



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: JUNE 30, 2024

Investment Performance Review for

Kern County Employees' Retirement Association

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Investment Landscape

TAB I

Investment Performance
Review

TAB II



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

3RD QUARTER 2024
Investment Landscape

Verus business update

Since our last Investment Landscape webinar:

- Verus hired Dillon Kuk, Kacey Franich, Nico Caballero, and Sarah Khan as Performance Analysts, and Margie Lane as a Marketing Associate, in our Seattle office.
- The Los Angeles office relocated to N. Continental Blvd., 2 miles from our prior location.
- Verus hired Dawit Ewnetu as a Summer Intern in our Seattle office, in partnership with Rainier Scholars.
- Recent research, found at verusinvestments.com/research:
 - ***2024 Real Assets Outlook***
 - ***Mid-year Capital Markets Update***
 - ***Is the U.S. heading for a recession?***

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Recent Verus research

Visit: verusinvestments.com/research

Thought leadership

REAL ASSETS OUTLOOK

As inflation has moderated and interest rates have stabilized, the market has been eager for the Fed to pivot towards a looser monetary policy. Asset prices are broadly rich, pricing in an economic soft landing and a couple rate cuts by year-end. While we are less bearish this year across real assets, given more positive signs of a soft landing, rich asset valuations temper our enthusiasm.

MID-YEAR CAPITAL MARKETS UPDATE

Equity forecasts fell across U.S., International, and Emerging markets. The cash forecast decreased slightly. High cash rates have mixed impacts, while model changes mitigated some effects. Falling yields and spread compression lowered fixed income forecasts, especially U.S. Treasury and emerging market debt. Real Estate forecasts increased due to rising capitalization rates and higher U.S. real GDP expectations.

IS THE U.S. HEADING FOR A RECESSION?

Many market strategies have been predicting a U.S. recession since the start of 2023. This short video presents our team's analysis of key indicators to determine whether a recession is likely in the coming year.

2nd quarter summary

THE ECONOMY

- U.S. inflation (CPI) fell to 3.0% YoY in June, following two consecutive months of flat prices (0.0% in May and -0.1% in June). The report reflected a slowing in shelter costs, which have been a primary hurdle for inflation reaching the 2% Federal Reserve target. If the slowing of shelter prices persists, inflation could fall rather quickly. Core inflation (ex-Food & Energy) was 3.3% year-over-year in June.
- The U.S. labor market remains strong, but recently some cracks of weakness have appeared. Unemployment jumped unexpectedly to 4.1% in June—a level not seen since 2021. Jobless claims have also been rising. This negative data could prove to be a continuation of the trend towards a more balanced labor market, though it will be important to monitor conditions closely.

EQUITY

- Emerging market equities outperformed during Q2, up +5.0%, despite significant ongoing underperformance of China. U.S. equities were close behind (S&P 500 +4.3%), setting a new all-time-high price level. In contrast, international developed equities were flat.
- Small cap and value style investing underperformed. Small cap lagged large cap by -6.9% while value underperformed growth by -10.5%. The style premia performance gap was even wider over the past year, as small cap underperformed large cap by -13.8% and value underperformed growth by -20.4%.

FIXED INCOME

- The 10-year U.S. Treasury yield increased slightly from 4.20% to 4.36% during Q2, resulting in near-zero or negative performance for high quality fixed income of a longer duration profile.
- Default activity in loans and credit reached a one-year low at the end of Q2. However, the gap between bank loan and high yield default activity has increased to a 10-year high, with total volume of distressed or defaults comprised of loans (80%) to bonds (20%) on pace for a record high.

ASSET ALLOCATION ISSUES

- Many goods and services prices have been falling in areas such as autos, energy, and transportation. This trend has occurred alongside signs of weakness in the job market and consumer spending, and has reignited hopes for lower inflation, which would ease pressures on household budgets and allow for interest rate cuts. It is possible that an economic *soft landing* may be occurring, which would suggest lower rates and further gains for risk assets.
- Market-priced volatility (Cboe VIX Index) remained very low, ending at 12.4% in June. This has raised eyebrows, given a variety of risks that domestic equities face, but low volatility is typical of strongly up trending equity environments. Markets continue to present a unique environment of low equity volatility but high fixed income volatility. This gap has closed somewhat, as bond market implied volatility has receded.

Risk assets delivered moderate returns in Q2, while fixed income was flat to mildly positive, depending on duration profile.

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

What drove the market in Q2?

“The US Economy is showing clear signs of a slowdown”

Employment change, Non-farm payrolls

January	February	March	April	May	June
256k	236k	240k	108k	218k	206k

Article Source: Bloomberg, July 8th, 2024

“Earnings bolster US stocks, but crucial inflation report looms”

S&P 500 EPS Growth, Year-over-year

Q4 2022	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024
+4.3%	-1.5%	-2.0%	-5.0%	+4.1%	+6.9%

Article Source: Reuters, May 14th, 2024

“Slowing U.S. inflation fuels expectations of interest rate cuts”

Consumer Price Index, Year-over-year change

Jan 23	Feb 24	March 24	April 24	May 24	June 24
3.1%	3.2%	3.5%	3.4%	3.3%	3.0%

Article Source: Wall Street Journal, June 28th, 2024

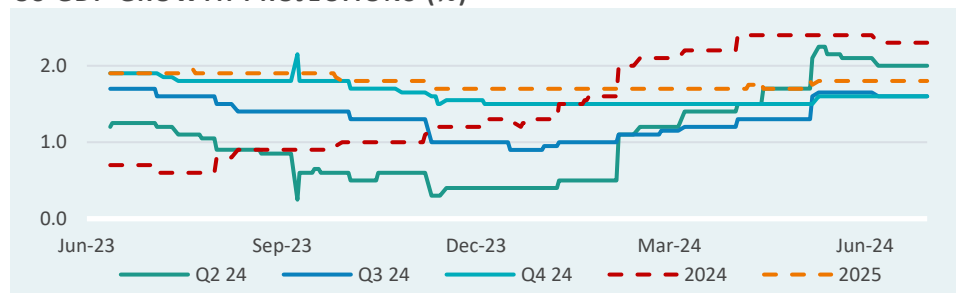
“European Central Bank cuts interest rates for first time in 5 years”

ECB Overnight Rate, Actual and Implied

March 24	June 24	Sep 24 (E)	Dec 24 (E)	March 25 (E)	June 25 (E)
4.0%	3.75%	3.45%	3.20%	2.98%	2.75%

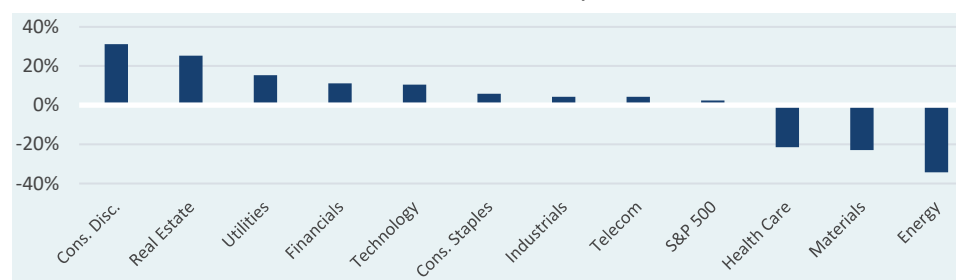
Article Source: Financial Times, June 6th, 2024

US GDP GROWTH PROJECTIONS (%)



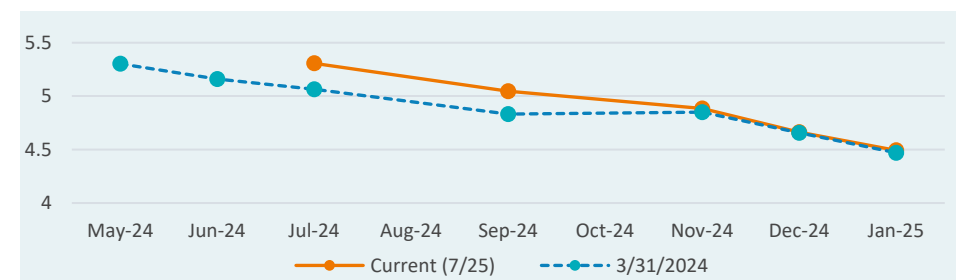
Source: Bloomberg, as of 6/30/24

S&P 500 TRAILING 12M EARNINGS GROWTH, YOY



Source: Bloomberg, as of 6/30/24

U.S. MARKET IMPLIED FUTURE INTEREST RATES (%)



Source: Bloomberg, as of 7/25/24

Economic environment

U.S. economics summary

- Real GDP growth was substantially higher than expected in Q2, rising 2.8% quarter-over-quarter (3.1% year-over-year), beating economist forecasts of a 2.0% increase on the quarter. The GDP release reflected an increase in consumer spending, as well as increased investment in inventories and capital goods. Residential fixed investment detracted from GDP growth, as did the trade deficit.
- U.S. inflation (CPI) fell to 3.0% YoY in June, following two consecutive months of flat prices (0.0% in May and -0.1% in June). The report reflected a slowing in shelter costs, which have been a primary hurdle for inflation reaching the 2% Federal Reserve target. If a slowing of shelter prices persists, inflation could fall rather quickly. Core inflation (e.g., Food & Energy) was 3.3% year-over-year in June.
- Inflation adjusted personal spending growth was 2.6% year-over-year in June, remaining in a 2-3% range for the past two years and suggesting more

moderate economic expansion in line with pre-pandemic conditions. Purchases of goods have been weaker than services, perhaps partly a reflection of higher interest rates, which impact the affordability of big-ticket items such as autos and homes.

- The U.S. labor market remains strong, but in recent months some cracks of weakness have appeared. Unemployment jumped unexpectedly to 4.1% in June—a level not seen since 2021. Jobless claims have also been rising. This negative data could prove to be a continuation of the trend towards a more balanced labor market.
- Consumer sentiment deteriorated in Q2, moving back towards the lows of 2022. The University of Michigan Consumer Sentiment survey dropped from 79.4 to 66.4 on concerns over high goods and services prices and the impacts of inflation on personal income. Household expectations for lower interest rates in the future helped to buoy the index somewhat.

	Most Recent	12 Months Prior
Real GDP (YoY)	3.1% 6/30/24	2.4% 6/30/23
Inflation (CPI YoY, Core)	3.3% 6/30/24	3.1% 6/30/23
Expected Inflation (5yr-5yr forward)	2.3% 6/30/24	2.3% 6/30/23
Fed Funds Target Range	5.25–5.50% 6/30/24	5.00–5.25% 6/30/23
10-Year Rate	4.20% 6/30/24	3.80% 6/30/23
U-3 Unemployment	4.1% 6/30/24	3.6% 6/30/23
U-6 Unemployment	7.4% 6/30/24	6.9% 6/30/23

Inflation

U.S. inflation (CPI) fell to 3.0% year-over-year in June, following two consecutive months of flat prices (0.0% in May and -0.1% in June). The June report was the first which reflected slower shelter cost increases, which have been a large hurdle for inflation falling to the Fed's 2% target. If this slowing in shelter prices persists, inflation could fall much more quickly to the Fed's 2% target. Core inflation (ex-Food & Energy) dropped to 3.3% year-over-year in June. Many goods and services prices have been *falling* in recent months in areas such as automobiles, energy, and transportation services. This trend has occurred alongside

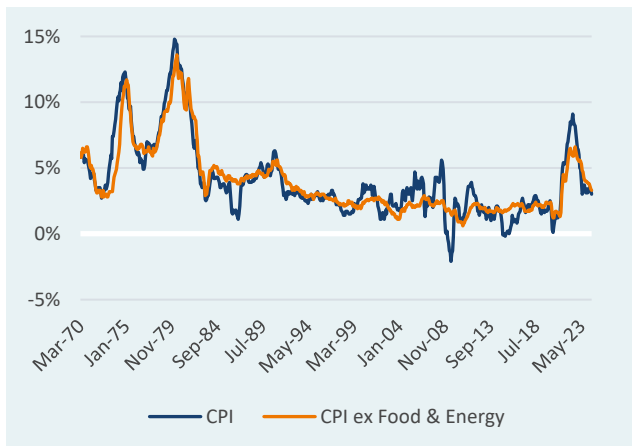
signs of weakness in the job market and other areas of the economy, and has reignited hopes for inflation to normalize, easing pressures on household budgets and allowing for interest rate cuts.

Investors have been watching monthly inflation reports very closely for potential signs of the future inflation path. If monthly inflation reports come in at a 0.2% to 0.3%, we can expect inflation to remain around today's level. However, if additional inflation reports come in at 0.1% or lower, inflation would fall rather quickly to 2%.

Inflation has fluctuated between 3-3.5% over the past year.

Shelter will likely need to slow further for inflation to reach 2%.

U.S. CPI (YOY)



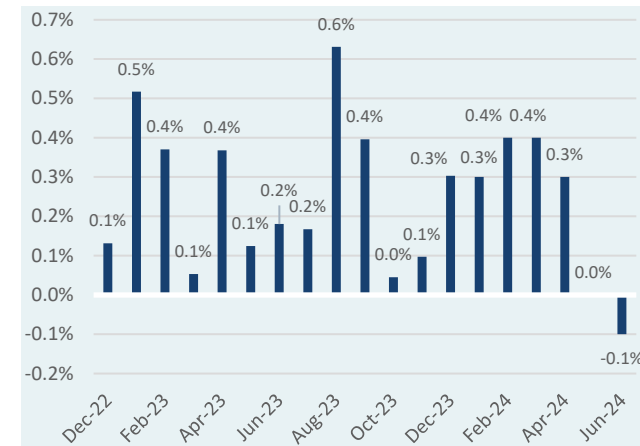
Source: BLS, as of 6/30/24

POTENTIAL INFLATION PATHS



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

MONTHLY PRICE MOVEMENT (CPI)



Source: BLS, as of 6/30/24

GDP growth

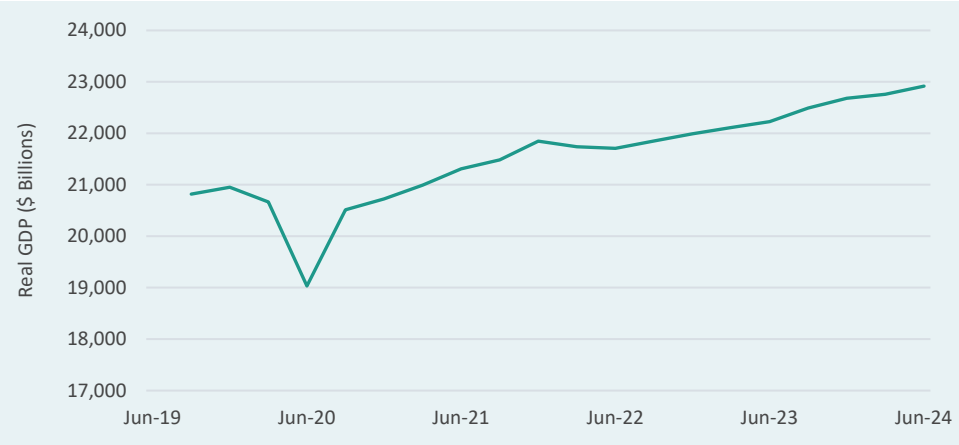
Real GDP growth was substantially higher than expected in Q2, rising 2.8% quarter-over-quarter (3.1% year-over-year), beating economist forecasts of a 2.0% increase on the quarter. The GDP release reflected an increase in consumer spending, as well as increased investment in inventories and capital goods. Residential fixed investment detracted from GDP growth, as did the trade deficit.

While consumption increased this quarter, economists are wary of the sustainability of consumer spending growth. Much of the increase in spending was concentrated in necessities, and with a cooling labor market and low savings rate, consumer spending could slow if these issues persist.

Recent economic data seems to reaffirm the idea that the U.S. economy is moving 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 in the labor market from *extreme tightness* to *relatively strong*, but not a move (yet) towards anything that suggests recession.

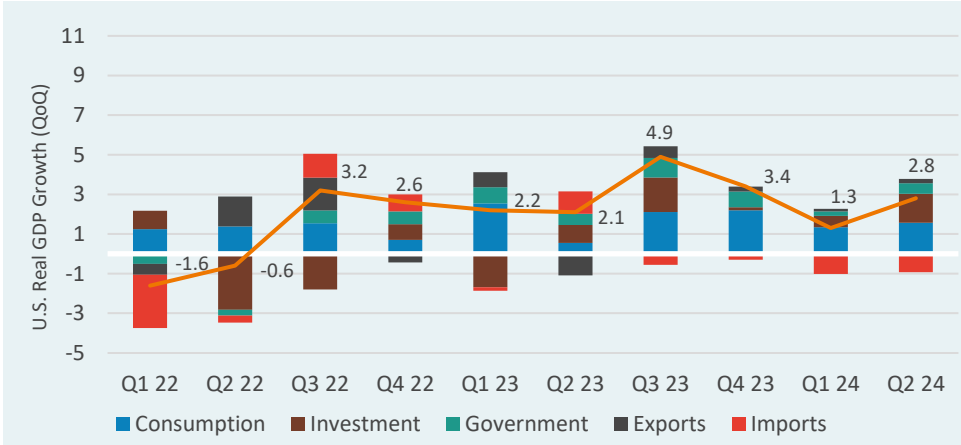
U.S. growth picked up in Q2, but concerns remain regarding the strength of the consumer.

U.S. REAL GROSS DOMESTIC PRODUCT



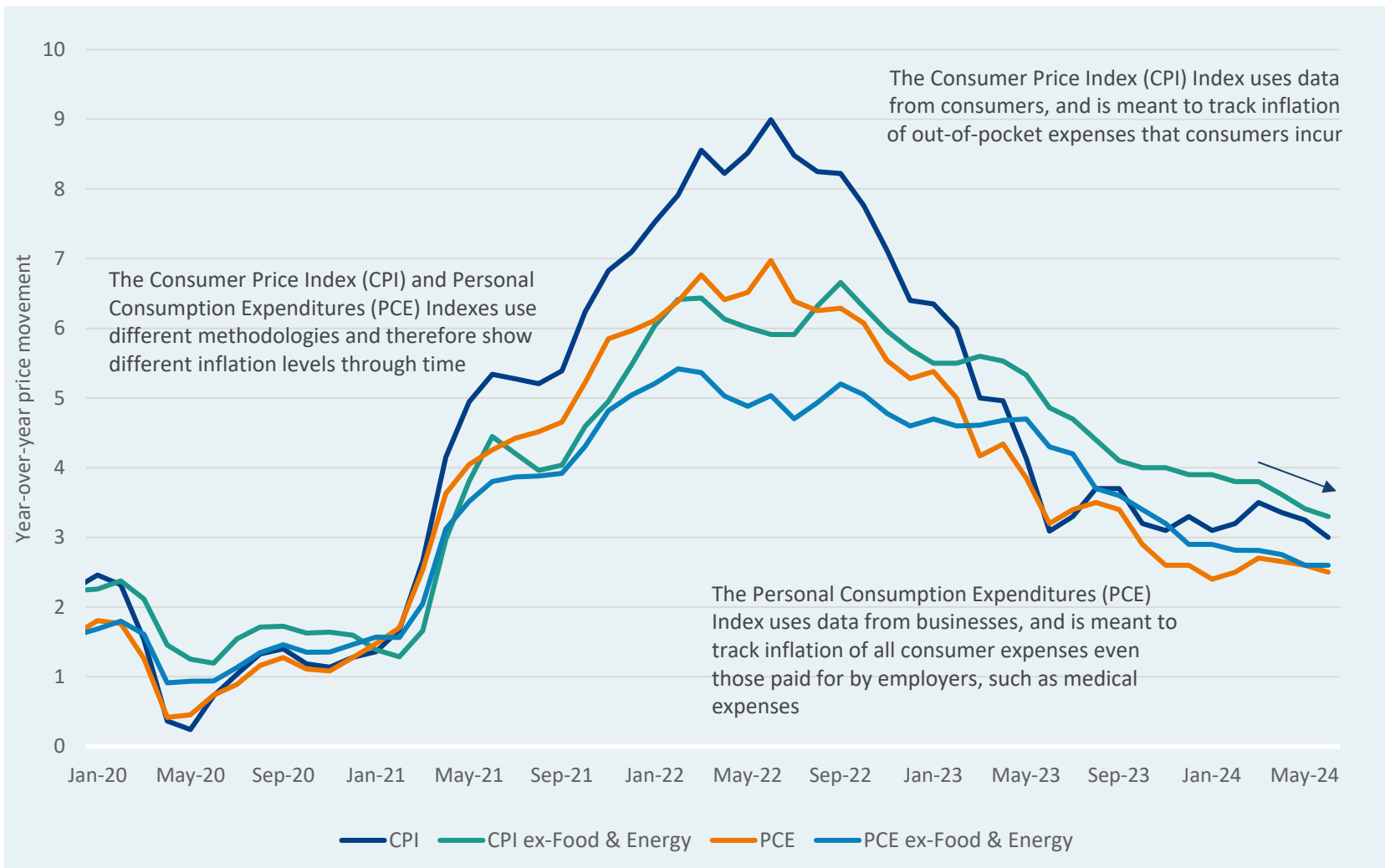
Source: FRED, as of 6/30/24

U.S. REAL GDP COMPONENTS (QOQ)



Source: FRED, as of 6/30/24

Inflation conditions are normalizing



Moderating price pressures in recent months have helped to push year-over-year CPI inflation to 3.0%.

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

Labor market

The U.S. labor market remains strong relative to history, but in recent months some cracks of weakness have appeared. The rate of unemployment jumped unexpectedly to 4.1% in June—a level not seen since 2021. Jobless claims have also been rising throughout the year. This negative data could prove to be a continuation of the trend towards a more balanced labor market, though it will be important to monitor conditions closely.

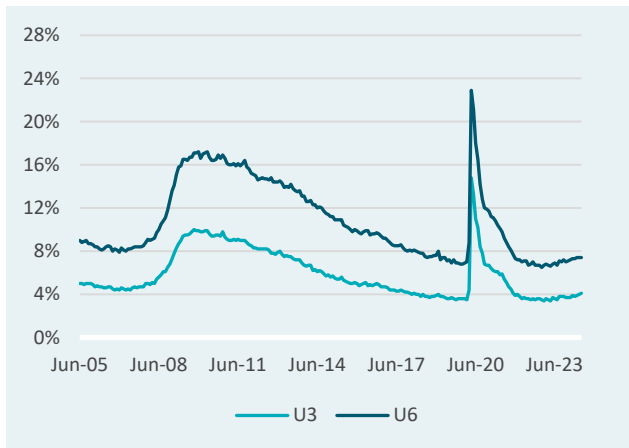
Average hourly earnings growth was 3.9% year-over-year in June, slightly outpacing the rate of inflation. As inflation has fallen, wage growth has also slowed, likely a reflection of a

more normal balance between jobs available and workers available, as well as less urgency for cost-of-living adjustments.

In many past instances of increasing unemployment, job losses were quick and accelerating, which often preceded recession. In contrast, more recently the rate of unemployment has more gradually moved up. Recessions have rarely occurred without a sharper downtrend in employment, which given current conditions might suggest we are seeing a moderation of economic growth rather than a move towards something worse.

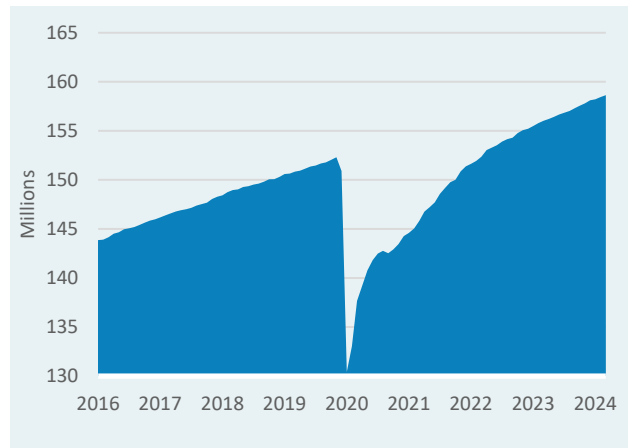
The labor market remains strong by historical standards, though conditions have moved in a weaker direction.

U.S. UNEMPLOYMENT



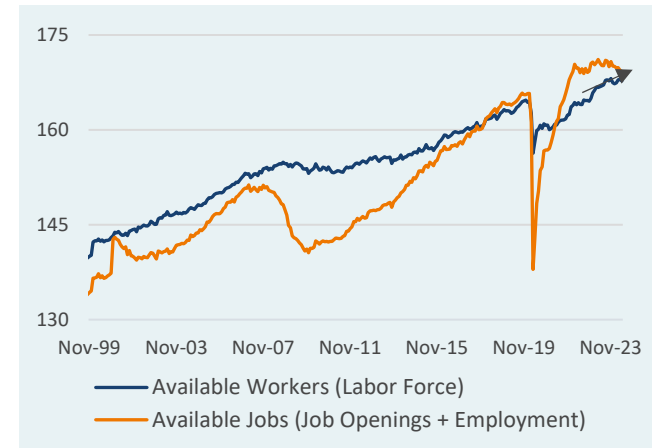
Source: FRED, as of 6/30/24

TOTAL U.S. EMPLOYMENT



Source: FRED, as of 6/30/24

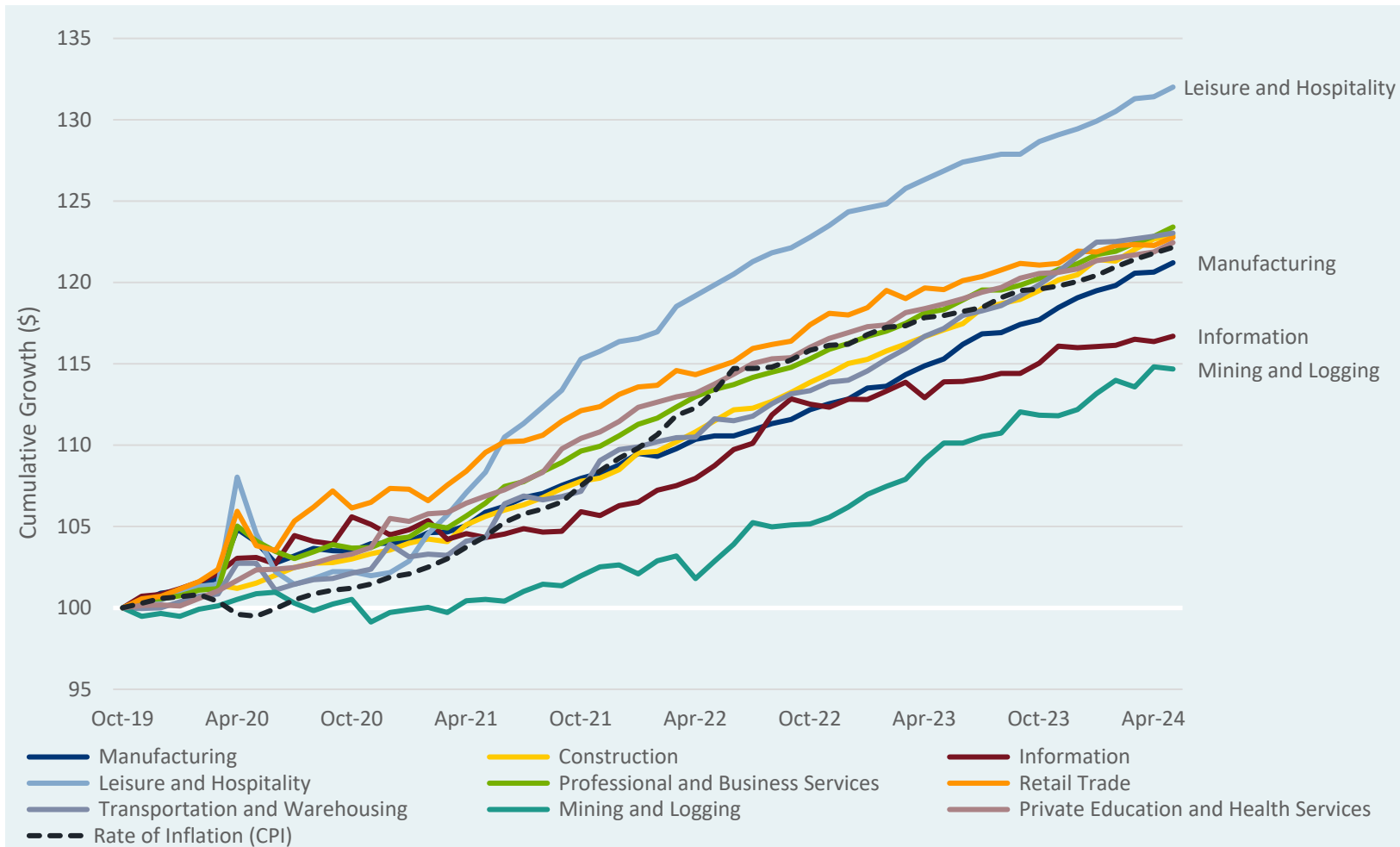
WORKERS AVAILABLE VS. AVAILABLE JOBS



Source: BLS, Verus, as of 5/31/24

Wage gains vs. rate of inflation

AVERAGE HOURLY EARNINGS



Over the past few years, inflation has eaten into wallets and resulted in shrinking pay for many types of work.

If inflation were to move higher, many households do not have much room to maneuver financially.

