# Operating Engineers Local No. 77
# Pension & Trust Funds

## Master Consulting Services Report

## Period Ended
## December 31, 2024

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**Operating Engineers Local No. 77 Pension Plan and Trust Fund of Washington DC**

# Market Discussion Q4 | 2024

# Financial Market Performance – Periods Ending December 31, 2024

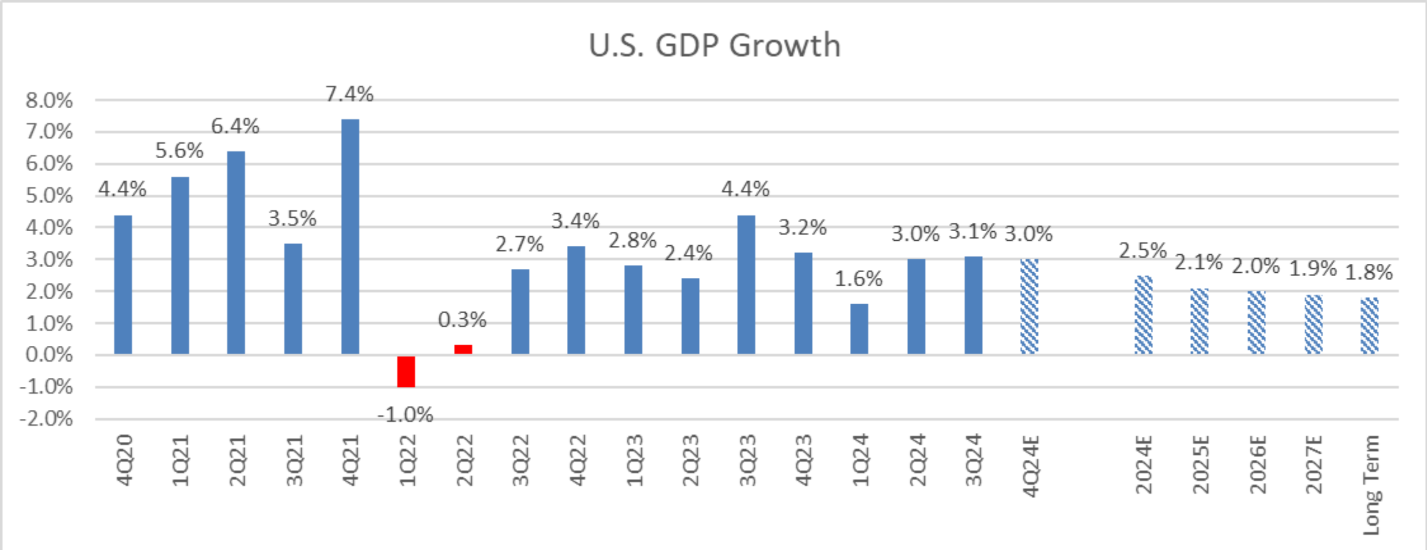
| Strategy | Sector | Index | QTR | YTD | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 | 1-Yr | 3-Yr | 5-Yr | 10-Yr | 20-Yr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stocks | US Large Cap | S&P 500 | 2.4% | 24.9% | 26.3% | -18.1% | 28.7% | 18.4% | 31.5% | -4.4% | 24.9% | 8.9% | 14.5% | 13.1% | 10.3% |
| | US Large Cap Growth | Russell 1000 Growth | 7.1% | 33.2% | 42.7% | -29.1% | 27.6% | 38.5% | 36.4% | -1.5% | 33.2% | 10.5% | 18.9% | 16.8% | 12.5% |
| | US Large Cap Value | Russell 1000 Value | -2.0% | 14.3% | 11.4% | -7.6% | 25.1% | 2.8% | 26.5% | -8.3% | 14.3% | 5.6% | 8.6% | 8.5% | 7.9% |
| | US Small Cap | Russell 2000 | 0.3% | 11.5% | 16.9% | -20.5% | 14.8% | 19.9% | 25.5% | -11.0% | 11.5% | 1.2% | 7.4% | 7.8% | 7.8% |
| | Non-US Developed | MSCI EAFE (net) | -8.1% | 3.8% | 18.2% | -14.5% | 11.3% | 7.8% | 22.0% | -13.8% | 3.8% | 1.6% | 4.7% | 5.2% | 4.8% |
| | Emerging Markets | MSCI EM (net) | -8.0% | 7.5% | 9.8% | -20.1% | -2.5% | 18.3% | 18.4% | -14.6% | 7.5% | -1.9% | 1.7% | 3.6% | 6.0% |
| | Int'l Small Cap | MSCI EAFE Small Cap (net) | -8.4% | 1.8% | 13.2% | -21.4% | 10.1% | 12.3% | 25.0% | -17.9% | 1.8% | -3.2% | 2.3% | 5.5% | 5.8% |
| Bonds | Treasury | Bloomberg US Govt | -3.1% | 0.6% | 4.1% | -12.3% | -2.3% | 7.9% | 6.8% | 0.9% | 0.6% | -2.8% | -0.6% | 0.9% | 2.6% |
| | Broad Market | Bloomberg Aggregate | -3.1% | 1.2% | 5.5% | -13.0% | -1.5% | 7.5% | 8.7% | 0.0% | 1.2% | -2.4% | -0.3% | 1.3% | 3.0% |
| | Intermediate | Bloomberg Gov/Credit Int. | -1.6% | 3.0% | 5.2% | -8.2% | -1.4% | 6.4% | 6.8% | 0.9% | 3.0% | -0.2% | 0.9% | 1.7% | 2.9% |
| | High Yield | Bloomberg HY BaB 2% IC | -0.2% | 6.7% | 12.6% | -10.6% | 4.6% | 7.7% | 15.2% | -1.9% | 6.7% | 2.4% | 3.9% | 5.0% | 6.1% |
| | Short Duration HY | ICE BofA 1-3 Yrs BB US Cash Pay HY | 0.8% | 6.7% | 8.9% | -3.1% | 3.2% | 5.4% | 8.7% | 1.3% | 6.7% | 4.0% | 4.1% | 4.4% | 5.5% |
| | Global Bonds | FTSE WGBI | -5.4% | -2.9% | 5.2% | -18.3% | -7.0% | 10.1% | 5.9% | -0.8% | -2.9% | -5.8% | -3.1% | -0.6% | 1.2% |
| GTAA | Unconstrained | 65% MSCI World /35% FTSE WGBI | -2.0% | 10.8% | 17.0% | -18.1% | 11.0% | 14.6% | 19.9% | -5.8% | 10.8% | 2.1% | 6.2% | 6.4% | 5.8% |
| Real Estate | Core | NCREIF ODCE Equal Weighted (net) | 0.8% | -2.4% | -2.4% | 7.6% | 21.9% | 0.8% | 5.2% | 7.3% | -2.4% | -3.1% | 2.2% | 5.2% | 5.6% |
| Hedge Fund of Funds | Diversified FOFs | HFRI FOF Composite | 2.6% | 9.7% | 6.1% | -5.3% | 6.2% | 10.9% | 8.4% | -4.0% | 9.7% | 3.3% | 5.4% | 3.8% | 3.5% |
| | Equity Long-Short | HFRI Equity Hedge | 1.8% | 12.3% | 11.4% | -10.1% | 11.7% | 17.9% | 13.7% | -7.1% | 12.3% | 4.0% | 8.2% | 6.3% | 5.6% |
| Commodities | Commodities | Goldman Sachs Commodity | 3.8% | 9.2% | -4.3% | 26.0% | 40.4% | -23.7% | 17.6% | -13.8% | 9.2% | 9.6% | 7.1% | 1.2% | -1.8% |

# Asset Class Performance "Quilt"

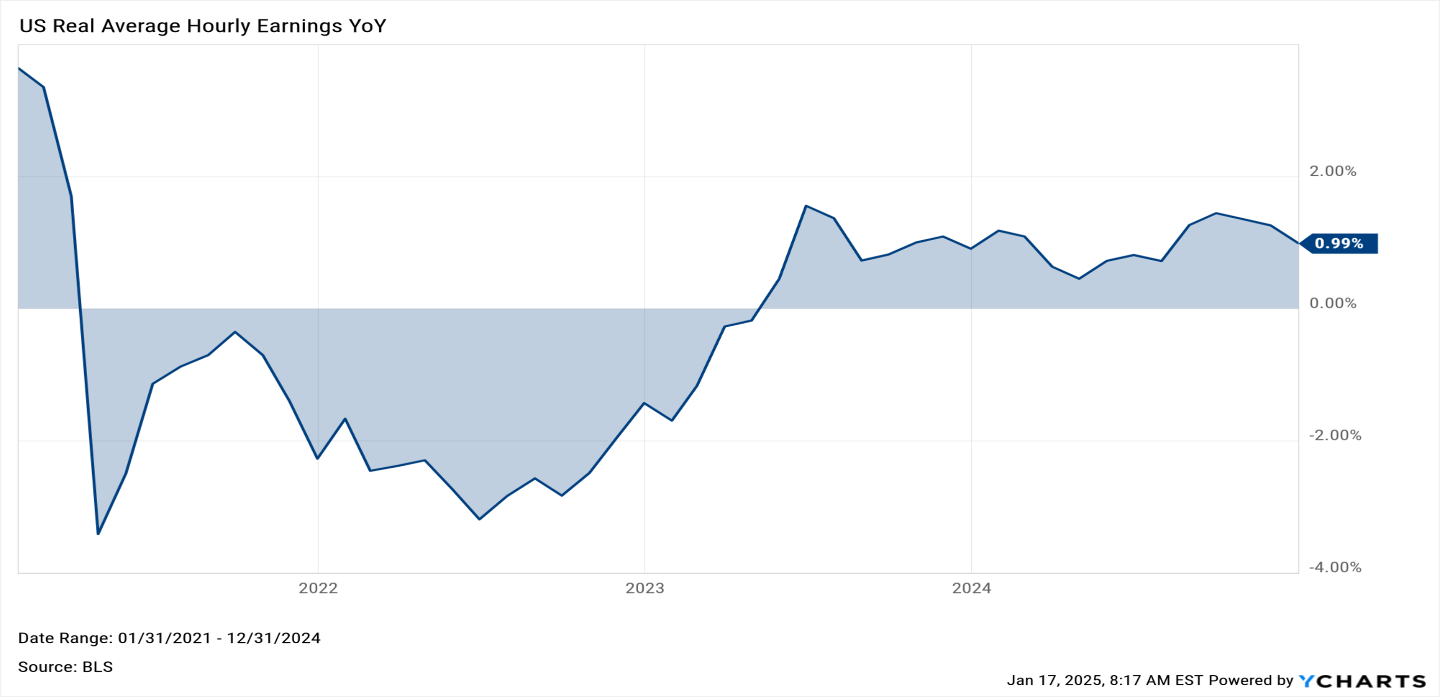
| 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Small Cap 26.9% | RE 15.0% | EM Equity 18.2% | Small Cap 38.8% | Large Cap 13.7% | RE 14.2% | Small Cap 21.3% | EM Equity 37.3% | RE 7.3% | Large Cap 31.5% | Small Cap 20.0% | Large Cap 28.7% | RE 7.6% | Large Cap 26.3% | Large Cap 25.0% |
| Mid Cap 25.5% | Fx Inc 7.8% | Int'l 17.3% | Mid Cap 34.8% | Mid Cap 13.2% | Return 7.0% | HY 17.5% | Int'l 25.0% | Return 7.0% | Mid Cap 30.5% | Large Cap 18.4% | Mid Cap 22.6% | Return 7.0% | Int'l 18.2% | Mid Cap 12.0% |
| EM Equity 18.9% | Return 7.0% | Mid Cap 17.3% | Large Cap 32.4% | RE 11.4% | Large Cap 1.4% | Mid Cap 13.8% | Large Cap 21.8% | SD HY 1.4% | Small Cap 25.5% | EM Equity 18.3% | RE 21.9% | SD HY -3.1% | Mid Cap 17.2% | Small Cap 11.5% |
| HY 15.2% | HY 4.4% | Small Cap 16.3% | Int'l 22.8% | Return 7.0% | SD HY 1.2% | Large Cap 12.0% | Mid Cap 18.5% | Fx Inc 0.0% | Int'l 22.0% | Mid Cap 17.1% | Small Cap 14.8% | HFoF -5.2% | GTAA 17.0% | GTAA 10.8% |
| RE 15.1% | SD HY 4.4% | Large Cap 16.1% | GTAA 15.3% | Fx Inc 6.0% | Fx Inc 0.6% | EM Equity 11.2% | GTAA 17.0% | HY -2.3% | GTAA 19.8% | GTAA 15.2% | Int'l 11.3% | HY -11.2% | Small Cap 16.9% | HFoF 9.7% |
| Large Cap 15.1% | Large Cap 2.1% | HY 15.6% | RE 12.4% | Small Cap 4.9% | HFoF -0.3% | SD HY 8.5% | Small Cap 14.7% | HFoF -4.0% | EM Equity 18.4% | HFoF 10.3% | GTAA 11.1% | Fx Inc -13.0% | HY 13.5% | EM Equity 7.5% |
| SD HY 11.7% | GTAA -0.9% | GTAA 10.9% | HFoF 9.0% | HFoF 3.4% | Int'l -0.8% | RE 8.4% | HFoF 7.8% | Large Cap -4.4% | HY 14.4% | Int'l 7.8% | Return 7.0% | Int'l -14.5% | EM Equity 9.8% | Return 7.0% |
| GTAA 9.8% | Mid Cap -1.6% | SD HY 10.2% | HY 7.4% | GTAA 3.0% | GTAA -1.6% | Return 7.0% | HY 7.5% | GTAA -5.7% | Fx Inc 8.7% | Fx Inc 7.5% | HFoF 6.0% | Mid Cap -17.3% | SD HY 8.9% | HY 6.8% |
| Int'l 7.8% | Small Cap -4.2% | RE 9.9% | Return 7.0% | HY 2.5% | Mid Cap -2.4% | GTAA 5.6% | Return 7.0% | Mid Cap -9.1% | SD HY 8.7% | Return 7.0% | HY 5.4% | GTAA -18.1% | Return 7.0% | SD HY 6.7% |
| Return 7.0% | HFoF -5.7% | Return 7.0% | SD HY 5.6% | SD HY 1.9% | Small Cap -4.4% | Fx Inc 2.7% | RE 6.9% | Small Cap -11.0% | HFoF 8.4% | HY 6.2% | SD HY 4.3% | Large Cap -18.1% | HFoF 6.6% | Int'l 3.8% |
| Fx Inc 6.5% | Int'l -12.1% | HFoF 4.8% | Fx Inc -2.0% | EM Equity -2.2% | HY -4.6% | Int'l 1.0% | SD HY 3.6% | Int'l -13.8% | Return 7.0% | SD HY 5.4% | Fx Inc -1.5% | EM Equity -20.1% | Fx Inc 5.5% | Fx Inc 1.3% |
| HFoF 5.7% | EM Equity -18.4% | Fx Inc 4.2% | EM Equity -2.6% | Int'l -4.9% | EM Equity -14.9% | HFoF 0.5% | Fx Inc 3.5% | EM Equity -14.6% | RE 5.2% | RE 0.8% | EM Equity -2.5% | Small Cap -20.5% | RE -13.4% | RE -2.4% |

Source: NCREIF, Bloomberg, Wilshire. Large Cap Equity: S&P 500 Index, Mid Cap Equity: Russell Midcap Index, Small Cap Equity: Russell 2000 Index, International Equity: MSCI EAFE Index, Emerging Markets: MSCI EM Index, Fixed Income: Bloomberg Aggregate Index, High Yield Fixed Income: ICE BofA US High Yield Index, Short Duration High Yield Fixed Income: ICE BofA High Yield Cash Pay 1-3 Yr BB Index, Real Estate: NCREIF ODCE Equal Weighted Index, Hedge Fund of Funds: HFRI FOF Index, Global Tactical Asset Allocation: 65%MSCI World Equity/35% FTSE World Gov't Bond Index. Past performance is not indicative of future returns.

# U.S. Economy



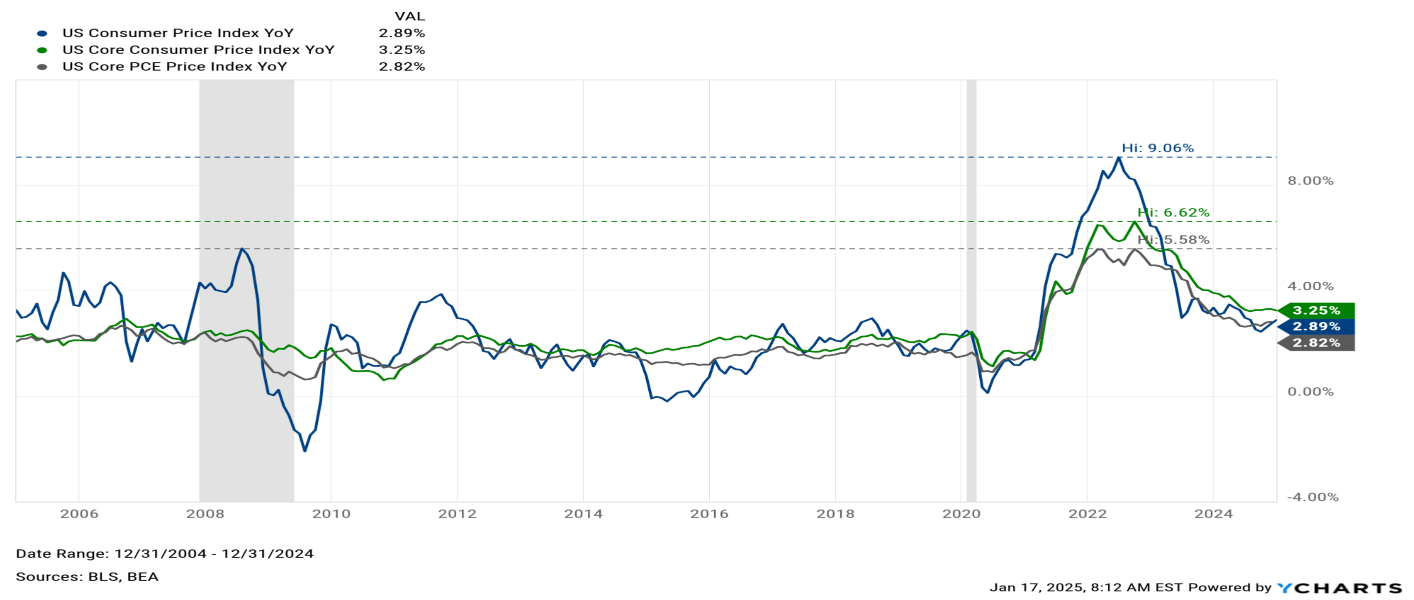

Sources: U.S. Bureau of Economic Analysis, Federal Reserve, Atlanta Federal Reserve

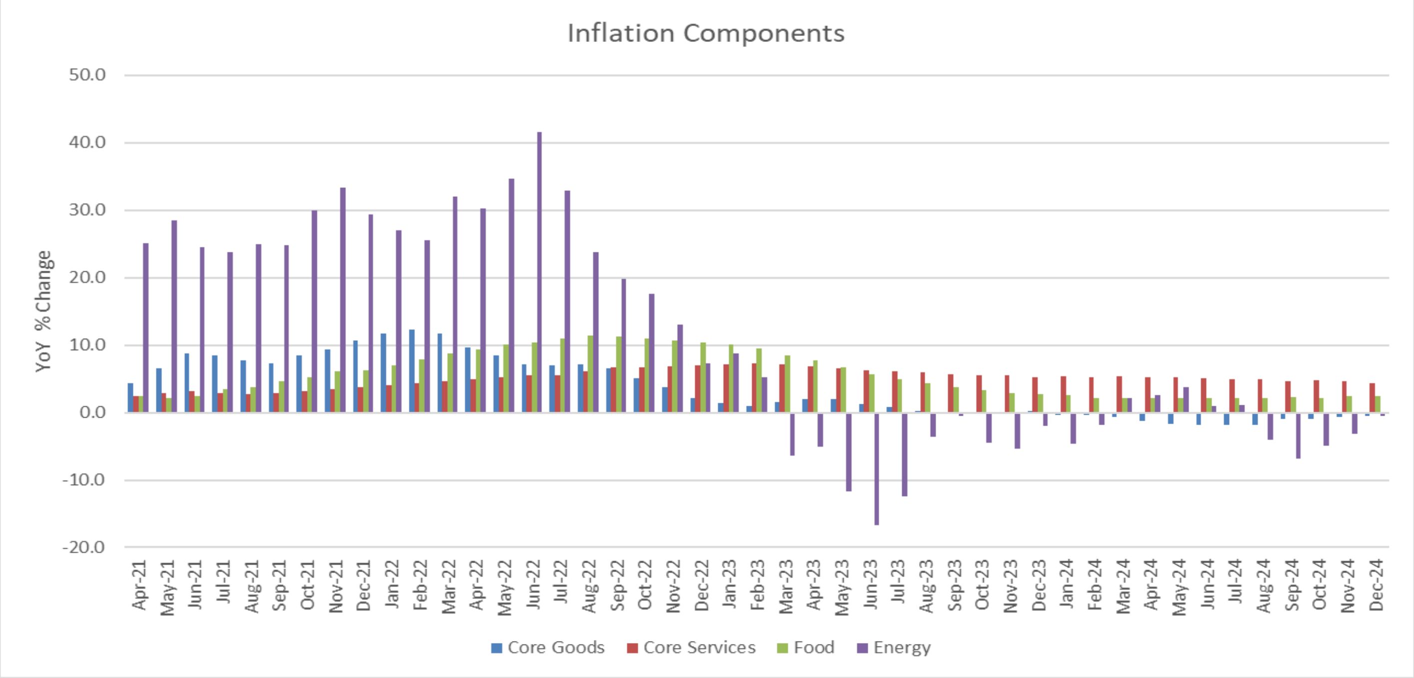



## U.S. Economic Growth Continues Above Trend

- U.S. GDP growth remains above trend, with 3.1% growth in Q3 2024. GDP growth has exceeded 2.0% in eight of the last nine quarters.
- Compared to Q2 2024, the acceleration in real GDP primarily reflected strong growth in consumer spending, which expanded by 3.5%, the most since Q1 2023.
- Increases in exports and government spending also contributed to the increase in overall growth.
- As of January 17, the Atlanta Federal Reserve is projecting GDP growth of 3.0% for Q4 2024.
- After 25 consecutive months of negative real wage growth for U.S. workers, higher wage and slowing inflation have more recently resulted in 20 consecutive months of real earnings growth, supporting robust economic growth.

# U.S. Economy



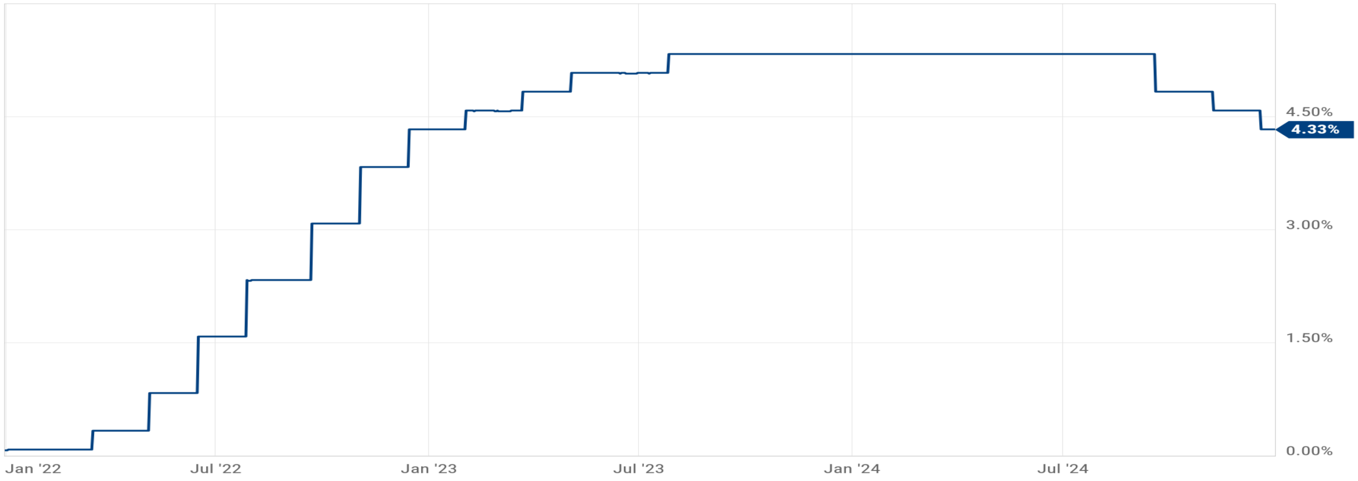




## Inflation Remains Above the Fed's Target

- December CPI increased 0.4% month-over-month, the largest increase since March 2024. Year-over-year, headline CPI was 2.9%, down from 4.1% in 2023.
- A 2.6% jump in the cost of energy prices in December accounted for more than 40% of the increase in the CPI month-over-month. For the full year, energy prices declined 0.5%.
- Excluding food and energy, core inflation increased by 3.25% vs. a year ago, the lowest level since April 2021.
- Year-over-year core goods inflation was negative for all twelve months of 2024, driven by falling used car prices.
- Service inflation remains elevated, driven by shelter and auto insurance.
- Core Personal Consumption Expenditures (PCE), the Fed's preferred inflation measure, increased by 2.8% over the last year through December, down from a peak of 5.6% in 2022.

# U.S. Economy

Effective Federal Funds Rate

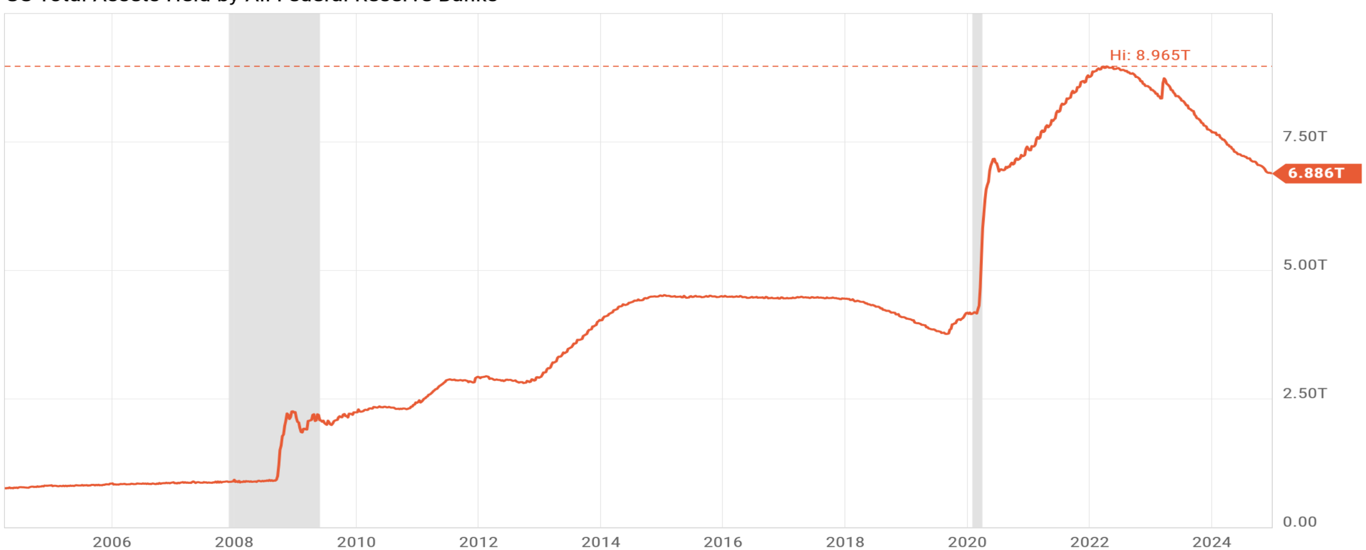



Date Range: 12/31/2021 - 12/31/2024

Source: Federal Reserve

Jan 6, 2025, 10:18 AM EST Powered by YCHARTS

US Total Assets Held by All Federal Reserve Banks




Date Range: 03/31/2004 - 12/25/2024

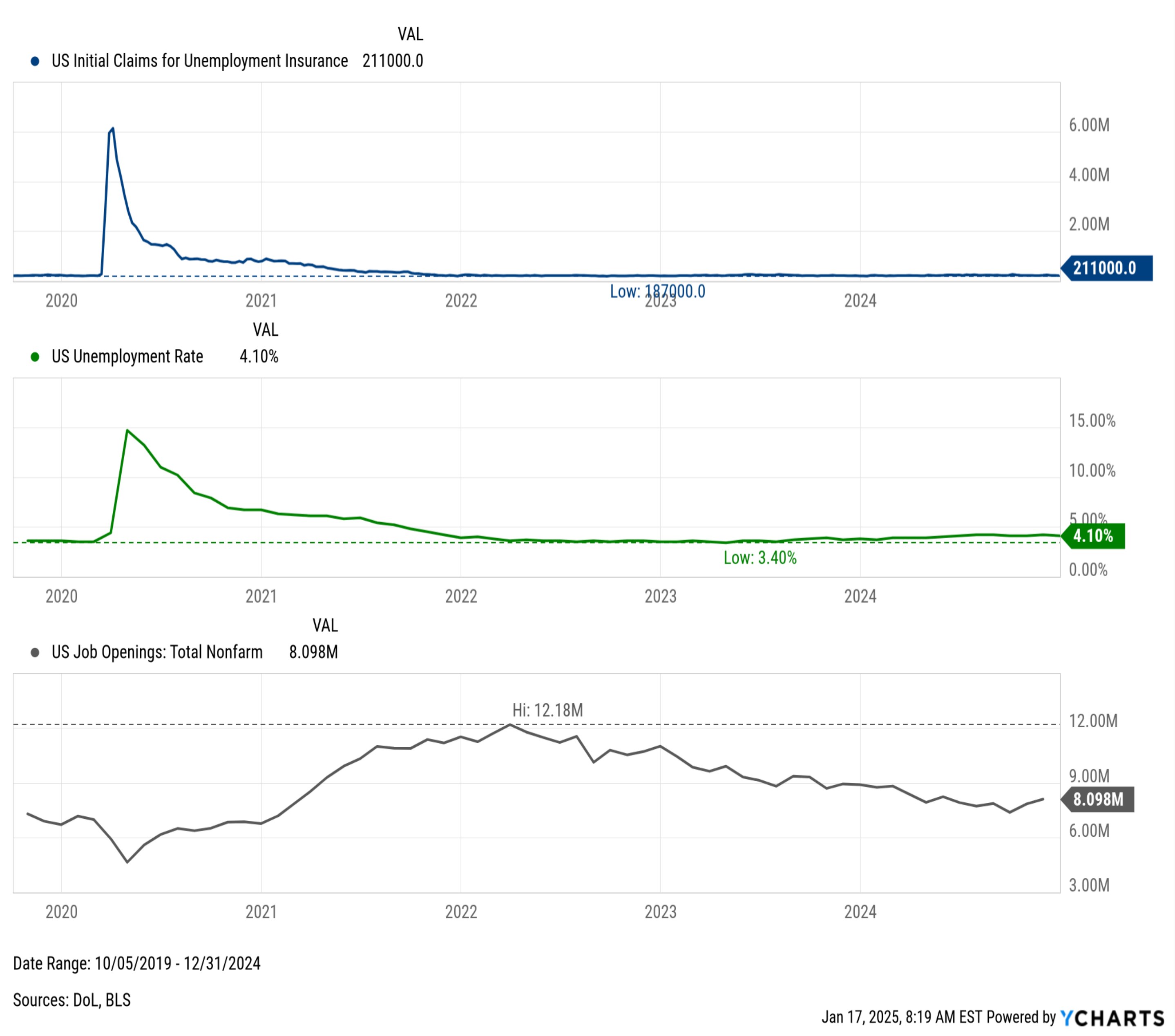
Source: Federal Reserve

Jan 6, 2025, 10:20 AM EST Powered by YCHARTS

## Fed Cuts Rates by 0.50% in 4Q 2024

- Despite inflation remaining above target, the Fed cut interest rates by 100 bps from September through December, including a 0.25% reduction at their final meeting of the year in December.
- The Effective Fed Funds Rate is now at the lowest level since January 2023.
- Forward guidance from the Fed at the December meeting suggests 0.50% in cuts in 2025 followed by an additional 0.50% in cuts in 2026.
- The Fed reduced the size of the balance sheet through quantitative tightening by approximately $2.1 trillion since the peak in April 2022.
- The balance sheet is at the lowest level since May 2020, but remains significantly larger than pre-COVID.

# U.S. Economy




## Labor Market Ends 2024 on a Strong Note

- Nonfarm payrolls surged by 256,000 in December, up from 212,000 in November and above the forecast of 155,000.
- There were an average of 186,000 jobs added per month in 2024, down from an average of 251,000 in 2023.
- Weekly claims for unemployment averaged 225,864 in Q4 2024 compared to 231,153 in Q3 2024.
- The unemployment rate has been at or above 4.0% since May 2024, following 27 consecutive months of unemployment below 4.0%.
- Despite an uptick in Q4 2024, job openings are approximately 4.0 million below the peak in 2022 of 12.2 million.

# U.S. Equity Market

| | Index | 4Q24 | YTD | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 | 1-Year | 3-Year | 5-Year | 10-Year |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Large Cap | S&P 500 | 2.4% | 24.9% | 26.3% | -18.1% | 28.7% | 18.4% | 31.5% | -4.4% | 24.9% | 8.9% | 14.5% | 13.1% |
| | Russell 1000 | 2.7% | 24.4% | 26.5% | -19.1% | 26.4% | 21.0% | 31.4% | -4.8% | 24.4% | 8.4% | 14.2% | 12.8% |
| | Russell 1000 Value | -2.0% | 14.3% | 11.4% | -7.6% | 25.1% | 2.8% | 26.5% | -8.3% | 14.3% | 5.6% | 8.6% | 8.5% |
| | Russell 1000 Growth | 7.1% | 33.2% | 42.7% | -29.1% | 27.6% | 38.5% | 36.4% | -1.5% | 33.2% | 10.5% | 18.9% | 16.8% |
| Mid Cap | Russell Mid-Cap | 0.6% | 15.3% | 17.2% | -17.3% | 22.6% | 17.1% | 30.5% | -9.1% | 15.3% | 3.8% | 9.9% | 9.6% |
| | Russell Mid-Cap Value | -1.8% | 13.0% | 12.7% | -12.1% | 28.3% | 5.0% | 27.0% | -12.3% | 13.0% | 3.9% | 8.6% | 8.1% |
| | Russell Mid-Cap Growth | 8.1% | 22.0% | 25.9% | -26.7% | 12.7% | 35.6% | 35.5% | -4.8% | 22.0% | 4.0% | 11.5% | 11.5% |
| Small Cap | Russell 2000 | 0.3% | 11.5% | 16.9% | -20.5% | 14.8% | 19.9% | 25.5% | -11.0% | 11.5% | 1.2% | 7.4% | 7.8% |
| | Russell 2000 Value | -1.1% | 8.0% | 14.6% | -14.5% | 28.2% | 4.6% | 22.4% | -12.9% | 8.0% | 1.9% | 7.2% | 7.1% |
| | Russell 2000 Growth | 1.7% | 15.1% | 18.6% | -26.4% | 2.8% | 34.6% | 28.4% | -9.3% | 15.1% | 0.2% | 6.8% | 8.1% |
| Total Market | Wilshire 5000 | 2.6% | 23.7% | 26.1% | -19.0% | 26.7% | 20.8% | 31.0% | -5.3% | 23.7% | 8.1% | 14.1% | 12.7% |
| | Russell 3000 | 2.6% | 23.7% | 25.9% | -19.2% | 25.6% | 20.9% | 31.0% | -5.2% | 23.7% | 8.0% | 13.8% | 12.5% |

## Major Index Total Return as of December 31, 2024

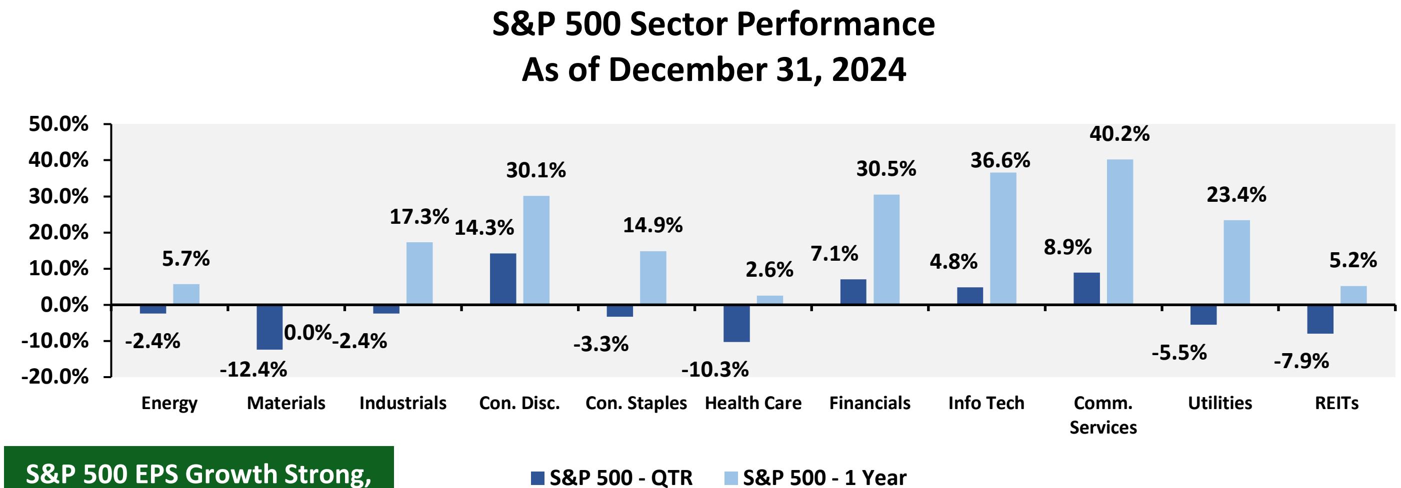
| Asset Class | Name | 4Q24 | % off Low | % Off All Time High |
|---|---|---|---|---|
| U.S. Large Cap | S&P 500 | 2.4% | 70.1% | -3.4% |
| U.S. Mid Cap | Russell Midcap | 0.6% | 47.8% | -7.1% |
| U.S. Smid Cap | Russell 2500 | 0.6% | 41.8% | -7.9% |
| U.S. Small Cap | Russell 2000 | 0.3% | 39.1% | -8.5% |
| International Large Cap | MSCI EAFE | -8.1% | 46.8% | -9.5% |
| International Small Cap | MSCI EAFE Small Cap (gross) | -0.6% | 37.1% | -13.0% |
| Emerging Markets | MSCI Emerging Markets | -7.9% | 35.9% | -16.6% |
| Global Equity | MSCI World (gross) | -0.1% | 63.6% | -3.7% |

- The U.S. stock market posted strong gains in 2024, despite a December selloff resulting in muted Q4 performance. Major U.S. benchmarks provided double-digit returns for the year, powered by strong corporate earnings growth and easing global monetary policies.

- The S&P 500 Index reached 57 record highs in 2024 and delivered annual returns exceeding 20% for two consecutive years, a milestone not achieved since 1998.

- In several respects, 2024 mirrored 2023, with the majority of gains concentrated in large-cap growth stocks, as fewer than 30% of S&P 500 Index stocks outperformed the index for the second straight year. Accordingly, the past two years saw one of the most significant periods of outperformance of growth stocks over value.

# U.S. Equity Market

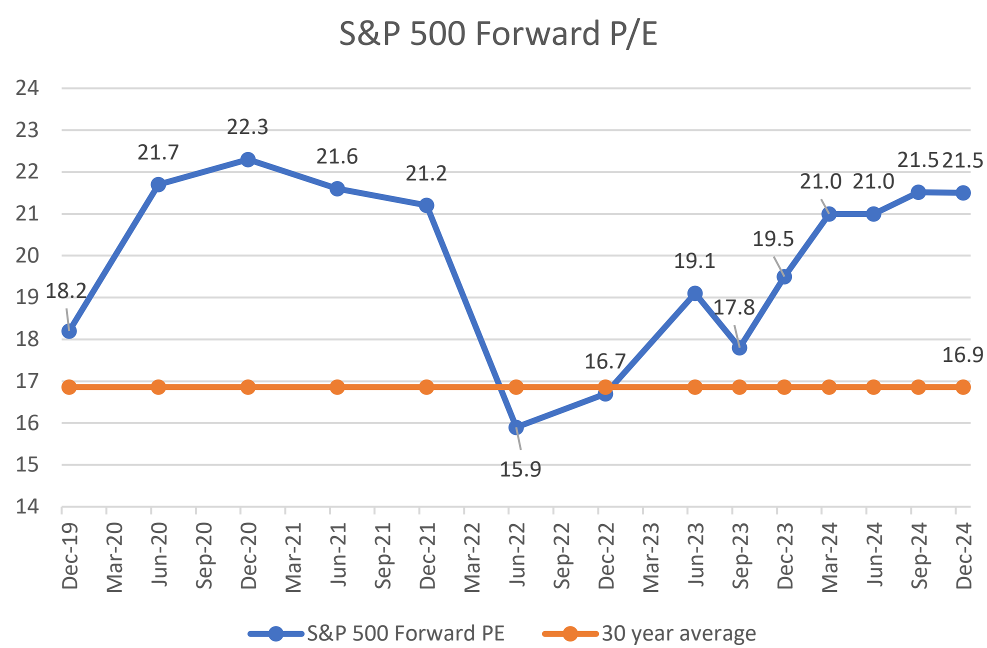



## 2024 Sector Gains Strong In Light of Mixed Q4

- Q4 featured mixed performance across sectors. At the end of November, all sectors were trending positively for the quarter following the election, but December proved challenging after the Fed's hawkish FOMC meeting, which triggered a sharp market reversal. As a result, 7 of the 11 sectors closed Q4 in the red.
- Notwithstanding this, for FY 2024, 10 out of 11 large-cap sectors saw gains, with four sectors rising by over 30%. The top performers were communications (+40.2%), IT (+36.6%), financials (+30.5%), and consumer discretionary (+30.1%).
- All 11 sectors would have been positive for the year if not for a weak December for materials, resulting in a slightly negative year for the sector. Healthcare (+2.6%) and REITs (+5.2%) were weaker performers, though still positive for the year.

## S&P 500 EPS Growth Strong, P/E Ratio Remains Elevated

- S&P 500 EPS is expected to grow 11.9% in Q4, the strongest quarter since Q4 2021.
- For FY 2024, EPS growth is forecast at 9.4%, with 5.1% revenue growth, while FY 2025 EPS growth is projected to rise 14.8% on 5.8% revenue growth.
- The S&P 500's forward P/E ratio remains above its historical average, driven by tech companies' higher multiples due to wide operating margins, market dominance, and index weighting.



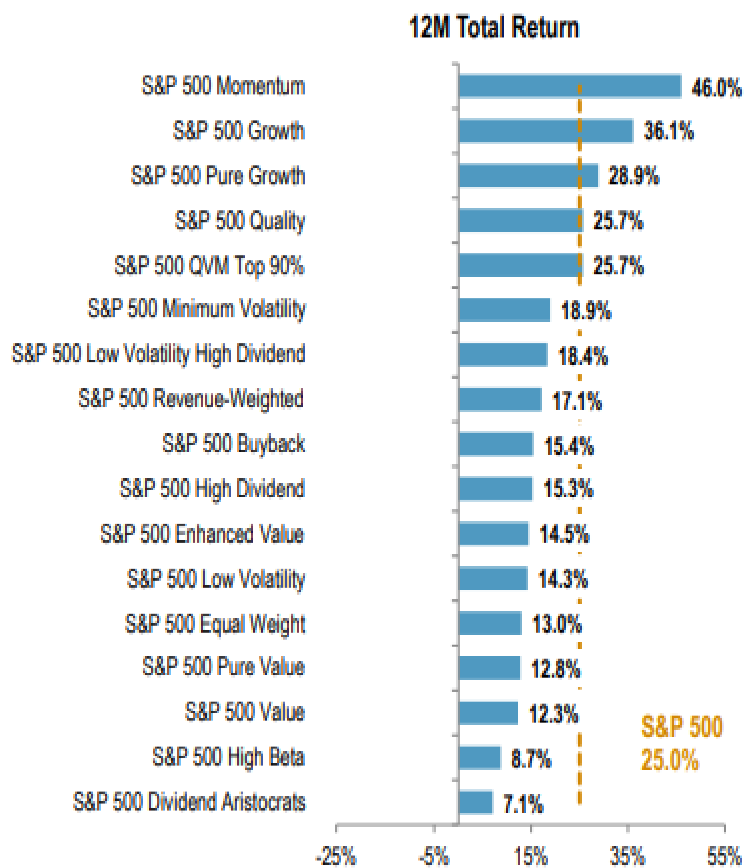

Source: J.P. Morgan Asset Management

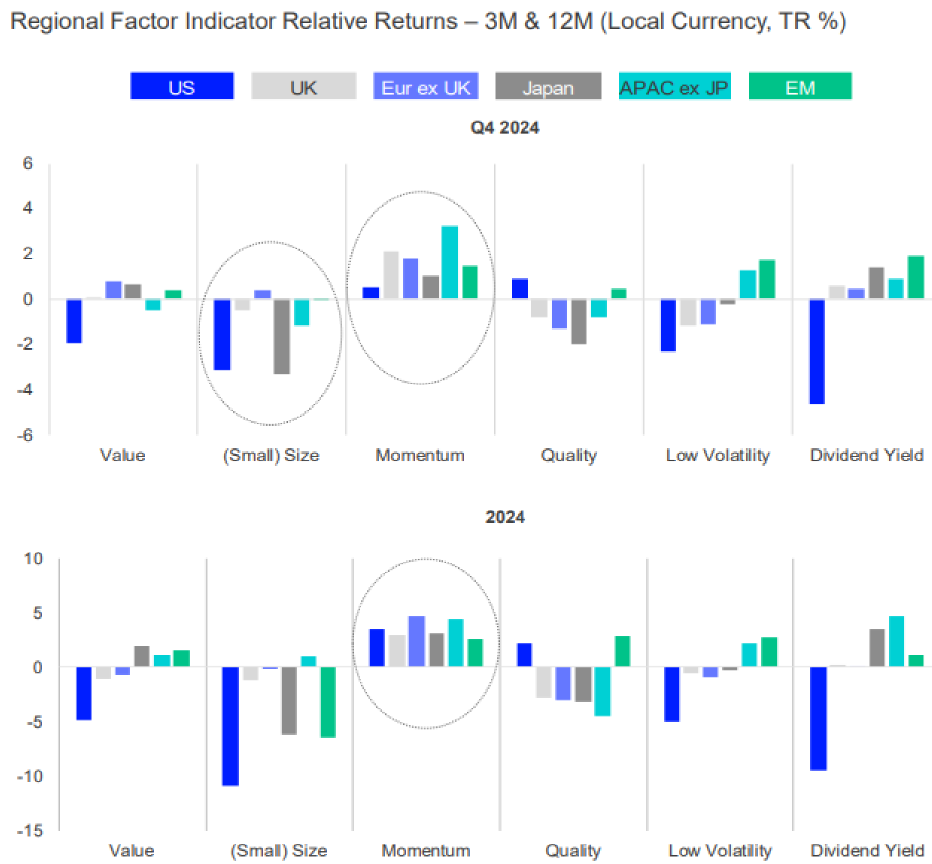
# U.S. Equity Market

## Momentum Dominates Over the Past Two Years

- In hindsight, the formula for stock-picking success over the past two years was clear: invest in momentum. In both 2023 and 2024, stocks with strong recent performance continued to outperform, reflecting the power of the momentum factor relative to anything else.

- While much of this was attributed to the Magnificent 7, the momentum factor excess performance was not limited to just these stocks or the U.S.; it was a broad, worldwide trend.

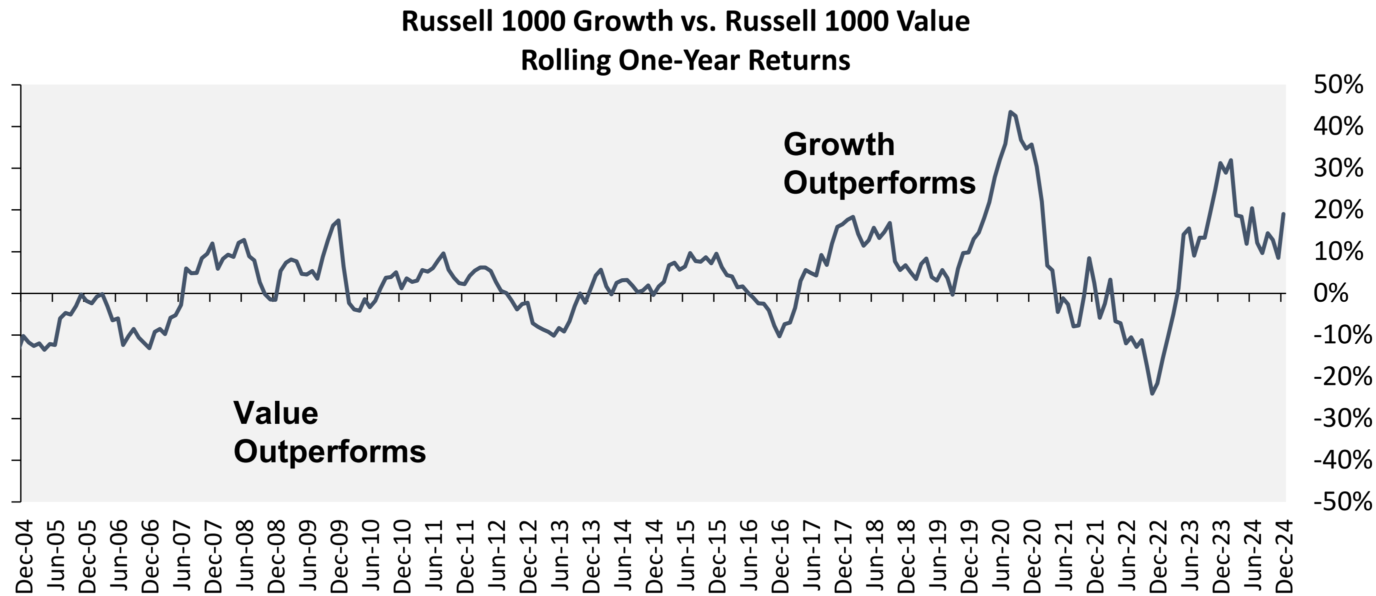


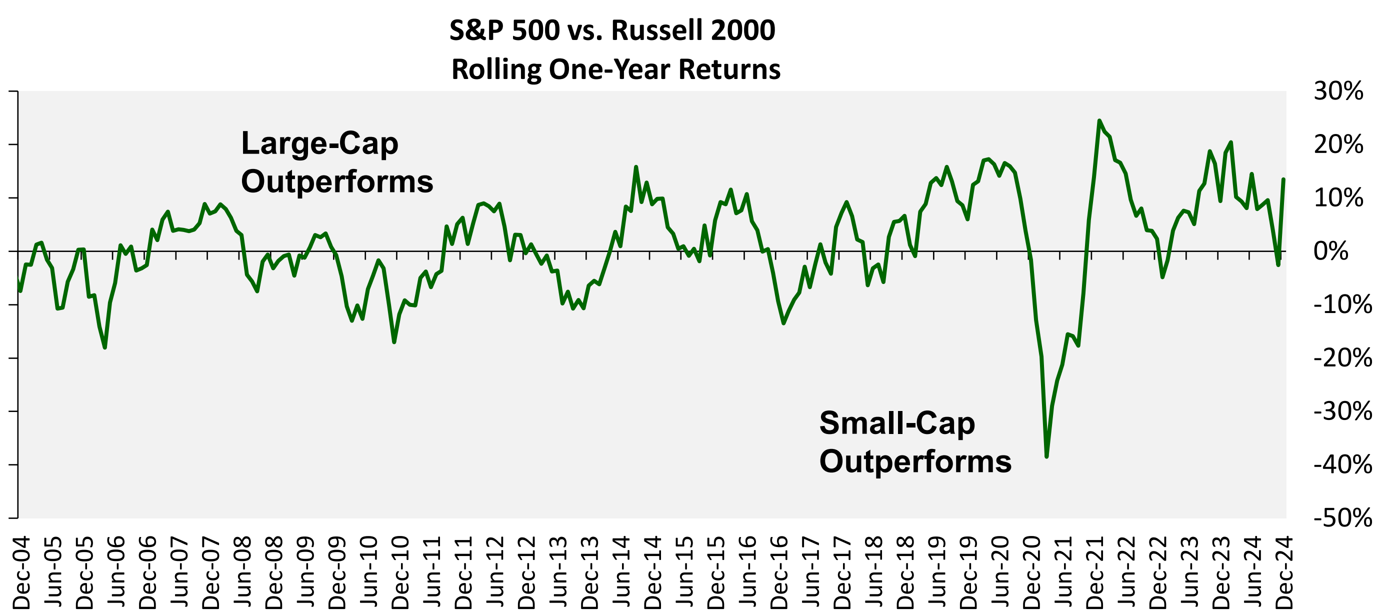






Source: S&P Dow Jones Indices LLC, FTSE Russell & LSEG

# U.S. Equity Market



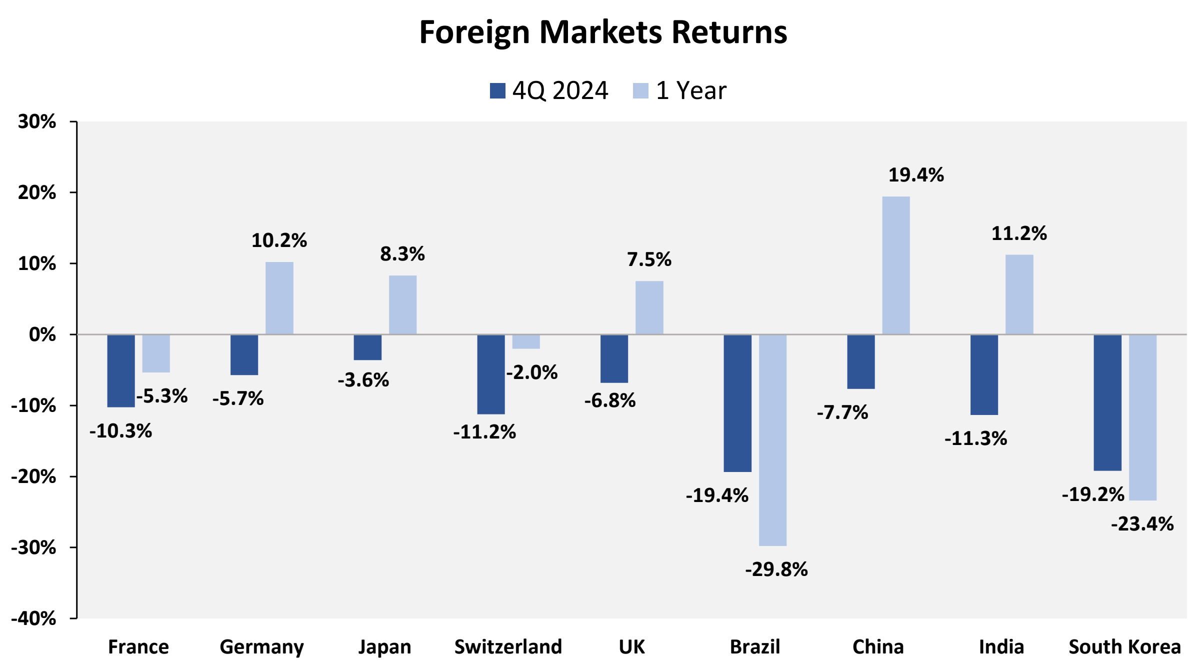




**Large-Cap Trends Overshadow, Leaving Small-Caps Behind**

- The two-year calendar period of 2023 and 2024 marked the strongest relative outperformance of Russell 1000 Growth over Russell 1000 Value since inception.
- Small-cap equities achieved strong absolute returns in 2024, but experienced an abrupt whipsaw in Q4, with November's impressive rally fully reversed by December's decline.
- Over the past twenty years, the Russell 2000 (small caps) has outperformed the Russell 1000 (large caps) in only five calendar years, with the most recent occurrence in 2016.
- The close of 2024 marks the longest stretch of calendar-year underperformance for the Russell 2000 relative to the Russell 1000 since the indices were established in 1978.

