Distortive Effects of Deposit Insurance: Administrative Evidence from Deposit and Loan Accounts [†]

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Abstract

We study how increasing deposit insurance coverage during a crisis distorts deposit and credit allocation. Exploiting a reform of Denmark's deposit insurance scheme during the Global Financial Crisis with comprehensive administrative datasets, we analyze the effects on deposit allocation. We find that individual depositors impose market discipline on weaker banks through withdrawals of uninsured deposits, but expanded insurance coverage disrupts this mechanism. This disproportionately benefits weaker banks, enabling them to expand lending to lower-quality firms that subsequently default without appropriate risk pricing. Our results highlight the trade-off between short-term financial stability and the costs of increasing deposit insurance coverage.

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1 Introduction

Bank runs have been at the center of financial crises throughout history (Reinhart and Rogoff 2009). Even in high-income countries with developed financial systems, retail depositor runs have occurred repeatedly in the 21st century—during the 2008 Global Financial Crisis (Shin 2009) and more recently during the 2023 collapses of Silicon Valley Bank and Signature Bank (White 2023). These events have reinvigorated debates on optimal deposit insurance design (FDIC 2023), with some arguing for increased limits while others advocate for universal coverage.[1] While understanding the effects of increasing deposit insurance coverage in the midst of a crisis is important, there is very little empirical evidence.

A fundamental question that arises is: Which banks benefit most from increasing deposit insurance guarantees, and what are the resulting implications for financial stability and credit allocation? The longstanding theoretical literature has characterized two classes of bank runs, each with distinct implications for the design of deposit insurance schemes: Diamond and Dybvig (1983) show that runs on solvent but illiquid banks can arise from coordination failures unrelated to bank fundamentals, making deposit insurance an efficient solution. However, bank runs can be driven by banks' weaker fundamentals, either in conjunction with panic-driven scenarios (Goldstein and Pauzner 2005), or without panics solely driven by fundamental-based runs (Allen and Gale 2004). In these cases, deposit insurance might distort market dynamics by supporting weaker banks (Gorton 1988, Calomiris and Kahn 1991, Diamond and Rajan 2001, Rochet and Vives 2004, Dávila and Goldstein 2023). Understanding these effects is crucial for determining optimal coverage (Dávila and Goldstein 2023).

We empirically analyze how changes in deposit insurance coverage affect the allocation of deposits across banks and, consequently, the supply of credit and risk taking toward nonfinancial firms. Our study focuses on Denmark, which provides an ideal setting for identification as we can exploit detailed administrative matched datasets, and changes to the deposit insurance coverage limit. We exploit a reform, implemented in response to the Global Financial Crisis

[1] https://www.wsj.com/finance/banking/unlimited-deposit-insurance-cant-solve-everything-55d5dedb.

(GFC) in October 2008, that removed the existing deposit insurance coverage limit, thereby providing unlimited insurance.

We use administrative datasets on the universe of retail depositors (a deposit register) matched with credit register data, and additional granular information on each bank, firm, and individual. Our deposit register data spans accounts held by over 6 million individuals across banks in Denmark from 2004 to 2010, providing deposit volumes and interest payments at the individual-bank level annually. We match this with credit register data covering term loans, credit lines, and credit cards held by approximately 100,000 non-financial firms. This is further enriched with administrative information on banks' and firms' balance sheets, income statements, and individual depositors' wealth and income from tax records.

We exploit Denmark's deposit insurance reform implemented in October 2008, which eliminated the existing DKK 300,000 (€40,000) coverage limit and introduced unlimited deposit insurance for all bank deposits. This reform, enacted immediately following Lehman Brothers' collapse, provides a sharp change in deposit insurance coverage that allows us to identify how expanded guarantees affect deposit allocation and bank behavior.

This policy shift is particularly instructive because Danish banks had a distinctive crisis exposure: they had funded a domestic real estate boom largely through wholesale (foreign) borrowing rather than through direct exposure to U.S. subprime assets. Consequently, when international funding markets seized in 2008:Q3, Danish banks experienced severe liquidity pressure despite minimal holdings of toxic mortgage-backed securities. The simultaneous deterioration in domestic real estate values further strained their balance sheets. The deposit insurance reform, enacted precisely during these liquidity pressures, creates an ideal setting to examine how increasing insurance coverage affects deposit allocation and subsequent credit supply. Our identification leverages two consecutive crisis periods with one crucial difference. In 2008:Q3, banks faced substantial liquidity stress under limited deposit insurance, while in 2008:Q4, the same stressed conditions persisted under unlimited coverage. This creates a controlled environment to isolate the impact of increasing deposit insurance during a crisis.

To study whether banks benefit differentially from deposit guarantees, we classify institutions based on their exposure to the adverse effects of the GFC using their pre-crisis loan-to-deposit ratio. This ratio serves as a meaningful proxy for bank vulnerability, capturing both illiquidity and solvency risk. Banks with higher loan-to-deposit ratios face greater exposure to credit quality deterioration on their asset side and funding instability on their liability side. This measure has been utilized by IMF-EU-ECB rescue programs during European banking crises after 2010 (IMF 2011), and applied in previous research analyzing credit supply to Danish households during the GFC (Jensen and Johannesen 2017).

We provide several validations that this measure effectively identifies weaker banks. First, institutions with higher pre-GFC loan-to-deposit ratios maintained demonstrably weaker loan portfolios before the crisis. Specifically, these banks lent more extensively during 2004-07 to less productive firms (those with lower total factor productivity) and directed more credit toward real-estate and construction firms. Second, this weaker ex-ante loan composition during 2004-07 translated into higher ex-post loan losses throughout the 2008-15 period. Furthermore, we find that a higher loan-to-deposit ratio strongly predicts subsequent bank failure, with our model achieving an area under the ROC curve of 0.83—indicating that it correctly distinguishes between failed and non-failed banks 83% of the time. This predictive power confirms that the loan-to-deposit ratio is a valid proxy for banks with weaker fundamentals.

Our analysis begins with quarterly supervisory data to document how the GFC's onset affected banks with elevated loan-to-deposit ratios. Examining deposit flows, interest rates, and liquidity positions during 2008:Q3—when the crisis intensified but deposit insurance was still capped at 300,000 DKK—we find consistent evidence of acute funding stress at vulnerable banks. These institutions experienced significant deposit outflows, paid higher interest rates to retain funding, and suffered deteriorating liquidity positions. Remarkably, these patterns reversed sharply in 2008:Q4 when deposit insurance became unlimited, despite continued crisis conditions. Following the introduction of unlimited coverage, these previously stressed banks with high loan-to-deposit ratios began attracting disproportionate deposit inflows.

To causally identify effects from the deposit insurance change, we examine how deposit

flows responded around the 300,000 DKK coverage threshold. Following Iyer et al. (2019), we categorize and aggregate deposits into standardized 25,000 DKK bins at the bank-year level, enabling precise comparisons of deposit volumes just above versus just below the insurance limit. Our analysis examines three progressively tighter windows around the threshold: 225,000–375,000 DKK, 250,000–350,000 DKK, and most narrowly, 275,000–325,000 DKK (representing approximately 3,400 EUR above and below the insurance threshold). Given the multiple policy interventions during the GFC, this focused approach helps isolate effects specifically attributable to deposit insurance rather than concurrent policy changes, as other economic shocks would be unlikely to generate differential effects at this regulatory threshold. The results confirm our earlier findings: banks with higher loan-to-deposit ratios experience greater deposit outflows from bins just above the insurance threshold compared to bins just below it in 2008. With unlimited insurance coverage implemented in late 2008, these differential effects disappear by 2009. Placebo tests at four alternative thresholds (ranging from 200,000 to 400,000 DKK) show no comparable effects, confirming that the deposit reallocation is uniquely tied to the regulatory insurance limit rather than mechanical responses to round-number cutoffs.

A key challenge in identifying the causal impact of deposit insurance reforms on deposit allocation is the potential sorting of depositors across banks with different loan-to-deposit ratios. Banks with higher exposure to the crisis (i.e., those with elevated loan-to-deposit ratios) might attract different types of depositors, who could differ systematically in withdrawal behavior and holdings of uninsured deposits.[2] We address this selection concern by examining deposits at the individual-bank level and exploiting within-individual variation in withdrawal patterns during the GFC. Specifically, we restrict our sample to individuals with deposits in multiple banks, allowing us to analyze how the same depositor reallocates funds across differently exposed banks while controlling for individual fixed effects.

We find that, on average, depositors withdrew more from banks with higher loan-to-deposit ratios in 2008, with this effect being significantly more pronounced for deposits that exceeded

[2]Banks' asset and liability sides are strategically linked (see Kashyap et al. 2002, Gatev and Strahan 2006, Ippolito et al. 2016), meaning a bank's business model and risk profile influence both its loan portfolio and depositor composition, which could create selection bias in our analysis if not addressed.

the insurance limit. However, when the deposit insurance threshold was eliminated, we observe a striking reversal in behavior. In 2009—when deposit insurance coverage became unlimited—these same depositors began allocating more funds above the deposit insurance limit to banks with higher loan-to-deposit ratios. Moreover, we find that high loan-to-deposit banks offered higher deposit rates in 2008 when insurance was limited, presumably to retain deposits. This rate premium vanished in 2009 when all deposits became fully insured.

To further strengthen our findings, we examine banks that ultimately failed during the 2009-2015 period as a clear-cut case of fundamentally weak institutions. The results for these failing banks mirror our previous findings on high loan-to-deposit ratio banks. Specifically, failing banks initially lost deposits above the insurance threshold relative to surviving banks when coverage was limited, but this differential effect disappeared once insurance became unlimited. Interestingly, we also find a stark difference in the relationship between deposit growth and subsequent bank failure: under limited deposit insurance, banks experiencing deposit outflows were more likely to fail—consistent with market discipline identifying weaker institutions. However, after unlimited deposit insurance was introduced, this relationship inverted: banks attracting the most deposits became more likely to fail. This reversal suggests that expanded guarantees not only muted the disciplining effect of deposit outflows but actively channeled funds toward institutions that were fundamentally unsound.

Finally, we examine how deposit insurance reforms affected credit allocation using firm-bank level data from the credit register. To isolate credit supply effects, we employ granular fixed effects that compare lending by banks with varying loan-to-deposit ratios to the same borrower in the same period (Khwaja and Mian 2008). This approach reveals that in 2008, when deposit insurance was limited, banks with higher loan-to-deposit ratios—which entered the crisis with weaker loan portfolios—significantly curtailed lending to firms that would eventually default. This suggests deposit outflows constrained risky lending by banks with weaker fundamentals. However, once deposit insurance became unlimited in 2009, these same banks reversed course, increasing credit supply to soon-to-default firms without charging higher interest rates to compensate for risk. In addition, we find that these effects are

stronger for banks with a higher share of uninsured deposits. These credit patterns directly mirror our deposit findings, demonstrating how expanded guarantees affect both funding and lending behavior during crises.

Our findings demonstrate that expanded deposit insurance disproportionately benefits weaker banks through retail deposit reallocation, enabling them to maintain elevated credit supply to lower-quality firms that eventually default. The fact that several of these banks failed during 2009-2015 suggests higher insurance thresholds primarily extended survival of fundamentally unsound banks rather than facilitating their recovery. This reveals an important policy trade-off: while expanded deposit insurance effectively reduces immediate financial fragility during crises, it introduces distortions in deposit allocation and credit supply that may amplify long-term financial system vulnerabilities. Although we refrain from drawing welfare conclusions, our results inform ongoing debate about optimal deposit insurance design. Our findings highlight the need to calibrate coverage levels carefully—balancing short-term stability against the costs of weakened market discipline and distorted funding and lending patterns.

Our paper adds to the literature on several fronts.[3] One of the most widely used polices to ensure financial stability in the midst of a crisis has been increasing deposit insurance limits.[4] However, there is very little evidence on how changing deposit insurance limits during a crisis affects deposit reallocation and lending behavior. Another empirical challenge has been to causally show that deposit insurance affects depositor discipline and risk taking by banks.[5] The reason being that during a crisis there are several shocks that affect bank risk and

[3]There are two strands of empirical literature. One examines the benefits of deposit insurance in terms of providing stability in a crisis (Demirgüç-Kunt et al. (2008), Iyer and Puri (2012), Iyer et al. (2016)). The other literature examines whether deposit insurance causes more financial instability via reduction in market discipline and enhanced risk taking by banks (Demirgüç-Kunt and Detragiache (2002); Demirgüç-Kunt and Huizinga (2004); Beck and Laeven (2008); Caprio and Klingebiel (1996); Laeven and Valencia (2013); Martinez Peria and Schmukler (2001); Schumacher (1998); Calomiris (1989); Calomiris (1990)).

[4]The US increased the deposit insurance limit in the 2008 crisis from 100,000 USD to 250,000 USD. Similarly, the European Union increased the deposit insurance threshold to 100,000 EUR in 2010 in the midst of the sovereign debt crisis.

[5]Most of the empirical literature examines bank level deposit flow and changes in bank risk during a crisis using cross-sectional variation in bank characteristics or alternatively examining cross-country variation in deposit insurance and its association with bank risk and financial crises. Notable exception is Calomiris and Jaremski (2019), that uses state level variation in deposit insurance adoption in the pre-

depositor behavior. In addition, the composition of the depositors across banks could be different. Using a change in the deposit insurance threshold in a crisis, along with the deposit and loan register, we find that there is a marked shift in behavior of the same depositor when the threshold changes. We find that weaker banks benefit more from the distortion in deposit flow arising from an increase in threshold. Weaker banks also increase lending to firms that ex-post default.[6] In fact, we find that many of the weaker banks that benefit from the increased deposit flow due to higher deposit insurance limit eventually fail.[7] Thus, our results suggest that increasing the deposit insurance threshold distorts depositor discipline and allows longer persistence of weak banks and riskier firms in an economy.

