



Bank Regulations and Turmoil in Repo Markets

By Francisco Covas, Bill Nelson

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Last week's turmoil in repo markets provided a relatively benign demonstration of how banking regulations have reduced financial market resilience. Tax payments shifted money out of money funds, reducing the supply of repo financing—basically, in this case, cash available for exchange for Treasury securities—while new issuance of Treasury securities boosted demand. As a result, repo rates rose from 2 percent to as high as 10 percent. A question many are asking is: Why didn't banks step in and supply the missing repo financing? The answer is that doing so would have required them to obtain the funds from their own deposits at the Fed or by borrowing. Regulations or supervisory expectations stood in the way of either course of action. Exactly how is complicated and not perfectly clear, as some of those expectations are non-public.

WHY COULDN'T BANKS USE DEPOSITS AT THE FED TO LEND INTO THE REPO MARKET?

Deposits of the banking system at the Federal Reserve are currently at \$1.45 trillion. Before the crisis, deposits were about \$25 billion. Banks currently only earn about 2 percent on their deposits at the Fed. So why didn't they shift more of that money into repo lending and make a profit from the higher interest rate in that market?

On the face of it, the one public liquidity requirement contained in post-crisis regulations in the United States—the Liquidity Coverage Ratio (LCR)—presents no hurdle to substitution. When a bank reduces its excess reserves and increases its Treasury reverse repo, its LCR does not change. The LCR requires banks to hold high-quality liquid assets (HQLA) equal to a projected 30-day net cash outflow under stress. Excess reserves and the Treasury securities received in a reverse repo count equally as HQLA, so trading one for the other leaves a bank's HQLA level unchanged. Moreover, the reverse repo is assumed to roll over 100 percent for 30 days, so there is no implication for net cash outflows. Consequently, the bank's LCR is unchanged.¹

But there are less obvious hurdles to the substitution between excess reserves and Treasury reverse repo in other liquidity requirements that are not public. The largest banks – which include all the major bank dealers in the repo market—are subject to non-public liquidity stress tests, non-public liquidity requirements associated with their [resolution plans](#), and non-public *ad hoc* examiner mandates. Collectively, they [seem](#) to have driven a strong bank preference for cash relative to Treasury reverse repos. Specifically, a recent [post](#) by Fed economists noted:

Internal liquidity stress tests apparently assume a significant discount on Treasury securities liquidated in large volumes during times of stress, so that Treasuries are not treated as cash equivalent. We have heard that banks occasionally feel under supervisory pressure to satisfy their HQLA requirements with reserves rather than Treasuries.

Perhaps regulators are taking their cue from the parameters that presently govern the discount window: The penalty rate is set 50 basis points above the target range for the federal funds rate, and longer-duration Treasury securities are given noticeable haircuts.

¹ In fact, by design, the LCR is not changed by any short-term lending or borrowing between financial institutions, regardless of whether or not the transaction is collateralized and if so, with what type of collateral. As a result, the LCR does not build in an incentive for banks to pull away from each other when markets are stressed.

More directly, Fed examiners have expressed a preference—undoubtedly taken as a mandate—that banks hold excess reserves rather than Treasury securities.² Finally, there is also the prospective implementation of the net stable funding ratio, which includes provisions to make it costly for banks to hold large matched-repo books (repos and reverse repos that match and so offset each other). While that regulation has not been adopted or even proposed in the United States, it is a Basel standard, and it is not unprecedented for U.S. regulators to expect effectively pre-compliance by U.S. banks in such a case.

The Fed recently surveyed banks about reasons for their demand for excess reserves. Oddly, the survey did not explicitly ask about the role of liquidity requirements. (The results of the Fed's survey are available [here](#)). To address those missing questions, we conducted our own survey and published the results in "[Missing Answers to a Recent Fed Survey](#)":

The results of the BPI survey indicate that satisfying liquidity requirements is a key determinant of banks' demand for excess reserves. Over three-quarters of the banks that indicated the Reg YY liquidity buffer requirement is applicable to them rated it as an "important" or "very important" consideration. Similarly, nearly three-quarters indicated the LCR is an "important" or "very important" consideration. Nearly half indicated that examiner expectations about the composition of liquidity buffers is an "important" or "very important" consideration. And over one-third rated resolution liquidity requirements "important" or "very important."

These responses reflect the fact that liquidity requirements and supervisory expectations are contributing both to the reduced substitutability between excess reserves and Treasury reverse repo and to the extraordinarily high level of demand for excess reserves. In a [blog post](#) three weeks ago, "Impending Money Market Volatility Prompts Warning Light for LCR Tune-Up," we predicted last week's money market kerfuffle and listed ways that the LCR could be adjusted and recalibrated that would both improve the regulation and reduce bank demand for excess reserves, allowing the Fed to shrink its balance sheet further. We also have been encouraged by recent remarks from Vice Chair Quarles that the Fed would be reviewing supervisory preference for excess reserves, and earlier statements from FDIC Chairman Jelena McWilliams that the banking agencies would be revisiting liquidity needs in resolution requirements.

