MERGERS BETWEEN SAVINGS BANKS. THE SOLUTION FOR IMPROVING RISK IN THE SPANISH BANKING SECTOR?

ABSTRACT

The objective of this paper is to study the changes in the performance of savings banks and the factors that influence the risk of these entities. The paper presents empirical evidence about the effect of mergers of savings banks, not only on performance but also on risk in the Spanish banking sector. First, in order to study the effectiveness of mergers we compare the economic-financial characteristics of savings banks before and after merging by carrying out the Mann-Whitney and Wilcoxon two-sample paired signed rank tests. Second, we carry out a multivariate regression to study risk determinants. Our findings indicate that the performance of savings banks has not improved from 2009 to 2012. Moreover, the size of the merged entity is directly related to the risk of the resulting entity, which denotes that mergers are not effective in obtaining a less risky banking sector.

Keywords: savings Banks; risk; performance; mergers; Spain
JEL: G.21, G.34, G.32

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1. Introduction

In the last five years, a wave of consolidation has transformed the Spanish banking industry. The financial crisis has intensified this process because mergers have been considered a means to prevent or to face bank failures; however, although the outcomes of bank mergers have been extensively studied, the question of whether they are effective in reducing default risk remains open (Vallascas and Hagendorff, 2011) and, for this purpose, the recent merger process of savings banks in Spain has hardly been evaluated. According to traditional economic theory, a merger lowers costs through economies of scale and raises prices by creating market power (Williamson, 1968). In the banking sector, mergers and acquisitions (M&A) has been used as a strategy for achieving larger size and being more competitive (Khan, 2011). Banks that have made wrong decisions and/or managed their resources inefficiently obtained lower performance and disappeared as a result of a merger (Crespí et al., 2004). However, M&A studies present divergences due, in part, to specificities of the samples (country, industry and time period analysed) (Amel et al., 2004) and the development of national studies is encouraged to capture the peculiarities of each market (Bernad et al., 2013). Therefore, this analysis seeks to shed light on the current transformation of the Spanish banking sector and the disappearance of savings banks.

Most studies have dealt with the potential gains from M&A in terms of performance (Barros et al., 2014; Asimakopoulos et al., 2013; Ayadi et al., 2013; Beccalli and Frantz, 2013; Bernad et al., 2013; Colombo and Turati, 2013; Erel, 2011; Vallascas and Hagendorff, 2011; Paik and Belcher, 2012) but, given the nature of banking institutions, the analysis of risk is crucial for a general assessment of the effects of consolidation (Amel *et al.*, 2004). Delgado *et al.* (2007) assert that medium size savings banks are more inclined than commercial banks of equal size to lend to low

credit quality borrowers, which is interpreted as evidence of higher risk, and Behr and Heid (2011) find that merged banks are, on average, less profitable and riskier than non-merged banks. This paper presents empirical evidence about the effect of mergers of savings banks, not only on performance but also on risk in the Spanish banking sector. The main objective of this paper is to analyse the changes in the performance of savings banks from 2009 to 2012 and the factors that influence the risk of these entities.

The article proceeds as follows. The next section describes the context and hypotheses of the study. Section 3 details the methodology used in the study and describes the data and variables used in the analysis. Section 4 presents the empirical results, Section 5 contains the discussion and Section 6 concludes.

2. Context and 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 banking sector. The financial crisis has brought hidden investment and credit risks derived from unsustainable political implementation to the surface and has revolutionized the sector by changing the legal structure of savings banks.

Savings banks had special corporate governance since because they were controlled by politicians and public entities and were unlisted. The interference of political forces started in 1985 when national legislation let politician control with voting rights to four categories of stakeholders: depositors, local governments, founders and employees. Conflicting interests appeared on the boards of the savings banks because they were made up of these different groups (Tortosa-Ausina et al., 2008). Internal and external mechanisms of corporate governance were weaker than in commercial banks and they did not work in Spanish savings banks (Crespi et al., 2004). Moreover, tensions between philanthropic core and business oriented approach, that

create disequilibria in market and non-market environments (Hockerts, 2010), can arise in these entities with social and economic objectives. As these entities did not operate under capital market discipline, they showed shortages in competitiveness and efficiency. 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. Although companies that are riskier, for example because they adopt more innovations, are less likely to receive the requested loan (van der Zwan, 2016), 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 (Pina *et al.,* 2016). In this section, we analyse the factors that contribute to explaining the merger processes of savings banks and develop our hypotheses.

