ECO FLASH

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The Fed's new role under Basel 3

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- **On 16 and 17 September, US money markets seized up. Excess demand for cash pushed overnight rates sharply higher.**
- **The Fed had to step in as a matter of urgency to re-establish control over short-term rates by injecting central bank money through repurchase agreement operations (repo).**
- **This lack of liquidity is not a new phenomenon. It is true that the situation was exacerbated by an irksome combination of factors. But there have been clear signs of a shortage of liquidity for more than a year now[1]. The underlying issue is the regulatory liquidity requirements imposed on banks.**
- **The rebuilding of the Treasury current account with the Fed, against a background of insufficient reserves at the central bank, threatens further pressure. To relieve this pressure in a lasting way, the Fed will be forced to further expand its balance sheet and accept the role of dealer of first resort implicitly allotted to it by Basel 3.**
- **One way to act quickly and without changing the size of its balance sheet would be to scale back its reverse repo operations with foreign central banks.**

In mid-September, for a number of one-off reasons, liquidity in the repo market dried up[2]. Nearly USD 100 bn invested in money market funds was withdrawn as corporates prepared to pay their tax bills; the auction of USD 84 bn of Treasury securities was settled; and nearly USD 100 bn of T-bills were issued.

Due to a lack of investor appetite for Treasury securities, primary dealers absorbed part of the excess collateral issued. The refinancing of their stocks of securities on the repo markets, against a background of insufficient central bank reserves, put significant pressure on money market rates. The

Liquidity at any cost

Rate at month end (%) and at 17 September 2019

Secured Overnight Financing Rate (SOFR)

Figure 1 Source: Macrobond

[1] C. Choulet (2018), *Will central bank reserves soon become insufficient?*, BNP Paribas, Conjoncture, December 2018

[2] A repo transaction – the temporary disposal of securities – can be considered, from an economics viewpoint, as a collateralised loan (cash against securities): from the point of view of the lender of the cash it is a reverse repurchase agreement; from that of the borrower of the cash it is a repurchase agreement. The repurchase agreement incorporates an undertaking to repurchase the security at a given point in time for an agreed price. The interest rate, or repo rate, is a function of the difference between the sale and repurchase prices. The Fed defines the operation as a function of its effect on its counterparty. Thus from the Fed's point of view, a repo is similar to a collateralised loan and recorded as an asset whereas a reverse repo is a liability. The repo markets are the main source of overnight refinancing for financial institutions in the USA.

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SOFR[3] jumped to 2.42% on Monday 16 September and then to 5.25% on Tuesday 17 (Figure 1). This jump in repo rates drew the traditional Fed fund lenders (the Federal Home Loan Banks[4]) away from the Fed funds market towards the more lucrative repo markets. The supply of Fed funds dried up (whilst demand increased) and the Effective Fed Funds Rate (EFFR) rose to 2.25% on Monday 16, taking it to the upper limit of its target range. The next day, Tuesday 17 September, it moved outside its range, reaching 2.3% (Figure 2).

Substantial stocks in need of refinancing

Since 2018, the net position of primary dealers has increased significantly: by USD 110 bn between February and August 2018, then by USD 140 bn between October 2018 and January 2019, and finally by USD 75 bn between March and May 2019[5] (Figure 3). On 18 September, inventories stood at USD 230 bn (or nearly USD 315 bn if one includes agency-issued mortgage backed securities), more than twice their level between 2015 and 2017.

Primary dealers are key counterparties for the US Treasury in all of its market activities. In particular their role is to take part in Treasury auctions, place securities and ensure the liquidity of the secondary market in Treasury securities. They do not have accounts with the Fed. They traditionally finance their purchases by drawing against their accounts with Bank of New York Mellon (BONY, the primary dealers' clearing bank) and rebuild their balances with the bank as they sell the securities. The unprecedented increase in their stocks of securities has, however, forced them to increase their borrowing on the repo markets (mainly overnight) from commercial banks (primarily their parent companies), money market funds, GSEs[6] and BONY itself.

