POLITICAL INFLUENCE AND THE PERFORMANCE OF NON-PROFIT SPANISH BANKS

ABSTRACT

Introduction: This paper presents empirical evidence about factors that influence the solvency of Spanish savings banks. It also studies whether the presence of politicians in their governance has led to lower solvency ratios and, consequently, to the current economic situation in the Spanish banking sector.

Methods: We use multivariate regressions, taking the solvency ratio as the dependent variable and efficiency, the coverage ratio, political influence, political CEO, size, growth and age as independent variables.

Results: Our results confirm that banking entities controlled by politicians obtained a poor performance and political influence on the boards of savings banks led them to insolvency.

Discussion: The findings show that the non-ownership structure of savings banks, the lack of best practice corporate governance mechanisms and political presence have weakened them.

1. Introduction

Spanish savings banks were non-profit commercial banks that were private foundations and had two kinds of objectives, financial and social. The term 'financial objectives' refers to the traditional business of the banking sector, that is, granting credit and capturing deposits. 'Social objectives', which other financial entities do not have, is a term that refers to the funding of social welfare programs. The savings banks offered the same financial services as private banks and, in 2010, these organizations made up approximately 50% of the Spanish banking system.

Until 1989, Spanish savings banks only operated in their own geographic region, where their head offices and branches were situated. They were not allowed to operate in other territories. At the end of the eighties, Spanish savings banks underwent a transformation process, characterized mainly by deregulation, which allowed them to open branches outside their region[1]. Although they were financial entities with commercial goals, they were controlled by regional governments. For decades, regional politicians sought a greater implication of savings banks in regional development (García-Cestona and Surroca 2008) by using them as financial tools to compensate for the lack of interest of the private sector in financing regional projects because of their financial risk.

Previous empirical research has mainly analyzed savings banks from the point of view of productivity (Buch *et al*., 2011; Grifell-Tatje and Lovell 1996; Illueca *et al*., 2009; La Porta *et al*., 2002; Serrano-Cinca *et al*., 2004; Tortosa-Ausina *et al*., 2008), costs (Carbo *et al.*, 2003; Maudos *et al.*, 2002; Prior, 2003) and efficiency (Cuesta and Orea, 2002; García-Cestona and Surroca, 2006 and Tortosa-Ausina, 2002). We study the governance of Spanish savings banks because we believe that it may be an

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[1] Fifteen years later, some savings banks still retained a high concentration of branches in their respective original territories. Others had adopted expansive strategies to widen their branching networks with the aim of diversifying their territorial network and/or entering new markets (Illueca *et al*. 2009).

explanatory factor of the current economic situation in this industry, that is, their situation of bankruptcy and the banking rescue process in Spain with the nationalization of these entities to make them more competitive and solvent. We focus on the political influence of the board of directors of these organizations. The relevance of these entities prior to the financial crisis is clear because they gave 55% of the loans and received 49% of the deposits of the Spanish banking system (Parejo *et al.* 2004)[2]. Political presence in the governance of Spanish savings banks makes the Spanish financial crisis different to those of other countries (Crespí *et al.*, 2004; Delgado *et al.*, 2007; Fonseca, 2005).

This paper presents empirical evidence about factors that influence the solvency of Spanish savings banks and about how the presence of politicians in their governance has led to lower solvency ratios and, consequently, to the current economic situation in the Spanish banking sector.

The article is organized as follows. The next section describes the governance of savings banks. In Section 3, we explain the hypotheses. Section 4 details the methodology employed in the study and describes the data and variables used in the analysis. In Section 5, we present the empirical results, Section 6 contains the discussion and, in Section 7, we conclude.

2. Context

2.1 Literature review and context

Most of the savings banks were created at the end of the 19th Century by Civil and Catholic associations. They were private foundations with financial and social objectives (social welfare). In the 1930s, they were established as financial entities.

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[2]The term funding includes all types of credit, that is, mortgages, consumer credit, lines of credit and so on. The term deposits includes deposits in current accounts, savings accounts and fixed deposits.

With the arrival of democracy (1975), savings bank strengthened their market position and a national law put them on the same level as private banks. In the late eighties, national legislation extended their operative limits to the entire country by removing geographic barriers and let local and regional governments hold control in terms of voting rights on the board. Illueca *et al.* (2009) find that savings banks that expanded geographically outside their natural markets achieved greater productivity gains. In contrast, lower increases in productivity are found in savings banks that continued operating in their traditional markets.

The Spanish banking sector has recently been involved in a process of concentration in order to create bigger and more competitive entities. Spanish savings banks have increased their size and merged to reduce their number as a consequence of the reform process. The literature about previous merger processes in Spain is contradictory. Grifell-Tatje and Lovell (1996) and Lozano-Vivas (1997) find no improvements in performance following mergers. By contrast, the results of Tortosa-Ausina *et al.* (2008) show that performance grew during the post-deregulation period in which mergers and acquisitions came to an end, mainly due to improvements in production.

Other authors that analyze this sector (Salas and Saurina 2003) assert that a decrease in market power can bring about a change from safe to risky policies while, in a more concentrated market, consolidated banks will carry out less risky operations. Reboredo (2012) finds that an increase in banking competition generates both more efficiency and solvency. The main explanation is that reductions of costs arising from technical efficiency can have a positive influence on profits and solvency. An efficient company that reduces costs has more ability to meet its long-term costs and to accomplish long-term expansion and growth. That is, positive effects on efficiency

reduce the insolvency risk. Serrano-Cinca *et al.* (2004) find that not all savings banks are able to see the new opportunities that the Internet offers and to adapt to the new times. These authors consider that savings banks must not ignore the importance of investment in intangible assets as a way of continuing their business.

In sum, previous literature has analyzed savings banks from different points of view. In this paper, we focus on the corporate governance system of these entities because not all of the stakeholders represented on the board can influence the bank′s management (Illueca *et al.* 2013).

