



Macro Picture

CREDIT FATIGUE

Dario Perkins

12 months ago, rising interest rates threatened to unwind the global search for yield and burst the 'Buy-side Bubble'. But as policymakers became aware of the risks, especially to BBB-rated corporate debt, central banks made every effort to support the expansion. Near-term dangers have eased but the eventual turn in the credit cycle could be nasty.

Chart 1: A macro counterpart to the global search for yield



Source: Federal Reserve, TS Lombard

YIELD HUNT

A decade of low interest rates fuelled a powerful search for yield, pushing investors into riskier and longer-duration assets. Institutional investors – not banks – drove these trends. While policymakers didn't initially recognize the dangers associated with the 'Buy-side Bubble', it has dominated their thinking in 2019. Central banks are desperate to keep the expansion going.

TICKING BBB-BOMB

Record levels of corporate debt are the 'macro counterpart' of the search for yield in global markets and the clearest vulnerability for the real economy in 2020 and beyond. The lowest investment grade (BBB) debt, in particular, has doubled since 2010. This could lead to a record number of fallen angels, acute stress in credit markets and even fire-sales of risky securities.

TRIGGER POINTS

While industry insiders have been quick to play down the dangers of corporate debt, nobody knows how these securities will perform in a stressed environment. The good news is that central banks now recognize the dangers and will do everything they can to keep interest rates down. But central banks can't control the earnings cycle, which is the thing to monitor in 2020.

CREDIT FATIGUE

Back in 2018, we warned about what we called (with important caveats) the 'Buy-side Bubble'. To the extent we could identify vulnerabilities in global markets, the clearest danger involved a powerful search for yield. Investors had naturally responded to a decade of low interest rates by seeking higher returns in riskier, longer-duration and more illiquid securities. The next financial crash would probably not be about large investment banks that had taken on too much leverage or funded themselves in dangerous ways, but it might see institutional investors play a pivotal role in the unwinding of this search for yield. The regulatory authorities had taken action to prevent a repeat of the subprime crash, but they seemed oblivious to potential risks in the asset-management industry. We explained how the insatiable appetite for yield among buy-side investors had become a critical source of funding for companies all over the world, pushing corporate debt to potentially dangerous levels. Much of this debt was denominated in USD. By early-2019, the consensus agreed, with corporate debt suddenly the 'big risk' to the global economy. Policymakers also started to pay attention. Various institutions, including the Federal Reserve, the BoE, the OECD and the IMF warned about these dangers with unusual candour.

Corporate leverage has increased all over the world since 2012. While banks have generally scaled back their lending, capital markets have taken over. (China is the main exception to this theme, but even China's bond market has played a more active role in the current cycle.) Internationally, corporate bond issuance has roughly doubled over the past decade and much of this has been concentrated in high-yield, or at the lowest end of the investment-grade spectrum (BBB). Our worry is that any sustained deterioration in the credit cycle could trigger an unprecedented wave of downgrades (fallen angels), which could overwhelm the junk bond market's capacity to absorb them. Worse, some institutional investors might be forced to dump these securities, leading to 'fire-sales' of risky securities and an aggressive tightening in credit conditions. This risk is arguably most acute in the United States, which has been one of the main beneficiaries of the search for yield and has seen corporate debt ratios rise to record levels. While the aggregate balance sheet of American companies doesn't look great, even this is flattered by a relatively small numbers of 'superstars'. There is also a fat tail of weak companies.

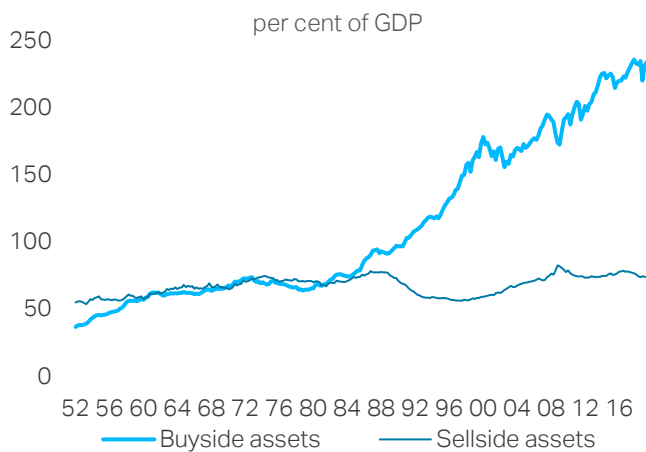
In recent months, various industry insiders have tried to downplay the dangers associated with corporate debt and in particular BBB-rated bonds. They point out that some of the extra debt issuance has come from 'non-cyclical' sectors, such as healthcare, while companies are already taking action to address investor concerns – such as extending maturities or cutting their spending. Yet there is really no way of knowing how these credit markets will perform under serious stress conditions, particularly as liquidity has been deteriorating in recent years¹. Recent analysis from the Bank of England, the IMF and the BIS suggest there will be serious strains. Perhaps the more important point is that policymakers – especially central banks – are now aware of these risks and will make every effort to keep interest rates down and extend the credit cycle. The hurdle for policy tightening has increased sharply, even in the unlikely scenario where inflation starts to rise a little. Profitability is now the more serious threat to corporate balance sheets, especially as earnings are already deteriorating. But even with sluggish productivity, we see only a modest squeeze on profit margins into 2020. This means, though the BBB-bomb will keep ticking, it should not explode anytime soon. The post-2009 expansion can continue.

¹ Note that there have recently been gentle but persistent signs of weakness on the fringes of the junk bond market, especially the lowest grade CCC. While this is partly about the energy sector, energy is not the whole story. This is definitely something to watch in 2020, even if there is no evidence (yet) of contagion to investment-grade debt.

1. YIELD HUNT

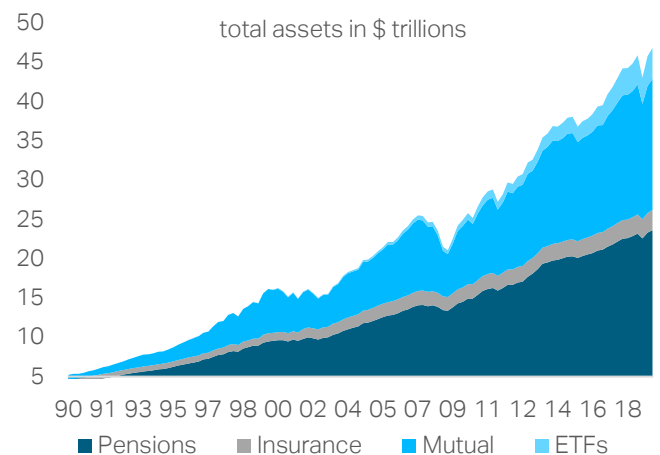
Investors have spent the last decade looking for financial vulnerabilities and macroeconomic risks that could bring an end to what is probably the most unloved expansion in history. Lots of potential 'black swans' have come and gone, including various euro crises, debt ceilings, fiscal cliffs and retail apocalypses. Yet, taking a macroeconomic perspective, there really hasn't been a great deal to get worked up about. The current expansion is the longest on record, but it is also the puniest. There are few obvious signs of mal-investment or overheating (esp. outside China). Banks have behaved remarkably cautiously, private-sector credit has been subdued and there has been no breakout in inflation. This has allowed central banks to provide fresh stimulus every time something has threatened to undermine the expansion. Yet there is one macro trend that has recently caused a degree of concern among investors – high levels of corporate debt. And this time it is capital markets – not banks – that have allowed companies to leverage up.

Chart 2: US financial assets



Source: Federal Reserve flow of funds

Chart 3: US Buy-side by assets



Source: Federal Reserve flows of funds

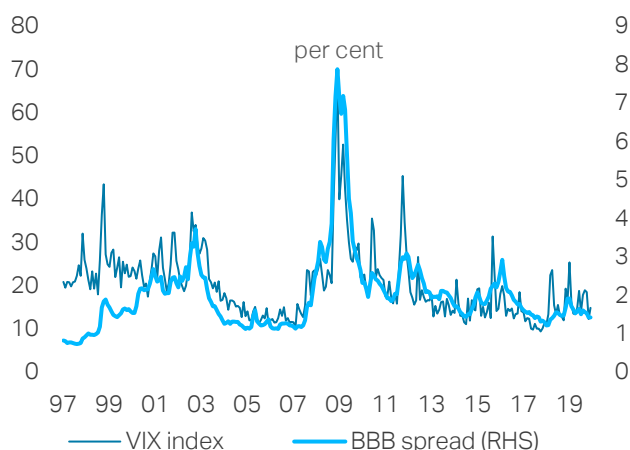
The Buy-side Bubble

Rising corporate debt has been the macro counterpart of a broader theme in global markets – the search for yield. With long-term interest rates hitting 700-year lows and turning negative in Europe and Japan, investors have understandably had to look for higher returns in riskier, longer-duration and sometimes illiquid securities. Writing in 2018, we called this phenomenon (half-jokingly) the 'Buy-side Bubble'. We gave it this label not because we wanted to irritate our clients (actually they were surprisingly open to the idea), but because we wanted to highlight the differences between the trends we were observing in global markets and previous bank-led (or 'sell-side') bubbles. This time, financial vulnerabilities were not the result of large investment banks leveraging themselves up and funding their balance sheets in increasingly risky ways. But perhaps it was now the behaviour of large asset-managers that had created new risks for the global economy. While this was unlikely to cause a crisis of 2009 proportions – there would be no systemic financial crisis – a reversal in the search for yield could still cause serious problems.

