



CERS Quarterly Performance Update

March 2024

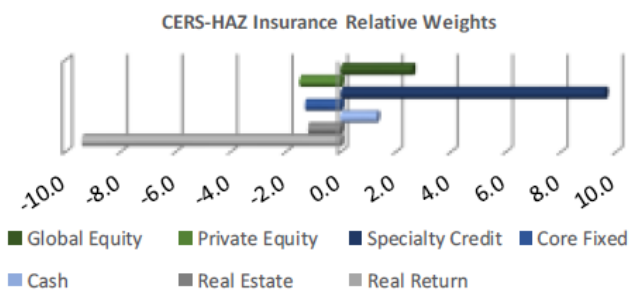
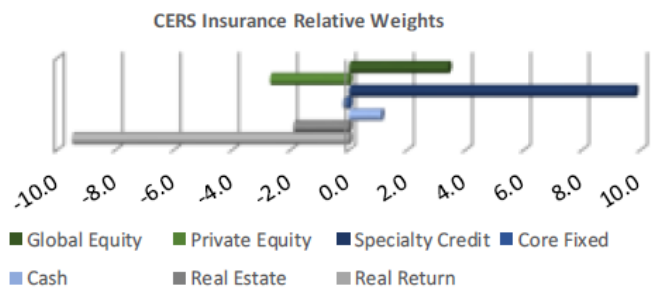
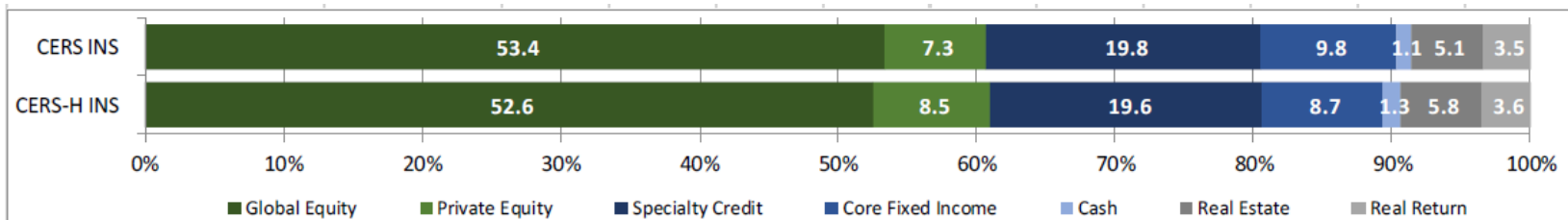
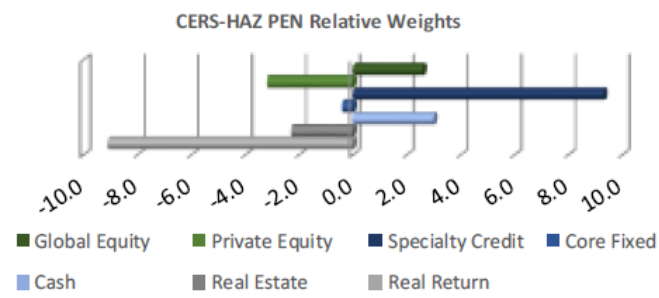
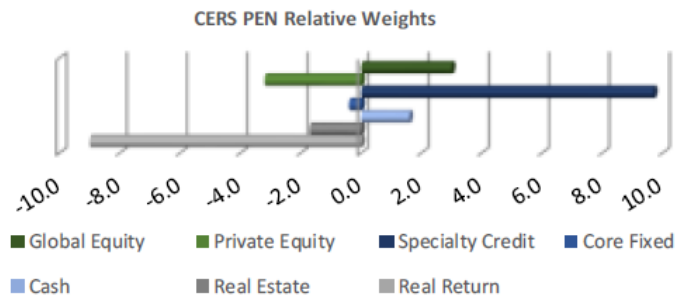
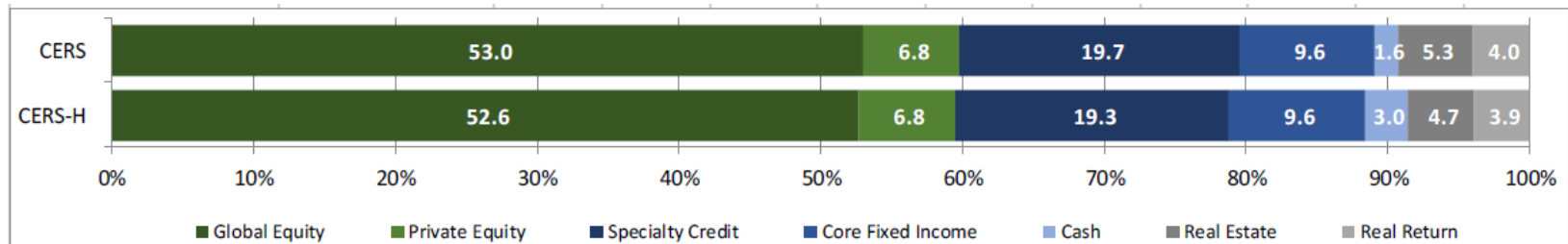
Pension Portfolios Performance

