# Corporate governance and procyclicality in a banking crisis: Empirical evidence and implications

ABSTRACT

This paper presents our analysis of a complete financial data set on the population of Spanish deposit institutions for the last credit cycle. This information is combined with details about the characteristics of the corporate governance of the banks. Our results show that in a context of rapid credit growth (2002–2007), only financial institutions managed with political criteria have eventually experienced serious solvency problems (2008–2017) and have finally had to be bailed out with public resources. These results are particularly relevant for the establishment of appropriate prudential policies in countries where a government-owned banking system still exists.

KEY WORDS: Financial crisis, bank bailout, procyclicality, corporate governance, politically motivated lending, connected lending.

Classification JEL: G21, G28, G32

## 1. Introduction

Correctly identifying and documenting the causes of a banking crisis is extremely important as it allows the establishment of appropriate policies to prevent or mitigate future crises. In addition, it should be borne in mind that the application of prudential policies based on an incorrect diagnosis of the crisis´ causes can make such policies ineffective, have a relevant economic cost or can promote the development of regulatory arbitrage mechanisms. Although there is a large empirical literature on the causes of banking crises, much of it refers to factors that are external to the financial system such as the evolution of GDP, real interest rates, inflation or external terms of trade (Demirgüç-Kunt and Detragiache, 2005). However after the last banking crisis, the procyclicality of financial systems and the problems in the corporate governance of financial institutions have been recognised as determining causes, both of which are endogenous to the financial system.

On the one hand, a number of supranational institutions, such as Bank for International Settlements (BIS), Financial Stability Board (FSB) or the European Banking Authority (EBA), have explicitly recognised the problem of credit pro-cyclicality and have established various policies and recommendations. The role of excessive credit expansions in causing financial crises is widely recognised in the scientific literature (Aikman et al., 2015; Alessi and Detken, 2018; Dell'Ariccia et al., 2012; Jordà et al., 2011; Schularick and Taylor, 2012). Thus, throughout the credit cycle, feedback mechanisms are produced where the financial sector amplifies the economic cycles, giving rise to the phenomenon known as credit procyclicality (Borio et al., 2001). It is evident that during the expansion this issue has played a relevant role in the formation of vulnerabilities that have been triggered during the crisis.

On the other hand, problems in the corporate governance of financial institutions have also been identified as determining factors in the origin of the latest global financial crisis (Berger et al., 2016;

Erkens et al., 2012; Kirkpatrick, 2009; Mehran et al., 2011). It should also be taken into account that bank balance sheets are opaque and consequently bank managers have the ability to take on risk very quickly, in a way that is not immediately visible to supervisors or external investors (Becht et al., 2011; Morgan, 2002). This issue has implications for the corporate governance of financial institutions and for their ownership and control (Caprio et al., 2007; Haan and Vlahu, 2016), and more specifically, on issues related to political interference in financial institutions (La Porta et al., 2002; Laeven and Levine, 2009; Shleifer and Vishny, 1994)[1]. This can lead to two problems: firstly, the phenomenon known as *politically motivated lending* in which a politically controlled financial institution increases the supply of credit during election years or finances public infrastructure even without economic viability (Dinç, 2005; Englmaier and Stowasser, 2017; Iannotta et al., 2013). Secondly, a bank may finance or refinance politically related businessmen even when their projects are economically questionable in a process known as *connected lending* (Charumilind et al., 2006; Dheera-aumpon, 2013; Khwaja and Mian, 2005; Sapienza, 2004).

These issues, which focus on the political deals as the cause of a banking crisis, are referred to by Calomiris and Haber (2014) as the *Game of Bank Bargains*. Thus, the misalignment of politically dependent managers´ incentives has two important consequences in terms of banking stability: (i) the supply of credit is increased by politically connected banks, which aggravates a potential problem of credit procyclicality, and (ii) the quality of the politically conditioned entities´ credit portfolio deteriorates because the incentives are economically suboptimal (Chen et al., 2018).

In this paper, we add to the literature on the banking crises by providing, to the best of our knowledge, the first empirical work to jointly address the issues of procyclicality and politicisation as determining factors in the triggering of a banking crisis. Using a unique hand-collected dataset that combines

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[1] Abundant anecdotal evidence, occasionally supported by more detailed analysis (Illueca et al., 2014), suggests that the reasons for the Spanish financial crisis are related to the political control of some savings banks.

financial information and characteristics about the boards of the Spanish banks for the period 2002–2017, we test our hypotheses by applying conditional process analysis (Hayes, 2018) and a Tobit model. Our results show that rapid credit growth is a necessary but not sufficient condition for a banking crisis to unfold. We find that only financial institutions managed during the expansion with political criteria have experienced solvency problems during the recession and have finally had to be bailed out with public money. In addition, the banks´ capitalisation level prior to the crisis has not been observed to have influenced their subsequent performance. These results contribute to the debate on the causes of banking crises in two areas. First, the results suggest that, from a scientific point of view, additional analyses should be carried out taking into account issues related to corporate governance of banks to explain the causes of banking crises. These results are also relevant for the design of prudential policies aimed at promoting banking sector stability, since they suggest that incentive misalignment is a determining factor in triggering a banking crisis, with greater explanatory capacity than other variables such as credit growth or the solvency of institutions during expansion.