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

The consumer

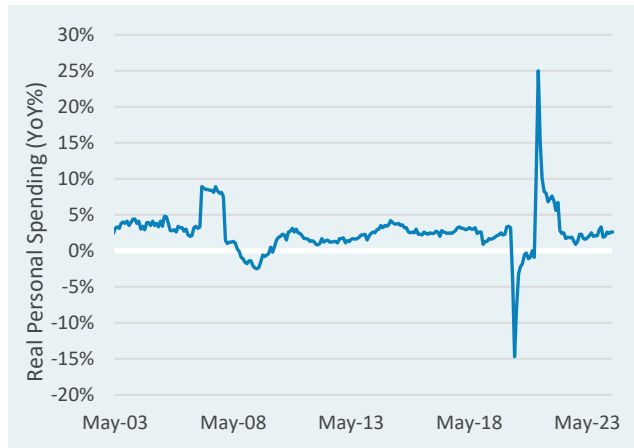
Inflation adjusted personal spending growth was 2.6% year-over-year in June, and has remained in a 2-3% range for the past two years. This rate indicates moderate economic expansion in line with pre-pandemic rates of growth. Purchases of goods have been much weaker than purchases of services, perhaps partly a reflection of higher interest rates which have impacted the affordability of big ticket items such as automobiles and homes.

Many Americans continue to spend rather freely despite higher costs of goods and services taking up a greater portion of take-home income,

and extreme discontent around inflation. However, certain non-essential spending such as for vacations has been robust. Total traveler volumes at U.S. airports in late June reached a record level.

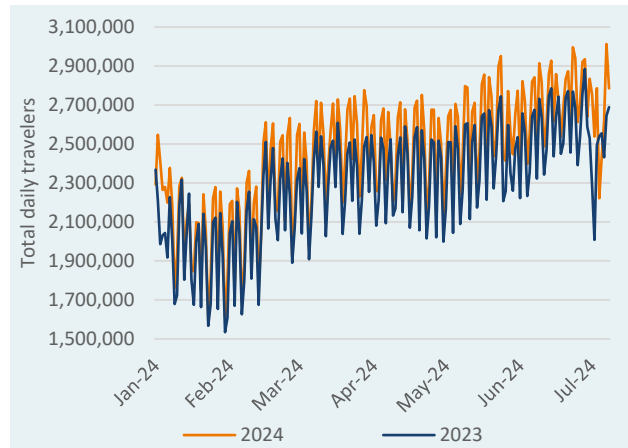
Personal savings rates improved slightly over the quarter, from 3.5% to 3.9%. It seems reasonable to assume that savings rates should improve if wage gains continue to outpace the rate of inflation, all else equal.

REAL PERSONAL SPENDING



Source: FRED, as of 6/30/24

U.S. TSA AIRPORT ACTIVITY



Source: FRED, as of 7/8/24

PERSONAL SAVINGS RATE



Source: FRED, as of 6/30/24

Sentiment

Consumer sentiment deteriorated over the quarter, moving back towards the lows of 2022. The University of Michigan Consumer Sentiment survey dropped from 79.4 to 66.4 on concerns over high goods and services prices and impacts of inflation on personal income. Household expectations for lower interest rates in the future helped to buoy the index somewhat.

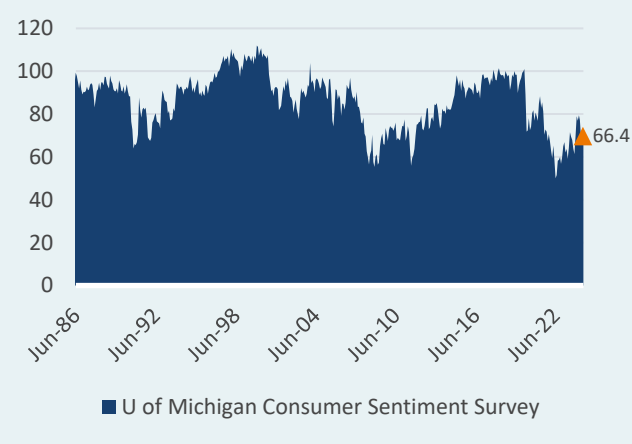
Poor consumer sentiment and the discontent around higher prices can only be partially captured by the rate of inflation. Higher prices of goods and services make life more difficult, but the jump in interest rates further exacerbated the problem, in some cases substantially. The total monthly loan cost of a car or a home has rocketed upward with increased prices for those items

and much higher interest costs baked into payments. For example, if a family had purchased an average home in 2021, the monthly payment would have been \$1,206. In early 2024, if the same family purchased an average home, the monthly payment for that home would be \$2,209 – an 83% increase!

The NFIB Small Business Optimism index was flat during the quarter, continuing to show an extremely poor reading. Inflation remains the top business concern. NFIB Chief Economist Bill Dunkelberg explained that “Increasing compensation costs has led to higher prices all around. Meanwhile, no relief from inflation is in sight for small business owners as they prepare for the uncertain months ahead.”

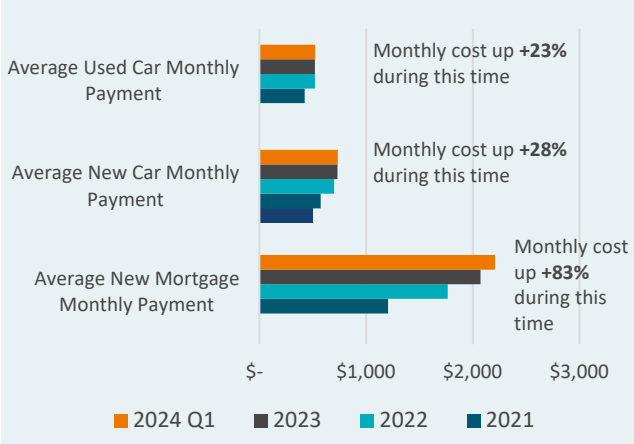
Consumer sentiment weakened during Q2, while small business optimism remained depressed.

CONSUMER SENTIMENT



Source: University of Michigan, as of 6/30/24

INFLATION EATING UP BUDGETS



Source: Edmunds, Verus, as of April 2024

NFIB SMALL BUSINESS SENTIMENT



Source: NFIB, as of 6/30/24

Housing

Imbalances in the U.S. housing market appear to be here to stay, at least for a while, as sharply lower home prices and/or lower mortgage rates (the conditions needed for reasonable affordability) seem unlikely. Affordability is extremely difficult for new homebuyers, currently near record lows, and has worsened as the average home price was up +5.8% year-over-year in May. The other saving grace for potential homebuyers would be lower mortgage rates, but Federal Reserve rate cuts are expected to be moderate and may not have a large impact on the longer end of the yield curve. A driver of ultra-low mortgage rates during the pandemic was government quantitative easing, much of which was focused on mortgage debt and therefore pushed mortgage interest rate spreads to unusually low levels. In short, mortgage rates may fall in the next few years but perhaps only mildly.

Fortunately, rent price growth has slowed considerably, up only 0.8% year-over-year in May, according to Redfin. As the cost of renting versus owning has dramatically shifted, a strong surge in activity towards renting and away from homeownership would not be surprising in the near future.

Depressed home sales activity reflects extreme unaffordability. Monthly home sales are at levels similar to that which followed the 2008-2009 housing bubble. Prior to that crisis, the mid-1990s were the most recent time that compares to this level of sales activity. On the other hand, *new home sales* activity has been fairly robust, which may provide some incremental easing to home prices through increased supply.

30-YEAR MORTGAGE RATE (%)



Source: Freddie Mac, as of 6/30/24

EXISTING HOME SALES



Source: FRED, as of 6/30/24

HOUSING AFFORDABILITY



Source: FRED, as of 3/31/24 – Housing affordability is calculated as the cost of a median priced single-family home at the current mortgage rate, as a percentage of the median family income

International economics summary

- Global economic data continues to paint a picture of slower but positive growth—a move back to pre-pandemic rates of expansion in the United States and across emerging markets, but with concerning weakness in Europe and Japan. Moderating conditions have allowed for rate cut signaling from central banks, which will likely provide an incremental boost to activity in the near-term.
- Inflation has fallen to a 2-3% range for most developed countries. Big inflation trends have tended historically to rhyme across the developed world, as crises often impact prices of global goods and services in similar ways. Recently, pandemic effects such as global supply chain issues, government stimulus, and higher energy prices had resulted in a similar ebb and flow to prices across marketplaces.
- India’s economy continues to face uncertainty for this upcoming quarter.

In the last five out of six years, India’s real GDP growth rate has fallen short of the Economic Survey projections, but they have seen growth in private investments and infrastructure spending. Annual retail inflation rose to 5.1% in June compared to 4.8% from the previous month, primarily due to food prices. The Reserve Bank of India paused rate hikes, with the goal of not obstructing growth, and bringing inflation to its target rate of 4%.

- China year-over-year inflation was just 0.2% in June, as the country struggles with deflationary pressures, given a real estate slump, a weak job market, and generally poor economic conditions. According to some reports, excess manufacturing capacity and government incentives for overinvestment have created a situation where supply is outstripping demand. A declining population significantly adds to uncertainty around these issues.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	3.1% 6/30/24	3.0% 6/30/24	4.1% 6/30/24
Eurozone	0.4% 3/31/24	2.5% 6/30/24	6.4% 5/31/24
Japan	(0.7%) 3/31/24	2.3% 6/30/24	2.8% 5/31/24
BRICS Nations	5.3% 3/31/24	1.9% 6/30/24	4.8% 12/31/22
Brazil	2.5% 3/31/24	4.2% 6/30/24	7.1% 5/31/24
Russia	5.4% 3/31/24	8.6% 6/30/24	2.6% 5/31/24
India	7.8% 3/31/24	5.1% 6/30/24	9.2% 6/30/24
China	4.7% 6/30/24	0.2% 6/30/24	5.0% 6/30/24

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

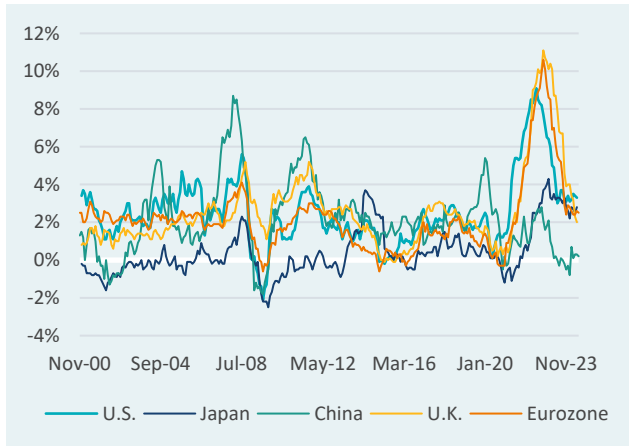
The global narrative appears to remain intact—that many economies are set to slow in 2024 but will likely avoid recession. The United States leads the developed world in growth with a 3.1% YoY real rate of GDP expansion. Europe and Japan have demonstrated anemic economic growth.

Inflation moderation continues, and in much of the world has normalized. Big inflation trends have tended historically to rhyme across developed countries, as crises often impact prices of global goods and services in similar ways. This seems to be at least partially the case recently, as pandemic effects such as global supply chain issues, government stimulus, and higher energy prices have followed global growth outpacing

expectations. This resulted in a similar ebb and flow in prices across most economies. If history is a guide, normal rates of inflation elsewhere may be a good sign for domestic inflation issues.

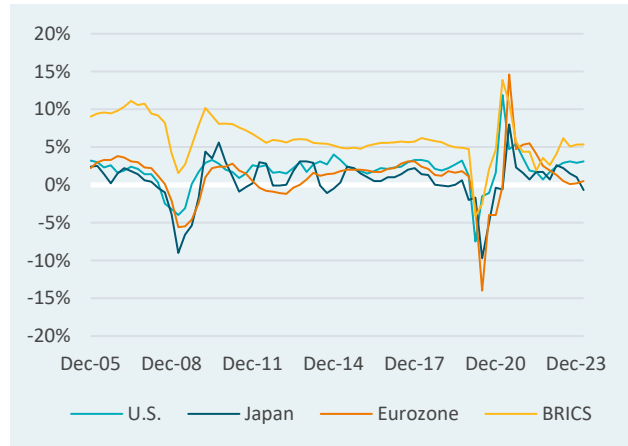
China year-over-year inflation was just 0.2% in June, as the country struggles with deflationary pressures, given a real estate slump, weak job market, and generally poor economic conditions. According to some reports, excess manufacturing capacity and government incentives for overinvestment have created conditions where supply has outstripped demand. A declining population significantly adds to uncertainty around these issues.

INFLATION (CPI YEAR-OVER-YEAR)



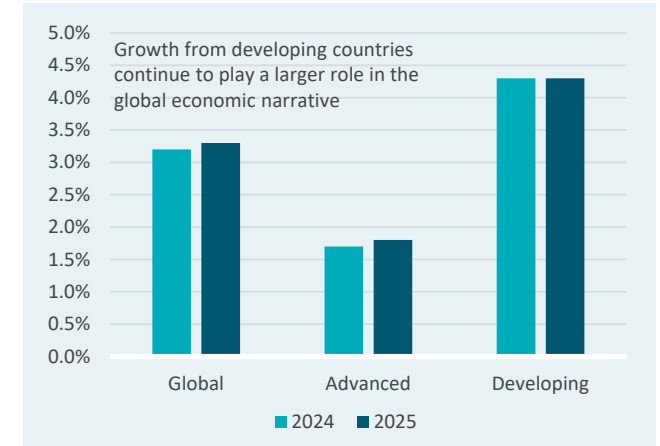
Source: Bloomberg, as of 6/30/24

REAL GDP GROWTH (YEAR-OVER-YEAR)



Source: Bloomberg, as of 6/30/24 – or most recent release

IMF JULY 2024 GDP FORECASTS



Source: IMF April World Economic Outlook, as of 7/17/24

Fixed income rates & credit

Fixed income environment

- The 10-year U.S. Treasury yield initially increased in Q2, rising from 4.20% to a peak of 4.70% before gradually falling to 4.36%, resulting in an overall increase in yields with a downward trend going into Q3. These movements resulted in near-zero performance for short to intermediate duration high quality fixed income and negative performance for longer duration.
- By comparison, most credit indices saw positive returns. High yield gained +1.1% (Bbg U.S. Corporate High Yield), while bank loans rose +1.9% (S&P/LSTA Leveraged Loan). Longer duration investment grade corporate bonds declined by -1.6% (Bloomberg U.S. Long Corporate Credit) as sensitivity to rising yields in April overwhelmed gradual returns in the latter half of the quarter. This reflects a continued concern in the market over inflation and higher-for-longer Fed policy.
- The U.S. yield curve, indicated by the 10-year minus the 2-year Treasury

yield, continues to remain inverted, marking over two years of continuous yield curve inversion (June 6th, 2022). The curve ended the quarter inverted by -35bps. While an inverted yield curve has been a common metric for predicting recessions, the recent continued economic resilience has increased public optimism of a potential soft-landing.

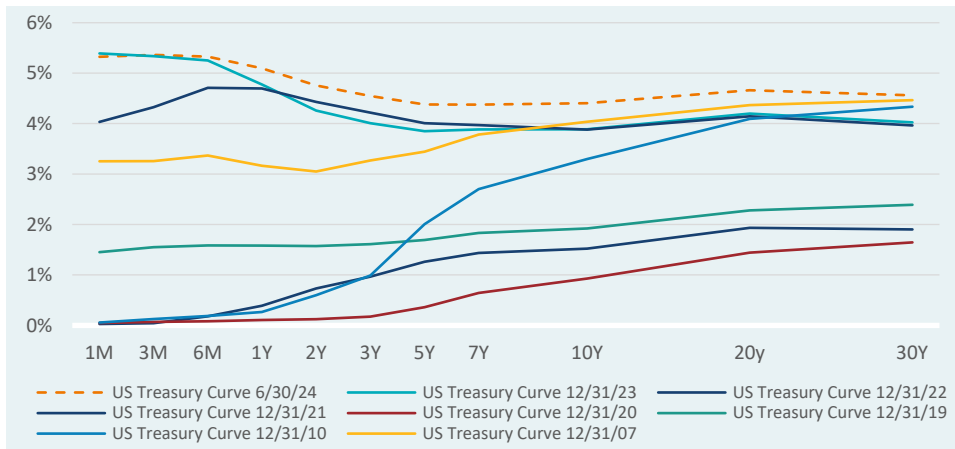
- Default activity in loans and credit reached a one-year low at the end of Q2. However, the gap between bank loan and high yield default activity has increased to a 10-year high, with total volume of distressed or defaults comprised of loans (80%) to bonds (20%) is on pace to be a record high proportion. During the period, a total of \$15.2 billion of bank loan and high yield bonds were impacted by default or distressed exchanges, down from \$20.6 billion in the prior quarter. Notably, default/distressed exchange volume averaged \$17.9 billion quarterly since 2020 and \$14 billion quarterly over the last 17.5 years.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	0.1%	2.6%
Core Plus Fixed Income (Bloomberg U.S. Universal)	0.2%	3.5%
U.S. Treasuries (Bloomberg U.S. Treasury)	0.1%	1.5%
U.S. Treasuries: Long (Bloomberg U.S. Treasury 20+)	(2.2%)	(7.2%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	1.1%	10.4%
Bank Loans (S&P/LSTA Leveraged Loan)	1.9%	11.1%
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	-1.6%	0.7%
Emerging Market Debt Hard (JPM EMBI Global Diversified)	0.3%	9.2%
Mortgage-Backed Securities (Bloomberg MBS)	0.1%	2.1%

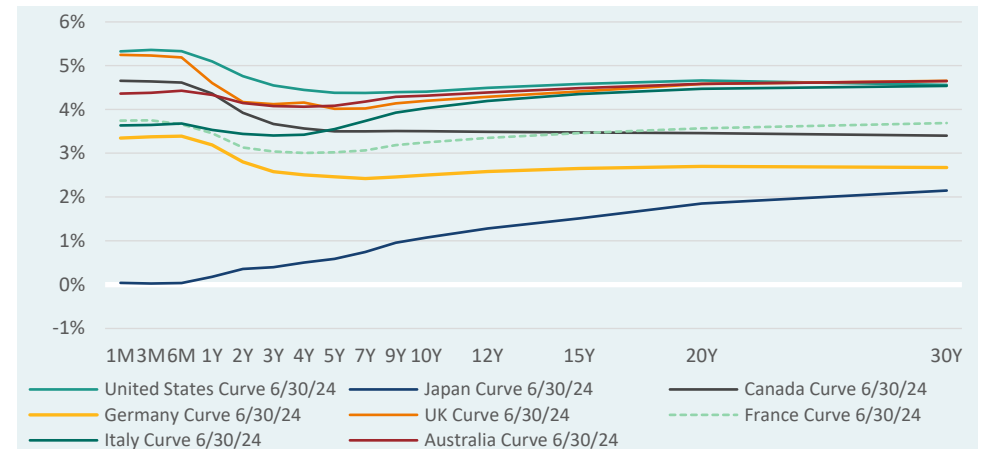
Source: Bloomberg, as of 6/30/24

Yield environment

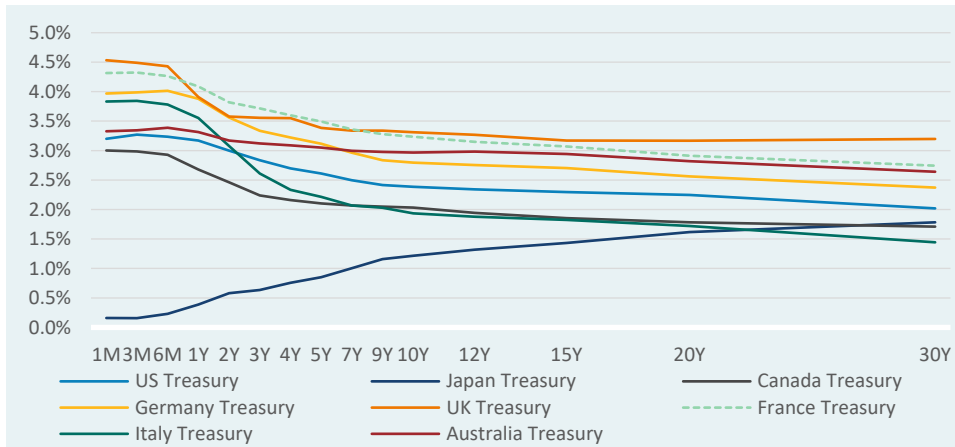
U.S. YIELD CURVE



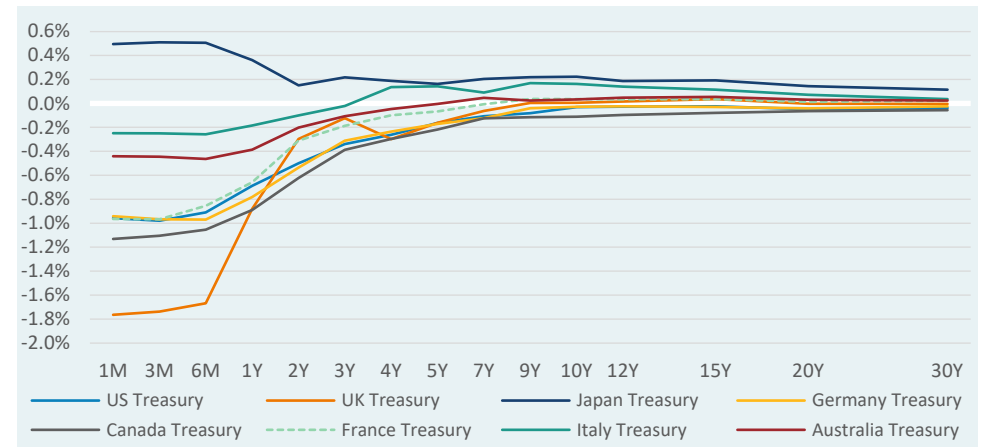
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 6/30/24

Credit environment

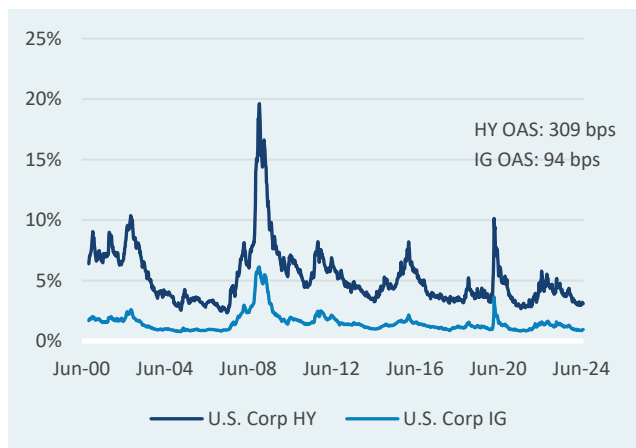
During the second quarter, credit markets delivered mostly positive returns with lower-quality credit such as high yield bonds and bank loans leading. Bank loans rose +1.9% (CS Leveraged Loans), while high yield bonds increased by +1.1% (Bbg U.S. Corporate High Yield). Longer duration investment grade corporate bonds (Bloomberg U.S. Long Corporate Credit) fell by -1.6% as concerns over rising interest rates and higher expected inflation acted as a headwind to performance.

Returns across credit ratings were broadly positive during Q2. Higher-quality BB-rated bonds returned +1.4% compared to +1.1% for B-rated, while non-distressed CCC's led with +2.0% returns. CCC-rated bonds including distressed lagged other credits with +0.2% returns. Higher-quality bank loans outperformed lower quality, with BB- and B- rated

loans returning +1.88% and +2.13%, while CCC-rated loans only returned +0.14%.

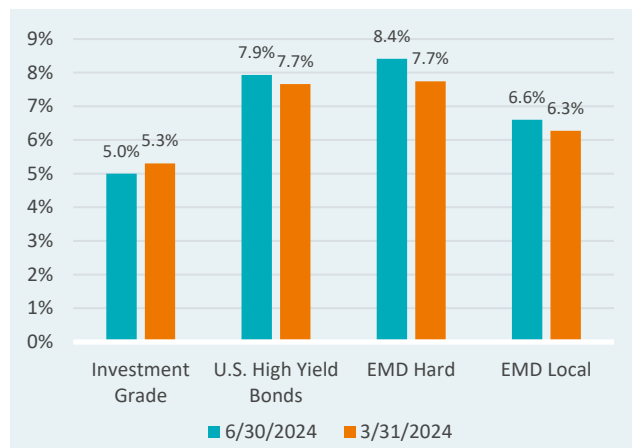
High quality credit spreads declined during the quarter while high yield spreads were mixed as recession concerns contended with further resilience in the corporate sector. Lower-quality high yield bond spreads rose by roughly 0.1% to 3.2%, while investment grade spreads continued to tighten by 0.3% to 0.9%. These trends continue to show spreads below long-term historical averages, suggesting that investors remain confident in the ability of most businesses to service debt. However, widening spreads and lower returns in CCC and distressed suggest that the highest risk credit sectors are beginning to show strain under the continued pressure of higher lending rates.

SPREADS



Source: Barclays, Bloomberg, as of 6/30/24

YIELD TO MATURITY



Source: Bloomberg, J.P. Morgan as of 6/30/24

CREDIT SPREAD (OAS)

Market	6/30/24	6/30/23
Long U.S. Corp	1.2%	1.5%
U.S. Inv Grade Corp	0.9%	1.2%
U.S. High Yield	3.1%	3.9%
U.S. Bank Loans*	3.9%	3.8%

Source: Barclays, Credit Suisse, Bloomberg, as of 6/30/24
*Discount margin (4-year life)

Default & issuance

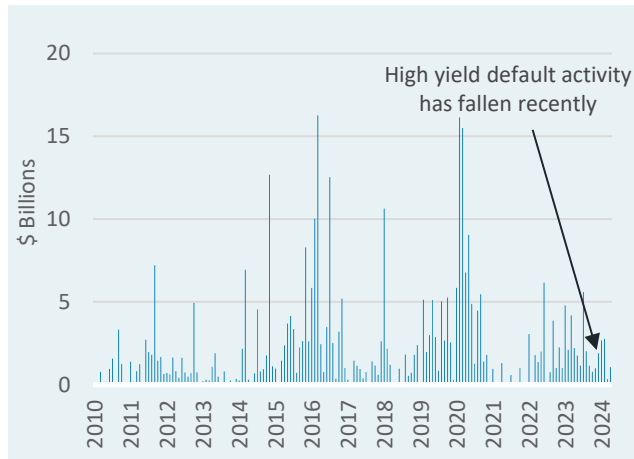
Default activity declined during the quarter as concerns around slowing economic growth abated. During the period, \$15 billion of bank loans and high yield bonds were affected by default or distressed exchanges, down from \$22 billion in the prior quarter. Year-to-date, 19 defaults and 23 distressed exchanges have occurred totaling more than \$37 billion, down roughly -14% from the same period last year.

The bank loan market has shown notable weakness compared to high yield bonds. Year-to-date, roughly 80%, or \$29.6 billion of loans, have either defaulted or resulted in distressed exchanges compared to \$7.5 billion for high yield bonds.

High yield bond default rates declined to roughly 1.8%, down from 2.7% a year ago, and are well below the long-term annual average of roughly 3.4%. High-yield default recovery rates ended the quarter at 38.8%, up significantly from 17.4% at the same time last year.

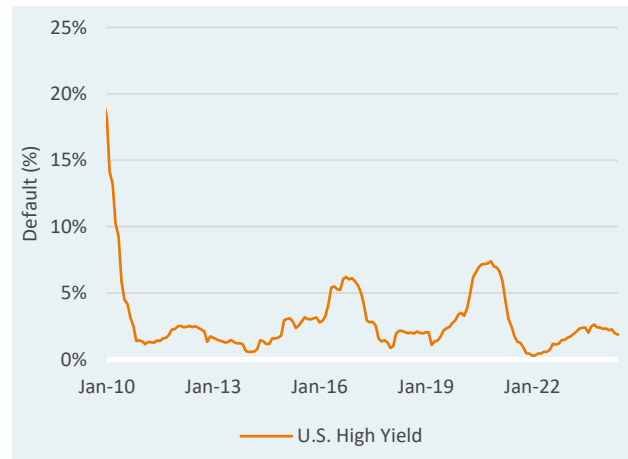
The issuance of investment grade credit declined significantly from the prior quarter, \$343 billion versus \$531 billion. Year-to-date issuance stands at \$874 billion, up 23% compared to last year at the same time. High yield bond issuance declined slightly to \$79.4 billion, down from \$86.6 billion during the previous quarter. Broadly, credit spreads remain near their recent lows, which despite the higher yield environment, allows companies to issue at more competitive rates.

U.S. HY MONTHLY DEFAULTS (PAR WEIGHTED)



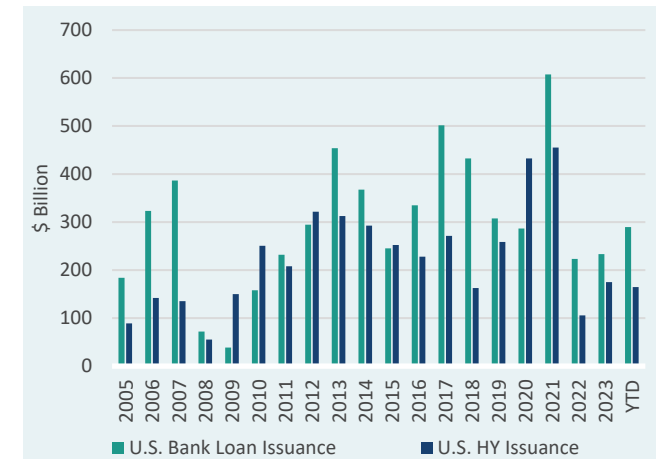
Source: BofA Merrill Lynch, as of 6/30/24

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



Source: BofA Merrill Lynch, as of 6/30/24 – par weighted

DEVELOPED MARKET ISSUANCE (\$ BILLIONS)



Source: BofA Merrill Lynch, all developed markets, as of 6/30/24

Credit hedge funds

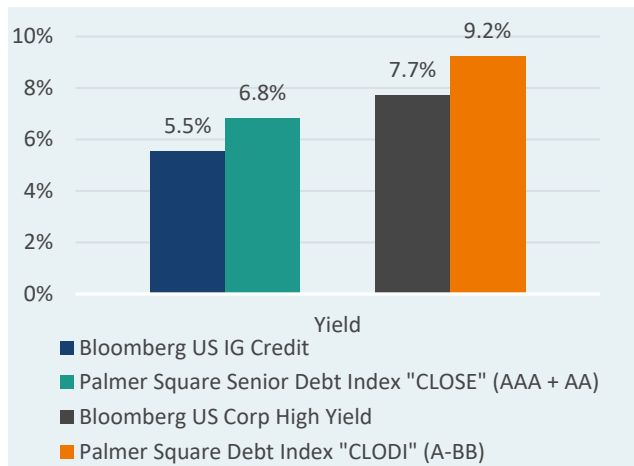
Credit hedge funds have outperformed high yield and leveraged loans through 2Q 2024, benefiting from high total yields and low duration.

