



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: SEPTEMBER 30, 2024**

Investment Performance Review for

**Imperial County Employees' Retirement System**

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Investment Landscape

**TAB I**

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Investment Performance  
Review

**TAB II**

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Private Markets Review

**TAB III**





**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

4<sup>TH</sup> QUARTER 2024  
Investment Landscape



# Verus business update

## Since our last Investment Landscape webinar:

- Verus hired Joshua Freimark as a Public Markets Research Analyst, Michael Hughes as Managing Director of Portfolio Management, and Tri Nguyen as a Portfolio Manager, in our Seattle office.
- Kraig McCoy, CFA, formerly Chief Financial Officer and Chief Operations Officer, was appointed President.
- Scott Whalen, CFA, CAIA, Executive Managing Director, was selected by *Chief Investment Officer* as a 2024 Knowledge Broker.
- Tim McEnery, CFA, Managing Director, was recognized by *Crain's Chicago Business* as a 2024 Notable Leader in Consulting.
- Recent research, found at [verusinvestments.com/research](https://verusinvestments.com/research):
  - ***The Rise of OCIO***
  - ***The private equity return premium: It's not just due to illiquidity***
  - ***Trends and challenges in the commercial real estate sector***
  - ***How fixed income portfolios are affected by interest rate regimes***

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# Recent Verus research

Visit: [verusinvestments.com/research](https://verusinvestments.com/research)

## Thought leadership

### THE RISE OF OCIO

We explore the factors leading to the rapid growth of the OCIO model, important variables when evaluating OCIO providers, and key questions asset owners should discuss when considering a move to OCIO.

### TRENDS AND CHALLENGES IN THE COMMERCIAL REAL ESTATE SECTOR

Headlines warning of commercial real estate risks to the broader financial system may overstate the size and scope of the challenges in real estate. The office market faces serious challenges that are likely to persist, especially in lower-quality office assets.

### THE PRIVATE EQUITY RETURN PREMIUM: IT'S NOT JUST DUE TO ILLIQUIDITY

We discuss the key drivers of successful private investment outcomes: skilled manager selection, best-in-class processes such as portfolio management, and effective and efficient governance.

### HOW FIXED INCOME PORTFOLIOS ARE AFFECTED BY INTEREST RATE REGIMES

The rise and fall of interest rates can have a significant positive or negative impact on fixed income portfolio performance.

# 3<sup>rd</sup> quarter summary

## THE ECONOMY

- On September 18th, the Federal Reserve cut interest rates by 50 basis points, bringing the target rate from 5.25-5.50% to 4.75-5.00%. This larger cut surprised many investors who still see inflation risks on the horizon and the economy as generally strong. This move likely kicks off a multi-year period of cuts as the Fed brings interest rates towards what they see as a more neutral level.
- U.S. inflation (CPI) fell to 2.4% year-over-year in September, moving closer to the Fed's 2% target. However, risks remain that inflation moderates above the Fed target, as shelter inflation is still elevated and food prices accelerated in September. Core inflation (ex-Food & Energy) has not budged from Q2 levels—at 3.3% year-over-year.

## EQUITY

- Global markets delivered strong performance, with consistent results across regions. Emerging markets (MSCI EM +8.7%) led, followed by international developed (MSCI EAFE +7.3%) and lastly the U.S. market (S&P 500 +5.9%). U.S. dollar weakness provided particular benefits to investors in international developed equities.
- Small cap and value style investing reversed their run of underperformance during the second quarter. Small cap led large cap by +3.2% (-8.9% over the past year), while value also outperformed by +6.2% (-14.4% over the past year). Despite this improvement, the market environment has been incredibly difficult for these style factors.

## FIXED INCOME

- The 10-year U.S. Treasury yield fell from 4.36% to 3.79% during the quarter, alongside a series of economic data releases that suggested inflation is moving further towards the Fed's 2% target, and that the labor market is softening. Interestingly, yields moved slightly higher in late September after the Fed's aggressive 50 bps rate cut.
- Default activity remained low, given economic strength. High yield bond default rates continued to decline, falling to 1.4%, well below the long-term annual average of 3.4%. However, distressed exchange activity was high. Total distressed exchange volume was roughly \$13.5 billion, the second largest quarter on record (since Q4 2008).

## ASSET ALLOCATION ISSUES

- China announced an aggressive stimulus program in the form of both fiscal and monetary support. Those moves followed a People's Bank of China rate cut from 2.3% to 2.0%. Chinese equities rallied more than 30% in late September. It is not yet clear whether these efforts will help solve any of China's deep and structural issues.
- On August 5th, volatility spiked 42 points to 66, marking the largest one day jump in volatility in modern market history. This was widely attributed to the unwinding of carry trade positions (one popular carry trade involved borrowing in Yen to invest in equities) following a weak labor market data release and an unexpected interest rate hike from the Bank of Japan.

In September, the Fed enacted the first of likely a series of interest rate cuts.

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

# What drove the market in Q3?

**“Federal Reserve signals end to inflation fight with a sizable half-point rate cut”**

## Fed Funds Effective Rate

Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024
5.08%	5.33%	5.33%	5.33%	5.33%	4.83%

Article Source: Associated Press, September 18<sup>th</sup>, 2024

**“China’s central bank unveils most aggressive stimulus since pandemic”**

## Chinese Equity Market Performance, Monthly

April 24	May 24	June 24	July 24	Aug 24	Sep 24
+6.5%	+2.4%	-2.1%	-1.2%	+0.9%	+23.4%

Article Source: Reuters, September 24<sup>th</sup>, 2024

**“Fears of Slowing U.S. Growth Jolt Markets Around the World”**

## Monthly Nonfarm Payroll Additions

April 24	May 24	June 24	July 24	Aug 24	Sep 24
108k	216k	118k	144k	159k	254k

Article Source: New York Times, August 5<sup>th</sup>, 2024

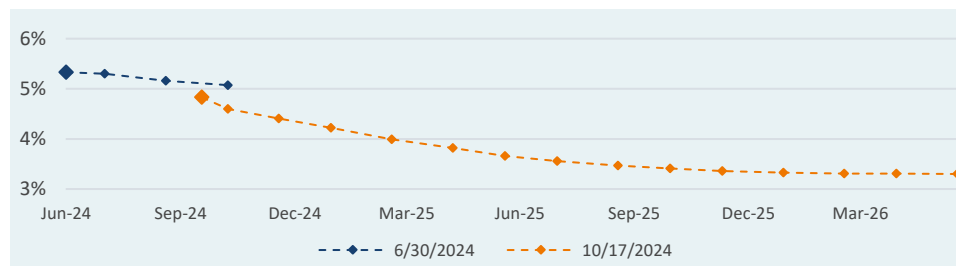
**“Inflation falls to its lowest level in more than 3 years”**

## Consumer Price Index, Year-over-Year change

April 24	May 24	June 24	July 24	Aug 24	Sep 24
3.4%	3.3%	3.0%	2.9%	2.5%	2.4%

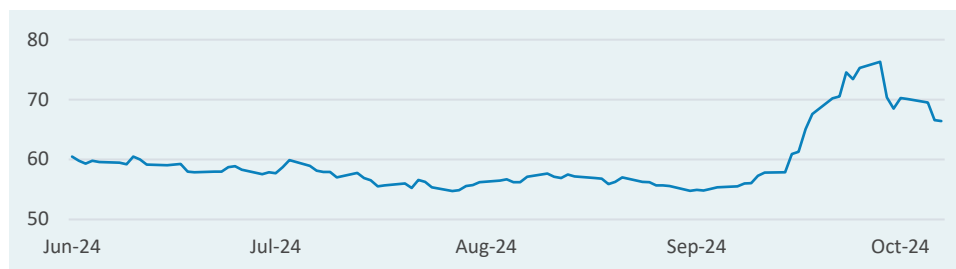
Article Source: NPR, September 11<sup>th</sup>, 2024

## U.S. MARKET IMPLIED FUTURE INTEREST RATES



Source: CME Group, as of 9/30/24

## MSCI CHINA INDEX, PRICE



Source: MSCI, as of 9/30/24

## CONSUMER PRICE INDEX, YEAR-OVER-YEAR CHANGE



Source: FRED, as of 9/30/24



# Economic environment

# U.S. economics summary

- On September 18<sup>th</sup>, the Federal Reserve cut interest rates by 50 basis points, bringing the target rate from 5.25-5.50% to 4.75-5.00%. This larger cut surprised many investors who still see inflation risks on the horizon and see the economy as generally strong. This move likely kicks off a multi-year period of cuts as the Fed brings interest rates towards what they see as a more neutral level.
- U.S. inflation (CPI) fell to 2.4% year-over-year in September, moving closer to the Fed's 2% target. However, risks remain that inflation remains above the Fed target, as shelter inflation is still high and food prices accelerated in September. Core inflation (ex-Food & Energy) has not budged from Q2 levels—at 3.3% year-over-year.
- Since earlier in 2024, unemployment had been ticking higher, but in August and September this trend reversed, with unemployment ending the quarter at 4.1%. The September nonfarm employment report reflected a 254,000

gain in jobs, dramatically outperforming expectations. The impacts of unlawful immigration on official employment statistics have continued to cause discrepancies in data and confusion regarding true labor conditions. We believe analyzing jobs data requires careful analysis.

- Multiple labor strikes have been occurring around the country, including Boeing and the International Longshoremen's Association (ILA). As organized labor fights for higher wages and benefits, disruptions to production and trade could contribute to inflation flareups.
- Consumer sentiment improved slightly during the third quarter, as illustrated by the University of Michigan Consumer Sentiment survey. Households expressed further frustration about high prices, but optimism has grown around the economy and the inflation outlook. According to the survey, expectations have brightened for Americans across the economic and political spectrum.

	Most Recent	12 Months Prior
Real GDP (YoY)	2.7% 9/30/24	2.4% 6/30/23
Inflation (CPI YoY, Core)	3.3% 9/30/24	3.7% 9/30/23
Expected Inflation (5yr-5yr forward)	2.3% 9/30/24	2.5% 9/30/23
Fed Funds Target Range	4.75–5.00% 9/30/24	5.25–5.50% 9/30/23
10-Year Rate	3.79% 9/30/24	4.59% 9/30/23
U-3 Unemployment	4.1% 9/30/24	3.8% 9/30/23
U-6 Unemployment	7.7% 9/30/24	7.0% 9/30/23

# Inflation

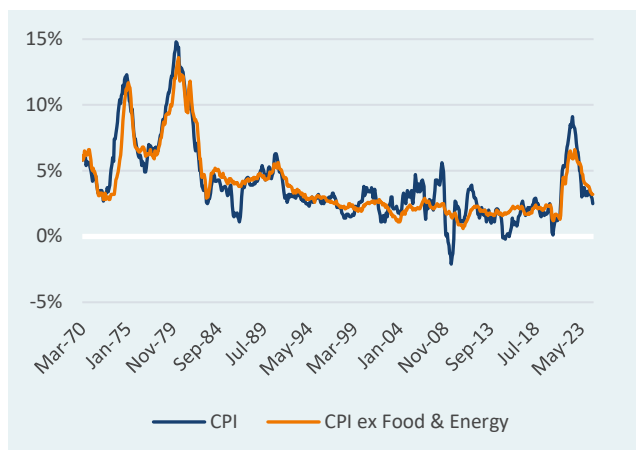
U.S. inflation (CPI) fell to 2.4% year-over-year in September, moving closer to the Fed's 2% target. However, risks remain that inflation could remain above the Fed target, as shelter inflation is still elevated and food prices accelerated in September. Core inflation (ex-Food & Energy) has not budged from Q2 levels—at 3.3% year-over-year.

While certain prices continue to show concerning trends, deflation (year-over-year) has been occurring across many goods prices, such as new vehicles (-1.3%), used vehicles (-5.1%), and energy (-6.8%). If inflation were calculated using market-based shelter prices, the current rate of inflation would likely be less than 2%.

Although price trends have recently been encouraging, the U.S. is certainly not out of the woods yet. For example, Federal Reserve rate cuts create the risk of reigniting demand and spending, pushing prices upward. Multiple labor strikes have been occurring around the country, including Boeing and the International Longshoremen's Association. As organized labor fights for higher wages and benefits, disruptions to production and trade could contribute to inflation flareups. Additionally, falling energy prices over the past year have played a large role in bringing inflation lower. If energy prices flatten out, or reverse and move higher, perhaps due to escalating conflict between Israel and Iran, energy could once again become an inflationary force.

Inflation had been fluctuating between 3-3.5%, but broke lower to 2.4% in Q3

U.S. CPI (YOY)



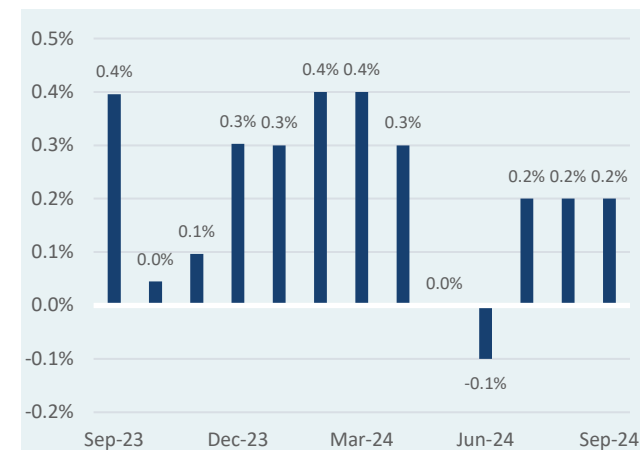
Source: BLS, as of 9/30/24

POTENTIAL INFLATION PATHS



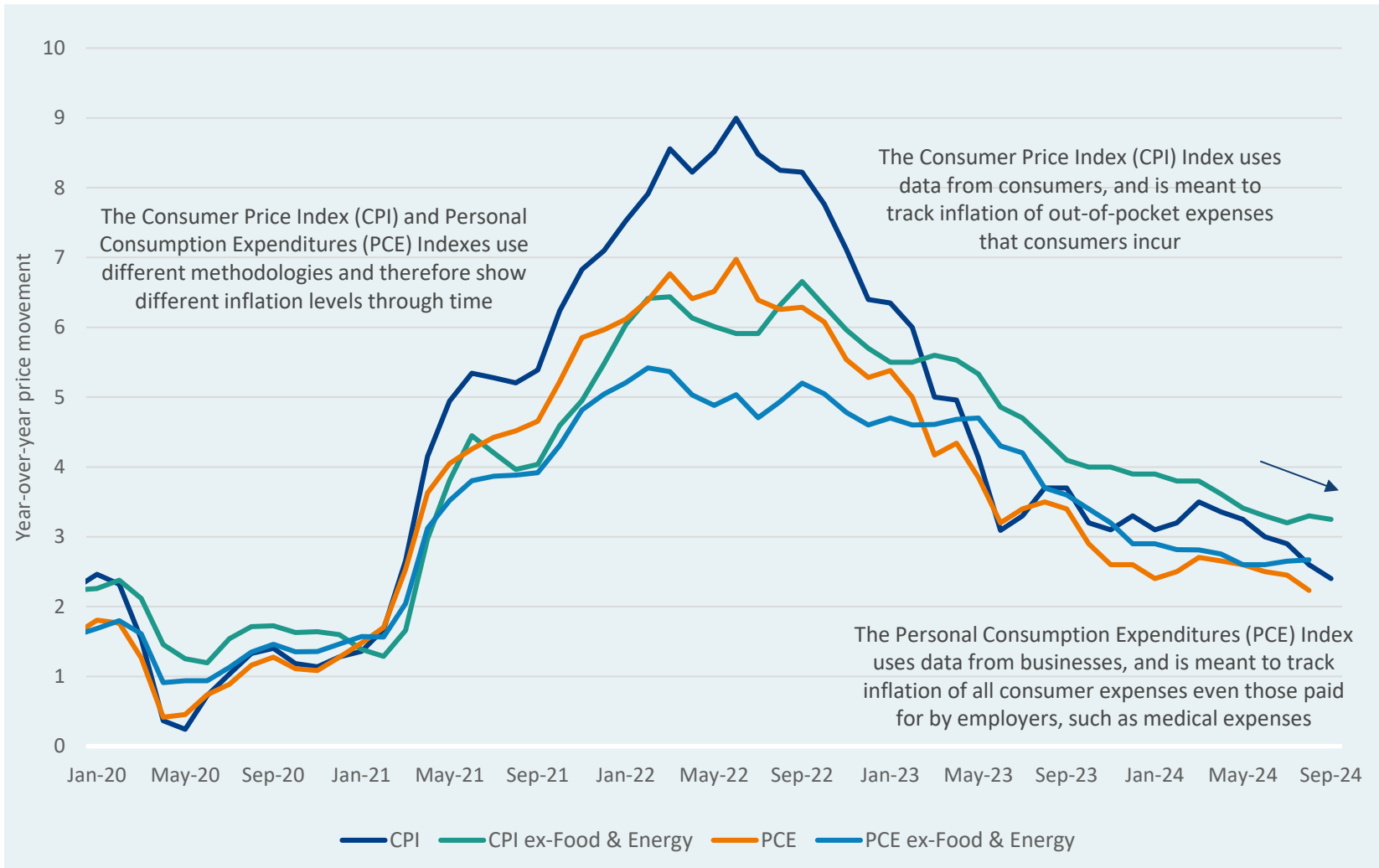
Source: FRED, Verus, of 9/30/24

MONTHLY PRICE MOVEMENT (CPI)



Source: BLS, as of 9/30/24

# Inflation is nearing the Fed's target



The Fed's preferred measure of inflation, PCE, may soon reach the stated 2% target

...though price pressures still exist in the economy

Source: FRED, Verus, as of 9/30/24 – or most recent release



# GDP growth

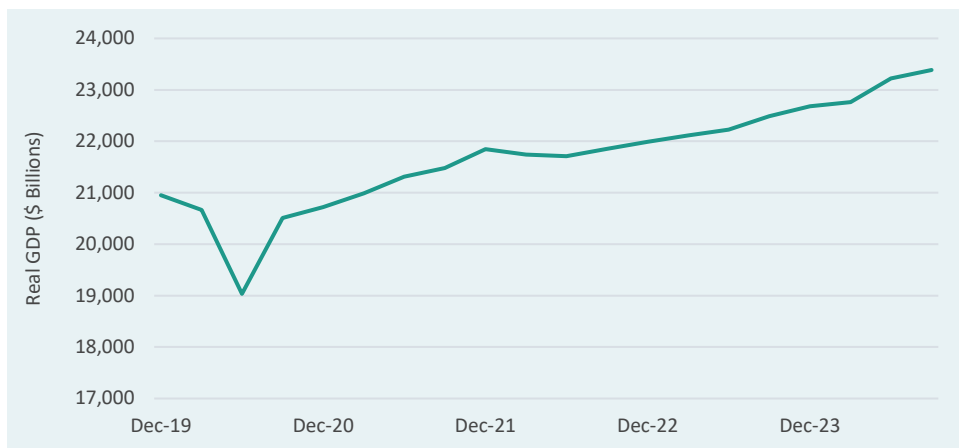
Real GDP growth was robust again during Q3, but slowed slightly from 3.0% to 2.8% quarter-over-quarter, annualized (2.7% year-over-year). Growth continues to be fueled by consumer purchases, which accelerated to a 3.7% annualized pace. Spending was broad based across goods and services. Heightened government defense spending was also a large contributor during the quarter. The moderate deceleration in real GDP growth was mainly caused by less private inventory investment, and a substantial slowing of residential fixed investment.

Although economic conditions remain strong, many economists and investors are wary of the sustainability of consumer

spending growth, given the drawdown of excess savings accumulated during the pandemic, lower personal savings rates, as well as slowing wage growth. The U.S. economy is likely headed towards a more moderate growth phase after many quarters of surprisingly hot growth and spending. Unlike past periods of economic weakening, many trends today could reasonably be summarized as a *return to normalcy*. For example, following the pandemic, the domestic labor market was experiencing a historic mismatch between the number of jobs available and the number of workers available. Resolving that mismatch required a material weakening of the labor market from *extreme tightness* to *relatively strong*, but not a move (yet) towards something that suggests recession.

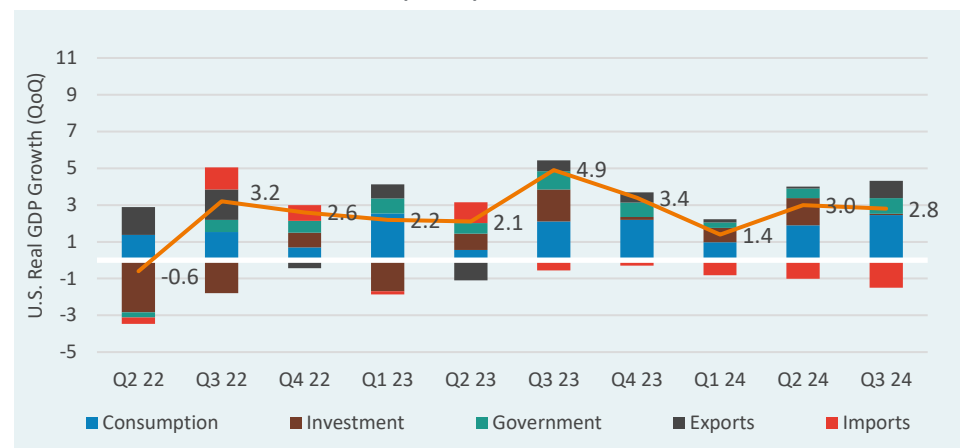
U.S. growth remained robust during Q3, fueled by consumer spending

## U.S. REAL GROSS DOMESTIC PRODUCT



Source: FRED, as of 9/30/24

## U.S. REAL GDP COMPONENTS (QOQ)



Source: FRED, as of 9/30/24

# Labor market

Signs of weakness in the U.S. labor market are evident, though conditions remain generally robust. Throughout 2024, we have held the view that the path towards lower interest rates would be a bumpy one, and that investors may be disappointed in their expectations for aggressive rate cuts. This view proved valid in August and September as the rate of unemployment reversed course and headed lower to 4.1%. September nonfarm payrolls reflected a 254,000 gain in jobs, dramatically outperforming expectations. This data surprised markets, pushing longer-term bond yields upward and contributing to an asset rally on better economic prospects.

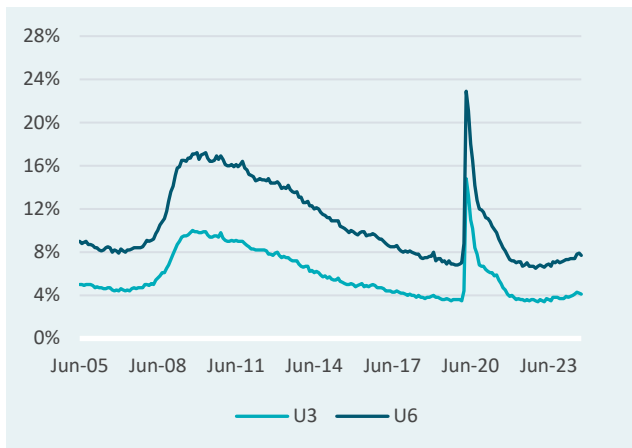
Recent labor trends appear to be unlike many past cycles. Weakness so far has been a product of natural attrition and

less hiring, rather than widespread terminations. These trends could indicate a return to a more balanced job market, rather than a turn towards a sharp economic downturn. Job market *rebalancing* is captured in the recent closing of a wide gap between the number of *available workers* and *available jobs*.

Various types of immigration and the difficulties of quantifying unlawful immigration in official statistics has created much uncertainty in the data. This problem has been acknowledged by senior government officials, including Fed Chair Jerome Powell. The level of unlawful immigration in recent years suggests that estimation errors could be large. Investors should be appropriately cautious when analyzing current data.

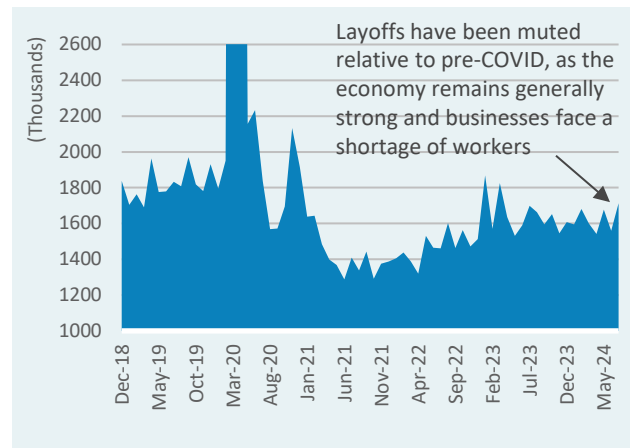
Labor weakness so far has been a product of natural attrition and less hiring, rather than widespread layoffs

## U.S. UNEMPLOYMENT



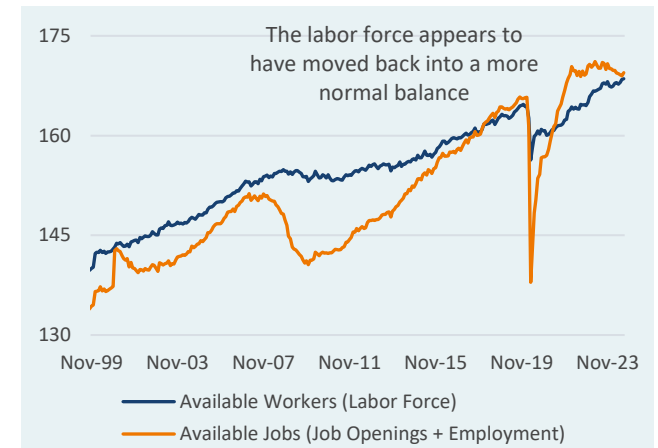
Source: FRED, as of 9/30/24

## LAYOFFS



Source: FRED, as of 7/31/24

## WORKERS AVAILABLE VS. AVAILABLE JOBS



Source: BLS, Verus, as of 8/31/24

# The consumer

Inflation adjusted personal spending growth was 2.9% year-over-year in August and has remained in a 2-3% range for the past two years. This rate indicates moderate economic expansion in line with pre-pandemic rates of growth.

Personal savings rates saw a significant upward adjustment, from 2.9% to 4.9% in July, as the data series was revised to better capture income sources that had been omitted previously. The most recent savings rate was 4.8% in August. This indicates that the consumer is in a healthier position than previously believed, and that fewer Americans are dipping into savings to support their spending.

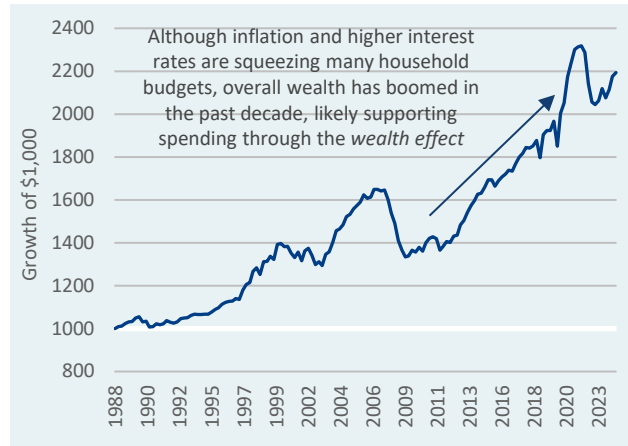
Fueled by large gains from equities and real estate, average household wealth has boomed. While inflation and high prices have in fact squeezed budgets, significant increases in household wealth may be a positive support to consumption. This behavior may be best described by the ‘wealth effect’—an economic theory stating that even if an individual’s income and expenses do not change, if that individual *feels more wealthy*, they tend to have a higher propensity to spend. This theory is often applied to wealth in real estate or investments such as retirement accounts which cannot be accessed immediately.

**REAL PERSONAL SPENDING**



Source: FRED, as of 8/30/24

**AVERAGE HOUSEHOLD NET WORTH (INFLATION-ADJUSTED)**



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

**PERSONAL SAVINGS RATE**



Source: FRED, as of 8/30/24

# Sentiment

Consumer sentiment improved slightly during the third quarter, as illustrated by the University of Michigan Consumer Sentiment survey. Households expressed further frustration about high prices, but optimism on the economy and that inflation will continue to slow. According to the survey, the outlook brightened for Americans all across the economic and political spectrum.

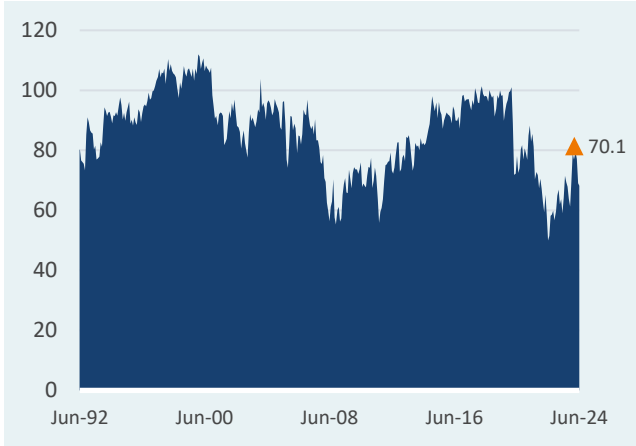
The latest consumer confidence reading from the Conference Board slightly increased from the prior quarter, but consumers expressed pessimism around labor market conditions. Concerns were reported regarding fewer hours and job openings. While interest rate cuts have likely led

consumers to plan on buying big-ticket items like cars and homes, families' perception of their financial conditions ultimately declined over the quarter.

The NFIB Small Business Optimism index was significantly depressed during the quarter, now marking 33 months below the 50-year average. NFIB Chief Economist Bill Dunkelberg stated "Small business owners are feeling more uncertain than ever. Uncertainty makes owners hesitant to invest in capital spending and inventory, especially as inflation and financing costs continue to put pressure on their bottom lines."

Consumer sentiment improved slightly during Q3, while small business sentiment remained very depressed

**CONSUMER SENTIMENT (UNIV. OF MICHIGAN)**



Source: University of Michigan, as of 9/30/24

**CONSUMER CONFIDENCE (CONFERENCE BOARD)**



Source: Conference Board, as of 9/30/24

**NFIB SMALL BUSINESS SENTIMENT**



Source: NFIB, as of 9/30/24



# Housing

It is very likely that the Federal Reserve’s September interest rate cut was the first of a series of cuts. This could be positive for potential home buyers and housing affordability, though it will depend on how cuts to the Federal Funds Rate relate to longer-term interest yields, which impact the mortgage rates that are offered to home buyers (the 30-year mortgage rate average fell to 6.1% at the end of Q3, down from a high of 7.8% in late 2023). This will also depend on the way in which home prices react to lower mortgage interest rates—if a rush of home buying activity pushes home prices upward, higher prices could overwhelm the cost savings of lower mortgage rates in terms of total cost of homeownership.

While home prices continue to climb, up 5% year-over-year in July, according

to S&P CoreLogic Case-Shiller, rent prices have reportedly flattened out nationwide. An analysis from Redfin suggests that rents were only up 0.9% year-over-year in August, as the recent boom in construction and building of new apartment units has helped to mitigate price pressure.

The cost of buying vs. owning is currently at historic extremes, given the intense deterioration of home ownership affordability. This has been further worsened as rent prices flattened out over the past year and home prices moved upward. Even in U.S. metro areas with the most attractive balance between renting and buying, it is more attractive to rent. In more expensive cities such as San Francisco and Seattle, the cost of owning is more than double the cost of renting, as illustrated below.

**30-YEAR MORTGAGE RATE (%)**



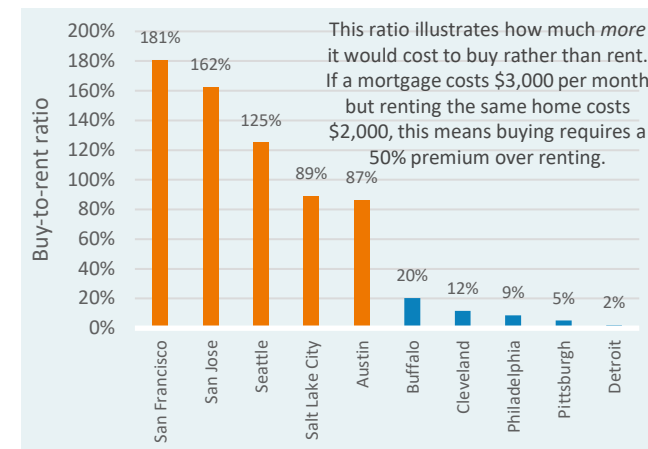
Source: Freddie Mac, as of 9/30/24

**EXISTING HOME SALES**



Source: National Association of Realtors, as of 8/31/24

**HOUSING AFFORDABILITY: 5 MOST EXPENSIVE & 5 LEAST EXPENSIVE METRO AREAS**



Source: Bankrate analysis of Redfin’s median sale price data and Zillow rent data, as of February 2024

# International economics summary

- The Eurozone faces slowing growth, with recession potentially imminent for Germany. A global shift in consumer purchase patterns towards *services* and away from *goods* has likely had a major impact on manufacturing-heavy economies. These effects are biting especially hard in export-heavy economies such as Germany and Japan. China's struggling economy is having widespread impacts on global growth, as well as energy and other commodity prices.
- Falling inflation and moderating economic growth creates conditions central banks may see as conducive to interest rate cuts. The European Central Bank and Federal Reserve kicked off a rate cutting cycle during the quarter. The Bank of Japan stands out from the crowd, deciding earlier this year to raise rates modestly. The bank sees Japan's economy growing faster than potential and wishes to normalize rates carefully.
- One year has passed since the Hamas attack on Israel, and the beginning of

the Israel-Hamas war. The conflict has now broadened out as Israel engages with the Iranian-backed militia Hezbollah, which is designated a terrorist group by much of the western world. Over the past month, Israel and Iran have clashed directly, substantially increasing risks of widespread war in the Middle East.

- China announced an aggressive economic stimulus program in the form of fiscal and monetary support. Those moves followed a People's Bank of China rate cut from 2.3% to 2.0%. Chinese equities rallied more than 30% in the last few weeks of September. It is not yet clear whether these developments will be sufficient to help turnaround the Chinese economy, which faces serious structural issues.
- India continues to be the fastest-growing major economy in the world, posting strong real GDP growth (+6.7%) on the back of a rapidly growing manufacturing sector and large investments in public infrastructure.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.7% 9/30/24	2.4% 9/30/24	4.1% 9/30/24
Eurozone	0.6% 6/30/24	1.7% 9/30/24	6.4% 8/31/24
Japan	(1.0%) 6/30/24	2.2% 9/30/24	2.5% 8/31/24
BRICS Nations	4.8% 6/30/24	2.0% 9/30/24	5.3% 12/31/23
Brazil	3.3% 6/30/24	4.4% 9/30/24	6.6% 8/31/24
Russia	4.1% 6/30/24	8.6% 9/30/24	2.4% 8/31/24
India	6.7% 6/30/24	5.5% 9/30/24	7.8% 9/30/24
China	4.6% 9/30/24	0.4% 9/30/24	5.1% 9/30/24

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

# International economics

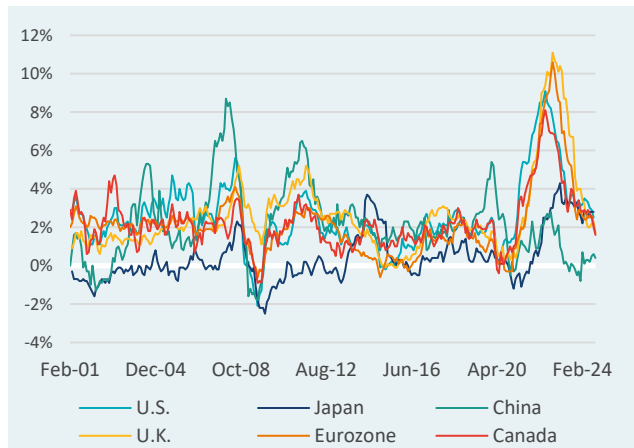
Many developed economies have shown slowing growth recently, as softer spending and a manufacturing slowdown contribute to weakness. These effects are biting especially hard in export-heavy economies such as Germany and Japan. It is difficult to attribute economic weakness on a single cause, though China's struggling economy and a global consumer spending trend towards services rather than goods are likely playing a part. Central bank interest rate hikes mean bigger ticket goods purchases such as automobiles, homes, and home furnishings, are more difficult to afford. As interest rates come down, this trend could reverse. The U.S. economy stands out as exceptionally strong in the current environment.

Inflation rates in the developed world have fallen towards pre-pandemic levels more quickly than had been expected. Many inflation drivers that

had occurred during the pandemic, such as global supply chain issues, government stimulus, and higher energy prices, have seen a reversal. This has helped inflation to normalize without a major shock to spending.

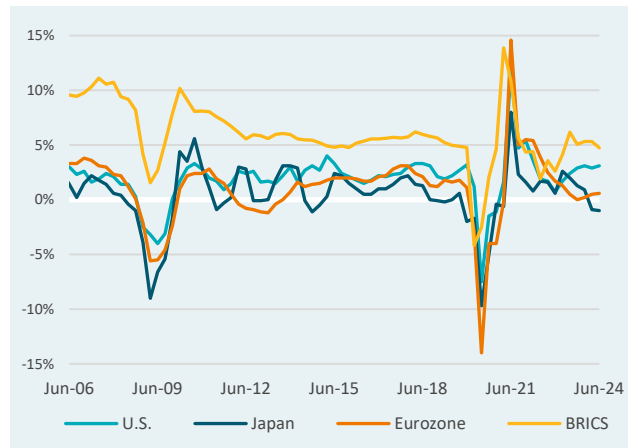
In September, China announced an aggressive economic stimulus program, after three years of ongoing mild support. President Xi pledged both fiscal and monetary support, with specific focus on the ailing real estate market, and stimulus to mitigate the downward trajectory of the stock market. Those moves followed a People's Bank of China rate cut from 2.3% to 2.0%. It is not yet clear whether these developments will be sufficient to help turn around the Chinese economy, which faces serious structural issues such as a declining population, shrinking workforce, and nationwide excess inventory of real estate.

**INFLATION (CPI YEAR-OVER-YEAR)**



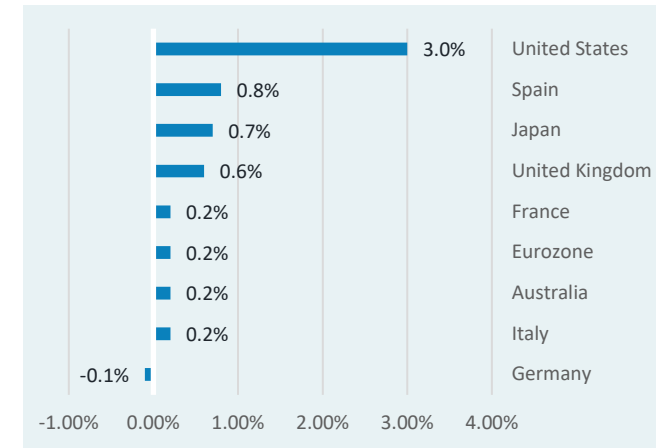
Source: BLS, Verus, as of 9/30/24

**REAL GDP GROWTH (YEAR-OVER-YEAR)**



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

**Q2 REAL GDP GROWTH (QOQ)**



Source: BLS, Verus, as of Q2 2024

# Fixed income rates & credit



# Fixed income environment

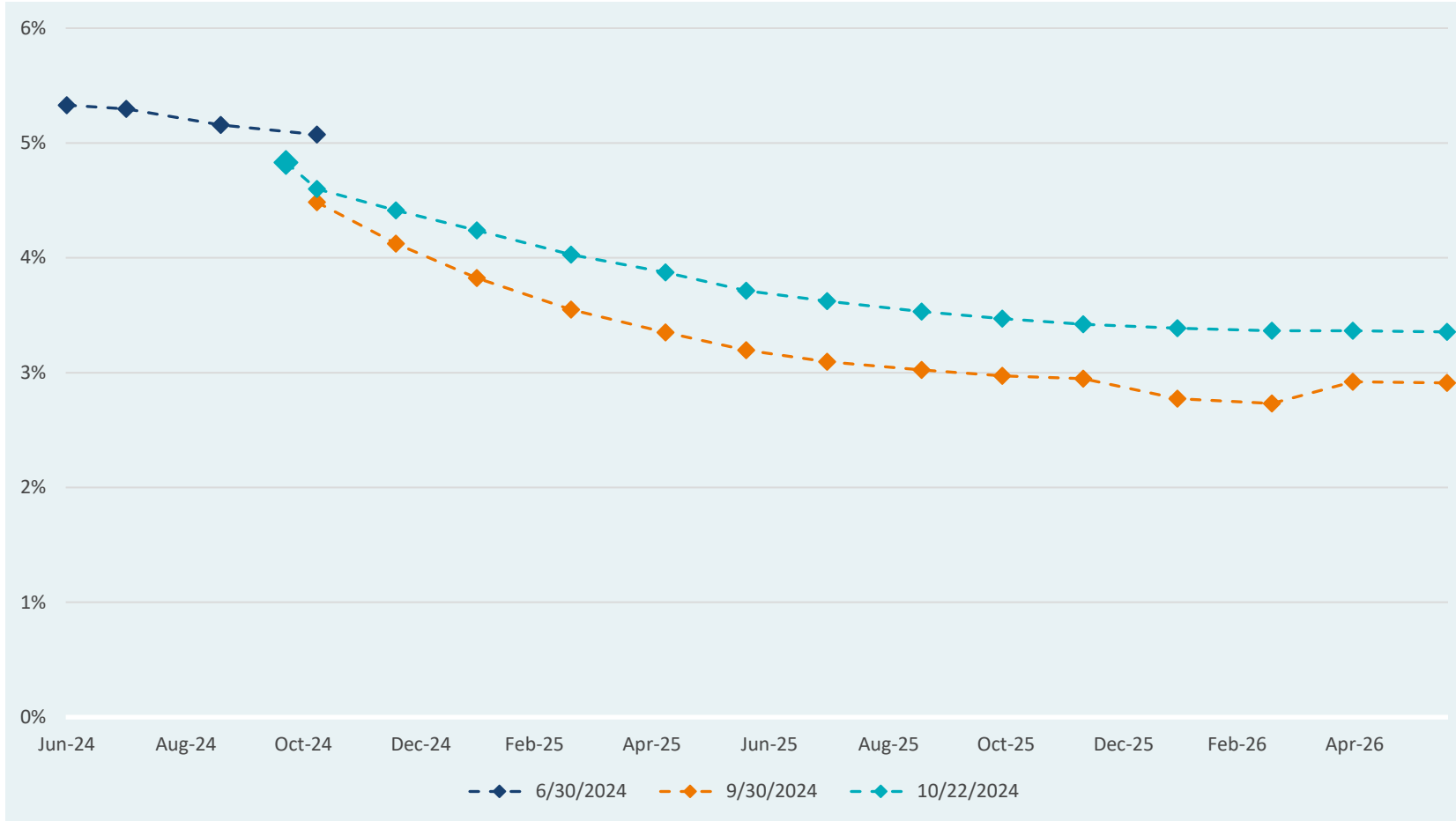
- On September 18<sup>th</sup>, the Federal Reserve cut interest rates by 50 bps, bringing the target rate from 5.25-5.50% to 4.75-5.00%. This larger cut surprised many investors who still see inflation risks and a generally strong economy. This move likely kicks off a multi-year period of cuts as the Fed brings interest rates towards what they believe to be a more neutral level. Investors have now focused sharply on what the neutral interest rate level, or “R-star”, might be today.
- The 10-year U.S. Treasury yield fell from 4.36% to 3.79% during the quarter, alongside a series of economic data releases that suggested inflation is moving further towards the Fed’s 2% target, and that the labor market is softening. Interestingly, yields moved slightly higher in late September after the Fed rate cut.
- Most credit indices saw positive returns, rising with the rest of the fixed income universe. However, greater credit risk only provided marginally higher returns, with high yield outperforming investment grade by +0.1%. Bank Loans (S&P/LSTA Leveraged Loan) underperformed other major fixed income indices, as the floating rate nature (and ultra-low duration) of bank loans meant these bonds did not benefit from the decline in yields.
- The U.S. yield curve *uninverted* during the quarter, indicated by the 10-year minus the 2-year Treasury yield, as shorter-term interest rates dropped along with more aggressive Federal Reserve rate cut expectations. This ended more than two years of yield curve inversion.
- Default activity remained low in Q3 as the economy remained strong. High yield bond default rates continued to decline, falling to 1.4%, down from 2.2% a year ago and well below the long-term annual average of 3.4%. However, distressed exchange activity was high. Total distressed credit volume was roughly \$13.5 billion, the second largest quarterly total on record (since Q4 2008).

