August 9, 2024

FIXED INCOME MUSINGS

MARKET MOVERS

Summertime Sadness

What happened?

The recent risk-off sentiment in financial markets is attributed to a mix of factors, including doubts about the health of the US economy, induced by the July labor market report which showed fewer jobs added than expected and a fourth consecutive monthly increase in unemployment. Additionally, diminishing excitement over AI advancements, geopolitical uncertainties, shifting US election odds suggesting less pro-growth policies, and the unwinding of Japanese yen carry trade strategies have all played a role in recent market volatility.

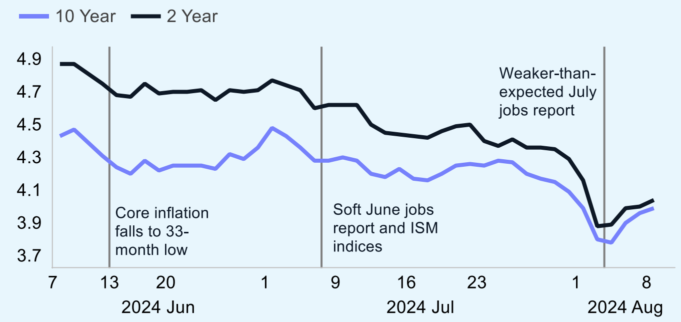
Dissecting the Market Moves

The market's recent movements can be dissected into two phases:

- **Initial risk-off overreaction:** Recession fears spurred expectations of aggressive Fed rate cuts, leading to a government bond rally and a drop in the 10-year US Treasury yield to its lowest level in a year. Perceived safe-haven assets like the Japanese yen saw a 7% appreciation against the US dollar post the US jobs report[1], with strength partially driven by an unwind of carry trades whereby investors were underweighting the Japanese yen to fund exposure in higher carry assets. Fixed income sectors weakened, with spreads widening in both investment grade and high yield credit, while securitized credit spreads remained relatively stable. Equity markets reacted sharply, with the S&P Volatility Index (VIX) more than doubling. For context, the equity market's correction followed one of the longest periods without a 5% drawdown in two decades.

Data-driven US Treasury yield volatility

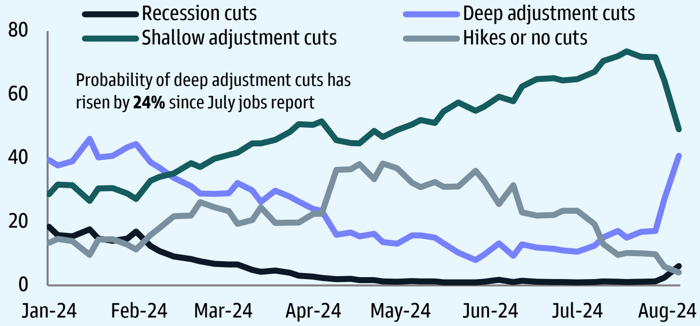
US Treasury yield (%)



Source: Goldman Sachs Asset Management, Macrobond. As of August 8, 2024.

Raised expectations for sharp Fed rate cuts

Option-implied probability for year-end 2024 SOFR rate (%)



Source: Goldman Sachs Asset Management. As of August 6, 2024. Secured overnight financing rate (SOFR). Year-end 2024 SOFR assumed ranges: Recession cuts: below 2.75%, deep adjustment cuts: 2.75-4.25%, shallow adjustment 4.25-5.25%.

Past performance does not guarantee future results, which may vary. The economic and market forecasts presented herein are for informational purposes as of the date of this presentation. There can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this presentation. [1] Denotes change from July 29, 2024 to August 5, 2024.

MARKET MOVERS (CONTINUED)

- **Subsequent partial correction:** Recent economic data, including a rebounding ISM services report and lower-than-expected jobless claims, have eased recession concerns. Over the course of the week, the 10-year Treasury yield has returned to pre-jobs report level and spread sectors have recovered some prior weakness. For example, US high yield spreads have unwound around 40% of their recent widening.