CERS & CERS-HAZ - PENSION FUND PLAN NET RETURNS - 03/31/24											
Plan	Market Value	Month	3 Months	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	ITD
CERS	9,518,354,564.88	2.20	4.64	10.15	13.79	6.48	8.30	7.13	6.73	8.03	8.94
KY Ret. CERS Plan IPS Index		2.10	5.27	11.06	15.56	6.46	8.07	6.89	6.68	7.98	8.98
CERS- H	3,354,701,178.90	2.21	4.67	10.26	13.90	6.45	8.25	7.12	6.72	8.02	8.94
KY Ret. CERS Haz Plan IPS Index		2.10	5.27	11.06	15.56	6.46	8.07	6.89	6.67	7.98	8.97
KPPA PENSION FUND UNIT - NET RETURNS - 03/31/24 - 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		3.27	8.22	15.44	21.88	5.97	10.61	8.41	7.58	9.10	10.40
MSCI ACWI		3.14	8.20	16.05	23.22	6.28	10.51	8.38	7.50	8.89	10.26
PRIVATE EQUITY		1.51	1.08	4.05	7.30	13.63	13.10	11.95	10.92		11.59
Russell 3000 + 3%(Qtr Lag)		5.71	12.01	19.38	28.96	11.61	18.21	14.61	12.15		12.31
SPECIALTY CREDIT		1.38	2.58	8.93	11.00	6.71	6.54				6.39
50% BB US HY / 50% Morningstar LSTA Lev'd Ln		1.02	1.97	9.17	11.84	4.13	4.88				4.66
CORE FIXED INCOME		0.97	-0.59	4.78	4.65	0.37	2.31	2.60			2.67
Bloomberg US Aggregate		0.92	-0.78	2.56	1.70	-2.46	0.36	1.54			1.65
CASH		0.46	1.36	3.94	5.03	2.51	2.04	1.54	1.83	2.75	3.35
FTSE Treasury Bill-3 Month		0.46	1.37	4.21	5.52	2.70	2.07	1.39	1.48	2.39	2.97
REAL ESTATE		-0.95	-4.24	-8.92	-10.92	5.97	6.87	8.18	7.41	6.10	6.26
NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^		-5.00	-5.00	-9.68	-12.73	4.01	3.34	6.33	6.25	7.25	6.07
REAL RETURN		3.00	4.75	11.36	14.19	10.91	8.12	5.43			5.42
US CPI +3%		0.85	1.79	4.27	6.15	8.55	6.72	4.35			4.23

Insurance Portfolios Performance

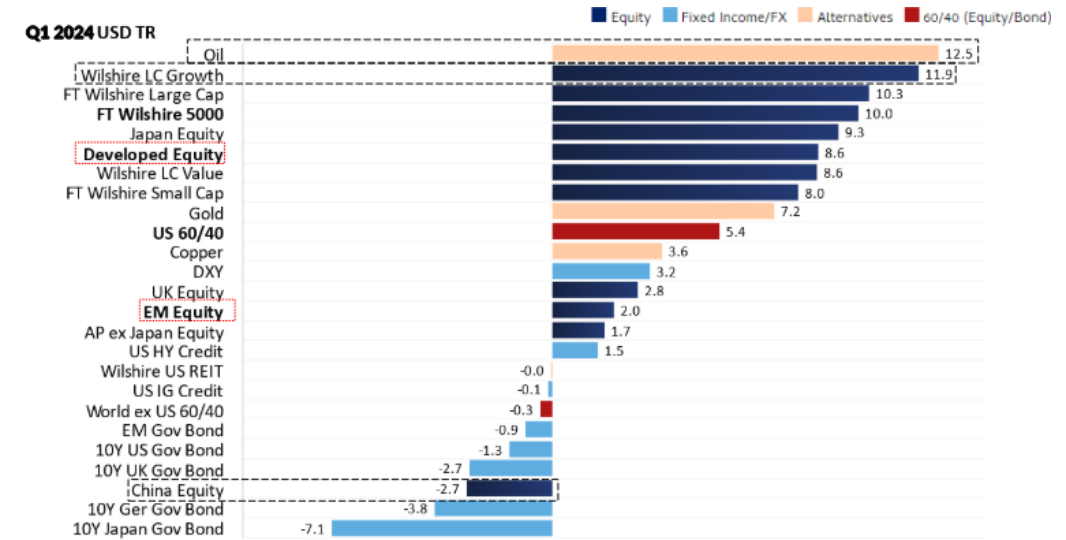
CERS INS & CERS HAZ INS - INSURANCE FUND - PLAN NET RETURNS - 03/31/24											
Plan	Market Value	Month	3 Months	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	ITD
CERS INS	3,563,663,759.68	2.22	4.69	10.33	13.91	6.59	8.19	7.16	6.59	7.18	7.50
KY Ins. CERS Plan IPS Index		2.10	5.27	11.06	15.56	6.32	7.82	6.88	6.56	7.40	7.70
CERS - H INS	1,719,596,964.13	2.23	4.70	10.25	13.83	6.68	8.25	7.22	6.62	7.20	7.52
KY Ins. CERS Haz Plan IPS Index		2.10	5.27	11.06	15.56	6.32	7.82	6.88	6.56	7.40	7.70
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MSCI ACWI		3.14	8.20	16.05	23.22	6.27	10.48	8.38	7.35		8.67
PRIVATE EQUITY		2.01	1.99	6.01	8.69	16.11	12.96	13.28	10.94		10.86
Russell 3000 + 3%(Qtr Lag)		5.71	12.01	19.38	28.96	11.61	18.21	14.61	11.86		11.88
SPECIALTY CREDIT		1.39	2.69	9.10	11.29	6.90	6.55				6.30
50% BB US HY / 50% Morningstar LSTA Lev'd Ln		1.02	1.97	9.17	11.84	4.13	4.88				4.66
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REAL RETURN		2.53	3.96	9.71	12.84	9.50	7.67	5.13			5.09
US CPI +3%		0.85	1.79	4.27	6.15	7.95	6.76	4.40			4.27

Allocations

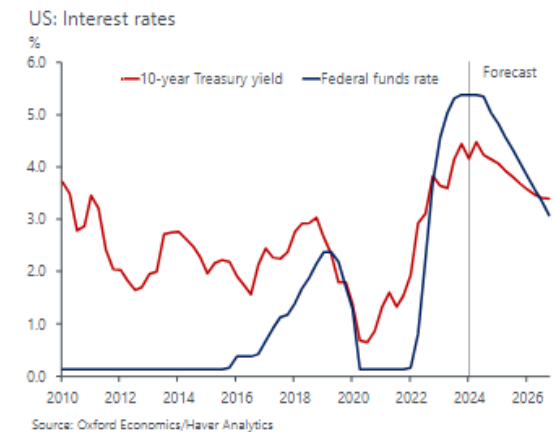
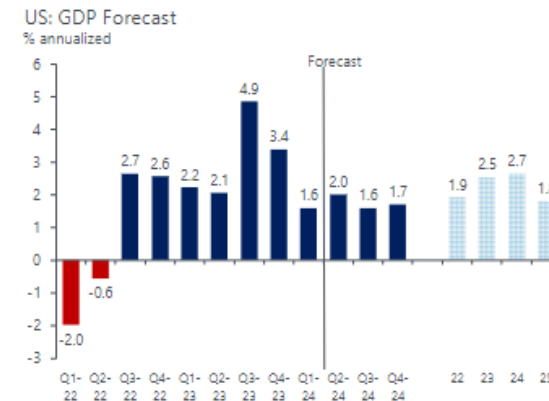


