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Global Money Notes #4

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A Tool of Their Own – The Foreign RRP Facility

Since the FOMC hiked interest rates in December, more than $100 billion in non-operating deposits have left the banking system.

However, it was not the o/n RRP facility that absorbed these outflows. Rather, it was the U.S. Treasury bill market with the help of the foreign RRP facility.

Many clients have asked the Fed about the foreign RRP facility, and the response they got was that it is just a service offering for foreign central banks.

But in our view it is more, far more than "just" a service offering.

It is a policy tool the Fed has been using to exert an upward pressure on bill yields and to facilitate the draining of reserves and the rotation of cash pools out of non-operating deposits and into Treasury bills. At a takeup of $220 billion (and rising), the foreign RRP facility is already a more prominent policy tool than the o/n RRP for money funds with a trend takeup of a mere $80 billion (and falling) – not bad for a policy tool that no Fed official has ever mentioned before.

For bank equity and fixed income investors with an eye on whether the outflow of non-operating deposits will force banks to rebalance HQLA portfolios, the new news in this issue of Global Money Notes is that we are far deeper into the process of deposit outflows ($300 billion and accelerating) than what the smaller-than-expected takeup in the o/n RRP facility would have us believe (looking at o/n RRP volumes, one would assume outflows are not happening).

The $100 billion in non-operating deposits that have flown out of banks since the December rate hike are big enough to force some big banks to rebalance between Level 2 and Level 1 assets in their HQLA portfolio in order to remain compliant with the letter and spirit of the liquidity coverage ratio. The maximum some banks can lose is $30 billion before their Level 2 limits are breached – and $100 billion in outflows since December mean that this scenario is now live.

It is one thing if these rebalancing flows are driven by the gradual outflow of non-operating deposits – the resulting trades may occur gradually, over time. But it's a completely different matter if they are forced by the Fed on compliance grounds and at banks where deposit outflows have not triggered them yet.

Since the December rate hike large U.S. banks have sold $10 billion in agency MBS and bought $13 billion in Treasuries. Whether these rebalancing flows have been triggered by the outflow on non-operating deposits or regulatory push to make U.S. G-SIBs comply with global HQLA portfolio composition benchmarks we do not know. But if it is the latter, flows out of MBS and into Treasuries could be substantial: $100 billion at best and $175 billion at worse with obvious implications for the mortgage basis, bank NIMs and mortgage REITs.

DISCLOSURE APPENDIX AT THE BACK OF THIS REPORT CONTAINS IMPORTANT DISCLOSURES AND ANALYST CERTIFICATIONS.

Policy innovations have thrown a curve ball to our view that non-operating deposits will flow out of banks and into money funds via the o/n RRP facility.

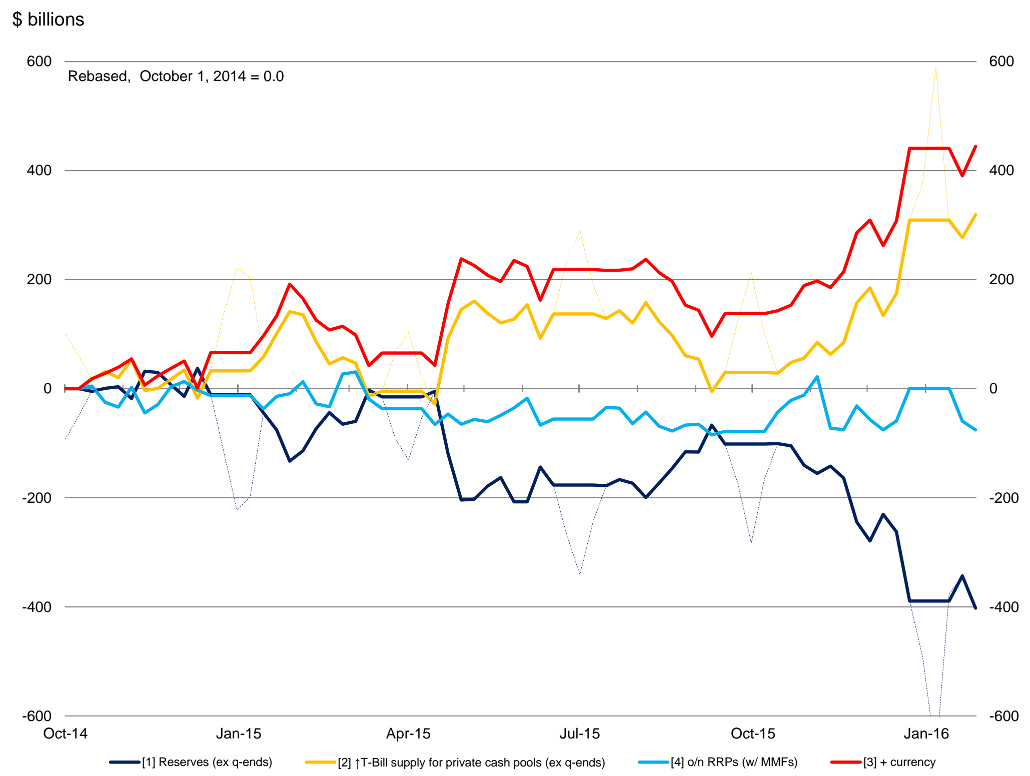
Non-operating deposits are indeed on their way out of the banking system. Since the beginning of 2015 there have been $400 billion in deposit outflows and a corresponding decline in banks' excess reserve balances at the Federal Reserve (see Figure 1).

Half of these outflows came from JPMorgan proactively driving $200 billion of non-operating deposits off its balance sheet, completing this process before the December rate hike. $100 billion occurred at other banks since the December rate hike and reflects a voluntary choice by investors to trade out of non-operating deposits and into other instruments. And for the sake of completeness the remaining $100 billion reflects the trend-like annual increase in currency in circulation as households withdraw deposits to finance their daily payment needs (an interesting factoid but not the focus of this analysis).

But the destination of non-operating deposit outflows did not turn out to be government-only money market funds via the o/n RRP facility.

We did get a full-allotment o/n RRP facility, but not only did its usage not go up since the hike; it actually declined! And therein lies the rub: as long as the size of the Federal Reserve's balance sheet is unchanged (and it did not change one penny), if one liability line item (reserves) is falling due to deposit outflows, other liability line items must be rising.

Figure 1: Tracking the Reserves Drain



Source: Federal Reserve, Credit Suisse

We will discuss these other liability lines items in detail below, but for now suffice it to say that in the aggregate their increase represents an increase in the supply of Treasury bills available for private institutional cash pools (the cash balances of asset managers, hedge funds, private equity funds and other investors) as they trade out of non-operating deposits.