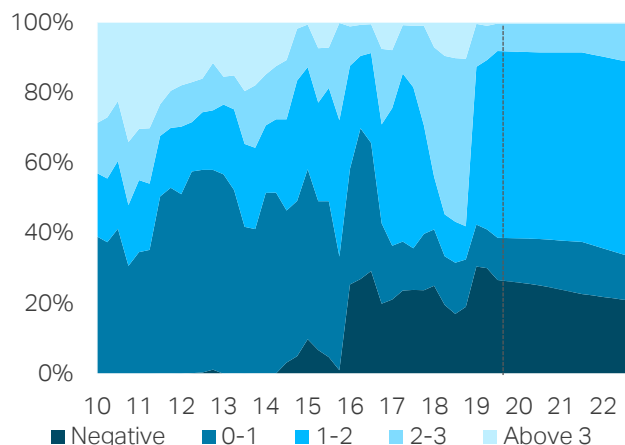
Diagnosing the issue

Before we get into the specific dangers involved in the search for yield, it is useful to provide a bit more detail on the sort of behaviour we are describing. Helpfully, this was the big theme in the IMF's [latest Global Financial Stability Report](#), published in October. The 109-page report not only contained an overview titled 'Lower for Longer', but it also contained separate analytical

chapters on the risks from Institutional Investors ('Falling rates, Rising risks'), corporate debt ('Riskier business') and the increasingly sensitivity of the global financial system to swings in dollar exchange rate – four of our most important themes in 2019. In terms of investors hunting for yield in riskier areas of global markets, the Fund highlights three main pieces of evidence: (i) elevated asset prices, (ii) historically tight credit spreads and low volatility; and (iii) specific examples to show how institutional investors have adjusted their portfolios since 2010.

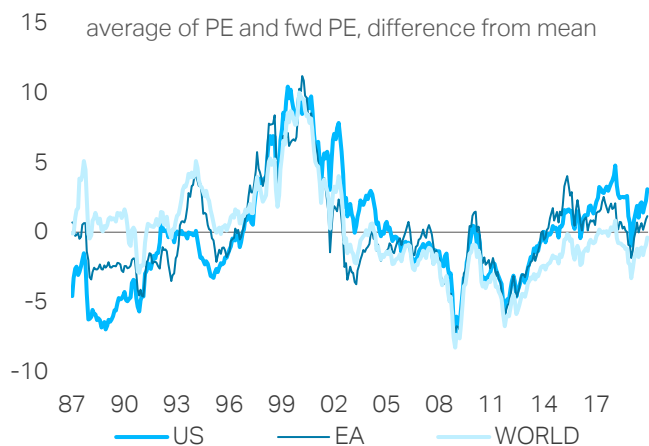
Chart 4: Market stability


Source: Bloomberg, FRED

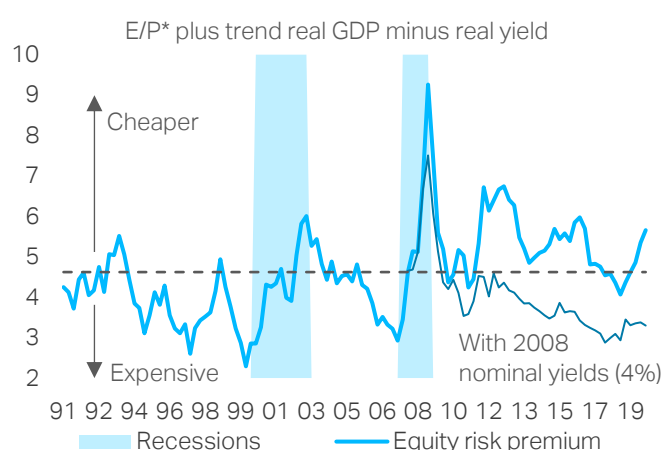
Chart 5: Global yields


Source: IMF GFSR October 2019

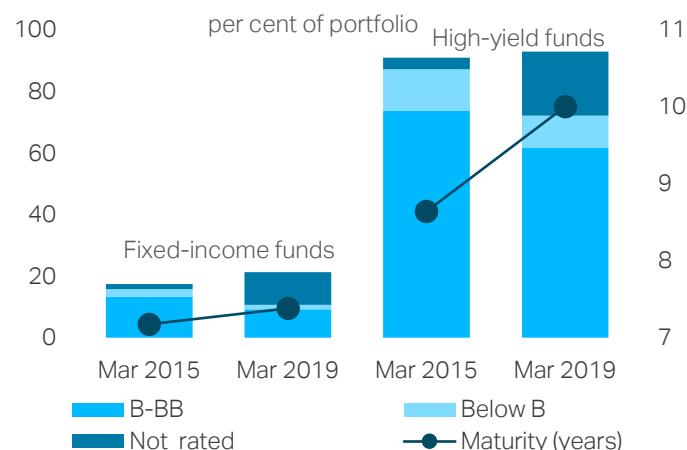
While the IMF believes most asset prices are above their fundamental or 'fair' values, this is a fairly controversial statement. Global stock markets have certainly hit new record highs but valuations do not look less ominous. Chart 6 shows PE ratios, calculated as the simple average of past and forward earnings estimates. This metric confirms that equities are not cheap, but neither do they look egregiously expensive. Of course, using PEs can also be problematic – they tell us nothing about the sustainability of recent earnings and do not take account of other asset valuations, especially bonds. To get round these problems we have calculated a version of [Antonio Fatas's equity risk premium](#), which is similar to the 'Fed model'. The Fatas method uses Shiller's Cyclically Adjusted PE ratio (a conservative earnings estimate) while also taking account of low real interest rates, which means it adjusts for the relative valuation of bonds.

Chart 6: Global equity valuations


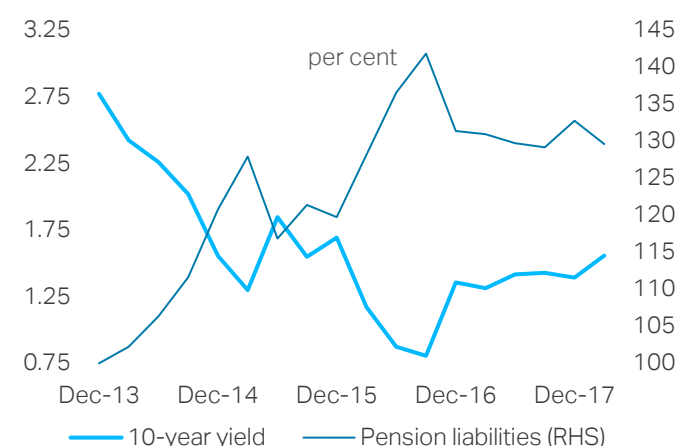
Source: Datastream, TS Lombard

Chart 7: US equity-risk premium 're-rates'


Source: Robert Shiller, TS Lombard, *CAPE estimate

Chart 8: FI investment funds


Source: IMF GFSR October 2019

Chart 9: Pension Funds under pressure


Source: IMF GFSR October 2019

Chart 7 shows how our estimate of the equity risk premium compares under two different interest-rate assumptions (current rates versus rates held at the 2009 level). The main takeaway is that equities valuations do not stretched, as long as real interest rate remain low. Put another way, the decline in interest rates since 2009 may have caused a 'rerating' in stock markets.