Performance Highlights

- The CERS and CERS-H Pension portfolios performed well during the quarter with returns of 4.64% and 4.67% respectively but were unable to keep pace with the benchmark's return of 5.27%
- The Insurance portfolios produced similar performance with the CERS portfolio returning 4.69% and the CERS-H portfolio returning 4.70%
- Across portfolios, for the quarter the largest contributors to outperformance were the underweight positioning in Real Return and the relative outperformance of the Specialty Credit portfolio
- The most significant detractors of performance were the overweight to Specialty Credit, the proxy for Real Return, as well as the underperformance of the Private Equity portfolio compared to its public markets benchmark
- Despite geopolitical concerns and US rates rising on expectations of a shallower US easing cycle, markets charged higher during the quarter with various markets setting all-time highs on the back of AI optimism and US exceptionalism
- Monetary policy will continue to have an unduly high impact via the valuations discounting mechanism and the interaction between fiscal and monetary policy will be crucial to outcomes for 2024



Source: Wilshire Indexes, FactSet and Refinitiv. Data as of March 29, 2024

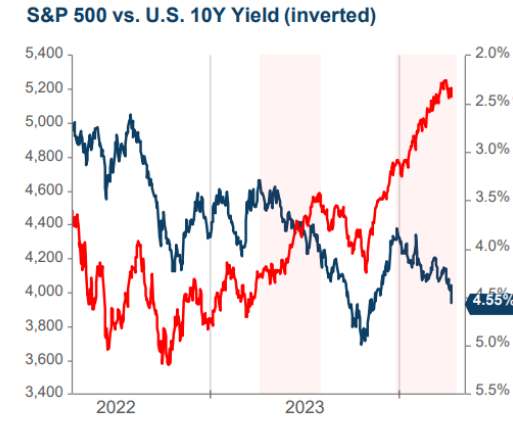


Performance Highlights

Public Equities

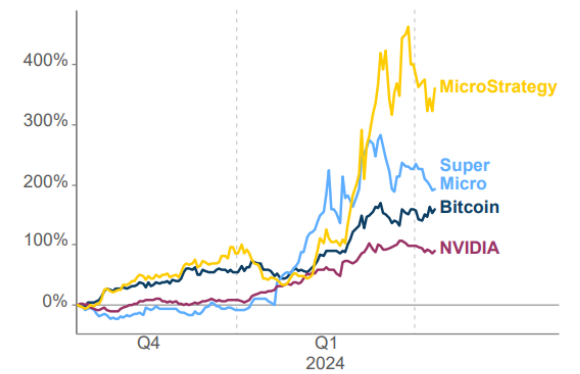
- Public Equity markets pushed higher despite expectations of fewer cuts pointing to higher rates for longer based on signals of economic strength
- Market participation broadened to include cyclicals and hard assets
- Large caps continued to outperform small and midcaps, growth outperformed value
- Stocks are priced close to perfection, meaning a lot has to go right for stocks to move higher, as such it is important to prioritize high quality and practice value discipline
- International Equity markets experienced steady growth during the quarter
- Improved inflation and growth trends, financial conditions eased, improved manufacturing activity, and earnings growth remained strong bolstering international developed markets
- Emerging market equities were mixed, domestic-oriented economies strengthened, while commodity-linked countries were weaker

The S&P and Rates (Inverted) Have Moved in Lockstep Outside of the AI Frenzy Over the Summer and in Q1



AI & Crypto Related Assets Caught Fire in 1Q

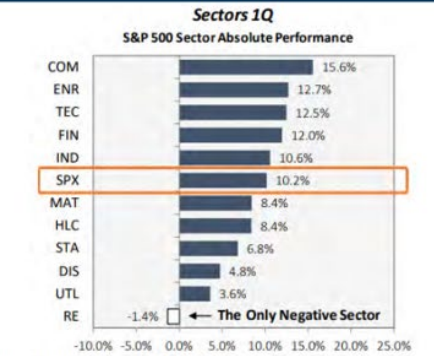
AI & Crypto - Indexed Return



Over 80% of the S&P 500 Above the 200 Day Moving Average



Participation Broadening Beyond Tech into Cyclicals



Performance Highlights

Public Equities

- The Public Equity portfolio returned 8.22% during the quarter versus its benchmark return of 8.20%
- Stock selection was a positive contributor to performance while a relative underweight to US and a relative overweight to Non-US detracted from performance
- The US Equity Portfolio returned 10.33% vs 10.02% for the Russell 3000
- The Non-US Equity Portfolio returned 5.01% vs 4.33% for the MSCI ACWI Ex-US
- In the US portfolio, only 1 strategy did not outperform during the quarter, but it behaved as expected given factor tilts
- In the Non-US portfolio, relative performance was mixed, but skewed positive as strategies with modest style tilts performed better than those with a more aggressive bent

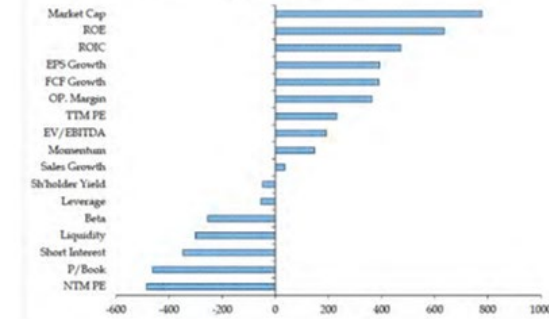
YTD Size and Style Returns (03/31/24)

	Value	Core	Growth
Large	8.99%	10.30%	11.41%
Mid	8.23%	8.60%	9.50%
Small	2.90%	5.18%	7.58%

