Differential agency cost related to the kind of financial system in each European country during the 2008 - 2014 financial crisis: the Spanish case

Costes de Agencia diferenciales relacionados con el sistema financiero de cada país europeo durante la crisis financiera 2008-2014: el caso español

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ABSTRACT

The purpose of this paper is to show the implications of the problem of agency cost depending on the economy's financial system. There are additional and differential agency costs when the banking system is the main financial supplier in a national economy (through loans to borrowers), as opposed to agency costs in a market-based financial system (trading shares and bonds). The Spanish case is analyzed to determine the existence of such differential costs in a bank-based financial system, as it is among the largest European bank-based systems and has undergone major restructuring due to the past financial crisis.

Keywords: Bank-based financial systems, financial crisis, agency costs, debt restructuring, predation theory.

JEL Classification: G15, G21, G32, G33.

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RESUMEN

El objetivo de este documento es mostrar las implicaciones de la problemática de los costes de agencia dependiendo del sistema financiero de la economía. Existen costes de agencia adicionales y diferenciales cuando el sistema bancario es el principal proveedor financiero de una economía nacional (a través de préstamos a los prestatarios), a diferencia de los costes de agencia en un sistema financiero basado en el mercado (de acciones y bonos). Se analiza el caso español para determinar la posible existencia de esos costes diferenciales en un sistema financiero bancario, ya que se encuentra entre los mayores sistemas bancarios europeos y ha sido objeto de una importante reestructuración debido a la pasada crisis financiera.

Palabras clave: sistemas financieros bancarios, crisis financiera, costes de agencia, reestructuración de la deuda, teoría de la depredación.

Clasificación JEL: G15, G21, G32, G33.

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1. INTRODUCTION: AGENCY THEORY AND FINANCIAL SYSTEM

This paper seeks to add to current investigations and literature on Agency Theory a new angle on traditionally analyzed agency problems, extending the agency problem to a second level of actors, and the effect of such problems on the primary level of agency relationships when their interests are taken to a business and professional survival area in the special environment of a deep financial crisis.

The paper is organized as follows.

Section 1 discusses the theoretical background in relation with agency theory and the different agency costs in the contractual relationship between a firm and its financial creditors, as well as their differential characteristics in the two financial systems.

Section 2 describes the implications of data employed in the reference (Spanish) case to show the existence of specific agency costs that are not usually present in the firm - financial creditors relationship.

Section 3 concludes on the cause and effects of these differential agency costs in the bank-based financial system, when subjected to specific circumstances.

The Appendix details the data and tables used to conclude.

2. THEORETICAL BACKGROUND

Agency theory (Jensen & Meckling, 1976) defines Agent as the person who acts on behalf of another, who is called Principal. This theory shows that companies are rarely able to maximize value due to differences among stakeholders' interests, which leads to agency problems in the case of Agent (managers) - Principal (shareholders) relationships. The costs incurred to minimize these agency problems are known as 'agency cost'. In the case of the managers-shareholders relationship, costs are related to the controls implemented to monitor managers' behavior to maximize shareholders' value, costs incurred to align both interests, or just due to the asymmetric information available to shareholders in comparison with the information managers have access to regarding their business for decision-making purposes.

As indicated in Agency Theory, contractual relations are the essence of a Firm. The Firm is not an individual with own personality, but a system of contractual relations among different individuals, each with their own interests in the outcomes they can achieve from

their interaction with the firm. Some outcomes may be direct, while others may be indirect and unobserved by other stakeholders in the Firm due to the problems of asymmetric information. Therefore, part of the gains obtained from these outcomes by some stakeholders could be the result of other stakeholders´ losses, but not necessarily. Losses can be incurred by one of the parties to the contract if decision rights on critical issues in the contract are not correctly allocated, as the theory of incomplete contracts demonstrates (Hart & Moore, 1989).

For the Firm, considered as a legal framework where equilibrium is brought through the mentioned series of contracts that seek to align conflicting objectives of individuals (stakeholders), the financial system it belongs to, is relevant. The contracting framework and the methods for aligning individuals´ interests are different in a financial market system or a banking-based financial system.

If the contracts are related to the financial structure of the firm, agency problems may be related to shareholders-managers, to shareholders-financial creditors, or among financial creditors due to them having established financial contracts with the same companies. This can be extended to other stakeholders and leads to the conclusion (Mascareñas, 1988) that in every contractual relationship of the firm, some kind of agency problem is present. Debt contracts are established to control the shareholders-financial creditors' conflict, in the case of bank-based financial systems. Bonds and Share market regulations play the same role in market-based financial systems, when issuing new bonds or shares.