Institutional investors

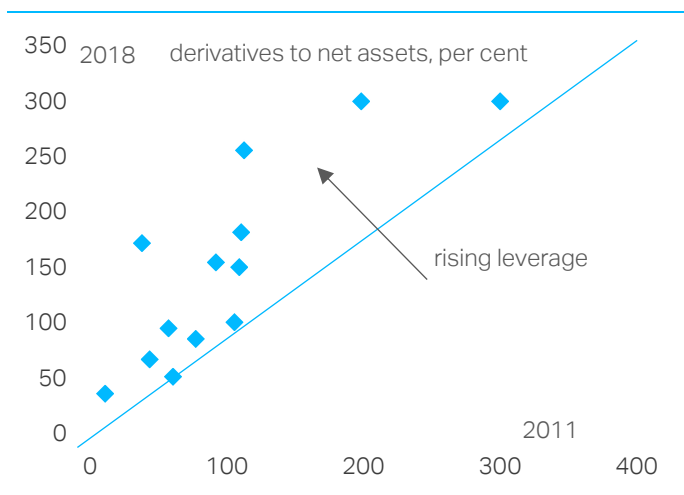
Rich equity valuations are one potential symptom of the search for yield, as are tight credit spreads and generally depressed levels of volatility across various markets. But none of this is clear evidence that investors have responded to lower interest rates by engaging in riskier behaviour. Fortunately, the IMF addresses this issue in detail, showing how chronically low interest rates have altered the behaviour of three main groups of buy-side investor:

- (i) **Fixed-income investment funds:** The IMF reports a large increase in the share of fixed income funds invested in BBB, high-yield and unrated securities. It also shows a sharp increase in the effective maturity of these assets with, for example, the average maturity of high yield paper rising from 7 to 10 years since 2014. Meanwhile there seems to have been a degree of 'herding' among these funds, leading to conformity in their investment strategies. Specifically, the returns of the top and bottom deciles of fixed income funds have become more correlated in recent years, increasing tied to the level of interest rates. With fixed income funds simultaneously reducing their liquidity buffers, the IMF is worried that these investors might face greater pressure than in the past to sell their less liquid holdings in the event of increased investor redemptions. Growing portfolio similarities, combined with low cash buffers, also raise the potential for rapid transmission of shocks across the industry, which could amplify periods of market stress;
- (ii) **Pension Funds:** Since liabilities to pension beneficiaries typically have longer duration than pension assets, falling interest rates disproportionately increase the present value of liabilities, weakening the long-term solvency of defined pension funds. This also creates an incentive to take on more risk. Chart 9 shows that among defined-pension funds in the Netherlands, the UK and the US – those that report mark-to-market liabilities, the value of future obligations has increased sharply as long-term interest rates have fallen. To better match their liabilities, pension funds have also increased their exposure to long-duration assets, taking greater illiquidity

risk in exchange for higher returns. The IMF illustrates this by showing how pension funds have increasingly invested in alternative asset classes such as [private equity](#), real estate and infrastructure, which often involve long-term lock-up periods and significant embedded leverage. The largest pension funds' notional derivatives positions have also risen to 155 per cent of net assets, from 95 per cent in 2011. Use of direct on-balance-sheet leverage has grown, particularly when net assets are adjusted for illiquid assets that are typically not available to repay borrowing and have separate and undisclosed embedded leverage.

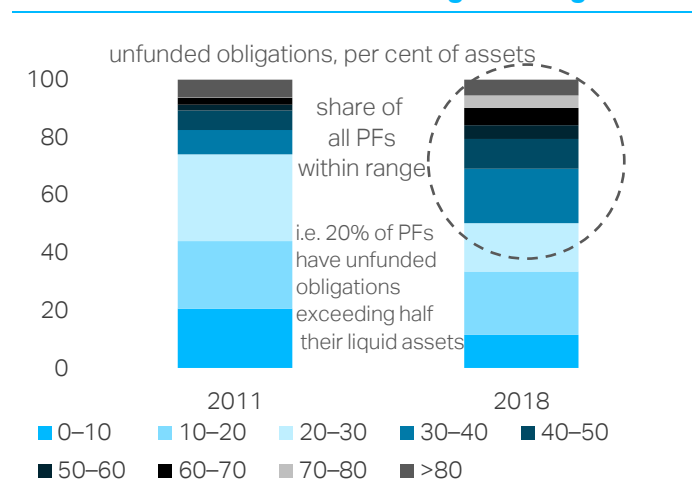
- (iii) **Life Insurers:** Life insurers face similar pressures to pension funds, seeking to achieve guaranteed returns on the insurance policies they have offered. Gaps between guaranteed returns and domestic sovereign bond yields, as well as duration mismatches between assets and liabilities, remain wide in the industry, most notably for some European countries (e.g. Germany) and many Asian insurers. This has prompted life insurers to increase their holdings of lower-rated and long-duration bond investments. The [behaviour of Asian lifers has attracted particular](#) attention in recent months, thanks to the [excellent analysis of Brad Setser](#) from the Council of Foreign Relations. The IMF confirms that this group of investors, especially from Japan, Korea and Taiwan, have been a huge source of demand (\$1.5 trillion) for US securities, especially corporate paper. In fact, Asian insurers' combined share of the US debt market has risen from 8 to 11 per cent over the past five years. Since in the case of Taiwan, we are talking about capital flows equivalent to almost 100 per cent of their GDP, it is easy to see the potential dangers in this activity, especially where it involves large currency and duration mismatches.

Chart 10: Pension Funds use of derivatives



Source: IMF GFSR October 2019

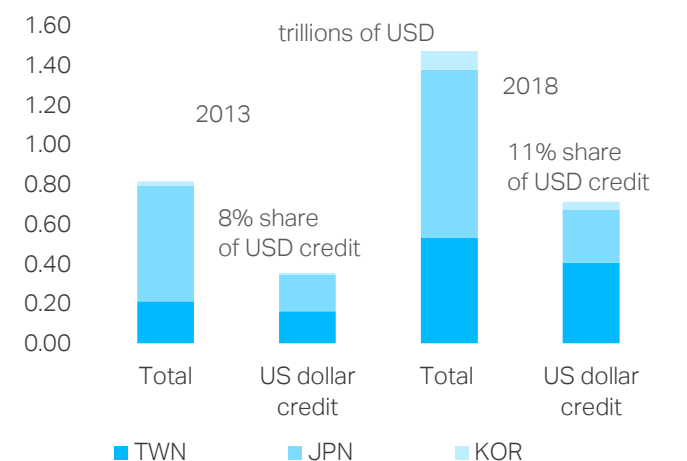
Chart 11: Pension funds' contingent obligations



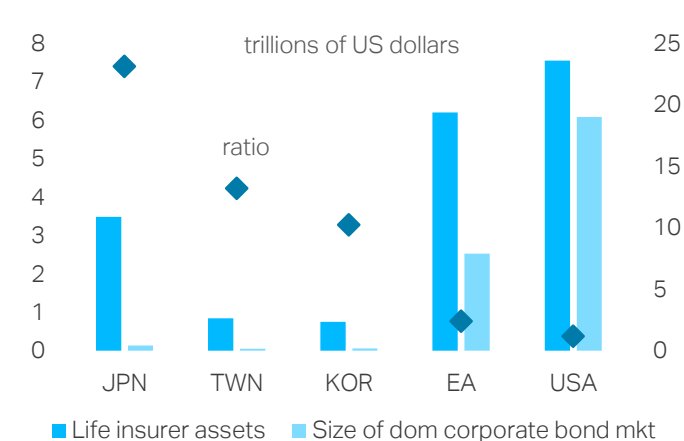
Source: IMF GFSR October 2019

In short, investors have responded to chronically low interest-rates by extending the duration of their assets and taking on more risk. Such behaviour is understandable. In fact, in an [earlier Macro Picture on the causes and consequences of negative interest rates](#), this is exactly what we suggested investors [should](#) be doing. But it is the job of the IMF and other organizations to assess the risks associated with this behaviour. Their main worry is that interest rates will eventually rise, which will trigger a large reversal in the search for yield and serious instability in markets. Certainly we have seen global markets become acutely sensitive to interest rates over the past decade, with even temporary spikes in the cost of borrowing causing episodes of

volatility. But, if investors have been involved in activities that are unsustainable, it is possible problems could arise even without higher interest rates. This is where it is helpful to look at the macroeconomic counterpart of the search for yield, specifically high levels of corporate debt.