Even though headline default numbers imply a benign opportunity set, according to JP Morgan, although default volume is lower year over year, the volume of distressed exchanges is already the third highest annual total since at least 2008. Additionally, the volume of Loan distressed transactions YTD is already the largest annual total on record for loans. Credit hedge funds are a natural participant in these types of transactions and are finding no shortage of actionable ideas even as broad markets are at or near highs.

Hedge funds focused on structured credit continue to take advantage of excess yield in CLO and other securitized markets. In the CLO market, an index of AAA and AA tranches (as proxied by the Palmer Square Indexes) are offering 1.3% excess yield over US Investment Grade Credit and A, BBB, and BB tranches are yielding 1.5% more than the Bloomberg US High Yield index.

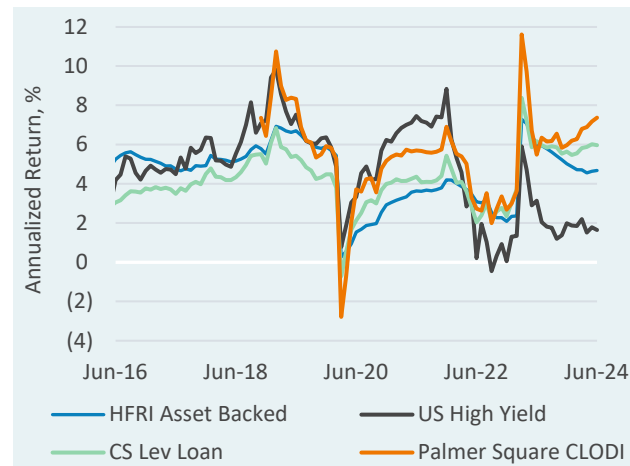
Distressed funds should continue to benefit from elevated levels of capital market activity in credit markets, with strong issuance in both HY and Loan markets set against a backdrop of tight credit spreads and low defaults.

CLO VS CORPORATE BOND YIELDS AS OF JUNE 30



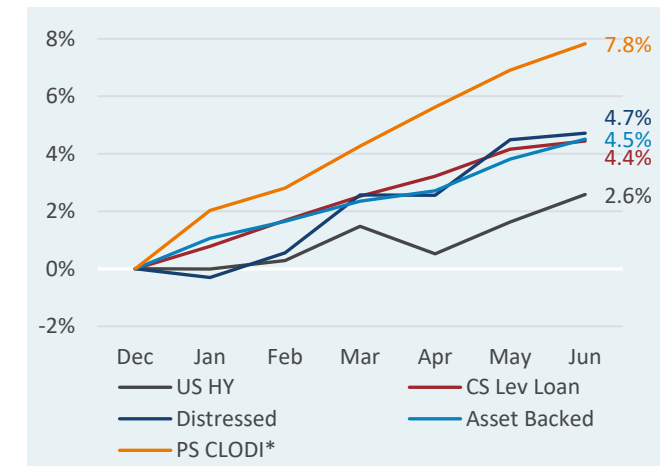
Source: MPI, Bloomberg, Palmer Square. As of 6/30/2024

3 YEAR ROLLING RETURN



Source: CS, HFR, Bloomberg, Palmer Square, MPI

YTD RETURN



Source: Bloomberg, Palmer Square, HFR, MPI

Equity

Equity environment

- Emerging market equities outperformed during Q2, up +5.0% (MSCI Emerging Markets), despite ongoing poor returns from China. U.S. equities were close behind (S&P 500 +4.3%), setting a new all-time-high price level. In contrast, international developed equities were relatively rangebound (MSCI EAFE -0.4%).
- Blended S&P 500 year-over-year Q2 earnings growth was +9.3% as of July 12th. If total reported earnings growth ends at this +9.3% rate, it would mark the largest year-over-year earnings growth rate since Q1 of 2022.
- The U.S. dollar rose moderately in value during Q2, resulting in losses for U.S. investors with unhedged foreign currency exposure. Given that the Federal Reserve is expected to engage in similar rate cuts as other developed economies, it is unclear the extent to which the global rate cutting path will impact relative currency

valuations. Unexpected central bank actions will likely have the greatest directional impact in the future.

- Small cap and value style investing drastically underperformed during Q1. Small cap lagged large cap by -6.9% (Russell 2000 -3.3% vs. Russell 1000 +3.6%), while value underperformed growth by -10.5% (Russell 1000 Value -2.2% vs. Russell 1000 Growth +8.3%). The style premia performance gap was even wider over the last year, as small cap underperformed large cap by -13.8% and value underperformed growth by -20.4%.
- Markets continue to present a unique environment of low equity volatility but high fixed income volatility. This gap has closed somewhat, as bond market implied volatility has moved a bit back towards normal levels since reaching a nearly all-time high 2023.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	4.3%		24.6%	
U.S. Small Cap (Russell 2000)	(3.3%)		10.1%	
U.S. Equity (Russell 3000)	3.2%		23.1%	
U.S. Large Value (Russell 1000 Value)	(2.2%)		13.1%	
US Large Growth (Russell 1000 Growth)	8.3%		33.5%	
Global Equity (MSCI ACWI)	2.9%	3.5%	19.4%	21.6%
International Large (MSCI EAFE)	(0.4%)	1.7%	11.5%	18.5%
Eurozone (EURO STOXX 50)	(2.8%)	(1.7%)	12.0%	16.3%
U.K. (FTSE 100)	3.8%	3.8%	12.1%	13.2%
Japan (TOPIX)	(4.3%)	3.0%	12.7%	32.5%
Emerging Markets (MSCI Emerging Markets)	5.0%	6.3%	12.5%	15.8%

Source: Russell Investments, MSCI, STOXX, FTSE, JPX, as of 6/30/24

Domestic equity

U.S. equities further outperformed international developed equities, but lagged emerging market shares, with the S&P 500 finishing up +4.3% during the quarter. The artificial intelligence boom provided a tailwind to earnings of chip manufacturers and has likely helped to lift valuations more broadly. Signs of cooling in the labor market, as well as surprisingly weak inflation figures, helped reignite investor hopes for an economic *soft landing* and interest rate cuts.

Blended S&P 500 year-over-year Q2 earnings growth was +9.3% as of July 12th. If total reported earnings growth ends at this +9.3% rate, it would mark the largest year-over-year earnings growth rate since Q1 of 2022. Communication Services (+18.4%) and Information Technology

(+16.4%) were the earnings leaders, while Materials (-11.8%) and Industrials (-3.7%) lagged.

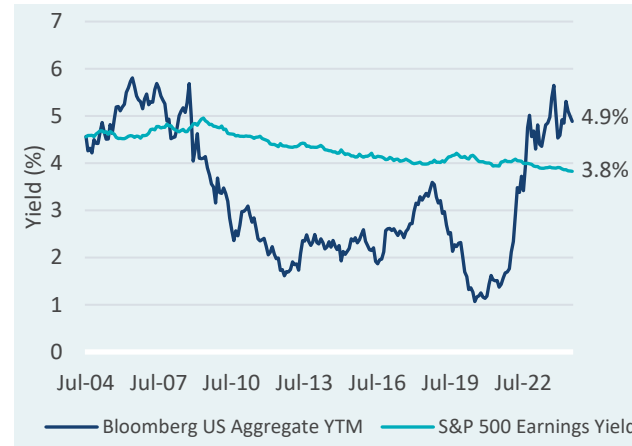
Strong price gains have moved valuations towards the richer side of the historical range. This effect, alongside higher interest rates and more attractive bond yields, has resulted in a regime shift regarding the attractiveness of equity and fixed income. Expensive equity prices have pushed total U.S. equity yield to below 4%, at a time when holding cash yields materially more than 5% and core fixed income yields 5%. This new regime is captured in institutional capital market assumptions which now tend to reflect mild future domestic equity returns and robust fixed income returns.

S&P 500 PRICE INDEX



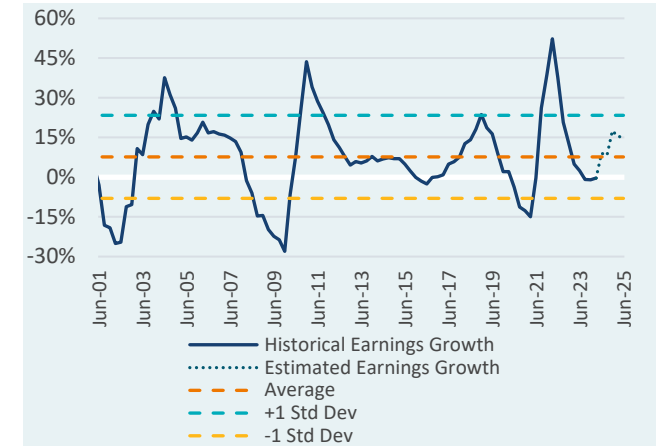
Source: Bloomberg, as of 6/30/24

RELATIVE YIELD: EQUITY VS FIXED INCOME



Source: Bloomberg, Standard & Poor's, Verus, as of 6/30/24

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



Source: Bloomberg, Factset, Verus, as of 7/19/24

Domestic equity size & style

Small cap and value style investing drastically underperformed during Q1. Small cap lagged large cap by -6.9% (Russell 2000 -3.3% vs. Russell 1000 +3.6%), while value underperformed growth by -10.5% (Russell 1000 Value -2.2% vs. Russell 1000 Growth +8.3%). The style premia performance gap was even wider over the last year, as small cap underperformed large cap by -13.8% and value underperformed growth by -20.4%.

Much of the difference in style performance is driven by sector differences. Growth has a much greater exposure to mega cap technology companies, which continued to overshadow all other sectors in the second quarter. Nvidia extended its historic run, while Apple and Tesla bounced back from a poor first quarter. Technology and Communication companies led earnings

growth and this is expected to persist going forward. Per Factset, Communication Services and Technology companies within the S&P 500 are expected to provide earnings growth of 21% and 18.7%, respectively, leading all other sectors. This has translated into volatility between sectors, where Technology (+13.8%) and Communications (+9.4%) led the S&P 500 in Q2, while six out of eleven sectors declined in value over the quarter.

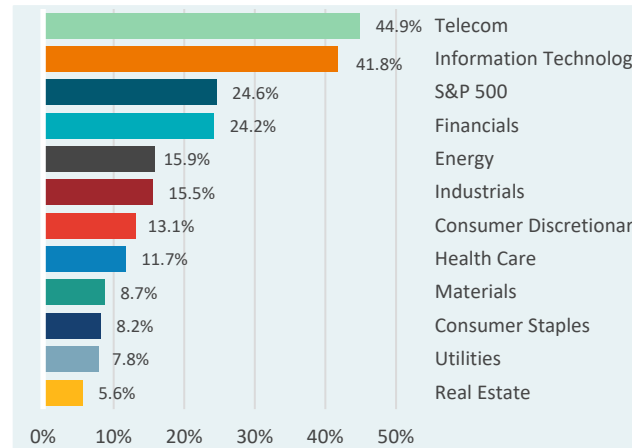
Unusually large disparities in style performance has been apparent, driven by sector trends and mega cap stock dominance. Market behavior continues to support our stance that short-term factor timing decisions should in most circumstances be pursued only in the rare occasion of obvious market mispricing and with a clear catalyst for price correction.

VALUE VS. GROWTH 1-YR ROLLING



Source: FTSE, Bloomberg, as of 6/30/24

S&P 500 SECTOR RETURNS (1 YEAR ROLLING)



Source: FTSE, Bloomberg, as of 6/30/24

1-YEAR SIZE & STYLE PERFORMANCE

	Value	Core	Growth
Large Cap	13.1%	23.9%	33.5%
Mid Cap	12.0%	12.9%	15.1%
Small Cap	10.9%	10.1%	9.1%

Source: FTSE, Bloomberg, as of 6/30/24

International developed equity

International developed shares had a weak second quarter, trailing domestic and emerging markets equities. The MSCI EAFE Index returned +1.7% in U.S. dollar terms, while losing value (-0.4%) if the exposure remained unhedged. The ECB cut rates for the first time in five years in June, with the intention of stimulating a set of economies that had been otherwise stagnant, especially in comparison to the U.S. economy. The dollar's advance was likely fueled by this ECB rate cut, which increased the interest rate differential between the U.S. dollar and the Euro, providing a headwind for unhedged investors.

Some of the discrepancy in performance between U.S. and international developed equities can be attributed to sector

differences. U.S. equities are heavily concentrated in technology companies, while developed markets have a more diversified sector breakdown, with Financials and Industrials – two sectors that tilt towards value – more heavily weighted in developed markets. This lower exposure to technology companies has not helped developed equity performance over the past couple of years, but if richly valued U.S. tech companies have a pullback, it would provide a material boost.

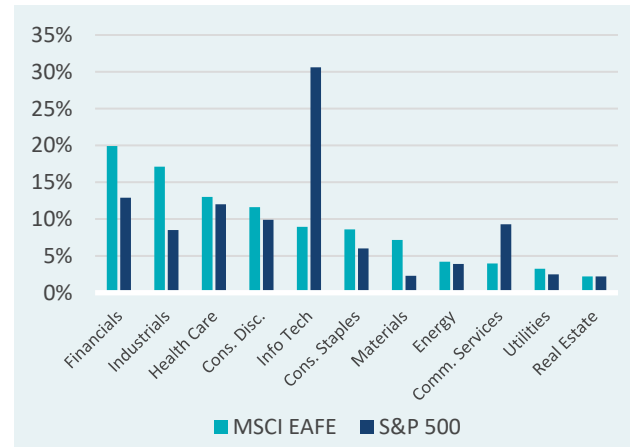
Markets will continue to watch the effect of adjustments to rate cut expectations, as European economies attempt to stimulate growth that has been lackluster this year without reigniting inflation.

INTERNATIONAL DEVELOPED EQUITY



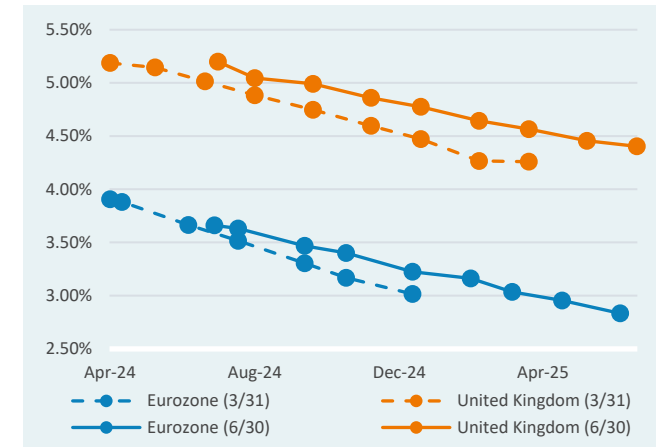
Source: MSCI, as of 6/30/24

MSCI EAFE VS. S&P 500 SECTOR DISTRIBUTION



Source: MSCI, S&P, as of 5/31/24

ECB & BOE RATE EXPECTATIONS VS Q1



Source: Bloomberg, as of 6/30/24

Emerging market equity

Emerging market equities were the highest performing equity market in portfolios (MSCI EM +5.0%), outpacing the domestic market (S&P 500 +4.3%) and international developed equities (MSCI EAFE -0.4%).

Sector differences played out in Emerging Markets, much as they did in the U.S., with Info Tech (+11.9%) being the best performing sector in the MSCI EM Index. This growth was bolstered by Taiwan Semiconductor Manufacturing Company (TSMC), who reported earnings growth of +36% in Q2. TSMC works directly with several domestic mega cap tech companies and makes up nearly 10% of the MSCI EM index.

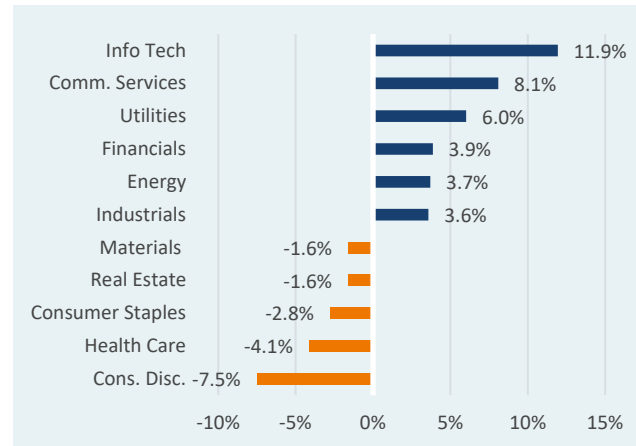
Chinese equities continue to be cheap from a valuation perspective but face serious structural issues which could further act as a drag on performance. Real estate market shakiness has come back to the forefront of many investors' minds. A large inventory of real estate sits empty, China's population is in decline and that decline is expected to accelerate, and a large portion of the economic boom has only been possible through ongoing real estate construction. It is difficult to imagine how these woes are resolved without a serious downward resetting of prices which would be incredibly painful for Chinese citizens who, on average, hold a large portion of their wealth in real estate.

EMERGING MARKET EQUITY



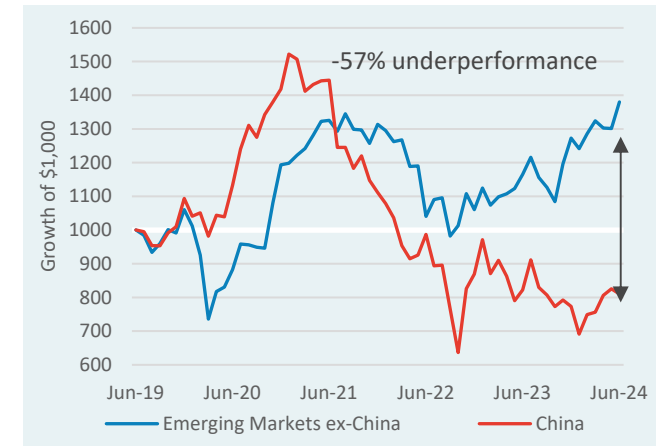
Source: MSCI, as of 6/30/24

MSCI EM Q2 2024 SECTOR RETURNS (USD)



Source: MSCI, J.P. Morgan, as of 6/30/24

SUBSTANTIAL CHINA UNDERPERFORMANCE



Source: MSCI, as of 6/30/24

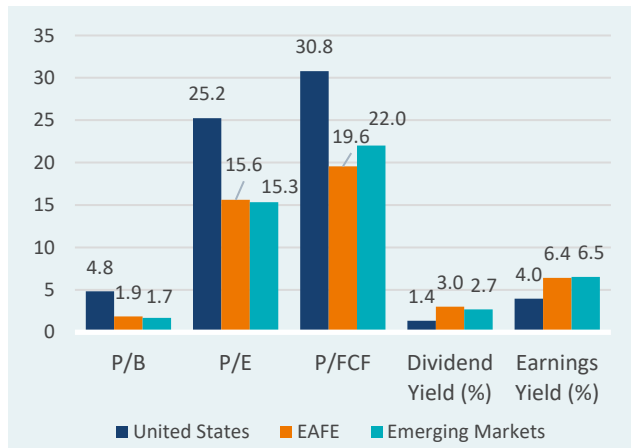
Equity valuations

Valuations moved higher in Q2 across each market. The S&P 500 traded at a Forward P/E of 21.4 at the end of June and a Trailing P/E of 25.2. High valuations have pushed the U.S. dividend yield to a nearly all-time historic low of 1.4%.

Lofty prices, along with a much more attractive environment for fixed income, suggest to us that the next decade may look much different than the past decade of unusually strong U.S. equity performance. The past decade was made possible by a very low equity valuation starting point, the impressive rise of mega cap tech / social media / online

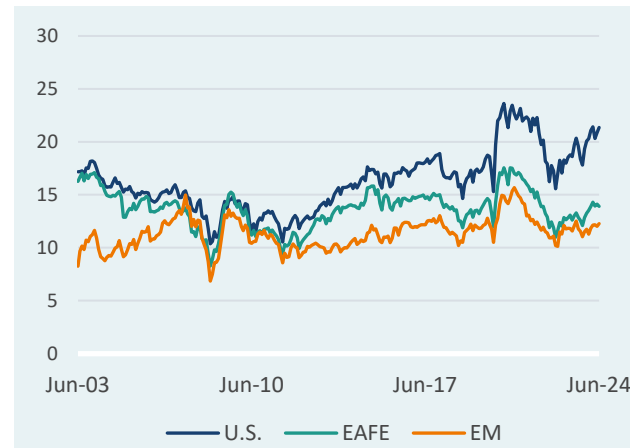
retailing businesses, extreme government stimulus pumped into the system, corporate tax cuts, and financial engineering following ultra low interest rates which contributed to a very large gain in corporate profit margins. Now, looking at the next 10 years, we are starting with high valuations, already high corporate profit margins, large debt burdens across many segments of the economy, and arguably a lower chance of future debt-driven stimulus. Fixed income may be very competitive with equity in terms of yields and prospective return over the next ten years. We believe this change in regime is noteworthy and may reasonably act as a theme for institutional asset allocation.

MSCI VALUATION METRICS (3-MONTH AVG)



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

FORWARD PRICE/EARNINGS RATIO



Source: MSCI, Bloomberg, as of 6/30/24

S&P 500 HISTORICAL DIVIDEND YIELD



Source: S&P, Bloomberg, as of 6/30/24

U.S. valuations & expected earnings



If projected earnings growth rates hold over the next two years, and the market increases in price at a more moderate rate, then valuations will come down toward historical averages.

Source: Bloomberg, Verus, as of 7/19/24 – here we assume that both: a) the S&P 500 delivers earnings growth over the next two years in line with current estimates (11% in 2024 and 14.7% in 2025), and b) The S&P 500 delivers a total return in those years equivalent to the Verus 2024 CMA return estimate. If both of things occur, the S&P 500 Price/Earnings ratio will move back towards the historical average.

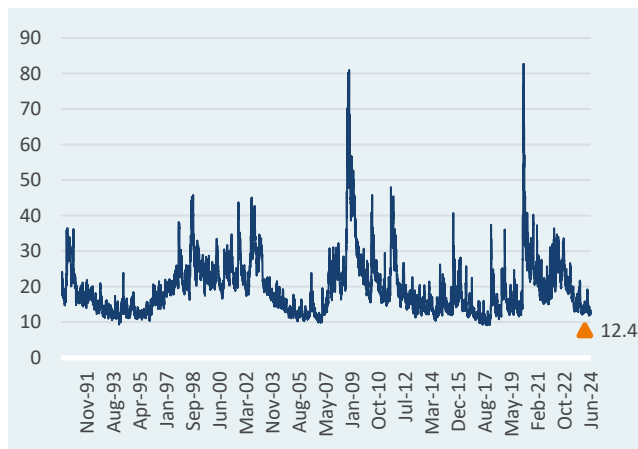
Market volatility

Market-priced volatility (Cboe VIX Index) remained very low during the second quarter, ending at 12.4% in June. This has reasonably raised eyebrows, given a variety of risks that domestic equities face, but low volatility is typical of strongly up trending equity environments.

Recent realized one-year volatility has also been fairly mild across global markets, relative to history. Domestic, international developed, and emerging market equities have all delivered between 14.6% and 15.8% volatility during that time, with emerging markets marking the upper end of the range.

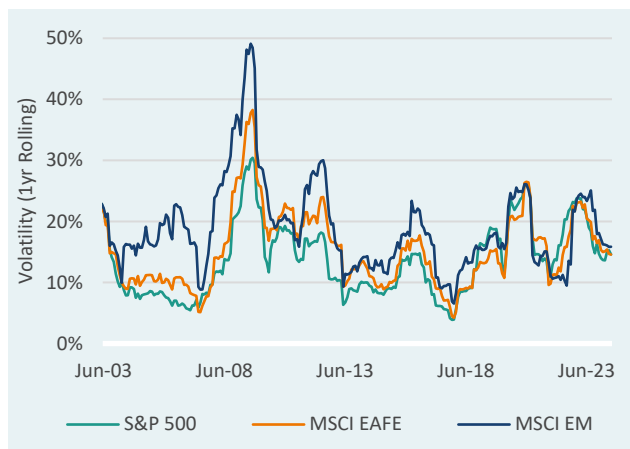
This asset allocation environment is unique in terms of low equity volatility but high fixed income volatility. This gap has closed somewhat, as bond market implied volatility has moved a bit back towards normal levels since reaching a nearly all time high in 2023. Bond characteristics are captured by the “MOVE” Index—which calculates the implied volatility of U.S. Treasury securities. As further clarity is gained around the path of the Federal Reserve, we would expect that bond volatility will further moderate.

U.S. IMPLIED VOLATILITY (VIX)



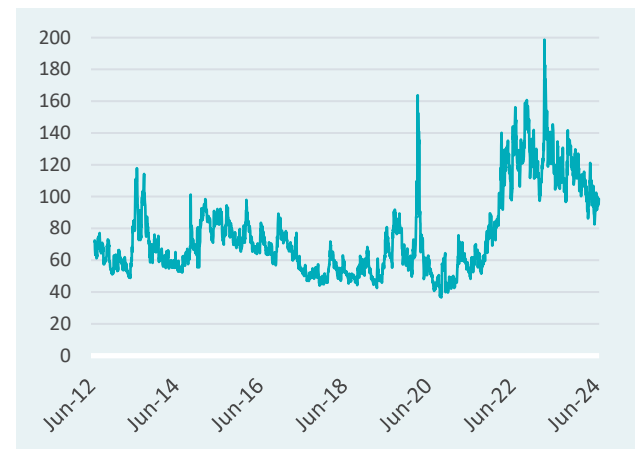
Source: Cboe, as of 6/30/24

REALIZED VOLATILITY



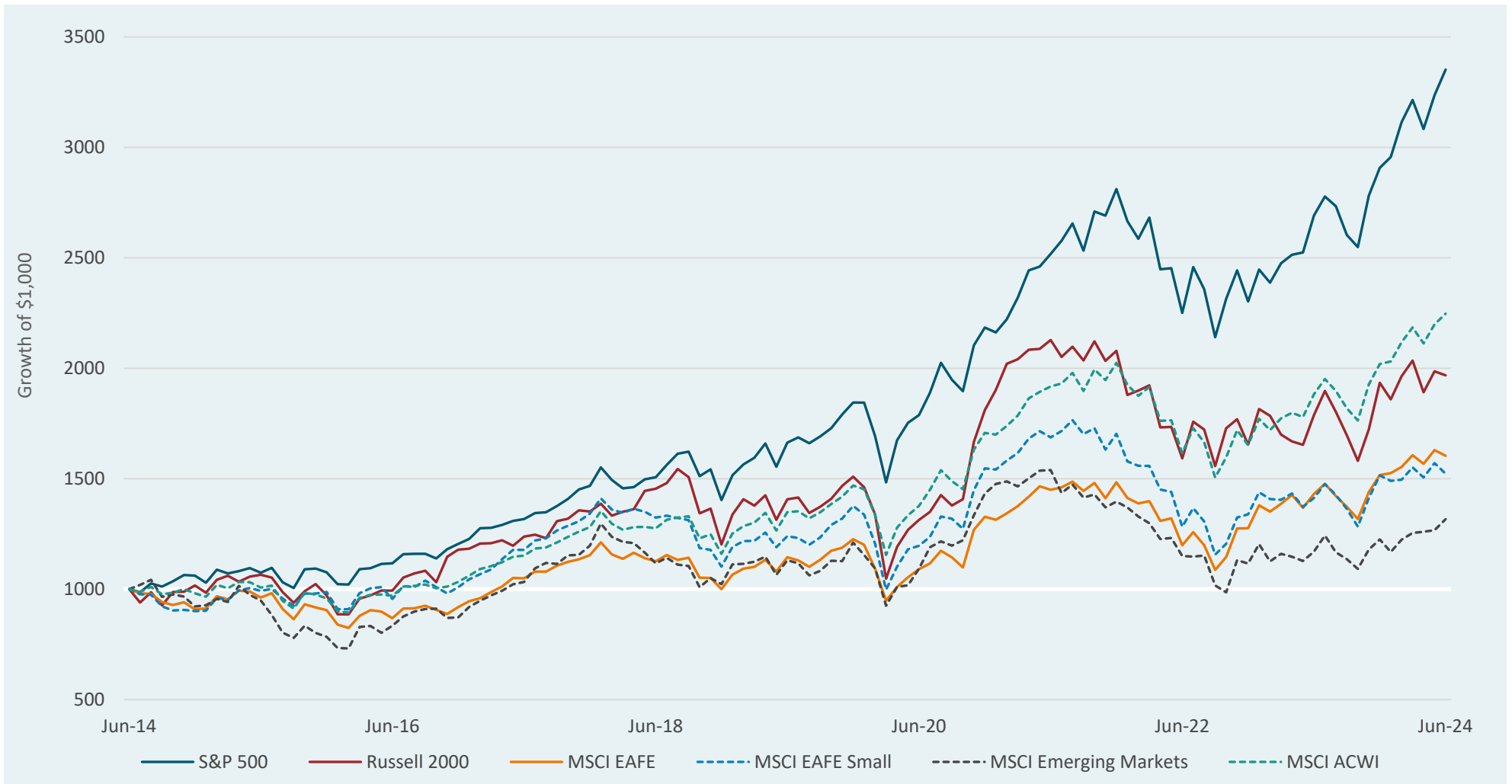
Source: S&P, MSCI, as of 6/30/24

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



Source: Bloomberg, as of 6/30/24

Long-term equity performance



Source: MPI, as of 6/30/24

Other assets

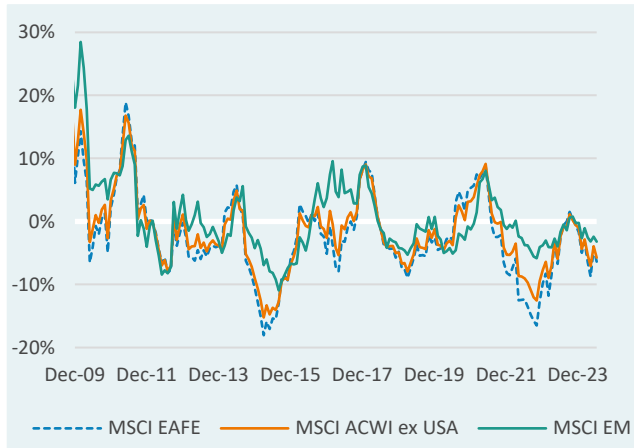
Currency

The U.S. dollar rose modestly in value during Q2, resulting in losses for investors with unhedged foreign currency exposure. Given that the Federal Reserve is expected to engage in similar sized rate cuts as other developed central banks, it is unclear the extent to which the *rate cutting path* will impact relative currency valuations. Unexpected central bank actions will likely have the greatest directional impact in the future.

