When Credit Dries Up: Job Losses in the Great Recession*

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*The paper is the sole responsibility of its authors. The views presented here do not necessarily reflect those of either the Banco de España or the Eurosystem.
Motivation

- The Great Recession raised concerns about the economic implications of the current lack of credit.
  
  “Policy makers want to support [credit] markets because the decline in lending is seen as a primary factor in the slow recovery" (IMF, Global Financial Stability Report, 2013).

- This concerns led to massive injections of capital in banks with solvency problems (over €600 Bn in Europe).

- However, recent evidence on the real effects of credit supply shocks and the economic benefits of bailouts is scarce. Why?
  - Lack of good data on bank credit, and
  - Challenging identification issues.
This paper contributes to the literature that explore the real effects of credit supply shocks.

In particular, we study the impact of the fall in bank lending during the Great Recession on firm-level employment in Spain.

- We have access to a unique dataset with confidential information about all bank loans to non-financial firms above 6,000€ and loan applications to non-current banks.

- These data are linked to firm and bank balance sheet data.

- The data allow us to reconstruct the entire banking relations and credit histories of over 170,000 non-financial firms.

To the best of our knowledge, it is the most extensive matched firm-loan-bank data set ever assembled for the analysis of credit supply shocks.
The Spanish experience during the Great Recession (GR)

- The Spanish economy offers an ideal setting to explore how shocks to credit supply spillover to the real economy:
  - Spanish firms rely heavily on bank credit.
    > Loans from credit institutions to non-financial corporations represents the 86% of GDP vs 62% in EU (2006).
  - The high leverage ratios of many firms, mostly SMEs, made them vulnerable to the reduction in credit supply during the GR.
  - This credit supply shock was originated by a boom-bust cycle in housing prices with catastrophic effects on bank solvency.
    > Interesting parallels with other countries, like Ireland and the US, that also suffered a boom-bust cycle in the housing market and an exceptional rise in unemployment.
The Basic Challenge

- **How to disentangle credit supply and credit demand shocks?**
  - A financial crisis may force banks to reduce credit supply, but it may also induce firms to reduce credit demand.
  - The economic troubles of firms may reinforce or even cause the hardship of banks, inducing problems of reversed causality.
  - Lastly, there may be selection, with an over-representation of vulnerable firms in weak banks.

- **In recent years most studies exploit quasi-experimental techniques to overcome these identification problems.**
Our Approach

- We exploit the pronounced cross-sectional differences in lender health at the onset of the crisis.
  - We consider two types of lenders: weak banks vs healthy banks.
    
    *Definition: a bank is considered weak if it was bailed out by the State (mostly after 2010).*
    
    *All but one of them cajas de ahorros.*
  - We exploit that *weak banks* reduced credit more than the other banks *before* their intervention.
  - We compare the change in employment from 2006 to 2010 at two sets of firms with a pre-crisis exposure to either weak or healthy banks.

- We exploit the richness of our database to face the identification problems.
Quasi-Experimental Techniques

- The most recent literature exploits quasi-experimental techniques.
  - Large external shocks to the banking sector.
    - Chava and Purnanandam (2011); Benmelech et al. (2012); Ongena et al. (2013).
  - Cross-sectional differences in firms’ financial vulnerability at the start of the Great Recession.
    - Almeida et al. (2011), Benmelech et al. (2011), Boeri et al. (2013) and Garicano and Steinwender (2013).
  - Cross-sectional differences in lender health at the onset of the crisis.
- All find sizeable effects on real variables, but none of them is able to reconstruct the complete banking relations of firms nor do they have such high-quality controls.
Summary of Results

- **Our most conservative estimates show that:**
  - Controlling for selection, attachment to weak banks caused an extra employment reduction of **2.2 percentage points** between 2006 and 2010.
    
    *This corresponds to 24% of job losses.*

  - Credit constrains affect both intensive and extensive margins.
  - The results are very robust: various estimation techniques (diff in diffs, instrumental variables, exact matching) and many robustness checks.

  - Sizeable differences across industries and firms with different credit histories.

  - Single-bank firms were scarcely affected by weak bank attachment.
Underlying assumptions

- i.e. necessary conditions for the existence of real effects and their correct identification:

- A1. Weak banks reduce loans supply more than other banks during the crisis.

- A2. Financial market frictions: firms borrowing from weak banks at the beginning of the crisis cannot easily switch to other healthier banks.

- A3. Firms must have been unable to foresee the solvency problems of weak banks when they formed their banking relationships.

→ All conditions are shown to hold.
Identification issues

- Disentangle changes in credit supply from concurrent changes in credit demand.
  - We control for credit demand using the procedure of Khwaja and Mian (2008).

