

Global Financial Trends

WHEN IS AN \$80T DEBT A PROBLEM?

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- **Mismatched-funding chains created by 2010s policy distortions are the greatest threat to global financial stability, both pre- and post- Fed pivot**
- **Chains starting with Asian holders of dollar reserves, running through Japanese financials in OTC FX derivatives, into the Caymans and back to China make us highly skeptical of the long-term value of the RMB**
- **We identify triggers pre- and post-Fed pivot**

Summary

Maturity and currency mismatches in global funding chains are always a bubbling source of concern. We identify several, running from short-term dollar funding markets potentially to soured Chinese debts, some of which start in the “missing dollar debt” markets recently flagged in the BIS quarterly review. Chinese official activity as a lender in these markets also gives us greater reason to doubt the staying power of the RMB at these levels against the dollar, though we continue to flag that the cyclical story currently points instead towards RMB appreciation.

We continue to be less worried about these chains than about those similar dynamics that preceded the Global Financial Crisis, not because the scale of the underlying soured debt is any smaller, but for two reasons. First, however great the exposure of foreign entities to Chinese soured assets, it is unlikely to be as significant as that to US subprime assets in 2008. Unlike China, the US is at the centre of the global financial system and has an open capital account. Second, US policymakers were willing to allow major financial institutions to go under in 2008. It is unlikely that Chinese policymakers will permit such failures in coming years.

Nevertheless, the problem of foreign exposure is likely the greatest known unknown in the global financial system, though we shed some light on it in today's report and our November GFT. For most investors, however, it seems to remain an unknown unknown. Uncertainty over exposure to US subprime assets in the GFC was a major contributing factor to the spiraling of the problem. But most investors do not even realise, at this stage, that there is something to be uncertain about.

In this GFT, we look further into the mismatched funding chains, bringing in supposedly long-only investors, and the FX derivatives liabilities highlighted in the BIS quarterly review. We then look at triggers that could bring the fragility of these chains more overtly into the public eye. We identify different types of exposed foreign entities, based on how they have reacted to the squeezing of their trades by the flattening of the yield curve since 2014. Those that responded by taking on greater credit risk are most exposed at the current juncture as the Fed feels its way towards higher real rates and a US recession. This group would also be exposed as the PBoC starts to withdraw stimulus later in 2023, given the likely resurgence of services inflation amid reopening, which we expect to happen from March, though the Bank will be slow to withdraw stimulus. A

second group of foreign entities to watch are those that have responded to pre-Covid flattening by reducing hedging ratios. With the dollar likely having peaked, these entities' capital is at risk, making them a fragile point in the chain.

