

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

**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

1ST QUARTER 2025
Investment Landscape

Verus business update

Since our last Investment Landscape webinar:

- Verus hired Aimee Hauff as a Senior Performance Analyst, Mallory Wallace as Senior Operations Analyst, Chloe Vo as a Performance Analyst, and Mouhamed Diop as an Accounting Specialist in our Seattle office.
- Palmer Pederson was promoted to Consulting Associate on the Not-For-Profit team.
- Ian Toner, CFA, had an in-depth interview with The Journal of Portfolio Management: “CIO Perspectives”.
- 2025 Verus Capital Market Assumptions were released.
- Recent research, found at verusinvestments.com/research:
 - *Top 10 ideas for 2025: Back to the 90s?*
 - *Examining the Case for Private Credit*
 - *Selecting Exceptional Private Markets Managers: Strategies for Success in a Complex Arena*
 - *Using Fixed Income to Avoid Downside Risk*

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Recent Verus research

Visit: verusinvestments.com/research

Thought leadership

TOP 10 IDEAS FOR 2025: BACK TO THE 90S?

Every year Verus identifies a series of topics that we believe will be important for investors to consider during the coming year. Some of those tend to be economics or markets focused, while others tend to focus on geopolitics or other broader issues.

SELECTING EXCEPTIONAL PRIVATE MARKETS MANAGERS: STRATEGIES FOR SUCCESS IN A COMPLEX ARENA

We examine the curated due diligence that Verus uses to select exceptional private markets managers, how our private market team identifies top-tier private markets managers, and the expertise required to do so.

EXAMINING THE CASE FOR PRIVATE CREDIT

We discuss the benefits of including private credit within an investment program. We also highlight the drawbacks and risks facing the asset class as we look to assist investors in answering the question of where to look for credit exposure.

USING FIXED INCOME TO AVOID DOWNSIDE RISK

Downside risk is the undesirable risk of market volatility. We explore how negative correlation of traditional fixed income to equities may mitigate equity drawdown risk and how these characteristics relate to the more active role that fixed income may play in broader portfolio risk management.

4th quarter summary

THE ECONOMY

- The election of Donald Trump and news of a unified government appears to have positively impacted household and business sentiment. The news has generally been perceived as implying easier business conditions, firmer economic growth, fewer interest rate cuts, and mildly higher inflation. **p. 8 & 9**
- U.S. inflation drifted upward during Q4, from 2.4% YoY in September to 2.9% in December. Core inflation (ex-food & energy) was fairly stable at 3.2%. Investors now expect the Fed to cut rates once or twice over the next year. Further increases in the rate of inflation could possibly push the Federal Reserve towards a rate hike—an outcome that would likely spook markets. **p. 10**

EQUITY

- The U.S. (S&P 500 +2.4%) provided a strong quarter while non-U.S. markets lagged. Emerging markets (MSCI EM -8.0%) and international developed (MSCI EAFE -8.1%) both delivered sharp losses, though these losses were caused by currency movements rather than equity weakness. For investors with hedged currency exposure, the MSCI EAFE index produced a +0.1% return. **p. 26 & 36**
- Small cap and value both continued to underperform. Small cap trailed large cap by -2.4% in Q4, while value trailed growth by -9.1%. This capped off a year of poor returns for both style factors, underperforming by -13% and -19%, respectively. **p. 28**

FIXED INCOME

- The 10-year U.S. Treasury yield jumped from 3.79% to 4.55% during the quarter, amid growing evidence that the economy may remain hotter than previously believed, and expectations around pro-growth policies of the Trump Administration, as well as the possibility that a tariff spat with trade partners could push inflation upwards. **p. 21**
- Default activity remained low, as the economy was strong and chances of recession have fallen. However, ‘distressed exchanges’, a renegotiation of debt that does not count as a technical default, have been rising substantially. During the quarter, total distressed credit volume was roughly \$19.4 billion, which marked the second largest quarterly total on record since Q4 2008. **p. 24**

ASSET ALLOCATION ISSUES

- U.S. election results triggered large market movements in early November. Equities rallied along with most risk assets, while treasury yields jumped materially. Although investors have interpreted this news as generally positive for the future, volatility along the way is also likely. **p. 9**
- Implied bond market volatility continued to moderate, following record highs that were achieved during the recent U.S. inflation scare. However, volatility levels remain materially above the longer-term average. We suspect that volatility will be elevated on an ongoing basis as investors are fixated on Federal Reserve actions and communications. **p. 33**

Evidence of a strong U.S. economy, and news of an incoming Trump Administration, have led to shifting expectations around growth, interest rates, and inflation

What drove the market in Q4?

“Donald Trump wins 2024 U.S. election in historic comeback”

Swing State Margin of Victory

Arizona	Georgia	Michigan	Nevada	NC	Pennsylvania	Wisconsin
+5.5%	+2.2%	+1.4%	+3.1%	+3.2%	+1.7%	+0.9%

Article Source: BBC, November 7th, 2024

“Fed cuts by a quarter point, indicates fewer reductions ahead”

Futures Implied Fed Funds Rate

Jan 25	March 25	May 25	June 25	July 25	Sep 25
4.32%	4.26%	4.19%	4.09%	4.05%	3.98%

Article Source: CNBC, December 18th, 2024

“U.S. inflation gauge ticks higher with consumer prices on the rise”

Personal Consumption Expenditures Price Index, Year-over-Year

June 24	July 24	Aug 24	Sep 24	Oct 24	Nov 24
2.4%	2.5%	2.3%	2.1%	2.3%	2.4%

Article Source: PBS, November 27th, 2024

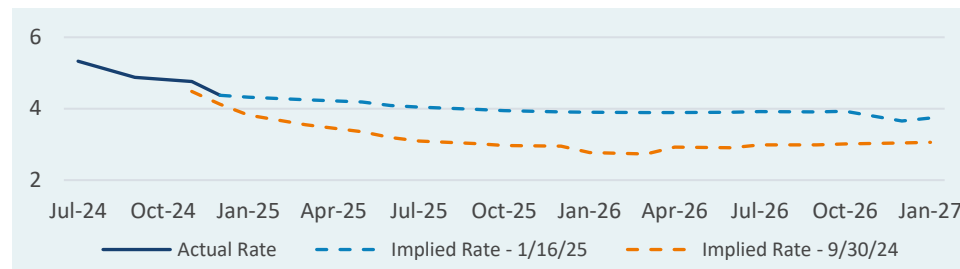
“Dollar hits one-year high as Trump clinches election victory”

ICE U.S. Dollar Index

July 24	Aug 24	Sep 24	Oct 24	Nov 24	Dec 24
104.1	101.7	100.8	104.0	105.7	108.5

Article Source: Bloomberg, November 6th, 2024

U.S. MARKET IMPLIED FUTURE INTEREST RATES



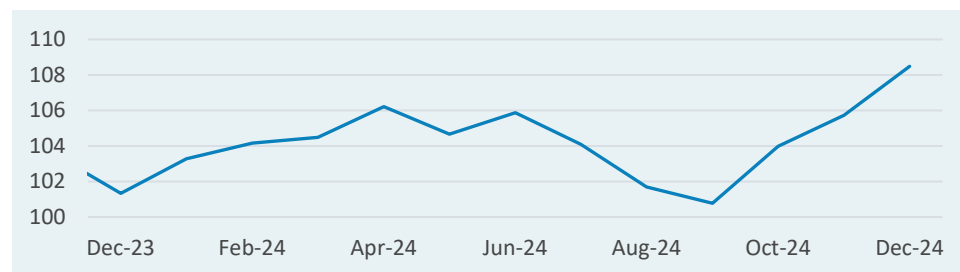
Source: CME Group, as of 1/16/25

PCE INFLATION, YEAR-OVER-YEAR



Source: BEA, as of 11/30/24

ICE U.S. DOLLAR INDEX



Source: ICE, as of 12/31/24

Economic environment

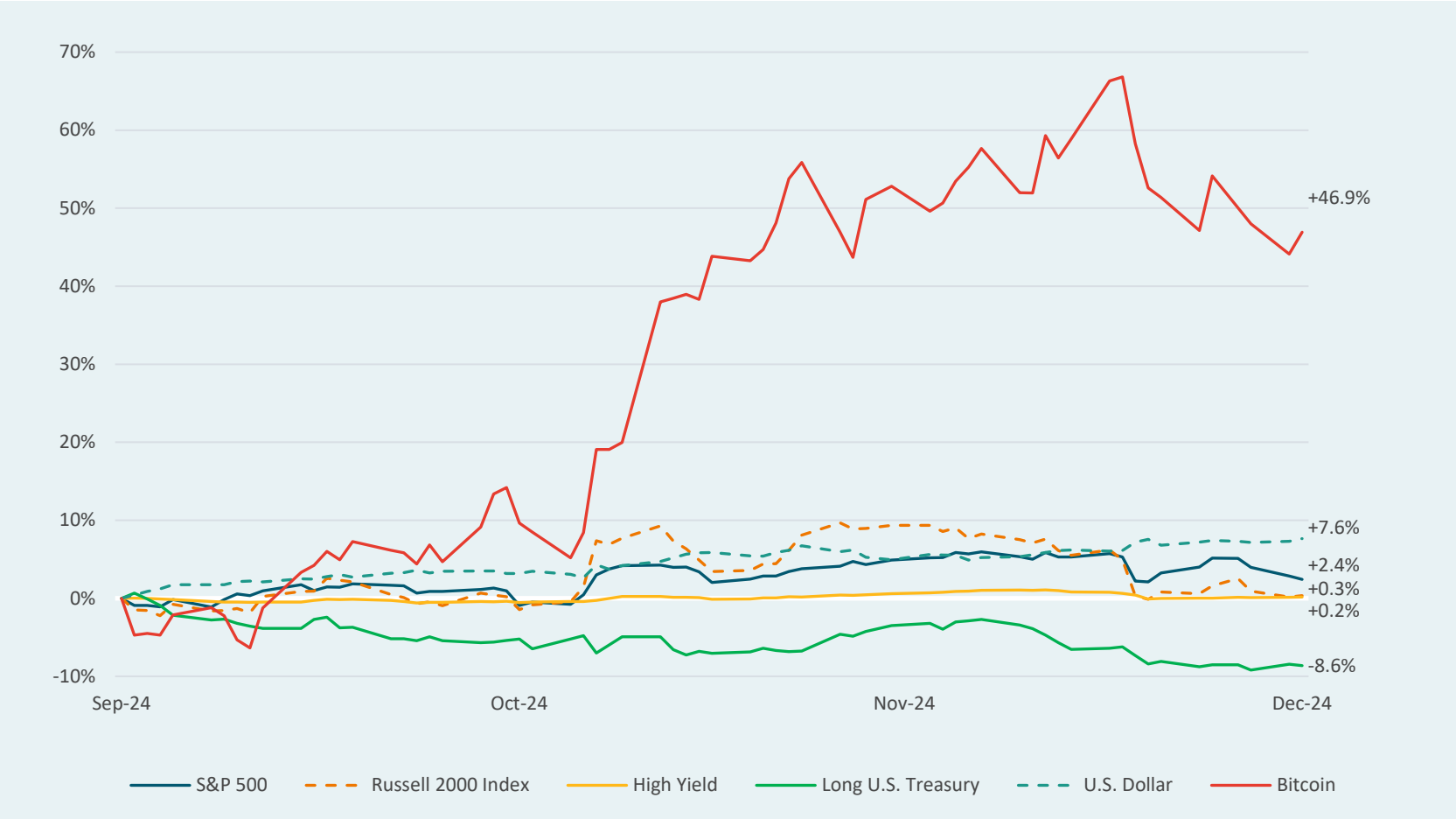
U.S. economics summary

- In early November, U.S. election results were announced, confirming the election of Donald Trump and a unified government as Republicans took the House and Senate. Household surveys and market movements suggest that the coming years may be characterized by easier business conditions, firmer economic growth, fewer interest rate cuts, and perhaps mildly higher inflation.
- Real GDP growth slowed during Q4, from 3.1% to 2.3% quarter-over-quarter annualized (2.5% year-over-year), but remained fairly robust. Economic growth continues to be supported largely by consumer purchases, with increases in government spending also providing notable support. Investment fell and was the largest drag on the economy.
- The Federal Reserve cut interest rates once in November and again in December—each time by a quarter point. This brought the Fed’s target rate from 4.75-5.00% down to 4.25-4.50%.
- U.S. inflation drifted upward during Q4, from 2.4% YoY in September to 2.9% in December. Core inflation (ex-food & energy) was fairly stable at 3.2%. Investors now expect the Fed to cut rates once or twice over the next full year. Further increases in the rate of inflation could potentially push the Federal Reserve towards a rate hike—an outcome that would likely spook markets.
- The labor market was broadly stable during the quarter. Unemployment remained at 4.1%, while the labor participation rate moved slightly lower. December nonfarm payrolls exceeded expectations, coming in at 256,000, which was 91,000 higher than forecast. Moderate, but stable, labor conditions further eased fears that the rise in unemployment of late-2023 might have indicated a trend towards recession.
- Consumer sentiment has improved materially since the results of the U.S. election became known. In November, small business optimism showed the largest monthly jump since 1980. Significant improvements in sentiment should bode well for household and business spending in the near-term.

	Most Recent	12 Months Prior
Real GDP (YoY)	2.5% <i>12/31/24</i>	3.2% <i>12/31/23</i>
Inflation (CPI YoY, Core)	3.2% <i>12/31/24</i>	3.3% <i>12/31/23</i>
Expected Inflation (5yr-5yr forward)	2.3% <i>12/31/24</i>	2.5% <i>12/31/23</i>
Fed Funds Target Range	4.25–4.50% <i>12/31/24</i>	5.25–5.50% <i>12/31/23</i>
10-Year Rate	4.55% <i>12/31/24</i>	3.88% <i>12/31/23</i>
U-3 Unemployment	4.1% <i>12/31/24</i>	3.7% <i>12/31/23</i>
U-6 Unemployment	7.5% <i>12/31/24</i>	7.1% <i>12/31/23</i>

Examining notable movements of Q4

Conditions shifted in Q4, fueled by economic surprises & U.S. election results



Source: S&P, FTSE Russell, Bloomberg, ICE, as of 12/31/24

Inflation

U.S. inflation (CPI) drifted upward during the quarter, from 2.4% year-over-year in September to 2.9% in December. Meanwhile, core inflation (excluding food & energy) was fairly stable year-over-year, at 3.2% in December. Investors now expect the Fed to cut rates perhaps once or twice over the next year, but the outcome, as always, will depend on the strength of the labor market and the trend of inflation. Further inflation pressures could potentially push the Federal Reserve towards a rate hike—an outcome that would likely spook markets. This is certainly not our expectation, but it is a risk worth watching.

In prior quarters we discussed topics such as deflationary trends in certain goods and services prices, as well as the

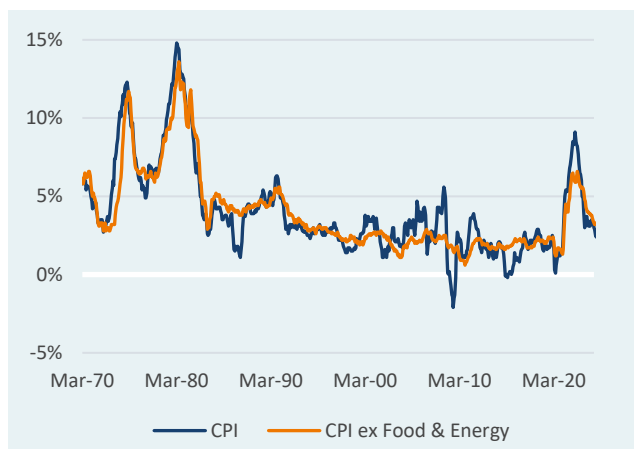
gradual decline of inflation (albeit slow) towards the Fed’s 2% target. Based on recent gains in consumer sentiment and very large gains in business sentiment, as well as positivity around the business and economic effects of a second Trump presidency, we are not as optimistic that inflation will move materially lower from this point. Instead, inflation appears to have stabilized around 3%, with more risks to the upside than to the downside.

Investors will likely remain focused intently on monthly economic data and how the Federal Reserve reacts to data surprises. Also, the *good news is bad news* market dynamics may continue, as strong economic data reduces the chance of rate cuts and therefore may be interpreted negatively.

Certain goods & services prices have been softening, but other areas have been rising at a concerning pace

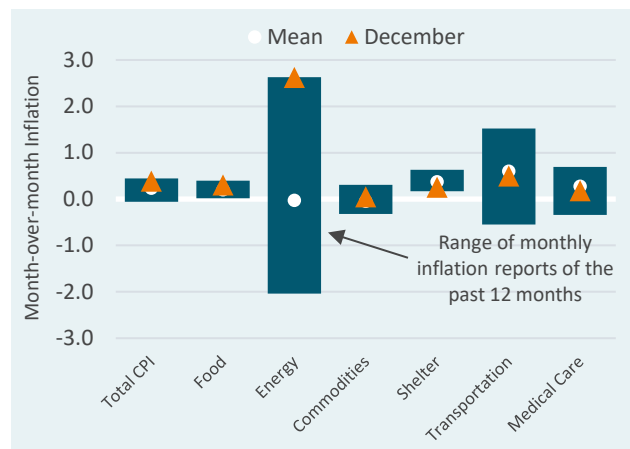
Energy prices fueled a hot December figure

U.S. CPI (YOY)



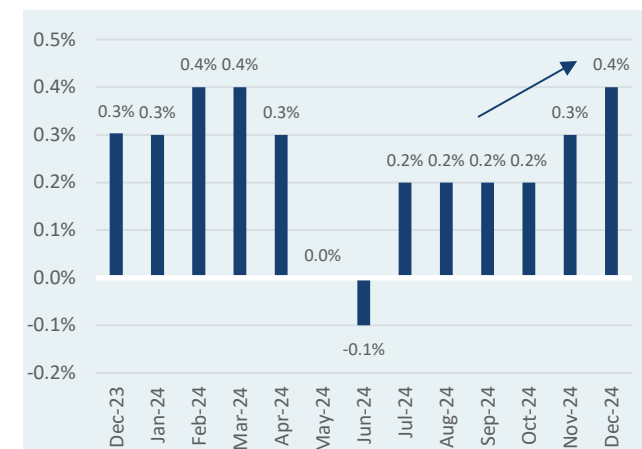
Source: BLS, as of 12/31/24

DECEMBER INFLATION REPORT



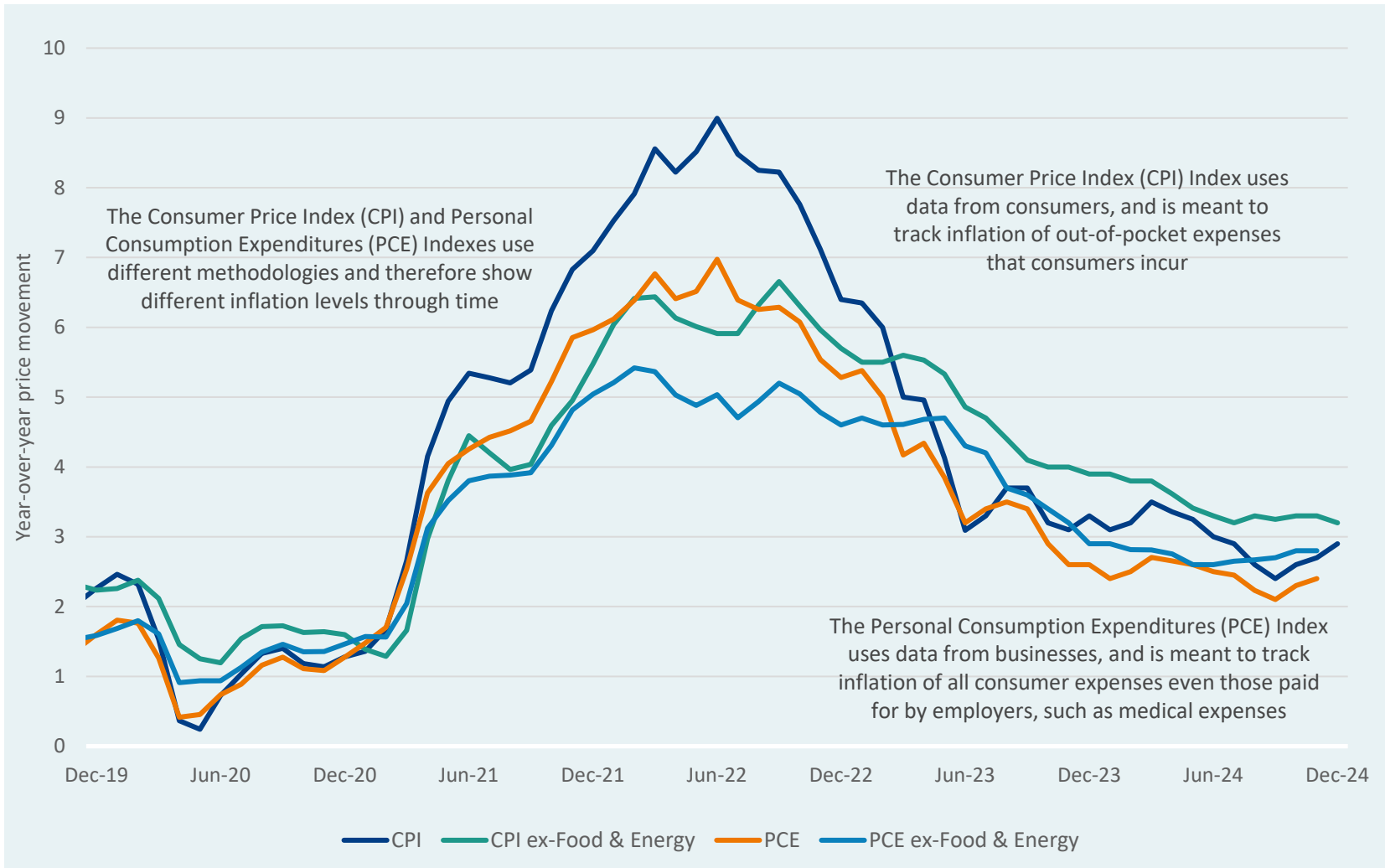
Source: BLS, Verus, of 12/31/24. Commodities exclude food and energy

MONTHLY PRICE MOVEMENT (CPI)



Source: BLS, as of 12/31/24

Inflation stabilizing above Fed's target



The rate of inflation appears to be stabilizing *above* the Fed's target of 2%

A surprisingly strong economy and ongoing price pressures have led investors to expect fewer interest rate cuts in 2025

Source: FRED, Verus, as of 12/31/24 – or most recent release

GDP growth

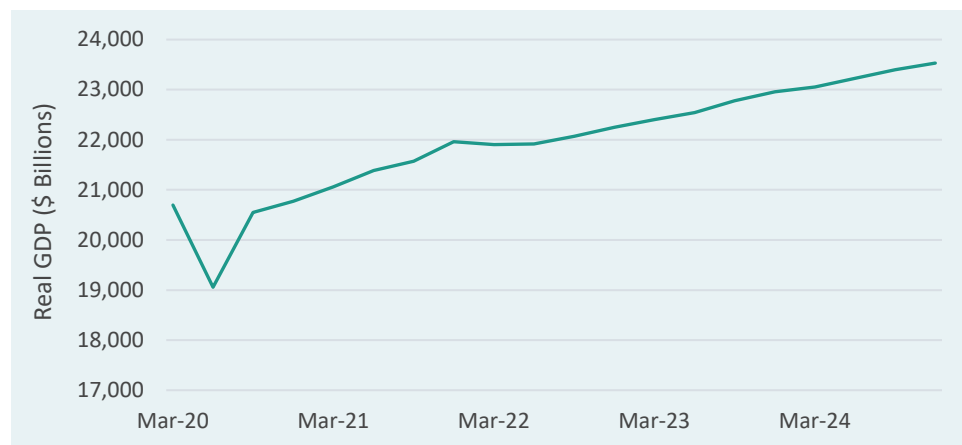
Real GDP growth slowed during Q4, from 3.1% to 2.3% quarter-over-quarter annualized (2.5% year-over-year), but remained fairly robust. Economic growth continues to be supported largely by consumer spending, with increases in government expenditures also providing notable support. Investment fell, and was the largest drag on the economy, followed by fewer imports. Spending gains were broad across goods and services—increases in healthcare spending acted as the largest change. Goods spending was boosted most notably by recreational goods and vehicles. The acceleration of government expenditures was fueled by employee compensation increases.

Economists and investors expect U.S. economic growth to slow

during 2025, reflecting more modest consumer spending as households face higher costs and lower savings rates. The U.S. economy is likely headed towards a more moderate growth phase after many quarters of surprisingly hot growth and spending. Unlike past periods of economic weakening, many trends today could reasonably be summarized as a return to normalcy. For example, following the pandemic, the domestic labor market was experiencing a historic mismatch between the number of jobs available and the number of workers available. Resolving that mismatch required a material weakening of the labor market from extreme tightness to relatively strong, but not a move towards something that suggests recession.

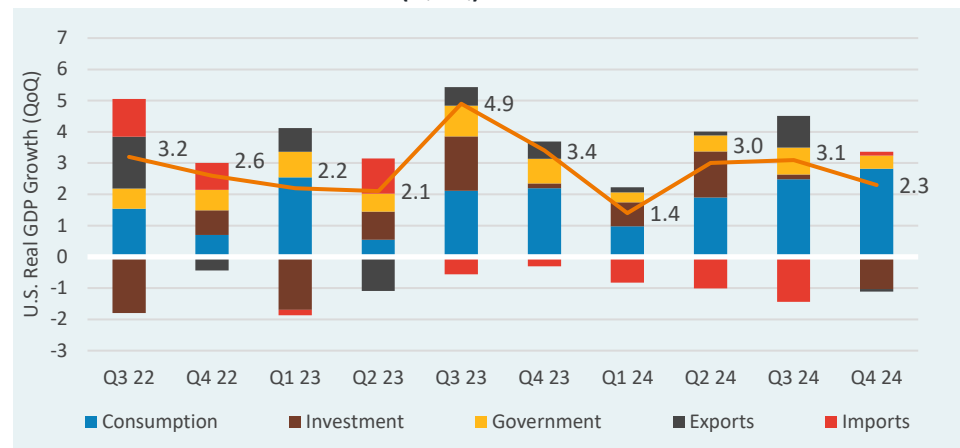
U.S. real GDP growth slowed during Q4, reflecting strong consumer spending but lower levels of private investment

U.S. REAL GROSS DOMESTIC PRODUCT



Source: FRED, as of 12/31/24

U.S. REAL GDP COMPONENTS (QOQ)

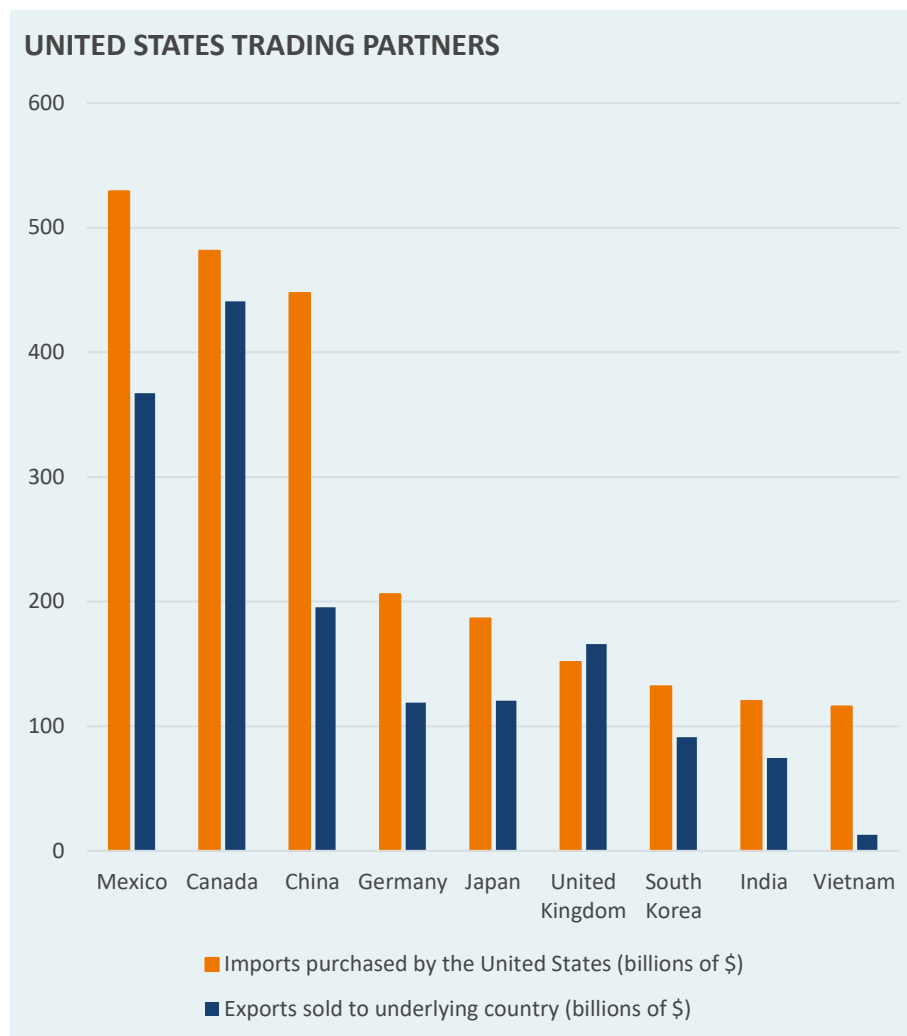


Source: FRED, as of 12/31/24

Trade negotiations: possible areas of focus

Since the re-election of Donald Trump, the topic of U.S. trade has been thrust back into the spotlight. While the President has publicly threatened large, across-the-board tariffs, lessons learned from the first Trump Administration suggest this may be a negotiation tactic. It is more likely that tariffs will be used tactically, without broad and large increases as some investors fear.

Here we provide an overview of the United States' largest trading partners, through two lenses: the total amount of goods and services that the U.S. purchases from each of our largest trading partners, and the total amount of goods and services that these trading partners purchase from the United States. The countries that sell a significant amount of goods and services to the U.S., but do not purchase nearly as much, may become targets for trade negotiation in the near future.



Source: Bureau of Economic Analysis, as of 2023

Countries which sell a significant amount of goods and services to the U.S., but do not purchase nearly as much, may become targets for trade negotiation

Labor market

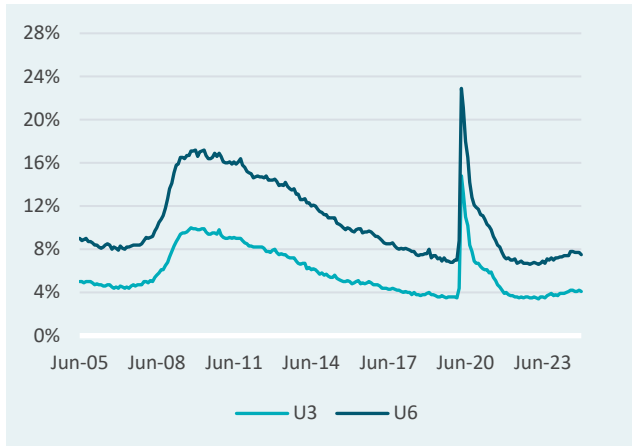
The labor market was broadly stable during the quarter. Unemployment remained at 4.1%, while the labor participation rate moved slightly from 62.7% to 62.5%. Labor data surprised to the upside in December with nonfarm payrolls exceeding expectations, coming in at 256,000, which was 91,000 higher than expectations for 165,000. Layoffs have been moving higher and are now back to pre-pandemic levels. Moderate, but stable, labor conditions have further eased fears that the rise in unemployment of late-2023 might have indicated a trend towards recession.

In recent editions of this document, we have explained that immigration, and specifically the difficulties of quantifying

unlawful immigration, have made certain labor statistics very difficult to interpret. Determining between a weak or strong job market, or whether the market is trending towards slack or tightness, requires data that is accurate and granular in nature. Relatively small changes in the size, or changes in trend, of the labor market can have real impacts on wage levels, the strength of the economy, and spending, for example. With the new administration coming into office, and many changes to border enforcement and overall immigration policy likely forthcoming, it will be important to closely monitor how these changes incrementally impact the size, trend, and nature of the U.S. job market.

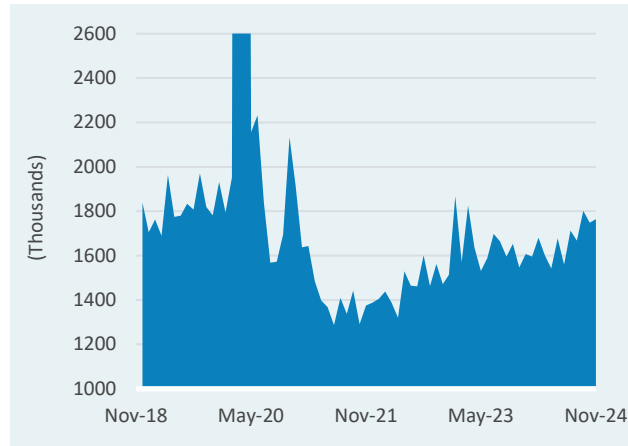
The job market appears to have shifted from *extremely tight* to *fairly balanced*, and is now showing greater stability

U.S. UNEMPLOYMENT



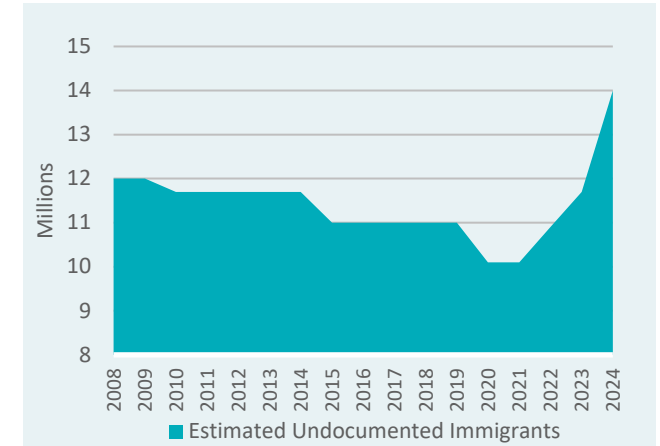
Source: FRED, as of 12/31/24

LAYOFFS



Source: FRED, as of 11/30/24

U.S. UNDOCUMENTED IMMIGRANTS



Source: Center for Immigration Studies

The consumer

Inflation adjusted personal spending growth was 2.9% year-over-year in November, remaining in a robust range. It is expected that consumer spending will slow in 2025, leading to a more moderate pace of overall economic growth.

The average cost of household debt payments has been rising in recent years, moving towards pre-pandemic levels. A helpful way to gauge the average household *debt burden* is to examine average monthly debt payments as a percentage of average monthly disposable income. This metric shows an important aspect of rising interest rate environments—higher interest rates gradually feed through to household costs over

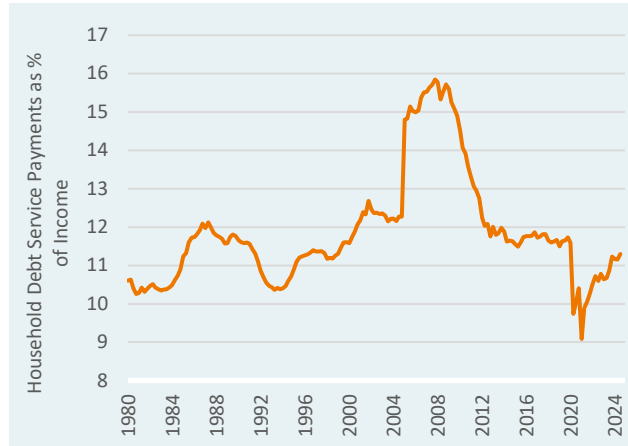
time, rather than all at once. This is due to fixed rate borrowing—most Americans who own a home or a car, for example, are not as impacted by higher interest rates for those items until they purchase a new home or purchase a new car and are then exposed to higher rates. As time goes by, more households must eventually make large purchases and therefore must borrow at higher rates. As this occurs, the higher costs of debt continues to eat into budgets. This hurts economic growth, as households must either reduce overall spending, or save less money—as observed recently. We expect that, although the economy is strong, this effect will act as an incremental drag on spending for years to come.