- To control for selection effects since we find significant differences between firms in the treatment and control groups.
  - We need to deal with selection effects since weak banks were more likely to grant loans to worse firms.
  - We include controls for trends in large sets of municipality, industry and firm control variables.
    - It controls for local demand effects and non-random matching between banks and firms.
    - The potential endogeneity of banking relationships is additionally addressed in an IV model.
Plan of the talk

1. Theoretical Background
2. The financial crisis in Spain
3. Data
4. Empirical strategy
5. Robustness checks
6. Conclusions
Theoretical Background
Financial Accelerator Mechanisms

- Shocks in credit markets may amplify, propagate or even initiate shocks to the real economy.
  - Bernanke et al. (1996).
  - Gertler and Kiyotaki (2010)
Theoretical Background

Credit Frictions

A causal relationship between the differences in lender health and differential employment growth at the firm level requires the existence of:

- Credit frictions: Firms subject to credit restrictions from their banks must not be able to (readily) switch to other banks or alternative sources of funding (Gobbi and Settle, 2014)

- Asymmetric information: Most explanations for credit friction rely on the assumption of asymmetric information between borrowers and lenders (Sharpe, 1990)
Theoretical Background

Relationship Banking

- This literature explains analyzes the advantages of stable banking relationships
  - Stable relationships help to reduce the agency cost of lending, as banks acquire soft information on their clients (Sharpe, 1990).
  - The superior information may provide better access to credit at the same bank when capital is scarce (Bolton et al., 2013).
  - While a switch to a new bank may be costly due to a lemon’s problem, especially in recessions (Gobbi and Sette, 2014).
  - Ambiguous predictions for the optimal number of banking relationships.
The Spanish experience

- Spanish economy experienced a severe credit crunch in the GR.

- GDP and Employment
  - Expansion, 1996-2007: GDP 3.7%; employment 4.1%.
  - Recession, 2008-2010: GDP -1.1%; employment -3.2%.

- A boom-bust cycle in housing priced by cheap credit.

- Asymmetric exposure to REI across banks:
  - Much larger share of loans to REI in weak banks (in 2006, 68% of loans to non financial firms vs 37%).

- Different evolution of credit flows at the two sets of banks
  - New credit grew more at weak banks during the boom (69% vs 12% in 2002-2007).
  - The fall in the slump was more pronounced in weak banks too (46% vs 35%).
  - This affects both intensive and extensive margins.
The financial crisis in Spain: The credit collapse. Testing for Hypothesis A1

New credit to non-financial firms by bank type
(12-month backward moving average, 2007:10=100)
The financial crisis in Spain: The credit collapse. Testing for Hypothesis A2

Acceptance rates of loan applications by non-current clients, by bank type (%)

[Firms applying to at least one bank of each type]
Anticipation Effects
Testing for Hypothesis A3

- Could firms anticipate differences in bank insolvency risk?
  - We look at risk premia on securitizations by Spanish banks in 2006.
  - Floating-rate, quarterly coupon frequency, referenced to the 3-month Euribor (303 deal-tranche observations, 24 issuers).
  - Controls for: type (mortgage backed security (MBS), asset backed securities (ABS)), risk category (AAA, AA+ to BBB-, BB+ to D), collateral type, guarantor type, years to maturity, and month of issue.
  - Dummy=1 if intervened bank: 2.8 basis points (p-value: 0.55).

- We cannot reject the hypothesis that financial markets failed to recognize differential risk at weak banks, as late as 2006!
- We take this as evidence for claiming that private firms could not possibly have predicted them either.
Data

- Firms’ loan information from Central Credit Register of the Bank of Spain:
  - All loans above €6,000: identity of bank, collateral, maturity, etc.
  - Firms’ credit history: non-performing loans and potentially problematic loans.

- Firms’ loan applications at non-current banks.

- Firms’ annual balance sheets and income statements from Spanish Mercantile Registers.
  - We exclude financial firms; We also exclude construction, real estate, and related industries (to minimize reverse causality).
  - Sample coverage (2006): 21% firms, 32% value added, 48% private sector employees.

- Firm entry and exit from Central Business Register.

- Banks’ balance sheets and income statements from regulatory and supervisory Bank of Spain database and branches location from the Bank of Spain Branches Registry.
The Treatment Dummy

- **Aim**
  - Measure the impact of credit constraints on employment during the GR.

- **How?**
  - Compare evolution of employment in 2010 (post) v. 2006 (pre-crisis) between firms working with weak banks vs. firms working with healthy banks.

