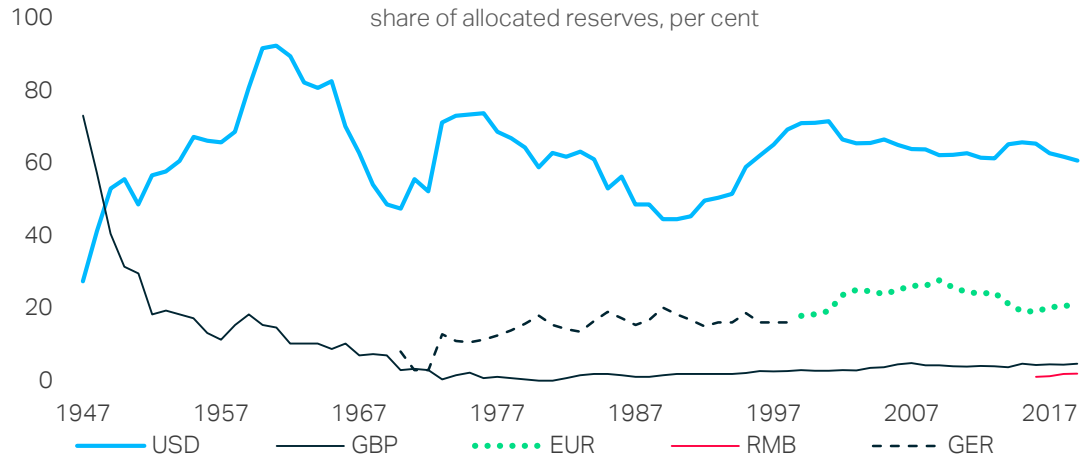
Macro Picture

DOLLAR DESCENT

Dario Perkins

Swings in the US currency amplify the global financial cycle. While easier Fed policy should alleviate the worst of the "dollar shortage", the modern Dollar Standard has created profound vulnerabilities in the global financial system. There is no immediate threat to US dominance, but new digital currencies – esp. CBDC – could ultimately challenge the dollar's global leadership.

Chart 1: The Dollar remains unrivalled – but for how long?



Source: IMF, TS Lombard, "International currencies – past, present and future"

USD DOMINANCE

Swings in the US currency have amplified the global financial cycle since 2008, as the critical Eurodollar system migrated from banks (now heavily regulated) to capital markets. Periods of USD weakness are increasingly linked to faster world trade, improving risk appetite in markets ("risk on"), stronger corporate balance sheets and increased cross-border lending capacity.

DOLLAR FROWN

The Fed's new monetary strategy helps to alleviate a structural USD "shortage". But the Dollar Standard's underlying flaws and macro vulnerabilities remain. These include: (i) the pervasive link between leverage and low interest rates; (ii) the dollar as an amplifier of US-global divergences; (iii) Reoccurring coordination failures; and (iv) Trade imbalances as a source of populism.

MONETARY DISRUPTION

Whenever the dollar depreciates, there is a bull market in gloomy predictions about the end of the dollar's dominance. Dollar weakness actually eases existing vulnerabilities. Yet, for the first time, we are seeing the development of a promising alternative to the Dollar Standard. The creation of Central Bank Digital Currencies (CBDCs) could have profound monetary implications.

DOLLAR DESCENT

After the 2008 crisis, some pundits warned about the "inevitable" end of the Dollar Standard, the post-World War II international monetary system. Even some policymakers, frustrated with US supremacy, searched for alternatives. Yet, despite these gloomy predictions, the dollar has become even more dominant during the past decade. Much of the world continues to invoice its trade in the US currency, while the dollar remains the critical source of funding for complex international supply chains. Perhaps the most significant change has been the migration of the "Eurodollar system" – i.e. global credit creation – from the banking sector to capital markets. New regulations diverted this activity away from banks, while there was an insatiable demand for USD denominated securities among institutional investors. It is not an exaggeration to the say, in financial markets at least, the 2010s was the story of a powerful search for yield, as policy divergence between the Federal Reserve and the rest of the DM world pushed investors into USD securities (domestic and international, especially EM). As its influence increased, America's exchange rate became a critical barometer of global activity and risk appetite. USD depreciation was tied to faster world trade, stronger international balance-sheets, improved cross-border lending and rising asset prices ("risk on"). In short, the dollar has become a "financial amplifier".

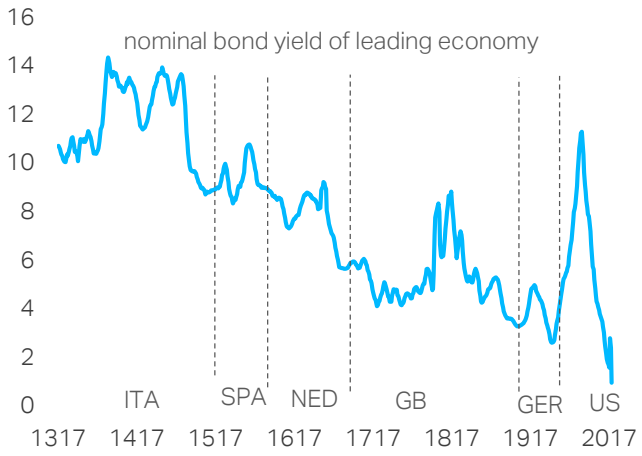
The authorities have already addressed the worst of the "dollar shortage", with the Fed expanding its swap lines and adding reserves to the US banking sector (a critical source of Eurodollars). Just as important, the FOMC has also adopted a new monetary strategy, which should ensure less extreme policy divergences with the other central banks. The net effect of these actions is to shift the distribution of the USD lower, turning the "dollar smile" into a "dollar smirk". Still, a deeper analysis of the Dollar Standard highlights continued flaws in the modern monetary system, which create a number of sources of fragility. These include: (i) a dangerous feedback loop between low interest rates and rising debt levels, since leverage makes the system more unstable, which in turn increases the demand for safe assets (leading to low rates); (ii) The US currency amplifies macro divergences between the United States and the rest of the world, rather than narrowing those divergences; (iii) There is a coordination problem at the heart of the Dollar Standard – the US authorities only have a domestic mandate, but their currency has global implications; (iv) Though the relationship is fuzzy, US financial dominance requires persistent US current account deficits – but these are harmful to a proportion of the US population, leading to populism (the "exorbitant privilege" can become an "exorbitant burden").

Despite structural vulnerabilities, there has never been a genuine alternative to the Dollar Standard. And perversely, periods of dollar weakness – which is when pundits issue their warnings about the currency's demise – can alleviate the underlying problems. Yet something important is happening in monetary economics, which could have profound long-term consequences, perhaps even overthrowing the US dollar. Central banks are developing new digital currencies (CBDC), which could transform the way they conduct monetary policy and even provide the basis for a new international monetary system. CBDC would give households and businesses direct access to central banks' balance sheets, which could open up fascinating policy options (depending on how they decide to operate this new system). Obviously there are risks associated with "monetary disruption" – some expect the abolition of cash, the possibility of deep negative interest rates, the annihilation of the banking sector, unprecedented fiscal-monetary coordination and unprecedented state "control" – though we think the authorities will proceed cautiously. But it is not a stretch to imagine the creation of a new international payments system, which could lead to new digital trade invoicing, perhaps a CBDC version of Libra. Some officials are already pushing this idea, a radical SDR, or a modern version of Keynes' bancor. Keynes lost the argument in the 1940s, but perhaps he will ultimately be proved right.

1. US DOMINANCE

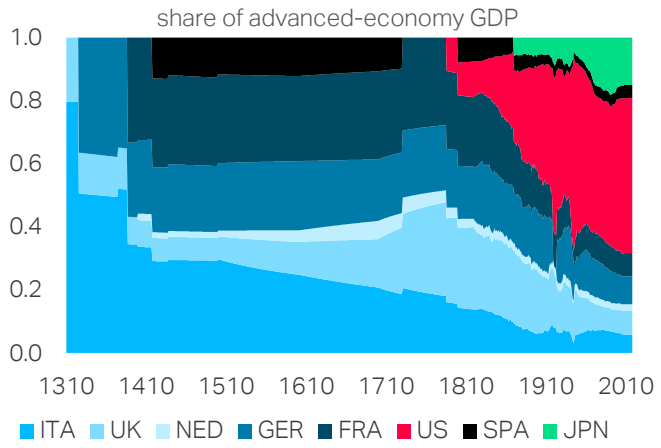
During 2020 – as it typical in a global crisis – there has been lots of talk about whether the US could lose its status as the world's dominant reserve currency. Writing in the FT, the always cheery Stephen Roach argued the US "had squandered its exorbitant privilege", with "the dollar now vulnerable to a sharp correction". "A crash is looming", he warned. Yet history shows the transfer of international leadership among currencies is a rare event, usually associated with wars or military conquests. Chart 2 plots the global reserve interest rate, based on Paul Schmelzing's historical statistics. His data start in 1311 with the financial and military dominance of the Northern Italian cities, especially Venice, which ended with the battle of Agnadello. Machiavelli noted Venice had lost "in one day what took them eight hundred years to conquer". Thereafter we have the Spanish (plus Spanish-Portuguese union), the Dutch, and the British regimes, each ending with military conflict. Most of these transitions were geopolitical, including Amsterdam's lost empire in the late 1700s. Yet the Dutch episode is especially fascinating because it includes the collapse of the East Asia Company and central-bank insolvency[1].