REAL PERSONAL SPENDING



Source: FRED, as of 11/30/24

HOUSEHOLD DEBT PAYMENTS AS % OF DISPOSABLE INCOME



Source: FRED, as of 12/31/24

PERSONAL SAVINGS RATE



Source: FRED, as of 11/30/24

Sentiment

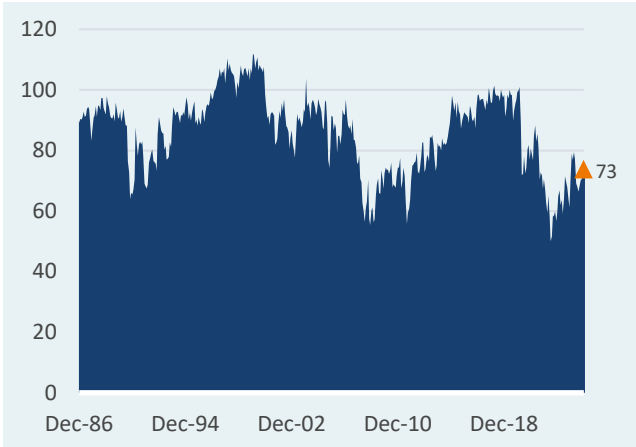
Consumer sentiment has improved materially since the results of the U.S. election became known. In November with small business optimism showing the largest monthly jump since 1980. Significant improvements in sentiment should bode well for household and business spending in the near-term.

According to the University of Michigan Consumer Sentiment survey, households expressed more optimism around the economy in December. Year-ahead inflation expectations changed, rising substantially to 3.3%, while long-run inflation expectations were more stable. We suspect ongoing news coverage and fear around tariffs has impacted expectations.

Throughout 2022, small business optimism had declined as companies grappled with high materials prices and labor shortages. Optimism remained very poor in the following years, until November showed the largest single-month increase in sentiment since 1980. As explained by NFIB Chief Economist Bill Dunkelberg, “Main Street also became more certain about future business conditions following the election, breaking a nearly three-year streak of record high uncertainty. Owners are particularly hopeful for tax and regulation policies that favor strong economic growth as well as relief from inflationary pressures.”

Consumer sentiment improved in Q4, while small business sentiment showed the largest monthly gain since 1980

CONSUMER SENTIMENT (UNIV. OF MICHIGAN)



Source: University of Michigan, as of 12/31/24

CONSUMER CONFIDENCE (CONFERENCE BOARD)



Source: Conference Board, as of 12/31/24

NFIB SMALL BUSINESS SENTIMENT



Source: NFIB, as of 12/31/24

Housing

The average 30-year mortgage rate jumped materially during the quarter, from 6.1% to 6.9%, alongside broader rises across the yield curve. Meanwhile, home prices have increased 3.4% year-over-year as of October, according to CoreLogic. These conditions have led to sustained extreme difficulties in affordability for many Americans. However, some aspects of the market have moved in a more favorable direction, such as total housing inventory, at 953,000 in November, closer to the level of 1,143,000 in November 2019 (pre-pandemic). Inventory reached a low of 346,000 in February 2022. The *average days on the market* of homes for sale has also risen to 62 days in November, which compares to 67 days in November 2019—suggesting that more power resides with homebuyers. This metric reached a low of 30 in April 2022. Overall, it appears that the market will

likely remain incredibly expensive, but perhaps with a more normal supply/demand balance. If inventory continues increasing and homes sit longer on the market, this may pressure sellers to reduce prices in the future in order to incentivize buyers who have more inventory to choose from.

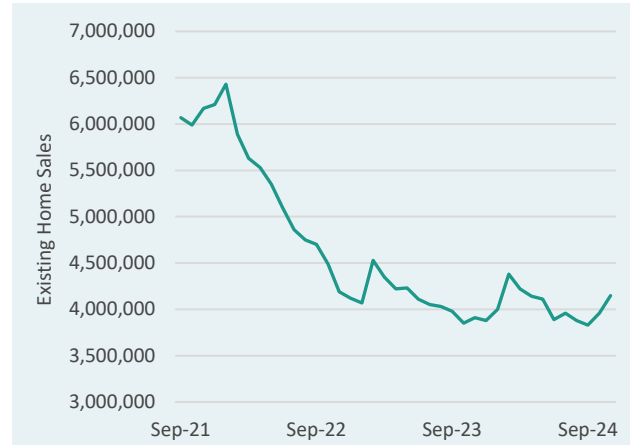
While home purchase affordability remains dire, the average cost of rent continues to fall nationwide. According to Redfin, in November rent costs were down -0.7% year-over-year and rents are now back to March 2022 levels. Substantial increases in multifamily supply have reportedly contributed to downward rent pressure, with the median asking rent price falling to \$1.79 per square foot for the first time since November 2021.

30-YEAR MORTGAGE RATE (%)



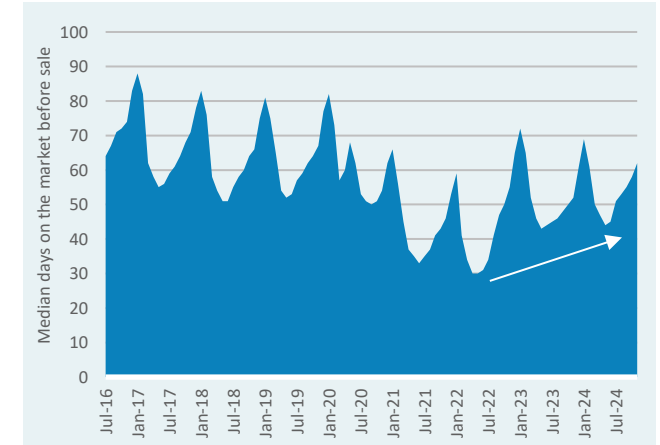
Source: Freddie Mac, as of 12/31/24

EXISTING HOME SALES



Source: National Association of Realtors, as of 11/30/24

AVERAGE DAYS ON THE MARKET



Source: FRED, as of 11/30/24

International economics summary

- The Eurozone grew only 0.9% YoY Q3. The region is also expected to show slow growth in 2025, with a +1.2% consensus estimate for the Euro Area. High energy prices have negatively impacted manufacturing and other business activities, while competition from China has also had dire impacts. Once the industrial heart of Europe, Germany’s manufacturing sector faces an uncertain future.
- Inflation has moderated across most global economies, with the European Central Bank (ECB) rounding out the year with its fourth interest rate cut. The ECB has shown a shift in concern away from inflation and towards growth—removing official language regarding keeping rates “sufficiently restrictive.” Economists now expect 4-5 rate cuts during 2025, to a rate level that is believed to be neutral to growth or slightly stimulative.
- After slipping into contractionary territory last quarter, the Japanese economy rebounded in Q3, delivering

growth of +0.5%. This coincided with a slight uptick in inflation, now at 3%. Growth has been assisted by a weak Yen, which makes exports cheaper for other countries to purchase. Domestic consumer demand has also provided a tailwind for growth and led to expectations of a more normal interest rate environment, with the Bank of Japan now expected to increase interest rates to 0.50% by March.

- China was reportedly able to achieve the official GDP growth target in 2024, claiming growth of 5.4% year-over-year, though the economy still faces deep structural issues. China is heavily reliant on exports, which may be interrupted by U.S. tariffs in the case of a trade spat. Home prices continue to fall alongside oversupply and weaker economic conditions. Deflation fears are weighing on consumer spending. Alongside these near-term issues, a declining population poses a multitude of problems to the overall economy, spending, and the housing market.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.5% 12/31/24	2.9% 12/31/24	4.1% 12/31/24
Eurozone	0.9% 9/30/24	2.4% 12/31/24	6.3% 11/30/24
Japan	0.5% 9/30/24	3.0% 12/31/24	2.4% 11/30/24
BRICS Nations	4.5% 9/30/24	2.1% 12/31/24	5.2% 12/31/24
Brazil	4.0% 9/30/24	4.8% 12/31/24	6.1% 11/30/24
Russia	3.1% 9/30/24	9.5% 12/31/24	2.3% 11/30/24
India	5.4% 9/30/24	5.2% 12/31/24	7.1% 12/31/24
China	5.4% 12/31/24	0.1% 12/31/24	5.1% 12/31/24

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

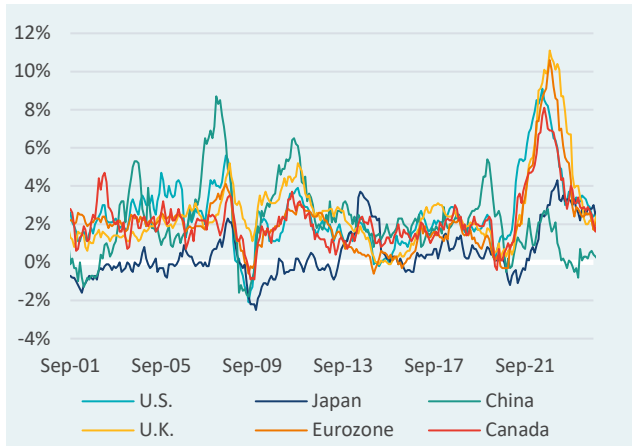
The Eurozone grew only 0.9% YoY Q3. The region is expected to show slow growth in 2025 of +1.2%. The ECB has communicated 4-5 rate cuts during the year, as low growth remains a concern, and the 2% inflation target has nearly been achieved. Although growth rates have ticked up slightly, strong headwinds remain. Many countries face high energy costs, greater competition from China, and deep side effects from a languishing Chinese economy. Europe's largest industrial power, Germany, has taken the brunt of these effects, with manufacturing activity contracting for many quarters.

The U.K. faces economic headwinds of its own, as tax increases introduced by the Labour Party, and uncertainty surrounding potential shifts in global trade due to a second Trump presidency, have made growth difficult for local companies. While inflation dropped in December to 2.5%, price

growth remains at levels that are too high for comfort. Despite the threat of inflation, economists expect four rate cuts in 2025.

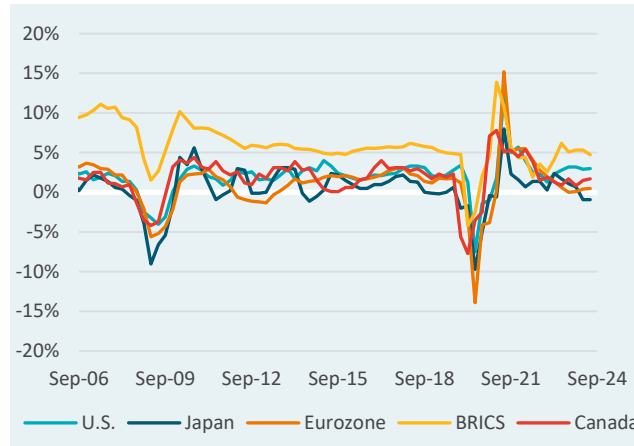
The Japanese economy has recently seen increasing costs, most notably in energy and food. An uptick in inflation following the pandemic and union wage negotiations led the Bank of Japan to reverse their negative interest rate policy in July, as they seek normalization and consistent growth. The BoJ is expected to hike interest rates to 0.5% in late January or March to the highest level in 17 years. Broad wage hikes were recently agreed upon between labor unions and employers, which were a prerequisite for the continued hiking of interest rates, which are expected to eventually reach 1%.

INFLATION (CPI YEAR-OVER-YEAR)



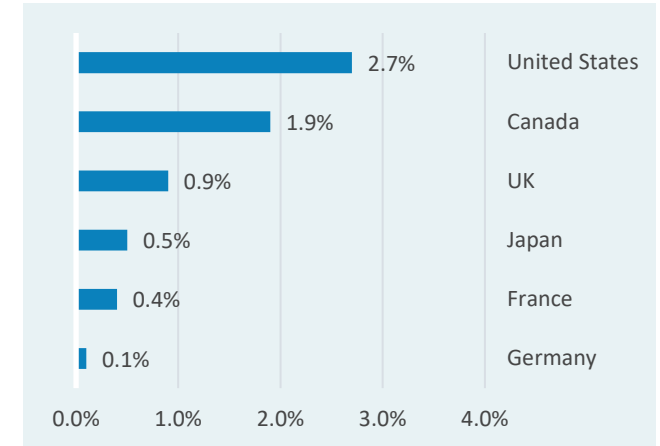
Source: BLS, Verus, as of 12/31/24

REAL GDP GROWTH (YEAR-OVER-YEAR)



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

Q3 REAL GDP GROWTH (YOY)



Source: BLS, Verus, as of Q3 2024

Fixed income rates & credit

Fixed income environment

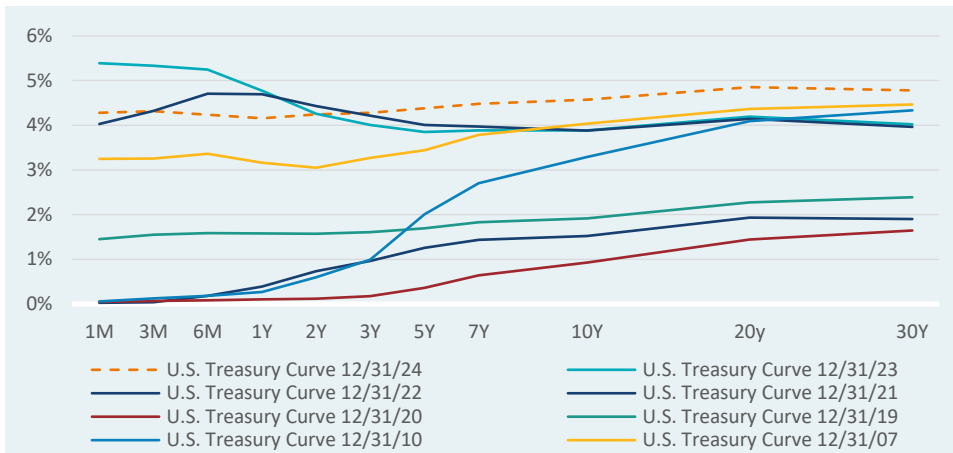
- The Federal Reserve cut interest rates once in November and again in December—each time by a quarter point. This brought the target rate from 4.75-5.00% to 4.25-4.50%. Rate expectations for 2025 have shifted, as better economic growth expectations and firmer inflation will likely lead the Fed towards fewer rate cuts.
- The 10-year U.S. Treasury yield jumped from 3.79% to 4.55% during the quarter, amid growing evidence that the economy may remain hotter than expected, expectations around pro-growth policies of the Trump Administration, as well as the possibility that a tariff spat with trade partners could push inflation upwards.
- Most credit indices delivered negative to slightly positive returns, with rising interest rates impacting duration-sensitive assets. Bank loans, which are much less sensitive to rate movements, returned +2.3%. High yield delivered slightly positive returns of +0.2% while investment grade lost -2.7%.
- Credit spreads were broadly tighter, a reflection of continued strength in the U.S. corporate sector. Lower-quality high yield bond spreads fell by -30bps to 2.7%, while investment grade spreads tightened slightly to 0.8%. Credit spreads across all ratings remain well below long-term historical averages, suggesting investors are confident in the ability of businesses to service debt.
- High yield default activity remained low, falling to 1.1%—down from 2.6% one-year prior. This compares to the long-term annual average of 3.4%. However, distressed exchange activity, particularly among LMEs, has continued to expand. Total distressed credit volume reached \$19.4 billion in Q4, far surpassing the previous quarter of \$13.5 billion. The level of Q4 was the second largest quarterly total on record since Q4 2008, with Q3 of 2024 being the third highest total on record.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	(3.1%)	1.3%
Core Plus Fixed Income (Bloomberg U.S. Universal)	(2.7%)	2.0%
U.S. Treasuries (Bloomberg U.S. Treasury)	(3.1%)	0.6%
U.S. Treasuries: Long (Bloomberg U.S. Treasury 20+)	(9.4%)	(8.0%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	0.2%	8.2%
Bank Loans (S&P/LSTA Leveraged Loan)	2.3%	9.0%
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	(7.0%)	(2.4%)
Emerging Market Debt Hard (JPM EMBI Global Diversified)	(1.9%)	6.5%
Mortgage-Backed Securities (Bloomberg MBS)	(3.2%)	1.2%

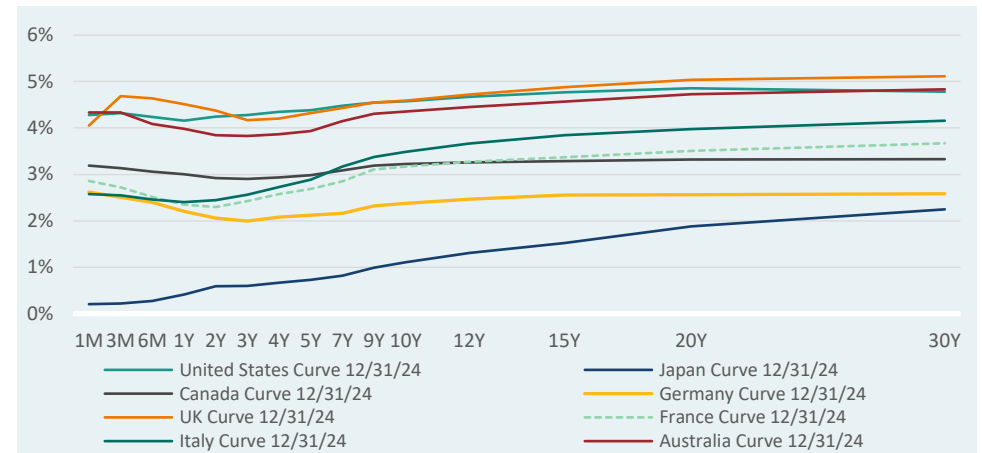
Source: Standard & Poor's, J.P. Morgan, Bloomberg, as of 12/31/24

Yield environment

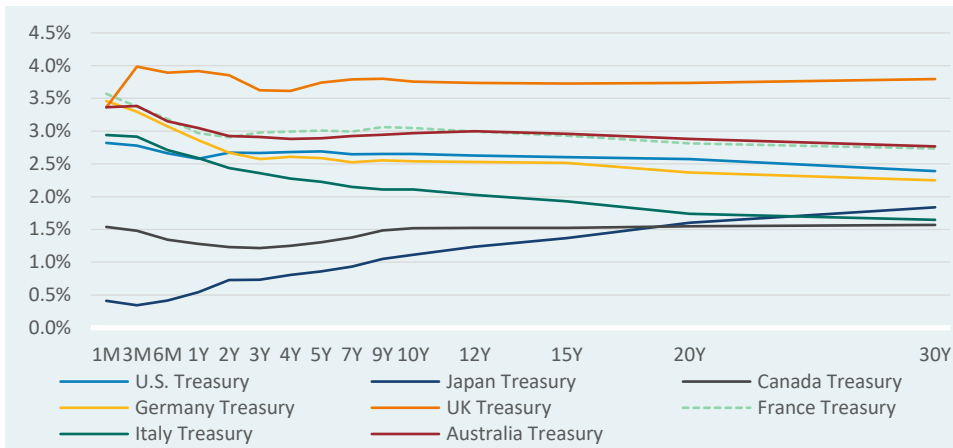
U.S. YIELD CURVE



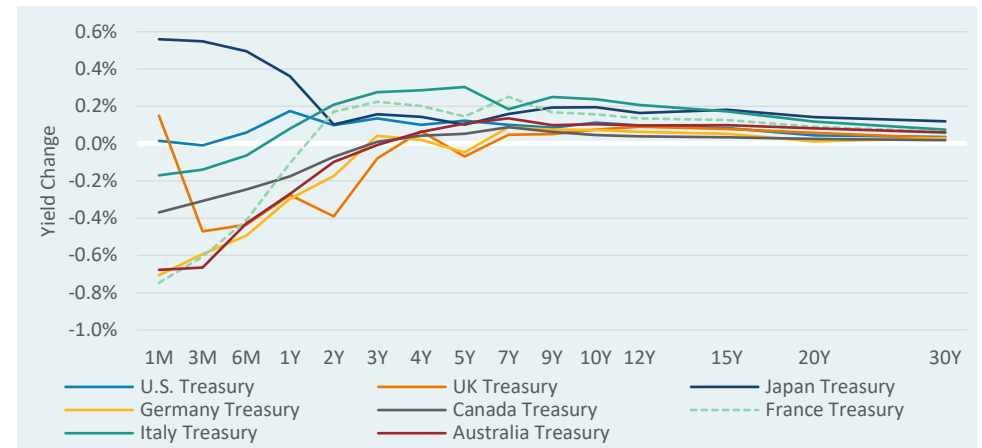
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 12/31/24

Credit environment

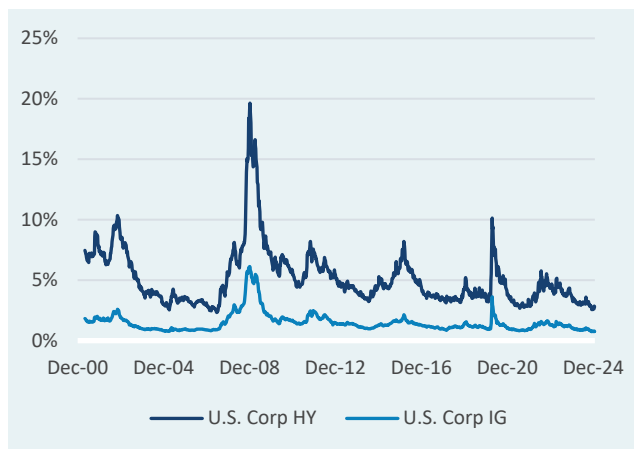
During the fourth quarter, longer duration credit underperformed shorter duration despite a 50bps rate cut by the Federal Reserve. Stronger economic growth expectations, sticky inflation, and a general repricing of the future Federal Funds Rate path, contributed to a rapid rise in the long end of the yield curve. Long duration investment grade corporate bonds (Bloomberg U.S. Long Corporate Credit) lost -6.3%. Bank loans added +2.3% (CS Leveraged Loans) while high yield returned +0.2% (Bloomberg U.S. Corporate High Yield).

Returns within the high yield bond market were mixed, with lower quality credits experiencing the best performance. Bonds rated CCC, which include distressed credit, returned +2.5%, compared to non-

distressed CCC-rated bonds which gained only +1.6%. Bonds rated B produced slightly positive returns of +0.3%, while BB-rated bonds lost -0.5% over the same period. Similarly, lower quality bank loans outperformed higher quality. CCC-rated loans returned +2.7%, compared to +2.6% and +2.1% for B- and BB-rated loans, respectively.

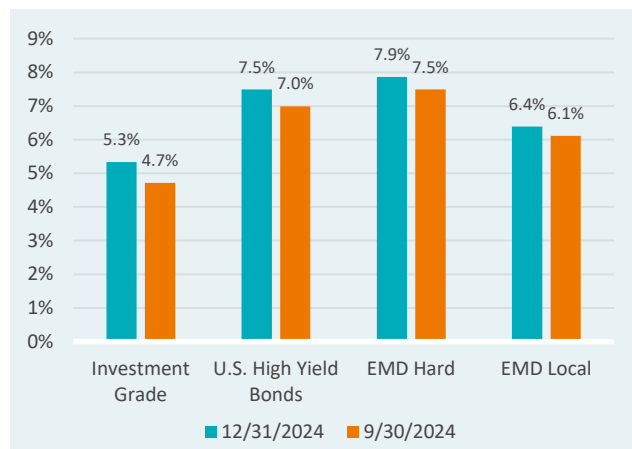
Credit spreads were broadly tighter, a reflection of continued strength in the U.S. corporate sector. Lower-quality high yield bond spreads fell by -30bps, to 2.7%, while investment grade spreads tightened slightly to 0.8%. Credit spreads across all ratings remain well below long-term historical averages, suggesting investors are confident in the ability of businesses to service debt.

SPREADS



Source: Barclays, Bloomberg, as of 12/31/24

YIELD TO MATURITY



Source: Bloomberg, J.P. Morgan as of 12/31/24

CREDIT SPREAD (OAS)

Market	12/31/24	12/31/23
Long U.S. Corp	1.0%	1.2%
U.S. Inv Grade Corp	0.8%	1.0%
U.S. High Yield	2.7%	3.2%
U.S. Bank Loans*	4.5%	5.0%

Source: Barclays, Credit Suisse, Bloomberg, as of 12/31/24

*Discount margin (4-year life)

Default & issuance

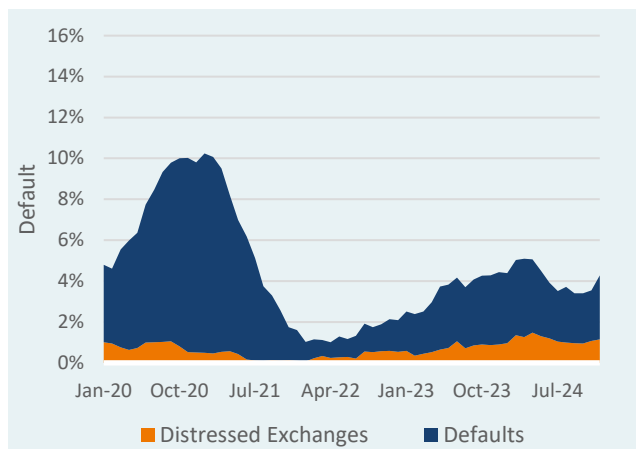
Default activity remained low during Q4, as economic data was strong and trends overall suggested a lower chance of near-term recession. During the period, \$27.9 billion of bank loans and high yield bonds were affected by default or distressed exchanges, well over double the \$11.0 billion in the prior quarter. Year-to-date, 38 companies defaulted, totaling more than \$4.8 billion in bonds and \$23.8 billion in loans.

While defaults have remained subdued, distressed exchange activity has increased rapidly. During the quarter, total distressed credit volume was roughly \$19.4 billion, surpassing the \$13.5 billion pace in Q2. This marked the second largest quarterly total on record since Q4 2008. However, the year-to-date combination of defaults and distressed exchanges of \$83.6 billion was still 3% less than the total of 2023.

High yield bond default rates continued their decline, falling to 1.1%, down from 2.6% one year ago. The current figures remain well below the long-term annual average of 3.4%. Recovery rates hit record lows in Q4, but ended the quarter at 24.8%, depressed relative to earlier quarters and 32.8% experienced during 2023.

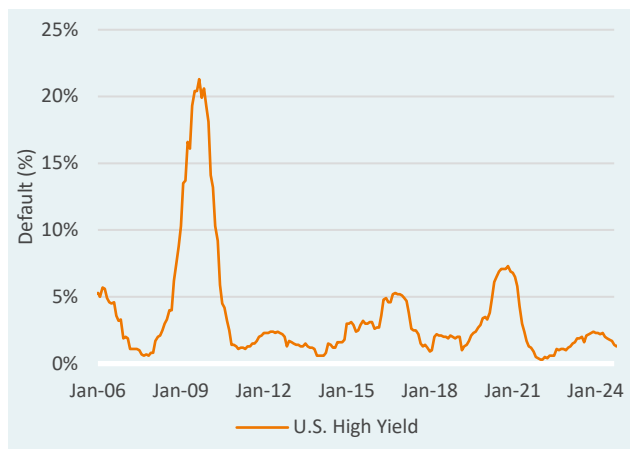
New issuance volume for high yield bonds was lower for the quarter, totaling \$49 billion, compared to \$74 billion in Q3. Bank loans saw record levels of issuance, reaching a record \$515 billion, up from \$204 billion. A further reduction in lending rates and credit spreads likely acted as a catalyst for higher issuance in bank loans as companies are able to issue and refinance their debt at more competitive rates.

U.S. BANK LOAN DEFAULTS (LAST 12 MONTHS)



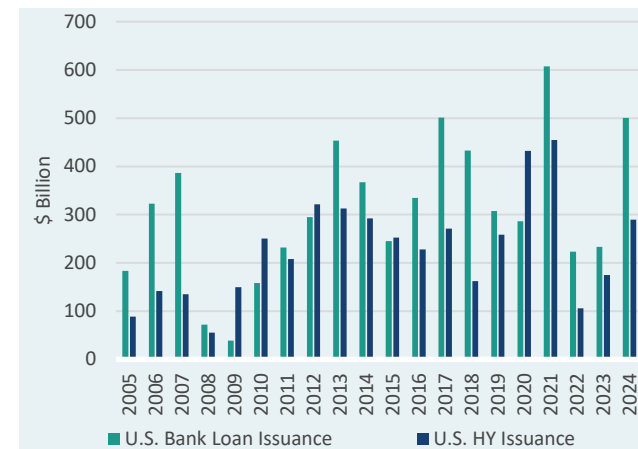
Source: BofA Merrill Lynch, Verus, as of 12/31/24 – par weighted

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



Source: BofA Merrill Lynch, as of 12/31/24 – par weighted

U.S. ISSUANCE (\$ BILLIONS)



Source: BofA Merrill Lynch, as of 12/31/24

Equity

Equity environment

- Global equities were mixed during Q4. Emerging markets (MSCI EM -8.0%) and international developed (MSCI EAFE -8.1%) delivered poor returns to U.S. investors with unhedged currency exposure, though most of those losses were driven by currency movement. During 2024, large currency moves created a wide gap between U.S. and non-U.S. returns. For example, currency hedged Japanese equities slightly outperformed U.S. (S&P 500 +25.0%, TOPIX +25.8%) but returned only +8.0% on an unhedged basis
- Expectations for interest rate cuts lessened after economic strength and stubborn inflation led the Fed to emphasize that they would not budge on their 2% inflation target. The *higher for longer* interest rate narrative likely contributed to U.S. dollar strength during the quarter.
- S&P 500 earnings growth is expected to be +11.9% for Q4,

which would mark the highest growth rate of the past three years. Financials (+39.5%) led the way, followed by Communication Services (+20.7%), while Energy (-24.6%) was a drag on the index.

- Small cap and value both continued to underperform. Small cap trailed large cap by -2.4% (Russell 2000 +0.3% vs. Russell 1000 +2.7%) in Q4, while growth outperformed value by +9.1% (Russell 1000 Growth +7.1% vs. Russell 1000 Value -2.0%). This capped off a year of poor performance for both of these size and style factors, underperforming by -13% and -19%, respectively.
- Market-priced volatility (Cboe VIX Index) was stable during Q4, beginning the quarter at 16.7% and ending at 17.4%. While the level of volatility has been far less than what was experienced during the spike in August, a few bouts of volatility occurred throughout the quarter.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	2.4%		25.0%	
U.S. Small Cap (Russell 2000)	0.3%		11.5%	
U.S. Equity (Russell 3000)	2.6%		23.8%	
U.S. Large Value (Russell 1000 Value)	(2.0%)		14.4%	
U.S. Large Growth (Russell 1000 Growth)	7.1%		33.4%	
Global Equity (MSCI ACWI)	(1.0%)	1.4%	17.5%	21.0%
International Large (MSCI EAFE)	(8.1%)	0.1%	3.8%	14.1%
Eurozone (EURO STOXX 50)	(8.9%)	(1.4%)	4.1%	12.9%
U.K. (FTSE 100)	(6.8%)	(0.1%)	7.7%	9.9%
Japan (TOPIX)	5.4%	6.7%	8.0%	25.8%
Emerging Markets (MSCI Emerging Markets)	(8.0%)	(4.3%)	7.5%	13.3%

Source: Standard & Poor's, FTSE, MSCI, STOXX, JPX, as of 12/31/24

Domestic equity

U.S. equities outperformed both international and emerging markets, with the S&P 500 ending Q4 up +2.4%. The market rallied in early November following the re-election of President Trump, which seems to have provided an animal spirits boost to sentiment, with markets pricing in firmer growth, a bit higher inflation, and elevated interest rates. Later in December, comments from Fed Chair Jerome Powell led markets to expect fewer rate cuts in 2025, which was received poorly by investors.

Earnings came in above expectations. The S&P 500 delivered year-over-year earnings growth of +5.9% in Q3, greater than the +4.2% growth that was expected going into the quarter. Growth expectations are very bullish for the final quarter of the year, with the S&P 500 forecast to

deliver growth of +11.9%. Financials (+39.5%) are expected to deliver the highest growth, with expectations also lofty for Communication Services (+20.7%) and Information Technology (+12.9%).

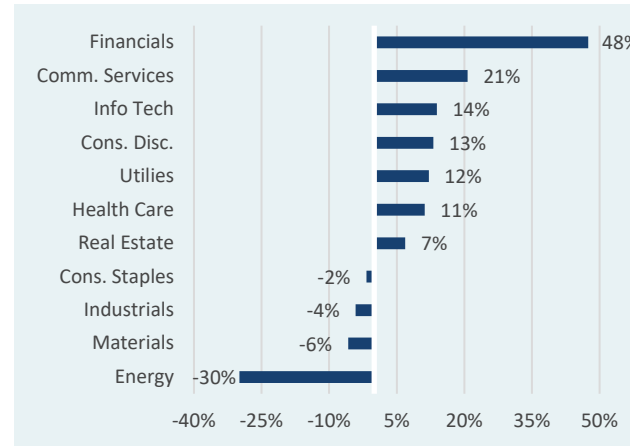
While valuations have been rising throughout the year, they remained at a consistent level over the course of Q4. On top of elevated valuations, U.S. equities are expected to deliver strong earnings growth of 14.8% and 13.6% in 2025 and 2026, respectively. If the U.S. market fails to achieve these estimates, it would place further upward pressure on valuation levels.

S&P 500 PRICE INDEX



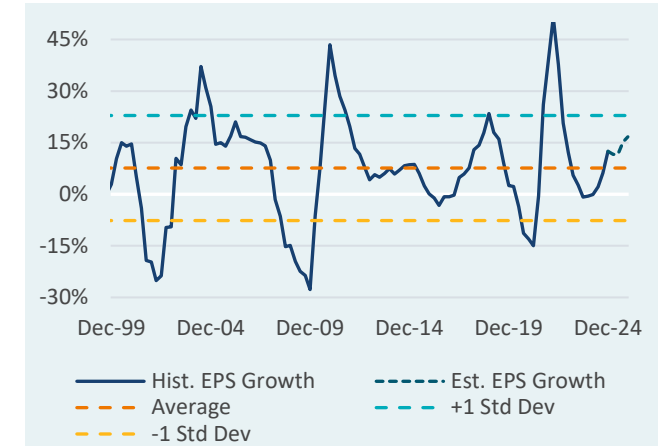
Source: Standard & Poor's, as of 12/31/24

S&P 500 BLENDED EPS GROWTH (YOY)



Source: Factset, as of 12/31/24

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



Source: Factset, Verus, as of 1/17/25

Domestic equity size & style

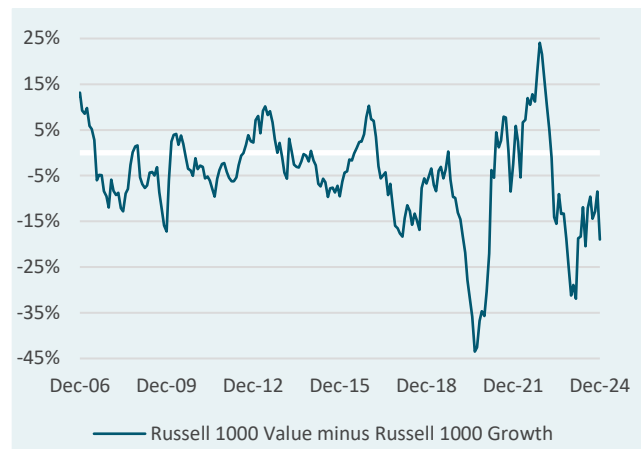
Small cap and value both continued to underperform. Small cap trailed large cap by -2.4% (Russell 2000 +0.3% vs. Russell 1000 +2.7%) in Q4, while growth outperformed value by +9.1% (Russell 1000 Growth +7.1% vs. Russell 1000 Value -2.0%). This capped off a year of poor performance for both of those size and style factors, underperforming by -13% and -19%, respectively.

The Magnificent 7 stocks delivered an exceptional +67.3% during 2024, substantially outperforming the index. However, recent years have shown investors that mega-cap

growth stocks can both act as a big boost to overall index returns or lead the index lower with large losses. The Magnificent 7 stocks delivered 21.7% earnings growth year-over-year in Q4, while the rest of the index reported 9.7% growth, per FactSet. But forecasts are for Magnificent 7 earnings growth to begin to converge with the broader index during 2025 (20.3% year-over-year in Q4 2025 relative to 15.4% overall for the index). If these stocks begin to stand out less from the rest of the S&P 500 in terms of growth, performance may become less differentiated, which could have a notable impact on size and style factor performance.

