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Countdown to QE4?

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The Fed's liquidity operations have not been sufficient to relax the constraints banks will face in the upcoming year-end turn. Reserves are still insufficient; there are no true "excess" reserves; and large U.S. banks' G-SIB scores are shaping up to be a severe binding constraint heading into the year-end turn.

We have never had a year-end without a comfortable buffer of excess reserves or when G-SIB scores could force most U.S. banks to turn off market making.

The FX swap market shows implied yields that don't imply a bad year-end turn, yet it is the market most exposed to liquidity and balance sheet constrains.

The apparent lack of concern may come from last year's benign experience and that repo rates have been trading normally since the September blowout. But these facts are less relevant than they seem. Last December U.S. banks still had plentiful excess reserves to lend and had no G-SIB constraints; and that liquidity operations have kept a lid on repo rates since September, doesn't mean they will be effective as balance sheets bind going into year-end.

The FX swap market becoming unglued is the biggest risk for RV hedge funds' assumption that they will have balance sheet to fund their bond basis trades around the year-end turn at not-too-punitive rates, if at all. They've lined up forward settling sponsored repo trades to lock up balance sheet for the turn, but they don't know the rates they'll have to pay on these trades, or if banks will be able to fund these trades – and they are missing the incentives at play…

…which is that dealers selling forward settling sponsored repos over the turn have an incentive to introduce an imbalance in collateral markets to maximize the value of whatever excess reserves their bank operating subsidiary has left to lend over the turn. In turn, the dealers hedge funds expect to stand between them and the Fed to bridge the above imbalance may not be there for them if the FX swap market becomes unglued and offers better yields than GC repos.

If we're right about funding stresses, the Fed will be doing "QE4" by year-end: the safe asset – U.S. Treasuries – is funded by RV hedge funds on the margin and if the FX swap market pulls balance sheet and funding away from them, the safe asset will go on sale. Treasury yields can spike into year-end, and the Fed will have to shift from buying bills to buying what's on sale – coupons.

Part I – Liquidity Operations ≠ Excess Reserves

The payments system used to be a credit system…

where banks routinely incurred daylight overdrafts – that is, negative balances – in their reserve accounts at the Fed. The Fed's intraday credit provision to the payments system ensured that payments between banks never bounced. Large money center banks like J.P. Morgan Chase Bank were the biggest and most active users of daylight overdrafts, and a once deep overnight (o/n) fed funds market was where large banks with negative reserve balances borrowed from small banks with positive reserve balances to get the reserves necessary to pay down their daylight overdrafts at the Fed by sunset.

The payments system morphed into a "token" system under Basel III…

as liquidity rules require large money center banks – which, under Basel III, we call globally systemically important banks or G-SIBs – to pre-fund their 30-day outflows, intraday liquidity needs and resolution liquidity needs. The liquidity war-chest of G-SIBs is held either in a reserve account at the Fed or in Treasuries. Intraday liquidity needs and resolution liquidity needs can only be met with reserves, whereas 30-day outflows can be met with both reserves and Treasuries and variations on their respective themes: o/n repos where banks swap reserves at the Fed for Treasuries reversed in for a day, and FX swaps where banks swap reserves at the Fed for reserves at the BoJ or the ECB.

Under Basel III, banks would never incur daylight overdrafts at the Fed for if were to, they would be in breach of either their intraday liquidity needs or resolution liquidity needs. This means that under Basel III the system clears with permanent reserves in circulation, as no bank has an incentive to borrow temporary reserves from the Fed on the margin.

The bank that has the most reserves in a token system…

functions as the system's lender of next-to-last resort, absorbing imbalances by lending some of its reserves via repos and FX swaps on the margin – but not all of its reserves. Since banks can meet their intraday and resolution liquidity needs only with reserves; reserves held for those liquidity needs aren't available for lending. It follows that a bank's ability to serve as the system's lender of next-to-last resort comes down to its reserves in excess of its intraday and resolution liquidity needs. Put differently, the excess reserves of the lender of next-to-last resort ensure that repo and FX swap markets have a backstop.