Investors without a currency hedging program lost -1.2% from their international developed equity exposure (MSCI EAFE) during Q2 due to currency movements and -7.0% over the past year. Losses from unhedged Japanese currency exposure have once again been extreme (-7.3% over the quarter, -19.8% over the past year, based on the TOPIX Index), while unhedged European equity exposure losses due to currency were milder (-1.1% over the quarter, -4.3% over the past year, EURO Stoxx 50 Index).

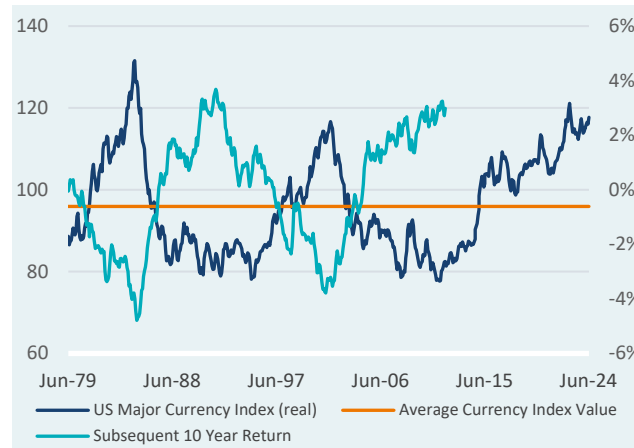
A more thoughtful portfolio approach to currency exposure has provided the dual benefit of lower portfolio volatility and also higher returns—a rare proposition in markets. This approach involves reducing the uncompensated risk of unhedged foreign currency exposure, and instead of unhedged exposure, 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 is testament to this approach, this program would have far outperformed unhedged currency exposure, and with much less volatility.

EFFECT OF CURRENCY (1-YEAR ROLLING)



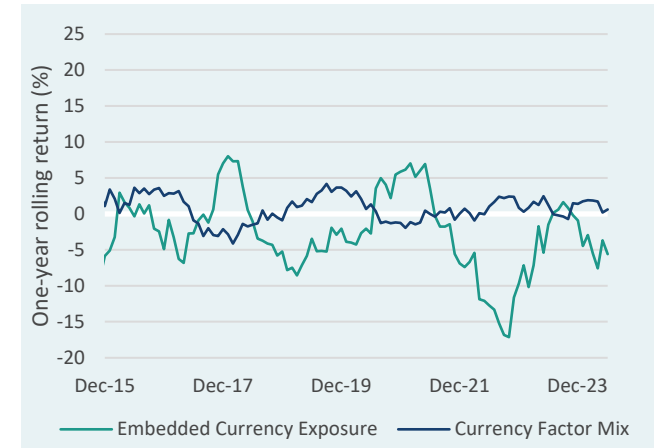
Source: MSCI, as of 6/30/24

U.S. DOLLAR MAJOR CURRENCY INDEX



Source: Bloomberg, as of 6/30/24

EMBEDDED CURRENCY VS CURRENCY FACTORS



Source: Bloomberg, MSCI, as of 6/30/24

Appendix

Periodic table of returns

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	5-Year	10-Year
Large Cap Growth	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	38.5	28.3	16.1	42.7	20.7	19.3	16.3
Large Cap Equity	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	31.4	34.6	27.6	9.4	26.5	14.2	14.6	12.5
Emerging Markets Equity	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	28.5	21.0	27.1	1.5	18.7	7.5	9.0	8.2
Large Cap Value	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	26.5	20.0	26.5	-4.7	18.2	6.6	7.2	7.4
International Equity	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	25.5	18.3	25.2	-7.5	16.9	5.3	7.1	7.0
60/40 Global Portfolio	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	22.4	14.0	17.7	-13.0	15.4	5.3	6.9	6.4
Commodities	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	22.0	10.3	14.8	-14.5	14.6	5.1	6.5	6.2
Hedge Funds of Funds	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	18.6	7.8	11.3	-14.5	11.5	4.6	6.2	5.0
Small Cap Growth	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	18.4	7.5	8.9	-17.3	9.8	4.4	5.7	4.3
Cash	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	8.7	4.6	6.5	-19.1	6.3	2.6	4.8	3.5
Small Cap Equity	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	7.8	2.8	2.8	-20.1	5.5	1.7	3.8	2.8
US Bonds	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	7.7	0.5	0.0	-20.4	5.0	-0.7	3.1	1.5
Small Cap Value	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	6.4	0.5	-1.5	-26.4	-7.9	-0.8	2.1	1.3
Real Estate	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	2.1	-3.1	-2.5	-29.1	-7.9	-1.0	-0.2	-1.3

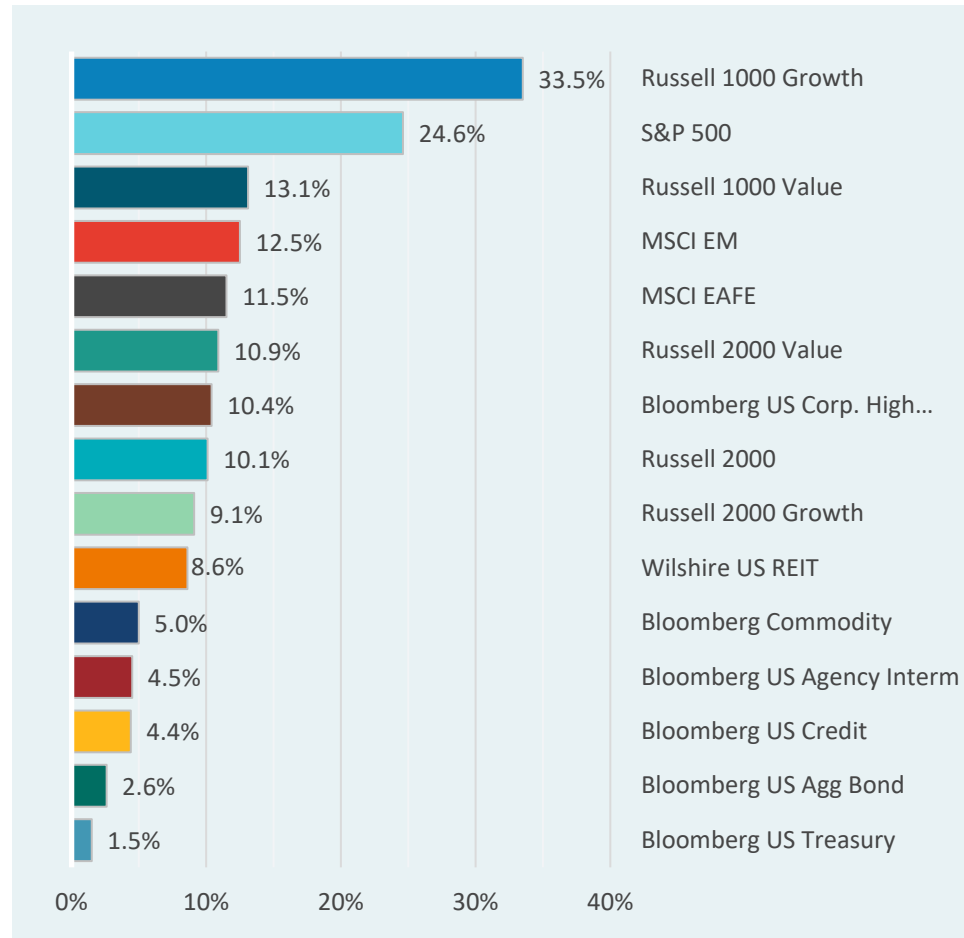
BEST
↑
↓
WORST

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

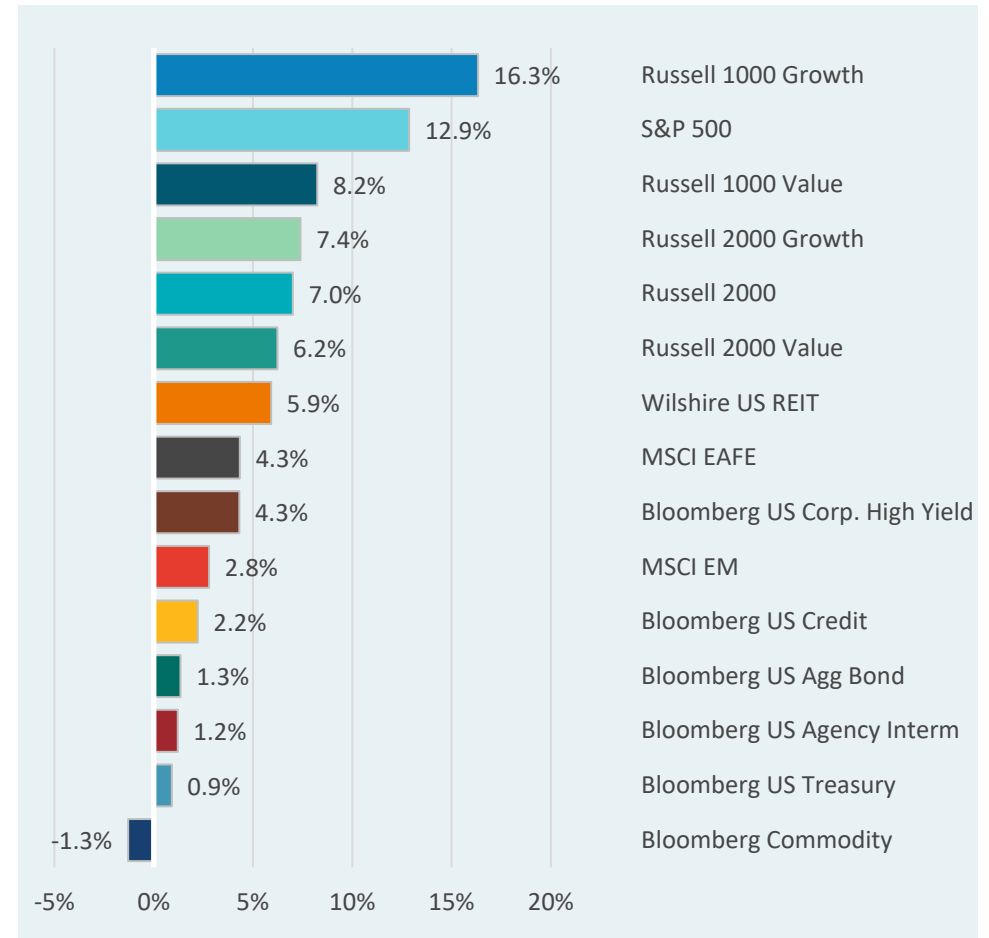
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, Bloomberg Global Bond. NCREIF Property Index performance data as of 12/31/23.

Major asset class returns

ONE YEAR ENDING JUNE



TEN YEARS ENDING JUNE



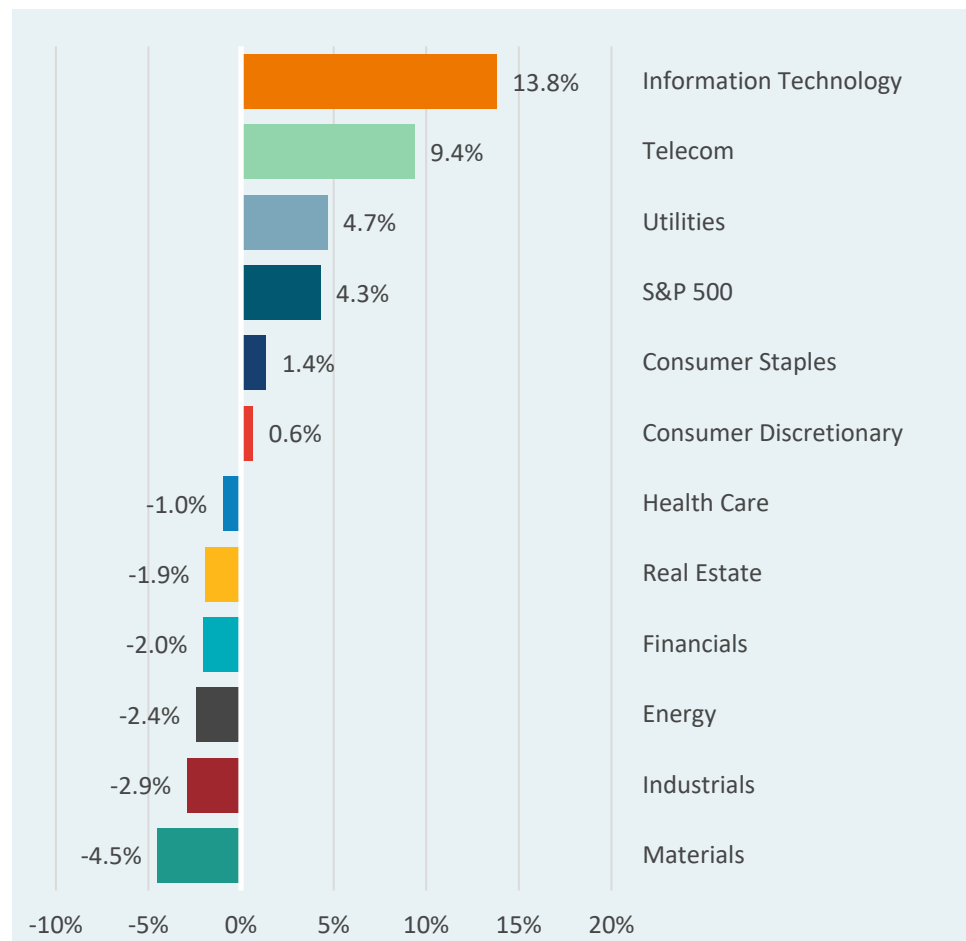
*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 6/30/24

Source: Morningstar, as of 6/30/24

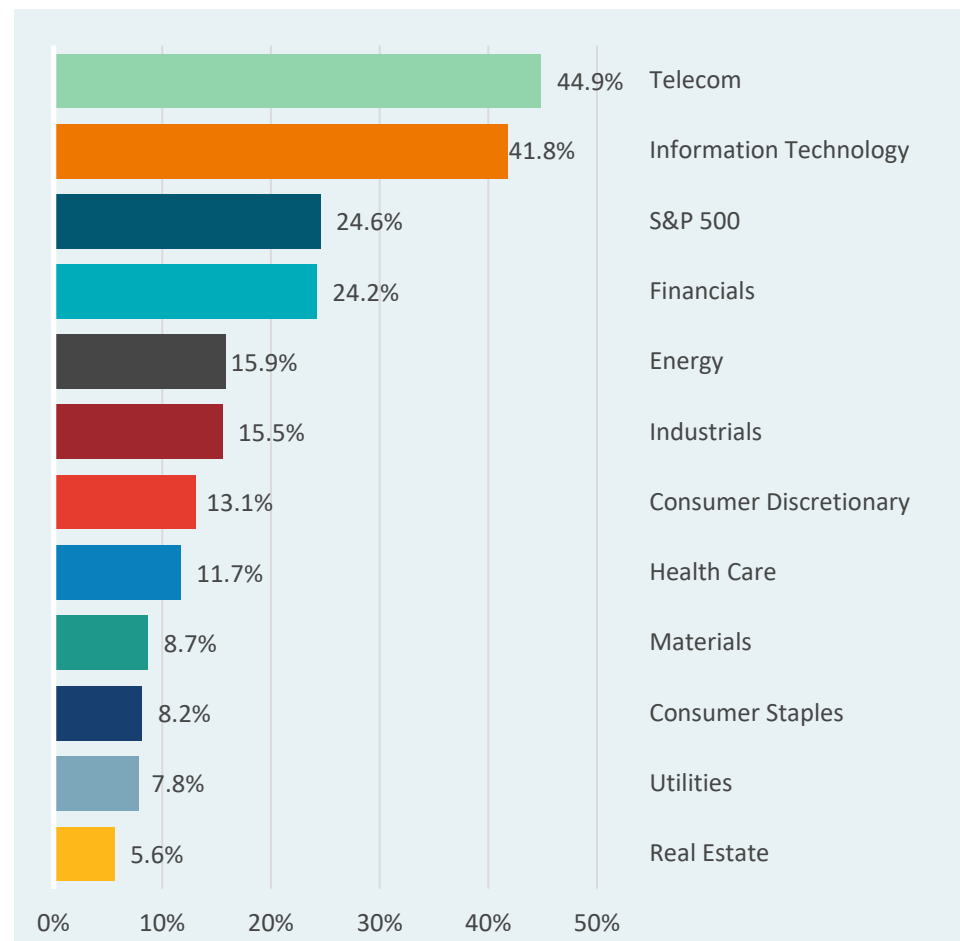
S&P 500 sector returns

QTD



Source: Morningstar, as of 6/30/24

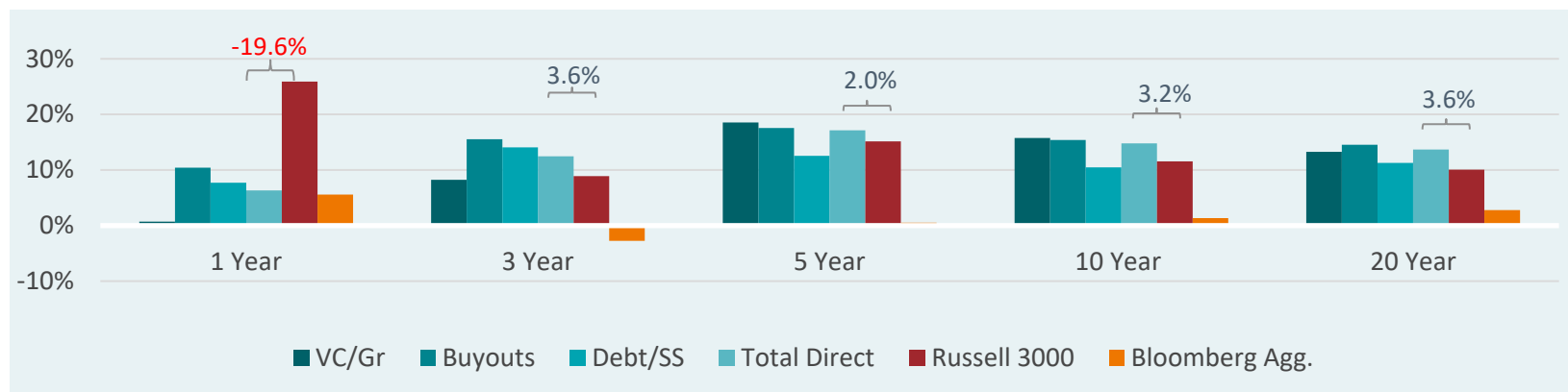
ONE YEAR ENDING JUNE



Source: Morningstar, as of 6/30/24

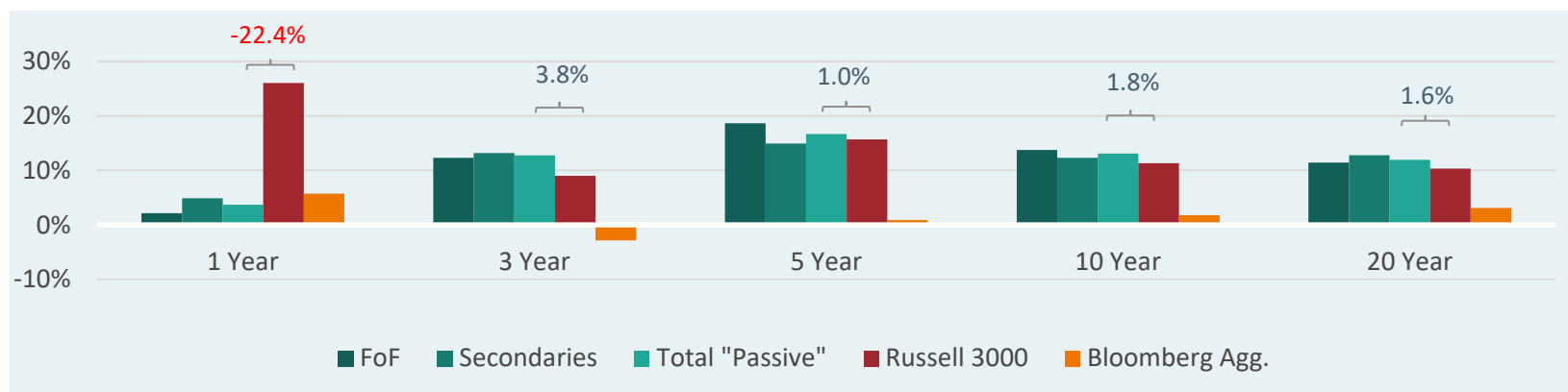
Private equity vs. traditional assets performance

DIRECT PRIVATE EQUITY FUND INVESTMENTS



Direct P.E Fund Investments outperformed comparable public equities across all time periods, aside from the 1-year.

"PASSIVE" STRATEGIES

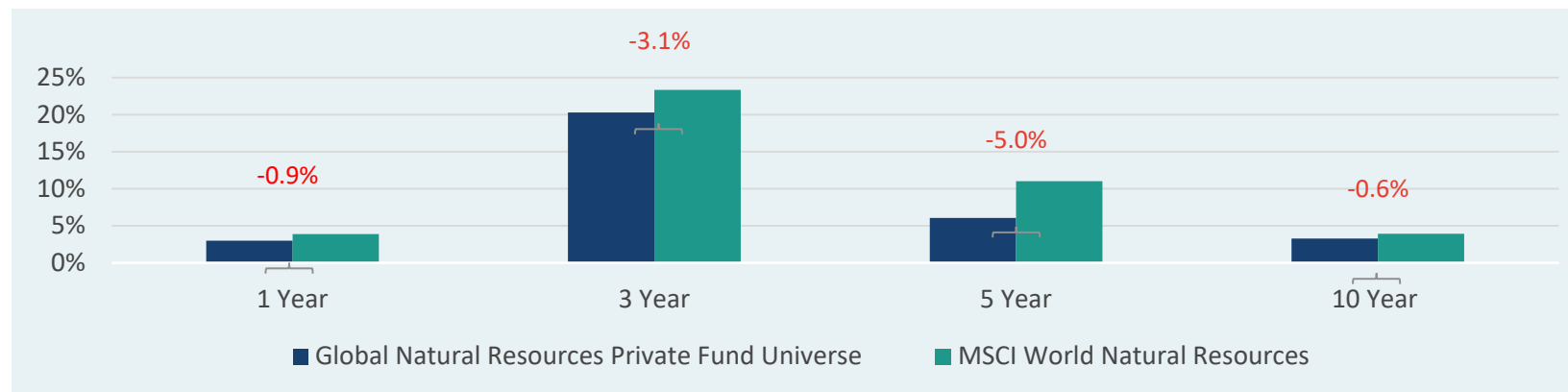


"Passive" strategies outperformed comparable public equities across all time periods, aside from the 1-year.

Sources: Refinitiv PME: U.S. Private Equity Funds sub asset classes as of September 30, 2023. Public Market Equivalent returns resulted from "Total Passive" and Total Direct's identical cash flows invested into and distributed from respective traditional asset comparable.

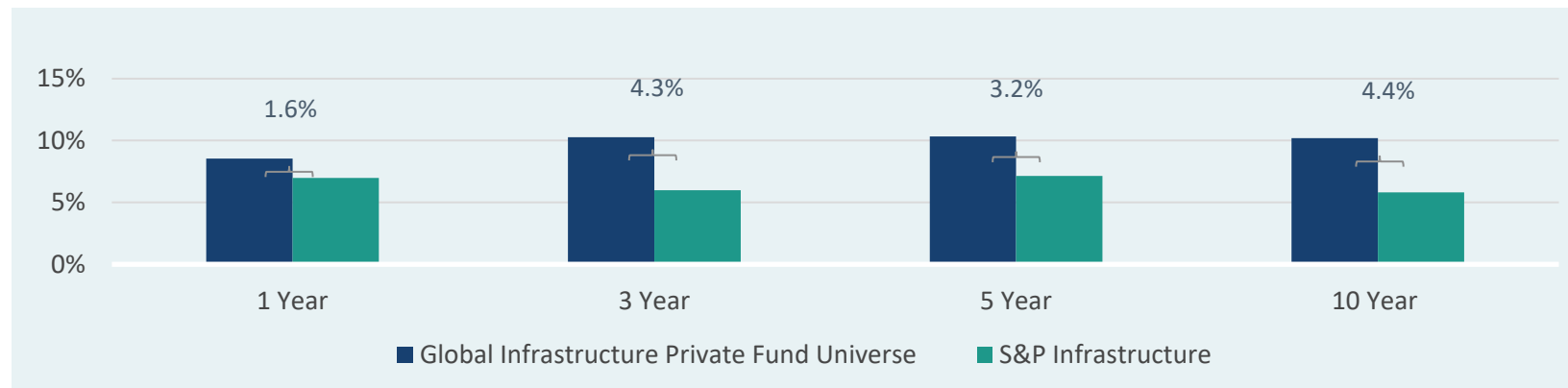
Private vs. liquid real assets performance

GLOBAL NATURAL RESOURCES FUNDS



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

GLOBAL INFRASTRUCTURE FUNDS

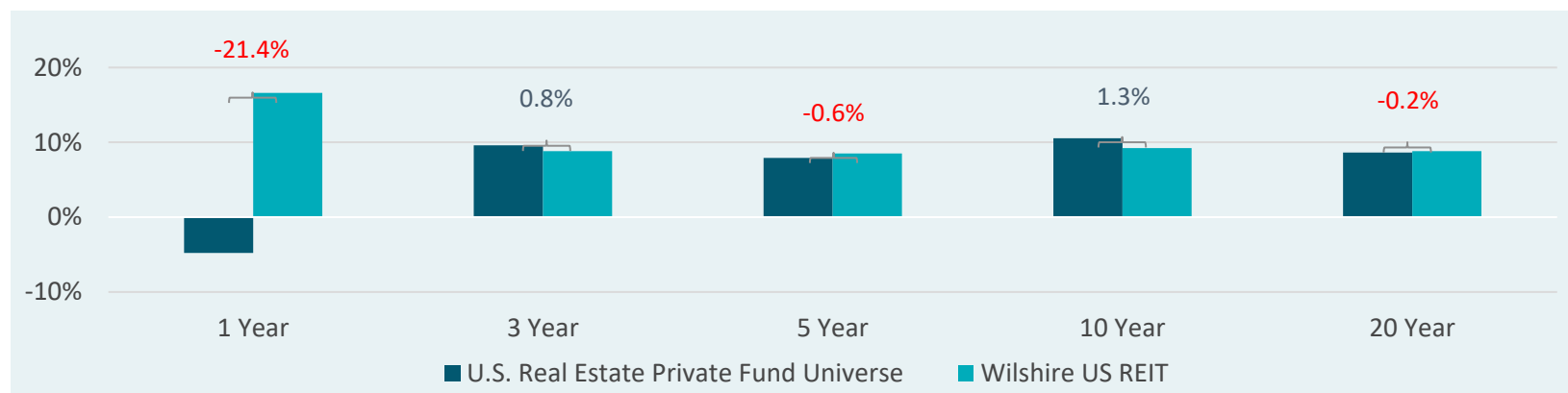


Infra. funds outperformed the S&P Infra. across all periods.

