CREDIT SUPPLY IN THE WAKE OF DISTRESSED BANK ACQUISITIONS

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Abstract

This paper examines the credit supply effects of sale-of-business (SoB) bank resolutions under the post-global financial crisis regulatory framework, focusing on the resolution of a major Spanish bank. We provide the first micro-level evidence of how SoB resolution reshapes credit allocation. The acquiring bank preserved lending relationships, prioritizing support for riskier inherited borrowers most exposed to retrenchment by competing banks. This stabilization occurred despite tighter capital constraints, as the acquiring bank strategically reallocated credit within its broader portfolio, shifting away from more capital-intensive exposures. By preserving credit and real outcomes for inherited borrowers, the SoB resolution illustrates the potential of this tool to limit disruptions to the real economy, contingent on the acquirer's strategic aligment and capital capacity. Our findings highlight the interplay between franchise-preservation incentives and capital constraints in shaping credit reallocation during bank resolutions.

Keywords: bank resolution, resolution tools, sale-of-business tool, credit supply.

JEL classification: G01, G21, G28, G32.

Resumen

Este documento examina los efectos sobre la oferta de crédito de las resoluciones bancarias mediante venta de negocio *(sale of business,* SoB) en el marco regulatorio posterior a la crisis financiera global, centrándose en la resolución de un banco español de gran tamaño. Aportamos la primera evidencia basada en microdatos sobre cómo una resolución mediante SoB afecta a la asignación del crédito. Los resultados muestran que el banco adquirente preservó las relaciones crediticias, priorizando el apoyo a los prestatarios de la entidad en resolución con un perfil de riesgo más elevado (que eran además los más expuestos a la contracción del crédito por parte del resto de entidades). Este apoyo a los prestatarios de la entidad en resolución se logró a pesar de unas condiciones de capital más restrictivas, ya que el banco adquirente reasignó el crédito dentro de su cartera agregada, reduciéndolo en exposiciones con mayor consumo de capital. Al preservar el crédito de este modo, la resolución mediante SoB pone de manifiesto el potencial de este instrumento para limitar las perturbaciones sobre la economía real, siempre que exista una adecuada alineación estratégica por parte del adquirente y una capacidad de capital suficiente. Nuestros resultados destacan cómo los incentivos para preservar la franquicia adquirida y las restricciones de capital condicionan conjuntamente la reasignación del crédito en los procesos de resolución bancaria.

Palabras clave: resolución bancaria, herramientas de resolución, herramienta de venta de negocio, oferta de crédito.

Códigos JEL: G01, G21, G28, G32.

1. Introduction

The establishment of a new toolkit to resolve distressed banks has been one of the cornerstone reforms to the post Global Financial Crisis (GFC) financial architecture (Acharya et al., 2024). These new resolution tools are designed to enable authorities to effectively manage bank failures without resorting to the public funds for bailouts, while simultaneously preventing contagion to other banks and the broader financial system. To achieve this objective, losses are proactively transferred to private stakeholders, either through the "bail-in tool" or the "transfer-of-business" tools.[1] As the private sector is more clearly on the hook to absorb losses, it raises questions about whether these new tools might generate other negative effects. While reducing publicly funded bailouts is expected to strengthen market discipline and mitigate moral hazard (e.g., Gropp et al., 2014), theoretical work predicts that it may also weaken credit supply following bank failures (e.g., Klimek et al. (2015); Colliard and Gromb (2024); Segura and Vicente (2019); Keister and Mitkov (2023); Walther and White (2023); Berger et al. (2022); Bernard et al. (2022)).[2] This contrasts with the positive impact on credit flows of bank bailouts (e.g., Mariathasan and Merrouche (2012); Brei et al. (2013); Giannetti and Simonov (2013); Homar and van Wijnbergen (2017)). Understanding how these new resolution tools affect credit supply is therefore central to assessing their overall economic impact.

Empirical evidence on the credit supply effects of the new resolution framework is still limited. This reflects both the novelty of the new framework and the scarcity of large bank failures resolved under the post-GFC architecture. In practice, no major bank failure has been resolved using the bail-in tool alone, and recent episodes, most notably the failure of Credit Suisse in 2023, highlight the challenges of relying exclusively on bail-in instruments to stabilize large institutions. As a

[1] Although the term "bail in" is often used to describe any write down of liabilities, under the post-GFC resolution frameworks such as the EU's Banking Recovery and Resolution Directive, the bail-in tool's definition is more stringent. Specifically, it is a tool to write down liabilities to a sufficient extent necessary to restore a bank's ability to comply with its authorization, continue performing its authorized activities and to sustain market confidence in the institution.

[2] That said, a large bank bankruptcy will likely trigger a sharper credit contraction, as underscored by the Lehamn Brothers demise (De Haas and Van Horen, 2012).

result, policymakers' attention has increasingly shifted toward transfer-of-business tools.

Resolution frameworks provide several instruments to transfer failed banks, including the sale-of-business (SoB) tool, bridge banks, and asset-separation mechanisms. While the impact on credit supply from the bridge-bank and asset separation tools has been studied in Beck et al. (2020) and Brei et al. (2023), respectively, there is no micro-level evidence on the credit supply impact on the new SoB tool. Based on the way authorities handled the crisis of Credit Suisse and First Republic Bank, two of the largest bank failures in recent years, the SoB appears to be a natural choice for resolution authorities when handling banking crises, not least because it can quickly stabilize the failing bank's business by drawing on the liquidity backstop and management expertise of the acquiring bank.[3]

Our study fills this gap by providing the first micro-level analysis of the use of the SoB tool to resolve a failing bank under the EU's post-GFC resolution framework. Specifically, we exploit the resolution of Banco Popular Español, which was sold to Banco Santander using the SoB tool on the 7th June 2017. This case marks the first resolution under the EU's Single Resolution Mechanism (SRM).

This event provides a unique opportunity to examine how a privately funded resolution of a major bank reshapes credit allocation. In the year before its collapse, Banco Popular (failed bank) was the sixth largest bank in Spain with total assets of around €150 billion. No public funds or additional support were used to support the SoB. The acquisition had a negative impact on Banco Santander's (acquirer) capital position, pulling its Core Tier 1 (CET1) ratio down by just over one percentage point even though the acquirer bought it for a token €1 after the SRB had written down €2.1 billion in CET1 capital, €1.3 billion in Additional Tier 1 (AT1) debt and €0.6 billion in subordinated Tier 2 debt.

From an identification perspective, the episode also delivers a plausibly exogenous shock to

[3]The demise of Credit Suisse, which was not a resolution, was handled through a state-brokered commercial merger, after authorities had imposed a contractual writedown of all the outstanding Additional Tier 1 (AT1) capital instruments.

bank capital and lending relationships to study the effects of a SoB resolution on credit supply. The failure of Banco Popular was not driven by macroeconomic conditions, but rather by a sudden and severe liquidity deterioration. Importantly, market participants did not fully anticipate the resolution: AT1 debt was still trading near par in 2017Q1 and at around 70 cents at the end of May (Bogdanova and Drehmann, 2017). Ultimately, the European Central Bank concluded that Banco Popular was "failing or likely to fail" due to its inability to meet its obligations as they fell due (Bank of Spain, 2017). Taken together, these features support treating the resolution as exogenous not only to bank capital and lending relationships, but also to the credit demand of individual firms and to the lending policies of competing banks.

A bank failure managed through a SoB may affect credit supply through several channels. The transaction can alter the combined entity's balance-sheet conditions and, in turn, influence how lending is allocated across borrowers, including along dimensions such as borrower risk. At the same time, borrowers inherited from the failed bank may be particularly exposed to uncertainty surrounding the continuation of lending relationships. The transfer of these relationships may involve the loss of soft information accumulated by the failed bank, making it more difficult for the acquiring bank to assess borrower quality and potentially reducing its willingness to extend credit to newly inherited clients. Yet, strategic considerations, such as preserving the value of the acquired franchise, may lead the acquiring bank to sustain these relationships even in the presence of balance-sheet constraints. The response of other banks is also crucial, as they may either smooth the shock by increase lending or amplify it by reducing their lending to borrowers connected with the failed bank.

We assess the credit supply effects by exploiting the richness of the Spanish Central Credit Register, which we combine with firm-level information from the Spanish Mercantile Register. This dataset provides bank-firm matched data on credit exposures and interest rates, as well as detailed borrower balance-sheet information. In our baseline analysis, we examine more than 200,000 lending relationships granted by 72 banks to 80,284 firms over a nine-quarter period (2016Q2-2018Q2).

By focusing on firms that borrow from multiple banks, we identify credit supply effects using specifications saturated with firm × time fixed effects that absorb both observable and unobservable time-varying firm characteristics, including credit demand, size, quality, and risk (Khwaja and Mian, 2008). We further estimate relative specifications that include bank × time fixed effects, allowing us to isolate the acquiring bank's credit supply to inherited borrowers relative to its own pre-existing clients.

Our analysis reveals that, following the SoB resolution, banks not involved in the transaction reduced their lending to borrowers of the failed bank, particularly to those classified as riskier ex ante. Specifically, non-acquiring banks cut credit to risky failed-bank borrowers by around 5% relative to safer borrowers. This retrenchment is also evident dynamically, with credit to these firms declining by roughly 2% per quarter over the year following the resolution. These patterns suggest that the failure conveyed negative information about borrower quality or generated uncertainty regarding the continuation of these lending relationships.

In contrast to non-acquiring banks, we find that the acquiring bank insulated inherited borrowers from this retrenchment. Relative to other lenders, it maintained lending to these firms, with particularly strong support for riskier borrowers that were most exposed to competing banks' withdrawals. In relative terms, lending to inherited borrowers increased by around 4% compared to the acquiring bank's own pre-existing clients, with the effect concentrated among the riskier segment.

Our results further point to a targeted reallocation of credit within the acquiring bank. While lending to riskier inherited borrowers was preserved, and relatively strengthened, the acquiring bank reduced credit to riskier borrowers within its pre-existing portfolio. This pattern indicates that the adjustment was absorbed within the bank's existing loan book, rather than through a contraction of inherited lending relationships. This behavior is consistent with incentives to preserve the value of the newly acquired lending franchise.

This targeted reallocation took place in the context of tighter capital conditions for the ac-

quiring bank following the transaction. As shown in Figure 1, its CET1 ratio temporarily declined relative to other large banks. Our evidence indicates that capital considerations shaped the internal allocation of credit, leading to a rebalancing away from more capital-intensive exposures within the pre-existing portfolio while preserving lending to inherited borrowers. This pattern is consistent with targeted portfolio reallocation under regulatory capital constraints rather than a generalized contraction in lending.

Figure 1

At the firm level, we find that total credit to failed-bank borrowers was broadly preserved, and real outcomes were largely insulated. Riskier inherited firms did not experience a contraction in investment or employment relative to less exposed firms.

Finally, we conduct a range of tests to assess alternative explanations for these patterns. The evidence does not support mechanisms based on the reversal of pre-resolution credit tightening, zombie lending, increased market power, or changes in bank efficiency. Our findings are also robust to alternative sample definitions, including specifications that incorporate single-bank borrowers and borrowers that maintained relationships with both the failed and acquiring banks prior to the resolution. Overall, the results are consistent with a combination of franchise-preservation incentives and capital constraints shaping credit reallocation following the resolution, highlighting that the SoB tool can effectively limit real-economy disruptions when implemented with a sufficiently capitalized and strategically aligned acquirer.

Our findings contrast with evidence from bridge bank resolutions. While Beck et al. (2020) find that credit supply contractions were more pronounced among firms whose main lender was the failed bank, we document that a SoB resolution can stabilize lending relationships to inherited borrowers, particularly riskier ones. At the same time, the alignment of the transaction with the acquirer's business strategy and sufficient capital capacity are critical to sustaining this outcome. In our setting, the acquiring bank's €7 billion rights issue on July 27, 2017, just under three

weeks after the acquisition, likely played a key role in supporting its capacity to preserve credit relationships associated with the failed institution.

Our paper contributes to several strands of the literature. First, we contribute to the literature on how banks should be resolved. A large theoretical literature compares the costs and benefits of relying on private loss absorption (bail-in) versus public support (bailouts) (Dell'Ariccia et al., 2018; Segura and Vicente, 2019; Berger et al., 2022; Bernard et al., 2022; Walther and White, 2023; Lambrecht and Tse, 2023; Colliard and Gromb, 2024).[4] This literature highlights a central trade-off: while bail-in enhances market discipline and reduces moral hazard, it may also weaken credit supply and amplify real effects relative to bailouts. We contribute by providing micro-level evidence on how a privately funded resolution reshapes credit supply across borrowers and the extent to which such a framework can mitigate disruptions to firms exposed to a failing bank.

Second, we contribute to the empirical literature on the effects of bank distress, resolution, and recapitalization on credit supply and real activity. Early contributions such as Giannetti and Simonov (2013) show that bank bailouts can support lending to viable firms, but may also lead to zombie lending if capital support is insufficient. Related evidence for post-crisis recapitalizations (Acharya et al., 2021, 2019; Mariathasan and Merrouche, 2012), as well as a broader literature on bank capital shocks, shows that weaker capital positions are associated with contractions in credit supply (Khwaja and Mian, 2008; Paravisini, 2008; Cornett et al., 2011; Berger and Bouwman, 2013; Uluc and Wieladek, 2018; Auer et al., 2022) and distortions in lending toward riskier and zombie firms (Peek and Rosengren, 2005; Dassatti et al., 2026; Schivardi et al., 2022; Blattner et al., 2023; Bonfim et al., 2023).

Within this empirical literature, evidence on resolution tools involving transfers of business remains limited. Beck et al. (2020) study a bridge-bank resolution and find significant credit contractions for affected firms, while Brei et al. (2023) document negative short-term effects of

[4] In theoretical literature, the term "bail-in" is used in its generic sense, as the ability of resolution authorities to impose losses on private stakeholders to recapitalize a failing bank. This use of "bail-in" term differs from its more specific meaning as a resolution tool in the Banking Recovery and Resolution Directive. We use "bail-out" to denote the use of public funds by governments to restore a bank's solvency.

asset separations on aggregate lending when the restructuring is privately funded. Hryckiewicz et al. (2023) provide cross-country bank-level evidence for 22 countries and find no significant effects of these tools on loan growth, although asset separations are associated with improvements in bank health. We contribute to this literature by providing the first micro-level evidence on the credit supply and real effects of a sale-of-business resolution. Using granular bank-firm-level data, we identify credit supply effects by exploiting within-firm variation and saturating our specifications with firm-time fixed effects to account for credit demand and borrower quality. In addition, we examine how the acquiring bank's lending to inherited borrowers evolves relative to its lending to pre-existing clients, allowing us to shed light on the internal reallocation of credit following the resolution.

Third, we relate to the literature on bank mergers and acquisitions (M&As) and their effects on credit supply. This literature shows that M&As can have heterogeneous effects depending on the balance between efficiency gains and increased market power. Sapienza (2002) finds that credit supply to inherited borrowers increases when efficiency gains dominate, but declines when local market concentration rises. Bonaccorsi Di Patti and Gobbi (2007) and Degryse et al. (2011) document reductions in credit supply to small borrowers following mergers in Italy and Belgium, respectively, consistent with the difficulty of transferring soft information. In contrast, Scott and Dunkelberg (2003) find no disproportionate effects for small firms in the U.S.

Our setting differs from standard M&A transactions along several key dimensions. The acquisition of a failed bank under the SoB framework may reveal adverse information about borrower quality and is accompanied by balance-sheet stress for the acquirer. These features affect both the response of competing lenders and the acquiring bank's internal allocation of credit. By exploiting this setting, we provide new evidence on how strategic considerations and capital constraints jointly shape credit reallocation following a bank resolution.

Finally, our results point to an additional motivation for capital requirements. Existing research has emphasized several roles of bank capital, including enhancing solvency and financial stability by

absorbing losses and reducing excessive risk-taking (e.g., Holmström and Tirole, 1997; Allen et al., 2011), shaping the strength of monetary policy transmission through banks' lending capacity (e.g., Kishan and Opiela, 2000; Jiménez et al., 2012), and mitigating credit line runs (e.g., Gutiérrez and Lafuerza, 2025; Huang, 2025), among others. Our findings suggest that capital buffers also facilitate the feasibility and effectiveness of SoB resolutions by enabling the acquiring bank to preserve the failed institution's lending relationships and, in turn, limit adverse spillovers.

The paper is organized as follows: section 2 provides details on the institutional background to the SoB resolution; section 3 describes our data set; section 4 sets out our identification strategy and empirical frameworks; section 5 presents our results; finally, section 6 concludes.

2. Institutional Background

The resolution of Banco Popular Español (BPE) marked a significant milestone for the new resolution frameworks put in place after the GFC. When BPE was placed into resolution, it became the first SoB resolution managed by the SRB under the European Union's Bank Recovery and Resolution Directive. The sale of business process involved inviting a short list of potential purchasers to submit binding offers for BPE. Following the SRB's approval of the resolution on 7th June 2017, the write down of CET1 capital, AT1 instruments, and subordinated Tier 2 debt was executed, together with the transfer of the bank to the successful acquirer (FROB, 2017). The resolution did not include public funds, other official sector support, use of a bridge bank, nor asset management tools to manage the transition and assets.

At the time of its failure, BPE was Spain's sixth-largest bank. It had assets of nearly €150 billion and subsidiary businesses in Portugal, the United States, and Mexico. It was the leader in lending to SMEs in Spain, holding a market share of 13.8% (Santander Group, 2017). In sum, it was a failure of a major bank.

2.1 The Resolution Event

As it looked likely that the bank might fail, the SRB engaged with an accounting firm to prepare a valuation for the bank on 23rd May. This followed speculation about a potential merger, and extensive media coverage which led to a 10% drop in BPE's share price and persistent deposit withdrawals. On 2nd June, the SRB initiated marketing procedures for a potential resolution (IMF, 2018). This included requesting all information from BPE relating the private sale, including providing confidential information to potential buyers through a Virtual Data Room (VDR) (SRB, 2017). The SRB requested BPE to stand ready to give access to the VDR to any potential buyer identified by the resolution authority, so as to eventually enable them to assess the portfolio of assets of the failing bank. The marketing process was initiated on 3rd June. Potential buyers were approached and informed about the conditions for making a binding offer for the purchase of BPE.

In the run-up to the resolution event, BPE faced substantial deposit outflows and was unable to secure additional emergency liquidity assistance due to insufficient eligible collateral. The bank subsequently informed the ECB that it would file for bankruptcy on the following day. The ECB declared BPE as failing or likely to fail and informed the SRB, which then initiated resolution proceedings. The SRB gave potential buyers until the next morning to submit final bids for BPE. On June 7, 2017, the SRB determined that resolution was in the public interest and approved a resolution scheme using the SoB tool (SRB, 2017). Following the SRB's decision, the Spanish national executive resolution authority (FROB) wrote down all shares and capital instruments and transferred BPE to Banco Santander for €1.[5]

2.2 The Sale of Business and the Acquirer

The rapid intervention by the SRB and the expedited sale rendered the resolution an unexpected event. Figure 2 illustrates the abnormal returns of the acquirer's shares over the 14 days surrounding

[5]The capital written down consisted of €2.1 billion in CET1, €1.35 billion in Additional Tier 1 capital and €0.64 in Tier 2 subordinated debt.

the resolution. Table 1 confirms the statistical significance of the abnormal returns around the announcement window. In addition, columns (2) and (5) show no evidence of abnormal returns in the days preceding the event. The 4% abnormal return recorded on the day following the resolution underscores the unexpected nature of the event and reflects a positive market reaction by the acquirer's shareholders to the acquisition.

Figure 2

Table 1

The acquisition of the failed bank enabled the acquirer to become the leading bank in Spain and the second largest in Portugal, with loan market shares of 19.5% and 17.5%, respectively. Prior to the acquisition, the acquirer ranked third in the Spanish loan market, holding a 12.3% share (Santander Group, 2017).