Chart 2: History of monetary dominance



Source: BoE working paper (available here)

Chart 3: The world's leading economies



Source: BoE working paper (available here)

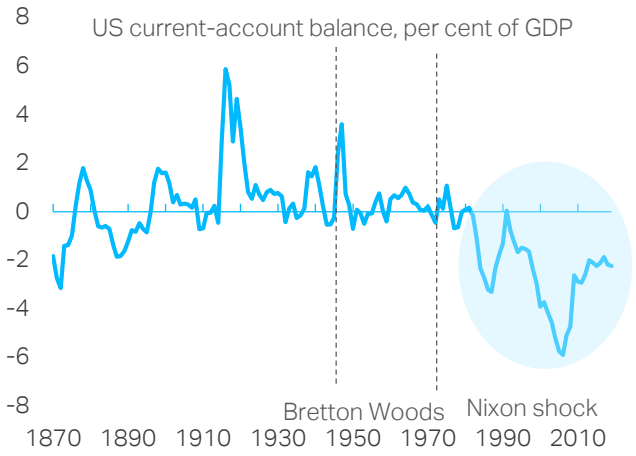
Dollar standard began after WW2

The current Dollar Standard started with the 1944 decision to put America's currency at the centre of international trade. Under the Bretton Woods system, the dollar became the world's reserve currency, together with fixed exchange rates and full convertibility into gold. From the start, there were worries about the sustainability of the system, since America was running a sizeable trade surplus, which created a "shortage" of USD. As a solution, the US recycled these surpluses by offering generous grants to fund post-WW2 rebuilding – the 1947 Marshal Plan. The experience was an early reminder that currencies with reserve status can face a conflict between domestic interests and those of the wider global community. Economists call this '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

[1] This was a rare occasion where the central banks negative "net equity" had a serious bearing on its ability to conduct monetary policy. We missed this in our previous Macro Picture, but the BIS has now plugged this gap (see here).

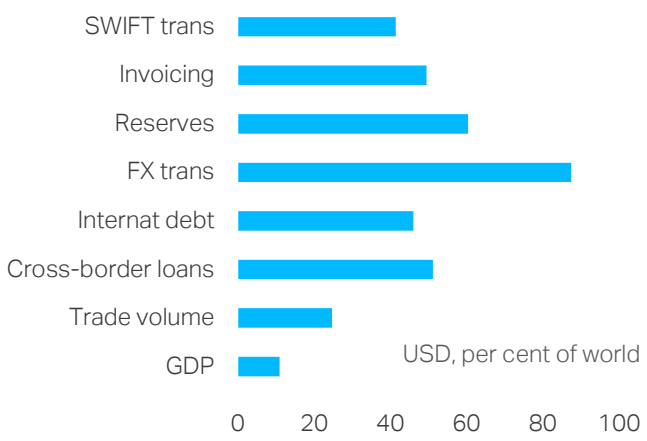
unilateral 1971 decision to 'suspend' the convertibility of the USD into gold. But this didn't end the global dominance of America's currency – it continued to grow, as did the US trade deficit.

Chart 4: US must run persistent deficits



Source: MacroHistory database, TS Lombard

Chart 5: USD dominance



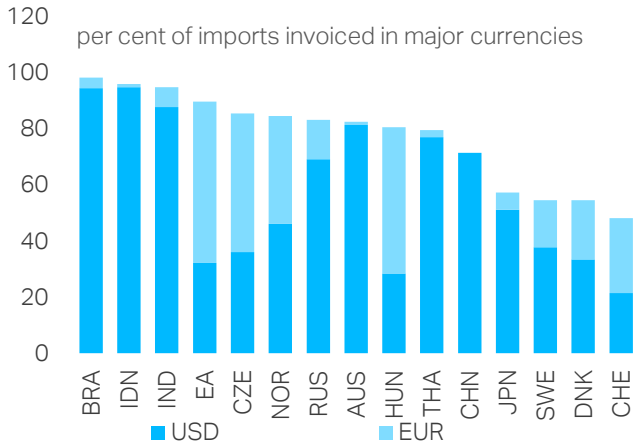
Source: "USD funding – an international perspective" (BIS)

The dollar is "special"

After decades of "financialization" and "globalization", the dollar now occupies a special role at the middle of the international financial cycle, with the Federal Reserve effectively the "world's central bank". Today, the dollar's influence works through several main channels:

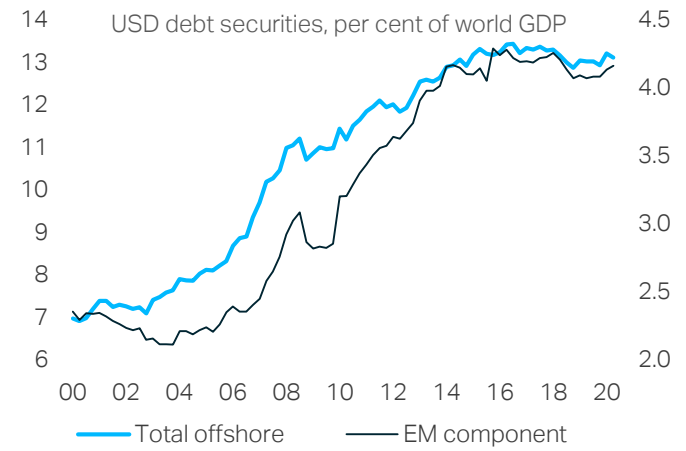
(i) Dollar invoicing: Economists traditionally assumed, when currencies move, exporters keep their domestic prices unchanged and allow their export prices to swing. Their goods become cheaper (or more expensive) overseas and consumers respond accordingly – the Mundell-Fleming model. But we now know this 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. 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.

Chart 6: The world invoices in USD



Source: OECD Economic Outlook

Chart 7: The world borrows in USD



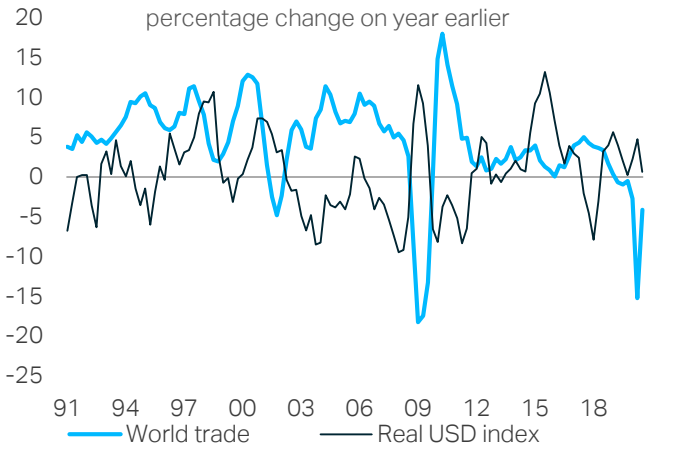
Source: BIS, OECD, TS Lombard

(ii) Risk-taking: The dollar is the main funding currency, with USD-denominated debt growing rapidly over time. Avdiev, Bruno, Koch and Shin show dollar strength is associated with falling cross-border bank lending and lower capex, 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 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.

(iii) 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 since the 1990s, the dollar has become even more important as an international funding currency, strengthening its link to global economic activity. GVCs further complicate exchange-rate transmission, as we saw after the UK's Brexit vote.

