

Credit Suisse Economics

Global Money Notes #29

U.S. Dollar Libor and War Finance

The Fed's liquidity injections are working.

Global dollar funding conditions have eased, and U.S. dollar Libor-OIS spreads started to tighten. We don't think that lower prices on the CPFF or the MMLF are necessary for Libor-OIS to tighten more – other factors can tighten it further.

First, positive Libor-Libor bases are prompting banks to shift their funding from the U.S. unsecured funding market to euro and sterling unsecured markets – as banks arbitrage positive bases, pressure on U.S. unsecured rates subside.

Second, the U.S. dollar swap lines, Section 402 of the Crapo Act and the temporary exemption of Treasury securities and potentially repos from the SLR will continue to improve the flow of dollars to non-banks through FX swaps – this will lower FX swap implied funding costs and compress Libor-OIS further.

Third, the FIMA repo facility is the only live liquidity facility that's not being used, and one can make the argument that the Fed is currently mispricing the facility: a lower price for FIMA repos could free up more balance sheet for FX swaps...

...with further declines on FX swap implied funding costs and Libor-OIS.

Fourth, positive Libor-Libor bases are also prompting some central banks to deploy their U.S. dollar FX reserves in A1/P1 rated unsecured bank debt, as these offer significantly better yields than FX swaps; the case for central banks to buy more unsecured bank debt is compelling, and more central bank buying could provide a backstop bid for the U.S. dollar commercial paper/CD markets.

Based on these developments, our target for three-month Libor-OIS is 75 bps by the end of April, and 25 bps by the end of May. Our target for May is based on three assumptions: the temporary exclusion of Treasury repos from the SLR; the Fed lowering the price on the FIMA repo facility to the price of o/n repos; and the Fed capping Treasury bill yields at OIS rates through bill yield control.

The machinery of war finance is in full swing...

...and liquidity injections over the past month have stabilized funding markets and are compressing Libor-OIS spreads from the top down. Messing things up from the bottom up – with bill supply – would be a mistake and also confusing.

The target range and the price of the liquidity facilities are the Fed's sanctum: as a matter of principle, the Fed shouldn't let bill supply breach the sanctum...

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Part I – Machiavelli, Bagehot and the CPFF

Had the Fed wanted to lower the prices of the Commercial Paper Funding Facility ([CPFF](#)) and the Money Market Mutual Fund Liquidity Facility ([MMLF](#)), it would have done so by now.

The CPFF's price at OIS+110 bps for A1/P1 issuers and OIS+200 for A2/P2 issuers is high relative to other programs, most of which are priced at 25 bps flat or OIS+25 bps.

The main reason for the pricing gap is that the low-priced facilities – the discount window, the PDCF, the U.S. dollar swap lines and the FIMA repo facility – are all secured, but the CPFF and the MMLF are unsecured, and the Fed is using their price to mitigate the credit risk of buying unsecured bank debt. But there is an easy way to fix this problem: all the Fed would have to do is ask for a bigger first loss buffer from the U.S. Treasury, and lower the price on the facilities in exchange – to say OIS+25 bps for A1/P1 issuers.

The fact that the Fed has not done this in recent weeks is telling...

...given all the other things the Fed has done, which include launching [three new facilities](#) to backstop the credit market, and temporarily [exempting](#) reserves and Treasuries from the leverage ratio (SLR). Why does the price of the CPFF remain far above other facilities'?

There are at least two possible answers.

First, maybe the Fed is sending us a Machiavellian message on benchmark rate reform: Libor is going away and SOFR is the future, and if one-sided borrowers like the Treasury or corporate treasurers were reluctant to issue SOFR-linked debt as they were put off by periodic spikes in repo rates in the past, they should reconsider. The Fed has shown a strong willingness and ability to police the SOFR rate through a low-priced repo facility, but it backstopped unsecured markets – which drive Libor – at much wider spreads. Borrowers now have a choice: in times of stress borrow at a low SOFR rate plus a spread or at a high Libor rate plus a spread. SOFR may come out of this crisis with stronger legs.

Second, the answer may have less to do with Machiavelli and more to do with Bagehot: *“central banks should lend freely to solvent firms against good collateral at a penalty rate”*.

Central banks do their core activities – open market operations and emergency lending – on a collateralized basis: the [discount window](#) lends to banks at 25 bps against collateral; the [PDCF](#) – the discount window for primary dealers – also lends at 25 bps collateralized; the [repo facility](#) lends to primary dealers at the IOR rate against U.S. Treasury collateral; the [FIMA repo facility](#) lends to central banks at IOR+25 bps also versus Treasuries; and the [dollar swap lines](#) lend to central banks at OIS+25 bps versus local currency collateral.¹

No one can say that the Fed has not done enough to backstop the core of the system: core assets like Treasuries are backstopped; core institutions like banks and dealers are backstopped; and core funding markets like repos and FX swaps are backstopped too.²

Money is hierarchical...

...and during crises, rules are flexible at the core and rigid at the periphery. In this crisis, the penalty rate part of Bagehot's rule was replaced with “friendly” rates for the core – with Covid-19 there is no moral hazard in lending to the core of the system at low rates.

¹ Liquidity absorbing facilities like the o/n reverse repo (RRP) facility or the foreign RRP facility are also collateralized, but in the case of these facilities it is the Fed that provides collateral. Central bank operations are always collateralized.

