TOP of MIND

RECESSION RISK

The US economic expansion looks poised to become the longest since the mid-19th century. While growth remains robust, rising policy headwinds have made recession risk top of mind. GS Chief Economist Jan Hatzius believes the Fed will most likely manage to slow the economy without triggering a recession; his base case has the expansion continuing for the next few years. Our strategists recognize risks in areas like corporate debt and shadow banking, but don't see big imbalances or amplifying factors that could catalyze a downturn. Not everyone agrees. Our external interviewees are skeptical about the Fed's ability to deliver a soft landing and think a 2020 recession is likely; NYU Professor Nouriel Roubini cites a confluence of factors (potentially including geopolitical conflict), while Guggenheim Partners CIO Scott Minerd worries about corporate bond downgrades. As for asset implications, we caution that selling equities early can be as costly as selling late.

"The last recession featured overleveraged consumers and banks; the next one will feature overleveraged companies and non-bank investors that have taken on too much risk in the era of low rates and QE.

- Scott Minerd

The US is pursuing a series of stagflationary economic policies including trade protectionism... restricting inward and outward FDI, and neglecting investments in infrastructure and the green economy. All of these policies encourage inflation, and therefore more monetary tightening even as growth slows.

- Nouriel Roubini

We are forecasting enough of a slowdown to keep the economy from overheating, which is the biggest risk I see today for recession.

- Jan Hatzius"

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

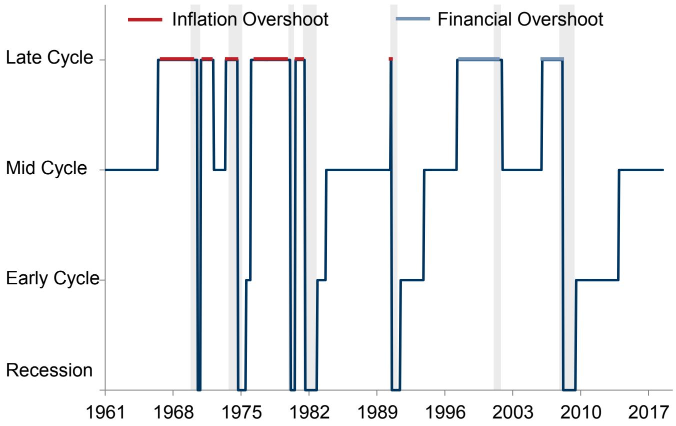
- No major changes in views.

Datapoints/trends we're focused on

- Continued strength in economic activity and jobs growth.
- Recent tightening in financial conditions, mainly on lower equity prices; financial conditions overall remain accommodative.
- The second consecutive miss in core CPI, though we expect the majority of recent weakness to reverse in October/November.
- Signs that economy is still closer to "mid-cycle" than "late-cycle," as inflation and financial excess remain in check.

Still mid-cycle

Stage of the US business cycle, based on GS model



Note: Shading denotes NBER recession. Source: Goldman Sachs GIR.

Japan

Latest GS proprietary datapoints/major changes in views

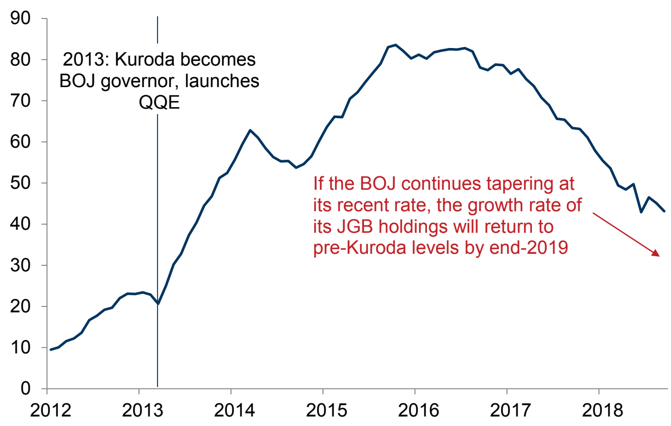
- We lowered our Q3 GDP tracking estimate by 0.2pp to 0.6% qoq ann, on upward revisions to expected real imports.

Datapoints/trends we're focused on

- The rapid pace of BOJ tapering, putting yoy growth in the bank's JGB holdings on track to reach pre-Kuroda levels. We expect the BOJ to slow its tapering over the next year.
- Steps toward tax hike implementation in October 2019.
- The first improvement in consumer confidence in four months.
- A sharp rise in machinery orders, a leading capex indicator.

Stealth tapering

Yoy growth in BOJ holdings of Japanese gov. bonds (JGBs), ¥ tn



Source: BOJ, Goldman Sachs Global Investment Research.

Europe

Latest GS proprietary datapoints/major changes in views

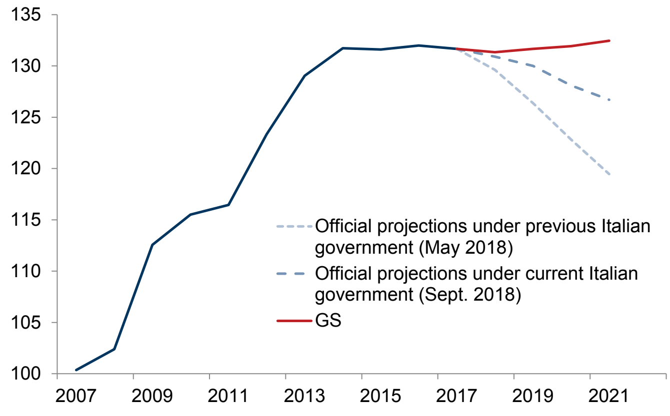
- No major changes in views.

Datapoints/trends we're focused on

- An uncertain path for Italy's budget plans; we think market tensions would need to intensify to trigger a change in policy.
- The impasse in Brexit talks; a deal this week looks unlikely.
- The weak performance of Germany's ruling parties in regional elections; nonetheless, snap federal elections remain unlikely.
- Upcoming updates to ECB reinvestment policy; we expect full reinvestment of maturing bonds to continue for now.

Budget under fire

Scenarios for Italian government debt, % of GDP



Source: ISTAT, Italian Finance Ministry, Goldman Sachs Global Investment Research.

Emerging Markets (EM)

Latest GS proprietary datapoints/major changes in views

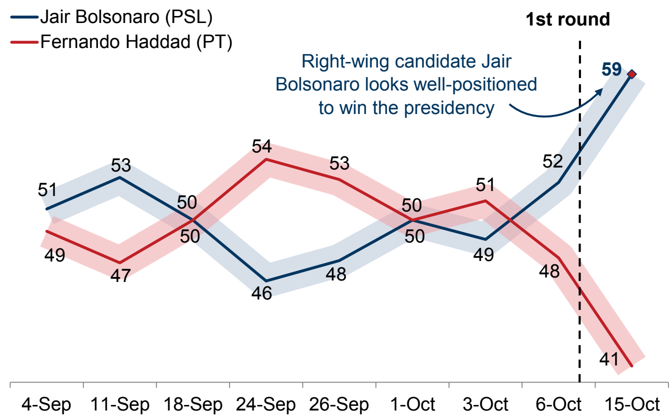
- We raised our near-term interest rate forecast for Turkey by 300bp to 27% on a sharp rise in headline inflation in August.
- We now expect a 25bp RBI hike (vs. no change) in 1Q19.

Datapoints/trends we're focused on

- Increased fragmentation in Brazil's congress, making fiscal reforms more challenging for the winner of the Oct. 28th presidential election; Jair Bolsonaro is leading in the polls.
- China's 1pp cut to its reserve requirement ratio; we expect further easing as needed to avoid a sharp growth slowdown.

Racing ahead

Brazil presidential election runoff poll, %



Source: Ibope, Goldman Sachs Global Investment Research.

Recession risk

The US economic expansion appears poised to become the longest since the mid-19th century. Yet even as US growth remains robust, the longevity of the current cycle, along with expectations of rising headwinds from fiscal and monetary policy, has increased investor worries about recession risk. What will trigger the next recession, when it will hit, and what it will look like is Top of Mind.

We first sit down with GS Chief Economist Jan Hatzius. While he forecasts a material slowdown in growth over the next few years, recession isn't his base case. In fact, he argues that slower growth is precisely what will allow the US to avoid the most likely cause of a recession: overheating. In other words, he expects the Fed to successfully navigate a "soft landing," helped along by well-anchored inflation expectations and a lack of large financial imbalances in the private sector.

Not everyone agrees. Scott Minerd, Global CIO of Guggenheim Partners, and Nouriel Roubini, professor at New York University, doubt that the Fed can pull off a soft landing (which has indeed been a historical rarity). They also see a range of other factors tipping the balance between weaker growth and recession: the US-China trade war, a repricing of financial assets, and a waning boost from tax reform. In particular, Minerd sees corporate bond downgrades at the epicenter of the next downturn, while Roubini doesn't rule out geopolitical conflict playing a role. Both think a recession in 2020 is likely.

Setting timing aside, Hatzius and Minerd generally agree that the next recession may not be especially severe. In contrast, Roubini fears that between a "vanilla" recession and one accompanied by a financial crisis, we'll get the latter, due in part to changes in financial regulation. One area where all three interviewees are on the same page? Policymakers' ability to respond, which will be more constrained than in the past.

We then dig deeper into potential recession causes with a focus on leverage. GS Chief Credit Strategist Lotfi Karoui and Senior Mortgage Strategist Marty Young look closely at the state of US corporate and household balance sheets, as well as oft-cited pockets of concern like leveraged loans, corporate real estate, and the corporate bonds Minerd is watching. Karoui and Young acknowledge that vulnerabilities on the corporate side have grown, but think that worries over rising interest expenses are overdone. And when it comes to the other areas of concern, they don't see any canary in the coal mine. The same applies to risks in direct lending, a slice of the shadow banking system that has seen strong growth since the 2008 crisis. GS Senior Credit Strategist Amanda Lynam and Karoui concede that the asset class has not been tested through a full-fledged recession. But they struggle to see any amplifying channels that would turn direct loans into the "subprime mortgages" of the next downturn.

And what about the other historical trigger of recessions: commodity shocks? Despite oil prices hovering near multi-year highs, GS Head of Global Commodities Research Jeff Currie argues that large strategic oil reserves, increased supply flexibility, and a reduced share of consumer spending on oil leave history unlikely to repeat itself.

So what are the implications of all of this for assets? In US credit, Karoui and Lynam continue to prefer IG over HY spreads—a view largely driven by valuation. They also emphasize the importance of sector selection, as the interaction of elevated leverage with both cyclical and structural headwinds is likely to be a key driver of performance. And in equities, GS strategists Peter Oppenheimer and Sharon Bell argue that today's relatively contained financial imbalances (at least in our view) should limit the severity of the next bear market. That said, in our base case of slowing (but positive) economic growth, they think low equity returns are more likely than an outright bear market—and they caution that equity investors have a lot to lose by reducing risk too soon.

For his part, Guggenheim's Minerd agrees that the equity bull market isn't over yet; he thinks a rally post the US midterm elections and into 2019 will be the one to sell. And while he doesn't expect credit spreads to widen until closer to the next recession, with spreads as tight as they are, he doesn't see much downside to starting to reduce risk now. But by the end of 2Q19, he warns, investors should be risk-off everywhere.

