

Discount Window Stigma with Random Borrowing

An Experimental Investigation

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Abstract

A core responsibility of the Federal Reserve is to ensure financial stability by acting as the “lender of last resort” through its Discount Window (DW). Historically, however, the DW has not been effective because its usage is stigmatized. The experimental analysis of Armantier and Holt (2020) suggest that regular random DW borrowing can overcome DW stigma. In this paper, we report on experiments showing that random borrowing remains effective even after the financial system is hit by solvency or liquidity shocks. However, random borrowing alone may not be sufficient to remove pre-existing stigma.

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Extended Abstract

This paper builds on Armantier and Holt (2020) (A&H),¹ to study experimentally “Discount Window” (DW) stigma, defined as the reluctance to access the central bank backstop lending facility even for benign reasons, out of concerns that it could be interpreted as a sign of financial weakness.

In principle, solvent but illiquid banks should obtain funding from private counterparties in the interbank market. Asymmetric information, however, can prevent lenders from distinguishing illiquid from insolvent borrowers, especially when markets are stressed. As a result, even solvent institutions can fail to secure funding on the interbank market, in which case they have to resort to costly alternatives such as fire sales of assets, borrowing at high rates through different channels or failing to (re)pay a counterparty. The failures of Northern Rock and Lehman Brothers in 2007-2008 illustrate how adverse selection in the interbank market can start or deepen a financial crisis.

To address market failures in the interbank market and prevent the negative externalities they can generate, central banks typically assume “Lender of last Resort” (LoLR) responsibilities. The objective of the LoLR is to avoid unnecessary and socially costly failures by providing liquidity support when private alternatives are not available or prohibitively expensive. In the U.S., the Federal Reserve (the Fed) has been operating as a LoLR through its “Discount Window” for more than a century. Because it aims to address any liquidity problems before they have systemic consequences, the DW is the Fed’s first line of defense against a financial crisis.

Historically, however, the DW has been scarcely used, even when banks faced acute liquidity shortages (e.g. at the onset of the 2007 financial crisis). This behavior is generally attributed to stigma. The argument goes as follows: solvent institutions that cannot meet their funding needs in private markets for benign reasons refrain from borrowing at the DW out of concern that, if

¹ Armantier O. and C. Holt (2020) “Overcoming Discount Window Stigma: An Experimental Investigation.” *The Review of Financial Studies*, 33 (12): 5630–59.

detected, they might be perceived as insolvent by market participants.

DW stigma is a first order concern for central banks because it can affect two of their core responsibilities: acting as a LoLR and implementing monetary policy (see A&H). In particular, stigma was a major concern in the design of the international policy response to the 2007 crisis and central banks have reformed their DW with the explicit objective of mitigating stigma (e.g. the BoE in 2015, the Fed in 2020).

To study DW stigma in the lab A&H developed a coordination game with adverse selection. There are two types of players, “banks” and “investors.” The bank receives privately a solvency shock and an end-of-day liquidity shock which can be addressed only at the DW or with an alternative. DW borrowing is less costly than the alternative, but it may be detected by the investor who must decide whether or not to fund the bank. Because DW borrowing is informative about solvency, the investor may decide not to fund a detected bank. This may produce DW stigma as the bank may prefer to choose the costly alternative in order to remain undetected and improve its chances of being funded. An original feature of the model is that, consistent with policymaker’s views, the detection probability decreases with the number of DW borrowers. This creates a coordination problem for banks and two pure strategy equilibria: a stigma-free equilibrium where every illiquid bank borrows at the DW and a stigma equilibrium where the DW is not accessed.

A&H treatments aimed at evaluating policies that have been proposed to mitigate DW stigma. They find that DW stigma is not reduced significantly by cutting the cost of the DW or by making DW borrowing harder to detect. In contrast, making DW borrowing regular by asking banks to borrow at random times helps subjects coordinate on the stigma-free equilibrium. This result supports Winters (2012) who argued that regular DW usage would make DW borrowing both unremarkable and uninformative thereby mitigating stigma.

This paper aims to answer two questions. First, would a stigma free DW with random borrowing withstand a systemic liquidity or solvency shock? This is a first order question because a stigma free DW is of greatest importance at the onset of a crisis when the financial system is hit by a liquidity or a solvency shock. Indeed, as mentioned above, the DW is a Central Bank first line of defense against a financial crisis and its effectiveness depends crucially on the banks’ willingness

to access it voluntarily when the system incurs a shock. Second, can a DW be de-stigmatized by the introduction of random borrowing? While A&H show that no stigma is attached to a DW with random borrowing, it remains to be seen whether random borrowing can cure a DW from pre-existing stigma.

The experiment we conducted suggest that the answer to the first question is positive. When a stigma-free DW with random borrowing is hit by a liquidity or a solvency shock, subjects keep coordinating on the stigma-free equilibrium. In particular, banks in need of liquidity access the DW when the shock hits, thereby allowing the DW to serve its purpose.

The answer to the second question is more nuanced. While in some sessions subjects who initially coordinated on the stigma equilibrium shift to the no-stigma equilibrium after random borrowing is introduced, the effect is not systematic. Increasing the frequency with which banks randomly borrow at the DW does not seem to solve the problem fully. This result suggests that although random borrowing may be effective at preventing a DW from being stigmatized, it may not be sufficient to cure pre-existing stigma. This result has practical importance. It implies that new stigma free LoLR facilities may need to be created, because curing the stigma of existing facility may not be possible. This may explain in part why the Fed, instead of trying to remove the stigma attached to its DW, introduced a new facility in 2021, the “Standing Repo Facility” (SRF), which serves as a close substitute to the DW.