Note: The following is a redacted version of the original report published August 10, 2023 [23 pgs].

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TOP *of* MIND

CORPORATE CREDIT CONCERNS

Amid the recent surge in US interest rates, whether the greater interest expense associated with higher-for-longer rates will lead to distress or even a wave of defaults across the major parts of the corporate credit market—corporate America, commercial real estate (CRE), and the private market—and the economic and market implications are Top of Mind. We speak with Saba Capital's Boaz Weinstein, who argues that credit markets are underpricing the current high level of macro uncertainty and that corporate defaults will almost certainly rise. GS GIR's Lotfi Karoui, however, sees this rise as just a reversion to the mean, which should allow for a modest tightening in credit spreads from here. GS strategists and economists further assess the near-term risks from corporate debt for the US economy and markets, concluding that these risks look manageable, and while CRE is more concerning, it's unlikely to present systemic risk. Lastly, we dig into private market risks and opportunities, where we see more opportunity in private credit, though Weinstein advises caution.

"As this more challenging borrowing environment persists, it won't be a prognostication but rather a near certainty that corporate default rates will continue to rise.

Owning corporate credit doesn't look compelling… the price just isn't right for the world we're currently living in. We'd need rainbows in the sky for spreads tighter than this.

- Boaz Weinstein

We expect corporate borrowers to transition to a higher cost-of-funding environment without a material uptick in financial distress, which is relatively consistent with the current tight level of spreads.

Given the current attractive levels of yields and the decent room for decreased volatility in rates markets, the value proposition of corporate bonds from a multi-asset standpoint is likely to remain strong.

- Lotfi Karoui"

WHAT'S INSIDE

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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

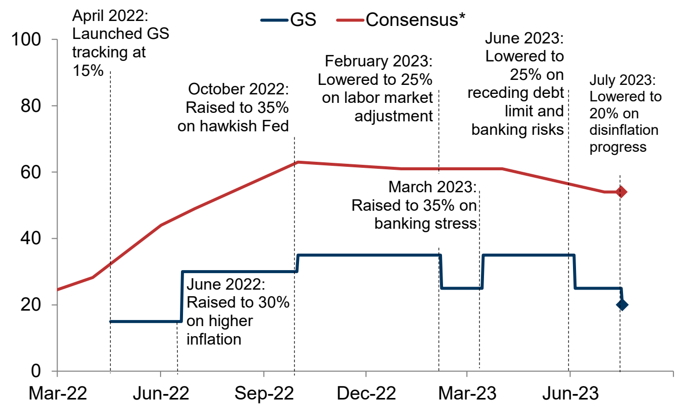
- We recently lowered our 12m recession odds to 20%, mainly due to recent inflation data that has reinforced our confidence that taming inflation will not require a recession.

Datapoints/trends we're focused on

- Fed policy; we think the Fed's hiking cycle is now complete and that the Fed will remain on hold at the current Fed funds rate range of 5.25-5.5% until the first rate cut in 2Q24.
- Core PCE inflation, which we expect to fall to 3.4% by YE23 as used car prices continue declining, shelter inflation further moderates, and the labor market continues to rebalance.
- US sovereign credit rating downgrade, which we believe will ultimately have little direct impact on financial markets.

Lower US recession odds on disinflation progress

US 12m ahead recession probability, %



*Median forecast, Wall Street Journal Economic Forecasting Survey.

Source: Wall Street Journal, Goldman Sachs GIR.

Japan

Latest GS proprietary datapoints/major changes in views

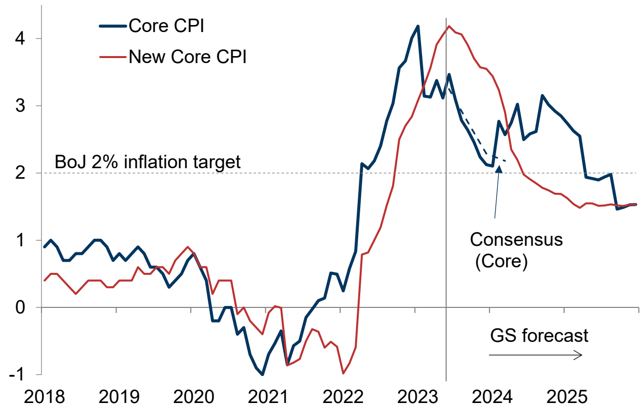
- No major changes in views.

Datapoints/trends we're focused on

- BoJ policy; we expect the BoJ to maintain the status quo on yield curve control (YCC) and negative interest rate policy (NIRP) for the rest of 2023, as the BoJ is unlikely to gain sufficient confidence that inflation will be sustained at 2% on a forward-looking basis for a while longer.
- Inflation pressures, which we expect to be less transitory than the BoJ believes given high inflation expectations among businesses and households and a large *shunto* wage hike.
- Japan trade balance, which swung to a surplus in June for the first time in 23 months, mainly due to lower fuel prices.

Japan inflation pressures: not so transitory

Japan core and new core CPI, %, yoy



Source: Ministry of Internal Affairs and Communications, JCER, GS GIR.

Europe

Latest GS proprietary datapoints/major changes in views

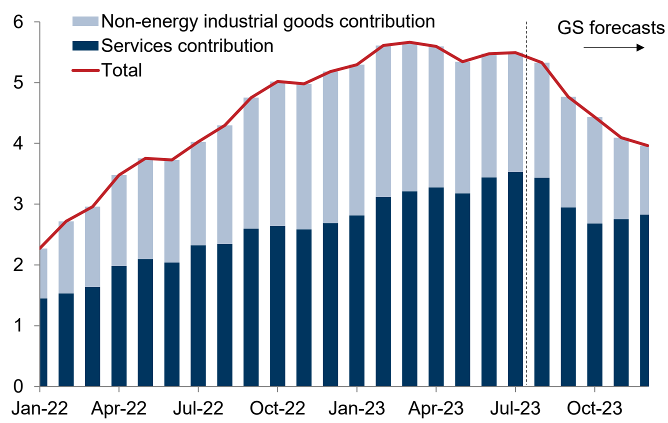
- No major changes in views.

Datapoints/trends we're focused on

- ECB policy; we expect a final 25bp hike in September for a terminal rate of 4% given sticky services inflation.
- BoE policy; we expect 25bp hikes in Sept and Nov for a terminal rate of 5.75% given our forecast for resilient activity and gradual inflation cooling, but recent BoE communication has lowered the hurdle for an earlier pause, skewing the risks around our forecast towards a lower terminal rate.
- Euro area growth; we look for a period of stagnation rather than a recession and expect growth to improve later this year.

No rest for the ECB yet amid sticky services inflation

Euro area core inflation, %, yoy



Source: Haver Analytics, Goldman Sachs GIR.

Emerging Markets (EM)

Latest GS proprietary datapoints/major changes in views

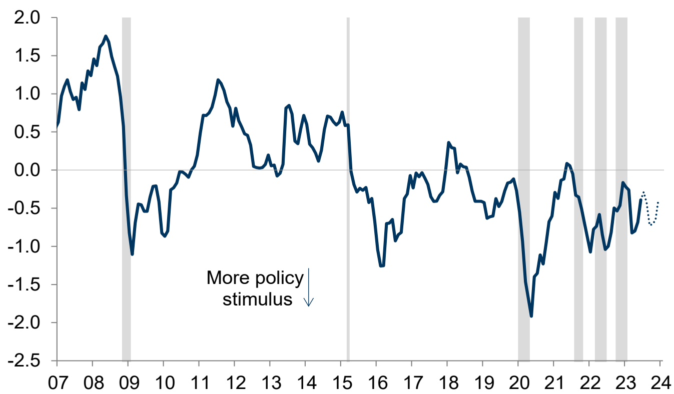
- We recently lowered our 2023/24 China headline CPI inflation forecasts to 0.4/1.7% (from 0.5/2.1%) due to subdued food inflation, weak energy prices, and soft durable goods prices.

Datapoints/trends we're focused on

- China growth; we expect sequential growth to improve in H2 from its Q2 trough owing to a fading drag from destocking, a stabilization in exports, and a step-up in policy easing, including more monetary, fiscal, and property easing measures in the next few months.
- EM inflation, which has declined sharply, paving the way for the EM cutting cycle recently kicked off by Chile and Brazil.

Further (moderate) policy easing ahead in China

China domestic macro policy proxy, z-score



Note: Shaded areas refer to periods when China CAI 3mma growth was below 5.5%.
Source: CEIC, Haver Analytics, Wind, Goldman Sachs GIR.

Corporate credit concerns

Amid the recent surge in US interest rates on the back of waning recession fears, whether the greater interest expense associated with a higher-for-longer rate environment will lead to distress or even a wave of defaults across the major parts of the corporate credit market—corporate America, commercial real estate (CRE), and the private market—and the implications for investors and the economy is Top of Mind.

We first explore the credit outlook for corporate America. Lotfi Karoui, GS Chief Credit Strategist, is generally optimistic. He expects corporates to be able to digest higher-for-longer funding costs without a significant rise in financial distress owing to healthy corporate fundamentals, including high profit margins and interest coverage ratios and strong liquidity positions, which he argues should offset high levels of balance sheet leverage. Though he's concerned about leveraged loan issuers, which are more vulnerable to higher rates due to the floating-rate structure of their debt, Karoui argues that the much larger portion of corporate debt locked in at fixed rates should allow most corporates to weather the more challenging borrowing environment. So, he expects only a benign increase in default rates ahead as they revert to their long-run average, which, he says, is consistent with relatively tight credit spreads today, and even some modest spread tightening from here heading into year end.

GS credit strategists Michael Puempel and Ben Shumway don't believe that the existence of zombie firms—economically unviable firms that survive only thanks to cheap debt—undermines that view. Rather, they find that zombie firms in the public debt markets are few and far between, which makes them unlikely to fuel a broad rise in financial distress even as they themselves come under increased pressure amid higher-for-longer rates.

GS senior US equity strategist Ben Snider is also generally sanguine about the outlook for corporates amid higher rates. He characterizes corporate debt service burdens as extremely light today, with S&P 500 firms paying around 3% interest on their debts even as 10y Treasuries yield 4% given that firms took advantage of the low interest rate environment post the Global Financial Crisis (GFC) to lock in cheap debt. While Snider anticipates that higher-for-longer rates will contribute to a slowdown in corporate spending in coming quarters, he expects this slowdown to be short-lived, and argues that resilient economic and earnings growth should more than offset the pressure on balance sheets for most US firms.

The generally healthy picture for corporate America leaves GS senior US economist Spencer Hill relatively unconcerned about the near-term risks from corporate debt for the broader US economy, although he does expect higher interest expenses to modestly weigh on capital spending in coming years, especially given the presence of leveraged loan issuers and unprofitable firms in the corporate debt market.

However, Boaz Weinstein, Founder and CIO of Saba Capital Management, doesn't share this optimism. He argues that credit spreads at the lower end of the post-GFC historical range aren't sufficiently pricing the current high level of macro uncertainty, in large part because investors still don't understand that, after 14 years of easy monetary policy, the Fed is no longer their friend.

Though Weinstein acknowledges that corporate fundamentals look relatively healthy today, he thinks that may not last long as many companies will be forced to refinance in 2024/25 at much higher rates, which could prove "painful". He also points out that *technicals* rather than fundamentals tend to govern the pricing of credit spreads, and technicals can turn against investors on a dime. So, Weinstein believes that owning corporate credit—especially cyclicals, which he argues aren't pricing enough macro uncertainty, whereas defensives are probably pricing too much of it—doesn't look compelling. Instead, he advises sticking with T-bills, and, for real risk, looking to agency mortgages, a combination Weinstein argues is likely to outperform corporate credit on a risk-adjusted basis.