- **Treatment**
  - $WB_i$: Dummy variable that takes value 1 if the firm had any loans with a weak bank in 2006.
The treatment variable
Selection Bias

- Are firms comparable in the treatment and control groups?

No, treated firms are on average:

- Younger and smaller.
- Financially worse: less capitalized, liquid, and profitable, more indebted with banks.
- More defaults, more loan applications to new banks, more defaults.
- Their banks: smaller, less capitalized, liquid, higher share of loans in mortgages, and more non-performing loans.
- Their employment grew more in the boom and fell more in the recession.

Different unconditional trends -> Need to control for firm characteristics.
Benchmark model

Difference in differences approach (DD)

\[ \Delta_4 \log(1 + n_{ij}) = \alpha + \beta WB_i + X_i \gamma + d_j \delta + d_k \lambda + u_{ijk} \] (1)

- \( \Delta_4 \) denotes four year differences taken in 2010.
- \( X_i \): a set of firm controls (18 variables).
- \( d_j \) and \( d_k \): Municipality and industry set of dummy variables, respectively.
- \( WB_i \) is a dummy variable for treated firms.
- \( \beta \) measures the differential impact of credit constraints arising from attachment to weak banks.

Estimating in differences imply an aggregate trend and also trends by municipality industry and firm characteristics.
Table 3. The employment effect of weak-bank attachment. Difference in Differences

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable: $\Delta_4 \log (1 + r_{ijt})$</td>
<td>Baseline</td>
<td>Placebo</td>
<td>Baseline</td>
<td>Placebo</td>
<td>Baseline</td>
<td>Placebo</td>
</tr>
<tr>
<td>$WB_1$</td>
<td>-0.077***</td>
<td>-0.072***</td>
<td>-0.067***</td>
<td>-0.059***</td>
<td>-0.022***</td>
<td>0.004</td>
</tr>
<tr>
<td></td>
<td>(0.011)</td>
<td>(0.005)</td>
<td>(0.010)</td>
<td>(0.010)</td>
<td>(0.007)</td>
<td>(0.008)</td>
</tr>
<tr>
<td>Municipality f.e.</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Industry f.e.</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Firm controls</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.001</td>
<td>0.032</td>
<td>0.050</td>
<td>0.063</td>
<td>0.074</td>
<td>0.156</td>
</tr>
</tbody>
</table>

Notes. OLS estimates for 2010, except in col. (6), where 2006 is used. Firm controls (see Appendix 2 for definitions): In col. (4): Size, Age, Age Squared, Return on Assets, and Temporary Employment. In col. (5): those in col. (4) plus Bank Debt, Short-Term Bank Debt, Long-Term Bank Debt, Own Funds, Liquidity, Past Loan Applications, All Past Applications Accepted, Past Defaults, Current Defaults, Credit Line, Banking Relationships, Banking Relationships Squared, and Uncollateralized Loans. "yes/no" indicates whether the corresponding set of variables is included. Robust standard errors corrected for multiclustering at the municipality, industry, and main bank level appear between parentheses. Significance levels: * $p<0.10$, ** $p<0.05$, *** $p<0.01$. 
Alternative specifications

- Coarsened exact matching method (Iacus et al, 2011).
  
  Compare within narrowly defined cells (4,496 matched strata).

- Panel fixed effect model to allow for firm-specific trends:

  \[
  \Delta \log(1 + n_{ijkt}) = \alpha_i + WB_i d_t \beta' + X_i d_t \gamma' + d_j d_t \delta' + d_k d_t \lambda' + d_t \phi + v_{ijkt}
  \] (2)

  - \( \alpha_i \) is a set of firm fixed effects.
  - \( d_t \) is a set of time dummy variables.

- Following Mian and Sufi (2014), we restrict attention to traded sectors to avoid local demand effects.

- Alternative definition of weak banks based on REI exposure.

- 2007 as reference year.

- Replace weak bank dummy by a measure of the intensity of exposure.