The acquisition significantly bolstered the acquirer's position in corporate lending. By the end of the first quarter of 2017, the failed bank provided loans to roughly one-fifth of Spanish non-financial corporations (NFCs) with bank borrowing, and around one-fourth of these NFCs relied solely on the failed bank for financing. The acquirer's market share increase was particularly notable in the SME segment, where the failed bank was the market leader. As a result, the acquirer's SME loan market share surged from 11.1% to 24.8%. Additionally, the acquirer emphasized the opportunity to deepen relationships with borrowers from the failed bank.[6] This was evident in the fees-to-loans ratio, which stood at 1.06% for the acquirer compared to 0.51% for the failed bank. This difference reflects Santander's more service-intensive business model and indicates scope to deepen relationships with the failed bank's customers by cross-selling additional fee-generating services (Santander Group, 2017). Figure 3 illustrates the share gained across Spanish municipalities by the acquiring bank due to the acquisition of the institution under resolution.

[6] The Financial Times noted at the time that "[a] key attraction of the deal for Santander is that it can overtake its rivals in small business lending, an area where it has long been trying to expand and one of the few places in which Popular had real expertise."

Figure 3

The acquirer also moved swiftly to rebuild its capital ratios after purchasing the failed bank. Since the acquisition was fully debt-financed due to the failed bank's zero net worth, the acquirer's capital adequacy ratio declined significantly, with the CET1 ratio declining by 114 basis points. In order to rebuild its capital buffers, the acquirer raised €7 billion in capital on 27th July 2017, which partially mitigated the initial drop.

Despite this, the acquirer's capital ratio remained under pressure. The subsequent recognition and sale of non-performing assets–including a €37 million loss in the first year due to extraordinary integration charges–further contributed to the decline in the CET1 ratio, which remained below its average over the six quarters preceding the resolution (see Panel (a) of Figure 1). In addition the evolution of its CET1 ratio was also sub par relative to other major Spanish banks. Even though deposit outflows from the failed bank ceased after the SoB acquisition, aggregate lending of the acquirer decreased relative to other Spanish systemic banks (Panel B of Figure 1).

3. Data

This paper leverages three comprehensive datasets, all proprietary to the Bank of Spain: (i) the Spanish Central Credit Register (CIR); (ii) firms' financial statements from the Bank of Spain's Central Balance Sheet Data Office (CBSO); and (iii) the Bank of Spain's in-house credit assessments of non-financial firm credit ratings (ICAS-BE).

The CIR provides detailed confidential information on nearly all transactions in Spain between firms and their banks. Since May 2016, the reporting threshold has been set at €3,000, effectively covering the entire spectrum of business loans. For each loan in our sample, we observe data on the loan type, amount (both drawn and undrawn), collateral status, maturity, currency, days past due, forbearance or refinancing status, lender, and borrower. Data on interest rates are only available for part of our analysis period, starting from June 2018. However, we use the stock of outstanding

credit as of June 2018 to infer the interest rates of new loans granted by the acquiring bank during the last year, after the acquisition of the failed institution.[7] Additionally, the database includes borrower-specific information such as the firm's size, geographical location, and industry.

For our study, we focus on all lending relationships of non-financial firms that had either the acquiring bank or the failed institution as one of their creditors. We aggregate for every quarter all committed credit of individual loans to a given firm from a specific bank. We discard branches of foreign banks in Spain, as we do not have access to financial statements of the banking group at the consolidated level. For our baseline analysis, we concentrate on firms with multiple lending relationships, meaning they have an additional lender besides the acquiring bank or the failed institution.[8] These additional lenders provide within-firm variation that allows us to identify credit supply effects by comparing the acquiring bank to other banks lending to the same firm. This selection leaves us with close to 215,100 lending relationships granted by 72 banks to 80,284 firms. In our sample, 75% of the borrowers of either the acquiring bank or the failed institution had an additional lending relationship as of the first quarter of 2017.

Furthermore, the ability to identify firms allows us to enrich the credit register data with firm-specific characteristics. From firms' annual financial statements, we gather information on the interest coverage ratio, sales, tangible assets, cash holdings and number of employees. However, our sample of firms drop as not all firms in the Credit Register have reliable financial statement information. Additionally, we obtain credit risk assessments for non-financial corporations from the Bank of Spain's in-house credit risk assessment system, ICAS-BE, as of the end of 2016. ICAS-BE provides firm-level estimates of the probability of default, allowing us to measure borrower risk in a consistent and supervisory-based framework (Gavilá et al., 2020).

[7] This strategy provides a less accurate picture if we want to obtain interest rates of newly granted loans before the acquisition, as most business loans have a maturity of a year or less.

[8] We further exclude from the baseline sample firms that had lending relationships with both the failed bank and the acquiring bank prior to the resolution. These "dual-relationship" firms are subject to the credit policies of both institutions before the resolution and may therefore complicate the distinction between inherited borrowers and existing borrowers that underlies our identification strategy. In section 5.4.3, we reintroduce these firms and show that our main results are robust to their inclusion.

Panel A of Table 2 reports summary statistics of the bank-firm variables used in the analysis. The sample period of our study covers the four quarters before and the four quarters after the SoB resolution, thus spanning from the second quarter of 2016 to the second quarter of 2018. Borrowers are split into two classes: (1) "Inherited borrowers", defined as firms that before the resolution had a credit relationship with the failed bank but not with the acquirer bank; and (2) "Pre-existing borrowers", defined as firms with credit relationships with the acquirer bank but not with the failed bank.

Overall, the bank-firm characteristics of the two classes of borrowers are quite similar. Mean committed credit in a bank-firm relationship totaled around €61,000 for firms with relationships with the failed bank and around €56,000 for firms with relationships with the acquirer. As our baseline sample consists of firms with multiple lending relationships, firms have at least two relationships. On average both classes of borrowers have relationships with three banks, with those at the 75th percentile having four relationships. By count, around 50% of relationships are with microenterprises. The distribution of credit relationships with banks that are highly systemically important, compared to less systemically important banks, was broadly similar across the two classes of borrowers. One notable difference is that the failed bank had a higher proportion of credit relationships with risky firms (39%) compared to the acquiring bank (26%), though the share of relationships with firms classified as zombie firms were broadly similar.

Table 2

Panel B of Table 2 shows that at the firm-level the summary statistics of the inherited and pre-existing borrowers were also broadly similar. Nevertheless, inherited borrowers generally had around €30,000 more credit outstanding compared to pre-existing borrowers. Despite the larger amounts outstanding, they tended to be smaller as measured by sales, tangible assets and employment. See Table A.1 for detailed definitions of the key variables used in the study.

4. Identification Strategy

We examine the credit supply and real effects of the SoB resolution in two steps. First, we analyze bank-firm level lending to identify how the acquisition affected the acquiring bank's credit supply relative to other lenders and relative to its own pre-existing borrowers. Second, we examine whether these credit supply adjustments translated into changes in total firm credit and real outcomes.

4.1 Identifying the Effect of Resolution on Credit Supply

At the bank-firm level, our objective is to isolate the causal impact of the SoB resolution on the acquiring bank's lending behavior. We first compare the acquiring bank's credit supply to inherited borrowers relative to lending by other banks not involved in the resolution. We then assess whether lending to inherited borrowers evolved differently relative to the acquiring bank's own pre-existing borrowers.

The main empirical challenge is to isolate credit supply from credit demand. To address this challenge, we focus on borrowers with multiple lending relationships that include either the failed bank or the acquiring bank.[9] Restricting the sample to firms with multiple bank relationships allows us to follow Khwaja and Mian (2008) and saturate our model with firm-time fixed effects, $\alpha_{f,t}$, which control for any observed and unobserved heterogeneity in firms' credit demand, quality and risk. Specifically, we estimate the following equation for borrowers inherited from the failed bank:

$$y_{f,b,t} = \alpha_{f,b} + \alpha_{f,t} + \alpha_{\tau(b),t} + \theta \times ACQ \times Post + \varepsilon_{f,b,t} \tag{1}$$

where the dependent variable is the logarithm of committed credit granted by bank b to firm f, ACQ is a dummy variable that identifies the lending relationship affected by the resolution and transferred to the acquiring bank, and $Post$ is a dummy variable that takes the value of one in the

[9] As part of our extensions, we extend our analysis to borrowers with a single lending relationship in section 5.4.4. Note that multiple-bank borrowers that do not have the acquiring or the failed bank as a one of its lenders do not contribute to the identification of the credit supply shock of the acquiring bank.

aftermath period of the resolution event (June 7, 2017) and zero otherwise.

In addition to firm-time fixed effects, we include bank-type-time fixed effects, $\alpha_{\tau(b),t}$, to control for time-varying credit supply shocks at the bank-type level. Specifically, we categorize banks into three types based on their average systemic importance score: above 700 basis points (including the acquiring bank), between 350 and 700 basis points, and below 350 basis points. These fixed effects allow us to compare the acquiring bank's lending to that of comparable institutions.[10] Finally, we add bank-firm fixed effects, $\alpha_{f,b}$, to control for unobserved time-invariant characteristics of the lending relationship that affect lending, such as the strength of the lending relationship.

The main coefficient of interest, θ, captures whether, following the acquisition, the acquiring bank adjusted its credit supply to inherited borrowers relative to other banks lending to the same firms.

We also estimate a second specification that includes bank-time fixed effects, absorbing all time-varying bank-level lending policies. This relative specification identifies whether the acquiring bank adjusted its lending to inherited borrowers differently relative to its own pre-existing borrowers after the resolution:

$$y_{f,b,t} = \alpha_{f,b} + \alpha_{f,t} + \alpha_{b,t} + \gamma \times ACQ \times Post \times Inherited + \varepsilon_{f,b,t}, \tag{2}$$

where, $\alpha_{b,t}$, are bank-time fixed effects. *Inherited* is a dummy variable taking the value of one if the borrower was inherited by the acquiring bank due to the acquisition of the failed institution. The triple interaction term $ACQ \times Post \times Inherited$ therefore identifies whether lending to inherited borrowers evolved differently relative to the acquiring bank's own pre-existing borrowers after the resolution. Standard errors are double-clustered at the bank-time level and firm level in all our

[10] We use the scores calculated by Bank of Spain to determine the Spanish systemically important institutions between 2016 and 2018. These scores are computed following the guidelines of the European Banking Authority (EBA/GL/2014/10), which propose a scoring system for the degree of systemic importance of institutions by reflecting the size, importance, complexity, and degree of interconnectedness of the institutions. Significant institutions are those whose scores exceed the threshold of 350 basis points and receive special supervisory treatment, as they are required to maintain additional capital buffers.

bank-firm level regressions to account for within-bank and within-firm correlations of the error terms.

4.2 Identifying the Effect of Resolution on Firm Outcomes

Identifying real effects poses additional challenges because firm-time fixed effects cannot be used once the unit of observation is the firm, limiting our ability to control directly for time-varying firm demand. We therefore rely on exposure-based variation combined with rich time-varying fixed effects to estimate the impact of the SoB resolution on firm outcomes. Specifically, we estimate the following specification for firms that were borrowers of the failed institution prior to the resolution:

$$y_{f,t} = \alpha_f + \alpha_{cl(f),t} + \phi_t \times Risky + \alpha_{\tau(\bar{b}(f)),t} + \theta \times Share\ ACQ \times Post + \varepsilon_{f,t}, \tag{3}$$

where the dependent variable is either the logarithm of total credit, sales, tangible assets, employment, or cash holdings of firm f. When the dependent variable is credit, we use quarterly CIR data over the same sample period as in our bank-firm-level analysis. For sales, employment, investment, and cash holdings, we use annual data for the period 2015-2019, as these variables are sourced from annual financial statements available at the Central Balance Sheet Data Office.

Share ACQ is the pre-resolution share of a firm's total bank debt granted by the failed institution (and subsequently transferred to the acquiring bank). It measures firm-level exposure to the lending relationship affected by the SoB resolution. As before, *Post* equals one after the acquisition.

To control for time-varying heterogeneous credit demand and local demand effects, we include firm-bin-quarter fixed effects, $\alpha_{cl(f),t}$, which cluster firms belonging to the same province, industry, and being in the same size category.[11] Large firms are only clustered by industry and year because they typically operate in several provinces. Additionally, to control for differences in firm risk that

[11] Size categories are defined following the four categories indicated by the European Commission Recommendation 2003/361/CE: Large, Medium, Small, and Micro-enterprises.

may not be fully captured by firm-bin-time fixed effects, we include the interaction of *Risky* with quarter dummies. *Risky* is defined as 1 if the one-year probability of default, calculated by the Bank of Spain's in-house credit assessment systems as of the end of 2016, is above 2.25% for the borrower, and 0 otherwise. This threshold follows the risk classification embedded in the ICAS-BE framework and corresponds to a marked deterioration in borrower credit quality, as documented in Gavilá et al. (2020). To control for unobserved credit supply policies by bank-type, we further include bank type-quarter fixed effects for the firms main bank, $\alpha_{\tau(\bar{b}(f)),t}$, where the main bank type is determined by the type of the main bank lending to the firm in the first quarter of 2017. As before, bank types categorize banks into three groups based on their average systemic importance score. Finally, we include firm fixed effects to control for time-invariant unobserved firm characteristics. Consistent with our bank-firm level regressions, we double cluster standard errors at the main bank-time level and firm level.

5. Results

In this section, we first analyze the response of non-acquiring banks. We then examine how the acquiring bank adjusted its lending to inherited borrowers, both relative to other banks and relative to its own pre-existing clients. Next, we investigate the mechanisms underlying these lending patterns, focusing first on the strategic incentives to preserve inherited relationships and then on the role of regulatory capital constraints in shaping internal credit reallocation. Finally, we assess the implications of these adjustments for total credit received by firms and trace their effects on real outcomes.

5.1 Effect on Lending

5.1.1 Lending by Non-Acquiring Banks

We begin by examining how the SoB resolution affected the credit supply of non-acquiring banks, as their response shapes the overall credit environment faced by borrowers of the failed institution and, therefore, the economy-wide impact of the intervention.

A priori, it is not obvious how non-acquiring banks may react to a SoB resolution of a failed bank. Because their funding and capital positions are not directly affected by the transaction, they could expand lending to firms previously associated with the failed bank, thereby mitigating potential disruptions. Alternatively, the resolution may convey negative information about borrower quality or generate uncertainty regarding the future management of these lending relationships. Borrower risk is likely to be central to these adjustments. Ex ante riskier firms are more exposed to informational frictions and reputation spillovers, making them more vulnerable to retrenchment. At the same time, if other lenders anticipate a reallocation of credit by the acquiring bank, particularly one driven by capital considerations, competitive responses may also be concentrated among riskier borrowers. As a result, differential adjustments are most likely to emerge along the risk dimension.

We therefore test whether non-acquiring banks differentially adjusted lending to riskier firms following the resolution, across both failed-bank (inherited) and acquiring-bank (pre-existing) borrowers, by estimating the following specification:

$$\log y_{f,b,t} = \alpha_{c(f),t} + \alpha_{\tau(b),t} + \alpha_{f,b} + \theta \times Post \times Risky + \varepsilon_{f,b,t}, \text{ where } b \neq ACQ \tag{4}$$

This specification includes only lending by banks not involved in the resolution. The fixed effects $\alpha_{c(f),t}$ denote firm-bin $\times$ time effects, where firms are grouped by size, industry, and municipality; $\alpha_{\tau(b),t}$ are bank-type $\times$ time fixed effects; and $\alpha_{f,b}$ are firm-bank fixed effects. By including firm binned fixed effects, this specification assesses whether credit supply to risky firms within a size-

industry-municipality bin evolved differently from that to safer firms in the same bin. Because risk varies at the firm level, including firm-time fixed effects would absorb the interaction of interest; we therefore adopt a coarser fixed-effects structure (as in our analysis of firm level outcomes).

The negative coefficient on $Post \times Risky$ in column (1) of Table 3 shows that the non-acquirer banks cut credit to risky borrowers of the failed bank relative to safe borrowers, doing so by nearly 5% on average. The run from these riskier credit relationships is clearly evident in Panel (a) of Figure 4, showing that the non-acquirer banks steadily cut credit to risky borrowers by around 2% a quarter from 2017 Q2 to 2018 Q2. This stands in contrast to their provision of credit supply in the run up to the resolution where the evolution of credit supply to risky failed bank borrowers was similar to safer borrowers.

Column (2) of Table 3 and Panel (b) of Figure 4 show that non-acquiring banks did not differentially adjust their lending to risky borrowers of the acquiring bank relative to safer borrowers. Credit supply to this segment evolved similarly across risk categories, indicating no evidence of a broader retrenchment from risky exposures outside the failed-bank segment.

Column (3) further confirms that this retrenchment is specific to the failed-bank segment. In the pooled specification, the coefficient on $Post \times Risky$ is small and statistically insignificant, indicating that non-acquiring banks did not generally reduce lending to risky borrowers of the acquiring bank. By contrast, the negative and statistically significant coefficient on $Post \times Inherited \times Risky$ shows that, after the resolution, non-acquiring banks cut credit more strongly to risky borrowers linked to the failed bank than to comparable risky borrowers of the acquiring bank.

In sum, the non-acquiring banks de-risked their exposure to risky borrowers from the failed bank, but did not change their exposure to risky borrowers of the acquiring bank. This selective withdrawal by competing banks provides the context in which the acquiring bank's lending response must be interpreted.

Table 3

Figure 4

5.1.2 Lending by the Acquiring Bank

We next examine how the SoB resolution affected the acquiring bank's credit supply to borrowers inherited from the failed institution. Our empirical strategy evaluates whether lending to inherited borrowers by the acquiring bank was adjusted relative to other banks lending to the same firms; and also relative to the acquiring bank's other lending relationships in the post-resolution period, and how borrower risk shaped these adjustments.

Our baseline results in Table 4 show that the SoB resolution did not lead to an overall contraction of credit supply to borrowers inherited from the failed bank. Column (1) reports the results from estimating Equation 1 on the sample of inherited borrowers. The small and insignificant coefficient on $ACQ \times Post$ indicates that, on average, the resolution did not reduce credit supply to these firms inherited from the failed bank relative to other lenders.

However, credit supply response was distributed unevenly across firms depending on their risk characteristics. Column (2) augments the baseline specification by interacting the treatment effect with borrower risk, allowing us to assess whether the acquiring bank's lending response differed between riskier and safer inherited borrowers. The positive and statistically significant coefficient on $ACQ \times Post \times Risky$ shows that the acquiring bank expanded credit to riskier inherited borrowers relative to other banks following the resolution. At the same time, the negative coefficient on $ACQ \times Post$ indicates that less risky inherited borrowers experienced a modest contraction in credit relative to other lenders. Taken together, these results suggest that the acquiring bank selectively protected credit to the riskier segment of the failed bank's portfolio, precisely the segment for which other banks appear to have reduced exposure.

Columns (3) and (4) turn to the relative specification based on Equation 2, which absorbs all bank $\times$ time variation and therefore compares inherited borrowers with the acquiring bank's own pre-existing borrowers within the same bank-quarter. In column (3), the coefficient on $ACQ \times Post \times Inherited$ is positive and statistically significant, indicating that lending to inherited borrowers grew 4.2% more than lending to the acquiring bank's own pre-existing borrowers after

the resolution. Thus, even after controlling for time-varying bank-level policies, the acquiring bank tilted credit toward inherited borrowers relative to the rest of its corporate credit portfolio.

Column (4) shows that this relative reallocation is driven by borrower risk. The coefficient on $ACQ \times Post \times Inherited \times Risky$ is positive and statistically significant, indicating that the differential support to inherited borrowers is concentrated among the riskier segment. In contrast, the coefficient on $ACQ \times Post \times Inherited$ becomes statistically insignificant once risk interactions are included, implying no differential adjustment among safer borrowers. At the same time, the negative and significant coefficient on $ACQ \times Post \times Risky$ indicates that lending to the acquiring bank's own riskier borrowers evolved less favorably relative to safer borrowers within its pre-existing portfolio.

Taken together, columns (2) and (4) show a consistent pattern: the acquiring bank protected riskier inherited borrowers relative to both other lenders and its own riskier pre-existing borrowers. This evidence points to a targeted internal reallocation of credit in which adjustments were absorbed within the acquiring bank's pre-existing risky segment while preserving lending relationships inherited from the failed institution.