Despite his relatively benign view on corporate America, Karoui, together with GS mortgage strategist Vinay Viswanathan, *is* concerned about the outlook for the CRE market, and the office sector in particular. Office landlords, they say, are not only facing a sharp increase in funding costs amid the higher rate environment, but also significant cyclical and structural challenges, which suggests the recent rise in financial distress in the sector is likely to continue. That said, they see limited risk of systemic shock stemming from CRE due to still-healthy fundamentals in other parts of the credit complex and strong bank capital positions that should be able to absorb CRE-related losses.

Finally, we dig into the risks and opportunities in private markets in this higher rate environment. GS US financials equity research analyst Alex Blostein sees more risk than opportunity in private equity, and more opportunity than risk in private credit. He makes the case that private credit managers are well-positioned to take advantage of upcoming refinancing and distressed opportunities to deploy capital. More broadly, while he expects private market default rates to rise amid the higher rate environment, Blostein argues that the ability to amend and extend loan structures and maturities in private markets should dampen this rise, and potentially the overall default cycle given that private lending now represents a larger (and still growing) share of credit markets than it did historically.

Weinstein, however, argues that such financial creativity can't change the inevitable—that defaults will eventually occur if rates stay high as the numerous small companies that received private market loans struggle to repay their debts. So, he believes that investors should be wary of opportunities in private markets, and private equity in particular given today's high valuations, which, he says, at best, limit the upside for investors and, at worst, could cause them to incur large losses.

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US corporate defaults: mean reverting

Lotfi Karoui assesses credit market risks amid a higher-for-longer rate environment

More than a year after the start of the Fed's steep hiking cycle, debate around the impact of tighter policy on corporate financial distress remains contentious. Amid the historic rise in interest rates, the speed and magnitude of the deterioration in credit quality in US public debt markets have so far been remarkably benign. Despite this resilience and the material decline in the risk of another large monetary policy shock as inflation ebbs, concerns remain about the risk of a lagged response to tighter monetary policy, and, more generally, the ability of US non-financial corporations to transition to a world of persistently higher funding costs. These concerns are legitimate—a pick-up in financial distress among corporate borrowers would bode poorly for the cyclical outlook, weighing on investment and employment growth. And such a scenario is currently not priced into markets, with credit spreads remaining on the lower end of their post-Global Financial Crisis (GFC) range.

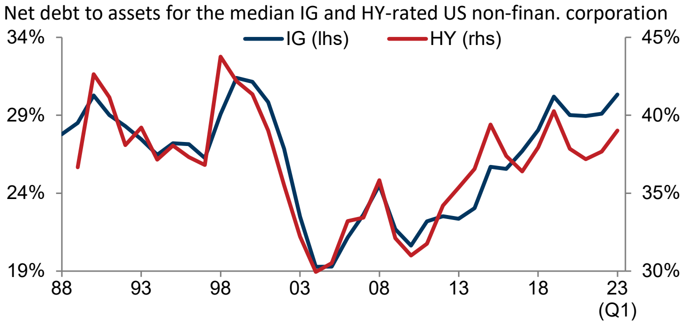
We believe the cyclical peak in corporate credit quality is now firmly behind us, and the era of suppressed defaults is over. However, we expect corporate borrowers to transition to a higher cost-of-funding environment without a material uptick in financial distress, which is relatively consistent with the current tight level of spreads. And even if corporate credit were to become more distressed than we expect, we believe that's unlikely to cause a recession in and of itself.

More leverage, but higher profits and debt servicing capacity

A decade of low yields following the GFC provided strong incentives for non-financial corporations to deploy more leverage on their balance sheets, often to fund M&A transactions, buybacks, and dividend recaps. As a result, net debt-to-total assets ratios of US non-financial corporate issuers in the investment-grade (IG) and high-yield (HY) bond markets are comparable to the highs of the late 1990s.

Higher, but recently stable leverage post-GFC

Net debt to assets for the median IG and HY-rated US non-finan. corporation

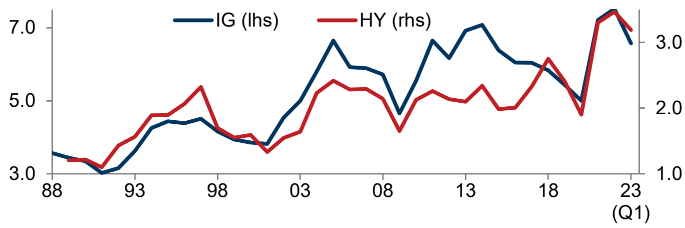


Source: FactSet, Goldman Sachs GIR.

However, despite some contraction in recent quarters, non-financial firms' net profit margins and interest coverage ratios are still twice as high as they were in the late 1990s. A large share of non-financial corporate liabilities is in fixed-rate and long-duration debt (see pg. 5). And balance sheet liquidity also remains healthy despite a notable erosion over the past few quarters. All told, barring a full-blown economic downturn, we expect these factors to allow the vast majority of public corporate borrowers to transition to a higher funding cost environment without a material uptick in financial distress.

Interest coverage ratios still high relative to history

Interest coverage ratios for the median IG and HY-rated US non-financial corporation



Source: FactSet, Goldman Sachs GIR.

Mean reversion without significant deterioration

We forecast the US HY 12-month trailing issuer-weighted default rate will end 2023 at 4%, a pace consistent with a reversion to the long-run average after two years of ultra-low default rates. This normalization is unlikely to derail the performance of corporate bond markets, in our view. While spreads are tight by historical standards, the share of distressed bonds (i.e., bonds that are pricing in a high likelihood of default) suggests a 4% annual HY default rate is to some extent priced in. More broadly, the aggregate level of financial distress in corporate America will likely remain benign, which, coupled with the brighter prospects for a soft landing, should continue to support risk appetite. Of course, valuation constraints loom large—a key reason why we envision only modest spread tightening ahead. But given the current attractive levels of yields and the decent room for decreased volatility in rates markets, the value proposition of corporate bonds from a multi-asset standpoint is likely to remain strong.

Pockets of vulnerability

That said, corporate borrowers with floating-rate liabilities—which predominately rely on the leveraged loan market—will likely remain pressured by headwinds from slower growth and higher interest expenses. In contrast to borrowers with fixed-rate liabilities, which experience rising interest expenses solely on newly issued debt, floating-rate borrowers face a payment shock on their entire stock of debt. But despite substantial growth in the leveraged loan market—where the aggregate notional value has risen to roughly $1.4tn today from $500bn post-GFC—it represents only 18% of the overall outstanding amount of public debt issued by US-domiciled non-financial corporations. So, this relatively narrow slice of vulnerability is unlikely to drive broader credit markets.

Recessions drive financial distress, not the reverse

Perhaps the greatest market fear today vis-à-vis corporate credit is that corporate distress amid higher rates would, in itself, cause a recession. But we think the typical cause-and-effect relationship between the state of the business cycle and the health of corporate balance sheets—whereby a weak macro backdrop leads to deterioration in corporate health—is unlikely to reverse. Again, while the cyclical peak in corporate credit quality is firmly behind us, and the era of suppressed defaults is over, strong profitability and debt servicing capacity among the majority of the US non-financial corporate landscape limits the risk of a corporate debt-driven recession, in our view.

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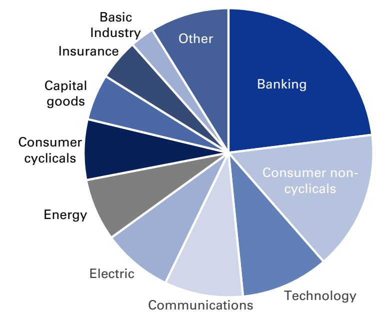
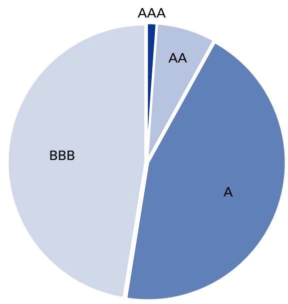
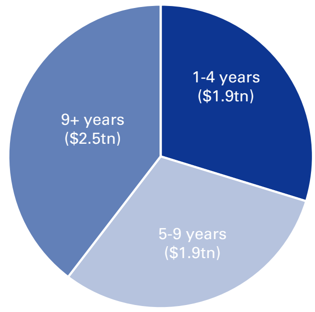
Sizing up the US corporate credit market

By Sector / By Rating / By Maturity

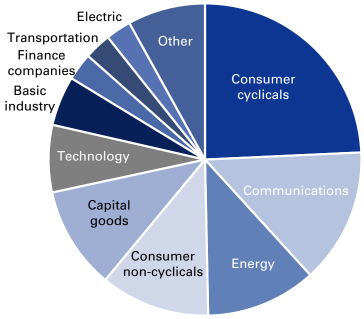
$6.3tn
(Market Value)
USD IG Market
(Fixed-rate)

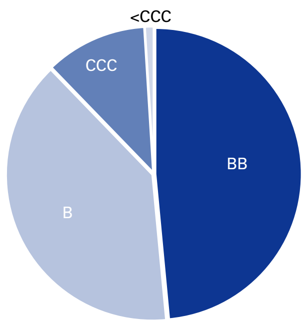


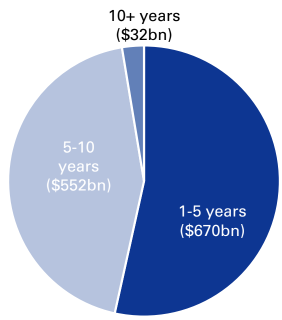




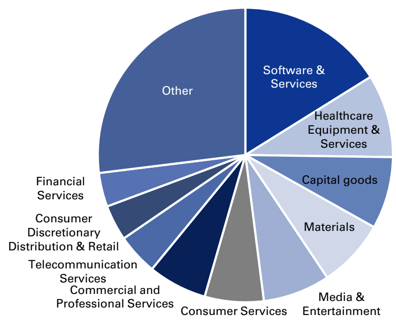
$1.3tn
(Market Value)
USD HY Market
(Fixed-rate)

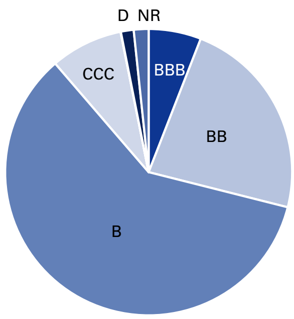


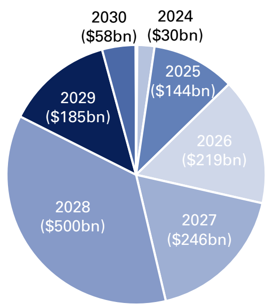




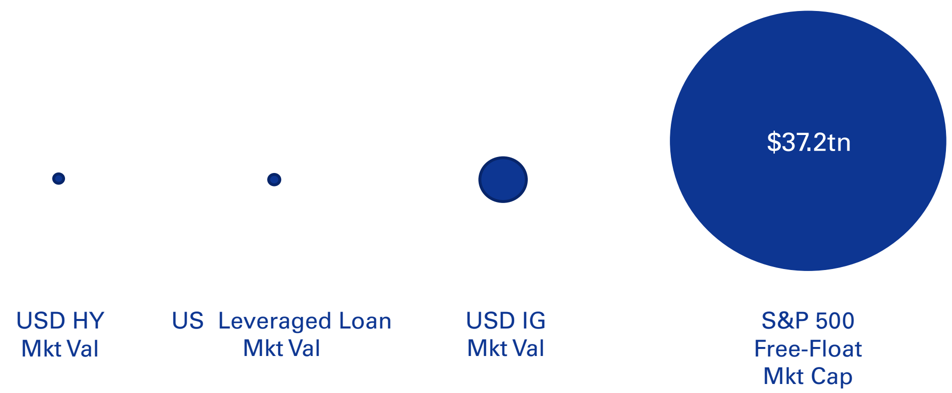
$1.4tn
(Total outstanding)
US Leveraged Loan Market
(Floating-rate)







Some context for market value...