In fact, the effective supply of bills available to private investors is up by more than $400 billion since October 2015, an amount in excess of the volume of non-operating deposits that have already left the banking system. And similar to the pace of deposit outflows, which have accelerated since the December hike, the pace at which the effective supply of Treasury bills available for cash pools has been accelerating since the rate hike as well.

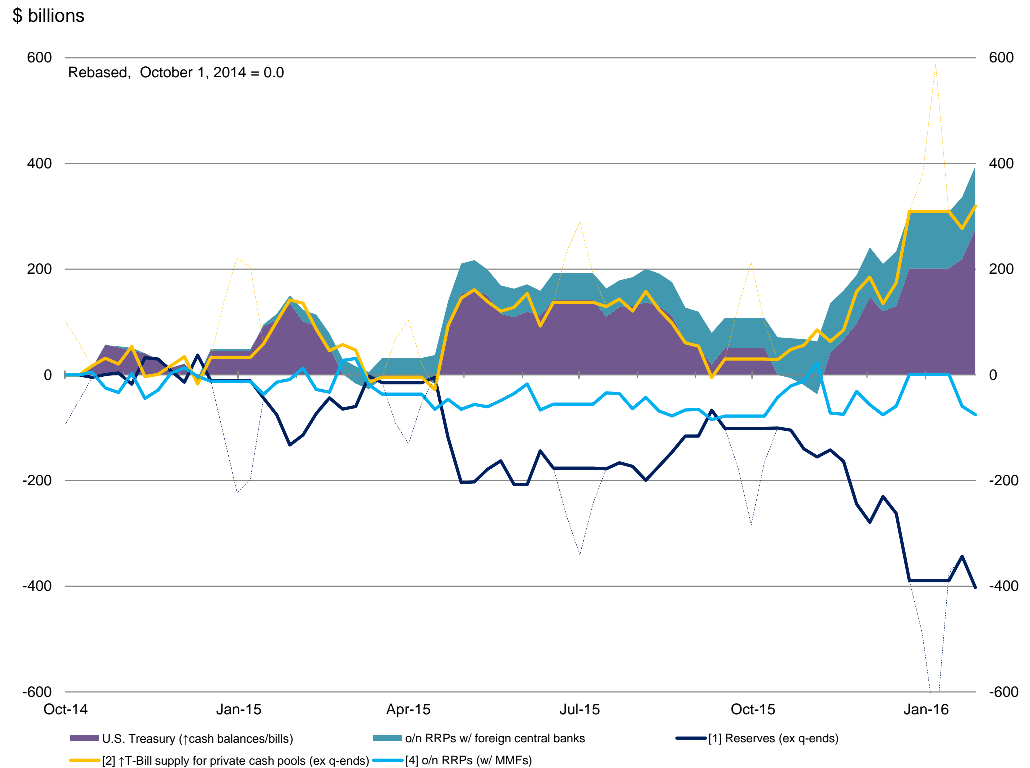
Other Ways to Drain

Other than o/n RRPs with money funds there are at least two other ways through which reserves can be drained and the outflow of non-operating deposits from banks to other corners of the financial system can be greased. As shown in Figure 2, these are:

1. …the U.S. Treasury boosting its cash balances in the Treasury General Account (TGA) at the New York Fed, and
2. …foreign central banks boosting their usage of an RRP facility the New York Fed maintains exclusively for them (a facility that is separate from the much talked about o/n RRP facility for other financial institutions, such as money funds).

Figure 2: More Treasury Bills for Private Cash Pools

$ billions



Source: Federal Reserve, Credit Suisse

Like any asset on any balance sheet, the cash balances of the Treasury need funding as well. Given that Treasury earns no interest on its cash balances at the Fed, it finances them in the cheapest possible way which are one-month bills. Buying these bills will be cash pools that heretofore have been sitting in non-operating deposits earning zero. When cash pools buy these bills, they spend a portion of their non-operating deposits (an asset swap). This results in a decline (outflow) of non-operating deposits and an equivalent loss of reserves in the banking system. Offsetting these declines will be an increase in the cash balances of the Treasury financed by bills in amounts equivalent to the amount of reserves and non-operating deposits lost by the banking system, closing the loop (see Figure 3).

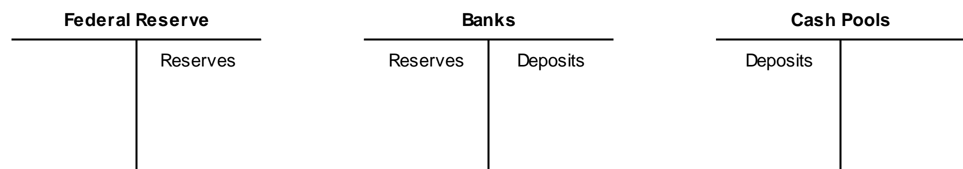
Since the resolution of the debt ceiling in October, the Treasury boosted its cash balances from $50 billion to nearly $350 billion and funded this by issuing that much in additional bills. On the flipside, this facilitated the flow of that much in non-operating deposits out of the banking system and into the bill market. This way of draining reserves is approaching its limits, however. At a recent TBAC meeting (see minutes) the Treasury floated the idea of boosting its cash balances to $500 billion but not beyond – we are only $150 billion away from that limit (like banks, the Treasury has balance sheet constraints as well, it is just that Treasury's constraints are not imposed by regulations but rather by Congress).

But even if we were to reach capacity in this way of draining reserves, there would still be other avenues to use. This is where the Fed's foreign RRP facility comes in.

Figure 3: Swapping Reserves for TGA Balances

Conceptually, think of the U.S. Treasury as taking over the "money dealer" function presently played by banks.

Step 1:



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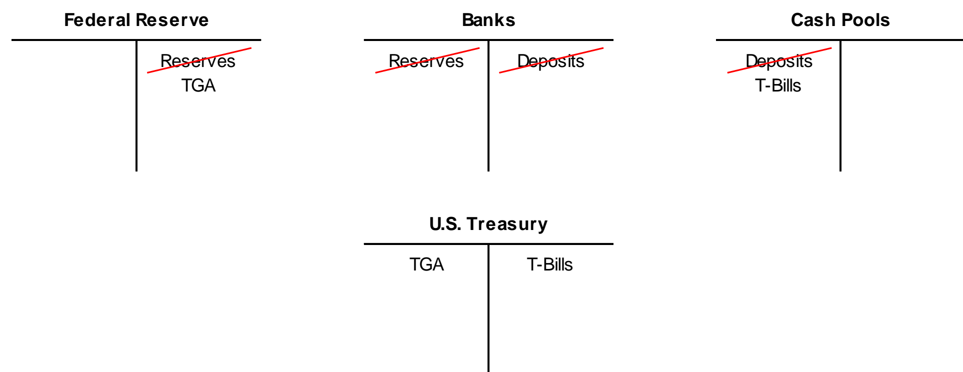


