Note: The following is a redacted version of the original report published October 13, 2026 [31 pgs]. All company mentions by GS analysts are illustrative and should not be interpreted as investment recommendations.

Goldman Sachs Research

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TOP *of* MIND

HIGHER BOND YIELDS: HOW CONCERNING?

Global bond yields have risen to multi-decade highs, yet growth and markets have remained remarkably resilient. But with some pressures beginning to emerge (e.g. in European sovereign bond markets), can this resilience last, or will more vulnerabilities be revealed? We ask the IMF's Tobias Adrian, Moody's Analytics' Mark Zandi, and GS economists. Adrian is relatively sanguine about the economy's resilience, though notes downside risks, while GS economists expect only a modest growth drag from higher rates, but a more consequential one if yields remain near current or higher levels. Zandi is generally more concerned, describing the US economy as vulnerable rather than resilient, and sees one-in-three odds of the economy going off the rails. Meanwhile, GS strategists and analysts are not especially concerned about banks or markets more broadly, but warn that further increases in yields or rate volatility could test risk assets. Key to watch: whether the increasingly interconnected and leveraged AI investment boom can continue to withstand higher rates.



INTERVIEWS *with...*

Tobias Adrian, Special Advisor and former Director of Monetary and Capital Markets, IMF

"The global economy has demonstrated considerable resilience in the face of multiple severe shocks, and I would not be surprised if it continues to shrug off higher yields, provided they do not keep rising sharply in a disorderly fashion. At the same time, I do worry about downside risks."

Mark Zandi, Chief Economist, Moody's Analytics

"Many continue to describe the US economy as resilient, which I find fascinating, bordering on frustrating. In my view, the right word is vulnerable... That shift in perspective completely changes how one evaluates the risks ahead."

ALSO *inside...*

Rising rates: key questions answered | William Marshall, GS Rates Strategy Research

A modest US growth drag | Pierfrancesco Mei, GS US Economics Research

Higher rates & DM growth: rules of thumb | Joseph Briggs and Johan Allen, GS Global Economics Research

Higher rates, greater US fiscal pressure | David Mericle and Pierfrancesco Mei, GS US Economics Research

Rates won't derail equities, for now | Ben Snider, GS US Portfolio Strategy Research

Rates risk in credit | Amanda Lynam, GS Credit Strategy Research

When to yield to bonds | Christian Mueller-Glissmann and Andrea Ferrario, GS Asset Allocation Research

Q&A: impact of higher rates on financials | Richard Ramsden and Alexander Blostein, GS Equity Research

Q&A on US Treasury buybacks | Isabella Rosenberg, GS Rates Strategy Research

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The Goldman Sachs Group, Inc.

Macro news and views

We provide a brief snapshot on the most important economies for the global markets

US

Latest GS proprietary datapoints/major changes in views

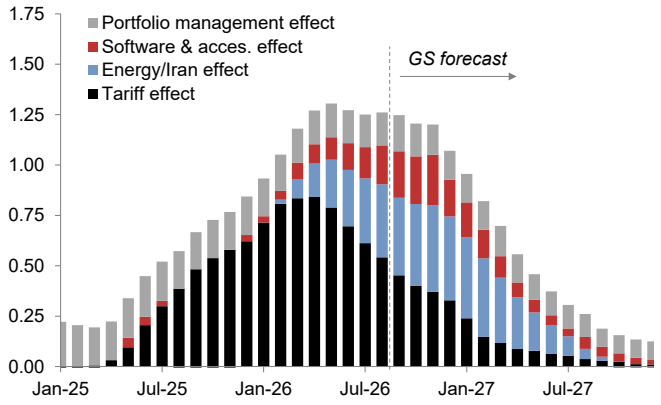
- We lowered our 2026 core PCE inflation forecast to 3.0% (Q4/Q4, from 3.2%) after larger-than-expected downward revisions to yoy core PCE growth, which partly led us to push back our forecast for the next Fed hike to Dec (from Oct).

Datapoints/trends we're focused on

- US economic growth, which has remained resilient this year despite higher rates and higher oil prices, though the economy is bifurcated, with strength among upper-income consumers and AI-exposed sectors.
- US midterm elections, where prediction markets imply relatively high odds of a Democratic sweep as voters remain focused on higher gasoline prices.

A fading US inflation impulse

Effects of temporary factors on yoy core PCE inflation, pp



Source: Bureau of Economic Analysis, Goldman Sachs GIR.

Japan

Latest GS proprietary datapoints/major changes in views

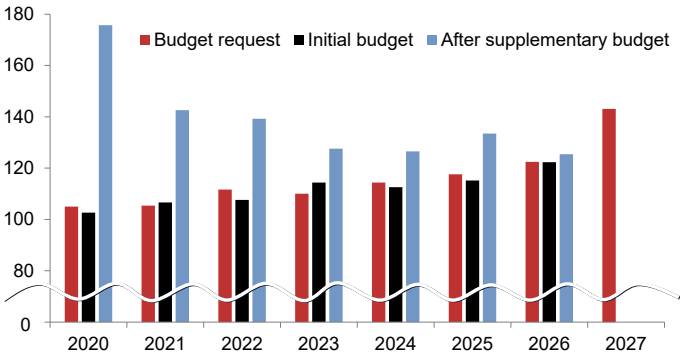
- No major changes in views.

Datapoints/trends we're focused on

- BoJ policy; we continue to expect the next rate hike in January 2027, though the timing could be brought forward in response to heightened inflation risks.
- FY2027 Ministry of Finance budget request, which increased significantly from FY2026 to a record ¥143tn and includes larger-than-usual JGB issuance.
- Japan real wages, which have maintained positive yoy growth since the beginning of the year.
- Japan consumer sentiment, which declined in September.

Japan's ever-increasing budget requests

General account budget requests, initial budgets, and supplementary budgets by fiscal year, ¥tn



Source: Ministry of Finance, Goldman Sachs GIR.

Europe

Latest GS proprietary datapoints/major changes in views

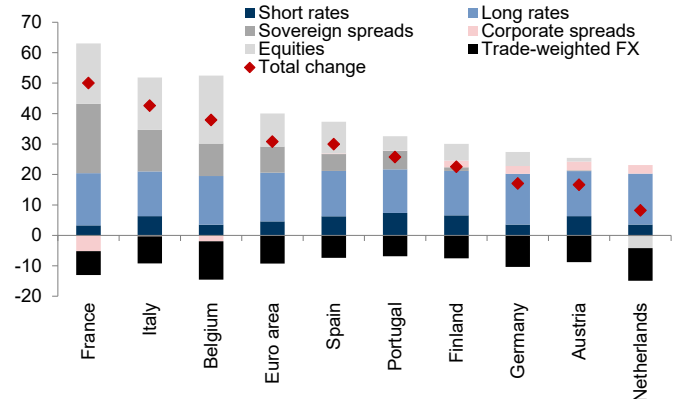
- No major changes in views.

Datapoints/trends we're focused on

- Positive growth spillovers from the global AI capex boom, which we think should continue into 2027.
- UK growth, which we expect to slow in the next two quarters.
- French elections; frontrunner Le Pen's proposal to address fiscal challenges is likely to face implementation challenges.
- Italy's 2027/2028 fiscal deficit, which was revised up significantly, weakening the country's debt outlook.
- Rising sovereign stress, which has tightened EA financial conditions, reducing the urgency for the ECB to hike rates beyond Dec, when we expect the last hike.

Tighter EA financial conditions, limited ECB hikes

Change in FCI since July 3, 2026, bp



Source: Goldman Sachs GIR.

Emerging Markets (EM)

Latest GS proprietary datapoints/major changes in views

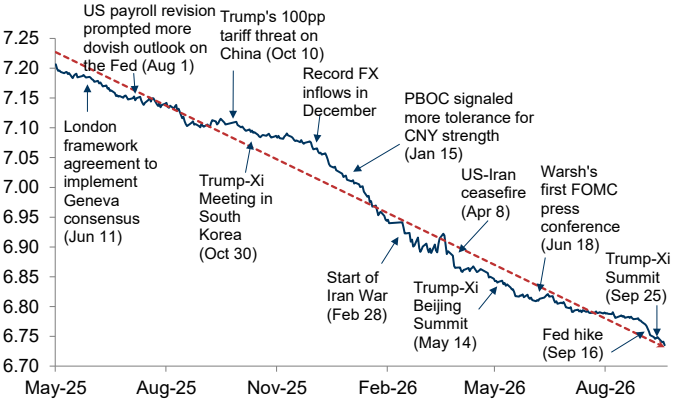
- No major changes in views.

Datapoints/trends we're focused on

- China's export boom, which we find still has room to run over the next few years but will eventually require stronger economic growth in importing countries.
- China FX policy; we see risk that RMB appreciation overshoots the gradual pace preferred by the PBOC, even as policymakers continue to lean against market expectations.
- Asia's AI dividend, which is broadening beyond exports.
- Brazilian presidential elections, which will be settled in a second-round runoff on October 25, with a market-friendly election outcome likely to lead to further BRL appreciation.

USD/CNY on the decline

USD/CNY fixing



Source: Bloomberg, Goldman Sachs GIR.

Higher bond yields: how concerning?

Recent acceleration in the rise in global bond yields to multi-decade highs has begun to raise questions about the implications for growth and markets. Both have remained remarkably resilient so far, with US growth in particular holding relatively firm and the S&P 500 and other equity markets near new all-time highs. But with pressure beginning to emerge—most notably in European sovereign bond markets—and yields looking unlikely to retreat soon, can that resilience last, or will more vulnerabilities be revealed?

GS Head of US Rates Strategy William Marshall first lays out how we arrived at higher rates, underscoring the striking breadth of the rise, which he attributes mainly to fundamentals—strong growth, inflation risks, hawkish policy shifts, the ongoing investment cycle, and long-run fiscal risks—but notes that technical factors likely amplified the recent move. And while he ultimately expects yields to fall (with YE 10-year US Treasury yields of 4.75%/4.4% in 2026/2027, respectively) as markets become more confident in easing inflation, he thinks elevated long-term yields should have some staying power, and sees continued upside risk from energy price and fiscal pressures.

So, just how much of a threat do higher rates pose to the macro outlook? For answers, we first turn to Tobias Adrian, Special Advisor to the Managing Director and former Financial Counsellor and Director of the Monetary and Capital Markets Department at the IMF, Mark Zandi, Chief Economist of Moody's Analytics, and GS US economists.

Adrian sees a global economy that has so far responded to the yield shock much as it has to the many other major shocks of the past seven years: resiliently. He notes that the rise in yields has not significantly tightened financial conditions or, more importantly, disrupted market functioning or forced damaging deleveraging. He believes that resilience could persist as long as the move in yields doesn't accelerate or become more disorderly. But he is concerned about vulnerabilities in the AI and technology complex, sovereign bond markets, and EMs—not to mention cyber risks—all of which leaves him "vigilant but cautiously optimistic."

GS US economists also characterize the US economy as resilient. Their expectation that the Fed will deliver just one more rate hike this year before cutting next year—consistent with Marshall's expectation of lower Treasury yields—leads Pierfrancesco Mei to expect only a modest 0.2pp growth drag in 2027 from higher rates. But he finds that the drag could rise to a more consequential 0.5pp if yields remain near current levels (see pg. 9 for GS global economists Joseph Briggs' and Johan Allen's rules of thumb for the impact of higher yields on rate-sensitive areas across major DMs.) David Mericle and Mei also worry about the implications for the already-concerning US fiscal trajectory, which they believe is unlikely to trigger a classic debt crisis but is too risky to ignore.

Zandi, for his part, is generally more concerned. While his baseline outlook is relatively sanguine, he describes the US economy as vulnerable rather than resilient and views the "distribution of possible outcomes as very flat and heavily skewed toward darker tail scenarios." He sees the clearest softness in the labor market, with weak hiring and falling real wage growth for many workers weighing on consumer spending. And he takes little comfort from US growth continuing to run around 2%—roughly its potential rate—noting that AI accounts for roughly one-third of that growth, leaving the non-AI economy growing at only around 1-1.5%, which he calls "a pretty punk economy." Zandi also worries that the US fiscal situation is "as bad as I have ever seen it" and that higher rates are already inflicting damage on real estate markets and squeezing existing debtors. As these stresses mount, he sees elevated risk of something breaking in the financial system. All told, he puts the odds of the current vulnerabilities pushing the economy completely off the rails at around one-in-three.

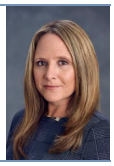
With banks historically at the center of the rate shocks and economic crises that Zandi is worried about, we then explore how much risk banks pose today. Adrian and GS Head of the Financials Equity Group Richard Ramsden both see little cause for alarm, explaining that higher rates should boost banks' net interest income and revenues given their asset-sensitive balance sheets. Ramsden also doesn't expect a significant deterioration in credit quality absent a broader economic downturn and says that most banks should have excess capital even after accounting for rate-driven portfolio losses.

But even if banks can weather higher rates, what about markets more broadly? GS strategists and analysts are not especially concerned, with Chief US Equity Strategist Ben Snider arguing that current rate levels shouldn't prevent continued strong US earnings growth and the S&P 500 from climbing higher, Chief Credit Strategist Amanda Lynam viewing the headwind to corporate credit from higher rates as manageable amid the solid growth backdrop, and US Financials Analyst Alexander Blostein expecting the recent slowdown in private market activity to rebound once rates stabilize. GS multi-asset strategists Christian Mueller-Glissmann and Andrea Ferrario add that higher yields have strengthened the strategic case for bonds in a multi-asset portfolio, though strong earnings continue to favor equities for now. But they all warn that if rate volatility remains elevated, and especially if yields continue to rise from here, risk assets could face mounting pressures.

All that said, with the AI boom powering the economy and markets, everything may come down to whether higher rates will derail it. Snider views this as unlikely given the strong balance sheets of the firms investing in AI and the expected profitability of these investments, with Lynam also seeing a high bar to derail AI-related debt issuance. Adrian also maintains a positive baseline for the AI economy but is concerned about the circularity of investment, increased leverage, and the sustainability of revenue growth in the AI complex. And Zandi again seems the most worried, warning that "AI could become the part of the economy that breaks" if rates remain at current levels for much longer.

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Interview with Mark Zandi

Mark Zandi is Chief Economist of Moody's Analytics. Below, he argues that the US economy is vulnerable rather than resilient and worries that high interest rates could deepen existing pockets of weakness and ultimately cause something to break in the financial system.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.



Allison Nathan: Prior to the September 2026 Fed rate hike, you argued that a hike would do little to address supply-driven inflation but could damage already weak parts of the US economy. Where are you seeing the most softness?

Mark Zandi: The clearest softness is in the labor market. Monthly payroll growth has averaged around 40,000 over the past year and has been essentially zero when excluding the healthcare sector. Hiring is moribund, hours worked are very low, and while the unemployment rate remains low, that is partly a reflection of declining labor force participation. Adjusting for that cyclical drop would put underlying unemployment in the mid-4% range—above the level consistent with full employment—and I expect the headline rate to move toward that level over the next 6-18 months. Real wage growth is, at best, flat, and for many Americans is actually declining, which is eroding purchasing power, particularly for lower- and middle-income households, who are increasingly drawing down savings to sustain spending. So, while the economy is still growing, the underlying labor market and household fundamentals point to very tenuous growth.

> "While the economy is still growing, the underlying labor market and household fundamentals point to very tenuous growth."

Allison Nathan: What is causing this softness?

Mark Zandi: Policy choices are at the root of the weakness. Tariffs, while more consequential last year, continue to weigh on growth and boost inflation. Heavy-handed immigration policy is also an underappreciated source of weakness. Many firms losing immigrant workers cannot afford to raise wages enough to attract native-born workers, so they are raising prices to align demand with the supply they can produce with a reduced labor force. But the most immediate and significant driver of the softness is the Iran war, which has pushed up energy prices, further fueling inflation and weighing on growth.

Allison Nathan: But US real GDP growth remains near 2%—roughly the economy's potential rate. Isn't that a relatively healthy growth pace?

Mark Zandi: Real GDP growth is indeed running at 2% yoy, but I estimate that AI-related activity accounts for roughly one-third of that, or around 0.6–0.7pp. Roughly half of that comes from AI capital spending, net of electronics imports for data centers, while the balance reflects wealth effects from the surge in AI-related stock prices that have contributed to an almost doubling in the S&P 500 since ChatGPT debuted four years ago, boosting net worth and consumer spending, especially among high-income households. So, the non-AI economy is growing at only around 1%–1.5%. That's a pretty punk economy, and a difficult place to be.

Allison Nathan: The September SEP indicated that most FOMC members expect one more rate hike this year, and the market is expecting the same. How damaging could further tightening be?

Mark Zandi: While I expect another hike this year, with the economy already barely growing at potential, additional hikes could push growth below potential. That would further strain the already weak non-AI economy and trigger layoffs, significantly raising the likelihood of a self-reinforcing negative spiral. So, further tightening would be a risky endeavor.

> "With the economy already barely growing at potential, additional hikes could push growth below potential. That would further strain the already weak non-AI economy and trigger layoffs, significantly raising the likelihood of a self-reinforcing negative spiral."

Higher rates are already inflicting damage on the economy's most rate-sensitive sectors, particularly housing and commercial real estate. Refinancing is in a deep freeze. Existing home sales have fallen to levels last seen during the teeth of the housing crash and the Global Financial Crisis. Home prices are moving sideways on average and outright declining in half the country. That could easily create broader problems for households, especially for those that bought homes in the last years after rates began to rise and have virtually no home equity. And while commercial real estate had begun to show signs of life, renewed rate increases are once again freezing activity and putting pressure on property values.