Results are robust!!
# Alternative specifications

## Table 4. The employment effect of weak-bank attachment. Difference in Differences

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exact</td>
<td>Tradable</td>
<td>Loans</td>
<td>2007</td>
<td>Intensity</td>
</tr>
<tr>
<td></td>
<td>Matching</td>
<td>Goods</td>
<td>to REI</td>
<td>ex-ante</td>
<td></td>
</tr>
<tr>
<td>( WB_i )</td>
<td>(-0.034^{***} )</td>
<td>(-0.049^{***} )</td>
<td>(-0.021^{***} )</td>
<td>(-0.017^{***} )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
<td>(0.020)</td>
<td>(0.008)</td>
<td>(0.007)</td>
<td></td>
</tr>
<tr>
<td>( WR Intensity_i )</td>
<td></td>
<td></td>
<td></td>
<td>(-0.104^{***} )</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.028)</td>
<td></td>
</tr>
<tr>
<td>Municipality f.e.</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Industry f.e</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Firm controls</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.001</td>
<td>0.109</td>
<td>0.074</td>
<td>0.057</td>
<td>0.074</td>
</tr>
<tr>
<td>No. obs.</td>
<td>166,315</td>
<td>21,029</td>
<td>169,295</td>
<td>159,649</td>
<td>169,295</td>
</tr>
</tbody>
</table>
Credit channel

- Is credit the transmission mechanism?
- Khwaja and Mian (2008)

\[ \Delta_4 \log (1 + \text{Credit}_{ib}) = \theta_i + \delta W B_b + F B_{ib \kappa} + \epsilon_{ib} \]

- $FB_{ib}$ denotes firm-bank controls: length of the bank-firm relationship, $1$ (past defaults).
- Firm fixed effects ($\theta_i$): implies restricting the sample to firms working with at least two banks; the same in 2006 and 2010.
- Perfectly controlling for credit demand.
Credit Channel
Perfectly controlling credit demand

Table 5. The credit effect of weak-bank attachment

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$WB_b$</td>
<td>-0.080**</td>
<td>-0.090**</td>
</tr>
<tr>
<td></td>
<td>(0.038)</td>
<td>(0.046)</td>
</tr>
<tr>
<td>Firm-bank controls</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Firm f.e.</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.411</td>
<td>0.393</td>
</tr>
<tr>
<td>No. firms</td>
<td>93,562</td>
<td>47,847</td>
</tr>
<tr>
<td>No. obs.</td>
<td>264,236</td>
<td>141,695</td>
</tr>
</tbody>
</table>
Instrument variables

- Further explore credit channel

\[
\Delta_4 \log (1 + n_{ijk}) = \alpha'' + \beta'' \Delta_4 \log (1 + C_{credit_{ijk}}) + X_i \gamma'' + d_j \delta'' + d_k \lambda'' + \varepsilon_{ijk}
\]

\[
\Delta_4 \log (1 + C_{credit_{ijk}}) = \rho + \mu W E_i + X_i \eta + d_j \sigma + d_k \omega + \omega_{ijk}
\]

- \(\mu\) is the differential impact of weak banks on credit.
- \(\beta''\) is the pass-through from credit to employment.
- Thus, \(\mu \beta''\) is equivalent to \(\beta\).
Credit Channel
Instrumental Variables

Table 6. The employment effect of weak-bank attachment. Instrumental Variables

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>$\Delta_4 \log (1 + n_{ij})$</td>
<td>$\Delta_4 \log (1 + \text{Credit}_{ijk})$</td>
<td>$\Delta_4 \log (1 + \text{Credit}_{ijk})^a$</td>
<td>$WB_1$</td>
</tr>
<tr>
<td></td>
<td>$0.447^{***}$</td>
<td>$0.301^{***}$</td>
<td>$0.849^{***}$</td>
<td>$-0.061^{***}$</td>
</tr>
<tr>
<td></td>
<td>$(0.127)$</td>
<td>$(0.132)$</td>
<td>$(0.307)$</td>
<td>$(0.020)$</td>
</tr>
</tbody>
</table>

First stage

<table>
<thead>
<tr>
<th></th>
<th>$WB_1$</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$-0.045^{***}$</td>
<td>$-0.061^{***}$</td>
<td>$-0.039^{***}$</td>
<td>$0.496^{***}$</td>
</tr>
<tr>
<td></td>
<td>$(0.010)$</td>
<td>$(0.014)$</td>
<td>$(0.016)$</td>
<td>$(0.071)$</td>
</tr>
</tbody>
</table>

Local weak-bank density $i$

| Municipality f.e. | yes | yes | yes | no |
| Industry f.e. | yes | yes | yes | yes |
| Firm controls | yes | yes | yes | yes |
| Coastal province f.e. | – | – | – | yes |

Overall effect ($\mu_1\beta''$)

| $F$ test / p value | 23.1/0.00 | 17.9/0.00 | 4.09/0.05 | 13.3/0.00 |
| No. obs. | 169,295 | 47,847 | 12,859 | 169,295 |
Instrumental variables