Note: Top 10 industries shown in sector breakdowns.
Source: Bloomberg, PitchBook LCD, Goldman Sachs GIR.

Special thanks to GS credit strategist Sienna Mori for data.

Interview with Boaz Weinstein

Boaz Weinstein is Founder and CIO of Saba Capital Management. Below, he argues that amid a higher-for-longer interest rate environment, credit default rates will almost certainly continue to rise, and that credit markets are mispricing the current level of macro uncertainty.

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

Allison Nathan: How concerned are you that we're nearing the end of the benign credit cycle and the beginning of a default cycle?

Boaz Weinstein: Since I don't have a crystal ball, I tend to focus on the level of uncertainty about the outlook versus what's actually priced in. Right now, an exceptional number of macro data points are providing conflicting signals about the likelihood of a US recession, with the average of forecasters ascribing roughly even odds of one over the next year. So, uncertainty about the macro outlook is high. But the VIX, which measures volatility in the stock market and is often viewed as a gauge of market uncertainty, is close to 42-month lows and investment-grade (IG) credit spreads, having weathered the recent regional bank crisis, are also relatively tight, nearing the bottom quartile. So, the market is not adequately acknowledging the high amount of uncertainty we're facing. At the same time, even absent a recession today, the effect of higher-for-longer interest rates has become increasingly apparent, with corporate bankruptcies reaching a 13-year high over the last quarter on a 15-week trailing basis. Those bankruptcies have so far been centered in the private market, but as this more challenging borrowing environment persists, it won't be a prognostication but rather a near certainty that corporate default rates will continue to rise.

Allison Nathan: Why is the market so optimistic, and what is it missing?

Boaz Weinstein: Investors' natural posture is to be long. The bearishness that took hold during the banking turmoil earlier this year was an uncomfortable position for most investors. So, as the AI-led equity rally lifted other risk assets, it was easy for bears to capitulate. And the posture of being "long or very long"—as one investor recently described their risk approach over the last decade to me—has served investors well. The Fed has been investors' friend ever since the Global Financial Crisis given the huge expansion in its balance sheet, zero interest rate policy, and the other extraordinary measures taken during Covid and beyond; it's paid off to buy the dips over the past 14 years. But given that the post-pandemic inflation problem has lent credence to the view that the Fed's easing measures perhaps went too far, investors should not rely on the Fed to help in the next selloff. The adage "don't fight the Fed" applies in both directions. And with quantitative tightening (QT) now underway and the Fed squarely focused on reining in inflation, to me "don't fight the Fed" today means proceed with caution. But investors don't seem to think they're being sufficiently compensated to exercise caution.

Allison Nathan: Corporate balance sheets are relatively healthy, and a large portion of corporate debt has been locked in at low rates. Do those fundamentals give you any comfort that the coming default cycle may be mild and credit spreads could remain relatively tight?

Boaz Weinstein: It's counterintuitive but true that higher interest rates have led to lower interest expense for corporate America in aggregate today. That owes to a combination of long-dated borrowing and a sharply inverted yield curve. The current substantial amount of cash on corporate balance sheets may be burnt off at some point, but, in the meantime, it's earning over 5% yield while corporates that pushed out the maturity of their debt are avoiding high near-dated rates. So, many corporates have weathered the storm of higher rates reasonably well so far, which isn't that surprising, especially given the relatively resilient economic backdrop. That said, we're probably setting up for a period in late 2024 to mid-2025 when many corporates will need to refinance, which could be painful, especially if inflation hasn't continued to subside as is widely expected.

I'd also note that your question presumes that fundamentals rather than technicals govern the pricing of credit spreads, which has often not been the case. Whenever high-yield credit spreads have blown out in recent years, corporate credit research analysts have typically argued that the expected default rate doesn't justify spreads at those wide levels, and therefore should tighten. So, for example, an analyst's model might show that spreads at 550bp would be consistent with a 9.5% default rate for the next three years, which might not seem plausible given the macro and micro backdrop. But credit spreads are often determined by factors other than fundamentals, such as the number of sellers versus buyers or the illiquidity or uncertainty in the market that may lead investors to demand extra premium to hold junk. These technical factors can shift quickly, as they did during Covid, when corporate bond markets suddenly had many more sellers than buyers. And when these shifts occur, credit investors that don't have a lot of spread can lose a year's worth of carry in a relatively short amount of time.

Allison Nathan: What areas of the public corporate credit market look most vulnerable?

Boaz Weinstein: The lack of sufficient differentiation in the corporate credit market between companies most exposed to the economic cycle—cyclicals and other companies like consumer finance and insurance companies—and defensives or blue-chip companies stands out. In equity markets, shorting cyclical companies even when the macro environment is weak is scary because there's always a chance that their stocks will rise sharply, and the short investor will be forced to incur significant losses. But in credit markets, investors can only ever receive par plus interest, so the upside is known, meaning that the debt holder isn't paid for the uncertainty inherent in cyclicals. So, the market is mispricing companies that are negatively affected by the economic cycle—their credit spreads are too low. At the same time, spreads on the debt of some of the safest companies in the world look too high. It's commonly understood that the Apples, IBMs, Verizons, and even Walmarts and McDonalds of the world won't run into problems in almost any scenario imaginable. But banks have been hedging their exposures to these super blue-chip defensives in an effort to free up capital to improve their performance on stress tests. As a result, spreads of super-safe companies in the credit default swap (CDS) market are not too different from the spreads of companies that may not default in a recession but could very well give us a scare as they have in the past. Betting that this lack of differentiation won't persist is at the core of our tail risk hedge strategy.

Allison Nathan: So, how would you advise positioning in public credit markets right now?

Boaz Weinstein: Owning corporate credit doesn't look compelling. CDX IG, a tradable CDS index which I'll use as a base case given its ample liquidity and long trading history, has traded in a range of 46-150bp over the last 14 years, and today it sits at 67bp. So, it's trading at the lower end of the historical range, but not at the sub-50 level where many investors would probably choose to short it because that's basically always worked. That said, investors have to consider whether trading towards the lower end of the historical range makes sense relative to the current macro backdrop.

A comparison to December 2018 is useful here. That month, market sentiment soured on the Fed hiking into a slowdown and US-China trade tensions, leading to a sharp selloff in the S&P 500 and a substantial widening of CDX IG to 95bp at the peak. Perhaps credit spreads widened too much back then, but it's nevertheless difficult to square CDX IG at 67bp today versus 95bp then given that there was no inflation, no QT, no war in Ukraine, no very disappointing China data, no deep inversion of the yield curve, no substantial credit constriction from senior loan officers, and few—let alone ~50%—of forecasters predicting recession. So, the price just isn't right for the world we're currently living in. We'd need rainbows in the sky for spreads tighter than this. And perhaps we're about to get them, but there isn't enough excess spread to justify long positions, especially given spreads elsewhere. Buying a single-A corporate bond with a five-year maturity is a bold bet today because investors could own T-bills and get the same yield without any duration or credit risk. The simplicity of T-bills has a lot of beauty right now. So, stick with them, and wait it out.

For real risk, agency mortgages, whether it's specific pools that investors may have expertise in assessing, or even just the futures market, are currently offering a very high spread given that the Fed and banks are now sellers rather than buyers of mortgage paper and that high rate volatility has increased the uncertainty around mortgage refinancing. So, I believe some combination of agency mortgages plus T-bills will significantly outperform corporate credit on a risk-adjusted basis.

Allison Nathan: Are you more or less concerned about private credit markets?

Boaz Weinstein: The tremendous growth in private credit, which not long ago was a cottage industry, has no doubt been transformational for credit markets—it's not your father's bond market. And that transformation has introduced some risk as private markets are inherently less transparent. In a benign credit cycle, that hasn't mattered much. But in the same way that SPACs went from being the darling of the market in 2020/21 to seeing high failure rates shortly thereafter, some small companies that received loans through the private markets will undoubtedly struggle in the current macro environment. In both cases, the impact on corporate America and the economy more broadly isn't very clear because these are small companies, but the quantity of SPAC failures in recent years has been noteworthy, and I similarly expect a schism between the default rates of private borrowers and public borrowers, with private market defaults already sharply rising. Again, it's difficult to say just how much these defaults will matter for the economy and for the markets in and of themselves, but we're watching private markets closely because it may be the area where warning signs that tightening credit standards are indeed biting first appear. That warning sign might be a false positive, but private credit is painting a notably bearish picture right now for risk assets.

Allison Nathan: Some have argued that the ability to "amend and extend" in the private markets could lead to a shallower credit default cycle. What's your view?

Boaz Weinstein: As often as I hear the phrase "amend and extend", I hear "amend and pretend." In many cases, financial creativity can be used to forestall the inevitable, but the inevitable ultimately happens. Given the current levels of credit spreads and equity multiples, if interest rates don't decline meaningfully—and so far Fed officials have been more right than Mr. Market, which believed that Fed policy rates would never reach current levels—and growth continues to slow as expected, it's hard to believe that defaults won't eventually occur, even with "amend and pretend".

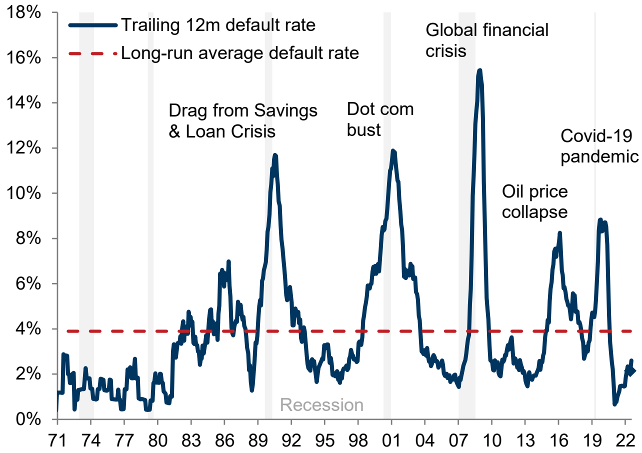
Allison Nathan: So, should investors be wary of private markets?

Boaz Weinstein: While it's very easy to turn on CNBC and hear about the great opportunities in private markets, the investor base that trades products like closed-end funds every day is clearly uncomfortable with current private equity valuations. A close look at the 750 closed-end funds that trade in the US, UK, Australia, or Canada reveals that funds comprised entirely of public securities trade far better as measured by the price relative to the net asset value than funds that hold private assets—equity or debt. To put some numbers around this, while funds comprised 100% of public equity typically trade at a discount to net asset value of 4% or 5%, closed end funds that are 100% private trade at a discount to net asset value of roughly 40 to 50%, with some even higher than 50%; there's almost a perfect relationship between the amount of private assets in a fund and the degree of discount. So, private marks either need to come down significantly, which will lead to large losses, or, should the market rally, big gains won't be made because prices would only be catching up with their marks.

Credit market health in pics

Default rates among HY-rated US non-financial corporations have risen, although they remain below historical averages…

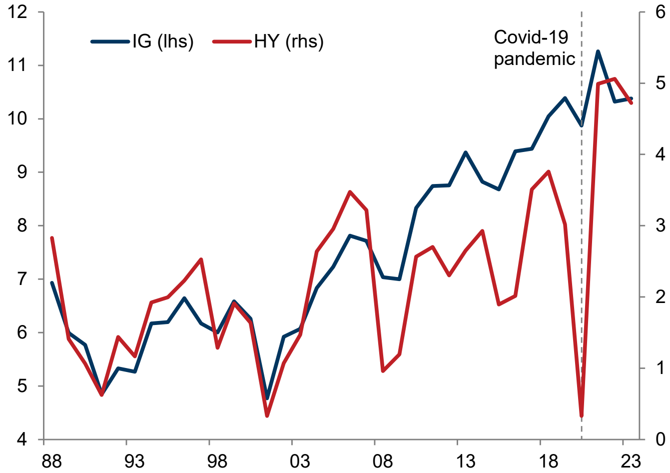
Issuer-weighted annual default rate for HY-rated US non-financial corporations, %



Note: Default rate for IG-rated US non-financial corporations is 0%.
Source: Moody's, Goldman Sachs GIR.