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	5.2%	11.6%
Core Plus Fixed Income (Bloomberg U.S. Universal)	5.2%	12.1%
U.S. Treasuries (Bloomberg U.S. Treasury)	4.7%	9.7%
U.S. Treasuries: Long (Bloomberg U.S. Treasury 20+)	8.0%	15.2%
U.S. High Yield (Bloomberg U.S. Corporate HY)	5.3%	15.7%
Bank Loans (S&P/LSTA Leveraged Loan)	2.1%	9.6%
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	9.0%	13.4%
Emerging Market Debt Hard (JPM EMBI Global Diversified)	6.2%	18.6%
Mortgage-Backed Securities (Bloomberg MBS)	5.5%	12.3%

Source: Standard & Poor’s, J.P. Morgan, Bloomberg, as of 9/30/24

# A new interest rate regime

*Looking at the upcoming expected path of the Fed Funds rate (short-term rate)*



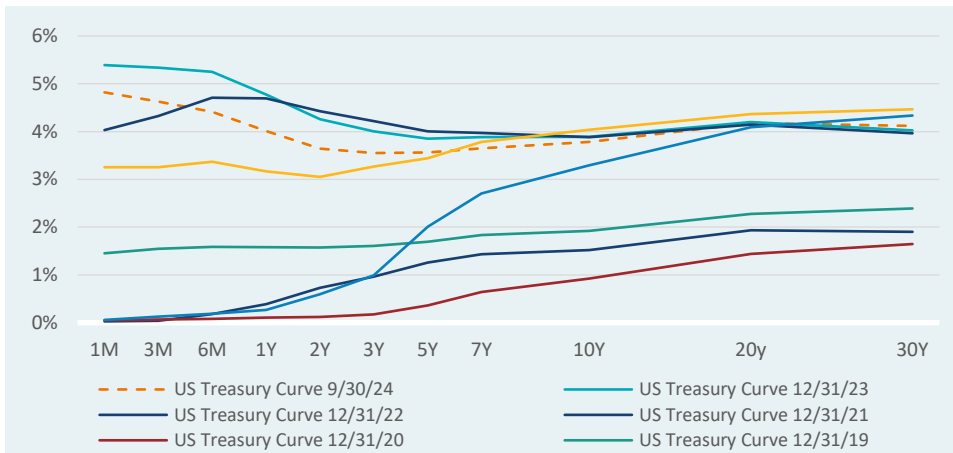
Investors are pricing in considerable near-term rate cuts

Sticky inflation and/or ongoing economic strength could lead to disappointment if the Fed takes a more restrained stance

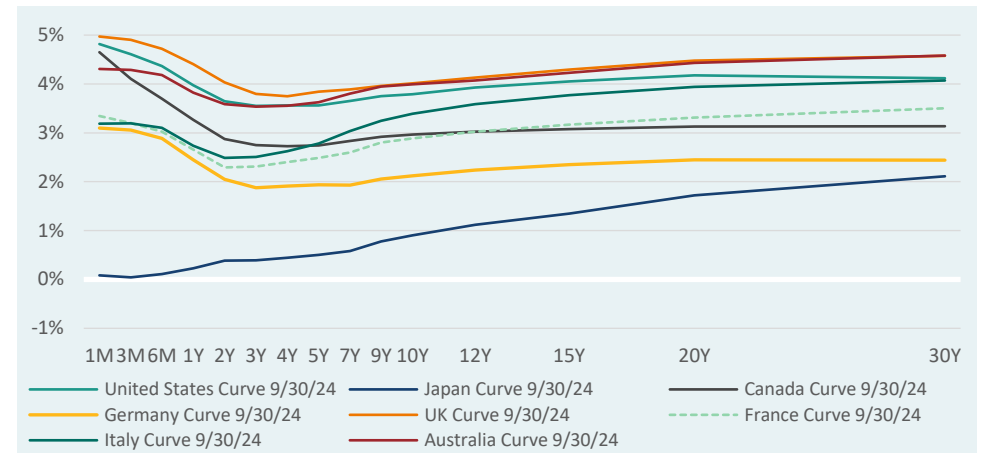
Source: Verus, as of 10/22/24

# Yield environment

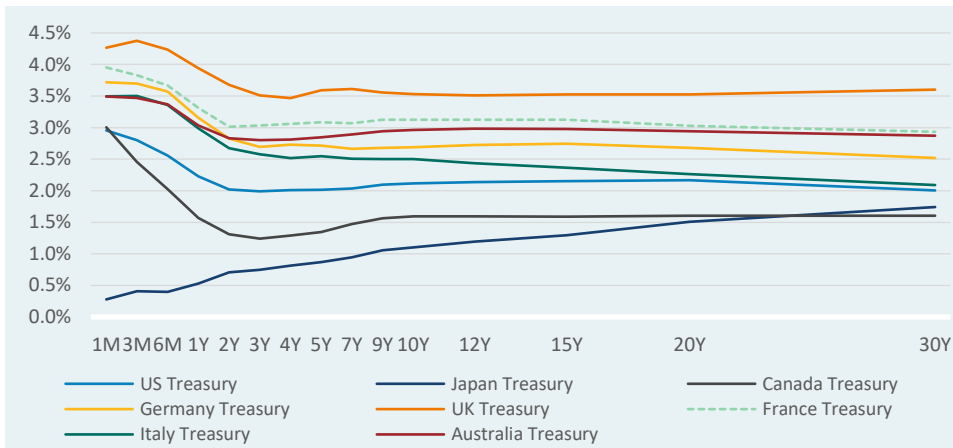
U.S. YIELD CURVE



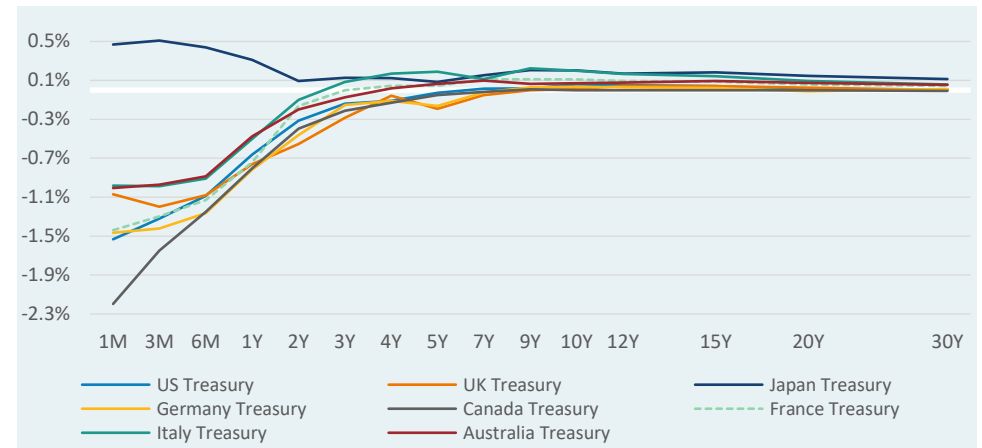
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/24

# Credit environment

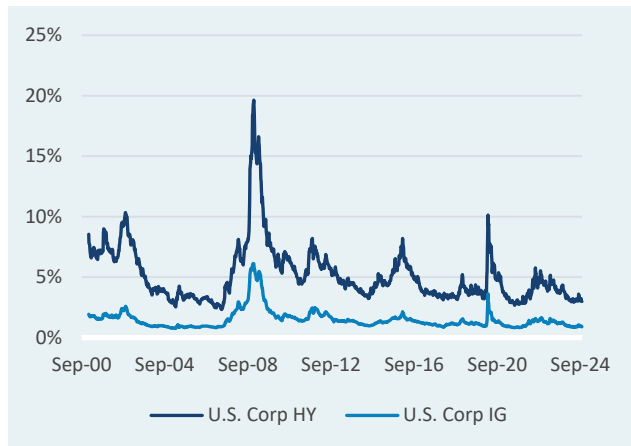
During the third quarter, longer duration credit outperformed shorter duration as U.S. interest rates headed downward. Long duration investment grade corporate bonds (Bloomberg U.S. Long Corporate Credit) gained 8.1% while lower quality credit markets also delivered strong returns—high yield and bank loans added +5.3% (Bloomberg U.S. Corporate High Yield) and +2.1% (CS Leveraged Loans), respectively.

Returns within the high yield bond market were broadly positive. Lower quality credits saw the strongest performance. Bonds rated CCC, which include distressed credit, returned +11.6%, compared to higher quality BB-rated bonds which returned +4.3%. Non-distressed CCC-rated bonds also delivered robust returns, gaining +6.9%. Similarly, lower quality

bank loans outperformed higher quality, with CCC-rated loans returning +2.6%, compared to +2.0% and +1.9% for B- and BB-rated loans.

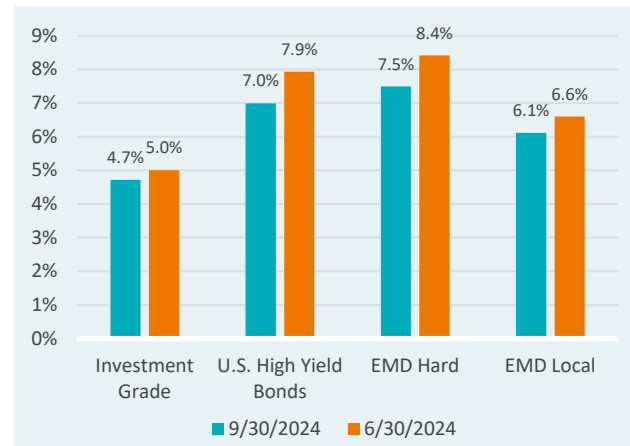
Credit spreads broadly declined alongside an easing of perceived U.S. recession risk. Lower-quality high yield bond spreads fell by roughly 0.2%, to 3.0%, while investment grade spreads tightened slightly to 0.9%. Broadly, across credit ratings, spreads remain well below their long-term historical averages. While some technical factors may be contributing to relative tightness, spreads suggest that investors are fairly confident in the ability of businesses to service debt in the future.

## SPREADS



Source: Barclays, Bloomberg, as of 9/30/24

## YIELD TO MATURITY



Source: Bloomberg, J.P. Morgan as of 9/30/24

## CREDIT SPREAD (OAS)

Market	9/30/24	9/30/23
Long U.S. Corp	1.1%	1.3%
U.S. Inv Grade Corp	0.9%	1.2%
U.S. High Yield	3.0%	3.9%
U.S. Bank Loans*	4.7%	5.2%

Source: Barclays, Credit Suisse, Bloomberg, as of 9/30/24

\*Discount margin (4-year life)

# Default & issuance

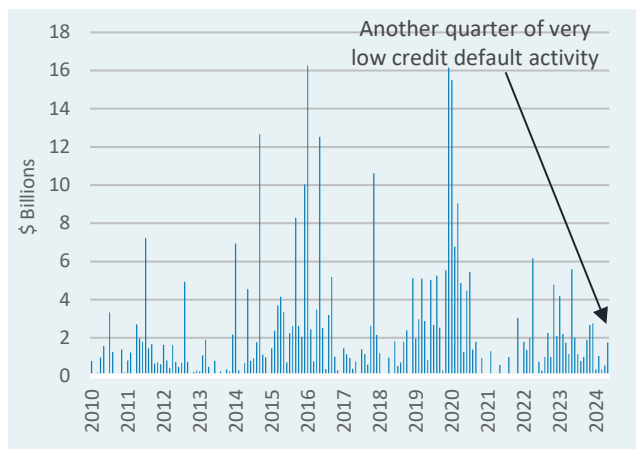
Default activity remained low during the quarter as economic growth was solid and strong economic data releases around the labor market and spending suggested a lower chance of near-term recession. During the period, \$11.1 billion of bank loans and high yield bonds were affected by default or distressed exchanges, down from roughly \$15.0 billion in the prior quarter. Year-to-date, 27 companies have defaulted, totaling more than \$3.0 billion in bonds and \$15.4 billion in loans.

While defaults have remained subdued, distressed exchange activity has been high. During the quarter, total distressed credit volume was roughly \$13.5 billion, the second largest quarterly total on record (since Q4 2008). Despite a rise in exchanges, the year-to-date combination of defaults and distressed exchanges of \$56.1 billion trailed the pace of 2023 by -13%.

High yield bond default rates continued to decline, falling to 1.4%, down from 2.2% a year ago, and are well below the long-term annual average of 3.4%. Recovery rates ended the quarter at 37.7%, down slightly from Q2, but up from the calendar year 2023 level of 32.8%.

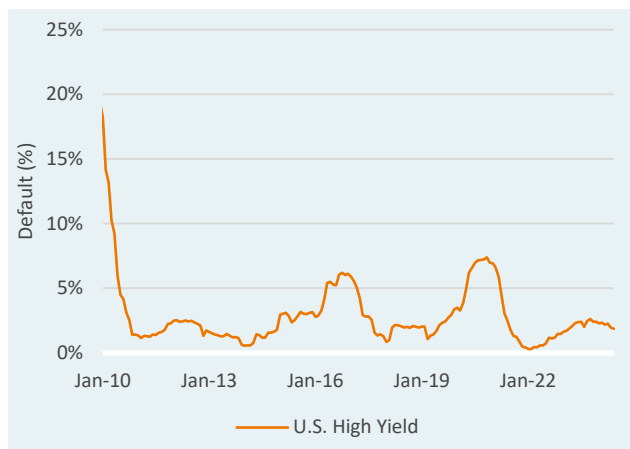
New issuance volume for high yield bonds and bank loans was mixed during the quarter. High yield bond issuance was \$74.0 billion, compared to \$79.4 billion in Q2, while bank loan issuance increased to \$204 billion, up from \$148.4 billion. Lower interest rates likely acted as a catalyst for bank loan issuance activity. Importantly, credit spreads remain near their all-time lows, which allows companies to issue and refinance their debt at more competitive rates.

**U.S. HY MONTHLY DEFAULTS (PAR WEIGHTED)**



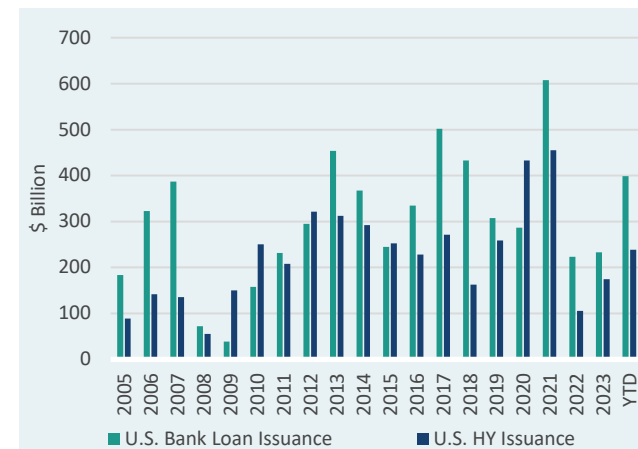
Source: BofA Merrill Lynch, as of 9/30/24

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



Source: BofA Merrill Lynch, as of 9/30/24 – par weighted

**U.S. ISSUANCE (\$ BILLIONS)**



Source: BofA Merrill Lynch, as of 9/30/24

# Credit hedge funds & high yield spreads

- Credit hedge funds tend to outperform high yield when spreads are compressed, based on data since 2000. When high yield spreads are especially wide, high yield typically outperform both U.S. Treasuries and credit hedge funds by a wide margin.
- Current high yield spread levels are well within the first quartile (i.e. are low relative to history), reflecting recent sustained economic growth, easing inflation fears, and the beginning of a rate cut cycle driven by lower inflation and a *soft landing* rather than concerns of recession or weakness.
- This supports our view that now may be an attractive time to consider alternative credit funds as a means of earning a premium over comparable liquid markets. Less liquid, more complex areas of the credit market typically offer premium yields, more idiosyncratic trading opportunities, and fund managers often possess more tools for generating alpha.
- Now may also be an appropriate time to plan for future spread widening, in setting up dedicated “trigger” vehicles with traditional or alternative managers to pre-commit to investing in liquid credit markets at certain spread thresholds, when those markets tend to offer the best return premium.

## HF CREDIT AVERAGE EXCESS RETURN VS HIGH YIELD BY SPREAD QUARTILE SINCE JULY 2000

Prior month High Yield Spread over Intermediate Treasury	Avg Monthly Excess Return of HY over Intermediate Treasury	Avg Monthly Excess Return of HF Credit over High Yield Bonds			
		HFRI Convert Arb	HFRI Distressed	HFRI L/S Corporate	HFRI Asset Backed
< 4.2% (Current spread is 3.6%)	0.12%	0.11%	0.13%	0.45%	0.30%
4.2 – 5.4%	0.51%	(0.12%)	(0.03%)	(0.02%)	0.09%
5.4 – 7.3%	0.47%	0.07%	(0.10%)	0.09%	0.08%
> 7.3%	1.13%	(0.33%)	(0.54%)	(0.54%)	(0.28%)

Source: Bloomberg, HFR, MPI. Time period: July 2000 – September 2024. Indexes used: BB US Intermediate Treasury, BB US Corporate High Yield, HFRI RV: Convertible Arbitrage, HFRI ED: Distressed/Restructuring, HFRI RV: Fixed Income: Corporate, HFRI RV: Fixed Income: Asset Backed



# Equity

# Equity environment

- Global markets delivered strong performance during the quarter, with fairly consistent results across broad regions. Emerging markets (MSCI EM +8.7%) led, followed by international developed equities (MSCI EAFE +7.3%), and lastly the domestic market (S&P 500 +5.9%). Dollar weakness provided particular benefits to investors in international developed equities.
- Market expectations for Federal Reserve rate cuts became aggressive, after the Fed cut by 50 basis points on September 18<sup>th</sup>. This likely contributed to dollar weakness, since expectations for lower rates make U.S. dollar holdings less attractive.
- S&P 500 blended year-over-year earnings growth was +3.4%, as of October 18th. Once again, technology companies led the way on earnings, providing growth of +15.2%, while Healthcare ranked second at +10.9%. Materials (-2.7%) and Energy (-20.9%) both

acted as a drag on overall index earnings.

- Small cap and value reversed their run of underperformance. Small cap led large cap by +3.2% (Russell 2000 +9.3% vs. Russell 1000 +6.1%) in Q3, while value outperformed growth by +6.2% (Russell 1000 Value +9.4% vs. Russell 1000 Growth +3.2%). Despite size and style factors performing well during Q3, both have done poorly over the past full year, with small cap and value underperforming by -8.9% and -14.4%, respectively.
- On August 5th, volatility spiked 42 points to 66, marking the largest one day jump in volatility in modern market history. This was widely attributed to significant investor unwinding of carry trade positions (borrowing in Yen to purchase U.S. equities) following a weak labor market data release and an unexpected interest rate hike from the Bank of Japan.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	5.9%		36.4%	
U.S. Small Cap (Russell 2000)	9.3%		26.8%	
U.S. Equity (Russell 3000)	6.2%		35.2%	
U.S. Large Value (Russell 1000 Value)	9.4%		27.8%	
US Large Growth (Russell 1000 Growth)	3.2%		42.2%	
Global Equity (MSCI ACWI)	6.6%	5.1%	31.8%	30.8%
International Large (MSCI EAFE)	7.3%	1.5%	24.8%	20.9%
Eurozone (EURO STOXX 50)	6.6%	2.9%	29.4%	25.1%
U.K. (FTSE 100)	8.0%	1.9%	23.5%	12.9%
Japan (TOPIX)	(4.9%)	(4.0%)	21.7%	22.2%
Emerging Markets (MSCI Emerging Markets)	8.7%	6.7%	26.1%	25.2%

Source: Standard & Poor's, FTSE, MSCI, STOXX, JPX, as of 9/30/24

# Domestic equity

U.S. equities underperformed both international and emerging market shares—the S&P 500 ended Q3 up +5.9%. Market momentum was fueled by strengthening earnings expectations and a solid macro environment. Easing inflation and a normalizing labor market allowed for the Fed to kick off its rate cutting cycle on September 18<sup>th</sup> with a 50 bps cut. Many other central banks have also pivoted towards lower interest rates.

S&P 500 blended year-over-year earnings growth was +3.4%, as of October 18<sup>th</sup>. If earnings growth remains positive, it will mark a fifth straight quarter of positive earnings growth for large cap domestic equities. Once again, the Technology sector has led the way in earnings,

providing gains of +15.6%, year-over-year. The Communication Services sector was close behind at a +10.6% pace. Industrials (-8.4%) and Energy (-26.0%) both acted as a drag on the index.

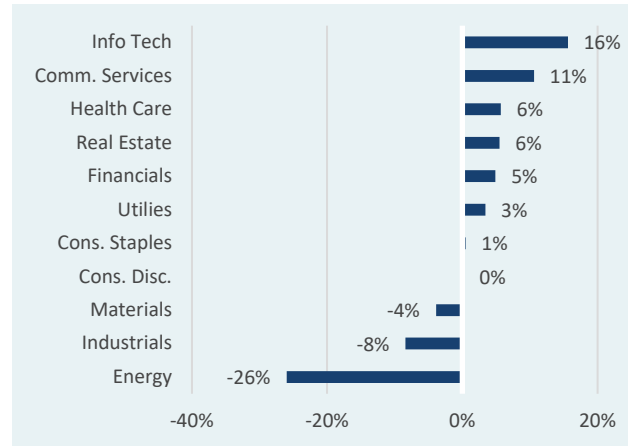
Robust price gains have continued to push valuations higher for the S&P 500, further generating concerns that U.S. equities are *priced for perfection*. Despite this, a resilient economy, interest rate cuts, and decreasing inflation risks arguably provide some fundamental justification for richer prices. Investors will be looking for these conditions to persist, specifically the trajectory of earnings and a path to profitability for recent substantial investments into artificial intelligence capabilities.

**S&P 500 PRICE INDEX**



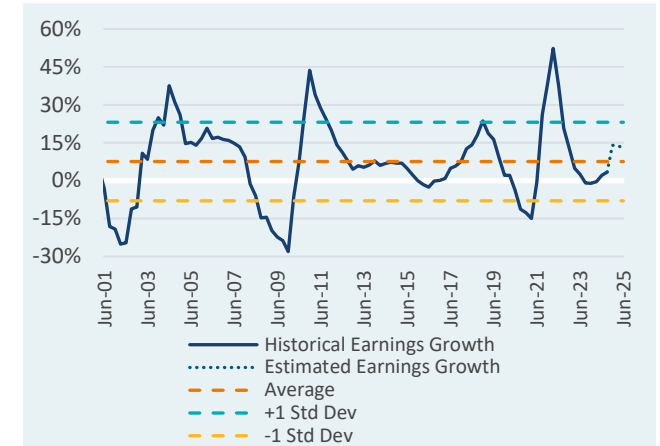
Source: Standard & Poor's, as of 9/30/24

**S&P 500 BLENDED EPS GROWTH (YOY)**



Source: Factset, as of 9/30/24

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



Source: Factset, Verus, as of 10/18/24

# Domestic equity size & style

Small cap and value reversed their run of underperformance. Small cap led large cap by +3.2% (Russell 2000 +9.3% vs. Russell 1000 +6.1%) in Q3, while value outperformed growth by +6.2% (Russell 1000 Value +9.4% vs. Russell 1000 Growth +3.2%). Despite size and style factors performing well during the quarter, both have done poorly over the past year, with small cap and value underperforming by -8.9% and -14.4%, respectively.

Sector performance differences continue to fuel significant volatility across size and style factors. The Information

Technology sector, which has a much greater concentration to Growth stocks, has delivered outside performance. Mega cap technology companies have led other S&P 500 constituents during the past year. On the other hand, the Energy sector which has a much greater concentration of Value stocks, has lagged the overall index considerably over the same time period. For investors who engage in tactical factor timing, the current environment has likely proved particularly difficult to do so profitably.

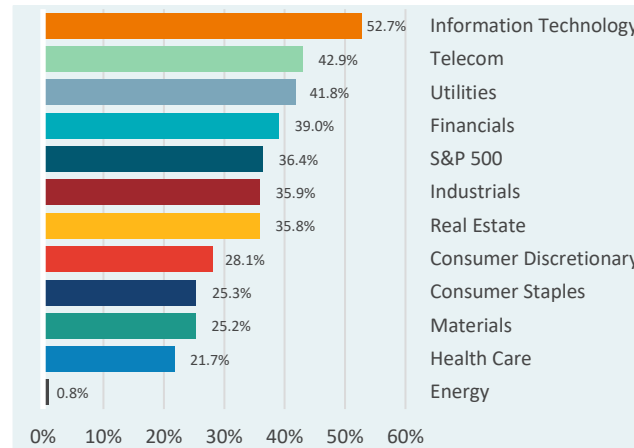
Despite a strong showing in Q3, small cap and value underperformed by -8.9% and -14.4% over the past year, respectively

VALUE VS. GROWTH 1-YR ROLLING



Source: FTSE, as of 9/30/24

S&P 500 SECTOR RETURNS (PAST 1 YEAR)



Source: Standard & Poor's, as of 9/30/24

1-YEAR SIZE & STYLE PERFORMANCE

	Value	Core	Growth
Large Cap	27.8%	35.7%	42.2%
Mid Cap	29.0%	29.3%	29.3%
Small Cap	25.9%	26.8%	27.7%

Source: FTSE, as of 9/30/24

# International developed equity

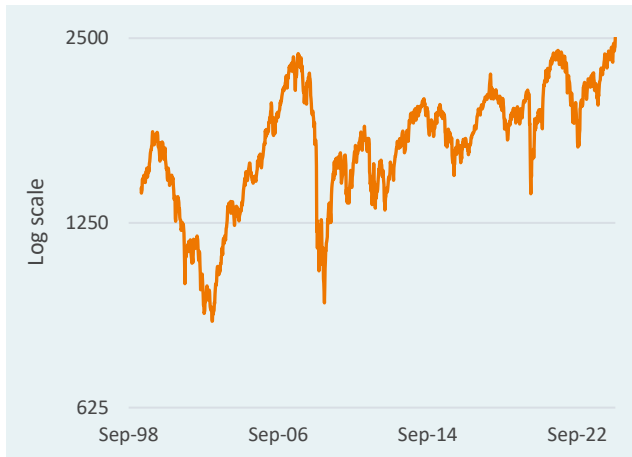
International developed shares (MSCI EAFE +7.3%) outperformed the U.S. market (S&P 500 +5.9%) during the quarter, but trailed emerging market equities (MSCI EM +8.7%). It should be noted that most of this performance was due to currency movements, rather than equity market performance. Unhedged currency exposure contributed +5.8% of the +7.3% index total return.

On a hedged basis, the international developed equity market underperformed the rest of the world (MSCI EAFE Hedged +1.5%). Many developed economies face more sluggish growth, with Europe's largest economy, Germany, now expected to contract -0.2% this year. High energy prices and increased competition with China have weighed on

European manufacturing. The European Union announced duties on these foreign exports with the goal of protecting their manufacturing sector. The European Central Bank has also implemented an accelerated rate cutting cycle in comparison to the U.S., where inflation is under the 2% target, and rate cuts may be necessary to stimulate growth.

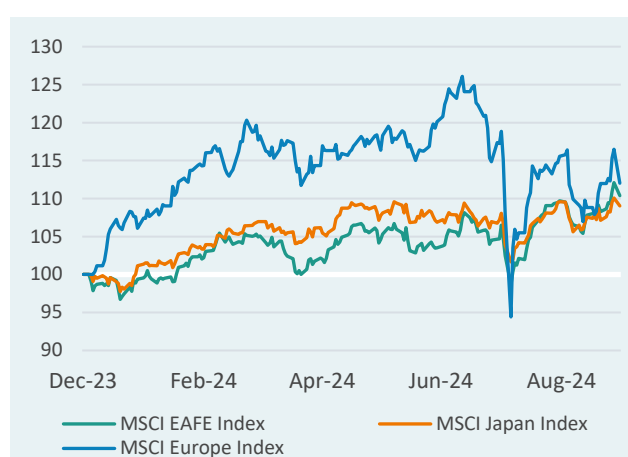
Japanese equities saw significant volatility in Q3, as an unexpected rate hike followed by weak U.S. economic data triggered what appeared to be the unwinding of a carry trade, triggering a sharp sell-off. Japanese equities recovered most of these losses, but the MSCI Japan (hedged) ended the quarter down -4.0%.

INTERNATIONAL DEVELOPED EQUITY



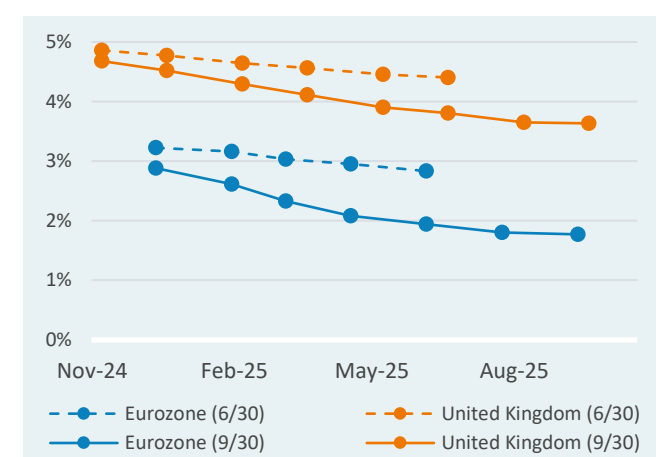
Source: MSCI, as of 9/30/24

MSCI EAFE PERFORMANCE



Source: MSCI, as of 9/30/24

ECB & BOE RATE EXPECTATIONS VS Q2



Source: Bloomberg, as of 9/30/24

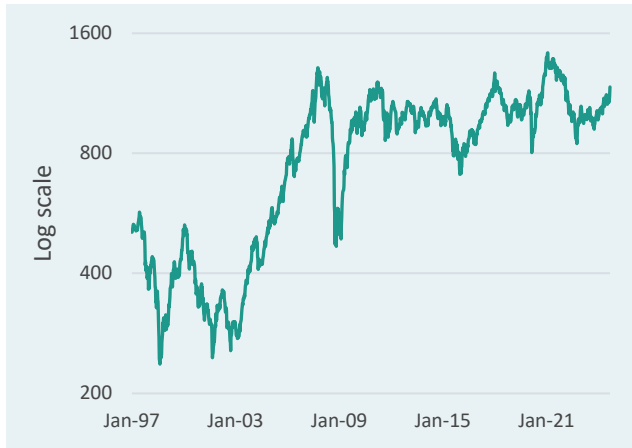
# Emerging market equity

Emerging market equities (MSCI EM +8.7%) outperformed both international developed (MSCI EAFE +7.3%) and domestic equities (S&P 500 +5.9%) over the quarter. After dragging the index lower for multiple years, Chinese equities delivered an aggressive rally in September on government stimulus news, though in early October this reversed and much of those gains were lost.

China announced an aggressive economic stimulus program in September, with President Xi pledging both fiscal and

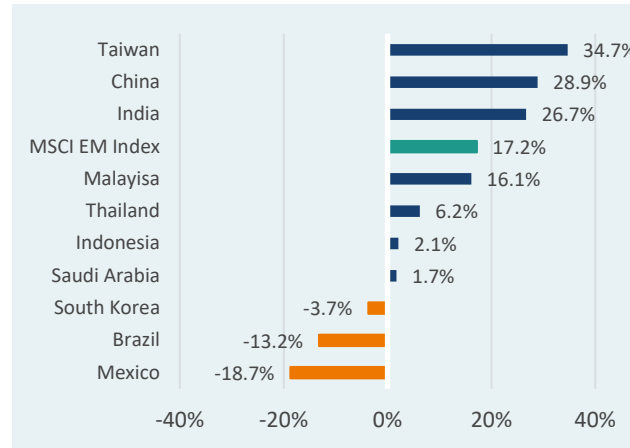
monetary support. Spending was specifically aimed at the ailing real estate market, and at mitigating the downward trajectory of the stock market. Those moves followed the People's Bank of China rate cut from 2.3% to 2.0%. It is not yet clear whether these developments will be sufficient to help turn around the Chinese economy, which faces serious structural issues such as a declining population, shrinking workforce, and a real estate crisis due to substantial excess inventory.

EMERGING MARKET EQUITY



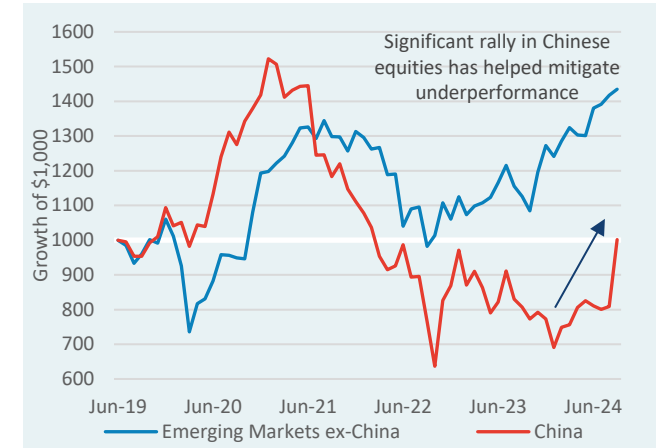
Source: MSCI, as of 9/30/24

MSCI EM 2024 SECTOR RETURNS YTD (USD)



Source: MSCI, J.P. Morgan, as of 9/30/24

CHINA UNDERPERFORMANCE PARTLY REVERSED



Source: MSCI, as of 9/30/24



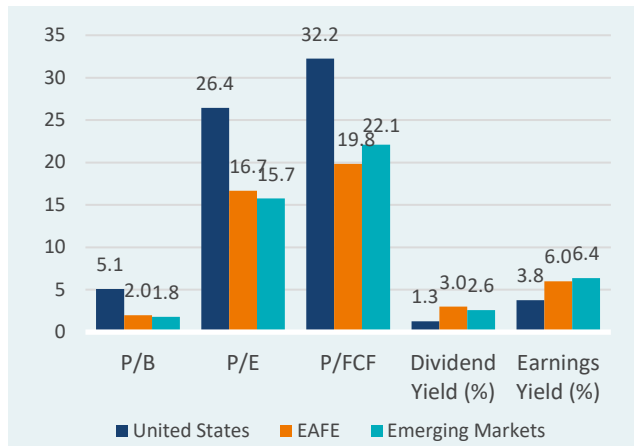
# Equity valuations

Valuations moved higher in Q3, fueled by central bank rate cut news, further signs of inflation normalization, and a generally great corporate earnings outlook. The U.S. continues to trade at a large premium to other markets, though high multiples can be partly attributed to the importance of the Information Technology sector in the index (which tends to demand a higher price-to-earnings ratio than other sectors), a stronger expected earnings growth rate, and a business environment that has more effectively fostered innovation.

As U.S. stock valuations head upwards and growth stocks play

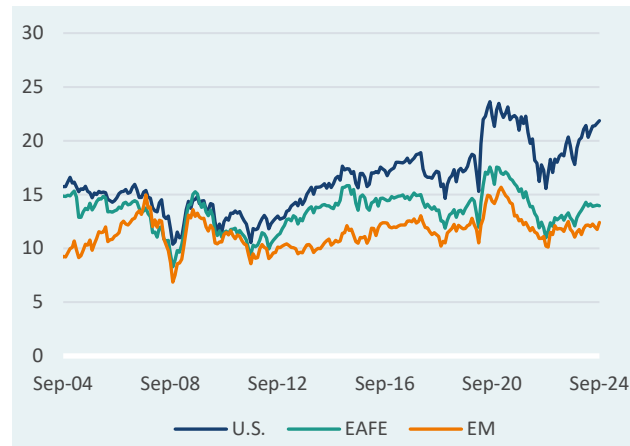
a larger role in the index, these effects have pushed total index dividend yield to a historically depressed level of 1.4%, as of September 30<sup>th</sup>. Meanwhile, non-U.S. stocks offer a 3.3% dividend yield (MSCI ACWI ex-U.S.). This is a large gap and has rarely occurred historically. However, changes in yield appear partly due to fundamental changes in marketplace characteristics, such as a greater proportion of the index being comprised of high growth companies that choose to reinvest a greater share of earnings, rather than paying those earnings out in the form of dividends.

**MSCI VALUATION METRICS (3-MONTH AVG)**



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

**FORWARD PRICE/EARNINGS RATIO**



Source: MSCI, Verus, as of 9/30/24

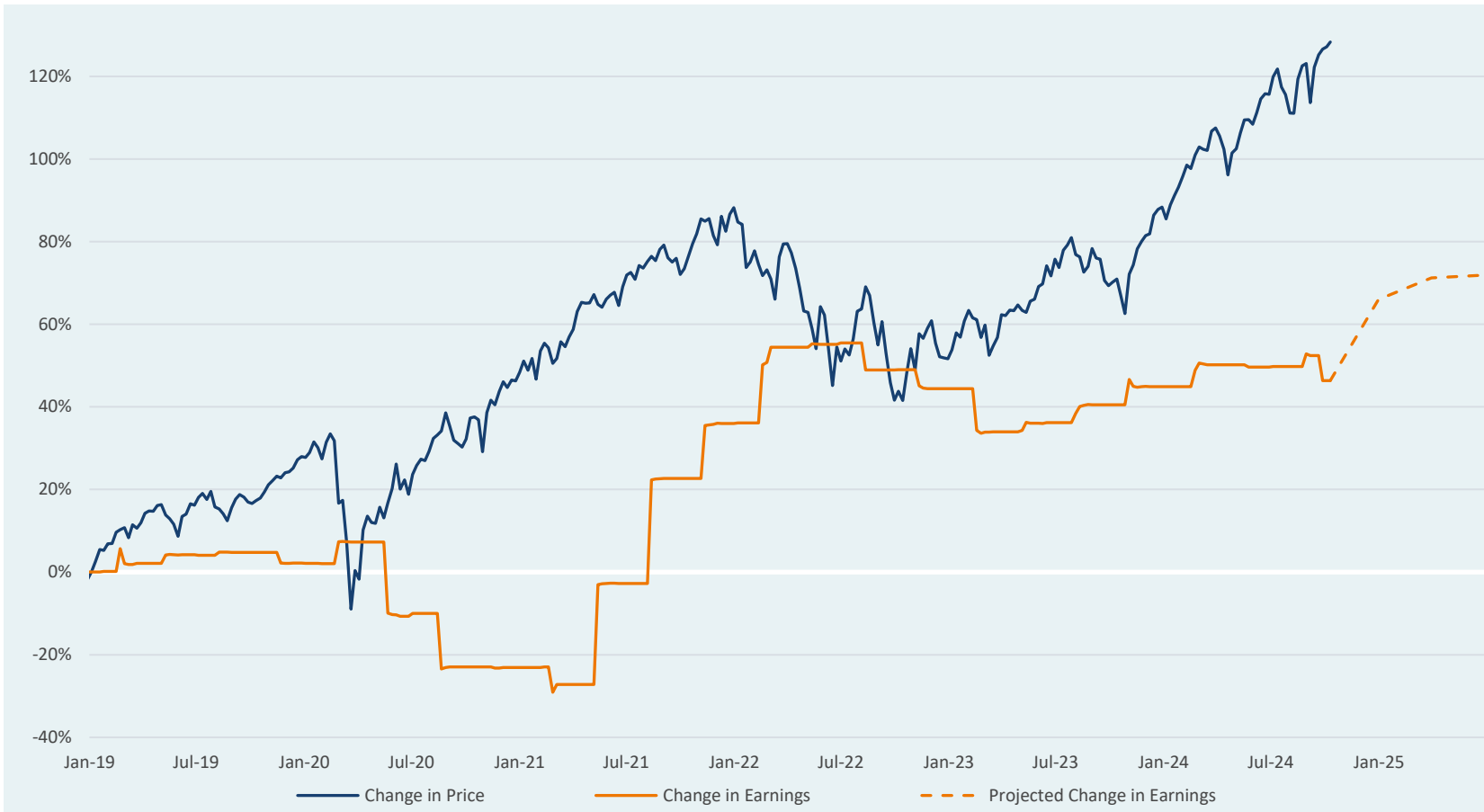
**S&P 500 HISTORICAL DIVIDEND YIELD**



Source: Standard & Poor's, Verus, as of 9/30/24

# Lofty U.S. equity valuations, but strong earnings are expected

S&P 500 PRICE GROWTH VS. EARNINGS GROWTH (SINCE 2019)



Valuations are in the 94th percentile relative to history, meaning multiples have only been this expensive 6% of the time.