**Data from FactSet, Russell Indices

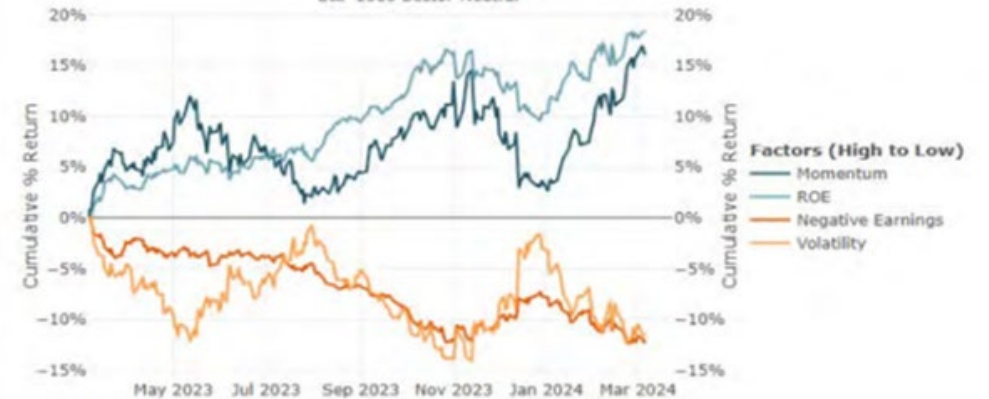
Source: Westfield, FactSet, as of 3/31/2024

R3000 Factor Alpha 2024 YTD Performance
(Alpha = Q1 Rel R3000)



Source: Strategas, as of 3/31/2024

Factor Performance
S&P 1500 Sector-Neutral



Source: Piper Sandler, as of 3/31/2024

Performance Highlights

Core Fixed Income

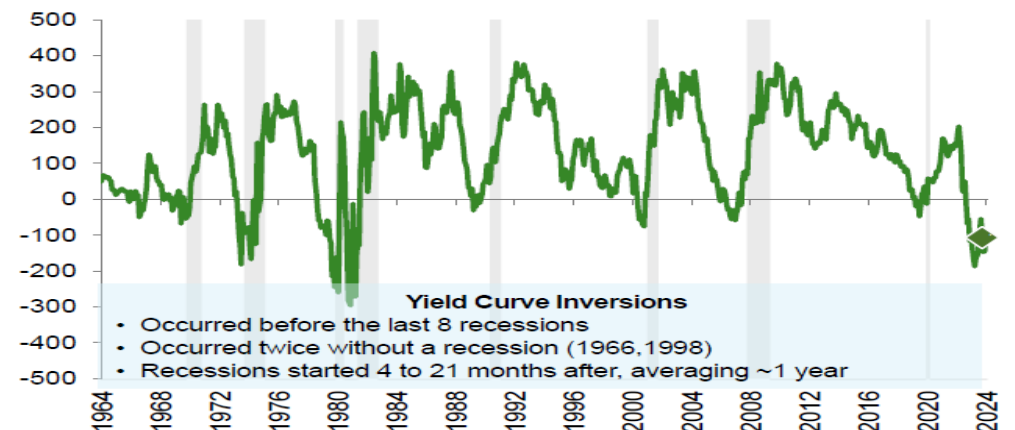
- Treasury rates rose across the curve, leading most fixed income categories to end the quarter with yields around their long-term averages
- Strong corporate and economic trends continued to boost the fundamental outlook for spread sectors and credit spreads tightened further in most categories, ending the quarter at the lower end of historical range
- The Treasury 10-Year minus 3-Month inversion continues with the current level at -117 basis points at the end of the quarter
- Corporate bonds were once again the top performing spread sector, outgaining same duration Treasuries by 89 basis points for the quarter
- Surprisingly, CMBS was the best performer within the securitized sector providing 145 basis points of excess returns followed by ABS providing 54 basis points of excess returns for the quarter



Treasury Yield Curve Spread

— 10-Year minus 3-Month

Basis Points



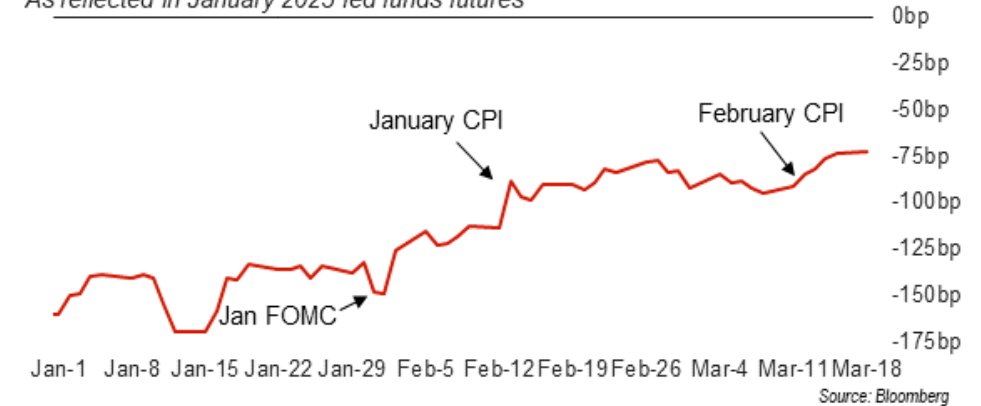
Performance Highlights

Core Fixed Income

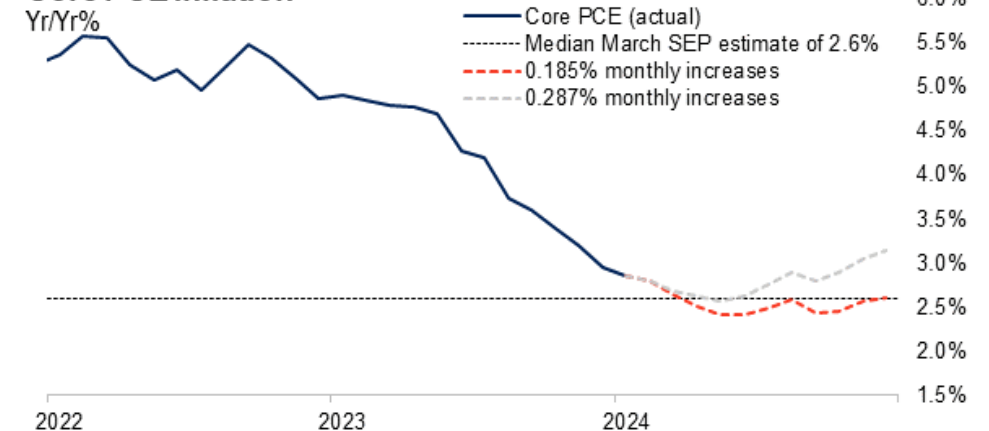
- The Core Fixed Income Portfolio produced a return of -0.59% for the quarter, outperforming the benchmark's return of -0.78%
- The portfolio's relative outperformance was driven by its higher allocation to corporate and ABS sectors compared to the benchmark
- Despite losing ground during the quarter, FYTD the portfolio continued to deliver strong relative performance producing a return of 4.78% and outperforming the Bloomberg Aggregate Index by 222 basis points
- The bond market is trading with less optimism for 2024 policy easing than the start of the year
- Fed funds futures trading have slowly converged with the March dot plot's median projection for three 25 basis point cuts in 2024
- Starting 2024, futures had priced in almost seven 25 basis point cuts
- Because of inflation concerns, all eyes will be on the PCE report for March released at the end of April