…and fundamentals for both US IG and HY bond issuers remain relatively healthy; net profit margins have increased over recent years…

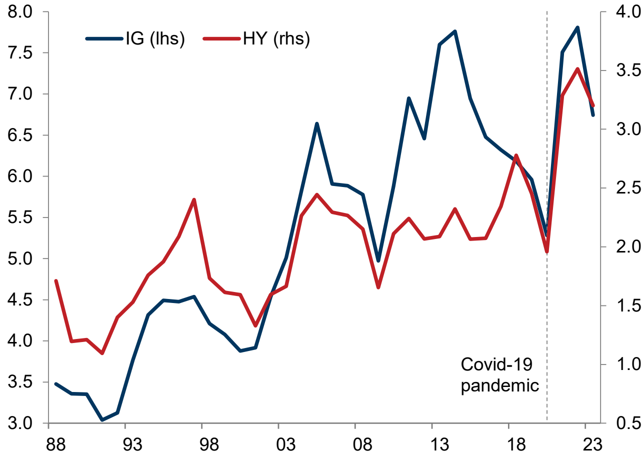
Net margins for the median HY and IG-rated US non-financial corporation, %



Source: FactSet, Goldman Sachs GIR.

…as have interest coverage ratios…

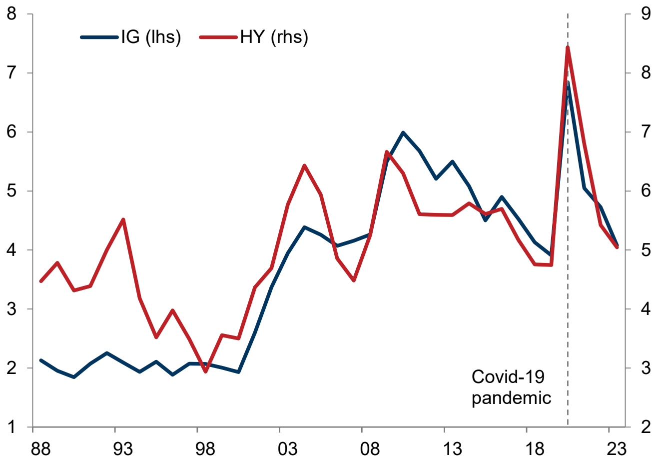
Interest coverage ratios for the median HY and IG-rated US non-financial corporation, %



Source: FactSet, Goldman Sachs GIR.

…and liquidity positions on balance sheets are still strong by historical standards, despite recent erosion

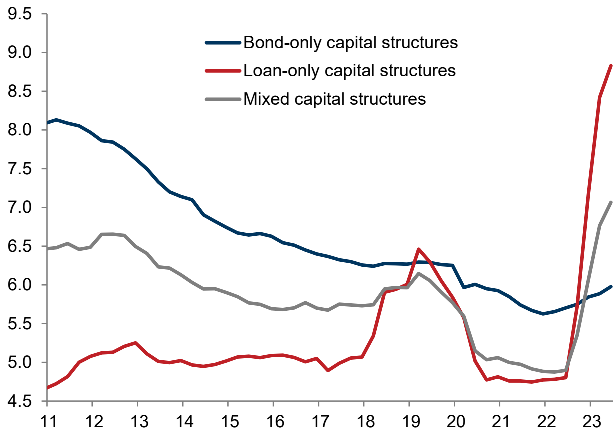
Cash-to-total assets ratios for the median HY and IG-rated US non-financial corporation, %



Source: FactSet, Goldman Sachs GIR.

However, we see signs of distress in the leveraged loan market, which has seen a larger increase in interest expenses amid the transition to a higher rate environment…

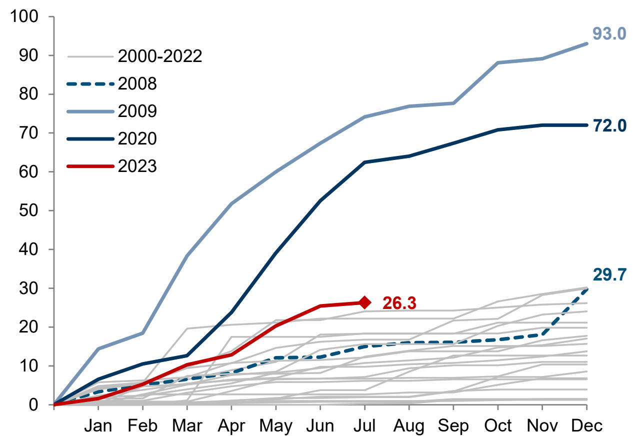
Weighted-average coupon for HY-rated USD bond and leveraged issuers by category of debt capital structure, %



Source: Bloomberg, Goldman Sachs GIR.

…and 2023 is on track to be the third most severe default year in history for leveraged loans, with the pace of defaults likely to remain elevated

Cumulative notional value of defaulted loans by year, $bn



Source: PitchBook LCD, Goldman Sachs GIR.

Special thanks to GS credit strategists Sienna Mori and Spencer Rogers for charts.

CRE: concerning, but not systemic

As credit markets grapple with a historic rise in interest rates, the US commercial real estate (CRE) market, and the office sector in particular, has become a major area of concern. Like corporate borrowers, office landlords have had to digest a significant increase in their marginal cost of funding amid higher rates. But the cyclical and structural challenges office landlords face are more pressing. The downward pressure on profitability is more pronounced given the ongoing negative feedback loop from rising vacancy rates (up to 13.1% from 9.4% in 3Q19) and declining appraisal values (down 31% from last year's peaks)[1]. And the office sector is more dependent on bank lending, as banks hold 40% of the $4.5tn of outstanding income-producing CRE mortgage loans but 60% of US office debt. This backdrop has fueled a large re-leveraging shock in the office sector, with office properties now accounting for 20% of total CRE mortgage debt but only 14% of total CRE asset value. That said, we continue to believe that systemic risk stemming from the CRE market is likely to be limited given still-healthy fundamentals in other parts of the CRE complex and strong bank capital positions.

A lender's market, mostly

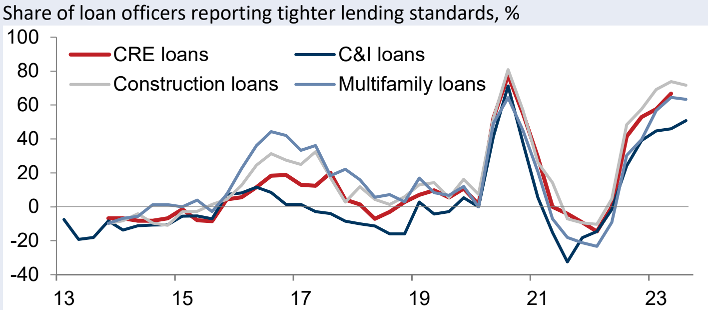
Financing costs and loan terms in the CRE market continue to largely favor lenders. As such, activity has been almost entirely centered around refinancing needs. Using the securitization market (CMBS) as a proxy, we find that the cost of secured debt for CRE borrowers has oscillated around 7% for new deals—the highest level in 20 years. Financing terms also remain quite tough for borrowers. The average loan-to-value (LTV) ratio has declined notably to 51% YTD from 57% in 2022 and 60% in 2021, while the share of loans backed by office properties has fallen to 20%—its lowest level in the post-Global Financial Crisis period and below its historical average of over 30%.

That said, the magnitude of the contraction in credit availability from banks since the March banking turmoil has been less sharp than many had initially feared. While weekly data on banks' assets and liabilities from the Fed's H.8 release remain distorted by the recent sales of loan books, even under conservative assumptions, loan growth has moderated but not collapsed. And while the Federal Reserve's latest Senior Loan Officer Opinion Survey reported a further tightening in lending standards in 2Q23, the incremental tightening in the first half of this year was much smaller than last year.

We believe that lending standards for office properties are likely to remain tight until the sector's valuations fully adjust, but that the bulk of the tightening is likely behind us at this point, which should allow debt capital to remain available for qualified borrowers through both the securitization market and the bank lending channel.

The share of loan officers reporting tighter lending standards has risen, though the incremental tightening YTD is smaller than in 2022

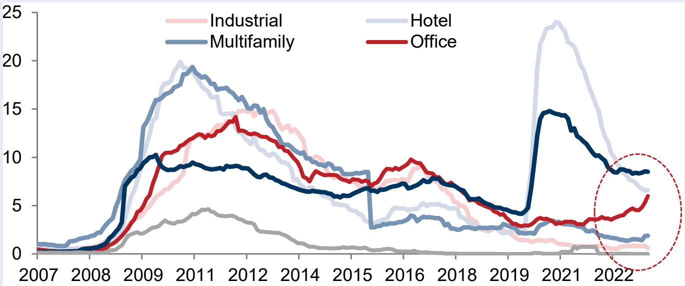
Share of loan officers reporting tighter lending standards, %



Source: Federal Reserve Board, Goldman Sachs GIR.

Special servicing rates for office properties spiked higher in June

Special servicing rates, %



Source: Trepp, Goldman Sachs GIR.

Rising financial distress, but low systemic risk

Financial distress among office landlords has risen at a faster pace relative to other types of properties. While delinquency rates in CMBS portfolios rose to 4.4% from a trough of 2.9% six months ago, for office properties they rose to 5.0% from a trough of 1.6% in January while declining from 0.4% to 0.3% for industrial properties over the same period. The special servicing rate—a leading indicator of losses that captures the amount of loans transferred from the master servicer to the special servicer for resolution—shows an even sharper rise in financial distress among office property landlords.

History suggests that losses on delinquent CRE loans typically follow a multi-year process. This lag reflects the time-consuming nature of the process that takes place between the default event (i.e., when a borrower stops servicing debt) and the collateral liquidation event. Considering the greater vulnerability of borrowers to higher funding costs today and, thus, the greater incentives for borrowers to default "strategically", we see risks of a more front-loaded path for losses relative to historical norms.

However, even if this scenario materializes, healthier fundamentals in other CRE subsectors such as apartment and industrial properties, and strong capital positions in the banking system, should make losses manageable. Results from banks' second quarter earnings season are also comforting, especially the strength of reserves and the low levels of net charge-offs on CRE loans. Taken together, this leaves us comfortable with our view that the risk of systemic shock originating from the CRE market remains low.

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[1] As of the end of June, based on estimates from Green Street.

US equities: low risk from high debt

Ben Snider argues that while high corporate debt will likely weigh on near-term S&P 500 spending, it poses little risk to US equities

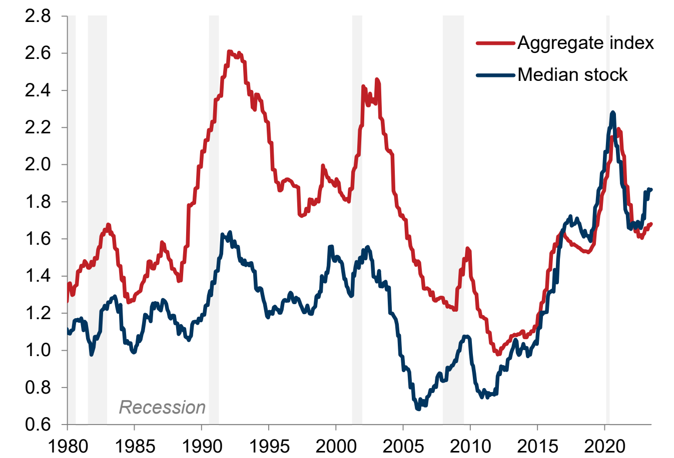
As US recession fears have ebbed on the back of disinflation progress, investors are grappling with the possibility that Fed policy remains tighter for longer and what that could mean for corporates given the higher cost of servicing their debt. While higher-for-longer interest rates will likely contribute to a slowdown in corporate spending among S&P 500 firms in coming quarters, we believe that high corporate debt loads pose little risk to the outlook for US equities.