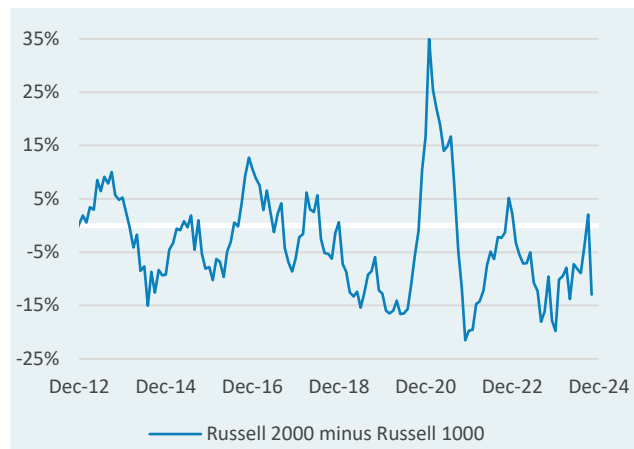
Small cap & value lagged in Q4, lagging in 2024 by -13% and -19%, respectively

VALUE VS. GROWTH 1-YR ROLLING RELATIVE PERFORMANCE



Source: FTSE, as of 12/31/24

SMALL VS. LARGE 1-YR ROLLING RELATIVE PERFORMANCE



Source: FTSE Russell, as of 12/31/24

1-YEAR SIZE & STYLE PERFORMANCE

	Value	Core	Growth
Large Cap	14.4%	24.5%	33.4%
Mid Cap	13.1%	15.3%	22.1%
Small Cap	8.1%	11.5%	15.2%

Source: FTSE Russell, as of 12/31/24

International developed equity

International developed shares (MSCI EAFE -8.1%) underperformed both the U.S. market (S&P 500 +2.4%) and emerging market equities (MSCI EM -8.0%). Most of this underperformance was due to currency movements rather than equity market behavior. On a hedged basis, international developed markets delivered slightly positive returns (+0.1%), with currency contributing losses of -8.2%.

European equities performed very poorly over the course of the quarter, falling -9.7% (MSCI Europe, -2.4% on a hedged basis), and acting as a drag on the overall index. European economies face turmoil due to political instability and a fairly bleak macroeconomic picture. Europe's largest economy, Germany, experienced a second consecutive year of contracting growth. Germany faces high energy costs, weak global demand for its

exports, and risks that its automobile manufacturers are left behind as electric vehicle competition heats up from Chinese and American manufacturers. In early December, the French government fell apart after Prime Minister Michel Barnier was ousted in a no-confidence vote. This followed Mr. Barnier's controversial move to use special powers to force through his budget without a vote.

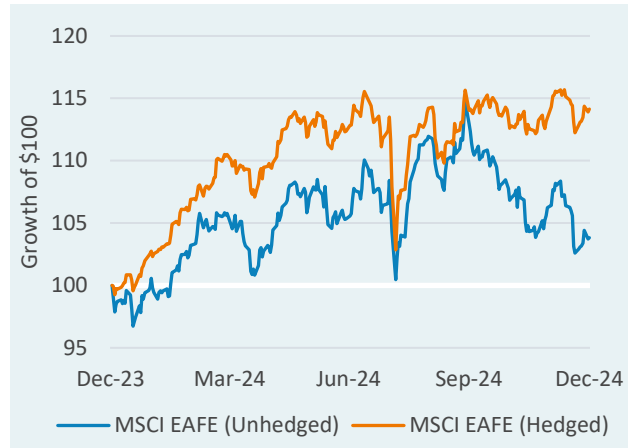
Currency moves also played a major role during the past year. Domestic investors without a currency hedging program lost -10.3% from currency volatility regarding their international equities (MSCI EAFE). The impact from unhedged Japanese asset exposure was particularly extreme—investors without a currency hedging program lost -17.8% from currency moves over the past year (TOPIX Index).

INTERNATIONAL DEVELOPED EQUITY



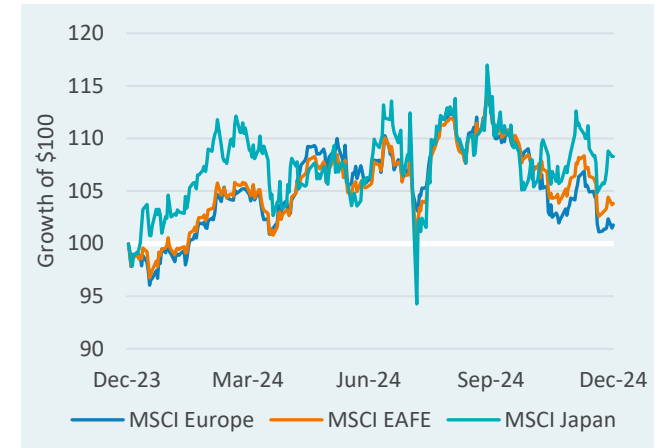
Source: MSCI, as of 12/31/24

MSCI EAFE HEDGED VS UNHEDGED



Source: MSCI, as of 12/31/24

REGIONAL RETURNS OF INTL. DEVELOPED



Source: MSCI, as of 12/31/24

Emerging market equity

Emerging market equities (MSCI EM -8.0%) underperformed U.S. markets (S&P 500 +2.4%) during the quarter, and narrowly outperformed international developed equities (MSCI EAFE -8.1%). While not as drastic as seen across international developed equities, currency movements were also a drag on performance, with the hedged index returning -4.3%.

During 2024, Chinese equities clawed back some of the losses of prior years, gaining +19.4% (MSCI China) relative to the broader index return of +7.5%. The Chinese Communist Party (CCP) has struggled to instill confidence in its citizens to look

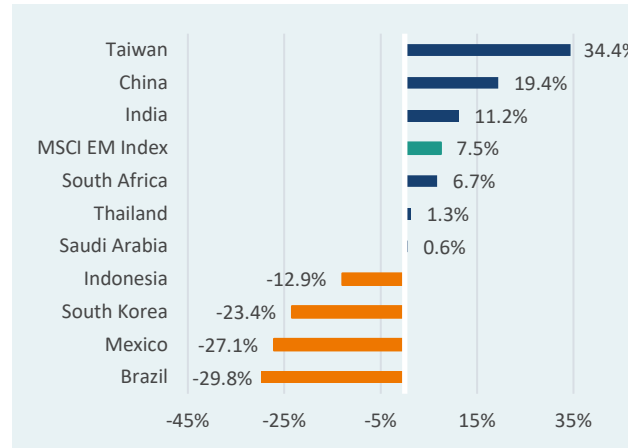
past China's various structural problems, and to have faith in the country's economic future and therefore to spend more freely. A severe drop in residential property prices has had a large impact on confidence, as the average citizen has most of their wealth and retirement savings in home equity. Much of that wealth has disappeared. Investors continue to wait for some sort of aggressive policy response or stimulus from the CCP. In September, major government announcements were made regarding market and economic stimulus, which sent the MSCI China Index up nearly +50%. However, the finer details of those plans were seen as lackluster by investors, and index prices had headed back down towards prior levels.

EMERGING MARKET EQUITY



Source: MSCI, as of 12/31/24

MSCI EM 2024 COUNTRY RETURNS (USD)



Source: MSCI, J.P. Morgan, as of 12/31/24

CHINA'S RALLY HAS PARTIALLY REVERSED



Source: MSCI, as of 12/31/24

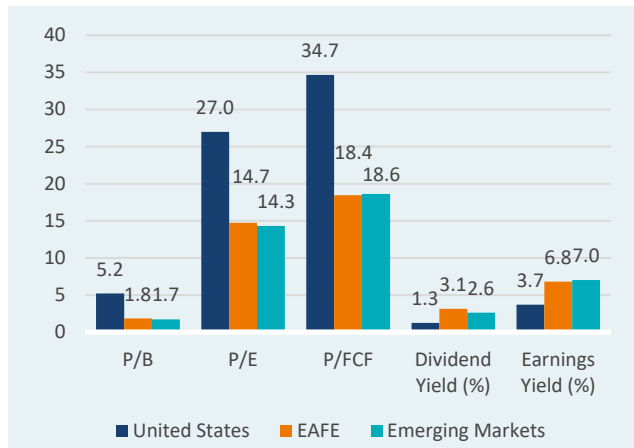
Equity valuations

Domestic equity valuations remained very elevated but were unchanged in Q4. A moderate return of +2.4%, combined with slightly higher expected earnings over the next 12 months, led the S&P 500 to continue to trade at a forward price-to-earnings of 22 during the quarter.

A historically wide gap between U.S. equity valuations and international equity valuations has drawn much attention in recent years. Domestic equities (S&P 500) trade at a 60% premium to international developed equity (MSCI EAFE Index) on a forward price-to-earnings bases, as of the end of the quarter. At first glance this may suggest that international

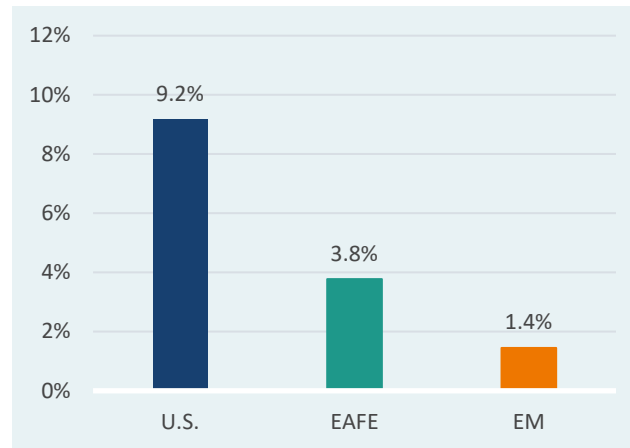
equities provide a particularly attractive opportunity for investors. However, these markets, specifically in Europe, face relatively sluggish growth—much of this due to China’s structural problems and economic slowdown. Europe has also faced a fairly severe lack of business innovation and entrepreneurialism—much of that driven by weak venture capital funding activity—lagging the U.S. in terms of earnings growth and new business formation. Additionally, changes in marketplace characteristics within the U.S. index help describe some of the valuation “gap”, with a greater proportion of the index being comprised of high growth companies that tend to command higher valuation multiples.

MSCI VALUATION METRICS (3-MONTH AVG)



Source: MSCI, Verus, as of 12/31/24 – trailing P/E

FORWARD P/E PERCENTAGE CHANGE IN 2024



Source: MSCI, Verus, as of 12/31/24

S&P 500 HISTORICAL DIVIDEND YIELD



Source: Standard & Poor’s, Verus, as of 12/31/24

Quant equity hedge funds outperform

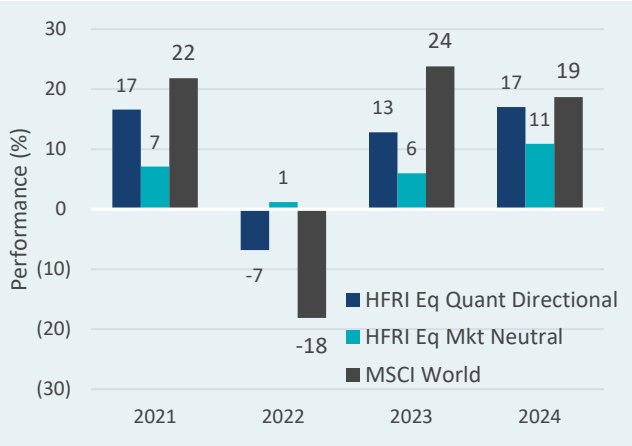
Quantitative equity hedge funds in 2024 had their best year in at least 20 years, as measured by the HFRI Equity Market Neutral and Quantitative Directional indices. Equity Market Neutral returned 10.9% and Quantitative Directional gained 17.0%, the highest annual returns for each since 2000 and 2003, respectively.

These strategies have outpaced their fundamental peers in the last few years while keeping up with global equity indices over the same time. We think this quantitative outperformance and the success of Equity Market Neutral

funds are related, as both strategies typically use similar techniques such as statistical arbitrage or factor investing.

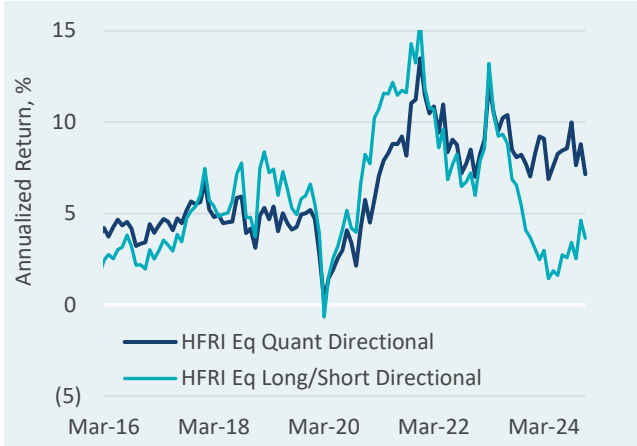
One of the market factors that may be contributing to quantitative strategies' success is the increase in single stock dispersion, which measures the variance in index constituent returns vs. the overall index. Higher dispersion, along with lower intra-stock correlation, theoretically should support strong potential returns for quant programs, which typically hold large numbers of stocks and take a relative value approach.

CALENDAR YEAR RETURNS (%)



Source: MPI, Morningstar, MSCI, HFR

3-YEAR ROLLING RETURN



Source: HFR, MPI, as of 12/31/24

AVERAGE IMPLIED STOCK DISPERSION – S&P 500



Source: S&P DowJones, CBOE S&P 500 Dispersion Index (DSPX)

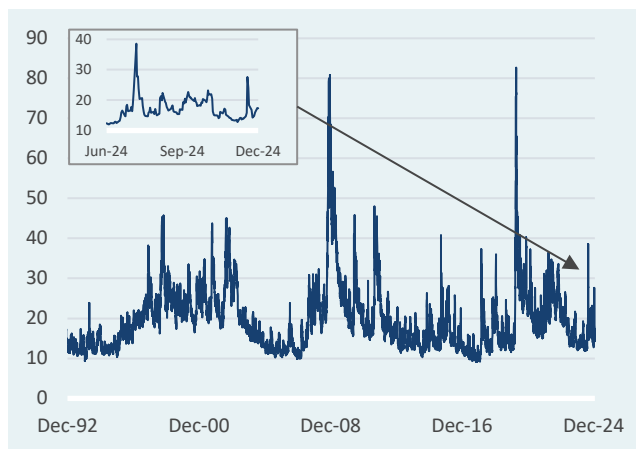
Market volatility

Market-priced volatility (Cboe VIX Index) rose slightly during Q4, beginning the quarter at 16.7% and ending at 17.4%. While the level of volatility was much less than what was experienced during the historic spike in August, a few bouts of volatility did occur throughout the quarter. Implied volatility was above average in the immediate lead-up to the presidential election, reaching 23.4%, while settling back down to below 17% after the results were known. Market volatility increased to its highest level of the quarter in mid-December, after Fed Chair Jerome Powell reiterated the Fed's 2% inflation target, which led markets to expect fewer interest rate cuts.

Implied bond market volatility continued to moderate, following the record highs that were experienced during the recent U.S. inflation scare. However, volatility levels remain materially above the longer-term average. We suspect that volatility will continue to be elevated as investors remain fixated on Federal Reserve actions and communications.

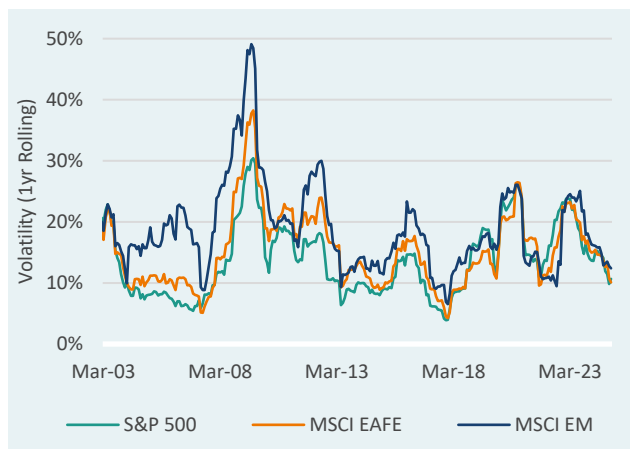
Recent realized one-year volatility drifted further lower, alongside positive equity performance and some easing of fears around recession or an inflation resurgence.

U.S. IMPLIED VOLATILITY (VIX)



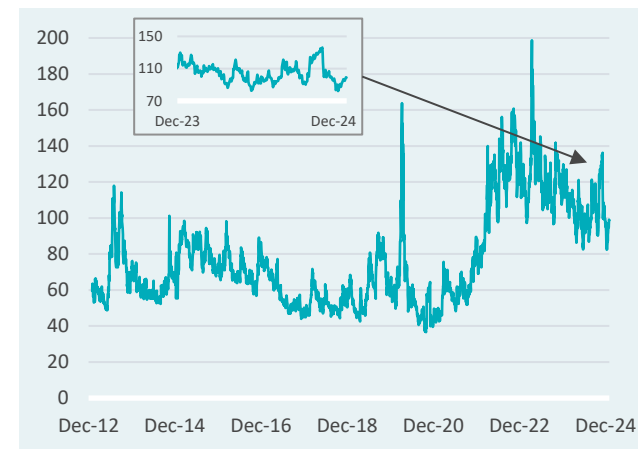
Source: Cboe, as of 12/31/24

REALIZED VOLATILITY



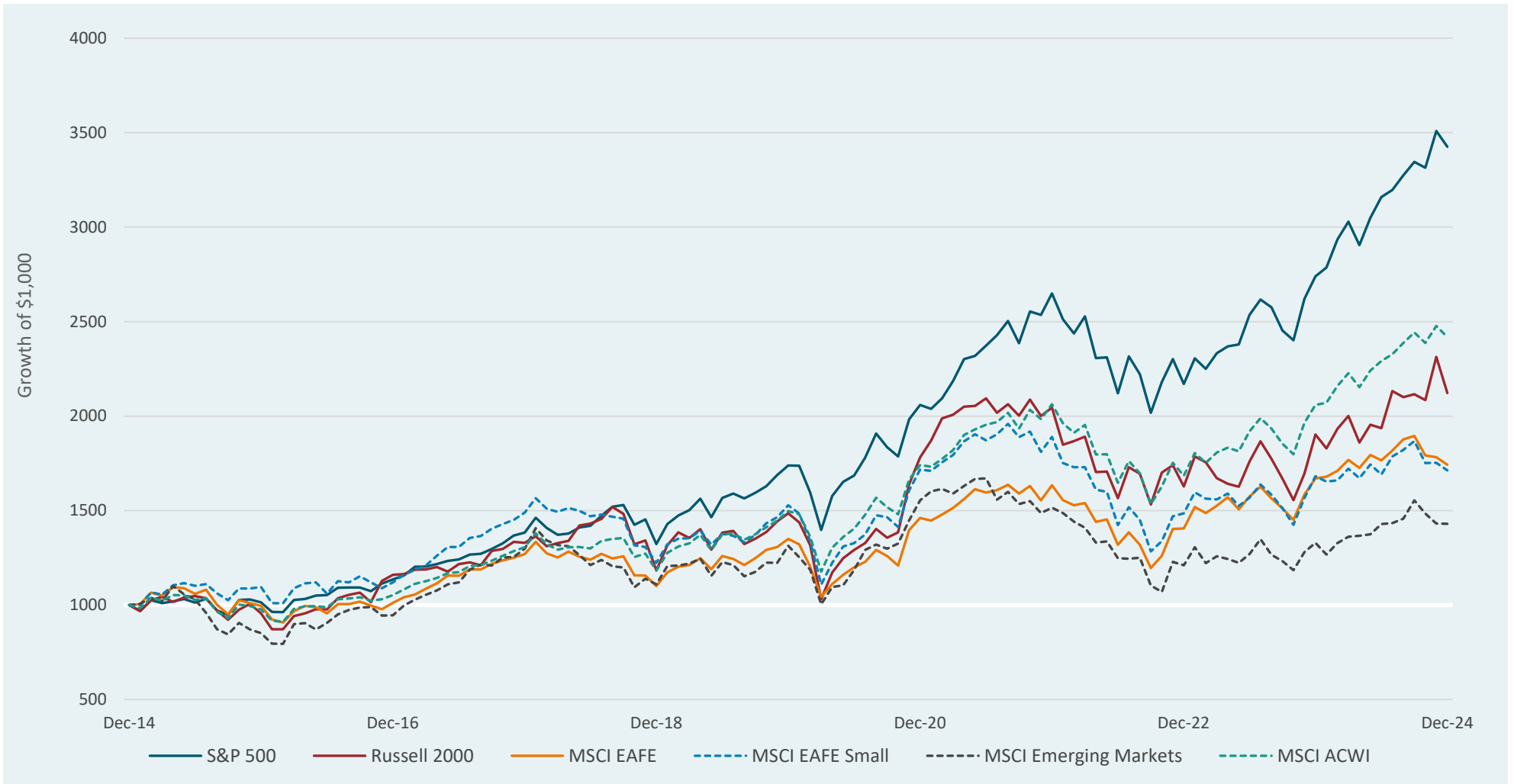
Source: Standard & Poor's, MSCI, Verus, as of 12/31/24

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



Source: BofA, as of 12/31/24

Long-term equity performance



Source: Standard & Poor's, FTSE, MSCI, Verus, as of 12/31/24

Other assets

Currency

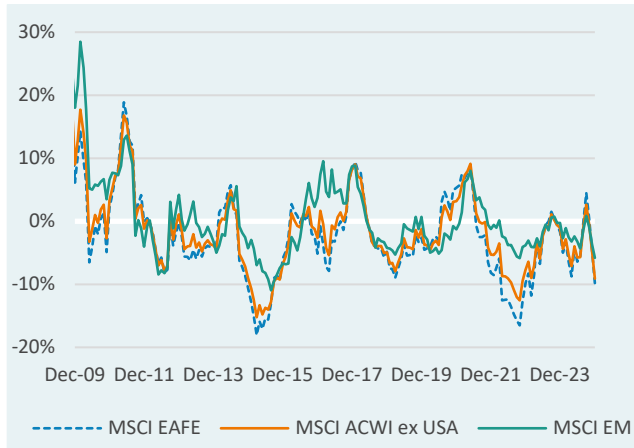
The U.S. dollar gained sharply in value during Q4—the DXY Index rising from 100.8 to 108.5. Strong economic data and evidence of sticky inflation led investors to reassess the number of upcoming Fed rate cuts and helped push up bond yields. Next, ongoing weak economic data in many international markets, as well as central bank rate cuts, created a bleaker outlook for foreign currency strength. Lastly, the U.S. election resulted in a rerating of expectations around the potential strength of the economy and led to some fears of higher inflation, which contributed to higher interest rates (lifting the U.S. dollar).

Dollar strength resulted in losses for investors with unhedged foreign asset exposure. Those without a currency hedging program lost -8.2% from international equities (MSCI EAFE) during Q4, and -10.3% over the past year. The impact from unhedged Japanese asset exposure was particularly

extreme. Investors without a currency hedging program lost -1.3% during the quarter from currency movements, and -17.8% over the past year (TOPIX Index).

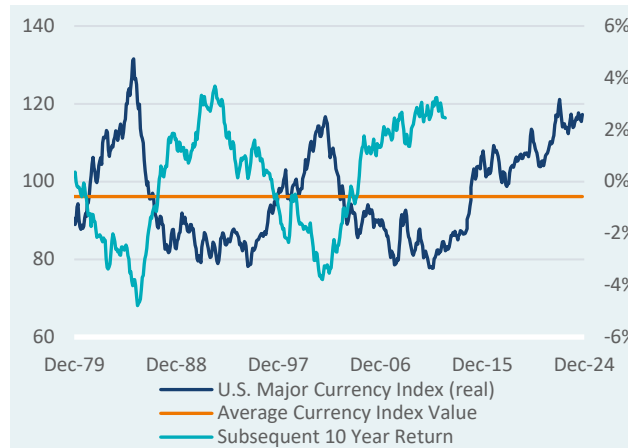
A more thoughtful portfolio approach to currency exposure has provided lower portfolio volatility and higher returns—a rare proposition. This approach involves reducing the uncompensated risk of unhedged foreign currency exposure, and instead of unhedged exposure, making a passive investment in the currency market by investing in currencies with higher interest rates, undervalued currencies, and currencies 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 an unhedged approach. The past year of intense currency volatility is testament to this approach.

EFFECT OF CURRENCY (1-YEAR ROLLING)



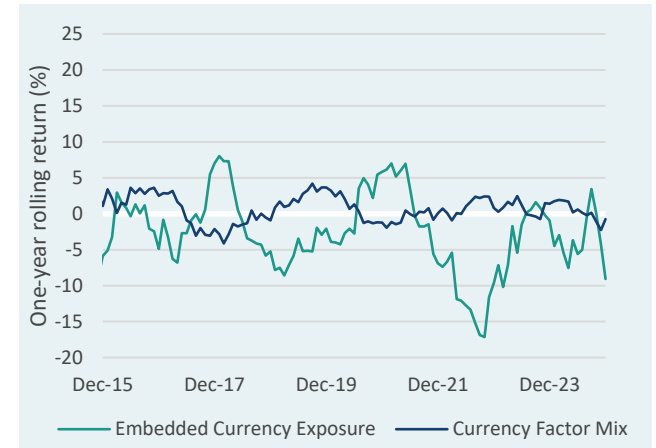
Source: MSCI, Verus, as of 12/31/24

U.S. DOLLAR MAJOR CURRENCY INDEX



Source: FRED, Verus, as of 12/31/24

EMBEDDED CURRENCY VS CURRENCY FACTORS



Source: MSCI, Verus, as of 12/31/24 "Embedded Currency Exposure" is the currency return impact from not hedging currency risk

Appendix

Periodic table of returns

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	5-Year	10-Year
Large Cap Growth	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	38.5	28.3	16.1	42.7	33.4	19.0	16.8
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	24.5	14.3	12.9
Large Cap Value	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	15.2	8.7	8.5
Small Cap Growth	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	14.4	7.4	8.1
Emerging Markets 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	11.5	7.3	7.8
Small Cap Equity	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	22.4	14.0	17.7	-13.0	15.4	9.9	6.9	7.1
60/40 Global Portfolio	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	22.0	10.3	14.8	-14.5	14.6	9.5	6.8	5.9
Small Cap Value	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	8.1	5.4	5.7
International Equity	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	7.5	5.4	5.2
Hedge Funds of Funds	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	8.7	4.6	6.5	-19.1	6.3	5.4	4.7	3.9
Cash	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	7.8	2.8	2.8	-20.1	5.5	5.3	3.3	3.6
Commodities	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	3.8	2.4	1.7
US Bonds	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	1.3	1.7	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	-0.5	-0.3	1.3

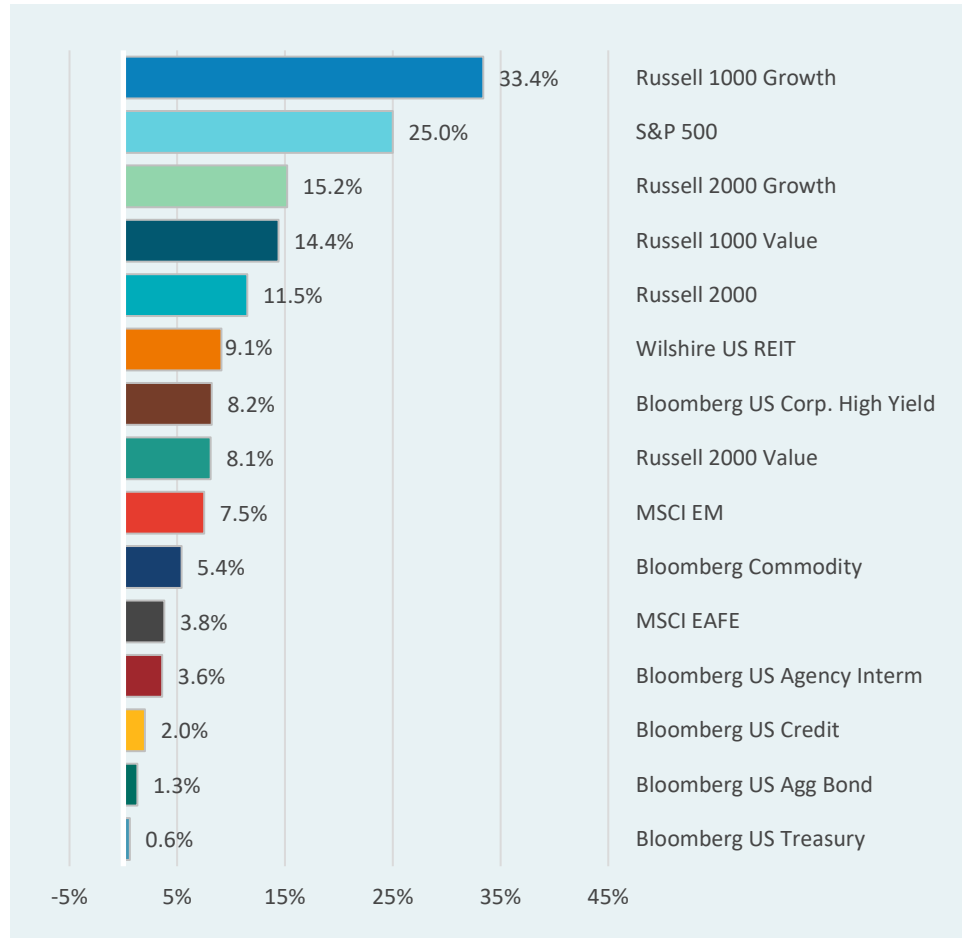
BEST
↑
WORST
↓

 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	

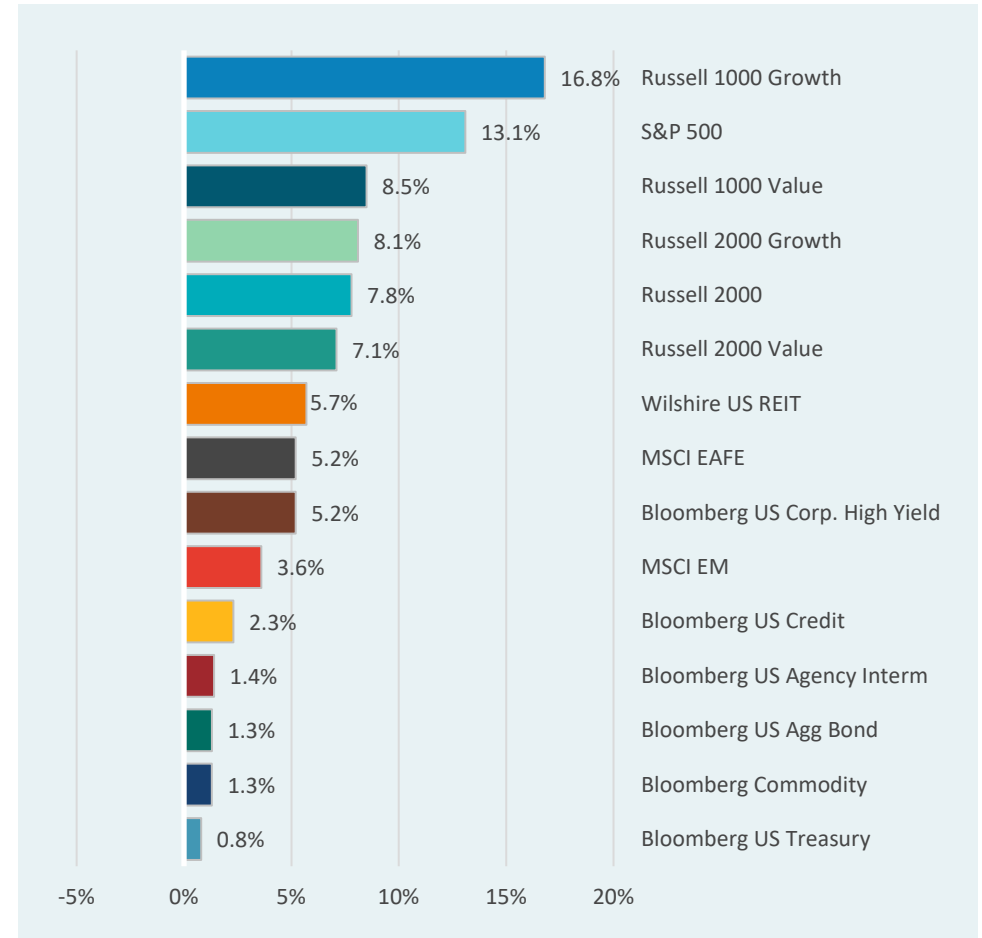
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, Bloomberg Global Bond. NCREIF Property Index performance data as of 9/30/24.