## 2. Data and methodology

Our initial sample consists of an unbalanced panel of annual financial data on all the Spanish banks and savings banks[2] (137 financial institutions) for the last full credit cycle (2002–2017) which managed 96% of Spanish banking assets[3].

We estimate the following model in order to examine the effect of loan growth and political dependence on bank bailout intensity:

$$Bailout_i = \beta_0 + \beta_1 \Delta LOAN_i + \beta_2 CAP_i + \beta_3 SEC_i + \beta_4 LIQ_i + \beta_5 ASSETS_i + \beta_6 POLITIC_i +$$
$$\beta_7 TENURE_i + \beta_8 BOASIZE_i + \beta_9 FEMALE_i + \varepsilon_i \qquad (1)$$

where $\Delta LOAN_i$ is the credit growth during the period of expansion and $POLITIC_i$ is a dummy variable that indicates whether the president of the entity is politically influenced[4]. The remaining independent variables are commonly used in estimates of banking performance in the literature. They are the bank-specific balance sheet variables including capitalisation, $CAP_i$; securitisation, $SEC_i$; liquidity, $LIQ_i$; and bank size, $ASSETS_i$ (Foss et al., 2010), and the corporate governance indicators including chairman tenure in number of years, $TENURE_i$ (Altunbaş et al., 2017); board size, $BOASIZE_i$ (de Andrés and Vallelado, 2008); and fraction of females on the board, $FEMALE_i$ (Adams and Ferreira, 2009). Descriptive statistics of the variables are given in Table 1 and variable definitions are presented in Table 2.

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[2] It should be noted that in 2007, saving banks controlled by local and regional governments accounted for 43% of the balance sheet managed by Spanish deposit institutions, while commercial banks owned by their shareholders accounted for 52%.

[3] By means of several complementary pieces of information, we have monitored the corporate restructuring activities that have taken place during the 12-year period covered by our analysis. Thus, we have documented a total of 279 corporate transactions that have been classified into: (1) registration of new banks (49 transactions); (2) liquidation, merger, takeover, acquisition or global transfer of assets and liabilities (125 transactions); and (3) denomination changes (105 operations).

[4] Hau and Thum (2009) find evidence that financial inexperience or irrelevant educational background of board members in German banks was strongly positively related to losses by banks. This lack of experience or education is correlated with being a political appointment and was much more present in public banks (*Landesbanken*). Similar conclusions can be drawn from the work of Cuñat and Garicano (2009) for *Savings Banks*. Thus, in our work the level of political interference in each financial institution has been measured by analysing the biographical characteristics of the institution´s chairman and their political involvement. In this way, the binary variable $POLITIC_i$ was in turn constructed from three variables: (1) previous political appointments of the entity´s chairman, (2) professional experience in the financial sector and (3) economic or financial academic studies. The variable $POLITIC_i$ takes value 1 if there is evidence of the chairman's political dependence in at least two of the three aspects analysed and takes value 0 otherwise.

Table 1

Descriptive statistics.

| Variables | N | Mean | Standard deviation | Minimum | Maximum |
|---|---|---|---|---|---|
| *Bank characteristics* | | | | | |
| Loan Growth | 816 | 0.20 | 0.05 | 0.04 | 0.32 |
| Capitalisation | 816 | 0.09 | 0.09 | 0.04 | 0.56 |
| Securitisation | 816 | 0.50 | 1.02 | 0 | 6.09 |
| Liquidity | 816 | 0.96 | 0.19 | 0.38 | 1.36 |
| Assets | 816 | 14.63 | 2.02 | 10.65 | 17.69 |
| *Corporate governance* | | | | | |
| Political Dependence | 34 | 0.38 | 0.49 | 0 | 1 |
| Tenure | 34 | 9.38 | 8.10 | 2.00 | 34.00 |
| Board Size | 34 | 14.12 | 4.13 | 5.00 | 20.00 |
| Fraction Females | 34 | 0.13 | 0.08 | 0 | 0.28 |