The merger process in the Spanish banking sector

The performance of the Spanish banking sector has been hampered by the inefficacy of most savings banks. As inefficient banking entities are forced out of the market, the Government has promoted mergers to improve the performance of this sector as mergers between savings banks are observed to be a more effective governance mechanism than in the case of commercial banks (Delgado *et al.*, 2007).

Mergers of savings banks are considered as a potential mechanism of corporate control to deal with poor economic performance because, although the acquiring firm may maintain the prior management, it may force the savings banks to make policy

changes that it otherwise would not have made (Prowse, 1995). As Crespí *et al.* (2004) assert, mergers bring changes in the corporate governance and, as a result in the management team and board, for instance, the replacement of the chairman. Furthermore, mergers might help banking institutions to diversify their portfolios or increase their market share (Amel *et al.*, 2004) and their profitability (Bernad *et al.*, 2013).

Mergers offer opportunities for cost savings because merged entities avoid overlapping operations and their efficiency increases. One example of this is that the interest rates charged to borrowers of merged banks decrease substantially after the consolidation (Sapienza, 2002). If efficiency gains derived from mergers are passed on to consumers, the higher market concentration can benefit them. However, Prager and Hannan (1998) find a reduction of deposit rates paid to consumers by merged banks, which is consistent with the economic theory that a merger creates increased market power.

Another factor that may induce banking entities to merge is related to the decision to reduce credit to risky borrowers. Although a fall in margins may be consistent with banks lowering risk on their loan portfolios (Fraser, 2014), merged banks usually reduce lending to small users as they are generally riskier than bigger businesses to obtain a higher profitability. In line with this, Han et al. (2011) assert that, in more concentrated markets, financial relationship with customers are improved due to the lower probability of losing customers and the improvement of information quality with longer financial relationships, which leads to a decrease in the credit risk. With longer relationships, risky borrowers become more and more pessimistic about the outcome of their loan applications and therefore become increasingly likely to be discouraged from applying in the first place; while, less risky ones become less likely to be discouraged.

Our first hypothesis is:

Hypothesis 1: Merged Spanish savings banks have a higher performance than before their mergers.

Determinants of risk in Spanish savings banks

Mergers in the banking sector have the potential to reduce banks′ risk of insolvency; therefore, consolidation in the financial sector is beneficial (Vennet, 1996; Berger, 2000; Amihud, 2002). As Lown *et al.* (2000) assert, the risk of failure of banks is likely to decline if they can expand their business. In general, it is supposed that mergers lead to less risky entities. Therefore, in this section, we explain the main factors that may influence the risk of Spanish savings banks: size, efficiency and board.

Efficiency

Mergers can raise profits a) by improving cost efficiency, reducing the cost per unit of an output for a given set of inputs, b) through improvements in profit efficiency, involving superior combinations of inputs and outputs and taking into account the cost and revenue effects and c) through the exercise of additional market power in setting prices. A concentrated market may be more efficient than a fragmented market because the consolidated firm may charge higher rates for its services and raise profits (Akhavein *et al.*, 1997). However, evidence on the impact of these initiatives has been mixed (Kumbhakar *et al.* 2001). While Cuesta and Orea (2002) find that merged firms are more efficient than non-merged firms, an increase in banking competition, which is the opposite of what occurs in mergers, usually generates more efficiency (Reboredo, 2004). The main explanation for this is that cost reductions arising from technical efficiency can have a positive influence on profits and solvency. An efficient company that saves costs has more ability to meet its long-term costs and to accomplish long-

term expansion and growth. Mergers lead to higher size, which increases scale economies and improves the performance and efficiency of savings banks (Carbo *et al.*, 2003; Usman, 2011). This generates positive effects that reduce the risk of insolvency. Non-efficient entities obtain lower market shares and take greater risk, with a consequent increase in the probability of insolvency. In line with this, Hermalin and Wallace (1994) find that inefficient financial entities are, indeed, more likely to fail.