Irrespective of the counterparties used by primary dealers on the repo markets (other than the GSEs, which have accounts with the Fed), the refinancing of their securities books results in a reduction in the reserves held by banks with the central bank. Where repos are conducted with non-bank institutions(with money market funds for instance), the banks debit their clients' deposit accounts and transfer cash from their own current accounts with the Fed to, ultimately[7], that of the Treasury. When banks themselves conduct repo transactions, the deal results simply in an asset swap, in the form of the recognition of a credit to the primary dealer (in the form of a repo) and a reduction in their reserves at the central bank.

[3]The SOFR is a broad measure of the cost of borrowing cash overnight collateralised by Treasury securities on the tri-party repo market and on markets cleared through the Fixed Income Clearing Corporation (GCF repo and bilateral market). Volumes traded on these markets vary between USD1,000 bn and USD1,250 bn per day. As part of the reform of benchmark rates, it has been selected as an alternative to LIBOR to come into use by the end of 2021.

[4]Credit cooperatives

[5]C. Choulet (2019), *Primary dealers absorb nearly 40% of the Fed's net sales of Treasuries,* BNP Paribas, Chart of the Week

[6]Mortgage guarantee and refinancing agencies

[7]Initially, subscription for securities by primary dealers results in a reduction in their credit balance with BONY, which transfers cash from its account with the Fed to that of the Treasury (to settle the purchases made by primary dealers). In a second phase, when a primary dealer puts securities into a repo with a bank (or one of its clients), there is a transfer of cash from the counterparty bank's account with the Fed to BONY. The net result is that banks' reserves with the Fed are reduced and the Treasury's account increased.

EFFR, above the upper bound of the target range

Rate at month end (%) and at 17 September 2019

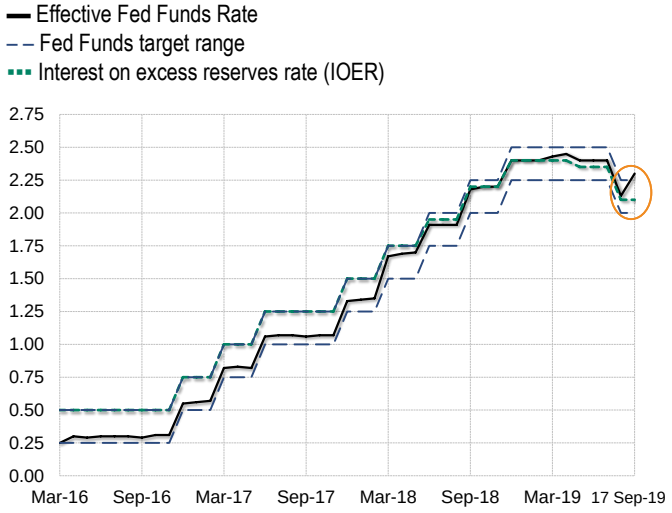

Figure 2 Source: Macrobond

Collateral is proving hard to digest

USD bn

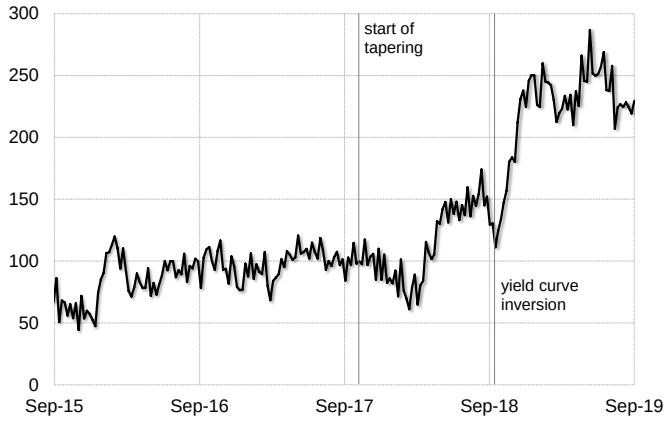

Figure 3 Source: Federal Reserve Bank of New York

A shortage of central bank money

The banks no longer have sufficient central bank money to play their part.