² Implicit in this web of backstops is that the dollar needs of emerging market (EM) economies are backstopped too, to the extent that EM central banks have a sufficient amount of U.S. Treasuries to repo privately or through FIMA repo.

But ignoring the need for collateral when lending to the periphery is anathema for the Fed, and given the unsecured nature of the CP market, it's understandable why the price of the CPFF and MMLF facilities are 100 bps higher than the price of collateralized facilities.³

Once again, there is a way to get around the Fed's discomfort around lending unsecured, which is the U.S. Treasury increasing the first loss buffer backing the CPFF and MMLF.

We doubt that U.S. Treasury would say no to such a request and if the Fed hasn't asked the Treasury for a bigger first loss buffer, that may suggest that the Fed is intent on either delivering the Machiavellian message above or drawing a stark contrast between the terms of lending secured versus unsecured, and lending to the core versus the periphery.

It appears that according to the Fed's mental map, prime funds are peripheral institutions, commercial paper is a peripheral funding market and Libor is a vestige of the past, and government funds are core institutions, repos and FX swaps are core funding markets and SOFR is the future. Instead of arguing for lower rates on the CPFF and the MMLF, maybe the market should reflect and listen to what the Fed is trying to say with its pricing.

Let's assume that the pricing of the CPFF and MMLF will not change from current levels: could U.S. dollar Libor-OIS spreads still tighten materially from their peak and if yes, how?

The answer is yes: Libor-OIS started to tighten already without a lower price on the CPFF (see Figure 1), and further significant tightening is likely by the end of April. How?

In previous issues of Global Money Notes we compared money markets to a cake...

...sponge, cream, sponge, cream.

Cakes have a bottom layer and a top layer and stuff in-between. In dollar funding markets the bottom layers are the fed funds/OIS curve and the general collateral (GC) repo curve and the top layer is made up of FX swap implied curves from the main funding currencies.

Unsecured rates – and hence U.S. dollar Libor – typically trade in-between (see Figure 2): it is unusual for Libor to go through the top layer and to stay there for a sustained period, which is to say that if the Fed can lower the top layer with the U.S. dollar swap lines, Libor will fall back into range irrespective of whether the price of the CPFF is lower or not.

That's because commercial paper and Libor trading above FX swap implied yields mean that Libor-Libor cross-currency bases are trading positive. In turn that means that it's cheaper for Libor panel banks to raise funding in yen, euros, sterling, and Swiss francs and swap it to U.S. dollars, than to issue U.S. dollar commercial paper onshore in the U.S. Banks headquartered in these currency zones can bid up local currency funding and bid for dollars in the FX swap market until Libor-Libor bases go into negative territory again.

In fact, we started to see these funding arbitrage trades gather momentum last week as Libor-OIS spreads traded considerably wider for the euro and sterling, and corresponding OIS-OIS cross-currency bases started to go more negative once again (see Figures 3-6).

Banks headquartered in these currency zones have around 40 bps more to squeeze from their local funding markets and corresponding OIS-OIS bases, respectively, before the arbitrage disappears. This is how U.S. dollar Libor-OIS spreads can fall to 75 bps by the end of April, which would put U.S. dollar Libor 40 bps below the price of the CPFF – so healing in the commercial paper market is possible without a lower price on the CPFF.

³ The MMLF is the secondary market cousin of the CPFF. The MMLF provides prime money funds with a liquidity put to the Fed at a price of the discount window rate plus 100 bps, or 125 bps. This discount rate is a floor under CP rates. Prime funds would not buy CP at lower yields. If they did, they couldn't cover the cost of raising liquidity from the Fed.

Part II – Balance Sheet Relief and OIS-OIS Bases

Further tightening in U.S. dollar Libor-OIS spreads is possible during the course of May, if FX swap implied yields fall and [OIS-OIS](#) cross-currency bases go less negative from here.

This is where the interaction between some of the Fed's new liquidity facilities and recent regulatory changes becomes important: the U.S. dollar swap lines, Section 402 of the Crapo Act, the temporary exclusion of Treasuries and repos from the leverage ratio, and changes to the pricing of the FIMA repo facility can all increase the flow of dollars through FX swaps to non-banks and drive OIS-OIS cross-currency bases less negative.

The U.S. dollar swap lines are currently lending close to \$400 billion (see Figure 7) – this means that foreign banks consume that much less dealer balance sheet and corresponding risk capital to get the dollars they need. They now get those dollars from central banks, and dealers have more balance sheet to lend to non-banks via FX swaps.

[Section 402](#) of the Economic Growth, Regulatory Relief and Consumer Protection Act (otherwise known as the Crapo Act) of 2018 went into effect last week, on April 1, 2020, and like the swap lines, it also increases the flow of dollars to non-banks via FX swaps.

Section 402 exempts central bank deposits from the calculation of the SLR for custodians, namely for The Bank of New York Mellon Corporation, Northern Trust Corporation, and State Street Corporation. Importantly, under the exemptions granted by Section 402, central bank deposits refer not only to deposits at the Fed, but also to deposits at any central bank of a member country of the OECD. This means that Section 402 increases custodian banks' ability to swap the U.S. dollar liquidity injected by the Fed through QE for deposits at the BoJ, the ECB, the SNB, the BoE and the BoC and other central banks.

