

Staff Working Paper 2017-1

Recognizing the value of the central bank as a liquidity backstop

William Nelson

January 2017

(revised June 2018)

Staff Working Papers describe research in progress by the author(s) and are published to elicit comments and to further debate. Any views expressed are solely those of the author(s) and so cannot be taken to represent those of The Clearing House or its owner banks. The Clearing House is a banking association and payments company that is owned by the largest commercial banks and dates back to 1853. The Clearing House Association L.L.C., is a nonpartisan organization that engages in research, analysis, advocacy and litigation focused on financial regulation that supports a safe, sound and competitive banking system.

Recognizing the value of the central bank as a liquidity backstop

William Nelson¹

January 6, 2017
(revised June 6, 2018)

Abstract

This paper argues that a critical missing element of the internationally agreed bank liquidity condition metric, the liquidity coverage ratio (LCR), is recognition of the liquidity support available to a commercial bank from the central bank. The paper describes a way that central banks can adjust their lending and deposit taking operations so that banks get, for a fee, recognition of their borrowing capacity. Likely inadvertently, such arrangements effectively already exist at the ECB, BoE, and BoJ. If the Federal Reserve were to adopt the proposed facilities, it would enhance economic growth, make the financial system safer, and raise money for taxpayers.

Key words: Liquidity regulation, discount window, reserve balances, central bank operations.

JEL classifications: G18, G21, G28, E5, E58.

¹ The Clearing House, william.nelson@theclearinghouse.org.

The views expressed in this paper are those of the authors and do not necessarily reflect the views of The Clearing House or its owner banks. The author received helpful comments from Greg Baer, Ulrich Bindseil, Seth Carpenter, Stephen Cecchetti, John Court, Francisco Covas, Dietrich Domanski, Kieran Fallon, Catherine Fuchs, Vivian Liu, Mervyn King, Jamie McAndrews, Jeremy Newell, Sean O'Black, Paige Pidano, Jeremy Stein, and Paul Tucker. Any remaining errors are the sole responsibility of the author.

1. Introduction

How should the ability of a commercial bank to borrow from the central bank be treated in an international liquidity requirement? At one extreme, all assets that can be pledged to the central bank as collateral could be treated as liquid. At the other extreme, the ability of the bank to borrow from the central bank could be ignored entirely. After all, one purpose of a liquidity requirement is to make a bank internalize the cost of its liquidity risk.

This proves to be a very difficult question. It was the last piece of the Liquidity Coverage Ratio (LCR) standard to be agreed to by the Basel Committee on Banking Supervision (BCBS), with the solution published a year after the rule was “finalized.”² A big part of the problem is that the lending terms of each central bank are different and, even within a central bank, vary over time. McAndrews and Nelson (2011) suggested that the LCR recognize as a liquid asset a bank’s capacity to borrow from the central bank as long as the central bank lending facility has met certain common criteria. They pointed specifically to the option of counting as a liquid asset committed lines of credit (“Committed Liquidity Facility” or CLF) from the central bank, obtained for a fee. CLFs were already recognized by the LCR as HQLA for jurisdictions with insufficient government debt (such as Australia). A similar approach was recommended by then Fed-governor Jeremy Stein in a 2013 speech.³ In 2014, the BCBS decided to permit CLFs to count as liquid assets in all jurisdictions, but only on cumbersome and expensive terms that make the lines unworkable.

In this note we propose a means by which the Federal Reserve (or any central bank) could recognize under its liquidity rules the contingent liquidity support that it may provide, at a charge, to banks through the discount window by creating a Fee-based Contingent Liquidity Facility (“the facility”). The facility would not utilize committed lines, but would instead combine a lending and a deposit facility in a manner that closely resembles a credit line, allowing the facility to be offered on workable terms while also avoiding some of the pitfalls of committed lines noted by McAndrews and Nelson.⁴ The facility would require no legislative change or change to existing liquidity regulations. As discussed below, the proposal is not only closely related to the one put forward by Jeremy Stein, but also to one described in a recent book by Mervyn King, former governor of the Bank of England.⁵

Regulatory changes are often discussed in terms of a tradeoff between growth and financial stability – while a more stringent regulatory framework may enhance financial stability, economic growth may suffer. However, if the Federal Reserve were to create the facility, both growth and financial stability would be fostered: banks would be safer, financial crises would be less likely, and the Federal Reserve would be better able to respond to any crises that do occur. At the same time, banks could reduce lending to the government and correspondingly increase lending to households and nonfinancial businesses. Under reasonable assumptions, that increased lending could increase GDP by $\frac{1}{4}$ to $\frac{3}{4}$ percent.

² Basel Committee on Banking Supervision, January 2014.

³ Stein (2013).

⁴ McAndrews and Nelson noted a risk that a bank could sign up for a committed line but then be unwilling to borrow. They also noted that the BCBS requires that the lines not be revocable if the bank condition deteriorates, while FDICIA makes it nearly impossible for the Federal Reserve to offer a line that is independent of the condition of the borrower.

⁵ King (2016). For an early discussion of the value of recognizing in the LCR the liquidity support provided by the central bank, see McAndrews and Nelson (2011).

In addition to these key benefits, the proposal should enhance market discipline, reduce moral hazard, pose no risk to the Fed or taxpayers, and raise money for the Treasury. Market discipline would be increased because access to the facility would be limited to financially sound banks, providing an additional incentive for banks to remain financially sound. Moral hazard would be reduced because, under the facility, collateralized borrowing from the discount window would occur when the bank establishes its account during ordinary times, eliminating the possibility of shifting risk to other creditors when the bank is under liquidity pressure. Risk to taxpayers would be essentially zero because the facility would only be available to financially sound banks and would be backed by abundant collateral.⁶ And the facility would raise funds for the Treasury—perhaps as much as \$1½ billion annually—through the new fees that banks would pay to the Fed for contingent liquidity support under the facility.

2. Background

Consider two identical households, the Kennys and the Tellados. Both have some cash, but most of their respective savings is locked up in longer-term investments. Each has a home and a mortgage. But the Tellados have set up a home-equity line of credit while the Kennys have not.

Both households have the same net worth, but which household is better equipped to meet emergencies? The Tellados. Why? Well, suppose a tree falls onto their house and they need to immediately pay the contractors more than they have in cash. The Tellados can pay the contractors because they can draw on their home-equity line; the Kennys can't.

The same is true for a business or a bank. Establishing backup sources of funding improves liquidity. But the international regulatory regime governing bank liquidity, the liquidity coverage ratio (LCR), gives no recognition to the value of such contingency planning. That omission may make sense, to a degree, if one bank establishes a line of credit with another bank -- if there were a banking crisis, both banks could come under pressure, and we might worry about the reliability of the backup liquidity provider -- but it makes no sense if the backup arrangement is with the central bank. The central bank is perfectly reliable, and when a bank obtains and deploys funding from the central bank during a financial crisis, it not only improves its own financial position directly, it also creates reserves and so increases the liquidity available to the banking system as a whole, thereby reducing the potential for credit to the real economy to be constricted. Moreover, serving such a function is precisely the reason that central banks were established in the first place—to provide liquidity to the banking system during times of stress to stave off the type of liquidity-induced panics that regularly (and unnecessarily) inflicted substantial harm on the economy prior to the establishment of central banks.

Banks of all sizes, today and in the past, establish borrowing capacity at the U.S. central bank, the Federal Reserve, by filing the necessary paperwork and pledging collateral to the discount window under section 10B of the Federal Reserve Act.⁷ Discount window loans under section 10B are only provided to commercial banks and other depository institutions, and have been a normal and highly effective tool for banks to obtain necessary liquidity since the establishment of the Fed.^{8 9} It is also important to

⁶ The Federal Reserve has not lost money on a discount window loan since the 1930s.

