg. U.S. TIPS</i>			-1.4	1.9	-1.4	-1.4	-0.1	2.5	2.1	-11.8	6.0	11.0	8.4	-1.3

	Total Fixed Income	Ducenta Squared	MacKay Shields Core Plus Opportunities	BlackRock US TIPS	Blmbg. U.S. Aggregate Index
Total Fixed Income	1.00				
Ducenta Squared	0.99	1.00			
MacKay Shields Core Plus Opportunities	0.99	0.99	1.00		
BlackRock US TIPS	0.91	0.85	0.87	1.00	
Blmbg. U.S. Aggregate Index	0.96	0.97	0.96	0.84	1.00

Ducenta Squared
Cumulative Performance Comparison (Net of Fees)

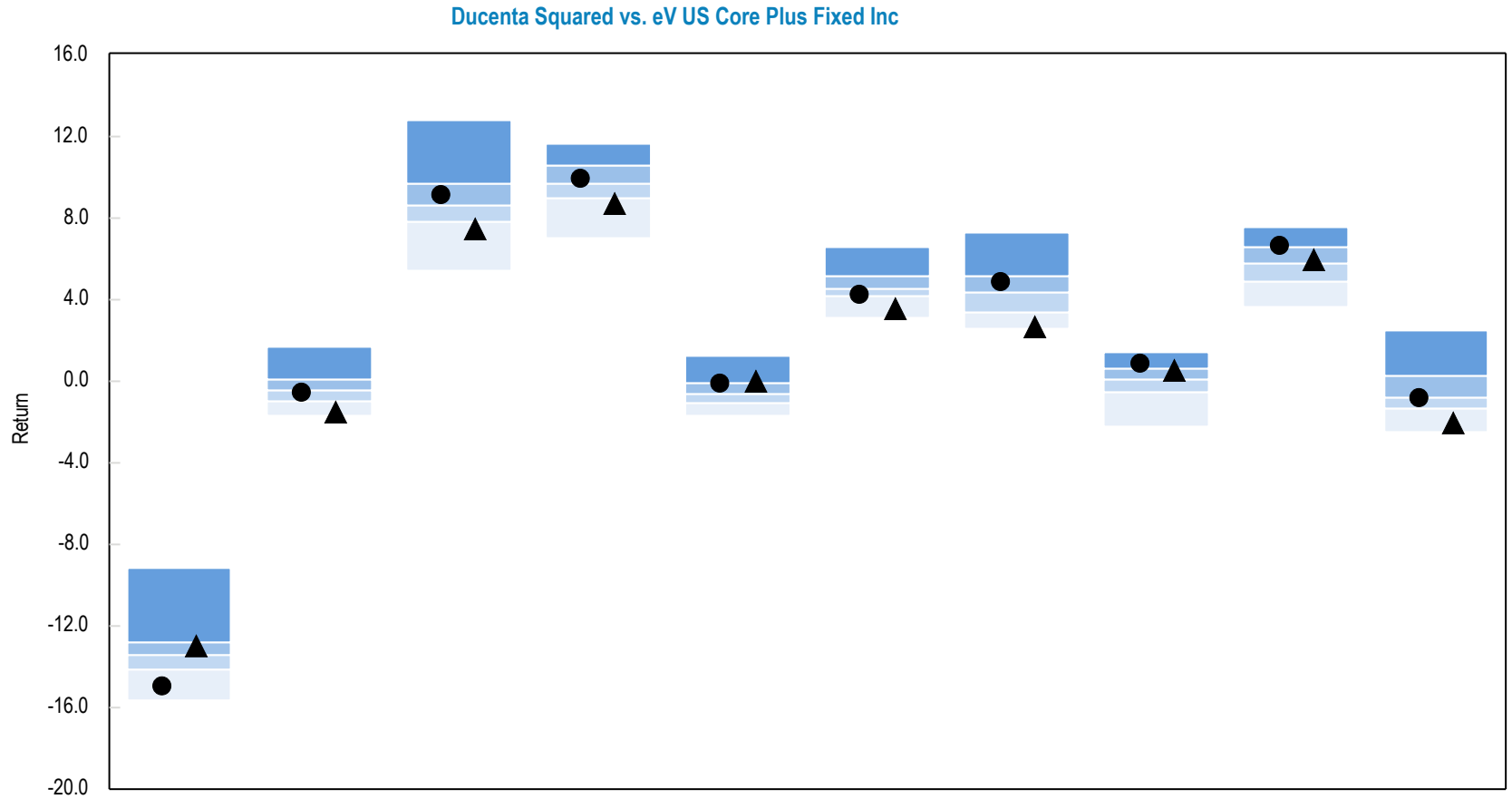
Imperial County Employees' Retirement System
Period Ending: June 30, 2023



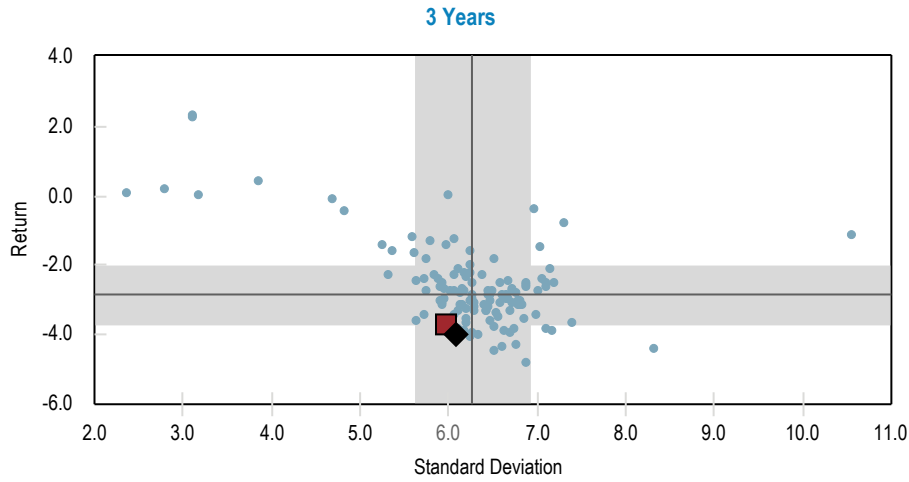
	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● Ducenta Squared	-0.61 (59)	2.52 (60)	-1.18 (88)	-1.18 (88)	-3.67 (86)	1.01 (74)	0.98 (70)	2.21 (39)
▲ Blmbg. U.S. Aggregate Index	-0.84 (80)	2.09 (87)	-0.94 (84)	-0.94 (84)	-3.97 (95)	0.77 (90)	0.44 (100)	1.52 (97)
5th Percentile	0.43	3.39	2.60	2.60	0.01	2.69	2.53	2.91
1st Quartile	-0.32	2.92	0.91	0.91	-2.32	1.60	1.56	2.38
Median	-0.54	2.60	0.16	0.16	-2.86	1.25	1.20	2.07
3rd Quartile	-0.79	2.34	-0.46	-0.46	-3.36	1.00	0.91	1.81
95th Percentile	-1.20	1.77	-1.65	-1.65	-3.98	0.65	0.61	1.56
Population	137	137	137	137	128	122	114	104

