Kentucky Retirement Systems

State Police Retirement System

KRS Quarterly Performance Update

December 2024

Pension Portfolios Performance

KERS, KERS-HAZ, & SPRS - PENSION FUND - PLAN NET RETURNS - 12/31/24											
Plan	**Market Value**	**Month**	**3 Months**	**Fiscal YTD**	**1 Year**	**3 Years**	**5 Years**	**10 Years**	**20 Years**	**30 Years**	**ITD**
KERS	**4,563,848,403.73**	**-1.76**	**-0.88**	**4.30**	**9.08**	**3.85**	**6.71**	**6.59**	**6.23**	**7.83**	**8.71**
KY Ret. KERS Plan IPS Index		-0.97	-0.34	4.10	9.59	3.91	6.34	6.48	6.23	7.80	8.77
KERS- H	**1,072,630,641.59**	**-1.77**	**-0.51**	**4.65**	**10.49**	**4.64**	**7.47**	**7.32**	**6.57**	**8.06**	**8.88**
KY Ret. KERS Haz Plan IPS Index		-0.88	0.27	4.75	11.94	4.92	7.68	7.28	6.64	8.08	8.97
SPRS	**685,796,136.01**	**-1.82**	**-0.97**	**4.26**	**8.96**	**4.20**	**6.77**	**6.60**	**6.21**	**7.82**	**8.70**
KY Ret. SPRS Plan IPS Index		-0.97	-0.34	4.10	9.59	3.91	6.34	6.43	6.21	7.79	8.76

KPPA PENSION FUND UNIT - NET RETURNS - 12/31/24 - PROXY PLAN ASSET PERFORMANCE											
Structure		**Month**	**3 Months**	**Fiscal YTD**	**1 Year**	**3 Years**	**5 Years**	**10 Years**	**20 Years**	**30 Years**	**ITD**
PUBLIC EQUITY		**-3.09**	**-1.55**	**5.04**	**15.22**	**4.43**	**9.28**	**8.86**	**7.40**	**9.16**	**10.37**
MSCI ACWI		-2.37	-0.99	5.56	17.49	5.41	9.71	9.00	7.37	9.02	10.28
PRIVATE EQUITY		**0.88**	**1.02**	**3.23**	**4.07**	**3.83**	**11.58**	**11.61**	**10.26**		**11.33**
Russell 3000 + 3%(Qtr Lag)		2.38	7.00	11.34	38.19	13.36	18.31	15.97	12.84		12.92
SPECIALTY CREDIT		**1.01**	**2.23**	**5.39**	**11.06**	**7.30**	**7.12**				**6.86**
50% BB US HY / 50% Morningstar LSTA Lev'd Ln		0.07	1.22	4.92	8.59	5.00	5.07				5.06
CORE FIXED INCOME		**-1.62**	**-2.92**	**2.06**	**1.76**	**0.93**	**1.85**	**2.46**			**2.70**
Bloomberg US Aggregate		-1.64	-3.06	1.98	1.25	-2.41	-0.33	1.35			1.72
CASH		**0.39**	**1.20**	**2.55**	**5.33**	**3.82**	**2.41**	**1.92**	**1.98**	**2.76**	**3.39**
FTSE Treasury Bill-3 Month		0.39	1.23	2.61	5.45	4.05	2.54	1.79	1.63	2.41	3.02
REAL ESTATE		**-0.80**	**-0.89**	**0.81**	**-4.52**	**0.33**	**5.05**	**7.58**	**6.88**	**5.99**	**6.14**
NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^		0.02	0.02	-0.64	-8.04	-1.04	2.05	5.16	5.65	7.01	5.87
REAL RETURN		**-2.81**	**3.73**	**10.67**	**18.90**	**12.20**	**9.90**	**6.79**			**6.11**
US CPI +3%		0.19	0.95	1.94	5.75	6.61	6.58	4.63			4.28

Insurance Portfolios Performance

KERS INS, KERS-HAZ INS, SPRS INS - INSURANCE FUND - PLAN NET RETURNS - 12/31/24											
Plan	**Market Value**	**Month**	**3 Months**	**Fiscal YTD**	**1 Year**	**3 Years**	**5 Years**	**10 Years**	**20 Years**	**30 Years**	**ITD**
KERS INS	**1,741,265,302.36**	**-1.79**	**-0.62**	**4.76**	**10.70**	**4.85**	**7.56**	**7.15**	**6.16**	**7.17**	**7.39**
KY Ins. KERS Plan IPS Index		-0.88	0.27	4.75	11.94	4.94	7.63	7.25	6.42	7.58	7.73
KERS - H INS	**688,366,546.75**	**-1.48**	**-0.34**	**4.40**	**10.36**	**4.86**	**7.53**	**7.36**	**6.31**	**7.27**	**7.47**
KY Ins. KERS Haz Plan IPS Index		-0.88	0.27	4.75	11.94	4.94	7.52	7.24	6.41	7.57	7.73
SPRS INS	**277,536,565.26**	**-1.50**	**-0.41**	**4.38**	**10.22**	**4.84**	**7.69**	**7.54**	**6.39**	**7.33**	**7.52**
KY Ins. SPRS Plan IPS Index		-0.88	0.27	4.75	11.94	4.94	7.52	7.26	6.42	7.58	7.73

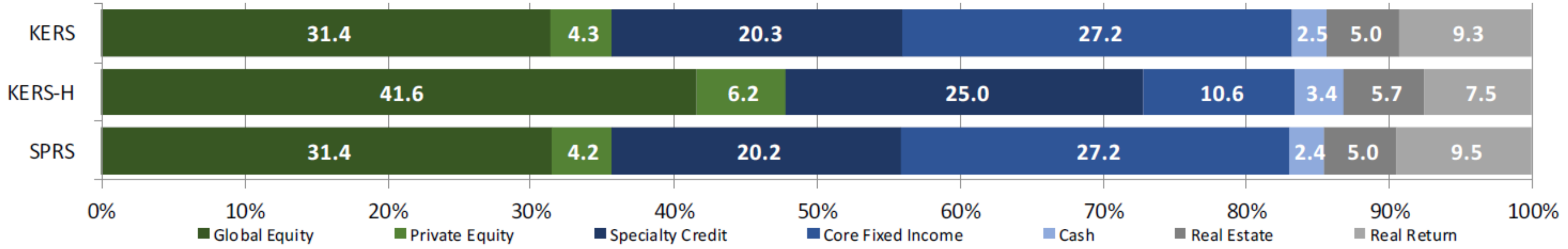
KPPA INSURANCE FUND UNIT - NET RETURNS - 12/31/24 - PROXY PLAN ASSET PERFORMANCE											
Structure		**Month**	**3 Months**	**Fiscal YTD**	**1 Year**	**3 Years**	**5 Years**	**10 Years**	**20 Years**	**30 Years**	**ITD**
PUBLIC EQUITY		**-3.10**	**-1.64**	**4.89**	**14.95**	**4.35**	**9.22**	**8.87**	**7.30**	**8.90**	**8.84**
MSCI ACWI		-2.37	-0.99	5.56	17.49	5.41	9.69	9.00	7.23	8.81	8.74
PRIVATE EQUITY		**0.72**	**0.87**	**2.52**	**5.16**	**6.80**	**11.85**	**12.70**	**10.62**		**10.63**
Russell 3000 + 3%(Qtr Lag)		2.38	7.00	11.34	38.19	13.36	18.31	15.97	12.54		12.51
SPECIALTY CREDIT		**1.01**	**2.26**	**5.39**	**11.22**	**7.56**	**7.18**				**6.78**
50% BB US HY / 50% Morningstar LSTA Lev'd Ln		0.07	1.22	4.92	8.59	5.00	5.07				5.06
CORE FIXED INCOME		**-1.63**	**-2.94**	**2.02**	**1.66**	**0.72**	**1.65**	**2.37**			**2.44**
Bloomberg US Aggregate		-1.64	-3.06	1.98	1.25	-2.41	-0.33	1.35			1.72
CASH		**0.39**	**1.20**	**2.54**	**5.34**	**3.81**	**2.39**	**1.78**	**1.82**	**2.51**	**2.58**
FTSE Treasury Bill-3 Month		0.39	1.23	2.61	5.45	4.05	2.54	1.79	1.63	2.41	2.50
REAL ESTATE		**-0.74**	**-0.83**	**0.84**	**-4.63**	**0.16**	**4.92**	**7.59**			**7.98**
NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^		0.02	0.02	-0.64	-8.04	-1.04	2.05	5.16			4.67
REAL RETURN		**-2.02**	**3.59**	**10.48**	**17.24**	**10.70**	**9.25**	**6.34**			**5.73**
US CPI +3%		0.19	0.95	1.94	5.75	6.19	6.55	4.67			4.33

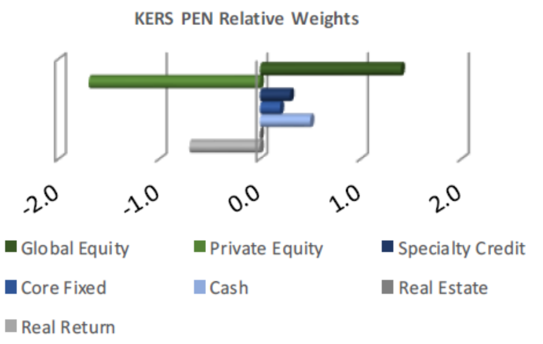
Internal Portfolios Performance

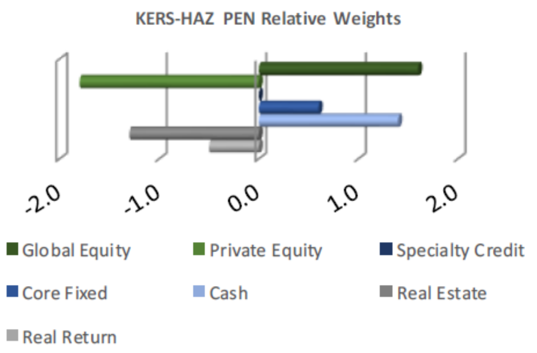
Kentucky Retirement Systems Pension
Monthly Internally Managed Portfolio Performance (Net of Fee)
As of Date: 12/31/2024