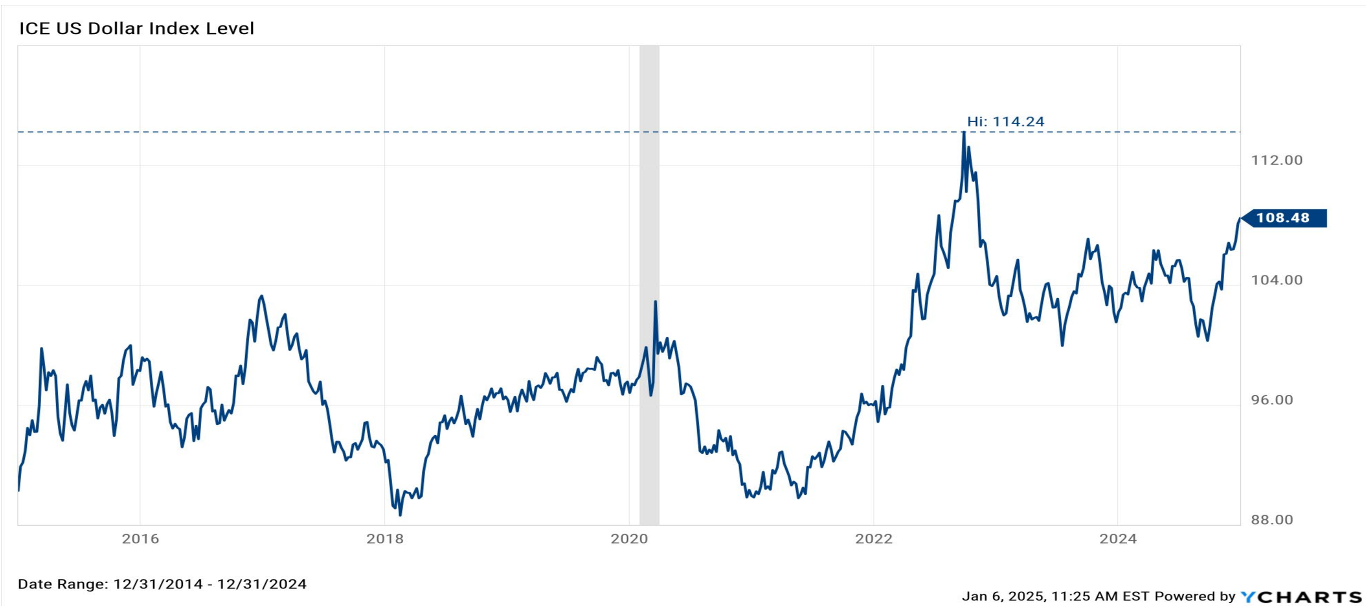
# International Equity Market

| | Index | 4Q24 | YTD | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 | 1-Year | 3-Year | 5-Year | 10-Year |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Global | MSCI AC World Index (net) | -1.0% | 17.4% | 22.2% | -18.4% | 18.5% | 16.3% | 26.6% | -9.4% | 17.4% | 5.4% | 10.1% | 9.2% |
| | MSCI World Small Cap (net) | -2.6% | 8.1% | 15.8% | -18.8% | 15.8% | 16.0% | 26.2% | -13.9% | 8.1% | 0.6% | 6.4% | 7.4% |
| | MSCI World ex US (net) | -7.4% | 4.7% | 17.9% | -14.3% | 12.6% | 7.6% | 22.5% | -14.1% | 4.7% | 1.9% | 5.1% | 5.3% |
| | MSCI World ex US Small Cap (net) | -7.9% | 2.8% | 12.6% | -20.6% | 11.1% | 12.8% | 25.4% | -18.1% | 2.8% | -2.8% | 2.9% | 5.5% |
| Developed ex US | MSCI EAFE (net) | -8.1% | 3.8% | 18.2% | -14.5% | 11.3% | 7.8% | 22.0% | -13.8% | 3.8% | 1.6% | 4.7% | 5.2% |
| | MSCI EAFE Value (net) | -7.1% | 5.7% | 19.0% | -5.6% | 10.9% | -2.6% | 16.1% | -14.8% | 5.7% | 5.9% | 5.1% | 4.3% |
| | MSCI EAFE Growth (net) | -9.1% | 2.0% | 17.6% | -22.9% | 11.3% | 18.3% | 27.9% | -12.8% | 2.0% | -2.6% | 4.0% | 5.8% |
| | MSCI EAFE Small Cap (net) | -8.4% | 1.8% | 13.2% | -21.4% | 10.1% | 12.3% | 25.0% | -17.9% | 1.8% | -3.2% | 2.3% | 5.5% |
| Emerging Markets | MSCI Emerging Markets (net) | -8.0% | 7.5% | 9.8% | -20.1% | -2.5% | 18.3% | 18.4% | -14.6% | 7.5% | -1.9% | 1.7% | 3.6% |



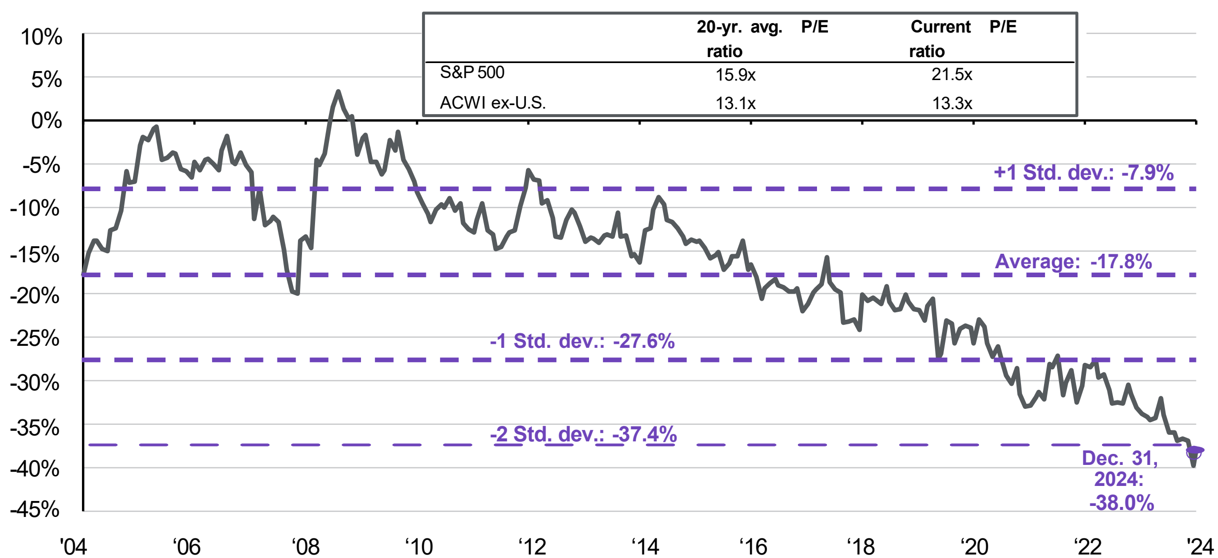

- Q4 presented challenges for many international regions, as the strengthening U.S. dollar and the weakening of foreign currencies significantly affected unhedged returns.
- European shares declined in Q4 amid recession fears, political instability in France and Germany, and concerns over trade wars following Donald Trump's U.S. presidential victory.
- The Japanese equity market posted a 5.4% gain in yen terms during Q4, but currency fluctuations led to a decline in dollar terms, resulting in a loss for U.S. investors.
- Emerging markets also faced headwinds, with the index falling in U.S. dollar terms due to concerns over proposed tariffs, mainly on Chinese goods. The dollar was further supported by the Fed’s signals of fewer rate cuts in 2025, while China’s ongoing deflationary spiral compounded the pressure on the broader emerging markets.

# International Equity Market & Currencies




**International: Price-to-earnings discount vs. U.S.**

MSCI All Country World ex-U.S. vs. S&P 500, next 12 months



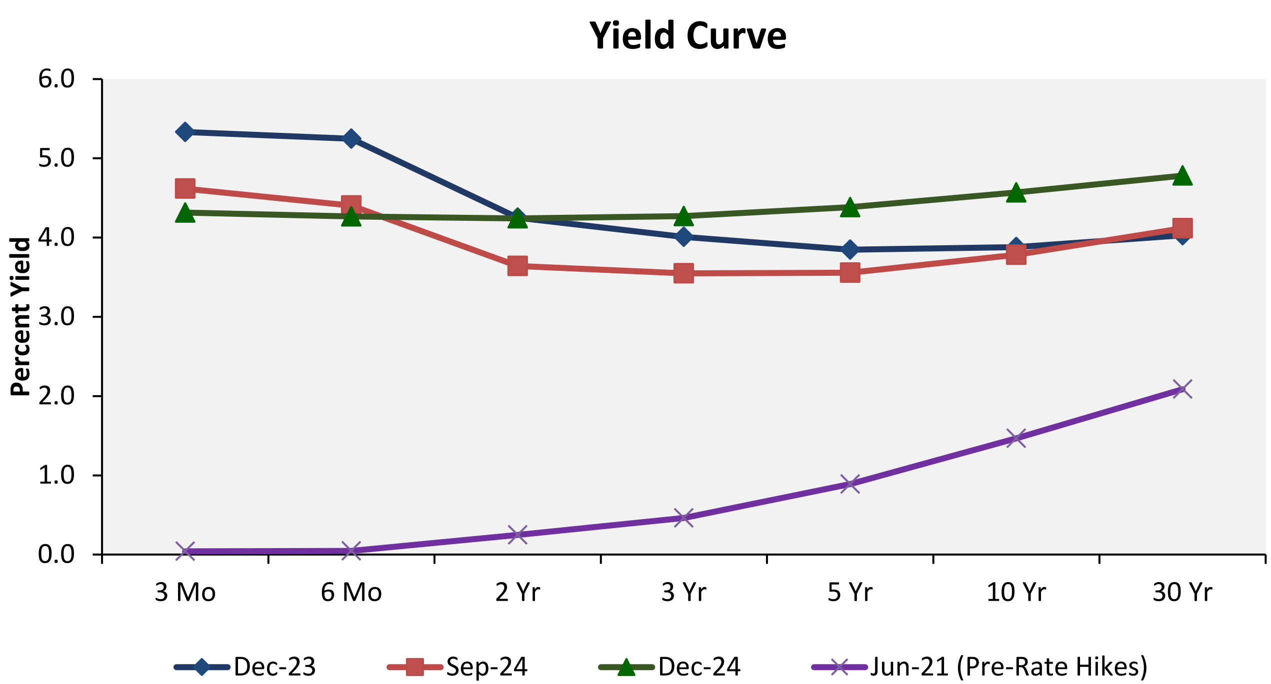

## Dollar Strengthens Amid Tariff Uncertainties

- The dollar posted one of its strongest quarters in recent times, driven by uncertainties surrounding President Trump's tariff policies. The shift in the U.S. trade stance is expected to prompt central banks globally to hasten rate cuts in support of their economies. In contrast, the Fed has adopted a more cautious tone toward further interest rate reductions. This divergence helps support the dollar in the short term.
- The dollar has not significantly affected U.S. multinational stocks yet, but it could constrain broader earnings growth, as multinationals have led the earnings recovery over the past two years. While substantial dollar gains are usually required to impact profits, the dollar has had a more instantaneous negative effect on international stocks compared to U.S. equities.
- Gold had its best year since 2010, even with traditional influences like real rates and dollar strength playing a limited role. Much of the return can be attributed to central bank demand, particularly from China. Global central bank buying helped maintain a floor for gold prices.

Source: J.P. Morgan Asset Management.

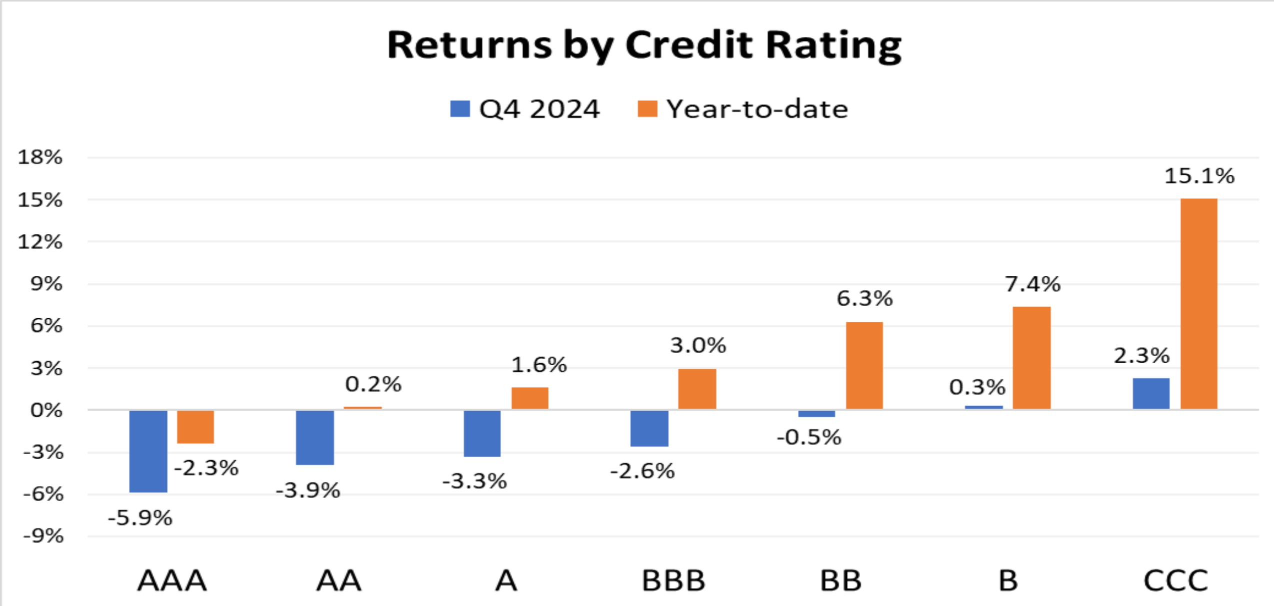
# Bond Market

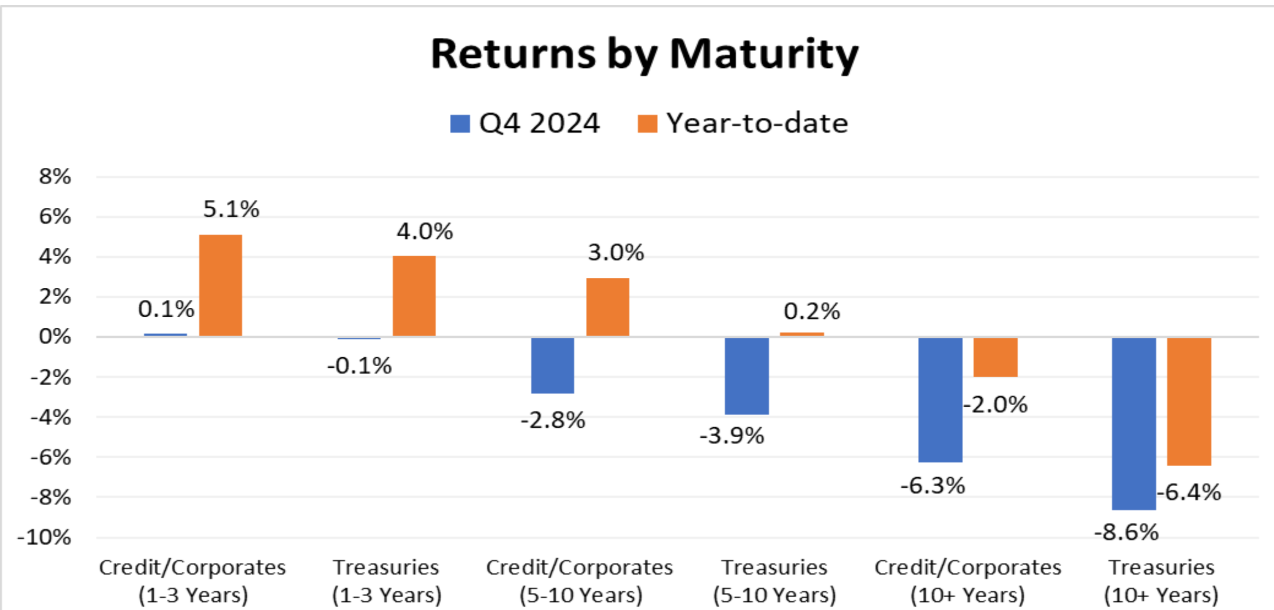
| Index | Duration (years) | Yield | 4Q24 | YTD | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 | 1-Year | 3-Year | 5-Year | 10-Year |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bloomberg Aggregate | 6.1 | 4.91% | -3.1% | 1.2% | 5.5% | -13.0% | -1.5% | 7.5% | 8.7% | 0.0% | 1.2% | -2.4% | -0.3% | 1.3% |
| Bloomberg Govt/Credit | 6.2 | 4.78% | -3.1% | 1.2% | 5.7% | -13.6% | -1.7% | 8.9% | 9.7% | -0.4% | 1.2% | -2.6% | -0.2% | 1.5% |
| Bloomberg Int Agg | 4.4 | 4.81% | -2.1% | 2.5% | 5.2% | -9.5% | -1.3% | 5.6% | 6.7% | 0.9% | 2.5% | -0.8% | 0.3% | 1.5% |
| Bloomberg Int Govt/Credit | 3.8 | 4.60% | -1.6% | 3.0% | 5.2% | -8.2% | -1.4% | 6.4% | 6.8% | 0.9% | 3.0% | -0.2% | 0.9% | 1.7% |
| Bloomberg U.S. Corporate | 7.0 | 5.33% | -3.0% | 2.1% | 8.5% | -15.8% | -1.0% | 9.9% | 14.5% | -2.5% | 2.1% | -2.3% | 0.3% | 2.4% |
| Bloomberg HY Ba/B 2% IC | 3.5 | 6.82% | -0.2% | 6.7% | 12.6% | -10.6% | 4.6% | 7.7% | 15.2% | -1.9% | 6.7% | 2.4% | 3.9% | 5.0% |
| ICE BofA 1-3 Yrs BB US Cash Pay HY | 1.8 | 6.12% | 0.8% | 6.7% | 8.9% | -3.1% | 3.2% | 5.4% | 8.7% | 1.3% | 6.7% | 4.0% | 4.1% | 4.4% |
| Bloomberg Mortgage | 5.8 | 5.27% | -3.2% | 1.2% | 5.0% | -11.8% | -1.0% | 3.9% | 6.4% | 1.0% | 1.2% | -2.1% | -0.7% | 0.9% |
| Bloomberg Treasury | 5.9 | 4.45% | -3.1% | 0.6% | 4.1% | -12.5% | -2.3% | 8.0% | 6.9% | 0.9% | 0.6% | -2.9% | -0.7% | 0.8% |
| Bloomberg US TIPS | 6.5 | 4.59% | -2.9% | 1.8% | 3.9% | -11.8% | 6.0% | 11.0% | 8.4% | -1.3% | 1.8% | -2.3% | 1.9% | 2.2% |
| BofA ML 91 day T-Bills | 0.2 | 4.33% | 1.2% | 5.3% | 5.2% | 1.5% | 0.0% | 0.7% | 2.3% | 1.9% | 5.3% | 4.0% | 2.5% | 1.8% |




- In Q4 2024, the U.S. Treasury yield curve normalized (uninverted) for the first time since July 2022. Short-term interest rates dropped modestly, while interest rates from 5-30 years rose by 60-80 bps, resulting in losses across most bond markets.
- Longer duration bonds were the worst performing areas in fixed income while shorter maturity/duration bonds proved more resilient.
- Bond markets finished 2024 with positive returns, led by higher yielding, riskier credit. Shorter maturity bonds proved more resilient to the interest rate volatility experienced throughout the year, outperforming longer maturity bonds.

# Bond Market

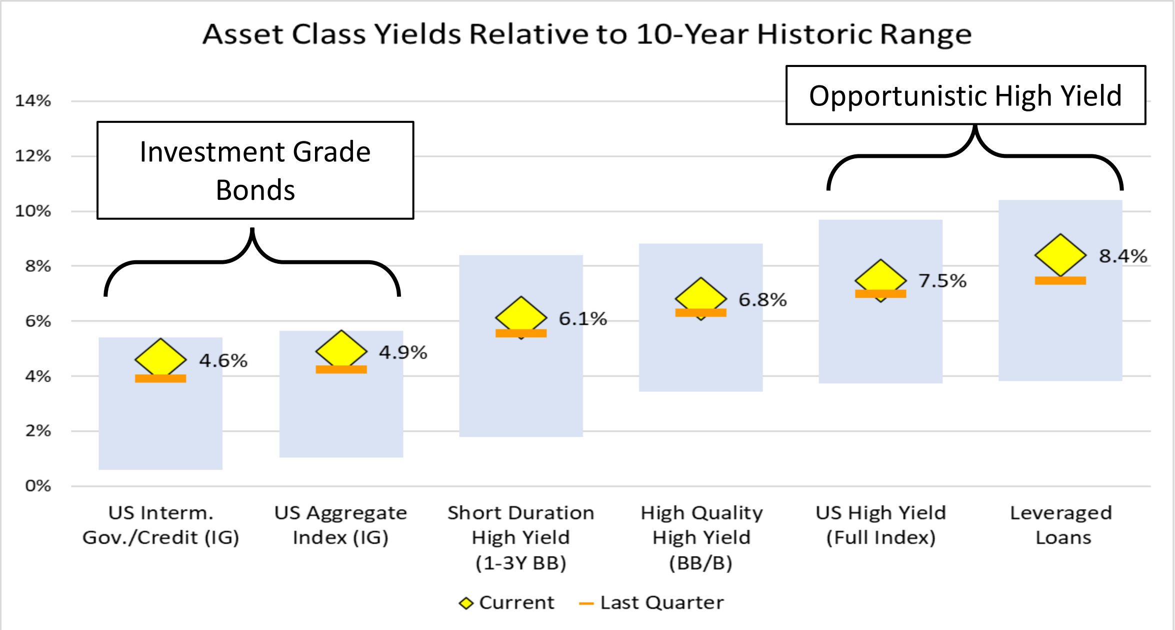


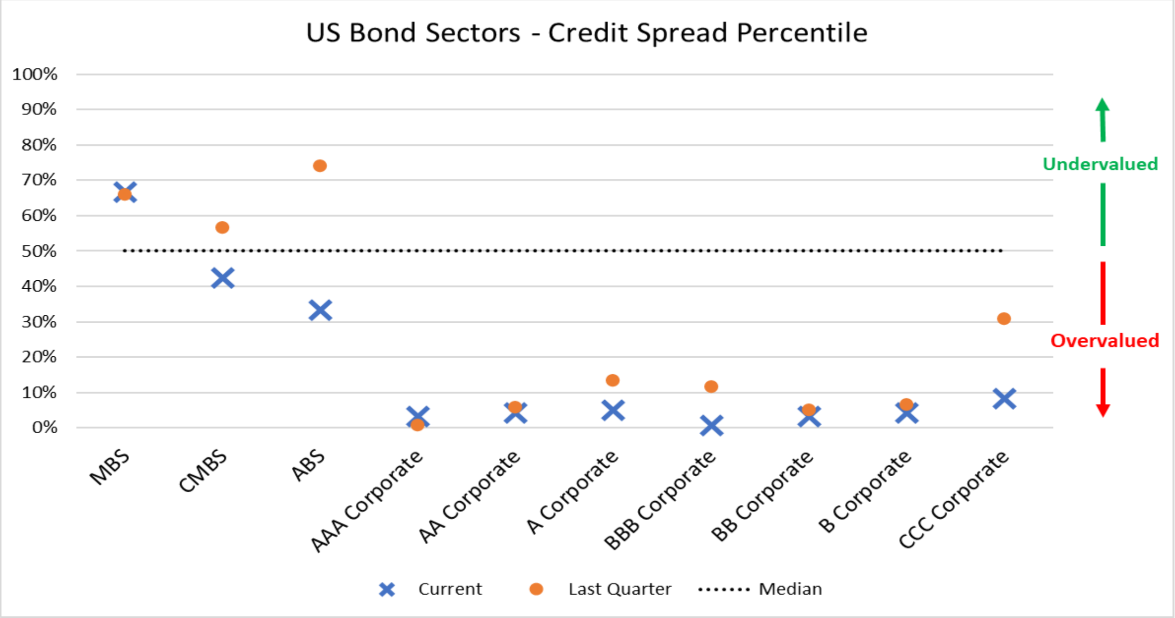




**Rising Treasury Rates Negatively Impact Fixed Income Returns in Q4**

- U.S. Treasury yields rose in Q4 2024, leading to negative performance across most fixed income markets.
- Longer maturity/duration bonds experienced large losses in Q4, pushing 2024 calendar year returns into negative territory.
- Lower-quality high yield bonds (CCC & below) were an outlier in Q4, generating a return of 2.3% for the quarter. The lower quality credit in the high yield market continues to experience spread tightening, bringing valuations more in-line with the rest of the corporate credit universe.
- Bonds with shorter maturities and shorter durations (i.e., high yield) generally outperformed in 2024. These bonds have remained isolated from the volatility in interest rates and benefited from an inverted yield curve for most of 2024.

# Bond Market



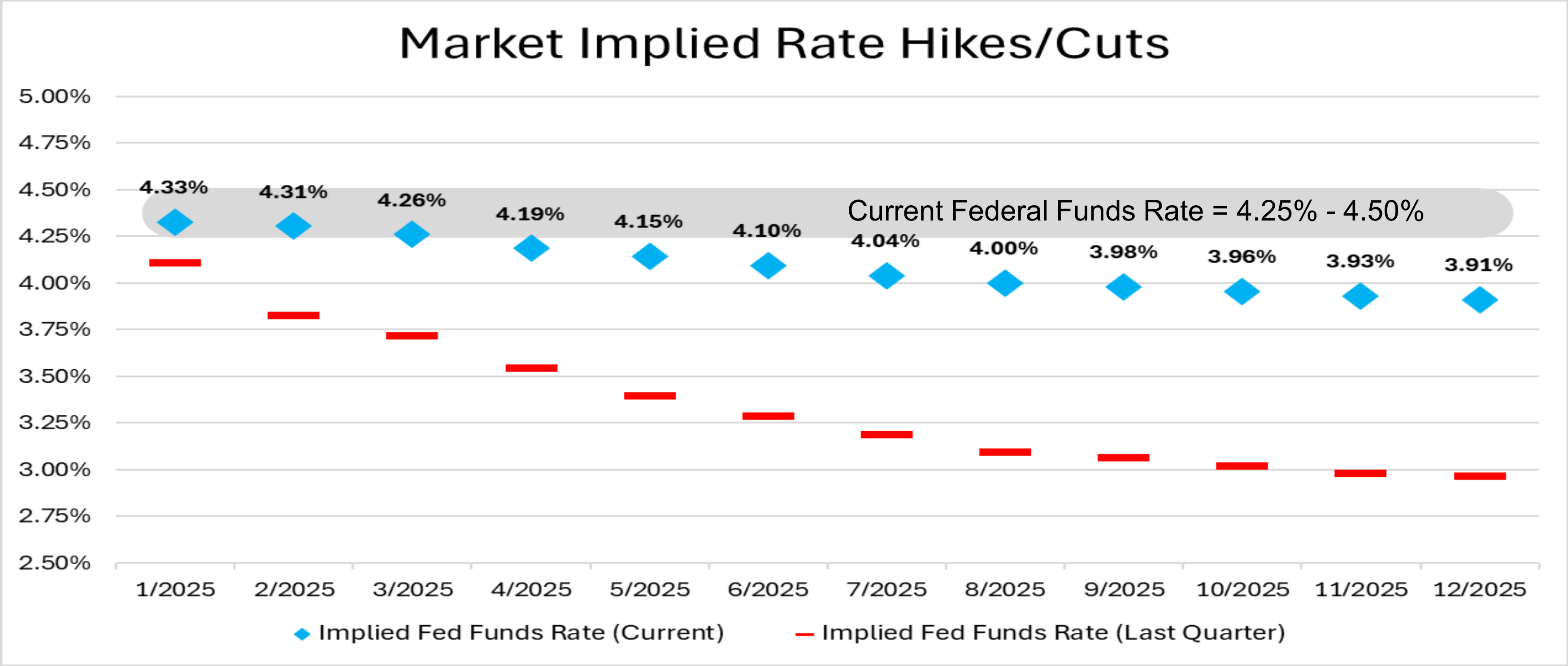

## Bond Yields

- Bond yields rose in Q4 2024, largely driven by higher treasury rates.
- Investment grade (IG) bonds now yield between 4.5% and 5.0%, while non-IG credit yields range from 6% to 8.5%.
- Yields across fixed income continue to sit at the higher end of their historical 10-year range, despite historically tight credit spreads.
- While credit valuations continue to remain elevated, the all-in yield offered to investors remains attractive due to the cushion provided by elevated base rates.

## Credit Spreads/Valuations

- Corporate credit spreads continue to grind lower, with both IG & non-IG credit spreads sitting near historical lows.
- Spreads in structured credit (MBS, CMBS, ABS) remain elevated, continuing to trade cheaper relative to the past decade.
- The reduction in corporate credit spreads appear to show some complacency by credit investors. However, the higher level of bond yields in 2024 provide additional protection for bond investors in the event credit spreads widen. Particularly for high yield investors, credit spreads would need to widen roughly 200 bps before investors would begin to experience losses.

# Bond Market

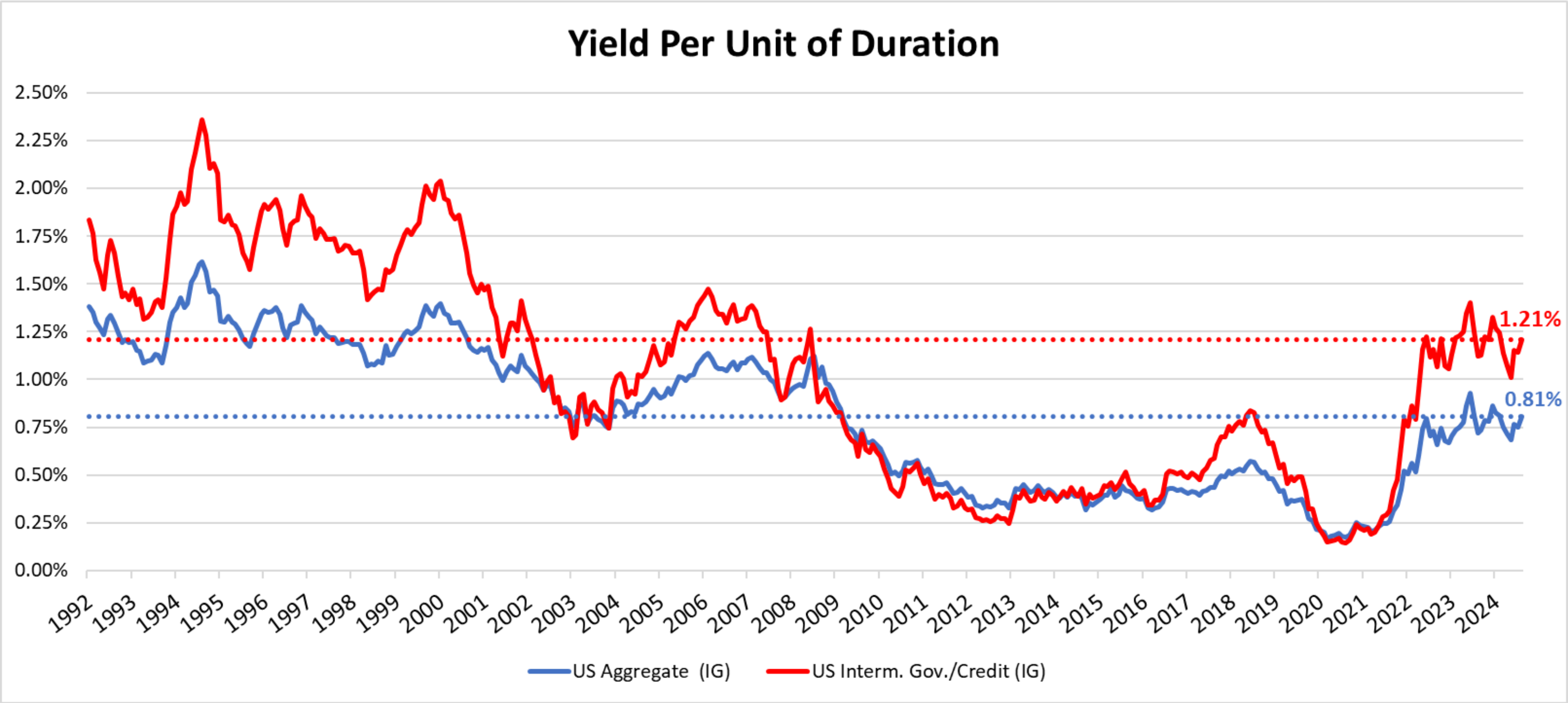



As of 12/31/24

- The FOMC lowered the Fed Funds target rate by 50 bps in Q4 2024, with 25 bps cuts at the November and December FOMC meetings. The current target Federal Funds rate sits at 4.25% - 4.50%.
- Since September, the FOMC has reduced the Fed Funds rate by 1%. The FOMC's decision to reduce the Fed Funds rate comes on the back of a gradual decline in the U.S. inflation rate since its recent peak in 2022. Policymakers have also expressed concerns over a gradual increase in the U.S. unemployment rate, implying some level of fear that the current level of interest rates is overly restrictive to economic growth.
- Following the initial 50 bps cut in September, markets began to immediately price in a more aggressive rate-cutting cycle. Those expectations dissipated in Q4 2024, contributing to some of the interest rate volatility experienced in the recent quarter. As of the end of Q4 2024, the Fed Funds futures market is pricing in an additional 50 bps reduction in the Fed Funds rate through 2025.

# Bond Market

## Investment Grade Investors Are <u>Now</u> Compensated For Duration Risk




- Investment grade bond returns were susceptible to a rise in interest rates for most of the past decade. With the recent surge higher in bond yields, investment grade bond investors are now being adequately compensated for duration risk.
- Interest rates can now move ~80 bps higher over a one-year period before core bond investors (U.S. Aggregate Index) start to realize negative returns on their portfolio while intermediate investment grade investors can withstand a ~120 bps rise in interest rates over a one-year period before realizing losses on their portfolio.
- Given yields are roughly equal for the U.S. Intermediate Gov./Credit Index and the U.S. Aggregate Index, intermediate investment grade bonds (US Interm. Gov/Credit) are seemingly better positioned to limit downside risk in the near-term while core bonds (U.S. Aggregate) can provide more upside if interest rates fall but have less protection in the event interest rates continue to rise.

## Interest Rate Sensitivity

12 Month Holding Period - Annualized Returns as of 12/31/2024

| Yield Change | US Treasuries<br>Bloomberg Treasury | Short-Term IG<br>Bloomberg 1-3 Yr US Govt/Credit | Intermediate IG<br>Bloomberg Interm Govt/Credit | Core Bond<br>Bloomberg Aggregate | Short Duration HY<br>ICE BofA 1-3 Yrs BB US Cash Pay HY | High-Quality HY<br>Bloomberg HY BB/B 2% Capped | Full High Yield<br>Bloomberg US Corporate HY |
|---|---|---|---|---|---|---|---|
| **-300** | 25.45% | 10.21% | 16.92% | 25.68% | 10.59% | 16.59% | 17.22% |
| **-250** | 21.49% | 9.22% | 14.74% | 21.86% | 9.97% | 15.07% | 15.69% |
| **-200** | 17.72% | 8.24% | 12.61% | 18.19% | 9.30% | 13.51% | 14.13% |
| **-150** | 14.13% | 7.26% | 10.53% | 14.66% | 8.58% | 11.90% | 12.53% |
| **-100** | 10.72% | 6.30% | 8.50% | 11.27% | 7.81% | 10.25% | 10.89% |
| **-75** | 9.08% | 5.82% | 7.51% | 9.62% | 7.41% | 9.41% | 10.05% |
| **-50** | 7.50% | 5.35% | 6.53% | 8.02% | 6.99% | 8.56% | 9.21% |
| **-25** | 5.95% | 4.87% | 5.55% | 6.44% | 6.56% | 7.69% | 8.35% |
| **0** | 4.45% | 4.40% | 4.60% | 4.91% | 6.12% | 6.82% | 7.49% |
| **25** | 3.00% | 3.93% | 3.65% | 3.40% | 5.67% | 5.93% | 6.61% |
| **50** | 1.60% | 3.47% | 2.72% | 1.93% | 5.20% | 5.03% | 5.73% |
| **75** | 0.24% | 3.00% | 1.80% | 0.50% | 4.72% | 4.13% | 4.83% |
| **100** | -1.08% | 2.54% | 0.89% | -0.90% | 4.23% | 3.21% | 3.93% |
| **150** | -3.57% | 1.63% | -0.89% | -3.59% | 3.21% | 1.34% | 2.09% |
| **200** | -5.87% | 0.72% | -2.62% | -6.14% | 2.14% | -0.58% | 0.21% |
| **250** | -8.00% | -0.17% | -4.31% | -8.54% | 1.02% | -2.54% | -1.71% |
| **300** | -9.94% | -1.06% | -5.94% | -10.81% | -0.15% | -4.54% | -3.66% |
| **Duration** | 5.90 | 1.88 | 3.81 | 6.08 | 1.79 | 3.52 | 3.48 |
| **Convexity** | 0.73 | 0.04 | 0.20 | 0.56 | -0.20 | -0.18 | -0.16 |

**FOR ILLUSTRATIVE PURPOSES ONLY:** For each index the current yield to worst as of 12/31/2024 was used as the base case annualized return. The annualized return sensitivity to a uniform increase or decrease in the yield curve was calculated by taking the index's Option-Adjusted Duration as of 12/31/2024 multiplied by the percentage point change in the yield curve (basis point change divided by 100), while adjusting for convexity effects using the index's Option-Adjusted Convexity as of 12/31/2024, and then appropriately adding or subtracting this implied percentage change in the value of the index (due to the shift in the yield curve) to the base case annualized return. This is a rough approximation of the annual return sensitivity to parallel shifts in the yield curve.

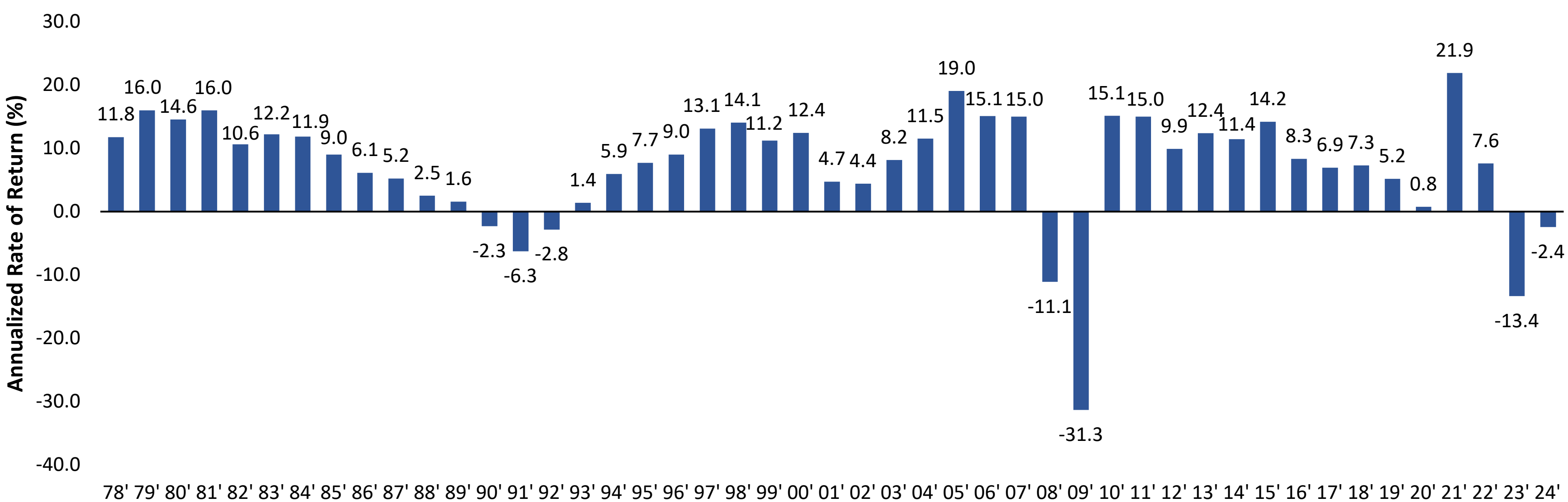
# Real Estate Market

| Sector | Index | 4Q24 | YTD | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 | 1-Year | 3-Year | 5-Year | 10-Year | 15-Year | 20-Year |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| US Private | NCREIF ODCE Equal Weighted (net) | 0.8% | -2.4% | -13.4% | 7.6% | 21.9% | 0.8% | 5.2% | 7.3% | -2.4% | -3.1% | 2.2% | 5.2% | 7.7% | 5.5% |
| | NCREIF ODCE EW Income Index | 1.0% | 4.0% | 3.5% | 3.5% | 4.1% | 3.6% | 3.5% | 3.5% | 4.0% | 3.7% | 3.9% | 4.2% | 4.0% | 4.2% |
| | NCREIF ODCE EW Appreciation Index | 0.0% | -5.5% | -15.8% | 4.8% | 18.3% | -2.1% | 1.7% | 3.7% | -5.5% | -5.9% | -0.8% | 1.9% | 3.8% | 1.5% |

- After eight consecutive negative quarters, the NCREIF ODCE Equal Weighted Index (net) posted a positive return in the fourth quarter, up +0.84% and finished the year down -2.44%. As shown in the chart below, 2024 was the seventh negative return year for the index since inception.

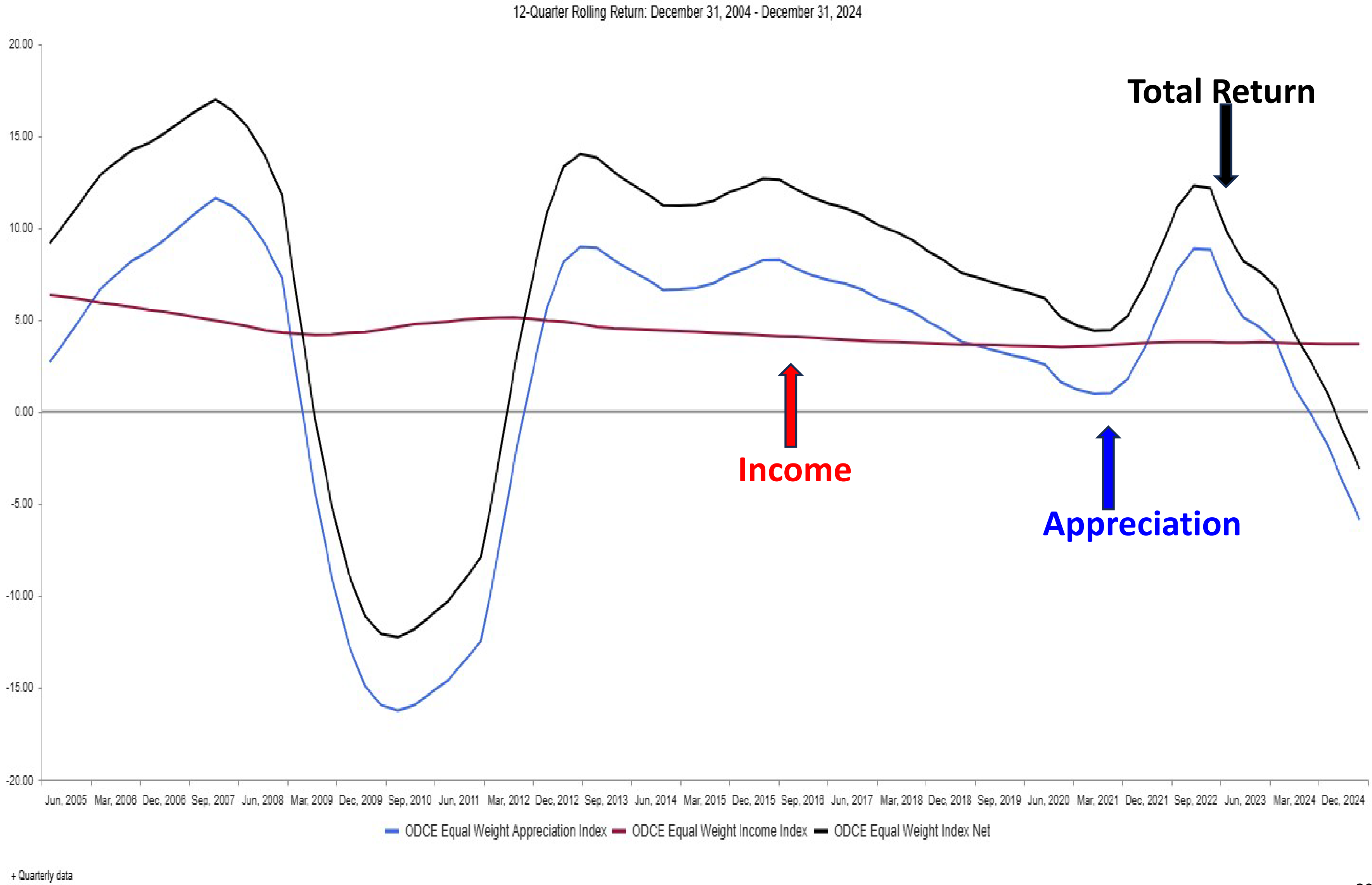
- Fundamentals across most commercial real estate sectors continue to improve, though uncertainty remains around the direction of interest rates, inflation and the impact of a new U.S. presidential administration on the U.S. economy, all of which may impact demand and pricing for commercial real estate assets.

## Historical NCREIF ODCE Equal Weight Total Net Performance



# Real Estate Market

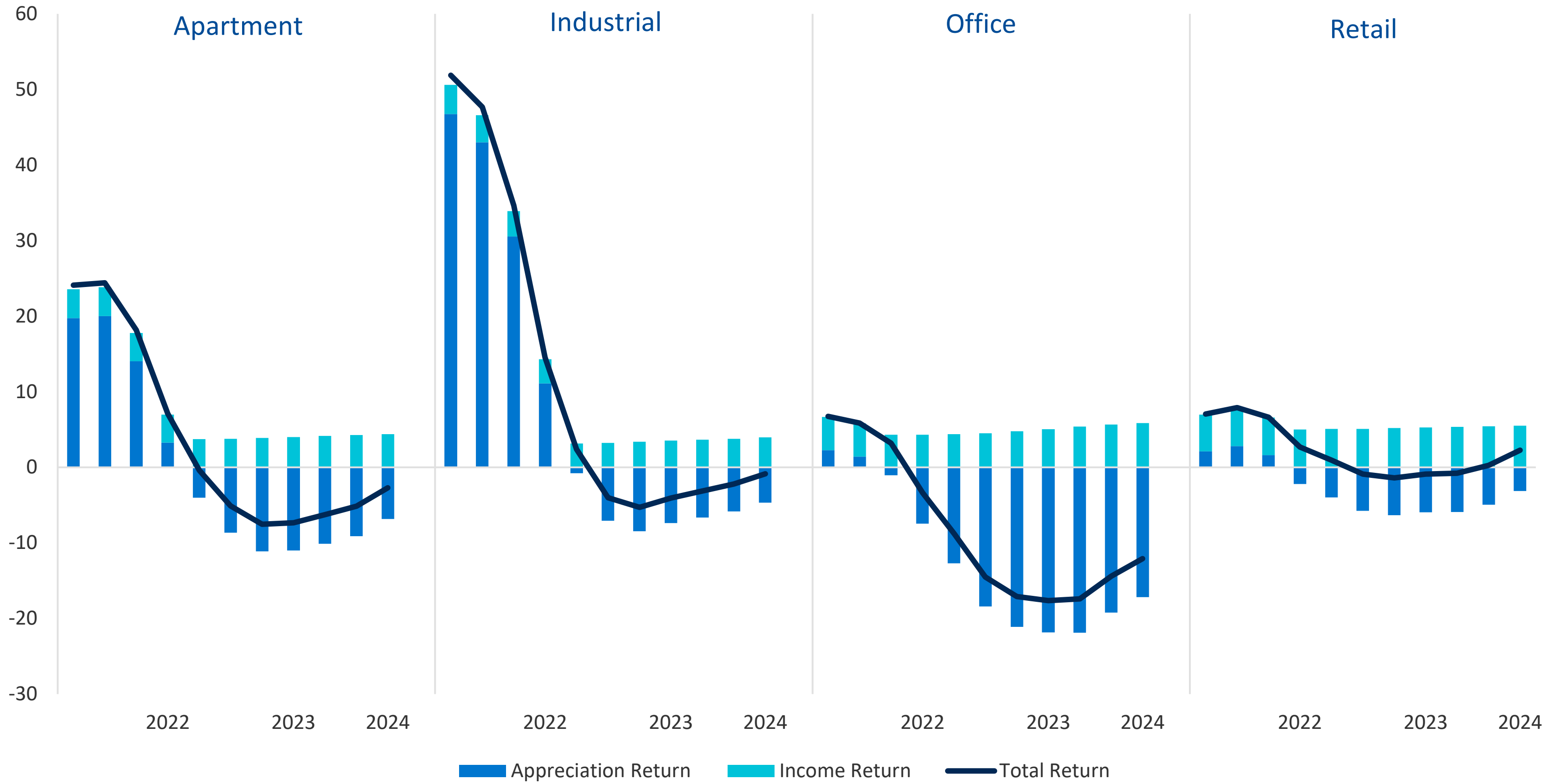
- The income component of real estate returns continues to remain stable, at approximately 1% per quarter. Appreciation in the ODCE was flat (+0.03%) in Q4 2024, rather than negative as it has been over the previous eight quarters, helping to stabilize the overall index return.



# Real Estate Market

- A recovery in valuations across the major sectors of the commercial real estate market appears to be underway, with total returns trending upwards at the end of 2024. Income returns have remained relatively stable across sectors, as shown below.
- While total returns across sectors followed a similar trendline over the last two years, retail sector returns held up relatively well. The office sector saw the largest negative capital appreciation, and though year-over-year returns for office are trending upwards, the sector is still facing significant headwinds relative to other sectors of the real estate market.