⁷ 12 USC 347(b) (1991). <https://www.federalreserve.gov/aboutthefed/section10b.htm>

⁸ Fischer (2016).

distinguish the traditional discount window lending we describe here from the emergency lending that the Federal Reserve provided during the global financial crisis to nonbanks under section 13(3) of the Federal Reserve Act, which has several key differences.¹⁰

Both large and small banks establish and preposition at the Fed specific pools of collateral for contingency liquidity purposes. For discount window loans, the Fed accepts most “bankable” assets—loans and securities—as collateral; typically, banks will pledge loans as collateral. The Fed applies a conservative haircut to each loan or security to determine the amount it will lend against it; haircuts currently range from 1 to 78 percent.¹¹ It takes the Fed and the bank time and effort to establish such a pre-positioned pool of collateral, but once established, it provides the bank a valuable source of backup liquidity to meet future contingencies. At the end of the third quarter of 2016, banks had positioned \$1.6 trillion in collateral at the discount window, with \$242 million borrowed by banks against that collateral.¹²

Fed regulation and supervisory guidance recognize the value to banks and to the financial system of banks’ ability to borrow from the discount window. Regulation A, which governs the Fed’s discount window lending activities, states that primary credit (what is colloquially called “discount window credit”) is available to financially sound banks on a “no-questions-asked” basis and is intended, in part, to help ease strains on interbank markets when the demand for liquidity increases in an emergency.¹³ Separately, the supervisory guidance established jointly by all the Federal banking agencies in 2003 instructs supervisors to recognize that the discount window is an important tool for liquidity management. It states:

The new primary credit program has the following attributes that make the discount window a viable source of back-up or contingency funding for short-term purposes:

⁹ All loans extended by the Federal Reserve—discount window loans and emergency loans—were repaid in full, on time, with interest. For a complete discussion of the Fed’s lending during the crisis, including both discount window lending and emergency lending see Domanski et al (2014).

¹⁰ The Federal Reserve provides, and has provided since its inception, discount window loans to depository institutions in normal times and during times of stress. Such loans are made almost every day, and are a standard tool of monetary policy and an established means to provide temporary liquidity support to solvent depository institutions. By contrast, emergency credit loans, extended under section 13(3) of the Federal Reserve Act, were not extended during the 70 years between the great depression and the recent financial crisis. During the crisis, the authority was used extensively (See Domanski et al (2014) and Carlson et al (2015)). The emergency authority enables the Fed to lend to non-DIs in only “unusual and exigent” circumstances, and post Dodd-Frank, the Fed’s authority to engage in emergency lending is limited to programs and facilities with “broad-based eligibility” that have been established with the approval of the Secretary of the Treasury. However, when the Fed uses the emergency authority, it extends liquidity support to a new and broader set of institutions, running the risk that those institutions will expect such support in the future, thereby increasing moral hazard.

¹¹ The complete discount window collateral haircut schedule can be found here. <https://www.frbdiscountwindow.org/en/Pages/Collateral/Discount-Window%20and%20Payment-System-Risk-Collateral-Margins-Table.aspx>

¹² See, “Quarterly Report on the Federal Reserve Balance Sheet Developments,” November 2016, footnote to table 5, p. 12.

https://www.federalreserve.gov/monetarypolicy/files/quarterly_balance_sheet_developments_report_201611.pdf and the Federal Reserve H.4.1 statistical release for September 29, 2016,

<https://www.federalreserve.gov/releases/H41/>.

¹³ <https://www.frbdiscountwindow.org/en/Pages/General-Information/Regulation-A-Federal-Reserve-Board-Governors.aspx>

- *A less burdensome administrative process than applied under the previous adjustment credit program makes primary credit a simpler and more accessible source of back-up, short-term funding;*
- *Primary credit can enhance diversification in short-term funding contingency plans;*
- *Discount window borrowings can be secured with an array of collateral, including consumer and commercial loans;*
- *Requests for primary credit advances can be made anytime during the day; and*
- *There are no restrictions on the use of short-term primary credit.*¹⁴

Notably, the National Credit Union Association (NCUA) *requires* its larger members to establish back-up funding sources either through its “Central Liquidity Facility” or at the Federal Reserve’s discount window.¹⁵

Similarly, in the international standard from which the U.S. LCR regulation is derived, the Basel Committee on Banking Supervision (BCBS) and its governing Body, the Group of Governors and Heads of Supervision (GHOS), have expressly recognized the value of the ability to borrow from the central bank. The LCR requires each bank to hold a sufficient amount of high quality liquid assets (HQLA) to meet its 30-day projected funding need in a period of severe stress. The BCBS standard states that one of the desirable characteristics of an asset potentially included as HQLA is that the central bank accept the asset as collateral.¹⁶

The BCBS standard also defines deposits at the central bank and government securities as the preferred form of HQLA. But jurisdictions that have insufficient government debt, such as Australia and South Africa, are allowed to treat lines of credit with the central bank as HQLA. And as noted above, the standard allows all jurisdictions to count such lines as HQLA, but only on cumbersome and expensive terms that make the lines unworkable.¹⁷

In this larger context, we think it is possible to construct a facility that will improve U.S. banks’ liquidity positions and align the U.S. LCR with a broadly-recognized consensus view about the benefits and liquidity value of secured borrowing from central banks. Affirming the liquidity value of a bank having collateral pledged to the Fed’s discount window for LCR purposes will also provide seven significant benefits:

1. It would allow the Fed to charge banks a commercially appropriate fee for back-up liquidity support, thereby ensuring appropriate incentives for its provision;
2. It would promote economic growth by improving the liquidity position of banks, thereby enabling them to lend more to businesses and households and less to the government, both in ordinary times and in crises;

¹⁴ “Interagency advisory on the use of the federal reserve’s primary credit program in effective liquidity management,” (July 23, 2003), p. 4.

<https://www.federalreserve.gov/BoardDocs/press/bcreg/2003/20030723/default.htm>

¹⁵ See “NCUA Letter to Credit Unions,” Letter No., 13-CU-10. (Oct. 2013).

<https://www.ncua.gov/Resources/Documents/LCU2013-10.pdf>

¹⁶ Basel Committee on Banking Supervision, January 2013, “Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools,” paragraphs 26. <http://www.bis.org/publ/bcbs238.pdf>

¹⁷ Basel Committee on Banking Supervision, January 2014.

3. It would help better align the U.S. LCR to international norms, ensuring a more level playing field for U.S. banks relative to foreign banks;
4. It would increase the usability of the HQLA that banks hold to meet their LCR, reducing the need for banks to hold liquidity buffers on top of the required LCR buffer;
5. It would provide the Fed a tool to limit liquidity transformation in the shadow banking system, promoting financial stability;
6. It would strengthen the ability of the Fed to respond to a financial crisis; and
7. It would facilitate the conduct of monetary policy.

3. Proposal: Fee-based Contingent Liquidity Facility

Under this proposal, the Fed would create a fee-based contingent liquidity facility through which banks would be able to get liquidity credit toward their LCR for a fraction of the post-haircut collateral they have pledged to the discount window.

Specifically:

- A commercial bank would pledge collateral to the Federal Reserve and the Federal Reserve would examine the collateral and assign a lendable value to it;
- The bank would direct the Federal Reserve to establish a contingency funding account in its name and advance into that fund, as discount window borrowing, an amount up to a maximum of i) one-half of the lendable value of all its prepositioned discount window collateral and ii) one-quarter of the bank's HQLA requirement under the LCR;¹⁸
- The bank would be free to use the borrowed funds, but must pay an above-market interest rate for them, as is appropriate for a contingency funding source. The bank would pay the Federal Reserve a market-based fee of 15 basis points for the funds held in the facility, reflecting their value as a backup source of liquidity, and an interest rate equal to 100 basis points above the target federal funds rate on funds removed from the account;¹⁹
- The Federal Reserve could close the account and call any outstanding amounts with 31 days' notice. In particular, the Fed would call such amounts if the condition of the bank deteriorated below the criteria for eligibility.