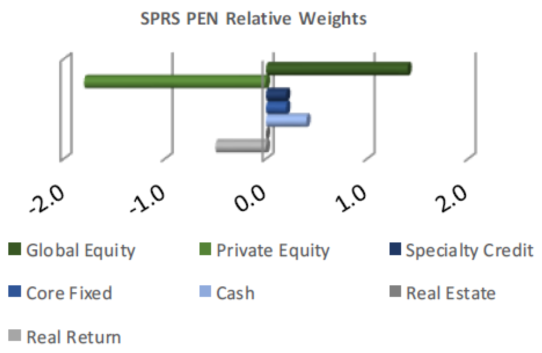
Structure	Market Value	% of Total	Month	3 Months	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	ITD	Inception Date
PUBLIC EQUITY												
S&P 500 INDEX	3,430,106,718.16	17.28	-2.35	2.44	8.47	25.02	9.03	14.75	13.23	10.60	9.33	2001-07-01
KY Ret. S&P Blend			-2.38	2.41	8.44	25.02	8.94	14.53	13.10	10.52		
Internal US Mid Cap	240,955,123.41	1.21	-7.13	0.44	7.42	14.43	5.61	11.05	10.18		10.43	2014-08-01
S&P MidCap 400 Index			-7.12	0.34		13.93	4.87	10.34	9.68			
Scientific Beta	279,193,536.38	1.41	-5.78	-0.61	7.38	15.77	4.60	9.50			10.82	2016-07-01
S&P 500 Index			-2.38	2.41		25.02	8.94	14.53				
PRIVATE EQUITY												
INTERNAL PRIVATE EQ	89,385,893.97	0.45	-1.91	2.04	7.27	18.31					17.30	2023-12-01
CORE FI												
INTERNAL CORE FI	998,575,671.19	5.03	-1.68	-3.08	2.04	1.34					4.23	2023-09-01
Bloomberg US Aggregate Bond Index			-1.64	-3.06	1.98	1.25					4.03	
REAL ESTATE												
INTERNAL REAL ESTATE	47,021,710.79	0.24	-8.17	-8.36	7.32	4.69					5.35	2023-12-01
NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^			0.02	0.02	-0.64	-8.04						
REAL RETURN												
INTERNAL REAL RETURN	241,695,452.41	1.22	-8.39	-4.90	7.40	13.11					11.60	2023-12-01
KRS CPI + 300 bpts			0.19	0.95	1.94	5.75					5.34	
INTERNAL TIPS	144,047.17	0.00	0.39	1.20	2.54	5.31	4.03	2.55	2.47	3.41	4.25	2002-05-01
KR2 Internal US TIPS Blend			-0.81	-1.60	1.77	3.25	-0.06	2.75	2.56	3.41	4.25	
CASH ACCOUNT	522,394,476.29	2.63	0.39	1.20	2.55	5.33	3.82	2.41	1.92	1.98	3.39	1988-01-01
FTSE Treasury Bill-3 Month			0.39	1.23		5.45	4.05	2.54	1.79	1.63	3.02	

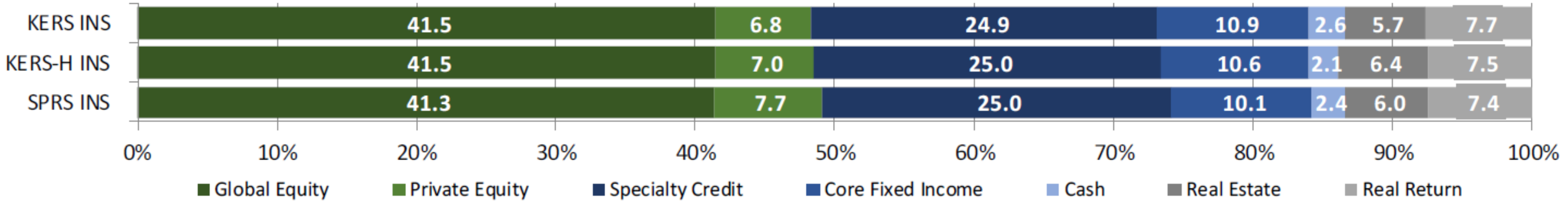
Allocations

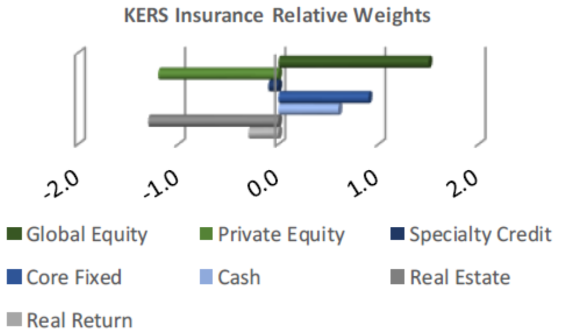


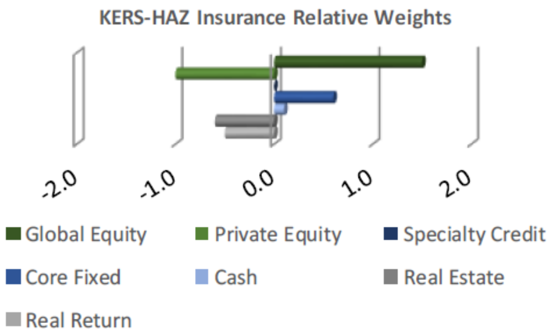


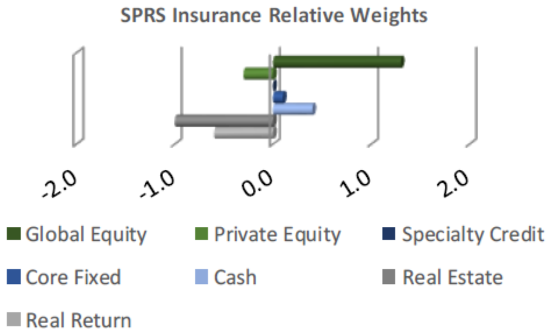












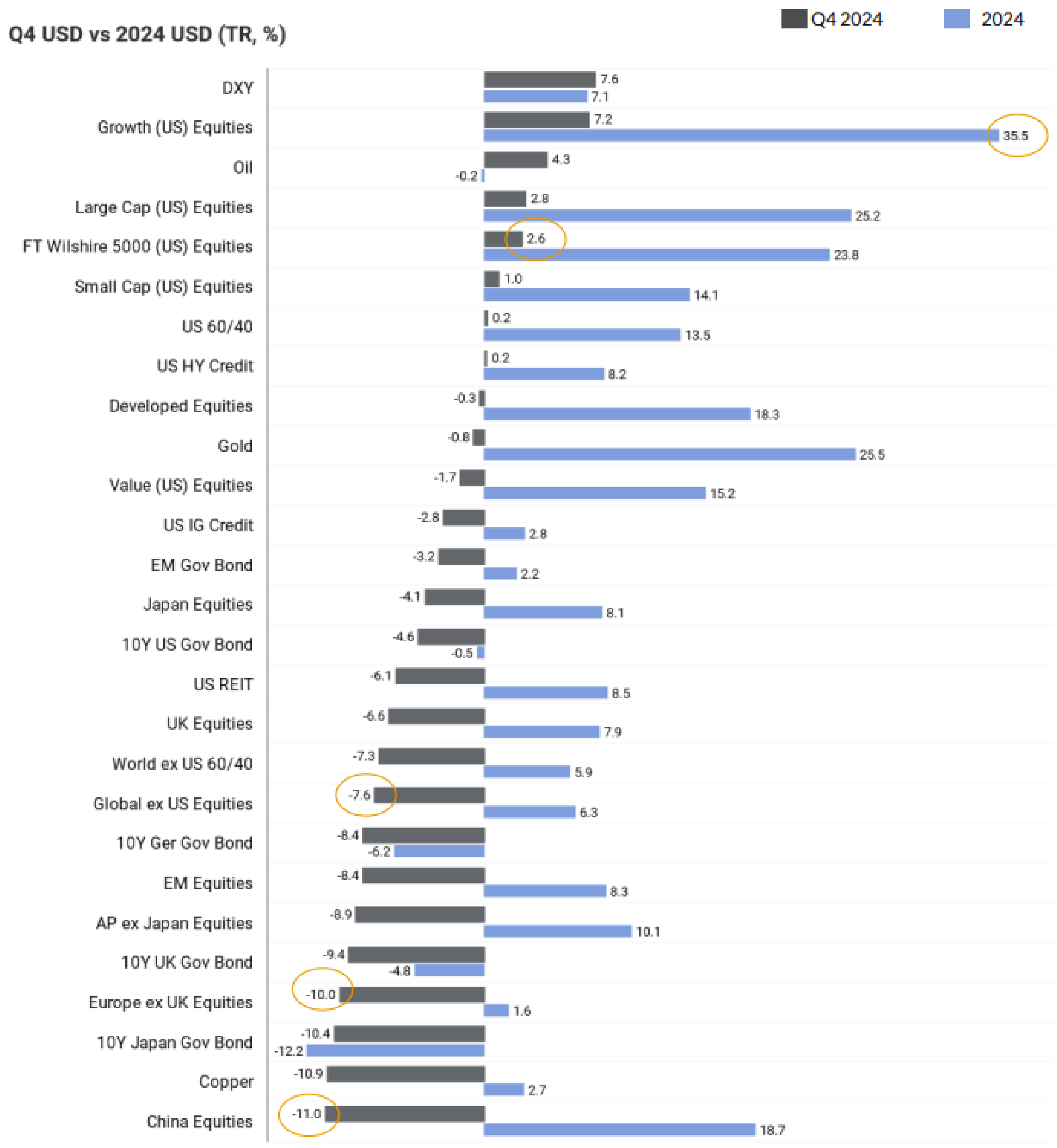
Performance Highlights

- The KRS Pension Composite produced a return of -0.83% for the quarter underperforming the blended benchmark return of -0.23%.
- The KRS Insurance Composite produced a return of -0.53% for the quarter versus the benchmark return of 0.27%.

