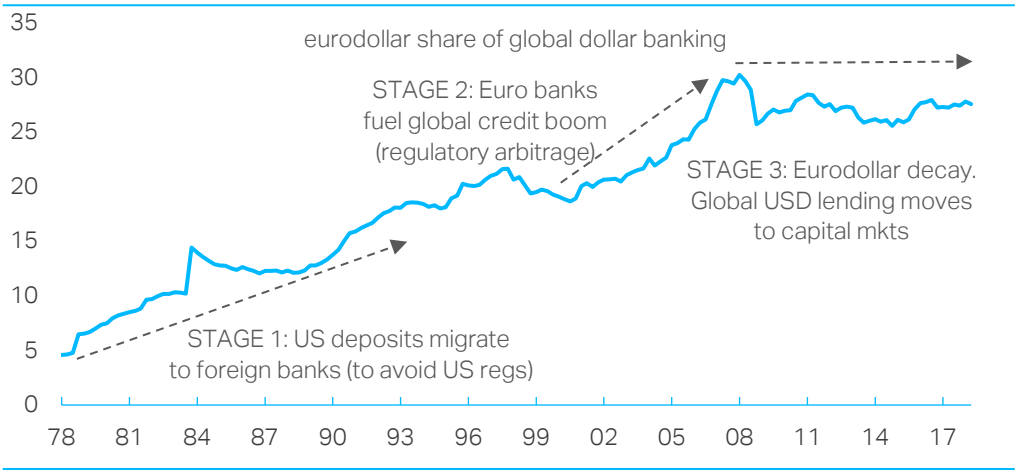
Macro Picture

DOLLAR DRAINED

Dario Perkins

Global 'liquidity' has been the big theme of 2018. While a lot of commentary has focused on global banks and 'eurodollars', capital markets have actually been the main lenders since the subprime crash. QT-related strains are relatively easy to fix, but policymakers face bigger problems if the global search for yield unwinds.

Chart 1: Eurodollar evolution



Source: BIS, TS Lombard

DOLLAR BILL

Economists are beginning to understand the special role the US currency plays in the global Dollar Standard (also known as the Eurodollar system). Periodic funding strains have emerged in recent years, mainly reflecting new regulation. But talk of a 'dollar shortage' is not new and global banks have not been the main dollar lenders since 2008.

DOLLAR STRAINS

The Eurodollar system has evolved over time. The large EU banks produced a global credit boom in the early 2000s, leading to the subprime crash. But the Euro banks have scaled back those activities since 2008. While Japanese banks remain vulnerable, capital markets have taken over, fueled by low interest rates and a global search for yield.

UNSTABLE STANDARD

The current obsession with QT and money market plumbing looks misplaced. If further strains emerge, either in the US or globally, central banks can deal with these. Rising interest rates and a reversal in the global search for yield are more dangerous. If capital markets stop lending and banks are hamstrung, the Dollar Standard faces a liquidity trap.

DOLLAR DRAINED

For all the chatter about trade wars, there is no doubt 'liquidity' has been the more important theme for markets in 2018. We see this on two levels. First, investors have become fascinated with money market plumbing and the intricacies of the Eurodollar banking system. Zoltan Pozsar, a former Fed official, has played an influential role, with his series of popular but complicated papers on the issue. Meanwhile, periodic strains in money markets have raised awareness of a "dollar shortage" which, in the extreme, could cause funding problems for large international banks. Investors have been watching short-term US interest rates and dollar swap markets closely, looking for further evidence of stress. Those who worry about the impact of QT are particularly obsessed with these strains, arguing that the Fed's removal of US dollar reserves will further undermine global liquidity. But the dollar shortage is not a new idea and dates back to at least the 1940s. The underlying issue is a global financial system increasingly reliant on dollars, which creates inherent instability and leaves the world vulnerable to sharp USD swings.

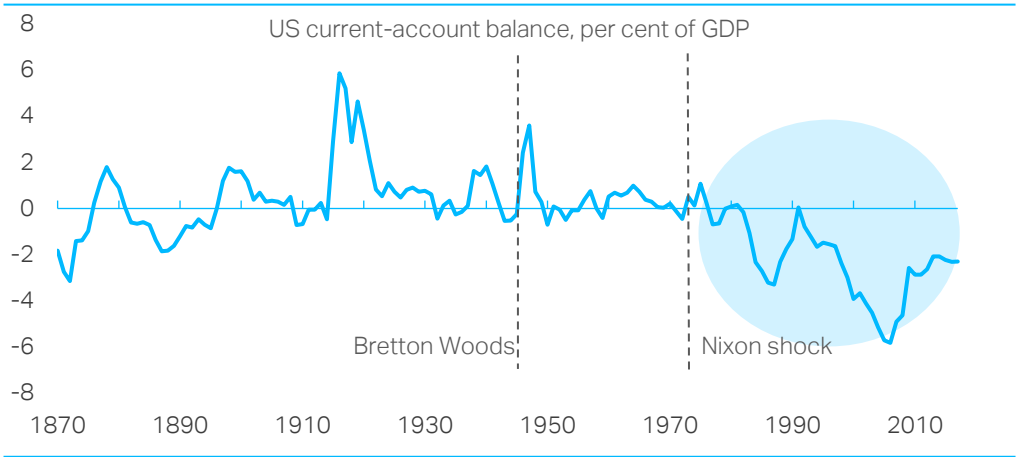
The second level on which investors express their concern about 'liquidity' is a more general theme about the end of global QE and the impact of rising interest rates. It is no coincidence that spikes in bond yields have preceded both of the major wobbles in equity markets this year. While these two liquidity themes (the dollar shortage in global banking and the impact of rising real interest rates) are clearly related, we feel the broader question will be the more important risk for global markets in 2019. After all, investment banks have not been the marginal providers of global credit over the past decade. Post-2008 regulation has prevented these institutions from doing many of the things they did in the early 2000s (a feature, not a bug). European banks, in particular, have scaled down their dollar activity, leaving only the Japanese with large and increasing USD exposure. To the extent there is a dollar shortage, it is a structural regulatory issue. But if QT makes this situation worse, either for US banks domestically or the large international (i.e. Japanese) banks, it should be relatively easy to fix. Policymakers have the tools they need to address these problems, by ending QT early, injecting new liquidity or extending dollar swap lines.

The bigger threat to markets is that the Eurodollar system (which is really just another name for global dollar lending) has migrated to capital markets since 2008, with corporate bond issuance – both EM and DM – becoming the main source of borrowing. Low interest rates encouraged an aggressive search for yield with investors, particularly large asset managers (the "buyside bubble"), hungry for higher returns. Some people blame central banks but with the traditional banking system not lending, policymakers didn't have much choice. (They cite secular stagnation.) The risk now is that as interest rates rise, the search for yield will unwind and borrowers, particularly riskier corporates, will struggle. A Fed pause, which seems increasingly likely in early 2019, would postpone these problems but not eliminate them. Even if corporate debt isn't the trigger for another recession, it could amplify the next economic downturn. And worse, there is a question about whether the world faces a dollar liquidity trap. If banks still can't lend and after the next crash, capital markets no longer fill the gap, you have to wonder who will fund the global expansion. Perhaps the Dollar Standard is in its final stages but there is no obvious replacement.

