Andersen Institute Notes

ANDERSEN INSTITUTE for Finance & Economics

Stigma and the Discount Window: The Beat Goes On

James A. Clouse[1]
October 7, 2026

Highlights

- Stigma has been a persistent factor hampering the key role of the discount window in supporting effective monetary policy implementation and promoting financial stability.
- In recent decades, structural factors such as expanded membership of the FHLBank system, liquidity requirements for banks, and the Federal Reserve's ample reserves regime may have indirectly contributed to stigma.
- The Federal Reserve has implemented a number of improvements to enhance the efficiency of discount window operations and to underscore the vital role of the discount window in bank contingency funding plans.
- These improvements along with more favorable pricing may have contributed to a notable pickup in discount window borrowing over recent years.
- Term borrowing in particular has gained popularity and may have helped mitigate reluctance to borrow and stigma, at least for smaller banks.

©2026 Andersen Institute for Finance & Economics. All Rights Reserved. This material is confidential intellectual property of the Andersen Institute for Finance & Economics. The views expressed in this note are those of the author and do not represent an official position of The Andersen Institute for Finance and Economics or affiliated organizations. By viewing this Andersen Institute Note, you agree that you will not directly or indirectly copy, modify, record, publish, or redistribute this material and the information therein, in whole or in part. No warranty or representation, express or implied, is made by the Andersen Institute or any of its affiliates, nor does Andersen accept any liability with respect to the information and data set forth herein. Distribution hereof does not constitute legal, tax, accounting, investment or other professional advice. The information provided herein is not intended to provide a sufficient basis on which to make an investment decision. Recipients should consult their own advisors, including tax advisors, before making any investment.

[1] James Clouse is a senior fellow at the Andersen Institute. This note has benefitted from helpful comments and suggestions from colleagues including Brian Boeckman, Charles Calomiris, Daisoon Kim, and Elif Tasar.

"Long before the establishment of the reserve system, it was one of the fundamental traditions of sound banking practice in this country, that a bank's operations should be confined to the resources which it derived from its stockholders and depositors, and interbank borrowing was at all times limited. When it did occur, it was viewed with such distrust as an evidence of weakness, or at least unsound practice [....]"

Winfield Riefler, 1930
From Money Rates and Money Markets in the United States

"The recent episode of more volatile funds trading also has underscored the increased reluctance depositories have exhibited in recent years in availing themselves of short-term adjustment credit at the discount window. The reluctance has stemmed from fears of being identified as having more fundamental funding problems. [...] The Federal Reserve has no desire to circumscribe the legitimate use of the discount window, and market participants should not interpret such use as indicating underlying problems for the institutions involved."

Chairman Greenspan
Monetary Policy Testimony, February 1991

"The efficacy of the discount window has been limited by the reluctance of depository institutions to use the discount window as a source of funding. The "stigma" associated with the discount window, which if anything intensifies during periods of crisis, arises primarily from banks' concerns that market participants will draw adverse inferences about their financial condition if their borrowing from the Federal Reserve were to become known."

Chairman Bernanke, 2008
Speech at FRB Atlanta Financial Markets Conference

"And so we beat on, boats against the current, borne back ceaselessly into the past."

F. Scott Fitzgerald, The Great Gatsby

The possibility that borrowing from the discount window could be seen as a sign of financial weakness, particularly during periods of financial distress, has been a recurrent theme in Federal Reserve history. The architects of the Federal Reserve System envisioned central bank lending as a key function of the System to support the economy and to address periods of stress. However, the role of the discount window as an ongoing funding source for the banking system withered over time, partly reflecting the "tradition against borrowing" encouraged by the Federal Reserve over the 1920s and the associated ascendance of open market operations as the primary tool to meet the reserve needs of the banking system. Nonetheless, the discount window has retained an important role as a backup source of liquidity in the banking system. In that capacity, the discount window serves at least four key functions today by helping to: (i) support banks in meeting idiosyncratic funding needs; (ii) create a ceiling on short-term interest rates and support the effective implementation of monetary policy; (iii) facilitate the orderly resolution of severe liquidity issues facing a depository institution; and (iv) mitigate run incentives in the banking system by obviating the need for costly fire sales of assets to meet withdrawals.

As the quotes above suggest, the ability of the discount window to fulfill these functions depends on the willingness of banks to turn to the discount window when the need arises. Unfortunately, many factors have tended to undercut the willingness of banks to use the discount window including operational costs and administrative pressure that supervisors and discount officers have at times applied to discourage heavy reliance on the discount window. Stigma—a belief that borrowing at the discount window, if it were to become known, would be taken as a sign of financial weakness—is yet another impediment to discount window usage. Discount window stigma can be particularly costly because it tends to become more pronounced during periods of financial distress when bank funding pressures are most acute.

A Brief History of Stigma

During the early years of the Federal Reserve System through the 1920s, Reserve Banks provided a substantial volume of credit to member banks. However, even over that period, there were concerns within the System that it was not appropriate for a central bank to serve as an ongoing funding source for depository institutions. Moreover, even in these early years, banks were wary that borrowing at the discount window could be seen as a sign of financial weakness.[2] By the end of the 1920s, discount window administration was largely geared toward discouraging borrowing for lengthy periods. Open market operations, rather than discount window lending, assumed primary importance for adjusting aggregate reserves in the banking system.

[2] See Carlson (2025) for an excellent discussion of discount window policies during the early years of the Federal Reserve System. Other useful historical references include Armantier et al. (2015), Clouse (1994), Hackley (1973), Shull (1971), Jefferson (2024).

Following the early years of the Great Depression, banks focused on maintaining liquidity and discount window lending was largely dormant. That environment persisted through WW II and for several years thereafter. Higher interest rates following the Fed/Treasury Accord in 1951 had the side effect of inducing larger levels of borrowing at the discount window. Federal Reserve officials judged that tightening the terms of lending at the discount window would help to provide greater control over the level of free reserves in the banking system—the key policy instrument in those years. Following a reappraisal of the discount window in the early 1950s, the System revised Regulation A governing the administration of the discount window. The revised regulation tightened standards for discount window borrowing to include the expectation that banks would rely on the discount window "when necessary" to meet unexpected liquidity needs and that discount window borrowing would generally be for short periods. A second reappraisal of the discount window conducted from 1965 to 1968 developed proposals aimed at making the discount window more accessible.[3] Most of the proposals aimed at relaxing discount window administration were not adopted although the 1973 revision of Regulation A did include a new seasonal borrowing program to address the special funding needs of smaller agricultural banks; however, the revision also introduced a concept of "appropriate" extension of short-term adjustment credit as a criterion for Reserve Banks to consider in their lending decisions.

The period of high interest rates in the 1970s and 1980s created severe stress in the banking system. High interest rates compounded by sectoral shocks resulted in waves of bank failures over this period. In 1980, the Congress expanded access to the discount window beyond member banks to include all depository institutions—commercial banks, credit unions and thrift institutions. A coincident revision to the Board's Regulation A included a new requirement that depository institutions must exhaust other "reasonably available" alternative sources of funds before turning to the discount window.[4]

In the 1980s, Savings and Loans (S&Ls) suffered severe losses and runs and the Federal Savings and Loan Insurance Corporation (FSLIC) was depleted. In response, Congress passed the Financial Institution Reform, Recovery, and Enforcement Act (FIRREA) in 1989 that resolved and restructured the entire sector. The situation in the commercial banking sector during the 1980s was also dire. According to the FDIC, more than 1600 banks failed or received FDIC assistance during the period from 1980-1994.[5] Many of these institutions were borrowing from the discount window as they approached failure.