Chart 12: Asian life insurers


Source: IMF GFSR October 2019

Chart 13: Domestic Asian market too small


Source: IMF GFSR October 2019

Macro counterpart – corporate debt

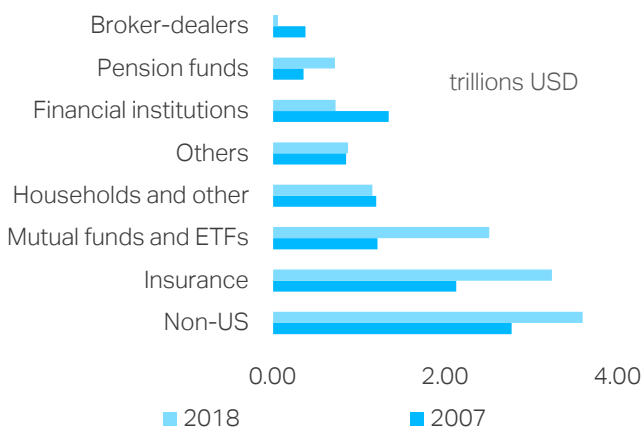
Critics of central banks believe policymakers should have raised interest rates earlier in an effort to break the search for yield and discourage risk-taking in financial markets. Yet, with inflation stuck below their targets, the authorities believed they had no choice but to keep interest rates low. In fact, those central banks that tightened policy for macro-prudential reasons (e.g. the Riksbank) always had to reverse course. Perhaps the underlying problem is that the level of interest rates that is 'right' for the real economy (on the basis of inflation etc.) is not necessarily the appropriate level of interest rates for financial markets. Yet, economists have always struggled with this idea, relying on models of 'equilibrium' (r^*) that exclude the financial sector. Still, there is one area where financial markets and the real economy have overlapped in recent years – the search for yield has provided a cheap source of funding for many corporations.

According to a [recent OECD study](#), global corporate bond issuance averaged \$1.7 trillion per year between 2008 and 2018, double its previous rate. While the United States remains the largest component of this increase, companies in many other parts of the world (DM and EM) have also borrowed heavily during this period. With traditional banks reluctant or unable to lend, capital markets became the marginal source of funding. To some extent, this is exactly what post-2008 regulation intended. Yet the question is not whether the search for yield has simply replaced bank intermediation, but whether it has allowed some companies to leverage themselves up to dangerous levels. After all, when we drill down into the details of the issuance that has taken place since the subprime crash, we see a clear deterioration in the quality of these loans, which suggests negotiating power shifted decisively away from bond-holders towards issuers. Put another way, there has been a 'glut' of non-bank funding. To illustrate:

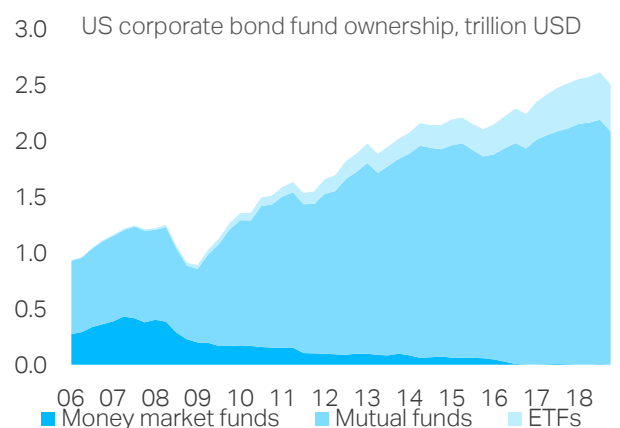
- Issuer quality has declined, with a notable surge in high-yield (junk) and lower-investment grade debt. The share of BBB securities, the lowest investment-grade rating, has jumped to more than 55% of the total, a record share of the market. While the average rating of junk bonds has actually improved in recent years, this is mainly because riskier borrowers have moved into other areas such as leveraged loans;

- Covenants have also become weaker. These are clauses designed to protect bond holders against the actions of issuers. The deterioration has been particularly notable among non-investment grade borrowers. According to the OECD's dataset, ten out of the eleven most popular junk bond covenants have weakened compared to pre-2008;
- Leveraged loans have also seen a clear dilution of covenants. These are loans extended to companies that already have considerable amounts of debt and/or a poor credit history. This sector of the market became a particular focus for policymakers in 2019, especially as these loans were extremely buoyant and had been used in various forms of securitization – drawing obvious comparisons with the subprime boom;
- The use of callable bonds has increased. These give issuers the right to redeem the bonds if interest rates decline. Since this creates a reinvestment risk that is undesirable to holders of these bonds, this is another symptom of power shifting to issuers;
- Internationally, much of the issuance has been denominated in US dollars².

The surge in corporate debt is important because it marks the nexus between the search for yield in markets and the potential 'real-economy' impact of these trends. To see why, look at Charts 14 and 15, which show large institutional investors are now holding most of the bonds that have been issued. Corporate debt is also the reason policymakers have started to pay more attention to potential risks in financial markets. Had the search for yield been a pure 'financial development', central banks would have been more reluctant to ease policy in 2019. Sure, some investors would have lost money if asset prices had continued their December 2018 plunge, but this wouldn't necessarily have destabilized the real economy, or challenged central banks' mandates.³ Yet because the search for yield was not purely a financial development – it was the marginal source of corporate borrowing – the monetary authorities took decisive action.

Chart 14: US corporate bond ownership


Source: IMF GFSR October 2019

Chart 15: US corporate bond fund ownership


Source: IMF GFSR October 2019

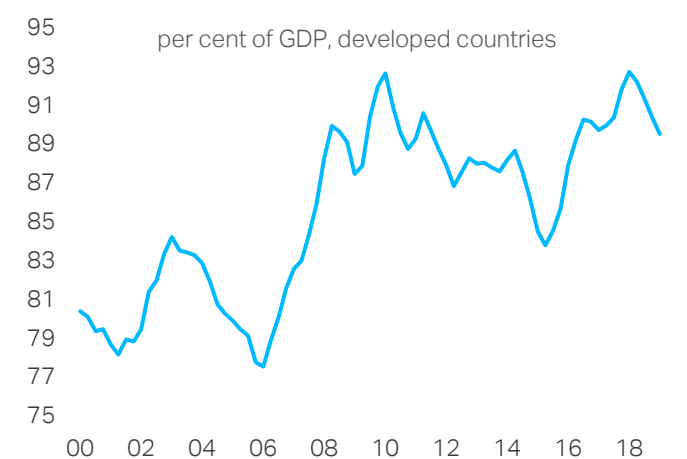
² The USD share of global bonds rose from 56% in 2009 to 67% in 2018. EMs have played a particularly important role, especially when we exclude China (which still issues in RMB).

³ After all, the authorities spent years pointing out the difference between Dotcom and Subprime, a pure asset-price bubble versus a leveraged credit bubble.

2. TICKING BBB-BOMB

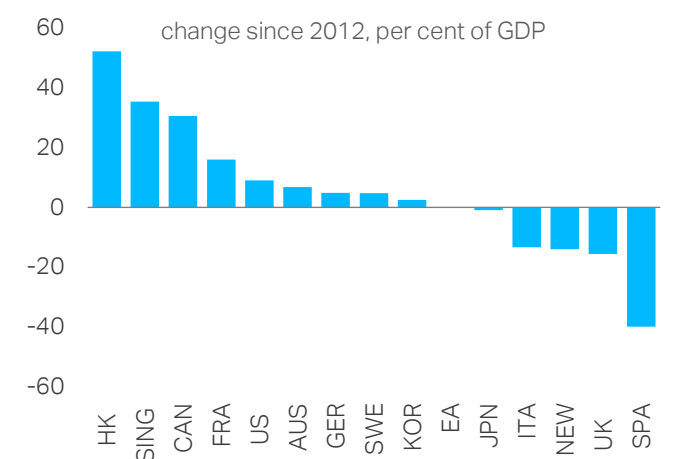
Central banks have eased monetary policy in an effort to revive the search for yield and prevent high levels of corporate debt from destabilizing the global economy. The extent to which they will be successful depends on whether the current debt load is already unsustainable. In its recent Financial Stability Report, the IMF provided a detailed analysis of corporate balance sheets in a variety of countries, including China, the United States and parts of Europe. China's situation is the most troubling, given the sheer size of the credit expansion over the past decade – total corporate debt has risen by \$15 trillion. Yet China is also in a rather unique position compared to many other major economies. Rather than a simple search for yield, rapid debt accumulation has been a deliberate policy choice, a critical part of the authorities' attempt to sustain high GDP growth. While the government cannot expand the credit cycle without limit, the State has effectively underwritten the corporate-sector's balance sheet. Other EMs are perhaps a more immediate threat, especially those that have borrowed in US dollars.