Major asset class returns

ONE YEAR ENDING DECEMBER



TEN YEARS ENDING DECEMBER



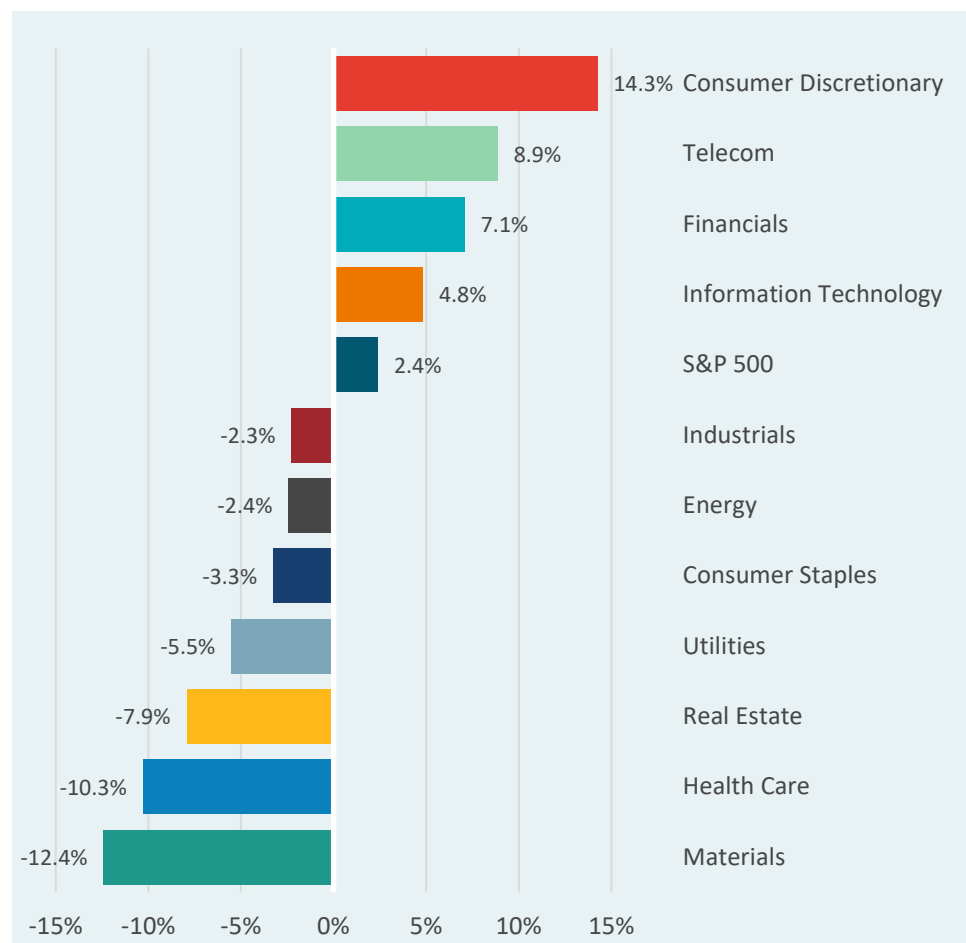
*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 12/31/24

Source: Morningstar, as of 12/31/24

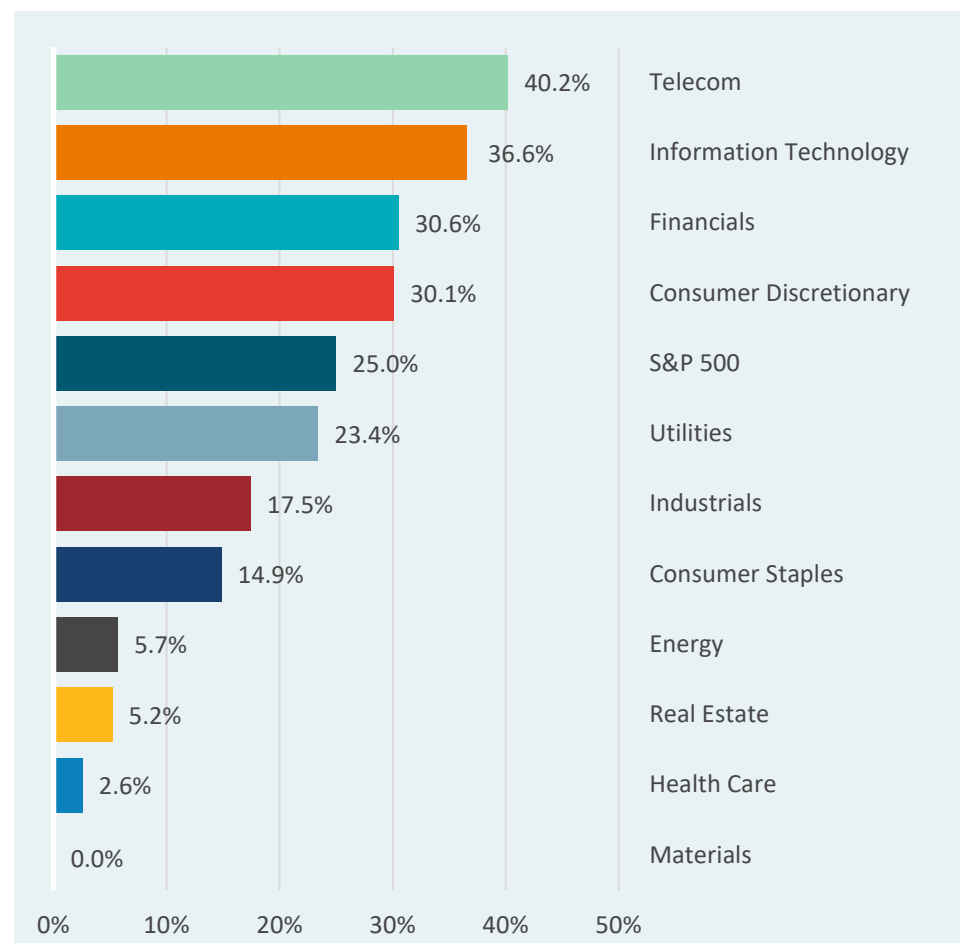
S&P 500 sector returns

QTD



Source: Morningstar, as of 12/31/24

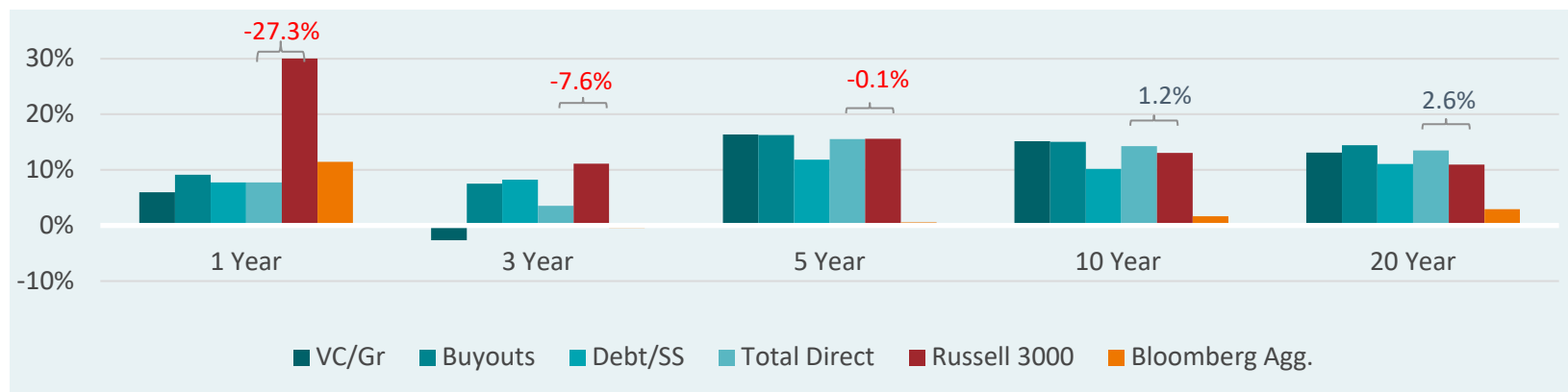
ONE YEAR ENDING DECEMBER



Source: Morningstar, as of 12/31/24

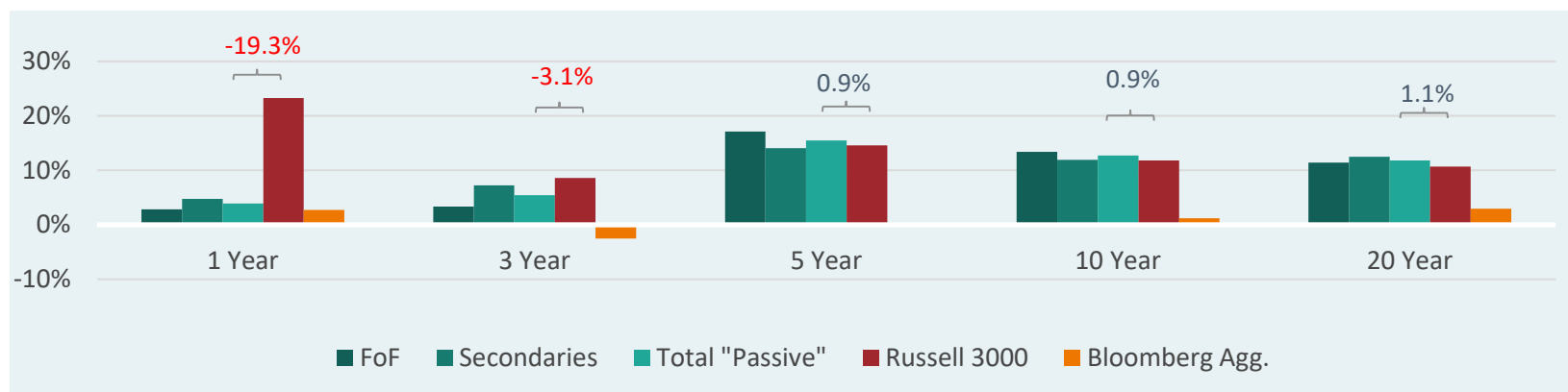
Private equity vs. traditional assets performance

DIRECT PRIVATE EQUITY FUND INVESTMENTS



Direct P.E fund performance vs. public equities has been mixed

"PASSIVE" STRATEGIES

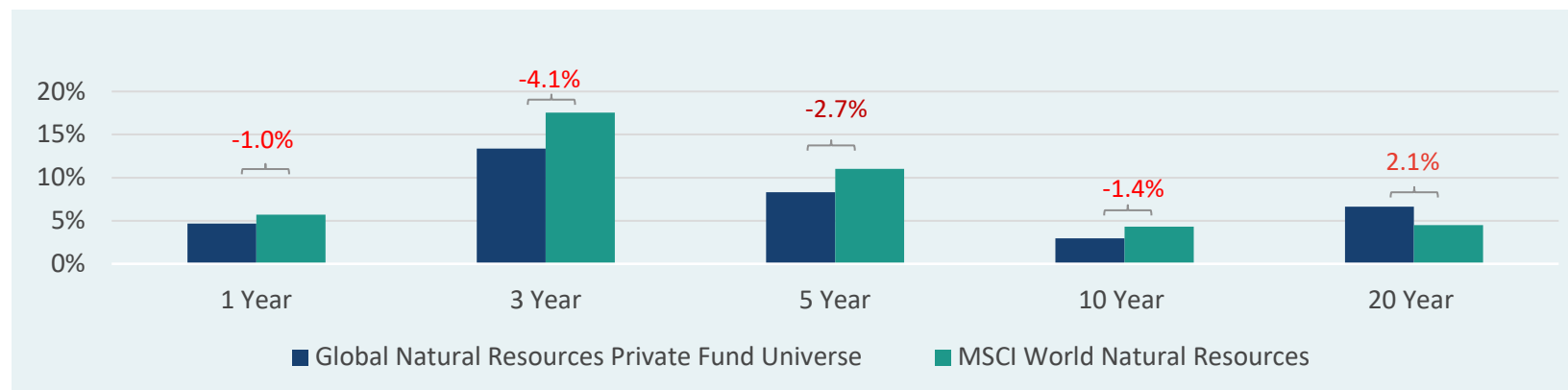


"Passive" strategy performance vs public equities has been mixed

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

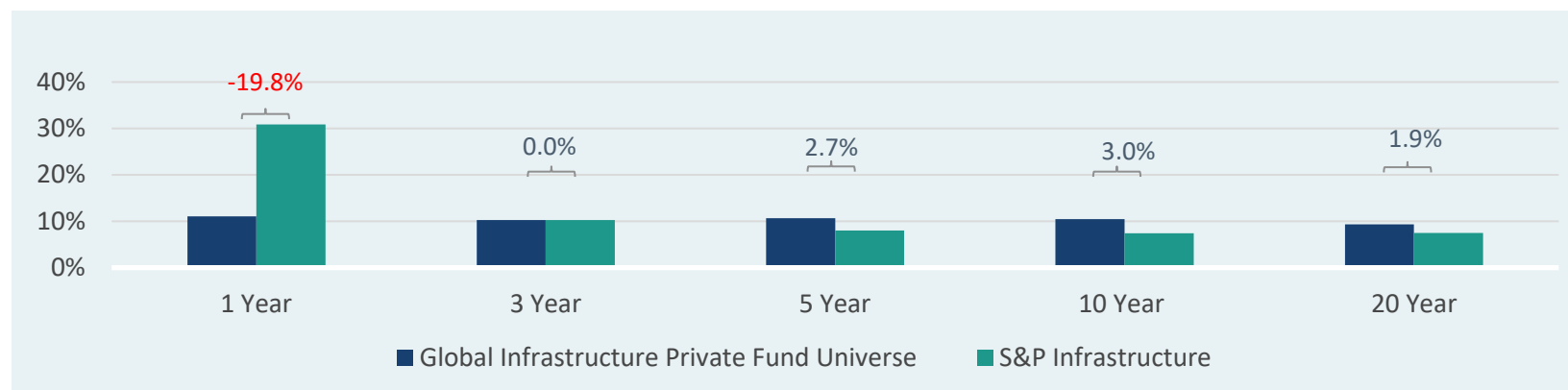
Private vs. liquid real assets performance

GLOBAL NATURAL RESOURCES FUNDS



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

GLOBAL INFRASTRUCTURE FUNDS

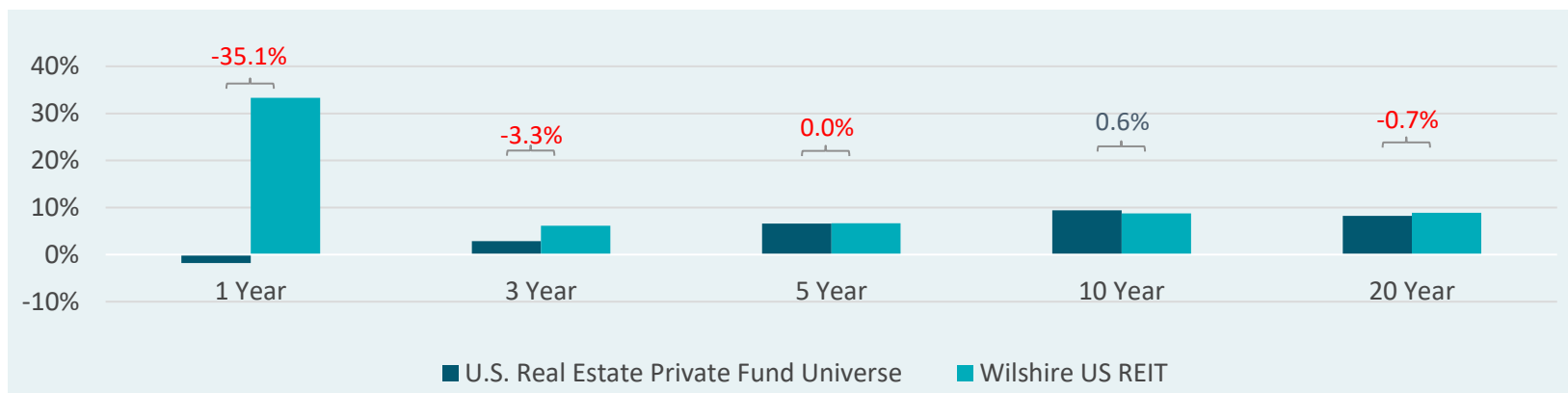


Infra. fund performance relative to the S&P Infra. was mixed

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

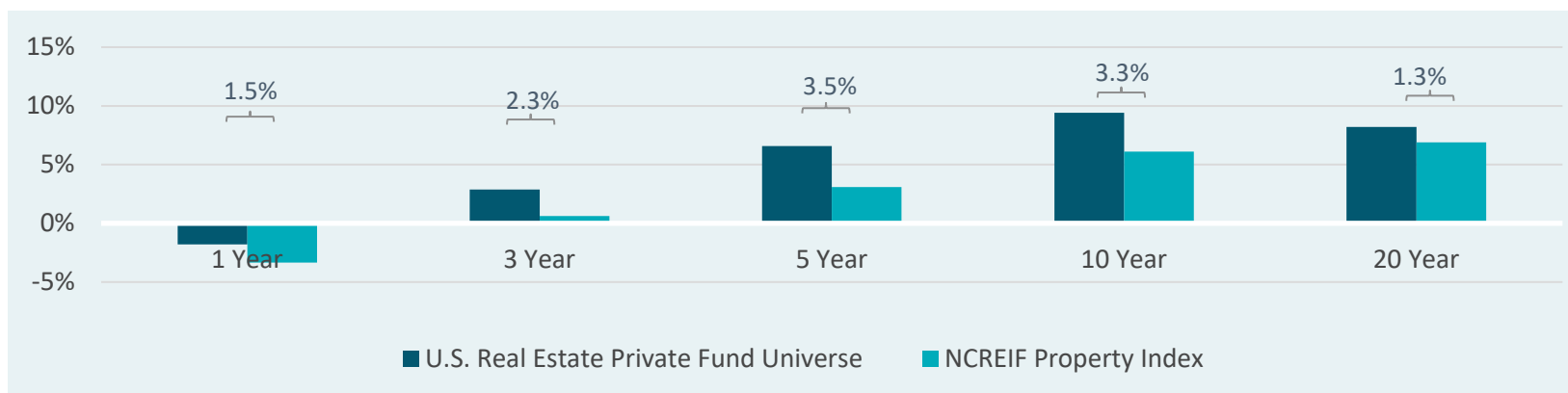
Private vs. liquid and core real estate performance

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



U.S. Private R.E. funds underperformed the Wilshire U.S. REIT Index across most time periods.

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



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

Sources: FTSE PME: U.S. Real Estate universes as of September 30, 2024. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real estate universes.

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	(2.4)	2.4	25.0	25.0	8.9	14.5	13.1
S&P 500 Equal Weighted	(6.3)	(1.9)	13.0	13.0	4.5	10.8	10.3
DJ Industrial Average	(5.1)	0.9	15.0	15.0	7.6	10.6	11.6
Russell Top 200	(1.5)	3.4	27.4	27.4	9.9	15.8	14.0
Russell 1000	(2.8)	2.7	24.5	24.5	8.4	14.3	12.9
Russell 2000	(8.3)	0.3	11.5	11.5	1.2	7.4	7.8
Russell 3000	(3.1)	2.6	23.8	23.8	8.0	13.9	12.5
Russell Mid Cap	(7.0)	0.6	15.3	15.3	3.8	9.9	9.6
Style Index							
Russell 1000 Growth	0.9	7.1	33.4	33.4	10.5	19.0	16.8
Russell 1000 Value	(6.8)	(2.0)	14.4	14.4	5.6	8.7	8.5
Russell 2000 Growth	(8.2)	1.7	15.2	15.2	0.2	6.9	8.1
Russell 2000 Value	(8.3)	(1.1)	8.1	8.1	1.9	7.3	7.1

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	(2.4)	(1.0)	17.5	17.5	5.4	10.1	9.2
MSCI ACWI ex US	(1.9)	(7.6)	5.5	5.5	0.8	4.1	4.8
MSCI EAFE	(2.3)	(8.1)	3.8	3.8	1.6	4.7	5.2
MSCI EM	(0.1)	(8.0)	7.5	7.5	(1.9)	1.7	3.6
MSCI EAFE Small Cap	(2.3)	(8.4)	1.8	1.8	(3.2)	2.3	5.5
Style Index							
MSCI EAFE Growth	(2.8)	(9.1)	2.0	2.0	(2.6)	4.0	5.8
MSCI EAFE Value	(1.8)	(7.1)	5.7	5.7	5.9	5.1	4.3
Regional Index							
MSCI UK	(2.8)	(6.8)	7.5	7.5	5.3	4.4	3.8
MSCI Japan	(0.3)	(3.6)	8.3	8.3	2.8	4.8	6.2
MSCI Euro	(0.4)	(9.4)	2.1	2.1	1.9	5.3	5.2
MSCI EM Asia	0.2	(7.9)	12.0	12.0	(1.6)	3.0	4.8
MSCI EM Latin American	(6.1)	(15.8)	(26.4)	(26.4)	2.1	(3.4)	0.3

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
Bloomberg US TIPS	(1.6)	(2.9)	1.8	1.8	(2.3)	1.9	2.2
Bloomberg US Treasury Bills	0.4	1.2	5.3	5.3	3.9	2.5	1.8
Bloomberg US Agg Bond	(1.6)	(3.1)	1.3	1.3	(2.4)	(0.3)	1.3
Bloomberg US Universal	(1.5)	(2.7)	2.0	2.0	(2.0)	0.1	1.7
Duration							
Bloomberg US Treasury 1-3 Yr	0.2	(0.1)	4.0	4.0	1.4	1.4	1.4
Bloomberg US Treasury Long	(5.3)	(8.6)	(6.4)	(6.4)	(12.0)	(5.2)	(0.6)
Bloomberg US Treasury	(1.5)	(3.1)	0.6	0.6	(2.9)	(0.7)	0.8
Issuer							
Bloomberg US MBS	(1.6)	(3.2)	1.2	1.2	(2.1)	(0.7)	0.9
Bloomberg US Corp. High Yield	(0.4)	0.2	8.2	8.2	2.9	4.2	5.2
Bloomberg US Agency Interm	(0.2)	(0.6)	3.6	3.6	0.5	0.9	1.4
Bloomberg US Credit	(1.9)	(3.0)	2.0	2.0	(2.2)	0.2	2.3

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	1.0	(0.4)	5.4	5.4	4.1	6.8	1.3
Wilshire US REIT	(7.3)	(5.0)	9.1	9.1	(2.5)	4.5	5.7
CS Leveraged Loans	0.6	2.3	9.1	9.1	6.8	5.7	5.1
S&P Global Infrastructure	(4.5)	(2.5)	15.1	15.1	7.1	5.3	5.9
Alerian MLP	(7.2)	5.6	26.7	26.7	27.2	14.8	3.3
Regional Index							
JPM EMBI Global Div	(1.4)	(1.9)	6.5	6.5	(0.9)	0.1	3.1
JPM GBI-EM Global Div	(1.9)	(7.0)	(2.4)	(2.4)	(1.0)	(1.9)	0.4
Hedge Funds							
HFRI Composite	(0.2)	1.5	8.8	8.8	4.1	6.8	5.2
HFRI FOF Composite	0.5	2.7	9.9	9.9	3.3	5.4	3.9
Currency (Spot)							
Euro	(2.0)	(7.2)	(6.3)	(6.3)	(3.1)	(1.6)	(1.5)
Pound Sterling	(1.5)	(6.6)	(1.8)	(1.8)	(2.6)	(1.1)	(2.2)
Yen	(4.4)	(9.0)	(10.3)	(10.3)	(9.8)	(7.1)	(2.7)

Source: Morningstar, HFRI, as of 12/31/24

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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Imperial County Employees' Retirement System

Investment Performance Review
Period Ending: December 31, 2024



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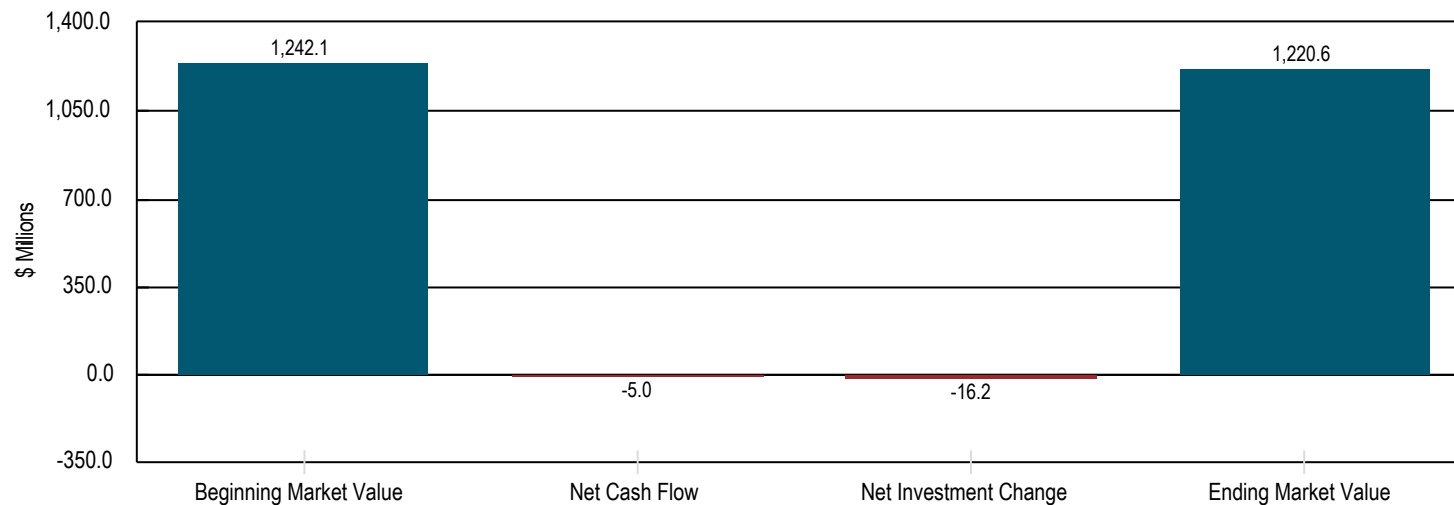
Total Fund
Portfolio Reconciliation

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

Portfolio Reconciliation

	Last Three Months	YTD	Fiscal Year-To-Date	One Year
Beginning Market Value	\$1,242,102,341	\$1,131,753,444	\$1,185,442,650	\$1,131,753,444
Net Cash Flows	-\$5,048,959	-\$14,249,920	-\$5,124,156	-\$14,249,920
Net Investment Change	-\$16,217,401	\$103,628,706	\$40,665,653	\$103,628,706
Ending Market Value	\$1,220,643,398	\$1,220,643,398	\$1,220,643,398	\$1,220,643,398

Change in Market Value
Last Three Months



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

Total Fund
Executive Summary (Net of Fees)

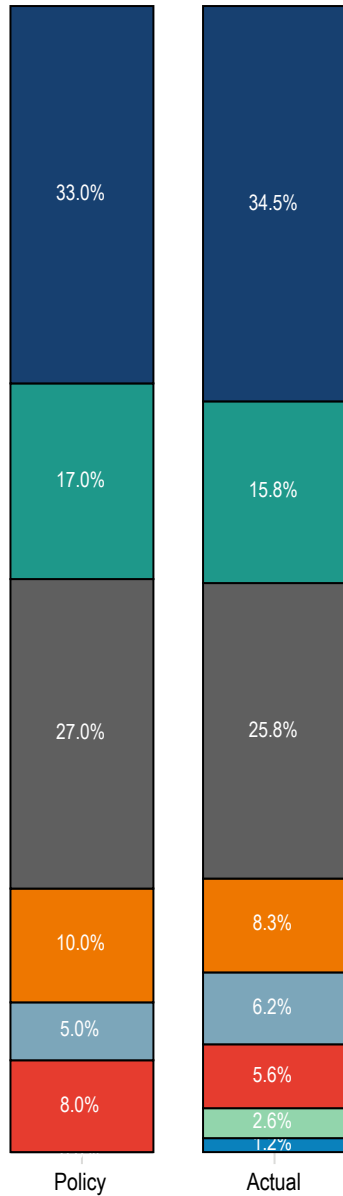
Imperial County Employees' Retirement System
Period Ending: December 31, 2024

	Market Value	% of Portfolio	QTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Fund	1,220,643,398	100.0	-1.3	3.1	8.7	2.5	7.0	7.0
<i>Policy Index</i>			-1.1	3.8	9.6	2.9	7.2	7.3
<i>InvMetrics Public DB Rank</i>			73	94	82	61	51	52
Total Domestic Equity	420,569,356	34.5	2.6	9.0	23.8	8.0	13.9	12.5
<i>Russell 3000 Index</i>			2.6	9.0	23.8	8.0	13.9	12.5
Total International Equity	193,379,267	15.8	-7.8	-1.8	3.4	0.8	4.0	4.9
<i>MSCI AC World ex USA Index</i>			-7.5	0.0	6.1	1.3	4.6	5.3
Total Fixed Income	314,557,790	25.8	-2.9	2.1	2.4	-2.3	0.6	2.0
<i>Blmbg. U.S. Aggregate Index</i>			-3.1	2.0	1.3	-2.4	-0.3	1.3
Total Real Estate	101,458,606	8.3	0.6	0.4	-5.9	-4.4	1.1	4.5
<i>NCREIF Property Index</i>			0.9	1.7	0.4	-0.8	3.1	5.7
Total Private Equity	75,972,804	6.2	1.6	1.6	5.1	2.7	16.0	16.0
<i>Private Equity Benchmark</i>			1.6	1.6	5.1	2.7	16.0	16.4
Total Private Credit	68,017,127	5.6	-1.8	-1.6	2.2	7.1	8.4	N/A
<i>Private Credit Benchmark</i>			-1.8	-1.6	2.2	7.1	9.0	N/A
Total Opportunistic	32,000,394	2.6	-7.2	-6.7	-2.8	6.6	7.7	6.9
<i>Assumption Rate + 1%</i>			2.1	4.2	8.5	8.5	8.5	8.5

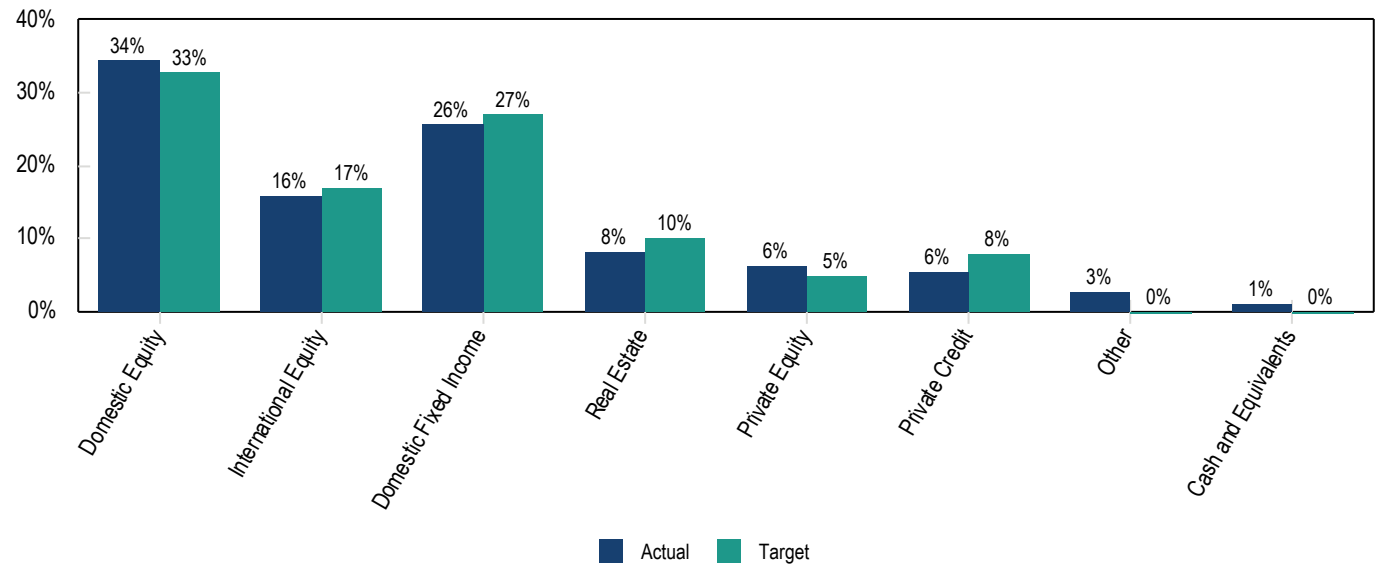
New Policy Index (as of 12/1/2023): 33% Russell 3000, 17% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 10% NCREIF Property, 5% Private Equity Benchmark, 8% Private Credit Benchmark. Prior quarter Private Equity returns, and index data are used. All returns are Net of fees. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. As of 10/1/20 the SAA Target for equity changed to 33% Russell 3000 + 20% ACWI ex-US (see Exhibit B attached). Cash & Equivalents value of \$14,688,053.96 included in Total Fund value.

Total Fund
Asset Allocation vs. Policy

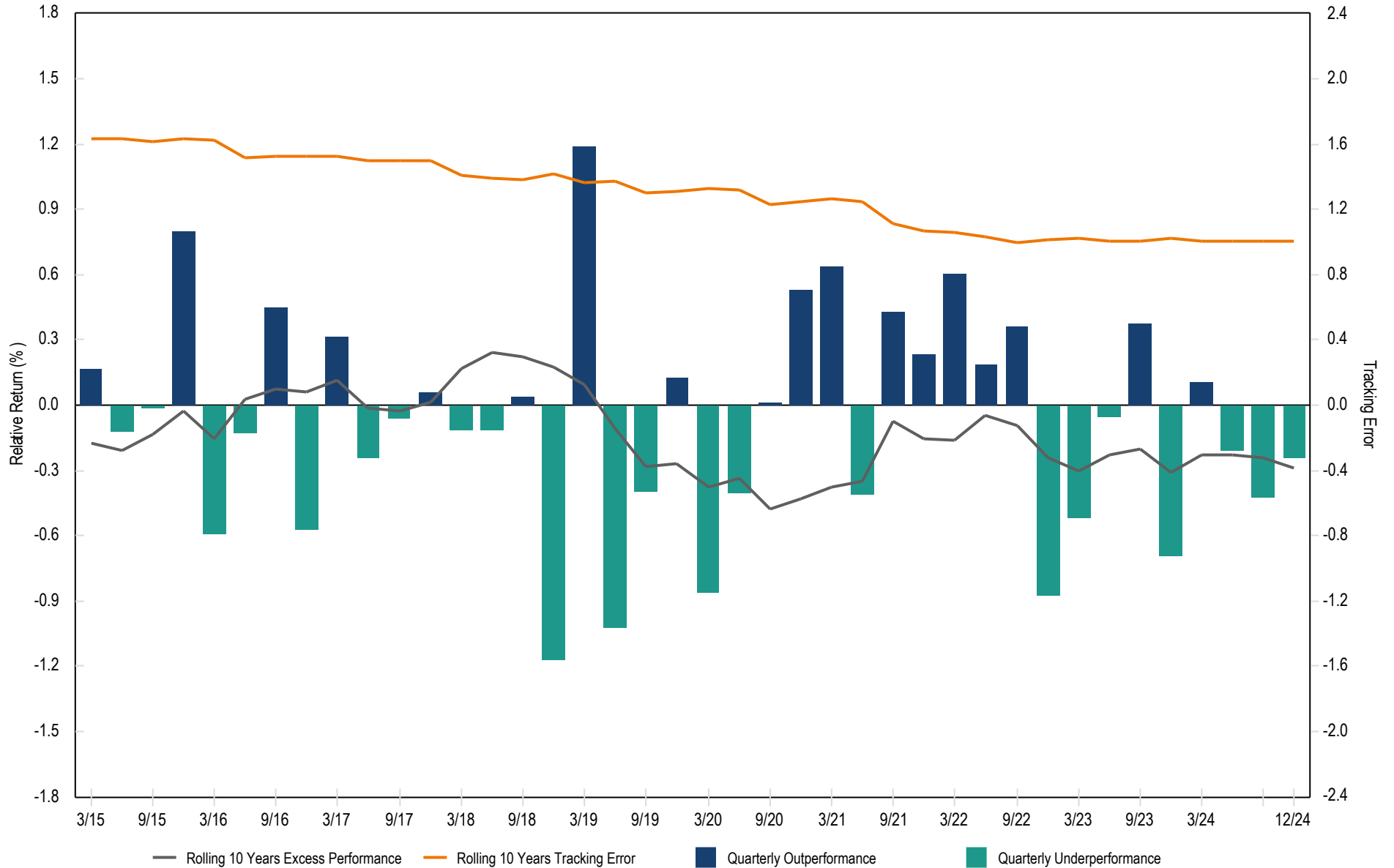
Imperial County Employees' Retirement System
Period Ending: December 31, 2024



	Current Balance (\$)	Current Allocation (%)	Policy Allocation (%)	Excess Allocation (%)	Policy Range (%)	Within IPS Range?
Domestic Equity	420,569,356	34.5	33.0	1.5	19.0 - 39.0	Yes
International Equity	193,379,267	15.8	17.0	-1.2	14.0 - 34.0	Yes
Domestic Fixed Income	314,557,790	25.8	27.0	-1.2	17.0 - 40.0	Yes
Real Estate	101,458,606	8.3	10.0	-1.7	5.0 - 15.0	Yes
Private Equity	75,972,804	6.2	5.0	1.2	0.0 - 10.0	Yes
Private Credit	68,017,127	5.6	8.0	-2.4	0.0 - 10.0	Yes
Other	32,000,394	2.6	0.0	2.6	0.0 - 10.0	Yes
Cash and Equivalents	14,688,054	1.2	0.0	1.2	0.0 - 0.0	No
Total	1,220,643,398	100.0	100.0	0.0		



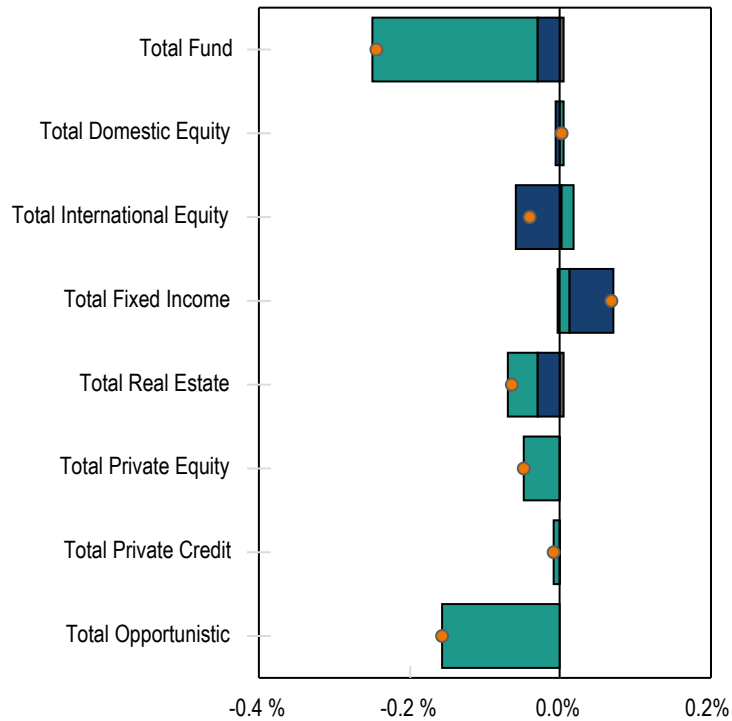
Rolling Annualized Excess Performance and Tracking Error



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

Imperial County Employees' Retirement System
 Period Ending: December 31, 2024

Attribution Effects
 Last Three Months



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

Performance Attribution

	Quarter	YTD
Wtd. Actual Return	-1.3	8.7
Wtd. Index Return	-1.1	9.6
Excess Return	-0.2	-0.8
Selection Effect	0.0	-0.9
Allocation Effect	-0.2	0.0
Interaction Effect	0.0	0.0

Attribution Summary
 Last Three Months

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Domestic Equity	2.6	2.6	0.0	0.0	0.0	0.0	0.0
Total International Equity	-7.8	-7.5	-0.3	-0.1	0.0	0.0	0.0
Total Fixed Income	-2.9	-3.1	0.2	0.1	0.0	0.0	0.1
Total Real Estate	0.6	0.9	-0.3	0.0	0.0	0.0	-0.1
Total Private Equity	1.6	1.6	0.0	0.0	0.0	0.0	0.0
Total Private Credit	-1.8	-1.8	0.0	0.0	0.0	0.0	0.0
Total Opportunistic	-7.2	2.1	-9.2	0.0	-0.2	0.0	-0.2
Total Fund	-1.3	-1.1	-0.2	0.0	-0.2	0.0	-0.2

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

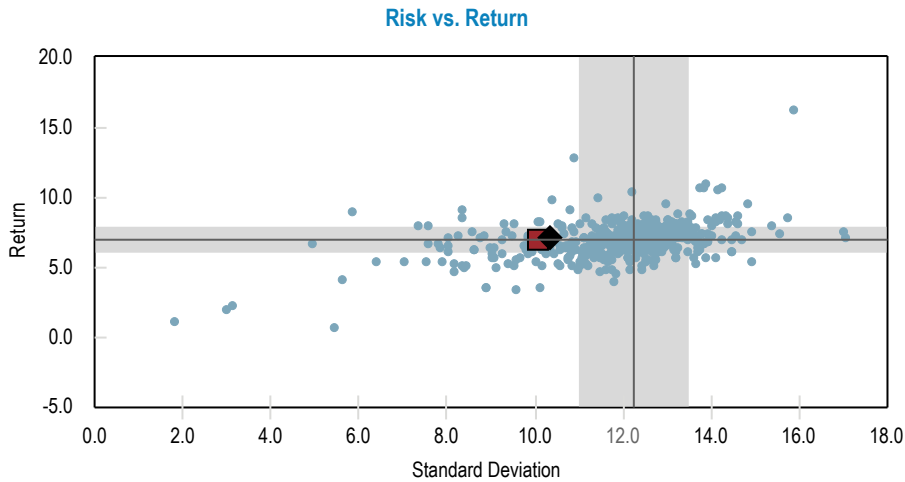
Total Fund

Risk Analysis - 5 Years (Net of Fees)