[3] See Board of Governors of the Federal Reserve System (1968).
[4] See Board of Governors of the Federal Reserve System (1980).
[5] See Federal Deposit Insurance Corporation (1997).

At the time, the Federal Reserve believed that lending to troubled institutions, in consultation with the FDIC and other federal regulators, was appropriate to facilitate the orderly closure of troubled institutions; orderly closure of troubled institutions helped to avert adverse knock on effects to other institutions, the financial system, and the economy. However, critics of the Federal Reserve's lending practices argued that the Federal Reserve's lending posture allowed insolvent institutions to remain open while continuing to sustain operating losses—a policy that served only to increase the ultimate costs to the FDIC in resolving the failed institutions.[6] The House Committee on Banking, Finance and Urban Affairs, chaired by Representative Henry Gonzalez, enthusiastically joined in this criticism. A study conducted by the Committee documented hundreds of cases over the 1980s and early 1990s in which the Federal Reserve was lending to depository institutions at the time of closure.[7]

Congress responded to the debacle in the banking system by enacting the Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991. Among many other provisions, FDICIA established a system of "prompt corrective action" as a bank's financial condition deteriorates; the act also placed certain restraints on the Federal Reserve's ability to lend to troubled depository institutions. The association of the discount window with failing banks in the 1980s and early 1990s exacerbated the so-called "body bag" image of the discount window and contributed to heightened stigma associated with discount window usage.

During the 1990s, the Federal Reserve made some attempts to mitigate stigma, largely by providing more welcoming messaging around the use of the discount window. Those efforts led to some modest improvement in discount window usage for a time. However, the administration of the discount window during this period remained a hindrance to borrowing. The discount rate for adjustment credit was typically below the level of overnight market interest rates. The Board's regulation A included the "appropriateness" and "reasonably available alternative sources of funds" criteria for borrowing, and discount window officers typically inquired about the nature of a bank's funding need before approving a discount window loan. This administrative pressure intensified if banks wished to borrow for periods of more than a few days.

In 2003, the Federal Reserve made a more determined effort to address stigma by restructuring the discount window. Under this restructuring, the Board established the primary and secondary credit programs.[8] Primary credit was available to depository institutions in generally sound financial condition on a no-questions-asked basis. Regulation A was revised to remove the "appropriateness" and "reasonably available alternative sources of funds" criteria for lending. The

[6] See Schwartz (1992).
[7] See House Committee on Banking, Finance, and Urban Affairs (1991).
[8] See Madigan and Nelson (2002) for a detailed discussion of the 2003 discount window restructuring including issues associated with stigma.

primary credit rate was set initially at 100 basis points over the target federal funds rate. The intent was to move away from administrative pressure in the operation of the discount window and to rely more on the discount rate as the primary tool to manage the level of borrowing. Limiting access to primary credit to institutions in generally sound financial condition was viewed as a way to help mitigate stigma by reducing the extent to which discount window borrowing would be seen as a sign of financial weakness. Secondary credit was available to depository institutions not eligible for primary credit. In contrast to primary credit, lending under secondary credit is conducted in consultation with the bank's supervisors and the rate on secondary credit is set 50 basis points higher than the primary credit rate.

The introduction of the primary credit program appeared to be modestly successful in addressing stigma. However, with the rate set 100 basis points above the level of short-term interest rates, primary credit remained relatively little used in normal circumstances. Subsequent periods of severe distress—the Asian financial crisis in the late 1990s, the Global Financial Crisis in 2008, the pandemic in 2020, and the period of banking strain in 2023—revived concerns about stigma in deterring the effectiveness of the discount window. The Federal Reserve responded with more welcoming messaging around discount window usage and by relaxing the terms of discount window lending, notably including the availability of term loans under the primary credit program and a reduction in the spread of the primary credit rate relative to the interest rate on reserve balances to only 10 basis points. In addition, Reserve Banks have introduced automated systems that help to minimize the administrative burden for banks in borrowing at the discount window. And the Board and Reserve Banks have pushed to enhance the operational readiness of depository institutions to turn to the window when the need arises.[9] All of these developments have been useful but stigma or reluctance to borrow remains an issue, particularly for larger depository institutions. The discount window has attracted Congressional interest of late; a Senate bill introduced this year would require depositories to establish and regularly test discount window arrangements in an effort to enhance operational readiness to use the discount window and mitigate stigma.[10]

Some Important Structural Changes

Structural changes over time may have indirectly contributed to stigma. Three changes in particular—the enormous expansion of access to funding from Federal Home Loan Banks, the

[9] See Logan (2025), Barr (2023) and Jefferson (2026) for more detail on these steps. See Interagency Statement (2023) for official guidance on the role of the discount window in contingency planning. See Board of Governors of the Federal Reserve System (2020) for a list of discount window actions taken in response to the pandemic.
[10] See Senate Bill 4585, the Discount Window Preparedness Act, introduced in May of 2026. Among its various provisions, the bill would require regular testing of the discount window by depository institutions and allows for variation in the schedule, size and tenor of test advances with the aim of reducing stigma.

introduction of liquidity requirements under the Dodd-Frank Act, and the FOMC's adoption of the so-called "ample reserves" framework—all tend to work against regular discount window usage and may also indirectly contribute to discount window stigma.

Prior to the passage of FIRREA in 1989, only S&Ls, other thrift institutions, and life insurance companies could become members of Federal Home Loan Banks. FIRREA allowed all banks and credit unions with significant residential mortgage assets to become FHLB members as well. Over the years, thousands of banks and credit unions have chosen to become FHLB members. In effect, the FHLBank System has become a central correspondent bank for large swaths of the banking system. As of the second quarter of this year, more than 6200 financial institutions were listed as FHLB members including nearly 3500 commercial banks and more than 1600 credit unions.[11] FHLB members enjoy access to a wide range of products including short-term and longer-term advances as well as many other banking services.

The Basel III rule introduced liquidity requirements for larger depository institutions.[12] Under the Liquidity Coverage Ratio (LCR), for example, banks are required to maintain high-quality liquid assets (HQLA) sufficient to meet a calculated "net cash outflow" over a 30-day period. The net cash outflow calculation is based on a schedule of runoff rates for different classes of liabilities and potential other types of liquidity needs during a stress period. Level 1 HQLA includes unencumbered Treasury securities and reserve balances. Most large banks maintain Level 1 HQLA well above the required minimum level. While there are important questions surrounding the "usability" of HQLA, it seems reasonable to assume that some fraction of level 1 HQLA would generally be available to meet a short-term funding need.

The FOMC formally adopted the ample-reserves operating regime in 2019. Under this framework, the Federal Reserve supplies an aggregate quantity of reserves sufficient to ensure that the federal funds rate is determined along the "flat portion" of the reserve demand curve. In this region, the Federal Reserve does not need to conduct frequent open market operations to fine tune the daily supply of reserves; it only needs to keep the aggregate supply of reserves in line with the trend growth of the demand for reserves. Since late 2025, that mode of operation has resulted in the federal funds rate running just a little below (about 1 basis point) the interest on reserve balances rate.

