



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: SEPTEMBER 30, 2024**

Investment Performance Review for

**Kern County Employees' Retirement Association**

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Investment Landscape

TAB I

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Investment Performance  
Review

TAB II

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

**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

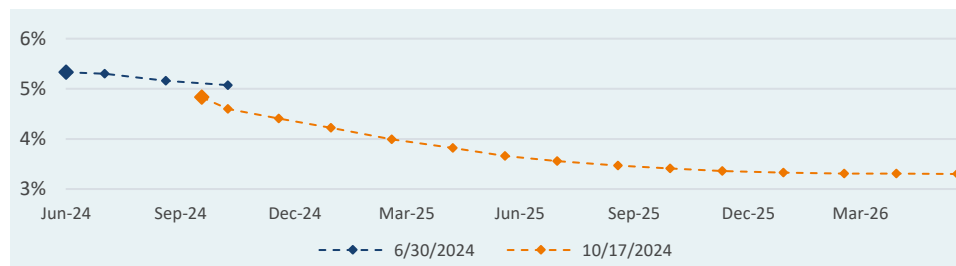
**“Inflation falls to its lowest level in more than 3 years”**

## 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%

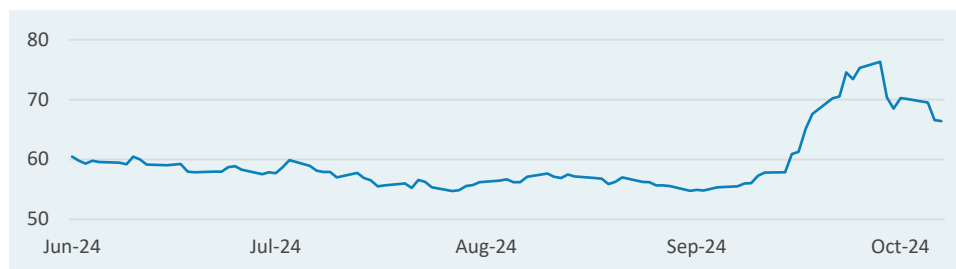
Article Source: NPR, September 11<sup>th</sup>, 2024

## 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 Longshoremens' 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

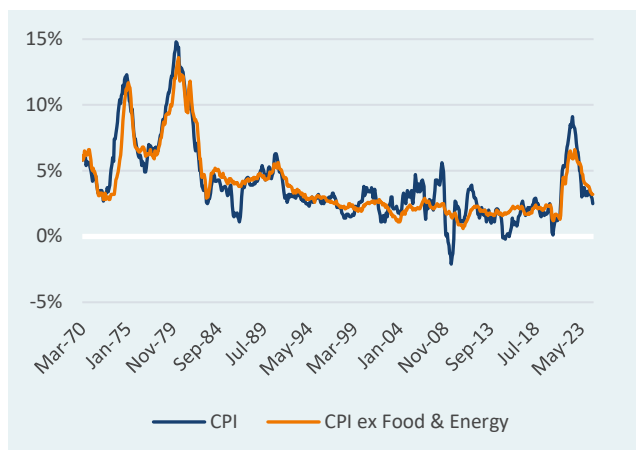
U.S. inflation (CPI) fell to 2.4% year-over-year in September, moving closer to the Fed's 2% target. However, risks remain that inflation could remain above the Fed target, as shelter inflation is still elevated and food prices accelerated in September. Core inflation (ex-Food & Energy) has not budged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



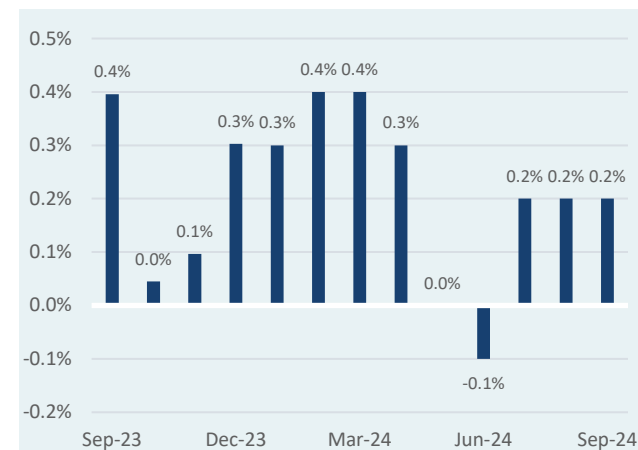
Source: BLS, as of 9/30/24

POTENTIAL INFLATION PATHS



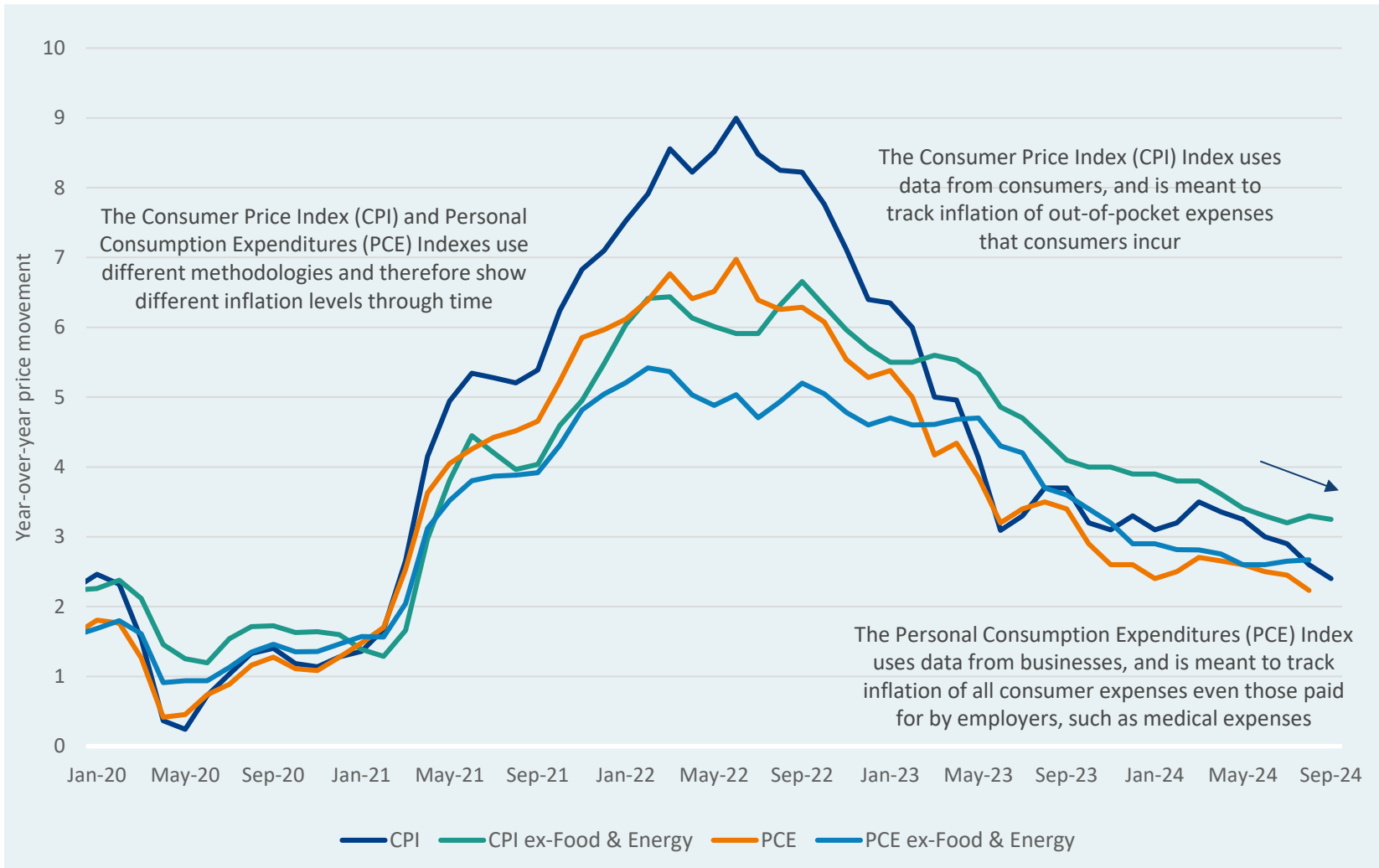
Source: FRED, Verus, of 9/30/24

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

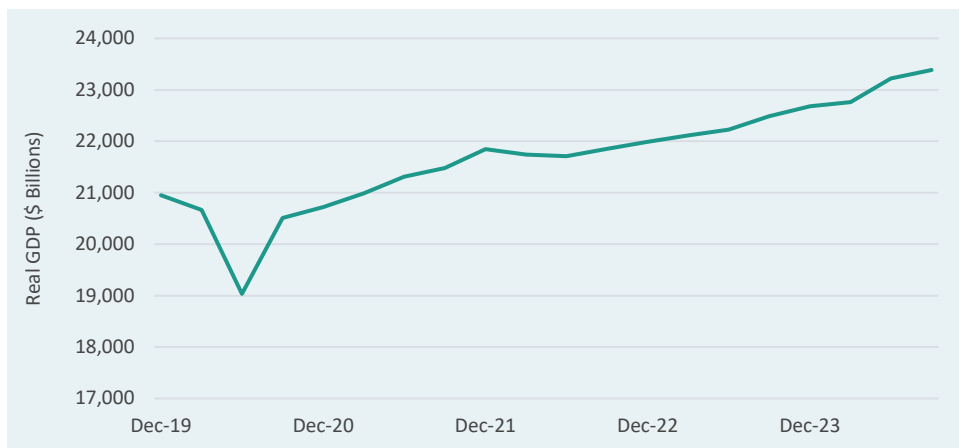
Real GDP growth was robust again during Q3, but slowed slightly from 3.0% to 2.8% quarter-over-quarter, annualized (2.7% year-over-year). Growth continues to be fueled by consumer purchases, which accelerated to a 3.7% annualized pace. Spending was broad based across goods and services. Heightened government 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.

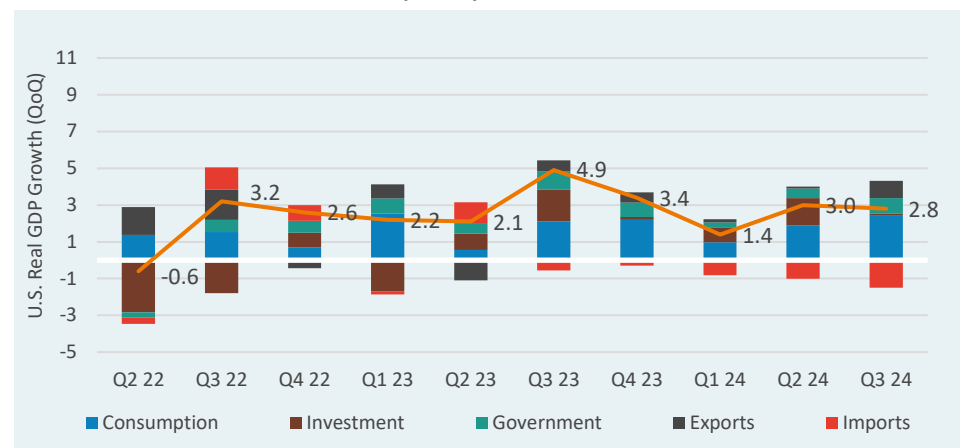
U.S. growth remained robust during Q3, fueled by consumer spending

## 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.

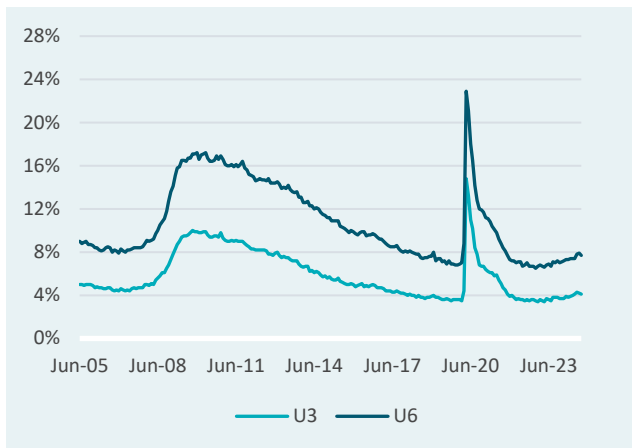
Recent labor trends appear to be unlike many past cycles. Weakness so far has been a product of natural attrition and

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.

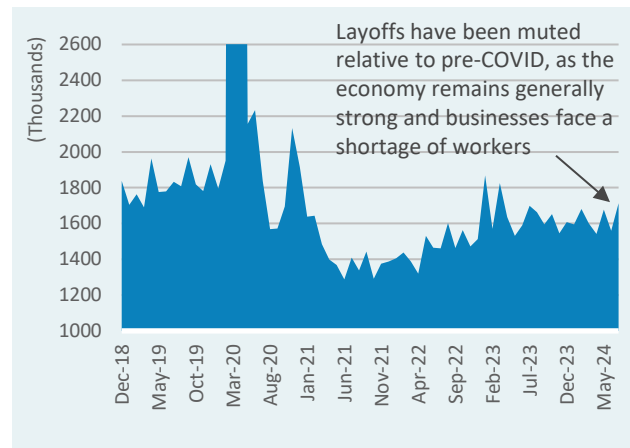
Labor weakness so far has been a product of natural attrition and less hiring, rather than widespread layoffs

## U.S. UNEMPLOYMENT



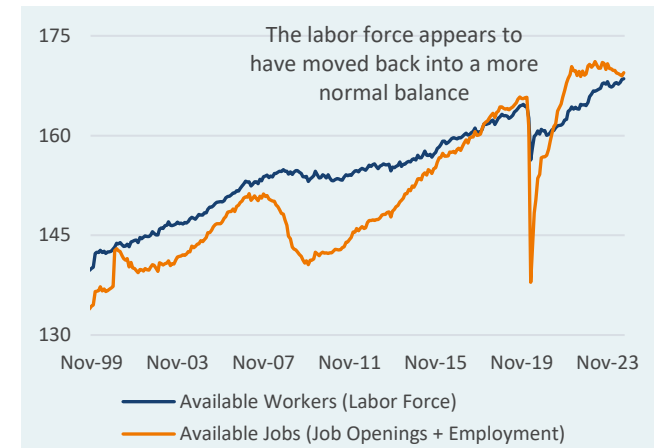
Source: FRED, as of 9/30/24

## 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.

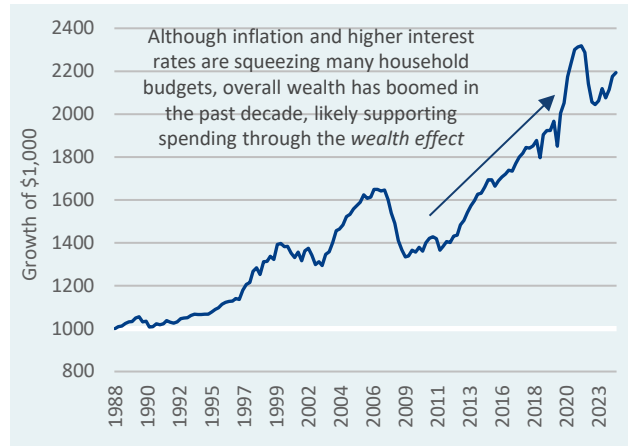
Fueled by large gains from equities and real estate, average household wealth has boomed. While inflation and high prices have in fact squeezed budgets, significant increases in household wealth may be a positive support to consumption. This behavior may be best described by the ‘wealth effect’—an economic 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.

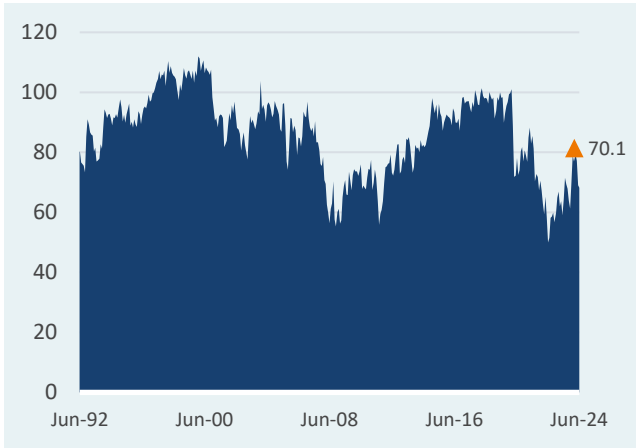
The latest consumer confidence reading from the Conference Board slightly increased from the prior quarter, but consumers expressed pessimism around labor market conditions. Concerns were reported regarding fewer hours and job openings. While interest rate cuts have likely led

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 (%)**



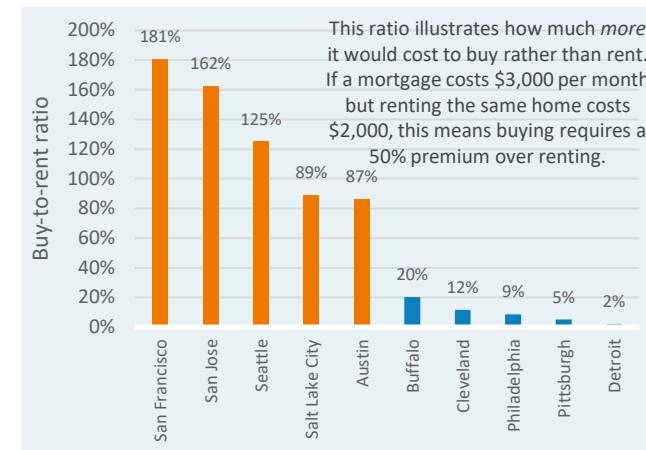
Source: Freddie Mac, as of 9/30/24

**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

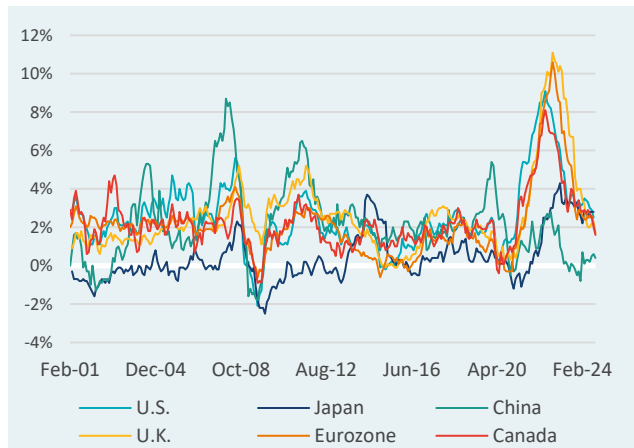
Many developed economies have shown slowing growth recently, as softer spending and a manufacturing slowdown contribute to weakness. These effects are biting especially hard in export-heavy economies such as Germany and Japan. It is difficult to attribute economic weakness on a single cause, though China's 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.

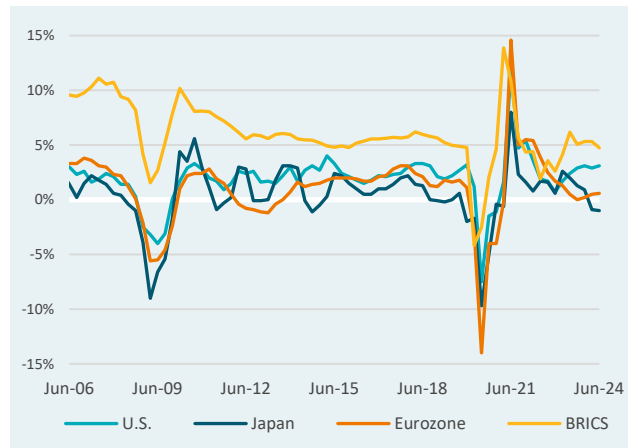
In September, China announced an aggressive economic stimulus program, after three years of ongoing mild support. President Xi pledged both fiscal and monetary support, with specific focus on the ailing real estate market, and stimulus to mitigate the downward trajectory of the stock market. Those moves 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)**



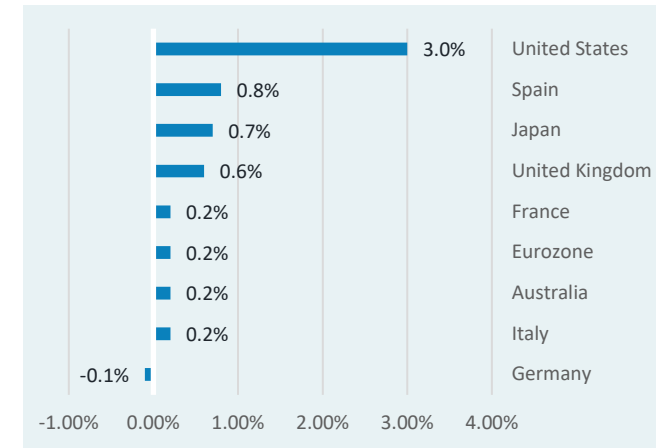
Source: BLS, Verus, as of 9/30/24

**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

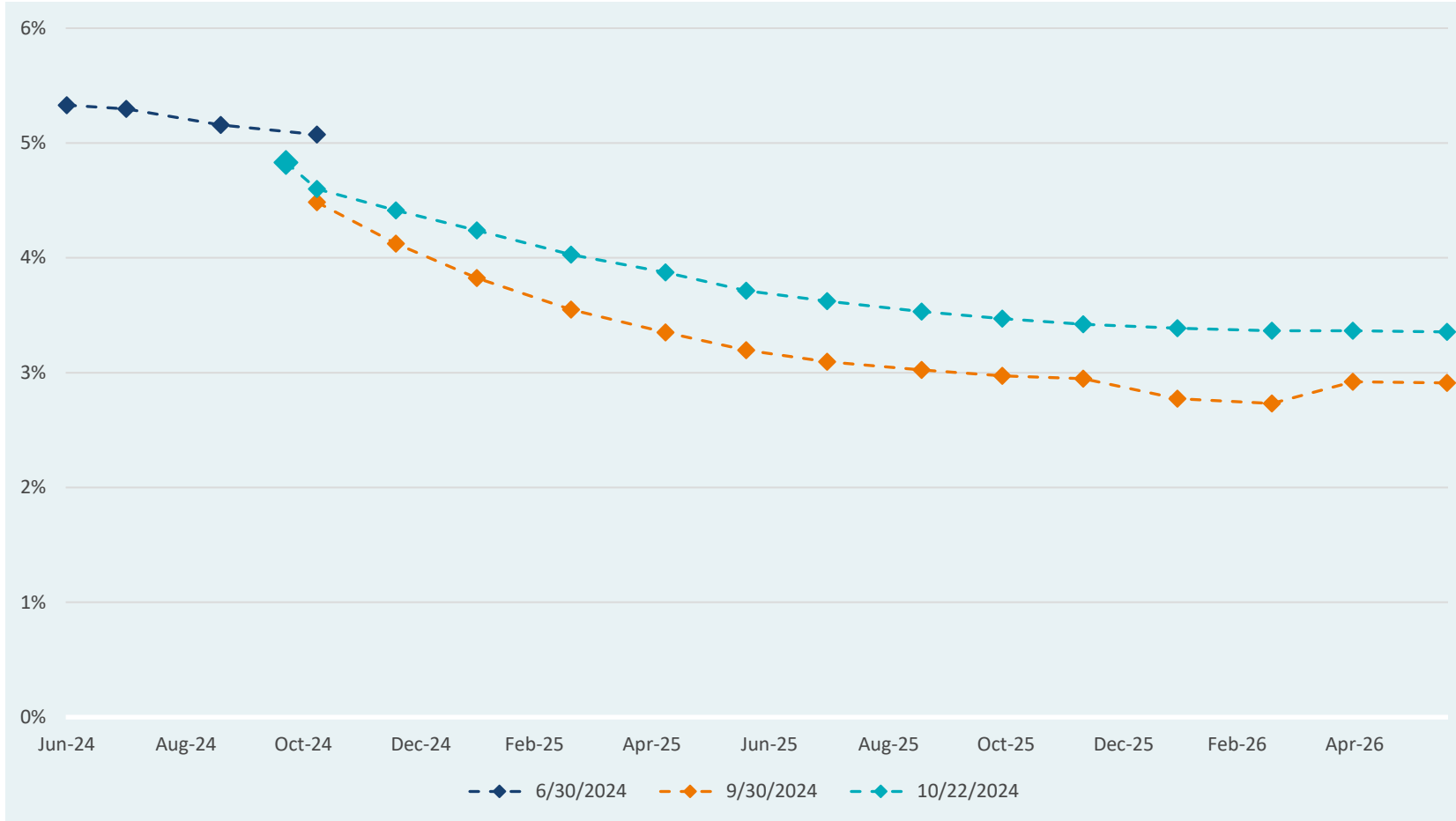
- On September 18<sup>th</sup>, the Federal Reserve cut interest rates by 50 bps, bringing the target rate from 5.25-5.50% to 4.75-5.00%. This larger cut surprised many investors who still see inflation risks and a generally strong economy. This move likely kicks off a multi-year period of cuts as the 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)*



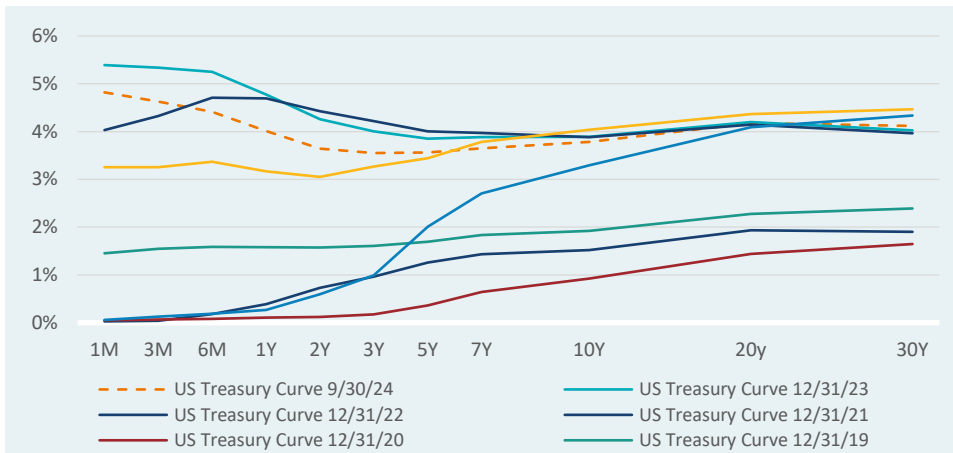
Investors are pricing in considerable near-term rate cuts