Ducenta Squared
Consecutive Performance Comparison (Net of Fees)

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

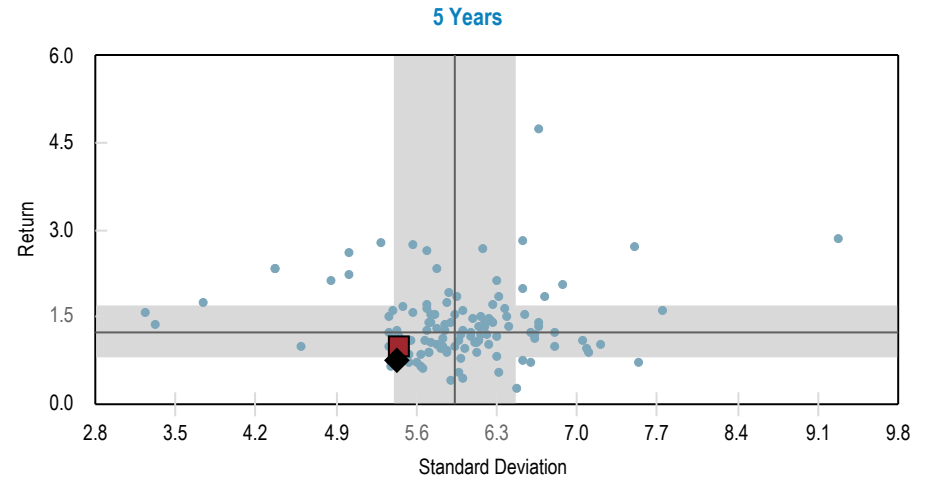


	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Ducenta Squared	-14.94 (91)	-0.57 (53)	9.11 (38)	9.91 (43)	-0.13 (27)	4.25 (67)	4.85 (32)	0.89 (16)	6.67 (23)	-0.83 (53)
▲ Blmbg. U.S. Aggregate Index	-13.01 (35)	-1.55 (92)	7.51 (82)	8.72 (81)	0.01 (25)	3.54 (91)	2.65 (93)	0.55 (29)	5.97 (41)	-2.02 (92)
5th Percentile	-9.16	1.71	12.80	11.63	1.27	6.57	7.28	1.44	7.53	2.52
1st Quartile	-12.76	0.10	9.65	10.61	-0.05	5.15	5.15	0.64	6.59	0.23
Median	-13.46	-0.43	8.65	9.72	-0.60	4.57	4.36	0.11	5.78	-0.77
3rd Quartile	-14.13	-1.02	7.86	9.02	-1.02	4.14	3.41	-0.52	4.85	-1.38
95th Percentile	-15.62	-1.70	5.44	6.99	-1.66	3.15	2.59	-2.27	3.61	-2.46
Population	141	142	145	146	144	146	143	142	140	138



eV US Core Plus Fixed Inc

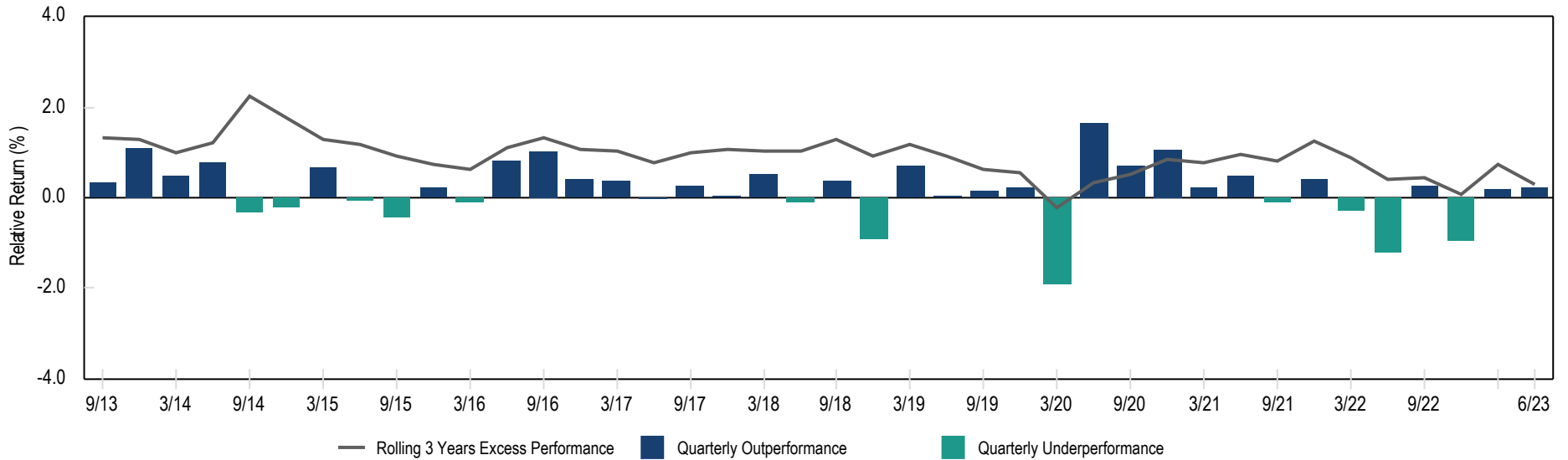
	Return	Standard Deviation
■ Ducenta Squared	-3.67	5.96
◆ Blmbg. U.S. Aggregate Index	-3.97	6.09
— Median	-2.86	6.27
Population	128	128