2 Data and Institutional Background

This section introduces our data sources, presents key descriptive statistics, and outlines the institutional context of Denmark's deposit insurance reforms.

2.1 Datasets

Our analysis combines several matched administrative datasets from Statistics Denmark (Danmarks Statistik). To examine deposit reallocation effects, we use comprehensive account-level information on retail deposits reported to the Danish tax authority (SKAT). These tax records function effectively as a deposit register, covering all deposit accounts at banks in Denmark. We supplement this with supervisory information on bank balance sheets to identify institutions more exposed to the crisis. Our analysis of bank lending uses tax-reported data on non-mortgage loans to non-financial firms, which serves as a de facto credit register. We further match these with administrative records on each individual depositor's wealth, income,

fed era to study risk taking behavior of banks. This existing literature focuses mainly on whether the presence of deposit insurance leads to greater risk taking by banks during normal times. In contrast, our focus is on understanding whether increasing deposit insurance limits during a crisis benefits weaker banks disproportionately, and whether it distorts lending behavior.

[6] Increased deposit flow to weaker banks and higher lending for firms that ex-post default could lead to misallocation of funds and can have real effects. See also Hsieh and Klenow (2009); Acharya et al. (2022).

[7] See also Correia et al. (2024) who find that most banks that fail are ex-ante weak banks.

and other socioeconomic characteristics. Our analysis spans 2004 to 2010.

Deposit register. We obtain comprehensive information on bank deposit accounts from the Danish tax authorities. At the end of each year, financial institutions in Denmark are required to report year-end balances for all deposit accounts to the tax authorities. These mandatory reports, which facilitate tax enforcement, ensure a high degree of data accuracy.[8] Our dataset covers deposit accounts held by 6.1 million individuals. For each individual at every Danish bank, we observe the total consolidated end-of-year account balance and the total interest payments over the preceding year. Each deposit account is associated with a unique identifier linking it to both an individual and a bank.

To facilitate our analysis, we aggregate account-level data to the individual-bank level by summing deposit volumes and interest payments across all accounts held by the same individual at a given bank in a given year.[9] This aggregation aligns with the structure of deposit insurance, which applies at the individual-bank level rather than the individual-bank-account level. For each individual-bank-year observation, we compute the effective deposit rate as the total interest payment in year t divided by the average deposit balance in year t. We approximate the deposit balance in year t by averaging the balance at the end of year t and the balance at the end of year $t-1$. The dataset on individual-bank-level deposit holdings serves as the foundation for our individual-level analysis of deposit withdrawal behavior.

Credit register. Our dataset on corporate loans closely parallels the retail deposit data outlined above. It encompasses all non-mortgage lending agreements between non-financial firms and banks in Denmark, including regular term loans, flexible credit facilities such as revolving loans and overdraft accounts, credit card debt, and commercial paper.[10] Similar to the deposit data, the credit register provides detailed information on each lending agreement, including the identity of the borrower, account number, outstanding credit balance, and total interest payments made over the year. Given our focus on credit allocation to firms, we restrict

[8] The dataset also contains information on contractual interest rates. However, since this information is not critical for tax purposes, its reporting is inconsistent.

[9] We do not observe the type of deposit account (e.g., whether it is a checking or savings account).

[10] In Denmark, mortgages are issued by specialized mortgage institutions that operate under distinct regulations. Consequently, we exclude these institutions from our analysis.

our analysis to loans extended to non-financial firms.

We aggregate the account-level data to the bank-firm-year level by summing credit balances and interest payments across all accounts held by the same firm at a given bank. To construct our baseline sample, we impose several restrictions. First, we include only active firms from 2004 to 2010, excluding those with total assets or sales below 750,000 DKK (100,000 EUR) to ensure financial substance. Additionally, we exclude cooperatives, NGOs, and other non-profit entities, primarily to omit housing cooperatives from our analysis. We further exclude loans granted by municipalities and any loans in arrears or subject to debt forgiveness. Lastly, we drop loans issued by mortgage banks, governmental institutions, and the Danish central bank. Our final loan-level dataset comprises 81,000 unique firms borrowing from 92 banks.

Individual-level data. In addition to financial records, our study incorporates a comprehensive set of demographic data obtained from tax records, covering all Danish taxpayers. This dataset provides detailed information on individual balance sheets, including sources of income and wealth components. It also includes demographic attributes such as age, educational background, and geographic location. These annual data points, collected at the end of each year, offer a granular view of each individual's socio-economic characteristics.

Lender and borrower characteristics. We enrich our corporate loan data with detailed information on both borrowers and lenders using databases compiled by Statistics Denmark and the financial supervisory authority. For corporate borrowers, we leverage the Danish firm register, which provides data on firms' legal status, founding year, location, number of employees, and financial statements, including balance sheets and income statements. Bank-specific information, covering balance sheets, income statements, and key regulatory metrics such as capital adequacy ratios, is obtained from the financial supervisory authority.

Identifying weak banks. The GFC revealed significant vulnerabilities in banking sector funding structures. We classify banks based on their exposure to the crisis using their pre-GFC loan-to-deposit ratio, which serves as a proxy for both illiquidity and solvency risk. Banks with higher loan-to-deposit ratios face greater exposure to credit quality deterioration on their asset

side and funding instability on their liability side. This dual vulnerability made them particularly susceptible during the GFC when funding markets seized up. The loan-to-deposit ratio has been recognized as a key indicator in financial stability assessments, serving as a target metric in IMF-EU-ECB rescue programs during European banking crises post-2010 (see, e.g., IMF 2011) and as an analytical tool for examining credit supply to Danish households during the GFC (see Jensen and Johannesen 2017). The following sections show that this measure effectively identifies banks with weaker pre-crisis loan portfolios and predicts subsequent loan losses and bank failures, confirming its validity as a proxy for bank vulnerability.

2.2 Descriptive Statistics

Table 1 presents descriptive statistics for the main variables as of December 2007, capturing banking sector and firm characteristics before the crisis.

Banks. Panel A of Table 1 characterizes the Danish banking landscape, revealing substantial heterogeneity among financial institutions. The average bank holds total assets of approximately 57.4 billion DKK, though this figure masks considerable variation (standard deviation of 344 billion DKK), reflecting a banking system comprising both small banks and large national institutions. Total deposits average 18.4 billion DKK, with retail deposits constituting about 5.7 billion DKK of this funding base. The mean interest rate on retail deposits is 2%, consistent with the prevailing monetary policy stance before the crisis.

Critically for our analysis, the share of uninsured retail deposits—balances exceeding the pre-crisis insurance threshold of 300,000 DKK—averages 37% of all retail deposits. However, only 6% of depositors held uninsured balances, indicating that while most depositors were fully covered, a significant portion of deposit value remained uninsured. The loan-to-deposit ratio—our measure of bank vulnerability—averages 1.17, with substantial dispersion (standard deviation of 0.39). The distribution spans from 0.64 (10th percentile) to 1.76 (90th percentile). The average Tier 1 capital ratio is 12.9%, well above regulatory minimums. Before the crisis, banks expanded their loan portfolios rapidly, with an average annual credit growth of 25% during 2004-2007.

Firms. Panel B presents the characteristics of borrowing firms in our sample. The average loan size is 3.13 million DKK, though the large standard deviation (24 million DKK) indicates substantial variation in credit exposures. The median loan size of 330,000 DKK suggests a predominance of smaller borrowers. Firms pay an average interest rate of 7% on their loans, with rates spanning from 2% at the 10th percentile to 12% at the 90th percentile. The borrower base is diverse in size: annual sales average 52 million DKK, ranging from 1.88 million DKK (10th percentile) to 62.83 million DKK (90th percentile). Similarly, the average firm employs 28.6 workers, while the median firm has 8 employees.

2.3 Deposit Insurance Reforms in Denmark

Leading up to the GFC of 2008, the Danish economy experienced robust growth, driving a significant expansion in banks' lending activities, particularly to real estate firms. This period was characterized by a booming housing market. The rapid expansion in credit outpaced deposit growth, increasing Danish banks' reliance on wholesale market funding. As a result, leverage ratios rose sharply while liquidity ratios declined. Despite these developments, banks remained profitable, and none failed during the pre-crisis boom (Rangvid et al. 2013).

Although the Danish banking sector had minimal direct exposure to the U.S. mortgage-backed securities, it nevertheless felt the impact of the 2007–2008 credit crunch (Shin 2009, IMF 2011, Jensen and Johannesen 2017). The situation deteriorated following the collapse of Lehman Brothers in September 2008, which led to a freeze in international credit markets and triggered a funding crisis for many Danish banks.

In response to the escalating crisis, the Danish government introduced a series of measures in October 2008 under the so-called "Bank Rescue Package I." Most notably, it temporarily guaranteed all bank deposits in Denmark, effectively lifting the previous deposit insurance limit of DKK 300,000 to provide unlimited coverage. This measure was initially set to expire in September 2010. Additionally, the Danish central bank launched temporary credit facilities to enhance liquidity in the banking sector. While these facilities bolstered confidence, banks

made little use of them (Dam and Risbjerg 2009).[11]

In the aftermath of the GFC, the European Commission sought to harmonize deposit insurance schemes across European Union member states, motivated by concerns over cross-country deposit flight. Effective 1 October 2010, Denmark aligned with the new EU regulations by setting the deposit insurance limit at DKK 750,000 (approximately 100,000 euros).[12]

3 Bank Vulnerability During the Global Financial Crisis

For our analysis, we argue that banks with higher loan-to-deposit (L/D) ratios in 2007 entered the Global Financial Crisis (GFC) with weaker fundamentals.[13] In particular, banks with higher L/D ratios were more exposed to the adverse effects of the crisis due to their greater reliance on wholesale funding and higher potential loan losses. In this section, we document this vulnerability by analyzing the composition and quality of pre-crisis loan portfolios, examining subsequent loan losses, and assessing broader structural characteristics of high L/D banks. We then investigate how banks with different pre-crisis L/D ratios responded to liquidity stress in 2008:Q3 and to the subsequent shift to unlimited deposit insurance in 2008:Q4.

3.1 Loan-to-Deposit Ratio as a Measure of Bank Vulnerability

We begin by evaluating whether banks with a higher L/D ratio in 2007 exhibited systematically weaker pre-crisis loan portfolios. Using matched credit register and firm-level data, we compute total factor productivity (TFP) at the firm level and aggregate it at the bank level, weighting each firm's TFP by loan volume (Blattner et al. 2023). Additionally, we measure each bank's exposure to the real estate and construction sectors by computing the share of loans allocated to these industries.

[11] Abildgren and Thomsen (2011) and Rangvid et al. (2013) provide further details on Denmark's policy response to the GFC.

[12] As in the U.S., Denmark's deposit insurance scheme applies separately to accounts held by the same individual at different banks, meaning depositors can effectively increase their coverage by spreading their funds across multiple institutions.

[13] Results are similar using other measures for weak banks, for example banks that ex-post failed.

We estimate the following panel regression for the pre-crisis period (2004–2007):

$$y_{b,t} = \alpha_t + \beta_t \text{Loan/Deposits}_{b,2007} + \gamma X_b + \epsilon_{b,t}, \tag{1}$$

where $y_{b,t}$ denotes the productivity or real estate exposure of a bank's loan portfolio, α_t are year fixed effects, and X_b includes bank controls such as the tier-1 capital ratio, log assets, and an indicator for the six largest banks based on total assets in 2007.

Table A.1 in the appendix shows that banks with higher L/D ratios in 2007 systematically lent to firms with lower TFP before the crisis. A one standard deviation increase in the L/D ratio is associated with a 0.23 unit decline in borrower TFP (-0.59×0.39). Additionally, these banks allocated a greater share of credit to real estate firms, with a one standard deviation increase in the L/D ratio linked to a 5-7 percentage point rise in lending to the real estate sector. Since the real estate sector was severely impacted during the GFC, banks with higher L/D ratios had ex-ante weaker loan portfolios, characterized by lower borrower productivity and greater exposure to the real estate sector.

Loan Losses During and After the GFC. Next, we examine whether these weaker portfolios translated into higher loan losses once the crisis hit. Figure 1 presents coefficient estimates with 95% confidence intervals from bank-level panel regressions of loan losses (scaled by total assets) on banks' L/D ratios measured in 2007, interacted with year indicators. The specification includes the following control variables measured in 2007: the tier-1 capital ratio, log assets, and an indicator for the six largest banks based on total assets, each interacted with year indicators. The regression includes bank and year fixed effects, with standard errors clustered at the bank level.

The figure shows that before 2008, loan losses did not differ significantly across banks with high versus low L/D ratios, with point estimates close to zero. However, once the crisis began, banks with a higher L/D ratio in 2007 experienced significantly larger loan losses from 2008 to 2015. This pattern confirms that weak lending practices before the crisis were a leading indicator of subsequent balance sheet deterioration, with effects persisting well beyond the

acute phase of the GFC. The timing and magnitude of these losses validate our use of the L/D ratio as an indicator of bank vulnerability entering the crisis.

Characteristics of High Loan-to-Deposit Banks. While the preceding results establish differences in loan portfolios and outcomes, we next contextualize the L/D ratio within broader structural differences before the crisis. Specifically, we examine how the pre-crisis L/D ratio correlates with various bank fundamentals, including balance sheet composition, pre-crisis growth, and ex-post performance. Table 2 presents cross-sectional regression results where the dependent variable is the L/D ratio in 2007, regressed on bank size, capitalization, credit growth, interbank borrowing, real estate lending, cumulative loan losses from 2008-2015, and an indicator for bank failure between 2009-2015.

