INVESTMENT PERFORMANCE SERVICES, LLC

Operating Engineers Local No. 77 JATC

Investment Performance Report

Period Ended September 30, 2024

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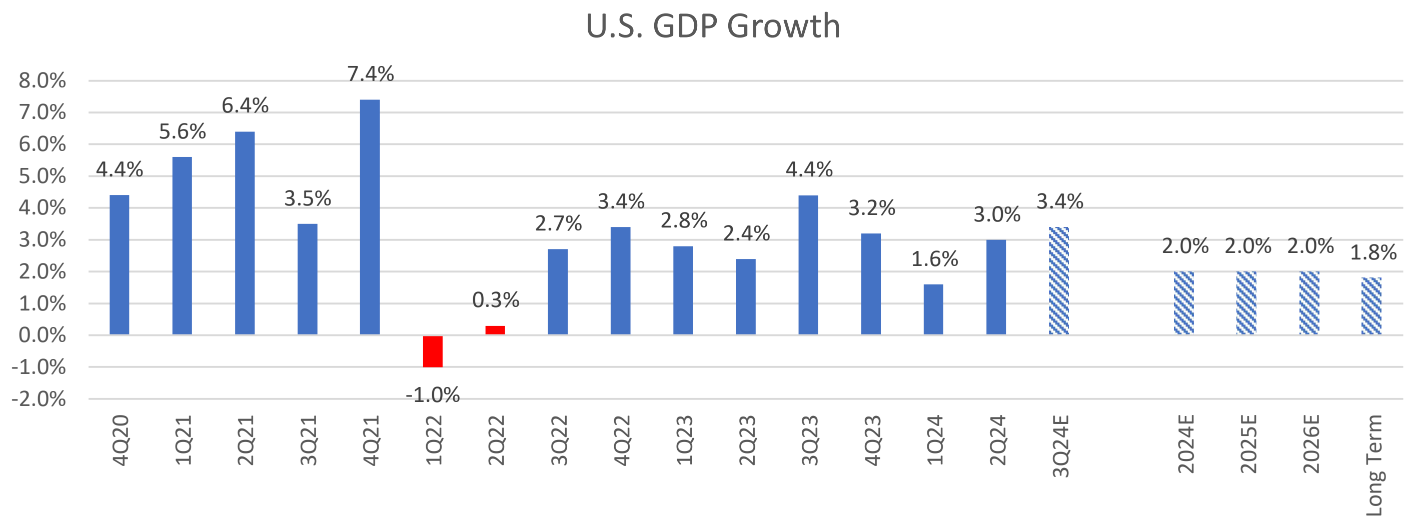
Market Discussion Q3 | 2024

INVESTMENT PERFORMANCE SERVICES, LLC

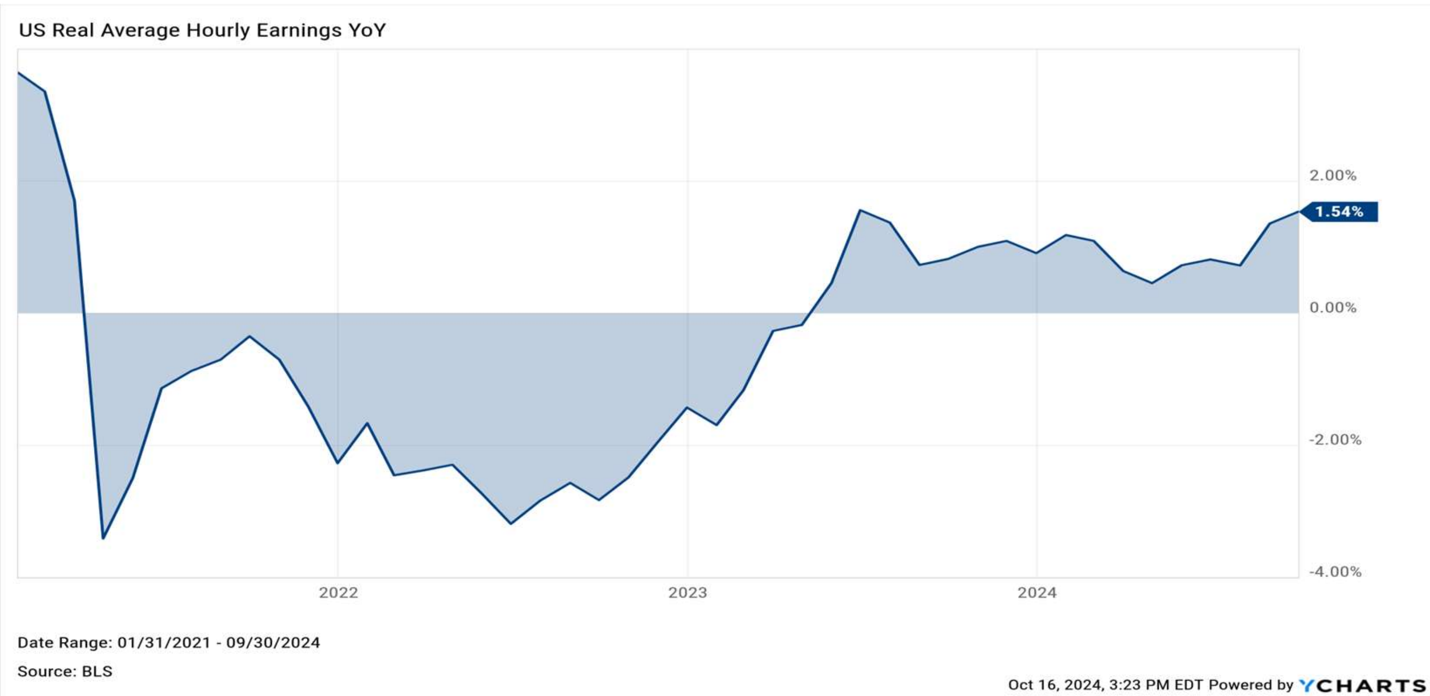
Financial Market Performance – Periods Ending September 30, 2024

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	5.9%	22.1%	26.3%	-18.1%	28.7%	18.4%	31.5%	-4.4%	36.2%	11.9%	15.9%	13.4%	10.7%
	US Large Cap Growth	Russell 1000 Growth	3.2%	24.5%	42.7%	-29.1%	27.6%	38.5%	36.4%	-1.5%	42.1%	12.0%	19.7%	16.5%	12.7%
	US Large Cap Value	Russell 1000 Value	9.4%	16.7%	11.4%	-7.6%	25.1%	2.8%	26.5%	-8.3%	27.6%	9.0%	10.7%	9.2%	8.5%
	US Small Cap	Russell 2000	9.3%	11.2%	16.9%	-20.5%	14.8%	19.9%	25.5%	-11.0%	26.7%	1.8%	9.3%	8.8%	8.5%
	Non-US Developed	MSCI EAFE (net)	7.3%	13.0%	18.2%	-14.5%	11.3%	7.8%	22.0%	-13.8%	24.7%	5.5%	8.2%	5.7%	6.0%
	Emerging Markets	MSCI EM (net)	8.7%	16.9%	9.8%	-20.1%	-2.5%	18.3%	18.4%	-14.6%	26.0%	0.4%	5.7%	4.0%	7.3%
	Int'l Small Cap	MSCI EAFE Small Cap (net)	10.5%	11.1%	13.2%	-21.4%	10.1%	12.3%	25.0%	-17.9%	23.4%	-0.4%	6.4%	6.2%	7.1%
Bonds	Treasury	Bloomberg US Govt	4.7%	3.8%	4.1%	-12.3%	-2.3%	7.9%	6.8%	0.9%	9.7%	-1.7%	-0.2%	1.4%	2.7%
	Broad Market	Bloomberg Aggregate	5.2%	4.4%	5.5%	-13.0%	-1.5%	7.5%	8.7%	0.0%	11.5%	-1.4%	0.3%	1.8%	3.2%
	Intermediate	Bloomberg Gov/Credit Int.	4.2%	4.7%	5.2%	-8.2%	-1.4%	6.4%	6.8%	0.9%	9.4%	0.2%	1.3%	2.0%	3.0%
	High Yield	Bloomberg HY BaB 2% IC	4.4%	6.9%	12.6%	-10.6%	4.6%	7.7%	15.2%	-1.9%	14.6%	2.7%	4.4%	4.9%	6.3%
	Short Duration HY	ICE BofA 1-3 Yrs BB US Cash Pay HY	3.0%	5.9%	8.9%	-3.1%	3.2%	5.4%	8.7%	1.3%	10.1%	3.9%	4.3%	4.4%	5.5%
	Global Bonds	FTSE WGBI	7.0%	2.7%	5.2%	-18.3%	-7.0%	10.1%	5.9%	-0.8%	11.0%	-4.4%	-2.1%	-0.1%	1.9%
GTAA	Unconstrained	65% MSCI World /35% FTSE WGBI	6.6%	13.0%	17.0%	-18.1%	11.0%	14.6%	19.9%	-5.8%	24.6%	4.3%	7.8%	6.6%	6.5%
Real Estate	Core	NCREIF ODCE Equal Weighted (net)	-0.1%	-3.2%	-13.4%	7.6%	21.9%	0.8%	5.2%	7.3%	-8.4%	-1.1%	2.3%	5.5%	5.7%
Hedge Fund of Funds	Diversified FOFs	HFRI FOF Composite	1.9%	6.8%	6.1%	-5.3%	6.2%	10.9%	8.4%	-4.0%	10.2%	2.5%	5.4%	3.7%	3.6%
	Equity Long-Short	HFRI Equity Hedge	3.8%	10.3%	11.4%	-10.1%	11.7%	17.9%	13.7%	-7.1%	17.3%	3.6%	9.0%	6.1%	5.7%
Commodities	Commodities	Goldman Sachs Commodity	-5.3%	5.2%	-4.3%	26.0%	40.4%	-23.7%	17.6%	-13.8%	-6.0%	8.8%	8.0%	-2.4%	-2.6%

U.S. Economy



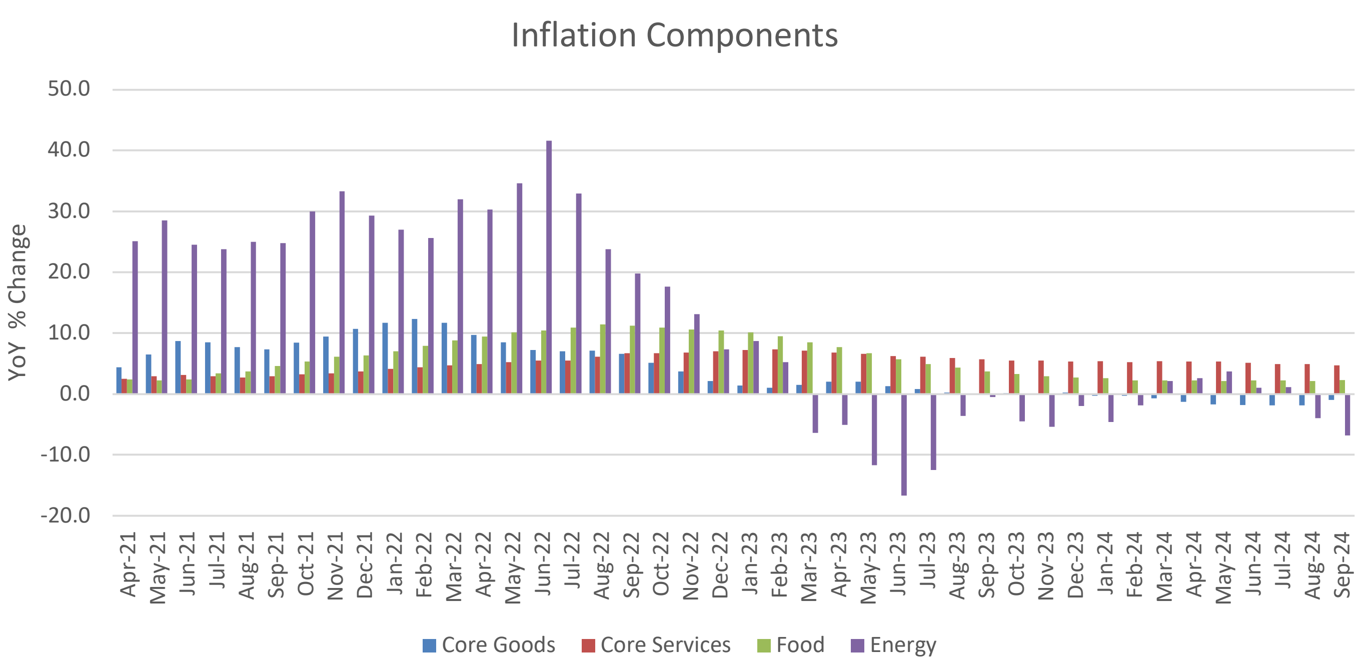
Sources: U.S. Bureau of Economic Analysis, Federal Reserve, Atlanta Federal Reserve



U.S. Economic Growth Reaccelerates

- U.S. GDP growth accelerated from 1.6% in Q1 2024 to 3.0% in Q2 2024.
- Compared to Q1 2024, the acceleration in real GDP primarily reflected strong growth in consumer spending, driven by increased spending on services and goods.
- Increases in private inventory investment and non-residential fixed investments also contributed to the increase in overall growth, while a rise in imports detracted.
- As of October 18th, the Atlanta Federal Reserve is projecting GDP growth of 3.4% for Q3 2024.
- After 25 consecutive months of negative real wage growth for U.S. workers, higher earnings and slowing inflation have more recently resulted in 17 consecutive months of real earnings growth, supporting robust economic growth.