All three of these structural changes serve very important purposes. The expansion of membership in the FHLBank System and the introduction of bank liquidity requirements help to promote banking sector and overall financial stability. And the FOMC's ample-reserves operating

[11] See Federal Housing Finance Agency (2026).
[12] The LCR requirement is applied to banks under a graduated framework described in Federal Register (2019).

framework allows the Federal Reserve to implement monetary policy very effectively and efficiently in a wide range of environments.

However, all of these structural changes make it less likely that a bank would need to resort to relatively high-cost discount window credit. Moreover, in the presence of increased liquidity of the banking system, market participants would tend to draw a stronger inference about the deterioration of the financial condition of the bank from any observed discount window borrowing. The discussion below develops an example that captures this type of interaction.

An Example

A simple example helps to illustrate the potential role of structural changes in contributing to discount window stigma.[13]

In the example, a bank faces an unexpected funding need that stems from two underlying factors—a pure liquidity factor and a credit risk factor. In responding to the funding need, the bank first turns to so-called "low-cost" funding sources. Low-cost funding sources may include reserve balances well in excess of those needed to meet liquidity requirements or attractively-priced funding available from FHLBanks. Once the low-cost funding is exhausted, any remaining liquidity need must be met through high-cost market funding sources or from the Federal Reserve's discount window. High-cost market funding sources could include borrowing from correspondent banks or from other counterparties without an established relationship.

In choosing between high-cost market funding and the discount window, a bank compares the all-in cost of borrowing for both sources. The all-in cost of borrowing at the discount window includes the discount rate plus any residual "hassle costs" stemming from operational impediments or other factors. In addition to these direct costs, a bank might also worry that any borrowing from the discount window could become known and interpreted by market participants as a sign of financial weakness. This stigma cost, in turn, stems from the inference about the financial condition of the borrower that market participants make based on knowledge of discount window borrowing.

The inference about the financial condition of the borrower corresponds to an estimate of the magnitude of the credit risk factor underlying the bank's funding need. In the example, market participants develop an estimate of the underlying credit risk factor based on a simple signal extraction informed by the quantity of discount window borrowing. This estimate is a function of

[13] Technical details are provided in the appendix. Stigma has attracted considerable attention in the research literature over recent years. See Armantier et al. (2024), Anbil and Vossmeyer (2017), Carlson and Rose (2017), Ennis (2018), Ennis and Price (2020), and Klee (2021) for recent examples from a variety of perspectives.

the quantity of discount window borrowing and the uncertainty about the bank's financial condition relative to other factors that could drive a bank's funding need. Some basic implications of this type of setup are listed below.

Borrowing Behavior Without the Low-Cost Funding Tranche: In the absence of the low-cost funding tranche, the decision to borrow in the market versus the discount window boils down to a "knife edge" condition for the marginal cost of borrowing for each funding source. When the market rate is slightly above the all-in marginal cost of funding through the discount window, the bank meets its funding need, no matter how small, at the discount window. When the market rate is slightly below the all-in marginal cost of borrowing at the discount window, the bank meets all of its excess funding needs in the market. Importantly, in the case without a low-cost funding tranche, the inference about a bank's financial condition is always directly proportional to the size of the borrowing at the window. In particular, a small amount of discount window borrowing would be associated with a correspondingly small inference about the magnitude of any deterioration in the borrower's financial condition.

Borrowing Behavior with the Low-Cost Funding Tranche: The situation changes with a low-cost funding tranche. In this case, borrowing even a small amount from the discount window signals that the funding need must have exceeded the quantity of readily available low-cost funding. As a consequence, even when the market rate is above the marginal cost of borrowing at the discount window, banks will have an incentive to avoid borrowing at the discount window and may be willing to bid the rate on market sources of funds up to very high levels to avoid the potential stigma effect. This will be the case particularly when the bank's funding need is relatively small. Beyond a threshold level of the funding need, however, the bank will turn to the discount window. The threshold level of the funding need is affected by a number of factors including the spread of the market rate over the discount rate, administrative costs of borrowing at the discount window, the probability that a bank's borrowing at the discount window becomes known, and the extent of the "signal" that borrowing conveys about the condition of the borrower.

Adverse Selection: The connection between the low-cost funding tranche and stigma results in so-called "adverse selection" at the discount window. Even when market rates are above the marginal cost of borrowing at the discount window, many banks will choose to avoid the window out of concerns around the possible adverse signaling effects. On average, then, banks turning to the discount window will have larger underlying funding needs and a larger underlying realization of the credit risk factor than entities choosing to meet their funding need from market funding sources. The gap between the average credit quality of banks turning to the discount window and those meeting their funding need through market sources tends to increase with the threshold level of the funding need.

Observations and Issues

Though very simple, the example described above seems to capture some important aspects of borrowing at the discount window and points to some of the challenges in reducing stigma.

Transparency: In the example, the probability that discount window borrowing could become known is critical in generating stigma. Partly for that reason, the Congress and the Federal Reserve long sought to maintain the confidentiality of discount window borrowing.[14] Since the early 1990s, however, the Congress has often called for greater transparency around usage of the discount window. As part of the Dodd-Frank Act, the Federal Reserve releases detailed transaction level information for all discount window borrowing with a two-year lag. These types of requirements illustrate the tension in balancing appropriate transparency and accountability regarding the discount window versus maintaining the degree of confidentiality necessary for the discount window to support effective policy implementation and financial stability. Following the onset of the pandemic, the Federal Reserve took a small step to promote confidentiality by eliminating the explicit reporting of discount window lending by district. Table 6 of the Federal Reserve's H.4.1 statistical release now reports loans by district as part of a larger category of assets that includes securities holdings and repurchase agreements as well.

Stigma in Periods of Stress: As noted above, the inference drawn from discount window borrowing depends importantly on the degree of uncertainty about the financial condition of borrowers. When uncertainty about the financial condition of a borrower is high—as in periods of financial distress—market participants would tend to infer a larger deterioration in financial condition for any observed level of discount window borrowing. In the example, this would tend to inhibit borrowing at the discount window by raising the marginal cost of borrowing at the window and boosting the threshold level of the funding need. This result seems consistent with the observation that stigma tends to intensify in just those moments of stress when policymakers would most want depository institutions to feel free to turn to the discount window to address funding needs.

Trouble at the Borderline: As noted above, one important step the Federal Reserve took in 2003 to diminish stigma was to restructure its regular discount window lending programs to include primary credit and secondary credit. By limiting primary credit to depository institutions that are in "generally sound financial condition," the Federal Reserve sought to counter the tendency for market participants to infer that borrowing at the discount window was a sign of financial weakness. As discussed in more detail in the appendix, that type of policy can reduce the stigma

[14] The Federal Banking Agency Audit Act of 1978 explicitly excluded discount window lending from areas subject to review by the General Accounting Office.

associated with borrowing under primary credit. However, stigma associated with borrowing under secondary credit may become more pronounced.