2.2 The context of corporate governance in Spanish savings banks.

Savings banks had a special corporate governance since they did not have owners but were controlled by politicians and public entities but, like all other financial institutions, they were supervised by the Spanish Central Bank. Spanish savings banks were unlisted and politicians could interfere in their corporate governance. The interference of political forces started in 1985 when national legislation specifically allocated control in terms of voting rights to four categories of stakeholders: depositors (44%), local governments (40%), founders (11%), and employees (5%). Subsequently, a number of Spanish regions[3] added the regional governments to the list of stakeholders, usually at the expense of the local governments' voting rights. National legislation on savings banks established a particular corporate governance structure based on three main governing bodies: the General Assembly, the Board of Directors and the Steering Committee. The General Assembly was the highest governing and decision-making body and was responsible for defining the strategy of the bank. It had the competence to appoint members to both the Board of Directors and the Steering Committee. The Board of Directors was in charge of the management and administration of the savings banks,

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[3] Autonomous Communities is the official Spanish name for regions.

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while the Steering Committee was set up as a body to oversee the Board of Directors. As savings banks were foundations, they generated a unique distribution of profits. The lack of definition of property rights led them to distribute profits through different channels to the traditional distribution of dividends by limited companies. Savings banks had to distribute 50% of their profits to reserves (Law 13/1985), but there was no normative about the minimum amount allocated to social welfare[4]. Due to the lack of ownership, conflicting interests appeared on their boards because they were made up of different groups such as public authorities, depositors, trade unions, employees and founding entities (Tortosa-Ausina *et al.* 2008). Internal mechanisms of control were weaker than in other commercial banks (Crespí *et al.* 2004) and the conflicting interest derived from the political influence on savings banks could generate a poor performance, high credit risk and, consequently, a negative effect on solvency.

There is an extensive literature on the failure, bankruptcy and demise of organizations. As Tuckman and Chang (1991) assert, a financially flexible non-profit entity is one with access to equity balances, revenue concentration, high administrative costs, and high operating margins. In the case of Spanish savings banks, the factor that especially affects them is the equity balance because organizations with higher equity are more flexible than organizations with lower equity in terms of facing financial shocks. This occurs because the former are better positioned to borrow money from capital markets and unrestricted equity can be converted to cash to offset financial shocks. Within the limits of external constraints, organizational leaders make decisions that affect success and failure. Bad strategic choices are rarely the only cause of an organization's demise. The same actions that work well in one organization may be

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[4] Their social function required that part of their profits be allocated in their region of origin through the delivery of cultural and social services to the population. The social goals were defined in the statutes of the savings banks and the annual meeting of the assembly chose the percentage of profits assigned to social welfare.

catastrophic in another under unstable or antagonistic environmental conditions. For non-profit organizations, financial distress is a common condition. Individual donor preferences and government support are diverted to competing organizations. Sometimes, legal conflicts or fiscal mismanagement create financial shocks from which an organization cannot recover.

Others factors frequently cited for closure are financial difficulties (Hager *et al.* 1996) and age. The savings banks in our sample could not access capital markets and the financial crisis caused the bankruptcy of most Spanish savings banks. Younger organizations should die sooner than older organizations because they have less experience and fewer resources than older organizations. Our sample is comprised of organizations that existed for more than a century along with others that were less than a decade old. This variance allows us to analyze whether organization age is indicative of the survival of savings banks.

Differences in the control structure generated differences in savings banks' priorities because, when regional governments participated more actively in the control of savings banks, the main priority was to fund projects without taking economic reasons into account. A higher politicization in the governing organs of savings banks led to a lower performance (García-Cestona and Surroca 2008) and, when public authorities had a higher participation in savings banks, the level of risk increased as investments responded to political objectives rather than to economic goals. This is in line with Shea and Hamilton (2015), who assert that governments influence non-profit entities to take strategic actions that escalate risk. Small and medium-size savings banks tended to lend to riskier firms because of political pressure (Delgado *et al.* 2007). Government ownership in banking entities did not create incentives to ensure socially desirable investments, facilitated the financing of politically attractive projects, not

economically efficient ones, and was linked with corruption (Barth *et al.*, 2004; Shleifer and Vishny, 1998). In our case, the lack of ownership and the political influence on savings bank boards affected the correct funding redistribution because politicians sought to finance projects related to political criteria rather than to profitable results. Political presence allowed inexperienced people, without economic or financial education, to manage savings banks. The particular governance system of savings banks had adverse effects on their long-term performance and, consequently, on the Spanish banking system. We find examples of how political influence has harmed these banks: the funding conceded by several savings banks to regional airports (Caja Castilla La Mancha, Bancaja, Caja de Ahorros de Murcia), shipping companies (Caja Madrid), private clinics (Caja Madrid), golf courses (Catalunya Caixa) and the recent case of Caja Madrid that gave 'special credit cards' to politicians on the board, allowing them to spend vast amounts of the bank's money. Moreover, the real estate boom, the bust in housing prices and the international financial crisis have provoked serious problems in the sector with the aggravating circumstance of the lack of risk control by the Spanish Central Bank. These problems were especially pronounced for savings banks because they could not issue capital and because of political interference.

3. Hypotheses

The scope and framework of this study can be explained by the changes that have taken place in the role of the savings banks sector in recent years in the Spanish regions. The financial crisis has brought hidden investment and credit risks derived from unsustainable political implementation to the surface and revolutionized this sector by changing the legal structure of savings banks. In this section, we analyze the factors that

contribute to explaining the solvency (or the lack of solvency) of savings banks and develop our hypotheses.