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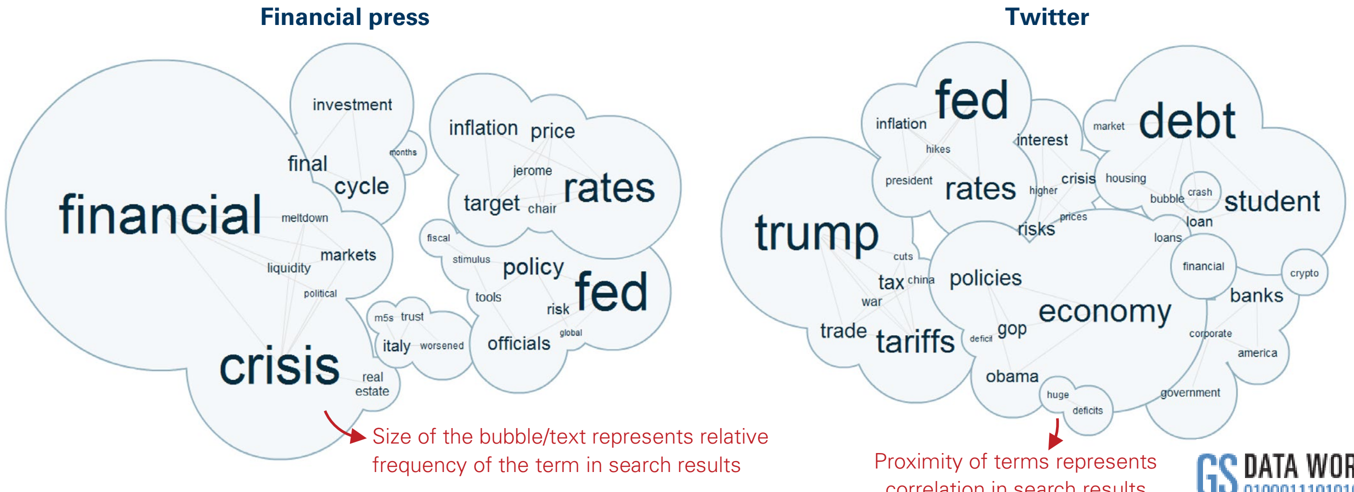
What will cause the next recession—according to the media and Twitter

Key terms associated with causes/drivers of the next US recession, based on financial news articles or tweets published year-to-date



Source: Crimson Hexagon, Twitter, various news sources. Special thanks to Dan Duggan and GS Data Works.

GS DATA WORKS 0100011101010011

Interview with Jan Hatzius

Jan Hatzius is Chief Economist at Goldman Sachs. Below, he argues that although recession risk rises over his forecast horizon through 2021, a slower expansion is the most likely scenario.

Allison Nathan: You do not have a US recession in your forecasts, which run through 2021. What's driving your view and how high is your conviction in it?

Jan Hatzius: Put simply, we are forecasting enough of a slowdown to keep the economy from overheating, which is the biggest risk I see today for recession. There are a few drivers of that slowdown: the fading impulse from the recent fiscal boost, tighter financial conditions as the Fed continues to gradually hike rates, and some natural deceleration from supply constraints in the labor market. On our estimates, these factors are not large enough to push us into recession, but they will slow GDP growth to about 1.25%—below trend—in 2021. And that slowdown is precisely why we don't think recession is the most likely scenario: to avoid a recession induced by overheating, we actually need the monetary and fiscal headwinds that many people seem to be worried about.

How much conviction do I have? I am reasonably confident of no recession in the next year, and maybe two years. But the uncertainty obviously increases over time. We put the cumulative probability of a recession occurring by the end of 2021 at about 40%. So the risk is non-trivial. I have to be humble about predicting the situation three years out.

Allison Nathan: Why is overheating the most likely trigger for a recession today?

Jan Hatzius: Because the labor market is already exceptionally tight and inflation is on the rise. So should stronger economic growth in the short term lead to upside surprises in inflation and further steep declines in the unemployment rate, the Fed may very well conclude that they need to deliver more rate hikes to prevent a degree of overheating that would leave us worse off one or two years down the road. And a more aggressive pace of rate hikes could well turn our already-low growth estimates negative. Indeed, Fed tightening is the most common cause of post-war US recessions.

That said, recessions typically have more than one cause, with some shock on top of existing vulnerabilities pushing the economy over the edge. Today, clients sometimes ask if a trade war could be that shock. I don't think trade in and of itself is going to be recessionary for the US. But much larger tariffs on consumer goods at a time when growth is strong and inflation is already rising are a plausible ingredient in a recession scenario.

Allison Nathan: Your forecast assumes that the unemployment rate bottoms at 3.0% in 2020 before below-trend growth helps push it back up to 3.3% in 2021. But your own findings conclude that the Fed has never managed to increase the unemployment rate by more than 0.35pp without ending up in recession. So aren't we walking a tight rope here?

Jan Hatzius: Yes, history says that below-trend growth is an unstable place to be—you either reaccelerate promptly or you fall into recession. Our forecasts imply that we will get close to testing whether that norm still holds, which has to imply a reasonable risk that it does.

The real question for me is how much the labor market ultimately has to soften. The FOMC estimates the natural rate of unemployment—the rate at which the labor market is in equilibrium and inflation is stable—at 4.5%. If we start to see strong evidence that inflation would increase continually unless we get to that 4.5% rate, it will indeed be a tall order for the Fed to get there without entering a recession. That said, you can make a case that it will be an easier lift today than in the past. For example, inflation expectations are much better-anchored now. That should give the Fed a better shot at navigating a late-cycle combination of below-trend growth, above-target inflation, and relatively tight monetary policy without pushing the economy into an outright recession.

Allison Nathan: Your forecasts also imply a modest inversion of the Treasury yield curve. Hasn't that historically been a reliable signal of recession?

Jan Hatzius: Yes, but I think it is probably less reliable today. In the past, the long end of the curve usually embedded a large term premium to compensate investors for holding longer-dated bonds. That meant that for the curve to invert, the market had to expect large rate cuts in the future. And that basically only happened when a recession was staring the market in the face. We are in a somewhat different situation now. Quantitative easing (QE) and other factors have substantially reduced the term premium, so it doesn't take nearly as much expected cutting to invert the curve. That means that the signaling power of an inverted curve is probably quite a bit weaker. It might be fair to interpret a large inversion in the same way you would have interpreted a small inversion in the past. But we are far from that today, and we don't expect to see that in the coming years.

Allison Nathan: Would the Fed invert the curve?

Jan Hatzius: This would surely be debated, but I do think the Fed would be willing to invert the curve to some degree if they saw that as a necessary step to avoid significant overheating.

Allison Nathan: Is there reason to be concerned about financial imbalances?

Jan Hatzius: In the US, I don't see much reason to worry. When assessing the vulnerabilities in the private sector I focus on the private-sector financial balance—the difference between the total income and total spending of all households and businesses. That measure is closely correlated with overall debt growth, and in many advanced economies it has been a reliable indicator of serious imbalances that preceded recession and/or the financial crises. In the US, this balance is currently about 4.5% of GDP, which is actually somewhat healthier relative to history. This is despite the fact that asset prices have increased substantially, which would typically see households and corporates spend a larger share of their income, or maybe even spend more than their income. That kind of excess spending just hasn't happened. Of course, there are financial imbalances in various parts of the private sector. Corporate debt is often discussed in this context. But neither on the corporate nor on the household side do I see any imbalances serious enough to trigger a recession.

Allison Nathan: What about public-sector imbalances, given the big expected increases in the US budget deficit?

Jan Hatzius: It's true that the growing budget deficit is a concern, as we have discussed extensively in our research. But from a US recession perspective, I tend to be more worried about private-sector financial imbalances because of how suddenly they can unwind. When a private-sector shock occurs, households, businesses, and investors tend to all try to squeeze through the same small door at the same time, which can be very disruptive. We don't typically see that type of panic on the public-sector side. So even if there are imbalances, they can usually be addressed in a more orderly manner.

Allison Nathan: Even if we take your mainline scenario that the fed funds rate will have reached 3.25-3.50% before the next recession hits, will the Fed have sufficient tools to effectively respond to the next downturn? What does that imply for the severity of the next recession?

Jan Hatzius: There are good reasons to think the next recession will be relatively mild. We don't have a major inflation problem, which tends to precede more severe recessions, and while inflation is accelerating I think the upside is somewhat capped because inflation expectations are so anchored. And, as I mentioned, the private sector isn't over-extended. That's also true of activity in the most cyclical sectors of the economy. For example, housing starts are still a touch below our estimates of long-term demographic needs, whereas at this stage of past cycles they were typically well above those estimates.

But make no mistake, any recession—even a mild one—is painful, with an increase in the unemployment rate of 2pp+ and big declines in risk asset prices. Additionally, I think the next recession could be quite "U-shaped," with a limited downturn but also a weak recovery. That's largely because policymakers are likely to have less firepower than normal. Historically, the Fed has typically eased by about 550bp in a recession. As you mentioned, on our forecasts it will eventually have roughly 300bp of conventional easing capacity. Other monetary policy tools would probably come back into play, including forward guidance, QE, or even more aggressive guidance such as Ben Bernanke's suggestion of a temporary price level target, or our suggestion of a nominal GDP level target. But these other tools are arguably less straightforward and less powerful than conventional easing.

There will also be less room on the fiscal policy side. Although there is technically no upper limit to the federal deficit, I do think that the already-large deficit will constrain policymakers in the use of countercyclical fiscal policy. It will just be harder to persuade Congress to pass significant stimulus when the deficit is already well above 5% of GDP, than, say, in the 2001-2003 period, when the starting point was a surplus.

Allison Nathan: When the next recession hits, how will the Fed prioritize the policy options in its toolkit?

Jan Hatzius: I think the Fed would exhaust conventional easing before they started buying assets again. That said, there is some uncertainty around how they would use their balance sheet. They have said that they will halt the balance sheet runoff if a "material" policy easing proves to be needed. But that leaves open the possibility that if the required easing looks less material, they could start cutting rates even as they continue running off the balance sheet for a while. Only once they get into serious easing mode is a halt to runoff assured.

In general, policymakers will likely be more comfortable using unconventional tools in size and at an earlier stage. Remember that although the Fed responded with everything they had in the fall of 2008, they were very reluctant to proceed further into unconventional territory once the actual crisis was over. In particular, QE2 took a long time to arrive, was limited in size, and ultimately not very powerful. Next time I think they would be willing to be more aggressive earlier.

Allison Nathan: Will that make unconventional policies any more or less effective than they were last time?

Jan Hatzius: It's hard for any easing program to be more effective than QE1, which played a big role in saving the financial system from collapse. But relative to QE2 or subsequent programs—a more realistic comparison if we don't see another major crisis—future QE programs could be quite effective if they are used in a timely and aggressive manner.

Allison Nathan: What are the risks of a global recession?

Jan Hatzius: If the biggest thing to worry about in the US is overheating, then there is probably less reason to worry about the rest of the world, because the US is farther along in the cycle. And while there are plenty of risks to watch—whether that's Euro area breakup risk or debt in China—I think the risk of a global recession looks quite limited.

If and when the US enters recession, that could change. But it will depend on the magnitude of the US downturn. It is of course very difficult to see how a deep US recession would not spill over to many other countries. On the other hand, a milder, 2001-type of US recession might not have particularly severe consequences for the rest of the world.

Allison Nathan: Is it safe to say that other central banks are unprepared for such spillovers?