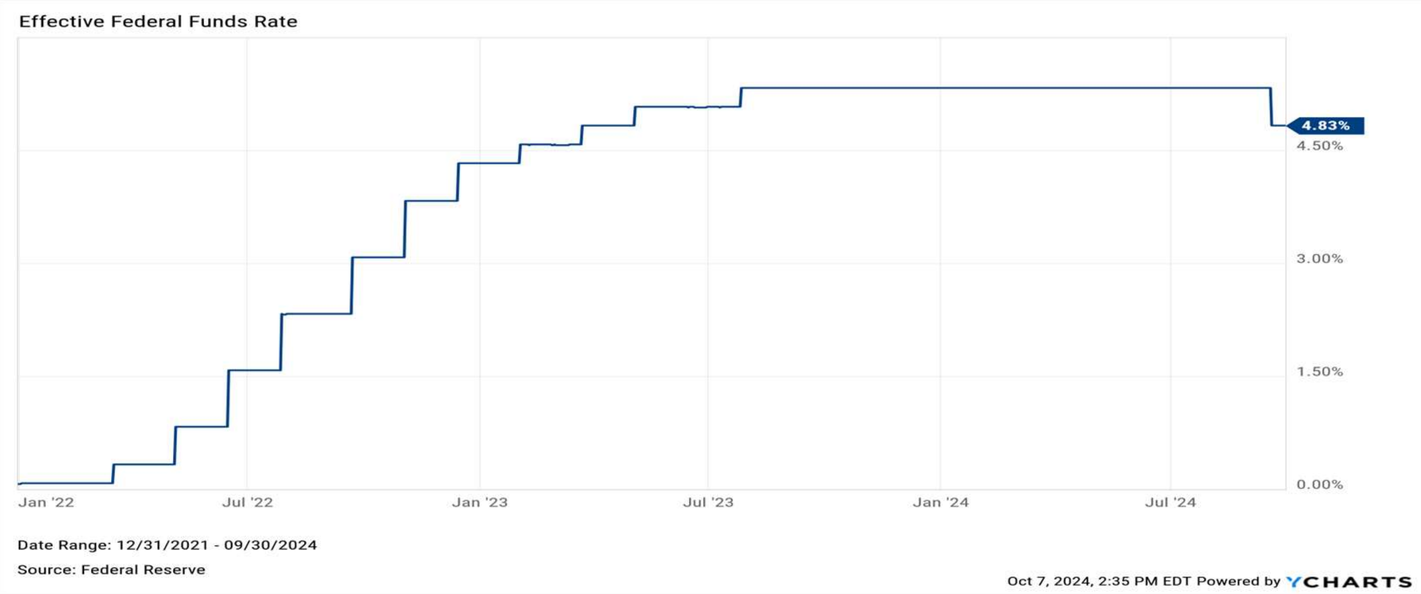
U.S. Economy

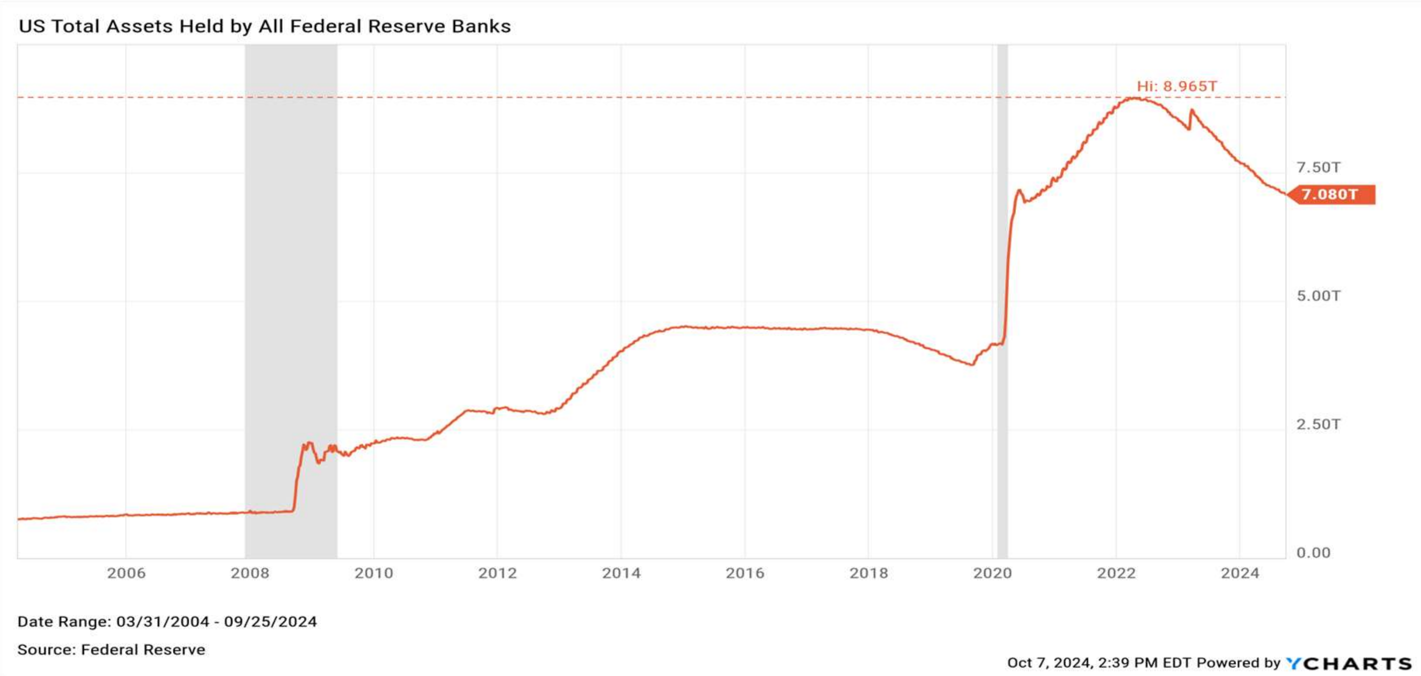


Progress Towards Inflation Target Continues

- September CPI increased 0.2% month-over-month. Year-over-year, headline CPI was 2.4%, the lowest level since February 2021.
- Shelter costs, which represent over one-third of headline CPI, rose by 4.9% in September, the smallest increase since Q1 2022 for the component.
- Excluding food and energy, core inflation increased by 3.3% vs. a year ago, the lowest level since April 2021.
- Year-over-year core goods inflation has been negative for all nine months of 2024, driven by falling used car prices.
- Service inflation remains elevated, driven by shelter and auto insurance, although it did fall below 5.0% in Q3 2024 for the first time since April 2022.
- Core Personal Consumption Expenditures (PCE), the Fed’s preferred inflation measure, increased by 2.7% over the last year through August, down from a peak of 5.6% in 2022.

U.S. Economy

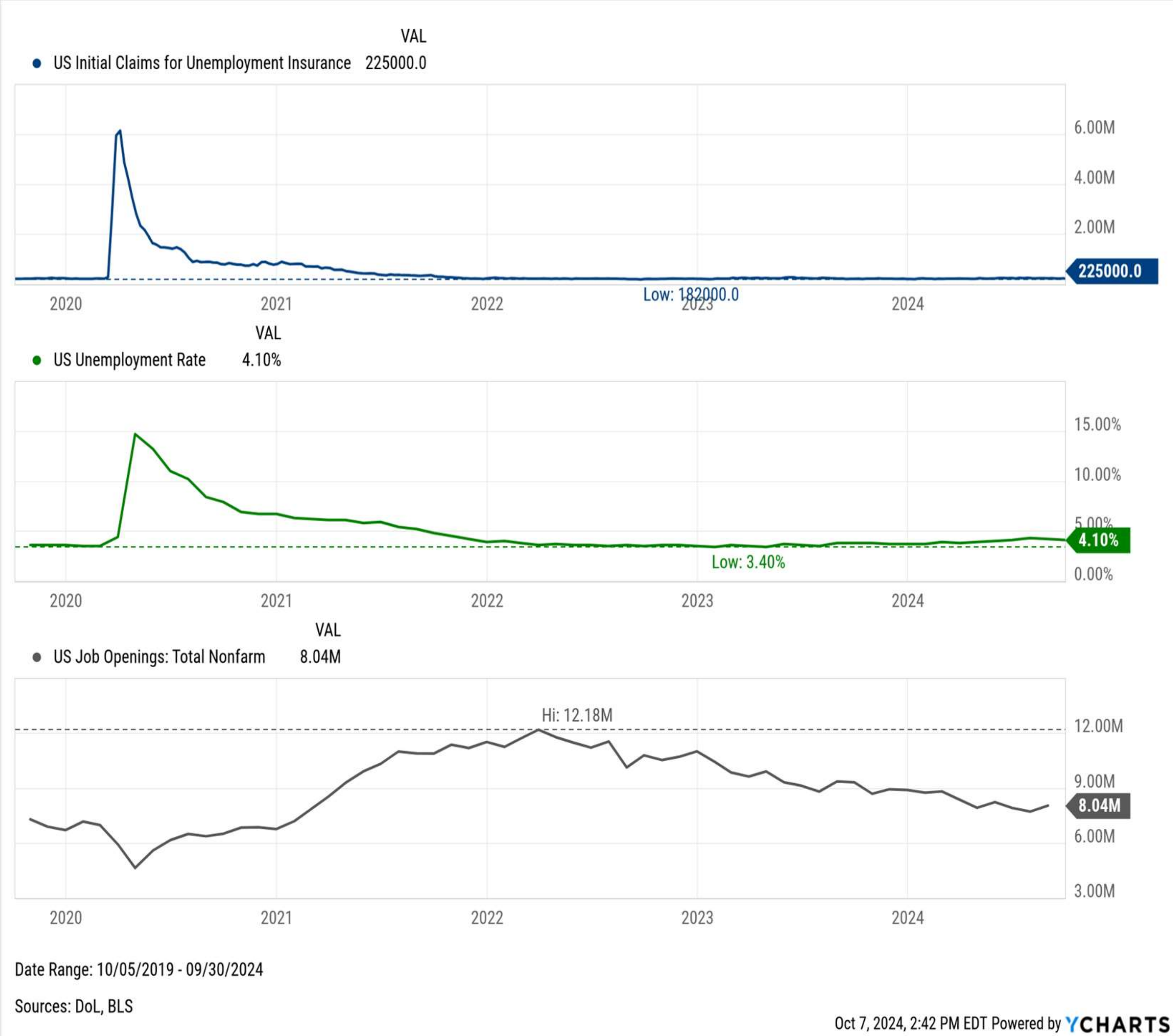




Fed Cuts Rates for First Time Since 2020

- Declining inflation and weakening employment data prompted the U.S. Federal Reserve (the "Fed") to implement its first interest rate cut since March 2020, reducing the Fed Funds Rate by (0.50%) in September.
- The September rate reduction came after the Fed left rates unchanged since July 2023.
- Forward guidance from the Fed at the September meeting suggests an additional 50 bps in cuts in 2024 followed by 100 bps in cuts in 2025.
- The Fed reduced the size of the balance sheet through quantitative tightening by approximately $1.9 trillion since the peak in April 2022.
- The balance sheet is at the lowest level since October 2020 but remains sufficiently larger than pre-COVID.

U.S. Economy



Labor Market Shows Some Signs of Softness

- While the labor market has remained resilient in the face of higher interest rates, signs of weakness have begun to emerge.
- There has been an average of 200,000 jobs added per month in 2024, down from an average of 251,000 in 2023.
- Weekly claims for unemployment averaged 231,154 in Q3 2024 compared to 217,692 in 1H 2024.
- The unemployment rate reached 4.3% in July, an increase of 0.9% since the low of 3.4% in April 2023, before retreating to 4.1% in September.
- U.S. job openings declined in 2024 by approximately 900k and are down by over four million from the peak in 2022.

U.S. Equity Market

	Index	3Q24	YTD	2023	2022	2021	2020	2019	2018	1-Year	3-Year	5-Year	10-Year
Large Cap	S&P 500	5.9%	22.1%	26.3%	-18.1%	28.7%	18.4%	31.5%	-4.4%	36.2%	11.9%	15.9%	13.4%
	Russell 1000	6.1%	21.2%	26.5%	-19.1%	26.4%	21.0%	31.4%	-4.8%	35.5%	10.8%	15.6%	13.1%
	Russell 1000 Value	9.4%	16.7%	11.4%	-7.6%	25.1%	2.8%	26.5%	-8.3%	27.6%	9.0%	10.7%	9.2%
	Russell 1000 Growth	3.2%	24.5%	42.7%	-29.1%	27.6%	38.5%	36.4%	-1.5%	42.1%	12.0%	19.7%	16.5%
Mid Cap	Russell Mid-Cap	9.2%	14.6%	17.2%	-17.3%	22.6%	17.1%	30.5%	-9.1%	29.2%	5.7%	11.3%	10.2%
	Russell Mid-Cap Value	10.1%	15.1%	12.7%	-12.1%	28.3%	5.0%	27.0%	-12.3%	28.9%	7.3%	10.3%	8.9%
	Russell Mid-Cap Growth	6.5%	12.9%	25.9%	-26.7%	12.7%	35.6%	35.5%	-4.8%	29.2%	2.3%	11.5%	11.3%
Small Cap	Russell 2000	9.3%	11.2%	16.9%	-20.5%	14.8%	19.9%	25.5%	-11.0%	26.7%	1.8%	9.3%	8.8%
	Russell 2000 Value	10.1%	9.2%	14.6%	-14.5%	28.2%	4.6%	22.4%	-12.9%	25.8%	3.7%	9.2%	8.2%
	Russell 2000 Growth	8.4%	13.2%	18.6%	-26.4%	2.8%	34.6%	28.4%	-9.3%	27.5%	-0.4%	8.8%	8.9%
Total Market	Wilshire 5000	6.2%	20.6%	26.1%	-19.0%	26.7%	20.8%	31.0%	-5.3%	35.1%	10.5%	15.5%	13.0%
	Russell 3000	6.2%	20.6%	25.9%	-19.2%	25.6%	20.9%	31.0%	-5.2%	35.1%	10.3%	15.2%	12.8%

Major Index Total Return as of September 30, 2024

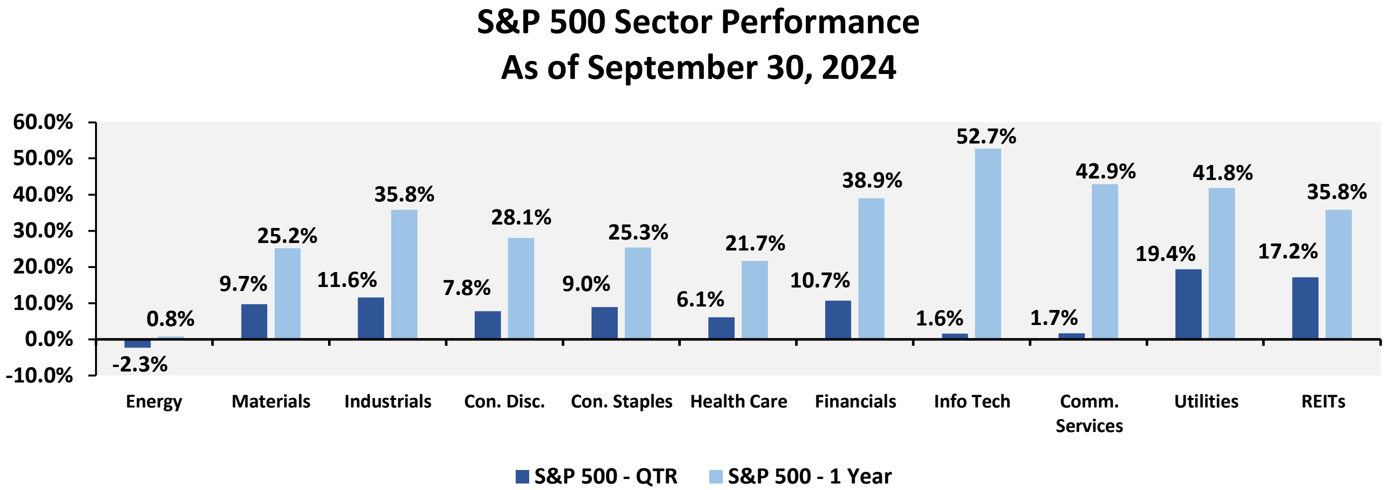
Asset Class	Name	3Q24	% off Low	% Off All Time High
U.S. Large Cap	S&P 500	5.9%	61.1%	0.0%
U.S. Mid Cap	Russell Midcap	9.2%	42.1%	0.0%
U.S. Smid Cap	Russell 2500	8.7%	36.5%	-3.3%
U.S. Small Cap	Russell 2000	9.3%	33.9%	-8.7%
International Large Cap	MSCI EAFE	7.4%	49.8%	-1.5%
International Small Cap	MSCI EAFE Small Cap (gross)	3.3%	40.6%	-13.7%
Emerging Markets	MSCI Emerging Markets	8.8%	38.9%	-11.7%
Global Equity	MSCI World (gross)	6.5%	57.2%	0.0%

- In Q3 2024 the overall trend in equity markets remained strong; however, market dynamics shifted and breadth expanded. More than 60% of S&P 500 constituents outperformed the index in Q3 2024, up from about 25% in the first half of 2024.