The concept of excess reserves is therefore an oxymoron…

as the lender of next-to-last resort's excess reserves are someone's required reserves and make the difference between money markets trading normally or falling into disarray. Given that J.P. Morgan was by far the largest user of daylight overdrafts before Basel III, it should not be a surprise that it became the largest holder of reserves under Basel III: if daylight overdrafts were the shock absorber that allowed the payments system, and, by extension, the repo and FX swap markets to deal with imbalances and clear seamlessly, it follows that if under Basel III no bank would ever tap the Fed for daylight overdrafts, J.P. Morgan's excess reserves became the system's shock absorber. J.P. Morgan's dominance in repo and FX clearing meant it had to hold more excess than other banks – its portfolio of excess reserves was the "Bakken Shale" of global dollar funding markets.

Thus, in a payments system that functions as a token system…

…an uneven distribution of reserves is the natural state. Upset that state by flattening the distribution of reserves and you rid the financial system of its lender of next-to-last resort. Taper and repeated cuts to the interest on reserves (IOR) rate were deliberately designed to eliminate excess reserves and flatten the distribution of reserves in the financial system, and that's precisely what caused the September storm in the repo and FX swap markets.

The Fed has been slow to recognize the full implications of this situation…

but in September it learned that when excess reserves are shredded through taper and the distribution of excess reserves is flattened through repeated cuts to the IOR rate, the system is left without a lender of next-to-last resort, and without such a lender the repo and FX swap markets can hit an air pocket, and the many entities that fund through those markets can't get things done: Treasury can't fund the deficits and pay its bills, dealers can't fund their Treasury inventories or their clearing accounts to make markets, and the world can't fund to get the U.S. dollars to pay for goods or to roll their FX hedges.

If carry makes the world go 'round, and reserves make carry possible…

…the day we run out of reserves would be the day when the world would stop spinning.

No, this is not an overstatement.

When Southeast Asia ran out of U.S. dollar reserves in 1997, the world did stop spinning – in Southeast Asia. Back then, the binding constraint was FX reserves – U.S. dollars in nostro accounts at large money center banks in New York. Today, the binding constraint is excess reserves – the reserves that G-SIBs hold in their reserve accounts at the Fed in excess of their regulatory requirements. When the money runs out, pegs get broken…

In Southeast Asia, we broke FX pegs.

In September, we broke o/n pegs – that is, the target range for the o/n rates complex.

To paraphrase Lou Mannheim's character: "*we looked in the abyss, there was nothing staring back at us, and at that moment, the Fed – with some delay – did the right thing and that was what kept us out of the abyss*"… and that was what kept the world spinning.

The Fed became lender of last resort to dealers as J.P. Morgan ran out of reserves to lend, and the primary financier of the government as $250 of the $275 billion of the reserves that's been put into the system since September ended up in Treasury's general account (see Figure 1). Thus, all that the Fed's liquidity operations have done to date is to ensure that the Treasury's cash needs don't drain further liquidity from banks' HQLA portfolios, but it did not inject excess reserves into the banking system ahead of the year-end turn.

That's another mistake in the making.

Under Basel III, year-end turns mark difficult to-get-through periods where the balance between balance sheet constraints and excess reserves determine where turns get priced.

Always and everywhere, excess reserves are what enable repo and FX swap markets to clear when foreign banks window dressing their leverage ratios stop making markets – when foreign banks stop borrowing in money markets to lend via repos and FX swaps, the market participants they've lent to would temporarily turn to J.P. Morgan for funding.

On the Fed's balance sheet, year-end flows would typically show up as liability swaps, where reserves drop and money funds' use of the o/n RRP facility spikes in equal amounts.

On J.P. Morgan's balance sheet, year-end flows would show up as asset swaps, where the above loss of reserves is filled by J.P. Morgan swapping its excess reserves for Treasuries through repos and for deposits at the ECB and the BoJ through FX swaps.

Thus, as the o/n RRP facility "sterilized" the reserves foreign banks did not have the balance sheet to intermediate, J.P. Morgan stepped up the lending of its excess reserves. This way, the aggregate reserves actively floating in the financial system did not change, only its mix – as some active reserves got sterilized, some excess reserves got activated…

but at a price: like the price of an Uber on a rainy day, surge pricing went into effect to mobilize excess reserves – a practice we've referred to as "fracking" in previous issues.