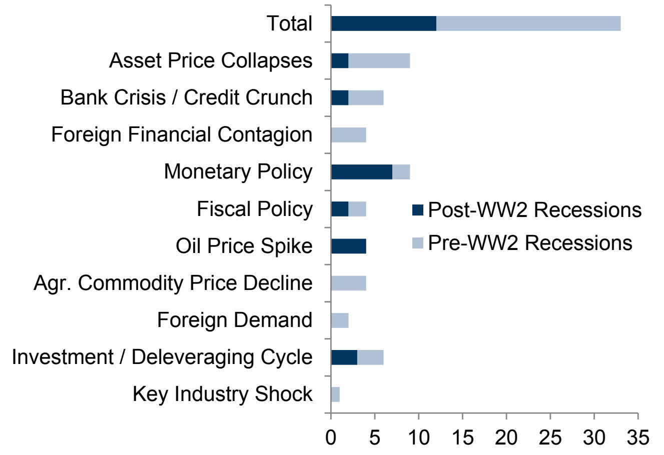
Jan Hatzius: For the most part, yes. If the US finds itself in recession within the next few years, policy ammunition is likely to be quite limited in places like Europe. And those economies probably wouldn't be able to stave off a negative shock with just one aggressive policy action. Even if they manage to stay out of recession, they may find themselves pretty far away from full employment for a long time. So if there is a US slowdown in 2020, that would be quite unwelcome.

US recession rundown

Special thanks to the US Economics team for these charts.

The Fed & financial excess: key causes of post-war recessions

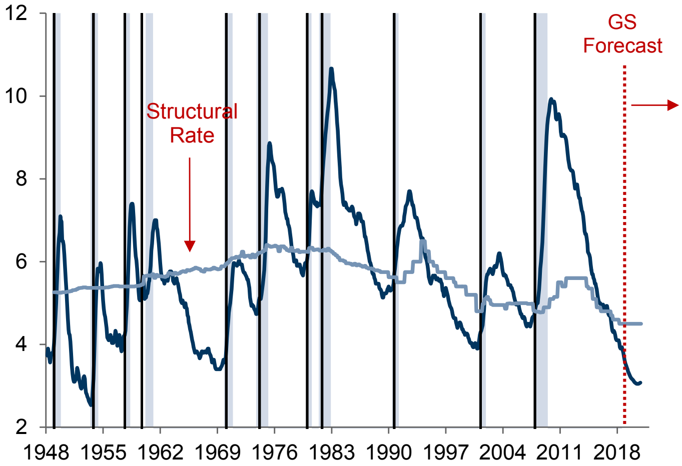
Number of contributions to US recessions since the 1850s



Note: Chart refers to NBER-dated recessions. For more detail, see here.
Source: NBER, Goldman Sachs Global Investment Research.

Today, overheating is a risk…

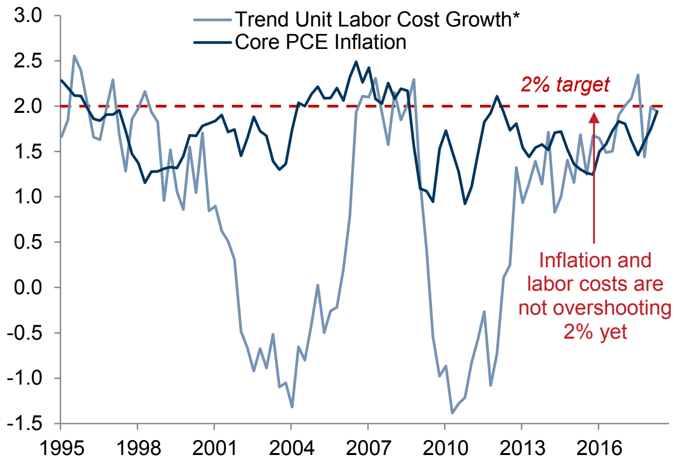
US unemployment rate, 3mma, %



Note: Vertical lines denote months in which jobless rate rose more than 0.35pp above the preceding low. Shading indicates NBER recession. Structural unemployment rate comes from the Fed since 1960 and the CBO before 1960.
Source: FRB, CBO, Goldman Sachs Global Investment Research.

…but inflation should allow the Fed to move gradually

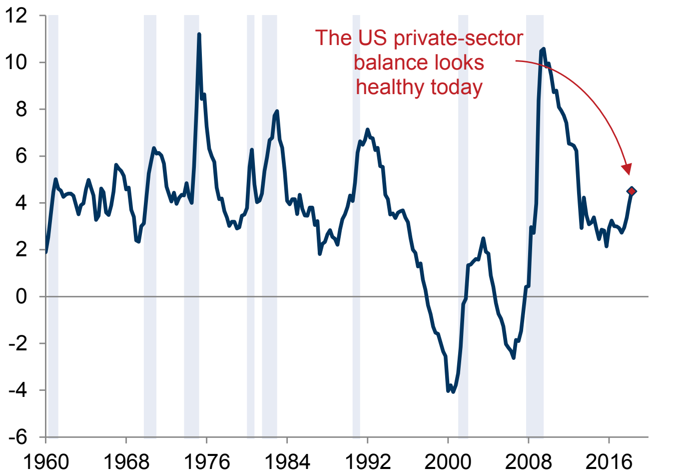
US core PCE inflation and trend unit labor cost growth*, %



**GS Wage Tracker – three-year average productivity growth.*
Source: Dept. of Commerce, FRB, Goldman Sachs Global Investment Research.

Private-sector financial balances look healthy…

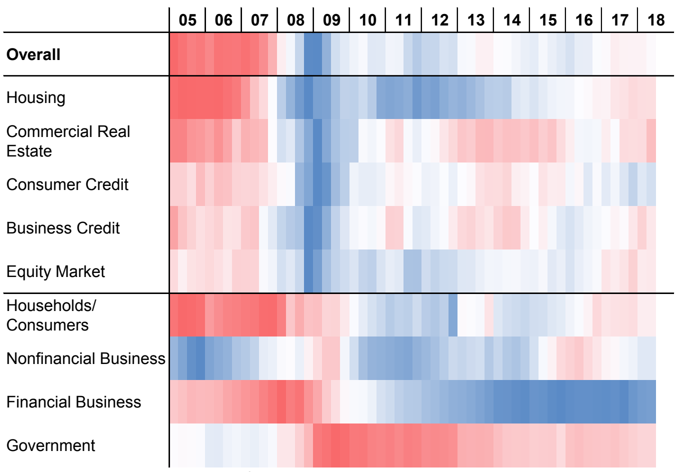
US private-sector financial balance*, %



**Total income minus total spending (or, alternatively, total saving minus total investment) for all households and businesses.*
Source: Goldman Sachs Global Investment Research.

…and other financial risks look moderate

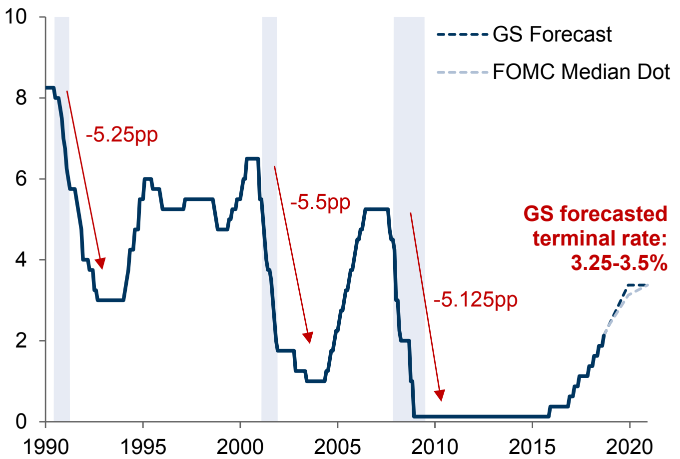
GS US financial excess monitor (red indicates higher risk)



Note: For more detail on the financial excess monitor, see here and here.
Source: Goldman Sachs Global Investment Research.

But the Fed will have less ammo for the next downturn

US federal funds rate, %



Source: FRB, Goldman Sachs Global Investment Research.

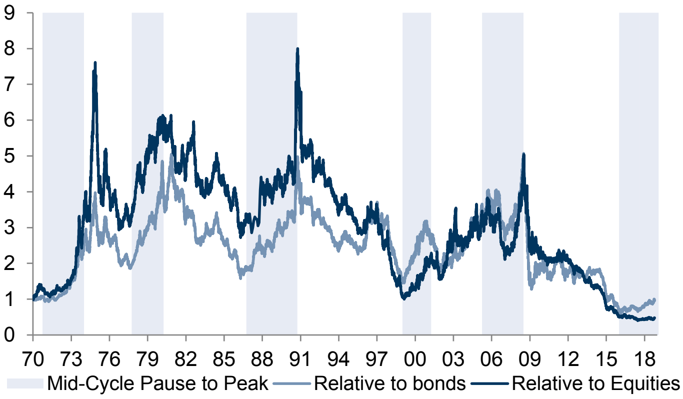
Short-cycle oil buys long-cycle economy

Jeff Currie argues that commodities are an unlikely trigger of the next recession

Every business cycle in the postwar era has ended with a sharp rise in commodity prices. This shouldn't be a surprise; after all, it is the resulting inflationary pressure that forces the central bank to raise rates, ultimately slowing growth. With oil prices near multi-year highs, this begs the question: will commodities spark the next recession?

Late-cycle surge

S&P GSCI performance relative to US 10y Treasuries and the S&P 500



Source: S&P, Bloomberg, Goldman Sachs Global Investment Research.

You can't consume what you don't have

We have long argued that rising commodity prices are the *symptom* of shortages that slow growth, not the cause. This stems from the difference between financial and physical markets: while financial markets are driven by growth expectations, physical markets are driven by the level of demand versus the level of supply. When demand for a commodity outstrips the capacity to produce it, inventory levels are drawn down and the price of the commodity rises. And once physical shortages become binding, the economic activity tied to that commodity's supply must slow or stop. This was the case in the 2001 recession when severe shortages in natural gas forced a large enough spike in prices to motivate auto plants in Michigan to slow production or source an alternative fuel, thereby allowing the scarce supplies to be redirected to residential consumers facing extreme cold.

Such constraints are typically far less binding in financial markets, as borrowing can finance deficits. However, in the 2008 recession, credit supply was halted (just as oil supply was in the 1970s), which forced a drop in economic activity. The key is that recessions are usually triggered when the economy runs out of something—typically, energy, capital, labor, or a combination of the three. Inflationary pressures are a symptom of these shortages, and the goal of the central bank is to slow demand growth to levels that match supply until the latter can begin to grow again.

The global economy is less exposed to oil shortages today

Today, the difference between oil demand and production capacity is razor thin, at about 1 million barrels per day (mb/d) versus 5 mb/d at the start of the cycle in June 2009. This explains why concerns about declining Iranian exports or a potential disruption in Saudi Arabian supply on geopolitical tensions has lent support to oil prices. Nevertheless, the global economy is actually less sensitive to global oil markets than it was a decade ago or in the 1970s.

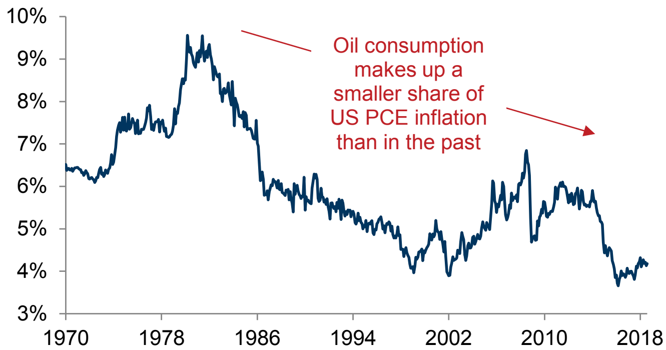
First, in response to the oil supply shocks of the 1970s, major industrial economies, including China more recently, have built large stockpiles of oil as strategic petroleum reserves (SPR). These reserves typically represent 90 days of imports, which could easily offset most Middle East supply disruptions on the table today until new investments in supply come to market. This buffer is particularly elevated in the US as these strategic reserves have not shrunk despite US crude oil imports collapsing following the rise in US shale production.