A particularly challenging problem for Reserve Banks is the case in which a bank's financial condition is uncertain or is just on the borderline for the criteria defining primary and secondary credit. If a bank has been borrowing under primary credit but the Reserve Bank receives new information suggesting that the borrower's financial condition has deteriorated, transitioning the bank's borrowing from primary to secondary credit could have adverse consequences. As noted above, the stigma effect for the bank would become larger, possibly exacerbating its liquidity difficulties. And during periods of financial distress, triggering additional liquidity strains at a troubled borrower by reclassifying borrowing as secondary credit may have adverse spillover effects in broader markets as well. And compounding matters, the information used to determine whether a bank is eligible for primary credit—capital ratios and supervisory ratings—often does not reflect rapidly changing developments at a particular institution.

These were serious issues during the period of banking stress in 2023. According to Federal Reserve discount window transaction data, Silicon Valley Bank, for example, borrowed about $5 billion on March 9 under the primary credit program the day before it was closed. Other banks that subsequently were closed or acquired borrowed under primary credit as well. Signature Bank in New York borrowed primary credit for a day before it was closed. First Republic Bank in California borrowed in very large amounts under primary credit before it was acquired by JP Morgan. Indeed, Federal Reserve records indicate that only a small number of secondary credit loans were extended in all of 2023, most of which were very small test loans. The entire episode illustrated the "no win" nature of many important lending decisions at the time—lend under primary credit to troubled institutions that technically meet the "generally sound financial condition" criteria based on lagged data and risk stigmatizing primary credit for healthy institutions or, alternatively, reclassify lending to troubled institutions as secondary credit based on "supplementary information" and risk exacerbating strains at the borrower and in broader markets.[15]

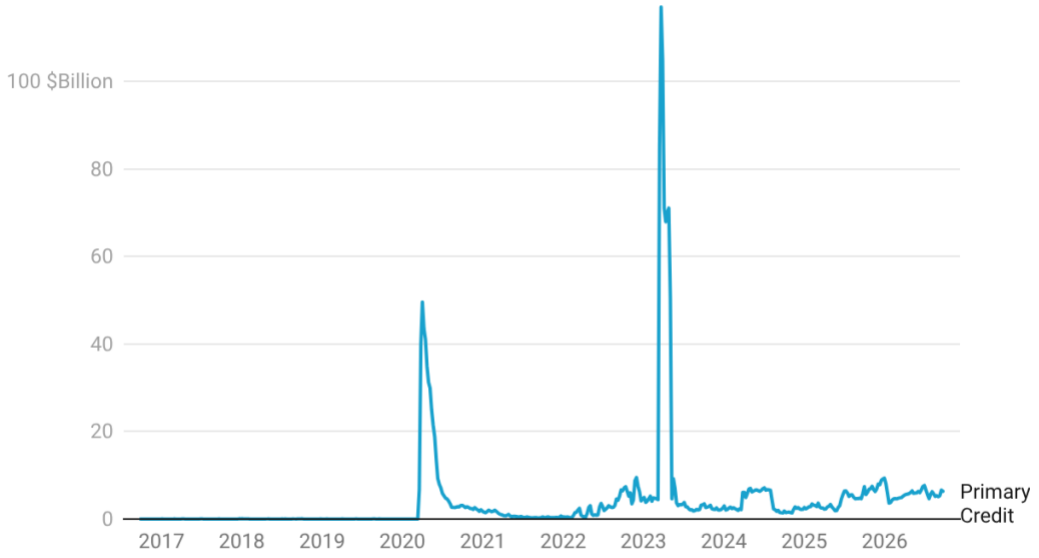
[15] The issue of lags in supervisory and regulatory data was discussed at length in the process of developing criteria for primary and secondary credit. The discussion in the Federal Register (2002) notice for the final rule establishing primary credit notes "The Board believes that, in order to ensure uniformity of credit eligibility throughout the Federal Reserve System, the criteria must rely heavily on objective supervisory data, which reflect determinations made by an institution's primary regulator after an extensive review process. However, the Board also recognizes that an institution could experience significant changes in its financial strength between examinations, in which case the institution's supervisory ratings might not reflect its current soundness and creditworthiness. To protect the Reserve Banks from the risks and to avoid the allocative distortions that could be involved in lending to such an institution, the Board believes that the eligibility criteria must allow for the use of some amount of supplementary information, including market-based information when available, to confirm that an institution's most recent supervisory data accurately reflect the institution's current condition."

Recent Data, a Minor Mystery, and Possible Inroads in Reducing Reluctance to Borrow

Much of the foregoing discussion points to the rather depressing conclusion that it may be very difficult to meaningfully reduce stigma associated with the discount window. Indeed, the example described above suggests that stigma is likely to be an inherent feature of any liquidity facility with terms that make it "out of the money" in most circumstances.

And yet, as shown in Figure 1, the average weekly value of primary credit over the period 2024 to date, at about $4.5 billion, has been notably higher than in the past.[16] For example, over the period 2017-2019, weekly average levels of primary credit were running at only about $15 million.

Figure 1: Primary Credit



Source: Federal Reserve H.4.1 statistical release

Created with Datawrapper

It's not hard to point to some factors that may have contributed to higher average levels of primary credit now. In the 2017-2019 period, for example, the spread of the primary credit rate over the

[16] The spike in primary credit borrowing in the spring of 2020 was associated with the onset of the pandemic and the "dash for cash" that left a number of relatively large institutions experiencing liquidity pressures. The spike in primary credit in the spring of 2023 was associated with severe liquidity pressures experienced by a number of regional banks following the run on Silicon Valley Bank and its failure in March of that year.

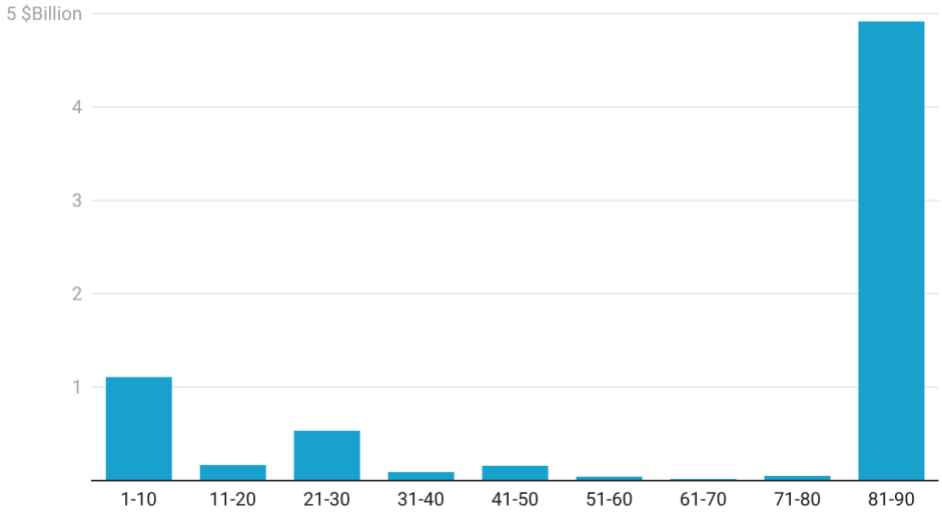
federal funds rate was about 60 basis points, on average.[17] That spread was narrowed to about 10 basis points in March of 2020 at the onset of the pandemic and remains around that level today. Moreover, as noted above, with the onset of the pandemic and continuing through the period of banking stress, the Federal Reserve actively encouraged banks to use the discount window and to incorporate the discount window into their contingency funding plans.[18] In addition, the Federal Reserve has implemented a number of changes over recent years to enhance the operational readiness of the discount window and reduce operational impediments or "hassle costs" of borrowing.[19]

