The September Repo Price Spike: Immediate and Longer-Term Issues
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My assignment today is to introduce the questions we need to ask in light of the September repo market disruption. Before doing so, I want to briefly note changes in relevant circumstances prior to September that should inform discussion of those issues.

First are changes in the Fed balance sheet. At the most basic level the reduction in the size of the balance sheet provides both a simple explanation of why reserves were at a premium and a simple solution. The post-crisis approach of using administered interest rates to achieve the federal funds target rate meant that monetary policy would no longer directly respond to changes in the effective price of reserves, in contrast to the pre-crisis regime. Thus, as the Fed emphasized in its policy statements before and while it was reducing its balance sheet, it intended to maintain – in its phrase – "ample" reserves. As a technical matter, this meant an amount sufficient to stay safely on the relatively flat part of the demand curve for reserves. In fact, however, the Fed's balance sheet reduction process appears to have moved the supply of reserves into the part of the demand curve with a steeper slope, thereby contributing to the September episode.

Of course, the Fed has now reversed course. It has begun a new round of balance sheet expansion, with monthly purchases of $60 billion of Treasury bills at least into the second quarter of 2020, meaning at least $360 billion in aggregate. The Fed's stated aim is that this increase in the balance sheet offset the growth in non-reserve liabilities, such as currency, and maintain at a minimum the level of reserves that prevailed in early September. During this rebuilding program, the Fed is also operating at least through January a short-term facility to provide additional reserves as needed.

Second are changes over the last couple of years in the Treasury market. The proximate cause of the September price spike was that Treasury scheduled a large auction to coincide with third quarter estimated tax payments. The result was a big increase in the Treasury account at the Fed and a corresponding reduction in reserves. With the budget deficit having increased by about 50% in the last two years, the supply of new Treasuries that need to be absorbed by debt markets has grown enormously. Since these increased deficits are not the result of countercyclical policies, one can anticipate continued high supply of Treasuries, absent a significant shift in fiscal policy.

In addition, the marginal purchaser of the increased supply of Treasuries has changed. Until the last couple of years, the Fed was buying Treasury bonds under its QE monetary policy. And, prior to the 2017 tax changes, U.S. multinationals with large offshore cash holdings were also significant purchasers of Treasuries. Today, though, the marginal purchaser is a primary dealer. This shift means that those purchases will likely need to be financed, at least until end investors acquire the Treasuries, and perhaps longer. It's not surprising that the volume of Treasury-backed repo transactions has increased substantially in the last year and a half. Together, these developments suggest that digesting the increased supply of Treasuries will be a continuing challenge, with potential ramifications for both Fed balance sheet and regulatory policies.

Third is prudential regulation. It's not clear how much of significance for repo has changed in the last couple of years. But any changes that have occurred have been deregulatory. The 2018 Congressional amendments to Dodd-Frank were predominantly directed at regional and smaller banks, but the banking agencies have cut back some regulation of superregionals and systemically important banks. Some regulations, such as the liquidity coverage ratio and the Volcker Rule, have been relaxed, though only recently. It's hard to quantify the impact of changes in supervisory practice, but clearly the direction is toward less oversight of banking organizations. The Net Stable Funding Ratio proposed three and half years ago appears to have been indefinitely shelved. There has been no strengthening of existing regulations or introduction of new ones.

Fed Balance Sheet Policy Issues

Turning now to the issues raised, let me start with the Fed's balance sheet policies, which obviously relate to monetary policy. Most immediately, will there be another reserve shortage and price spike at the end of the year? The Fed will be only partway through its renewed purchase program, and end-of-year balance sheet window dressing by some banks may further constrict their capacity or willingness to increase their repo market activity. I presume that the Fed is now just as focused on this possibility as markets are, and will be prepared to augment reserves as needed toward the end of this month.

The more interesting issue is what recent experience implies for balance sheet policies over the longer term. Addressing that issue involves answering two related questions. First, what is – or should be – the Fed's tolerance for volatility in Treasury-backed repo markets? Second, given that risk tolerance, what specific balance sheet policies should the Fed adopt?