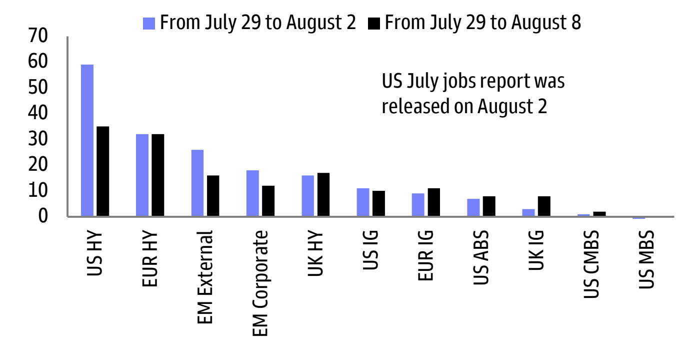
Stay Active, Stay Invested

In our view, recent market fears are overstated, and our investment strategy remains aligned with our Q3 Fixed Income Outlook: Sound Fundamentals, Narrow Margins.

1. **Navigating Easing Cycles.** Central bank easing cycles have commenced and are expected to expand, favoring overweight exposure to front-end rates. That said, to take advantage of the recent rally in sovereign bonds, we've shifted from an overweight to a neutral stance on front-end rates in both the US and Europe. Additionally, we've scaled back our exposure for a steeper US yield curve, pending more definitive indicators of an economic slowdown and a decrease in front-end yields.
2. **Capturing Carry-Driven Returns.** Sound credit fundamentals and a positive technical environment indicate that credit spreads should remain stable, allowing income (carry) to be the primary return driver. However, we've noticed an increased sensitivity of credit spreads to macroeconomic changes, underscoring the importance of active security selection amidst a complex economic landscape, political uncertainties, and tight valuations. Leveraging the recent market shifts, we've increased our investment grade credit exposure at favorable levels.
3. **Going Global.** Divergence in the pace of policy actions, coupled with policy uncertainties, are broadening the spectrum of global investment opportunities, including cross-market interest rate perspectives. While our ECB outlook is stable, a significant slowdown in the Euro area or US could lead to deeper, quicker rate cuts. Our belief in easing has strengthened for the BoC and BoE due to disinflation and a cooling labor market. In emerging markets (EM), conditions are aligning for more decisive rate cuts, with softer growth, inflation at pre-pandemic levels, and high real policy rates. In addition, the impending Fed easing cycle and shifts in US election polls which imply reduced tariff risks also support the case for monetary easing across EMs. Conversely, Japan's domestic conditions, like wage growth above 5%, support further rate hikes, reinforcing our underweight stance on Japanese rates.

Partial unwind of the recent spread widening

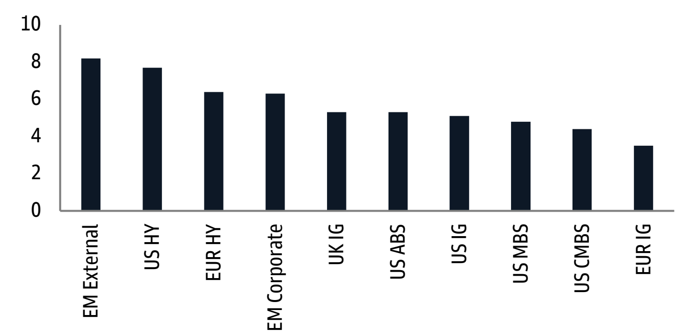
Change in spreads (basis points)



Source: Goldman Sachs Asset Management, Macrobond. As of August 8, 2024.

Attractive income across fixed income sectors

Fixed income sector yields (%)



Source: Goldman Sachs Asset Management, Macrobond. As of August 8, 2024.

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RECESSION WATCH

Bottom line: Despite the recent uptick in unemployment, broader economic indicators lean more towards an ongoing expansion of the US economy, rather than a recession. This 'Recession Watch' feature delves into the primary concerns surrounding recession risks, shedding light on why we think the outlook remains relatively optimistic.