- In Q3 2024, the equal-weight S&P 500 returned 9.6%, outperforming the cap-weighted index by 3.7%, as laggards from the first half of 2024 outperformed.

- Equity market volatility increased significantly in Q3 2024, mainly due to the unwinding of the Japanese yen carry trade in late July and early August, triggering a brief dip that quickly reversed in U.S. equity markets.

U.S. Equity Market

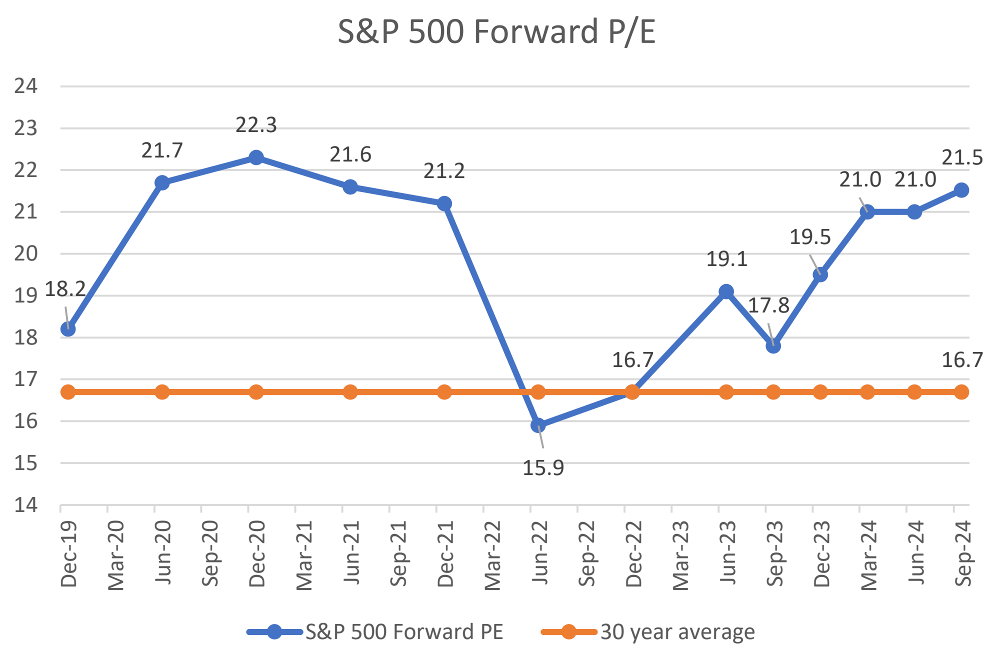


Rate-Sensitive Sectors Boosted in Q3, Energy Declines

- In Q3 2024, ten of the eleven large-cap sectors rose, led by utilities (+19.4%), REITs (+17.2%), industrials (+11.6%), financials (+10.7%), and materials (+9.7%). energy (-2.3%) was the only sector to decline, though it still boasts a strong +8.4% total return year-to-date.
- As the hiking cycle concludes and an easing cycle begins, market participants responded by buying rate-sensitive sectors like REITs, financials, and utilities.
- Market participants may also be recognizing that improving earnings growth expectations extend beyond the "Magnificent Seven." The earnings recession for non-mega-cap companies appears to be largely over, with projected EPS growth rates now slightly exceeding those of the Magnificent Seven. This earnings recovery, following a non-mega-cap “earnings recession”, could support a broader market rally.

S&P 500 Could See Fifth Quarter of Earnings Growth

- The S&P 500 is projected to achieve 4.1% earnings growth for the third quarter, according to analysts' expectations. If these projections hold, it would mark the fifth consecutive quarter of year-over-year increases.
- Historically, companies often exceed analysts' estimates, suggesting that actual earnings growth could be even higher—potentially over 7%—based on past trends of stronger-than-expected performance during earnings season.



Source: J.P. Morgan Asset Management

U.S. Equity Market

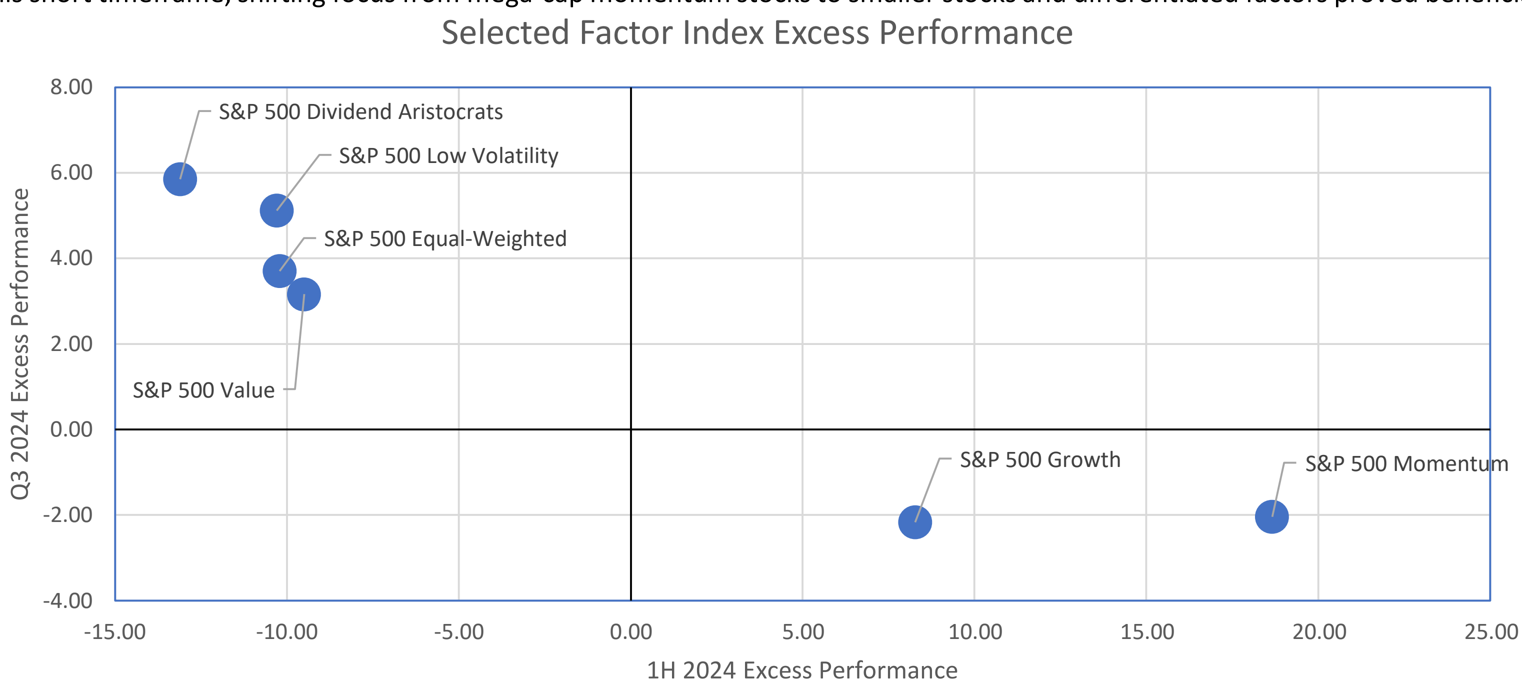
Q3 Leadership Shift: Defensive Factors Outperform in Rising Market

- Leadership shifted in Q3 2024, creating a glaring contrast with the previous two quarters. The chart below highlights some of the excess performance leaders versus the S&P 500 in the first half of 2024 and Q3 2024.

- Two key observations emerge: first, the upper right quadrant is empty, indicating no factors outperformed in both periods. Second, the upper left quadrant features market segments with a defensive stance, characterized by low volatility and dividends, which outperformed the cap-weighted parent index.

- Interestingly, defensive factors outperformed in an overall rising market during Q3 2024. The S&P 500 climbed 5.9% in Q3 2024, despite brief dips in early August and September, as defensive stocks limited downside capture and rebounded positively. Meanwhile, growth and momentum factors, largely driven by the Magnificent Seven, lagged.

- Although the Magnificent Seven stocks comprised over 30% of the S&P 500 by weight, they contributed less than 10% to the index's gains for the quarter. At least in this short timeframe, shifting focus from mega-cap momentum stocks to smaller stocks and differentiated factors proved beneficial in Q3 2024.



U.S. Equity Market

Yen Carry Trade Unwinds, Affecting Markets Worldwide, Including the U.S.

- The yen carry trade, where investors borrow in Japanese yen at low interest rates to invest in higher-return assets, faced significant unwinding in Q3 2024 due to a rising yen and a surprise rate hike by the Bank of Japan. This caused the yen to appreciate 14% against the dollar from July to August, leading to forced selling in global markets as investors unwound their trades.

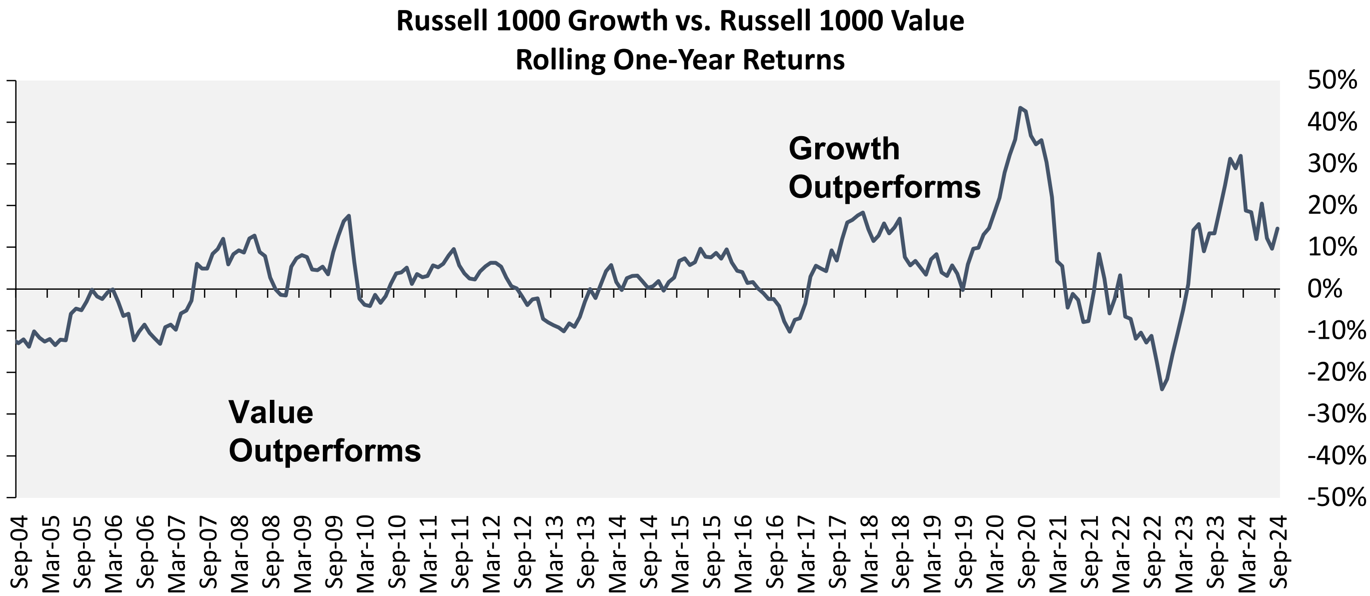
- The strategy of long tech and short yen gained traction over the years, utilizing the yen's low borrowing costs. This approach has likely directed significant capital into U.S. tech stocks, as evidenced by the correlation between the dollar-yen exchange rate and the Nasdaq Composite.

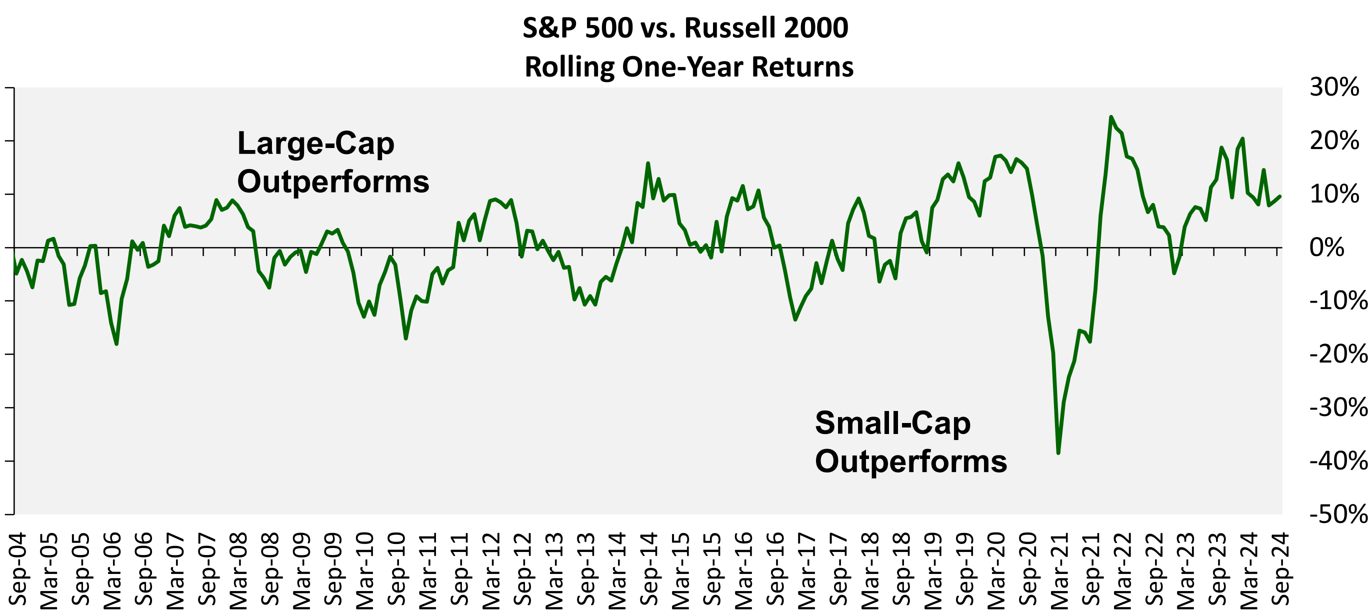
- During this period, the VIX ("Fear Index") surged to levels not seen since the COVID-19 pandemic, spiking close to 40, prompting further unwinding of leveraged positions, including those in the U.S. technology sector. However, by the end of the quarter, the VIX rapidly declined back below 20, while global equities approached all-time highs.