Columns 1-8 sequentially introduce bank characteristics, highlighting their individual correlations with the L/D ratio. Larger banks (Column 1) and those with lower capital ratios (Column 2) had significantly higher L/D ratios. Banks with more aggressive pre-crisis credit growth (Column 3) and greater reliance on interbank funding (Column 4) also maintained higher L/D ratios. The relationship with the real estate lending share (Column 5) is positive but not statistically significant. Importantly, banks with higher L/D ratios experienced greater loan losses post-crisis (Column 6) and were more likely to fail (Column 7), validating our use of this ratio as a measure of vulnerability. When all variables are included in Column 9, only credit growth and interbank debt remain significant, suggesting that these factors were the primary drivers of high L/D ratios before the GFC. This supports our interpretation that banks with high L/D ratios were primarily characterized by rapid loan expansion financed through wholesale funding, making them particularly vulnerable when these funding markets deteriorated during the crisis.

3.2 Bank Liquidity Dynamics Around the DI Reform

Having established that banks with higher L/D ratios entered the crisis with weaker fundamentals and experienced greater loan losses in the subsequent years, we now examine how

they responded to evolving funding conditions during the GFC. Using quarterly supervisory data, we conduct cross-sectional regressions to analyze how banks with different L/D ratios experienced funding stress in 2008:Q3 (before the deposit insurance expansion) and how these patterns changed following the introduction of unlimited deposit insurance in 2008:Q4. Importantly, the GFC was in full force throughout both quarters, with the key distinction being the implementation of unlimited deposit insurance in October 2008. This allows us to analyze how this policy intervention affected funding dynamics in the midst of a crisis.

Table 3 examines quarterly changes in total liquidity (Columns 1–2), total deposits (Columns 3–4), and deposit rates (Columns 5–6) for banks with higher L/D ratios in 2007. In 2008:Q3, while deposit insurance was still capped at DKK 300,000, banks with higher L/D ratios faced significant funding pressure. A one-standard-deviation increase in the L/D ratio is associated with a 4.3% decline in total liquidity (.109 × 0.39) and a 3.5% reduction in total deposits (.089 × 0.39). At the same time, these banks increased deposit rates by 15.6 basis points.

In October 2008, Denmark implemented an unlimited deposit insurance scheme, significantly altering depositor incentives. This policy shift reversed the liquidity dynamics observed in 2008:Q3. In 2008:Q4, banks with higher L/D ratios experienced substantial funding improvements. A one standard deviation increase in the L/D ratio is now associated with a 11.2% increase in total liquidity and a 9.6% increase in total deposits. Meanwhile, deposit rates declined by 6 basis points. These changes suggest that the removal of the deposit insurance limit alleviated funding pressure, particularly for banks with weaker fundamentals.

Overall, the introduction of unlimited deposit insurance relieved funding pressures on weaker banks, allowing those with higher L/D ratios to retain and attract deposits. While these patterns are suggestive of causal effects, we cannot establish causality based solely on bank-level correlations. To establish causal relationships and understand the specific mechanisms at work, we turn to micro-level deposit data.

4 Deposit Insurance and Depositor Behavior

This section examines how depositors adjusted their allocations across banks during the Global Financial Crisis (GFC), focusing on the role of deposit insurance in shaping withdrawal behavior. To isolate the impact of insurance coverage, we employ two complementary identification strategies. We begin with a threshold design at the account range level, comparing deposit growth just above versus just below the 300,000 DKK insurance limit. This approach isolates the response of uninsured deposits across banks with different pre-crisis fundamentals, using aggregated account-size bins at the bank-year level. We then turn to individual-depositor data and examine within-person variation in withdrawals for depositors holding accounts at multiple banks. This allows us to test whether the same individual was more likely to withdraw from banks with higher L/D ratios when balances exceeded the coverage limit.

4.1 Deposit Reallocation Around Insurance Thresholds

To identify the causal effect of deposit insurance, we examine how deposit flows responded around the 300,000 DKK coverage threshold. Following Iyer et al. (2019), we categorize and aggregate deposits into standardized 25,000 DKK bins at the bank-year level, enabling precise comparisons of deposit volumes just above versus just below the insurance limit.

To construct the data, we decompose each deposit account into standardized 25,000 DKK range bins. For example, an account with a balance of 210,000 DKK contributes 25,000 DKK to each of the first eight bins (0-25K, 25-50K, ..., 175K-200K) and 10,000 DKK to the ninth bin (200-225K). We then aggregate these decomposed amounts across all depositors for each bin, bank, and year. This approach produces a bank-bin-year panel that enables us to isolate changes in deposit allocation specifically attributable to the insurance threshold, as other concurrent economic shocks or policy interventions during the GFC would be unlikely to generate differential effects precisely at this regulatory boundary.

We estimate the following regression model:

$$Log(\text{Deposits})_{btk} = \alpha_{kt} + \alpha_{bt} + \sum_t \beta_t(\eta_t \times \text{Loan/Deposit}_{b,2007} \times \text{Above 300K}_{bk}) + \sum_t \gamma_t(\eta_t \times \text{Above 300K}_{bk}) + \epsilon_{btk}\,, \tag{2}$$

where the dependent variable $Log(\text{Deposits})_{btk}$ denotes the logarithm of total deposits held by bank b in year t within bin k. The indicator Above 300K_{bk} equals one for bins exceeding the 300,000 DKK insurance limit. The coefficients of interest, β_t, capture the differential effect of a bank's loan-to-deposit ratio on deposit volumes in bins above versus below the threshold in each year. A negative coefficient implies that banks with higher loan-to-deposit ratios experienced disproportionately larger outflows (or smaller inflows) in bins exceeding the insured limit. Our specification includes bin-year fixed effects (α_{kt}), which absorb all time-varying heterogeneity in deposit volumes across bins within each year, and bank-year fixed effects (α_{bt}), which absorb all time-varying deposit dynamics within each bank-year. This saturated fixed effects structure ensures that identification comes solely from within-bank variation in deposit growth across threshold bins.

Figure 2 shows the dynamic coefficients of this specification, which we estimate separately for three progressively narrower windows around the insurance threshold: 225,000–375,000 DKK, 250,000–350,000 DKK and most tightly 275,000–325,000 DKK. The latter, most narrow, range studies deposit growth in account ranges approximately 3,400 EUR above and below the insurance threshold. Table A.2 in the Appendix presents the full set of results underlying this dynamic coefficient plot.

Prior to 2008, deposit levels above and below the threshold evolved in parallel: the coefficients on the triple interaction terms for 2004, 2005, and 2007 are close to zero and statistically insignificant, supporting the validity of the identification strategy. In 2008, however, the coefficient becomes large and negative.[14] For economic interpretation, a one-standard-deviation

[14]The 2008 data reflect deposit levels as of December 31, 2008, capturing primarily the limited insurance period (10 months) but also including some exposure to unlimited insurance. Our estimates should thus be viewed as lower bounds, as some depositors may have already responded to the policy change by year-end.

increase in the L/D ratio (0.39) is associated with a 3.9 percentage point decline in deposit growth above versus below the threshold in 2008 (-0.10 × 0.39). This substantial difference indicates that depositors actively withdrew uninsured funds from banks with higher loan-to-deposit ratios during the crisis period when deposit insurance remained limited.

In 2009, when unlimited deposit insurance was in effect, the differential effect attenuated substantially. The coefficient for all three account ranges remain negative, but are close to zero and not statistically significant. This attenuation confirms that the insurance limit played a central role in withdrawal decisions. In 2008, uninsured depositors disproportionately withdrew from high L/D banks, but once full coverage was implemented, deposit flows became much less sensitive to bank fundamentals. These findings confirm that expanding deposit insurance disproportionately benefited weaker banks by removing market discipline that had constrained their funding under limited coverage.

To assess the specificity of the threshold effect, we conduct placebo tests using counterfactual deposit insurance thresholds. We re-estimate the baseline triple-difference specification at four alternative cutoffs—200,000, 250,000, 350,000, and 400,000 DKK—examining deposit growth in 50,000 DKK ranges above versus below each threshold to test whether deposit flows exhibit discontinuities at these arbitrary points. If our main results are driven by the salience of the 300,000 DKK coverage limit, we should observe no comparable effects at placebo thresholds. Figure 3 presents these estimates using the same dynamic framework applied to the actual insurance threshold. The results show no statistically significant coefficients at any placebo threshold, in sharp contrast to the significant negative effect at the true 300,000 DKK limit during the 2008 crisis. This null result at arbitrary cutoffs provides strong evidence that the deposit reallocation behavior is uniquely tied to the regulatory insurance limit rather than mechanical responses to round-number thresholds or other nonlinearities in deposit demand.

4.2 Individual-Level Analysis of Deposit Reallocation

A key challenge in identifying the causal impact of deposit insurance on deposit allocation is the potential sorting of depositors across banks. Banks with higher L/D ratios may attract

depositors with different risk preferences, liquidity needs, or socioeconomic characteristics, potentially confounding the relationship between bank fundamentals and depositor behavior during crises (Kashyap et al. 2002, Gatev and Strahan 2006, Ippolito et al. 2016).

To address this concern, we restrict our sample to individuals who held deposits at multiple banks and exploit within-individual variation in withdrawal behavior. This approach allows us to analyze changes in deposits at the individual-bank level, comparing the same depositor's responses across banks with differing pre-crisis L/D ratios. By including individual fixed effects, we absorb all time-invariant depositor characteristics (such as income, risk preferences, and baseline liquidity needs) that could influence withdrawal behavior.

We estimate the following individual-bank-time level regression:

$$\begin{aligned}\Delta \log(\text{Deposits})_{ibt} = \alpha_i + \alpha_b + \beta_1 \text{Loan/Deposits}_{b,2007} \times \text{Above 300K}_{i,b,t-1} \\ + \beta_2 \text{Loan/Deposits}_{b,2007} + \beta_3 \text{Above 300K}_{i,b,t-1} + \gamma X_b + \epsilon_{ibt} \ , \end{aligned} \tag{3}$$

where $\Delta \log(\text{Deposits})_{ibt}$ denotes the change in the logarithm of deposits for individual i at bank b over two periods: 2007–2008 (when deposit insurance remained limited) and 2008–2009 (when coverage became unlimited). The key explanatory variables are $\text{Loan/Deposits}_{b,2007}$, which measures bank b's L/D ratio at the end of 2007, and $\text{Above 300K}_{i,b,t-1}$ an indicator equal to one if the individual's deposits in bank b in year $t-1$ exceeded 300,000 DKK. Standard errors are double-clustered at the individual and bank level.

The interaction term $\text{Loan/Deposits}_{b,2007} \times \text{Above 300K}_{i,b,t-1}$ tests whether depositors with balances above the insurance threshold were more or less likely to withdraw from banks with higher pre-crisis L/D ratios. A negative coefficient on this interaction term (β_1) would indicate that uninsured depositors disproportionately withdrew from banks with higher pre-crisis L/D ratios. X_b represents bank-level controls including (log) total assets, tier-1 capital ratio, and an indicator for the six largest banks by total assets, all measured in 2007. The model includes individual fixed effects α_i to focus on within-individual variation in deposit changes and bank fixed effects α_b, and the error term ϵ_{ibt}.

Table 4 presents our regression results. Columns (1) to (4) focus on annual deposit changes from December 2007 to December 2008. Since the deposit insurance reform was implemented in October 2008, the majority of this period falls under the limited coverage regime prior to the reform. Across specifications, the coefficient on the interaction term $\textit{Loan/Deposits}_{b,2007} \times \textit{Above 300K}_{i,b,t-1}$ is negative and significant, suggesting that depositors exceeding the insurance threshold disproportionately withdraw more from banks with higher L/D ratios. In Column (4), the most stringent specification with individual and bank fixed effects, the interaction coefficient of -0.187 implies that a one standard deviation increase in the L/D ratio (0.39) leads to a 7.3 percentage point larger decline in deposits among uninsured accounts ($-0.187 \times 0.39 = -0.071$). This economically meaningful response highlights that depositors moved deposits away from weaker banks when coverage was limited.[15]

This pattern reverses in the 2008–2009 period, shown in Column (5), when deposit insurance expanded to cover all balances. The interaction term $\text{Loan/Deposits}_{b,2007} \times \text{Above 300K}_{i,b,t-1}$ turns positive and statistically significant, indicating that uninsured depositors no longer penalized banks with high L/D ratios. The coefficient of 0.059 implies that a one standard deviation increase in the L/D ratio leads to a 2.3 percentage point larger increase in deposits in accounts that previously exceeded the insurance limit. This reversal demonstrates how unlimited deposit insurance disrupted the market discipline mechanisms that had led depositors to withdraw from banks with weaker fundamentals. Under unlimited insurance, depositors' safety concerns were eliminated, but banks with higher L/D ratios may have attracted deposits in these higher-balance accounts by offering more competitive interest rates (Figure 4).

These results underscore a key mechanism through which deposit insurance influences financial stability: by reshaping depositor incentives, expanded coverage weakens market discipline and directs funds toward banks with weaker fundamentals. When coverage was limited,

[15]Public awareness of bank fundamentals at the time was aided by widespread media coverage that translated technical risk metrics into intuitive rankings and simplified indicators. Notable examples include Berlingske Business's "Banking Risk Index" that explicitly ranked institutions by risk factors (April-September 2008), Politiken's coverage of Moody's downgrades ("Moody's rammer danske banks," September 17, 2008), and extensive television coverage on TV2 and DR1 that explained banking fundamentals to general audiences.

depositors with uninsured balances actively reallocated funds away from banks with weaker fundamentals. Once insurance became unlimited, this responsiveness declined markedly. The same individuals stopped penalizing weaker banks, suggesting that comprehensive coverage distorts market discipline.

