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When Credit Turns Political: Evidence From the Spanish Financial Crisis*

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Abstract

This paper provides causal evidence on the effect of credit crunches on political polarisation. Combining data on bank-firm connections and electoral outcomes at the city-level during the 2008-2014 Spanish financial crisis, I construct an instrument for unemployment based on the city-level exposure to (foreign) weak banks. I find that a 10% increase in (instrumented) local unemployment rates leads to radical parties gaining approximately one percentage point more in vote share relative to centrist parties. This suggests that credit contractions do not only impact firm performance and economic output, but also shape political polarisation through the channel of economic uncertainty.

JEL classification: G01, P16, D72, P43

Keywords: polarisation, Financial Crisis, Instrumental Variable Strategy, Spanish Elections, Credit Supply Shock, Real Effects

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1 Introduction

“Populism is the true legacy of the global financial crisis.”

Financial Times, August 2018

Since the start of the 2008 financial crisis, anti-establishment sentiment is on the rise again (Rodrik 2018, Algan et al. 2017). It is a well established fact that financial crises - as opposed to other types of crises - are frequently at the heart of this polarisation (Mian, Sufi, and Trebbi 2014). However, the specific mechanisms behind these dynamics have been underexplored so far: Doerr et al. (2022) suggest antisemitism in Germany’s banking crisis of the 1930s as a key driver behind the rising Nazi votes; Gyöngyösi and Verner (2022) finds a debtor-creditor conflict at the heart of the growing far-right support in Hungary. I use data on bank-firm connections and electoral outcomes during the financial crisis in Spain to study how credit crunches lead to political polarisation through the channel of economic uncertainty.

With the start of the Great Financial Crisis, Spain’s entire banking sector suffered from the bursting of a housing bubble. Subsequently, bank bailouts led to ballooning public deficits and debt levels. During the subsequent European debt crisis, Spain agreed to an international programme to rescue its financial sector, which was conditional on structural reforms and austerity measures. These socially costly reforms were pushed through by both center-left and center-right mainstream parties, in power during the crisis years. At the same time, Podemos, a left-wing, pro-redistribution populist party running on an anti-corruption and anti-austerity platform, gained new heights in terms of approval and voting results. The Spanish experience allows shedding light on one hand on the fallout from financial crises, and on the other hand on the polarisation of votes, defined as the relation between radical and centrist voting, as opposed to the increase in populist voting alone.

In a first set of results, I show that the effect on vote polarisation is higher in areas with higher local unemployment. This is in line with Algan et al. (2017), who document a link between increases in unemployment and voting for populist parties during the Great Recession. However, unobserved city-specific time-varying factors might affect local unemployment and voting at the same time. Austerity measures could be an example of such a bias. Introduced in the aftermath of bank bailouts and the financial assistance package, austerity measures contributed to migration outflows, impacting the local labour

market.¹ At the same time, left-wing populist platforms in Spain ran on anti-austerity, pro redistribution, promises.

In order to address this endogeneity issue in the most rigorous way, I set up a two-stage least squares (2SLS) estimation. I construct an instrument for unemployment based on the aggregated city-level exposure to foreign weak banks. The reasoning behind is the following: As credit supply shocks have an adverse impact on firm-level employment, I use the exposure to foreign weak banks as an shock for labour market conditions on the local level, which is unrelated to austerity, but related to economic insecurity.² In doing so, I provide causal evidence in support of the model of Guiso et al. (2017), where economic insecurity is a significant predictor of the populist vote share. I find that a 10% increase in (instrumented) local unemployment rates leads to radical parties gaining approximately one percentage point more in vote share relative to centrist parties.

The identification relies on a number of assumptions. First, the loan demand from Spanish firms is negligible from the foreign bank’s perspective.³ Second, the local exposure to foreign weak banks has no effect on the austerity measures in the locality.

To highlight the relevance of the instrument, I take advantage of an established fact in the empirical banking literature: firms in a relationship with weak banks experience a bigger reduction in loan supply compared to firms without such relationships (Chodorow-Reich 2014, Acharya et al. 2018, Huber 2018). I define weak banks as banks that received a bailout from their respective government. Here, one major identification challenge is related to reverse causality between the health of the banking sector and the economy. Given that Spain experienced a housing bubble, it could well be that failing borrowers decreased loan demand, which led to banks cutting credit to these borrowers.

To address this concern, I focus on *foreign* weak banks active in Spain, but which received a bailout in their respective home countries other than Spain. In this set-up, large foreign banks lend directly cross-border via the syndicated loan market to large domestic Spanish firms. The idea behind this is that the troubles of these foreign weak banks are likely to be exogenous to the performance of the Spanish loan portfolio, but might nevertheless

¹As shown in Izquierdo, Jimeno, and Lacuesta (2016), Spanish migration outflows went from an average of 0.4% of the population over the period 2008-2010 to 1.2% 2012.

²Cantó and Ruiz (2015) shows that economic insecurity is relatively more impacted by an agents’ perception about recent job losses, and hence the risk of getting unemployed.

³This assumption would reasonably be violated when I would look at domestic Spanish banks instead of foreign banks.

lead to a contraction of credit supply to Spanish borrowers, similar to the “imported lending cut” in Huber (2018) and Peek and Rosengren (2000).⁴ Consequently, this credit crunch leads to a reduction of firm-level employment, as shown also in Bentolila, Jansen, and Jiménez (2018), impacting the perceived economic security of employees.

This paper relates to several strands of literature. First, it adds to the emerging political economy literature which links economic shocks to sharp ideological shifts in voting behaviour. When looking at different types of crises such as financial, currency, inflation and debt crises, Mian, Sufi, and Trebbi (2014) provide evidence that, especially after financial crises, government vote shares decrease and voters become more ideologically extreme. Similarly, De Bromhead, Eichengreen, and O’Rourke (2013) and Funke, Schularick, and Trebesch (2016) find that far-right parties increase their vote shares significantly after financial crises. However, the literature on well-identified microeconomic evidence on the impact of credit contraction on voting behaviour is limited. Notable exceptions are Braggion, Manconi, and Zhu (2020) and Doerr et al. (2022), who show that credit rationing has an impact on social unrest in 1930s China, and on the votes for the Nazi Party in 1930s Germany. This paper brings the set-up to modern day data, and proposes an instrumental variable approach to further understand the mechanics behind the increase in populist votes following credit contractions.

Related to this, the paper contributes to the literature on the drivers behind populism.⁵ Algan et al. (2017) document a link between increases in unemployment and voting for populist parties during the Great Recession. Also, Guiso, Morelli, and Sonno (2023) show that economic insecurity, proxied by individual responses on employment status, income difficulties, and exposure to globalization, is a significant predictor of populist votes. Dehdari (2022) studies the role of economic insecurity and unemployment on the

⁴Another dimension of financial integration in the euro area has been through the interbank market. Hoffmann, Maslov, and Sørensen (2022) show that declines in cross-border *interbank* lending led to domestic banks reducing lending, which in turn led to large declines in output in sectors with many small (bank-dependent) firms.

⁵Rodrik (2021) identifies both cultural and economic factors behind the recent rise of populist voting. In the former, several studies focus on hostility towards migrants (see Becker and Fetzer 2016, Dustmann, Vasiljeva, and Piil Damm 2018, Edo et al. 2019 among others). In the latter, Autor et al. (2020) identifies Chinese import shocks as a driver behind rising populism in the US; Becker, Fetzer, and Novy (2017) highlight the role of cuts to government spending in the Brexit vote; Gyöngyösi and Verner (2022) the foreign currency composition of household debt on Hungarian Far-Right votes; Antoniadou and Calomiris (2020) the role of crisis-driven credit supply contractions on the 2008 U.S. presidential election, and Sartre and Daniele (2021) public finance mismanagement on the entry of populist politicians. Doerr et al. (2022) suggest antisemitism in Germany’s banking crisis of the 1930s as a key driver behind the rising Nazi votes.

rise of the far-right Sweden Democrats party using granular data of layoff notices. To the best of my knowledge, this paper is among the first to identify economic insecurity as the channel through which a credit crunch leads to political polarisation.

The paper also adds to the literature on the real effects of banking crises. Chodorow-Reich (2014)’s important work on firm-bank relationships during crises reveals that firms with a relationship to banks affected by the Lehman crisis suffered more in terms of employment than firms without such a connection. For Spain, Bentolila, Jansen, and Jiménez (2018) finds that the solvency of Spanish banks caused the highest employment losses. Huber (2018) moves beyond firm-level evidence and shows that imported credit contractions also indirectly depress economic activity in the regions most exposed to imported lending cuts. This paper takes election outcomes as another important real effect, and provides evidence that imported lending cuts do not only impact firm performance and employment and economic output, but also shape voter behaviour.

The remainder of the paper is as follows. Section 2 sets the scene, describes the data, the variable construction, Section 3 presents the empirical strategy and the results. Section 4 concludes.