Chart 16: Developed Market corporate debt



Source: BIS, TS Lombard

Chart 17: Main DM borrowers



Source: BIS, TS Lombard

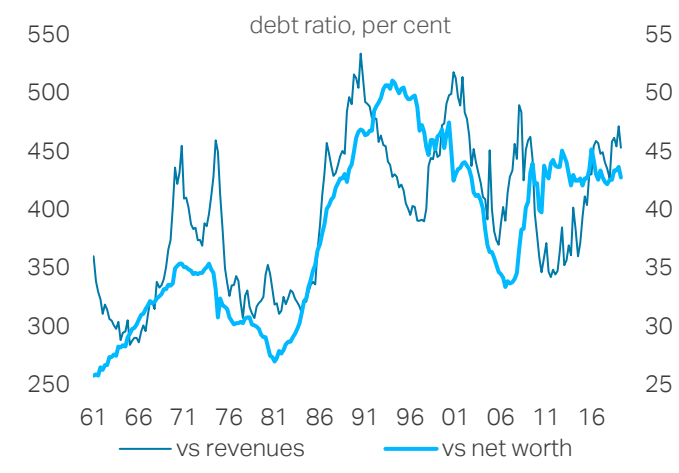
Focus on the US

From a global cyclical perspective, it makes sense to focus on the United States – though the trends we see in the US are common to a number of other DM economies. There is no consensus way to measure debt sustainability, but most commentators highlight the ratio of corporate borrowing to revenues. Chart 18 shows this ratio has increased sharply over the past decade, approaching previous historic highs. But we shouldn't restrict our attention to the liability side of the balance sheet – the asset side is also important. Looking at the ratio of corporate debt to net worth offers a more benign picture, since this metric has been stable since the subprime crisis. Yet there is a clear sensitivity here to the stock market. A large decline in asset prices would decimate the net worth of US companies, while leaving their liabilities unchanged. We can see this by comparing the net worth of US companies based on the market value of their assets to a 'fundamental' measure based on 'replacement' values (Chart 19).

While the aggregate debt of US companies looks troublesome, other metrics seem less precarious. Servicing costs remain low, close to the average of previous economic cycles, and companies have taken measures to improve the sustainability of their borrowing, by extending its maturity and holding larger amounts of cash. This could allow them to meet any short-term

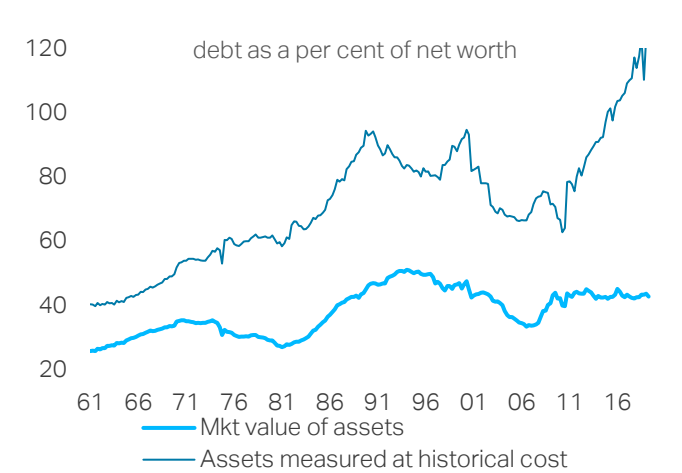
obligations. The 'flow' situation of the US corporate sector also looks better than the 'stock' position. Chart 21 shows that even as corporate debt has increased over the past decade, companies have not – in aggregate – operated with a large deficit. There is no sign of the late-cycle funding gap that has historically preceded US recessions. But this raises an obvious question – why have companies been borrowing without running a deficit? Part of the answer is that they have been using debt to buy back their stock, or fund M&A activity, rather than invest. After all, the funding gap is just the difference between capital spending and revenues.

Chart 18: US corporate debt



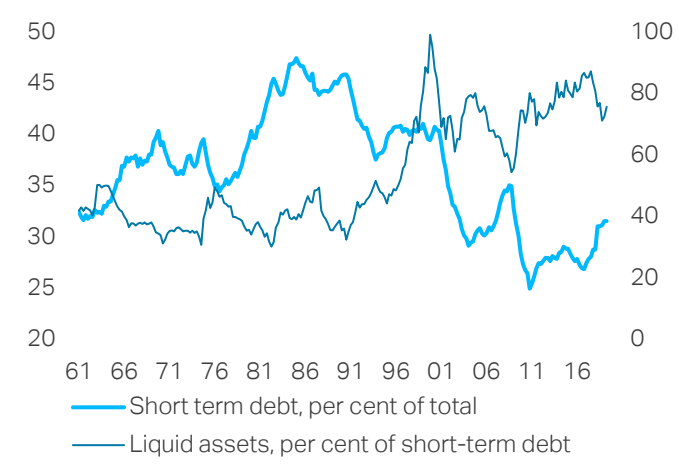
Source: Federal Reserve, TS Lombard, % of net worth on RHS

Chart 19: US corporate net worth



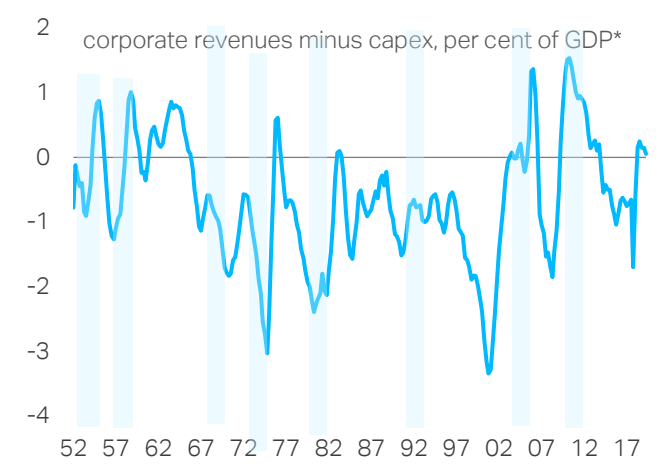
Source: Federal Reserve, TS Lombard

Chart 20: Enhanced debt sustainability



Source: Federal Reserve, TS Lombard, ST term ratio on LHS

Chart 21: US corporate net lending ('flow')



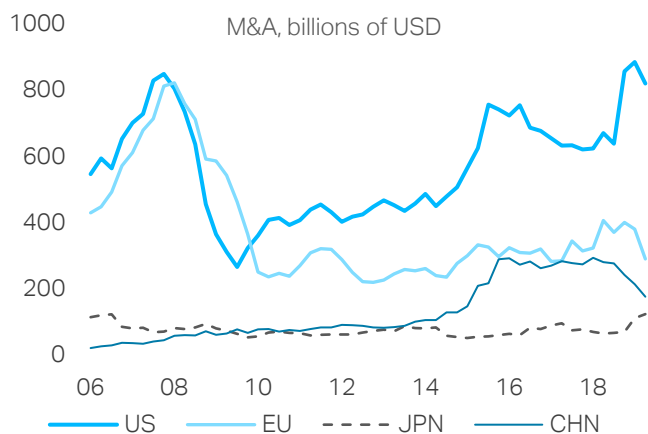
Source: Federal Reserve, TS Lombard

Sting in the tail

The other reason US corporate debt has increased without the sector running a persistent deficit is that the companies doing the borrowing are not necessarily the companies that have been operating with a financial surplus – there have been big shifts in the distribution of the sector's performance. A relatively small number of 'superstar' companies have been extremely profitable and have generated outsized profits, while a fat tail of weaker companies have been operating with much lower margins. It is this second group of companies that has been

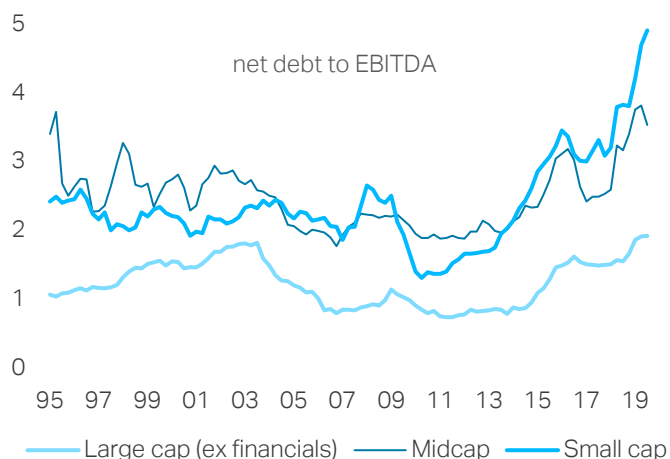
responsible for much of the increase in debt over the past decade. While it is hard to get detailed information on US companies at a 'micro level', we get a clear sense of this trend by looking at debt-to-EBIT ratios for large- mid- and small-cap (listed) companies (Chart 23). The IMF also provides a helpful breakdown, showing that interest coverage ratios are much lower among US SMEs than larger companies. This is worrying because SMEs have actually been responsible for much of the employment growth that has happened since 2009.