Like all non-required deposits at a central bank, the funds in the account would count as the highest quality liquid assets (level 1) under both the U.S. and BCBS LCR standards as they exist today. Because banks typically pledge to the discount window loans that don't count as HQLA, the added reserves

¹⁸ The Fed can advance the funds into the account against the pledged collateral under its regular discount window lending authority, section 10B of the Federal Reserve Act.

¹⁹ As shown in the term sheet, the fee and interest rate structure would be implemented by charging the bank 100 bp above the target federal funds rate for the total amount of funds advanced against the collateral and paying it 90 bp above the target federal funds rate on the funds in the contingency funding account. The Fed states that the interest rate will not exceed the general level of short-term interest rates and explicitly mentions the "primary credit rate," (the discount rate) as a relevant rate. Because the primary credit rate has historically been 100 bp above the target federal funds rate, an interest rate 90 bp above the target federal funds rate would appear to be permissible. (Title 12, chapter II, subchapter A, Part 204.10).

balances would provide a dollar-for-dollar increase in a bank’s LCR with no corresponding reduction when the loans become encumbered, allowing the bank to reduce the government debt securities, or the additional deposits at the Federal Reserve, it would otherwise have to hold to satisfy HQLA requirements – both of which are effectively loans to the government. Instead, the bank would be able to use its balance sheet to extend credit to businesses and households. Table 1 summarizes the facility.

Table 1

Fee-based Contingent Liquidity Facility – Term Sheet

| | |
|-------------------------|---|
| Objective | Recognizing discount window borrowing capacity as a high quality liquid asset (HQLA) in the liquidity coverage ratio (LCR) |
| Description | The facility pairs a Federal Reserve discount window lending facility and a deposit facility to create a effective line of credit from the Federal Reserve in a manner that counts as level 1 HQLA under the LCR. |
| Eligibility | Depository institutions (DIs) (banks, thrifts, credit unions, U.S. branches and agencies of foreign banks) that qualify for primary credit (that is, they are financially sound) only. |
| Size | The maximum of one half of prepositioned discount window collateral and one quarter of the bank’s HQLA used to satisfy the LCR. |
| Fee | 15 bp (the difference between the lending rate and the deposit rate.) |
| <i>Lending facility</i> | |
| Authority | Standard discount window lending authority (section 10B of the Federal Reserve Act) |
| Collateral | Standard discount window collateral: essentially, all loans and securities. |
| Term | 31 days, renewed daily at the Federal Reserve Bank’s discretion |
| Interest rate | Target federal funds rate plus 100 bp |
| Maximum amount | The maximum of one half of prepositioned discount window collateral and one quarter of the bank’s HQLA used to satisfy the LCR. (Any of a bank’s remaining lendable value not deployed under the facility would remain eligible to back traditional discount window loans.) |
| <i>Deposit facility</i> | |
| Authority | Standard authority for the Federal Reserve to offer DIs interest-bearing DI deposits accounts (Section 19 of the Federal Reserve Act) |
| Term | Funds available on demand |
| Interest rate | Target federal funds rate plus 85 bp. (N.B. The difference between the lending rate and the deposit rate is the fee for the undrawn line.) |
| Maximum amount | The amount borrowed from the lending facility |

Under normal circumstances, the outstanding loans would be backed by the deposits, resulting in no exposure for the Fed or taxpayers. If the funds were used, the loan would still be backed by conservatively abundant collateral. The Fed has not lost money on a discount window loan since the 1920s, including those that were made during the great financial crisis, which were all repaid in full, on time, with interest. The proposal would also be compliant with the international and (more stringent) U.S. version of the LCR and, as explained further below, would be consistent with international practice.

The proposal has several choice variables: (i) the financial soundness criteria for participation, (ii) the maximum size of the facility for each bank, (iii) the fee on the facility if the funds are not withdrawn, and (iv) the interest rate if the funds are withdrawn.

Financial soundness criteria

We propose that only banks that meet the financial soundness criteria for “primary credit” be eligible to participate in the facility. Primary credit requires that the participating bank be “generally sound,” defined as adequately capitalized and rated CAMELS 3 or better, in large part so that the above-market rate would be sufficient to encourage the borrowing bank to limit use.^{20 21} In that way, the Fed can administer primary credit as a “no-questions-asked” facility without concern that the facility will be overused. A weaker institution could have a higher alternative cost of funds and so would be more likely to find primary credit attractive as an ongoing funding source. It would seem appropriate to apply the same criteria to participants in the facility to reduce the likelihood the bank would be interested in using the facility as an ongoing source of funds.²²

Alternatively, the financial soundness criteria could be tighter than those for primary credit. As noted, the criteria for primary credit are that a bank be adequately capitalized and CAMELS 3 rated. The criteria could, instead, be that the bank be well capitalized. This approach would be consistent with the suggestion of several researchers at the New York Fed that only banks that pass strict capital and liquidity tests be eligible for backstop liquidity support from the Fed, and would eliminate the use of subjective (and potentially lagging) supervisory ratings.²³

²⁰ The eligibility criteria for primary credit are included in the Fed’s “Frequently Asked Questions - Discount Window Lending Programs,” which can be found here:

https://www.frbdiscountwindow.org/Frequently_Asked_Questions.aspx

²¹ Madigan and Nelson (2002).

²² The Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991 amends section 10B of the Federal Reserve Act to set time periods beyond which the Fed may not lend to undercapitalized and critically undercapitalized institutions without incurring a potential limited liability to the FDIC. Under the criteria we propose, any bank that became undercapitalized would be ejected from the facility, with any outstanding loans due in 31 days, well within the FDICIA guidelines. See Clouse (1994) p.975.

²³ Eisenbach et al (2014).

Maximum size

The maximum size of the program could be determined in a variety of ways. We propose that the size be limited to no more than the lesser of (i) one half of the lendable value of discount window collateral and (ii) one quarter of its HQLA requirement under the LCR. The limit to one half of the lendable value of collateral guarantees extraordinarily conservative overcollateralization, and thereby extraordinarily conservative protection for the Federal Reserve (and indirectly, for taxpayers). The assets created under the facility are central bank reserves and therefore level 1 HQLA, the top category. Even so, to be sure that a bank is not relying too heavily on the central bank for its liquidity contingency planning, we propose that the facility be further limited to one quarter of the bank's HQLA requirement

Alternatively, the maximum size could be higher. Providing a higher fraction of the lendable value of collateral with no other restriction would be consistent international practice. For example, in the Eurosystem, a bank can borrow 100 percent of the lendable value of collateral pledged to the ECB. A higher maximum size would also be consistent with Regulation A, which states that discount window funds are available on a "no-questions-asked" basis.

Choosing a lower size limit could reflect a view that in normal times, banks' liquidity needs are more likely to be idiosyncratic and so best addressed without recourse to the central bank. It also could reflect extra caution on the part of the Fed given the unrestricted ability of banks to draw on the funds.