Second, shale was a technological revolution that made long-cycle commodity supply short-cycle. Before shale, it would take between three and five years to bring on new supplies, which left the market extremely vulnerable to oil supply disruptions. Today, oil supplies can be brought online in several months, leaving only midstream infrastructure like pipelines as a bottleneck. Markets are currently facing such pipeline bottlenecks in the US Permian basin, but they should be resolved by next summer, with the SPR easily able to bridge the gap.

Third, the US and global economy is far less energy-intensive than in the past. Currently, oil consumption represents 4.2% of US PCE, down from a peak of 6.8% in 2008 and 9.6% in 1980. Such improvements have been achieved by conservation efforts created by the high prices of the 1970s and the 2000s. In fact, given this smaller share of consumption and the now offsetting capex impact in the US of higher shale activity, oil is no longer a component of the Financial Conditions Index (FCI) tracked by GS economists.

Smaller share

Energy share of US personal expenditures since 1970, %



Source: BEA, Goldman Sachs Global Investment Research.

The bottom line is that despite heightened geopolitical risks, the global economy is not nearly as exposed to oil shocks as it was during the 1970s or even the 2000s. In fact, we see the fundamental risks in oil skewed to the downside, barring a major supply disruption. Our view is that short-cycle oil will help extend this long-cycle expansion.

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Interview with Nouriel Roubini

Nouriel Roubini is a professor of economics at New York University's Stern School of Business. He is also CEO of Roubini Macro Associates, LLC, a global macroeconomic consultancy firm, and the co-founder of Rosa & Roubini Associates. Previously, Roubini served as the senior economist for international affairs on the White House Council of Economic Advisors, and the senior advisor to the undersecretary for international affairs at the US Treasury Department. Below, he discusses his forecast for a global recession and a financial crisis in 2020.

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

Allison Nathan: You're calling for both a global recession and a financial crisis in 2020. What are the primary reasons for that?

Nouriel Roubini: Several factors are likely to drive a slowdown in US growth that tips the global economy into recession in a couple of years. First, the US is approaching a large fiscal cliff in 2020. The economy is growing at around 3% today largely because of last year's fiscal stimulus; the fading of that stimulus alone will probably push US growth below 2%.

Second, the Fed must continue tightening monetary policy to prevent the economy from overheating. The fiscal stimulus, which was excessive for a growing economy in peacetime, has only added to that imperative. As a result, the fed funds rate is likely to eventually reach 3.5%. Along with that, markets should expect a significant increase in short- and long-term rates, a stronger US dollar, a widening of credit spreads, and a correction of US and global equities. This will all amount to a significant tightening of financial conditions at a time when the ECB and other G10 central banks will start reducing liquidity, allowing long-term rates globally to rise.

Third, the US is pursuing a series of stagflationary economic policies including trade protectionism, which I believe will lead to a full-scale trade war with China that extends beyond trade to foreign direct investment (FDI), technology, and intellectual property. In fact, I think this is the beginning of a Cold War with China and trade wars with many US allies. And other countries' retaliation to US protectionism will only exacerbate the economic decline. But trade and chilling foreign relations are not the only issues. The US is reducing its potential growth by restricting inward and outward FDI, limiting migration, and neglecting investments in infrastructure and the green economy. All of these policies encourage inflation, and therefore more monetary tightening even as growth slows. Elsewhere, one can also expect a sharp slowdown of growth in highly leveraged economies in Europe, China, and other fragile emerging market economies in the next two years.

Finally, financial markets are frothy. Equities, bonds, private equity, real estate and credit—especially high-yield credit—are all expensive. And there is a huge amount of corporate debt that has been manageable only because interest rates have been so low. These fragilities suggest the Fed has to worry not only about inflation but also about financial stability, which could eventually induce them to raise rates above 3.5%. But whether or not that happens, as US real rates rise, markets will reprice. And while that repricing alone won't cause a recession, asset prices and the real economy may end up reinforcing each other in a vicious cycle. This is a long-winded way of saying that by 2020, the conditions will be ripe for crisis and recession.

Allison Nathan: Is an external shock necessary to tip us into recession?

Nouriel Roubini: No. But I cannot rule it out. Suppose that US growth falls towards 1% come 2020 and that, for political reasons, Trump doesn't have any fiscal levers to pull. He may well create some foreign policy crisis to shore up support ahead of the election that year. I could envision, for example, a conflict with Iran and a large shock to oil prices.

Allison Nathan: If overheating is one of your concerns, don't we *need* fiscal and monetary tightening to slow growth? Couldn't this prevent a recession instead of triggering one?

Nouriel Roubini: You're right that we need growth to slow, yet undesirable fiscal stimulus is leading to overheating. And if the economy overheated and inflation accelerated significantly, the Fed would have to tighten even more, ultimately leading to a deeper and more severe downturn. But in my view, a "soft landing" will be very difficult to achieve. Fed tightening will eventually increase unemployment; historically, once unemployment starts to rise—even by a half a percentage point—the risk of recession becomes very high. With the exception of 1994/1995, a recession has never been avoided. And this time, a soft landing will be even more challenging because the combination of factors I mentioned will both weigh on growth and stoke inflation, likely forcing the Fed to continue tightening even as the economy slows.

> "In my view, a "soft landing" will be very difficult to achieve."

Allison Nathan: But inflation expectations still seem very well-anchored across the advanced economies. Does your forecast assume that changes?

Nouriel Roubini: No. I think inflation expectations will stay anchored; I'm expecting core PCE slightly above 2% and inflation expectations of around 2%. But there is still room for financial conditions to tighten. The market is pricing around three Fed hikes between now and the end of next year; in my view, the economy has enough momentum for the Fed to hike four times per year. That's a big gap. And, as I mentioned, if markets remain frothy, the Fed will have to consider how else to ensure financial stability. Despite the emphasis on using macroprudential policy before monetary policy, I don't think anybody at the Fed believes that the former is really going to work. So you can't rule out the need for even more tightening.

Allison Nathan: Given how subdued US inflation has been, where will inflationary pressures come from?

Nouriel Roubini: Wages are one area given very tight labor markets. Wage inflation is already increasing, albeit gradually. It is now closer to 3% than 2%, and official measures may be understating actual wage inflation, some of which is going to benefits. Another area is oil. Given supply issues, oil prices could reach $90 or even $100 a barrel, which might affect headline and eventually core inflation. Finally, outside of the US, many other countries are at full capacity and seeing inflation rise. Keep in mind that you don't need sharply higher US inflation for the term premium to reprice, especially once central banks around the world gradually normalize policy.

Allison Nathan: Are the risks skewed towards recession occurring earlier or later than your base case of 2020? And what would have to happen for the US economy to continue expanding beyond 2020?

Nouriel Roubini: At the margin, I see a bigger risk that the recession arrives later rather than earlier. I don't expect a US recession in 2019 because the fiscal stimulus has some room to run before the economy loses momentum. That said, certain factors could delay the downturn. The fiscal cliff could end up smaller. However, I think this is unlikely. If the Democrats win the House of Representatives in the midterm elections, they won't allow another corporate tax cut, and they wouldn't want to give Trump the political "gift" of a massive infrastructure plan ahead of the 2020 elections.

Other than that, the acceleration in real wage growth could provide more momentum to consumption growth and consumer confidence than I currently expect. On the corporate side, capex acceleration could run further. Reducing trade frictions and other inflationary policies could also postpone the recession or make it milder. For example, if inflation or growth looks softer than expected, the Fed might stop hiking at 3% or 3.25% rather than 3.5%. I don't think that's very likely, but if it happened, it would help limit the rise in real rates and avoid a sharp correction in financial markets.

Allison Nathan: How severe do you think the next recession will be?

Nouriel Roubini: It's hard to tell, but between a "vanilla" recession and one accompanied by a financial crisis, I fear that we'll get the latter. Bank leverage may be lower than it was before the last crisis, but as I mentioned, we have huge amounts of debt outside of the banking system—corporate debt, leveraged loans, and so on, financed by shadow banks. Once interest rates rise, many highly leveraged borrowers will likely experience insolvency issues. This is one ingredient for a financial crisis—along with excessive consumer debt, frothiness in parts of the real estate market, and debt in emerging markets (EMs). Importantly, Dodd-Frank has constrained the Fed's ability to provide unconventional liquidity support to foreign financial institutions and non-banks, which was a critical part of the response to the Global Financial Crisis. Today, that leaves us with a time bomb of trillions of dollars' worth of US dollar-denominated liabilities around the world that don't have a clear backstop. So these liabilities could drive massive financial shocks.

> "Today, [we have] a time bomb of trillions of dollars' worth of US dollar-denominated liabilities around the world that don't have a clear backstop. So these liabilities could drive massive financial shocks."

Of course, the severity of the recession will depend on the monetary and fiscal policy responses. And our policy toolkit is more constrained this time around. That may make the recession and the crisis more severe.

Allison Nathan: So you don't think there will be enough policy firepower to respond effectively?

Nouriel Roubini: On the monetary side, the Fed will definitely have less head room to cut rates than in past cycles: about 300bp. Even in a mild recession, they will have to go to zero. And beyond that, forward guidance won't be enough. So the question is how much they can utilize unconventional monetary policy and whether that will be effective. On the first point, the Fed will have some headroom. But other central banks will be much more constrained. By the end of 2019, the ECB will be lucky if their repo rate is back at zero. It's the same situation—or worse—in countries like Japan, Switzerland, and Sweden. On the second point, unconventional policies were partially effective the last time around, and I expect they will be partially effective the next time around. But, again, they will be constrained.

This is also the case for fiscal policy, which will obviously be restricted by higher debt and deficit levels, both in the US and globally. At the same time, political populism will likely prevent governments from bailing out financial institutions. Never mind that in places like Italy and others, the government has enough financial troubles of its own, so it isn't clear how they could bail out the banks anyway.

Allison Nathan: How likely is a US recession to spill over to the rest of the world?

Nouriel Roubini: Very likely. The idea that the world can somehow de-couple from the US is nonsense. A US recession without a global recession is very rare; there are common factors affecting various parts of the global economy, and dozens of channels for transmitting US shocks. Pockets of weakness exist around the world—from EMs to Italy—and it may not take much to get them into trouble. Just look at EMs, which are already struggling with the fed funds rate at 2%. Wait until it's at 3.5%. The same goes for every risky asset globally. So will the rest of the world catch a cold when the US sneezes? Yes. And if the US has a severe recession, the rest of the world will get pneumonia.