Section 402 thus boosts the flow of U.S. dollars in the FX swap market: as QE stuffs the custodians with reserves, they will lend more to non-banks via FX swaps; the limit to these flows will be custodians banks' Tier 1 leverage ratios, but the banks' voluntary suspension of stock buybacks for the duration of the crisis will delay that limit, so "[limitless FX swap books](#)" at custodian banks is a game changer we should be aware of.

Next, the [temporary exclusion](#) of reserves and U.S. Treasury securities from the SLR is a highly "unusual" rule change. First, it's been issued by the Board of Governors of the Fed, not including the Fed's supervisory peers from the FDIC and the OCC as it's customary.

Second, given that the Board has sole jurisdiction over bank holding companies only – it shares jurisdiction over banks with the FDIC and the OCC – the exemption applies to U.S. bank holding companies and U.S. intermediate holding companies of foreign banks and the key operating subsidiaries of such holding companies, which are primary dealers.

Third, given that the operating entities the exemption applies to are primary dealers, exempting reserves from the SLR is meaningless since primary dealers don't have any – only banks have reserve accounts at the Fed. So where do these contradictions leave us?

In our reading, the net impact of this rule will be that primary dealers will be able to run "[limitless Treasury inventories](#)", which, if need be, will be financed via repos by the Fed. In that sense, the Board of Governors of the Fed is "drafting" the dealer community to take part in the war effort – by financing the war on Covid-19. Paraphrasing Churchill:

"we give you the balance sheet, and you'll finish the job".

One detail of the exemption that's still not clear is whether repos backed by Treasuries will also be exempt from the SLR. Given that the exemption applies to primary dealers, and that repo is the bread-and-butter activity of dealers, our working assumption is that repos will be exempt too by mid-May, by the time rule change's comment period is over.

If our assumption is right and repos are exempt from the SLR, primary dealers can run “limitless repo books”, similar to how they can now run limitless Treasury inventories, with one caveat: repos have risk weights and Treasuries do not, so Tier 1 leverage ratios can limit the size of repo books. But here too, buyback suspensions will delay that limit.

Limitless repos in turn mean even more lending of dollars to non-banks via FX swaps: if balance sheet for repos is freely available, any hedge fund or asset manager can repo more Treasuries for dollars to lend more to non-banks in the FX swap market.

To pull three balance sheet relief themes together: as central banks lend more to banks through the swap lines, custodian banks lend more in the FX swap market thanks to Section 402, and dealers finance more Treasuries for hedge funds and asset managers thanks to the relaxation of the SLR, the flow of dollars in the FX swap market improves – FX swap implied yields can fall further and OIS-OIS bases can go less negative from here.

The FIMA repo facility has the potential to provide further balance sheet relief.

The facility allows central banks to repo Treasuries with the Fed, and if central banks shift their repo needs from the dealers to the Fed, dealers will have more balance sheet to offer to hedge funds and asset managers to lend even more to non-banks via FX swaps.

The Fed seems to think of the facility as a swap line for central banks without a swap line: whereas some central banks can use their own currency to borrow U.S. dollars through the swap lines, some central banks cannot – the FIMA facility is for these central banks.

Because the Fed sees the facility is a quasi-swap line, it is pricing it at IOR+25 bps, in line with the price of the swap lines.⁴ But at IOR+25 bps, or 35 bps, it is priced relatively high compared to private repo rates, which explains why foreign central banks are not using it.

The FIMA repo facility is the only live facility of the Fed that's not being used.

That could suggest that the Fed should not think of the FIMA facility as a quasi-swap line, because there is a big difference between one pledging foreign currency for U.S. dollars and one pledging Treasuries for U.S. dollars: one is called an FX swap; the other a repo.

Were the Fed to lower the price on the FIMA repo facility from IOR+25 bps, or 35 bps, to the price of the repo facility for primary dealers, which offers liquidity at IOR, or 10 bps, the usage of the facility would increase as foreign central banks shift their repo needs from private dealers to the Fed. That would free up more balance sheet for FX swaps, and lead to further declines in FX swap implied yields and less negative OIS-OIS bases.

In our view, the liquidity facility that's overdue for a price change is the FIMA repo facility, and not the CPFF: a lower rate on FIMA repos can push U.S. dollar Libor lower indirectly.

The liquidity the Fed is pumping into the system, combined with balance sheet relief coming from both regulatory changes and the liquidity facilities means that the drivers of dollar funding stresses under Basel III – liquidity shortages and balance sheet constraints – are about to disappear from our radars for the foreseeable future. In turn, if these drivers were what kept FX swap implied yields high and OIS-OIS cross currency bases negative, their absence can push FX swap implied yields lower and OIS-OIS bases less negative.

OIS-OIS bases can go as high as -25 bps, in line with the price of the Fed's swap lines, and that can tighten U.S. dollar Libor-OIS further to around 25 bps by the end of May.

⁴ The Fed's U.S. dollar swap lines are priced at OIS+25 bps. Because the dollar swap lines offer term U.S. dollars, they are priced off of OIS. But the FIMA repo facility offers only overnight U.S. dollars and so it is priced off of IOR.