1. DOLLAR BILL

Global macro research is changing. Looking at individual countries in isolation is becoming less important, with common international drivers taking over. This shift should have been obvious after the subprime crisis, but it has taken the profession a while to catch up. And the irony, of course, is that this change is taking place just at the point where the emergence of populist politics is threatening to unravel some of the main themes. (But we digress.) Financial markets are increasingly at the centre of this new macroeconomic framework, with the US dollar playing a critical role. While the dollar system, the Dollar Standard, has been around since the Second World War, its dominance has grown over time and economists have only recently started to understand how it works. Since 2008 there have been a number of interesting studies in this area, examining the role of the USD and the global financial cycle it creates (see e.g. this NBER paper).

Chart 2: World needs US deficits



Source: Macrohistory, OECD, TS Lombard

Dollar dominance

Let's start with some history. The Dollar Standard started with the 1944 decision to put America's currency at the centre of international trade and commerce. Under the Bretton Woods system, the dollar became the world's reserve currency, together with fixed exchange rates and full convertibility into gold. Within a few years, there were already worries about a 'dollar shortage' because America was running a sizeable trade surplus. Economists believed that the country had to run current-account deficits in order to supply the rest of the world with the funds required for post-WWII reconstruction. As a solution, the US eventually recycled these surpluses by offering generous grants to the countries that needed them – the 1947 Marshal Plan.

This experience was a reminder that currencies with reserve status face a conflict between domestic economic interests and those of the wider global community. Though this idea dates back to at least 1929, it is called 'Triffin's Dilemma', after Robert Triffin who – in the 1960s – correctly predicted the demise of Bretton Woods. Triffin argued that the US would need to run persistent current-account deficits in order to satisfy the global demand for dollars. By the late 1960s, stubborn dollar strength had made the Bretton Woods system unsustainable. President Nixon killed it off completely with his unilateral 1971 decision to 'suspend' the convertibility of the USD into gold. But this didn't end the global dominance of America's currency – it continued to grow, as did the US trade deficit.

The Dollar's role

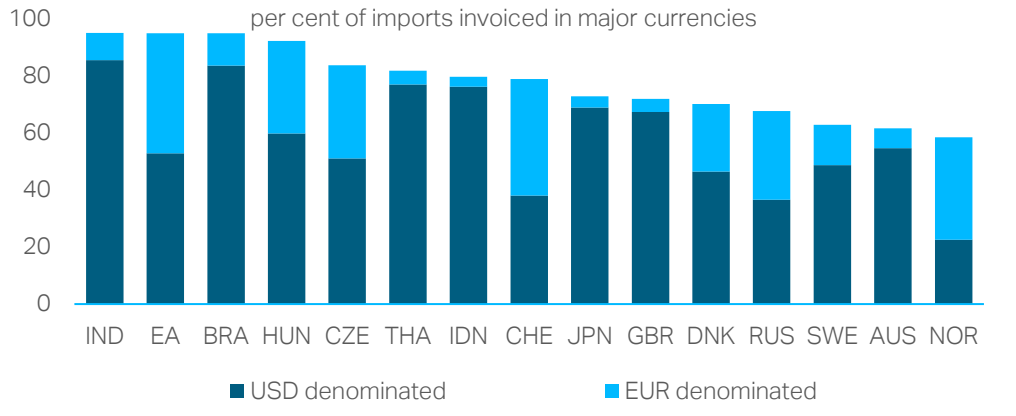
Today, a growing body of economic research shows how the dollar's special role operates through three main channels, which macro textbooks tend to ignore:

1. Dollar invoicing: Economists traditionally assumed, when currencies move, exporters would keep their domestic prices unchanged and allow their export prices to swing. Their goods become cheaper (or more expensive) overseas and consumers responds accordingly – the Mundell-Fleming model. But the latest research suggests this is not how exchange rates work. Most international trade takes place in a handful of ('dominant') currencies, particularly the US dollar. This gives America's exchange rate a special role in world trade. For example, Boz et al find that a 1% appreciation in the USD reduces trade volumes between countries in the rest of the world by around 0.6-0.8% within one year. So dollar strength actually hurts everyone.

2. Risk-taking: The dollar is the main funding currency, with USD-denominated debt surging over time. Avdiev, Bruno, Koch and Shin find that dollar strength is strongly associated with falling cross-border bank lending and lower real investment rates, particularly among the emerging economies. An appreciation in the dollar hurts borrowers' balance sheets, reducing both the global demand and supply of dollar credit. They show that these effects can more than offset the traditional positive impact that was supposed to come from an improvement in net trade (i.e. a depreciation in the domestic currency versus the dollar). Recent Bank of England analysis quantified the effect, finding that a10% appreciation in the USD cuts EM GDP by around 1.5 percentage points. More work is needed on the DM impact.

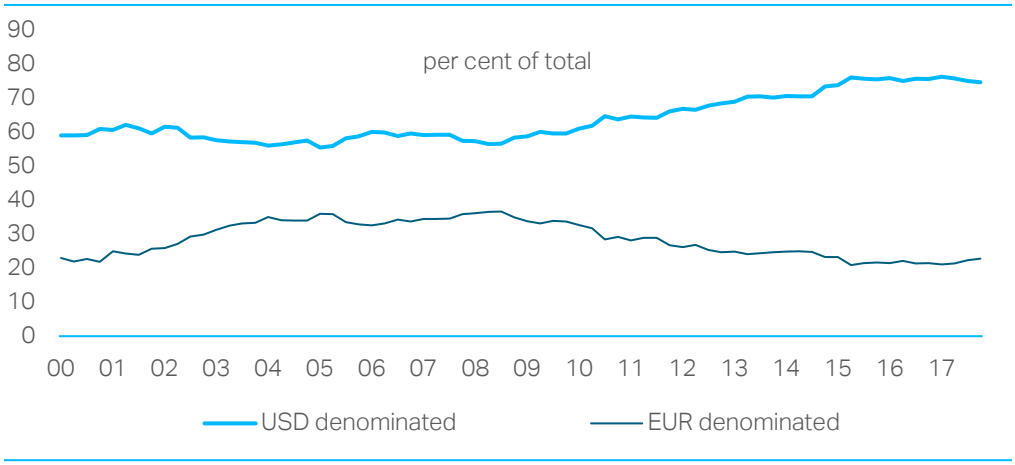
3. Global value chains: Related to the risk taking channel, dollar strength has a powerful impact on global value chains. Consider an auto manufacturer that makes engines in Japan, ships them to Canada (where the cars undergo further assembly), before sending the cars to be finished in Mexico. This process involves large inventories of engines, semi-finished autos and finished autos. These are assets which the company needs to finance and the longer the value chain the greater the financing needs. With global value chains (GVCs) expanding rapidly over the past two decades, the dollar has become even more important as an international funding currency, strengthening the link between USD swings and global activity. GVCs further complicate exchange rate transmission, as we saw after the UK's Brexit vote.

Chart 3: Dollar invoicing



Source: OECD 2018

Chart 4: USD dominates cross-border lending



Source: BIS, TS Lombard

The Eurodollar system - origins

In short, the global financial system is dependent on dollars because a lot of trade, most commodities and a huge amount of debt is denominated in USD. The 1944 decision to give the dollar reserve status created the need for a way to settle international trade using dollars. What started as a system of bankers' acceptances or IOUs became a fully-fledged offshore dollar system by the late 1950s, giving rise to the term 'Eurodollars'. These were initially USD-denominated time deposits held outside the United States (though not necessarily in Europe). By the 1970s, the system was growing rapidly, as investors tried to circumvent US monetary controls (e.g. Regulation Q) and seek higher interest rates outside the United States. In an influential paper in 1971, Milton Friedman showed how banks in the Eurodollar system were able to create new money themselves, at the 'stroke of a bookkeeper's pen'. Most of these extra dollars were not included in official US M3 statistics, prompting a lively debate about whether the Federal Reserve was still in control of domestic monetary conditions. Some even blamed massive Eurodollar creation for the runaway inflation of the 1970s, though this claim is controversial.