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

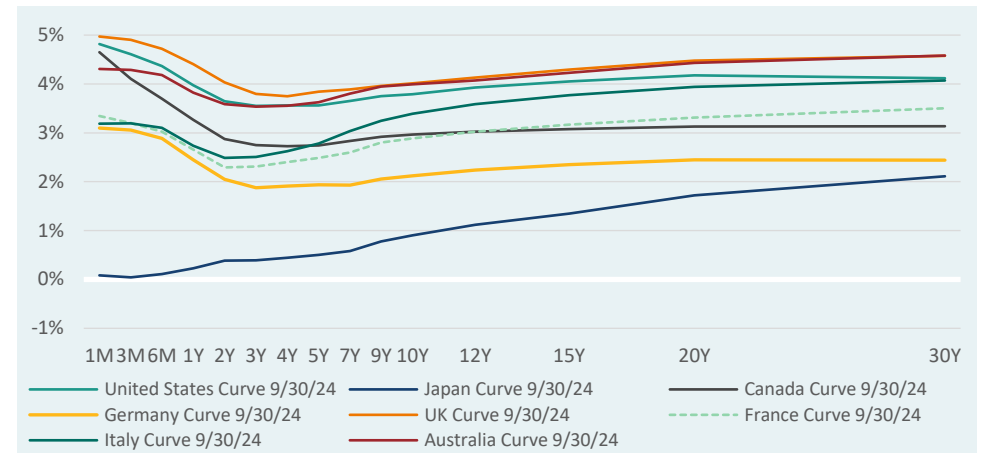
Source: Verus, as of 10/22/24

# Yield environment

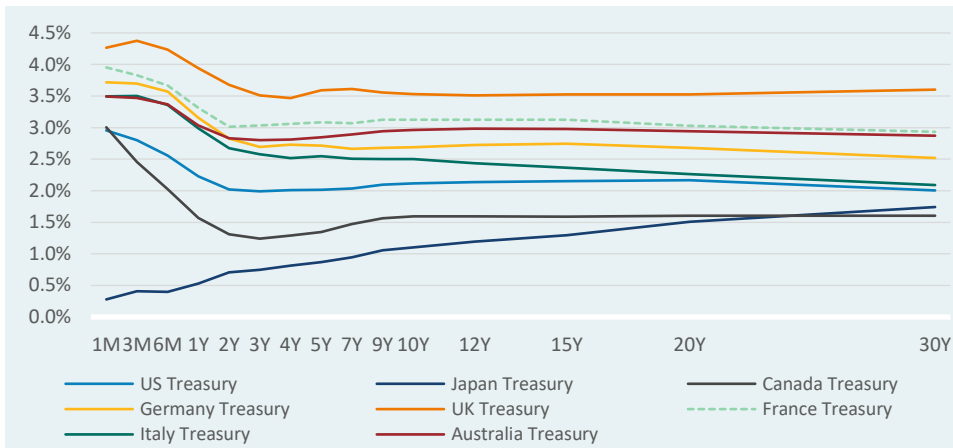
U.S. YIELD CURVE



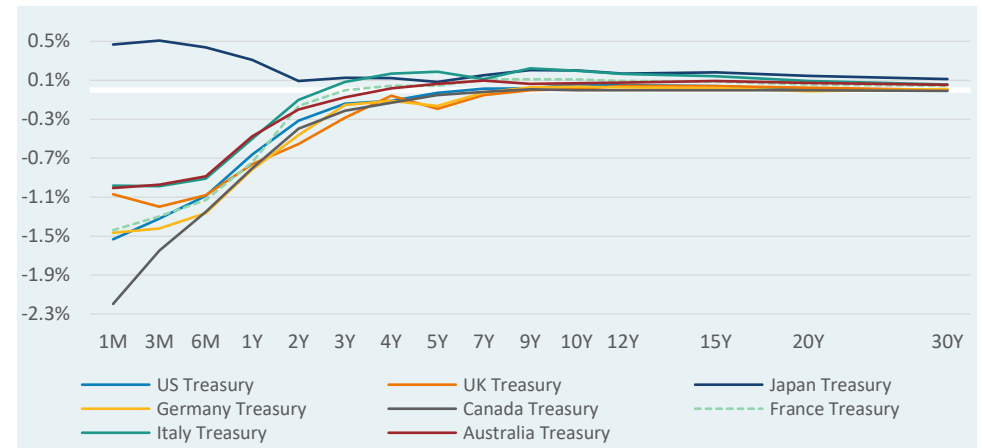
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/24

# Credit environment

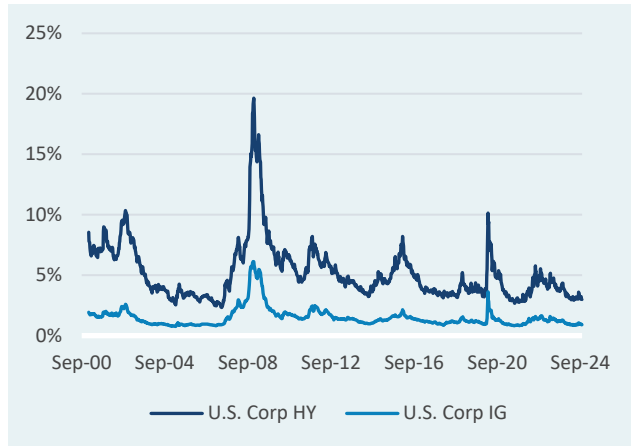
During the third quarter, longer duration credit outperformed shorter duration as U.S. interest rates headed downward. Long duration investment grade corporate bonds (Bloomberg U.S. Long Corporate Credit) gained 8.1% while lower quality credit markets also delivered strong returns—high yield and bank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

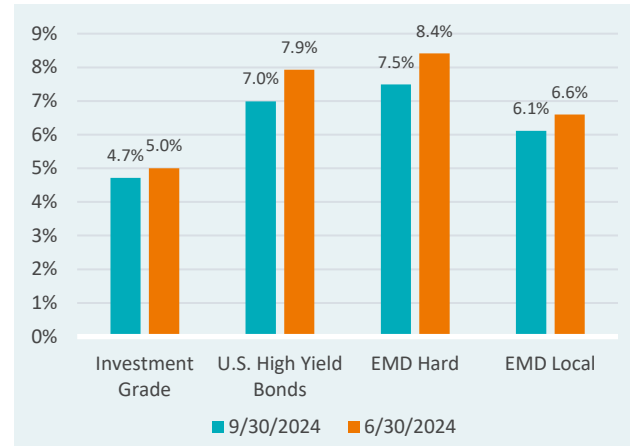
Credit spreads broadly declined alongside an easing of perceived U.S. recession risk. Lower-quality high yield bond spreads fell by roughly 0.2%, to 3.0%, while investment grade spreads tightened slightly to 0.9%. Broadly, across credit ratings, spreads remain well below their long-term historical averages. 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

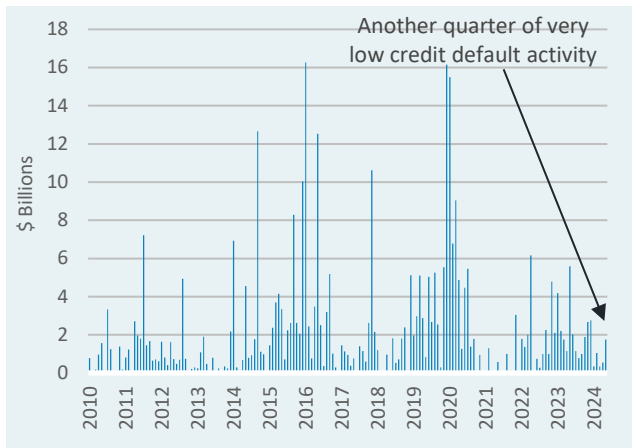
Default activity remained low during the quarter as economic growth was solid and strong economic data releases around the labor market and spending suggested a lower chance of near-term recession. During the period, \$11.1 billion of bank loans and high yield bonds were affected by default or distressed 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)**



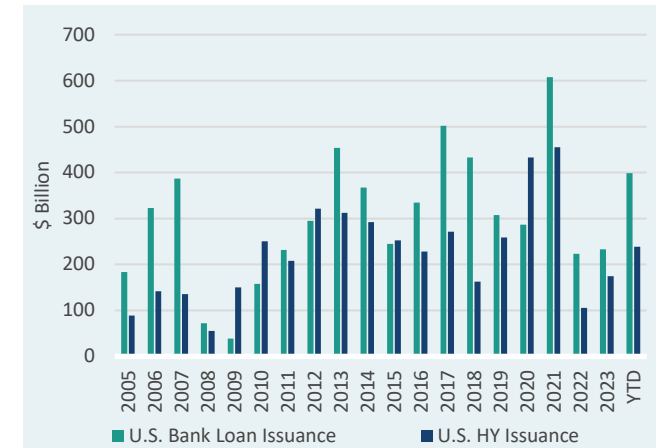
Source: BofA Merrill Lynch, as of 9/30/24

**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

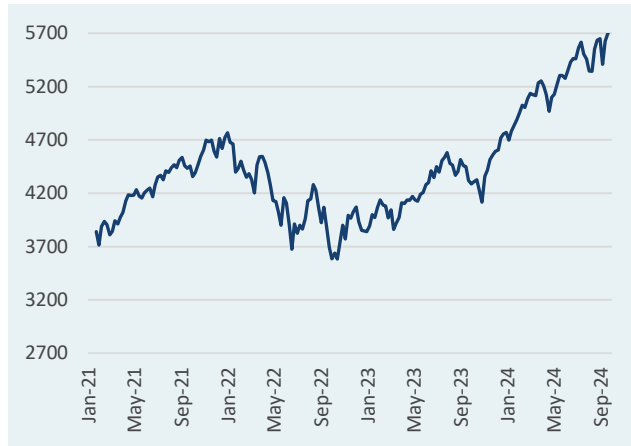
U.S. equities underperformed both international and emerging market shares—the S&P 500 ended Q3 up +5.9%. Market momentum was fueled by strengthening earnings expectations and a solid macro environment. Easing inflation and a normalizing labor market allowed for the Fed to kick off its rate cutting cycle 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.

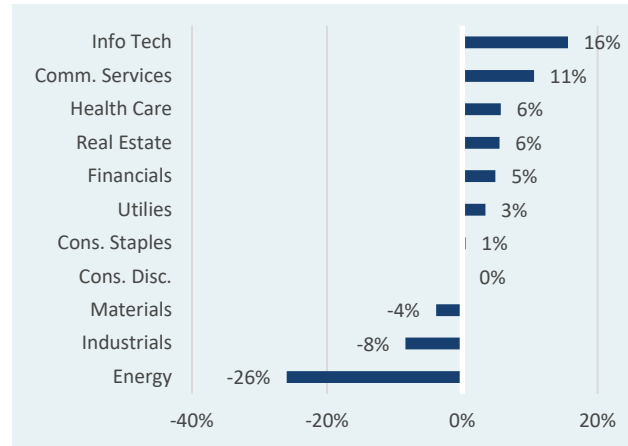
Robust price gains have continued to push valuations higher for the S&P 500, further generating concerns that U.S. equities are *priced for perfection*. Despite this, a resilient economy, interest rate cuts, and decreasing inflation risks arguably provide some fundamental justification for richer prices. 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**



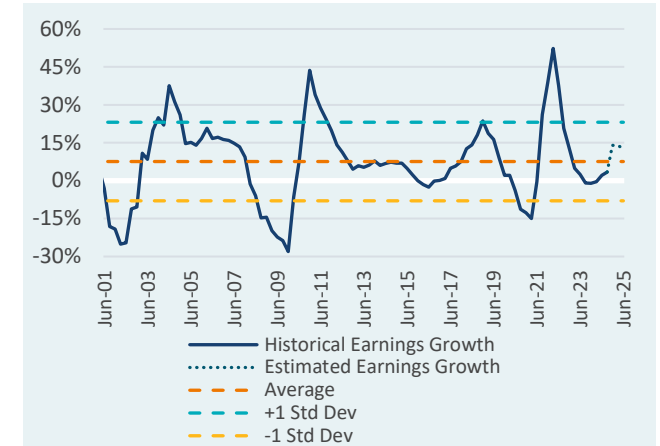
Source: Standard & Poor's, as of 9/30/24

**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

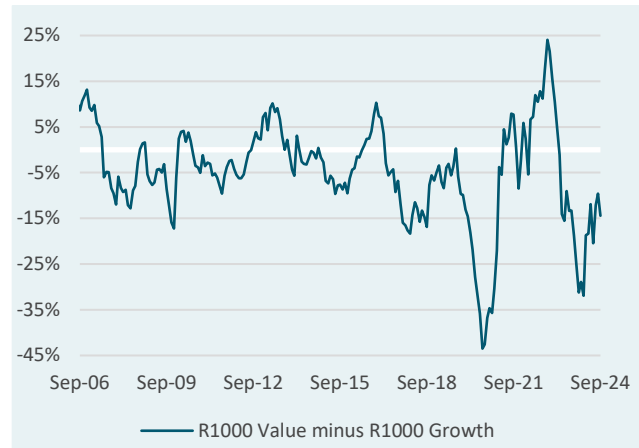
Small cap and value reversed their run of underperformance. Small cap led large cap by +3.2% (Russell 2000 +9.3% vs. Russell 1000 +6.1%) in Q3, while value outperformed growth by +6.2% (Russell 1000 Value +9.4% vs. Russell 1000 Growth +3.2%). Despite size and style factors performing well during the 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.

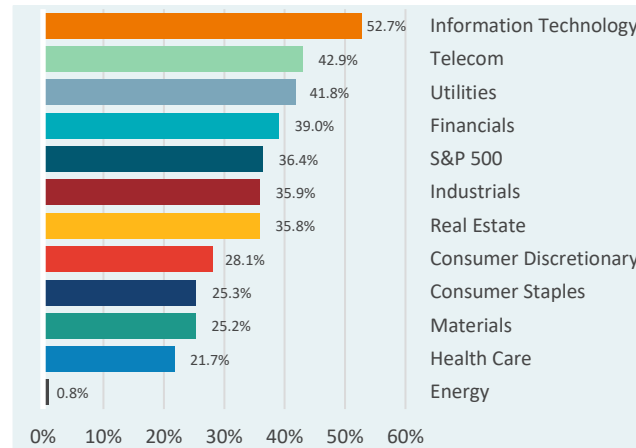
Despite a strong showing in Q3, small cap and value underperformed by -8.9% and -14.4% over the past year, respectively

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

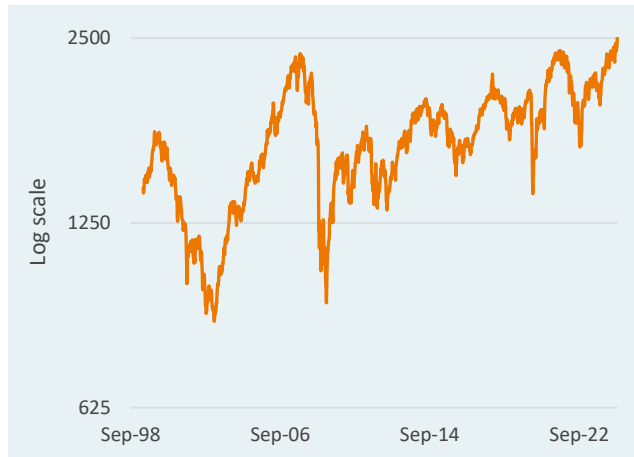
International developed shares (MSCI EAFE +7.3%) outperformed the U.S. market (S&P 500 +5.9%) during the quarter, but trailed emerging market equities (MSCI EM +8.7%). It should be noted that most of this performance was due to currency movements, rather than equity market performance. Unhedged currency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

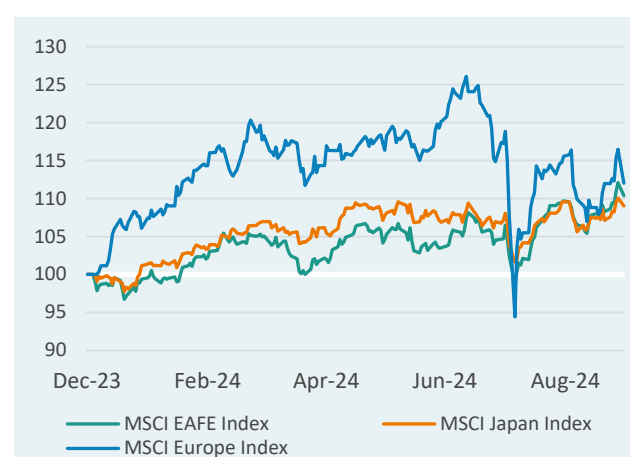
Japanese equities saw significant volatility in Q3, as an unexpected rate hike followed by weak U.S. economic data triggered what appeared to be the unwinding of a carry trade, triggering a sharp sell-off. Japanese equities recovered most of these losses, but the MSCI Japan (hedged) ended the quarter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

INTERNATIONAL DEVELOPED EQUITY



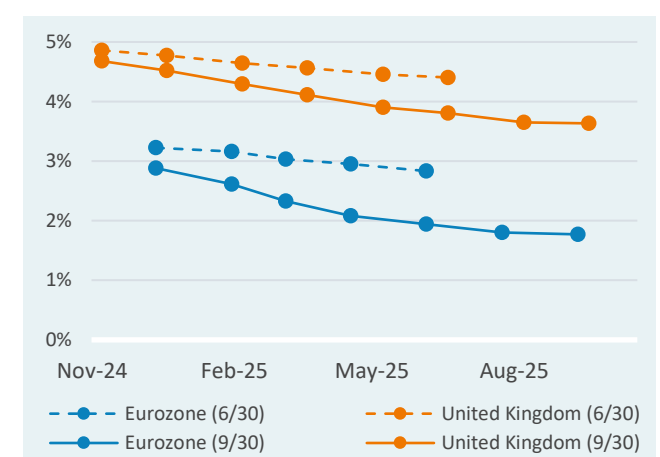
Source: MSCI, as of 9/30/24

MSCI EAFE PERFORMANCE



Source: MSCI, as of 9/30/24

ECB & BOE RATE EXPECTATIONS VS Q2



Source: Bloomberg, as of 9/30/24

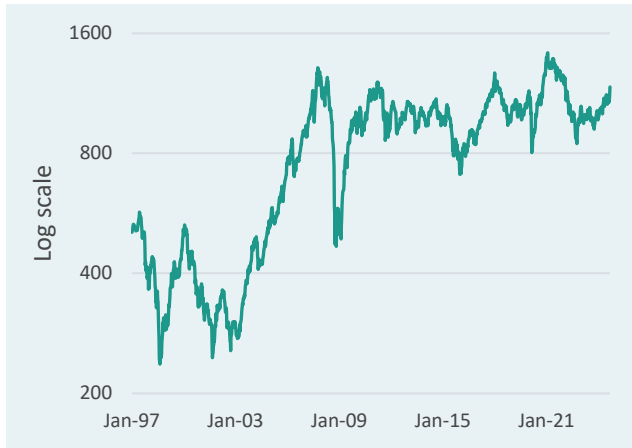
# Emerging market equity

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

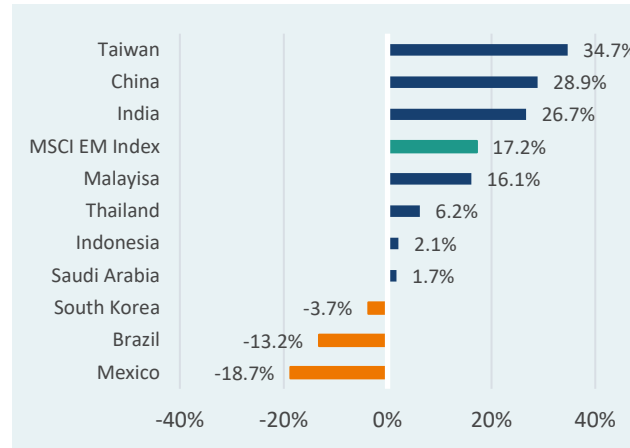
monetary support. Spending was specifically aimed at the ailing real estate market, and at mitigating the downward trajectory of the stock market. Those moves followed the People's Bank of China rate cut from 2.3% to 2.0%. It is not yet clear whether these developments will be sufficient to help turn 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



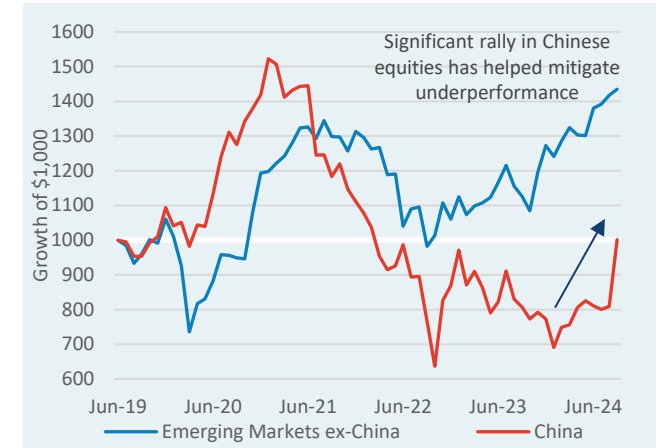
Source: MSCI, as of 9/30/24

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



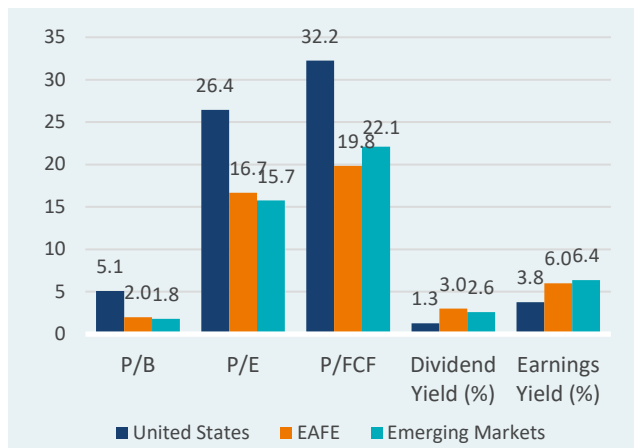
# Equity valuations

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

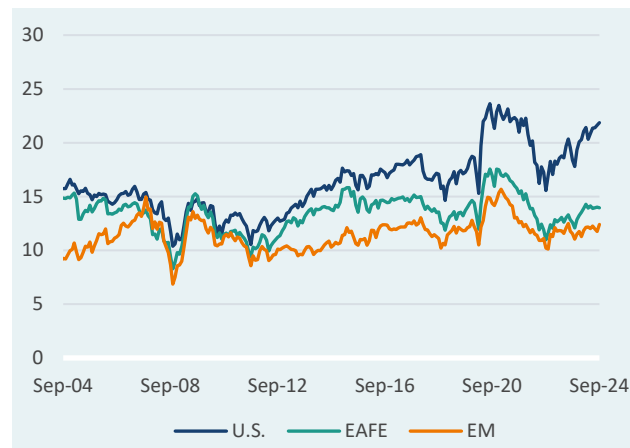
a larger role in the index, these effects have pushed total index dividend yield to a historically depressed level of 1.4%, as of September 30<sup>th</sup>. Meanwhile, non-U.S. stocks offer a 3.3% dividend yield (MSCI ACWI ex-U.S.). This is a large gap and has rarely occurred historically. However, changes 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

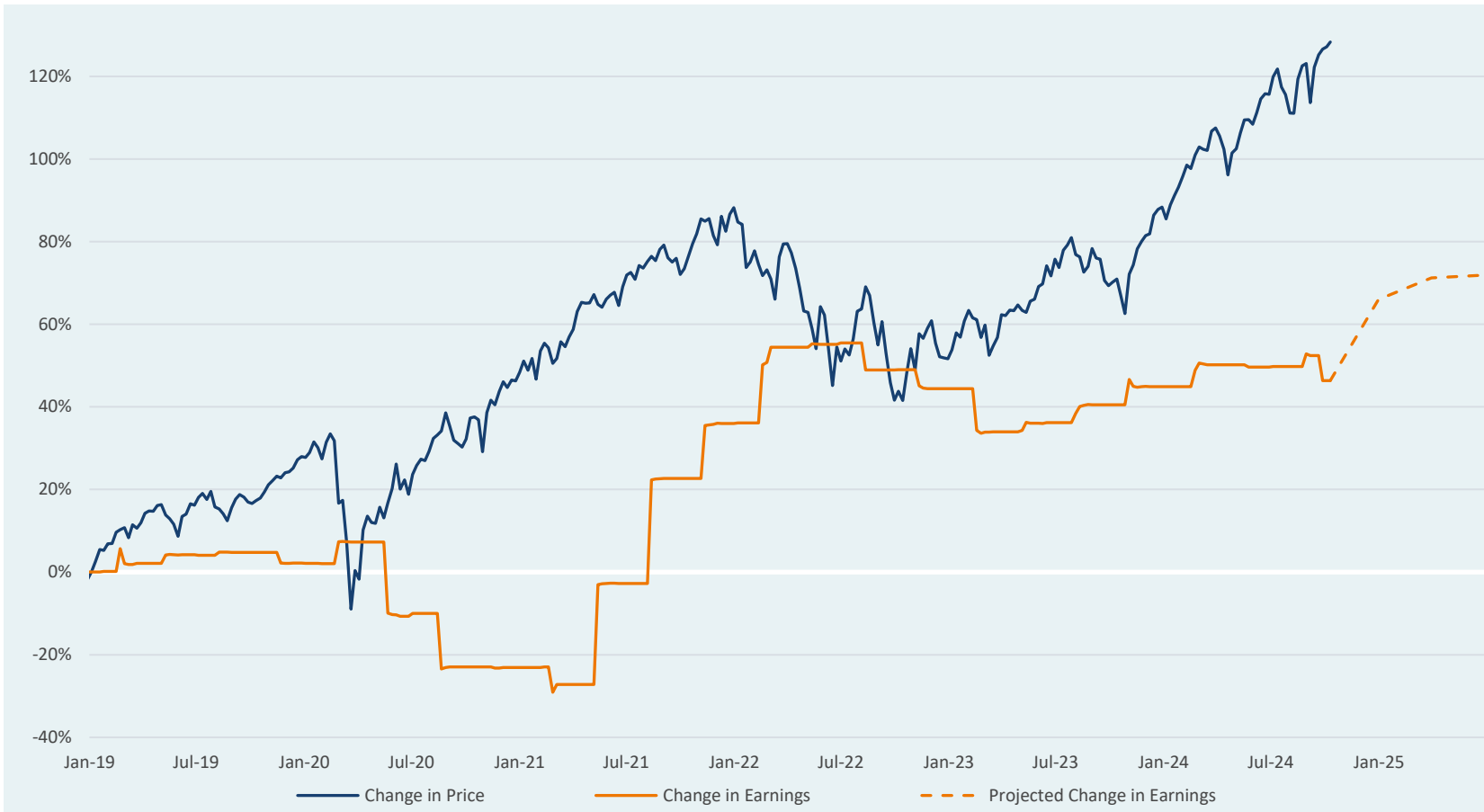
**S&P 500 HISTORICAL DIVIDEND YIELD**



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

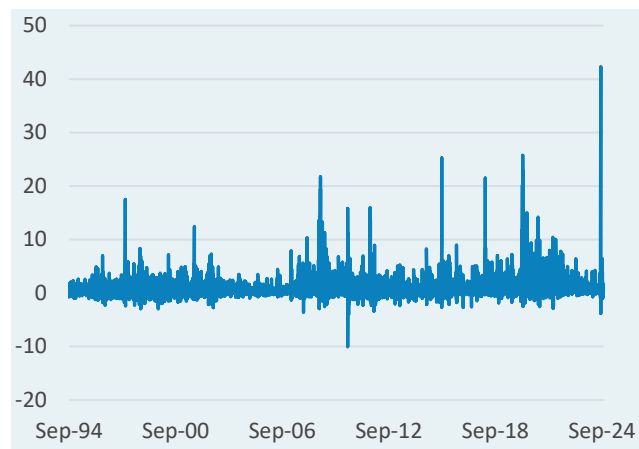
# Market volatility

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.

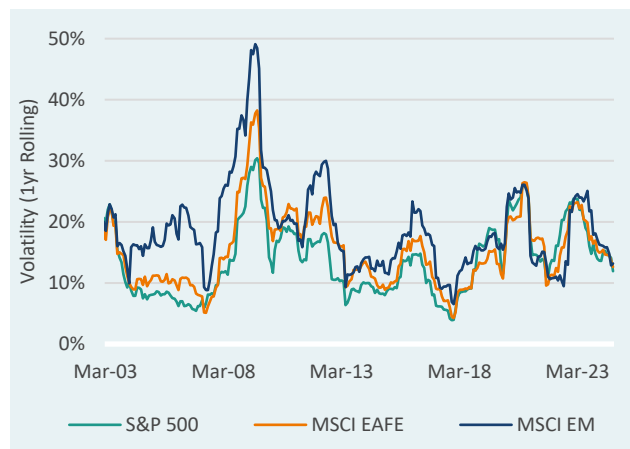
Recent realized one-year volatility has drifted to very low levels, despite uncertainty around inflation and interest rates, geopolitical risk flareups, and the upcoming election. Domestic and foreign markets showed similar volatility levels during that time.

