

The Fed as Lender of Last Resort

Loretta J. Mester

**Adjunct Full Professor of Finance, The Wharton School, University of Pennsylvania,
Senior Scholar, Griswold Center for Economic Policy Studies, Princeton University,
and Former President and CEO, Federal Reserve Bank of Cleveland**

**The Bradley Lecture on Financial Regulation
First Financial Policy and Regulation Conference
Simon Business School, University of Rochester**

**Rochester, NY
November 14, 2025**

Lender of Last Resort (LOLR)

- LOLR is part of the financial system safety net (which also includes deposit insurance)
 - To ensure liquidity is flowing in the market and credit continues to flow
- Classical writing on Lender of Last Resort (LOLR) (term first used by Ralph Hawtrey, 1932):
 - Henry Thorton, 1802: Explained why Bank of England should expand its lending in response to banking crises (viewed as monetary problem and not credit market problem)
 - Walter Bagehot, 1873, *Lombard Street*:
 - “in a crisis, the lender of last resort should **lend freely**, at a **penalty rate**, on the basis of **collateral that is marketable in the ordinary course of business when there is no panic**”
- Central banks take on the role of LOLR – other institutions could (e.g., Treasury, IMF)
 - To prevent and mitigate financial crises: **social cost of crisis** => private sector unlikely to solve

Lender-of-last-resort function

- **Ex post:** To stem panic once it has started by replacing deposits with Fed loans (avoid fire sales of assets)
- **Ex ante:** To prevent crisis from starting in first place
 - Think of panic/crisis as a case of multiple equilibria
 - Existence of safety net can keep economy in the good equilibria
 - Depositors have no reason to run if they know they are covered by insurance
 - **Money Market Investor Funding Facility (MMIFF)** – established by Fed on Oct 21, 2008 to provide liquidity to money market mutual funds, which were experiencing runs. Closed on October 30, 2009.
No lending done under the program.
- **Modern view:** Lender of last resort should assure liquidity to the market but not necessarily lend to individual institutions
 - Dodd-Frank reforms took away the Fed's ability to lend to individual institutions
 - Fed can still extend credit under Section 13(3) of Federal Reserve Act in **“unusual and exigent circumstances”** but these emergency lending facilities have to be available to a **broad class of borrowers** and **Sec of Treasury has to approve** such a lending facility
 - Lend to illiquid but not insolvent firms

Lender-of-last-resort design

- Incentives: existence of LOLR affects incentives of financial institutions to take on and manage risk
 - Too lax gov't protection => MORAL HAZARD
 - Too broad of safety net => undermines market discipline
 - Too tight criteria or limited protection => less effective at stemming crises
 - Make bank liabilities information-insensitive so no incentive for depositors to run but encourage self insurance
 - Trade-off between preventing crisis from starting vs. mitigating panic/crisis once it has started
- Size of the safety net has grown over time
 - Lacker and Weinberg (2010): Share of liabilities covered by explicit and implicit guarantees rose from about 45% in 1999 to about 58% in 2010

Lender-of-last-resort design, continued

- Design elements can help to balance between preventing crises and mitigating crises
 - Penalty interest rate: limits borrowing to institutions unable to get liquidity in the market; helps mitigate moral hazard; gives incentive to institution to repay quickly
 - Good collateral (but “good” is evaluated against normal market price not “fire sale” price)
 - Lend to solvent institutions with temporary liquidity problems and not to insolvent institutions
 - BUT **distinguishing the two can be difficult**. (Argument for having LOLR involved in financial institution supervision)
 - Dynamic: Temporary liquidity problems can morph into insolvency problems (via fire-sale losses)
- Not only incentives of financial institutions, but also **incentives of LOLR/crisis manager**: TIME INCONSISTENCY
 - Lender of **last** resort **NOT** Lender of **first** resort
 - LOLR involves making commitments to lend; commitments need to be credible (and so time consistent)
- Design special lending programs to be self liquidating
- Spell out LOLR’s rules in advance: limits risk of politically motivated actions by the LOLR
- Encourage private-sector monitoring => disclosure; limit deposit insurance; close banks when insolvent