KERS Pension -0.88%
SPRS Pension -0.97%
Benchmark -0.34%

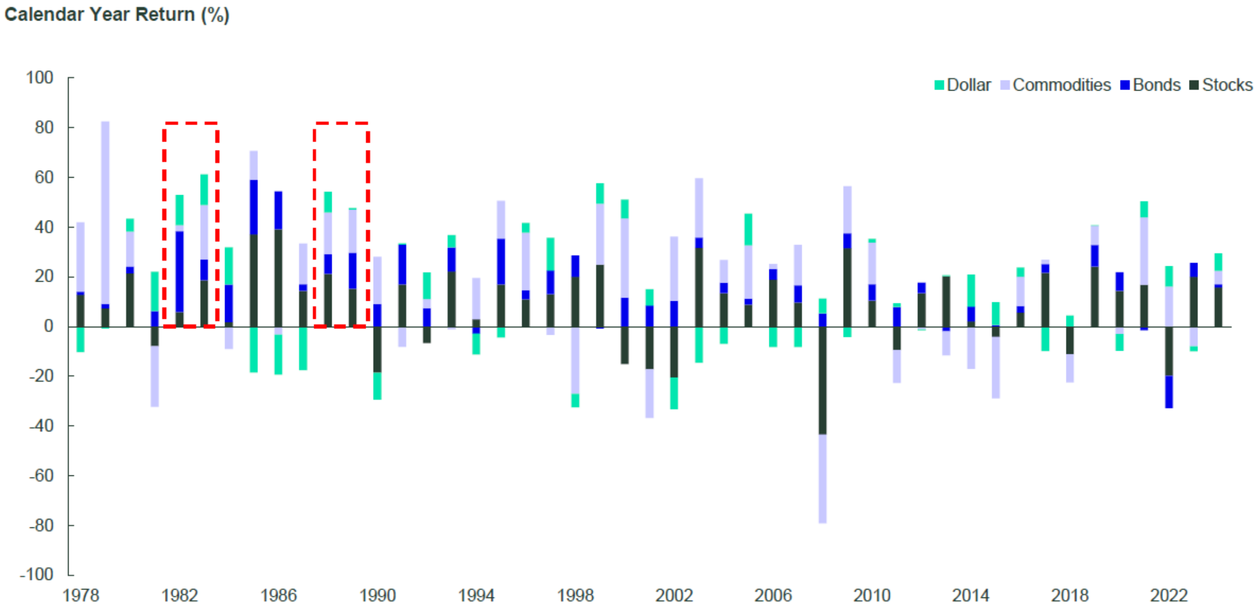
KERSH Pension -0.51%
KERS Insurance -0.62%
KERSH Insurance -0.34%
SPRS Insurance -0.41%
Benchmark 0.27%

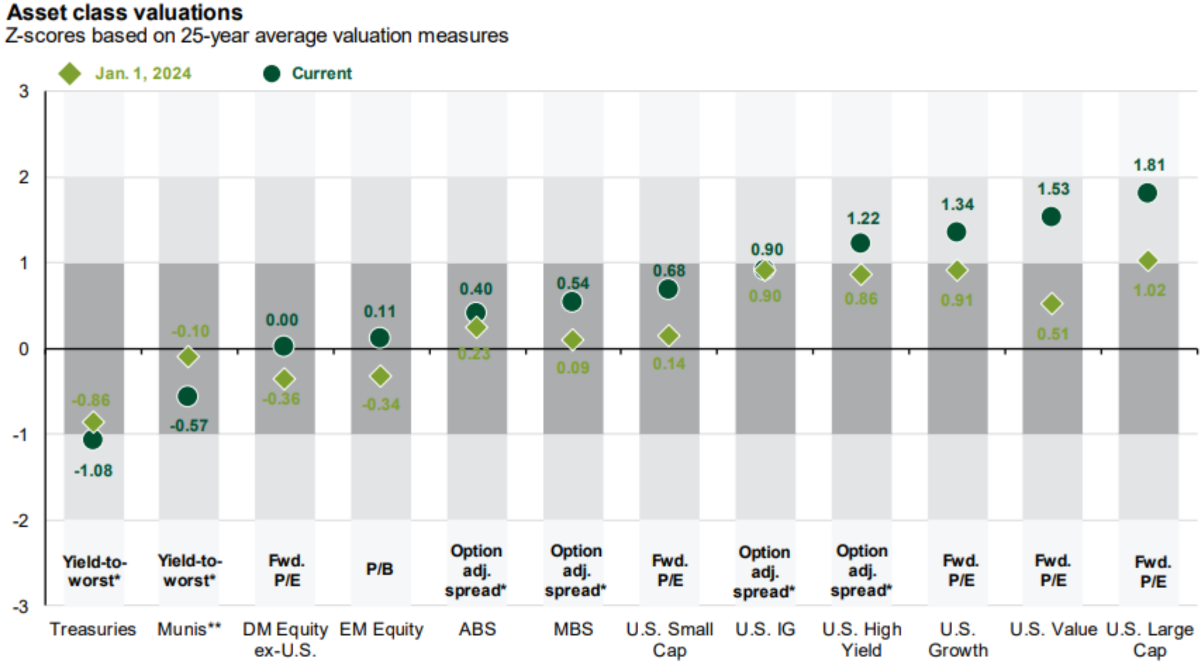
- Across portfolios, the largest contributor to outperformance was the relative outperformance in the Specialty Credit portfolio as managers produced positive excess performance across the board. Relative underperformance in the Public Equity portfolio as well as the underperformance of the Private Equity portfolio versus the public equity benchmark were the biggest drivers of underperformance during the quarter.
- Fiscal year to date, the KRS Pension Composite produced a return of 4.36% outperforming the blended benchmark by 15bps while the KRS Insurance Composite produced a return of 4.33% versus the blended benchmark return of 4.75%.



Performance Highlights

- Fiscal year to date, strong outperformance in the Real Return and Specialty Credit portfolios have been the most significant drivers of relative performance which has been partially offset by underperformance in the Public Equity and Private Equity portfolios.
- Risk markets struggled in December, failing to build on the "Trump bump" following the US election that saw markets surge especially segments seen as beneficiaries of lower taxes, regulatory rollbacks and protectionism.
- Despite the pullback late in the quarter, US Public Equities ended the quarter in the black as one of the few bright spots with NonUS Public Equities, Core Fixed Income, Real Estate and broad Commodities all falling during the quarter.
- For the calendar year, US public equities, bonds, commodities and the dollar all rallied which has only happened twice in the last 50 years.
- Markets grappled with numerous headwinds and unknowns in 2024; elections, geopolitical, uncertain fiscal policies and the uneven normalization of inflation and the labor markets all of which combined to keep fears of recession and stagflation elevated. Despite the uncertainty and volatility, markets were resilient with cross-asset volatility remaining extremely low.
- Uncertainty should remain high in 2025 with risks seemingly asymmetric as markets react to policy shifts and economic data underscoring the reality of a new macro environment with a wider range of possible outcomes and persistently high volatility.





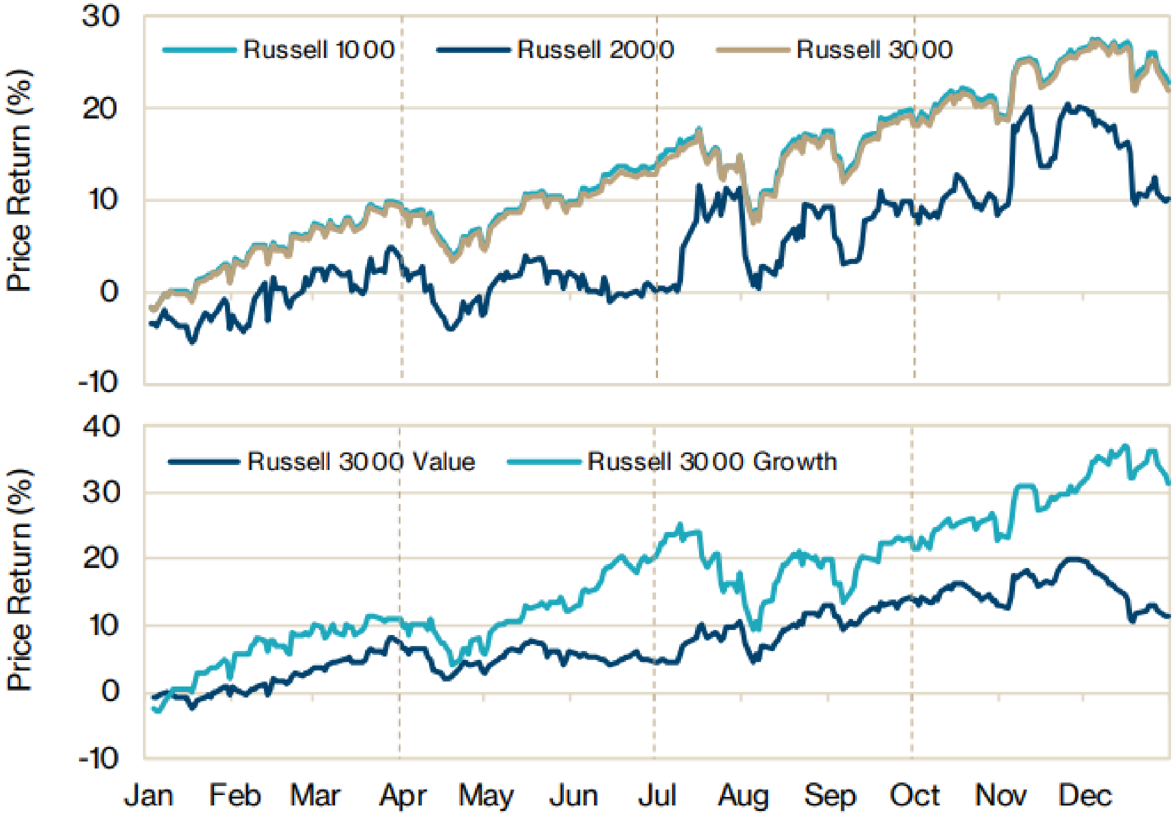
Performance Highlights

Public Equities

- Global equity markets had a heterogeneous performance during the fourth quarter as US equity markets reacted positively to President Trump's election in November, driven mostly by a positive sentiment regarding optimism of a lower regulatory burden under his presidency while European equity investors were more bearish on the news due to growing concerns about the region's trade relationships with the US.

- While the global rate-cutting cycle was broadly perceived as a tailwind for equities, valuations remain highly elevated and numerous global geopolitical risks remain, which could potentially be a trigger for a sharp correction in equity markets.