The growth of sponsored repo since 2018 changed some of these year-end dynamics as the reserves that went to the o/n RRP facility in the past now remain in the system as sponsored repo enables some banks to circulate them without using balance sheet. Figure 2 shows how year-end spikes in the o/n RRP facility migrated to sponsored repo and how the system went from sterilizing reserves on year-ends to retaining more of them.

As more reserves were retained in the repo market, fracking became less profitable – the FX swap market had more excess reserves and a better year-end turn in 2018, which made large U.S. banks spend all their excess reserves on Treasuries during 2019. Figure 3 shows the rotation from excess reserves to collateral in banks' HQLA portfolios: since the beginning of the Fed's balance sheet taper, large U.S. banks like J.P. Morgan that are central to year-end flows spent some $350 billion of excess reserves on collateral.

Truly "excess" reserves are thus gone…

…but dealers and banks loaded up on collateral as a trade – a trade they were supposed to be taken out of by eventual coupon purchases by the Fed. But the Fed never did that, and for the first time we're heading into a year-end turn without any excess reserves.

Don't fight the Fed you say, they are adding liquidity through repos and bill purchases, and what's not in the system now will be there on year-end, and the turn will be just fine.

Not so fast!

What we need for the turn to go well are balance sheet neutral repo operations, or asset purchases aimed at what dealers bought all year: coupons, not bills – the former to get around foreign banks' balance sheet constraints around year-end, and the latter to ensure that excess reserves accumulate with large banks like J.P. Morgan.

Unfortunately, the Fed is doing neither.

Repo operations are done through the tri-party system which means they aren't nettable, which in turn means that once balance sheet constraints start to bind around year-end, foreign dealers will take less liquidity from it to lend it to those in need on the periphery: central bank liquidity is useless unless primary dealers have balance sheet to pass it on, and that they've been passing it on since September does not mean they will at year-end.

Bill purchases are also ill conceived because banks and dealers don't own any bills and so don't have anything to sell to the Fed to boost their excess reserves ahead of year-end. In our view, the notion that bill purchases will force money funds down the yield curve to buy short coupons from primary dealers who would then pay off their repos with banks so that banks build up some excess reserves into year-end involves too many moving parts…

…and Murphy's law applies in money markets too.

In our view, once the Fed's bill purchases push bill yields below the o/n RRP facility rate – there are about 10 basis points to go (see Figure 4) – the reserves entering the system won't flow down the curve and up to banks, but up the curve and down the drain…

to the o/n RRP facility where reserves get sterilized. Money market funds need a steeper money market curve to start buying short coupons, but with the Fed done with rate cuts for now, more slope is not in the cards. In turn, if o/n repos and short coupons yield the same, money funds will choose repos – with dealers until there is balance sheet, and with the Fed when balance sheet constraints flare up and start to bind into year-end.

In summary, year-end balance sheet constrains will preclude primary dealers from bidding for reserves from the Fed through the repo facility or through repos from money funds. The slope of money market curves suggest that excess reserves won't build up at banks, and so U.S. banks will not be able to fill the market making vacuum left by foreign banks.

Part II – G-SIB Scores and the Flow of Excess Reserves

Running low on excess reserves is only one factor that determines how bad the vacuum in market making can get around year-end turns. G-SIB scores are the other, as they determine what banks can do with whatever excess reserves they have at year-end: lend them through repos, spend them on Treasuries, or lend them through FX swaps, – in that specific order as repos are less punitive for banks' G-SIB score than FX swaps.

U.S. banks are particularly sensitive to their G-SIB scores this year, as they all moved up to a higher surcharge bucket due to bigger Treasury holdings and a heavier repo footprint: every U.S. bank except Morgan Stanley has an incentive to shrink its score into year-end.

G-SIB scores are a moving target as they are influenced by markets. The themes pushing G-SIB scores in the wrong direction this year are the equity market rally and the flat curve:

(1) the rally in equities is inflating scores through G-SIBs' market capitalization and the value of equities G-SIBs hold as trading assets or available for sale securities;

(2) the flat yield curve is inflating scores through G-SIBs' bloated Treasury portfolios, which, given auction supply and the equities rally, may grow further into year-end.