Financial imbalances: late-cycle check-up

Lotfi Karoui and Marty Young take a temperature check of US financial imbalances

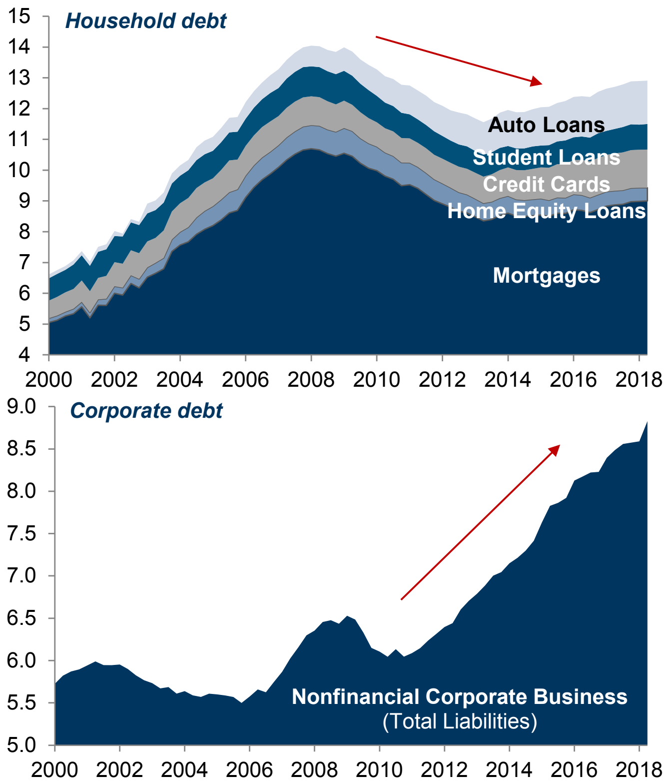
With the current expansion solidly on track to become the longest since the mid-19th century, assessing financial imbalances—a source of past instability and recessions—has rarely been more important. We perform a temperature check on household and corporate balance sheets, as well as three other oft-cited areas of concern: BBB-rated corporate bonds, leveraged loans, and commercial real estate. We find that corporate leverage is an area to watch, but is not as vulnerable to rising rates as many assume; and we don't believe the other areas of concern are canaries in the coal mine.

Corporate debt more concerning this time around...

In contrast to the last cycle, the current cycle has featured steady deleveraging among households but strong re-leveraging by non-financial corporates. Owing to the significant contraction in mortgage loans, the level of household debt remains well below its 2008 peak in real terms while non-financial corporate debt has steadily climbed since 2010.

Households vs. corporates: a tale of two cycles

Total household and non-financial corporate debt outstanding, $tn

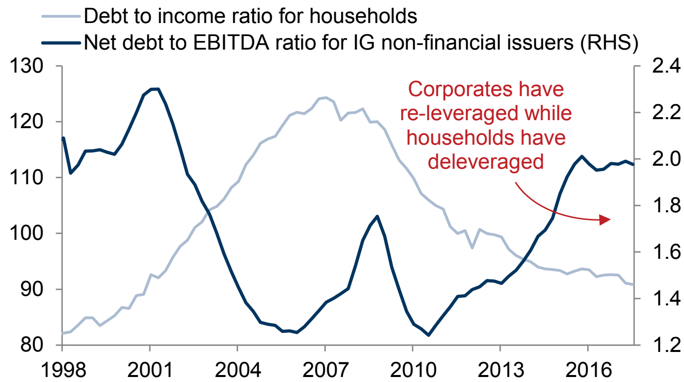


Source: FRB, Goldman Sachs Global Investment Research.

The more conservative stance of households in deploying debt has unsurprisingly translated into much healthier credit metrics relative to non-financial corporations. Indeed, the net debt to EBITDA ratio for the median IG-rated non-financial corporation has drifted meaningfully higher in this cycle (recent stabilization, notwithstanding) while the ratio of debt to income, a key metric for household leverage, has experienced a steady decline for the past 10 years, reverting to its early 2000 levels.

Deleveraging vs. re-leveraging

Household debt-to-income ratio; IG non-financial net debt-to-EBITDA ratio (rhs)



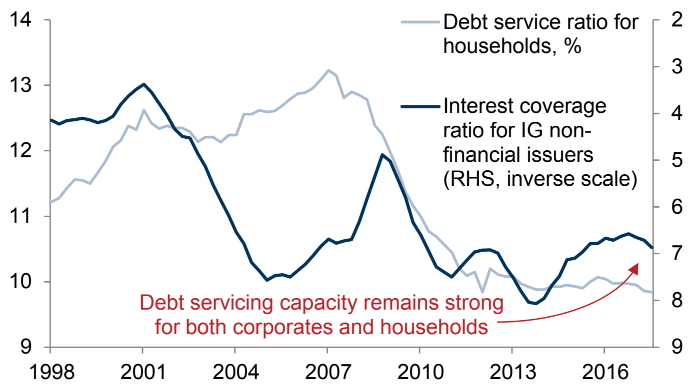
Source: FactSet, FRB, Goldman Sachs Global Investment Research.

...but worries over higher interest expenses are overdone

While corporate debt levels look worse than household debt this time around, we think concerns around potential payment shocks as the Fed continues to hike rates is generally overdone. Although the interest coverage ratio for non-financial corporations peaked in 2015, the pace of deterioration in the face of rising rates has been gradual, and current levels of interest coverage still provide a solid cushion against rising policy rates. Because the bulk of the funding mix for non-financial corporations is in fixed-rate structures, higher interest rates will likely continue to only gradually flow through to bond issuers' interest expenses.

Still serviceable

Household debt service ratio, %; IG non-financial interest coverage ratio (rhs, inverse scale)



Source: FactSet, FRB, Goldman Sachs Global Investment Research.

On the household side, the picture is even stronger. The debt service ratio, which measures monthly debt payments as a percentage of monthly disposable income, has been steadily declining, driven by a lower debt load as well as historically low rates. As is the case for non-financial corporations, the lion's share of household debt is in the form of fixed-rate loans, including home mortgages, auto loans, and student loans. In the mortgage market for example, the share of borrowers electing adjustable-rate mortgages has declined significantly since the crisis, barely exceeding 5% today.

The bottom line? Over nine years into the expansion, non-financial corporations have unambiguously become more vulnerable to negative shocks than households. But the biggest late-cycle risk is not rate hikes, in our view. Rather, it is the risk that rising raw material costs and freight/logistics expenses, in addition to the prospect of accelerating wage inflation, fuel another leg of re-leveraging driven by deteriorating earnings growth. A soft landing of the current cycle would buy corporations time to improve their credit quality. But in a full-employment economy, the stakes are arguably high.

Three pockets of concern:
(1) BBB bonds: time is your most valuable asset

Amid broader worries about corporate leverage, the low end of the IG corporate bond market seems to be in focus. The concerns typically revolve around three areas: (1) significant growth of non-financial BBB-rated bonds, which increased from 23% of the IG market in 2010 to 33% by late 2015 (equivalent to $2.4tn), and have since plateaued; (2) concentration of the exposure across a handful of sectors and issuers (the share of the 10 largest issuers in the BBB non-financial market is 22%); and (3) more generally, the risk of a wave of downgrades into HY following years of re-leveraging and deteriorating balance sheet quality.

Although these areas do warrant close monitoring, we struggle to see any recent developments that would make BBB-rated bonds a canary in a coal mine, at least for now. Low recession risk and the recent improvement in revenue and earnings growth should limit the risk of a wave of downgrades from BBB into HY in the medium term. More likely, in our view, is an uptick in downgrades from the high end of IG into the BBB bucket, given that net leverage for A-rated issuers remains on an upward trajectory while it has stabilized for their BBB-rated counterparts. To us, this suggests that the median BBB issuer has been behaving more conservatively vs. its A-rated peer.

That said, we do have sympathy with concerns over the concentrated exposure across sectors and issuers. Many large BBB-rated capital structures are over-leveraged and thus vulnerable to an unexpected turn in the cycle. This makes deleveraging critical to sector allocations. Within BBB issuers, we continue to see value in Banks and Telecom. We hold a negative view on issuers in the Food and Beverage, Healthcare, Consumer, and Autos sectors, where we see scope for further re-leveraging either passively (driven by eroding margins) or actively (driven by debt-funded M&A).

(2) The US leveraged loan market: frothy, not yet bubbly

Unlike the HY bond market, which peaked in size in 2014, the leveraged loan market has been steadily growing, crossing the $1tn mark earlier this year. This growth, plus further loosening in underwriting standards, the dominance of covenant-lite loans, and the increasing appetite for highly leveraged deals, has fueled concerns, not least among regulators.

We would describe the leveraged loan market as somewhat frothy, as opposed to bubbly, today. We take comfort from the still-healthy levels of issuers' interest coverage ratios, which should keep the risk of a payment shock in check. In addition, while the strong demand for floating-rate debt instruments such as leveraged loans has unambiguously increased the "issuer-friendliness" of the market, we think the growth of cov-lite loans (80% of the overall market) also reflects structural factors, namely a shift towards a more "institutionalized" and "bond-like" market. This has diminished the ability to enforce maintenance covenants, as well as reduced their value proposition and increased coordination costs. Historically, the inclusion of maintenance covenants in leveraged loans, in addition to incurrence-based covenants that are typically included in HY bonds, reflected differences in the degrees of coordination across loan and bond creditors. But the higher the number of creditors, the higher the coordination costs and the less efficient the maintenance covenants.

To be clear, all is not rosy in the leveraged loan market. Aside from elevated leverage, the pronounced shift in the funding mix towards the leveraged loan market bodes poorly for expected recovery rates, particularly for unsecured debt-holders. This shift has been particularly striking this year. Year-to-date gross HY bond issuance is down 26% vs. the same period last year, while leveraged loan gross issuance (including both institutional and pro-rated loans) is down just 5%. But while the return outlook is not optimistic, we don't see much reason for leveraged loans to become a source of financial instability.

(3) CRE: bubbly prices, but cautious lending standards

US commercial real estate (CRE) property prices have risen faster than single-family house prices in recent years and are now well above their previous 2007 peak level. Standard valuation models suggest that CRE prices across property type have been pulled above their equilibrium fair values. Like leveraged loans, stretched CRE valuations have received attention from bank regulators, as seems appropriate given the large amount of CRE loan risk on bank balance sheets.

While the high prices and low capitalization rates of CRE are a legitimate cause for concern, we think the situation still looks quite different from 2006-2007, due to increased conservatism in lending. For example, loan-to-value ratios on recent vintage commercial loans are around 58%, vs. 68% in 2007. This implies that commercial mortgages have a larger buffer today against declining prices before the borrower reaches a condition of negative equity. Similarly, debt service coverage ratios are higher today vs. pre-crisis. They also make less use of "pro-forma underwriting," in which loans are originated based on assumptions regarding future property incomes rather than on in-place historical cash flows. Partly as a result of these tighter underwriting standards, new default rates among commercial mortgages have reached historical low levels.

A modest downturn in CRE prices is a distinct possibility at current levels. Bear markets in CRE contributed significantly to the 2008 global financial crisis and to the savings and loan crisis of the late 1980s. However, in comparison to these earlier episodes, today's tighter lending standards and higher bank capital ratios suggest that commercial mortgage lending currently poses less risk to financial stability.

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For more detail, see: The Credit Line: Households vs. corporates: A tale of two cycles, 5 October 2018

Interview with Scott Minerd

Scott Minerd is Global Chief Investment Officer of Guggenheim Partners and Chairman of Guggenheim Investments. Below, he argues that US recession is right around the corner.

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

Marina Grushin: What makes you confident that the US economy will enter recession in early 2020?

Scott Minerd: Confidence in our recession call stems from what we've observed in past business cycles. Most pre-recessionary periods share a common set of characteristics. They start with an economy growing above potential, putting downward pressure on unemployment. The Fed then raises interest rates—eventually into restrictive territory—to try to limit the growth of imbalances. This is the key recession trigger. Evidence that policy is getting tighter can be seen in the flattening of the Treasury yield curve. Economic activity doesn't typically slow until a few quarters prior to recession; in fact, growth in the second-to-last year of the expansion is usually fairly strong. We see all of these things playing out right now. The fact that the fiscal impulse is set to fade in 2020 and policy uncertainty will rise heading into the presidential election only adds to my confidence.