Chart 22: Global M&A activity



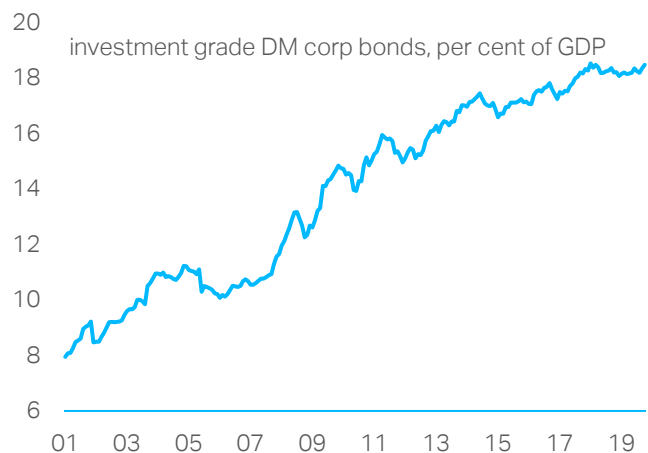
Source: IMF

Chart 23: Smaller companies more indebted



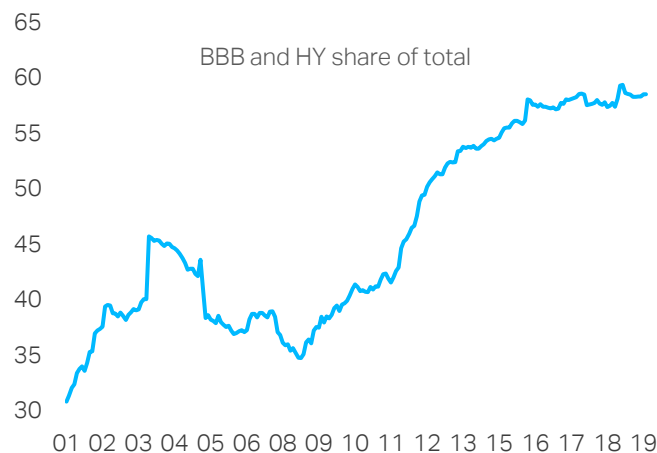
Source: Bloomberg, TS Lombard

Chart 24: Global corporate bond issuance



Source: Bloomberg, TS Lombard

Chart 25: BBB bulge

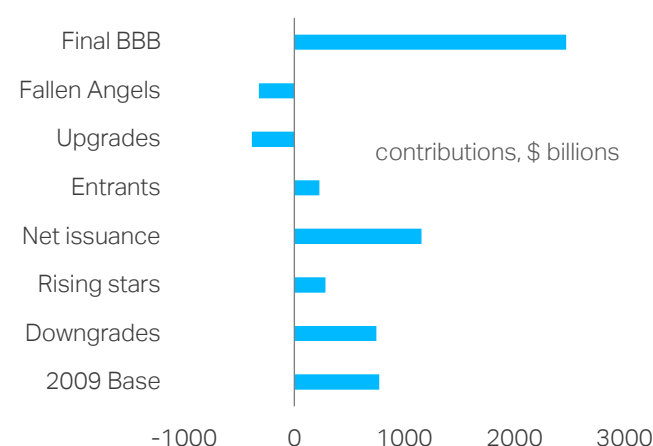


Source: Bloomberg, TS Lombard

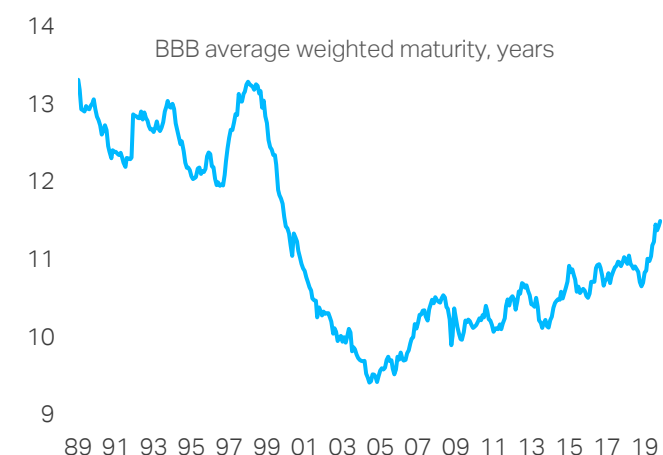
BBB-Bombed out

Policymakers were relatively relaxed about the corporate debt issue until the start of 2019, after which they suddenly showed a far greater degree of concern. What changed? The plunge in stock markets in December 2018 obviously didn't help, especially as this also led to a significant tightening in financial conditions. Credit spreads began to widen, especially in the high-yield sector. But we suspect the 'BBB scare', which became a consensus worry in 2019, was also a big part of the story. Like most investors, the authorities became aware of the boom in the

lowest-investment grade debt issuance and the potential danger of 'fallen angels'. Remember, the share of BBB-rated securities in the total investment-grade universe has risen to 58 per cent, from 30 per cent in 2001, a record. If a large number of these bonds are downgraded by even one notch they will become junk bonds. This has the potential to dwarf the junk bond market's capacity to absorb such a large increase supply, plus it might also force large institutional investors – now the main holder of these securities – to dump them in a round of 'fire sales'. Central banks decided they needed to short-circuit this dynamic, easing monetary policy and trying to revive the search for yield, before the situation got really messy.

Chart 26: Evolution of BBB securities


Source: BlackRock

Chart 27: Rising debt maturities


Source: Bloomberg, TS Lombard

3. TRIGGER POINTS

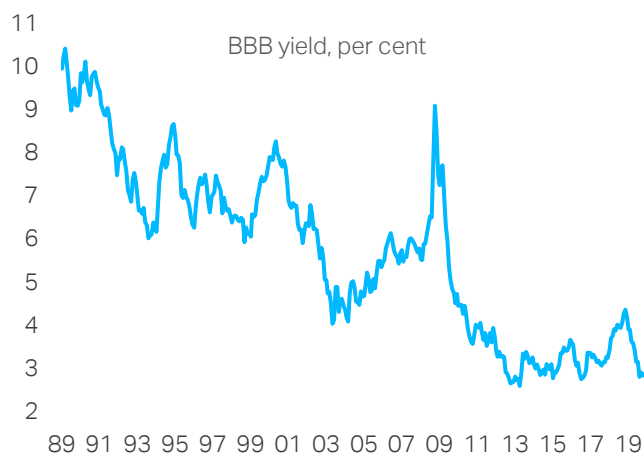
While policymakers have clearly become more worried about corporate debt and the prospect of fallen angels in particular, some of the largest players in the industry have tried to reassure anxious investors by arguing that the whole BBB story is overblown. An [excellent report from BlackRock](#), for example, sees limited scope for broad forced-selling from the asset management industry, the idea that perhaps most spooked policymakers. BlackRock analysts argue that a significant chunk of the BBB issuance has occurred in non-cyclical sectors such as healthcare and communications, which are unlikely to get downgraded in a recession. Moreover, [issuers are already taking action to try to avoid a potential downgrade](#), such as cutting dividends, reducing share repurchase programmes and curbing M&A. Even if a significant share of BBB bonds became junk, BlackRock argues this doesn't necessarily mean institutional investors would dump these securities. They also point out that some investors have agreements such as 'separate accounts', which give asset owners more discretion, allowing them to hold downgraded bonds rather than offload securities for less than their underlying value.

How dangerous is the BBB-Bomb?

While BlackRock raises a number of important points, the underlying issue is that nobody really knows how these securities will perform during periods of extreme stress or even a relatively 'normal' global recession. Recent attempts to model such a scenario are not encouraging. The IMF, for example, has shown that an economic shock roughly half as bad as the 2008 crash could lead to serious strains on corporate balance sheets. On their estimates, this would leave more than 40% of US companies with interest coverage ratios below 1, which means they would

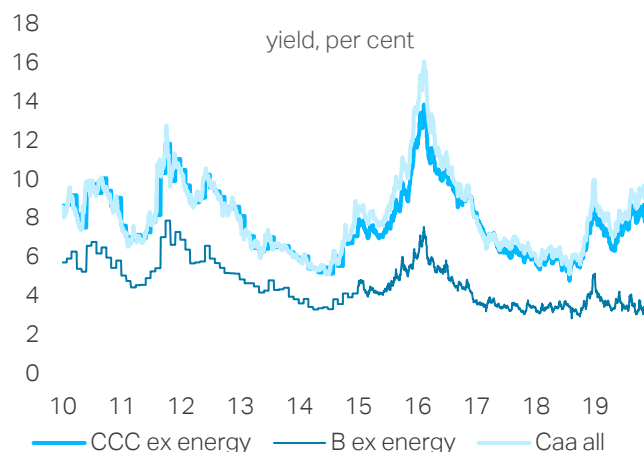
struggle to service their existing debts. This dynamic would hit smaller companies particularly hard, which as the IMF points out, could have serious knock-on effects for regional banks, which are especially sensitive to SMEs and have heavy exposure to risky commercial real estate loans and various tranches of syndicated leveraged loans originated by larger banks.