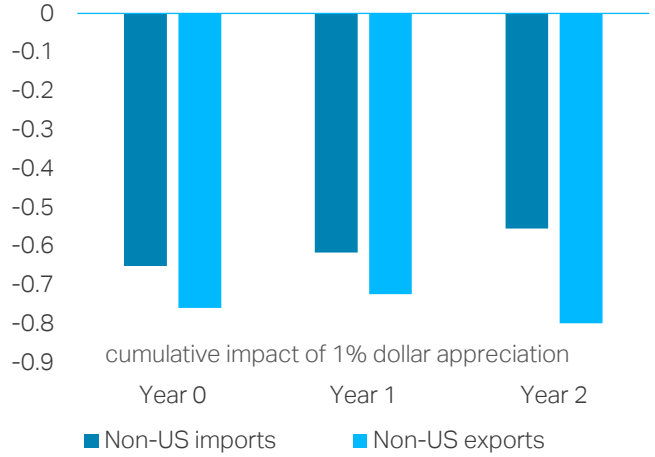
(iv) Global asset prices: Dollar funding seems to have an additional impact on global asset prices, independent of what it means for economic growth and inflation prospects. The latest research from Torsten Ehlers, Mathias Hoffmann and Alexander Raabe, for example, shows how an increase (decrease) in US net capital inflows improves (tightens) US dollar funding conditions for non-US global banks, leading them to increase (decrease) foreign lending to third-party borrowing countries. This induces a synchronization of lending across borrowing countries, which translates into an international synchronization of mortgage credit growth and, ultimately, house prices. And since housing in a critical source of financial wealth and collateral, the wider "spillover" effects could be huge.

Chart 8: Dollar strength hurts global trade



Source: OECD, CPB, TS Lombard

Chart 9: Econometric evidence



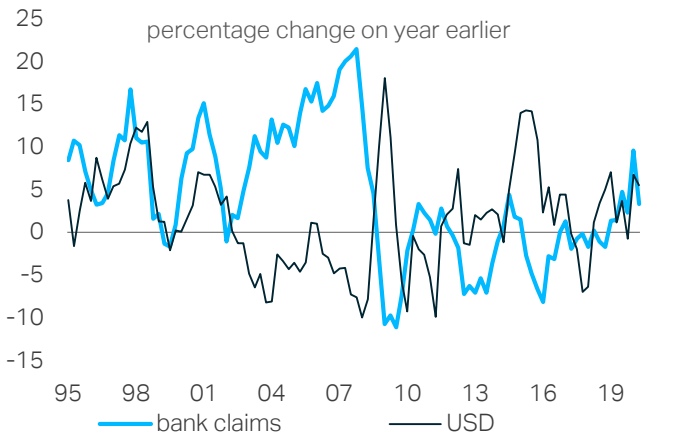
Source: Emine Boz, Gita Gopinath, Mikkel Plagborg-Moller (2017)

Global finance – the "Eurodollar" system

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

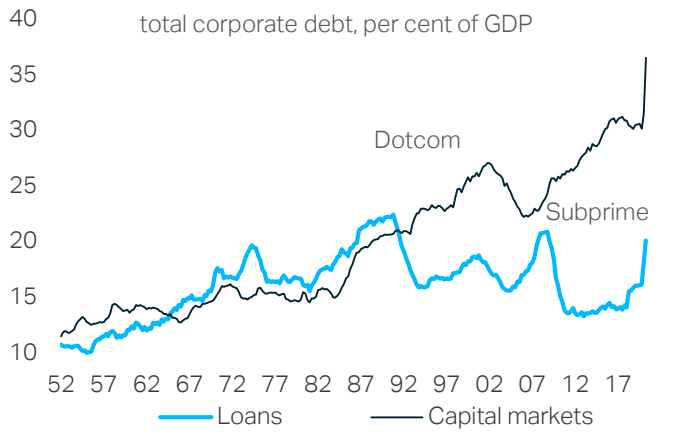
started as a system of bankers' acceptances or IOUs became a fully-fledged offshore dollar system by the late 1950s, giving rise to the term 'Eurodollars'. These were initially USD-denominated time deposits held outside the United States (though not necessarily in Europe). By the 1970s, the system was growing rapidly, as investors tried to circumvent US 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.

Chart 10: Dollar can hurt cross-border credit



Source: BIS, TS Lombard

Chart 11: Yield search inflated US debt



Source: Federal Reserve, TS Lombard

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 offshore USD deposits, global banks' wholesale funding and – increasingly – developments in international capital markets. In short, global dollar credit-creation.

Beyond trade imbalances

One important point about the modern Eurodollar system is that it has made the classic "Triffin" link between the US trade position and the global supply of dollars fuzzier. A 'dollar shortage' is not necessarily a sign that America's trade deficit is too small, though this clearly hasn't helped in recent years, since the US deficit has been smaller than it was in the early 2000s. To illustrate, consider three international dollar transactions that are common in the modern Dollar Standard:

(i) 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 $10m in a London bank, which lends the funds to a Brazilian oil importer;

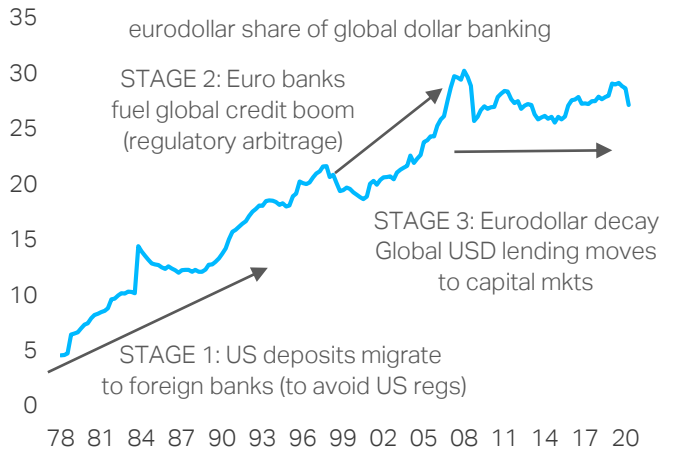
(ii) Round tipping: This is the opposite of a pure offshore transaction, since both sides of the transaction are residents in the US but the offshore market serves as the balance sheet through which the funds loop from the domestic economy back to it. In the early 2000s, for

example, euro-area banks invested heavily in US asset-backed securities and subprime debt using funds they secured from US money markets;

(iii) Net international lending through offshore markets: 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.

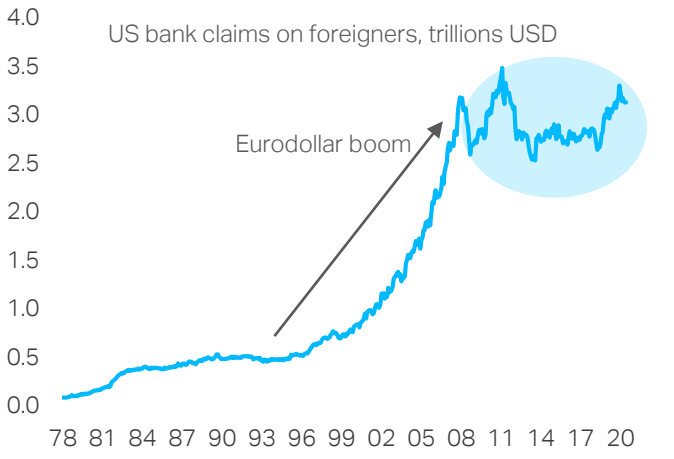
Among these three transactions, only the third type would show up in the participating countries' current-account positions. The first two, classic Eurodollar operations, involve gross capital flows but not 'net' flows – dollars move from residents to residents, or non- residents to non-residents. This explains how European banks built up massive 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 (Charts 12-13).

Chart 12: The Eurodollar banking sector



Source: BIS, TS Lombard

Chart 13: Eurodollar banking decay after 2008



Source: US Treasury, TS Lombard

System evolved in the 2010s – regulations and carry trade

The Eurodollar banking system entered a state of decay after 2008 because global banks could no longer create USD as freely as they had done previously. This was want the authorities wanted, as they introduced new regulations to try to prevent the re-emergence of the fragilities the financial crisis had exposed. Remember, not only had global banks' dollar businesses played a critical role in inflating the subprime bubble, they had also caused acute funding pressures during the most acute phase of the crash, bringing the entire international financial system close to collapse. The new restrictions didn't completely kill the Eurodollar market, but they did create a structural USD shortage among banks, which became especially acute at certain times of the year, typically when the large international lenders engaged in "window dressing[2]". And there were important shifts among the most important players, with the Japanese expanding their

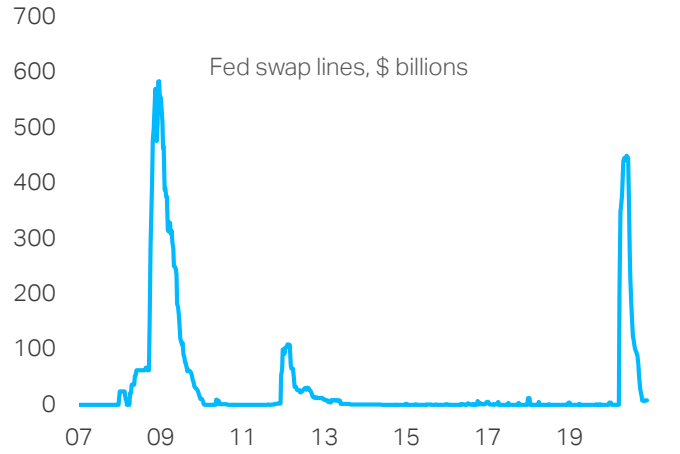
[2] Institutional Investors had obligations in euros and Yen but an increasing share of USD assets, which they needed to hedge. Since banks were no longer able to provide hedging services (new Basel III regulations restricted their balance sheets), investors relied on FX swap markets (around 65% of foreigners' bond purchases were hedged like this), which caused periodic strains in the system – especially when traditional lenders (banks) had to 'window-dress' their exposures, cutting USD lending at the end of every quarter.

dollar activities even as the Europeans withdrew. Yet, the most important Eurodollar story – often missed in all the talk about "dollar shortages" – was the diversion of USD lending from investment banks to international capital markets. This was part of the "search for yield", an insatiable appetite for USD-denominated debt securities among large institutional investors. The Eurodollar market increasingly became a "buyside" story, rather than a "sellside" story.