Table 4

5.1.3 Identifying Assumptions

A crucial assumption behind the identification of idiosyncratic firm-specific demand shocks (Khwaja and Mian, 2008) is that the firm adjusts loan demand proportionally across all credit relationships. One identification concern is that during periods of uncertainty, firms may turn towards their main bank for credit which would violate the proportionality assumption. To rule out this possibility, in columns (5) to (8) of Table 4, we replicate the results in columns (1) to (4) but additionally include interactions between the resolution terms and a *Main Bank* dummy to capture any potential rotation of credit demand toward the main lender. Both in qualitative and quantitative terms, the inclusion of this additional variable does not alter our main findings. Credit supply to borrowers

inherited from the failed bank remains broadly unaffected, while the relative support to riskier inherited borrowers and the reallocation patterns identified in columns (3) and (4) continue to hold under this augmented specification.

The validity of our identification strategy also requires that, in the absence of treatment (i.e. the bank failure and subsequent resolution), credit supply to borrowers of the failed bank and the acquirer bank would have evolved similarly. This is clearly not obvious given the difficulties that can emerge in a bank before its failure. To test this assumption we estimate a modified version of Equation 2 replacing the variable *Post* with year quarter dummy variables. As the Figure 5 shows, prior to the resolution in 2017 Q2, credit supply to borrowers of the failed bank followed a similar trend to borrowers of the acquirer bank (insignificant coefficients). However, the figure shows that after the event, the evolution of credit supply differed dramatically between the two groups.

Figure 5

Our identification assumptions may also be violated if banks specialize in specific industries (Paravisini et al., 2023). If banks specialize in lending to particular sectors, sector-specific demand shocks may translate into bank-firm-specific loan demand. We examine this concern by re-estimating Equation 1 repeatedly, excluding one industry at a time. Panel (a) of Figure 6 reports the estimated coefficients on the $ACQ \times Post$ term for the full set of inherited borrowers and, in Panel (b), separately for the subset of riskier borrowers. The results show that the baseline estimates are stable across specifications. In particular, the coefficients for inherited borrowers remain similar in magnitude and statistically insignificant throughout, while those for riskier inherited borrowers are consistently positive and statistically significant. This indicates that our main findings are not driven by demand shocks in any particular industry.

Similarly, if banks' activities are unevenly distributed across Spain, regional shocks could generate bank-firm-specific loan demand and threaten identification. To address this, Panels (c) and (d) of Figure 6 report estimates obtained by excluding one municipality at a time. The results again show a high degree of stability: the coefficients for inherited borrowers remain statistically

insignificant, whereas those for riskier inherited borrowers remain positive and significant across specifications. Overall, these findings indicate that neither sectoral nor regional demand shocks drive our results.

Figure 6

5.1.4 Additional Heterogeneity Across Borrowers

In addition to the heterogeneity by firm risk documented in Table 4, we further explore in Table 5 whether the credit supply response differed across other firm characteristics, namely size, borrowers' switching costs, and the importance of the borrower to the lender.

We begin by examining heterogeneity by firm size. Columns (1) to (4) report results for inherited borrowers, progressively augmenting the baseline specification with additional borrower characteristics. The interaction between $ACQ \times Post$ and $Micro$ is not statistically significant in columns (1)-(3), but becomes positive and statistically significant once size, switching costs, and borrower importance are jointly controlled for (column (4)). This suggests that, conditional on these firm attributes, micro firms inherited from the failed institution were relatively more protected than larger firms within the same borrower class.

Turning to the relative specification in columns (5) to (8), which compares inherited borrowers with the acquiring bank's own pre-existing borrowers within the same bank-time environment, the evidence is stronger and more robust. The corresponding interaction terms indicate that micro firms inherited from the failed bank were systematically more shielded than similarly sized existing borrowers of the acquirer. These findings are consistent with the view that preserving smaller, relationship-dependent firms was an integral part of maintaining the value of the acquired lending franchise.

Along other dimensions, however, the acquiring bank's lending response appears broadly similar across borrower types. Across both classes of borrowers, the acquiring bank prioritized credit supply to firms with lower switching costs. Specifically, in columns (3) and (4), the positive and

statistically significant coefficients on the interaction with the number of bank relationships indicate that, relative to other banks lending to the same firms, the acquiring bank increased credit by approximately 1.5% to 1.7% for each additional banking relationship among inherited borrowers. In the relative specification (columns (7) and (8)), the coefficient on $ACQ \times Post \times Inherited \times \#Relationships$ is small and statistically insignificant, indicating that this sensitivity to switching costs does not differ between inherited and pre-existing borrowers of the acquiring bank.

A similar pattern emerges for borrower importance. In column (4), inherited borrowers in the top quartile of outstanding credit receive roughly 6% higher credit growth from the acquiring bank relative to other lenders. In the relative specification (column (8)), the insignificant coefficient on $ACQ \times Post \times Inherited \times Top$ indicates that borrower importance influenced lending decisions in a comparable manner across inherited and pre-existing clients.

Importantly, the heterogeneous effects by firm risk remain robust to controlling for size, switching costs, and borrower importance, as the relative protection of riskier inherited borrowers persists across specifications. At the same time, the acquirer maintained lending to borrowers with lower switching costs and to its most important clients across both inherited and pre-existing relationships. These findings reinforce the interpretation that the SoB resolution preserved the most economically relevant lending relationships of the failed institution and shielded credit supply to inherited borrowers facing the strongest retrenchment from competing banks.

Table 5

5.2 Potential Mechanisms

In this section we investigate potential mechanisms that could rationalize our findings on the credit supply impact of the SoB resolution.

5.2.1 Franchise Value Preservation and Support for Riskier Inherited Borrowers

Section 5.1 shows that non-acquiring banks retrenched from riskier borrowers of the failed institu-

tion, while the acquiring bank relatively supported credit to the borrowers it inherited, particularly the riskier ones. What mechanisms can account for this differentiated treatment of newly inherited firms? Potential explanations include the reversal of pre-resolution credit tightening, information frictions, a desire to preserve the value of the newly acquired franchise, regulatory signaling considerations, zombie-lending incentives, and too-big-to-fail risk-taking motives.

One potential explanation for the relative support to riskier inherited borrowers is that the acquiring bank reversed a tightening of credit supply by the failed bank in the months preceding the resolution. Figure 7 examines this possibility by plotting quarter-by-quarter estimates of Equation 1 for all inherited borrowers (Panel a) and, separately, for the subset of riskier borrowers (Panel b). The evidence does not support this mechanism. While there is some indication of a decline in credit supply in the quarters leading up to the resolution, this contraction is not more pronounced for riskier borrowers. If anything, the pre-resolution dynamics suggest that credit to riskier inherited borrowers evolved similarly, or somewhat less negatively, than for the broader set of borrowers.

Figure 7

Another potential mechanism related to the preservation of inherited borrowers concerns changes in local market power following the acquisition. A number of studies show that bank mergers that increase market concentration can lead to adverse credit supply effects, particularly for smaller or relationship-dependent firms (Sapienza, 2002; Bonaccorsi Di Patti and Gobbi, 2007; Degryse et al., 2011). If the acquisition had materially increased the acquiring bank's local market power, one might expect either a contraction in credit or an increase in loan rates in municipalities where concentration rose the most. At the same time, a strategic franchise-preservation motive would predict a different pattern: stronger stabilization of lending relationships precisely in those areas where the failed bank had a larger pre-resolution presence, without necessarily implying higher prices. There are several findings that appear consistent with this channel.

First, we exploit cross-municipality variation in the failed bank's pre-resolution market share. Specifically, we construct an indicator variable, $Failed\ Bank\ High\ Mun.\ \%$, equal to one if the

failed bank's share of total lending in a given municipality in 2016Q2 was above its median share across municipalities. We then interact this indicator with our main treatment term, $ACQ \times Post$. The results, reported in Table 6, are consistent with a strategic franchise-preservation motive. In the baseline specifications for inherited borrowers (columns (1)-(3)), the interaction $ACQ \times Post \times Failed\ Bank\ High\ Mun.\ \%$ is positive and, in column (1), statistically significant, indicating that lending to inherited borrowers did not decline more in municipalities where the acquiring bank's local concentration increased the most; if anything, credit evolved more favorably in those areas. The relative specifications in columns (4)-(6) yield similar conclusions: the positive and significant coefficients imply that the acquiring bank provided comparatively stronger support to inherited borrowers in municipalities where the failed bank had been more important prior to the resolution.

Table 6

Importantly, this pattern is not accompanied by higher loan pricing. In Table 7, we estimate the impact of the resolution on loan pricing across municipalities. In these regressions the dependent variable is the interest rate on new loans granted, otherwise the specifications follow Equation 1. Columns (3) and (6) show that the coefficient on the $ACQ \times Post \times Failed\ Bank\ High\ Mun.\ \%$ is approximately zero and statistically insignificant, indicating that the acquiring bank did not charge higher rates in municipalities where its market share increased the most. Moreover, column (1), estimated for inherited borrowers, indicates that interest rates declined by approximately 25 basis points after the resolution. Taken together, these findings suggest that the observed lending patterns reflect targeted relationship stabilization rather than the exercise of increased market power.

Table 7

Second, as shown in Table 5, smaller and risky firms of the failed bank, which tend to be more opaque, experienced a more stable credit supply from the acquiring bank. The support from Santander to these more opaque firms was potentially very important to preserve the newly

acquired credit relationships, as following the resolution, non-acquirer banks pulled back their lending to these opaque firms. For the acquirer, if the run by non-acquirer banks on these firms had precipitated a wave of defaults among its newly acquired customers, it would have jeopardized the value of the newly acquired franchise.

These incentives to protect its newly inherited customer base are consistent with the acquiring bank's stated business strategy, which was to "carry out an exemplary integration, without losing a single customer..." (Santander Group, 2017). This strategic focus on expanding its SME franchise also helps explain why the acquiring bank was careful to avoid restricting credit supply to its own borrowers that were important or had low switching costs.

Yet another potential mechanism explaining support for risky and smaller borrowers of the failed bank may run through regulatory signaling. Beyond economic reasons, the acquiring bank may have supported vulnerable SMEs in order to maintain reputational capital with supervisors and politicians. This could be achieved through actions that aim to meet supervisory expectations and the broader regulatory narrative surrounding the SoB tool, including safeguarding the real economy (Board, 2020; Godwin et al., 2017). One way to signal its commitment to safeguarding the real economy could be directing lending towards municipalities with higher local unemployment rates. To assess this channel, we also include the interaction term $ACQ \times Post \times High\ Unemployment$ in Table 6, where *High Unemployment* is an indicator variable that takes the value of one if the municipality has an unemployment rate above the median in 2016.

The results in column (2) of Table 6 indicate that the acquiring bank provided more supported credit to the customers of the failed bank in municipalities with higher unemployment. Nevertheless, column (3) shows that, even after controlling for this factor, the positive and statistically significant coefficient on risky borrowers of the failed bank remains largely unchanged, indicating that support for these more opaque firms was not confined to economically weaker areas. Importantly, this result also holds in the relative specification: in column (6), the positive and statistically significant coefficient on risky inherited borrowers confirms that the acquiring bank's relative support to this

group persists when accounting for local unemployment conditions. By contrast, the interaction term associated with high unemployment in the relative specification is statistically insignificant, suggesting that the differential treatment of inherited borrowers was not systematically stronger in economically weaker municipalities, which runs somewhat counter to a pure regulatory signaling mechanism.

Zombie lending motives do not appear to be consistent with the data, even if such behavior could in principle alleviate short-run pressure on capital ratios. To test for the presence of zombie lending, we consider two complementary definitions of zombie firms. First, we use an interest coverage ratio (ICR)-based measure, classifying as zombies those firms with an interest coverage ratio below one over the three years preceding the acquisition, as commonly done in the literature (see e.g., Adalet McGowan et al. (2018); Acharya et al. (2019); Banerjee and Hofmann (2018, 2022); Bonfim et al. (2023)). Second, we adopt an alternative definition based on negative equity in the year prior to the resolution, following Bonfim et al. (2023).

The results are presented in Table 8. Columns (1) to (3) report the estimates for our baseline specification, Equation 1, where we interact an indicator for zombie firms with the treatment variable $ACQ \times Post$. In addition, to directly read off the relative credit supply effect on risky firms that are not classified as zombies, we include the interaction term $ACQ \times Post \times Risky \times No\ Zombie$, where the latter variable equals one minus the zombie indicator.[12]

The results consistently show that support to risky firms was not driven by financially non-viable firms under either definition. In particular, the coefficient on $ACQ \times Post \times Risky \times No\ Zombie$ is positive and statistically significant, indicating that riskier inherited borrowers not classified as zombie firms were the ones experiencing the relative increase in credit compared to safer borrowers. This pattern is complemented by the estimates on $ACQ \times Post \times Zombie$, which are statistically insignificant for both measures (the ICR-based and the equity-based definitions), providing no evidence of preferential credit support to financially non-viable firms.

[12] For the interaction term with *Risky*, we interact the complement of the zombie indicator, *No Zombie*, so that the regression coefficients are always benchmarked against safe borrowers.

Columns (4) to (6) report the estimates from Equation 2, where we compare the acquiring bank's lending supply to inherited borrowers with its lending to pre-existing borrowers. Importantly, in addition to reducing lending to its existing risky borrowers, the acquiring bank also reduced lending to existing borrowers that were financially non-viable. While a positive and statistically significant coefficient on $ACQ \times Post \times Inherited \times Zombie$ appears in column (6) when using the negative-equity definition, this does not reflect an absolute statistical increase in credit to inherited zombie firms. Rather, it arises from relative comparisons across borrower groups within the acquiring bank's portfolio. Moreover, columns (5) and (6) confirm the additional support to risky–but not zombie–borrowers inherited from the failed institution. Overall, the evidence indicates that the observed support for riskier inherited borrowers does not reflect evergreening or attempts to artificially sustain non-viable firms. Instead, it is consistent with a selective reallocation of credit toward economically viable, albeit riskier, borrowers.

Table 8

Finally, too-big-to-fail risk taking incentives could be another mechanism that might explain credit support to risky firms. With the acquisition, the acquiring bank jumped from being the third largest to become the largest lender to SMEs in Spain. With the increase in the systemic importance of the bank, it might lead to expectations of implicit support, leading the combined bank to ratchet up its risk taking. Overall, the results do not support this mechanism. First, the evolution of Santander's CDS spreads after the resolution relative to other major Spanish banks does not indicate that market participants expected greater implicit support for the combined bank (Figure 8). Additionally, we do not observe a broad increase in lending to all borrowers after the acquisition. Rather, the acquiring bank cut credit to its existing borrowers that were risky.

Figure 8

Taken together, the evidence indicates that the relative support for riskier inherited borrowers, particularly those more exposed to retrenchment by other banks, reflects a strategic franchise-

preservation motive rather than a normalization of pre-resolution tightening, zombie lending, regulatory signaling, or excessive risk-taking. This pattern is consistent with stabilizing economically relevant lending relationships and limiting disruptions to credit intermediation under the SoB framework.

5.2.2 Capital Constraints and Risk-Based Reallocation

While section 5.2.1 highlights strategic incentives to preserve inherited borrowers, a central question is whether the acquiring bank's capital position shaped how credit was reallocated across risk segments within its broader portfolio. To address this, we extend the analysis to the acquiring bank's pre-existing borrowers in order to assess whether the capital shock induced additional reallocation within the overall loan portfolio.

The acquisition entailed a temporary deterioration in the acquiring bank's regulatory capital position. As shown in Figure 1, the evolution of the acquiring bank's CET1 capital ratio was subpar compared to other major Spanish banks in the quarters following the resolution. This is despite the fact that all CET1, AT1 debt and Tier 2 debt were written down by the resolution authority before the acquisition and the acquiring bank raising €7 billion in capital within two months of the acquisition. Indeed, the subsequent €37 million loss in the first year highlights the immediate pressure on the acquiring bank's capital ratios.

To test whether capital constraints shaped lending behavior, we augment Equation 1 by interacting the post-resolution indicator with bank-level capital ratios. *Bank Capital* is the CET1 capital ratio in the preceding quarter. The coefficient on $Post \times Bank\ Capital$ captures whether better-capitalized banks expanded credit more in the post-resolution period. To assess whether capital constraints operate differentially across borrower risk, we further interact capital with the borrower risk indicator. These interaction terms capture how the cross-sectional and time variation in capital ratios across banks influenced their lending behavior after the resolution. If the subpar post-resolution evolution of the acquiring bank's CET1 ratio relative to other banks drove

the reduction in lending to its existing customers, then one would expect these interaction terms to absorb the statistical significance of the treatment coefficients in our baseline results.

Column (1) of Table 9 reports the baseline specification for the acquiring bank's pre-existing borrowers. The negative and statistically significant coefficient on $ACQ \times Post \times Risky$ indicates that, within the pre-existing portfolio, lending to riskier borrowers evolved less favorably relative to safer borrowers after the resolution. Column (2) introduces $Post \times Bank\ Capital$, whose positive and significant coefficient implies that stronger capital ratios are associated with more robust post-resolution credit growth. Once capital is accounted for, the coefficient on $ACQ \times Post$ becomes statistically insignificant, suggesting that the average post-resolution adjustment in lending to pre-existing borrowers is closely linked to capital conditions.

Column (4) allows capital to operate differentially across risk segments. The positive and highly significant coefficient on $ACQ \times Post \times Risky \times Bank\ Capital$ indicates that stronger capital buffers substantially attenuate the relative adjustment across risk categories. In other words, tighter capital conditions are associated with a greater shift away from more capital-intensive exposures within the pre-existing portfolio.

Table 9

We next consider whether alternative mechanisms could account for these patterns. One possibility is that changes in bank efficiency following the acquisition affected lending. Mergers can generate efficiency gains that expand credit supply Sapienza (2002), but they may also entail short-run integration costs that temporarily weigh on lending. To explore this channel, we incorporate interactions between the post-resolution indicator and measures of nonperforming loans ($Post \times NPLs$) and return on assets ($Post \times ROA$).

The results in Table 9 do not indicate a meaningful role for efficiency effects. The interaction terms involving NPLs and ROA are generally statistically insignificant, and the capital-related coefficients remain stable in magnitude and significance when these variables are included. Moreover,

efficiency-based explanations would not naturally predict that lending adjustments concentrate in more capital-intensive exposures.

Similarly, explanations based on increased market power are difficult to reconcile with the evidence. As shown in section 5.2.1, municipalities where local concentration increased the most did not experience higher loan pricing or disproportionate credit contractions. More importantly, a pure market-power mechanism would not predict that the internal adjustment within the acquiring bank's portfolio be systematically stronger for riskier borrowers.

Overall, the evidence suggests that the acquiring bank efforts to efficiently use its regulatory capital shaped how credit was redistributed within the acquiring bank's portfolio following the resolution. The adjustment took the form of targeted rebalancing across risk segments, more pronounced among capital-intensive exposures, rather than a generalized shift in lending policy. This underscores the central role of capital capacity in determining how privately funded SoB resolutions shape credit allocation.

5.3 Effect on Firm Outcomes

In this section, we study the implications of the SoB resolution on firm-level outcomes. So far, we have primarily analyzed the impact of the SoB resolution on the supply of credit from the acquiring bank by comparing its credit supply to that of other banks. However, the overall effect of the SoB depends on the impact on total credit supply to the firm, which includes lending from other banks. As described in section 4.2, our treatment variable at the firm level is $Share\ ACQ$, which captures a firm's exposure to the failed bank. We measure this exposure prior to the SoB resolution. At the firm level, we cannot include firm-time fixed effects to control for time-varying unobserved credit demand. Instead, we account for heterogeneous demand conditions by introducing firm bin-quarter fixed effects, $\alpha_{cl(f),t}$, which cluster firms by province, industry, and size. Firm size is defined according to the four categories in the CIR: Large, Medium-size, Small, and Micro-enterprises.

5.3.1 Total Credit

Table 10 assesses the impact of the SoB resolution on total credit to borrowers of the failed bank. The results are broadly consistent with those identified at the bank-firm level. Column (1) shows that, on average, total credit to failed-bank borrowers was largely unaffected by the SoB resolution. The coefficient on Share $ACQ \times Post$ is small and statistically insignificant, indicating no aggregate contraction in credit for firms more exposed to the failed bank.