Property Sector Returns, quarter, Y/Y %

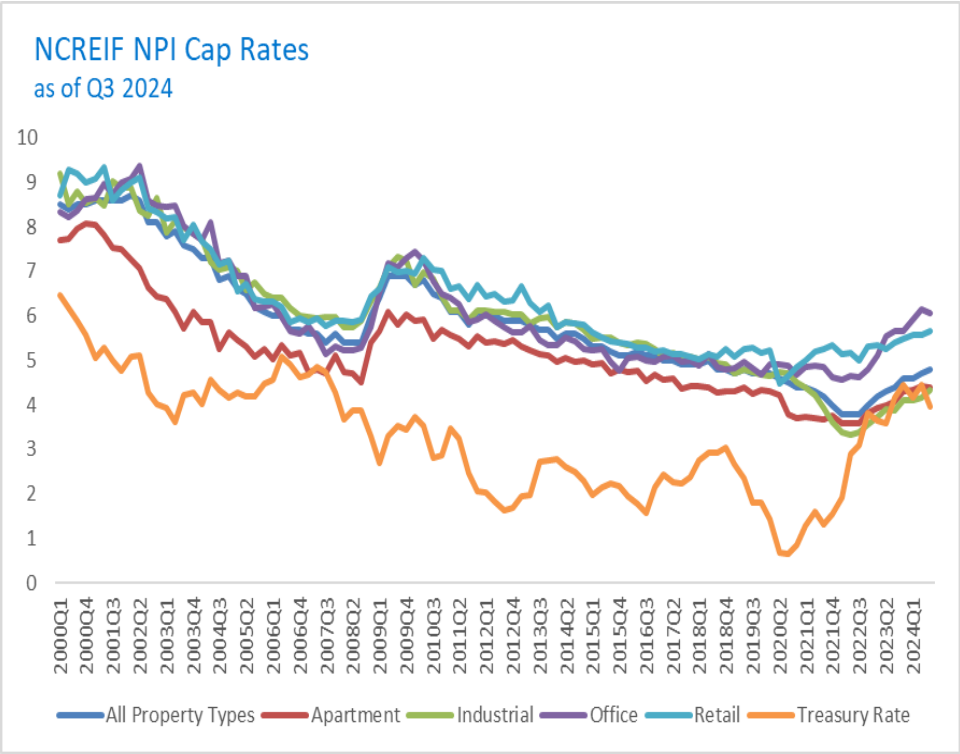





Source: NCREIF NPI, Principal Real Estate, Q3 2024.

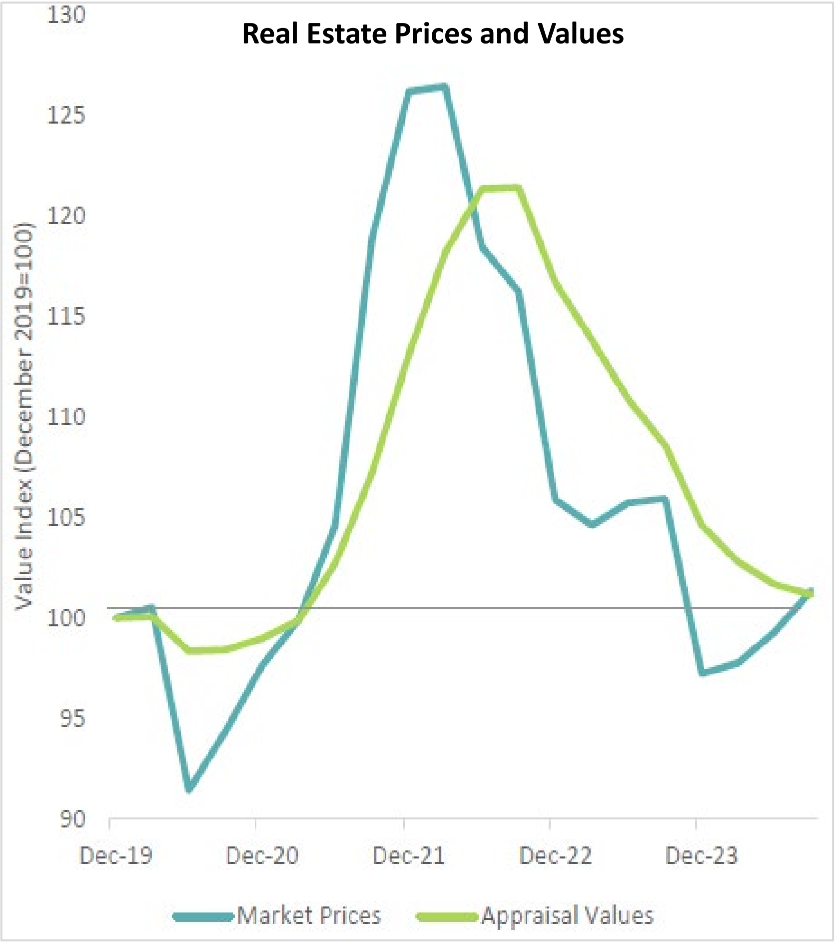
# Real Estate Market

- Cap rate expansion across real estate sectors appears to be stabilizing, suggesting the widespread downward repricing in valuations may be coming to an end.




Source: NCREIF via Principal.

- Market prices and appraisal values have converged (assets are transacting at or near appraisal values), further suggesting that future downward valuations of real estate properties should be minimal.




Source: GSA (market prices); NCREIF (appraisal values); via DWS.

# Operating Engineers Local No. 77 Pension Plan

Master Consulting Services Report

Period Ended

December 31, 2024

## Total Fund Growth of Assets

| | Fourth Quarter | Fiscal Year-To-Date | Three Years |
|---|---|---|---|
| Beginning Market Value | $201,740,481 | $191,750,568 | $213,546,642 |
| Net Cash Flow | -$1,469,038 | -$6,112,134 | -$21,431,862 |
| Net Investment Change | $44,042 | $14,677,050 | $8,200,704 |
| Ending Market Value | $200,315,485 | $200,315,485 | $200,315,485 |

## Total Fund Growth of Assets

| | Five Years | Seven Years | Ten Years |
|---|---|---|---|
| Beginning Market Value | $179,309,893 | $175,316,533 | $164,903,371 |
| Net Cash Flow | -$37,621,704 | -$54,987,087 | -$84,169,504 |
| Net Investment Change | $58,627,295 | $79,986,039 | $119,581,617 |
| Ending Market Value | $200,315,485 | $200,315,485 | $200,315,485 |

- The Fund's fiscal year end is December 31st.

## Performance Summary (Gross of Fees) - Annualized

| | | | Ending December 31, 2024 | | |
|---|---|---|---|---|---|
| | Market Value | % of Portfolio | 2024 Q4 | Fiscal YTD | 3 Yrs |
| **Total Fund** | **$200,315,485** | **100.0%** | **0.1%** | **8.1%** | **2.1%** |
| **Total Domestic Large Cap Equity** | **$39,548,493** | **19.7%** | **3.4%** | **27.1%** | **6.5%** |
| **Total Domestic SMID Cap Equity** | **$14,659,263** | **7.3%** | **-1.0%** | **--** | **--** |
| **Total International Large Cap Equity** | **$9,981,514** | **5.0%** | **-6.4%** | **4.8%** | **-4.9%** |
| **Total International Small Cap Equity** | **$10,749,562** | **5.4%** | **-7.3%** | **6.0%** | **-1.2%** |
| **Total Investment Grade Fixed Income** | **$16,581,805** | **8.3%** | **-1.6%** | **3.2%** | **0.1%** |
| **Total Short Duration High Yield Fixed Income** | **$22,079,962** | **11.0%** | **0.5%** | **6.2%** | **3.7%** |
| **Total Mortgages** | **$10,544,444** | **5.3%** | **0.5%** | **5.0%** | **3.4%** |
| **Total Opportunistic High Yield Fixed Income** | **$26,448,272** | **13.2%** | **1.6%** | **8.5%** | **4.6%** |
| **Total Real Estate - Core** | **$16,721,031** | **8.3%** | **0.8%** | **-2.9%** | **-1.9%** |
| **Total Real Estate - Value Add** | **$15,983,784** | **8.0%** | **0.4%** | **-5.0%** | **0.2%** |
| **Total Private Equity** | **$11,847,357** | **5.9%** | | | |
| **Total Infrastructure - Value Add** | **$3,309,375** | **1.7%** | | | |
| **Total Cash Equivalents** | **$1,860,624** | **0.9%** | | | |

Note: The present assumed actuarial rate as determined by the plan actuary is 7.0%.

Note: Time-weighted returns are not shown for asset classes for which internal rate of return (IRR) is a more appropriate performance measurement. IRRs can be found on the Commitment and Funding of Alternative Investments chart.

## Performance Summary (Gross of Fees) - Annualized

| | | | Ending December 31, 2024 | | |
|---|---|---|---|---|---|
| | Market Value | % of Portfolio | 5 Yrs | 7 Yrs | 10 Yrs |
| **Total Fund** | **$200,315,485** | **100.0%** | **6.8%** | **6.9%** | **7.5%** |
| **Total Domestic Large Cap Equity** | **$39,548,493** | **19.7%** | **13.7%** | **13.0%** | **12.7%** |
| **Total Domestic SMID Cap Equity** | **$14,659,263** | **7.3%** | **--** | **--** | **--** |
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| **Total Real Estate - Value Add** | **$15,983,784** | **8.0%** | **--** | **--** | **--** |
| **Total Private Equity** | **$11,847,357** | **5.9%** | | | |
| **Total Infrastructure - Value Add** | **$3,309,375** | **1.7%** | | | |
| **Total Cash Equivalents** | **$1,860,624** | **0.9%** | | | |

**Performance Summary (Gross of Fees)**

| | Fiscal Year Ending December 31st | | | | | |
|---|---|---|---|---|---|---|
| | 2024 | 2023 | 2022 | 2021 | 2020 | 2019 |
| **Total Fund** | **8.1%** | **8.8%** | **-9.7%** | **15.1%** | **13.8%** | **17.1%** |
| *Total Fund Benchmark* | *8.0%* | *9.2%* | *-9.7%* | *14.3%* | *12.8%* | *17.6%* |

| | Fiscal Year Ending December 31st | | | | |
|---|---|---|---|---|---|
| | 2018 | 2017 | 2016 | 2015 | 2014 |
| **Total Fund** | **-2.5%** | **15.4%** | **7.6%** | **4.0%** | **7.9%** |
| *Total Fund Benchmark* | *-3.7%* | *11.1%* | *9.5%* | *1.6%* | *7.2%* |

## Performance Summary (Net of Fees)

| | Fiscal Year Ending December 31st | | | | | |
|---|---|---|---|---|---|---|
| | 2024 | 2023 | 2022 | 2021 | 2020 | 2019 |
| **Total Fund** | **7.4%** | **8.0%** | **-10.4%** | **14.2%** | **13.0%** | **16.2%** |
| *Total Fund Benchmark* | *8.0%* | *9.2%* | *-9.7%* | *14.3%* | *12.8%* | *17.6%* |

| | Fiscal Year Ending December 31st | | | | |
|---|---|---|---|---|---|
| | 2018 | 2017 | 2016 | 2015 | 2014 |
| **Total Fund** | **-3.3%** | **14.5%** | **6.7%** | **3.3%** | **7.1%** |
| *Total Fund Benchmark* | *-3.7%* | *11.1%* | *9.5%* | *1.6%* | *7.2%* |

## Current vs. Policy

| | Current | Current | Policy | Policy Range | Difference | Difference |
|---|---|---|---|---|---|---|
| Domestic Large Cap Equity | $39,548,493 | 19.7% | 17.5% | 12.5% - 22.5% | 2.2% | $4,493,283 |
| Domestic Small/Mid Cap Core Equity | $14,659,263 | 7.3% | 7.5% | 2.5% - 12.5% | -0.2% | -$364,398 |
| International Large Cap Equity | $9,981,514 | 5.0% | 5.0% | 0.0% - 10.0% | 0.0% | -$34,261 |
| International Small Cap Equity | $10,749,562 | 5.4% | 2.5% | 0.0% - 7.5% | 2.9% | $5,741,675 |
| Investment Grade Fixed Income | $16,581,805 | 8.3% | 10.0% | 5.0% - 15.0% | -1.7% | -$3,449,744 |
| Short Duration High Yield Fixed Income | $22,079,962 | 11.0% | 12.5% | 7.5% - 17.5% | -1.5% | -$2,959,473 |
| Mortgages | $10,544,444 | 5.3% | 5.0% | 0.0% - 10.0% | 0.3% | $528,669 |
| Opportunistic High Yield Fixed Income | $26,448,272 | 13.2% | 12.5% | 7.5% - 17.5% | 0.7% | $1,408,837 |
| Real Estate - Core | $16,721,031 | 8.3% | 10.0% | 0.0% - 100.0% | -1.7% | -$3,310,518 |
| Real Estate - Value Add | $15,983,784 | 8.0% | 7.5% | 2.5% - 12.5% | 0.5% | $960,123 |
| Private Credit | $0 | 0.0% | 2.5% | 0.0% - 7.5% | -2.5% | -$5,007,887 |
| Private Equity | $11,847,357 | 5.9% | 5.0% | 0.0% - 10.0% | 0.9% | $1,831,583 |
| Infrastructure - Value Add | $3,309,375 | 1.7% | 2.5% | 0.0% - 7.5% | -0.8% | -$1,698,512 |
| Cash Equivalents | $1,860,624 | 0.9% | 0.0% | 0.0% - 0.0% | 0.9% | $1,860,624 |
| **Total** | **$200,315,485** | **100.0%** | **100.0%** | | | |

- Policy adopted February 2024; effective TBD.
- Cash Equivalents Includes:
  - $81,839 income distribution from real estate - core (Boyd Watterson GSA Fund, LP) received in January 2025.
  - $215,749 income distribution from real estate - value add (Boyd Watterson State Government Fund, LP) received in January 2025.

# Operating Engineers Local No. 77 Pension Plan – Asset Allocation

- Asset allocation reviews were provided on the following dates: February 9, 2021, February 8, 2022, February 14, 2023, August 8, 2023, and February 13, 2024.
- Private equity pacing analyses were provided on the following dates: May 11, 2021, May 10, 2022, February 14, 2023, and February 13, 2024.
- At the February 13, 2024, meeting, the Trustees adopted Policy: 17.5% domestic large cap equity (+2.5%), 0.0% domestic mid cap equity (-5.0%), 7.5% domestic small/mid cap core equity (new asset class), 0.0% domestic small cap equity (-5.0%), 5.0% international large cap equity, 2.5% international small cap equity (-2.5%), 10.0% investment grade fixed income, 12.5% short duration high yield fixed income, 5.0% mortgages, 12.5% (+12.5%) opportunistic high yield fixed income, 10.0% real estate - core, 7.5% real estate – value add (-2.5%), 0.0% opportunistic strategies (-10.0%), 2.5% private credit (new asset class), 5.0% private equity, 2.5% infrastructure – value add. To rebalance closer to Policy, the Trustees approved: submit a partial redemption request of $250K from Boyd Watterson State Government Fund, LP (real estate – value add); effective June 30, 2024. Status: Redemption was fully satisfied in October 2024.
- At the meeting on May 14, 2024, to rebalance closer to Policy, the Trustees approved: 1) Retain Loomis Sayles (domestic small/mid cap core equity) for a $14.0M mandate. Status: Completed September 2024. 2) Retain Arena Capital (opportunistic high yield) for a $5.0M mandate. Status: Completed August 2024. 3) Terminate Times Square Capital Management (domestic mid cap equity) and Eaton Vance Small Cap CIT Fund (domestic small cap equity) and utilize proceeds to fund newly hired managers Loomis Sayles and Arena Capital. Status: Completed September 2024.
- At the meeting on August 19, 2024, the Trustees approved: 1) Retain GCM Grosvenor Private Credit Fund (private credit) for a $5.0M mandate. Status: Documents submitted, pending capital calls. 2) Rescind remaining balance of withdrawal request with Principal U.S. Property Account (real estate – core). Status: Completed August 2024.

**Recommendation: After presentation of the asset allocation review, consider modifying the Policy.**

## Commitment and Funding of Real Estate - Core (In Millions) as of December 31, 2024

| Investments | | Commitments | | | Contributions & Distributions | | Valuations | | Performance | |
|---|---|---|---|---|---|---|---|---|---|---|
| Account Name | Vintage Year | Commitment | Unfunded Commitment | Call Ratio | Cumulative Contributions | Cumulative Distributions | Valuation | Total Value | DPI | TVPI |
| Principal U.S. Property Account | 2001 | $33.8 | $0.0 | 1.0 | $33.8 | $51.5 | $6.1 | $57.6 | 1.5 | 1.7 |
| Multi-Employer Property Trust | 2001 | $20.0 | $0.0 | 1.0 | $20.0 | $28.0 | $5.1 | $33.1 | 1.4 | 1.7 |
| Boyd Watterson GSA Fund, LP | 2015 | $5.0 | $0.0 | 1.0 | $5.0 | $2.7 | $5.6 | $8.2 | 0.5 | 1.6 |
| **Total** | | **$58.8** | **$0.0** | **1.0** | **$58.8** | **$82.2** | **$16.7** | **$98.9** | **1.4** | **1.7** |

## Commitment and Funding of Real Estate - Value Add (In Millions) as of December 31, 2024

| Investments | | Commitments | | | Contributions & Distributions | | Valuations | | Performance | |
|---|---|---|---|---|---|---|---|---|---|---|
| Account Name | Vintage Year | Commitment | Unfunded Commitment | Call Ratio | Cumulative Contributions | Cumulative Distributions | Valuation | Total Value | DPI | TVPI |
| Boyd Watterson State Government Fund, LP | 2021 | $18.0 | $0.0 | 1.0 | $18.0 | $1.6 | $16.0 | $17.6 | 0.1 | 1.0 |
| **Total** | | **$18.0** | **$0.0** | **1.0** | **$18.0** | **$1.6** | **$16.0** | **$17.6** | **0.1** | **1.0** |

## Commitment and Funding of Opportunistic High Yield Fixed Income (In Millions) as of December 31, 2024

| Investments | | Commitments | | | Contributions & Distributions | | Valuations | | Performance | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Account Name | Vintage Year | Commitment | Unfunded Commitment | Call Ratio | Cumulative Contributions | Cumulative Distributions | Valuation | Total Value | DPI | TVPI | IRR |
| Grosvenor Opportunistic Credit Fund III, Ltd | 2014 | $3.0 | $0.0 | 1.0 | $3.0 | $3.4 | $0.1 | $3.5 | 1.1 | 1.2 | 4.5% |
| Grosvenor Opportunistic Credit Fund IV, Ltd | 2015 | $3.0 | $0.0 | 1.0 | $3.0 | $3.2 | $0.1 | $3.4 | 1.1 | 1.1 | 2.8% |
| GCM Grosvenor Opportunistic Credit Fund, Ltd | 2017 | $8.7 | $0.0 | 1.0 | $8.7 | $0.9 | $10.8 | $11.8 | 0.1 | 1.4 | |
| **Total** | | **$14.7** | **$0.0** | **1.0** | **$14.7** | **$7.6** | **$11.1** | **$18.6** | **0.5** | **1.3** | |

## Commitment and Funding of Private Equity (In Millions) as of December 31, 2024

| Investments | | Commitments | | | Contributions & Distributions | | Valuations | | Performance | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Account Name | Vintage Year | Commitment | Unfunded Commitment | Call Ratio | Cumulative Contributions | Cumulative Distributions | Valuation | Total Value | DPI | TVPI | IRR |
| GCM Grosvenor Secondary Opportunities Feeder Fund II, LP | 2018 | $11.0 | $3.2 | 0.7 | $7.9 | $3.6 | $7.0 | $10.6 | 0.5 | 1.3 | 9.6% |
| [1,2]GCM Grosvenor Secondary Opportunities Feeder Fund III, LP | 2021 | $8.5 | $4.6 | 0.5 | $3.9 | $0.0 | $4.8 | $4.9 | 0.0 | 1.2 | |
| **Total** | | **$19.5** | **$7.8** | **0.6** | **$11.9** | **$3.6** | **$11.8** | **$15.5** | **0.3** | **1.3** | |

[1]Unfunded commitment includes recallable distributions of $208K.

[2]Commitment amount includes $2.5M unfunded commitment adjustment.

## Commitment and Funding of Private Credit (In Millions) as of December 31, 2024

| Investments | | Commitments | | | Contributions & Distributions | | Valuations | | Performance | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Account Name | Vintage Year | Commitment | Unfunded Commitment | Call Ratio | Cumulative Contributions | Cumulative Distributions | Valuation | Total Value | DPI | TVPI | IRR |
| [1]GCM Grosvenor Private Credit Fund, LP | 2024 | $5.0 | $5.0 | | $0.0 | $0.0 | $0.0 | $0.0 | | | |
| **Total** | | **$5.0** | **$5.0** | | **$0.0** | **$0.0** | **$0.0** | **$0.0** | | | |

[1]Unfunded commitment after January 2, 2025 is $4.1M.

## Commitment and Funding of Infrastructure - Value Add (In Millions) as of December 31, 2024

| Investments | | Commitments | | | Contributions & Distributions | | Valuations | | Performance | |
|---|---|---|---|---|---|---|---|---|---|---|
| Account Name | Vintage Year | Commitment | Unfunded Commitment | Call Ratio | Cumulative Contributions | Cumulative Distributions | Valuation | Total Value | DPI | TVPI |
| [1]WaCap - SP Infrastructure Fund IV Feeder | 2021 | $5.0 | $1.9 | 0.7 | $3.3 | $0.6 | $3.3 | $3.9 | 0.2 | 1.2 |
| **Total** | | **$5.0** | **$1.9** | **0.7** | **$3.3** | **$0.6** | **$3.3** | **$3.9** | **0.2** | **1.2** |

[1]Unfunded commitment includes recallable distributions of $203K.

- Performance data included in the table above may differ from performance data provided by the investment manager due to the availability and timing of data used in the calculations.

## Summary of Investment Manager Recommendations

| Manager | Recommendation | Initiated | Action Required | Comment |
|---|---|---|---|---|
| Wedge Capital Management | Fee Reduction - no recommendation required | 4Q2024 | Discuss with Trustees | In a letter dated, December 5, 2024, Wedge Capital Management notified the Fund of a reduction in fees. Effective October 1, 2024, the new fee schedule will be .25% per year on the first $50M, .20% on the next $50M and .15% on all remaining assets under management. This fee reduction will result in an estimated annual savings of approximately $23,000 per year across all OE 77 Account relationships. |

Performance Detail (Net of Fees) - Annualized

| | | | Ending December 31, 2024 | | | | |
|---|---|---|---|---|---|---|---|
| | Market Value | % of Portfolio | 2024 Q4 | Fiscal YTD | 2 Yrs | 3 Yrs | 5 Yrs |
| **Total Fund** | **$200,315,485** | **100.0%** | **0.0%** | **7.4%** | **7.7%** | **1.3%** | **6.1%** |
| **Total Domestic Large Cap Equity** | **$39,548,493** | **19.7%** | **3.4%** | **26.8%** | **26.7%** | **6.1%** | **13.1%** |
| Northern Trust Collective Russell 1000 Growth Index Fund | $20,980,406 | 10.5% | 7.1% | 33.3% | -- | -- | -- |
| *Russell 1000 Growth* | | | *7.1%* | *33.4%* | *--* | *--* | *--* |
| Wedge Capital Management - QVM | $18,568,087 | 9.3% | -0.6% | 19.9% | 18.4% | 7.0% | 11.5% |
| *Russell 1000 Value* | | | *-2.0%* | *14.4%* | *12.9%* | *5.6%* | *8.7%* |
| **Total Domestic SMID Cap Equity** | **$14,659,263** | **7.3%** | **-1.0%** | **--** | **--** | **--** | **--** |
| Loomis Sayles Small/Mid Cap Growth | $14,659,263 | 7.3% | -1.0% | -- | -- | -- | -- |
| *Russell 2500 Growth* | | | *2.4%* | *--* | *--* | *--* | *--* |
| **Total International Large Cap Equity** | **$9,981,514** | **5.0%** | **-6.5%** | **4.1%** | **5.1%** | **-5.5%** | **2.9%** |
| Hardman Johnston International Equity Group Trust | $5,504,014 | 2.7% | -3.4% | 13.0% | 9.2% | -3.1% | 4.5% |
| *MSCI EAFE* | | | *-8.1%* | *3.8%* | *10.8%* | *1.6%* | *4.7%* |
| *MSCI ACWI ex USA Growth* | | | *-7.9%* | *5.1%* | *9.5%* | *-2.7%* | *3.4%* |
| Barrow Hanley Non-US Value CIT - Founders Class | $4,477,500 | 2.2% | -10.0% | -5.1% | -- | -- | -- |
| *MSCI EAFE Value* | | | *-7.1%* | *5.7%* | *--* | *--* | *--* |

**Performance Detail (Net of Fees) - Annualized**

| | Market Value | % of Portfolio | Ending December 31, 2024 2024 Q4 | Fiscal YTD | 2 Yrs | 3 Yrs | 5 Yrs |
|---|---|---|---|---|---|---|---|
| **Total International Small Cap Equity** | **$10,749,562** | **5.4%** | **-7.5%** | **5.1%** | **10.1%** | **-2.1%** | **4.1%** |
| Victory Trivalent International Small-Cap Collective Fund | $10,749,562 | 5.4% | -7.5% | 5.1% | 10.1% | -2.1% | 4.1% |
| *S&P Developed Ex-U.S. Small Cap (Net)* | | | *-8.9%* | *-0.1%* | *6.4%* | *-3.9%* | *2.1%* |
| **Total Investment Grade Fixed Income** | **$16,581,805** | **8.3%** | **-1.7%** | **2.9%** | **4.0%** | **-0.2%** | **0.9%** |
| Wedge Capital Management | $16,581,805 | 8.3% | -1.7% | 2.9% | 4.0% | -0.2% | 0.9% |
| *Wedge Custom Benchmark* | | | *-1.6%* | *3.0%* | *4.1%* | *-0.2%* | *0.9%* |
| **Total Short Duration High Yield Fixed Income** | **$22,079,962** | **11.0%** | **0.4%** | **5.7%** | **6.5%** | **3.2%** | **3.2%** |
| Chartwell Investment Partners SDHY | $22,079,962 | 11.0% | 0.4% | 5.7% | 6.5% | 3.2% | 3.2% |
| *ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR* | | | *0.8%* | *6.7%* | *7.8%* | *4.0%* | *4.1%* |
| *Bloomberg US Govt/Credit Int TR* | | | *-1.6%* | *3.0%* | *4.1%* | *-0.2%* | *0.9%* |
| **Total Mortgages** | **$10,544,444** | **5.3%** | **0.4%** | **4.4%** | **4.3%** | **2.8%** | **2.7%** |
| Ullico - J for Jobs | $4,962,140 | 2.5% | 0.3% | 4.4% | 4.2% | 2.9% | 2.7% |
| *Bloomberg US Aggregate TR* | | | *-3.1%* | *1.2%* | *3.4%* | *-2.4%* | *-0.3%* |
| Washington Capital JMT Mortgage Income Fund | $5,582,304 | 2.8% | 0.4% | 4.5% | 4.5% | 2.8% | 2.8% |
| *Bloomberg US Aggregate TR* | | | *-3.1%* | *1.2%* | *3.4%* | *-2.4%* | *-0.3%* |

**Performance Detail (Net of Fees) - Annualized**

| | Market Value | % of Portfolio | Ending December 31, 2024 | | | | |
|---|---|---|---|---|---|---|---|
| | | | 2024 Q4 | Fiscal YTD | 2 Yrs | 3 Yrs | 5 Yrs |
| **Total Opportunistic High Yield Fixed Income** | **$26,448,272** | **13.2%** | **1.4%** | **7.7%** | **6.9%** | **3.7%** | **5.0%** |
| Grosvenor Opportunistic Credit Fund III, Ltd | $89,138 | 0.0% | | | | | |
| Grosvenor Opportunistic Credit Fund IV, Ltd | $137,041 | 0.1% | | | | | |
| GCM Grosvenor Opportunistic Credit Fund, Ltd | $10,825,240 | 5.4% | 1.8% | 8.0% | 7.8% | 5.3% | 5.3% |
| *50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index* | | | *1.2%* | *8.6%* | *11.0%* | *5.0%* | *5.1%* |
| *HFRI Credit Index* | | | *2.4%* | *10.0%* | *8.9%* | *4.9%* | *5.8%* |
| Corbin ERISA Opportunity Fund, LP - Class C Shares | $10,184,739 | 5.1% | 1.4% | 9.4% | 6.9% | 3.0% | -- |
| *50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index* | | | *1.2%* | *8.6%* | *11.0%* | *5.0%* | *--* |
| *HFRI Credit Index* | | | *2.4%* | *10.0%* | *8.9%* | *4.9%* | *--* |
| Arena Short Duration High Yield Fund, LP - Series E | $5,212,114 | 2.6% | 2.1% | -- | -- | -- | -- |
| *50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index* | | | *1.2%* | *--* | *--* | *--* | *--* |

### Performance Detail (Net of Fees) - Annualized

| | Market Value | % of Portfolio | Ending December 31, 2024 | | | | |
|---|---|---|---|---|---|---|---|
| | | | 2024 Q4 | Fiscal YTD | 2 Yrs | 3 Yrs | 5 Yrs |
| **Total Real Estate - Core** | **$16,721,031** | **8.3%** | **0.5%** | **-3.9%** | **-6.9%** | **-3.0%** | **1.7%** |
| Principal U.S. Property Account | $6,091,154 | 3.0% | 1.0% | -2.2% | -6.7% | -3.3% | 2.2% |
| *NCREIF ODCE Equal Weighted Net* | | | *0.8%* | *-2.4%* | *-8.1%* | *-3.1%* | *2.2%* |
| Boyd Watterson GSA Fund, LP | $5,550,295 | 2.8% | 0.2% | -5.9% | -4.6% | -1.6% | 1.7% |
| *NCREIF ODCE Equal Weighted Net* | | | *0.8%* | *-2.4%* | *-8.1%* | *-3.1%* | *2.2%* |
| Multi-Employer Property Trust | $5,079,582 | 2.5% | 0.2% | -3.7% | -9.8% | -4.3% | 1.1% |
| *NCREIF ODCE Equal Weighted Net* | | | *0.8%* | *-2.4%* | *-8.1%* | *-3.1%* | *2.2%* |
| **Total Real Estate - Value Add** | **$15,983,784** | **8.0%** | **0.1%** | **-6.2%** | **-4.4%** | **-1.0%** | **--** |
| Boyd Watterson State Government Fund, LP | $15,983,784 | 8.0% | 0.1% | -6.2% | -4.4% | -1.0% | -- |
| *NCREIF ODCE Equal Weighted Net* | | | *0.8%* | *-2.4%* | *-8.1%* | *-3.1%* | *--* |
| **Total Private Equity** | **$11,847,357** | **5.9%** | | | | | |
| GCM Grosvenor Secondary Opportunities Feeder Fund II, LP | $7,005,211 | 3.5% | | | | | |
| GCM Grosvenor Secondary Opportunities Feeder Fund III, LP | $4,842,146 | 2.4% | | | | | |

## Performance Detail (Net of Fees) - Annualized

| | | | Ending December 31, 2024 | | | | |
|---|---|---|---|---|---|---|---|
| | Market Value | % of Portfolio | 2024 Q4 | Fiscal YTD | 2 Yrs | 3 Yrs | 5 Yrs |
| **Total Infrastructure - Value Add** | **$3,309,375** | **1.7%** | | | | | |
| WaCap - SP Infrastructure Fund IV Feeder | $3,309,375 | 1.7% | | | | | |
| **Total Cash Equivalents** | **$1,860,624** | **0.9%** | | | | | |
| Cash Account | $1,563,036 | 0.8% | | | | | |
| Cash in Transit - Boyd Watterson GSA Fund, LP Distribution Proceeds | $81,839 | 0.0% | | | | | |
| Cash in Transit - Boyd Watterson State Government Fund, LP Distribution Proceeds | $215,749 | 0.1% | | | | | |

Performance Detail (Net of Fees) - Annualized

| | | | Ending December 31, 2024 | | | |
|---|---|---|---|---|---|---|
| | Market Value | % of Portfolio | 7 Yrs | 10 Yrs | Inception | Inception Date |
| **Total Fund** | **$200,315,485** | **100.0%** | **6.0%** | **6.6%** | **8.6%** | **Apr-88** |
| **Total Domestic Large Cap Equity** | **$39,548,493** | **19.7%** | **12.4%** | **12.2%** | **--** | **Jul-01** |
| Northern Trust Collective Russell 1000 Growth Index Fund | $20,980,406 | 10.5% | -- | -- | 34.9% | May-23 |
| *Russell 1000 Growth* | | | *--* | *--* | *34.9%* | *May-23* |
| Wedge Capital Management - QVM | $18,568,087 | 9.3% | 10.0% | 10.3% | 9.8% | Jul-01 |
| *Russell 1000 Value* | | | *8.4%* | *8.5%* | *7.6%* | *Jul-01* |
| **Total Domestic SMID Cap Equity** | **$14,659,263** | **7.3%** | **--** | **--** | **170.5%** | **Sep-24** |
| Loomis Sayles Small/Mid Cap Growth | $14,659,263 | 7.3% | -- | -- | 170.5% | Sep-24 |
| *Russell 2500 Growth* | | | *--* | *--* | *4.1%* | *Sep-24* |
| **Total International Large Cap Equity** | **$9,981,514** | **5.0%** | **4.1%** | **6.2%** | **--** | **Apr-97** |
| Hardman Johnston International Equity Group Trust | $5,504,014 | 2.7% | 5.2% | 7.0% | 7.6% | Jul-09 |
| *MSCI EAFE* | | | *4.1%* | *5.2%* | *6.4%* | *Jul-09* |
| *MSCI ACWI ex USA Growth* | | | *3.7%* | *5.3%* | *6.6%* | *Jul-09* |
| Barrow Hanley Non-US Value CIT - Founders Class | $4,477,500 | 2.2% | -- | -- | -0.5% | Dec-23 |
| *MSCI EAFE Value* | | | *--* | *--* | *10.0%* | *Dec-23* |

**Performance Detail (Net of Fees) - Annualized**

| | Market Value | % of Portfolio | Ending December 31, 2024 7 Yrs | 10 Yrs | Inception | Inception Date |
|---|---|---|---|---|---|---|
| **Total International Small Cap Equity** | **$10,749,562** | **5.4%** | **--** | **--** | **3.4%** | **Mar-18** |
| Victory Trivalent International Small-Cap Collective Fund | $10,749,562 | 5.4% | -- | -- | 3.4% | Mar-18 |
| *S&P Developed Ex-U.S. Small Cap (Net)* | | | *--* | *--* | *1.6%* | *Mar-18* |
| **Total Investment Grade Fixed Income** | **$16,581,805** | **8.3%** | **1.7%** | **1.7%** | **4.3%** | **Jun-95** |
| Wedge Capital Management | $16,581,805 | 8.3% | 1.7% | 1.8% | 3.2% | Jan-03 |
| *Wedge Custom Benchmark* | | | *1.7%* | *1.7%* | *3.2%* | *Jan-03* |
| **Total Short Duration High Yield Fixed Income** | **$22,079,962** | **11.0%** | **3.4%** | **3.3%** | **3.2%** | **Jan-13** |
| Chartwell Investment Partners SDHY | $22,079,962 | 11.0% | 3.4% | 3.3% | 3.2% | Jan-13 |
| *ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR* | | | *4.4%* | *4.4%* | *4.3%* | *Jan-13* |
| *Bloomberg US Govt/Credit Int TR* | | | *1.7%* | *1.7%* | *1.7%* | *Jan-13* |
| **Total Mortgages** | **$10,544,444** | **5.3%** | **3.2%** | **3.2%** | **3.4%** | **Oct-04** |
| Ullico - J for Jobs | $4,962,140 | 2.5% | 2.9% | 3.0% | 2.8% | Oct-04 |
| *Bloomberg US Aggregate TR* | | | *1.0%* | *1.3%* | *3.0%* | *Oct-04* |
| Washington Capital JMT Mortgage Income Fund | $5,582,304 | 2.8% | 3.4% | 3.6% | 4.6% | Oct-04 |
| *Bloomberg US Aggregate TR* | | | *1.0%* | *1.3%* | *3.0%* | *Oct-04* |

**Performance Detail (Net of Fees) - Annualized**

| | Market Value | % of Portfolio | 7 Yrs | 10 Yrs | Inception | Inception Date |
|---|---|---|---|---|---|---|
| | | | Ending December 31, 2024 | | | |
| **Total Opportunistic High Yield Fixed Income** | **$26,448,272** | **13.2%** | **4.5%** | **5.3%** | **5.3%** | **Jan-14** |
| Grosvenor Opportunistic Credit Fund III, Ltd | $89,138 | 0.0% | | | | |
| Grosvenor Opportunistic Credit Fund IV, Ltd | $137,041 | 0.1% | | | | |
| GCM Grosvenor Opportunistic Credit Fund, Ltd | $10,825,240 | 5.4% | 5.3% | -- | 5.2% | Feb-17 |
| *50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index* | | | *5.1%* | -- | *5.1%* | *Feb-17* |
| *HFRI Credit Index* | | | *5.0%* | -- | *5.0%* | *Feb-17* |
| Corbin ERISA Opportunity Fund, LP - Class C Shares | $10,184,739 | 5.1% | -- | -- | 5.9% | Jan-20 |
| *50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index* | | | -- | -- | *5.1%* | *Jan-20* |
| *HFRI Credit Index* | | | -- | -- | *5.8%* | *Jan-20* |
| Arena Short Duration High Yield Fund, LP - Series E | $5,212,114 | 2.6% | -- | -- | 4.2% | Aug-24 |
| *50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index* | | | -- | -- | *3.6%* | *Aug-24* |

**Performance Detail (Net of Fees) - Annualized**

| | Market Value | % of Portfolio | 7 Yrs | 10 Yrs | Inception | Inception Date |
|---|---|---|---|---|---|---|
| | | | Ending December 31, 2024 | | | |
| **Total Real Estate - Core** | **$16,721,031** | **8.3%** | **3.2%** | **5.1%** | **5.5%** | **Jul-01** |
| Principal U.S. Property Account | $6,091,154 | 3.0% | 3.5% | 5.5% | 6.0% | Oct-01 |
| *NCREIF ODCE Equal Weighted Net* | | | *3.4%* | *5.3%* | *5.8%* | *Oct-01* |
| Boyd Watterson GSA Fund, LP | $5,550,295 | 2.8% | 3.5% | -- | 5.1% | Feb-15 |
| *NCREIF ODCE Equal Weighted Net* | | | *3.4%* | -- | *5.3%* | *Feb-15* |
| Multi-Employer Property Trust | $5,079,582 | 2.5% | 2.3% | 4.1% | 5.0% | Jul-01 |
| *NCREIF ODCE Equal Weighted Net* | | | *3.4%* | *5.3%* | *5.7%* | *Jul-01* |
| **Total Real Estate - Value Add** | **$15,983,784** | **8.0%** | **--** | **--** | **-0.4%** | **Oct-21** |
| Boyd Watterson State Government Fund, LP | $15,983,784 | 8.0% | -- | -- | -0.4% | Oct-21 |
| *NCREIF ODCE Equal Weighted Net* | | | -- | -- | *-0.7%* | *Oct-21* |
| **Total Private Equity** | **$11,847,357** | **5.9%** | | | | |
| GCM Grosvenor Secondary Opportunities Feeder Fund II, LP | $7,005,211 | 3.5% | | | | |
| GCM Grosvenor Secondary Opportunities Feeder Fund III, LP | $4,842,146 | 2.4% | | | | |
| **Total Infrastructure - Value Add** | **$3,309,375** | **1.7%** | | | | |
| WaCap - SP Infrastructure Fund IV Feeder | $3,309,375 | 1.7% | | | | |

Performance Detail (Net of Fees) - Annualized

| | Market Value | % of Portfolio | 7 Yrs | 10 Yrs | Inception | Inception Date |
|---|---|---|---|---|---|---|
| | | | Ending December 31, 2024 | | | |
| **Total Infrastructure - Value Add** | **$3,309,375** | **1.7%** | | | | |
| WaCap - SP Infrastructure Fund IV Feeder | $3,309,375 | 1.7% | | | | |
| **Total Cash Equivalents** | **$1,860,624** | **0.9%** | | | | |
| Cash Account | $1,563,036 | 0.8% | | | | |
| Cash in Transit - Boyd Watterson GSA Fund, LP Distribution Proceeds | $81,839 | 0.0% | | | | |
| Cash in Transit - Boyd Watterson State Government Fund, LP Distribution Proceeds | $215,749 | 0.1% | | | | |

| Account Information | |
|---|---|
| Account Name | **Northern Trust Collective Russell 1000 Growth Index Fund** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Passive** |
| Inception Date | **5/01/23** |
| Account Type | **Domestic Large Cap Growth Equity** |
| Benchmark | **Russell 1000 Growth** |
| Universe | **eV US Large Cap Growth Equity Net** |

**Northern Trust Collective Russell 1000 Growth Index Fund**
Ending December 31, 2024

| | **Fourth Quarter** | **Inception 5/1/23** |
|---|---|---|
| Beginning Market Value | $20,155,286 | $0 |
| Net Cash Flow | -$603,736 | $12,260,365 |
| Net Investment Change | $1,428,856 | $8,720,041 |
| Ending Market Value | $20,980,406 | $20,980,406 |

| | | | | | | | | | | | Calendar Years | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 Q4 | Rank | Fiscal YTD | Rank | 1 Yr | Rank | 3 Yrs | Rank | 5 Yrs | Rank | 2024 | Rank | 2023 | Rank | 2022 | Rank | 2021 | Rank | 2020 | Rank | Inception | Inception Date |
| Northern Trust Collective Russell 1000 Growth Index Fund | 7.1% | 20 | 33.3% | 25 | 33.3% | 25 | -- | -- | -- | -- | 33.3% | 25 | -- | -- | -- | -- | -- | -- | -- | -- | 34.9% | May-23 |
| *Russell 1000 Growth* | *7.1%* | *20* | *33.4%* | *25* | *33.4%* | *25* | -- | -- | -- | -- | *33.4%* | *25* | -- | -- | -- | -- | -- | -- | -- | -- | *34.9%* | *May-23* |

Note: Returns are net of fees.

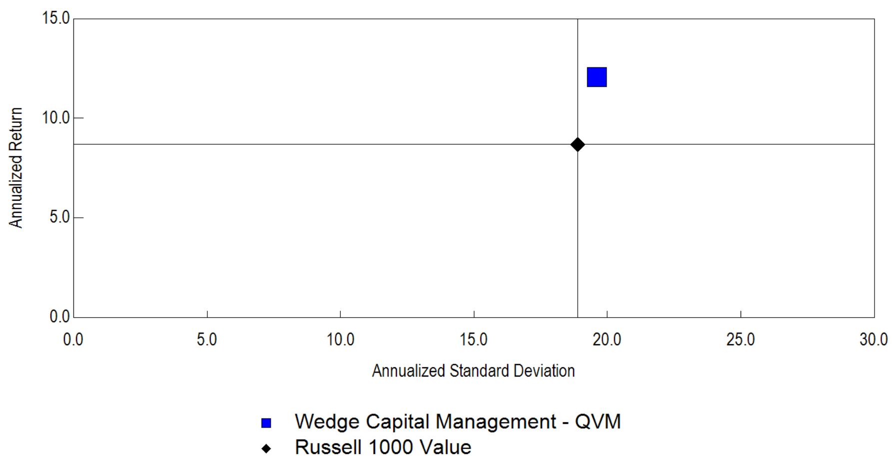
## Account Information

| | |
|---|---|
| Account Name | **Wedge Capital Management - QVM** |
| Account Structure | **Separate Account** |
| Investment Style | **Active** |
| Inception Date | **7/01/01** |
| Account Type | **Domestic Large Cap Value Equity** |
| Benchmark | **Russell 1000 Value** |
| Universe | **eV US Large Cap Value Equity Gross** |

## Wedge Capital Management - QVM
Ending December 31, 2024

| | Fourth Quarter | Inception 7/1/01 |
|---|---|---|
| Beginning Market Value | $18,665,599 | $22,264,495 |
| Net Cash Flow | $0 | -$53,054,949 |
| Net Investment Change | -$97,512 | $49,358,541 |
| Ending Market Value | $18,568,087 | $18,568,087 |

### Annualized Return vs. Annualized Standard Deviation
### 5 Years Ending December 31, 2024




### 3 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Wedge Capital Management - QVM | 7.5% | 18.0% | 108.8% | 99.6% |
| Russell 1000 Value | 5.6% | 16.9% | 100.0% | 100.0% |

### 5 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Wedge Capital Management - QVM | 12.1% | 19.6% | 109.7% | 95.9% |
| Russell 1000 Value | 8.7% | 18.9% | 100.0% | 100.0% |

| | | | | | | | | | | | Calendar Years | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 Q4 | Rank | Fiscal YTD | Rank | 1 Yr | Rank | 3 Yrs | Rank | 5 Yrs | Rank | 2024 | Rank | 2023 | Rank | 2022 | Rank | 2021 | Rank | 2020 | Rank | Inception | Inception Date |
| Wedge Capital Management - QVM | -0.5% | 33 | 20.5% | 13 | 20.5% | 13 | 7.5% | 44 | 12.1% | 27 | 20.5% | 13 | 17.5% | 26 | -12.3% | 88 | 33.2% | 9 | 6.8% | 38 | 10.4% | Jul-01 |
| *Russell 1000 Value* | *-2.0%* | *67* | *14.4%* | *56* | *14.4%* | *56* | *5.6%* | *73* | *8.7%* | *82* | *14.4%* | *56* | *11.5%* | *62* | *-7.5%* | *69* | *25.2%* | *72* | *2.8%* | *62* | *7.6%* | *Jul-01* |

Note: Returns are gross of fees.

| Account Information | |
|---|---|
| Account Name | **Loomis Sayles Small/Mid Cap Growth** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **9/01/24** |
| Account Type | **Domestic Small/Mid Cap Equity** |
| Benchmark | **Russell 2500 Growth** |
| Universe | **eV US Small-Mid Cap Growth Equity Gross** |

## Loomis Sayles Small/Mid Cap Growth
Ending December 31, 2024

| | **Fourth Quarter** | **Inception 9/1/24** |
|---|---|---|
| Beginning Market Value | $14,809,440 | $0 |
| Net Cash Flow | $0 | $14,000,980 |
| Net Investment Change | -$150,177 | $658,283 |
| Ending Market Value | $14,659,263 | $14,659,263 |

## Account Information

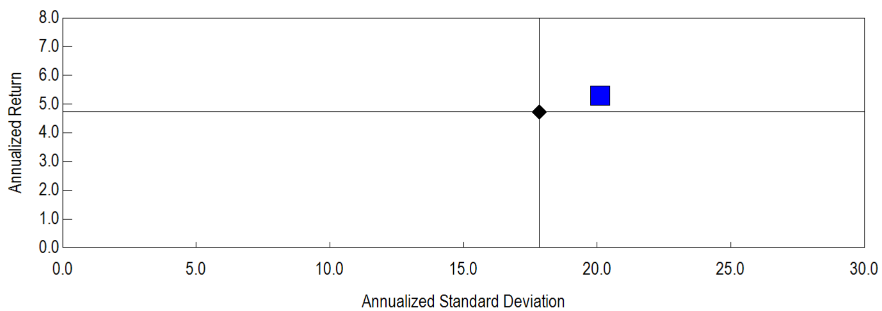
| | |
|---|---|
| Account Name | **Hardman Johnston International Equity Group Trust** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **7/01/09** |
| Account Type | **International Large Cap Equity** |
| Benchmark | **MSCI EAFE** |
| Universe | **eV Non-US Diversified Growth Eq Gross** |

## Hardman Johnston International Equity Group Trust

Ending December 31, 2024

| | Fourth Quarter | Inception 7/1/09 |
|---|---|---|
| Beginning Market Value | $5,700,161 | $6,099,925 |
| Net Cash Flow | $0 | -$12,935,348 |
| Net Investment Change | -$196,147 | $12,339,436 |
| Ending Market Value | $5,504,014 | $5,504,014 |

### Annualized Return vs. Annualized Standard Deviation
### 5 Years Ending December 31, 2024




■ Hardman Johnston International Equity Group Trust
◆ MSCI EAFE

### 3 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Hardman Johnston International Equity Group Trust | -2.4% | 19.5% | 88.9% | 106.1% |
| MSCI EAFE | 1.6% | 16.8% | 100.0% | 100.0% |

### 5 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Hardman Johnston International Equity Group Trust | 5.3% | 20.1% | 99.1% | 98.3% |
| MSCI EAFE | 4.7% | 17.8% | 100.0% | 100.0% |

| | 2024 Q4 | Rank | 1 Yr | Rank | 3 Yrs | Rank | 5 Yrs | Rank | Calendar Years: 2024 | Rank | 2023 | Rank | 2022 | Rank | 2021 | Rank | 2020 | Rank | Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hardman Johnston International Equity Group Trust | -3.3% | 13 | 13.8% | 10 | -2.4% | 45 | 5.3% | 46 | 13.8% | 10 | 6.4% | 93 | -23.1% | 39 | 1.9% | 90 | 36.5% | 15 | 8.4% | Jul-09 |
| *MSCI EAFE* | *-8.1%* | *63* | *3.8%* | *50* | *1.6%* | *12* | *4.7%* | *54* | *3.8%* | *50* | *18.2%* | *36* | *-14.5%* | *5* | *11.3%* | *41* | *7.8%* | *99* | *6.4%* | *Jul-09* |
| *MSCI ACWI ex USA Growth* | *-7.9%* | *60* | *5.1%* | *42* | *-2.7%* | *50* | *3.4%* | *73* | *5.1%* | *42* | *14.0%* | *70* | *-23.1%* | *38* | *5.1%* | *79* | *22.2%* | *60* | *6.6%* | *Jul-09* |

Note: Returns are gross of fees.

| Account Information | |
|---|---|
| Account Name | **Barrow Hanley Non-US Value CIT - Founders Class** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **12/01/23** |
| Account Type | **International Large Cap Value Equity** |
| Benchmark | **MSCI EAFE Value** |
| Universe | **eV Non-US Diversified Value Eq Gross** |

**Barrow Hanley Non-US Value CIT - Founders Class**
Ending December 31, 2024

| | Fourth Quarter | Inception 12/1/23 |
|---|---|---|
| Beginning Market Value | $4,977,000 | $0 |
| Net Cash Flow | $0 | $4,500,000 |
| Net Investment Change | -$499,500 | -$22,500 |
| Ending Market Value | $4,477,500 | $4,477,500 |

| | 2024 Q4 | Rank | 1 Yr | Rank | 3 Yrs | Rank | 5 Yrs | Rank | Calendar Years 2024 | Rank | 2023 | Rank | 2022 | Rank | 2021 | Rank | 2020 | Rank | Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barrow Hanley Non-US Value CIT - Founders Class | -9.9% | 94 | -4.6% | 98 | -- | -- | -- | -- | -4.6% | 98 | -- | -- | -- | -- | -- | -- | -- | -- | 0.1% | Dec-23 |
| *MSCI EAFE Value* | *-7.1%* | *44* | *5.7%* | *48* | -- | -- | -- | -- | *5.7%* | *48* | -- | -- | -- | -- | -- | -- | -- | -- | *10.0%* | *Dec-23* |

Note: Returns are gross of fees.