Higher rates are also squeezing existing debtors as borrowing costs on credit cards, home loans, auto loans, and corporate debt rise. I am particularly worried about highly leveraged, often private equity-backed companies that have managed the higher rate environment by extending maturities and limiting near-term interest payments. That strategy cannot continue indefinitely if borrowing costs remain elevated or continue to rise.

The equity market is another key area of concern. AI continues to propel the equity market, but it is not impervious to higher rates. Persistently elevated rates will eventually weigh on valuations, increasing the risk of a major correction that could quickly reverberate through the real economy as positive wealth effects reverse and consumer spending weakens. AI capex is also vulnerable as a higher cost of capital makes investment

more expensive and falling valuations make it harder to raise the capital necessary to sustain the current pace of the AI buildout. For now, AI is operating under its own momentum, supported by considerable optimism and euphoria. But if rates remain at these levels or higher for longer than a quarter or two, AI could become the part of the economy that breaks.

Last but not least, higher rates will worsen the US fiscal situation, which is itself contributing to elevated yields today. While we have navigated this fiscal risk for some time, the fiscal situation is as bad as I have ever seen it. The deficit exceeds 6% of GDP, the primary deficit is above 3%, and debt is roughly 100% of GDP and on track to reach 125% in a decade. Annual federal interest payments are already well above $1tn and will rise rapidly if rates remain elevated. All told, I see a roughly one-in-five chance of a fiscal cliff event over the coming year—unlikely, but large enough to warrant attention.

So, higher rates will weigh on the economy through several channels. Historically, rate increases of this magnitude have almost invariably caused something to break in the financial system. We cannot know exactly where the fault line will emerge, but the risk of these pockets of weakness becoming a broader problem is significant.

> "I view the distribution of possible outcomes as very flat and heavily skewed toward darker tail scenarios."

Allison Nathan: How do these risks translate into your forecasts for economic growth?

Mark Zandi: My baseline forecast is relatively sanguine based on the assumption that the Iran war begins to wind down, allowing oil prices to decline to around $80/bbl as we move into next year. That should ease inflation, reduce Fed tightening concerns, and bring the 10-year Treasury yield back toward 4.5% by early next year—a level the economy can digest.

Importantly, though, I view the distribution of possible outcomes as very flat and heavily skewed toward darker tail scenarios. The war may not fade into the background, keeping energy prices elevated and raising the risk of further inflation pressure. That could prompt additional Fed tightening, push yields even higher, and ultimately cause something to break in the financial system.

Meanwhile, the Treasury market has grown more fragile as traditional, price-insensitive buyers—including the Fed, banks, and foreign institutional investors—have stepped back, increasing the market's reliance on highly leveraged, price-sensitive hedge funds that could rush for the exits under stress. A debt-limit confrontation under a likely divided US government next year could provide the catalyst, particularly if lawmakers underestimate the consequences of a breach. In that scenario, an even sharper bond market selloff than we are currently experiencing could occur. While none of this is my baseline—and I remain inherently optimistic because avoiding the darkest scenarios is largely a policy choice—I put the odds of a severe bond market selloff at around one-in-four and of the economy going completely off the rails for any of the reasons we have discussed at around one-in-three. So, the downside risks are significant.

> "I put the odds of a severe bond market selloff at around one-in-four and of the economy going completely off the rails for any of the reasons we have discussed at around one-in-three. So, the downside risks are significant."

Allison Nathan: The Fed has considerable room to cut rates. Should that provide any comfort that the worst-case scenarios may be avoided?

Mark Zandi: That remains an open question. If inflation fades and allows the Fed to take its foot off the brake, rate cuts should bring yields down across the curve—though not back to pre-war levels. But in a darker scenario involving a debt limit crisis and even higher yields, short-term rate cuts would have little effect on the long end. The Fed would need to turn to alternative policy tools, including quantitative easing and bond purchases. That would amount to financial repression—a strategy similar to the one employed by the BoJ for many years—which could prove counterproductive by reducing the pressure on lawmakers to address the underlying problems while fueling even more persistent inflation.

Allison Nathan: Why do you think others are more sanguine about the risks that higher interest rates pose to the US economy?

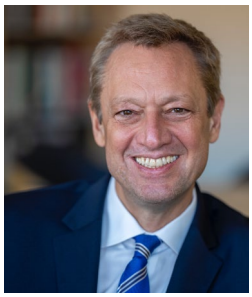
Mark Zandi: Some likely see greater underlying economic strength and expect AI to drive much stronger growth. Others may believe that the neutral rate is higher, perhaps for the same reasons, while some may be more concerned about persistently higher inflation.

But the more fundamental difference is the broader lens through which I currently view the economy. Many continue to describe the US economy as resilient, which I find fascinating, bordering on frustrating. In my view, the right word is vulnerable. Again, growth is pedestrian, the labor market is soft, which was further underscored by the much weaker-than-expected September jobs report, real wage growth is decelerating, inflation remains elevated, and interest rates are rising. That shift in perspective completely changes how one evaluates the risks ahead.

Interview with Tobias Adrian

Tobias Adrian is Special Advisor to the Managing Director and former Financial Counsellor and Director of the Monetary and Capital Markets Department at the IMF. Below, he argues that the global economy has been resilient despite higher bond yields and could very well remain so. But he sees several areas of concern in the economy and markets.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs, the IMF, IMF Management, or the IMF Executive Board.



Jenny Grimberg: The IMF has cautioned that sharp increases in global bond yields could create strains across economies and markets. How would you assess the global economy's response to the recent rise in yields?

Tobias Adrian: The global economy has so far responded to the rise in yields much the same way as it has to the shocks of the past seven years: resiliently. If somebody had told you in late 2019 that the global economy would face a pandemic, multiple wars, deep geopolitical fragmentation, and trade and energy supply shocks, you would have been hard-pressed not to expect a global recession. The pandemic did, of course, trigger a contraction, but it was exceptionally short-lived despite the severe supply and demand shocks. And the global monetary tightening cycle that began in 2021 and accelerated sharply in 2022 in response to the pandemic-related inflation surge did not trigger a recession at all, which is unusual by historical standards. So, the global economy has proven deeply resilient.

Jenny Grimberg: What has that resilience owed to?

Tobias Adrian: Three factors explain this resilience: policy, the adaptability of the economy, and some luck related to technological innovation. Over the past seven years, fiscal and monetary policymakers acted aggressively to stabilize economic activity. Fiscal policy provided substantial support during the pandemic, while central banks cut interest rates, expanded asset purchases, and established emergency standing facilities. That fiscal support has of course come at a significant long-term cost as debt-to-GDP ratios in advanced economies have surged since 2019, and deficits in many countries remain large, contributing to the rise in long-term yields. But policy has undoubtedly been critical to the economy's resilience to date.

The economy itself has also become more adaptable. A dividend of the pandemic is that firms have developed a greater ability to rewire global value chains quickly in response to a range of disruptions, from shifts in energy and food prices to geopolitical developments, which has helped the global economy more effectively absorb shocks.

And luck has played a role in that the more recent challenges have coincided with the emergence and rapid adoption of generative AI technology, which has helped fuel expectations of a broad productivity boom and created massive demand for investment that is stimulating aggregate demand. If large language models (LLMs) had not come to the fore in November 2022, global growth in the more recent period certainly would not have been as strong.

Jenny Grimberg: As bond yields continue to climb, are you concerned that this resilience could falter?

Tobias Adrian: So far, the rise in bond yields has not triggered a substantial, broad-based tightening in financial conditions or, more importantly, disruptions to market functioning or forced deleveraging that could damage markets and the economy. But I see three main areas of concern: the AI and technology complex, sovereign bond markets, and emerging markets (EMs).

Three vulnerabilities stand out in the AI and technology complex. First, the interconnectivity and circularity of investment among many AI firms raises the risk that one firm's earnings hit could fairly quickly spread across the broader complex. Second, many AI firms have taken on significant leverage, and investor leverage has also grown through the use of leveraged ETFs and derivatives. Leverage upon leverage can be problematic when adverse shocks hit. Third, while relatively subdued valuations suggest that the market is not in a 1999 state of indiscriminate price appreciation, with investors continuing to differentiate across firms and sectors, the strength of the complex is predicated on strong earnings and high revenue growth, and it is not clear how long that will last. While my baseline outlook is positive, greater competition from open-source models, for example, could eat into AI firms' profitability and pressure the broader value chain.

Sovereign debt markets are another key concern. As I mentioned, global public debt is approaching 100% of GDP, and debt levels in major advanced economies exceed 120% of GDP. Those are staggering figures from a historical perspective. The investor base for sovereign bonds has also increasingly shifted to more leveraged investors who are more sensitive to macro developments. A key indicator to watch is auction tails—the difference between the yield at which a government sells bonds at auction and the yield the market expected beforehand. Looking at 30-year bond auctions across G4 sovereign bond markets, the tails have grown over time, suggesting increased market vulnerability to supply. 5-to-10-year forward term premia have risen to pre-Global Financial Crisis (GFC) levels. So, the quantitative easing period has now been fully priced out of the long end of the global yield curve. And I see no good reason for term premia to decline in the foreseeable future. If anything, both expected short rates and the term premium will probably remain somewhat elevated.

Finally, while EM economies have shown tremendous resilience through the shocks of the past seven years owing to stronger policy frameworks, resilient FX reserve buffers, and the development of local-currency bond markets that have reduced currency mismatches, vulnerabilities remain. Particularly striking is the K-shaped pattern of capital flows. Capital has flowed into EM sovereign bonds, while equity

capital has flowed out on net as domestic investors direct their savings into global—and, in particular, US—technology stocks. So, even though EM equities have rallied over the past two years, capital flows have moved in the other direction. That leaves these countries' external positions more leveraged, with less equity and more debt on net.

Jenny Grimberg: Higher yields played a key role in the 2023 regional banking crisis. Are you worried about banks today?

Tobias Adrian: Not particularly. Banks generally do well when interest rates are elevated, because financial intermediation is fundamentally about spreads. When rates rise, asset yields often reprice faster than deposit costs, supporting bank net revenues. That partly explained the banking system's overall resilience in 2023, even as a few outlier banks ran into trouble. Significant capital and liquidity buffers broadly absorbed mark-to-market losses on fixed-income securities, while higher spreads supported profitability.

Jenny Grimberg: What about residential and commercial real estate, where stresses were already visible?

Tobias Adrian: Real estate markets are faring differently across countries. London's housing market, for example, has cooled meaningfully, while other major financial centers like New York and Hong Kong continue to see strong home price appreciation. Real estate valuations are sensitive to long-term yields, and the pace of price appreciation will probably slow if yields remain at elevated levels. But with economic activity remaining relatively strong, immediate severe distress in either commercial or residential real estate seems unlikely.

Jenny Grimberg: When would you begin to worry that higher yields are creating a financial stability problem?

Tobias Adrian: The speed and magnitude of the yield move matter enormously. So far, even though bond yields have risen sharply, market functioning has remained orderly and no forced deleveraging appears to be occurring, as we discussed. I would be more concerned if the move in yields accelerated or became nonlinear, which could set off a damaging deleveraging spiral in which investors are forced to reduce leverage, adding to selling pressures and intensifying market stress. The question then becomes: who will catch the falling knife?

And leveraged investors may not be the only source of selling pressures. Before central banks launched massive asset purchase programs to stabilize markets in March 2020, open-ended funds were the sellers, while some hedge funds actually played a stabilizing role. Sharp selling pressure can even come from plain-vanilla mutual funds or ETFs. That said, it is reassuring that the major banks are well capitalized today, because it would be particularly worrisome if stress in the non-bank sector coincided with forced asset sales in the banking sector. We saw that dynamic during the GFC and the Long-Term Capital Management crisis.

Jenny Grimberg: What should investors watch for warning signs of systemic stress?

Tobias Adrian: I would watch repo market and money market functioning, because the early warning signs of stress typically show up in short-term funding markets. I would also look at a range of market-based indicators, including cross-currency and domestic basis measures, swap spreads, and convenience yields. I would also watch for a broader tightening of financial conditions, which can indicate that pressure is spreading beyond a particular market. And I would keep a close eye on implied volatility as a market-based assessment of risk that feeds directly into investors' risk-management models. When implied volatility rises sharply, investors may need to cut positions, which can reinforce the underlying market move.

Jenny Grimberg: If vulnerabilities were to become more acute, how well prepared are policymakers to respond?

Tobias Adrian: Central banks retain a powerful ability to inject liquidity through repo operations, outright asset purchases, and emergency standing facilities, and in recent years they have repeatedly demonstrated that they can act quickly and decisively when market functioning deteriorates. That is distinct from the broader stance of monetary policy. Ongoing inflationary pressures mean that monetary policy remains on a tightening bias in many countries. But central banks can hike rates and inject liquidity at the same time.

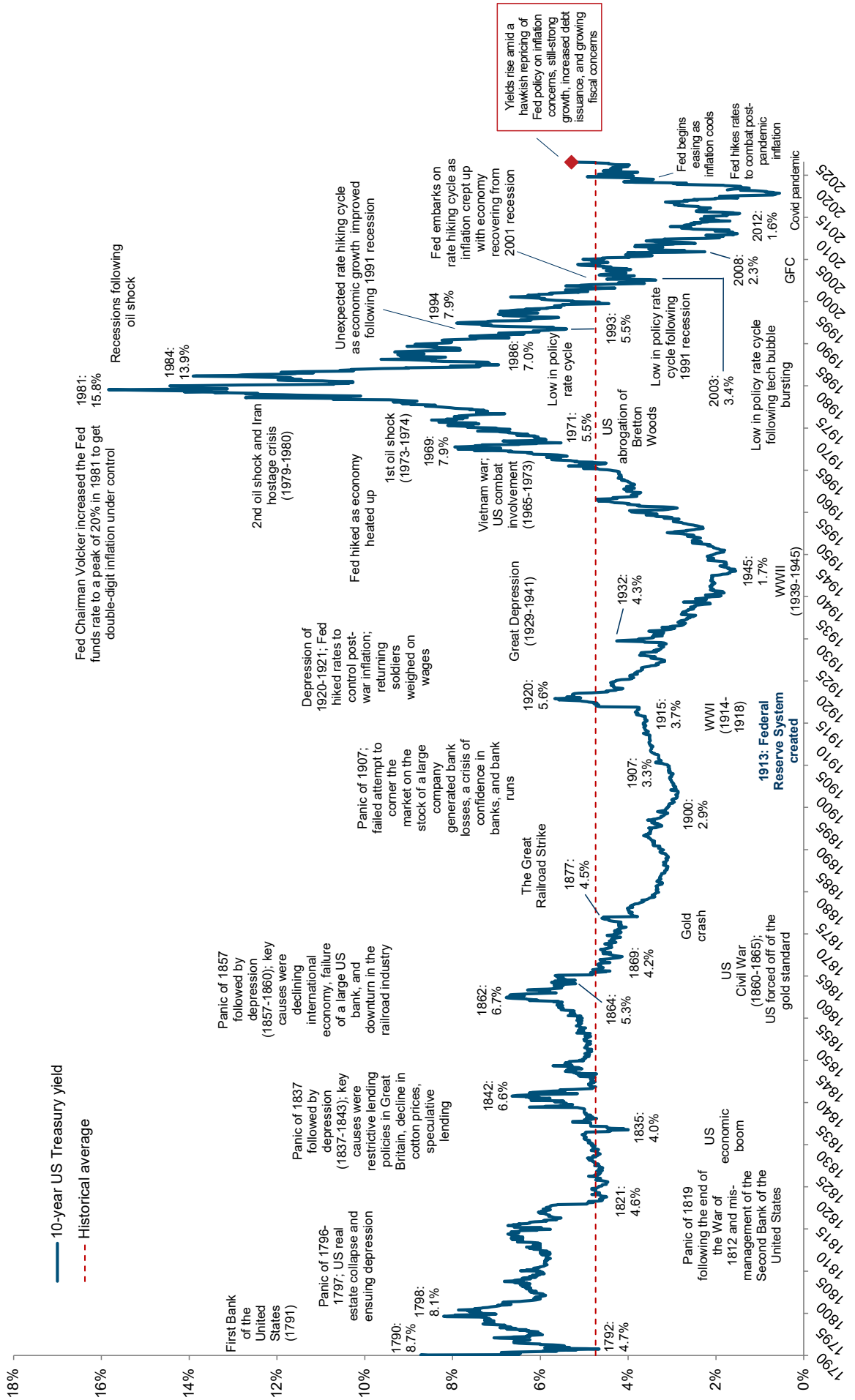
Fiscal policymakers are more constrained. Governments may still be willing to respond as forcefully as they did during the pandemic, but after taking such aggressive fiscal steps, less room exists to go big on fiscal policy today. Markets may also react to such support more negatively than in 2020 given already-elevated debt levels and ongoing concerns about fiscal sustainability. If monetary and fiscal authorities act together, as they did in 2020, that would temporarily mitigate market stress, but it would not resolve the longer-term fiscal problem.

Hopefully, the recent rise in bond yields will feed back into the politics of fiscal policy and prompt an adjustment. Bond market pressure has already triggered policy shifts in some countries. The question is how far yields must rise before adjustment occurs more broadly, and whether that adjustment can happen without uncomfortable volatility. But until it occurs, fiscal policymakers will remain relatively constrained.

Jenny Grimberg: Where does all of that leave you on the outlook for the global economy and markets?