Depositor Characteristics and Withdrawal Patterns. Table 5 extends our baseline analysis by incorporating depositor wealth to assess whether wealthier individuals exhibit different sensitivity to bank risk in their deposit allocation decisions. The 2008 results in Column (1) show that the triple interaction term, $Loan/Deposits_{b,2007} \times Wealth_{i,2007} \times Above\ 300K_{i,b,t-1}$, is negative and significant (-0.001). Since wealth is measured in millions of DKK, this coefficient implies that at a bank one standard deviation above the mean L/D ratio, uninsured depositors with 1 million DKK more wealth reduced deposits by an additional 0.04 percentage points (0.001×0.39) compared to depositors with 1 million DKK less wealth. This pattern suggests that wealthier depositors were more responsive to bank fundamentals when making withdrawal decisions, consistent with greater financial sophistication.[16]

By contrast, in 2009 (Column 2), after the introduction of unlimited deposit insurance, the triple interaction coefficient becomes positive (0.001), suggesting that wealthier uninsured depositors increased deposits by more in banks with higher L/D ratio. Taken together, the results point to the importance of sophisticated depositors in disciplining banks. Additional analysis examining heterogeneity by education, age, and other individual characteristics revealed no significant differences in withdrawal behavior.

Banks' Uninsured Deposit Exposure and Withdrawal Patterns. Table 6 investigates how a bank's funding structure—specifically, its reliance on uninsured deposits—affected withdrawal behavior during the crisis. While previous analyses focused on depositor-level and balance-specific characteristics, here we explore another dimension of heterogeneity: a bank's proportion of uninsured deposits. Banks with a higher proportion of uninsured deposits face

[16]Evidence from Danish online financial forums, particularly Finansforum.dk's discussion boards (August-October 2008), shows sophisticated depositors sharing detailed analyses of bank financial statements and explicit withdrawal strategies.

greater run risk during financial stress, as more of their funding base remains sensitive to changes in perceived safety (Chen et al. 2024).

Columns (1) and (2) present results for 2008 and 2009, respectively. The triple interaction term—$Loan/Deposits_{b,2007} \times Uninsured\ Share_{b,2007} \times Above\ 300K_{i,b,t-1}$—captures how bank-level funding vulnerabilities shaped depositor withdrawals. In 2008, the coefficient is large, negative, and significant (-1.479), indicating that uninsured depositors' sensitivity to bank L/D ratios was amplified at banks with higher uninsured funding reliance. A one standard deviation increase in both the L/D ratio and uninsured share results in 8.7 percentage points larger withdrawals ($-1.479 \times 0.39 \times 0.15$) in uninsured accounts.

In 2009, after the introduction of unlimited deposit insurance, this pattern flips. The triple interaction coefficient becomes positive and significant (0.379), implying that banks previously most exposed to market discipline now saw the strongest inflows. A one standard deviation increase in both the L/D ratio and uninsured share results in 2.2 percentage points higher deposit growth ($0.379 \times 0.39 \times 0.15$), reflecting a sharp reversal in depositor behavior. These findings highlight that funding stress was concentrated at banks with high L/D ratios and substantial uninsured deposits. The asymmetric response underscores how unlimited deposit insurance disproportionately benefited weaker banks by neutralizing the disciplinary effects of uninsured depositor withdrawals.

4.3 Deposit Rates

Having established that depositors withdrew funds from banks with higher L/D ratios when deposit insurance was limited, we examine the deposit rates offered by banks. Our findings in Section 3.2 using quarterly supervisory data revealed that banks with higher L/D ratios offered elevated deposit rates during 2008:Q3 when insurance remained limited. In this section, we explore whether these rate adjustments reflected systematic responses to funding pressures, and whether the introduction of unlimited deposit insurance attenuated this pricing behavior.

Figure 4 illustrates the evolution of retail deposit rates for banks with high versus low L/D ratios (classified based on whether their 2007 ratio was above or below the median). Prior

to 2007, both groups offered similar rates, but a clear divergence emerges beginning in 2007 and intensifying in 2008. Banks with higher L/D ratios substantially increased their rates relative to more stable peers, with the divergence peaking in 2008, when uninsured depositors were actively reallocating funds. After the introduction of unlimited deposit insurance in October 2008, this rate differential begins to narrow in 2009, suggesting that expanded coverage reduced the need for banks with higher L/D ratios to offer higher deposit rates.

To formally quantify this relationship, we estimate a panel regression that captures the time-varying association between pre-crisis L/D ratios and subsequent deposit rates:

$$\text{Rate}_{bt} = \alpha_b + \alpha_t + \sum_t \beta_t(\eta_t \times \text{Loan/Deposit}_{b,2007}) + \sum_t \gamma_t(X_b \times \eta_t) + \epsilon_{bt} \tag{4}$$

where Rate_{bt} represents the average interest rate on retail deposits at bank b in year t, α_b and α_t are bank and year fixed effects, and X_b includes bank controls (tier-1 capital ratio, log assets, and an indicator for the six largest banks) measured in 2007 and interacted with year indicators. We cluster standard errors at the bank level.

Figure 5 plots the estimated β_t coefficients with 95% confidence intervals. Prior to 2007, coefficients are close to zero and statistically insignificant, consistent with the absence of systematic rate differences. The relationship becomes positive and increasingly significant from 2007, peaking in 2008. A one standard deviation increase in the L/D ratio is associated with a 10.9 basis point increase in retail deposit rates in 2008 (0.028×0.39).[17] By 2009, after the implementation of unlimited deposit insurance, this premium decreases substantially, indicating that pricing differentials normalized once deposit guarantees were expanded.

These results suggest that when insurance coverage was limited during the crisis, weaker banks offered significant rate premiums to stabilize their deposit base and attract more deposit funding. Once comprehensive guarantees were implemented, this pricing channel became less necessary. Combined with our earlier evidence on deposit flows, this suggests that increasing

[17]Note that we examine the average rate offered by banks across all deposits (insured and uninsured). Thus it is possible that the banks with higher L/D ratio offered higher rates on insured deposits to attract more funds in 2008 when the deposit insurance was limited and they experienced withdrawal by uninsured deposits, see e.g. Acharya and Mora (2015) and Egan et al. (2017).

deposit insurance coverage not only reallocated uninsured deposits toward weaker banks but also lowered their cost of funds by relaxing the need to offer higher deposit rates.

5 Deposit Insurance and Bank Failure

Thus far, our analysis has used the L/D ratio as a proxy for weak banks. However, some banks with high L/D ratios eventually failed during the crisis period between 2009 and 2015.[18] To study whether withdrawals were larger at banks with weaker fundamentals, particularly those that eventually failed, we apply the same individual-bank-level specification as in equation (3), but now include an indicator for banks that failed between 2009 and 2015 alongside the loan-to-deposit ratio. Our main variable of interest is the coefficient on the triple interaction: $\textit{Loan/Deposits}_{b,2007} \times \textit{Above 300K}_{i,b,t-1} \times \textit{Failing bank}_b$. This specification allows us to test whether uninsured depositors actively withdrew from the weakest banks during the crisis when deposit insurance was limited. Note that these regressions capture deposit flows before the banks failed, as most failures occurred after our sample period ends.

Table 7 presents regression results examining how depositors responded to ex-post failing banks before and after the deposit insurance expansion. By including individual fixed effects, we exploit within-individual variation in deposit withdrawals across failing and surviving banks, mirroring our approach in Section 4.2. Column (1) shows that in 2008, depositors with uninsured balances were significantly more likely to withdraw from banks with higher L/D ratios that would later fail. The triple interaction coefficient of 0.808 implies that a one standard deviation increase in the bank's L/D ratio leads uninsured depositors at failing banks to reduce deposits by an additional 31.5 percentage points (-0.808×0.39) compared to uninsured depositors at non-failing banks. The double interaction term between the L/D ratio and uninsured status (0.018) captures the differential withdrawal behavior at non-failing banks and is small and statistically insignificant. This suggests that among non-failing banks, uninsured depositors did not significantly differentiate between high and low L/D ratio banks. The results

[18] A small number of banks failed during our main sample period of 2007-2009. In unreported results, we confirm that our results are robust to dropping these banks from our sample.

indicate that uninsured depositors selectively withdrew from the banks that would ultimately fail, particularly those with higher pre-crisis L/D ratios.

Notably, this pattern reverses in 2009 (Column 2). After the introduction of unlimited deposit insurance, the triple interaction becomes small and statistically insignificant, indicating that depositor discipline toward ex-post failing banks was sharply curtailed once full coverage was implemented. To further validate these findings, Appendix Table A.3 presents a simplified specification focusing solely on uninsured depositor responses at failing vis-a-vis non-failing banks, without the L/D ratio interaction. In 2008, depositors with balances above the insurance limit withdrew significantly more from failing banks, with an interaction coefficient of -0.241, representing a 24.1 percentage point larger decline in deposits at failing versus non-failing banks. By 2009, there is no statistically significant difference in deposit flows from uninsured depositors between failing and non-failing banks, confirming that unlimited deposit insurance sharply curtailed market discipline toward the weakest institutions.

Predicting bank failures. Our results thus far raise the question: were depositors responding to observable bank characteristics that genuinely predicted future failures? Table 8 examines which observable characteristics best predict bank failures. We estimate logit regressions at the bank-level where the outcome is an indicator for bank failure between 2009 and 2015. The L/D ratio in 2007 is a strong predictor across all specifications (Columns 2–3), with economically large and highly significant coefficients. By contrast, the Tier 1 capital ratio (Column 1) is not significant. Moreover, the model fit (area under the ROC curve, "AUC") increases markedly when including the L/D ratio. Specifically, the model achieves an AUC of 0.83 (column 2) and 0.86 (column 3). This suggests that the L/D ratio is indeed a reliable ex-ante measure of bank weakness.

More tellingly, deposit flows themselves predict failures in ways that validate our main findings. Banks that experienced deposit outflows in 2008:Q3—during the limited insurance regime—were more likely to subsequently fail (Column 4). However, banks that experienced deposit inflows in 2008:Q4—after guarantees were expanded—were also more likely to fail

(Column 6). Columns 7 and 8 confirm this pattern using predicted deposit flows based on banks' L/D ratios: the same reversal emerges when examining how L/D-predicted deposit flows relate to subsequent failures. This stark reversal reinforces our argument: depositors disciplined weak banks when coverage was limited, but this disciplinary mechanism was eliminated under unlimited insurance, allowing weak banks to attract deposits.

6 Bank Lending After the Deposit Insurance Reforms

In earlier sections, we find that weak banks lost uninsured deposits when deposit insurance was limited and gained deposits with unlimited coverage. An important question is how these altered deposit flows affected weak banks' lending behavior. We examine credit allocation by weak banks, focusing on lending to firms that would eventually default. This analysis explores a potentially important distortion from expanding deposit insurance: whether weaker banks channeled funds towards lower-quality borrowers once their funding constraints eased (Hsieh and Klenow 2009, Acharya et al. 2022).

Our empirical strategy compares lending by banks with different pre-crisis L/D ratios to the same borrower within the same period (Khwaja and Mian 2008). By restricting to multi-bank borrowers and including borrower fixed effects, we isolate supply-side variation in credit while controlling for all firm-specific credit demand. Specifically, we estimate:

$$\Delta \log(\text{Credit})_{bf} = \alpha_f + \beta_1 \text{Loan/Deposit}_{b,2007} + \beta_2 (\text{Loan/Deposit}_{b,2007} \times \text{Defaulting Firm}_f) + \gamma X_b + \epsilon_{bf} \,. \tag{5}$$

The dependent variable represents the change in lending by bank b to firm f from 2007 to 2008 (during limited deposit insurance) or from 2008 to 2009 (after insurance became unlimited). Our key explanatory variable is the bank's L/D ratio measured in 2007. The interaction term with the defaulting firm indicator tests whether banks with higher L/D ratios adjusted credit differently to firms that eventually defaulted between 2009 and 2015. Table A.4 confirms that defaulting firms were significantly weaker across observable characteristics, including size, leverage, profitability, and productivity. Later in the section, we also examine the lending rates

charged by banks to these firms.

Table 9 presents the regression results. Columns (3) and (4) examine lending to firms that subsequently defaulted between 2009 and 2015. In 2008 (Column 3), when funding pressures were acute and deposit insurance remained capped, the interaction term is negative and significant (-0.04), indicating that high L/D banks curtailed lending to riskier borrowers. A one standard deviation increase in the L/D ratio (0.39) is associated with a 1.6 percentage point larger decline in lending to defaulting firms (-0.04×0.39). In 2009 (Column 4), following the introduction of unlimited deposit insurance, this pattern reverses: the interaction term becomes positive and significant (0.05), suggesting that these same banks reallocated credit toward borrowers who would ultimately default. A one standard deviation increase in the L/D ratio is associated with a 1.9 percentage point larger increase in lending to defaulting firms. This reversal is consistent with a shift in behavior induced by relaxed funding constraints. Columns (5) and (6) confirm these patterns remain robust after adding bank fixed effects.

Risk Pricing in Bank Lending. Beyond changes in credit volumes, we examine whether banks with higher L/D ratios adjusted loan pricing when allocating credit to riskier borrowers. Table 10 reports results with loan interest rates as the dependent variable. In Column (3), we find no differential lending rate for defaulting firms in 2008. However, in 2009 (Column 4), the interaction term becomes negative and significant, indicating that banks with higher L/D ratios actually charged lower rates to firms that would later default. Columns (5) and (6), which include bank fixed effects, confirm that the negative interaction persists but is no longer statistically significant. The finding that weaker firms received cheaper credit in 2009 reinforces the view that credit standards declined with unlimited deposit insurance coverage.[19]

6.1 The Role of Uninsured Funding

To further explore how the deposit insurance reform affected bank lending, we examine whether banks with higher shares of uninsured deposits exhibited stronger responses. Since these

[19] Appendix Tables A.8 and A.9 replicate our lending volume and pricing results using a failing bank indicator instead of the L/D ratio, with similar findings.

banks experienced the most pronounced changes in funding dynamics when coverage became unlimited, they allow us to better understand how the expansion of deposit insurance influenced credit allocation. Table 11 reports the results. In Column (3), we find that the interaction between uninsured share and defaulting firm is negative and significant, showing that in 2008, banks with higher pre-crisis shares of uninsured deposits cut lending more to firms that would later default. However, this pattern reverses in Column (4): by 2009, the interaction becomes positive and significant, suggesting that banks with higher pre-crisis uninsured deposit shares increased lending to defaulting firms once insurance coverage was expanded. Columns (5) and (6), which introduce bank fixed effects, further confirm this shift.