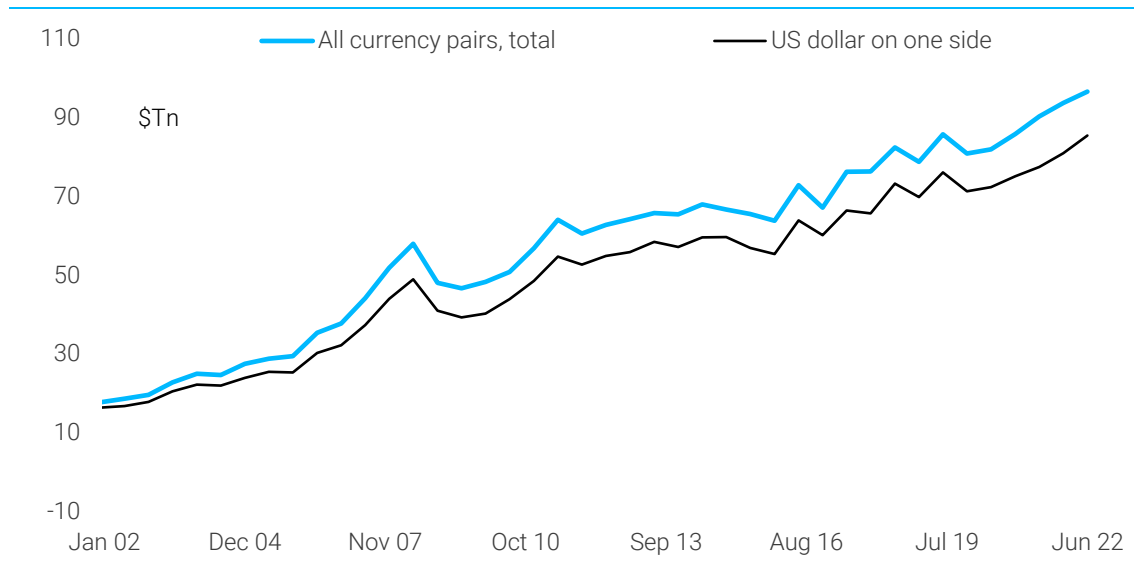
Maturity-mismatched funding chains

The global financial system is a web of funding chains, but some of these are more fragile than others. Particularly worrying chains are those in which some kind of mismatch exists, for instance in currency or maturity. Indeed, it is quite difficult in international finance to escape exposure on some level to one or other of these mismatches. Last decade saw huge outflows essentially from the same old Eurasian savings glut countries, as policymakers in these regions tried to fix all woes through loose monetary policy. Particularly with Japan, Taiwan and to an extent Korea (JTK), the search for yield has been voracious and has led to ever riskier behaviours as global yields fell and the yield curve flattened. This has left these economies with significant mismatches in their external balance sheets, initially mainly in terms of maturities but towards the end of the 2010s in some cases also increasingly in terms of currencies.

In last month's GFT we discussed one of the most concerning of these chains, which starts with a Japanese borrower in short-term dollar markets. We then followed BIS banking data through to the Cayman Islands, finding that Japan is the largest claimant on residents of the region. Recognizing that companies listed on the HK Exchange tend to operate offshore holding companies or SPVs, we found that 59% of those listed on the Main Board or GEM (smaller companies) were incorporated in the Cayman Islands. We then noted that Cayman Island resident "other" financials, which includes SPVs, have seen a spike in debt since 2016. This happens to be when Japanese outflows began to accelerate as a result of the BoJ's new yield curve targeting programme. Client questions since the publication also led us to do more digging into the CLO aspect, where we found that the Cayman Islands is again a major issuer (in general, not specifically with respect to bundling Chinese assets), and Japan's Norichukin Bank has been the major buyer for years, though it has on occasion had to pull back due to regulatory scrutiny. Finally, we showed that Chinese issuance of international debt securities on a nationality basis, which also includes offshore entities, has risen much more rapidly than issuance on a residency basis, which may not include these entities. We then took a leap of faith and suggested that this constitutes a funding chain starting with Japanese short-term debt, running through the Cayman Islands and into Chinese sourced assets. And just to be clear, one of those Cayman-listed corporations is Evergrande. For the numbers, please refer to last month's GFT.