Fed Discount Window

- Section 10B of Federal Reserve Act gives Fed authority to extend credit to depository institutions (banks, thrifts, credit unions, branches and agencies of foreign banks whose parent companies are depository insts)
 - Reg A and Operating Circular 10 (8/28/2023)
- Banks not able to get liquidity in the fed funds market can borrow from the Fed through the discount window
 - Need to have legal documentation and collateral in place
 - Funds are placed by Fed in bank's account at the Fed
 - Loans are typically short-term but can be up to 90 days
- **Federal Reserve Banks** operate the discount window
 - Consistent practices across Res Banks but loans have to be collateralized to the satisfaction of the **Reserve Bank** – so some discretion
 - Each Reserve Bank lends to the banks in its district
 - Most investment-grade assets held by banks are eligible collateral
 - Collateral can be securities and loans
 - Haircuts are applied
 - <https://www.frbdiscountwindow.org/>

Primary, secondary, seasonal credit

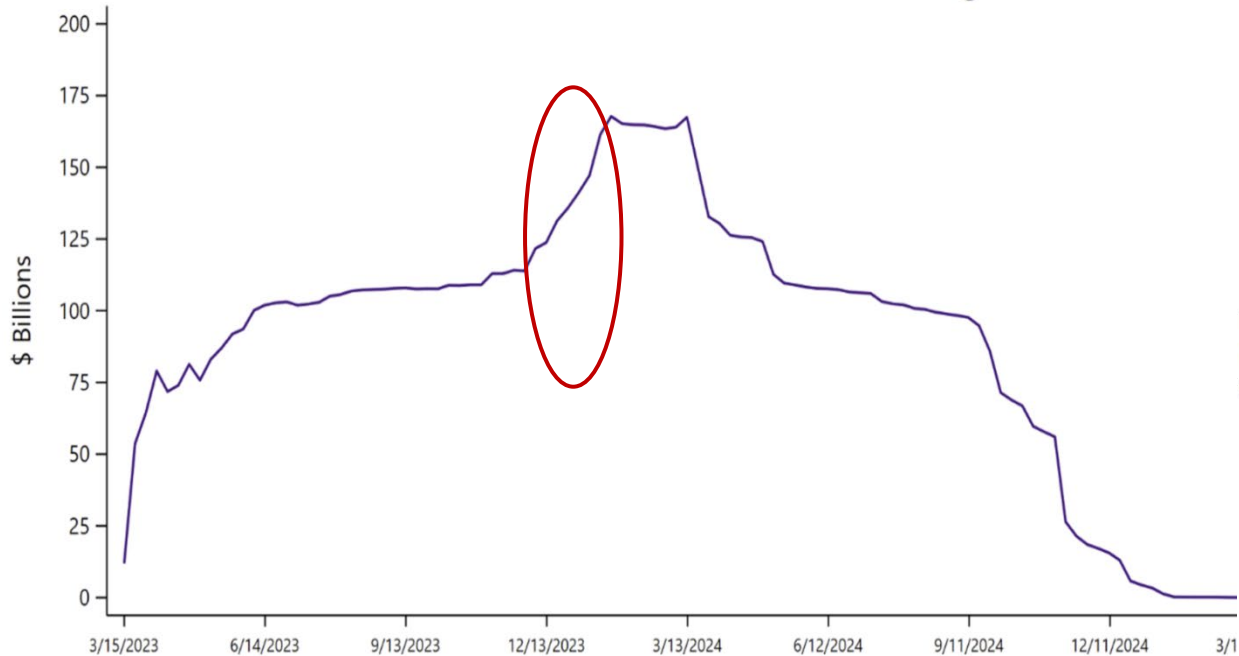
- Primary credit is main discount window lending program
 - Available to sound insts and granted on a “no-questions-asked” basis with minimal administration (Adequately or well capitalized and CAMELS rating 1,2, or 3)
 - **Prior to 2003**, discount rate was set below fed funds rate => administered lending – lots of questions asked
 - Funds can be used for any purpose
 - Primary credit rate = top of target range for fed funds rate (narrowed spread of primary credit rate to overnight rates at start of pandemic)
 - Loans up to 90-day term; mostly overnight
- Secondary credit is for insts not eligible for primary credit – in worse condition
 - Less than adequately capitalized or CAMELS rating 4 or 5
 - Higher level of administration; very short-term basis (typically overnight)
 - Cannot be used to expand assets
 - Secondary credit rate = primary credit rate + 50 basis points
- Seasonal credit is for sound insts with liquidity pressures that are seasonal in nature: e.g., agriculture, tourism
 - Generally meant for small insts with less than \$500 mill in deposits
 - Eligible for up to 9 months during the calendar year
 - Seasonal credit rate is average of prior two-week average fed funds rate and secondary market rate on 90-day large CDs