**U.S. IMPLIED VOLATILITY (VIX)**



Source: Cboe, as of 9/30/24

**REALIZED VOLATILITY**



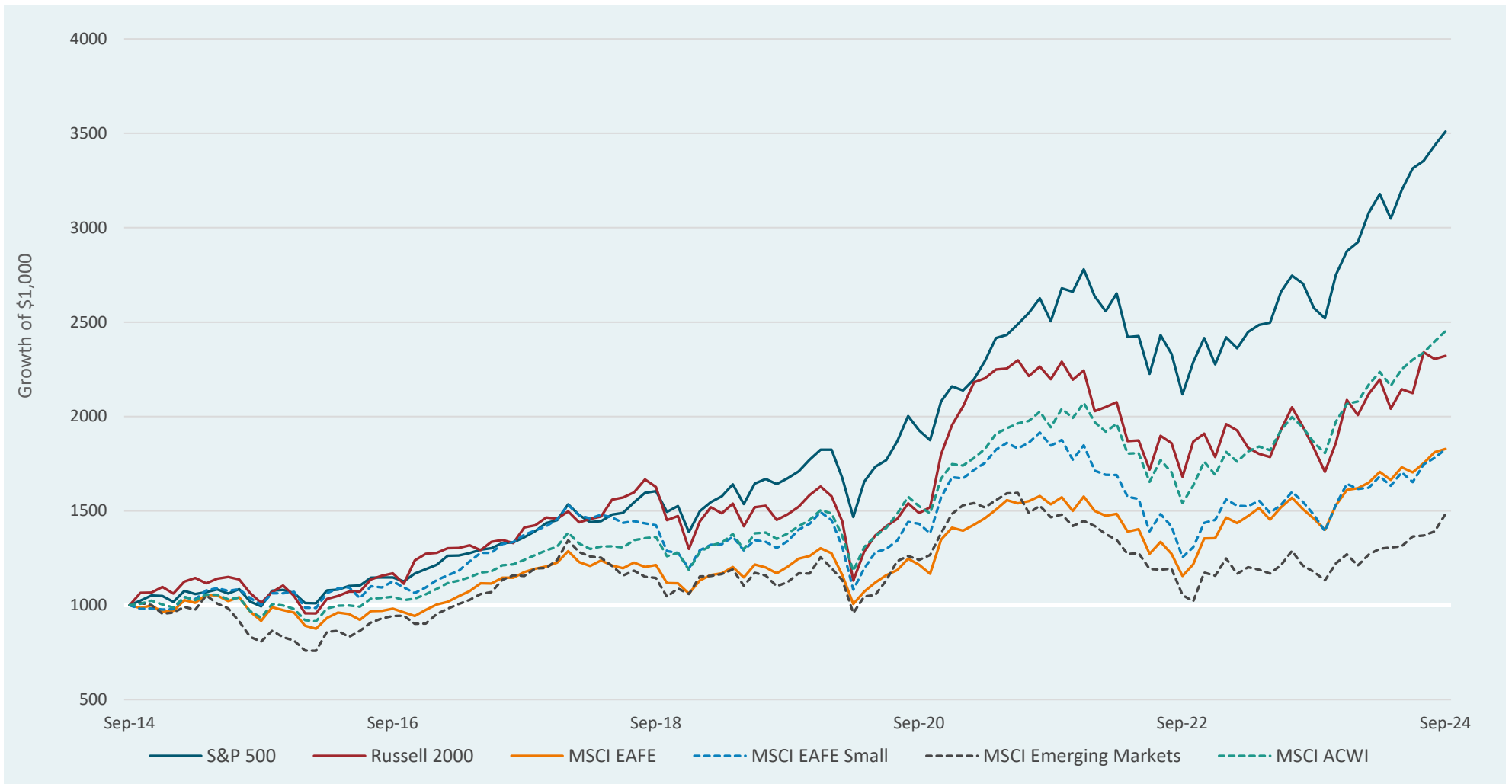
Source: Standard & Poor's, MSCI, Verus, as of 9/30/24

**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

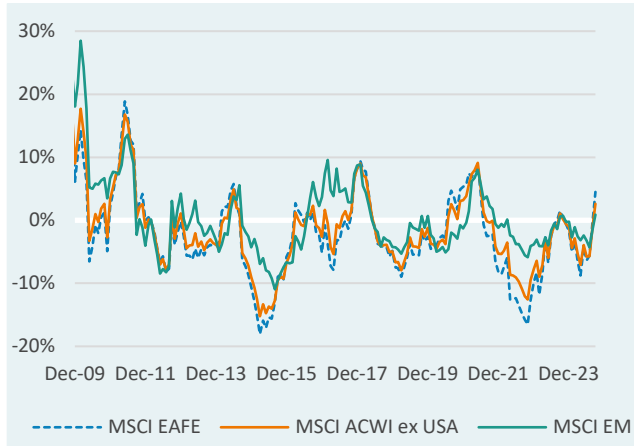
# Currency

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).

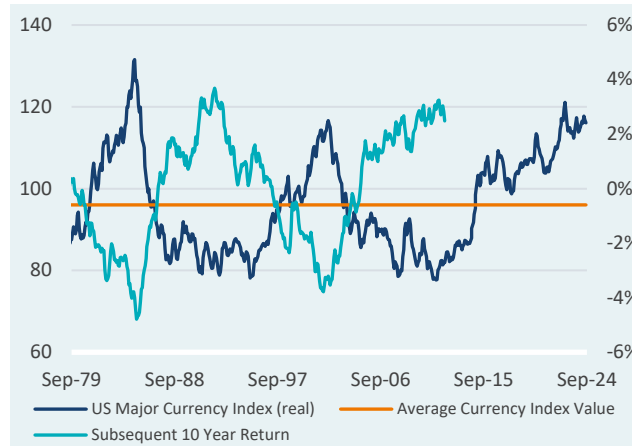
A more thoughtful portfolio approach to currency exposure has provided the dual benefit of lower portfolio volatility and also higher returns—a rare proposition in markets. This approach involves reducing the uncompensated risk of unhedged foreign currency exposure, and instead of unhedged exposure, 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)



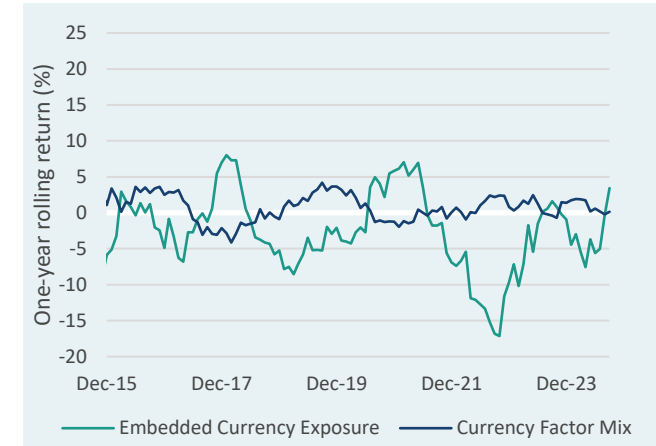
Source: MSCI, Verus, as of 9/30/24

## 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

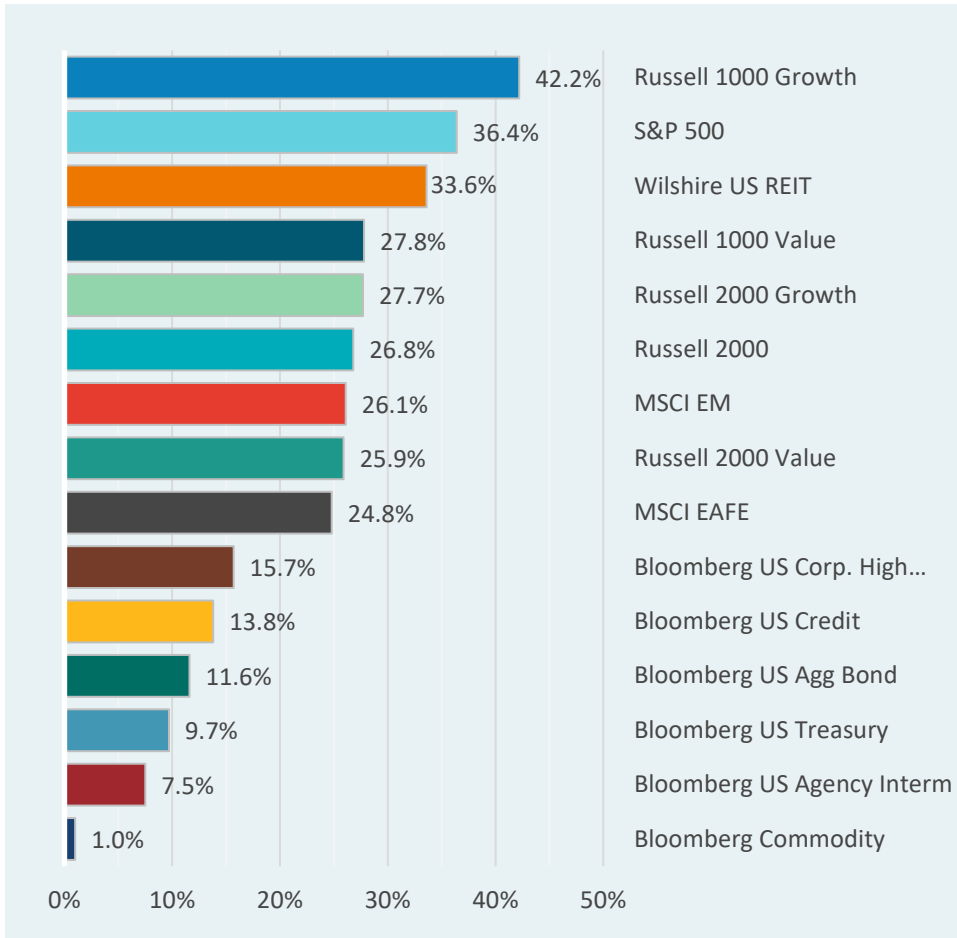


Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill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

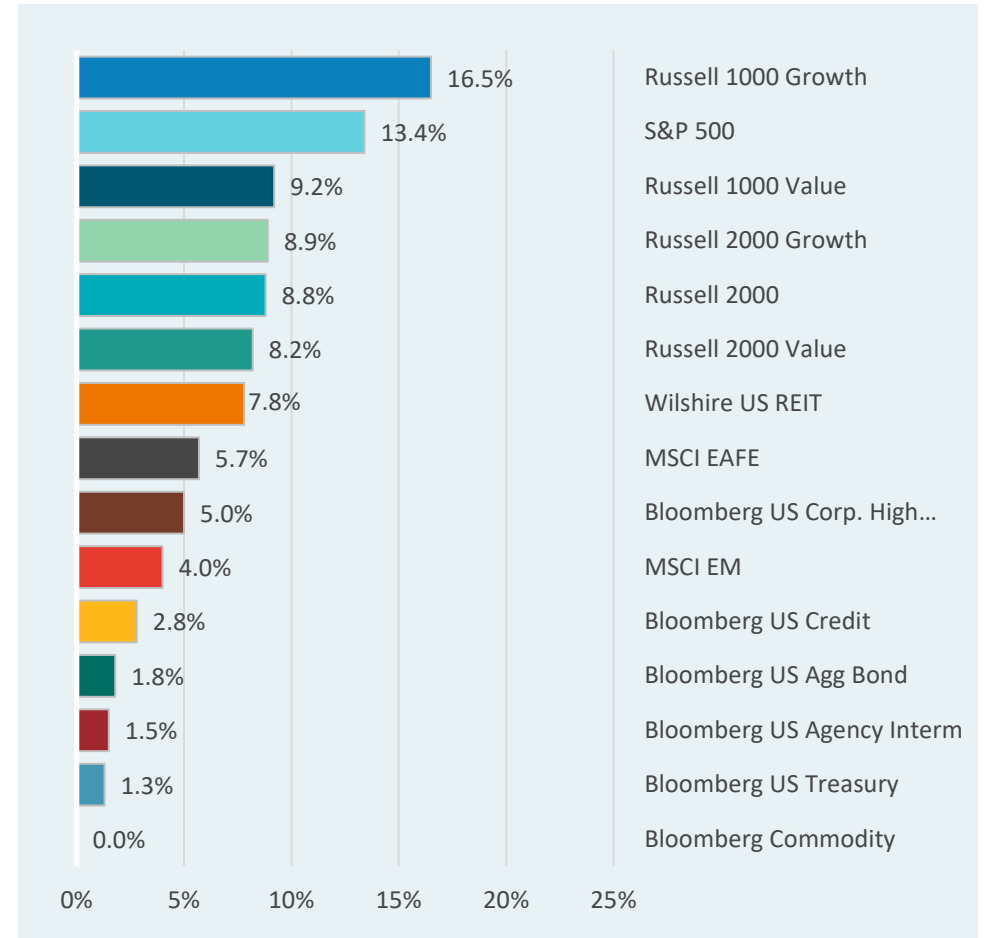


# Major asset class returns

ONE YEAR ENDING SEPTEMBER



TEN YEARS ENDING SEPTEMBER



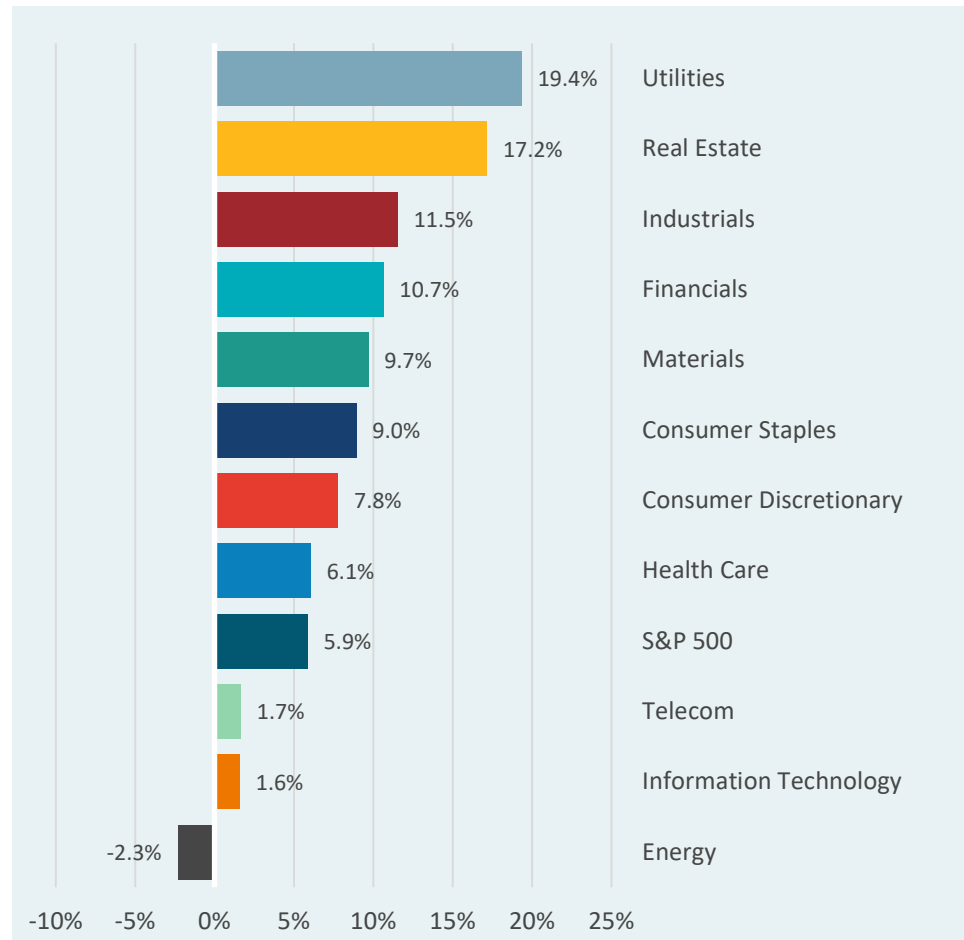
\*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 9/30/24

Source: Morningstar, as of 9/30/24

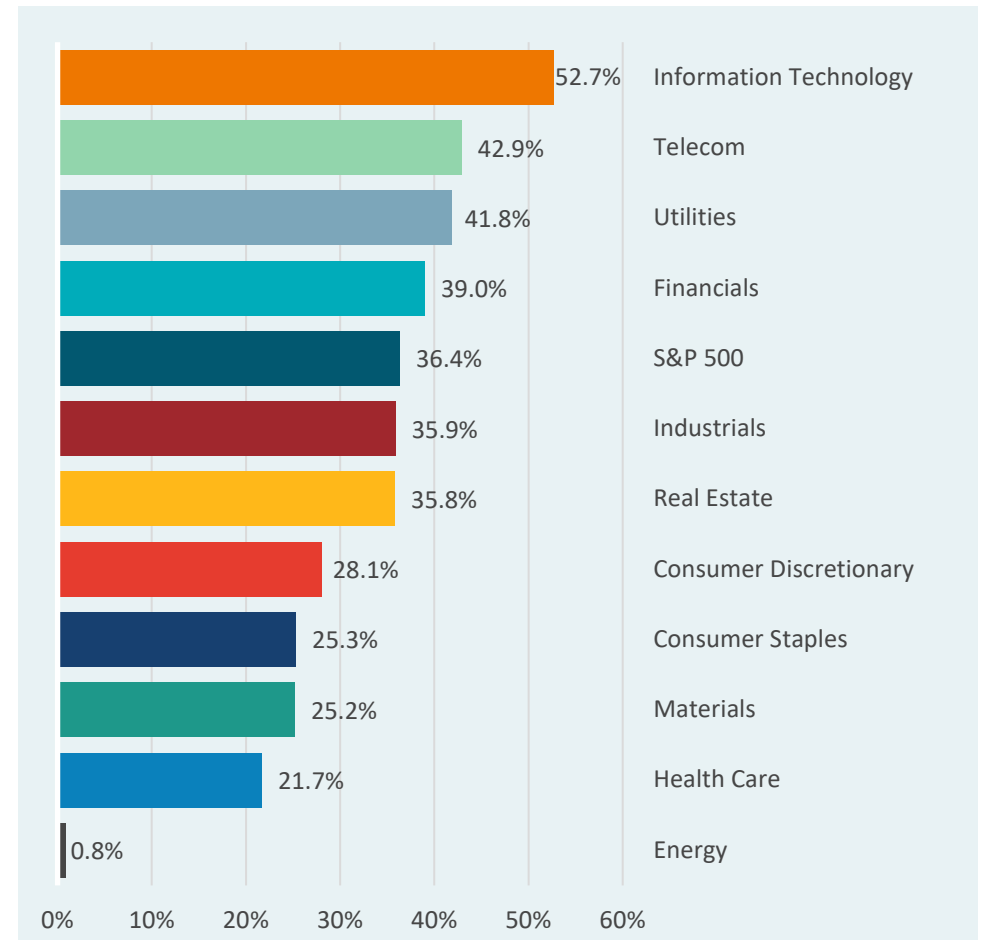
# S&P 500 sector returns

QTD



Source: Morningstar, as of 9/30/24

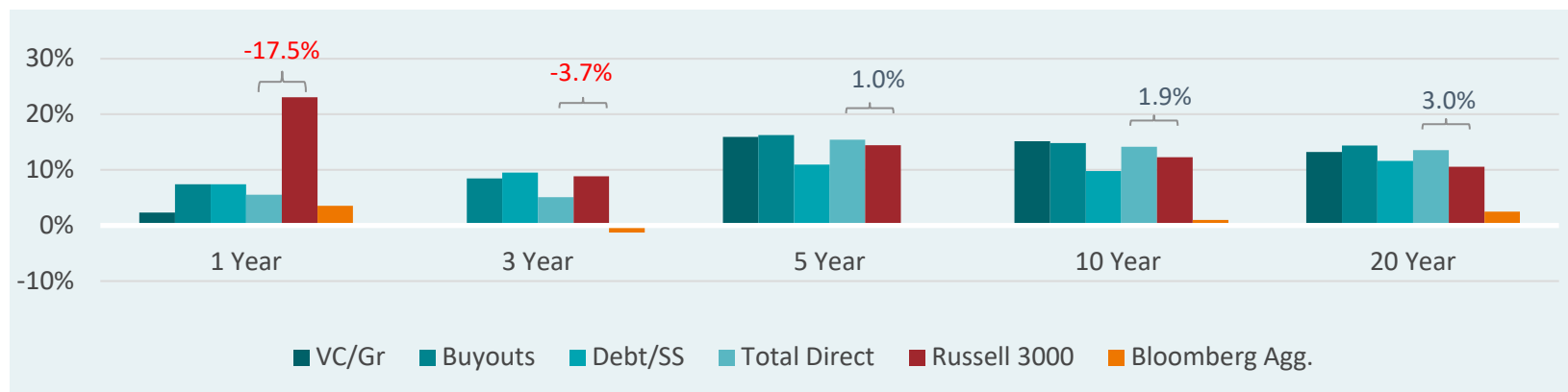
ONE YEAR ENDING AUGUST



Source: Morningstar, as of 9/30/24

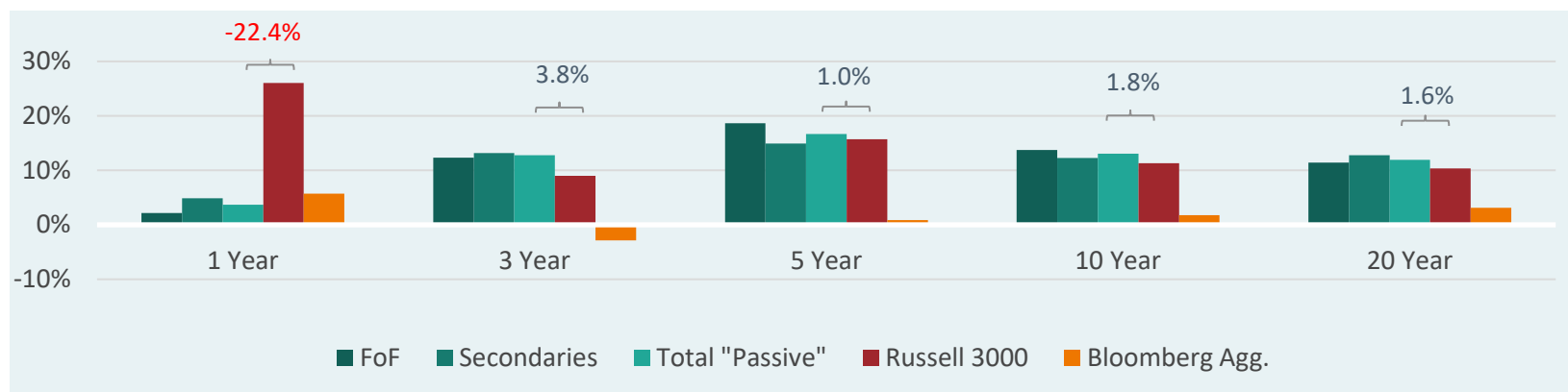
# Private equity vs. traditional assets performance

## DIRECT PRIVATE EQUITY FUND INVESTMENTS



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

## “PASSIVE” STRATEGIES

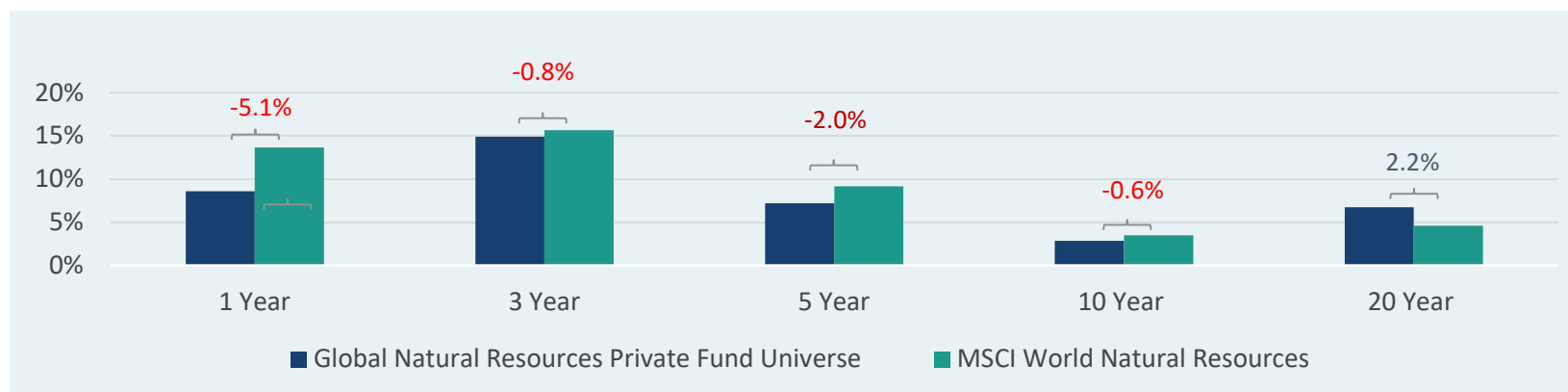


“Passive” strategies outperformed comparable public equities across all time periods, aside from the 1-year.

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.

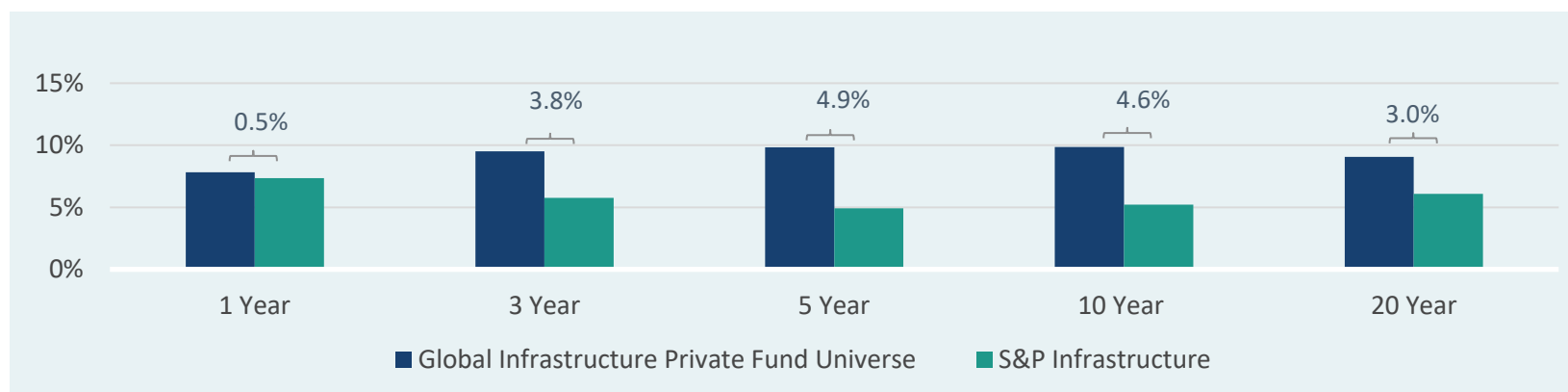
# Private vs. liquid real assets performance

## GLOBAL NATURAL RESOURCES FUNDS



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

## GLOBAL INFRASTRUCTURE FUNDS

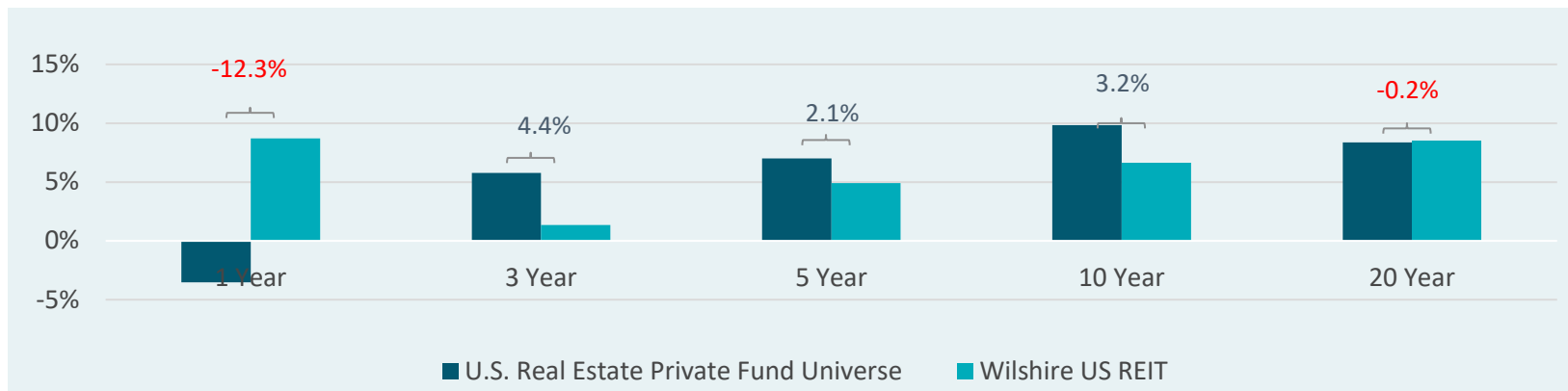


Infra. funds outperformed the S&P Infra. across all periods.

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.