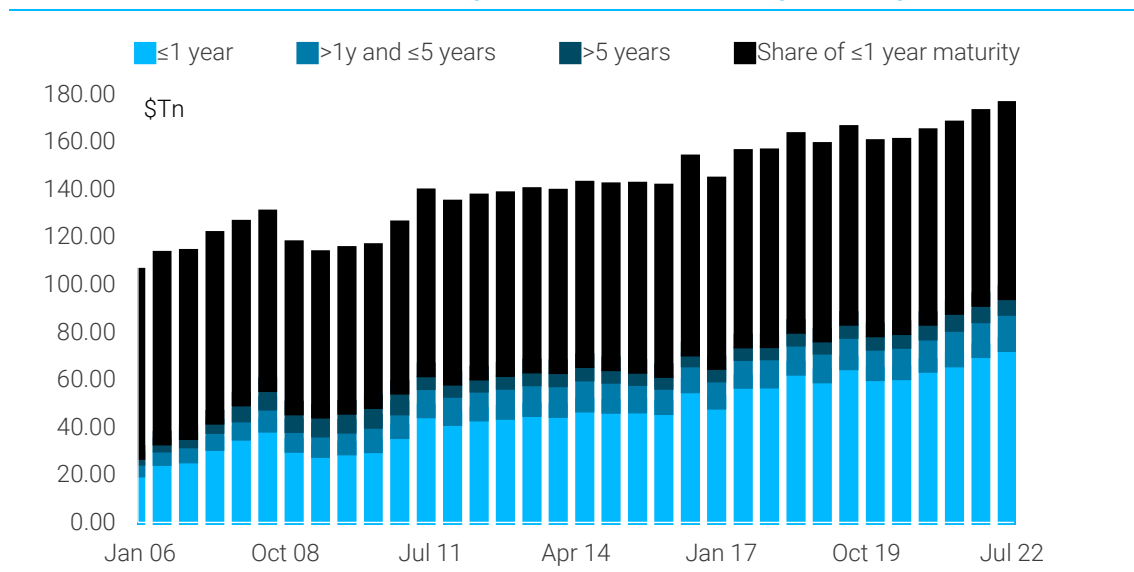
Since then, the BIS quarterly review has caused a stir by pointing to liabilities of at most one-year maturity to the tune of \$74T in FX and currency swaps and FX forwards. The chain we identified above could just as well start in FX swap liabilities. We provided data on Japan's outstanding short-term portfolio and "other" debt, including repo obligations, which are on-balance sheet. FX derivatives are a form of off-balance sheet borrowing.

FX swaps, FX forwards and currency swaps outstanding: By currency



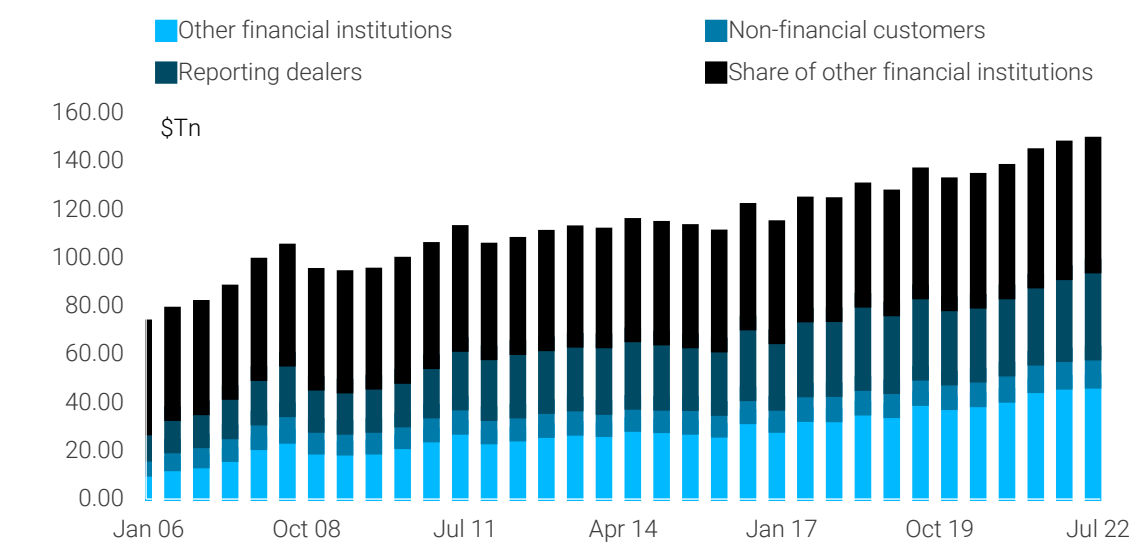
Source: BIS, TS Lombard

FX swaps, FX forwards and currency swaps outstanding: By maturity



Source: BIS, TS Lombard

FX swaps, FX forwards and currency swaps outstanding: By counterparty sector



Source: BIS, TS Lombard

In last month's GFT, we focused on banks as the data are better, and we were able to show macro figures on known exposures to the Cayman Islands. We also are fed up with the common assertion that banks are not the main concern post-GFC. In many parts of the world there are ongoing problems, not least of course in China itself. We agree, however, that non-banks are the major threat as far as most DM financial markets go. Indeed, the BIS article shows that \$49T of these FX derivatives are liabilities of non-bank financials, including lifers and pension funds.¹ Most of this is at maturities of one year or less.