Although central bank reserves stood at USD 1,385 bn at 18 September, a level significantly above the volume strictly required under monetary policy (required reserves), everything suggests that they are close to the new minimum level needed to meet the regulatory liquidity requirements introduced under Basel 3.

Since the introduction of the Liquidity Coverage Ratio (LCR) in 2015, banks must hold reserves (or more generally high-quality liquid assets – HQLA) sufficient to cover the net cash outflows over 30 days that would be triggered by a significant liquidity crisis (based on theoretical outflow or non-renewal rates as set by the regulator).

The central bank money requirements of the eight biggest US banks are all the greater because the regulator requires them, as part of their resolution plans, to be able to cover theoretical

cash outflows on an intra-day rather than merely daily basis. This constraint can only be met by holding large deposits with the central bank.

At the time LCR was introduced, reserves were in particularly abundant supply (the automatic effect of the quantitative easing – QE – programme), but they have dwindled since. As QE came to an end in October 2014, banks had reserves with the Fed of more than USD 2,820 bn. Since then, monetary policy measures (reverse repo transactions, Fed balance sheet reduction programme), combined with the upward trend in money in circulation and issues of Treasuries, have reduced this stock. Over the last five years USD 1,430 bn of reserves have been destroyed. Some USD 620 bn has been destroyed by the reduction in the Fed's securities portfolio, and USD 810 bn by the increase in other liabilities on the Fed's balance sheet (Figure 4): cash in circulation (+USD 470 bn), the Treasury account with the Fed (+USD 200 bn), repos on the Fed's securities (+USD 100 bn) and the accounts of GSEs and clearing houses (+USD 40 bn).

For a number of years now, the US monetary authorities have sought to evaluate the extent to which liquidity requirements affect the aggregate demand for reserves. On 20 March, Fed Chairman, Jerome Powell, indicated that despite its efforts, the FOMC had not managed to come to a precise and detailed view on the topic: *"The truth is, we don't know. It may evolve over time. So we'll just have to see."* On 18 September, he acknowledged that uncertainty over reserve demand was still high.

Although it is certainly difficult to evaluate with any accuracy banks' need for central bank liquidity, we believe that tensions have been visible for more than a year now[8]. A range of symptoms bear this out: the increasing scarcity of cash 'deposits' from money market funds to the Fed (through the reverse repo facility, or RRP, which has been in place since 2013); the generous yields paid by banks on deposits from Federal Home Loan Banks; the swelling of primary dealer inventories; and the higher level of the EFFR relative to the rate paid on excess reserves.

In the final quarter of 2018, the increase in primary dealer inventories came alongside a reduction in the reserves of US commercial banks of around USD 160 bn and an increase in net outstanding reverse repos and Fed funds loans of USD 166 bn (figures from FDIC Call Reports). Given the considerable concentration of reserves, the shock was absorbed in no small part by a single commercial bank, the largest of them, JP Morgan National Association. Its reserves with the Fed fell by USD 130 bn (from USD 275 bn in Q3 to USD 145 bn in Q4 2018), whilst its net outstanding reverse repo position increased by USD 110 bn (Figure 5).

Between Wednesday 11 and Wednesday 18 September, the Treasury's account with the Fed increased by USD 120 bn, reducing bank reserves by a like amount. It seems clear that the banks' ability to absorb this shock was already too limited[9].

[8] C. Choulet (2019), *Pressure on central bank liquidity is going undetected*, BNP Paribas, Eco Flash, April 2019

[9] In Q2 2019, central bank reserves represented 33% of HQLA at the 8 biggest US banks, from 43% in Q3 2017 (before the Fed's balance sheet reduction).