A close look at the data suggests another important factor that may be at work in boosting the average level of primary credit. In March of 2020, at the outset of the pandemic, the Board announced a number of actions aimed at supporting liquidity in the banking system. Among these, the Board announced that discount window loans could be extended with terms as long as 90 days, prepayable and renewable by the borrower on a daily basis. That administrative change has remained in place, and banks have actively embraced that new feature. For example, Table 2 in the Federal Reserve's H.4.1 statistical release shows the volume of discount window lending by remaining maturity each week. For the week ended September 23 2026, total discount window loans with remaining maturities exceeding 15 days accounted for nearly half of total loans outstanding.[20]

Many of the loans in the shorter remaining maturity bucket reported in the H.4.1 may have been initially extended with longer maturities. Unfortunately, the Federal Reserve does not release weekly data on primary credit loans by original maturity. As noted above, the Federal Reserve does release detailed discount window borrowing data with a two-year lag, and that data can be used to get a sense of discount window loans by original maturity. As an example based on those data, primary credit loans outstanding on June 26 2024 stood at just over $7 billion. As shown in Figure 2, longer term loans accounted for the bulk of primary credit loans outstanding. In total, 186 primary credit loans were outstanding on that date and, as shown in Figure 3, most were extended with original maturities exceeding 5 days. By contrast, essentially all primary credit loans extended in the 2017-2019 period were originated with terms of 5 days or less.

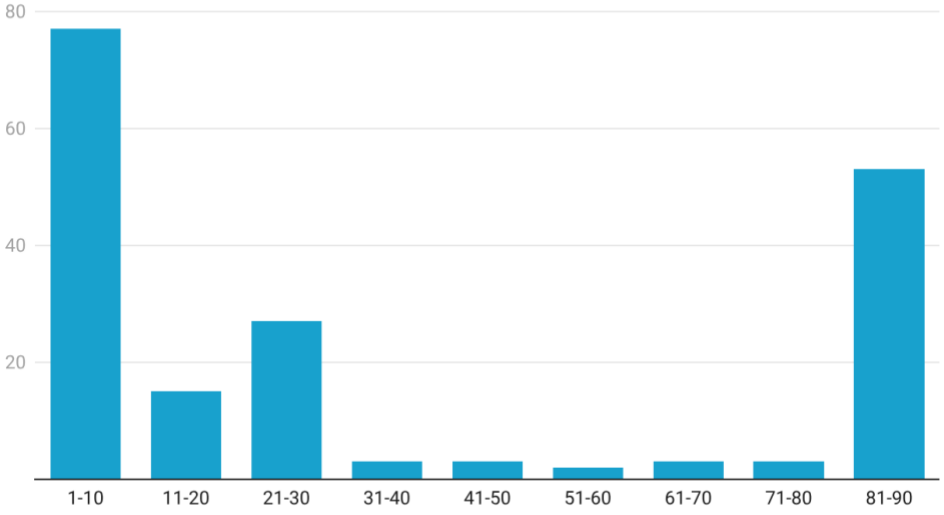
[17] The discount rate was set 50 basis points above the top of the target range for the federal funds rate. The federal funds rate trended higher within the target range over the period of balance sheet normalization beginning in 2017 and extending through the fall of 2019.
[18] See Interagency Statement (2023).
[19] See Jefferson (2026).
[20] Table 2 in the H.4.1 shows the remaining maturity for all discount window loans including those extended under the seasonal credit and secondary credit programs and also the Paycheck Protection Program Liquidity Facility. However, the amounts outstanding under these programs were very small on the reporting date so the remaining maturity breakdown shown in Table 2 for that date almost entirely reflects the remaining maturity structure of primary credit loans.

Figure 2: Primary Credit Loans Outstanding by Original Maturity



Source: Federal Reserve quarterly transaction data; dollar volume of primary credit loans outstanding on June 26, 2024 (vertical axis) by original maturity in days (horizontal axis).

Figure 3: Number of Primary Credit Loans by Original Maturity



Source: Federal Reserve quarterly transaction data; number of primary credit loans outstanding on June 26, 2024 (vertical axis) by original maturity in days (horizontal axis).

The behavior in June of 2024 is not necessarily a good guide to borrowing behavior at present. We'll know for sure when the discount window transaction data is released in two years. That said, together with the information on remaining maturity reported in the weekly H.4.1, it seems a good bet that many primary credit loans continue to be extended with relatively long maturities.

Term Primary Credit Loans and Low-Cost Funding: Why do banks seem to find the term funding option under primary credit so attractive? There may be many reasons but one surely is that term primary credit is a relatively inexpensive funding source.[21] Interest on a term primary credit loan accrues daily based on the primary credit rate in effect on each day. A term primary credit loan then is effectively a floating rate loan with a rate set 10 basis points or so above the level of overnight rates. A comparable product from the Federal Home Loan Banks—a term floating rate advance indexed to the daily SOFR rate—typically includes a higher spread of about 20 basis points for advances with 60 or 90 days to maturity. However, there is an offsetting "dividend adjustment" for term floating rate advances of about 25 basis points, leaving the dividend adjusted spread at -5 basis points. Adding up all of these factors, a term floating rate FHLB advance would have about a 15 basis point cost advantage relative to term primary credit. However, term floating rate advances from the FHLB incorporate penalties for prepayments while term primary credit loans may be prepaid without penalty. Moreover, the range of collateral acceptable to secure primary credit loans is much broader than the collateral eligible to secure FHLB advances. Taking these factors into account, term primary credit loans may be a relatively close substitute for comparable products from the FHLBanks.[22]

But what about stigma and term primary credit loans? In the context of the example discussed earlier, attractive pricing on discount window lending may help to mitigate the stigma effect. As noted in the appendix, the threshold market rate necessary to induce discount window borrowing would not be as high. Moreover, it's possible that borrowing term primary credit might carry less of a signal about a deterioration in credit quality than borrowing for short-term. In particular, if outside observers discovered that a bank was borrowing term credit, they might reasonably conclude that the Federal Reserve believes the institution is not only currently in generally sound financial condition at present but also expected to remain so over the maturity of the loan.

[21] In some cases, term primary credit may simply be an operational convenience. Many term loans are repayed before maturity suggesting that borrowers may request a term loan when facing a funding need of uncertain duration and repay the loan when the funding need is resolved. Some banks also appear to use term loans as part of a laddering strategy for funding involving a number of overlapping term loans.

[22] See Buckeridge (2026), Federal Home Loan Bank of Boston presentation for a discussion of FHLB floating rate advances. According to the FHLB presentation, the dividend adjustment for a 1 month SOFR indexed advance would be about 25 basis points implying that the "all-in" cost of an FHLB floating rate advance would be about 5 basis points *below* the average SOFR rate over the term of the loan and then about 15 basis points below the rate for a term primary credit loan.