Imperial County Employees' Retirement System

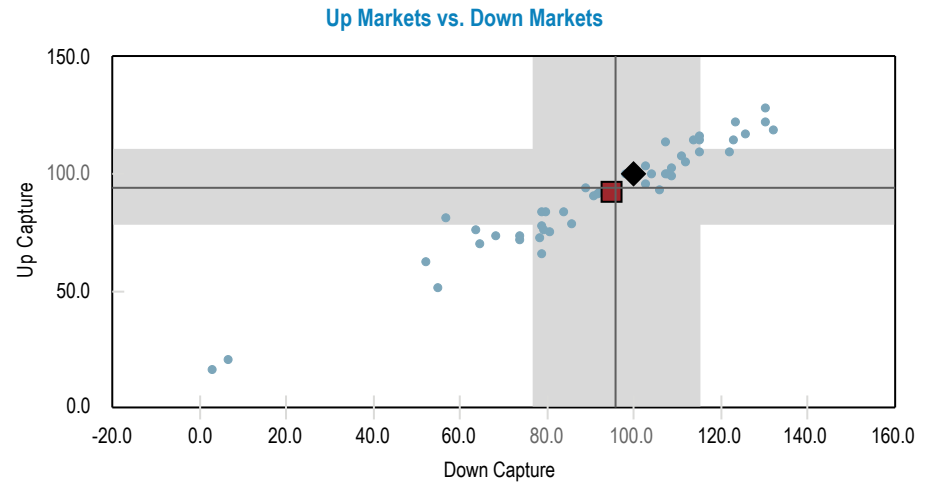
Period Ending: December 31, 2024

	Annualized Return	Annualized Excess Return	Annualized Standard Deviation	Annualized Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
Total Fund	6.96	-0.26	10.06	-0.04	0.97	0.95	0.99	-0.27	-0.27	97.44	98.03
Policy Index	7.21	0.00	10.32	0.00	1.00	0.00	1.00	-	-	100.00	100.00



● InvMetrics Public DB ■ Total Fund

	Return	Standard Deviation
■ Total Fund	6.96	10.06
◆ Policy Index	7.21	10.32
— Median	6.97	12.25
Population	499	499



● InveMetrics Public DB ■ Total Fund

	Up Capture	Down Capture
■ Total Fund	92.98	94.69
◆ Policy Index	100.00	100.00
— Median	94.59	95.86
Population	47	47

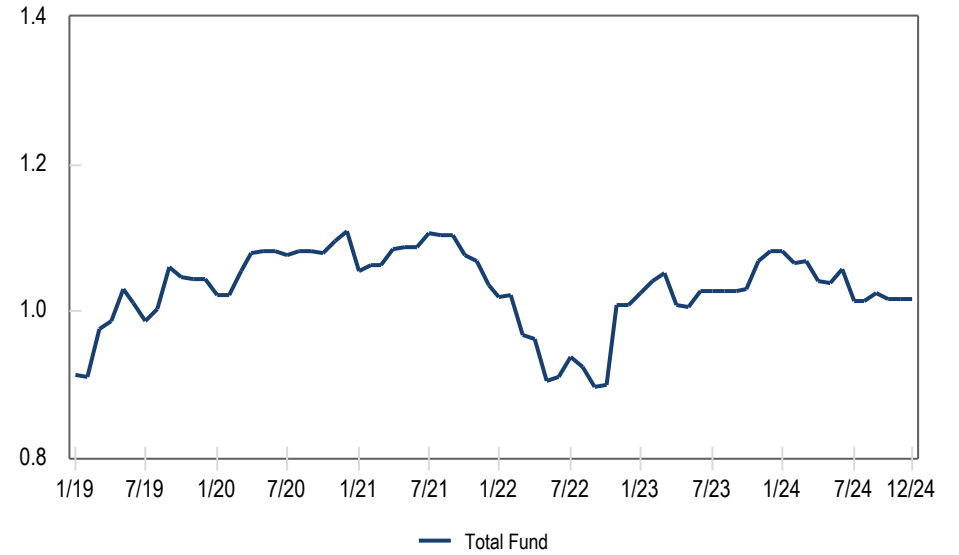
Total Fund
Rolling Risk Statistics

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

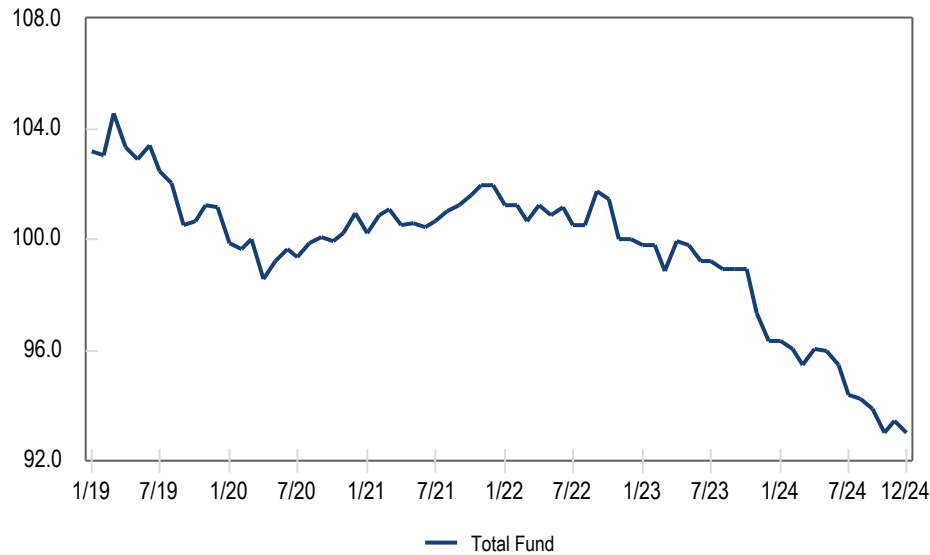
Rolling Information Ratio



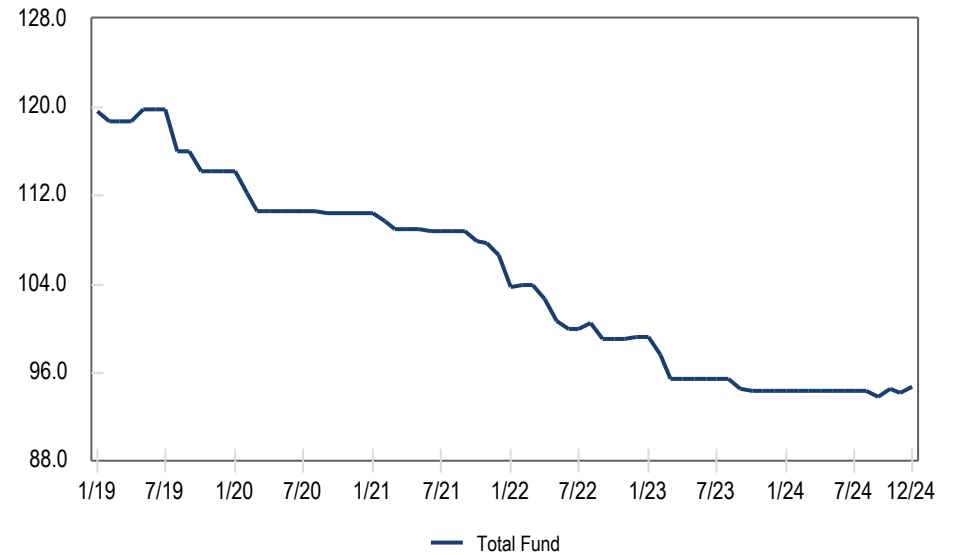
Rolling Tracking Error



Rolling Up Market Capture Ratio (%)



Rolling Down Market Capture Ratio (%)



Total Fund
Manager Summary (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019	Inception	Inception Date
Total Fund	1,220,643,398	100.0	-1.3	3.1	8.7	2.5	7.0	7.0	11.9	-11.6	15.8	12.3	17.9		
<i>Policy Index</i>			-1.1	3.8	9.6	2.9	7.2	7.3	12.8	-11.9	14.8	13.3	18.0		
<i>InvMetrics Public DB Rank</i>			73	94	82	61	51	52	71	23	23	59	71		
Total Domestic Equity	420,569,356	34.5	2.6	9.0	23.8	8.0	13.9	12.5	26.0	-19.2	25.7	21.0	31.1		
<i>Russell 3000 Index</i>			2.6	9.0	23.8	8.0	13.9	12.5	26.0	-19.2	25.7	20.9	31.0		
BlackRock Russell 3000	420,569,356	34.5	2.6	9.0	23.8	8.0	13.9	-	26.0	-19.2	25.7	21.0	31.1	13.7	Dec-15
<i>Russell 3000 Index</i>			2.6	9.0	23.8	8.0	13.9	-	26.0	-19.2	25.7	20.9	31.0	13.6	
<i>eV US All Cap Core Equity Rank</i>			25	25	22	24	26	-	25	58	51	41	37		
Total International Equity	193,379,267	15.8	-7.8	-1.8	3.4	0.8	4.0	4.9	16.9	-15.4	10.1	8.1	20.7		
<i>MSCI AC World ex USA Index</i>			-7.5	0.0	6.1	1.3	4.6	5.3	16.2	-15.6	8.3	11.1	22.1		
BlackRock International Equity	149,967,173	12.3	-8.4	-1.7	3.8	1.9	5.0	5.5	18.6	-14.1	11.6	8.1	22.4	6.8	Jul-03
<i>MSCI EAFE (Net)</i>			-8.1	-1.4	3.8	1.6	4.7	5.2	18.2	-14.5	11.3	7.8	22.0	6.8	
<i>eV All EAFE Equity Rank</i>			67	72	54	41	44	46	33	36	53	52	50		
William Blair Emerging Growth	19,360,281	1.6	-3.8	-	-	-	-	-	-	-	-	-	-	-1.8	Jul-24
<i>MSCI Emerging Markets Growth Index</i>			-6.9	-	-	-	-	-	-	-	-	-	-	1.7	
<i>eV Emg Mkts Large Cap Growth Equity Rank</i>			8	-	-	-	-	-	-	-	-	-	-		
DFA Emerging Markets Value	24,051,814	2.0	-7.6	-2.3	6.2	3.4	5.0	4.8	16.5	-10.7	12.4	2.7	9.6	4.1	Jan-07
<i>MSCI Emerging Markets Value (Net)</i>			-9.2	-1.8	4.5	0.2	2.0	2.8	14.2	-15.8	4.0	5.5	12.0	3.3	
<i>eV Emg Mkts All Cap Value Equity Rank</i>			41	75	48	33	35	71	44	38	20	83	94		
Total Fixed Income	314,557,790	25.8	-2.9	2.1	2.4	-2.3	0.6	2.0	6.2	-14.2	0.6	9.8	9.5		
<i>Blmbg. U.S. Aggregate Index</i>			-3.1	2.0	1.3	-2.4	-0.3	1.3	5.5	-13.0	-1.5	7.5	8.7		
Income Research & Management	134,603,337	11.0	-2.9	2.0	1.7	-	-	-	-	-	-	-	-	5.0	Sep-23
<i>Blmbg. U.S. Aggregate Index</i>			-3.1	2.0	1.3	-	-	-	-	-	-	-	-	4.0	
<i>eV US Core Plus Fixed Inc Rank</i>			64	76	82	-	-	-	-	-	-	-	-		
MacKay Shields Core Plus Opportunities	136,696,014	11.2	-2.8	2.4	3.3	-2.0	0.6	-	6.7	-14.5	-0.5	9.9	9.7	1.7	Mar-15
<i>Blmbg. U.S. Aggregate Index</i>			-3.1	2.0	1.3	-2.4	-0.3	-	5.5	-13.0	-1.5	7.5	8.7	1.3	
<i>eV US Core Plus Fixed Inc Rank</i>			48	40	21	58	47	-	46	85	55	20	54		
BlackRock US TIPS	43,258,439	3.5	-2.9	1.1	2.0	-2.3	1.9	2.3	3.9	-11.9	5.9	11.2	8.5	3.4	Apr-07
<i>Blmbg. U.S. TIPS Index</i>			-2.9	1.1	1.8	-2.3	1.9	2.2	3.9	-11.8	6.0	11.0	8.4	3.4	
<i>eV US TIPS / Inflation Fixed Inc Rank</i>			60	62	55	56	50	45	44	67	26	26	32		

Income Research & Management replaced Ducenta 9/30/2023. Harbourvest 2023 funded 12/28/2023. Harding Loevner liquidated 6/30/2024. William Blair Emerging Growth funded 7/02/2024. Harbourvest, KKR Mezzanine, Portfolio Advisors, Crescent Direct Lending, Audax Direct Lending, Lone Star, Ares Capital, Sixth Street Diversified Credit, and Sixth Street TAO Partners market values as of 09/30/2024 adjusted for cash flows.

Total Fund
Manager Summary (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019	Inception	Inception Date
Total Real Estate	101,458,606	8.3	0.6	0.4	-5.9	-4.4	1.1	4.5	-14.3	8.5	18.4	2.1	5.7		
<i>NCREIF Property Index</i>			0.9	1.7	0.4	-0.8	3.1	5.7	-7.9	5.5	17.7	1.6	6.4		
<i>NCREIF ODCE Net</i>			1.0	1.0	-2.3	-3.1	2.0	4.9	-12.7	6.5	21.0	0.3	4.4		
ASB Real Estate	20,817,358	1.7	0.0	-1.1	-15.2	-9.7	-3.1	1.7	-21.5	10.7	14.2	1.5	3.0	3.4	Jan-13
<i>NCREIF Property Index</i>			0.9	1.7	0.4	-0.8	3.1	5.7	-7.9	5.5	17.7	1.6	6.4	6.6	
<i>NCREIF ODCE Net</i>			1.0	1.0	-2.3	-3.1	2.0	4.9	-12.7	6.5	21.0	0.3	4.4	6.1	
Clarion Lion	27,709,515	2.3	1.9	2.2	-2.3	-3.3	2.7	5.9	-15.5	9.6	23.6	2.3	6.8	4.3	Jan-07
<i>NCREIF Property Index</i>			0.9	1.7	0.4	-0.8	3.1	5.7	-7.9	5.5	17.7	1.6	6.4	5.8	
<i>NCREIF ODCE Net</i>			1.0	1.0	-2.3	-3.1	2.0	4.9	-12.7	6.5	21.0	0.3	4.4	4.3	
ARA American Strategic Value Realty	50,886,928	4.2	0.2	0.1	-3.7	-2.7	2.3	-	-10.3	6.8	18.6	2.4	7.8	3.9	Jan-18
<i>NCREIF Property Index +2%</i>			1.4	2.7	2.4	1.2	5.2	-	-6.1	7.6	20.0	3.6	8.5	6.2	
<i>NCREIF ODCE Net</i>			1.0	1.0	-2.3	-3.1	2.0	-	-12.7	6.5	21.0	0.3	4.4	3.1	
1221 State St. Corp	2,044,805	0.2	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	7.9	1.2	Jun-08
Total Private Equity	75,972,804	6.2	1.6	1.6	5.1	2.7	16.0	16.0	3.9	-0.8	57.3	23.0	13.3		
Harbourvest Buyout IX	3,077,566	0.3	-1.1	-2.2	-3.2	-1.2	11.8	15.4	5.9	-6.0	49.6	21.3	17.6		
<i>Russell 3000 + 3%</i>			3.4	10.6	27.5	11.2	17.3	15.9	29.7	-16.8	29.4	24.5	34.9		
Harbourvest Credit Ops IX	421,142	0.0	-0.8	-1.2	-12.5	0.6	6.2	9.1	5.0	11.0	32.1	0.3	8.0		
<i>Russell 3000 + 3%</i>			3.4	10.6	27.5	11.2	17.3	15.9	29.7	-16.8	29.4	24.5	34.9		
Harbourvest International PE VI	834,266	0.1	-3.0	-10.5	-14.6	-9.6	4.1	8.0	3.9	-16.7	41.2	17.2	6.0		
<i>Russell 3000 + 3%</i>			3.4	10.6	27.5	11.2	17.3	15.9	29.7	-16.8	29.4	24.5	34.9		
Harbourvest Venture IX	3,583,506	0.3	0.0	-1.2	-0.6	-8.9	17.1	17.1	-9.5	-15.9	91.1	52.4	24.6		
<i>Russell 3000 + 3%</i>			3.4	10.6	27.5	11.2	17.3	15.9	29.7	-16.8	29.4	24.5	34.9		
Harbourvest 2017 Global Fund	24,055,509	2.0	1.4	2.6	8.6	3.9	16.6	-	4.6	-1.3	61.6	18.8	8.8	16.6	Oct-17
<i>Russell 3000 + 3%</i>			3.4	10.6	27.5	11.2	17.3	-	29.7	-16.8	29.4	24.5	34.9	17.0	
Harbourvest 2018 Global Fund	20,435,574	1.7	1.4	2.8	4.3	6.0	13.6	-	4.0	9.7	37.0	16.0	14.3	13.7	Jan-19
<i>Russell 3000 + 3%</i>			3.4	10.6	27.5	11.2	17.3	-	29.7	-16.8	29.4	24.5	34.9	20.1	
Harbourvest 2019 Global Fund	20,412,621	1.7	2.8	4.0	8.7	6.7	19.6	-	6.1	5.4	49.6	34.6	-	19.3	Dec-19
<i>Russell 3000 + 3%</i>			3.4	10.6	27.5	11.2	17.3	-	29.7	-16.8	29.4	24.5	-	17.7	
Harbourvest 2023 Global Fund	3,152,620	0.3	7.4	10.7	29.2	-	-	-	-	-	-	-	-	-	
<i>Russell 3000 + 3%</i>			3.4	10.6	27.5	-	-	-	-	-	-	-	-	-	
Total Private Credit	68,017,127	5.6	-1.8	-1.6	2.2	7.1	8.4	-	11.1	8.1	16.1	4.8	9.4		
Portfolio Advisors Credit Strategies Fund	11,930,984	1.0	N/A	4.5	8.5	6.7	9.9	-	4.0	7.7	26.8	3.9	8.2	8.9	Oct-17
<i>Bloomberg High Yield +2% (Lagged)</i>			5.8	7.5	18.0	5.2	6.8	-	12.5	-12.4	13.5	5.3	8.5	6.8	
Crescent Direct Lending Levered Fund II	1,876,063	0.2	N/A	2.0	7.6	9.3	9.0	-	9.3	10.9	11.5	6.0	12.4	9.3	Mar-18
<i>Bloomberg High Yield +2% (Lagged)</i>			5.8	7.5	18.0	5.2	6.8	-	12.5	-12.4	13.5	5.3	8.5	6.9	

Income Research & Management replaced Ducenta 9/30/2023. Harbourvest 2023 funded 12/28/2023. Harding Loevner liquidated 6/30/2024. William Blair Emerging Growth funded 7/02/2024. Harbourvest, KKR Mezzanine, Portfolio Advisors, Crescent Direct Lending, Audax Direct Lending, Lone Star, Ares Capital, Sixth Street Diversified Credit, and Sixth Street TAO Partners market values as of 09/30/2024 adjusted for cash flows.

Total Fund
Manager Summary (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019	Inception	Inception Date
Audax Direct Lending Fund A	5,271,662	0.4	3.4	6.0	12.3	12.7	14.2	-	10.4	15.5	23.1	10.1	16.3	16.1	Oct-18
<i>Bloomberg High Yield +2% (Lagged)</i>			5.8	7.5	18.0	5.2	6.8	-	12.5	-12.4	13.5	5.3	8.5	7.3	
Ares Capital Europe IV	5,458,569	0.4	1.5	4.1	7.6	7.5	8.5	-	7.8	7.0	11.8	8.2	13.1	9.2	Aug-18
<i>Bloomberg High Yield +2% (Lagged)</i>			5.8	7.5	18.0	5.2	6.8	-	12.5	-12.4	13.5	5.3	8.5	7.2	
Lone Star XI	5,082,402	0.4	N/A	10.3	15.0	15.0	29.2	-	16.2	13.7	538.0	-62.8	-	18.4	Jun-19
<i>Bloomberg High Yield +2% (Lagged)</i>			5.8	7.5	18.0	5.2	6.8	-	12.5	-12.4	13.5	5.3	-	7.2	
Sixth Street Diversified Credit	33,670,960	2.8	-4.2	0.4	4.1	11.0	-	-	16.1	13.2	-1.4	-	-	6.3	May-20
<i>Bloomberg High Yield +2% (Lagged)</i>			5.8	7.5	18.0	5.2	-	-	12.5	-12.4	13.5	-	-	6.6	
Ascribe Opportunities Fund IV	4,726,487	0.4	N/A	-2.9	7.4	8.0	-	-	11.0	5.6	-	-	-	11.0	Oct-21
<i>Bloomberg High Yield +2% (Lagged)</i>			5.8	7.5	18.0	5.2	-	-	12.5	-12.4	-	-	-	5.1	
Total Opportunistic	32,000,394	2.6	-7.2	-6.7	-2.8	6.6	7.7	6.9	13.0	10.4	18.6	0.9	-10.7		
KKR Mezzanine Partners	572,672	0.0	-58.4	-66.5	-65.2	-33.5	-22.7	-9.0	22.5	-31.0	10.5	-15.2	-4.2	-3.1	Jun-11
TSSP Adjacent Opportunities Partners	31,427,722	2.6	-5.0	-3.4	0.6	9.5	-	-	12.4	16.2	26.1	-	-	13.4	Apr-20
Total Cash	14,688,054	1.2	1.1	2.5	4.9	1.6	1.0	0.5	0.0	0.0	0.0	0.0	0.0		
Invesco Treasury Portfolio	14,688,054	1.2	1.1	2.5	4.8	-	-	-	-	-	-	-	-	4.8	Jan-24
<i>FTSE 3 Month T-Bill</i>			1.2	2.6	5.4	-	-	-	-	-	-	-	-	5.4	

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

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

	Annualized Return	Annualized Excess Return	Annualized Standard Deviation	Annualized Alpha	Annualized Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
BlackRock Russell 3000	8.01	5.45	17.57	0.00	1.00	0.02	1.00	0.31	0.05	100.01	100.01
BlackRock International Equity	1.86	-0.61	16.61	0.21	1.00	0.24	1.00	-0.04	0.86	100.71	99.87
DFA Emerging Markets Value	3.35	0.63	15.27	3.17	0.94	3.10	0.96	0.04	0.98	98.26	83.21
MacKay Shields Core Plus Opportunities	-1.96	-5.47	8.15	0.59	1.05	1.18	0.98	-0.69	0.42	104.89	100.12
BlackRock US TIPS	-2.27	-5.86	7.14	0.03	1.00	0.23	1.00	-0.84	0.13	100.80	100.37
ASB Real Estate	-9.67	-13.38	10.59	-7.98	1.80	7.06	0.69	-1.23	-1.25	125.31	326.66
Clarion Lion	-3.27	-6.78	8.62	-1.77	1.66	4.30	0.89	-0.76	-0.52	158.30	200.95
ARA American Strategic Value Realty	-2.67	-6.37	5.75	-3.92	1.13	1.62	0.93	-1.05	-2.35	67.03	153.49
Portfolio Advisors Credit Strategies Fund	6.70	2.76	4.35	6.43	0.06	8.98	0.01	0.63	0.13	34.14	-20.13
Crescent Direct Lending Levered Fund II	9.27	5.19	4.95	9.84	-0.08	10.29	0.02	1.06	0.35	38.14	-41.39
Audax Direct Lending Fund A	12.72	8.34	5.32	12.49	0.06	9.48	0.01	1.52	0.72	46.54	-63.87
Ares Capital Europe IV	7.49	3.47	3.17	7.12	0.07	8.38	0.04	1.05	0.23	32.16	-31.37
Lone Star XI	14.99	10.50	7.67	16.13	-0.13	12.18	0.02	1.38	0.73	60.26	-66.31
Sixth Street Diversified Credit	11.01	7.07	9.19	10.99	0.08	12.00	0.01	0.76	0.46	30.17	-75.77
Ascribe Opportunities Fund IV	7.97	4.05	6.13	8.36	-0.03	10.62	0.00	0.67	0.23	29.01	-43.14

Risk analysis requires 3 years of data.

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

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

	Annualized Return	Annualized Excess Return	Annualized Standard Deviation	Annualized Alpha	Annualized Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
BlackRock Russell 3000	13.88	12.37	18.66	0.01	1.00	0.03	1.00	0.66	0.37	100.01	99.97
BlackRock International Equity	4.98	4.00	17.73	0.23	1.00	0.31	1.00	0.23	0.79	101.00	100.16
DFA Emerging Markets Value	4.98	4.27	18.92	3.07	1.02	4.06	0.95	0.22	0.77	104.87	91.14
Mackay Shields Core Plus Opportunities	0.60	-1.59	7.03	0.99	1.07	1.86	0.93	-0.23	0.52	115.01	103.78
BlackRock US TIPS	1.90	-0.36	6.29	0.02	1.00	0.19	1.00	-0.06	0.15	100.79	100.62
ASB Real Estate	-3.10	-5.16	9.06	-6.77	1.32	5.69	0.64	-0.55	-1.05	97.53	308.87
Clarion Lion	2.72	0.61	8.57	-1.74	1.49	3.66	0.92	0.07	-0.05	143.08	199.77
ARA American Strategic Value Realty	2.30	0.02	6.08	-3.07	1.07	1.55	0.94	0.00	-1.78	79.27	145.98
Portfolio Advisors Credit Strategies Fund	9.86	7.29	7.62	8.17	0.26	9.94	0.10	0.94	0.27	61.22	-7.08
Crescent Direct Lending Levered Fund II	9.05	6.39	5.24	10.16	-0.13	11.62	0.05	1.21	0.15	36.58	-42.27
Audax Direct Lending Fund A	14.18	11.16	7.51	13.45	0.13	10.95	0.03	1.46	0.60	68.45	-42.28
Ares Capital Europe IV	8.49	5.86	5.02	8.23	0.05	10.11	0.01	1.14	0.12	44.42	-20.77
Lone Star XI	29.22	42.96	77.54	50.29	0.56	77.48	0.00	0.55	0.50	320.13	31.92

Risk analysis requires 5 years of data.

Private Equity
Non Marketable Securities Overview

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

Vintage	Manager & Fund Name	Estimated 12/31/2024 Market Value ³	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value for IRR	Distrib./	Tot. Value/	Net IRR	IRR Date		
									Paid-In (DPI) ¹	Paid-In (TVPI) ²	Since Inception ⁴			
2011	HarbourVest IX-Buyout	\$3,077,566	\$10,000,000	\$8,525,000	85%	\$1,475,000	\$15,765,126	\$4,328,802	184.9%	221.0%	17.3%	9/30/24		
2011	HarbourVest IX-Credit	\$421,142	\$2,000,000	\$1,641,541	82%	\$358,459	\$2,258,431	\$632,548	137.6%	163.2%	11.7%	9/30/24		
2008	HarbourVest Int'l VI ⁵	\$834,266	\$3,712,930	\$2,630,078	71%	\$1,082,852	\$4,757,149	\$886,576	180.9%	212.6%	13.5%	9/30/24		
2011	HarbourVest IX-Venture	\$3,583,506	\$4,000,000	\$3,800,000	95%	\$200,000	\$1,637,181	\$4,004,662	43.1%	137.4%	20.4%	9/30/24		
2017	HarbourVest 2017 Global	\$24,055,509	\$30,000,000	\$19,364,051	65%	\$10,635,949	\$16,357,239	\$26,940,297	84.5%	208.7%	18.3%	9/30/24		
2018	HarbourVest 2018 Global	\$20,435,574	\$20,000,000	\$11,238,043	56%	\$8,761,957	\$6,067,027	\$21,227,071	54.0%	235.8%	17.9%	9/30/24		
2019	HarbourVest 2019 Global	\$20,412,621	\$20,000,000	\$13,975,273	70%	\$6,024,727	\$3,250,733	\$20,412,621	23.3%	169.3%	19.4%	9/30/24		
2023	HarbourVest 2023 Global	\$3,152,620	\$10,000,000	\$2,753,540	28%	\$7,246,460	\$0	NA	0.0%	114.5%	NA	NA		
Total Illiquid Private Equity		\$75,972,804	\$99,712,930	\$63,927,526	64%	\$35,785,404	\$50,092,886	\$78,432,577	78.4%	197.2%				
% of Portfolio (Market Value)		6.22%												
									Management Fee	Admin Fee	Interest Expense	Other Expense	Total Expense⁶	
									HarbourVest IX-Buyout	\$18,171	\$0	\$2,765	\$102	\$21,038
									HarbourVest IX-Credit	\$3,630	\$0	\$787	\$22	\$4,439
									HarbourVest Int'l VI	\$2,019	\$0	\$455	\$235	\$2,709
									HarbourVest IX-Venture	\$7,281	\$0	\$1,567	\$66	\$8,914
									HarbourVest 2017 Global	\$66,000	\$0	\$6,522	\$88,962	\$161,484
									HarbourVest 2018 Global	\$44,000	\$0	\$1,142	\$36,644	\$81,786
									HarbourVest 2019 Global	\$44,362	\$0	\$23,875	\$18,682	\$86,919
									HarbourVest 2023 Global	\$18,842	\$0	\$7,273	\$30,059	\$56,174
										\$204,305	\$0	\$44,386	\$174,772	\$423,463

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

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

³Last known market value + capital calls - distributions (preliminary MV's as of 12/31/2024)

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

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

⁶fees and expenses are for 3Q 2024

HarbourVest 2017 Global Fund first capital call issued 9/21/2017. Portfolio Advisors first capital call issued 10/5/2017. HarbourVest 2018 Global Fund first capital call issued 12/13/2018.
HarbourVest 2023 Global Fund first capital call issued 12/28/2023.

Private Credit
Non Marketable Securities Overview

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

Vintage	Manager & Fund Name	Estimated 12/31/2024 Market Value ³	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value for IRR	Distrib./ Paid-In (DPI) ¹	Tot. Value/ Paid-In (TVPI) ²	Net IRR Since Inception ⁴	IRR Date			
2013	Portfolio Advisors Credit Strategies Fund	\$11,930,984	\$11,250,000	\$11,250,000	100%	\$0	\$4,137,744	\$12,135,638	36.8%	142.8%	8.9%	9/30/24			
2017	Crescent Direct Lending Levered Fund II	\$1,876,063	\$7,000,000	\$5,707,507	82%	\$1,292,493	\$5,799,791	\$1,976,224	101.6%	134.5%	9.5%	9/30/24			
2017	Audax Direct Lending Fund A	\$5,271,662	\$7,000,000	\$5,791,026	83%	\$1,208,974	\$3,516,122	\$5,419,863	60.7%	151.7%	14.6%	9/30/24			
2018	Ares Capital Europe IV	\$5,458,569	\$8,000,000	\$6,762,884	85%	\$1,237,116	\$4,228,594	\$5,581,910	62.5%	143.2%	8.1%	9/30/24			
2019	Lone Star Fund XI	\$5,082,402	\$5,750,000	\$5,080,264	88%	\$669,736	\$3,210,404	\$5,028,253	63.2%	163.2%	30.3%	9/30/24			
2019	Ascribe Opportunities IV	\$4,726,487	\$6,000,000	\$5,456,288	91%	\$543,712	\$1,812,063	\$4,726,487	33.2%	119.8%	10.0%	9/30/24			
2020	Sixth Street Diversified Credit	\$33,670,960	\$60,000,000	\$33,183,951	55%	\$26,816,049	\$5,467,296	\$35,596,159	16.5%	117.9%	13.3%	9/30/24			
Total Illiquid Private Credit		\$68,017,127	\$105,000,000	\$73,231,920	69.7%	\$31,768,080	\$28,172,014	\$70,464,534	38.5%	131.3%					
% of Portfolio (Market Value)		5.48%													
									Management Fee	Accrued Carried Interest	Admin Fee	Interest Expense	Other Expense	Total Expense⁵	
									Portfolio Advisors CSF	\$0	\$0	\$0	\$0	\$0	\$0
									Crescent Direct Lending II	\$44,234	\$5,130	\$8,407	\$0	\$0	\$57,771
									Audax Direct Lending A	\$29,458	\$0	\$0	\$0	\$0	\$29,458
									Ares Capital Europe IV	\$21,429	\$15,361	\$0	\$56,897	\$4,325	\$98,012
									Ascribe Opportunities IV	\$33,506	\$7,874	\$0	\$0	\$0	\$41,380
									Lone Star Fund XI	\$0	\$0	\$0	\$0	\$0	\$0
									Sixth Street Diversified Credit	\$0	\$0	\$0	\$0	\$0	\$0

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

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

³Last known market value + capital calls - distributions (preliminary MV's as of 12/31/2024)

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

⁵All fees and expenses are for 3Q 2024

\$128,627 \$28,365 \$8,407 \$56,897 \$4,325 **\$226,621**

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

Opportunistic Non Marketable Securities Overview

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

Vintage	Manager & Fund Name	Estimated 12/31/2024 Market Value ³	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value for IRR	Distrib./ Paid-In (DPI) ¹	Tot. Value/ Paid-In (TVPI) ²	Net IRR Since Inception ⁵	IRR Date	
2010	KKR Mezzanine ⁶	\$572,672	\$10,000,000	\$10,000,000	100%	\$0	\$14,153,380	\$572,672	141.5%	147.3%	3.6%	9/30/24	
2020	TSSP Adjacent Opportunities Partners	\$31,427,722	\$40,000,000	\$29,017,784	73%	\$10,982,216	\$6,182,047	NA	21.3%	129.6%	NA	NA	
Total Illiquid Opportunistic		\$32,000,394	\$50,000,000	\$39,017,784	78%	\$10,982,216	\$20,335,427	\$586,289	1.5%	53.6%			
% of Portfolio (Market Value)		2.62%											
							Management Fee	Accrued Carried Interest	Admin Fee	Interest Expense	Other Expense	Total Expense⁶	
							KKR Mezzanine	\$0	\$0	\$0	\$0	\$2,487	\$2,487
							TSSP Adjacent Opportunities P:	\$0	\$0	\$0	\$0	\$0	\$0
								\$0	\$0	\$0	\$0	\$2,487	\$2,487

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

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

³Last known market value + capital calls - distributions (preliminary MV's as of 12/31/2024)

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

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

⁶All fees and expenses are for 3Q 2024

Total Fund
Cash Flow by Manager (Last Three Months)

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

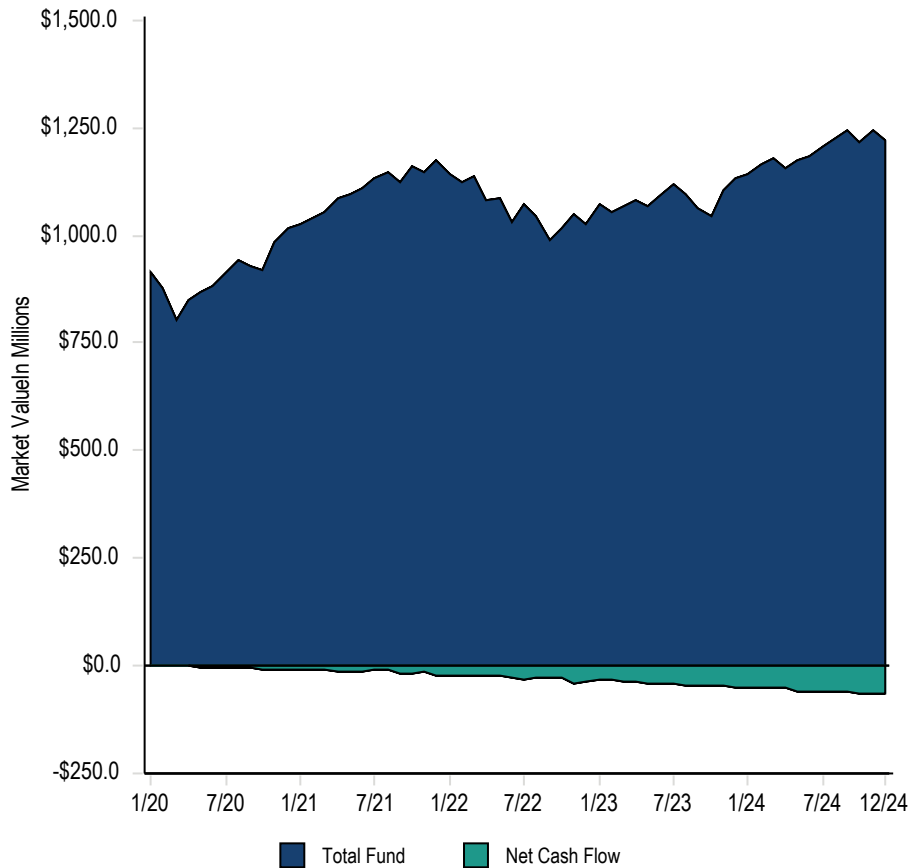
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flows	Capital Appreciation	Ending Market Value
BlackRock Russell 3000	\$414,713,871	\$0	-\$5,000,000	-\$5,000,000	\$10,855,485	\$420,569,356
BlackRock International Equity	\$163,600,626	\$0	\$0	\$0	-\$13,633,453	\$149,967,173
William Blair Emerging Growth	\$20,096,186	\$0	\$0	\$0	-\$691,717	\$19,360,281
DFA Emerging Markets Value	\$26,036,536	\$0	\$0	\$0	-\$1,984,723	\$24,051,814
Income Research & Management	\$138,597,484	\$0	\$0	\$0	-\$3,994,146	\$134,603,337
MackKay Shields Core Plus Opportunities	\$140,582,021	\$0	\$0	\$0	-\$3,886,007	\$136,696,014
BlackRock US TIPS	\$44,544,326	\$0	\$0	\$0	-\$1,285,887	\$43,258,439
ASB Real Estate	\$20,808,556	\$0	\$0	\$0	\$8,802	\$20,817,358
Clarion Lion	\$27,245,218	\$188,283	-\$246,387	-\$58,104	\$522,401	\$27,709,515
ARA American Strategic Value Realty	\$50,796,396	\$0	\$0	\$0	\$238,928	\$50,886,928
1221 State St. Corp	\$2,035,541	\$24,779	-\$15,634	\$9,145	\$120	\$2,044,805
Harbourvest Buyout IX	\$4,519,054	\$0	-\$1,393,827	-\$1,393,827	-\$47,661	\$3,077,566
Harbourvest Credit Ops IX	\$734,344	\$0	-\$308,198	-\$308,198	-\$5,004	\$421,142
Harbourvest International PE VI	\$1,130,124	\$0	-\$262,153	-\$262,153	-\$33,705	\$834,266
Harbourvest Venture IX	\$4,159,295	\$0	-\$577,784	-\$577,784	\$1,995	\$3,583,506
Harbourvest 2017 Global Fund	\$26,575,555	\$0	-\$2,884,788	-\$2,884,788	\$364,742	\$24,055,509
Harbourvest 2018 Global Fund	\$20,933,372	\$0	-\$791,497	-\$791,497	\$293,699	\$20,435,574
Harbourvest 2019 Global Fund	\$19,857,798	\$0	\$0	\$0	\$554,823	\$20,412,621
Harbourvest 2023 Global Fund	\$1,865,476	\$1,150,000	\$0	\$1,150,000	\$137,144	\$3,152,620
Portfolio Advisors Credit Strategies Fund	\$12,135,638	\$0	-\$204,654	-\$204,654	\$0	\$11,930,984
Crescent Direct Lending Levered Fund II	\$1,976,224	\$0	-\$100,161	-\$100,161	\$0	\$1,876,063
Audax Direct Lending Fund A	\$5,241,625	\$0	-\$148,201	-\$148,201	\$178,238	\$5,271,662
Ares Capital Europe IV	\$5,497,160	\$0	-\$123,341	-\$123,341	\$84,750	\$5,458,569
Lone Star XI	\$5,028,253	\$54,149	\$0	\$54,149	\$0	\$5,082,402
Sixth Street Diversified Credit	\$34,616,420	\$2,526,832	-\$1,925,199	\$601,633	-\$1,547,093	\$33,670,960
Ascribe Opportunities Fund IV	\$4,726,487	\$0	\$0	\$0	\$0	\$4,726,487
KKR Mezzanine Partners	\$1,377,433	\$0	\$0	\$0	-\$804,761	\$572,672
TSSP Adjacent Opportunities Partners	\$30,300,888	\$2,768,189	\$0	\$2,768,189	-\$1,641,355	\$31,427,722
Invesco Treasury Portfolio	\$12,370,435	\$13,719,803	-\$11,499,170	\$2,220,633	\$96,985	\$14,688,054
Total Fund	\$1,242,102,341	\$20,432,034	-\$25,480,993	-\$5,048,959	-\$16,217,401	\$1,220,643,398

Harbourvest, KKR Mezzanine, Portfolio Advisors, Crescent Direct Lending, Audax Direct Lending, Lone Star, Ares Capital, Sixth Street Diversified Credit, and Sixth Street TAO Partners
market values as of 09/30/2024 adjusted for cash flows.