- August underscored the vulnerability of large FX carry trade positions amid recent volatility, necessitating rapid unwinding. While these strategies usually provide small, consistent returns in stable markets, they can lead to substantial losses during turbulence—often compared to "picking up nickels in front of a steamroller."

Source: Bloomberg

U.S. Equity Market





Small Caps Rally as Market Closes Q3 Strong

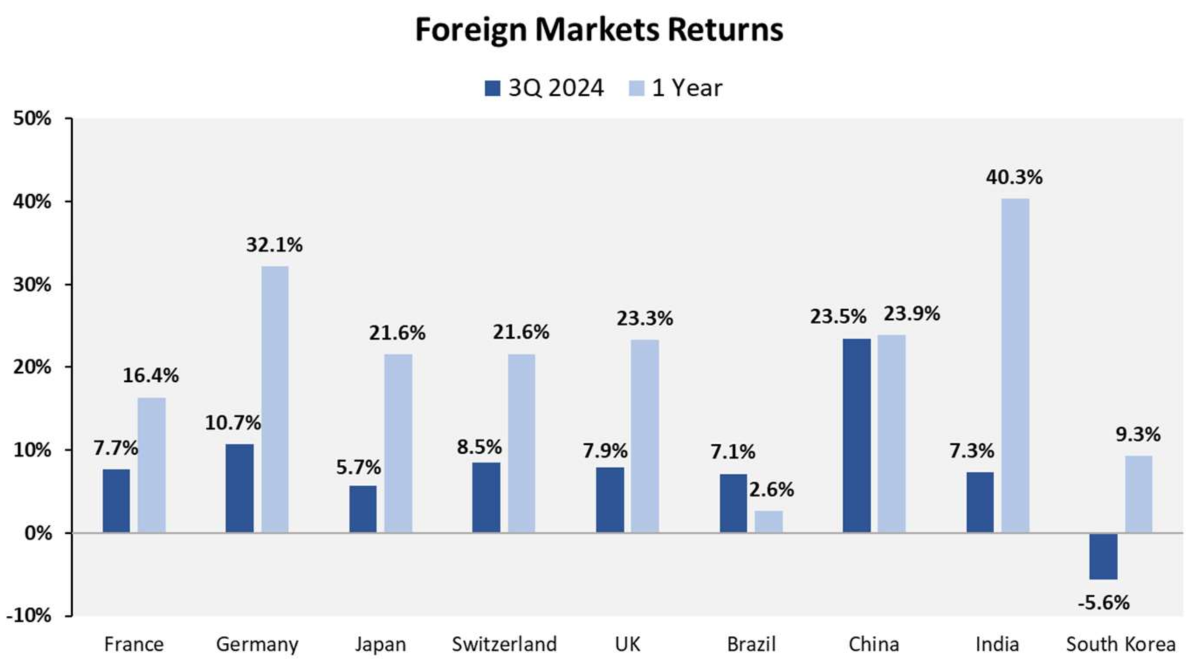
- The equity market concluded Q3 positively, though the period was marked by considerable turbulence and no shortage of headlines. In Q3 2024, large-cap growth underperformed, while small-cap value and rate-sensitive sectors experienced gains, contributing to enhanced market breadth.

- Small caps rebounded strongly in the third quarter, with the Russell 2000 Index rising 9.3% and outpacing the Russell 1000 Index's 6.1% gain. The Russell 2000 Value Index also outperformed its Growth counterpart, increasing by 10.1% compared to 8.4%. This surge was primarily driven by the financial sector, which constitutes nearly 30% of the small-cap value index.

- The 2022-2023 rate hike cycle adversely impacted smaller companies, which typically have more floating rate debt, squeezing margins. The dovish rate outlook in Q3 2024 has been a key factor driving the rotation from large-cap growth to small caps, value, and cyclicals.

International Equity Market

	Index	3Q24	YTD	2023	2022	2021	2020	2019	2018	1-Year	3-Year	5-Year	10-Year
Global	MSCI AC World Index (net)	6.6%	18.7%	22.2%	-18.4%	18.5%	16.3%	26.6%	-9.4%	31.7%	8.1%	12.2%	9.4%
	MSCI World Small Cap (net)	9.4%	11.0%	15.8%	-18.8%	15.8%	16.0%	26.2%	-13.9%	24.8%	2.2%	9.0%	8.0%
	MSCI World ex US (net)	7.8%	13.1%	17.9%	-14.3%	12.6%	7.6%	22.5%	-14.1%	24.9%	5.6%	8.4%	5.7%
	MSCI World ex US Small Cap (net)	10.4%	11.5%	12.6%	-20.6%	11.1%	12.8%	25.4%	-18.1%	23.3%	0.0%	6.8%	6.0%
Developed ex US	MSCI EAFE (net)	7.3%	13.0%	18.2%	-14.5%	11.3%	7.8%	22.0%	-13.8%	24.7%	5.5%	8.2%	5.7%
	MSCI EAFE Value (net)	8.9%	13.8%	19.0%	-5.6%	10.9%	-2.6%	16.1%	-14.8%	23.1%	8.9%	8.3%	4.6%
	MSCI EAFE Growth (net)	5.7%	12.3%	17.6%	-22.9%	11.3%	18.3%	27.9%	-12.8%	26.5%	1.9%	7.7%	6.6%
	MSCI EAFE Small Cap (net)	10.5%	11.1%	13.2%	-21.4%	10.1%	12.3%	25.0%	-17.9%	23.4%	-0.4%	6.4%	6.2%
Emerging Markets	MSCI Emerging Markets (net)	8.7%	16.9%	9.8%	-20.1%	-2.5%	18.3%	18.4%	-14.6%	26.0%	0.4%	5.7%	4.0%



- Excluding South Korean equities, and to a lesser extent, some of the major U.S. tech leaders, most global equity markets performed exceptionally well during Q3 2024.

- Q3 2024 was marked by unprecedented volatility in the Japanese stock market. After reaching a new high in early July, the market corrected sharply by month’s end, influenced by weaker U.S. economic data and the Bank of Japan's interest rate hike. These changes triggered significant fluctuations in the currency market, with the yen strengthening abruptly against the U.S. dollar.

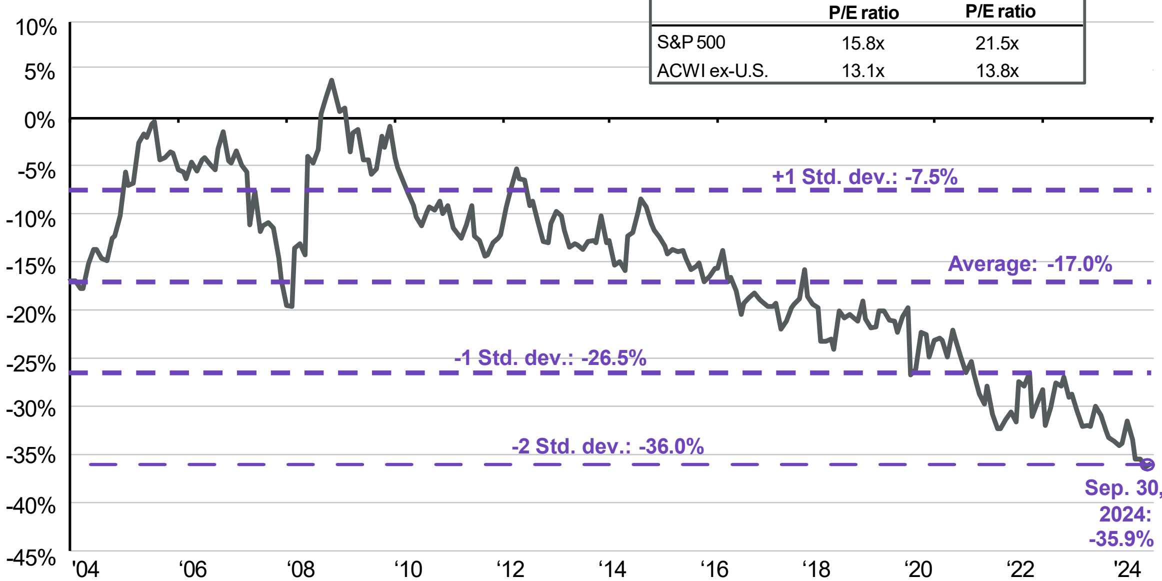
- Emerging market equities saw strong gains in Q3 2024, outpacing developed markets, largely driven by China's robust stimulus measures aimed at stabilizing the economy and boosting consumption. Over a span of just two weeks, China transformed from one of the worst-performing equity markets for the quarter to one of the best, showcasing a remarkable turnaround.

International Equity Market

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

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

	20-yr. avg. P/E ratio	Current P/E ratio
S&P 500	15.8x	21.5x
ACWI ex-U.S.	13.1x	13.8x



Source: J.P. Morgan Asset Management.

Weakened Dollar and Fed Cuts: A Setup for International Markets?

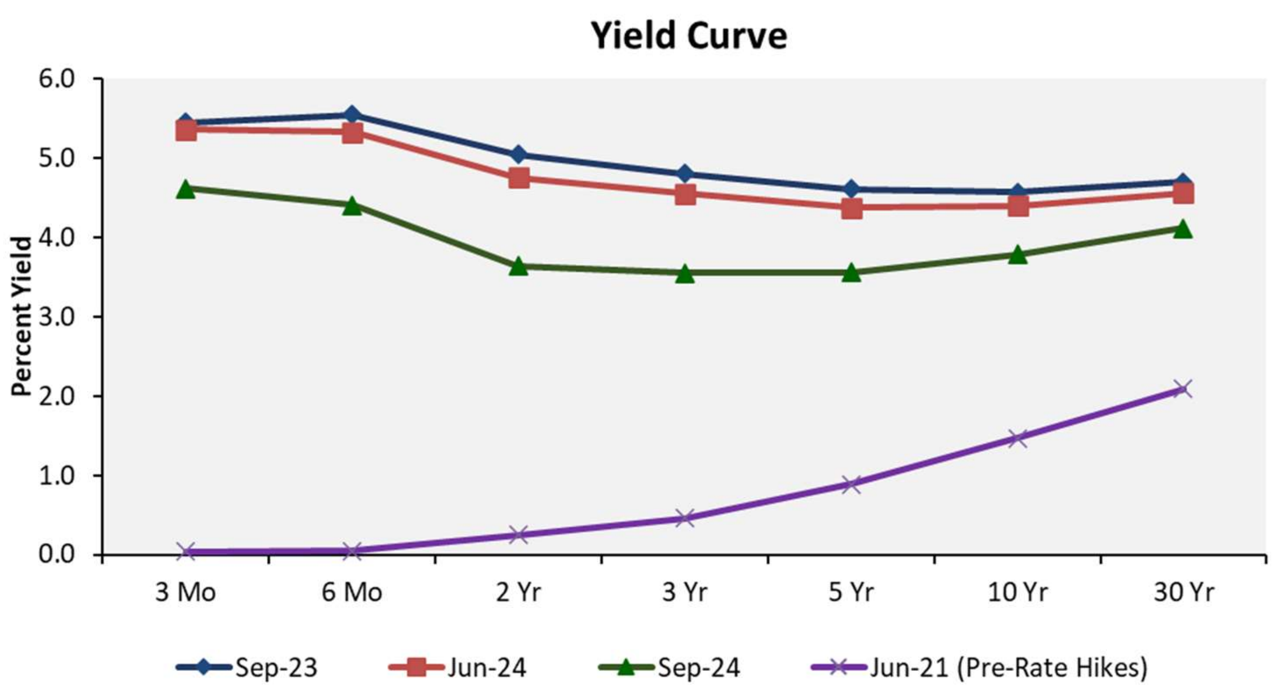
- As the Federal Reserve begins its rate-cutting cycle, the U.S. dollar has quickly declined in value over the last quarter. The yield on the Bloomberg U.S. Aggregate Bond Index has reached its narrowest level in two years compared to the Bloomberg Global Aggregate Bond Index (ex-USD). While a yield differential of over 150 basis points still makes U.S. dollars attractive, this advantage is fading.

- While the dollar's decline typically benefits U.S. investors with overseas assets, it is just one of many components. The lower chart suggests that international markets may be undervalued, trading at a P/E ratio two standard deviations below the historical average of the S&P 500.

- However, P/E ratio fails to consider differences in sector composition between regions and the faster earnings growth in the U.S. market. Moreover, U.S. companies demonstrate superior return on invested capital compared to their international peers, driving increased investor preference for U.S. stocks—an ongoing trend since the global financial crisis.