3.1 The efficiency factor in the savings bank sector

In the 1990s, policymakers deregulated this sector to improve the efficiency of savings banks. The deregulation process meant the liberalization of the savings banks, allowing them to open branches outside their region. Reserve requirements were lowered and investment requirements were gradually phased out (Grifell-Tatje and Lovell 1996). The process of deregulation in Spain led to a more competitive market. However, evidence on the impact of these initiatives has been mixed (Kumbhakar *et al.* 2001). The intensive process of financial integration and the structural change in the Spanish banking sector promoted competition (Cuesta and Orea 2002) with the purpose of improving the solvency of the sector. This competition was the result of a liberalized regulatory framework, the emergence of new financial intermediaries, the disintermediation process and the diffusion of new technologies. The liberalization process sought to improve technical efficiency through the entry of new competitors and to promote differentiation in the market. An increase in banking competition generates more efficiency (Reboredo 2004) and enhances the solvency of banking entities (Suarez, 1994). The main explanation is that cost reductions arising from technical efficiency have a positive influence on profits and solvency. An efficient company that reduces costs has more ability to meet its long-term costs and to accomplish long-term expansion and growth. That is, these positive effects reduce the risk of insolvency.

During the liberalization process, the regulator's concerns about credit risk management grew (Salas and Saurina 2003). The resulting normative had a positive

impact on the solvency of banking entities and efficiency increased. A decrease in market power can bring about a sudden change from safe to risky policies. Usually, non-efficient entities take greater risks with a consequent increase in the probability of insolvency.

So, our first hypothesis is:

H1: Efficiency is positively related to solvency in the Spanish savings banks sector.

3.2 Coverage ratio in the savings bank sector

The coverage ratio is defined as the ratio of the intermediation margin over operating costs and provides evidence for the ability of savings banks to meet total operating costs from the normal intermediation margin. The intermediation margin is indicative of the traditional business of the banking sector: granting credit and capturing deposits. A higher intermediation margin reflects the attempts of savings banks to avoid default after their territorial expansion in order to gain market share. Therefore, it is positively correlated with the solvency of the entity. Spain's adhesion to the European Monetary Union decreased the interest rate, eroding the traditional banking business (Crespí *et al.* 2004). Moreover, the process of deregulation in Spain led to a more competitive market and an expansion of branches (Prior 2003), which makes it difficult to obtain an adequate margin. As for the operating costs, a positive relationship between the coverage ratio and solvency appears when the entity minimizes these costs. That is, a decrease in costs positively influences both magnitudes.

The coverage ratio helps to determine the company's ability to survive in the long run. Therefore, we consider that the coverage ratio will be positively related to solvency.

H2: The coverage ratio is positively related to solvency in the Spanish savings banks sector in the period analyzed.

3.3 Political influence on savings banks

Another factor that influenced the performance of savings banks was the intervention of politicians, political parties and trade unions in their corporate governance. The public authorities' group on the board of directors is made up of different political parties and its composition varies depending on the election results.

Government ownership politicizes resource allocation, softens budget constraints and hinders economic efficiency (Shleifer and Vishny 1998). The lack of ownership and political interference lower the solvency of savings banks because, when public authorities have a higher participation in savings banks, the level of risk increases (Crespí *et al.*, 2004; Fonseca, 2005; García-Cestona and Surroca, 2008) and entities adopt strategic decisions related to political criteria rather than to economic ones (La Porta *et al.* 2002). Savings banks invested in riskier projects than banks, these projects being promoted by regional politicians without thinking about the economic consequences. Savings banks with more political influence pursued goals such as regional development (García-Cestona and Surroca 2008), whereas goals related to the attainment of profitability were, in general, secondary objectives. There was a positive relationship between the weight of public administration in the management of savings banks and the credit given to them. Savings banks that followed this economic policy obtained a lower profitability (Maroto and Melle 1999).

Therefore, we test the following hypothesis:

H3: Political influence is negatively related to solvency in the Spanish savings banks sector.

3.4 The size factor in the savings bank sector

In this paper, size has been included not only as a control variable, but also as a determinant factor of solvency. This is consistent with Maudos *et al.* (2002) who demonstrate the importance of size, among other factors, in explaining the differences in performance among banking companies.

The Spanish banking sector was involved in a process of concentration in order to create bigger and more competitive companies. So, Spanish savings banks increased their size and merged to reduce their number as a consequence of the deregulation process. Grifell-Tatje and Lovell (1996) find no productivity gains following mergers and Lozano-Vivas (1997), who analyzes whether concentration increased efficiency, finds no significant change in frontier profits over the merger period. By contrast, the results of Tortosa-Ausina *et al.* (2008) show that productivity grew over the post-deregulation period in which mergers and acquisitions came to an end, mainly due to improvements in production. In line with this, Cuesta and Orea (2002) find that merged firms are more efficient than non-merged firms and Carbo *et al.* (2003) assert that scale economies grow with the size of savings banks, which improves their performance.

In consequence, we propose this hypothesis:

H4: The variable 'size' is positively related to solvency in the Spanish savings banks sector.

4. Sample and methodology

This study is focused on the 45 savings banks that were operating in Spain in 2009. It analyzes factors that influence their solvency.

The solvency of a company indicates whether its cash flow is sufficient to meet its short-term and long-term liabilities and to accomplish long-term expansion and growth.

Solvency can also be described as the degree to which the current assets of an individual or entity exceed the current liabilities of that individual or entity. Bank solvency is defined as the ratio of equity to Risk Weighted Assets. This ratio was published by the savings banks themselves to comply with stress tests[5]. Our data is collected from the Spanish Savings Banks Association (CECA) and annual reports from savings banks for 2009.

We analyze solvency in a multivariate regression framework. Four multivariate analyses are carried out for the total sample, taking the solvency ratio as the dependent variable and efficiency, the coverage ratio, political influence, size and growth as independent variables.

The independent variables have been obtained as follows:

- To test whether efficiency influences the solvency of Spanish savings banks, an efficiency score has been obtained by applying the Data Envelopment Analysis (DEA) developed by Charnes *et al.* (1978) and Banker (1984). Savings banks are non-profit organizations and, because of this, they are under less pressure to obtain profits than commercial banks. So the traditional assessment methods (profitability indicators) are not suitable for measuring the performance of these firms.