The "fee"

A case could be made for a low or a high fee. The fee (the difference between the interest rate charged on the advance and the interest rate earned on the deposits) could be zero, consistent with the view that central banks do not, themselves, face any liquidity risk, so the socially optimal outcome would occur when the central bank provides liquidity support to the banking system on a no-cost basis.²⁴

We believe, though, that the fee should be set at a higher rate to provide a fair return to the Fed for valuing collateral, assessing the condition of the bank, and being exposed (on a theoretical but not practical basis) to some small amount of risk. Hence, we propose a fee of 15 bp, at the high end of the commitment fee of a modestly sized collateralized line for a commercial bank; this is also the fee that the Reserve Bank of Australia charges for the lines of credit it offers to banks.²⁵

A higher fee would provide banks an incentive to limit their use of the CLF except during a crisis when alternative sources of HQLA become scarce, when the fee could be reduced.²⁶ That is, a high fee could be used instead of a maximum size to curtail the use of the program. However, as discussed below, a high fee would reduce one of the benefits of the program, its ability to limit growth of the shadow banking system.

²⁴ For a discussion of the relationships between liquidity regulations and the lender of last resort function of a central bank see Carlson et al (2015).

²⁵ Bindseil (2014) suggests that the fee increase with the use of the facility to avoid over use, and that it be higher for less liquid and harder-to-value collateral.

²⁶ Stein (2013) and Domanski et al (2014).

The interest rate on the drawn amount

When the Fed redesigned its discount window lending arrangements in 2003, it adopted a discount rate that was 100 basis points above the FOMC's target for the federal funds rate because such a rate was high enough to discourage most sound banks from using the discount window as an ongoing source of funds.²⁷ The same spread, for the same reason, seems appropriate for draws on the liquidity backup facility.

The term of the loans

The loans under the proposed facility would have terms of 31 days, renewable each day. Consistent with the intent of the LCR, 31 days would provide the bank sufficient time to address its liquidity need. As a result, that term would put the repayment day beyond the 30-day window of the LCR and so not result in a projected cash outflow under the regulation. If the term were less than 30 days, the facility would not increase banks' LCRs because the added HQLA would be offset by the projected cash outflow.

The same result could be achieved by revising the rollover rate on the loans assumed in the LCR. The internationally agreed LCR standard allows jurisdictions to assume that the rollover rate on central bank loans is 100 percent, and, as far as we know, a 100 percent rollover rate is assumed in all other jurisdictions.²⁸ In the United States, however, the rollover rate is assumed to be zero percent, reflecting the reality that primary credit loans are not intended to be an ongoing source of funding. Because the loans extended under the facility are intended to remain outstanding, albeit with the funds typically sitting in the reserve account, the rollover rate could be raised to 100 percent and the term shortened to overnight consistent with other discount window loans. Indeed, the U.S. LCR rule indicates that

The agencies proposed to treat borrowings from Federal Reserve Banks the same as other secured funding transactions because these borrowings are not automatically rolled over, and a Federal Reserve Bank may choose not to renew the borrowing...[S]hould the Federal Reserve Banks offer alternative facilities with different terms than the current primary credit facility, or modify the terms of the primary credit facility, outflow rates for the LCR may be modified.²⁹

While either approach would achieve the same end, we prefer that the loans have terms of 31 days for three reasons. First, it would more clearly represent both the commitment and the limits on the commitment from the Federal Reserve. The Fed could stop lending at any time, presumably because there were problems at the borrowing bank, and the outstanding loans would have to be repaid in 31 days. In such a case, the bank's LCR would drop sharply almost immediately, signaling a need for immediate action on the part of the bank and its supervisors, as would be appropriate. By contrast, extending the loans with overnight terms but assuming a 100 percent rollover rate would be doubly problematic. Either the arrangement would not strengthen a bank's liquidity because the bank would have to repay the loan when it came under stress, or the overnight maturity would be a chimera because the Fed would have to keep rolling over the loan in a situation where the bank's condition had worsened. Relatedly, the

²⁷ See, Madigan and Nelson (2002).

²⁸ Basel Committee on Banking Supervision, "Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools," paragraphs 107, (Jan. 2013). <http://www.bis.org/publ/bcbs238.pdf>

²⁹ Federal Register Notice, "Liquidity Coverage Ratio: Liquidity Risk Measurement Standards; Final Rule," Vol. 79, No. 197, October 10, 2014, p. 61503-04.

assumption of a 100 percent rollover rate would either be false or inconsistent with the stated maturity of the loan. Third, under the proposed design of the facility, the current rollover rate would not need to be changed, so the U.S. LCR rule would not need to be adjusted.

3.1. Relationship to Jeremy Stein’s and Mervyn King’s proposals

In a 2013 speech Jeremy Stein, then a governor of the Federal Reserve Board, argued that liquidity regulations act as both a tax on, and a mitigant for, liquidity risk.³⁰ He proposed that central bank lines of credit for a fee, similar to what is being proposed here, could help reduce variability in compliance costs for the LCR over time, and across countries, and particularly in a financial crisis when liquid assets become scarce. He also noted that such lines of credit could make banks more willing to use their HQLA in a crisis, especially if the central bank reduced the price of the lines at such times.

In “The End to Alchemy,” Mervyn King, former governor of the Bank of England, proposed that banks be required to back all short-term runnable liabilities one-for-one with borrowing capacity at the central bank established with pre-positioned collateral.³¹ Because the LCR requirement is based on the projected net outflows the bank would face under severe idiosyncratic and systemic stress, it is a similar measure to “all runnable liabilities.” The Fed already establishes borrowing capacity using pre-positioned collateral. Consequently, because the facility would allow a fraction of a bank’s borrowing capacity at the Fed to satisfy its LCR requirement, it resembles the King proposal. Moreover, as discussed next, a central advantage of both the King proposal and the facility is that banks would be charged for the central bank liquidity backstop support they receive.³²

3.2. Benefits

The facility would allow the Fed to charge banks for the contingency funding arrangement.

While the facility would recognize the liquidity value of a commercial bank’s capacity to borrow from the Fed, it would also charge the bank for that capacity. As discussed above, such a fee would compensate the Fed for the collateral services it provides as well as the (minimal) risk to which it is exposed when the funds are on deposit at the Fed. Moreover, it would establish a price incentive for banks to limit their liquidity risk. If banks established \$1 trillion at the facility and the fee were set at 15 basis points, the facility would collect \$1.5 billion per year. By way of comparison, the entire annual operating expenses of the Federal Reserve System are less than \$6 billion.³³ Of course, since the Fed remits any earnings above its expenses to the Treasury each year, the added funds from the facility could help offset other Federal expenditures.

³⁰ Stein (2013).

³¹ King (2016).

³² Paul Tucker (2016) notes that a serious problem with backing runnable liabilities with collateral pledged to the central bank is that the collateralized central bank loans, when made, would disadvantage existing creditors. Under the current proposal, however, the loans would be continuously outstanding, albeit matched by corresponding deposits, making it clear to other creditors that the collateral backing the loan is encumbered.

³³ Federal Reserve Banks Combined Quarterly Financial Report, June 30, 2016, p. 4.

The facility would promote economic growth

Currently, banks hold about \$3.7 trillion in HQLA – deposits at the Fed, government securities, and securities issued by government-supported entities. While banks' LCRs are not currently disclosed, anecdotal reports suggest banks maintain LCRs of about 1.1 because they are concerned about the supervisory consequence of falling below 1, even temporarily. However, as discussed below, the proposed facility could make it possible for banks to avoid holding a buffer on top of the LCR requirement.

If banks deposited \$800 billion in the proposed facility (backed by the \$1.6 trillion in collateral that is already prepositioned at the discount window in collateral, after haircut) and reduced their LCRs to 1, banks could reduce their HQLA, that is, their lending to the government, by over \$1.1 trillion. If banks used those funds to instead lend to businesses and households, such lending would increase by about 15 percent.³⁴ Based on a recent BIS review of the impacts of liquidity and capital requirement, such an increase would translate into a permanent increase in GDP of ¼ to ¾ percent.³⁵ Analysis of bank behavior within a rigorous economic model also finds that a more stringent LCR reduces lending and economic growth, especially when added to stringent capital requirements (Di NiColo et al (2014) and Covas and Driscoll (2014)).