Tobias Adrian: It is important to distinguish between the baseline and the downside. My baseline is fairly positive. The global economy has demonstrated considerable resilience in the face of multiple severe shocks, and I would not be surprised if it continues to shrug off higher yields, provided they do not keep rising sharply in a disorderly fashion. At the same time, I do worry about downside risks. Beyond the vulnerabilities we have discussed, cyber risk is an important concern. So far, cyber risks have not been macro-critical, but they certainly could become so. AI could strengthen cyber defenses, but it could also enhance offensive capabilities. And while sophisticated institutions may be resilient to cyberattacks, many firms may lack the capabilities and know-how to defend themselves effectively. So, plenty of room exists to worry about the downside, but the offset is policymaking, especially monetary policymaking, as we have discussed. All of that leaves me vigilant but cautiously optimistic.

A long history of US rates



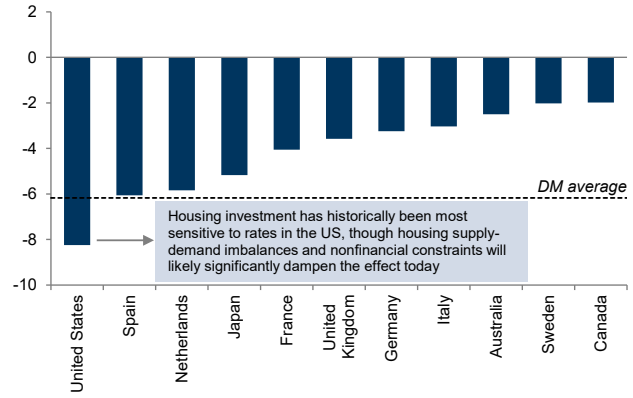
Note: Chart shows monthly averages.
Source: Global Financial Data, Inc., Federal Reserve Board, Haver Analytics, Goldman Sachs GIR.

Higher rates & DM growth: rules of thumb

GS global economists Joseph Briggs and Johan Allen develop rules of thumb to quantify the near-term rate sensitivity of major DM economies across four channels: (1) housing, (2) consumers, credit, and cashflow, (3) corporates and capex, and (4) debt and deficits.

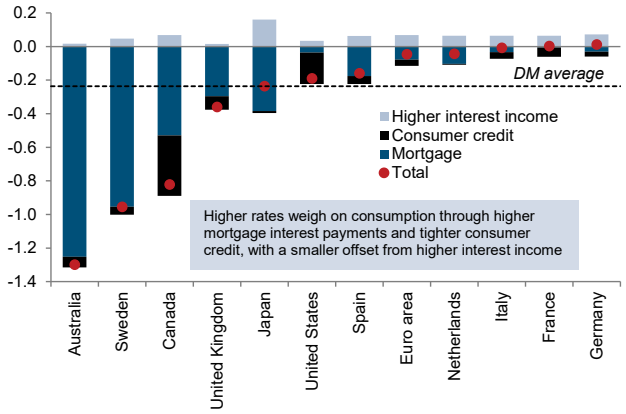
Each 100bp increase in rates lowers DM housing investment by 6% over the next 1-2 years on average...

Peak cumulative effect of a 100bp increase in bond yields on residential investment, %



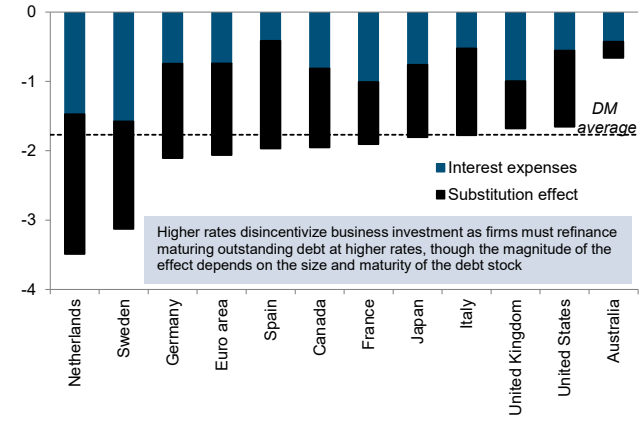
...DM consumer spending by 0.2% on average, with the largest effects in Australia, Sweden, and Canada...

Effect of 100bp higher interest rates on household consumption by credit type, %



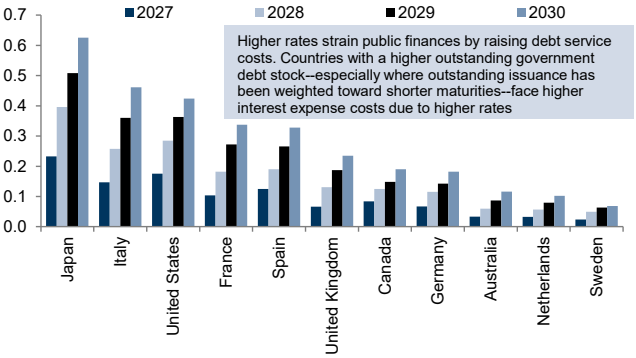
...and DM business investment by 1.8%, with larger effects in the Netherlands, Sweden, and Germany

Hit to corporate investment within next 12m, %



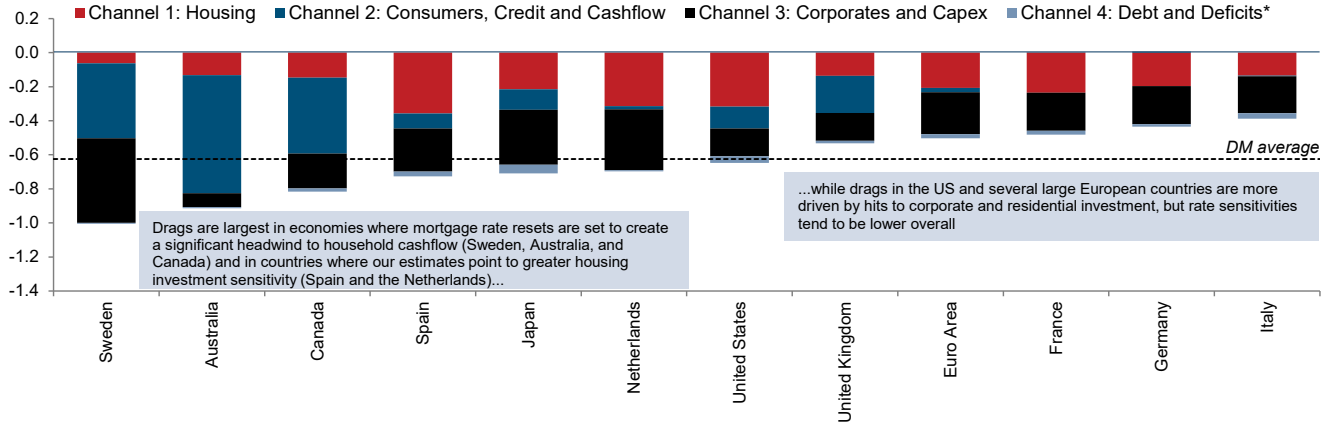
The current maturity structure of debt implies that a persistent 100bp increase in rates raises interest expenses by 0.0-0.2% of GDP over the next year and 0.1-0.6% of GDP by 2030, with the largest effects in Japan, Italy, and the US

Increase in interest expenses as a % of GDP assuming a 100bp increase in yields



The cumulative effect from a 100bp rise in rates across all four channels implies a 0.6% drag on DM GDP overall over the next year

Cumulative effect on overall GDP from a 100bp tightening, % of GDP



**We apply our estimate of the 2027 rise in interest expenses and assume that governments on average consolidate fiscal balance by 0.2pp for every 1pp increase in interest expenses, in line with Debrun and Kinda (2016).*

Source for all charts: Goldman Sachs GIR.

Rising rates: key questions answered

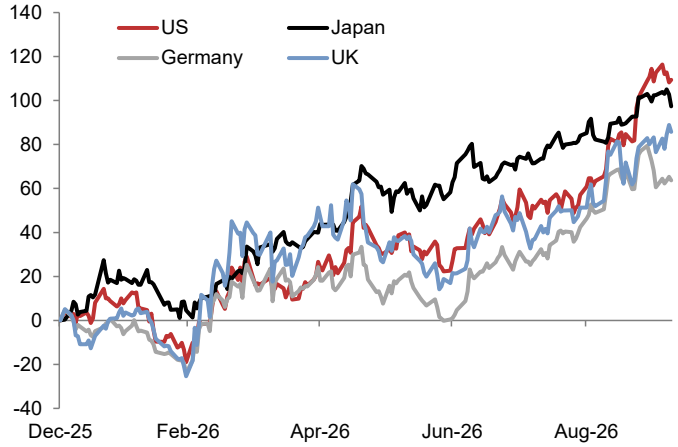
William Marshall explains the rise in global bond yields and where they may be headed

Q: What has driven the gradual rise in global bond yields over the past several months?

A: The most striking feature of the rise in yields has been its breadth. Yields in all major economies have risen, without a clear market leader or single source of the bond selloff, which has occurred across yield curves, with both front-end and long-end rates moving to fresh highs. Measures of inflation risk *and* real rates, as well as rate expectations *and* term premia, have played roles in the rise in nominal yields. In particular, estimates of term premium, which reflect the extra compensation investors demand for holding duration, have surged to the highest level in over a decade. And the move has not been isolated to sovereign bonds, occurring across all forms of duration. Until recently, the relative stability in interest rate volatility suggested that fundamentals, including stronger growth, higher inflation risks, hawkish policy, AI capex, and long-run fiscal risks, largely drove the rise in yields.

The rise in bond yields has not been unique to any market this year

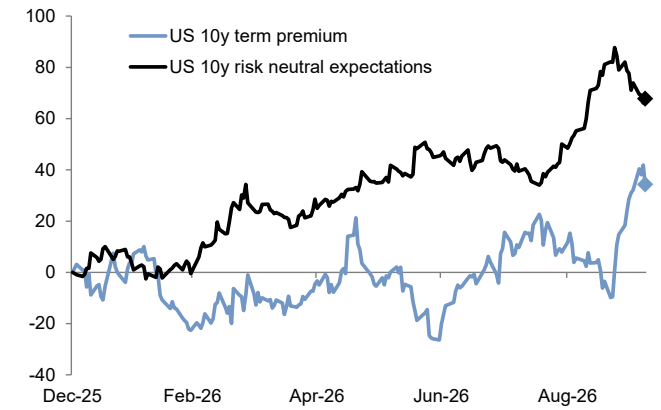
Year-to-date change in 10-year sovereign bond yields, bp



Source: Goldman Sachs FICC and Equities, Goldman Sachs GIR.

Both term premium and policy rate expectations have contributed

US 10-year term premium vs. risk neutral expectations, bp



Source: Goldman Sachs GIR.

Q: What role has AI capex and related issuance played?

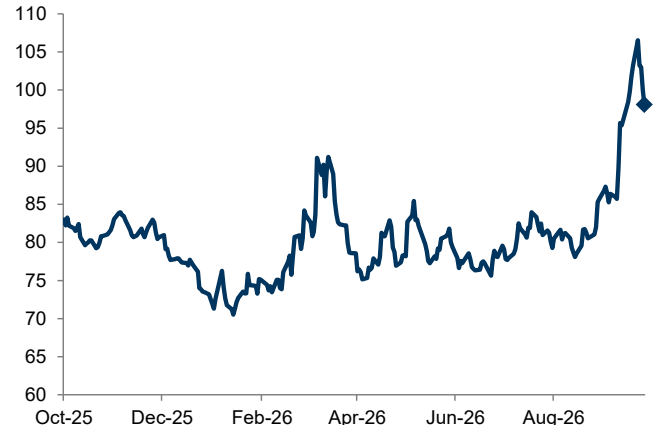
A: A swing of the investment/savings pendulum back toward investment creates a less supportive backdrop for bonds and requires higher yields to motivate investors to hold duration. The perception that investment spending (and the issuance to finance it) is relatively insensitive to higher yields is reinforcing that impact. While evidence that the absorption of duration supply is having a durable impact on longer-term yields is limited, the backdrop of price-insensitive issuance from both sovereigns and corporates is among the factors likely weighing on duration risk appetite. As long as investment and borrowing needs continue to grow, the skew of risks around where longer-term yields sit relative to macro drivers is likely to remain to the upside, with fundamental catalysts rather than valuations alone likely needed to reinvigorate duration demand.

Q: Beyond the steady march higher, bond yields have risen sharply in recent weeks. Are these moves fundamental or technical in nature?

A: The recent sharper rise partly reflects hawkish shifts in policy pricing, reinforced by the Fed, ECB, and BoJ all hiking in response to inflation pressure. Fundamental risks and central bank signals have modestly boosted front-end volatility. The rise in volatility toward the end of September points to these hawkish risks beginning to tighten financial conditions, as well as to technical factors related to hedging risks directly related to higher yields that may have helped to push yield levels higher than fundamentals would suggest.

Interest rate volatility has risen sharply recently

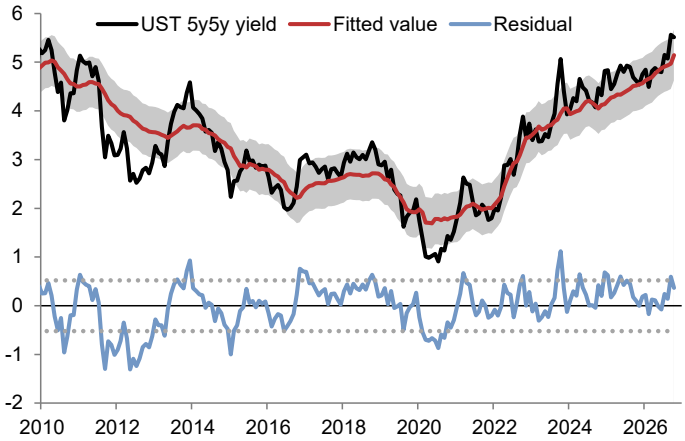
1y10y US implied volatility, annualized bp



Source: Goldman Sachs FICC and Equities, Goldman Sachs GIR.

The longer-term yield rise has lately de-coupled from fundamentals

UST 5y5y yield versus fitted value, %



Source: Bloomberg, Goldman Sachs GIR.

Q: Can the recent bond market operations of some Treasuries influence the level of bond yields?

A: Managing the reliance on longer-term issuance is a sensible response to the higher term premium environment. The combination of structural shifts in longer-term savings and higher yields is reducing the duration needs of liability-driven investors such as pension funds. However, while maturity adjustments that rebalance supply and demand across the yield curve can benefit long-end bonds at the margin, they are unlikely to meaningfully lower yields. Buybacks and increased front-end issuance do not change the deficit or the inflation trajectory (see pg. 24). Although these actions can potentially reduce interest costs on average, they risk raising interest cost volatility should front-end rates need to rise to combat higher inflation.

Q: On net, where do you expect global bond yields to go from here over the near, medium, and long term, and how do your forecasts compare to consensus?

A: We expect bond yields to fall across major markets, with 10y yields ending 2026 at 4.75% in the US, 3.25% in Germany, 5% in the UK, and 3% in Japan. Achieving this will require greater market confidence in a more benign underlying inflation trend. Our more dovish-than-priced outlook for policy rates across most markets argues for lower yields over the medium term, though for the US in particular we expect fiscal dynamics to exert steady upward pressure on longer-term yields over time.

Q: How is the balance of risks to your forecasts skewed, and what could cause yields to deviate meaningfully from these expectations?

A: Front-end rates are still tethered to inflation risks, especially from energy prices, and yields will remain skewed to the upside if energy volatility does not subside. This is especially true given that the growth data remain strong and the Fed recently delivered its first hike. Although we expect policy tightening to prove limited, visibility on the extent and duration of the hiking cycle is low and rates often struggle to price in the end of tightening in advance of the final hike. A credible reduction in inflation risk via a decline in energy volatility across natural gas, crude oil, and refined products, or progress in underlying inflation toward central bank targets would therefore likely be required to realize lower yields. Evidence of slowing AI investment or any revision of the economic potential of AI investment would also alleviate upward pressure on yields and may ultimately lead to much lower yields down the line, as would a return of cyclical concerns.

Q: What areas of the rates complex look vulnerable if government bond yields remain high?

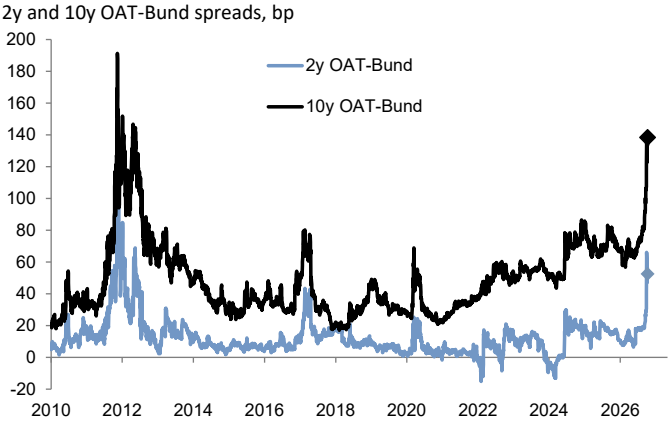
A: Aside from the effects on the real economy (see pgs. 9 and 12-13), the market is likely to focus on the credit implications of higher rates in both AI and non-AI-related sectors. In Europe, higher yields pose risks to sovereign credit spreads. While the growth backdrop remains supportive for now, and fiscal fundamentals in some countries such as Spain have improved, the pressure from higher German yields and ECB rate hikes will pressure markets like OATs (French bonds), which will price additional fiscal risks at higher refinancing rates.