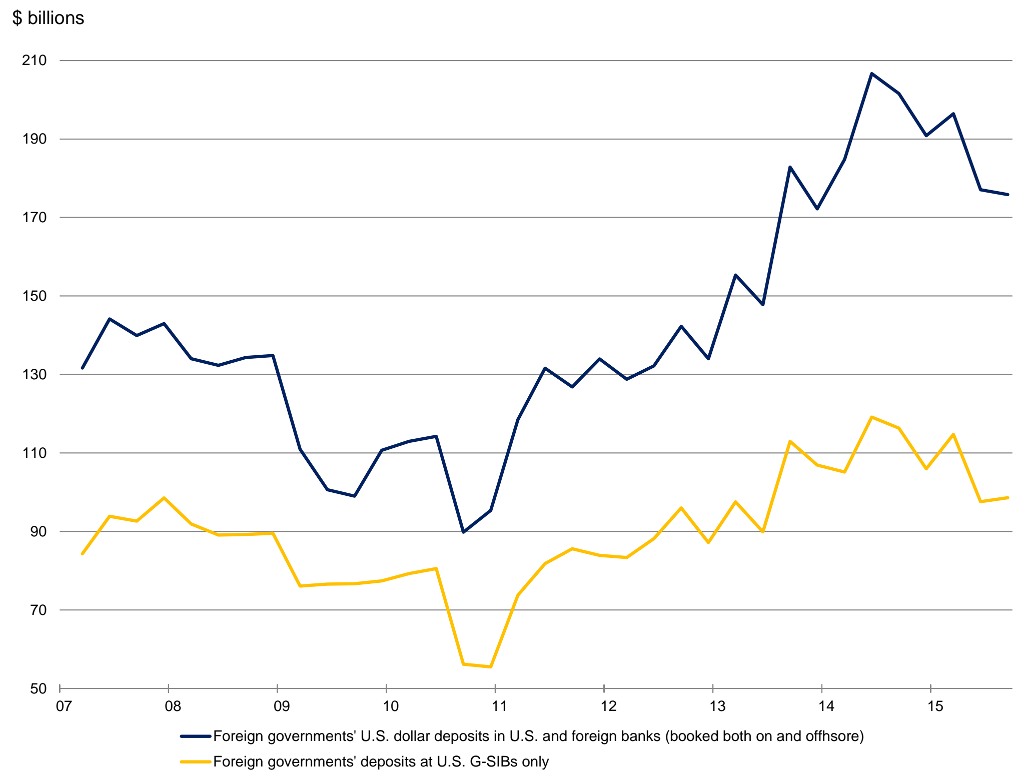
Notes: TGA = Treasury General Account

Source: Credit Suisse

There are two types of assets on which foreign central banks can draw to boost their balances in the Fed's foreign RRP facility – bank deposits and holdings of Treasury bills.

First, consider a foreign central bank wiring funds from its bank deposit into the foreign RRP facility. This would be an asset swap for the foreign central bank (deposits for RRPs); a decline in both liabilities (deposits) and assets (reserves) for banks; and a liability swap for the Fed (reserves for RRPs). However, looking at the operating and non-operating balances that foreign governments (including foreign central banks) maintain at banks in New York (including both large U.S. banks and the New York branches of foreign banks) we have not seen any meaningful outflows recently (see Figure 4). This makes sense as the HQLA requirements associated with foreign central banks' non-operating deposits are not that onerous: 40% at worst (the same as for corporate non-operating deposits), which is far less than the more punitive 100% requirement for buy-side non-operating deposits. As such, banks do not have much of an incentive to push foreign central banks' deposits off their books since that would leave them with an HQLA shortfall (see page 10 here).

Figure 4: Foreign Governments' Bank Deposits



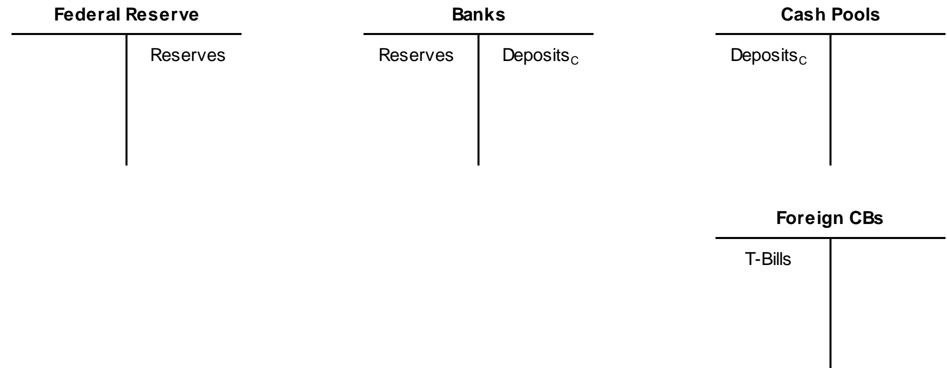
Source: Call Reports (FDIC), Credit Suisse

The second source on which foreign central banks can draw to boost their balances in the foreign RRP facility are their holdings of U.S. Treasury bills. Here the process is as simple as trading out of bills and wiring the proceeds out of a bank account over into the foreign RRP facility. Whether it is proceeds from the sale of bills in secondary markets or bill maturities that get wired over into the foreign RRP facility does not matter. What matters is that by trading out of bills, foreign central banks free up more bills for private cash pools to buy as cash pools trade out of non-operating deposits. Consider two examples.

Imagine a foreign central bank that sells bills in the secondary market. As it sells bills its bank deposits go up (an asset swap). On the flipside of this trade cash pools buy the bills and spend bank deposits (also an asset swap, but in the opposite direction). While the cash pool was invested in a bank deposit it did not have the option to wire its balances over into RRPs at the Fed, but the foreign central bank does have that option and exercises it. It makes yet another asset swap (this time deposits for RRPs). In the process, banks lose both deposits and reserves, and the central bank swaps reserves for foreign RRPs. In the end, the foreign central bank swapped bills for RRPs, and the cash pool deposits for bills. Banks lost both deposits and reserves, and the Fed swapped reserves for RRPs, triggered by the secondary market sale of bills. The loop closes (see Figure 5).