A similar pattern emerges in loan pricing. Table A.5 in the appendix explores how banks with different pre-crisis uninsured deposit shares priced loans to defaulting firms. In 2008 (Column 3), the interaction between defaulting firm and uninsured share is negative but insignificant, implying no meaningful difference in lending rates. By 2009 (Column 4), however, the interaction becomes negative and significant. This suggests that banks with higher pre-crisis uninsured deposit shares extended more credit to risky borrowers in 2009 and did so at lower rates—further eroding credit standards.

To assess how deposit insurance expansion altered lending behavior at banks with higher L/D ratios, we estimate a triple interaction specification that jointly considers weak banks (*L/D ratio*), funding fragility (*share of uninsured deposits*), and borrower risk (*firm default*). Table 12 reports results. In Column (1), the coefficient on the double interaction term—*Uninsured share* × *L/D ratio*—is negative and statistically significant in 2008, consistent with the interpretation that banks with higher L/D ratios and higher share of uninsured deposits cut back credit more sharply when deposit insurance was limited. However, in 2009 (Column 2), the coefficient on the interaction turns positive and statistically insignificant. This suggests that the deposit insurance expansion relaxed the binding constraint that previously disciplined credit growth. A t-test confirms that the interaction coefficient differs significantly between 2008 and 2009.

Columns (3) and (4) introduce the triple interaction term—*Defaulting firm* × *Uninsured share* × *L/D ratio*. In 2008 (Column 3), the coefficient is negative but insignificant (-0.61). However,

by 2009 (Column 4), it becomes large and marginally significant (2.34, p-value = 0.12), indicating that banks with higher L/D ratios and higher shares of uninsured deposits increased credit supply toward borrowers that would ultimately default. A t-test shows that the 2009 triple interaction coefficient is significantly larger than the 2008 coefficient, despite moderate correlation between the uninsured share and the L/D ratio.

We validate these findings with two robustness checks. First, we split the sample by banks' 2007 uninsured deposit share, comparing institutions with above- and below-median reliance on uninsured funding (Appendix Table A.6). For high uninsured banks, the *L/D* × *Defaulting firm* interaction is negative and significant in 2008 but turns positive and significant in 2009. A t-test shows the 2009 coefficient is significantly larger (1-sided pp p = 0.01). Low uninsured banks show no such shift, and results remain robust with bank fixed effects.

Second, restricting our sample to banks with above-median uninsured deposit shares in 2007 (Appendix Table A.7) confirms that the *L/D* × *Defaulting firm* interaction becomes strongly positive and significant in 2009, while remaining insignificant in 2008. Both robustness checks confirm that the documented shift in credit allocation by high L/D banks towards defaulting firms is driven by banks most directly affected by the deposit insurance expansion.

Altogether, these results show that in 2008, weaker banks with higher shares of uninsured deposits curtailed lending to defaulting firms when facing deposit withdrawals under limited insurance coverage. In 2009, after the coverage was expanded, the same institutions reversed course—expanding credit to firms that defaulted ex-post. This reversal suggests that the deposit insurance reform reduced the effectiveness of market discipline and led weaker banks to channel more credit to firms that ultimately failed.

7 Conclusion

This paper studies how increasing deposit insurance coverage during a crisis affects deposit and credit allocation. For identification, we exploit Denmark's transition from limited to unlimited deposit insurance during the Global Financial Crisis. Using comprehensive adminis-

trative data, we establish a causal relationship between deposit insurance coverage and the allocation of deposits. During the crisis when deposit insurance was limited, individual depositors imposed market discipline on weaker banks through withdrawals, especially of uninsured deposits. When insurance became unlimited later in the crisis, this discipline mechanism broke down as deposits disproportionately flowed toward weaker banks. The credit effects mirrored these deposit patterns: weaker banks initially curtailed lending to riskier firms—firms that ex-post defaulted—when facing deposit withdrawals under limited coverage. However, they expanded lending to such firms once deposit insurance became unlimited without charging higher rates. We also find that many of the high loan-to-deposit banks that benefited most from the expanded deposit insurance coverage eventually failed.

Our analysis provides empirical support for theoretical models emphasizing how deposit insurance affects market discipline and the disproportionate benefit accruing to weaker banks from increasing deposit insurance limits. This trade-off has significant implications for financial stability and resource allocation. While higher coverage effectively prevents short-term bank fragility, it simultaneously allows weaker banks to persist and continue financing firms of lower quality that ex-post default. These results suggest that increasing deposit insurance coverage can prolong the survival of fundamentally unsound banks and firms.

These findings contribute to our understanding of optimal deposit insurance design, particularly regarding appropriate coverage limits (Dávila and Goldstein 2023). By demonstrating how coverage limits affect depositor discipline on weaker banks and the subsequent allocation of credit to lower-quality firms, our work informs the ongoing policy debate on deposit insurance design. Policymakers must carefully calibrate coverage limits to balance financial stability with maintaining effective market discipline.

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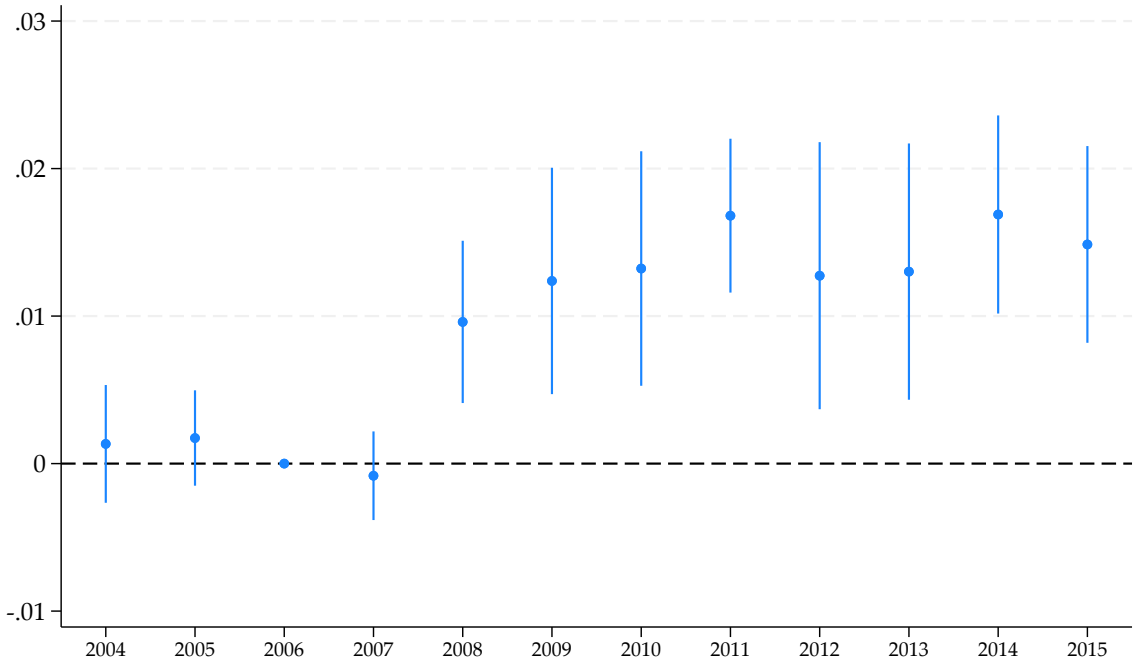
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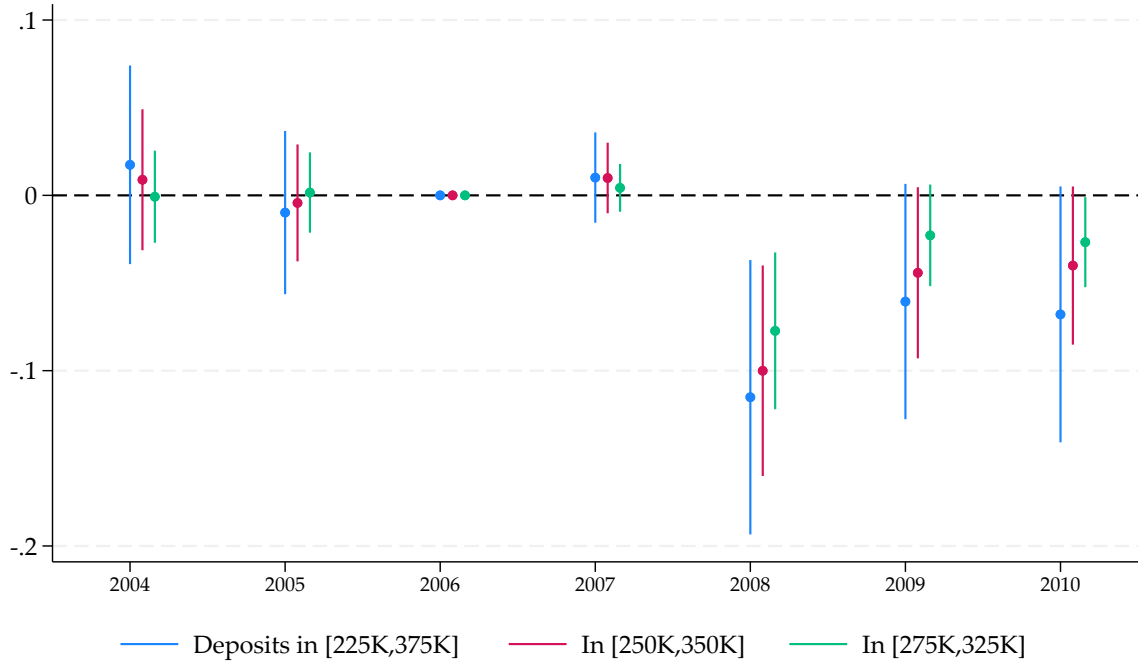
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Figure 1: Loan Losses and Pre-Crisis Loan-to-Deposit Ratios



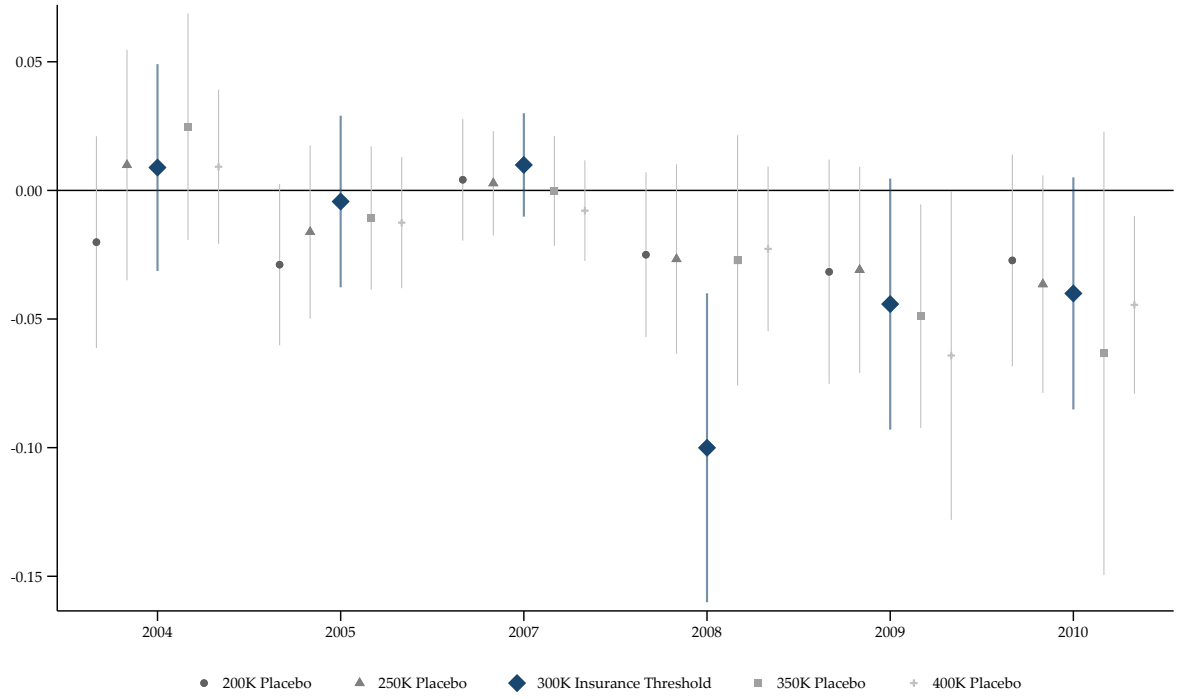
Notes: This figure presents coefficient estimates and 95% confidence intervals from bank-level panel regressions of loan losses (scaled by total assets) on banks' loan-to-deposit ratios measured in 2007, interacted with year indicators. The specification includes control variables measured in 2007 (tier-1 capital ratio, log assets, and an indicator for the six largest banks), each interacted with year indicators. The regression includes bank and year fixed effects. Standard errors are clustered at the bank level.