Q: How concerned should we be about a sovereign bond crisis in France and contagion risk across Europe?

A: The relative rise in French versus German yields has been extreme by historical standards, particularly when benchmarked against other sovereign spreads. Domestic macro and fiscal fundamentals remain unfavorable for OATs, with ongoing budget negotiations and the presidential race increasing uncertainty. That said, French spreads have widened more than fundamental drivers would imply, suggesting that the latest leg of widening has been driven by uncertainty and risk premium rather than a clear shift in the outlook.

Stabilization likely requires inflation relief, signs of successful budget negotiations, or sufficient financial conditions tightening that shifts the path for ECB policy, with risk that elevated premium remains stickier. For Europe more broadly, spillovers have increased (particularly to Italian spreads), though risks still remain idiosyncratic to France. Similar to the case for France specifically, it will likely take a fundamental anchor to reduce risks of greater spillovers.

The rise in French OATs vs. German Bunds has been extreme by historical standards



Source: Goldman Sachs FICC and Equities, Goldman Sachs GIR.

Q: How can investors best navigate a world of sustained high bond yields?

A: The return of higher yields isn't necessarily bad news for investors, especially if it reflects higher nominal growth. A world of high term premium used to be a familiar one, and higher term premium is associated with positive excess returns. This should help to protect total returns for bond investors. But the competition with cash is likely to imply steeper curves than in past periods of high term premium/low volatility. The hedge value of bonds will therefore need to be recalibrated, but bonds should still offer strong protection against cyclical downturns.

William Marshall, Head of US Rates Strategy

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Tel: 212-357-0413

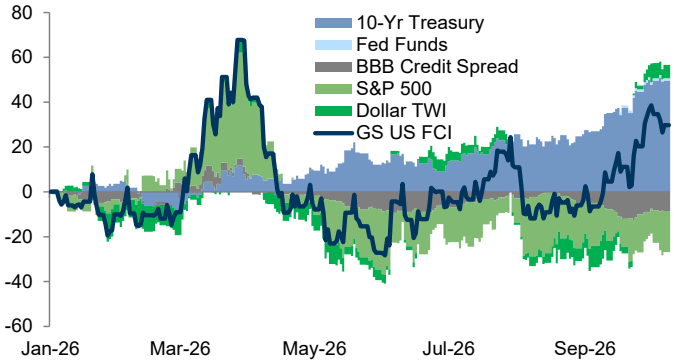
A modest US growth drag

Pierfrancesco Mei expects higher rates to only weigh modestly on US growth next year

The recent sharp rise in long-term interest rates has fueled a material tightening in US financial conditions, raising the question of how much this will affect US growth. Higher rates tend to weigh most heavily on residential investment, but also dampen consumer spending and capex, which can contribute meaningfully to the overall growth drag since they account for relatively large shares of GDP (~65% and 15%, respectively, vs. 5% for residential investment). Under our baseline forecast that sees the Fed delivering one more rate hike in December followed by three cuts starting in 2H27 and 10-year Treasury yields declining to 4.4% by end-2027, we expect only a modest 0.2pp drag on growth in 2027 from higher rates, though the drag could rise to 0.5pp if rates remain around current levels.

After moving sideways for a few months, financial conditions are now tightening amid the move higher in rates

Changes in GS US FCI since January 1, 2026, bp



Source: Goldman Sachs GIR.

Residential investment hardest hit...

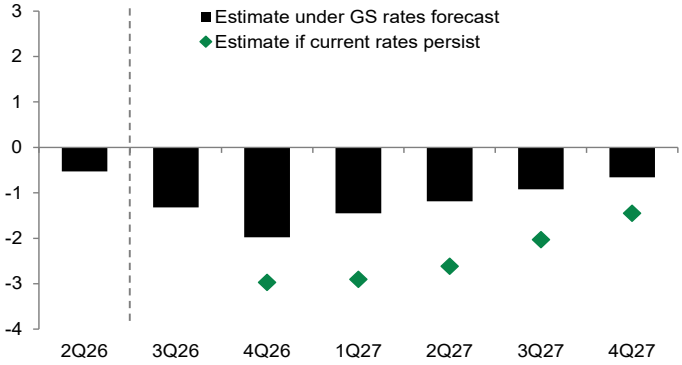
The sharp rise in 30-year mortgage rates to above 7% is likely weighing on residential investment, and will likely continue to do so by further cooling housing demand, which we already expected to remain tepid amid affordability concerns, slowing income growth, and a persistent drag on household formation from reduced immigration. Consistent with this, survey-based measures of purchase intentions (as expressed in the Conference Board and Michigan surveys) have declined since early summer.

Higher mortgage rates will also continue to weigh on housing turnover via the lock-in effect: because many borrowers took advantage of low rates in 2020 and 2021 to refinance, the cost of moving at current mortgage rates is significant. Indeed, with mortgage rates up more than 1pp since February, over 90% of borrowers now hold mortgages priced below market rates, leaving them with little incentive to move.

Although we noted during the last housing cycle that housing scarcity tended to dampen the hit to residential investment from rising rates, and such scarcity has eased, vacancy rates remain low by historical standards. On net, accounting for the prevailing vacancy rate, assuming mortgage rates evolve in line with our 10y Treasury yield forecast plus a 200bp spread, and measuring the counterfactual against our rates strategists' pre-Iran war forecasts, we expect higher rates to subtract around 2pp from annualized residential investment growth at the peak in 4Q26 and 1pp on average in 2027, with the drag likely to be roughly twice as large if rates remain at current levels.

We expect the drag from higher mortgage rates on residential investment growth to peak at ~2pp in 4Q26 and average ~1pp in 2027, but the drag would be twice as large if current rates persist

Effect of higher mortgage rates on QoQ annualized residential fixed investment growth, GS baseline vs. current market rates, pp



Source: Goldman Sachs GIR.

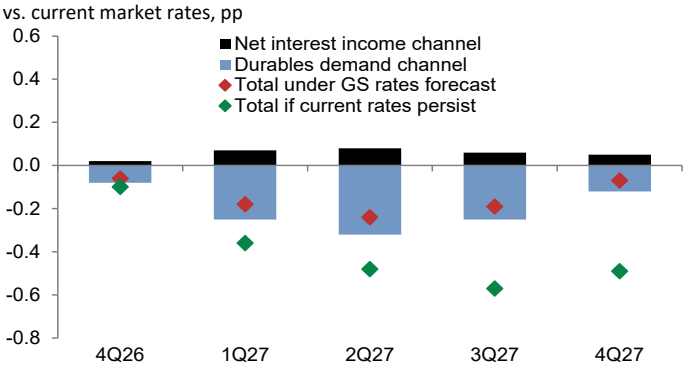
...but consumer spending will also take a hit...

Higher rates weigh on consumer spending mainly by reducing demand for durable goods. Using data since the 1960s, we find that a 50bp rise in the Fed funds rate—the cumulative increase we expect by December—has historically lowered consumer spending by just under 0.5%, with the decline concentrated in durable goods that rely heavily on credit financing and, in particular, recreational goods and motor vehicles.

That said, we think the impact could be smaller today as strong household balance sheets should help cushion the rise in interest expense and negative wealth effects should be limited given our equity strategists' baseline expectation that equity prices will continue to edge higher through 2027.

We expect the decline in durable goods spending to outweigh the boost to spending from higher net interest income, resulting in a ~0.2pp decline in consumption growth through 2027

Effect of higher interest rates on QoQ annualized real PCE growth, GS baseline vs. current market rates, pp



Source: Goldman Sachs GIR.

On net, focusing on reduced durables demand (given the higher incentive to save and higher financing costs) and an offsetting rise in households' net interest income[1] (since households are

[1] We isolate the direct substitution effect of higher rates on durables demand using estimates from economists Alisdair McKay and Johannes Wieland that strip out second-round effects from lower net wealth, and we estimate the effect on net interest income from the historical relationship between interest rates and net interest income and apply standard marginal propensities to consume to translate it into spending effects.

overall net lenders as they hold more interest-earning assets than interest-bearing debts), we estimate that higher rates will slow consumption growth by roughly 0.2pp through 2027. However, the drag would increase substantially if rates remain at current levels and stifle goods demand for longer.

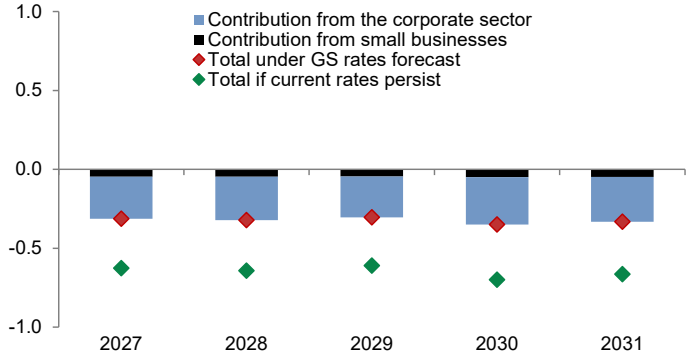
...as will capex

Higher rates also raise firms' marginal cost of funding, weighing on investment. A growing concern among investors is that higher rates could derail the AI-driven capex boom that has boosted investment growth in recent quarters, especially as companies have increasingly relied on debt and equity issuance to fund this investment. However, hyperscalers' capex—which accounts for over two-thirds of AI investment in the US—has so far proven largely resilient to higher rates and input costs, suggesting that these companies are unlikely to meaningfully pull back capex in the near term (see pgs. 18-19). Consistent with this, our portfolio strategists continue to expect a healthy pace of AI-related capex in 2027, and our credit strategists recently raised their forecasts for hyperscalers' debt issuance.

That said, non-AI companies will need to devote a larger share of revenue to interest expense as they refinance maturing debt at higher rates. In the corporate sector, around 15% of bonds are set to mature within the next two years—roughly in line with recent years but below the historical average—as the average maturity of corporate debt has roughly doubled over the last three decades. This should slow the passthrough from policy rate hikes to corporate borrowing costs, reducing the economy's near-term sensitivity to the funds rate. However, small businesses are more exposed since around half of their debt is variable-rate and reprices quickly.

We estimate that higher refinancing costs for businesses will dampen capex growth by ~0.3pp/year over the next five years

Effect of higher interest expenses from maturing debt on aggregate capex growth, GS baseline vs. current market rates, pp



Source: Goldman Sachs GIR.

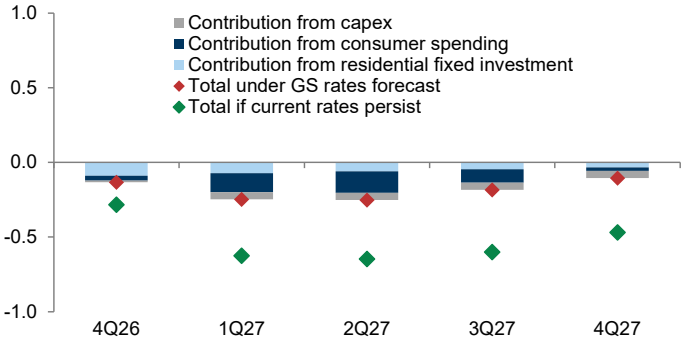
Taken together, we expect higher interest expense to weigh modestly on capex growth—by around 0.3pp in 2027 and subsequent years—assuming that borrowing rates reset in line with our strategists' forecasts for Treasury yields and credit spreads, though the impact would more than double if rates remain around current levels[2].

A modest growth drag, but larger if rates remain at current levels...

Until recently, higher equity prices, tighter credit spreads, and a weaker Dollar roughly offset the drag on financial conditions from higher rates, resulting in only a 0.1pp hit to GDP growth this year (Q4/Q4). Looking ahead, we expect the combined hit to residential investment, consumer spending, and capex from higher rates to subtract around 0.2pp from GDP growth in 2027 (Q4/Q4), which would still leave the economy growing close to our 2.3% potential growth estimate. That said, if rates were to remain at current levels, we estimate the drag would more than double, rising to just over 0.5pp.

We estimate that higher rates will subtract around 0.2pp from GDP growth in 2027, with the drag over twice as large if rates remain at current levels

Impact of higher rates on QoQ annualized real GDP growth, GS baseline vs. current market rates, pp



Source: Goldman Sachs GIR.

...and watch additional risks

Beyond the impact on the most rate-sensitive areas of growth, we see two additional risks if the current level of rates persists. First, equity prices could come under pressure. The most rate-sensitive segments of the equity market—unprofitable tech, utilities, REITs, and homebuilders—have already pulled back sharply from their highs, though the S&P 500 has been roughly flat since August. Our strategists think that current rate levels should not prevent the equity market from rising further (see pg. 16), but if equities remained roughly flat through 2027, we estimate that the missing boost to household net worth would lower consumer spending growth by just under 0.5pp.

Second, the fiscal sustainability outlook could deteriorate. Large primary deficits remain the main driver of the US' rising debt-to-GDP ratio, but the average interest rate on outstanding debt has remained below nominal GDP growth in recent years, allowing the government to issue new debt without mechanically pushing the ratio higher. This would remain the case under our baseline rate forecast, but not if current rate levels persist and maturing debts are refinanced at a higher cost (see pg. 15). In this scenario, interest expense and debt as a share of GDP would rise to an unprecedented 6% and 132% by 2035, respectively, increasing the urgency of deficit reduction, which could create a further drag on growth.

Pierfrancesco Mei, US Economist

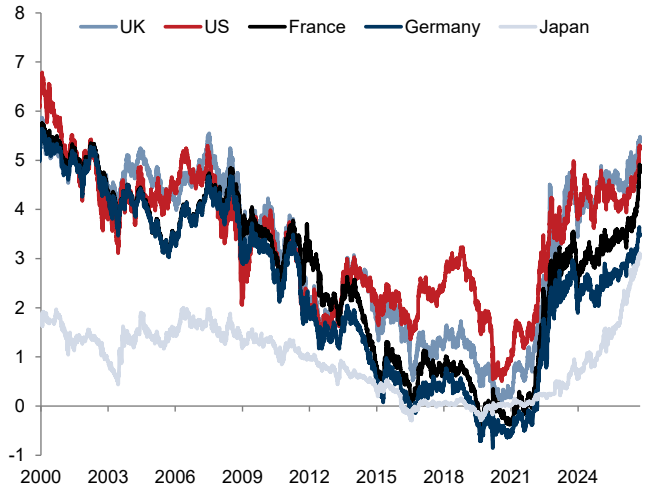
Email: pierfrancesco.mei@gs.com *Goldman Sachs & Co. LLC*
Tel: 212-902-8809

[2] We estimate the increase in interest expense separately for large and small businesses based on their financing needs over the next few years and then apply our standing estimates of capex sensitivity to interest payments.

A look at growing global fiscal risks

A sharp rise in sovereign bond yields around the world...

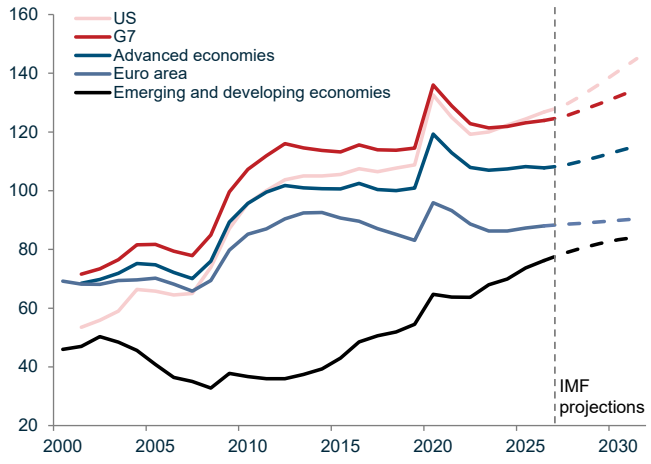
10-year sovereign bond yields, %



Source: Bloomberg, Goldman Sachs GIR.

...has both contributed to and reflected growing fiscal concerns, as already elevated debt-to-GDP ratios are set to rise further...

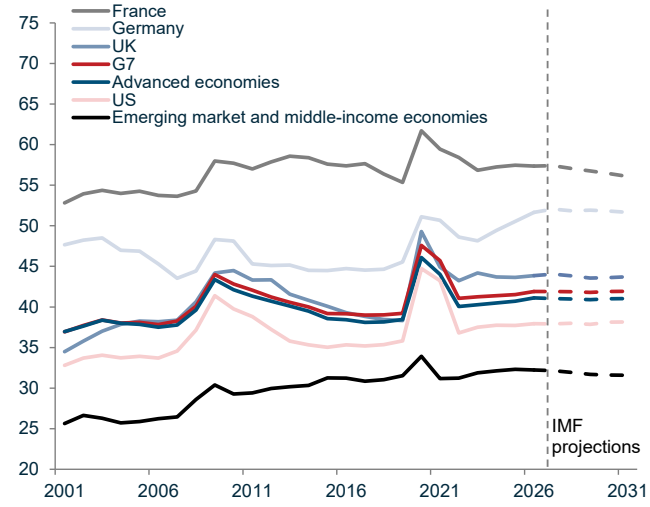
General government gross debt, % of GDP



Source: IMF (projections as of October 2026, found here), Goldman Sachs GIR.

...government spending is projected to remain high...