Recent crises and Fed Discount Window

- Global Financial Crisis: In August 2007, Fed took efforts to encourage DW borrowing (Lacker, 2025)
 - Cut spread of discount rate over fed funds rate; extend term to up to 30 days
 - Met with banks to emphasize window ready to lend without stigma
 - Organized DW borrowing by the 4 largest banks
 - Created Term Auction Facility (TAF): funds auctioned by Fed and distributed to multiple bidders
- Start of the pandemic: March 2020
 - DW terms eased (spread over ff rate decreased and term increased to 90 days)
 - Eight largest banks borrowed from DW on Mar 16, 2020
- Silicon Valley Bank: March 2023
 - SVB collateral was tied up at FHLB; run speed was very quick; not clear if SVB was TBTF or not
 - Fed created Bank Term Funding Program (BTFP): announced Mar 12, 2023; ended Mar 11, 2024
 - loans up to one year to dep insts pledging any collateral eligible for open mkt operations, **valued at par**; rate = one-year overnight index swap (OIS) rate plus 10 bp; no prepayment penalty
 - Pricing created an arbitrage opportunity in Nov 2023 when BTFP rate < IORB rate
 - Jan 2024: put lower limit on BTFP loan rate at IORB rate

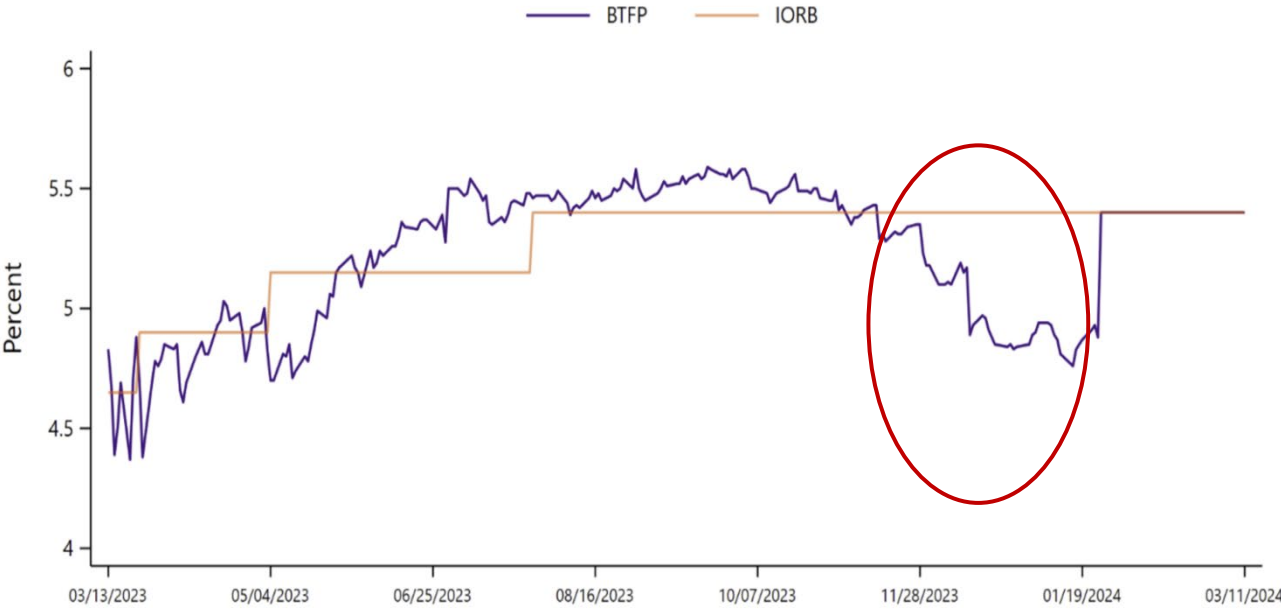
BTFP design flaw

Exhibit 1: Total BTFP Loans Outstanding



Source: FRED.