Expectations for cumulative 2024 change in fed funds

As reflected in January 2025 fed funds futures



Core PCE Inflation



Performance Highlights

Specialty Credit Fixed Income

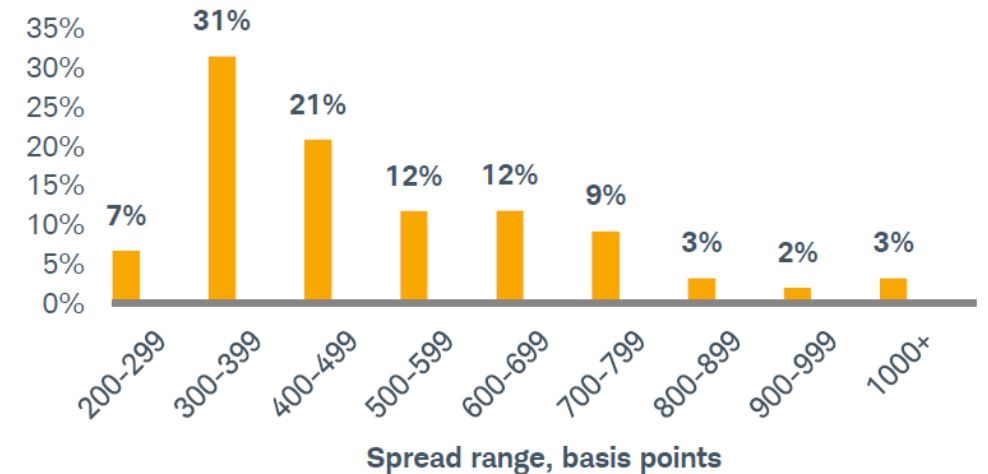
- The Specialty Credit portfolio produced a return of 2.58% for the quarter, outperforming the blended benchmark which returned 1.97%. Fiscal Year to Date the portfolio has continued to perform well, returning 8.93% compared to the benchmark's return of 9.17%
- The public High Yield Bond and Private Credit components of the portfolio were all positive contributors to relative performance, mandates with structured credit and mortgage-backed exposures performed well as spreads tightened
- Over longer periods the portfolio has contributed significant outperformance, beating the benchmark by 258 and 166 basis points over three- and five-year periods respectively
- The High Yield option adjusted spread (OAS) tightened 24 basis points for the quarter and 91 basis points fiscal year-to-date to 299

CREDIT SPREADS HAVE TIGHTENED TO NEAR HISTORICAL LOWS
Bloomberg U.S. High Yield OAS and Cycles



High-yield bond spreads have rarely been this low

Percent of time spend in OAS bucket

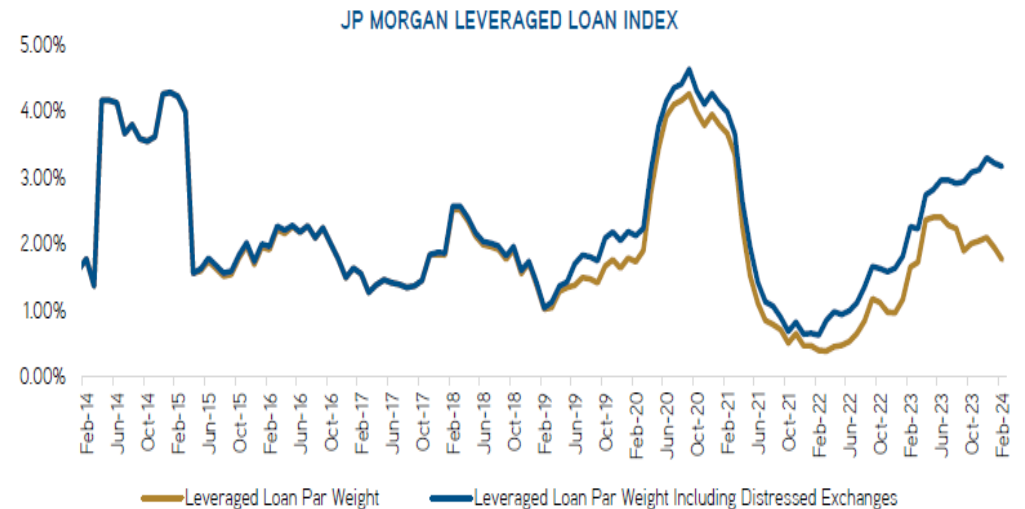
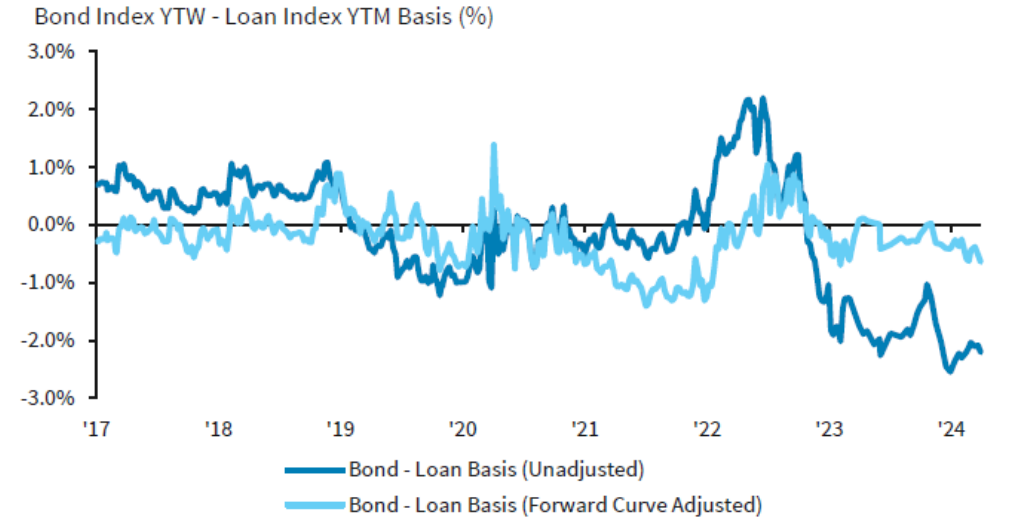