Size

In this paper, size has been included not only as control variable but also as a determinant factor of risk. 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 and Behr and Heid (2011) who assert that the most important factor for explaining bank mergers is the size of the banks involved and the realization of scale economies or market power.

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. However, the literature about previous merger processes in Spain is contradictory. Grifell-Tatje and Lovell (1996) find no improvements in performance following mergers and Lozano-Vivas (1997) find no significant change in frontier profits over the merger period. By contrast, the results of Tortosa-Ausina *et al.* (2008) show that performance grew over the post-deregulation period in which mergers and acquisitions came to an end, mainly due to improvements in production. In general, larger banks are more diversified and, therefore, less risky (Amel *et al.*, 2004) because they have more assets with which to meet their liabilities.

A higher size means a higher market concentration. A decrease in market power can bring about a change from safe to risky policies (Salas and Saurina, 2003); however, in a more concentrated market, consolidated banks will set higher prices after the merger (Sapienza, 2002) and will carry out less risky operations.

Board

The Spanish banking sector has been restructured by transforming savings banks into banks to face to a new economic environment. Internal and external mechanisms of corporate governance were weaker than in commercial banks and they did not work in Spanish savings banks (Crespí *et al.*, 2004). As these entities did not operate under capital market discipline, they showed shortages in competitiveness and efficiency (Serra, 2012). Inexperienced people with no education in economics or finance, but with strong political loyalty, were put on the boards of savings banks, which led to poor performance (Fonseca, 2005). With mergers, strategies have been modified and corporate governance mechanisms were enhanced in Spanish savings banks to improve the composition of the board and eliminate the political influence. Therefore, the board may be considered an internal device of corporate control (Prowse, 2005; Ferrero-Ferrero et al., 2012) and mergers led to the removal of top management by the board of directors.

A bigger board can have more experience and knowledge. However, according to the agency theory, when too many directors are serving on the board, agency costs increase; therefore, it will be more complicated to monitor managers and to ensure wealth maximization for the shareholders. Moreover, directors may be incapable of rationalising the firm and encounter resistance to change at some level of the organization (Villalonga, 2000). In line with this, Eisenberg *et al.* (1998) and Yermack (1996) find that the size of the board and the value of the firm are inversely correlated.

In consequence, we analyse the relationship between the variable risk and the variable size, efficiency and board. Our second hypothesis is:

Hypothesis 2a. The relationship between the risk of Spanish savings banks and their efficiency is negative.

Hypothesis 2b. The relationship between the size of Spanish savings banks and their risk is negative.

Hypothesis 2c. The relationship between the risk of Spanish savings banks and the size of their board is positive.

3. Sample and methodology

This study focuses on the 46 savings banks operating in Spain in 2009 and on the banks resulting from mergers involving these savings banks operating in 2012 (see Appendix A). The information referring to 2009 is an adequate representation of the situation of Spanish savings banks at the moment of their default. 2012 is the last year with available information for our sample. Data is collected from the Spanish Savings Banks Association (CECA) and the annual reports of savings banks for 2009 and 2012.

First, in order to study the effectiveness of mergers we compare the economic-financial characteristics of savings banks before and after merging by carrying out the Mann-Whitney and Wilcoxon two-sample paired signed rank tests, which do not require normality. Following Hasan (2003), Prior (2003) and Trujillo (2013), we have selected the following ratios:

- *Key balance sheet items*.
    - o Institutional deposits ratio
    - o Retail deposits ratio
    - o Retail loans ratio

- Equity ratio solvency
- Retail deposits to liabilities ratio
- Logarithm of assets

- *Key income expenditure items*
  - Total cost ratio
  - Return on assets
  - Return on equity

- *Other ratios used in the study are:*
  - CR. The coverage ratio is defined as the intermediation margin to total operating cost. This ratio provides evidence of the ability of banking entities 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).
  - Efficiency. To test whether efficiency has changed from 2009 to 2012, an efficiency score has been obtained by applying the Data Envelopment Analysis (DEA) developed by Charnes *et al*. (1978) and Banker (1984) [1] . The traditional intermediation approach and the production approach are the main alternatives for measuring banking activity. Most studies defining bank output have tended to opt for the intermediation approach, due to the difficulty of obtaining data that closely reflect the banking production aspect (Carbo *et al.*, 2003; Tortosa-Ausina *et al.* 2008; Illueca, *et al.*, 2009). Here, we also

[1] Savings banks are non-profit organizations and, thus, under less pressure to obtain profits than commercial banks. Because of this, the traditional assessment methods (profitability indicators) are not suitable for measuring the performance of these firms.

consider the intermediation approach and the variables used are branches and staff (inputs) and deposits and credits (outputs).