Part III – FX Reserve Managers and U.S. Dollar Libor-OIS

Clearly, there is a lot of moving parts in funding markets and as everything falls into place, FX swap implied yields will grind lower and OIS-OIS cross-currency bases less negative, and these dynamics will bring down commercial paper yields and tighten Libor-OIS, so the Fed is right not to lower the price on the CPFF yet. We'll see how things play out given the existing lending and regulatory responses. The signs so far are encouraging...

Other than less negative OIS-OIS bases, FX reserve managers could also help Libor-OIS by providing a much needed backstop bid for the commercial paper and deposit markets.

The problem with the U.S. commercial paper market currently is that the usual buyers – corporate treasurers, prime money funds, offshore money funds and securities lenders – are not buying. Corporate treasurers usually have excess cash but now they do not; prime and offshore money market funds had big outflows and are unwilling to term out; and securities lenders won't have cash inflows and won't term out until risk is definitely on.

U.S. dollar Libor-OIS spreads reflect problems with buyers, not problems with banks.

During past episodes of money market dislocations, medium-term bond funds stepped in with a backstop bid for commercial paper and that backstop bid was what started to drive Libor-OIS spreads in. But this time around, medium term bond funds are absent as they chase better yields in the IG market, where paper trades 200 bps over three-month Libor.

With the usual backstop bid for commercial paper absent, and the CPFF priced too wide, foreign central banks have a potential role to play as buyers of U.S. commercial paper: foreign central banks with access to the dollar swap lines are not in a position where they have to liquidate their U.S. dollar reserves, and if they don't, they leave money on the table.

First, if they lend their dollars in the FX swap market, they are leaving money on the table because commercial paper – as implied by U.S. dollar Libor – offers better yields than lending dollars versus euros, sterling and yen for example (see Figures 4, 6, and 8).

Second, if they lend dollars in the Treasury market, they are leaving money on the table too because commercial paper offers yields that are at least 100 bps better than Treasuries.

Switching from FX swaps and Treasuries to commercial paper should not be a big deal: while FX swaps are secured and commercial paper is unsecured, the global banks (GSIBs) that are the biggest issuers of commercial paper do not pose a credit risk given that they are on liquidity support in every jurisdiction they operate in. Furthermore, most the commercial paper issued by banks funds portfolios of high-quality liquid assets (HQLA) like reserves and Treasuries, so really, commercial paper is basically HQLA in a "gift-wrap".

The relative value case for commercial paper and certificates of deposit are compelling, and if central banks backstop the commercial paper market below the price of the CPFF, then U.S. dollar Libor-OIS spreads could drop to as low as 50 bps by the end of April, independent of the FX swap market dynamics that we have discussed on the prior pages.

And then there is the obvious...

...general risk on, the equity market rally, inflows into prime funds and securities lenders which will all help the bid for commercial paper and certificates of deposit, and of course the Fed may listen to the consensus and lower the price on the CPFF and the MMLF.

These things can all improve Libor-OIS spreads, but their timing is uncertain.

Our aim with this analysis was to show how absent any improvement in the obvious drivers of front-end dynamics, there is a lot of war finance in motion already that will ease unsecured funding pressures from the top down: by compressing FX swap implied yields and potentially by bringing central banks in as marginal buyers of unsecured bank debt.

Conclusion

Our analysis showed how the machinery of war finance can ease unsecured funding pressures from the top down: by compressing FX swap implied yields and OIS-OIS bases.

But bill supply can complicate this picture from the bottom up.

Bill supply last week pushed Treasury bill yields from below OIS to 20 bps above OIS, and further supply without yield curve control could push bill yields higher, which would risk undoing the improvement that the Fed's liquidity and regulatory measures helped engineer:

higher bill yields could pull funds away from the FX swap market as foreign central banks put their dollars into bills, not FX swaps, and as bill-OIS spreads grind more positive, they will push FX swap implied yields higher, OIS-OIS cross-currency bases more negative and that will limit how much more U.S. dollar Libor-OIS spreads can tighten from here.

For all the talk about the war on an invisible enemy and war finance, we haven't heard from the Debt Management Office of the Treasury and the Fed about the need for the monetary financing of the CARES Act and further stimulus measures. The exemption of Treasuries from the leverage ratio frees up demand for supply ("limitless inventories"), but the near-term supply of bills is too much and can push bills yields higher from here, risking a reversal to the improved funding conditions the Fed worked so hard to achieve.