U.S. G-SIBs can't do a thing about the equity market, and, as the largest primary dealers, they also can't not take down more Treasuries at auctions if there are insufficient bids; but they can do two things to offset some of the factors that are pushing their scores up:

(1) collateral upgrades where they repo equities out to raise some excess reserves, or repo or outright sell some of their Treasuries to raise some excess reserves.

(2) clamping down on market making in the FX swap or sponsored repo markets whereby they'd add to the vacuum in market making triggered by foreign banks.

Note the connection between "remedial" trades to G-SIB scores and excess reserves – when G-SIB scores are too high and banks need to reduce them, they do so by swapping assets for excess reserves. In other words, when banks hold lots of excess reserves their G-SIB scores are relatively low and they have room to lend their excess reserves through repos and FX swaps, and conversely, when banks are low on excess reserves their G-SIB scores are high and that may force them to clamp down on market making.

Excess reserves are gone and as a result G-SIB scores are high…

and banks are lowering their scores by swapping assets for reserves to scrape together some excess reserves ahead of the year-end turn – and those scraps are all U.S. banks will have to lend into the market making vacuum left by foreign banks around year-end…

lending mostly via repos and not FX swaps given their G-SIB scores. But these flows will be scraps of excess reserves, not bursts from the Bakken Shale like in the past…

and that's the best case scenario.

The worst case scenario is that collateral upgrades aren't sufficient and U.S. banks stop making markets in FX swaps and so exacerbate the vacuum triggered by foreign banks.

We are on track to realize the worst case scenario, and the market doesn't price for that.

According to our conversations with market participants, U.S. G-SIBs rely heavily on Canadian pensions for equity upgrades to accumulate some excess reserves for the turn.

Furthermore, some large U.S. banks are selling Treasuries to lower their G-SIB scores and scrape together some excess reserves to harvest higher repo rates over year-end.

Finally, at least one large U.S. bank appears to be pricing some of its FX swaps trades such that it misses those trades – a polite way of clamping down market making activities.

G-SIB score-related year-end pressures are thus on…

…and the equity market rally and Treasury auctions are the main variables to watch: for every dollar of equities funded with Canadian pensions to reduce one's G-SIB score, a one dollar gain in one's market cap or equity inventories forces another upgrade trade; the more the stock market rallies into year-end the more the demand for upgrades trades, and the higher the rate where banks will lend scraps of excess reserves over the turn; similarly, for every dollar of Treasuries sold by a bank portfolio to reduce G-SIB scores, a one dollar gain in Treasury inventories due to a poor auction can push scores back up.

One step forward, one step back…

and if markets won't let G-SIBs reduce their scores, G-SIBs will retort to scale back market making, like the one U.S. bank that's already pricing FX swap trades to miss them. We do not see the pressure from this in FX swap markets yet as foreign banks still have balance sheet to pick up the slack, but pressures will come as we get closer to year-end.

Our point is that the realized turn in FX swap markets will be worse than what is priced by the market regardless of whether we end up in the best case or worst case scenario.

In our view, the FX swap market is expecting too much similarity between the current year-end turn to last year's turn. That's a mistake as last year's dynamics were different:

(1) large U.S. banks still had excess reserves to lend, but this year they do not; and

(2) they got a G-SIB relief from a 20% fall in equities, but this year end they do not.

Lower G-SIB scores allowed large U.S. banks to spend their hoards of excess reserves on more complex trades like FX swaps, and the year-end turn went down as a non-event – in FX swaps, but not repos. Recall that repo printed at 6.5% on December 31st spot.

This year may be the opposite.

Higher G-SIB scores will favor repos over FX swaps when deploying excess reserves, but given that the Bakken Shale has run dry, repos may still print as bad as last year-end, while FX swaps could end up as the orphaned asset class without an obvious backstop, and that may force banks in some parts of the world to the edge of the proverbial abyss.

Meanwhile, the relative value (RV) hedge fund community is certain that they will have balance sheet to fund their bond basis trades at reasonable rates over the year-end turn.

Why?

"*Because we have locked up forward settling sponsored repos with dealers over the turn, and market making in sponsored repos is less likely to be scaled back than in FX swaps.*"

Forward settling sponsored repos are meant to substitute for the balance sheet that the RV hedge funds will lose from foreign banks around year-end, but their risk is that RV hedge funds don't know the rate at which they'll get balance sheet at year-end – forward settling sponsored repos only lock in balance sheet capacity, but not the rate…

…and with all due respect, RV funds are ignoring the incentives of repo dealers.