- Risk. Bank risk is defined as the ratio of loan loss provisions over loans, so it is an inverse variable of risk. This variable relates the provision for impairment losses to the loan portfolio of a bank and has been used by Vander Vennet (1996) and Trujillo (2013).

Table 1 shows the descriptive statistics for the ratios used in the study.

Table 1: Descriptive statistics of variables

Variable	Definition	Mean	Standard deviation	Maximum	Minimum
Institutional deposits ratio	Institutional deposit (liabilities to other banking institutions) to total assets	0.12	0.11	0.66	0.00
Retail deposits ratio	Retail deposit (short-term liabilities to clients) to total assets	0.66	0.15	0.90	0.10
Retail loans ratio	Retail loans (loans given to customers) to total assets	0.65	0.14	0.90	0.02
Equity ratio	Equity to total assets	0.04	0.02	0.12	-0.03
Customer Deposits/Total Liabilities	Retail deposit (short-term liabilities to clients) to total liabilities	0.70	0.16	0.94	0.11
Size (ln TA)	Logarithm of total assets	160.73	10.49	190.70	120.75
Total cost ratio	Total operating cost to total assets	0.01	0.01	0.02	0.01
ROA	Return to total assets ratio	-0.01	0.03	0.01	-0.15
ROE	Return to equity ratio	-20.16	130.21	30.66	-1,040.55
Coverage Ratio	Intermediation margin to total operating cost	10.41	0.374	2	0
Efficiency	DEA score (inputs: branches and staff and outputs: deposits and credits)	0.16	0.310	1	0
Risk	Loan loss provisions over loans	0.01	0.03	0.11	-0.01

Second, we carry out a multivariate regression to study risk determinants. As independent variables, the variables *Size* (defined previously), *Efficiency* (defined previously) and *Board* (indicative of the number of members on the board) are introduced into the regression. The ratios previously analysed are introduced into the regression as control variables. Accordingly, we estimate the following model:

$Risk_i = \alpha_1$ Efficiency $_i + \alpha_2$ Size$_i + \alpha_3$ Board$_i + \alpha_4$ Institutional deposits ratio $_i + \alpha_5$ Retail deposits ratio$_i$ + + α_6 Equity ratio$_i + \alpha_7$ Customer Deposits/Total Liabilities$_i + \alpha_8$ Total cost ratio $_i + \alpha_9$ ROE$_i + \alpha_{10}$ ROA$_i + \alpha_{11}$ Coverage ratio $_i + \varepsilon_i$

4. Analysis of results

In order to check whether performance is statistically different before and after the mergers, the non-parametric Mann-Whitney U and Wilcoxon tests have been applied. These tests measure the average ratios before and after mergers and do not require normality. The results are shown in Table 2.

Table 2: Mann-Whitney U and Wilcoxon tests results

Ratio	Year	N	Average Rank	Sum rank	Mann-Whitney U test	Wilcoxon test	Z
Institutional deposits ratio	2012	20	50.70	1014	116	1197	-4.800***
	2009	46	26.02	1197			
Retail deposits ratio	2012	20	22.65	453	243	453	-3.028***
	2009	46	38.22	1758			
Retail loans ratio	2012	20	17.40	348	138	348	-4.493***
	2009	46	40.50	1863			
Equity ratio	2012	20	26.30	526	316	526	-2.009**
	2009	46	36.63	1685			
Customer Deposits/Total Liabilities	2012	20	21.35	427	217	427	-3.391***
	2009	46	38.78	1784			
Size (ln TA)	2012	20	46.05	921	209	1290	-3.502***
	2009	46	28.04	1290			
Total cost ratio	2012	20	28.75	575	365	575	-1.326
	2009	46	35.57	1636			
ROA	2012	20	13.95	279	69	279	-5.456***
	2009	46	42.00	1932			
ROE	2012	20	20.35	407	197	407	-3.670***
	2009	46	39.22	1804			
CR	2012	20	23.20	464	254	464	-2.874***
	2009	46	37.98	1747			
Efficiency	2012	19	51.16	972	92	1173	-6.742***
	2009	46	25.50	1173			
Risk	2012	20	41.60	832	298	1379	-2.260**