Consistent with the bank-firm credit supply impacts documented in section 5.1, column (2) shows that riskier borrowers did not experience a decline in total credit. The positive and statistically significant coefficient on $Share\ ACQ \times Post \times Risky$ indicates that firms with greater pre-resolution exposure to the failed bank and higher ex-ante risk experienced relatively stronger total credit dynamics following the resolution. Columns (3) to (5) explore additional heterogeneity. While the interaction with firm size ($Micro$) is not robustly significant across specifications, the interaction with the number of bank relationships is positive and statistically significant in columns (4) and (5), indicating that firms with more lending relationships experienced relatively stronger total credit dynamics. This pattern is consistent with the idea that firms with greater access to alternative funding sources were better positioned to smooth potential disruptions.

Table 10

5.3.2 Real Effects

Given the heterogeneous impact of the SoB resolution on total credit, did this lead to any real effects? To investigate this, we next turn to annual firm balance-sheet information for the period 2015-2019.[13] Consistent with the evidence on total credit, the results in Table 11 indicate that borrowers with higher exposure to the failed institution were not adversely affected in terms of real activity. Sales (columns (1)-(3)) and employment (columns (7)-(9)) do not differ significantly

[13] Due to the coarser annual frequency of firm balance-sheet data, it is harder to rule out the potential influence of contemporaneous developments around the resolution event.

between more and less exposed firms, suggesting that the resolution did not impair operating performance among failed-bank borrowers. Investment dynamics display a more nuanced pattern. Column (5) shows that investment increased for riskier firms with stronger pre-resolution ties to the failed institution, as reflected in the positive and statistically significant coefficient on *Share ACQ* $\times$ *Post* $\times$ *Risky*. This result indicates that the insulation of credit supply to riskier inherited borrowers translated into stronger investment performance relative to less exposed risky firms. In addition, column (6) shows a positive and statistically significant coefficient on Share *ACQ* $\times$ *Post* $\times$ *#Relationships*, consistent with the credit-level evidence that borrowers with stronger banking ties experienced relatively more favorable lending conditions. Taken together, these results suggest that the preservation of key lending relationships supported investment activity among the most exposed firms.

Finally, cash holdings (columns (10)-(12)) provide no indication of financial stress among more exposed firms. If anything, the estimated coefficients on *Share ACQ* $\times$ *Post* are positive in all specifications and statistically significant in two of them, pointing to modest increases in cash buffers among firms more exposed to the failed bank.

The firm-level evidence indicates that more exposed firms did not experience adverse real effects following the resolution. In particular, the relative support to riskier inherited borrowers appears to have mitigated potential real spillovers, consistent with the SoB resolution limiting disruptions to the real economy.

Table 11

5.4 Extensions

Our baseline results are robust to several extensions. This includes examining the impact of the SoB resolution on various lending dimensions beyond the quantity and price of lending, assessing effects at the extensive margin, analyzing firms with credit relationships involving both the failed and acquiring banks, and broadening the sample to encompass single-bank borrowers.

5.4.1 Lending Dimensions Beyond Quantity and Price

Beyond adjusting the quantity and price of lending, banks can also modify other contract dimensions when faced with balance-sheet and capital pressures, which in turn influence borrowers' financing capacity. These adjustments include altering loan characteristics, such as shortening loan maturity or increasing collateral requirements. To examine the impact of the business sale on lending maturity, we construct an indicator variable, *Long-Term*, which takes the value of one if the share of outstanding credit of firm f with bank b that has a residual maturity greater than one year exceeds the median.

Columns (1) and (2) of Table 12 show that the effects observed for lending volumes also extend to the maturity of lending. Specifically, column (1) indicates that the acquiring bank supported the maturity of lending to borrowers inherited from the failed bank, especially for riskier borrowers. The relative specification in column (2) confirms that this maturity support was stronger for inherited borrowers relative to the acquiring bank's own pre-existing borrowers.

Columns (3) to (6) separately analyze the effects on term loans and credit lines, where *Term Loan* or *Credit Line*, are the logarithm of the total term loan or credit line granted by bank b to firm f in quarter t, respectively. These results reveal that the baseline findings on lending volumes are primarily driven by shifts in term loan lending. In contrast, the estimated effects on lending through credit lines, as shown in columns (5) to (6), do not indicate significant support for risky borrowers of the failed bank, nor statistically significant differences between inherited and pre-existing borrowers. This pattern is consistent with term lending being the main margin through which longer-term relationship lending is adjusted.

Finally, columns (7) and (8) examine the impact of the SoB resolution on the collateralization of lending, where *Collateralized* is a dummy equal to one if firm f has a collateralized loan with bank b. The findings suggest that, following the resolution, lending by the acquiring bank became more likely to be collateralised compared to other banks. However, there is no evidence that this increase in collateralization was disproportionately targeted toward riskier inherited borrowers. In column

(7), the interaction capturing borrower risk is statistically insignificant, and the relative specification in column (8) likewise shows no significant differential effect for risky inherited borrowers.

Table 12

5.4.2 Extensive Margin

To assess whether the SoB resolution supported credit flows to the real economy, it is important to examine whether our baseline findings, documented at the intensive margin, also extend to the extensive margin. If the acquiring bank's relative support for inherited borrowers, particularly riskier ones, was economically meaningful, it should also be reflected in a lower probability of relationship termination for these firms, rather than merely in adjustments to loan volumes within continuing relationships. To evaluate the impact on the extensive margin, we adapt our specifications in Equation 1 and Equation 2, using as the dependent variable an indicator equal to one if a bank-firm credit relationship active in the pre-resolution period was terminated by 2018Q2. The specification is cross-sectional and compares post-resolution termination probabilities across banks. Specifically, the coefficient on ACQ and its interactions captures whether relationships involving the acquiring bank were more or less likely to be terminated relative to those of other banks, conditional on firm fixed effects, bank-type fixed effects, and firm characteristics.

As Table 13 shows, our findings at the intensive margin are also evident at the extensive margin. First, the acquiring bank was less likely to terminate lending relationships with riskier borrowers inherited from the failed bank. This finding is consistent with the earlier evidence that credit support to these firms was not merely reflected in maintained loan volumes, but also in the preservation of ongoing lending relationships. Second, in the relative specification (columns (4) to (6)), the probability of relationship termination is higher for riskier and smaller pre-existing borrowers compared with similarly characterized inherited firms. Third, the acquiring bank was less likely to terminate lending relationships with borrowers characterized by lower switching costs, captured by the number of bank relationships, and with its most important clients. Somewhat more strongly

than in the intensive-margin results, column (6) indicates that, at the extensive margin, the acquiring bank was also relatively less likely to terminate relationships with the most important inherited borrowers compared to similarly important pre-existing clients.

Table 13

Overall, the evidence indicates that the SoB resolution did not trigger widespread relationship destruction. Instead, the acquiring bank preserved key inherited lending relationships, particularly those involving riskier and economically salient borrowers, at a time when other banks were retrenching from these firms. While adjustments occurred within its broader portfolio under capital constraints, the pattern reflects targeted reallocation across borrower risk segments rather than an indiscriminate contraction of credit ties.

5.4.3 Analysis of Hybrid Borrowers

To sharpen identification, our baseline sample excludes firms that maintained credit relationships with both the failed bank and the acquiring bank prior to the resolution ("hybrid borrowers"). These firms are potentially exposed to both lending policies after the acquisition, making their treatment more complex. In Table 14, we re-estimate our main bank-firm specifications on this sample of hybrid borrowers.

The results indicate that the credit supply response for hybrid borrowers lies between the patterns documented separately for inherited borrowers and for the acquiring bank's broader portfolio. In the specification analogous to Equation 1, the estimated coefficient on $ACQ \times Post$ indicates a moderate adjustment in credit supply, smaller in magnitude than the relative support observed for inherited borrowers but also less pronounced than the rebalancing effects documented elsewhere in the portfolio. Similarly, in the relative specification, the estimated differential effect for hybrid borrowers is economically meaningful but attenuated compared with the baseline estimates for firms exclusively linked to the failed bank. This intermediate response reinforces the interpretation that the resolution generated targeted credit reallocation rather than a uniform shift in lending

policies, consistent with the coexistence of franchise-preserving incentives for inherited exposures and capital-sensitive rebalancing within the combined institution.

Table 14

5.4.4 Analysis of Single-Bank Borrowers

In our baseline sample, we restrict attention to firms with at least two lending relationships in order to absorb time-varying unobserved credit demand through firm-time fixed effects. In this section, we expand the sample to include borrowers with a single lending relationship. Specifically, we incorporate firms for which either the failed institution or the acquiring bank was the sole creditor prior to the resolution. To provide a control group, we also include single-bank borrowers from other institutions. Following Degryse et al. (2019), we construct firm clusters based on the number of borrowing relationships: for firms with multiple lenders, the cluster consists of the firm itself, whereas for single-bank firms clusters are formed at the province-industry-size level.[14]

Table 15 presents the results. Columns (1)-(4) report the estimates for the baseline sample, while columns (5)-(8) extend the sample to include single-bank borrowers. Focusing first on inherited borrowers, columns (5) and (6) indicate that the overall pattern remains broadly consistent with the baseline. In particular, the average post-resolution coefficient on $ACQ \times Post$ becomes negative and statistically significant in the expanded sample (column (6)), suggesting that lending to the broader group of inherited borrowers declined somewhat once single-bank firms are included. This difference relative to the baseline (column (1)) is consistent with the presence of higher switching costs among single-bank firms. By construction, these borrowers are more dependent on their main lender and may face greater informational frictions when reallocating credit across institutions.

Turning to the relative specification in columns (7) and (8), our main mechanism remains intact. The coefficient on $ACQ \times Post \times Inherited$ remains positive and statistically significant (column (7)), and the interaction $ACQ \times Post \times Inherited \times Risky$ is positive and statistically significant

[14] In Table A.2 of the Appendix, we show that controlling firm demand with firm clusters (province, industry, and size) and firm fixed effects render similar results on the sample of borrowers with multiple lending relationships.

in column (8). Thus, even in the expanded sample, inherited borrowers, particularly riskier ones, continue to receive comparatively stronger support relative to the acquiring bank's pre-existing clientele.

Table 15

6. Concluding Remarks

We examine the credit supply and real effects of a bank resolution implemented through the SoB tool. To do so, we exploit the first use of this tool under the EU's post-GFC resolution framework, when it was employed to resolve the failure of a major Spanish bank. We show that the SoB resolution did not negatively impact the acquiring bank's credit supply to inherited borrowers. Instead, lending was unevenly distributed across borrowers depending on their risk and shaped by both the reaction of competing banks and the capital position of the acquiring institution.

Following the resolution, banks not involved in the transaction reduced lending to borrowers of the failed bank, particularly to those perceived as riskier. In contrast, the acquiring bank insulated credit supply to the borrowers it inherited from the failed institution, especially riskier firms that experienced retrenchment from other lenders. This relative support helped dampen the potential real effects of the bank failure. At the same time, lending adjustments within the acquiring bank's pre-existing portfolio were concentrated among more capital-intensive exposures, consistent with the regulatory capital implications of the acquisition. This pattern is consistent with the acquiring bank seeking to preserve the value of the newly acquired lending franchise. In line with this objective, the acquiring bank maintained credit supply to borrowers that were more important to the bank and to those with lower switching costs, pointing to a strategic and relationship-oriented reallocation of lending.

These results point to a number of potential policy relevant implications. First, our findings indicate that the SoB resolution tool can preserve aggregate credit and avoid recourse to public

funds in the resolution of a mid-sized bank. Compared with alternative mechanisms, such as bridge-bank resolutions financed with extraordinary contributions, which appear to entail more pronounced credit contractions for economically important firms (Beck et al., 2020), the SoB tool can sustain lending to affected borrowers, provided that the acquiring bank is sufficiently well capitalized, a condition that our evidence shows to be central for shaping post-resolution credit allocation. Despite the complete write-down of CET1, AT1 debt and Tier 2 subordinated debt, as well as a substantial subsequent capital increase, we detect capital-related lending adjustments within the acquiring bank's existing portfolio. This suggests that the strength of the acquirer's capital buffer plays a central role in determining how credit is reallocated following a resolution. Greater loss-absorbing capacity at the failed bank may mitigate spillovers, and in addition the capital resilience of the acquirer remains critical for avoiding distortions in credit allocation. Our evidence shows that capital strength does not merely affect aggregate lending, but how credit is reallocated across risk segments. More broadly, these findings point to an additional rationale for capital requirements: stronger capital buffers can improve the effectiveness of crisis resolution ex post by enabling sale-of-business interventions that better preserve credit to the real economy. Of course, this must be weighed against any potential contagion effects.

Second, the acquiring bank's business strategy appears to shape how credit is reallocated following resolution. In our setting, the acquirer explicitly aimed to preserve the failed bank's core SME franchise, which likely contributed to limiting credit disruptions. Outcomes may differ, however, in environments characterized by multiple simultaneous bank failures, stressed financial markets, or weak macroeconomic conditions. Moreover, the integration process involved significant restructuring in employment and branch networks. The implications of such operational adjustments for credit allocation remain an open question and warrant further research.

Third, the behavior of banks not directly involved in the resolution plays an important role in shaping aggregate outcomes. The acquiring bank's capacity to dampen the shock might have been greater had other banks not withdrawn from lending relationships with inherited borrowers. This

suggests that information asymmetries matter, both regarding the quality of the failed bank's borrowers and the intended lending strategy of the acquiring bank. Had competing banks anticipated that the acquirer would support riskier inherited firms, they might have been less inclined to reduce credit to these borrowers. In turn, this could have preserved additional lending capacity within the acquiring bank to support its pre-existing risky borrowers and those with higher switching costs.

Overall, our evidence suggests that the SoB tool can preserve credit intermediation and limit real-economy disruptions when implemented with a sufficiently capitalized and strategically aligned acquiring bank. The interaction between regulatory capital constraints, competitive dynamics, and franchise preservation incentives is central to understanding how privately funded bank resolutions reshape credit allocation.

References

Acharya, Viral V., Lea Borchert, Maximilian Jager and Sascha Steffen. (2021). "Kicking the can down the road: Government interventions in the European banking sector". *The Review of Financial Studies*, 34(9), pp. 4090-4131. https://doi.org/10.1093/rfs/hhab002

Acharya, Viral V., Elena Carletti, Fernando Restoy and Xavier Vives. (2024). *The Future of Banking: 6: Banking Turmoil and Regulatory Reform*. CEPR Press, Centre for Economic Policy Research. https://cepr.org/system/files/publication-files/205101-barcelona_6_banking_turmoil_and_regulatory_reform.pdf

Acharya, Viral V., Tim Eisert, Christian Eufinger and Christian Hirsch. (2019). "Whatever it takes: The real effects of unconventional monetary policy". *The Review of Financial Studies*, 32(9), pp. 3366-3411. https://doi.org/10.1093/rfs/hhz005

Adalet McGowan, Müge, Dan Andrews and Valentine Millot. (2018). "The walking dead? Zombie firms and productivity performance in OECD countries". *Economic Policy*, 33(96), pp. 685-736. https://doi.org/10.1093/epolic/eiy012

Allen, Franklin, Elena Carletti and Robert Marquez. (2011). "Credit market competition and capital regulation". *The Review of Financial Studies*, 24(4), pp. 983-1018. https://doi.org/10.1093/rfs/hhp089

Auer, Raphael, Alexandra Matyunina and Steven Ongena. (2022). "The countercyclical capital buffer and the composition of bank lending". *Journal of Financial Intermediation*, 52(100965). https://doi.org/10.1016/j.jfi.2022.100965

Banco de España. (2017). "Box 2.4 - Banco Popular Español Resolution Process". *Financial Stability Report, Banco de España*, 11/2017. https://www.bde.es/f/webbde/Secciones/Publicaciones/InformesBoletinesRevistas/InformesEstabilidadFinancera/17/IEF_Noviembre2017Ing.pdf

Banerjee, Ryan, and Boris Hofmann. (2018). "The rise of zombie firms: causes and consequences". *BIS Quarterly Review*, September, Bank for International Settlements. https://ideas.repec.org/a/bis/bisqtr/1809g.html

Banerjee, Ryan, and Boris Hofmann. (2022). "Corporate zombies: anatomy and life cycle". *Economic Policy*, 37(112), pp. 757-803. https://doi.org/10.1093/epolic/eiac027

Beck, Thorsten, Samuel Da-Rocha-Lopes and André F. Silva. (2020). "Sharing the pain? Credit supply and real effects of bank bail-ins". *The Review of Financial Studies*, 34(4), pp. 1747-1788. https://doi.org/10.1093/rfs/hhaa067

Berger, Allen N., and Christa H. S. Bouwman. (2013). "How does capital affect bank performance during financial crises?". *Journal of Financial Economics*, 109(1), pp. 146-176. https://doi.org/10.1016/j.jfineco.2013.02.008

Berger, Allen N., Charles P. Himmelberg, Raluca A. Roman and Sergey Tsyplakov. (2022). "Bank bailouts, bail-ins, or no regulatory intervention? A dynamic model and empirical tests of optimal regulation and implications for future crises". *Financial Management*, 51(4), pp. 1031-1090. https://doi.org/10.1111/fima.12392

Bernard, Benjamin, Agostino Capponi and Joseph E. Stiglitz. (2022). "Bail-ins and bailouts: Incentives, connectivity, and systemic stability". *Journal of Political Economy*, 130(7), pp. 1805-1859. https://doi.org/10.1086/719758

Blattner, Laura, Luisa Farinha and Francisca Rebelo. (2023). "When losses turn into loans: The cost of weak banks". *American Economic Review*, 113(6), pp. 1600-1641. https://doi.org/10.1257/aer.20190149

Bogdanova, Bilyana, and Mathias Drehmann. (2017). "How did markets react to bank distress in Europe?". *BIS Quarterly Review*, September. https://www.bis.org/publ/qtrpdf/r_qt1709u.htm

Bonaccorsi Di Patti, Emilia, and Giorgio Gobbi. (2007). "Winners or losers? The effects of banking consolidation on corporate borrowers". *The Journal of Finance*, 62(2), pp. 669-695. https://doi.org/10.1111/j.1540-6261.2007.01220.x

Bonfim, Diana, Geraldo Cerqueiro, Hans Degryse and Steven Ongena. (2023). "On-Site Inspecting Zombie Lending". *Management Science*, 69(5), pp. 2547-2567. https://doi.org/10.1287/mnsc.2022.4452

Brei, Michael, Leonardo Gambacorta, Marcella Lucchetta and Bruno Maria Parigi. (2023). "How effective are bad bank resolutions? New evidence from Europe". *Journal of Financial Stability*, 67(101153). https://doi.org/10.1016/j.jfs.2023.101153

Brei, Michael, Leonardo Gambacorta and Goetz von Peter. (2013). "Rescue packages and bank lending". *Journal of Banking & Finance*, 37(2), pp. 490-505. https://doi.org/https://doi.org/10.1016/j.jbankfin.2012.09.010

Colliard, Jean-Edouard, and Denis Gromb. (2024). "Financial restructuring and resolution of banks". CEPR Discussion Paper, 19032, Centre for Economic Research. https://cepr.org/publications/dp19032

Cornett, Marcia Millon, Jamie John McNutt, Philip E. Strahan and Hassan Tehranian. (2011). "Liquidity risk management and credit supply in the financial crisis". *Journal of Financial Economics*, 101(2), pp. 297-312. https://doi.org/10.1016/j.jfineco.2011.03.001

Dassatti, Cecilia, Rodrigo Lluberas and Francesc Rodriguez-Tous. (2026). "Loan evergreening through banks' lenses: Evidence from credit product-level data". *Journal of Money, Credit and Banking*. Early view. https://doi.org/10.1111/jmcb.13275

De Haas, Ralph, and Neeltje Van Horen. (2012). "International Shock Transmission after the Lehman Brothers Collapse: Evidence from Syndicated Lending". *American Economic Review*, 102(3), pp. 231-237. https://doi.org/10.1257/aer.102.3.231

Degryse, Hans, Olivier De Jonghe, Sanja Jakovljević, Klaas Mulier and Glenn Schepens. (2019). "Identifying credit supply shocks with bank-firm data: Methods and applications". *Journal of Financial Intermediation*, 40(100813). https://doi.org/10.1016/j.jfi.2019.01.004

Degryse, Hans, Nancy Masschelein and Janet Mitchell. (2011). "Staying, dropping, or switching: The impacts of bank mergers on small firms". *The Review of Financial Studies*, 24(4), pp. 1102-1140. https://doi.org/10.1093/rfs/hhp126