Sources: Refinitiv PME: Global Natural Resources (vintage 1999 and later, inception of MSCI World Natural Resources benchmark) and Global Infrastructure (vintage 2002 and later, inception of S&P Infrastructure benchmark) universes as of September 30, 2023. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

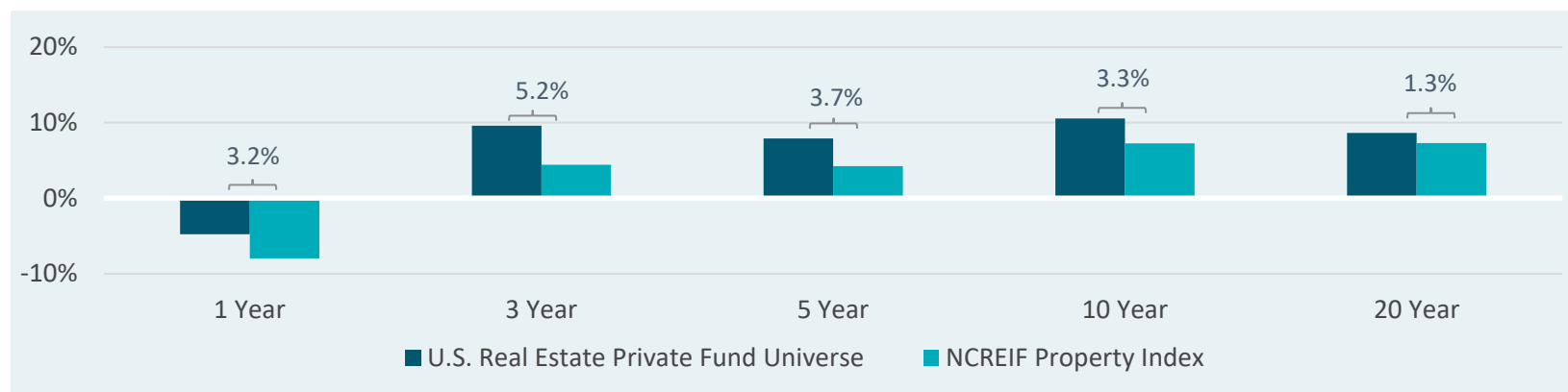
Private vs. liquid and core real estate performance

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



U.S. Private R.E. fund 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: Refinitiv PME: U.S. Real Estate universes as of September 30, 2023. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real estate universes.

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	3.6	4.3	15.3	24.6	10.0	15.0	12.9
S&P 500 Equal Weighted	(0.5)	(2.6)	5.1	11.8	4.8	10.9	10.0
DJ Industrial Average	1.2	(1.3)	4.8	16.0	6.4	10.3	11.3
Russell Top 200	4.5	5.7	17.2	27.4	10.9	16.4	13.8
Russell 1000	3.3	3.6	14.2	23.9	8.7	14.6	12.5
Russell 2000	(0.9)	(3.3)	1.7	10.1	(2.6)	6.9	7.0
Russell 3000	3.1	3.2	13.6	23.1	8.1	14.1	12.1
Russell Mid Cap	(0.7)	(3.3)	5.0	12.9	2.4	9.5	9.0
Style Index							
Russell 1000 Growth	6.7	8.3	20.7	33.5	11.3	19.3	16.3
Russell 1000 Value	(0.9)	(2.2)	6.6	13.1	5.5	9.0	8.2
Russell 2000 Growth	(0.2)	(2.9)	4.4	9.1	(4.9)	6.2	7.4
Russell 2000 Value	(1.7)	(3.6)	(3.6)	10.9	(0.5)	7.1	6.2

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	2.2	2.9	11.3	19.4	5.4	10.8	8.4
MSCI ACWI ex US	(0.1)	1.0	5.7	11.6	0.5	5.5	3.8
MSCI EAFE	(1.6)	(0.4)	5.3	11.5	2.9	6.5	4.3
MSCI EM	3.9	5.0	7.5	12.5	(5.1)	3.1	2.8
MSCI EAFE Small Cap	(3.0)	(1.8)	0.5	7.8	(3.4)	4.2	4.3
Style Index							
MSCI EAFE Growth	(0.4)	(0.8)	6.2	9.4	0.1	6.5	5.4
MSCI EAFE Value	(2.8)	0.0	4.5	13.7	5.5	6.1	3.0
Regional Index							
MSCI UK	(1.8)	3.7	6.9	12.5	6.9	5.7	2.7
MSCI Japan	(0.7)	(4.3)	6.3	13.1	2.3	6.6	5.5
MSCI Euro	(3.3)	(2.8)	5.4	10.1	3.6	7.2	4.1
MSCI EM Asia	5.0	7.4	11.0	15.1	(5.5)	4.6	4.5
MSCI EM Latin American	(6.1)	(12.2)	(15.7)	(5.6)	0.9	0.1	(0.3)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
Bloomberg US TIPS	0.8	0.8	0.7	2.7	(1.3)	2.1	1.9
Bloomberg US Treasury Bills	0.4	1.3	2.6	5.5	3.0	2.2	1.5
Bloomberg US Agg Bond	0.9	0.1	(0.7)	2.6	(3.0)	(0.2)	1.3
Bloomberg US Universal	0.9	0.2	(0.3)	3.5	(2.7)	0.1	1.6
Duration							
Bloomberg US Treasury 1-3 Yr	0.6	0.9	1.2	4.5	0.3	1.0	1.1
Bloomberg US Treasury Long	1.7	(1.8)	(5.0)	(5.6)	(10.5)	(4.3)	0.6
Bloomberg US Treasury	1.0	0.1	(0.9)	1.5	(3.3)	(0.7)	0.9
Issuer							
Bloomberg US MBS	1.2	0.1	(1.0)	2.1	(2.9)	(0.8)	0.9
Bloomberg US Corp. High Yield	0.9	1.1	2.6	10.4	1.6	3.9	4.3
Bloomberg US Agency Interim	0.7	0.8	1.0	4.5	(0.5)	0.6	1.2
Bloomberg US Credit	0.7	(0.0)	(0.5)	4.4	(2.9)	0.5	2.2

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	(1.5)	2.9	5.1	5.0	5.7	7.2	(1.3)
Wilshire US REIT	3.0	(0.2)	(0.3)	8.6	0.3	4.0	5.9
CS Leveraged Loans	0.3	1.9	4.4	11.0	6.0	5.4	4.6
S&P Global Infrastructure	(2.9)	2.7	4.0	7.0	5.6	4.3	4.6
Alerian MLP	4.7	3.8	19.2	34.2	22.3	11.1	1.9
Regional Index							
JPM EMBI Global Div	0.6	0.3	2.3	9.2	(3.5)	0.6	3.2
JPM GBI-EM Global Div	(1.1)	(1.6)	0.7	0.7	(3.3)	(1.3)	(0.9)
Hedge Funds							
HFRI Composite	(0.2)	0.4	4.8	9.6	2.8	6.6	4.8
HFRI FOF Composite	0.1	0.4	4.6	8.4	2.0	4.8	3.5
Currency (Spot)							
Euro	(1.3)	(1.8)	(3.0)	(1.8)	(3.3)	(1.2)	(2.4)
Pound Sterling	(0.7)	0.3	(0.8)	(0.6)	(2.9)	(0.1)	(3.0)
Yen	(2.3)	(10.1)	(12.4)	(10.2)	(11.6)	(7.7)	(4.5)

Source: Morningstar, HFRI, as of 6/30/24

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)

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

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

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

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Kern County Employees' Retirement Association

Investment Performance Review

Period Ending: June 30, 2024



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LOS ANGELES 310.297.1777
SAN FRANCISCO 415.362.3484

Total Fund
Portfolio Reconciliation

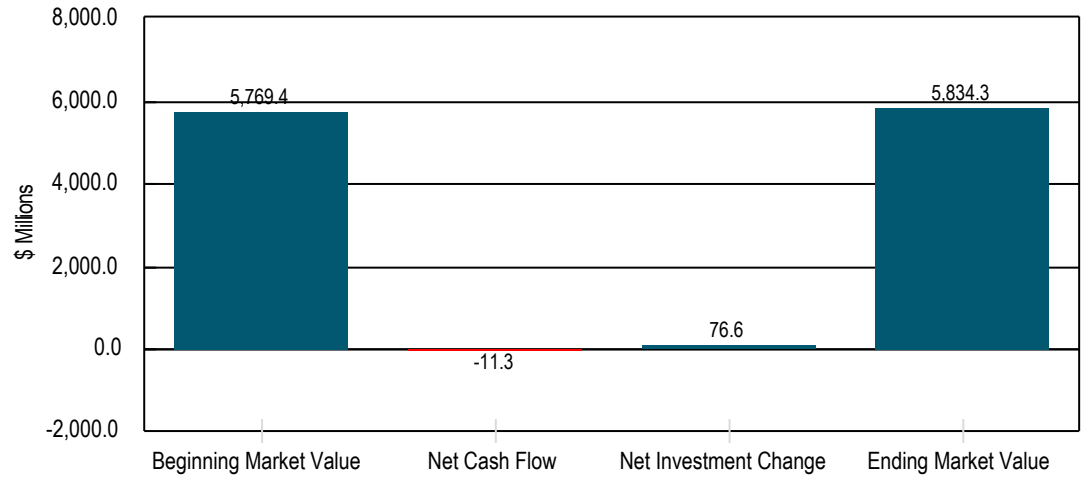
Kern County Employees' Retirement Association
Period Ending: June 30, 2024

Portfolio Reconciliation

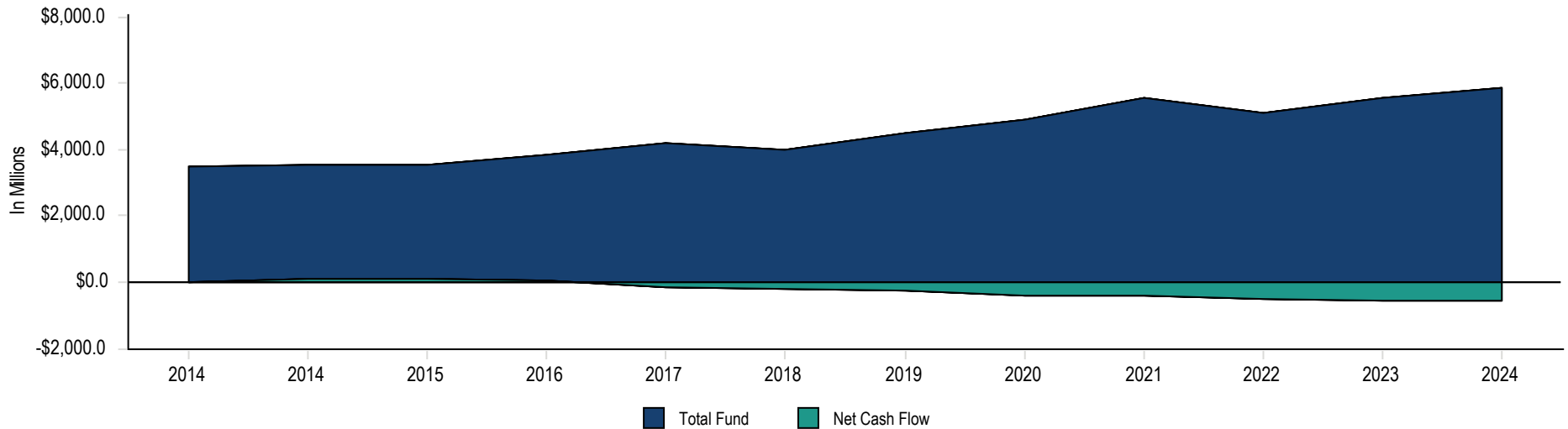
Last Three Months

Beginning Market Value	\$5,769,420,481
Net Cash Flows	-\$11,254,346
Net Investment Change	\$76,602,006
Ending Market Value	\$5,834,270,434

Change in Market Value
Last Three Months



Market Value History



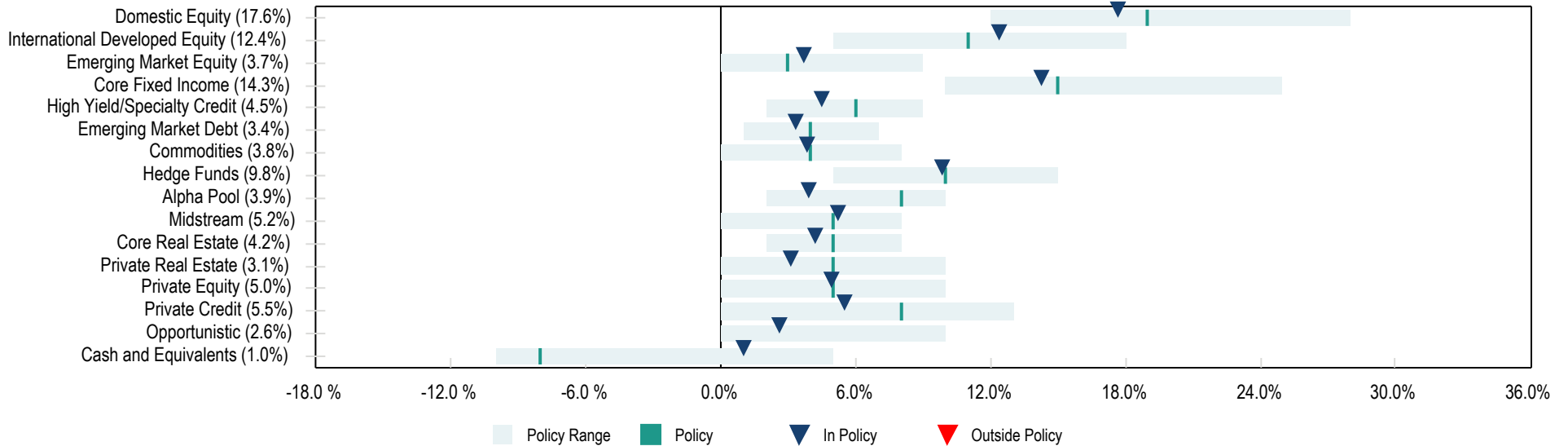
Total Fund

Asset Allocation vs. Policy

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

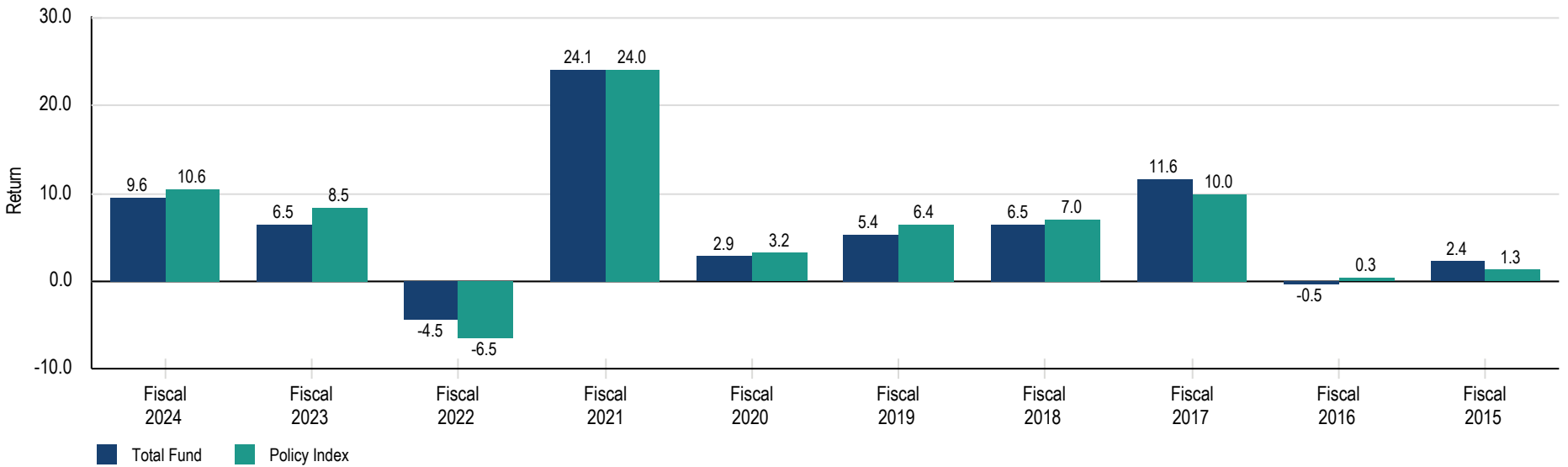
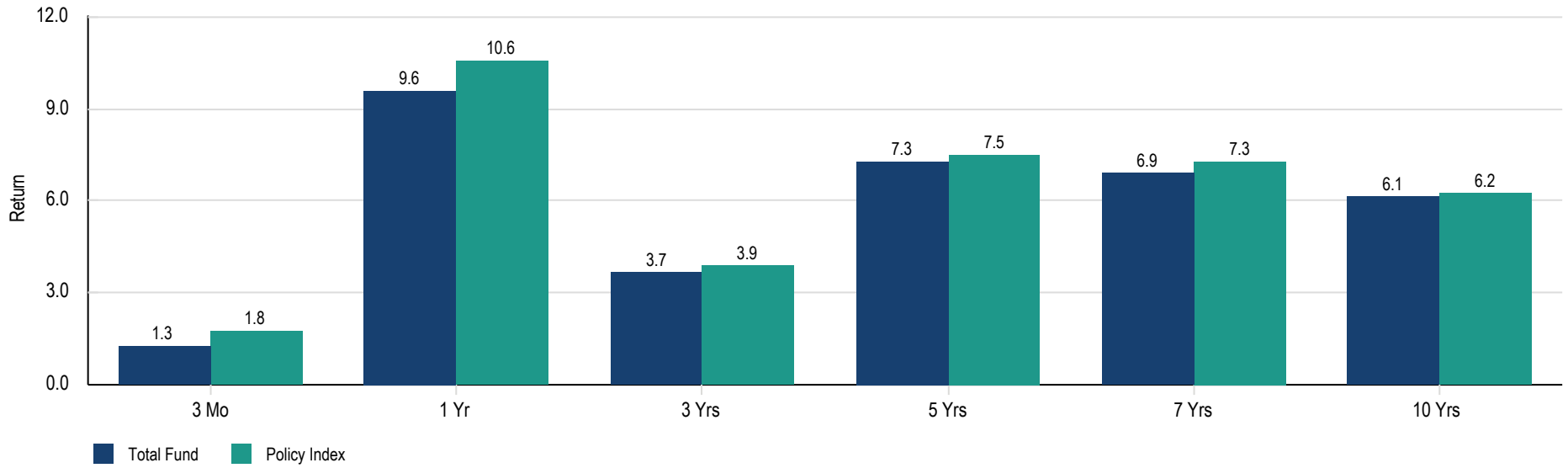
	Current Balance (\$)	Current Allocation (%)	Policy Allocation (%)	Excess Allocation (%)	Policy Range (%)	Within IPS Range?
Equity	1,967,821,735	33.7	33.0	0.7	23.0 - 45.0	Yes
Fixed Income	1,290,646,469	22.1	25.0	-2.9	15.0 - 35.0	Yes
Core Real Estate	245,562,202	4.2	5.0	-0.8	2.0 - 8.0	Yes
Hedge Funds	574,408,314	9.8	10.0	-0.2	5.0 - 15.0	Yes
Alpha Pool	228,281,533	3.9	8.0	-4.1	2.0 - 10.0	Yes
Private Equity	269,203,109	4.6	5.0	-0.4	0.0 - 10.0	Yes
Private Credit	339,602,834	5.8	8.0	-2.2	0.0 - 13.0	Yes
Private Real Estate	180,655,798	3.1	5.0	-1.9	0.0 - 10.0	Yes
Commodities	224,267,766	3.8	4.0	-0.2	0.0 - 8.0	Yes
Opportunistic	150,814,814	2.6	0.0	2.6	0.0 - 10.0	Yes
Midstream	302,472,317	5.2	5.0	0.2	0.0 - 8.0	Yes
Cash and Equivalents	60,533,543	1.0	-8.0	9.0	-10.0 - 5.0	Yes
Total	5,834,270,434	100.0	100.0	0.0		

Executive Summary



Total Fund
Performance vs. Policy (Net of Fees)

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



Total Fund
Executive Summary (Gross of Fees)

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

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2023	Fiscal 2022	Fiscal 2021	Fiscal 2020	Fiscal 2019
Total Fund	5,834,270,434	100.0	1.4	9.8	9.8	4.0	7.6	6.5	6.7	-4.2	24.4	3.2	5.7
<i>Policy Index</i>			1.8	10.6	10.6	3.9	7.5	6.2	8.5	-6.5	24.0	3.2	6.4
<i>InvMetrics Public DB > \$1B Rank</i>			29	53	53	29	41	52	71	35	86	24	65
Equity	1,967,821,735	33.7	1.9	17.1	17.1	4.9	10.4	9.0	15.9	-14.9	41.2	0.7	5.3
<i>MSCI AC World IMI Index (Net)</i>			2.4	18.4	18.4	4.7	10.4	8.2	16.1	-16.5	40.9	1.2	4.6
Domestic Equity	1,029,665,533	17.6	3.3	22.4	22.4	8.3	14.1	12.7	17.8	-12.0	43.6	6.3	9.2
<i>MSCI USA IMI</i>			3.4	23.3	23.3	8.2	14.3	12.3	19.2	-13.7	44.4	6.7	9.0
International Developed Equity	724,007,149	12.4	-1.1	11.0	11.0	2.5	6.9	5.3	17.2	-17.2	37.0	-5.5	-0.6
<i>MSCI World ex U.S. IMI Index (Net)</i>			-0.7	10.8	10.8	2.0	6.3	4.2	16.3	-17.7	34.8	-5.1	0.2
Emerging Markets Equity	214,147,831	3.7	5.5	14.2	14.2	-1.9	3.4	3.0	5.3	-21.4	40.6	-10.9	0.4
<i>MSCI Emerging Markets IMI (Net)</i>			5.1	13.6	13.6	-4.1	3.9	3.1	3.2	-24.8	43.2	-4.0	0.5
Fixed Income	1,290,646,469	22.1	0.3	4.2	4.2	-2.1	1.1	2.1	3.1	-12.7	5.4	6.6	7.9
<i>Fixed Income Custom Benchmark</i>			0.3	4.8	4.8	-1.9	0.7	1.9	1.9	-11.6	4.0	5.2	8.4
Core Fixed Income	831,879,960	14.3	0.1	2.5	2.5	-3.4	-0.1	1.6	-0.9	-11.2	1.0	9.5	8.0
<i>Bloomberg U.S. Aggregate Index</i>			0.1	2.6	2.6	-3.0	-0.2	1.3	-0.9	-10.3	-0.3	8.7	7.9
High Yield/ Specialty Credit	262,323,475	4.5	1.7	8.0	8.0	1.7	3.7	3.4	7.9	-9.7	13.6	0.0	7.5
<i>ICE BofA U.S. High Yield Index</i>			1.1	10.4	10.4	1.6	3.7	4.2	8.9	-12.7	15.6	-1.1	7.6
Emerging Market Debt	196,200,032	3.4	-0.7	6.4	6.4	-1.5	0.6	1.0	11.7	-19.6	9.4	-1.2	8.5
<i>50 JPM EMBI Global Div / 50 JPM GBI EM Global Div</i>			-0.7	4.9	4.9	-2.9	-0.6	0.9	9.4	-20.2	7.1	-1.1	10.8
Commodities	224,267,766	3.8	2.6	14.6	14.6	8.8	10.6	1.1	-6.3	20.1	43.5	-10.7	-6.2
<i>Bloomberg Commodity Index Total Return</i>			2.9	5.0	5.0	5.7	7.2	-1.3	-9.6	24.3	45.6	-17.4	-6.8
Hedge Funds	574,408,314	9.8	1.7	9.2	9.2	6.2	8.4	6.3	6.9	2.8	16.3	7.3	2.6
<i>75% 3-Month Treasury Bill +3% / 25% MSCI ACWI IMI (Net)</i>			2.3	11.5	11.5	6.8	7.5	6.5	10.1	-0.9	12.3	5.1	6.6
Alpha Pool	228,281,533	3.9	-0.4	0.7	0.7	0.5	-	-	-0.9	1.5	14.5	-	-
<i>3-Month Treasury Bill +3%</i>			2.1	8.6	8.6	6.1	-	-	6.7	3.2	3.1	-	-
Midstream Energy	302,472,317	5.2	5.0	30.6	30.6	19.8	-	-	20.1	9.6	-	-	-
<i>Alerian Midstream Energy Index</i>			5.4	26.7	26.7	16.5	-	-	12.2	11.4	-	-	-
Core Real Estate	245,562,202	4.2	-3.5	-19.3	-19.3	-3.7	-0.5	-	-11.9	25.6	6.6	2.3	6.1
<i>NCREIF ODCE</i>			-0.4	-9.3	-9.3	1.9	3.2	6.4	-10.0	29.5	8.0	2.2	6.4
Private Real Estate	180,655,798	3.1	-2.0	-6.4	-6.4	9.9	9.2	10.8	7.9	31.3	12.1	4.4	9.0
			-2.0	-6.4	-6.4	9.9	9.2	10.8	7.9	31.3	12.1	4.4	9.0
Private Equity	269,203,109	4.6	2.4	11.9	11.9	11.0	11.7	10.6	-0.6	23.0	41.7	-10.5	10.9
			2.4	11.9	11.9	11.0	11.7	10.6	-0.6	23.0	41.7	-10.5	10.9
Private Credit	339,602,834	5.8	4.1	13.2	13.2	5.7	5.5	-	3.2	1.2	4.8	5.5	9.7
			4.1	13.2	13.2	5.7	5.5	-	3.2	1.2	4.8	5.5	9.7

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 Estate 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: June 30, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2023	Fiscal 2022	Fiscal 2021	Fiscal 2020	Fiscal 2019
Opportunistic	150,814,814	2.6	-0.2	2.5	2.5	-0.8	-	-	0.6	-5.4	59.9	-	-
<i>Assumed Rate of Return +3%</i>			2.4	10.0	10.0	10.0	-	-	10.0	10.0	10.0	-	-
Cash	433,731,277	7.4	1.5	6.4	6.4	2.8	1.9	2.1	2.3	-0.2	0.1	1.0	2.0
<i>3 Month T-Bill</i>			1.3	5.4	5.4	3.0	2.2	1.5	3.6	0.2	0.1	1.6	2.3

Performance and Attribution

Total Fund
Performance (Net of Fees)

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

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2023	Fiscal 2022	Fiscal 2021	Fiscal 2020	Fiscal 2019	Inception	Inception Date
Total Fund	5,834,270,434	100.0	1.3	9.6	9.6	3.7	7.3	6.1	6.5	-4.5	24.1	2.9	5.4	6.7	Jun-11
<i>Policy Index</i>			1.8	10.6	10.6	3.9	7.5	6.2	8.5	-6.5	24.0	3.2	6.4	6.7	
Equity	1,967,821,735	33.7	1.8	16.9	16.9	4.7	10.1	8.7	15.7	-15.1	40.7	0.3	4.8	9.4	Jun-11
<i>MSCI AC World IMI Index (Net)</i>			2.4	18.4	18.4	4.7	10.4	8.2	16.1	-16.5	40.9	1.2	4.6	8.8	
Domestic Equity	1,029,665,533	17.6	3.2	22.1	22.1	8.0	13.9	12.3	17.6	-12.2	43.2	6.0	8.8	12.3	Jul-14
<i>MSCI USA IMI</i>			3.4	23.3	23.3	8.2	14.3	12.3	19.2	-13.7	44.4	6.7	9.0	12.3	
Equity Beta Exposure	51,902,100	0.9	4.2	24.1	24.1	9.6	-	-	19.2	-11.0	-	-	-	15.3	Aug-20
<i>S&P 500 Index</i>			4.3	24.6	24.6	10.0	-	-	19.6	-10.6	-	-	-	15.8	
Mellon DB SL Stock Index Fund	667,508,966	11.4	4.3	24.5	24.5	10.0	15.0	-	19.6	-10.6	40.8	7.5	10.4	14.0	Oct-17
<i>S&P 500 Index</i>			4.3	24.6	24.6	10.0	15.0	-	19.6	-10.6	40.8	7.5	10.4	13.9	
PIMCO StocksPLUS	146,190,170	2.5	4.2	25.6	25.6	9.2	14.7	12.7	18.8	-12.8	41.7	7.7	10.6	11.3	Jul-03
<i>S&P 500 Index</i>			4.3	24.6	24.6	10.0	15.0	12.9	19.6	-10.6	40.8	7.5	10.4	10.6	
AB US Small Cap Value Equity	105,688,442	1.8	-2.5	9.1	9.1	-1.5	6.4	-	4.3	-16.1	77.5	-19.4	-6.9	6.6	Jul-15
<i>Russell 2000 Value Index</i>			-3.6	10.9	10.9	-0.5	7.1	-	6.0	-16.3	73.3	-17.5	-6.2	6.9	
Geneva Capital Small Cap Growth	58,375,855	1.0	-1.2	9.8	9.8	-0.4	8.2	-	15.6	-22.1	37.6	9.3	8.6	10.1	Jul-15
<i>Russell 2000 Growth Index</i>			-2.9	9.1	9.1	-4.9	6.2	-	18.5	-33.4	51.4	3.5	-0.5	6.7	
International Developed Equity	724,007,149	12.4	-1.1	10.9	10.9	2.4	6.7	5.0	17.1	-17.3	36.7	-5.7	-0.9	5.0	Jul-14
<i>MSCI World ex U.S. IMI Index (Net)</i>			-0.7	10.8	10.8	2.0	6.3	4.2	16.3	-17.7	34.8	-5.1	0.2	4.2	
Mellon DB SL World ex-US Index Fund	436,964,367	7.5	-0.3	11.7	11.7	3.4	7.2	-	17.9	-16.1	35.6	-5.5	-	6.2	Jul-18
<i>MSCI World ex U.S. IMI Index (Net)</i>			-0.7	10.8	10.8	2.0	6.3	-	16.3	-17.7	34.8	-5.1	0.2	5.1	
Cevian Capital II	47,349,726	0.8	1.5	21.8	21.8	11.9	13.6	-	25.3	-8.2	46.8	-8.2	-5.0	8.9	Dec-14
<i>MSCI Europe (Net)</i>			0.5	11.7	11.7	3.9	7.1	-	21.8	-17.6	35.1	-6.8	1.9	5.5	
Lazard Japanese Equity	118,573,007	2.0	-4.0	-	-	-	-	-	-	-	-	-	-	18.7	Nov-23
<i>TOPIX Net Total Return Index</i>			-4.3	-	-	-	-	-	-	-	-	-	-	15.4	
American Century Non-US Small Cap	64,559,071	1.1	-1.2	8.3	8.3	-5.3	-	-	7.9	-27.4	-	-	-	-0.6	Dec-20
<i>MSCI World ex U.S. Small Cap Growth Index (Net)</i>			-1.3	5.6	5.6	-6.2	-	-	9.5	-28.6	-	-	-	-2.1	
Dalton Japan Long Only	56,560,978	1.0	-3.2	-	-	-	-	-	-	-	-	-	-	13.1	Oct-23
<i>MSCI Japan Small Cap Index (Net)</i>			-5.8	-	-	-	-	-	-	-	-	-	-	10.8	
Emerging Markets Equity	214,147,831	3.7	5.5	13.8	13.8	-2.4	2.7	2.2	4.6	-21.9	39.5	-11.8	-0.6	2.2	Jul-14
<i>MSCI Emerging Markets IMI (Net)</i>			5.1	13.6	13.6	-4.1	3.9	3.1	3.2	-24.8	43.2	-4.0	0.5	3.1	
DFA Emerging Markets Value I	95,168,458	1.6	5.9	16.7	16.7	3.1	5.9	3.9	7.9	-12.9	47.6	-17.7	2.0	5.0	Mar-14
<i>MSCI Emerging Markets Value (Net)</i>			5.1	14.1	14.1	-1.1	2.9	2.0	4.1	-18.6	41.6	-15.7	5.0	2.9	
Mellon Emerging Markets Stock Index Fund	118,979,373	2.0	5.1	12.0	12.0	-5.4	-	-	1.6	-25.5	41.1	-	-	4.4	Jun-20
<i>MSCI Emerging Markets (Net)</i>			5.0	12.5	12.5	-5.1	-	-	1.7	-25.3	40.9	-	-	6.5	
Fixed Income	1,290,646,469	22.1	0.2	3.9	3.9	-2.4	0.8	1.8	2.9	-13.0	5.1	6.3	7.6	3.2	Jun-10
<i>Fixed Income Custom Benchmark</i>			0.3	4.8	4.8	-1.9	0.7	1.9	1.9	-11.6	4.0	5.2	8.4	3.0	
Core Fixed Income	831,879,960	14.3	0.1	2.4	2.4	-3.5	-0.2	1.5	-1.0	-11.4	0.8	9.3	7.9	1.5	Jul-14
<i>Bloomberg U.S. Aggregate Index</i>			0.1	2.6	2.6	-3.0	-0.2	1.3	-0.9	-10.3	-0.3	8.7	7.9	1.3	
Fixed Income Beta Exposure	410,419,101	7.0	0.2	1.7	1.7	-	-	-	-2.5	-	-	-	-	0.7	Jun-22
<i>Bloomberg U.S. Aggregate Index</i>			0.1	2.6	2.6	-	-	-	-0.9	-	-	-	-	0.0	
Mellon DB SL Aggregate Bond Index Fund	165,322,237	2.8	0.1	2.6	2.6	-3.1	-0.3	1.3	-0.9	-10.4	-0.4	8.8	7.9	2.0	Jan-11
<i>Bloomberg U.S. Aggregate Index</i>			0.1	2.6	2.6	-3.0	-0.2	1.3	-0.9	-10.3	-0.3	8.7	7.9	2.0	
PIMCO Core Plus	170,839,344	2.9	0.0	3.6	3.6	-2.5	0.4	1.6	-0.7	-9.9	1.1	8.7	6.3	2.3	Feb-11
<i>Bloomberg U.S. Aggregate Index</i>			0.1	2.6	2.6	-3.0	-0.2	1.3	-0.9	-10.3	-0.3	8.7	7.9	2.0	