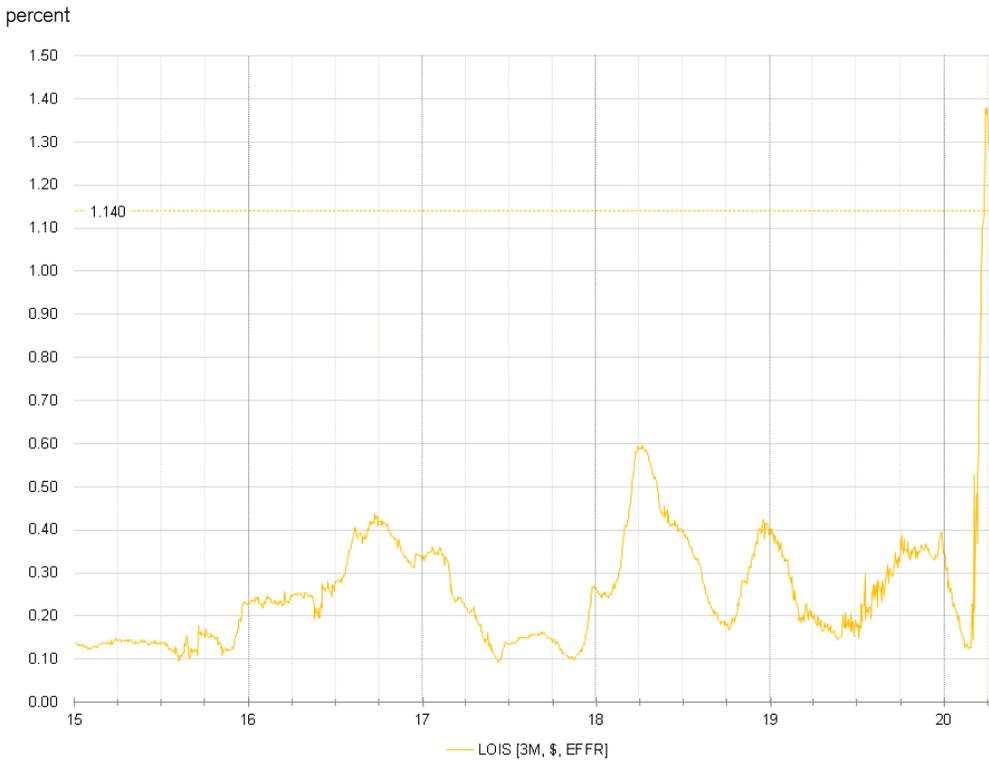
The Fed has done a lot...

...and yield curve control where they peg three month Treasury bill yields at OIS rates and is the only thing the Fed has not done yet, but soon will have to. The target range for overnight rates and the OIS curve – the bottom layer of the money market cake – are the Fed's monetary sanctum. Everything the Fed does is priced based on variables within that sanctum: the top of the band, IOR, IOR plus a spread and OIS plus a spread.

The fiscal authority should not breach the Fed's sanctum in money markets and the monetary authority shouldn't tolerate a breach – especially in the current environment.

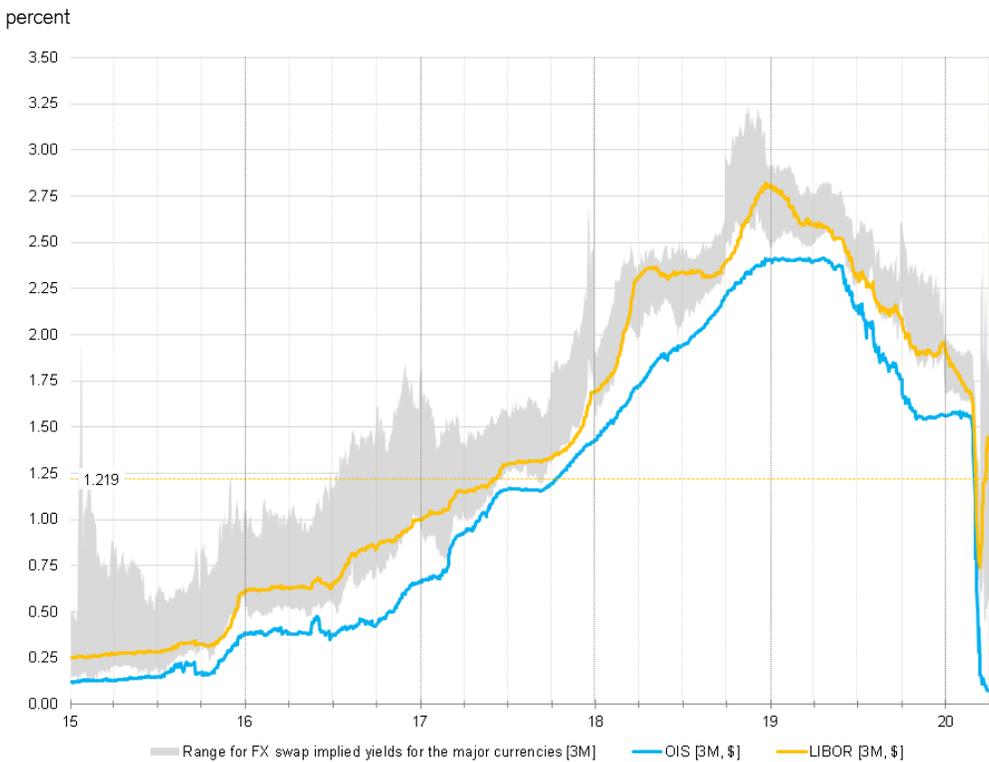
The monetary authority should cap the bill curve at OIS rates so that money market rates do not get pushed around by bill supply and do not offset the impact of liquidity injections.