Dell'Ariccia, Giovanni, Maria Soledad Martinez Peria, Deniz Igan, Elsie Addo Awadzi, Marc Dobler and Damiano Sandri. (2018). "Trade-offs in bank resolution". IMF Staff Discussion Notes, 18/02, International Monetary Fund. https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2018/02/09/Trade-offs-in-Bank-Resolution-45127

FROB. (2017). *FROB sale of business process letter.* FROB, Madrid, 6, June, Executive Resolution Authority. https://www.srb.europa.eu/system/files/media/document/sale_process_letter.pdf

Gavilá, Sergio, Alfredo Maldonado and Antonio Marcelo. (2020). "The Banco de España in-house credit assessment system". *Financial Stability Review-Banco de España*, 38 (Spring 2020), pp. 95-122. https://repositorio.bde.es/handle/123456789/13555

Giannetti, Mariassunta, and Andrei Simonov. (2013). "On the real effects of bank bailouts: Micro evidence from Japan". *American Economic Journal: Macroeconomics*, 5(1), pp. 135-167. https://doi.org/10.1257/mac.5.1.135

Gropp, Reint, Christian Gruendl and Andre Guettler. (2014). "The impact of public guarantees on bank risk-taking: Evidence from a natural experiment". *Review of Finance*, 18(2), pp. 457-488. https://doi.org/10.1093/rof/rft014

Gutiérrez, José E., and Luis Fernández Lafuerza. (2025). "Stress tests, information disclosure, and credit line runs". *Journal of Money, Credit and Banking*, 57(7), pp. 1691-1728. https://doi.org/https://doi.org/10.1111/jmcb.13242

Holmström, Bengt, and Jean Tirole. (1997). "Financial intermediation, loanable funds, and the real sector". *The Quarterly Journal of Economics*, 112(3), pp. 663-691. https://doi.org/10.1162/003355397555316

Homar, Timotej, and Sweder J. G. van Wijnbergen. (2017). "Bank recapitalization and economic recovery after financial crises". *Journal of Financial Intermediation*, 32, pp. 16-28. https://doi.org/10.1016/j.jfi.2016.11.004

Hryckiewicz, Aneta, Natalia Kryg and Dimitrios P. Tsomocos. (2023). "Bank resolution mechanisms revisited: Towards a new era of restructuring". *Journal of Financial Stability*, 67(101158). https://doi.org/10.1016/j.jfs.2023.101158

Huang, Zongbo. (2025). "Asset-Side Bank Runs and Liquidity Rationing: A Vicious Cycle". *Management Science*, 71(4), pp. 3537-3557. https://doi.org/10.1287/mnsc.2023.00872

International Monetary Fund. (2018). "Euro Area Policies: Financial Sector Assessment ProgramTechnical Note-Bank Resolution and Crisis Management". IMF Staff Country Reports, 2018/232, International Monetary Fund. https://ideas.repec.org/p/imf/imfscr/2018-232.html

Jiménez, Gabriel, Steven Ongena, José-Luis Peydró and Jesús Saurina. (2012). "Credit Supply and Monetary Policy: Identifying the Bank Balance-Sheet Channel with Loan Applications". *American Economic Review*, 102(5), pp. 2301-2326. https://doi.org/10.1257/aer.102.5.2301

Keister, Todd, and Yuliyan Mitkov. (2023). "Allocating losses: Bail-ins, bailouts and bank regulation". *Journal of Economic Theory*, 210(105672). https://doi.org/10.1016/j.jet.2023.105672

Khwaja, Asim Ijaz, and Atif Mian. (2008). "Tracing the impact of bank liquidity shocks: Evidence from an emerging market". *American Economic Review*, 98(4), pp. 1413-1442. https://doi.org/10.1257/aer.98.4.1413

Kishan, Ruby P., and Timothy P. Opiela. (2000). "Bank size, bank capital, and the bank lending channel". *Journal of Money, Credit and Banking*, 32(1), pp. 121-141. https://doi.org/10.2307/2601095

Klimek, Peter, Sebastian Poledna, J. Doyne Farmer and Stefan Thurner. (2015). "To bail-out or to bail-in? Answers from an agent-based model". *Journal of Economic Dynamics and Control*, 50(C), pp. 144-154. https://doi.org/10.1016/j.jedc.2014.08.02

Lambrecht, Bart M., and Alex S. L. Tse. (2023). "Liquidation, bailout, and bail-in: Insolvency resolution mechanisms and bank lending". *Journal of Financial and Quantitative Analysis*, 58(1), pp. 175-216. https://doi.org/10.1017/S0022109022000813

Lintner, Pamela, Marie Anne Johanna Lincoln Nagy, Piotr Pyziak, Andrew John Godwin, Susan Caroline Schroeder and Nurgul Irsalieva. (2017). *Understanding bank recovery and resolution in the EU: A guidebook to the BRRD.* World Bank Group, 112266. http://documents.worldbank.org/curated/en/100781485375368909

Mariathasan, Mike, and Ouarda Merrouche. (2012). "Recapitalization, credit and liquidity". *Economic Policy*, 27(72), pp. 603-646. https://doi.org/10.1111/j.1468-0327.2012.00293.x

Paravisini, Daniel. (2008). "Local bank financial constraints and firm access to external finance". *The Journal of Finance*, 63(5), pp. 2161-2193. https://doi.org/10.1111/j.1540-6261.2008.01393.x

Paravisini, Daniel, Veronica Rappoport and Philipp Schnabl. (2023). "Specialization in bank lending: Evidence from exporting firms". *The Journal of Finance*, 78(4), pp. 2049-2085. https://doi.org/https://doi.org/10.1111/jofi.13254

Peek, Joe, and Eric S. Rosengren. (2005). "Unnatural selection: Perverse incentives and the misallocation of credit in Japan". *The American Economic Review*, 95(4), pp. 1144-1166. https://doi.org/10.1257/0002828054825691

Santander Group. (2017). *Banco Popular Acquisition: Creating Shareholder Value Through In-Market Consolidation.* Yale School of Management. https://elischolar.library.yale.edu/cgi/viewcontent.cgi?article=2638&context=ypfs-documents2

Sapienza, Paola. (2002). "The effects of banking mergers on loan contracts". *The Journal of Finance*, 57(1), pp. 329-367. https://doi.org/10.1111/1540-6261.00424

Schivardi, Fabiano, Enrico Sette and Guido Tabellini. (2022). "Credit misallocation during the European financial crisis". *The Economic Journal*, 132(641), pp. 391-423. https://doi.org/10.1093/ej/ueab039

Scott, Jonathan A., and William C. Dunkelberg. (2003). "Bank mergers and small firm financing". *Journal of Money, Credit, and Banking*, 35(6-1), pp. 999-1017. https://doi.org/10.1353/mcb.2003.0049

Segura, Anatoli, and Sergio Vicente. (2019). "Bank resolution and public backstop in an asymmetric banking union". Temi di discussione - Working Papers, 1212, Bank of Italy. https://www.bancaditalia.it/pubblicazioni/temi-discussione/2019/2019-1212/en_Tema_1212.pdf

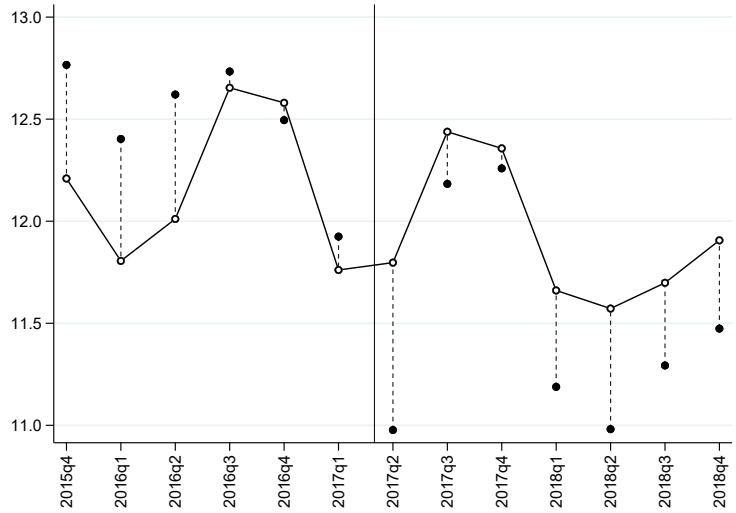
Single Resolution Board. (2017). *Memo - Regarding the non-confidential version of the documents related to the resolution of Banco Popular*. [Explanatory Note]. https://www.srb.europa.eu/system/files/media/document/explanatory_note.pdf

Single Resolution Board. (2020). *Expectations for banks*. https://www.srb.europa.eu/system/files/media/document/efb_main_doc_final_web_0_0.pdf

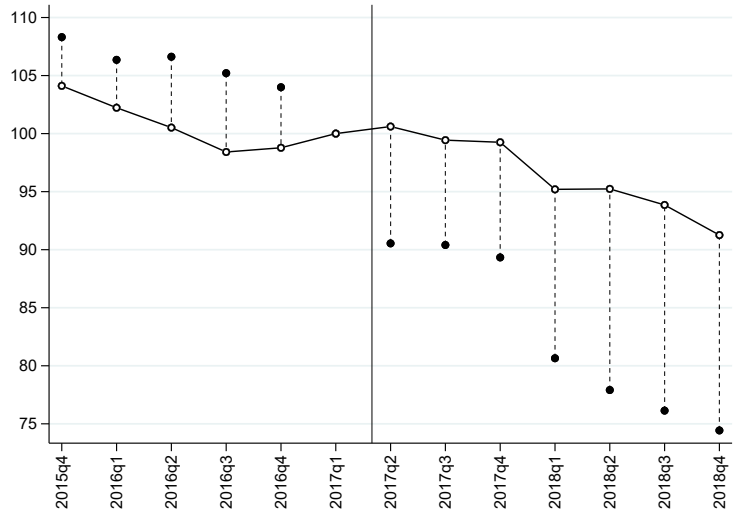
Uluc, Arzu, and Tomasz Wieladek. (2018). "Capital requirements, monetary policy and risk shifting in the mortgage market". *Journal of Financial Intermediation*, 35(B), pp. 3-16. https://doi.org/10.1016/j.jfi.2018.06.007

Walther, Ansgar, and Lucy White. (2020). "Rules versus discretion in bank resolution". *The Review of Financial Studies*, 33(12), pp. 5594-5629. https://doi.org/10.1093/rfs/hhaa032

Figures & Tables



(a) CET1 Capital Ratio



(b) Corporate Lending

Figure 1: Acquirer's Solvency and Lending Around the Target's Resolution

This figure shows the evolution of the acquirer's CET1 capital ratio and lending to non-financial firms around the resolution date of the target bank in June 2017, represented by the black dots in panels a and b, respectively. The values of these variables before the resolution date consider the new resulting bank (i.e., as if the target and acquirer had been one entity before). These variables are compared to other Spanish global systemically important institutions (G-SIIs) and other systemically important institutions (O-SIIs), represented by the solid line. The data comes from Supervisory Financial Statements available at the Bank of Spain.

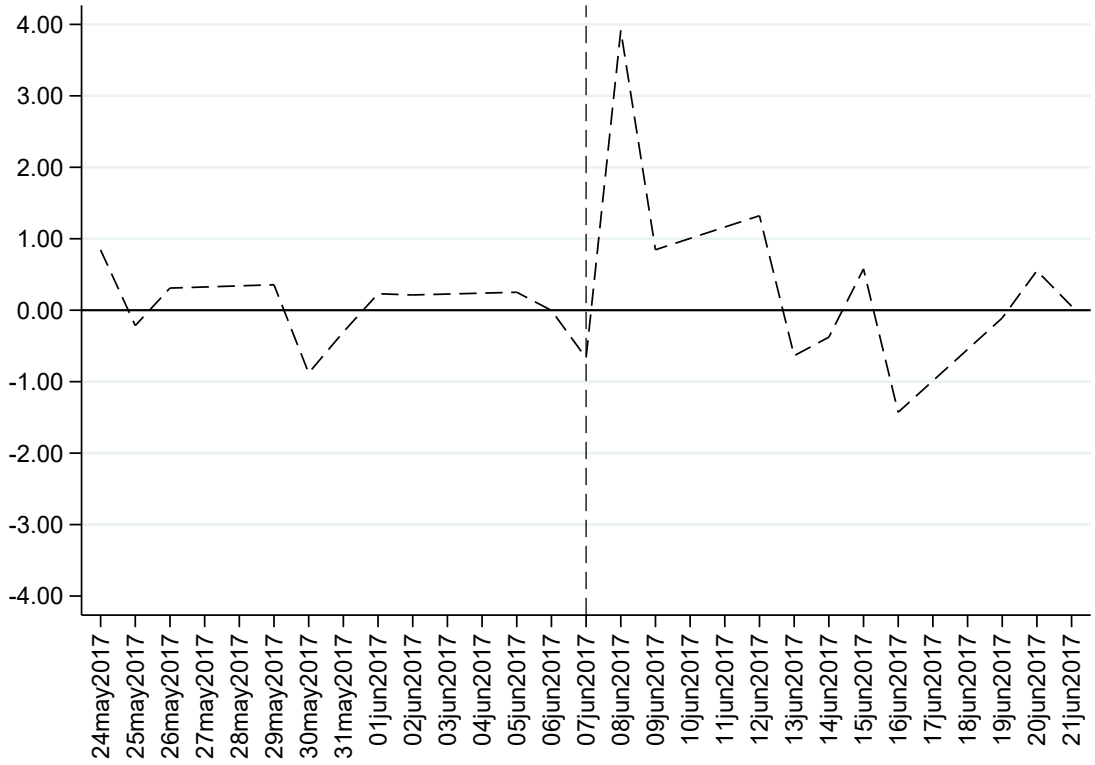


Figure 2: Acquirer's Abnormal Return (%) around the Resolution Date

This figure illustrates the abnormal returns of the acquirer within a 10-day window around the resolution date of June 7, 2017. The abnormal returns are calculated using stock price data from Datastream and a single-factor model, with an estimation window from $t_0 - 120$ to $t_0 - 10$, where t_0 is the event date. The IBEX35 index is used to compute the market return.

	Event Window					
	$[-2,+2]$	$[-2,-1]$	$[+1,+2]$	$[-5,+5]$	$[-5,-1]$	$[+1,+5]$
	(1)	(2)	(3)	(4)	(5)	(6)
Cumulative Abnormal Return	0.0434***	0.0025	0.0476***	0.0479**	0.0039	0.0507***
t-stat	3.1767	0.2884	5.5071	2.3628	0.2844	3.7089

Table 1: Stock Market Reactions around the Acquisition Date

This table presents tests for abnormal returns around the acquisition date on June 7, 2017. Columns 1 and 4 consider event windows of two and five days before and after the event, respectively. Columns 2 and 5 consider the period before the event, whereas columns 3 and 6 consider the period after.

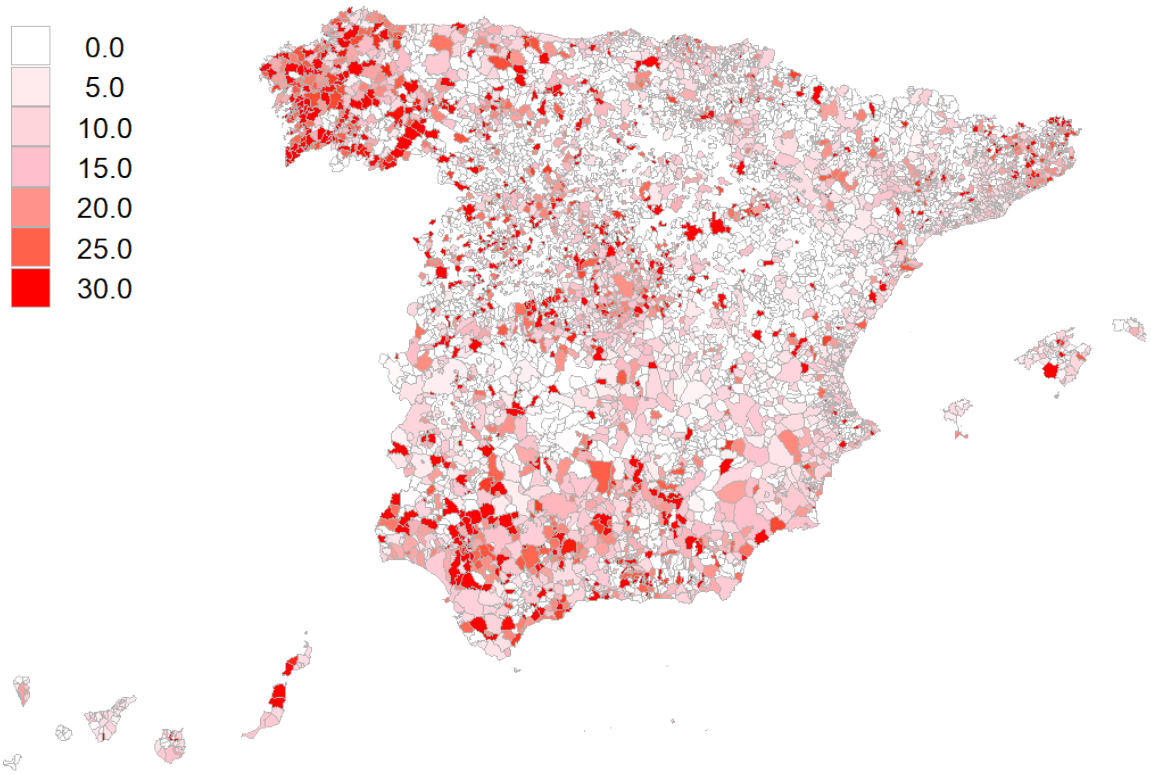


Figure 3: Failed Bank's Corporate Lending Market Share (%) by Municipality Before Resolution

This figure illustrates the corporate lending market share of the failed institution as of 2017Q1, the quarter preceding its resolution, across all municipalities in Spain. The data is sourced from the Spanish Central Credit Register. Values range from 0 to 100%, with the brightest color representing values above 30%.