The Eurodollar system became even more complicated after the 1990s, with global banks creating new dollar liquidity through an explosion in the size and complexity of their balance sheets. The original Basel regulations surely played a role, giving financial intermediaries a powerful incentive to 'game the system' by increasing their leverage and developing increasingly sophisticated funding products, including derivatives, repo and Asset Backed Securities. Today when people talk about the 'Eurodollar' system, they are using a rather ubiquitous term that covers both offshore USD deposits and global banks' wholesale funding. As Jeffrey Snider from Alhambra Investments explains in a fascinating series of podcasts (click on this link for the "Eurodollar University"), Eurodollars have basically become a catch-all term for global dollar creation.

Beyond trade imbalances

One important point about the Eurodollar system is that it challenges the traditional link between the US trade position and the global supply of dollars. A 'dollar shortage' is not necessarily a sign that America's trade deficit is too small – worth remembering, especially as Donald Trump is promising to close America's current-account deficit. To illustrate, consider three international dollar transactions:

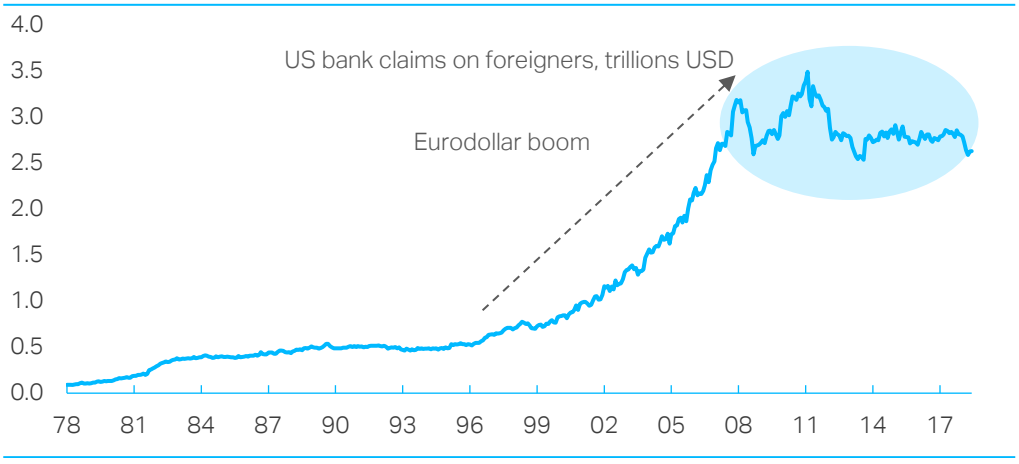
1) A pure offshore dollar transaction: two counterparties from outside the United States engage in a dollar-denominated trade. For example, a central bank from the Middle East might deposit $10 million in a London-based bank, which in turn lends the funds to a Brazilian oil importer;

2) Round tripping: This is the opposite of a pure offshore transaction, since both sides of the transaction are residents in the US but the offshore market serves as the balance sheet through which the funds loop from the domestic economy back to it. In the early 2000s, for example, euro-area banks invested heavily in US asset-backed securities and subprime debt using funds they secured from US money markets.

3) Net international lending through offshore markets: For example, US residents might deposit dollars in London, which are then used by a British bank to lend to a company in France. Or an American company might borrow dollars that were placed offshore by non-US residents.

Among these three transactions, only the third type would show up in a participating country's current-account position. The first two, which are classic Eurodollar transactions, involve gross capital flows but not 'net' flows – dollars move from residents to residents, or non- residents to non-residents. This explains how European banks built up such large exposure to US subprime – 'the global banking glut' – without running a current-account deficit. In aggregate, the euro area had a broadly balanced trade position in 2007, so if officials wanted to monitor these activities, they needed to follow gross capital flows, not net trade flows. While we don't know the exact size of the Eurodollar market, especially when you include wholesale funding and derivatives, BIS data suggests it grew rapidly until 2008, creating a huge amount of global liquidity (see Chart 1).

Chart 5 : Eurodollar decay



Source: US Treasury (TICs)

Why does this matter?

Fair question. The problem is that the banking part of the Eurodollar market, which expanded massively until 2008, creating a global credit boom, has been in a state of decay since the subprime bubble burst. In part, this reflects what Jeffrey Snider calls the 'internal consistencies' of the pre-2008 banking model. Global banks, which relied on ever-increasing leverage, engaged in a number of activities that proved unsustainable. But just as important, the authorities have introduced much tougher rules, which have squeezed banks' balance sheets. Basel III regulations came into force in January 2015, around the time investors started to talk about a 'dollar shortage'. Since the eurodollar system was essentially an attempt to avoid previous regulations, it makes sense that tougher new regulations would again threaten its existence. And as regulations have tightened further, clear strains have emerged – raising alarm in some quarters.

2. DOLLAR STRAINS

Many of our clients have become concerned about dollar funding pressures over the past 12 months, particularly as the Federal Reserve is now withdrawing dollar liquidity more aggressively by stepping up its QT programme. Indeed, investors suddenly seem far more interested in money market plumbing, asking detailed and technical questions about what QT means for the global banking system (thanks Zoltan!). Investors are particularly focused on two problems they associate with Fed QT:

1) US banking reserves becoming 'scarce' and what this might mean for short-term interest rates in the United States;

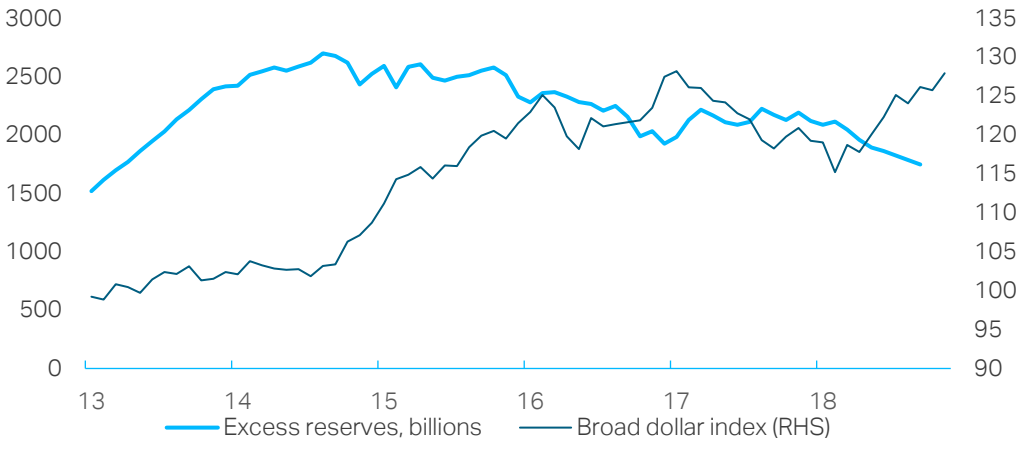
2) What the removal of American bank reserves might do to dollar funding conditions outside the United States and the resulting dollar shortage.