The labor market is cooling, not collapsing

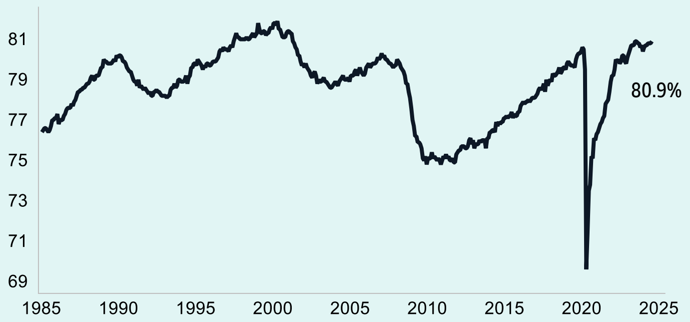
The unemployment rate rose 0.2% to 4.3% in July and is up 0.5% year-over-year on a three-month average basis. Although such an increase has historically signalled a recession[1], as per the Sahm rule, the current circumstances differ for a few reasons. The rise in unemployment is partly due to a substantial increase in labor supply, with immigration surging by approximately 1.8 million above the pre-pandemic trend in 2022 and 2023[2]. New workforce entrants can take time to secure employment, temporarily boosting unemployment figures. Additionally, about 70% of the unemployment rate increase in July is attributed to temporary layoffs, which could be weather-related and may partially reverse. Furthermore, the three-month average payroll growth remains strong at 170k, and recent data shows a significant decrease in initial jobless claims. The employment-to-population ratio for prime-age workers is at its highest since 2001. It's also notable that the current unemployment rate is relatively low historically, having been lower less than a quarter of the time since records began in 1948. In summary, the labor market is cooling down, but it is not indicative of large-scale layoffs that could trigger a demand collapse and a cycle of further layoffs.

Growth is slowing, not declining

The Conference Board Leading Economic Indicator, which typically precedes changes in the business cycle by about seven months, has shown a downward trend since early 2022, suggesting a potential recession by the end of that year. Contrary to this prediction, the US economy has

Employment to population ratio at highest level in 23 years

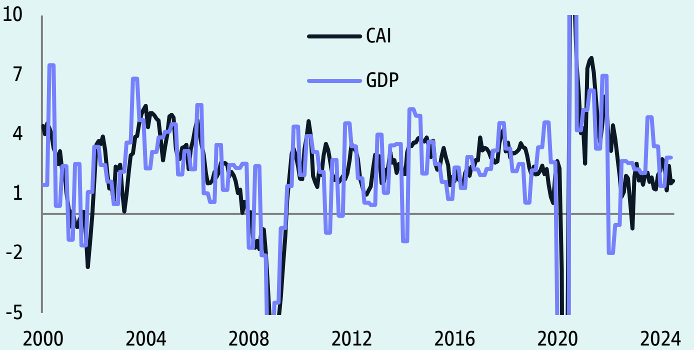
US employment to population ratio of workers aged 25-54 (%)



Source: Goldman Sachs Asset Management, Macrobond, US Bureau of Labor Statistics. As of July 2024.

Our CAI indicates the US economy is still growing

Quarterly US GDP growth (%)



Source: Goldman Sachs Asset Management. Our Current Activity Indicator (CAI) offers real-time economic snapshots by analyzing over 300 high-frequency activity data points, expressed in GDP terms, to help identify timely economic shifts. CAI is as of July 2024; GDP is as of June 2024. Amended x-axis to account for outsized moves during the pandemic period.

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RECESSION WATCH (CONTINUED)

demonstrated resilience with the addition of over 8 million jobs since then and a 3.1% expansion in real GDP in 2023. The gap between the Leading Economic Indicator and actual economic performance is likely due to two key factors. Firstly, manufacturing sector indicators, which make up about 40% of the Conference Board index, have become less significant for US growth and employment over time, particularly after the pandemic, which saw a shift in spending towards services following lockdowns. Secondly, the consumer sentiment component of the indicator has been influenced by negative media headlines, failing to reflect real spending patterns. In contrast, our Current Activity Indicator (CAI), which uses a wider range of high-frequency data and places less emphasis on manufacturing and more on services, housing, and labor market indicators, shows the US economy is growing at about 1.2%. This growth rate is a deceleration from the 2.8% annualized rate in the second quarter and is slightly below potential growth estimates, but still above recessionary levels.