Exhibit 2: BTFP Loan Rate vs. IORB Rate



Note: IORB rate is the interest on reserve balances rate.
Source: FRED. Final Disclosure of Transaction Data Pursuant to 11(s) of the Federal Reserve Act.

Source: Bill Nelson, Pat Parkinson, Laura Suhr Plassman, and Felipe Garcia Rosa, “Bank Term Funding Program: Experience and Lessons Learned,” Bank Policy Institute, April 1, 2025

Discount Window stigma

- Primary Credit facility is subject to **stigma**: banks reluctant to borrow because concerned it will signal they are unhealthy
 - Bankers don't want to have to explain use on earnings calls
 - Dodd-Frank Act requires names of DW borrowers to be published two years after the borrowing
 - Stigma existed before that change:
 - Infer a bank borrowed from Res Bank aggregate borrowing data published weekly and absence of a bank from fed funds market
 - Before 2003, discount rate was lower than fed funds rate and bank had to show it had sought funds on the fed funds market before borrowing from the DW: stigma created
 - *"In my banking days, I always described it as being like borrowing from my father. I was always sure that at some point I would have to answer uncomfortable questions."* Fed Gov. Betsy Duke, 2/18/2010
- Stigma rises as uncertainty about health of banks/banking system rises and banks try to assess health of counterparties =>
 - **DW most stigmatized when DW lending is most needed**
- Crux of stigma: LOLR cannot commit to **not lend** to insolvent bank

Evidence of stigma: Y2K SLF

- Y2K Special Lending Facility (SLF): end of 1999
 - Furfine (2001): During week of Dec 15, 1999, SLF borrowing = \$236 million;
borrowing through fed funds market **at a higher rate** was > \$1.5 billion (6.5 times as large)

Table 1

SLF and federal funds market borrowing

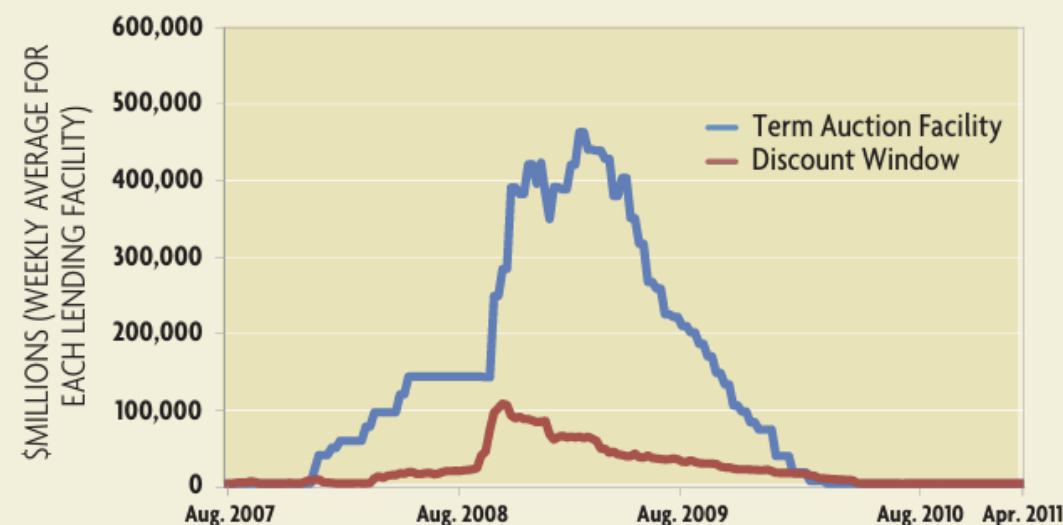
| Date | Borrowing from the Fed's Special Lending Facility (in USD millions) | Borrowing at more than 150 basis points above target in the overnight federal funds market (in USD millions) | Spread between highest reported rate on overnight funds and the target federal funds rate (in basis points) |
|-------------------|---|--|---|
| October 6, 1999 | 5 | 0 | 25 |
| October 13, 1999 | 0 | 0 | 0 |
| October 20, 1999 | 6 | 0 | 0 |
| October 27, 1999 | 10 | 0 | 25 |
| November 3, 1999 | 210 | 1136 | 475 |
| November 10, 1999 | 7 | 940.1 | 125 |
| November 17, 1999 | 5 | 105.7 | 150 |
| November 24, 1999 | 9 | 0 | 50 |
| December 1, 1999 | 7 | 0 | 75 |
| December 8, 1999 | 11 | 0 | 25 |
| December 15, 1999 | 236 | 1539 | 250 |
| December 22, 1999 | 28 | 0 | 6.25 |
| December 29, 1999 | 1187 | 2727 | 450 |
| January 5, 2000 | 27 | 0 | 75 |