Panel A:	*Bank-Firm Level Analysis*											
	Inherited Borrowers						Pre-existing Borrowers					
	N	Mean	sd.	P_{25}	P_{50}	P_{75}	N	Mean	sd.	P_{25}	P_{50}	P_{75}
log(Committed Credit)	862,788	11.02	1.82	10.11	11.15	12.12	937,876	10.93	1.94	9.73	11.00	12.14
ACQ	862,788	0.36	0.48	0.00	0.00	1.00	937,876	0.37	0.48	0.00	0.00	1.00
# Relationships	862,788	3.21	1.49	2.00	3.00	4.00	937,876	3.06	1.34	2.00	3.00	4.00
Microenterprise	862,788	0.58	0.49	0.00	1.00	1.00	937,876	0.52	0.50	0.00	1.00	1.00
Top	708,392	0.26	0.44	0.00	0.00	1.00	827,852	0.22	0.41	0.00	0.00	0.00
Risky	708,392	0.39	0.49	0.00	0.00	1.00	827,852	0.26	0.44	0.00	0.00	1.00
Zombie	387,648	0.07	0.25	0.00	0.00	0.00	476,673	0.05	0.22	0.00	0.00	0.00
Failed Bank High Mun %	848,536	0.56	0.50	0.00	1.00	1.00	923,588	0.42	0.49	0.00	0.00	1.00
High Unemployment	848,536	0.53	0.50	0.00	1.00	1.00	923,588	0.50	0.50	0.00	1.00	1.00
High Systemic Importance	862,788	0.58	0.49	0.00	1.00	1.00	937,876	0.60	0.49	0.00	1.00	1.00
Medium Systemic Importance	862,788	0.17	0.37	0.00	0.00	0.00	937,876	0.16	0.37	0.00	0.00	0.00
Long-Term	708,392	0.64	0.41	0.18	0.87	1.00	827,852	0.66	0.41	0.19	0.95	1.00
Collateralized	708,392	0.12	0.33	0.00	0.00	0.00	827,852	0.12	0.33	0.00	0.00	0.00
log(Term Loan)	445,173	10.90	1.74	9.89	10.94	11.98	487,763	10.86	1.88	9.65	10.87	12.03
log(Credit Line)	228,817	10.93	1.29	10.31	10.82	11.51	212,154	11.16	1.88	10.31	11.07	12.02
Termination (extensive margin)	83,933	0.03	0.17	0.00	0.00	0.00	98,231	0.03	0.16	0.00	0.00	0.00

Panel B:	*Firm-Level Analysis*											
	Inherited Borrowers						Pre-Existing Borrowers					
	N	Mean	sd.	P_{25}	P_{50}	P_{75}	N	Mean	sd.	P_{25}	P_{50}	P_{75}
log(Total Bank Credit)	254,057	12.39	1.38	11.50	12.35	13.21	314,316	12.25	1.62	11.18	12.16	13.18
log(Sales)	115,962	6.54	1.54	5.60	6.56	7.51	147,749	6.81	1.72	5.71	6.72	7.84
log(Tangible Assets)	112,423	5.03	1.97	3.84	5.22	6.35	143,815	5.21	2.06	3.89	5.31	6.55
log(Employment)	107,887	1.86	1.22	1.10	1.85	2.64	138,721	2.07	1.37	1.10	2.00	2.89
log(Cash)	105,058	3.37	2.04	2.05	3.43	4.74	136,970	3.96	2.10	2.58	3.97	5.37

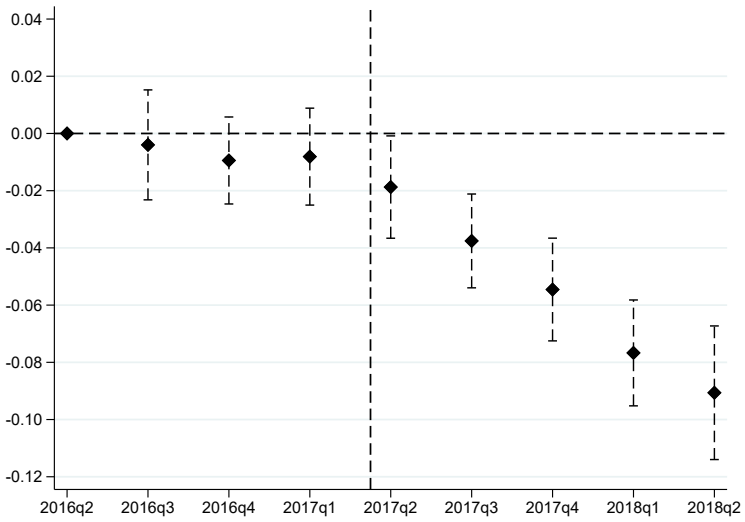
Table 2: Descriptive Statistics

This table presents the descriptive statistics of the variables used in our analysis. *Committed Credit* is the total credit granted by bank b, including undrawn but committed credit, to firm f in quarter t, expressed in euros. *ACQ* is an indicator variable that takes the value one if the lending relationship belongs to either the failed bank or the acquiring bank. *Post* is an indicator variable that takes the value one after the resolution and zero otherwise. *Microenterprise* is an indicator variable that takes value one if the borrower is flagged as a microenterprise in the Credit Register, which follows the European Commission Recommendation 2003/361/CE, and zero otherwise. *Top* is an indicator taking value one if the borrower's outstanding credit with the acquiring bank is in the top quartile, and 0 otherwise. *# Relationships* indicates the number of lending relationships, relative to the median, as of 2016q2. *Risky* is an indicator variable taking value one if the one-year probability of default calculated by the Banco de España's in-house credit assessment systems as of the end of 2016 exceeds 2.25%, and 0 otherwise. *Zombie* takes the value one if in the three preceding the acquisition (2014-2016) the firm had an interest coverage ratio below or equal to one. *Failed Bank High Mun. %* takes the value of one if the failed institution's municipality market share as of 2016q2 was above the median of the distribution of the failed institution's municipality market shares. *High Systemic Importance* takes the value of one for banks with an average systemic importance score above 700 basis points. *Medium Systemic Importance* takes the value of one for banks with an average systemic importance score between 350 and 700 basis points. *Total Bank Credit* represents the total credit granted by banks operating in Spain to firm f, expressed in euros. *Sales* and *Tangible Assets* are measured in thousand of euros. *Employment* measures number of workers.

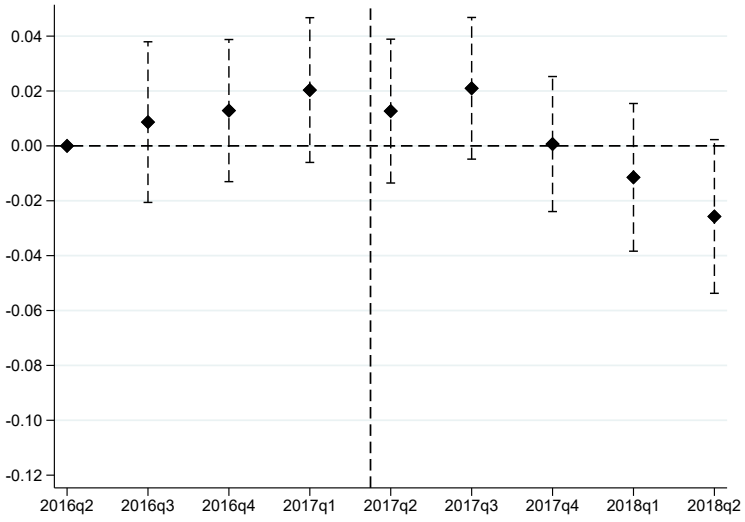
	Borrower Class		
	Inherited	Pre-existing	Inherited vs. Pre-existing
	(1)	(2)	(3)
Post×Risky	-0.047***	-0.006	-0.007
	(0.008)	(0.007)	(0.007)
Post×Inherited			0.006
			(0.005)
Post×Inherited×Risky			-0.043***
			(0.008)
Bank×Firm FE	Y	Y	Y
Firm bin×Time FE	Y	Y	Y
Bank type×Time FE	Y	Y	N
Bank×Time FE	N	N	Y
Obs.	449,179	514,555	972,799
R-squared	0.94	0.95	0.94

Table 3: Lending by Non-Acquiring Banks

This table presents the results of the effect of the resolution of the failed institution on non-acquiring banks. Columns 1 and 2 show the results from regressing the logarithm of committed credit at the bank-firm pair level for quarter t on a set of fixed effects (bank-firm, firm bin-quarter, bank type-quarter) and the interaction of *Risky* and *Post*. Column 1 uses the sample of borrowers inherited due to the resolution of the failed institution, while column 2 uses the sample of borrowers from the acquiring banks that did not have a lending relationship with the failed institution. Column 3 includes both borrower classes, saturates the regressions with bank-quarter fixed effects, and adds as regressors the interaction of *Post* and *Inherited* and the triple interaction of *Post*, *Inherited*, and *Risky*. *Post* is a dummy variable that takes the value one in the aftermath of the resolution and zero otherwise. *Inherited* is an indicator variable that takes the value one if the borrower was inherited by the acquirer due to the resolution of the failed bank. *Risky* is an indicator variable taking the value one if the one-year probability of default calculated by the Banco de España's in-house credit assessment systems as of the end of 2016 exceeds 2.25%, and zero otherwise. *Firm bins* encompass firms belonging to the same industry and province and being of the same size. *Bank type* divides banks into three categories: (1) banks with an average systemic importance score above 700 basis points, which includes the acquiring bank; (2) banks with an average systemic importance score between 350 and 700 basis points; and (3) banks with a score below 350 basis points. Standard errors are double-clustered at the bank-quarter level and firm level. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.



(a) Inherited Borrowers



(b) Pre-existing Borrowers

Figure 4: Total Credit to Firms by Non-Acquiring Banks: Risky vs. Safe Borrowers

The figures present estimated coefficients from firm-level regressions, where the logarithm of total credit granted by non-acquiring banks to a firm is regressed on the interaction of *Risky* with quarter dummies and firm bin-quarter and firm fixed effects. Panel A shows the estimated coefficients using the sample of borrowers inherited by the acquiring banks due to the resolution of the failed institution, while Panel B employs the sample of the acquiring bank's original borrowers (those not having a lending relationship with the failed institution). *Risky* is an indicator variable taking the value one if the one-year probability of default calculated by the Banco de España's in-house credit assessment systems as of the end of 2016 exceeds 2.25%, and zero otherwise. *Firm bins* encompass firms belonging to the same industry and province, being of the same size. Standard errors are clustered at the main bank-quarter level. The bands represent the 2.5%−97.5% confidence interval.

	Baseline				Augmented			
	Inherited		Inherited vs. Pre-existing		Inherited		Inherited vs. Pre-existing	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ACQ×Post	-0.005	-0.045***			-0.011	-0.050***		
	(0.008)	(0.010)			(0.012)	(0.014)		
×Risky		0.051***		-0.029**		0.050***		-0.029**
		(0.010)		(0.011)		(0.010)		(0.011)
×Main Bank					0.017	0.014		
					(0.022)	(0.024)		
ACQ×Post×Inherited			0.042***	-0.007			0.037***	-0.011
			(0.008)	(0.011)			(0.014)	(0.017)
×Risky				0.080***			0.015	0.079***
				(0.015)			(0.022)	(0.014)
×Main Bank								0.012
								(0.024)
Bank×Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Firm×Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Bank Type×Time FE	Y	Y	N	N	Y	Y	N	N
Bank×Time FE	N	N	Y	Y	N	N	Y	Y
Obs.	862,788	708,392	1,800,659	1,536,229	862,788	708,392	1,800,659	1,536,229
R-squared	0.97	0.96	0.97	0.96	0.97	0.96	0.97	0.96

Table 4: Lending by the Acquirer Bank

This table presents results on the effect of the acquisition on the acquirer bank's lending supply to different classes of borrowers. Columns 1 and 2 consider borrowers inherited by the acquirer from the failed institution and present the estimation results of specification (1). Columns 3 and 4 include both inherited borrowers and the acquiring bank's pre-existing borrowers, and report the results of specification (2), which compares the acquiring bank's lending to these two groups after the resolution. In columns 4 to 8, to account for the possibility of a bank-specific-driven demand, we augment these baseline regressions with the interaction of the variable of interest and a variable indicating whether the bank is the main creditor of the firm (*Main Bank*). The dependent variable is the logarithm of total committed credit granted by bank b to firm f at quarter t. *Post* is an indicator variable that takes the value one after the resolution and zero otherwise. *ACQ* is an indicator variable that takes the value one if the lending relationship belongs to either the failed bank or the acquiring bank. *Inherited* is an indicator variable that takes the value one if the borrower was inherited by the acquirer due to the resolution of the failed bank. *Risky* is an indicator variable taking value one if the one-year probability of default calculated by the Banco de España's in-house credit assessment systems as of the end of 2016 exceeds 2.25%, and 0 otherwise. *Bank type* divides banks into three categories: (1) banks with an average systemic importance score above 700 basis points, which includes the acquiring bank; (2) banks with an average systemic importance score between 350 and 700 basis points; and (3) banks with a score below 350 basis points. Standard errors are double-clustered at the bank-quarter level and firm level. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

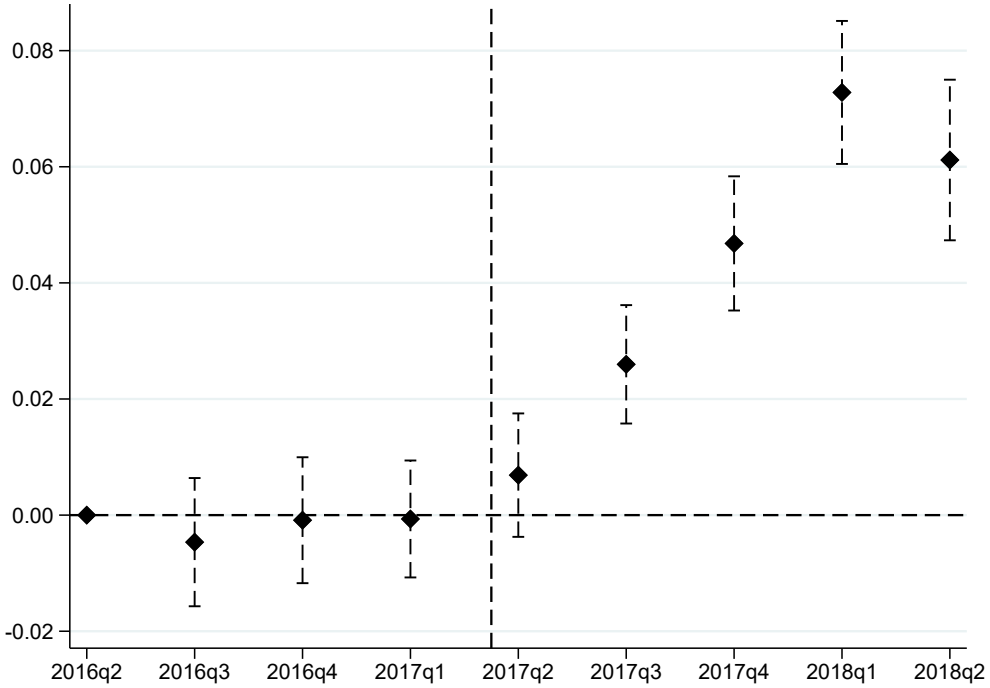
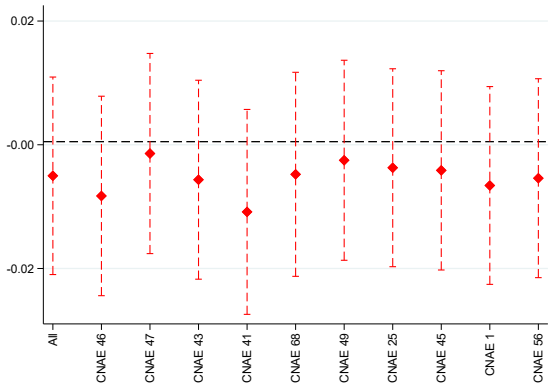
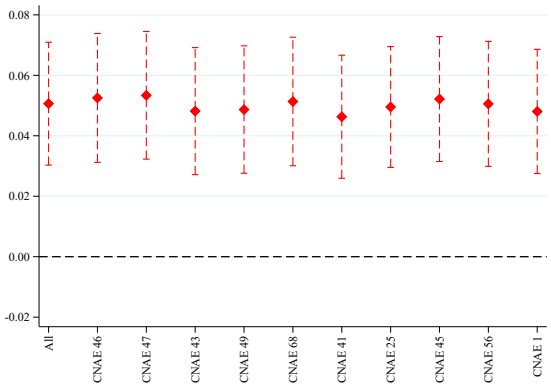


Figure 5: Inherited Borrowers vs. Pre-existing Borrowers, Parallel Trend Check

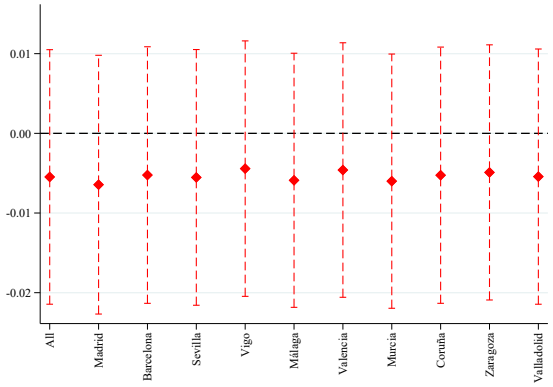
This figure shows the estimated coefficients of a modified version of specification (2), where we replace the variable *Post* by quarter dummies. The dotted line corresponds to the resolution and then acquisition of the failed institution (June 7, 2017). Each dot represents the difference, relative to 2016q2, in credit supply by the acquiring bank (failed institution before its resolution) to borrowers inherited from the failed institution, compared to borrowers who were with the acquirer bank but not the failed institution. Standard errors are clustered at the bank-quarter level. The bands represent the 2.5%−97.5% confidence interval.



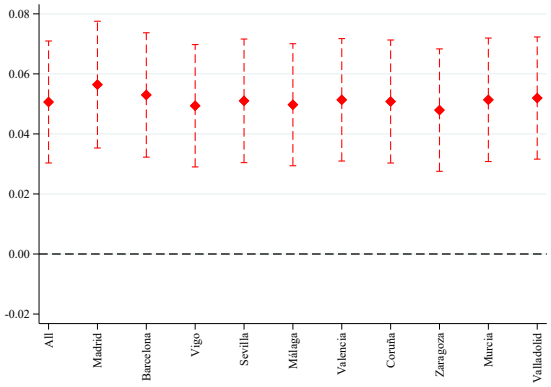
(a) Main Industries−Inherited Borrowers



(b) Main Industries−Risky Inherited Borrowers



(c) Main Municipality−Inherited Borrowers



(d) Main Municipality−Risky Inherited Borrowers

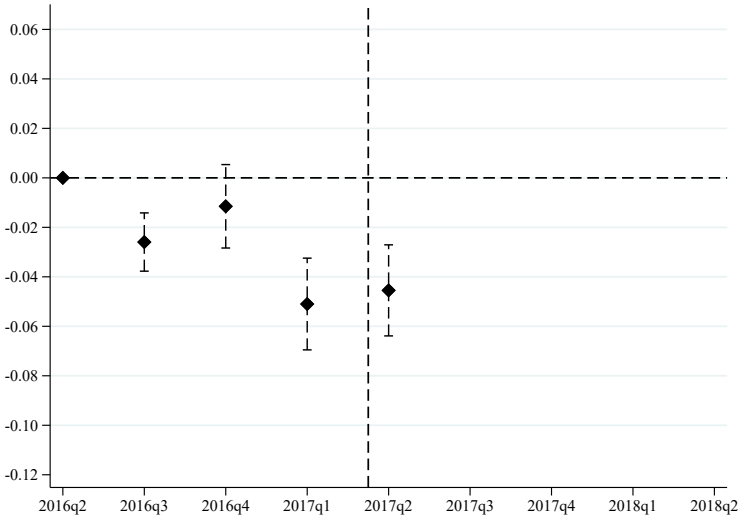
Figure 6: Sensitivity Analysis to Main Industries and Municipalities

The figure presents sensitivity analyses of our baseline estimates in Table 4 for borrowers inherited from the failed bank (i.e., firms that did not have a lending relationship with the acquiring bank prior to the resolution). Panels (a) and (b) report a leave-one-industry-out exercise in which we sequentially exclude each of the main 2-digit industries to which these borrowers belong, while Panels (c) and (d) perform an analogous leave-one-municipality-out exercise. We report estimates for the full set of inherited borrowers (Panels (a) and (c)) and, separately, for the subset of riskier borrowers (Panels (b) and (d)), defined using the ICAS-BE one-year probability of default. The first point ("All") in Panels (a) and (c) corresponds to the baseline estimate reported in column (1) of Table 4, while in Panels (b) and (d) it corresponds to the coefficient on $ACQ \times Post \times Risky$ in column (4). The vertical bands denote 95% confidence intervals. The 2-digit industry codes considered are: Wholesale trade (46), Retail trade (47), Real estate activities (68), Specialized construction activities (43), Land transport and transport via pipelines (49), Construction of buildings (41), Food and beverage service activities (56), Wholesale and retail trade and repair of motor vehicles and motorcycles (45), Crop and animal production, hunting and related service activities (01), Manufacture of food products (10), and Manufacture of fabricated metal products, except machinery and equipment (25).