The facility would promote a more level international playing field.

Banks in all the other major jurisdictions (Europe, United Kingdom, and Japan) have been able for extended periods to convert their discount window collateral into level 1 HQLA for the LCR.³⁶ In recent years, the central banks offered favorable lending terms against non-HQLA collateral, with lending rates that were in many cases close to or equal to the central bank deposit rate, allowing the banks to comply with the LCR at low or zero cost, and that remains the case in Japan. For example, at the end 2015, the ECB had extended €59 billion in loans to commercial banks through its main refinancing operations, standard longer-term refinancing operations, and targeted longer-term refinancing operations. The interest rates on those programs varied from -0.40 to 0 percent and the interest rate paid on deposits was -0.4 percent.³⁷ Consequently, European banks had access to favorable funding vehicles to help them comply with the LCR. Similarly, in the United Kingdom, banks could borrow from the Bank of England at bank rate (0.25 percent) for terms of four years and deposit the funds into their reserve accounts where they earned 0.25 percent, enabling the banks to comply with the LCR at essentially zero cost.³⁸ In both cases, the “fee” for converting non-HQLA to HQLA was zero. And in Japan the Bank of Japan extends 4-year loans to banks at an interest rate of 0 and pays them -10 basis points on deposits, resulting in a lower

³⁴ According to the Federal Reserve's H.8 statistical release, banks had \$7.6 trillion in loans to nonfinancial businesses and households outstanding, (Nov. 23, 2016). <https://www.federalreserve.gov/releases/h8/Current/>

³⁵ Basel Committee on Banking Supervision (2016). The estimates in table 1 (p. 8) of the BCBS paper suggest a 15 percent increase in lending would result from roughly a 4 percentage point increase the capital requirement. Table 3 (p. 11) suggest a 4 percentage increase in capital requirements would reduce steady state GDP by ¼ to ¾ percent.

³⁶ All three jurisdictions accept as collateral assets that do not count as HQLA for the LCR.

³⁷ <https://www.ecb.europa.eu/pub/pdf/annrep/ar2015en.pdf> and <https://www.ecb.europa.eu/stats/monetary/rates/html/index.en.html>

³⁸ Bank of England “Term Funding Scheme – Documentation,” <http://www.bankofengland.co.uk/markets/Pages/apf/termfunding/documentation.aspx> and “The Bank of England's Sterling Monetary Framework” <http://www.bankofengland.co.uk/markets/Documents/money/publications/redbook.pdf#page=10>

“fee” than we propose for the Fed facility.³⁹ The favorable lending programs in Europe and the U.K. have been wound down recently, however. The spread between lending and deposit rates in the Eurosystem is now 40 bp and the BoE currently does not lend to banks against non-HQLA on an ongoing basis.

Another way the facility proposed here could be implemented would be for the Fed to renew regular auctions of discount window credit as authorized in Regulation A.⁴⁰ Such auctions would make the Federal Reserve’s monetary policy framework essentially the same as the ECB’s. Indeed, while such auctions of regular discount window credit were first used during the financial crisis, they were initially proposed as a conventional asset the Federal Reserve could hold if, as then expected, the Federal debt were to be paid down.⁴¹ However, such an approach would be substantially more generous to banks. The auction-clearing rate for the loans would likely be about equal to other money-market rates, and the borrowings could earn a market-rate on deposits at the Federal Reserve both now and potentially in the future after interest rates and the Fed’s balance sheet has normalized.⁴² Consequently, banks could effectively (as in the Eurosystem) convert all of their central bank collateral to HQLA at zero or very low cost.

The facility would increase the feasibility of banks using, when appropriate, the HQLA that they hold to meet their LCR, which would reduce the need for banks to hold liquidity buffers on top of the LCR requirement.

The stockpiles of liquid assets required by the LCR are only useful if banks can use the liquidity to meet stress funding needs.⁴³ The Basel Committee explicitly recognizes the importance of usability, stating

During a period of financial stress...banks may use their stock of HQLA, thereby falling below 100%, as maintaining the LCR at 100% under such circumstances could produce undue negative effects on the bank and other market participants.... Banks may use their stock of HQLA in both idiosyncratic and systemic stress events...⁴⁴

Most observers believe, however, that banks would not allow their LCR to fall below 1 given the reputational risk. Furthermore, in the United States, the LCR rule requires a bank to notify its supervisor on any day that its LCR falls below one and to provide the supervisor with a remediation plan if its LCR falls below one for three consecutive days. Such an approach obviously signals to banks and their

³⁹ The interest rate the BoJ pays on deposits defined in its Statement on Monetary Policy, https://www.boj.or.jp/en/announcements/release_2016/k161101a.pdf. The lending terms are defined in “Other [monetary policy] Measures,” <https://www.boj.or.jp/en/mopo/outline/other.htm/>.

⁴⁰ Title 12, Chapter II, subchapter A, part 201.4 (e)

⁴¹ “Alternative Instruments for Open Market and Discount Window Operations” 2002, pp. 3-3 to 3-7. For a discussion of the auction of regular discount window loans during the financial crisis see Carlson et al (2015) pp. 15-17.

⁴² See the discussion of the Fed’s longer run monetary policy framework in the minutes to the November meeting of the Federal Open Market Committee, <https://www.federalreserve.gov/monetarypolicy/files/fomcminutes20161102.pdf>

⁴³ Goodhart (2008).

⁴⁴ Basel Committee on Banking Supervision (Jan. 2013).

management that there would be future regulatory and enforcement risk from making use of HQLA, even if, in the moment, regulators were allowing it.

Assuming banks will be unwilling to draw down their HQLA when they are under stress, they will likely instead pull back from extending credit and sell other assets, potentially exacerbating asset price declines. In doing so, a reduction in market liquidity can propagate into broader financial stress and inflict damage on the real economy, precisely the result that the LCR is intended to avoid.

Under the proposed scheme, however, when a bank draws down its funds at the Fed, it would have to pay the penalty interest rate, providing it a strong incentive to replenish the funds quickly. Supervisors could allow market forces to enforce LCR compliance, only stepping in if the shortfall were persistent or appeared to be driven by other problems. The bank would be able to make an economic decision as to how quickly to replenish the funds based on its situation.

Any stigma associated with an LCR shortfall should then decline as banks, supervisors and market participants become increasingly used to temporary and benign instances where the bank uses its HQLA only to then quickly replenish it.⁴⁵ Consequently, banks would feel less need to hold a buffer on top of their HQLA to avoid any shortfall.

The Fed could use the facility to limit liquidity transformation in the shadow banking system, promoting financial stability.

Instruments that have money-like characteristics – ones that either can be converted to cash quickly without depressing their value or that mature very soon – are especially valuable to investors. These money-like instruments provide a place for corporate money managers or households to keep funds for cash management purposes, and they provide the same function for banks or money funds. Money-like instruments include bank deposits, deposits at the Fed, very short-term government debt, repurchase agreements, and high quality commercial paper. Because of the added value of these instruments as a money substitute, investors are willing to accept a lower yield on them than otherwise. The amount by which the yields on these instruments fall below otherwise similar instruments is known as the money-premium.