Performance Highlights

Specialty Credit Fixed Income

- With high yield spreads compressing to historically tight levels, the yield offering of loans versus high yield is attractive
- The spot yield pickup between loans and high yield is over 200 basis points, and on a curve-adjusted basis, the differential is still nearly 50 basis points
- Due to the elevated carry, demand for loans continues to increase
- Default activity in the leveraged finance markets subsided in March
- The trailing twelve-month par-weighted default rates for high yield bonds and leveraged loans ended the quarter at 1.67% and 1.77%, respectively, well below historical averages of approximately 3%
- After a relatively low level of M&A in 2023, early 2024 has shown a reversal in the trend within selected industries like Financials, Energy and Technology

Loan Yields vs HY Bonds



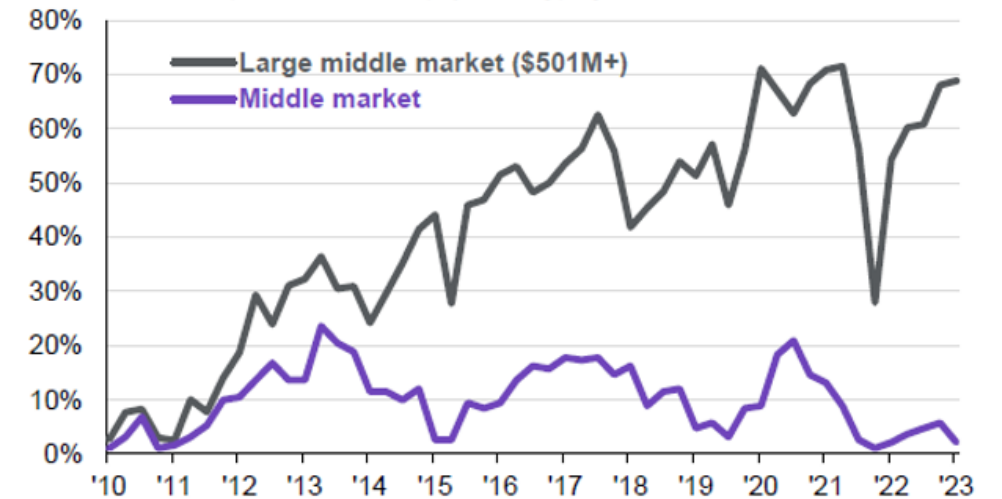
Performance Highlights

Specialty Credit Fixed Income

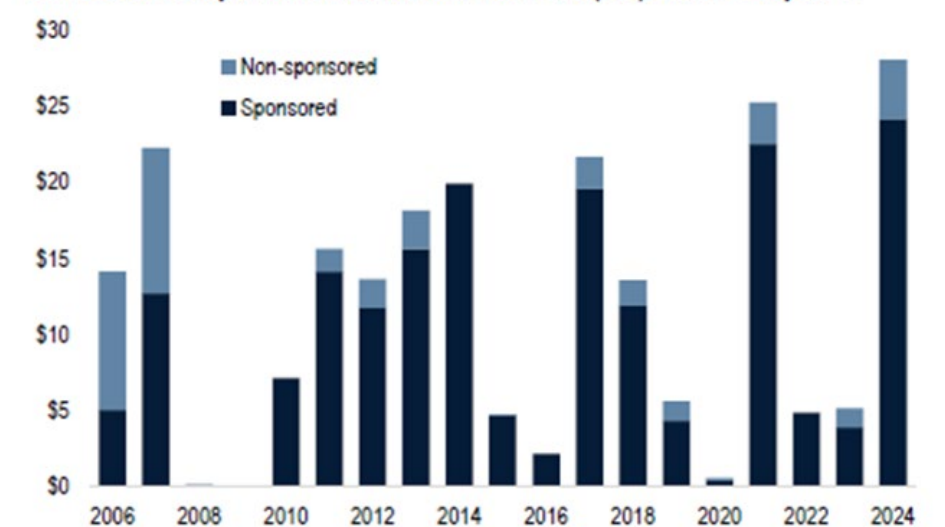
- While volumes in several areas have rebounded sharply, certain sectors have acted as if the easy money era never ended with generally worse credit protections and terms for lenders
- Leveraged loan issuance backing dividend recaps have risen significantly and are on a record pace as traditional deal-exit routes for private equity remain limited
- Recent spread compression in Private Credit has been driven by increased competition among lenders with significant capital to deploy as well as the revitalization of the syndicated loan market
- We continue to view the space as one of the most attractive current investment opportunities, but remain selective in deploying capital favoring managers with strong underwriting that protect capital rather than being volume focused

Covenant-lite loans*

% of total loans, 4Q10 – 4Q23, quarterly, by deal size



Dividend recap institutional loan volume (\$B): Jan. 1–April 17



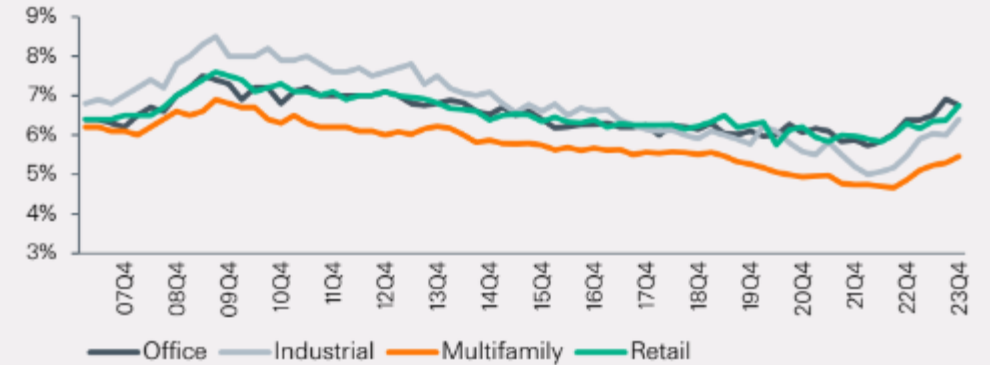
Source: PitchBook | LCD - Data through April 17, 2024