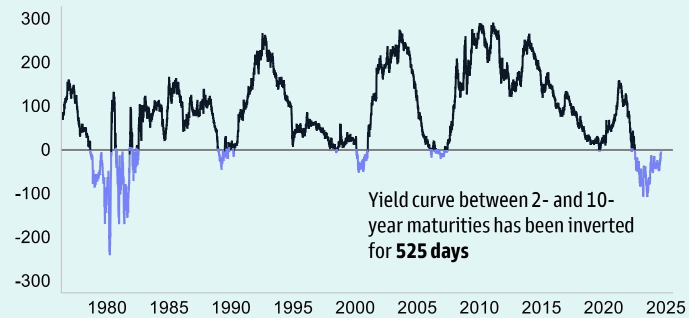
A note on yield curve: Inversion of the yield curve, often a recession indicator, suggests high recession odds according to simple regression models. The 2-year and 10-year maturity segment has been inverted for 525 days, the longest stretch since the early 1980s[1]. However, the economic performance since the inversion indicates that the yield curve may be overstating the recession risks. It may also be influenced by Fed quantitative easing in recent years and could also signal expectations for Fed easing in response to a 'soft landing' rather than a recession.

Disinflation creates room for the Fed to ease policy

Inflation has resumed its downward trend in the second quarter, after an early-year setback. Annual core PCE inflation, the Fed's preferred measure, is now at 2.6%, a decrease from a cycle peak of 5.6%. Underlying trends are also showing positive signs. For instance, shelter inflation, the largest component of CPI inflation is now decelerating

Yield curve inversion has been a weak recession signal

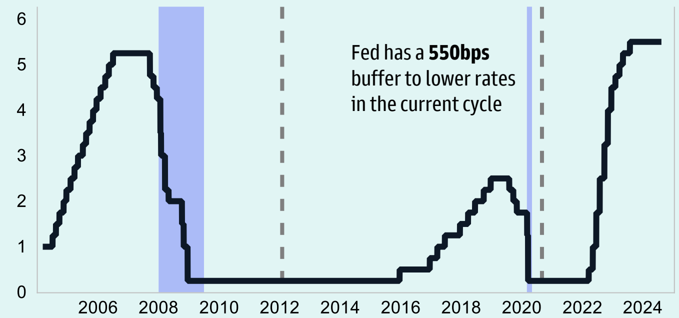
Spread between 10-year and 2-year US Treasury yield curve (basis points)



Source: Goldman Sachs Asset Management, Macrobond. As of August 8, 2024.

The Fed has ample room to cut rates in this cycle

Fed funds rate (%)



Source: Goldman Sachs Asset Management, Macrobond. As of August 2024. Purple shaded regions denote recessions based on NBER definition. The first shaded region denotes the Global Financial Crisis and the second denotes the Covid-19 pandemic.

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RECESSION WATCH (CONTINUED)

as the catch-up of existing rents to new rents is almost complete. Wage growth has also slowed significantly, with the Goldman Sachs wage tracker hovering around 4% year-over-year. Additionally, prices for used and new cars, which were high due to supply shortages, are beginning to normalize.

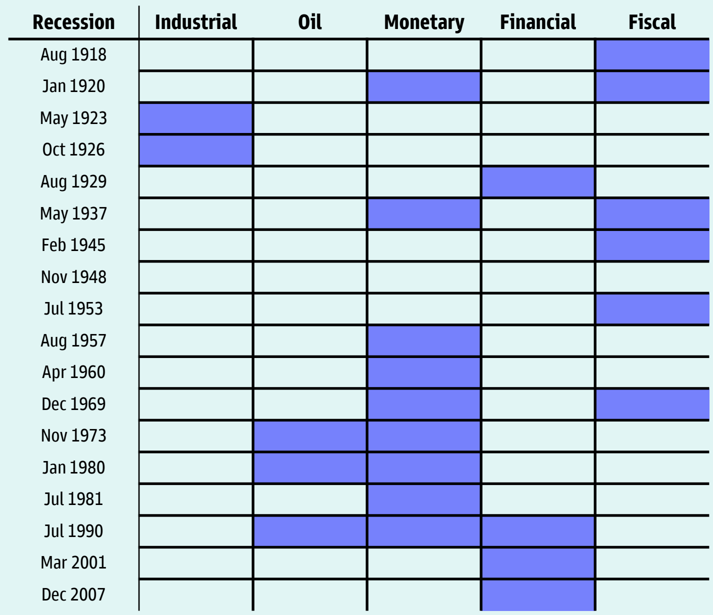
Improving inflation along with a higher unemployment rate suggests a 50-basis point rate cut by the Fed in September is plausible, followed by 25 basis point cuts in both November and December. It's also worth noting that the Fed has considerable leeway to implement rate cuts to bolster the economy if needed, with 550 basis points of room currently, compared to only 175 basis points before the pandemic and 525 basis points before the Global Financial Crisis[1]. This flexibility provides the Fed with ample capacity to respond to any sharp tightening in financial conditions or further softening of the labor market.