The search for yield – global USD debt explosion

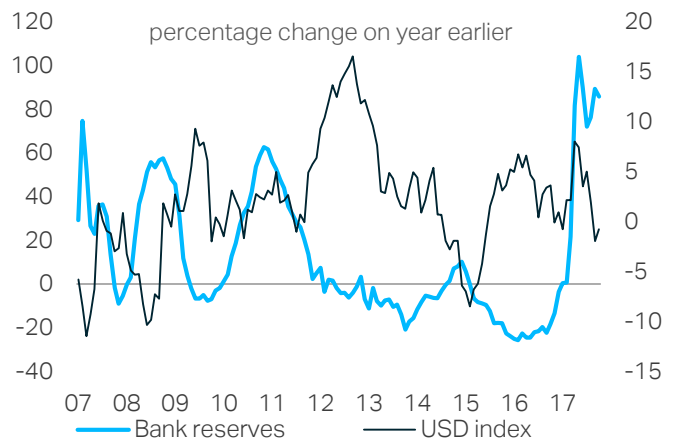
With long-term interest rates at 700 year lows, investors have struggled to make a decent nominal return. The problem is most acute in jurisdictions with negative yields such as Japan, Europe and Scandinavia. So they rotated towards the United States (the developed economy with the highest interest rates) and the Emerging Markets. But switching currency wasn't enough, investors also moved along the credit spectrum, into riskier and less-liquid securities. This insatiable search for yield wasn't just a financial story – it also created clear macroeconomic vulnerabilities, especially in the form of record corporate leverage. US and EM companies took advantage of cheap borrowing costs to stay afloat in a world of low margins, or to engage in financial engineering (stock buybacks, M&A and leveraged buyouts). Corporate debt surged, particularly at the lower end of the investment grade (which was especially appealing to institutional investors) but also in high-yield and leveraged loans. When the pandemic struck in 2020, it seemed – at least for a brief period – like the world was on the brink of another serious financial crash. And the Eurodollar system, this time in capital markets rather than banking, would provide the epicentre of the crisis. But on this occasion, the authorities understood the risks.

Chart 14: Fed lender of last resort



Source: FRED

Chart 15: QE adds cheaper Eurodollar funding



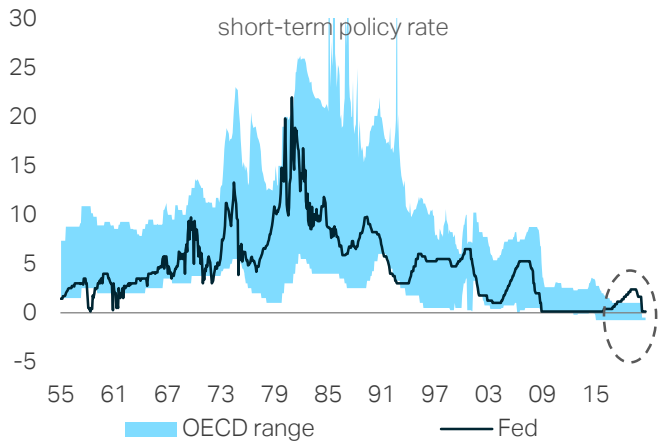
Source: FRED

2. DOLLAR FROWN

The authorities' actions in 2020 were decisive in preventing another Eurodollar disaster. Not only because they prevented a 2008-style "run" on dollar funding but because they have lowered the medium-term trajectory of the US exchange rate. The Federal Reserve's role has been paramount. In terms of short-term funding, the Fed made two critically important adjustments to its policies earlier this year. First, it incentivized and expanded its central-bank swap lines with the rest of the world, which ensured a continued flow of dollar liquidity to a broader set of countries (including Asia and some EMs) and financial institutions (non-banks). Swap lines are

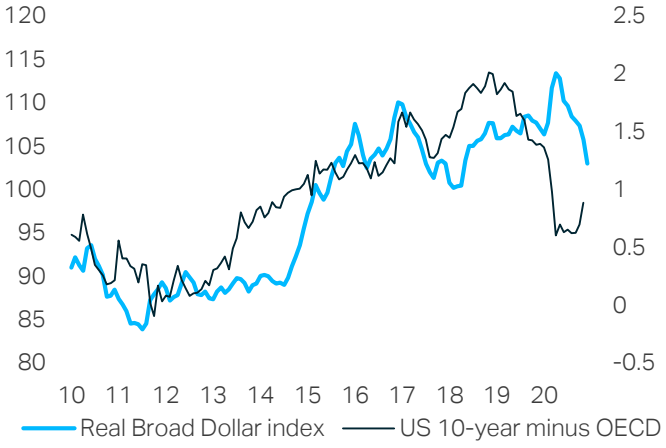
facilities that allow central banks in other jurisdictions direct access to the Fed's balance sheet, so they can deliver dollars to their own domestic financial sector. In effect, this meant the Fed had back-stopped global markets and become the "lender of last resort" to the Eurodollar system. Second, the Fed engaged in massive QE, which has radically increased the size of its balance sheet, alleviating a shortage of dollar reserves among US banks.

Chart 16: Historic policy decoupling ends



Source: BIS, OECD, TS Lombard

Chart 17: Rate differentials weigh on USD?



Source: Datastream, TS Lombard

QE helps "dollar shortage"

Investors tend to overstate the benefits of QE. There is no real evidence these asset purchases have persistently "distorted" bond markets or created the sort of "portfolio balance" effects that are supposed to drive asset prices higher. After a decade of low inflation and secular stagnation, yields would have fallen to historic lows even without these interventions. Yet QE does appear to have a more important influence on global dollar funding, especially if US banks are running into a scarcity of reserves, which is what happened in 2019 after the Fed had tried to curb the size of its balance sheet through QT (the opposite of QE). Central-bank asset purchases swap long-duration bonds for overnight reserves. Former Fed official Zoltan Pozsar has written extensively about how these operations affect the supply of liquidity to the Eurodollar market.

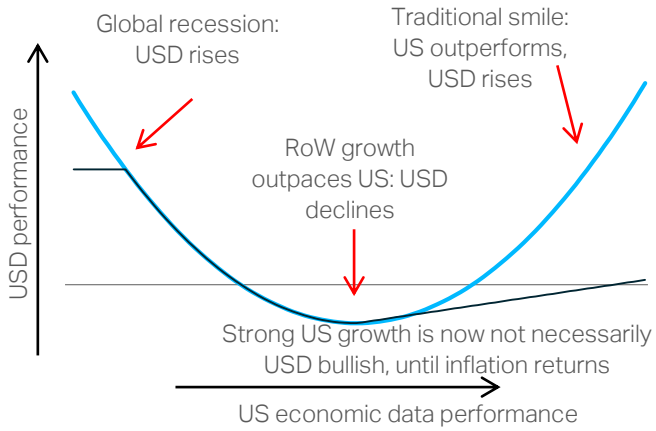
Pozsar shows the large banks changed their behaviour after 2008. At the most basic level, Basel III made it costlier for banks to move dollars across borders, including among their own foreign subsidiaries. Interbank lending used to be limitless and cheap, with arbitrage ensuring parity across various money market rates. But in the new system, interbank lending disappeared and an alternative eurodollar market developed, a system centred on large US banks such as JP Morgan that provide dollars to the rest of the world (mainly through FX swaps). When reserves are scarce, QE makes this Eurodollar system less costly because US banks will incur smaller charges – and their various Basel III metrics will improve – if they use "frack" reserves to provide the funding rather than lend the bonds they hold. By massively expanding its balance sheet, the Fed has eliminated the US reserve scarcity, providing cheaper funding to the rest of the world.