- The 4th quarter saw a continuation of style and market cap leadership in US Equity markets
  - Growth outpaced value by nearly 9% (R3000G: 6.82% vs R3000V: -1.94%)
  - Large cap extended dominance (SP500: 2.41% vs Midcap: 0.34% vs R2000: 0.33%)
  - Trump's election win drove a strong rally in response to optimism surrounding deregulation and fiscal reforms (tax cuts & pro-business policies)

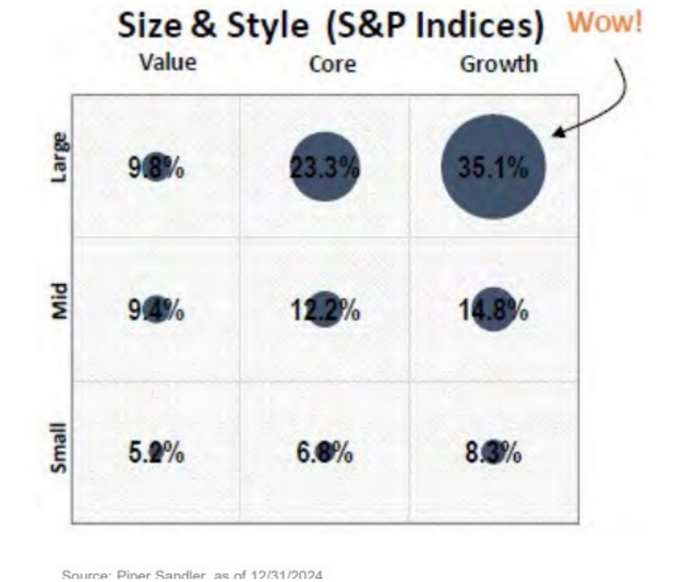


Performance Highlights

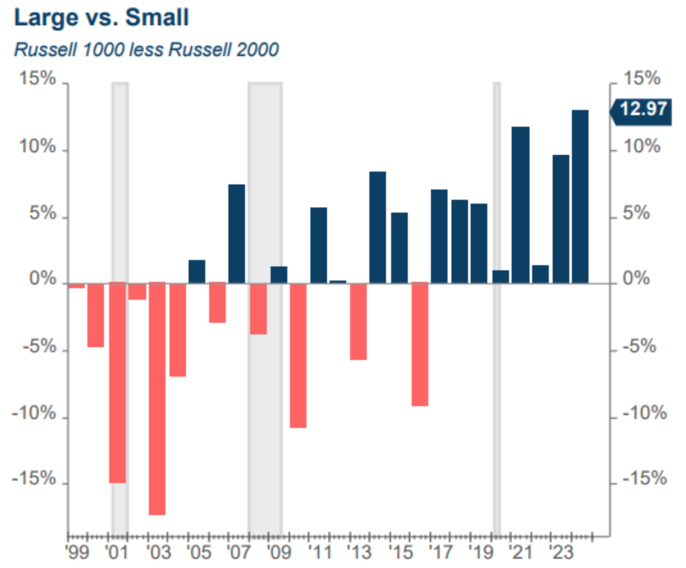
Public Equities

- During calendar 2024, the S&P 500 hit 57 record highs and has delivered over 20% annualized for the past 2 years.
  - The economy exceeded expectations, inflation moved lower, large impact from AI-enthusiasm
  - Fed signaled a more accommodative policy (first cut in September)
  - Market was incredibly narrow, led by mega cap growth
    - Growth outpaced value (best 2-year stretch in history)
    - Small caps significantly lagged large caps (last 8 calendar years)
- In contrast, performance in International Public Equity markets was extremely negative for the quarter as growth weakened and political uncertainty persisted with meaningful losses from weakening foreign currencies exacerbating the losses.
  - Growth in Europe weakened
    - Germany faces higher energy costs and increased competition from China
    - Manufacturing and trade slowed in France
    - United Kingdom continued its growth due to a strong service sector leading to higher wages

Larger Growth Drove the Gains in '24



Worst Year for Small vs. Large Since 1998



Source: FactSet as of 01/06/2025

Performance Highlights

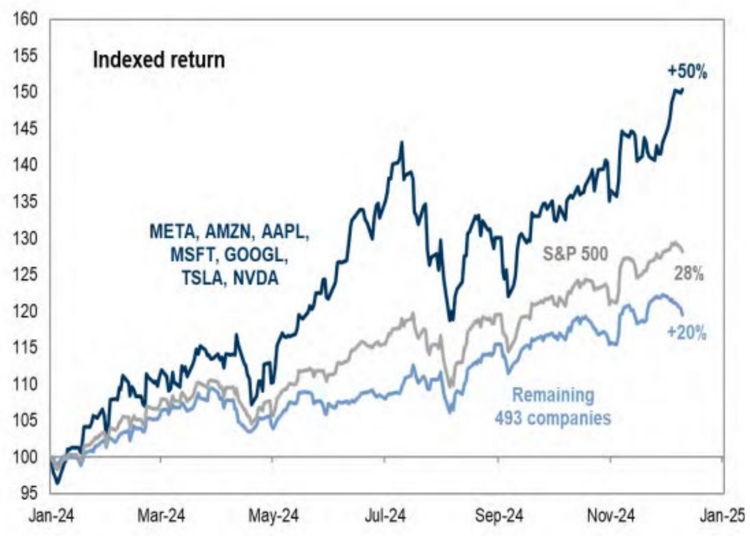
Public Equities

- Japan was one of the top performers
  - Exited deflationary spiral – nominal GDP has increased (inflation), price increases and wage growth
  - Improvements in corporate governance (efficiency and balance sheet restructuring) has led to higher ROE's
- China has outperformed recently driven by policy initiatives to stabilize the economy
  - Growth is weak (structural overcapacity and weak real estate market) but government providing stimulus
  - Tariffs from US a looming threat to exports
- India continues to demonstrate strong growth with significant investment in infrastructure and manufacturing, though investors must be cognizant of higher valuations

- International markets have been difficult to consistently add value actively due to higher intra stock correlations and lower correlations between EPS estimates and stock prices
  - This appears to be reverting providing a better market backdrop for stock picking

- Growth continues to trade at a premium versus value at a discount with the spread consolidating to a degree over the past couple years but expanded in the last quarter.

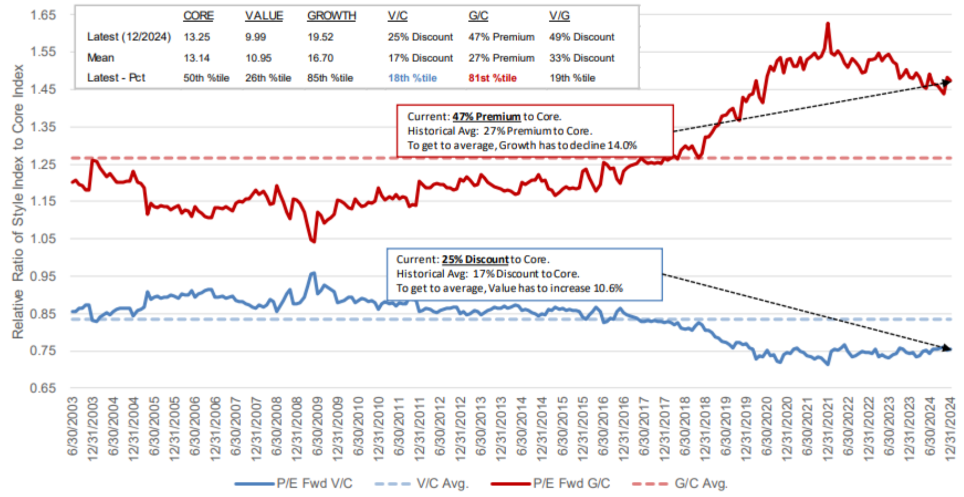
Magnificent 7 Stocks More Than Doubled the Return of the 493



Source: Goldman Sachs Global Investment Research, Scott Rubner, as of 12/12/24.

Relative Valuations of Value vs. Growth at Extreme Levels

Forward PE for MSCI ACWI ex-US Value and Growth Index Relative to MSCI ACWI ex-US Core (Dec-2024)



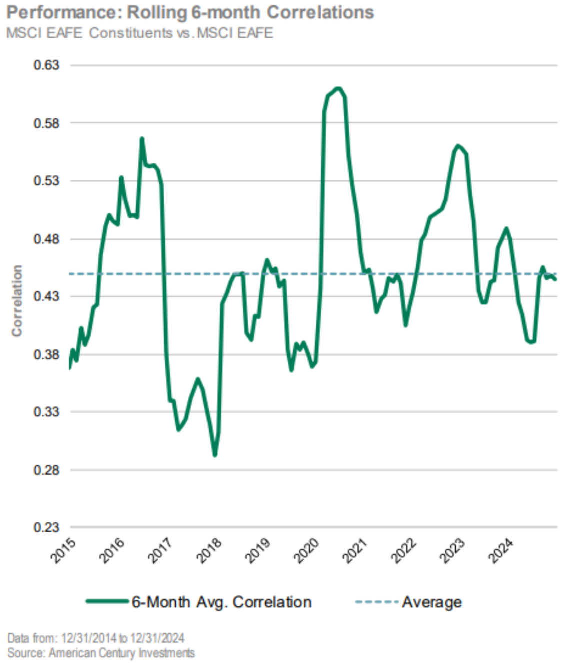
Value Equity

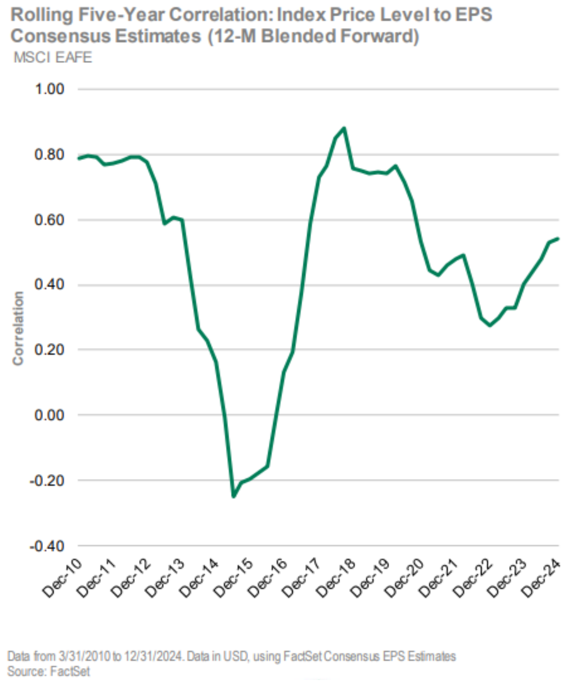
Data as of 12/31/2024. Source: LSV, MSCI. This slide does not represent the composition of any LSV portfolio.