But higher valuations may be partly justified by strong earnings forecasts

Source: Standard & Poor's, Verus, as of 10/10/24

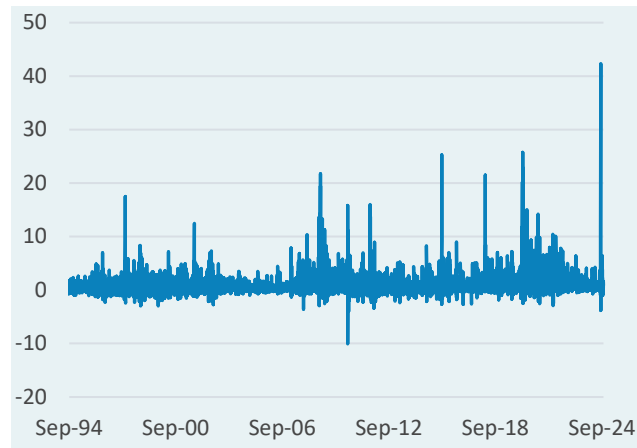
# Market volatility

Market-priced volatility (Cboe VIX Index) rose during Q3, starting the quarter at 12.4% and ending at 16.7%—closer to the longer-term average of 19.5%. On August 5<sup>th</sup>, volatility spiked 42 points to 66, making the largest one day jump in volatility in modern market history. The previous record was set during market turmoil among COVID-19 lockdowns. This market shock in August was widely attributed to unwinding of carry trade positions (borrowing in Yen to purchase U.S. equities) following a weak labor market data release, as well as an unexpected interest rate hike from the Bank of Japan. Volatility has since subsided, and markets have recovered much of their losses. With valuations at elevated levels, it would not be surprising to see further market shakiness.

Bond market volatility remains significantly above the longer-term average, but has trended downward as inflation risk has eased, and economic conditions have outperformed expectations. The Federal Reserve path to lower interest rates, and bumps that will inevitably occur along that path, could result in elevated fixed income volatility.

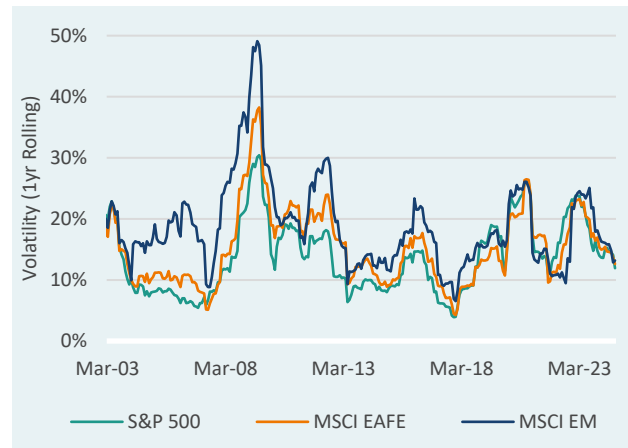
Recent realized one-year volatility has drifted to very low levels, despite uncertainty around inflation and interest rates, geopolitical risk flareups, and the upcoming election. Domestic and foreign markets showed similar volatility levels during that time.

## U.S. IMPLIED VOLATILITY (VIX)



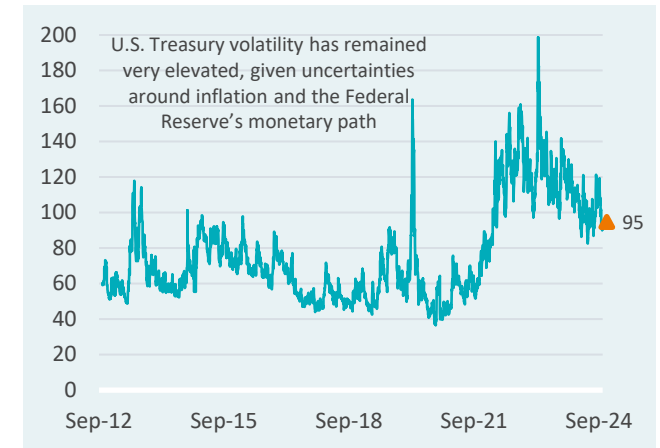
Source: Cboe, as of 9/30/24

## REALIZED VOLATILITY



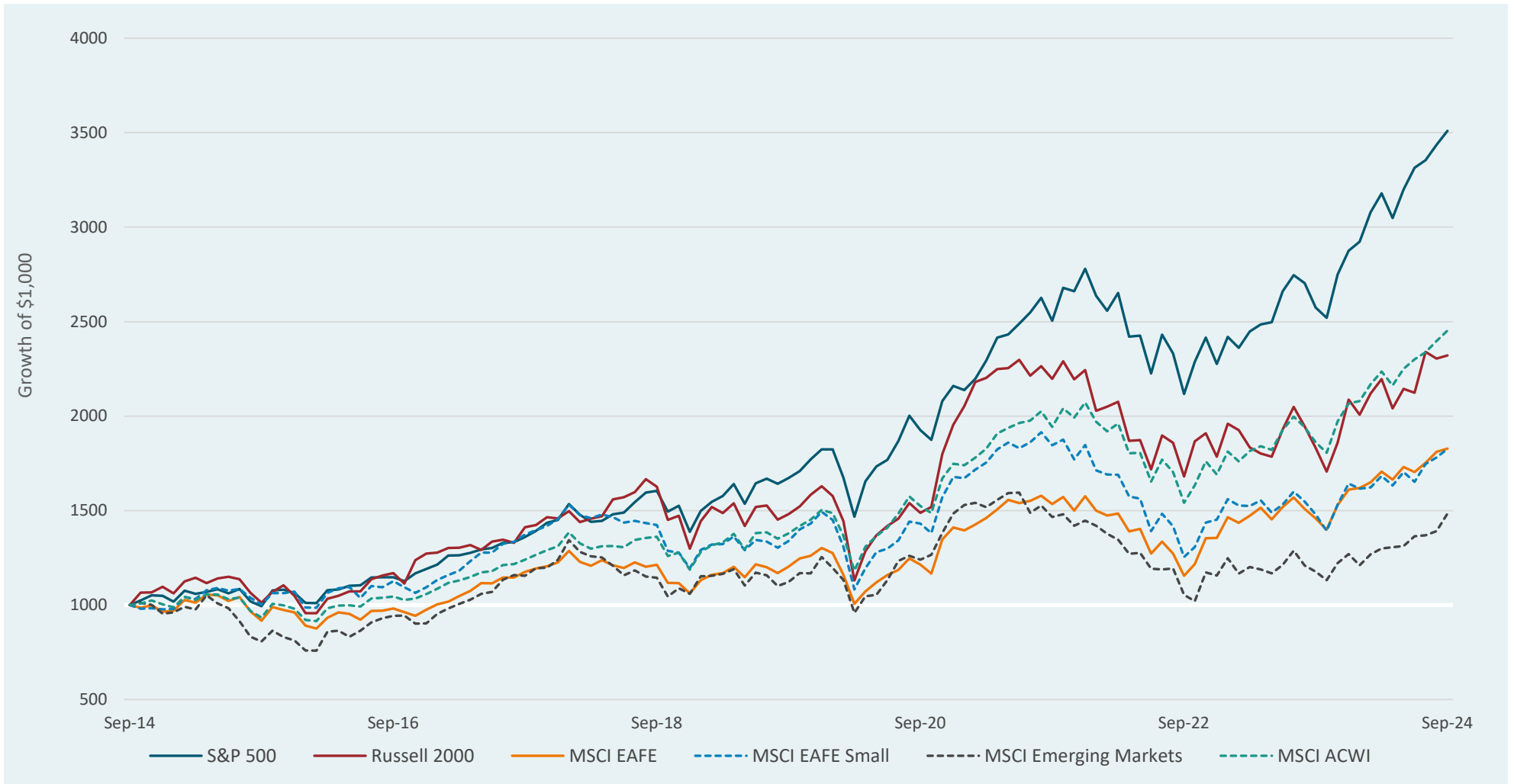
Source: Standard & Poor's, MSCI, Verus, as of 9/30/24

## U.S. TREASURY IMPLIED VOL ("MOVE" INDEX)



Source: BofA, as of 9/30/24

# Long-term equity performance



Source: Standard & Poor's, FTSE, MSCI, Verus, as of 9/30/24

# Other assets

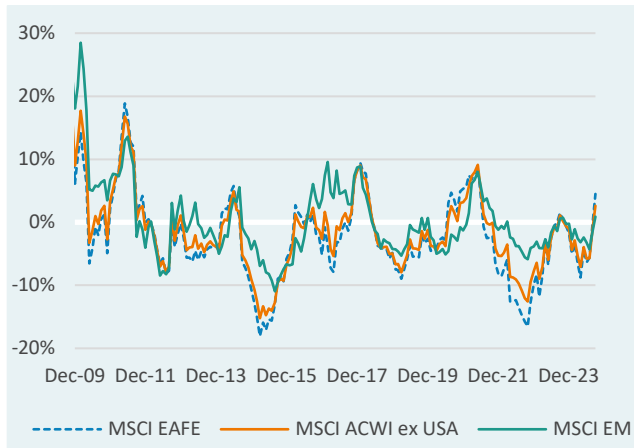
# Currency

U.S. dollar weakness resulted in gains for investors with unhedged foreign currency exposure. Market expectations for Federal Reserve rate cuts have become fairly aggressive over the past month, following the surprise 50 basis point cut on September 18<sup>th</sup>. This has contributed to dollar weakness— expectations for lower rates in the future make holding the U.S. dollars less attractive.

Investors without a currency hedging program gained +5.8% from their international developed equity exposure (MSCI EAFE) during the quarter due to currency movements, and +3.9% over the past year. The return impact from unhedged Japanese currency exposure, which has delivered extreme losses in recent quarters, sharply reversed direction and resulted in a +10.9% gain (represented by the TOPIX Index).

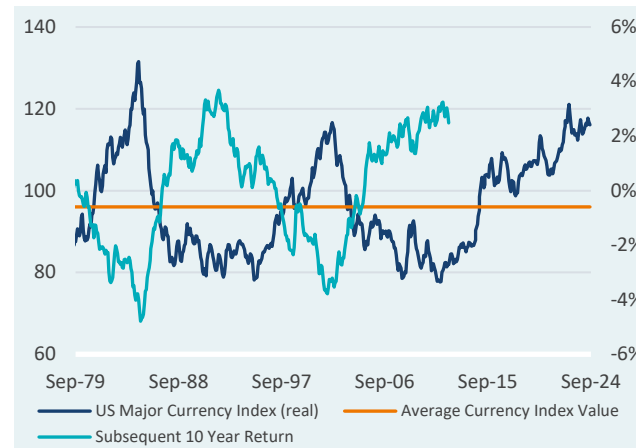
A more thoughtful portfolio approach to currency exposure has provided the dual benefit of lower portfolio volatility and also higher returns—a rare proposition in markets. This approach involves reducing the uncompensated risk of unhedged foreign currency exposure, and instead of unhedged exposure,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

## EFFECT OF CURRENCY (1-YEAR ROLLING)



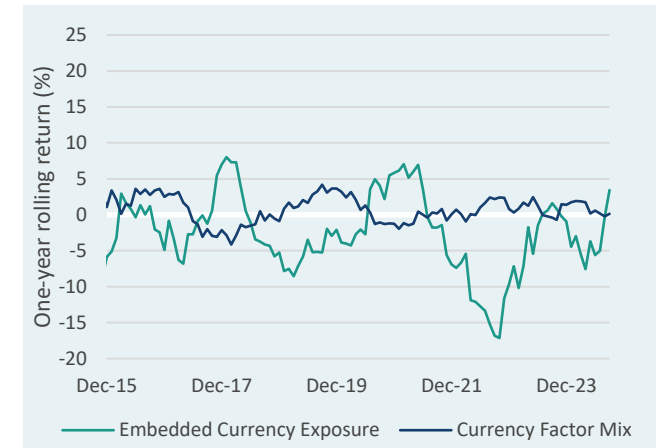
Source: MSCI, Verus, as of 9/30/24

## U.S. DOLLAR MAJOR CURRENCY INDEX



Source: FRED, Verus, as of 9/30/24

## EMBEDDED CURRENCY VS CURRENCY FACTORS



Source: MSCI, Verus, as of 9/30/24 "Embedded Currency Exposure" is the currency return impact from not hedging currency risk



# Appendix

# Periodic table of returns

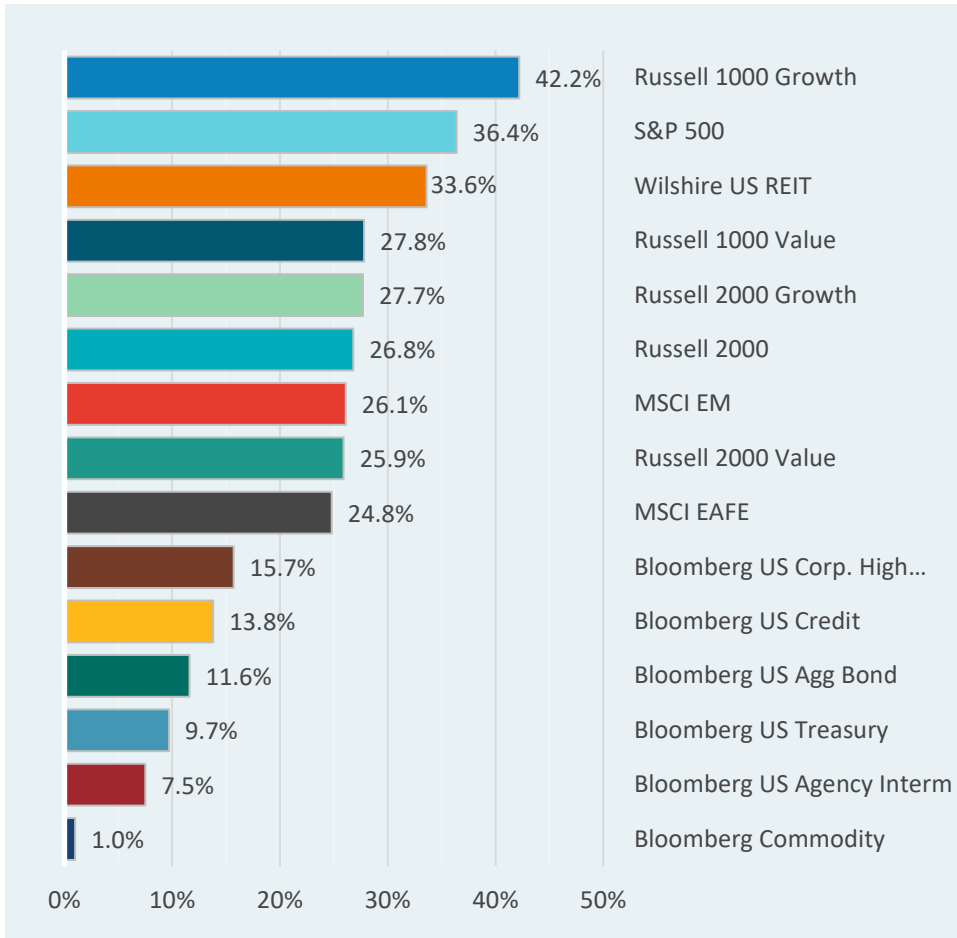
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	5-Year	10-Year
Large Cap Growth	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	38.5	28.3	16.1	42.7	24.5	19.7	16.5
Large Cap Equity	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	31.4	34.6	27.6	9.4	26.5	21.2	15.6	13.1
Emerging Markets Equity	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	28.5	21.0	27.1	1.5	18.7	16.9	10.7	9.2
Large Cap Value	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	26.5	20.0	26.5	-4.7	18.2	16.7	7.8	8.9
Small Cap Growth	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	25.5	18.3	25.2	-7.5	16.9	13.2	9.3	8.8
International Equity	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	22.4	14.0	17.7	-13.0	15.4	13.0	9.4	6.4
60/40 Global Portfolio	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	22.0	10.3	14.8	-14.5	14.6	12.5	8.2	8.2
Small Cap Equity	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	18.6	7.8	11.3	-14.5	11.5	11.2	8.8	5.0
Small Cap Value	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	18.4	7.5	8.9	-17.3	9.8	9.2	5.7	5.7
Hedge Funds of Funds	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	8.7	4.6	6.5	-19.1	6.3	6.0	5.3	3.6
Commodities	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	7.8	2.8	2.8	-20.1	5.5	5.9	3.8	4.0
US Bonds	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	7.7	0.5	0.0	-20.4	5.0	4.4	5.7	1.5
Cash	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	6.4	0.5	-1.5	-26.4	-7.9	4.0	2.1	1.8
Real Estate	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	2.1	-3.1	-2.5	-29.1	-7.9	-1.2	0.3	0.0



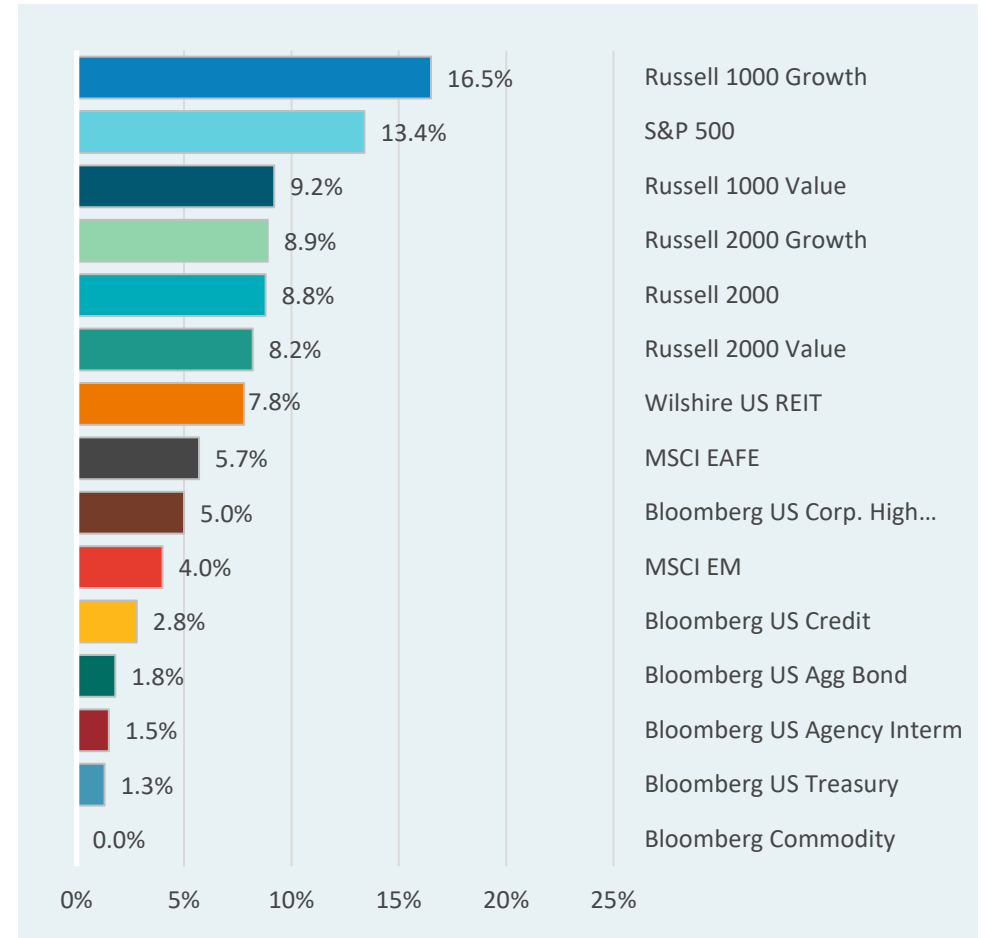
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, Bloomberg Global Bond. NCREIF Property Index performance data as of 6/30/24.

# Major asset class returns

ONE YEAR ENDING SEPTEMBER



TEN YEARS ENDING SEPTEMBER



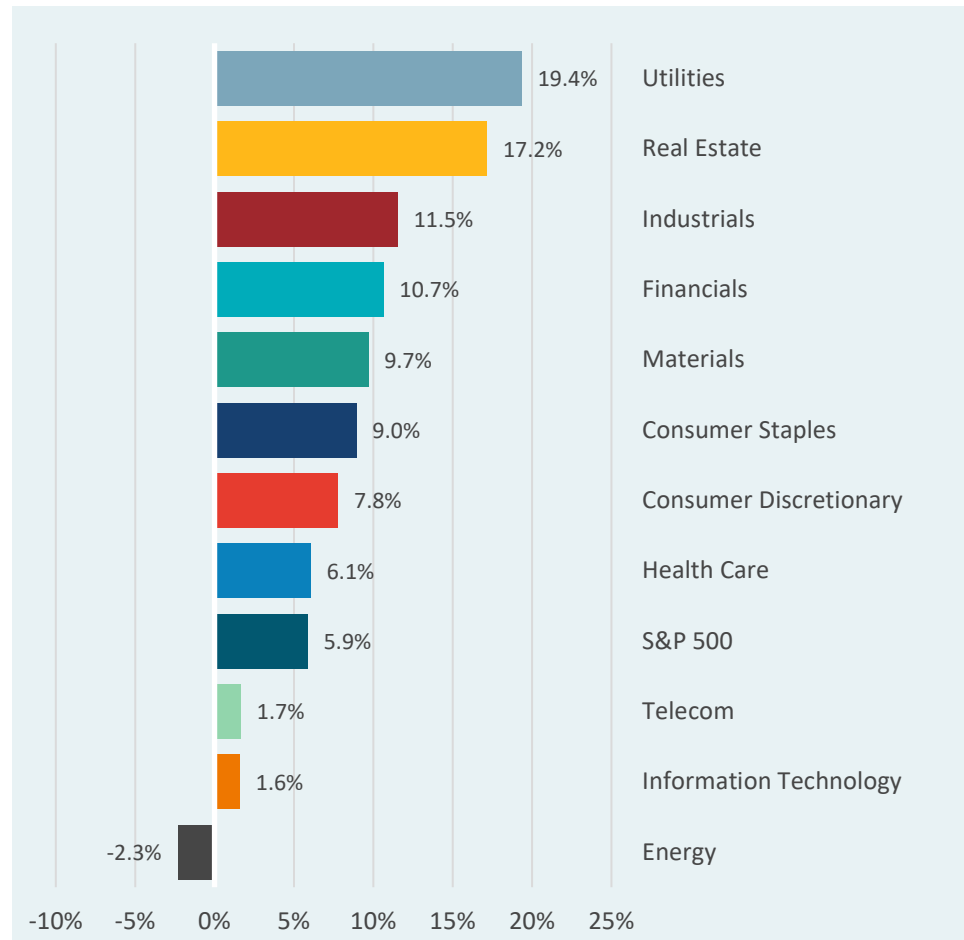
\*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 9/30/24

Source: Morningstar, as of 9/30/24

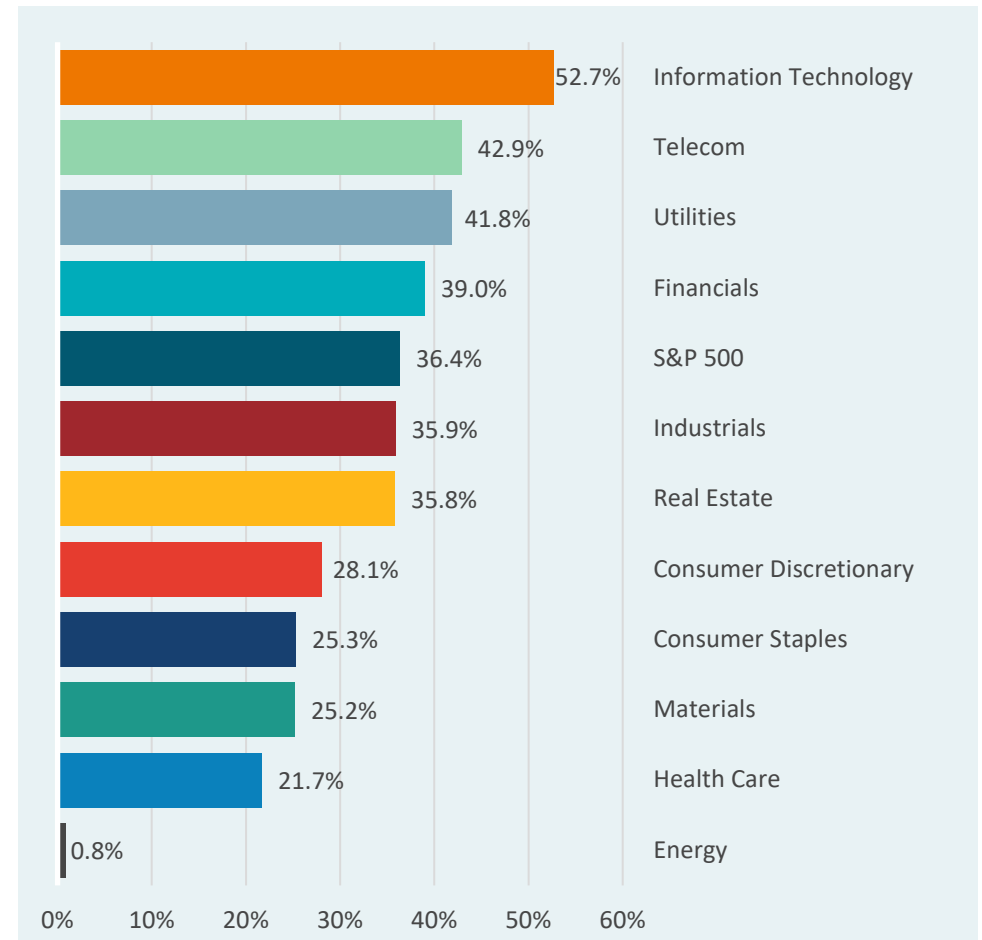
# S&P 500 sector returns

QTD



Source: Morningstar, as of 9/30/24

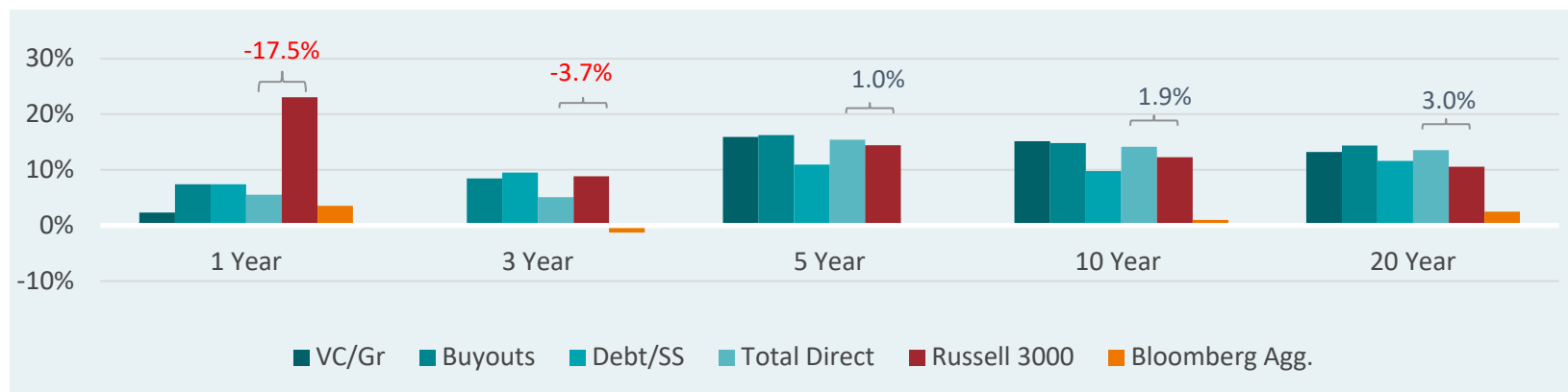
ONE YEAR ENDING AUGUST



Source: Morningstar, as of 9/30/24

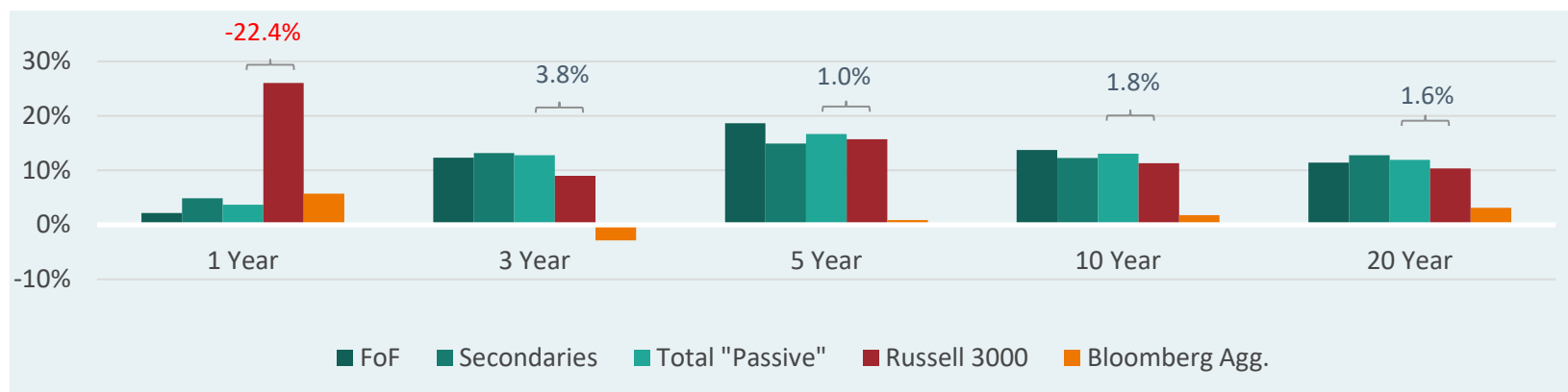
# Private equity vs. traditional assets performance

## DIRECT PRIVATE EQUITY FUND INVESTMENTS



Direct P.E Fund Investments vs. public equities has been mixed.

## "PASSIVE" STRATEGIES

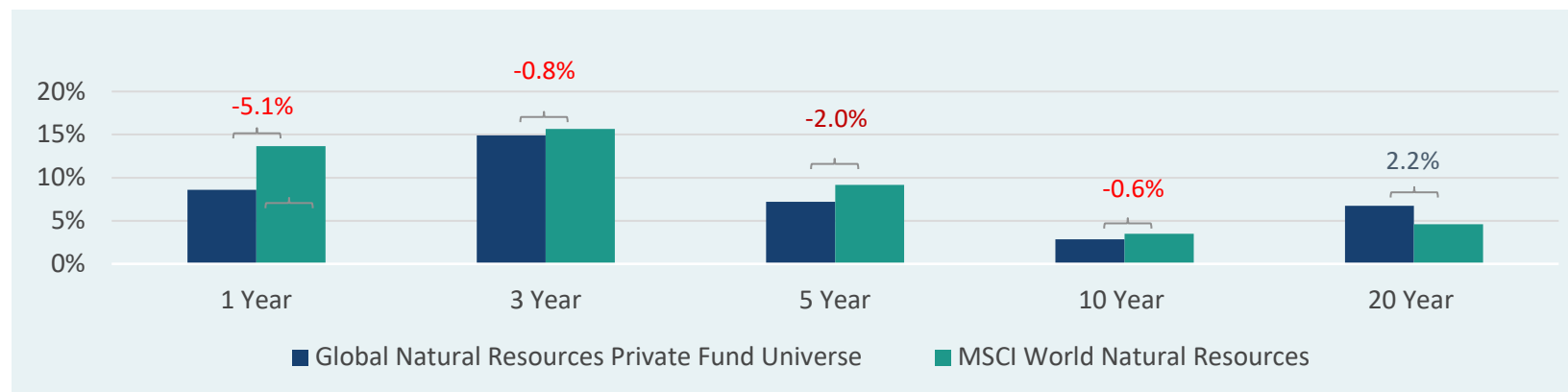


"Passive" strategies outperformed comparable public equities across all time periods, aside from the 1-year.

Sources: FTSE PME: U.S. Direct Private Equity returns are as of June 30, 2024, whereas "Passive" strategies as of March 31, 2024. Public Market Equivalent returns resulted from "Total Passive" and Total Direct's identical cash flows invested into and distributed from respective traditional asset comparable.

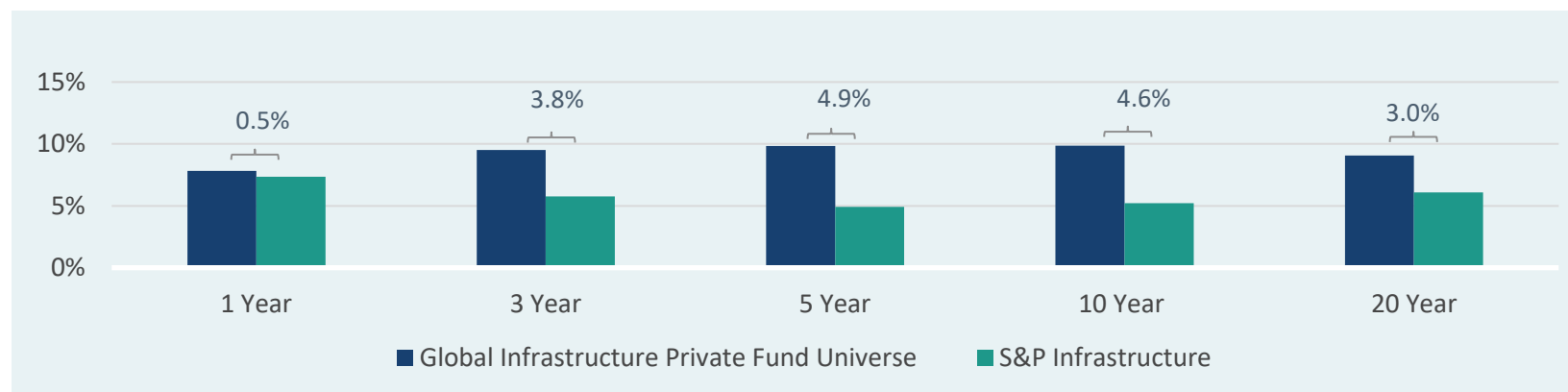
# Private vs. liquid real assets performance

## GLOBAL NATURAL RESOURCES FUNDS



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

## GLOBAL INFRASTRUCTURE FUNDS



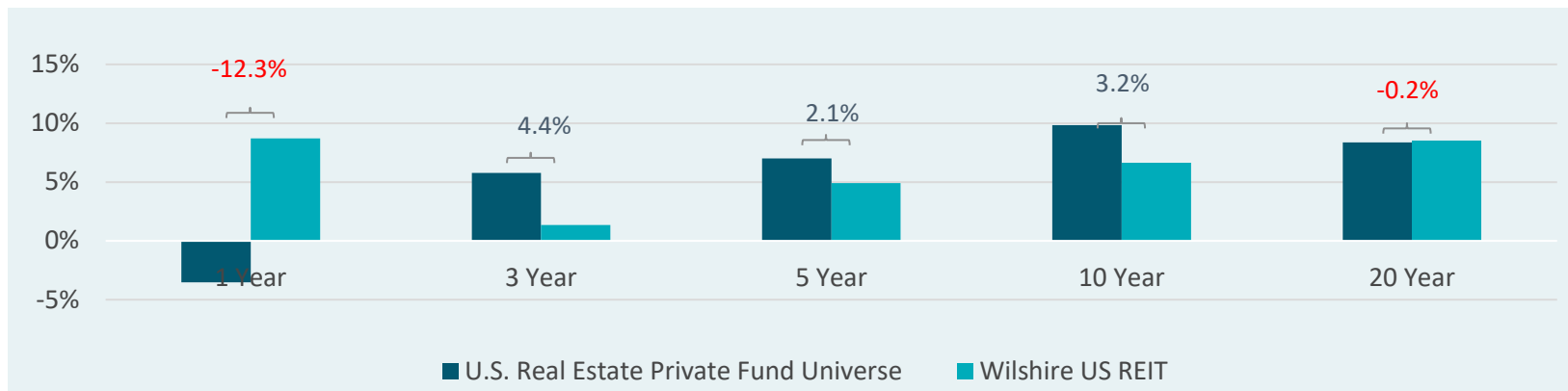
Infra. funds outperformed the S&P Infra. across all periods.

Sources: FTSE PME: Global Natural Resources (vintage 1999 and later, inception of MSCI World Natural Resources benchmark) and Global Infrastructure (vintage 2002 and later, inception of S&P Infrastructure benchmark) universes as of June 30, 2024. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.