## Account Information

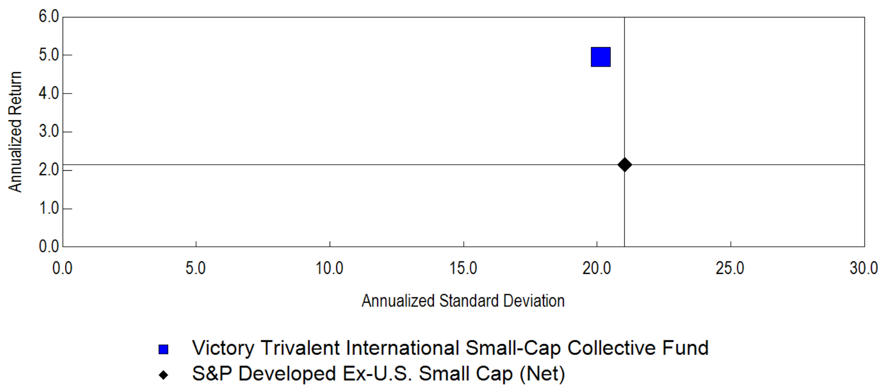
| | |
|---|---|
| Account Name | Victory Trivalent International Small-Cap Collective Fund |
| Account Structure | Commingled Fund |
| Investment Style | Active |
| Inception Date | 3/01/18 |
| Account Type | International Small Cap Equity |
| Benchmark | S&P Developed Ex-U.S. Small Cap (Net) |
| Universe | eV Non-US Diversified Small Cap Eq Gross |

## Victory Trivalent International Small-Cap Collective Fund

Ending December 31, 2024

| | Fourth Quarter | Inception 3/1/18 |
|---|---|---|
| Beginning Market Value | $11,591,226 | $0 |
| Net Cash Flow | $0 | $8,059,128 |
| Net Investment Change | -$841,665 | $2,690,433 |
| Ending Market Value | $10,749,562 | $10,749,562 |

### Annualized Return vs. Annualized Standard Deviation
### 5 Years Ending December 31, 2024




### 3 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Victory Trivalent International Small-Cap Collective Fund | -1.2% | 18.5% | 103.5% | 95.2% |
| S&P Developed Ex-U.S. Small Cap (Net) | -3.9% | 19.1% | 100.0% | 100.0% |

### 5 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Victory Trivalent International Small-Cap Collective Fund | 5.0% | 20.1% | 106.0% | 96.7% |
| S&P Developed Ex-U.S. Small Cap (Net) | 2.1% | 21.0% | 100.0% | 100.0% |

### Calendar Years

| | 2024 Q4 | Rank | 1 Yr | Rank | 3 Yrs | Rank | 5 Yrs | Rank | 2024 | Rank | 2023 | Rank | 2022 | Rank | 2021 | Rank | 2020 | Rank | Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Victory Trivalent International Small-Cap Collective Fund | -7.3% | 57 | 6.0% | 43 | -1.2% | 49 | 5.0% | 46 | 6.0% | 43 | 16.3% | 42 | -21.9% | 55 | 13.7% | 55 | 16.4% | 36 | 4.2% | Mar-18 |
| *S&P Developed Ex-U.S. Small Cap (Net)* | *-8.9%* | *79* | *-0.1%* | *76* | *-3.9%* | *63* | *2.1%* | *82* | *-0.1%* | *76* | *13.5%* | *69* | *-21.6%* | *54* | *9.6%* | *78* | *14.3%* | *47* | *1.6%* | *Mar-18* |

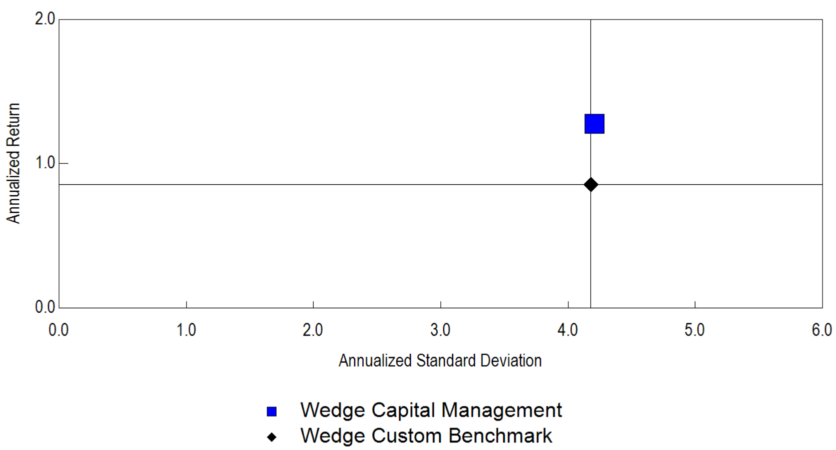
Note: Returns are gross of fees.

| Account Information | |
|---|---|
| Account Name | Wedge Capital Management |
| Account Structure | Separate Account |
| Investment Style | Active |
| Inception Date | 1/01/03 |
| Account Type | Investment Grade Fixed Income |
| Benchmark | Wedge Custom Benchmark |
| Universe | |

**Wedge Capital Management**
Ending December 31, 2024

| | Fourth Quarter | Inception 1/1/03 |
|---|---|---|
| Beginning Market Value | $16,851,863 | $19,772,647 |
| Net Cash Flow | $0 | -$12,877,488 |
| Net Investment Change | -$270,058 | $9,686,645 |
| Ending Market Value | $16,581,805 | $16,581,805 |

**Annualized Return vs. Annualized Standard Deviation**
**5 Years Ending December 31, 2024**




**3 Years Ending December 31, 2024**

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Wedge Capital Management | 0.1% | 5.1% | 101.7% | 98.2% |
| Wedge Custom Benchmark | -0.2% | 5.1% | 100.0% | 100.0% |

**5 Years Ending December 31, 2024**

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Wedge Capital Management | 1.3% | 4.2% | 102.9% | 95.7% |
| Wedge Custom Benchmark | 0.9% | 4.2% | 100.0% | 100.0% |

| | 2024 Q4 | 1 Yr | 3 Yrs | 5 Yrs | Calendar Years 2024 | 2023 | 2022 | 2021 | 2020 | Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Wedge Capital Management | -1.6% | 3.2% | 0.1% | 1.3% | 3.2% | 5.5% | -7.9% | -1.1% | 7.5% | 3.6% | Jan-03 |
| *Wedge Custom Benchmark* | *-1.6%* | *3.0%* | *-0.2%* | *0.9%* | *3.0%* | *5.2%* | *-8.2%* | *-1.4%* | *6.4%* | *3.2%* | *Jan-03* |

Note: Returns are gross of fees.

## Account Information

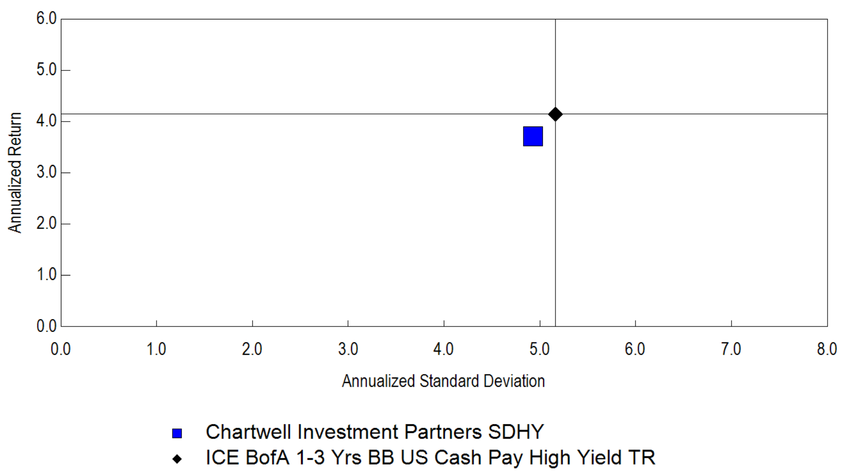
| | |
|---|---|
| Account Name | **Chartwell Investment Partners SDHY** |
| Account Structure | **Separate Account** |
| Investment Style | **Active** |
| Inception Date | **1/31/13** |
| Account Type | **Short Duration High Yield Fixed Income** |
| Benchmark | **ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR** |
| Universe | |

## Chartwell Investment Partners SDHY

Ending December 31, 2024

| | Fourth Quarter | Inception 1/31/13 |
|---|---|---|
| Beginning Market Value | $21,968,551 | $0 |
| Net Cash Flow | $0 | $17,889,919 |
| Net Investment Change | $111,411 | $4,190,043 |
| Ending Market Value | $22,079,962 | $22,079,962 |

### Annualized Return vs. Annualized Standard Deviation
### 5 Years Ending December 31, 2024




### 3 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Chartwell Investment Partners SDHY | 3.7% | 4.3% | 97.8% | 104.5% |
| ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR | 4.0% | 4.1% | 100.0% | 100.0% |

### 5 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Chartwell Investment Partners SDHY | 3.7% | 4.9% | 92.7% | 98.2% |
| ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR | 4.1% | 5.2% | 100.0% | 100.0% |

| | 2024 Q4 | 1 Yr | 3 Yrs | 5 Yrs | Calendar Years 2024 | 2023 | 2022 | 2021 | 2020 | Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chartwell Investment Partners SDHY | 0.5% | 6.2% | 3.7% | 3.7% | 6.2% | 7.8% | -2.7% | 2.8% | 4.7% | 3.7% | Jan-13 |
| *ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR* | *0.8%* | *6.7%* | *4.0%* | *4.1%* | *6.7%* | *8.8%* | *-3.1%* | *3.2%* | *5.4%* | *4.3%* | *Jan-13* |
| *Bloomberg US Govt/Credit Int TR* | *-1.6%* | *3.0%* | *-0.2%* | *0.9%* | *3.0%* | *5.2%* | *-8.2%* | *-1.4%* | *6.4%* | *1.7%* | *Jan-13* |

Note: Returns are gross of fees.

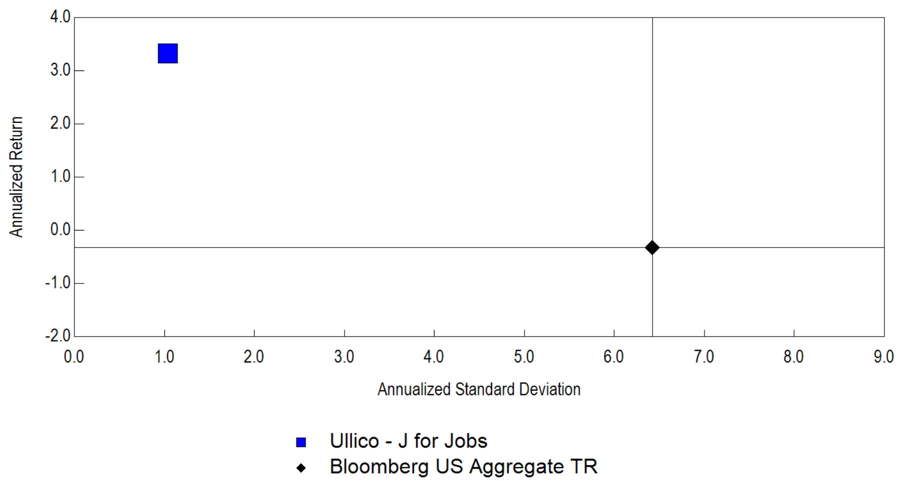
## Account Information

| | |
|---|---|
| Account Name | **Ullico - J for Jobs** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **10/01/04** |
| Account Type | **Mortgages** |
| Benchmark | **Bloomberg US Aggregate TR** |
| Universe | |

## Ullico - J for Jobs
Ending December 31, 2024

| | Fourth Quarter | Inception 10/1/04 |
|---|---|---|
| Beginning Market Value | $4,946,022 | $10,000,000 |
| Net Cash Flow | $0 | -$8,968,786 |
| Net Investment Change | $16,119 | $3,930,926 |
| Ending Market Value | $4,962,140 | $4,962,140 |

**Annualized Return vs. Annualized Standard Deviation**
**5 Years Ending December 31, 2024**




## 3 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Ullico - J for Jobs | 3.5% | 1.3% | 25.1% | -5.0% |
| Bloomberg US Aggregate TR | -2.4% | 7.8% | 100.0% | 100.0% |

## 5 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Ullico - J for Jobs | 3.3% | 1.0% | 25.2% | -10.2% |
| Bloomberg US Aggregate TR | -0.3% | 6.4% | 100.0% | 100.0% |

| | 2024 Q4 | 1 Yr | 3 Yrs | 5 Yrs | Calendar Years 2024 | 2023 | 2022 | 2021 | 2020 | Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ullico - J for Jobs | 0.5% | 5.0% | 3.5% | 3.3% | 5.0% | 4.5% | 0.9% | 3.6% | 2.6% | 3.3% | Oct-04 |
| *Bloomberg US Aggregate TR* | *-3.1%* | *1.2%* | *-2.4%* | *-0.3%* | *1.2%* | *5.5%* | *-13.0%* | *-1.5%* | *7.5%* | *3.0%* | *Oct-04* |

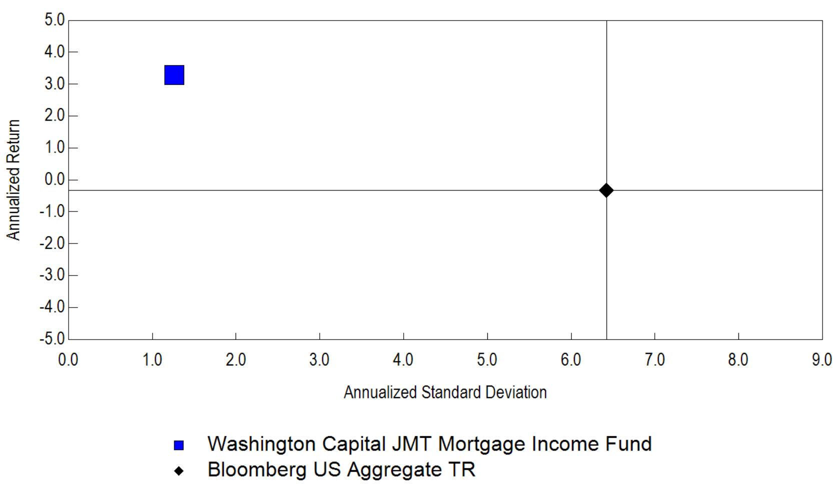
Note: Returns are gross of fees.

| Account Information | |
|---|---|
| Account Name | **Washington Capital JMT Mortgage Income Fund** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **10/01/04** |
| Account Type | **Mortgages** |
| Benchmark | **Bloomberg US Aggregate TR** |
| Universe | |

**Washington Capital JMT Mortgage Income Fund**
Ending December 31, 2024

| | **Fourth Quarter** | **Inception 10/1/04** |
|---|---|---|
| Beginning Market Value | $5,553,494 | $5,000,000 |
| Net Cash Flow | $0 | -$3,500,000 |
| Net Investment Change | $28,810 | $4,082,304 |
| Ending Market Value | $5,582,304 | $5,582,304 |

**Annualized Return vs. Annualized Standard Deviation**
**5 Years Ending December 31, 2024**




**3 Years Ending December 31, 2024**

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Washington Capital JMT Mortgage Income Fund | 3.3% | 1.5% | 27.2% | -1.6% |
| Bloomberg US Aggregate TR | -2.4% | 7.8% | 100.0% | 100.0% |

**5 Years Ending December 31, 2024**

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Washington Capital JMT Mortgage Income Fund | 3.3% | 1.3% | 28.4% | -5.6% |
| Bloomberg US Aggregate TR | -0.3% | 6.4% | 100.0% | 100.0% |

| | | | | | Calendar Years | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 Q4 | 1 Yr | 3 Yrs | 5 Yrs | 2024 | 2023 | 2022 | 2021 | 2020 | Inception | Inception Date |
| Washington Capital JMT Mortgage Income Fund | 0.5% | 5.0% | 3.3% | 3.3% | 5.0% | 5.0% | 0.1% | 3.2% | 3.3% | 5.0% | Oct-04 |
| *Bloomberg US Aggregate TR* | *-3.1%* | *1.2%* | *-2.4%* | *-0.3%* | *1.2%* | *5.5%* | *-13.0%* | *-1.5%* | *7.5%* | *3.0%* | *Oct-04* |

Note: Returns are gross of fees.

| Account Information | |
|---|---|
| Account Name | **Grosvenor Opportunistic Credit Fund III, Ltd** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **1/01/14** |
| Account Type | **Opportunistic High Yield Fixed Income** |
| Benchmark | |
| Universe | |

## Grosvenor Opportunistic Credit Fund III, Ltd
Ending December 31, 2024

| | **Fourth Quarter** | **Inception 1/1/14** |
|---|---|---|
| Beginning Market Value | $94,809 | $0 |
| Net Cash Flow | $0 | -$463,074 |
| Net Investment Change | -$5,671 | $552,212 |
| Ending Market Value | $89,138 | $89,138 |

Note: Reported market values were provided by the manager and are preliminary. Market values and returns are subject to change.

## Account Information

| | |
|---|---|
| Account Name | **Grosvenor Opportunistic Credit Fund IV, Ltd** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **9/30/15** |
| Account Type | **Opportunistic High Yield Fixed Income** |
| Benchmark | |
| Universe | |

## Grosvenor Opportunistic Credit Fund IV, Ltd

Ending December 31, 2024

| | Fourth Quarter | Inception 9/30/15 |
|---|---|---|
| Beginning Market Value | $183,413 | $0 |
| Net Cash Flow | -$10,404 | -$239,262 |
| Net Investment Change | -$35,968 | $376,303 |
| Ending Market Value | $137,041 | $137,041 |

Note: Reported market values were provided by the manager and are preliminary. Market values and returns are subject to change.

## Account Information

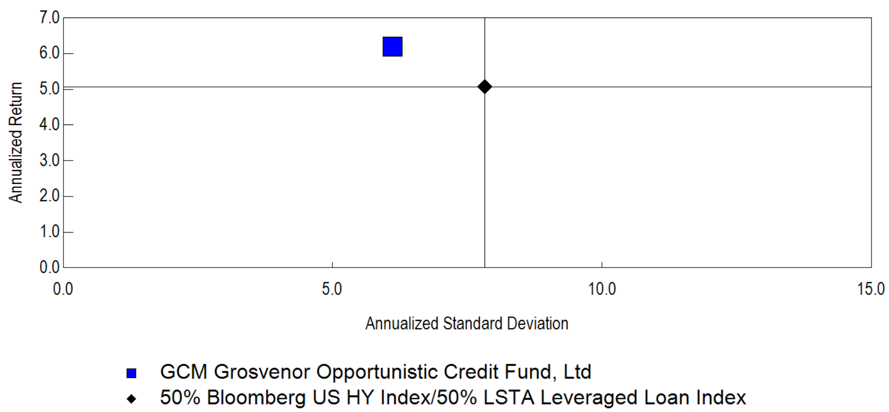
| | |
|---|---|
| Account Name | **GCM Grosvenor Opportunistic Credit Fund, Ltd** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **2/01/17** |
| Account Type | **Opportunistic High Yield Fixed Income** |
| Benchmark | **50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index** |
| Universe | |

## GCM Grosvenor Opportunistic Credit Fund, Ltd
Ending December 31, 2024

| | Fourth Quarter | Inception 2/1/17 |
|---|---|---|
| Beginning Market Value | $10,640,846 | $0 |
| Net Cash Flow | $0 | $7,759,247 |
| Net Investment Change | $184,394 | $3,065,993 |
| Ending Market Value | $10,825,240 | $10,825,240 |

Note: Reported market values were provided by the manager and are preliminary. Market values and returns are subject to change.

### Annualized Return vs. Annualized Standard Deviation
5 Years Ending December 31, 2024




### 3 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| GCM Grosvenor Opportunistic Credit Fund, Ltd | 6.2% | 1.9% | 45.6% | -23.2% |
| 50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index | 5.0% | 5.7% | 100.0% | 100.0% |

### 5 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| GCM Grosvenor Opportunistic Credit Fund, Ltd | 6.2% | 6.1% | 63.9% | 30.8% |
| 50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index | 5.1% | 7.8% | 100.0% | 100.0% |

| | 2024 Q4 | 1 Yr | 3 Yrs | 5 Yrs | Calendar Years 2024 | 2023 | 2022 | 2021 | 2020 | Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GCM Grosvenor Opportunistic Credit Fund, Ltd | 2.0% | 9.1% | 6.2% | 6.2% | 9.1% | 8.6% | 1.1% | 10.9% | 1.6% | 6.1% | Feb-17 |
| *50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index* | *1.2%* | *8.6%* | *5.0%* | *5.1%* | *8.6%* | *13.4%* | *-6.0%* | *5.2%* | *5.1%* | *5.1%* | *Feb-17* |
| *HFRI Credit Index* | *2.4%* | *10.0%* | *4.9%* | *5.8%* | *10.0%* | *7.8%* | *-2.6%* | *7.9%* | *6.3%* | *5.0%* | *Feb-17* |

Note: Returns are gross of fees.

## Account Information

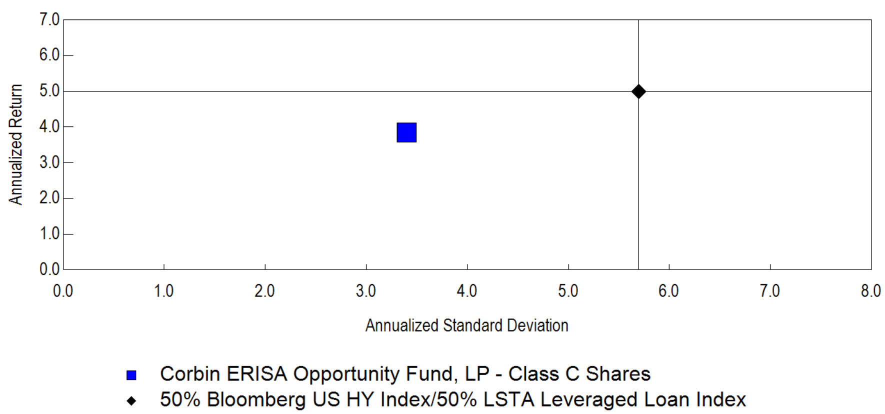
| | |
|---|---|
| Account Name | Corbin ERISA Opportunity Fund, LP - Class C Shares |
| Account Structure | Commingled Fund |
| Investment Style | Active |
| Inception Date | 1/31/20 |
| Account Type | Opportunistic High Yield Fixed Income |
| Benchmark | 50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index |
| Universe | |

## Corbin ERISA Opportunity Fund, LP - Class C Shares
Ending December 31, 2024

| | Fourth Quarter | Inception 1/31/20 |
|---|---|---|
| Beginning Market Value | $10,044,777 | $0 |
| Net Cash Flow | $0 | $7,500,000 |
| Net Investment Change | $139,962 | $2,684,739 |
| Ending Market Value | $10,184,739 | $10,184,739 |

Note: Reported market values were provided by the manager and are preliminary. Market values and returns are subject to change.

### Annualized Return vs. Annualized Standard Deviation
3 Years Ending December 31, 2024




### 3 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Corbin ERISA Opportunity Fund, LP - Class C Shares | 3.8% | 3.4% | 49.8% | 32.5% |
| 50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index | 5.0% | 5.7% | 100.0% | 100.0% |

| | 2024 Q4 | 1 Yr | 3 Yrs | 5 Yrs | Calendar Years 2024 | 2023 | 2022 | 2021 | 2020 | Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Corbin ERISA Opportunity Fund, LP - Class C Shares | 1.6% | 10.4% | 3.8% | -- | 10.4% | 5.4% | -3.7% | 13.3% | -- | 6.8% | Jan-20 |
| *50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index* | *1.2%* | *8.6%* | *5.0%* | -- | *8.6%* | *13.4%* | *-6.0%* | *5.2%* | -- | *5.1%* | *Jan-20* |
| *HFRI Credit Index* | *2.4%* | *10.0%* | *4.9%* | -- | *10.0%* | *7.8%* | *-2.6%* | *7.9%* | -- | *5.8%* | *Jan-20* |

Note: Returns are gross of fees.

| Account Information | |
|---|---|
| Account Name | **Arena Short Duration High Yield Fund, LP - Series E** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **8/01/24** |
| Account Type | **Opportunistic High Yield Fixed Income** |
| Benchmark | **50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index** |
| Universe | |

## Arena Short Duration High Yield Fund, LP - Series E

Ending December 31, 2024

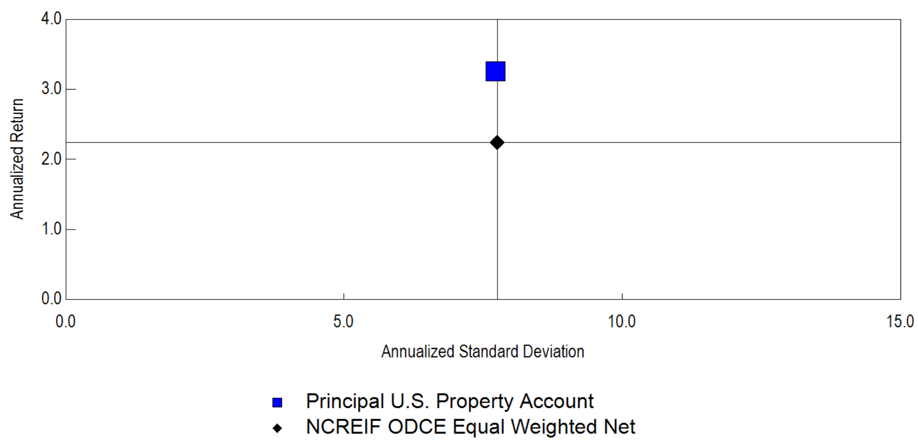
| | Fourth Quarter | Inception 8/1/24 |
|---|---|---|
| Beginning Market Value | $5,105,067 | $0 |
| Net Cash Flow | $0 | $5,000,000 |
| Net Investment Change | $107,048 | $212,114 |
| Ending Market Value | $5,212,114 | $5,212,114 |

| Account Information | |
|---|---|
| Account Name | **Principal U.S. Property Account** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **10/01/01** |
| Account Type | **Real Estate - Core** |
| Benchmark | **NCREIF ODCE Equal Weighted Net** |
| Universe | |

| Principal U.S. Property Account<br>Ending December 31, 2024 | Fourth Quarter | Inception 10/1/01 |
|---|---|---|
| Beginning Market Value | $6,059,316 | $7,999,474 |
| Net Cash Flow | -$30,170 | -$25,728,635 |
| Net Investment Change | $62,009 | $23,820,316 |
| Ending Market Value | $6,091,154 | $6,091,154 |

Income is distributed.

**Annualized Return vs. Annualized Standard Deviation**
**5 Years Ending December 31, 2024**




**3 Years Ending December 31, 2024**

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Principal U.S. Property Account | -2.3% | 7.0% | 91.8% | 85.5% |
| NCREIF ODCE Equal Weighted Net | -3.1% | 7.7% | 100.0% | 100.0% |

**5 Years Ending December 31, 2024**

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Principal U.S. Property Account | 3.3% | 7.7% | 103.6% | 85.7% |
| NCREIF ODCE Equal Weighted Net | 2.2% | 7.8% | 100.0% | 100.0% |

| | | | | | Calendar Years | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 Q4 | 1 Yr | 3 Yrs | 5 Yrs | 2024 | 2023 | 2022 | 2021 | 2020 | Inception | Inception Date |
| Principal U.S. Property Account | 1.3% | -1.1% | -2.3% | 3.3% | -1.1% | -10.0% | 5.0% | 23.8% | 1.6% | 7.1% | Oct-01 |
| *NCREIF ODCE Equal Weighted Net* | *0.8%* | *-2.4%* | *-3.1%* | *2.2%* | *-2.4%* | *-13.3%* | *7.6%* | *21.9%* | *0.8%* | *5.8%* | *Oct-01* |

Note: Returns are gross of fees.

## Account Information

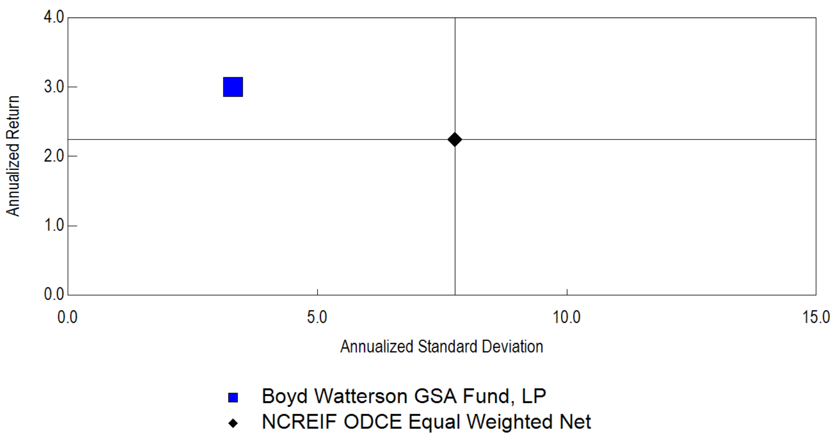
| | |
|---|---|
| Account Name | **Boyd Watterson GSA Fund, LP** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **2/01/15** |
| Account Type | **Real Estate - Core** |
| Benchmark | **NCREIF ODCE Equal Weighted Net** |
| Universe | |

## Boyd Watterson GSA Fund, LP
Ending December 31, 2024

| | **Fourth Quarter** | **Inception 2/1/15** |
|---|---|---|
| Beginning Market Value | $5,622,676 | $0 |
| Net Cash Flow | -$81,839 | $2,334,800 |
| Net Investment Change | $9,458 | $3,215,495 |
| Ending Market Value | $5,550,295 | $5,550,295 |

Income is distributed.

### Annualized Return vs. Annualized Standard Deviation
### 5 Years Ending December 31, 2024




### 3 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Boyd Watterson GSA Fund, LP | -0.4% | 3.1% | 41.2% | 32.4% |
| NCREIF ODCE Equal Weighted Net | -3.1% | 7.7% | 100.0% | 100.0% |

### 5 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Boyd Watterson GSA Fund, LP | 3.0% | 3.3% | 50.7% | 21.3% |
| NCREIF ODCE Equal Weighted Net | 2.2% | 7.8% | 100.0% | 100.0% |

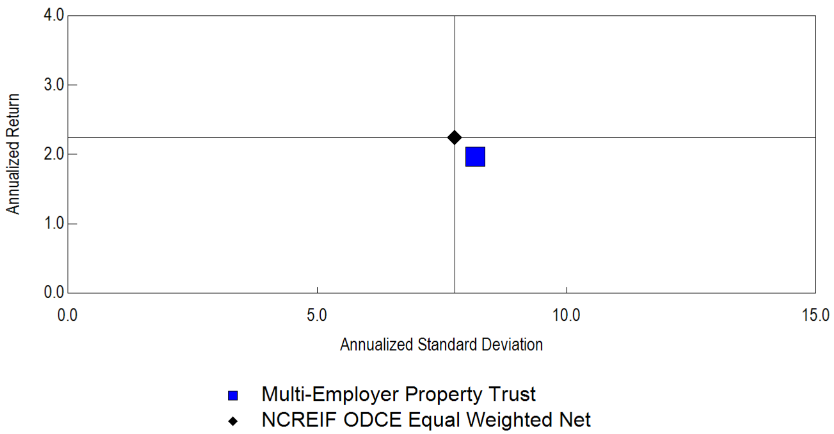
| | | | | | Calendar Years | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 Q4 | 1 Yr | 3 Yrs | 5 Yrs | 2024 | 2023 | 2022 | 2021 | 2020 | Inception | Inception Date |
| Boyd Watterson GSA Fund, LP | 0.5% | -4.8% | -0.4% | 3.0% | -4.8% | -1.9% | 5.9% | 9.4% | 7.2% | 6.4% | Feb-15 |
| *NCREIF ODCE Equal Weighted Net* | *0.8%* | *-2.4%* | *-3.1%* | *2.2%* | *-2.4%* | *-13.3%* | *7.6%* | *21.9%* | *0.8%* | *5.3%* | *Feb-15* |

Note: Returns are gross of fees.

| Account Information | |
|---|---|
| Account Name | Multi-Employer Property Trust |
| Account Structure | Commingled Fund |
| Investment Style | Active |
| Inception Date | 7/01/01 |
| Account Type | Real Estate - Core |
| Benchmark | NCREIF ODCE Equal Weighted Net |
| Universe | |

Income is distributed.

**Annualized Return vs. Annualized Standard Deviation**
**5 Years Ending December 31, 2024**




## Multi-Employer Property Trust
Ending December 31, 2024

| | Fourth Quarter | Inception 7/1/01 |
|---|---|---|
| Beginning Market Value | $5,097,205 | $0 |
| Net Cash Flow | -$27,377 | -$7,992,120 |
| Net Investment Change | $9,753 | $13,071,701 |
| Ending Market Value | $5,079,582 | $5,079,582 |

**3 Years Ending December 31, 2024**

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Multi-Employer Property Trust | -3.4% | 8.4% | 111.7% | 109.7% |
| NCREIF ODCE Equal Weighted Net | -3.1% | 7.7% | 100.0% | 100.0% |

**5 Years Ending December 31, 2024**

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Multi-Employer Property Trust | 2.0% | 8.2% | 107.9% | 113.1% |
| NCREIF ODCE Equal Weighted Net | 2.2% | 7.8% | 100.0% | 100.0% |

| | | | | | Calendar Years | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 Q4 | 1 Yr | 3 Yrs | 5 Yrs | 2024 | 2023 | 2022 | 2021 | 2020 | Inception | Inception Date |
| Multi-Employer Property Trust | 0.4% | -2.9% | -3.4% | 2.0% | -2.9% | -14.8% | 8.7% | 20.8% | 1.4% | 5.9% | Jul-01 |
| *NCREIF ODCE Equal Weighted Net* | *0.8%* | *-2.4%* | *-3.1%* | *2.2%* | *-2.4%* | *-13.3%* | *7.6%* | *21.9%* | *0.8%* | *5.7%* | *Jul-01* |

Note: Returns are gross of fees.

## Account Information

| | |
|---|---|
| Account Name | **Boyd Watterson State Government Fund, LP** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **10/01/21** |
| Account Type | **Real Estate - Value Add** |
| Benchmark | **NCREIF ODCE Equal Weighted Net** |
| Universe | |

## Boyd Watterson State Government Fund, LP
Ending December 31, 2024

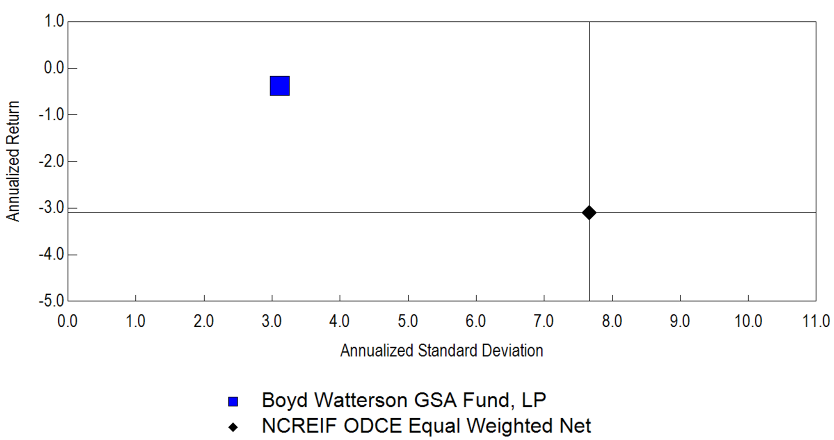
| | Fourth Quarter | Inception 10/1/21 |
|---|---|---|
| Beginning Market Value | $16,177,353 | $0 |
| Net Cash Flow | -$215,749 | $16,150,224 |
| Net Investment Change | $22,180 | -$166,440 |
| Ending Market Value | $15,983,784 | $15,983,784 |

Income is distributed.

## 3 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Boyd Watterson GSA Fund, LP | -0.4% | 3.1% | 41.2% | 32.4% |
| NCREIF ODCE Equal Weighted Net | -3.1% | 7.7% | 100.0% | 100.0% |

**Annualized Return vs. Annualized Standard Deviation**
**3 Years Ending December 31, 2024**




| | 2024 Q4 | 1 Yr | 3 Yrs | 5 Yrs | Calendar Years 2024 | 2023 | 2022 | 2021 | 2020 | Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Boyd Watterson State Government Fund, LP | 0.4% | -5.0% | 0.2% | -- | -5.0% | -1.2% | 7.4% | -- | -- | 0.8% | Oct-21 |
| *NCREIF ODCE Equal Weighted Net* | *0.8%* | *-2.4%* | *-3.1%* | -- | *-2.4%* | *-13.3%* | *7.6%* | -- | -- | *-0.7%* | *Oct-21* |

Note: Returns are gross of fees.

| Account Information | |
|---|---|
| Account Name | **GCM Grosvenor Secondary Opportunities Feeder Fund II, LP** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **5/31/18** |
| Account Type | **Private Equity** |
| Benchmark | |
| Universe | |

## GCM Grosvenor Secondary Opportunities Feeder Fund II, LP
Ending December 31, 2024

| | **Fourth Quarter** | **Inception 5/31/18** |
|---|---|---|
| Beginning Market Value | $7,005,211 | $0 |
| Net Cash Flow | $0 | $4,342,214 |
| Net Investment Change | $0 | $2,662,997 |
| Ending Market Value | $7,005,211 | $7,005,211 |

Note: Investment is valued as of September 31, 2024, plus or minus any flows.

| Account Information | |
|---|---|
| Account Name | **GCM Grosvenor Secondary Opportunities Feeder Fund III, LP** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **7/01/21** |
| Account Type | **Private Equity** |
| Benchmark | |
| Universe | |

## GCM Grosvenor Secondary Opportunities Feeder Fund III, LP
Ending December 31, 2024

| | Fourth Quarter | Inception 7/1/21 |
|---|---|---|
| Beginning Market Value | $4,842,146 | $0 |
| Net Cash Flow | $0 | $3,901,202 |
| Net Investment Change | $0 | $940,944 |
| Ending Market Value | $4,842,146 | $4,842,146 |

Note: Investment is valued as of September 31, 2024, plus or minus any flows.

## Account Information

| | |
|---|---|
| Account Name | **WaCap - SP Infrastructure Fund IV Feeder** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **7/01/21** |
| Account Type | **Infrastructure** |
| Benchmark | |
| Universe | |

## WaCap - SP Infrastructure Fund IV Feeder

Ending December 31, 2024

| | Fourth Quarter | Inception 7/1/21 |
|---|---|---|
| Beginning Market Value | $3,319,206 | $0 |
| Net Cash Flow | -$9,831 | $2,809,551 |
| Net Investment Change | $0 | $499,824 |
| Ending Market Value | $3,309,375 | $3,309,375 |

Note: Investment is valued as of September 31, 2024 plus or minus any flows.

## Investment Policy Statement

- The current investment policy statement was adopted and signed on May 14, 2024.

## Custody Bank

- The current custodian is PNC Bank.
- Separate account market values and flows are derived from the custodial statement.

## Commission Recapture Provider

- Cowen and Company, LLC.
- IPS evaluated the benefits of ongoing participation in a commission recapture program and suggested Funds continue to participate in them. To potentially enhance the managers' utilization of the commission recapture program, in November 2022, as a courtesy IPS provided draft notices for the Fund Administrator to consider sending to the investment managers.

## Commingled Funds

- Commingled Fund: Due to the commingled fund structure, IPS does not monitor the holdings within the commingled fund for compliance with the client's investment policy statement. The commingled fund is governed by its own investment policy.
- Commingled fund market values and flows are derived from the manager statement.

# Operating Engineers Local No. 77 Pension Plan

## Appendix

## Performance Detail (Gross of Fees) - Annualized

| | Market Value | % of Portfolio | 2024 Q4 | Fiscal YTD | 2 Yrs | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Ending December 31, 2024 | | | | | | | | |
| **Total Fund** | **$200,315,485** | **100.0%** | **0.1%** | **8.1%** | **8.5%** | **2.1%** | **6.8%** | **6.9%** | **7.5%** | **9.0%** | **Apr-88** |
| **Total Domestic Large Cap Equity** | **$39,548,493** | **19.7%** | **3.4%** | **27.1%** | **27.1%** | **6.5%** | **13.7%** | **13.0%** | **12.7%** | **--** | **Jul-01** |
| Northern Trust Collective Russell 1000 Growth Index Fund | $20,980,406 | 10.5% | 7.1% | 33.4% | -- | -- | -- | -- | -- | 35.0% | May-23 |
| *Russell 1000 Growth* | | | *7.1%* | *33.4%* | -- | -- | -- | -- | -- | *34.9%* | *May-23* |
| Wedge Capital Management - QVM | $18,568,087 | 9.3% | -0.5% | 20.5% | 19.0% | 7.5% | 12.1% | 10.5% | 10.8% | 10.4% | Jul-01 |
| *Russell 1000 Value* | | | *-2.0%* | *14.4%* | *12.9%* | *5.6%* | *8.7%* | *8.4%* | *8.5%* | *7.6%* | *Jul-01* |
| **Total Domestic SMID Cap Equity** | **$14,659,263** | **7.3%** | **-1.0%** | **--** | **--** | **--** | **--** | **--** | **--** | **170.5%** | **Sep-24** |
| Loomis Sayles Small/Mid Cap Growth | $14,659,263 | 7.3% | -1.0% | -- | -- | -- | -- | -- | -- | 170.5% | Sep-24 |
| *Russell 2500 Growth* | | | *2.4%* | -- | -- | -- | -- | -- | -- | *4.1%* | *Sep-24* |
| **Total International Large Cap Equity** | **$9,981,514** | **5.0%** | **-6.4%** | **4.8%** | **5.8%** | **-4.9%** | **3.7%** | **4.9%** | **7.0%** | **--** | **Apr-97** |
| Hardman Johnston International Equity Group Trust | $5,504,014 | 2.7% | -3.3% | 13.8% | 10.0% | -2.4% | 5.3% | 6.0% | 7.9% | 8.4% | Jul-09 |
| *MSCI EAFE* | | | *-8.1%* | *3.8%* | *10.8%* | *1.6%* | *4.7%* | *4.1%* | *5.2%* | *6.4%* | *Jul-09* |
| *MSCI ACWI ex USA Growth* | | | *-7.9%* | *5.1%* | *9.5%* | *-2.7%* | *3.4%* | *3.7%* | *5.3%* | *6.6%* | *Jul-09* |
| Barrow Hanley Non-US Value CIT - Founders Class | $4,477,500 | 2.2% | -9.9% | -4.6% | -- | -- | -- | -- | -- | 0.1% | Dec-23 |
| *MSCI EAFE Value* | | | *-7.1%* | *5.7%* | -- | -- | -- | -- | -- | *10.0%* | *Dec-23* |
| **Total International Small Cap Equity** | **$10,749,562** | **5.4%** | **-7.3%** | **6.0%** | **11.0%** | **-1.2%** | **5.0%** | **--** | **--** | **4.2%** | **Mar-18** |
| Victory Trivalent International Small-Cap Collective Fund | $10,749,562 | 5.4% | -7.3% | 6.0% | 11.0% | -1.2% | 5.0% | -- | -- | 4.2% | Mar-18 |
| *S&P Developed Ex-U.S. Small Cap (Net)* | | | *-8.9%* | *-0.1%* | *6.4%* | *-3.9%* | *2.1%* | -- | -- | *1.6%* | *Mar-18* |
| **Total Investment Grade Fixed Income** | **$16,581,805** | **8.3%** | **-1.6%** | **3.2%** | **4.3%** | **0.1%** | **1.3%** | **2.0%** | **2.1%** | **4.4%** | **Jun-95** |
| Wedge Capital Management | $16,581,805 | 8.3% | -1.6% | 3.2% | 4.3% | 0.1% | 1.3% | 2.0% | 2.1% | 3.6% | Jan-03 |
| *Wedge Custom Benchmark* | | | *-1.6%* | *3.0%* | *4.1%* | *-0.2%* | *0.9%* | *1.7%* | *1.7%* | *3.2%* | *Jan-03* |

### Performance Detail (Gross of Fees) - Annualized

| | Market Value | % of Portfolio | 2024 Q4 | Fiscal YTD | 2 Yrs | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Ending December 31, 2024 | | | | | | | | |
| **Total Short Duration High Yield Fixed Income** | **$22,079,962** | **11.0%** | **0.5%** | **6.2%** | **7.0%** | **3.7%** | **3.7%** | **3.9%** | **3.8%** | **3.7%** | **Jan-13** |
| Chartwell Investment Partners SDHY | $22,079,962 | 11.0% | 0.5% | 6.2% | 7.0% | 3.7% | 3.7% | 3.9% | 3.8% | 3.7% | Jan-13 |
| *ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR* | | | *0.8%* | *6.7%* | *7.8%* | *4.0%* | *4.1%* | *4.4%* | *4.4%* | *4.3%* | *Jan-13* |
| *Bloomberg US Govt/Credit Int TR* | | | *-1.6%* | *3.0%* | *4.1%* | *-0.2%* | *0.9%* | *1.7%* | *1.7%* | *1.7%* | *Jan-13* |
| **Total Mortgages** | **$10,544,444** | **5.3%** | **0.5%** | **5.0%** | **4.9%** | **3.4%** | **3.3%** | **3.7%** | **3.8%** | **3.8%** | **Oct-04** |
| Ullico - J for Jobs | $4,962,140 | 2.5% | 0.5% | 5.0% | 4.8% | 3.5% | 3.3% | 3.6% | 3.7% | 3.3% | Oct-04 |
| *Bloomberg US Aggregate TR* | | | *-3.1%* | *1.2%* | *3.4%* | *-2.4%* | *-0.3%* | *1.0%* | *1.3%* | *3.0%* | *Oct-04* |
| Washington Capital JMT Mortgage Income Fund | $5,582,304 | 2.8% | 0.5% | 5.0% | 5.0% | 3.3% | 3.3% | 3.9% | 4.1% | 5.0% | Oct-04 |
| *Bloomberg US Aggregate TR* | | | *-3.1%* | *1.2%* | *3.4%* | *-2.4%* | *-0.3%* | *1.0%* | *1.3%* | *3.0%* | *Oct-04* |
| **Total Opportunistic High Yield Fixed Income** | **$26,448,272** | **13.2%** | **1.6%** | **8.5%** | **7.7%** | **4.6%** | **5.9%** | **5.4%** | **6.2%** | **6.2%** | **Jan-14** |
| Grosvenor Opportunistic Credit Fund III, Ltd | $89,138 | 0.0% | | | | | | | | | |
| Grosvenor Opportunistic Credit Fund IV, Ltd | $137,041 | 0.1% | | | | | | | | | |
| GCM Grosvenor Opportunistic Credit Fund, Ltd | $10,825,240 | 5.4% | 2.0% | 9.1% | 8.8% | 6.2% | 6.2% | 6.2% | -- | 6.1% | Feb-17 |
| *50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index* | | | *1.2%* | *8.6%* | *11.0%* | *5.0%* | *5.1%* | *5.1%* | *--* | *5.1%* | *Feb-17* |
| *HFRI Credit Index* | | | *2.4%* | *10.0%* | *8.9%* | *4.9%* | *5.8%* | *5.0%* | *--* | *5.0%* | *Feb-17* |
| Corbin ERISA Opportunity Fund, LP - Class C Shares | $10,184,739 | 5.1% | 1.6% | 10.4% | 7.8% | 3.8% | -- | -- | -- | 6.8% | Jan-20 |
| *50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index* | | | *1.2%* | *8.6%* | *11.0%* | *5.0%* | *--* | *--* | *--* | *5.1%* | *Jan-20* |
| *HFRI Credit Index* | | | *2.4%* | *10.0%* | *8.9%* | *4.9%* | *--* | *--* | *--* | *5.8%* | *Jan-20* |
| Arena Short Duration High Yield Fund, LP - Series E | $5,212,114 | 2.6% | 2.1% | -- | -- | -- | -- | -- | -- | 4.2% | Aug-24 |
| *50% Bloomberg US HY Index/50% LSTA Leveraged Loan Index* | | | *1.2%* | *--* | *--* | *--* | *--* | *--* | *--* | *3.6%* | *Aug-24* |

## Performance Detail (Gross of Fees) - Annualized

| | | | Ending December 31, 2024 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Market Value | % of Portfolio | 2024 Q4 | Fiscal YTD | 2 Yrs | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | Inception | Inception Date |
| **Total Real Estate - Core** | **$16,721,031** | **8.3%** | **0.8%** | **-2.9%** | **-5.9%** | **-1.9%** | **2.8%** | **4.3%** | **6.1%** | **6.3%** | **Jul-01** |
| Principal U.S. Property Account | $6,091,154 | 3.0% | 1.3% | -1.1% | -5.7% | -2.3% | 3.3% | 4.6% | 6.6% | 7.1% | Oct-01 |
| *NCREIF ODCE Equal Weighted Net* | | | *0.8%* | *-2.4%* | *-8.1%* | *-3.1%* | *2.2%* | *3.4%* | *5.3%* | *5.8%* | *Oct-01* |
| Boyd Watterson GSA Fund, LP | $5,550,295 | 2.8% | 0.5% | -4.8% | -3.4% | -0.4% | 3.0% | 4.8% | -- | 6.4% | Feb-15 |
| *NCREIF ODCE Equal Weighted Net* | | | *0.8%* | *-2.4%* | *-8.1%* | *-3.1%* | *2.2%* | *3.4%* | -- | *5.3%* | *Feb-15* |
| Multi-Employer Property Trust | $5,079,582 | 2.5% | 0.4% | -2.9% | -9.0% | -3.4% | 2.0% | 3.2% | 5.0% | 5.9% | Jul-01 |
| *NCREIF ODCE Equal Weighted Net* | | | *0.8%* | *-2.4%* | *-8.1%* | *-3.1%* | *2.2%* | *3.4%* | *5.3%* | *5.7%* | *Jul-01* |
| **Total Real Estate - Value Add** | **$15,983,784** | **8.0%** | **0.4%** | **-5.0%** | **-3.2%** | **0.2%** | **--** | **--** | **--** | **0.8%** | **Oct-21** |
| Boyd Watterson State Government Fund, LP | $15,983,784 | 8.0% | 0.4% | -5.0% | -3.2% | 0.2% | -- | -- | -- | 0.8% | Oct-21 |
| *NCREIF ODCE Equal Weighted Net* | | | *0.8%* | *-2.4%* | *-8.1%* | *-3.1%* | -- | -- | -- | *-0.7%* | *Oct-21* |
| **Total Private Equity** | **$11,847,357** | **5.9%** | | | | | | | | | |
| GCM Grosvenor Secondary Opportunities Feeder Fund II, LP | $7,005,211 | 3.5% | | | | | | | | | |
| GCM Grosvenor Secondary Opportunities Feeder Fund III, LP | $4,842,146 | 2.4% | | | | | | | | | |
| **Total Infrastructure - Value Add** | **$3,309,375** | **1.7%** | | | | | | | | | |
| WaCap - SP Infrastructure Fund IV Feeder | $3,309,375 | 1.7% | | | | | | | | | |
| **Total Cash Equivalents** | **$1,860,624** | **0.9%** | | | | | | | | | |
| Cash Account | $1,563,036 | 0.8% | | | | | | | | | |
| Cash in Transit - Boyd Watterson GSA Fund, LP Distribution Proceeds | $81,839 | 0.0% | | | | | | | | | |
| Cash in Transit - Boyd Watterson State Government Fund, LP Distribution Proceeds | $215,749 | 0.1% | | | | | | | | | |

| Account | Fee Schedule | Market Value As of 12/31/2024 | % of Portfolio | Estimated Annual Fee ($) | Estimated Annual Fee (%) |
|---|---|---|---|---|---|
| **Total Domestic Large Cap Equity** | **-** | **$39,548,493** | **19.7%** | **--** | **--** |
| Northern Trust Collective Russell 1000 Growth Index Fund | 0.04% of Assets | $20,980,406 | 10.5% | $8,392 | 0.04% |
| **Wedge Capital Management - QVM | 0.50% of Assets | $18,568,087 | 9.3% | $92,840 | 0.50% |
| **Total Domestic Mid Cap Equity** | **-** | **--** | **--** | **--** | **--** |
| TimesSquare Capital Management | 0.80% of First 50.0 Mil,<br>0.70% of Next 50.0 Mil,<br>0.60% Thereafter | $0 | 0.0% | $0 | 0.00% |
| **Total Domestic SMID Cap Equity** | **-** | **$14,659,263** | **7.3%** | **--** | **--** |
| Loomis Sayles Small/Mid Cap Growth | 0.70% of Assets | $14,659,263 | 7.3% | $102,615 | 0.70% |
| **Total International Large Cap Equity** | **-** | **$9,981,514** | **5.0%** | **--** | **--** |
| Hardman Johnston International Equity Group Trust | 0.75% of First 25.0 Mil,<br>0.60% of Next 75.0 Mil,<br>0.50% Thereafter | $5,504,014 | 2.7% | $41,280 | 0.75% |
| Barrow Hanley Non-US Value CIT - Founders Class | 0.53% of Assets | $4,477,500 | 2.2% | $23,731 | 0.53% |
| **Total International Small Cap Equity** | **-** | **$10,749,562** | **5.4%** | **--** | **--** |
| Victory Trivalent International Small-Cap Collective Fund | 0.85% of Assets | $10,749,562 | 5.4% | $91,371 | 0.85% |
| **Total Investment Grade Fixed Income** | **-** | **$16,581,805** | **8.3%** | **--** | **--** |
| 1*Wedge Capital Management | 0.25% of First 50.0 Mil,<br>0.20% of Next 50.0 Mil,<br>0.15% Thereafter | $16,581,805 | 8.3% | $41,455 | 0.25% |
| **Total Short Duration High Yield Fixed Income** | **-** | **$22,079,962** | **11.0%** | **--** | **--** |
| Chartwell Investment Partners SDHY | 0.50% of Assets | $22,079,962 | 11.0% | $110,400 | 0.50% |
| **Total Mortgages** | **-** | **$10,544,444** | **5.3%** | **--** | **--** |
| Ullico - J for Jobs | 0.55% of First 90.0 Mil,<br>0.50% Thereafter | $4,962,140 | 2.5% | $27,292 | 0.55% |
| Washington Capital JMT Mortgage Income Fund | 0.50% of Assets | $5,582,304 | 2.8% | $27,912 | 0.50% |

| Account | Fee Schedule | Market Value As of 12/31/2024 | % of Portfolio | Estimated Annual Fee ($) | Estimated Annual Fee (%) |
|---|---|---|---|---|---|
| **Total Opportunistic High Yield Fixed Income** | **-** | **$26,448,272** | **13.2%** | **--** | **--** |
| Grosvenor Opportunistic Credit Fund III, Ltd | 0.80% of Assets | $89,138 | 0.0% | $713 | 0.80% |
| Grosvenor Opportunistic Credit Fund IV, Ltd | 0.80% of Assets | $137,041 | 0.1% | $1,096 | 0.80% |
| GCM Grosvenor Opportunistic Credit Fund, Ltd | 0.80% of Assets | $10,825,240 | 5.4% | $86,602 | 0.80% |
| Corbin ERISA Opportunity Fund, LP - Class C Shares | 0.85% of Assets | $10,184,739 | 5.1% | $86,570 | 0.85% |
| Arena Short Duration High Yield Fund, LP - Series E | 0.59% of Assets | $5,212,114 | 2.6% | $30,751 | 0.59% |
| **Total Real Estate - Core** | **-** | **$16,721,031** | **8.3%** | **--** | **--** |
| Principal U.S. Property Account | 1.10% of Assets | $6,091,154 | 3.0% | $67,003 | 1.10% |
| Boyd Watterson GSA Fund, LP | 1.25% of First 25.0 Mil,<br>1.15% of Next 75.0 Mil,<br>1.05% Thereafter | $5,550,295 | 2.8% | $69,379 | 1.25% |
| Multi-Employer Property Trust | 0.87% of Assets | $5,079,582 | 2.5% | $44,192 | 0.87% |
| **Total Real Estate - Value Add** | **-** | **$15,983,784** | **8.0%** | **--** | **--** |
| Boyd Watterson State Government Fund, LP | 1.25% of First 25.0 Mil,<br>1.15% of Next 75.0 Mil,<br>1.05% Thereafter | $15,983,784 | 8.0% | $199,797 | 1.25% |
| **Total Private Equity** | **-** | **$11,847,357** | **5.9%** | **--** | **--** |
| **GCM Grosvenor Secondary Opportunities Feeder Fund II, LP | 16,626 Quarterly | $7,005,211 | 3.5% | $66,504 | 0.95% |
| **GCM Grosvenor Secondary Opportunities Feeder Fund III, LF | 14,875 Quarterly | $4,842,146 | 2.4% | $59,500 | 1.23% |

| Account | Fee Schedule | Market Value As of 12/31/2024 | % of Portfolio | Estimated Annual Fee ($) | Estimated Annual Fee (%) |
|---|---|---|---|---|---|
| **Total Infrastructure - Value Add** | **-** | **$3,309,375** | **1.7%** | **--** | **--** |
| WaCap - SP Infrastructure Fund IV Feeder | 14,509 Quarterly | $3,309,375 | 1.7% | $58,036 | 1.75% |
| **Total Cash Equivalents** | **-** | **$1,860,624** | **0.9%** | **--** | **--** |
| Cash Account | - | $1,563,036 | 0.8% | -- | -- |
| Cash in Transit - Boyd Watterson GSA Fund, LP Distribution Proceeds | - | $81,839 | 0.0% | -- | -- |
| Cash in Transit - Boyd Watterson State Government Fund, LP Distribution Proceeds | - | $215,749 | 0.1% | -- | -- |
| **Investment Management Fee** | | **$200,315,485** | **100.0%** | **$1,337,431** | **0.67%** |

Note: The above fee schedules may not include incentive fees, operating expenses, custodian fees, or other administrative costs.