The DEA technique is a non-parametric method based on linear programming that was developed by Charnes *et al.* (1978) and Banker *et al.* (1989). It is used to measure the relative efficiency of several decision-making units (DMU), which are

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[5] Banking entities do not assess their solvency as other companies do, namely, by dividing equity by total assets. Instead of total assets, banks divide equity by Risk Weighted Assets. These assets are weighted according to risk, that is, they are computed by adjusting each asset class for its own risk in order to determine a bank's real world exposure to potential losses and provide a common measure for a bank's risks. As we explained in the paper, this ratio was published by the savings banks themselves to comply with stress tests establish by the Basel Committee.

organisations where several inputs and outputs are taken into account[6]. Its objective is to compare the inputs and the outputs of DMUs by establishing a frontier of efficiency and by evaluating efficiency relative to that frontier. Therefore, a DMU is qualified as efficient if no other DMU can produce more outputs by using an equal or smaller quantity of inputs, or if no other DMU can use fewer inputs to produce an equivalent or higher quantity of outputs. DEA coefficients give an idea of the theoretical maximum quantity of inputs that could be reduced without affecting the output level (for instance, a coefficient X means that it would be possible to obtain the same output with a saving of $(100 - X)$ % of inputs). When the coefficient is 1.00 the DMU is comparatively efficient, i.e. the DMU optimizes its resources to obtain the output.

There are two main alternatives to measure banking activity, namely, the production approach and the intermediation approach. The first considers banking institutions as producers of services for their customers. The intermediation approach expands the definition of inputs to include deposits and suggests measures of banking output according to the time value of money, basically in earning assets. It considers banking institutions primarily as intermediating entities between savers and investors. Most studies defining bank output have leaned towards the intermediation approach (Illueca *et al.* 2009) and we also consider this model.

The selection of inputs and outputs has been carried out considering their importance in the intermediation approach, previous research and the availability of data. The amount of deposits, their cost measured as interest and charges paid and the cost of the staff have been included as inputs in the model. As outputs, we include loans and interest and fees received. All these variables are relevant because they reflect the

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[6] Cooper *et al.* (2000) and Seiford (1996) collected numerous references on empirical applications of the DEA technique in several areas such as education, teaching, banking and savings banks, transport, agriculture and industrial companies.

view that savings banks make loans to obtain an income (Kumbhakar *et al.* 2001). The intermediation approach with these inputs and outputs has been used by Maudos *et al.* (2002), Carbo *et al.* (2003), Cuesta and Zofío (2005), Tortosa-Ausina *et al.* (2008), Illueca *et al.* (2009) and Williams *et al.* (2011), among others.

After running the DEA model, we have calculated the Malmquist index for the period 2005 to 2009 (see Table 3) in order to introduce it into the regressions. The Malmquist index makes use of distance functions to measure productivity change over time, and can be multiplicatively decomposed into an efficiency change index and a technological change index[7].

- The *coverage ratio* is defined as follows:

$$Coverage = \frac{Intermediation M \arg in}{Total Operating Cost}$$

This ratio provides evidence of the entity's ability to meet the total operating cost from the normal intermediation margin and determines the company's ability to survive in the long run (Prior, 2003).

- *Political influence* is defined in this study as the percentage of members of the board that belong to a political party or have a connection with the regional government. Firstly, we took the names of each member of the boards of the 45 savings banks from the Statistical Yearbook of the Spanish Savings Banks Association (CECA). Secondly, we searched for their names on the websites of political parties, trade unions and other pages to determine whether they belonged to any political party or had a connection with the regional government. We focus on the board and not on other governing bodies because it is the organ that takes the strategic and executive decisions.

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[7] See Caves *et al.* (1982).

- *Political CEO* is a dummy variable measuring the direct political weight of the entity's Chief Executive Officer. This variable takes the value 0 when the CEO has no political connections, and 1 otherwise.

- *Size* is measured as the logarithm of the total assets of each Spanish savings bank in 2009. *Growth* measures the variation in total assets from 2005 to 2009. This period coincides with the great expansion of savings banks in Spain when these entities expanded their network by opening new branches and gave more credit to the real estate sector.

Control variables

The age of the organization and the square of the age of the organization are independent variables which can also contribute to explaining the variation of the solvency of the savings banks.

- *Organization age* is measured as the number of years from the creation of the entity until 2009. Younger organizations are more likely to become insolvent and die. Stinchcombe (1965) asserts that this occurs because younger organizations have less experience, fewer slack resources and less social capital than older organizations. The square of the variable has also been included in the models to analyze the non-lineal relationship between age and solvency.

Table 1 shows the descriptive statistics for the solvency ratio, efficiency, the coverage ratio, political influence, political CEO, size, growth and control variables.

[Insert Table 1 about here]

Table 2 presents the correlation matrix for independent variables. As can be seen, the independent variables do not have a significant correlation between them, which indicates a lack of multicollinearity.

[Insert Table 2 about here]

As we have mentioned above, two variables are indicative of size (Size and Growth). In consequence, we have combined these variables to carry out regressions and estimate the following models:

$$\text{Solvency}_i = \alpha_1 \text{ Efficiency}_i + \alpha_2 \text{ Coverage Ratio}_i + \alpha_3 \text{ Political Influence}_i + \alpha_4 \text{ Political CEO}_i + \alpha_5 \text{ Size}_i + \alpha_6 \text{ Age}_i + \alpha_7 \text{ Age}^2_i + \varepsilon_i \quad [1]$$

$$\text{Solvency}_i = \alpha_1 \text{ Efficiency}_i + \alpha_2 \text{ Coverage Ratio}_i + \alpha_3 \text{ Political Influence}_i + \alpha_4 \text{ Political CEO}_i + \alpha_5 \text{ Growth}_i + \alpha_6 \text{ Age}_i + \alpha_7 \text{ Age}^2_i + \varepsilon_i \, [2]$$