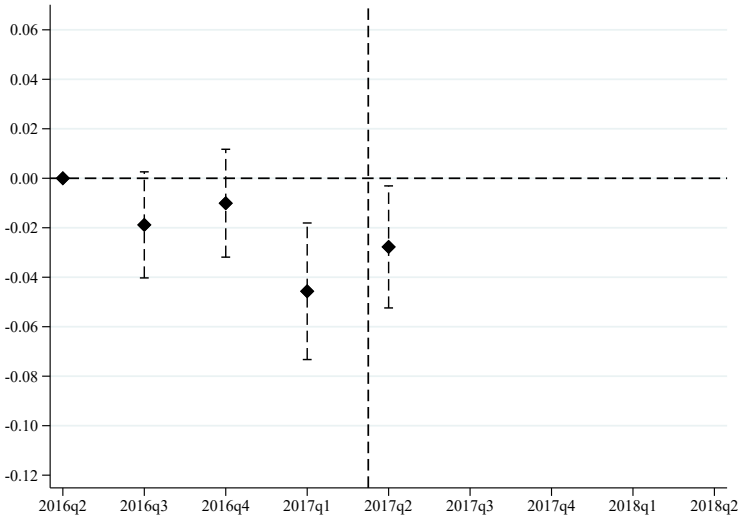
	Inherited				Inherited vs. Pre-existing			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ACQ×Post	-0.011	-0.045***	-0.051***	-0.071***				
	(0.010)	(0.012)	(0.012)	(0.018)				
×Risky		0.051***	0.048***	0.045***		-0.015	-0.018*	-0.020*
		(0.010)	(0.010)	(0.010)		(0.010)	(0.011)	(0.011)
×Micro	0.009	-0.000	0.011	0.023**	-0.068***	-0.067***	-0.052***	-0.039***
	(0.009)	(0.010)	(0.009)	(0.012)	(0.012)	(0.012)	(0.011)	(0.012)
×# Relationships			0.017***	0.015***			0.025***	0.021***
			(0.005)	(0.005)			(0.005)	(0.005)
×Top				0.059**				0.071**
				(0.029)				(0.035)
ACQ×Post×Inherited					0.001	-0.038***	-0.041***	-0.039***
					(0.011)	(0.013)	(0.013)	(0.014)
×Risky						0.066***	0.066***	0.065***
						(0.014)	(0.014)	(0.014)
×Micro					0.075***	0.065***	0.062***	0.061***
					(0.013)	(0.013)	(0.013)	(0.014)
×# Relationships							-0.006	-0.005
							(0.005)	(0.005)
×Top								-0.013
								(0.016)
Bank×Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Firm×Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Bank Type×Time FE	Y	Y	N	N	Y	Y	N	N
Bank×Time FE	N	N	Y	Y	N	N	Y	Y
Obs.	862,788	708,392	708,392	708,392	1,800,659	1,536,229	1,536,229	1,536,229
R-squared	0.97	0.96	0.96	0.96	0.97	0.96	0.96	0.96

Table 5: Heterogeneous Effects Based on Borrower Size, Importance, and Switching Costs

This table presents the estimation results for specifications (1) and (2), incorporating interaction terms between the variables of interest and additional firm characteristics. Columns 1 to 4 show the estimation results of specification (1) for borrowers inherited by the acquirer from the failed bank. Columns 5 to 8 include both inherited borrowers and the acquiring bank's pre-existing borrowers, and report the results of specification (2), which compares the acquiring bank's lending to these two groups after the resolution. The dependent variable is the logarithm of total committed credit granted by bank b to firm f at quarter t. *Post* is an indicator variable that takes the value one after the resolution and zero otherwise. *ACQ* is an indicator variable that takes the value one if the lending relationship belongs to either the failed bank or the acquiring bank. *Inherited* is an indicator variable that takes the value one if the borrower was inherited by the acquirer due to the resolution of the failed bank. *Risky* is an indicator variable taking value one if the one-year probability of default calculated by the Banco de España's in-house credit assessment systems as of the end of 2016 exceeds 2.25%, and 0 otherwise. *Micro* is an indicator variable that takes value one if the borrower is flagged as a microenterprise in the Credit Register, which follows the European Commission Recommendation 2003/361/CE, and zero otherwise. *# Relationships* indicates the number of lending relationships, relative to the median, as of 2016q2. *Top* is an indicator taking value one if the borrower's outstanding credit with the acquiring bank is in the top quartile, and 0 otherwise. *Bank type* divides banks into three categories: (1) banks with an average systemic importance score above 700 basis points, which includes the acquiring bank; (2) banks with an average systemic importance score between 350 and 700 basis points; and (3) banks with a score below 350 basis points. Standard errors are double-clustered at the bank-quarter level and firm level. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.



(a) All Inherited Borrowers



(b) Risky Inherited Borrowers

Figure 7: Pre-Resolution Credit Dynamics: Risky vs. Safer Inherited Borrowers

This figure shows the estimated pre-resolution credit supply dynamics for borrowers of the failed institution. Panel (a) reports estimates for the full set of inherited borrowers, while Panel (b) focuses on the subset of riskier borrowers, defined using the ICAS-BE one-year probability of default. The estimates are obtained from modified versions of specification (1), where the *Post* indicator is replaced by quarter dummies. The sample is restricted to borrowers of the failed bank prior to the resolution event in 2017Q2. All regressions include firm-bank, firm-quarter, and bank type-quarter fixed effects. Bank types classify banks into three categories based on their average systemic importance score: (1) above 700 basis points; (2) between 350 and 700 basis points; and (3) below 350 basis points. The vertical dotted line marks the resolution and subsequent acquisition of the failed institution (June 7, 2017). Standard errors are clustered at the bank-quarter level. Shaded areas represent 95% confidence intervals.

	Inherited			Inherited vs. Pre-existing		
	(1)	(2)	(3)	(4)	(5)	(6)
ACQ × Post	-0.014	-0.024**	-0.057***			
	(0.010)	(0.010)	(0.013)			
× Failed Bank High Mun %	0.015*	0.013	0.008	0.025***	0.024***	0.023***
	(0.009)	(0.009)	(0.010)	(0.006)	(0.006)	(0.007)
× High Unemployment		0.021***	0.015*		0.005	0.002
		(0.008)	(0.009)		(0.006)	(0.006)
× Risky			0.050***			-0.027***
			(0.010)			(0.011)
ACQ × Post × Inherited				0.041***	0.041***	-0.008
				(0.008)	(0.008)	(0.011)
× Risky						0.077***
						(0.015)
Bank × Firm FE	Y	Y	Y	Y	Y	Y
Firm × Time FE	Y	Y	Y	Y	Y	Y
Bank Type × Time FE	Y	Y	Y	N	N	N
Bank × Time FE	N	N	N	Y	Y	Y
Obs.	848,536	848,536	696,229	1,772,119	1,772,119	1,511,139
R-squared	0.97	0.97	0.96	0.97	0.97	0.96

Table 6: The Role of Market Power and Regional Unemployment

This table examines the role of the failed institution's municipality market share and the unemployment rate in the municipality on the acquirer bank's lending. Columns 1 to 3 show the estimation results of specification (1) for borrowers inherited from the failed bank. Columns 4 to 6 include both inherited borrowers and the acquiring bank's pre-existing borrowers, and report the results of specification (2), which compares the acquiring bank's lending to these two groups after the resolution. The dependent variable is the logarithm of total committed credit granted by bank b to firm f at quarter t. *Post* is an indicator variable that takes the value one after the resolution and zero otherwise. *ACQ* is an indicator variable that takes the value one if the lending relationship belongs to either the failed bank or the acquiring bank. *Inherited* is an indicator variable that takes the value one if the borrower was inherited by the acquirer due to the resolution of the failed bank. *Risky* is an indicator variable taking value one if the one-year probability of default calculated by the Banco de España's in-house credit assessment systems as of the end of 2016 exceeds 2.25%, and 0 otherwise. *Failed Bank High Mun. %* takes the value of one if the failed institution's municipality market share as of 2016Q2 was above the median of the distribution of the failed institution's municipality market shares. High Unemployment takes the value of one if the firm is located in a municipality with an unemployment rate above the median of the distribution of municipal unemployment rates as of the end of 2016. *Bank type* divides banks into three categories: (1) banks with an average systemic importance score above 700 basis points, which includes the acquiring bank; (2) banks with an average systemic importance score between 350 and 700 basis points; and (3) banks with a score below 350 basis points. Standard errors are double-clustered at the bank-quarter level and firm level. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

	Inherited			Inherited vs. Pre-existing		
	(1)	(2)	(3)	(4)	(5)	(6)
ACQ	-0.249**	-0.225**	-0.255***			
	(0.102)	(0.103)	(0.090)			
×Risky		-0.059	-0.059		-0.301***	-0.302***
		(0.038)	(0.038)		(0.080)	(0.079)
×Failed Bank High Mun %			0.054			0.025
			(0.049)			(0.035)
Risky		0.680***	0.681***		0.689***	0.689***
		(0.030)	(0.030)		(0.041)	(0.041)
ACQ × Inherited				-0.427**	-0.512**	-0.515**
				(0.211)	(0.219)	(0.218)
×Risky					0.284***	0.285***
					(0.064)	(0.064)
Inherited				0.152***	0.113***	0.115***
				(0.029)	(0.029)	(0.028)
×Risky					-0.038	-0.038
					(0.047)	(0.047)
Loan Type × Time FE	Y	Y	Y	Y	Y	Y
Firm bin × Time FE	Y	Y	Y	Y	Y	Y
Bank Type × Time FE	Y	Y	Y	N	N	N
Bank × Time FE	N	N	N	Y	Y	Y
Obs.	57,337	57,337	57,337	124,358	124,358	124,358
R-squared	0.38	0.41	0.41	0.40	0.42	0.42

Table 7: Analysis on Loan Pricing, New Loans After the Acquisition

This table presents regression results on loan prices. The sample includes loan-level interest rates at the origination of new loans granted in euros between July 1, 2017, and June 30, 2018 (a year after the resolution and subsequent acquisition of the failed institution). The results in columns 1 to 3 are derived from regressing interest rates on a set of fixed effects (firm bin-quarter of origination, loan type-quarter of origination, and bank type-quarter of origination fixed effects) and a set of variables of interest (*ACQ*, *Risky* , *Inherited*, *Failed Bank High Mun.* %, and their interactions). Columns 1 to 3 focus on borrowers inherited from the failed bank. Columns 4 to 6 include both inherited borrowers and the acquiring bank's pre-existing borrowers, and saturate the specification with bank-quarter of origination fixed effects. *ACQ* is an indicator variable that takes the value one if the lending relationship belongs to either the failed bank or the acquiring bank. *Inherited* is an indicator variable that takes the value one if the borrower was inherited by the acquirer due to the resolution of the failed bank. *Risky* is an indicator variable taking value one if the one-year probability of default calculated by the Banco de España's in-house credit assessment systems as of the end of 2016 exceeds 2.25%, and 0 otherwise. *Failed Bank High Mun.* % takes the value of one if the failed institution's municipality market share as of 2016Q2 was above the median of the distribution of the failed institution's municipality market shares. Firm bins encompass firms belonging to the same industry and province and being of the same size. *Bank type* divides banks into three categories: (1) banks with an average systemic importance score above 700 basis points, which includes the acquiring bank; (2) banks with an average systemic importance score between 350 and 700 basis points; and (3) banks with a score below 350 basis points. *Loan type* includes credit lines, term loans, and receivable-backed credit. Standard errors are clustered at the bank-quarter level. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

	Inherited			Inherited vs. Pre-existing		
		ICR≤1	Equity< 0		ICR≤1	Equity< 0
	(1)	(2)	(3)	(4)	(5)	(6)
ACQ×Post	-0.051***	-0.049***	-0.051***			
	(0.012)	(0.012)	(0.012)			
×Risky	0.037***			-0.043***		
	(0.012)			(0.015)		
×Risky × No Zombie		0.039***	0.038***		-0.041***	-0.029***
		(0.013)	(0.013)		(0.016)	(0.015)
×Zombie		0.000	0.030		-0.044*	-0.122***
		(0.023)	(0.022)		(0.024)	(0.027)
ACQ×Post×Inherited				-0.013	-0.012	-0.016
				(0.012)	(0.013)	(0.013)
×Risky				0.080***		
				(0.019)		
×Risky × No Zombie					0.081***	0.067***
					(0.019)	(0.019)
×Zombie					0.042	0.150***
					(0.032)	(0.032)
Bank × Firm FE	Y	Y	Y	Y	Y	Y
Firm × Time FE	Y	Y	Y	Y	Y	Y
Bank Type × Time FE	Y	Y	Y	N	N	N
Bank × Time FE	N	N	N	Y	Y	Y
Obs.	387,648	387,648	387,648	864,279	864,279	864,279
R-squared	0.96	0.96	0.96	0.96	0.96	0.96

Table 8: Analysis on Zombie Lending

This table examines bank lending based on firm riskiness and financial viability. Columns 1-3 show the estimation results of specification (1) for borrowers inherited from the failed bank. Columns 4-6 include both inherited borrowers and the acquiring bank's pre-existing borrowers, and report the results of specification (2), which compares the acquiring bank's lending to these two groups after the resolution by including bank-quarter fixed effects in the regressions. The dependent variable is the logarithm of total committed credit granted by bank b to firm f at quarter t. *Post* is an indicator variable that takes the value one after the resolution and zero otherwise. *ACQ* is an indicator variable that takes the value one if the lending relationship belongs to either the failed bank or the acquiring bank. *Inherited* is an indicator variable that takes the value one if the borrower was inherited by the acquirer due to the resolution of the failed bank. *Risky* is an indicator variable taking value one if the one-year probability of default calculated by the Banco de España's in-house credit assessment systems as of the end of 2016 exceeds 2.25%, and 0 otherwise. *Zombie* takes the value one if, in the three years preceding the acquisition (2014-2016), the firm had an interest coverage ratio less than or equal to one (columns (2) and (5)), or if the firm's equity was negative in 2016 (columns (3) and (6)). *No Zombie* is one minus the zombie indicator. *Bank type* divides banks into three categories: (1) banks with an average systemic importance score above 700 basis points, which includes the acquiring bank; (2) banks with an average systemic importance score between 350 and 700 basis points; and (3) banks with a score below 350 basis points. Standard errors are double-clustered at the bank-quarter level and firm level. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

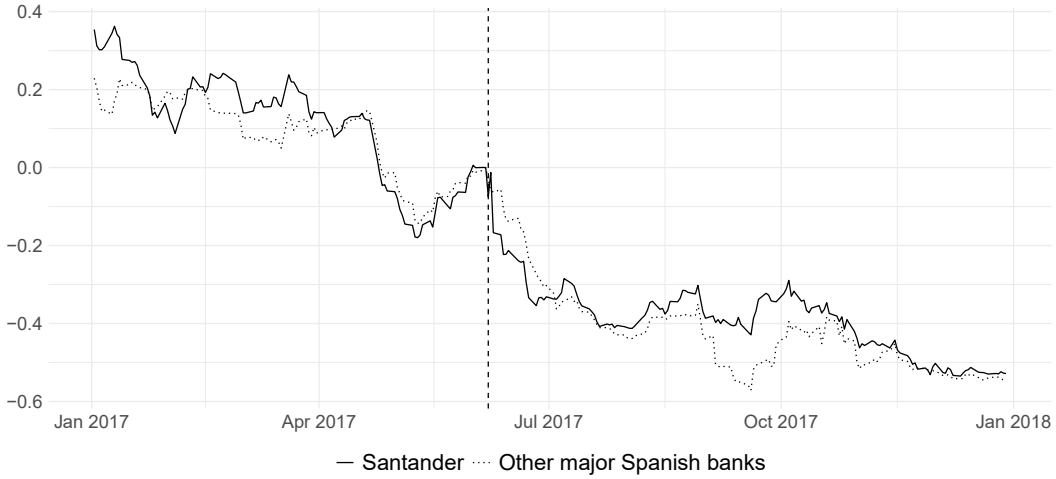


Figure 8: CDS spreads of acquirer bank and other major Spanish banks

This figure shows the daily 5-year CDS spread on senior unsecured debt of Banco Santander (acquirer bank) and the median CDS spread of the four other major Spanish banks (BBVA, Bankia, Banco Sabadell and Caixa Bank), rebased to zero on 6th June 2017. The vertical dashed line indicates the 7th June 2017, the day of the resolution of Banco Popular.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ACQ × Post	-0.031***	-0.017	-0.008	-0.008	-0.008	-0.020	-0.012
	(0.011)	(0.012)	(0.013)	(0.021)	(0.014)	(0.013)	(0.014)
ACQ × Post × Risky	-0.029**		-0.029***	0.0279*			
	(0.011)		(0.011)	(0.015)			
Bank Capital		-0.006	-0.005	-0.007	-0.007	-0.005	-0.006
		(0.007)	(0.007)	(0.008)	(0.007)	(0.007)	(0.007)
Post × Bank Capital		0.016***	0.016***	0.014***	0.016***	0.016***	0.017***
		(0.004)	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)
ACQ × Post × Bank Capital				-0.060			
				(0.043)			
Post × Risky × Bank Capital				0.005			
				(0.006)			
ACQ × Post × Risky × Bank Capital				0.133***			
				(0.040)			
NPL					-0.008		-0.009
					(0.005)		(0.005)
Post × NPL					-0.002		-0.004
					(0.004)		(0.004)
ROA						0.004	0.005
						(0.009)	(0.009)
Post × ROA						-0.007	-0.009
						(0.009)	(0.009)
Bank × Firm FE	Y	Y	Y	Y	Y	Y	Y
Firm × Time FE	Y	Y	Y	Y	Y	Y	Y
Bank type × Time FE	Y	Y	Y	Y	Y	Y	Y
Obs.	827,852	926,954	818,610	818,610	926,954	925,551	925,551
R-squared	0.97	0.97	0.97	0.97	0.97	0.97	0.97

Table 9: Effect of Bank Capital on Lending after the Acquisition

This table presents the results on the effect of the acquisition on lending by the acquiring bank to its own borrowers, those that were with the acquirer but not with the failed institution prior to the resolution. *Post* is an indicator variable that takes the value one after the resolution and zero otherwise. *ACQ* is an indicator variable that takes the value one if the lending relationship belongs to the acquiring bank. For each column, we include a bank-specific time-varying lagged characteristic to assess whether it accounts for the differential decline in lending by the acquiring bank. *Risky* is an indicator variable taking value one if the one-year probability of default calculated by the Banco de España's in-house credit assessment systems as of the end of 2016 exceeds 2.25%, and 0 otherwise. *Bank Capital* is the ratio of regulatory capital to total assets. NPL is the ratio of non-performing loans to Spanish private-sector exposures relative to total assets. ROA is the return on total assets. *Bank type* divides banks into three categories: (1) banks with an average systemic importance score above 700 basis points, which includes the acquiring bank; (2) banks with an average systemic importance score between 350 and 700 basis points; and (3) banks with a score below 350 basis points. Standard errors are double-clustered at the bank-quarter level and firm level. All specifications include the full set of lower-order interaction terms required by the inclusion of capital and risk interactions (e.g., interactions between capital, risk, and treatment indicators). To save space, these coefficients are not reported. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

	(1)	(2)	(3)	(4)	(5)
Share ACQ×Post	-0.002	-0.010	0.004	-0.005	-0.007
	(0.006)	(0.007)	(0.008)	(0.006)	(0.009)
Share ACQ×Post×Risky		0.019***			0.020***
		(0.006)			(0.006)
Share ACQ×Post×Micro			-0.009		-0.010
			(0.006)		(0.006)
Share ACQ×Post×# Relationships				0.010***	0.009***
				(0.003)	(0.003)
Firm FE	Y	Y	Y	Y	Y
Firm bin×Time FE	Y	Y	Y	Y	Y
Main bank type×Time FE	Y	Y	Y	Y	Y
Obs.	254,057	254,057	254,057	254,057	254,057
R-squared	0.96	0.96	0.96	0.96	0.96

Table 10: Effect on Total Bank Credit

This table presents results on the effect of the resolution/acquisition on total bank credit by estimating specification 3 and using the logarithm of total bank credit of firm f as the dependent variable. The table considers borrowers inherited by the acquirer due to the resolution of the failed institution. *Post* is an indicator variable that takes the value one after the resolution and zero otherwise. *Share ACQ* is the average share of outstanding credit given by the failed institution to firm f, relative to the firm's total bank debt, during the pre-period. *Risky* is an indicator variable taking value one if the one-year probability of default calculated by the Banco de España's in-house credit assessment systems as of the end of 2016 exceeds 2.25%, and 0 otherwise. *Micro* is an indicator variable that takes value one if the borrower is flagged as a microenterprise in the Credit Register, which follows the European Commission Recommendation 2003/361/CE, and zero otherwise. *# Relationships* indicates the number of lending relationships, relative to the median, as of 2016q2. *Main Bank* is the main creditor of the firm as of 2017q1. *Firm bins* encompass firms belonging to the same industry and province and being of the same size. *Bank type* divides banks into three categories: (1) banks with an average systemic importance score above 700 basis points, which includes the acquiring bank; (2) banks with an average systemic importance score between 350 and 700 basis points; and (3) banks with a score below 350 basis points. All the regressions include the interaction of *Risky* with quarter dummies. Standard errors are double-clustered at the main bank-quarter level and firm level. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