Figure 1: U.S. Dollar Libor-OIS



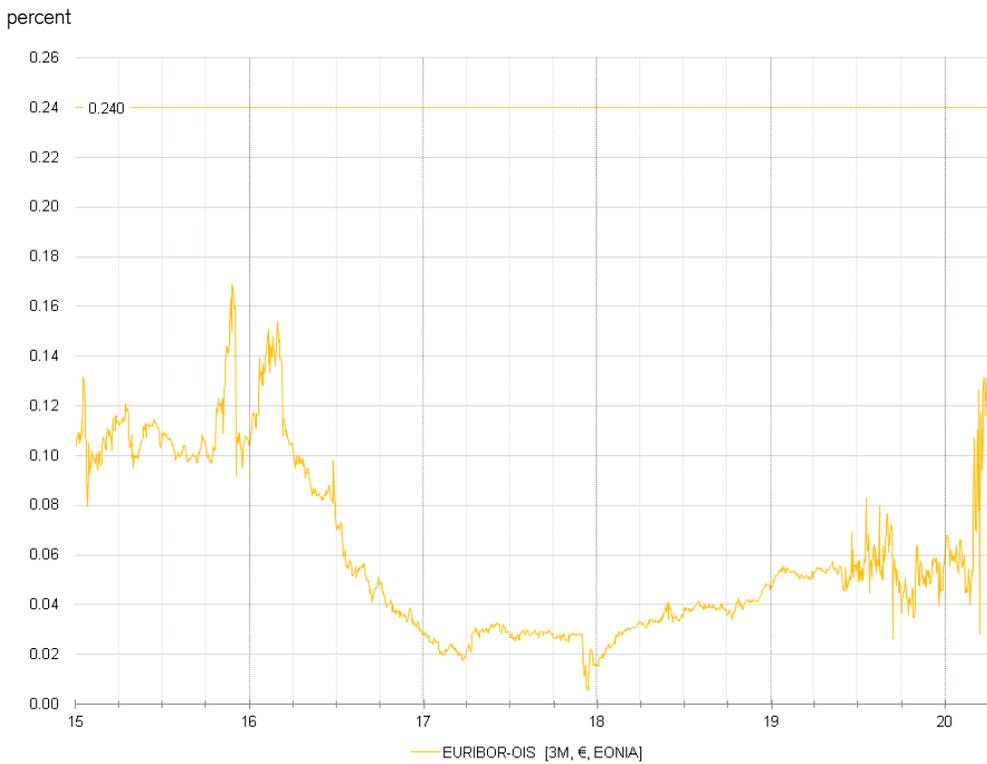
Source: Credit Suisse, the BLOOMBERG PROFESSIONAL™ service

Figure 2: U.S. Dollar Libor Usually Doesn't Trade above FX Swap Implied Rates



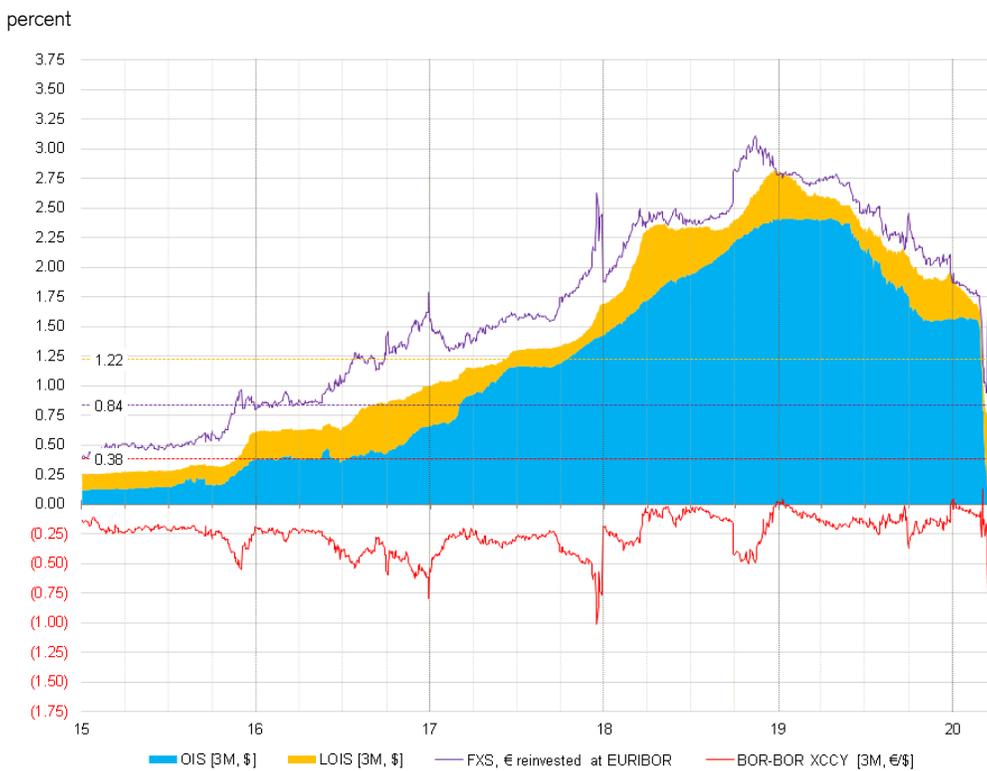
Source: Credit Suisse, the BLOOMBERG PROFESSIONAL™ service