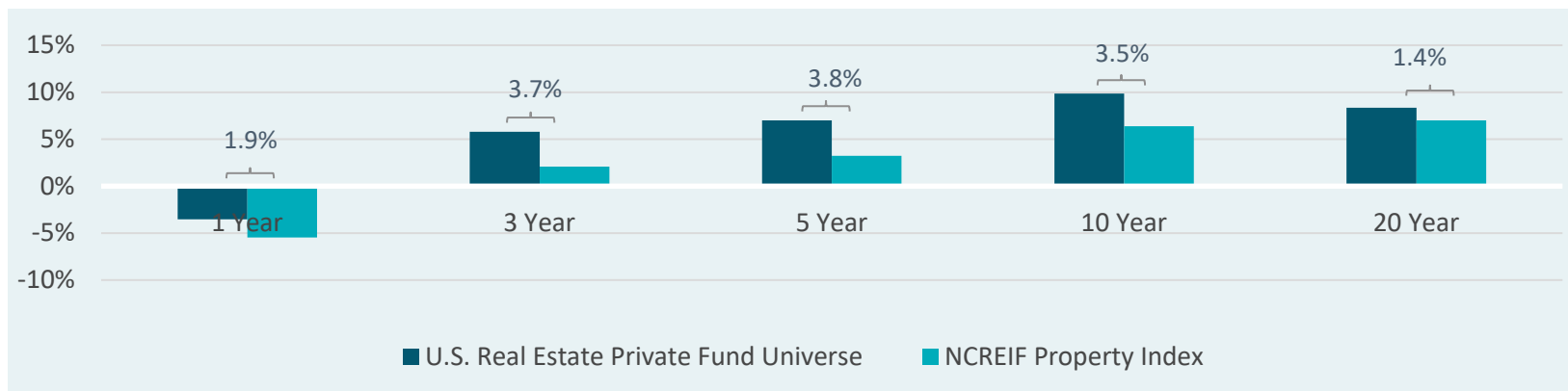
# Private vs. liquid and core real estate performance

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



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

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



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

Sources: FTSE PME: U.S. Real Estate universes as of June 30, 2024. 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
<b>Core Index</b>							
S&P 500	2.1	5.9	22.1	36.4	11.9	16.0	13.4
S&P 500 Equal Weighted	2.3	9.6	15.2	28.8	8.2	12.8	11.1
DJ Industrial Average	2.0	8.7	13.9	28.8	10.0	11.8	12.0
Russell Top 200	2.1	5.2	23.3	37.7	12.6	17.2	14.1
Russell 1000	2.1	6.1	21.2	35.7	10.8	15.6	13.1
Russell 2000	0.7	9.3	11.2	26.8	1.8	9.4	8.8
Russell 3000	2.1	6.2	20.6	35.2	10.3	15.3	12.8
Russell Mid Cap	2.2	9.2	14.6	29.3	5.8	11.3	10.2
<b>Style Index</b>							
Russell 1000 Growth	2.8	3.2	24.5	42.2	12.0	19.7	16.5
Russell 1000 Value	1.4	9.4	16.7	27.8	9.0	10.7	9.2
Russell 2000 Growth	1.3	8.4	13.2	27.7	(0.4)	8.8	8.9
Russell 2000 Value	0.1	10.2	9.2	25.9	3.8	9.3	8.2

## INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
MSCI ACWI	2.3	6.6	18.7	31.8	8.1	12.2	9.4
MSCI ACWI ex US	2.7	8.1	14.2	25.4	4.1	7.6	5.2
MSCI EAFE	0.9	7.3	13.0	24.8	5.5	8.2	5.7
MSCI EM	6.7	8.7	16.9	26.1	0.4	5.7	4.0
MSCI EAFE Small Cap	2.6	10.5	11.1	23.5	(0.4)	6.4	6.2
<b>Style Index</b>							
MSCI EAFE Growth	0.4	5.7	12.3	26.5	1.9	7.7	6.6
MSCI EAFE Value	1.4	8.9	13.8	23.1	8.9	8.3	4.6
<b>Regional Index</b>							
MSCI UK	0.3	7.9	15.4	23.3	9.8	7.9	4.1
MSCI Japan	(0.6)	5.7	12.4	21.6	2.7	7.1	6.4
MSCI Euro	1.8	6.9	12.8	27.3	6.7	9.1	5.7
MSCI EM Asia	8.0	9.5	21.6	29.7	0.8	7.2	5.6
MSCI EM Latin American	0.1	3.7	(12.5)	2.8	7.2	2.1	0.6

## FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
Bloomberg US TIPS	1.5	4.1	4.9	9.8	(0.6)	2.6	2.5
Bloomberg US Treasury Bills	0.5	1.4	4.1	5.6	3.5	2.3	1.7
Bloomberg US Agg Bond	1.3	5.2	4.4	11.6	(1.4)	0.3	1.8
Bloomberg US Universal	1.4	5.2	4.9	12.1	(1.1)	0.7	2.2
<b>Duration</b>							
Bloomberg US Treasury 1-3 Yr	0.8	2.9	4.1	6.8	1.3	1.5	1.4
Bloomberg US Treasury Long	2.0	7.8	2.4	15.4	(8.4)	(4.3)	1.1
Bloomberg US Treasury	1.2	4.7	3.8	9.7	(1.8)	(0.2)	1.3
<b>Issuer</b>							
Bloomberg US MBS	1.2	5.5	4.5	12.3	(1.2)	0.0	1.4
Bloomberg US Corp. High Yield	1.6	5.3	8.0	15.7	3.1	4.7	5.0
Bloomberg US Agency Interm	0.9	3.1	4.2	7.5	0.5	1.1	1.5
Bloomberg US Credit	1.7	5.7	5.2	13.8	(1.1)	1.1	2.8

## OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Index</b>							
Bloomberg Commodity	4.9	0.7	5.9	1.0	3.7	7.8	0.0
Wilshire US REIT	2.6	15.2	14.9	33.6	4.6	5.4	7.8
CS Leveraged Loans	0.7	2.1	6.6	9.7	6.3	5.6	4.9
S&P Global Infrastructure	3.8	13.4	18.0	30.9	9.6	6.9	6.3
Alerian MLP	(0.4)	0.7	20.0	23.6	25.3	12.5	1.6
<b>Regional Index</b>							
JPM EMBI Global Div	1.8	6.2	8.6	18.6	(0.4)	0.9	3.3
JPM GBI-EM Global Div	3.4	9.0	4.9	13.4	0.6	0.6	0.6
<b>Hedge Funds</b>							
HFRI Composite	0.3	1.3	6.2	10.7	3.4	7.0	4.9
HFRI FOF Composite	0.2	1.1	6.0	9.3	2.3	5.3	3.6
<b>Currency (Spot)</b>							
Euro	0.8	4.1	1.0	5.4	(1.3)	0.5	(1.2)
Pound Sterling	2.1	6.1	5.2	9.9	(0.2)	1.7	(1.9)
Yen	1.8	12.5	(1.4)	4.3	(8.0)	(5.5)	(2.6)

Source: Morningstar, HFRI, as of 9/30/24

# Definitions

**Bloomberg US Weekly Consumer Comfort Index** - tracks the public's economic attitudes each week, providing a high-frequency read on consumer sentiment. The index, based on cell and landline telephone interviews with a random, representative national sample of U.S. adults, tracks Americans' ratings of the national economy, their personal finances and the buying climate on a weekly basis, with views of the economy's direction measured separately each month. ([www.lanqerresearch.com](http://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](http://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: September 30, 2024



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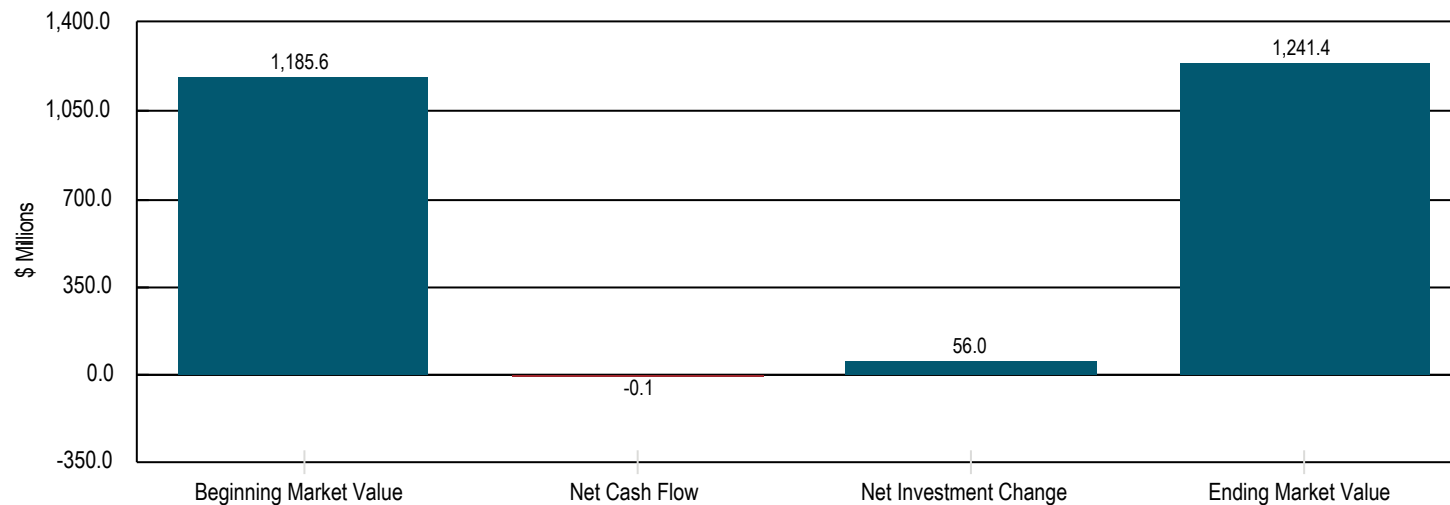
Total Fund  
Portfolio Reconciliation

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

Portfolio Reconciliation

	Last Three Months	YTD	Fiscal Year-To-Date	One Year
Beginning Market Value	\$1,185,622,490	\$1,131,753,444	\$1,185,622,490	\$1,064,910,729
Net Cash Flows	-\$75,197	-\$9,200,961	-\$75,197	-\$14,131,014
Net Investment Change	\$55,992,824	\$119,135,716	\$55,992,824	\$190,908,484
<b>Ending Market Value</b>	<b>\$1,241,391,951</b>	<b>\$1,241,391,951</b>	<b>\$1,241,391,951</b>	<b>\$1,241,391,951</b>

Change in Market Value  
Last Three Months



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

Total Fund  
Executive Summary (Net of Fees)

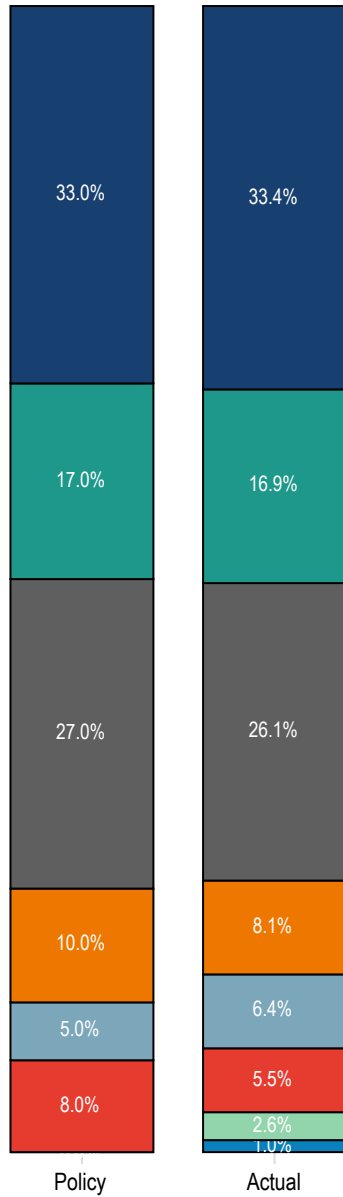
Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

	Market Value	% of Portfolio	QTD	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>Total Fund</b>	<b>1,241,391,951</b>	<b>100.0</b>	<b>4.5</b>	<b>10.2</b>	<b>4.5</b>	<b>17.7</b>	<b>4.6</b>	<b>8.4</b>	<b>7.2</b>
<i>Policy Index</i>			4.9	10.8	4.9	19.0	4.8	8.5	7.5
<i>InvMetrics Public DB Rank</i>			84	78	84	81	50	49	56
<b>Total Domestic Equity</b>	<b>414,713,871</b>	<b>33.4</b>	<b>6.2</b>	<b>20.6</b>	<b>6.2</b>	<b>35.2</b>	<b>10.3</b>	<b>15.3</b>	<b>12.8</b>
<i>Russell 3000 Index</i>			6.2	20.6	6.2	35.2	10.3	15.3	12.8
<b>Total International Equity</b>	<b>209,733,348</b>	<b>16.9</b>	<b>6.6</b>	<b>12.2</b>	<b>6.6</b>	<b>22.8</b>	<b>4.2</b>	<b>7.6</b>	<b>5.3</b>
<i>MSCI AC World ex USA Index</i>			8.2	14.7	8.2	26.0	4.7	8.1	5.7
<b>Total Fixed Income</b>	<b>323,723,831</b>	<b>26.1</b>	<b>5.1</b>	<b>5.4</b>	<b>5.1</b>	<b>12.2</b>	<b>-1.1</b>	<b>1.3</b>	<b>2.4</b>
<i>Blmbg. U.S. Aggregate Index</i>			5.2	4.4	5.2	11.6	-1.4	0.3	1.8
<b>Total Real Estate</b>	<b>100,885,710</b>	<b>8.1</b>	<b>-0.2</b>	<b>-6.4</b>	<b>-0.2</b>	<b>-11.1</b>	<b>-2.8</b>	<b>1.4</b>	<b>4.8</b>
<i>NCREIF Property Index</i>			0.8	-0.5	0.8	-3.5	0.9	3.3	5.9
<b>Total Private Equity</b>	<b>79,775,018</b>	<b>6.4</b>	<b>0.0</b>	<b>3.5</b>	<b>0.0</b>	<b>2.8</b>	<b>4.9</b>	<b>16.2</b>	<b>16.0</b>
<i>Private Equity Benchmark</i>			0.0	3.5	0.0	2.8	4.9	16.2	16.5
<b>Total Private Credit</b>	<b>68,511,417</b>	<b>5.5</b>	<b>0.2</b>	<b>4.1</b>	<b>0.2</b>	<b>7.1</b>	<b>8.8</b>	<b>9.4</b>	<b>N/A</b>
<i>Private Credit Benchmark</i>			0.2	4.1	0.2	7.1	8.8	10.0	N/A
<b>Total Opportunistic</b>	<b>31,678,321</b>	<b>2.6</b>	<b>0.5</b>	<b>4.6</b>	<b>0.5</b>	<b>6.9</b>	<b>9.4</b>	<b>9.7</b>	<b>7.9</b>
<i>Assumption Rate + 1%</i>			2.1	6.3	2.1	8.5	8.5	8.5	8.5

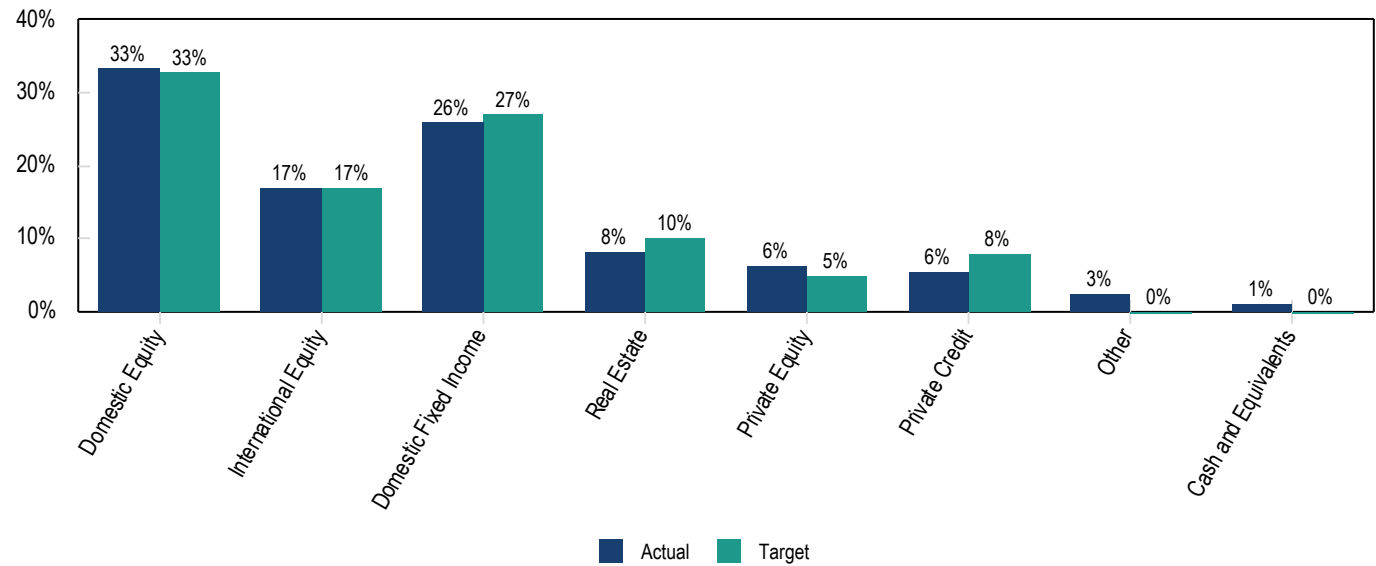
New Policy Index (as of 12/1/2023): 33% Russell 3000, 17% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 10% NCREIF Property, 5% Private Equity Benchmark, 8% Private Credit Benchmark. Prior quarter Private Equity returns, and index data are used. All returns are Net of fees. Effective 1/01/2017, only 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). Cash & Equivalents value of \$12,370,435 included in Total Fund value.

Total Fund  
Asset Allocation vs. Policy

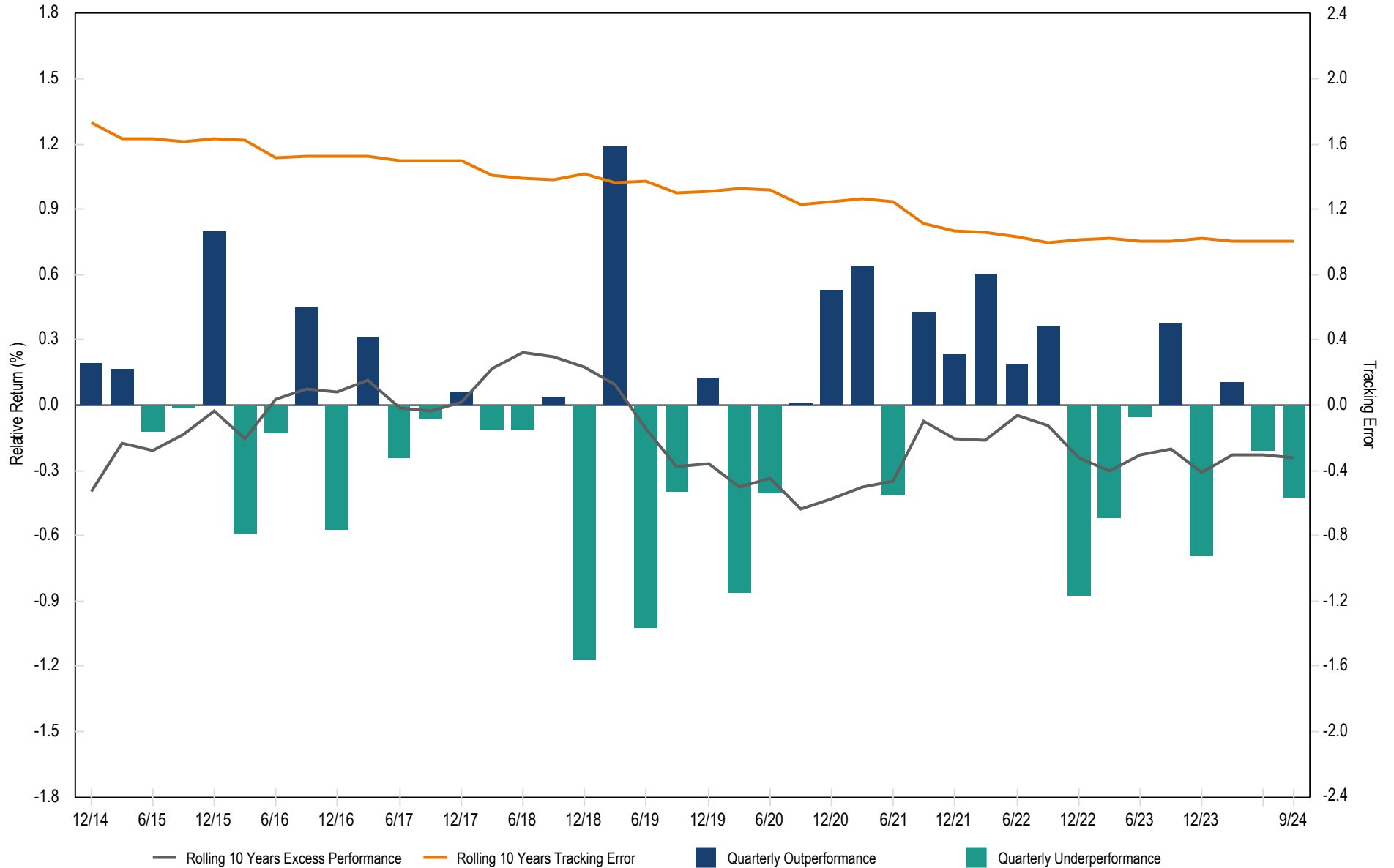
Imperial County Employees' Retirement System  
Period Ending: September 30, 2024



	Current Balance (\$)	Current Allocation (%)	Policy Allocation (%)	Excess Allocation (%)	Policy Range (%)	Within IPS Range?
Domestic Equity	414,713,871	33.4	33.0	0.4	19.0 - 39.0	Yes
International Equity	209,733,348	16.9	17.0	-0.1	14.0 - 34.0	Yes
Domestic Fixed Income	323,723,831	26.1	27.0	-0.9	17.0 - 40.0	Yes
Real Estate	100,885,710	8.1	10.0	-1.9	5.0 - 15.0	Yes
Private Equity	79,775,018	6.4	5.0	1.4	0.0 - 10.0	Yes
Private Credit	68,511,417	5.5	8.0	-2.5	0.0 - 10.0	Yes
Other	31,678,321	2.6	0.0	2.6	0.0 - 10.0	Yes
Cash and Equivalents	12,370,435	1.0	0.0	1.0	0.0 - 0.0	No
<b>Total</b>	<b>1,241,391,951</b>	<b>100.0</b>	<b>100.0</b>	<b>0.0</b>		



Rolling Annualized Excess Performance and Tracking Error

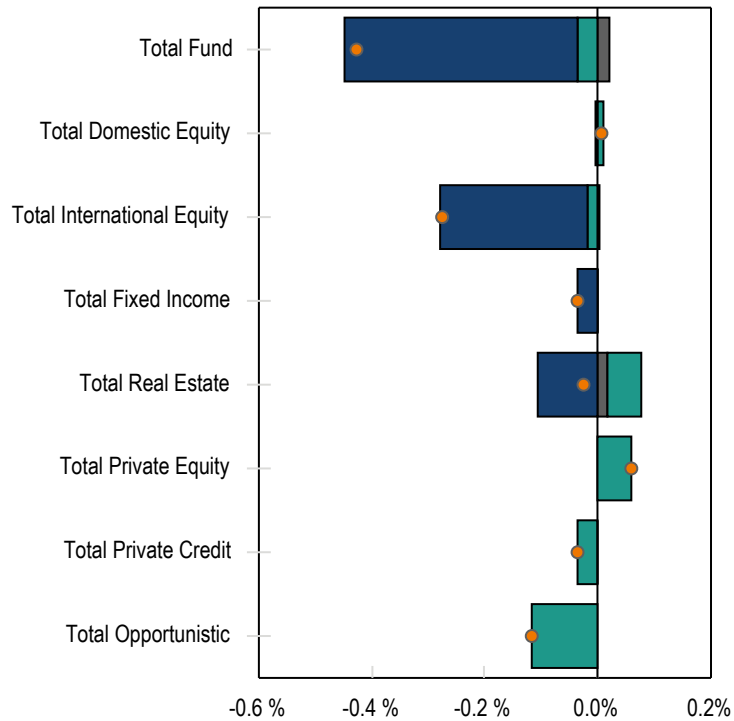




Total Fund  
Attribution Analysis - Asset Class Level (Net of Fees)

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

Attribution Effects  
Last Three Months



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

Performance Attribution

	Quarter	YTD
Wtd. Actual Return	4.5	10.2
Wtd. Index Return	4.9	10.8
<b>Excess Return</b>	<b>-0.4</b>	<b>-0.6</b>
Selection Effect	-0.4	-0.9
Allocation Effect	0.0	0.3
Interaction Effect	0.0	0.0

Attribution Summary  
Last Three Months

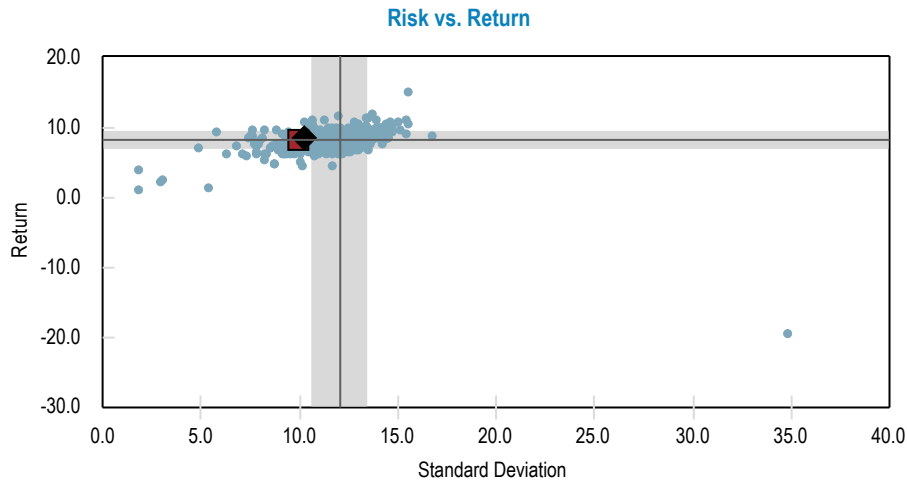
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Domestic Equity	6.2	6.2	0.0	0.0	0.0	0.0	0.0
Total International Equity	6.6	8.2	-1.6	-0.3	0.0	0.0	-0.3
Total Fixed Income	5.1	5.2	-0.1	0.0	0.0	0.0	0.0
Total Real Estate	-0.2	0.8	-1.0	-0.1	0.1	0.0	0.0
Total Private Equity	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Total Private Credit	0.2	0.2	0.0	0.0	0.0	0.0	0.0
Total Opportunistic	0.5	2.1	-1.6	0.0	-0.1	0.0	-0.1
<b>Total Fund</b>	<b>4.5</b>	<b>4.9</b>	<b>-0.4</b>	<b>-0.4</b>	<b>0.0</b>	<b>0.0</b>	<b>-0.4</b>

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

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

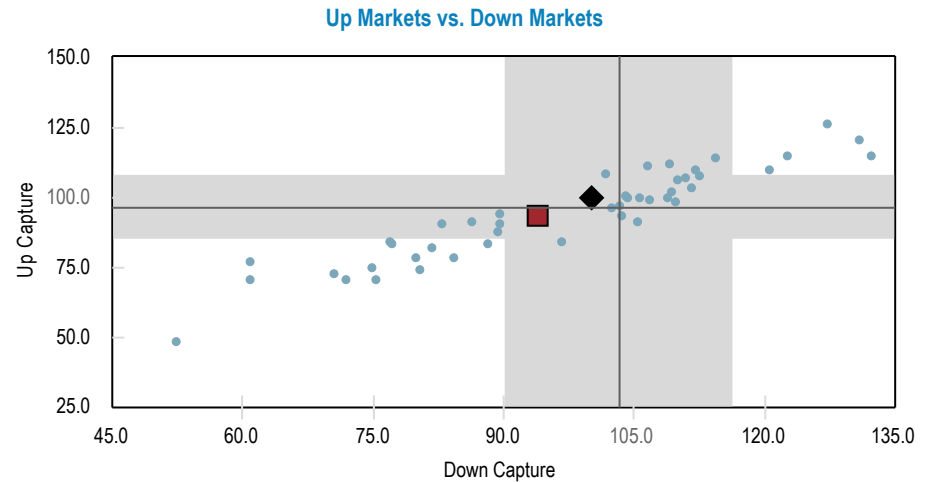
# Imperial County Employees' Retirement System Period Ending: September 30, 2024

	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	8.36	-0.19	9.95	0.08	0.97	0.95	0.99	-0.20	-0.20	97.59	97.38
Policy Index	8.53	0.00	10.22	0.00	1.00	0.00	1.00	-	-	100.00	100.00



● InvMetrics Public DB ■ Total Fund

	Return	Standard Deviation
■ Total Fund	8.36	9.95
◆ Policy Index	8.53	10.22
— Median	8.32	12.05
Population	509	509



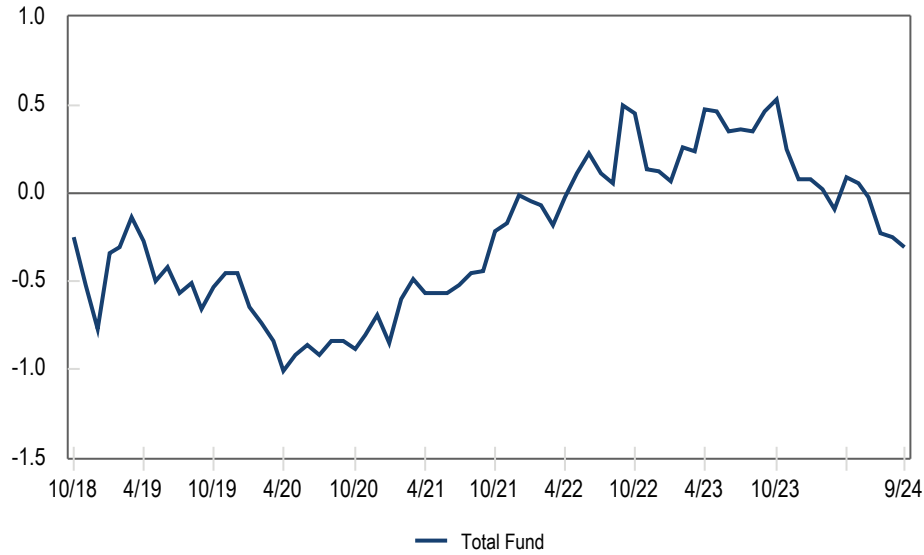
● InveMetrics Public DB ■ Total Fund

	Up Capture	Down Capture
■ Total Fund	93.91	93.84
◆ Policy Index	100.00	100.00
— Median	96.77	103.26
Population	45	45

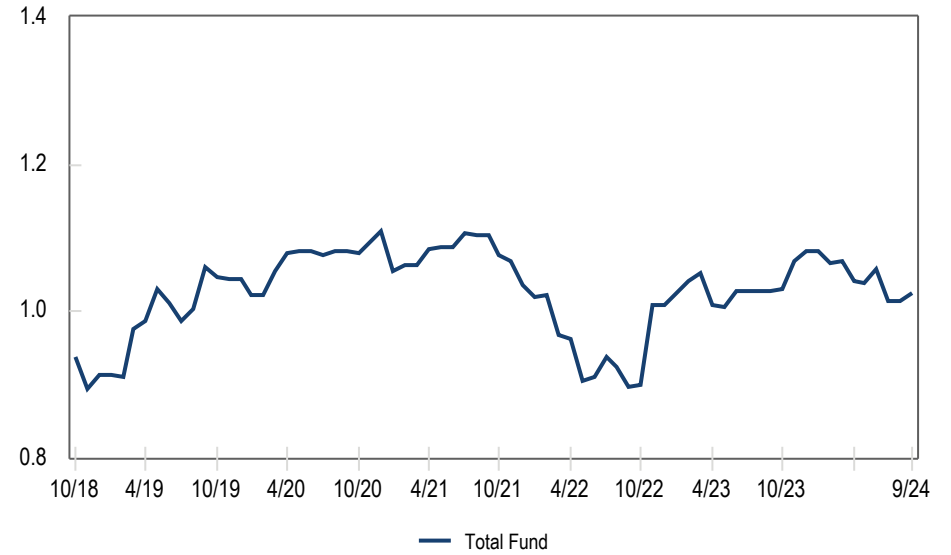
Total Fund  
Rolling Risk Statistics

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

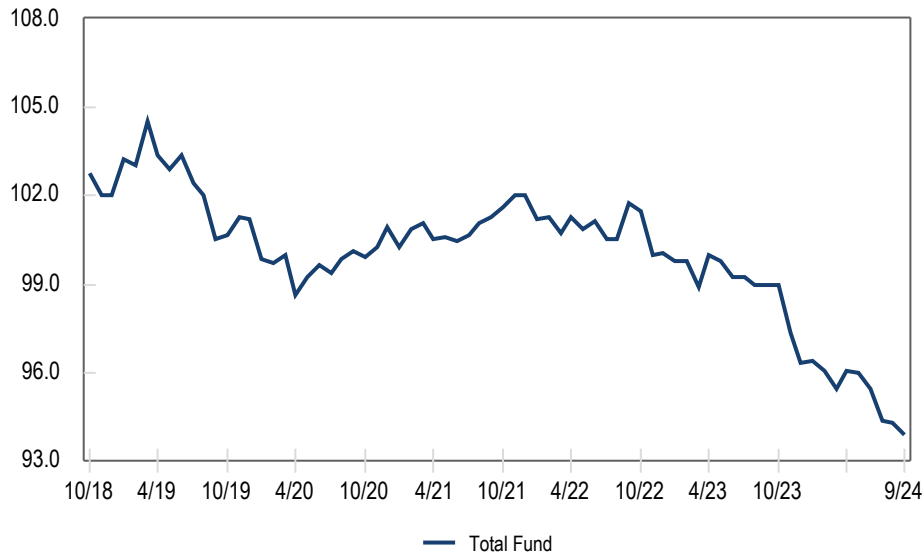
Rolling Information Ratio



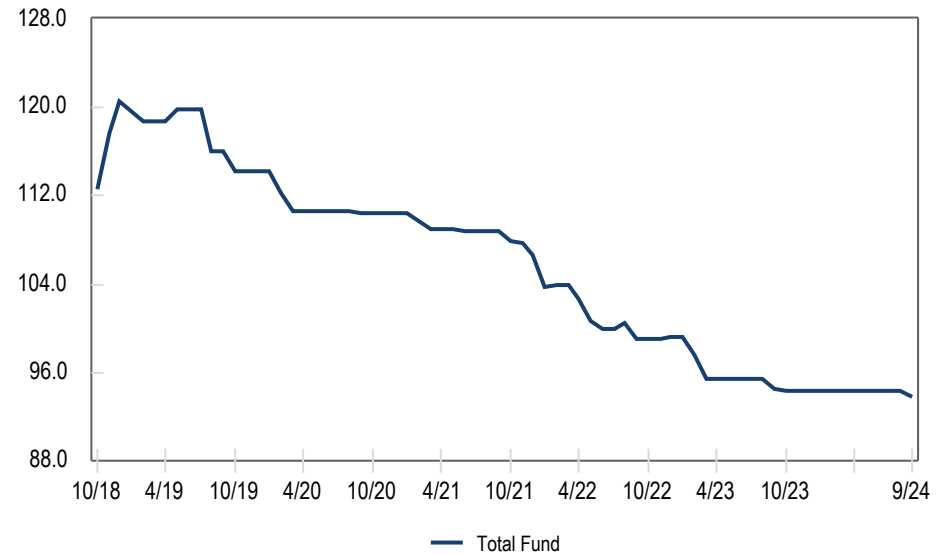
Rolling Tracking Error



Rolling Up Market Capture Ratio (%)



Rolling Down Market Capture Ratio (%)



Total Fund  
 Manager Summary (Net of Fees)

Imperial County Employees' Retirement System  
 Period Ending: September 30, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019	Inception	Inception Date
<b>Total Fund</b>	<b>1,241,391,951</b>	<b>100.0</b>	<b>4.5</b>	<b>4.5</b>	<b>10.2</b>	<b>17.7</b>	<b>4.6</b>	<b>8.4</b>	<b>7.2</b>	<b>11.9</b>	<b>-11.6</b>	<b>15.8</b>	<b>12.3</b>	<b>17.9</b>		
<i>Policy Index</i>			4.9	4.9	10.8	19.0	4.8	8.5	7.5	12.8	-11.9	14.8	13.3	18.0		
<i>InvMetrics Public DB Rank</i>			84	84	78	81	50	49	56	70	23	22	59	71		
<b>Total Domestic Equity</b>	<b>414,713,871</b>	<b>33.4</b>	<b>6.2</b>	<b>6.2</b>	<b>20.6</b>	<b>35.2</b>	<b>10.3</b>	<b>15.3</b>	<b>12.8</b>	<b>26.0</b>	<b>-19.2</b>	<b>25.7</b>	<b>21.0</b>	<b>31.1</b>		
<i>Russell 3000 Index</i>			6.2	6.2	20.6	35.2	10.3	15.3	12.8	26.0	-19.2	25.7	20.9	31.0		
BlackRock Russell 3000	414,713,871	33.4	6.2	6.2	20.6	35.2	10.3	15.3	-	26.0	-19.2	25.7	21.0	31.1	13.8	Dec-15
<i>Russell 3000 Index</i>			6.2	6.2	20.6	35.2	10.3	15.3	-	26.0	-19.2	25.7	20.9	31.0	13.6	
<i>eV US All Cap Core Equity Rank</i>			47	47	25	28	28	26	-	25	59	51	41	38		
<b>Total International Equity</b>	<b>209,733,348</b>	<b>16.9</b>	<b>6.6</b>	<b>6.6</b>	<b>12.2</b>	<b>22.8</b>	<b>4.2</b>	<b>7.6</b>	<b>5.3</b>	<b>16.9</b>	<b>-15.4</b>	<b>10.1</b>	<b>8.1</b>	<b>20.7</b>		
<i>MSCI AC World ex USA Index</i>			8.2	8.2	14.7	26.0	4.7	8.1	5.7	16.2	-15.6	8.3	11.1	22.1		
BlackRock International Equity	163,600,626	13.2	7.3	7.3	13.2	25.0	5.8	8.5	6.0	18.6	-14.1	11.6	8.1	22.4	7.3	Jul-03
<i>MSCI EAFE (Net)</i>			7.3	7.3	13.0	24.8	5.5	8.2	5.7	18.2	-14.5	11.3	7.8	22.0	7.3	
<i>eV All EAFE Equity Rank</i>			60	60	40	39	34	42	46	33	37	52	53	49		
William Blair Emerging Growth	20,096,186	1.6	-	-	-	-	-	-	-	-	-	-	-	-	2.1	Jul-24
<i>MSCI Emerging Markets Growth Index</i>			-	-	-	-	-	-	-	-	-	-	-	-	9.2	
<i>eV Emg Mkts Large Cap Growth Equity Rank</i>			-	-	-	-	-	-	-	-	-	-	-	-		
DFA Emerging Markets Value	26,036,536	2.1	5.7	5.7	14.9	23.2	6.3	8.6	5.0	16.5	-10.7	12.4	2.7	9.6	4.6	Jan-07
<i>MSCI Emerging Markets Value (Net)</i>			8.1	8.1	15.1	24.4	3.3	5.9	3.1	14.2	-15.8	4.0	5.5	12.0	4.0	
<i>eV Emg Mkts All Cap Value Equity Rank</i>			81	81	49	60	27	41	72	44	38	19	82	94		
<b>Total Fixed Income</b>	<b>323,723,831</b>	<b>26.1</b>	<b>5.1</b>	<b>5.1</b>	<b>5.4</b>	<b>12.2</b>	<b>-1.1</b>	<b>1.3</b>	<b>2.4</b>	<b>6.2</b>	<b>-14.2</b>	<b>0.6</b>	<b>9.8</b>	<b>9.5</b>		
<i>Blmbg. U.S. Aggregate Index</i>			5.2	5.2	4.4	11.6	-1.4	0.3	1.8	5.5	-13.0	-1.5	7.5	8.7		
Income Research & Management	138,597,484	11.2	5.1	5.1	4.7	11.5	-	-	-	-	-	-	-	-	9.2	Sep-23
<i>Blmbg. U.S. Aggregate Index</i>			5.2	5.2	4.4	11.6	-	-	-	-	-	-	-	-	8.0	
<i>eV US Core Plus Fixed Inc Rank</i>			68	68	88	90	-	-	-	-	-	-	-	-		
MacKay Shields Core Plus Opportunities	140,582,021	11.3	5.3	5.3	6.2	13.8	-1.0	1.2	-	6.7	-14.5	-0.5	9.9	9.7	2.1	Mar-15
<i>Blmbg. U.S. Aggregate Index</i>			5.2	5.2	4.4	11.6	-1.4	0.3	-	5.5	-13.0	-1.5	7.5	8.7	1.6	
<i>eV US Core Plus Fixed Inc Rank</i>			40	40	13	13	59	50	-	45	86	54	20	54		
BlackRock US TIPS	44,544,326	3.6	4.1	4.1	5.0	9.8	-0.5	2.7	2.6	3.9	-11.9	5.9	11.2	8.5	3.6	Apr-07
<i>Blmbg. U.S. TIPS Index</i>			4.1	4.1	4.9	9.8	-0.6	2.6	2.5	3.9	-11.8	6.0	11.0	8.4	3.6	
<i>eV US TIPS / Inflation Fixed Inc Rank</i>			46	46	30	28	55	49	19	44	67	28	28	32		

TSSP Adjacent funded 4/16/2020. PIMCO BRAVO liquidated 12/30/2022. Income Research & Management replaced Duenta 9/30/2023. Harbourvest 2023 funded 12/28/2023. Harding Loevner liquidated 6/30/2024. Harbourvest, KKR Mezzanine, Portfolio Advisors, Crescent Direct Lending, Audax Direct Lending, Lone Star, Ares Capital, Sixth Street Diversified Credit, Sixth Street TAO Partners and Ascribe market values as of 06/30/2024 adjusted for cash flows. William Blair Emerging Growth funded 7/02/2024

Total Fund  
Manager Summary (Net of Fees)

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019	Inception	Inception Date
<b>Total Real Estate</b>	<b>100,885,710</b>	<b>8.1</b>	<b>-0.2</b>	<b>-0.2</b>	<b>-6.4</b>	<b>-11.1</b>	<b>-2.8</b>	<b>1.4</b>	<b>4.8</b>	<b>-14.3</b>	<b>8.5</b>	<b>18.4</b>	<b>2.1</b>	<b>5.7</b>		
NCREIF Property Index			0.8	0.8	-0.5	-3.5	0.9	3.3	5.9	-7.9	5.5	17.7	1.6	6.4		
NCREIF ODCE Net			N/A	N/A	-3.2	-8.0	-1.0	2.1	5.2	-12.7	6.5	21.0	0.3	4.4		
ASB Real Estate	20,808,556	1.7	-1.1	-1.1	-15.1	-21.7	-8.5	-2.9	2.1	-21.5	10.7	14.2	1.5	3.0	3.5	Jan-13
NCREIF Property Index			0.8	0.8	-0.5	-3.5	0.9	3.3	5.9	-7.9	5.5	17.7	1.6	6.4	6.7	
NCREIF ODCE Net			N/A	N/A	-3.2	-8.0	-1.0	2.1	5.2	-12.7	6.5	21.0	0.3	4.4	6.2	
Clarion Lion	27,245,218	2.2	0.2	0.2	-4.1	-8.3	-1.4	2.7	6.1	-15.5	9.6	23.6	2.3	6.8	4.2	Jan-07
NCREIF Property Index			0.8	0.8	-0.5	-3.5	0.9	3.3	5.9	-7.9	5.5	17.7	1.6	6.4	5.9	
NCREIF ODCE Net			N/A	N/A	-3.2	-8.0	-1.0	2.1	5.2	-12.7	6.5	21.0	0.3	4.4	4.3	
ARA American Strategic Value Realty	50,796,396	4.1	-0.1	-0.1	-3.9	-8.0	-1.1	2.7	-	-10.3	6.8	18.6	2.4	7.8	4.1	Jan-18
NCREIF Property Index +2%			1.3	1.3	1.0	-1.5	2.9	5.3	-	-6.1	7.6	20.0	3.6	8.5	6.2	
NCREIF ODCE Net			N/A	N/A	-3.2	-8.0	-1.0	2.1	-	-12.7	6.5	21.0	0.3	4.4	3.1	
1221 State St. Corp	2,035,541	0.2	0.0	0.0	0.0	0.0	0.0	1.5	2.4	0.0	0.0	0.0	0.0	7.9	1.2	Jun-08
<b>Total Private Equity</b>	<b>79,775,018</b>	<b>6.4</b>	<b>0.0</b>	<b>0.0</b>	<b>3.5</b>	<b>2.8</b>	<b>4.9</b>	<b>16.2</b>	<b>16.0</b>	<b>3.9</b>	<b>-0.8</b>	<b>57.3</b>	<b>23.0</b>	<b>13.3</b>		
Harbourvest Buyout IX	4,519,054	0.4	-1.1	-1.1	-2.2	-3.6	1.3	13.3	15.5	5.9	-6.0	49.6	21.3	17.6		
Russell 3000 + 3%			7.0	7.0	23.3	39.2	13.6	18.7	16.2	29.7	-16.8	29.4	24.5	34.9		
Harbourvest Credit Ops IX	734,344	0.1	-0.4	-0.4	-11.8	-11.4	2.9	6.8	9.2	5.0	11.0	32.1	0.3	8.0		
Russell 3000 + 3%			7.0	7.0	23.3	39.2	13.6	18.7	16.2	29.7	-16.8	29.4	24.5	34.9		
Harbourvest International PE VI	1,130,124	0.1	-7.8	-7.8	-12.0	-12.3	-10.0	4.6	8.5	3.9	-16.7	41.2	17.2	6.0		
Russell 3000 + 3%			7.0	7.0	23.3	39.2	13.6	18.7	16.2	29.7	-16.8	29.4	24.5	34.9		
Harbourvest Venture IX	4,159,295	0.3	-1.3	-1.3	-0.6	-3.8	-4.8	17.3	18.0	-9.5	-15.9	91.1	52.4	24.6		
Russell 3000 + 3%			7.0	7.0	23.3	39.2	13.6	18.7	16.2	29.7	-16.8	29.4	24.5	34.9		
Harbourvest 2017 Global Fund	26,575,555	2.1	1.2	1.2	7.2	7.3	5.6	16.7	-	4.6	-1.3	61.6	18.8	8.8	17.0	Oct-17
Russell 3000 + 3%			7.0	7.0	23.3	39.2	13.6	18.7	-	29.7	-16.8	29.4	24.5	34.9	17.1	
Harbourvest 2018 Global Fund	20,933,372	1.7	1.3	1.3	2.9	1.9	9.0	14.2	-	4.0	9.7	37.0	16.0	14.3	14.1	Jan-19
Russell 3000 + 3%			7.0	7.0	23.3	39.2	13.6	18.7	-	29.7	-16.8	29.4	24.5	34.9	20.3	
Harbourvest 2019 Global Fund	19,857,798	1.6	1.1	1.1	5.7	5.4	9.5	-	-	6.1	5.4	49.6	34.6	-	19.7	Dec-19
Russell 3000 + 3%			7.0	7.0	23.3	39.2	13.6	-	-	29.7	-16.8	29.4	24.5	-	17.9	
Harbourvest 2023 Global Fund	1,865,476	0.2	3.1	3.1	20.3	-	-	-	-	-	-	-	-	-	-	
Russell 3000 + 3%			7.0	7.0	23.3	-	-	-	-	-	-	-	-	-	-	
<b>Total Private Credit</b>	<b>68,511,417</b>	<b>5.5</b>	<b>0.2</b>	<b>0.2</b>	<b>4.1</b>	<b>7.1</b>	<b>8.8</b>	<b>9.4</b>	<b>-</b>	<b>11.1</b>	<b>8.1</b>	<b>16.1</b>	<b>4.8</b>	<b>9.4</b>		
Portfolio Advisors Credit Strategies Fund	11,618,287	0.9	N/A	N/A	3.9	4.2	7.2	9.4	-	4.0	7.7	26.8	3.9	8.2	8.6	Oct-17
Bloomberg High Yield +2% (Lagged)			1.6	1.6	11.6	12.6	3.7	6.0	-	12.5	-12.4	13.5	5.3	8.5	6.2	
Crescent Direct Lending Levered Fund II	1,930,050	0.2	N/A	N/A	5.5	8.6	9.2	9.6	-	9.3	10.9	11.5	6.0	12.4	9.4	Mar-18
Bloomberg High Yield +2% (Lagged)			1.6	1.6	11.6	12.6	3.7	6.0	-	12.5	-12.4	13.5	5.3	8.5	6.2	