In this case, the chain could run as follows. A Japanese lifer has a short-dated FX derivative liability and a long-term bond. The data here are murkier but there certainly is no reason to believe that Japanese lifers or pension funds or Taiwanese or Korean entities have not built up the exact same exposures to Chinese entities as Japanese banks appear to have done.

This type of borrowing by supposedly long-only funds presents a problem, one that we, alongside the BIS, have been writing about in this context since the mid-2010s. In a nutshell, the problem is that these long-only funds all of a sudden look a lot more like banks, and particularly European and Korean banks in the run-up to the subprime crisis (see last month's GFT for a very brief overview). Their asset and liability structure begins to look like maturity transformation.

Let's round out this section on dodgy funding chains by looking at a long and potentially circular one. As the BIS article reminds readers, sovereign wealth funds and central banks with large dollar reserves have become large players as *lenders* in FX derivatives markets (because why not?). [Brad Setser of the Council on Foreign Relations](#) and a [flow of funds blogger Concentrated Ambiguity](#) have done a lot of work showing how the Taiwanese Central Bank is heavily involved. Less work has been done on the PBoC but it is not implausible to assert that the Chinese authorities, through various routes, are lenders of dollars in these markets, and the PBoC first began dabbling in FX swap markets in 2006.² But this suggests potentially significant sums of

¹ It is worth noting also that some of the on-balance sheet banking liabilities exist precisely as a counter-hedge to the bank's operations in providing "long-only" funds with FX hedges. In providing a hedge against a long-dollar position, the bank takes on the long-dollar position itself, which it then offsets by borrowing short.

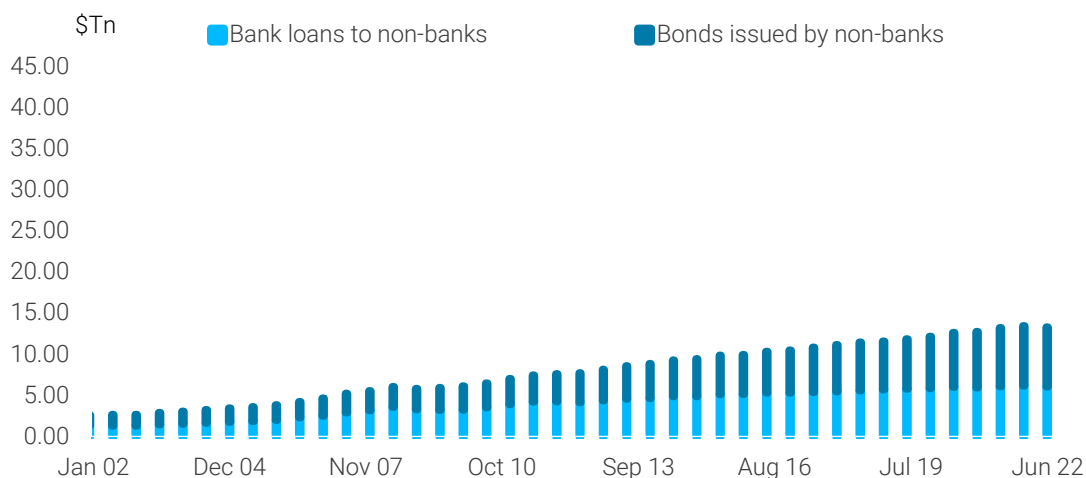
² "The initial swap involved 10 domestic banks buying \$6 billion from the PBOC in exchange for renminbi at the prevailing spot rate, with the agreement to swap the dollars back in 12 months' time at an agreed rate of Rmb7.85 to the dollar." *China: PBoC moves into FX swaps*, Euromoney, Chris Leahy, Jan 2006.

money that the Chinese authorities may ultimately owe themselves, though more work needs to be done to pin down some ballpark figure.