Figure 5: Swapping Reserves for Balances in the Foreign Repo Pool

Step 1:



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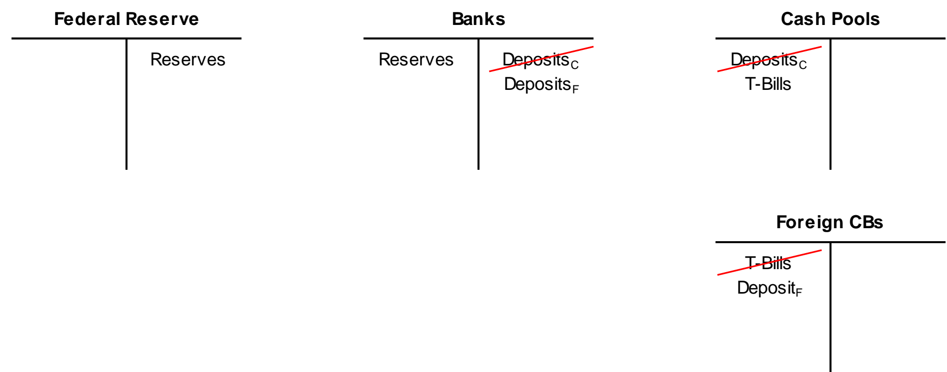
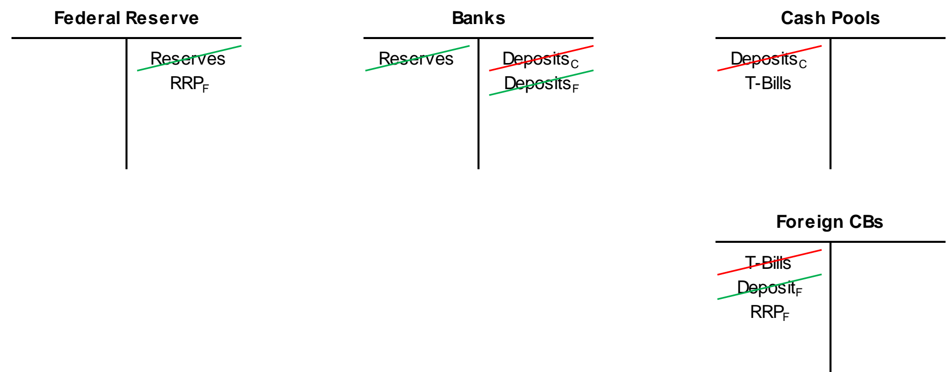


Step 3:



Notes: Deposits_C = deposits of cash pools; Deposits_F = deposits of foreign central banks; RRP_F = the foreign RRP pool

Source: Credit Suisse

Alternatively, imagine that some portion of a foreign central bank's bill portfolio matures. When bills mature, the foreign central bank's holdings of bills go down and its holdings of cash balances (in a bank deposit) go up. But instead of the usual process of using cash in the bank to buy new bills at the next auction, the foreign central bank decides to wire the funds over into the foreign RRP facility. At the end of the day all that has happened is that the foreign central bank had an asset swap (bills for RRPs); cash pools could take down a bigger share of bills at auction than before as they did not have to bid against foreign central banks and spent cash from non-operating deposits to do so; banks lost both deposits and reserves; and the Fed had a liability swap (reserves for RRPs). This example holds irrespective of whether bills finance increased Treasury cash balances or not.

Since the beginning of 2015, foreign central banks have traded out of $120 billion of bills (and invested an equivalent amount in the foreign RRP facility) in two waves: $60 billion during the first half of 2015 and another $60 billion since the third quarter of 2015. Foreign central banks' pace of bill sales (and equivalently) RRP inflows appear to have accelerated since the December rate hike. But just as there is limited room (about $150 billion) for Treasury to boost the bill supply in a way that drains reserves, there is limited room for foreign central banks to trade out of bills. According to the November TIC data release, foreign central banks held just north of $300 billion in bills, meaning that the size of the foreign RRP facility can increase by only that much from here, not more.

For our regular readers these examples of asset and liability swaps and the balance sheet relief they generate for banks should be familiar from our previous works (see for example here), where we described similar examples involving flows between banks and money funds using the o/n RRP facility. The dynamics here are the same as the dynamics there: cash pools swap assets but not deposits for money fund shares, but rather deposits for bills; the Fed swaps liabilities but not reserves for o/n RRPs but rather reserves for foreign RRPs or alternatively reserves for balances in the TGA; and banks gain balance sheet relief in all three examples by losing some assets (reserves) and liabilities (non-operating deposits) in equal amounts. Three variations on the same theme (see Figures 6, 7 and 8).

Pricing Foreign RRPs

Many clients have contacted the Fed to ask about the foreign RRP facility, and the standard response they got was that "it is just a service offering for foreign central banks."

But in our view it is more, far more than "just" a service offering. It is a policy tool that the Fed has been using to exert an upward pressure on bill yields and to facilitate the rotation of cash pools out of non-operating deposits and into the bill market. At a trend takeup of $220 billion (and rising), the foreign RRP facility is already a more prominent policy tool than the o/n RRP for money funds with a trend takeup of a mere $80 billion (and falling).

The pricing of the foreign RRP facility is a key piece of the puzzle.

Figure 9 shows three repo rates (all o/n and against Treasury collateral). The thick blue line shows the o/n RRP rate, the rate the Fed pays money funds. The thin orange line shows the tri-party repo rate, the rate that primary dealers pay money market funds. The thick red line shows the foreign RRP rate, the rate the Fed pays foreign central banks.

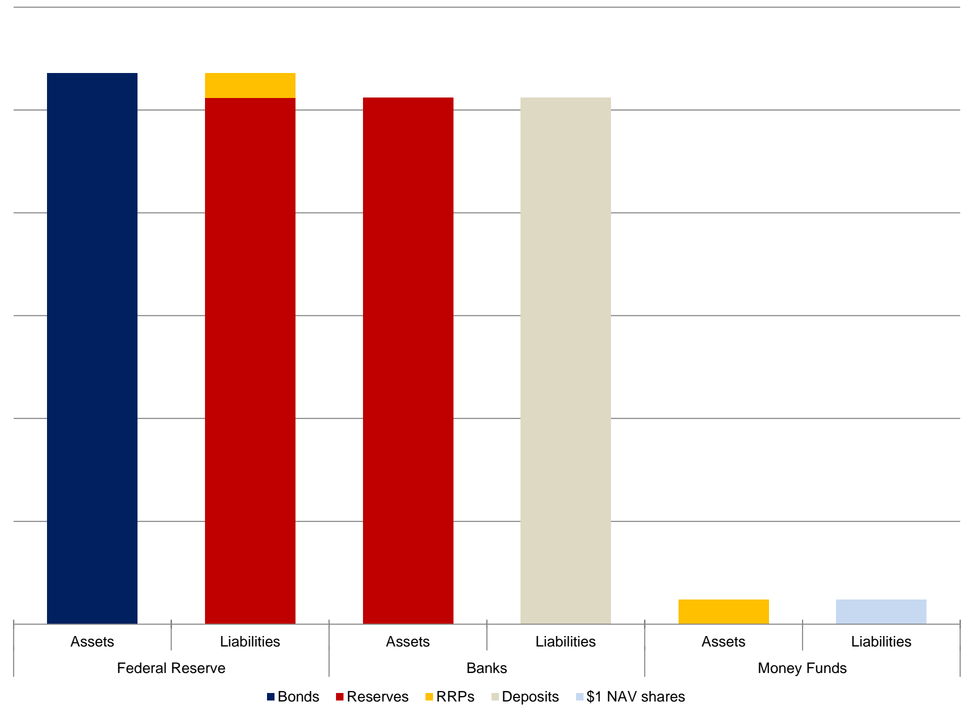
The first two rates are readily published on a daily basis, but the rate on the foreign RRP facility takes a bit of detective work to find. The place to go to is the Fed's unaudited financial statements which get published for the first, second and third quarter of every year (see here) and which disclose the rate the Fed has been paying on foreign RRPs during the first three, six and nine months of the year on average. Interestingly the Fed's annual audited financial statements – which one would hope would be the window to the foreign RRP rate during the fourth quarter of the year – are silent on the pricing of the facility, which leaves us no choice but to interpolate (the red dashed lines) between existing data points (for 2014Q4) and along existing trends (for 2015Q4 and beyond).