Figure 2: Deposit Growth Around the Insurance Threshold



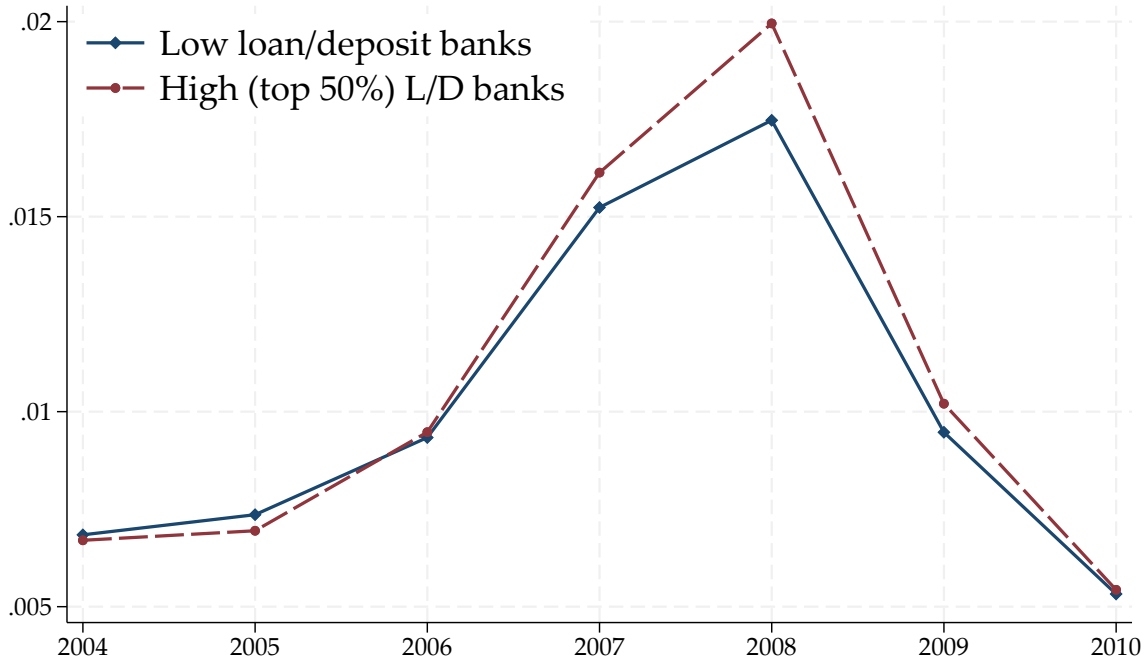
Notes: This figure presents coefficient estimates and 95% confidence intervals from the triple interaction terms ($\eta_t \times \text{Above300}_{kt} \times \text{Loan/Deposit}_{b,2007}$) in bank-account level regressions. The dependent variable is the logarithm of deposit amounts in 25,000 DKK bins. Above300K is an indicator equal to one for deposit bins exceeding the 300,000 DKK insurance threshold. The analysis focuses on narrow deposit ranges around the threshold (225,000-375,000 DKK, 250,000-350,000 DKK, and 275,000-325,000 DKK) to isolate the causal effect of deposit insurance changes. The regression includes bank-by-year and bin-by-year fixed effects. Standard errors are clustered at the bank level.

Figure 3: Placebo Tests: Deposit Growth Around Placebo Thresholds



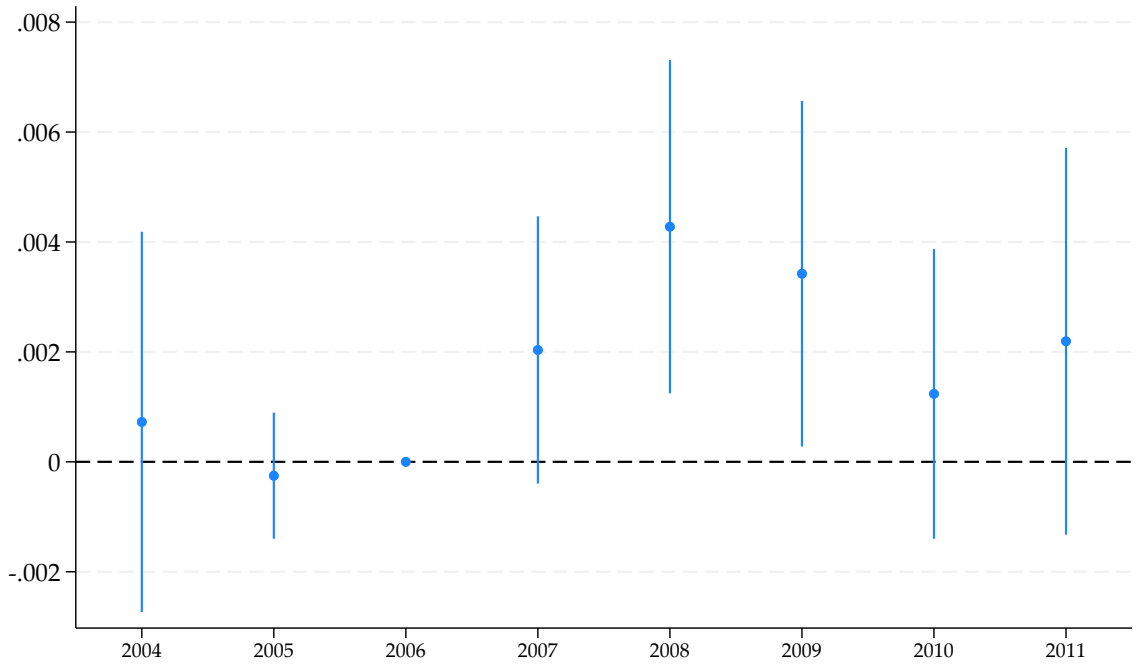
Notes: This figure presents coefficient estimates and 95% confidence intervals from dynamic regression models examining deposit growth around various account balance thresholds. The figure depicts the triple interaction terms ($\eta_t \times \text{Above } Z_{kt} \times \text{Loan/Deposit}_{b,2007}$) from bank-account level regressions, which capture how the differential growth in deposits above versus below threshold Z varies across banks with different loan-to-deposit ratios in 2007. The dependent variable is the logarithm of deposits in 25,000 DKK bins, with the analysis focusing on deposit changes within 50,000 DKK ranges surrounding each threshold. The 300,000 DKK threshold (blue diamonds) represents the actual deposit insurance coverage limit. The remaining thresholds (200K, 250K, 350K, and 400K DKK; gray symbols) serve as placebo tests. Each regression includes bank-by-year and bin-by-year fixed effects. Standard errors are clustered at the bank level.

Figure 4: Retail Deposit Rates: High vs. Low Loan-to-Deposit Banks



This figure plots the average interest rates on retail deposits for banks with high and low loan-to-deposit ratios over time. Banks are classified based on their 2007 loan-to-deposit ratios, with "High Loan/Deposit Banks" representing banks above the median and "Low Loan/Deposit Banks" representing banks below the median.

Figure 5: Loan-to-Deposit Ratios and Deposit Rates



Notes: This figure presents coefficient estimates and 95% confidence intervals from the double interaction terms ($\eta_t \times \text{Loan/Deposit}_{b,2007}$) in bank-level regressions. The dependent variable is banks' average interest rate on retail deposits. Control variables measured in 2007 (tier-1 capital ratio, log assets, and an indicator for the six largest banks) are interacted with year indicators. The regression includes bank and year fixed effects. Standard errors are clustered at the bank level.

Table 1: Descriptive Statistics

	Mean	SD	p10	p50	p90
Panel A. Banks					
Total assets (bn DKK)	57.40	343.97	0.59	4.19	32.47
Total deposits (bn DKK)	18.38	100.34	0.34	1.94	14.64
Total retail deposits (bn DKK)	5.69	21.75	0.23	1.12	6.03
Interest rate on retail deposits	0.02	0.01	0.01	0.01	0.03
Share of uninsured retail deposits	0.37	0.15	0.25	0.34	0.46
Share of uninsured retail depositors	0.06	0.05	0.03	0.05	0.07
Loan/deposit ratio	1.17	0.39	0.64	1.14	1.76
T1 capital ratio (%)	12.91	4.99	7.85	11.65	19.25
Avg credit growth '04-'07	0.25	0.09	0.13	0.26	0.39
Panel B. Firms					
Average loan size (m DKK)	3.13	23.98	0.00	0.33	4.89
Average loan rate	0.07	0.04	0.02	0.06	0.12
Sales (m DKK)	52.02	716.87	1.88	7.86	62.83
Number of employees	28.62	252.82	2.00	8.00	42.00

Notes: This table provides descriptive statistics measured in December 2007. Panel A and Panel B report the characteristics of banks and firms, respectively.

Table 2: Loan-to-Deposit Ratios and Bank Characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Outcome: Loan/deposit 2007									
Total assets (log)	0.122***								0.008
	(0.0217)								(0.0454)
T1 capital ratio		-0.030**							-0.016
		(0.0122)							(0.0151)
Avg credit growth '04-'07			1.875***						1.221***
			(0.4587)						(0.4321)
Interbank debt (log)				0.072***					0.049**
				(0.0089)					(0.0201)
Real-estate credit share					0.325				0.179
					(0.2128)				(0.1727)
Loan losses '08-'15/Capital '07						0.265***			0.037
						(0.0581)			(0.0732)
Bank defaults b/t '09-'15							0.189*		0.129
							(0.1119)		(0.0802)
Top-6 bank								0.196	0.004
								(0.1215)	(0.1804)
Observations	89	89	86	84	86	85	89	89	76
R2	0.25	0.16	0.21	0.37	0.04	0.21	0.05	0.02	0.58

Notes: This table presents regression coefficients from cross-sectional regressions of banks' loan-to-deposit ratios in 2007 on various bank characteristics. Explanatory variables include: the logarithm of bank assets; the Tier 1 capital divided by risk-weighted assets; the average annual growth rate in loans from 2004 to 2007; the logarithm of interbank debt; the proportion of the loan portfolio allocated to firms in the real estate and construction industries; cumulative loan losses during 2008-2015 scaled by 2007 capital; an indicator for banks that defaulted between 2009 and 2015; and an indicator for the six largest banks by total assets. All explanatory variables are measured as of 2007 unless otherwise noted. Robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Liquidity Stress and Loan-to-Deposit Ratios in 2008Q3 and 2008Q4

Outcome: Quarterly change in logs	Total liquidity		Total deposits		Deposit rate	
	(1)	(2)	(3)	(4)	(5)	(6)
	2008-q3	2008-q4	2008-q3	2008-q4	2008-q3	2008-q4
Loan/deposit 2007 (de-meaned)	-0.109**	0.287***	-0.089*	0.245***	0.004**	-0.016***
	(0.051)	(0.100)	(0.045)	(0.056)	(0.002)	(0.003)
Observations	86	84	75	83	67	70
R2	0.19	0.20	0.26	0.45	0.32	0.36
Bank controls	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table presents the results from estimating a cross-sectional regression of quarterly changes in bank-level outcomes on loan-to-deposit ratios measured in 2007. Bank controls include banks' total assets and tier-1 capital ratio measured in 2007. Robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Individual Withdrawal Behavior

Outcome: Δ (log) Deposits	Individuals with 2+ banks				
	2008				2009
	(1)	(2)	(3)	(4)	(5)
Loan/deposit 2007 (de-meaned)	-0.044**	-0.046**	-0.035**		
	(0.017)	(0.018)	(0.016)		
Above 300K		-0.522***	-0.504***	-0.507***	-0.285***
		(0.027)	(0.025)	(0.026)	(0.013)
Loan/deposit 2007 (de-meaned) X Above 300K			-0.182**	-0.187**	0.059**
			(0.071)	(0.072)	(0.026)
Observations	1,776,698	1,776,698	1,776,698	1,776,698	1,622,053
R2	0.46	0.47	0.47	0.47	0.46
Individual FE	Yes	Yes	Yes	Yes	Yes
Bank controls	Yes	Yes	Yes		
Bank FE				Yes	Yes

Notes: This table presents regression results where the dependent variable is the change in the logarithm of deposits at the individual-bank level from 2007 to 2008 (columns 1-4) or from 2008 to 2009 (column 5). Loan/deposit 2007 is the bank's (de-meaned) loan-to-deposit ratio measured at the end of 2007. Above 300K is an indicator equal to one if the individual's deposits at the bank exceeded the deposit insurance limit of DKK 300,000 in the previous year. We restrict the sample to individuals with deposits at multiple banks, allowing us to include individual fixed effects to exploit within-individual variation in deposit changes. Columns 4 and 5 include bank fixed effects. Specifications without bank fixed effects (columns 1-3) include controls for bank characteristics measured in 2007: bank size (log assets), tier-1 capital ratio, and an indicator for the six largest banks. Standard errors in parentheses are double clustered at the individual and bank level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 5: Heterogeneity in Individual Withdrawal Behavior: Depositor Wealth

Outcome: Δ (log) Deposits	Individuals with 2+ banks	
	Year: 2008	Year: 2009
	(1)	(2)
Loan/deposit 2007 (de-meaned) X Wealth (DKK 1m) X Above 300K	-0.001***	0.001*
	(0.000)	(0.001)
Loan/deposit 2007 (de-meaned) X Above 300K	-0.178**	0.050**
	(0.069)	(0.023)
Wealth (DKK 1m) X Above 300K	-0.000	-0.002***
	(0.000)	(0.001)
Loan/deposit 2007 (de-meaned) X Wealth (DKK 1m)	0.001**	-0.001**
	(0.000)	(0.000)
Above 300K	-0.503***	-0.286***
	(0.026)	(0.014)
Observations	1,404,822	1,400,733
R2	0.47	0.46
Bank FE	Yes	Yes
Individual FE	Yes	Yes

Note: This table presents regression results where the dependent variable is the change in the logarithm of deposits at the individual-bank level from 2007 to 2008 (column 1) or from 2008 to 2009 (column 2). Loan/deposit 2007 is the bank's (de-meaned) loan-to-deposit ratio measured at the end of 2007. Above 300K is an indicator equal to one if the individual's deposits at the bank exceeded the deposit insurance limit of DKK 300,000 in the previous year. Wealth denotes the individual depositor's gross wealth measured in DKK 1 million in 2007. We restrict the sample to individuals with deposits at multiple banks and include individual fixed effects. All specifications include bank fixed effects. Standard errors in parentheses are double clustered at the individual and bank level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 6: Heterogeneity in Individual Withdrawal Behavior: Bank Uninsured share