How does the chain run? Let's say the Chinese authorities, either directly or through state-controlled entities, lend into FX derivatives markets. Let's say the counterparty is then a Japanese (or Korean or Taiwanese) bank or non-bank financial entity, which has taken on the off-balance sheet liability as a hedge to its long dollar position acquired by buying offshore debt of a Chinese real estate developer, through similar channels as we explained in last month's GFT and above.³ So it is possible that the PBoC, one way or another, is essentially passing dollars to soured real estate developers through maturity-mismatched Japanese, Taiwanese or Korean banks and non-banks. If these assets were to become more stressed or if something along the chain breaks (see below), then the logical first response of the PBoC – unwilling to allow full-scale financial ructions – would be to give dollars to the real estate developers. We don't pretend to be experts in these financial derivatives markets, but the 2019 BIS FX and OTC derivatives markets triennial survey notes that "electronification has propelled growth of offshore trading and increased the diversity of market participants". It goes on to emphasize that "In contrast to trends in other segments of the OTC markets, in FX markets initiatives to mitigate risk exposures appear to have stalled. Most FX instruments are deliverable contracts, which involve an exchange of principal. Thus, settlement risk – the risk that one counterparty fails to deliver after the other has delivered – is a major concern." This quarter's BIS review highlights that when the swap unwinds, the parties have to deliver the full amount, meaning there is clear liquidity risk.

If the PBoC were to be able to call in these FX derivative assets (from its point of view; liabilities from the JTK point of view), it probably wouldn't do it any good, as the JTK entities would be selling their assets (including the soured Chinese longer-duration assets) to pay off the short-term debts which the PBoC has just called in, increasing the likelihood of the PBoC having to bail out the Chinese entities at the other end of the chain. And, it cannot be a good thing that just when the PBoC would be called upon to use its reserves, questions might also be asked as to the quality of those reserves. This deepens our suspicion of the RMB in anything beyond the narrow cyclical drivers we have been highlighting as the economy shifts towards reopening and the rest of the world heads for recession.

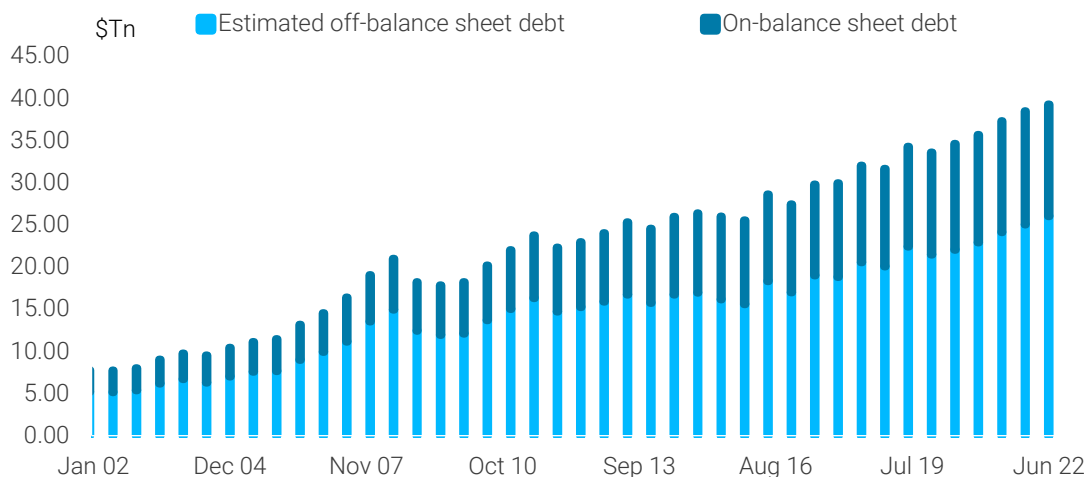
US dollar-denominated debt (Non-banks outside the US): On-balance sheet debt