Chart 28: CBs eliminate BBB stresses



Source: Bloomberg

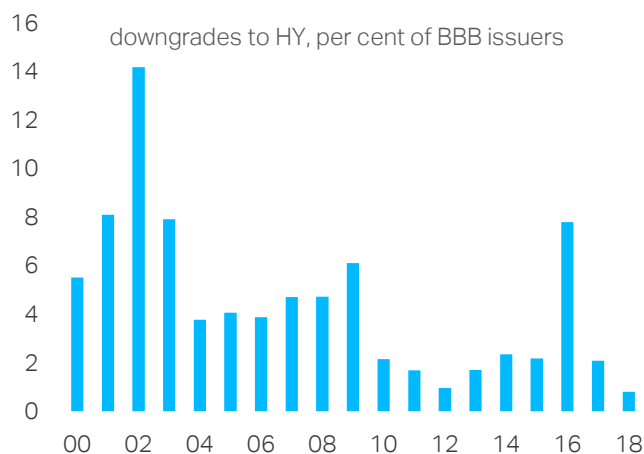
Chart 29: But CCCs remain under pressure



Source: Bloomberg

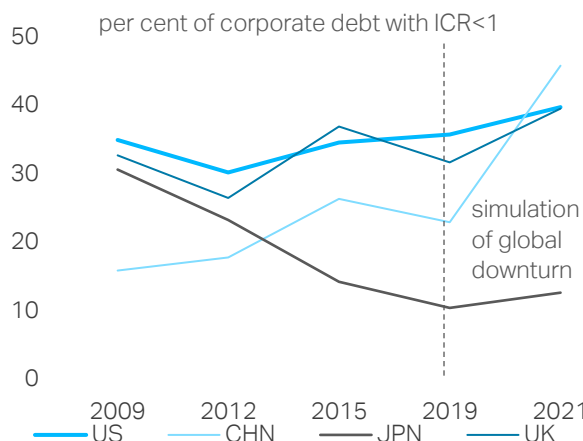
While the IMF did not specifically test the vulnerability of the non-bank sector, the Bank of England has made more effort to do this – at least on the basis of UK data. In a [recent blog post](#), Bank stuff showed that forced selling from institutional investors could push the value of current BBB-rated bonds significantly below their fundamental value. Officials calculate that every year around 5% of UK bonds become fallen angels but that this could rise to at least 11% in a moderate recession. This would mean around £10 billion in forced selling, which would be difficult for the UK high-yield market to absorb. Even in ‘normal market’ conditions, this would amount to more than half of the total monthly volume of sterling high-yield bond purchasers by dealers, but in stressed conditions the situation would become materially worse. The BoE concludes this has ‘serious financial stability risks’, potentially including ‘market dysfunction and large losses’. Since a similar spike in fallen angels is likely in the US (see Chart 30 for what happened during previous downturns), we could see similar dangers in the United States.

Chart 30: History of BBB ‘fallen angels’



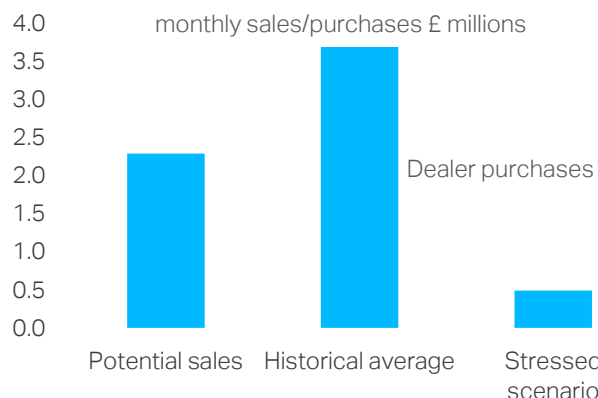
Source: OECD

Chart 31: IMF simulated recession shock



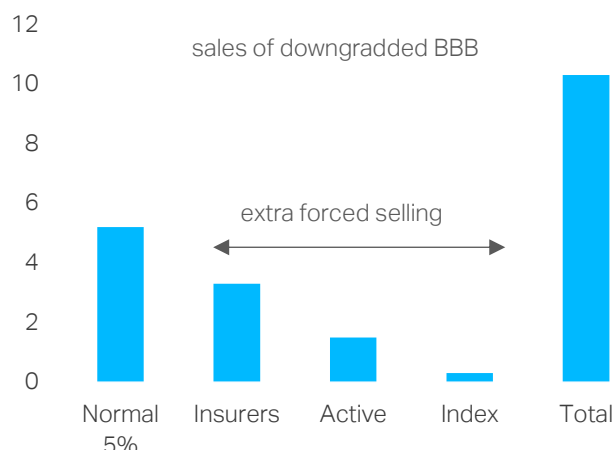
Source: IMF GFSR October 2019

Chart 32: BoE fallen-angel simulation



Source: Bank of England

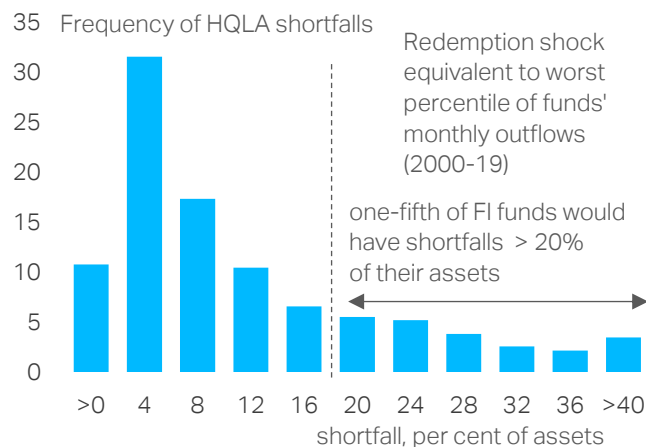
Chart 33: Who would need to sell?



Source: Bank of England

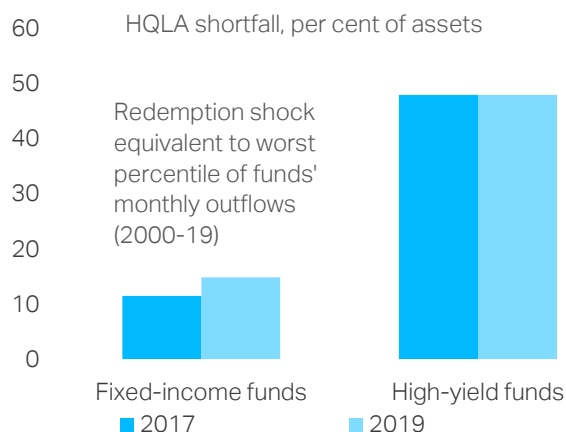
The ability of the junk bond market to absorb fallen angels from the BBB universe is just one potential form of 'illiquidity' that might arise when the search for yield breaks down. But we must also consider the danger posed by the broader deterioration in market liquidity over the past decade, which could also influence market functioning during times of stress. Again, the IMF's latest GFSR provides useful information because it includes a special chapter on 'liquidity in capital markets'. IMF Staff point to a notable reduction in bank's trading books across all jurisdictions over the past decade, which when combined with sharp increases in the use of algorithmic trading, could cause serious problems during the next global recession. The IMF uses the example of several recent 'flash crashes' to highlight the potential dangers involved.

Chart 34: FI Fund redemption shock



Source: IMF GFSR simulation, October 2019 (Box 3.1, page 48)

Chart 35: Large HQLA shortfalls in FI funds

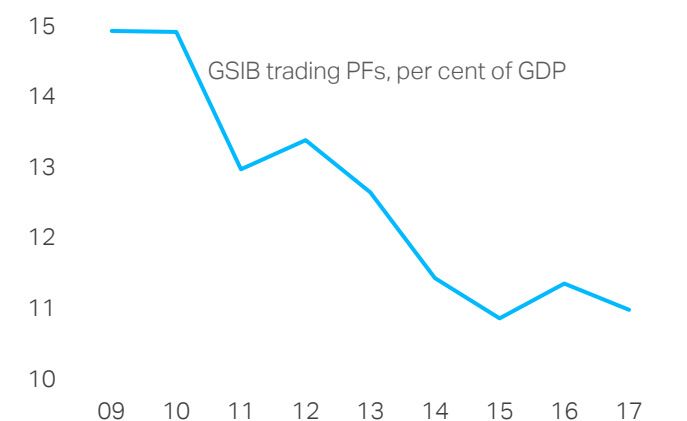


Source: IMF GFSR October 2019

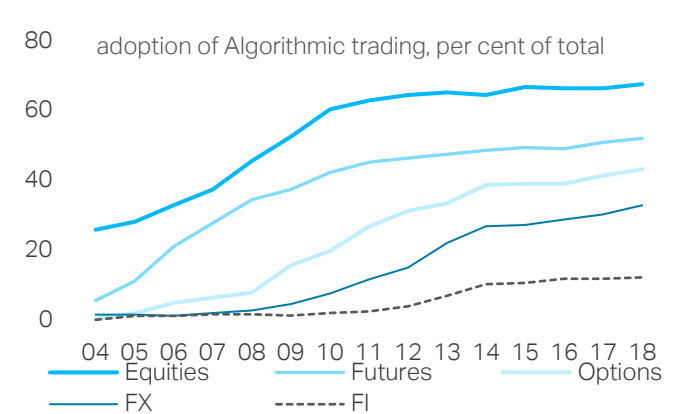
What are the triggers?