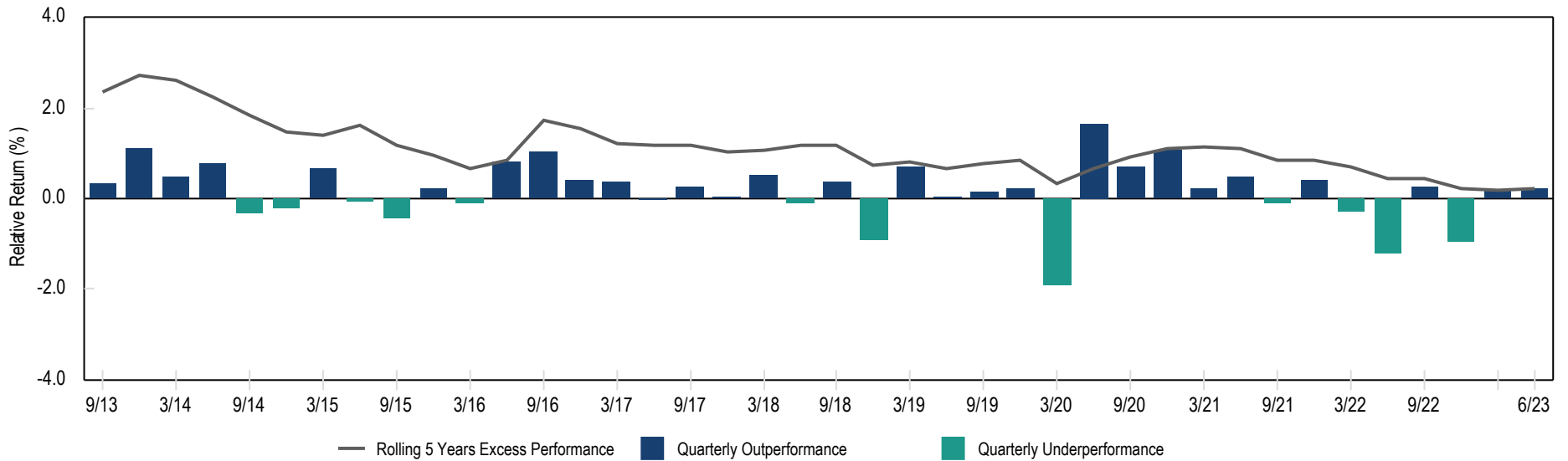
eV US Core Plus Fixed Inc

	Return	Standard Deviation
■ Ducenta Squared	1.01	5.45
◆ Blmbg. U.S. Aggregate Index	0.77	5.43
— Median	1.25	5.93
Population	122	122

Rolling 3 Year Annualized Excess Performance



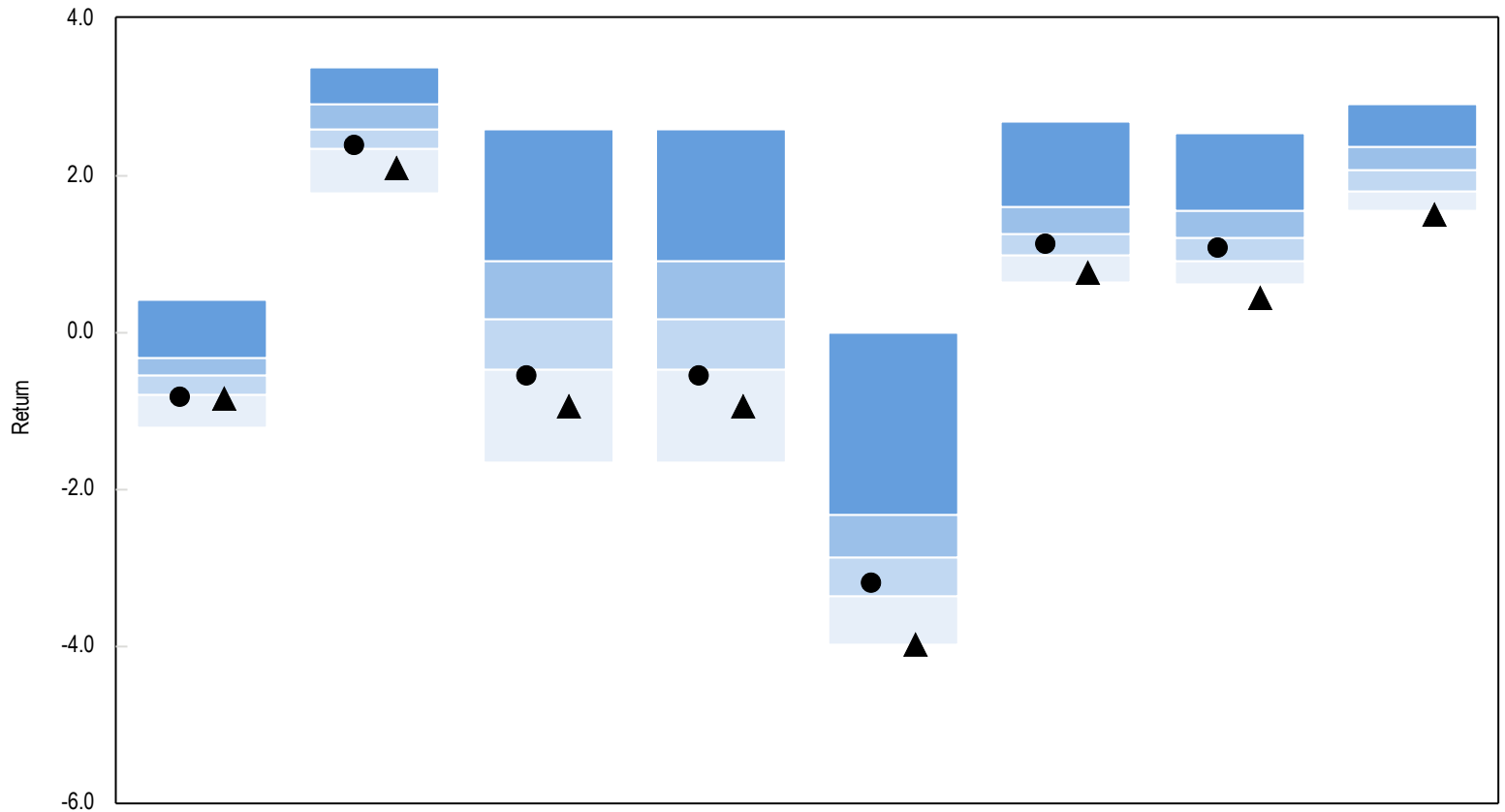
Rolling 5 Year Annualized Excess Performance