The new Fed strategy

While Fed swap lines and QE have boosted the short-term availability of dollars, the FOMC has also adjusted its monetary policy strategy – which could have important implications for the US currency over the next economic cycle. The "policy decoupling" theme between the US and the rest of the world is dead. US officials now say they want inflation to overshoot their 2% target and will not consider raising interest rates until the economy is back to full employment – which

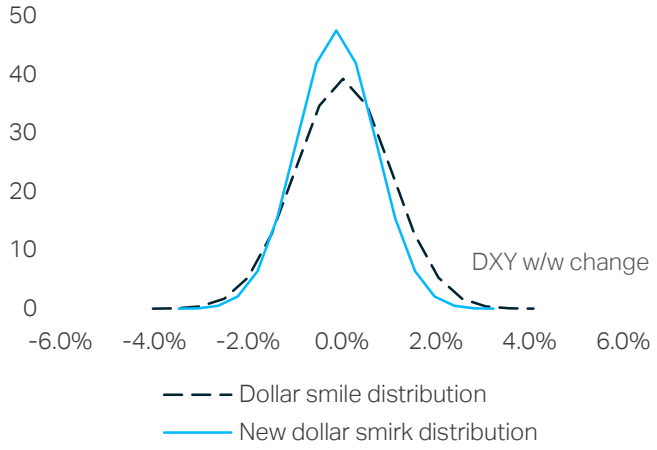
means previous jobless lows, rather than traditional NAIRU estimates. Since other central banks will struggle to match the Fed's dovish pivot – they do not have formal employment objectives and are already at the lower policy bound – this means a reduction in US interest rates relative to the rest of the world. Our strategy team believes this has altered the probability distribution of the US currency for the next cycle, shifting it down and changing its shape. The traditional "dollar smile" is now a "dollar smirk" (Charts 18 and 19). By this, they mean "bad news is still good news" for the USD, but good news will have a less marked impact on America's exchange rate, because it is now less likely to trigger policy tightening from the Federal Reserve.

Chart 18: USD "smile" becomes "smirk"



Source: TS Lombard strategy team

Chart 19: USD distribution to shift

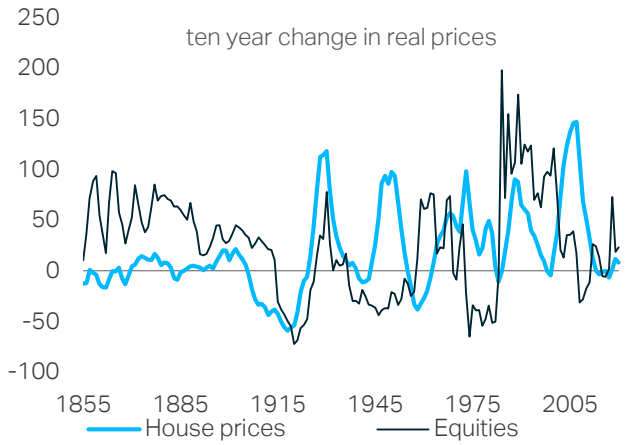


Source: TS Lombard strategy team

Underlying fragilities remain

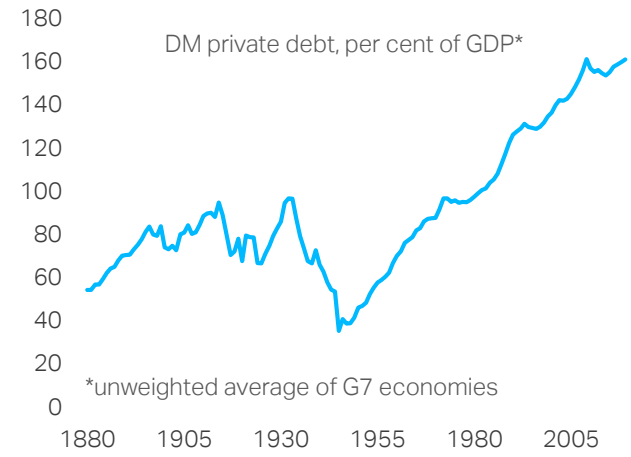
With the dollar depreciating sharply in recent weeks, there has been a bull market in analysts predicting the demise of the Dollar Standard. Yet they seem to be forgetting that US currency weakness is actually good news for the Eurodollar market – it will conceal many of the underlying vulnerabilities in the global financial system. It boosts international trade and eases cross-border lending conditions. But those longer-term sources of fragility haven't gone away and could reappear at some point. The Dollar Standard has generated unprecedented levels of wealth and prosperity, but there have always been concerns about its underlying stability – especially as it seems to be associated with an endless boom-bust sequence in asset prices and leverage. Probably the best account of this was published in a speech by the Bank of England's Gertjan Vlieghe. He showed how the transition from the Gold Standard to the modern Dollar system had greatly increased the risk of extreme negative outcomes, which created a number of dangerous dynamics in global markets. Chart 22, from his speech, shows 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 the BIS, believe central banks have compounded this problem, particularly the Fed's 'asymmetric' response to debt.

Chart 20: Asset prices increasingly volatile



Source: Bank of England, TS Lombard

Chart 21: Higher leverage means more risk



Source: MacroHistory, TS Lombard

Instability in the Dollar Standard

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.

A bad equilibrium

Over last 30 years, several worrying dynamics have emerged, creating a "bad equilibrium":

(i) Low rates and rising debt: As Vlieghe showed, the dollar standard encourages massive increases in debt and leverage, which makes the financial system more dangerous. But this also creates a "disaster premium" in bond markets, which lowers interest rates and leads to even easier financial conditions – leading to more debt. EMs, in particular, have accumulated vast USD reserves (the global saving glut). And this low interest rate/high debt equilibrium is extremely "sticky" because the additional leverage makes the system more vulnerable to higher borrowing costs. Whenever the Fed has tried to raise interest rates above the 30-year secular decline in US bond yields (which started in the early 1980s), something has always "broken" in financial markets;

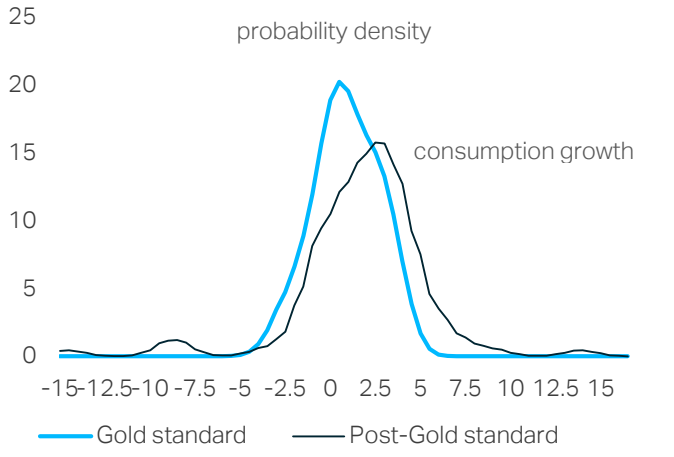
(ii) Strong dollar amplifies divergences: Since there are such large financial and economic spillovers associated with dollar exchange-rate moves, US currency strength tends to hurt the rest of the world even more than it damages the United States. This can mean it actually exacerbates – rather than curbs – global economic divergence, which leads to further dollar appreciation. This is not what economic theory usually assumes about exchange rates, which are supposed to act as international "shock absorbers";

(iii) Co-ordination problem: The Federal Reserve, as the world's central banker, takes insufficient account of the impact of its policies on the rest of the world. The was clear in the 2010s, when the dollar became too strong for many Emerging economies, following a period in which US interest rates had been too low – encouraging the

buildup on large EM external vulnerabilities (a repeat of what happened in the 1990s). Small open DM economies, like the UK, can also struggle because the authorities have limited capacity to influence the "global financial cycle". Though the Fed has now addressed the most pressing short-term problems with its QE and global swap lines, these coordination problems are certain to reappear at some stage;

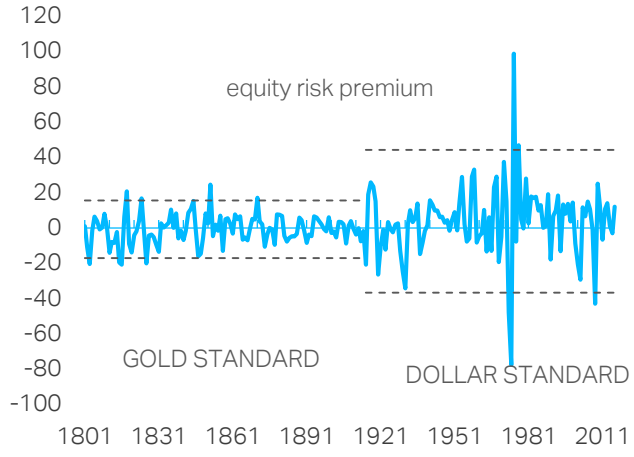
(iv) Populism and trade deficits: The United States has been running a persistent current-account deficit since the 1970s, when President Nixon suspended gold convertibility. While the relationship between the US trade position and the availability of Eurodollars is not as close as some economists assume (see Section 1), it is broadly true that the United States will need to continue to run deficits going forward. This creates the "exorbitant privilege", in that Americans are able to borrow more cheaply than anyone else. But it also has a dark side – an "exorbitant burden". US manufacturers suffer, which is leading to serious hardship in some parts of the country, causing populism and a backlash against globalization. President Trump – who had tried to eliminate the current-account deficit by creating barriers to trade – lost the US election, but the political pressures associated with the Dollar Standard are unlikely to disappear.