We don't see evidence of widespread financial imbalances

Historically, long periods of economic growth can lead to excessive leverage and imbalances, which were the primary causes of the three recessions before the pandemic. Today, key indicators of financial health in the private sector, such as interest coverage ratios, suggest that credit metrics, while slightly weaker, are still adequate. Leverage and credit growth for households and corporations are under control, and US households have seen an improvement in their balance sheets due to rising asset prices, with the net worth-to-disposable income ratio remaining near record highs across all income levels.

However, we are aware of specific areas of vulnerability. Consumer credit delinquencies have increased, potentially reflecting a riskier borrower pool, higher interest expenses, and the resumption of student loan payments. This could suggest that some lower-income households are nearing their borrowing limits. Despite this, we expect only a modest increase in delinquency rates, unless there is an unforeseen downturn in the labor market. In addition, the

Key drivers of US recessions since World War I



Source: Goldman Sachs Global Investment Research – US Economics Analyst: Learning from a Century of US Recession (January 20, 2019).

shift to higher interest rates and structural changes have stressed certain regional banks, office commercial real estate, and specific companies in the CCC-rated segment of the high yield market, such as Telecommunications and Media. The rise in distressed exchanges in the leveraged credit market, particularly among companies with floating-rate debt facing faster increases in interest costs, is also being monitored.

Overall, we are watchful for unexpected financial vulnerabilities, like those seen in the UK Gilt market in October 2022. However, current indicators do not suggest widespread financial imbalances within the private sector that typically precede credit crunches and recessions. The issues observed appear to be more isolated rather than systemic at this stage, highlighting the importance of diversified portfolio exposures and active security selection.

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CENTRAL BANK SNAPSHOT

	Interest Rate Policy	Balance Sheet Policy	Outlook	Our outlook relative to market-implied pricing
Fed	Federal funds rate: 5.25-5.5% Last change: July 2023 (+25bps) Hiking cycle duration: 17 months Rate at the start of latest hiking cycle: 0.25%	The Fed has been reducing its balance sheet passively since June 2022. The FOMC decided to decrease the pace of this reduction starting in June 2024, with the monthly runoff scaling down from $60 billion to $25 billion.	We think the Fed will initiate a 50bps rate cut in September followed by 25bps in November and December on the back of recent softening in labor market data Anticipated rate at end-2024: 4.25-4.5% Neutral rate estimate: 2.5-3.0%	Slightly dovish
ECB	Deposit facility rate: 3.75% Last change: June 2024 (-25bps) Hiking cycle duration: 15 months Rate at the start of the latest hiking cycle: -0.5%	The ECB started reducing its balance sheet in March 2023 and ceased reinvestments from its APP in July 2023. The reinvestment of proceeds from maturing securities under the PEPP will gradually decrease starting July 2024 and conclude in December 2024.	We think the ECB will deliver a 25bps rate cut in September and December. However, further downside growth risks could prompt larger and faster cuts. Anticipated rate at end-2024: 3.25% Neutral rate estimate: 2.0-3.0%	Slightly dovish
BoE	Bank Rate: 5.0% Last change: August 2024 (-25bps) Hiking cycle duration: 21 months Rate at the start of the latest hiking cycle: 0.1%	The BoE has actively been reducing its balance sheet since November 2022. While we expect the passive reduction to continue in conjunction with rate cuts, active bond sales may be paused.	We anticipate a second rate cut in November given weak data signals including a loosening labor market and ongoing disinflation. Anticipated rate at end-2024: 4.75% Neutral rate estimate: 2.75-3.25%	Dovish
BoJ	Policy deposit rate: 0.25% Last change: July 2024 (+15bps) Duration of negative rates: 98 months Rate at start of the latest hiking cycle: -0.10%	The gradual reduction plan for JGB purchase will be from around ¥6 tn per month to around ¥3 tn over 18-months. Reduced bond buying will initially concentrate on intermediate maturity bonds.	We anticipate a 25bps hike at every quarterly economic forecast meeting. That said, we flag risks of a slower hiking cycle if incoming data tilt to the downside. Anticipated rate at end-2024: 0.5% Neutral rate estimate: 0.75-2.0%	Hawkish