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 Estate 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: June 30, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2023	Fiscal 2022	Fiscal 2021	Fiscal 2020	Fiscal 2019	Inception	Inception Date
Western Asset Core Plus	85,299,278	1.5	-0.4	2.7	2.7	-4.0	-0.2	1.8	0.8	-14.5	2.4	9.3	9.4	3.7	Jun-04
<i>Bloomberg U.S. Aggregate Index</i>			0.1	2.6	2.6	-3.0	-0.2	1.3	-0.9	-10.3	-0.3	8.7	7.9	3.1	
High Yield/ Specialty Credit	262,323,475	4.5	1.6	7.5	7.5	1.3	3.2	3.0	7.5	-10.2	13.1	-0.5	7.0	3.0	Jul-14
<i>ICE BofA U.S. High Yield Index</i>			1.1	10.4	10.4	1.6	3.7	4.2	8.9	-12.7	15.6	-1.1	7.6	4.2	
Western Asset High Yield Fixed Income	170,032,306	2.9	1.3	10.0	10.0	1.2	3.4	3.7	9.5	-14.1	16.5	-2.2	8.3	6.0	Jun-05
<i>Bloomberg US HY Ba/B 2% Cap TR</i>			1.2	10.0	10.0	1.6	3.9	4.3	8.9	-12.4	13.4	2.1	8.8	6.2	
TCW Securitized Opportunities	92,291,169	1.6	2.0	3.1	3.1	1.1	2.3	-	4.4	-4.0	6.4	2.2	5.2	3.4	Feb-16
<i>Bloomberg U.S. High Yield - 2% Issuer Cap</i>			1.1	10.4	10.4	1.6	3.9	-	9.1	-12.8	15.3	0.0	7.5	6.3	
Emerging Market Debt	196,200,032	3.4	-0.8	6.0	6.0	-1.9	0.2	0.5	11.2	-19.9	9.1	-1.7	7.9	0.5	Jul-14
<i>50 JPM EMBI Global Div / 50 JPM GBI EM Global Div</i>			-0.7	4.9	4.9	-2.9	-0.6	0.9	9.4	-20.2	7.1	-1.1	10.8	0.9	
Stone Harbor Emerging Markets Debt Blend Portfolio	39,809,109	0.7	-0.7	6.8	6.8	-2.2	0.1	0.6	10.8	-20.9	9.5	-1.8	8.2	0.5	Aug-12
<i>50 JPM GBI-EM Global Div/ 40 JPM EMBI Global Div/ 10 JPM Corporate EM Bond Idx</i>			-0.5	4.9	4.9	-2.7	-0.4	1.0	9.2	-19.5	7.2	-0.8	10.6	1.3	
PIMCO EMD	156,390,923	2.7	-0.9	5.6	5.6	-1.7	-	-	11.3	-19.2	8.7	-	-	-0.3	Feb-20
<i>50 JPM EMBI Global Div / 50 JPM GBI EM Global Div</i>			-0.7	4.9	4.9	-2.9	-	-	9.4	-20.2	7.1	-	-	-1.6	
Commodities	224,267,766	3.8	2.4	13.7	13.7	8.1	9.8	0.5	-7.0	19.4	42.5	-11.3	-6.7	0.8	Jul-13
<i>Bloomberg Commodity Index Total Return</i>			2.9	5.0	5.0	5.7	7.2	-1.3	-9.6	24.3	45.6	-17.4	-6.8	-0.5	
Gresham MTAP Commodity Builder Fund	36,237,197	0.6	2.4	5.9	5.9	5.4	7.5	-0.9	-11.5	24.7	46.8	-16.3	-9.0	-0.3	Oct-13
<i>Bloomberg Commodity Index Total Return</i>			2.9	5.0	5.0	5.7	7.2	-1.3	-9.6	24.3	45.6	-17.4	-6.8	-0.5	
Wellington Commodities	188,030,569	3.2	2.4	15.5	15.5	8.7	10.7	1.5	-5.2	17.2	40.2	-7.5	-5.4	1.6	Sep-13
<i>S&P GSCI Commodity Equal Weighted</i>			1.4	10.4	10.4	7.3	8.8	1.1	-6.0	19.0	40.9	-12.4	-3.5	1.3	
Hedge Funds	574,408,314	9.8	1.6	9.2	9.2	6.2	8.3	5.8	6.8	2.8	16.1	7.0	2.5	6.1	Sep-10
<i>75% 3-Month Treasury Bill +3% / 25% MSCI ACWI IMI (Net)</i>			2.3	11.5	11.5	6.8	7.5	6.5	10.1	-0.9	12.3	5.1	6.6	6.4	
Aristeia International Limited	74,515,835	1.3	0.6	5.1	5.1	4.1	8.3	5.4	5.5	1.8	21.6	8.7	9.2	5.3	May-14
Brevan Howard Fund	55,977,238	1.0	0.6	3.1	3.1	5.5	8.5	7.3	-1.0	15.2	6.1	20.5	12.7	6.8	Sep-13
D.E. Shaw Composite Fund	63,532,971	1.1	1.9	12.9	12.9	17.4	17.3	14.2	11.0	29.0	19.0	15.6	11.5	14.1	Jul-13
HBK Fund II	50,031,498	0.9	1.7	11.1	11.1	7.0	6.7	4.8	7.9	2.3	11.0	1.5	5.5	5.1	Nov-13
Hudson Bay Cap Structure Arbitrage Enhanced Fund	79,731,148	1.4	0.7	4.0	4.0	6.5	9.9	-	7.7	7.7	14.2	16.2	-	9.8	Jun-19
Indus Pacific Opportunities Fund	49,087,530	0.8	1.3	5.8	5.8	-1.1	9.1	6.6	-0.4	-8.2	38.0	15.8	-19.2	6.6	Jul-14
Pharo Macro Fund	70,975,638	1.2	2.0	12.7	12.7	0.5	-	-	1.2	-11.1	3.5	-	-	1.8	Dec-19
PIMCO Commodity Alpha Fund	82,495,501	1.4	3.3	15.6	15.6	14.1	12.2	-	18.3	8.6	14.2	4.8	5.2	11.6	Jun-16
Enhanced Domestic Partners to Sculptor Master Fund	48,060,954	0.8	2.1	13.5	13.5	-0.3	4.3	-	8.8	-19.9	16.8	6.5	-	6.6	Feb-19
Alpha Pool	228,281,533	3.9	-0.4	0.7	0.7	0.5	-	-	-0.9	1.5	14.5	-	-	3.8	Jul-20
<i>3-Month Treasury Bill +3%</i>			2.1	8.6	8.6	6.1	-	-	6.7	3.2	3.1	-	-	5.4	
Hudson Bay - Alpha Pool	65,508,104	1.1	-0.9	-2.8	-2.8	0.8	-	-	-1.1	6.7	-	-	-	3.7	Aug-20
Davidson Kempner Institutional Partners	60,024,545	1.0	-0.4	1.2	1.2	-2.1	-	-	-4.1	-3.4	-	-	-	0.5	Dec-20
HBK Fund II	37,692,601	0.6	0.2	4.0	4.0	1.4	-	-	-1.0	1.3	-	-	-	2.6	Dec-20
Garda Fixed Income Relative Value Opportunity Fund	65,056,284	1.1	-0.4	1.8	1.8	-	-	-	3.6	-	-	-	-	3.8	Sep-21

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Total Fund
Performance (Net of Fees)

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

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2023	Fiscal 2022	Fiscal 2021	Fiscal 2020	Fiscal 2019	Inception	Inception Date
Midstream Energy	302,472,317	5.2	4.8	29.8	29.8	19.2	-	-	19.3	9.3	-	-	-	28.3	Sep-20
<i>Alerian Midstream Energy Index</i>			5.4	26.7	26.7	16.5	-	-	12.2	11.4	-	-	-	25.6	
Harvest Midstream	161,434,527	2.8	6.3	35.9	35.9	23.7	-	-	20.9	15.3	-	-	-	34.4	Aug-20
<i>Alerian Midstream Energy Index</i>			5.4	26.7	26.7	16.5	-	-	12.2	11.4	-	-	-	25.0	
PIMCO Midstream	141,037,790	2.4	3.1	23.6	23.6	13.9	-	-	16.9	2.2	-	-	-	22.7	Oct-20
<i>50/25/25 Alerian Midstream/ ICE BofA US Pipeline/ ICE BofA US HY Midstream</i>			3.2	17.6	17.6	8.7	-	-	10.1	-0.7	-	-	-	15.7	
Core Real Estate	245,562,202	4.2	-3.6	-19.7	-19.7	-4.3	-1.2	-	-12.4	24.8	5.6	1.4	5.9	3.5	Oct-14
<i>NCREIF ODCE</i>			-0.4	-9.3	-9.3	1.9	3.2	-	-10.0	29.5	8.0	2.2	6.4	6.2	
ASB Allegiance Real Estate Fund	122,471,881	2.1	-7.8	-23.9	-23.9	-6.7	-2.8	2.7	-13.3	23.0	5.4	1.5	6.8	3.3	Sep-13
<i>NCREIF ODCE</i>			-0.4	-9.3	-9.3	1.9	3.2	6.4	-10.0	29.5	8.0	2.2	6.4	6.8	
JPMCB Strategic Property Fund	111,134,693	1.9	1.1	-14.9	-14.9	-1.2	0.7	-	-11.4	27.9	5.9	1.3	5.0	4.4	Jul-14
<i>NCREIF ODCE</i>			-0.4	-9.3	-9.3	1.9	3.2	6.4	-10.0	29.5	8.0	2.2	6.4	6.4	
Blue Owl Real Estate Fund VI	11,955,628	0.2	-	-	-	-	-	-	-	-	-	-	-	0.0	May-24
<i>NCREIF ODCE</i>			-	-	-	-	-	-	-	-	-	-	-	-0.4	
Private Real Estate	180,655,798	3.1	-2.0	-6.4	-6.4	9.9	9.2	10.4	7.9	31.3	12.1	4.4	9.0	10.9	Mar-11
			-2.0	-6.4	-6.4	9.9	9.2	10.4	7.9	31.3	12.1	4.4	9.0	10.9	
Private Equity	269,203,109	4.6	2.4	11.9	11.9	11.0	11.7	10.2	-0.6	22.9	41.7	-10.5	10.9	10.7	Sep-10
			2.4	11.9	11.9	11.0	11.7	10.2	-0.6	23.0	41.7	-10.5	10.9	10.7	
Private Credit	339,602,834	5.8	4.1	13.2	13.2	5.7	5.5	-	3.2	1.2	4.8	5.5	9.7	7.7	Jan-16
			4.1	13.2	13.2	5.7	5.5	-	3.2	1.2	4.8	5.5	9.7	7.7	
Opportunistic	150,814,814	2.6	-0.2	2.5	2.5	-0.9	-	-	0.6	-5.4	59.9	-	-	8.2	Jan-20
<i>Assumed Rate of Return +3%</i>			2.4	10.0	10.0	10.0	-	-	10.0	10.0	10.0	-	-	10.0	
River Birch International	4,666,492	0.1	-2.7	17.6	17.6	-	-	-	45.1	-	-	-	-	36.8	Jun-22
<i>Assumed Rate of Return +3%</i>			2.4	10.0	10.0	-	-	-	10.0	-	-	-	-	10.0	
Sixth Street TAO Partners (D)	89,786,388	1.5	1.6	11.3	11.3	8.4	-	-	4.4	9.6	39.6	-	-	14.5	Mar-20
<i>Assumed Rate of Return +3%</i>			2.4	10.0	10.0	10.0	-	-	10.0	10.0	10.0	-	-	10.0	
Aristeia Select Opportunities II	43,669,014	0.7	-4.6	-9.7	-9.7	-	-	-	-7.2	-	-	-	-	-4.2	Jul-21
<i>Assumed Rate of Return +3%</i>			2.4	10.0	10.0	10.0	-	-	10.0	10.0	-	-	-	10.0	
Hudson Bay Special Opportunities Fund LP	2,692,920	0.0	18.0	-	-	-	-	-	-	-	-	-	-	18.0	Feb-24
<i>Assumed Rate of Return +3%</i>			2.4	-	-	-	-	-	-	-	-	-	-	3.5	
Pharo Opportunities Fund SPC	10,000,000	0.2	-	-	-	-	-	-	-	-	-	-	-	0.0	Jun-24
<i>Assumed Rate of Return +3%</i>			-	-	-	-	-	-	-	-	-	-	-	0.1	
Cash	433,731,277	7.4	1.4	6.3	6.3	2.7	1.9	2.1	2.2	-0.2	0.1	1.0	2.0	1.7	Apr-11
<i>3 Month T-Bill</i>			1.3	5.4	5.4	3.0	2.2	1.5	3.6	0.2	0.1	1.6	2.3	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 Estate 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: June 30, 2024

IRR Analysis as of IRR date												
Vintage	Estimated Market Value	Total	Capital	%	Remaining	Capital		Distrib./	Tot. Value/	Net IRR	IRR	
Year	as of 06/30/2024	Commitment	Called	Called	Commitment	Returned	Market Value as of IRR date	Paid-In (DPI) ¹	Paid-In (TVPI) ²	Since Inception ³	Date	
Manager/Fund												
Private Equity												
2008	Abbott Capital PE VI	\$13,773,543	\$50,000,000	\$49,750,000	100%	\$250,000	\$82,084,694	\$15,174,054	1.65x	1.93x	12.6%	03/31/24
2006	Pantheon Global III	\$540,212	\$50,000,000	\$47,300,000	95%	\$2,700,000	\$52,000,000	\$542,524	1.10x	1.11x	1.9%	03/31/24
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	\$307,061	\$35,000,000	\$33,075,000	95%	\$1,925,000	\$50,623,827	\$329,223	1.53x	1.54x	6.7%	03/31/24
2006	Pantheon USA VII	\$6,473,929	\$50,000,000	\$46,600,000	93%	\$3,400,000	\$80,999,998	\$6,431,968	1.74x	1.88x	10.1%	03/31/24
2020	Vista Foundation Fund IV	\$19,775,303	\$25,000,000	\$19,970,294	80%	\$5,029,706	\$30,252	\$19,440,908	0.00x	0.99x	0.6%	03/31/24
2021	Crown Global Secondaries V Master S.C.Sp	\$42,308,607	\$50,000,000	\$32,250,000	65%	\$17,750,000	\$1,550,000	\$39,156,263	0.05x	1.36x	24.5%	03/31/24
2021	Brighton Park Capital Fund I	\$40,792,750	\$30,000,000	\$29,520,053	98%	\$479,947	\$1,888,187	\$41,250,646	0.06x	1.45x	13.1%	03/31/24
2021	Warren Equity Partners Fund III	\$37,184,375	\$32,500,000	\$28,344,462	87%	\$4,155,538	\$508,290	\$35,816,645	0.02x	1.33x	21.0%	03/31/24
2021	Peak Rock Capital Fund III	\$18,578,615	\$30,000,000	\$18,656,463	62%	\$11,343,537	\$6,286,731	\$16,945,661	0.34x	1.33x	26.1%	03/31/24
2021	Level Equity Growth Partners V	\$10,905,931	\$15,000,000	\$9,473,677	63%	\$5,526,323	\$0	\$8,532,754	0.00x	1.15x	10.0%	03/31/24
2021	Level Equity Opportunities Fund 2021	\$7,428,528	\$15,000,000	\$6,614,000	44%	\$8,386,000	\$0	\$6,565,113	0.00x	1.12x	11.1%	03/31/24
2022	Linden Capital Partners V LP	\$14,370,024	\$22,500,000	\$12,279,125	55%	\$10,220,875	\$0	\$13,779,144	0.00x	1.17x	12.1%	03/31/24
2022	Rubicon Technology Partners IV LP	\$9,997,253	\$30,000,000	\$10,757,463	36%	\$19,242,537	\$0	\$9,838,432	0.00x	0.93x	-21.0%	03/31/24
2022	OrbiMed Private Investments IV, LP	\$2,831,951	\$10,000,000	\$2,649,201	26%	\$7,350,799	\$0	\$2,039,772	0.00x	1.07x	31.9%	03/31/24
2022	Brighton Park Capital Fund II	\$6,099,408	\$30,000,000	\$6,992,652	23%	\$23,007,348	\$354,441	N/A	0.05x	0.92x	N/A	N/A
2022	Linden Co-Investment V LP	\$6,292,741	\$7,500,000	\$9,054,807	121%	-\$1,554,807	\$55,503	\$4,113,076	0.01x	0.70x	21.7%	12/31/23
2022	Warren Equity Partners Fund IV	\$17,361,164	\$32,500,000	\$11,689,634	36%	\$20,810,366	\$0	\$17,361,164	0.00x	1.49x	16.9%	06/30/24
2023	WEP Co-Invest IV	\$7,220,378	\$10,000,000	\$7,470,589	75%	\$2,529,411	\$173,170	N/A	0.02x	0.99x	N/A	N/A
2023	Crown Global Secondaries Fund VI	\$1,591,982	\$30,000,000	\$1,050,000	4%	\$28,950,000	\$0	N/A	0.00x	1.52x	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
2023	Parthenon Investors VII	\$1,484,445	\$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	\$3,854,091	\$15,000,000	\$3,713,172	25%	\$11,286,828	\$0	N/A	N/A	N/A	N/A	N/A
Total Private Equity		\$269,203,109	\$650,000,000	\$413,009,968	64%	\$236,990,032	\$314,846,318	\$237,691,704	0.76x	1.41x		
% of Portfolio (Market Value)		4.6%										

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

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

³Net 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: June 30, 2024

IRR Analysis as of IRR date												
Vintage	Estimated Market Value	Total	Capital	%	Remaining	Capital		Distrib./	Tot. Value/	Net IRR	IRR	
Year	6/30/2024	Commitment	Called	Called	Commitment	Returned	Market Value as of IRR date	Paid-In (DPI) ¹	Paid-In (TVPI) ²	Since Inception ³	Date	
Manager/Fund												
Private Credit												
2015	DC Value Recovery Fund IV ⁴	\$15,070,043	\$74,360,749	\$73,340,099	99%	\$1,020,650	\$44,343,375	\$18,041,473	0.60x	0.81x	N/A	N/A
2017	Sixth Street TAO Partners (B)	\$46,335,052	\$108,035,958	\$89,095,779	82%	\$18,940,179	\$46,945,528	\$42,298,855	0.53x	1.05x	9.9%	3/31/24
2017	Brookfield Real Estate Finance Fund V	\$16,098,537	\$50,000,000	\$39,198,138	78%	\$10,801,862	\$31,444,596	\$16,098,537	0.80x	1.21x	8.0%	6/30/24
2018	Magnetar Constellation Fund V	\$23,206,748	\$60,000,000	\$56,445,318	94%	\$3,554,682	\$45,623,684	\$23,206,748	0.81x	1.22x	4.8%	6/30/24
2019	H.I.G Bayside Loan Opportunity Fund V	\$41,157,624	\$60,000,000	\$35,821,497	60%	\$24,178,503	\$22,319,918	\$41,157,624	0.62x	1.77x	15.9%	6/30/24
2020	Blue Torch Credit Opportunities Fund II	\$13,593,149	\$20,000,000	\$17,296,007	86%	\$2,703,993	\$8,502,603	\$15,532,183	0.49x	1.28x	13.1%	3/31/24
2020	Fortress Credit Opportunites Fund V Expansion	\$29,218,859	\$40,000,000	\$27,018,489	68%	\$12,981,511	\$2,417,001	\$24,853,353	0.09x	1.17x	20.1%	3/31/24
2021	Fortress Lending Fund II	\$24,386,253	\$40,000,000	\$34,937,851	87%	\$5,062,149	\$15,679,574	\$24,386,253	0.45x	1.15x	9.7%	6/30/24
2022	Blue Torch Credit Opportunities Fund III	\$23,889,429	\$40,000,000	\$32,999,891	82%	\$7,000,109	\$13,804,824	\$25,574,861	0.42x	1.14x	18.2%	3/31/24
2022	Fortress Lending Fund III	\$29,229,392	\$40,000,000	\$26,432,701	66%	\$13,567,299	\$5,590,556	\$29,229,392	0.21x	1.32x	11.9%	6/30/24
2022	OrbiMed Royalty & Credit Opportunities IV	\$10,256,472	\$30,000,000	\$8,983,980	30%	\$21,016,020	\$2,763,403	\$10,256,472	0.31x	1.45x	11.5%	6/30/24
2023	Cerberus Business Finance V	\$18,648,339	\$30,000,000	\$16,734,852	56%	\$13,265,148	\$0	\$18,403,624	0.00x	1.11x	19.7%	5/31/24
2023	Silver Point – Specialty Credit Fund III	\$9,756,659	\$30,000,000	\$11,124,002	37%	\$18,875,998	\$3,246,341	\$9,520,807	0.29x	1.17x	16.6%	3/31/24
2023	Ares Pathfinder II	\$4,830,058	\$30,000,000	\$4,525,972	15%	\$25,474,028	\$0	\$2,450,370	0.00x	1.07x	17.0%	12/31/23
2023	Oak Hill Advisors Structured Products Fund III, L.P.	\$13,906,378	\$25,000,000	\$12,420,411	50%	\$12,579,589	\$0	\$13,201,470	0.00x	1.12x	21.8%	3/31/24
2023	Ares Senior Direct Lending III	\$0	\$30,000,000	\$0	0%	\$30,000,000	\$0	\$0	N/A	N/A	N/A	N/A
2024	ITE Rail Fund, L.P.	\$20,019,841	\$40,000,000	\$20,000,000	50%	\$20,000,000	\$100,000	\$0	0.01x	1.01x	N/A	N/A 03/31/24
Total Private Credit		\$339,602,834	\$747,396,707	\$506,374,985	68%	\$339,602,834	\$339,602,834	\$339,602,834	0.67x	1.34x		
% of Portfolio (Market Value)		5.8%										

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

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

³Net 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.