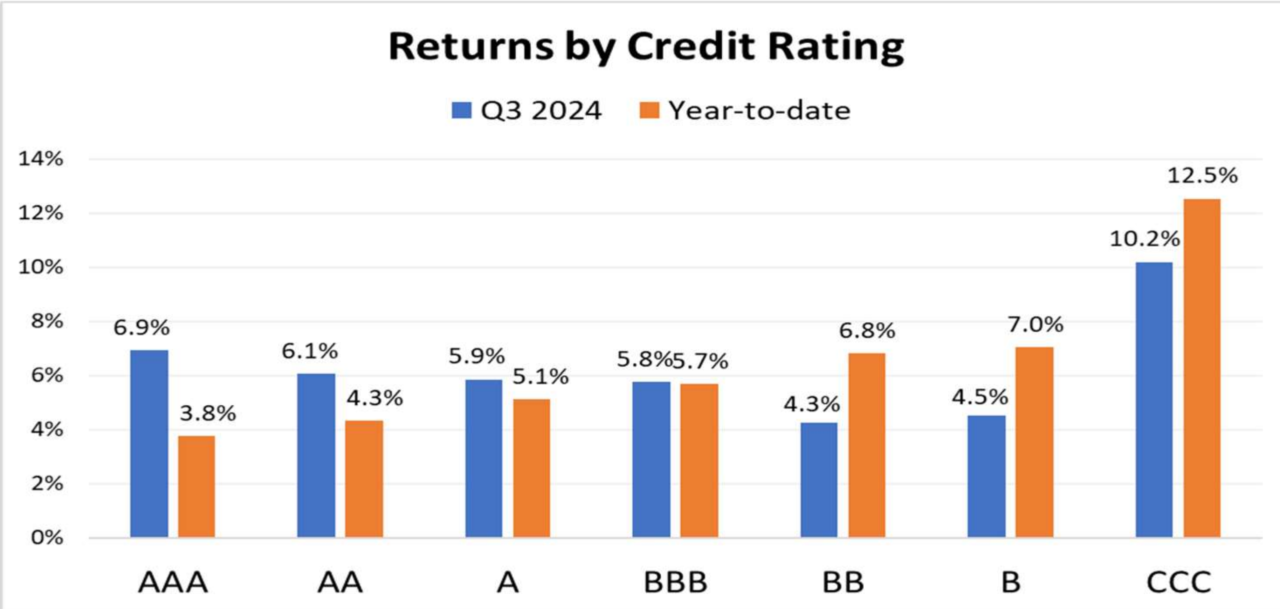
Bond Market

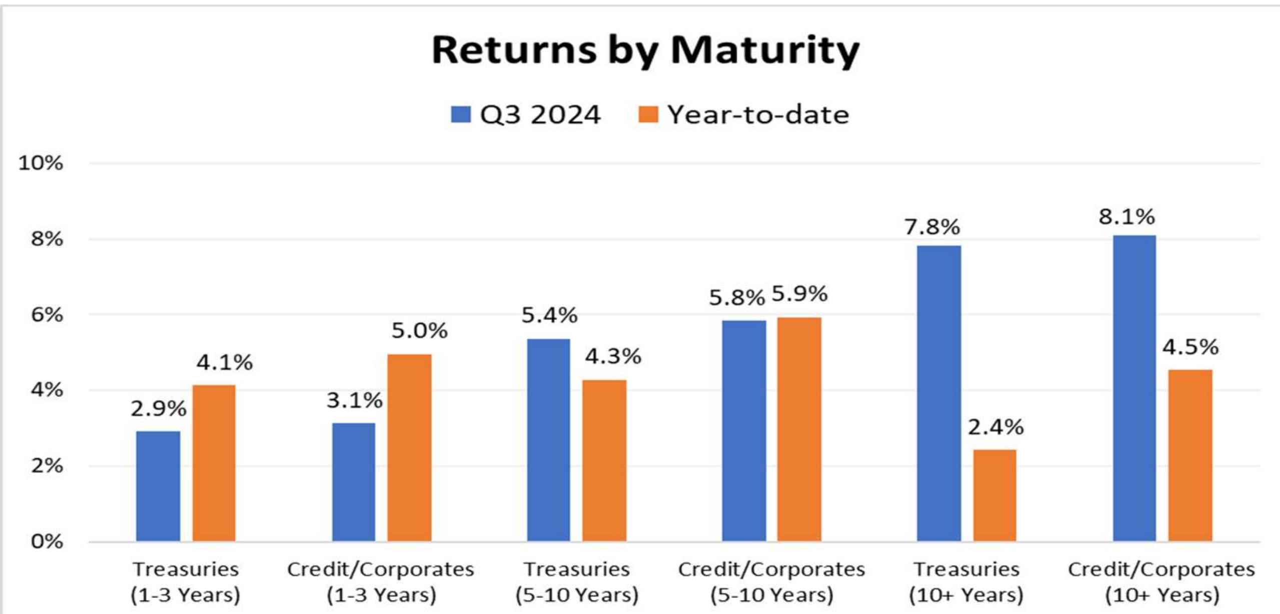
Index	Duration (years)	Yield	3Q24	YTD	2023	2022	2021	2020	2019	2018	1-Year	3-Year	5-Year	10-Year
Bloomberg Aggregate	6.2	4.23%	5.2%	4.4%	5.5%	-13.0%	-1.5%	7.5%	8.7%	0.0%	11.5%	-1.4%	0.3%	1.8%
Bloomberg Govt/Credit	6.5	4.12%	5.1%	4.4%	5.7%	-13.6%	-1.7%	8.9%	9.7%	-0.4%	11.3%	-1.5%	0.4%	2.0%
Bloomberg Int Agg	4.4	4.13%	4.6%	4.6%	5.2%	-9.5%	-1.3%	5.6%	6.7%	0.9%	10.4%	-0.3%	0.8%	1.8%
Bloomberg Int Govt/Credit	3.9	3.92%	4.2%	4.7%	5.2%	-8.2%	-1.4%	6.4%	6.8%	0.9%	9.4%	0.2%	1.3%	2.0%
Bloomberg U.S. Corporate	7.3	4.27%	5.8%	5.3%	8.5%	-15.8%	-1.0%	9.9%	14.5%	-2.5%	14.2%	-1.2%	1.2%	2.9%
Bloomberg HY Ba/B 2% IC	3.5	6.30%	4.4%	6.9%	12.6%	-10.6%	4.6%	7.7%	15.2%	-1.9%	14.6%	2.7%	4.4%	4.9%
ICE BofA 1-3 Yrs BB US Cash Pay HY	1.7	5.56%	3.0%	5.9%	8.9%	-3.1%	3.2%	5.4%	8.7%	1.3%	10.1%	3.9%	4.3%	4.4%
Bloomberg Mortgage	5.4	4.53%	5.5%	4.5%	5.0%	-11.8%	-1.0%	3.9%	6.4%	1.0%	12.3%	-1.2%	0.0%	1.4%
Bloomberg Treasury	6.2	3.76%	4.7%	3.8%	4.1%	-12.5%	-2.3%	8.0%	6.9%	0.9%	9.7%	-1.8%	-0.2%	1.3%
Bloomberg US TIPS	6.9	3.85%	4.1%	4.9%	3.9%	-11.8%	6.0%	11.0%	8.4%	-1.3%	9.8%	-0.6%	2.6%	2.5%
BofA ML 91 day T-Bills	0.2	4.63%	1.4%	4.1%	5.2%	1.5%	0.0%	0.7%	2.3%	1.9%	5.5%	3.6%	2.4%	1.7%



- The U.S. Treasury yields dropped by 50-100 bps in Q3 2024, contributing to strong returns across fixed income markets.
- Longer duration bonds were the largest beneficiaries of the decline in interest rates. Credit spreads also tightened, adding some additional return to corporate credit, particularly those with lower credit quality.
- The strong performance in investment grade bonds in Q3 2024 brought their year-to-date returns more in-line with high yield bonds. High yield bonds continue to outperform investment grade bonds in 2024, benefiting from higher interest income and credit spread tightening.

Bond Market

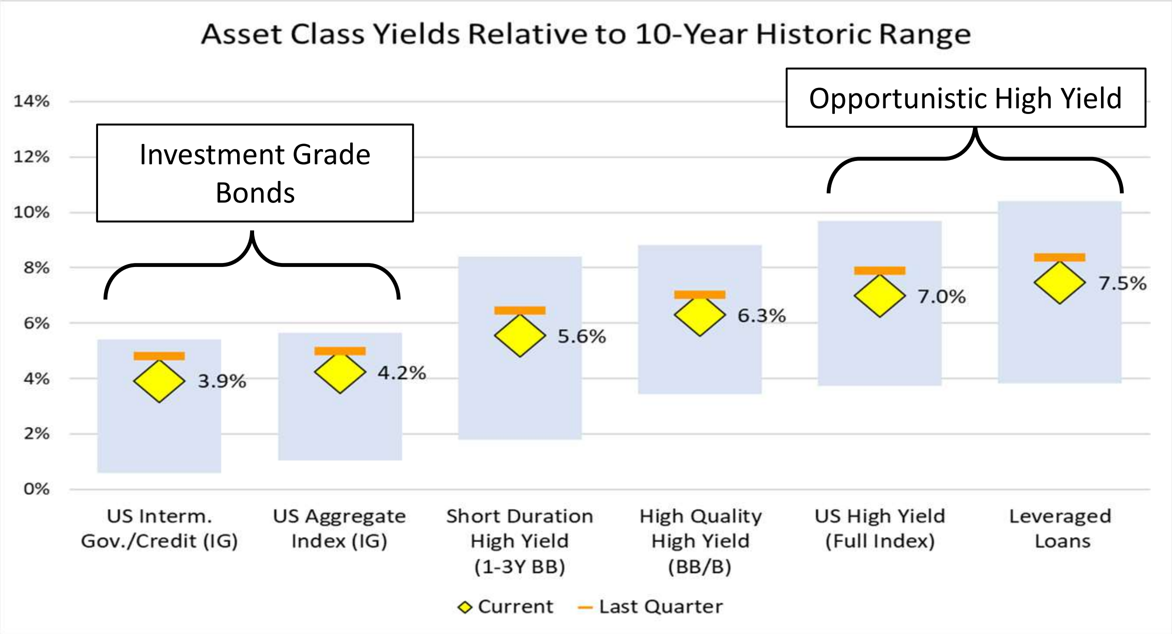


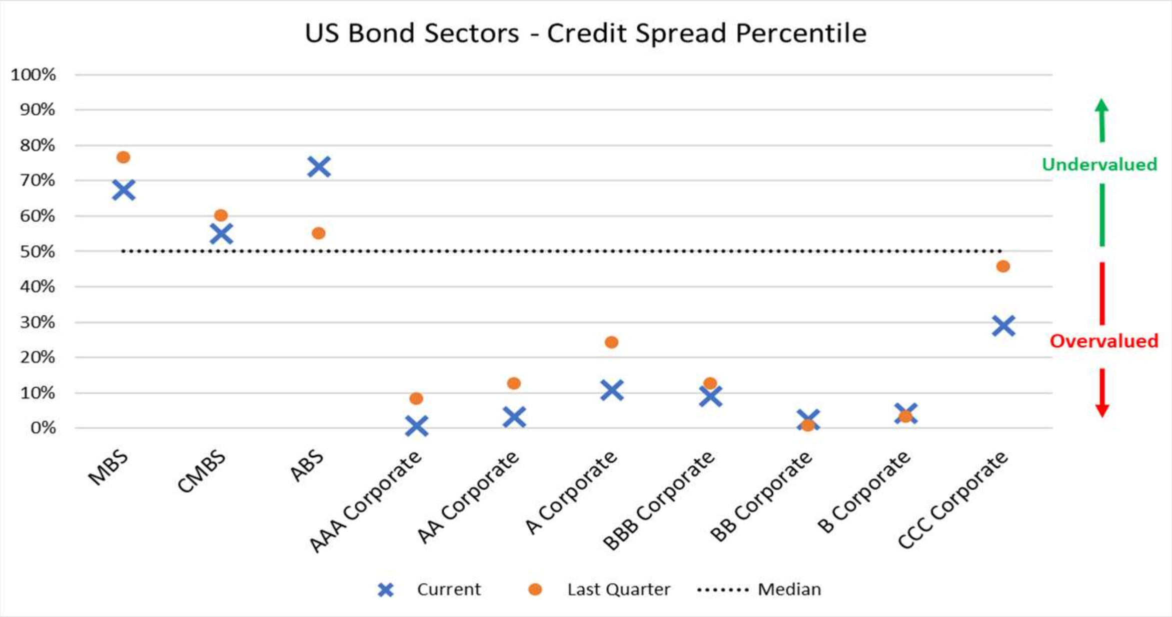


A sharp decline in interest rates in Q3 2024 pushed fixed income markets higher.

- U.S. Treasury yields fell in Q3 2024, leading to positive performance across fixed income markets.
- Longer duration bonds were the largest beneficiaries of the decline in interest rates, resulting in outperformance by investment grade bonds over high yield bonds and longer maturity bonds over shorter maturity bonds.
- Lower-quality high yield bonds (CCC & below) experienced outsized returns in Q3 2024 due to higher interest income and 150 bps of credit spread tightening. Most of the spread tightening experienced in CCC-rated bonds came in the weeks following the September FOMC meeting.
- Despite the strong performance in investment grade bonds in Q3 2024, high yield bonds continue to outperform in 2024 with lower-quality credit leading the way.

Bond Market





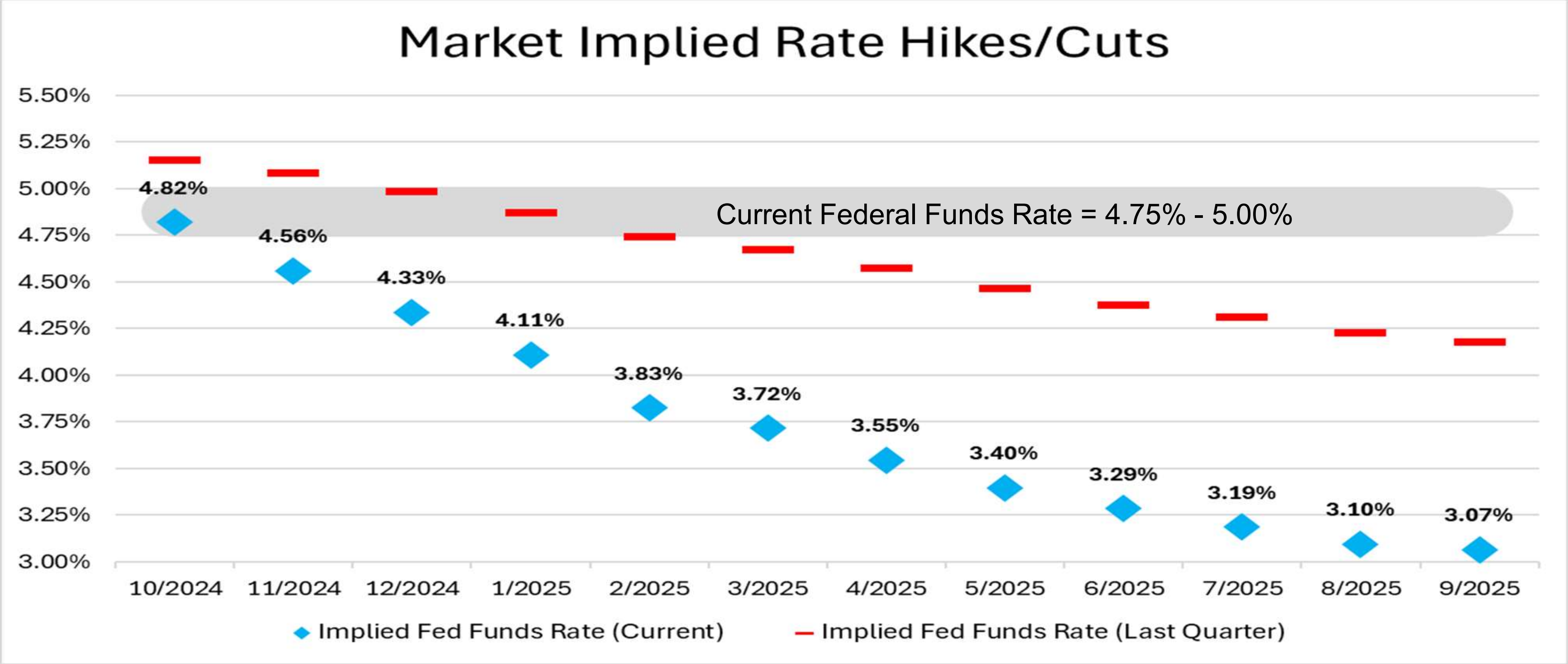
Bond Yields

- Bond yields fell in Q3 2024, largely due to a decline in treasury rates, with an incremental reduction in credit spreads.
- Investment grade (IG) bonds now yield ~4%, while non-IG credit yields between 5.5% and 7.5%. Yields on IG credit remain near the higher end of the range experienced over the past decade. However, non-IG yields are back near the mid-point of their 10-year range.
- The decline in yields over past several quarters is the result of falling inflation expectations and credit spreads tightening to historical lows.