These models have been replicated by including only one independent variable in order to better highlight the significance of each. In consequence, we estimate the following univariate models:

$$\text{Solvency}_i = \alpha_1 \text{ Efficiency}_i + \alpha_2 \text{ Age}_i + \alpha_3 \text{ Age}^2_i + \varepsilon_i \qquad [3]$$

$$\text{Solvency}_i = \alpha_1 \text{ Coverage Ratio}_i + \alpha_2 \text{ Age}_i + \alpha_3 \text{ Age}^2_i + \varepsilon_i \qquad [4]$$

$$\text{Solvency}_i = \alpha_1 \text{ Political Influence}_i + \alpha_2 \text{ Age}_i + \alpha_3 \text{ Age}^2_i + \varepsilon_i \qquad [5]$$

$$\text{Solvency}_i = \alpha_1 \text{ Political CEO}_i + \alpha_2 \text{ Age}_i + \alpha_3 \text{ Age}^2_i + \varepsilon_i \quad [6]$$

$$\text{Solvency}_i = \alpha_1 \text{ Size}_i + \alpha_2 \text{ Age}_i + \alpha_3 \text{ Age}^2_i + \varepsilon_i \qquad [7]$$

$$\text{Solvency}_i = \alpha_1 \text{ Growth}_i + \alpha_2 \text{ Age}_i + \alpha_3 \text{ Age}^2_i + \varepsilon_i \qquad [8]$$

5. Analysis of results

The results of the DEA model are shown in Table 3 and the results of the regressions in Table 4[8].

[Insert Table 3 about here]

[Insert Table 4 about here]

In Model 1, we find that the *coverage ratio* and *age* have a positive effect on solvency, as predicted, while *political influence* and *political CEO* have a negative effect. The variables *efficiency, size* and *the square of the age* are not significant in the regression. Model 2 includes *growth* instead of *size*. In this model, the results are similar to the previous model, with *the coverage ratio, age* and *political influence* being significant. *Efficiency*, *growth* and *the square of the age* are not significant.

If we jointly analyze the two models, we can see that the coefficient for *coverage ratio* is positive and significant, which means that this variable is directly correlated with solvency. This result is coherent because a savings bank with a greater ability to survive in the long run is more solvent. The coefficients for *political influence* and *political CEO* are negative and significant, so savings banks with a higher political influence obtain a lower solvency ratio. However, the variables *size* and *growth* are not significant, so the solvency of savings banks is not determined by these variables. These results are consistent across all four models, so the empirical estimations presented in this paper are robust to alternative measures of size.

The univariate models (Models 3-8) confirm some of the previous results. The *coverage ratio* and *age* have a positive effect on solvency, while *efficiency, size and*

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[8] The R^2 value indicates that the dependent variables explain the solvency of the savings banks and the F value indicates that there is no specification error.

growth are not significant. *Political influence* and *political CEO* are not statistically significant in the univariate models. This indicates that political influence has a negative effect on solvency but in combination with other variables.

Figure 1 shows scatter plots of both *political influence* and *efficiency* (Malmquist Index) with respect to solvency. Unlike the models, the scatter plots do not display a strong relationship between the level of political influence and the level of solvency. This indicates that the inclusion of the other independent and control variables in the model leads to the statistical significance of political influence.

[Insert Figure 1 about here]

6. Discussion

The results obtained in our empirical research suggest that political influence had negative effects on the solvency of savings banks. Our results are consistent with those obtained by Shleifer and Vishny (1998), La Porta *et al.* (2002) and Barth *et al.* (2004). For these authors, governmental influence on banking entities leads to poor performance. Politicians seek to finance politically attractive projects which are not always efficient or with acceptable risks. Despite the practice of acquiring management tools from the for-profit sector (Lichtsteiner and Lutz 2012), inexperienced people with no education in economics or finance, but with strong political loyalty, were put on the boards of savings banks, not only as directors but also as CEOs, leading to the fall of many Spanish savings banks. The impact of having politicized boards on the solvency ratio is substantial because some decisions taken by the boards of the savings banks negatively influenced their solvency in times of financial crisis, which led to their

demise. As a consequence, these entities were transformed into banks where there is no political influence.

Corporate governance mechanisms should be enhanced in these transformed banks to improve the composition of the board and appoint experienced CEOs. An increase in monitoring and control tasks can help to improve organizational effectiveness and performance (Cumberland *et al*., 2015; Heemskerk *et al*., 2015). Following Shaw and Allen (2009), we consider that the initial social mission of savings banks should have been maintained with a more heavy-handed business management model.

In the case of the entities studied, efficiency is not directly related to solvency. The objective of the deregulation process in the Spanish financial sector was to increase competition in order to enhance efficiency (Reboredo 2004) and solvency (Suarez 1994). However, our results do not indicate that these two magnitudes are positively related, that is, an efficient entity does not have more ability to meet its long-term costs and to be more solvent. The relationship between the coverage ratio and solvency is also positive. This indicates that the traditional business of the banking sector (granting credit and capturing deposits) guarantees that a banking entity will be solvent. If a savings bank expands and its branches are profitable, that is, if the intermediation margin covers the costs, it will be more solvent. An entity that lowers costs reduces its risk of insolvency and performs better. This idea is coherent with Bowman (2011) who asserts that an organization that is unsustainable in the short term will be chronically short of cash.

Solvency is not determined by either the size or growth of savings banks, but depends on branches obtaining good margins and being solvent in the long run. Therefore, the recent mergers carried out by the Spanish government may not be

appropriate to improve the solvency of the Spanish banking sector. An example of this is Bankia, the entity made up of Caja Madrid and Bancaja, two big savings banks with financial problems whose merger has triggered off the banking rescue process in Spain. Ratings agencies consider that savings banks are small entities and mergers are encouraged. However, these mergers must be guided by economic criteria rather than by political ones.