The two issues are related, but also quite distinct. Let's consider each in turn.

'Scarce' US reserves

Quantitative Tightening is QE in reverse. The Federal Reserve allows the bonds on its balance sheet to mature. The Treasury must either repay the principle on these loans or issue new debt. Either way, both the Fed's assets and liabilities will shrink and the policy removes reserves from the monetary system. (Because either taxes go up or, as has been the case in 2018, somebody buys the new Treasury bills with cash, which withdraws money from the banking system.) If we believe the official measures of 'excess reserves' in the United States, Fed QT shouldn't make a big difference – after three rounds of QE, the banks in aggregate hold far more reserves than they need. Yet, QT has already been associated with a modest rise in short-term interest rates, so some commentators believe reserves are already becoming scarce. In the extreme, there are even warnings that the Fed is 'losing control of interest rates'.

Chart 6 : 'Excess' reserves at US banks

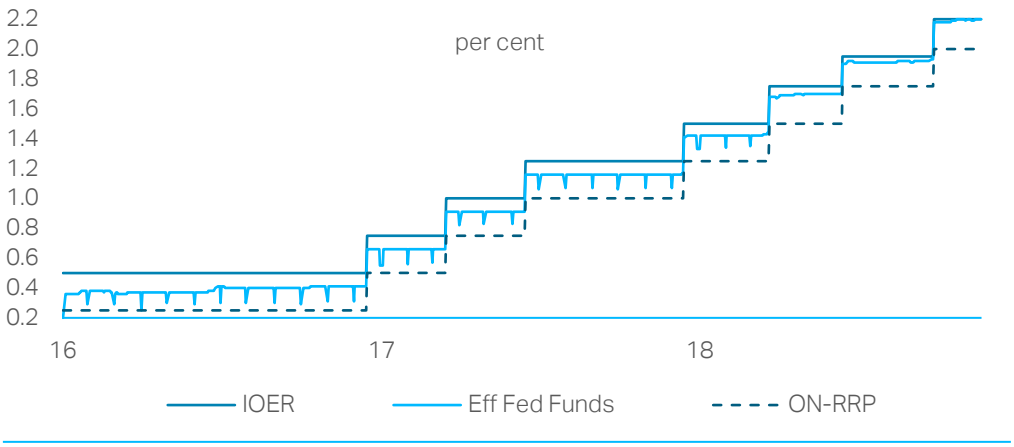


Source: Federal Reserve

Remember the Federal Reserve changed the way it operates monetary policy during the financial crisis. Before the crash, it set short-term interest rates by keeping reserves scarce. The central bank would hit its target for the funds rate by manipulating the supply of overnight funds (unlike e.g. the Bank of England). But once the Fed started QE, this mechanism no longer functioned because QE flooded the banking system with new

reserves. So the Federal Reserve devised a new strategy, similar to that used in other countries. It started to pay interest on excess reserves (IOER). This not only prevented overnight rates from falling too far during the recession – the IOER provided a natural floor – it also meant the Fed would eventually be able to raise interest rates even with large quantities of reserves in the system. QE and the IOER killed the federal funds (FF) market. In fact, since Congress excluded the Government Sponsored Enterprises, the FF market became a place for the GSEs to park overnight cash, earning a non-zero interest rate. Foreign banks were willing to pay the GSEs a positive interest rate, but below the IOER.

Chart 7: Short-term US interest rates



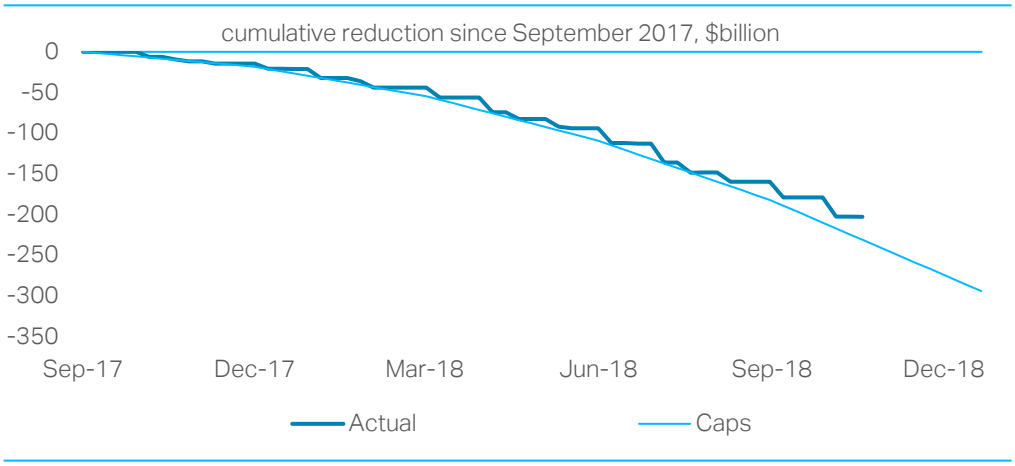
Source: Federal Reserve

Under the new regime, interbank lending basically disappeared – domestic banks had more liquidity than they needed – and the effective Fed funds rate traded below the rate on excess reserves. Now the IOER-FF spreads is narrowing (Chart 7), some people think this means reserves are already becoming scarce. The authorities don't share this view, as several recent speeches by Simon Potter – who runs the Fed's SOMA – explains. Potter accepts that the relationship between bank reserves and interest rates is likely to steepen once the Fed's balance sheet passes a certain threshold, but his analysis suggests they are still operating on the 'flat' part of the curve. He provides a list of developments he would need to see to change his mind on reserve scarcity, including a (i) surge in the amount of borrowing at above IOER rates and (ii) a day-to-day relationship between the stock of reserves and overnight interest rates. Since these things are not yet happening, Potter thinks the narrowing in the FF/IOER spread reflects technical influences, notably massive Treasury issuance in 2018 (which pushed GSEs into FF).

Even if Potter is correct, the debate about reserve scarcity highlights an important point – nobody knows how much of the reserves in the banking system are actually 'excess'. This is partly because it is the distribution of reserves that matters for short-term lending rates, not the overall level. A few small banks with low levels of reserves could push the FF higher. But more significant, the old rules that determined 'excess reserves' are no longer relevant. Banks are now constrained not by traditional reserve requirements (Regulation D), but rather by new Basel III restrictions. Today the appropriate amount of reserves depends on the complex interplay of various regulations and features of the new system, including an apparent institutional reluctance to borrow from other banks. This makes it almost impossible for officials to judge the "right" level of reserves.

The Liquidity Coverage Ratio (LCR) is arguably now the most important constraint on banks' behavior, forcing them to hold a sufficient quantity of high-quality liquid assets (HQLA). While in principle QT replaces one highly liquid asset (reserves) for another (Treasury bills), these assets are not necessarily equivalent from a regulatory point of view. Reserves are especially liquid, since they can be used to make payment at any time without the need to sell or finance another asset, which can be costly in a stressed environment. And one area where QT might impose an additional cost of banks is in the provision of dollar liquidity overseas if, for example, US banks were using FX swap markets to lend their reserves to foreign institutions. This takes us back to the potential link between Fed QT and the global 'dollar shortage'.