Evidence of stigma: TAF funding vastly exceeded DW funding

- Term Auction Facility (TAF): 2007-2010
 - Armantier, et al. (2015):
 - In summer 2008, banks were willing to pay average premium of **35 bp** to borrow from TAF rather than DW; and premium of **143 bp** in auction on Sept 22, 2008 after Lehman Bro failed =>
 - **\$85 mill** in interest premium paid per TAF auction in summer 2008 and **\$1.1 billion** in interest premium paid for auction after Lehman failure

Fed Lending During the Financial Crisis

Banks proved much more willing to borrow from the Term Auction Facility, which was specifically designed to sidestep the stigma problem that is believed to afflict the discount window.



SOURCE: Federal Reserve Board of Governors H.4.1 Release (Factors Affecting Reserve Balances)

Source: Haltom, Renee Courtois, "Stigma and the Discount Window," *Regional Focus*, Federal Reserve Bank of Richmond, First Quarter 2011, p. 6-8.

Surveys => Banks still reluctant to borrow at DW

- Fed's Senior Financial Officer Survey, Sep 2024**

Question 12: Please characterize your bank's willingness to borrow discount window primary credit under its existing terms in each of the following situations, on a scale of 1 (very unwilling to borrow) to 5 (very willing to borrow).

| | Average rating (all) | Average rating (dom) | Average rating (fore) |
|--|----------------------|----------------------|-----------------------|
| A. To lend at higher rates in money markets than the primary credit rate | 1.1 (<i>n</i> = 97) | 1.1 (<i>n</i> = 61) | 1.0 (<i>n</i> = 36) |
| B. If other funding sources became more expensive than the primary credit rate due to firm-specific stress | 2.2 (<i>n</i> = 97) | 2.3 (<i>n</i> = 61) | 2.0 (<i>n</i> = 36) |
| C. If other funding sources became more expensive than the primary credit rate due to market-wide stress | 2.2 (<i>n</i> = 97) | 2.4 (<i>n</i> = 61) | 2.0 (<i>n</i> = 36) |
| D. If other funding sources became more expensive than the primary credit rate in the absence of firm-specific or market-wide stress | 1.5 (<i>n</i> = 97) | 1.6 (<i>n</i> = 61) | 1.5 (<i>n</i> = 36) |
| Note: <i>n</i> is used to represent the total number of respondents | | | |

- Bank Policy Institute survey taken in late 2024**

1. How has your bank's willingness to borrow from the discount window changed over the past year?

| | All Respondents | |
|--------------------------|-----------------|--------------|
| | Banks | Percent |
| Increased significantly | 0 | 0.0 |
| Increased somewhat | 8 | 25.8 |
| Remained about unchanged | 23 | 74.2 |
| Decreased somewhat | 0 | 0.0 |
| Decreased significantly | 0 | 0.0 |
| Total | 31 | 100.0 |

Discount Window improvements

- Fed put out a request for info on ways to improve the operations of the DW (Federal Register, Sep 10, 2024)
- Regulation/Supervision: Proposal to include DW borrowing capacity as part of contingent liquidity and part of stress test
 - Aug. 13, 2024: Fed FAQ on large BHC internal liquidity stress test: Banks can point to capacity to borrow at discount window, standing repo facility, or FHLB as way to monetize highly liquid assets
 - Proposal to include collateral pre-positioned at DW as part of high-quality liquid assets in calculating liquidity coverage ratio regulatory requirement
- Improve discount window readiness: **access, pre-positioned collateral, testing**
 - Fed encouraging banks to get legal documents and collateral in place, and to practice taking out small loans so that they are ready to use DW.
 - *Discount Window Direct*: on-line portal for request and prepaying DW loans; launched June 2024
 - Considering expanding the hours of DW