Two things stand out about the interest rate offered by the foreign RRP facility.

First, during 2014, the foreign RRP rate was less than the o/n RRP rate and the tri-party repo rate. But in 2015 a regime shift occurred. The New York Fed started to pay a higher rate on foreign RRPs than it paid on o/n RRPs and gradually moved it over the going market rate (the tri-party repo rate). According to the Fed's unaudited financial statements the foreign RRP rate was raised by 2 bps during each of the first three quarters of 2015, and if we extrapolate this trend, the facility currently pays 35 bps, or 10 bps over the o/n RRP rate for money funds. That said, we won't know for a fact what the foreign RRP rate was during 2016Q1 until the next unaudited financial statements are published in April.

Figure 6: The Financial System With a Small o/n RRP Facility

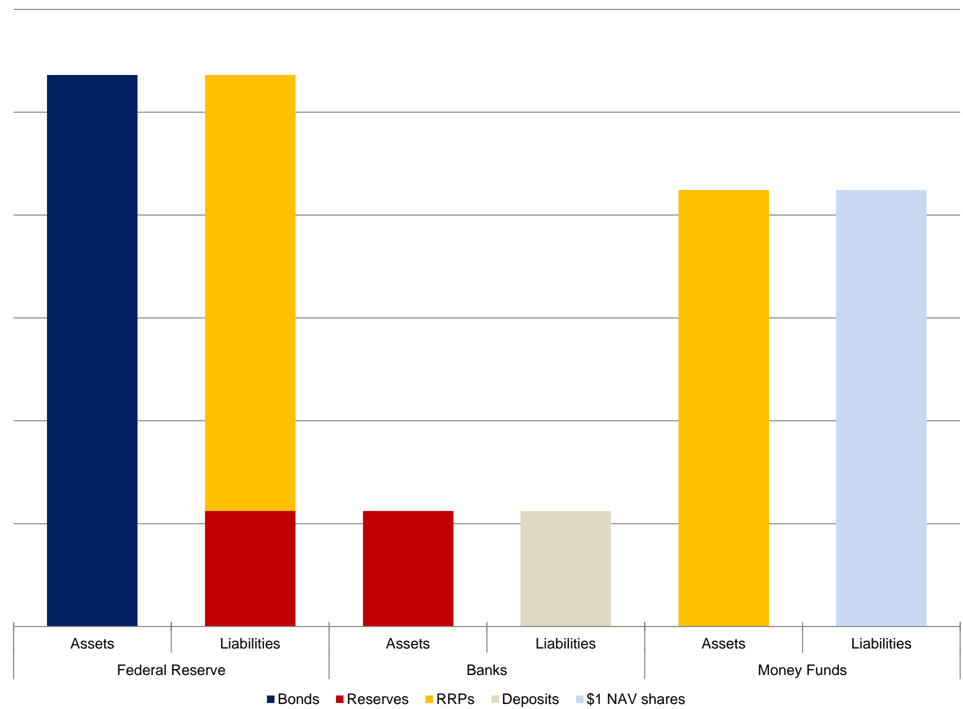
Illustrative example (no scales)



Source: Credit Suisse

Figure 7: The Financial System with a Big o/n RRP Facility

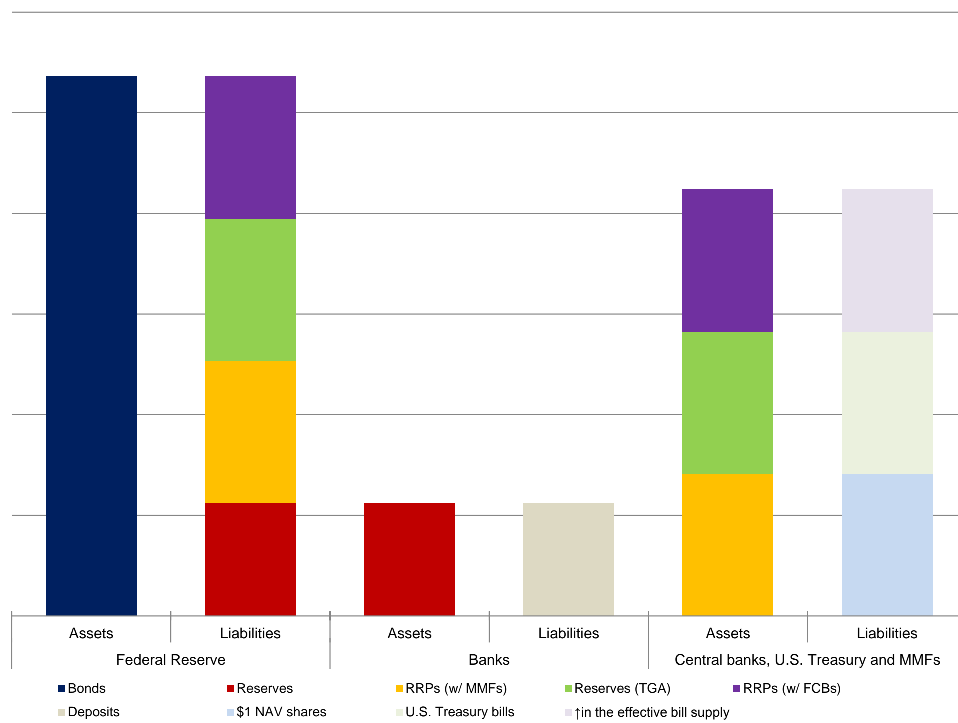
Illustrative example (no scales)



Source: Credit Suisse

Figure 8: Alternatives to a Big o/n RRP Facility

Illustrative example (no scales)



Source: Credit Suisse

Second, the New York Fed appears to be pricing the foreign RRP facility opportunistically, with an aim of luring foreign central banks out of certain segments of the bill market (see Figure 10). During 2014 the foreign RRP rate was only marginally above one-month and three-month Treasury bill yields and it never went above six-month Treasury bill yields.