Source: BIS, TS Lombard

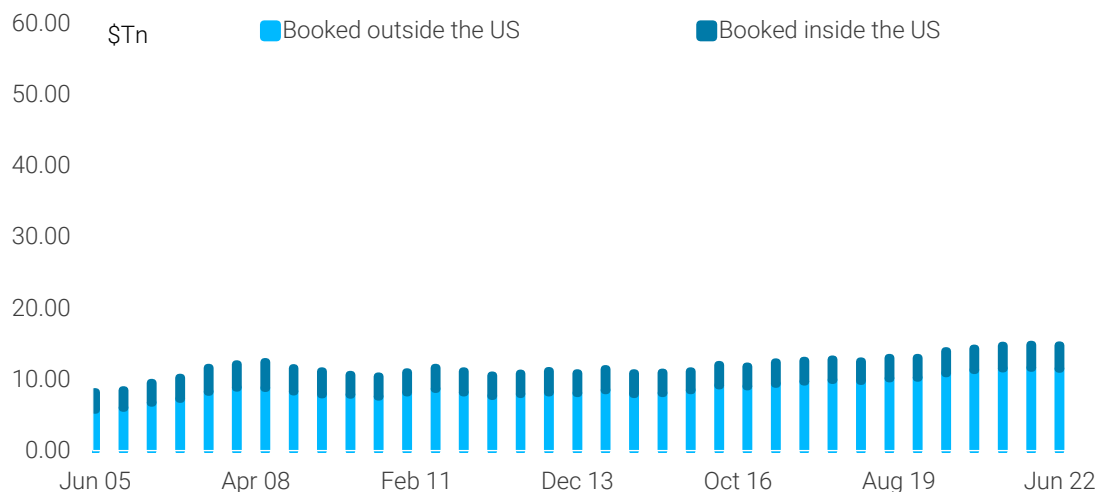
³ In fact, it doesn't really matter directly with whom the Asian CB or SWF is contracting. We know that Asian financial institutions are active in these markets and would be put under stress if any part of the chain broke.

US dollar-denominated debt (Non-banks outside the US): On- and off-Balance sheet debt