* The estimated annual fee (%) shown in the above table is calculated based on the investment market value. For investments in which the fee is based on committed capital, the estimated annual fee (%) shown may not be representative of the actual annual fee (%).

**Fee schedule represents the effective rate from the aggregation of assets of related Funds.

[1]Effective October 1, 2024, the manager reduced the fee schedule to .25 percent on the first $25 million under management, .20 percent for the next $20 million and .15 percent for remaining assets under management.

### Benchmark History

| | | |
|---|---|---|
| Total Fund | | |
| 10/1/2023 | Present | Russell 1000 15% / Russell MidCap Growth 5% / Russell 2000 5% / MSCI EAFE 5% / S&P Developed Ex-U.S. Small Cap (Net) 5% / Bloomberg US Govt/Credit Int TR 10% / ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR 12.5% / Bloomberg US Aggregate TR 5% / NCREIF ODCE Equal Weighted Net 20% / HFRI Credit Index 10% / Russell 2000 5% / CPI + 400 Basis Points 2.5% |
| 10/1/2021 | 9/30/2023 | Russell 1000 20% / Russell 2000 5% / Russell MidCap Growth 5% / MSCI EAFE 7.5% / Bloomberg US Govt/Credit Int TR 5% / Bloomberg US Aggregate TR 5% / ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR 5% / NCREIF ODCE Equal Weighted Net 20% / HFRI Fund of Funds Composite Index 2.5% / 65% MSCI World Index/35% FTSE WGBI 2.5% / Russell 2000 5% / S&P Developed Ex-U.S. SmallCap 5% / HFRI Credit Index 10% / CPI + 400 Basis Points 2.5% |
| 11/1/2019 | 9/30/2021 | Russell 1000 Value 10% / Russell 1000 Growth 10% / Russell 2000 5% / Russell MidCap Growth 5% / MSCI EAFE 5% / Bloomberg US Govt/Credit Int TR 5% / Bloomberg US Aggregate TR 5% / ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR 5% / NCREIF ODCE Equal Weighted Net 17.5% / HFRI Fund of Funds Composite Index 5% / 65% MSCI World Index/35% FTSE WGBI 7.5% / Russell 2000 5% / S&P Developed Ex-U.S. SmallCap 5% / HFRI Credit Index 10% |
| 2/2/2018 | 10/31/2019 | Russell 1000 Value 10% / Russell 1000 Growth 10% / Russell 2000 Value 5% / Russell MidCap Growth 5% / MSCI EAFE 5% / Bloomberg US Govt/Credit Int TR 7.5% / Bloomberg US Aggregate TR 5% / ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR 5% / NCREIF ODCE Equal Weighted Net 17.5% / HFRI Fund of Funds Composite Index 5% / 65% MSCI World Index/35% FTSE WGBI 10% / HFRI Credit Index 5% / Russell 2000 Value 5% / S&P Developed Ex-U.S. SmallCap 5% |
| 1/1/2017 | 2/1/2018 | Russell 1000 Value 25% / Russell 2000 Value 5% / Russell MidCap Growth 7.5% / MSCI EAFE 5% / Bloomberg US Govt/Credit Int TR 7.5% / Bloomberg US Aggregate TR 5% / ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR 5% / NCREIF ODCE Equal Weighted Net 20% / HFRI Fund of Funds Composite Index 5% / 65% MSCI World Index/35% FTSE WGBI 10% / HFRI Credit Index 5% |
| 2/1/2015 | 12/31/2016 | MSCI EAFE 5% / HFRI Fund of Funds Composite Index 10% / Russell 1000 Value 25% / Russell 2000 Value 5% / Russell MidCap Growth 7.5% / 65% MSCI World Index/35% FTSE WGBI 10% / Bloomberg US Govt/Credit Int TR 7.5% / ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR 5% / NCREIF ODCE Equal Weighted Net 20% / Bloomberg US Aggregate TR 5% |
| 6/1/2013 | 1/31/2015 | MSCI EAFE 7.5% / HFRI Fund of Funds Composite Index 10% / Russell 1000 Value 12.5% / Russell 2000 Value 7.5% / Russell MidCap Growth 7.5% / Russell 1000 Growth 12.5% / 65% MSCI World Index/35% FTSE WGBI 10% / ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR 5% / Bloomberg US Govt/Credit Int TR 5% / ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR 5% / NCREIF ODCE Equal Weighted Net 17.5% |
| 1/1/2013 | 5/31/2013 | MSCI EAFE 7.5% / Bloomberg US Aggregate TR 5% / Bloomberg US Aggregate TR 5% / HFRI Fund of Funds Composite Index 10% / Russell 1000 Value 12.5% / Russell 2000 Value 7.5% / Russell MidCap Growth 7.5% / Russell 1000 Growth 12.5% / 65% MSCI World Index/35% FTSE WGBI 10% / ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR 5% / NCREIF ODCE Equal Weighted Net 17.5% |
| 7/1/2012 | 12/31/2012 | MSCI EAFE 7.5% / Bloomberg US Aggregate TR 5% / Bloomberg US Aggregate TR 5% / HFRI Fund of Funds Composite Index 15% / Russell 1000 Value 12.5% / Russell 2000 Value 7.5% / Russell MidCap Growth 7.5% / Russell 1000 Growth 12.5% / 65% MSCI World Index/35% FTSE WGBI 10% / NCREIF ODCE Equal Weighted Net 17.5% |
| 1/1/2011 | 6/30/2012 | MSCI EAFE 10% / Bloomberg US Aggregate TR 5% / Bloomberg US Aggregate TR 5% / HFRI Fund of Funds Composite Index 15% / Russell 1000 Value 12.5% / Russell 2000 Value 7.5% / Russell MidCap Growth 7.5% / Russell 1000 Growth 12.5% / 65% MSCI World Index/35% FTSE WGBI 10% / NCREIF ODCE Equal Weighted Net 15% |
| 4/1/2010 | 12/31/2010 | MSCI EAFE 15% / Bloomberg US Aggregate TR 5% / Bloomberg US Aggregate TR 5% / HFRI Fund of Funds Composite Index 15% / Russell 1000 Value 12.5% / Russell 2000 Value 10% / Russell MidCap Growth 10% / Russell 1000 Growth 12.5% / NCREIF ODCE Equal Weighted Net 15% |
| 1/1/2009 | 3/31/2010 | S&P 500 34% / MSCI EAFE 11% / Bloomberg US Aggregate TR 25% / HFRI Fund of Funds Composite Index 10% / NCREIF ODCE Equal Weighted Net 20% |
| 4/1/2007 | 12/31/2008 | S&P 500 34% / MSCI EAFE 11% / Bloomberg US Aggregate TR 25% / HFRI Fund of Funds Composite Index 10% / NCREIF ODCE Equal Weighted Net 20% |
| 10/1/2005 | 3/31/2007 | Bloomberg US Aggregate TR 30% / MSCI EAFE 12% / S&P 500 38% / NCREIF ODCE Equal Weighted Net 20% |
| 10/1/2004 | 9/30/2005 | S&P 500 38% / MSCI EAFE 12% / Bloomberg US Aggregate TR 30% / NCREIF ODCE Equal Weighted Net 20% |
| 10/1/2002 | 9/30/2004 | S&P 500 55% / MSCI EAFE 10% / Bloomberg US Aggregate TR 25% / NCREIF ODCE Equal Weighted Net 10% |
| 7/1/2001 | 9/30/2002 | S&P 500 55% / Bloomberg US Govt/Credit TR 25% / MSCI EAFE 10% / NCREIF ODCE Equal Weighted Net 10% |
| 4/1/1997 | 6/30/2001 | Bloomberg US Govt/Credit TR 35% / MSCI EAFE 10% / S&P 500 55% |
| 1/1/1990 | 3/31/1997 | Bloomberg US Govt/Credit TR 6000% / S&P 500 40% |
| 4/1/1988 | 12/31/1989 | Bloomberg US Govt/Credit TR 45% / S&P 500 55% |

## Benchmark History

| Wedge Capital Management | | |
|---|---|---|
| 6/1/2013 | Present | Bloomberg US Govt/Credit Int TR 100% |
| 1/1/2003 | 5/31/2013 | Bloomberg US Aggregate TR 100% |

**Index Disclosures**

- Bloomberg US Govt/Credit Int TR - Index is listed for illustrative purposes.
- HFRI Credit Index - Index is listed for illustrative purposes.
- Long-Term Target Return of 8% - Index is listed for illustrative purposes.
- Long-Term Income Objective 8% -The manager's stated objective of an 8% net income return is listed for illustrative purposes.
- MSCI ACWI ex USA Growth - Index is listed for illustrative purposes.
- The NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE) is a non-investable, time-weighted index comprised of the time weighted returns of approximately 30 open-end commingled funds pursuing a core private real estate investment strategy. The constituent funds qualify for inclusion in the NFI-ODCE based on specific criteria regarding their percentage of net assets invested in private equity real estate, geography, property type, life cycle, diversification and use of leverage. Constituent funds must also comply with the NCREIF PREA Reporting Standards, including annual audits, quarterly valuations and time-weighted returns. The NFI-ODCE returns are mainly driven by the underlying property investments in the constituent funds but can also be impacted by each funds use of leverage, cash balances, fund costs, etc. Returns shown are for the NFI-ODCE Equal Weight Index (fund constituents are equally-weighted), net of fees.
- Total Fund Benchmark History - During 4Q 2018, the real estate benchmark was changed from NCREIF ODCE Equal Weighted Index to NCREIF ODCE Equal Weighted Net Index for all historical time periods since inception.
- Total Fund Benchmark History - As of November 1, 2019, the Total Fund Benchmark domestic small cap equity weighting was changed from the Russell 2000 Value Index to the Russell 2000 Index to more accurately represent the underlying investment in the asset class.
- Total Fund Benchmark History - During 4Q 2019, the opportunistic benchmark was changed from HRFI Event Driven Index to HFRI Credit Index for all historical time periods since inception.

- Total Fund Benchmark History - During 4Q 2021, the real estate - value add benchmark was changed from NCREIF ODCE Equal Weighted Net Index to Long-Term Income Objective 9% for all historical time periods since inception.
- Total Fund Benchmark - The Total Fund Benchmark is comprised of the respective market indices for each asset class weighted at the percentage the asset class represents in the Policy. It is important to acknowledge that not all asset classes have a corresponding market index due to the specialized nature of the asset class (i.e. private equity, private debt, infrastructure, hedge funds) and/or the specialized nature of the investment (opportunistic investments, global tactical asset allocation, absolute return strategies). In such cases, a traditional asset class index may be used as a proxy in the Total Fund Benchmark. The Total Fund Benchmark illustrates how an indexed portfolio with a similar allocation to that of the Policy would have performed during a specific period. The Total Fund Benchmark does not account for ongoing changes in the allocation percentages of the Total Fund resulting from market gains/losses, cash flows, and rebalancing during the same period. While a useful tool in examining performance, due to the static nature of the allocation percentages in the Total Fund Benchmark, the fact that not all asset classes have a representative index, and considering that some indices in the Total Fund Benchmark are not investable, the Total Fund Benchmark should not be used as the primary measure of a Total Fund's success or failure.

**Footnotes**

- Values, flows, and returns for all commingled funds, mutual funds, partnerships, and all other alternative assets are provided by the firm managing the assets and cannot be independently verified by IPS. Separately managed account returns are calculated by IPS using custodian data.
- The net of fees returns in this report are estimated. Fees do not include: The investment consulting fee paid to IPS, custodian fees, or other administrative costs.
- The information contained in this report is proprietary and confidential information. You are hereby notified that any dissemination, distribution, or copying of this document is strictly prohibited.
- Hedge Fund of Funds - Multi Strategy returns are based on the manager provided estimated value.
- Grosvenor OCF III, OCF IV and OCF V – the net of fee returns include the accrual of the incentive fee. The difference between the gross and net returns may vary widely due to this accounting. The information reported by IPS is provided by the manager and subject to change.
- Net of fees calculations began 3Q 2001 and cannot be calculated for prior time periods.
- Total asset class inception returns may not be available if the performance history begins prior to December 2007.

- The following composite returns prior to 1Q 2010 do not include cash in the returns:
    - Total Fund Domestic Equity
    - Total Fund International Equity
    - Total Domestic Fixed Investment Grade
    - Total Fund Mortgage
    - Total Fund Real Estate
    - Total Fund Hedge Fund of Funds
- Prior to the 4Q 2011 report, Principal's returns were reported net of fees.
- Prior to the 4Q 2011 report, Multi-Employer Property Trust’s returns were reported net of fees.
- The Total Fund benchmark is comprised of the respective market indices for each asset class weighted at the percentage the asset class represents in the Policy. For real estate, where Boyd Waterson GSA (core real estate) and/or Boyd Waterson State (value add real estate) are the lone real estate investments, the annualized income objective of the respective Boyd Watterson fund (8% for GSA; 9% for State) was previously used as the market index to represent the real estate asset class. For example, if a fund has a 10% Policy for core real estate and Boyd Waterson GSA is the lone core real estate investment, 10% of the Total Fund benchmark was an 8% annualized income objective.
- The dramatic rise in interest rates in 2021 and 2022 made the annualized income objectives for the Boyd Waterson funds an unrealistic baseline for near-term and intermediate-term real estate return expectations. Therefore, the real estate component of the Total Fund benchmark is changed to the NCREIF ODCE Equal Weight Net Index for all real estate allocations, regardless of the specific real estate manager(s). The change has been applied to all historical time periods. We believe this change better represents the opportunity set for the real estate asset class.

- The following managers are valued as of September 30, 2024, plus or minus any flows:
  - GCM Grosvenor Secondary Opportunities Feeder Fund II, LP
  - GCM Grosvenor Secondary Opportunities Feeder Fund III, LP
  - WaCap - SP Infrastructure Fund IV Feeder
- The following managers' values are preliminary and are subject to change:
  - Grosvenor Opportunistic Credit Fund III, Ltd
  - Grosvenor Opportunistic Credit Fund IV, Ltd
  - GCM Grosvenor Opportunistic Credit Fund, Ltd

# ASSET ALLOCATION REVIEW

## Operating Engineers Local No. 77 Pension Plan

## February 2025

# Asset Allocation Overview

- The asset allocation review is provided to assist the Trustees in identifying portfolios that meet the investment objectives, risk tolerance, and liquidity requirements of the Fund.
- The IPS Investment Committee develops and utilizes capital market assumptions for various asset classes to help determine the optimal mix of assets for an investment portfolio. These assumptions are forward-looking projections of an asset class' expected return and risk as measured by standard deviation or volatility of returns.
- All return assumptions are "net of fee" market or index returns and do not include alpha or excess return expected to be generated through active management. Return assumptions are the average expected return over the next 10 – 20 years and not the expected return in any given year.
- IPS capital market assumptions are compared with various assumptions from other providers and published resources for reasonableness. The IPS Investment Committee reviews the assumptions on a semiannual basis but may adjust at anytime, as needed, based on severe market dislocations, sudden changes in interest rates, or extreme events that impact global markets, economic development, and the business cycle.
- IPS capital market assumptions are not a guarantee of future performance. Actual results may differ from the projections included in this review.
- The asset allocation modeling requires the mathematical construction of an efficient frontier of various portfolios with distinct asset allocations and risk and return characteristics. The modeling process also requires the imposition of constraints, so that the efficient frontier represents a prudently diversified portfolio with adequate consideration of the liquidity needs and investment time horizon. Unconstrained optimization frequently generates allocations that have superior risk/reward characteristics, but the resulting allocations may not be adequately diversified and/or may have inappropriate allocations to illiquid investments.
- The cashflows and liquidity constraints of the fund for which this asset allocation review is being presented were considered when developing the portfolios presented for consideration.
- IPS utilizes the Wilshire Compass system for asset allocation modeling and all returns are based on geometric calculation.

# Annualized Expected Returns over 10-20 years

| Equity Asset Class | Return | Risk |
|---|---|---|
| U.S. Large Cap | 6.75% | 15.50 |
| U.S. Mid Cap | 7.00% | 18.00 |
| U.S. Smid Cap | 7.00% | 19.50 |
| U.S. Small Cap | 7.00% | 21.00 |
| International Large Cap | 7.00% | 17.00 |
| International Small Cap | 7.75% | 19.50 |
| Emerging Markets | 8.00% | 21.00 |
| Global Equity | 7.00% | 16.75 |

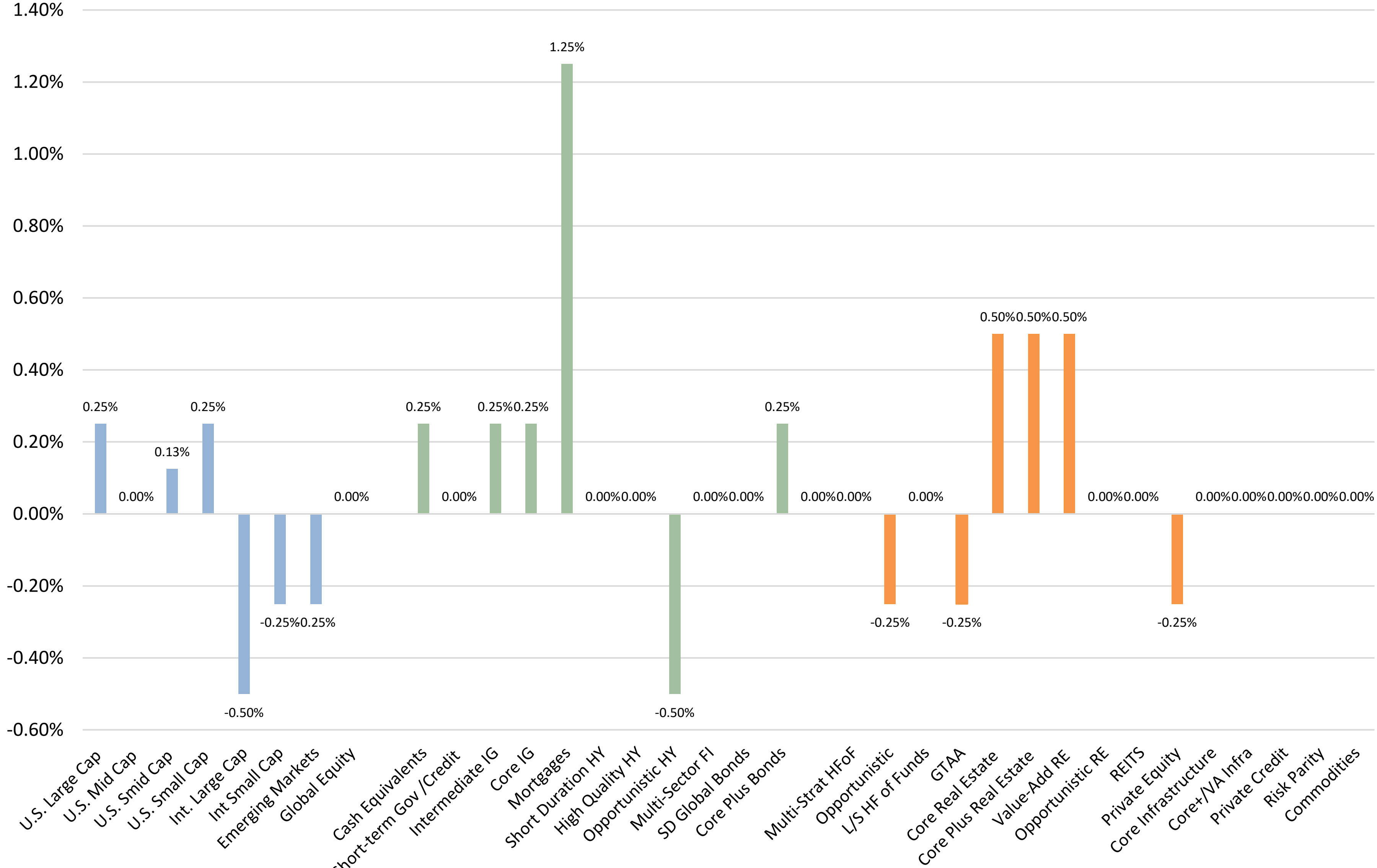
| Fixed Income Asset Class | Return | Risk |
|---|---|---|
| Cash Equivalents | 3.25% | 1.00 |
| Short-term Gov /Credit | 3.75% | 2.25 |
| Intermediate Investment Grade | 4.50% | 3.75 |
| Core Investment Grade | 4.75% | 5.00 |
| Mortgages | 6.00% | 6.50 |
| Short Duration High Yield | 6.00% | 6.00 |
| High Quality High Yield | 6.50% | 7.00 |
| Opportunistic High Yield | 7.25% | 9.00 |
| Multi-Sector Fixed Income | 3.50% | 6.25 |
| Short Duration Global Bonds | 2.50% | 5.00 |
| Core Plus Bonds | 5.00% | 5.75 |

| Alternatives Asset Class | Return | Risk |
|---|---|---|
| Multi-Strategy Hedge Fund of Funds | 5.00% | 6.00 |
| Opportunistic Strategies | 7.25% | 15.00 |
| L/S Hedge Fund of Funds | 5.00% | 9.00 |
| Global Tactical Asset Allocation | 6.25% | 12.50 |
| Core Real Estate | 6.50% | 10.50 |
| Core Plus Real Estate | 7.00% | 12.50 |
| Value-Add Real Estate | 7.50% | 14.00 |
| Opportunistic Real Estate | 9.00% | 17.00 |
| REITS | 6.00% | 20.00 |
| Diversified Private Equity | 9.50% | 21.00 |
| Core Infrastructure | 6.25% | 11.75 |
| Core+/Value Add Infrastructure | 8.25% | 15.75 |
| Private Credit | 9.00% | 13.50 |
| Risk Parity | 5.50% | 16.00 |
| Commodities | 3.75% | 17.00 |

INVESTMENT PERFORMANCE SERVICES, LLC

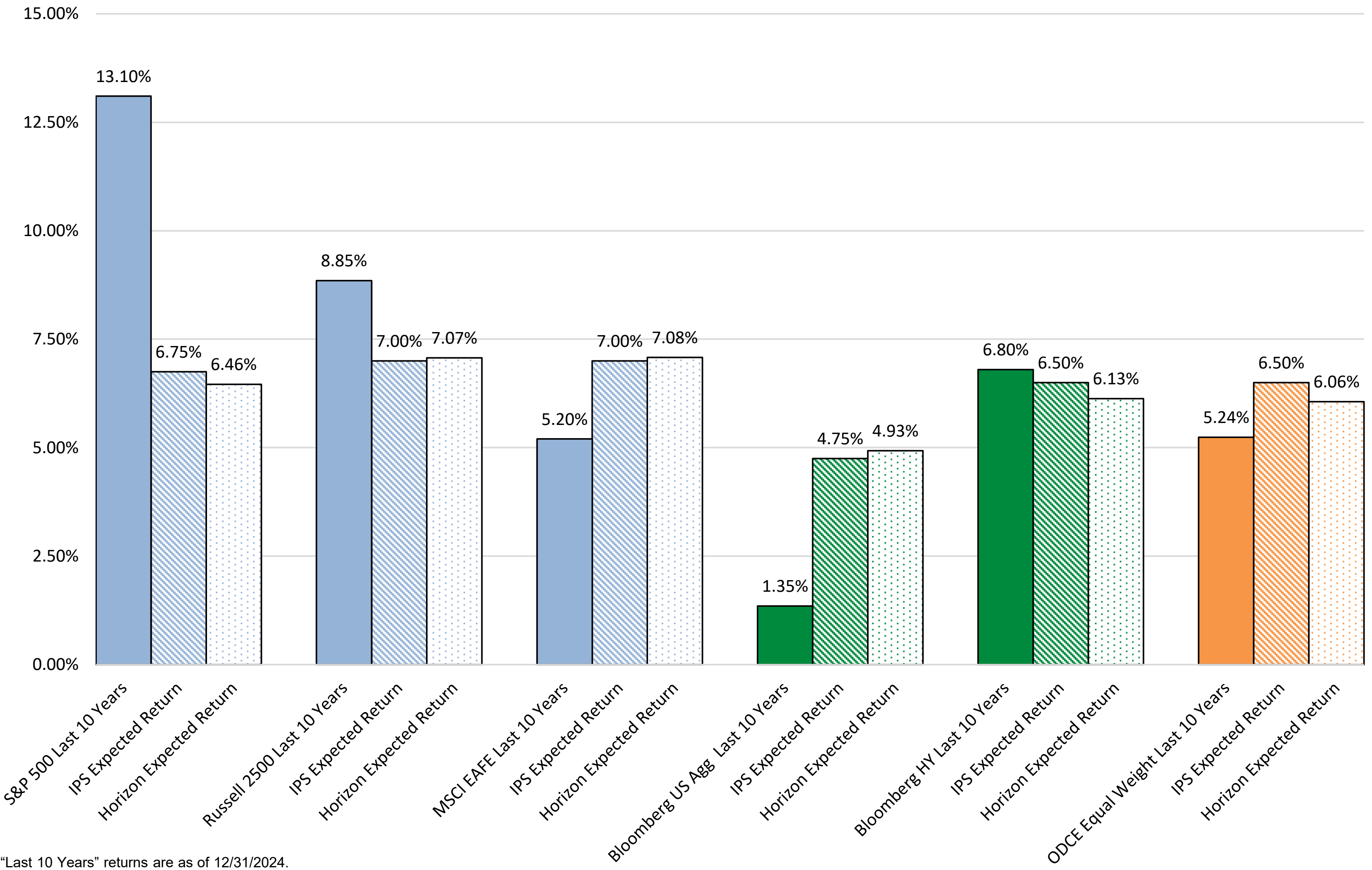
- IPS Investment Committee January 2025.
- Inflation expectation 2.5%.

# Change in Expected Returns[1]




1 January 2025 vs. January 2024

# Historical Returns vs. Forward Looking Assumptions




- “Last 10 Years” returns are as of 12/31/2024.
- “Horizon Expected Returns” are sourced from the Survey of Capital Market Assumptions (20-year horizon) published by Horizon Actuarial Services, LLC published in the August 2024 edition.

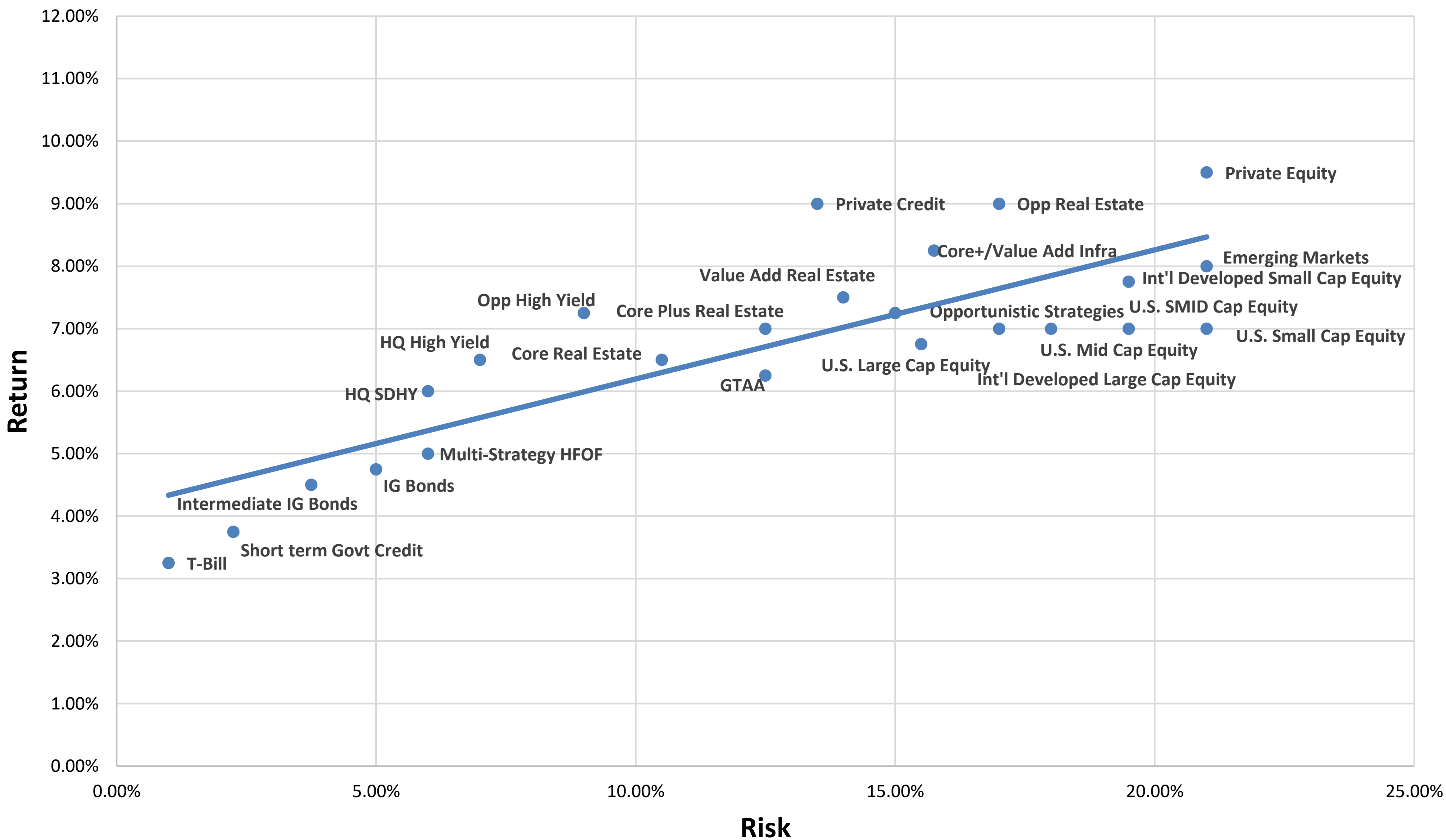
# Asset Class Constraints

| | | |
|---|---|---|
| Total Domestic Equity | 60% | Max |
| Domestic Large Cap Equity | 20% | Min |
| Small, Mid and Smid Cap Equity | 20% | Max |
| International Equity Large Cap | 20% | Max |
| International Small Cap Equity | 10% | Max |
| Cash | 5% | Max |
| Fixed Investment Grade (Includes Short Term & Intermediate) | 10% | Min |
| Opportunistic High Yield | 12.5% | Max |
| High Yield Bonds (Includes Short Duration, High Quality, & Opportunistic) | 20% | Max |
| Real Estate – Core | 10% | Max |
| Real Estate – Core Plus | 10% | Max |
| Real Estate – Value Add | 10% | Max |
| Total Real Estate | 20% | Max |
| Hedge Fund of Funds – Multi Strategy | 5% | Max |
| Opportunistic Strategies | 5% | Max |
| Private Credit | 5% | Max |
| Global Tactical Asset Allocation | 10% | Max |
| Private Equity | 5% | Max |
| Total Alternatives | 40% | Max |

The constraints shown are used for modeling purposes only. They should not be construed as suggested or recommended allocations, or limits on allocations, to any asset class or investment strategy. Each client fund has different facts, circumstances, time horizon, risk tolerance levels, return objectives, investment preferences, cash flows, and liquidity requirements. As such, each client's investment policy may differ materially from the constraints shown above.

- IPS Investment Committee January 2025.

# 2025 Capital Market Assumptions



# Asset Class Correlations

| Assumption table: | US Large Cap Equity | US Mid Cap Equity | US Smid Cap Equity | US Small Cap Equity | Int'l Large Cap Equity | Int'l Small Cap Equity | Emerging Markets Equity | Cash | Short Term Govt / Credit | Interm. Invest. Grade | Core Invest. Grade | Mortgages | Short Duration High Yield | High Yield | Opp High Yield | Real Estate Core | Real Estate Core Plus | Real Estate Value Add | Private Equity | HFoF Multi-Strategy | Private Credit | Opp. Strategies | GTAA | Infrastructure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| US Large Cap Equity | 1.00 | | | | | | | | | | | | | | | | | | | | | | | |
| US Mid Cap Equity | 0.96 | 1.00 | | | | | | | | | | | | | | | | | | | | | | |
| US Smid Cap Equity | 0.93 | 0.98 | 1.00 | | | | | | | | | | | | | | | | | | | | | |
| US Small Cap Equity | 0.90 | 0.95 | 0.99 | 1.00 | | | | | | | | | | | | | | | | | | | | |
| Int'l Equity | 0.87 | 0.86 | 0.82 | 0.78 | 1.00 | | | | | | | | | | | | | | | | | | | |
| Int'l Small Cap Equity | 0.84 | 0.87 | 0.83 | 0.79 | 0.95 | 1.00 | | | | | | | | | | | | | | | | | | |
| Emerging Markets Equity | 0.74 | 0.76 | 0.72 | 0.69 | 0.86 | 0.85 | 1.00 | | | | | | | | | | | | | | | | | |
| Cash | -0.06 | -0.09 | -0.09 | -0.09 | 0.00 | -0.08 | 0.01 | 1.00 | | | | | | | | | | | | | | | | |
| Short Term Govt / Credit | 0.15 | 0.10 | 0.07 | 0.05 | 0.13 | 0.13 | 0.17 | 0.33 | 1.00 | | | | | | | | | | | | | | | |
| Int. Investment Grade | 0.30 | 0.25 | 0.20 | 0.17 | 0.22 | 0.23 | 0.25 | 0.11 | 0.87 | 1.00 | | | | | | | | | | | | | | |
| Core Investment Grade | 0.35 | 0.30 | 0.25 | 0.20 | 0.30 | 0.22 | 0.24 | 0.08 | 0.81 | 0.98 | 1.00 | | | | | | | | | | | | | |
| Mortgages | 0.16 | 0.14 | 0.11 | 0.09 | 0.18 | 0.20 | 0.18 | 0.12 | 0.25 | 0.50 | 0.60 | 1.00 | | | | | | | | | | | | |
| Short Duration High Yield | 0.65 | 0.72 | 0.67 | 0.62 | 0.66 | 0.71 | 0.65 | -0.09 | 0.30 | 0.40 | 0.37 | 0.22 | 1.00 | | | | | | | | | | | |
| High Yield | 0.73 | 0.79 | 0.75 | 0.70 | 0.74 | 0.76 | 0.70 | -0.09 | 0.25 | 0.40 | 0.42 | 0.26 | 0.93 | 1.00 | | | | | | | | | | |
| Opp. High Yield | 0.70 | 0.77 | 0.73 | 0.69 | 0.70 | 0.73 | 0.67 | -0.10 | 0.10 | 0.20 | 0.25 | 0.07 | 0.90 | 0.95 | 1.00 | | | | | | | | | |
| Real Estate Core | 0.28 | 0.20 | 0.20 | 0.30 | 0.20 | 0.12 | 0.16 | -0.09 | -0.37 | -0.33 | -0.28 | 0.40 | 0.28 | 0.20 | 0.12 | 1.00 | | | | | | | | |
| Real Estate Core Plus | 0.28 | 0.20 | 0.20 | 0.30 | 0.20 | 0.12 | 0.16 | -0.09 | -0.37 | -0.33 | -0.28 | 0.40 | 0.28 | 0.20 | 0.12 | 1.00 | 1.00 | | | | | | | |
| Real Estate Value Add | 0.28 | 0.20 | 0.20 | 0.30 | 0.20 | 0.12 | 0.16 | -0.09 | -0.37 | -0.33 | -0.28 | 0.40 | 0.28 | 0.20 | 0.12 | 1.00 | 1.00 | 1.00 | | | | | | |
| Private Equity | 0.76 | 0.81 | 0.86 | 0.88 | 0.67 | 0.69 | 0.59 | -0.11 | -0.06 | 0.03 | 0.03 | 0.05 | 0.53 | 0.60 | 0.60 | 0.25 | 0.30 | 0.35 | 1.00 | | | | | |
| HFoF Multi-Strategy | 0.73 | 0.78 | 0.76 | 0.71 | 0.78 | 0.83 | 0.76 | -0.01 | 0.01 | 0.07 | 0.08 | 0.01 | 0.64 | 0.67 | 0.71 | 0.08 | 0.08 | 0.08 | 0.70 | 1.00 | | | | |
| Private Credit | 0.69 | 0.75 | 0.71 | 0.68 | 0.65 | 0.64 | 0.64 | -0.04 | -0.28 | -0.16 | -0.17 | -0.23 | 0.71 | 0.74 | 0.80 | 0.28 | 0.28 | 0.28 | 0.65 | 0.76 | 1.00 | | | |
| Opportunistic Strategies | 0.79 | 0.85 | 0.85 | 0.82 | 0.81 | 0.85 | 0.76 | -0.07 | -0.02 | 0.05 | 0.05 | 0.03 | 0.72 | 0.76 | 0.81 | -0.02 | -0.02 | -0.02 | 0.82 | 0.91 | 0.82 | 1.00 | | |
| GTAA | 0.94 | 0.91 | 0.87 | 0.83 | 0.95 | 0.92 | 0.83 | -0.01 | 0.23 | 0.35 | 0.35 | 0.30 | 0.69 | 0.77 | 0.70 | -0.01 | -0.01 | -0.01 | 0.77 | 0.75 | 0.62 | 0.78 | 1.00 | |
| Infrastructure | 0.60 | 0.55 | 0.54 | 0.50 | 0.62 | 0.57 | 0.55 | 0.00 | 0.18 | 0.31 | 0.32 | 0.26 | 0.53 | 0.59 | 0.54 | 0.40 | 0.40 | 0.40 | 0.60 | 0.63 | 0.56 | 0.66 | 0.68 | 1.00 |

A correlation of 1.00 indicates two series move perfectly together while a -1.00 shows they move perfectly opposite one another.

# Efficient Frontier Analysis

| Efficient Frontier Report | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Asset | Portfolio 1 | Portfolio 2 | Portfolio 3 | Portfolio 4 | Portfolio 5 | Portfolio 6 | Portfolio 7 | Portfolio 8 | Portfolio 9 | Portfolio 10 |
| US Large Cap Equity | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 |
| US Mid Cap Equity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| US Smid Cap Equity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| US Small Cap Equity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.69 |
| Int'l Equity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Int'l Small Cap Equity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.65 | 10.00 |
| Emerging Markets | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.36 | 6.37 | 10.00 | 10.00 |
| Cash | 5.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Short Term Govt/Credit | 33.33 | 20.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Int. Investment Grade | 26.44 | 40.61 | 57.26 | 47.29 | 26.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Core Investment Grade | 0.00 | 0.00 | 0.00 | 0.00 | 15.61 | 35.65 | 27.14 | 21.13 | 14.85 | 10.00 |
| Short Duration High Yield | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| High Yield | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.84 | 7.50 | 7.50 | 7.50 | 4.31 |
| Opportunistic High Yield | 0.00 | 0.00 | 1.15 | 10.21 | 12.50 | 12.50 | 12.50 | 12.50 | 12.50 | 12.50 |
| Real Estate – Core | 1.82 | 4.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Real Estate – Core Plus | 0.00 | 0.00 | 6.58 | 7.50 | 7.50 | 7.50 | 7.50 | 7.50 | 7.50 | 7.50 |
| Real Estate – Value Add | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| Private Equity | 0.00 | 0.00 | 0.00 | 0.00 | 2.72 | 4.15 | 5.00 | 5.00 | 5.00 | 5.00 |
| HFoF - Multi Strategy | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Private Credit | 3.42 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| Opportunistic Strategies | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GTAA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Infrastructure | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 1.36 | 5.00 | 5.00 | 5.00 | 5.00 |
| **Return** | **5.40** | **5.69** | **5.98** | **6.26** | **6.53** | **6.79** | **7.05** | **7.29** | **7.52** | **7.72** |
| **Risk** | **4.54** | **4.92** | **5.32** | **5.80** | **6.42** | **7.08** | **7.78** | **8.65** | **9.62** | **10.75** |
| **Return/Risk** | **1.19** | **1.16** | **1.12** | **1.08** | **1.02** | **0.96** | **0.91** | **0.84** | **0.78** | **0.72** |

Compound annual return.

# Asset Allocation Policy History

| | 2017 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|
| U.S. Large Cap | 20.0% | 20.0% | 20.0% | 20.0% | 20.0% | 15.0% | 17.5% |
| U.S. Mid Cap | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 0.0% |
| U.S. SMID Cap | -- | -- | -- | -- | -- | -- | 7.5% |
| U.S. Small Cap | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 0.0% |
| International Large Cap | 5.0% | 5.0% | 5.0% | 7.5% | 7.5% | 5.0% | 5.0% |
| International Small Cap | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 2.5% |
| GTAA | 10.0% | 7.5% | 5.0% | 2.5% | 2.5% | 0.0% | 0.0% |
| Intermediate Fixed | 7.5% | 5.0% | 5.0% | 5.0% | 5.0% | 10.0% | 10.0% |
| Mortgages | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| SD High Yield | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 12.5% | 12.5% |
| Opportunistic High Yield | -- | -- | -- | -- | -- | -- | 12.5% |
| Core Real Estate | 17.5% | 17.5% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| Value Add Real Estate | -- | -- | 10.0% | 10.0% | 10.0% | 10.0% | 7.5% |
| Hedge Funds | 5.0% | 5.0% | 5.0% | 2.5% | 2.5% | 0.0% | 0.0% |
| Opportunistic | 5.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 0.0% |
| Private Equity | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| Value Add Infrastructure | -- | -- | -- | 2.5% | 2.5% | 2.5% | 2.5% |
| Private Credit | -- | -- | -- | -- | -- | -- | 2.5% |
| **Expected Return** | **7.27%** | **7.07%** | **6.75%** | **6.87%** | **6.83%** | **7.12%** | **7.00%** |
| **Expected Risk** | **9.79%** | **9.99%** | **9.66%** | **9.87%** | **9.75%** | **8.88%** | **8.71%** |
| **Actuarial Assumed Rate** | **7.00%** | **7.00%** | **7.00%** | **7.00%** | **7.00%** | **7.00%** | **7.00%** |

| | |
|---|---|
| (green) | Increase allocation |
| (red) | Decrease allocation |
| (blue) | New asset class |
| (purple) | Reclassification |

# Current Policy Comparison

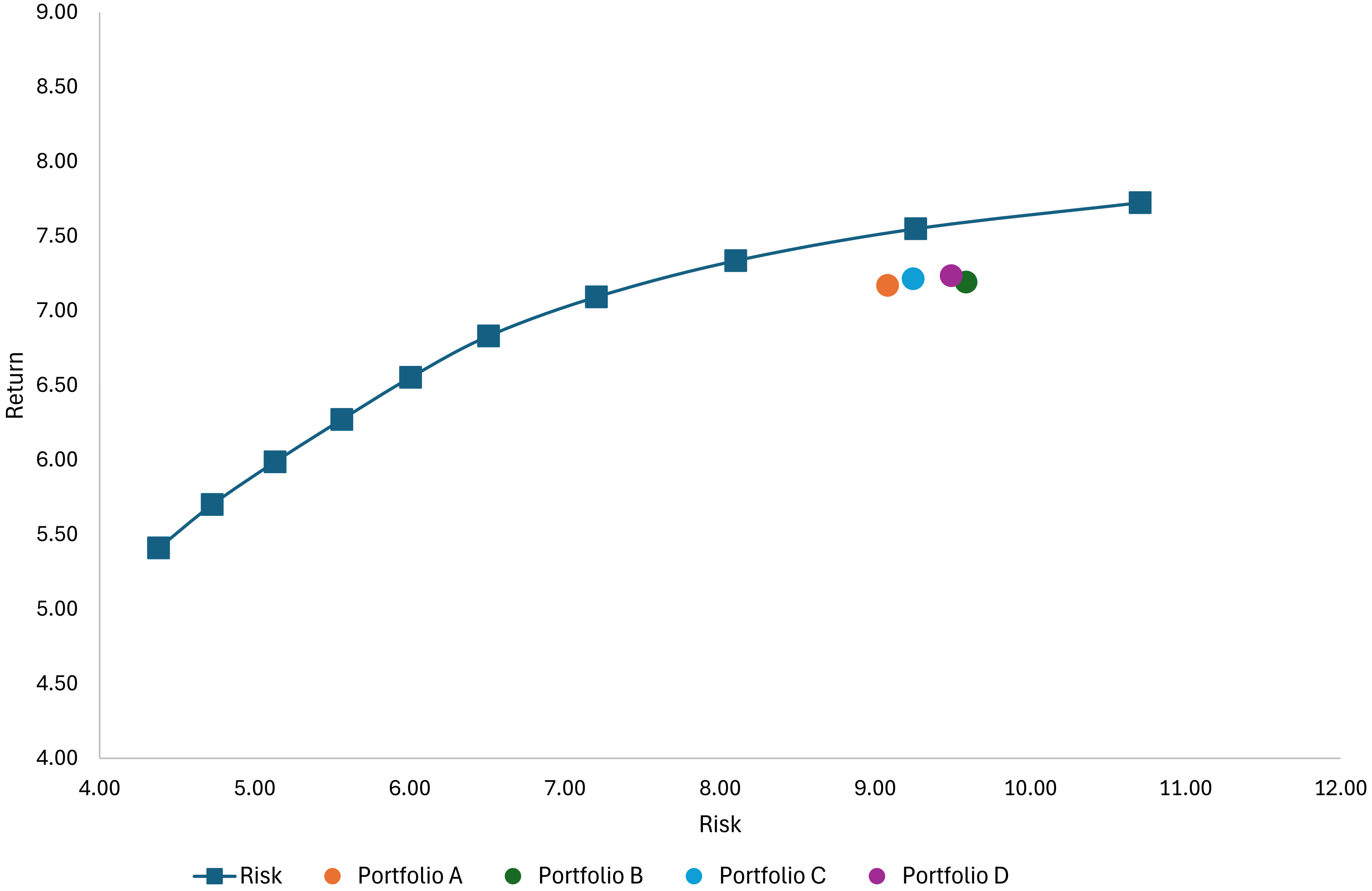
| | | % Equity Target | | | | % Fixed Income Target | | | | % Alternatives Target | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | US LC Equity | US SMID Cap Equity | Int'l Equity | Int'l SC Equity | Fixed Income Interm | Mort. | SDHY | Opp High Yield | Real Estate Core | Real Estate Value Add | Private Credit | Private Equity | Infra | Cash | Expected Return (net of fees) | Risk | Comments |
| | | 32.5% Equity | | | | 40% Fixed Income | | | | 17.5% Real Estate | | 10% Alts | | | | | | |
| 1 | Operating Engineers Local No. 77 Pension Plan | 17.5 | 7.5 | 5.0 | 2.5 | 10.0 | 5.0 | 12.5 | 12.5 | 10.0 | 7.5 | 2.5 | 5.0 | 2.5 | 0.0 | 7.17% | 9.08 | Current Policy |
| 2 | Portfolio B | 19.7 | 7.3 | 5.0 | 5.4 | 8.3 | 5.3 | 11.0 | 13.2 | 8.3 | 8.0 | 0.0 | 5.9 | 1.7 | 0.9 | 7.19% | 9.59 | Allocation as of December 31, 2024 |
| | | 32.5% Equity | | | | 40% Fixed Income | | | | 15% Real Estate | | 12.5% Alts | | | | | | |
| 3 | Portfolio C | 17.5 | 7.5 | 5.0 | 2.5 | 10.0 | 5.0 | 12.5 | 12.5 | 7.5 | 7.5 | 2.5 | 5.0 | 5.0 | 0.0 | 7.21% | 9.24 | Increase Infrastructure. Decrease Core Real Estate. |
| | | 35% Equity | | | | 37.5% Fixed Income | | | | 15% Real Estate | | 12.5% Alts | | | | | | |
| 4 | Portfolio D | 20.0 | 7.5 | 5.0 | 2.5 | 10.0 | 5.0 | 10.0 | 12.5 | 7.5 | 7.5 | 2.5 | 5.0 | 5.0 | 0.0 | 7.24% | 9.49 | Increase US LC equity and Infrastructure. Decrease SDHY and Core real estate. |

The Fund's assumption rate as determined by the plan actuary is 7.0%.