- The choice of bank is an endogenous choice.
- Here we exploit a 1988 legal change to generate exogenous variation in exposure to weak-banks.
  - The legal change allowed savings banks to expand beyond their region of origin.
  - We use the density of weak-bank branches in 1988 at the municipal level as instrument for WB.
    - Independence assumption: proximity in 1988 to banks that required state intervention in 2008 is orthogonal to firm characteristics before the onset of the boom-bust cycle in the 2000s.
    - Exclusion restriction: local weak bank density only affects a firm’s employment through its exposure to weak banks
      - Not so clear because a weak bank could have a different performance in its province of origin in terms of credit during the boom.
      - It cannot be tested.
More Results
Financial vulnerability (DDD)

Table 7. The employment effect of weak-bank attachment. Triple Differences
Dependent variable: \( \Delta \log (1 + n_{ijt}) \)

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( WB_i )</td>
<td>-0.025***</td>
<td>-0.026***</td>
</tr>
<tr>
<td></td>
<td>(0.007)</td>
<td>(0.007)</td>
</tr>
<tr>
<td>Rejected application_i</td>
<td>-0.065***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.008)</td>
<td></td>
</tr>
<tr>
<td>( WB_i \times \text{Rejected application}_i )</td>
<td>-0.027**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.013)</td>
<td></td>
</tr>
<tr>
<td>Past Defaults_i</td>
<td>-0.212***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.031)</td>
<td></td>
</tr>
<tr>
<td>( WB_i \times \text{Past Defaults}_i )</td>
<td>-0.059**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.032)</td>
<td></td>
</tr>
<tr>
<td>Short-term debt_i</td>
<td>-0.083***</td>
<td>-0.083***</td>
</tr>
<tr>
<td></td>
<td>(0.013)</td>
<td>(0.013)</td>
</tr>
<tr>
<td>( WB_i \times \text{Short-term debt}_i )</td>
<td>-0.018</td>
<td>-0.017</td>
</tr>
<tr>
<td></td>
<td>(0.014)</td>
<td>(0.014)</td>
</tr>
<tr>
<td>( \log(\text{Total Assets}_i) )</td>
<td>0.018***</td>
<td>0.019***</td>
</tr>
<tr>
<td></td>
<td>(0.005)</td>
<td>(0.005)</td>
</tr>
<tr>
<td>( WB_i \times \log(\text{Total Assets}_i) )</td>
<td>0.004</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.006)</td>
</tr>
<tr>
<td>Single bank_i</td>
<td>0.033***</td>
<td>0.033***</td>
</tr>
<tr>
<td></td>
<td>(0.007)</td>
<td>(0.007)</td>
</tr>
<tr>
<td>( WB_i \times \text{Single bank}_i )</td>
<td>0.037***</td>
<td>0.043***</td>
</tr>
<tr>
<td></td>
<td>(0.016)</td>
<td>(0.016)</td>
</tr>
<tr>
<td>Municipality f.e.</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Industry f.e.</td>
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<td>yes</td>
</tr>
<tr>
<td>Firm controls</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.071</td>
<td>0.071</td>
</tr>
<tr>
<td>No. obs.</td>
<td>169,295</td>
<td>169,295</td>
</tr>
</tbody>
</table>
### More Results

**Firm exit**

Table 8. Effect of weak-bank attachment on the probability of exit  
Dependent variable: Probability of exit from 2006 to 2010:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$WB_i$</td>
<td>0.010***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.004)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$WB_{Intensity_i}$</td>
<td></td>
<td>0.070***</td>
<td>0.080***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.015)</td>
<td>(0.016)</td>
</tr>
<tr>
<td>$WB_{Intensity_i} \times \text{Single bank}_i$</td>
<td></td>
<td></td>
<td>-0.004***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.017)</td>
</tr>
<tr>
<td>Municipality f.e.</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Industry f.e.</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Firm controls</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.050</td>
<td>0.051</td>
<td>0.078</td>
</tr>
<tr>
<td>No. obs.</td>
<td>169,295</td>
<td>169,295</td>
<td>169,295</td>
</tr>
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</table>
Conclusions

- **Aim:** We study the impact of credit constraints on employment during the Great Recession in Spain outside the real estate industry.

- **Identification:** We exploit differences in lender health at the onset of the crisis, as evidenced by the bailout of savings banks.

- We construct a large dataset that allows us to control almost perfectly for demand factors reducing selection bias.

- Finally, controlling for selection we find sizeable effects of being attached to a weak bank prior to the recession: additional job losses due to weak bank attachment around 2.2 pp in 2006-2010. It represents around 24% of job losses at firms attached to weak banks in our sample.

- We provide evidence that credit constraints were relatively more important in inducing firms to downsize than forcing them to close down.
GRACIAS POR SU ATENCIÓN