Chart 8: The Fed's US Treasury holdings



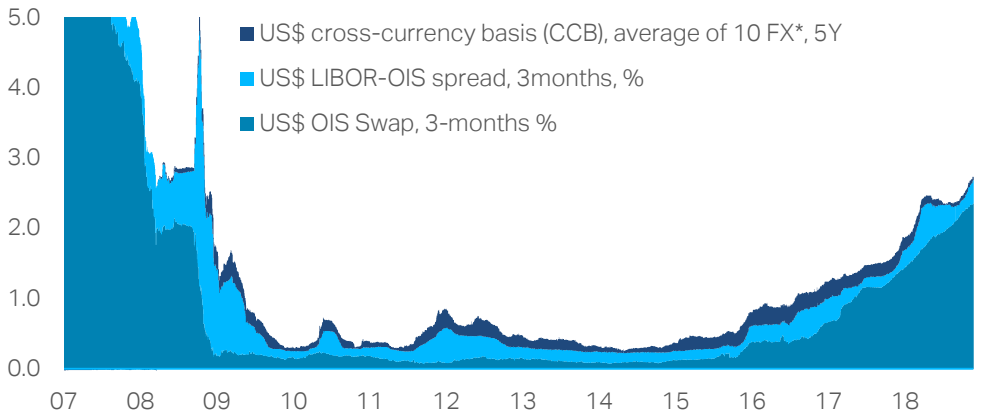
Source: New York Fed, TS Lombard

QT drains global dollars?

Former Fed official Zoltan Pozsar has written extensively about global dollar liquidity over the past few years. He has examined in detail how the large international banks have changed their behaviour since 2008. At the most basic level, Basel III has made it more costly for banks to move dollars across borders, including among their own foreign subsidiaries. Interbank lending used to be limitless and cheap, with arbitrage ensuring parity across various money market rates. But in the new system, interbank lending has disappeared and Pozsar argues that an alternative eurodollar market has developed, a system increasingly centred on large US banks such as JP Morgan that provide dollars to the rest of the world (mainly through FX swaps).

QT arguably makes this eurodollar system more costly because US banks will incur additional charges – and their various Basel III metrics will deteriorate – if they try to lend US government paper (from QT) rather than lending their reserves. Poszar also shows how other regulations, particularly the 2016 Money Market Fund reforms, have gradually tightened global dollar funding, leading to the periodic stress and strains we see in a variety of price indicators (such as the cross-currency basis, Chart 10). US MMFs used to be big buyers of foreign banks' commercial paper, providing dollar liquidity offshore. But the reforms discouraged this activity, forcing foreign banks to rely on more costly forms of borrowing such as repo. Recently, US tax changes have made the situation even more complicated and costly, encouraging US companies to repatriate their foreign earnings to the US and potentially upsetting another supply line for global dollars.

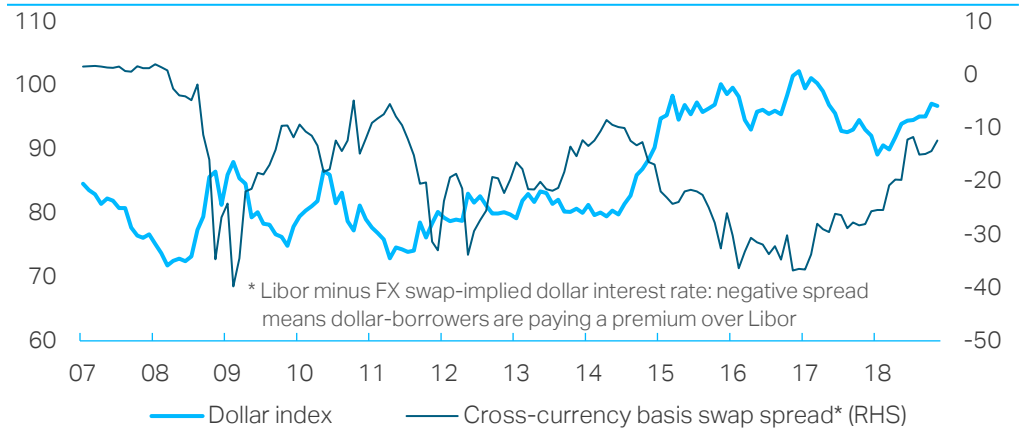
Chart 9: USD funding costs



Source: Bloomberg, *AUD, CAD, CHF, DKK, EUR, JPY, GBP, NOK, NZD, and SEK; signs reversed

It is easy to understand why the 'dollar shortage' causes anxiety for investors. During the 2008 financial crisis, sudden scarcity of US currency became an important propagation channel. European banks, for example, had built a $1.2 trillion funding gap ahead of the crash . When conditions in money markets deteriorated, there was a scramble for dollars and 'run' on the global banking system, causing a vicious cycle of deleveraging and asset firesales. And we showed in Section 1 how the dollar has become even more important since then, with USD strength now associated with a wider contraction in global trade and a tightening in international financial conditions. Any structural shortage of dollars would become materially worse during another global downturn and/or banking crisis. And the rising dollar exchange rate would compound the pain for everyone.

Chart 10: USD and 'dollar shortage'



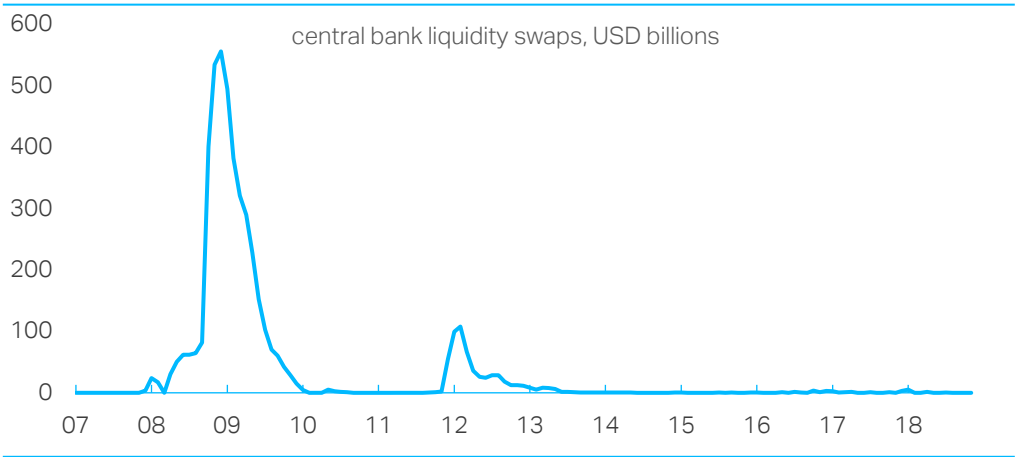
Source: Bloomberg, TS Lombard

QT threat exaggerated?

While it will be important to monitor dollar funding conditions, both the main problems associated with QT – scarce US reserves lifting short-term interest rates, and the global dollar shortage – seem reasonably treatable. If the Fed started to 'lose control of interest rates', it would end QT early and provide new liquidity to banks. Since officials do not know the true level of excess reserves in the system and have not said when they will end QT (or even expressed a preference for the size of their balance sheet), ending the programme

early would not damage their credibility. A shortage of global dollars would arguably cause bigger problems, especially as it falls outside the Federal Reserve's traditional remit. There has always been a co-ordination problem at the heart of the Dollar Standard because the Fed has a global reach but only domestic responsibilities. Yet most foreign banks now have access to Fed swap lines, which were not available in 2008. While access to this funding carries an obvious stigma, banks could tap this market if they needed to.