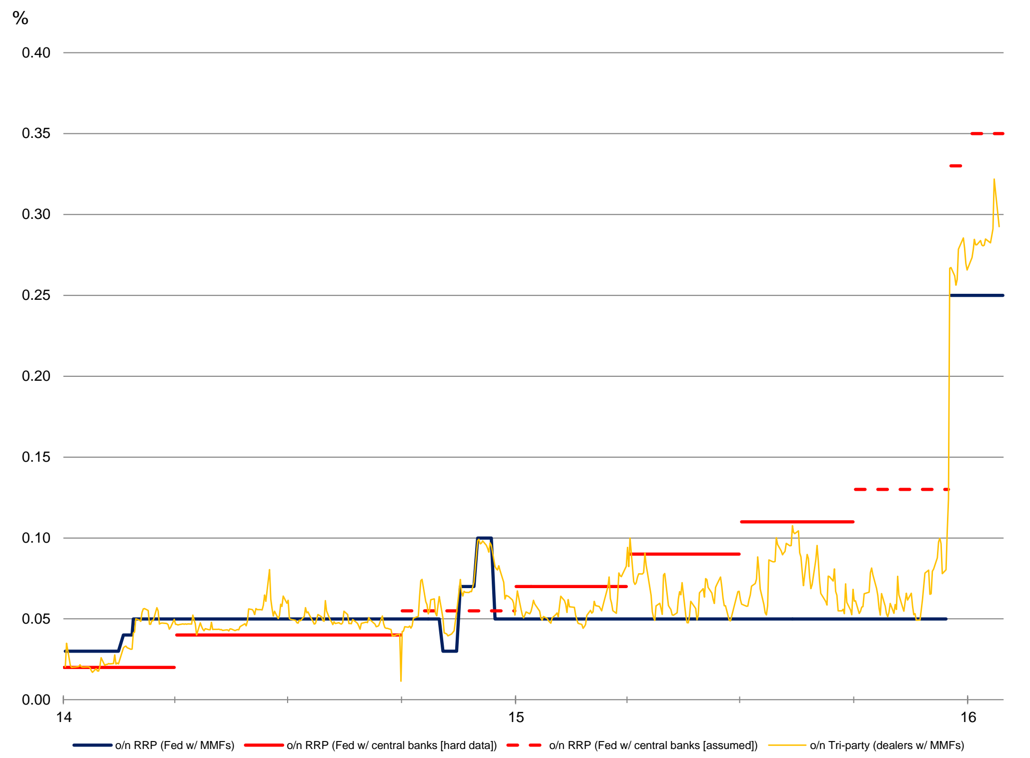
But starting in 2015, the foreign RRP rate was raised meaningfully above one- and three-month bill yields and for the bulk of the first half of 2015 the rate was even higher than six-month bill yields – this generous pricing (a meaningfully better yield on an o/n instrument than a one-, three- or even six-month instruments) explains why foreign central banks traded $60 billion in bills for foreign RRPs during the first half of 2015.

During the second half of 2015 (including the weeks after the December hike) the New York Fed's strategy seems to have remained broadly the same: it continued to price the foreign RRP facility in a way that would encourage foreign central banks to trade out of one- to three-month bills so that (1) there are more bills available for cash pools to buy as they trade out of non-operating deposits and for money funds to buy as they voluntarily convert prime funds into government-only funds and (2) to ensure that all of the extra bill issuance that came from funding the Treasury's increased TGA balances also goes exclusively to cash pools and to money funds, and not to foreign central banks.

Looking at bill yields since the December hike, no one expected one- or three-month yields to be so close to the o/n RRP rate. The fact that their beta has been so high despite the fact that the conversion of $200 billion in money funds and $300 billion in deposit outflows increased private demand for bills by $500 billion during the second half of 2015 can only be attributed to the coordinated efforts of the Treasury and the New York Fed.

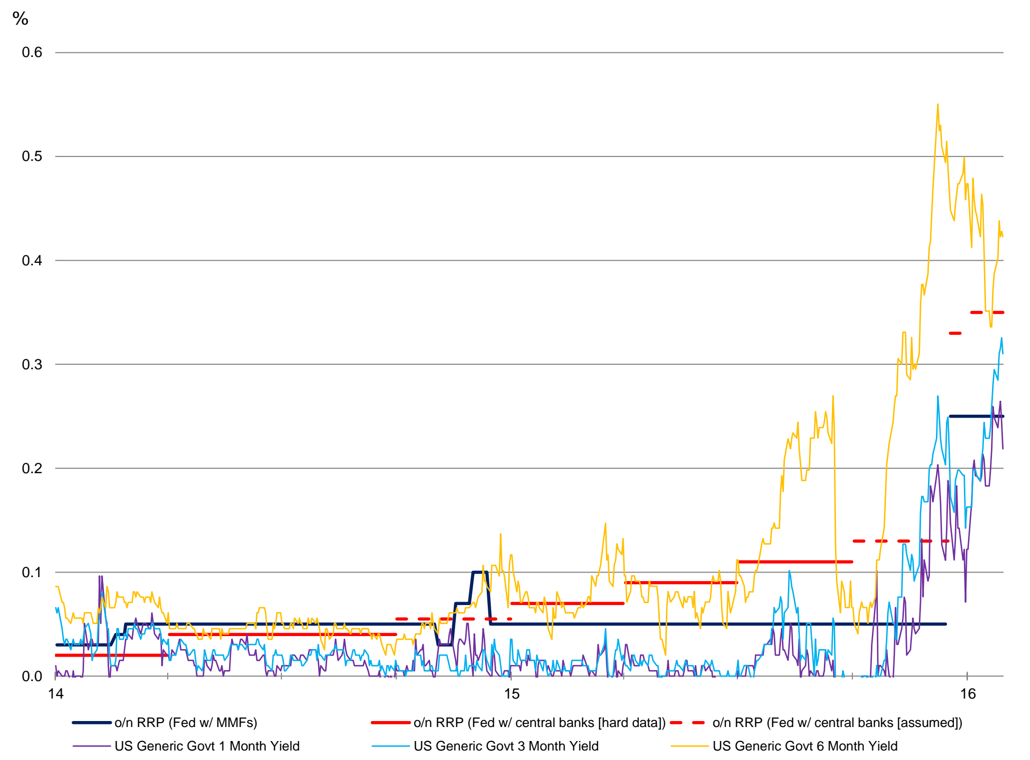
But despite this very successful experiment, the New York Fed has some explaining to do.