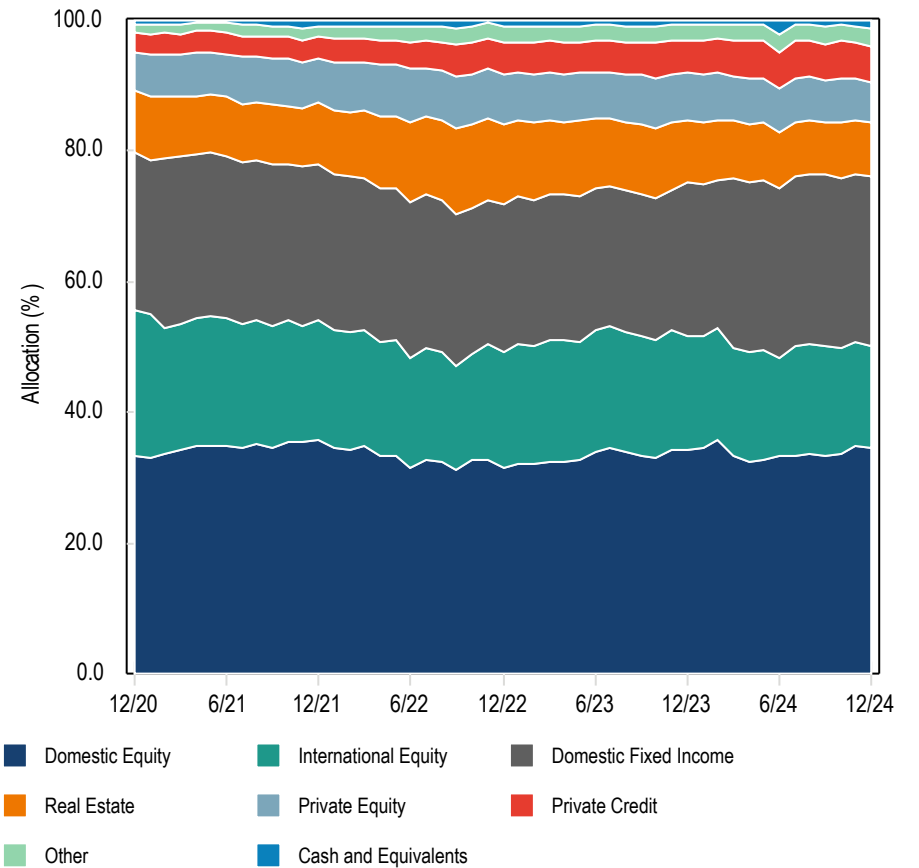
Total Fund
Asset Allocation History

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

Market Value History



Asset Allocation History



Total Fund Investment Fund Fee Analysis

Imperial County Employees' Retirement System Period Ending: December 31, 2024

Account	Fee Schedule	Market Value	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
ARA American Strategic Value Realty	1.25 % of First \$10 M 1.20 % of Next \$15 M 1.10 % of Next \$25 M 1.00 % Thereafter	50,886,928	4.17	588,869	1.16
Ares Capital Europe IV	1.38 % of Assets	5,458,569	0.45	75,328	1.38
ASB Real Estate	1.25 % of First \$5 M 1.00 % of Next \$10 M 0.75 % Thereafter	20,817,358	1.71	206,130	0.99
Ascribe Opportunities Fund IV	1.50 % of Assets	4,726,487	0.39	70,897	1.50
Audax Direct Lending Fund A	0.85 % of Assets	5,271,662	0.43	44,809	0.85
BlackRock International Equity	0.15 % of First \$50 M 0.10 % of Next \$50 M 0.00 % Thereafter	149,967,173	12.29	125,000	0.08
BlackRock Russell 3000	0.03 % of Assets	420,569,356	34.45	126,171	0.03
BlackRock US TIPS	0.07 % of Assets	43,258,439	3.54	30,281	0.07
Clarion Lion	1.25 % of First \$10 M 1.00 % of Next \$15 M 0.85 % Thereafter	27,709,515	2.27	298,031	1.08
Crescent Direct Lending Levered Fund II	Minimum Fee: \$25,280	1,876,063	0.15	25,280	1.35
DFA Emerging Markets Value	0.44 % of Assets	24,051,814	1.97	105,828	0.44
Income Research & Management	0.20 % of First \$100 M 0.17 % Thereafter	134,603,337	11.03	258,826	0.19
Harbourvest 2017 Global Fund	Minimum Fee: \$262,500	24,055,509	1.97	262,500	1.09
Harbourvest 2018 Global Fund	Minimum Fee: \$138,000	20,435,574	1.67	138,000	0.68
Harbourvest 2019 Global Fund	0.45 % of Assets	20,412,621	1.67	91,857	0.45
Harbourvest 2023 Global Fund	0.50 % of Assets	3,152,620	0.26	15,763	0.50
Harbourvest Buyout IX	Minimum Fee: \$100,000	3,077,566	0.25	100,000	3.25
Harbourvest Credit Ops IX	Minimum Fee: \$20,000	421,142	0.03	20,000	4.75
Harbourvest International PE VI	Minimum Fee: \$35,000	834,266	0.07	35,000	4.20
Harbourvest Venture IX	Minimum Fee: \$40,000	3,583,506	0.29	40,000	1.12
Invesco Treasury Portfolio		14,688,054	1.20	-	-
KKR Mezzanine Partners	Minimum Fee: \$150,000	572,672	0.05	150,000	26.19
Lone Star XI	0.71 % of Assets	5,082,402	0.42	36,034	0.71
MacKay Shields Core Plus Opportunities	0.30 % of Assets	136,696,014	11.20	410,088	0.30

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

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

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

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

*1221 State St Corp value of \$2,044,805 included in Total Fund MV.

Total Fund
Investment Fund Fee Analysis

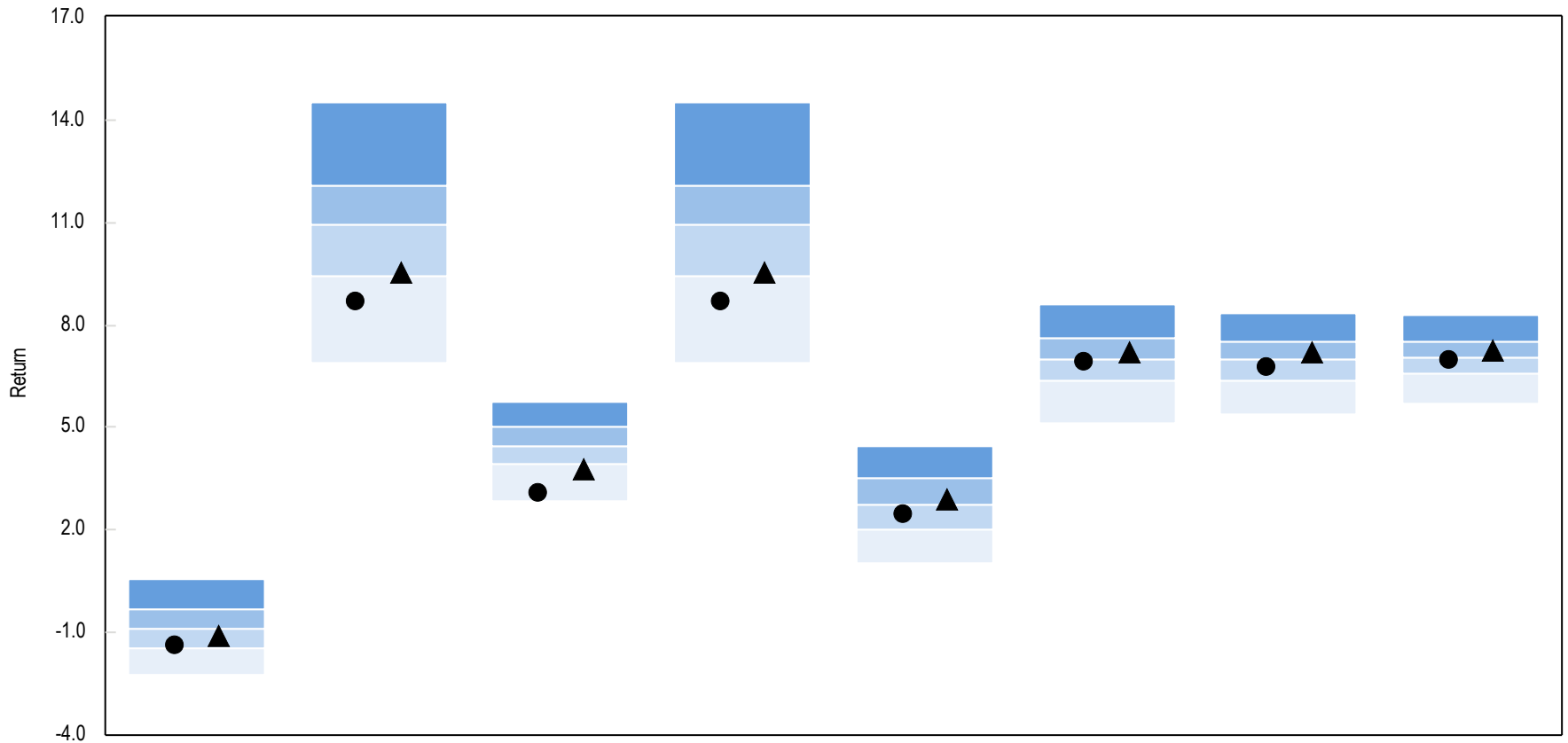
Imperial County Employees' Retirement System
Period Ending: December 31, 2024

Account	Fee Schedule	Market Value	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Portfolio Advisors Credit Strategies Fund	Minimum Fee: \$180,000	11,930,984	0.98	180,000	1.51
Sixth Street Diversified Credit	1.35 % of Assets	33,670,960	2.76	454,558	1.35
TSSP Adjacent Opportunities Partners		31,427,722	2.57	-	-
William Blair Emerging Growth	0.90 % of First \$25 M 0.85 % of Next \$25 M 0.70 % of Next \$50 M 0.65 % of Next \$50 M 0.60 % of Next \$50 M 0.40 % of Next \$200 M 0.35 % Thereafter	19,360,281	1.59	174,243	0.90
Investment Management Fee		1,220,643,398	100.00	4,063,493	0.33

*HarbourVest and KKR fees are estimated gross management fees only and do not include incentive allocations or offsetting cash flows received by the fund.
 *HarbourVest International Private Equity VI fees are based on committed Euros, actual US Dollar amount will fluctuate based on exchange rates.
 *Verus advisory fee shown for disclosure purposes only and is not included in total investment management fee calculations.
 *Portfolio Advisors fee is 0.20% on committed capital and 1.00% on invested capital.
 *1221 State St Corp value of \$2,044,805 included in Total Fund MV



Total Fund vs. InvMetrics Public DB Net

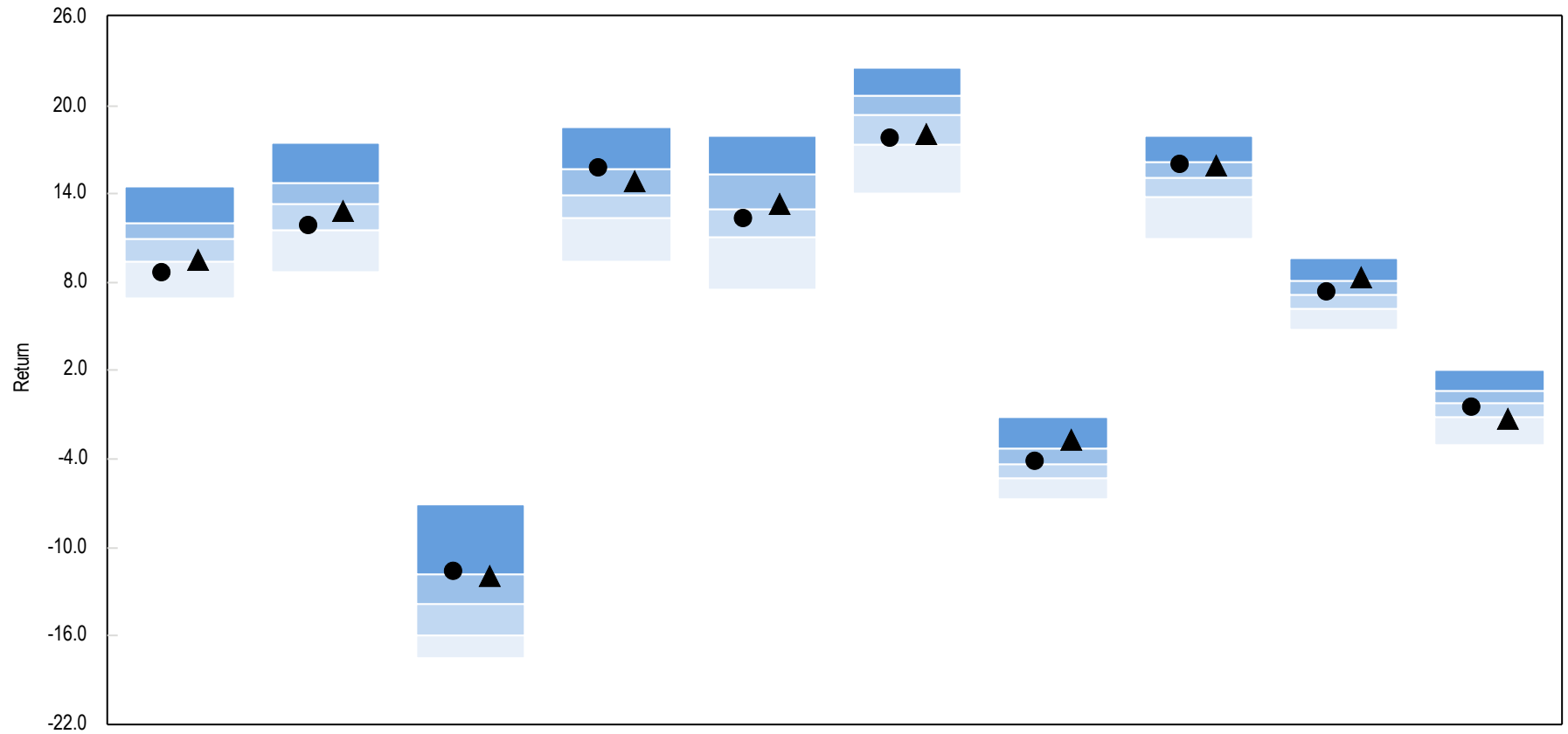


	Quarter	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Total Fund	-1.35 (73)	8.73 (82)	3.08 (94)	8.73 (82)	2.47 (61)	6.96 (51)	6.77 (61)	6.98 (52)
▲ Policy Index	-1.10 (61)	9.55 (75)	3.76 (82)	9.55 (75)	2.88 (46)	7.21 (42)	7.19 (41)	7.27 (36)
5th Percentile	0.55	14.50	5.76	14.50	4.44	8.62	8.34	8.28
1st Quartile	-0.33	12.06	5.03	12.06	3.50	7.62	7.50	7.50
Median	-0.87	10.94	4.46	10.94	2.76	6.97	6.98	7.02
3rd Quartile	-1.44	9.41	3.93	9.41	2.01	6.35	6.35	6.56
95th Percentile	-2.22	6.86	2.85	6.86	1.01	5.14	5.40	5.70
Population	549	537	545	537	514	499	481	430

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

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

Total Fund vs. InvMetrics Public DB Net

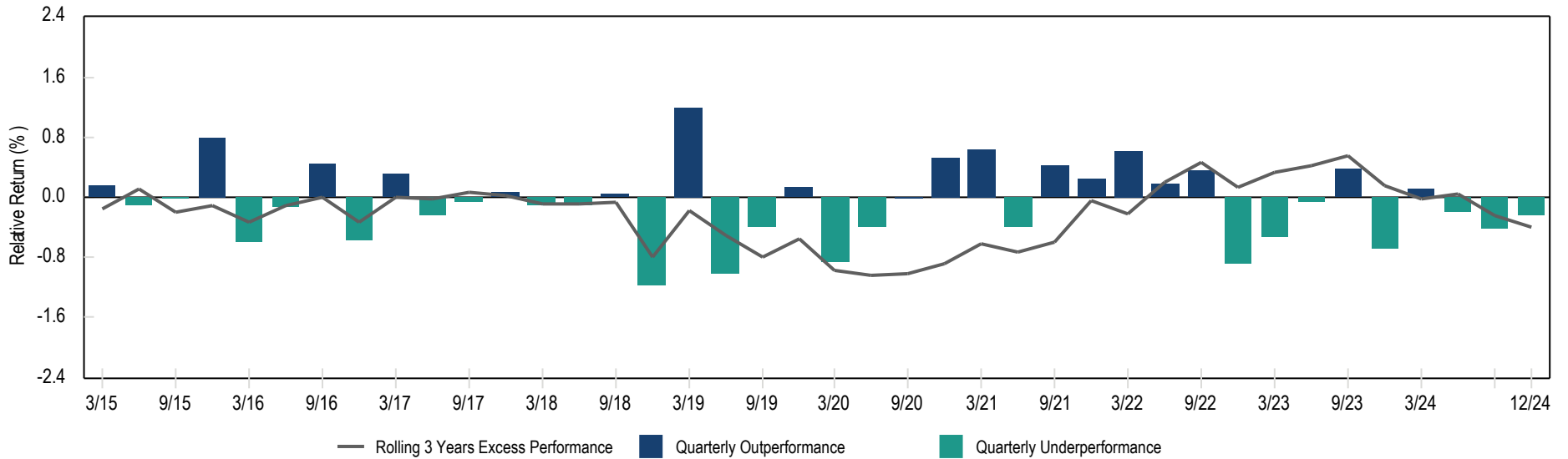


	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
● Total Fund	8.73 (82)	11.93 (71)	-11.60 (23)	15.84 (23)	12.33 (59)	17.85 (71)	-4.12 (42)	16.02 (28)	7.45 (44)	-0.41 (58)
▲ Policy Index	9.55 (75)	12.85 (58)	-11.93 (27)	14.83 (36)	13.29 (47)	18.03 (69)	-2.73 (15)	15.93 (30)	8.36 (21)	-1.22 (77)
5th Percentile	14.50	17.42	-7.05	18.54	17.92	22.54	-1.16	17.89	9.67	2.02
1st Quartile	12.06	14.73	-11.77	15.70	15.39	20.66	-3.31	16.13	8.15	0.64
Median	10.94	13.32	-13.87	13.90	13.01	19.40	-4.40	15.07	7.17	-0.19
3rd Quartile	9.41	11.55	-15.95	12.39	11.10	17.35	-5.29	13.79	6.26	-1.13
95th Percentile	6.86	8.75	-17.48	9.35	7.55	14.07	-6.68	10.92	4.74	-2.98
Population	537	1,113	1,131	1,176	1,221	1,129	1,083	1,066	1,055	996

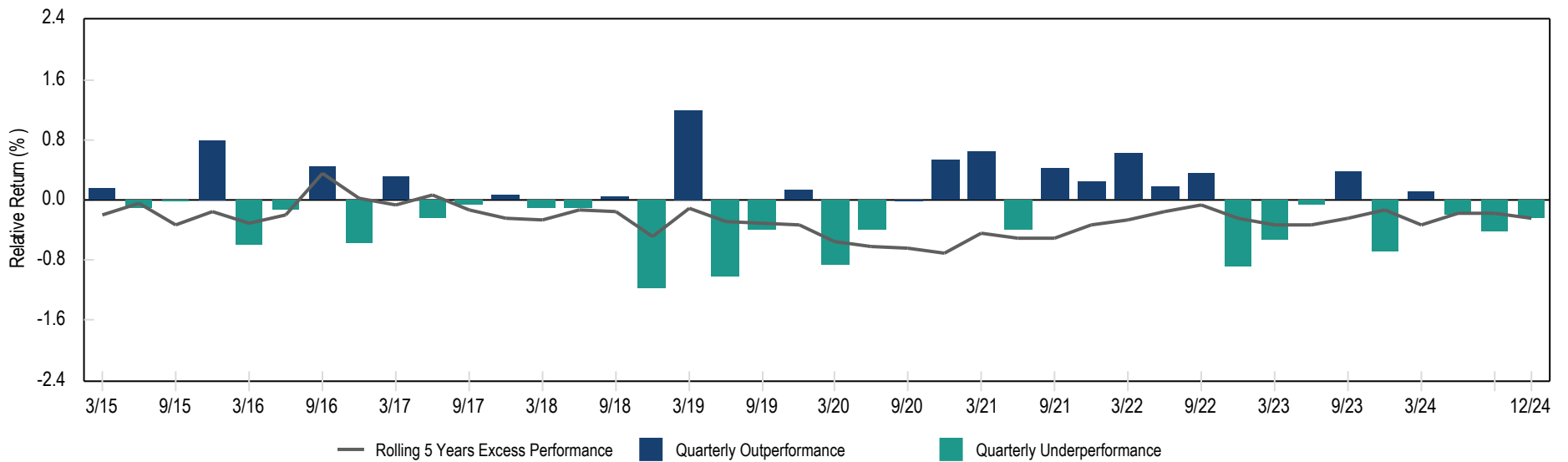
Total Fund
Rolling Return Analysis (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



Total Domestic Equity

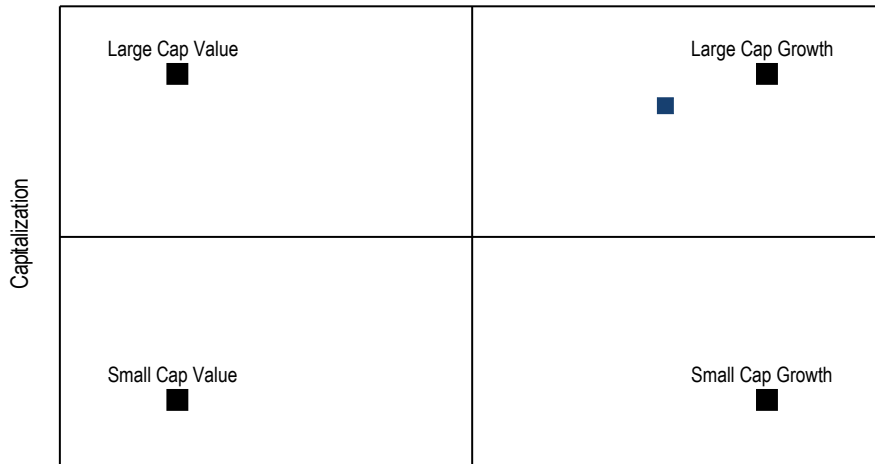
Asset Class Overview (Net of Fees)

Imperial County Employees' Retirement System

Period Ending: December 31, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019
Total Domestic Equity	420,569,356	100.0	2.6	9.0	23.8	8.0	13.9	12.5	26.0	-19.2	25.7	21.0	31.1
<i>Russell 3000 Index</i>			2.6	9.0	23.8	8.0	13.9	12.5	26.0	-19.2	25.7	20.9	31.0
BlackRock Russell 3000	420,569,356	100.0	2.6	9.0	23.8	8.0	13.9	-	26.0	-19.2	25.7	21.0	31.1
<i>Russell 3000 Index</i>			2.6	9.0	23.8	8.0	13.9	-	26.0	-19.2	25.7	20.9	31.0
<i>eV US All Cap Core Equity Rank</i>			25	25	22	24	26	-	25	58	51	41	37

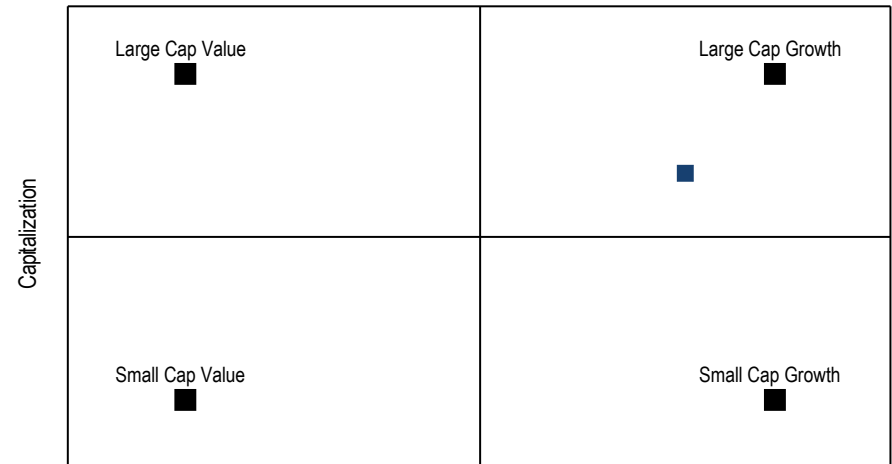
U.S. Effective Style Map
3 Years Ending: December 31, 2024



Manager Style

■ BlackRock Russell 3000

U.S. Effective Style Map
5 Years Ending: December 31, 2024



Manager Style

■ BlackRock Russell 3000

Total International Equity Asset Class Overview (Net of Fees)

Imperial County Employees' Retirement System Period Ending: December 31, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019
Total International Equity	193,379,267	100.0	-7.8	-1.8	3.4	0.8	4.0	4.9	16.9	-15.4	10.1	8.1	20.7
<i>MSCI AC World ex USA Index</i>			-7.5	0.0	6.1	1.3	4.6	5.3	16.2	-15.6	8.3	11.1	22.1
BlackRock International Equity	149,967,173	77.6	-8.4	-1.7	3.8	1.9	5.0	5.5	18.6	-14.1	11.6	8.1	22.4
<i>MSCI EAFE (Net)</i>			-8.1	-1.4	3.8	1.6	4.7	5.2	18.2	-14.5	11.3	7.8	22.0
<i>eV All EAFE Equity Rank</i>			67	72	54	41	44	46	33	36	53	52	50
William Blair Emerging Growth	19,360,281	10.0	-3.8	-	-	-	-	-	-	-	-	-	-
<i>MSCI Emerging Markets Growth Index</i>			-6.9	-	-	-	-	-	-	-	-	-	-
<i>eV Emg Mkts Large Cap Growth Equity Rank</i>			8	-	-	-	-	-	-	-	-	-	-
DFA Emerging Markets Value	24,051,814	12.4	-7.6	-2.3	6.2	3.4	5.0	4.8	16.5	-10.7	12.4	2.7	9.6
<i>MSCI Emerging Markets Value (Net)</i>			-9.2	-1.8	4.5	0.2	2.0	2.8	14.2	-15.8	4.0	5.5	12.0
<i>eV Emg Mkts All Cap Value Equity Rank</i>			41	75	48	33	35	71	44	38	20	83	94

**MSCI Effective Style Map
3 Years Ending: December 31, 2024**



**MSCI Effective Style Map
5 Years Ending: December 31, 2024**

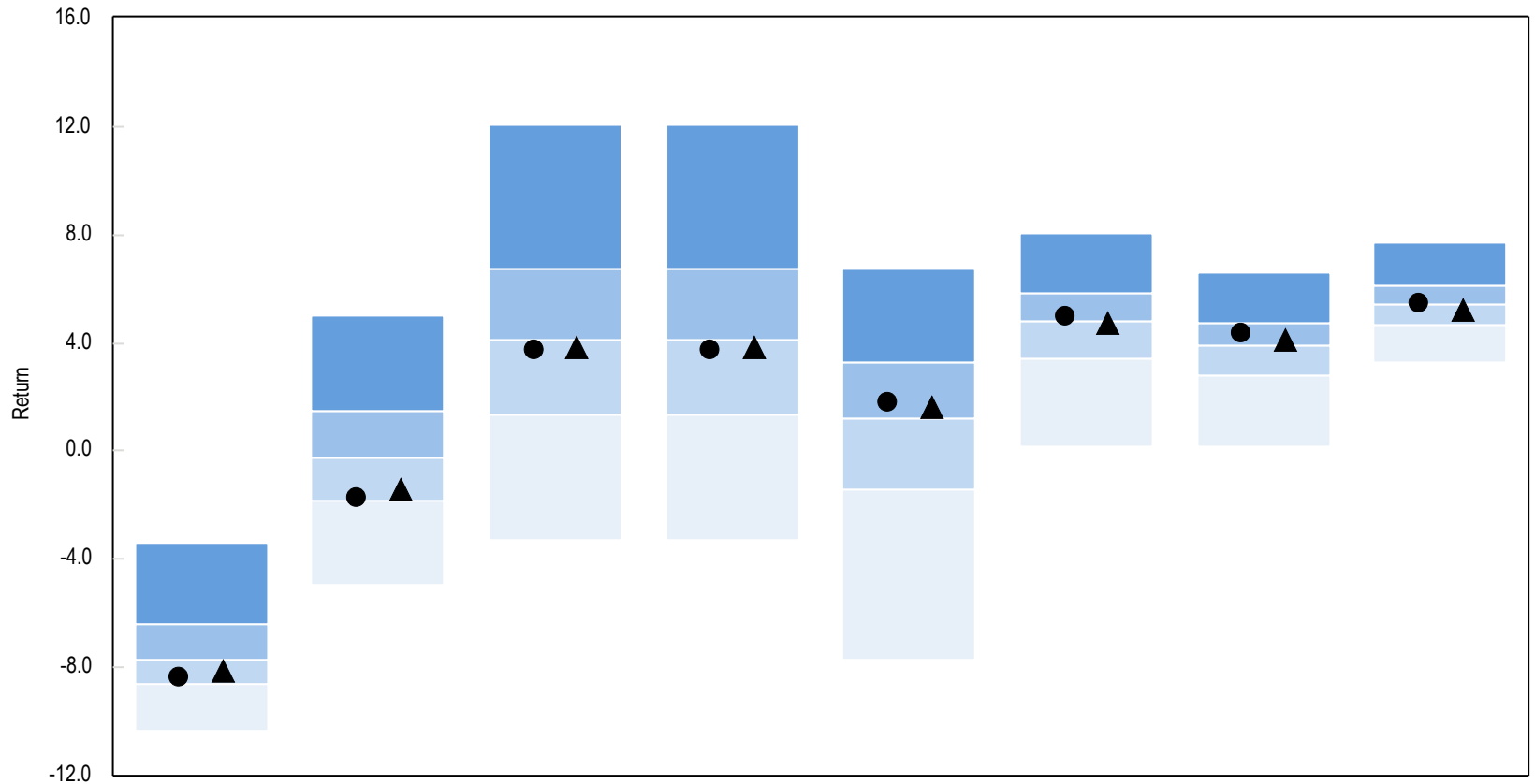


Harding Loevner liquidated 6/30/24.