2 Institutional Setting and Data

2.1 The Spanish Financial Crisis

In Spain, the Great Financial Crisis triggered the collapse of a housing bubble and led to a subsequent banking crisis. During the most challenging years of the crisis, both Socialist and Conservative parties were in power. In 2008, the government, led by Prime Minister Zapatero and his Socialist Party, had been in office for eight years. According to Magone (2016), Zapatero’s economic policy initially denied the existence of the crisis, then introduced fiscal stimulus packages, before shifting to austerity and structural reforms in response to the turmoil caused by the onset of the Greek sovereign debt crisis in May 2010. In 2011, Mariano Rajoy, leader of the conservative People’s Party, won the elections with an absolute majority. As part of the agreement to continue the structural reform agenda, the Spanish government received a EUR 100 billion loan from the European Stability Mechanism (ESM) in June 2012 to restructure its struggling banking sector.

The Spanish crisis gave rise to several narratives that populist parties easily capitalized on. First, bank bailouts.⁶ Popular resentment over bank bailouts gave populists the chance to argue that bankers - who were connected to the old political parties - escaped accountability for their mistakes. Second, austerity. As part of the financial sector assistance program imposed by supranational institutions, the implementation of socially costly reforms provided populists with a platform to criticize globalization and the European Union. Both center-right and center-left mainstream parties were involved in passing the most unpopular reforms during the crisis years, from 2008 to 2012.

Podemos, a left-wing populist party focused on anti-elite and anti-austerity messages, gained significant popularity, reflected in rising approval and voting results (Figure 1). This is why the focus of this paper is on the polarisation of votes and the relationship between radical and centrist voting, rather than simply examining the increase in populist voting, as is common in other studies.

2.2 Data

This paper uses four different data sets. A firm-bank panel on lending relationships, a bank panel on state aid, a city panel on electoral outcomes and city controls.

Lending Data I obtain bank-firm relationships from the syndicated loan market. In this market, different banks form a syndicate to then jointly lend to a single borrower. The lending syndicate includes one lead bank and a number of participating banks. Lead arrangers are those members of a syndicate typically responsible for traditional bank duties, including negotiating the conditions of the deals, due diligence, and monitoring (Ivashina and Scharfstein 2010). Participants are usually not in direct contact with the borrower, but merely supply credit. I therefore consider only banks acting as lead arrangers. Similarly, I restrict the sample to loans by banks to non-financial firms and consider lending only by commercial, savings, cooperative and investment banks. I decompose syndicated loan deals into loan portions provided by each lender to obtain granular loan level data. Whenever Dealscan provides information on lending shares of each bank, I use this information to split loan volume accordingly. In other cases, I follow Schwert (2018) to estimate lending shares via a tobit estimation using information on the facility amount,

⁶For an excellent overview of populist narratives, see Guriev and Papaioannou (2022).

the number of participants, borrower and lender sales. In doing so, obtain bank i 's loan issuance to firm j in year t , which I define as a bank-firm observation. Total loan volume in a given year is the sum of all new loans issued by bank i to firm j . Hence, I only account for transactions happening when a syndicated loan is issued, disregarding its maturity profile, accounting only for flows on the bank-firm level.

State Aid I hand-collect state aid given to individual banks for the 28 countries of the European Union, and break down the information into amount and type of state aid. The primary source for state aid to financial institutions is the online database on state aid provided by the European Commission. It contains all state aid cases which occurred in the European Union, and in particular, it contains state aid within the meaning of Article 107(1) TFEU⁷ granted to financial institutions. It is important to highlight that I only have information about 'implemented' state aid, involving the aid actually used and given to financial institutions. I identify a bank to be subject to government aid, if it has received at least one of four state aid measures, as indicated in the documents (recapitalisation, asset relief, liquidity support, guarantees). In doing so, I can identify 70 banks active in the European Union, which were subject to government aid between 2008 and 2015.

Electoral Data I hand-collect data of the Spanish parliamentary elections on the constituency (city) level, which have taken place in 2008, 2011, 2015 and 2016.⁸ This allows obtaining the electoral results of 8127 constituencies with respect to 56 parties. The electoral data allows extracting also data on population and voter turnout on a constituency-year level. I define *voter turnout* as the ratio between total votes and the electoral census in constituency c in year t and *population* as the log of the total population in constituency c in year t .

Political Orientation Data I download the political orientation of European parties from Chapel Hill, which is widely used in the literature.⁹ This database allows classifying parties with respect to eight political ideology categories: far right, conservatives, liberal, socialist, far left, greens, regional, no family.

Other Data On the city level, I collect unemployment statistics from SEPE (Servicio Público de Empleo Estatal), which gives the total number of unemployed.¹⁰ To calculate

⁷Treaty on the Functioning of the European Union

⁸Available at Spain Ministerio del Interior www.infoelectoral.mir.es/infoelectoral/min/

⁹Available at www.chesdata.eu

¹⁰Available at <https://www.sepe.es/HomeSepe/en/que-es-el-sepe/estadisticas/>

the *unemployment rate* on the city-level, I divide the number of unemployed people by the total population, in city c at time t .¹¹ Data on public debt in city c at time t is extracted from the Ministerio de Hacienda y Función Pública. On the province level, I collect migration statistics from the INE¹², in particular the *immigration flow*, number of immigrants from abroad in province p at time t .

2.3 Variable Construction

2.3.1 Political Polarisation Measure

The goal is to define a measure of voter polarisation in the Spanish parliamentary elections in the aftermath of the global financial crisis, comprising the parliamentary elections of 2011, 2015 and 2016.

Ideological classification First, I need to classify the ideological orientation of all the parties running in Spanish parliament elections. The online database Chapel Hill allows classifying parties with respect to eight political ideology categories: far right, conservatives, liberal, socialist, far left, greens, regional, no family. Matching Spanish parties with this database allows categorizing the ideological identification of 26 parties, out of the 56 Spanish parties running in the 2011, 2015 and 2016 parliamentary elections. The ones not classified are fringe parties. I drop parties which achieved a electoral result of only 1% of overall votes or below.

Second, I obtain the respective vote shares on the city-year level, defined as the number of votes going to a certain party divided by the total amount of valid votes, at the city-year level (e.g. Radical vote is the vote share going to new parties which collocate themselves on the extremes, and have advertised themselves as radical alternatives, on the back of major corruption scandals of the more established parties).¹³

Change in Vote Share When it comes to handling voting data, Rodrik (2021) states

`datos-estadisticos.html`

¹¹The SEPE does not provide data on the labour force (sum of active and inactive population) at the city level, which would be the standard denominator for calculating the unemployment rate when following EUROSTAT definitions.

¹²Instituto Nacional de Estadística

¹³I add up radical left and radical right, as the newly established radical right party VOX only enters national elections as of 2015.

the following: “The relative importance one ascribes to economics versus culture depends crucially on whether I am interested in a question about levels or about changes that is, whether I ask why so many people voted for a populist candidate or why the populist vote share increased so much” (Margalit 2019). It is therefore important to look at changes in the vote share between election years, instead of looking at the vote shares in the respective years.

Therefore, I define the political orientation variable $Radical_{ct}$ as the change in vote shares going to the radical left and right, where c is city and t is year:

$$\Delta Radical_{ct} = \Delta(Radical\ Left_{ct} + Radical\ Right_{ct}). \quad (1)$$

I then define centralist votes as the vote share going to established, traditional parties, both of which have shaped Spanish politics over the last decades. I define the political orientation variable $Central_{ct}$, as the change in vote shares going to the conservatives and the social democrats, where c is city and t is year:

$$\Delta Central_{ct} = \Delta(Conservatives_{ct} + Social\ Democrats_{ct}). \quad (2)$$

Lastly, I define the measure of $Polarisation_{ct}$ as the change in $Radical_{ct}$ minus the change in $Central_{ct}$, where c refers to city and t to the year:

$$\Delta Polarisation_{ct} = \Delta Radical_{ct} - \Delta Central_{ct}. \quad (3)$$

This measure captures shifts in electoral support away from the political center toward more extreme ends of the spectrum, and serves as a proxy for increasing political polarisation at the local level. For instance, if radical parties gained +15% from one election to another, and the centre lost -2%, the polarisation measure would be +17% ($\Delta Polarisation = 15\% - (-2\%) = 17\%$). Hence, a positive value indicates radical parties are gaining more support compared to centrist parties, leading to greater political polarisation. A negative value implies that centrist are gaining more support than radical parties, signaling less polarisation or a return toward the center.¹⁴

¹⁴In the Robustness section, I define alternative measures of polarisation, and show that the results do not depend on the definition of polarisation.

2.3.2 Weak Bank Measure

Firm-Bank Level Combining the bank-firm relationship data with the bank-level state aid data allows constructing the weak bank indicator variable on the firm level. I divide the sample into two groups depending on firm j 's relationship with a "weak" bank i . In this case, a "weak" bank is a bank which has received government aid (WB_i). Next, I divide "weak" banks into "domestic weak" banks and "foreign weak" banks, depending on the headquarter of the bank - if it is located in Spain or otherwise.

I then construct a firm-level bank dependence variable $Dependence_{jt}$, using the loan issuance by bank i to firm j , depending on bank i being a weak or a healthy bank. Mathematically speaking:

$$Dependence_{jt} = \sum_{\forall j} Volume_{ijt} * WB_i \quad (4)$$

where $Volume_{ijt}$ is bank i 's loan issuance to firm j in year t via the syndicated loan market. I do not consider the maturity profile of the loans. I define $Dependence_{jt}$ to be its three year backward looking moving average.¹⁵

Aggregation to the City-Level The goal is to construct a measure that describes the overall exposure of firms to weak banks on the level where the elections take place, i.e. the electoral constituencies (cities).