The "romantic" understanding of how sponsored repo works is that a sponsoring dealer sponsors in a unit of cash from a money fund and a unit of cash from an RV hedge fund and novates both sides of the book to FICC so that the growth of its sponsored repo book does not introduce an imbalance in the repo market. But that's not the way things work.

The "realpolitik" of sponsored repo is this: some sponsors have access to money funds and some sponsors have access to hedge funds and the former sponsor cash into FICC and the latter sponsor collateral into FICC. Thus, the pace at which cash and collateral is being sponsored in is never in line, and if collateral is being sponsored in faster than cash,

imbalances can arise. Those sponsors that have a large bank operating subsidiary with excess reserves have an incentive to sponsor in collateral in excess of their excess reserves to boost the value of their scraps of excess reserves; and if their scraps run out and forward repos can't be funded, that's not the sponsors' problem but the RV funds' problem.

Without having intelligence about the balance between forward settling sponsored repos and banks' progress to scrape together excess reserves to fund those forward repos, RV funds don't know where the rate on their forward settling sponsored repos will print. And given that there are no signs of excess reserves accumulating into year-end, it is likely that the RV community will be taxed excessively to get over the year-end turn.

No problem you say…

as the excess reserves missing from bank portfolios will be filled by a small cadre of primary dealers that do not have balance sheet constraints and they'll fill the hole and keep a lid on repo rates. Sure, let's assume for a moment that those primary dealers that are not subject to Basel III – Amherst Pierpont Securities LLC, Cantor Fitzgerald & Co. and Jefferies LLC – and three Canadian dealers whose year-end was on October 31st – the Bank of Nova Scotia, BMO Capital Markets Corp. and TD Securities (USA) LLC – will save the day by borrowing enough from the Fed to bridge your needs in repo markets.

Maybe, maybe not.

The risk to this benign and optimistic view is the FX swap market as discussed above: given that G-SIB scores bind and excess reserves are gone, the FX swap market, unlike last year-end, may end up without a lender of next-to-last resort, and so it will likely trade at implied rates far worse than anything that we've seen in recent year-end turns. If that will indeed be the case, the Canadian dealers you expect to lend to you to fund your bond basis trades will lend in the FX swap market instead and you'll end up short…

and you may end up as a forced seller of Treasuries.

Our overarching point is that a dealer is a hedge fund's enabler, not its friend…

and dealers that co-exist with large bank operating subsidiaries have an incentive to introduce imbalances the repo market to boost the value of their banks' excess reserves, and dealers that have the balance sheet to take liquidity from the Fed's repo operations will not necessarily do repos with RV hedge funds if FX swaps offer a much better value.

Our big picture conclusion is that…

the safe asset – U.S. Treasuries – is being funded o/n and therefore it depends on balance sheet to be held and printed. Balance sheet for the safe asset isn't guaranteed around year-end and if balance sheet won't be there, the safe asset will go on sale…

Treasury yields will spike.

The FX swap market could be the trigger of forced sales of Treasuries around year-end, and these funding market stresses will likely pull away capital and hence balance sheet from equity long-short strategies which could spill over into a broader equity selloff…

during a Treasury selloff – that's not the right kind of risk parity Christmas.

When these pressures will show up and how long they will last is the last big question, and here it's hard to have a definitive answer: it depends. It depends on how equities do, which depends on the trade deal and other random tweets. It depends on how auctions go, which depends on the equity market and the curve slope relative to actual funding costs.

If the equity market rallies and auctions go poorly, G-SIB scores will keep going higher and the risk that funding market pressures from managing G-SIB scores will show up starting the last two weeks of the year and will last longer than just the spot turn are rising.

Conclusions – FX Swap Lines and "QE4"

Year-end in the FX swap market is thus shaping up to be the worst in recent memory, and the markets are not pricing any of this. Prices don't seem to discount the facts that excess reserves are gone and the Fed's operations still have not added any, and that G-SIB scores are binding and risk large U.S. banks clamping down on market making.