BlackRock International Equity
 Cumulative Performance Comparison (Net of Fees)

Imperial County Employees' Retirement System
 Period Ending: December 31, 2024

BlackRock International Equity vs. eV All EAFE Equity

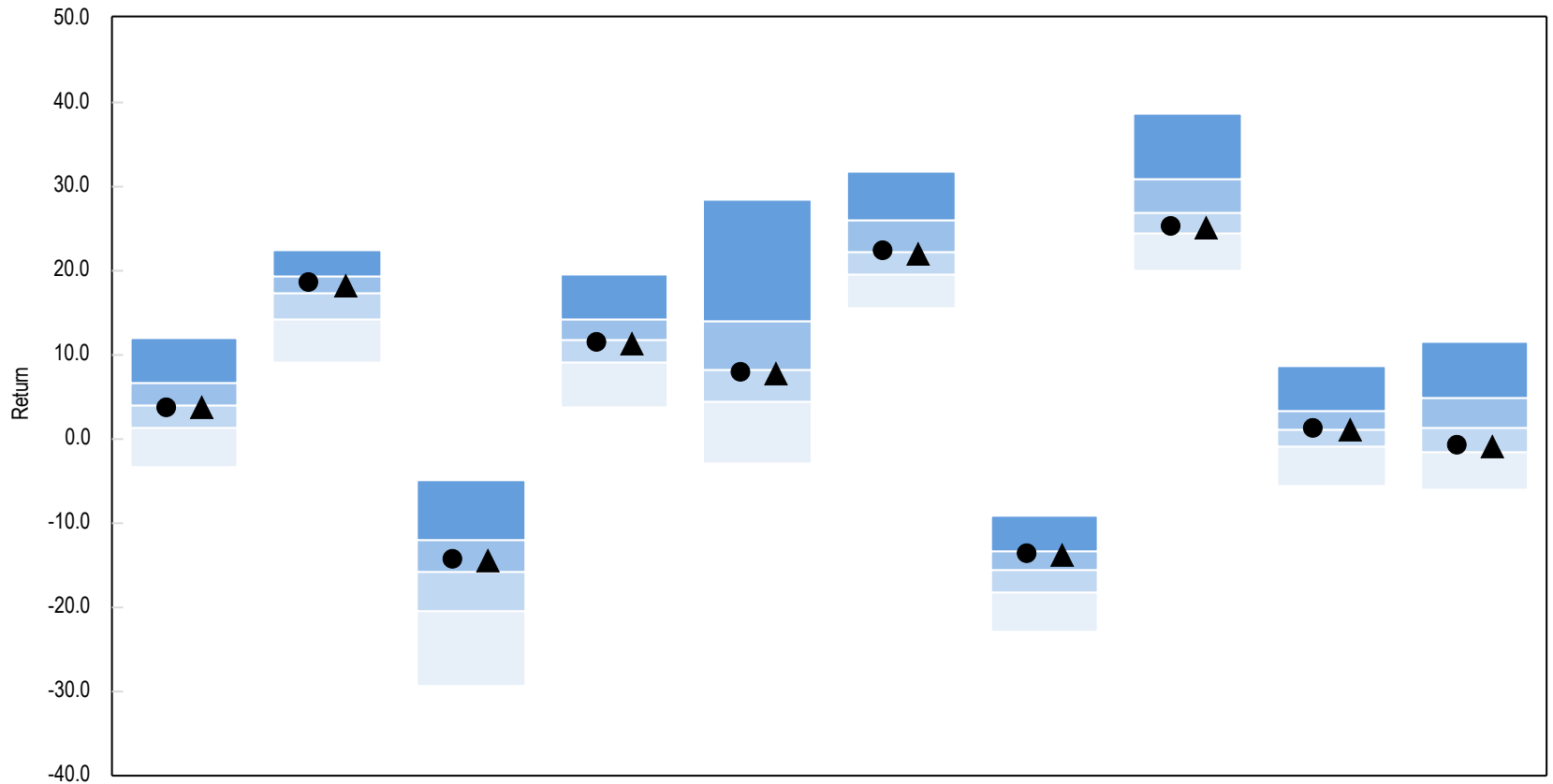


	Quarter	Fiscal YTD	YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● BlackRock International Equity	-8.35 (67)	-1.69 (72)	3.78 (54)	3.78 (54)	1.86 (41)	4.98 (44)	4.37 (34)	5.48 (46)
▲ MSCI EAFE (Net)	-8.11 (61)	-1.44 (67)	3.82 (53)	3.82 (53)	1.65 (44)	4.73 (52)	4.10 (45)	5.20 (62)
5th Percentile	-3.44	5.04	12.06	12.06	6.72	8.02	6.57	7.71
1st Quartile	-6.41	1.47	6.75	6.75	3.25	5.87	4.73	6.11
Median	-7.70	-0.27	4.08	4.08	1.21	4.77	3.91	5.40
3rd Quartile	-8.59	-1.87	1.36	1.36	-1.42	3.44	2.80	4.69
95th Percentile	-10.33	-4.96	-3.27	-3.27	-7.71	0.14	0.18	3.30
Population	414	414	413	413	389	366	339	288

BlackRock International Equity
Consecutive Performance Comparison (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

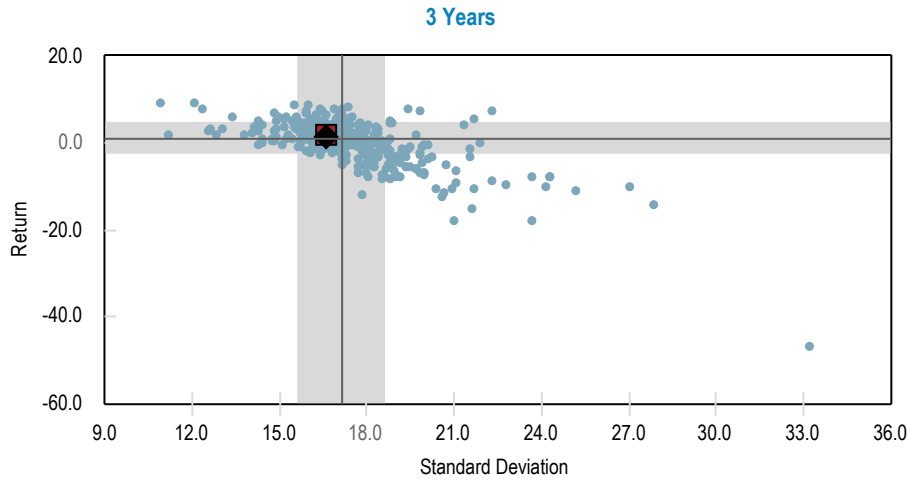
BlackRock International Equity vs. eV All EAFE Equity



	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
● BlackRock International Equity	3.78 (54)	18.56 (33)	-14.12 (36)	11.62 (53)	8.07 (52)	22.40 (50)	-13.52 (29)	25.42 (64)	1.34 (46)	-0.63 (65)
▲ MSCI EAFE (Net)	3.82 (53)	18.24 (38)	-14.45 (41)	11.26 (59)	7.82 (56)	22.01 (54)	-13.79 (35)	25.03 (68)	1.00 (53)	-0.81 (68)
5th Percentile	12.06	22.53	-4.83	19.65	28.38	31.76	-9.10	38.70	8.65	11.66
1st Quartile	6.75	19.25	-12.10	14.21	14.07	25.91	-13.24	30.82	3.38	4.99
Median	4.08	17.35	-15.79	11.81	8.20	22.26	-15.65	26.99	1.08	1.24
3rd Quartile	1.36	14.25	-20.41	9.22	4.43	19.61	-18.24	24.41	-0.94	-1.57
95th Percentile	-3.27	9.20	-29.38	3.82	-2.96	15.54	-22.92	20.01	-5.45	-5.98
Population	413	455	464	468	473	477	480	474	460	444

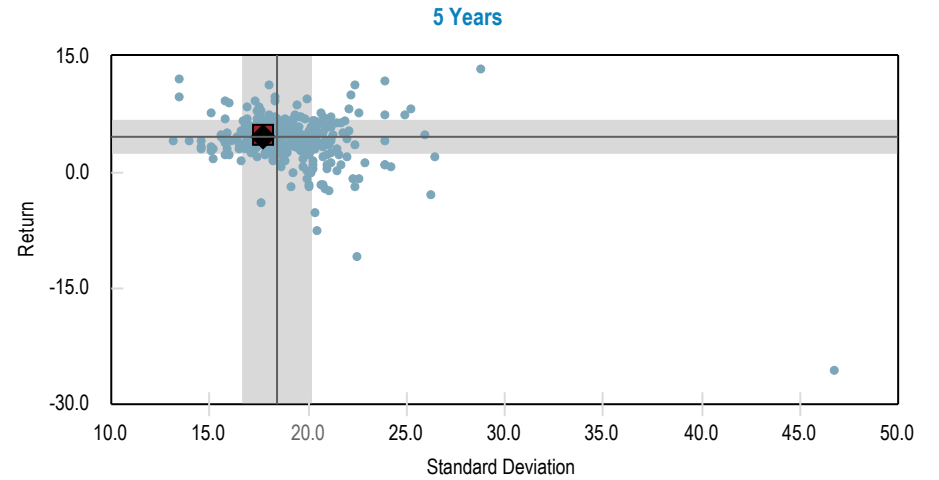
BlackRock International Equity
 Risk vs Return Three & Five Year (Net of Fees)

Imperial County Employees' Retirement System
 Period Ending: December 31, 2024



eV All EAFE Equity

	Return	Standard Deviation
■ BlackRock International Equity	1.86	16.61
◆ MSCI EAFE (Net)	1.65	16.61
— Median	1.21	17.15
Population	389	389



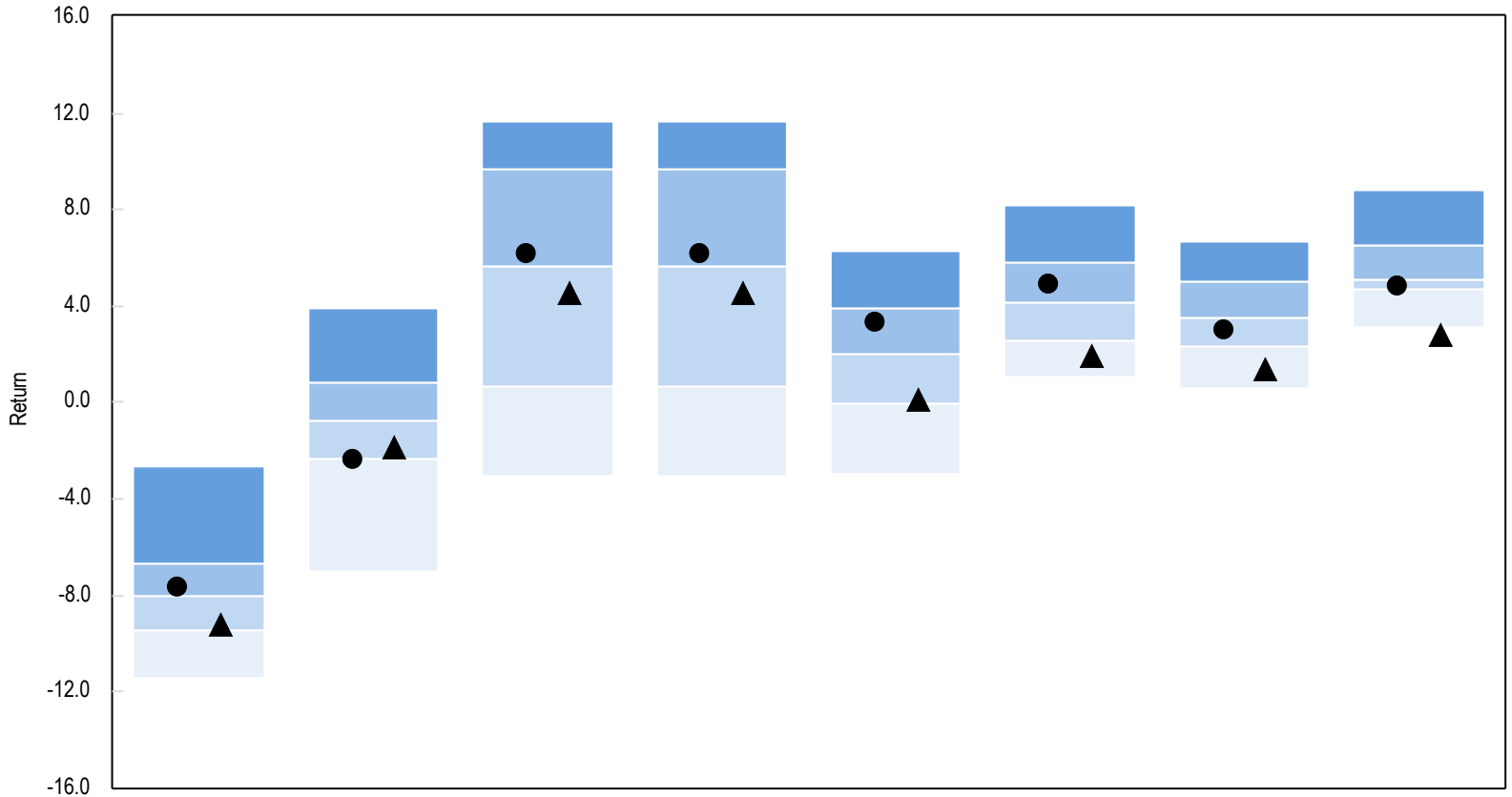
eV All EAFE Equity

	Return	Standard Deviation
■ BlackRock International Equity	4.98	17.73
◆ MSCI EAFE (Net)	4.73	17.70
— Median	4.77	18.46
Population	366	366

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

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

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

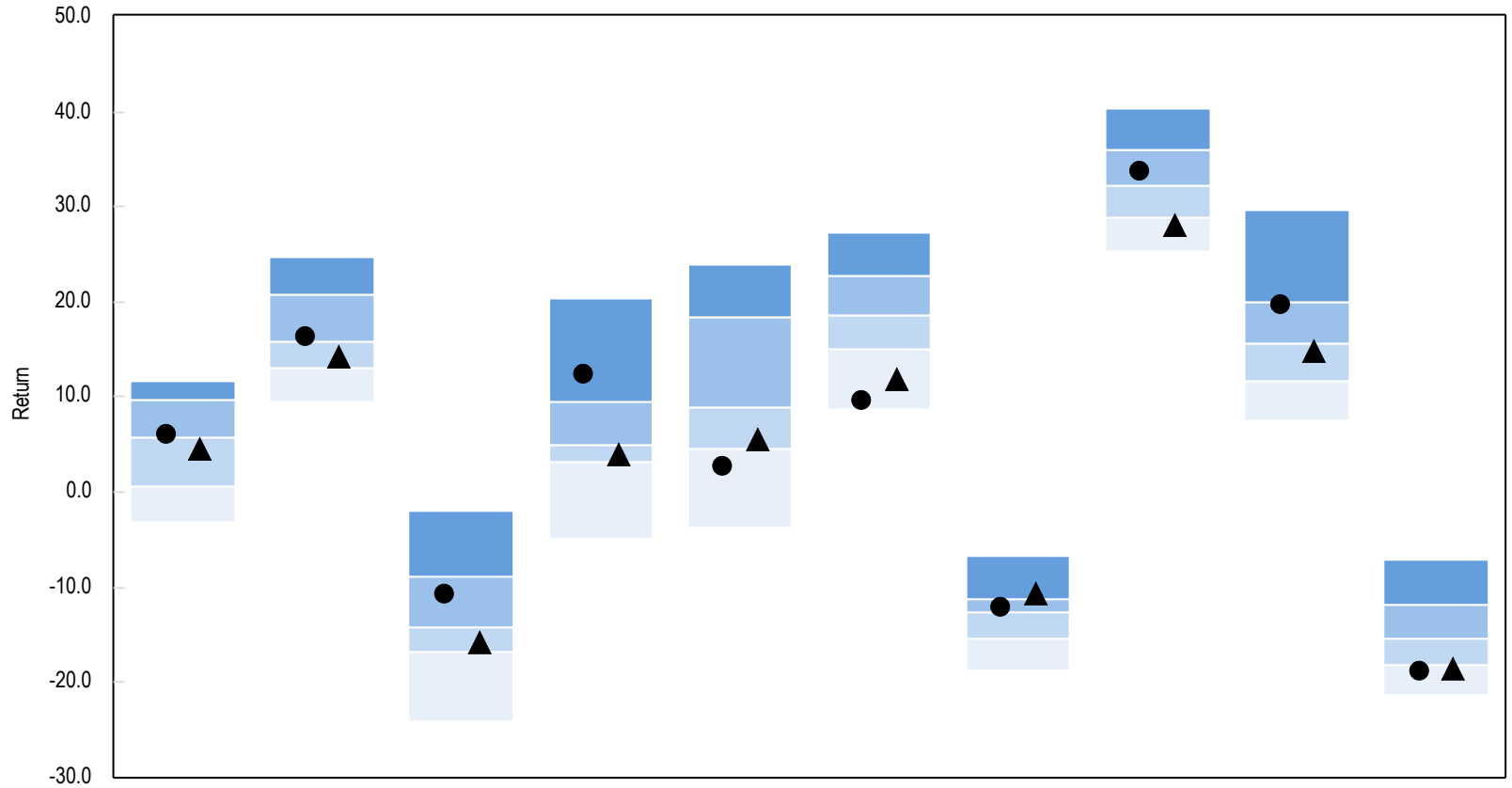


	Quarter	Fiscal YTD	YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● DFA Emerging Markets Value	-7.62 (41)	-2.33 (75)	6.17 (48)	6.17 (48)	3.35 (33)	4.98 (35)	3.01 (66)	4.83 (71)
▲ MSCI Emerging Markets Value (Net)	-9.21 (68)	-1.84 (68)	4.51 (53)	4.51 (53)	0.16 (74)	1.96 (89)	1.39 (87)	2.81 (100)
5th Percentile	-2.69	3.94	11.69	11.69	6.27	8.17	6.69	8.83
1st Quartile	-6.69	0.86	9.66	9.66	3.93	5.82	5.00	6.49
Median	-8.06	-0.77	5.69	5.69	2.03	4.11	3.48	5.11
3rd Quartile	-9.45	-2.33	0.68	0.68	-0.03	2.54	2.35	4.66
95th Percentile	-11.38	-6.97	-3.08	-3.08	-2.93	1.08	0.58	3.15
Population	54	54	54	54	52	46	43	32

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

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

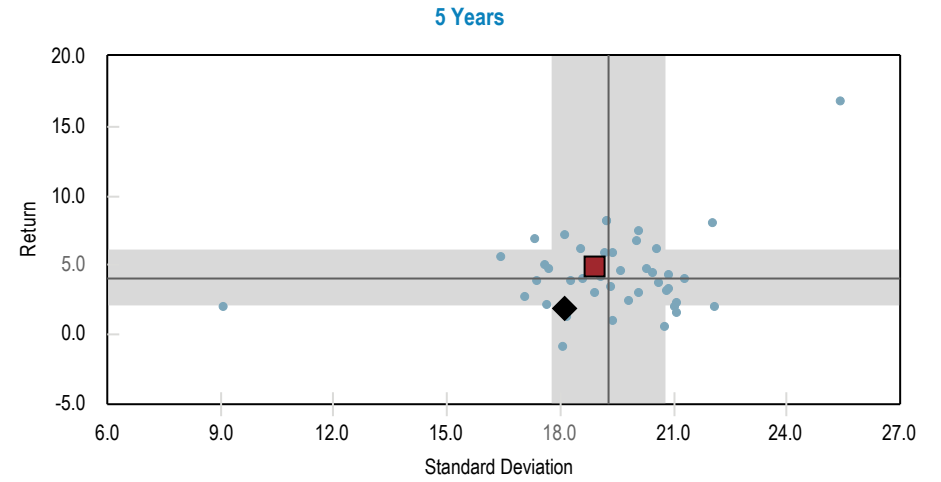
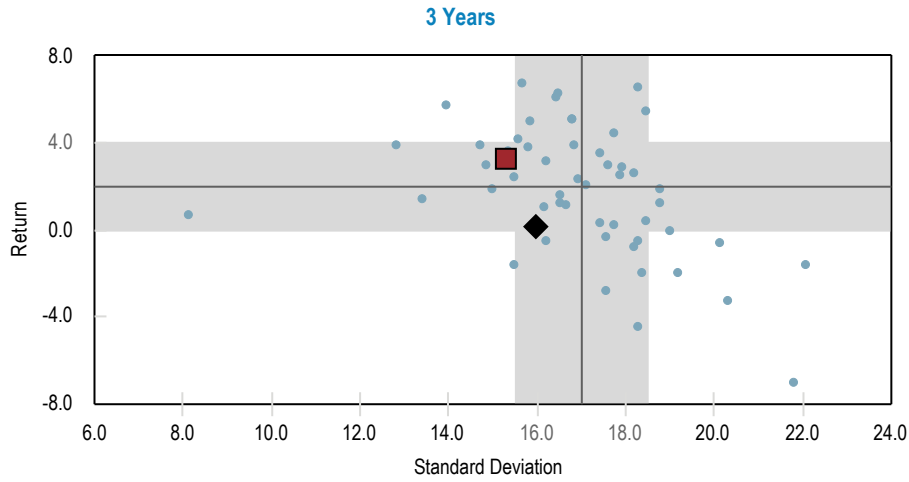
DFA Emerging Markets Value vs. eV Emg Mkts All Cap Value Equity



	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
● DFA Emerging Markets Value	6.17 (48)	16.49 (44)	-10.74 (38)	12.41 (20)	2.73 (83)	9.64 (94)	-11.93 (37)	33.76 (40)	19.84 (26)	-18.77 (84)
▲ MSCI Emerging Markets Value (Net)	4.51 (53)	14.21 (67)	-15.83 (63)	4.00 (68)	5.48 (72)	11.96 (93)	-10.74 (23)	28.07 (81)	14.90 (54)	-18.57 (84)
5th Percentile	11.69	24.75	-1.92	20.32	23.96	27.29	-6.66	40.40	29.74	-7.00
1st Quartile	9.66	20.68	-8.83	9.47	18.49	22.65	-11.22	36.00	19.95	-11.76
Median	5.69	15.92	-14.26	4.87	8.93	18.51	-12.58	32.24	15.63	-15.31
3rd Quartile	0.68	13.06	-16.84	3.27	4.50	15.01	-15.32	28.80	11.67	-18.08
95th Percentile	-3.08	9.52	-24.07	-4.86	-3.63	8.63	-18.81	25.30	7.49	-21.28
Population	54	53	58	57	59	60	58	53	50	48

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

Imperial County Employees' Retirement System
Period Ending: December 31, 2024



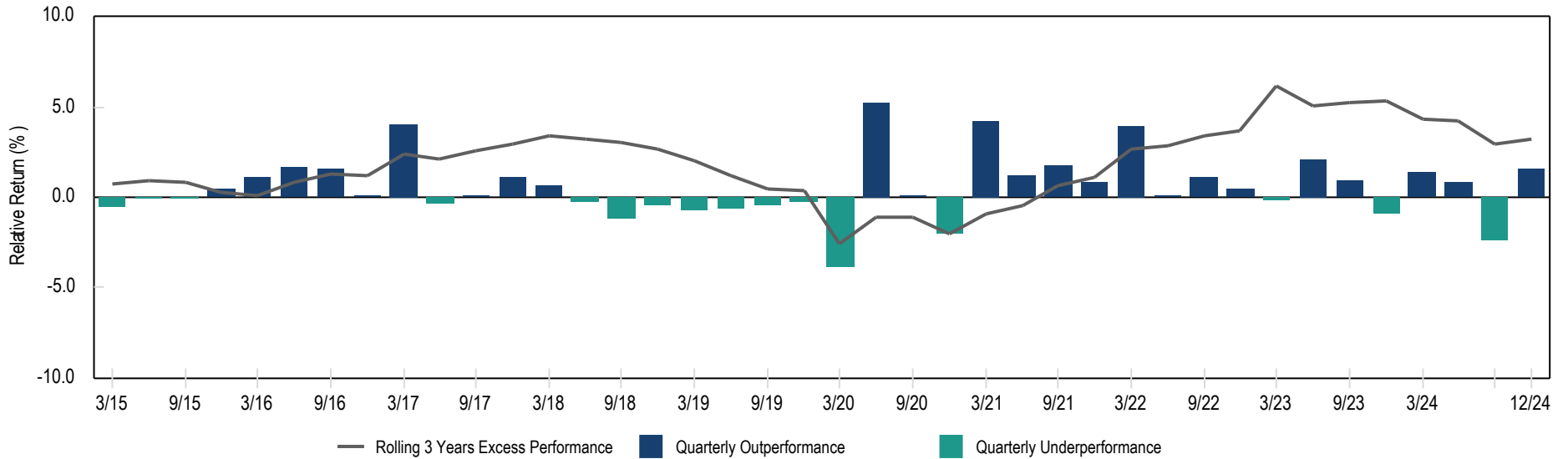
eV Emg Mkts All Cap Value Equity

	Return	Standard Deviation
■ DFA Emerging Markets Value	3.35	15.27
◆ MSCI Emerging Markets Value (Net)	0.16	15.96
— Median	2.03	17.01
Population	52	52

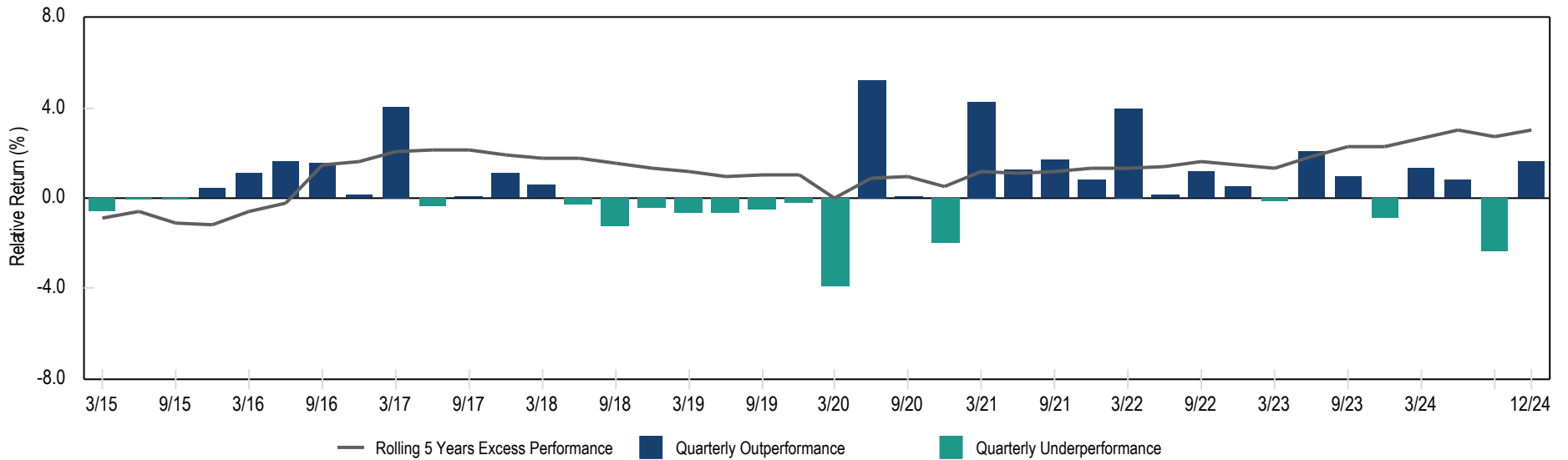
eV Emg Mkts All Cap Value Equity

	Return	Standard Deviation
■ DFA Emerging Markets Value	4.98	18.92
◆ MSCI Emerging Markets Value (Net)	1.96	18.09
— Median	4.11	19.27
Population	46	46

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance

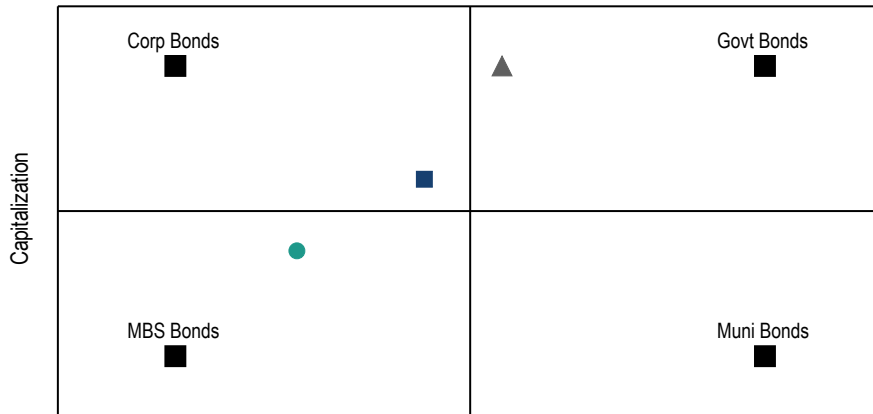


Total Fixed Income Asset Class Overview (Net of Fees)

Imperial County Employees' Retirement System Period Ending: December 31, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019
Total Fixed Income	314,557,790	100.0	-2.9	2.1	2.4	-2.3	0.6	2.0	6.2	-14.2	0.6	9.8	9.5
<i>Blmbg. U.S. Aggregate Index</i>			-3.1	2.0	1.3	-2.4	-0.3	1.3	5.5	-13.0	-1.5	7.5	8.7
Income Research & Management	134,603,337	42.8	-2.9	2.0	1.7	-	-	-	-	-	-	-	-
<i>Blmbg. U.S. Aggregate Index</i>			-3.1	2.0	1.3	-	-	-	-	-	-	-	-
<i>eV US Core Plus Fixed Inc Rank</i>			64	76	82	-	-	-	-	-	-	-	-
MacKay Shields Core Plus Opportunities	136,696,014	43.5	-2.8	2.4	3.3	-2.0	0.6	-	6.7	-14.5	-0.5	9.9	9.7
<i>Blmbg. U.S. Aggregate Index</i>			-3.1	2.0	1.3	-2.4	-0.3	-	5.5	-13.0	-1.5	7.5	8.7
<i>eV US Core Plus Fixed Inc Rank</i>			48	40	21	58	47	-	46	85	55	20	54
BlackRock US TIPS	43,258,439	13.8	-2.9	1.1	2.0	-2.3	1.9	2.3	3.9	-11.9	5.9	11.2	8.5
<i>Blmbg. U.S. TIPS Index</i>			-2.9	1.1	1.8	-2.3	1.9	2.2	3.9	-11.8	6.0	11.0	8.4
<i>eV US TIPS / Inflation Fixed Inc Rank</i>			60	62	55	56	50	45	44	67	26	26	32

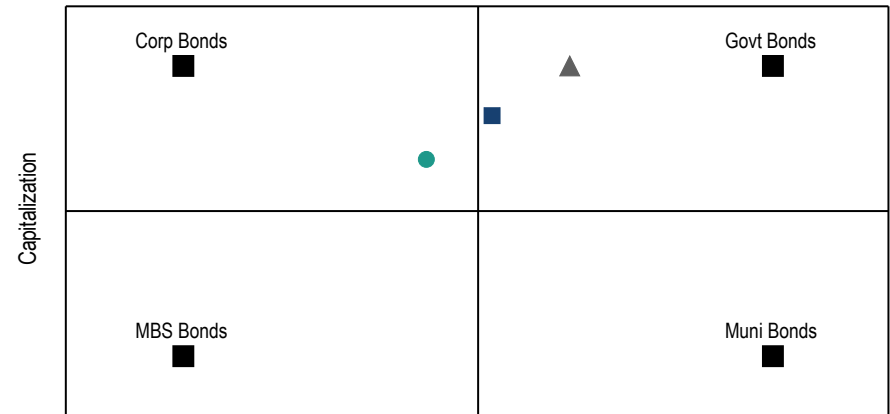
**Fixed Income Style Map
3 Years Ending December 31, 2024**



Manager Style

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

**Fixed Income Style Map
5 Years Ending December 31, 2024**



Manager Style

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

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

Total Fixed Income
Asset Class Overview (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019
Total Fixed Income	314,557,790	100.0	-2.9	2.1	2.4	-2.3	0.6	2.0	6.2	-14.2	0.6	9.8	9.5
<i>Blmbg. U.S. Aggregate Index</i>			-3.1	2.0	1.3	-2.4	-0.3	1.3	5.5	-13.0	-1.5	7.5	8.7
Income Research & Management	134,603,337	42.8	-2.9	2.0	1.7	-	-	-	-	-	-	-	-
<i>Blmbg. U.S. Aggregate Index</i>			-3.1	2.0	1.3	-	-	-	-	-	-	-	-
MacKay Shields Core Plus Opportunities	136,696,014	43.5	-2.8	2.4	3.3	-2.0	0.6	-	6.7	-14.5	-0.5	9.9	9.7
<i>Blmbg. U.S. Aggregate Index</i>			-3.1	2.0	1.3	-2.4	-0.3	-	5.5	-13.0	-1.5	7.5	8.7
BlackRock US TIPS	43,258,439	13.8	-2.9	1.1	2.0	-2.3	1.9	2.3	3.9	-11.9	5.9	11.2	8.5
<i>Blmbg. U.S. TIPS Index</i>			-2.9	1.1	1.8	-2.3	1.9	2.2	3.9	-11.8	6.0	11.0	8.4

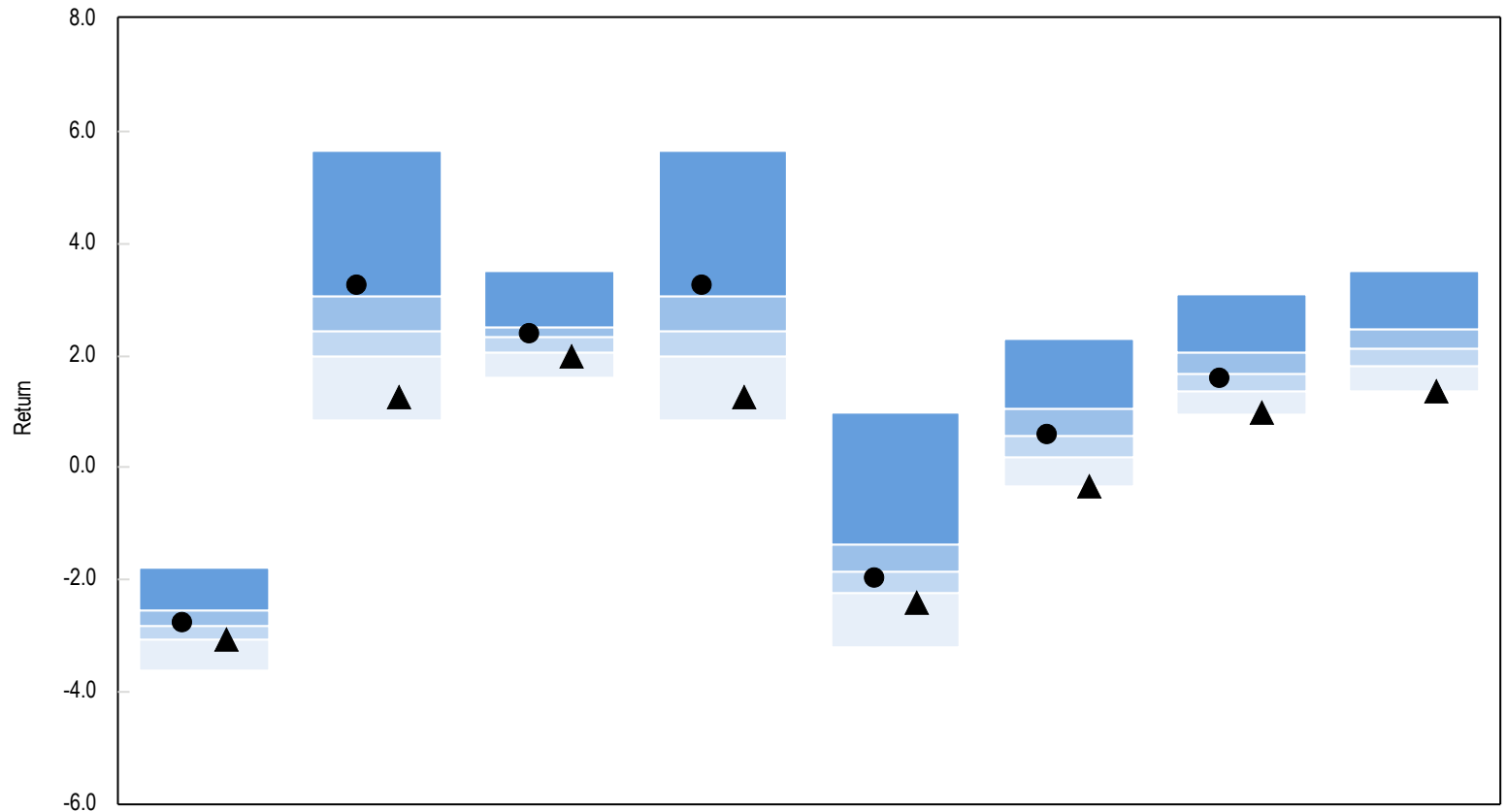
	Total Fixed Income	MacKay Shields Core Plus Opportunities	BlackRock US TIPS	Blmbg. U.S. Aggregate Index
Total Fixed Income	1.00			
MacKay Shields Core Plus Opportunities	0.99	1.00		
BlackRock US TIPS	0.91	0.88	1.00	
Blmbg. U.S. Aggregate Index	0.97	0.97	0.85	1.00