When creating this measure, I exploit information on the geographical coordinates of the firms' headquarters and match firms to electoral constituencies(cities).¹⁶

To identify the headquarter of the respective firms, I use the information provided by Dealscan, which is both the city name and the zip, or missings thereof. Whenever one of the two is missing, I combine the available data with zip or city name data for Spain.¹⁷ Whenever none of the two is available, I identify the headquarter manually through web searches based on the firm name. Eventually, I identify 796 firms located in 199 cities

¹⁵I am interested in the shadow cost of acquiring a new loan. This rolling average captures the importance of the set of weak banks that lent to firm j in the past three years. The assumption is, if bank i is in distress, firm j 's shadow cost of acquiring a new loan by this bank i increases.

¹⁶I use the geographical coordinates of the district/capital/municipality as a proxy for the location of the electoral constituencies. By doing so, I implicitly assume that the location of a firm's headquarter is correlated with the locations of the facilities where the firm's employees are employed.

¹⁷available at: www.geonames.org

across Spain. 435 of which have a relationship to a weak bank and 361 do not have such a relationship in end-2010.

I then compute geodetic distances between each electoral constituency (city), c , and every firm headquarter, k .¹⁸ For every c, k pair I define a dummy variable, D_{ck} , which takes the value of one if the physical distance between electoral constituency c and firm headquarter k is smaller than 20 kilometers; and zero else. This dummy variable flags firm headquarters which are within a 20 km range of a electoral constituency.

In order to create a city level measure, I aggregate the firm level exposure to foreign weak banks, $Dependence_{jt}^{for}$, over all firms which are in the vicinity of the electoral constituency.

$$Exposure_{ct} = \sum_{\forall j} D_{c(k)} \times Dependence_{jt}^{for} \quad (5)$$

where $D_{c(k)}$ equals one if firm's headquarters k is within 20 km of city c .

2.3.3 Descriptive Statistics

The final dataset is on the city-year level, covering the election years 2008, 2011, 2015 and 2016. It includes 1588 cities with no or positive exposure to foreign weak banks.¹⁹ Panel A of Table 1 reports summary statistics on the city level, while Panel B compares cities with positive exposure to foreign weak banks to cities with no exposure to foreign weak banks in 2008. By construction, cities differ in their exposure. Cities more exposed to foreign weak banks are also on average larger in terms of population, have a higher share of immigration and a higher public debt level. The differences are highly significant, but less than 0.5% in absolute terms. Importantly, cities with or without exposure to foreign weak banks do not differ in terms of unemployment rate, voter turnout, radical and centralist voting, as well as polarisation.

Figure 2 shows the distribution of city-level exposure to foreign weak banks in 2008. The mean is 2.0 and the standard deviation equals 2.4. In geographical terms, Figure 3 shows the distribution of city-level exposure to foreign weak banks across the 51 provinces of

¹⁸That is the length of the shortest curve between two points along the surface of a mathematical model of the earth. I follow the methodology proposed by Vincenty, T. (1975) Direct and inverse solutions of geodesics on the ellipsoid with application of nested equations, Survey Review 22(176): 88-93. Available from: <https://geodesy.noaa.gov/>

¹⁹In the Appendix, I provide a list of all foreign weak banks active in Spain in the syndicated loan market.

Spain. The exposure seems evenly distributed, without any province having a significant bias, although some provinces do not exhibit exposure to foreign weak banks at all. Figure 4 and Figure 5 show similar geographical distributions for both unemployment rates and radical voting across the 51 provinces of Spain in 2008.

3 Empirical Strategy and Results

The aim of this paper is to estimate the causal effect of a credit crunch on political polarisation. The proposed mechanism is as follows: during the Great Financial Crisis, many banks came under financial pressure, limiting their ability to extend credit to existing corporate clients (Chodorow-Reich 2014; Acharya et al. 2018). This reduction in credit supply led to layoffs among affected firms, increasing economic insecurity among their employees. Bentolila, Jansen, and Jiménez (2018) provide evidence that this mechanism was at work in Spain. A potential consequence of rising insecurity is political polarisation among workers, as suggested by Guiso et al. (2017), Urdal (2012), and Algan et al. (2017). This paper focuses on estimating the effect of a credit supply shock on political polarisation, operating through the channel of elevated economic insecurity.

Since economic insecurity is not directly observable, a valid proxy is required. Cantó and Ruiz (2015) show that during the Spanish crisis, individuals' perceptions of job loss risk—driven by recent local layoffs—were a key component of economic insecurity. The local unemployment rate is therefore used as a proxy. In an initial specification, I show that polarisation increases more in cities with higher unemployment rates (Section 3.1), consistent with findings in Algan et al. (2017).

However, this approach faces a significant identification challenge due to potential omitted variable bias: unobserved, time-varying city-level factors may simultaneously influence both unemployment and political outcomes. One such confounder is the implementation of austerity measures, introduced as part of Spain's financial assistance program following public deficits and bank bailouts. These policies spurred migration outflows, affecting local labor markets.²⁰ At the same time, left-wing populist parties in Spain campaigned on anti-austerity, pro-redistribution platforms, which may have affected voting outcomes.

²⁰Izquierdo, Jimeno, and Lacuesta (2016) show that Spain's migration outflows increased from an average of 0.4% of the population between 2008 and 2010 to 1.2% in 2012.

To address this endogeneity, I implement a two-stage least squares (2SLS) estimation. Specifically, I construct an instrument for local unemployment based on city-level exposure to foreign weak banks (see Section 3.3).²¹ This strategy provides causal evidence consistent with the theoretical model of Guiso et al. (2017), which posits that rising economic insecurity fuels support for populist parties.

The identification strategy relies on two key assumptions. First, that city-level exposure to foreign weak banks influences local unemployment by constraining credit supply. Second, that bank exposure affects political outcomes only through labor market effects—specifically, through economic uncertainty linked to job losses. While one could argue that bank bailouts themselves influenced voting preferences²², focusing on exposure to *foreign* weak banks mitigates this concern. The exclusion restriction assumes that foreign banks operating in Spain did not engage in mortgage lending, but instead focused on syndicated corporate loans—a plausible assumption given the structure of Spain’s banking market.

Also, to account for time-varying differences across cities, I include several city level controls: $\ln(\text{Population})$, as changing population might be indicative of economic prosperity. Voter turnout, as this might be another proxy for anti-establishment sentiment. I also control the amount of public debt at the municipal level, the level of public debt at the province level, which may influence both local economic expectations and political preferences. Lastly, I control for net migration at the province level, as migration patterns may affect labor market dynamics and social cohesion. Additionally, the granularity of the city-year-level data allows for the inclusion of city fixed effects, which control for time-invariant local characteristics such as long-run political preferences, economic structure, demographics, homeownership rates, and education levels. Year fixed effects capture nationwide macroeconomic trends.

²¹Algan et al. (2017) suggest using the pre-crisis share of construction as a Bartik-style instrument. However, this variable is closely tied to housing prices—a potential omitted variable—and may introduce bias.

²²Bailouts have been politically contentious due to the large sums of public funds directed toward the financial sector.

3.1 Economic Insecurity and the Polarisation of Voters (OLS)

I empirically examine the impact of economic insecurity on voting behavior, using the local unemployment rate ($Urate_{ct}$) as a proxy for economic insecurity.²³

Empirical studies, such as Bentolila, Jansen, and Jiménez (2018), show that a credit crunch can reduce firm-level employment, particularly in Spain, while Algan et al. (2017) identifies unemployment as a key factor behind the rise of populism during the European debt crisis. Together, this evidence suggests that political polarisation may be more pronounced in areas with high local unemployment rates.

To test this, I estimate the following equation at the city-year level:

$$\Delta Vote_{ct} = \beta_1 Urate_{ct} + \beta_2 \mathbf{X}_{ct} + \phi_c + \phi_t + \epsilon_{ct} \quad (6)$$

where $\Delta Vote_{ct}$ represents the change in vote share for a given party in city c between the election years 2011, 2015, and 2016; $Urate_{ct}$ is the log of local unemployment rate for city c in year t ; and $\mathbf{X}_{ct}$ is a vector of time-varying city-level controls, including the log of population (which can reflect economic prosperity), voter turnout (as a proxy for anti-establishment sentiment), public debt at the municipal level, and net migration at the provincial level. ϕ_c are city fixed effects, capturing time-invariant characteristics like long-term political leanings, industrial structure, demographics, and education levels, while ϕ_t are year fixed effects.

I expect the coefficient of interest $\beta_1 > 0$, as cities with higher local unemployment rates are likely to influence individuals' perceptions of economic security, potentially leading to greater political polarisation compared to cities with lower unemployment.

Table 3 reports the results. I begin by examining the changes in votes for radical parties (Columns 1-2). The coefficient for the logged unemployment rate is positive and statistically significant in both specifications. Once year fixed effects are included, the coefficient decreases in magnitude but remains positive and significant. Economically speaking, a 10% increase in the local unemployment rate is associated with a roughly 0.10 percentage

²³Due to data limitations, I use the local unemployment rate as a proxy for labor market conditions, as I do not have access to data on job vacancies or the total labor force at the city level. This assumption implies that trends in job vacancies do not vary significantly across cities, and if anything, I might be underestimating the effect of credit shocks on local labor markets.

point increase in the vote share for radical parties, which is statistically significant at the 1% level ($1.053 \times \ln(1.1) = 0.10$).