When the money-premium is high, the interest rates on money-like instruments are lower than other instruments. As noted in Gorton and Metrick (2012), Gorton (2010), and Stein (2012), private financial intermediaries take advantage of this money premium when they issue certain types of collateralized short-term debt, such as asset-backed commercial paper (ABCP), or engage in repo transactions. They argue that this “private money creation” was a big part of the growth in the shadow banking sector in the years preceding the financial crisis, where seemingly safe maturity and liquidity transformation led to the run-like behavior in financial markets observed during the crisis. A recent Clearing House research note provides evidence that the money premium is currently elevated.⁴⁶ While the shadow banking system

⁴⁵ The suggested approach for increasing the usability of HQLA is almost identical to the approach used by the Federal Reserve to reduce stigma associated with the discount window in 2003. At that time, the Fed moved from a below-market rate that to an above market rate on discount window loans, simultaneously simplifying loan administration. See Madigan and Nelson (2002).

⁴⁶ The Clearing House (2016)

does not appear to be growing rapidly now, the currently elevated money-premium may be providing similar incentives that could lead to a re-expansion of the shadow banking system in the future.

Under the proposed arrangement, the fee charged on the backup funds at the central bank should serve as a ceiling on the money premium. Currently, banks are holding \$3.7 trillion of cash-like assets, likely in large part to comply with the LCR. Because banks will be able to expand their HQLA considerably by pledging to the central bank illiquid assets on their balance sheet, that 15 basis point fee will become the marginal cost of LCR compliance. If the money premium rose above 15 basis points, banks would pledge more collateral to the central bank and increase the amount in their Fed deposit accounts rather than hold the low-yielding assets.⁴⁷ If banks' use of the facility were broadly capped by the proposed restriction to one quarter of HQLA, then the ceiling on the money premium would be less effective, although it would still be somewhat effective, so long as some banks were not bound by the restriction.

For example, Treasury bills ("Tbills") are an excellent money substitute, and the amount by which the Treasury bill rate falls below market interest rates is commonly used as a measure of the money premium.⁴⁸ If a bank's cost of funds is 1 percent and the interest rate on a Treasury bill is 0.80 percent, it would cost the bank 0.20 percent to comply with its LCR using Treasury bills. But if the bank pledged more collateral to the Fed so that it could increase the funds in the facility, it would cost the bank 15 basis points. As long as the Tbill rate was more than 15 basis points below market, the bank would substitute away from Tbills and toward the facility.

The facility would strengthen the ability of the Fed to respond to a financial crisis.

In a period of financial turmoil, the demand for liquidity outstrips the available supply, and the central bank has to meet that demand to prevent a financial crisis.⁴⁹ Under the proposed arrangement, the Fed could immediately address the building funding need by increasing amounts in the facility accounts as a percentage of the pledged collateral. For example, the maximum allowable amounts in the facility accounts could be increased.

While the Fed could lend funds directly through the discount window instead, there is a severe stigma associated with discount window borrowing.⁵⁰ As a result, as in the case where banks are unwilling to use their HQLA, banks would likely go to great lengths to avoid borrowing at the discount window, allowing pressures to build in financial markets that the discount window is intended to relieve.⁵¹ In the case of the proposed facility, however, if the bank needed to draw on the funds, that action would not

⁴⁷ For evidence that the money premium responds to the supply of government-created alternatives and of ways the Federal Reserve could use its balance sheet to reduce the premium, see Carlson et al (2016). For a thorough analysis of the ability of such a contingency funding arrangement to limit the money premium, see Bech and Keister (2014).

⁴⁸ Greenwood et al (2015).

⁴⁹ Carlson (2013).

⁵⁰ See Clouse (1994), Madigan, and Nelson (2002), and Gorton and Metrick (2013) for a discussion of discount window stigma. The Presidents Working Group on Financial Markets and the Financial Stability Forum (since renamed the Financial Stability Board) identified the stigma associated with borrowing from the Federal Reserve's discount window as a significant threat to financial stability. See The President's Working Group on Financial Markets, March 2008, p.9, FSF Working Group on Market and Institutional Resilience, April 7, 2008, p.8, and FSF Working Group on Market and Institutional Resilience, October, 10, 2008, p.35.

⁵¹ When banks did borrow from the discount window during the crisis, the results were good for Main Street. Specifically, Berger et al (2016) found sizable increases in lending to businesses and households from banks that received discount window loans from Federal Reserve Banks during the financial crisis.

correspond to a new advance, as the advance occurs when the facility is set up, simply a payment from the reserve account, and so should not be inhibited by stigma.

Moreover, the facility would provide commercial banks an incentive to pledge collateral to the Fed. Abundant collateral at the discount window increases the ability of the bank to address liquidity stress episodes and the ability of the Fed to respond to a financial crisis.

Lastly, the facility could help to directly reduce discount window stigma. The Dodd-Frank Act requires the Fed to report details on all advances, including discount window loans, with a two-year lag. The provision of funds by the Fed into the contingency funding accounts would be reported with all other Fed discount window loans. Because the advances into the facility would be widespread and not associated with any particular financial difficulties, the stigma associated with all loans would decline.

The facility would facilitate the conduct of monetary policy

Monetary policy in most countries in normal times involves manipulating the demand and supply for reserve balances so that the market clears at the interest rate desired by the central bank. Morton Bech and Todd Keister (2013), have pointed out that the demand by banks for reserve balances to comply with the LCR, as opposed to the traditional demand for reserves to meet required reserves or avoid overdrafts, can interfere with monetary policy in some cases, preventing the central bank from being able to hit its interest rate target. They note that establishing an arrangement like the one proposed here would be a way to prevent that interference. Intuitively, the arrangement would provide the Federal Reserve separate tools with which it could manipulate the demand and supply of HQLA for compliance with the LCR independently of its monetary policy operations.

In addition, a key function of discount window loans is putting a ceiling on market rates, but that ceiling is ineffective if stigma prevents banks from borrowing. As discussed above, the facility proposed here should help reduce the stigma associated with regular discount window lending, improving the effectiveness of the discount window as a monetary policy tool.

3.3. Costs

Several costs have been raised by observers about proposals along these lines – the facility would weaken the LCR, banks would sign up but then not use the liquidity, the Fed would be unwilling to downgrade participants because of the resulting market consequences, and the facility would cause moral hazard. We think each of these concerns is misplaced.

The facility will weaken the LCR

One objection to the proposed facility will likely be that it will weaken the LCR. But, as noted above, the facility is completely consistent with the internationally agreed LCR and with the U.S. version of the LCR. In fact, as already noted, other major central banks provided banks loans in recent years on an ongoing basis at market rates, in effect enabling banks in their jurisdictions to convert the collateral they have pledged to the central bank into HQLA at a lower cost than proposed here.

Moreover, the restrictions suggested here on the facility in terms of size and excess collateral are neither required by LCR nor applied in other jurisdictions. And by charging a market-based fee (the difference

between the lending and deposit rate), the facility would provide U.S. banks an incentive to reduce their liquidity risk. Such a margin between the lending and deposit rate is also not required by the LCR nor applied in other jurisdictions. Consequently, the facility would neither weaken nor strengthen the LCR; it would simply recognize, in a manner that is stricter and more costly than what already has been done in other jurisdictions, the liquidity value of a bank having made arrangements to borrow from the central bank.

Banks would sign up but not use the facility

One concern could be that banks will sign up for the facility, allowing them to comply with the LCR, but then not use the funds, leading to the same market consequences that would occur if the banks had insufficient liquidity. Such concerns would be appropriate if the facility was designed as a line of credit. In that case, banks could sign up but then be unwilling to borrow because of the stigma associated with the discount window. However, under the facility, the borrowing would take place upfront and the loan would always be outstanding unless the bank lost access to the facility. If the bank was unwilling to borrow from the Federal Reserve, it would not sign up for the facility. The liquidity support would take place when the bank spent the funds in the deposit account. But there is no stigma associated with spending.⁵² In fact, as discussed above, the operation of the facility should not only be stigma free, but should help reduce the stigma associated with regular discount window borrowing.