	Sales			Investment			Employment			Cash		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Share ACQ×Post	-0.004	-0.004	-0.002	-0.005	-0.012	-0.008	-0.003	-0.000	0.004	0.015*	0.016*	0.016
	(0.003)	(0.003)	(0.007)	(0.007)	(0.008)	(0.008)	(0.003)	(0.003)	(0.006)	(0.009)	(0.009)	(0.013)
Share ACQ×Post×Risky		0.000	-0.003		0.021***	0.020**		-0.008	-0.010		-0.003	-0.005
		(0.006)	(0.007)		(0.007)	(0.008)		(0.006)	(0.007)		(0.016)	(0.017)
Share ACQ×Post×Micro			0.003			-0.003			-0.001			0.001
			(0.011)			(0.009)			(0.010)			(0.016)
Share ACQ×Post×# Relationships			-0.001			0.008**			-0.000			-0.004
			(0.003)			(0.004)			(0.002)			(0.008)
Firm Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Province×Industry×Time FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Main bank type×Time FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Obs.	115,962	115,962	115,962	112,423	112,423	112,423	107,887	107,887	107,887	105,058	105,058	105,058
R-squared	0.98	0.98	0.98	0.97	0.97	0.97	0.97	0.97	0.97	0.86	0.86	0.86

Table 11: Effect on Firm Real Outcomes

This table presents results on the effect of the resolution/acquisition on firm real activity by estimating specification 3 and using the logarithm of sales, tangible assets, employment and cash of firm f as dependent variables. The table considers borrowers inherited by the acquirer due to the resolution of the failed institution. *Post* is an indicator variable that takes the value one after the resolution and zero otherwise. *Share ACQ* is the average share of outstanding credit given by the failed institution to firm f, relative to the firm's total bank debt, during the pre-period. *Risky* is an indicator variable taking value one if the one-year probability of default calculated by the Banco de España's in-house credit assessment systems as of the end of 2016 exceeds 2.25%, and zero otherwise. *Micro* is an indicator variable that takes value one if the borrower is flagged as a microenterprise in the Credit Register, which follows the European Commission Recommendation 2003/361/CE, and zero otherwise. *# Relationships* indicates the number of lending relationships, relative to the median, as of 2016q2. *Main Bank* is the main creditor of the firm as of 2017q1. *Bank type* divides banks into three categories: (1) banks with an average systemic importance score above 700 basis points, which includes the acquiring bank; (2) banks with an average systemic importance score between 350 and 700 basis points; and (3) banks with a score below 350 basis points. All the regressions include the interaction of *Risky* with year dummies and firm controls (the logarithm of one plus age, the logarithm of total assets, the ratio of equity to total assets, current ratio, and ROA). Standard errors are double-clustered at the main bank-year level and firm level. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

	Long-Term		Term Loans		Credit Lines		Collateralized	
	Inherited (1)	Inherited vs. Pre (2)	Inherited (3)	Inherited vs. Pre (4)	Inherited (5)	Inherited vs. Pre (6)	Inherited (7)	Inherited vs. Pre (8)
ACQ×Post	0.012***		-0.033**		-0.058***		0.005**	
	(0.004)		(0.014)		(0.010)		(0.002)	
×Risky	0.018***	-0.006	0.029**	-0.031**	0.019	0.002	0.003	-0.003
	(0.006)	(0.004)	(0.013)	(0.014)	(0.014)	(0.022)	(0.003)	(0.003)
ACQ×Post×Inherited		0.060***		0.017		-0.032		-0.040***
		(0.007)		(0.015)		(0.020)		(0.006)
×Risky		0.025***		0.064***		0.016		0.005
		(0.008)		(0.019)		(0.026)		(0.004)
Bank×Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Firm×Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Bank Type×Time FE	Y	N	Y	N	Y	N	Y	N
Bank×Time FE	N	Y	N	Y	N	Y	N	Y
Obs.	708,392	1,536,229	445,173	932,905	228,817	708,392	708,392	1,536,229
R-squared	0.86	0.86	0.96	0.96	0.95	0.96	0.92	0.92

Table 12: Effect of the Acquisition on Lending, Other Contractual Terms

This table presents the results on the effect of the acquisition on the loan terms offered by the acquiring bank. The dependent variables are: $Long\text{-}Term$, a dummy equal to one if the share of outstanding credit of firm f with bank b that has a residual maturity greater than one year exceeds the median; $Term\ Loan$ and $Credit\ Line$, the logarithm of the total term loan and credit line granted by bank b to firm f in quarter t; and $Collateralized$, a dummy equal to one if firm f has a collateralized loan with bank b. For each dependent variable, the first column reports estimates of specification (1) using only borrowers inherited from the failed bank, while the second column reports estimates of specification (2), estimated on the combined sample of inherited and pre-existing borrowers, and compares lending terms across these groups after the resolution while controlling for bank-quarter fixed effects. *Post* is an indicator variable that takes the value one after the resolution and zero otherwise. *ACQ* is an indicator variable that takes the value one if the lending relationship belongs to either the failed bank or the acquiring bank. *Inherited* is an indicator variable that takes the value one if the borrower was inherited by the acquirer due to the resolution of the failed bank. *Bank type* divides banks into three categories: (1) banks with an average systemic importance score above 700 basis points, which includes the acquiring bank; (2) banks with an average systemic importance score between 350 and 700 basis points; and (3) banks with a score below 350 basis points. Standard errors are double-clustered at the bank-quarter level and firm level. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

	Inherited			Inherited vs. Pre-existing		
	(1)	(2)	(3)	(4)	(5)	(6)
ACQ	0.011***	0.010***	0.019***			
	(0.001)	(0.002)	(0.002)			
×Risky	-0.012***	-0.012***	-0.011***	0.007***	0.005**	0.006**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
×Micro		0.002	-0.004**		0.008***	0.003***
		(0.002)	(0.002)		(0.002)	(0.002)
×# Relationships		0.002	-0.000			-0.002
		(0.002)	(0.001)			(0.001)
×Top			-0.027***			-0.019***
			(0.002)			(0.002)
ACQ×Inherited				0.005***	0.009***	0.012***
				(0.002)	(0.002)	(0.002)
×Risky				-0.019***	-0.018***	-0.017***
				(0.003)	(0.003)	(0.003)
×Micro					-0.007***	-0.007***
					(0.002)	(0.003)
×# Relationships						-0.002*
						(0.001)
×Top						-0.007***
						(0.003)
Firm FE	Y	Y	Y	Y	Y	Y
Bank Type FE	Y	Y	Y	N	N	N
Bank FE	N	N	N	Y	Y	Y
Obs.	83,933	83,933	83,933	182,163	182,163	182,163
R-squared	0.38	0.38	0.38	0.38	0.38	0.38

Table 13: Effect of the Acquisition on Lending, Extensive Margin

This table reports firm-bank regressions examining the effect of the acquisition on lending at the extensive margin. For lending relationships active in the pre-period, the dependent variable equals one if the bank-firm relationship ended in the post-period. Columns 1 to 3 show the estimation results of specification (1) for borrowers inherited from the failed bank. Columns 4 to 6 include both inherited borrowers and the acquiring bank's pre-existing borrowers, and report the results of specification (2), which compares the acquiring bank's lending to these two groups after the resolution by including bank fixed effects in the regressions. *ACQ* is an indicator equal to one if the lending relationship belongs to either the failed bank or the acquiring bank. *Inherited* equals one if the borrower was inherited by the acquirer due to the resolution of the failed bank. *Risky* equals one if the one-year probability of default, as calculated by Banco de España's in-house credit assessment system at the end of 2016, exceeds 2.25%, and zero otherwise. *Micro* equals one if the borrower is flagged as a microenterprise in the Credit Register, following the European Commission Recommendation 2003/361/CE, and zero otherwise. *# Relationships* indicates the number of lending relationships relative to the median as of 2016Q2. *Top* equals one if the borrower's outstanding credit with the acquiring bank is in the top quartile, and zero otherwise. *Bank type* classifies banks into three categories: (1) banks with an average systemic importance score above 700 basis points (including the acquiring bank); (2) banks with a score between 350 and 700 basis points; and (3) banks with a score below 350 basis points. Standard errors are double-clustered at the bank and firm levels. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and **, respectively.

	Borrower Class											
	Hybrid						Hybrid vs. Pre-existing					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ACQ×Post	-0.026*	-0.040***	-0.036**	-0.036**	-0.102***	-0.108***	–	–	–	–	–	–
	(0.014)	(0.014)	(0.014)	(0.014)	(0.025)	(0.026)						
×Risky		0.042***	0.045***	0.043***	0.040***	0.039***		-0.026**	-0.012	-0.016	-0.017	-0.018*
		(0.009)	(0.009)	(0.009)	(0.009)	(0.009)		(0.011)	(0.010)	(0.011)	(0.011)	(0.011)
×Micro			-0.018*	-0.006	0.018	0.017			-0.068***	-0.053***	-0.040***	-0.041***
			(0.010)	(0.010)	(0.013)	(0.013)			(0.012)	(0.011)	(0.012)	(0.012)
×# Relationships				0.007***	0.002	0.003				0.026***	0.021***	0.022***
				(0.002)	(0.003)	(0.003)				(0.005)	(0.005)	(0.005)
×Top					0.085***	0.084***					0.073**	0.073**
					(0.031)	(0.031)					(0.035)	(0.035)
×Failed Bank High Mun. %						0.014*						0.029***
						(0.007)						(0.006)
ACQ×Post×Hybrid							0.020***	-0.002	-0.029***	-0.059***	-0.095***	-0.097***
							(0.007)	(0.008)	(0.010)	(0.012)	(0.020)	(0.020)
×Risky								0.068***	0.057***	0.058***	0.056***	0.056***
								(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
×Micro									0.046***	0.045***	0.056***	0.055***
									(0.012)	(0.013)	(0.014)	(0.014)
×# Relationships										-0.017***	-0.018***	-0.018***
										(0.005)	(0.005)	(0.005)
×Top											0.014	0.011
											(0.016)	(0.016)
Bank×Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm×Time FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Bank Type×Time FE	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N
Bank ×Time FE	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y
Obs.	876,327	876,327	876,327	876,327	876,327	876,327	1,691,237	1,691,237	1,691,237	1,691,237	1,691,237	1,691,237
R-squared	0.95	0.95	0.95	0.95	0.95	0.95	0.96	0.96	0.96	0.96	0.96	0.96

Table 14: Effect of the Acquisition on Lending, Hybrid-Type Borrowers

This table presents results on the effect of the acquisition on the acquiring bank's lending supply to "Hybrid" borrowers. Hybrid borrowers are those who had a lending relationship with both the acquirer and the failed institution during the four quarters before the resolution date. Columns 1 to 6 present the estimation results of specification (1) using the sample of hybrid borrowers, while columns 7 to 12 present the results of specification (2) using the sample of hybrid borrowers and the acquiring bank's exclusive borrowers (those not having a lending relationship with the failed bank). The dependent variable is the logarithm of total committed credit granted by bank b to firm f at quarter t. *Post* is an indicator variable that takes the value one after the resolution and zero otherwise. *ACQ* is an indicator variable that takes the value one if the lending relationship belongs to the acquiring bank. *Hybrid* is an indicator variable that takes the value one if the borrower was a hybrid borrower. *Risky* is an indicator variable taking value one if the one-year probability of default calculated by the Banco de España's in-house credit assessment systems as of the end of 2016 exceeds 2.25%, and 0 otherwise. *# Relationships* indicates the number of lending relationships, relative to the median, as of 2016q2. *Top* is an indicator taking value one if the borrower's outstanding credit with the acquiring bank is in the top quartile, and 0 otherwise. *Failed Bank High Mun. %* takes the value of one if the failed institution's municipality market share as of 2016q2 was above the median of the distribution of the failed bank's municipality market shares. *Bank type* divides banks into three categories: (1) banks with an average systemic importance score above 700 basis points, which includes the acquiring bank; (2) banks with an average systemic importance score between 350 and 700 basis points; and (3) banks with a score below 350 basis points. Standard errors are double-clustered at the bank-quarter level and firm level. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

	Baseline				Including Single Bank Borrowers			
	Inherited		Inherited vs. Pre-existing		Inherited		Inherited vs. Pre-existing	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ACQ×Post	-0.005	-0.045***			-0.025***	-0.053***		
	(0.008)	(0.010)			(0.009)	(0.012)		
×Risky		0.051***		-0.029**		0.011		-0.042***
		(0.010)		(0.011)		(0.010)		(0.014)
ACQ×Post×Inherited			0.042***	-0.007			0.033***	-0.012
			(0.008)	(0.011)			(0.009)	(0.011)
×Risky				0.080***				0.091***
				(0.015)				(0.016)
Post×Inherited							-0.018***	0.009
							(0.007)	(0.009)
Post×Inherited×Risky								-0.073***
								(0.015)
Bank×Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Firm×Time FE	Y	Y	Y	Y	N	N	N	N
Firm Cluster×Time FE	N	N	N	N	Y	Y	Y	Y
Bank Type×Time FE	Y	Y	N	N	Y	Y	N	N
Bank×Time FE	N	N	Y	Y	N	N	Y	Y
Obs.	862,788	708,392	1,800,659	1,536,229	3,563,698	2,668,283	4,877,943	3,786,321
R-squared	0.97	0.96	0.97	0.96	0.97	0.97	0.97	0.97

Table 15: Effect of the Acquisition on Lending, Including Borrowers with a Single Lending Relationship

This table presents results on the effect of the acquisition on the acquiring bank's lending supply to different classes of borrowers. In columns 1 to 4, we replicate the same results as in columns 1 to 4 of Table 4. In columns 5 to 8, we expand our sample to include borrowers with a single lending relationship. In particular, we include borrowers who have either the failed institution or the acquirer as their sole creditor, and to serve as a control group, we also incorporate single-bank borrowers from other institutions. Columns 1 and 4 consider borrowers inherited by the acquirer due to the resolution of the failed institution. Columns 1-2 and 5-6 consider borrowers that were with the acquirer but not the failed institution before the resolution. Columns 3-4 and 7-8 include both inherited borrowers and the acquiring bank's pre-existing borrowers, and report the results of specification (2). In columns 5 to 8, to account for credit demand, we add firm clusters-time fixed effects, where clusters are built as follows: (i) for firms with multiple lenders, the cluster consists of the firm itself; (ii) for firms with only one lender, clusters are formed based on the firm's province, industry group, and size. The dependent variable is the logarithm of total committed credit granted by bank b to firm f at quarter t. *Post* is an indicator variable that takes the value one after the resolution and zero otherwise. *ACQ* is an indicator variable that takes the value one if the lending relationship belongs to either the failed bank or the acquiring bank. *Inherited* is an indicator variable that takes the value one if the borrower was inherited by the acquirer due to the resolution of the failed bank. *Bank type* divides banks into three categories: (1) banks with an average systemic importance score above 700 basis points, which includes the acquiring bank; (2) banks with an average systemic importance score between 350 and 700 basis points; and (3) banks with a score below 350 basis points. Standard errors are double-clustered at the bank-quarter level and firm level. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

A. Additional Tables

Variable	Description
ACQ	1 if the lending relationship belongs to either the failed bank or the acquiring bank.
Inherited borrower	1 if the borrower had a lending relationship with the failed institution and not the acquirer during the four quarters before the resolution date, and 0 otherwise.
Pre-existing borrower	1 if the borrower had a lending relationship with the acquirer and not the failed institution during the four quarters before the resolution date, and 0 otherwise.
Hybrid	1 if the borrower had a lending relationship with the acquirer and failed institution during the four quarters before the resolution date, and 0 otherwise.
Risky	1 if the one-year probability of default calculated by the Banco de España's in-house credit assessment systems as of the end of 2016 for the borrower is above 2.25%, and 0 otherwise.
Micro	1 if the borrower is flagged as a microenterprise in the Credit Register, which follows the European Commission Recommendation 2003/361/CE, and 0 otherwise.
# Relationships	Number of lending relationships, relative to the median, as of 2016q2.
Top	1 if the borrower's outstanding credit with the acquiring bank is in the top quartile, and 0 otherwise.
Bank Capital	The ratio of regulatory capital to total assets of bank b in quarter $t-1$.
NPL	The ratio of non-performing loans to Spanish private-sector exposures relative to total assets of bank b in quarter $t-1$.
ROA	The return on total assets of bank b in quarter $t-1$.
Failed Bank High Mun. %	1 if the failed institution's municipality market share as of the second quarter of 2016 was above the median of the distribution of the failed institution's municipality market shares, which was 12.5%.
High Unemployment	1 if the firm is located in a municipality with an unemployment rate above the median of the distribution of municipal unemployment rates as of the end of 2016.
Zombie	Three consecutive years (2014:2016) having an interest coverage ratio below or equal 1.
Share ACQ	The average share of outstanding credit given by the acquiring bank or the failed institution to firm f, relative to the firm's total bank debt, during the pre-period.
Sales	Logarithm of Sales of firm f at year t.
Investment	Logarithm of Tangible Assets of firm f at year t.
Employment	Logarithm of Number of Workers of firm f at year t.
Cash	Logarithm of Cash of firm f at year t.
Long-Term	1 if the share of outstanding credit of firm f with bank b that has a residual maturity greater than one year exceeds the median.
Term Loan	The logarithm of the total term loan granted by bank b to firm f in quarter t.
Credit Line	The logarithm of the total credit line granted by bank b to firm f in quarter t.
Collateralized	1 if firm f has a collateralized loan with bank b.
Termination (extensive margin)	1 if the bank-firm relationship ended in the post-period (by 2018 Q2).

Table A.1: Variable Definitions

	Baseline				Firm Bin–Time Fixed Effects			
	Inherited		Inherited vs. Pre-existing		Inherited		Inherited vs. Pre-existing	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ACQ×Post	-0.005	-0.045***			-0.012	-0.052***		
	(0.008)	(0.010)			(0.013)	(0.015)		
×Risky		0.051***		-0.029**		0.054***		-0.026*
		(0.010)		(0.011)		(0.014)		(0.015)
ACQ×Post×Inherited			0.042***	-0.007			0.041***	-0.009
			(0.008)	(0.011)			(0.008)	(0.012)
×Risky				0.080***				0.081***
				(0.015)				(0.013)
Bank×Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Firm×Time FE	Y	Y	Y	Y	N	N	N	N
Firm bin×Time FE	N	N	N	N	Y	Y	Y	Y
Bank Type×Time FE	Y	Y	N	N	Y	Y	N	N
Bank×Time FE	N	N	Y	Y	N	N	Y	Y
Obs.	862,788	708,392	1,800,659	1,536,229	862,788	708,392	1,800,659	1,536,229
R-squared	0.97	0.96	0.97	0.96	0.95	0.94	0.95	0.94

Table A.2: Effect of the Acquisition on Lending Using Firm Bin-Time Fixed Effects

This table presents results on the effect of the acquisition on the acquiring bank's lending supply. Columns 1-2 and 5-6 show the estimation results of specification (1) for borrowers inherited from the failed bank. Columns 3-4 and 7-8 include both inherited borrowers and the acquiring bank's pre-existing borrowers, and report the results of specification (2), which compares the acquiring bank's lending to these two groups after the resolution by including bank fixed effects in the regressions. In columns 5 to 8, we re-estimate columns 1 to 4 using firm bin-quarter fixed effects instead of firm-quarter fixed effects to check the robustness of the former in controlling for credit demand. The dependent variable is the logarithm of total committed credit granted by bank b to firm f at quarter t. *Post* is an indicator variable that takes the value one after the resolution and zero otherwise. *ACQ* is an indicator variable that takes the value one if the lending relationship belongs to either the failed bank or the acquiring bank. *Risky* is an indicator variable taking value one if the one-year probability of default calculated by the Banco de España's in-house credit assessment systems as of the end of 2016 exceeds 2.25%, and 0 otherwise. *Inherited* is an indicator variable that takes the value one if the borrower was inherited by the acquirer due to the resolution of the failed bank. *Firm bins* encompass firms belonging to the same industry and province and being of the same size. *Bank type* divides banks into three categories: (1) banks with an average systemic importance score above 700 basis points, which includes the acquiring bank; (2) banks with an average systemic importance score between 350 and 700 basis points; and (3) banks with a score below 350 basis points. Standard errors are double-clustered at the bank-quarter level and firm level. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

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