Neither does anyone think that the Fed will cut one more time in December to deliver slope in the money market curve so that reserves from bill purchases flow up to banks; or that the Fed will actively encourage the use of FX swap lines around year-end to get around G-SIB bottlenecks; or that the Fed will start buying coupons from dealers to inject excess reserves in a balance sheet neutral and G-SIB score-reducing manner.

Something will have to give and the turn has to get very bad before something gives…

If we are right and the Fed loses control over the o/n rates complex going into year-end – not just around the spot turn but the weeks leading up to it – what else can the Fed do?

(1) encourage foreign central banks to use of the FX swap lines;

(2) start QE4 by switching from buying bills to buying coupons;

The Fed's FX swap lines would get around the G-SIB problem directly – if market making in the FX swap market breaks down due to G-SIB-related bottlenecks at large banks, flows get kicked higher up in the hierarchy and central banks become market makers in FX swaps and lend dollars to banks in their jurisdictions at a price of OIS + 50 bps…

…so that the world does not stop spinning.

That response would deal with the potential problems in FX swap markets above head on, and ensure that the reserves taken by a select group of dealers from the repo facility around year-end flow into the repo market to fill the funding needs of RV hedge funds.

QE4 would help through the backdoor: by reversing the mistake of balance sheet taper. QE4 would mean buying back from dealers and banks the Treasuries they were forced to buy during balance sheet taper and giving back the reserves they gave up in the process.

QE4 would re-liquefy HQLA portfolios by trading Treasuries for excess reserves…

the excess reserves that were always needed to get through to year-ends seamlessly, and which the system's liquidity profile and U.S. banks G-SIB scores need desperately.

QE4 would re-fill the Bakken Shale in an instant…

as primary dealers stuck with Treasuries would pay off their repos with J.P Morgan, and that would bring us back to the natural state of the token system, that is, a state, where the distribution of excess reserves is uneven once again, and where J.P. Morgan is the system's lender of next-to-last resort once again. Why is that better than the Fed?

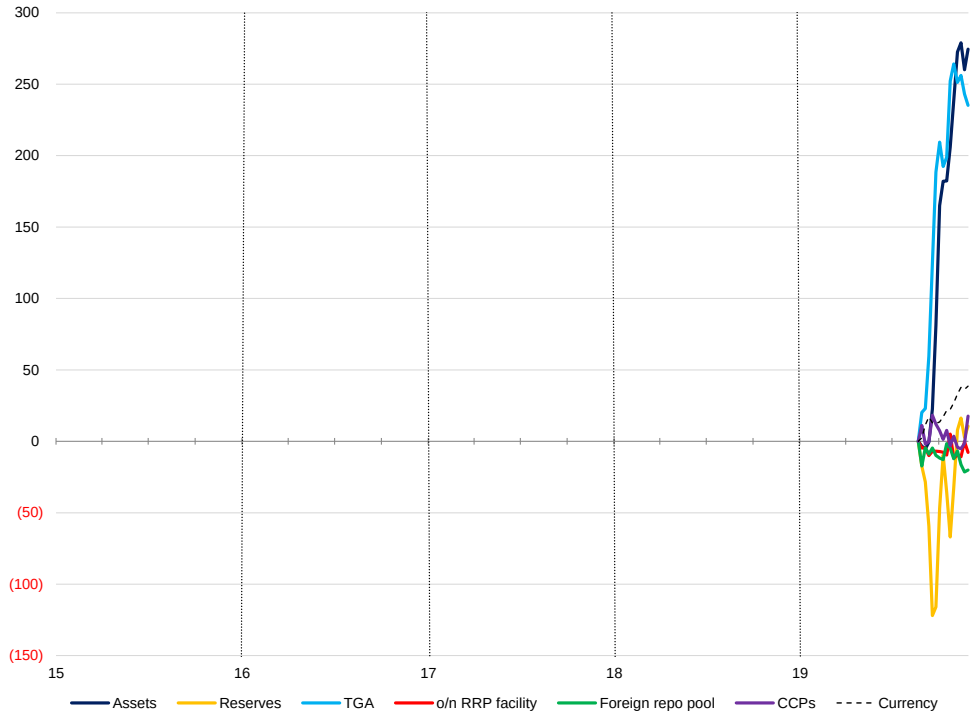
Because J.P. Morgan has the right set of pipes: it lends into FICC and the Fed does not. Because J.P. Morgan is pragmatic: it buys coupons when it has to and the Fed does not.