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

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

Imperial County Employees' Retirement System
 Period Ending: December 31, 2024

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

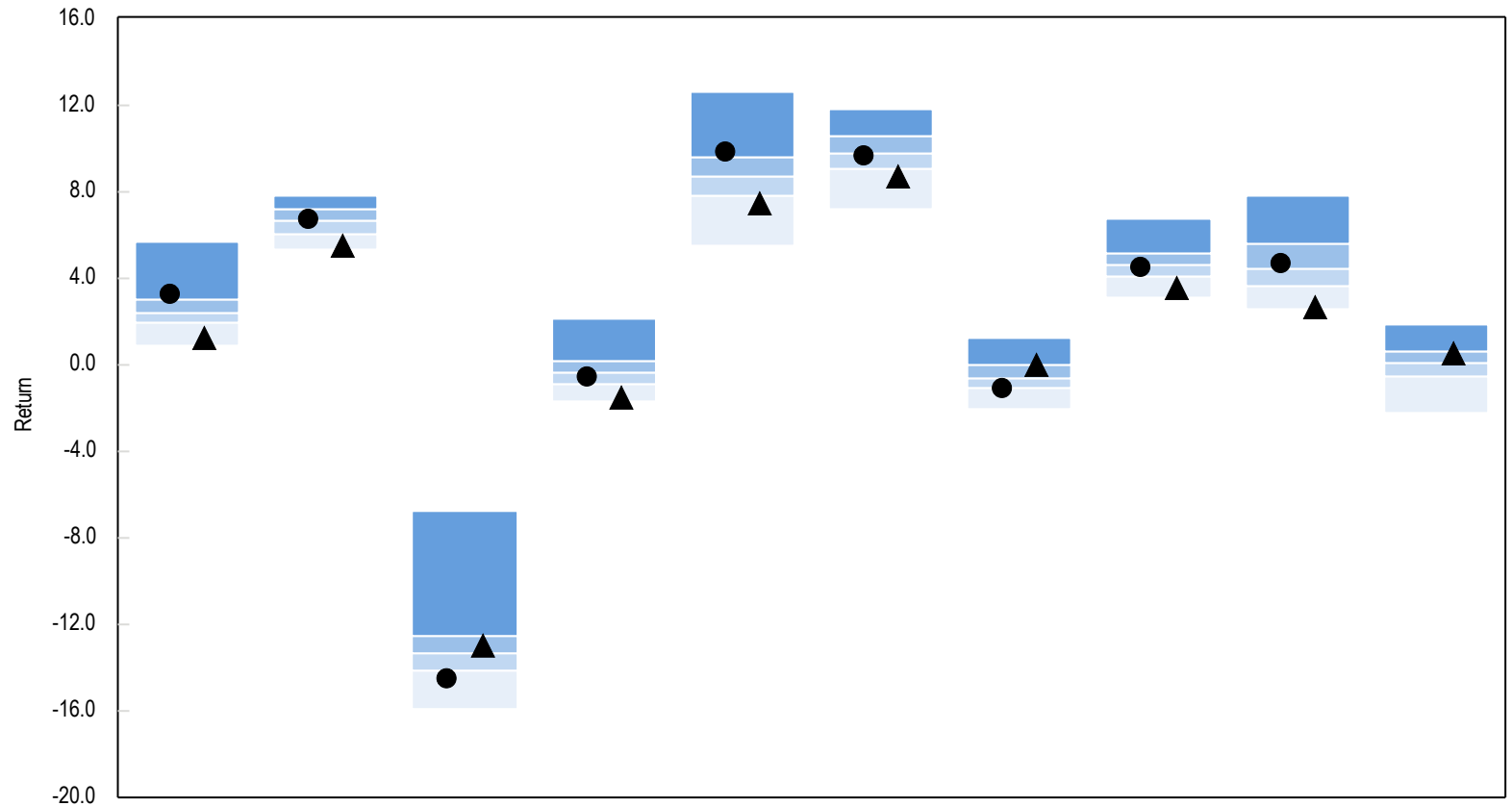


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● MacKay Shields Core Plus Opportunities	-2.76 (48)	3.27 (21)	2.40 (40)	3.27 (21)	-1.96 (58)	0.60 (47)	1.61 (58)	-
▲ Blmbg. U.S. Aggregate Index	-3.06 (76)	1.25 (90)	1.98 (82)	1.25 (90)	-2.41 (79)	-0.33 (95)	0.97 (95)	1.35 (96)
5th Percentile	-1.80	5.65	3.52	5.65	0.98	2.31	3.09	3.52
1st Quartile	-2.56	3.05	2.52	3.05	-1.38	1.06	2.07	2.45
Median	-2.82	2.44	2.32	2.44	-1.86	0.55	1.68	2.12
3rd Quartile	-3.06	2.00	2.06	2.00	-2.22	0.18	1.38	1.83
95th Percentile	-3.60	0.85	1.59	0.85	-3.21	-0.34	0.95	1.36
Population	137	137	137	137	133	125	119	109

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

Imperial County Employees' Retirement System
 Period Ending: December 31, 2024

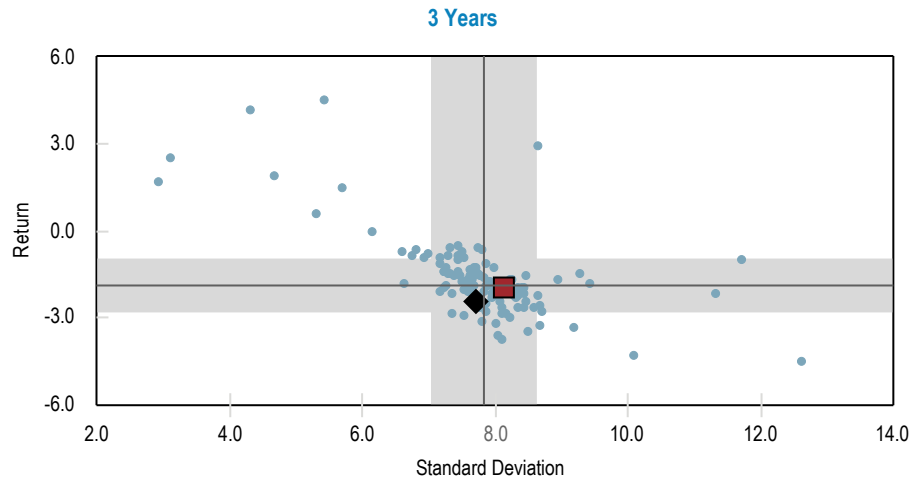
MacKay Shields Core Plus Opportunities vs. eV US Core Plus Fixed Inc



	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
● MacKay Shields Core Plus Opportunities	3.27 (21)	6.74 (46)	-14.51 (85)	-0.49 (55)	9.91 (20)	9.67 (54)	-1.03 (75)	4.53 (56)	4.69 (43)	-
▲ Blmbg. U.S. Aggregate Index	1.25 (90)	5.53 (92)	-13.01 (40)	-1.55 (91)	7.51 (81)	8.72 (81)	0.01 (25)	3.54 (91)	2.65 (94)	0.55 (29)
5th Percentile	5.65	7.84	-6.79	2.09	12.62	11.81	1.26	6.72	7.79	1.86
1st Quartile	3.05	7.21	-12.54	0.20	9.60	10.61	0.01	5.17	5.57	0.64
Median	2.44	6.64	-13.38	-0.33	8.71	9.74	-0.61	4.64	4.48	0.09
3rd Quartile	2.00	6.07	-14.11	-0.92	7.79	9.03	-1.04	4.13	3.65	-0.54
95th Percentile	0.85	5.30	-15.96	-1.68	5.48	7.16	-2.03	3.09	2.60	-2.24
Population	137	150	155	156	154	155	154	154	151	150

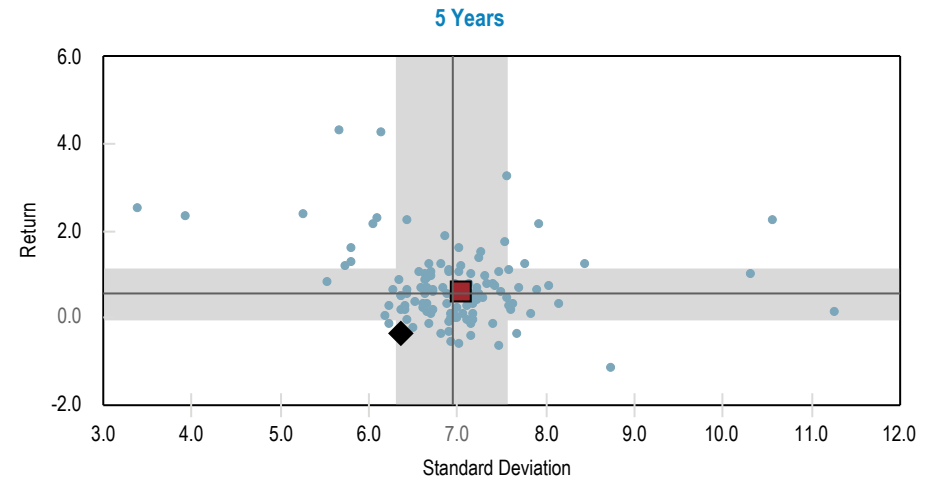
MacKay Shields Core Plus Opportunities
 Risk vs Return Three & Five Year (Net of Fees)

Imperial County Employees' Retirement System
 Period Ending: December 31, 2024



eV US Core Plus Fixed Inc

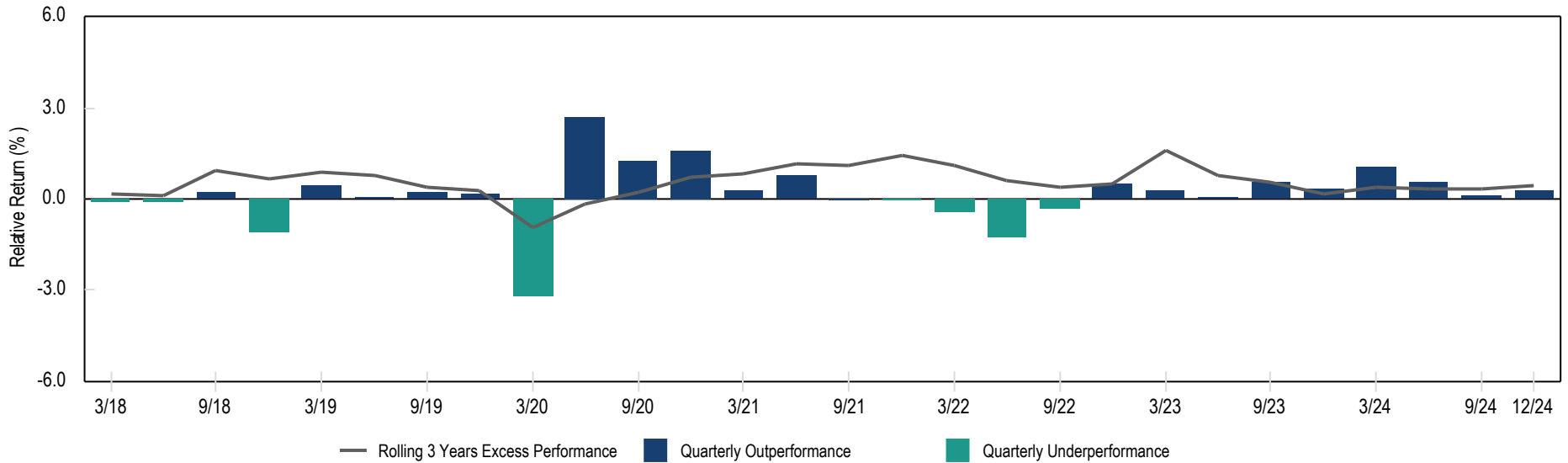
	Return	Standard Deviation
■ MacKay Shields Core Plus Opportunities	-1.96	8.15
◆ Blmbg. U.S. Aggregate Index	-2.41	7.72
— Median	-1.86	7.83
Population	133	133



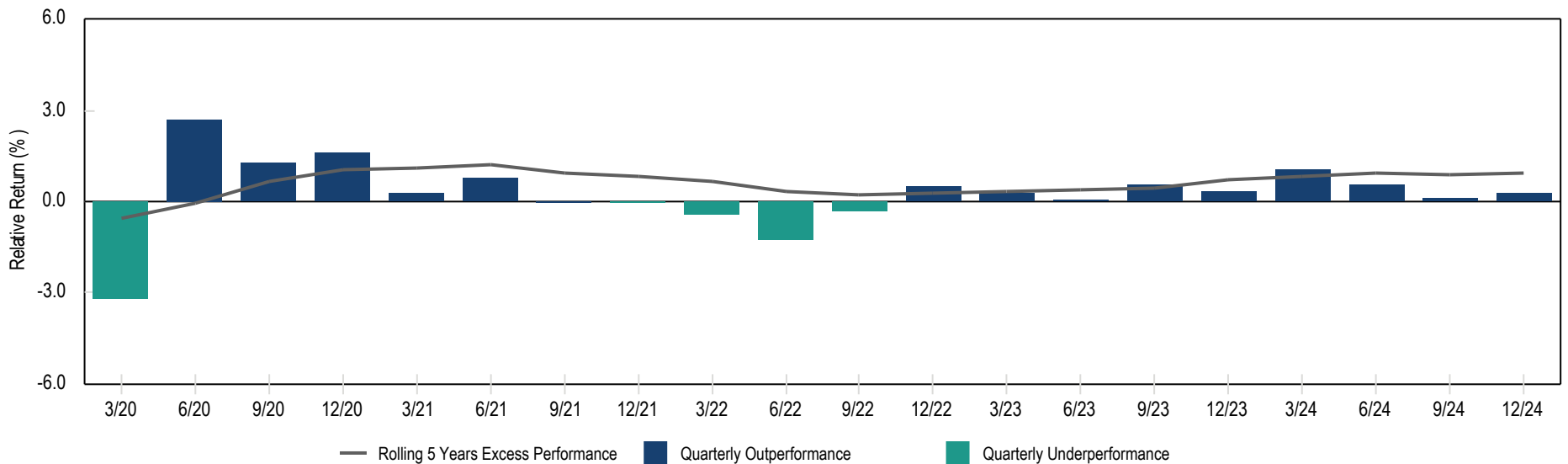
eV US Core Plus Fixed Inc

	Return	Standard Deviation
■ MacKay Shields Core Plus Opportunities	0.60	7.03
◆ Blmbg. U.S. Aggregate Index	-0.33	6.37
— Median	0.55	6.94
Population	125	125

Rolling 3 Year Annualized Excess Performance



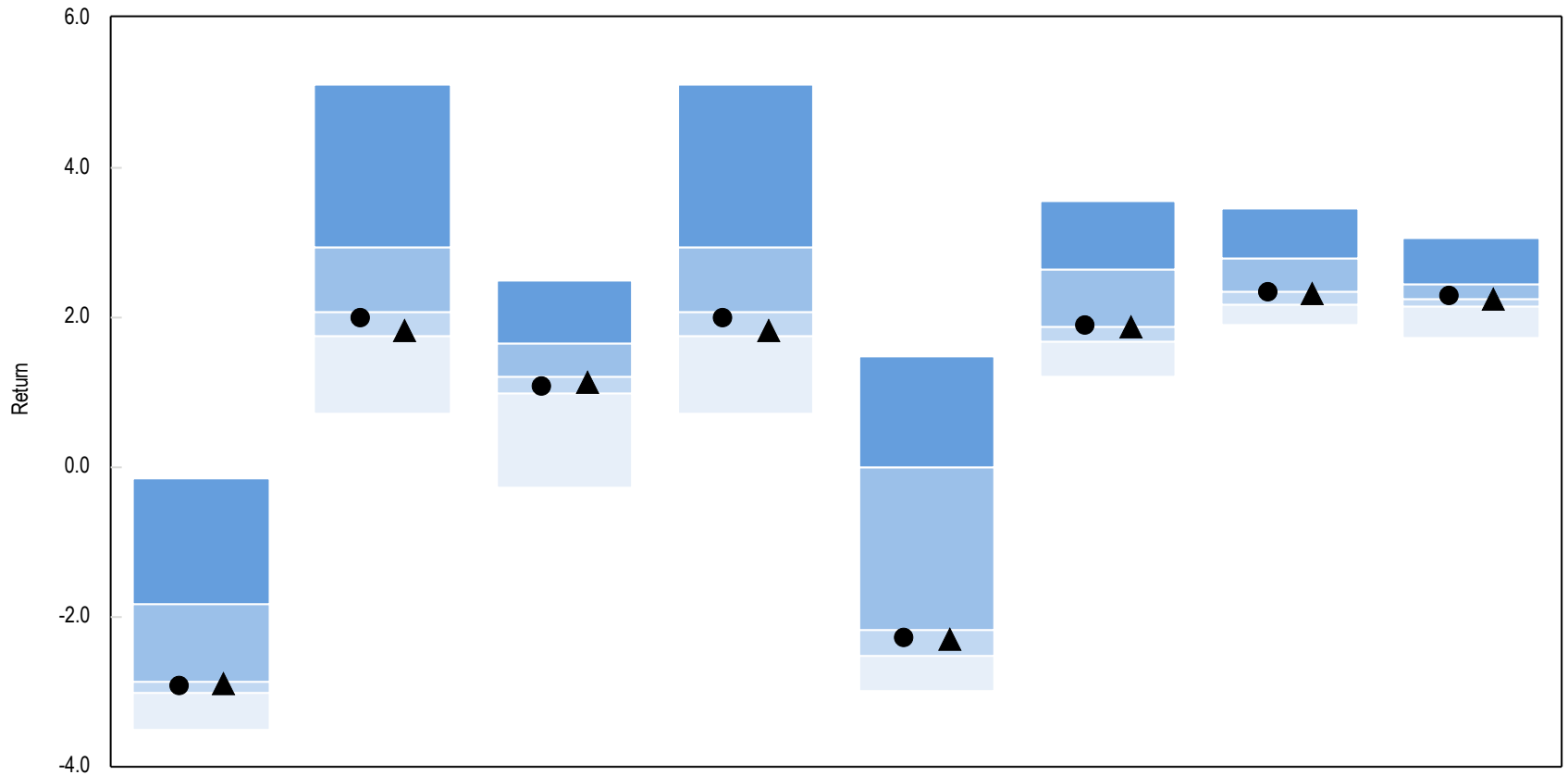
Rolling 5 Year Annualized Excess Performance



BlackRock US TIPS
Cumulative Performance Comparison (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

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

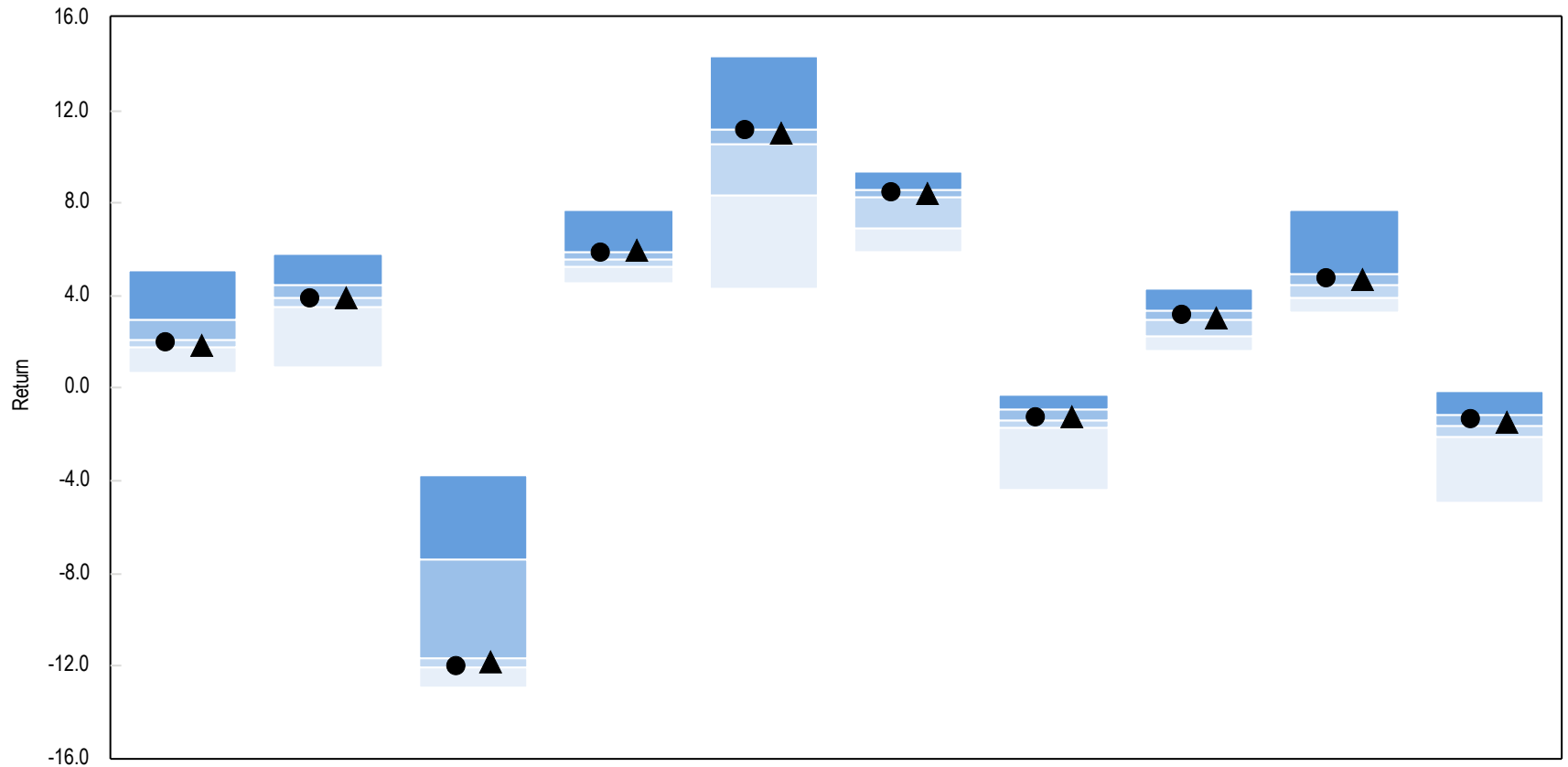


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● BlackRock US TIPS	-2.90 (60)	1.99 (55)	1.10 (62)	1.99 (55)	-2.27 (56)	1.90 (50)	2.36 (48)	2.30 (45)
▲ Blmbg. U.S. TIPS Index	-2.88 (55)	1.84 (65)	1.12 (56)	1.84 (65)	-2.30 (59)	1.87 (52)	2.32 (53)	2.24 (50)
5th Percentile	-0.16	5.12	2.49	5.12	1.49	3.55	3.44	3.05
1st Quartile	-1.83	2.94	1.66	2.94	-0.01	2.64	2.78	2.44
Median	-2.85	2.06	1.21	2.06	-2.17	1.88	2.34	2.24
3rd Quartile	-3.01	1.76	0.99	1.76	-2.52	1.69	2.16	2.15
95th Percentile	-3.50	0.70	-0.27	0.70	-2.99	1.22	1.89	1.72
Population	46	46	46	46	46	45	42	39

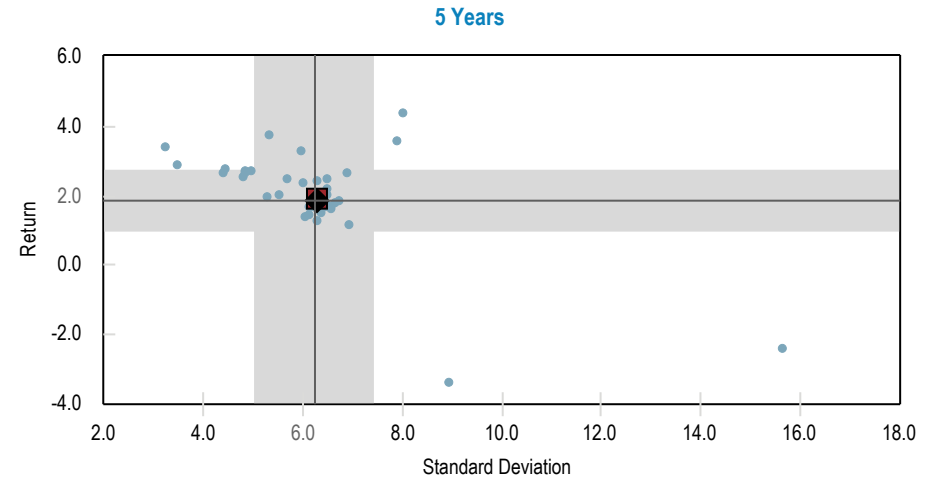
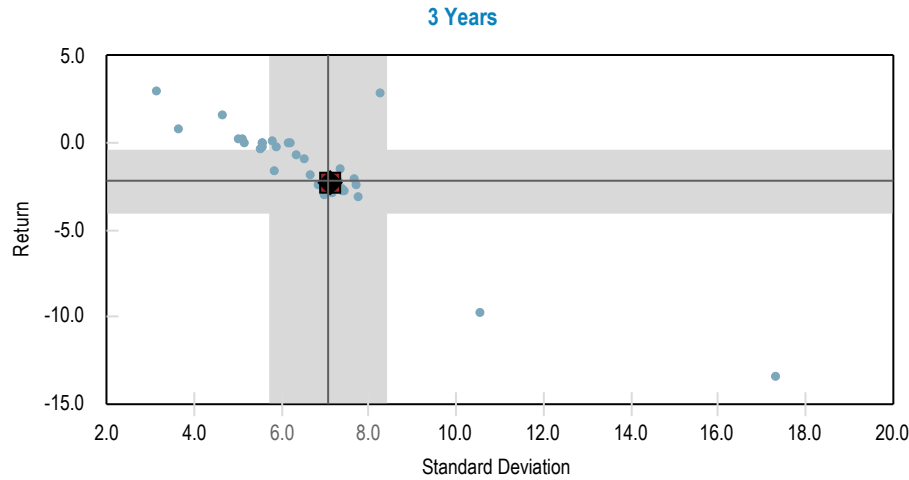
BlackRock US TIPS
 Consecutive Performance Comparison (Net of Fees)

Imperial County Employees' Retirement System
 Period Ending: December 31, 2024

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



	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
● BlackRock US TIPS	1.99 (55)	3.94 (44)	-11.94 (67)	5.86 (26)	11.15 (26)	8.46 (32)	-1.19 (39)	3.17 (37)	4.77 (32)	-1.31 (34)
▲ Blmbg. U.S. TIPS Index	1.84 (65)	3.90 (50)	-11.85 (62)	5.96 (20)	10.99 (32)	8.43 (33)	-1.26 (41)	3.01 (48)	4.68 (37)	-1.44 (36)
5th Percentile	5.12	5.81	-3.74	7.69	14.32	9.35	-0.26	4.31	7.70	-0.12
1st Quartile	2.94	4.44	-7.42	5.86	11.20	8.55	-0.91	3.40	4.92	-1.14
Median	2.06	3.90	-11.65	5.59	10.56	8.30	-1.35	2.97	4.43	-1.62
3rd Quartile	1.76	3.48	-12.05	5.25	8.34	6.90	-1.68	2.28	3.95	-2.13
95th Percentile	0.70	0.92	-12.93	4.58	4.30	5.90	-4.39	1.65	3.26	-4.96
Population	46	51	52	52	51	53	56	58	61	62



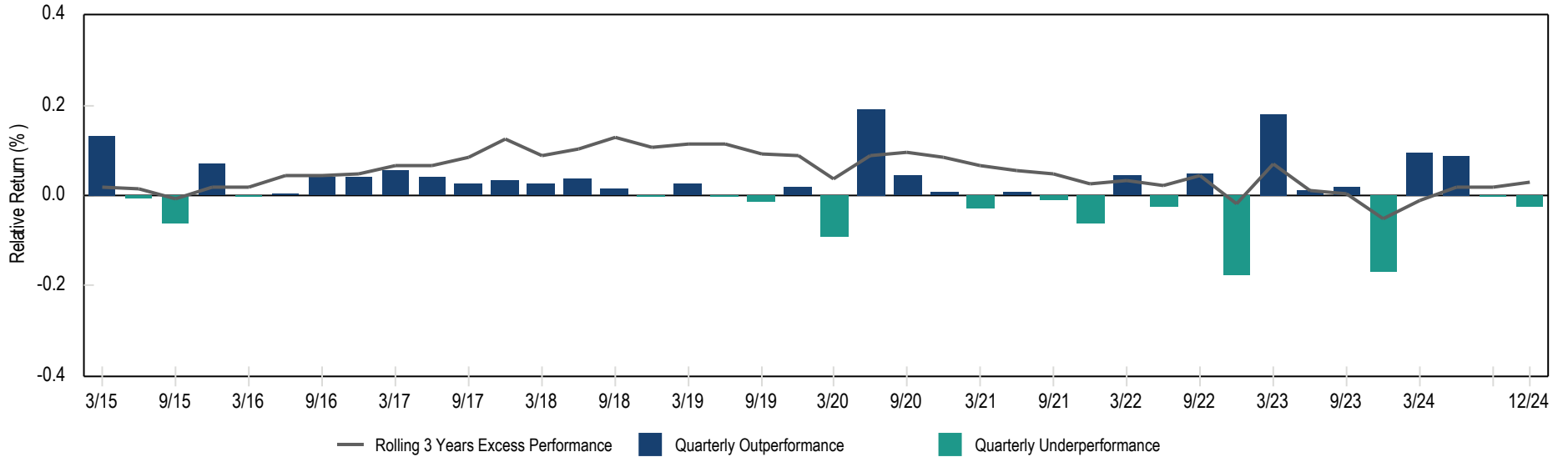
eV US TIPS / Inflation Fixed Inc

	Return	Standard Deviation
■ BlackRock US TIPS	-2.27	7.14
◆ Blmbg. U.S. TIPS Index	-2.30	7.14
— Median	-2.17	7.07
Population	46	46

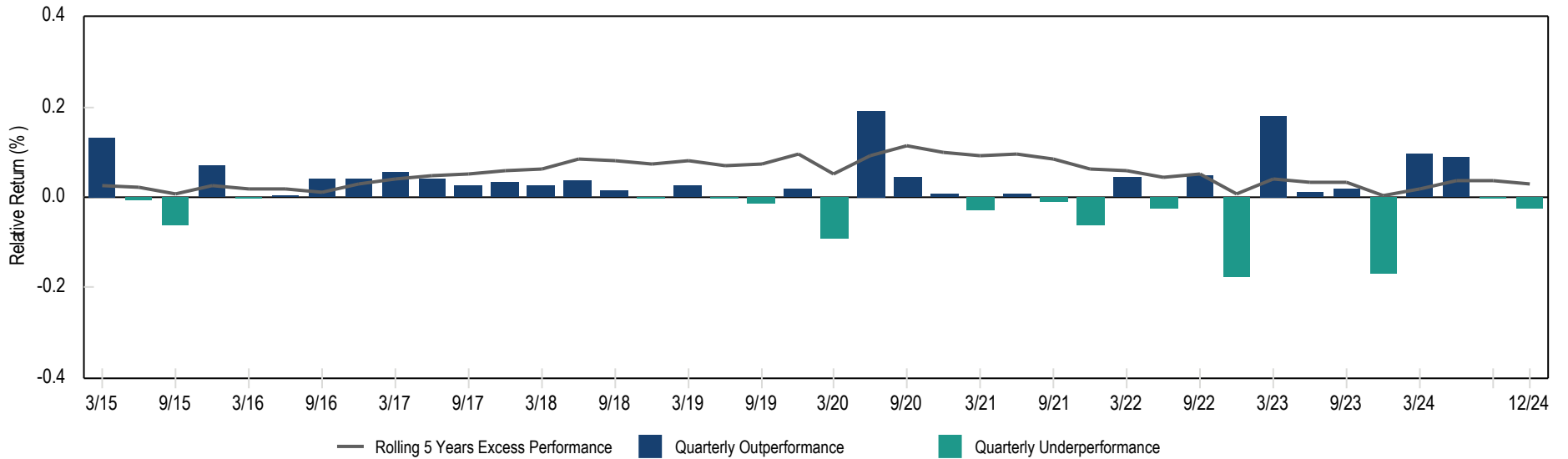
eV US TIPS / Inflation Fixed Inc

	Return	Standard Deviation
■ BlackRock US TIPS	1.90	6.29
◆ Blmbg. U.S. TIPS Index	1.87	6.27
— Median	1.88	6.24
Population	45	45

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



Total Real Estate
Asset Class Overview (Net of Fees)

Imperial County Employees' Retirement System
Period Ending: December 31, 2024

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019
Total Real Estate	101,458,606	100.0	0.6	0.4	-5.9	-4.4	1.1	4.5	-14.3	8.5	18.4	2.1	5.7
<i>NCREIF Property Index</i>			0.9	1.7	0.4	-0.8	3.1	5.7	-7.9	5.5	17.7	1.6	6.4
<i>NCREIF ODCE</i>			1.2	1.4	-1.4	-2.3	2.9	5.5	-12.0	7.5	22.2	1.2	5.3
ASB Real Estate	20,817,358	20.5	0.0	-1.1	-15.2	-9.7	-3.1	1.7	-21.5	10.7	14.2	1.5	3.0
<i>NCREIF Property Index</i>			0.9	1.7	0.4	-0.8	3.1	5.7	-7.9	5.5	17.7	1.6	6.4
<i>NCREIF ODCE</i>			1.2	1.4	-1.4	-2.3	2.9	5.5	-12.0	7.5	22.2	1.2	5.3
Clarion Lion	27,709,515	27.3	1.9	2.2	-2.3	-3.3	2.7	5.9	-15.5	9.6	23.6	2.3	6.8
<i>NCREIF Property Index</i>			0.9	1.7	0.4	-0.8	3.1	5.7	-7.9	5.5	17.7	1.6	6.4
<i>NCREIF ODCE</i>			1.2	1.4	-1.4	-2.3	2.9	5.5	-12.0	7.5	22.2	1.2	5.3
ARA American Strategic Value Realty	50,886,928	50.2	0.2	0.1	-3.7	-2.7	2.3	-	-10.3	6.8	18.6	2.4	7.8
<i>NCREIF Property Index +2%</i>			1.4	2.7	2.4	1.2	5.2	-	-6.1	7.6	20.0	3.6	8.5
<i>NCREIF ODCE +2%</i>			1.7	2.4	0.5	-0.4	4.9	-	-10.3	9.6	24.6	3.2	7.4
1221 State St. Corp	2,044,805	2.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	7.9

Performance Return Calculations

Performance is calculated using Modified Dietz and for time periods with large cash flow (generally greater than 10% of portfolio value), Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year.

Data Source

Verus is an independent third party consulting firm and calculates returns from best source book of record data. Returns calculated by Verus may deviate from those shown by the manager in part, but not limited to, differences in prices and market values reported by the custodian and manager, as well as significant cash flows into or out of an account. It is the responsibility of the manager and custodian to provide insight into the pricing methodologies and any difference in valuation.

Illiquid Alternatives

Due to the inability to receive final valuation prior to report production, closed end funds (including but are not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit) performance is typically reported at a one-quarter lag. Valuation is reported at a one-quarter lag, adjusted for current quarter flow (cash flows are captured real time). Closed end fund performance is calculated using a time-weighted return methodology consistent with all portfolio and total fund performance calculations. For Private Markets, performance reports also include Verus-calculated multiples based on flows and valuations (e.g. DPI and TVPI) and manager-provided IRRs.

Manager Line Up

Manager	Inception Date	Data Source	Manager	Inception Date	Data Source
BlackRock Russell 3000	12/10/2015	J.P. Morgan	Cash	-	J.P. Morgan
BlackRock International Equity	7/3/2003	J.P. Morgan	HarbourVest IX-Buyout	2011 ¹	HarbourVest
DFA Emerging Markets Value	1/11/2007	J.P. Morgan	HarbourVest IX-Credit	2011 ¹	HarbourVest
MackKay Shields Core Plus Ops	3/2/2015	CITCO	HarbourVest International VI	2008 ¹	HarbourVest
BlackRock US TIPS	4/11/2007	J.P. Morgan	Harbourvest IX-Venture	2011 ¹	HarbourVest
ASB Real Estate	12/31/2012	ASB Real Estate	Harbourvest 2017 Global	2017 ¹	HarbourVest
Clarion Lion	12/31/2006	Clarion Lion	Harbourvest 2018 Global	2018 ¹	HarbourVest
Portfolio Advisors	10/31/2017	Portfolio Advisors	Harbourvest 2019 Global	2019 ¹	HarbourVest
TSSP Adjacent Opportunities Partners	4/16/2020	Sixth Street	Harbourvest 2023 Global	2023 ¹	HarbourVest
Sixth Street Diversified Credit	5/29/2020	Sixth Street	KKR Mezzanine	2010 ¹	KKR
1221 State Street Corp	9/30/2008	ICERS/Union Bank	ARA American Strategic Value Realty	01/04/2018	ARA
Income Research & Management	9/1/2023	IR&M	William Blair Emerging Growth	7/02/2024	William Blair

¹Represents fund vintage year.

Policy & Custom Index Composition

Policy Index (12/1/2023-Present)	33% Russell 3000, 17% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 10% NCREIF Property, 5% Private Equity Benchmark, 8% Private Credit Benchmark.
Policy Index (8/1/2020- 11/30/2023)	33% Russell 3000, 20% MSCI ACWI ex USA Gross, 29% Bloomberg Aggregate, 10% NCREIF Property, 5% Private Equity Benchmark, 3% Private Credit Benchmark.
Policy Index (1/1/2020-7/31/2020)	29% Russell 3000, 24% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 10% NCREIF Property, 1% Russell 3000, 2% Bloomberg Aggregate, 4% Private Equity Benchmark, 3% Private Credit Benchmark.
Policy Index (10/1/2018-12/31/2019)	29% Russell 3000, 24% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 10% NCREIF Property, 5% Russell 3000 +3% (Lagged), 5% Bloomberg High Yield +2% (Lagged).
Policy Index (10/1/2016-9/30/2018)	29% Russell 3000, 24% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 5% NCREIF Property, 5% NCREIF Property +2%, 5% Russell 3000 +3% (Lagged), 5% Bloomberg High Yield +2% (Lagged).

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

Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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