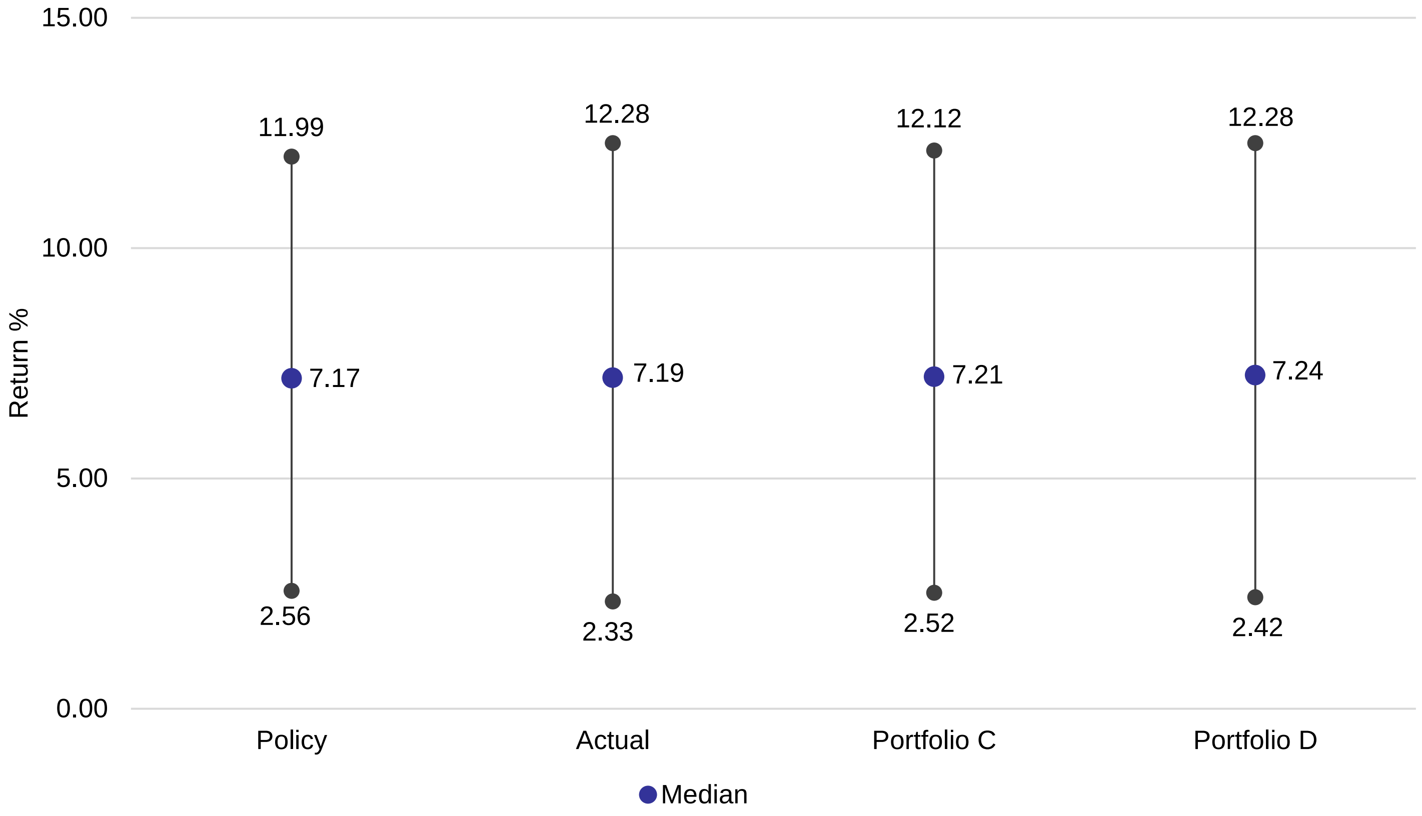
Scenarios are shown for illustrative purposes.

| | |
|---|---|
| (green) | Increase allocation |
| (red) | Decrease allocation |
| (light blue) | New asset class |
| (purple) | Reclassification |

# Efficient Frontier Comparison

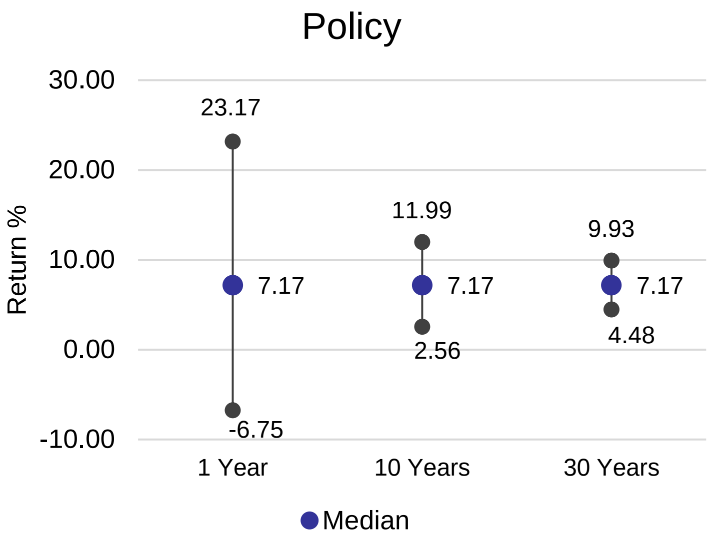


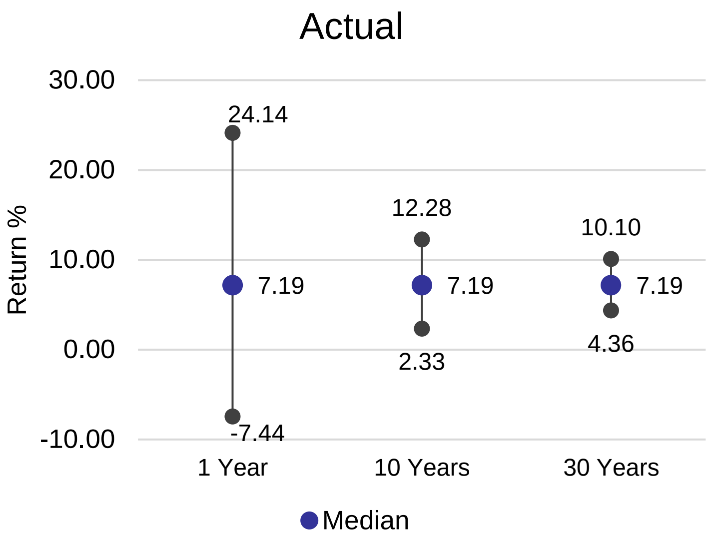
# Potential Distribution of Returns – 10 Year Horizon

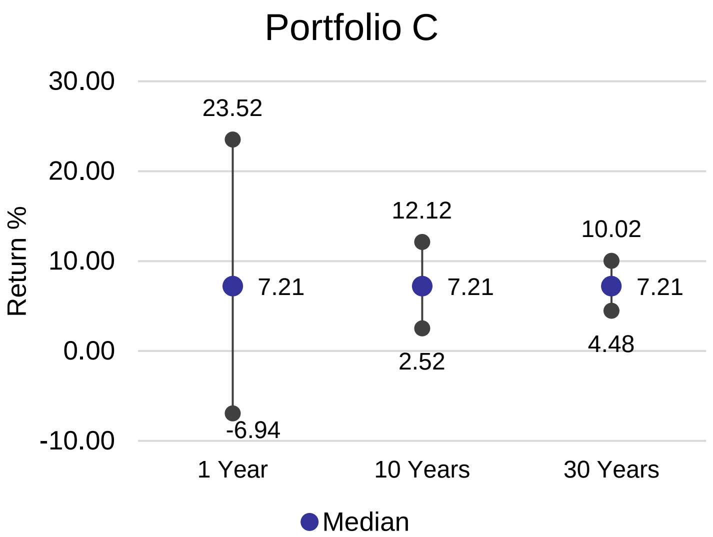


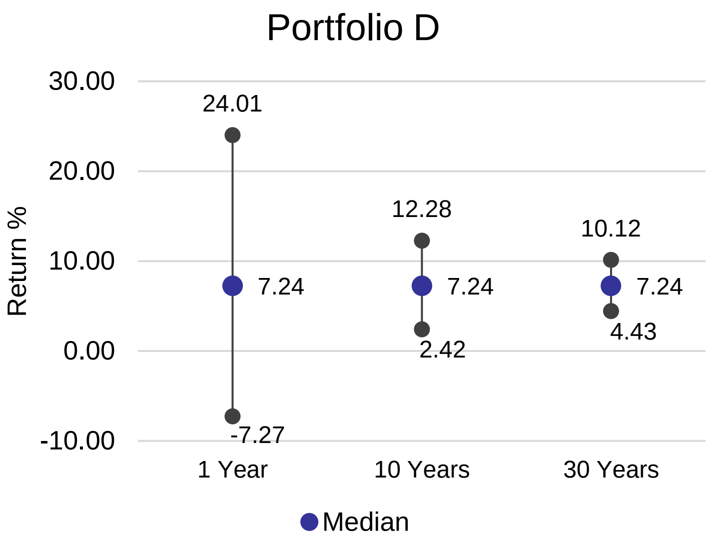

Potential distribution of returns is based on the Parametric Method. Best and worst outcomes are based on the 5th and 95th percentile, respectively.

# Potential Distribution of Returns




Potential distribution of returns is based on the Parametric Method. Best and worst outcomes are based on the $5^{th}$ and $95^{th}$ percentile, respectively.

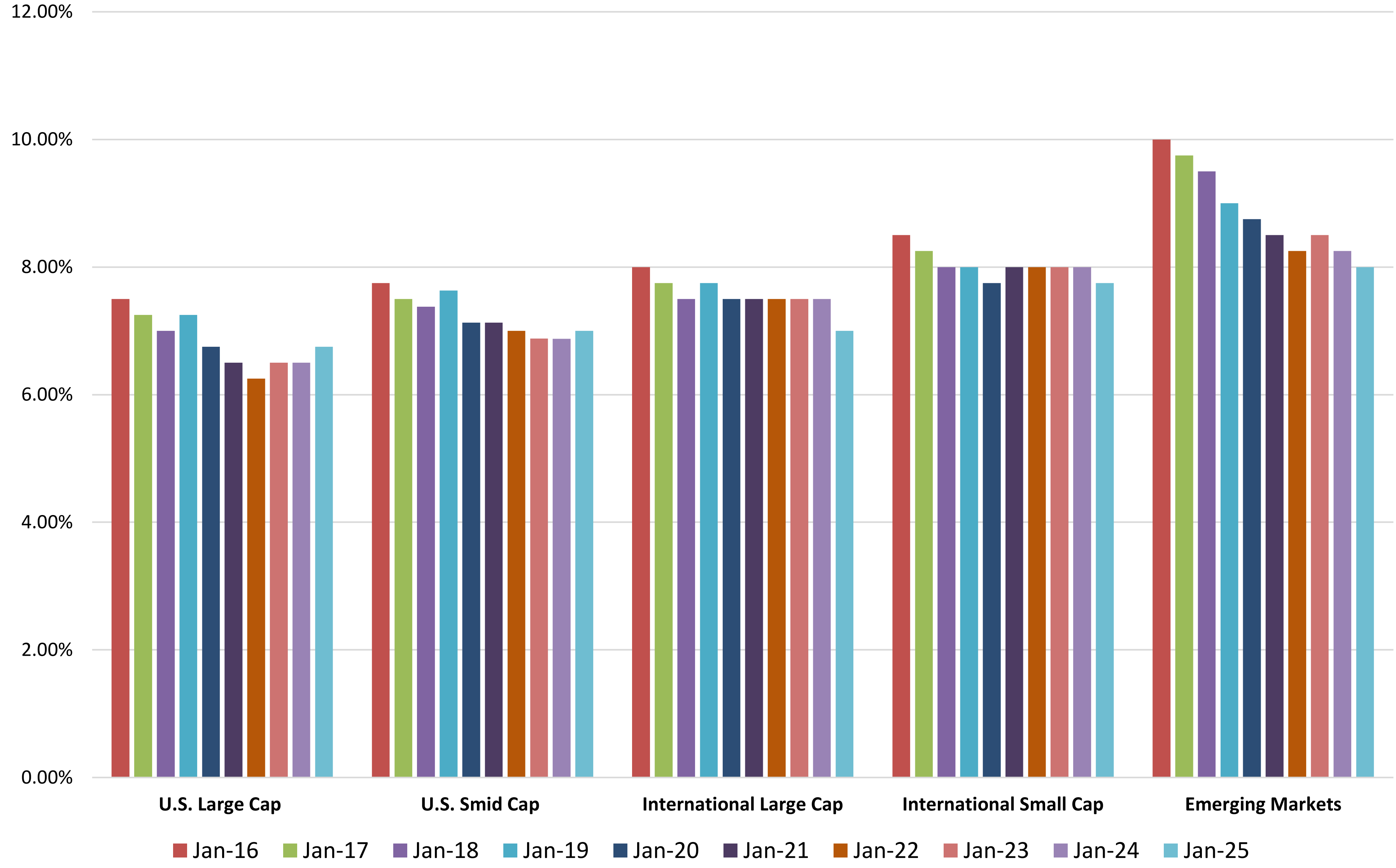
# Hurdle Rate Analysis – 10 Year Horizon

| | Policy | Portfolio B | Portfolio C | Portfolio D |
|---|---|---|---|---|
| Expected Return | 7.17% | 7.19% | 7.21% | 7.24% |
| Expected Risk | 9.08 | 9.59 | 9.24 | 9.49 |
| Probability of achieving 6.50% | 59.88% | 59.68% | 60.35% | 60.38% |
| Probability of achieving 6.75% | 56.23% | 56.21% | 56.77% | 56.90% |
| Probability of achieving 7.00% | 52.52% | 52.70% | 53.14% | 53.36% |
| Probability of achieving 7.25% | 48.79% | 49.17% | 49.48% | 49.79% |

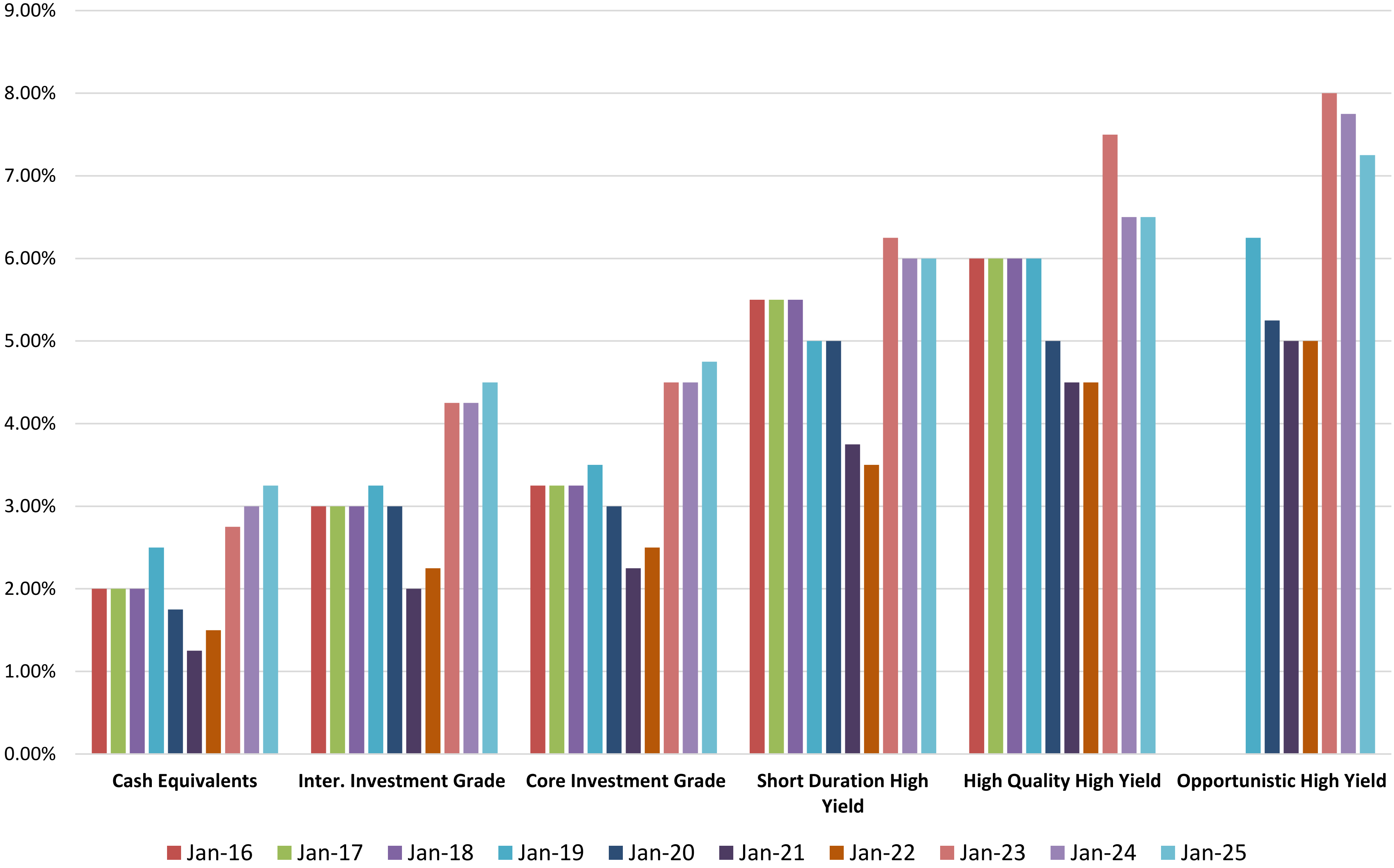
Probability of achieving specific returns is based on the Parametric Method.

# APPENDIX

# Public Equity – IPS Historical Capital Market Assumptions

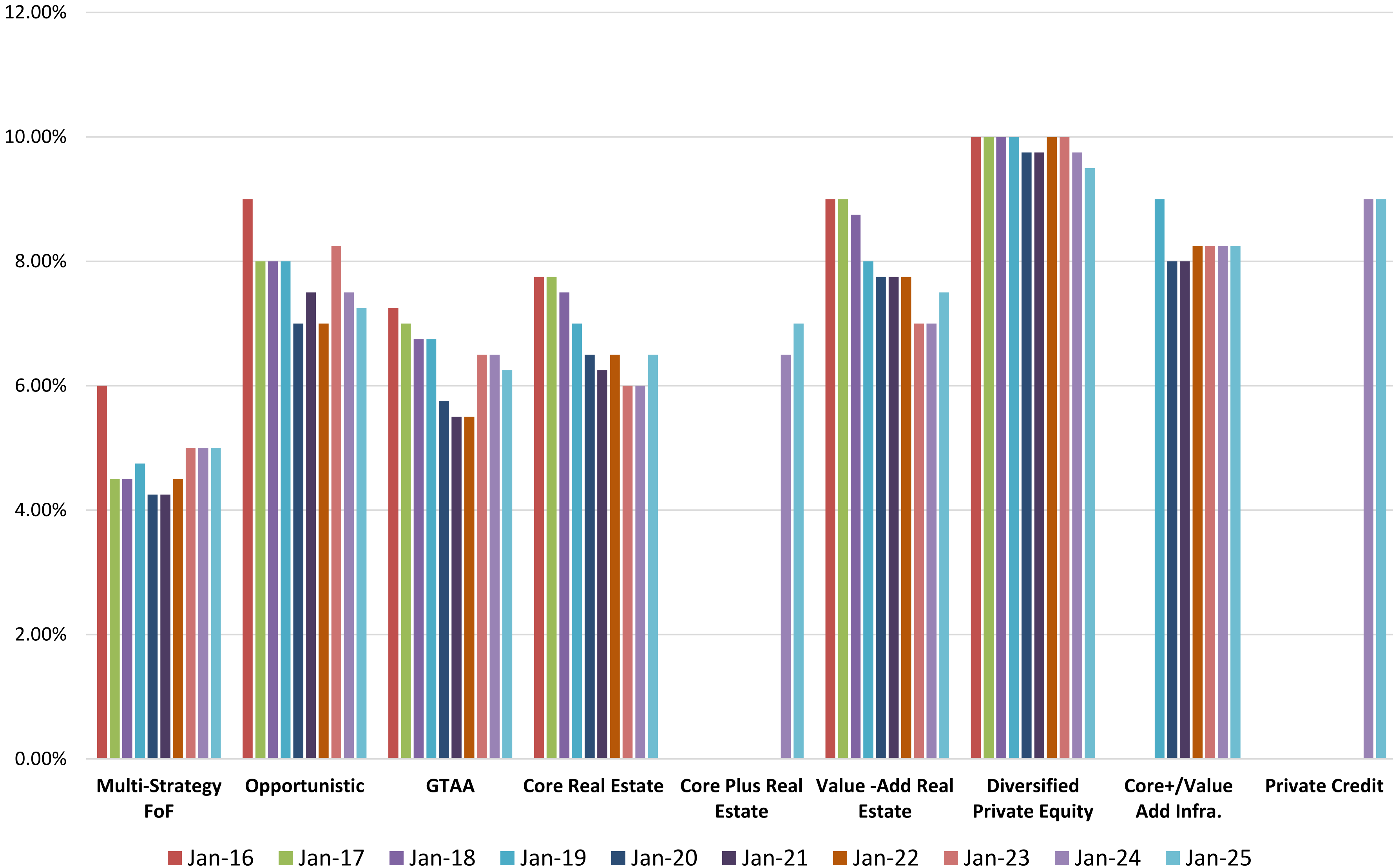


# Fixed Income – IPS Historical Capital Market Assumptions




IPS began setting a capital market assumption for Opportunistic High Yield in January 2019.

# Alternative Investments – IPS Historical Capital Market Assumptions



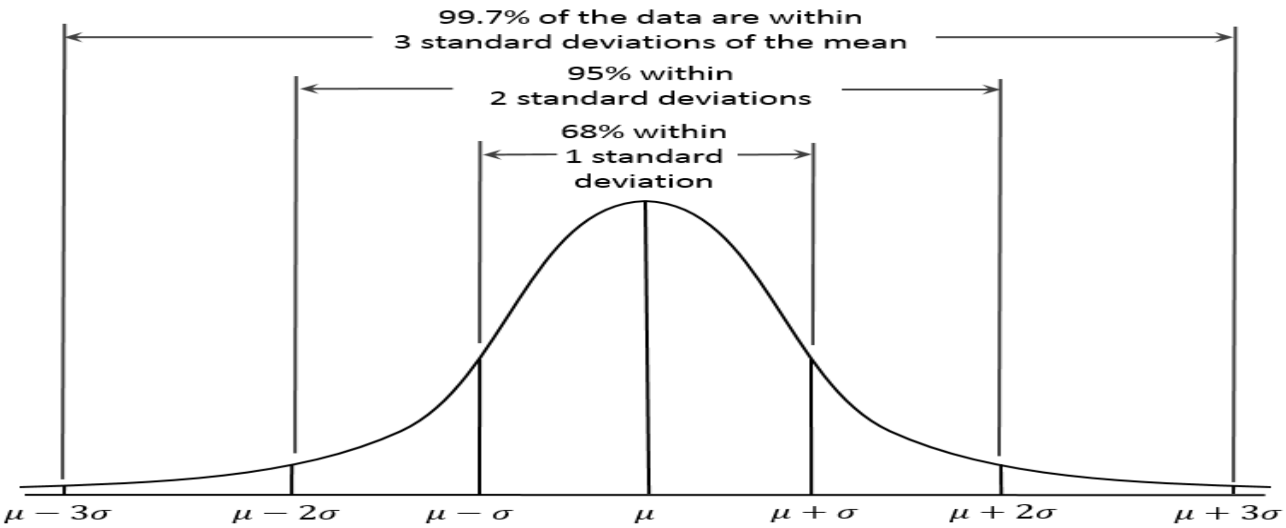

IPS began setting capital market assumptions for Core+/Value Add Infrastructure in January 2019 and for Core Plus Real Estate and Private Credit in January 2024.

# Explanation of Methodology

- The analysis in this presentation utilizes the parametric method, also known as the variance-covariance method

- The parametric method assumes a normal distribution of returns, commonly referred to as a bell-shaped curve.
  - For a normal distribution, 68% of the observations are within +/- one standard deviation, 95% are within +/- two standard deviations, and 99.7% are within +/- three standard deviations

- The chart below shows a normal distribution




- In reality, financial returns are not “normal;” they exhibit positive skewness (you get more positive returns above the mean than a normal distribution would predict) and kurtosis (the extreme “tails” of both positive and negative returns occur more often and are more extreme than a normal distribution would predict).

# Glossary of Investment Terminology

**Alpha** — The amount of an investment's return that is independent of the return of the market. Alpha is generated by active management through security selection and may be positive or negative relative to a given benchmark.

**Beta** — A measure of an investment's volatility relative to the market. The beta of the market is 1.0 (as represented by a benchmark such as the S&P 500 Index). A beta of greater than 1.0 indicates an investment with greater volatility than the benchmark. A beta of less than 1.0 indicates less volatility than the benchmark.

**Capture Ratio** — A measurement (usually based on monthly or quarterly time periods) of an investment manager's performance relative to their benchmark in a rising or falling market. Upside capture illustrates how a manager has performed when their benchmark index is positive. In a rising market, a percentage over 100% indicates the manager exceeded the benchmark, while a percentage below 100% indicates the manager lagged the benchmark. Downside capture illustrates how a manager has performed when their benchmark index is negative. In a falling market, a percentage of less than 100% indicates that the manager lost less than the benchmark, while a percentage above 100% indicates the manager lost more than the market. Index funds, in theory, should have 100% upside and downside capture ratios before fees.

**Compound Annual Returns** — A time-weighted measure of the annual investment return, assuming the investment grew at a constant rate.

**Correlation** — A statistical measure of how two investments perform in relation to each other. Investments with a correlation of 1.0 have perfect positive correlation (exactly the same). Investments with perfect negative correlation of -1.0 will perform equally but in opposite directions.

**Distribution to Paid-In (DPI)** — The value of all distributions to limited partners divided by the amount limited partners have contributed to the fund. Often expressed as a ratio, DPI plus the unrealized value of limited partners' investments (RPI) equals the Total Value to Paid In (TVPI) multiple. A DPI of 1 indicates the investor has received capital back equal to what they invested while a DPI over 1 indicates an investor has received more capital back than they invested. DPI is most relevant for closed-end fund structures such as private equity.

**Efficient Frontier** — Represents the set of possible portfolios that have the greatest expected return for each level of risk (standard deviation of returns).

# Glossary of Investment Terminology

| | |
|---|---|
| **Geometric Return** | A calculation used when determining an annualized investment return, which tends to dampen the effect of very high or very low values. The result is a number that is smaller than (or equal to) the arithmetic average of the values. |
| **Internal Rate of Return (IRR)** | The discount rate at which the net present value of an investment's cash flows is equal to zero (0). IRR is commonly used to gauge fund performance. |
| **Market Cap** | The dollar value of a corporation, which is calculated by multiplying the share price of the stock by the number of outstanding shares. |
| **Residual to Paid-In (RPI)** | The unrealized value of limited partners' investments divided by the amount limited partners have contributed to the fund. Often expressed as a ratio, RPI plus the amount distributed back to investors (DPI) equals the total value to paid in (TVPI) multiple. |
| **Return/Risk Ratio** | The expected return of an investment divided by the expected standard deviation (risk). When comparing return/risk ratios, a higher value is presumed to be better than a lower value. |
| **Standard Deviation** | A statistical measurement of the dispersion of a set of data from its mean. The more spread apart the data is, the greater the standard deviation. Standard deviation is the most commonly cited measure of volatility or "risk" in investment returns. It measures total volatility, meaning it does not differentiate "bad" volatility associated with negative returns from "good" volatility associated with positive returns. |
| **Total Return** | The annual return on an investment, including appreciation, depreciation and income (interest, dividends, net operating income). |
| **Total Value to Paid in Multiple (TVPI)** | A measure of return that expresses how much a fund has made relative to how much was contributed. It is calculated by dividing the sum of the amount of capital distributed to investors and the amount of remaining value by the amount of invested capital. A TVPI below 1 indicates the current value of the investment plus the capital returned to the investor is less than the investor contributed. A TVPI greater than 1 indicates the current value of the investment plus the capital returned to the investor is more than the investor contributed. For closed-end funds such as private equity, DPI and TVPI will be the same at the end of the fund's life. |

# Impact of Negative Cash Flows

- Most defined benefit pension funds payout more in benefits and expenses than they take in via contributions, resulting in **negative net cash flows** on an annual basis.
- Plans with negative net cash flows require a much higher return in Year 2 following a loss in Year 1 to get back to the starting fund value.
- For example, a plan with a neutral net cash flow that returns -10.0% in Year 1 would require an **11.0% return in Year 2 to break even**.
- A plan with -5.0% net cash flows that experiences a -10.0% return in Year 1 would require a **24.0% return in Year 2 to breakeven (Year 2B).**
- An 11.0% return for a -5.0% net cash flow plan in Year 2 following a -10.0% return in Year 1 would result in an ending value **that is $10.5 million less (Year 2A)** than the neutral cash flow plan, assuming a starting value of $100 million.

**Return Needed in Year 2 to Breakeven**

| Year 1 Return | Cash Flow as Percentage of Beginning Assets: 0.0% | -2.5% | -5.0% | -7.5% | -10.0% |
|---|---|---|---|---|---|
| 0.0% | 0% | 5% | 11% | 16% | 22% |
| -5.0% | 5% | 11% | 17% | 23% | 29% |
| -10.0% | **11%** | 17% | **24%** | 30% | 38% |
| -15.0% | 18% | 24% | 31% | 39% | 47% |
| -20.0% | 25% | 32% | 40% | 48% | 57% |

| | Neutral Cash Flow Fund | | Negative Cash Flow Fund | | |
|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 1 | Year 2A | Year 2B |
| Beginning Assets | $100,00,000 | $90,000,000 | $100,000,000 | $85,000,000 | $85,000,000 |
| Net Cash Flows | NA | NA | ($5,000,000) | ($5,000,000) | ($5,000,000) |
| Investment Return (%) | -10% | 11% | -10% | 11% | 24% |
| Investment Return ($) | ($10,000,000) | $10,000,000 | ($10,000,000) | $9,444,350 | $20,000,000 |
| **Ending Value** | **$90,000,000** | **$100,000,000** | **$85,000,000** | **89,444,350** | **$100,000,000** |

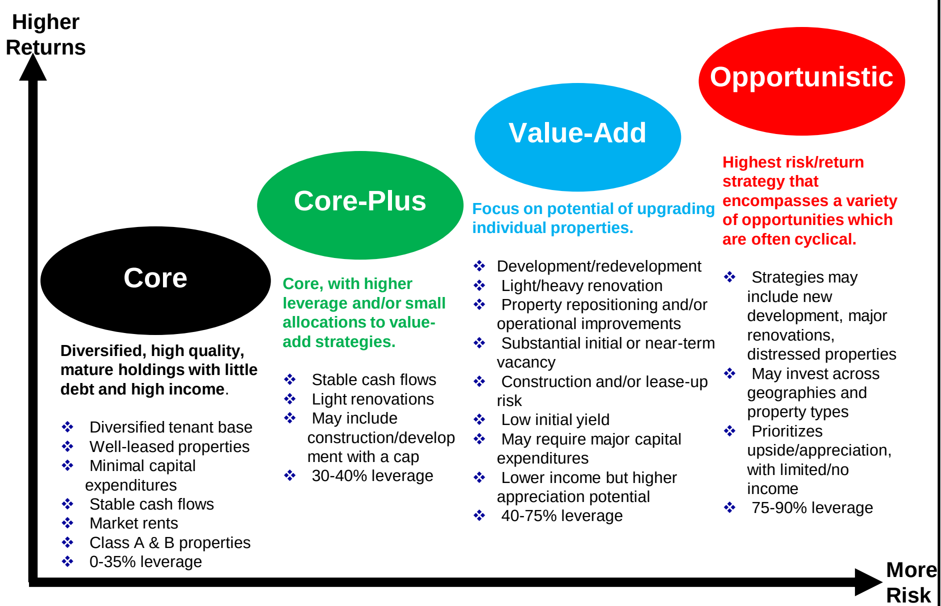
## Common Market Capitalization Categories for Equities

| | |
|---|---|
| Mega Cap | Greater than $250 Billion |
| Large Cap | $50 Billion to $250 Billion |
| Mid Cap | $10 Billion to $50 Billion |
| Small Cap | $1 Billion to $10 Billion |
| Micro Cap | Less than $1 Billion |

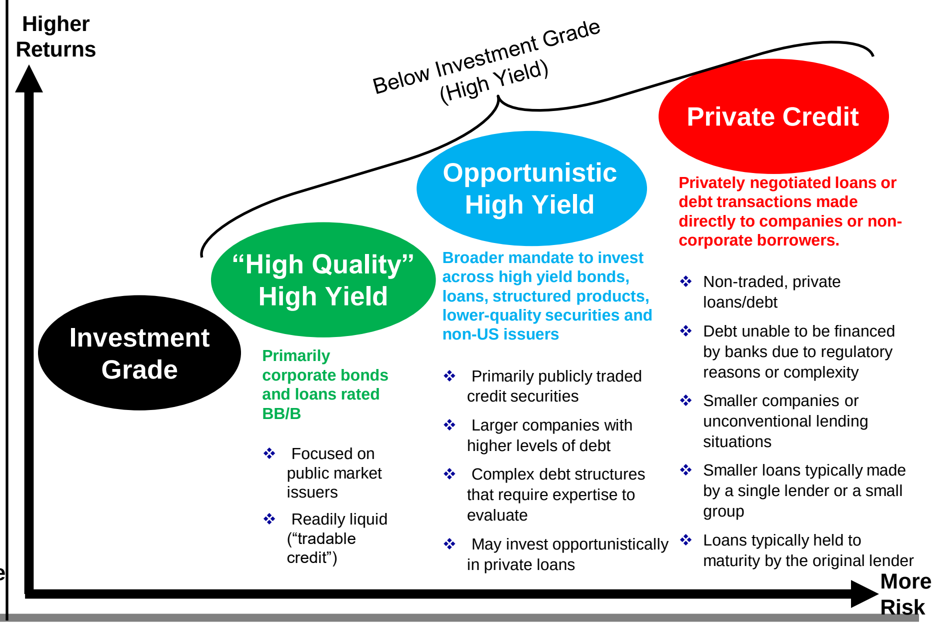
## Bond Ratings & Classifications

| Classification | Standard & Poor's | Moody's |
|---|---|---|
| Investment Grade | AAA | Aaa |
| | AA | Aa |
| | A | A |
| | BBB | Baa |
| High Quality High Yield | BB | Ba |
| | B | B |
| Low Quality High Yield | CCC | Caa |
| | CC | Ca |
| | C | C |

## Real Estate Asset Class




## High Yield Credit Asset Class



# Operating Engineers Local No. 77 Pension Plan
# Private Equity Pacing Analysis

*As of December 31, 2024*

# Private Equity Pacing Analysis

- Private equity funds "draw down" committed capital from investors over a period of several years early in a fund's life.  This "investment period" typically expires three to five years from the date of the fund's first investment

- Distributions on realized (sold) investments generally do not occur until a few years after capital is initially drawn from investors

- Private equity funds typically have lives of 10 to 15 years; however, on average, a private equity fund will invest much of the capital in years one through four and most of the invested capital and gains will  be distributed to investors in years four through nine

- Investors typically build a private equity allocation by making commitments to multiple funds over several years period in order to achieve diversification by vintage year

- Pacing analysis allows investors to determine the appropriate amount of private equity commitments to make each year by projecting future cash flows based on the investments made to date

- IPS has developed cash flow models based on specific types of private equity fund investments (secondary funds, primary funds, co-investment funds, diversified fund of funds) in order to advise clients on the appropriate commitment amounts to reach and maintain a policy allocation to private equity

- IPS recommends a pacing analysis be completed no less than annually

# Current Private Equity Portfolio

- As of 12/31/24, the Operating Engineers Local No. 77 Pension Plan has a 5.90% allocation to private equity vs. a 5.00% Policy
- The Pension Fund committed a total of $17.0 million to two private equity funds (see table below)
- Approximately $7.8 million of the committed amount remains available for investment

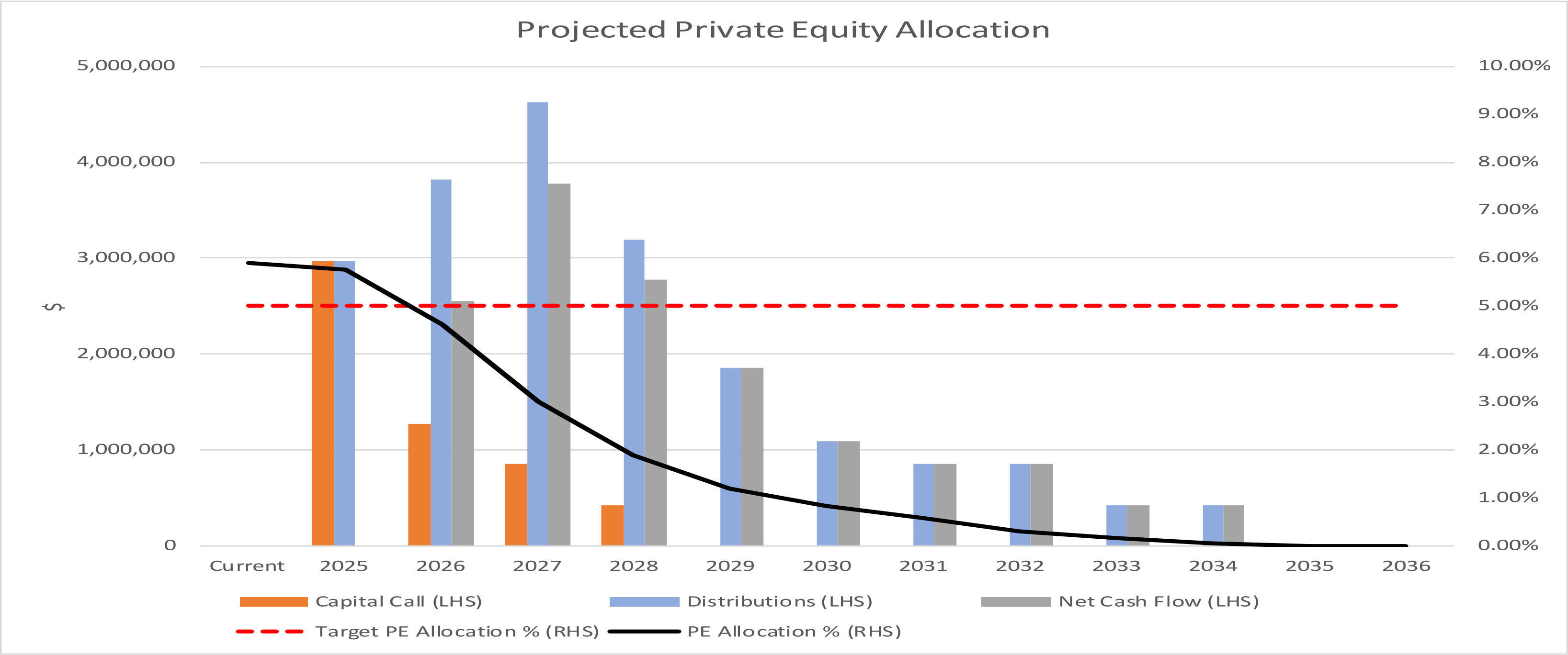
| | Vintage Year | Commitment | Market Value | Remaining Commitment |
|---|---|---|---|---|
| Grosvenor Secondary Fund II | 2018 | 8,500,000 | 7,454,199 | 3,200,000 |
| Grosvenor Secondary Fund III | 2021 | 8,500,000 | 3,597,726 | 4,600,000 |
| **Total** | | **17,000,000** | **11,051,925** | **7,800,000** |



INVESTMENT PERFORMANCE SERVICES, LLC

# Private Equity Portfolio Allocations Based on Current Commitments

- The chart below shows the projected cash flows for the Penson Plan's private equity portfolio based on the commitments made to date
- The portfolio is projected to be cash flow positive beginning in 2026 with distributions exceeding contributions, resulting in a declining allocation to private equity
- The private equity allocation is projected to fall below 1% in 2030 and approach 0% in 2034 assuming no further commitments are made

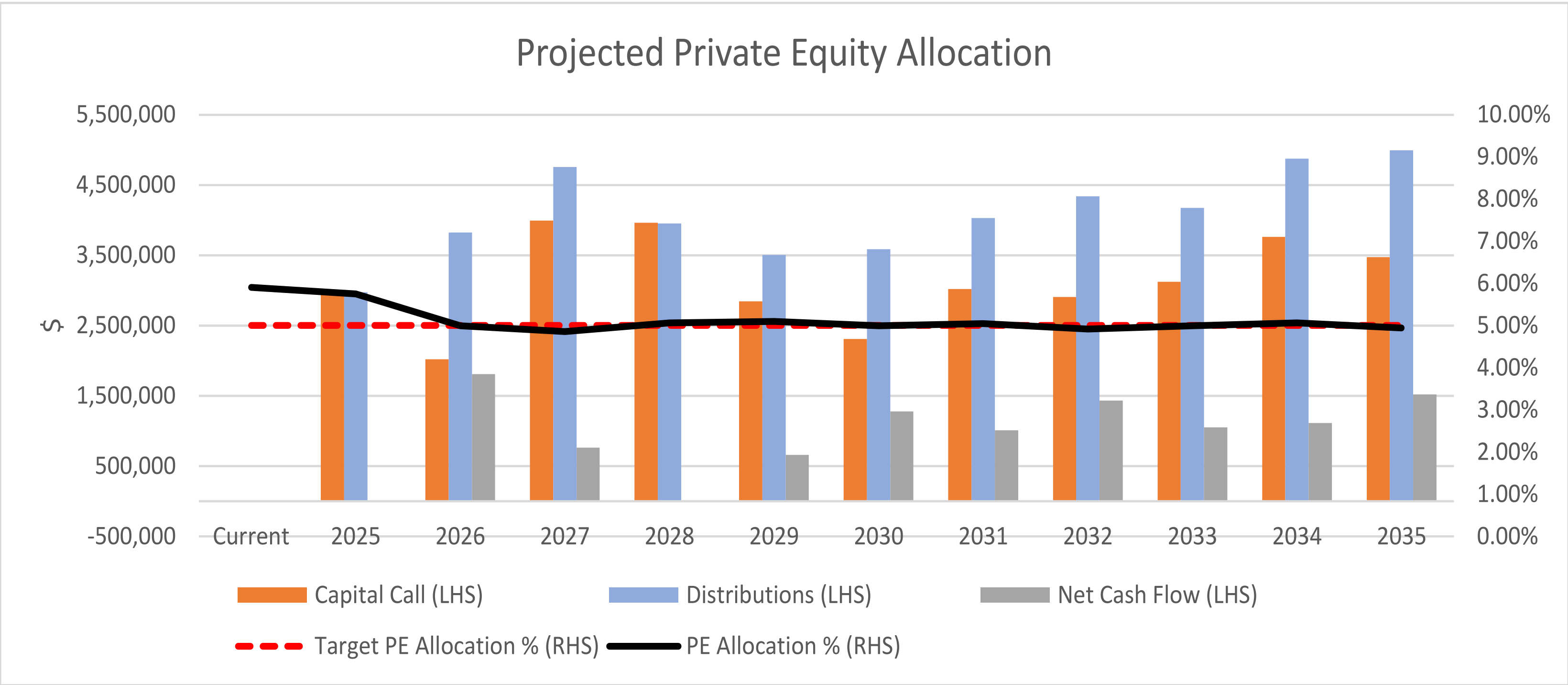



INVESTMENT PERFORMANCE SERVICES, LLC

# Private Equity Portfolio Allocations Based Future Annual Commitments

- The table below shows the amount of annual private equity commitments needed to reach and maintain the 5.00% Policy to private equity
- The chart shows the projected cash flows of the private equity allocation based on the recommended commitment amount

| Calendar Year | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual Commitment Amount to Reach/Maintain Target Allocation ($) | | 3,500,000 | 10,500,000 | | | 3,750,000 | 5,500,000 | | 6,000,000 | 5,750,000 | |



# Operating Engineers Local No. 77 Trust Fund of Washington DC

Master Consulting Services Report

Period Ended

December 31, 2024

## Total Fund Growth of Assets

| | Fourth Quarter | Fiscal Year-To-Date | Three Years |
|---|---|---|---|
| Beginning Market Value | $38,743,358 | $36,452,729 | $38,475,037 |
| Net Cash Flow | -$93,464 | $65,711 | -$2,067,117 |
| Net Investment Change | $31,200 | $2,162,655 | $2,273,175 |
| Ending Market Value | $38,681,095 | $38,681,095 | $38,681,095 |

## Total Fund Growth of Assets

| | Five Years | Seven Years | Ten Years |
|---|---|---|---|
| Beginning Market Value | $37,953,625 | $38,307,327 | $33,365,242 |
| Net Cash Flow | -$6,612,233 | -$10,532,341 | -$11,310,504 |
| Net Investment Change | $7,339,703 | $10,906,109 | $16,626,357 |
| Ending Market Value | $38,681,095 | $38,681,095 | $38,681,095 |

- The Fund's fiscal year end is December 31st.

Performance Summary (Gross of Fees) - Annualized

| | Market Value | % of Portfolio | Ending December 31, 2024 2024 Q4 | Fiscal YTD | 3 Yrs |
|---|---|---|---|---|---|
| **Total Fund** | **$38,681,095** | **100.0%** | **0.1%** | **6.0%** | **2.2%** |
| **Total Domestic Large Cap Equity** | **$4,721,333** | **12.2%** | **3.0%** | **26.2%** | **8.2%** |
| **Total Investment Grade Fixed Income** | **$13,482,285** | **34.9%** | **-1.6%** | **3.2%** | **0.1%** |
| **Total Short Duration High Yield Fixed Income** | **$13,704,413** | **35.4%** | **0.5%** | **6.2%** | **3.8%** |
| **Total Real Estate - Core** | **$2,870,108** | **7.4%** | **1.0%** | **-1.2%** | **-2.1%** |
| **Total Real Estate - Value Add** | **$2,879,712** | **7.4%** | **0.4%** | **-5.0%** | **0.2%** |
| **Total Cash Equivalents** | **$1,023,244** | **2.6%** | | | |

## Performance Summary (Gross of Fees) - Annualized

| | Market Value | % of Portfolio | Ending December 31, 2024 5 Yrs | 7 Yrs | 10 Yrs |
|---|---|---|---|---|---|
| **Total Fund** | **$38,681,095** | **100.0%** | **4.2%** | **4.5%** | **4.8%** |
| **Total Domestic Large Cap Equity** | **$4,721,333** | **12.2%** | **13.0%** | **11.2%** | **11.3%** |
| **Total Investment Grade Fixed Income** | **$13,482,285** | **34.9%** | **1.3%** | **2.1%** | **2.1%** |
| **Total Short Duration High Yield Fixed Income** | **$13,704,413** | **35.4%** | **3.9%** | **4.1%** | **3.9%** |
| **Total Real Estate - Core** | **$2,870,108** | **7.4%** | **3.1%** | **4.3%** | **6.0%** |
| **Total Real Estate - Value Add** | **$2,879,712** | **7.4%** | **--** | **--** | **--** |
| **Total Cash Equivalents** | **$1,023,244** | **2.6%** | | | |

**Performance Summary (Gross of Fees)**

| | Fiscal Year Ending December 31st | | | | | |
|---|---|---|---|---|---|---|
| | 2024 | 2023 | 2022 | 2021 | 2020 | 2019 |
| **Total Fund** | **6.0%** | **6.3%** | **-5.1%** | **8.9%** | **5.5%** | **9.7%** |
| *Total Fund Benchmark* | *5.2%* | *4.8%* | *-5.1%* | *8.6%* | *4.9%* | *9.9%* |

| | Fiscal Year Ending December 31st | | | | |
|---|---|---|---|---|---|
| | 2018 | 2017 | 2016 | 2015 | 2014 |
| **Total Fund** | **1.0%** | **6.8%** | **6.5%** | **3.3%** | **6.1%** |
| *Total Fund Benchmark* | *1.0%* | *5.2%* | *7.5%* | *3.0%* | *5.9%* |

Performance Summary (Net of Fees)

| | Fiscal Year Ending December 31st | | | | | |
|---|---|---|---|---|---|---|
| | 2024 | 2023 | 2022 | 2021 | 2020 | 2019 |
| **Total Fund** | **5.5%** | **5.7%** | **-5.6%** | **8.4%** | **4.9%** | **9.1%** |
| *Total Fund Benchmark* | *5.2%* | *4.8%* | *-5.1%* | *8.6%* | *4.9%* | *9.9%* |

| | Fiscal Year Ending December 31st | | | | |
|---|---|---|---|---|---|
| | 2018 | 2017 | 2016 | 2015 | 2014 |
| **Total Fund** | **0.4%** | **6.2%** | **5.9%** | **2.7%** | **5.5%** |
| *Total Fund Benchmark* | *1.0%* | *5.2%* | *7.5%* | *3.0%* | *5.9%* |

## Current vs. Policy

| | Current | Current | Policy | Policy Range | Difference | Difference |
|---|---|---|---|---|---|---|
| Domestic Large Cap Equity | $4,721,333 | 12.2% | 10.0% | 5.0% - 15.0% | 2.2% | $853,224 |
| Investment Grade Fixed Income | $13,482,285 | 34.9% | 35.0% | 30.0% - 40.0% | -0.1% | -$56,099 |
| Short Duration High Yield Fixed Income | $13,704,413 | 35.4% | 35.0% | 30.0% - 40.0% | 0.4% | $166,030 |
| Real Estate - Core | $2,870,108 | 7.4% | 10.0% | 5.0% - 15.0% | -2.6% | -$998,001 |
| Real Estate - Value Add | $2,879,712 | 7.4% | 10.0% | 5.0% - 15.0% | -2.6% | -$988,398 |
| Cash Equivalents | $1,023,244 | 2.6% | 0.0% | 0.0% - 0.0% | 2.6% | $1,023,244 |
| **Total** | **$38,681,095** | **100.0%** | **100.0%** | | | |

- Policy adopted February 2023; effective April 2023.
- Cash Equivalents Includes:
  - $20,738 income-distribution from real estate - core (ARA Core Property Fund, LP) received in January 2025.
  - $38,870 income-distribution from real estate - value add (Boyd Watterson State Government Fund, LP) received in January 2025.

## Operating Engineers Local No. 77 Trust Fund of Washington DC – Asset Allocation

- Asset allocation reviews were provided on the following dates: February 9, 2021, February 8, 2022, February 14, 2023, and February 13, 2024.
- At the meeting on February 14, 2023, the Trustees adopted Policy: 10.0% domestic large cap equity (-5.0%), 35.0% investment grade fixed income, 35.0% short duration high yield fixed income (+5.0%), 10.0% real estate - core, 10.0% real estate - value add. To rebalance closer to the Policy, the Trustees approved: transfer $500K from Vanguard Growth Index Fund Admiral Shares (domestic large cap equity) and $500K from Wedge Capital Management – QVM (domestic large cap equity) to Chartwell Investment Partners (short duration high yield fixed income). Status: Completed April 2023.
- At the meeting on August 8, 2023, the following recommendation was approved: Rebalance closer to Policy by transferring available cash to Wedge Capital Management (investment grade fixed income allocation); however, administration noted cash was needed for claims and cash needs. Status: No rebalancing occurred.
- At the meeting on November 14, 2023, the following recommendation was approved: Rebalance closer to Policy by transferring $2.0M of cash to Wedge Capital Management (investment grade fixed income allocation); however, administration noted cash was needed for claims and cash needs. Status: No rebalancing occurred.
- At the meeting on August 19, 2024, the following recommendations were approved: 1) Rebalance closer to Policy by transferring $750K from Vanguard Growth Index Fund Admiral Shares (domestic large cap equity) to Chartwell Investment Partners SDHY (short duration high yield fixed income). Status: Completed August 2024. 2) Rescind remaining balance of withdrawal request with ARA Core Property Fund, LP (real estate – core). Status: Completed August 2024.

**Recommendations: 1) After presentation of the asset allocation review, consider modifying the Policy. 2) Reinvest income from real estate managers (ARA Core Property Fund, LP and Boyd Watterson State Government Fund, LP).**

## Commitment and Funding of Real Estate - Core (In Millions) as of December 31, 2024

| Investments | | Commitments | | | Contributions & Distributions | | Valuations | | Performance | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Account Name** | **Vintage Year** | **Commitment** | **Unfunded Commitment** | **Call Ratio** | **Cumulative Contributions** | **Cumulative Distributions** | **Valuation** | **Total Value** | **DPI** | **TVPI** |
| ARA Core Property Fund, LP | 2007 | $5.2 | $0.0 | 1.0 | $5.2 | $7.3 | $2.9 | $10.1 | 1.4 | 1.9 |
| **Total** | | **$5.2** | **$0.0** | **1.0** | **$5.2** | **$7.3** | **$2.9** | **$10.1** | **1.4** | **1.9** |

## Commitment and Funding of Real Estate - Value Add (In Millions) as of December 31, 2024

| Investments | | Commitments | | | Contributions & Distributions | | Valuations | | Performance | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Account Name** | **Vintage Year** | **Commitment** | **Unfunded Commitment** | **Call Ratio** | **Cumulative Contributions** | **Cumulative Distributions** | **Valuation** | **Total Value** | **DPI** | **TVPI** |
| Boyd Watterson State Government Fund, LP | 2021 | $3.8 | $0.0 | 1.0 | $3.8 | $0.9 | $2.9 | $3.8 | 0.2 | 1.0 |
| **Total** | | **$3.8** | **$0.0** | **1.0** | **$3.8** | **$0.9** | **$2.9** | **$3.8** | **0.2** | **1.0** |

- Performance data included in the table above may differ from performance data provided by the investment manager due to the availability and timing of data used in the calculations.

