

Too Big vs. Too Frail

Danish experience suggests too-big-to-fail banks pose economic risks by altering competitive banking landscape and threatening stability of non-systemic banks during crises

Summary

When deposits are not completely insured, the presence of too-big-to-fail (TBTF) banks alters the competitive landscape for depositors' funds, resulting in financial fragility and real economic costs. Tracking the response of depositors who lost insurance coverage during the financial crisis demonstrates this starkly. Uninsured depositors at TBTF institutions are less likely to withdraw funding and depositors with uninsured balances at non-systemic banks appear to move their entire account to a TBTF institution, rather than just the uninsured portion of their funds. This funding shock to non-systemic banks hinders their ability to provide credit to the economy. Current regulations do not adequately address these risks: TBTF looms large and assumed deposit run-off rates under Basel III are too low to secure the funding of non-systemic banks during periods of distress.

As the Trump Administration and 115th Congress appear poised to revisit regulatory measures put in place after the financial crisis of 2007-08, it is critical for policymakers in Washington and around the world to understand evidence – including recent insights gained by studying deposit insurance practices in Denmark – on how regulation affects the fragility of financial markets.

With issuance of an [executive order](#) to review Dodd-Frank, the Trump Administration has signaled its intent to cast a critical eye on existing financial policy. Separately, in a [letter](#) to Federal Reserve Chair Janet Yellen, Congressman Patrick McHenry (R-NC), Vice Chairman of the House Financial Services Committee, demanded a re-evaluation of the Basel III Accord, an international post-crisis regulatory framework for banks. From those pronouncements, it is not clear which specific regulations will eventually be revised, but the odds weigh in favor of a general move towards a lighter-touch approach.

In a new [paper](#) with my co-authors Rajkamal Iyer (Imperial College London), Thais Laerkholm Jensen and Niels Johannesen (University of Copenhagen), we study the intersection of two policy issues that form important parts of Dodd-Frank and Basel III: deposit insurance and the problem of too-big-to-fail (TBTF) financial institutions.

This policy brief was prepared by Adam Sheridan, a doctoral student at the University of Copenhagen. He can be reached at adam.sheridan@econ.ku.dk.

MIT Golub Center for Finance and Policy
One Broadway
Suite 1375
Cambridge, MA 02142
(617) 324-7367
gcfp@mit.edu
gcfp.mit.edu
[@MITCFP](https://twitter.com/MITCFP)

We find that in a period of systemic crisis, implicit TBTF guarantees result in an uneven playing field in bank deposit funding: the largest, most complex banks find it easier to retain uninsured deposits *and* to attract new uninsured balances, relative to the significant outflows of funds from smaller banks. Thus, our analysis highlights the destabilizing effects of banks that are TBTF and the important role of deposit insurance in mitigating this financial fragility.

The laboratory for our study is Denmark. There are two reasons for this choice. First, while the Danish government made deposit insurance unlimited in September 2008, an insurance limit of DKK 750,000 (around USD 125,000) was introduced in October 2010. This new limit was decided by the EU and left a significant fraction of deposits uninsured. Crucially, it was introduced at a time of crisis in the Danish banking sector. Second, we have access to a unique dataset with annual balances for every account in Danish banks held by individuals for 2003-2011. We also are able to view

detailed information about account holders.

In combination, the policy change and the data allow us to perform the first micro-level study of how, in a systemic crisis, individual depositors allocate funds in the banking system; how this allocation changes in response to the insurance limit; and how the magnitude of responses depends on bank and depositor characteristics.

The core analysis compares the behavior of different depositors within the same bank who happen to have deposit balances *just below* and *just above* the DKK 750,000 insurance limit, right before it is introduced. We demonstrate that, prior to the reform, deposits above and below the threshold evolved very similarly, but after the 2010 reform, there was a sharp divergence: deposits above the limit decreased by around 40% relative to the growth trend in deposits below.