Source: Goldman Sachs Asset Management. As of August 5, 2024. Abbreviations: Quantitative Easing (QE), Quantitative Tightening (QT), Yield Curve Control (YCC), Negative Interest Rate Policy (NIRP) Pandemic Emergency Purchase Program (PEPP), Asset Purchase Program (APP), Targeted Longer-Term Refinancing Operations (TLTROs), Japanese Government Bond (JGB). The economic and market forecasts presented herein are for informational purposes as of the date of this document. There can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this document. The **neutral rate estimates** come with a degree of uncertainty. They are derived from a combination of fundamental, market, and model-based assessments. The ranges for the Fed, BoE and BoJ reflect the diversity of these estimates. For the ECB, the range represents the spectrum of policymakers' estimates, which has been adjusted based on our discretionary perspective. Estimated neutral rates by central banks are as follows: BoE 2-3%, BoJ 1-2.5%, Fed 2.4-3.8%, ECB 1.5-3%.

OUR LATEST THINKING

Fixed Income Musings

Week	In Focus
August 2, 2024	• BoJ, Fed and BoE recap • July in review • Ongoing growth divergence in China and further policy support • India fiscal budget recap
July 26, 2024	• US inflation check-in • Growth among DM economies • BoC delivers back-to-back cuts • Top market movers of the week
July 19, 2024	• UK data send mixed signals • ECB meeting recap • Navigating the US elections • Fixed Income Q3 Outlook overview • Sustainability Spotlight
July 12, 2024	• US disinflation still on track • UK economy rebounds • Recent Fed chatter • Factors impacting Treasury yields
July 5, 2024	• European inflation slowing • US economy cools • H2 in review

Market Fears Are Overstated: Stay Active Amid Volatility

August 6, 2024

Sound Fundamentals, Narrow Margins

Fixed Income Outlook 3Q 2024
July 18, 2024

Asset Management Perspectives: Cutting Through the Complexity

July 30, 2024

SOVEREIGN BOND YIELDS (%)

	Latest (%)	Year-to-date Change (bps)	1-Year Change (bps)	Last 10-year Percentile
US 2 Year	4.0	-19	-72	83
US 10 Year	4.0	11	-10	90
US 2-10 Slope	0.0	30	62	21
US Treasury 10-Year Inflation-Protected	1.9	15	19	92
Germany 2 Year	2.4	1	-57	84
Germany 10 Year	2.3	25	-32	86
Japanese 10 Year	0.8	22	23	96
UK 10 Year	4.0	39	-44	89
Chinese 10 Year	2.2	-36	-45	0

Source: Macrobond, Goldman Sachs Asset Management. As of 09 August 2024.

EXCHANGE RATES

	Latest	Year-to-date Change (%)	1-year Change (%)
Euro (€ per $)	0.92	1.1	0.2
British Pound (£ per $)	0.78	-0.2	-0.4
Japanese Yen (¥ per $)	146.71	4.0	2.5
Chinese Yuan Renminbi (CNY per $)	7.17	1.2	-0.7

Source: Macrobond, Goldman Sachs Asset Management. As of 09 August 2024.