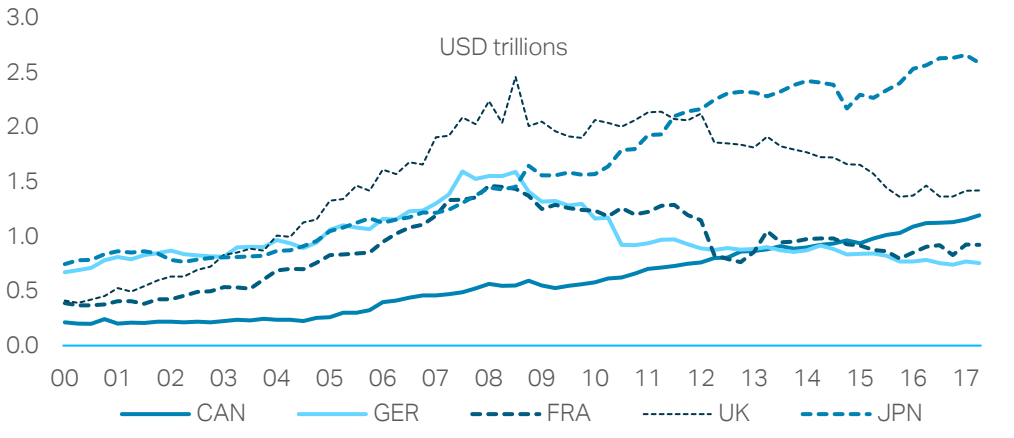
Chart 11: Fed Swap lines



Source: FRED database

Perhaps the bigger question about the 'dollar shortage' in banks is whether this analysis misses the point. Dollars are scarce because banks have not engaged in the activities they were doing in the early 2000s – this was, after all, the whole point of the Basel III regulations. European banks, which provided massive dollar creation until 2008, have shrunk their balance sheets aggressively. We can see this in Chart 12, which shows how the main international banking sectors have reduced their dollar assets over the past decade. But there is an important exception – Japan. While European banks have scaled down their dollar business, the Japanese have rapidly increased their USD exposure.

Chart 12: Non- US bank's USD assets

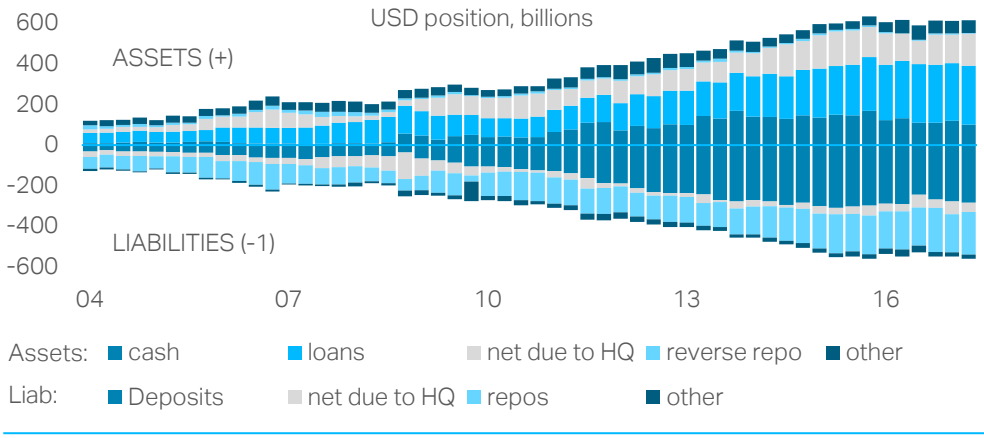


Source: Aldasoro, Ehlers and Eren from the BIS (2018)

If you are interested in the comparison between Japanese and European banks, it is worth reading this paper by Aldasoro, Ehlers and Eren from the BIS (2018). The authors show that while Japanese banks have taken on greater exposure to American assets, leaving them with large USD funding needs (and potential asset-liability mismatches), European

banks have reduced their dollar business and instead focused on short-term arbitrage activities, such as lending via repo markets to the Japanese or playing the difference between the Federal Funds rate and the IOER by holding large dollar reserves at the Fed. Interestingly, the fact that the European banks must also curb their lending to the Japanese at the end of each quarter to improve their Basel III metrics is one of the main reasons we see periodic spikes in dollar funding costs.

Chart 13: US branches of Japanese banks



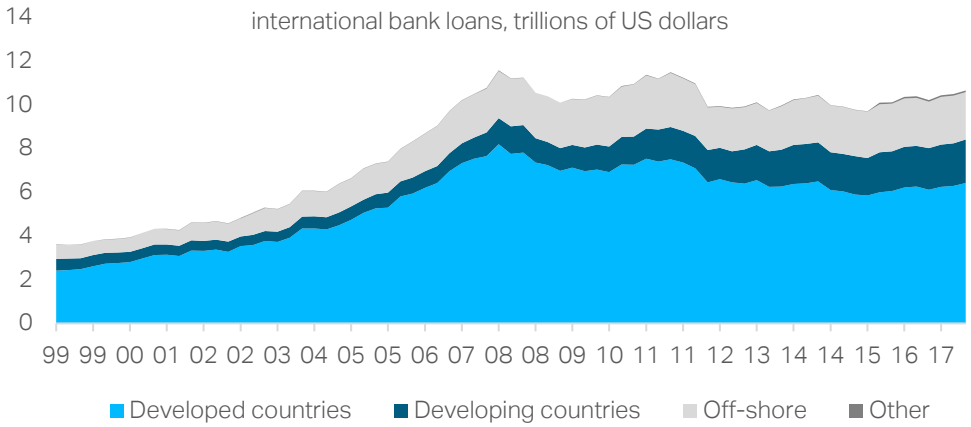
Source: BIS reproduced by TS Lombard

A Japanese Lehman?

If global banks are going to run out of dollars, Japan is the obvious risk. Their net exposure is actually similar to European banks before the subprime crash. But their balance sheets look more stable. Rather than holding complicated illiquid assets that are turning toxic, the Japanese seem to have been playing a simple carry trade. They sold their JGBs to the Bank of Japan and then purchased higher yielding US agency debt, Treasurys and corporate bonds. In a scramble for dollars, Japanese banks would presumably be able to sell these securities to raise funds, without triggering a 2008-style collapse. And while recent reforms have made it more costly for Japanese banks to secure USD funding, they have still managed to do so. The 2016 MMF reforms, for example, made it harder for prime funds to buy foreign banks' commercial paper and CDs, removing a crucial source of dollar liquidity for Japanese banks. But US government funds were still able to engage in repo with foreign banks, becoming an alternative source of USD funding.