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Total Fund  
 Manager Summary (Net of Fees)

Imperial County Employees' Retirement System  
 Period Ending: September 30, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019	Inception	Inception Date
Audax Direct Lending Fund A	5,241,625	0.4	2.5	2.5	8.6	11.1	12.3	14.1	-	10.4	15.5	23.1	10.1	16.3	16.2	Oct-18
<i>Bloomberg High Yield +2% (Lagged)</i>			1.6	1.6	11.6	12.6	3.7	6.0	-	12.5	-12.4	13.5	5.3	8.5	6.6	
Ares Capital Europe IV	5,497,160	0.4	2.5	2.5	6.0	7.4	9.9	8.8	-	7.8	7.0	11.8	8.2	13.1	9.3	Aug-18
<i>Bloomberg High Yield +2% (Lagged)</i>			1.6	1.6	11.6	12.6	3.7	6.0	-	12.5	-12.4	13.5	5.3	8.5	6.5	
Lone Star XI	4,560,663	0.4	N/A	N/A	4.3	8.3	14.1	29.4	-	16.2	13.7	538.0	-62.8	-	17.2	Jun-19
<i>Bloomberg High Yield +2% (Lagged)</i>			1.6	1.6	11.6	12.6	3.7	6.0	-	12.5	-12.4	13.5	5.3	-	6.4	
Sixth Street Diversified Credit	34,616,420	2.8	4.9	4.9	8.7	14.3	10.0	-	-	16.1	13.2	-1.4	-	-	7.7	May-20
<i>Bloomberg High Yield +2% (Lagged)</i>			1.6	1.6	11.6	12.6	3.7	-	-	12.5	-12.4	13.5	-	-	5.6	
Ascribe Opportunities Fund IV	5,047,212	0.4	N/A	N/A	14.6	17.5	-	-	-	11.0	5.6	-	-	-	14.5	Oct-21
<i>Bloomberg High Yield +2% (Lagged)</i>			1.6	1.6	11.6	12.6	3.7	-	-	12.5	-12.4	-	-	-	3.6	
<b>Total Opportunistic</b>	<b>31,678,321</b>	<b>2.6</b>	<b>0.5</b>	<b>0.5</b>	<b>4.6</b>	<b>6.9</b>	<b>9.4</b>	<b>9.7</b>	<b>7.9</b>	<b>13.0</b>	<b>10.4</b>	<b>18.6</b>	<b>0.9</b>	<b>-10.7</b>		
KKR Mezzanine Partners	1,377,433	0.1	-19.5	-19.5	-16.2	-18.5	-9.3	-7.9	-0.6	22.5	-31.0	10.5	-15.2	-4.2	3.4	Jun-11
TSSP Adjacent Opportunities Partners	30,300,888	2.4	1.7	1.7	5.8	8.5	12.9	-	-	12.4	16.2	26.1	-	-	15.6	Apr-20
<b>Total Cash</b>	<b>12,370,435</b>	<b>1.0</b>	<b>1.4</b>	<b>1.4</b>	<b>3.7</b>	<b>3.7</b>	<b>1.2</b>	<b>0.7</b>	<b>0.4</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>		
Invesco Treasury Portfolio	12,370,435	1.0	1.4	1.4	3.6	-	-	-	-	-	-	-	-	-	3.6	Jan-24
<i>FTSE 3 Month T-Bill</i>			1.4	1.4	4.2	-	-	-	-	-	-	-	-	-	4.2	

TSSP Adjacent funded 4/16/2020. PIMCO BRAVO liquidated 12/30/2022. Income Research & Management replaced Duenta 9/30/2023. Harbourvest 2023 funded 12/28/2023. Harding Loevner liquidated 6/30/2024. Harbourvest, KKR Mezzanine, Portfolio Advisors, Crescent Direct Lending, Audax Direct Lending, Lone Star, Ares Capital, Sixth Street Diversified Credit, Sixth Street TAO Partners and Ascribe market values as of 06/30/2024 adjusted for cash flows. William Blair Emerging Growth funded 7/02/2024

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

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

	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	10.29	7.94	17.55	0.00	1.00	0.02	1.00	0.46	0.17	100.01	99.99
BlackRock International Equity	5.80	3.60	16.69	0.31	1.00	0.18	1.00	0.22	1.70	100.67	99.45
DFA Emerging Markets Value	6.27	3.81	15.30	3.03	0.95	2.81	0.97	0.25	0.99	99.43	84.34
MacKay Shields Core Plus Opportunities	-1.04	-4.17	7.97	0.44	1.05	1.20	0.98	-0.54	0.32	103.42	99.64
BlackRock US TIPS	-0.55	-3.74	7.06	0.02	1.00	0.22	1.00	-0.54	0.08	100.23	100.04
ASB Real Estate	-8.46	-11.63	10.94	-9.29	1.45	7.11	0.64	-1.03	-1.30	109.73	326.66
Clarion Lion	-1.42	-4.40	9.71	-2.54	1.54	4.39	0.91	-0.44	-0.46	143.67	200.95
ARA American Strategic Value Realty	-1.13	-4.37	6.47	-4.00	1.04	1.69	0.93	-0.64	-2.34	73.25	153.49
Portfolio Advisors Credit Strategies Fund	7.22	3.66	4.87	7.11	0.05	9.20	0.01	0.73	0.34	42.06	-20.13
Crescent Direct Lending Levered Fund II	9.21	5.53	4.94	9.65	-0.07	10.13	0.01	1.13	0.49	42.06	-41.39
Audax Direct Lending Fund A	12.35	8.39	5.19	12.23	0.06	9.33	0.01	1.56	0.84	49.12	-63.87
Ares Capital Europe IV	9.86	6.14	5.44	9.65	0.08	9.30	0.02	1.09	0.61	53.80	-31.37
Lone Star XI	14.10	10.05	6.76	15.07	-0.16	11.65	0.04	1.48	0.82	60.48	-66.31
Sixth Street Diversified Credit	9.96	6.56	9.80	9.91	0.13	12.11	0.01	0.67	0.50	26.52	-75.77
Ascribe Opportunities Fund IV	14.06	10.20	9.34	14.52	0.00	12.47	0.00	1.09	0.78	77.63	-43.14

Risk analysis requires 3 years of data.

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

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

	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	15.28	13.72	18.44	0.02	1.00	0.03	1.00	0.74	0.53	100.02	99.96
BlackRock International Equity	8.52	7.45	17.54	0.29	1.00	0.28	1.00	0.42	1.07	100.97	99.92
DFA Emerging Markets Value	8.65	7.87	18.92	2.59	1.02	3.95	0.96	0.42	0.69	103.84	91.42
Mackay Shields Core Plus Opportunities	1.24	-0.83	6.89	0.91	1.07	1.86	0.93	-0.12	0.51	114.93	104.13
BlackRock US TIPS	2.66	0.52	6.17	0.03	1.00	0.18	1.00	0.08	0.21	100.65	100.37
ASB Real Estate	-2.93	-4.85	9.07	-6.76	1.31	5.69	0.64	-0.52	-1.04	98.25	308.87
Clarion Lion	2.75	0.78	8.57	-1.90	1.48	3.63	0.92	0.09	-0.08	140.40	199.77
ARA American Strategic Value Realty	2.73	0.59	6.16	-2.84	1.08	1.56	0.94	0.09	-1.58	83.36	145.98
Portfolio Advisors Credit Strategies Fund	9.38	6.98	7.47	7.87	0.27	9.75	0.11	0.92	0.31	61.40	-7.08
Crescent Direct Lending Levered Fund II	9.60	7.04	5.28	10.58	-0.12	11.55	0.05	1.32	0.27	42.13	-42.27
Audax Direct Lending Fund A	14.13	11.26	7.49	13.50	0.13	10.89	0.03	1.48	0.67	71.86	-42.28
Ares Capital Europe IV	8.75	6.25	5.09	8.53	0.05	10.08	0.01	1.20	0.23	48.60	-20.77
Lone Star XI	29.38	43.23	77.56	50.86	0.59	77.46	0.00	0.56	0.51	338.49	31.92

Risk analysis requires 5 years of data.





Private Credit  
Non Marketable Securities Overview

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

Vintage	Manager & Fund Name	Estimated 9/30/2024 Market Value <sup>3</sup>	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value for IRR	Distrib./ Paid-In (DPI) <sup>1</sup>	Tot. Value/ Paid-In (TVPI) <sup>2</sup>	Net IRR Since Inception <sup>4</sup>	IRR Date		
2013	Portfolio Advisors Credit Strategies Fund	\$11,618,287	\$11,250,000	\$11,250,000	100%	\$0	\$3,933,090	\$11,820,085	35.0%	138.2%	8.4%	6/30/24		
2017	Crescent Direct Lending Levered Fund II	\$1,930,050	\$7,000,000	\$5,707,507	82%	\$1,292,493	\$5,699,630	\$2,978,355	99.9%	133.7%	9.5%	6/30/24		
2017	Audax Direct Lending Fund A	\$5,241,625	\$7,000,000	\$5,791,026	83%	\$1,208,974	\$3,367,921	\$5,363,545	58.2%	148.7%	14.6%	6/30/24		
2018	Ares Capital Europe IV	\$5,497,160	\$8,000,000	\$6,762,884	85%	\$1,237,116	\$4,105,253	\$5,889,390	60.7%	142.0%	8.2%	6/30/24		
2019	Lone Star Fund XI	\$4,560,663	\$5,750,000	\$5,026,116	87%	\$723,884	\$3,210,404	\$3,611,793	63.9%	154.6%	29.1%	6/30/24		
2019	Ascribe Opportunities IV	\$5,047,212	\$6,000,000	\$5,456,288	91%	\$543,712	\$1,812,063	\$5,096,538	33.2%	125.7%	10.0%	6/30/24		
2020	Sixth Street Diversified Credit	\$34,616,420	\$60,000,000	\$30,657,119	51%	\$29,342,881	\$3,542,097	\$33,738,088	11.6%	124.5%	13.4%	6/30/24		
<b>Total Illiquid Private Credit</b>		<b>\$68,511,417</b>	\$105,000,000	\$70,650,940	67.3%	\$34,349,060	\$25,670,458	\$68,497,794	36.3%	133.3%				
<b>% of Portfolio (Market Value)</b>		<b>5.52%</b>												
								<b>Management</b>	<b>Accrued</b>	<b>Admin</b>	<b>Interest</b>	<b>Other</b>	<b>Total</b>	
								<b>Fee</b>	<b>Carried Interest</b>	<b>Fee</b>	<b>Expense</b>	<b>Expense</b>	<b>Expense<sup>5</sup></b>	
								Portfolio Advisors CSF	\$0	\$0	\$0	\$0	\$0	\$0
								Crescent Direct Lending II	\$37,979	\$10,135	\$8,956	\$0	\$0	\$57,070
								Audax Direct Lending A	\$28,193	\$1,893	\$0	\$0	\$0	\$30,086
								Ares Capital Europe IV	\$22,655	\$24,562	\$0	\$68,802	\$2,738	\$118,757
								Ascribe Opportunities IV	\$35,284	\$709	\$0	\$0	\$0	\$35,993
								Lone Star Fund XI	\$0	\$0	\$0	\$0	\$0	\$0
								Sixth Street Diversified Credit	\$0	\$0	\$0	\$0	\$0	\$0
									\$124,111	\$37,299	\$8,956	\$68,802	\$2,738	<b>\$241,906</b>

<sup>1</sup>(DPI) is equal to (capital returned / capital called)

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

<sup>3</sup>Last known market value + capital calls - distributions (preliminary MV's as of 9/30/2024)

<sup>4</sup>Net 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.

<sup>5</sup>All fees and expenses are for 2Q 2024

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

# Opportunistic Non Marketable Securities Overview

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

Vintage	Manager & Fund Name	Estimated 9/30/2024 Market Value <sup>3</sup>	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value for IRR	Distrib./ Paid-In (DPI) <sup>1</sup>	Tot. Value/ Paid-In (TVPI) <sup>2</sup>	Net IRR Since Inception <sup>5</sup>	IRR Date
2010	KKR Mezzanine <sup>6</sup>	\$1,377,433	\$10,000,000	\$10,000,000	100%	\$0	\$14,153,380	\$1,377,433	141.5%	155.3%	5.3%	6/30/24
2020	TSSP Adjacent Opportunities Partners	\$30,300,888	\$40,000,000	\$26,249,595	66%	\$13,750,405	\$6,182,047	NA	23.6%	139.0%	NA	NA
<b>Total Illiquid Opportunistic</b>		<b>\$31,678,321</b>	\$50,000,000	\$36,249,595	72%	\$13,750,405	\$20,335,427	\$1,391,050	3.8%	59.9%		
<b>% of Portfolio (Market Value)</b>		<b>2.55%</b>										
							<b>Management Fee</b>	<b>Accrued Carried Interest</b>	<b>Admin Fee</b>	<b>Interest Expense</b>	<b>Other Expense</b>	<b>Total Expense<sup>6</sup></b>
							\$0	\$0	\$0	\$0	\$2,512	\$2,512
							\$0	\$0	\$0	\$0	\$0	\$0
							\$0	\$0	\$0	\$0	\$2,512	<b>\$2,512</b>

<sup>1</sup>(DPI) is equal to (capital returned / capital called)

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

<sup>3</sup>Last known market value + capital calls - distributions (preliminary MV's as of 9/30/2024)

<sup>4</sup>Investment period ended, no further capital to be called.

<sup>5</sup>Net 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.

<sup>6</sup>All fees and expenses are for 2Q 2024

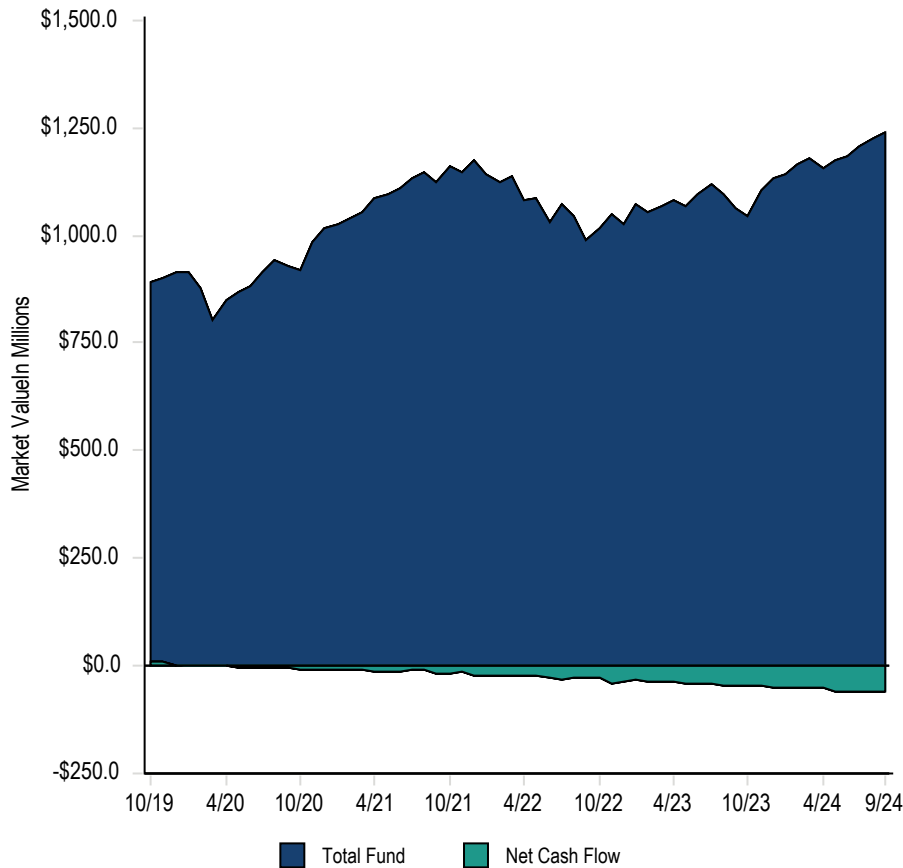
Total Fund  
Cash Flow by Manager (Last Three Months)

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

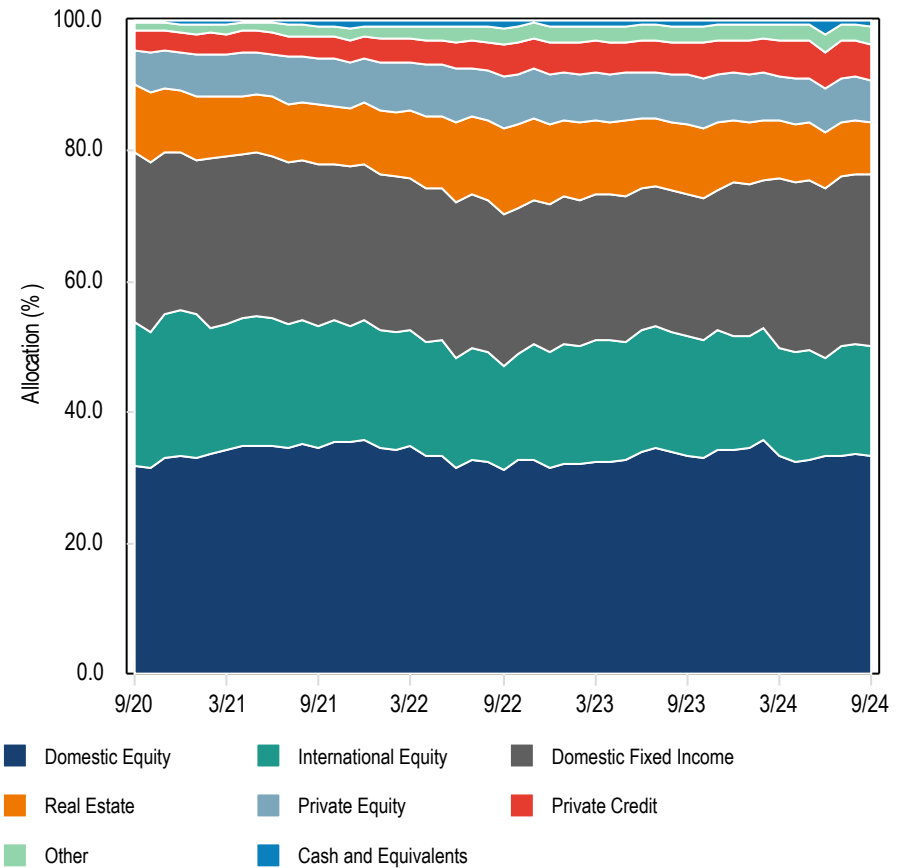
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flows	Capital Appreciation	Ending Market Value
BlackRock Russell 3000	\$395,102,726	\$0	-\$5,000,000	-\$5,000,000	\$24,611,145	\$414,713,871
BlackRock International Equity	\$152,491,730	\$0	\$0	\$0	\$11,108,896	\$163,600,626
William Blair Emerging Growth	\$0	\$19,639,097	\$0	\$19,639,097	\$457,089	\$20,096,186
DFA Emerging Markets Value	\$24,626,078	\$0	\$0	\$0	\$1,410,458	\$26,036,536
Income Research & Management	\$131,766,154	\$9,646	\$0	\$9,646	\$6,821,684	\$138,597,484
MackKay Shields Core Plus Opportunities	\$133,495,773	\$0	\$0	\$0	\$7,086,248	\$140,582,021
BlackRock US TIPS	\$42,774,765	\$0	\$0	\$0	\$1,769,561	\$44,544,326
ASB Real Estate	\$21,017,420	\$0	\$0	\$0	-\$208,865	\$20,808,556
Clarion Lion	\$27,255,306	\$184,974	-\$261,831	-\$76,857	\$66,769	\$27,245,218
ARA American Strategic Value Realty	\$50,852,753	\$0	\$0	\$0	\$91,809	\$50,796,396
1221 State St. Corp	\$2,043,406	\$13,656	-\$21,641	-\$7,986	\$121	\$2,035,541
Harbourvest Buyout IX	\$4,570,760	\$0	\$0	\$0	-\$51,706	\$4,519,054
Harbourvest Credit Ops IX	\$737,149	\$0	\$0	\$0	-\$2,805	\$734,344
Harbourvest International PE VI	\$1,225,348	\$0	\$0	\$0	-\$95,224	\$1,130,124
Harbourvest Venture IX	\$4,213,448	\$0	\$0	\$0	-\$54,153	\$4,159,295
Harbourvest 2017 Global Fund	\$26,878,561	\$0	-\$636,350	-\$636,350	\$333,344	\$26,575,555
Harbourvest 2018 Global Fund	\$20,655,233	\$0	\$0	\$0	\$278,139	\$20,933,372
Harbourvest 2019 Global Fund	\$20,068,328	\$0	-\$440,845	-\$440,845	\$230,315	\$19,857,798
Harbourvest 2023 Global Fund	\$1,809,611	\$0	\$0	\$0	\$55,865	\$1,865,476
Portfolio Advisors Credit Strategies Fund	\$11,820,085	\$0	-\$201,798	-\$201,798	\$0	\$11,618,287
Crescent Direct Lending Levered Fund II	\$2,978,355	\$0	-\$1,048,305	-\$1,048,305	\$0	\$1,930,050
Audax Direct Lending Fund A	\$5,231,351	\$0	-\$121,920	-\$121,920	\$132,194	\$5,241,625
Ares Capital Europe IV	\$5,745,612	\$0	-\$392,230	-\$392,230	\$143,778	\$5,497,160
Lone Star XI	\$4,560,663	\$0	\$0	\$0	\$0	\$4,560,663
Sixth Street Diversified Credit	\$32,175,382	\$878,332	\$0	\$878,332	\$1,562,706	\$34,616,420
Ascribe Opportunities Fund IV	\$5,096,538	\$248,838	-\$298,164	-\$49,326	\$0	\$5,047,212
KKR Mezzanine Partners	\$1,711,505	\$0	\$0	\$0	-\$334,072	\$1,377,433
TSSP Adjacent Opportunities Partners	\$29,556,486	\$255,715	\$0	\$255,715	\$488,687	\$30,300,888
Invesco Treasury Portfolio	\$25,161,964	\$8,139,612	-\$21,021,982	-\$12,882,370	\$90,842	\$12,370,435
<b>Total Fund</b>	<b>\$1,185,622,490</b>	<b>\$29,369,869</b>	<b>-\$29,445,066</b>	<b>-\$75,197</b>	<b>\$55,992,824</b>	<b>\$1,241,391,951</b>

Harbourvest, KKR Mezzanine, Portfolio Advisors, Crescent Direct Lending, Audax Direct Lending, Lone Star, Ares Capital, Sixth Street Diversified Credit, Sixth Street TAO Partners and Ascribe market values as of 06/30/2024 adjusted for cash flows.

Market Value History



Asset Allocation History



Total Fund  
Investment Fund Fee Analysis

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

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	50,796,396	4.09	587,964	1.16
Ares Capital Europe IV	1.38 % of Assets	5,497,160	0.44	75,861	1.38
ASB Real Estate	1.25 % of First \$5 M 1.00 % of Next \$10 M 0.75 % Thereafter	20,808,556	1.68	206,064	0.99
Ascribe Opportunities Fund IV	1.50 % of Assets	5,047,212	0.41	75,708	1.50
Audax Direct Lending Fund A	0.85 % of Assets	5,241,625	0.42	44,554	0.85
BlackRock International Equity	0.15 % of First \$50 M 0.10 % of Next \$50 M 0.00 % Thereafter	163,600,626	13.18	125,000	0.08
BlackRock Russell 3000	0.03 % of Assets	414,713,871	33.41	124,414	0.03
BlackRock US TIPS	0.07 % of Assets	44,544,326	3.59	31,181	0.07
Clarion Lion	1.25 % of First \$10 M 1.00 % of Next \$15 M 0.85 % Thereafter	27,245,218	2.19	294,084	1.08
Crescent Direct Lending Levered Fund II	Minimum Fee: \$25,280	1,930,050	0.16	25,280	1.31
DFA Emerging Markets Value	0.44 % of Assets	26,036,536	2.10	114,561	0.44
Income Research & Management	0.20 % of First \$100 M 0.17 % Thereafter	138,597,484	11.16	265,616	0.19
Harbourvest 2017 Global Fund	Minimum Fee: \$262,500	26,575,555	2.14	262,500	0.99
Harbourvest 2018 Global Fund	Minimum Fee: \$138,000	20,933,372	1.69	138,000	0.66
Harbourvest 2019 Global Fund	0.45 % of Assets	19,857,798	1.60	89,360	0.45
Harbourvest 2023 Global Fund	0.50 % of Assets	1,865,476	0.15	9,327	0.50
Harbourvest Buyout IX	Minimum Fee: \$100,000	4,519,054	0.36	100,000	2.21
Harbourvest Credit Ops IX	Minimum Fee: \$20,000	734,344	0.06	20,000	2.72
Harbourvest International PE VI	Minimum Fee: \$35,000	1,130,124	0.09	35,000	3.10
Harbourvest Venture IX	Minimum Fee: \$40,000	4,159,295	0.34	40,000	0.96
Invesco Treasury Portfolio		12,370,435	1.00	-	-
KKR Mezzanine Partners	Minimum Fee: \$150,000	1,377,433	0.11	150,000	10.89
Lone Star XI	0.71 % of Assets	4,560,663	0.37	32,335	0.71
MacKay Shields Core Plus Opportunities	0.30 % of Assets	140,582,021	11.32	421,746	0.30

\*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.

\*1221 State St. Corp value of \$2,035,541 included in Total Fund value.

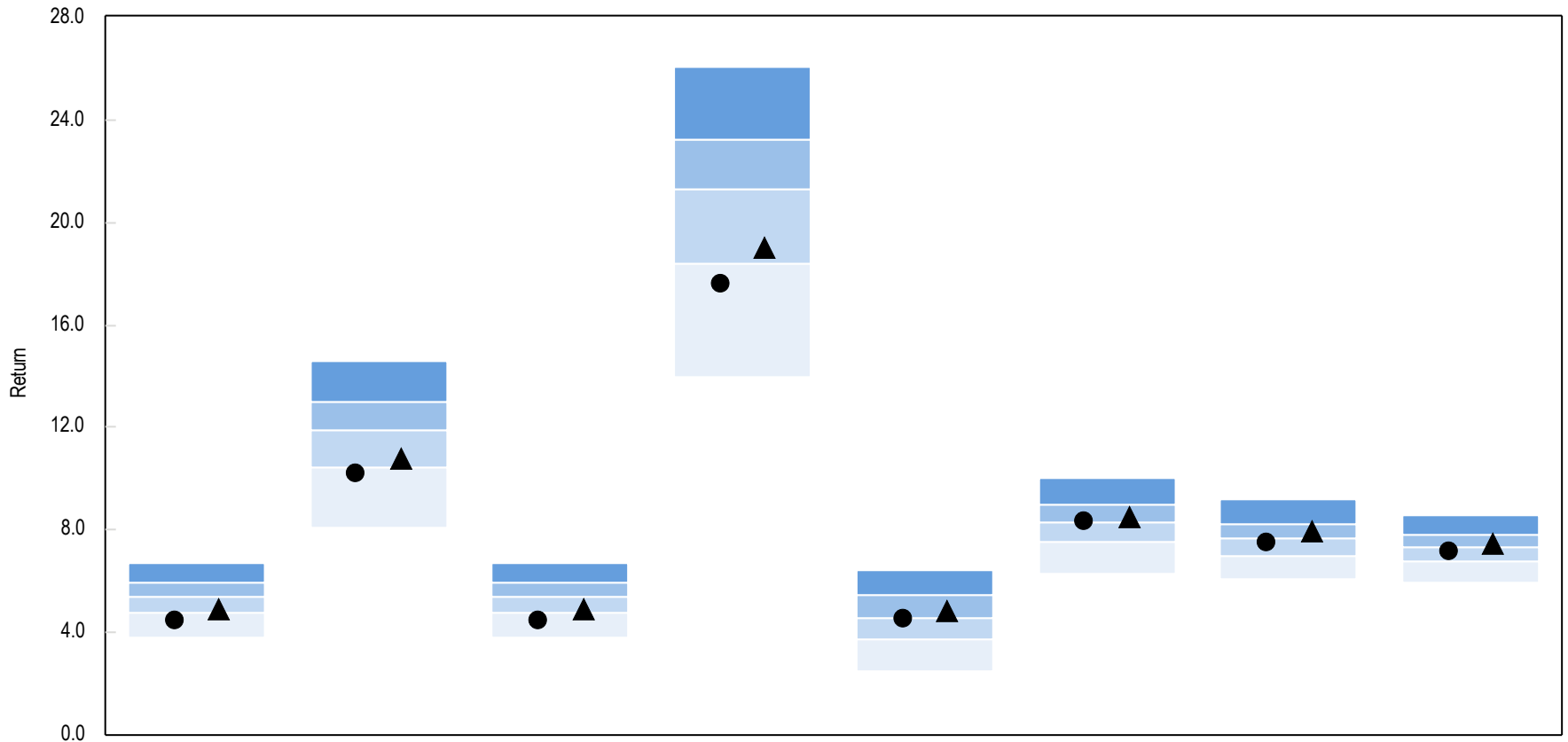
Total Fund  
Investment Fund Fee Analysis

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

Account	Fee Schedule	Market Value	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Portfolio Advisors Credit Strategies Fund	Minimum Fee: \$180,000	11,618,287	0.94	180,000	1.55
Sixth Street Diversified Credit	1.35 % of Assets	34,616,420	2.79	467,322	1.35
TSSP Adjacent Opportunities Partners		30,300,888	2.44	-	-
William Blair Emerging Growth	0.90 % of First \$25 M 0.85 % of Next \$25 M 0.70 % of Next \$50 M 0.65 % of Next \$50 M 0.60 % of Next \$50 M 0.40 % of Next \$200 M 0.35 % Thereafter	20,096,186	1.62	180,866	0.90
<b>Investment Management Fee</b>		<b>1,241,391,951</b>	<b>100.00</b>	<b>4,096,743</b>	<b>0.33</b>

\*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.  
 \*1221 State St. Corp value of \$2,035,541 included in Total Fund value

Total Fund vs. InvMetrics Public DB Net



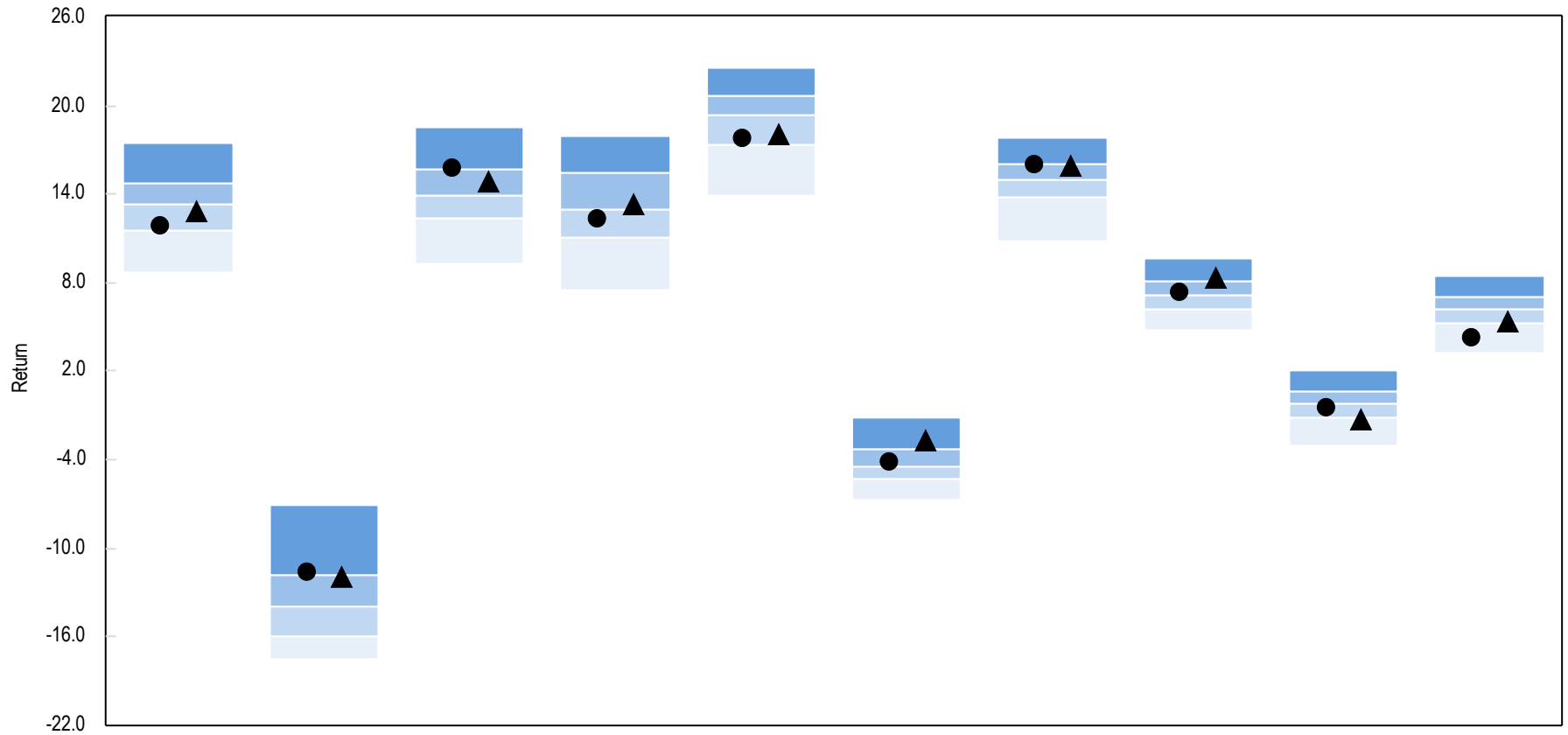
	Quarter	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Total Fund	4.49 (84)	10.21 (78)	4.49 (84)	17.65 (81)	4.58 (50)	8.36 (49)	7.55 (56)	7.22 (56)
▲ Policy Index	4.91 (71)	10.77 (71)	4.91 (71)	19.02 (72)	4.83 (43)	8.53 (42)	7.93 (39)	7.46 (42)
5th Percentile	6.70	14.62	6.70	26.08	6.46	10.06	9.19	8.56
1st Quartile	5.98	13.01	5.98	23.24	5.48	8.98	8.24	7.82
Median	5.42	11.92	5.42	21.27	4.57	8.32	7.68	7.32
3rd Quartile	4.79	10.41	4.79	18.40	3.73	7.55	7.00	6.77
95th Percentile	3.81	8.06	3.81	13.94	2.51	6.32	6.06	5.98
Population	556	547	556	542	524	509	493	431



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

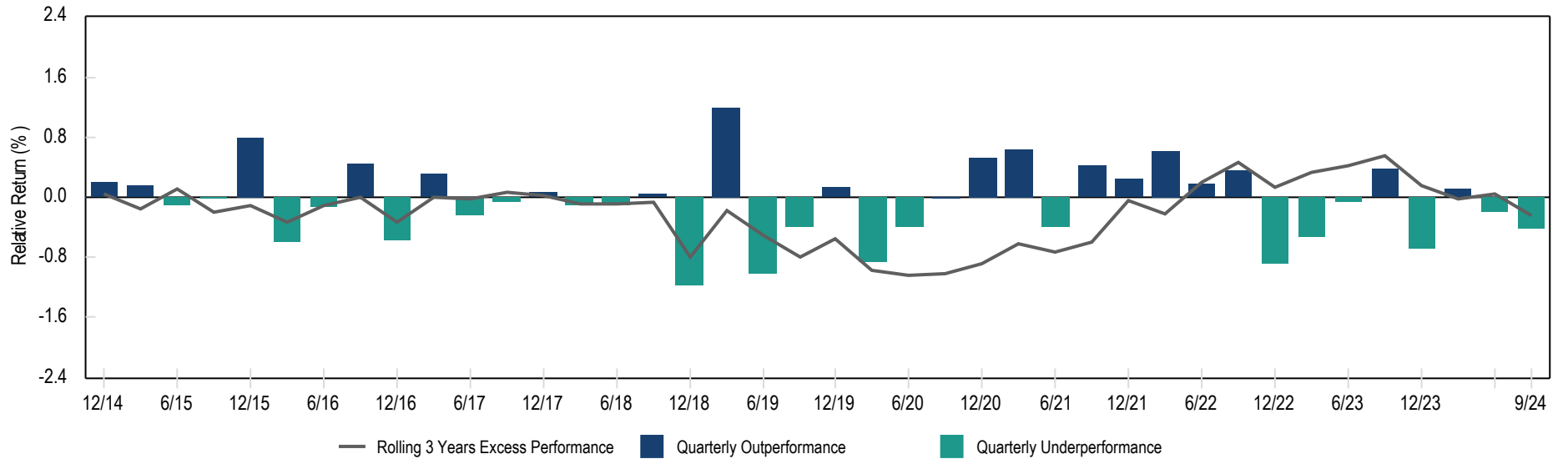
Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

Total Fund vs. InvMetrics Public DB Net

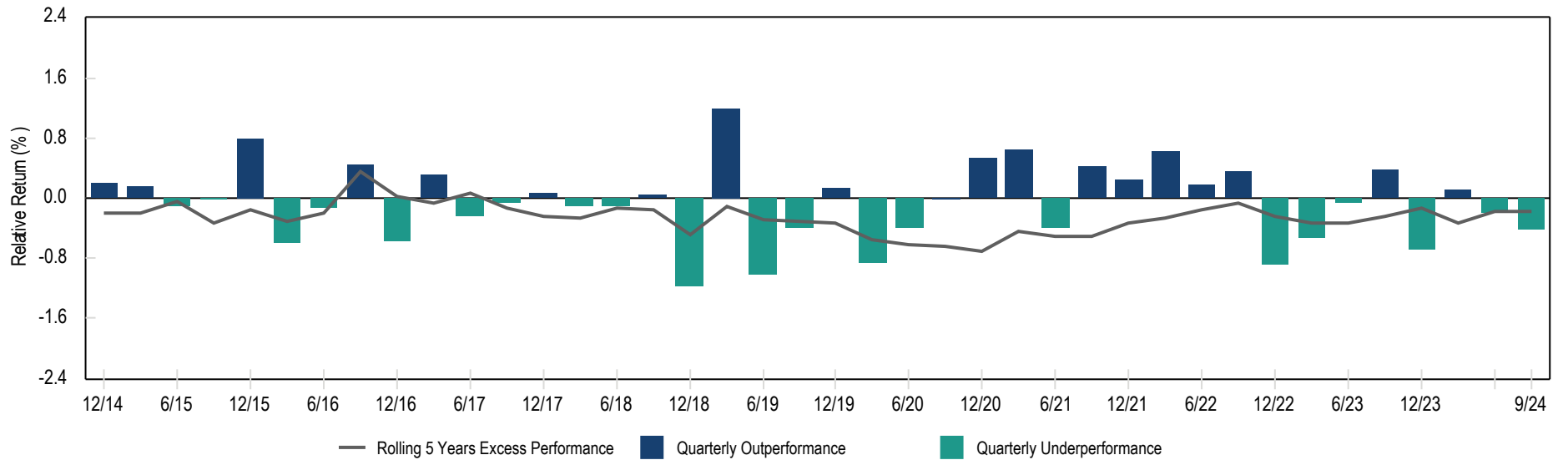


	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
● Total Fund	11.93 (70)	-11.60 (23)	15.84 (22)	12.33 (59)	17.85 (71)	-4.12 (41)	16.02 (27)	7.45 (44)	-0.41 (58)	4.37 (87)
▲ Policy Index	12.85 (58)	-11.93 (27)	14.83 (35)	13.29 (47)	18.03 (69)	-2.73 (15)	15.93 (29)	8.36 (21)	-1.22 (77)	5.33 (73)
5th Percentile	17.46	-7.11	18.51	17.92	22.57	-1.14	17.88	9.67	2.02	8.47
1st Quartile	14.71	-11.78	15.66	15.40	20.67	-3.33	16.10	8.13	0.63	7.03
Median	13.30	-13.91	13.88	13.01	19.41	-4.40	15.02	7.17	-0.20	6.15
3rd Quartile	11.52	-15.96	12.36	11.10	17.35	-5.30	13.78	6.25	-1.11	5.22
95th Percentile	8.71	-17.47	9.26	7.54	13.92	-6.68	10.89	4.74	-2.99	3.29
Population	1,082	1,100	1,147	1,191	1,101	1,055	1,039	1,028	969	920