QE4 – as much as it makes sense – won't happen unless the Fed's hands are forced…

and not responding to potential stresses in the FX swap market with the swap lines, may be what forces the Fed's hands. If it will take the swap lines to help RV hedge funds to roll their positions without the risk of fire sales, not encouraging their use preemptively can lead to fire sales where QE4 goes live as a clean-up "operation" with the Fed buying what the RV funds are forced to sell – and what they could have bought from dealers under normal circumstances as dealers have been politely asking the Fed since September, just like they were asking for a repo facility before that – and we know how that ended…

Figure 1: Liquidity Operations Have Not Boosted Excess Reserves

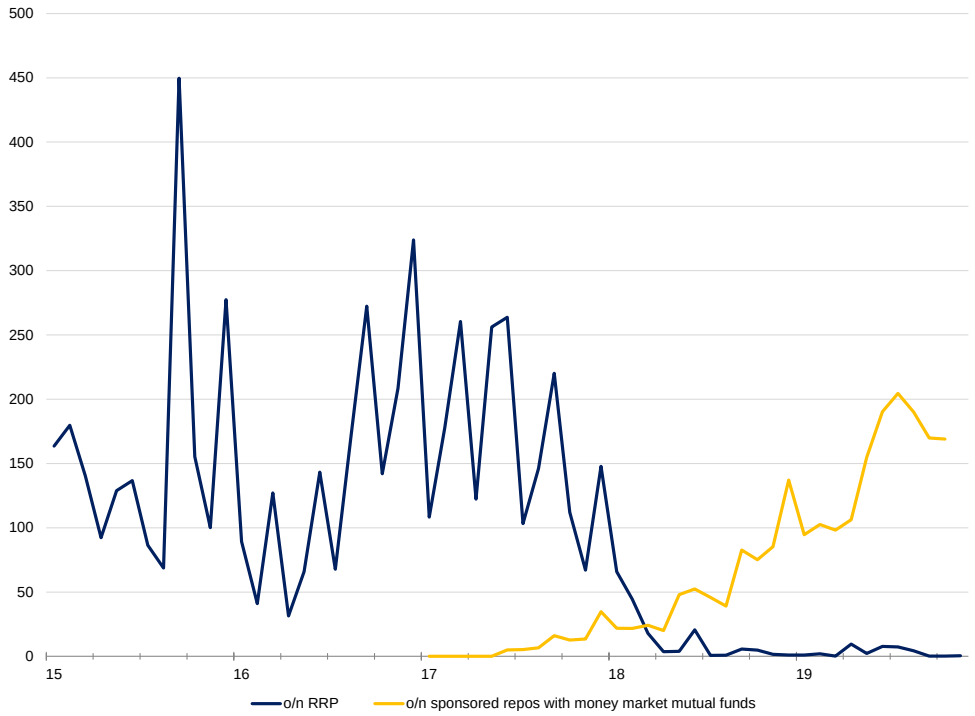
$ billions, based = August 21st, 2019 = 0