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

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

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

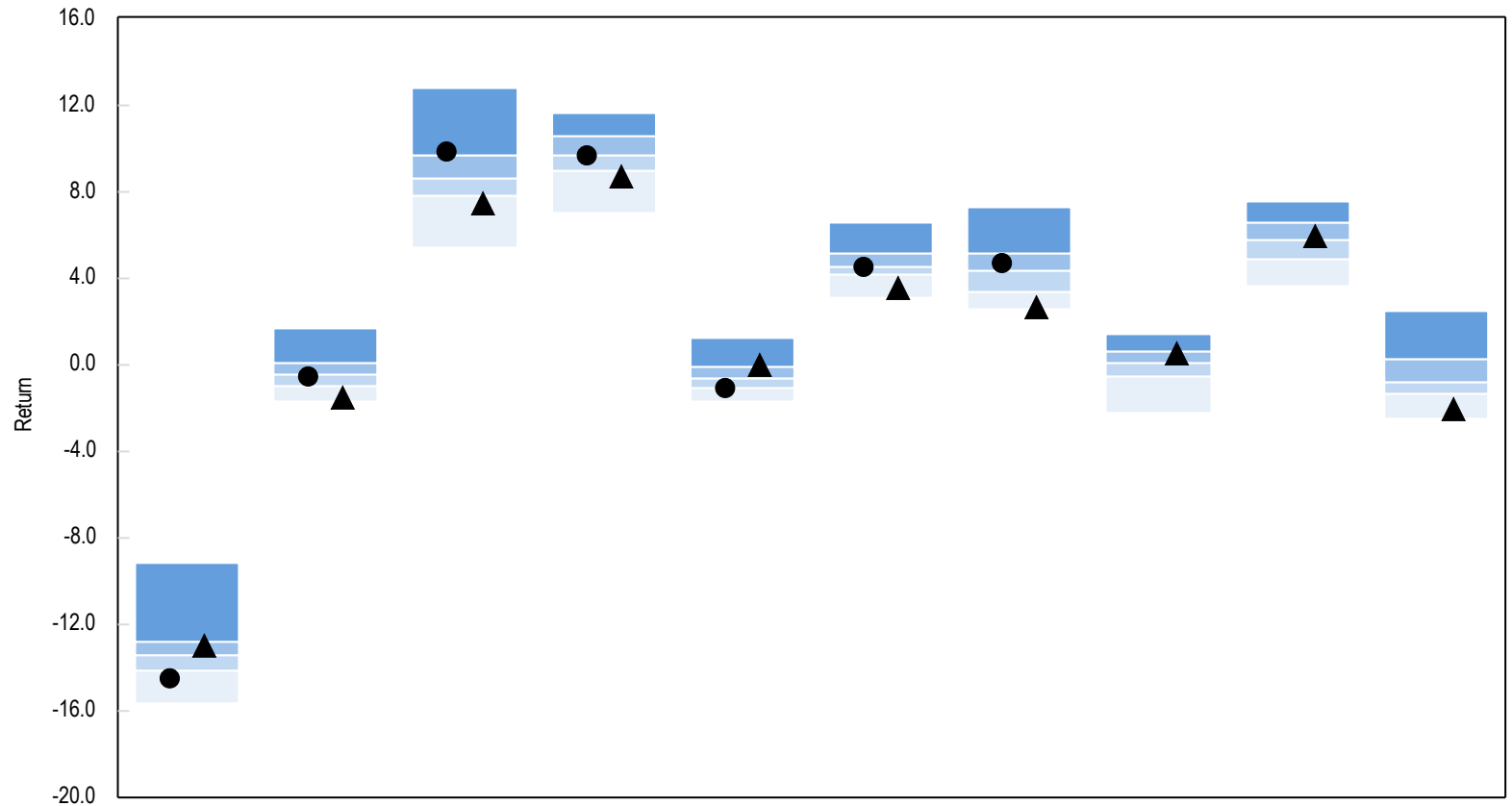


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● MacKay Shields Core Plus Opportunities	-0.80 (77)	2.40 (68)	-0.54 (77)	-0.54 (77)	-3.19 (69)	1.14 (60)	1.08 (60)	-
▲ Blmbg. U.S. Aggregate Index	-0.84 (80)	2.09 (87)	-0.94 (84)	-0.94 (84)	-3.97 (95)	0.77 (90)	0.44 (100)	1.52 (97)
5th Percentile	0.43	3.39	2.60	2.60	0.01	2.69	2.53	2.91
1st Quartile	-0.32	2.92	0.91	0.91	-2.32	1.60	1.56	2.38
Median	-0.54	2.60	0.16	0.16	-2.86	1.25	1.20	2.07
3rd Quartile	-0.79	2.34	-0.46	-0.46	-3.36	1.00	0.91	1.81
95th Percentile	-1.20	1.77	-1.65	-1.65	-3.98	0.65	0.61	1.56
Population	137	137	137	137	128	122	114	104

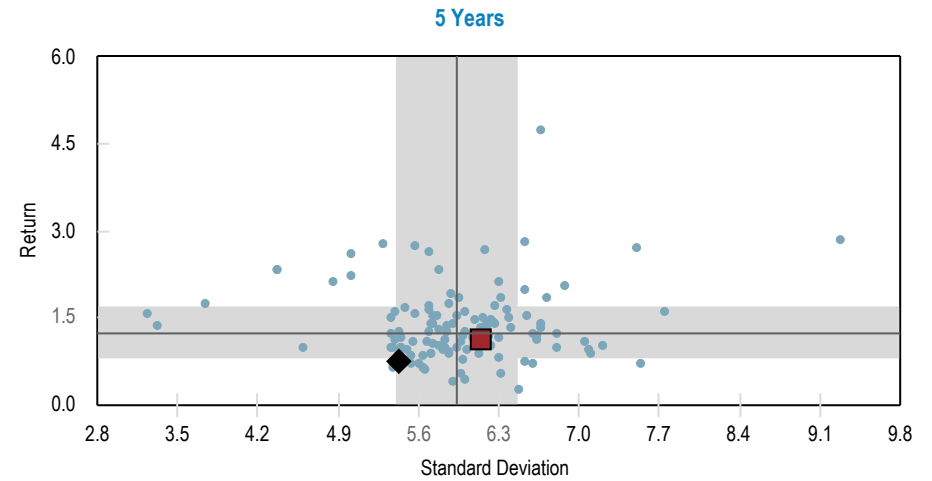
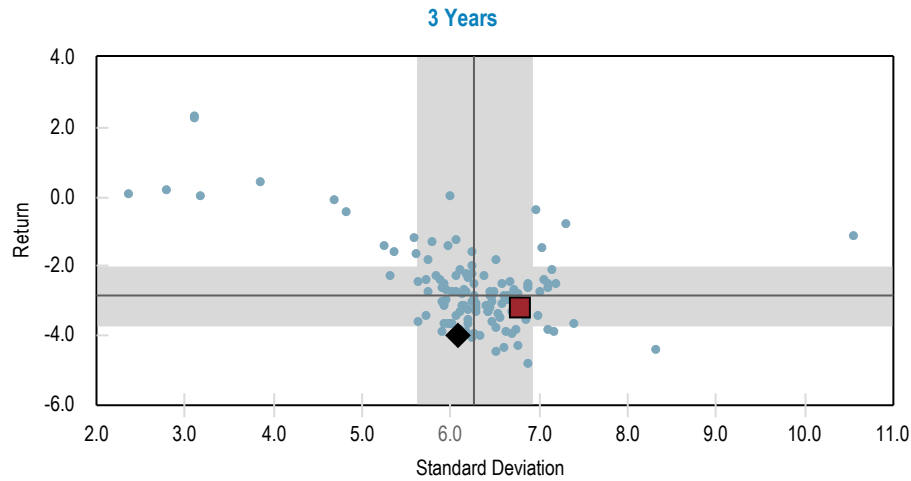
MacKay Shields Core Plus Opportunities
 Consecutive Performance Comparison (Net of Fees)