⁴Name changed from Colony Distressed Credit fund to DC Value Recovery Fund IV

IRR Analysis as of IRR date												
Vintage Year	Manager/Fund	Estimated Market Value 6/30/2024	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib./ Paid-In (DPI) ¹	Tot. Value/ Paid-In (TVPI) ²	Net IRR Since Inception ³	IRR Date
Private Real Estate												
2014	Invesco Real Estate Value-Add Fund IV	\$157,969	\$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	\$33,048,887	\$60,000,000	\$45,109,466	75%	\$14,890,534	\$25,662,388	\$33,048,887	0.57x	1.30x	11.9%	06/30/24
2018	Long Wharf Real Estate Partners VI	\$33,431,828	\$50,000,000	\$50,000,000	100%	\$0	\$24,281,467	\$33,431,828	0.49x	1.15x	13.8%	06/30/24
2020	Covenant Apartment Fund X	\$29,338,245	\$30,000,000	\$25,507,333	85%	\$4,492,667	\$7,920,010	\$29,338,245	0.31x	1.46x	12.4%	06/30/24
2021	Singerman Real Estate Opportunity Fund IV	\$18,175,814	\$35,000,000	\$13,527,500	39%	\$21,472,500	\$0	\$18,175,814	0.00x	1.34x	19.9%	06/30/24
2022	LBA Logistics Value Fund IX, L.P.	\$17,923,620	\$40,000,000	\$14,230,769	36%	\$25,769,231	\$0	\$17,923,620	0.00x	1.26x	-4.2%	06/30/24
2022	Covenant Apartment Fund XI	\$21,061,180	\$30,000,000	\$15,600,000	52%	\$38,076,924	\$3,112	\$21,061,180	0.00x	1.35x	1.0%	06/30/24
2022	KSL Capital Partners VI	\$4,994,026	\$30,000,000	\$6,945,876	23%	\$23,054,124	\$212,603	\$4,994,026	0.03x	0.75x	-19.7%	06/30/24
2023	Merit Hill V	\$14,505,177	\$30,000,000	\$17,529,762	58%	\$12,470,238	\$2,062,594	N/A	0.12x	0.95x	N/A	N/A
2024	Juniper Capital IV, L.P.	\$4,467,289	\$30,000,000	\$5,115,008	17%	\$24,884,992	\$0	N/A	0.00x	0.87x	N/A	N/A
2024	Landmark Real Estate Partners IX	\$242,794	\$5,000,000	\$1,162,127	23%	\$3,837,873	\$0	N/A	0.00x	0.21x	N/A	N/A
2024	Juniper High Noon Partners, L.P.	\$3,308,969	\$40,000,000	\$3,309,091	8%	\$36,690,909	\$0	N/A	0.00x	1.00x	N/A	N/A
Total Private Real Estate		\$180,655,798	\$430,000,000	\$241,674,649	56%	\$212,002,275	\$116,966,924	\$158,131,569	0.48x	1.23x		
% of Portfolio (Market Value)		3.1%										

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

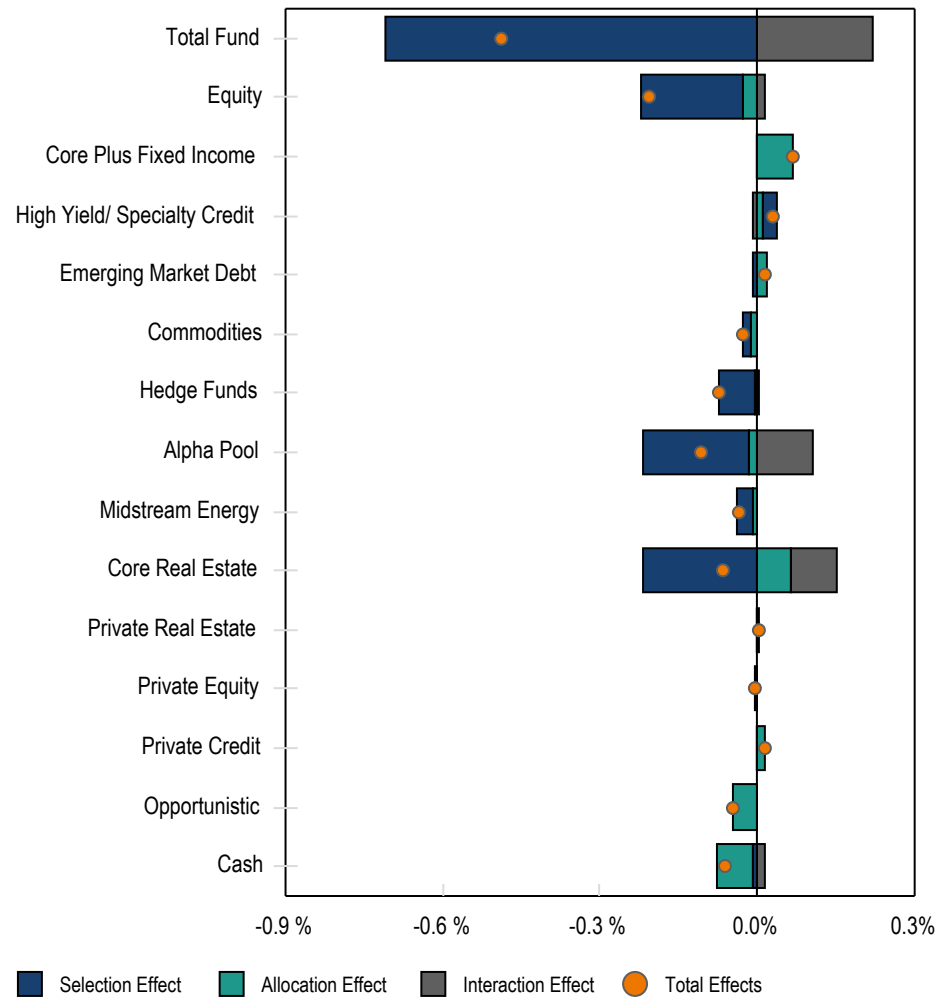
²(TVPI) is equal to (market value + capital returned) / capital called

³Net 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: June 30, 2024

Attribution Effects
Last Three Months



Performance Attribution

	Last Three Months
Wtd. Actual Return	1.3
Wtd. Index Return	1.8
Excess Return	-0.5
Selection Effect	-0.7
Allocation Effect	0.0
Interaction Effect	0.2

Attribution Summary
Last Three Months

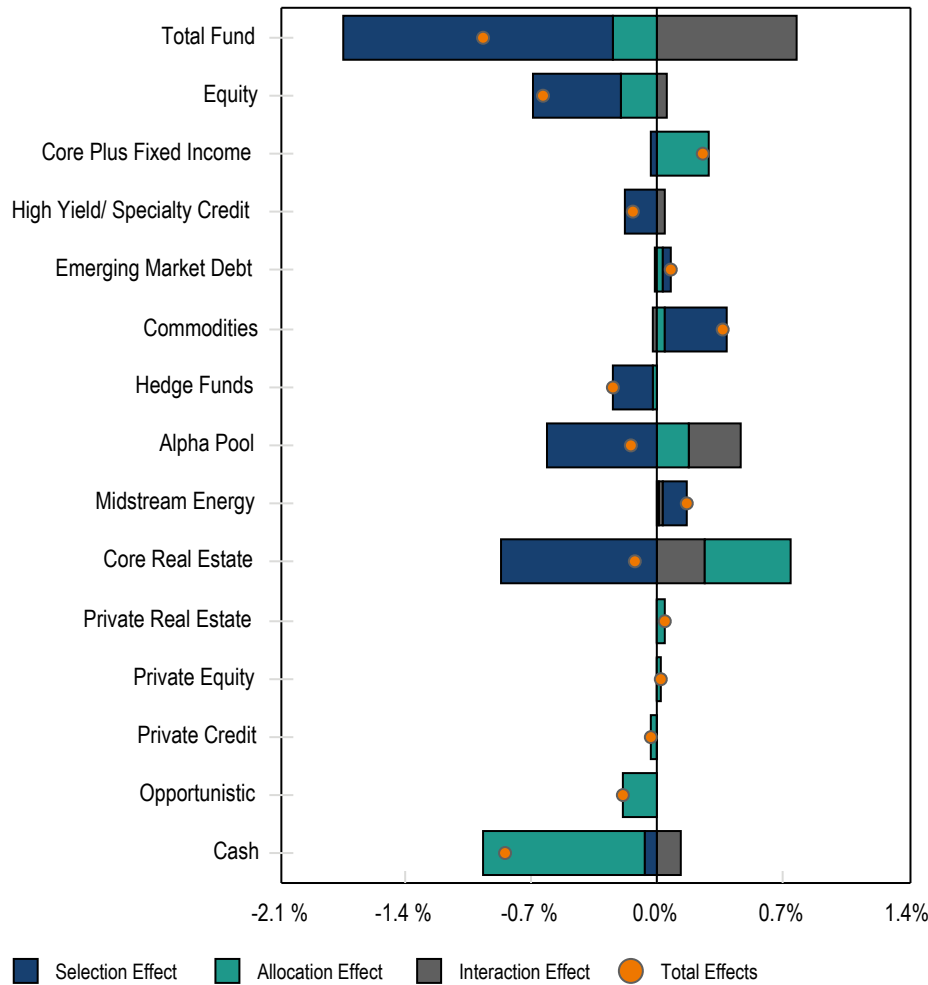
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Equity	1.8	2.4	-0.6	-0.2	0.0	0.0	-0.2
Core Plus Fixed Income	0.1	0.1	0.0	0.0	0.1	0.0	0.1
High Yield/ Specialty Credit	1.6	1.1	0.5	0.0	0.0	0.0	0.0
Emerging Market Debt	-0.8	-0.7	-0.1	0.0	0.0	0.0	0.0
Commodities	2.4	2.9	-0.5	0.0	0.0	0.0	0.0
Hedge Funds	1.6	2.3	-0.7	-0.1	0.0	0.0	-0.1
Alpha Pool	-0.4	2.1	-2.5	-0.2	0.0	0.1	-0.1
Midstream Energy	4.8	5.4	-0.6	0.0	0.0	0.0	0.0
Core Real Estate	-3.6	-0.4	-3.1	-0.2	0.1	0.1	-0.1
Private Real Estate	-2.0	-2.0	0.0	0.0	0.0	0.0	0.0
Private Equity	2.4	2.4	0.0	0.0	0.0	0.0	0.0
Private Credit	4.1	4.1	0.0	0.0	0.0	0.0	0.0
Opportunistic	-0.2	2.4	-2.6	0.0	0.0	0.0	0.0
Cash	1.4	1.3	0.1	0.0	-0.1	0.0	-0.1
Total Fund	1.3	1.8	-0.5	-0.7	0.0	0.2	-0.5

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: June 30, 2024

Attribution Effects
Fiscal YTD



Performance Attribution

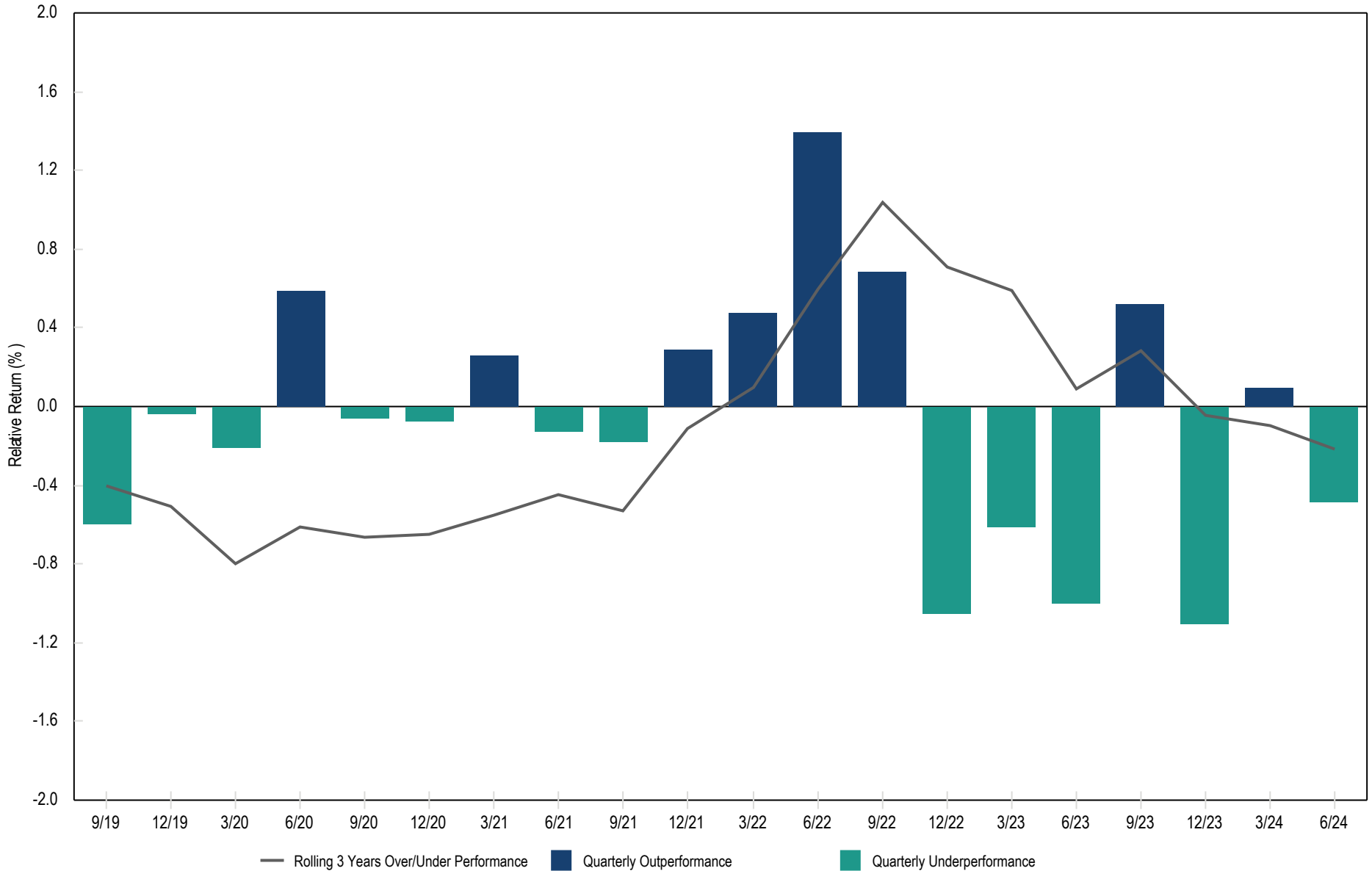
	Fiscal YTD
Wtd. Actual Return	9.6
Wtd. Index Return	10.6
Excess Return	-1.0
Selection Effect	-1.5
Allocation Effect	-0.2
Interaction Effect	0.8

Attribution Summary
FYTD

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Equity	16.9	18.4	-1.5	-0.4	-0.2	0.1	-0.6
Core Plus Fixed Income	2.4	2.6	-0.2	0.0	0.3	0.0	0.3
High Yield/ Specialty Credit	7.5	10.4	-2.9	-0.2	0.0	0.0	-0.1
Emerging Market Debt	6.0	4.9	1.1	0.1	0.0	0.0	0.1
Commodities	13.7	5.0	8.7	0.4	0.0	0.0	0.4
Hedge Funds	9.2	11.6	-2.4	-0.2	0.0	0.0	-0.2
Alpha Pool	0.7	8.8	-8.1	-0.6	0.2	0.3	-0.1
Midstream Energy	29.8	26.7	3.1	0.2	0.0	0.0	0.2
Core Real Estate	-19.7	-9.3	-10.5	-0.8	0.5	0.3	-0.1
Private Real Estate	-6.4	-6.4	0.0	0.0	0.0	0.0	0.0
Private Equity	11.9	11.9	0.0	0.0	0.0	0.0	0.0
Private Credit	13.2	13.2	0.0	0.0	0.0	0.0	0.0
Opportunistic	2.5	10.0	-7.5	0.0	-0.2	0.0	-0.2
Cash	6.3	5.4	0.8	0.0	-0.9	0.1	-0.8
Total Fund	9.6	10.6	-1.0	-1.5	-0.2	0.8	-1.0

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.

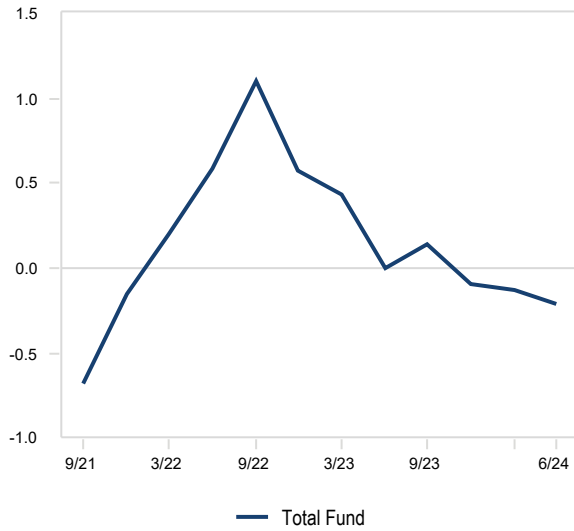
Rolling 3 Year Annualized Excess Performance



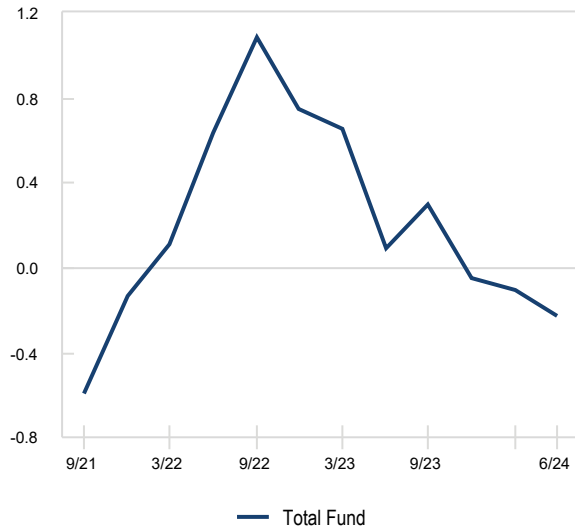
Total Fund
Rolling Risk Statistics: 3 Years (Net of Fees)

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

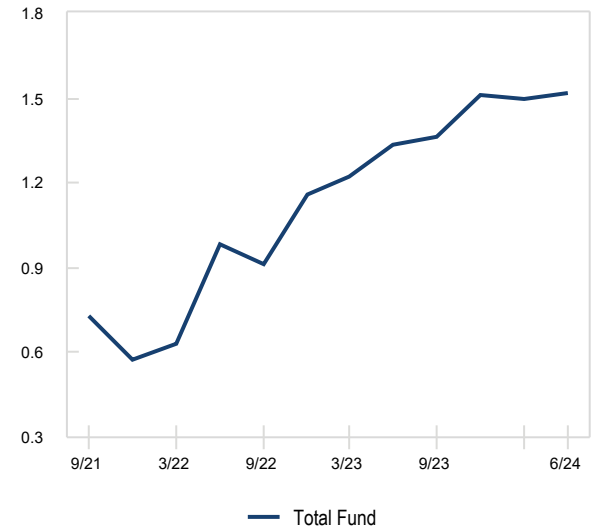
Rolling Information Ratio



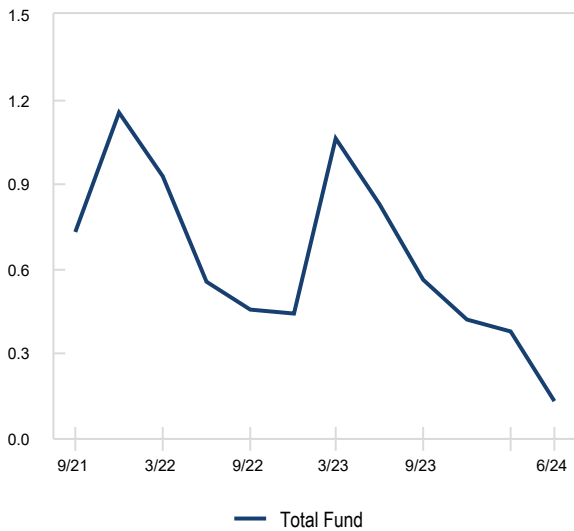
Rolling Annual Excess Benchmark Return



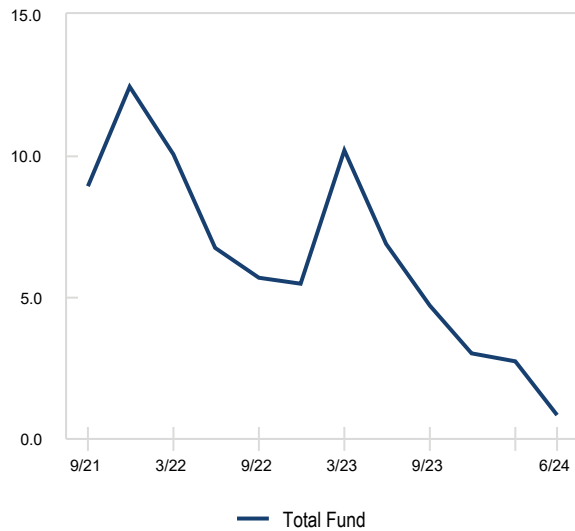
Rolling Tracking Error



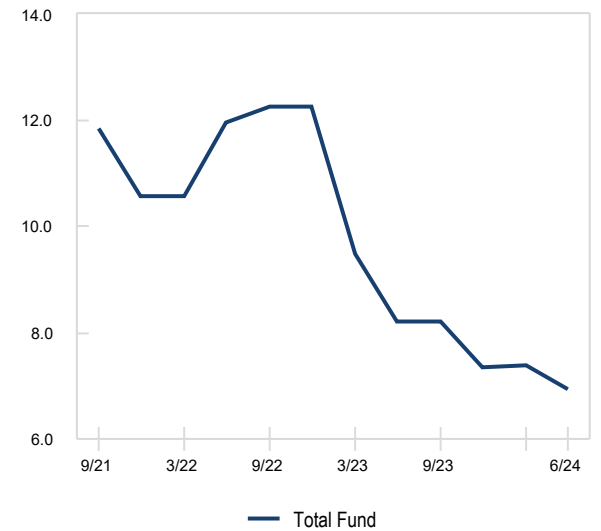
Rolling Sharpe Ratio



Rolling Annual Excess Risk Free Return



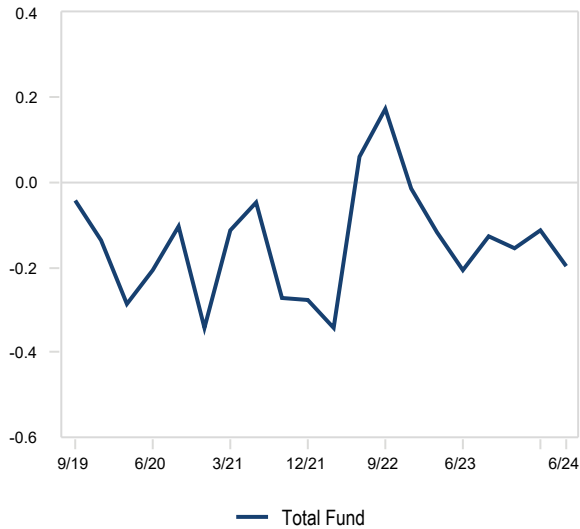
Rolling Annualized Standard Deviation



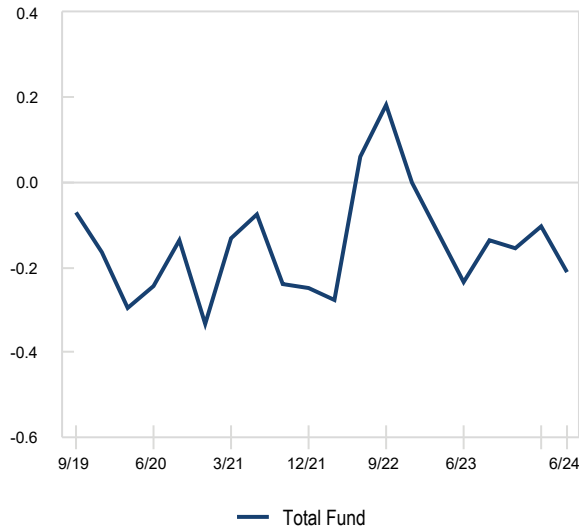
Total Fund
Rolling Risk Statistics: 5 Years (Net of Fees)

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

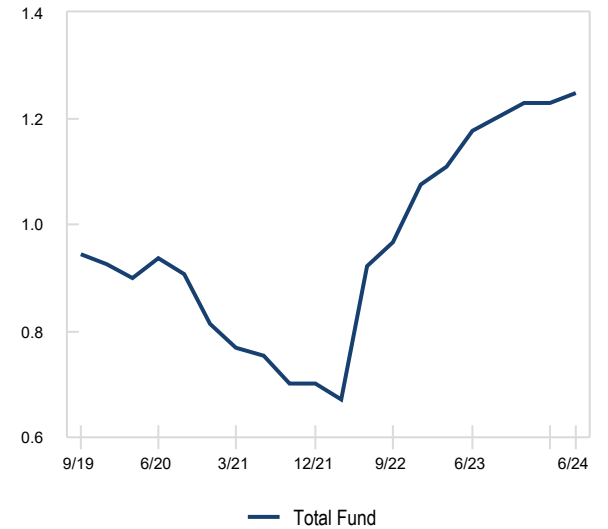
Rolling Information Ratio



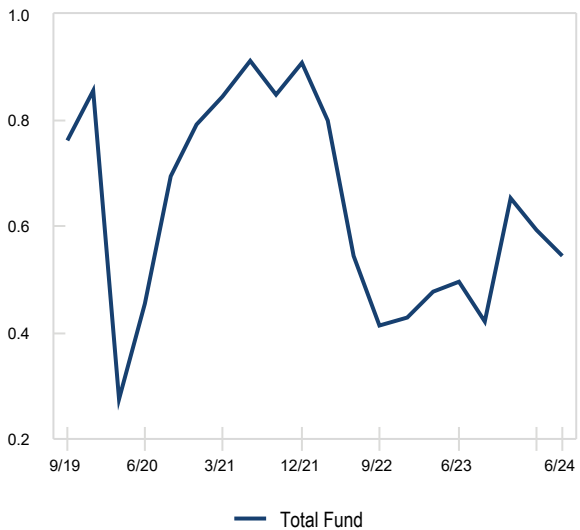
Rolling Annual Excess Benchmark Return



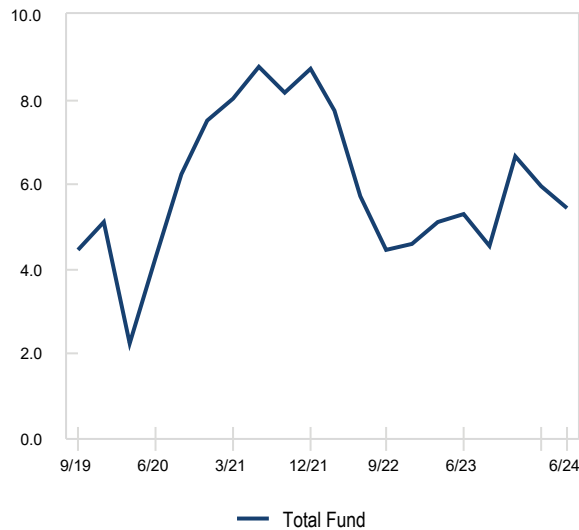
Rolling Tracking Error



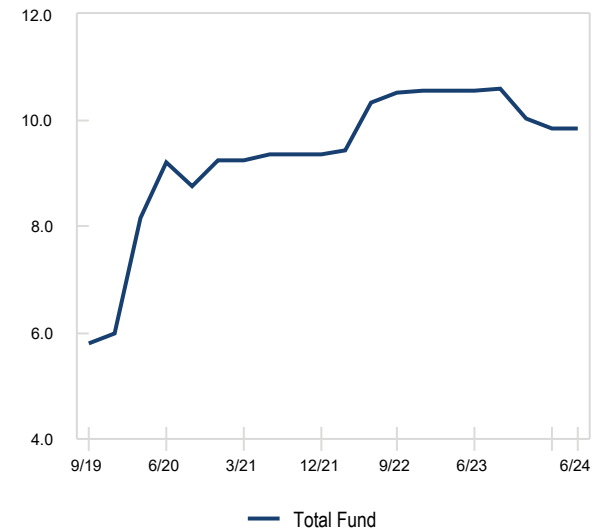
Rolling Sharpe Ratio



Rolling Annual Excess Risk Free Return



Rolling Annualized Standard Deviation



Cash Flows

Total Fund
Net Cash Flow: Last 1 Quarter

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

	Estimated Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Estimated Ending Market Value
Equity	1,947,024,404	605,214	-25,681,271	-198,459	9,910,000	36,161,847	1,967,821,735
Equity Beta Exposure	74,849,850	605,214	-25,681,082		-90,000	2,218,118	51,902,100
Mellon DB SL Stock Index Fund	640,105,317					27,403,650	667,508,966
PIMCO StocksPLUS	140,270,349					5,919,822	146,190,170
AB US Small Cap Value Equity	97,451,717				10,000,000	-1,763,275	105,688,442
Geneva Capital Small Cap Growth	58,974,980		-190			-598,936	58,375,855
Mellon DB SL World ex-US Index Fund	438,411,988					-1,447,621	436,964,367
Cevian Capital II	46,636,862					712,864	47,349,726
Lazard Japanese Equity	123,534,244					-4,961,237	118,573,007
American Century Non-US Small Cap	65,312,790					-753,718	64,559,071
DFA Emerging Markets Value I	89,884,072					5,284,386	95,168,458
Mellon Emerging Markets Stock Index Fund	113,187,443					5,791,931	118,979,373
Dalton Japan Long Only	58,403,682			-198,459		-1,644,245	56,560,978
Transition Equity	1,111					111	1,221
Fixed Income	1,330,993,517	6,059,482	-1,202,011		-48,045,108	2,840,589	1,290,646,469
Fixed Income Beta Exposure	409,545,497	3,811,517	-530,462		-3,347,900	940,450	410,419,101
Mellon DB SL Aggregate Bond Index Fund	165,191,596					130,641	165,322,237
PIMCO Core Plus	170,876,531					-37,187	170,839,344
Western Asset Core Plus	125,987,988				-40,000,000	-688,710	85,299,278
Western Asset High Yield Fixed Income	170,504,476	117,397			-2,804,002	2,214,435	170,032,306
TCW Securitized Opportunities	90,272,008	2,130,568			-1,893,206	1,781,799	92,291,169
Stone Harbor Emerging Markets Debt Blend Portfolio	40,753,547		-671,549			-272,889	39,809,109
PIMCO EMD	157,613,905					-1,222,982	156,390,923
Transition Fixed Income	247,968					-4,968	243,001
Commodities	218,661,777					5,605,989	224,267,766
Gresham MTAP Commodity Builder Fund	35,387,098					850,099	36,237,197
Wellington Commodities	183,274,679					4,755,890	188,030,569
Hedge Funds	570,388,005				-5,000,000	9,020,308	574,408,314
Aristeia International Limited	74,092,689					423,146	74,515,835
Brevan Howard Fund	55,643,110					334,129	55,977,238
D.E. Shaw Composite Fund	62,332,223					1,200,748	63,532,971
HBK Fund II	49,186,197					845,301	50,031,498
Hudson Bay Cap Structure Arbitrage Enhanced Fund	79,215,595					515,553	79,731,148

Total Fund
Net Cash Flow: Last 1 Quarter

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

	Estimated Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Estimated Ending Market Value
Indus Pacific Opportunities Fund	48,475,711					611,819	49,087,530
Pharo Macro Fund	69,581,938					1,393,700	70,975,638
PIMCO Commodity Alpha Fund	79,895,079					2,600,422	82,495,501
Enhanced Domestic Partners to Sculptor Master Fund	51,965,463				-5,000,000	1,095,491	48,060,954
Alpha Pool	225,846,861				3,437,900	-1,003,227	228,281,533
Hudson Bay - Alpha Pool	65,084,519				986,962	-563,378	65,508,104
Davidson Kempner Institutional Partners	59,379,556				902,581	-257,592	60,024,545
HBK Fund II	37,055,770				567,826	69,005	37,692,601
Garda Fixed Income Relative Value Opportunity Fund	64,327,016				980,530	-251,262	65,056,284
Midstream Energy	292,089,375				-4,140,844	14,523,786	302,472,317
Harvest Midstream	153,718,313				-2,296,021	10,012,235	161,434,527
PIMCO Midstream	138,371,062				-1,844,823	4,511,551	141,037,790
Core Real Estate	247,841,190			-257,434	6,813,494	-8,835,049	245,562,202
ASB Allegiance Real Estate Fund	133,800,042				-1,005,071	-10,323,091	122,471,881
JPMCB Strategic Property Fund	114,041,148			-257,434	-4,137,063	1,488,042	111,134,693
Blue Owl Real Estate Fund VI					11,955,628		11,955,628
Private Real Estate	177,087,610	1,162,127			6,037,209	-3,631,148	180,655,798
Invesco Real Estate Value-Add Fund IV	509,038				-298,828	-52,241	157,969
Landmark Real Estate Partners VIII	32,731,187				1,213,803	-896,103	33,048,887
Long Wharf Real Estate	34,458,333				-991,080	-35,425	33,431,828
Covenant Apartment Fund X	30,237,283				-81,468	-817,570	29,338,245
Singerman Real Estate Opportunity Fund IV	15,505,631				2,581,250	88,933	18,175,814
LBA Logistics Value Fund IX, L.P.	15,799,980				2,307,692	-184,052	17,923,620
Covenant Apartment Fund XI, LP	19,508,856				1,500,000	52,324	21,061,180
KSL Capital Partners VI	5,344,102				-194,160	-155,916	4,994,026
Merit Hill Self-Storage V, LP.	14,569,101					-63,924	14,505,177
Juniper Capital IV, L.P.	5,115,008					-647,719	4,467,289
Landmark Real Estate Partners IX		1,162,127				-919,333	242,794
Juniper High Noon Partners, L.P.	3,309,091					-122	3,308,969
Private Equity	245,107,031				17,939,765	6,156,314	269,203,109
Abbott VI	15,174,054				-1,250,000	-150,511	13,773,543