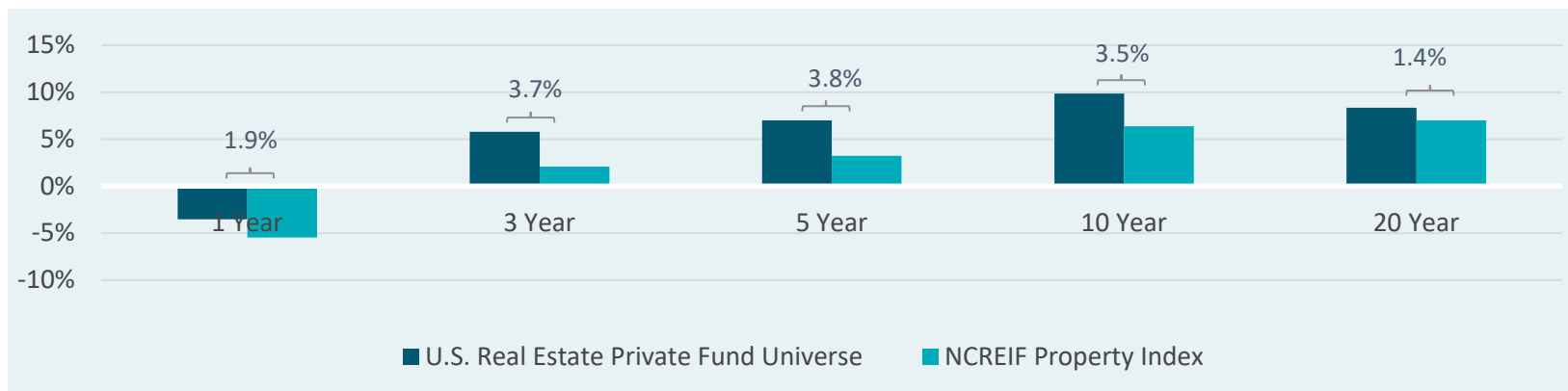
# Private vs. liquid and core real estate performance

## 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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# Kern County Employees Retirement Association

Investment Performance Review  
Period Ending: September 30, 2024



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Total Fund  
Portfolio Reconciliation

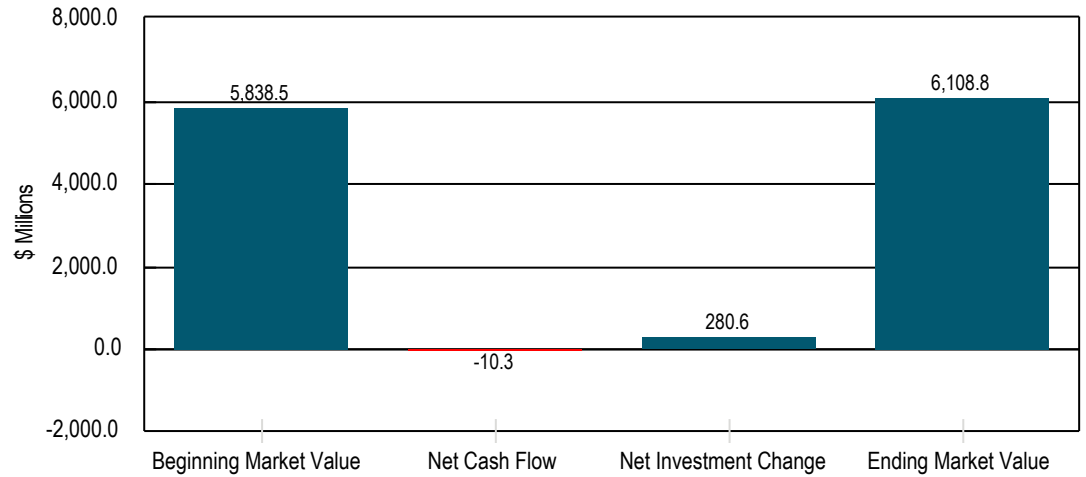
Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

Portfolio Reconciliation

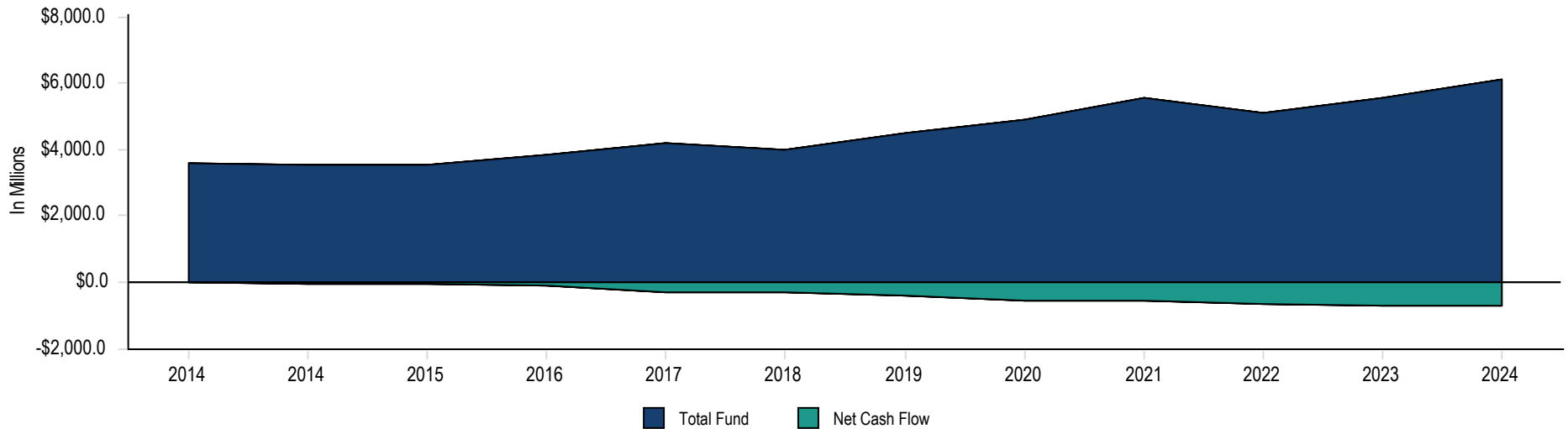
Last Three Months

Beginning Market Value	\$5,838,506,052
Net Cash Flows	-\$10,340,519
Net Investment Change	\$280,590,806
Ending Market Value	\$6,108,756,148

Change in Market Value  
Last Three Months



Market Value History



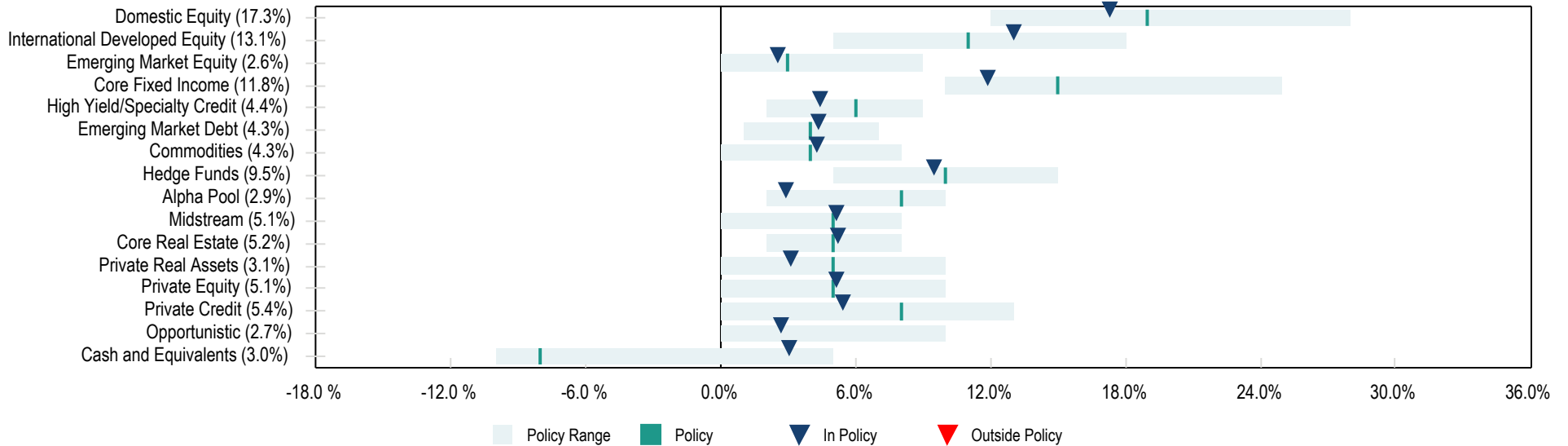
# Total Fund

## Asset Allocation vs. Policy

Kern County Employees Retirement Association  
 Period Ending: September 30, 2024

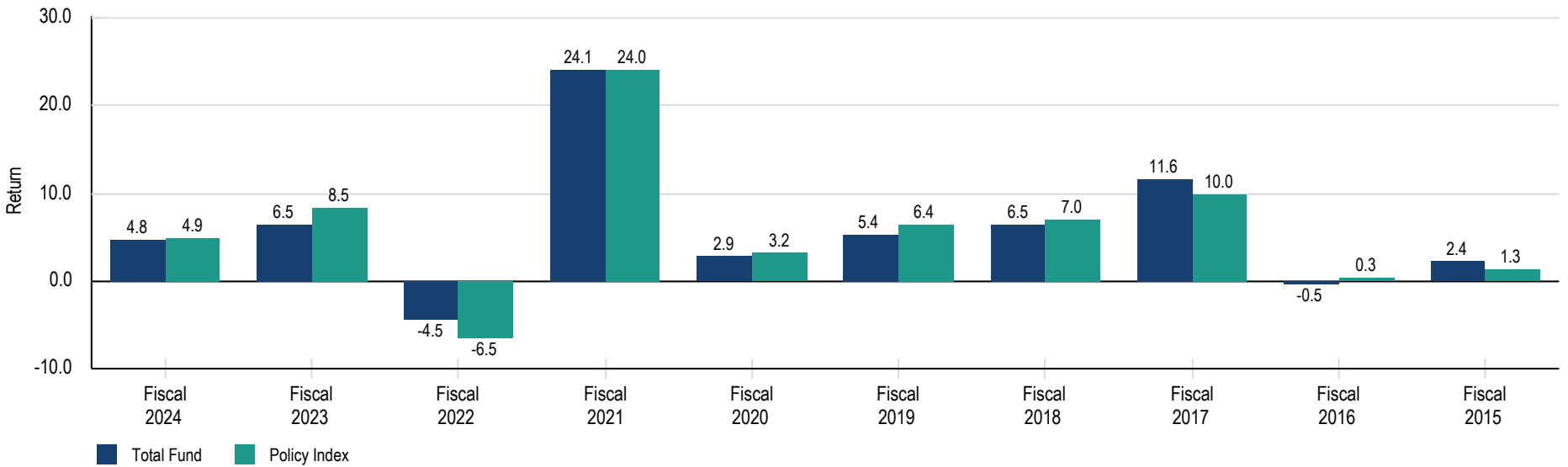
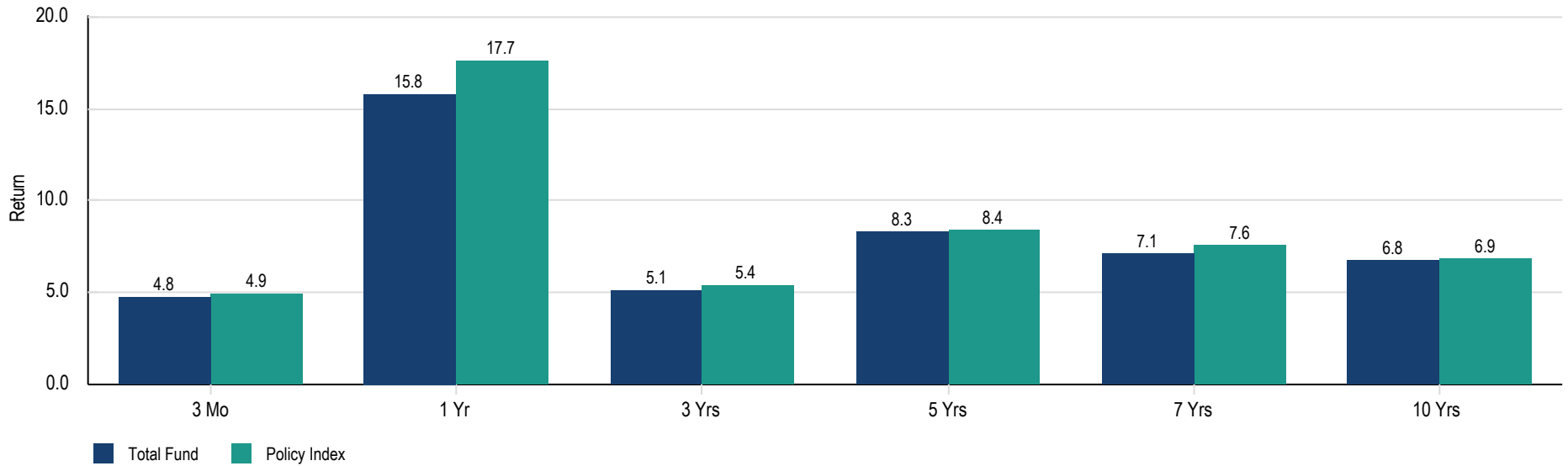
	Current Balance (\$)	Current Allocation (%)	Policy Allocation (%)	Excess Allocation (%)	Policy Range (%)	Within IPS Range?
Equity	2,009,502,445	32.9	33.0	-0.1	23.0 - 45.0	Yes
Fixed Income	1,258,154,026	20.6	25.0	-4.4	15.0 - 35.0	Yes
Core Real Estate	316,215,179	5.2	5.0	0.2	2.0 - 8.0	Yes
Hedge Funds	578,436,545	9.5	10.0	-0.5	5.0 - 15.0	Yes
Alpha Pool	177,913,104	2.9	8.0	-5.1	2.0 - 10.0	Yes
Private Equity	283,370,446	4.6	5.0	-0.4	0.0 - 10.0	Yes
Private Credit	361,439,686	5.9	8.0	-2.1	0.0 - 13.0	Yes
Private Real Assets	192,060,389	3.1	5.0	-1.9	0.0 - 10.0	Yes
Commodities	261,721,066	4.3	4.0	0.3	0.0 - 8.0	Yes
Opportunistic	164,441,022	2.7	0.0	2.7	0.0 - 10.0	Yes
Midstream	313,582,513	5.1	5.0	0.1	0.0 - 8.0	Yes
Cash and Equivalents	185,419,727	3.0	-8.0	11.0	-10.0 - 5.0	Yes
<b>Total</b>	<b>6,102,256,148</b>	<b>99.9</b>	<b>100.0</b>	<b>-0.1</b>		

### Executive Summary



Total Fund  
Performance vs. Policy (Net of Fees)

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024



Total Fund  
Executive Summary (Gross of Fees)

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2024	Fiscal 2023	Fiscal 2022	Fiscal 2021	Fiscal 2020
<b>Total Fund</b>	<b>6,108,756,148</b>	<b>100.0</b>	<b>4.9</b>	<b>4.9</b>	<b>16.1</b>	<b>5.4</b>	<b>8.6</b>	<b>7.2</b>	<b>9.8</b>	<b>6.7</b>	<b>-4.2</b>	<b>24.4</b>	<b>3.2</b>
<i>Policy Index</i>			4.9	4.9	17.7	5.4	8.4	6.9	10.6	8.5	-6.5	24.0	3.2
<i>InvMetrics Public DB &gt; \$1B Rank</i>			41	41	63	24	37	52	57	72	36	87	24
<b>Equity</b>	<b>2,083,185,034</b>	<b>34.1</b>	<b>6.9</b>	<b>6.9</b>	<b>29.6</b>	<b>7.6</b>	<b>12.0</b>	<b>10.1</b>	<b>17.1</b>	<b>15.9</b>	<b>-14.9</b>	<b>41.2</b>	<b>0.7</b>
<i>MSCI AC World IMI Index (Net)</i>			6.8	6.8	31.0	7.4	11.9	9.2	18.4	16.1	-16.5	40.9	1.2
<b>Domestic Equity</b>	<b>1,055,253,558</b>	<b>17.3</b>	<b>6.2</b>	<b>6.2</b>	<b>34.7</b>	<b>10.3</b>	<b>15.2</b>	<b>13.4</b>	<b>22.4</b>	<b>17.8</b>	<b>-12.0</b>	<b>43.6</b>	<b>6.3</b>
<i>MSCI USA IMI</i>			6.2	6.2	35.3	10.4	15.4	12.9	23.3	19.2	-13.7	44.4	6.7
<b>International Developed Equity</b>	<b>797,731,778</b>	<b>13.1</b>	<b>7.6</b>	<b>7.6</b>	<b>24.5</b>	<b>5.2</b>	<b>8.8</b>	<b>6.7</b>	<b>11.0</b>	<b>17.2</b>	<b>-17.2</b>	<b>37.0</b>	<b>-5.5</b>
<i>MSCI World ex U.S. IMI Index (Net)</i>			8.1	8.1	24.8	4.8	8.1	5.7	10.8	16.3	-17.7	34.8	-5.1
<b>Emerging Markets Equity</b>	<b>230,198,150</b>	<b>3.8</b>	<b>7.7</b>	<b>7.7</b>	<b>24.2</b>	<b>3.3</b>	<b>6.0</b>	<b>4.0</b>	<b>14.2</b>	<b>5.3</b>	<b>-21.4</b>	<b>40.6</b>	<b>-10.9</b>
<i>MSCI Emerging Markets IMI (Net)</i>			8.2	8.2	25.6	1.0	6.5	4.2	13.6	3.2	-24.8	43.2	-4.0
<b>Fixed Income</b>	<b>1,258,154,026</b>	<b>20.6</b>	<b>5.5</b>	<b>5.5</b>	<b>12.6</b>	<b>-0.3</b>	<b>1.8</b>	<b>2.8</b>	<b>4.2</b>	<b>3.1</b>	<b>-12.7</b>	<b>5.4</b>	<b>6.6</b>
<i>Fixed Income Custom Benchmark</i>			5.3	5.3	12.9	-0.2	1.4	2.5	4.8	1.9	-11.6	4.0	5.2
<b>Core Fixed Income</b>	<b>723,119,691</b>	<b>11.8</b>	<b>4.8</b>	<b>4.8</b>	<b>11.1</b>	<b>-1.9</b>	<b>0.4</b>	<b>2.1</b>	<b>2.5</b>	<b>-0.9</b>	<b>-11.2</b>	<b>1.0</b>	<b>9.5</b>
<i>Bimbg. U.S. Aggregate Index</i>			5.2	5.2	11.6	-1.4	0.3	1.8	2.6	-0.9	-10.3	-0.3	8.7
<b>High Yield/ Specialty Credit</b>	<b>270,869,622</b>	<b>4.4</b>	<b>5.3</b>	<b>5.3</b>	<b>13.3</b>	<b>3.1</b>	<b>4.4</b>	<b>4.2</b>	<b>8.0</b>	<b>7.9</b>	<b>-9.7</b>	<b>13.6</b>	<b>0.0</b>
<i>ICE BofA U.S. High Yield Index</i>			5.3	5.3	15.7	3.1	4.5	5.0	10.4	8.9	-12.7	15.6	-1.1
<b>Emerging Market Debt</b>	<b>263,918,297</b>	<b>4.3</b>	<b>7.9</b>	<b>7.9</b>	<b>17.5</b>	<b>1.6</b>	<b>2.6</b>	<b>2.2</b>	<b>6.4</b>	<b>11.7</b>	<b>-19.6</b>	<b>9.4</b>	<b>-1.2</b>
<i>50 JPM EMBI Global Div / 50 JPM GBI EM Global Div</i>			7.6	7.6	16.0	0.1	0.8	2.0	4.9	9.4	-20.2	7.1	-1.1
<b>Commodities</b>	<b>261,721,066</b>	<b>4.3</b>	<b>0.6</b>	<b>0.6</b>	<b>7.1</b>	<b>8.1</b>	<b>11.1</b>	<b>2.3</b>	<b>14.6</b>	<b>-6.3</b>	<b>20.1</b>	<b>43.5</b>	<b>-10.7</b>
<i>Bloomberg Commodity Index Total Return</i>			0.7	0.7	1.0	3.7	7.8	0.0	5.0	-9.6	24.3	45.6	-17.4
<b>Hedge Funds</b>	<b>584,936,545</b>	<b>9.6</b>	<b>2.6</b>	<b>2.6</b>	<b>10.0</b>	<b>6.7</b>	<b>9.1</b>	<b>6.6</b>	<b>9.2</b>	<b>6.9</b>	<b>2.8</b>	<b>16.3</b>	<b>7.3</b>
<i>75% (3 Month T-Bill + 3%) + 25% MSCI ACWI Net</i>			3.2	3.2	14.2	7.2	7.4	6.1	11.4	9.4	-1.7	11.4	4.5
<b>Alpha Pool</b>	<b>177,913,104</b>	<b>2.9</b>	<b>0.8</b>	<b>0.8</b>	<b>1.3</b>	<b>0.5</b>	<b>-</b>	<b>-</b>	<b>0.7</b>	<b>-0.9</b>	<b>1.5</b>	<b>14.5</b>	<b>-</b>
<i>3-Month Treasury Bill +3%</i>			2.1	2.1	8.6	6.6	-	-	8.6	6.7	3.2	3.1	-
<b>Midstream Energy</b>	<b>313,582,513</b>	<b>5.1</b>	<b>5.2</b>	<b>5.2</b>	<b>29.3</b>	<b>22.0</b>	<b>-</b>	<b>-</b>	<b>30.6</b>	<b>20.1</b>	<b>9.6</b>	<b>-</b>	<b>-</b>
<i>Alerian Midstream Energy Index</i>			9.7	9.7	35.6	20.7	-	-	26.7	12.2	11.4	-	-
<b>Core Real Estate</b>	<b>242,532,590</b>	<b>4.0</b>	<b>-0.4</b>	<b>-0.4</b>	<b>-17.2</b>	<b>-5.8</b>	<b>-0.7</b>	<b>3.9</b>	<b>-19.8</b>	<b>-11.9</b>	<b>25.6</b>	<b>6.6</b>	<b>2.3</b>
<i>NCREIF ODCE</i>			0.2	0.2	-7.3	-0.2	2.9	6.1	-9.3	-10.0	29.5	8.0	2.2
<b>Private Real Assets</b>	<b>192,060,389</b>	<b>3.1</b>	<b>1.0</b>	<b>1.0</b>	<b>-1.8</b>	<b>7.9</b>	<b>9.7</b>	<b>10.4</b>	<b>-6.4</b>	<b>7.9</b>	<b>31.3</b>	<b>12.1</b>	<b>4.4</b>
			1.0	1.0	-1.8	7.9	9.7	10.4	-6.4	7.9	31.3	12.1	4.4
<b>Private Equity</b>	<b>277,840,912</b>	<b>4.5</b>	<b>2.0</b>	<b>2.0</b>	<b>10.6</b>	<b>8.4</b>	<b>11.8</b>	<b>10.4</b>	<b>11.9</b>	<b>-0.6</b>	<b>23.0</b>	<b>41.7</b>	<b>-10.5</b>
			2.0	2.0	10.6	8.4	11.8	10.4	11.9	-0.6	23.0	41.7	-10.5
<b>Private Credit</b>	<b>366,969,220</b>	<b>6.0</b>	<b>2.6</b>	<b>2.6</b>	<b>12.3</b>	<b>5.5</b>	<b>5.8</b>	<b>-</b>	<b>13.2</b>	<b>3.2</b>	<b>1.2</b>	<b>4.8</b>	<b>5.5</b>
			2.6	2.6	12.3	5.5	5.8	-	13.2	3.2	1.2	4.8	5.5

Policy Index: 33% MSCI ACWI IMI (Net), 17% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets Global Diversified, 4% Bloomberg Commodity Index, 7.5% 3-Month Treasury Bill +3%, 2.5% MSCI ACWI (Net), 8% 3-Month Treasury Bill + 3%, 7% NCREIF-ODCE Gross Monthly, 5% actual time-weighted Private Equity Returns\*, 6% actual time-weighted Private Credit Returns\*, 3% actual time-weighted Private Real Assets Returns\*, 5% Alerian Midstream, 0% Assumed Rate of Return +3%, -8% 3-Month Treasury Bill. All data prior to 2Q 2011 has been provided by the investments managers. FY: 6/30. The Equity and Fixed Income Beta Exposure return includes overlay cash and an implied hurdle rate also applied to the Alpha pool.

Total Fund  
Executive Summary (Gross of Fees)

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2024	Fiscal 2023	Fiscal 2022	Fiscal 2021	Fiscal 2020
<b>Opportunistic</b>	<b>164,441,022</b>	<b>2.7</b>	<b>12.0</b>	<b>12.0</b>	<b>16.4</b>	<b>3.4</b>	<b>-</b>	<b>-</b>	<b>2.9</b>	<b>0.6</b>	<b>-5.4</b>	<b>59.9</b>	<b>-</b>
<i>Assumed Rate of Return +3%</i>			2.4	2.4	10.0	10.0	-	-	10.0	10.0	10.0	10.0	-
<b>Cash</b>	<b>427,394,302</b>	<b>7.0</b>	<b>1.6</b>	<b>1.6</b>	<b>6.6</b>	<b>3.3</b>	<b>2.1</b>	<b>2.3</b>	<b>6.4</b>	<b>2.3</b>	<b>-0.2</b>	<b>0.1</b>	<b>1.0</b>
<i>3 Month T-Bill</i>			1.4	1.4	5.5	3.5	2.3	1.6	5.4	3.6	0.2	0.1	1.6

# Performance and Attribution

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# Total Fund Performance (Net of Fees)