Chart 22: Fatter tail on consumption growth



Source: Gertjan Vlieghe

Chart 23: Increased demand for safe assets



Source: Gertjan Vlieghe

These inherent vulnerabilities explain why so many people – including some policymakers – are sceptical about the long term survival of the Dollar Standard. Yet, as we explained at the start, "regime change" is rare and is usually associated with massive political upheaval. There is a vast economic literature on the topic, which highlights – in particular – the sources of "network effects" and "inertia" that can allow a currency to maintain its leadership, even as its economic dominance fades. And in the case of the Dollar Standard, there has never been any viable alternative. In the early 2000s, some commentators thought the euro would challenge US supremacy – remember when Gisele Bundchen demanded payment in euros and Jay Z used EUR cash instead of dollars in his rap videos – but the euro crisis revealed deep flaws in the European Monetary Union. And despite the best efforts of the authorities, China's closed capital account precludes a more international role for the RMB. Yet this doesn't mean there will never be an alternative to the Dollar Standard – in fact, thanks to some radical new developments in digital currencies, we might already be on a path to a different monetary system.

3. MONETARY DISRUPTION

With the development of private digital currencies creating a sudden ense of urgency, the world's central banks have radically accelerated their efforts to design new Central Bank Digital Currencies (CBDCs). The BIS, working with the Fed, the ECB, the BoE, the BoJ and other central banks, even published a "Joint Report" in October, much to the excitement of financial conspiracy theorists. In principle, new CBDCs could be the start of something big, a radical departure from our current monetary policy regimes and – perhaps – eventually a challenge to the dollar's dominance of the International Monetary and Financial System. Real Vision's influential CEO Raoul Pal (who apparently has most of his liquid wealth invested in Bitcoin), released a podcast earlier this year where he claimed CBDCs would cause massive disruption to both monetary policy and financial markets. He argued CBDC would:

(i) Bring an end to physical cash, eliminating monetary "privacy";

(ii) Destroy the traditional banking system;

(iii) Enable central banks to push their policy rates deeply negative (NIRP);

(iv) Allow the monetary authorities to set multiple (e.g. sector-specific) interest rates;

(v) Encourage closer monetary-fiscal coordination, allowing "helicopter" transfers;

(vi) Replace existing cross-border payments systems (e.g. SWIFT);

(vii) Allow a digital IMF-style SDR that will eventually dethrone the US dollar;

Reality Check

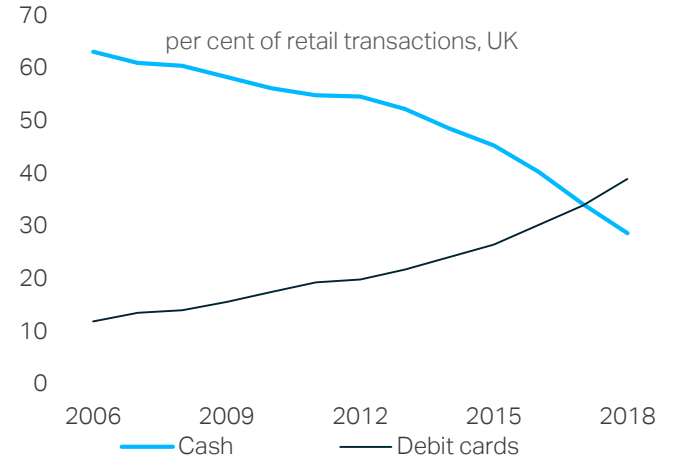
There is no doubt CBDC has massive potential to reshape the global financial system, but it is important to remember that central banks are a conservative bunch – they will proceed cautiously (as it clear from everything they have published so far). The BIS report stresses an overriding objective to "do no harm". This means, even if Raoul Pal and others are correct about the endgame – largely speculation at this point – this could be years away. As long as people still have to pay their taxes in their domestic currency, central banks are not going to lose their monetary "sovereignty" overnight, especially when the volatility of existing digital currencies such as Bitcoin makes them an unreliable store of value. Still, many of our clients are interested in CBDCs and the idea of a digital replacement for the dollar is intriguing, especially given the flaws in the current system, so it is worth looking at these issues in greater detail. We will focus on two main questions: (i) what are central banks currently thinking about in the context of new digital currencies? And: (ii) could CBDCs eventually challenge the USD's global supremacy?

What is CBDC?

"Digital currency" doesn't sound like new idea – people and businesses have been using digital payments for years (in China and the Nordic countries, these now dominate consumer cash transactions). Yet this form of money is created by commercial banks and is based on an "accounts" system, where banks verify the identity of the people or businesses involved in the transaction. These are liabilities of private banks and if they were to go bust, households and businesses could lose their money (beyond a certain level of deposit insurance). With CBDCs, we have the potential to give households and businesses direct access to the central bank's balance sheet ("retail CBDC"). In the existing system, this can only happen to the extent people

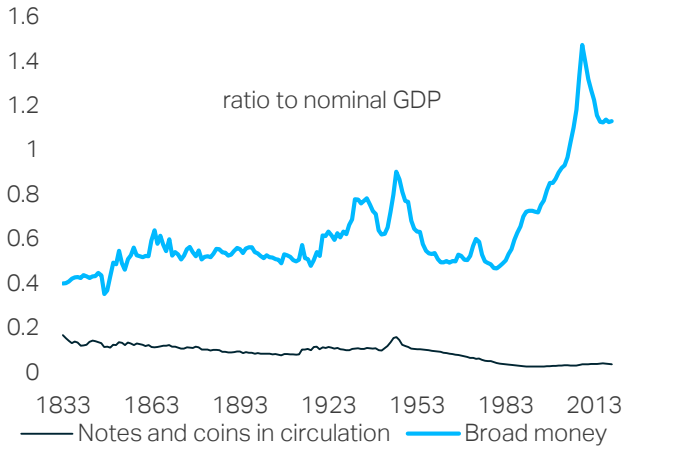
are willing to hold physical cash – paper money is a central bank liability. Opening up the monetary authority's balance sheet to the public could have far-reaching consequences.

Chart 24: Digital money takes over



Source: Bank of England Discussion Paper

Chart 25: Banks create the money supply



Source: Bank of England historical database

Central banks currently restrict digital access to their balance sheet to a select group of banks and other financial institutions ("wholesale CBDC"), via their reserves system. New technologies such as blockchain could lead to big changes in the way this system operates. Some new forms of money, such as Bitcoin, use a decentralized "token-based ledger", which means transactions are verified by the authenticity of the thing being transferred (the token) rather than the identity of the participants (NB cash is also a token). Central banks are looking at ways to improve the current system based on these new technologies, which raise a variety of questions – should they be token or account based? Centralized or decentralized? But these issues are only interesting to central banks and the institutions that use the wholesale system. While these are also technological questions associated with retail CBDC, we will put these to one side and focus on the monetary and financial implications of providing non-bank CB access.