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance

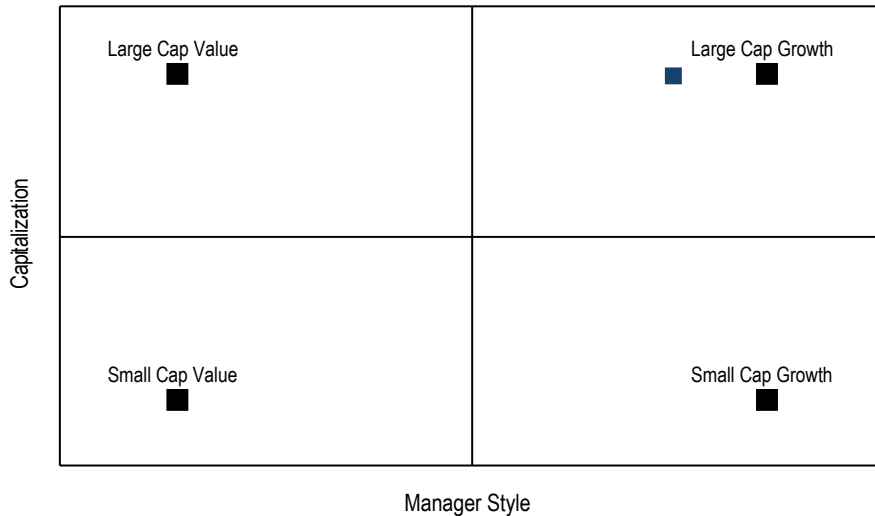


Total Domestic Equity  
Asset Class Overview (Net of Fees)

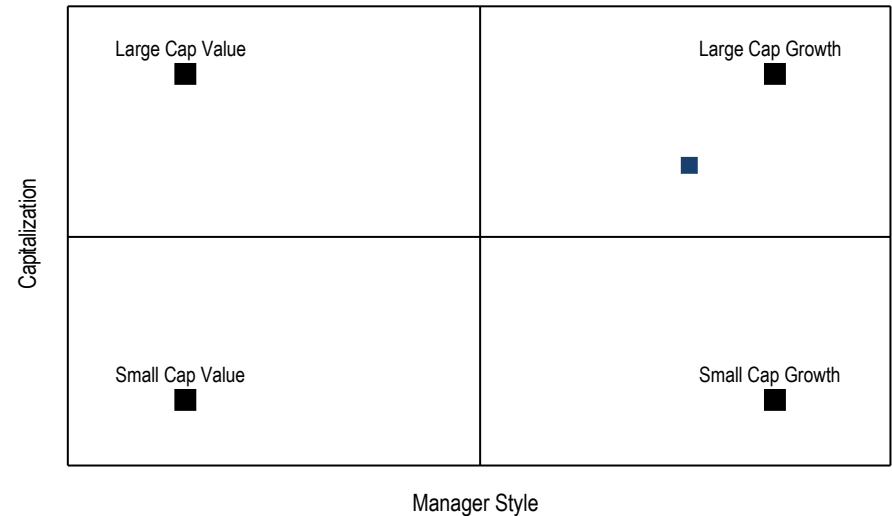
Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019
<b>Total Domestic Equity</b>	<b>414,713,871</b>	<b>100.0</b>	<b>6.2</b>	<b>6.2</b>	<b>20.6</b>	<b>35.2</b>	<b>10.3</b>	<b>15.3</b>	<b>12.8</b>	<b>26.0</b>	<b>-19.2</b>	<b>25.7</b>	<b>21.0</b>	<b>31.1</b>
<i>Russell 3000 Index</i>			6.2	6.2	20.6	35.2	10.3	15.3	12.8	26.0	-19.2	25.7	20.9	31.0
BlackRock Russell 3000	414,713,871	100.0	6.2	6.2	20.6	35.2	10.3	15.3	-	26.0	-19.2	25.7	21.0	31.1
<i>Russell 3000 Index</i>			6.2	6.2	20.6	35.2	10.3	15.3	-	26.0	-19.2	25.7	20.9	31.0
<i>eV US All Cap Core Equity Rank</i>			47	47	25	28	28	26	-	25	59	51	41	38

U.S. Effective Style Map  
3 Years Ending: September 30, 2024



U.S. Effective Style Map  
5 Years Ending: September 30, 2024



# Total International Equity Asset Class Overview (Net of Fees)

# Imperial County Employees' Retirement System Period Ending: September 30, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019
<b>Total International Equity</b>	<b>209,733,348</b>	<b>100.0</b>	<b>6.6</b>	<b>6.6</b>	<b>12.2</b>	<b>22.8</b>	<b>4.2</b>	<b>7.6</b>	<b>5.3</b>	<b>16.9</b>	<b>-15.4</b>	<b>10.1</b>	<b>8.1</b>	<b>20.7</b>
<i>MSCI AC World ex USA Index</i>			8.2	8.2	14.7	26.0	4.7	8.1	5.7	16.2	-15.6	8.3	11.1	22.1
BlackRock International Equity	163,600,626	78.0	7.3	7.3	13.2	25.0	5.8	8.5	6.0	18.6	-14.1	11.6	8.1	22.4
<i>MSCI EAFE (Net)</i>			7.3	7.3	13.0	24.8	5.5	8.2	5.7	18.2	-14.5	11.3	7.8	22.0
<i>eV All EAFE Equity Rank</i>			60	60	40	39	34	42	46	33	37	52	53	49
William Blair Emerging Growth	20,096,186	9.6	-	-	-	-	-	-	-	-	-	-	-	-
<i>MSCI Emerging Markets Growth Index</i>			-	-	-	-	-	-	-	-	-	-	-	-
<i>eV Emg Mkts Large Cap Growth Equity Rank</i>			-	-	-	-	-	-	-	-	-	-	-	-
DFA Emerging Markets Value	26,036,536	12.4	5.7	5.7	14.9	23.2	6.3	8.6	5.0	16.5	-10.7	12.4	2.7	9.6
<i>MSCI Emerging Markets Value (Net)</i>			8.1	8.1	15.1	24.4	3.3	5.9	3.1	14.2	-15.8	4.0	5.5	12.0
<i>eV Emg Mkts All Cap Value Equity Rank</i>			81	81	49	60	27	41	72	44	38	19	82	94

MSCI Effective Style Map  
3 Years Ending: September 30, 2024



■ BlackRock International Equity   
 ● DFA Emerging Markets Value  
▲ Total International Equity

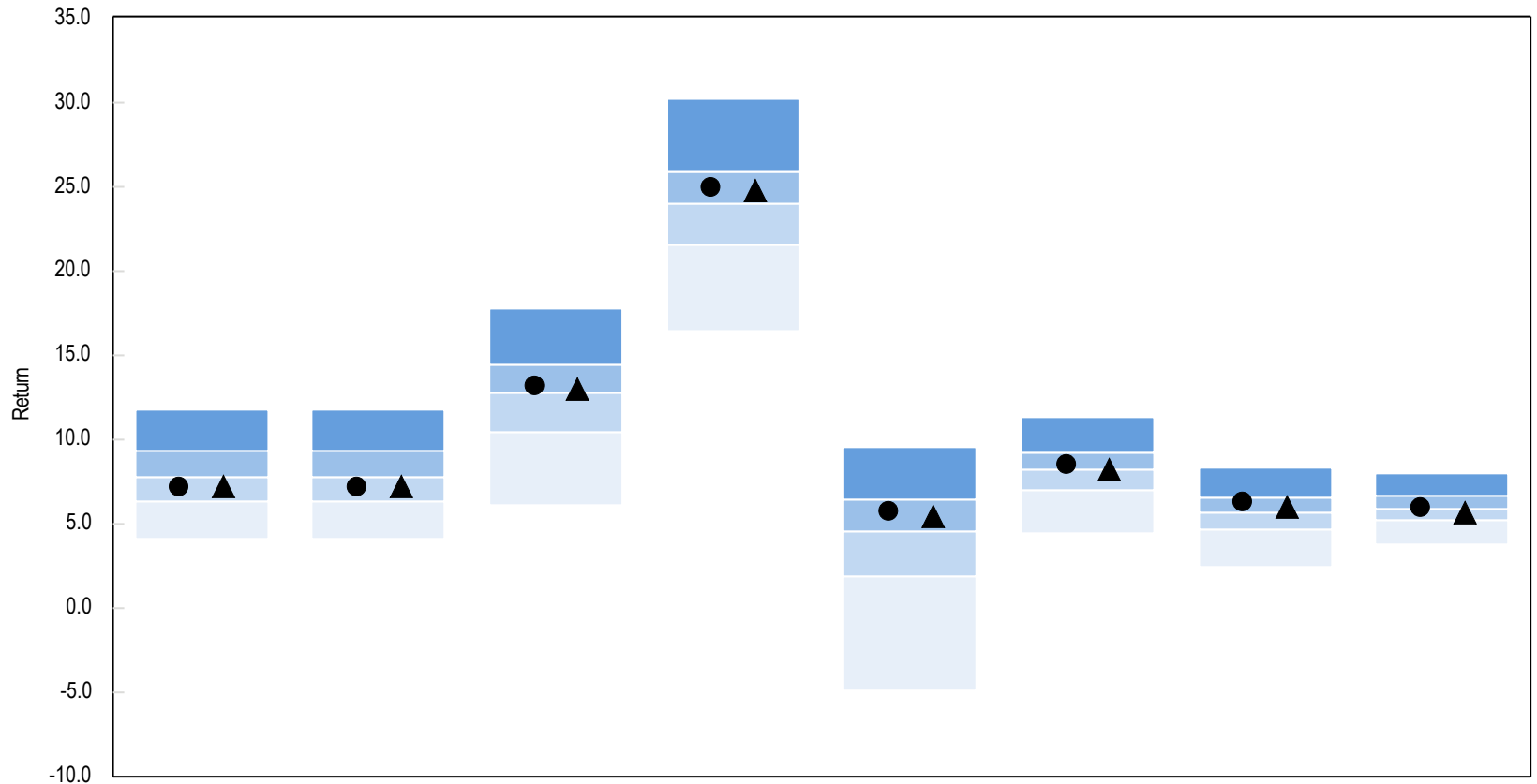
MSCI Effective Style Map  
5 Years Ending: September 30, 2024



■ BlackRock International Equity   
 ● DFA Emerging Markets Value  
▲ Total International Equity

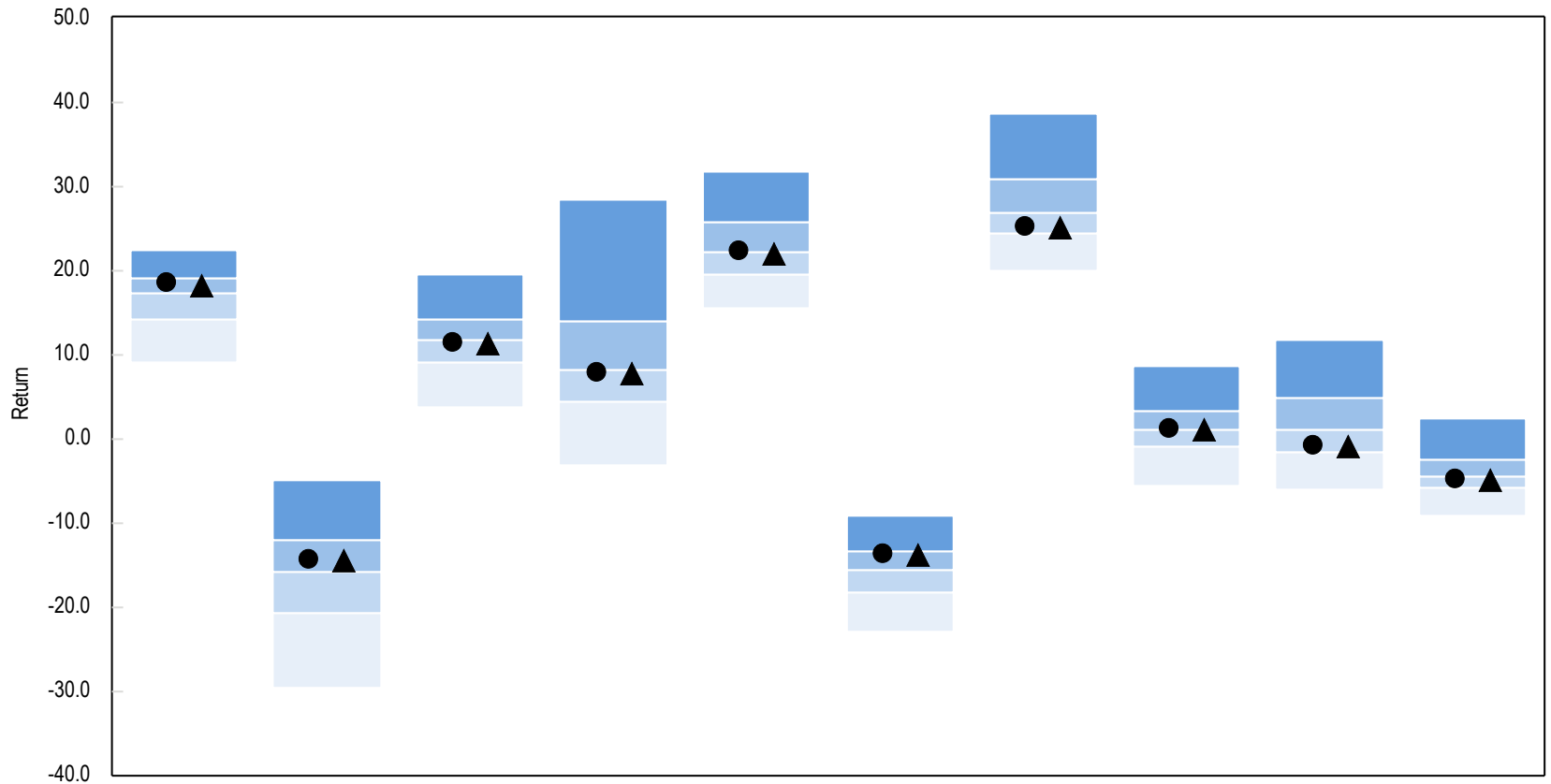
Harding Loevner liquidated 6/30/24. William Blair Emerging Growth funded 7/02/2024.

BlackRock International Equity vs. eV All EAFE Equity

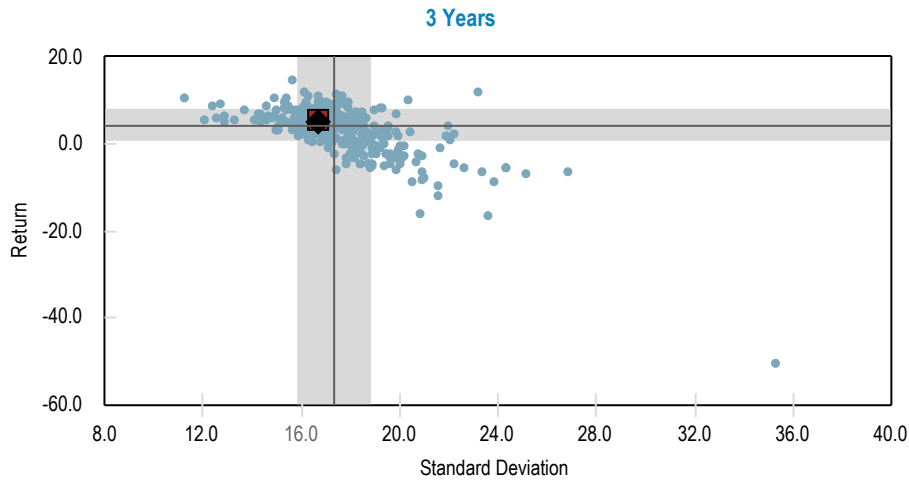


	Quarter	Fiscal YTD	YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● BlackRock International Equity	7.26 (60)	7.26 (60)	13.24 (40)	24.96 (39)	5.80 (34)	8.52 (42)	6.31 (30)	6.01 (46)
▲ MSCI EAFE (Net)	7.26 (60)	7.26 (60)	12.99 (48)	24.77 (41)	5.48 (39)	8.20 (50)	6.00 (40)	5.71 (60)
5th Percentile	11.74	11.74	17.78	30.18	9.54	11.30	8.29	7.98
1st Quartile	9.31	9.31	14.47	25.94	6.41	9.25	6.51	6.67
Median	7.73	7.73	12.82	23.99	4.58	8.20	5.65	5.94
3rd Quartile	6.34	6.34	10.42	21.60	1.89	7.01	4.61	5.17
95th Percentile	4.10	4.10	6.10	16.40	-4.89	4.49	2.40	3.80
Population	419	419	418	418	388	368	341	285

BlackRock International Equity vs. eV All EAFE Equity

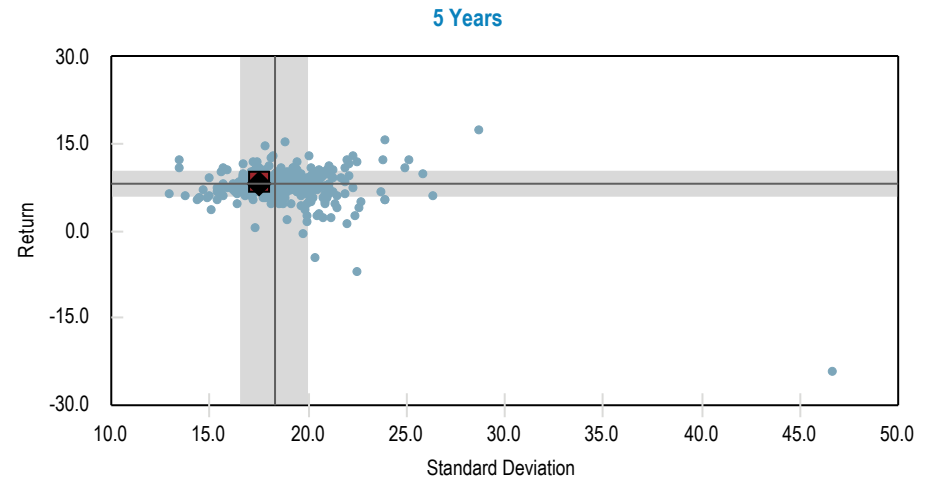


	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
● BlackRock International Equity	18.56 (33)	-14.12 (37)	11.62 (52)	8.07 (53)	22.40 (49)	-13.52 (29)	25.42 (63)	1.34 (46)	-0.63 (65)	-4.77 (56)
▲ MSCI EAFE (Net)	18.24 (38)	-14.45 (42)	11.26 (58)	7.82 (56)	22.01 (54)	-13.79 (34)	25.03 (68)	1.00 (53)	-0.81 (68)	-4.90 (60)
5th Percentile	22.49	-4.83	19.56	28.48	31.77	-9.15	38.71	8.70	11.72	2.50
1st Quartile	19.22	-12.10	14.18	14.00	25.87	-13.29	30.80	3.38	4.98	-2.42
Median	17.34	-15.79	11.75	8.20	22.19	-15.65	26.97	1.08	1.17	-4.48
3rd Quartile	14.18	-20.58	9.10	4.48	19.61	-18.24	24.39	-0.97	-1.57	-5.86
95th Percentile	9.17	-29.45	3.75	-3.13	15.52	-22.92	19.90	-5.45	-6.00	-9.10
Population	444	456	460	467	471	476	470	456	441	433



eV All EAFE Equity

	Return	Standard Deviation
■ BlackRock International Equity	5.80	16.69
◆ MSCI EAFE (Net)	5.48	16.71
— Median	4.58	17.34
Population	388	388



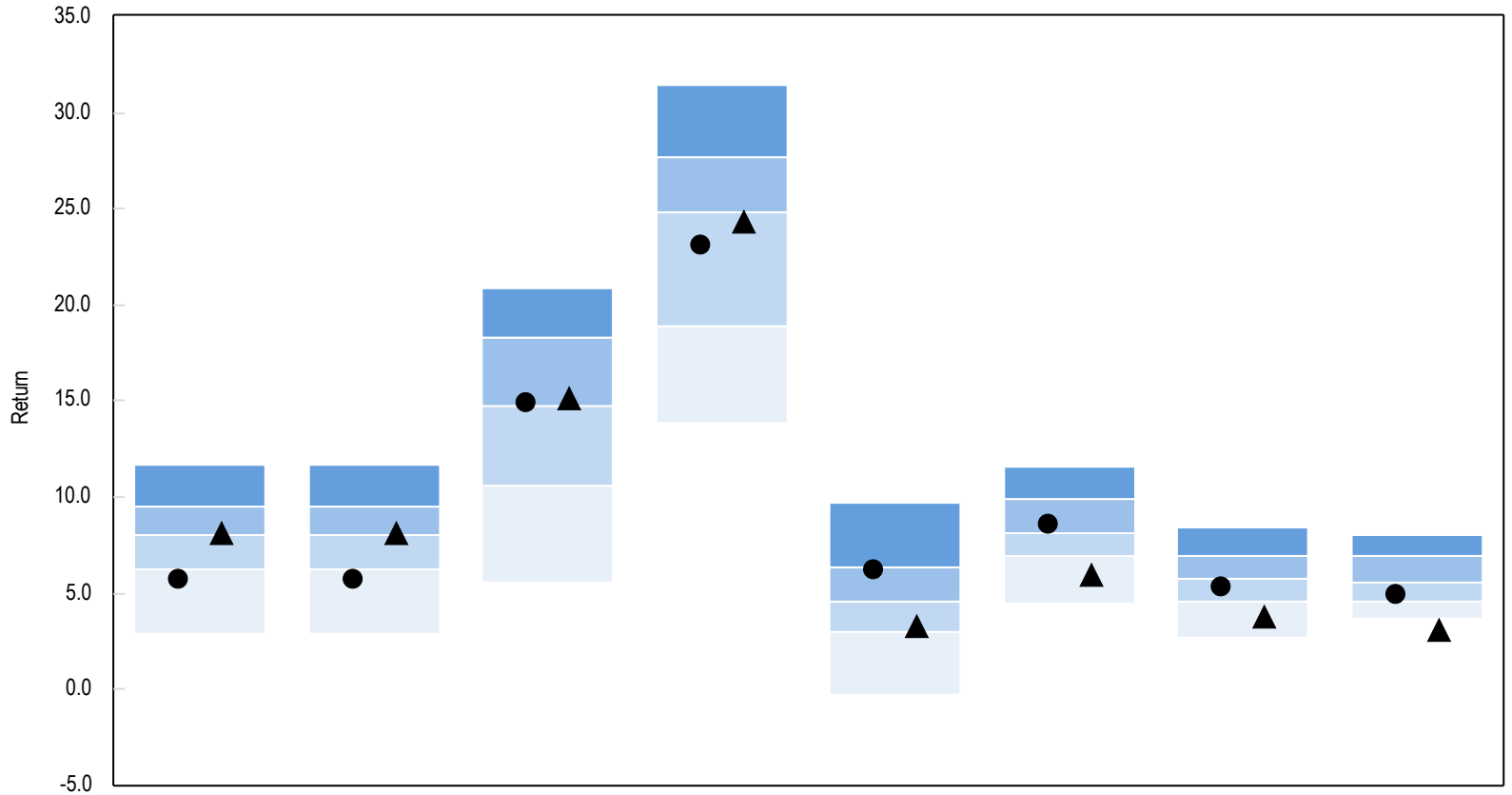
eV All EAFE Equity

	Return	Standard Deviation
■ BlackRock International Equity	8.52	17.54
◆ MSCI EAFE (Net)	8.20	17.52
— Median	8.20	18.31
Population	368	368

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

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

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



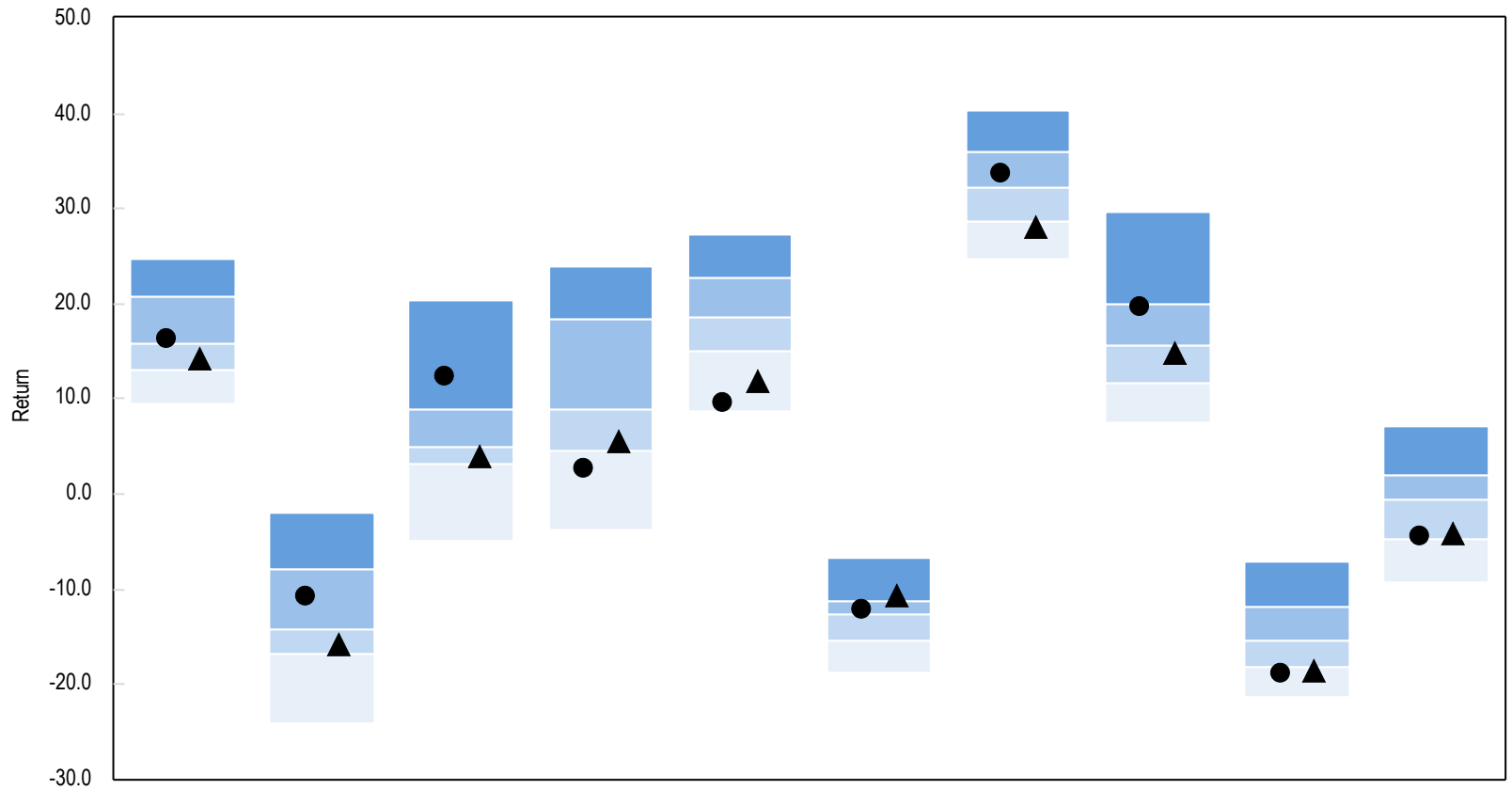
	Quarter	Fiscal YTD	YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● DFA Emerging Markets Value	5.73 (81)	5.73 (81)	14.93 (49)	23.17 (60)	6.27 (27)	8.65 (41)	5.33 (61)	4.98 (72)
▲ MSCI Emerging Markets Value (Net)	8.12 (50)	8.12 (50)	15.11 (49)	24.38 (57)	3.29 (70)	5.94 (85)	3.77 (84)	3.12 (100)
5th Percentile	11.72	11.72	20.90	31.48	9.68	11.62	8.41	8.04
1st Quartile	9.47	9.47	18.27	27.71	6.39	9.93	7.00	6.95
Median	8.05	8.05	14.76	24.87	4.61	8.13	5.80	5.55
3rd Quartile	6.28	6.28	10.63	18.93	3.00	6.96	4.53	4.56
95th Percentile	2.88	2.88	5.62	13.88	-0.25	4.49	2.73	3.69
Population	50	50	50	50	48	42	40	31



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

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

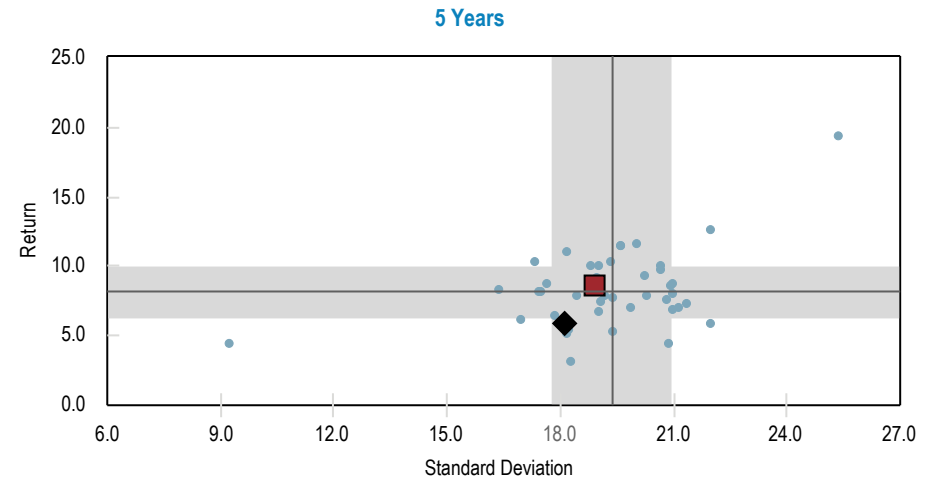
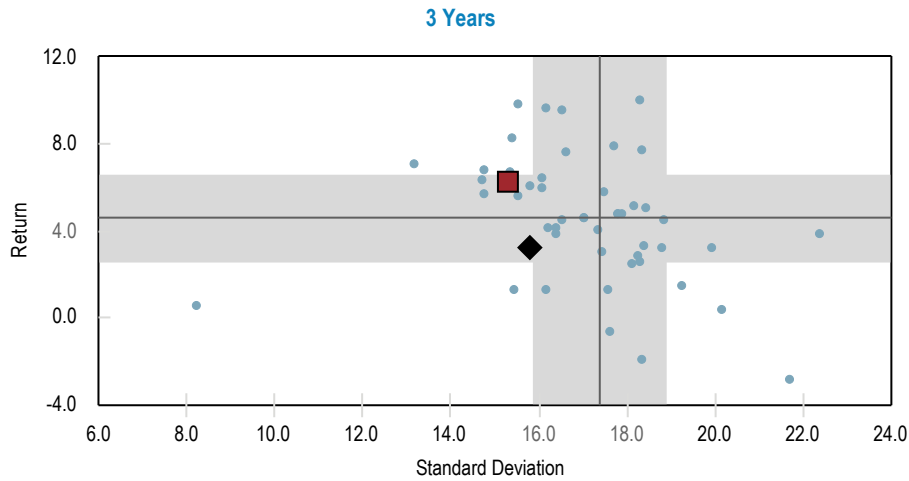
DFA Emerging Markets Value vs. eV Emg Mkts All Cap Value Equity



	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
● DFA Emerging Markets Value	16.49 (44)	-10.74 (38)	12.41 (19)	2.73 (82)	9.64 (94)	-11.93 (37)	33.76 (39)	19.84 (26)	-18.77 (84)	-4.41 (72)
▲ MSCI Emerging Markets Value (Net)	14.21 (67)	-15.83 (63)	4.00 (68)	5.48 (72)	11.96 (93)	-10.74 (23)	28.07 (80)	14.90 (54)	-18.57 (84)	-4.08 (69)
5th Percentile	24.75	-1.92	20.32	23.96	27.29	-6.66	40.35	29.74	-7.00	7.04
1st Quartile	20.68	-7.96	8.87	18.49	22.65	-11.22	35.98	19.95	-11.76	2.04
Median	15.92	-14.26	4.87	8.93	18.51	-12.58	32.24	15.63	-15.31	-0.66
3rd Quartile	13.06	-16.84	3.27	4.50	15.01	-15.32	28.74	11.67	-18.08	-4.70
95th Percentile	9.52	-24.07	-4.86	-3.63	8.63	-18.81	24.65	7.49	-21.28	-9.30
Population	53	58	57	59	60	58	54	50	48	52

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

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024



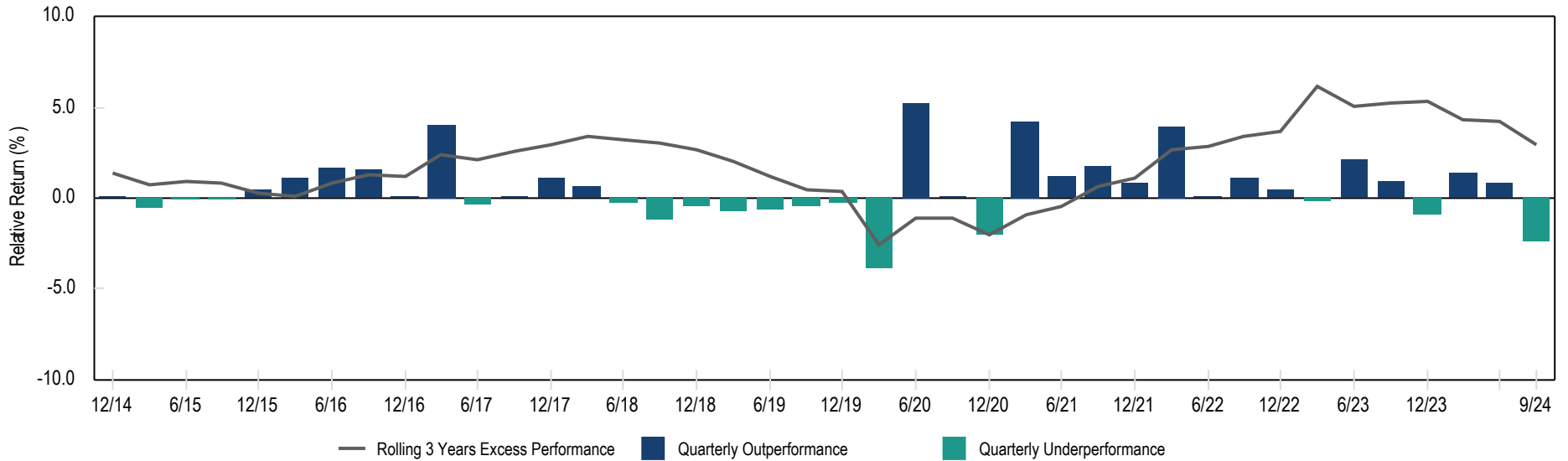
eV Emg Mkts All Cap Value Equity

	Return	Standard Deviation
■ DFA Emerging Markets Value	6.27	15.30
◆ MSCI Emerging Markets Value (Net)	3.29	15.80
— Median	4.61	17.38
Population	48	48

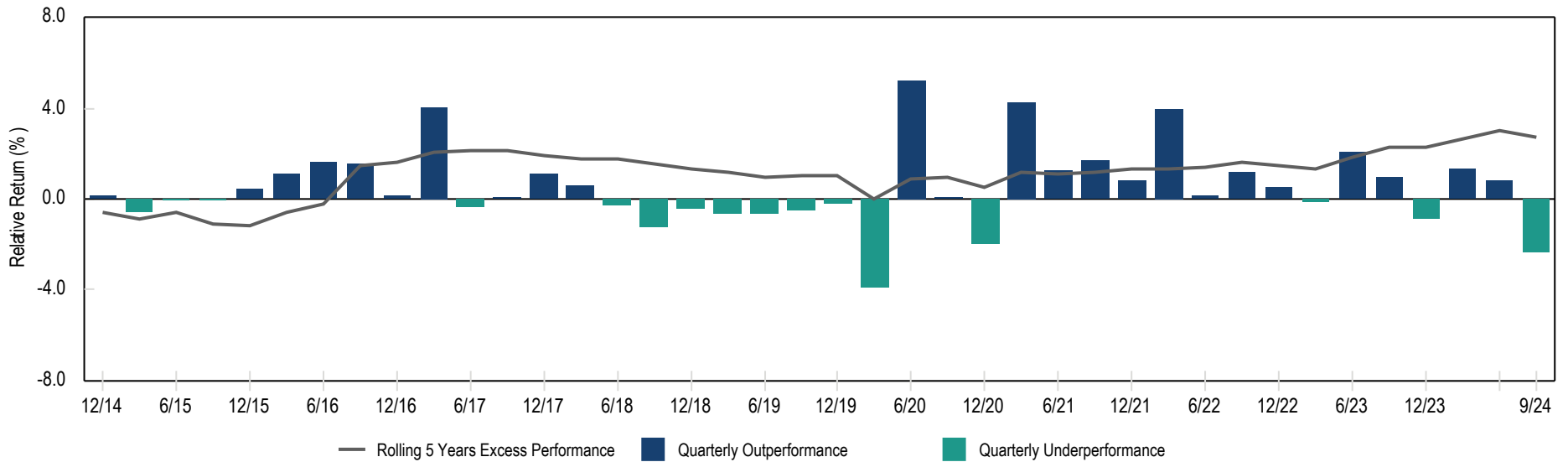
eV Emg Mkts All Cap Value Equity

	Return	Standard Deviation
■ DFA Emerging Markets Value	8.65	18.92
◆ MSCI Emerging Markets Value (Net)	5.94	18.11
— Median	8.13	19.37
Population	42	42

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



# Total Fixed Income Asset Class Overview (Net of Fees)

# Imperial County Employees' Retirement System Period Ending: September 30, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019
<b>Total Fixed Income</b>	<b>323,723,831</b>	<b>100.0</b>	<b>5.1</b>	<b>5.1</b>	<b>5.4</b>	<b>12.2</b>	<b>-1.1</b>	<b>1.3</b>	<b>2.4</b>	<b>6.2</b>	<b>-14.2</b>	<b>0.6</b>	<b>9.8</b>	<b>9.5</b>
<i>Blmbg. U.S. Aggregate Index</i>			5.2	5.2	4.4	11.6	-1.4	0.3	1.8	5.5	-13.0	-1.5	7.5	8.7
Income Research & Management	138,597,484	42.8	5.1	5.1	4.7	11.5	-	-	-	-	-	-	-	-
<i>Blmbg. U.S. Aggregate Index</i>			5.2	5.2	4.4	11.6	-	-	-	-	-	-	-	-
<i>eV US Core Plus Fixed Inc Rank</i>			68	68	88	90	-	-	-	-	-	-	-	-
MacKay Shields Core Plus Opportunities	140,582,021	43.4	5.3	5.3	6.2	13.8	-1.0	1.2	-	6.7	-14.5	-0.5	9.9	9.7
<i>Blmbg. U.S. Aggregate Index</i>			5.2	5.2	4.4	11.6	-1.4	0.3	-	5.5	-13.0	-1.5	7.5	8.7
<i>eV US Core Plus Fixed Inc Rank</i>			40	40	13	13	59	50	-	45	86	54	20	54
BlackRock US TIPS	44,544,326	13.8	4.1	4.1	5.0	9.8	-0.5	2.7	2.6	3.9	-11.9	5.9	11.2	8.5
<i>Blmbg. U.S. TIPS Index</i>			4.1	4.1	4.9	9.8	-0.6	2.6	2.5	3.9	-11.8	6.0	11.0	8.4
<i>eV US TIPS / Inflation Fixed Inc Rank</i>			46	46	30	28	55	49	19	44	67	28	28	32

**Fixed Income Style Map  
3 Years Ending September 30, 2024**



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

**Fixed Income Style Map  
5 Years Ending September 30, 2024**



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

Income Research & Management replaced Duenta 9/30/2023.