Table 2

Definitions of variables used in estimates and data sources.

| Variables | Source | Description |
|---|---|---|
| *Bank characteristics* | | |
| Loan Growth | EBA/AEB/CECA | Bank credit growth as a percentage from 2002 to 2007 |
| Capitalisation | EBA/AEB/CECA | TIER1/Credit average from 2002 to 2007 |
| Securitisation | CNMV/BME-AIAF/SGFT | Total securitisation/Average credit between 2002 and 2007 |
| Liquidity | EBA/AEB/CECA | Deposits/Credit average from 2002 to 2007 |
| Assets | EBA/AEB/CECA | Natural logarithm of average total assets between 2002 and 2007 |
| *Corporate governance* | | |
| Political Dependence | Authors´ calculation | Dummy variable equal to 1 if the Chairman is politically connected |
| Tenure | Authors´ calculation | The number of years the Chairman has served on the board up to 2007 |
| Board Size | EBA/AEB/CECA | The number of directors sitting on the board in 2007 |
| Fraction Females | EBA/AEB/CECA | Proportion of women sitting on the board in 2007 |

EBA: European Banking Authority (Credit Institutions Register); AEB: Spanish Banking Association; CECA: Spanish Confederation of Savings Banks; CNMV: National Securities Market Commission; BME-AIAF: Spanish Stock Exchanges and Markets – Association of Financial Asset Intermediaries; SGFT: Securitisation Fund Management Companies (SPVs); Authors´ calculation with information obtained from different sources.

Our $Bailout_i$ variable is the public bail out amount percentage in relation to the loan portfolio of the bank aided. The data have been obtained from (1) FROB, Spanish Executive Resolution Authority and (2) FGD, Deposit Guarantee Fund of Credit Institutions. Of the 34 entities under study, 13 have required public financial assistance since 2008[5]. In Table 3, we compare the means of the explanatory variables of the entities that have had to be bailed out with those that have not had to be bailed out[6]. The results of this comparison suggest that the rescued entities have a series of differentiating characteristics with respect to those that are not rescued in terms of their credit policy and, especially, their corporate governance characteristics.

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[5] The cost of restructuring Spain's bankrupt banks had totaled €60.7 billion up to 2017 (Bank of Spain, 2017).

6 Here it is worth noting the independent variables correspond to the period 2002–2007 while the dependent variable (BailOut) corresponds to the period 2008–2017 so that our research design can mitigate simultaneity (endogeneity) concerns about explanatory variables.

## Table 3

Comparison of bailed-out banks to those without bail-out. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels respectively (ANOVA test).

| Variables | Mean for non-aided banks n=21 | Mean for aided banks n=13 | Difference |
|---|---|---|---|
| *Bank characteristics* | | | |
| Loan Growth | 0.19 | 0.22 | 0.036* |
| Capitalisation | 0.11 | 0.07 | -0.043 |
| Securitisation | 0.54 | 0.45 | -0.091 |
| Liquidity | 0.94 | 1.00 | 0.066 |
| Assets | 14.28 | 15.19 | 0.903 |
| | | | |
| *Corporate governance* | | | |
| Political Dependence | 0.10 | 0.85 | 0.751*** |
| Tenure | 10.95 | 6.85 | -4.106 |
| Board size | 12.43 | 16.85 | 4.418*** |
| Fraction Females | 0.11 | 0.16 | 0.052* |

## 3. Empirical results

Table 4 reports the empirical results for several regressions where the dependent variable is Bailout. In Column 1, we find that the coefficient of the Political Dependence is positive and statistically significant, which suggests that politically dependent banks are more likely to be rescued than politically independent banks. However, when we carry out a stepwise regression (Column 2), we can see how the Loan Growth and the Political Dependence coefficients are both positive and significant which suggests that the credit policy of the entity also has some relevance.

To assess the moderating effect of the Political Dependence variable on the relationship between the Loan Growth and Bailout, we run a Conditional Process Analysis (Hayes, 2018), the results of which can be seen in Column 3. On the one hand, we can see how the coefficient of interaction between Loan Growth and Political Dependence is positive and significant. Thus, in decomposing the conditional effect it is observed that the relationship between Loan Growth and Bailout only occurs in the case of deposit institutions in which there is political dependence (Political Dependence = 1). Finally, to check the robustness of the results obtained, we run the quasi-maximum likelihood Tobit estimator (see Column 4) and a Stepwise Logistic Regression (see column 5) and similar results arise. As can be inferred from the results, the model can be considered robust as long as the same variables are identified as significant. The classification accuracy of the Stepwise Logistic Regression reaches 88.2%.