Whatever the reason for elevated levels of term primary credit, the higher average level of term primary credit borrowing may also help alleviate stigma for run-of-the-mill overnight borrowing. Higher average levels of primary credit make it less likely that any individual borrowing would stand out in the Fed's weekly statistics, perhaps lowering the risk that discount window borrowing would be detected. Indeed, returning to the week of June 26 2024, the level of borrowing for very short-term loans with original maturities of 5 days or less, stood at about $1 billion. That is still many times the average level of primary credit over the period 2017-2019. Again, the higher level of short-term primary credit now relative to that earlier period likely owes importantly to the more attractive setting of the discount rate and Fed communications. But the elevated level of term primary credit outstanding may also be giving banks greater "cover" for coming to the window for short-maturity loans.

To summarize, the data suggest that the Federal Reserve has made some significant progress in reducing the reluctance to borrow at the discount window. That progress likely owes to more attractive pricing of primary credit and more welcoming Federal Reserve communications but may also reflect some reduction in stigma associated with borrowing at the window. That said, most of the increase in discount window borrowing appears to have been by relatively small institutions. Based on the Federal Reserve's quarterly transactions data, apart from periodic small test loans, borrowing by larger banks remains very infrequent, likely reflecting lingering concerns about stigma. Indeed, in the example discussed above, larger institutions would tend to have the largest untapped tranche of low-cost funding available to them. So as the example suggests, the signaling cost of turning to the discount window for these institutions may remain quite high.

Concluding Comments

Stigma surrounding use of the discount window remains an important issue, particularly during periods of financial distress. Many factors contribute to stigma including the long history of Fed administrative pressure aimed at discouraging frequent borrowing and the involvement of the discount window in failing bank situations. Structural changes such as the introduction of liquidity requirements, increases in access to contingency funding from the Federal Home Loan Banks, and the Fed's ample reserves system may have indirectly contributed to stigma as well.

Despite these headwinds, the Fed seems to have made some important progress in reducing the reluctance to borrow and stigma over recent years, particularly for smaller institutions. That progress apparently owes to a more welcoming posture toward lending reinforced by official communications and more attractive price and non-price terms of discount window loans. Term primary credit loans, in particular, have been popular with smaller banks and have helped to establish a base level of discount window borrowing that is notably higher than in the past.

In some ways, these recent developments could be viewed as a modest shift in discount window philosophy and practice away from the long tradition of the discount window serving primarily as a backstop funding source and toward the original conception of the discount window in the Fed's early days as a regular source of funding for depository institutions. Of course, there's no free lunch. Fed term lending arguably can have some downsides including allocating credit to particular classes of institutions and raising questions about the treatment of borrowers whose financial condition deteriorates over the term of the loan. But for now, term lending appears to have mostly been a net positive in helping to dispel negative attitudes toward the discount window and mitigating stigma. Time will tell whether the positives of term discount window lending continue to outweigh the potential downsides.

Example: Technical Details

Banks experience an unexpected funding need each day that could arise from either a pure liquidity component, l, or from a credit risk component, c. The liquidity and credit risk components are assumed to be independent normally distributed variables with mean zero and variances σ_l^2 and σ_c^2, respectively. The unexpected funding need, s, is the sum of these components:

$$s = l + c$$

The variance of the unexpected funding need is $\sigma_s^2 = \sigma_l^2 + \sigma_c^2$. The bank is assumed to have access to a tranche of low-cost funding up to a level τ; the low cost funding tranche could include reserve balances well above those needed to meet liquidity requirements or access to favorably priced credit lines at Federal Home Loan Banks. The value of τ is not known to investors but is assumed to be drawn from an independent normal distribution with mean $\bar{\tau}$ and variance σ_τ^2. For funding needs that exceed the level of the low-cost tranche, $s > \tau$, the bank can turn to external market funding sources at the interest rate r_m or to the Federal Reserve's discount window at the discount rate r_d plus any additional administrative or "hassle" costs, h. The bank's cost in meeting the excess funding need, $s - \tau$, is then:

$$Cost = r_m \cdot (1 - \gamma) \cdot (s - \tau) + (r_d + h) \cdot \gamma \cdot (s - \tau)$$

where γ is the proportion of the excess funding need met at the discount window and $1 - \gamma$ is the proportion met through external market funding sources. With this simple structure, the cost minimizing bank should meet the excess funding need entirely at the discount window whenever $r_m > r_d + h$ and entirely with external market funding sources whenever $r_m < r_d + h$. In aggregate this behavior should imply that the market rate will never rise above the discount rate plus the

hassle cost. In models, the ready availability of funding from the discount window also mitigates run incentives at banks because the risk that banks will need to resort to costly firesales to meet a funding need is eliminated. Reducing the hassle cost, h, would thus help to make the discount window a more effective instrument in managing the level of short-term interest rates and also in mitigating run incentives.

Unfortunately, in practice, borrowing from the discount window involves some potential costs and frictions that are not captured in the simple cost minimization example. One common observation is that market participants may learn that a bank has borrowed from the discount window and use that information to form a judgment about the bank's financial condition. For example, if market participants could observe the value of the bank's unexpected excess funding need, they could make an inference about the value of the credit risk factor. In particular, given the assumed distributions for the liquidity and credit risk factors, the expression for the credit risk factor conditional on the excess funding need, $s - \tau$, is given by:

$$c = \rho\bar{\tau} + \rho(s - \tau) + e$$

Where

$$\rho = \sigma_c^2/(\sigma_s^2 + \sigma_\tau^2)$$

And where the regression residual, e, is normally distributed and orthogonal to $s - \tau$ with variance

$$\sigma_e^2 = (1 - \rho)^2\sigma_c^2 + \rho^2\sigma_l^2 + \rho^2\sigma_\tau^2.$$

Thus, if investors are able to observe the funding need, $s - \tau$, their estimate of the value of the credit risk factor conditional on $s - \tau$ is:

$$\hat{c} = E\{\rho\bar{\tau} + \rho s + e | s - \tau\} = \rho\bar{\tau} + \rho(s - \tau)$$

Assuming that a positive credit risk factor entails some cost for the bank, the cost minimization problem for the bank might be modified as:

$$Cost = r_m \cdot (1 - \gamma) \cdot (s - \tau) + (r_d + h) \cdot \gamma \cdot (s - \tau) + P\beta\hat{c} \cdot I(\gamma > 0)$$

Where $\beta\hat{c}$ is the cost incurred for a firm with inferred credit risk factor $\hat{c}$ and P is the probability that a bank's borrowing at the discount window becomes known. $I(\gamma > 0)$ is just an indicator function that takes on a value of 1 whenever the bank borrows at the discount window.

In the case when all of the excess funding need is met at the discount window, the bank's cost reduces to:

$$Cost = (r_d + h) \cdot (s - \tau) + P\beta\hat{c}$$

And when all of the excess funding need is met in the market, the bank's cost is:

$$Cost = r_m \cdot (s - \tau)$$

The bank will be indifferent between borrowing at the window versus borrowing from market sources when:

$$r_m \cdot (s - \tau) = (r_d + h) \cdot (s - \tau) + P\beta\hat{c} = (r_d + h) \cdot (s - \tau) + P\beta \cdot (\rho\bar{\tau} + \rho(s - \tau))$$

Note that when the expected value of the low-cost funding tranche, $\bar{\tau}$, is zero, the borrowing decision is again determined by a knife edge condition. When $r_m < r^d + h + P\beta\rho$, the bank meets its entire excess funding need with external market funding sources. Conversely, when $r_m > r^d + h + P\beta\rho$, the bank meets its entire excess funding need at the discount window. The term $r^d + h + P\beta\rho$ represents the all-in *marginal* cost of borrowing at the discount window.