# Kern County Employees' Retirement Association Period Ending: September 30, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2024	Fiscal 2023	Fiscal 2022	Fiscal 2021	Fiscal 2020	Inception	Inception Date
<b>Total Fund</b>	<b>6,108,756,148</b>	<b>100.0</b>	<b>4.8</b>	<b>4.8</b>	<b>15.8</b>	<b>5.1</b>	<b>8.3</b>	<b>6.8</b>	<b>9.6</b>	<b>6.5</b>	<b>-4.5</b>	<b>24.1</b>	<b>2.9</b>	<b>6.9</b>	<b>Jun-11</b>
<i>Policy Index</i>			4.9	4.9	17.7	5.4	8.4	6.9	10.6	8.5	-6.5	24.0	3.2	6.9	
<b>Equity</b>	<b>2,083,185,034</b>	<b>34.1</b>	<b>6.9</b>	<b>6.9</b>	<b>29.4</b>	<b>7.4</b>	<b>11.7</b>	<b>9.7</b>	<b>16.9</b>	<b>15.7</b>	<b>-15.1</b>	<b>40.7</b>	<b>0.3</b>	<b>9.7</b>	<b>Jun-11</b>
<i>MSCI AC World IMI Index (Net)</i>			6.8	6.8	31.0	7.4	11.9	9.2	18.4	16.1	-16.5	40.9	1.2	9.1	
<b>Domestic Equity</b>	<b>1,055,253,558</b>	<b>17.3</b>	<b>6.2</b>	<b>6.2</b>	<b>34.4</b>	<b>10.1</b>	<b>14.9</b>	<b>13.0</b>	<b>22.1</b>	<b>17.6</b>	<b>-12.2</b>	<b>43.2</b>	<b>6.0</b>	<b>12.6</b>	<b>Jul-14</b>
<i>MSCI USA IMI</i>			6.2	6.2	35.3	10.4	15.4	12.9	23.3	19.2	-13.7	44.4	6.7	12.6	
Mellon DB SL Stock Index Fund	706,785,735	11.6	5.9	5.9	36.3	11.9	16.0	-	24.5	19.6	-10.6	40.8	7.5	14.4	Oct-17
<i>S&amp;P 500 Index</i>			5.9	5.9	36.4	11.9	16.0	-	24.6	19.6	-10.6	40.8	7.5	14.3	
PIMCO StocksPLUS	154,576,110	2.5	5.7	5.7	37.1	11.0	15.6	13.2	25.6	18.8	-12.8	41.7	7.7	11.5	Jul-03
<i>S&amp;P 500 Index</i>			5.9	5.9	36.4	11.9	16.0	13.4	24.6	19.6	-10.6	40.8	7.5	10.7	
AB US Small Cap Value Equity	125,024,919	2.0	8.4	8.4	23.6	1.3	8.4	-	9.1	4.3	-16.1	77.5	-19.4	7.3	Jul-15
<i>Russell 2000 Value Index</i>			10.2	10.2	25.9	3.8	9.3	-	10.9	6.0	-16.3	73.3	-17.5	7.8	
Geneva Capital Small Cap Growth	68,866,795	1.1	8.7	8.7	27.2	3.1	10.6	-	9.8	15.6	-22.1	37.6	9.3	10.8	Jul-15
<i>Russell 2000 Growth Index</i>			8.4	8.4	27.7	-0.4	8.8	-	9.1	18.5	-33.4	51.4	3.5	7.5	
<b>International Developed Equity</b>	<b>797,731,778</b>	<b>13.1</b>	<b>7.6</b>	<b>7.6</b>	<b>24.4</b>	<b>5.1</b>	<b>8.7</b>	<b>6.4</b>	<b>10.9</b>	<b>17.1</b>	<b>-17.3</b>	<b>36.7</b>	<b>-5.7</b>	<b>5.6</b>	<b>Jul-14</b>
<i>MSCI World ex U.S. IMI Index (Net)</i>			8.1	8.1	24.8	4.8	8.1	5.7	10.8	16.3	-17.7	34.8	-5.1	4.9	
Mellon DB SL World ex-US Index Fund	471,332,046	7.7	7.9	7.9	25.6	6.3	9.0	-	11.7	17.9	-16.1	35.6	-5.5	7.2	Jul-18
<i>MSCI World ex U.S. IMI Index (Net)</i>			8.1	8.1	24.8	4.8	8.1	-	10.8	16.3	-17.7	34.8	-5.1	6.2	
Cevian Capital II	48,613,486	0.8	2.7	2.7	23.7	12.9	14.8	-	21.8	25.3	-8.2	46.8	-8.2	9.0	Dec-14
<i>MSCI Europe Index (Net) Hedged</i>			1.7	1.7	16.4	6.9	7.2	-	12.2	17.3	-8.6	25.0	-5.6	7.0	
Lazard Japanese Equity	143,675,214	2.4	5.9	5.9	-	-	-	-	-	-	-	-	-	25.7	Nov-23
<i>TOPIX Net Total Return Index</i>			6.8	6.8	-	-	-	-	-	-	-	-	-	23.3	
American Century Non-US Small Cap	69,815,299	1.1	8.1	8.1	26.0	-3.7	-	-	8.3	7.9	-27.4	-	-	1.5	Dec-20
<i>MSCI World ex U.S. Small Cap Growth Index (Net)</i>			10.0	10.0	23.4	-3.6	-	-	5.6	9.5	-28.6	-	-	0.5	
Dalton Japan Long Only	64,295,733	1.1	13.7	13.7	-	-	-	-	-	-	-	-	-	28.6	Oct-23
<i>MSCI Japan Small Cap Index (Net)</i>			12.1	12.1	19.2	-	-	-	-	-	-	-	-	24.3	
<b>Emerging Markets Equity</b>	<b>230,198,150</b>	<b>3.8</b>	<b>7.6</b>	<b>7.6</b>	<b>23.8</b>	<b>2.7</b>	<b>5.3</b>	<b>3.2</b>	<b>13.8</b>	<b>4.6</b>	<b>-21.9</b>	<b>39.5</b>	<b>-11.8</b>	<b>2.8</b>	<b>Jul-14</b>
<i>MSCI Emerging Markets IMI (Net)</i>			8.2	8.2	25.6	1.0	6.5	4.2	13.6	3.2	-24.8	43.2	-4.0	3.8	
DFA Emerging Markets Value I	58,777,011	1.0	5.7	5.7	23.2	6.3	8.6	5.0	16.7	7.9	-12.9	47.6	-17.7	5.5	Mar-14
<i>MSCI Emerging Markets Value (Net)</i>			8.1	8.1	24.4	3.3	5.9	3.1	14.1	4.1	-18.6	41.6	-15.7	3.6	
Mellon Emerging Markets Stock Index Fund	22,115,167	0.4	8.3	8.3	25.0	-0.1	-	-	12.0	1.6	-25.5	41.1	-	6.1	Jun-20
<i>MSCI Emerging Markets (Net)</i>			8.7	8.7	26.1	0.4	-	-	12.5	1.7	-25.3	40.9	-	8.2	
Carrhae Capital Long Master Fund Ltd	75,623,383	1.2	-	-	-	-	-	-	-	-	-	-	-	8.0	Aug-24
<i>MSCI Emerging Markets Value (Net)</i>			-	-	-	-	-	-	-	-	-	-	-	7.4	
ABS Emerging Market Direct	73,682,589	1.2	-	-	-	-	-	-	-	-	-	-	-	5.3	Aug-24
<i>MSCI Emerging Markets Value (Net)</i>			-	-	-	-	-	-	-	-	-	-	-	5.7	
<b>Fixed Income</b>	<b>1,258,154,026</b>	<b>20.6</b>	<b>5.5</b>	<b>5.5</b>	<b>12.4</b>	<b>-0.6</b>	<b>1.6</b>	<b>2.5</b>	<b>3.9</b>	<b>2.9</b>	<b>-13.0</b>	<b>5.1</b>	<b>6.3</b>	<b>3.5</b>	<b>Jun-10</b>
<i>Fixed Income Custom Benchmark</i>			5.3	5.3	12.9	-0.2	1.4	2.5	4.8	1.9	-11.6	4.0	5.2	3.3	
<b>Core Fixed Income</b>	<b>723,119,691</b>	<b>11.8</b>	<b>4.7</b>	<b>4.7</b>	<b>11.0</b>	<b>-2.1</b>	<b>0.3</b>	<b>2.0</b>	<b>2.4</b>	<b>-1.0</b>	<b>-11.4</b>	<b>0.8</b>	<b>9.3</b>	<b>1.9</b>	<b>Jul-14</b>
<i>Bloomberg U.S. Aggregate Index</i>			5.2	5.2	11.6	-1.4	0.3	1.8	2.6	-0.9	-10.3	-0.3	8.7	1.8	
Fixed Income Beta Exposure	281,287,485	4.6	4.3	4.3	9.7	-	-	-	1.7	-2.5	-	-	-	2.5	Jun-22
<i>Bloomberg U.S. Aggregate Index</i>			5.2	5.2	11.6	-	-	-	2.6	-0.9	-	-	-	2.2	
Mellon DB SL Aggregate Bond Index Fund	248,737,017	4.1	5.2	5.2	11.6	-1.4	0.3	1.8	2.6	-0.9	-10.4	-0.4	8.8	2.3	Jan-11
<i>Bloomberg U.S. Aggregate Index</i>			5.2	5.2	11.6	-1.4	0.3	1.8	2.6	-0.9	-10.3	-0.3	8.7	2.4	

Policy Index: 33% MSCI ACWI IMI (Net), 17% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets Global Diversified, 4% Bloomberg Commodity Index, 7.5% 3-Month Treasury Bill +3%, 2.5% MSCI ACWI (Net), 8% 3-Month Treasury Bill + 3%, 7% NCREIF-ODCE Gross Monthly, 5% actual time-weighted Private Equity Returns\*, 6% actual time-weighted Private Credit Returns\*, 3% actual time-weighted Private Real Assets Returns\*, 5% Alerian Midstream, 0% Assumed Rate of Return +3%, -8% 3-Month Treasury Bill. All data prior to 2Q 2011 has been provided by the investments managers. FY: 6/30. The Equity and Fixed Income Beta Exposure return includes overlay cash and an implied hurdle rate also applied to the Alpha pool.

Total Fund  
Performance (Net of Fees)

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2024	Fiscal 2023	Fiscal 2022	Fiscal 2021	Fiscal 2020	Inception	Inception Date
PIMCO Core Plus	179,845,803	2.9	5.3	5.3	12.6	-0.9	1.1	2.2	3.6	-0.7	-9.9	1.1	8.7	2.7	Feb-11
<i>Bloomberg U.S. Aggregate Index</i>			5.2	5.2	11.6	-1.4	0.3	1.8	2.6	-0.9	-10.3	-0.3	8.7	2.4	
Western Asset Core Plus	13,249,387	0.2	4.2	4.2	11.4	-2.8	0.1	2.2	2.7	0.8	-14.5	2.4	9.3	3.8	Jun-04
<i>Bloomberg U.S. Aggregate Index</i>			5.2	5.2	11.6	-1.4	0.3	1.8	2.6	-0.9	-10.3	-0.3	8.7	3.4	
High Yield/ Specialty Credit	270,869,622	4.4	5.2	5.2	12.8	2.7	3.9	3.7	7.5	7.5	-10.2	13.1	-0.5	3.4	Jul-14
<i>ICE BofA U.S. High Yield Index</i>			5.3	5.3	15.7	3.1	4.5	5.0	10.4	8.9	-12.7	15.6	-1.1	4.6	
Western Asset High Yield Fixed Income	176,373,870	2.9	5.5	5.5	15.0	2.7	4.2	4.5	10.0	9.5	-14.1	16.5	-2.2	6.2	Jun-05
<i>Bloomberg US HY Ba/B 2% Cap TR</i>			4.4	4.4	14.6	2.7	4.5	5.0	10.0	8.9	-12.4	13.4	2.1	6.3	
TCW Securitized Opportunities	94,495,752	1.5	4.6	4.6	8.9	2.2	3.0	-	3.1	4.4	-4.0	6.4	2.2	3.8	Feb-16
<i>Bloomberg U.S. High Yield - 2% Issuer Cap</i>			5.3	5.3	15.7	3.1	4.7	-	10.4	9.1	-12.8	15.3	0.0	6.7	
Emerging Market Debt	263,918,297	4.3	7.8	7.8	17.0	1.2	2.2	1.7	6.0	11.2	-19.9	9.1	-1.7	1.2	Jul-14
<i>50 JPM EMBI Global Div / 50 JPM GBI EM Global Div</i>			7.6	7.6	16.0	0.1	0.8	2.0	4.9	9.4	-20.2	7.1	-1.1	1.6	
Stone Harbor Emerging Markets Debt Blend Portfolio	42,309,381	0.7	7.7	7.7	17.0	0.8	1.8	1.7	6.8	10.8	-20.9	9.5	-1.8	1.1	Aug-12
<i>50 JPM GBI-EM Global Div/ 40 JPM EMBI Global Div/ 10 JPM Corporate EM Bond Idx</i>			7.4	7.4	15.6	0.3	1.0	2.0	4.9	9.2	-19.5	7.2	-0.8	1.9	
PIMCO EMD	221,608,916	3.6	7.8	7.8	17.0	1.5	-	-	5.6	11.3	-19.2	8.7	-	1.4	Feb-20
<i>50 JPM EMBI Global Div / 50 JPM GBI EM Global Div</i>			7.6	7.6	16.0	0.1	-	-	4.9	9.4	-20.2	7.1	-	0.1	
Commodities	261,721,066	4.3	0.4	0.4	6.4	7.4	10.4	1.7	13.7	-7.0	19.4	42.5	-11.3	0.8	Jul-13
<i>Bloomberg Commodity Index Total Return</i>			0.7	0.7	1.0	3.7	7.8	0.0	5.0	-9.6	24.3	45.6	-17.4	-0.4	
Gresham MTAP Commodity Builder Fund	46,793,801	0.8	-0.1	-0.1	0.8	3.8	8.0	0.2	5.9	-11.5	24.7	46.8	-16.3	-0.3	Oct-13
<i>Bloomberg Commodity Index Total Return</i>			0.7	0.7	1.0	3.7	7.8	0.0	5.0	-9.6	24.3	45.6	-17.4	-0.5	
Wellington Commodities	214,927,265	3.5	0.5	0.5	7.4	8.4	11.2	2.5	15.5	-5.2	17.2	40.2	-7.5	1.6	Sep-13
<i>S&amp;P GSCI Commodity Equal Weighted</i>			0.1	0.1	5.1	6.7	9.2	2.1	10.4	-6.0	19.0	40.9	-12.4	1.2	
Hedge Funds	584,936,545	9.6	2.4	2.4	9.8	6.6	9.0	6.1	9.2	6.8	2.8	16.1	7.0	5.9	Jun-13
<i>75% 90 Day TBills +3% / 25% MSCI ACWI IMI (Net)</i>			3.2	3.2	14.2	7.2	7.4	6.1	11.4	9.4	-1.7	11.4	4.5	6.0	
Aristeia International Limited	76,065,456	1.2	2.1	2.1	5.1	4.6	8.7	5.6	5.1	5.5	1.8	21.6	8.7	5.4	May-14
Brevan Howard Fund	58,729,187	1.0	4.9	4.9	5.7	7.0	9.9	6.7	3.1	-1.0	15.2	6.1	20.5	7.1	Sep-13
D.E. Shaw Composite Fund	65,003,295	1.1	2.3	2.3	10.6	16.5	16.9	14.3	12.9	11.0	29.0	19.0	15.6	14.0	Jul-13
HBK Fund II	50,988,594	0.8	1.9	1.9	9.3	7.0	7.1	5.1	11.1	7.9	2.3	11.0	1.5	5.2	Nov-13
Hudson Bay Cap Structure Arbitrage Enhanced Fund	81,415,249	1.3	2.1	2.1	5.0	6.4	9.7	-	4.0	7.7	7.7	14.2	16.2	9.8	Jun-19
Indus Pacific Opportunities Fund	50,279,070	0.8	2.4	2.4	9.8	-0.4	11.1	7.2	5.8	-0.4	-8.2	38.0	15.8	6.7	Jul-14
Pharo Macro Fund	73,257,054	1.2	3.2	3.2	18.2	1.9	-	-	12.7	1.2	-11.1	3.5	-	2.4	Dec-19
PIMCO Commodity Alpha Fund	83,152,032	1.4	0.8	0.8	12.6	13.3	12.6	-	15.6	18.3	8.6	14.2	4.8	11.4	Jun-16
Enhanced Domestic Partners to Sculptor Master Fund	39,546,607	0.6	3.1	3.1	14.0	0.1	6.2	-	13.5	8.8	-19.9	16.8	6.5	6.9	Feb-19
Elliott Associates	6,500,000	0.1	0.0	0.0	-	-	-	-	-	-	-	-	-	0.0	Jul-24
Alpha Pool	177,913,104	2.9	0.8	0.8	1.3	0.5	-	-	0.7	-0.9	1.5	14.5	-	3.7	Jul-20
<i>3-Month Treasury Bill +3%</i>			2.1	2.1	8.6	6.6	-	-	8.6	6.7	3.2	3.1	-	5.6	
Hudson Bay - Alpha Pool	46,891,782	0.8	0.9	0.9	-1.1	0.5	-	-	-2.8	-1.1	6.7	-	-	3.7	Aug-20
Davidson Kempner Institutional Partners	51,867,195	0.8	1.7	1.7	3.6	-1.5	-	-	1.2	-4.1	-3.4	-	-	0.9	Dec-20
HBK Fund II	38,413,655	0.6	0.5	0.5	3.0	1.0	-	-	4.0	-1.0	1.3	-	-	2.6	Dec-20
Garda Fixed Income Relative Value Opportunity Fund	40,740,472	0.7	-0.1	-0.1	0.7	3.5	-	-	1.8	3.6	-	-	-	3.5	Sep-21
Midstream Energy	313,582,513	5.1	5.0	5.0	28.6	21.3	-	-	29.8	19.3	9.3	-	-	27.9	Sep-20
<i>Alerian Midstream Energy Index</i>			9.7	9.7	35.6	20.7	-	-	26.7	12.2	11.4	-	-	26.7	
Harvest Midstream	166,891,311	2.7	4.6	4.6	32.1	25.7	-	-	35.9	20.9	15.3	-	-	33.4	Aug-20
<i>Alerian Midstream Energy Index</i>			9.7	9.7	35.6	20.7	-	-	26.7	12.2	11.4	-	-	26.1	

Policy Index: 33% MSCI ACWI IMI (Net), 17% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets Global Diversified, 4% Bloomberg Commodity Index, 7.5% 3-Month Treasury Bill +3%, 2.5% MSCI ACWI (Net), 8% 3-Month Treasury Bill + 3%, 7% NCREIF-ODCE Gross Monthly, 5% actual time-weighted Private Equity Returns\*, 6% actual time-weighted Private Credit Returns\*, 3% actual time-weighted Private Real Assets Returns\*, 5% Alerian Midstream, 0% Assumed Rate of Return +3%, -8% 3-Month Treasury Bill. All data prior to 2Q 2011 has been provided by the investments managers. FY: 6/30. The Equity and Fixed Income Beta Exposure return includes overlay cash and an implied hurdle rate also applied to the Alpha pool.



Total Fund  
Performance (Net of Fees)

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2024	Fiscal 2023	Fiscal 2022	Fiscal 2021	Fiscal 2020	Inception	Inception Date
PIMCO Midstream	146,691,202	2.4	5.5	5.5	24.9	16.0	-	-	23.6	16.9	2.2	-	-	22.8	Oct-20
50/25/25 Alerian Midstream/ ICE BofA US Pipeline/ ICE BofA US HY Midstream			7.1	7.1	24.9	11.3	-	-	17.6	10.1	-0.7	-	-	16.6	
<b>Core Real Estate</b>	<b>242,532,590</b>	<b>4.0</b>	<b>-0.6</b>	<b>-0.6</b>	<b>-17.6</b>	<b>-6.4</b>	<b>-1.4</b>	<b>3.3</b>	<b>-20.2</b>	<b>-12.4</b>	<b>24.8</b>	<b>5.6</b>	<b>1.4</b>	<b>3.3</b>	<b>Oct-14</b>
NCREIF ODCE			0.2	0.2	-7.3	-0.2	2.9	6.1	-9.3	-10.0	29.5	8.0	2.2	6.1	
ASB Allegiance Real Estate Fund	120,351,816	2.0	-1.0	-1.0	-21.6	-8.5	-2.8	2.3	-23.9	-13.3	23.0	5.4	1.5	3.1	Sep-13
NCREIF ODCE			0.2	0.2	-7.3	-0.2	2.9	6.1	-9.3	-10.0	29.5	8.0	2.2	6.6	
JPMCB Strategic Property Fund	108,269,373	1.8	0.6	0.6	-11.5	-3.1	0.7	4.3	-14.9	-11.4	27.9	5.9	1.3	4.4	Jul-14
NCREIF ODCE			0.2	0.2	-7.3	-0.2	2.9	6.1	-9.3	-10.0	29.5	8.0	2.2	6.3	
Blue Owl Real Estate Fund VI	13,911,400	0.2	-6.7	-6.7	-	-	-	-	-	-	-	-	-	-18.5	May-24
NCREIF ODCE			0.2	0.2	-	-	-	-	-	-	-	-	-	-0.2	
<b>Private Real Assets</b>	<b>192,060,389</b>	<b>3.1</b>	<b>1.0</b>	<b>1.0</b>	<b>-1.8</b>	<b>7.9</b>	<b>9.7</b>	<b>10.0</b>	<b>-6.4</b>	<b>7.9</b>	<b>31.3</b>	<b>12.1</b>	<b>4.4</b>	<b>10.8</b>	<b>Mar-11</b>
			1.0	1.0	-1.8	7.9	9.7	10.4	-6.4	7.9	31.3	12.1	4.4	10.8	
<b>Private Equity</b>	<b>277,840,912</b>	<b>4.5</b>	<b>2.0</b>	<b>2.0</b>	<b>10.6</b>	<b>8.4</b>	<b>11.8</b>	<b>10.0</b>	<b>11.9</b>	<b>-0.6</b>	<b>22.9</b>	<b>41.7</b>	<b>-10.5</b>	<b>10.7</b>	<b>Sep-10</b>
			2.0	2.0	10.6	8.4	11.8	10.4	11.9	-0.6	23.0	41.7	-10.5	10.9	
<b>Private Credit</b>	<b>366,969,220</b>	<b>6.0</b>	<b>2.6</b>	<b>2.6</b>	<b>12.3</b>	<b>5.5</b>	<b>5.8</b>	<b>-</b>	<b>13.2</b>	<b>3.2</b>	<b>1.2</b>	<b>4.8</b>	<b>5.5</b>	<b>7.7</b>	<b>Jan-16</b>
			2.6	2.6	12.3	5.5	5.8	-	13.2	3.2	1.2	4.8	5.5	7.7	
<b>Opportunistic</b>	<b>164,441,022</b>	<b>2.7</b>	<b>12.0</b>	<b>12.0</b>	<b>16.4</b>	<b>3.3</b>	<b>-</b>	<b>-</b>	<b>2.9</b>	<b>0.6</b>	<b>-5.4</b>	<b>59.9</b>	<b>-</b>	<b>10.5</b>	<b>Jan-20</b>
Assumed Rate of Return +3%			2.4	2.4	10.0	10.0	-	-	10.0	10.0	10.0	10.0	-	10.0	
River Birch International	4,713,804	0.1	29.2	29.2	57.1	-	-	-	31.0	45.1	-	-	-	55.2	Jun-22
Assumed Rate of Return +3%			2.4	2.4	10.0	-	-	-	10.0	10.0	-	-	-	10.0	
Sixth Street TAO Partners (D)	87,440,579	1.4	2.0	2.0	9.6	9.2	-	-	11.3	4.4	9.6	39.6	-	14.1	Mar-20
Assumed Rate of Return +3%			2.4	2.4	10.0	10.0	-	-	10.0	10.0	10.0	10.0	-	10.0	
Aristeia Select Opportunities II	58,113,643	1.0	33.1	33.1	28.6	6.5	-	-	-9.7	-7.2	-	-	-	4.9	Jul-21
Assumed Rate of Return +3%			2.4	2.4	10.0	10.0	-	-	10.0	10.0	10.0	-	-	10.0	
Hudson Bay Special Opportunities Fund LP	3,893,496	0.1	31.0	31.0	-	-	-	-	-	-	-	-	-	54.6	Feb-24
Assumed Rate of Return +3%			2.4	2.4	-	-	-	-	-	-	-	-	-	6.0	
Pharo Opportunities Fund SPC	10,279,500	0.2	2.8	2.8	-	-	-	-	-	-	-	-	-	2.8	Jun-24
Assumed Rate of Return +3%			2.4	2.4	-	-	-	-	-	-	-	-	-	2.5	
<b>Cash</b>	<b>427,394,302</b>	<b>7.0</b>	<b>1.5</b>	<b>1.5</b>	<b>6.4</b>	<b>3.2</b>	<b>2.1</b>	<b>2.2</b>	<b>6.3</b>	<b>2.2</b>	<b>-0.2</b>	<b>0.1</b>	<b>1.0</b>	<b>1.8</b>	<b>Apr-11</b>
3 Month T-Bill			1.4	1.4	5.5	3.5	2.3	1.6	5.4	3.6	0.2	0.1	1.6	1.2	

Policy Index: 33% MSCI ACWI IMI (Net), 17% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets Global Diversified, 4% Bloomberg Commodity Index, 7.5% 3-Month Treasury Bill +3%, 2.5% MSCI ACWI (Net), 8% 3-Month Treasury Bill + 3%, 7% NCREIF-ODCE Gross Monthly, 5% actual time-weighted Private Equity Returns\*, 6% actual time-weighted Private Credit Returns\*, 3% actual time-weighted Private Real Assets Returns\*, 5% Alerian Midstream, 0% Assumed Rate of Return +3%, -8% 3-Month Treasury Bill. All data prior to 2Q 2011 has been provided by the investments managers. FY: 6/30. The Equity and Fixed Income Beta Exposure return includes overlay cash and an implied hurdle rate also applied to the Alpha pool.

Total Fund  
Total Private Equity

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

IRR Analysis as of IRR date												
Vintage Year	Manager/Fund	Estimated Market Value as of 9/30/2024	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib./ Paid-In (DPI) <sup>1</sup>	Tot. Value/ Paid-In (TVPI) <sup>2</sup>	Net IRR Since Inception <sup>3</sup>	IRR Date
<b>Private Equity</b>												
2008	Abbott Capital PE VI	\$13,242,893	\$50,000,000	\$49,750,000	100%	\$250,000	\$82,334,694	\$13,773,543	1.65x	1.92x	12.5%	06/30/24
2006	Pantheon Global III	\$537,225	\$50,000,000	\$47,300,000	95%	\$2,700,000	\$52,000,000	\$540,212	1.10x	1.11x	1.9%	06/30/24
2002	Pantheon USA V	\$30,817	\$25,000,000	\$24,350,000	97%	\$650,000	\$38,291,224	\$374,357	1.57x	1.57x	9.0%	12/31/23
2004	Pantheon USA VI	\$309,541	\$35,000,000	\$33,075,000	95%	\$1,925,000	\$50,623,827	\$307,061	1.53x	1.54x	6.7%	06/30/24
2006	Pantheon USA VII	\$4,215,981	\$50,000,000	\$46,600,000	93%	\$3,400,000	\$82,779,998	\$6,473,929	1.78x	1.87x	10.0%	06/30/24
2020	Vista Foundation Fund IV	\$21,479,058	\$25,000,000	\$19,970,294	80%	\$5,029,706	\$30,252	\$19,775,303	0.00x	1.08x	26.6%	06/30/24
2021	Crown Global Secondaries V Master S.C.Sp	\$43,419,619	\$50,000,000	\$32,250,000	65%	\$17,750,000	\$1,550,000	\$42,308,607	0.05x	1.39x	23.9%	06/30/24
2021	Brighton Park Capital Fund I	\$42,586,009	\$30,000,000	\$30,000,000	100%	\$0	\$1,889,172	\$40,792,750	0.06x	1.48x	14.0%	06/30/24
2021	Warren Equity Partners Fund III	\$36,597,253	\$32,500,000	\$28,344,462	87%	\$4,155,538	\$508,290	\$36,597,253	0.02x	1.31x	18.0%	09/30/24
2021	Peak Rock Capital Fund III	\$19,776,734	\$30,000,000	\$18,656,463	62%	\$11,343,537	\$6,286,731	\$19,776,734	0.34x	1.40x	29.0%	09/30/24
2021	Level Equity Growth Partners V	\$11,430,126	\$15,000,000	\$9,473,677	63%	\$5,526,323	\$0	\$11,430,126	0.00x	1.21x	10.0%	09/30/24
2021	Level Equity Opportunities Fund 2021	\$8,023,637	\$15,000,000	\$6,614,000	44%	\$8,386,000	\$0	\$8,023,637	0.00x	1.21x	12.9%	09/30/24
2022	Linden Capital Partners V LP	\$14,448,158	\$22,500,000	\$12,279,125	55%	\$10,220,875	\$0	\$14,448,158	0.00x	1.18x	10.6%	09/30/24
2022	Rubicon Technology Partners IV LP	\$10,109,238	\$30,000,000	\$10,757,463	36%	\$19,242,537	\$0	\$9,997,253	0.00x	0.94x	-12.0%	06/30/24
2022	OrbiMed Private Investments IV, LP	\$2,793,919	\$10,000,000	\$2,649,201	26%	\$7,350,799	\$0	\$2,793,919	0.00x	1.05x	31.9%	09/30/24
2022	Brighton Park Capital Fund II	\$8,882,238	\$30,000,000	\$9,090,535	30%	\$20,909,465	\$354,441	N/A	0.04x	1.02x	N/A	N/A
2022	Linden Co-Investment V LP	\$6,559,177	\$7,500,000	\$9,054,807	121%	-\$1,554,807	\$55,503	\$6,559,177	0.01x	0.73x	21.7%	09/30/24
2022	Warren Equity Partners Fund IV	\$17,910,770	\$32,500,000	\$11,689,634	36%	\$20,810,366	\$0	\$17,910,770	0.00x	1.53x	16.9%	09/30/24
2023	WEP Co-Invest IV	\$7,450,442	\$10,000,000	\$7,470,589	75%	\$2,529,411	\$173,170	\$7,450,442	0.02x	1.02x	0.0%	09/30/24
2023	Crown Global Secondaries Fund VI	\$2,814,026	\$30,000,000	\$2,250,000	8%	\$27,750,000	\$0	N/A	0.00x	1.25x	N/A	N/A
2023	Parthenon Investors VII	\$1,461,391	\$30,000,000	\$1,449,377	5%	\$28,550,623	\$0	N/A	N/A	N/A	N/A	N/A
2024	Longreach Capital Partners	\$3,762,659	\$15,000,000	\$3,713,172	25%	\$11,286,828	\$0	N/A	N/A	N/A	N/A	N/A
2024	Accel-KKR Capital Partners VII	\$0	\$25,000,000	\$0	0%	\$25,000,000	\$0	N/A	N/A	N/A	N/A	N/A
<b>Total Private Equity</b>		<b>\$277,840,912</b>	<b>\$650,000,000</b>	<b>\$416,787,798</b>	<b>64%</b>	<b>\$233,212,202</b>	<b>\$316,877,303</b>	<b>\$259,333,232</b>	<b>0.76x</b>	<b>1.43x</b>		
<b>% of Portfolio (Market Value)</b>		<b>4.5%</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>Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR is provided by the Fund manager and is reflective of the Fund IRR, rather than KCERA's specific IRR.