Performance Highlights

Public Equities

- The Global Public Equity portfolio returned -1.55% during the quarter versus its benchmark return of -0.99%.
  - The portfolio's NonUS Equity tilt drove underperformance as these markets underperformed the US markets by over 10%
  - Performance was also hampered by the overweight to small caps relative to the benchmark
- For the quarter, the US Public Equity portfolio returned 2.50% versus its benchmark return of 2.63%.
  - Persistent style and size headwind hampered relative performance
  - Individual mandate performance remained strong with 5 of 7 mandates outperforming
- The NonUS Public Equity portfolio returned -7.80% versus the MSCI ACWI Ex-US index's return of -7.61%.
- For the LTM the Global Public Equity portfolio returned 15.22% versus its benchmark return of 17.49% while the US Public Equity portfolio returned 23.00% versus its benchmark return of 23.81% and the NonUS Public Equity portfolio returned 3.76% versus the benchmark's return of 5.23.

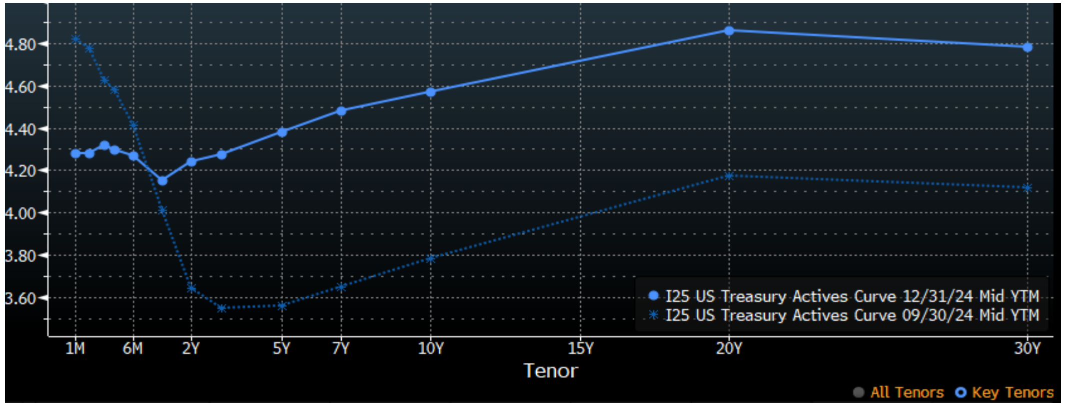




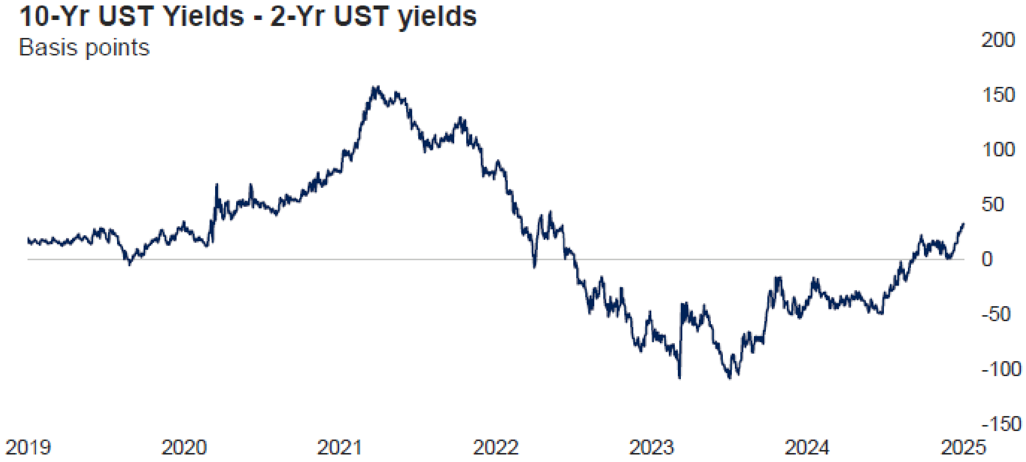
Performance Highlights

Core Fixed Income

- Despite two 25 basis point rate cuts from the Fed, the U.S. Treasury yield curve was up across most of the maturity spectrum during the quarter.
- The 2YR and 5YR US Treasury yields rose 60 basis points and 82 basis points to close at 4.24% and 4.38%, respectively. The 10YR yield was 79 basis points higher to close at 4.57%. The 20YR and 30YR yields were higher 68 basis points and 66 basis points to finish the quarter at 4.86% and 4.78%, respectively.
- Yields on 10YR and 30YR Treasuries approached 2024 highs in December as investors begin demanding compensation for the risks associated with a potentially higher long-term neutral fed funds rate and the bond-bearish implications of expected upcoming federal policy.
- The closely watched 2-10YR curve finished the quarter with a spread of 33 basis points, continuing the healthy step towards normalcy after nearly two years of curve inversion which ended in September.



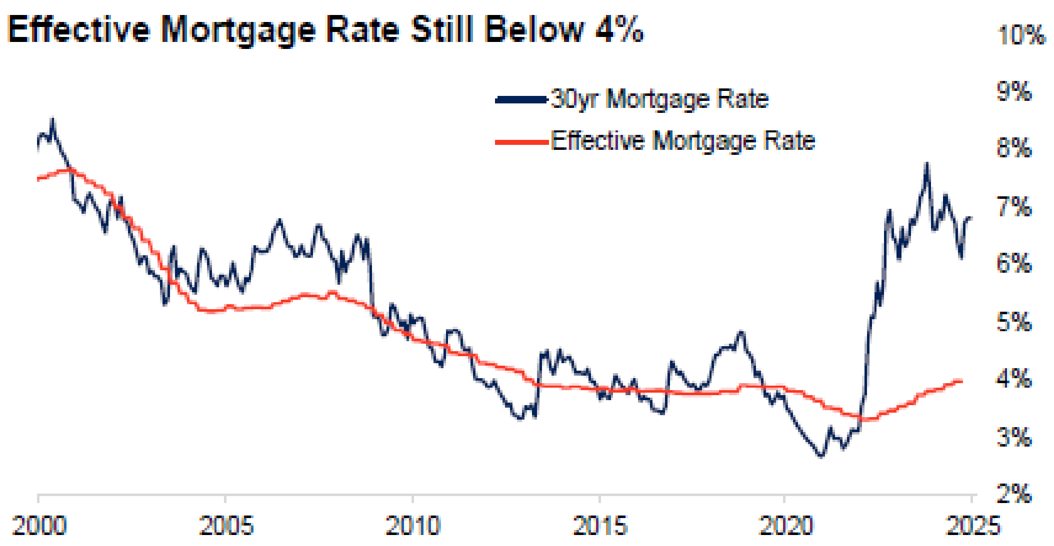
	Curve Id	1M	3M	2Y	5Y	10Y	20Y	30Y
11)	I25 12/31/24	4.280	4.321	4.243	4.383	4.572	4.860	4.783
12)	I25 09/30/24	4.820	4.627	3.642	3.559	3.782	4.176	4.120
13)	I25 (12/31/24-09/30/...	-54.0	-30.6	60.1	82.4	79.0	68.4	66.3

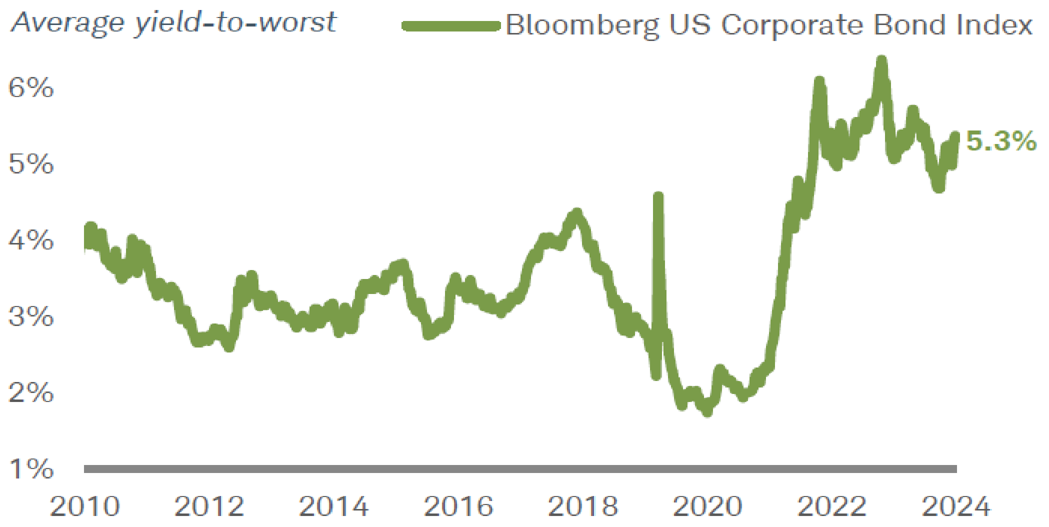


Performance Highlights

Core Fixed Income

- The Core Fixed Income Portfolio produced a return of -2.92% for the quarter and 2.06% fiscal year-to-date, slightly outperforming the benchmark by 14 and 8 basis points, respectively.
- The portfolio's relative outperformance was driven by ABS allocation as the sector's excess return was 0.61%, losing only 0.05% in total return for the quarter.
- In addition, CMBS produced 0.66% excess returns with total return of -1.48% for the quarter with the MBS sector performing the worst with total return of -3.16%.
- The Corporate index OAS (Option Adjusted Spread) closed 9 basis points tighter at 80 during the quarter even though total return was negative 3.04% as rates rose.
- Although 30-year mortgage rates have hovered near 7% for 2 years, the effective mortgage rate has yet to surpass 4%, reflecting many homeowners locked into low rates since the pandemic housing boom.