Turning to centrist voting (Column 4), once both year and city fixed effects are included, the coefficient becomes negative and statistically significant. A 10% increase in the local logged unemployment rate is associated with roughly 0.04 percentage point decrease in the vote share for centrist parties, which is statistically significant at the 1% level ($-0.464 \times \ln(1.1) = -0.044$).

Columns 5 and 6 report the results for the preferred measure, “Polarisation”, which is the change in the radical vote share minus the change in the central vote share. The coefficient is positive and significant in both specifications, though it decreases in magnitude when year fixed effects are included in Column 6. Specifically, a 10% increase in the log unemployment rate leads to radical parties gaining roughly 0.14 percentage points more in vote share relative to centrist parties ($1.518 \times \ln(1.1) = 0.144$). This provides evidence that rising unemployment shifts support away from centrist parties toward more radical parties. Furthermore, a look at the included control variables shows that higher turnout is associated with lower polarisation. This confirms the hypothesis that a low voter turnout can be a proxy for political dissatisfaction, as people for a sign of protest stay away from elections. Cities with larger population decrease the measure of polarisation, while cities with larger immigration inflow, as well as larger levels of local public debt are subject to higher polarisation. However these relationships are only marginally significant.

This approach faces a significant identification challenge due to potential omitted variable bias: unobserved, time-varying city-level factors may simultaneously influence both unemployment and political outcomes, such as austerity or immigration. To address this concern, I next estimate a reduced form specification, in which changes in voting behavior are directly regressed on an exogenous measure of credit supply shocks. This allows me assessing whether economic shocks influence political outcomes even without conditioning on unemployment and setting the stage for an instrumental variables strategy.

3.2 Credit Supply Shock and the Polarisation of Voters (Reduced Form)

To address potential endogeneity concerns in the relationship between local unemployment and voting behavior, I proceed by estimating the reduced form specification. Specifically, I exploit plausibly exogenous variation in city-level exposure to a credit supply shock to examine its direct effect on electoral outcomes. The reduced form captures the total effect of the credit shock on voting behavior — including, but not limited to, its impact via labor market conditions — and provides a preliminary test of the hypothesis that economic distress drives electoral shifts.

I estimate the following reduced-form equation at the city-year level:

$$\Delta Vote_{ct} = \beta_1 Exposure_{ct}^{for} + \beta_2 \mathbf{X}_{ct} + \phi_c + \phi_t + \epsilon_{ct} \quad (7)$$

where $\Delta Vote_{ct}$ represents the change in vote share for a particular party in city c between one election year t and another. $Exposure_{ct}^{for}$ is the exposure of city c to foreign weak banks, as defined previously at the firm level. This variable is the key explanatory variable of interest.

In addition, $\mathbf{X}_{ct}$ is a vector of time-varying city-level controls, which includes the unemployment rate, population, voter turnout, net immigration, and public debt. The model also includes city fixed effects (ϕ_c) to account for time-invariant factors at the city level, and year fixed effects (ϕ_t) to control for common time trends across all cities. The sample period spans the parliamentary elections of 2008, 2011, 2015, and 2016.

I expect that $\beta_1 > 0$, meaning that cities with greater exposure to firms borrowing from weak banks experience a stronger contraction in bank lending, which in turn leads to higher political polarisation in voting. The identifying assumption here is that cities with firms borrowing more from weak banks are more severely affected by the troubles of those banks.

Table 4 presents the results of regressing changes in the vote share on city-level log credit exposure to weak foreign banks. I start by looking at the change in vote shares for radical parties (Column 1-2). The coefficient of interest is positive and significant at the 1% level, once I add year fixed effects in Column 2 it remains positive, but is only significant at

the 15 % level.

The change in votes for centrist parties are shown in Column (3) and (4). Once year and city fixed effects are included, the coefficient is negative and highly significant.

Lastly, I look at the preferred measure “polarisation”. Again, Column (5) includes only city fixed effects, while Column (6) includes both year and city fixed effects. In both specifications, there is a positive and statistically significant reduced-form relationship: Cities with a higher exposure to foreign weak banks experience an increase in polarisation. In economic terms, a 10% percent increase in city level exposure to foreign weak banks translates into a 0.0005 percent point increase in polarised voting ($0.00499 \times \ln(1.1) = 0.000475$), the coefficient is statistically significant at the 5 % level. In this specification, also the coefficient on the local unemployment rate is highly positive. The higher the unemployment rate, the higher the change in the polarisation measure. Similarly, the coefficient for voter turnout is negative and highly significant: The higher the turnout rate, the less polarized votes.

The reduced form results serve as an important empirical foundation for the subsequent instrumental variable strategy, in which the credit shock will be used as an instrument for local unemployment to shed light on the causal effect of economic insecurity on voting behavior.

3.3 Instrumental Variable Approach

To establish a causal relationship between unemployment and voter behaviour, I propose an instrumental variable based on the city-level exposure measure to foreign weak banks. This allows establishing a causal relationship between the local unemployment rates, my proxy for economic insecurity, and changes in voting behaviour.

In a standard two stage least square (2SLS), I first regress the local unemployment rate on foreign exposure:

$$Urate_{ct} = b \text{ Exposure}_{ct}^{for} + \gamma \mathbf{X}_{ct} + \epsilon_{pt} \quad (8)$$

and use the prediction of $Urate_{ct}$, $\widehat{Urate}_{ct}$ as regressor in the second stage regression:

$$\Delta Vote_{ct} = \beta' \widehat{Urate}_{ct} + \gamma \mathbf{X}_{ct} + \epsilon_{ct} \quad (9)$$

The b coefficient estimated from Equation 8, the first stage, measures the relationship between unemployment rate ($Urate_{ct}$) and the city-level exposure to foreign weak banks ($Exposure_{ct}^{for}$). The reasoning behind this is the following: foreign bank bailouts affect employment on the firm level, and hence the local labour markets. If this was not the case, b would be equal to zero, and the instrument would be weak. If foreign bank bailouts instead do play a role for domestic labour markets, b is larger than zero. I cluster the standard errors at the city level.

Consequently, the β' coefficient estimated from Equation 9, the second stage, allows for causal interpretation of the effect of local unemployment rates on the polarisation of votes.

Table 5 reports the regression results of the two stage least squares estimation (2SLS), as defined in Equation 9. I use the preferred measure “polarisation” as dependent variable across all specifications. For sake of comparison, Column (1) presents again the OLS estimates, while Column (2) presents the estimates from the reduced form. Column (3) shows a strong first-stage relationship between the instrument $Exposure_{ct}^{for}$ and the local unemployment rates, as defined in Equation 8. The positive relationship, significant at the 1% level, suggests that the instrument is relevant: foreign weak bank exposure does play a role for local unemployment rates. The second-stage coefficient in Column (4) reports a positive and significant effect on polarisation, consistent with the OLS results. At the same time, compared to the OLS estimate in Column (1), the IV coefficient in Column (4) gained greatly in magnitude, and implies larger effects. Higher (instrumented) unemployment rates lead to higher polarisation of votes. Economically speaking, a 10% increase in (instrumented) log unemployment rates leads to radical parties gaining approximately 1.0 percentage points more in vote share relative to centrist parties ($10.82 \times \ln(1.10) = 1.032$). This effect is significant at the 5% level. These results are consistent in magnitude with those reported in Algan et al. (2017), among others.

3.4 Robustness Checks

Urban vs Rural Split One concern in this analysis related to the rural-urban divide in voting behaviour. While the inclusion of city fixed effects controls for time-invariant differences across cities, the rural-urban divide in voting behaviour (as highlighted by Dominicus, Dijkstra, and Pontarollo (2022) and Dijkstra, Poelman, and Rodríguez-Pose (2020), among others) may be driven by time-varying dynamics. As a result, the treatment effect itself might vary systematically by city size. Figure 3 provides a first impression of how city-level exposure to foreign weak banks is distributed across the 51 provinces of Spain. The exposure seems evenly distributed, without any significant urban/rural bias.

To address this issue more rigorously, I follow Dijkstra, Poelman, and Rodríguez-Pose (2020) and classify the cities in the sample by three categories: i) cities or large urban areas with a population of more than 200,000, ii) towns and suburbs with a population between 50,000 and 200,000 and iii) rural areas with a population below 50,000. I then re-estimate the 2SLS model on two subsamples: one excluding large urban areas and another including only rural areas.

Table 6 presents the results of the 2SLS estimation.²⁴ The relationship appears robust across different types of city sizes. Whether large urban centers or rural areas, the estimated effect of instrumented unemployment on vote polarisation remains statistically and economically similar.

Alternative Measures of Polarisation The measure of polarisation used in the main analysis is defined as the change in vote shares going to radical parties minus the change in vote shares going to centrist parties between two consecutive elections. While this is a commonly used approach, it may have two key limitations. First, it is sensitive to how parties are categorised. Second, by subtracting the change in centrist vote shares from that of radicals, the measure may overemphasize movements toward the extremes, without accounting for the relative stability or continued dominance of the center.