Reasons for CBDCs

The central-bank acceleration towards CBDCs is partly defensive, from a desire to protect their monetary sovereignty. The emergence of new "stablecoins" such as Libra, which has its value tied to existing fiat currencies (making it less volatile than Bitcoin) has clearly focused minds, as Jerome Powell admitted in recent testimony to Congress. But it would be wrong to think the creation of CBDC is a purely defensive manoeuvre. The authorities can also see various opportunities and policy advantages from creating digital currencies, These include:

(i) Enhanced financial inclusion[3];

(ii) Improving the payments system, to allow faster, more efficient real-time settlement;

(iii) Better protection against money laundering and other illicit uses;

(iv) Enabling digital micro-payments, impossible with even small transactions costs;

[3] Seven percent of U.S. households are currently "unbanked," meaning that no individual in the household has a bank account. Another twenty percent of U.S. households are "underbanked," meaning that, despite having a bank account, they rely to some degree on expensive nonbank services—such as nonbank money orders, check cashing, and payday loans—for payments and other financial needs

(v) Facilitating 'programmable money', by enabling transactions to occur according to certain conditions, rules or events[4]

(vi) Protecting deposits – as a liability of the central bank, CBDC would be totally safe;

(vii) CBDC could enhance the monetary transmission mechanism (see below)

Design uncertainties and risks

The precise impact of CBDCs will depend on how central banks design them. The authorities are still in the research stage. Yet, so far, it is clear central banks would like CBDCs to operate alongside physical money and bank deposits, rather than as a replacement for existing forms of money. One of the most important questions is whether there will be an interest rate associated with CBDCs. If no interest accrues, the new digital currency would just be an alternative to physical cash and its consequences for monetary policy and financial markets would be negligible. Most central banks are opposed to this form of CBDC because it would reinforce the zero bound. If they tried to cut interest rates below zero, people could move their deposits to the zero-yielding CBDC, without the inconvenience and risk of trying to store physical cash. So it seems likely central banks would pay (or perhaps charge…) interest on their digital currencies.

A CBDC that pays interest is a more serious threat to the banking system. Some of the households and businesses that currently hold commercial bank deposits might wish to exchange these deposits for CBDC. This process of converting deposits to CBDC would mean commercial banks losing both deposits and assets, shrinking their balance sheet. While some degree of disintermediation is inevitable, it would result in a lower volume of funding for banks. Banks would need to react to this loss of deposit funding, which could influence their ability to provide lending to the wider economy. Either they could pay a higher interest rate on deposits, or they could seek to replace lost deposit funding with alternatives, such as longer-term deposits or wholesale funding. Both of these options would raise their funding costs, which could force banks to increase the cost of credit for the economy, reducing the overall volume of lending. Worse, the risk of disintermediation will be greatest precisely when it is most dangerous. In a period of financial stress, the availability of a CBDC could intensify the risk that depositors convert commercial bank deposits into CBDC in a flight to safety (a "bank run"). For this reason, we should expect central banks to try to protect the banking system, by introducing caps on CBDC holdings, or giving banks a cost advantage (the ECB suggests a tiering system).

Impact on monetary policy

How would monetary policy work with a new CBDC? The BoE has published the most detailed description, imagining a system broadly similar to the way it conducts policy today – the central bank would adjust the interest rate on the CBDC, which would provide the floor for borrowing costs across the entire economy. In fact, by increasing the proportion of money linked directly to the central bank's policy rate, the BoE believes the CBDC could actually strengthen the "monetary transmission mechanism". It is also important to point out that the BoE's version of the CBDC would leave credit creation in the hands of private financial institutions and banks. Currently, banks lend by issuing new deposits, in effect creating new money and purchasing

[4] There will be many potential applications of this functionality, including integration with physical devices or Internet of Things (IoT) applications. Examples might include the automatic routing of tax payments to tax authorities at point of sale, shares automatically paying dividends directly to shareholders, or electricity meters paying suppliers directly based on power usage because the CB would not charge interchange fees on debit card transactions,

power. With the introduction of CBDC, banks could continue to lend by issuing deposits, but they could alternatively choose to 'lend CBDC'. In practical terms, this would require that they ask the borrower to nominate a CBDC account into which the lent funds could be transferred. The BoE believes there are good reasons why banks will want to continue to lend via deposits[5].

Unconventional stimulus

Central banks could use CBDC to conduct QE. They could purchase bonds from the private sector in exchange for new digital cash. The advantage of this scheme is that it would not use the banking sector as an intermediary – the central bank would give cash directly to anyone who has government bonds to sell. Whether this makes QE more potent is debatable – the BoE claims it would – but it also creates the potential for more exciting possibilities, such as using digital cash injections to increase the overall quantity of money in the economy. The central bank would now have the possibly or providing large income transfers, which would give the private sector more spending power – a compelling new form of stimulus. Yet, as we explained in our previous Macro Picture, these sorts of policies would also damage the central bank's equity because they would create new liabilities without corresponding assets. This blurs the boundary between fiscal and monetary policy, which means central banks will probably want national treasuries to be involved. CBDC certainly provides more opportunity for formal "coordination" between the fiscal and monetary authorities. Imagine how quickly governments could have distributed COVID-19 rescue funds in 2020 with this digital infrastructure in place.

CBDC might even allow central banks to pay different interest rates on CBDC depending on who holds it. The obvious differential is between banks and non-banks, which would allow the authorities to protect private credit creation. But central banks could also use differentiated borrowing costs to introduce a system of "dual interest rates", which would allow them to unlock the benefits of lower interest rates for borrowers without necessary harming savers. They could even create income transfers among different sectors of the economy, in order to target monetary stimulus where it is needed most – perhaps even a monetary response to inequality.

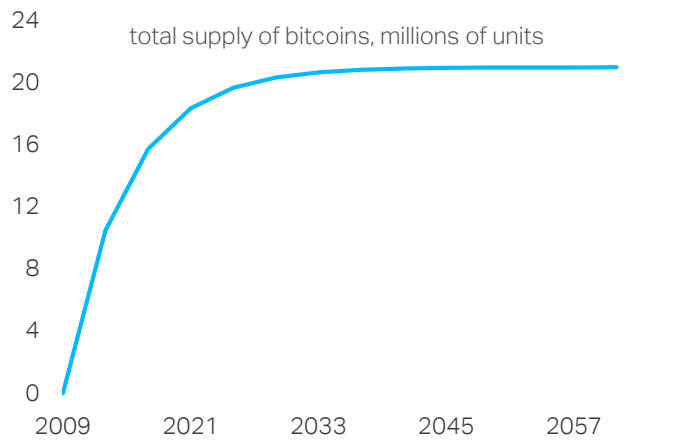
No "modern Gold Standard"

Central banks are keen to harness CBDCs because they think it will enhance their discretionary powers. This is a notable contrast to the initial idea behind digital currencies, especially Bitcoin, which was to protect people from "official debasement". After all, the supply of bitcoins is fixed, set deterministically by an algorithm that governs how many new bitcoin 'miners' receive for verifying transactions and adding to the blockchain. There are obvious parallels between this system and the 1880-1914 Gold Standard, which tied most major currencies to the quantity of gold available. Under this system, both the money supply and the price level where effectively fixed and beyond the control of central banks. Many commentators would like to go back to the gold standard, or a modern digital version of it, because of the inherent vulnerabilities in the current monetary system. Yet, there is no real possibility of the authorities surrendering their

[5] First, there is unlikely to be demand for borrowing in CBDC specifically: - as long as the sellers of goods, services or assets are able to substitute freely between deposits and CBDC, they should be neutral between receiving payments in CBDC or deposits, and should not offer any incentive for buyers to pay by one medium over the other. This means borrowers themselves should be neutral between borrowing CBDC and borrowing deposits — they will borrow from whichever lender offers them the best borrowing rate. Consequently, the interest rate on loans for a given level of risk and term should be the same whether it is CBDC or deposits that are borrowed. For this reason, banks are unlikely to receive requests to borrow in CBDC specifically. Second, for a bank, lending CBDC will have a more negative impact on current regulatory ratios (specifically the LCR and NSFR) than lending via issuing deposits, because lending CBDC ensures that the bank will lose £100 of liquidity for every £100 lent. In contrast, while lending by issuing deposits could still lead to some outflow of CBDC, it is likely to be less, on average, than 100% of the amount lent.

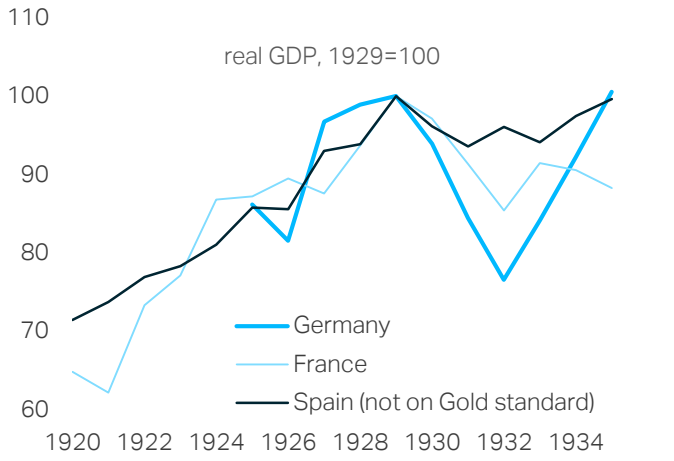
policy discretion in this way. Most officials believe a gold/Bitcoin based system would be dangerous. After all, not only were there regular banking crises in the Gold Standard, but there were times – such as during the Great Depression – when adherence to fixed monetary rules were a sources of acute macro pain. Famously, those countries that abandoned the Gold Standard earliest, were also the fastest to recover (Chart 27).