## Summary of Investment Manager Recommendations

| Manager | Recommendation | Initiated | Action Required | Comment |
|---|---|---|---|---|
| Wedge Capital Management | Fee Reduction - no recommendation required | 4Q2024 | Discuss with Trustees | In a letter dated, December 5, 2024, Wedge Capital Management notified the Fund of a reduction in fees. Effective October 1, 2024, the new fee schedule will be .25% per year on the first $50M, .20% on the next $50M and .15% on all remaining assets under management. This fee reduction will result in an estimated annual savings of approximately $23,000 per year across all OE 77 Account relationships. |

Performance Detail (Net of Fees) - Annualized

| | | | Ending December 31, 2024 | | | | |
|---|---|---|---|---|---|---|---|
| | Market Value | % of Portfolio | 2024 Q4 | Fiscal YTD | 1 Yr | 3 Yrs | 5 Yrs |
| **Total Fund** | **$38,681,095** | **100.0%** | **0.0%** | **5.5%** | **5.5%** | **1.7%** | **3.7%** |
| **Total Domestic Large Cap Equity** | **$4,721,333** | **12.2%** | **3.0%** | **25.8%** | **25.8%** | **7.9%** | **12.6%** |
| Vanguard Growth Index Fund Admiral Shares | $2,325,090 | 6.0% | 7.0% | 32.7% | 32.7% | 9.2% | -- |
| *CRSP US Large Cap Growth TR USD* | | | *7.0%* | *32.7%* | *32.7%* | *9.2%* | *--* |
| Wedge Capital Management - QVM | $2,396,243 | 6.2% | -0.6% | 20.0% | 20.0% | 7.0% | 11.1% |
| *Russell 1000 Value* | | | *-2.0%* | *14.4%* | *14.4%* | *5.6%* | *8.7%* |
| **Total Investment Grade Fixed Income** | **$13,482,285** | **34.9%** | **-1.7%** | **2.9%** | **2.9%** | **-0.2%** | **1.0%** |
| Wedge Capital Management | $13,482,285 | 34.9% | -1.7% | 2.9% | 2.9% | -0.2% | 1.0% |
| *Bloomberg US Govt/Credit Int TR* | | | *-1.6%* | *3.0%* | *3.0%* | *-0.2%* | *0.9%* |
| **Total Short Duration High Yield Fixed Income** | **$13,704,413** | **35.4%** | **0.4%** | **5.7%** | **5.7%** | **3.3%** | **3.4%** |
| Chartwell Investment Partners SDHY | $13,704,413 | 35.4% | 0.4% | 5.7% | 5.7% | 3.3% | 3.4% |
| *ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR* | | | *0.8%* | *6.7%* | *6.7%* | *4.0%* | *4.1%* |
| *Bloomberg US Govt/Credit Int TR* | | | *-1.6%* | *3.0%* | *3.0%* | *-0.2%* | *0.9%* |

Performance Detail (Net of Fees) - Annualized

| | | | Ending December 31, 2024 | | | | |
|---|---|---|---|---|---|---|---|
| | Market Value | % of Portfolio | 2024 Q4 | Fiscal YTD | 1 Yr | 3 Yrs | 5 Yrs |
| **Total Real Estate - Core** | **$2,870,108** | **7.4%** | **0.7%** | **-2.3%** | **-2.3%** | **-3.1%** | **1.9%** |
| ARA Core Property Fund, LP | $2,870,108 | 7.4% | 0.7% | -2.3% | -2.3% | -3.1% | 1.9% |
| *NCREIF ODCE Equal Weighted Net* | | | *0.8%* | *-2.4%* | *-2.4%* | *-3.1%* | *2.2%* |
| **Total Real Estate - Value Add** | **$2,879,712** | **7.4%** | **0.1%** | **-6.2%** | **-6.2%** | **-1.0%** | **--** |
| Boyd Watterson State Government Fund, LP | $2,879,712 | 7.4% | 0.1% | -6.2% | -6.2% | -1.0% | -- |
| *NCREIF ODCE Equal Weighted Net* | | | *0.8%* | *-2.4%* | *-2.4%* | *-3.1%* | -- |
| **Total Cash Equivalents** | **$1,023,244** | **2.6%** | | | | | |
| Cash Account | $963,636 | 2.5% | | | | | |
| Cash in Transit - ARA Core Property Fund, LP Distribution Proceeds | $20,738 | 0.1% | | | | | |
| Cash in Transit - Boyd Watterson State Government Fund, LP Distribution Proceeds | $38,870 | 0.1% | | | | | |

**Performance Detail (Net of Fees) - Annualized**

| | Market Value | % of Portfolio | 7 Yrs | 10 Yrs | Inception | Inception Date |
|---|---|---|---|---|---|---|
| | | | Ending December 31, 2024 | | | |
| **Total Fund** | **$38,681,095** | **100.0%** | **3.9%** | **4.2%** | **4.6%** | **Oct-97** |
| **Total Domestic Large Cap Equity** | **$4,721,333** | **12.2%** | **10.8%** | **10.8%** | **6.3%** | **Apr-99** |
| Vanguard Growth Index Fund Admiral Shares | $2,325,090 | 6.0% | -- | -- | 14.0% | Mar-21 |
| *CRSP US Large Cap Growth TR USD* | | | *--* | *--* | *14.0%* | *Mar-21* |
| Wedge Capital Management - QVM | $2,396,243 | 6.2% | 9.7% | 10.1% | 12.2% | Dec-12 |
| *Russell 1000 Value* | | | *8.4%* | *8.5%* | *10.8%* | *Dec-12* |
| **Total Investment Grade Fixed Income** | **$13,482,285** | **34.9%** | **1.7%** | **1.7%** | **3.7%** | **Jan-99** |
| Wedge Capital Management | $13,482,285 | 34.9% | 1.7% | 1.7% | 3.3% | Jan-03 |
| *Bloomberg US Govt/Credit Int TR* | | | *1.7%* | *1.7%* | *3.0%* | *Jan-03* |
| **Total Short Duration High Yield Fixed Income** | **$13,704,413** | **35.4%** | **3.5%** | **3.4%** | **3.4%** | **Sep-12** |
| Chartwell Investment Partners SDHY | $13,704,413 | 35.4% | 3.5% | 3.4% | 3.4% | Sep-12 |
| *ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR* | | | *4.4%* | *4.4%* | *4.4%* | *Sep-12* |
| *Bloomberg US Govt/Credit Int TR* | | | *1.7%* | *1.7%* | *1.6%* | *Sep-12* |

## Performance Detail (Net of Fees) - Annualized

| | Market Value | % of Portfolio | Ending December 31, 2024 7 Yrs | 10 Yrs | Inception | Inception Date |
|---|---|---|---|---|---|---|
| **Total Real Estate - Core** | **$2,870,108** | **7.4%** | **3.2%** | **4.9%** | **3.8%** | **Apr-07** |
| ARA Core Property Fund, LP | $2,870,108 | 7.4% | 3.2% | 4.9% | 3.8% | Apr-07 |
| *NCREIF ODCE Equal Weighted Net* | | | *3.4%* | *5.3%* | *4.1%* | *Apr-07* |
| **Total Real Estate - Value Add** | **$2,879,712** | **7.4%** | **--** | **--** | **-0.4%** | **Oct-21** |
| Boyd Watterson State Government Fund, LP | $2,879,712 | 7.4% | -- | -- | -0.4% | Oct-21 |
| *NCREIF ODCE Equal Weighted Net* | | | *--* | *--* | *-0.7%* | *Oct-21* |
| **Total Cash Equivalents** | **$1,023,244** | **2.6%** | | | | |
| Cash Account | $963,636 | 2.5% | | | | |
| Cash in Transit - ARA Core Property Fund, LP Distribution Proceeds | $20,738 | 0.1% | | | | |
| Cash in Transit - Boyd Watterson State Government Fund, LP Distribution Proceeds | $38,870 | 0.1% | | | | |

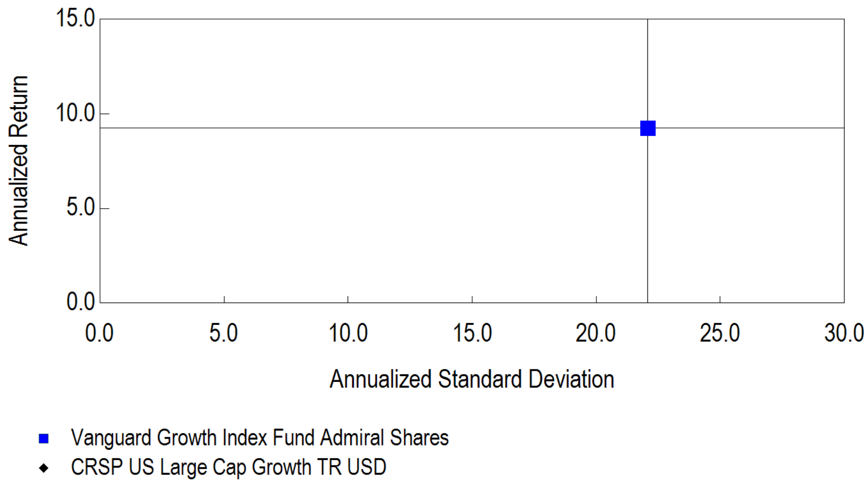
| Account Information | |
|---|---|
| Account Name | **Vanguard Growth Index Fund Admiral Shares** |
| Account Structure | **Mutual Fund** |
| Investment Style | **Passive** |
| Inception Date | **3/31/21** |
| Account Type | **Domestic Large Cap Growth Equity** |
| Benchmark | **CRSP US Large Cap Growth TR USD** |
| Universe | **Large Growth MStar MF** |

## Vanguard Growth Index Fund Admiral Shares

Ending December 31, 2024

| | **Fourth Quarter** | **Inception 3/31/21** |
|---|---|---|
| Beginning Market Value | $2,173,662 | $0 |
| Net Cash Flow | $0 | $1,075,000 |
| Net Investment Change | $151,428 | $1,250,090 |
| Ending Market Value | $2,325,090 | $2,325,090 |

**Annualized Return vs. Annualized Standard Deviation**
**3 Years Ending December 31, 2024**




| 3 Years Ending December 31, 2024 | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Vanguard Growth Index Fund Admiral Shares | 9.2% | 22.1% | 100.0% | 100.0% |
| CRSP US Large Cap Growth TR USD | 9.2% | 22.1% | 100.0% | 100.0% |

| | 2024 Q4 | Rank | Fiscal YTD | Rank | 1 Yr | Rank | 3 Yrs | Rank | 5 Yrs | Rank | Calendar Years: 2024 | Rank | 2023 | Rank | 2022 | Rank | 2021 | Rank | 2020 | Rank | Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vanguard Growth Index Fund Admiral Shares | 7.0% | 27 | 32.7% | 33 | 32.7% | 33 | 9.2% | 23 | -- | -- | 32.7% | 33 | 46.8% | 14 | -33.1% | 69 | -- | -- | -- | -- | 14.0% | Mar-21 |
| *CRSP US Large Cap Growth TR USD* | *7.0%* | *27* | *32.7%* | *33* | *32.7%* | *33* | *9.2%* | *22* | -- | -- | *32.7%* | *33* | *46.9%* | *14* | *-33.1%* | *68* | -- | -- | -- | -- | *14.0%* | *Mar-21* |

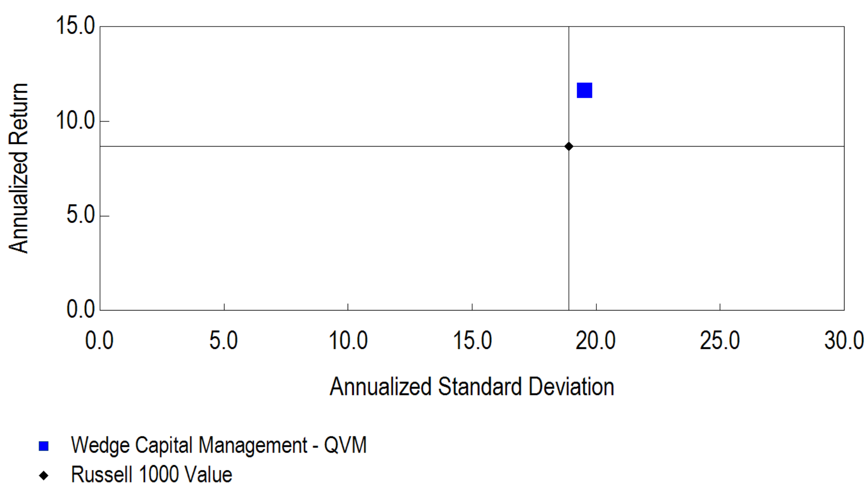
Note: Returns are net of fees.

| Account Information | |
|---|---|
| Account Name | **Wedge Capital Management - QVM** |
| Account Structure | **Separate Account** |
| Investment Style | **Active** |
| Inception Date | **12/01/12** |
| Account Type | **Domestic Large Cap Value Equity** |
| Benchmark | **Russell 1000 Value** |
| Universe | **eV US Large Cap Value Equity Gross** |

## Wedge Capital Management - QVM
Ending December 31, 2024

| | Fourth Quarter | Inception 12/1/12 |
|---|---|---|
| Beginning Market Value | $2,695,624 | $0 |
| Net Cash Flow | -$300,000 | -$4,378,444 |
| Net Investment Change | $620 | $6,774,688 |
| Ending Market Value | $2,396,243 | $2,396,243 |

**Annualized Return vs. Annualized Standard Deviation**
**5 Years Ending December 31, 2024**




### 3 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Wedge Capital Management - QVM | 7.5% | 18.0% | 108.5% | 99.2% |
| Russell 1000 Value | 5.6% | 16.9% | 100.0% | 100.0% |

### 5 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Wedge Capital Management - QVM | 11.6% | 19.5% | 106.9% | 95.9% |
| Russell 1000 Value | 8.7% | 18.9% | 100.0% | 100.0% |

| | | | | | | | | | | | Calendar Years | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 Q4 | Rank | Fiscal YTD | Rank | 1 Yr | Rank | 3 Yrs | Rank | 5 Yrs | Rank | 2024 | Rank | 2023 | Rank | 2022 | Rank | 2021 | Rank | 2020 | Rank | Inception | Inception Date |
| Wedge Capital Management - QVM | -0.4% | 31 | 20.6% | 13 | 20.6% | 13 | 7.5% | 43 | 11.6% | 31 | 20.6% | 13 | 17.5% | 27 | -12.2% | 88 | 30.9% | 19 | 6.5% | 40 | 12.7% | Dec-12 |
| *Russell 1000 Value* | *-2.0%* | *67* | *14.4%* | *56* | *14.4%* | *56* | *5.6%* | *73* | *8.7%* | *82* | *14.4%* | *56* | *11.5%* | *62* | *-7.5%* | *69* | *25.2%* | *72* | *2.8%* | *62* | *10.8%* | *Dec-12* |

Note: Returns are gross of fees.

## Account Information

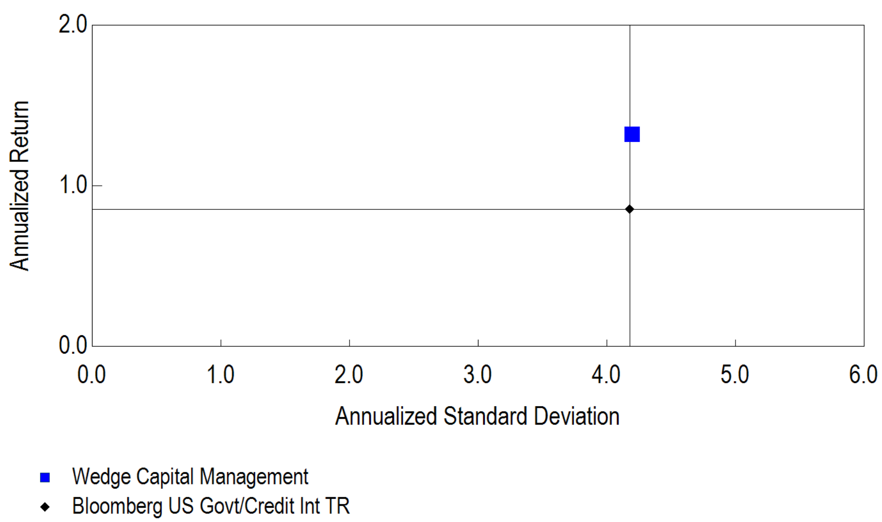
| | |
|---|---|
| Account Name | **Wedge Capital Management** |
| Account Structure | **Separate Account** |
| Investment Style | **Active** |
| Inception Date | **1/01/03** |
| Account Type | **Investment Grade Fixed Income** |
| Benchmark | **Bloomberg US Govt/Credit Int TR** |
| Universe | |

## Wedge Capital Management

Ending December 31, 2024

| | Fourth Quarter | Inception 1/1/03 |
|---|---|---|
| Beginning Market Value | $13,701,785 | $3,769,223 |
| Net Cash Flow | $0 | $1,950,913 |
| Net Investment Change | -$219,501 | $7,762,149 |
| Ending Market Value | $13,482,285 | $13,482,285 |

### Annualized Return vs. Annualized Standard Deviation
### 5 Years Ending December 31, 2024




### 3 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Wedge Capital Management | 0.1% | 5.1% | 102.1% | 97.9% |
| Bloomberg US Govt/Credit Int TR | -0.2% | 5.1% | 100.0% | 100.0% |

### 5 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Wedge Capital Management | 1.3% | 4.2% | 103.2% | 95.2% |
| Bloomberg US Govt/Credit Int TR | 0.9% | 4.2% | 100.0% | 100.0% |

| | 2024 Q4 | Fiscal YTD | 1 Yr | 3 Yrs | 5 Yrs | Calendar Years 2024 | 2023 | 2022 | 2021 | 2020 | Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wedge Capital Management | -1.6% | 3.2% | 3.2% | 0.1% | 1.3% | 3.2% | 5.6% | -7.9% | -1.1% | 7.6% | 3.6% | Jan-03 |
| *Bloomberg US Govt/Credit Int TR* | *-1.6%* | *3.0%* | *3.0%* | *-0.2%* | *0.9%* | *3.0%* | *5.2%* | *-8.2%* | *-1.4%* | *6.4%* | *3.0%* | *Jan-03* |

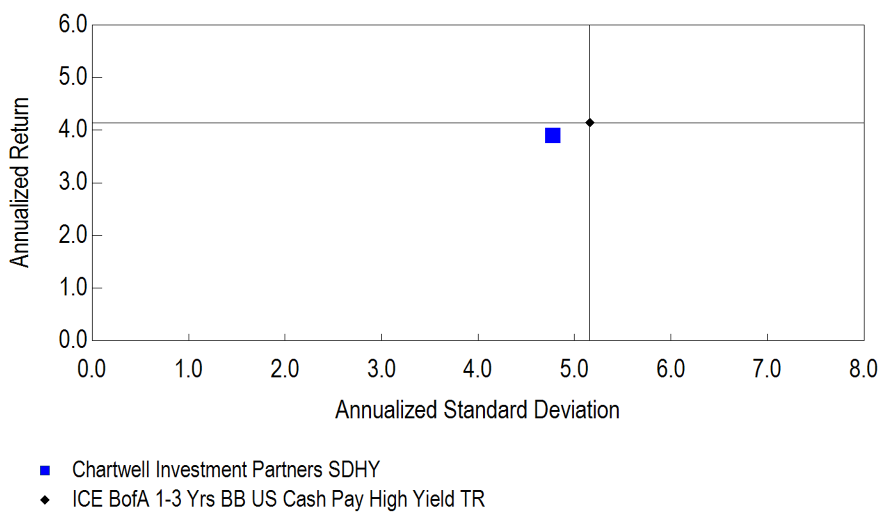
Note: Returns are gross of fees.

| Account Information | |
|---|---|
| Account Name | **Chartwell Investment Partners SDHY** |
| Account Structure | **Separate Account** |
| Investment Style | **Active** |
| Inception Date | **9/01/12** |
| Account Type | **Short Duration High Yield Fixed Income** |
| Benchmark | **ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR** |
| Universe | |

## Chartwell Investment Partners SDHY
Ending December 31, 2024

| | Fourth Quarter | Inception 9/1/12 |
|---|---|---|
| Beginning Market Value | $13,635,644 | $0 |
| Net Cash Flow | $0 | $8,634,627 |
| Net Investment Change | $68,769 | $5,069,786 |
| Ending Market Value | $13,704,413 | $13,704,413 |

**Annualized Return vs. Annualized Standard Deviation**
**5 Years Ending December 31, 2024**




### 3 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Chartwell Investment Partners SDHY | 3.8% | 4.3% | 98.1% | 101.0% |
| ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR | 4.0% | 4.1% | 100.0% | 100.0% |

### 5 Years Ending December 31, 2024

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Chartwell Investment Partners SDHY | 3.9% | 4.8% | 92.3% | 93.6% |
| ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR | 4.1% | 5.2% | 100.0% | 100.0% |

| | | | | | | Calendar Years | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 Q4 | Fiscal YTD | 1 Yr | 3 Yrs | 5 Yrs | 2024 | 2023 | 2022 | 2021 | 2020 | Inception | Inception Date |
| Chartwell Investment Partners SDHY | 0.5% | 6.2% | 6.2% | 3.8% | 3.9% | 6.2% | 8.2% | -2.5% | 3.0% | 5.0% | 3.9% | Sep-12 |
| *ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR* | *0.8%* | *6.7%* | *6.7%* | *4.0%* | *4.1%* | *6.7%* | *8.8%* | *-3.1%* | *3.2%* | *5.4%* | *4.4%* | *Sep-12* |
| *Bloomberg US Govt/Credit Int TR* | *-1.6%* | *3.0%* | *3.0%* | *-0.2%* | *0.9%* | *3.0%* | *5.2%* | *-8.2%* | *-1.4%* | *6.4%* | *1.6%* | *Sep-12* |

Note: Returns are gross of fees.

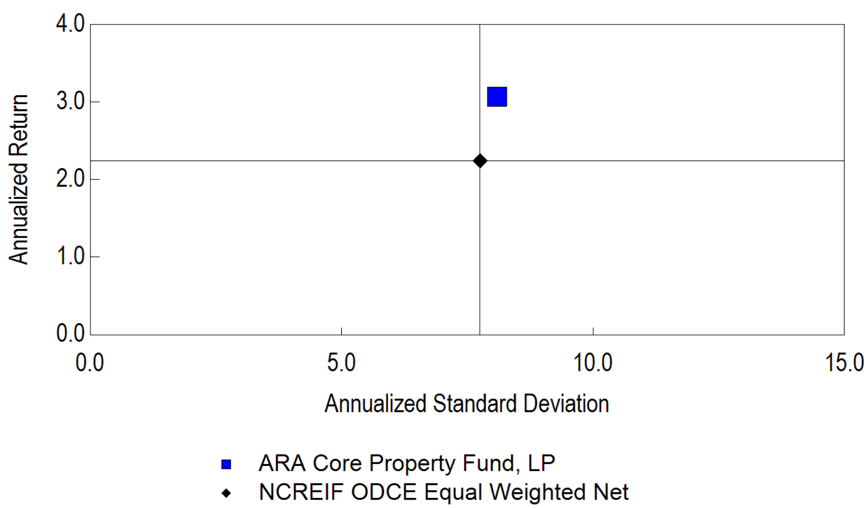
| Account Information | |
|---|---|
| Account Name | **ARA Core Property Fund, LP** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **4/01/07** |
| Account Type | **Real Estate - Core** |
| Benchmark | **NCREIF ODCE Equal Weighted Net** |
| Universe | |

## ARA Core Property Fund, LP
Ending December 31, 2024

| | Fourth Quarter | Inception 4/1/07 |
|---|---|---|
| Beginning Market Value | $2,870,963 | $0 |
| Net Cash Flow | -$20,738 | -$2,093,187 |
| Net Investment Change | $19,883 | $4,963,295 |
| Ending Market Value | $2,870,108 | $2,870,108 |

Income is distributed.

**Annualized Return vs. Annualized Standard Deviation**
**5 Years Ending December 31, 2024**




**3 Years Ending December 31, 2024**

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| ARA Core Property Fund, LP | -2.1% | 8.3% | 117.0% | 95.8% |
| NCREIF ODCE Equal Weighted Net | -3.1% | 7.7% | 100.0% | 100.0% |

**5 Years Ending December 31, 2024**

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| ARA Core Property Fund, LP | 3.1% | 8.1% | 109.1% | 95.2% |
| NCREIF ODCE Equal Weighted Net | 2.2% | 7.8% | 100.0% | 100.0% |

| | 2024 Q4 | Fiscal YTD | 1 Yr | 3 Yrs | 5 Yrs | Calendar Years 2024 | 2023 | 2022 | 2021 | 2020 | Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ARA Core Property Fund, LP | 1.0% | -1.2% | -1.2% | -2.1% | 3.1% | -1.2% | -13.1% | 9.4% | 21.9% | 1.6% | 5.0% | Apr-07 |
| *NCREIF ODCE Equal Weighted Net* | *0.8%* | *-2.4%* | *-2.4%* | *-3.1%* | *2.2%* | *-2.4%* | *-13.3%* | *7.6%* | *21.9%* | *0.8%* | *4.1%* | *Apr-07* |

Note: Returns are gross of fees.

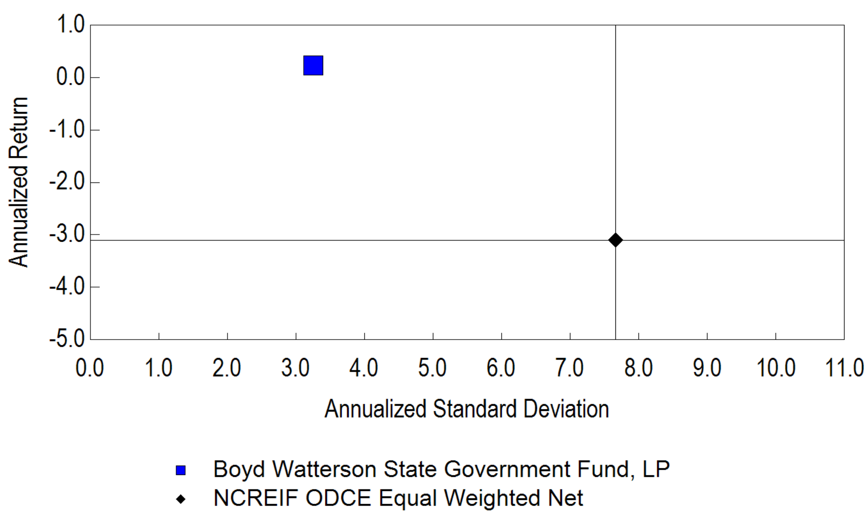
| Account Information | |
|---|---|
| Account Name | **Boyd Watterson State Government Fund, LP** |
| Account Structure | **Commingled Fund** |
| Investment Style | **Active** |
| Inception Date | **10/01/21** |
| Account Type | **Real Estate - Value Add** |
| Benchmark | **NCREIF ODCE Equal Weighted Net** |
| Universe | |

## Boyd Watterson State Government Fund, LP
Ending December 31, 2024

| | **Fourth Quarter** | **Inception 10/1/21** |
|---|---|---|
| Beginning Market Value | $2,914,586 | $0 |
| Net Cash Flow | -$38,870 | $2,865,572 |
| Net Investment Change | $3,996 | $14,140 |
| Ending Market Value | $2,879,712 | $2,879,712 |

Income is distributed.

**Annualized Return vs. Annualized Standard Deviation**
**3 Years Ending December 31, 2024**




**3 Years Ending December 31, 2024**

| | Anlzd Return | Anlzd Standard Deviation | Up Mkt Capture Ratio | Down Mkt Capture Ratio |
|---|---|---|---|---|
| Boyd Watterson State Government Fund, LP | 0.2% | 3.3% | 43.5% | 25.5% |
| NCREIF ODCE Equal Weighted Net | -3.1% | 7.7% | 100.0% | 100.0% |

| | 2024 Q4 | Fiscal YTD | 1 Yr | 3 Yrs | 5 Yrs | Calendar Years 2024 | 2023 | 2022 | 2021 | 2020 | Inception | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boyd Watterson State Government Fund, LP | 0.4% | -5.0% | -5.0% | 0.2% | -- | -5.0% | -1.2% | 7.4% | -- | -- | 0.8% | Oct-21 |
| *NCREIF ODCE Equal Weighted Net* | *0.8%* | *-2.4%* | *-2.4%* | *-3.1%* | *--* | *-2.4%* | *-13.3%* | *7.6%* | *--* | *--* | *-0.7%* | *Oct-21* |

Note: Returns are gross of fees.

## Investment Policy Statement

- The current investment policy statement was adopted and signed on May 14, 2024.

## Custody Bank

- The current custodian is PNC Bank.
- Separate account market values and flows are derived from the custodial statement.

## Commission Recapture Provider

- Cowen and Company, LLC.
- IPS evaluated the benefits of ongoing participation in a commission recapture program and suggests Funds continue to participate in them. To potentially enhance the manager's utilization of the commission recapture program, in November 2022, as a courtesy IPS provided draft notices for fund Administrator to consider sending to the investment managers.

## Commingled Funds

- Commingled Fund: Due to the commingled fund structure, IPS does not monitor the holdings within the commingled fund for compliance with the client's investment policy statement. The commingled fund is governed by its own investment policy.
- Commingled fund market values and flows are derived from the manager statement.

## Mutual Funds

- Mutual Fund: Due to the mutual fund structure, IPS does not monitor the holdings within the mutual fund for compliance with the client's investment policy statement. The mutual fund is governed by its own investment policy.
- Mutual fund market values and flows are derived from the manager statement.

# Operating Engineers Local No. 77 Trust Fund of Washington DC

## Appendix

## Performance Detail (Gross of Fees) - Annualized

| | | | Ending December 31, 2024 | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Market Value | % of Portfolio | 2024 Q4 | Fiscal YTD | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs |
| **Total Fund** | **$38,681,095** | **100.0%** | **0.1%** | **6.0%** | **2.2%** | **4.2%** | **4.5%** | **4.8%** |
| **Total Domestic Large Cap Equity** | **$4,721,333** | **12.2%** | **3.0%** | **26.2%** | **8.2%** | **13.0%** | **11.2%** | **11.3%** |
| Vanguard Growth Index Fund Admiral Shares | $2,325,090 | 6.0% | 7.0% | 32.7% | 9.2% | -- | -- | -- |
| *CRSP US Large Cap Growth TR USD* | | | *7.0%* | *32.7%* | *9.2%* | *--* | *--* | *--* |
| Wedge Capital Management - QVM | $2,396,243 | 6.2% | -0.4% | 20.6% | 7.5% | 11.6% | 10.3% | 10.6% |
| *Russell 1000 Value* | | | *-2.0%* | *14.4%* | *5.6%* | *8.7%* | *8.4%* | *8.5%* |
| **Total Investment Grade Fixed Income** | **$13,482,285** | **34.9%** | **-1.6%** | **3.2%** | **0.1%** | **1.3%** | **2.1%** | **2.1%** |
| Wedge Capital Management | $13,482,285 | 34.9% | -1.6% | 3.2% | 0.1% | 1.3% | 2.1% | 2.1% |
| *Bloomberg US Govt/Credit Int TR* | | | *-1.6%* | *3.0%* | *-0.2%* | *0.9%* | *1.7%* | *1.7%* |
| **Total Short Duration High Yield Fixed Income** | **$13,704,413** | **35.4%** | **0.5%** | **6.2%** | **3.8%** | **3.9%** | **4.1%** | **3.9%** |
| Chartwell Investment Partners SDHY | $13,704,413 | 35.4% | 0.5% | 6.2% | 3.8% | 3.9% | 4.1% | 3.9% |
| *ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR* | | | *0.8%* | *6.7%* | *4.0%* | *4.1%* | *4.4%* | *4.4%* |
| *Bloomberg US Govt/Credit Int TR* | | | *-1.6%* | *3.0%* | *-0.2%* | *0.9%* | *1.7%* | *1.7%* |

## Performance Detail (Gross of Fees) - Annualized

| | | | Ending December 31, 2024 | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Market Value | % of Portfolio | 2024 Q4 | Fiscal YTD | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs |
| **Total Real Estate - Core** | **$2,870,108** | **7.4%** | **1.0%** | **-1.2%** | **-2.1%** | **3.1%** | **4.3%** | **6.0%** |
| ARA Core Property Fund, LP | $2,870,108 | 7.4% | 1.0% | -1.2% | -2.1% | 3.1% | 4.3% | 6.0% |
| *NCREIF ODCE Equal Weighted Net* | | | *0.8%* | *-2.4%* | *-3.1%* | *2.2%* | *3.4%* | *5.3%* |
| **Total Real Estate - Value Add** | **$2,879,712** | **7.4%** | **0.4%** | **-5.0%** | **0.2%** | **--** | **--** | **--** |
| Boyd Watterson State Government Fund, LP | $2,879,712 | 7.4% | 0.4% | -5.0% | 0.2% | -- | -- | -- |
| *NCREIF ODCE Equal Weighted Net* | | | *0.8%* | *-2.4%* | *-3.1%* | -- | -- | -- |
| **Total Cash Equivalents** | **$1,023,244** | **2.6%** | | | | | | |
| Cash Account | $963,636 | 2.5% | | | | | | |
| Cash in Transit - ARA Core Property Fund, LP Distribution Proceeds | $20,738 | 0.1% | | | | | | |
| Cash in Transit - Boyd Watterson State Government Fund, LP Distribution Proceeds | $38,870 | 0.1% | | | | | | |

| Account | Fee Schedule | Market Value As of 12/31/2024 | % of Portfolio | Estimated Annual Fee ($) | Estimated Annual Fee (%) |
|---|---|---|---|---|---|
| **Total Domestic Large Cap Equity** | **-** | **$4,721,333** | **12.2%** | **--** | **--** |
| Vanguard Growth Index Fund Admiral Shares | 0.05% of Assets | $2,325,090 | 6.0% | $1,163 | 0.05% |
| Wedge Capital Management - QVM | 0.50% of Assets | $2,396,243 | 6.2% | $11,981 | 0.50% |
| **Total Investment Grade Fixed Income** | **-** | **$13,482,285** | **34.9%** | **--** | **--** |
| Wedge Capital Management | 0.25% of First 25.0 Mil, 0.20% of Next 25.0 Mil, 0.15% Thereafter | $13,482,285 | 34.9% | $33,706 | 0.25% |
| **Total Short Duration High Yield Fixed Income** | **-** | **$13,704,413** | **35.4%** | **--** | **--** |
| Chartwell Investment Partners SDHY | 0.50% of Assets | $13,704,413 | 35.4% | $68,522 | 0.50% |
| **Total Real Estate - Core** | **-** | **$2,870,108** | **7.4%** | **--** | **--** |
| ARA Core Property Fund, LP | 1.10% of Assets | $2,870,108 | 7.4% | $31,571 | 1.10% |
| **Total Real Estate - Value Add** | **-** | **$2,879,712** | **7.4%** | **--** | **--** |
| Boyd Watterson State Government Fund, LP | 1.25% of First 25.0 Mil, 1.15% of Next 75.0 Mil, 1.05% Thereafter | $2,879,712 | 7.4% | $35,996 | 1.25% |
| **Total Cash Equivalents** | **-** | **$1,023,244** | **2.6%** | **--** | **--** |
| Cash Account | - | $963,636 | 2.5% | -- | -- |
| Cash in Transit - ARA Core Property Fund, LP Distribution Proceeds | - | $20,738 | 0.1% | -- | -- |
| Cash in Transit - Boyd Watterson State Government Fund, LP Distribution Proceeds | - | $38,870 | 0.1% | -- | -- |
| **Investment Management Fee** | | **$38,681,095** | **100.0%** | **$182,939** | **0.47%** |

Note: The above fee schedules may not include incentive fees, operating expenses, custodian fees, or other administrative costs.

Note: The above information utilizes net expense ratio for any mutual fund investment. Management fee is used for all other investment types.

*Fee schedule represents the effective rate from the aggregation of assets of related Funds.

[1]Effective October 1, 2024, the manager reduced the fee schedule to .25 percent on the first $25 million under management, .20 percent for the next $20 million and .15 percent for remaining assets under management.

## Benchmark History

| | | |
|---|---|---|
| Total Fund | | |
| 4/1/2023 | Present | Russell 1000 10% / Bloomberg US Govt/Credit Int TR 35% / ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR 35% / NCREIF ODCE Equal Weighted Net 20% |
| 10/1/2021 | 3/31/2023 | Russell 1000 15% / Bloomberg US Govt/Credit Int TR 35% / ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR 30% / NCREIF ODCE Equal Weighted Net 20% |
| 12/1/2012 | 9/30/2021 | Russell 1000 Value 15% / Bloomberg US Govt/Credit Int TR 35% / ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR 30% / NCREIF ODCE Equal Weighted Net 20% |
| 7/1/2012 | 11/30/2012 | S&P 500 15% / Bloomberg US Govt/Credit Int TR 35% / ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR 30% / NCREIF ODCE Equal Weighted Net 20% |
| 7/1/2009 | 6/30/2012 | S&P 500 20% / Bloomberg US Govt/Credit Int TR 65% / NCREIF ODCE Equal Weighted Net 15% |
| 4/1/2007 | 6/30/2009 | S&P 500 20% / Bloomberg US Govt/Credit Int TR 60% / NCREIF ODCE Equal Weighted Net 20% |
| 4/1/1999 | 3/31/2007 | S&P 500 20% / Bloomberg US Govt/Credit Int TR 80% |
| 10/1/1997 | 3/31/1999 | 91 Day T-Bills 100% |

## Index Disclosures

- Bloomberg US Govt/Credit Int TR Index is listed for illustrative purposes.
- Long-Term Income Objective 9% - The manager's stated objective of a 9% net income return is listed for illustrative purposes.
- The NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE) is a non-investable, time-weighted index comprised of the time weighted returns of approximately 30 open-end commingled funds pursuing a core private real estate investment strategy. The constituent funds qualify for inclusion in the NFI-ODCE based on specific criteria regarding their percentage of net assets invested in private equity real estate, geography, property type, life cycle, diversification and use of leverage. Constituent funds must also comply with the NCREIF PREA Reporting Standards, including annual audits, quarterly valuations and time-weighted returns. The NFI-ODCE returns are mainly driven by the underlying property investments in the constituent funds but can also be impacted by each funds use of leverage, cash balances, fund costs, etc. Returns shown are for the NFI-ODCE Equal Weight Index (fund constituents are equally-weighted), net of fees.
- Total Fund Benchmark History - During 4Q 2018, the real estate benchmark was changed from NCREIF ODCE Equal Weighted Index to NCREIF ODCE Equal Weighted Net Index for all historical time periods since inception.
- Total Fund Benchmark - The Total Fund Benchmark is comprised of the respective market indices for each asset class weighted at the percentage the asset class represents in the Policy. It is important to acknowledge that not all asset classes have a corresponding market index due to the specialized nature of the asset class (i.e. private equity, private debt, infrastructure, hedge funds) and/or the specialized nature of the investment (opportunistic investments, global tactical asset allocation, absolute return strategies). In such cases, a traditional asset class index may be used as a proxy in the Total Fund Benchmark. The Total Fund Benchmark illustrates how an indexed portfolio with a similar allocation to that of the Policy would have performed during a specific period. The Total Fund Benchmark does not account for ongoing changes in the allocation percentages of the Total Fund resulting from market gains/losses, cash flows, and rebalancing during the same period. While a useful tool in examining performance, due to the static nature of the allocation percentages in the Total Fund Benchmark, the fact that not all asset classes have a representative index, and considering that some indices in the Total Fund Benchmark are not investable, the Total Fund Benchmark should not be used as the primary measure of a Total Fund's success or failure. Real Estate Benchmark - During 4Q2018 the real estate benchmark was changed from NCREIF ODCE Equal Weighted Index to NCREIF ODCE Equal Weighted Net Index for all historical time periods since inception.

## Footnotes

- Values, flows, and returns for all commingled funds, mutual funds, partnerships, and all other alternative assets are provided by the firm managing the assets and cannot be independently verified by IPS. Separately managed account returns are calculated by IPS using custodian data.
- The net of fees returns in this report are estimated. Fees do not include: The investment consulting fee paid to IPS, custodian fees, or other administrative costs.
- The information contained in this report is propriety and confidential information. You are hereby notified that any dissemination, distribution, or copying of this document is strictly prohibited.
- Net of fees calculations began 3Q 2001, and cannot be calculated for prior time periods.
- Starting 4Q 2021, mutual fund returns are calculated utilizing the net expense ratio. Prior to 4Q 2021, mutual fund returns were calculated utilizing the fund's management fee.

- The Total Fund benchmark is comprised of the respective market indices for each asset class weighted at the percentage the asset class represents in the Policy. For real estate, where Boyd Waterson GSA (core real estate) and/or Boyd Waterson State (value add real estate) are the lone real estate investments, the annualized income objective of the respective Boyd Watterson fund (8% for GSA; 9% for State) was previously used as the market index to represent the real estate asset class. For example, if a fund has a 10% Policy for core real estate and Boyd Waterson GSA is the lone core real estate investment, 10% of the Total Fund benchmark was an 8% annualized income objective.
- The dramatic rise in interest rates in 2021 and 2022 made the annualized income objectives for the Boyd Waterson funds an unrealistic baseline for near-term and intermediate-term real estate return expectations. Therefore, the real estate component of the Total Fund benchmark is changed to the NCREIF ODCE Equal Weight Net Index for all real estate allocations, regardless of the specific real estate manager(s). The change has been applied to all historical time periods. We believe this change better represents the opportunity set for the real estate asset class.
- The following are investments in a mutual fund; the underlying holdings of the mutual fund are not monitored for compliance.
    - Vanguard Growth Index Fund Admiral Shares

# ASSET ALLOCATION REVIEW

## Operating Engineers Local No. 77 Trust Fund of Washington DC

## February 2025

# Asset Allocation Overview

- The asset allocation review is provided to assist the Trustees in identifying portfolios that meet the investment objectives, risk tolerance, and liquidity requirements of the Fund.

- The IPS Investment Committee develops and utilizes capital market assumptions for various asset classes to help determine the optimal mix of assets for an investment portfolio. These assumptions are forward-looking projections of an asset class' expected return and risk as measured by standard deviation or volatility of returns.

- All return assumptions are "net of fee" market or index returns and do not include alpha or excess return expected to be generated through active management. Return assumptions are the average expected return over the next 10 – 20 years and not the expected return in any given year.

- IPS capital market assumptions are compared with various assumptions from other providers and published resources for reasonableness. The IPS Investment Committee reviews the assumptions on a semiannual basis but may adjust at anytime, as needed, based on severe market dislocations, sudden changes in interest rates, or extreme events that impact global markets, economic development, and the business cycle.

- IPS capital market assumptions are not a guarantee of future performance. Actual results may differ from the projections included in this review.

- The asset allocation modeling requires the mathematical construction of an efficient frontier of various portfolios with distinct asset allocations and risk and return characteristics. The modeling process also requires the imposition of constraints, so that the efficient frontier represents a prudently diversified portfolio with adequate consideration of the liquidity needs and investment time horizon. Unconstrained optimization frequently generates allocations that have superior risk/reward characteristics, but the resulting allocations may not be adequately diversified and/or may have inappropriate allocations to illiquid investments.

- The cashflows and liquidity constraints of the fund for which this asset allocation review is being presented were considered when developing the portfolios presented for consideration.

- IPS utilizes the Wilshire Compass system for asset allocation modeling and all returns are based on geometric calculation.

# Annualized Expected Returns over 10-20 years

| Equity Asset Class | Return | Risk |
|---|---|---|
| U.S. Large Cap | 6.75% | 15.50 |
| U.S. Mid Cap | 7.00% | 18.00 |
| U.S. Smid Cap | 7.00% | 19.50 |
| U.S. Small Cap | 7.00% | 21.00 |
| International Large Cap | 7.00% | 17.00 |
| International Small Cap | 7.75% | 19.50 |
| Emerging Markets | 8.00% | 21.00 |
| Global Equity | 7.00% | 16.75 |

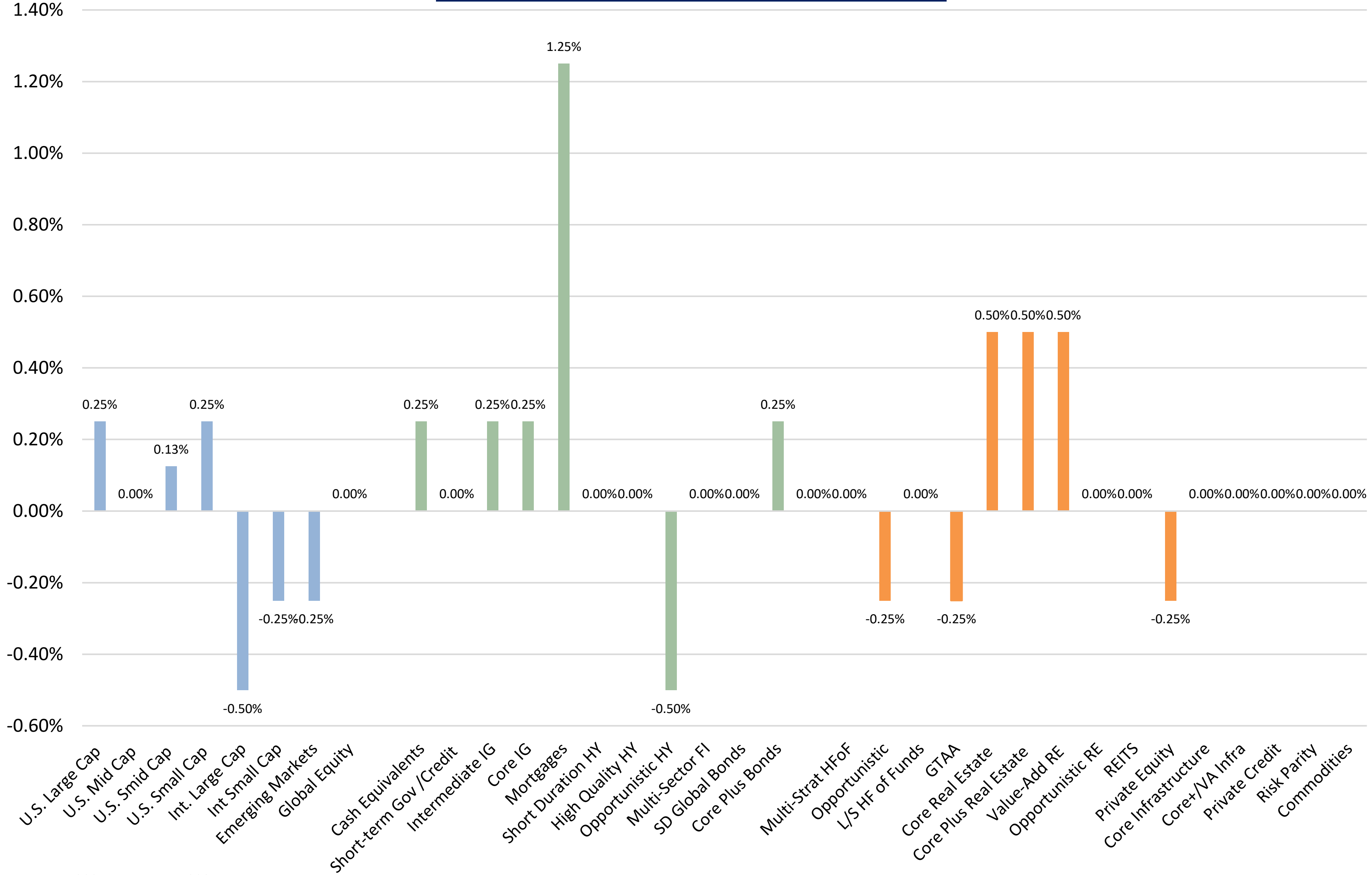
| Fixed Income Asset Class | Return | Risk |
|---|---|---|
| Cash Equivalents | 3.25% | 1.00 |
| Short-term Gov /Credit | 3.75% | 2.25 |
| Intermediate Investment Grade | 4.50% | 3.75 |
| Core Investment Grade | 4.75% | 5.00 |
| Mortgages | 6.00% | 6.50 |
| Short Duration High Yield | 6.00% | 6.00 |
| High Quality High Yield | 6.50% | 7.00 |
| Opportunistic High Yield | 7.25% | 9.00 |
| Multi-Sector Fixed Income | 3.50% | 6.25 |
| Short Duration Global Bonds | 2.50% | 5.00 |
| Core Plus Bonds | 5.00% | 5.75 |

| Alternatives Asset Class | Return | Risk |
|---|---|---|
| Multi-Strategy Hedge Fund of Funds | 5.00% | 6.00 |
| Opportunistic Strategies | 7.25% | 15.00 |
| L/S Hedge Fund of Funds | 5.00% | 9.00 |
| Global Tactical Asset Allocation | 6.25% | 12.50 |
| Core Real Estate | 6.50% | 10.50 |
| Core Plus Real Estate | 7.00% | 12.50 |
| Value-Add Real Estate | 7.50% | 14.00 |
| Opportunistic Real Estate | 9.00% | 17.00 |
| REITS | 6.00% | 20.00 |
| Diversified Private Equity | 9.50% | 21.00 |
| Core Infrastructure | 6.25% | 11.75 |
| Core+/Value Add Infrastructure | 8.25% | 15.75 |
| Private Credit | 9.00% | 13.50 |
| Risk Parity | 5.50% | 16.00 |
| Commodities | 3.75% | 17.00 |

INVESTMENT PERFORMANCE SERVICES, LLC

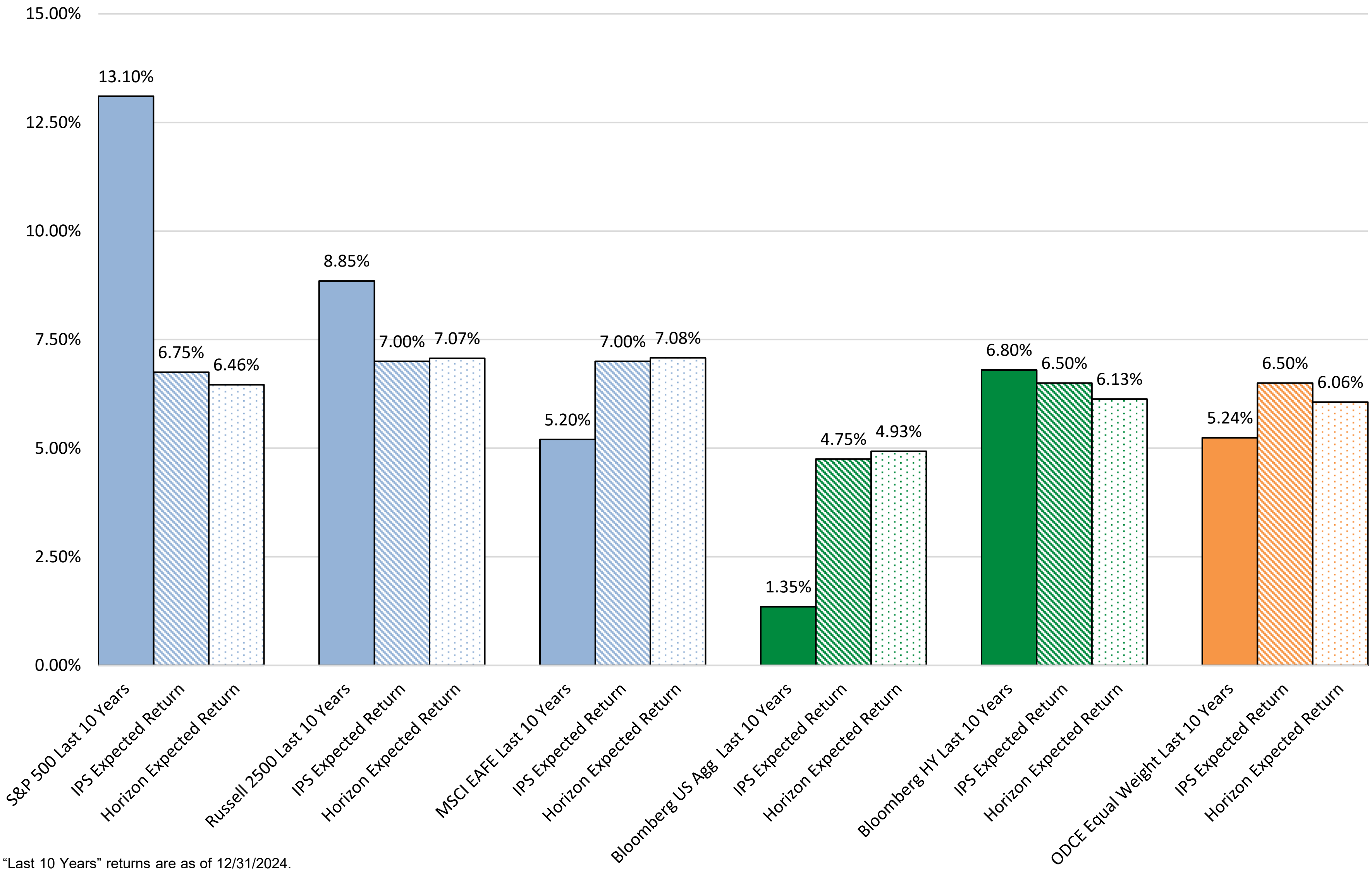
- IPS Investment Committee January 2025.
- Inflation expectation 2.5%.

# Change in Expected Returns[1]




1 January 2025 vs. January 2024

# Historical Returns vs. Forward Looking Assumptions




- “Last 10 Years” returns are as of 12/31/2024.
- “Horizon Expected Returns” are sourced from the Survey of Capital Market Assumptions (20-year horizon) published by Horizon Actuarial Services, LLC published in the August 2024 edition.

# Asset Class Constraints

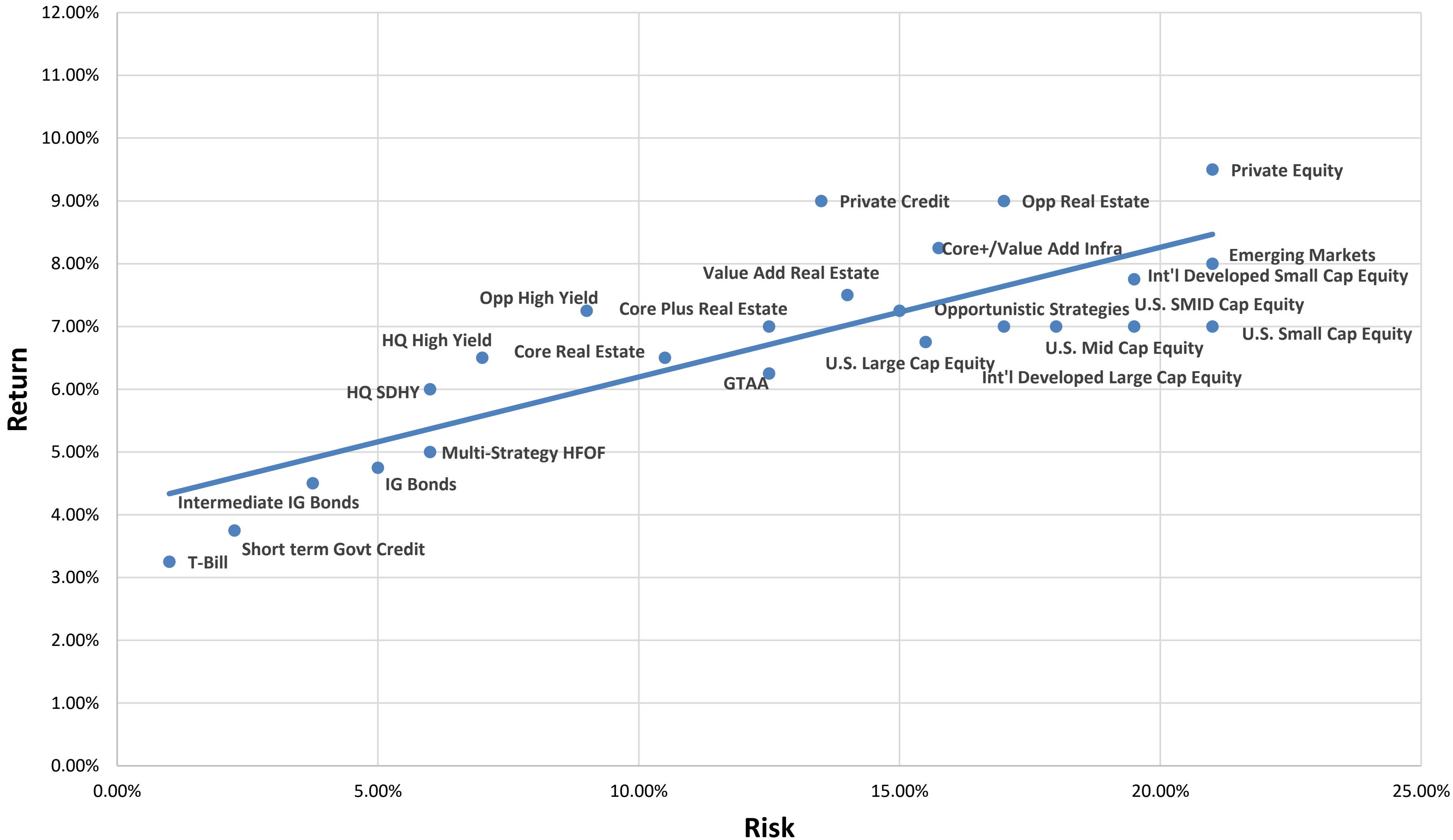
| | | |
|---|---|---|
| Total Domestic Equity | 20% | Max |
| Cash | 5% | Max |
| Fixed Investment Grade (Includes Short Term & Intermediate) | 20% | Min |
| High Quality High Yield Bonds (Includes Short Duration) | 30% | Max |
| Real Estate – Core | 10% | Max |
| Real Estate – Core Plus | 5% | Max |
| Real Estate – Value Add | 5% | Max |
| Total Real Estate | 15% | Max |
| Total Infrastructure | 5% | Max |
| Total Alternatives (Includes Real Estate & Infrastructure) | 20% | Max |

The Asset Allocation modeling requires the mathematical construction of an efficient frontier of various portfolios with distinct asset allocations and risk and return characteristics. The modeling process also requires the imposition of constraints, so that the efficient frontier represents a prudently diversified portfolio with adequate consideration of the liquidity needs and investment time horizon. Unconstrained optimization frequently generates allocations that have superior risk/reward characteristics, but the resulting allocations may not be adequately diversified and/or may have high allocations to illiquid investments.