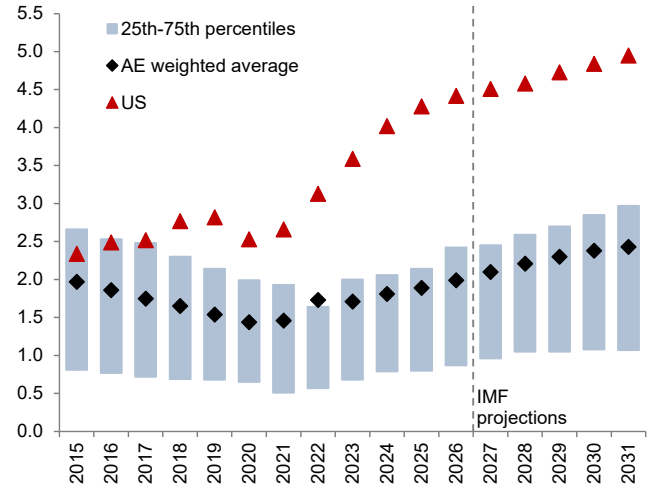
General government expenditure, % of GDP



Source: IMF (projections as of April 2026, found here), Goldman Sachs GIR.

...and interest expenses in advanced economies are expected to increase...

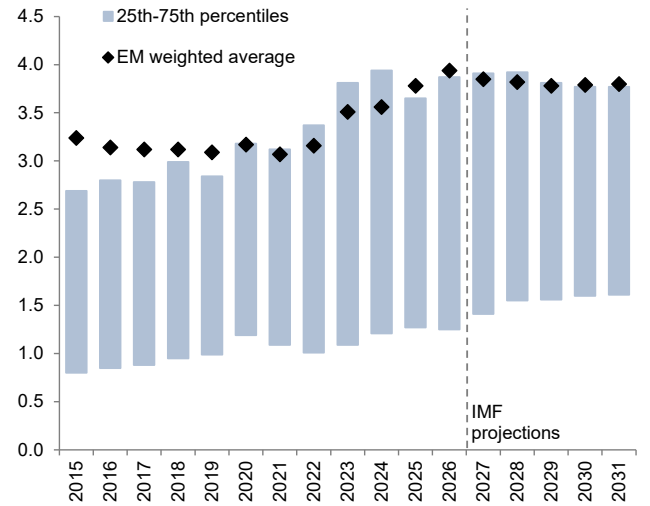
Interest expense in advanced economies (AE), % of GDP



Source: IMF (projections as of April 2026, found here), Goldman Sachs GIR.

...while debt servicing costs for the most vulnerable EMs are set to remain structurally elevated

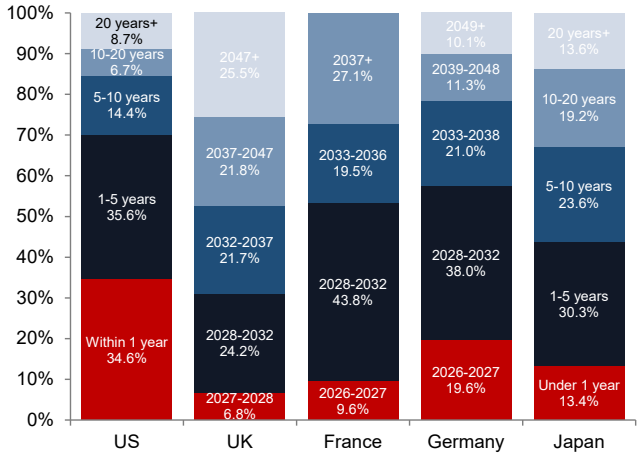
Interest expense in emerging markets (EM), % of GDP



Source: IMF (projections as of April 2026, found here), Goldman Sachs GIR.

Different debt maturity profiles across advanced economies mean that higher yields will impact the US relatively soon, while delaying the refinancing shock for longer-duration issuers like the UK

% of debt maturing within each timeframe, by country



Source: US Treasury, UK Debt Management Office, Agence France Tresor, Bundesrepublik Deutschland Finanzagentur, Japan Ministry of Finance, GS GIR.

Higher rates, greater US fiscal pressure

David Mericle and Pierfrancesco Mei assess the US fiscal outlook amid higher rates

While concerns about the US fiscal trajectory have grown steadily in recent years, driven by unusually large primary deficits and a debt-to-GDP ratio approaching post-WWII highs, the recent sharp rise in rates has intensified those concerns. Under our baseline forecast of nominal GDP growth close to 4.5%, an average primary deficit of around 3% of GDP, and an average interest rate on new government debt of just over 3.5%, we expect the debt-to-GDP ratio to rise from 100% today to 124% by 2035, and an even higher 132% if current rates persist—a problematic situation that is politically difficult to tackle, but too risky to ignore.

High debt is problematic…

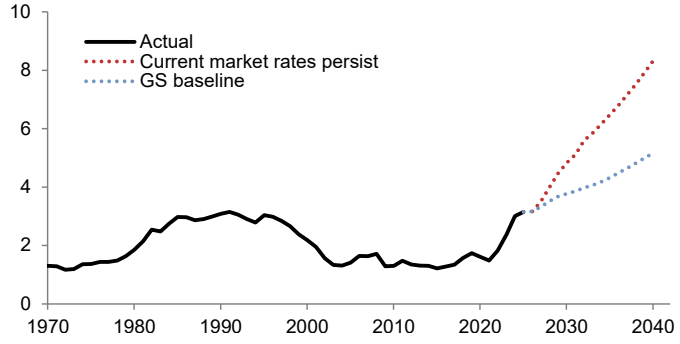
A large and growing debt is problematic because it puts upward pressure on nominal net interest expense as a share of GDP, which captures the cash outflows required to service the debt and is likely how policymakers think about the debt servicing burden. Nominal interest expense is already near its 1990s peak and is set to surpass it substantially in the coming years, especially if rates remain at current levels or rise even further.

A larger debt stock can also raise interest rates, which could further push up debt levels. The average interest rate on outstanding debt has been below nominal GDP growth in recent years, which has allowed the government to cover its interest expense by issuing new debt without contributing to an increase in debt-to-GDP (even though the large primary deficit has continued to push it higher). This would remain true under our baseline rates forecast, but would not if current interest rates persisted as maturing debt is refinanced.

To be clear, we don't think such a rise would likely trigger a classic debt crisis—where falling confidence in the government's ability or willingness to repay its debt causes a spike in interest rates that leads to financial market instability and/or recession—given that the US issues debt in dollars, sets its own monetary policy, and has a flexible exchange rate. But failing to address the rise is still risky and could prove costly. If the debt servicing burden or the necessary deficit reduction become large and painful enough, there could be pressure on the Fed to keep rates too low, resulting in high inflation. An unfavorable debt situation could also limit policymakers' ability and willingness to fight recessions with fiscal stimulus.

Nominal interest expense as a share of GDP will likely rise beyond its 1990s peak over the coming years…

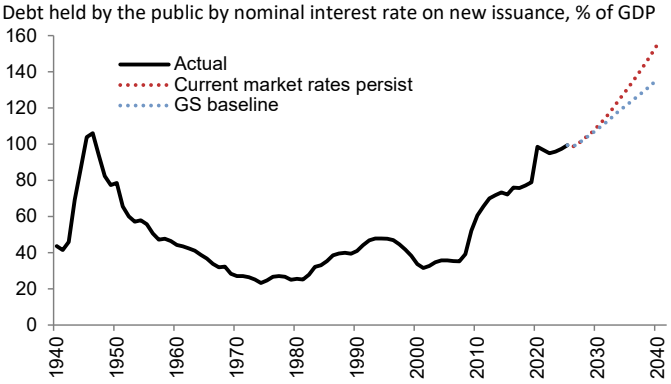
Federal nominal interest expense by nominal interest rate on new issuance, % of GDP



Source: Goldman Sachs GIR.

…and the debt-to-GDP ratio will likely reach 124% by 2035, and even higher if current rates persist

Debt held by the public by nominal interest rate on new issuance, % of GDP



Source: Goldman Sachs GIR.

…but politically difficult to tackle

The rise in the debt-to-GDP ratio that we expect over the next decade is driven entirely by a higher primary deficit rather than rising interest costs. So, balancing the primary budget would be sufficient to keep the ratio stable. The US has two advantages in achieving this adjustment. First, we expect growth to remain solid. This, together with substantial room for the Fed to ease and resilient private sector balance sheets, makes it more likely that deficit reduction would lower the debt-to-GDP ratio. Second, the US collects less revenue as a share of GDP than other G7 countries, giving it more room to raise additional revenue.

However, achieving a balanced primary budget would require a large deficit reduction given the current starting point—a tall order at a time when growing entitlement costs push in the opposite direction—and for now, deficit reduction looks politically unlikely.

Could AI solve the problem?

AI may be helpful in tackling the fiscal problem. A larger AI productivity boost to growth than we expect would slow the rise in the debt-to-GDP ratio, by boosting GDP and narrowing the primary deficit as revenues rise and cyclically sensitive outlays decline, much as the productivity boom that began in the late 1990s did. In a scenario in which AI lifts real GDP growth to 3% through 2035 (vs. ~2.5% in our baseline), we find that the debt-to-GDP ratio would rise to ~114% by 2035.

That said, AI may not be a magic bullet. The technology could displace workers, reducing government revenues and raising spending on income support, or it could shift national income from labor to capital, lowering the average tax rate and overall revenues. It could also improve healthcare and longevity, reducing some costs while potentially increasing overall entitlement spending. And it could boost the demand for capital, raising interest rates and government borrowing costs. This wide range of effects could dilute the improvement in government finances from higher productivity. So, AI is more likely to lower—not eliminate—the deficit reduction needed to tackle fiscal problems in the US and beyond.

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Rates won't derail equities, for now

Ben Snider argues that the current level of yields should not prevent the US equity market from rising further, though another sharp rise would likely pressure the rally

The S&P 500 is on pace for its fourth consecutive year of double-digit returns despite long-term Treasury yields surging to their highest levels in decades. For equity investors, the natural question is how much of a threat higher yields pose to stock prices, and at what level they might cause recent equity market strength to reverse. Ultimately, we think that the current level of yields should not prevent the equity market from climbing higher, though a further sharp rise would pressure the rally.

Higher rates weigh on valuations...

Rising rates most directly weigh on equity valuations. The value of an equity can be viewed as a discounted stream of future cash flows, and higher yields increase the discount rate applied to those future earnings. We estimate that over 75% of the S&P 500's current value reflects cash flows 10+ years in the future, the largest share in decades. In other words, the market is highly dependent on distant future profits, making valuations particularly sensitive to higher rates today.

Reflecting this pressure, equity multiples have declined substantially as bond yields have risen. The S&P 500 forward P/E multiple has fallen from 23x a year ago to 19x today, a nearly 20% decline. Although several factors have contributed to this decline—including AI-related uncertainty and skepticism about the durability of recent earnings strength—higher rates have played an important role.

However, while equity valuation multiples have fallen, valuations relative to bonds have remained surprisingly steady. The difference between the S&P 500 earnings yield (5%) and the real 10-year US Treasury yield (3%)—a simple proxy for the equity risk premium—currently stands at 230bp and has remained fairly stable over the past two years. This suggests that equity valuations have largely recalibrated to the rise in yields thus far. However, the steady recent relationship between equity valuations and interest rates also suggests that a further increase in yields from here would put additional pressure on stocks.

...but earnings matter more...

However, valuations are only part of the story. The continued appreciation of the equity market to new record highs this year despite rising rates and declining valuations is a testament to the predominance of earnings in driving stocks. S&P 500 earnings have grown by over 30% during the past 12 months, more than offsetting the rates drag on valuations. The more critical question for equity investors is therefore whether rising rates will derail the market's underlying earnings strength.

We see three reasons for optimism. First, US corporate balance sheets generally appear healthy today. Most S&P 500 company debt carries fixed rates and long maturities, and interest expenses remain small relative to strong profits. The S&P 500 interest coverage ratio exceeds 10x, close to the highest level on record, and interest coverage for the median S&P 500 stock ranks in the 70th percentile of the last 40 years.

Second, we estimate that AI investment spending is driving roughly half of S&P 500 earnings growth this year, and we don't expect the recent rise in interest rates to affect those spending plans. While debt is financing a growing share of AI spending, the largest companies driving this spending have particularly strong balance sheets and appear to be targeting returns well in excess of their current cost of capital.

Third, although the Fed recently hiked its policy rate, there is little evidence of economic overheating that would prompt policymakers to tighten aggressively to slow growth. And with the rates market already pricing over three additional 25bp hikes in the coming year, the bar for policy to surprise in a hawkish direction is high.

...and rate volatility matters too

Interest rate volatility also matters for equities. Over the past few decades, stocks have usually been able to digest gradually rising rates but have struggled to digest sharp rate increases, typically declining alongside increases in Treasury yields greater than two standard deviations. This relationship has been consistent across investment horizons and parts of the yield curve. Today, a two standard deviation move in the 10-year yield is roughly 50bp in a month, a "speed limit" only recently exceeded as yields surged in late September. So, further increases in interest rate volatility warrant close watch.

Some pockets of greater vulnerability

While the broad US equity market looks reasonably resilient at current yield levels, some pockets of the market are more vulnerable. Smaller companies typically have weaker balance sheets and more floating-rate debt than large-cap companies, leaving small-cap stocks more sensitive to rising rates. Real estate and housing stock earnings are also particularly tied to the interest rate environment. Recent rotations within the equity market have reflected these sensitivities. Homebuilder stocks, for example, have lagged the S&P 500 by more than 20pp since June, closely tracking moves in long-term yields.

This uneven rate sensitivity has pushed correlations across US stocks to near record lows. While concerns about rising rates have weighed on many stocks, the strong balance sheets and earnings growth of many companies exposed to the AI boom have kept the aggregate S&P 500 index near its record high. As a result, US equity market breadth has fallen to its lowest level since the Dot-Com Boom.

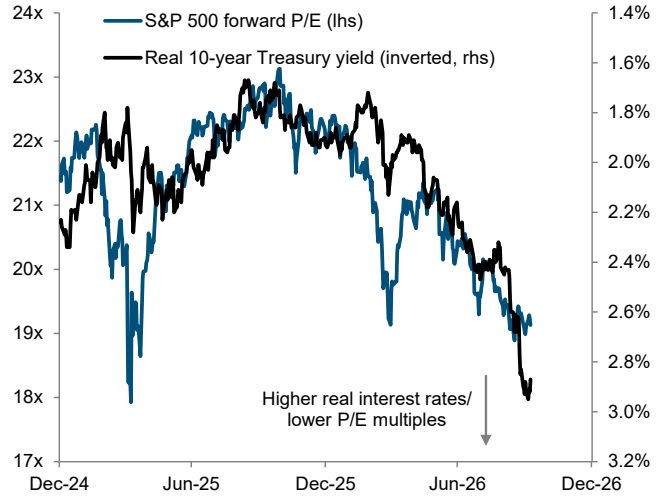
Not derailing equities, for now

Looking ahead, easing rate pressures would likely broaden the equity market rally and propel indices to new highs. However, even if yields remain at current levels, stocks should continue to climb gradually higher, as long as the earnings outlook remains intact and rate volatility remains contained.

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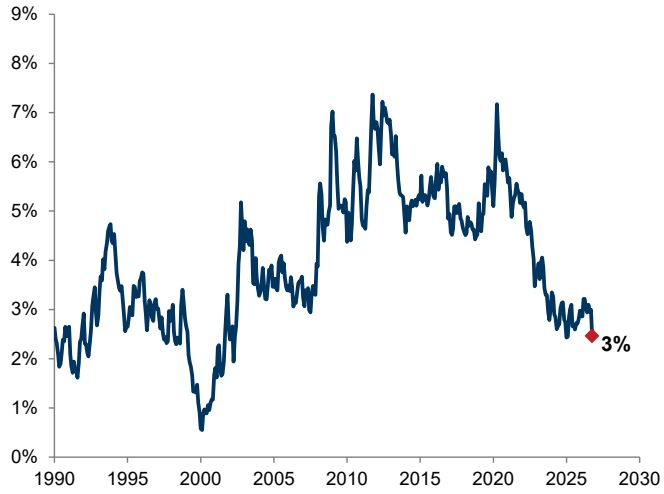
US equity multiples have declined this year as bond yields have risen...



Source: FactSet, Goldman Sachs GIR.

...though the market-implied equity risk premium has remained relatively stable in the past few years

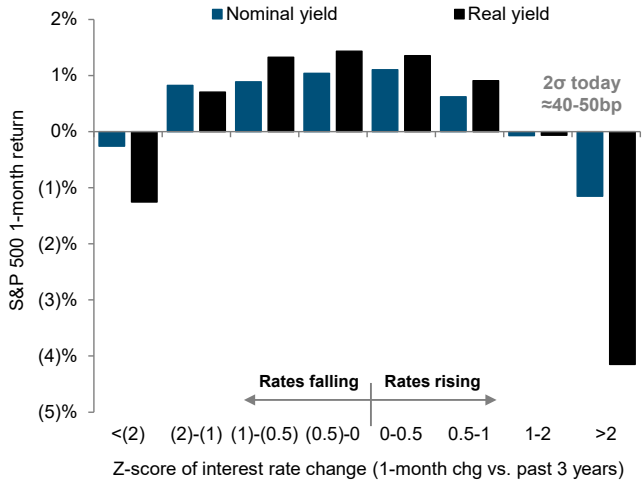
S&P 500 DDM-implied equity risk premium



Source: Goldman Sachs GIR.