A healthy fundamental picture

As company earnings have weakened, corporate leverage has risen over the past year, but doesn't screen as extreme relative to history. The median S&P 500 non-financial company carries a net debt/EBITDA ratio of 1.9x, ranking in the 95th percentile of history since 1980, but below the 2.0x pre-Covid level. And due to the particularly strong balance sheets of the larger index constituents, the net leverage ratio for the aggregate S&P 500 index is just 1.7x, ranking in the 56th historical percentile.

Net leverage for S&P 500 firms has risen over the past year, though not to historical extremes

S&P 500 ex. financials net leverage (net debt/EBITDA)

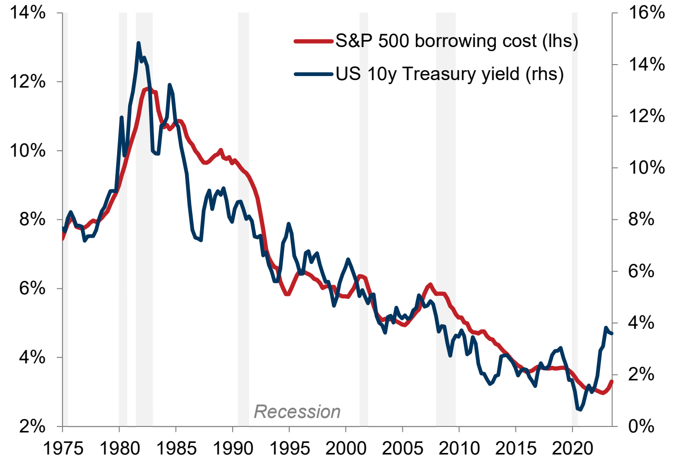


Source: Compustat, Goldman Sachs GIR.

Because many companies wisely took advantage of the extraordinarily low interest rates of recent years to lock in debt, the burden of servicing their debt is also extremely light today. Despite a 10-year US Treasury yield of 4% and a US investment-grade yield of 5.5%, S&P 500 income statements report an effective interest rate of just 3.3% on their debt. While interest coverage ratios have dipped in recent months alongside weakening earnings and rising interest rates, they nonetheless rank in the 80th historical percentile for the median S&P 500 firm and in the 95th percentile for the aggregate index. And with nearly 50% of S&P 500 debt not set to mature until after 2030, corporates and their earnings should remain largely insulated from higher interest rates for years to come.

S&P 500 firms' debt service burden is extremely light today

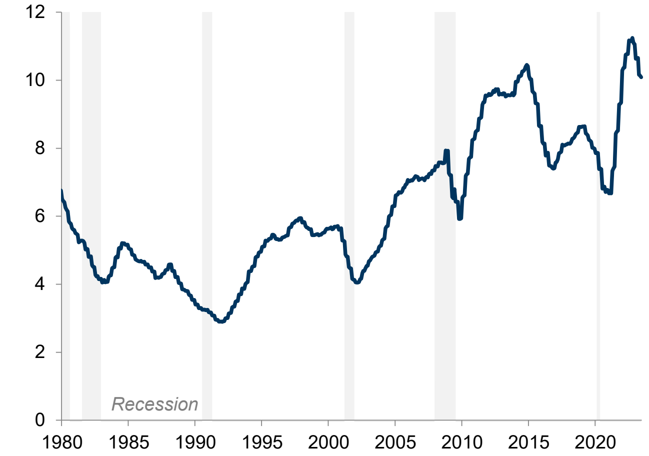
S&P 500 borrowing cost (interest expense/debt, lhs), 10y Treasury yield (rhs)



Source: Compustat, Goldman Sachs GIR.

S&P 500 interest coverage ratios have declined in recent months, but remain high

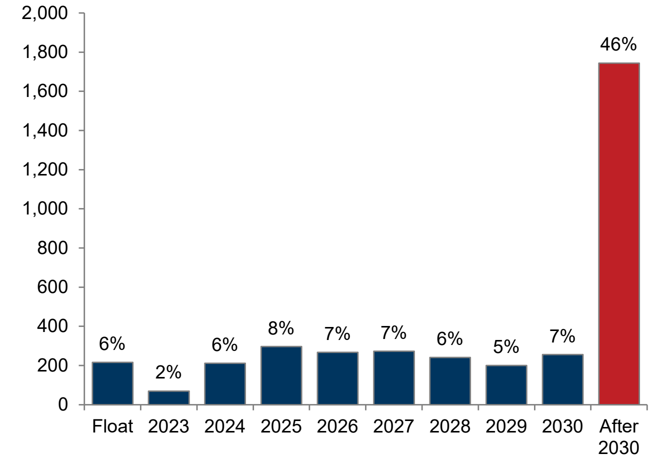
S&P 500 ex. financials interest coverage ratio



Source: Compustat, Goldman Sachs GIR.

Nearly half of S&P 500 debt is set to mature after 2030

S&P 500 ex. financials debt outstanding by maturity, $bn



Source: Bloomberg, Goldman Sachs GIR.

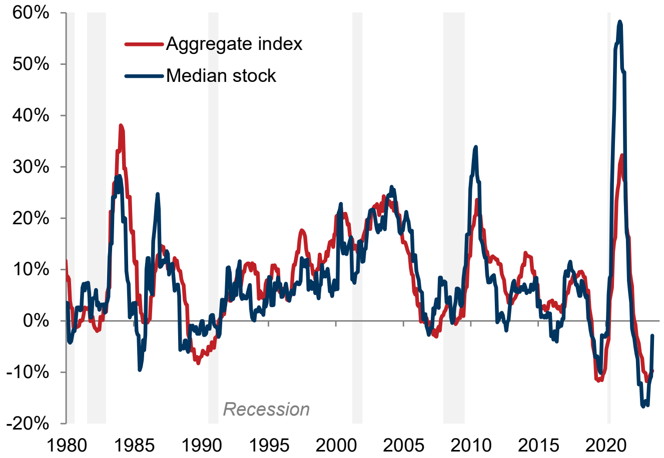
A (short-lived) slowdown in corporate spending

However, firms' desire to avoid higher interest costs has led to a slowdown in debt issuance, creating headwinds to corporate spending. S&P 500 cash spending grew at a robust pace during the Fed hiking cycle as companies compensated for declining debt issuance and falling cash flows by drawing down cash balances. S&P 500 cash declined by 11% during 2022, the largest 12-month decline in at least four decades. And from record highs in 2021, S&P 500 cash/asset and cash/equity ratios are now at their lowest levels since the Global Financial Crisis. As a result, corporate spending across various channels is likely to decelerate over the coming quarters. Corporate buybacks are often the first lever for companies to pull. Indeed, repurchase spending has already declined by over 20% year/year in the first quarter of 2023, and we expect gross buybacks to fall by 15% this year. And after growing by 18% in 2022, S&P 500 capex and R&D spending will likely grow by just 6% this year, while dividend growth should slow to 5% in 2023 following 9% growth last year.

Nonetheless, the slowdown in corporate spending will likely prove short-lived. Earnings appear to have troughed and should reaccelerate in 2023 as profit margins stabilize alongside still-healthy demand growth. And Fed tightening—and long-term interest rates—have now peaked, per our economists, which should reduce uncertainty among corporate managements.

S&P 500 firms have drawn down their cash balances amid declining debt issuance and falling cash flows...

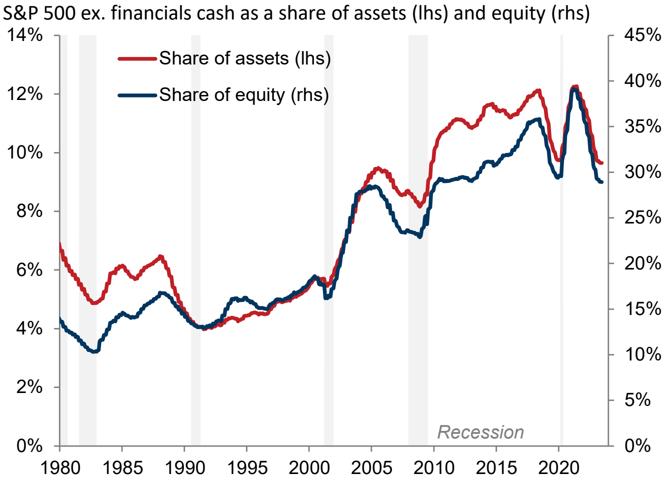
Trailing 12-month change in cash balance for S&P 500 ex. financials



Source: Compustat, Goldman Sachs GIR.

...and cash as a share of assets and equity has declined to the lowest levels since the Global Financial Crisis

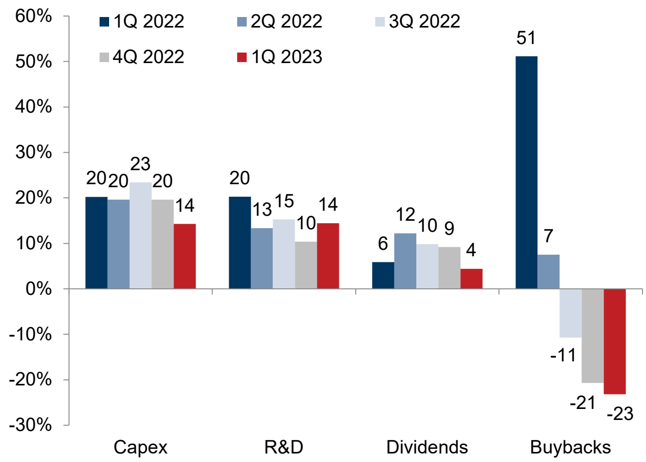
S&P 500 ex. financials cash as a share of assets (lhs) and equity (rhs)



Source: Compustat, Goldman Sachs GIR.

Corporate spending across various channels is likely to further decelerate over the coming quarters

Year/year growth in S&P 500 cash use



Source: Compustat, Goldman Sachs GIR.

Relatively resilient equities

Despite these reasons for optimism, recent equity market moves reflect investor uncertainty around the health of corporate balance sheets. While large cap US equities generally have strong balance sheets, small caps tend to carry more floating-rate and short-term debt than their large cap peers. The relative fragility of small cap balance sheets in the current high-rate environment helps explain why their stocks have lagged other cyclical equities this year. Ultimately, however, resilient economic and earnings growth should more than offset the pressure on firm balance sheets from higher interest rates for most US stocks.