Imperial County Employees' Retirement System
 Period Ending: June 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 (51)	9.91 (22)	9.67 (52)	-1.03 (76)	4.53 (53)	4.69 (37)	-	-	-
▲ Blmbg. U.S. Aggregate Index	-13.01 (35)	-1.55 (92)	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	-9.16	1.71	12.80	11.63	1.27	6.57	7.28	1.44	7.53	2.52
1st Quartile	-12.76	0.10	9.65	10.61	-0.05	5.15	5.15	0.64	6.59	0.23
Median	-13.46	-0.43	8.65	9.72	-0.60	4.57	4.36	0.11	5.78	-0.77
3rd Quartile	-14.13	-1.02	7.86	9.02	-1.02	4.14	3.41	-0.52	4.85	-1.38
95th Percentile	-15.62	-1.70	5.44	6.99	-1.66	3.15	2.59	-2.27	3.61	-2.46
Population	141	142	145	146	144	146	143	142	140	138



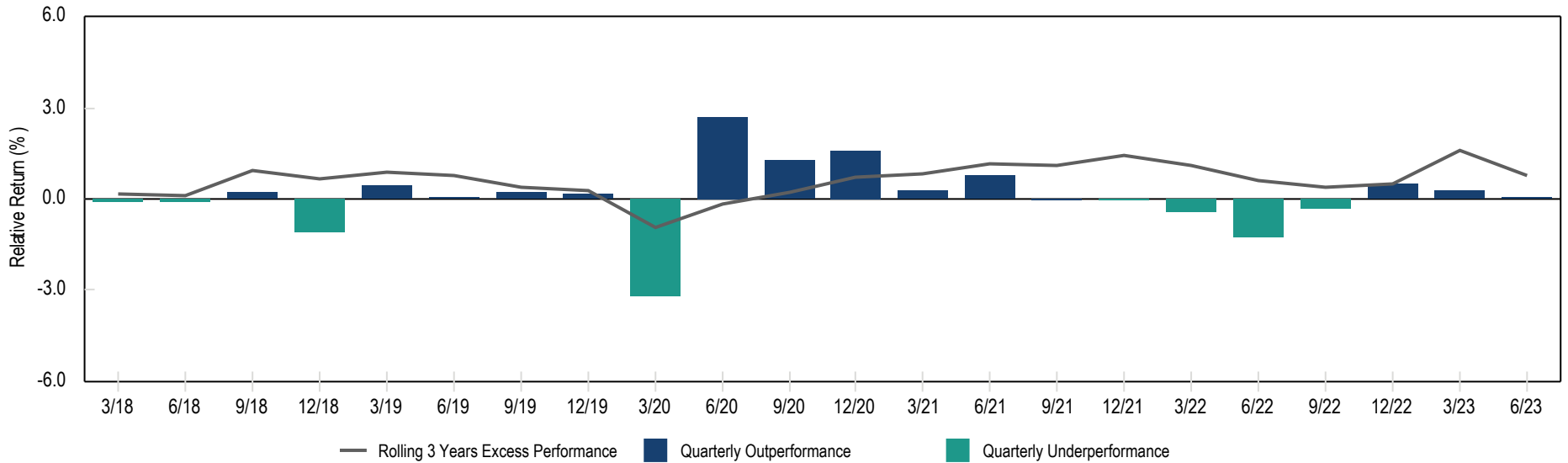
eV US Core Plus Fixed Inc

	Return	Standard Deviation
■ MacKay Shields Core Plus Opportunities	-3.19	6.78
◆ Blmbg. U.S. Aggregate Index	-3.97	6.09
— Median	-2.86	6.27
Population	128	128

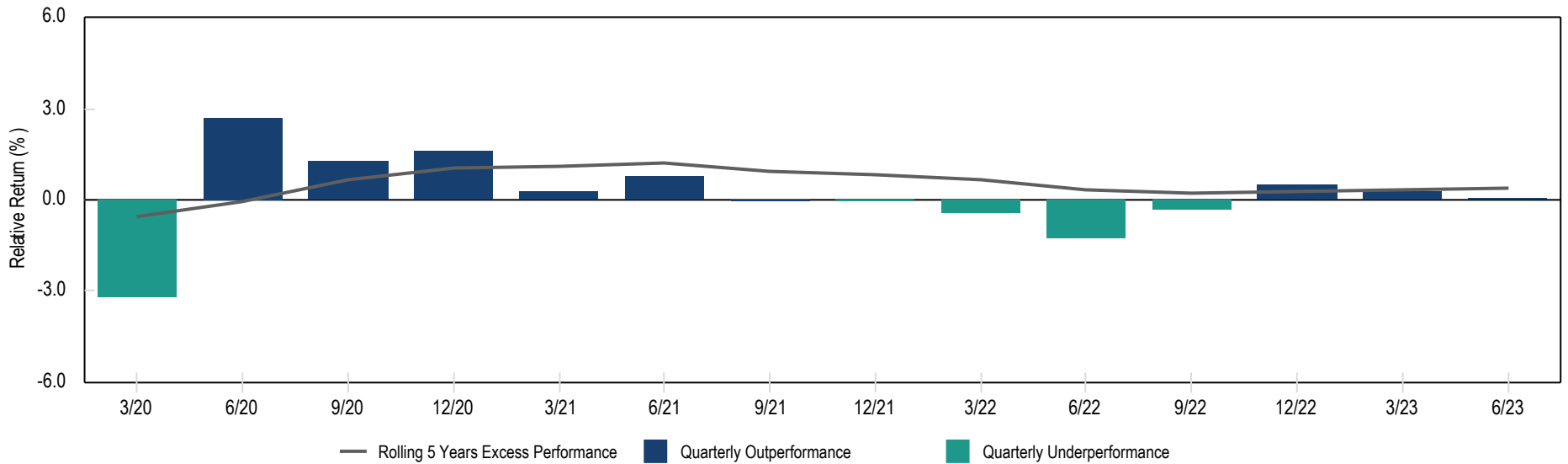
eV US Core Plus Fixed Inc

	Return	Standard Deviation
■ MacKay Shields Core Plus Opportunities	1.14	6.14
◆ Blmbg. U.S. Aggregate Index	0.77	5.43
— Median	1.25	5.93
Population	122	122