Discount Window open issues

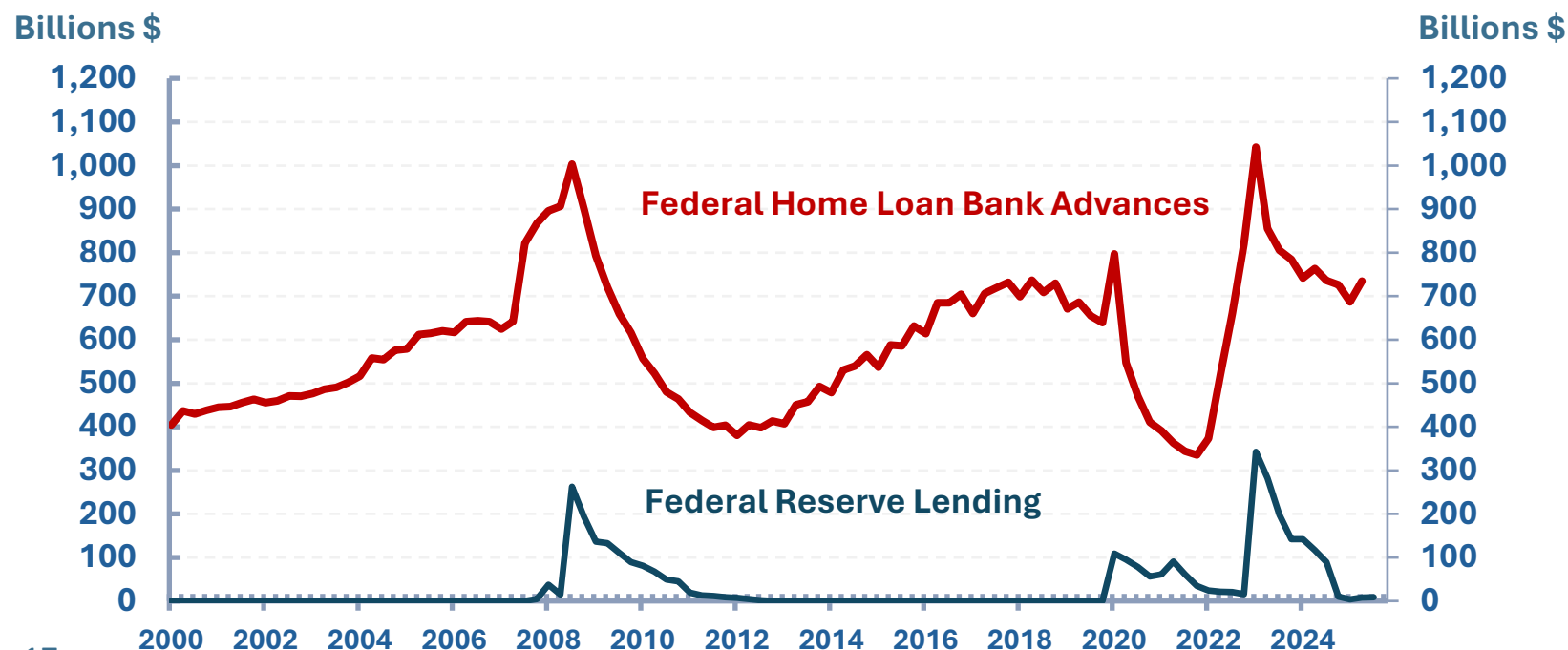
- Should DW be available to nonbanks?
 - Fed established Primary Dealer Credit Facility during 2008 financial crisis and during pandemic to lend to primary dealers. Operated like the DW.
 - If inst is doing banking, it should be regulated as a bank and have access to DW
- How should Fed manage the DW in normal times vs. extended periods of elevated financial stability risks vs. crisis times?
 - Publish operating principles for each regime; announcement when moving from normal to stress period
 - Proposal to split primary credit program from secondary credit program to limit stigma (McLaughlin, 2023)
 - Balance financial stability concerns with Res Bank's risk tolerance – stale supervisory ratings; tension between DW managers and bank supervisors
 - Should gov't securities posted as DW collateral be valued at par (as BTFP did) instead of market value?
Should margins be adjusted during stress period?