Total Fixed Income  
Asset Class Overview (Net of Fees)

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019
<b>Total Fixed Income</b>	<b>323,723,831</b>	<b>100.0</b>	<b>5.1</b>	<b>5.1</b>	<b>5.4</b>	<b>12.2</b>	<b>-1.1</b>	<b>1.3</b>	<b>2.4</b>	<b>6.2</b>	<b>-14.2</b>	<b>0.6</b>	<b>9.8</b>	<b>9.5</b>
<i>Blmbg. U.S. Aggregate Index</i>			5.2	5.2	4.4	11.6	-1.4	0.3	1.8	5.5	-13.0	-1.5	7.5	8.7
Income Research & Management	138,597,484	42.8	5.1	5.1	4.7	11.5	-	-	-	-	-	-	-	-
<i>Blmbg. U.S. Aggregate Index</i>			5.2	5.2	4.4	11.6	-	-	-	-	-	-	-	-
MacKay Shields Core Plus Opportunities	140,582,021	43.4	5.3	5.3	6.2	13.8	-1.0	1.2	-	6.7	-14.5	-0.5	9.9	9.7
<i>Blmbg. U.S. Aggregate Index</i>			5.2	5.2	4.4	11.6	-1.4	0.3	-	5.5	-13.0	-1.5	7.5	8.7
BlackRock US TIPS	44,544,326	13.8	4.1	4.1	5.0	9.8	-0.5	2.7	2.6	3.9	-11.9	5.9	11.2	8.5
<i>Blmbg. U.S. TIPS Index</i>			4.1	4.1	4.9	9.8	-0.6	2.6	2.5	3.9	-11.8	6.0	11.0	8.4

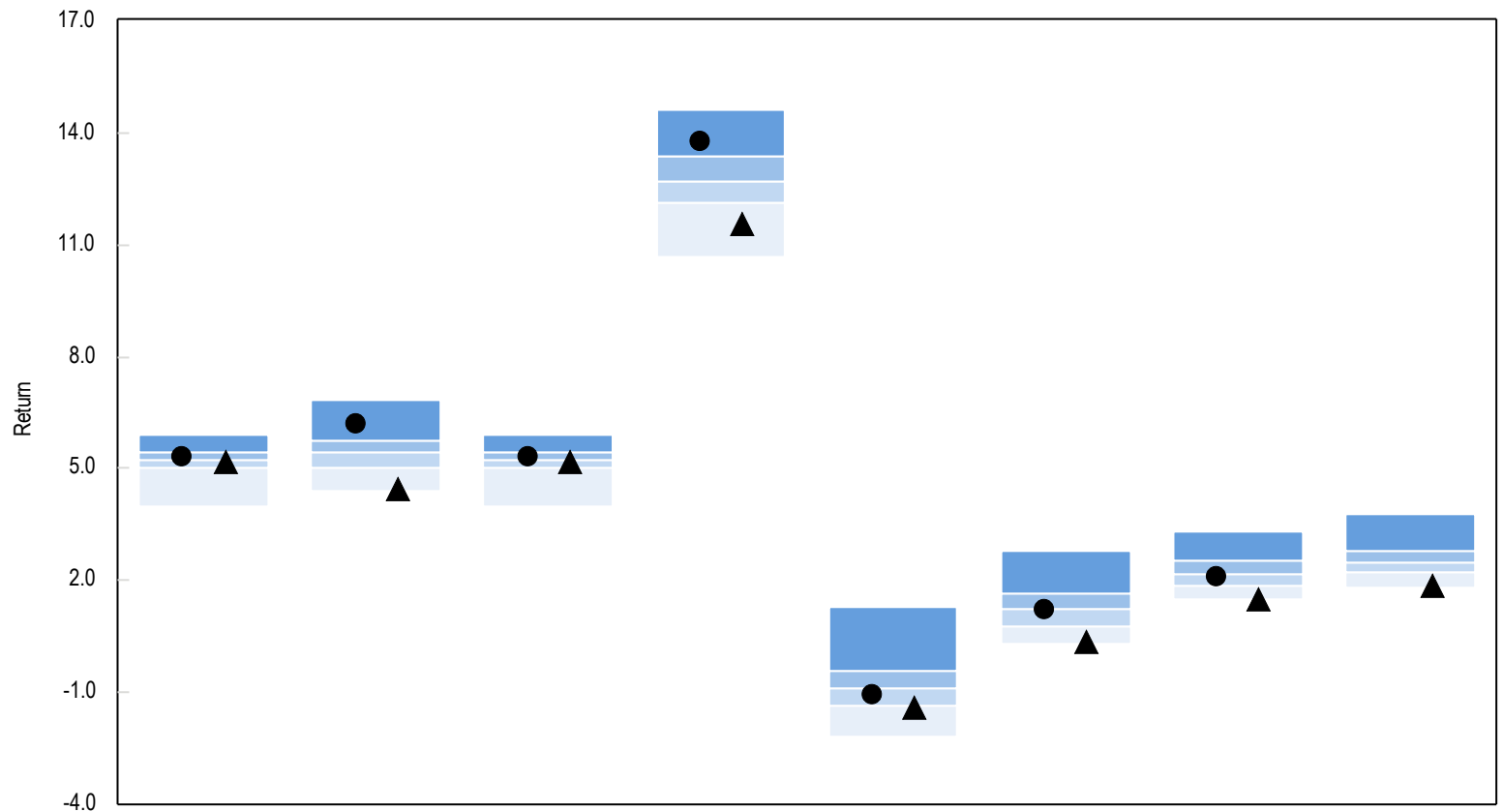
	Total Fixed Income	MacKay Shields Core Plus Opportunities	BlackRock US TIPS	Blmbg. U.S. Aggregate Index
Total Fixed Income	1.00			
MacKay Shields Core Plus Opportunities	0.99	1.00		
BlackRock US TIPS	0.91	0.88	1.00	
Blmbg. U.S. Aggregate Index	0.97	0.96	0.85	1.00

Income Research & Management replaced Duenta 9/30/2023. Managers need 5 years of history to appear on the Correlation Matrix.

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

Imperial County Employees' Retirement System  
 Period Ending: September 30, 2024

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

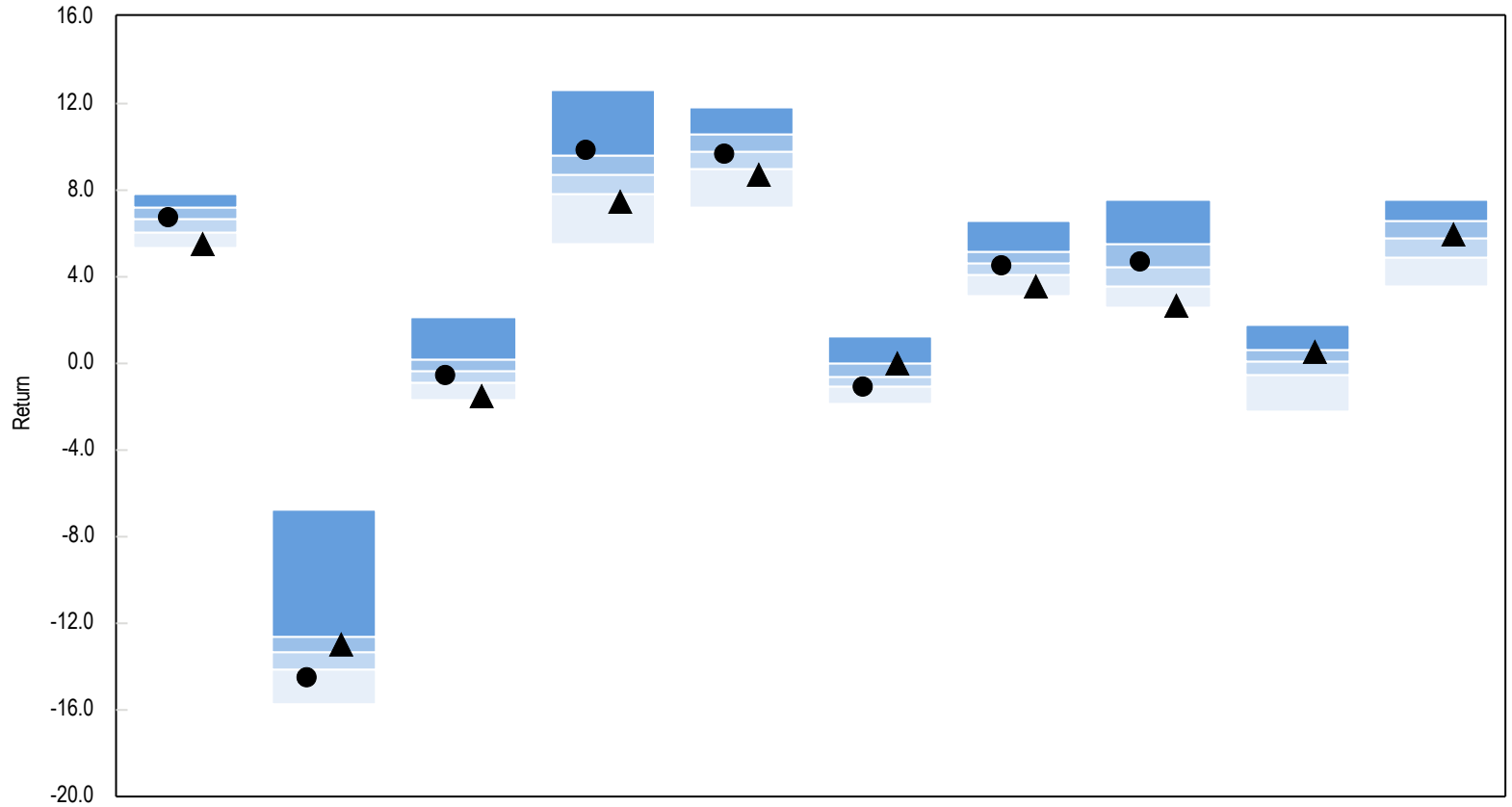


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● MacKay Shields Core Plus Opportunities	5.31 (40)	6.21 (13)	5.31 (40)	13.78 (13)	-1.04 (59)	1.24 (50)	2.10 (57)	-
▲ Blmbg. U.S. Aggregate Index	5.20 (58)	4.45 (94)	5.20 (58)	11.57 (90)	-1.39 (76)	0.33 (95)	1.47 (96)	1.84 (93)
5th Percentile	5.90	6.83	5.90	14.59	1.30	2.82	3.33	3.80
1st Quartile	5.44	5.77	5.44	13.36	-0.42	1.67	2.52	2.78
Median	5.24	5.41	5.24	12.71	-0.90	1.23	2.17	2.50
3rd Quartile	5.03	5.01	5.03	12.12	-1.34	0.77	1.87	2.21
95th Percentile	3.96	4.39	3.96	10.65	-2.18	0.32	1.50	1.80
Population	139	139	139	139	134	127	119	110

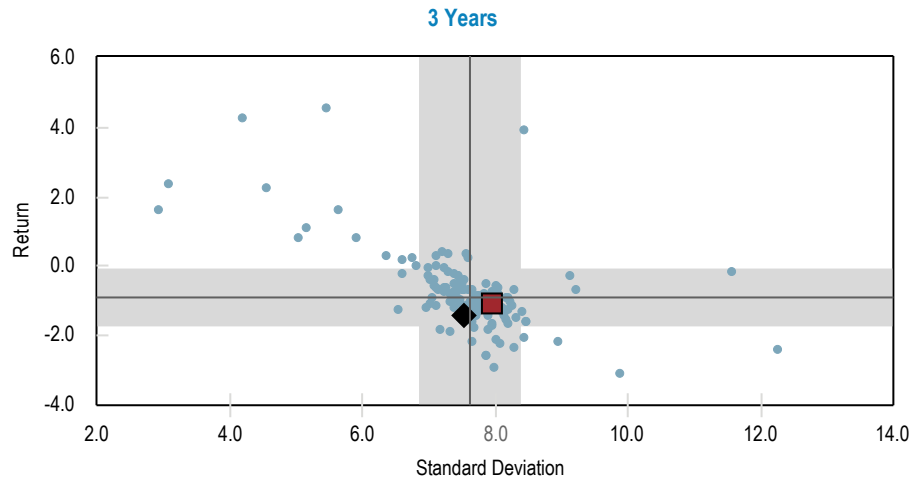
MacKay Shields Core Plus Opportunities  
 Consecutive Performance Comparison (Net of Fees)

Imperial County Employees' Retirement System  
 Period Ending: September 30, 2024

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

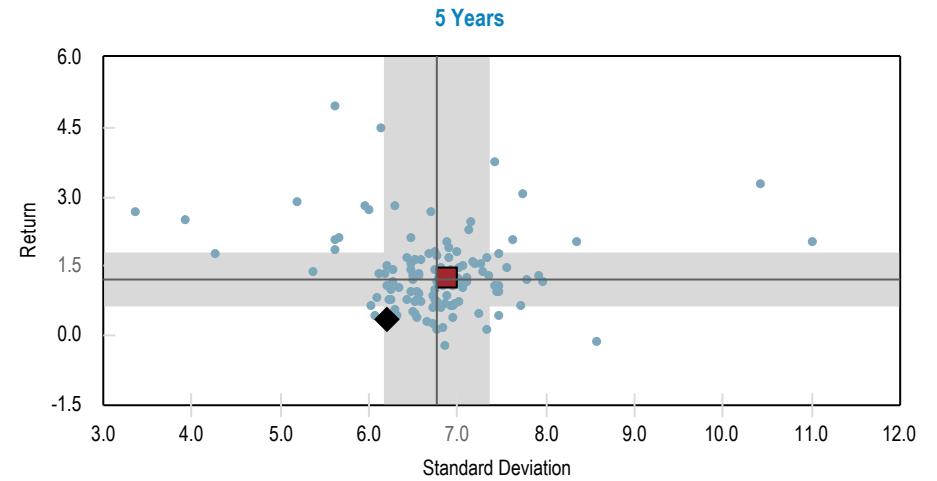


	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
● MacKay Shields Core Plus Opportunities	6.74 (45)	-14.51 (86)	-0.49 (54)	9.91 (20)	9.67 (54)	-1.03 (75)	4.53 (55)	4.69 (42)	-	-
▲ Blmbg. U.S. Aggregate Index	5.53 (92)	-13.01 (41)	-1.55 (91)	7.51 (81)	8.72 (81)	0.01 (25)	3.54 (91)	2.65 (93)	0.55 (29)	5.97 (41)
5th Percentile	7.81	-6.72	2.09	12.62	11.81	1.26	6.62	7.53	1.74	7.57
1st Quartile	7.18	-12.59	0.15	9.60	10.61	0.01	5.17	5.54	0.61	6.62
Median	6.63	-13.33	-0.36	8.71	9.74	-0.61	4.62	4.44	0.09	5.75
3rd Quartile	6.06	-14.09	-0.93	7.79	9.02	-1.04	4.11	3.58	-0.54	4.85
95th Percentile	5.30	-15.70	-1.68	5.48	7.16	-1.86	3.07	2.57	-2.24	3.58
Population	149	154	155	154	155	154	154	150	149	147



eV US Core Plus Fixed Inc

	Return	Standard Deviation
■ MacKay Shields Core Plus Opportunities	-1.04	7.97
◆ Blmbg. U.S. Aggregate Index	-1.39	7.53
— Median	-0.90	7.62
Population	134	134

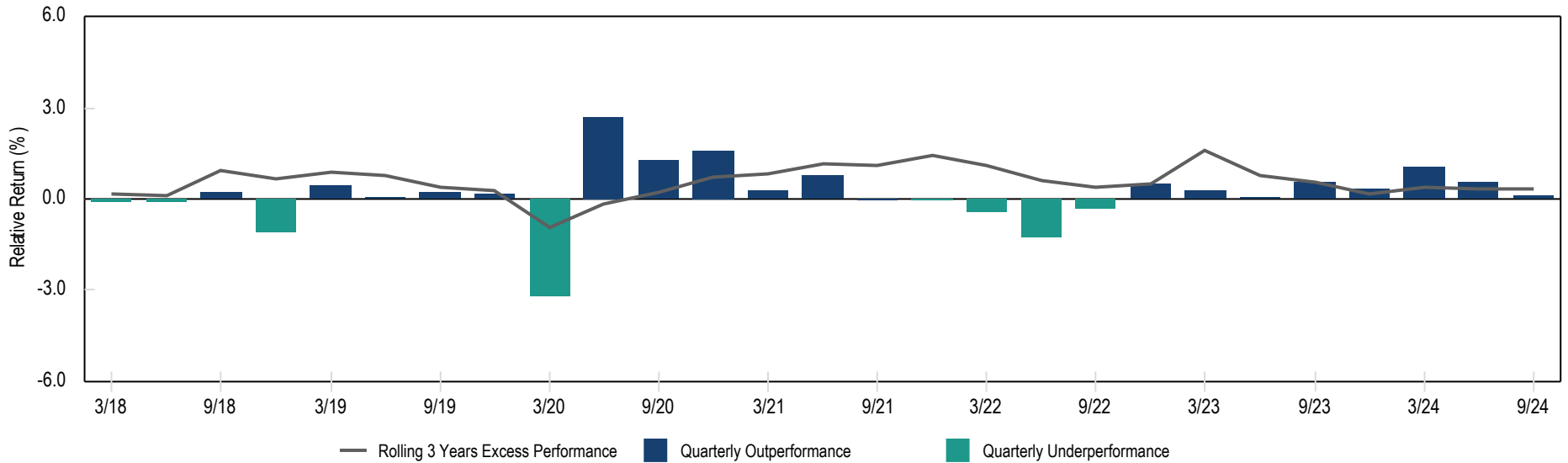


eV US Core Plus Fixed Inc

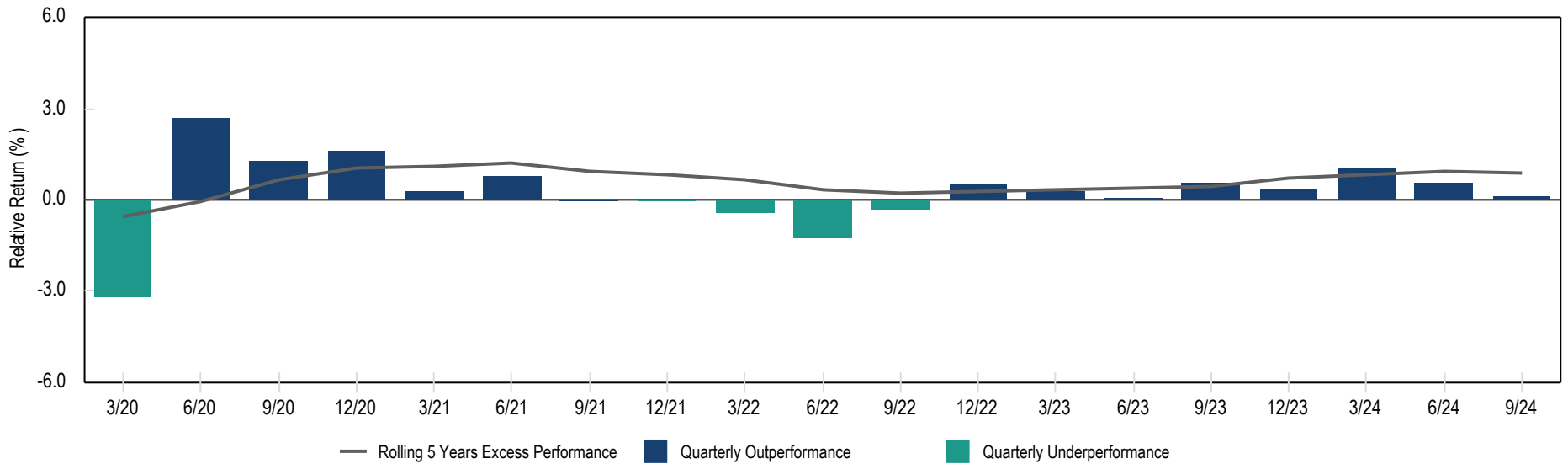
	Return	Standard Deviation
■ MacKay Shields Core Plus Opportunities	1.24	6.89
◆ Blmbg. U.S. Aggregate Index	0.33	6.21
— Median	1.23	6.76
Population	127	127



Rolling 3 Year Annualized Excess Performance



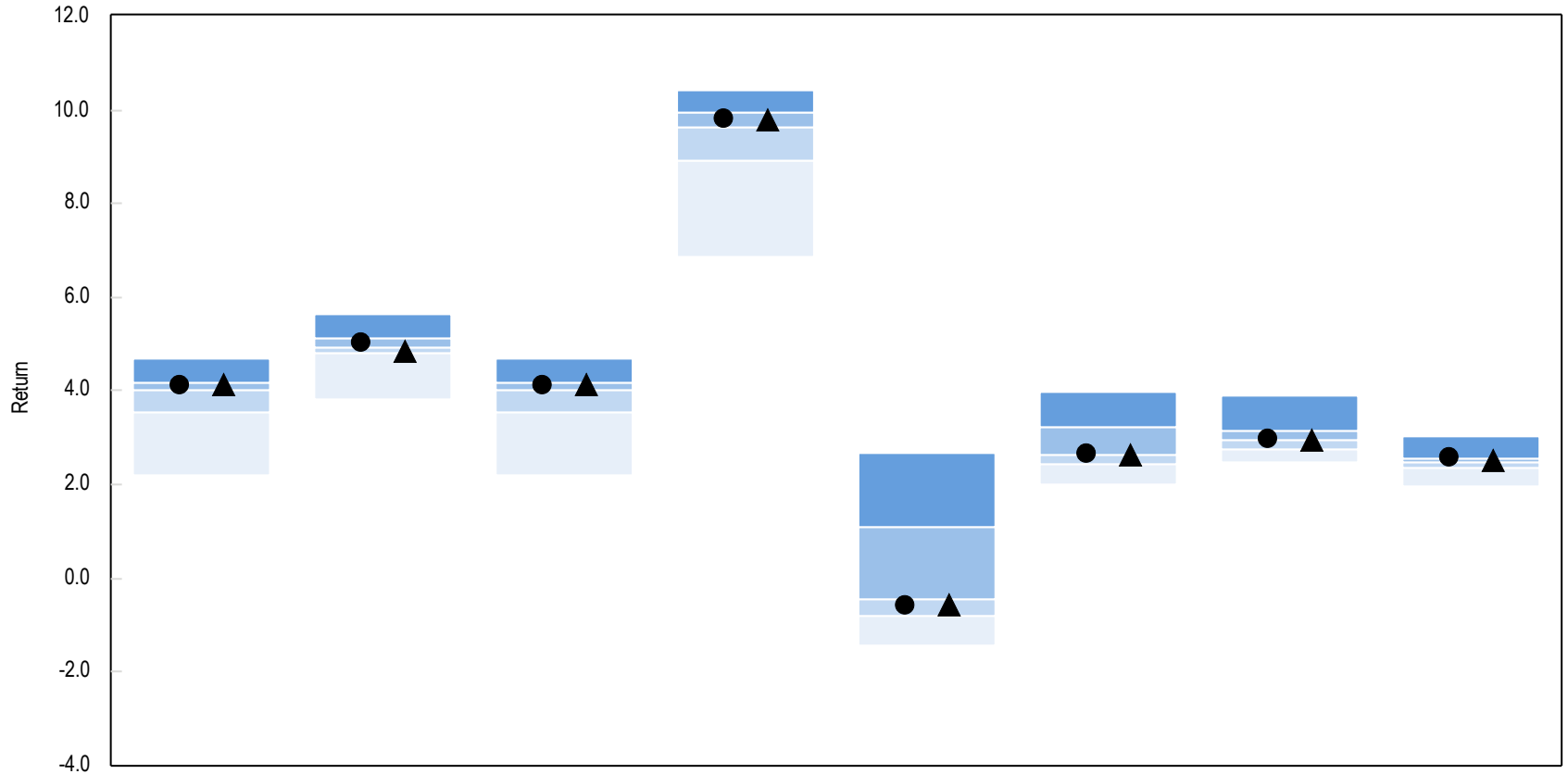
Rolling 5 Year Annualized Excess Performance



BlackRock US TIPS  
 Cumulative Performance Comparison (Net of Fees)

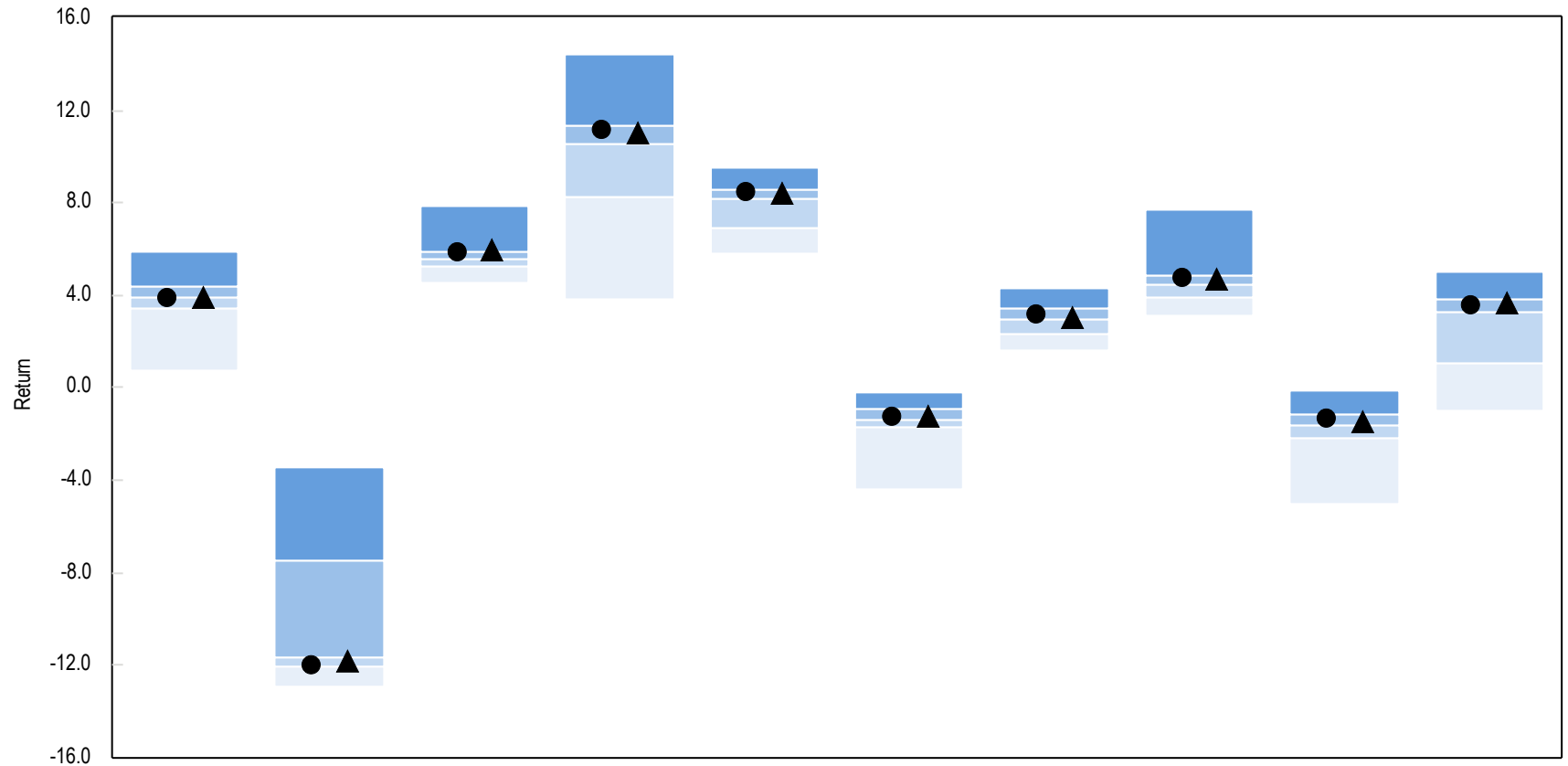
Imperial County Employees' Retirement System  
 Period Ending: September 30, 2024

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

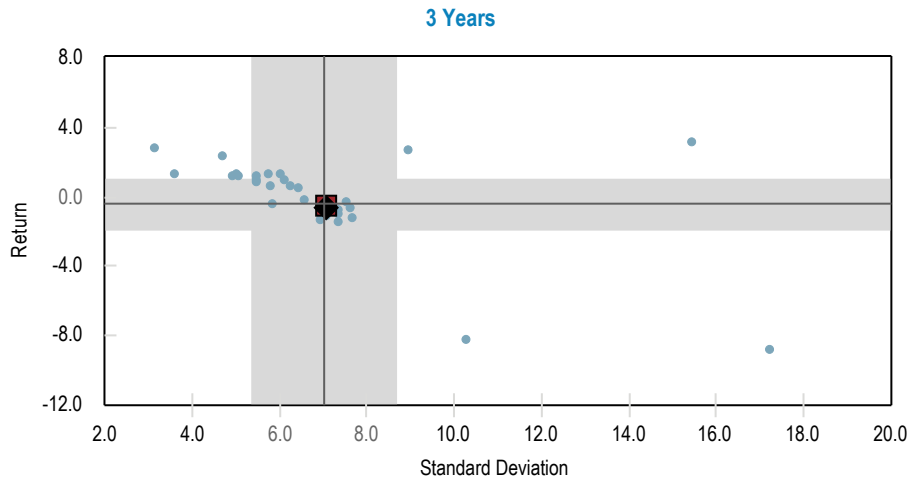


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● BlackRock US TIPS	4.12 (46)	5.04 (30)	4.12 (46)	9.81 (28)	-0.55 (55)	2.66 (49)	2.98 (49)	2.59 (19)
▲ Blmbg. U.S. TIPS Index	4.12 (46)	4.85 (71)	4.12 (46)	9.79 (30)	-0.57 (56)	2.62 (52)	2.93 (52)	2.54 (40)
5th Percentile	4.69	5.63	4.69	10.42	2.68	3.97	3.89	3.04
1st Quartile	4.18	5.12	4.18	9.93	1.08	3.22	3.15	2.57
Median	4.03	4.94	4.03	9.61	-0.44	2.64	2.96	2.50
3rd Quartile	3.56	4.82	3.56	8.90	-0.79	2.43	2.77	2.37
95th Percentile	2.19	3.82	2.19	6.85	-1.42	2.02	2.49	1.95
Population	45	45	45	45	43	42	39	37

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

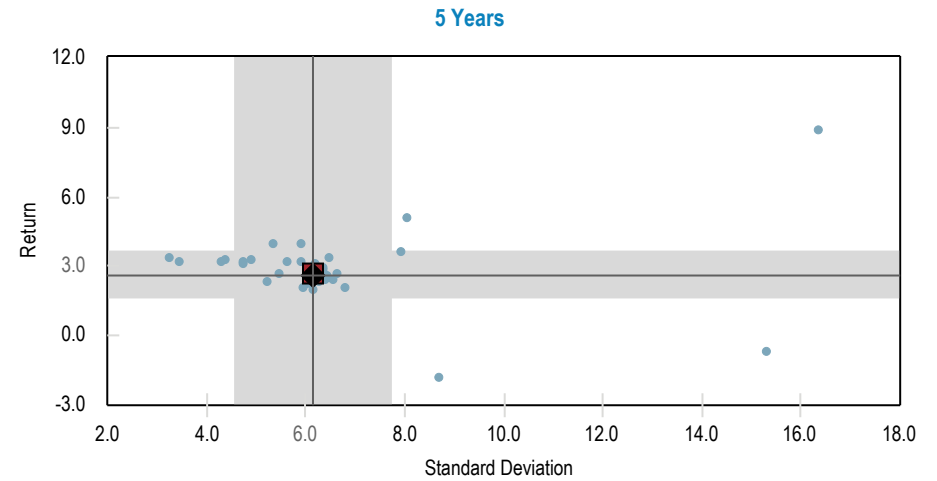


	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
● BlackRock US TIPS	3.94 (44)	-11.94 (67)	5.86 (28)	11.15 (28)	8.46 (32)	-1.19 (39)	3.17 (39)	4.77 (32)	-1.31 (35)	3.56 (38)
▲ Blmbg. U.S. TIPS Index	3.90 (49)	-11.85 (61)	5.96 (21)	10.99 (32)	8.43 (33)	-1.26 (42)	3.01 (49)	4.68 (37)	-1.44 (38)	3.64 (33)
5th Percentile	5.86	-3.47	7.83	14.44	9.50	-0.23	4.33	7.72	-0.10	5.00
1st Quartile	4.41	-7.46	5.86	11.36	8.56	-0.91	3.44	4.87	-1.14	3.81
Median	3.89	-11.63	5.61	10.57	8.21	-1.36	2.98	4.43	-1.61	3.29
3rd Quartile	3.46	-12.03	5.25	8.29	6.89	-1.70	2.32	3.94	-2.15	1.05
95th Percentile	0.72	-12.94	4.55	3.84	5.83	-4.42	1.65	3.15	-5.03	-0.95
Population	48	49	49	48	50	53	55	58	60	63



eV US TIPS / Inflation Fixed Inc

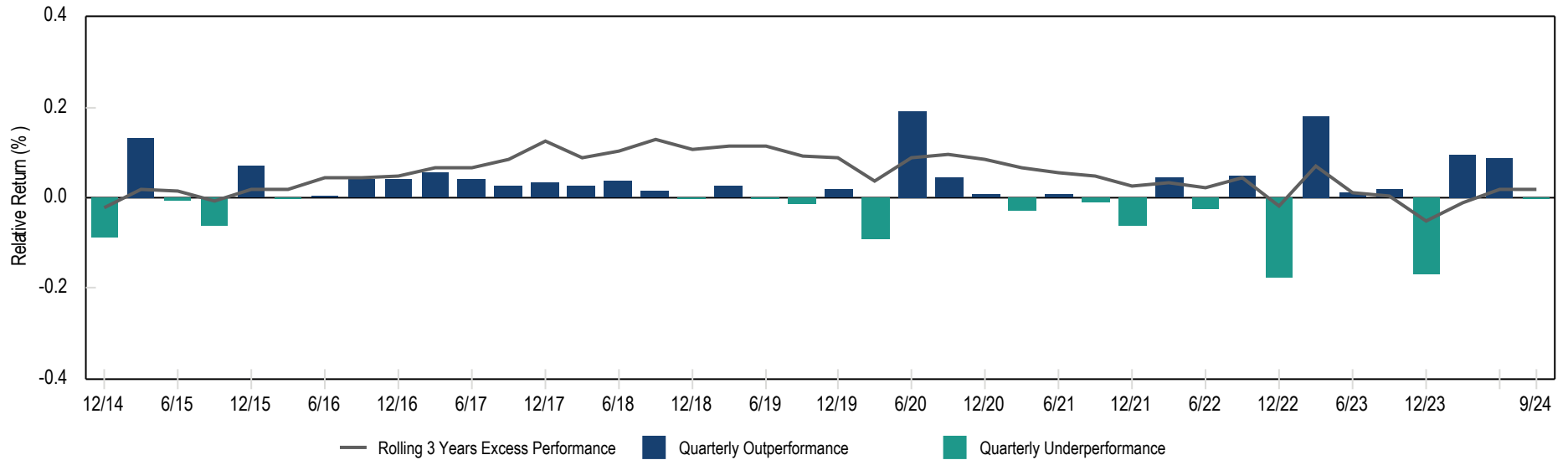
	Return	Standard Deviation
■ BlackRock US TIPS	-0.55	7.06
◆ Blmbg. U.S. TIPS Index	-0.57	7.07
— Median	-0.44	7.02
Population	43	43



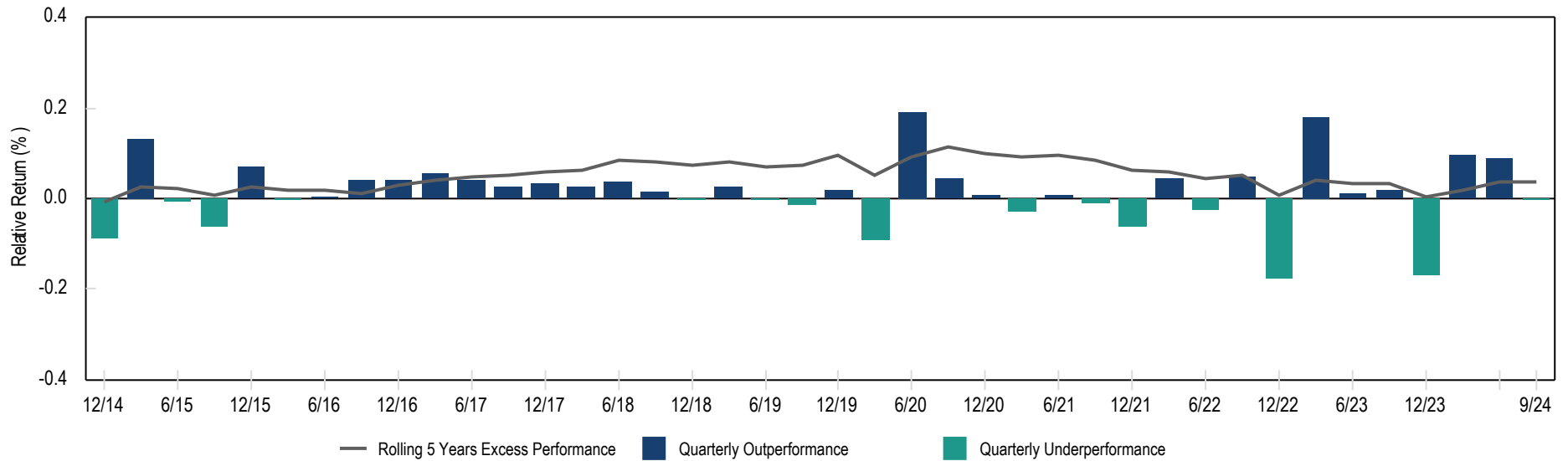
eV US TIPS / Inflation Fixed Inc

	Return	Standard Deviation
■ BlackRock US TIPS	2.66	6.17
◆ Blmbg. U.S. TIPS Index	2.62	6.16
— Median	2.64	6.15
Population	42	42

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



Total Real Estate  
Asset Class Overview (Net of Fees)

Imperial County Employees' Retirement System  
Period Ending: September 30, 2024

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019
<b>Total Real Estate</b>	<b>100,885,710</b>	<b>100.0</b>	<b>-0.2</b>	<b>-6.4</b>	<b>-0.2</b>	<b>-11.1</b>	<b>-2.8</b>	<b>1.4</b>	<b>4.8</b>	<b>-14.3</b>	<b>8.5</b>	<b>18.4</b>	<b>2.1</b>	<b>5.7</b>
<i>NCREIF Property Index</i>			0.8	-0.5	0.8	-3.5	0.9	3.3	5.9	-7.9	5.5	17.7	1.6	6.4
<i>NCREIF ODCE</i>			0.2	-2.6	0.2	-7.3	-0.2	2.9	5.7	-12.0	7.5	22.2	1.2	5.3
ASB Real Estate	20,808,556	20.6	-1.1	-15.1	-1.1	-21.7	-8.5	-2.9	2.1	-21.5	10.7	14.2	1.5	3.0
<i>NCREIF Property Index</i>			0.8	-0.5	0.8	-3.5	0.9	3.3	5.9	-7.9	5.5	17.7	1.6	6.4
<i>NCREIF ODCE</i>			0.2	-2.6	0.2	-7.3	-0.2	2.9	5.7	-12.0	7.5	22.2	1.2	5.3
Clarion Lion	27,245,218	27.0	0.2	-4.1	0.2	-8.3	-1.4	2.7	6.1	-15.5	9.6	23.6	2.3	6.8
<i>NCREIF Property Index</i>			0.8	-0.5	0.8	-3.5	0.9	3.3	5.9	-7.9	5.5	17.7	1.6	6.4
<i>NCREIF ODCE</i>			0.2	-2.6	0.2	-7.3	-0.2	2.9	5.7	-12.0	7.5	22.2	1.2	5.3
ARA American Strategic Value Realty	50,796,396	50.4	-0.1	-3.9	-0.1	-8.0	-1.1	2.7	-	-10.3	6.8	18.6	2.4	7.8
<i>NCREIF Property Index +2%</i>			1.3	1.0	1.3	-1.5	2.9	5.3	-	-6.1	7.6	20.0	3.6	8.5
<i>NCREIF ODCE +2%</i>			0.7	-1.1	0.7	-5.4	1.8	5.0	-	-10.3	9.6	24.6	3.2	7.4
1221 State St. Corp	2,035,541	2.0	0.0	0.0	0.0	0.0	0.0	1.5	2.4	0.0	0.0	0.0	0.0	7.9

**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	Cash	-	J.P. Morgan
BlackRock International Equity	7/3/2003	J.P. Morgan	HarbourVest IX-Buyout	2011 <sup>1</sup>	HarbourVest
DFA Emerging Markets Value	1/11/2007	J.P. Morgan	HarbourVest IX-Credit	2011 <sup>1</sup>	HarbourVest
MackKay Shields Core Plus Ops	3/2/2015	CITCO	HarbourVest International VI	2008 <sup>1</sup>	HarbourVest
BlackRock US TIPS	4/11/2007	J.P. Morgan	Harbourvest IX-Venture	2011 <sup>1</sup>	HarbourVest
ASB Real Estate	12/31/2012	ASB Real Estate	Harbourvest 2017 Global	2017 <sup>1</sup>	HarbourVest
Clarion Lion	12/31/2006	Clarion Lion	Harbourvest 2018 Global	2018 <sup>1</sup>	HarbourVest
Portfolio Advisors	10/31/2017	Portfolio Advisors	Harbourvest 2019 Global	2019 <sup>1</sup>	HarbourVest
TSSP Adjacent Opportunities Partners	4/16/2020	Sixth Street	Harbourvest 2023 Global	2023 <sup>1</sup>	HarbourVest
Sixth Street Diversified Credit	5/29/2020	Sixth Street	KKR Mezzanine	2010 <sup>1</sup>	KKR
1221 State Street Corp	9/30/2008	ICERS/Union Bank	ARA American Strategic Value Realty	01/04/2018	ARA
Income Research & Management	9/1/2023	IR&M	William Blair Emerging Growth	7/02/2024	William Blair

<sup>1</sup>Represents fund vintage year.

**Policy & Custom Index Composition**

Policy Index (12/1/2023-Present)	33% Russell 3000, 17% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 10% NCREIF Property, 5% Private Equity Benchmark, 8% Private Credit Benchmark.
Policy Index (8/1/2020- 11/30/2023)	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).

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

# Glossary

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**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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**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**NOVEMBER 2024**

Annual Private Markets Program Review

**Imperial County Employees' Retirement System**

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Appendix 23

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# I. Overview

# Executive summary

## Private Equity

- ICERS's uses HarbourVest in a multi-series global fund-of-fund structure to gain sector, geographic, and vintage year diversification.
- The program has performed well since inception.
- As of June 30, 2024, private equity was overweight relative to its policy target (6.8% vs. 5.0%), driven primarily by relative outperformance.
- Based on projections, an additional capital commitment is still needed to maintain the long-term target and vintage year diversification.

## Private Credit

- ICERS' program was originally initiated through Portfolio Advisors, which includes Portfolio Advisors Credit Strategies and five separate closed-end funds.
- The Portfolio Advisors sleeve is winding down in favor of a simpler, single-platform solution with Sixth Street Partners.
- As of June 30, 2024, private credit was underweight relative to its policy target (5.7% vs. 8.0%).
- The Board has authorized \$80M of ongoing commitments to Sixth Street Partners' Diversified Credit Program, of which \$60M has been committed so far.