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 cheap 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

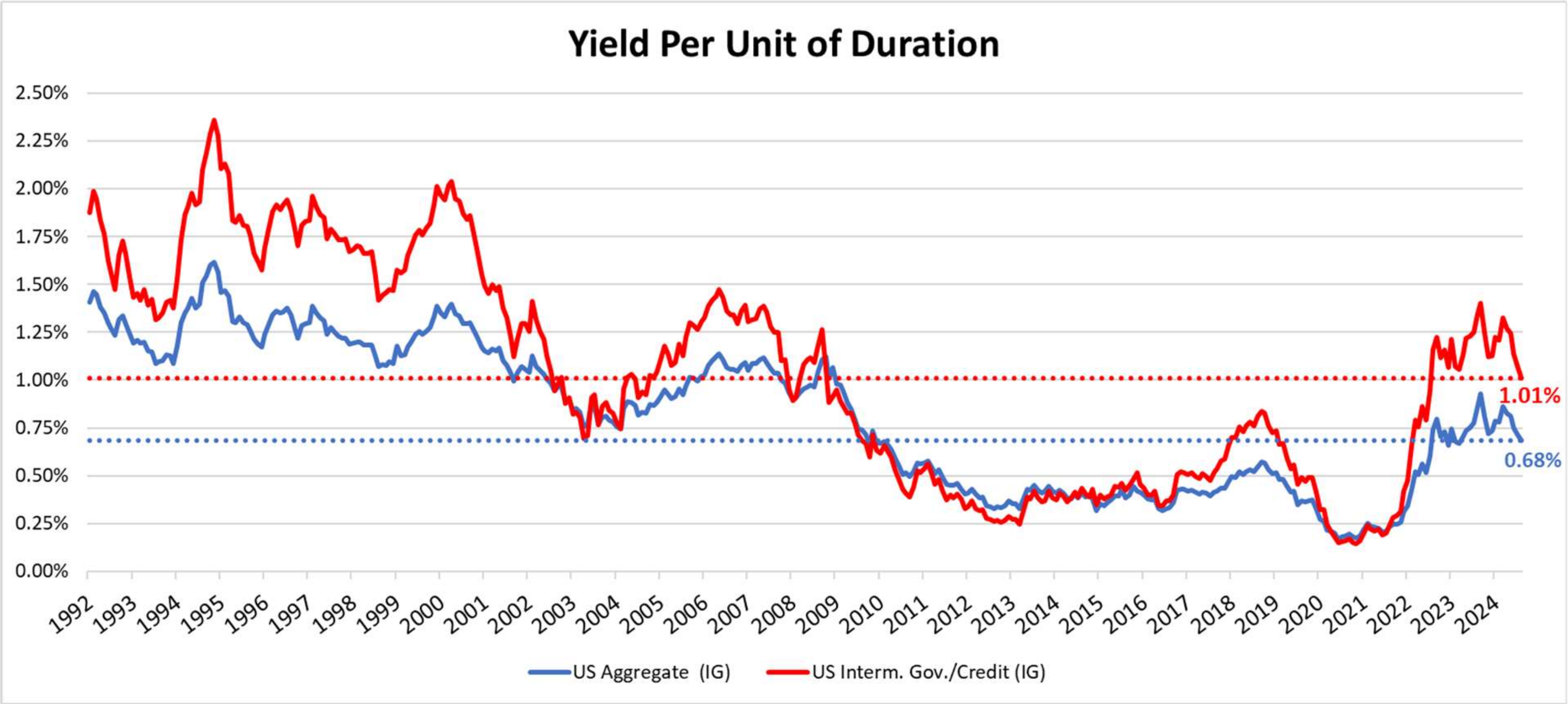


As of 9/30/24

- The FOMC lowered the Fed Funds rate by 50 bps at its September meeting, marking the first rate cut since 2020. The current target Federal Funds rate sits at 4.75% - 5.00%.
- 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.
- At the end of Q2, the futures market was anticipating a 25 bps cut in September with the potential for an additional 25 bps cut before year-end. The 50 bps cut in September was larger than expected, causing markets to immediately price in a more aggressive rate-cutting cycle. This rapid repricing of rate cut expectations in Q3 2024 pulled the treasury yield curve downward, generating positive returns in fixed income markets.
- As of the end of Q3 2024, the Fed Funds futures market has priced in an additional 50 bps cut before year-end with an additional 100 bps of rate cuts in the 1st half of 2025. These expectations have moderated in the early weeks of Q4 2024, but the market still anticipates an additional 25 bps cut before year-end with the Fed Funds rate approaching 3.5% by the end of 2025.

Bond Market

Investment Grade Investors Are Now 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 ~70 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 ~100 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.

Bond Market

Interest Rate Sensitivity

12 Month Holding Period - Annualized Returns as of 09/30/2024

Yield Change	US Treasuries Bloomberg Treasury	Short-Term IG Bloomberg 1-3 Yr US Govt/Credit	Intermediate IG Bloomberg Interm Govt/Credit	Core Bond Bloomberg Aggregate	Short Duration HY ICE BofA 1-3 Yrs BB US Cash Pay HY	High-Quality HY Bloomberg HY BB/B 2% Capped	Full High Yield Bloomberg US Corporate HY
-300	25.92%	9.72%	16.49%	25.22%	9.82%	15.68%	16.38%
-250	21.72%	8.72%	14.27%	21.39%	9.24%	14.25%	14.94%
-200	17.73%	7.73%	12.10%	17.69%	8.60%	12.78%	13.45%
-150	13.93%	6.75%	9.98%	14.13%	7.92%	11.24%	11.91%
-100	10.34%	5.77%	7.91%	10.70%	7.18%	9.65%	10.32%
-75	8.62%	5.29%	6.89%	9.03%	6.79%	8.83%	9.51%
-50	6.95%	4.81%	5.89%	7.40%	6.40%	8.00%	8.68%
-25	5.33%	4.33%	4.90%	5.80%	5.98%	7.16%	7.84%
0	3.76%	3.86%	3.92%	4.23%	5.56%	6.30%	6.99%
25	2.25%	3.38%	2.96%	2.70%	5.12%	5.43%	6.12%
50	0.78%	2.91%	2.01%	1.20%	4.68%	4.54%	5.25%
75	-0.64%	2.44%	1.07%	-0.27%	4.21%	3.64%	4.36%
100	-2.00%	1.98%	0.15%	-1.70%	3.74%	2.73%	3.45%
150	-4.58%	1.05%	-1.66%	-4.47%	2.76%	0.86%	1.61%
200	-6.96%	0.13%	-3.42%	-7.10%	1.72%	-1.07%	-0.29%
250	-9.13%	-0.77%	-5.13%	-9.60%	0.64%	-3.05%	-2.24%
300	-11.10%	-1.67%	-6.79%	-11.97%	-0.50%	-5.09%	-4.24%
Duration	6.17	1.90	3.88	6.20	1.72	3.46	3.44
Convexity	0.81	0.04	0.21	0.53	-0.20	-0.22	-0.20

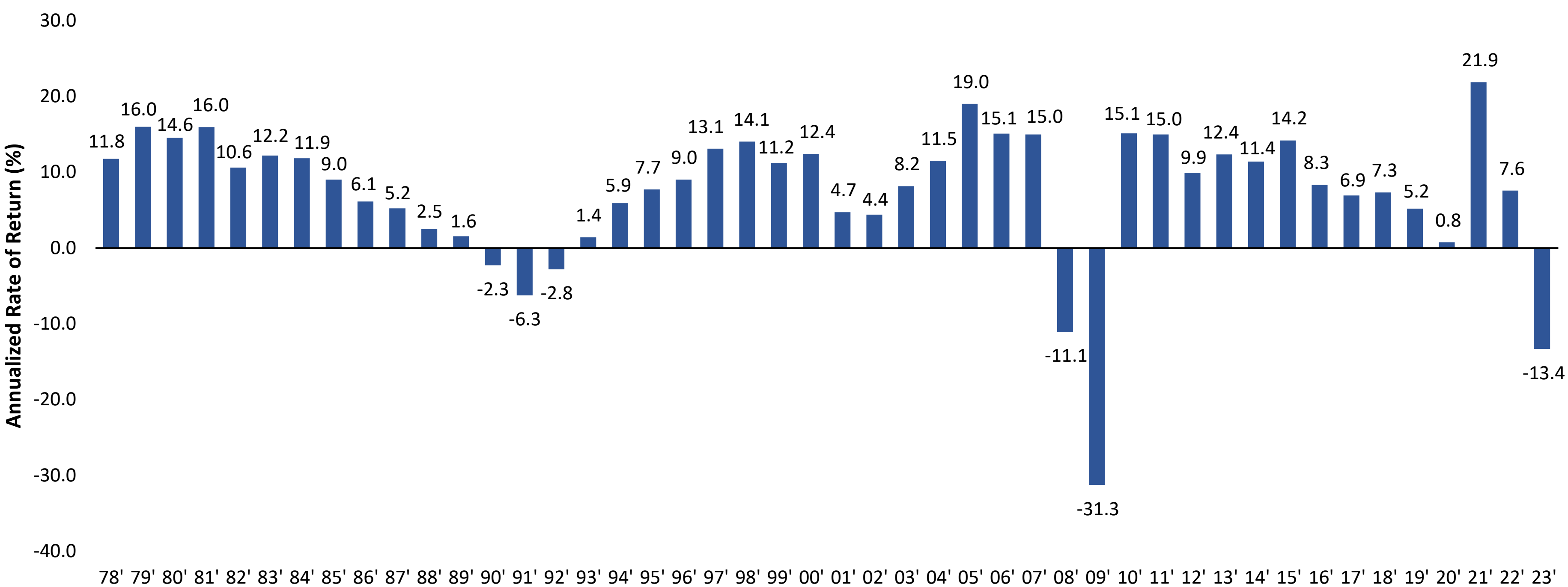
FOR ILLUSTRATIVE PURPOSES ONLY: For each index the current yield to worst as of 9/30/2024 was used as the base case annualized return. The annualized return sensitivity to a uniform increase or decrease in the yield curve was calculated by taking the index's Option-Adjusted Duration as of 9/30/2024 multiplied 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 9/30/2024, 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	3Q24	YTD	2023	2022	2021	2020	2019	2018	1-Year	3-Year	5-Year	10-Year
US Private	NCREIF ODCE Equal Weighted (net)	-0.1%	-3.2%	-13.4%	7.6%	21.9%	0.8%	5.2%	7.3%	-8.4%	-1.1%	2.3%	5.5%
	NCREIF ODCE EW Income Index	1.0%	2.9%	3.5%	3.5%	4.1%	3.6%	3.5%	3.5%	3.9%	3.7%	3.9%	4.2%
	NCREIF ODCE EW Appreciation Index	-0.9%	-5.6%	-15.8%	4.8%	18.3%	-2.1%	1.7%	3.7%	-11.3%	-3.8%	-0.7%	2.1%

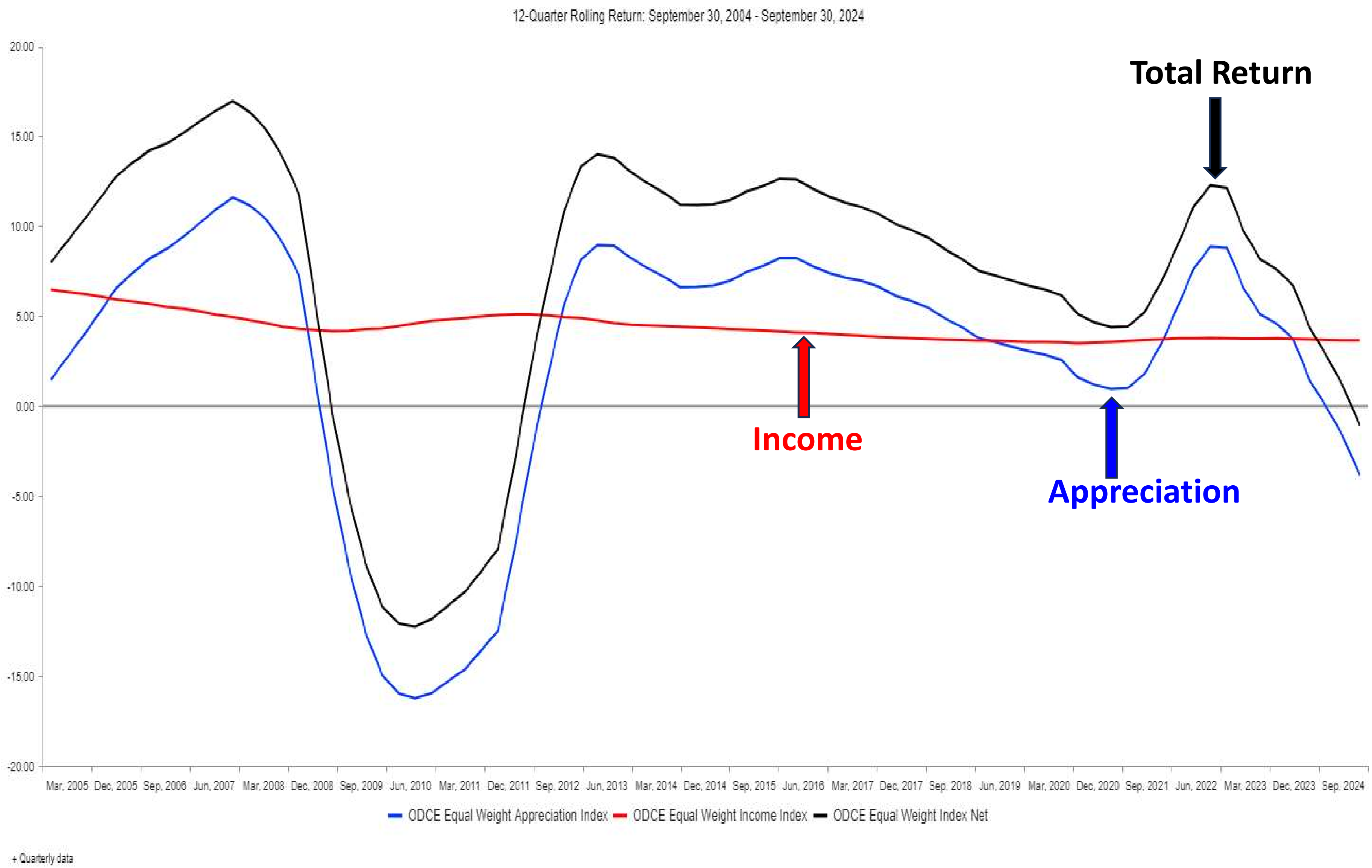
- The NCREIF ODCE Equal Weighted Index (net) declined -0.1% in Q3 2024, representing the eighth consecutive negative quarterly return for the index, but also the least negative return during this downturn. Gross of fees, the index return was modestly positive during the quarter (+0.14%).
- The previous drawdown from 2008-2009 was much sharper than the current drawdown, but shorter in duration, lasting six quarters, after which valuations improved for a sustained multi-year period. The ODCE index has experienced only three meaningful drawdowns in its history.
- Liquidity, pricing and fundamentals for most sectors (outside of office) continue to improve. Q3 2024 saw a higher number of ODCE fund managers report positive returns relative to Q2.