Threshold Market Rate

The situation is different when the mean value of the low-cost funding tranche is greater than zero, $\bar{\tau} > 0$. In this case, for any given excess funding need, the threshold market rate r_m^* that leaves the bank indifferent between borrowing in the market versus turning to the discount window depends on the magnitude of the funding need:

$$r_m^* = r_d + h + P\beta\rho + P\beta\rho\bar{\tau}/(s - \tau)$$

For low values of the excess funding need, this critical value of the market rate is very high. Conversely, when the excess funding need is large, the market rate required to induce discount window borrowing asymptotes toward the marginal cost of discount window borrowing, $r_d + h + P\beta\rho$. This pattern reflects the assumed structure of uncertainty and the nature of the inference problem for investors. With a low-cost funding tranche, borrowing even a small amount at the discount window implies that the total funding need must have exceeded the low-cost funding tranche. So the inference problem effectively creates a fixed cost for banks in turning to the discount window.

The comparative statics for the threshold market rate are straightforward. Conditional on the observed value of the excess funding need, $s - \tau$, an increase in the hassle cost factor, the probability of discount window borrowing detection P, and the cost associated with a positive imputed credit risk factor, β, all push the threshold market rate higher. Similarly, an increase in uncertainty about credit risk boosts the signal extraction factor, ρ and thus boosts the threshold rate associated with any given level of the excess funding need. Finally, an increase in the mean level of the low-cost funding tranche, $\bar{\tau}$, boosts the threshold market rate by raising the estimate of the credit risk factor.

Threshold Excess Funding Need

In the case with the market rate above the all-in marginal cost of discount window borrowing, $r_m > r^d + h + P\beta\rho$, there is a threshold value $(s-\tau)^*$ of the excess funding need that determines when the bank chooses to borrow at the discount window given by:

$$(s-\tau)^* = \frac{P\beta\rho \cdot \bar{\tau}}{r_m - r_d - h - P\beta\rho} = \alpha\bar{\tau}$$

where $\alpha = \frac{P\beta\rho}{r_m - r_d - h - P\beta\rho}$

For values of the funding need below this threshold value, the bank will choose to meet all of the excess funding need with market sources. For values of the funding need exceeding this threshold level, the bank will meet all of the excess funding need at the discount window. In effect, the potential for "stigma" captured by the term $P\beta\rho\bar{\tau}$ acts like a fixed cost in turning to the discount window. That is, even if the bank borrows just a small amount at the discount window, it reveals important information to investors about the magnitude of its entire funding need. And the total magnitude of the funding need is what investors use to infer the credit risk factor.

For relatively small funding needs, it is not cost effective to incur this fixed cost even when the market rate on external funding is above the discount rate. For large funding needs, however, the bank minimizes its total cost by incurring the fixed cost of borrowing at the window and meeting all of the excess funding need $(s-\tau)$ at the discount window. Note that the threshold value for borrowing becomes arbitrarily large as the all-in marginal cost of borrowing at the discount rate approaches the market interest rate.

The comparative statics for the threshold value are straightforward. An increase in the probability that discount window borrowing will become known, P, boosts the threshold value.

Similarly, an increase in the cost associated with a positive credit risk factor β also makes borrowing at the window more costly and increases the threshold value of the excess funding need. Similarly, when the variance of the credit risk factor is high relative to the variance of the liquidity factor, the value of the signal extraction factor, ρ, increases. That is, market participants infer a higher value of the credit risk factor for any given observed value of the funding need. This also raises the fixed cost associated with borrowing at the window and boosts the threshold value.

Adverse Selection

The presence of a threshold funding need leads to adverse selection in the pool of banks that choose to borrow at the discount window versus those meeting their funding needs in the market. In particular, with a large sample of banks, on average the value of the credit risk factor for banks that choose to borrow at the discount window is:

$$\hat{c}_{discount\ window} = E\{(\rho\bar{\tau} + \rho(s-\tau) + e)\ |(s-\tau) > \alpha\bar{\tau}\} = \rho\sigma n(\frac{(1+\alpha)\bar{\tau}}{\sigma})/(1 - N\left(\frac{(1+\alpha)\bar{\tau}}{\sigma}\right))$$

The average value of the credit risk factor for banks that choose to meet their funding need in the market is:

$$\hat{c}_{market} = E\{(\rho\bar{\tau} + \rho(s-\tau) + e)\ |0 < (s-\tau) < \alpha\bar{\tau}\} = \rho\sigma(n\left(\frac{\bar{\tau}}{\sigma}\right) - n(\frac{(1+\alpha)\bar{\tau}}{\sigma}))/\ (N\left(\frac{(1+\alpha)\bar{\tau}}{\sigma}\right) - N(\frac{\bar{\tau}}{\sigma}))$$

Here σ is used as shorthand for $(\sigma_s^2 + \sigma_\tau^2)^{.5}$ and $n(\cdot) and\ N(\cdot)$ are the density and cumulative distribution functions, respectively, for the unit normal distribution. The gap between the average credit factor for those borrowing at the discount window versus those borrowing in the market is always positive by construction.

Lending Criteria

As discussed in the main text, the Federal Reserve restructured its discount window lending programs in 2003, partly in an effort to reduce stigma associated with borrowing at the discount window. In doing so, the Federal Reserve created two lending programs—so-called primary credit for banks in "generally sound" financial condition and secondary credit for banks not eligible for primary credit. In the context of the example, one could view the lending criteria for primary credit to be a threshold value for the value of the credit factor, c', so that only banks with a realized value of c less than some value c' would be allowed to borrow under the primary credit program. The central bank is assumed to know the actual value of c by virtue of its role as bank regulator

and supervisor. In that case, the inference that market participants would make about the value of the credit factor for any bank borrowing under primary credit would be:

$$\hat{c}_{primary} = E\{(\rho\bar{\tau} + \rho(s-\tau) + e)|(s-\tau)\ \&\ (c \le c')\} = \rho\bar{\tau} + \rho(s-\tau) - \sigma_e\overline{\varphi}(\frac{(c' - (\rho\bar{\tau} + \rho(s-\tau))}{\sigma_e})$$

where $\overline{\varphi}(\cdot)$ is the inverse Mills ratio with truncation from above defined as $\overline{\varphi}(u) = n(u)/N(u)$ and σ_e is the standard deviation of the regression residual e. The properties of the inverse Mills ratio imply that the expression on the right-hand side of the equation is less than the lending criterion cutoff value c'. So, not surprisingly, establishing a lending criterion of this type reduces the stigma effect for the primary credit program relative to the base case without the lending criterion. The reverse is true for the inference for a bank borrowing under the secondary credit program. In that case, the inference for the value of the credit factor is:

$$\hat{c}_{secondary} = E\{(\rho\bar{\tau} + \rho(s-\tau) + e)|(s-\tau)\&\ (c > c')\}$$
$$= \rho\bar{\tau} + \rho(s-\tau) + \sigma_e\underline{\varphi}(\frac{(c' - (\rho\bar{\tau} + \rho(s-\tau))}{\sigma_e})$$

Where $\underline{\varphi}$ is the inverse Mills ratio with truncation from below; that is, $\underline{\varphi}(u) = \frac{n(u)}{1-N(u)}$. Again, the properties of the inverse Mills ratio imply that the value of the expression on the right hand side is greater than the lending criterion cutoff value c'.