In its October 11 Statement Regarding Monetary Policy Implementation, the Fed reaffirmed its commitment to an ample reserve monetary policy regime that operates primarily through the setting of administered interest-on-excess-reserves (IOER) and reverse-repo purchases (RRP) and does not require active management of the supply of reserves. The Fed identified the risk it sought to avoid: money market pressures that could adversely affect policy implementation. The question, though, is whether the Fed understands adverse effects on policy implementation to be more or less synonymous with any spike in repo prices. The pre-crisis scarce reserve monetary policy regime predictably experienced transitory spikes. Is there something about the current policy regime that would make similar spikes more of a risk to effective monetary policy implementation? Relatedly, is there reason to believe that it will be more difficult to distinguish transitory from persistent reserve shortages and, accordingly, is it desirable for reserve levels to be large enough that they stay comfortably in the flat part of the demand curve? Or, alternatively, are there advantages to tolerating some measure of volatility in this market and, indeed, in other financial markets? Obviously, such tolerance would permit a somewhat smaller Fed balance sheet, which the Fed might favor for a variety of reasons. But there's also the broader issue of whether policies that largely suppress volatility in normal times may yield more intense volatility when a significant shock occurs.

The second question is what set of balance sheet policies the Fed should adopt given its volatility tolerance. In its October Statement the Fed noted its intention to continue balance sheet growth as non-reserve liabilities grow, so as to maintain reserves at about the level that prevailed prior to the September incident. Is this intended size for a buffer adequate? The answer must depend in part on whether the Fed is reasonably confident in predicting the effective capacity of banks to respond to spikes in demand for repo. It's pretty clear that pre-September assumptions were not wholly accurate. Various factors may have been at work. Banking interests have predictably identified regulatory constraints as the culprit. More on that in a moment. Others have suggested that the apparent additional available reserves of banks may not translate into significant actual additional repo activity during spikes. Banks may have different strategies for holding reserves versus Treasuries. It may also be the case that the internal risk and other limits established by some banks for their Treasuries function have not been designed to take advantage of short-term price spikes. Have recent events given the Fed a better handle on effective bank capacities? And, to the degree that business model and/or organizational limits play a role, might the expectation – or lack thereof – of recurring episodes of volatility affect bank incentives to change these practices to take advantage of the profit opportunity when price spikes occur?

A key decision for the Fed will be the means by which it makes additional reserves available given its volatility tolerance and assumptions about effective bank capacity. Perhaps the most risk averse approach would be to grow the permanent balance sheet enough to maintain a truly sizeable buffer of reserves beyond what will probably be a shifting and somewhat uncertain point at which the slope of the demand curve steepens. This would be closer to an "abundant" or "really abundant" reserves policy than an "ample" one. Of course, all the considerations that have been discussed for years in debates on the right size of the balance sheet are relevant here, including how much of the increased supply of Treasuries resulting from the larger budget deficits the Fed wants to monetize.

If there is discomfort with the prospect of a larger and, unless the accelerating demand for currency slows, possibly quickly growing balance sheet, the Fed may opt for some kind of backup mechanism to deal with surges in repo demand. Possibilities include the much-discussed standing repo facility or, as Chair Powell hinted during his last press conference, some way to facilitate bank use of intraday overdrafts in their Fed accounts. These facilities could presumably be priced to respond to anything more than a hiccup in demand for reserves, or to allow for some volatility before pumping out liquidity. The choice to create a standing (r standby) facility and the characteristics of any such facility may also be affected by other monetary or financial stability policy preferences. For example, if the Fed wanted to use its balance sheet to directly affect the shape of the yield curve after it reached the zero lower bound, would this policy tool be made easier or more difficult by the creation and operation of such a facility?

An additional question, on which Zoltan Poszar has regularly written, relates to the impact of the Fed's foreign repo pool in taking up balance sheet space. This long-standing facility has at least tripled in size over the last five years after caps on its usage were removed. To the degree foreign official institutions sell Treasuries to invest in the pool, the already growing market supply is further increased. In any case, the pool is another non-reserve liability. This issue introduces a whole additional set of considerations, including whether the dollar's central international role argues for the Fed to depart from the practice of other central banks operating similar facilities, such as a cap on its size.