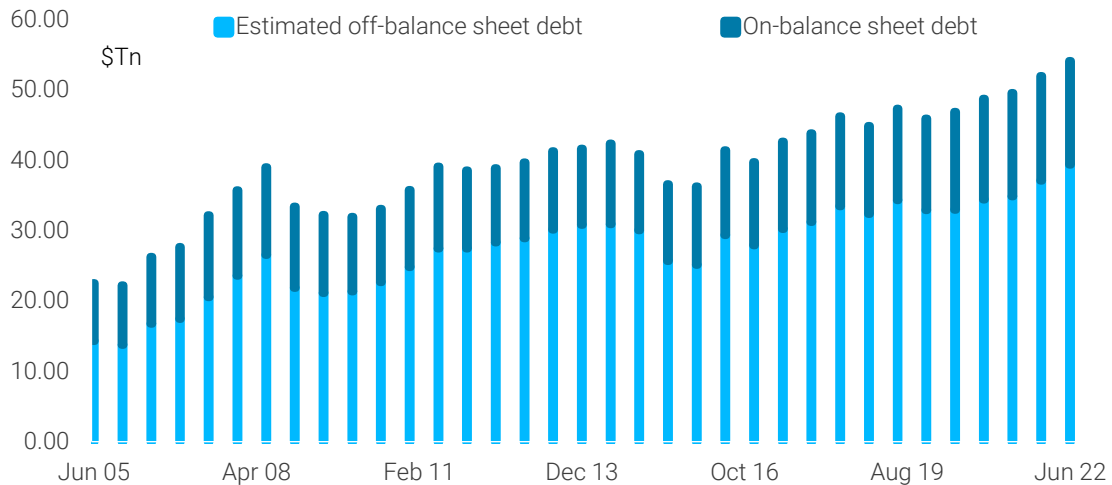
Source: BIS, TS Lombard

US dollar-denominated debt (Non-US banks): On-balance sheet debt



Source: BIS, TS Lombard

US dollar-denominated debt (Non-US banks): On- and off-balance sheet debt

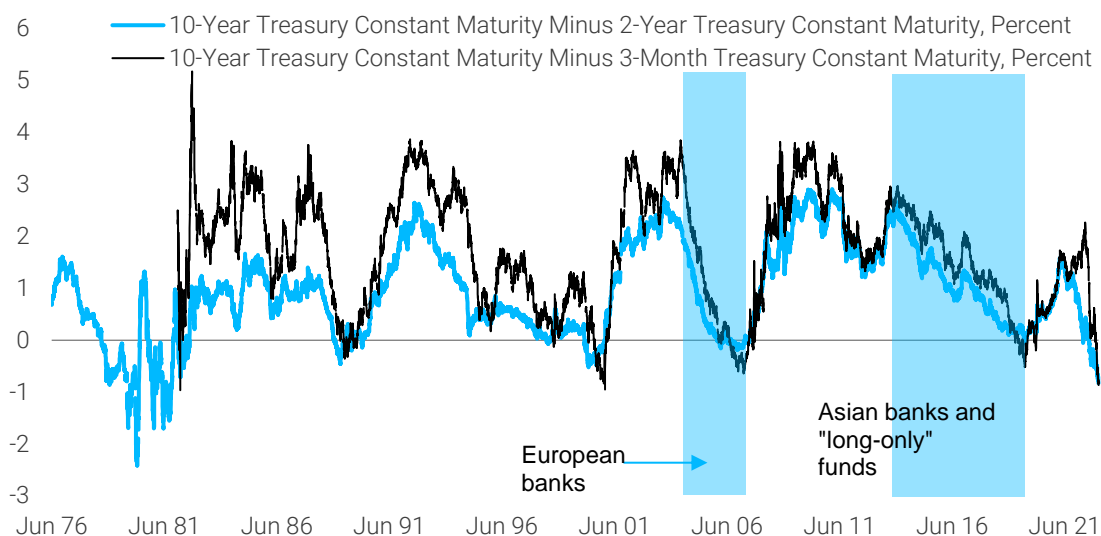


Source: BIS, TS Lombard

Why would any of this become a problem?

Financial problems split into two categories: liquidity and capital. And the next logical questions then become: for whom is this a problem, and what would be the triggers for these different parties? Curve inversion is a problem for all of these supposedly long-only funds and banks with maturity mismatches. But the curve had been flattening almost continuously from 2014 until the start of the Covid crisis. Indeed, the behaviour of these funds, borrowing short and lending long, was probably a contributing factor to that flattening, which in turn made the trades less lucrative. As a result, funds responded in one of two ways: either they could take on greater credit risk; or they could reduce hedging ratios, which were becoming prohibitive. These dynamics mirror those of European banks' external balance sheet in the run-up to the subprime crisis. They borrowed short and lent long, contributing to the flattening of the curve. And they kept going, even as the curve flattened.

Curve flattening drove supposedly long-only funds into more risky behaviours



Source: FRED, TS Lombard

Our job at this stage is to identify where conditions could be more painful for either of these groups (more credit risk and more currency risk exposed), and the clear driver here is the Fed. The main risk, as we see it, is that markets have been lulled into a false sense of security by one good CPI print, when the Fed is more concerned about ongoing labour market pressure on wages. This means the period of curve inversion is likely to be prolonged, and even deepened, putting greater pressure on all these maturity-mismatched entities. This is where the liquidity versus capital dichotomy becomes important.

The most straightforward liquidity problem here starts at the funding side of the chain. If stress arises in short-term dollar markets the whole chain is called into question. When the swap unwinds, the borrowing entity has to deliver the full value of the swap, even though its assets are much longer-term, leading it to sell those assets. If liquidity is not provided, by a central bank for instance, then the mass sale of assets undermines the capital of the entity and its standing as a borrower is called into question, making it yet harder for it to borrow and forcing it to sell more assets. If these types of stressed entities are prevalent enough, the whole funding market can seize up.