Performance Highlights

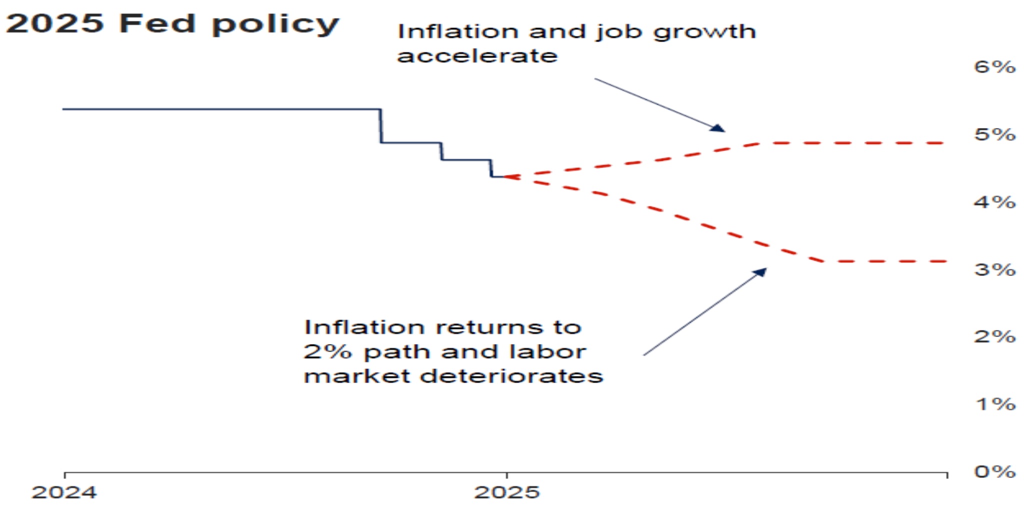
Liquidity

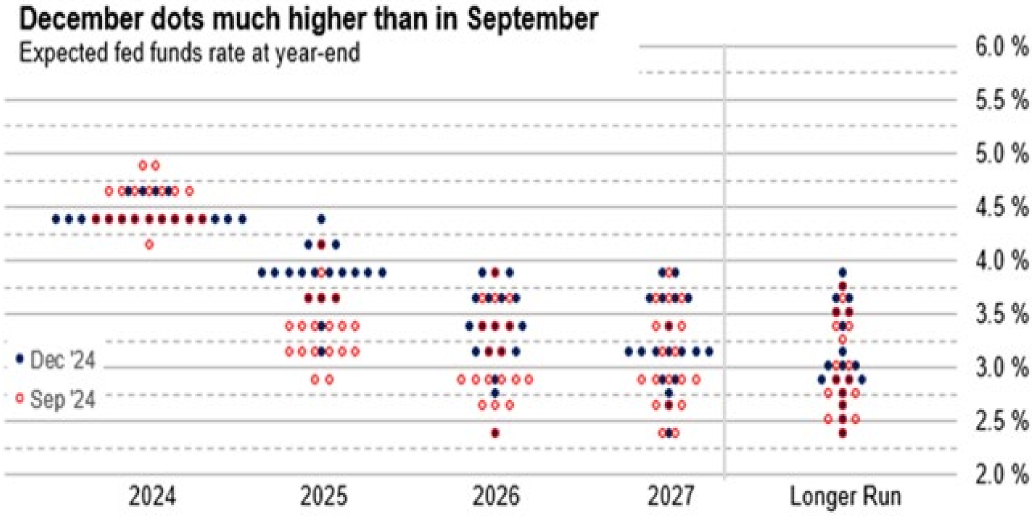
- After reducing the target range for the federal funds rate by 100 basis points over the last three meetings of 2024, updated economic projections from the FOMC point to just two rate cuts in 2025.

- Cash produced a return of 1.20% for the 3-month period ending December 31st, slightly underperforming the 3-Month Treasury Bill benchmark which returned 1.23%.

- In the FOMC's updated Summary of Economic Projections (SEP), the most significant change was the inflation outlook. The 2025 PCE forecast rose from 2.1% to 2.5%. As a result, the committee now forecasts a 2025 median federal funds rate of 3.9%.

- Persistently strong growth and inflation readings materially reset market expectations for Fed easing over the coming year, with approximately four 25 basis point cuts removed from year-end 2025 pricing forecasts over the quarter.





Performance Highlights

Specialty Credit Fixed Income

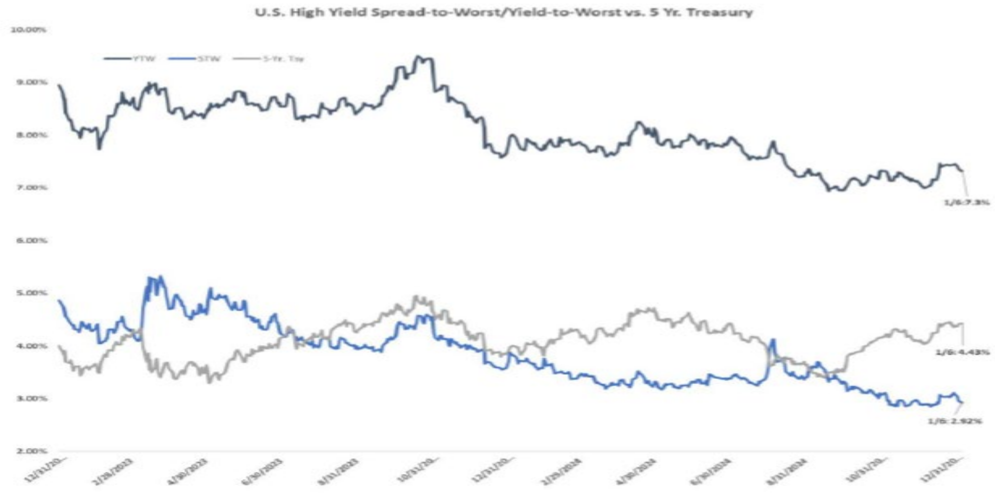
- The Specialty Credit portfolio produced a return of 2.23% for the quarter and 5.39% fiscal year-to-date, outperforming the custom benchmark which returned 1.22% and 4.92%, respectively.

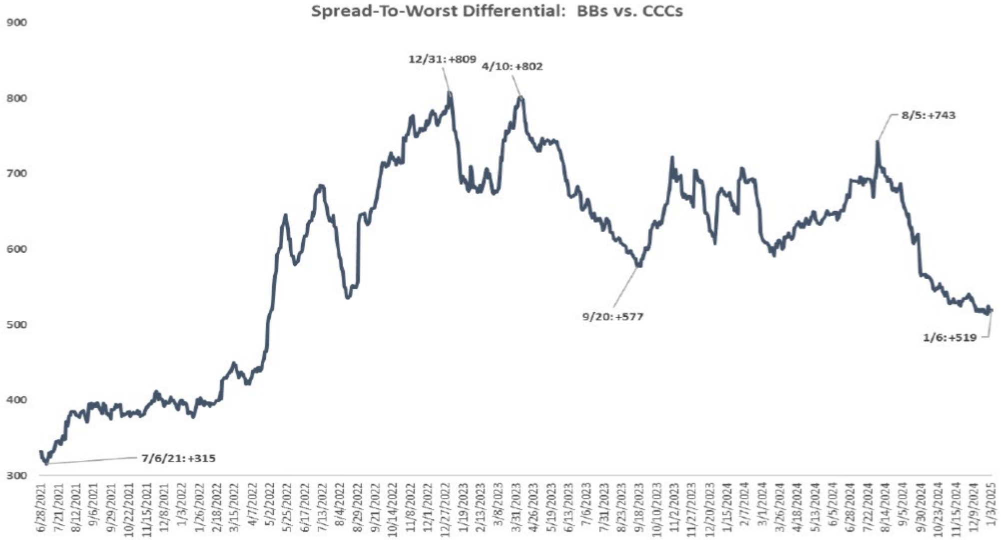
- Valuation on a spread basis remain near eighteen-year tights. With interest rates resuming their post-election move higher, absolute yields of 7.31% remain at levels only seen approximately 30% of the time over the last ten years.

- Lower quality issuers outperformed for the sixth consecutive month in December. Over the quarter, BB, B and CCC rated issues returned -0.51%, 0.31% and 2.17%, respectively.

- Over longer periods the portfolio has contributed significant outperformance, beating the benchmark by 230 and 205 basis points over three- and five-year periods respectively.

- The High Yield option adjusted spread (OAS) tightened 8 basis points for the quarter to 287.