This funding shock was not equal across all banks. We repeat the analysis distinguishing between the six largest banks and all others, labeling these groups systemic and

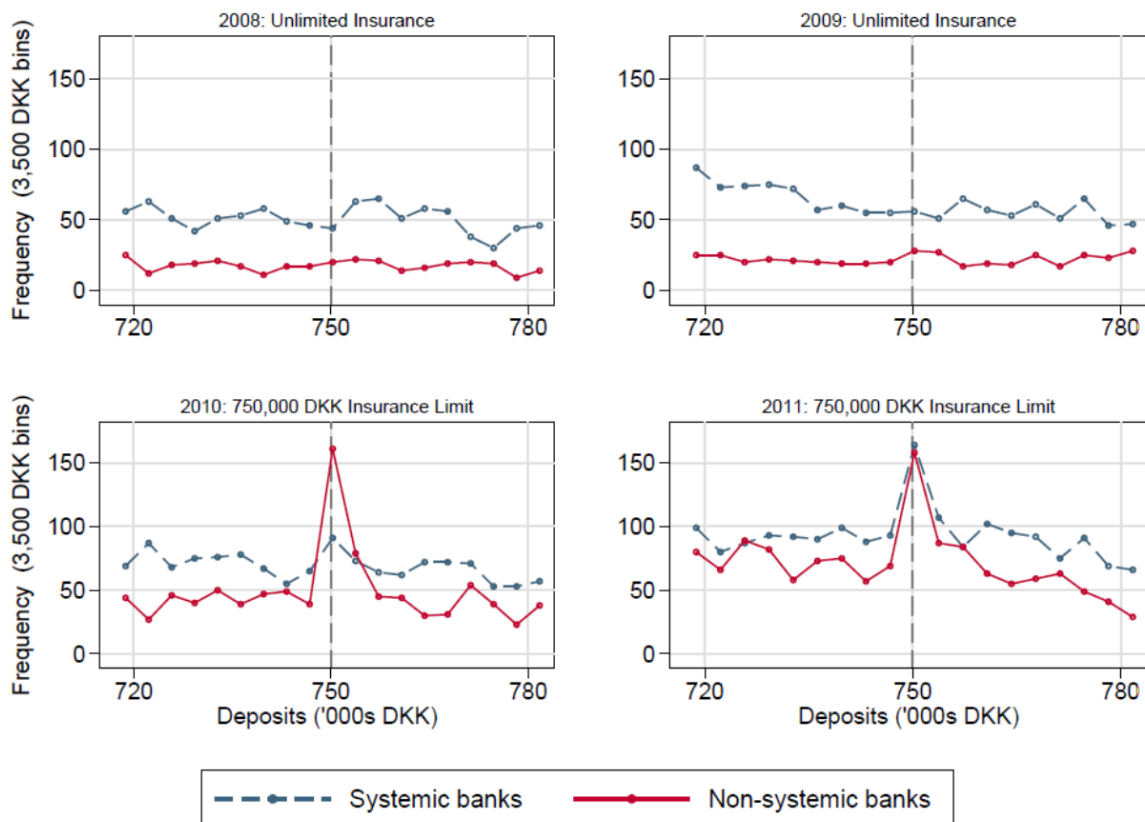


Figure 1 The figure illustrates the empirical distribution of account balances in a narrow window around DKK 750,000 for each of the years 2008-2009 (where all deposits were guaranteed by the government) and for 2010-2011 (where the insurance limit was DKK 750,000) for systemic and non-systemic banks separately. Bunching at the insurance limit is considerably more pronounced at non-systemic banks. *Source:* Figure 4 from Iyer, Jensen, Johannesen and Sheridan (2017).

non-systemic, respectively. We estimate that the reform caused a 50% decrease in the DKK value of deposits above the insurance limit in non-systemic banks but a much smaller decrease in systemic banks. The stark difference in funding shocks suggests that depositors believed the six largest banks were more likely to be bailed out in case of failure. This points to implicit government guarantees as an important determinant of depositor behavior in a systemic crisis.

Figure 2 captures these identified trends vividly. It plots the point estimates and confidence intervals from a regression comparing the supply of deposits in a narrow window around DKK 750,000 across non-systemic and systemic banks. Each point represents the difference in the supply of deposits above DKK 750,000 relative to below DKK 750,000 at non-systemic banks relative to systemic banks. The figure shows almost identical trends in deposits above relative to below DKK 750,000 for systemic and non-systemic banks over the period 2006-2009. This can be seen by the point estimates that are indistinguishable from zero. The impact of TBTF becomes clear from 2010: deposits above the threshold decrease much more rapidly relative to deposits below the threshold in non-systemic than in systemic banks. This figure is drawn for *all* deposits in a window around DKK 750,000. Repeating it for only *existing* accounts and for only *new* accounts gives the same result.