The Fed would not be willing to enforce the financial soundness criteria in a crisis

One concern is that the Fed would not be willing to kick a bank out of the program if the bank's financial condition weakened during a financial crisis because of the potential systemic consequences. As discussed in Carlson et al (2016), an essential way that the LCR and the Fed's provision of backstop liquidity support each other is that the LCR buys the Fed time to assess whether a bank is solvent and lending is appropriate and not excessively risky. For the same reason, it would be critical that the Fed call the loans of a participating bank whose financial condition had become unsound, closing it out of the proposed facility. That action would cause the bank's LCR to fall sharply the next day. In that situation, the bank could either replace the term borrowing or add to its HQLA. If the bank could do neither, supervisors should step in to get the bank on the right course or close it down.

The need for prompt action to address a bank's financial difficulties is essentially the same whether the bank uses the facility or not. And the incentives to delay are also the same – concern that the action would precipitate wider financial problems. However, the Fed and FDIC have certified that all of the

⁵² There is no consensus concerning why there is such an intense stigma associated with borrowing from the discount window, but the potential reasons include 1) even though borrowing is kept secret (or revealed with a lag), supervisors and internal bank management consider it to be an indication that the bank screwed up; 2) requesting a loan from the Fed is like “borrowing money from your dad;” 3) borrowing can be inferred by the market because a bank first seeks market funding and only then turns to the Fed; and 4) (post Dodd-Frank) banks will be vilified as having received a bailout when their borrowing is revealed after two years. None of these reasons apply to the bank spending funds from its account at the Fed. Banks make such payments all the time, thousands or even millions of times a day, they are completely ordinary. There would be no sense in which the payment from the facility account would be different from all other payments. See Clouse (1994), Madigan, and Nelson (2002), and Gorton and Metrick (2013) for a discussion of discount window stigma.

largest U.S. commercial banks can be resolved through bankruptcy without systemic consequences.⁵³ As a result, the Fed should be willing and able to kick a bank out of the program if the bank becomes unfit financially.

The facility would enable banks to shift risk away from short-term creditors

Another concern about the proposed facility is that it would enable the bank to shift risk from its short-term creditors to its longer-term creditors and the FDIC when it approaches insolvency and faces a run. When an insolvent institution liquidates its HQLA, or borrows from the central bank on a collateralized basis, to meet short-term payments, it shifts risk away from short-term creditors and to longer-term creditors and to the FDIC deposit insurance fund. This potential for risk-shifting is an important reason why supervisors need to act quickly to resolve a troubled or insolvent institution and not use either Fed lending or the availability of HQLA as a reason to delay action.

However, the possibility of risk-shifting is not a legitimate concern for the proposed facility. For one thing, as discussed above, the facility does not change the need for supervisors to take prompt action, and the existence of living wills for systemic banks makes such prompt action less costly.

But more importantly, banks cannot use the facility to shift risk. The bank's discount window collateral is encumbered *ex ante* when the bank signs up for the facility, not when the funds are used. The consequences of the collateralized borrowing for the riskiness of longer-term debt and risk to the deposit insurance fund would be apparent well in advance, allowing those creditors and the FDIC to adjust if necessary.

The facility would increase moral hazard

The most likely concern that could be raised about the facility is that it would increase moral hazard. Moral hazard occurs if the availability of unpriced or underpriced liquidity support from the central bank leads short-term creditors to assume that they will always be repaid. In that case, banks have an incentive to take on greater liquidity risk and shift towards short-term financing.

There are a number of reasons, however, to conclude that the facility would reduce, not increase, moral hazard. First, banks would have to pay for the facility, increasing the *ex ante* cost of central bank liquidity support. Second, the liquidity support would be more transparent, allowing longer-term creditors and the FDIC to adjust and, if necessary, require compensation. Lastly, if a participating bank used the funds in the facility, it would pay an above-market fee for a nearly riskless loan, preventing it from shifting risk to the Federal Reserve.

Banks that are bound by the leverage ratio would find the facility uneconomic

While it is true that banks that are bound by the leverage ratio would have to hold equity against the reserve balances created, they would have already have been required to hold equity against the HQLA used to satisfy the LCR. Because that original HQLA would decline by the amount of the deposits, the net change in the capital requirement for the bank would be zero. Moreover, if the facility is successful in

⁵³ Joint Federal Reserve and FDIC Press release, "Agencies announce joint determinations for living wills," December 19, 2017. <https://www.federalreserve.gov/newsevents/pressreleases/bcreg20171219a.htm>

making it unnecessary for banks to hold excess HQLA, banks bound by the leverage ratio would need to hold less, not more, capital.

The added reserves will complicate monetary policy

Almost all the time, the amount of discount window loans and reserve balances will be the same, so there will be no net change in excess reserves and so no complication for monetary policy implementation. In the rare instance in which a bank used the funds to meet a contingency funding need, the Fed would need to compensate (specifically, it would need to reduce its daily repos by a like amount), but that type of adjustment is what the Fed does daily to implement monetary policy.⁵⁴

Moreover, if the facility made borrowing more common and reduced stigma, it would support monetary policy implementation by putting an upper bound on interbank rates. If stigma were zero, no bank would borrow in the market for more than it could borrow at the regular discount window. In fact, there would be nothing preventing banks from spending reserves from their facility account if needed to avoid an overnight overdraft.

The facility would prevent the Federal Reserve from controlling the size of its balance sheet

As designed, the total size of the facility would be determined by the demand of commercial banks at the terms being offered. As with any standing facility, such as the primary credit facility, the total size on any day is therefore outside the control of the central bank. Unlike regular discount window credit, however, as noted above, changes in the size of the facility would not affect the amount of excess reserves so would not require sterilizing (offsetting) market operations. In fact, any endogenous changes in demand in response to changes in interest rate spreads could largely reflect the facility helping to control the level of the money premium as intended.

Moreover, over time the size of the facility could be determined by the Federal Reserve by adjusting the terms. The Fed could reduce the size, for example, by raising the fee, increasing the overcollateralization requirement, or reducing the fraction of HQLA that could be fulfilled by the facility.

Lastly, if the Fed strongly preferred to control the absolute size of the program, it could allocate the capacity in periodic auctions that would determine the fee. In that case, however, it could be simpler for the Fed—as discussed above—to just restart the Term Auction Facility, which auctioned regular discount window credit between December 2007 and March 2010.

⁵⁴ In the current extraordinary circumstance where reserve balances are super abundant, the Fed would not need to make any adjustment to implement monetary policy. Only after the Fed's balance sheet normalizes would an adjustment be needed.

4. Conclusion

Determining how collateral pledged to the central bank should be treated in an international liquidity standard such as the LCR is challenging. The question is not simply “What collateral is accepted?” but more importantly “On what terms is the central bank lending?” Because the lending policies of each central bank differ, it would not be appropriate for the LCR to simply treat all assets that can be pledged to the central bank as collateral as HQLA.

On the other hand, it is also not appropriate to ignore entirely the liquidity value to a bank of being able to borrow from the central bank if needed. By construction, the measure proposed here, however, takes into account the amount of collateral pledged, the lendable value of that collateral, and the willingness of the central bank to provide funds against the collateral. While at most times those funds would not be used, resulting in no exposure to the central bank, the funds would be immediately accessible when needed, and thus would count as HQLA just like any other central bank deposit. That is, the proposed facility is not intended, nor would it circumvent the intent of the LCR. Further, by limiting the size to one-quarter of the bank’s LCR requirement, the bank would still primarily self-insure its liquidity risk. And banks would pay the Fed for the liquidity support it provides.