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"Zombie" firms: not so terrifying

Michael Puempel and Ben Shumway argue that zombie firms won't be a large contributor to financial distress

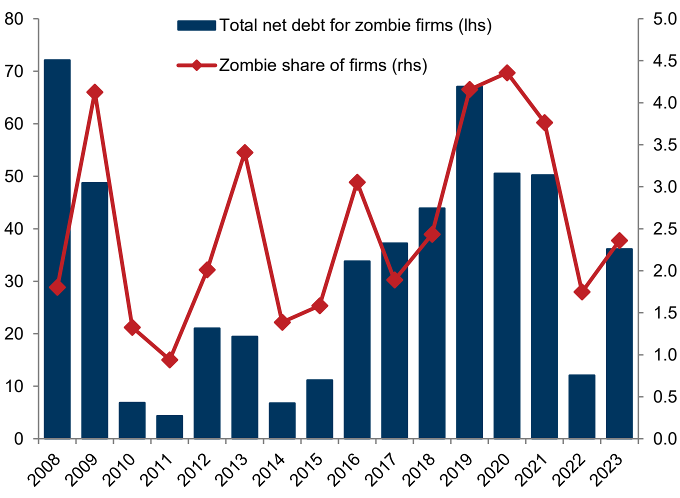
Over the past decade, and especially during 2020 and 2021, a popular narrative emerged that the prolonged period of low interest rates and generally easy financial conditions had allowed too many firms with weak balance sheets and limited growth prospects to refinance their maturing debt too cheaply, allowing them to avoid default and a restructuring of their liabilities. The primary concern was that these so-called "zombie" borrowers would crowd out capital formation for more productive peers, dampening growth and productivity in the broader economy. Amid today's higher-for-longer rate environment, concerns have shifted to what zombie firms could mean for public bond market issuer-level financial distress given upcoming debt maturity walls that suggest a sharp rise in interest expense for these firms ahead. However, we believe the prevalence of these zombie firms—and their economic and market impact—has long been overstated.

Too small to matter much

We find that zombie firms represent only a sliver of US public credit markets, using three criteria to define these firms: (1) an interest coverage ratio below 1.0 for the previous three consecutive years, (2) a balance sheet with positive net debt, and (3) underperformance of their publicly-traded equity by at least 5% relative to the S&P 500 in each of the past two years. The interest coverage ratio criterion captures firms which are consistently unable to service their outstanding liabilities, while the net debt and equity performance criteria both act as additional filters to exclude high-growth firms from our sample of zombie firms, as they may have otherwise been included given their low level of current earnings.

The amount of zombie net debt and issuer share remains benign

Total zombie net debt ($bn, lhs) and overall zombie issuer share (%, rhs) by year



Note: 2023 values incorporate year-to-date equity returns.
Source: FactSet, Bloomberg, Goldman Sachs GIR.

These criteria suggest that just over 2% of public market credit issuers can be classified as a zombie firm, for a total net debt of $36bn. While this represents an increase relative to very low numbers of 2022, it remains well below the number of zombie firms in 2018-21, in terms of both issuer share and total net debt. In fact, zombie firms have never been an important factor in US public markets, always remaining below a 5% share of issuers. And the picture is even more benign under the surface, with just five firms accounting for 80% of total zombie net debt.

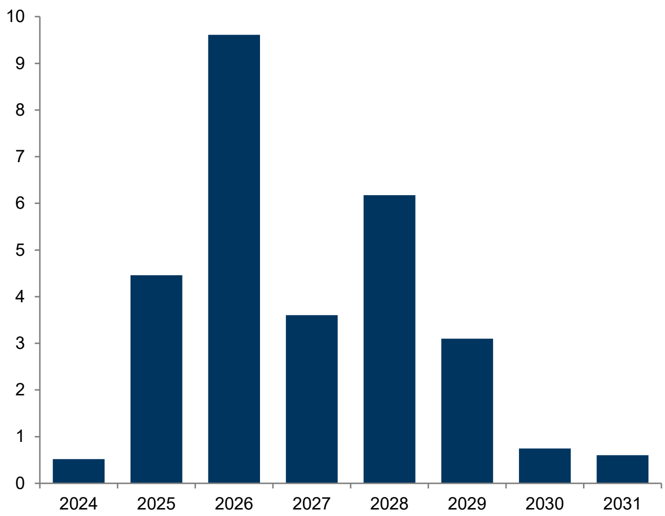
More pressure for zombie borrowers ahead

However, while the small share and size of zombie borrowers relative to the broader high-yield (HY) bond market will likely limit the macro effects of any financial distress they may face, the fast-approaching maturity walls of their debt suggest that the next several quarters will be difficult for these issuers. Almost 20% of zombie firms' outstanding bonds will mature by 2025, and just over 50% will mature by 2026, forcing these borrowers to tap public markets for refinancing at what are likely to be materially higher all-in funding costs.

We expect this upcoming payment shock to lead to higher default rates for this universe of zombie firms given that restructuring their balance sheet liabilities is likely to be the most viable way for them to return to solid footing. That said, we wouldn't view this impending rise in zombie firm defaults as a sign of systemic stress, but rather as evidence that financial markets are indeed functioning properly, and that the process of creative destruction is alive and well.

Over the next three years, 50% of zombie firm maturities will have to be refinanced

Upcoming maturity wall for the current cohort of zombie firms by year, $bn



Source: FactSet, Bloomberg, Goldman Sachs GIR.

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US corporate debt: a manageable risk

Spencer Hill assesses the economic impact of a higher cost-of-funding environment

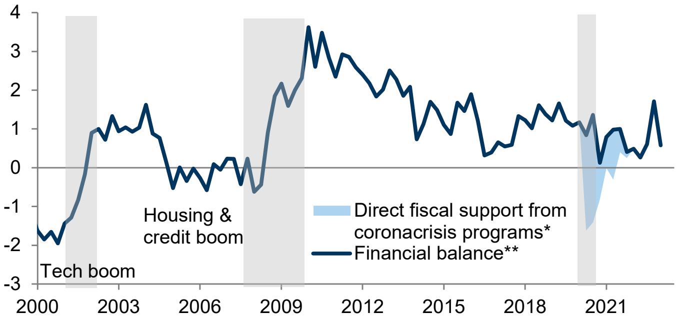
The Fed's historic tightening cycle has pushed borrowing costs for corporate America sharply higher, raising concerns about the implications for the broader US economy. While declining corporate profitability and the rebound in default rates from very low levels both warrant attention, we are not too concerned about the near-term risks from corporate debt on the broader economy, for three reasons: (1) the positive financial balance of the private sector, (2) low near-term refinancing risk for the corporate sector, and (3) the only-modest rise we expect in corporate interest expense in 2023-24.

A continued financial surplus in the private sector

In spring 2022, we argued that the healthy financial position of the overall private sector would help sustain the economic expansion in the face of new shocks, and this continues to be the case. The financial balance—the difference between total income and total spending—is our preferred summary indicator. It measures the ability of internal cash flows to finance the current level of consumption and investment, and even after the wind-down of pandemic support programs, the overall private sector achieved a surplus of 4.1% of GDP in Q1 and 1.9% of GDP over the last four quarters. The nonfinancial corporate sector in particular ran a surplus of 0.6% of GDP in Q1 and 0.8% of GDP over the last four quarters.

Corporate America's financial position remains relatively healthy

Non-financial corporations' financial balance and fiscal support, % of GDP



**Reflects payroll protection program (PPP), employee retention tax credits, and federal grants to airlines. Assumes one-third of employee retention payments to unincorporated businesses and two-thirds to corporations. **Excludes impact of abnormal repatriation flows, inventory investment, and inter-sector M&A.*
Source: Federal Reserve, Goldman Sachs GIR.

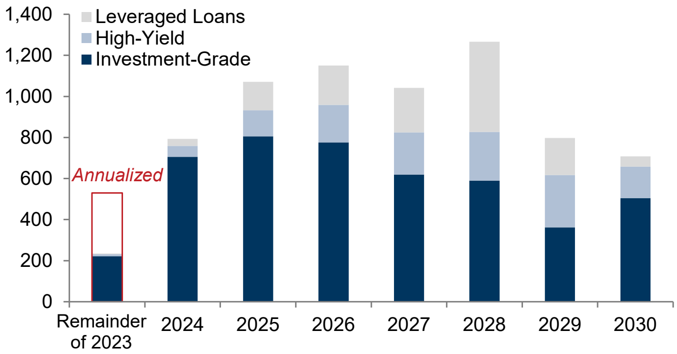
Financial fragility in the private sector has historically amplified the impact of economic shocks, most notably during the 2000-2002 tech bust and 2007-2009 housing and credit crisis. Accordingly, today's surpluses cushion the downside risks from higher interest rates and tighter bank credit—and in turn increase the odds of a soft landing.

Low near-term refinancing risk

Refinancing needs will remain historically low this year and next. Only around 16% of corporate debt will mature over the next two years, because the corporate sector seized the opportunity from the low interest rate environment in the wake of the pandemic to lock in financing, in many cases through 2025 and beyond.

Limited near-term refinancing needs for corporates

Corporate debt maturing, $bn



Source: Bloomberg LP, FactSet, Goldman Sachs GIR.

A modest aggregate rise in interest expenses

The Fed's tightening cycle has pushed *marginal* funding costs for businesses sharply higher. However, we expect the impact on 2024 interest expense to be relatively modest—both because of the limited near-term refinancing needs discussed previously, and because corporate borrowing outside of the leveraged loan segment is generally fixed-rate in nature (and thus benefits from the inverted yield curve). Despite the 5.25pp increase in the Fed funds rate, we estimate that the average interest rate on existing corporate debt will rise only a tenth in 2024—from 4.2% to 4.3%—followed by a somewhat more meaningful 0.2pp rise in 2025 to 4.5%. As a share of gross output (revenues), this would imply that private sector interest expense will rise from 3.35% in 2023 to 3.40% in 2024—a likely manageable uptick in the context of the continued financial surpluses discussed previously. We would also note that corporate cash balances are historically high, at 11-12% as a share of total assets, compared to 7% in 2007 (excludes the financial sector).

Watch leveraged loan issuers and unprofitable firms

One credit segment to watch is leveraged loan issuers, which are more vulnerable to higher interest rates due to their floating rate borrowings. Our credit strategists expect higher interest expenses to continue to weigh on leveraged loan credit quality, likely exerting further upward pressure on default rates that have already risen to 4% in that relatively small but still-important segment.

A related risk is the rising number of unprofitable firms, including unprofitable small businesses, which generally do not have access to capital markets and have more limited access to credit. In previous research, we found that unprofitable firms disproportionately cut back on employment and capex when faced with margin pressure. We estimate higher corporate interest expenses are likely to reduce capex growth by 0.10pp in 2024 and 0.25pp in 2025, and these headwinds could prove larger if leveraged loan borrowers or unprofitable firms cut back more dramatically. Fortunately, for now, NFIB data do not indicate a significant tightening in credit availability, with only 6% of small businesses reporting that credit has become harder to get (seasonally adjusted).

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Private markets: risks and opportunities

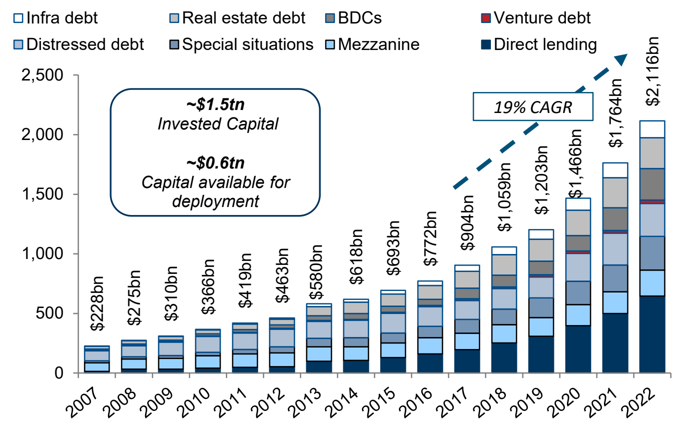
Alex Blostein answers key questions about the risks and opportunities in private markets amid a higher-for-longer rate environment

Q: How large is the private credit market?