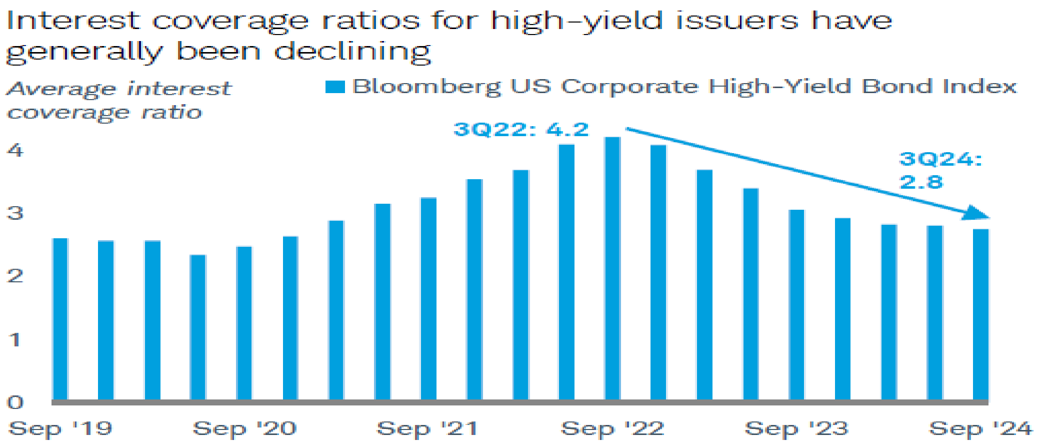


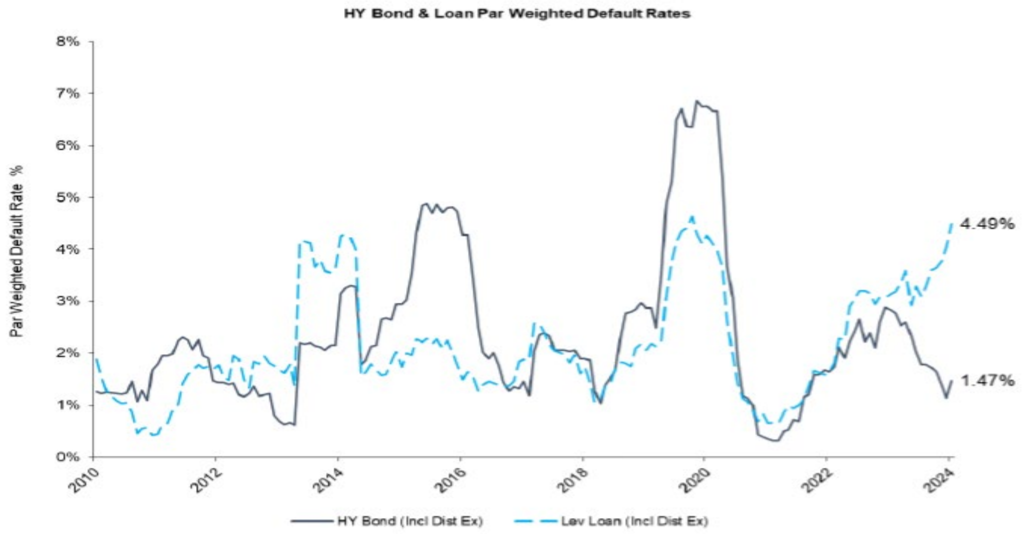


Performance Highlights

Specialty Credit Fixed Income

- Earnings season surprised to the upside, with high yield issuers' operating earnings rising 3.0% quarter over quarter and 1.2% year over year helping keep interest coverage favorable even with the recent decline.
- For the quarter, new issuance totaled $49.5 billion with 64% representing refinancing, 23% for M&A and 6% accounted for dividends.
- The high yield bond default and distressed exchange activity remained moderate for the quarter. The LTM par-weighted default rate including distressed exchanges increased to 1.47%.
- Default and distressed exchange activity remains concentrated in the leveraged loan market, where the par-weighted default rate including distressed exchange increased to 4.59%.
- The over 300 basis point spread between high yield bond and leveraged loan default activity is at a 24-year high.





Performance Highlights

Private Capital (as of 9/30/24 - 1 quarter lag)

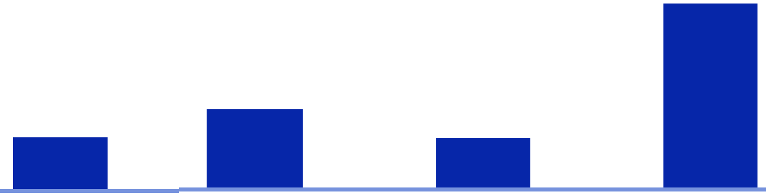
- Like public equity markets, private markets were broadly positive during the quarter. However, short-term returns for all alternative asset classes continued to lag a sharply rising US equity market, with the S&P 500 and Russell 3000 both gaining over 35% for the trailing 1 year ending 9/30/2024.

- Even though it is senior in the capital structure, private credit's 7-8% returns have outpaced those from private equity over the trailing 1 and 3 years.

- Given its ample liquidity position, KPPA maintains a long term focus in private markets and prefers that its managers continue to manage their investments if an attractive exit is not attainable in the current market environment.

- The Investment Team continues to find and evaluate attractive opportunities that have arisen from higher interest rates and lower liquidity pressuring current holders of attractive assets.

MSCI Private Capital Benchmarks – US



Private Capital Fund Indexes	Pooled Trailing Period Returns			
	3Q 2024	1-Yr	3-Yr	5-Yr
Private Capital	**1.9%**	**5.9%**	**3.9%**	**13.7%**
Private Equity	**2.2%**	**6.7%**	**2.7%**	**16.6%**
Venture Capital	1.8%	3.0%	(6.3%)	16.9%
Expansion Capital	5.7%	11.3%	1.0%	11.7%
Buyout	2.3%	7.8%	7.4%	16.4%
Private Credit	**1.7%**	**7.7%**	**7.7%**	**9.1%**
Senior	1.8%	8.2%	8.2%	8.0%
Mezzanine	1.6%	8.0%	7.6%	9.0%
Distressed	1.6%	7.8%	7.8%	10.7%
Private Real Assets	**0.7%**	**0.5%**	**6.5%**	**7.3%**
Real Estate	(0.2%)	(4.9%)	1.1%	5.1%
Natural Resources	(2.3%)	3.7%	15.8%	10.4%
Infrastructure	3.6%	9.7%	10.6%	9.4%

Source: MSCI Private Capital Benchmarks Report (data through calendar 3Q 2024)

Performance Highlights

Real Estate (as of 9/30/24 - 1 quarter lag)

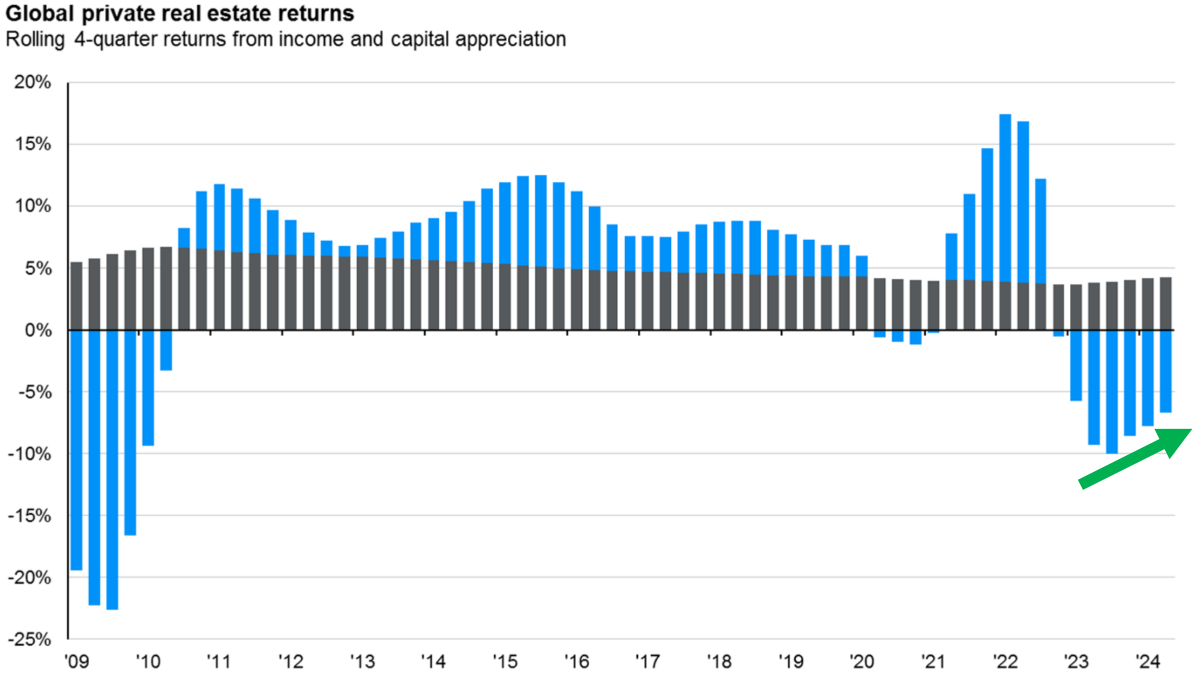
- Real Estate markets and sentiment have begun to turn, with the Open End Diversified Core Equity (NFI-ODCE) index posting its first positive quarter since 3Q 2022.

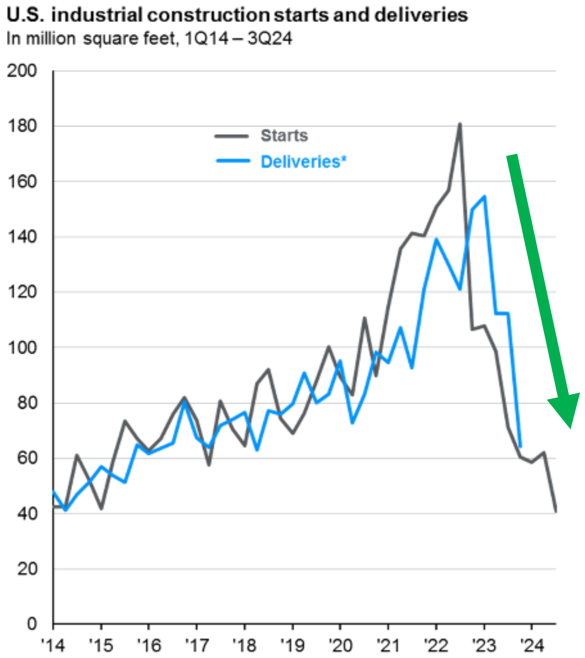
- The Real Estate portfolio's value fell -0.9% during the quarter, slightly less than the benchmark's flat 0.0% return.

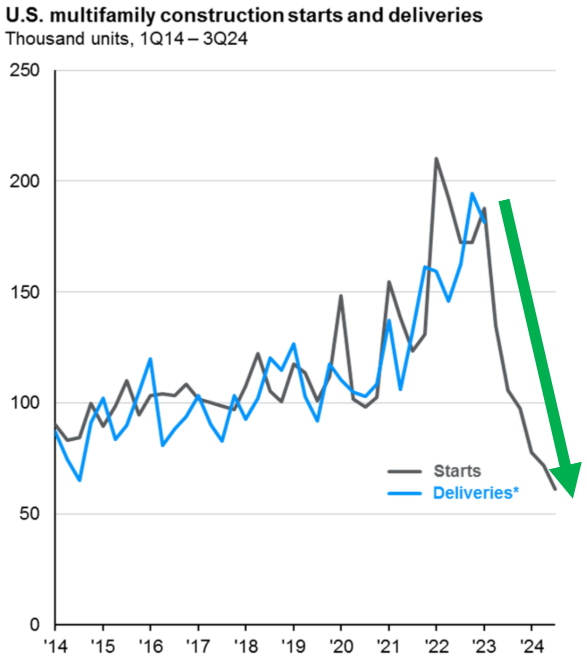
- The portfolio's open-end Core strategies all produced positive returns during the third quarter. While valuation markdowns persist, they diminished enough to be more than offset by steady income returns.

- Construction starts continued to fall sharply from their peak in 2022, even in more favored sectors like industrial and multifamily. The decline in deliveries that will result over the next several quarters should improve rent growth and supply dynamics.

- During the second half of 2024, the three Core equity funds that make up the portfolio's largest positions collectively raised over a billion dollars, largely cleared their redemption queues, and called capital from their contribution queues to start playing offense.