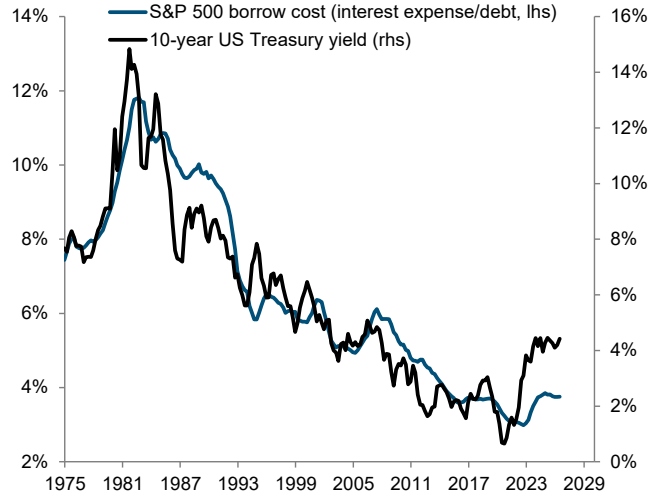
Equities typically struggle to digest sharp rises in bond yields...

Average monthly S&P 500 return vs. change in 10-year US Treasury yields



Source: Goldman Sachs GIR.

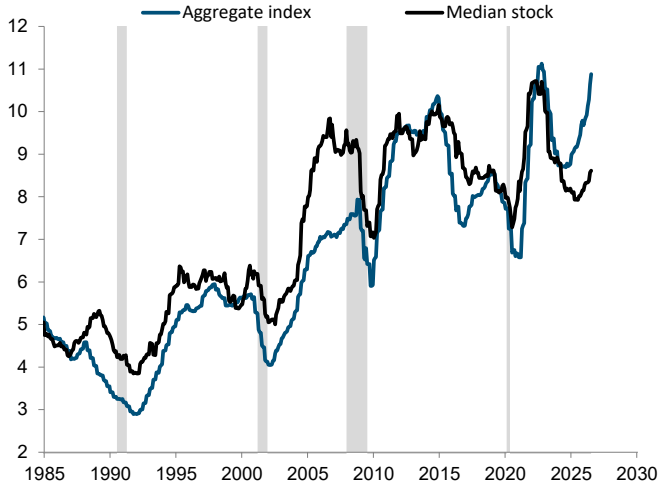
...though corporate balance sheets currently face limited fundamental risk from rising rates, as the increase in interest expense has been manageable...



Source: Compustat, Goldman Sachs GIR.

...and interest coverage ratios are historically high

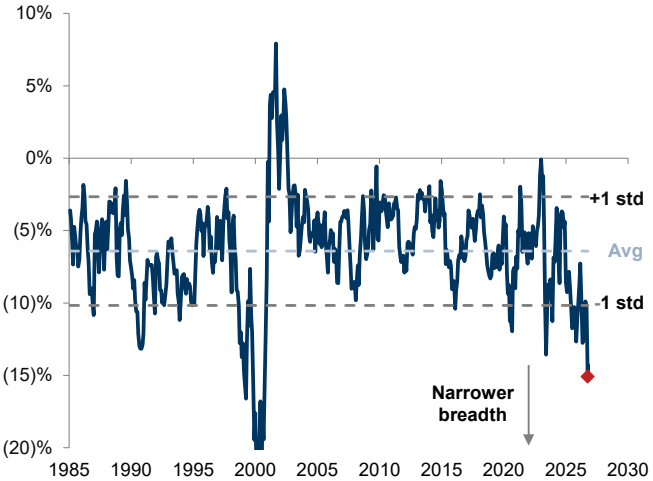
S&P 500 interest coverage (ex Financials)



Note: Aggregate excludes "other income" for GOOGL, AMZN, MSFT in recent quarters; grey bars denote recessions.
Source: Compustat, Goldman Sachs GIR.

But uneven rate sensitivity has pushed correlations across US stocks to near record lows, leading US equity market breadth to fall to its lowest level since the Dot-Com Boom

S&P 500 52-week market breadth



Source: Goldman Sachs GIR.

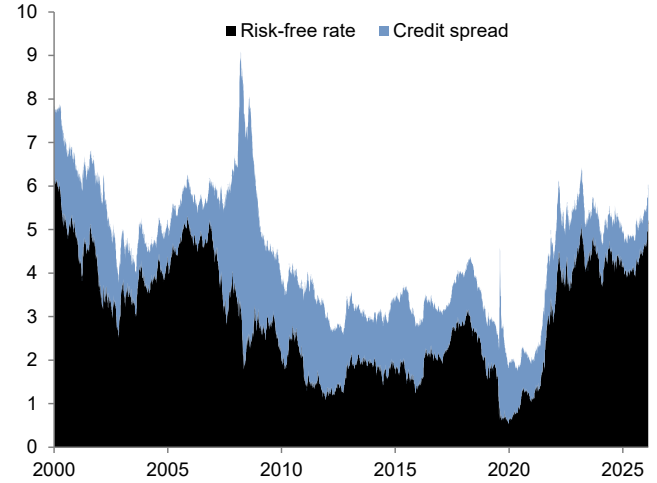
Rates risk in credit

Amanda Lynam sees growing risk that interest rates shift from a tailwind to a headwind for credit markets but views the headwind as manageable as long as growth holds up

For much of the past few years, elevated Treasury yields, or risk-free rates, have been a tailwind to corporate credit, sparking "yield-based" demand from institutional investors such as pensions, insurers, and foreign entities. The ability of these investors to achieve their all-in yield targets—even though much of the "heavy lifting" has been driven by the *risk-free rate rather than credit spreads*—supported demand for corporate credit and helped keep spreads anchored in a tight range. Credit spreads account for less than 15% of the all-in yield of the USD Investment Grade (IG) Corporate Index today, compared to 45% from 2019 to 2021, on average. This has effectively turned segments of the corporate credit market into a quasi-rates product. But with interest rate volatility now increasing, we are monitoring the risk that interest rates shift from a *tailwind* to a *headwind* for credit in two ways: by reducing investor demand and weighing on corporate fundamentals.

Credit spreads now account for less than 15% of the all-in yield of the USD IG Corporate Index

All-in yield for the Bloomberg USD IG Corporate Index, deconstructed between the spread and risk-free rate components, %



Note: Data as of September 28, 2026.
Source: Bloomberg, Goldman Sachs GIR.

Rate volatility poses a risk…

Increased rate volatility could reduce the confidence of yield-based investors to deploy capital. This would be especially negative for the IG market, as a large part of the yield-based demand was targeted toward that universe (due to insurers' rating-sensitive capital rules, for example). This flow is sizable, yet difficult to track. While weekly mutual fund and ETF flows are a closely watched, high-frequency data point for gauging credit market sentiment, they often *do not* capture flows from large-scale institutional allocators such as pensions, insurers, and sovereign wealth funds. The key signpost to watch for waning credit demand, in our view, is if rate volatility revisits the elevated levels of 2022-2023.

Higher rates could also weigh on corporate fundamentals through a higher cost of debt capital and/or pressure on interest-sensitive business models which rely heavily on financing, such as those tied to housing and autos. These fundamental concerns are most pronounced for leveraged finance borrowers, who tend to have thinner financial cushions relative to their larger and more diversified peers. These borrowers also tend to rely more heavily on floating rate debt, which experiences a headwind from higher base rates immediately. Fixed rate borrowers, by contrast, experience higher interest costs only if/when they refinance their lower-coupon debt.

We also believe the fundamental improvements visible over the past several quarters are likely to stall somewhat for issuers in the broadly syndicated leveraged loan and private credit markets. Higher base rates are an especially unwelcome development for issuers aiming to refinance upcoming Software loan maturities—especially those formed during the low interest rate backdrop of 2020-2021, before the potential for AI-related disruption to legacy Software business models became a key concern.

…though floating rate credit could benefit…

While higher rate volatility could weigh on credit demand, modestly higher base rates may actually support increased demand for floating rate credit, such as direct lending loans (within private credit) or broadly syndicated loans (either outright or as part of structured investments), on the margin.

The experience of the past few years in the broadly syndicated loan market shows how the linkage between higher base rates and demand can be nuanced. Notably, loan funds reported *outflows* when rates rose during the Federal Reserve's 2022-2023 hiking cycle, as recession concerns overshadowed higher loan yields. Given the magnitude and speed of the rate hiking cycle during 2022-2023, there was also a more pronounced focus on debt service and default risks.

Incrementally higher rates in the current market backdrop are unlikely to generate the same concerns, in our view. Indeed, inflows into loan funds have accelerated since April 2026 and the momentum has extended into late September. Similarly, private credit fundraising reached a new record in 2Q26, but we primarily attribute this to the broad-based improvement in sentiment toward the asset class.

…and growth is key

The drivers of any rate increases are also far more important than the absolute levels of rates. Higher rates reflecting resilient growth are more easily digested by credit fundamentals. Given the solid state of the economy and the relatively contained amount of rate hikes that our economists expect, we view the fundamental headwind as largely manageable and unlikely to spark a meaningful rise in defaults above our current forecasts.

A high bar to derail AI-related debt issuance

All that said, given the sharp increase in yields across the curve, market participants are increasingly questioning whether a higher cost of debt capital could impact higher-rated issuers—potentially derailing the pace of AI-related investment and, by extension, the AI-related debt issuance that we expect over the

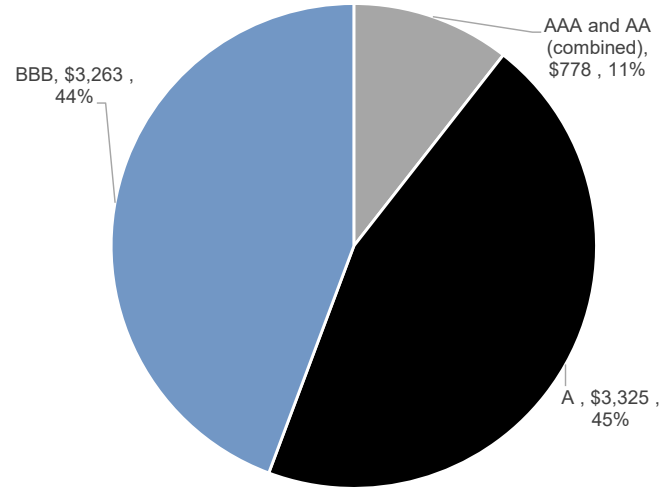
next few years. We view the bar as very high for such a scenario, for two key reasons.

First and foremost, we do not view today's all-in cost of debt as outsized by historical standards. For example, while the 10-year US Treasury yield (5.30%) is the highest since 2007, the USD IG index-level spread of 83bp still ranks toward the tight end of the historical range since 2000 (and below the average of 144bp). A similar takeaway is visible when isolating the spread of the USD IG Technology index. While the average spread of the sector has widened more than 20bp so far in 2026, the index-level spread measure of 91bp is below the average of 128bp since 2000. Moreover, while longer-term ROIC metrics on AI investment are still widely debated, even a relatively conservative assumption of a 15% ROIC leaves plenty of room for the after-tax cost of debt to increase, while still likely resulting in accretive debt-financed investment opportunities.

Second, highly rated Technology issuers have plenty of financial flexibility and debt capacity. For example, several AI-related firms—including MSFT, META, AMZN, GOOGL, NVDA, and TAISEM—have credit ratings in the range of AAA or AA. Such a high rating has become a relative rarity in the credit market, with only 11% of the market in that territory. Far more common these days is a rating in the A or BBB context—which allows for additional balance sheet leverage while still offering ample, consistent access to the USD IG debt capital markets.

Only 11% of the market value of the USD IG Corporate Index is rated AAA or AA

Market value by rating for the USD IG Bloomberg Corporate Index, $bn

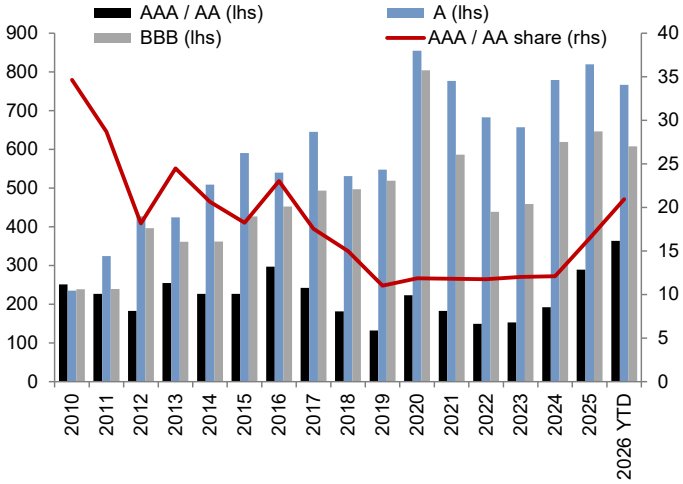


Note: Data as of 2Q26.
Source: Bloomberg, Goldman Sachs GIR.

The significant financial flexibility of the combined AAA/AA universe of issuers is visible when comparing key credit metrics side-by-side. The interest coverage ratio for the AAA/AA cohort is a striking 27.7x. This compares to 7.5x for the A-rated universe. Net leverage tells a similar story: 0.5x for the AAA/AAs, compared to 2.5x for As.

As Tech-related issuance has accelerated, the share of USD IG issuance rated AAA/AA has climbed to the highest since 2016—but A and BBB rated issuers still dominate the market

USD IG gross issuance by rating at launch (lhs, $bn) vs. the share of issuance that is rated AAA or AA (rhs, %)

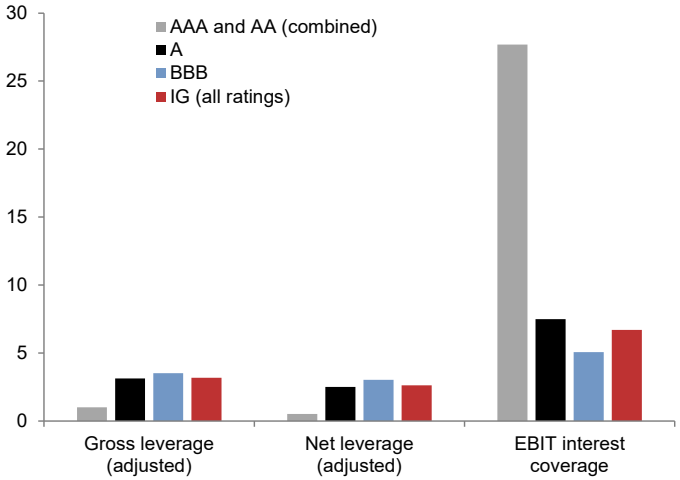


Note: Data as of September 28, 2026. Uses Dealogic Effective Rating at Launch.
Source: Dealogic (ION Analytics), Bloomberg, Goldman Sachs GIR.

We expect these highly rated, AI-focused firms to utilize the significant debt capacity available—irrespective of a higher cost of debt capital—as the risk of *under*investment in AI-related innovation appears greater than *over*investment.

AAA and AA rated firms have significant financial flexibility—and debt capacity—relative to the broader USD IG market

Trimmed mean aggregate credit metrics for the rating-specific cohorts of the USD IG Corporate Index, ratio (x)



Note: Data as of 2Q26. Gross leverage, net leverage, and interest coverage metrics use trimmed mean, which excludes the top 10% and bottom 10% of observations.
Source: Bloomberg, Goldman Sachs GIR.

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Q&A: impact of higher rates on financials

Banks

Q: What are the implications of the recent rise in rates across the curve for banks?



Richard Ramsden, Head of Financials Equity Research Group

A: Higher rates impact banks through three primary channels: 1) net interest income (NII), 2) credit quality, and 3) mark-to-market changes in bank securities' fair value.

Net interest income (NII): We expect higher rates to have an overall positive impact on US banks' NII given their asset-sensitive balance sheets, where asset yields reprice faster than liabilities. Higher long rates accelerate fixed-rate asset repricing as maturing loans and securities roll over into higher coupon assets. While higher short-term interest rates put upward pressure on funding costs, for most banks this is more than offset by the repricing of floating-rate loans and securities, as well as higher yields on cash held at central banks. Higher interest rates can also weigh on loan growth given that elevated borrowing costs adversely impact demand. However, the historical relationship between changes in rates and loan growth is relatively weak, with consumer spending and corporate confidence generally the larger drivers of loan demand.

Credit quality: Higher interest rates can increase delinquency and default risks, particularly in commercial real estate (CRE), where maturing debt is refinanced into higher coupon debt. However, a significant deterioration in unemployment or corporate bankruptcy rates has historically driven meaningful increases in nonperforming loans (NPLs), neither of which has occurred so far in this cycle. Accordingly, we do not expect the recent increase in rates to materially impact credit quality unless it is accompanied by broader economic deterioration.

Changes in securities values: Higher rates will also result in negative marks on banks' securities portfolios, decreasing their capital positions. However, we expect the impact of this shift to be manageable this quarter. We estimate that marks for available-for-sale (AFS) portfolios will decline by ~0.6%, resulting in a ~13bps reduction to CET1 ratios and ~8bps hit to tangible common equity-to-tangible assets (TCE/TA). Most banks should retain excess capital even after accounting for these losses. That said, the risk of further rate increases, alongside continued growth in bank balance sheets, could lead some banks to moderate buybacks in coming quarters to ensure that they maintain capital cushions. Higher rates also impact held-to-maturity (HTM) securities portfolios, which are larger than AFS portfolios. However, these losses do not impact a bank's capital position and pose limited risk to the banking system unless material deposit outflows force banks to realize losses in their HTM book. So far, deposit flows into the banking industry have remained positive (+6% YoY and 1% QoQ over the last 3 months) and HTM losses remain meaningfully below 2023 levels, reflecting both shorter securities duration across banks (the duration has fallen from 4.8 years to 3.7 years since 2023) and smaller overall HTM portfolios.