Marina Grushin: What assumptions are you making about inflation and interest rates?

Scott Minerd: We're expecting core PCE inflation to rise over the next couple of years to around 2.25%, partly as a result of cyclical consumer pressures. Tariffs will also have more impact than people think. Not only will imported goods prices increase but competing producers will pad their profit margins by raising prices on domestically produced goods, just as we saw with the 20% increase in washing machine prices earlier this year.

In the face of inflationary pressures and low unemployment, the Fed will have no choice but to forge ahead into restrictive territory. Even former doves like Governor Lael Brainard are now arguing that the short-run neutral rate may be rising, and that policy will eventually need to become restrictive relative to that. In fact, all Fed officials forecast that the terminal rate will be above their respective forecasts of neutral. So restrictive policy is coming in 2019. We therefore see the Fed raising the target range to 3.25-3.50% next year. This will put three-month Libor somewhat above 3.75%. Long-term Treasury yields will likely top out near 3.50%, and the yield curve will invert once it's clear the Fed is done hiking. We expect a Fed easing cycle to begin in 2020, which will put to rest questions about whether the 35-year bull market in bonds is over. It isn't.

Marina Grushin: You mentioned the shape of the yield curve as evidence of growing recession risk. Haven't QE and other factors reduced the curve's signaling power?

Scott Minerd: I'm not a new-era thinker on this issue. What the conventional wisdom misses is that offsetting factors have negated the Fed's impact on the shape of the yield curve. QE was more than offset by the combination of large deficits, the decline in market yields and the extension of the Treasury portfolio's average maturity. Post-crisis regulation also contributed to a steeper curve, as did the Emerging Market (EM) turmoil of 2015-16, which resulted in the liquidation of a lot of FX reserves, i.e. Treasuries. We see evidence that these factors matter when we look at the cheapening of Treasuries relative to swaps in the past decade or the current steepness of the Treasury curve relative to the Overnight Index Swap (OIS) curve. Lastly, term premiums are not as low as the Fed's models say, so the argument that negative term premiums should affect how we interpret yield curve flattening just doesn't hold water. But even if you don't believe the yield curve, there are still reasons to believe that a recession is around the corner. One is that consumer and business surveys give the same late-cycle signal as the Treasury market.

Marina Grushin: Does the recent steepening give you pause?

Scott Minerd: I wouldn't draw conclusions based on a few trading days. Sure, the curve has steepened recently, but it's been flattening for the last three years! As I said, longer-dated yields are getting closer to our expected terminal rate and there's still more room for short-end yields to increase.

Marina Grushin: You've expressed concern about corporate debt. What are the risks?

Scott Minerd: The last recession featured overleveraged consumers and banks; the next one will feature overleveraged companies and non-bank investors that have taken on too much risk in the era of low rates and QE. As the Fed raises rates, it will choke off corporate free cash flow. Leverage among IG companies, which has already increased a lot in this cycle, will rise further when earnings roll over. This will help lead to a big wave of rating downgrades, thanks to the dramatic growth of the BBB segment of the corporate bond market. BBB-rated bonds now account for almost half of the Bloomberg Barclays Corporate IG index, yet many of their issuers have leverage ratios that were historically associated with BB securities. Passive bond funds have not only aided the buildup of these risks but may also exacerbate their impact when they eventually need to sell downgraded positions into an illiquid market. If the scale of downgrades is on par with prior cycles, the migration of "fallen angels" from BBB to BB could amount to about $1tn of debt, overwhelming the HY market. That will tighten financial conditions and hurt the economy.

Marina Grushin: Haven't corporate borrowers mitigated these risks by locking in low rates at longer maturities?

Scott Minerd: Actually, a lot of corporate America appears more sensitive to changes in interest rates today, and that lot exists in the riskiest segment—issuers rated below investment-grade (IG). Floating-rate liabilities currently make up a larger piece of the high-yield (HY) corporate debt pie than at any time in the past; and if not this year, then next year, there will be more floating-rate bank loans than fixed-rate HY bonds outstanding. The companies that have locked in rates are typically IG, and won't be the most vulnerable in a recession.

Marina Grushin: Does the growth of non-bank lending worry you?

Scott Minerd: It's a risk we're watching in the HY market. Fifteen years ago, around 80% of all syndicated loans remained on bank balance sheets through a "pro-rata" tranche that was a revolving credit line or an amortizing term loan; now, 70-80% of syndicated bank loans are outside of the banking system, meaning that the pro-rata tranche is much smaller in comparison to the institutional loan tranche that is distributed among non-bank lenders. We've also seen estimates that the private debt market has grown to around $400bn to $700bn in size—larger than the size of the bank loan market in 2007. That has made it harder to trace credit risk and maintain credit standards. Meanwhile, innovations like bank loan ETFs have moved credit risk into the hands of retail investors. That's something we didn't have to worry about in the last major crisis in corporate credit, in 2001/02. We're in uncharted territory.

Marina Grushin: Putting this all together, how severe do you think the next recession will be?

Scott Minerd: The next recession may not be any more severe than average in part because policymakers are likely to act quickly knowing that they have limited policy options. But that lack of policy space worries me. In the US we'll be entering the downturn with the largest peacetime budget deficit we've had outside of a recession, and the Fed is likely to be constrained by the zero bound once again, making this the recession when unconventional policies become conventional; we expect the Fed to cut rates to zero, employ aggressive forward guidance, and resurrect QE. Whether these tools will be as effective as the Fed claims they were in the last cycle remains to be seen. Keep in mind that achieving the equivalent of a 2% rate reduction—the difference between our 3.5% forecast for the terminal rate and the roughly 5.5pp of rate cuts in a typical easing cycle—would be worth several trillion dollars of QE. Put differently, we think the Fed will probably wish they had more powerful tools when the time comes to use them.

Outside of the US, the lack of policy space is even more concerning. Markets will force belt-tightening measures in Southern Europe, but the ECB will have minimal ability to cushion the downturn. Will the political systems in Italy, Spain, Portugal and Greece be able to deliver the fiscal tightening that markets will demand? If not, then we'll have big problems. The BOJ will have limited options to fight a sharp appreciation of the yen, and China will be choking on bad debt after an epic debt binge over the last decade. These factors could make the next recession more severe than our models suggest.

Marina Grushin: What looks mispriced today?

Scott Minerd: Not surprisingly, we think credit spreads are too tight right now. For example, after adjusting for expected credit losses, HY bonds offer minimal value over Treasuries. While carry is reasonably attractive and trailing defaults are modest, a credit investor should not take for granted the ability to liquidate a position when the value proposition changes. The door is always smaller on the way out.

More broadly, turmoil in the credit markets will almost certainly spill over into the equity markets. In a scenario similar to 2001/02, we think HY spreads could widen by about 800bp or more, which corresponds to a roughly 40% decline in stocks—effectively a retracement to prior technical support levels, the S&P 500 highs of 2007 and 2000. While I don't think the equity bull market is over yet, an eventual decline of that magnitude looks justifiable to me on a technical and a fundamental basis.

Marina Grushin: How soon should investors reduce risk?

Scott Minerd: Corporate credit spreads tend to start widening roughly one year before a recession begins, which would correspond to the first half of next year. But with spreads as tight as they are you aren't giving up much by starting to reduce risk now. Besides, it takes time to turn a ship around. Equities will probably peak a bit later in 2019, not least because the Nov-April period tends to be seasonally strong for stocks, especially after midterm elections. That will be the rally to sell. By the end of Q2 next year, I expect risk-off everywhere.

Marina Grushin: What should investors buy/sell today?

Scott Minerd: We're underweight duration in our core fixed income funds to position for a rise in rates toward 3.5%. We expect the yield curve to continue flattening and recommend a barbell of high-quality, longer-duration bonds and floating-rate credit. We are upgrading credit quality and reducing our credit beta in anticipation of spread widening beginning next year.

Marina Grushin: What would have to happen for you to change your call for a recession in 2020?

Scott Minerd: We'd likely have to see faster supply-side growth, which would allow us to sustain this pace of economic growth without putting pressure on resource utilization. That would entail better productivity growth but also more rapid increases in labor supply. Despite some observers' optimism that tax cuts will achieve the former, we don't expect to see major productivity gains. As for the latter, Washington is unfortunately pursuing a self-defeating immigration policy. At a time when we should be welcoming new foreign workers who can fill the void left by retiring baby boomers, we're instead looking for ways to restrict immigration.

Marina Grushin: What else are you looking out for?

Scott Minerd: Aside from our recession dashboard, we'll be keeping a close eye on trade. An escalation of the US-China trade dispute looks nearly inevitable. Large majorities of voters across the US political spectrum describe China's trade practices as unfair. We expect US politicians of both parties to exploit this angst. But the demands the US has made of China go to the very heart of the Communist Party's growth model, so it's hard to see Beijing capitulating. There will be a lot of collateral damage as this escalates. The policy response by the Chinese will be key; we are likely to see a material devaluation of the renminbi, which would put more downward pressure on other EM currencies. That could make it more difficult for EM borrowers to service their large stock of dollar-denominated debt, especially if it coincides with the onset of a recession.

The budget situation in Italy also bears watching. The government there is playing a dangerous game. As the Fed continues to tighten and the ECB winds down QE, Italy will find markets to be less forgiving—and once the US business cycle turns things will only become more difficult. Another crisis of confidence involving the euro appears inevitable.

How much risk does direct lending pose?

Amanda Lynam and Lotfi Karoui argue that direct lending markets are unlikely to be the "subprime mortgages" of the next recession, even if their opacity warrants investor caution

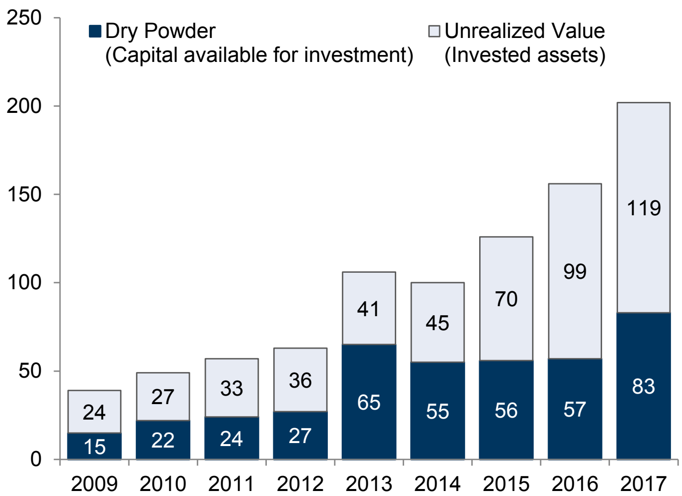
Within the $7.8tn alternative asset universe lies the $638bn private debt market, which includes a variety of investing strategies such as direct lending, distressed debt, mezzanine and "special situations." This market's strong growth since the financial crisis has established it as an important new asset class. Indeed, according to data from Preqin, the top 100 institutional investors have, on average, 7.2% of their assets under management invested in private debt. At the same time, the market's opaque nature and deteriorating credit quality—particularly in the direct lending space—have raised questions about its implications for financial stability. Some observers have even made parallels between direct lending and the subprime mortgages that sparked the global financial crisis. While we recognize the risks associated with direct lending, we think concerns about a repeat of 2008 are overdone.