Outcome: Δ (log) Deposits	Individuals with 2+ banks	
	2008	2009
	(1)	(2)
Loan/deposit 2007 (de-meaned) X Bank's uninsured deposit share 2007 X Above 300K	-1.479**	0.379**
	(0.564)	(0.162)
Loan/deposit 2007 (de-meaned) X Above 300K	0.582**	-0.076
	(0.247)	(0.082)
Bank's uninsured deposit share 2007 X Above 300K	-0.545**	-0.318***
	(0.212)	(0.120)
Above 300K	-0.245***	-0.155***
	(0.083)	(0.051)
Observations	1,766,963	1,778,282
R2	0.47	0.47
Bank FE	Yes	Yes
Individual FE	Yes	Yes

Notes: This table presents regression results where the dependent variable is the change in the logarithm of deposits at the individual-bank level from 2007 to 2008 (column 1) or from 2008 to 2009 (column 2). Loan/deposit 2007 is the bank's (de-meaned) loan-to-deposit ratio measured at the end of 2007. Above 300K is an indicator equal to one if the individual's deposits at the bank exceeded the deposit insurance limit of DKK 300,000 in the previous year. Bank's uninsured share denotes the share of uninsured deposits in the bank's total deposits measured in 2007. We restrict the sample to individuals with deposits at multiple banks and include individual fixed effects. All specifications include bank fixed effects. Standard errors in parentheses are double clustered at the individual and bank level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 7: Heterogeneity in Individual Withdrawal Behavior: Failed Banks

Outcome: Δ (log) Deposits	Individuals with 2+ banks	
	2008	2009
	(1)	(2)
Loan/deposit 2007 (de-meaned) X Failing X Above 300K	-0.808***	0.074
	(0.203)	(0.071)
Loan/deposit 2007 (de-meaned) X Above 300K	0.018	0.041
	(0.035)	(0.040)
Failing bank X Above 300K	0.045	-0.025
	(0.051)	(0.026)
Above 300K	-0.503***	-0.295***
	(0.026)	(0.014)
Observations	1,776,698	1,788,460
R2	0.47	0.47
Individual FE	Yes	Yes
Bank FE	Yes	Yes

Notes: This table presents regression results where the dependent variable is the change in the logarithm of deposits at the individual-bank level from 2007 to 2008 (column 1) or from 2008 to 2009 (columns 2). Failing bank is an indicator equal to one if the bank defaults at any point between 2009 and 2015. Loan/deposit 2007 is the bank's (de-meaned) loan-to-deposit ratio measured at the end of 2007. Above 300K is an indicator equal to one if the individual's deposits at the bank exceeded the deposit insurance limit of DKK 300,000 in the previous year. We include individual fixed effects to exploit within-individual variation in deposit changes and include bank fixed effects. Standard errors in parentheses are clustered at the individual level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 8: Predicting Bank Failures, 2009-2015

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Tier-1 capital ratio	-0.179							
	(0.125)							
Loan/deposit 2007			3.668***	3.780***				
			(0.935)	(1.161)				
Deposit growth 2008-q3					-7.129**			
					(3.335)			
Deposit growth 2008-q4						6.814***		
						(2.178)		
Predicted deposit growth 2008-q3							-37.533***	
							(11.134)	
Predicted deposit growth 2008-q4								17.512***
								(4.640)
Observations	90	90	90	90	75	83	75	83
Pseudo R2	0.07	0.11	0.23	0.26	0.08	0.12	0.21	0.24
AUC	0.73	0.73	0.83	0.86	0.70	0.71	0.81	0.83
Bank controls		Yes		Yes				

Notes: This table presents logit regression results where the dependent variable is an indicator equal to one if the bank defaults at any point between 2009 and 2015. Column 1 uses the tier-1 capital ratio measured in December 2007 as the predictor. Column 2 includes all bank controls (tier-1 capital ratio, log assets, and an indicator for the six largest banks) but does not report individual coefficients. Columns 3-4 use the loan-to-deposit ratio measured in December 2007 as the predictor. Columns 5-6 use the bank's total deposit growth (including both real and corporate deposits) in 2008-Q3 (column 5) and 2008-Q4 (column 6) as predictors. Columns 7-8 use predicted deposit growth as predictors, where predicted values are obtained by first regressing actual quarterly deposit growth in 2008-Q3 (column 7) or 2008-Q4 (column 8) on banks' 2007 loan-to-deposit ratios, then using the estimated coefficients to predict deposit growth for each bank based on their 2007 loan-to-deposit ratio. AUC refers to the area under the receiver operating characteristic curve, measuring the model's discriminatory power. Robust standard errors are reported in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 9: Lending and Borrower Default Risk

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable: Δ log credit	2008	2009	2008	2009	2008	2009
Loan/deposit 2007 (de-meaned)	-0.04***	-0.03***	-0.10**	-0.16***		
	(0.00)	(0.00)	(0.04)	(0.05)		
Loan/deposit 2007 (de-meaned) X Defaulting firm			-0.04**	0.05***	-0.04**	0.06***
			(0.02)	(0.02)	(0.02)	(0.02)
Observations	5,575	4,993	5,359	4,843	5,349	4,832
R2	0.49	0.49	0.49	0.49	0.51	0.50
Firm controls			Y	Y	Y	Y
Bank controls	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Bank FE					Y	Y

Notes: This table presents regression results where the dependent variable is the change in the logarithm of credit granted by bank b to firm f from 2007 to 2008 (odd columns) or from 2008 to 2009 (even columns). Loan/deposit 2007 is the bank's (de-meaned) loan-to-deposit ratio measured at the end of 2007. Defaulting firm is an indicator equal to one if the firm defaults between 2009 and 2015. All specifications include interacted bank controls and firm fixed effects. Bank controls include bank size (log assets), tier-1 capital ratio, and an indicator for the six largest banks, all measured in 2007. Columns 3-4 control for firm size (log) in interactions with all bank-level controls. Standard errors in parentheses are double clustered at the bank and firm level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 10: Loan Pricing and Borrower Default Risk

Dependent Variable: Loan rate	(1) 2008	(2) 2009	(3) 2008	(4) 2009	(5) 2008	(6) 2009
Loan/deposit 2007 (de-meaned)	0.00***	0.00	-0.01***	-0.01***		
	(0.00)	(0.00)	(0.00)	(0.00)		
Loan/deposit 2007 (de-meaned) X Defaulting firm			-0.00	-0.00*	-0.00	-0.00
			(0.00)	(0.00)	(0.00)	(0.00)
Observations	7,866	7,152	7,520	6,891	7,509	6,883
R2	0.51	0.54	0.52	0.54	0.53	0.56
Firm controls			Y	Y	Y	Y
Bank controls	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Bank FE					Y	Y

Notes: This table presents regression results where the dependent variable is the interest rate on credit granted by bank b to firm f in 2008 (odd columns) or in 2009 (even columns). Loan/deposit 2007 is the bank's (de-meaned) loan-to-deposit ratio measured at the end of 2007. Defaulting firm is an indicator equal to one if the firm defaults between 2009 and 2015. All specifications include interacted bank controls and firm fixed effects. Bank controls include bank size (log assets), tier-1 capital ratio, and an indicator for the six largest banks, all measured in 2007. Columns 3-4 control for firm size (log) in interactions with all bank-level controls. Standard errors in parentheses are double clustered at the bank and firm level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 11: Uninsured deposit share X Borrower Default Risk

Dependent Variable: Δ log credit	(1) 2008	(2) 2009	(3) 2008	(4) 2009	(5) 2008	(6) 2009
Uninsured deposit share (2007, de-meaned)	-0.48***	-0.30***	-0.78	-1.65***		
	(0.04)	(0.06)	(0.56)	(0.54)		
Defaulting firm X Uninsured share			-0.38**	0.56***	-0.42**	0.56***
			(0.18)	(0.21)	(0.18)	(0.20)
Observations	5,575	4,993	5,359	4,843	5,349	4,832
R2	0.49	0.49	0.49	0.49	0.51	0.50
Bank controls	Y	Y	Y	Y	Y	Y
Firm controls			Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Bank FE					Y	Y

Notes: This table presents regression results where the dependent variable is the change in the logarithm of credit granted by bank b to firm f from 2007 to 2008 (odd columns) or from 2008 to 2009 (even columns). Uninsured deposit share 2007 is the bank's (de-meaned) share of uninsured deposits in total deposits, measured at the end of 2007. Defaulting firm is an indicator equal to one if the firm defaults between 2009 and 2015. All specifications include interacted bank controls and firm fixed effects. Bank controls include bank size (log assets), tier-1 capital ratio, and an indicator for the six largest banks, all measured in 2007. Columns 3-4 control for firm size (log) in interactions with all bank-level controls. Standard errors in parentheses are double clustered at the bank and firm level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 12: Loan/deposit X Uninsured deposit share X Borrower Default Risk

Dependent Variable: Δ log credit	(1) 2008	(2) 2009	(3) 2008	(4) 2009
Uninsured share X Loan/deposit 2007	-0.69**	0.42		
	(0.34)	(0.32)		
Uninsured deposit share (2007, de-meaned)	0.53	-1.69		
	(1.07)	(1.11)		
Loan/deposit 2007	-0.03	-0.45		
	(0.55)	(0.52)		
Defaulting firm X Uninsured share X Loan/deposit 2007			-0.61	2.34†
			(1.70)	(1.54)
Defaulting firm X Uninsured share			0.79	-4.01
			(3.14)	(2.84)
Loan/deposit 2007 X Defaulting firm			0.17	-3.93
			(3.53)	(2.93)
Observations	5,359	4,843	5,349	4,832
R2	0.49	0.49	0.51	0.50
Diff. int. term 09-08		1.10		2.96
Diff: SE		0.47		2.29
Diff: t-stat		2.37		1.29
p-value (2-sided)		0.02		0.20
p-value (1-sided)		0.01		0.10
Firm controls	Y	Y	Y	Y
Bank controls	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Bank FE			Y	Y

Notes: This table presents regression results where the dependent variable is the change in the logarithm of credit granted by bank b to firm f from 2007 to 2008 (odd columns) or from 2008 to 2009 (even columns). Uninsured deposit share 2007 is the bank's (de-meaned) share of uninsured deposits in total deposits, measured at the end of 2007. Loan/deposit 2007 is the bank's loan-to-deposit ratio measured at the end of 2007. Defaulting firm is an indicator equal to one if the firm defaults between 2009 and 2015. All specifications include interacted bank controls (log assets, tier-1 capital ratio, and an indicator for the six largest banks) and firm controls (log assets), as well as firm fixed effects. The reported difference statistics test whether the interaction coefficients in 2009 differ significantly from their 2008 counterparts: columns (1) and (2) test whether the Uninsured share × Loan/deposit 2007 coefficient changed between periods, while columns (3) and (4) test the change in the Defaulting firm × Uninsured share × Loan/deposit 2007 triple interaction. Standard errors in parentheses are double clustered at the bank and firm level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$, $^{\dagger}p < 0.13$.

Appendix A Additional Tables

Table A.1: Pre-Crisis Loan Portfolio and Bank Loan-to-Deposit Ratio

Outcome:	Period: 2004-2007					
	TFP			**Real-estate firm**		
	(1)	(2)	(3)	(4)	(5)	(6)
Loan / deposit 2007	-0.64**	-0.57***	-0.59***	0.05***	0.07***	0.07***
	(0.27)	(0.22)	(0.22)	(0.02)	(0.02)	(0.01)
Observations	330	330	330	330	330	330
R2	0.02	0.03	0.04	0.06	0.11	0.15
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Bank controls		Yes	Yes		Yes	Yes
Control: Top-6 bank			Yes			Yes

Notes: This table presents the results from regressing bank-level TFP (columns 1-3) and bank-level share of lending to the real-estate sector (columns 4-6) on loan to deposits over 2004-2007. Bank controls include banks' total assets and tier-1 capital ratio measured in 2007. We also include a control for the top-6 banks, which are the six banks with largest total assets in 2007. We report robust standard errors in parenthesis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.2: Deposit Growth Around the Insurance Threshold: Regression Coefficients

	(1) Deposits in [225K,375K]	(2) Deposits in [250K,350K]	(3) Deposits in [275K,325K]
Above 300K x Loan/deposit 2007 (de-meaned)	0.06**	0.04*	0.02*
	(0.03)	(0.02)	(0.01)
2004 X Above 300K X Loan/deposit 2007 (de-meaned)	0.02	0.01	-0.00
	(0.03)	(0.02)	(0.01)
2005 X Above 300K X Loan/deposit 2007 (de-meaned)	-0.01	-0.00	0.00
	(0.02)	(0.02)	(0.01)
2007 X Above 300K X Loan/deposit 2007 (de-meaned)	0.01	0.01	0.00
	(0.01)	(0.01)	(0.01)
2008 X Above 300K X Loan/deposit 2007 (de-meaned)	-0.12***	-0.10***	-0.08***
	(0.04)	(0.03)	(0.02)
2009 X Above 300K X Loan/deposit 2007 (de-meaned)	-0.06*	-0.04*	-0.02
	(0.03)	(0.02)	(0.01)
2010 X Above 300K X Loan/deposit 2007 (de-meaned)	-0.07*	-0.04*	-0.03**
	(0.04)	(0.02)	(0.01)
Observations	3,468	2,312	1,156
R2	1.00	1.00	1.00
Bank FEs	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes
Bank-year FE	Yes	Yes	Yes
Range-year FE	Yes	Yes	Yes