The constraints shown are used for modeling purposes only. They should not be construed as suggested or recommended allocations, or limits on allocations, to any asset class or investment strategy. Each client fund has different facts, circumstances, time horizon, risk tolerance levels, return objectives, investment preferences, cash flows, and liquidity requirements. As such, each client's investment policy may differ materially from the constraints shown above.

IPS Investment Committee January 2025.

# 2025 Capital Market Assumptions



# Asset Class Correlations

| Assumption table: | US Large Cap Equity | US Mid Cap Equity | US Smid Cap Equity | US Small Cap Equity | Int'l Large Cap Equity | Int'l Small Cap Equity | Emerging Markets Equity | Cash | Short Term Govt / Credit | Interm. Invest. Grade | Core Invest. Grade | Mortgages | Short Duration High Yield | High Yield | Opp High Yield | Real Estate Core | Real Estate Core Plus | Real Estate Value Add | Private Equity | HFoF Multi-Strategy | Private Credit | Opp. Strategies | GTAA | Infrastructure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| US Large Cap Equity | 1.00 | | | | | | | | | | | | | | | | | | | | | | | |
| US Mid Cap Equity | 0.96 | 1.00 | | | | | | | | | | | | | | | | | | | | | | |
| US Smid Cap Equity | 0.93 | 0.98 | 1.00 | | | | | | | | | | | | | | | | | | | | | |
| US Small Cap Equity | 0.90 | 0.95 | 0.99 | 1.00 | | | | | | | | | | | | | | | | | | | | |
| Int'l Equity | 0.87 | 0.86 | 0.82 | 0.78 | 1.00 | | | | | | | | | | | | | | | | | | | |
| Int'l Small Cap Equity | 0.84 | 0.87 | 0.83 | 0.79 | 0.95 | 1.00 | | | | | | | | | | | | | | | | | | |
| Emerging Markets Equity | 0.74 | 0.76 | 0.72 | 0.69 | 0.86 | 0.85 | 1.00 | | | | | | | | | | | | | | | | | |
| Cash | -0.06 | -0.09 | -0.09 | -0.09 | 0.00 | -0.08 | 0.01 | 1.00 | | | | | | | | | | | | | | | | |
| Short Term Govt / Credit | 0.15 | 0.10 | 0.07 | 0.05 | 0.13 | 0.13 | 0.17 | 0.33 | 1.00 | | | | | | | | | | | | | | | |
| Int. Investment Grade | 0.30 | 0.25 | 0.20 | 0.17 | 0.22 | 0.23 | 0.25 | 0.11 | 0.87 | 1.00 | | | | | | | | | | | | | | |
| Core Investment Grade | 0.35 | 0.30 | 0.25 | 0.20 | 0.30 | 0.22 | 0.24 | 0.08 | 0.81 | 0.98 | 1.00 | | | | | | | | | | | | | |
| Mortgages | 0.16 | 0.14 | 0.11 | 0.09 | 0.18 | 0.20 | 0.18 | 0.12 | 0.25 | 0.50 | 0.60 | 1.00 | | | | | | | | | | | | |
| Short Duration High Yield | 0.65 | 0.72 | 0.67 | 0.62 | 0.66 | 0.71 | 0.65 | -0.09 | 0.30 | 0.40 | 0.37 | 0.22 | 1.00 | | | | | | | | | | | |
| High Yield | 0.73 | 0.79 | 0.75 | 0.70 | 0.74 | 0.76 | 0.70 | -0.09 | 0.25 | 0.40 | 0.42 | 0.26 | 0.93 | 1.00 | | | | | | | | | | |
| Opp. High Yield | 0.70 | 0.77 | 0.73 | 0.69 | 0.70 | 0.73 | 0.67 | -0.10 | 0.10 | 0.20 | 0.25 | 0.07 | 0.90 | 0.95 | 1.00 | | | | | | | | | |
| Real Estate Core | 0.28 | 0.20 | 0.20 | 0.30 | 0.20 | 0.12 | 0.16 | -0.09 | -0.37 | -0.33 | -0.28 | 0.40 | 0.28 | 0.20 | 0.12 | 1.00 | | | | | | | | |
| Real Estate Core Plus | 0.28 | 0.20 | 0.20 | 0.30 | 0.20 | 0.12 | 0.16 | -0.09 | -0.37 | -0.33 | -0.28 | 0.40 | 0.28 | 0.20 | 0.12 | 1.00 | 1.00 | | | | | | | |
| Real Estate Value Add | 0.28 | 0.20 | 0.20 | 0.30 | 0.20 | 0.12 | 0.16 | -0.09 | -0.37 | -0.33 | -0.28 | 0.40 | 0.28 | 0.20 | 0.12 | 1.00 | 1.00 | 1.00 | | | | | | |
| Private Equity | 0.76 | 0.81 | 0.86 | 0.88 | 0.67 | 0.69 | 0.59 | -0.11 | -0.06 | 0.03 | 0.03 | 0.05 | 0.53 | 0.60 | 0.60 | 0.25 | 0.30 | 0.35 | 1.00 | | | | | |
| HFoF Multi-Strategy | 0.73 | 0.78 | 0.76 | 0.71 | 0.78 | 0.83 | 0.76 | -0.01 | 0.01 | 0.07 | 0.08 | 0.01 | 0.64 | 0.67 | 0.71 | 0.08 | 0.08 | 0.08 | 0.70 | 1.00 | | | | |
| Private Credit | 0.69 | 0.75 | 0.71 | 0.68 | 0.65 | 0.64 | 0.64 | -0.04 | -0.28 | -0.16 | -0.17 | -0.23 | 0.71 | 0.74 | 0.80 | 0.28 | 0.28 | 0.28 | 0.65 | 0.76 | 1.00 | | | |
| Opportunistic Strategies | 0.79 | 0.85 | 0.85 | 0.82 | 0.81 | 0.85 | 0.76 | -0.07 | -0.02 | 0.05 | 0.05 | 0.03 | 0.72 | 0.76 | 0.81 | -0.02 | -0.02 | -0.02 | 0.82 | 0.91 | 0.82 | 1.00 | | |
| GTAA | 0.94 | 0.91 | 0.87 | 0.83 | 0.95 | 0.92 | 0.83 | -0.01 | 0.23 | 0.35 | 0.35 | 0.30 | 0.69 | 0.77 | 0.70 | -0.01 | -0.01 | -0.01 | 0.77 | 0.75 | 0.62 | 0.78 | 1.00 | |
| Infrastructure | 0.60 | 0.55 | 0.54 | 0.50 | 0.62 | 0.57 | 0.55 | 0.00 | 0.18 | 0.31 | 0.32 | 0.26 | 0.53 | 0.59 | 0.54 | 0.40 | 0.40 | 0.40 | 0.60 | 0.63 | 0.56 | 0.66 | 0.68 | 1.00 |

A correlation of 1.00 indicates two series move perfectly together while a -1.00 shows they move perfectly opposite one another.

# Efficient Frontier Analysis

| Efficient Frontier Report<br>Asset | Portfolio 1 | Portfolio 2 | Portfolio 3 | Portfolio 4 | Portfolio 5 | Portfolio 6 | Portfolio 7 | Portfolio 8 | Portfolio 9 | Portfolio 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| US Large Cap Equity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.88 | 10.42 | 20.00 |
| US Mid Cap Equity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| US Smid Cap Equity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| US Small Cap Equity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Int'l Equity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Int'l Small Cap Equity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Emerging Markets | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Cash | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Short Term Govt / Credit | 85.06 | 76.15 | 60.26 | 40.17 | 20.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Int. Investment Grade | 0.00 | 0.00 | 10.40 | 25.62 | 39.93 | 54.12 | 52.28 | 20.14 | 0.00 | 0.00 |
| Core Investment Grade | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 26.98 | 39.58 | 30.00 |
| Short Duration High Yield | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| High Yield | 0.00 | 6.64 | 10.58 | 14.21 | 20.03 | 25.88 | 30.00 | 30.00 | 30.00 | 30.00 |
| Real Estate Core | 9.94 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| Real Estate Core Plus | 0.00 | 2.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Real Estate Value Add | 0.00 | 0.00 | 3.76 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| Private Equity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| HFoF Multi-Strategy | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Opp. Strategies | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GTAA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Infrastructure | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.72 | 5.00 | 5.00 | 5.00 |
| **Return** | **4.05** | **4.34** | **4.62** | **4.89** | **5.17** | **5.44** | **5.71** | **5.96** | **6.20** | **6.43** |
| **Risk** | **1.82** | **1.98** | **2.28** | **2.64** | **3.05** | **3.51** | **4.02** | **4.75** | **5.66** | **6.72** |
| **Return/Risk** | **2.22** | **2.19** | **2.03** | **1.86** | **1.69** | **1.55** | **1.42** | **1.26** | **1.10** | **0.96** |

Compound annual return.

# Asset Allocation Policy History

| | 2018 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| U.S. Large Cap | 15.0% | 15.0% | 15.0% | 10.0% | 10.0% |
| Intermediate Fixed | 35.0% | 35.0% | 35.0% | 35.0% | 35.0% |
| SD High Yield | 30.0% | 30.0% | 30.0% | 35.0% | 35.0% |
| Core Real Estate | 20.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| Value Add Real Estate | -- | 10.0% | 10.0% | 10.0% | 10.0% |
| **Expected Return** | **5.46%** | **4.44%** | **4.44%** | **5.84%** | **5.72%** |
| **Expected Risk** | **4.46%** | **4.37%** | **4.22%** | **4.21%** | **4.67%** |

| | |
|---|---|
| (green) | Increase allocation |
| (red) | Decrease allocation |
| (blue) | New asset class |
| (purple) | Reclassification |

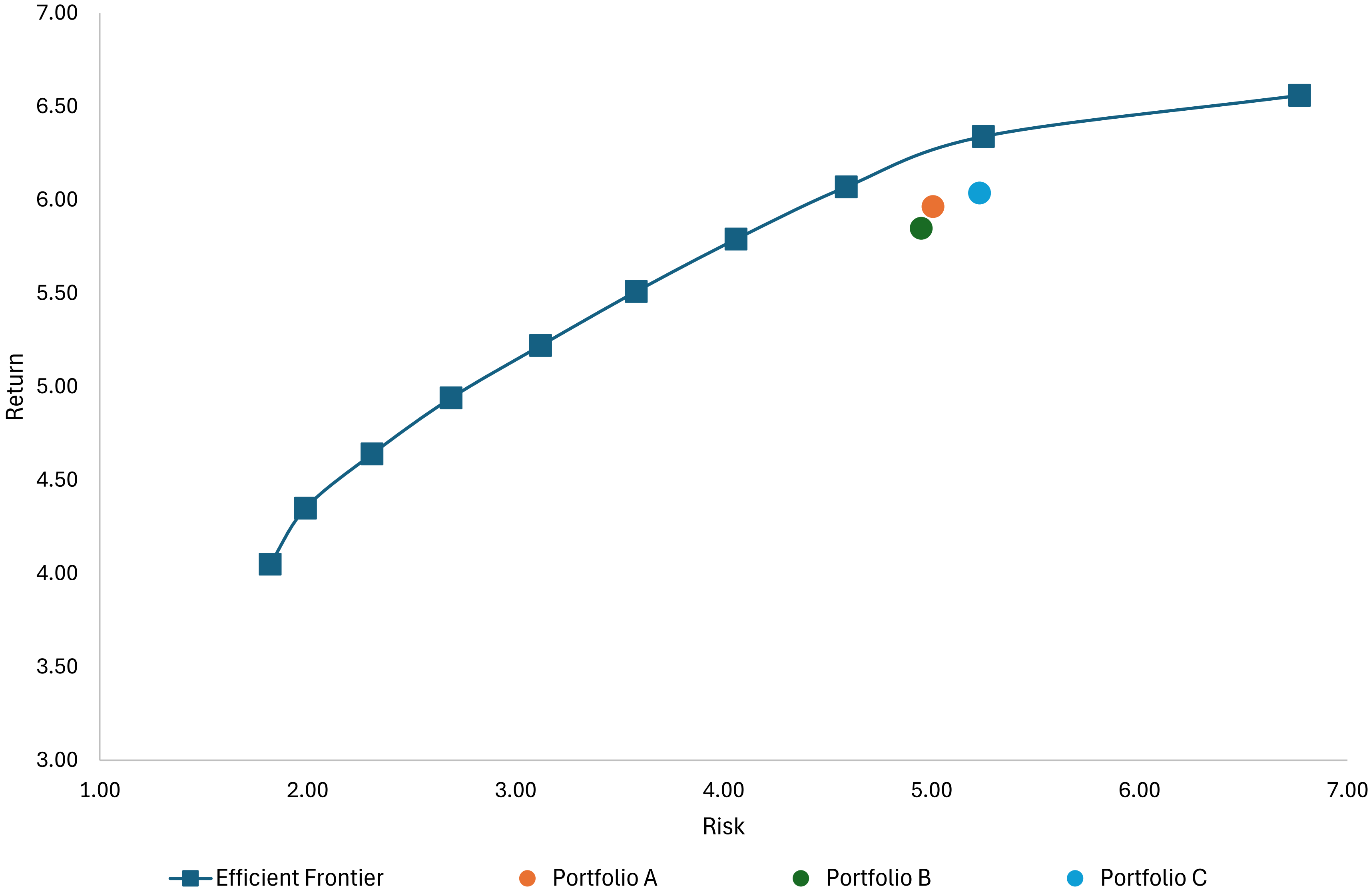
# Current Policy Comparison

| | | % Equity Target | % Fixed Income Target | | % Alternatives Target | | | Cash | Expected Return (net of fees) | Risk | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | US LC Equity | Fixed Income Interm | SDHY | Real Estate Core | Real Estate Value Add | Infra | | | | |
| | | 10% Equity | 70% Fixed Income | | 20% Real Estate | | 0% Alts | | | | |
| 1 | Operating Engineers Local No. 77 Trust Fund of Washington DC | 10.0 | 35.0 | 35.0 | 10.0 | 10.0 | 0.0 | 0.0 | 5.96% | 5.01 | Current Policy |
| 2 | Portfolio B | 12.2 | 34.9 | 35.4 | 7.4 | 7.4 | 0.0 | 2.7 | 5.85% | 4.95 | Allocation as of December 31, 2024 |
| | | 10% Equity | 70% Fixed Income | | 15% Real Estate | | 5% Alts | | | | |
| 3 | Portfolio C | 10.0 | 35.0 | 35.0 | 7.5 | 7.5 | 5.0 | 0.0 | 6.04% | 5.23 | Decrease RE Core and RE Value Add. Add Infrastructure. |

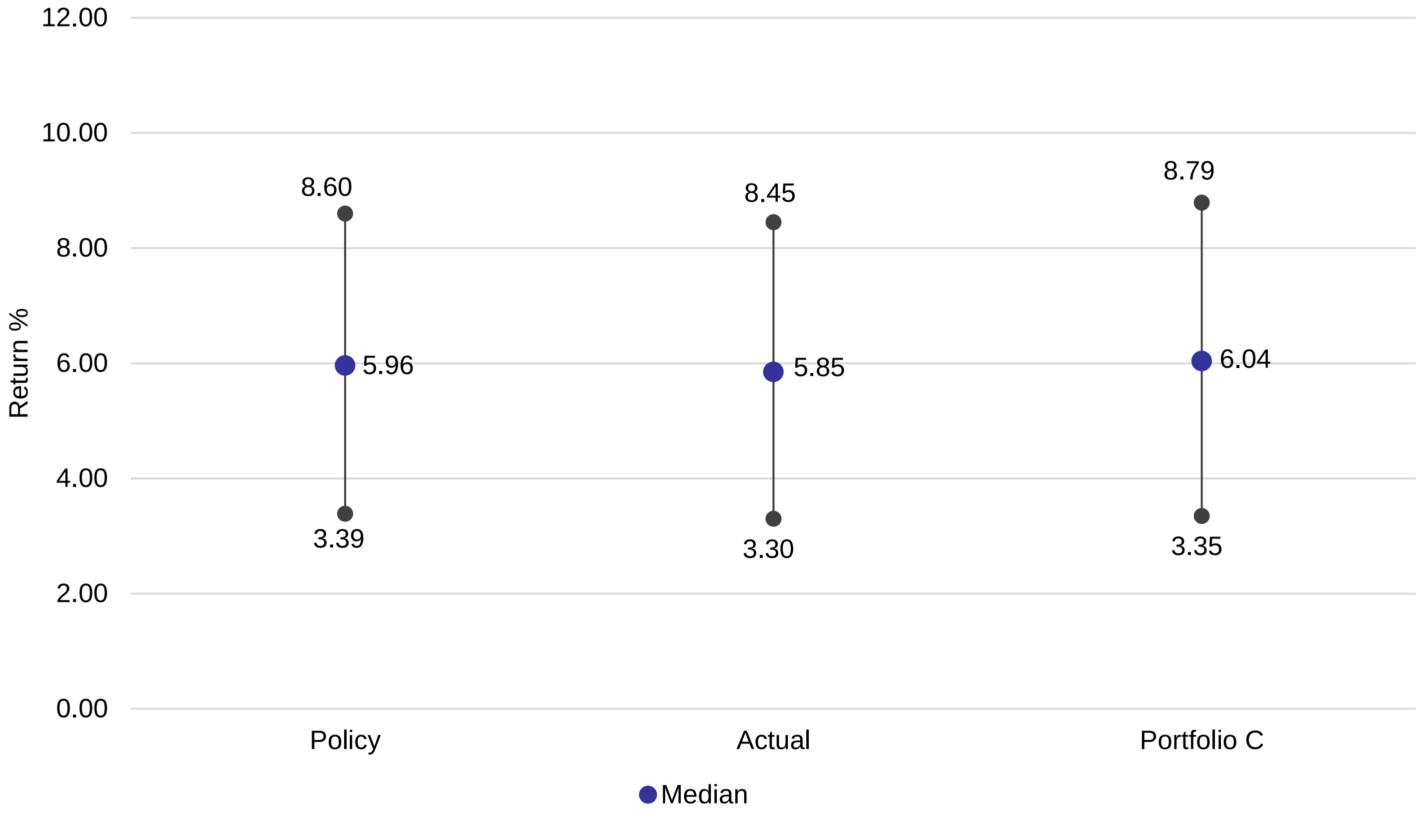
Scenarios are shown for illustrative purposes.

| | |
|---|---|
| | Increase allocation |
| | Decrease allocation |
| | New asset class |
| | Reclassification |

# Efficient Frontier Comparison

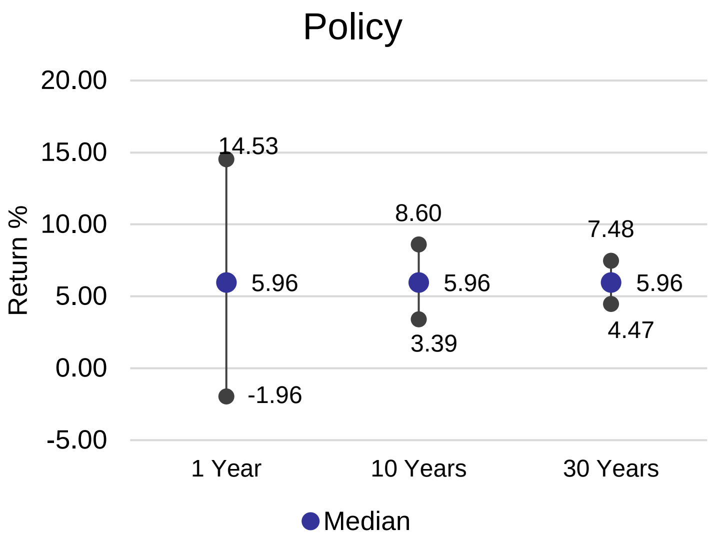


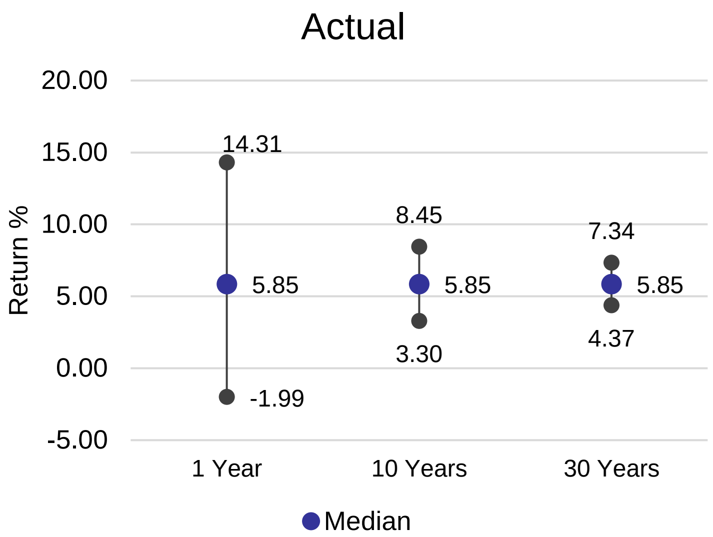
# Potential Distribution of Returns – 10 Year Horizon

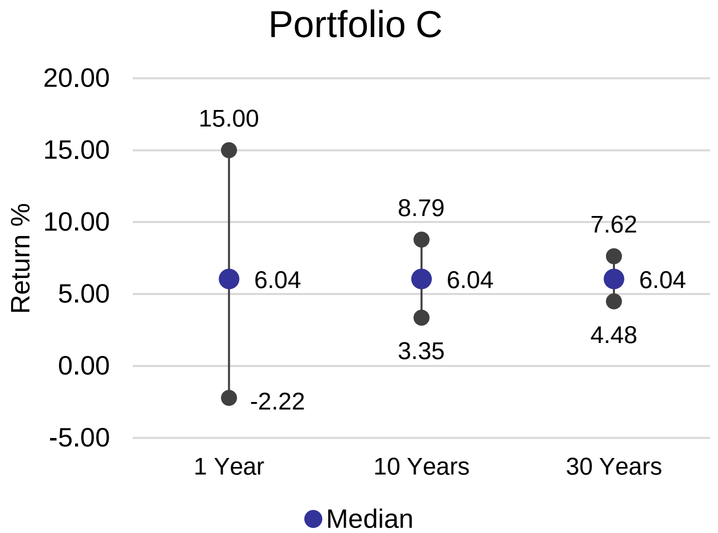



Potential distribution of returns is based on the Parametric Method. Best and worst outcomes are based on the 5th and 95th percentile, respectively.

# Potential Distribution of Returns

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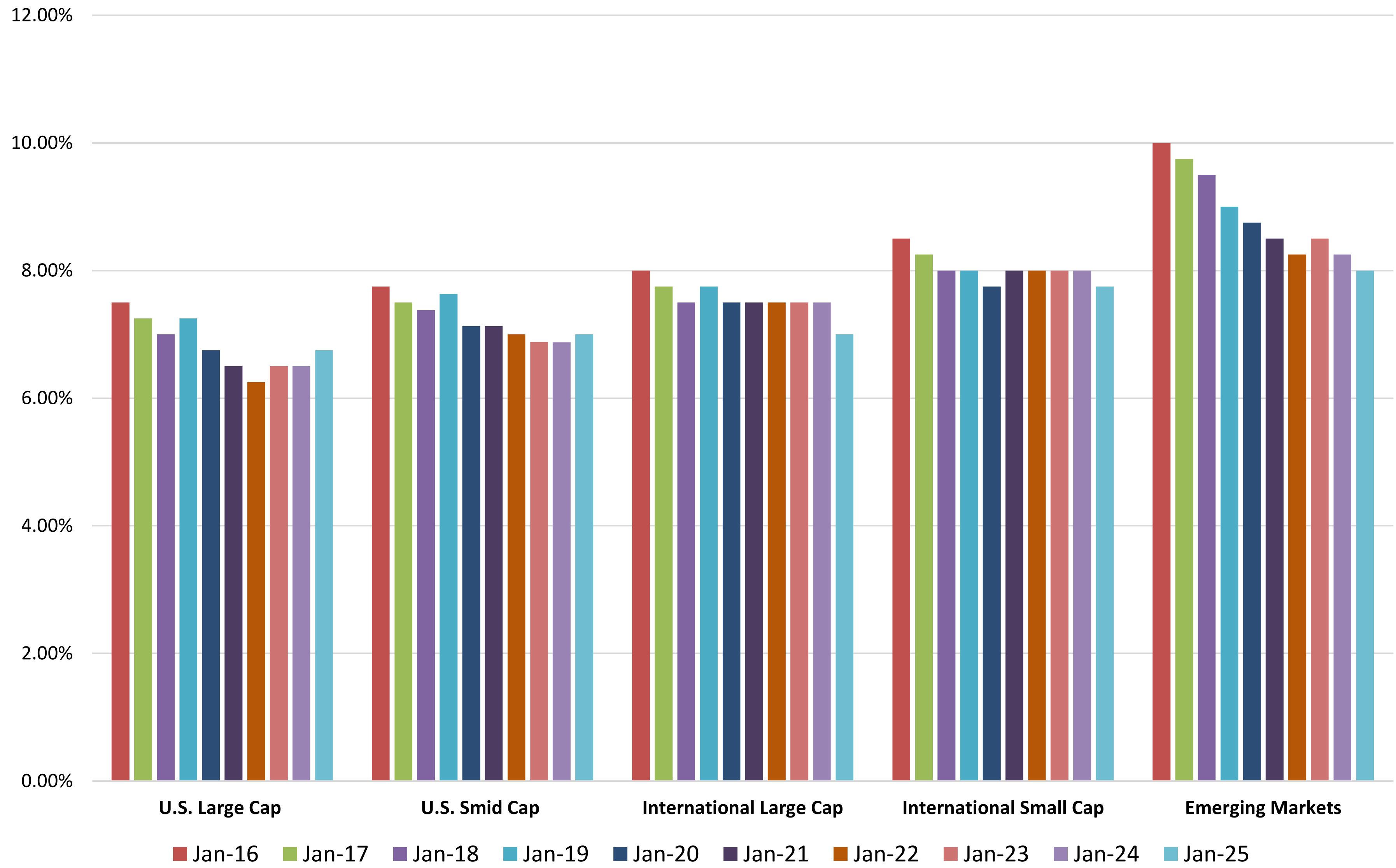
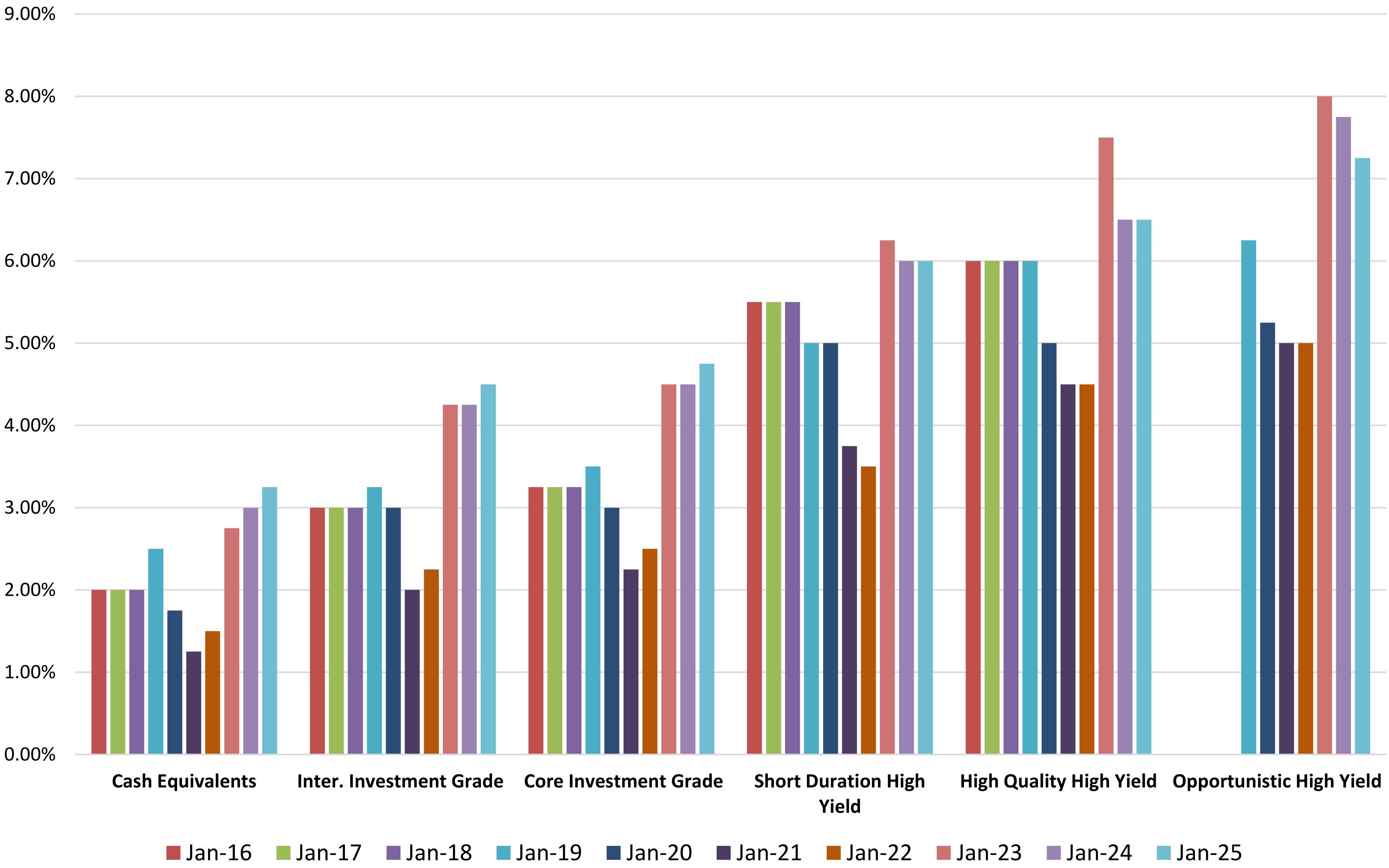
# APPENDIX

# Public Equity – IPS Historical Capital Market Assumptions

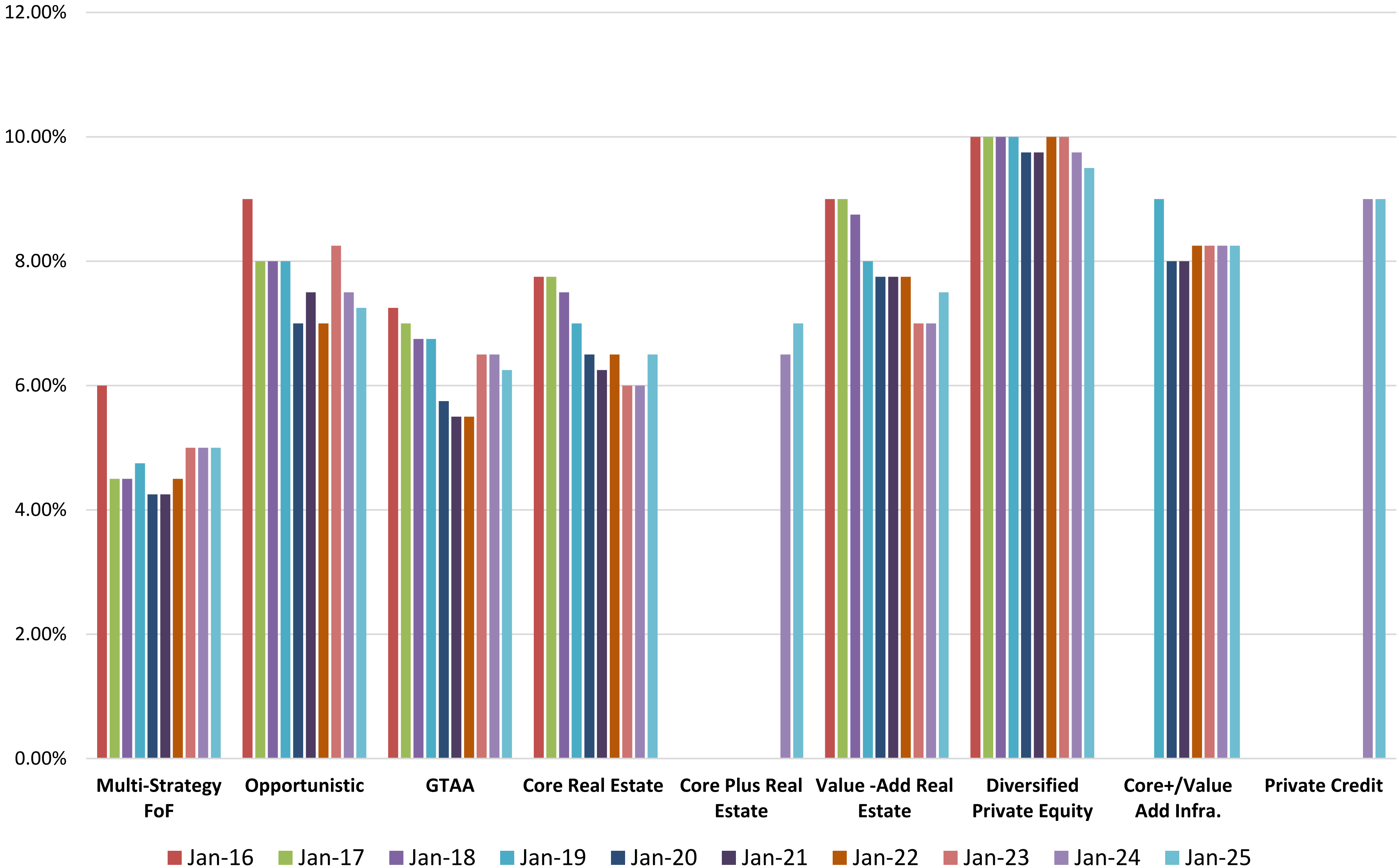


# Fixed Income – IPS Historical Capital Market Assumptions




IPS began setting a capital market assumption for Opportunistic High Yield in January 2019.

# Alternative Investments – IPS Historical Capital Market Assumptions



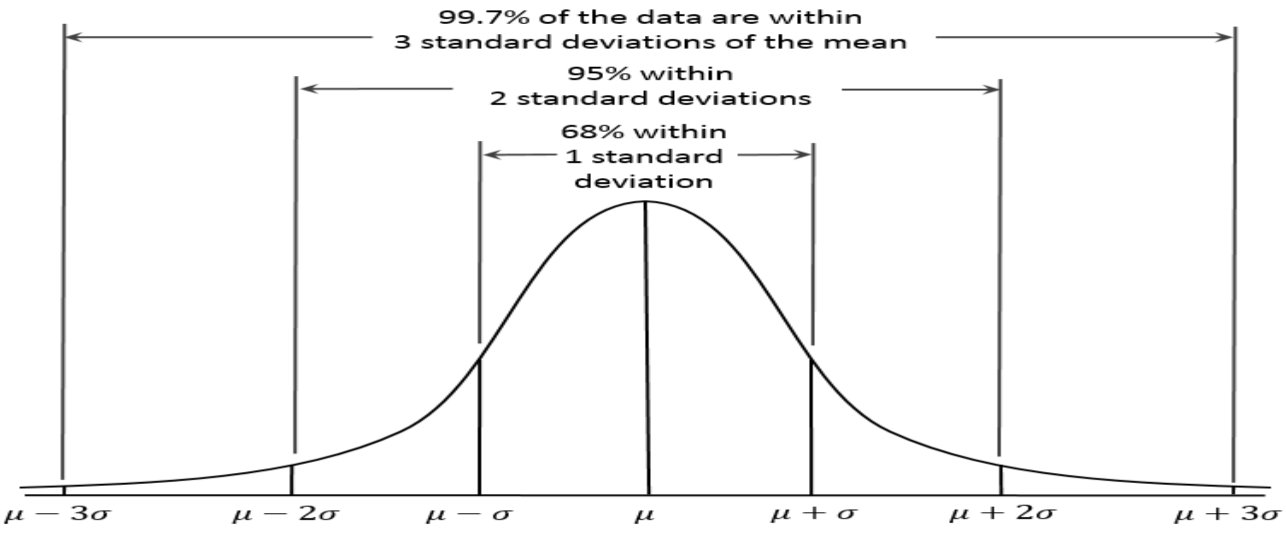

IPS began setting capital market assumptions for Core+/Value Add Infrastructure in January 2019 and for Core Plus Real Estate and Private Credit in January 2024.

# Explanation of Methodology

- The analysis in this presentation utilizes the parametric method, also known as the variance-covariance method

- The parametric method assumes a normal distribution of returns, commonly referred to as a bell-shaped curve.
  - For a normal distribution, 68% of the observations are within +/- one standard deviation, 95% are within +/- two standard deviations, and 99.7% are within +/- three standard deviations

- The chart below shows a normal distribution




- In reality, financial returns are not “normal;” they exhibit positive skewness (you get more positive returns above the mean than a normal distribution would predict) and kurtosis (the extreme “tails” of both positive and negative returns occur more often and are more extreme than a normal distribution would predict).

# Glossary of Investment Terminology

| | |
|---|---|
| **Alpha** | The amount of an investment's return that is independent of the return of the market. Alpha is generated by active management through security selection and may be positive or negative relative to a given benchmark. |
| **Beta** | A measure of an investment's volatility relative to the market. The beta of the market is 1.0 (as represented by a benchmark such as the S&P 500 Index). A beta of greater than 1.0 indicates an investment with greater volatility than the benchmark. A beta of less than 1.0 indicates less volatility than the benchmark. |
| **Capture Ratio** | A measurement (usually based on monthly or quarterly time periods) of an investment manager's performance relative to their benchmark in a rising or falling market. Upside capture illustrates how a manager has performed when their benchmark index is positive. In a rising market, a percentage over 100% indicates the manager exceeded the benchmark, while a percentage below 100% indicates the manager lagged the benchmark. Downside capture illustrates how a manager has performed when their benchmark index is negative. In a falling market, a percentage of less than 100% indicates that the manager lost less than the benchmark, while a percentage above 100% indicates the manager lost more than the market. Index funds, in theory, should have 100% upside and downside capture ratios before fees. |
| **Compound Annual Returns** | A time-weighted measure of the annual investment return, assuming the investment grew at a constant rate. |
| **Correlation** | A statistical measure of how two investments perform in relation to each other. Investments with a correlation of 1.0 have perfect positive correlation (exactly the same). Investments with perfect negative correlation of -1.0 will perform equally but in opposite directions. |
| **Distribution to Paid-In (DPI)** | The value of all distributions to limited partners divided by the amount limited partners have contributed to the fund. Often expressed as a ratio, DPI plus the unrealized value of limited partners' investments (RPI) equals the Total Value to Paid In (TVPI) multiple. A DPI of 1 indicates the investor has received capital back equal to what they invested while a DPI over 1 indicates an investor has received more capital back than they invested. DPI is most relevant for closed-end fund structures such as private equity. |
| **Efficient Frontier** | Represents the set of possible portfolios that have the greatest expected return for each level of risk (standard deviation of returns). |

# Glossary of Investment Terminology

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# Impact of Negative Cash Flows

- Most defined benefit pension funds payout more in benefits and expenses than they take in via contributions, resulting in **negative net cash flows** on an annual basis.
- Plans with negative net cash flows require a much higher return in Year 2 following a loss in Year 1 to get back to the starting fund value.
- For example, a plan with a neutral net cash flow that returns -10.0% in Year 1 would require an **11.0% return in Year 2 to break even**.
- A plan with -5.0% net cash flows that experiences a -10.0% return in Year 1 would require a **24.0% return in Year 2 to breakeven (Year 2B).**
- An 11.0% return for a -5.0% net cash flow plan in Year 2 following a -10.0% return in Year 1 would result in an ending value **that is $10.5 million less (Year 2A)** than the neutral cash flow plan, assuming a starting value of $100 million.

**Return Needed in Year 2 to Breakeven**

| Year 1 Return | Cash Flow as Percentage of Beginning Assets: 0.0% | -2.5% | -5.0% | -7.5% | -10.0% |
|---|---|---|---|---|---|
| 0.0% | 0% | 5% | 11% | 16% | 22% |
| -5.0% | 5% | 11% | 17% | 23% | 29% |
| -10.0% | **11%** | 17% | **24%** | 30% | 38% |
| -15.0% | 18% | 24% | 31% | 39% | 47% |
| -20.0% | 25% | 32% | 40% | 48% | 57% |

| | Neutral Cash Flow Fund | | Negative Cash Flow Fund | | |
|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 1 | Year 2A | Year 2B |
| Beginning Assets | $100,00,000 | $90,000,000 | $100,000,000 | $85,000,000 | $85,000,000 |
| Net Cash Flows | NA | NA | ($5,000,000) | ($5,000,000) | ($5,000,000) |
| Investment Return (%) | -10% | 11% | -10% | 11% | 24% |
| Investment Return ($) | ($10,000,000) | $10,000,000 | ($10,000,000) | $9,444,350 | $20,000,000 |
| **Ending Value** | **$90,000,000** | **$100,000,000** | **$85,000,000** | **89,444,350** | **$100,000,000** |

## Common Market Capitalization Categories for Equities

| | |
|---|---|
| Mega Cap | Greater than $250 Billion |
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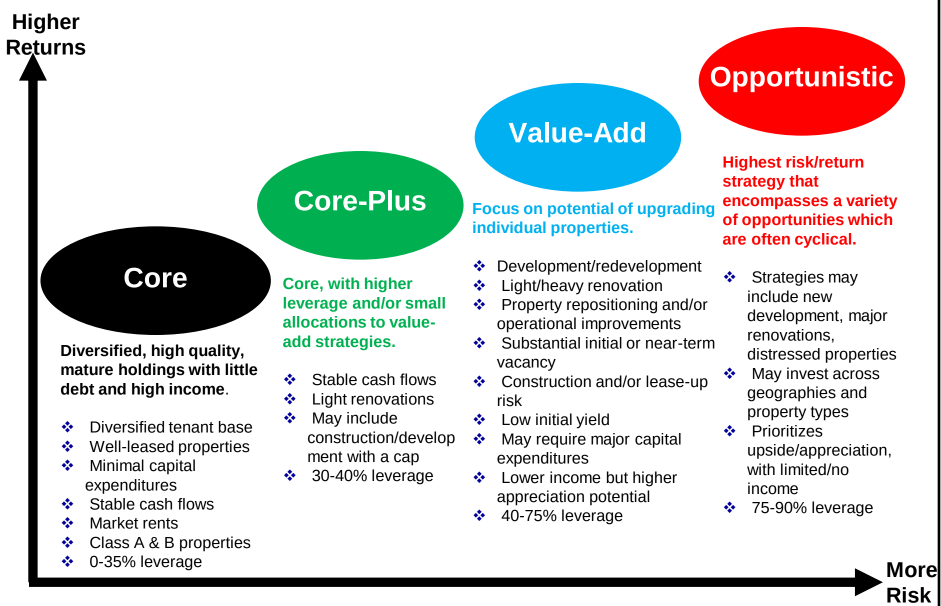
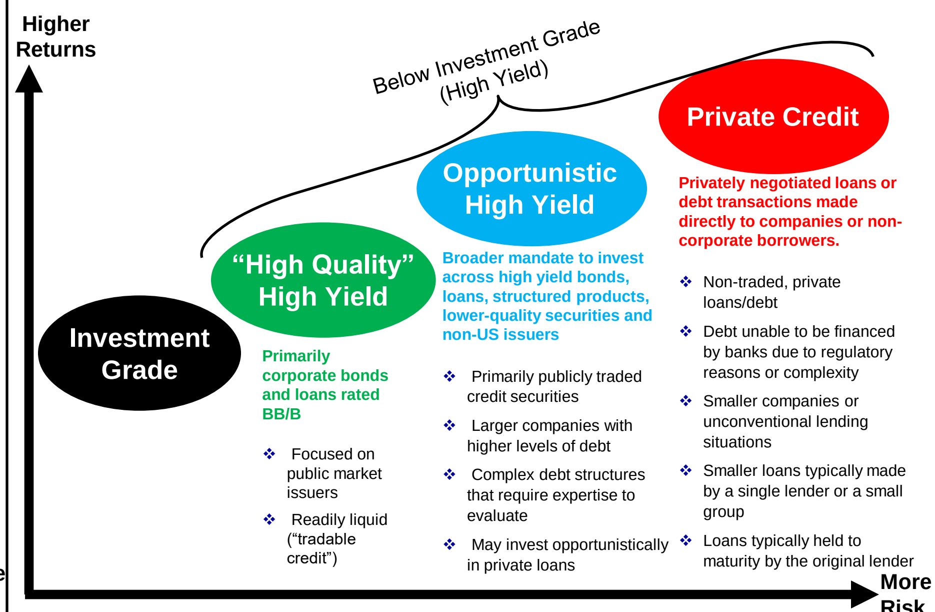
## Bond Ratings & Classifications

| | Standard & Poor's | Moody's |
|---|---|---|
| Investment Grade | AAA | Aaa |
| | AA | Aa |
| | A | A |
| | BBB | Baa |
| High Quality High Yield | BB | Ba |
| | B | B |
| Low Quality High Yield | CCC | Caa |
| | CC | Ca |
| | C | C |

## Real Estate Asset Class




## High Yield Credit Asset Class



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| | Neutral Cash Flow Fund | | Negative Cash Flow Fund | | |
|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 1 | Year 2A | Year 2B |
| Beginning Assets | $100,00,000 | $90,000,000 | $100,000,000 | $85,000,000 | $85,000,000 |
| Net Cash Flows | NA | NA | ($5,000,000) | ($5,000,000) | ($5,000,000) |
| Investment Return (%) | -10% | 11% | -10% | 11% | 24% |
| Investment Return ($) | ($10,000,000) | $10,000,000 | ($10,000,000) | $9,444,350 | $20,000,000 |
| **Ending Value** | **$90,000,000** | **$100,000,000** | **$85,000,000** | **89,444,350** | **$100,000,000** |

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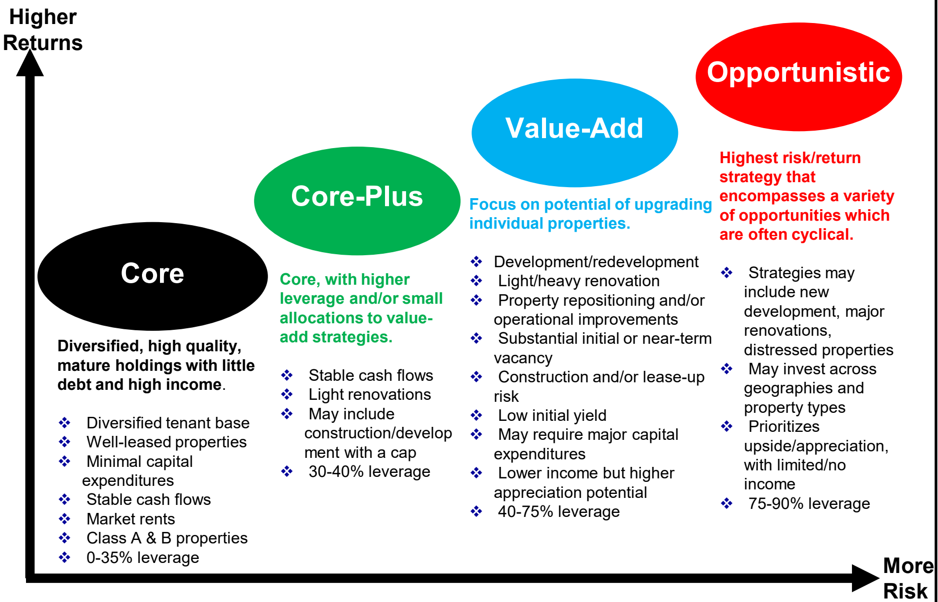
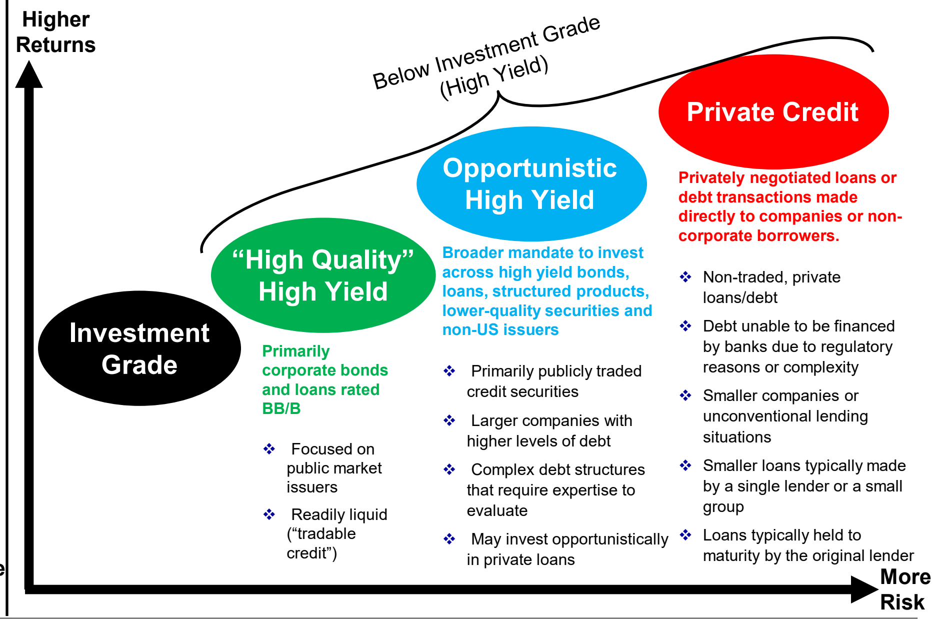
| | A | A |
| | BBB | Baa |
| High Quality High Yield | BB | Ba |
| | B | B |
| Low Quality High Yield | CCC | Caa |
| | CC | Ca |
| | C | C |

## Real Estate Asset Class




## High Yield Credit Asset Class



**Disclaimer:**

# EPIC

**April 30 - May 3, 2024**

**The following investment managers and providers attended and helped to defray the cost of IPS' annual conference EPIC. EPIC is an educational conference addressing various issues related to employee benefit plans. IPS does not give preferential treatment to investment managers or any other provider that pays to attend EPIC.**

400 Capital Management
Alliance Bernstein
Amalgamated Bank of Chicago
Amalgamated Bank of NY
American Realty Advisors
Apogem Capital
Arena Capital
Aristotle
ASB Real Estate Investments
Atlanta Capital Management
Barrow Hanley Global Investors
BentallGreenOak
Blackstone Infrastructure
BNY Mellon Investment Management
Boston Partners
Boyd Watterson Asset Management
BPEA Private Equity
Brown Advisory
Chartwell Investment Partners
Christenson Investment Partners
Columbia Threadneedle Investments
Constitutional Capital Partners
Corbin Capital Partners
Crux Point
Dana Investment Advisors
Earnest Partners
Empower
EnTrust Global
F/M Investments
Fidelity Investments
First Eagle Investments
Fisher Investments
Foundry Partners
Fred Alger Management
GCM Grosvenor
Glouston Capital Partners
GoldenTree Asset Management
Great Lakes Advisors
Hamilton Lane Advisors
Hardman Johnston Global Advisors
HPS Investment Partners
Income Research & Management
Intercontinental Real Estate Corp.
Invesco Advisors, Inc.
Janus Henderson Investors
John Hancock
JP Morgan Asset Management
Kearney Capital LLC
Kelson Group
Lazard Asset Management
Loomis, Sayles & Company
Lord Abbett & Co.
LSV Asset Management
Lyrical Asset Management
MacKay Shields
McMorgan & Company
Manulife
MGG Investment Group
Mesirow Private Equity
National Investment Services
National Real Estate Advisors
Neuberger Berman
Northern Trust Asset Management
Nuveen Investment Group
Oaktree Capital Management
Old Glory Asset Management
One America Financial
Partners Group
Patriot Financial Partners
PNC Capital Advisors
Portfolio Advisors LLC
Post Advisory Group
Principal Financial Group
Principal Life Insurance
Richmond Capital Management
Schroders Investment Management
Segall Bryant & Hamill
Sierra Investment Partners
Siguler Guff & Company, LP
State Street Global Advisors
Stonepeak Partners
Ullico Investment Company
Victory Capital Management
Wasatch Global Investors
Washington Capital Management
WEDGE Capital Management
Wellington Management Company
Westfield Capital Management
Westport Capital Partners
William Blair & Company
Xponance