Financial Regulation Issues

Now to regulation. As has been the case with their response to many financial developments, representatives of the banking industry were quick to suggest that the September experience had been caused by excessive bank regulation, that the right response was in any case one or more forms of deregulation beyond those already in process, or both. So quick in fact that some of the instant analyses looked a bit like the conclusion had been reached before much analysis was done. An important exception was the assessment given by Jamie Dimon, which seemed considerably more plausible and which I will address in a few minutes.

I begin with two introductory points. First, as I mentioned at the outset, all the regulations being blamed for the price spike were in place for at least several years beforehand.

Yet until a few months ago, while there were a few hints of possible problems as the Fed began to reduce its balance sheet, there had not been any repo disruptions. Of course, financial regulations are developed on the basis or explicit or implicit assumptions about monetary policy, including the Fed's balance sheet, and other background conditions such as fiscal and debt management policies. It may be that the changes I mentioned in those areas interact with existing regulatory policies in such a way as to warrant some reconsideration.

My second introductory point is that, for both heuristic and policy purposes, it may be useful to distinguish between regulatory requirements directed at the size of banks' balance sheets and those directed at the composition of assets on those balance sheets.

Beginning with balance sheet size: Notwithstanding some of the instant commentary suggesting that the enhanced supplementary leverage ratio and/or the G-SIB surcharge bore responsibility for the September price spike, the evidence seems rather thin. Note first that if banks providing additional funding in the repo market would simply substitute Treasuries for reserves on a temporary basis, there would be no increase in their balance sheets. In any case, the largest banks all had room within their leverage ratio requirements to increase lending (though this might not always be the case in the future). Finally, for purposes of quarterly reporting of leverage ratios, the asset component of the denominator is based on the median size of the balance sheet over each day of the quarter. So a temporary increase to take advantage of the price could easily be smoothed out in the remainder of the quarter.

With respect to the G-SIB surcharge, the formula for determining the surcharge bucket is indeed affected by the amount of repo financing undertaken by banks. And it's true that the repo amount is measured at the end of each quarter, not just the end of the year. But the impact is fairly attenuated – a big decrease in repo financing will not shave that many points off the surcharge score. As various market analysts have noted, in past years banks have made more adjustments in other balance sheet items. But if a bank is close to the cutoff between buckets, every little bit of regulatory arbitrage may help. Hence the recent market speculation that some banks, especially JPMorgan, may limit repo participation further even in the face of a year-end spike in demand.

There are several questions raised by the G-SIB surcharge issue. First, would it really make sense to reduce capital requirements for the very largest, most systemically important banks just so that they can ramp up their repo activity? The musing by some observers that the September price spike was significantly accounted for by JPMorgan's staying on the sidelines arguably reinforces, rather than undermines, the case for a higher capital surcharge. A key motivation for the post-crisis reforms was to take account of the systemic importance of institutions whose weakness or failure could disrupt the whole financial system. This is especially important in the area of runnable short-term funding. Reducing capital requirements to facilitate a private bank becoming a quasi-lender of last resort would seem to pervert that very aim of requiring extra resiliency as the systemic footprint of the bank grows.

Second, might it not be better regulatory policy to calculate most metrics for the surcharge formula, including repo activity, based on averages over the course of the preceding year, rather than on a point-in-time (or four points-in-time) basis? This would both accommodate temporary increases in some bank activity even at the end of the year, while precluding the window dressing exercise by which a bank that has engaged in higher levels of that activity artificially slims down for a quarterly or annual snapshot of its balance sheet.

Third, though, the window dressing exercise that can involve year-end reductions in repo activity reflects the cliff-effect disadvantage of the bucket approach to surcharges, as adopted by the Financial Stability Board following the financial crisis. Within the Fed we had at least tentatively favored more of a continuous function approach, by which a bank's systemic score would correlate directly with the resulting surcharge. A change of this sort, like the previously mentioned idea of using averages rather than point-in-time measures, could be effected in a way that would be relatively capital neutral, though it would probably take more technical work.