Historical NCREIF ODCE Equal Weight Total Net Performance



Real Estate Market

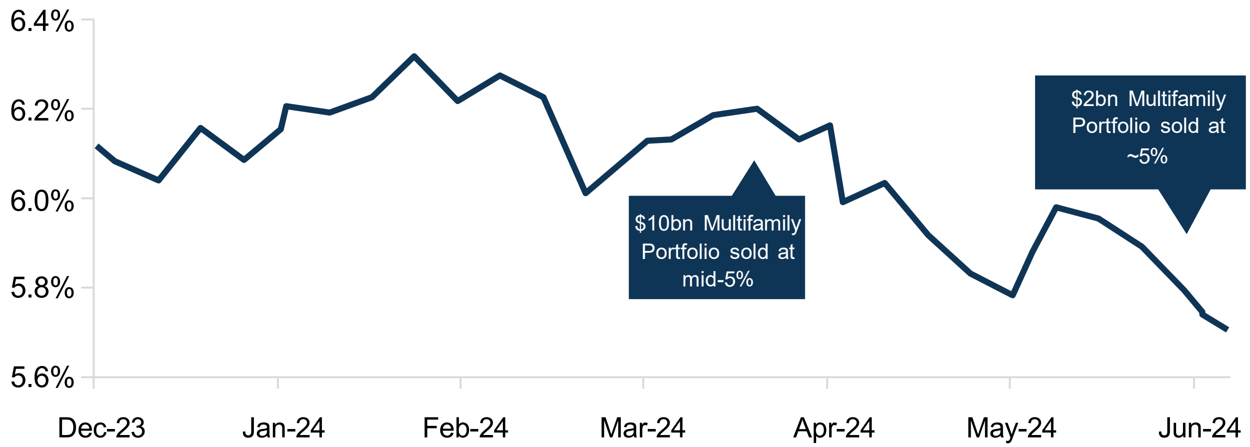
- The income component of real estate returns continues to remain stable, at approximately 1% per quarter. Appreciation in the ODCE remains negative, though the rate of decline continues to slow: Q2 2024 appreciation was -1.60%, while Q3 2024 was -0.88%.



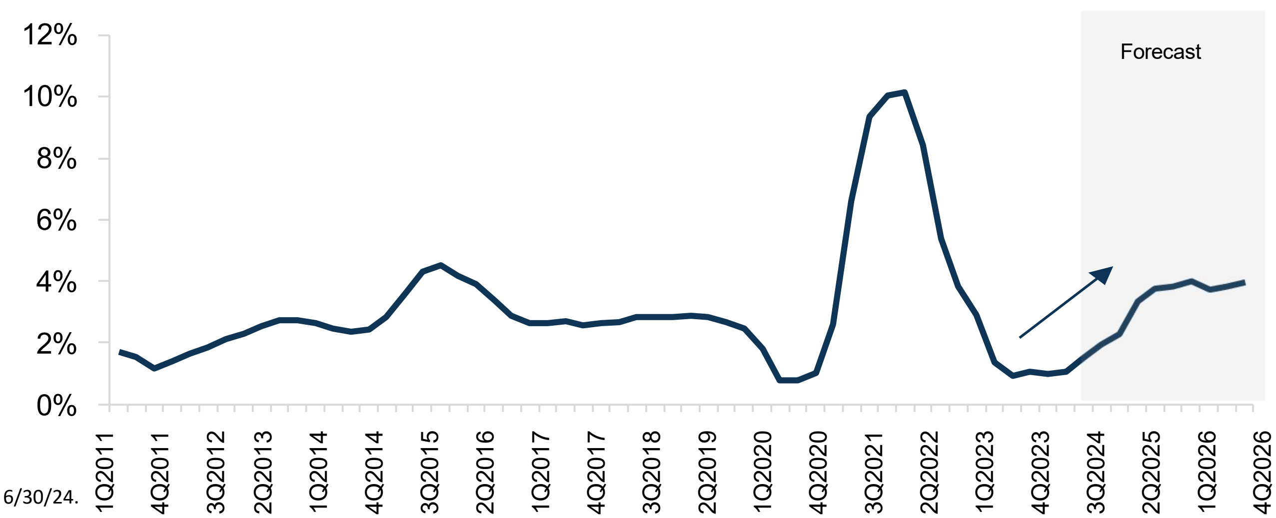
Real Estate Market

- Fundamentals across real estate sectors (ex-office) are generally healthy, particularly in the residential, industrial and retail sectors.
- Strong demand for multifamily assets and increasing transaction activity have driven multifamily cap rates lower, offsetting oversupply in some markets, particularly in the Southern U.S. As oversupply works through the market, rents are projected to increase.

Multifamily Cap Rates



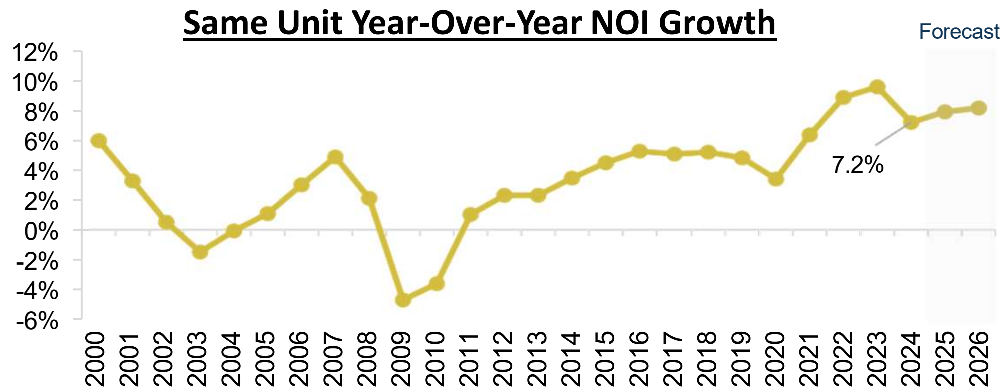
12-Month Market Asking Rent Growth - Multifamily



Source: Oaktree; as of 6/30/24.

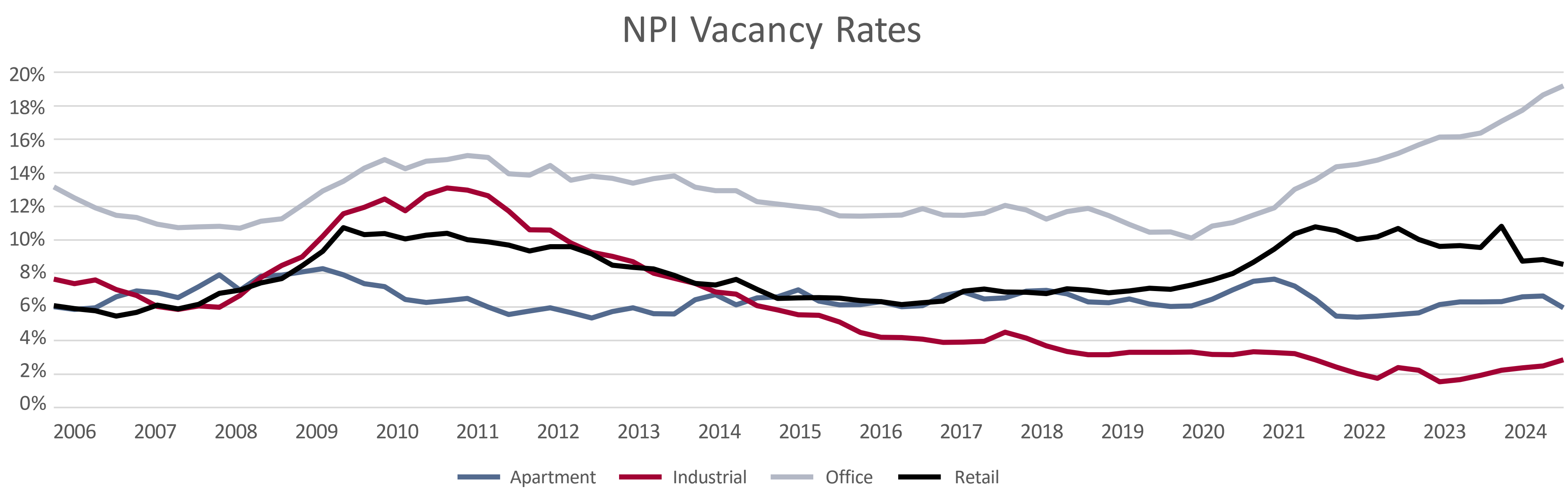
Real Estate Market

- The industrial sector has performed well over the last several years, though now faces slowing demand from its pandemic-era peak and strong new supply. Nonetheless, new deliveries of industrial are expected to slow over the next two years, with a forecast increase in net operating income (NOI).



Source: Oaktree; as of 6/30/24.

- The apartment and retail sectors have had recent declines in vacancy, while industrial has increased slightly but remains low (<4%). Office vacancies continue to rise and have exceeded the levels seen during the Great Financial Crisis in 2008-09.



Source: NCREIF, via Intercontinental Real Estate; as of 6/30/24.

Operating Engineers Local No. 77 JATC Fund

Investment Performance Report

Period Ended

September 30, 2024

Total Fund Growth of Assets

	Third Quarter	Fiscal Year-To-Date	One Year	Three Years	Inception 11/30/19
Beginning Market Value	$3,373,213	$3,193,838	$3,083,459	$3,076,084	--
Net Cash Flow	-$355,197	-$294,916	-$305,542	-$323,159	$2,406,696
Net Investment Change	$96,019	$215,113	$336,117	$361,109	$707,339
Ending Market Value	$3,114,035	$3,114,035	$3,114,035	$3,114,035	$3,114,035

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

Performance Summary (Gross of Fees) - Annualized

	Market Value	% of Portfolio	Ending September 30, 2024					
			2024 Q3	Fiscal YTD	1 Yr	3 Yrs	Inception	Inception Date
Total Fund	**$3,114,035**	**100.0%**	**3.2%**	**7.0%**	**11.1%**	**3.8%**	**4.6%**	**Nov-19**
Total Domestic Large Cap Equity	**$428,162**	**13.7%**	**5.9%**	**22.1%**	**36.3%**	**11.9%**	**15.2%**	**Nov-19**
Total Investment Grade Fixed Income	**$1,321,176**	**42.4%**	**2.8%**	**4.7%**	**7.6%**	**2.3%**	**2.4%**	**Nov-19**
Total Short Duration High Yield Fixed Income	**$1,217,401**	**39.1%**	**2.9%**	**5.8%**	**10.1%**	**3.8%**	**3.7%**	**Jul-21**
Total Cash Equivalents	**$147,296**	**4.7%**	**1.3%**	**3.6%**	**4.8%**	**2.9%**	**1.9%**	**Nov-19**

Performance Summary

	Fiscal Year Ending December 31st (Gross of Fees)				
	Fiscal YTD	2023	2022	2021	2020
Total Fund	**7.0%**	**8.7%**	**-5.8%**	**6.1%**	**5.7%**
Total Fund Benchmark	*6.8%*	*10.0%*	*-5.4%*	*5.6%*	*6.5%*

	Fiscal Year Ending December 31st (Net of Fees)				
	Fiscal YTD	2023	2022	2021	2020
Total Fund	**6.8%**	**8.4%**	**-6.0%**	**6.0%**	**5.6%**
Total Fund Benchmark	*6.8%*	*10.0%*	*-5.4%*	*5.6%*	*6.5%*

Current vs. Policy

	Current	Current	Policy	Policy Range	Difference	Difference
Domestic Large Cap Equity	$428,162	13.7%	10.0%	5.0% - 15.0%	3.7%	$116,759
Investment Grade Fixed Income	$1,321,176	42.4%	40.0%	35.0% - 45.0%	2.4%	$75,562
Short Duration High Yield Fixed Income	$1,217,401	39.1%	35.0%	30.0% - 40.0%	4.1%	$127,488
Cash Equivalents	$147,296	4.7%	15.0%	10.0% - 20.0%	-10.3%	-$319,809
Total	**$3,114,035**	**100.0%**	**100.0%**			

- Policy adopted May 2023; effective July 2023.