High levels of corporate debt, driven by a powerful search for yield in global markets, are probably the clearest macroeconomic vulnerability in the world today. But now that investors and policymakers are fully aware of this problem, can we avoid another financial calamity? Certainly the situation seems less worrying that it did 12 months ago. Back then, the consensus was that central banks – especially the Federal Reserve – would continue to tighten monetary policy even if inflation stayed low. Sell-side economists assured us that the authorities were

obsessed with their macroeconomic models (especially the Phillips curve) – models that have a tendency to ignore financial imbalances – and would raise interest rates in an effort to prevent potential wage-price spirals. Yet, we have actually had the exact opposite response from central banks in 2019. Officials are now saying they will keep policy loose even if inflation begins to rise. And with no sign of inflation moving higher, this means one potential trigger – higher rates – is gone. This is why we are not particularly worried by the recent tensions in some of the more speculative parts of the junk bond markets, especially the widening in CCC spreads (Chart 29).

Chart 36: Reduced liquidity from primary dealers


Source: IMF GFSR October 2019

Chart 37: Algos taking over


Source: IMF GFSR October 2019

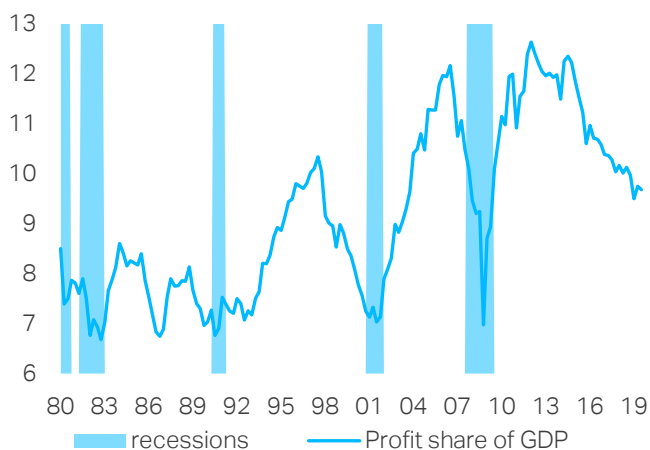
In fact, we suspect global policymakers will now do everything they can to try to revive the search for yield and keep the long expansion going. But in terms of companies' ability to service their debts, central banks can only really influence the denominator of the Interest Coverage Ratio – they can't directly influence the numerator (corporate earnings). So the clearest potential trigger for a corporate debt problem is no longer interest rates, but rather the earnings cycle. And this is where the outlook seems a little less encouraging. Profits are already under pressure in a variety of major countries, including the US and the euro area. The US situation certainly looks less benign than it did a few months ago, following revisions to the national accounts. Chart 38 shows the corporate share of GDP has now been trending lower for some time, a classic sign that the economic cycle might be approaching its climax. If companies cannot pass on rising wages to consumers, they have no choice but to accept lower profit margins.

Earnings are the key

We suspect what happens to US corporate earnings in 2020 (and beyond) will have a critical bearing on the sustainability of US balance sheets and the remaining duration of the global expansion. The good news is that while a margin squeeze has already started, it does not look particularly aggressive compared to past episodes – especially the late 1990s. Chart 39 shows a simple proxy for US profits, based on our expectation for nominal GDP growth and real unit labour costs, the difference between inflation, productivity and wages. The bottom line is that if wages and productivity continue to grow at their current pace, margins will shrink a little but overall earnings should grow at a low single-digit pace in 2020. This would surely disappoint market expectations for the next couple of years, but it should not be sufficient to derail the real economy or trigger another powerful bear market in risk assets. In short, the world central banks

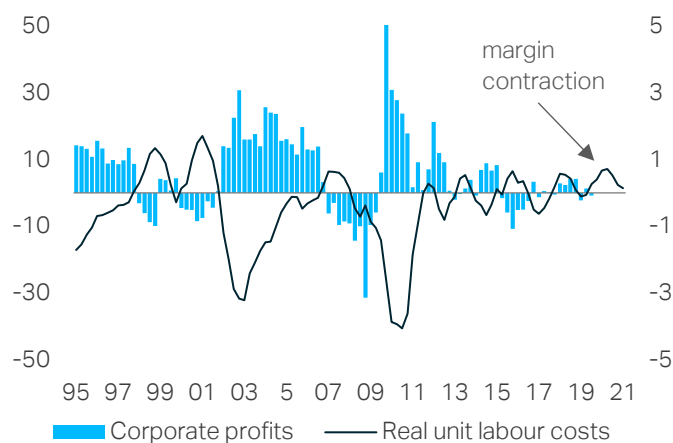
might actually have done enough to keep the longest expansion in modern history going, even if we remain sceptical about the likely potency of the post-2020 revival.

Chart 38: Late-cycle earnings squeeze?



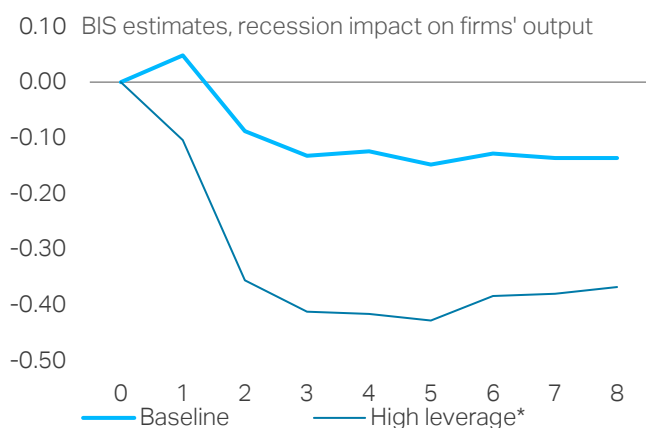
Source: BEA, TS Lombard

Chart 39: But modest pressure on margins



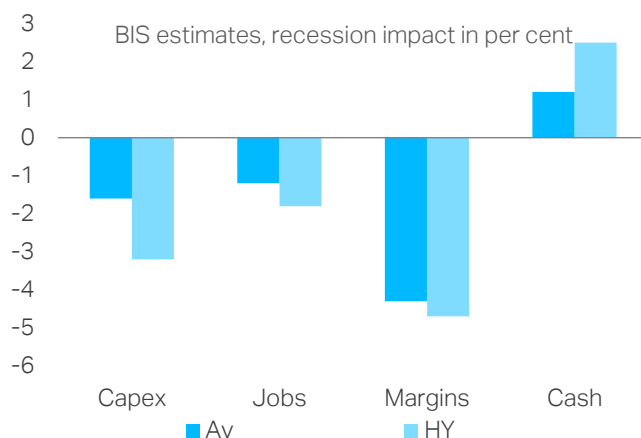
Source: BEA, TS Lombard

Chart 40: Corporate debt amplifies recessions



Source: BIS Annual Report 2019, *If debt service ratio 25% > median

Chart 41: High-debt companies react more



Source: BIS Annual Report 2019

Bottom line

A decade of low interest rates has not caused any obvious signs of 'overheating' in the global economy, except potentially in financial markets. The consensus has recently caught on to our long-running worries about the search for yield in markets, especially where it has encouraged institutional investors to seek higher returns in riskier, longer duration and more illiquid securities. Record levels of corporate debt provide the corresponding macroeconomic vulnerability, as companies all over the world have taken advantage of cheap funding costs to leverage up their balance sheets. We are particularly worried about a fat tail of weaker, lower-margin businesses that are especially vulnerable to either a rise in interest rates or a moderate deterioration in earnings. The good news is central banks are now aware of these risks and will do everything they can to keep the expansion going. The 'hurdle' for further monetary tightening increased dramatically in 2019. Yet policymakers can't directly control the corporate earnings cycle, which is now the clearest risk to the global economy in 2020 and beyond.

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