2009	46	29.98	1379	

**Statistically significant at the 5% level.
***Statistically significant at the 1% level.
In bold, the higher value for each variable.

As can be seen, the difference in all ratios except the *total cost ratio* is statistically significant. The *retail deposits ratio*, *retail loans ratio*, *equity ratio*, *customer deposits/total liabilities*, *ROA*, *ROE*, *coverage ratio* and *risk* are statistically higher before the mergers. The tests indicate that the *institutional deposits ratio*, *size* and *efficiency* are statistically higher after the mergers. In general, we cannot assert that the merger of these companies means an improvement in their performance.

The variable *institutional deposits ratio* is higher after the mergers. Savings banks have more deposits from the European Central Bank and other banks in their accounts. However, the variables *retail deposits ratio* and the *customer deposits/total liabilities ratio* indicate that clients deposited less money in savings banks in 2012 than in 2009. The same occurs with the *retail loans ratio*, which indicates that the amount of loans is lower in 2012 than in 2009. One reason for this is the lack of liquidity in the banking system and that families are reducing their debts with banking entities. The *equity ratio* is higher in 2009. This is consistent because, in 2009, the savings banks were small and non-merged entities. The variable *size* is higher after the mergers. This result is consistent because several savings banks merged into only one entity. As a consequence of this, the ROA and ROE are lower after the mergers. The coverage ratio is higher before the mergers. This result may indicate that the intermediation margin was higher in 2009 than in 2012. The variables efficiency and risk show a better behaviour in 2012, which is indicative that mergers have generated improvements in efficiency and risk.

Next, a regression is carried out to determine the effect of the ratios and of the board structure on risk. Appendix B includes Pearson correlations for independent variables and graphic plots between the dependent and independent variables. Pearson

correlation coefficient indicates that there is significant association between independent variables; therefore, we carry out a stepwise regression to control for these correlations. Table 3 presents the results of the regression. As can be seen the variables *retail deposits ratio*, *efficiency* and *size* are statistically significant, while the other ratios are not representative in the regression. The F value and the R^2 statistics indicate that there is no misspecification error.

Table 3: Multivariate regression results

	MODEL 1
Constant	0.147*** (0.000)
Retail deposits ratio	-0.088*** (0.000)
Efficiency	0.014*** (0.001)
Size	-0.005** (0.000)
R^2	0.688
F	10.401

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

The negative sign of the variable *retail deposits ratio* indicates that when savings banks have more deposits, they are less risky. This is coherent because banking entities that keep more deposits give comparatively less loans to their customers. The positive sign of the variable *efficiency* means that the less efficient are the entities, the riskier the savings banks. An efficient entity may exercise an additional market power and give less risky loans. The variable *size* has a negative sign, which indicates that a bigger savings bank accounts for less provisions and is riskier than a smaller one. This demonstrates that mergers have not been effective in creating less risky banks.

5. Discussion

The driving idea behind M&A policies that consolidated entities result in better performance is not confirmed in the Spanish savings banks studied because seven of the twelve ratios analysed indicate that the performance of savings banks is better before the merger than afterwards. The results obtained in our empirical research suggest that mergers in this sector are not sufficient to bring about the effects forecasted for M&A processes. Consequently, we cannot accept Hypothesis 1 (Merged Spanish savings banks have a higher performance than before their mergers). So, the idea that mergers of savings banks may be used to correct the efficiency of the Spanish banking sector should be taken with caution. These results are consistent with those obtained in other countries by Berger (1998), Avkiran, (1999), Amel *et al.* (2004), Prowse (2005) and Vallascas and Hagendorff (2011), in which little improvement is found between the performance of banking entities before and after mergers. One reason is that the likelihood of merging for low performing savings banks is higher than for low performing commercial banks (Crespí *et al.*, 2004) and studies restricted to a short post-merger period might fail to account for the efficiency gains of consolidation (Amel *et al.*, 2004).