Tools for reducing central bank liquidity

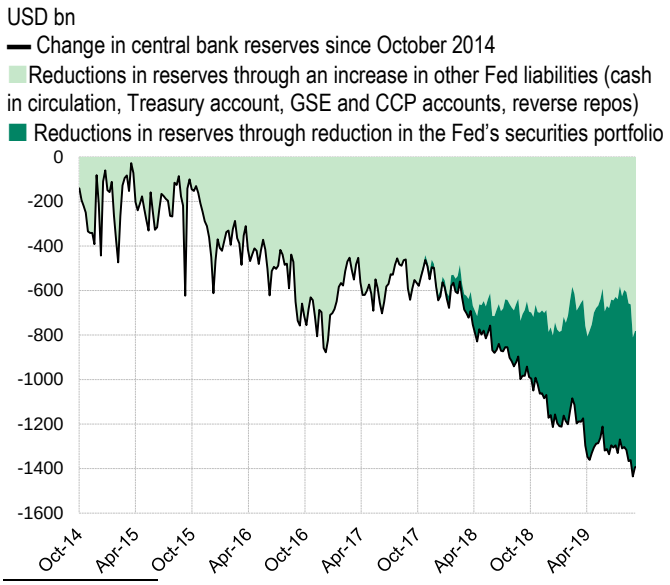

Figure 4 Source: Federal Reserve, BNP Paribas

A halving of the stock of reserves

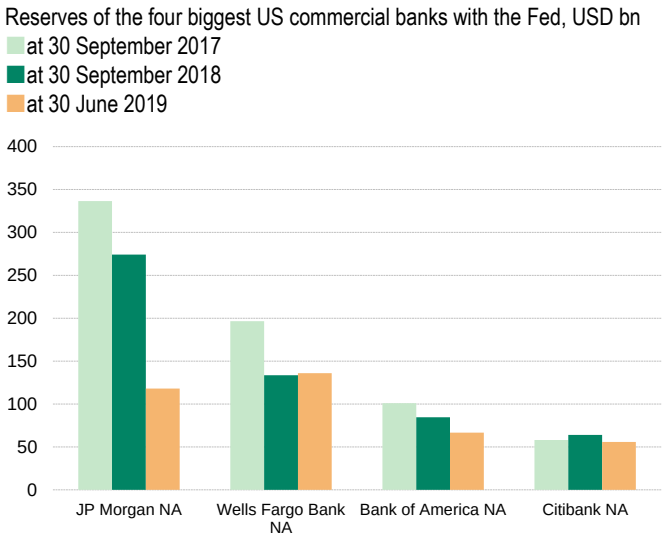

Figure 5 Source: FDIC Call Reports

The Fed, dealer of first resort

The Fed's decision to interrupt the reduction in its balance sheet at the end of July rather than the end of September, and the more recent decision to inject central bank liquidity through temporary repo deals[10] reflect increasing awareness of the restrictive nature of liquidity requirements.

[10] These transactions consist, for eligible counterparties (the primary dealers in this instance), in selling securities (Treasury debt securities, debt securities and mortgage-backed securities issued by the mortgage guarantee agencies) to the Fed with an obligation to buy them back at a certain point. From an accounting point of view, the securities remain on the balance sheets of the Fed's counterparties. The Fed records the repo on its balance sheet as a credit to primary dealers and credits the banks' current accounts

Since 17 September, overnight transactions have been conducted with primary dealers each trading day (the volume of each daily transaction was capped at USD 75 bn between 17 and 25 September, at USD 100 bn from 26 to 30 September and then at USD 75 bn from 1 October). In addition, three 14-day term transactions have been conducted (the first was capped at USD 30 bn, the second and third at USD 60 bn). The liquidity "lent" by the Fed is charged at a rate no less than the IOER interest on excess reserves rate (1.8% since 19 September) for overnight deals and IOER plus 5 basis points for longer deals. This system will remain in place until at least 10 October[11]. Adding together overnight and term repos, the outstanding liquidity lent reached USD 202.5 bn on 30 September (Figure 6).

Granted, the Fed has reduced the risk that the specific needs of participants, at the moment that they close their quarterly accounts, would yet again lead it to lose control of short-term rates. However, the system it has put in place is only intended to be temporary, whilst there is a risk of a resurgence of tensions on multiple occasions. Most notably, the Treasury's plans to rebuild its account with the Fed to USD 410 bn by the end of the year[12] (from USD 303 bn on 18 September) could be a source of new tensions. This might suggest that to bring these tensions under long-term control, the Fed will have to introduce a permanent repo system[13].