Performance Detail (Net of Fees) - Annualized

			Ending September 30, 2024					
	Market Value	% of Portfolio	2024 Q3	Fiscal YTD	1 Yr	3 Yrs	Inception	Inception Date
Total Fund	**$3,114,035**	**100.0%**	**3.1%**	**6.8%**	**10.9%**	**3.6%**	**4.4%**	**Nov-19**
Total Domestic Large Cap Equity	**$428,162**	**13.7%**	**5.9%**	**22.0%**	**36.3%**	**11.9%**	**15.2%**	**Nov-19**
Vanguard 500 Index Fund Admiral Shares	$428,162	13.7%	5.9%	22.1%	36.4%	11.9%	15.2%	Nov-19
S&P 500			*5.9%*	*22.1%*	*36.4%*	*11.9%*	*15.2%*	*Nov-19*
Total Investment Grade Fixed Income	**$1,321,176**	**42.4%**	**2.8%**	**4.6%**	**7.5%**	**2.1%**	**2.2%**	**Nov-19**
Chartwell Investment Partners	$1,321,176	42.4%	2.8%	4.6%	7.5%	2.1%	2.2%	Dec-19
Bloomberg US Credit 1-3 Yr TR			*3.1%*	*5.0%*	*8.1%*	*2.0%*	*2.1%*	*Dec-19*
Total Short Duration High Yield Fixed Income	**$1,217,401**	**39.1%**	**2.8%**	**5.4%**	**9.6%**	**3.3%**	**3.2%**	**Jul-21**
Carillon Chartwell SDHY Fund	$1,217,401	39.1%	2.8%	5.4%	9.6%	3.3%	3.2%	Jul-21
ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR			*3.0%*	*5.9%*	*10.1%*	*3.9%*	*3.8%*	*Jul-21*
Total Cash Equivalents	**$147,296**	**4.7%**	**1.3%**	**3.6%**	**4.8%**	**2.9%**	**1.9%**	**Nov-19**
PNC Cash	$147,296	4.7%	1.3%	3.6%	4.8%	2.9%	1.9%	Nov-19

Account Information

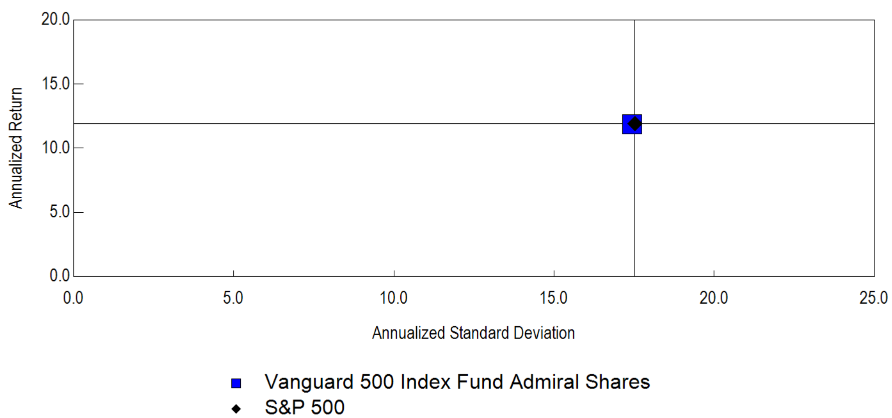
Account Name	**Vanguard 500 Index Fund Admiral Shares**
Account Structure	**Mutual Fund**
Investment Style	**Passive**
Inception Date	**11/30/19**
Account Type	**Domestic Large Cap Core Equity**
Benchmark	**S&P 500**
Universe	**Large Blend MStar MF**

Vanguard 500 Index Fund Admiral Shares

Ending September 30, 2024

	Third Quarter	Inception 11/30/19
Beginning Market Value	$404,404	--
Net Cash Flow	$0	$54,281
Net Investment Change	$23,758	$373,881
Ending Market Value	$428,162	$428,162

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



3 Years Ending September 30, 2024

	Anlzd Return	Anlzd Standard Deviation	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Vanguard 500 Index Fund Admiral Shares	11.9%	17.4%	43.0%	36.9%
S&P 500	11.9%	17.5%	100.0%	100.0%

	2024 Q3	Rank	Fiscal YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	2023	Rank	2022	Rank	2021	Rank	2020	Rank	2019	Rank	Inception	Inception Date
											Calendar Years											
Vanguard 500 Index Fund Admiral Shares	5.9%	47	22.1%	24	36.4%	24	11.9%	22	--	--	26.2%	27	-18.1%	50	28.7%	23	18.4%	39	--	--	15.2%	Nov-19
S&P 500	*5.9%*	*45*	*22.1%*	*25*	*36.4%*	*25*	*11.9%*	*21*	--	--	*26.3%*	*25*	*-18.1%*	*48*	*28.7%*	*22*	*18.4%*	*38*	--	--	*15.2%*	*Nov-19*

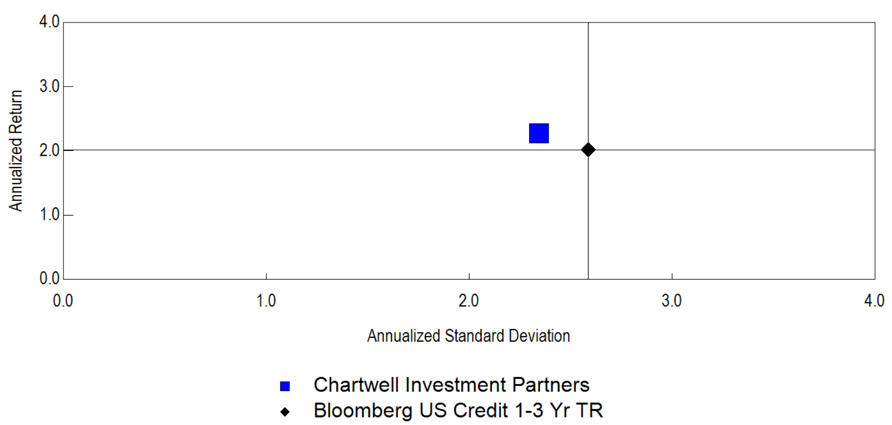
Note: Returns are net of fees.

Account Information	
Account Name	**Chartwell Investment Partners**
Account Structure	**Separate Account**
Investment Style	**Active**
Inception Date	**12/31/19**
Account Type	**Investment Grade Fixed Income**
Benchmark	**Bloomberg US Credit 1-3 Yr TR**
Universe	

Chartwell Investment Partners
Ending September 30, 2024

	Third Quarter	Inception 12/31/19
Beginning Market Value	$1,285,403	--
Net Cash Flow	$0	$1,150,564
Net Investment Change	$35,772	$170,611
Ending Market Value	$1,321,176	$1,321,176

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



3 Years Ending September 30, 2024

	Anlzd Return	Anlzd Standard Deviation	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Chartwell Investment Partners	2.3%	2.3%	94.5%	83.1%
Bloomberg US Credit 1-3 Yr TR	2.0%	2.6%	100.0%	100.0%

	2024 Q3	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	Calendar Years 2023	2022	2021	2020	2019	Inception	Inception Date
Chartwell Investment Partners	2.8%	4.7%	7.6%	2.3%	--	5.7%	-2.8%	0.0%	4.2%	--	2.4%	Dec-19
Bloomberg US Credit 1-3 Yr TR	*3.1%*	*5.0%*	*8.1%*	*2.0%*	--	*5.3%*	*-3.4%*	*-0.2%*	*3.7%*	--	*2.1%*	*Dec-19*

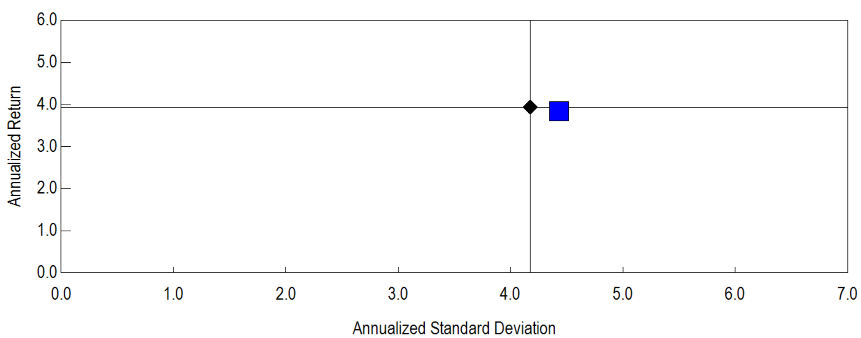
Note: Returns are gross of fees.

Account Information	
Account Name	Carillon Chartwell SDHY Fund
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	7/31/21
Account Type	Short Duration High Yield Fixed Income
Benchmark	ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR
Universe	

Carillon Chartwell SDHY Fund
Ending September 30, 2024

	Third Quarter	Inception 7/31/21
Beginning Market Value	$1,184,296	$0
Net Cash Flow	$0	$1,100,000
Net Investment Change	$33,105	$117,401
Ending Market Value	$1,217,401	$1,217,401

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



■ Carillon Chartwell SDHY Fund
◆ ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR

3 Years Ending September 30, 2024

	Anlzd Return	Anlzd Standard Deviation	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Carillon Chartwell SDHY Fund	3.8%	4.4%	53.9%	16.6%
ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR	3.9%	4.2%	100.0%	100.0%

	2024 Q3	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	Calendar Years 2023	2022	2021	2020	2019	Inception	Inception Date
Carillon Chartwell SDHY Fund	2.8%	5.4%	9.6%	3.3%	--	7.8%	-3.2%	--	--	--	3.2%	Jul-21
ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR	*3.0%*	*5.9%*	*10.1%*	*3.9%*	*--*	*8.8%*	*-3.1%*	*--*	*--*	*--*	*3.8%*	*Jul-21*

Note: Returns are net of fees.

Account Information	
Account Name	**PNC Cash**
Account Structure	**Separate Account**
Investment Style	**Active**
Inception Date	**11/30/19**
Account Type	**Cash Equivalents**
Benchmark	
Universe	

PNC Cash

Ending September 30, 2024

	Third Quarter	**Inception 11/30/19**
Beginning Market Value	$499,109	--
Net Cash Flow	-$355,197	$102,118
Net Investment Change	$3,384	$45,179
Ending Market Value	$147,296	$147,296

Current Yield as of September 30, 2024: 4.86%

					Calendar Years						
	2024 Q3	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	2023	2022	2021	2020	2019	Inception	Inception Date
PNC Cash	1.3%	3.6%	4.8%	2.9%	--	4.0%	1.2%	0.1%	0.0%	--	1.9%	Nov-19

Note: Returns are gross of fees.

Operating Engineers Local No. 77 JATC Fund

Appendix

Performance Detail (Gross of Fees) - Annualized

			Ending September 30, 2024					
	Market Value	% of Portfolio	2024 Q3	Fiscal YTD	1 Yr	3 Yrs	Inception	Inception Date
Total Fund	**$3,114,035**	**100.0%**	**3.2%**	**7.0%**	**11.1%**	**3.8%**	**4.6%**	**Nov-19**
Total Domestic Large Cap Equity	**$428,162**	**13.7%**	**5.9%**	**22.1%**	**36.3%**	**11.9%**	**15.2%**	**Nov-19**
Vanguard 500 Index Fund Admiral Shares	$428,162	13.7%	5.9%	22.1%	36.4%	11.9%	15.2%	Nov-19
S&P 500			*5.9%*	*22.1%*	*36.4%*	*11.9%*	*15.2%*	*Nov-19*
Total Investment Grade Fixed Income	**$1,321,176**	**42.4%**	**2.8%**	**4.7%**	**7.6%**	**2.3%**	**2.4%**	**Nov-19**
Chartwell Investment Partners	$1,321,176	42.4%	2.8%	4.7%	7.6%	2.3%	2.4%	Dec-19
Bloomberg US Credit 1-3 Yr TR			*3.1%*	*5.0%*	*8.1%*	*2.0%*	*2.1%*	*Dec-19*
Total Short Duration High Yield Fixed Income	**$1,217,401**	**39.1%**	**2.9%**	**5.8%**	**10.1%**	**3.8%**	**3.7%**	**Jul-21**
Carillon Chartwell SDHY Fund	$1,217,401	39.1%	2.9%	5.8%	10.1%	3.8%	3.7%	Jul-21
ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR			*3.0%*	*5.9%*	*10.1%*	*3.9%*	*3.8%*	*Jul-21*
Total Cash Equivalents	**$147,296**	**4.7%**	**1.3%**	**3.6%**	**4.8%**	**2.9%**	**1.9%**	**Nov-19**
PNC Cash	$147,296	4.7%	1.3%	3.6%	4.8%	2.9%	1.9%	Nov-19

Account	Fee Schedule	Market Value As of 9/30/2024	% of Portfolio	Estimated Annual Fee ($)	Estimated Annual Fee (%)
Total Domestic Large Cap Equity	**-**	**$428,162**	**13.7%**	**--**	**--**
Vanguard 500 Index Fund Admiral Shares	0.04% of Assets	$428,162	13.7%	$171	0.04%
Total Investment Grade Fixed Income	**-**	**$1,321,176**	**42.4%**	**--**	**--**
Chartwell Investment Partners	0.18% of Assets	$1,321,176	42.4%	$2,378	0.18%
Total Short Duration High Yield Fixed Income	**-**	**$1,217,401**	**39.1%**	**--**	**--**
Carillon Chartwell SDHY Fund	0.49% of Assets	$1,217,401	39.1%	$5,965	0.49%
Total Cash Equivalents	**-**	**$147,296**	**4.7%**	**--**	**--**
PNC Cash	-	$147,296	4.7%	--	--
Investment Management Fee		**$3,114,035**	**100.0%**	**$8,515**	**0.27%**

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.

Benchmark History

Total Fund		
7/1/2023	Present	S&P 500 10% / Bloomberg US Credit 1-3 Yr TR 40% / ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR 35% / 91 Day T-Bills 15%
7/1/2021	6/30/2023	S&P 500 20% / Bloomberg US Credit 1-3 Yr TR 35% / ICE BofA 1-3 Yrs BB US Cash Pay High Yield TR 30% / 91 Day T-Bills 15%
11/30/2019	6/30/2021	S&P 500 20% / Bloomberg US Credit 1-3 Yr TR 65% / 91 Day T-Bills 15%

Index Disclosures

- 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.
- Effective 4Q 2021, mutual fund returns are calculated utilizing the net expense ratio. Prior to 4Q 2021, mutual fund returns were calculated utilizing the mutual fund's management fee.
- In May 2023, $300K was withdrawn from domestic large cap equity (Vanguard 500 Index Fund Admiral Shares).
- In June 2023, $200K was transferred from PNC Cash to investment grade fixed income (Chartwell Investment Partners).
- In June 2023, $100K was transferred from PNC Cash to short duration high yield fixed income (Carillon Chartwell SDHY Fund).

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.

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
	AAA	Aaa
Investment Grade	AA	Aa
	A	A
	BBB	Baa
High Quality High Yield	BB	Ba
	B	B
	CCC	Caa
Low Quality High Yield	CC	Ca
	C	C

Real Estate Asset Class

Higher Returns

Core

Diversified, high quality, mature holdings with little debt and high income.

- Diversified tenant base
- Well-leased properties
- Minimal capital expenditures
- Stable cash flows
- Market rents
- Class A & B properties
- 0-35% leverage

Core-Plus

Core, with higher leverage and/or small allocations to value-add strategies.

- Stable cash flows
- Light renovations
- May include construction/development with a cap
- 30-40% leverage

Value-Add

Focus on potential of upgrading individual properties.

- Development/redevelopment
- Light/heavy renovation
- Property repositioning and/or operational improvements
- Substantial initial or near-term vacancy
- Construction and/or lease-up risk
- Low initial yield
- May require major capital expenditures
- Lower income but higher appreciation potential
- 40-75% leverage

Opportunistic

Highest risk/return strategy that encompasses a variety of opportunities which are often cyclical.

- Strategies may include new development, major renovations, distressed properties
- May invest across geographies and property types
- Prioritizes upside/appreciation, with limited/no income
- 75-90% leverage

More Risk

High Yield Credit Asset Class

Higher Returns

Below Investment Grade (High Yield)

Investment Grade

"High Quality" High Yield

Primarily corporate bonds and loans rated BB/B

- Focused on public market issuers
- Readily liquid ("tradable credit")

Opportunistic High Yield

Broader mandate to invest across high yield bonds, loans, structured products, lower-quality securities and non-US issuers

- Primarily publicly traded credit securities
- Larger companies with higher levels of debt
- Complex debt structures that require expertise to evaluate
- May invest opportunistically in private loans

Private Credit

Privately negotiated loans or debt transactions made directly to companies or non-corporate borrowers.

- Non-traded, private loans/debt
- Debt unable to be financed by banks due to regulatory reasons or complexity
- Smaller companies or unconventional lending situations
- Smaller loans typically made by a single lender or a small group
- Loans typically held to maturity by the original lender

More Risk

Disclaimer:

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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