The age of the organization is directly related to solvency. This is consistent with theory, which indicates that younger organizations are more likely to become insolvent. A lack of experience in management and their financial arrangement of these entities may explain why some of them close as a result of financial distress (Hager 2001).

The results obtained explain how the lack of solvency of the Spanish savings bank sector was caused by the lack of ownership and the political influence on their boards. The restructuring of this sector, favored by public authorities, worsened the economic situation as insolvent entities have merged. The restructuring process should reduce the excess of capacity in this sector and improve its cost structure.

At present, savings banks are being transformed into banks but control remains in the hands of the 'board of directors of the old savings bank'. It is too soon to know whether the Spanish financial system has really been transformed or whether politics still influences it.

7. Conclusions

Savings banks have a special form of governance since they do not have owners but are controlled by politicians and public entities. To analyze how the governance of Spanish savings banks has influenced their solvency, we have investigated the

relationship between the solvency of savings banks and efficiency, the coverage ratio, political influence and size.

Our results confirm previous studies in that banking entities controlled by politicians perform poorly as politicians seek to finance projects to obtain votes and political yields rather than profitable results. We can assert that political influence on savings banks led to insolvency. Huge investments in public projects, such as airports and high speed train stations with no passengers, conference centers with no activities, motorways with no traffic, along with mortgage loans to citizens, generated the bankruptcy of the savings banks sector and the banking rescue process in Spain. Some savings banks have been converted into banks controlled by the old savings banks and others have been nationalized with the aim of making them more competitive and solvent. In the long run, the latter could be privatized to recover the financial aid given by Europe.

Currently, the Spanish Central Government is promoting mergers and acquisitions to strengthen this sector. However, the size of a savings bank does not guarantee that it will be more solvent. Mergers should be carried out with rational criteria rather than political motives focused on keeping regional political control over the new banks. Mechanisms of corporate governance should be taken into account in the composition of governing bodies to avoid a poor performance in the future.

In sum, we can assert that the non-ownership of savings banks, the lack of best practice corporate governance mechanisms and political presence have weakened them. The restructuring and merger processes should be designed to create more competitive and solvent entities and to strengthen the Spanish banking sector. New entities should be managed by independent professionals so that they may become more transparent and efficient.

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Table 1: Descriptive statistics of variables

Variable	Definition	Mean	Standard deviation	Maximun	Minimum
Solvency ratio (%)	Ratio of equity to Risk Weighted Assets	10.45	2.89	17.43	2.74
Efficiency1	Score obtained from DEA model whose inputs are deposits, interest/charges paid and cost of staff and whose outputs are credits and interest/fees received (Malmquist)	1.28	0.15	1.73	0.92
Coverage ratio	Ratio of Intermediation margin to Total Operating Cost	1.06	0.35	1.88	0.39
Political influence (%)	Percentage of members of the board with a connection in politics	0.35	0.17	0.74	0.05
Political CEO	Dummy variable (value 1, CEO belong to a party or union; otherwise 0)	0.41	0.49	1	0
Size (euros)	Total assets	27,961,502	45,873,225.3	252,759,471	344,442
Growth (%)	Variation in total assets from 2005 to 2009	0.52	0.29	2.18	0.15
Age	Age of organization	86.56	49.18	177	8
Age^2	Square of Age of organization	9912.35	8444.42	31329	64

Figure 1: Scatter plots: political influence/Malmquist index and solvency.
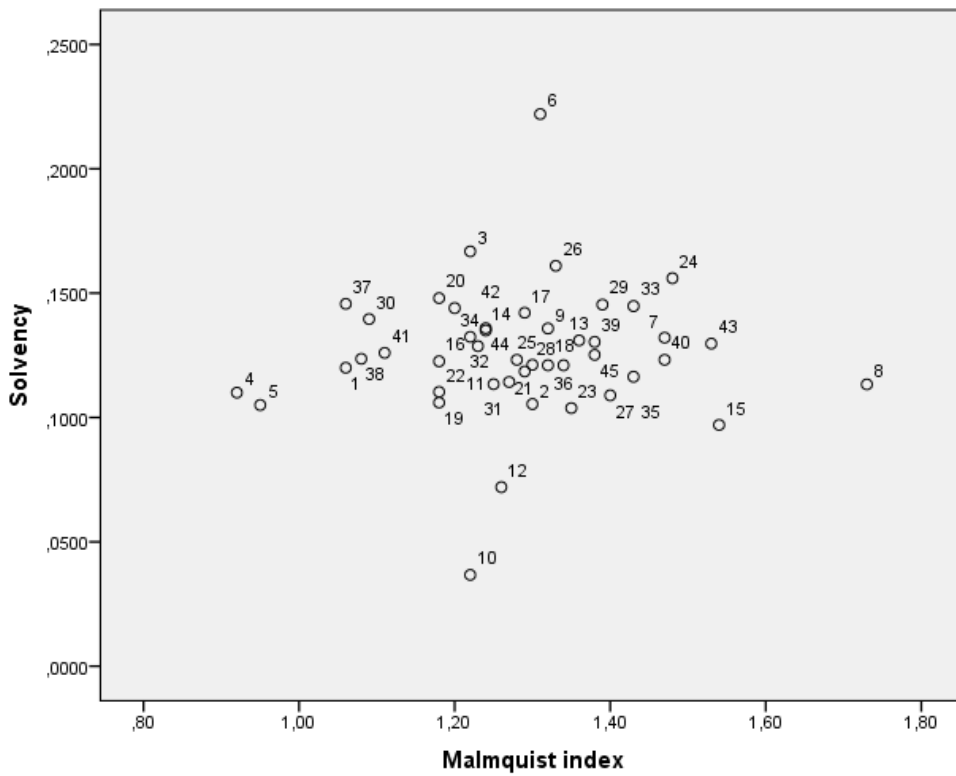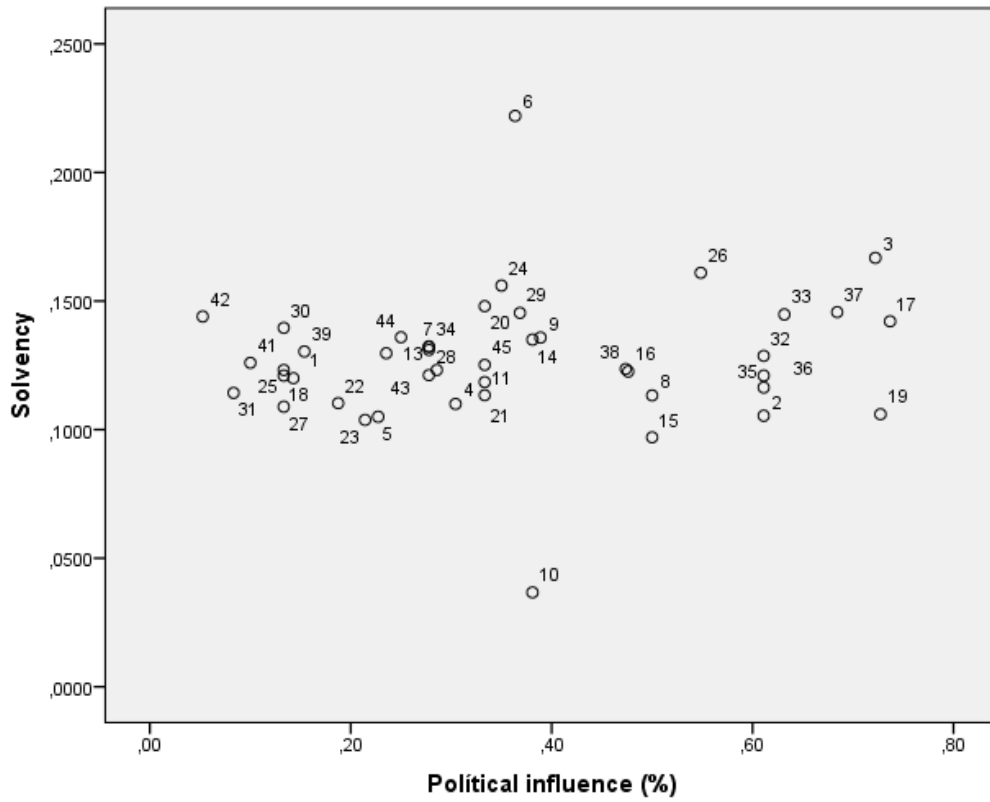
Note: Numbers denote organisations analyzed