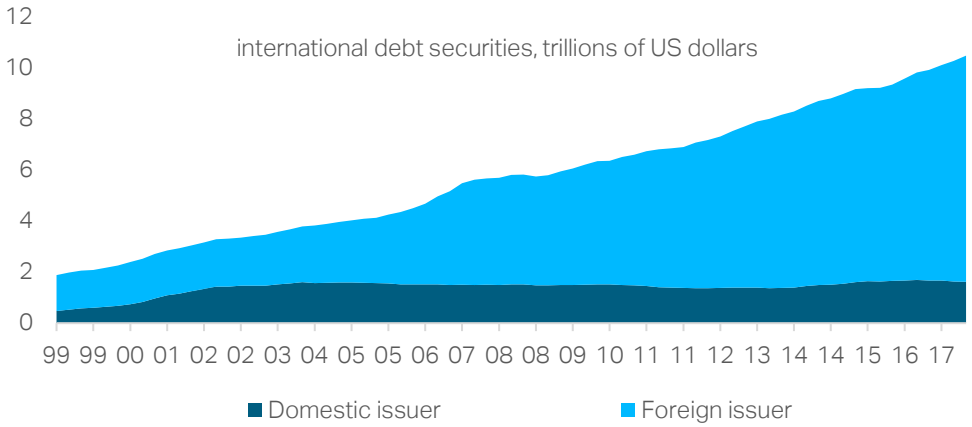
To reiterate the main message of this section, the Eurodollar banking system has been in decay since 2008, leading to a (sort of) structural shortage of US dollars. This was largely by design – it was the whole point of the Basel III reforms. Fed QT has the potential to make these problems worse, though central banks have various tools they can use to keep borrowing costs where they want them to be. Perhaps the more important point is that by focusing on the dollar banking shortage and the intricate workings of global money markets, investors might be missing the more important story – the traditional Eurodollar system has not been the main provider of global USD credit since 2008.

Chart 14: The old eurodollar system is broken



Source: OECD Economic Outlook 2018

Chart 15: The new eurodollar system

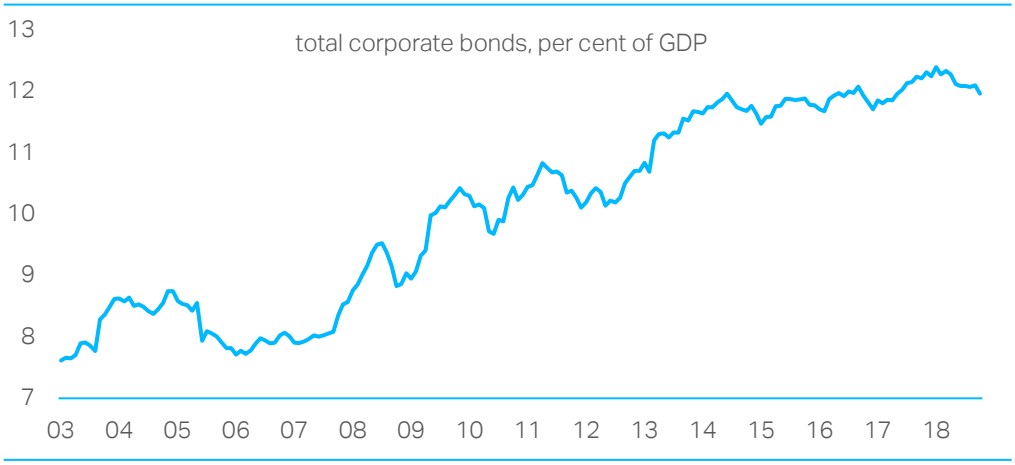


Source: OECD Economic Outlook 2018

3. UNSTABLE STANDARD

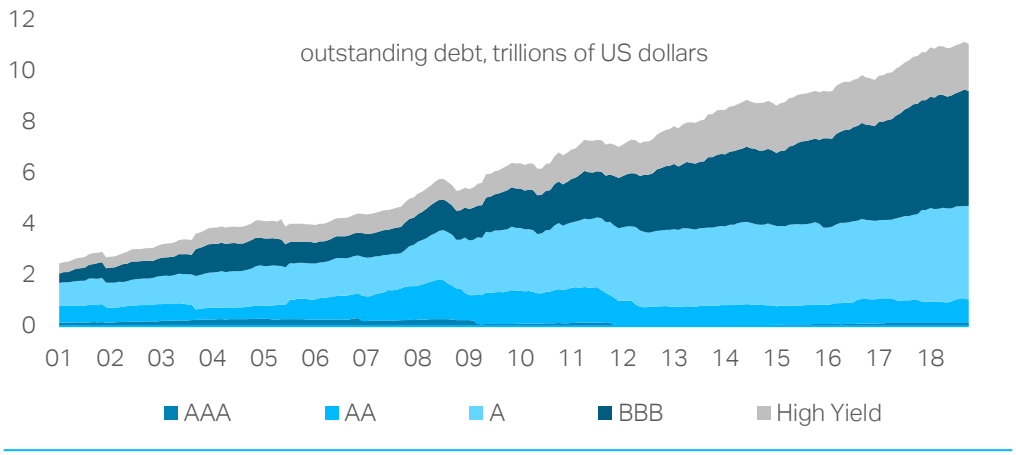
To oversimplify and generalize, the early 2000s credit expansion was largely about banks lending to households, albeit in increasingly complex and sophisticated ways. To the extent a new credit bubble has emerged since 2008, it has involved companies borrowing from dollar credit markets. EM borrowers have been an important part of this story but this is also a trend we see across most developed nations. Developed market bond issuance has surged since the subprime crisis, with the market roughly doubling in size as a share of GDP. It is easy to understand what has driven this. With interest rates low and in some cases negative, investors have been searching for yield, prepared to take on more risk in order to secure a higher return. With the large banks reluctant to lend and institutional investors competing for yield, bond issuance has provided the main source of funding for both EM and DM corporates. Much of this issuance has occurred at the lower-end of the investment grade spectrum.

Chart 16 : Global corporate bonds



Source: Barclays indices, TS Lombard estimates

Chart 17: DM corporate bonds



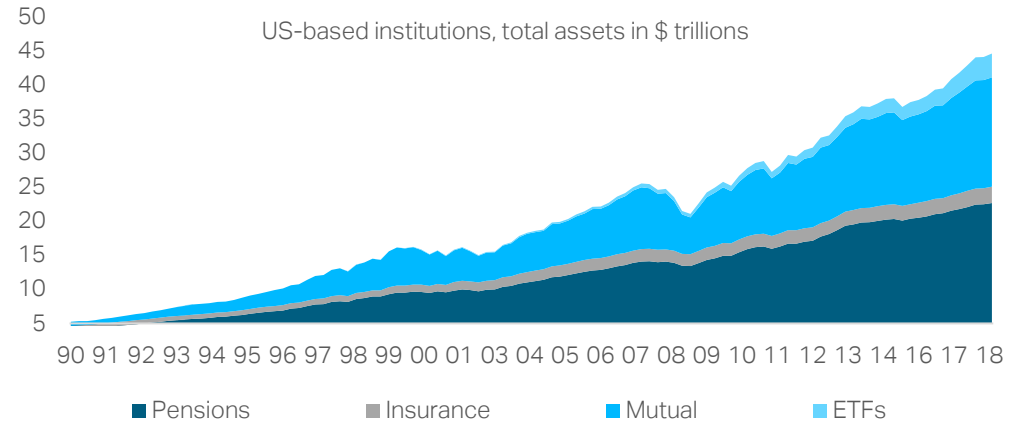
Source: Barclays Bloombeg indices

When the tide goes out

With central banks tightening policy and bond yield rising, the risk now is a sudden reversal in the global search for yield and a sharp decline in asset prices. Fed QT is unhelpful in this regard, but it is not the main story. With the ECB and Bank of Japan also winding down their QE programmes and the US Treasury issuing huge amounts of new debt, there are currently a variety of forces pushing long-term interest rates higher. And it is this move in global real interest rates that is potentially destabilizing. Even if the unwinding in the search for yield does not carry the same systemic consequences as the bank-centric collapse that took place in 2008, it could still damage the global economy and lead to further destruction in asset markets. The problem looks most acute in areas such as leveraged loans, where the institutional investors who have bought these

products could face severe liquidity problems, leading to asset firesales and classic 'overshooting' in prices (see this previous macro picture for more).