FIXED INCOME SECTOR YIELDS (%)

	Latest (%)	Last 10 year average (%)	Year-to-date change (bps)	Last 10 year Percentile
US Investment Grade	5.1	3.6	-0.4	82
European Investment Grade	3.5	1.5	-4.3	81
UK Investment Grade	5.3	3.2	14.7	83
US High Yield	7.7	6.6	4.0	72
European High Yield	6.4	4.4	8.6	82
EM External	8.2	6.3	35.6	84
EM Corporate	6.3	5.4	-38.0	75
US Agency MBS	4.8	2.9	7.4	89
US ABS	5.3	2.8	-35.3	81
US Munis	3.5	2.4	16.6	86
US CMBS	4.4	2.7	-12.3	84

Source: Macrobond, Goldman Sachs Asset Management, ICE BofAML and J.P. Morgan. As of 09 August 2024.

FIXED INCOME SECTOR SPREADS (BASIS POINTS)

	Latest (bps)	Last 10 year average (bps)	Year-to-date change (bps)	Last 10 Year Percentile
US Investment Grade	105	129	1	22
European Investment Grade	120	122	-15	56
UK Investment Grade	119	149	-15	16
US High Yield	348	440	14	19
European High Yield	379	404	-16	46
EM External	411	379	28	74
EM Corporate	256	338	-32	4
US Agency MBS	43	36	-5	63
US ABS	103	96	-19	69
US CMBS	46	53	-5	24

Source: Macrobond, Goldman Sachs Asset Management, ICE BofAML and J.P. Morgan. As of 09 August 2024.

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Investments in fixed income securities are subject to the risks associated with debt securities generally, including credit, liquidity, interest rate, prepayment and extension risk. Bond prices fluctuate inversely to changes in interest rates. Therefore, a general rise in interest rates can result in the decline in the bond's price. The value of securities with variable and floating interest rates are generally less sensitive to interest rate changes than securities with fixed interest rates. Variable and floating rate securities may decline in value if interest rates do not move as expected. Conversely, variable and floating rate securities will not generally rise in value if market interest rates decline. Credit risk is the risk that an issuer will default on payments of interest and principal. Credit risk is higher when investing in high yield bonds, also known as junk bonds. Prepayment risk is the risk that the issuer of a security may pay off principal more quickly than originally anticipated. Extension risk is the risk that the issuer of a security may pay off principal more slowly than originally anticipated. All fixed income investments may be worth less than their original cost upon redemption or maturity.

The risk of foreign currency exchange rate fluctuations may cause the value of securities denominated in such foreign currency to decline in value. Currency exchange rates may fluctuate significantly over short periods of time. These risks may be more pronounced for investments in securities of issuers located in, or otherwise economically tied to, emerging countries. If applicable, investment techniques used to attempt to reduce the risk of currency movements (hedging), may not be effective. Hedging also involves additional risks associated with derivatives.

Emerging markets investments may be less liquid and are subject to greater risk than developed market investments as a result of, but not limited to, the following: inadequate regulations, volatile securities markets, adverse exchange rates, and social, political, military, regulatory, economic or environmental developments, or natural disasters.

Collateralized loan obligations ("CLOs") involve many of the risks associated with debt securities, including interest rate risk, credit risk, default risk, and liquidity risk. The risks of an investment in a CLO also depend largely on the quality and type of the collateral and the class or "tranche" of the CLO. There is the possibility that the strategy may invest in CLOs that are subordinate to other classes. CLOs also can be difficult to value and may be highly leveraged (which could make them highly volatile). The use of CLOs may result in losses.

When interest rates increase, fixed income securities will generally decline in value. Fluctuations in interest rates may also affect the yield and liquidity of fixed income securities.

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High-yield, lower-rated securities involve greater price volatility and present greater credit risks than higher-rated fixed income securities.

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Sector Spread Indexes

US Investment Grade Corporates: ICE BofAML US Corporate Index

US High Yield Corporates: ICE BofAML US Corporate High Yield Index

European Investment Grade Corporates: ICE BofAML Euro Corporate Index

European High Yield Corporates: ICE BofAML Euro High Yield Index

ABS: ICE BofAML US Fixed Rate Asset-Backed Securities Index

MBS: ICE BofAML US Agency Mortgage-Backed Securities Index

CMBS: ICE BofAML US Fixed Rate Commercial Mortgage-Backed Securities Index

EM External Debt: J.P. Morgan, EMBI Global Diversified Face Constrained Index

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