Rolling 3 Year Annualized Excess Performance



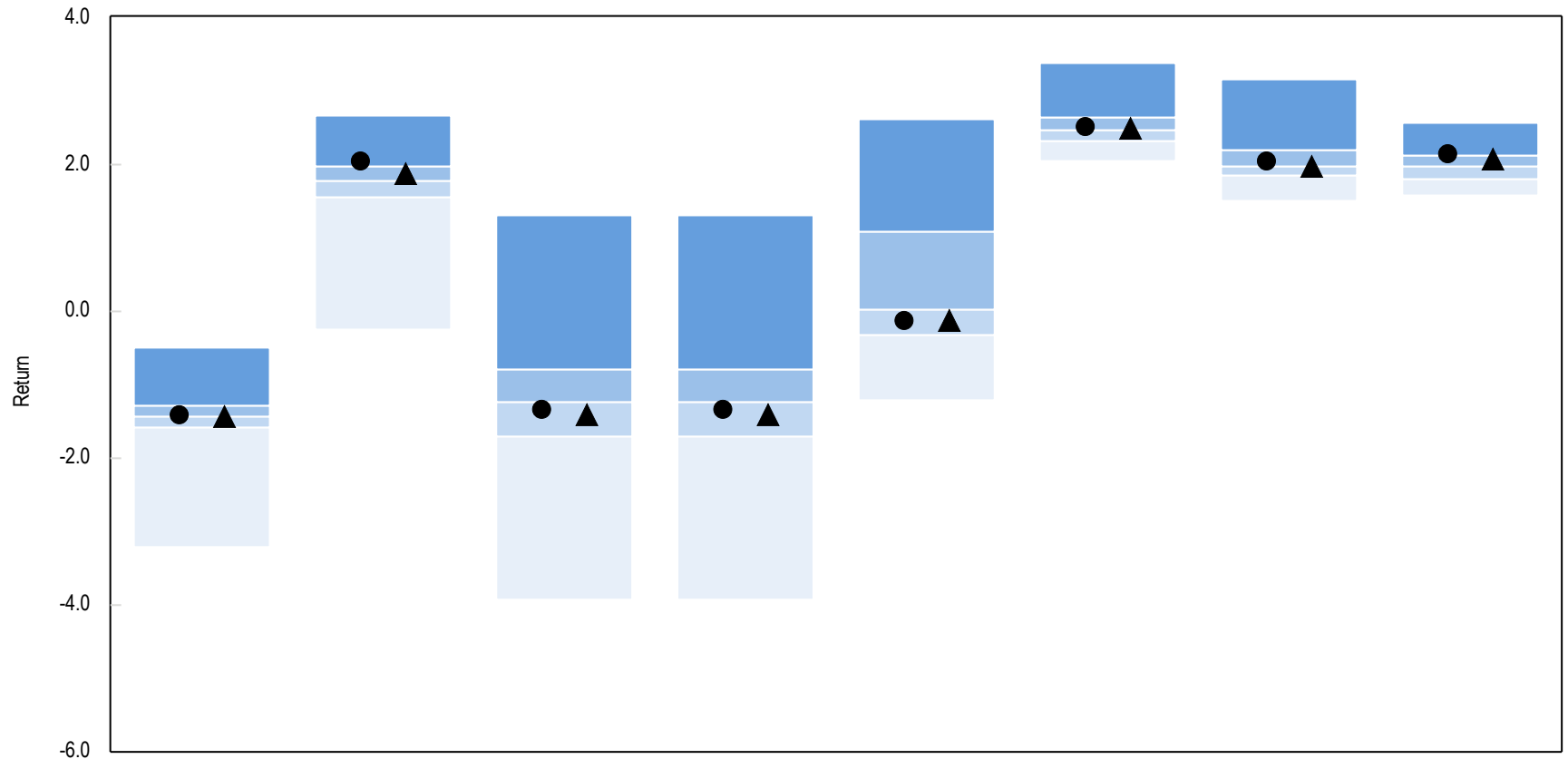
Rolling 5 Year Annualized Excess Performance



BlackRock US TIPS
Cumulative Performance Comparison (Net of Fees)