Performance Highlights

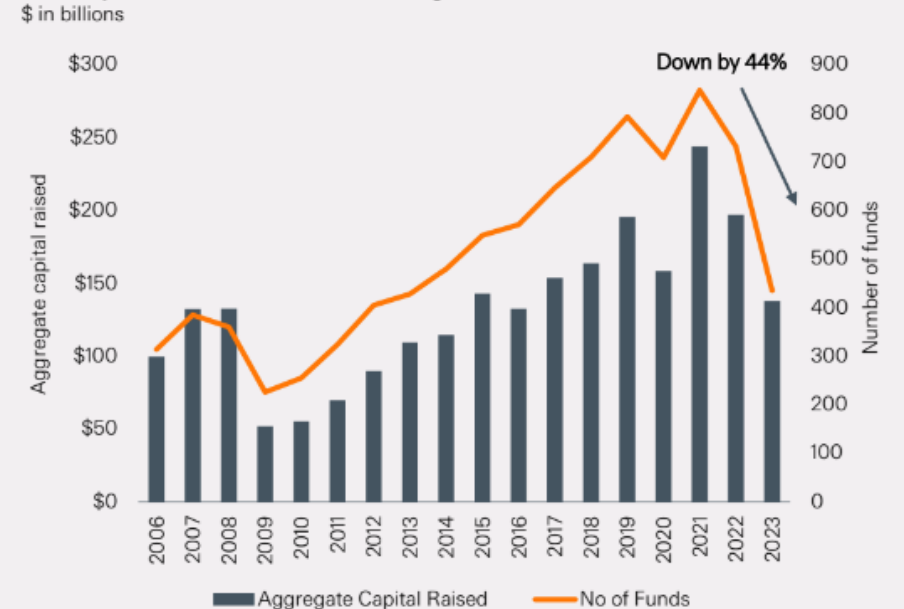
Real Return- Real Estate

- While Real Return markets were able to rebound during the quarter posting positive performance, Real Estate markets continued to struggle, posting their fifth consecutive quarter of negative performance
- The Real Estate portfolio declined 4.24% during the quarter but was able to outperform its benchmark which fell 5.00%
- FYTD the Real Estate portfolio has declined 8.92% while its benchmark has declined 9.68%
- Performance in the Real Estate portfolio has been mixed but overall outperformance has been driven by good performance in the Core strategies and lower exposures to the most stressed parts of the market including the Office sector
- We have maintained an underweight position in Real Estate as we view more pain to come for the asset class with cyclical slowing of fundamentals in healthy sectors, a challenging outlook for office due to work from home and functional obsolescence amid frozen capital markets and repricing ultimately needed to restore yields at normal spreads above now higher interest rates

Median global cap rate trends by property type



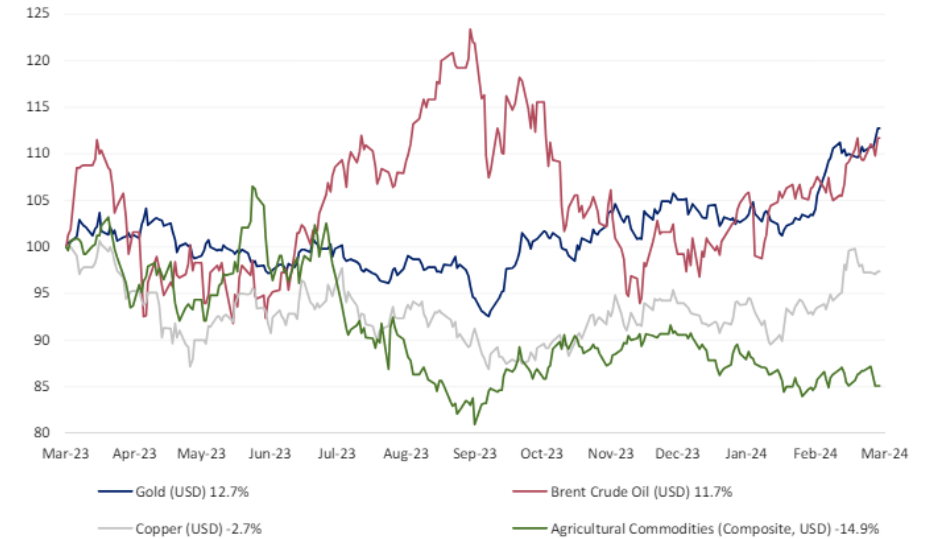
Global private real estate fundraising



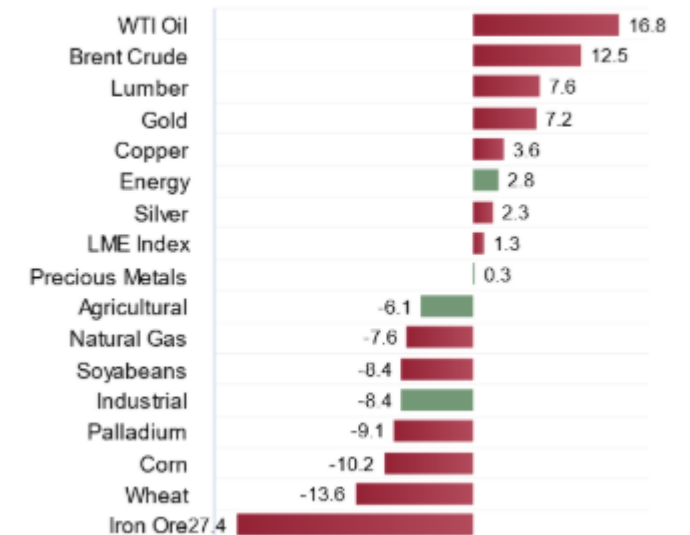
Performance Highlights

Real Return- Real Estate

- The Real Return portfolio performed well during the quarter positing a return of 4.75% which outpaced the 1.79% return of the benchmark
- FYTD the Real Return portfolio has produced a return of 11.36%, significantly outperforming the 4.27% return of its benchmark
- Outperformance has continued to be paced by the portfolio's MLP exposure which returned over 14% for the quarter and is up over 28% FYTD as strong cash flows, disciplined capex and consolidation have continued to benefit the industry
- Broad commodities were up for the quarter with Oil and Gold leading the markets higher
 - Oil was up over 12% for the quarter on elevated geopolitical tensions but remains below the high it reached in September
 - Gold experienced a strong rally in March, setting a new all-time high for the precious metal
 - Agricultural commodities continued to struggle with Wheat down almost 14% for the quarter