A: Private credit is a >$2tn AUM market, having grown at a 19% CAGR over the last five years. The single largest component of the private credit market today is direct lending, a business established on the heels of post-Global Financial Crisis (GFC) regulatory changes. Direct lending has historically centered around sponsor-backed financing, with private lenders providing the capital to finance leveraged buyouts (LBOs) by private equity firms. We estimate that ~$290bn, or 60%, of sponsor-led deal financing originated from direct lending firms last year vs. ~$190bn from syndicated loans and <$30bn from high yield (HY) bonds. This is consistent with prior periods of capital market dislocation, during which direct lending firms benefitted as traditional sources of financing became scarce.

The private credit market has grown significantly in recent years

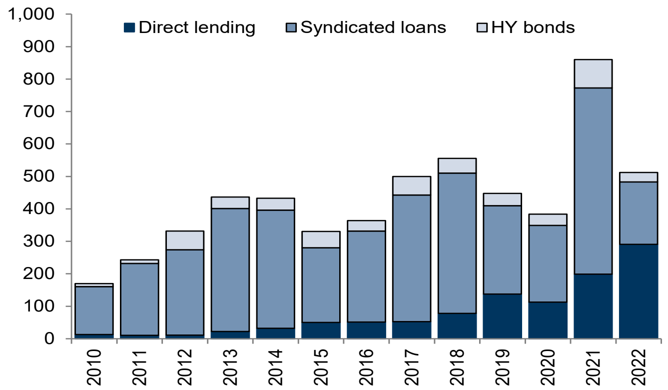
Global private lending assets under management, $bn



Source: Preqin, Goldman Sachs GIR.

Syndicated loans have historically been the largest source of sponsor-led financing...

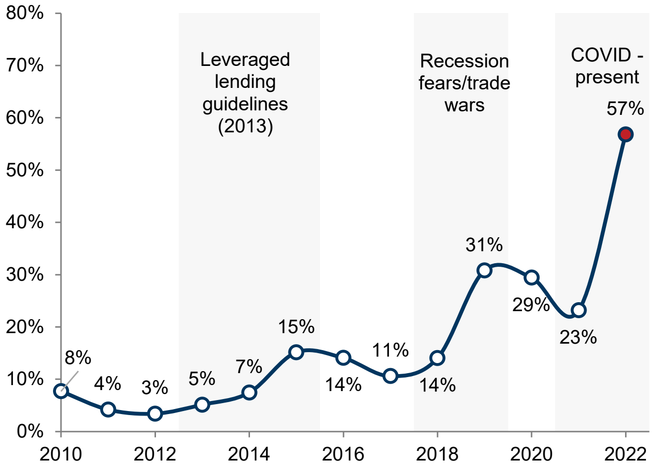
Levered finance issuance for global sponsor-backed M&A, $bn



Source: Preqin, PitchBook LCD, Thomson Reuters Eikon, Goldman Sachs GIR.

...before being overtaken by direct lending last year

Estimated direct lending market share, sponsor M&A financing



Source: Preqin, PitchBook LCD, Thomson Reuters Eikon, Goldman Sachs GIR.

As traditional bank lending further retrenches following the recent regional banks crisis, we expect the composition of private credit to broaden, with incremental growth in real estate lending, non-financial sponsor-based lending, asset-backed finance, and other forms of private investment-grade (IG) lending likely ahead.

Q: How might the private credit market perform in an environment of rising defaults?

A: Similar to borrowers in the broadly syndicated loan market, where the share of loans trading at distressed levels is marginally higher than the post-GFC average[1], private market borrowers are experiencing a large payment shock on their floating-rate debt due to the higher rate environment, which will likely result in an increase in defaults/delinquencies. Moreover, private credit as an asset class is young, and has never experienced a full-blown default cycle given that the Covid shock was very limited in scope and duration. That said, the risks from any systemic shock to the private credit market should be manageable given the different lender-borrower relationship on the private side relative to the public side. In particular, private market lenders have the ability to enact stricter controls, perform better due diligence, and provide stronger liquidity backstops, as well as amend structures and extend loan maturities, which should dampen the market's overall default rates.

Q: What areas of private markets look more/less vulnerable to a further deterioration in credit metrics?

A: We think private equity managers look more vulnerable than private credit managers in a scenario in which credit metrics across the syndicated and private/direct lending loan markets deteriorate further. On average, sponsor-led LBOs have historically used 60%/40% debt-to-equity to finance a given deal—should a portfolio company default, the lenders have the most senior claim on the assets, with the equity investors typically the most subordinate part of the capital structure.

[1] As of June 2023, 5.5% of the Morningstar LSTA Levered Loan index was trading at distressed levels (loans priced<80) vs. the ~5% post-GFC average.

To that end, the private credit managers (the lenders) are the party with the most senior claim in a default scenario, and would likely benefit from equity sponsors injecting capital to prevent the loss of their equity stake.

That said, for private equity managers, we see this largely as a performance issue rather than a firm/balance sheet issue, as private equity investments sit in funds (backed by qualified institutional investors) managed by a given private equity firm but not on the private equity firm's balance sheet. Thus, a "credit cycle" is likely to manifest in the form of deteriorating private equity fund performance, potentially creating challenges for future fundraising. However, the spread in relative investment performance could widen as the era of easy money has likely diminished idiosyncratic alpha differentiation among private equity managers. And with widening performance outcomes, we expect future capital raising will also become more differentiated, widening the gap between relative winners and losers.

Overall, we see more risk than opportunity in private equity, and more opportunity than risk in private credit.

Q: How is the investment opportunity set in private credit likely to evolve from here?

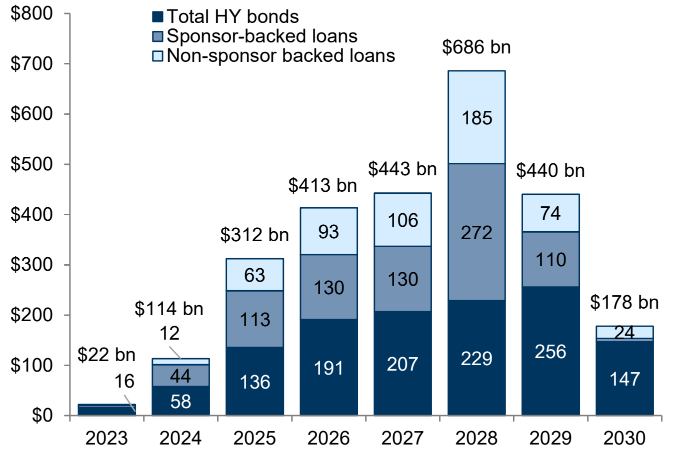
A: We believe that the opportunity set for private credit managers is likely to accelerate meaningfully over the next several years. In addition to significant share gains by private credit managers in the traditional direct lending space (vs. syndicated markets) and the newly formed opportunities created by banks retrenching from various lending markets, we think opportunistic/distressed managers are likely to become much more active.

Industrywide, AUM in opportunistic or distressed credit funds amounted to ~$560bn at the end of 2022. Historically, deployment from distressed/opportunistic credit funds has been highly correlated with the amount of outstanding syndicated loans that are downgraded by the rating agencies. Based on our regression analysis (which has an R-squared of over 0.65) and estimated number of credit downgrades through the cycle, we see ~$800bn of deployment from distressed credit vehicles over the next five years to capture these opportunities.

Additionally, ~$300bn of HY bonds and levered loans is set to mature in 2025, with more in the following years (per Moody's and PitchBook LCD). This upcoming speculative-grade maturity wall, coupled with tighter lending standards and lower refinancing capacity from banks, leaves distressed credit managers well positioned to capture a share of the near-term refinance opportunity. Based on the market share trajectory in the early days of the direct lending industry's growth (rising from ~10% in the early days of the GFC to 15% by 2015), we expect a similar market share dynamic to play out for distressed vehicles as they pursue the refinance opportunity, which will create another >$150bn deployment opportunity. Taken together, we see >$900bn of aggregate deployment opportunities for distressed credit managers in the next five years, a significant increase relative to the $365bn of deployment over the prior five years (2018-2022).

Distressed credit managers are well-positioned to benefit from an upcoming speculative-grade maturity wall

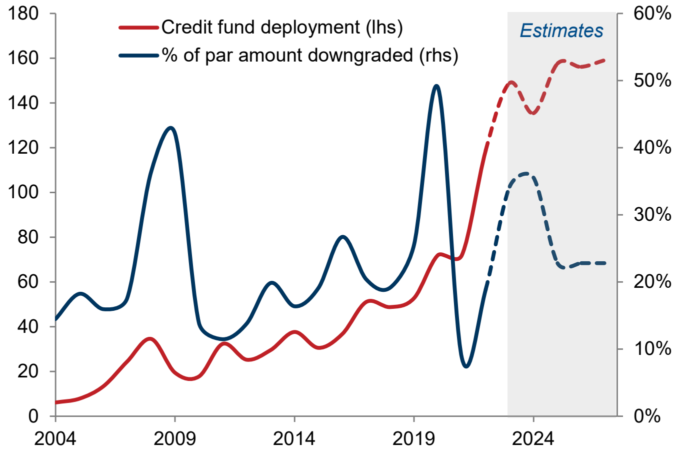
Upcoming speculative grade maturity wall, $bn



Source: Moody's Analytics, PitchBook LCD, Goldman Sachs GIR.

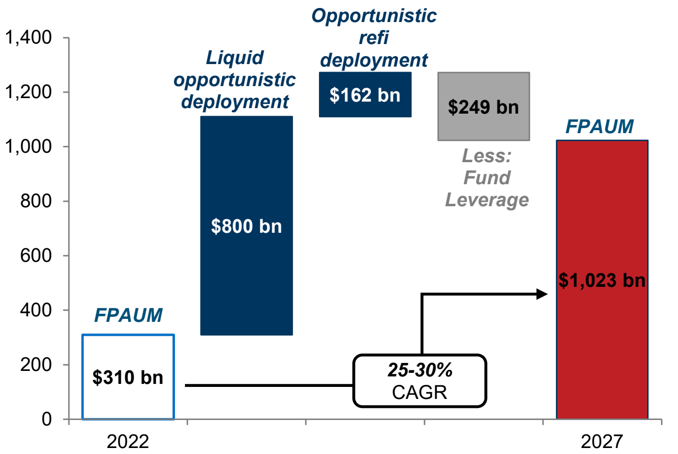
Significant deployment opportunities for opportunistic/distressed credit managers are on the horizon

Distressed credit and special opps credit deployment ($bn, lhs) vs. % of levered loans downgraded (rhs)



Source: PitchBook LCD, Moody's Analytics, Goldman Sachs GIR.

Opportunistic deployment, $bn



Source: Preqin, PitchBook LCD, Goldman Sachs GIR.