We go on to explore the mechanisms behind this finding. The TBTF banks benefit from two depositor behaviors: on the one hand, depositors with uninsured balances at TBTF banks are less likely to run, and on the other hand, depositors with uninsured balances at non-systemic banks appear to move their *entire* account to a TBTF institution, rather than just the uninsured portion of their funds. The second behavior is a result of transaction costs: it is costly to manage multiple bank accounts, so when depositors at non-systemic banks begin to fear for their uninsured funds they simply transfer everything across to a “safer” bank.

Taken together, these findings highlight the risks to the economy of having some banks that are TBTF: it alters the competitive landscape in deposit funding and this poses a threat to the stability of non-systemic banks during crises. This financial fragility has costs for the real economy. We find that the funding shock to non-systemic banks is associated with a reduction in their lending.

Theory suggests that these banks primarily cater to smaller borrowers – exactly the people expected to encounter difficulties in obtaining credit elsewhere.

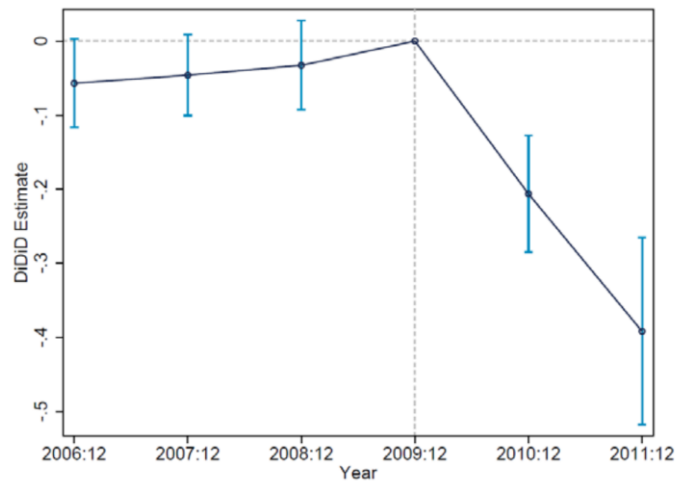


Figure 2 The figure illustrates the differential trend in deposits above DKK 750,000 relative to deposits below DKK 750,000 across systemic and non-systemic banks. The points represent the coefficients from a regression of bank-level deposit mass in ranges above and below DKK 750,000 on an interaction of an indicator for deposits being above DKK 750,000 with an indicator for whether the bank is non-systemic and an indicator for the year of interest, along with all other interactions and variables in levels. Vertical lines represent 95 percent confidence intervals for the estimates. *Source:* Figure 6 Panel B from Iyer, Jensen, Johannesen and Sheridan (2017).

Our research suggests that current regulations do not adequately address the risk of instability of the banking sector in a time of crisis. Dodd-Frank was designed to eliminate (implicit) government guarantees, but banks that do not benefit from TBTF may struggle to weather a significant storm because they rely heavily on runnable deposits. Specifically, according to the FDIC’s [Statistics on Depository Institutions](#), US commercial banks were holding around \$4.6 trillion in uninsured retail deposits at the end of 2016. This is 43% of total retail deposit funding; a significant fraction. Several of these banks are still considered TBTF and thus depositor perceptions of the safety of their uninsured deposits are likely to vary across banks. Our estimates suggest actual runoff rates in non-systemic banks are much higher than the 10% that banks have to prepare for under Basel III. Policymakers currently reviewing financial regulation in the US should consider the Danish experience when considering issues involving too-big-to-fail – including the financial fragilities resulting from depositor perceptions of TBTF institutions.

References

Federal Deposit Insurance Corporation, *Statistics on Depository Institutions – Standard Industry Reports*. Data from 12/31/2016.

Iyer, Rajkamal and Jensen, Thais Laerkholm and Johannesen, Niels and Sheridan, Adam, The Run for Safety: Financial Fragility and Deposit Insurance (February 22, 2017). Available at SSRN: <https://ssrn.com/abstract=2780073> or <http://dx.doi.org/10.2139/ssrn.2780073>

You can view other GCFP reports at:
<http://gcfp.mit.edu>