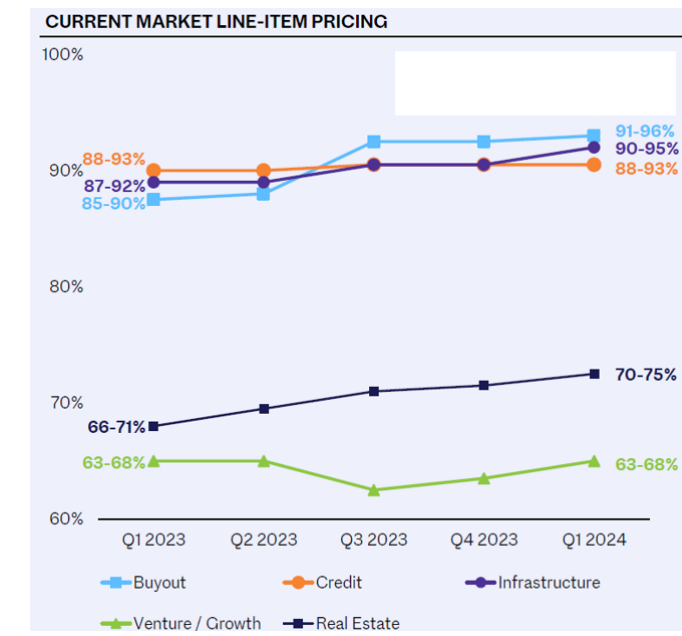
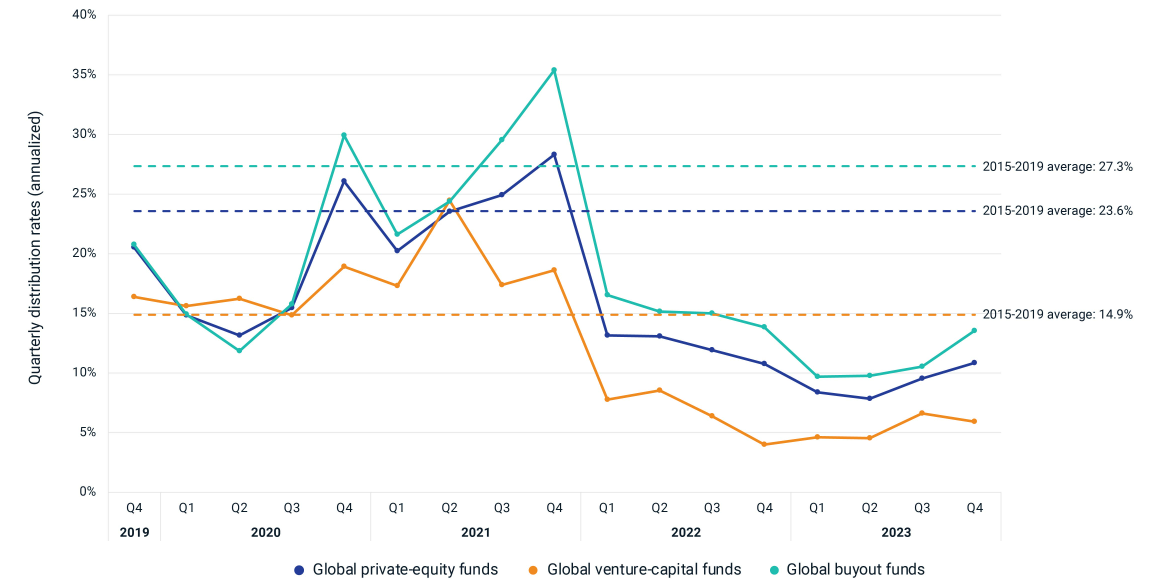
Q1 2024 USD (%)



Performance Highlights

Private Equity

- The Private Equity portfolio produced a return of 1.08% for the quarter, underperforming the benchmark's return of 12.01%
- Performance relative to the benchmark (Russell 3000 + 3% based on a quarter lag) continues to be volatile given the market and timing misalignments as well as the vintage of the investments in the portfolio
- Broad indications of Private Equity investment performance for the quarter indicated performance of around positive 2.5-3% with Buyout Funds outperforming Venture Capital Funds
- While the pace of PE Fund distributions has picked up recently, the very slow pace of distributions remains a concern for LPs in PE funds as newly raised funds continued to call capital while distributions from mature funds have been muted since 2022
- Markets have seen a slight improvement in secondary pricing over the past year but markets have been slow to move overall
- Capital remained scarce as GPs faced a more arduous fundraising environment with constrained capital allocations from LPs as a result of limited distributions and already full allocations



Performance Highlights

Liquidity

- The Fed's overnight reverse repo facility (RRP) has been steadily falling since May 2023. Seen as a gauge of excess reserves in the system and as it approaches zero (likely mid-year) the pace and timing of quantitative tightening (QT) will be reconsidered
- As long as short-maturity bill yields remain above the RRP rate, money will continue flowing out of RRP
- Cash produced a return of 1.36% for the 3-month period ending March 31st, slightly underperforming the 3-Month Treasury Bill benchmark which returned 1.37%
- Fiscal Year-To-Date, cash has earned 3.94% underperforming the benchmark by 27 basis points as market rates (T-Bills) yielded more than deposit rates (Fed funds)
- The FOMC maintained the range for the federal funds target rate at 5.25% to 5.50% during the quarter as it continued to cautiously assess the effects of its policy firming
- The Committee noted that inflation “remains elevated” while acknowledging that it has “eased over the past year”

US: RRP demand still trending lower



RRP award rate minus 1m T-bill yield (3-day MA)