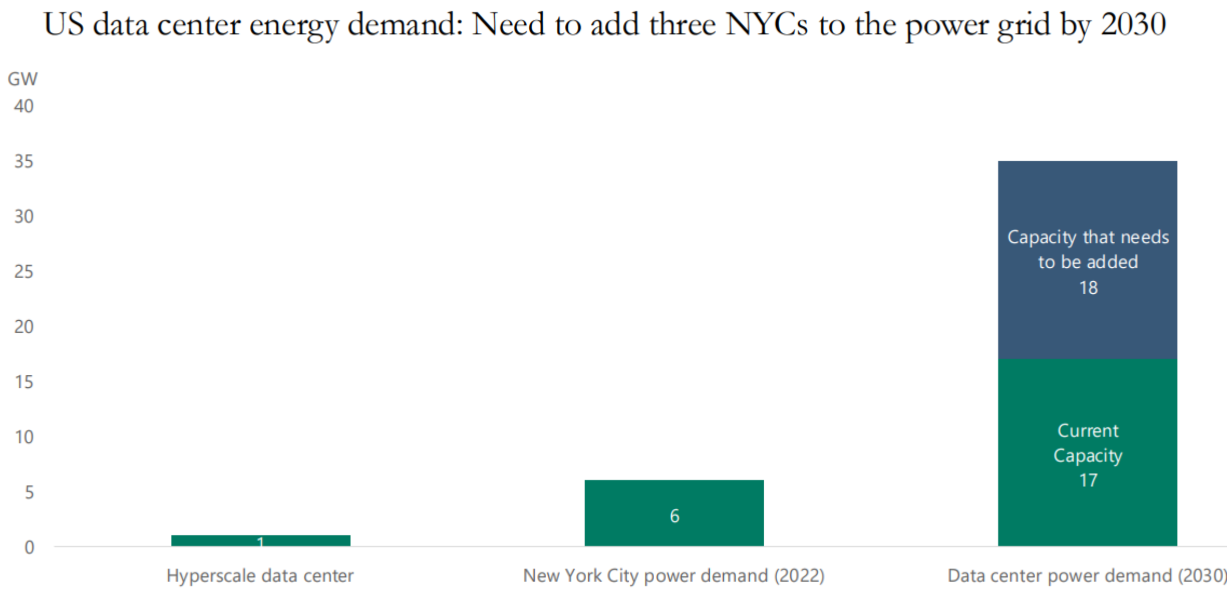


Source: JP Morgan

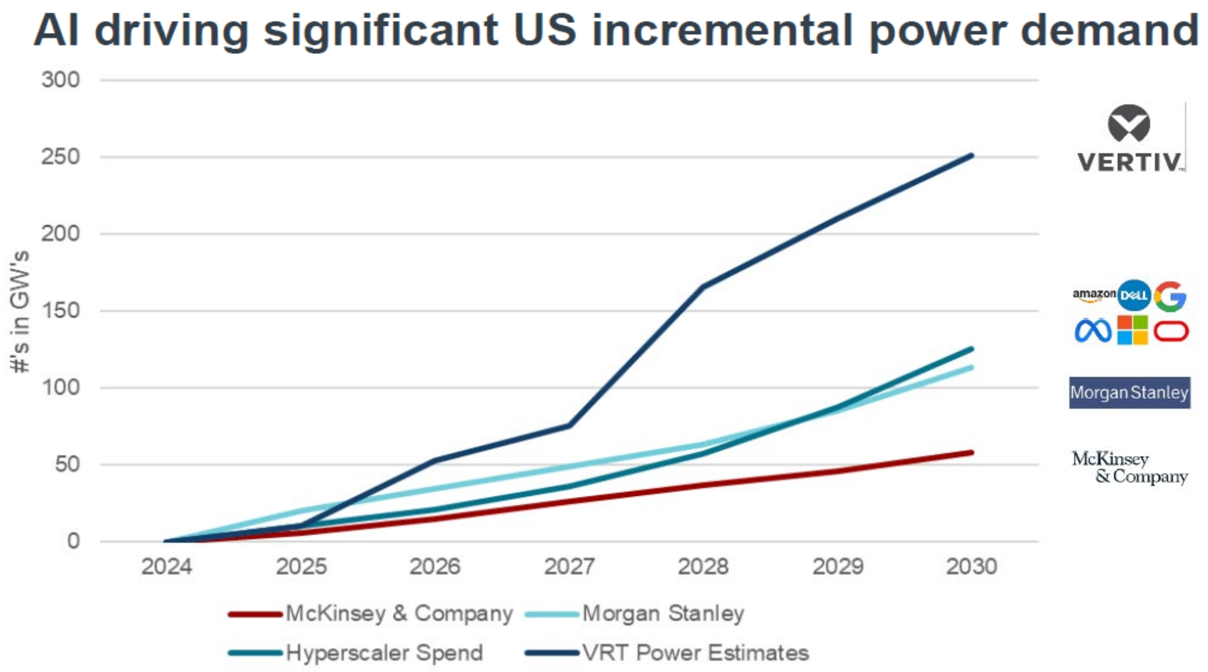
Performance Highlights

Real Return

- The Real Return portfolio continued to perform well during the quarter, posting a return of 3.7% that outpaced the 1.0% return of its benchmark.
- A second-order effect of the current AI and technology boom is the significant increase in demand for power and the energy needed to supply it. One key beneficiary in 2024 was utility stocks, as its index nearly matched the S&P 500 with a 23.4% gain.
- Even after declining nearly 7% in December, the portfolio's MLP exposure gained 13.7% for the quarter versus its benchmark return of 4.9%. The account was up more than 46% for calendar year 2024 as strong cash flows, disciplined capex, and consolidation continued to benefit the industry.
- Infrastructure debt, marine transportation, and sports investments also contributed to the portfolio's outperformance.
- The portfolio's farmland mandate was funded in 4Q 2024 along with a toll road continuation vehicle investment with an existing private equity manager.



Source: Apollo Global



Source: Tortoise Capital

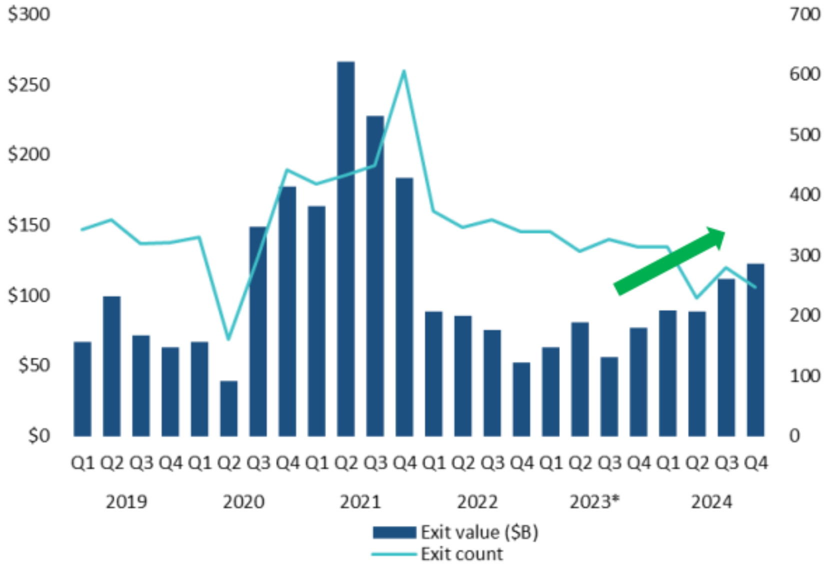
Performance Highlights

Private Equity

- The Private Equity portfolio produced a return of 1.0% for the quarter, underperforming the benchmark's return of 7.0%.
- Performance relative to the benchmark (Russell 3000 + 3%, lagged one quarter) has continued to trail due to a robust equity market that has gained more than 35% over the past year through 9/30/2024.
- Deal activity and exits have picked up in recent quarters, but the slow pace of distributions remains a concern for many investors in private equity funds. While distributions from mature funds have been muted for the past 2-3 years, more recently raised funds continue to call capital, which is straining investor liquidity.

PE Deal Activity by Quarter

Exit Activity by Quarter



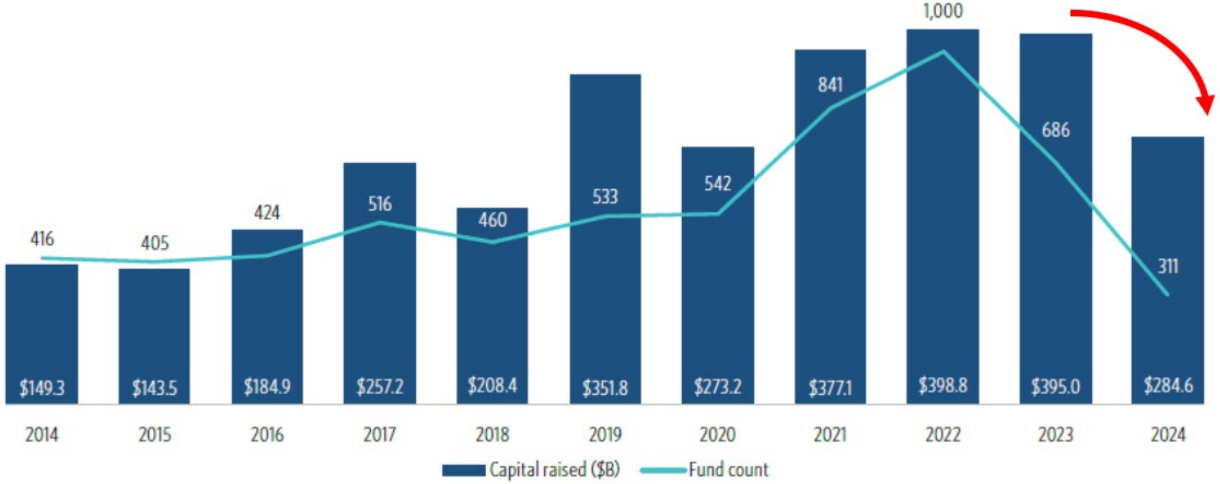
Source: Pitchbook, Geography; US, As of 12/31/2024

Performance Highlights

Private Equity

- Given these factors, managers continue to face a difficult fundraising environment. This has contributed to private equity management fees falling to their lowest level in two decades.

US Private Equity Fundraising Activity 2014-24



Source: Pitchbook, Geography; US, As of 12/31/2024