Sizing the private debt market

Private debt fund managers—55% of which are based in North America, and 25% in Europe—have steadily attracted capital since the financial crisis, raising a record $107bn in 2017. Cumulatively, $626bn of private debt capital has been raised by the top 100 fund managers over the past 10 years. In fact, so much capital has been raised that not all of it has found an opportunity to be deployed. The amount of capital available for investment (otherwise known as "dry powder") in private debt strategies stood at a record $251bn as of June 2018, according to Preqin; direct lending accounts for the largest portion of this ($90bn), followed by distressed debt ($76bn).

Sitting on a lot of dry powder

Global direct lending assets under management, $ bn



Source: Preqin.

Drilling down on direct lending

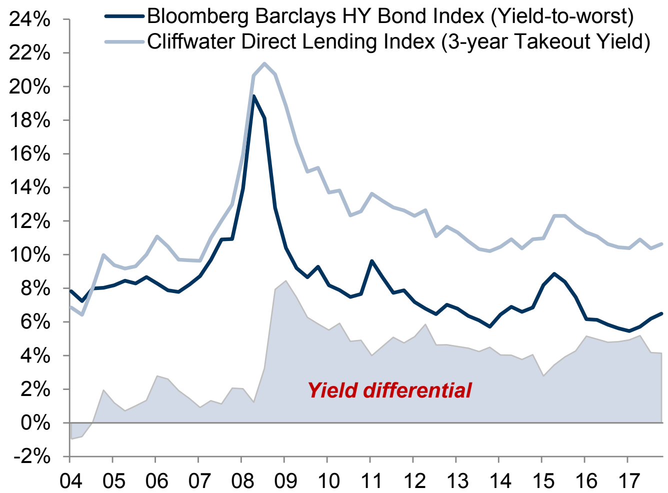
Within the private debt market, direct lending has attracted particular attention. Direct lending refers to financing that is directly negotiated between a lender (typically an alternative asset manager) and a borrower (typically a small-to-mid sized company, with high-yield debt ratings). The loans tend to be floating rate and are often secured. The key difference between direct loans and loans issued through the traditional "syndicated" bank channel is that the former are not sold to multiple investors after being issued. Rather, they are often held by the lenders (alternative asset managers) until maturity (which can range anywhere from two to seven years).

The bulk of direct lending activity takes place in the "middle market," loosely defined as companies with annual revenue between $10mn and $1bn, and EBITDA ranging from $5mn to $100mn or more. According to data compiled by Preqin, direct lending assets under management have more than tripled since 2012, reaching $202bn as of December 2017.[1] Some industry publications over the past few years have estimated the size of the direct lending market to be as high as $400bn.

The significant capital inflows into direct lending funds have been driven by strong "search for yield" motives. Direct lending funds have provided investors with a decent liquidity premium, as captured by the yield differential between direct loans and publicly traded HY bonds.

Searching for yield in direct lending

HY bond index yield vs. direct lending index yield, %



Source: Bloomberg Barclays, Cliffwater LLC, Goldman Sachs Global Investment Research.

This capital influx has, in turn, allowed direct lenders to expand their business. Historically, direct lending was used solely for very small financing deals ($100-$200mn) or for companies without financial statements, agency ratings, or meaningful EBITDA (less than $25mn, or even negative). This made direct loans a viable funding channel for highly leveraged companies that otherwise lacked meaningful scale and capital markets access. In recent years, however, direct lenders have funded larger institutional deals, leading to more competition with the traditional (syndicated) leveraged finance markets. This has contributed to a financing mix shift: the HY bond market has been shrinking in recent years as companies have chosen to rely on direct lending, other forms of private credit, and leveraged loans for more of their funding needs.

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[1] This figure excludes business development companies, which are discussed further on pg. 15.

Late-cycle risks

Amid heightened concerns about late-cycle risks in the credit market, the strong growth of direct lending has come into focus, with a few of the market's characteristics facing scrutiny.

First, increasing competition in direct lending appears to be fueling deterioration in underwriting standards, suppressing returns—and creating an environment more friendly to borrowers. This trend is already visible in recent data from the Cliffwater Direct Lending Index, an asset-weighted index of over 6,000 direct loans totaling $94bn, which was launched in 2015 and reconstructed back to 2004 using SEC filings covering reporting public and private business development companies (BDCs—entities that invest in small-to-medium-sized businesses). Net realized losses on the Cliffwater Direct Lending Index have been slightly above average for the last three quarters. And the most recent trailing four-quarter total return for the index was 8.90%, compared to the inception-to-date total return of 9.70%. In the near term, we expect competition among direct lenders to remain intense, given the large amounts of capital available for deployment (direct lending managers earn fees on deployed capital only) and the still-strong economic backdrop in the US. Further, we also see potential for heightened competition from banks over the next few years, fueled by the prospect of deregulation and banks' appetite for new areas of growth. This will likely only exacerbate the trend of deteriorating lending standards.

Second, the direct lending market's opacity limits investors' ability to monitor changes in credit and underwriting quality. Unlike publicly traded syndicated loans and bonds, which are marked-to-market daily, direct loans are often marked-to-market just once a quarter. Capital in direct lending funds can also be subject to lock-up periods, making it difficult to swiftly reallocate it when deterioration in underwriting or credit quality is identified. One exception is publicly traded BDCs, which provide quarterly disclosures that can offer detailed information on direct loan performance. However, these vehicles represent only a portion of the overall direct lending market (a 2015 study by Cliffwater suggested publicly traded BDCs represent roughly 20% of all middle market lending).

Finally, another source of concern stems from the involvement of retail investors, who can participate in the direct lending market by purchasing shares of publicly traded BDCs. Importantly, BDCs offer their investors daily liquidity on highly illiquid underlying assets, raising the prospect of market dislocations. Most of the industry's largest alternative asset managers also manage BDCs.

Mitigating factors

How worried should we be about these risks? Given that the bulk of the growth in direct lending has taken place post-crisis, there is no precedent to gauge the magnitude and persistence of defaults and losses in a full-blown recession. Assumptions on long-term defaults and potential returns remain largely untested while data on recovery values are too sparse to provide any reliable guidance on the forward distribution of losses.

While we recognize that the young age of the asset class makes it difficult to assess its performance through a full cycle, we think the risk of a repeat of the 2008 subprime mortgage crisis is largely overstated. Unlike the 2008 subprime market, we struggle to see any amplifying channels that would result in large-scale leveraged losses and thus meaningfully contract the supply of credit in the system. A number of factors that turned the collapse of the subprime mortgage market into a global credit crunch are just not in place today, in our view. These include maturity mismatches in the funding structures and the ability to deploy significant financial leverage, both of which were key drivers of the 2008 credit crunch.

Aside from the tail risk of a 2008 repeat, we would highlight a few other factors that mitigate the risks associated with direct loans. For one, the fact that many direct lenders are the sole lender and often own the loan through its maturity gives them more control over covenants (financial reporting requirements), structure (amortization payments), and due diligence. To the extent a borrower in a direct lending portfolio encounters financial stress (in an economic downturn or otherwise), direct lenders often have control throughout the workout process, which may also positively impact recovery values. The Cliffwater Direct Lending Index appears to support this hypothesis. The index experienced three-year cumulative realized losses of 10.16% during the global financial crisis (2008-2010). And the disruption in the Energy and Retail sectors from early 2015 through mid-2018 resulted in realized losses of 4.54%. In both cases, these losses were similar in magnitude to those typically observed in diversified leveraged loan and bond portfolios during economic downturns.

In short, whether direct loans experience outsized losses during the next recession remains an open question. However, when it comes to causing the next recession, we believe losses on direct loans are an unlikely catalyst.

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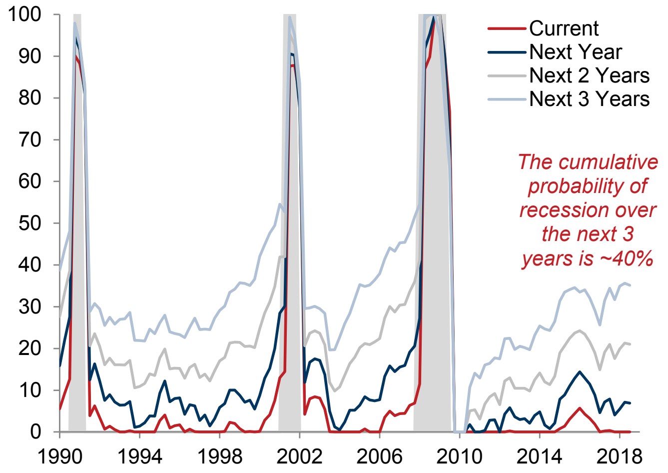
Recession spillover synopsis

Special thanks to the Global Economics team. For more, see [Global Economics Analyst: All Together Now? Taking Stock of Global Recession Risk, 16 September 2018](#).

For now, US recession risk remains relatively low…

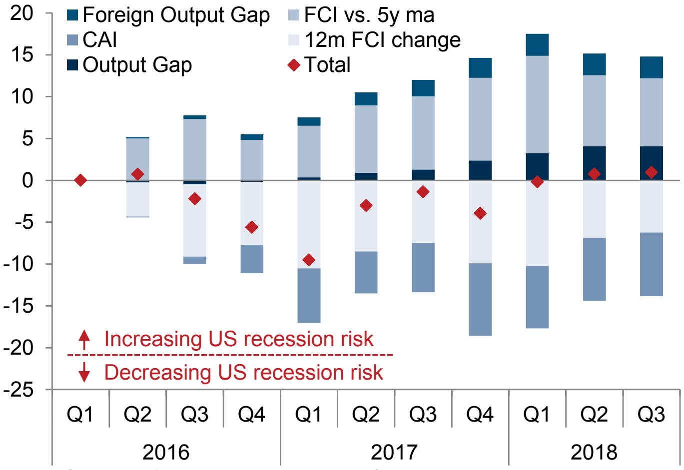
GS estimate of US recession risk, %



Source: Haver Analytics, Goldman Sachs Global Investment Research.

…and the typical drivers look stable

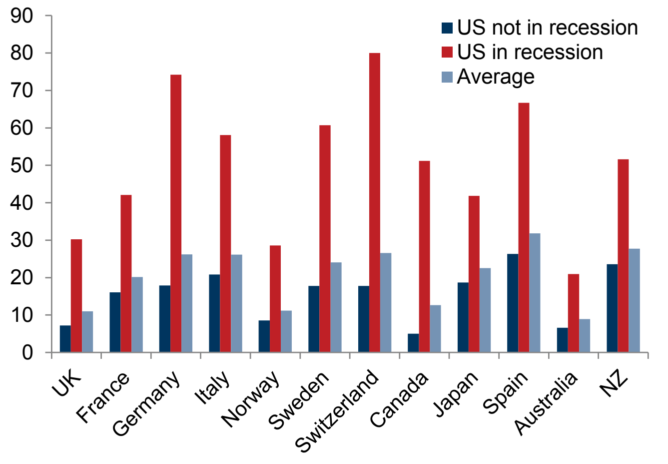
Cumulative change in 3y-ahead US recession risk since 1Q2016, %



Note: FCI cycle = financial conditions index, CAI = current activity indicator.
Source: Goldman Sachs Global Investment Research.