Figure 9: A Pretty Good Deal



Source: Federal Reserve, Bank of New York, Credit Suisse

Figure 10: Please Leave the Bill Market Behind



Source: Federal Reserve, U.S. Treasury, Credit Suisse

First, for a facility that appears to be more meaningful than the o/n RRP facility (both in terms of the amount of reserves it helped drain and the impact it has on short-term interest rates), it is a touch bit odd to us that the foreign RRP facility has never been mentioned in FOMC minutes before. That flies in the face of central bank transparency.

Second, given that the foreign RRP rate has such a great influence on bill yields and is an effective tool to manage the supply of bills available for cash pools, its pricing should be more transparent and available at a higher frequency. Discuss.

No Pact With the Devil

Compared to o/n RRPs for money market funds, increased bill issuance by the Treasury and the use of the foreign RRP facility to free up the amount of bills available for private cash pools is a more democratic way of sorting out the question of who should benefit as banks are pushing buy-side non-operating deposits off their balance sheets.

The old script was government-only money funds with the use of the o/n RRP facility. Here the buy-side would not have much choice as to how to invest cash in the "new normal."

The new script is more Treasury bills with the help of a structural increase in the cash balances of the Treasury and incentivizing foreign central banks to leave the bill market. Here, the buy-side has a choice: if you want to be passive in managing your cash portfolio go for a money fund where the money fund will have the option to choose between bills and o/n RRPs and will take a fee for this. If you want to run your cash portfolio yourself, then be our guest, you can do that too. Run your bill portfolio directly and save the fees.

Based on our conversations with buy-side investors (those who were already incentivized out of non-operating deposits by their banks or who are presently considering where to move), an overwhelming majority prefer the ability to run a bill portfolio directly, on their own.

In the end, the Fed's long-standing aversion to money funds (whether prime or government-only) seems to have dominated the FOMC's thinking.

Policy innovations (much like the idea of segregated cash accounts, see here) ended up reducing the potential role for money funds as middle-men.

To be sure the sun still rises in the morning and the Earth still revolves on its axis under this alternative configuration, but as always some groups win (cash pools through more bills, higher yields), and some groups lose (money funds through forgone AuM and fees).

In the very end cash pools did end up getting their Treasury bill "fix" (see Pozsar, 2011).

But don't write off the o/n RRP facility just yet. As we have discussed above, there remains only limited room for the U.S. Treasury to boost its cash balances (about $150 billion more) and for foreign central banks to trade out of bills and into foreign RRPs (about $300 billion more). The point is that both of these options are finite and when they reach their limits (keep in mind that we have yet to see prime to government-only money fund flows in the run-up to the October 2016 floating NAV deadline) the o/n RRP facility – and on the flipside, government-only money funds – may well become the only game in town.

Forced HQLA Portfolio Rebalancing?

For bank equity investors and fixed income investors with an eye on whether the outflow of non-operating deposits will force banks to rebalance HQLA portfolios, the new news from this analysis is that we are far deeper into the process of deposit outflows ($300 billion and accelerating) than what the smaller-than-expected takeup in the o/n RRP facility would have us believe (looking at o/n RRPs, one would assume deposit flows are not happening).

The $100 billion in non-operating deposits that have flown out of banks other than JPMorgan since the December rate hike are big enough to force some big banks to re-balance between Level 2 and Level 1 assets in their HQLA portfolio in order to remain compliant with the letter and spirit of the liquidity coverage ratio (LCR; see pp 17-18 here). Some banks can only lose $30 billion in deposits before their Level 2 limits are breached – and $100 billion in deposit outflows since December mean this this scenario is now live.

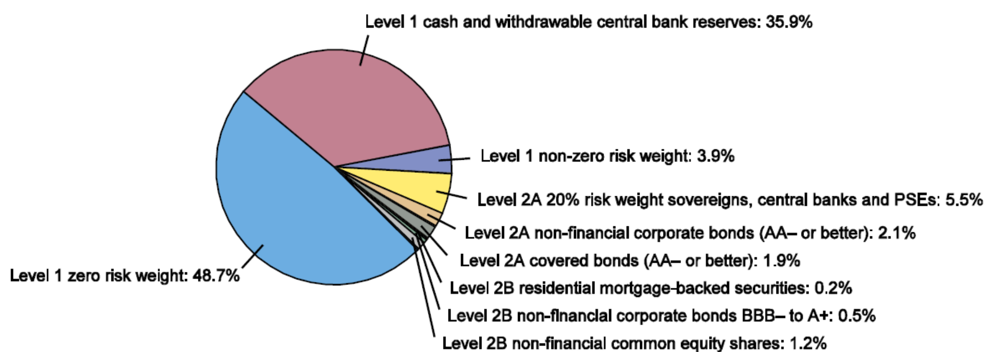
Indeed, some of these rebalancing flows may already be happening: according to the Fed's weekly H.8 release since the December rate hike, large banks have sold $10 billion in agency mortgages (Level 2 assets) and bought $13 billion in Treasuries (Level 1 assets). These flows bear close watching and have obvious implications for the bid for Treasuries and the agency mortgage basis (and mortgage REITs as derivatives of the MBS basis).

Furthermore, it is one thing if these rebalancing flows are driven by the gradual outflow of non-operating deposits – the resulting rebalancing flows may occur gradually, over time.

But it is a completely different matter if these trades are forced by the Fed on compliance grounds and in portfolios where deposit outflows have not triggered them yet!

To appreciate this scenario, consider the following chart from the September issue of the BIS's Basel III Monitoring Report (see Figure 11). According to the BIS, the largest banks across the globe have built their HQLA portfolios by allocating about 35% to central bank reserves, 50% to sovereign debt (Level 1 assets) and only 15% to Level 2 assets.