Total Fund  
Total Private Credit

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

IRR Analysis as of IRR date												
Vintage		Estimated Market Value	Total	Capital	%	Remaining	Capital		Distrib/	Tot. Value/	Net IRR	IRR
Year	Manager/Fund	6/30/2024	Commitment	Called	Called	Commitment	Returned	Market Value as of IRR date	(DPI) <sup>1</sup>	(TVPI) <sup>2</sup>	Inception <sup>3</sup>	Date
<b>Private Credit</b>												
2015	DC Value Recovery Fund IV <sup>4</sup>	\$15,882,710	\$74,360,749	\$73,340,099	99%	\$1,020,650	\$44,343,375	N/A	0.60x	0.82x	N/A	N/A
2017	Sixth Street TAO Partners (B)	\$48,154,805	\$108,035,958	\$90,128,419	83%	\$17,907,539	\$46,945,528	\$46,335,052	0.52x	1.06x	9.7%	6/30/24
2017	Brookfield Real Estate Finance Fund V	\$13,952,219	\$50,000,000	\$39,198,138	78%	\$10,801,862	\$33,584,273	\$13,952,219	0.86x	1.21x	5.0%	9/30/24
2018	Magnetar Constellation Fund V	\$18,839,741	\$60,000,000	\$56,445,318	94%	\$3,554,682	\$49,874,045	\$18,839,741	0.88x	1.22x	4.9%	9/30/24
2019	H.I.G Bayside Loan Opportunity Fund V	\$39,103,832	\$60,000,000	\$35,821,497	60%	\$24,178,503	\$24,954,033	\$39,103,832	0.70x	1.79x	18.2%	9/30/24
2020	Blue Torch Credit Opportunities Fund II	\$12,936,411	\$20,000,000	\$17,296,007	86%	\$2,703,993	\$8,811,476	\$13,593,149	0.51x	1.26x	11.2%	6/30/24
2020	Fortress Credit Opportunites Fund V Expansion	\$30,575,376	\$40,000,000	\$27,018,489	68%	\$12,981,511	\$3,363,726	\$29,218,859	0.12x	1.26x	19.6%	6/30/24
2021	Fortress Lending Fund II	\$24,888,838	\$40,000,000	\$34,937,851	87%	\$5,062,149	\$16,714,785	\$24,386,253	0.48x	1.19x	9.7%	6/30/24
2022	Blue Torch Credit Opportunities Fund III	\$28,338,193	\$40,000,000	\$36,999,891	92%	\$3,000,109	\$14,115,111	\$24,386,253	0.38x	1.15x	17.4%	6/30/24
2022	Fortress Lending Fund III	\$30,081,378	\$40,000,000	\$26,432,701	66%	\$13,567,299	\$5,590,556	\$29,229,392	0.21x	1.35x	11.9%	6/30/24
2022	OrbiMed Royalty & Credit Opportunities IV	\$13,021,811	\$30,000,000	\$11,983,980	40%	\$18,016,020	\$3,381,881	\$13,021,811	0.28x	1.37x	11.2%	9/30/24
2023	Cerberus Business Finance V	\$19,390,391	\$30,000,000	\$16,734,852	56%	\$13,265,148	\$0	\$18,403,624	0.00x	1.16x	19.7%	5/31/24
2023	Silver Point – Specialty Credit Fund III	\$12,631,180	\$30,000,000	\$14,360,816	48%	\$15,639,184	\$3,797,555	\$12,631,180	0.26x	1.14x	15.7%	9/30/24
2023	Ares Pathfinder II	\$5,979,610	\$30,000,000	\$5,442,084	18%	\$24,557,916	\$0	N/A	0.00x	1.10x	N/A	N/A
2023	Oak Hill Advisors Structured Products Fund III, L.P.	\$14,361,818	\$25,000,000	\$12,420,411	50%	\$12,579,589	\$0	\$13,906,378	0.00x	1.16x	21.8%	6/30/24
2023	Ares Senior Direct Lending III	\$4,500,595	\$30,000,000	\$4,500,595	15%	\$25,499,405	\$0	N/A	N/A	N/A	N/A	N/A
2024	ITE Rail Fund, L.P.	\$28,800,778	\$40,000,000	\$28,555,540	71%	\$11,444,460	\$100,000	\$0	0.4%	101.2%	N/A	N/A
2024	HPS Special Situations Opportunity Fund II, L.P.	\$5,529,534	\$25,000,000	\$5,152,410	79%	\$19,847,590	\$0	\$0	N/A	N/A	N/A	N/A
<b>Total Private Credit</b>		<b>\$366,969,220</b>	<b>\$772,396,707</b>	<b>\$536,769,096</b>	<b>69%</b>	<b>\$235,627,611</b>	<b>\$255,576,345</b>	<b>\$297,007,743</b>	<b>0.48x</b>	<b>1.16x</b>		
<b>% of Portfolio (Market Value)</b>		<b>6.0%</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>Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR is provided by the Fund manager and is reflective of the Fund IRR, rather than KCERA's specific IRR.

<sup>4</sup>Name changed from Colony Distressed Credit fund to DC Value Recovery Fund IV

Total Fund  
Total Private Real Assets

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

IRR Analysis as of IRR date												
Vintage		Estimated Market Value	Total	Capital	%	Remaining	Capital		Distrib./	Tot. Value/	Net IRR	IRR
Year	Manager/Fund	9/30/2024	Commitment	Called	Called	Commitment	Returned	Market Value as of IRR date	Paid-In (DPI) <sup>1</sup>	Paid-In (TVPI) <sup>2</sup>	Since Inception <sup>3</sup>	Date
<b>Private Real Assets</b>												
2014	Invesco Real Estate Value-Add Fund IV	\$145,935	\$50,000,000	\$43,637,717	87%	\$6,362,283	\$56,824,750	\$157,969	1.30x	1.31x	11.6%	06/30/24
2017	Landmark Real Estate Partners VIII	\$33,636,579	\$60,000,000	\$46,233,098	77%	\$13,766,902	\$25,662,388	\$33,636,579	0.56x	1.28x	11.1%	09/30/24
2018	Long Wharf Real Estate Partners VI	\$33,595,954	\$50,000,000	\$50,000,000	100%	\$0	\$24,281,467	\$33,431,828	0.49x	1.16x	13.8%	06/30/24
2020	Covenant Apartment Fund X	\$30,188,721	\$30,000,000	\$25,507,333	85%	\$4,492,667	\$8,921,353	\$30,188,721	0.35x	1.53x	11.3%	09/30/24
2021	Singerman Real Estate Opportunity Fund IV	\$18,185,543	\$35,000,000	\$13,527,500	39%	\$21,472,500	\$0	\$18,185,543	0.00x	1.34x	16.6%	09/30/24
2022	LBA Logistics Value Fund IX, L.P.	\$20,380,496	\$40,000,000	\$16,153,846	40%	\$23,846,154	\$0	\$17,923,620	0.00x	1.26x	-4.2%	06/30/24
2022	Covenant Apartment Fund XI	\$25,820,082	\$30,000,000	\$18,150,000	61%	\$38,076,924	\$176,543	\$25,820,082	0.01x	1.43x	1.5%	09/30/24
2022	KSL Capital Partners VI	\$5,979,917	\$30,000,000	\$7,526,386	25%	\$22,473,614	\$212,603	\$5,979,917	0.03x	0.82x	-28.8%	09/30/24
2023	Merit Hill V	\$14,463,767	\$30,000,000	\$17,529,762	58%	\$12,470,238	\$2,062,594	N/A	0.12x	0.94x	N/A	N/A
2024	Juniper Capital IV, L.P.	\$4,230,534	\$30,000,000	\$5,115,008	17%	\$24,884,992	\$59,700	N/A	0.01x	0.84x	N/A	N/A
2024	Landmark Real Estate Partners IX	\$2,376,256	\$40,000,000	\$3,486,381	9%	\$36,513,619	\$0	N/A	0.00x	0.68x	N/A	N/A
2024	Juniper High Noon Partners, L.P.	\$3,056,606	\$5,000,000	\$3,309,091	66%	\$1,690,909	\$0	N/A	0.00x	0.92x	N/A	N/A
<b>Total Private Real Assets</b>		<b>\$192,060,389</b>	\$430,000,000	\$250,176,122	58%	\$206,050,802	\$118,201,398	\$165,324,259	0.47x	1.24x		
<b>% of Portfolio (Market Value)</b>		<b>3.1%</b>										

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

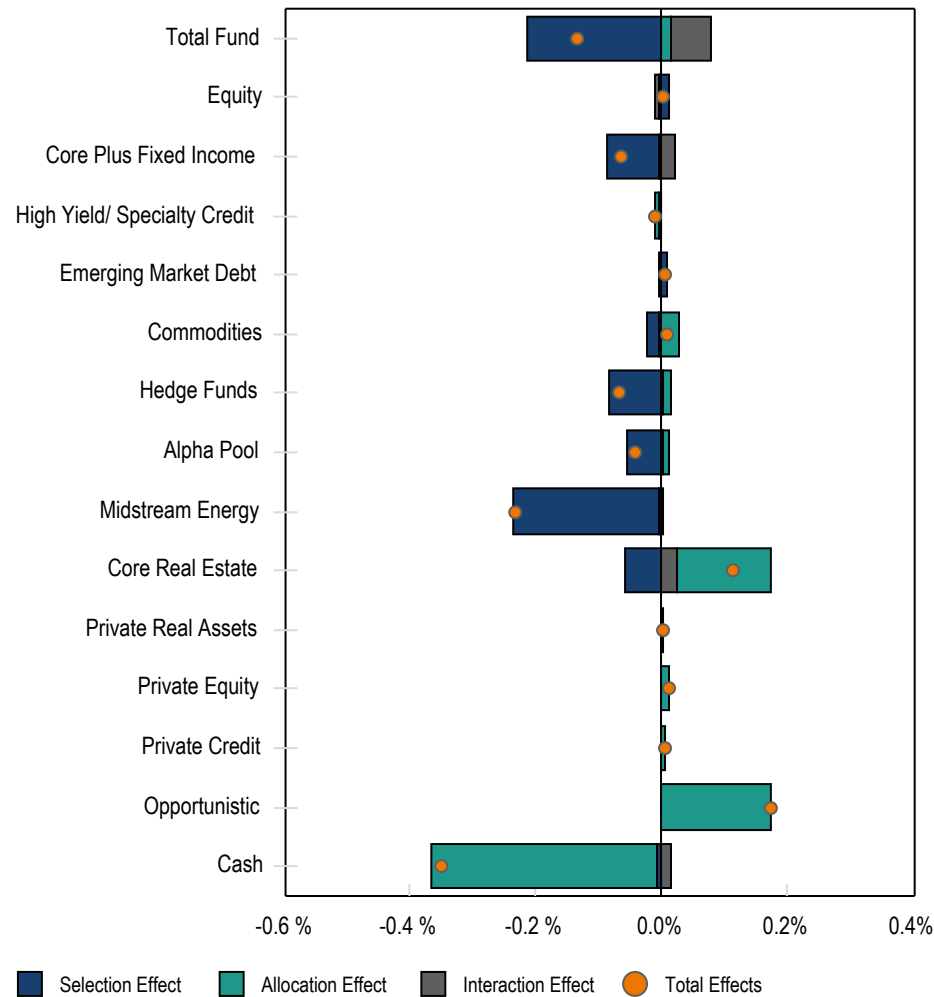
<sup>2</sup>(TVPI) is equal to (market value + capital returned) / capital called

<sup>3</sup>Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR is provided by the Fund manager and is reflective of the Fund IRR, rather than KCERA's specific IRR.

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

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

Attribution Effects  
Last Three Months



Performance Attribution

	Last Three Months
Wtd. Actual Return	4.8
Wtd. Index Return	4.9
<b>Excess Return</b>	<b>-0.1</b>
Selection Effect	-0.2
Allocation Effect	0.0
Interaction Effect	0.1

Attribution Summary  
Last Three Months

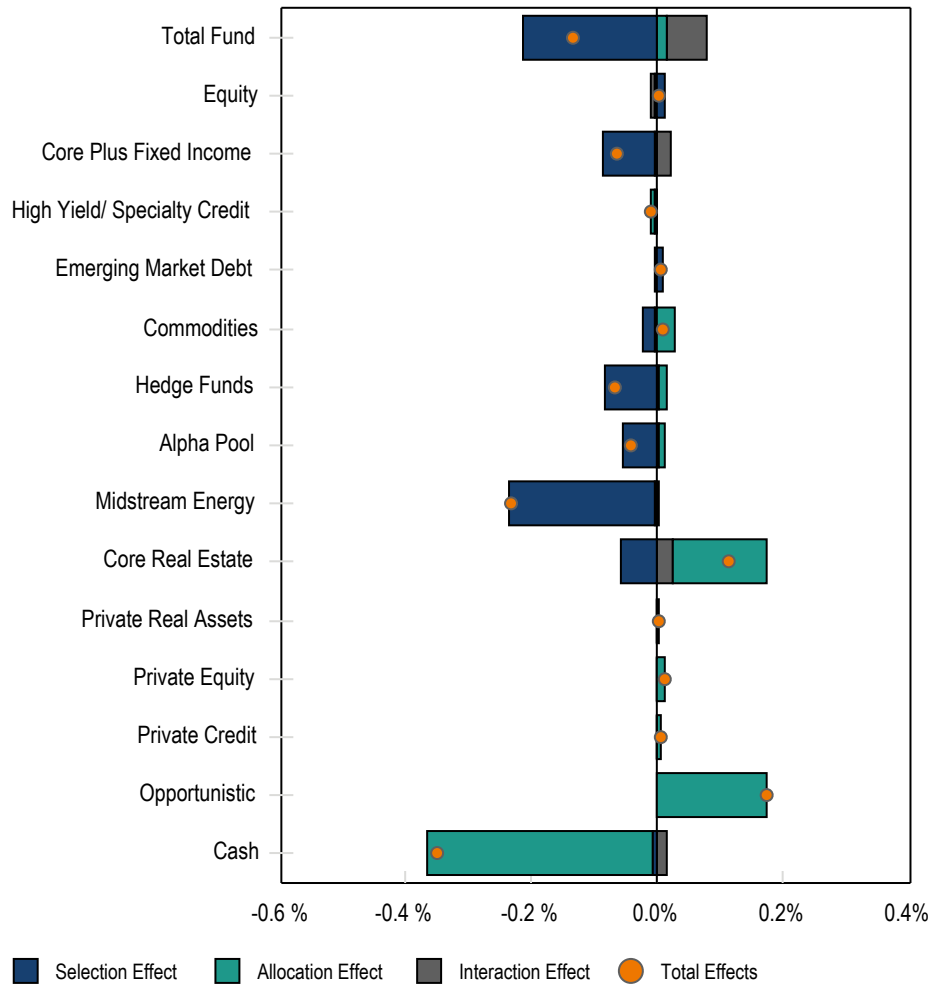
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Equity	6.9	6.8	0.0	0.1	0.0	0.0	0.0
Core Plus Fixed Income	4.7	5.2	-0.5	0.0	0.0	0.0	-0.1
High Yield/ Specialty Credit	5.2	5.3	-0.1	0.0	0.0	0.0	0.0
Emerging Market Debt	7.8	7.6	0.2	0.0	0.0	0.0	0.0
Commodities	0.4	0.7	-0.3	0.0	0.0	0.0	0.0
Hedge Funds	2.4	3.2	-0.8	-0.1	0.0	0.0	-0.1
Alpha Pool	0.8	2.1	-1.4	0.0	0.0	0.0	0.0
Midstream Energy	5.0	9.7	-4.7	-0.2	0.0	0.0	-0.2
Core Real Estate	-0.6	0.2	-0.8	0.0	0.1	0.0	0.1
Private Real Assets	1.0	1.0	0.0	0.0	0.0	0.0	0.0
Private Equity	2.0	2.0	0.0	0.0	0.0	0.0	0.0
Private Credit	2.6	2.6	0.0	0.0	0.0	0.0	0.0
Opportunistic	12.0	2.4	9.6	0.0	0.2	0.0	0.2
Cash	1.5	1.4	0.2	0.0	-0.4	0.0	-0.3
<b>Total Fund</b>	<b>4.8</b>	<b>4.9</b>	<b>-0.1</b>	<b>-0.2</b>	<b>0.0</b>	<b>0.1</b>	<b>-0.1</b>

Weighted returns shown in attribution analysis may differ from actual returns. Negative cash allocation unable to be shown in Attribution Summary table. Wtd. Index Returns calculated from benchmark returns and weightings of each component. Selection Effect includes Other Effect in the Performance Attribution table.

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

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

Attribution Effects  
Fiscal YTD



Performance Attribution

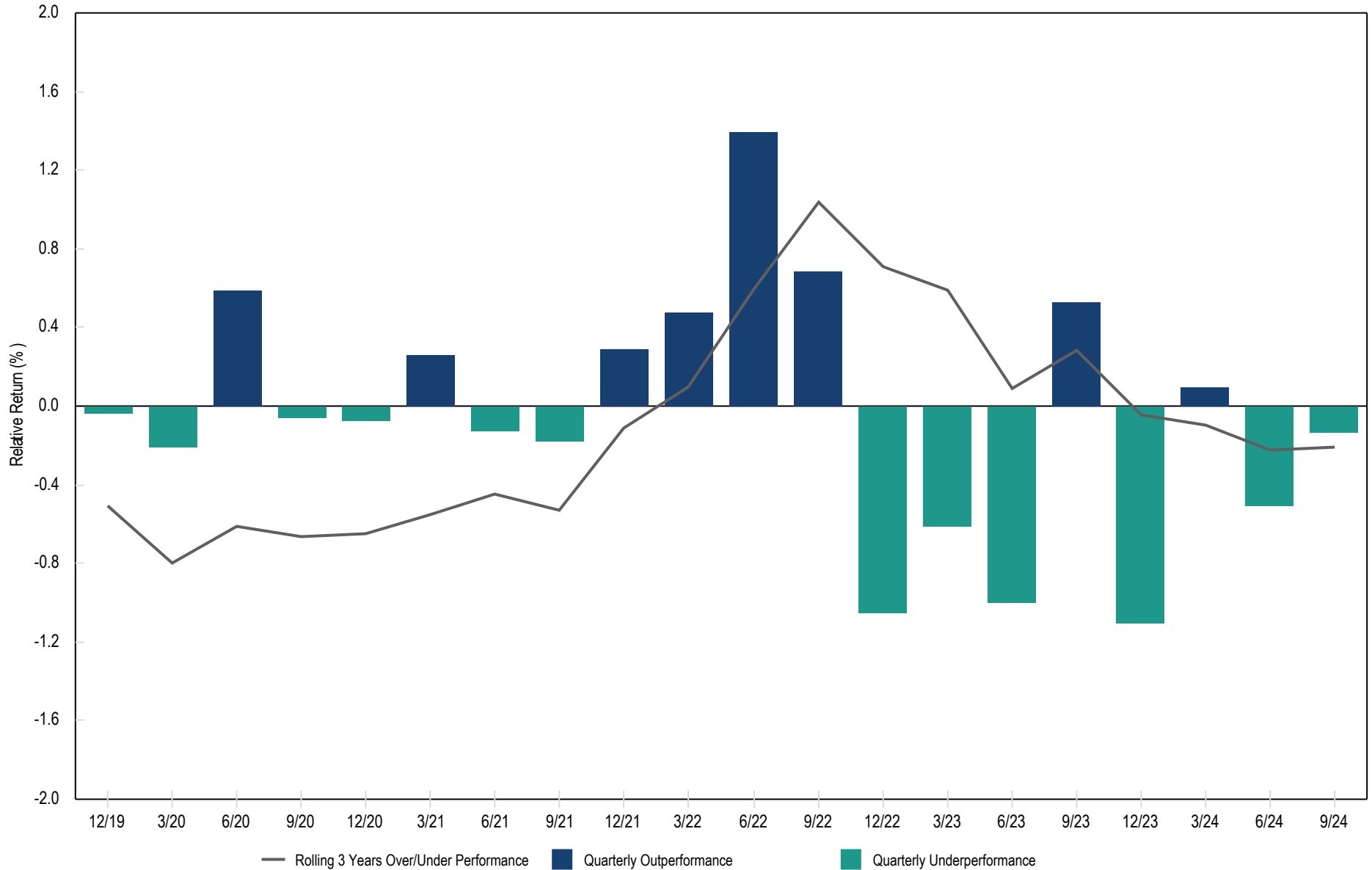
	Fiscal YTD
Wtd. Actual Return	4.8
Wtd. Index Return	4.9
<b>Excess Return</b>	<b>-0.1</b>
Selection Effect	-0.2
Allocation Effect	0.0
Interaction Effect	0.1

Attribution Summary  
FYTD

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Equity	6.9	6.8	0.0	0.1	0.0	0.0	0.0
Core Plus Fixed Income	4.7	5.2	-0.5	0.0	0.0	0.0	-0.1
High Yield/ Specialty Credit	5.2	5.3	-0.1	0.0	0.0	0.0	0.0
Emerging Market Debt	7.8	7.6	0.2	0.0	0.0	0.0	0.0
Commodities	0.4	0.7	-0.3	0.0	0.0	0.0	0.0
Hedge Funds	2.4	3.2	-0.8	-0.1	0.0	0.0	-0.1
Alpha Pool	0.8	2.1	-1.4	0.0	0.0	0.0	0.0
Midstream Energy	5.0	9.7	-4.7	-0.2	0.0	0.0	-0.2
Core Real Estate	-0.6	0.2	-0.8	0.0	0.1	0.0	0.1
Private Real Assets	1.0	1.0	0.0	0.0	0.0	0.0	0.0
Private Equity	2.0	2.0	0.0	0.0	0.0	0.0	0.0
Private Credit	2.6	2.6	0.0	0.0	0.0	0.0	0.0
Opportunistic	12.0	2.4	9.6	0.0	0.2	0.0	0.2
Cash	1.5	1.4	0.2	0.0	-0.4	0.0	-0.3
<b>Total Fund</b>	<b>4.8</b>	<b>4.9</b>	<b>-0.1</b>	<b>-0.2</b>	<b>0.0</b>	<b>0.1</b>	<b>-0.1</b>

Weighted returns shown in attribution analysis may differ from actual returns. Negative cash allocation unable to be shown in Attribution Summary table. Wtd. Index Returns calculated from benchmark returns and weightings of each component. Selection Effect includes Other Effect in the Performance Attribution table.

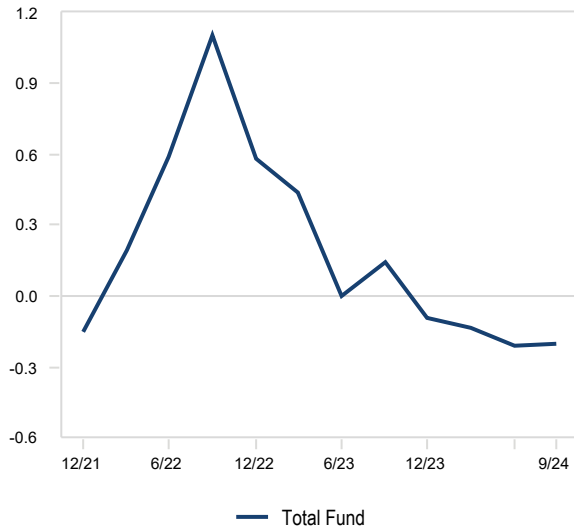
Rolling 3 Year Annualized Excess Performance



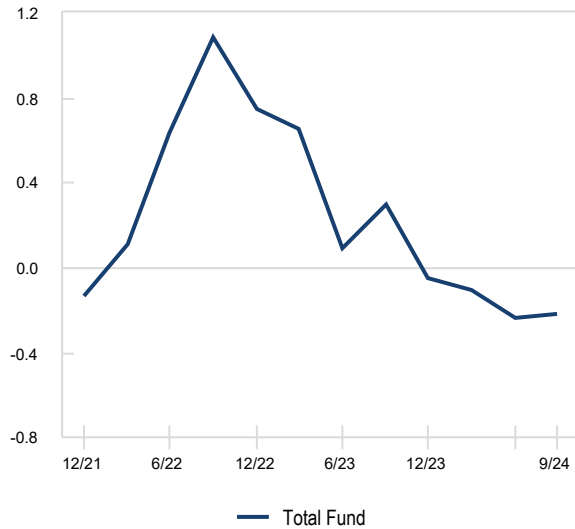
Total Fund  
Rolling Risk Statistics: 3 Years (Net of Fees)

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

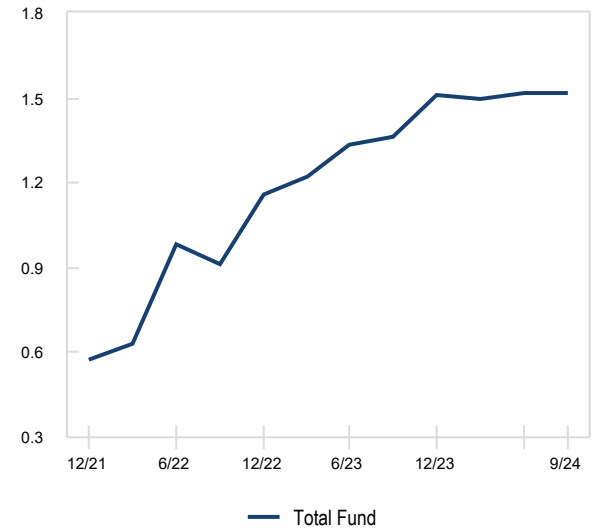
Rolling Information Ratio



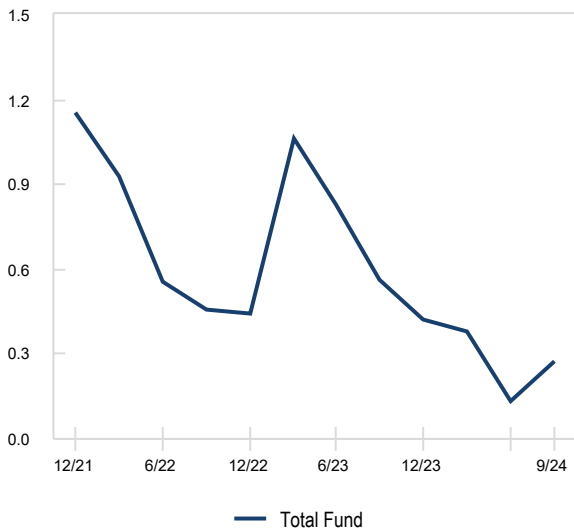
Rolling Annual Excess Benchmark Return



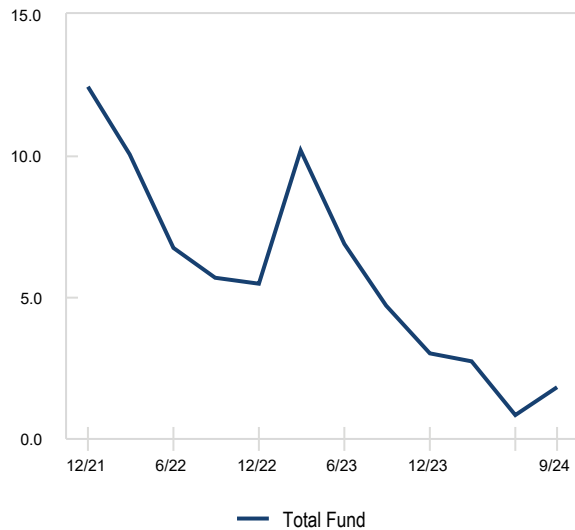
Rolling Tracking Error



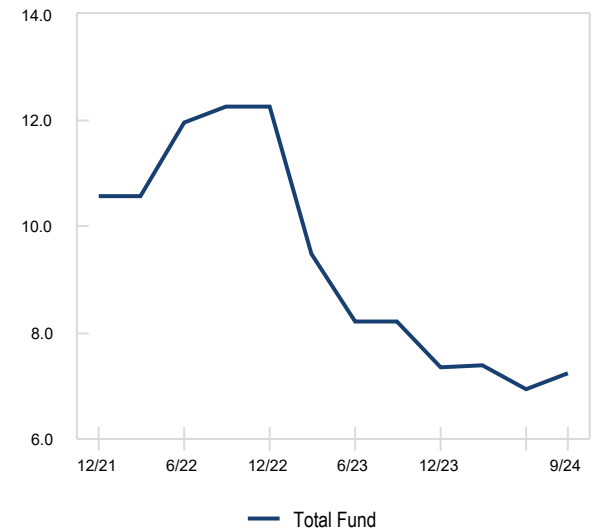
Rolling Sharpe Ratio



Rolling Annual Excess Risk Free Return



Rolling Annualized Standard Deviation

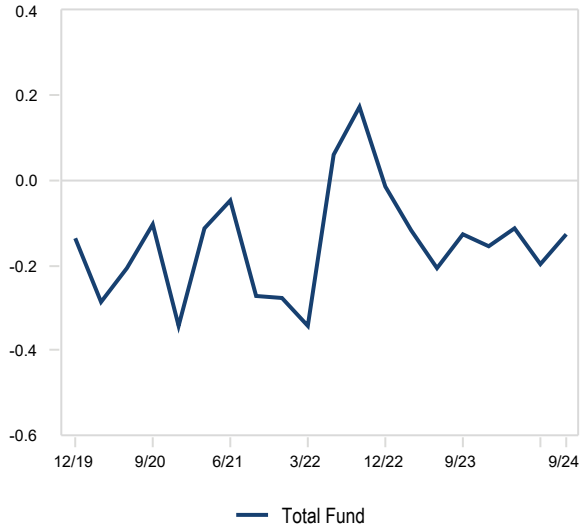




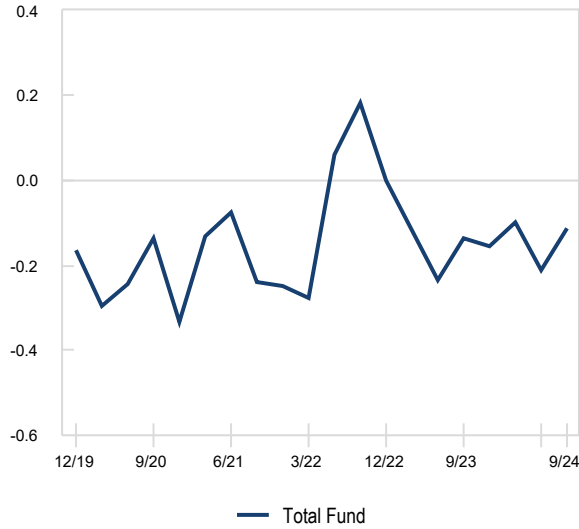
Total Fund  
Rolling Risk Statistics: 5 Years (Net of Fees)