To address the first concern, I refrain from aggregating vote shares into a single polarisation measure and instead re-estimate the OLS specification separately for each major

²⁴In unreported results, I estimate the OLS and reduced form regressions using the same sample splits, and the results are qualitatively unchanged.

party. Table 7 presents the results, which provide evidence that the general dyna.

To address the second concern, I follow Guiso, Morelli, and Sonno (2023) and Funke, Schularick, and Trebesch (2016) in constructing an alternative measure of political polarisation based on support for anti-establishment parties:

$$\Delta \text{Anti-Establishment}_{ct} = \Delta \text{Non-Mainstream}_{ct} \quad (10)$$

Here, *Non-Mainstream* refers to parties outside the traditional center-left and center-right spectrum, specifically VOX, Podemos, and Ciudadanos.²⁵ This measure captures discontent expressed through support for new or anti-system actors, disregarding the ideological position of the center.

Table 8 displays the results of the 2SLS regression. The coefficient in the second stage is positive and highly significant. Economically speaking, a 10% increase in (instrumented) log unemployment rates leads to an increase of approximately 0.8 percentage points in vote shares for anti-establishment parties ($8.286 \times \ln(1.10) = 0.787$). While the estimated effect is slightly smaller than the baseline estimate of 1.0 percentage point, it remains statistically significant at the 5% level. This reduction in magnitude is expected, as the alternative measure captures only gains to non-mainstream parties, without accounting for potential losses from the political center. This is a more conservative estimate of polarisation, as it does not assume a one-to-one transfer of votes from the center to the extremes. Nonetheless, the findings suggest that the results are not sensitive to how polarisation is defined.

Distance Measures I vary the distance measures in the geo-matching exercise (see Equation 5). In Table 9, D is equal to 50 km, instead of the 20 km assumed for the baseline results. I find that such an alternative definition decreases the coefficient by one third in magnitude.

Different Moving Averages The preferred definition of the Exposure measure is the three-year moving average of it. Table 10 provides evidence that the results do not de-

²⁵Ciudadanos is included as it emerged during the same period as an alternative to the mainstream centre-right, the results are robust to excluding this party.

pend on how the explanatory variable is smoothed.

3.5 Credit Supply on the Firm-Bank level

Importantly, in a last step, I test whether (foreign) weak banks curtail credit to firms more than other banks. Here, a major identification challenge is related to a reverse causality issue between the health of the banking sector and the economy. Weak banks might be weak (= subject to a bailout in this case) because their loan portfolio performs poorly. Given that Spain experienced a housing bubble, it can well be that failing borrowers decreased loan demand, which led to banks cutting their credit to these borrowers. To address this concern, I focus on *foreign* weak banks active in Spain. In other words, I focus on banks active in Spain, but subject to a bailout in their respective home countries other than Spain. The troubles of these banks are likely to be exogenous to the performance of the Spanish loan portfolio, but might nevertheless lead those banks to reduce their exposure to Spanish borrowers (Giannetti and Laeven 2012). Hence, firm-level exposure to foreign weak banks is the proxy for exposure to a credit crunch. The control group are domestic banks, which are healthy, i.e. which did not experience a bailout.

Addressing this hypothesis in a more formal way, I build on Bentolila, Jansen, and Jiménez (2018) and set up the following equation.

$$y_{ijt} = \delta_1 \text{ Foreign WB}_i + \delta \mathbf{X}_{i,t-2} + \mu_{jt} + \epsilon_{ijt}, \quad (11)$$

where y_{ijt} is the logarithm of the loan issuance in million USD to firm j provided by bank i (as lead or participating bank) at quarter t . The sample contains all banks lending to Spanish firms in the period between 2008 Q1 and 2014 Q1. $\text{Foreign WB}(0/1)_i$ is an indicator variable equal to 1 if bank i is a foreign bank subject to a bailout, and equal to zero if bank i is a domestic bank not subject to a bailout. $\mathbf{X}_{i,t-1}$ is a vector of bank-level controls for size, equity ratio, cash ratio, liquidity ratio and deposits ratio, all lagged by two quarters. μ_{jt} denote industry or firm $\times$ year fixed effects.

The coefficient of interest δ_1 measures whether the same firm experiences a larger reduction in lending from weak foreign banks than from healthy banks once loan demand is controlled for. I expect $\delta_1 < 0$, as foreign weak banks are banks in trouble, and curtail credit more than domestic healthy banks. This is along the lines of Chodorow-Reich

(2014), who finds that firms with a relationship to banks hit by the Lehman shock suffer most in terms of credit contraction and employment.

Table 11 presents the results of the estimation on the firm-bank-quarter level. Robust standard errors are clustered at the bank level. Column (1) does not include any fixed effects, the coefficient is positive and significant at the 5% level. Once I include industry $\times$ quarter and firm $\times$ quarter fixed effects in Column (2), the coefficient of interest turns negative and insignificant. To refine the comparison between treatment and control group, I add time-varying bank-level controls in Column (3), such as the log of total assets, the equity ratio, the cash ratio, and the deposits ratio. The coefficient of interest is now negative and significant at the 1% level. Foreign weak banks decrease their lending by $\exp(0.248) - 1 = 28.16\%$ to the same firm compared to healthy domestic banks.

4 Conclusions

I provide causal evidence on the effect of credit crunches on political polarisation through the channel of unemployment risk. Combining data on bank-firm connections and on electoral outcomes at the city level during the Spanish Financial Crisis, I construct an instrument for unemployment based on the city-level exposure to foreign weak banks. I find that a 10% increase in the (instrumented) unemployment rate translates into radical parties gaining roughly one percentage point more in vote share relative to centrist parties.

This paper first and foremost expands the understanding of the channels through which financial crises polarize voters. The results confirm the model of Guiso et al. (2017): rising economic insecurity leads to higher support for populist parties. Some caveats are in order. I only focus on unemployment risk as a channel, which however does not exclude other channels discussed in the literature so far (i.e. cultural traits, import competition, austerity, debtor-creditor conflicts, public mismanagement). Studying in more detail the relative strength of the different channels would be a profitable avenue for future research.

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5 Table and Figures

5.1 Figures

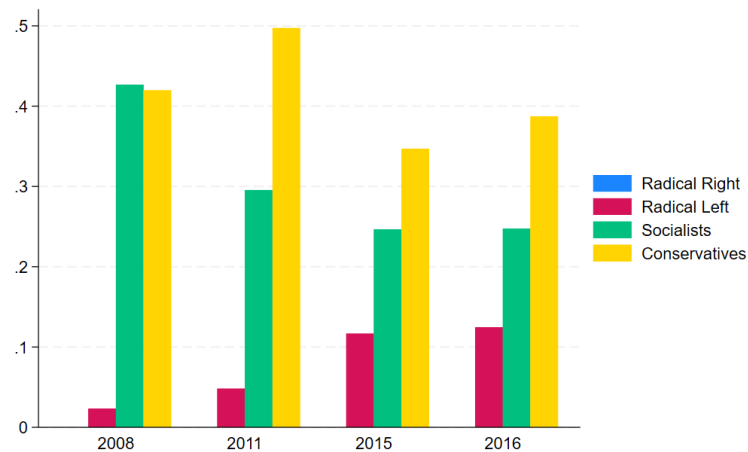


Figure 1: **Aggregated Votes Across Single Parties.** This figure plots the % share of votes going to single parties in the 2008, 2011, 2015 and 2016 Spanish parliamentary elections. Source: Ministerio del Interior and GADM.

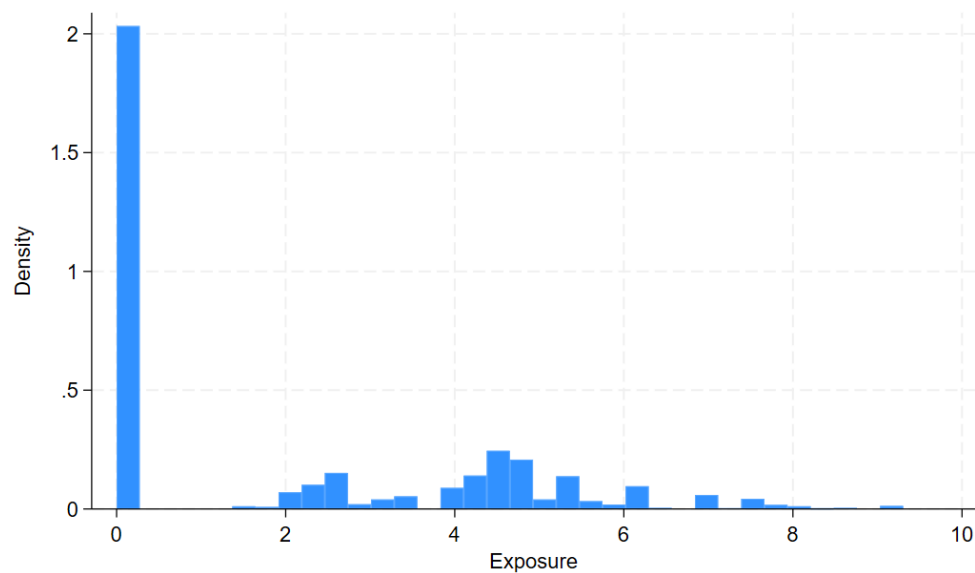


Figure 2: **City-Level Exposure.** This figure plots the city-level exposure to foreign weak banks in log loan volume in 2008.