The threshold market rates that would induce borrowing under the primary and secondary credit programs are given by[23]:

$$r^*_{m,primary} = r_d + h + P\beta\rho + \frac{P\beta\rho\bar{\tau}}{s-\tau} - P\beta\sigma_e\overline{\varphi}(\frac{(c' - (\rho\bar{\tau} + \rho(s-\tau))}{\sigma_e})/(s-\tau)$$

And

[23] The threshold condition for the market rate here depends on the additional assumption that the inferred credit risk factor for primary credit borrowers is positive. That will be the case if the threshold value c' is set high enough relative to $\rho\bar{\tau}$. If the inferred credit risk factor is negative, that would imply a positive signaling benefit from borrowing at the discount window that could be large enough to make it optimal to borrow at the discount window even with the market rate below the marginal cost of borrowing at the window.

$$r^*_{m,secondary} = r_d + h + P\beta\rho + \frac{P\beta\rho\bar{\tau}}{s-\tau} + P\beta\sigma_e\underline{\varphi}(\frac{(c' - (\rho\bar{\tau} + \rho(s-\tau))}{\sigma_e})/(s-\tau)$$

Not surprisingly, for any given positive excess funding need $(s-\tau)$, the market rate necessary to induce discount window borrowing under the hypothetical primary credit program falls relative to the baseline case while the reverse is true for the market rate necessary to induce borrowing under secondary credit.

Establishing two discount window programs as described above tends to diminish the stigma effect associated with primary credit while at the same time increasing the stigma effect for any bank borrowing under the secondary credit program.

Other Equilibria

The example described above is a plausible solution in the sense that banks make borrowing decisions to minimize funding costs given the behavior of investors in drawing inferences from borrowing behavior and, conversely, the inference that investors draw is consistent with the borrowing behavior of banks. However, there may be other types of equilibria with more strategic behavior. For example, in some circumstances, it could be worthwhile for a bank to engage in a "signal jamming" strategy to minimize the inference that investors might draw from discount window borrowing. For example, a bank could indicate that it intends to borrow random amounts at the discount window at random times and for random intervals even when it does not need any funding. That type of strategy could be costly in most circumstances but might be worthwhile if it lessened the stigma cost of borrowing at the discount window on those occasions when the bank has an acute funding need. This behavior does not seem to be observed in the real world, suggesting that it may be difficult to execute this type of strategy in practice. Some elements of Senate Bill 4585 discussed in the main text appear to aim at introducing an element of signal jamming in discount window usage as a way of mitigating stigma.

References

Anbil, Sriya and Angela Vossmeyer (2017). "Liquidity from Two Lending Facilities," FEDS working paper 2017-117.

Armantier, Olivier, Marco Cipriani and Asani Sarkar (2024). "Discount Window Stigma After the Global Financial Crisis," Federal Reserve Bank of New York, staff reports 1137, November.

Armantier, Olivier, Helene Lee, and Asani Sarkar (2015). "History of Discount Window Stigma," Federal Reserve Bank of New York, Liberty Street Blog.

Barr, Michael S. (2023). "The Importance of Effective Liquidity Risk Management," speech delivered at the ECB forum on Banking Supervision, December.

Bernanke, Ben (2008). "Liquidity Provision by the Federal Reserve," speech delivered at the Federal Reserve Bank of Atlanta Conference on Financial Markets, May 13.

Board of Governors of the Federal Reserve System (1968). Reappraisal of the Federal Reserve Discount Mechanism: Volume 1.

Board of Governors of the Federal Reserve System (1980). Extensions of Credit by Federal Reserve Banks.

Board of Governors of the Federal Reserve System. Quarterly Transaction Data.

Board of Governors of the Federal Reserve system (2020). "Federal Reserve Actions to Support the Flow of Credit to Households and Businesses," March 15.

Buckeridge, Tyler (2026). Case Study: Identifying Value in Short-Term Floating-Rate Funding, Federal Home Loan Bank of Boston.

Carlson, Mark (2025). "The Young Fed," University of Chicago Press.

Carlson, Mark and Jonathan D. Rose (2017). "The Fed - Stigma and the discount window", FEDS Notes, December 19.

Clouse, James A. (1994). "Recent Developments in Discount Window Policy," Federal Reserve Bulletin, 80(11), November.

Ennis, Huberto M. (2018). Interventions in Markets with Adverse Selection: Implications for Discount Window Stigma, Journal of Money Credit and Banking, 51(7), November.

Ennis, Huberto M. and David A. Price (2020). "Understanding Discount Window Stigma," Federal Reserve Bank of Richmond, Economic Brief, April.

Federal Deposit Insurance Corporation (1997). An Examination of the Banking Crises of the 1980s and early 1990s.

Federal Housing Finance Agency (2026). Federal Home Loan Bank Membership Data | FHFA.

Federal Register (2002). Extensions of Credit by Federal Reserve Banks, November.

Federal Register (2019). Changes to Applicability Thresholds for Regulatory Capital and Liquidity Requirements.

Greenspan, Alan (1991). Monetary Policy Testimony, Senate Committee on Banking, Housing, and Urban Affairs, February.

Hackley, Howard H. (1973). "Lending Functions of the Federal Reserve Banks: A History," May.

House Committee on Banking, Finance and Urban Affairs (1991). An analysis of Federal Reserve discount window loans to failed institutions.

Interagency Statement (2023). "Agencies update guidance on liquidity risks and contingency planning," joint press release, July 28.

Jefferson, Phillip N. (2024). "A History of the Fed's Discount Window: 1913-2024," speech delivered at Davidson College, October 8.

Jefferson, Phillip N. (2026). "Discount Window Modernization and Treasury Market Functioning," speech delivered at the Treasury Market Conference, September 22.

Klee, Elizabeth (2021). "The First Line of Defense: The Discount Window During the Early Stages of the Financial Crisis," International Journal of Central Banking, 17(1), March.

Logan, Lorie (2025). "Efficient and Effective Central Bank Balance Sheets," speech delivered at the Bank of England Agenda for Research Conference, February 25.

Madigan, Brian and William R. Nelson (2002). "Proposed Revision to the Federal Reserve's Discount Window Lending Programs," Federal Reserve Bulletin, July.

Riefler, Winfield (1930). "Money Rates and Money Markets in the United States," Harper and Brothers Publishers.

Senate Bill 4585 (2026). "Discount Window Preparedness Act."

Shull, Bernard (1971). “Report on Research Undertaken in Connection with a System Study,” in Reappraisal of the Federal Reserve Discount Mechanism, vol. 1. Washington: Board of Governors of the Federal Reserve System.

Schwartz, Anna J. (1992), “The Misuse of the Fed's Discount Window,” Federal Reserve Bank of St. Louis Review.