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

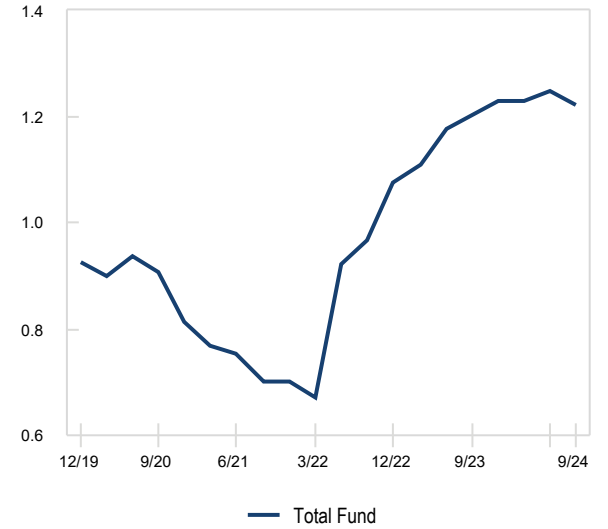
Rolling Information Ratio



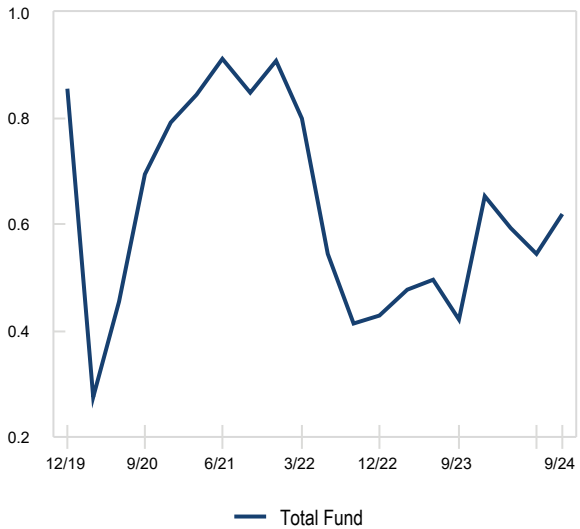
Rolling Annual Excess Benchmark Return



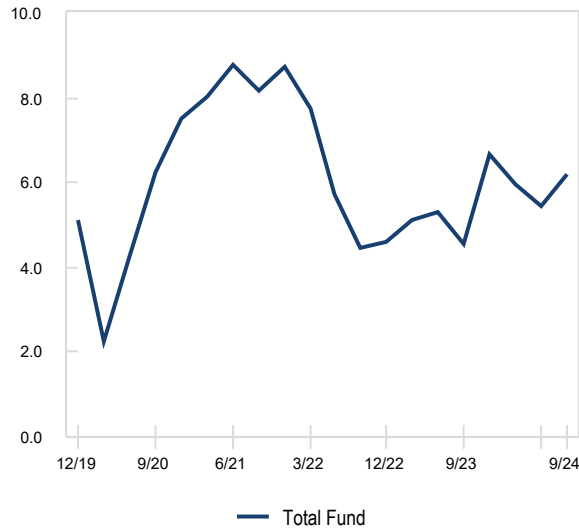
Rolling Tracking Error



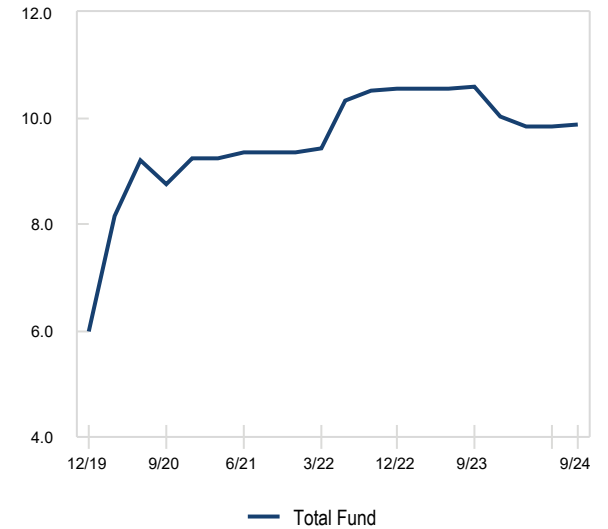
Rolling Sharpe Ratio



Rolling Annual Excess Risk Free Return



Rolling Annualized Standard Deviation



# Cash Flows

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Total Fund  
Net Cash Flow: Last 1 Quarter

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

	Estimated Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Estimated Ending Market Value
<b>Equity</b>	<b>1,967,821,735</b>		<b>-53,427,539</b>	<b>71,145</b>	<b>30,641,150</b>	<b>138,078,542</b>	<b>2,083,185,034</b>
Equity Beta Exposure	51,902,100		-53,427,539		641,150	884,289	
Mellon DB SL Stock Index Fund	667,508,966					39,276,768	706,785,735
PIMCO StocksPLUS	146,190,170					8,385,940	154,576,110
AB US Small Cap Value Equity	105,688,442				10,000,000	9,336,477	125,024,919
Geneva Capital Small Cap Growth	58,375,855				5,000,000	5,490,940	68,866,795
Mellon DB SL World ex-US Index Fund	436,964,367					34,367,680	471,332,046
Cevian Capital II	47,349,726					1,263,760	48,613,486
Lazard Japanese Equity	118,573,007				15,000,000	10,102,207	143,675,214
American Century Non-US Small Cap	64,559,071					5,256,228	69,815,299
Dalton Japan Long Only	56,560,978			71,145		7,663,609	64,295,733
DFA Emerging Markets Value I	95,168,458				-40,000,000	3,608,553	58,777,011
Mellon Emerging Markets Stock Index Fund	118,979,373				-100,000,000	3,135,793	22,115,167
Carrhae Capital Long Master Fund Ltd					70,000,000	5,623,383	75,623,383
ABS Emerging Market Direct					70,000,000	3,682,589	73,682,589
Transition Equity	1,221					326	1,547
<b>Fixed Income</b>	<b>1,290,646,469</b>	<b>10,406,643</b>	<b>-151,098,401</b>		<b>40,384,197</b>	<b>67,815,119</b>	<b>1,258,154,026</b>
Fixed Income Beta Exposure	410,419,101	10,406,643	-150,545,045		-3,537,000	14,543,785	281,287,485
Mellon DB SL Aggregate Bond Index Fund	165,322,237				75,000,000	8,414,779	248,737,017
PIMCO Core Plus	170,839,344					9,006,459	179,845,803
Western Asset Core Plus	85,299,278				-76,000,000	3,950,109	13,249,387
Western Asset High Yield Fixed Income	170,032,306				-3,084,189	9,425,753	176,373,870
TCW Securitized Opportunities	92,291,169				-1,994,615	4,199,197	94,495,752
Stone Harbor Emerging Markets Debt Blend Portfolio	39,809,109		-553,356			3,053,627	42,309,381
PIMCO EMD	156,390,923				50,000,000	15,217,993	221,608,916
Transition Fixed Income	243,001					3,416	246,416
<b>Commodities</b>	<b>224,267,766</b>				<b>35,000,000</b>	<b>2,453,300</b>	<b>261,721,066</b>
Gresham MTAP Commodity Builder Fund	36,237,197				10,000,000	556,604	46,793,801
Wellington Commodities	188,030,569				25,000,000	1,896,696	214,927,265
<b>Hedge Funds</b>	<b>574,408,314</b>				<b>-3,500,000</b>	<b>14,028,231</b>	<b>584,936,545</b>
Aristeia International Limited	74,515,835					1,549,621	76,065,456
Brevan Howard Fund	55,977,238					2,751,948	58,729,187
D.E. Shaw Composite Fund	63,532,971					1,470,324	65,003,295

Total Fund  
Net Cash Flow: Last 1 Quarter

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

	Estimated Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Estimated Ending Market Value
HBK Fund II	50,031,498					957,096	50,988,594
Hudson Bay Cap Structure Arbitrage Enhanced Fund	79,731,148					1,684,101	81,415,249
Indus Pacific Opportunities Fund	49,087,530					1,191,541	50,279,070
Pharo Macro Fund	70,975,638					2,281,417	73,257,054
PIMCO Commodity Alpha Fund	82,495,501					656,531	83,152,032
Enhanced Domestic Partners to Sculptor Master Fund	48,060,954				-10,000,000	1,485,653	39,546,607
Elliott Associates					6,500,000		6,500,000
<b>Alpha Pool</b>	<b>228,281,533</b>				<b>-52,104,150</b>	<b>1,735,721</b>	<b>177,913,104</b>
Hudson Bay - Alpha Pool	65,508,104				-19,192,121	575,800	46,891,782
Davidson Kempner Institutional Partners	60,024,545				-9,208,775	1,051,425	51,867,195
HBK Fund II	37,692,601				527,856	193,198	38,413,655
Garda Fixed Income Relative Value Opportunity Fund	65,056,284				-24,231,109	-84,702	40,740,472
<b>Midstream Energy</b>	<b>302,472,317</b>				<b>-4,599,194</b>	<b>15,709,390</b>	<b>313,582,513</b>
Harvest Midstream	161,434,527				-2,314,881	7,771,665	166,891,311
PIMCO Midstream	141,037,790				-2,284,313	7,937,725	146,691,202
<b>Core Real Estate</b>	<b>244,045,158</b>			<b>-393,090</b>	<b>-208,058</b>	<b>-1,270,721</b>	<b>242,532,590</b>
ASB Allegiance Real Estate Fund	122,471,881				-912,041	-1,208,024	120,351,816
JPMCB Strategic Property Fund	111,134,693			-241,804	-3,502,491	519,674	108,269,373
Blue Owl Real Estate Fund VI	10,438,584			-151,286	4,206,474	-582,371	13,911,400
<b>Private Real Assets</b>	<b>180,655,798</b>				<b>9,648,249</b>	<b>1,756,343</b>	<b>192,060,389</b>
Invesco Real Estate Value-Add Fund IV	157,969					-12,034	145,935
Landmark Real Estate Partners VIII	33,048,887				1,123,632	-535,940	33,636,579
Long Wharf Real Estate	33,431,828					164,126	33,595,954
Covenant Apartment Fund X	29,338,245				-1,001,343	1,851,819	30,188,721
Singerman Real Estate Opportunity Fund IV	18,175,814				131,250	-121,521	18,185,543
LBA Logistics Value Fund IX, L.P.	17,923,620				1,923,077	533,798	20,380,496
Covenant Apartment Fund XI, LP	21,061,180				4,626,569	132,333	25,820,082
KSL Capital Partners VI	4,994,026				580,510	405,381	5,979,917
Merit Hill Self-Storage V, LP.	14,505,177					-41,410	14,463,767
Juniper Capital IV, L.P.	4,467,289				-59,700	-177,055	4,230,534
Landmark Real Estate Partners IX	242,794				2,324,254	-190,792	2,376,256
Juniper High Noon Partners, L.P.	3,308,969					-252,363	3,056,606

Total Fund  
Net Cash Flow: Last 1 Quarter

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

	Estimated Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Estimated Ending Market Value
<b>Private Equity</b>	<b>269,203,109</b>				<b>3,243,675</b>	<b>5,394,127</b>	<b>277,840,912</b>
Abbott VI	13,773,543				-250,000	-280,650	13,242,893
Pantheon Secondary III	540,212					-2,987	537,225
Pantheon V	30,817						30,817
Pantheon VI	307,061					2,480	309,541
Pantheon VII	6,473,929				-1,780,000	-477,948	4,215,981
Vista Foundation Fund IV	19,775,303				1,537,775	165,980	21,479,058
Crown Global Secondaries V Master S.C.Sp	42,308,607					1,111,012	43,419,619
Crown Global Secondaries VI Master S.C.Sp	1,591,982				1,200,000	22,044	2,814,026
Brighton Park Capital Fund I	40,792,750				498,693	1,294,566	42,586,009
Warren Equity Partners Fund III	37,184,375				-306,603	-280,519	36,597,253
Peak Rock Capital Fund III	18,578,615					1,198,119	19,776,734
Level Equity Growth Partners V	10,905,931					524,195	11,430,126
Level Equity Opportunities Fund 2021	7,428,528					595,109	8,023,637
Linden Capital Partners V LP	14,370,024					78,134	14,448,158
Rubicon Technology Partners IV L.P.	9,997,253					111,985	10,109,238
OrbiMed Private Investments IX, LP	2,831,951					-38,032	2,793,919
Brighton Park Capital Fund II, L.P	6,099,408				2,097,883	684,947	8,882,238
Linden Co-Investment V LP	6,292,741					266,437	6,559,177
Warren Equity Partners Fund IV	17,361,164					549,606	17,910,770
WEP IV TS Co-Investment, L.P.	7,220,378				245,927	-15,863	7,450,442
Parthenon Investors VII	1,484,445					-23,054	1,461,391
Longreach Capital Partners	3,854,091					-91,432	3,762,659
<b>Private Credit</b>	<b>344,755,243</b>				<b>13,161,969</b>	<b>9,052,007</b>	<b>366,969,220</b>
DC Value Recovery Fund IV	15,070,043					812,667	15,882,710
Sixth Street TAO Partners (B)	46,335,052				1,032,640	787,113	48,154,805
Brookfield Real Estate Finance Fund V	16,098,537				-2,139,677	-6,641	13,952,219
Magnetar Constellation Fund V	23,206,748				-4,933,345	566,338	18,839,741
H.I.G. Bayside Loan Opportunity Fund V	41,157,624				-2,634,114	580,322	39,103,832
Blue Torch Credit Opportunities Fund II	13,593,149				-308,873	-347,865	12,936,411
Fortress Credit Opportunitites Fund V Expansion	29,218,859				805,211	551,306	30,575,376
Fortress Lending Fund II	24,386,253				-1,747,665	2,250,251	24,888,838
Blue Torch Credit Opportunities Fund III	23,889,429				3,689,713	759,051	28,338,193
Fortress Lending Fund III	29,229,392				658,711	193,275	30,081,378

Total Fund  
Net Cash Flow: Last 1 Quarter

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

	Estimated Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Estimated Ending Market Value
OrbiMed Royalty & Credit Opportunities IV	10,256,472				2,381,521	383,818	13,021,811
Cerberus Business Finance V	18,648,339					742,052	19,390,391
Silver Point Specialty Credit Fund III, L.P.	9,756,659				2,685,600	188,921	12,631,180
Ares Pathfinder II	4,830,058				916,112	233,440	5,979,610
Oak Hill Advisors Structured Products Fund III, L.P.	13,906,378					455,440	14,361,818
ITE Rail Fund, L.P.	20,019,841				8,255,540	525,397	28,800,778
Ares Senior Direct Lending Fund III LP					4,500,595		4,500,595
HPS Special Situations Opportunity Fund II, L.P.	5,152,410					377,124	5,529,534
<b>Opportunistic</b>	<b>151,415,066</b>				<b>-5,837,480</b>	<b>18,863,436</b>	<b>164,441,022</b>
Sixth Street TAO Partners (D)	89,786,388				-4,109,722	1,763,913	87,440,579
Aristeia Select Opportunities II	43,669,014					14,444,629	58,113,643
River Birch International - Opportunistic Investment	5,266,744				-2,093,217	1,540,277	4,713,804
Hudson Bay Special Opportunities Fund LP	2,692,920				365,459	835,117	3,893,496
Pharo Opportunities Fund SPC	10,000,000					279,500	10,279,500
<b>Cash</b>	<b>433,731,277</b>	<b>145,362</b>	<b>-11,723,652</b>	<b>-37,547</b>	<b>-830,357</b>	<b>6,109,220</b>	<b>427,394,302</b>
Short Term Investment Funds	188,191,468	145,362	-11,723,652	-37,547	9,169,643	1,816,338	187,561,611
BlackRock Short Duration Fund	245,539,809				-10,000,000	4,292,882	239,832,691
<b>Other</b>	<b>-373,197,734</b>	<b>277,265,304</b>	<b>-81,908,236</b>		<b>-65,000,000</b>	<b>866,092</b>	<b>-241,974,574</b>
Parametric Cash Overlay	80,648,603	39,719,718	-21,893,611		-65,000,000		33,474,710
Goldman Sachs Cash Account	-2,006,135	36,417,585	-33,750,249				661,200
Futures Offset	-462,321,201	201,128,001	-20,960,376			866,092	-281,287,485
Collateral Cash	10,481,000		-5,304,000				5,177,000

Total Fund  
Cash Flow History

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

Portfolio Reconciliation

	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Beginning Market Value	5,838,506,052	5,838,506,052	5,314,111,145	5,426,278,401	4,335,652,653	3,567,703,678
Contributions	1,074,192,042	1,074,192,042	2,546,118,782	7,976,180,855	14,348,563,465	19,930,572,507
Withdrawals	-1,084,532,561	-1,084,532,561	-2,593,715,175	-8,170,823,238	-14,652,100,412	-20,638,248,274
Fees	-359,491	-359,491	-1,232,030	-16,089,038	-45,118,050	-128,199,860
Net Cash Flows	-10,340,519	-10,340,519	-47,596,393	-194,642,384	-303,536,947	-707,675,768
Net Investment Change	280,590,615	280,590,615	842,241,396	877,120,131	2,076,640,441	3,248,728,238
Ending Market Value	6,108,756,148	6,108,756,148	6,108,756,148	6,108,756,148	6,108,756,148	6,108,756,148
Net Change \$	270,250,096	270,250,096	794,645,003	682,477,747	1,773,103,495	2,541,052,470

Contribution and withdrawals include transfers in and out of accounts. Ending market value is net of fees. Market value and flows do not include the Short Term Cash Account balance.

# Risk Metrics

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Total Fund  
Actual Correlation Matrix

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

Correlation Matrix  
3 Years Ending September 30, 2024

	A	B	C	D	E	F	G	H	I	J	K	L
A	1.00											
B	0.98	1.00										
C	0.95	0.98	1.00									
D	0.96	0.97	0.91	1.00								
E	0.78	0.79	0.68	0.80	1.00							
F	0.85	0.85	0.79	0.86	0.79	1.00						
G	0.75	0.77	0.71	0.77	0.71	0.97	1.00					
H	0.90	0.88	0.85	0.87	0.71	0.90	0.81	1.00				
I	0.84	0.85	0.75	0.87	0.87	0.91	0.82	0.82	1.00			
J	0.48	0.38	0.32	0.42	0.41	0.15	0.02	0.28	0.27	1.00		
K	0.44	0.41	0.40	0.42	0.23	0.27	0.16	0.42	0.35	0.24	1.00	
L	-0.18	-0.24	-0.20	-0.26	-0.32	-0.40	-0.40	-0.34	-0.37	0.04	-0.18	1.00

- A = Total Fund
- B = Equity
- C = Domestic Equity
- D = International Developed Equity
- E = Emerging Markets Equity
- F = Fixed Income
- G = Core Fixed Income
- H = High Yield/ Specialty Credit
- I = Emerging Market Debt
- J = Commodities
- K = Hedge Funds
- L = Core Real Estate

- Low Interaction
- Moderate Interaction
- Moderate to High Interaction
- High Interaction

Total Fund  
Risk Analysis - 3 Years (Net of Fees)

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

	Alpha	Beta	R-Squared	Return	Information Ratio	Excess Performance	Tracking Error	Sharpe Ratio	Excess Return	Standard Deviation	Sortino Ratio	Up Capture	Down Capture
Total Fund	0.5	0.8	1.0	5.1	-0.2	-0.2	1.7	0.2	1.9	8.0	0.3	87.2	83.7
Equity	0.1	1.0	1.0	7.4	-0.1	0.0	1.2	0.3	5.1	16.1	0.5	98.9	98.8
Domestic Equity	-0.3	1.0	1.0	10.1	-0.3	-0.3	1.0	0.4	7.8	17.6	0.7	98.5	99.2
International Developed Equity	0.4	1.0	1.0	5.1	0.1	0.2	1.7	0.2	2.8	16.4	0.2	99.4	98.5
Emerging Markets Equity	1.7	0.9	1.0	2.7	0.7	1.7	2.2	0.0	0.5	16.1	0.0	98.4	90.8
Fixed Income	-0.4	1.0	1.0	-0.6	-0.5	-0.4	0.8	-0.5	-3.8	7.4	-0.6	98.8	102.4
Core Fixed Income	-0.7	1.0	1.0	-2.1	-1.4	-0.7	0.5	-0.7	-5.3	7.5	-0.9	96.2	102.8
High Yield/ Specialty Credit	0.3	0.7	0.9	2.7	-0.2	-0.4	2.7	-0.1	-0.6	6.6	-0.1	75.1	72.1
Emerging Market Debt	1.1	1.0	1.0	1.2	1.2	1.1	0.9	-0.2	-1.7	10.7	-0.2	104.4	96.8
Commodities	4.1	0.9	0.9	7.4	0.7	3.7	4.9	0.3	4.7	13.7	0.5	90.5	69.3
Hedge Funds	5.0	0.2	0.2	6.6	-0.4	-1.4	3.9	1.6	3.0	2.0	2.7	45.1	-46.7
Alpha Pool	3.6	-0.4	0.0	0.5	-3.5	-7.2	2.0	-1.5	-3.0	1.8	-1.6	6.6	-
Midstream Energy	3.5	0.8	0.9	21.3	0.0	0.6	4.7	1.1	17.3	15.9	1.8	86.8	70.3
Core Real Estate	-6.2	0.8	0.7	-6.4	-1.4	-6.2	4.5	-1.2	-9.7	7.9	-1.3	54.1	147.8
Private Real Assets	0.0	1.0	1.0	7.9	-	0.0	0.0	0.6	4.4	6.5	1.4	100.0	100.0
Private Equity	0.0	1.0	1.0	8.4	-0.6	0.0	0.0	0.8	4.8	5.7	1.7	100.0	100.2
Private Credit	0.0	1.0	1.0	5.5	-0.6	0.0	0.0	0.5	2.0	4.3	1.1	99.9	100.0
Opportunistic	-	-	-	3.3	-0.6	-6.7	9.1	0.0	0.2	9.1	0.0	38.6	-

Risk Return Statistics: Last Three Years

Period Ending: September 30, 2024

	Equity	MSCI AC World IMI (Net)	Core Plus Fixed Income	Bloomberg U.S. Aggregate Index	High Yield/ Specialty Credit	ICE BofA U.S. High Yield Index	Emerging Market Debt	3 Years 50 JPM EMBI Global Div/ 50 JPM GBI EM Global Div	Commodities	Bloomberg Commodity Index Total Return	Hedge Funds	75% 3 Month T-Bill +4% / 25% MSCI ACWI (net)	Core Real Estate	NCREIF ODCE-monthly
<b>RETURN SUMMARY STATISTICS</b>														
Up Market Periods	22	22	15	15	21	21	18	18	20	20	23	23	29	29
Down Market Periods	14	14	21	21	15	15	18	18	16	16	13	13	7	7
Maximum Return	8.39	9.24	4.23	4.53	4.80	6.02	7.56	7.35	7.67	8.78	1.46	2.89	5.39	7.97
Minimum Return	-9.42	-9.65	-4.27	-4.32	-5.04	-6.81	-5.99	-5.81	-8.90	-10.77	-0.75	-1.96	-6.33	-4.97
Return	7.43	7.44	-2.07	-1.39	2.66	3.08	1.21	0.12	7.39	3.66	6.61	8.03	-6.38	-0.18
Excess Return	5.05	5.12	-5.26	-4.56	-0.60	-0.04	-1.66	-2.77	4.65	1.31	3.00	4.40	-9.70	-3.27
Excess Performance	-0.01	0.00	-0.69	0.00	-0.42	0.00	1.09	0.00	3.73	0.00	-1.42	0.00	-6.21	0.00
<b>RISK SUMMARY STATISTICS</b>														
Beta	0.98	1.00	0.99	1.00	0.75	1.00	1.02	1.00	0.86	1.00	0.19	1.00	0.80	1.00
Upside Risk	12.42	12.60	5.15	5.33	5.04	6.35	7.69	7.38	10.67	10.95	2.63	4.34	4.33	6.85
Downside Risk	10.61	10.88	5.43	5.32	4.30	5.74	7.48	7.42	8.91	10.49	0.68	2.03	6.90	4.99
<b>RISK/RETURN SUMMARY STATISTICS</b>														
Standard Deviation	16.15	16.46	7.46	7.53	6.57	8.50	10.72	10.46	13.70	15.10	1.99	4.23	7.94	8.48
Alpha	0.12	0.00	-0.71	0.00	0.30	0.00	1.10	0.00	4.09	0.00	5.05	0.00	-6.22	0.00
Sharpe Ratio	0.32	0.31	-0.72	-0.62	-0.09	0.00	-0.16	-0.27	0.34	0.09	1.59	1.09	-1.16	-0.37
Excess Risk	16.01	16.32	7.26	7.34	6.37	8.31	10.46	10.20	13.79	15.23	1.89	4.05	8.36	8.82
Tracking Error	1.22	0.00	0.50	0.00	2.69	0.00	0.90	0.00	4.90	0.00	3.87	0.00	4.54	0.00
Information Ratio	-0.05	-	-1.41	-	-0.21	-	1.23	-	0.68	-	-0.36	-	-1.42	-
<b>CORRELATION STATISTICS</b>														
R-Squared	0.99	1.00	1.00	1.00	0.94	1.00	0.99	1.00	0.90	1.00	0.17	1.00	0.72	1.00
Actual Correlation	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.41	1.00	0.85	1.00

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

Risk Return Statistics: Last Two Years

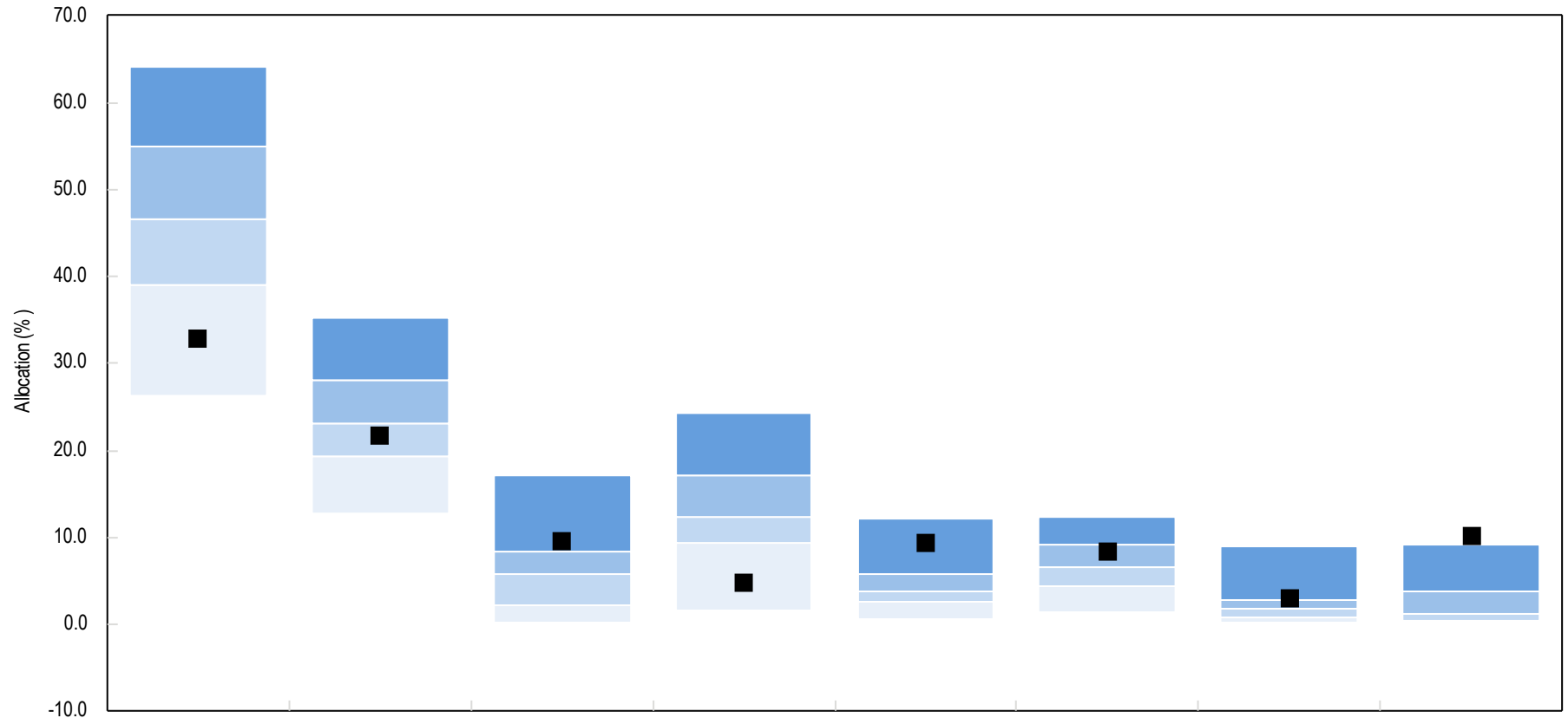
	Midstream Energy	Alerian Midstream Energy Index	2 Yrs Opportunistic	Assumed Rate of Return +3%
<b>RETURN SUMMARY STATISTICS</b>				
Up Market Periods	15	15	24	24
Down Market Periods	9	9	0	0
Maximum Return	10.65	11.05	10.18	0.80
Minimum Return	-5.15	-6.02	-2.34	0.80
Return	24.58	25.46	9.41	10.00
Excess Return	17.98	18.98	4.56	4.71
Excess Performance	-0.88	0.00	-0.59	0.00
<b>RISK SUMMARY STATISTICS</b>				
Beta	0.80	1.00	-	-
Upside Risk	12.48	14.07	8.93	2.76
Downside Risk	4.67	6.41	2.69	0.00
<b>RISK/RETURN SUMMARY STATISTICS</b>				
Standard Deviation	11.58	13.84	8.92	0.00
Alpha	3.76	0.00	-	-
Sharpe Ratio	1.54	1.37	0.51	18.80
Excess Risk	11.65	13.89	8.95	0.25
Tracking Error	4.23	0.00	8.92	0.00
Information Ratio	-0.24	-	-0.02	-
<b>CORRELATION STATISTICS</b>				
R-Squared	0.92	1.00	-	-
Actual Correlation	0.96	1.00	-	-

Data for unavailable for positions held for less than two years.