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

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

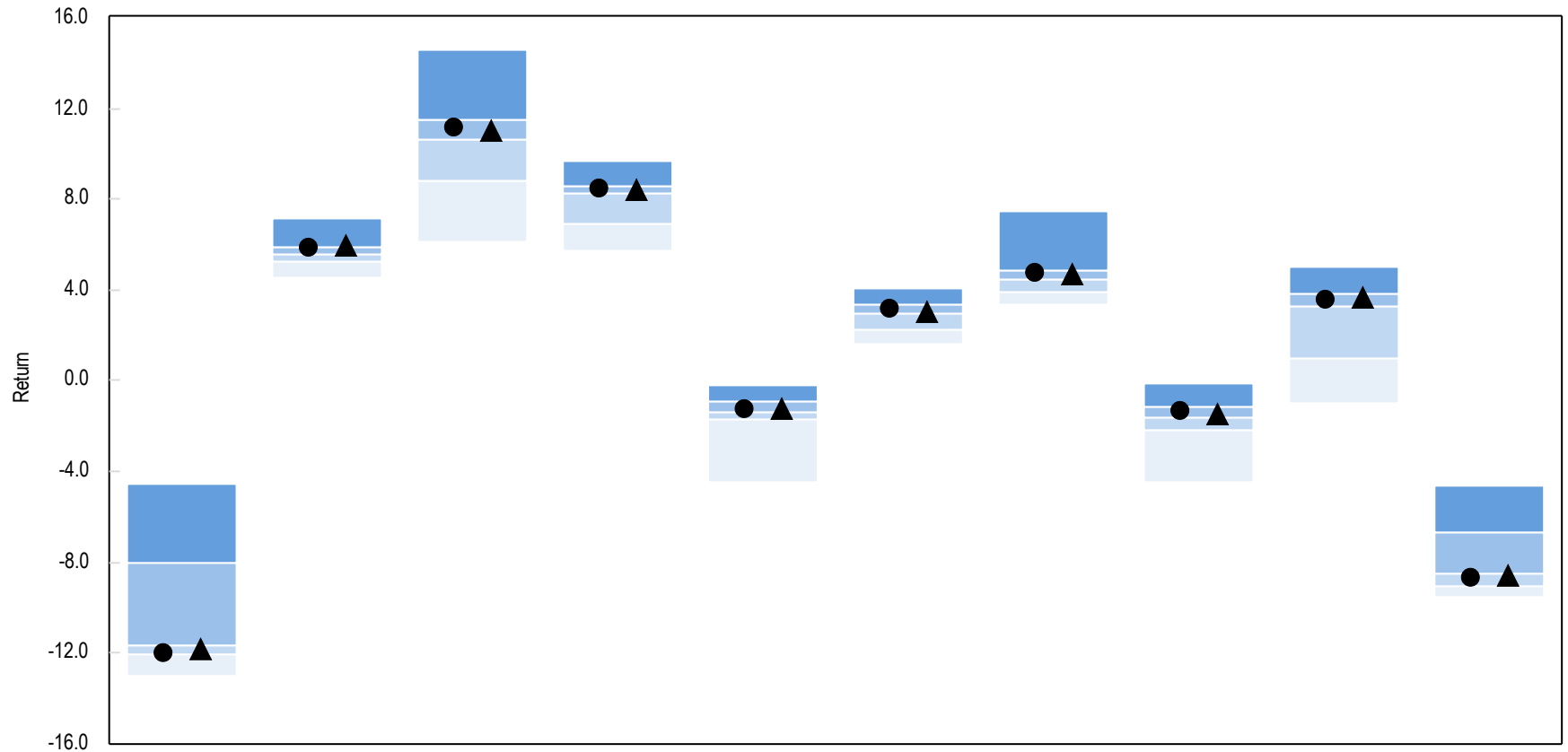


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● BlackRock US TIPS	-1.41 (43)	2.06 (17)	-1.34 (59)	-1.34 (59)	-0.11 (58)	2.53 (39)	2.05 (37)	2.14 (18)
▲ Blmbg. U.S. TIPS	-1.42 (43)	1.87 (39)	-1.40 (63)	-1.40 (63)	-0.12 (58)	2.49 (47)	1.99 (51)	2.08 (30)
5th Percentile	-0.51	2.67	1.31	1.31	2.61	3.39	3.15	2.57
1st Quartile	-1.29	1.97	-0.80	-0.80	1.10	2.65	2.21	2.12
Median	-1.44	1.77	-1.22	-1.22	0.02	2.48	1.99	1.98
3rd Quartile	-1.57	1.56	-1.71	-1.71	-0.32	2.31	1.84	1.80
95th Percentile	-3.22	-0.25	-3.92	-3.92	-1.21	2.06	1.50	1.58
Population	43	43	43	43	41	39	39	35

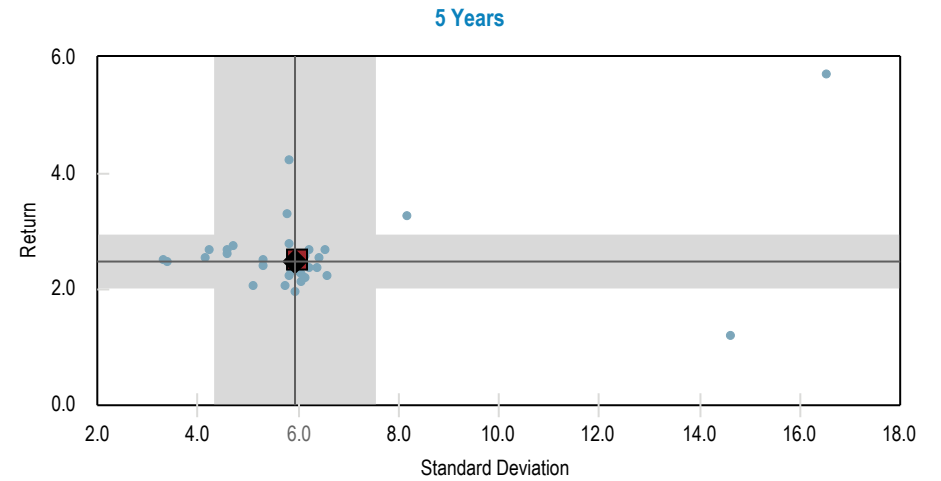
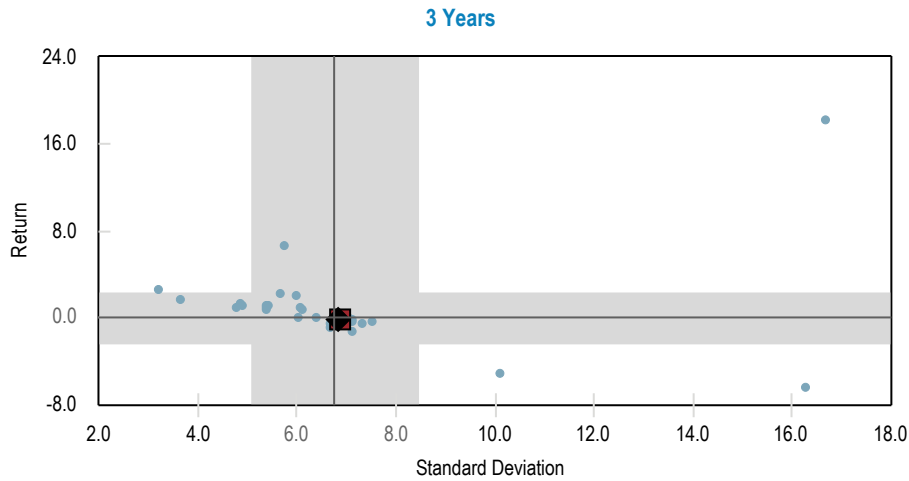
BlackRock US TIPS
 Consecutive Performance Comparison (Net of Fees)