Notes: This table presents the complete set of coefficient estimates from the triple interaction terms ($\eta_t \times \text{Above300}_{kt} \times \text{Loan/Deposit}_{b,2007}$) in bank-account level regressions illustrated graphically in Figure 2. The dependent variable is the logarithm of deposit amounts in 25,000 DKK bins. Above300K is an indicator equal to one for deposit bins exceeding the 300,000 DKK insurance threshold. Column (1) focuses on deposits in the 225,000-375,000 DKK range. Column (2) restricts the sample to deposits in the 250,000-350,000 DKK range, and column (3) focuses on the 275,000-325,000 DKK range. The regression includes bank-by-year and bin-by-year fixed effects. Standard errors are clustered at the bank level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A.3: Individual Depositor Behavior: Failed Banks

Outcome: Δ (log) Deposits	Individuals with 2+ banks			
	2008		2009	
	(1)	(2)	(3)	(4)
Defaulting bank (2009-2015)	-0.030		-0.077**	
	(0.019)		(0.034)	
Above 300K		-0.501***		-0.292***
		(0.026)		(0.016)
Defaulting bank X Above 300K		-0.241***		0.013
		(0.068)		(0.022)
Observations	1,776,698	1,776,698	1,788,460	1,788,460
R2	0.46	0.47	0.46	0.47
Individual FE	Yes	Yes	Yes	Yes
Bank controls	Yes		Yes	
Bank FE		Yes		Yes

Notes: This table presents regression results where the dependent variable is the change in the logarithm of deposits at the individual-bank level from 2007 to 2008 (column 1) or from 2008 to 2009 (column 2). Defaulting bank is an indicator equal to one if the bank defaults at any point between 2009 and 2015. Above 300K is an indicator equal to one if the individual's deposits at the bank exceeded the deposit insurance limit of DKK 300,000 in the previous year. We restrict the sample to individuals with deposits at multiple banks and include individual fixed effects. All specifications include bank fixed effects. Standard errors in parentheses are double clustered at the individual and bank level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A.4: Descriptive Statistics Comparing Surviving vs Defaulting Firms

	Surviving firms			Defaulting firms ('09-'15)			Diff
	Mean	Std. Dev.	Median	Mean	Std. Dev.	Median	
Total assets (DKK m)	369.79	4,269.95	27.48	59.02	218.11	12.35	310.77***
Employees	113.15	799.30	22.00	37.35	67.83	15.00	75.80***
RoA	0.06	0.13	0.06	0.03	0.16	0.06	0.03**
Sales/Employment	6.95	17.26	3.85	5.41	6.27	3.54	1.53**
Leverage	0.70	0.17	0.72	0.76	0.13	0.77	-0.06***
TFP	0.36	0.44	0.41	0.39	0.38	0.45	-0.03
Equity/Assets	0.28	0.21	0.28	0.20	0.18	0.22	0.08***
Sales growth	0.33	1.44	0.09	0.46	1.86	0.06	-0.13
Value-added/Worker (DKK m)	0.63	0.45	0.51	0.51	0.32	0.47	0.12***
Sales/Assets	1.59	1.20	1.43	1.81	1.21	1.56	-0.23**
Real-estate firm	0.16	0.37	0.00	0.12	0.33	0.00	0.04
Avg. loan rate (loan size-weighted)	0.05	0.03	0.05	0.06	0.04	0.06	-0.01**
Z-score	7.76	12.33	5.09	3.73	4.93	2.55	4.02***
Zombie firm (bottom 10%)	0.01	0.10	0.00	0.05	0.21	0.00	-0.04**
N	2,365			147			2,512

Notes: This table provides descriptive statistics measured in December 2007 comparing firms that survive through 2015 versus those that default between 2009 and 2015. Total assets are measured in millions of DKK. RoA is return on assets, calculated as profits divided by total assets. Leverage is the ratio of total debt to total assets. TFP is total factor productivity estimated as revenue-based productivity following the framework in Gopinath et al. (2017). The Z-score measures financial stability as (RoA + Equity/Assets) divided by the within-firm standard deviation of RoA. Zombie firm is an indicator equal to one if a firm is simultaneously in the bottom 10% of both the Z-score and Sales/Employment distributions. The average loan rate is loan size-weighted across all bank relationships for each firm. Real-estate firm is an indicator for firms in the real estate sector. The "Diff" column reports t-statistics from tests of equality of means between surviving and defaulting firms. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A.5: Uninsured deposit share X Defaulting firm: Loan Pricing

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable: Loan rate	2008	2009	2008	2009	2008	2009
Uninsured deposit share (2007, de-meaned)	0.01***	0.00	-0.11***	-0.05*		
	(0.00)	(0.00)	(0.03)	(0.03)		
Defaulting firm X Uninsured share			-0.02	-0.03**	-0.02*	-0.02**
			(0.01)	(0.01)	(0.01)	(0.01)
Observations	7,866	7,152	7,520	6,891	7,509	6,883
R2	0.51	0.54	0.52	0.54	0.53	0.56
Bank controls	Y	Y	Y	Y	Y	Y
Firm controls			Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Bank FE					Y	Y

Notes: This table presents regression results where the dependent variable is the interest rate on credit granted by bank b to firm f from 2007 to 2008 (odd columns) or from 2008 to 2009 (even columns). Uninsured deposit share 2007 is the bank's (de-meaned) share of uninsured deposits in total deposits, measured at the end of 2007. Defaulting firm is an indicator equal to one if the firm defaults between 2009 and 2015. All specifications include interacted bank controls and firm fixed effects. Bank controls include bank size (log assets), tier-1 capital ratio, and an indicator for the six largest banks, all measured in 2007. Columns 3-6 control for firm size (log) in interactions with all bank-level controls. Standard errors in parentheses are double clustered at the bank and firm level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A.6: L/D X Defaulting firm, splitting L/D coef by uninsured share

Dependent Variable: Δ log credit	(1) 2008	(2) 2009	(3) 2008	(4) 2009	(5) 2008	(6) 2009
Loan/deposit 2007 (High uninsured deposit share '07)	-0.24***	-0.17***	-0.49	-0.98***		
	(0.05)	(0.04)	(0.37)	(0.34)		
Loan/deposit 2007 (Low uninsured deposit share '07)	-0.26***	-0.22***	-0.70	-1.65***		
	(0.07)	(0.06)	(0.52)	(0.50)		
Defaulting firm X Loan/deposit (High uninsured)			-0.22*	0.25*	-0.22*	0.30**
			(0.12)	(0.15)	(0.12)	(0.14)
Defaulting firm X Loan/deposit (Low uninsured)			-0.19	0.21	-0.18	0.36
			(0.20)	(0.22)	(0.22)	(0.22)
Observations	5,575	4,993	5,359	4,843	5,349	4,832
R2	0.49	0.49	0.49	0.49	0.51	0.50
Diff. int. term 09-08 (L)		0.05		0.40		0.54
Diff (L): SE		0.09		0.09		0.31
Diff (L): t-stat		0.51		4.46		1.75
p-value (L; 2-sided)		0.61		0.00		0.08
p-value (L; 1-sided)		0.30		0.00		0.04
Diff. int. term 09-08 (H)		0.07		0.47		0.52
Diff (H): SE		0.06		0.13		0.19
Diff (H): t-stat		1.01		3.70		2.80
p-value (H; 2-sided)		0.31		0.00		0.01
p-value (H; 1-sided)		0.16		0.00		0.00
Bank controls	Y	Y	Y	Y	Y	Y
Firm controls			Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Bank FE					Y	Y

Notes: This table presents regression results where the dependent variable is the change in the logarithm of credit granted by bank b to firm f from 2007 to 2008 (odd columns) or from 2008 to 2009 (even columns). Banks are split into two groups based on their share of uninsured deposits in 2007: high uninsured deposit share banks (above median) and low uninsured deposit share banks (below median). Loan/deposit 2007 is the bank's loan-to-deposit ratio measured at the end of 2007. Defaulting firm is an indicator equal to one if the firm defaults between 2009 and 2015. Columns (1)-(2) include only the main Loan/deposit 2007 terms for each bank group, while columns (3)-(6) add the interaction with the Defaulting firm indicator. The specification includes Loan/deposit 2007, the Defaulting firm indicator, and their interaction, with coefficients split by bank type while maintaining firm fixed effects. The difference statistics test whether the interaction coefficients differ significantly between 2008 and 2009 periods: "Diff. int. term 09-08 (L)" tests the change in the Defaulting firm × Loan/deposit coefficient for low uninsured deposit share banks, while "Diff. int. term 09-08 (H)" tests the same for high uninsured deposit share banks. Bank controls include bank size (log assets), tier-1 capital ratio, and an indicator for the six largest banks, all measured in 2007. Standard errors in parentheses are double clustered at the bank and firm level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A.7: L/D X Defaulting firm among banks with high share of uninsured deposits

Dependent Variable: Δ log credit	(1) 2008	(2) 2009	(3) 2008	(4) 2009	(5) 2008	(6) 2009
Loan/deposit 2007	-0.23***	-0.16***	-0.75*	-0.73**		
	(0.06)	(0.04)	(0.38)	(0.34)		
Loan/deposit 2007 X Defaulting firm			-0.15	0.41***	-0.16	0.45***
			(0.13)	(0.15)	(0.13)	(0.15)
Observations	4,786	4,280	4,610	4,152	4,607	4,150
R2	0.49	0.49	0.49	0.49	0.51	0.50
Diff. int. term 09-08				0.56		0.61
Diff: SE				0.20		0.20
Diff: t-stat				2.86		3.08
p-value (2-sided)				0.00		0.00
p-value (1-sided)				0.00		0.00
Bank controls	Y	Y	Y	Y	Y	Y
Firm controls			Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Bank FE					Y	Y

Notes: This table presents regression results where the dependent variable is the change in the logarithm of credit granted by bank b to firm f from 2007 to 2008 (odd columns) or from 2008 to 2009 (even columns). The sample is restricted to banks with above-median uninsured deposit shares in 2007. Loan/deposit 2007 is the bank's loan-to-deposit ratio measured at the end of 2007. Defaulting firm is an indicator equal to one if the firm defaults between 2009 and 2015. Columns (1)-(2) include only the main Loan/deposit 2007 term, while columns (3)-(6) add the interaction with the Defaulting firm indicator. The difference statistics test whether the Loan/deposit 2007 $\times$ Defaulting firm interaction coefficient changed significantly between 2008 and 2009: "Diff. int. term 09-08" reports the difference in the interaction coefficient (2009 minus 2008), along with its standard error, t-statistic, and p-values for both two-sided and one-sided tests. Bank controls include bank size (log assets), tier-1 capital ratio, and an indicator for the six largest banks, all measured in 2007. Standard errors in parentheses are double clustered at the bank and firm level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A.8: Lending and Borrower Default Risk: Failed Banks

Dependent Variable: Δ log credit	(1) 2008	(2) 2009	(3) 2008	(4) 2009	(5) 2008	(6) 2009
Defaulting bank (2009-2015)	-0.16***	-0.12***	-0.19	-0.70***		
	(0.03)	(0.02)	(0.23)	(0.20)		
Defaulting firm X Defaulting bank			-0.14*	0.21**	-0.15*	0.24***
			(0.08)	(0.08)	(0.08)	(0.08)
Observations	5,575	4,993	5,359	4,843	5,349	4,832
R2	0.49	0.49	0.49	0.49	0.51	0.50
Bank controls	Y	Y	Y	Y	Y	Y
Firm controls			Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Bank FE					Y	Y

Notes: This table presents regression results where the dependent variable is the change in the logarithm of credit granted by bank b to firm f from 2007 to 2008 (odd columns) or from 2008 to 2009 (even columns). Defaulting bank (2009-2015) is an indicator equal to one if the bank defaults at any point between 2009 and 2015. Defaulting firm is an indicator equal to one if the firm defaults between 2009 and 2015. Columns (1)-(2) include only the main Defaulting bank term, while columns (3)-(6) add the interaction with the Defaulting firm indicator. The specification examines whether banks that eventually fail reduce credit differently to firms that will also fail, capturing potential complementarities between bank distress and borrower risk. Columns (3)-(4) include firm controls in addition to bank controls, while columns (5)-(6) add bank fixed effects. Bank controls include bank size (log assets), tier-1 capital ratio, and an indicator for the six largest banks, all measured in 2007. Standard errors in parentheses are double clustered at the bank and firm level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A.9: Loan Pricing and Borrower Default Risk: Failed Banks

Dependent Variable: Loan rate	(1) 2008	(2) 2009	(3) 2008	(4) 2009	(5) 2008	(6) 2009
Defaulting bank (2009-2015)	0.00**	0.00	-0.04***	-0.02		
	(0.00)	(0.00)	(0.01)	(0.01)		
Defaulting firm X Defaulting bank			-0.01	-0.01*	-0.01	-0.01
			(0.00)	(0.00)	(0.00)	(0.00)
Observations	7,866	7,152	7,520	6,891	7,509	6,883
R2	0.51	0.54	0.52	0.54	0.53	0.56
Bank controls	Y	Y	Y	Y	Y	Y
Firm controls			Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Bank FE					Y	Y

Notes: This table presents regression results where the dependent variable is the loan interest rate charged by bank b to firm f in 2008 (odd columns) or in 2009 (even columns). Defaulting bank (2009-2015) is an indicator equal to one if the bank defaults at any point between 2009 and 2015. Defaulting firm is an indicator equal to one if the firm defaults between 2009 and 2015. Columns (1)-(2) include only the main Defaulting bank term, while columns (3)-(6) add the interaction with the Defaulting firm indicator. The specification examines whether banks that eventually fail price loans differently to firms that will also fail. Columns (3)-(4) include firm controls in addition to bank controls, while columns (5)-(6) add bank fixed effects. Bank controls include bank size (log assets), tier-1 capital ratio, and an indicator for the six largest banks, all measured in 2007. Standard errors in parentheses are double clustered at the bank and firm level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.