Chart 26: Fixed supply of Bitcoin



Source: Bitcoin

Chart 27: Gold standard amplified Depression



Source: TS Lombard

An alternative to US dominance

The prospect of fixed international exchange rates, or a 'return to Bretton Woods" is equally remote. Contrary to what some commentators claim, officials are not planning to revisit the policy discussions they had in the 1940s and try to design a new International Monetary System – even if some countries (notably China) and institutions (notably. the IMF) are keen to go down this route. That said, the creation of CBDCs doesn't mean the dollar's long-term status as the global hegemon is totally assured. Quite the opposite. Recent plans for a global "stablecoin" – though subsequently diluted – have raised the possibly of new international reserve currency, which might evolve organically, even without a "managed currency regime". Libra is the best example of this, a joint initiate from Facebook and other multinational corporations. Libra is designed to address an important problem – for many users, cross-border payments have been expensive, slow, and opaque (senders do not know when the payment will be settled, and recipients do not know the charges that will be deducted on an incoming credit). Libra suggests an intriguing alternative – an international digital currency, backed by a basket of existing currencies, namely the US dollar, sterling, the euro and the Japanese Yen.

Though Libra has since adjusted its plan – the latest version is a derivative of the dollar – the original idea has caught the imagination of some government officials because it closely resembles a modern version of the IMF's Special Drawing Rights (SDR). The SDR is reserve asset, created by the IMF, based on a similar basket of currencies (though it includes China's RMB). Members of the IMF are obliged to accept the SDR, within certain limits, in exchange for their domestic currencies – but it is not used for every day payments. Some policymakers, including Mark Carney, Christine Lagarde and several high-ranking Chinese officials, think a new CBDC version of the SDR, close to Libra's original blueprint, could provide the basis for a New International Monetary System (without the need for fixed exchange rates – so there would still be policy discretion). Indeed, this might have several advantages over the dollar standard, since:

(i) The digital SDR, as a basket of currencies, would be more stable than the USD;

(ii) SDR "monetary conditions" would be a weighted average of the policies of the various central banks, meaning less dependency on the Federal Reserve;

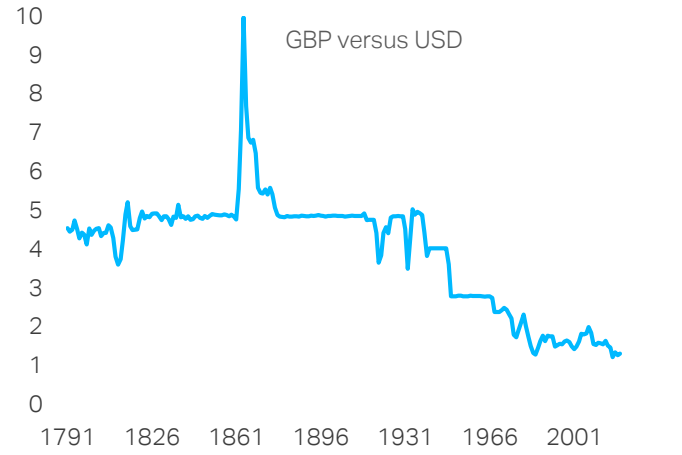
(iii) The supply of risk-free assets would increase, which would encourage less hoarding of dollar assets and a smaller 'disaster premium" in bonds markets – helping the world to break out of its current low interest rate/high leverage equilibrium.

The digital SDR could create what Mark Carney called a "multi-polar synthetic hegemon". The irony, of course, is that this would be close John Maynard Keynes' "bancor" idea, which was the main alternative to the Dollar Standard in the 1940s[6]. Of course, as in the 1940s, there is a major obstacle to such a reordering of the global monetary system – US opposition. Even if China, the euro area, the UK etc were in favour of such a regime, the US would not want to give up its exorbitant privilege. Yet it is possible to imagine such a system developing over time, especially given a dwindling the dwindling role of the United States in global GDP. First, we might have the introduction of CBDCs, which undermine the existing international payments system (SWIFT etc). Then, a significant part of the world could invoice cross-border retail transactions in a new Libra-type basket of CBDC currencies. But for real acceleration in this trend, we would need business-to-business payments (B2B) to start invoicing in the new digital SDR, not just consumer-to-consumer or consumer-to-business payments. This is because B2B payments constitute the largest volume of cross-border payments. And this requires a new financial infrastructure – SDR liquidity and credit-facilities – not just a means of instantaneous payment.

Chart 28: Gold didn't prevent bank crises

Source: Ben Bernanke speech on Gold Standard

Chart 29: How the GBP lost its status

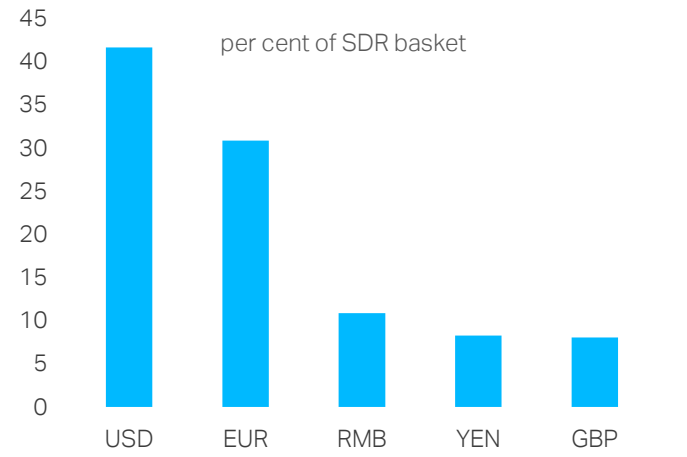


Source: Bank of England

Global reserve currencies enjoy powerful network effects, which makes it extremely tricky to forecast the demise of the Dollar Standard – as many pundits have found out. Trade invoicing in a specific currency encourages funding it that same currency, which creates a demand for safe assets with the same denomination, which further reduces funding costs. And companies that fund themselves in dollars are more likely to invoice in dollars, producing a circular dynamic. So it would be brave to think the US will lose its dominance anytime soon. That said, for the first time, we might be seeing the beginning of a credible alternative to the Dollar Standard. And since the digital economy is naturally fast-moving and "winner-takes-all", it will be important for investors to continue to monitor these new technologies. Perhaps we will eventually reach a tipping point.

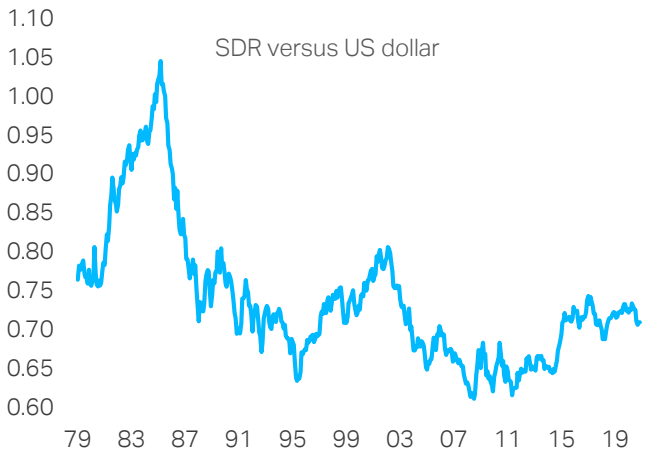
[6] The current international monetary system is largely the result of wartime negotiations between the US and the UK, based on the competing ideas of John Maynard Keynes and Harry Dexter White. The ultimate outcome more closely reflected White's ideas than those of Keynes.

Chart 30: Currency weights in the SDR



Source: IMF

Chart 31: SDR should be more stable



Source: IMF

Bottom line

The world's sensitivity to the US dollar has increased over the past decade, as the international Eurodollar system migrated from banks to capital markets. US policy "decoupling" plus an insatiable appetite for dollar assets created a powerful bid for USD securities. The good news is that Fed has now alleviated the structural shortage of dollars, by expanding its swap lines and increasing the size of its balance sheet (reducing funding pressures for banks). The US monetary authorities have also adopted a new policy strategy, which should prevent another 2010s-style policy decoupling. These developments have weakened the dollar, which is good news for the global economy. Investors have a habit of worrying about the sustainability of the Dollar Standard as the US currency depreciates, which is odd since USD weakness eases many of the inherent vulnerabilities in the global monetary system. They should be more worried about dollar strength! Still, thanks to the creation of CBDCs, we are now seeing the start of an important monetary revolution, which could have profound implications for both the way central banks conduct policy and perhaps – ultimately – for US dominance of the global financial system.