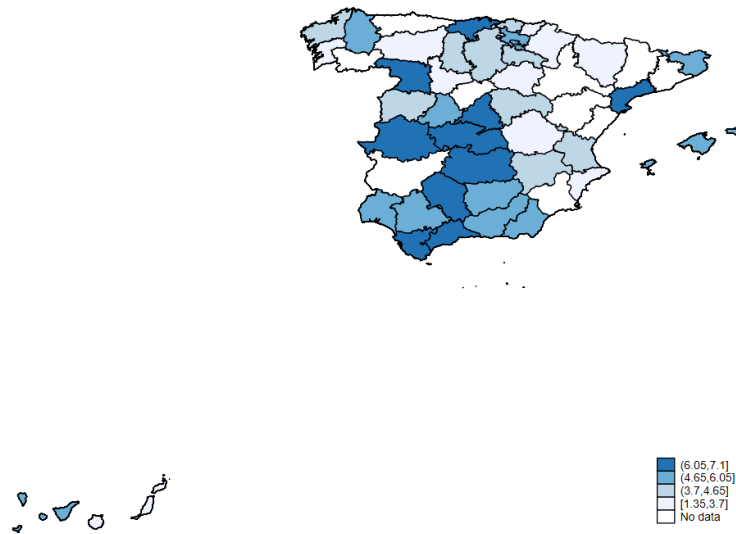


Figure 3: **Exposure to Weak Banks by Spanish Provinces.** This figure plots the city-level exposure measure to weak banks in 2008, aggregated to 51 Spanish provinces. Legend in log of total volume. Source: Own calculations and GADM.

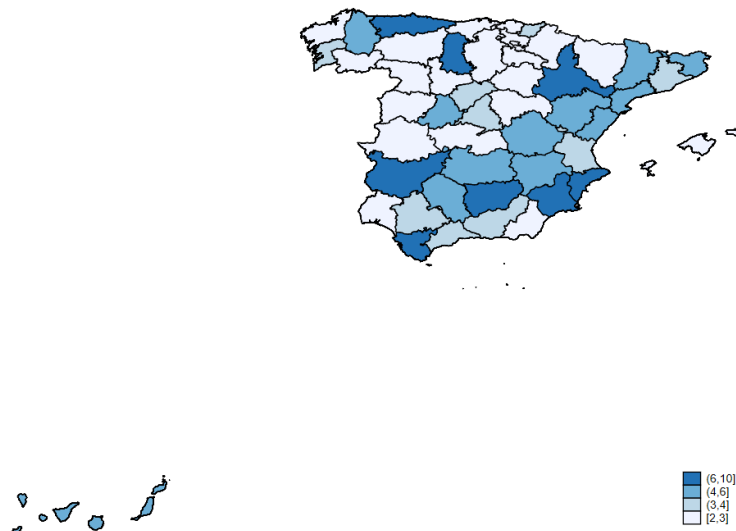


Figure 4: **Unemployment Rate by Spanish Provinces.** This figure plots the city unemployment rate in 2008, aggregated to 51 Spanish provinces. Legend in % Source: Instituto Nacional de Estadística (INE) and GADM.

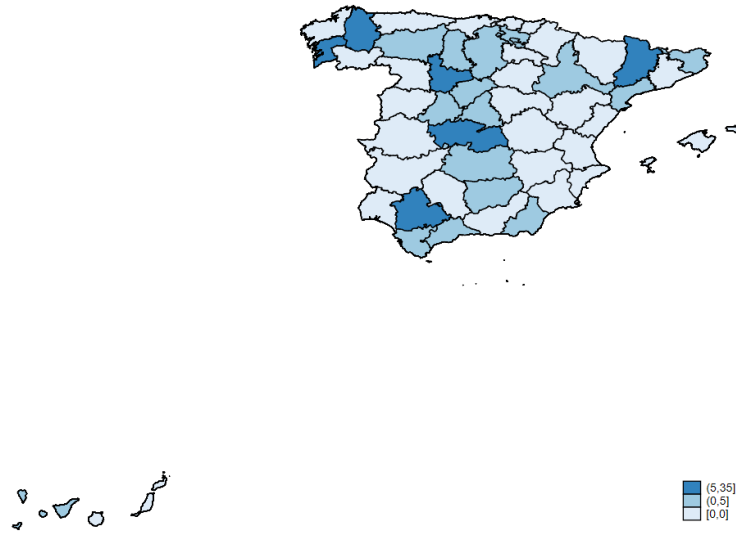


Figure 5: **Radical votes by Spanish Provinces.** This figure plots the city-level votes, aggregated to 51 Spanish provinces, going to radical left-wing parties in the 2008 parliamentary elections for 51 Spanish provinces. Legend in %. Source: Ministerio del Interior and GADM.

5.2 Descriptives

Table 1: **City level: Summary Statistics** Panel A presents summary statistics on the city level in year 2008. *Unemployment Rate* is the ratio of total unemployed over the total population, in city c in year t . *Exposure* is defined as city-level exposure to foreign weak banks in log total volume. $\ln(\text{Population})$ is the log of total population of city c . *Voter Turnout* is the ratio of total votes over the electoral census in city c . *Immigration* is the log of the immigration flow to province p , *Public Debt* is the log of total debt in million in province p . *Vote Radical (Central)* is the ratio of votes going to radical (centralist) parties over total votes in city c . *Polarisation* is the share of radical parties minus the share of centralist parties in city c . All variables are defined in Appendix A1. Panel B shows univariate t-tests between cities, where *No Exposure* are cities without firms exposed to foreign weak banks, and *Exposure* otherwise in 2008.

	mean	sd	min	max	count
Exposure	0.92	1.91	0.00	7.57	4,087
Unemployment	0.08	0.03	0.00	0.22	4,087
$\ln(\text{Population})$	7.88	1.77	3.37	14.30	4,087
Turnout	0.74	0.06	0.49	0.92	4,087
Immigration	8.44	1.30	5.88	11.35	4,087
Public Debt	11.33	2.50	0.00	19.11	4,087
Vote Radical	0.12	0.11	0.00	0.48	4,087
Vote Central	0.67	0.22	0.10	0.98	4,087
Polarisation	-0.55	0.27	-0.98	0.39	4,087

	No Exposure		Exposure			
	Mean	N	Mean	N	Diff.	t-stat.
Exposure	0.37	762	3.66	826	-3.29***	-33.25
Unemployment	0.05	762	0.05	826	0.00	1.75
$\ln(\text{Population})$	7.48	762	8.08	826	-0.60***	-6.87
Turnout	0.77	762	0.77	826	-0.01	-1.43
Immigration	8.66	762	9.29	826	-0.63***	-11.06
Public Debt	10.67	762	11.54	826	-0.87***	-7.22
Vote Radical	0.07	762	0.07	826	0.00	0.80
Vote Central	0.81	762	0.81	826	-0.00	-0.19
Polarisation	-0.73	762 ₃₀	-0.74	826	0.01	0.43

Table 2: **Firm level: Summary Statistics** This table presents summary statistics on the firm level. The sample period is end 2010. $Exposure_j$ (0/1) is an indicator variable equal to one if firm j has a relationship with a weak bank, and zero otherwise. $\ln(Total\ assets)$ is the natural logarithm of firm j 's total assets. $Profits-to-Assets-Ratio$ is firm j ' EDIBTA over total assets. $LTDebt-to-Assets-Ratio$ is firm j 's long term debt to total assets. $STDebt-to-Assets-Ratio$ is firm j 's short term debt to total assets. $Equity-to-Assets-Ratio$ is firm j 's equity ratio to total assets. $Leverage-Ratio$ is firm j 's total liabilities to total assets. All variables are defined in Appendix A1.