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

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



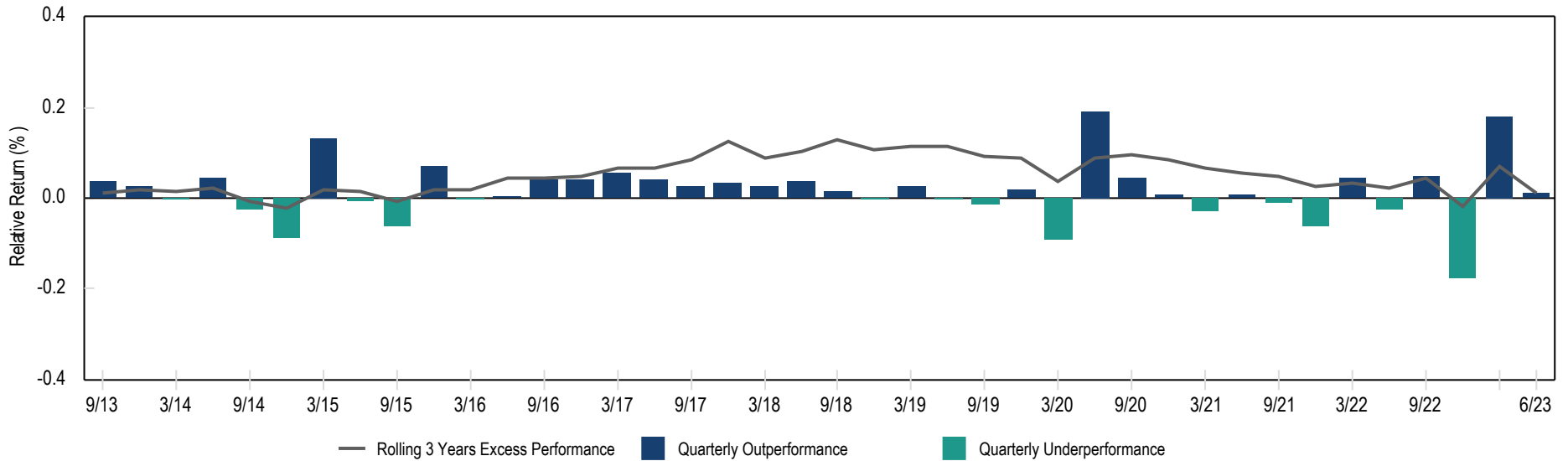
eV US TIPS / Inflation Fixed Inc

	Return	Standard Deviation
■ BlackRock US TIPS	-0.11	6.86
◆ Blmbg. U.S. TIPS	-0.12	6.84
— Median	0.02	6.77
Population	41	41

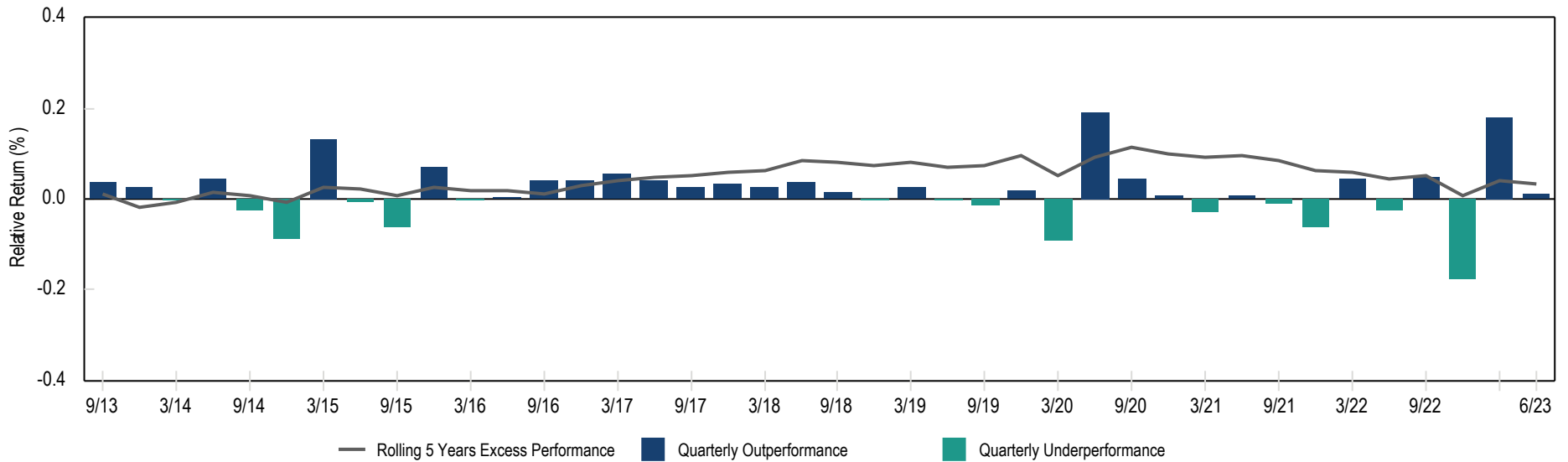
eV US TIPS / Inflation Fixed Inc

	Return	Standard Deviation
■ BlackRock US TIPS	2.53	5.98
◆ Blmbg. U.S. TIPS	2.49	5.95
— Median	2.48	5.94
Population	39	39

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: June 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	116,229,446	100.0	-4.1	-7.9	-10.4	-10.4	6.3	5.7	7.8	8.5	18.4	2.1	5.7	7.5
<i>NCREIF Property Index</i>			-2.0	-3.8	-6.6	-6.6	6.8	5.9	7.8	5.5	17.7	1.6	6.4	6.7
<i>NCREIF ODCE</i>			-2.7	-5.8	-10.0	-10.0	8.0	6.4	8.1	7.5	22.2	1.2	5.3	7.1
ASB Real Estate	27,602,011	23.7	-6.2	-11.4	-13.0	-13.0	4.1	3.8	6.7	10.7	14.2	1.5	3.0	6.6
<i>NCREIF Property Index</i>			-2.0	-3.8	-6.6	-6.6	6.8	5.9	7.8	5.5	17.7	1.6	6.4	6.7
<i>NCREIF ODCE</i>			-2.7	-5.8	-10.0	-10.0	8.0	6.4	8.1	7.5	22.2	1.2	5.3	7.1
Clarion Lion	30,451,834	26.2	-5.9	-10.7	-14.8	-14.8	7.5	6.5	8.6	9.6	23.6	2.3	6.8	8.6
<i>NCREIF Property Index</i>			-2.0	-3.8	-6.6	-6.6	6.8	5.9	7.8	5.5	17.7	1.6	6.4	6.7
<i>NCREIF ODCE</i>			-2.7	-5.8	-10.0	-10.0	8.0	6.4	8.1	7.5	22.2	1.2	5.3	7.1
ARA American Strategic Value Realty	56,175,865	48.3	-2.2	-4.6	-6.6	-6.6	7.0	6.6	-	6.8	18.6	2.4	7.8	-
<i>NCREIF Property Index +2%</i>			-1.5	-2.8	-4.7	-4.7	8.9	8.0	-	7.6	20.0	3.6	8.5	8.9
<i>NCREIF ODCE +2%</i>			-2.2	-4.8	-8.2	-8.2	10.2	8.5	-	9.6	24.6	3.2	7.4	8.9
1221 State St. Corp	1,999,736	1.7	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
MackKay 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			

¹Represents fund vintage year.

Policy & Custom Index Composition

Policy Index (8/1/2020- Current)	33% Russell 3000, 20% MSCI ACWI ex USA Gross, 29% Bloomberg Aggregate, 10% NCREIF Property, 5% Private Equity Benchmark, 3% 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.

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