In the case of the entities studied, risk is inversely related to the efficiency of the savings bank and directly related to the size. As for the efficiency, our results show that more efficient savings banks are less risky than less efficient ones, result consistent with our expectations and allows us to accept Hypothesis 2a. Mergers can improve risk conditions because they increase the market power of entities and they can obtain best rates for funding and give credits to less risky clients. An efficient company that saves

costs has more ability to meet its long-term costs, which reduce the risk of insolvency. Low levels of efficiency could lead banks to boost returns by lowering their operating standards, such as the less intensive monitoring of credit (Fiordelisi *et al*., 2011). This result is consistent with Hermalin and Wallace (1994), who assert that inefficient financial entities are more likely to fail and Fiordelisi *et al.* (2011), who find that lower bank efficiency causes higher bank risk.

As for the size of the saving banks, our results indicate that this magnitude is positively related, that is, a bigger entity leads to riskier entities. Consequently, we cannot accept Hypothesis 2b. So, the recent mergers carried out by the Spanish government may not be appropriate to improve the situation of the Spanish banking sector. Our result is consistent with Vallascas and Hagendorff (2011), who doubt the ability of bank mergers to exert a risk-reducing and stabilizing effect on the European banking industry and Amihud *et al.* (2002), who find no change in firm risk after mergers between banks. One reason for this may be that mergers increase the monitoring risk related to the loan customer base and operating cost structure of merged entities (Winton, 1999). For Spanish entities, Griffel-Tatje and Lovell (1996) also conclude that mergers do not lead to improvements in banking entities. The direct relationship between risk and size is consistent with the inertia theory that asserts that resistance to organizational changes that are necessary to improve performance are more difficult to implement in larger organizations than in smaller ones (Hannan and Freeman, 1984). These authors argue that, in large companies, it is more difficult to delegate authority and, in consequence, these firms adopt organizational changes less efficiently than smaller companies. The greater inertia of large organizations might reduce the success of the reorganization, leading to a lower performance and, in consequence, higher risk. Furthermore, internet banking entities, that are smaller than

traditional banks, changed the nature of channel delivery in the financial services sector and the market structure (Gandy, 2009) by showing that a small size is not an impediment to survival in the long run.

Our results do not allow us to conclude about the relationship between the size of the board of savings banks and their risk (Hypothesis 2c). That is, there is no evidence of the supposed disciplinary role of mergers in the board in Spanish savings banks. This is coincident with Prowse (1995), who finds that bank boards appear weaker in disciplining management than those of manufacturing firms because bank board have lower levels of outsiders. Although directors are less inclined to leave low performance savings banks than low performance commercial banks (Delgado *et al.*, 2007), boards should be reduced and professionalized to hinder the entrance of politicians.

The overall consideration of the results obtained shows that the Spanish banking sector must still be reinforced in order to achieve improvements in the performance of merged savings banks and to reduce the risk of merged entities. The mergers in this sector have resulted in bigger entities that must be reorganised to have a better performance and a more efficient banking industry.

6. Conclusions

This paper analyzes the effect of bank consolidation on the performance of merged Spanish savings banks. To analyze how the process of mergers in Spain has influenced performance and risk, we have compared twelve performance ratios in 2009 and 2012 and investigated the relationship between, on the one hand, risk, and, on the other, the size, efficiency and board of savings banks. Our findings indicate that the performance of savings banks has not improved from 2009 to 2012, the period in which merger to place. Moreover, the size of the merged entity is directly related to the risk of

the resulting entity, which denotes that mergers are not effective in obtaining a less risky banking sector.

The study identifies some interesting policy implications and raises some questions for future research including the analysis of the evolution of the composition of the board of merged savings banks and its influence on the Spanish banking sector. Our results suggest that policymakers should have taken into account economic issues rather than political or geographical criteria when considering the process of mergers to strengthen this sector. In particular, the finding that a bigger savings bank is riskier indicates that the size of a savings bank does not guarantee that it will be more solvent and that these entities should merge only if the merged entity is able to be more competitive and its board is composed of directors with expertise. For this, mechanisms of corporate governance should be taken into account in the composition of governing bodies to avoid a poor performance in the future.