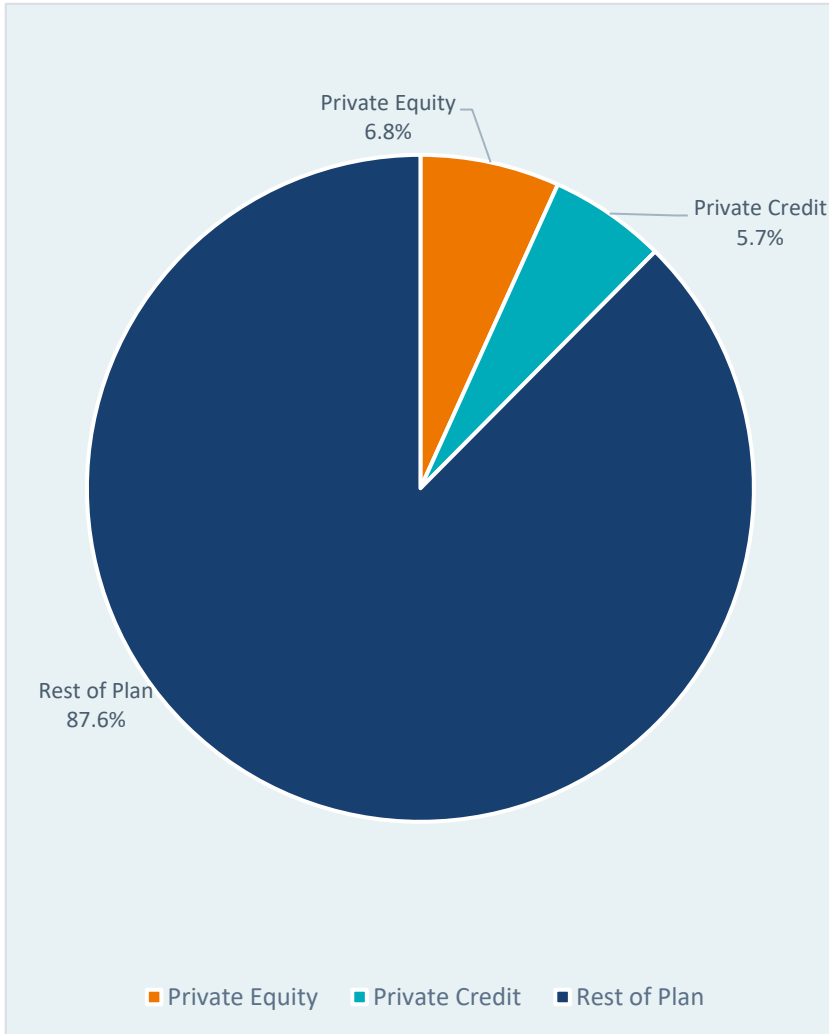
# Portfolio allocation

<b>Asset Class</b>	<b>Policy (Adopted August 2023)</b>	<b>Current (As of June 30, 2024)</b>
Domestic Equity	33%	33.3%
International Equity	17%	14.9%
Fixed Income	27%	26.0%
Real Estate	10%	8.5%
Private Equity	5%	6.8%
Private Credit	8%	5.7%
Opportunistic <sup>1</sup>	0%	2.6%
Cash	0%	2.1%

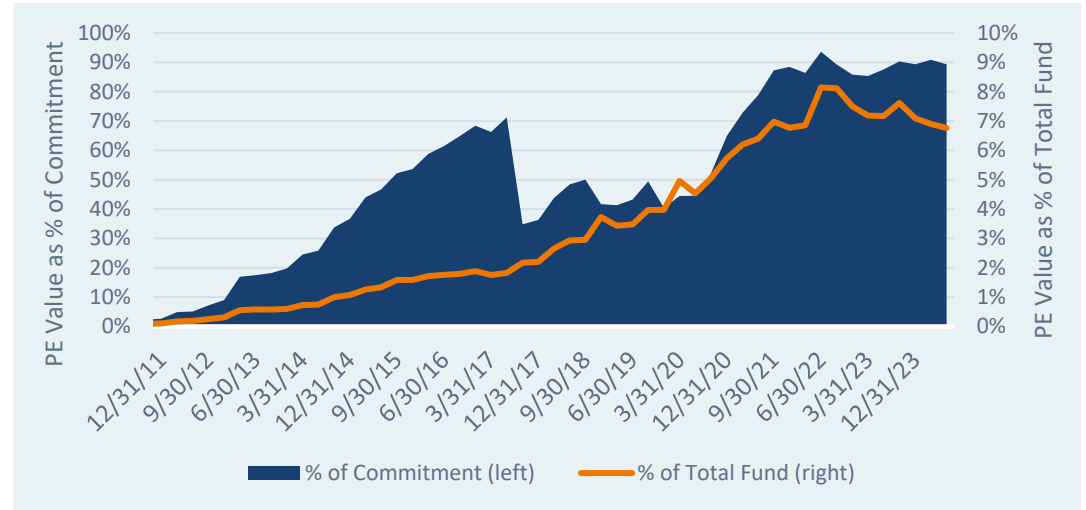
<sup>1</sup> Opportunistic is composed of TSSP Adjacent Opportunities Partners and KKR Mezzanine, with the KKR winding down.

# Private markets program at a glance

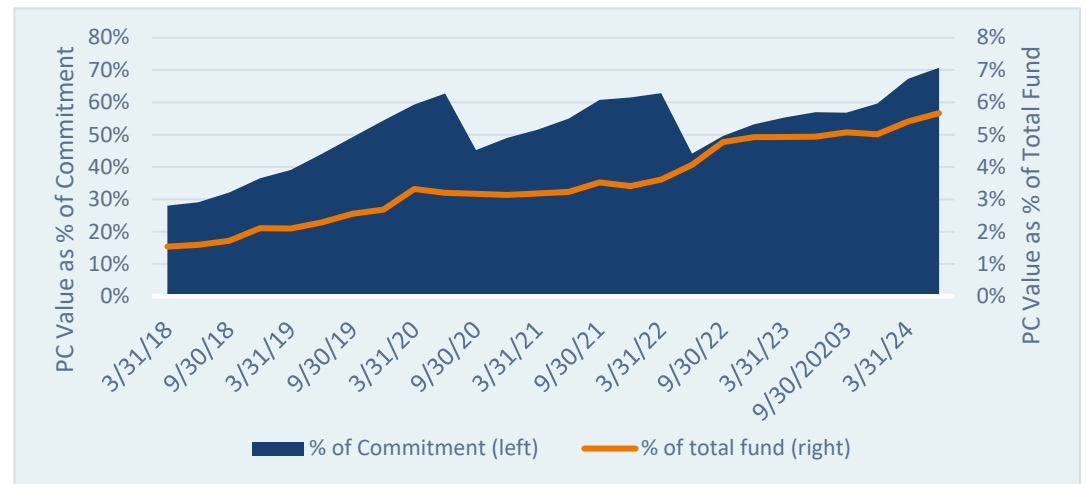
PRIVATE MARKETS AS % OF TOTAL FUND



PRIVATE EQUITY AS % OF COMMITMENT AND TOTAL FUND



PRIVATE CREDIT AS % OF COMMITMENT AND TOTAL FUND



As of 6/30/2024

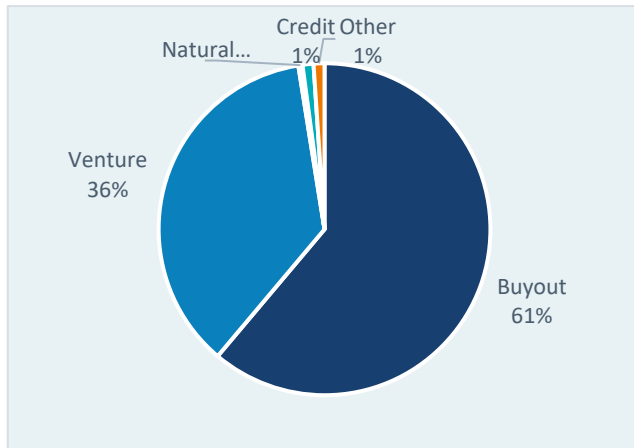
# II. Private equity



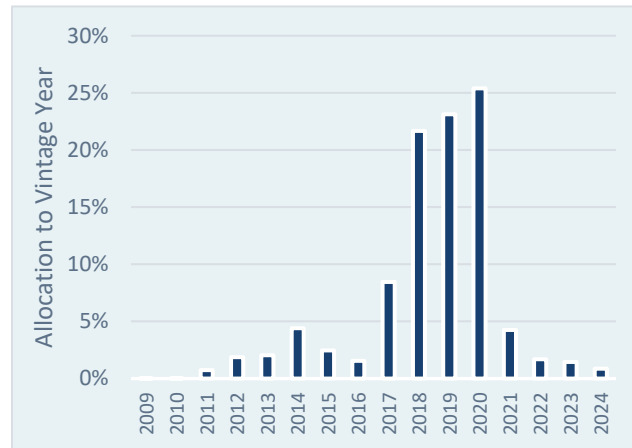
# Diversification

- The private equity program is diversified across seven funds through a single manager (HarbourVest).
- The program currently spans 16 vintage years with the highest concentration in years 2018-2020.
- Buyout investments (61%) and venture capital (36%) make up almost the entire set of underlying strategies.

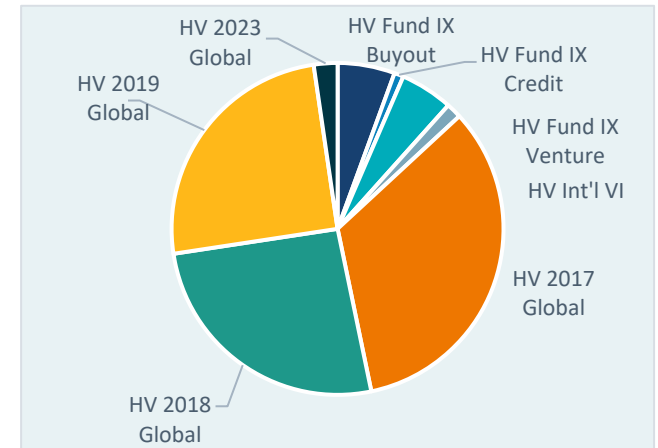
**STRATEGY DIVERSIFICATION**



**VINTAGE YEAR DIVERSIFICATION**

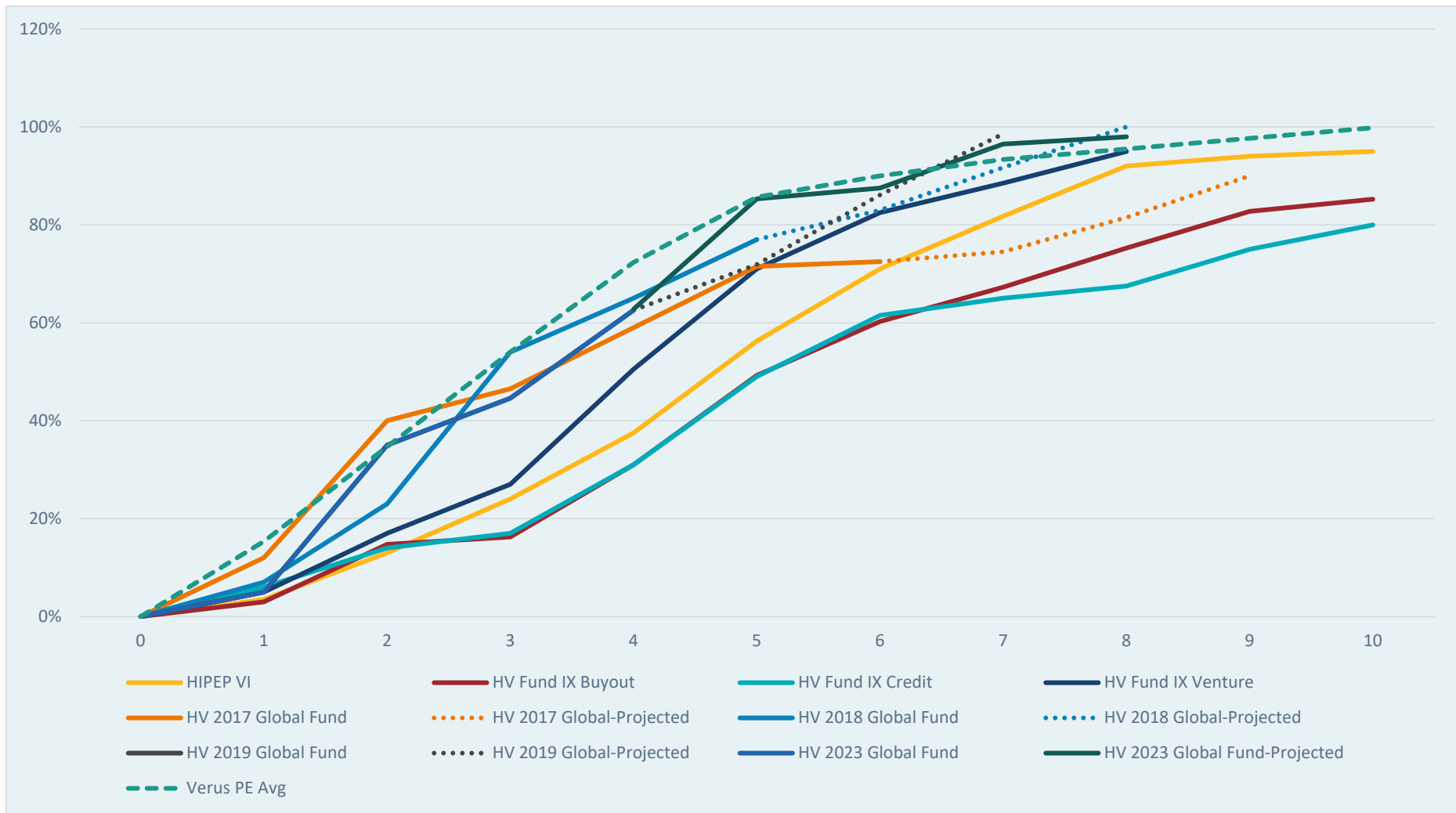


**FUND DIVERSIFICATION**



By current value as of 6/30/24

# Pace of capital calls



Source: HarbourVest portal and projections of contributions

\* Verus developed this average through a mix of client experience and database funds

# Current holdings

Vintage	Manager & Fund Name	NAV as of 6/30/24	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Distrib/ Paid-In (DPI) <sup>1</sup>	Tot. Value/ Paid-In (TVPI) <sup>2</sup>	Net IRR Since Inception <sup>3</sup>
2008	HarbourVest Int'l VI <sup>3</sup>	\$1,225,348	\$3,712,930	\$2,630,078	71%	\$1,082,852	\$4,494,996	170.9%	217.5%	13.6%
2011	HarbourVest Partners IX-Buyout Fund L.P.	\$4,570,760	\$10,000,000	\$8,525,000	85%	\$1,475,000	\$14,371,299	168.6%	222.2%	16.9%
2011	HarbourVest Partners IX-Credit	\$737,149	\$2,000,000	\$1,641,541	82%	\$358,459	\$1,950,233	118.8%	163.7%	11.5%
2011	HarbourVest Partners IX-Venture	\$4,213,448	\$4,000,000	\$3,800,000	95%	\$200,000	\$1,059,397	27.9%	138.8%	20.2%
2017	HarbourVest Partners 2017 Global Fund L.P.	\$26,878,561	\$30,000,000	\$19,364,051	65%	\$10,635,949	\$12,836,101	66.3%	205.1%	18.7%
2018	HarbourVest Partners 2018 Global Fund L.P.	\$20,655,233	\$20,000,000	\$11,238,043	56%	\$8,761,957	\$5,275,530	46.9%	230.7%	18.6%
2019	HarbourVest Partners 2019 Global Fund L.P.	\$20,068,328	\$20,000,000	\$13,975,273	70%	\$6,024,727	\$2,809,888	20.1%	163.7%	19.8%
2023	HarbourVest Partners 2023 Global Fund L.P.	\$1,809,611	\$10,000,000	\$1,603,540	16%	\$8,396,460	\$0	0.0%	112.9%	NA
<b>Total Private Equity</b>		<b>\$80,158,438</b>	\$99,712,930	\$62,777,526	63%	\$36,935,404	\$42,797,444	68.2%	195.9%	
<b>% of Portfolio (Market value)</b>		<b>6.8%</b>								

<sup>1</sup> (DPI) is equal to (capital returned / capital called)

<sup>2</sup>(TVPI) is equal to (NAV + capital returned) / capital called

<sup>3</sup>Investor IRR is as of 6/30/24 provided by HarbourVest

Excerpt from the Q2 2024 investment performance report

# Management fees

	Fund IX Buyout	Fund IX Credit	Fund IX Venture	HarbourVest Int'l VI	HarbourVest 2017 Global	HarbourVest 2018 Global	HarbourVest 2019 Global
Commitment	\$10,000,000	\$2,000,000	\$4,000,000	\$3,712,930 <sup>1</sup>	\$30,000,000	\$20,000,000	\$20,000,000
Vintage Year	2011	2011	2011	2009	2017	2018	2019
Yr 1 Eff. Date	Jan – Dec 2011	Jan – Dec 2011	Jan – Dec 2011	Oct 08 – Sep 09	Apr 17 – Mar 18	Apr 18 – Mar 19	May 19 – Apr 20
Year 1	0.25%	0.25%	0.25%	0.25%	0.45%	0.45%	0.45%
Year 2	0.50%	0.50%	0.50%	0.50%	0.66%	0.66%	0.66%
Year 3	0.75%	0.75%	0.75%	0.75%	0.88%	0.88%	0.88%
Year 4	1.00%	1.00%	1.00%	1.00%	0.88%	0.88%	0.88%
Year 5	1.00%	1.00%	1.00%	1.00%	0.88%	0.88%	0.88%
Year 6	1.00%	1.00%	1.00%	1.00%	0.88%	0.88%	0.88%
Year 7	1.00%	1.00%	1.00%	1.00%	0.88%	0.88%	0.88%
Year 8	1.00%	1.00%	1.00%	1.00%	0.88%	0.88%	0.88%
Year 9	1.00%	1.00%	1.00%	1.00%	0.66%	0.66%	0.66%
Year 10	1.00%	1.00%	1.00%	1.00%	0.45%	0.45%	0.45%
Year 11	0.90%	0.90%	0.90%	1.00%	0.22%	0.22%	0.22%
Year 12	0.81%	0.81%	0.81%	0.90%	0.13%	0.13%	0.13%
Year 13	0.73%	0.73%	0.73%	0.81%	0.09%	0.09%	0.09%
Year 14				0.73%			
Year 15				0.30%			
Year 16				0.30%			
Year 17				0.15%			
Average	0.84%	0.84%	0.84%	0.75%	0.61%	0.61%	0.61%

Total lifetime program costs average to about 0.67%<sup>1</sup>

Source: HarbourVest

<sup>1</sup>Calculation is cap-weighted based on commitment amounts of current funds.

# Performance vs. public market equivalents

Fund	Vintage	Commitment	Fund Level Net IRR	ICERS Net IRR	PME Return	PME Benchmark
Fund IX Buyout	2011	\$ 10,000,000	17.4%	16.9%	13.8%	S&P 500
					10.1%	Russell 2000
Fund IX Credit	2011	\$ 2,000,000	11.8%	11.5%	14.1%	S&P 500
					10.4%	Russell 2000
Fund IX Venture	2011	\$ 4,000,000	20.6%	20.2%	13.5%	S&P 500
					9.4%	Russell 2000
HarbourVest Int'l VI	2008	\$ 3,712,930	13.6%	13.6%	7.5%	MSCI World ex-US
HarbourVest 2017 Global	2017	\$ 30,000,000	18.8%	18.7%	6.5%	MSCI World ex-US
HarbourVest 2018 Global	2018	\$ 20,000,000	18.6%	18.6%	7.4%	MSCI World ex-US
HarbourVest 2019 Global	2019	\$ 20,000,000	20.1%	19.8%	7.1%	MSCI World ex-US
HarbourVest 2023 Global	2023	\$ 10,000,000	NM	NM	NM	MSCI World ex-US

See Appendix for PME calculation notes

Source: HarbourVest  
As of 6/30/2024

# Cash flow projections (\$mm)

Fund	Vintage Year	Commitment	Remaining Commitment	Inception thru 2Q 2024 - Actual	(Contributions) / Distributions - Projected								
					2024	2025	2026	2027	2028	2029	2030	2031	
HIPEP VI Partners	2008	\$3.3	\$0.00										
Net Cash Flow					\$0.6	\$1.4							
NAV				\$1.2	\$1.0	(\$0.0)							
HarbourVest IX - Buyout	2011	\$10.0	\$1.47										
Net Cash Flow					\$2.1	\$2.7	\$2.2	\$0.6					
NAV				\$4.6	\$3.7	\$2.1	\$0.4	(\$0.0)					
HarbourVest IX - Credit Opps	2011	\$2.0	\$0.40										
Net Cash Flow					\$0.3	\$0.4	\$0.2						
NAV				\$0.7	\$0.5	\$0.2	(\$0.0)						
HarbourVest IX - Venture	2011	\$4.0	\$0.20										
Net Cash Flow					\$0.7	\$1.0	\$1.7	\$1.6					
NAV				\$4.2	\$3.8	\$3.0	\$1.5	(\$0.0)					
Global Fund 2017	2017	\$30.0	\$8.55										
Net Cash Flow					\$2.0	\$7.5	\$9.9	\$8.8	\$6.7	\$3.7			
NAV				\$26.9	\$27.8	\$23.4	\$16.0	\$9.0	\$3.3	(\$0.0)			
Global Fund 2018	2018	\$20.0	\$7.00										
Net Cash Flow					\$1.3	\$5.5	\$7.0	\$6.1	\$5.2	\$3.4	\$1.4		
NAV				\$20.7	\$21.5	\$18.3	\$13.2	\$8.5	\$4.2	\$1.3	(\$0.0)		
Global Fund 2019	2019	\$20.0	\$10.80										
Net Cash Flow					(\$0.4)	\$3.9	\$6.0	\$7.5	\$6.3	\$4.8	\$3.6	\$1.6	
NAV				\$20.1	\$22.9	\$21.7	\$18.3	\$13.0	\$8.3	\$4.5	\$1.4	\$0.0	
Global Fund 2023	2023	\$10.0	\$8.40										
Net Cash Flow					(\$2.2)	(\$1.7)	(\$0.3)	\$0.5	\$1.3	\$3.2	\$3.3	\$2.3	
NAV				\$1.8	\$4.2	\$6.4	\$7.5	\$7.9	\$7.5	\$5.3	\$2.6	\$0.6	
<b>PE Balance</b>		<b>\$99.3</b>	<b>\$28.43</b>	<b>\$80.16</b>	<b>\$81.26</b>	<b>\$68.63</b>	<b>\$49.48</b>	<b>\$30.48</b>	<b>\$15.75</b>	<b>\$5.78</b>	<b>\$1.43</b>	<b>\$0.00</b>	
<b>% of Total Assets</b>				<b>6.8%</b>	<b>6.5%</b>	<b>5.2%</b>	<b>3.5%</b>	<b>2.1%</b>	<b>1.0%</b>	<b>0.3%</b>	<b>0.1%</b>	<b>0.0%</b>	
<b>Total Plan Assets</b>				<b>\$1,185</b>	<b>\$1,251</b>	<b>\$1,324</b>	<b>\$1,401</b>	<b>\$1,482</b>	<b>\$1,569</b>	<b>\$1,660</b>	<b>\$1,755</b>	<b>\$1,854</b>	

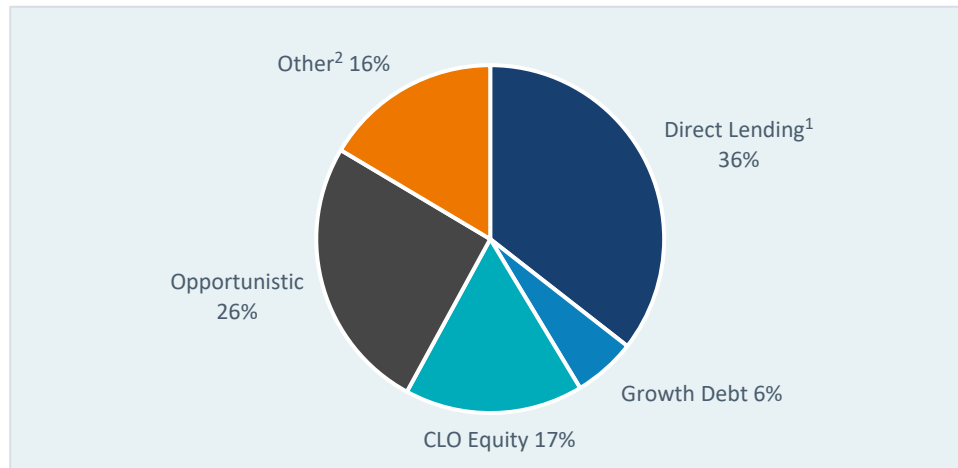
Note: Assumptions for this model are detailed in the appendix; Remaining Commitment is as of 6/30/24

# III. Private credit

# Diversification

- The private credit program was implemented in 2017 with a total commitment of \$45 million and contributions of \$15.6 million.
- A \$20 million commitment to Sixth Street Diversified Credit Program (DCP) was added in 2018, with another \$10 million added in 2021, \$20 million added in 2022, and \$10M in 2023, bringing the total private credit program to \$115 million.
- As of 6/30/24, the program was invested across 12 funds, 6 of which are included in the Sixth Street DCP.
- The largest allocation is to Sixth Street Partners DCP, with an ongoing commitment of \$60 million
  - \$10 million each to CLO Equity III / CLO Equity IV, SLE II, Growth II, SSLP, and \$20 million to TAO 5.0.

## STRATEGY DIVERSIFICATION

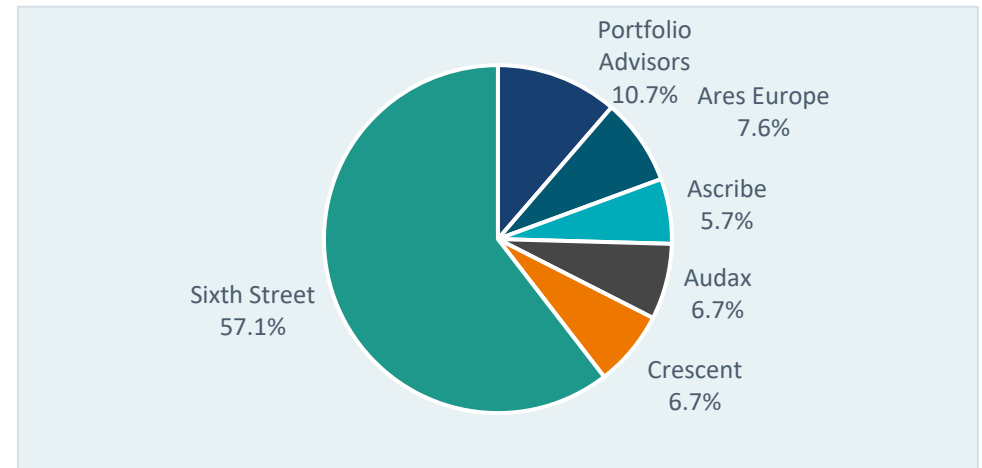


By capital balance

<sup>1</sup> Includes non-US strategy

<sup>2</sup> Mezzanine, second lien, senior secured and event driven syndicated bank debt

## MANAGER DIVERSIFICATION



By commitment



# Current holdings

Vintage	Manager & Fund Name	Estimated	Total	Capital	%	Remaining	Capital	Market Value	Distrib./ Tot. Value/		Net IRR	IRR		
		6/30/2024							Market Value <sup>1</sup>	Commitment	Called		Called	Commitment
									(DPI) <sup>2</sup>	(TVPI) <sup>3</sup>	Inception <sup>4</sup>	Date		
2013	Portfolio Advisors Credit Strategies Fund	\$11,497,447	\$11,250,000	\$11,250,000	100%	\$0	\$3,731,292	\$12,166,621	33.2%	135.4%	8.3%	3/31/24		
2017	Crescent Direct Lending Levered Fund II	\$2,887,144	\$7,000,000	\$5,707,507	82%	\$1,292,493	\$4,651,325	\$2,770,407	81.5%	132.1%	9.5%	3/31/24		
2017	Audax Direct Lending Fund A	\$5,231,351	\$7,000,000	\$5,791,026	83%	\$1,208,974	\$3,246,001	\$5,227,810	56.1%	146.4%	14.9%	12/31/23		
2018	Ares Capital Europe IV	\$5,745,612	\$8,000,000	\$6,762,884	85%	\$1,237,116	\$3,713,023	\$6,896,335	54.9%	139.9%	8.2%	12/31/23		
2019	Lone Star Fund XI	\$4,560,663	\$5,750,000	\$5,026,116	87%	\$723,884	\$3,210,404	\$3,611,793	63.9%	154.6%	29.1%	6/30/24		
2019	Ascribe Opportunities IV	\$5,096,538	\$6,000,000	\$5,207,450	87%	\$792,550	\$1,513,899	\$5,351,462	29.1%	126.9%	9.9%	3/31/24		
2020	Sixth Street Diversified Credit	\$32,175,382	\$60,000,000	\$29,778,787	60%	\$20,221,213	\$3,542,097	\$18,961,608	11.9%	119.9%	11.1%	3/31/24		
<b>Total Illiquid Private Credit</b>		<b>\$67,194,137</b>	\$105,000,000	\$69,523,770	73.2%	\$25,476,230	\$23,608,041	\$54,986,036	34.0%	130.6%				
<b>% of Portfolio (Market Value)</b>		<b>5.67%</b>							<b>Management</b>	<b>Accrued</b>	<b>Admin</b>	<b>Interest</b>	<b>Other</b>	<b>Total</b>

<sup>1</sup>Last known market value + capital calls - distributions (preliminary MVs as of 6/30/24)

<sup>2</sup> (DPI) is equal to (capital returned / capital called)

<sup>3</sup>(TVPI) is equal to (NAV + capital returned) / capital called

<sup>4</sup>Investor IRR as of 6/30/24 per manager's data.

# Program details

Fund Name	Vintage	Commitment (\$mm)	Fund Size (\$mm)	Geographic Focus	Investment Focus
Portfolio Advisors Credit Strategies Fund	2013	\$11.25	\$258	North America	Secondary & Co-investment mezzanine and subordinated debt
Audax Direct Lending Solutions Fund	2017	\$7.00	\$1,650	North America	Unitranche and stretch senior debt
Crescent Direct Lending II	2017	\$7.00	\$1,600	North America	Senior Loans to lower middle-market companies
Ares Capital Europe IV	2018	\$8.00	€ 6,500	Europe	Flexible debt capital to European mid-market companies
Ascribe Opportunities IV	2018	\$6.00	\$1,500	North America	Opportunistic, value-based investments in distressed assets
Lone Star Fund XI	2018	\$5.75	\$6,000	Global	Distressed assets across a broad range of products
SSP CLO Equity III	2020	\$10.0	\$291.3	North America	Floating-rate leveraged loan and structured credit securities
SSP SLE II	2020	\$10.0	\$844.4	Europe	Direct loans to middle-market companies, primarily in Europe
SSP Growth II	2021	\$10.0	\$2,084.5	U.S.	Provides flexible financing solutions to growth companies
SSP TAO 5.0	2022	\$20.0	\$25,682.0	Global	Multi-strategy across all SSP funds
SSP CLO Equity IV	2023	\$10.0	n/a	North America	Floating-rate leveraged loan and structured credit securities
SSLP	2024	\$10.0	n/a	North America	Business development companies
<b>Total</b>		<b>\$115.0</b>			

# Management fees

	Portfolio Advisors \$11,250,000 2018	Ares Europe IV \$8,000,000 2018	Ascribe Opportunities IV \$6,000,000 2018	Audax Direct Lending \$7,000,000 2018	Crescent Direct Lending II \$7,000,000 2018	Lone Star XI \$5,750,000 2018	Sixth Street Partners DCP									
							CMS III \$10,000,000 2020		SLE II \$10,000,000 2020		Growth II \$10,000,000 2021		TAO 5.0 \$20,000,000 2022		CMS IV \$10,000,000 2023	
							Uncalled	Called	Uncalled	Called	Uncalled	Called	Uncalled	Called	Uncalled	Called
Year 1	0.12%	1.38%	0.00%	0.00%	0.00%	0.50%	0.00%	0.30%	0.25%	1.25%	1.25%	1.50%	0.65%	1.35%	0.00%	0.30%
Year 2	1.20%	1.38%	0.00%	1.25%	0.75%	1.40%	0.00%	0.30%	0.25%	1.25%	1.25%	1.50%	0.65%	1.35%	0.00%	0.30%
Year 3	1.30%	1.38%	1.50%	1.25%	0.75%	1.45%	0.00%	0.30%	0.25%	1.25%	1.25%	1.50%	0.65%	1.35%	0.00%	0.30%
Year 4	1.40%	1.38%	1.50%	1.25%	0.75%	1.45%	0.00%	0.30%	0.25%	1.25%	1.25%	1.50%	0.65%	1.35%	0.00%	0.30%
Year 5	1.50%	1.38%	1.50%	1.25%	0.75%	1.45%	0.00%	0.30%	0.25%	1.25%	1.25%	1.50%	0.65%	1.35%	0.00%	0.30%
Year 6	1.30%	1.00%	1.50%	1.25%	0.75%	1.45%	0.00%	0.30%	0.00%	1.25%	0.00%	1.50%	0.65%	1.35%	0.00%	0.30%
Year 7	1.30%	1.00%	1.50%	1.25%	0.75%	0.40%	0.00%	0.30%	0.00%	1.25%	0.00%	1.50%	0.00%	1.35%	0.00%	0.30%
Average	1.12%	1.25%	1.50%	1.25%	0.75%	1.16%	0.00%	0.30%	0.14%	1.25%	0.89%	1.50%	0.65%	1.35%	0.00%	0.30%

Total program costs through year 7 average to about 130 bps\*

Management fee schedule

Source: Fund managers; CMS is also known as CLO Equity Fund

\*Calculation is cap-weighted based on commitment amounts of current funds.

# Performance vs. public market equivalents

Fund	Net IRR	Unlevered IRR	PME Return	PME Benchmark
PA Credit Strategies Fund	9.1%	9.1%	4.8%	Credit Suisse Lev Loan Index
			n/a	S&P/LSTA US Levered Loan
Ascribe Opportunities IV	10.0%	n/a	6.1%	Credit Suisse Lev Loan Index
			6.3%	S&P/LSTA US Levered Loan
Audax Direct Lending Solutions Fund	13.8%	9.1%	5.0%	Credit Suisse Lev Loan Index
			5.2%	S&P/LSTA US Levered Loan
Ares Capital Europe IV Levered	9.6%	5.9% (€)	5.5%	Credit Suisse Lev Loan Index
			5.5%	S&P/LSTA US Levered Loan
Crescent Direct Lending II	9.5%	7.4%	5.1%	Credit Suisse Lev Loan Index
			5.7%	S&P/LSTA US Levered Loan
Lone Star Fund XI	24.5%	n/a	n/a	Credit Suisse Lev Loan Index
			n/a	S&P/LSTA US Levered Loan
Sixth Street CMS III	14.8%	n/a	5.4%	Credit Suisse Lev Loan Index
			5.6%	S&P/LSTA US Levered Loan
Sixth Street CMS IV	14.7%	n/a	8.1%	Credit Suisse Lev Loan Index
			8.2%	S&P/LSTA US Levered Loan
Sixth Street SLE II <sup>1</sup>	14.5%	n/a	6.2%	Credit Suisse Lev Loan Index
			2.6%	S&P/LSTA US Levered Loan
Sixth Street Growth II	7.9%	n/a	n/a	Credit Suisse Lev Loan Index
			n/a	S&P/LSTA US Levered Loan
TAO 5.0	10.9%	n/a	10.7%	Credit Suisse Lev Loan Index
			11.0%	S&P/LSTA US Levered Loan

Source: Fund managers

<sup>1</sup> As of 6/30/24, the SLE II Main Fund returned a levered net IRR of 13.0% and an unlevered net IRR of 10.9%. ICERS is invested in the SLE II USD feeder fund. The net return shown here reflects ICERS's actual net IRR based on their investor-specific cash flows.

# Projections

Fund	Vintage Year	Commitment	Remaining Commitment	(Contributions) / Distributions		
				Cumulative to 6/30/2024	2H 2024	2025
PA Credit Strategies Fund	2013	\$11.25	\$0.00			
Net Cash Flow					\$0.8	\$0.9
NAV (Target)				\$12.2	\$12.1	\$12.2
Audax Direct Lending Solutions	2017	\$7.00	\$0.69			
Net Cash Flow					\$2.3	\$0.4
NAV				\$5.2	\$2.6	\$2.1
Crescent Direct Lending II	2017	\$7.00	\$4.06			
Net Cash Flow					\$1.5	\$1.5
NAV				\$2.98	\$1.7	\$0.3
Ares Capital Europe IV	2018	\$8.00	\$1.22			
Net Cash Flow					\$0.6	\$0.6
NAV				\$5.9	\$3.6	\$1.9
Lone Star Fund XI	2019	\$5.75	\$0.46			
Net Cash Flow					\$0.1	\$3.5
NAV				\$5.4	\$5.7	\$2.6
Ascribe Opportunities IV*	2019	\$6.00	\$0.90			
Net Cash Flow					\$0.0	\$0.5
NAV				\$4.9	\$5.4	\$5.4
CLO Equity Fund III	2020	\$10.00	\$0.44			
Net Cash Flow					(\$0.5)	(\$1.0)
NAV				\$7.2	\$8.3	\$10.1
SLE II	2020	\$10.00	\$5.74			
NAV				\$5.8	\$5.7	\$5.4
Growth II	2021	\$10.00	\$6.56			
Net Cash Flow					\$0.8	\$1.7
NAV				\$3.7	\$3.3	\$1.9
TAO 5.0	2022	\$20.00	\$11.18			
Net Cash Flow					(\$1.6)	(\$3.2)
NAV				\$9.8	\$12.3	\$16.7
CLO Equity Fund IV	2023	\$10.00	\$7.78			
Net Cash Flow					(\$1.1)	(\$2.1)
NAV				\$2.3	\$3.6	\$6.1
SSLP	2024	\$10.00	\$10.00			
NAV				\$1.7		
<b>PC Balance</b>		<b>\$115.00</b>	<b>\$49.03</b>	<b>\$67.2</b>	<b>\$64.3</b>	<b>\$64.7</b>
<b>% of Total Assets</b>				<b>5.7%</b>	<b>5.1%</b>	<b>4.9%</b>
<b>Total Plan Assets</b>				<b>\$1,185</b>	<b>\$1,250.9</b>	<b>\$1,323.8</b>

Note: Assumptions & Disclosures for this model are detailed in the appendix

# IV. Recommendations

# Recommendations

## Private Equity

- Verus recommends the Board approve a \$10mm commitment to Harbourvest Global Fund 2025.
  - Although the Plan is expected to be overweight for another 1-2 years, most of the current funds are in the net distribution phase; additional capital calls over the next couple years are needed to maintain the private equity allocation over the long-term.
  - The Harbourvest Global Fund 2025 is the upcoming vintage of the Global Funds series ICERS has committed to in the past (2017, 2018, 2019, and 2023). Commitments to the Global Fund 2025 will be available early next year.

## Private Credit

- Verus recommends no action. The Board previously authorized \$80mm of ongoing commitments to the Sixth Street Diversified Credit Program, of which \$60mm has been committed.
  - As funds come to market, Verus will assess and continue to provide recommendations to build out the private credit program to the 8% target.

# Appendix



# Public Market Equivalent (PME)

- PME information represents adjusted model performance of each index as if the respective index had been purchased and sold at the time of the limited partners' capital calls and distributions, with the remainder held at the date noted. Dividends are not reinvested.
- Under this methodology, the capital calls for the purchase of the public market index are the same as the capital calls for the Fund(s). The distributions for the sales of the public market index are scaled to represent the same proportion of the Fund's NAV at the time of the distribution.
  - For example, if the Fund distributes 5% of NAV, then 5% of the index NAV is distributed. Thus, the index returns presented are not actual index returns, but adjusted model returns.
- In certain instances, the comparison is based on the PME+ (public market equivalent) method as described in an article titled, "Beating the Public Market," by Christophe Rouvinez, as published in the Private Equity International in December 2003 / January 2004. When using this methodology, both the Fund and the adjusted index are assumed to have the same ending NAV. The ending NAV for the adjusted index is derived by scaling the distributions by a constant scaling factor, while preserving the overall cash flow pattern.

# Assumptions for PE cash flow model

- Asset Values are represented in millions
- This is a hypothetical model based on reasonable assumptions and does not reflect actual timing and should not be interpreted as predicting the future
- Contribution and distribution forecasts are provided by HarbourVest at the request of Verus. Hypothetical assumptions are based on experience of prior funds, current market conditions, and current fund expectations. Actual pace and timing of cash flows is likely to be different.
- Total Plan assets are assumed to grow at an annual rate of 7.0% based on policy forecasted returns using Verus 2024 capital market assumptions adjusted by net contributions, taken from the recent asset liability study completed in October.
- Market values from ICERS 2<sup>th</sup> quarter 2024 investment performance report were used for the purpose of this exercise.
- NAV at future dates are estimated based on cash flows and implied remaining life IRR calculations.
- Growth rates (IRR) are estimated using the manager cash flow projections over the expected remaining life of each fund.
- Drawdowns and distributions may continue beyond the final year (2030) shown in this exercise.

# Assumptions for PC cash flow model

- Asset Values are represented in millions.
- This is a hypothetical model based on reasonable assumptions and does not reflect actual timing and should not be interpreted as predicting the future.
- Contribution and distribution forecasts are provided by the managers at the request of Verus. Hypothetical assumptions are based on experience of prior funds, current market conditions, and current fund expectations. Actual pace and timing of cash flows is likely to be different.
- Drawdowns and distributions will continue beyond the final year (2024) shown in this exercise.
- Total Plan assets are assumed to grow at an annual rate of 7.0% based on policy forecasted returns using Verus 2024 capital market assumptions adjusted by net contributions, taken from the recent asset liability study completed in October.
- Market values are from ICERS 2<sup>th</sup> quarter 2024 investment performance report for the purpose of this exercise.
- NAV at future dates are estimated based on cash flows and Verus forecasted returns for the private credit asset class.
- Remaining commitment calculations do not factor in the recallable distribution component.

# SSP Fund descriptions

## **TAO**

Focuses on the entire set of credit opportunities generated across the TSSP platform. It is TSSP's most flexible investment vehicle and can house any investment that meets the firm's broad investment criteria.

## **SLE** *(previously TSLE)*

Focuses on direct loans to middle-market companies, primarily in Europe.

## **CMS/CLO Equity Fund** *(previously TICP)*

Focuses on investments in the floating-rate leveraged loan and structured credit markets.

## **Growth** *(previously TCS)*

Focuses on providing flexible financing solutions to growth companies (i.e., companies growing faster than the economy that require a high level of investment capital for continued expansion).

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