Total Fund
Net Cash Flow: Last 1 Quarter

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

	Estimated Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Estimated Ending Market Value
Pantheon Secondary III	542,524					-2,312	540,212
Pantheon V	372,041				-341,224		30,817
Pantheon VI	329,223					-22,162	307,061
Pantheon VII	6,431,968					41,961	6,473,929
Vista Foundation Fund IV	19,440,908					334,395	19,775,303
Crown Global Secondaries V Master S.C.Sp	39,156,263				1,450,000	1,702,344	42,308,607
Crown Global Secondaries VI Master S.C.Sp	940,874				600,000	51,108	1,591,982
Brighton Park Capital Fund I	41,250,646				-559,496	101,600	40,792,750
Warren Equity Partners Fund III	35,816,645				646,212	721,518	37,184,375
Peak Rock Capital Fund III	16,945,661				479,090	1,153,864	18,578,615
Level Equity Growth Partners V	8,532,754				1,923,314	449,863	10,905,931
Level Equity Opportunities Fund 2021	6,565,113				825,581	37,834	7,428,528
Linden Capital Partners V LP	13,779,144				267,947	322,933	14,370,024
Rubicon Technology Partners IV L.P.	9,838,432					158,821	9,997,253
OrbiMed Private Investments IX, LP	2,039,772				499,201	292,978	2,831,951
Brighton Park Capital Fund II, L.P	3,391,755				2,463,291	244,362	6,099,408
Linden Co-Investment V LP	4,413,688				1,555,630	323,423	6,292,741
Warren Equity Partners Fund IV	12,910,057				4,076,750	374,357	17,361,164
WEP IV TS Co-Investment, L.P.	7,235,509					-15,131	7,220,378
Parthenon Investors VII	256,855				1,449,377	-221,787	1,484,445
Longreach Capital Partners					3,854,091		3,854,091
Private Credit	338,443,874				-7,604,461	8,763,421	339,602,834
DC Value Recovery Fund IV	18,041,473				-2,783,342	-188,088	15,070,043
Sixth Street TAO Partners (B)	42,298,855				3,034,599	1,001,598	46,335,052
Brookfield Real Estate Finance Fund V	12,698,028				3,178,221	222,288	16,098,537
Magnetar Constellation Fund V	25,053,561				-1,282,809	-564,004	23,206,748
H.I.G. Bayside Loan Opportunity Fund V	45,495,767				-5,564,517	1,226,374	41,157,624
Blue Torch Credit Opportunities Fund II	15,532,183				-2,177,126	238,092	13,593,149
Fortress Credit Opportunitites Fund V Expansion	24,853,353				2,935,755	1,429,751	29,218,859
Fortress Lending Fund II	27,428,105				-3,734,355	692,503	24,386,253
Blue Torch Credit Opportunities Fund III	25,574,861				-2,696,124	1,010,692	23,889,429
Fortress Lending Fund III	29,132,881				-889,024	985,535	29,229,392
OrbiMed Royalty & Credit Opportunities IV	7,598,005				2,382,041	276,426	10,256,472
Cerberus Business Finance V	18,215,431					432,908	18,648,339
Silver Point Specialty Credit Fund III, L.P.	9,520,807				-771,417	1,007,269	9,756,659

Total Fund
Net Cash Flow: Last 1 Quarter

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

	Estimated Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Estimated Ending Market Value
Ares Pathfinder II	3,799,094				863,636	167,328	4,830,058
Oak Hill Advisors Structured Products Fund III, L.P.	13,201,470					704,908	13,906,378
ITE Rail Fund, L.P.	20,000,000				-100,000	119,841	20,019,841
Opportunistic	145,854,173				5,177,721	-217,080	150,814,814
Sixth Street TAO Partners (D)	91,197,527				-2,835,733	1,424,594	89,786,388
Aristeia Select Opportunities II	45,787,157					-2,118,144	43,669,014
River Birch International - Opportunistic Investment	5,412,216				-600,252	-145,472	4,666,492
Hudson Bay Special Opportunities Fund LP	3,457,272				-1,386,294	621,942	2,692,920
Pharo Opportunities Fund SPC					10,000,000		10,000,000
Cash	425,244,044	8,261,005	-21,459,601	-41,813	15,474,324	6,253,318	433,731,277
Short Term Investment Funds	183,373,517	8,261,005	-21,459,601	-41,813	15,474,324	2,584,036	188,191,468
BlackRock Short Duration Fund	241,870,527					3,669,282	245,539,809
Other	-395,161,380	130,863,986	-109,863,277			962,937	-373,197,734
Parametric Cash Overlay	80,429,037	44,129,762	-43,910,196				80,648,603
Goldman Sachs Cash Account	-3,842,071	46,755,850	-44,919,914				-2,006,135
Futures Offset	-484,395,347	39,978,375	-18,867,167			962,937	-462,321,201
Collateral Cash	12,647,000		-2,166,000				10,481,000

Total Fund
Cash Flow History

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

Portfolio Reconciliation

	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Beginning Market Value	5,769,420,481	5,352,263,309	5,352,263,309	5,374,393,446	4,339,112,963	3,469,923,668
Contributions	335,898,490	1,790,443,526	1,790,443,526	8,266,127,493	13,411,588,988	19,597,295,151
Withdrawals	-347,152,836	-1,828,289,815	-1,828,289,815	-8,431,418,808	-13,734,654,370	-20,149,626,280
Fees	-497,706	-1,046,135	-1,046,135	-19,416,572	-48,485,169	-127,840,369
Net Cash Flows	-11,254,346	-37,846,289	-37,846,289	-165,291,315	-323,065,382	-552,331,129
Net Investment Change	76,104,300	519,853,414	519,853,414	625,168,304	1,818,222,853	2,916,677,895
Ending Market Value	5,834,270,434	5,834,270,434	5,834,270,434	5,834,270,434	5,834,270,434	5,834,270,434
Net Change \$	64,849,953	482,007,125	482,007,125	459,876,989	1,495,157,471	2,364,346,766

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

Total Fund
Actual Correlation Matrix

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

Correlation Matrix
3 Years Ending June 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	0.97	0.97	0.91	1.00								
E	0.78	0.79	0.68	0.80	1.00							
F	0.85	0.86	0.80	0.86	0.77	1.00						
G	0.74	0.76	0.71	0.76	0.68	0.97	1.00					
H	0.89	0.87	0.84	0.87	0.69	0.89	0.80	1.00				
I	0.84	0.86	0.77	0.88	0.87	0.91	0.80	0.80	1.00			
J	0.49	0.37	0.30	0.43	0.37	0.16	0.04	0.31	0.27	1.00		
K	0.42	0.40	0.39	0.41	0.23	0.24	0.11	0.39	0.33	0.21	1.00	
L	-0.21	-0.28	-0.23	-0.29	-0.35	-0.42	-0.41	-0.34	-0.41	0.07	-0.17	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: June 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	0.3	0.8	1.0	3.7	-0.2	-0.2	1.7	0.1	0.9	8.0	0.2	86.6	84.6
Equity	0.1	1.0	1.0	4.7	0.0	0.0	1.1	0.2	3.0	16.3	0.3	98.7	98.5
Domestic Equity	-0.1	1.0	1.0	8.0	-0.2	-0.2	0.9	0.4	6.4	17.8	0.5	98.7	99.0
International Developed Equity	0.5	1.0	1.0	2.4	0.2	0.5	1.4	0.0	0.7	16.3	0.1	100.0	98.4
Emerging Markets Equity	1.5	0.9	1.0	-2.4	0.7	1.7	2.4	-0.3	-4.1	16.2	-0.4	97.2	90.9
Fixed Income	-0.5	1.0	1.0	-2.4	-0.6	-0.5	0.8	-0.7	-5.1	7.2	-0.9	98.4	103.1
Core Fixed Income	-0.5	1.0	1.0	-3.5	-1.1	-0.5	0.5	-0.9	-6.3	7.3	-1.0	97.4	102.5
High Yield/ Specialty Credit	0.0	0.7	0.9	1.3	-0.2	-0.4	2.7	-0.2	-1.5	6.4	-0.3	72.3	72.1
Emerging Market Debt	1.1	1.0	1.0	-1.9	1.2	1.0	0.9	-0.4	-4.4	10.6	-0.5	104.9	97.1
Commodities	3.1	0.9	0.9	8.1	0.4	2.4	5.1	0.4	5.7	13.5	0.6	88.7	71.7
Hedge Funds	4.9	0.2	0.2	6.2	-0.2	-0.8	3.9	1.6	3.1	2.0	2.9	43.0	-48.0
Alpha Pool	4.6	-0.6	0.0	0.5	-3.2	-6.7	2.0	-1.2	-2.5	1.8	-1.4	6.7	-
Midstream Energy	4.5	0.8	1.0	19.2	0.4	2.6	4.4	1.0	16.0	16.2	1.6	90.4	71.4
Core Real Estate	-5.7	0.8	0.8	-4.3	-1.4	-6.2	4.6	-0.8	-7.0	8.3	-1.0	63.9	144.8
Private Real Estate	0.0	1.0	1.0	9.9	-	0.0	0.0	0.9	6.7	6.8	2.2	100.0	100.0
Private Equity	0.0	1.0	1.0	11.0	-0.6	0.0	0.0	1.1	7.7	6.9	2.9	100.0	100.3
Private Credit	0.0	1.0	1.0	5.7	-0.6	0.0	0.0	0.6	2.7	4.4	1.4	99.9	100.0
Opportunistic	-	-	-	-0.9	-1.4	-10.9	7.1	-0.5	-3.6	7.1	-0.7	-6.3	-

Risk Return Statistics: Last Three Years

Period Ending: June 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
RETURN SUMMARY STATISTICS														
Up Market Periods	21	21	13	13	21	21	16	16	20	20	22	22	29	29
Down Market Periods	15	15	23	23	15	15	20	20	16	16	14	14	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	4.73	4.70	-3.52	-3.02	1.26	1.65	-1.90	-2.91	8.09	5.65	6.23	7.02	-4.28	1.90
Excess Return	2.96	3.00	-6.31	-5.79	-1.54	-1.01	-4.35	-5.41	5.73	3.64	3.08	3.90	-7.01	-0.69
Excess Performance	0.02	0.00	-0.50	0.00	-0.39	0.00	1.01	0.00	2.44	0.00	-0.79	0.00	-6.18	0.00
RISK SUMMARY STATISTICS														
Beta	0.98	1.00	0.99	1.00	0.74	1.00	1.02	1.00	0.85	1.00	0.19	1.00	0.78	1.00
Upside Risk	12.28	12.49	4.94	5.08	4.74	6.11	7.28	6.97	10.60	11.01	2.55	4.23	5.00	7.85
Downside Risk	10.83	11.12	5.45	5.34	4.30	5.74	7.65	7.59	8.80	10.23	0.69	2.08	6.76	4.99
RISK/RETURN SUMMARY STATISTICS														
Standard Deviation	16.29	16.63	7.29	7.33	6.39	8.37	10.56	10.28	13.54	14.91	1.98	4.27	8.33	9.27
Alpha	0.10	0.00	-0.53	0.00	-0.01	0.00	1.12	0.00	3.10	0.00	4.90	0.00	-5.67	0.00
Sharpe Ratio	0.18	0.18	-0.88	-0.81	-0.25	-0.12	-0.42	-0.54	0.42	0.24	1.62	0.95	-0.80	-0.07
Excess Risk	16.16	16.49	7.15	7.19	6.24	8.21	10.33	10.05	13.62	15.07	1.91	4.10	8.80	9.65
Tracking Error	1.08	0.00	0.49	0.00	2.69	0.00	0.90	0.00	5.09	0.00	3.92	0.00	4.59	0.00
Information Ratio	-0.04	-	-1.05	-	-0.20	-	1.18	-	0.41	-	-0.21	-	-1.38	-
CORRELATION STATISTICS														
R-Squared	1.00	1.00	1.00	1.00	0.94	1.00	0.99	1.00	0.88	1.00	0.16	1.00	0.76	1.00
Actual Correlation	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.94	1.00	0.40	1.00	0.87	1.00

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

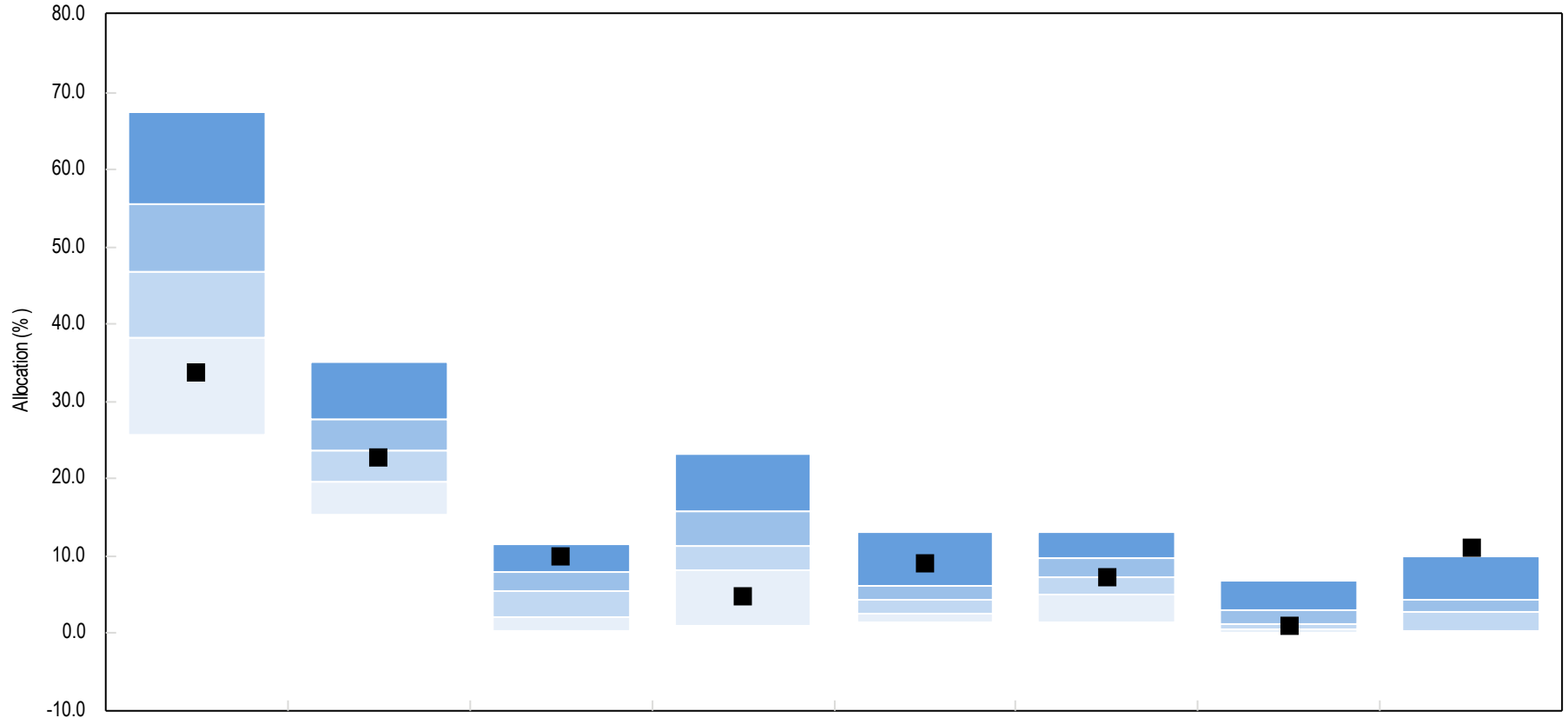
Risk Return Statistics: Last Two Years

	Midstream Energy	Alerian Midstream Energy Index	2 Yrs Opportunistic	Assumed Rate of Return +3%
RETURN SUMMARY STATISTICS				
Up Market Periods	13	13	24	24
Down Market Periods	11	11	0	0
Maximum Return	11.14	11.05	5.16	0.80
Minimum Return	-7.34	-9.86	-2.58	0.80
Return	24.44	19.20	1.53	10.00
Excess Return	18.73	14.71	-2.70	5.16
Excess Performance	5.24	0.00	-8.47	0.00
RISK SUMMARY STATISTICS				
Beta	0.85	1.00	-	-
Upside Risk	14.63	15.09	1.50	2.76
Downside Risk	6.98	9.47	3.43	0.00
RISK/RETURN SUMMARY STATISTICS				
Standard Deviation	14.76	16.94	6.21	0.00
Alpha	7.12	0.00	-	-
Sharpe Ratio	1.26	0.86	-0.43	13.51
Excess Risk	14.89	17.02	6.24	0.38
Tracking Error	4.18	0.00	6.21	0.00
Information Ratio	0.96	-	-1.27	-
CORRELATION STATISTICS				
R-Squared	0.95	1.00	-	-
Actual Correlation	0.97	1.00	-	-

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

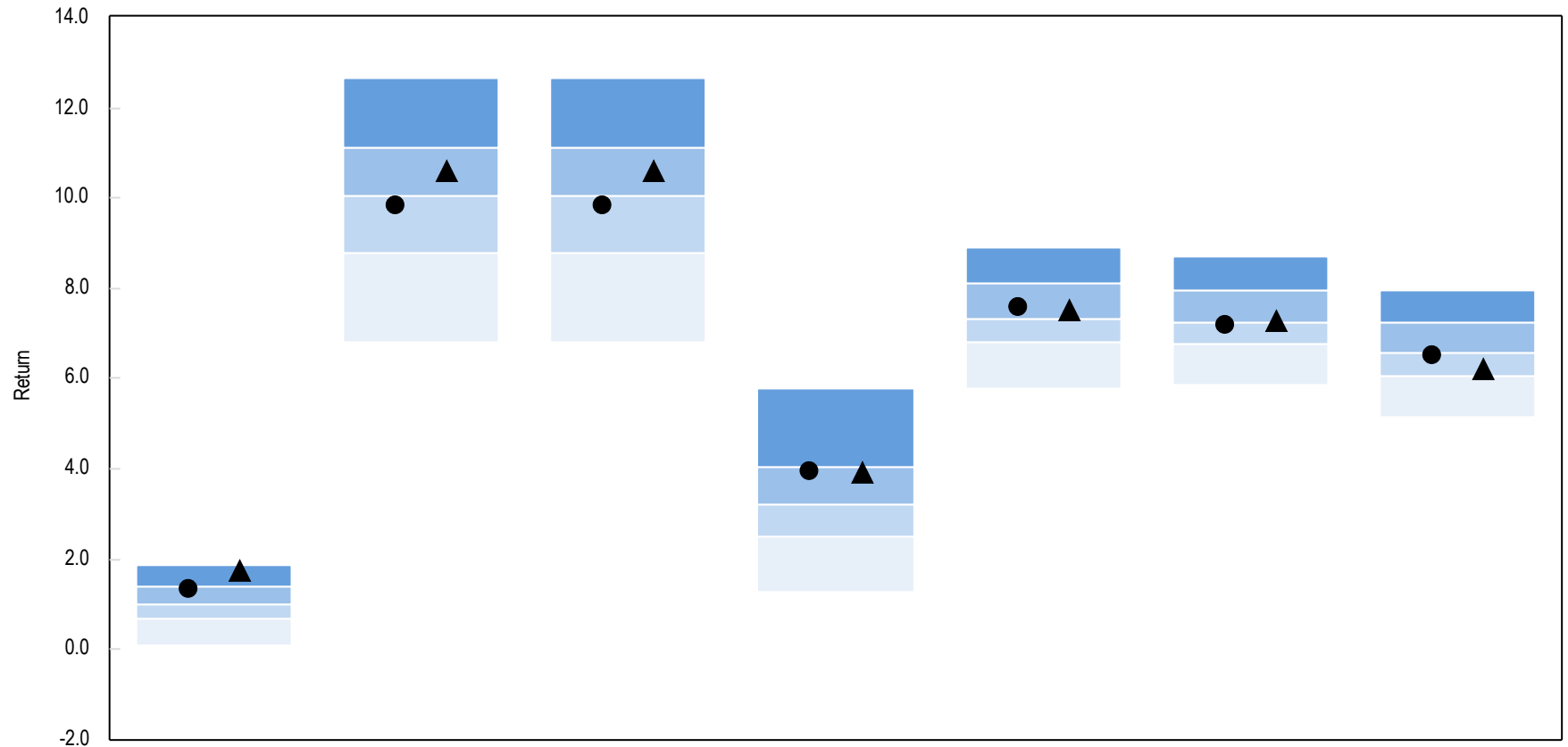
Peer Comparison

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



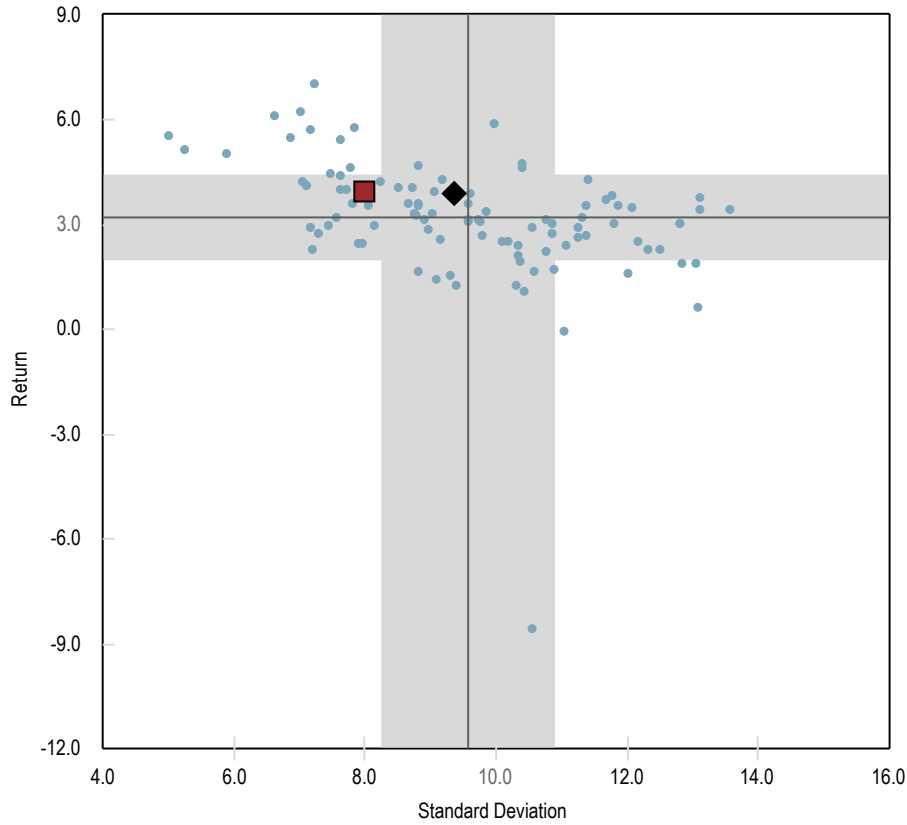
	Total Equity	Total Fixed Income	Hedge Funds	Private Equity	Real Assets/Commod	Real Estate - Private	Cash & Equivalents	Other
■ Total Fund	33.7 (88)	22.8 (59)	10.0 (11)	4.9 (86)	9.0 (16)	7.3 (48)	1.0 (59)	11.2 (1)
5th Percentile	67.3	35.0	11.5	23.1	13.1	13.0	6.9	10.1
1st Quartile	55.6	27.7	8.1	15.9	6.1	9.7	3.0	4.4
Median	46.8	23.7	5.5	11.3	4.4	7.3	1.3	2.7
3rd Quartile	38.2	19.6	2.2	8.2	2.6	5.0	0.7	0.3
95th Percentile	25.7	15.3	0.4	1.0	1.6	1.5	0.1	0.2
Population	97	98	42	83	60	76	91	14

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



	Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● Total Fund	1.4 (29)	9.8 (53)	9.8 (53)	4.0 (29)	7.6 (41)	7.2 (53)	6.5 (52)
▲ Policy Index	1.8 (8)	10.6 (32)	10.6 (32)	3.9 (30)	7.5 (45)	7.3 (50)	6.2 (70)
5th Percentile	1.9	12.6	12.6	5.8	8.9	8.7	8.0
1st Quartile	1.4	11.1	11.1	4.1	8.1	7.9	7.2
Median	1.0	10.0	10.0	3.2	7.3	7.3	6.6
3rd Quartile	0.7	8.8	8.8	2.5	6.8	6.8	6.0
95th Percentile	0.1	6.8	6.8	1.3	5.8	5.9	5.2
Population	103	103	103	99	98	95	95

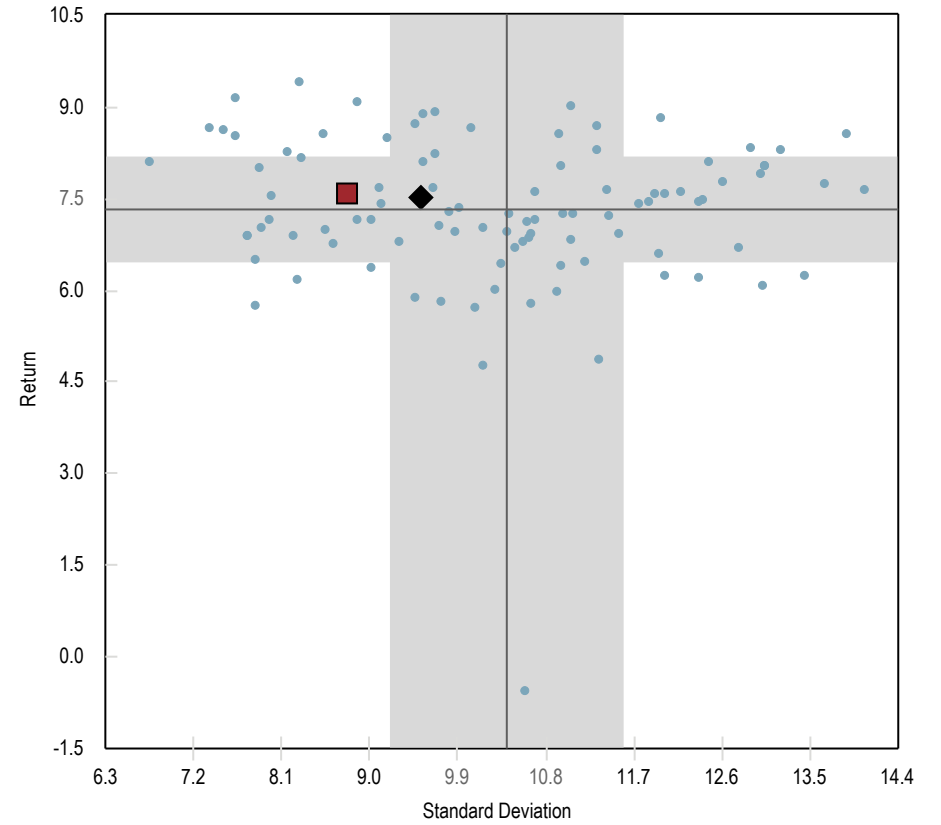
Annualized Return vs. Annualized Standard Deviation
3 Years Ending June 30, 2024



● InvMetrics Public DB > \$1B

	Return	Standard Deviation
■ Total Fund	3.96	7.98
◆ Policy Index	3.91	9.35
— Median	3.21	9.57
Population	99	99

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



● InvMetrics Public DB > \$1B

	Return	Standard Deviation
■ Total Fund	7.61	8.78
◆ Policy Index	7.51	9.53
— Median	7.33	10.41
Population	98	98

Other

Total Fund
Quarterly Historical Returns (Net of Fees)

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

	2024 Q2	2024 Q1	2023 Q4	2023 Q3	2023 Q2	2023 Q1	2022 Q4	2022 Q3	2022 Q2	2022 Q1	2021 Q4	2021 Q3
Total Fund	1.3	3.8	5.1	-0.8	1.9	3.2	4.5	-3.1	-7.5	-0.8	3.6	0.5
<i>Policy Index</i>	1.8	3.7	6.2	-1.4	2.9	3.8	5.5	-3.8	-8.9	-1.3	3.3	0.7

	2021 Q2	2021 Q1	2020 Q4	2020 Q3	2020 Q2	2020 Q1	2019 Q4	2019 Q3	2019 Q2	2019 Q1	2018 Q4	2018 Q3
Total Fund	5.5	3.5	8.8	4.4	10.7	-11.3	4.6	0.2	3.1	6.8	-6.4	2.3
<i>Policy Index</i>	5.7	3.3	8.8	4.5	10.1	-11.1	4.6	0.8	3.0	7.0	-5.5	2.2

	2018 Q2	2018 Q1	2017 Q4	2017 Q3	2017 Q2	2017 Q1	2016 Q4	2016 Q3	2016 Q2	2016 Q1	2015 Q4	2015 Q3
Total Fund	0.3	-0.1	3.0	3.2	2.7	4.2	0.8	3.5	1.9	1.1	2.2	-5.4
<i>Policy Index</i>	0.7	-0.1	3.2	3.1	2.8	3.5	0.5	2.9	2.2	1.8	1.4	-4.9

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

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, 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: 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

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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