The issues raised by the repo disruption with respect to regulations affecting the composition of bank balance sheets are, I think, more difficult. As nearly everyone immediately recognized, the Liquidity Coverage Ratio was essentially irrelevant in September, since Treasuries and central bank reserves are treated identically. So drawing down reserves to take Treasuries would not have changed a bank's LCR. But they are not treated as fungible in resolution planning or to meet liquidity stress tests, as Vice Chair Quarles noted in his Congressional testimony yesterday. The specific requirements under both these frameworks are not published, so it's hard to draw any conclusions as to how binding these requirements may be. During JPMorgan's Q3 earnings call in October, Jamie Dimon identified these requirements as the constraint that prevented JP Morgan from doing more repo and said his bank is required to maintain at least $60 billion in reserves at the Fed on an intraday basis. Although one would expect that JPMorgan's size and complexity mean that its requirement is considerably higher than that of other banks, some back of the envelope extrapolation would suggest that the aggregate requirement for all banks could be significant.

The reason for discriminating between Treasuries and reserves is that the former need to be monetized. In stressed circumstances, when liquidity providers generally become more cautious even as borrowers need more funding, monetization through other market actors may not be immediately possible. Thus, if the aim of resolution planning and liquidity requirements is to assure funding self-sufficiency by banks under all circumstances, there will be a preference for reserves. So long as reserves have been plentiful, this preference is a feasible regulatory choice. If they prove not to be, though, these requirements might contribute to the kind of episode that motivated this conference. Given the pace of increase in the supply of Treasuries created by the post-2017 budget deficits, the importance of the asymmetric regulatory treatment of Treasuries and reserves may become more significant. This, I think, is a regulatory issue worth revisiting, though – as already noted – the absence of publicly available firm-specific and aggregate information may make it difficult for those outside the regulatory agencies to debate the matter in anything but conceptual terms. And, as always, one must caution that the mere fact that a regulatory requirement contributes to reduced lending or some other financial outcome does not in itself clinch the argument for its modification. That depends on the seriousness of the effect, as well as the relative availability of alternative means both to address the effect and to achieve the financial stability aims that motivated the regulation in the first place.

In closing, let me suggest one related, but much broader regulatory issue that was implicated by the repo episode. The post-crisis approach to liquidity regulation – and here the Liquidity Coverage Ratio *is* relevant – requires banks to amass large quantities of liquid assets to ensure their self-sufficiency during periods of stress. I have for some time been concerned that while this approach does a reasonable job of countering what Jean Tirole called the "underhoarding" of liquidity by banks during normal times, it may exacerbate the problem of banks "overhoarding" liquidity during stress periods, and does little to address the use of runnable funding by shadow banks. Having every bank completely self-insure its liquidity needs even under severe stress or failure may make sense as a microprudential matter. But if every bank must sit on its pool of readily usable liquidity in anticipation of possible failure, the result could in periods of stress be a decidedly suboptimal macroprudential policy that starves an already strained financial system of needed liquidity.

Questions about the theoretical foundations for the current approach to liquidity regulation have been further complicated by the torrent of new Treasury issuance and the reduction in the size of the Fed's balance sheet. Yet it's neither realistic nor desirable to delay decisions on the more immediate issues surrounding Fed balance sheet policies. Devising a different approach to liquidity regulation – perhaps one centered on sustainable funding practices rather than pools of liquidity – would take time, especially since any significant change would need to be coordinated internationally. And if an element of a different approach were to include liquidity assistance, such as a Fed facility that would stand ready to monetize Treasuries or other assets, the possible resulting increase in moral hazard would need to be addressed. But the disruption in repo markets, along with recent reports of serious potential funding vulnerabilities among non-banks involved in mortgage lending, together remind us that liquidity regulation remains an important unfinished piece of post-crisis regulatory reform.