Q: Does the above calculus shift at all for smaller/regional banks?

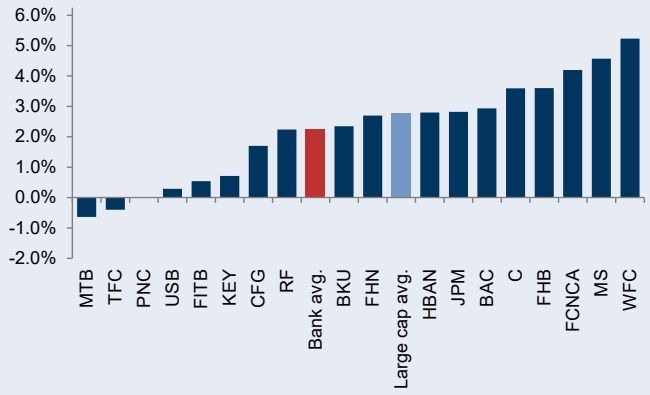
A: Regional banks are more sensitive to interest rate movements than large-cap banks because they generally have less diversified revenue streams and therefore rely more heavily on spread income. By contrast, large banks typically generate a greater share of their revenues from capital markets and wealth management businesses, reducing their rate sensitivity.

Q: Where do you see the most attractive investment opportunities if rates remain elevated?

A: In a higher rate environment, we prefer banks with high-quality deposit bases as those deposits are largely operational and not yield-seeking and therefore face limited upward pressure from higher rates. We also favor banks positioned to benefit from higher long-term rates as fixed-rate assets reprice.

Banks remain mostly asset sensitive

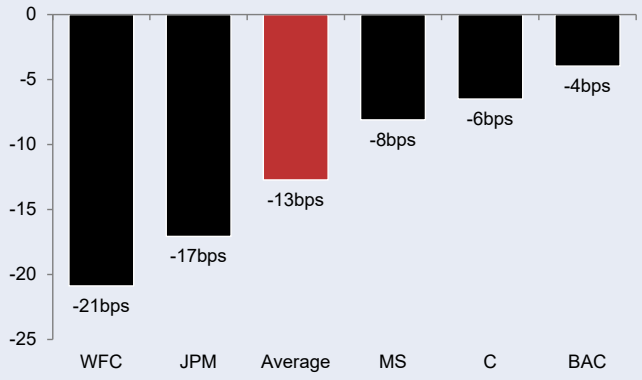
Estimated NII sensitivity to a +200bps parallel shift in rates



Source: Company data, Goldman Sachs GIR.

We estimate a ~13bps hit to CET1 ratios through Accumulated Other Comprehensive Income (AOCI) from AFS marks

Impact on CET1, bps



Source: Company data, Goldman Sachs GIR.

Private markets



Alexander Blostein, US Financials Equity Research Analyst

Q: What are the implications of the recent rise in rates across the curve for private markets?

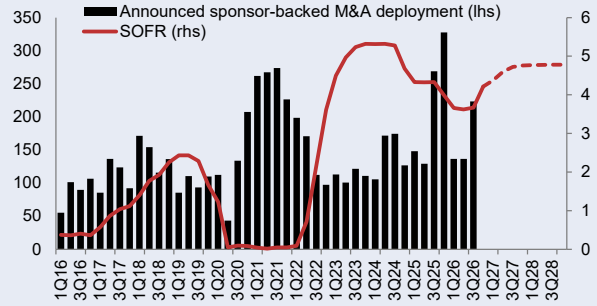
A: The rise in rates is generally negative for private markets, though the implications vary by asset class and, ultimately, the level of rates. At a high level, higher rates across the curve typically result in (1) lower levels of monetization and deployment activity in private equity, real estate, and the direct lending part of private credit (loans to sponsor-backed portfolio companies) and (2) potential headwinds to portfolio valuations, particularly in growth-oriented private equity assets and real estate.

Most private equity assets are funded with floating-rate loans, so the short-end of the curve tends to have a larger impact on financial sponsors' deployment and realization activity. When it comes to valuations, we believe much of this risk is hedged out, reducing the ultimate impact on portfolio companies' cash flows and investment performance, but higher-growth companies where most of the value is predicated on terminal value could be more negatively impacted.

In private real estate, the long end of the curve tends to matter more for both valuation and activity rates. Direct lending could also see slower activity rates as it is directly linked to private equity capital deployment. And higher borrowing costs from floating rates could weigh on cash flows and credit performance, though the absolute risk of a ~100bp move would be manageable.

We expect broad M&A deployment volumes to remain relatively range-bound amid higher rates

Announced sponsor-backed M&A deployment (lhs, $bn) vs. SOFR (rhs, %)



Source: Dealogic, Refinitiv Eikon, Goldman Sachs GIR.

Based on what we have seen so far across both the long and the short end of the curve (including market expectations for future rate hikes), we see the slowdown in private market activity as relatively temporary, with rate volatility, as opposed to the currently higher absolute level of rates, driving incremental uncertainty.

Q: If the rise in rates continues, at what point would you become more concerned about the outlook for private markets?

A: Rates rising +/- 100bps across the curve should not be a material headwind to private markets, and we expect activity to resume once the level of rates stabilizes. However, if rates rise significantly more, we expect more concerns around the valuation of longer-duration assets, such as real estate and growth-oriented private equity. A more prolonged hit to exit activity would also further delay the return of capital to investors (which has been running around two years behind typical timelines), leading to lower fundraising outlooks.

Q: What do you believe investors may be too concerned about, or underappreciating, about how higher yields could impact private markets?

A: Although higher rates are a net negative to private markets, the absolute level of rates matters. So far, the rise in yields of around +/-100bps has been relatively manageable, and activity rates are likely to resume once rates volatility stabilizes. Moreover, credit spreads remain tight by historical standards, and economic growth (a larger driver of value across private equity) remains on a strong footing. We think investors are likely overestimating the fundamental damage of higher rates on alternative managers, leading to stock price selloffs of >20% that represent a significant overshoot relative to the low-to-mid single-digit risks to 2027 earnings that we forecast in our base case. We note that the industry has spent the better part of the last three years operating in a higher rate environment, during which time fundraising, deployment, and realization activity have all experienced periods of pressure but continued to grow on a multi-year basis.

We think investors are also underappreciating the robust structural tailwinds that help offset macro headwinds, including (1) the earnings lever of the AI capex cycle across infrastructure, private credit, and syndication businesses; (2) the highly resilient fundraising trends; (3) the stabilization of retail alternative channels, where private credit redemption requests have peaked and are beginning to moderate alongside strong momentum in non-credit vehicles; (4) potentially stronger returns from newer vintages in private credit/direct lending amid higher base rates (since loans are floating rate); and (5) a potential acceleration in secondary market activity as LP liquidity is further pushed out by slower realizations.

Q: Where do you see the most attractive investment opportunities if rates remain near current levels or continue to rise?

A: If rates remain at current levels or move modestly higher, we would continue to see the most attractive opportunity set in infrastructure, private credit, and secondaries. In infrastructure and private credit, the secular investment cycle around AI-related power, energy, and digital infrastructure remains one of the most significant capital deployment opportunities in private markets today, supporting both deployment volumes and earnings growth for managers with relevant exposure. And in secondaries, depressed realizations and persistent pressure on distributed to paid-in capital (DPI) continue to drive a favorable supply-demand backdrop, creating opportunities to acquire assets at attractive discounts to net asset value.

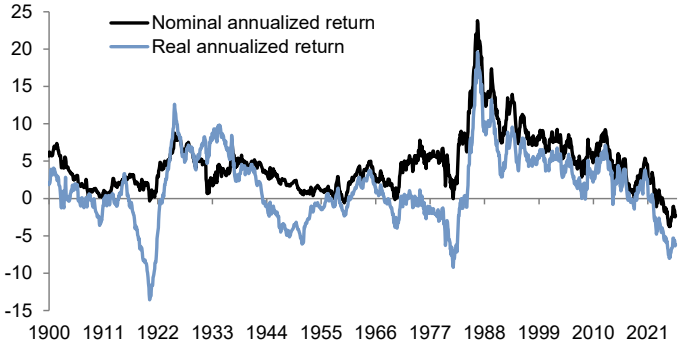
When to yield to bonds

Christian Mueller-Glissmann and Andrea Ferrario argue that higher yields strengthen the strategic case for bond allocations

Over the past five years, US 10-year bonds delivered the worst return in over a century—with real returns declining to levels seen only in the aftermath of WWI and WWII and in the 1970s—as global bond yields have risen sharply toward their long-run average from unusually low levels during the post-Global Financial Crisis (GFC) cycle (at 5.2%, the US 10-year yield is modestly above its 4.7% average over the past 250 years). These higher starting yields should improve carry, lift medium- to long-term total returns, and provide a larger portfolio buffer against further yield increases. This argues for a larger strategic allocation to bonds than over the past five years, but we do not expect an immediate return to the 60/40 portfolio, as strong earnings growth, sticky inflation, and capital competition still favor equities over bonds, at least for now.

US bonds recently had one of the worst returns in a century

5-year rolling returns of 10y Treasury bonds, %



Source: Haver Analytics, Robert Shiller, Goldman Sachs GIR.

Finding the right balance

The optimal equity/bond mix has varied materially over time, largely as a function of macro conditions. Since 1950, the 60/40 portfolio has been close to optimal on average, but the optimal mix has shifted significantly in recent decades. From the GFC to the Covid-19 pandemic, the optimal equity/bond allocation was closer to 40/60. But over the past five years, it has shifted to 100% equities, as most investors would have been better off pairing equities with cash than holding a balanced portfolio.

An improving tactical and strategic case for bonds…

However, higher yields are shifting the calculus for bonds, but their attractiveness depends on the investment horizon. In the near term, monetary policy and energy prices should remain the key drivers of equities and bonds. Further yield increases—particularly if driven by higher energy prices or more aggressive central bank tightening—would likely weigh more on equities than bonds, with increases above two standard deviations over three months historically triggering particularly large equity declines. Conversely, lower energy prices, continued core inflation normalization, and less hawkish central banks should help bonds stabilize into year-end and support equities.

Over medium- to long-term horizons, higher starting yields should improve carry and buy-and-hold returns while also giving bonds better asymmetry as the potential gains from rate relief now exceed the likely losses from a further rise in yields.

Accordingly, the case for higher strategic bond allocations is stronger now than in the past five years, and we see the optimal share of bonds in portfolios normalizing back toward the long-run optimal range of 35-55%.

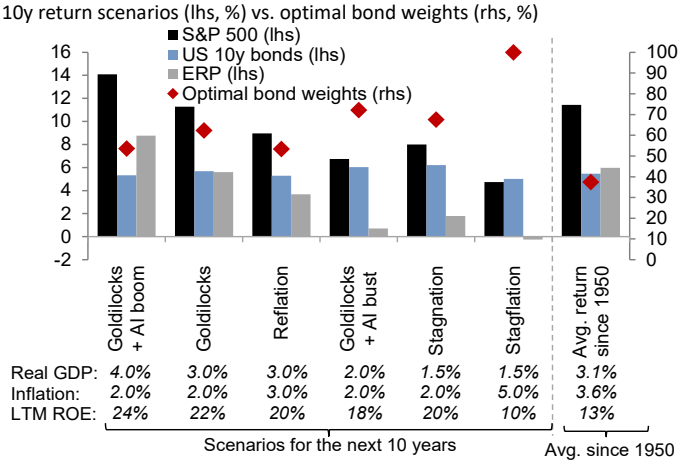
…but not quite a 60/40 balance yet

However, we do not expect a return to the traditional 60/40 portfolio anytime soon as strong earnings growth still favors equities over bonds in the near and medium term. Prospective global equity carry—the starting dividend yield plus subsequent change in earnings—has increased sharply this year, supported by the AI investment boom. Our equity strategists expect slower but still strong earnings growth next year, which should keep risk-adjusted equity returns attractive relative to bonds, even as relative returns moderate. That said, the case for higher bond allocations would strengthen on a 6-12m horizon if AI-driven earnings tailwinds fade or growth slows materially.

For now, bonds' diversification benefits are also likely to remain weaker than during the post-GFC period as equity/bond correlations should be less negative with less firmly anchored inflation. And even over a 10-year horizon, equities are likely to drive most of the variation across portfolio outcomes.

Structural regimes point to different long-term return forecasts

10y return scenarios (lhs, %) vs. optimal bond weights (rhs, %)



Source: Haver Analytics, Robert Shiller, Goldman Sachs GIR.

Beyond bonds for balanced portfolios

As the case for more "normal" strategic allocations to bonds grows, investors should favor the parts of the curve that offer the best carry vs. convexity balance, such as the belly of the curve. Rates receiver swaptions on shorter-dated rates can also provide a more convex hedge for recession risk as well as lower energy prices and rates relief.

Bond-like equities are also a valuable source of diversification. Correlations between the S&P 500 and both low-volatility and high-dividend stocks have fallen sharply, while the proportion of stocks with a negative beta to the market has risen, as it did around the Tech Bubble. Conversely, equity-like bonds such as convertibles can improve portfolio asymmetry, as embedded call option provides upside exposure to equities, while their relatively low duration limits sensitivity to rising bond yields.

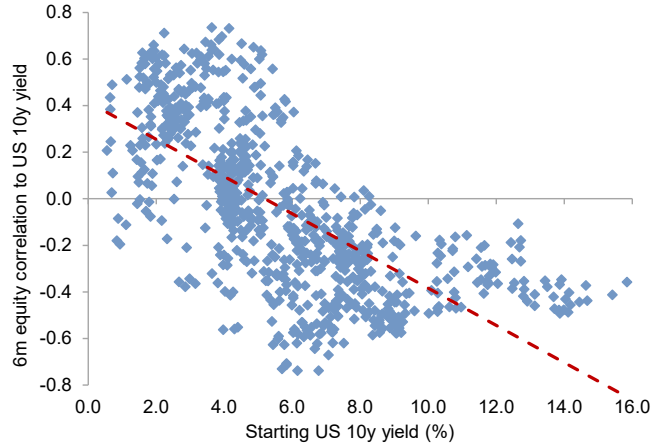
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Multi-asset implications of rising rates

US bond yields and equities tend to become more negatively correlated as bond yields rise...

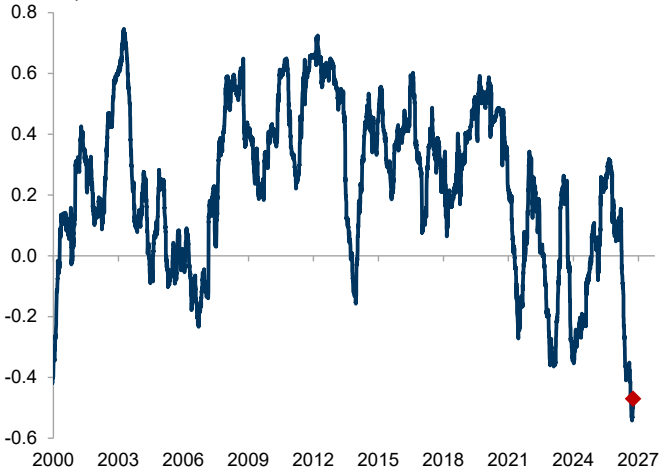
Starting US 10y yield vs. 6m correlation of S&P 500 index to US 10y Treasury yield



Note: Data since 1962.
Source: Bloomberg, Haver Analytics, Goldman Sachs GIR.

...with equity-bond yield correlations turning sharply negative amid the latest rise in yields...

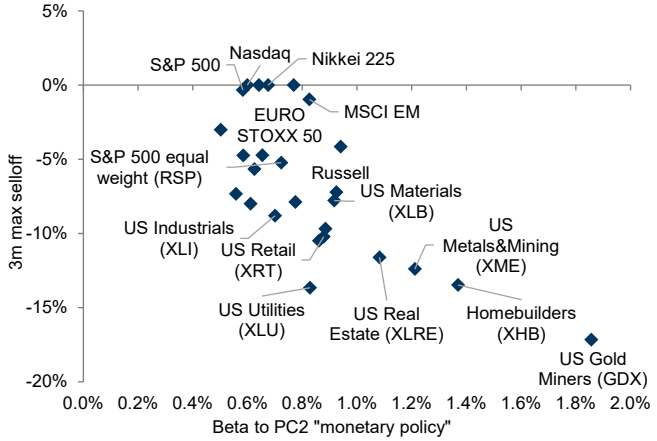
6m correlation of S&P 500 index and 10y Treasury yield (weekly returns)



Source: Datastream, Goldman Sachs GIR.

...and the most rate-sensitive equity market sectors selling off sharply in recent months

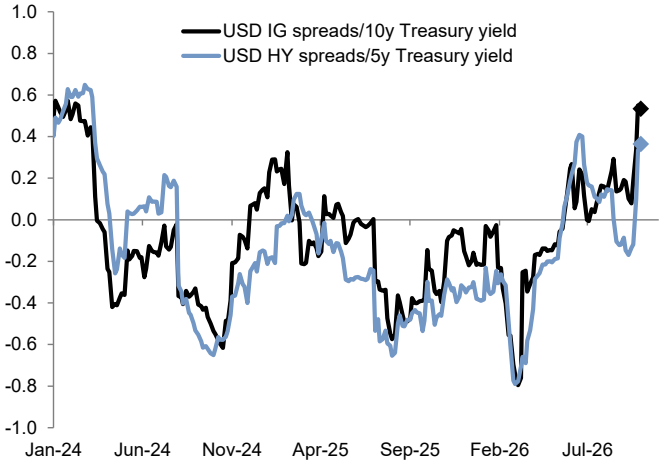
3y beta to "monetary policy" vs. 3m max selloff



Note: Beta is taken from a multivariate regression on both the PC1 "Global growth" and PC2 "Monetary policy" factors.
Source: Datastream, Bloomberg, Goldman Sachs GIR.