The paradigm governing monetary policy has shifted. Previously, when central bank reserves were abundant, the Fed was required to step in to mop up excess liquidity through reverse repo deals. Today, due to the shortage of reserves, the Fed is required to inject central bank money.

Although the introduction of liquidity rules sought to make the banking system less dependent on the central bank in times of crisis, it has paradoxically increased that dependence in normal times. Over and above its established role as lender of last resort, the Fed must now take on the mantle of the liquidity provider of first resort (through the regular conduct of repo transactions or the constitution of a large portfolio of securities).

The means to increase reserves are at hand

As we wrote in April, the Fed does have another tool in its locker. This would consist of capping the volume of reverse repo transactions with foreign central banks (FRRP) and/or the interest rate on such deals.

For several years now, these transactions have made a significant contribution to the draining of reserves[14].

On 30 Sept., the Fed lent USD 200 bn of liquidity…

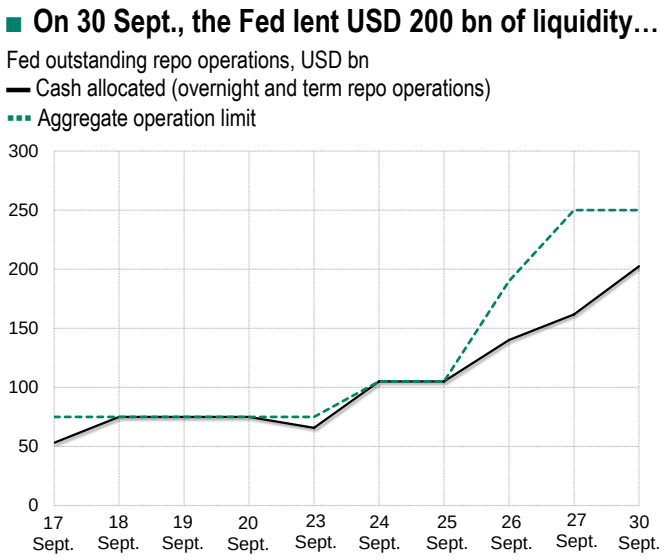

Figure 6 Source: FRBNY, BNP Paribas

Their outstanding value reached a record high of USD 306 billion on 18 September (Figure 7). This is hardly surprising given the very attractive rates available on such deals. In the second quarter, the Fed paid a rate of 2.42%, equal to the average EFFR and slightly higher than the yield on 1-month securities. The Fed does not communicate regularly on the rate offered[15], but given recent increases in rates, we would wager that yields remained very attractive in the third quarter.

We believe that maintaining these high rates is unjustified for three reasons. First, since the beginning of 2019 it has created a distortion in the range of rates paid on cash deposited with the Fed. Treasury and GSE current accounts do not earn interest; cash lent by money market funds to the Fed (under RRP reverse repos) earns 1.7% (2% prior to the latest rate cut announced on 18 September); and bank deposits (reserves) receive 1.8% (2.1% prior to 18 September – Figure 8).

Secondly, such transactions seem inappropriate against a background of excess collateral[16]. Reducing their yields (or introducing a cap) would help redirect foreign central bank liquidity towards Treasury securities.

(central bank reserves), whilst the banks credit the deposit accounts of their clients. All other things being equal, on completion of the transaction banks' reserves with the central bank are increased.

[11]https://www.newyorkfed.org/markets/domestic-market-operations/monetary-policy-implementation/repo-reverse-repo-agreements/repurchase-agreement-operational-details

[12]By borrowing an additional USD 381 bn on the fixed income markets in the fourth quarter (https://home.treasury.gov/news/press-releases/sm743)

[13]Z. Pozsar (2019), *Design options for an o/n repo facility,* Global Money Notes #25, Credit Suisse Economics, September 2019, 9.

[14]As foreign central banks do not have accounts with the Fed, these transactions transit through bank balance sheets. In return for the reverse repo operation with a foreign central bank, the Fed reduces the stock of reserves of the intermediary commercial bank, which in turn debits the dollar current account of its client (the foreign central bank). The Fed records the foreign central bank's debt on its balance sheet (reverse repo) but reduces its debt to the banking system (reserves) by the same amount, such that the transaction has no effect on the size of its balance sheet.