# Peer Comparison

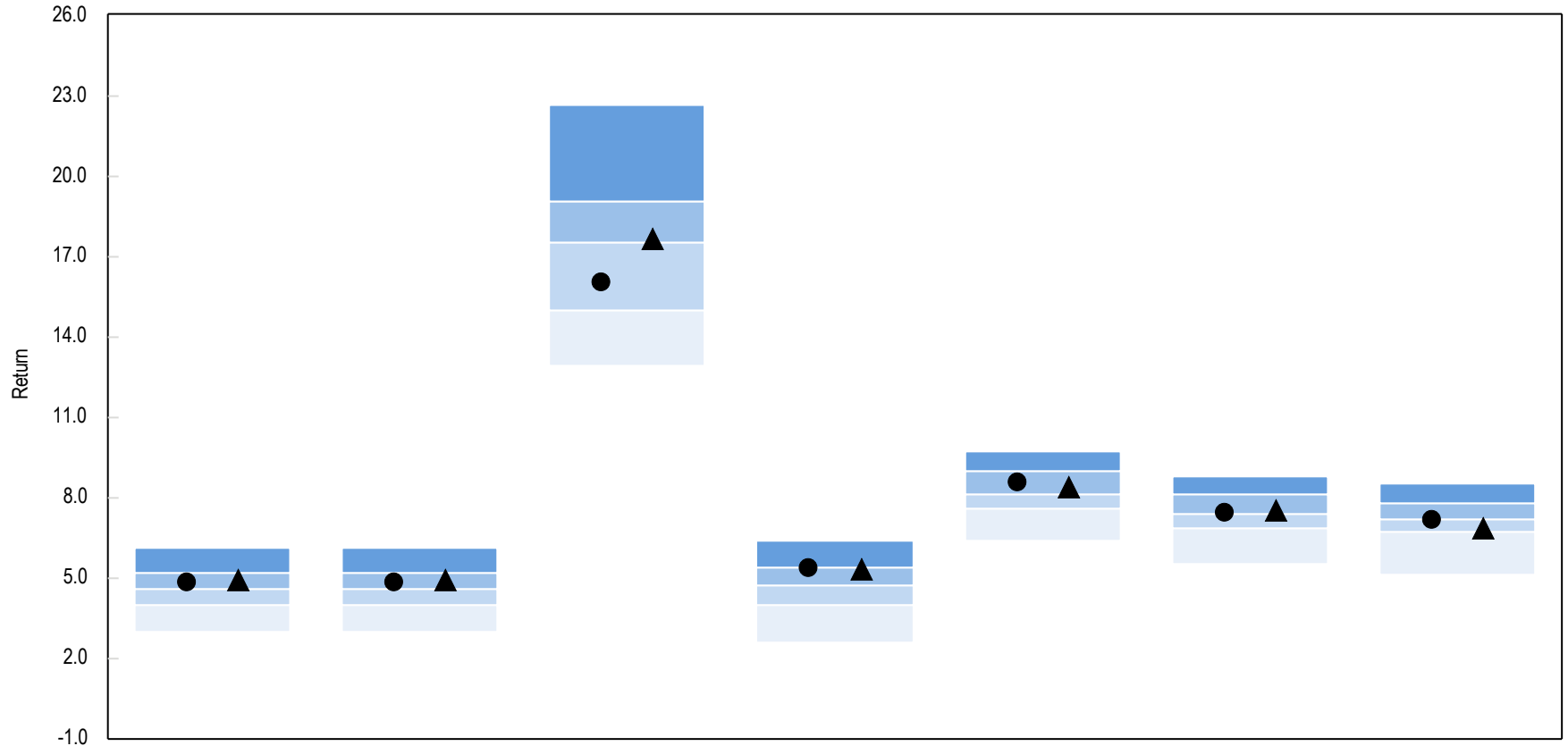
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Total Plan Allocation vs. InvMetrics Public DB > \$1B  
As of September 30, 2024



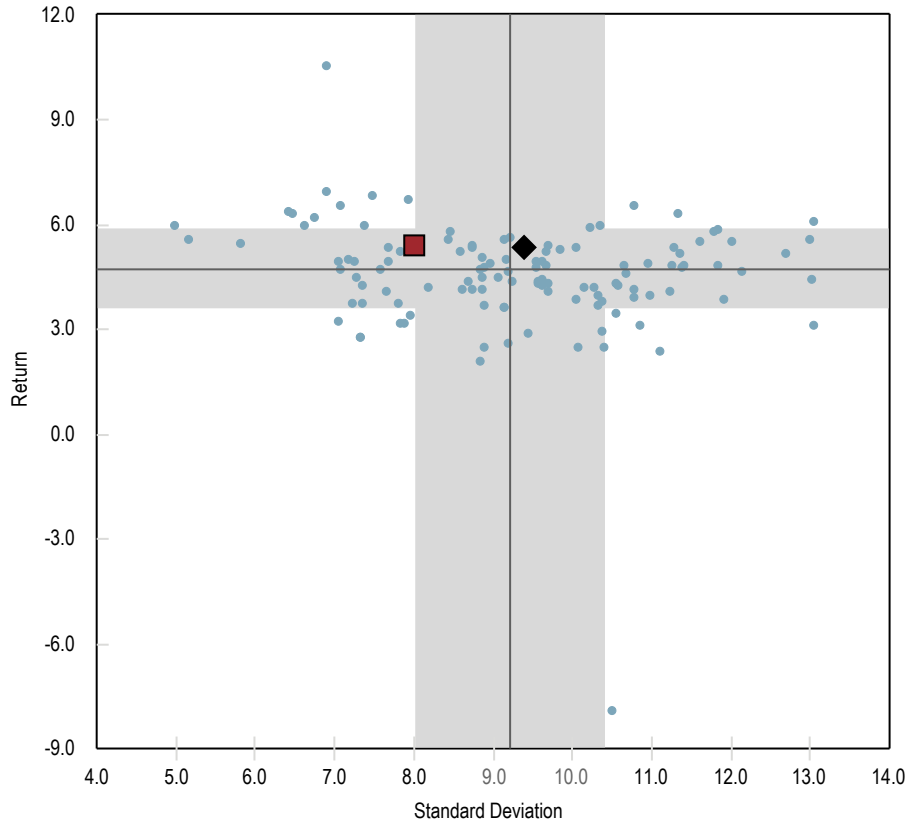
	Total Equity	Total Fixed Income	Hedge Funds	Private Equity	Real Assets/Commod	Real Estate - Private	Cash & Equivalents	Other
■ Total Fund	32.9 (91)	21.7 (64)	9.6 (18)	4.8 (90)	9.4 (17)	8.3 (33)	3.0 (24)	10.2 (1)
5th Percentile	64.3	35.4	17.1	24.4	12.2	12.4	9.0	9.1
1st Quartile	55.0	28.0	8.4	17.2	5.8	9.1	2.8	3.8
Median	46.7	23.2	5.8	12.4	3.9	6.5	1.8	1.1
3rd Quartile	39.1	19.4	2.2	9.4	2.5	4.4	0.8	0.3
95th Percentile	26.3	12.8	0.1	1.6	0.7	1.4	0.1	0.1
Population	106	107	50	96	70	89	100	18

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



	Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● Total Fund	4.9 (41)	4.9 (41)	16.1 (63)	5.4 (24)	8.6 (37)	7.4 (47)	7.2 (52)
▲ Policy Index	4.9 (39)	4.9 (39)	17.7 (49)	5.4 (27)	8.4 (44)	7.6 (43)	6.9 (63)
5th Percentile	6.1	6.1	22.7	6.4	9.7	8.8	8.5
1st Quartile	5.2	5.2	19.0	5.4	9.0	8.1	7.8
Median	4.6	4.6	17.5	4.7	8.1	7.4	7.2
3rd Quartile	4.0	4.0	15.0	4.0	7.6	6.9	6.7
95th Percentile	3.0	3.0	12.9	2.6	6.4	5.5	5.1
Population	120	120	120	118	117	115	115

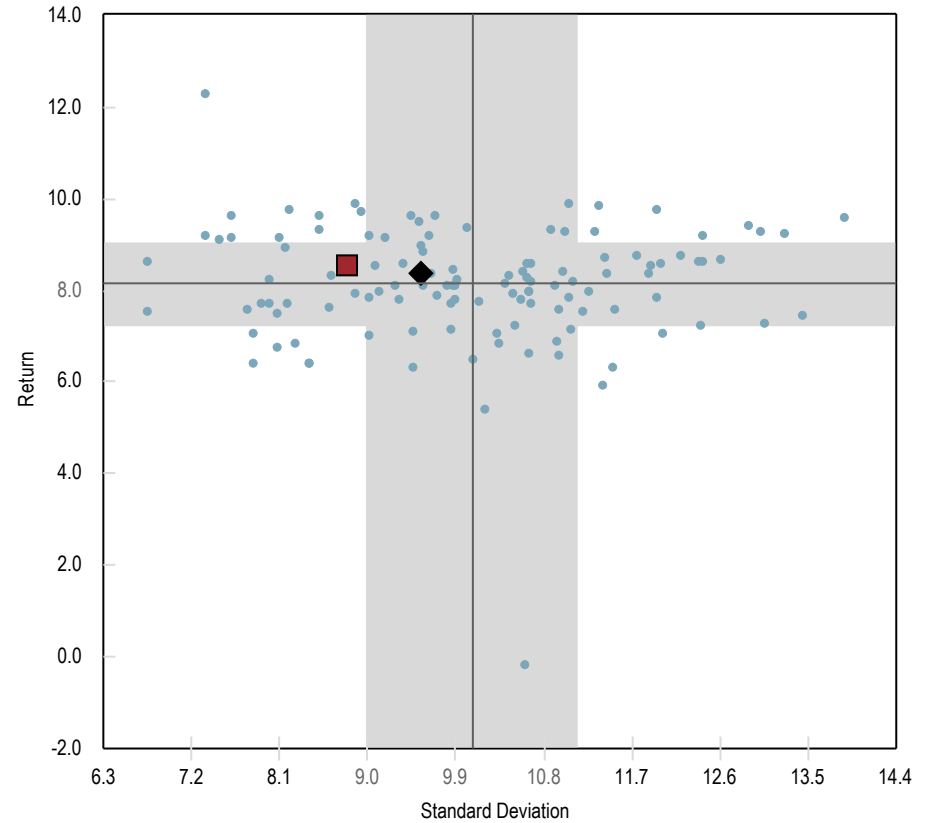
Annualized Return vs. Annualized Standard Deviation  
3 Years Ending September 30, 2024



● InvMetrics Public DB > \$1B

	Return	Standard Deviation
■ Total Fund	5.42	8.00
◆ Policy Index	5.35	9.38
— Median	4.74	9.22
Population	118	118

Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2024



● InvMetrics Public DB > \$1B

	Return	Standard Deviation
■ Total Fund	8.57	8.79
◆ Policy Index	8.38	9.54
— Median	8.15	10.07
Population	117	117



Other

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Total Fund  
Quarterly Historical Returns (Net of Fees)

Kern County Employees' Retirement Association  
Period Ending: September 30, 2024

	2024 Q3	2024 Q2	2024 Q1	2023 Q4	2023 Q3	2023 Q2	2023 Q1	2022 Q4	2022 Q3	2022 Q2	2022 Q1	2021 Q4
<b>Total Fund</b>	<b>4.8</b>	<b>1.3</b>	<b>3.8</b>	<b>5.1</b>	<b>-0.8</b>	<b>1.9</b>	<b>3.2</b>	<b>4.5</b>	<b>-3.1</b>	<b>-7.5</b>	<b>-0.8</b>	<b>3.6</b>
<i>Policy Index</i>	4.9	1.8	3.7	6.2	-1.4	2.9	3.8	5.5	-3.8	-8.9	-1.3	3.3

	2021 Q3	2021 Q2	2021 Q1	2020 Q4	2020 Q3	2020 Q2	2020 Q1	2019 Q4	2019 Q3	2019 Q2	2019 Q1	2018 Q4
<b>Total Fund</b>	<b>0.5</b>	<b>5.5</b>	<b>3.5</b>	<b>8.8</b>	<b>4.4</b>	<b>10.7</b>	<b>-11.3</b>	<b>4.6</b>	<b>0.2</b>	<b>3.1</b>	<b>6.8</b>	<b>-6.4</b>
<i>Policy Index</i>	0.7	5.7	3.3	8.8	4.5	10.1	-11.1	4.6	0.8	3.0	7.0	-5.5

	2018 Q3	2018 Q2	2018 Q1	2017 Q4	2017 Q3	2017 Q2	2017 Q1	2016 Q4	2016 Q3	2016 Q2	2016 Q1	2015 Q4
<b>Total Fund</b>	<b>2.3</b>	<b>0.3</b>	<b>-0.1</b>	<b>3.0</b>	<b>3.2</b>	<b>2.7</b>	<b>4.2</b>	<b>0.8</b>	<b>3.5</b>	<b>1.9</b>	<b>1.1</b>	<b>2.2</b>
<i>Policy Index</i>	2.2	0.7	-0.1	3.2	3.1	2.8	3.5	0.5	2.9	2.2	1.8	1.4

# Total Fund Data Sources and Methodology

# Kern County Employees' Retirement Association Period Ending: September 30, 2024

## Performance Return Calculations

Performance is calculated using a Time Weighted Rates of Return (TWRR) methodology. Monthly returns are linked geometrically 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

Investment Fund or Strategy	Fund Incepted	Data Source	Investment Fund or Strategy	Fund Incepted	Data Source
AB US Small Cap Value Equity	7/7/2015	Northern Trust	Lazard Japanese Equity	11/1/2023	Lazard
Abbott Capital PE VI	3/31/2008	Abbott Capital	LBA Logistics Value Fund IX, L.P.	2/22/2022	LBA
ABS Emerging Market Direct	8/29/2024	ABS	Level Equity Growth Partners V	11/1/2021	Level Equity
American Century Non-US Small Cap	12/15/2020	American Century	Level Equity Opportunities Fund 2021	11/1/2021	Level Equity
Ares Pathfinder	10/1/2023	Ares	LGT Crown	2/1/2021	LGT
Aristeia International Limited	5/1/2014	Northern Trust	Linden Capital Partners V LP	7/19/2022	Linden
ASB Real Estate	9/30/2013	ASB	Linden Co-Investment V LP	6/30/2022	Linden
Barclays Capital Aggregate Rebalancing Overlay	6/15/2022	Parametric	Longreach Capital Partners	5/28/2024	Long Reach
BlackRock Short Duration Fund	9/6/2021	BlackRock	Long Wharf Real Estate	6/27/2019	Long Wharf
Blue Owl Real Estate Fund VI	3/18/2024	Blue Owl	Magnetar Constellation	11/14/2018	Magnetar
Blue Torch Credit Opportunities	7/24/2020	Blue Torch	Mellon Aggregate Bond Index Fund	1/14/2011	Mellon
Brevan Howard	11/1/2013	Northern Trust	Mellon EB DV Stock Index	10/18/2017	Mellon
Brighton Private Equity	3/28/2021	Brighton	Mellon EB DV World ex-US Index	8/1/2018	Mellon
Brighton Park Capital Fund II, L.P.	9/30/2022	Brighton	Merit Hill Self Storage	11/3/2023	Merit
Brookfield Real Estate Finance Fund V	12/18/2017	Northern Trust	Myriad Opportunities Offshore	5/19/2016	Northern Trust
Carrhae Capital Long Master Fund	8/1/2024	Carrhae	Oak Hill Advisors	12/22/2023	Oak Hill
Cerberus Business Finance V	8/25/2023	Cerberus	OrbiMed Private Investments IV, LP	11/4/2022	OrbiMed
Cevian Capital II	12/30/2014	Northern Trust	OrbiMed Royalty & Credit Opportunities	9/12/2022	OrbiMed
Covenant Apartment Fund X	10/29/2020	Covenant	Pantheon Global III	6/30/2000	Pantheon
Crown Global Secondaries V Master S.C.Sp	2/1/2021	Crown	Pantheon USA V	6/30/2005	Pantheon
Crown Global Secondaries Fund VI	2/1/2021	Crown	Pantheon USA VI	3/31/2005	Pantheon
Dalton Japan Long Only	10/31/2023	Dalton	Pantheon USA VII	3/31/2005	Pantheon
DC Value Recovery fund IV	12/28/2015	Colony	Parametric Overlay/ Cap Efficiency Program	7/31/2020	Parametric
D.E. Shaw	6/30/2013	Northern Trust	Peak Rock Capital Fund III	7/13/2021	Peak Rock
DFA Emerging Markets Value I	3/7/2014	Northern Trust	Pharo Opportunities Fund SPC	6/28/2024	Pharo
Elliott Associates	7/1/2024	Elliott	PIMCO Core Plus	1/21/2011	Northern Trust
Fortress Credit Opportunities	12/17/2020	Fortress	PIMCO Commodity Alpha	5/4/2016	PIMCO
Fortress Lending Fund II	3/15/2021	Fortress	PIMCO EMD	2/29/2020	Northern Trust
Garda Fixed Income Relative Value Opp	9/30/2021	Garda	PIMCO Midstream	10/9/2020	PIMCO
Geneva Capital Small Cap Growth	7/22/2015	Geneva	PIMCO StocksPLUS	7/14/2003	PIMCO
Gresham MTAP Commodity	9/3/2013	Gresham	Fidelity Non-US Small Cap Equity	6/10/2008	Northern Trust
Harvest Midstream	9/28/2020	Harvest Midstream	River Birch	8/3/2015	Northern Trust
HBK Fund II	11/1/2013	Northern Trust	Rubicon Technology Partners IV LP	11/30/2022	Rubicon
Henderson Smallcap Growth	7/22/2015	Northern Trust	Silver Point Specialty Credit Fund III, L.P.	10/4/2023	Singerman
H.I.G Bayside Loan Opportunities Fund V	7/24/2019	H.I.G. Capital	Singerman Real Estate Opportunity Fund IV	10/27/2021	Sculptor
Hudson Bay	6/7/2019	Northern Trust	Sculptor Enhanced Domestic Partners	3/26/2019	Northern Trust
Hudson Bay Special Opportunities Fund	2/20/2024	Hudson Bay	Short Term Cash Account	12/31/2000	Northern Trust
Indus Pacific Opportunities	6/30/2014	Northern Trust	Short Term Investment Funds	6/30/2000	Stone Harbor
Invesco Real Estate III	6/30/2013	Invesco	Stone Harbor Emerging Markets Debt	8/8/2012	TPG Sixth Street
Invesco Real Estate IV	12/18/2015	Invesco	TAO Contingent	4/16/2020	TCW
ITE Rail Fund, L.P.	2/27/224	ITE Rail	TCW Securitized Opportunities	2/3/2016	Northern Trust
J.P. Morgan Strategic Property	7/2/2014	J.P. Morgan	Transition Equity	9/30/2010	Northern Trust
Juniper High Noon Partners, L.P.	3/18/2024	Juniper	Transition Fixed Income	9/30/2010	TPG Sixth Street
Juniper Capital IV, L.P.	4/26/2023	Juniper	TSSP Adjacent Opportunities Partners	11/17/2017	Vista Equity
KSL Capital Partners VI	4/26/2023	KSL Capital	Vista Equity Partners	7/24/2020	Warren
Landmark Real Estate Partners VIII	4/29/2018	Landmark	Warren Equity III	4/1/2021	Warren
Landmark Real Estate Partners IX	4/1/2024	Landmark	Warren Equity IV	1/1/2023	Wellington
			Wellington Alternative Investments	2/9/2023	Wellington
			WEP IV TS Co-Investment, L.P.	8/14/2023	Northern Trust
			Western Asset Core Plus	5/31/2004	Northern Trust
			Western Asset High Yield Fixed income	5/31/2005	Western Asset

Policy & Custom Index Composition	
Policy Index: 10/31/2023 - Present	33% MSCI ACWI IMI (Net), 15% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets Global Diversified, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +3%, 2.5% MSCI ACWI (Net), 8% 90 Day T-Bill + 3%, 5% Alerian Midstream Energy Index, 5% NCREIF-ODCE Gross Monthly, 5% actual time-weighted Private Equity Returns*, 8% actual time-weighted Private Credit Returns*, 5% actual time-weighted Private Real Estate Returns*, 0% Assumed Rate of Return +3%, -8% 90 Day T-bill.
Policy Index: 4/1/2022-9/30/23	37% MSCI ACWI IMI (Net), 14% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets Global Diversified, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +4%, 2.5% MSCI ACWI (Net), 8% 91 Day T-Bill + 4%, 5% NCREIF-ODCE Gross Monthly, 5% actual time-weighted Private Equity Returns*, 5% actual time-weighted Private Credit Returns*, 5% actual time-weighted Private Real Estate Returns*, 5% Alerian Midstream, 0% Assumed Rate of Return +3%, -8% 3-Month T-bill.
Policy Index: 7/1/2021-4/1/2022	37% MSCI ACWI IMI, 14% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 2% actual time-weighted Private Equity Returns*, 4% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 1% Bloomberg US Aggregate*, 4% Bloomberg US Aggregate, 5% Alerian Midstream, 5% 3-Month T-bill +400bps, 91 Day T-Bills, -5% 3-Month T-bill.
Policy Index: 1/1/2021-6/30/2021	37% MSCI ACWI IMI, 14% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 1% actual time-weighted Private Equity Returns*, 4% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 1% Bloomberg US Aggregate*, 4% Bloomberg US Aggregate, 5% Alerian Midstream, 5% 3-Month T-bill +400bps, 91 Day T-Bills, -5% 3-Month T-bill.
Policy Index: 7/1/2020-12/31/2020	37% MSCI ACWI IMI, 14% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 1% actual time-weighted Private Equity Returns*, 4% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 4% MSCI ACWI*, 5% Bloomberg US Aggregate, 1% Alerian Midstream, 4% Bloomberg US Aggregate
Policy Index: 4/1/2020-6/30/2020	37% MSCI ACWI IMI, 19% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 2% actual time-weighted Private Equity Returns*, 4% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 5% Bloomberg US Aggregate*.
Policy Index: 1/1/2020-3/31/2020	37% MSCI ACWI IMI, 19% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 2% actual time-weighted Private Equity Returns*, 4% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 5% Bloomberg US Aggregate*.
Policy Index: 10/1/2019-12/31/2019	37% MSCI ACWI IMI, 19% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 2% actual time-weighted Private Equity Returns*, 3% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 6% Bloomberg US Aggregate*.
Policy Index: 7/1/2019-9/30/2019	37% MSCI ACWI IMI, 19% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 2% actual time-weighted Private Equity Returns*, 4% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 5% Bloomberg US Aggregate*.
Policy Index: 4/1/2019-6/30/2019	37% MSCI ACWI IMI, 19% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 2% actual time-weighted Private Equity Returns*, 3% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 6% Bloomberg US Aggregate*.
Policy Index: 1/1/2019-3/31/2019	37% MSCI ACWI IMI, 19% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 2% actual time-weighted Private Equity Returns*, 3% actual time-weighted Private Credit Returns*, 2% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 5% Bloomberg US Aggregate*.
Policy Index: 10/1/2018-12/31/2018	37% MSCI ACWI IMI, 19% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 2% actual time-weighted Private Equity Returns*, 2% actual time-weighted Private Credit Returns*, 2% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 6% Bloomberg US Aggregate*.
Policy Index: 7/1/2018-9/30/2018	37% MSCI ACWI IMI, 19% Bloomberg US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 3% actual time-weighted Private Equity Returns*, 2% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 2% MSCI ACWI*, 7% Bloomberg US Aggregate*.
Policy Index: 1/1/2017- 6/30/2018	19% Russell 3000 Index, 18% MSCI ACWI ex US, 29% Bloomberg US Aggregate, 10% NCREIF-ODCE, 4% Bloomberg Commodity Index, 7.5% 91-day T-bills + 400bps, 2.5% MSCI ACWI, 5% Russell 3000 Index + 300 bps, 5% ICE BofA ML High Yield + 200 bps.
Policy Index: 4/1/2014-12/31/2016	23% Russell 3000 Index, 29% Bloomberg US Aggregate, 22% MSCI ACWI ex US,

**Other Disclosures**

\*Private Asset actual weights, rounded to 1%, and actual time-weighted returns of Private Equity, Private Credit, Private Real Estate used in policy with the difference in weight versus target allocated to private markets public market "equivalent". Private Equity to Global Equity, Private Credit and Private Real Estate to Core Plus.

All data prior to 2Q 2011 has been provided by the investment managers.

# 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: Portfolio Return - [Risk-free Rate + Portfolio Beta x (Market Return - 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: Portfolio Excess Return / 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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