	No Exposure			Exposure		
	mean	sd	count	mean	sd	count
Exposure (0/1)	0.00	0.00	361	1.00	0.00	435
$\ln(Total\ Assets)$	4.92	1.65	154	5.71	1.93	209
Profits-to-Assets-Ratio	8.67	10.51	145	5.46	8.69	198
LTDebt-to-Assets-Ratio	30.75	24.30	132	32.14	23.88	176
STDebt-to-Assets-Ratio	9.68	12.90	130	10.75	16.42	174
Equity-to-Assets-Ratio	29.10	22.09	154	24.95	21.60	209
Leverage-Ratio	71.25	21.75	153	75.05	21.60	209

5.3 Main Results (City-Level)

Table 3: **OLS: Effect of Unemployment on Electoral Outcomes.** This table reports OLS estimates of the effect of local unemployment on electoral results at the city-year level for the elections in 2011, 2015, and 2016. The dependent variables are changes in vote shares for radical parties ($\Delta Radical$; Columns 1–2), centrist parties ($\Delta Central$; Columns 3–4), and their difference ($Polarisation$; Columns 5–6). The key independent variable is $\ln(Unemployment)$, the log of the local unemployment rate. Controls include $\ln(Population)$, $Turnout$, $\ln(Public\ Debt)$, and $\ln(Immigration)$. All variables are defined in Appendix A1. Regressions include city and year fixed effects. Robust standard errors clustered at the city level are in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Δ Vote Radical	(2) Δ Vote Radical	(3) Δ Vote Central	(4) Δ Vote Central	(5) Δ Polarisation	(6) Δ Polarisation
Urate	2.014*** (0.269)	1.116*** (0.258)	-2.801*** (0.233)	-0.510*** (0.139)	4.815*** (0.428)	1.626*** (0.347)
$\ln(Population)$	0.170*** (0.044)	-0.001 (0.048)	-0.233*** (0.044)	0.115*** (0.026)	0.403*** (0.066)	-0.116* (0.064)
Turnout	-0.858*** (0.098)	-1.285*** (0.114)	-1.310*** (0.064)	-0.027 (0.048)	0.452*** (0.127)	-1.258*** (0.142)
$\ln(Immigration)$	0.039** (0.015)	0.013 (0.014)	0.364*** (0.011)	-0.023** (0.010)	-0.324*** (0.022)	0.036* (0.020)
$\ln(Public\ Debt)$	0.005*** (0.002)	0.004* (0.002)	-0.009*** (0.002)	-0.003** (0.001)	0.014*** (0.004)	0.007** (0.003)
Observations	4,087	4,087	4,087	4,087	4,087	4,087
R-squared	0.306	0.332	0.525	0.805	0.316	0.461
City-Level Controls	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes	No	Yes
Cluster	City	City	City	City	City	City

Table 4: **Reduced Form: Effect of Credit Supply Shock on Electoral Results.** This table provides results of a OLS regression analyzing the effect of credit constraints on electoral results. The analysis is based on data on the city-year level. The sample period are the election years 2011, 2015 and 2016. All variables are defined in the Appendix [A1](#). The regressions further include city and year fixed effects, as indicated. Reported standard errors are in parentheses, clustered at the city level . ***, **, * denote significance at the 1, 5, and 10% level, respectively.

VARIABLES	(1) Δ Vote Radical	(2) Δ Vote Radical	(3) Δ Vote Central	(4) Δ Vote Central	(5) Δ Polarisation	(6) Δ Polarisation
Exposure ^{for}	0.008*** (0.002)	0.002 (0.002)	-0.002* (0.001)	-0.003*** (0.001)	0.010*** (0.002)	0.005** (0.002)
Urate	1.749*** (0.262)	1.074*** (0.261)	-2.737*** (0.236)	-0.467*** (0.139)	4.486*** (0.419)	1.542*** (0.349)
ln(Population)	0.148*** (0.044)	0.000 (0.048)	-0.227*** (0.044)	0.114*** (0.025)	0.375*** (0.066)	-0.113* (0.063)
Turnout	-0.931*** (0.104)	-1.290*** (0.114)	-1.292*** (0.066)	-0.021 (0.049)	0.361*** (0.134)	-1.269*** (0.142)
ln(Immigration)	0.028* (0.015)	0.015 (0.013)	0.366*** (0.012)	-0.025** (0.010)	-0.338*** (0.021)	0.039** (0.019)
ln(Public Debt)	0.005** (0.002)	0.003* (0.002)	-0.009*** (0.002)	-0.003** (0.001)	0.013*** (0.004)	0.007** (0.003)
Observations	4,087	4,087	4,087	4,087	4,087	4,087
R-squared	0.312	0.332	0.526	0.805	0.321	0.462
City-Level Controls	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes	No	Yes
Cluster	City	City	City	City	City	City

Table 5: **IV Results: Votes and Unemployment.** This table reports the regressions of the effect of local unemployment rates ($Urate$) on votes. Column 1 presents the OLS regression of polarisation on local unemployment rates. Column 2 presents the reduced from regression of polarisation on city exposure to foreign weak banks. Column 4 presents the estimates of a two stage least squared (2SLS) fixed effects panel regression. The first stage (Column 3) uses $Exposure^{for}$, the log of city c 's exposure to foreign weak banks in year t as an instrument for local unemployment rates ($Urate$). First-stage diagnostics, including the Angrist-Pischke F-statistic and the Kleibergen-Paap rk statistic, are reported to assess the strength and validity of the instrument. All variables are defined in the Appendix A1. Reported standard errors are in parentheses, clustered at the city level. All specifications include city and year fixed effects. ***, **, * denote significance at the 1, 5, and 10% level, respectively.

	(1)	(2)	(3)	(4)
	Δ Polarisation	Δ Polarisation	$\ln(Urate)$	Δ Polarisation
	b/se	b/se	b/se	b/se
Urate	1.626*** (0.347)	1.542*** (0.349)		10.820** (4.474)
$\ln(Population)$	-0.116* (0.064)	-0.113* (0.063)	-0.048*** (0.004)	0.328 (0.223)
Turnout	-1.258*** (0.142)	-1.269*** (0.142)	-0.026*** (0.008)	-1.031*** (0.184)
$\ln(Immigration)$	0.036* (0.020)	0.039** (0.019)	-0.006*** (0.002)	0.096*** (0.036)
$\ln(Public\ Debt)$	0.007** (0.003)	0.007** (0.003)	-0.000 (0.000)	0.007* (0.003)
$Exposure^{for}$		0.005** (0.002)	0.001*** (0.000)	
N	4087	4087	4087	4087
APFtest			17.009	

5.3.1 Robustness Checks

Table 6: **Robustness: Urban vs Rural Split** This table presents estimates from a two stage least squares (2SLS) fixed effects panel regression as specified in Equation 9. The sample is split into three city size categories: All Cities; Excl. Largest ($\leq 200,000$) and Rural Only ($\leq 50,000$). The analysis is conducted at the city-year level, covering election years 2011, 2015, and 2016. First-stage diagnostics, including the Angrist-Pischke F-statistic and the Kleibergen-Paap rk statistic, are reported to assess the strength and validity of the instrument. All variables are defined in the Appendix A1. The regressions include city and year fixed effects, as indicated. Standard errors, clustered at the city level, are reported in parentheses. ***, **, * denote significance at the 1, 5, and 10% levels, respectively.

	(1)	(2)	(3)
	All Cities	Excl. Largest	Rural Only
	Δ Polarisation	Δ Polarisation	Δ Polarisation
Urate	10.820** (4.474)	10.997** (4.546)	9.723** (4.366)
ln(Population)	0.328 (0.223)	0.339 (0.226)	0.277 (0.217)
Turnout	-1.031*** (0.184)	-1.021*** (0.185)	-1.056*** (0.180)
ln(Public Debt)	0.007* (0.003)	0.007* (0.003)	0.007** (0.003)
ln(Immigration)	0.096*** (0.036)	0.096*** (0.036)	0.078** (0.032)
N	4087	4033	3861
APFtest	17.009	16.655	16.503
rkF	17.01	16.65	16.50

Table 7: **Robustness: Effect of Unemployment on Change in Single Party Shares.** This table reports OLS estimates of the effect of local unemployment on changes in single party shares at the city-year level for the elections in 2011, 2015, and 2016. The dependent variables are changes in single vote shares. The key independent variable is $Urate$, the log of the local unemployment rate. Controls include $\ln(Population)$, $Turnout$, $\ln(Public\ Debt)$, and $\ln(Immigration)$. All variables are defined in Appendix A1. Regressions include city and year fixed effects. Robust standard errors clustered at the city level are in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Δ Vote Conservatives	(2) Δ Vote Liberal	(3) Δ Vote Socialists	(4) Δ Vote Radical Left	(5) Δ Vote Green
$Urate$	-0.298** (0.134)	0.161** (0.068)	-0.191 (0.137)	1.240*** (0.305)	-0.244*** (0.028)
$\ln(Population)$	0.006 (0.024)	0.105*** (0.014)	0.109*** (0.022)	0.003 (0.056)	-0.017*** (0.003)
$Turnout$	0.133*** (0.046)	0.169*** (0.028)	-0.166*** (0.042)	-1.401*** (0.128)	0.019*** (0.007)
$\ln(Immigration)$	-0.021** (0.009)	0.016*** (0.004)	-0.004 (0.007)	0.023 (0.015)	-0.004** (0.002)
$\ln(Public\ Debt)$	-0.004*** (0.001)	0.001 (0.001)	0.001 (0.001)	0.004 (0.002)	-0.000 (0.000)
Observations	4,087	4,087	4,087	4,087	4,087
R-squared	0.844	0.788	0.738	0.310	0.137
City FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Cluster	City	City	City	City	City

Table 8: **Robustness: Anti-Establishment** This table reports the results of a two stage least squared (2SLS) fixed effects panel regression of the effect of instrumented local unemployment rates $Urate$ on an alternative measure of polarisation, $Anti-Establishment_{ct}$, as defined in Equation 10. First-stage diagnostics, including the Angrist-Pischke F-statistic, are reported to assess the strength and validity of the instrument. All variables are defined in the Appendix A1. Reported standard errors are in parentheses, clustered at the city level. All specifications include city and year fixed effects. ***, **, * denote significance at the 1, 5, and 10% level, respectively.