Rising yields have also pushed USD credit spreads wider as higher borrowing costs lead investors to demand a larger risk premium, with the correlation now firmly positive

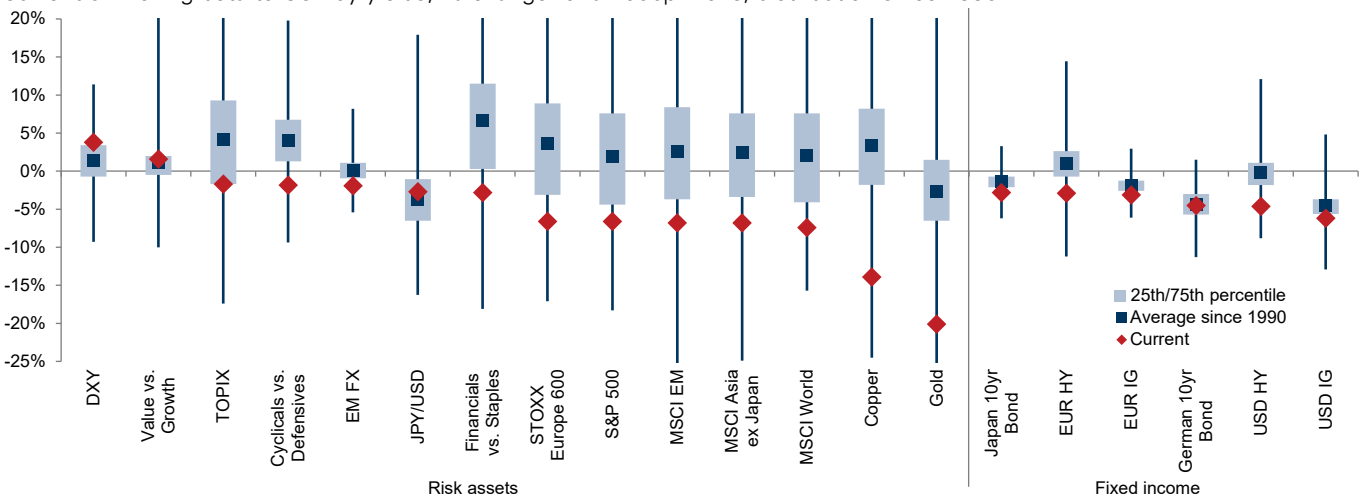
Rolling 3m correlation of USD credit spreads to bond yields



Source: Bloomberg, Goldman Sachs GIR.

More broadly, fixed income assets (unsurprisingly) tend to suffer when bond yields rise, while the impact on risk assets varies and can depend on the drivers of higher yields, though the latest increase has broadly weighed on risk assets

Current 3m rolling beta to US 10y yields, % change for a 100bp move, distribution since 1990



Source: Datastream, Goldman Sachs GIR.

Special thanks to GS Asset Allocation Strategist Andrea Ferrario and GS Global Credit Strategist Shamshad Ali for charts.

Q&A on US Treasury buybacks

Q: What are Treasury buyback operations and how do they work?

A: The Treasury conducts buyback operations generally once or twice a week by purchasing off-the-run Treasury securities (securities that are not the most recently issued) from primary dealers and other select market participants up to a pre-announced cap. While the Treasury is under no obligation to buy back any securities, it often purchases the maximum amount. The Treasury funds these purchases by issuing additional short-term debt, effectively removing longer-term debt from the market and replacing it with shorter-term debt.

Q: Why does the Treasury conduct such operations?

A: The purpose of buyback operations is to bolster market liquidity by establishing a "regular and predictable" opportunity for market participants to sell off-the-run securities. Bonds tend to become less liquid as they age, so by offering periodic opportunities for dealers to reduce inventories of these securities, the Treasury helps ensure sufficient liquidity and supports overall market functioning across the maturity spectrum.

Q: What did the US Treasury recently announce regarding its buyback operations?

A: On August 19, the Treasury announced that it would at least double the size of its buyback operations for longer-dated government debt (the 10- to 20-year and 20- to 30-year maturity buckets), from $2bn/operation to at least $4bn/operation. The announcement was notable given that the buyback schedule is typically set at each Quarterly Treasury Refunding—the Treasury's quarterly announcement of its borrowing strategy and upcoming debt auction sizes—making a mid-quarter change to operation sizes unusual.

Q: How meaningful is the announced increase in buybacks?

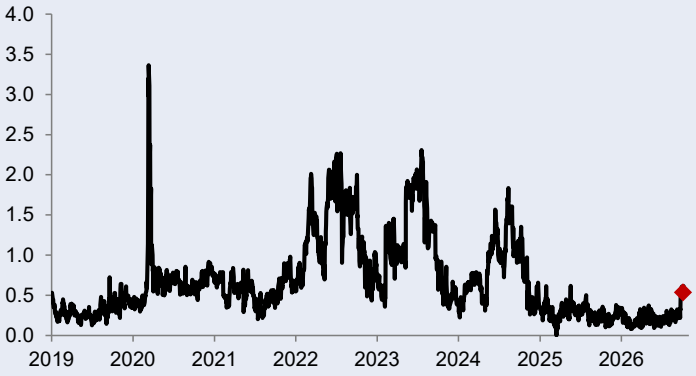
A: While the expanded operation is meaningful from a long-end supply perspective—at the new upsized amount, long-end buybacks should offset at least 30% of gross 10-30 year issuance annually, and 45% if the Treasury uses the entire $6bn cap it has announced so far for each buyback operation—it is small relative to overall Treasury supply. The stock of US Treasury debt with at least 10 years to maturity stands at around $4tn, or around 15% of privately held debt outstanding. While the larger buybacks should keep that share roughly stable over the coming years following several decades of steady increases, they will likely have a much more marginal impact on the total debt outstanding as a share of GDP.

Q: Why did the Treasury increase the operation size?

A: The Treasury cited liquidity support as the justification, pointing to the "significant volume of high-quality offers it routinely receives in longer-dated buyback operations" as evidence of strong dealer demand to sell older securities. That said, we see little evidence that yields have risen due to poor liquidity or an oversupply of long-end Treasuries, with macro fundamentals the main drivers of the recent bond selloff (see pgs. 10-11). The more likely motivation for the increase in buybacks looks to be a desire to temper the rise in longer-term bond yields. That said, the Treasury's purchase of over $4bn of long-dated bonds during each of the last three buyback operations has repeatedly fallen short of the $6bn cap—implying that it is not willing to purchase bonds regardless of price.

The dislocation of the Treasury curve vs. a modeled fitted curve remains relatively contained, signaling little evidence that higher yields have been due to poor liquidity or an oversupply of long-end Treasuries

US Treasury curve dislocations from model fitted values



Source: Goldman Sachs GIR.

Q: Has the increase in buybacks impacted the level of bond yields?

A: The larger buybacks have had very little impact on the level of yields so far, for a few key reasons. First, as mentioned, the shift in supply is relatively small compared to the overall size of the Treasury market. Our typical rule of thumb for the impact of duration removal on the level of yields argues for a relatively modest impact. We estimate that the Fed's 2011 Operation Twist program lowered 10-year yields by around 4bp per percent of GDP. Assuming a similar impact today, the buybacks would imply around a 1bp decline in 10-year yields levels. Second, as mentioned, the way in which the Treasury has conducted the operations suggests it remains a discerning—not indiscriminate—buyer. Third, and most importantly, removing long-end supply does little to address the macro fundamentals that have driven the selloff.

Q: What else can the Treasury do if it wants to lower yields?

A: The Treasury can potentially ease pressures on long-end bonds by reducing long-end auction sizes or doing away with 20-year issuance. Treasuries in other major economies, such as the UK and Japan, recently took similar actions, which had some impact—in Japan, it supported a reduction in long-end risk premium —but in both cases the efforts have failed to arrest the macro pressures that have taken long-end yields to cycle highs. Similarly, in the US, with the latest leg of the bond selloff having affected both long- and medium-term yields, any issuance adjustments at the long end may have only a limited impact.

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Tel: 212-357-7628

Summary of our key forecasts

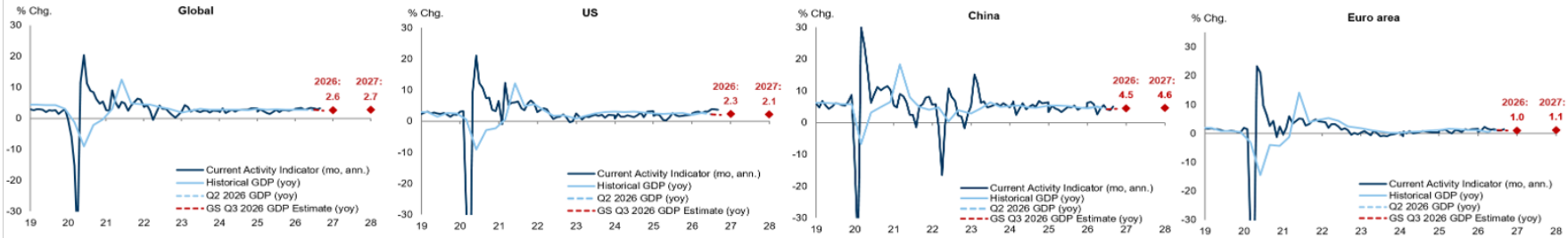
GS GIR: Macro at a glance

Watching

- **Globally,** we expect real GDP growth to slow to 2.6% yoy in 2026 amid headwinds from higher energy prices from the Middle East conflict. We expect global core inflation to end the year at 2.8%, reflecting a further normalization in shelter and wage inflation but a boost from energy price passthrough and lingering but fading tariff effects.
- **In the US,** we expect real GDP growth of 2.3% on a Q4/Q4 basis in 2026, largely reflecting the continued boost from the AI boom. We expect core PCE inflation to fall to 3.0% in 2026 on a Q4/Q4 basis as the effects of tariffs, energy price passthrough, and AI demand begin to fade, with it falling closer to 2% in 2027 as those effects subside further. We expect the unemployment rate to end 2026 at 4.2%.
- **We expect the Fed** to deliver one more 25bp hike in December to a peak policy rate range of 4.00-4.25%.
- **In the Euro area,** we expect real GDP growth of 1.0% on a Q4/Q4 basis in 2026, reflecting headwinds from elevated energy prices as well as subdued consumer confidence, though we expect growth to improve next year. We expect core inflation to rise to a peak of 2.7% yoy in 1Q27, reflecting energy price passthrough, before gradually declining to 2.0% by end-2028.
- **We expect the ECB** to deliver one more 25bp hike in December to a peak policy rate of 2.75%.
- **In China,** we expect real GDP growth of 4.5% yoy in 2026, reflecting broad-based export strength but headwinds from weak domestic demand. We expect CPI/PPI inflation to rise to 1.0%/2.0% yoy this year, largely owing to commodity price passthrough.
- **WATCH MIDDLE EAST CONFLICT.** The situation in the Middle East remains fluid and we will be closely watching how the region's energy exports as well as demand for its energy from key consumers like China continue to evolve.

Goldman Sachs Global Investment Research.

Growth



Source: Haver Analytics, Goldman Sachs Global Investment Research.
Note: GS CAI is a measure of current growth. For more information on the methodology of the CAI please see "Technical Updates to Our Global CAIs," Global Economics Comment, Sep. 01, 2025.

Forecasts

Economics							Markets				Equities								
GDP growth (%)	2026				2027		Interest rates 10Yr (%)	Last	E2026	E2027	FX	Last	3m	12m	S&P 500	E2026		E2027		Returns (%)	12m	YTD	E2026 P/E
	GS (Q4/Q4)	Cons. (Q4/Q4)	GS (CY)	Cons. (CY)	GS (CY)	Cons. (CY)										GS	Cons.	GS	Cons.				
Global	2.6	--	2.6	2.6	2.7	2.7	US	5.24	4.75	4.40	EUR/$	1.12	1.14	1.12	Price	8,000				S&P 500	11.4	14.0	22.2x
US	2.3	2.1	2.3	2.2	2.1	2.2	Germany	3.47	3.25	3.25	GBP/$	1.32	1.33	1.28	EPS	$375	$366	$415	$423	MXAPJ	28.8	20.4	12.3x
China	4.4	4.5	4.5	4.6	4.6	4.4	Japan	3.01	3.00	2.75	$/JPY	159	158	150	Growth	36%	33%	11%	15%	Topix	12.1	20.4	19.7x
Euro area	1.0	1.1	1.0	1.0	1.1	1.3	UK	5.26	5.00	4.85	$/CNY	6.68	6.70	6.40						STOXX 600	9.1	7.6	15x
Policy rates (%)	2026				2027		Commodities	Last	4Q26	1Q27	Credit (bp)		Last	4Q26	1Q27	Consumer	2026		2027		Wage Tracker 2026 (%)			
	GS	Mkt.			GS	Mkt.											CPI (%, yoy)	Unemp. Rate	CPI (%, yoy)	Unemp. Rate	Q1	Q2	Q3	Q4
US	4.13	4.14			3.63	4.68	Nat Gas, NYMEX ($/mmBtu)	3.17	2.90	2.95	USD	IG	81	82	80	US	3.4	4.2	2.4	4.1	3.5	3.6	3.5	--
Euro area	2.75	2.66			2.50	3.17	Nat Gas, TTF (EUR/MWh)	83.90	70	44		HY	308	295	290	Euro area	3.0	6.3	3.0	6.2	--	--	--	--
China	1.40	1.40			1.30	--	Copper ($/mt)	14,792	13,700	13,800	EUR	IG	108	88	86	China	1.0	--	1.0	--	--	--	--	--
Japan	1.25	1.43			1.75	2.15	Gold ($/troy oz)	4,172	4,605	4,765		HY	323	315	310									

Source: Bloomberg, Goldman Sachs Global Investment Research. For important disclosures, see the Disclosure Appendix or go to www.gs.com/research/hedge.html.

Market pricing as of October 12, 2026

Glossary of GS proprietary indices

Current Activity Indicator (CAI)

GS CAIs measure the growth signal in a broad range of weekly and monthly indicators, offering an alternative to Gross Domestic Product (GDP). GDP is an imperfect guide to current activity: In most countries, it is only available quarterly and is released with a substantial delay, and its initial estimates are often heavily revised. GDP also ignores important measures of real activity, such as employment and the purchasing managers' indexes (PMIs). All of these problems reduce the effectiveness of GDP for investment and policy decisions. Our CAIs aim to address GDP's shortcomings and provide a timelier read on the pace of growth.

For more, see our CAI page and Global Economics Comment: Technical Updates to Our Global CAIs.

Dynamic Equilibrium Exchange Rates (DEER)

The GSDEER framework establishes an equilibrium (or "fair") value of the real exchange rate based on relative productivity and terms-of-trade differentials.

For more, see our GSDEER page, Global Economics Paper No. 227: Finding Fair Value in EM FX, 26 January 2016, and Global Markets Analyst: A Look at Valuation Across G10 FX, 29 June 2017.

Financial Conditions Index (FCI)

GS FCIs gauge the "looseness" or "tightness" of financial conditions across the world's major economies, incorporating variables that directly affect spending on domestically produced goods and services. FCIs can provide valuable information about the economic growth outlook and the direct and indirect effects of monetary policy on real economic activity.

FCIs for the G10 economies are calculated as a weighted average of a policy rate, a long-term risk-free bond yield, a corporate credit spread, an equity price variable, and a trade-weighted exchange rate; the Euro area FCI also includes a sovereign credit spread. The weights mirror the effects of the financial variables on real GDP growth in our models over a one-year horizon. FCIs for emerging markets are calculated as a weighted average of a short-term interest rate, a long-term swap rate, a CDS spread, an equity price variable, a trade-weighted exchange rate, and—in economies with large foreign-currency-denominated debt stocks—a debt-weighted exchange rate index.

For more, see our FCI page, Global Economics Analyst: Our New G10 Financial Conditions Indices, 20 April 2017, and Global Economics Analyst: Tracking EM Financial Conditions – Our New FCIs, 6 October 2017.

Goldman Sachs Analyst Index (GSAI)

The US GSAI is based on a monthly survey of GS equity analysts to obtain their assessments of business conditions in the industries they follow. The results provide timely "bottom-up" information about US economic activity to supplement and cross-check our analysis of "top-down" data. Based on analysts' responses, we create a diffusion index for economic activity comparable to the ISM's indexes for activity in the manufacturing and nonmanufacturing sectors.

Macro-Data Assessment Platform (MAP)

GS MAP scores facilitate rapid interpretation of new data releases for economic indicators worldwide. MAP summarizes the importance of a specific data release (i.e., its historical correlation with GDP) and the degree of surprise relative to the consensus forecast. The sign on the degree of surprise characterizes underperformance with a negative number and outperformance with a positive number. Each of these two components is ranked on a scale from 0 to 5, with the MAP score being the product of the two, i.e., from -25 to +25. For example, a MAP score of +20 (5;+4) would indicate that the data has a very high correlation to GDP (5) and that it came out well above consensus expectations (+4), for a total MAP value of +20.

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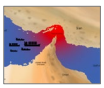
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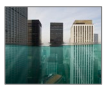
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Disclosure Appendix

Reg AC

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