But we never find that a very satisfactory answer, relying as it does on an “if” in the first sentence. It is like saying more stress arises if stress arises, which is a perfectly valid problem to raise. Indeed, the recent problems UK pension funds ran into with their LDI structures when Gilt yields jumped is a perfect example of how these types of loops can amplify shocks and force a response from policymakers. But they can also lie dormant for years without anything triggering them.

The threat of major disruption would arise from the deterioration of the underlying assets. A good old doom loop cannot be ruled out. If capital is called into question and exposure to deteriorating assets is unknown, that uncertainty can ripple back up the chain to funding markets, causing liquidity problems which then force maturity-mismatched firms to sell assets, causing further deterioration in the assets in question. This was the trigger and dynamic for European banks in the GFC. At this stage, however, the irony is that for most investors the exposure of maturity-mismatched entities to China still seems to be an unknown unknown. If it were to become a known unknown, this could cause liquidity problems.

Most exposed at this stage are those firms that have taken on greater credit risk. As the entire yield curve shifts up, there is an increased likelihood that the long duration assets will run into problems. Somewhere, there is a pressure point. That pain threshold is, however, much lower in China than in the US, which is why we keep emphasizing the exposure to China (see last month's GFT).

China owes over \$2.7T in external debt, much of which is owed by real estate developers (for those securities covered by Bloomberg, around 60% are in this category). A prolonged rise in dollar rates puts pressure on the ability of these non-financial corporations to repay their debts. Clearly, so too would a rise in domestic RMB rates. For now, we continue to think that the PBoC will maintain an easing stance through H1 next year. Full reopening is unlikely to come through until around March, and the real economy is losing drivers fast: local government bond quotas have been used up, though investment admittedly lags, and external demand is deteriorating. But services inflation should stage a temporary comeback as demand booms with reopening, against supply that has been rotting away for over two years. We still think the PBoC will take a dim view of this kind of inflation but the risks are then tilted towards domestic tightening at that point. Reopening should also help out developer cash flows, but the major questions over the property market remain unanswered and we are not convinced that prices have properly been allowed to clear, keeping buyers wary. In short, the woes of developers do not end with the Fed pivot.

We continue to think that foreign exposure to these assets lies well above what is commonly acknowledged, and the threat that the underlying funding liabilities are of much shorter duration is a real worry. But we continue to emphasize that the overall foreign exposure must be significantly smaller than to US subprime assets. A second critical difference is that the US authorities were prepared to let major financial firms go under, while that seems unlikely to be the case in China. So a financial crisis on the scale of the GFC is unlikely, though that increases the burden on longer-term growth as it keeps capital tied up in unproductive uses. The EA, EMs and commodity producers are most exposed to this later feature.

Beyond the Fed pivot, then, the main trigger for realisation of capital deterioration would be from PBoC re-tightening. But the Fed pivot itself could be a trigger for some banks/funds. This comes down to the dollar, which appears to have peaked and so could already be creating problems. The second group of maturity-mismatched entities has responded by reducing hedging ratios, putting capital at risk as the dollar now weakens. Again, Japan draws attention here, owing to the massive *slide* in the yen and the potential for reversal with a Fed pivot and any introduction of “flexibility” into the yield curve control policies (though we maintain that the long-run average for the yen in real effective terms is a downtrend). But Korean and Taiwanese financial corporations are worth considering too.

In sum, the major policy events are the Fed pivot and the beginning of the PBoC tightening cycle, tentative though that will be. The most exposed as the Fed continues to tighten are those that have taken on greater credit risk as a result of curve flattening since 2014. This group also warrants caution when the PBoC tightens. They have been helped out by the decoupling of the Chinese cycle from the US due to the timing of Covid policy as Fed tightening has coincided with PBoC loosening, relieving the pressure on Chinese entities somewhat, especially since last month’s 16-point property rescue plan (all liquidity and no capital). The most exposed as evidence of cracks in the US labour market appear are those that responded to curve flattening by reducing FX hedging ratios, and now face capital risk as the dollar weakens.