These results warn us against the risk of assuming that credit growth is the relevant factor explaining banking crises since, in our case, this relationship only exists between those entities that suffer from political dependence in the management of the company. The lack of relevance of the capitalisation variable on the intensity of the rescue should also be highlighted here.

Table 4

Relation between bail-out intensity and loan growth mediated by political dependence.

| Independent variable | Dependent Variable: Bailout | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Constant | -4.51e-04 | -4.48e-04* | 8.09e-04 | 1.36e-04 | -2.387*** |
| | (8.04e-04) | (2.27-04) | (5.97e-04) | (4.49e-04) | (0.766) |
| Loan Growth | 3.17e-03* | 2.53e-03** | 2.63e-03 | 2.61e-03** | n.e. |
| | (1.82e-03) | (1.12e-03) | (1.57e-03) | (1.01e-03) | |
| Capitalisation | -2.76e-04 | n.e. | -6.56e-04 | -6.56e-04 | n.e. |
| | (1.88e-03) | | (1.62e-03) | (7.80e-04) | |
| Securitisation | 1.15e-04 | n.e. | 4.85e-05 | 4.85e-05 | n.e. |
| | (1.53e-04) | | (1.33e-04) | (6.76e-05) | |
| Liquidity | -8.37e-05 | n.e. | -3.14e-04 | -3.14e-04 | n.e. |
| | (4.50e-04) | | (3.94e-04) | (2.74e-04) | |
| Assets | 5.65e-08 | n.e. | -2.68e-05 | -2.67e-05 | n.e. |
| | (3.83e-05) | | (3.41e-05) | (2.30e-05) | |
| Political Dependence | 4.93e-04** | 5.07e-04*** | 3.99e-04** | 3.98e-04*** | n.e. |
| | (1.81e-04) | (1.23e-04) | (1.58e-04) | (9.06e-05) | |
| Tenure | -7.46e-06 | n.e. | -4.13e-06 | -4.13e-06 | n.e. |
| | (9.46e-06) | | (8.20e-06) | (4.11e-06) | |
| Board size | 4.00e-06 | n.e. | 9.43e-06 | 9.43e-06 | n.e. |
| | (2.74e-05) | | (2.36e-05) | (1.86e-05) | |
| Fraction Females | -4.62e-04 | n.e. | 2.49e-04 | 2.48e-04 | n.e. |
| | (1.19e-03) | | (1.05e-03) | (1.17e-03) | |
| Loan X Political Dependence | - | - | 8.40e-03*** | 8.39e-03*** | 21.670*** |
| | | | (2.73e-03) | (2.60e-03) | (6.134) |
| Conditional effect: | | | | | |
| Political dependence = 0 | | | -5.76e-04 | | |
| | | | (1.98e-03) | | |
| Political dependence = 1 | | | 7.82e-03*** | | |
| | | | (2.17e-03) | | |
| Model fit: | | | | | |
| *R squared* | *0.516* | *0.462* | *0.657* | *-* | *0.696 (Nagelkerke)* |
| *Adjusted R²* | *0.335* | *0.427* | *-* | *-* | |
| *Sigma* | *-* | *-* | *-* | *2.61e-04****| |
| *Log-likelihood* | *-* | *-* | *-* | *232.30* | |
| *χ²* | *-* | *-* | *-* | *53.03****| |
| Regression type | OLS | OLS stepwise | Conditional process | Tobit QML | Stepwise Logistic Regression |

The standard errors of the coefficients are reported in parentheses. The sample is the population of banks and saving banks for the period 2002-2017. Number of observations: 34 deposit institutions. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

## 4. Conclusions

Our results qualify earlier empirical findings as they highlight the relevance of corporate governance of banks to their credit policy. They also confirm the thesis of Calomiris and Haber (2014) who underline the importance of the political arrangements that distorted the incentives of agents participating in a financial market causing banking crises. Thus, we have seen how credit growth during expansion only influences the solvency of a bank if this relationship is moderated by politically motivated management. In addition, the level of capitalisation that institutions had before the crisis was not observed to have influenced their subsequent performance. All this suggests that the focus of prudential policies adopted in the last global financial crisis aftermath should have had a greater impact on improving the corporate governance of banks. It should be noted that in many countries there are still financial systems dominated by government-owned banks, such as in Brazil, China, India, Indonesia, Turkey and Russia (Barth et al., 2013). In our view, supervisory systems should be strengthened to ensure that the incentives for bank managers are aligned with maintaining the solvency of institutions over the long term. In this regard, we believe that it would also be desirable to discuss the possibility of creating a supranational supervisory body to avoid political conflicts between the national supervisory bodies and the respective national governments.

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