Source: Federal Reserve, Credit Suisse

Figure 2: From Sterilization to Circulation

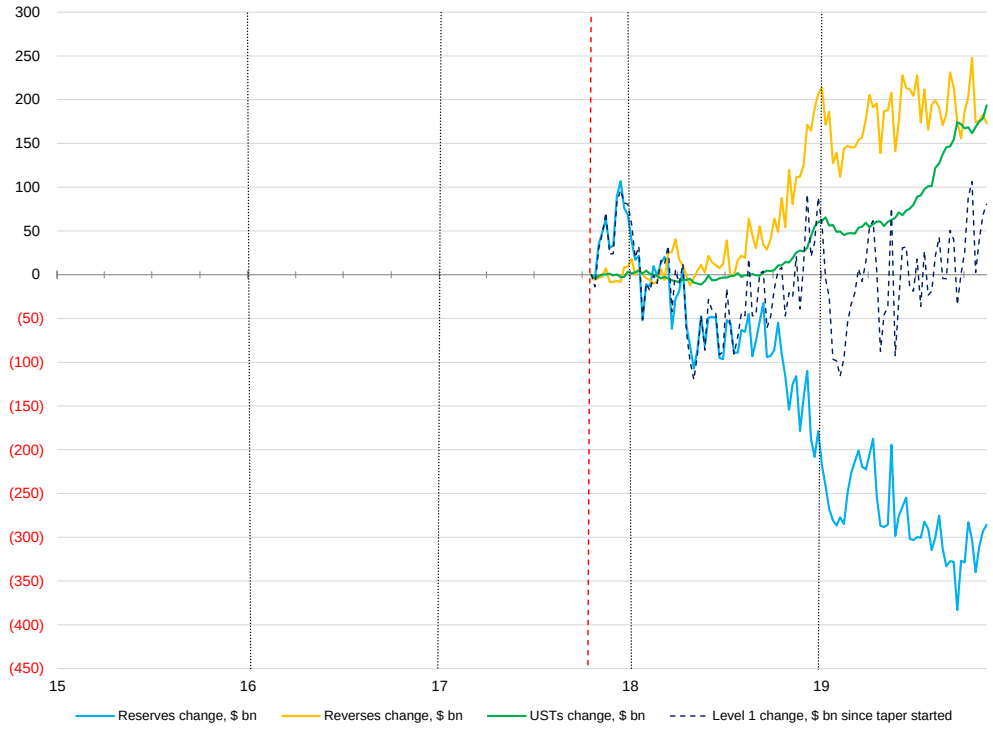
$ billions



Source: Federal Reserve, FICC, Credit Suisse

Figure 3: Large U.S. Banks Have No Excess Reserves Left to "Frack"

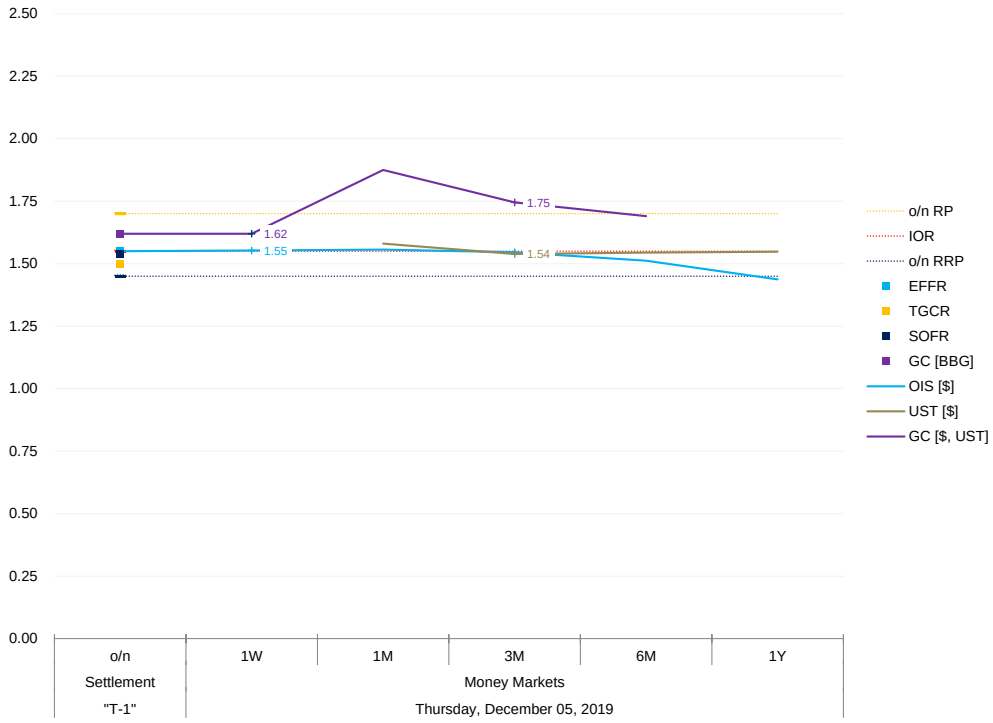
$ billions, base = start of balance sheet taper = 0



Source: Federal Reserve, Credit Suisse

Figure 4: Up the Curve and Down the Drain

percent



Source: the BLOOMBERG PROFESSIONAL™ service, Credit Suisse

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