Alex Blostein, US Financials Equity Research Analyst

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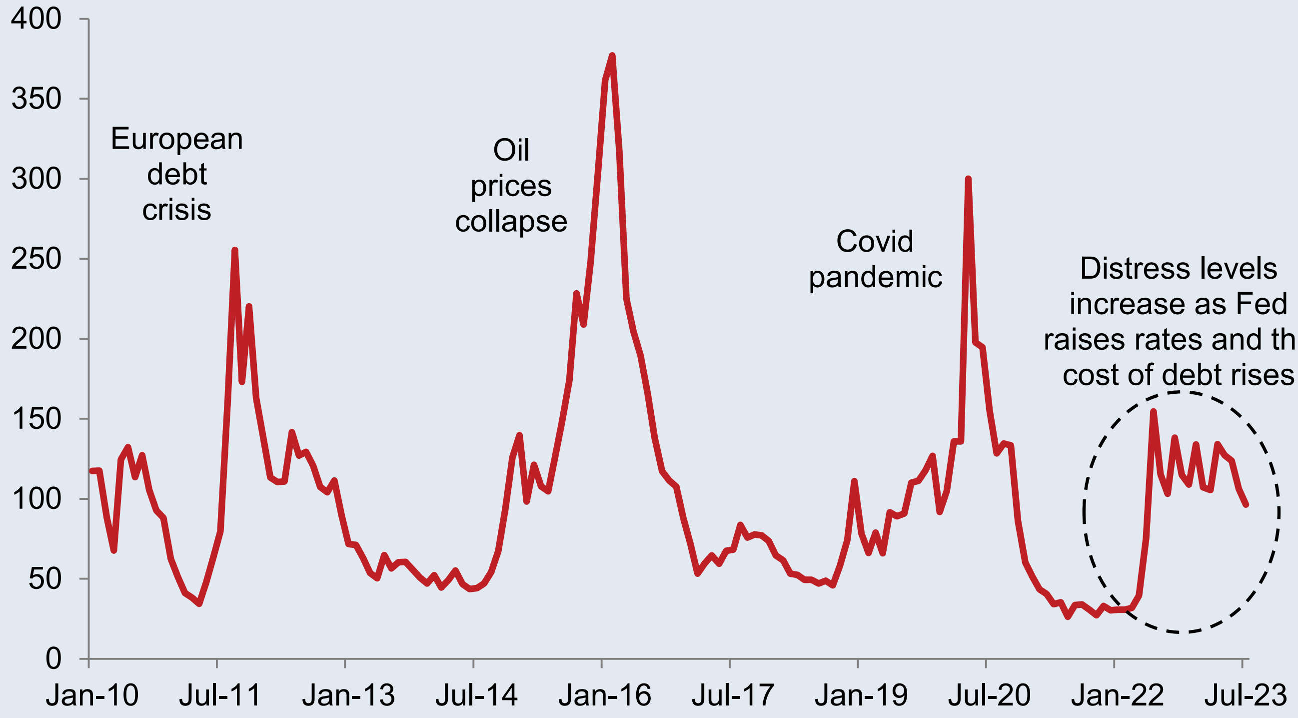
How distressed is corporate credit?

High-yield bonds are facing distress levels in line with those of a typical late-cycle backdrop...

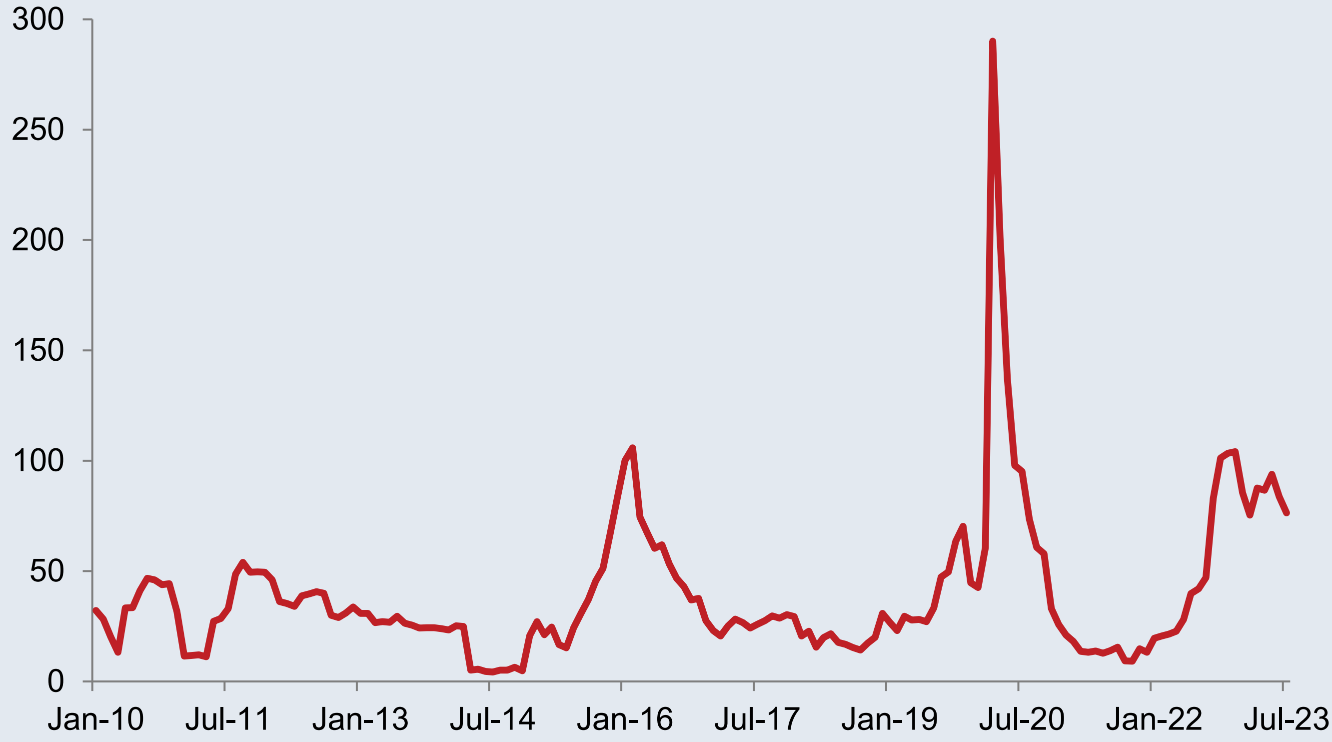
Aggregate face value of distressed high-yield bonds, $bn



Note: Distressed bonds are classified as those trading at spreads>1000; data as of 7/31/2023.
Source: ICE BAML Distressed Index, Goldman Sachs GIR.

…while leveraged loan distress levels are elevated relative to non-recessionary periods

Total outstanding value of distressed leveraged loans, $bn



Note: Distressed loans are classified as those trading at prices<80; data as of 7/31/2023.
Source: PitchBook LCD, Goldman Sachs GIR.

Special thanks to GS credit strategists Michael Puempel and Sienna Mori for data and guidance.

Summary of our key forecasts

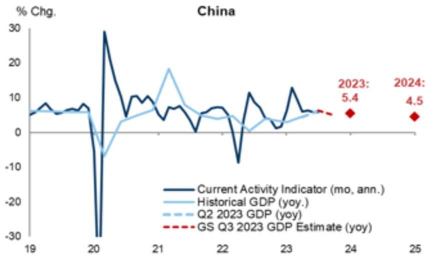
GS GIR: Macro at a glance

Watching

- **Globally,** we expect annual average real GDP growth to slow to 2.6% yoy in 2023, reflecting ongoing drags from monetary policy tightening and tighter bank lending in the US and Europe, with softer China growth also likely weighing on global activity. We expect global core inflation to fall back below 3% in 2024 reflecting supply chain improvements, slower wage growth, and tighter monetary policy.
- **In the US,** we expect real GDP growth to slow to an above-consensus 1.8% this year on a Q4/Q4 basis, reflecting a negative impulse from tighter financial conditions and additional drags from tighter bank lending. We see a below-consensus 20% probability of entering a recession over the next year as we think taming inflation will not require a recession. We expect core PCE inflation to decline to 3.4% by Dec 2023, reflecting continued supply chain recovery, a decline in shelter inflation, and slower non-housing services inflation as the labor market continues to rebalance. We expect the unemployment rate to edge up slightly to 3.6% by Dec 2023 and remain there for the next few years.
- **We believe the Fed's** hiking cycle is now complete and that the Fed will remain on hold at the current Fed funds rate range of 5.25-5.5% into 2024. We expect the first rate cut to come only in 2Q24 and to proceed at a 25bp/quarter pace, with the Fed funds rate range likely ultimately stabilizing at 3-3.25%.
- **In the Euro area,** we expect real GDP growth to slow to 0.6% in 2023, reflecting historically elevated energy prices driven by the war in Ukraine, tighter bank lending standards amid the ongoing ECB hiking cycle, and weak data momentum. We expect core inflation to decline gradually to 4.0% yoy by the end of 2023, reflecting indirect pass-through from falling energy and food prices, although we expect services inflation to remain elevated on the back of a tight labor market.
- **We expect the ECB** to deliver a final 25bp hike in September for a terminal rate of 4.00% given sticky services inflation. Subsequently, we expect the ECB to remain on hold until 4Q24.
- **In China,** we expect real GDP growth to accelerate to 5.4% yoy in 2023 off the back of China's post-reopening recovery. We expect sequential growth to improve in H2 from the Q2 trough owing to a diminishing drag from destocking, step up in policy easing measures, and stabilization of Chinese exports, although significant uncertainties remain around the property sector downturn and its impact on the rest of the economy.
- **WATCH CHINA GROWTH HEADWINDS.** In China, following a shorter-than-expected reopening impulse, medium-term challenges such as demographics, the multi-year property downturn, local government implicit debt problems, and geopolitical tensions may start to become more important for the growth outlook. As such, we expect lower and below-consensus growth in 2024 and 2025.

Goldman Sachs Global Investment Research.

Growth



Source: Haver Analytics and 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 "Improving Our Within-Month CAI Forecasts," Global Economics Comment, Mar. 06, 2023.

Forecasts

Economics

GDP growth (%)	2023 GS (Q4/Q4)	2023 GS (CY)	2023 Cons. (CY)	2024 GS (CY)	2024 Cons. (CY)
Global	2.6	2.6	2.6	2.5	2.7
US	1.8	2.1	1.6	1.7	0.6
China	5.7	5.4	5.2	4.5	4.7
Euro area	0.6	0.6	0.5	1.3	1.0

Policy rates (%)	2023 GS	2023 Mkt.	2024 GS	2024 Mkt.
US	5.38	5.03	4.63	4.11
Euro area	4.00	3.69	3.75	3.16
China	1.80	2.16	1.80	2.41
Japan	-0.10	0.03	-0.10	0.19

Markets

Interest rates 10Yr (%)	Last	E2023	E2024
US	4.00	3.90	3.75
Germany	2.46	2.75	2.25
Japan	0.58	0.75	0.70
UK	4.29	4.40	4.00

FX	Last	3m	12m
EUR/$	1.10	1.07	1.12
GBP/$	1.27	1.24	1.33
$/JPY	144	140	125
$/CNY	7.19	7.20	6.90

Commodities	Last	3m	12m
Crude Oil, Brent ($/bbl)	88	86	93
Nat Gas ($/mmBtu)	2.96	2.90	2.85
Copper ($/mt)	8,363	9,250	10,000
Gold ($/troy oz)	1,923	2,050	2,050

Credit (bp)		Last	3Q23	4Q23
USD	IG	120	118	118
	HY	385	355	355
EUR	IG	164	157	157
	HY	448	435	435

Equities

S&P 500	E2023 GS	E2023 Cons.	E2024 GS	E2024 Cons.
Price	4,500	--	--	--
EPS	$224	$222	$237	$246
Growth	1%	0%	5%	11%

Returns (%)	12m	YTD	E2023 P/E
S&P 500	5.0	16	20.7x
MXAPJ	12.0	3	14.8x
Topix	10.0	21	15.9x
STOXX 600	9.0	8	12.9x

Consumer	2023 CPI (%, yoy)	2023 Unemp. Rate*	2024 CPI (%, yoy)	2024 Unemp. Rate*
US	3.9	3.6	2.8	3.6
Euro area	5.4	6.8	2.9	6.7
China	0.4	--	1.7	--

Wage Tracker 2023 (%)	Q1	Q2	Q3	Q4
US	5.0	4.8	4.4	--
Euro area	--	--	--	--
China	--	--	--	--

**Denotes end of period.*
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 August 9, 2023

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 Analyst: Trackin' All Over the World – Our New Global CAI, 25 February 2017.

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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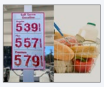

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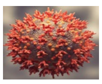

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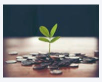

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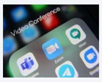

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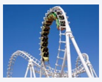

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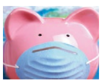

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Reg AC

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