Table 2: Pearson correlations among variables

Variables	Efficiency	Coverage ratio	Political Infl.	Political CEO	Size	Growth	Age	Age^2
Efficiency	1.000	-0.045 (0.233)	0.143 (0.449)	0.078 (0.665)	0.144 (0.389)	0.245 (0.211)	-0.176 (0.656)	0.112 (0.456)
Coverage ratio		1.000	0.568 (0.389)	0.478 (0.206)	-0.097 (0.556)	0.678 (0.344)	0.365 (0.625)	-0.433 (0.698)
Political Infl.			1.000	0.345 (0.453)	0.082 (0.522)	0.347 (0.423)	0.146 (0.256)	0.182 (0.554)
Political CEO				1.000	-0.124 (0.669)	0.273 (0.122)	0.369 (0.546)	0.296 (0.411)
Size					1.000	-0.004 (0.875)	0.867 (0.103)	0.077 (0.336)
Growth						1.000	-0.757 (0.113)	0.836 (0.236)
Age							1.000	0.996 (0.091)
Age^2								1.000

Note: The p-values are reported in parentheses.

Table 3: Coefficients of technical efficiency for each savings bank

	2009			Malmquist Index		
	CRS	VRS	CRS/VRS	Efficiency change	Technical change	Malmquist
Caja Mediterráneo	100.00%	100.00%	1.00	0.76	1.40	1.06
Caja de Ahorros y M. P. de Ávila	100.00%	100.00%	1.00	0.89	1.47	1.30
Monte de Piedad y Caja General de A. de Badajoz	95.44%	96.51%	0.99	0.97	1.26	1.22
Caixa D´Estalvis I Pensions de Barcelona. "La Caixa"	97.72%	100.00%	0.98	0.93	0.99	0.92
Caixa D´Estalvis de Catalunya	100.00%	100.00%	1.00	0.84	1.13	0.95
Bilbao Bizkaia Kutxa	100.00%	100.00%	1.00	1.12	1.16	1.31
Caja de A. y M. P. del Círculo Católico de Obreros de Burgos	90.01%	91.15%	0.99	1.15	1.28	1.47
Caja de Ahorros Municipal de Burgos	98.21%	99.08%	0.99	1.07	1.62	1.73
Caja de Ahorros y M. P. de Extremadura	100.00%	100.00%	1.00	0.85	1.55	1.32
Caja de Ahorros y M. P. de Córdoba - Cajasur	86.71%	86.73%	1.00	1.30	0.94	1.22
Caja de Ahorros de Galicia	95.26%	95.78%	0.99	1.06	1.19	1.25
Caja de Ahorros de Castilla La Mancha	80.43%	80.51%	1.00	1.12	1.12	1.26
Caixa D´Estalvis de Girona	90.17%	90.49%	1.00	0.99	1.37	1.36
Caja General de Ahorros de Granada	88.32%	88.36%	1.00	1.30	0.96	1.24
Caja de Ahorro Provincial de Guadalajara	77.57%	80.55%	0.96	1.13	1.37	1.54
Caja Provincial de Ahorros de Jaén	86.22%	87.34%	0.99	1.07	1.10	1.18
Caja España de Inversiones, Caja de Ahorros y M. P.	85.18%	87.77%	0.97	0.94	1.38	1.29
Caja de Ahorros de La Rioja	91.85%	93.02%	0.99	1.00	1.33	1.32
Caja de Ahorros y M. P. de Madrid	100.00%	100.00%	1.00	0.87	1.36	1.18
M.P. y C.A. de Ronda, Cádiz, Almería, Málaga y Antequera - Unicaja	99.45%	100.00%	0.99	0.77	1.52	1.18
Caixa D'estalvis Comarcal de Manlleu	88.06%	89.54%	0.98	0.99	1.31	1.29
Caixa D´Estalvis de Manresa	95.15%	95.49%	1.00	0.90	1.32	1.18
Caixa D´Estalvis Laietana	100.00%	100.00%	1.00	0.92	1.47	1.35
Caja de Ahorros de Murcia	99.27%	100.00%	0.99	1.04	1.43	1.48
Caja de Ahorros y M. P. de Ontinyent	94.53%	96.50%	0.98	1.05	1.21	1.28
Caja de Ahorros de Asturias	94.62%	94.76%	1.00	0.96	1.38	1.33
Caja de Ahorros y M. P. de Las Baleares	80.20%	80.37%	1.00	1.21	1.15	1.40
Caja Insular de Ahorros de Canarias	88.90%	89.08%	1.00	1.11	1.17	1.30
Caja de Ahorros y Monte de Piedad de Navarra	85.17%	85.21%	1.00	1.17	1.19	1.39
Caja de Ahorros de Pollensa	96.74%	100.00%	0.97	0.98	1.11	1.09
Caixa D´Estalvis de Sabadell	83.41%	83.64%	1.00	1.09	1.16	1.27
Caja de Ahorros de Salamanca y Soria - Caja Duero	84.80%	85.14%	1.00	0.93	1.32	1.23
Caja de Ahorros y M. P. de Gipuzkoa y San Sebastian	85.86%	86.71%	0.99	1.05	1.36	1.43
Caja General de Ahorros de Canarias	98.43%	99.40%	0.99	0.85	1.43	1.22
Caja de Ahorros de Santander y Cantabria	100.00%	100.00%	1.00	0.99	1.45	1.43