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Appendix A: Spanish savings bank in 2009 and 2012

Name (2009)	Autonomous Regions
Caja Mediterráneo	Valencian Community
Caja de Ahorros y M. P. de Ávila	Castilla-Leon
Monte de Piedad y Caja General de A. de Badajoz	Extremadura
Caixa D´Estalvis I Pensions de Barcelona. ´La Caixa´	Catalonia
Caixa D´Estalvis de Catalunya	Catalonia
Bilbao Bizkaia Kutxa	Basque Country
Caja de A. y M. P. del Círculo Católico de Obreros de Burgos	Castilla-Leon
Caja de Ahorros Municipal de Burgos	Castilla-Leon
Caja de Ahorros y M. P. de Extremadura	Extremadura
Caja de Ahorros y M. P. de Córdoba - Cajasur	Andalusia
Caja de Ahorros de Galicia	Galicia
Caja de Ahorros de Castilla La Mancha	Castilla La Mancha
Caixa D´Estalvis de Girona	Catalonia
Caja General de Ahorros de Granada	Andalusia
Caja de Ahorro Provincial de Guadalajara	Castilla La Mancha
Caja Provincial de Ahorros de Jaén	Andalusia
Caja España de Inversiones, Caja de Ahorros y M. P.	Castilla-Leon
Caja de Ahorros de La Rioja	La Rioja
Caja de Ahorros y M. P. de Madrid	Madrid
M.P. y C.A. de Ronda, Cádiz, Almería, Málaga y Antequera - Unicaja	Andalusia
Caixa D'estalvis Comarcal de Manlleu	Catalonia
Caixa D´Estalvis de Manresa	Catalonia
Caixa D´Estalvis Laietana	Catalonia
Caja de Ahorros de Murcia	Murcia
Caja de Ahorros y M. P. de Ontinyent	Valencian Community
Caja de Ahorros de Asturias	Asturias
Caja de Ahorros y M. P. de Las Baleares	Balearic Islands

Caja Insular de Ahorros de Canarias	Canary Islands
Caja de Ahorros y Monte de Piedad de Navarra	Navarre
Caja de Ahorros de Pollensa	Balearic Islands
Caixa D´Estalvis de Sabadell	Catalonia
Caja de Ahorros de Salamanca y Soria - Caja Duero	Castilla-Leon
Caja de Ahorros y M. P. de Guipúzcoa y San Sebastián	Basque Country
Caja General de Ahorros de Canarias	Canary Islands
Caja de Ahorros de Santander y Cantabria	Cantabria
Caja de Ahorros y M. P. de Segovia	Castilla-Leon
Caja de Ahorros Provincial San Fernando de Sevilla y Jerez	Andalusia
Caixa D´Estalvis de Tarragona	Catalonia
Caixa D´Estalvis de Terrassa	Catalonia
Caja de Ahorros de Valencia, Castellón y Alicante - Bancaja	Valencian Community
Caixa de Aforros de Vigo, Ourense e Pontevedra	Galicia
Caixa D´Estalvis del Penedès	Catalonia
Caja de Ahorros de Vitoria y Alava	Basque Country
Caja de Ahorros y M. P. de Zaragoza Aragón y Rioja	Aragon
Caja de Ahorros de La Inmaculada de Aragón	Aragon
Confederación Española de Cajas de Ahorros	Madrid

Name (2012)	Autonomous Regions
Banco Ceiss	Madrid
Bankia	Valencian Community
BBK Bank	Basque Country
BFA	Valencian Community
BMN	Madrid
Caixabank	Catalonia
Caja España	Madrid
Caja3	Aragon
Catalunya Banc	Catalonia
Ceca	Madrid
Ibercaja	Aragon
Ibercaja Banco	Aragón
Kutxabank	Basque Country
Liberbank	Madrid
NCG Banco	Galicia
Ontinyent	Valencian Community
Pollensa	Balearic Islands
Unicaja	Andalusia