Moreover, by creating the facility, the Federal Reserve would improve its assessment of the liquidity condition of banks, encourage economic growth by freeing up banks’ capacity to lend to Main Street, and enhance its ability to respond to a financial crisis by drawing in more collateral and reducing the stigma associated with borrowing from the discount window, while taking on virtually no risk.

References

- Basel Committee on Banking Supervision, January 2013, “Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools.” <http://www.bis.org/publ/bcbs238.pdf>
- Basel Committee on Banking Supervision, January 2014, “The Liquidity Coverage Ratio and restricted-use committed liquidity facilities.” <http://www.bis.org/publ/bcbs274.htm>
- Basel Committee on Banking Supervision, March 2016, Working Paper No 30, “Literature review on integration of regulatory capital and liquidity instruments.” <http://www.bis.org/bcbs/publ/wp30.pdf>
- Bech, Morton and Todd Keister (2014), “On the economics of committed liquidity facilities,” BIS working paper No. 439, January 2014. <http://www.bis.org/publ/work439.pdf>
- Bech, Morten and Todd Keister (2013), “Liquidity regulation and the implementation of monetary policy,” BIS working paper No. 432, October 2013, p.14.
- Berger, Allen and Lamont Black, Christa Bouwman and Jennifer Dlugosz (2015), The Federal Reserve's Discount Window and TAF Programs: 'Pushing on a String?' (October 28, 2015). Available at SSRN: <https://ssrn.com/abstract=2429710>
- Bindseil, Ulrich (2014), Monetary Policy Operations and the Financial System, Oxford University Press.
- Carlson, Mark (2013). “Lessons from the Historical Use of Reserve Requirements in the United States to Promote Bank Liquidity,” Finance and Economics Discussion Series 2013-11. Washington: Board of Governors of the Federal Reserve System, January 2013.
- Carlson, Mark, Burcu Duygan-Bump, and William Nelson (2015), “Why Do We Need Both Liquidity Regulations and a Lender of Last Resort? A Perspective from Federal Reserve Lending during the 2007-09 U.S. Financial Crisis,” Finance and Economics Discussion Series 2015-011. Washington: Board of Governors of the Federal Reserve System. <http://dx.doi.org/10.17016/FEDS.2015.011>.
- Carlson, Mark; Burcu Duygan-Bump, Fabio Natalucci, William Nelson, Marcelo Ochoa, Jeremy Stein and Skander Van den Heuvela (2016), “The Demand for Short-Term, Safe Assets and Financial Stability: Some Evidence and Implications for Central Bank Policies,” International Journal of Central Banking, Vol. 12, No. 4, pp. 307-332.
- The Clearing House (2016), “Liquidity Regulations, the Neutral Real Federal Funds Rate, and the Money Premium,” (Aug., 24, 2016) <https://www.theclearinghouse.org/issues/articles/2016/08/20160824-tch-research-note-on-liquidity-and-money-premium>
- Clouse, James (1994), “Recent Developments in Discount Window Policy,” Federal Reserve Bulletin, November 1994. <https://www.federalreserve.gov/monetarypolicy/1194lead.pdf>
- Covas, F and J C Driscoll (2014), “Bank liquidity and capital regulation in general equilibrium”, Finance and Economics Discussion Series, Federal Reserve Board.
- De Nicolò, G, A Gamba and M Lucchetta (2014), “Microprudential regulation in a dynamic model of banking”, Review of Financial Studies, vol 27, no 7, pp 2097–138.

Domanski, Dietrich, Richhild Moessner, and William Nelson (2014), “Central banks as lender of last resort: experiences during the 2007-2010 crisis and lessons for the future,” Finance and Economics Discussion Series 2014-110. Washington: Board of Governors of the Federal Reserve System, <http://dx.doi.org/10.17016/FEDS.2014.110>

Eisenbach, Thomas, James McAndrews, and Tanju Yorulmazer (2014), “Systemic Liquidity Insurance,” mimeograph, Federal Reserve Bank of New York, March 2014.

Federal Register Notice (2014), “Liquidity Coverage Ratio: Liquidity Risk Measurement Standards; Final Rule,” Vol. 79, No. 197, October 10, 2014.
<https://www.gpo.gov/fdsys/pkg/FR-2014-10-10/pdf/2014-22520.pdf>

Federal Reserve System (2002), Alternative Instruments for Open Market and Discount Window Operations, Federal Reserve System Study Group on Alternative Instruments for System Operations,” Board of Governors of the Federal Reserve System, Washington, D.C., December 2002.
https://www.federalreserve.gov/boarddocs/surveys/soma/alt_instrmnts.pdf

Federal Reserve System (2016), “Quarterly Report on the Federal Reserve Balance Sheet Developments,” November 2016. https://www.federalreserve.gov/monetarypolicy/files/quarterly_balance_sheet_developments_report_201611.pdf

Federal Open Market Committee, Minutes of the meeting on November 1-2, 2016. <https://www.federalreserve.gov/monetarypolicy/files/fomcminutes20161102.pdf>

Fischer, Stanley, Vice Chairman, Board of Governors of the Federal Reserve System, Speech at “The Lender of Last Resort: An International Perspective.” (Feb. 10, 2016.)
<https://www.federalreserve.gov/newsevents/speech/fischer20160210a.htm>

Greenwood, Robin, Samuel G. Hanson, and Jeremy C. Stein (2015), “A Comparative-Advantage Approach to Government Debt Maturity,” *Journal of Finance*, Vol. 70, Issue 4, August 2015, pp. 1683-1722.

Goodhart, Charles (2008). “Liquidity Risk Management,” *Banque de France, Financial Stability Review*, vol. 11 (Feb. 2008), pp. 39–44.

Gorton, Gary (2010), *Slapped by the Invisible Hand: The Panic of 2007* (Oxford University Press).

Gorton, Gary, and Andrew Metrick (2012), “Securitized Banking and the Run on Repo,” *Journal of Financial Economics*, 103, 425–451.

Gorton, Gary, and Andrew Metrick (2013), “The Federal Reserve and Panic Prevention: The Roles of Financial Regulation and Lender of Last Resort,” *Journal of Economic Perspectives*, vol. 27 (4), pp. 45–64.

King, Mervyn (2016), “The End of Alchemy: Money, Banking, and the Future of the Global Economy,” W. W. Norton & Company.

Madigan, Brian and William Nelson (2002), “Proposed revision to the Federal Reserve’s discount window lending programs,” Federal Reserve Bulletin, July 2002, pp. 313-319. <https://www.federalreserve.gov/pubs/bulletin/2002/0702lead.pdf>

McAndrews, James and William Nelson (2011), “Supply and Demand for Liquidity under the LCR,” presented at a Federal Reserve Board conference on November 2, 2011.

Nelson, William (2002), “Criteria for central bank assets: lessons from pre-ECB Germany,” New England Economic Review, second quarter, pp. 30-32. <https://www.bostonfed.org/-/media/Documents/neer/neer202f.pdf>

Stein, Jeremy (2012), “Monetary Policy as Financial-Stability Regulation,” Quarterly Journal of Economics, 127, 57–95.

Stein, Jeremy (2013), “Liquidity Regulation and Central Banking,” speech at the "Finding the Right Balance" 2013 Credit Markets Symposium sponsored by the Federal Reserve Bank of Richmond, Charlotte, North Carolina, April 19, 2013. <https://www.federalreserve.gov/newsevents/speech/stein20130419a.htm>

Tucker, Paul (2016), “The design and governance of financial stability regimes,” Essays on International Finance, CIGI, Volume 3, September 2016.