Discount Window open issues, continued-1

- Should banks be **required** to pre-position collateral at the DW against their uninsured deposits and runnable liabilities?
 - Penalizes banks with riskier funding strategies; less deadweight cost than higher liquidity requirement
 - But limits banks' ability to lend and crowds out other uses for the collateral
 - Scott (2024): Requires constant adjustment as collateral values and levels of runnable liabilities change; better to make the transfer of collateral and funds easier and faster.
- Should the Fed offer a **Committed Liquidity Facility**, as suggested by BPI (June 22, 2023)
 - Line of credit from the Fed to sound banks for a fee: a firm commitment to lend for at least next 30 days unless the banks becomes insolvent
 - Backed by collateral; above-market rate on draws on the line; recognized in supervision and regulation as source of liquidity
 - But difficult to determine if bank is insolvent; refusal to lend on the line could spur insolvency

Discount Window open issues, continued-2

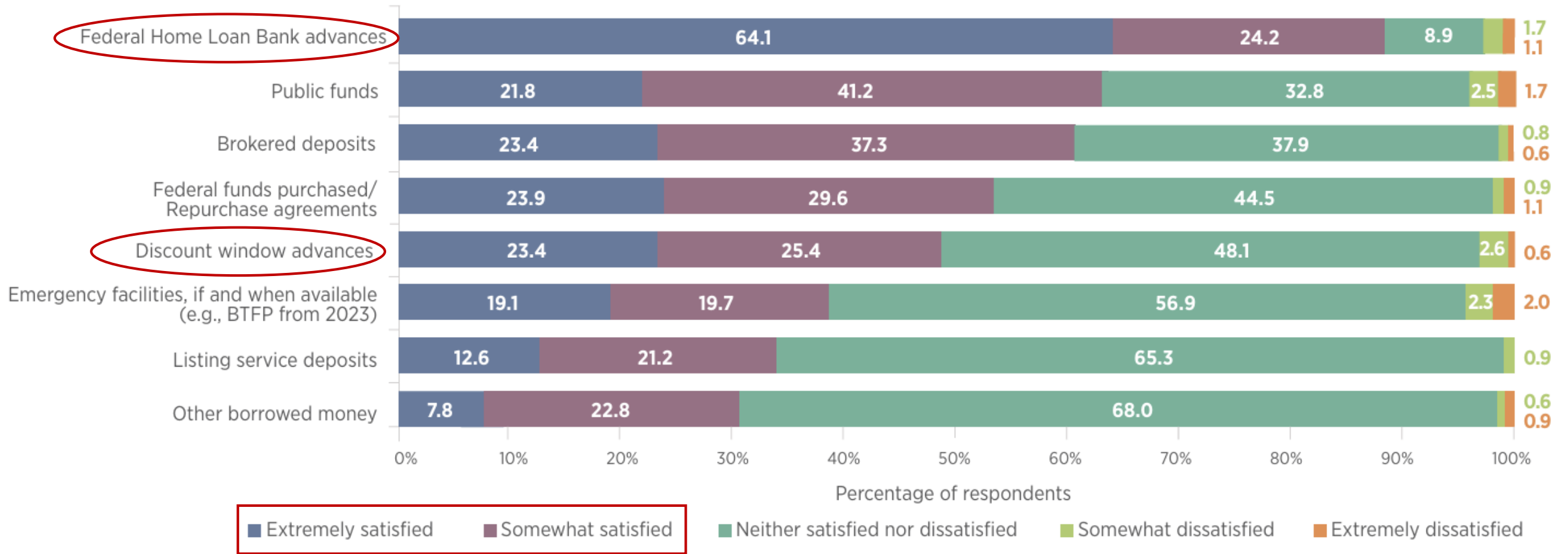
- What should be the role of **Federal Home Loan Bank** funding?
 - FHLBs have been called Lenders of **Next to Last Resort** (Aschraft, Bech, and Frame, 2008) and **Second to Last Resort** (Cecchetti, Schoenholtz and White, 2023, and Judge, 2023)
 - FHLB advances to banks are over-collateralized; funding tends to be low-cost bec of FHLBs' own low borrowing rate (implicit government guarantee)
 - FHLB claims have a super lien on all the borrower's assets: disadvantages FDIC; low risk to FHLBs to lend to weak banks => lending greater than socially-optimal level; bank failures cost taxpayers more
 - Federal Housing Finance Agency oversees FHLBs and wants them not to act as LOLR