[15]Whilst the Fed provides detailed information on repo and reverse repo transactions with private counterparties (volumes demanded, range of rates offered), it is much less forthcoming regarding reverse repo transactions entered into with foreign central banks. It does not publish continuous information on the interest rates for these transactions. It only provides the average rates for the first quarter, first half and first nine months of each year when it publishes its (unaudited) quarterly financial statements. We have extrapolated quarterly estimates on the basis of these data.

[16]Although between 2015 and 2016 these operations helped ease tension in the yields on Treasuries (nudging foreign central banks towards Treasuries at a time when money market funds were forced to increase their exposure to government debt), under current circumstances (high issuance levels of short-dated Treasuries) they look unjustified.

Above all, in a situation of scarcity of central bank money, it is counter-productive to offer this facility. The Fed's systems result in the daily injection of at most between USD 200 bn and USD 250 bn into banks' current accounts, through repo transactions[17], whilst at the same time destroying nearly USD 300 bn in reserves each day through reverse repo deals with foreign central banks.

Reducing the scale of these transactions would allow the Fed to free up space on its balance sheet for banks (without expanding its balance sheet further) whilst it defines more precisely its needs in "organic growth", according to the Fed's terminology.

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… whilst destroying nearly USD300 bn in reserves

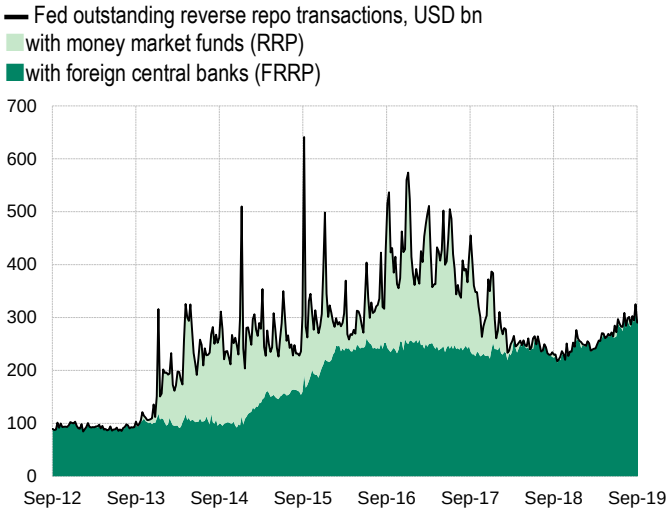

Figure 7 Source: Federal Reserve

Attractive returns on FRRP

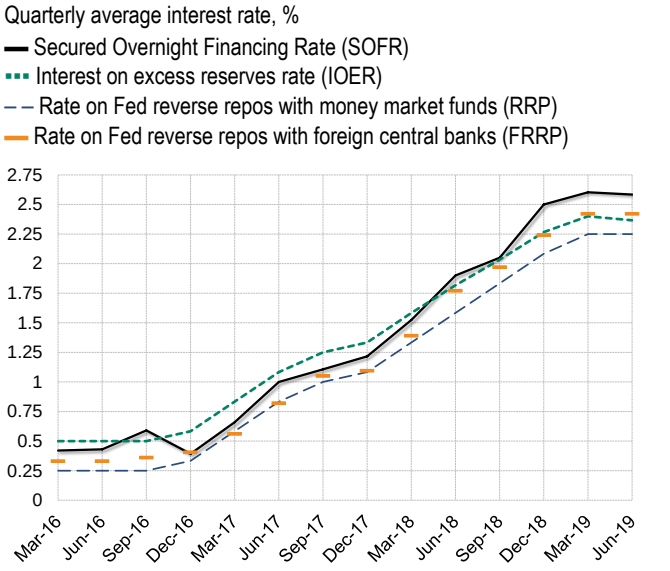

Figure 8 Source: Macrobond, Federal Reserve, BNP Paribas

[17] The maximum offered on daily overnight operations (USD 100 bn) and the three 14-day term operations (USD 150 bn).

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