US recessions do affect most developed markets…

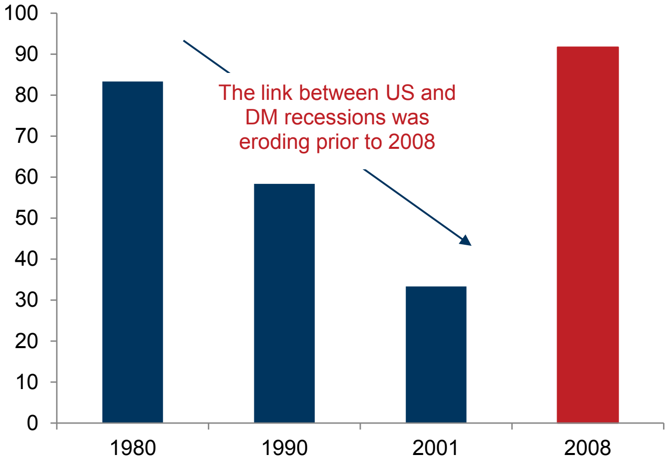
Average incidence of domestic recession vs. the US, %



Source: Goldman Sachs Global Investment Research.

…though this link was becoming weaker prior to the GFC

Share of DM economies in recession during US recessions, %



Note: Years denote start dates of US recessions.
Source: Goldman Sachs Global Investment Research.

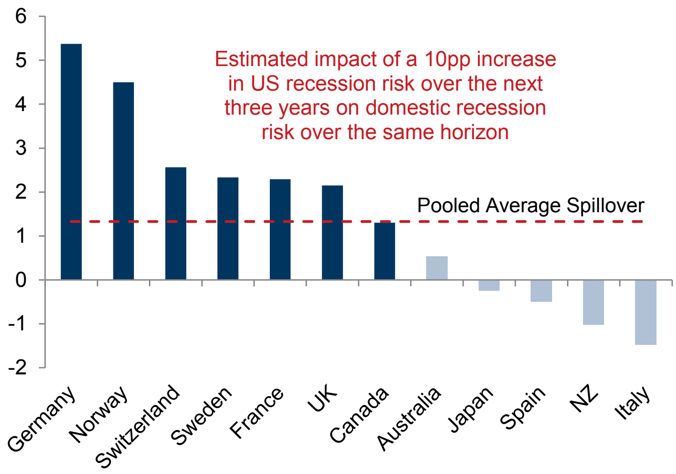
US recession risk is adding ~5pp to recession risk in other DMs

Drivers of recession probability over the next 3 years, %

Note: For a breakdown of "other drivers," see the link at the top of this page.
Source: Goldman Sachs Global Investment Research.

…though some economies are more vulnerable than others

Spillovers from US recession risk to other DM economies, %



Note: Light blue bars denote insignificant effects (at a 10% significance level).
Source: Goldman Sachs Global Investment Research.

Stock sell-offs and recession risks

Peter Oppenheimer and Sharon Bell argue that investors shouldn't stray from equities yet

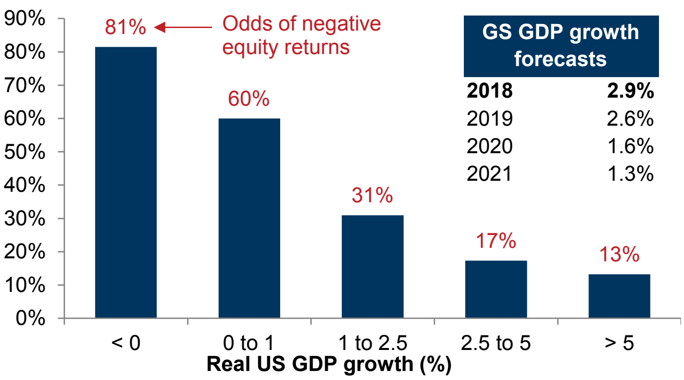
While the equity markets face many risks—trade tariffs, politics, wage growth, tighter financial conditions, etc.—it's hard to imagine any of them having as big an impact as a recession. Put another way, it's rare to get a bear market—a fall of 20% or more—without a recession; indeed, the former has not happened without the latter in the US since the 1990s. However, a recession with no bear market is equally rare, implying that investors will have to eventually deal with both.

Returns: more likely low than negative

The good news is that recession risk—and therefore the risk of a sharp bear market—looks reasonably low at the moment. Equities usually rise when economic growth is positive. In the US, for example, the probability of negative annual S&P 500 returns falls dramatically as real GDP (lagged by 2Q) rises. Indeed, the strong pace of US growth right now suggests just 17% odds of negative equity returns. However, even with the slower growth we forecast for 2019-2021, our estimated probability of negative year-on-year returns is just 31%.

Negative returns: not likely

Likelihood of negative annual S&P 500 returns by range of real US GDP growth (2Q lag), %, based on data since 1960



Source: Shiller, Haver Analytics, Goldman Sachs Global Investment Research.

That said, our work suggests that there is an "inflection point" for returns before growth turns negative. In the US, if growth is positive but below around 1-1.5%, the chances of very low returns in the equity market are pretty high. For Europe, the turning point is similar (growth below 1%), while for Japan, with its lower trend growth rate, the probability of a bear market rises significantly when growth is negative.

Too soon to price recession

So what is the market pricing? Equity prices and valuations have come down; in fact, European P/Es are at a four-year low. The MSCI World Index is up just 1% yoy, which would be consistent with global PMIs at around 50, a little below current levels. This suggests the market is fearful about substantial risks to future growth, but is not pricing a full recession.

However, even if equities were to start pricing a more severe downturn or a recession, that doesn't guarantee one would take place. Indeed, this is what happened in 2012 (the European sovereign crisis) and 2016 (the emerging markets/ commodity price crisis). At these points the move in MSCI World came close to pricing PMIs in the mid-40s. But PMIs never fell that far, and while there were pockets of weakness, neither case brought a significant global downturn.

Fearful, but not pricing recession

MSCI World performance, % yoy; global manufacturing PMI (rhs)

Source: Datastream, Haver Analytics, Goldman Sachs Global Investment Research.

How big of a bear?

How much the equity markets will actually decline in the next recession is difficult to say. Equity bear markets tend to fall into three categories: event-driven, cyclical, and structural, with the latter two generally accompanied by a recession. Structural bear markets are much worse, as they normally involve unwinding significant financial imbalances, making the downturn much deeper and more prolonged. In contrast, cyclical bear markets are typically a function of rising interest rates and falls in profits.

Today, financial imbalances generally look contained (although pockets of risk exist). We therefore think the next bear market is likely to be cyclical rather than structural. But cyclical markets can be brutal too. In the US they have lasted 26 months on average, with the market falling 30% peak to trough. It typically takes 48 months to reach the previous highs.

Nevertheless, investors should take caution in attempting to time the start of the bear market. As a general rule, equity prices start to fall five months before EPS does, and perhaps one or two quarters before a recession. But the range is very wide. Moreover, our work shows that selling the market too early can be just as costly as selling too late. Since bear markets typically experience a bounce after the initial fall, investors should have another opportunity to reduce risks. We therefore recommend staying invested. We like a mix of growth and value sectors and think neither will be clearly dominate from here. More specifically, we see value in Oil and Financials, and think growth is still attractive in Tech. Regionally, we like TOPIX based on improving ROE, whereas Asia ex-Japan represents good value.

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Summary of our key forecasts

	GDP Growth (% yoy)				FX				Equity				Rates (% eop)				Revision Notes
	2018		2019		3-mth		12-mth		3-mth		12-mth		Policy*		10-yr		
	GS	Cons	GS	Cons	GS	Cons	GS	Cons	GS	Cons	GS	Cons	2018	2019	2018	2019	
GLOBAL	4.0	3.8	3.8	3.6	-	-	-	-	-	-	-	-	-	-	-	-	
					EUR/$		**EUR/$**		**SP500**		**SP500**		**Fed Funds**				
US	2.9	2.9	2.6	2.5	1.17	1.16	1.25	1.22	2850	-	2975	-	2.25 to 2.50	3.25 to 3.50	3.10	3.40	
					EUR/$		**EUR/$**		**Euro Stoxx 50**		**Euro Stoxx 50**		**MRO Rate**				
EURO AREA	2.1	2.0	1.8	1.8	1.17	1.16	1.25	1.22	3550	-	3700	-	0.00	0.00	-	-	
					EUR/$		**EUR/$**		**DAX 30**		**DAX 30**						
GERMANY	2.0	1.9	1.9	1.8	1.17	1.16	1.25	1.22	-	-	-	-	-	-	0.50	1.00	
					$/JPY		**$/JPY**		**TOPIX**		**TOPIX**		**Policy Deposit**				
JAPAN	1.1	1.1	1.2	1.1	108	112	115	109	1850	-	1950	-	-0.10	-0.10	0.12	0.18	On October 5, we raised our 3m/6m TOPIX targets to 1850/1875, respectively, from 1750/1800 previously, given expectations of firm 2QFY18 earnings results, a pick-up in buyback announcements, and positive 4Q seasonality.
					$/CNY+		**$/CNY+**		**MXCN**		**MXCN**		**7-Day Repo**				
CHINA	6.6	6.6	6.1	6.3	6.90	6.90	6.60	6.80	-	-	95	-	2.25	2.50	-	-	On October 6, we lowered our 12m MXCN target to 95 from 107 on the heels of the recent drawdown in Chinese equities.
					$/BRL		**$/BRL**		**BOVESPA**		**BOVESPA**						
BRAZIL	1.2	1.5	2.5	2.5	3.80	3.88	3.50	3.85	-	-	-	-	6.50	8.25	-	-	

	Brent crude oil ($/bbl)				Copper ($/mt)				Gold ($/toz)				Corn (cent/bu)				
	3-mth		12-mth		3-mth		12-mth		3-mth		12-mth		3-mth		12-mth		
	GS	Cons	GS	Cons	GS	Cons	GS	Cons	GS	Cons	GS	Cons	GS	Cons	GS	Cons	
	80	76	75	73	6500	-	7000	-	1250	-	1325	-	375	-	375	-	On September 20, we lowered our 3m/6m/12m gold price forecasts to $1250/$1300/$1325/toz, respectively, from 1350/$1375/$1450/toz previously, given EM weakness and the resulting decline in financial and physical gold holdings. On October 4, we lowered our 12m copper price forecast to $7000/t from $7667/t, reflecting macro headwinds (e.g., EM weakness, USD strength, and trade tensions) that have weighed on prices despite healthy market fundamentals.

Note: Recent revisions marked in red; GDP consensus is Bloomberg; all other consensus is Reuters; commodity 12-mo consensus is Reuters for 2018 average.

+ CNY daily fix

Source: Bloomberg, Thomson Reuters, Goldman Sachs Global Investment Research.

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.

Global Leading Indicator (GLI)

The GS GLI was designed to provide a timelier reading on the state of the global industrial cycle than existing alternatives did, and in a way that is largely independent of market variables. The GLI has historically provided early signals on global cyclical swings that matter to a wide range of asset classes. The GLI currently includes the following components: a consumer confidence aggregate, the Japan IP inventory/sales ratio, Korean exports, the S&P GS Industrial Metals Index, US initial jobless claims, Belgian and Netherlands manufacturing surveys, the Global PMI, the GS AUD and CAD trade-weighted index aggregate, global new orders less inventories, and the Baltic Dry Index.

For more, see our GLI page and Global Economics Paper No. 199: An Even More Global GLI, 29 June 2010.

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.

Real-Time Indicator of Activity (RETINA)

GS RETINA uses a comprehensive econometric methodology to filter incoming information from the most up-to-date high-frequency variables in order to track real GDP growth in the Euro area and the UK.

For more, see European Economics Analyst: RETINA Redux, 14 July 2016 and European Economics Analyst: Introducing RETINA-UK, 2 August 2017.

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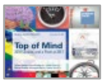

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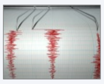

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