Source: Mester update 11/7/2025 to chart in
Cecchetti, Schoenholtz, and White, 8/2/2023
FHLB Advances from Federal Reserve Financial
Accounts of the U.S. and Federal Reserve
Lending from Federal Reserve H.4.1 Table 5
Consolidated Statement of Condition from All
Federal Reserve Banks
Quarterly data: Last obs. 2025 Q2 for FHLB Advances
and 2025 Q3 for Fed Res Lending

Community banks are more satisfied with FHLB funding access than with DW

In your experience, how satisfied are you with the accessibility of the following funding sources?



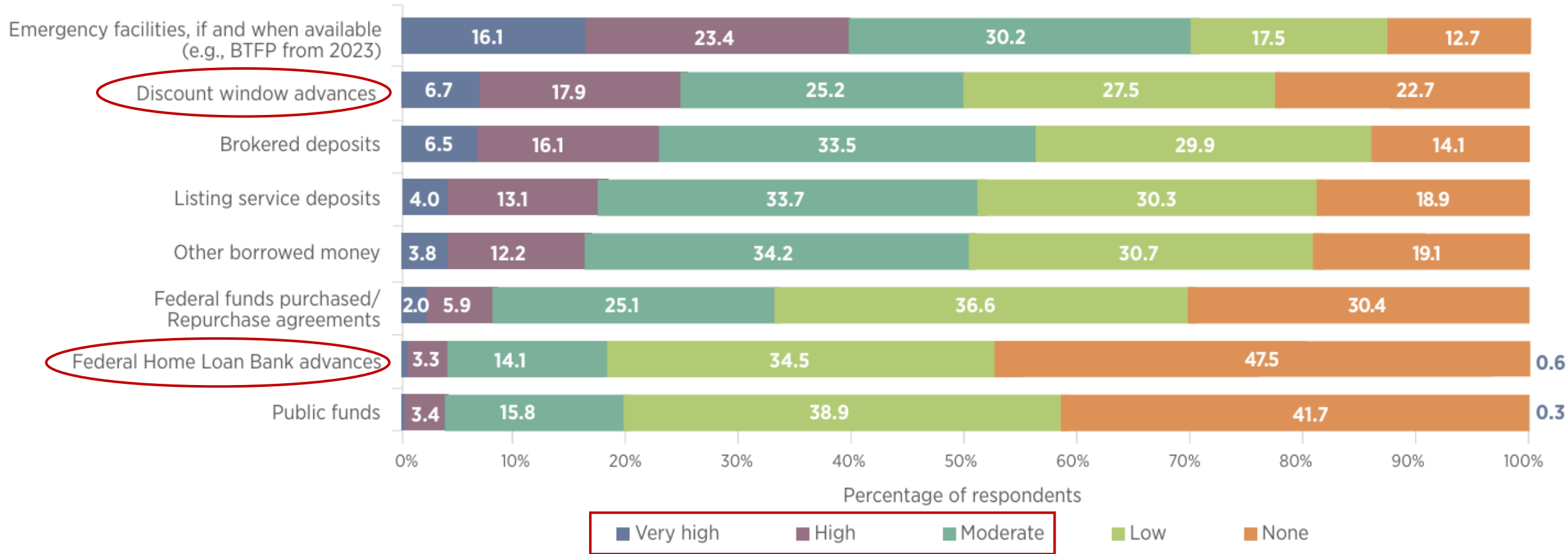
NOTE: BTFP is the Bank Term Funding Program.

Source: Conference of State Bank Supervisors (CSBS), *Annual Survey of Community Banks, 2024*, and included in the CSBS Comment Letter to the Board of Governors in response to Docket No. OP-1838 in Re: Request for Information and Comment on Operational Aspects of Federal Reserve Bank Extensions of Discount Window and Intraday Credit, Dec 9, 2024



Community banks feel discount window lending is stigmatized

What level of stigma, if any, do you feel is associated with the following funding sources?



Source: Conference of State Bank Supervisors (CSBS), 2024 Annual Survey of Community Banks, 2024

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