The implications of the substitution between excess reserves and Treasury reverse repos for capital requirements are more subtle. Although the Treasury reverse repo has a non-zero risk-weight, the collateral brings down the exposure materially with sufficiently high haircuts. That said, a GSIB's systemic risk score may increase via the cross-jurisdictional activity indicator if the counterparty is a foreign entity (e.g., a branch of a foreign bank).³ Although most indicators of the Method 2 GSIB surcharge are measured at the end of the year, banks have long-term relationships with borrowers and are unwilling to increase funding to resolve market dislocations only to later stop funding abruptly at year-end. In addition, the GSIB surcharge is not a continuous function like other capital regulations and moves in 50-basis-point increments. A single transaction could thereby force a bank to a higher capital surcharge bucket, prompting an additional 50-basis-point capital requirement against not just that trade but the entire balance sheet.

WHY DIDN'T BANKS BORROW THE MONEY AND LEND INTO THE REPO MARKET?

If banks borrowed the money to finance lending into the repo market, the transactions would have reduced their capital ratios. Most obviously, the leverage ratio of a bank that borrows and then invests the funds in reverse Treasury repo would decline. Although few banks are bound by their point-in-time leverage ratios, about half of the banks that participate in the Fed's annual CCAR stress tests are most closely bound by the test's leverage-ratio hurdle.

And if, as seems most likely, banks borrow in wholesale funding markets to finance increased repo lending, they would increase their systemic risk score and therefore risk getting a higher GSIB surcharge. Most of the components of the systemic risk score are calculated on a year-end basis, but the short-term wholesale funding component is based on a daily average.

² In response to a question at a conference at the Hoover Institution on May 4, 2018, Vice Chair Randal K. Quarles acknowledged that supervisors have indicated to banks that there is an expectation that some HQLA be held in the form of excess reserves. See <https://www.wsj.com/articles/transcript-panel-discussion-with-feds-quarles-at-hoover-institution-conference-1525724119?mod=searchresults&page=1&pos=2>.

³ The impact is about 1 GSIB score point per \$10 billion increase in cross-jurisdictional activity.

More broadly, however, the high level of capital requirements on low- or no-risk assets has reduced repo market liquidity and arbitrage across financial markets. In 2015, [a BIS review on the impact of the post-crisis regulatory changes on monetary policy](#) found that the reduction in market liquidity and cross-market arbitrage would require central banks to operate in more markets and with more counterparties.

So part of the story last week was how banks and broker-dealers have become slower to respond to financial dislocations. As one analyst observed to us, capital is now so expensive for banks that they use all that is available at all times. Even when an asset cheapens massively, there is simply no way to adjust quickly.

AND THEN THERE'S THE STIGMA . . .

Another important component of the unwillingness of banks to substitute Treasury reverse repo for excess reserves is the extraordinarily high levels of stigma associated with the discount window. If a liquidity need materializes for a bank late in the day, then the only way to resolve it is using the bank's excess reserves or borrowing from the discount window. The Fed's discount window is largely intended to give banks confidence that they can meet temporary funding needs if they come up short because of market dislocations. But the ever-present stigma associated with discount window borrowing has intensified sharply since the financial crisis, when such borrowings often were mischaracterized as "bailouts." When we discussed the determinants of bank demand for excess reserves at a symposium in January 2019, many banks indicated they now hold excess reserves in an amount designed to eliminate the possibility of ever having to borrow from the discount window.⁴

FINAL THOUGHTS ON THE FED'S CHALLENGES

The Fed is considering launching a standing repo facility to mitigate the volatility in secured overnight rates. As we noted in a recent [post](#), the Fed will have to overcome a number of design challenges to do so, but events in money markets may have offered the incentive to act quickly. One of those challenges is that the facility does not overcome balance sheet constraints on repo intermediaries—constraints especially acute at the end of each quarter and even more so at year-end. Specifically, borrowing from the facility and relending into the market will reduce banks' leverage ratios and increase their GSIB surcharge when they borrow from such facility and use the proceeds to lend to other counterparties. In particular, the Method 2 GSIB surcharge has not been adjusted since it was finalized in 2015. This is despite the Fed [stating](#) that it would periodically reevaluate the framework to ensure that factors unrelated to systemic risk do not have an unintended effect on a bank holding company's systemic indicator scores. Establishing a permanent standing repo facility will also have the Fed playing an even greater role in financial markets, without ever acknowledging the importance of liquidity and capital regulations in constraining the ability of banks to take actions to improve the functioning of repo markets.

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⁴ One of the participants told us that when he joined his bank, he was told that if he every borrowed from the discount window, there would be two follow-up calls: one from the New York Fed to his bank CEO to ask what happened, and another from HR telling him to clean out his desk.