Figure 3: EURIBOR-OIS



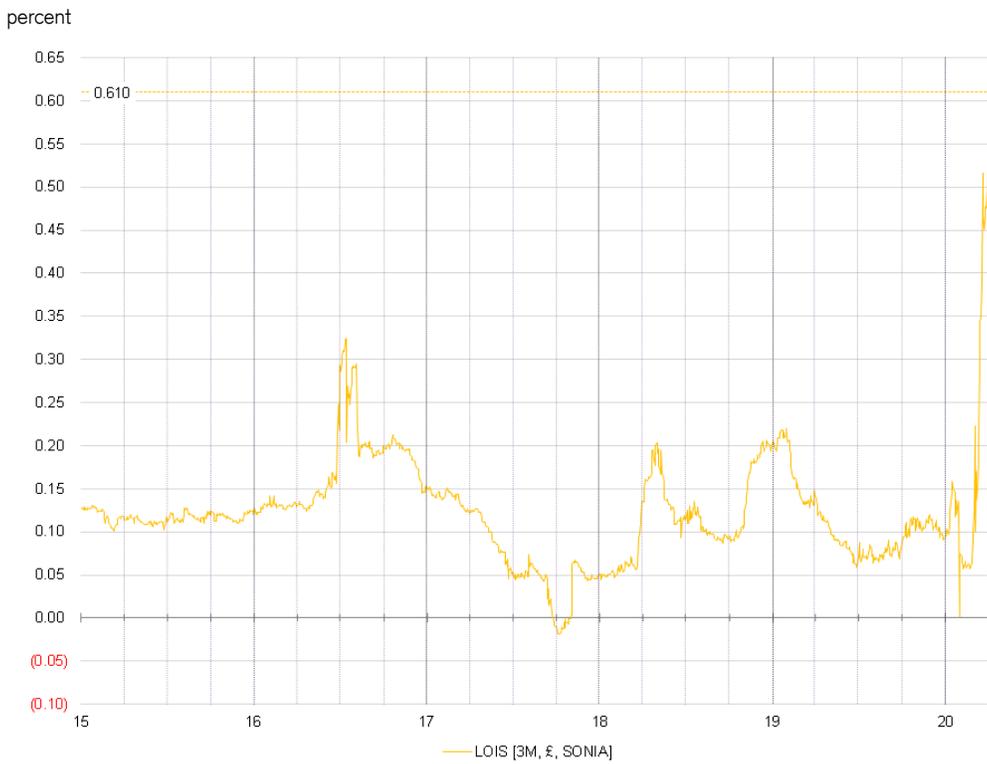
Source: Credit Suisse, the BLOOMBERG PROFESSIONAL™ service

Figure 4: FX Swap Implied Cost of Dollar Funding from €



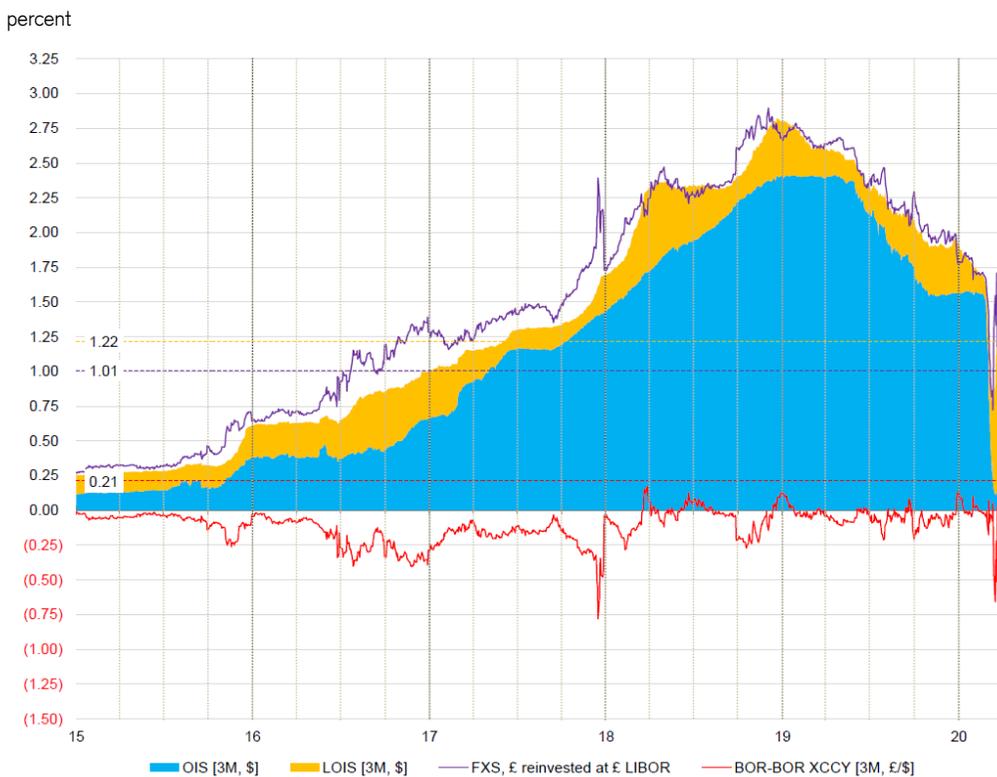
Source: Credit Suisse, the BLOOMBERG PROFESSIONAL™ service