Caja de Ahorros y M. P. de Segovia	93.58%	93.75%	1.00	0.89	1.50	1.34
Caja de Ahorros Provincial San Fernando de Sevilla y Jerez	100.00%	100.00%	1.00	0.83	1.28	1.06
Caixa D´Estalvis de Tarragona	97.71%	97.79%	1.00	0.85	1.27	1.08
Caixa D´Estalvis de Terrassa	83.95%	84.17%	1.00	1.19	1.16	1.38
Caja de Ahorros de Valencia, Castellón y Alicante - Bancaja	100.00%	100.00%	1.00	0.95	1.56	1.47
Caixa de Aforros de Vigo, Ourense e Pontevedra	86.53%	86.55%	1.00	1.08	1.03	1.11
Caixa D´Estalvis del Penedès	86.35%	86.44%	1.00	1.18	1.02	1.20
Caja de Ahorros de Vitoria y Alava	95.37%	95.49%	1.00	1.13	1.35	1.53
Caja de Ahorros y M. P. de Zaragoza Aragón y Rioja	96.11%	97.62%	0.98	0.89	1.40	1.24
Caja de Ahorros de La Inmaculada de Aragón	89.64%	89.67%	1.00	1.16	1.19	1.38

Table 4: Multivariate and univariate regressions results

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL7	MODEL 8
Efficiency score	0.097	0.087	1.013					
Coverage ratio	0.041**	0.015**		0.540***				
Political influence	-0.011**	-0.018**			0.371			
Political CEO	-2.386*	-1.743*				0.103		
Size	-1.476E-11						0.156	
Growth		-0.076						0.347
Age	421.013*	356.789*	0.026***	1.310***	2.478***	1.888***	2.608***	1.933***
Age^2	76745.153	69876.434	-0.083***	-0.947***	-1.752***	-1.369***	-1.894***	-1.384***
R^2	0.921	0.934	0.974	0.955	0.931	0.952	0.938	0.953
F	184.364	168.698	262.34	145.153	90.925	132.892	102.971	138.062

Note: Note: The table shows estimated coefficients of the regression.
Dependent variable: solvency
*** $p < 1\%$; ** $p < 5\%$; * $p < 10\%$

Estimated equations:

$Solvency_i = \alpha_1\ Efficiency_i + \alpha_2\ Coverage\ Ratio_i + \alpha_3\ Political\ CEO_i + \alpha_4\ Political\ Influence_i + \alpha_5\ Size_i + \alpha_6\ Age_i + \alpha_7\ Age^2{}_i + \varepsilon_i$ [Model 1]

$Solvency_i = \alpha_1\ Efficiency_i + \alpha_2\ Coverage\ Ratio_i + \alpha_3\ Political\ CEO_i + \alpha_4\ Political\ Influence_i + \alpha_5\ Growth_i + \alpha_6\ Age_i + \alpha_7\ Age^2{}_i + \varepsilon_i$ [Model 2]

$Solvency_i = \alpha_1\ Efficiency_i + \alpha_2\ Age_i + \alpha_3\ Age^2{}_i + \varepsilon_i$ [Model 3]

$Solvency_i = \alpha_1\ Coverage\ Ratio_i + \alpha_2\ Age_i + \alpha_3\ Age^2{}_i + \varepsilon_i$ [Model 4]

$Solvency_i = \alpha_1\ Political\ Influence_i + \alpha_2\ Age_i + \alpha_3\ Age^2{}_i + \varepsilon_i$ [Model 5]

$Solvency_i = \alpha_1\ Political\ CEO_i + \alpha_2\ Age_i + \alpha_3\ Age^2{}_i + \varepsilon_i$ [Model 6]

$Solvency_i = \alpha_1\ Size_i + \alpha_2\ Age_i + \alpha_3\ Age^2{}_i + \varepsilon_i$ [Model 7]

$Solvency_i = \alpha_1\ Growth_i + \alpha_2\ Age_i + \alpha_3\ Age^2{}_i + \varepsilon_i$ [Model 8]