Chart 18 : Buyside boom

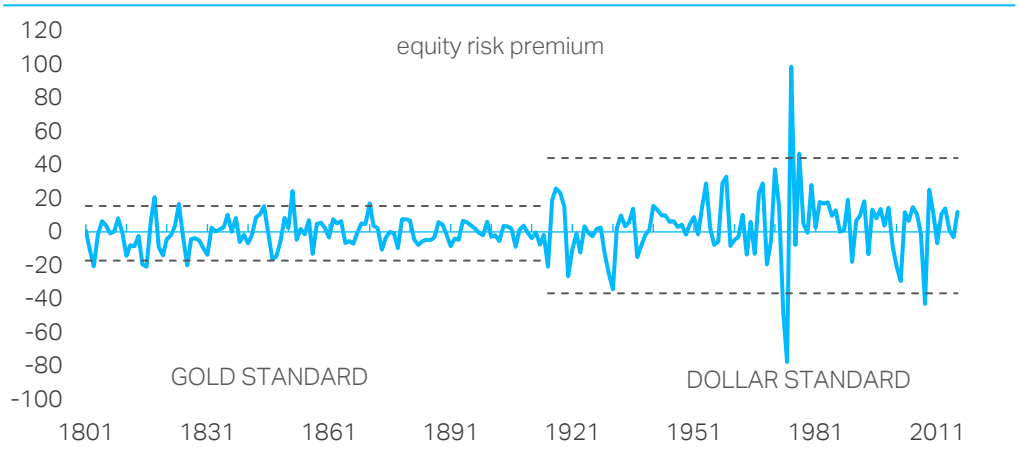


Source: Federal Reserve, TS Lombard

What next for the Dollar Standard?

The problem with another financial crash, even a non-systemic one, is that central banks appear to have limited ammo to get the global economy going again. We can also think about this problem in the context of the wider Eurodollar system. The Dollar Standard continued to function after 2008 only because dollar credit creation migrated to capital markets. Tougher regulation and past excesses prevented the banks from playing their traditional role. Unless these regulations are lifted, it is hard to see the large banks resuming their pre-2009 role. Meanwhile, if corporate bonds are the epicenter of the next crash, it might be hard for central banks to use QE to reignite a new search for yield. In short, we could be facing a sort of Eurodollar liquidity trap. You can understand why some commentators are beginning to ask whether the Dollar Standard is doomed.

Chart 19: Equity risk premium

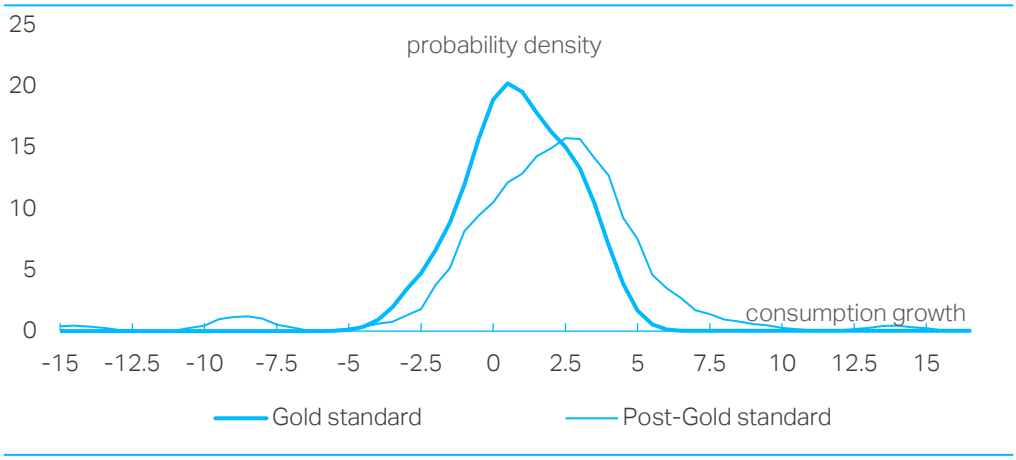


Source: UK data from Bank of England, dashed line is two standard deviations

While the modern Dollar Standard has generated unprecedented levels of wealth and prosperity, there have always been concerns about its long-term stability. Some believe the system is vulnerable, generating frequent and increasingly dangerous cycles in asset prices. In a recent speech, for example, the Bank of England's Gertjan Vlieghe showed

how the end of the Gold Standard greatly increased the risk of extreme negative outcomes, raising the premium on safe assets and lowering equilibrium interest rates. Chart 4, taken from his speech, shows how the distribution of UK consumption shifted between the two regimes, resulting in 'fatter tails'. Vlieghe blamed the increasing role of bank intermediation and leverage. Others, including Claudio Borio at the BIS, argue central banks are the problem, particularly the Fed's 'asymmetric' response to the credit cycle.

Chart 20: Tail risks higher in Dollar Standard



Source: UK data from Bank of England

This debate goes back a long way. Jacques Rueff, former Bank of France deputy governor and economic advisor between 1923 and 1969, warned about the 'double pyramid of credit' in the modern Dollarized system. During the Gold Standard era, credit expansions were a zero sum game – if the US experienced a large expansion in credit and a trade deficit, it would leak gold to the rest of the world. While this would ease monetary conditions elsewhere, it would tighten US conditions. But this mechanism broke down in the Dollar Standard. Other countries gained dollar-denominated reserves, which they could redeposit at the Federal Reserve. US monetary conditions remained excessively loose and credit could boom everywhere simultaneously. Are we now approaching the end of this system? Even if we accept the limits of the Dollar Standard, it is not clear what could replace it. The euro has never really challenged dollar supremacy and given continued political tensions and worries about EMU stability, this shift now seems unlikely. Talk of the RMB taking over also looks premature, particularly as the Chinese authorities are struggling to deal with their own domestically-generated credit splurge.

We haven't really mentioned the situation in China – this macro picture is already far too long – but suffice to say Chinese credit tightening has had a major impact on global activity in 2018, even if the 'liquidity' effects are mainly domestic. So instead of a monetary response, it seems likely that the next global financial crash will require fiscal remedies. If asset prices drop and central banks are unable to revive their economies with new rounds of QE – or worse, the politicians blame central banks for creating the bubbles in the first place – we should expect fiscal policy (including various forms of helicopter money) to take over. After all, this has been the supercycle in macro policy over the last 100 years – push monetary policy to the extreme, then do the same with fiscal policy in an effort to inflate private debts away.

Bottom line

Investors are obsessed with money market 'plumbing', looking for evidence of a 'dollar shortage' in global banks. After all, the dollar is more pivotal to the global financial system than ever before and the Federal Reserve is now tightening monetary policy, including via

the direct withdrawal of USD liquidity. But this obsession with quantity-based measures of liquidity and the behaviour of the large banks, misses the point. The Eurodollar system (i.e. global dollar credit) migrated to capital markets after 2008, driven by low interest rates and a search for yield. While QT-related problems should be easy to fix (but Japanese banks are the main fault line), tighter global policy still has the potential to cause serious damage to asset prices and potentially even the global economy. While not 'systemic' and unlikely to cause a crash of 2008 proportions, there is a question about whether the Dollar standard is reaching its limits. A Fed rate pause in early 2019, which looks increasingly likely after Powell's recent comments, would postpone these problems – but not eliminate them. And when the next crash occurs, policymakers might have to find new solutions.

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