Figure 5: Sterling Libor-OIS



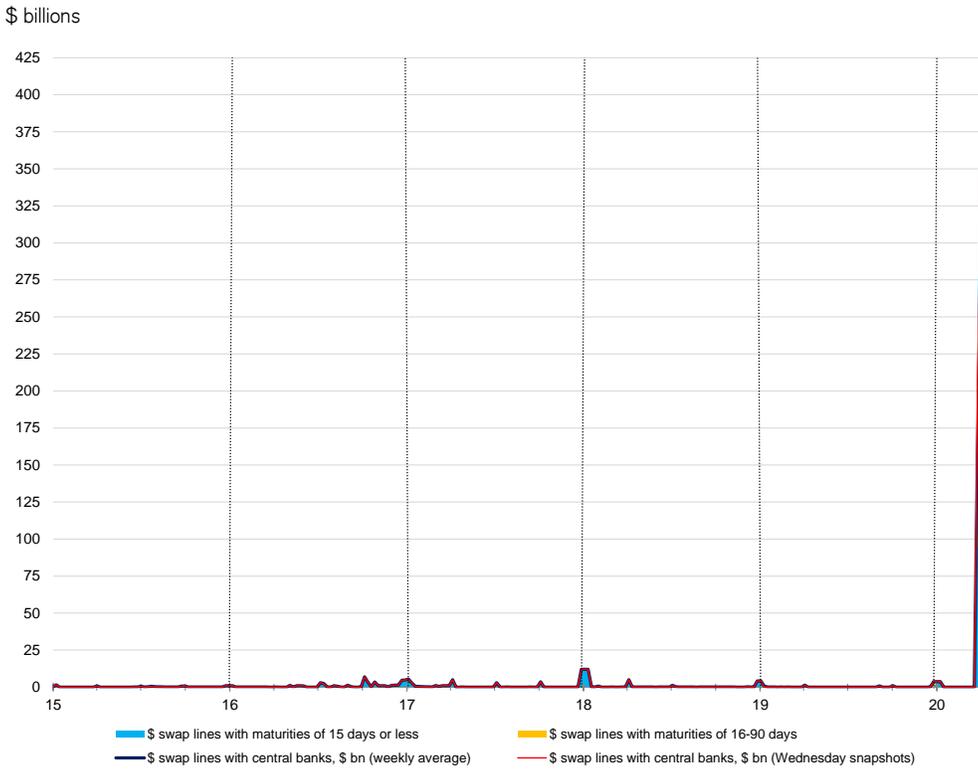
Source: Credit Suisse, the BLOOMBERG PROFESSIONAL™ service

Figure 6: FX Swap Implied Cost of Dollar Funding from £



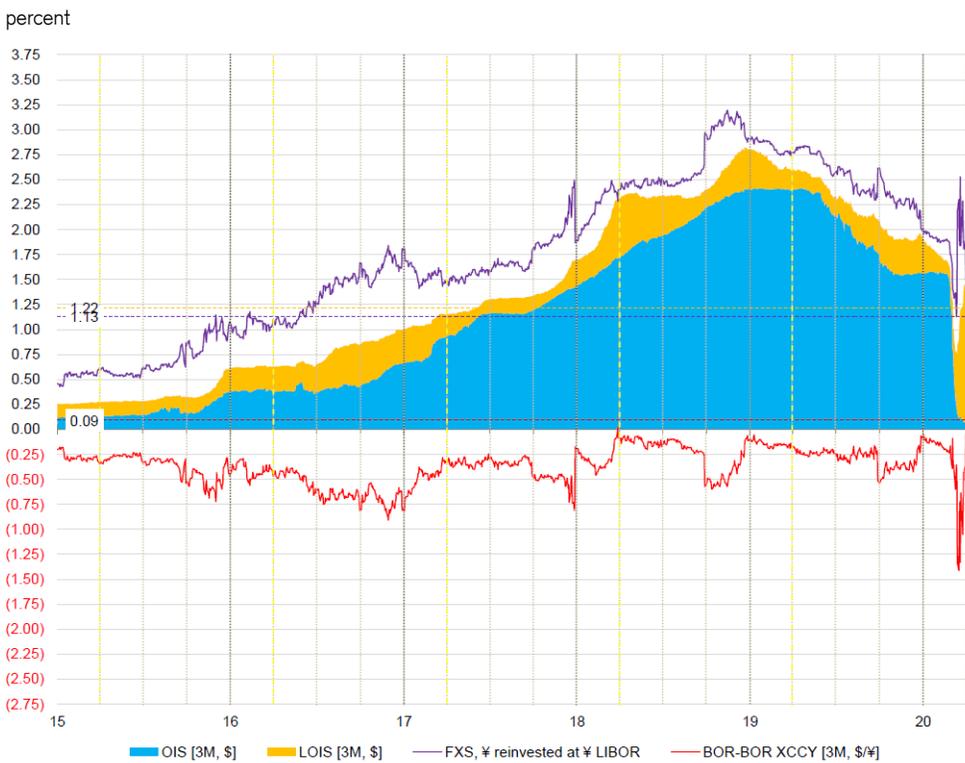
Source: Credit Suisse, the BLOOMBERG PROFESSIONAL™ service

Figure 7: Swap Lines for Banks means more FX Swaps for Non-Banks



Source: Federal Reserve

Figure 8: FX Swap Implied Cost of Dollar Funding from ¥



Source: Credit Suisse, the BLOOMBERG PROFESSIONAL™ service

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