	(1)	(2)	(3)	(4)
	Δ Antiestablishment	Δ Antiestablishment	$\ln(Urate)$	Δ Antiestablishment
	b/se	b/se	b/se	b/se
Urate	1.282*** (0.276)	1.218*** (0.279)		8.286** (3.708)
$\ln(\text{Population})$	0.103** (0.052)	0.105** (0.052)	-0.048*** (0.004)	0.441** (0.185)
Turnout	-1.113*** (0.122)	-1.122*** (0.122)	-0.026*** (0.008)	-0.941*** (0.155)
$\ln(\text{Immigration})$	0.027* (0.015)	0.030** (0.014)	-0.006*** (0.002)	0.073*** (0.028)
$\ln(\text{Public Debt})$	0.004** (0.002)	0.004** (0.002)	-0.000 (0.000)	0.004 (0.003)
Exposure ^{for}		0.004** (0.002)	0.001*** (0.000)	
N	4087	4087	4087	4087
APFtest			17.009	

Table 9: **Robustness Check: Distance Measure (50 km).** This table reports the regressions of the effect of the log of total unemployed (*Unemployment*) on vote growth for different parties. Column 1 presents the OLS regression of polarisation on the number of unemployed. Column 2 presents the reduced from regression of polarisation on foreign exposure. Column 4 presents the estimates of a two stage least squared (2SLS) fixed effects panel regression. The first stage (Column 3) uses $Exposure_{ct}^{for}$, the log of city c 's exposure to foreign weak banks in year t as an instrument for local unemployment (*Unemployment*). I report the Angrist-Pischke F test statistic of the excluded instruments in the first stage regression. All variables are defined in the Appendix A1. Reported standard errors are in parentheses, clustered at the city level. The sample period is 2011, 2015, 2016. All specifications include city fixed effects. ***, **, * denote significance at the 1, 5, and 10% level, respectively.

	(1)	(2)	(3)	(4)
	Polarisation	Polarisation	Urate	Polarisation
	b/se	b/se	b/se	b/se
Urate	1.102*** (0.238)	1.044*** (0.239)		7.144** (3.023)
ln(Population)	-0.066 (0.048)	-0.064 (0.048)	-0.051*** (0.005)	0.245 (0.161)
Turnout	-0.977*** (0.108)	-0.986*** (0.109)	-0.028*** (0.008)	-0.813*** (0.137)
ln(Immigration)	0.028* (0.015)	0.031** (0.014)	-0.006*** (0.002)	0.070*** (0.026)
ln(Public Debt)	0.005** (0.002)	0.005** (0.002)	0.000 (0.000)	0.005* (0.003)
Exposure ^{for}		0.004** (0.002)	0.001*** (0.000)	
N	4078	4078	4078	4078
APFtest			17.998	

Table 10: **Robustness Check: Different Moving Averages** This table provides results of a OLS regression analyzing the effect of credit constraints on electoral results. The analysis is based on data on the city-year level. The sample period are the election years 2011, 2015 and 2016. All variables are defined in the Appendix A1. The regressions further include city and year fixed effects, as indicated. Reported standard errors are in parentheses, clustered at the city level . ***, **, * denote significance at the 1, 5, and 10% level, respectively.

VARIABLES	(1) Δ Radical	(2) Δ Radical	(3) Δ Radical	(4) Δ Radical	(5) Δ Radical	(6) Δ Radical
ExposureNO _{ct}	0.009*** (0.001)	0.010*** (0.001)				
Exposure2 _{ct}			0.004*** (0.001)	0.002** (0.001)		
Exposure4 _{ct}					-0.002** (0.001)	-0.003*** (0.001)
Observations	7,648	7,648	7,648	7,648	7,648	7,648
R-squared	0.270	0.282	0.264	0.276	0.263	0.276
City Controls	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes	No	Yes
Cluster	City	City	City	City	City	City

5.4 Main Results (Firm-Bank Level)

Table 11: **Credit Supply on the Firm-Bank Level** This table provides results of a OLS regression analyzing the loan volume when banks are weak foreign banks. The analysis is based on data on the firm-bank-quarter level. The sample period is Q1 2008 to Q4 2014. $\ln(\text{loan volume})$ is the logarithm of the loan volume from bank i (as lead arranger) to firm j at quarter t . WB_i is an indicator variable equal to one if bank i is a foreign weak bank, and zero if bank i is a domestic healthy bank. Bank controls are bank i 's log of total assets, the leverage ratio, the cash ratio, and the deposits ratio, lagged by two periods. The regressions further include industry $\times$ time and firm $\times$ time fixed effects, as indicated. Reported standard errors are in parentheses, clustered at the bank level. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

VARIABLES	(1) ln(Loan Volume)	(2) ln(Loan Volume)	(3) ln(Loan Volume)
Foreign WB_i	0.595** (0.242)	-0.104 (0.093)	-0.248*** (0.091)
Total Assets			0.155*** (0.026)
Equity Ratio			-0.018 (0.018)
Cash Ratio			-0.002 (0.009)
Deposits Ratio			-0.001 (0.001)
Observations	1,771	1,771	1,771
R-squared	0.027	0.898	0.905
Industry $\times$ Time FE	No	Yes	Yes
Firm $\times$ Time FE	No	Yes	Yes
Cluster	Bank	Bank	Bank

A Appendix

Table A1: Variable Definitions.

Variable	Description	Source
City-Level		
Exposure ^{for}	Exposure to foreign weak banks in log total volume, in city c in year t	own calculations based on Dealscan
Unemployment rate (%)	Ratio of total unemployed over the total population, in city c in year t	SEPE
ln(Urate)	Log of unemployment rate, in city c in year t	own calculations SEPE
ln(Population)	Log of total population in city c in year t	Ministero del Interior
Turnout rate (%)	The ratio of total votes over the electoral census in city c in year t	Ministero del Interior
Vote Radical (%)	Ratio of votes going to radical parties over total votes in city c in year t	own calculations based on Ministerio del Interior, Chapell Hill
Vote Central	Ratio of votes going to centralist parties over total votes in city c in year t	own calculations Ministerio del Interior, Chapell Hill
Polarisation	Share of radical parties minus the share of centralist parties in c in year t	own calculations
Vote Conservatives	Ratio of votes going to conservative parties over total votes in city c in year t	own calculations Ministerio del Interior, Chapell Hill
Vote Liberal	Ratio of votes going to liberal parties over total votes in city c in year t	own calculations Ministerio del Interior, Chapell Hill
Vote Socialists	Ratio of votes going to socialist parties over total votes in city c in year t	own calculations Ministerio del Interior, Chapell Hill
Vote Radical Left	Ratio of votes going to radical left parties over total votes in city c in year t	own calculations Ministerio del Interior, Chapell Hill
Vote Green	Ratio of votes going to green parties over total votes in city c in year t	own calculations Ministerio del Interior, Chapell Hill
Anti-Establishment	Share of non mainstream parties in city c in year t	own calculations
Firm-Bank-Level		
ln(Loan Volume)	Log of total loan amount in million USD to firm j by bank i in quarter t	DealScan
WB	Indicator variable equal to one if bank i is located outside Spain and has received a bailout by the respective home country, and equal to zero if bank i is located in Spain and did not receive a bailout.	own calculations European State Aid Registry
Total Assets	Log of total assets of bank i in quarter t	S&P Global
Equity Ratio	Bank i 's equity over total assets in quarter t	S&P Global
Cash Ratio	Bank i 's cash and equivalents over total assets in quarter t	S&P Global
Deposits Ratio	Bank i 's deposits over total assets in quarter t	S&P Global
Firm-Level		
Exposure (0/1)	Indicator variable equal to one if firm j has a relationship with a weak bank, and zero otherwise	own calculations based on Dealscan
ln(Total Assets)	Log of total assets of firm j in year t	Compustat
Profits to Assets Ratio	Firm j 's EDIBTA over total assets in year t	Compustat
LTDebt to Assets Ratio	Firm j 's long term debt over total assets in year t	Compustat
STDebt to Assets Ratio	Firm j 's short term debt over total assets in year t	Compustat
Equity to Assets Ratio	Firm j 's equity over total assets in year t	Compustat
Leverage Ratio	Firm j 's total liabilities over total assets in year t	Compustat
Province-Level		
Immigration	Log of the flow of immigrants from abroad in province p in year t	INE
Public Debt	Log of total public debt in city c in year t	Ministerio de Hacienda y Funcion Publica

Table A2: List of Foreign Weak Banks

ABN AMRO Bank N.V.
AIB Group plc
BAWAG Group AG
BNP Paribas Fortis SA/NV
BNP Paribas SA
Banca Monte dei Paschi di Siena S.p.A.
Banca Popolare di Milano Società per Azioni
Banco BIC Português, S.A.
Banco BPM Società per Azioni
Banco Comercial Português, S.A.
Banif - Banco Internacional do Funchal, S.A.
Bank Of Ireland Group plc
Bayerische Landesbank
Caisse Fédérale de Crédit Mutuel
Caixa Geral de Depósitos, S.A.
Dexia SA
Groupe BPCE
Groupe Banques Populaire
HSH Nordbank
Hypo Real Estate Holding AG
IKB Deutsche Industriebank Aktiengesellschaft
ING Groep N.V.
KBC Group NV
Landesbank Baden-Württemberg
Lloyds Banking Group plc
Norddeutsche Landesbank Girozentrale
Portigon AG
The Royal Bank of Scotland Group plc