Figure 11: The Model HQLA Portfolio



Source: Basel Committee on Banking Supervision

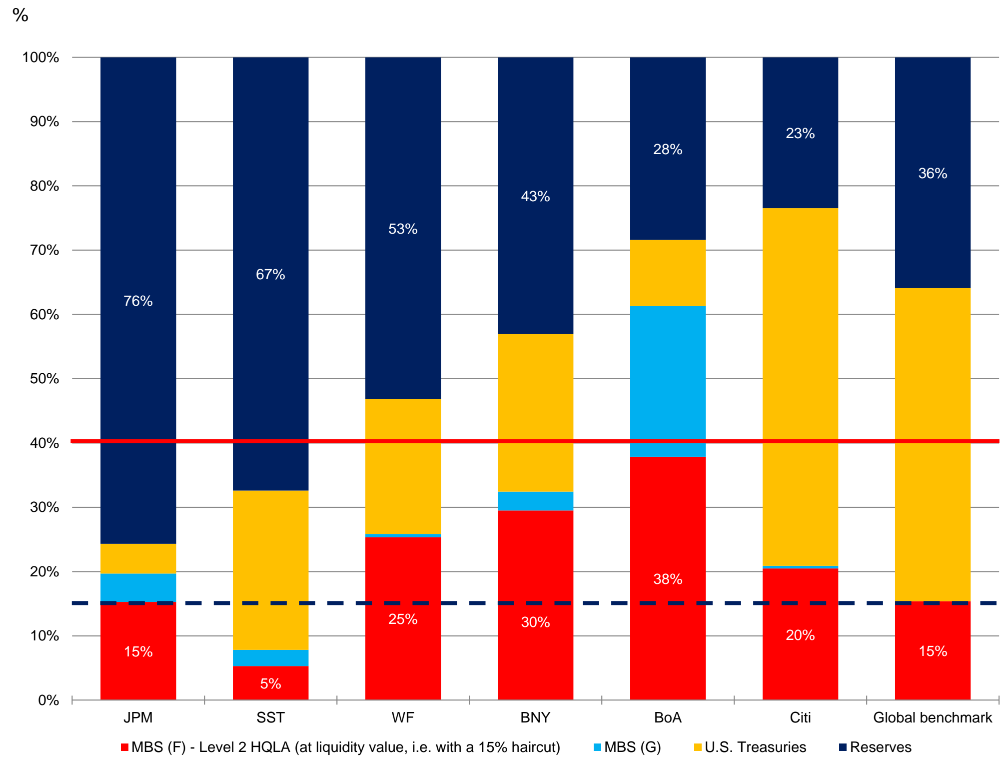
Compared to this global benchmark, the largest U.S. depository institutions stack up as follows (see Figure 12). JPMorgan is smack in line with the global Level 2 allocation average and is way overweight in reserves at the central bank – a remarkably conservative HQLA posture. But three banks – Wells Fargo, BoNY and Bank of America – seem well above the global average as far as their Level 2 allocation is concerned.

Up to now, the Fed has been concerned with ensuring that all major banks are compliant with the LCR, and in fact over-compliant (about 115%) with the Basel III minimum of 100%.

But the next stage of compliance with the letter and spirit of the LCR will move beyond the need for "all children to be above average" and focus on enforcing "uniform diets" – that is for all HQLA portfolios to have a similar mix of reserves, Treasuries and agency MBS.

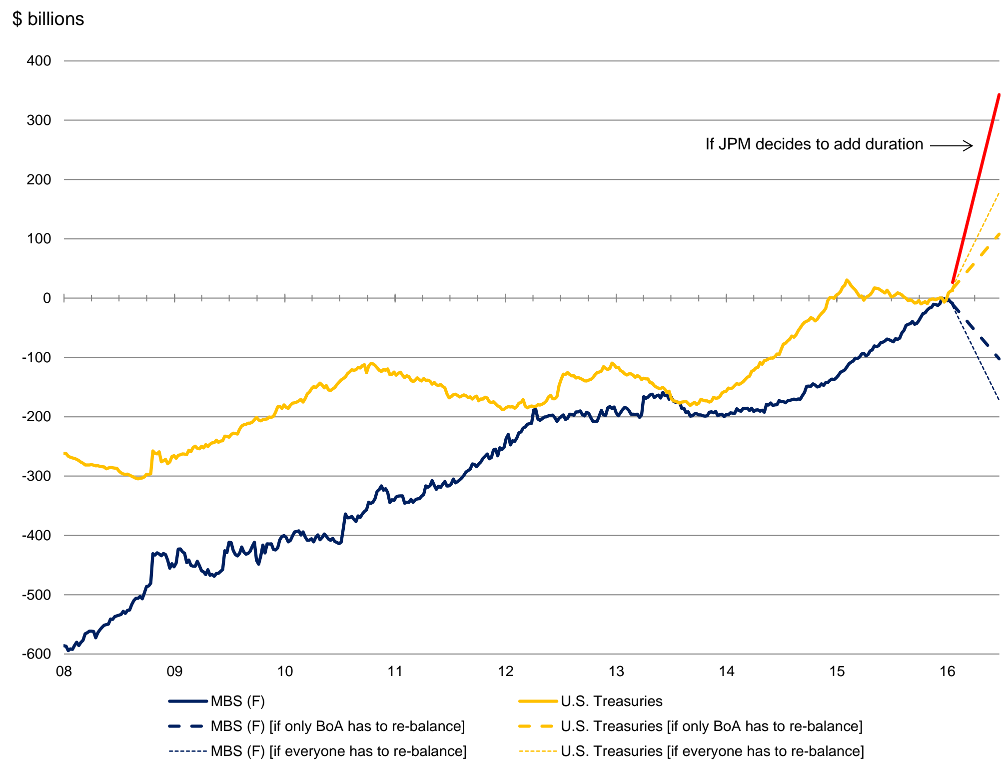
Again, whether the rebalancing flows we have been seeing since the Fed hike have been triggered by the outflow on non-operating deposits or regulatory pressure to comply with global HQLA benchmarks we do not yet know. But if it is the latter, flows out of agency mortgages could be substantial: $100 billion in sales at best and $175 billion at worst, with an equivalent amount of bids for U.S. Treasury securities (see Figure 13).

Figure 12: Cups of Water, Ice-Water and Ice Cubes



Source: Call Reports (FDIC), Basel Committee on Banking Supervision, Credit Suisse

Figure 13: Not What the Consensus Expects



Source: Federal Reserve, Credit Suisse

And the bid for Treasuries could be even stronger still, if one considers the fact that JPMorgan is now done optimizing its deposit mix and has twice as big a share of its HQLA portfolio allocated to reserves at the Fed than the global average – in the words of CFO Marianne Lake, the bank has been leaving money on the table through its conservative HQLA posture. Were JPM to trim its reserve balances down to the global average and buy Treasuries, bids could swell to as much as $350 billion this year (the red line in Figure 13).

These calls are wildly out of consensus, which is for banks to buy, not sell $100 in MBS over the course of 2016. But in a world where no one expected a full allotment o/n RRP facility but we got one, where everyone expected the take-up of the RRP facility to soar after liftoff but did not, where as recently as December the market expected two rate hikes this year but no more hikes as of today, one must never cease to “invert, always invert”…

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