Following the traditional theory of value of the firm, the company would be looking to increase its value. The basic irrelevancy theorem (Modigliani & Miller, 1958) suggests that the choice among different financial instruments is inconsequential to the value of the firm under perfect capital markets. To prove the irrelevancy statement in the context of risky debt financing, a costless financial intermediary is needed (Stiglitz, 1974). This means that in the ex-ante contracting framework at issuance, all gains that shareholders may obtain are considered and covered conveniently, so that arbitrage profits are fully exploited and paid for at issuance of debt. But the model proposed is not consistent with the complexity in which the contracting framework has developed: endeavouring to cover, through private agreements, the referred agency problems that the legislation in each financial system is unable to cover. Given an environment in which agency problems prevail owing to informational asymmetry and risk incentive problems, the already indebted firm would make decisions regarding growth in the interest of shareholders, but these would not receive all the benefits because a part would be for the creditors in the form of lower risk of default. (Bodie & Tagart, 1978; Kish, & Livingston, 1992). In other words, the complexity of financial instruments is due to the fact that markets and legislation are not perfect in the sense that they do not provide costless and complete solutions to the mentioned agency problems (Barnea, Haugen, & Senbet, 1980).

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Companies may mitigate some of the agency problems (Berger& Di Patti, 2006) by choosing their optimal capital structure. The interests of shareholders might be protected making managers operate in a high leverage or low equity/asset ratio scenario, which reduces the agency cost related to outside equity, while potentially increasing firm value because of the insolvency threat potentially affecting the salary and reputation of managers (Harris & Raviv, 1991). But this is true under a certain level of leverage that not increases significantly the insolvency (bankruptcy costs) or even the liquidity risk (financial distress costs), reaching the point where a solvent but illiquid borrower is unable to refinance and therefore incurs in default. In this excessively high-leveraged scenario, further increases generate significant agency costs for third-party debt arising from conflicts between financial creditors and shareholders. In both kinds of financial system, the effects would be non-differential, as they would be related to the company situation and banks and bondholders would consider the risks to be similar, while for shareholders the indebtedness would provide similar results in both systems, the risk being more related to the maturity of the debt.

Traditionally, agency cost considered in the bank (principal) – borrower (agent) relationship has been related to asset substitution, underinvestment, credit rights dilution due to new debt increasing the level of indebtedness (Smith & Warner, 1979), due to dividend payment policy, or the specification of assets used as collaterals. Protection clauses in loan agreements are established in order to align principal and agent interest and cover possible borrower actions and decisions that might reduce the probability of recovering their loans and the corresponding interest amounts. There are various kinds of debt covenants which are included in debt contracts to restrict the firm from engaging in specified actions before the debt is paid. These covenants imply additional agency cost in the form of non-optimal decisions for the company (García-Posada, 2013). In financial market systems, covenants are in many cases implicit and are found through debt valuation in the market, or the firm´s debt rating, so in both financial systems this kind of agency cost would be non-differential.

In the case of agency problems related to insolvency cost, stakeholders will incur in agency cost depending on the legislation applicable and the kind of financial system in which the firm is operating. In each case, insolvency legislation could reach efficiency depending on the level of information on the economy available to creditors in each financial system (Berkovitch & Israel 1999). In economies where real guarantees receive preferential treatment in the insolvency legislation, and the information is supported by an official, agile and transparent real estate registry, credit will rely on this model of secured funding requiring such collaterals. In these cases, investment decisions in companies would bias toward these assets. In comparison with alternative asset funding and investment, this model may imply an opportunity cost. It will also affect capital structure decisions, requiring more equity in relation with other indebtedness alternatives. This is consistent with (Titman, 1984) adopting optimal capital structure depending on

the possibility of liquidating the firm. According to this, firms should be minimally leveraged when able to impose liquidation costs on their customers or business associates and should be higher leveraged when they cannot translate liquidation costs to their customers. This might bring another differential cost characteristic based on the sector of activity and its required assets for operations.

Another agency cost is related to matching debt maturity and investment cash flows. The firm would try to minimize the uncertainty of interest rate fluctuations (Barnea, et al., 1980) and shareholders would increase their value at the expense of creditors if the firm turns to riskier projects than forecasted at debt issuance. This incentive risk can be reduced by shortening debt maturity. Again, what is good for reducing an agency problem increases the cost of another: default risk increases when debt maturity is lower than the matching cash flows generated by the investment, or at least increases the risk of insolvency if any of the assumptions for the investment project are not materialized as forecasted. The problem comes when shortening debt maturity induces a gap with cash flow forecasted incomes. This too can be anticipated and valued at bond issuance and at the time of bank debt contracting. Therefore, this is not a differential agency cost in either of the two financial systems.

Most of the mentioned agency costs are more or less common to both financial systems. There might be differences in the legislation model with regard to insolvency procedures, and there might also be differences among different industries' approach to the coverage of agency problems, and even different costs depending on the size of the firm or its shareholder´s ownership model. In any case, they are present in most financial contracts in both main financial systems.

For a Firm, when facing a decision regarding financing growth, it is important not only to take into consideration the internal agency cost, but also the relevant external ones that will depend on the kind of financial system and the legislation in the market or markets where it is operating.

There has long been a debate about the implications in terms of economic growth stemming from bank-based versus market-based financial systems. Theories on financial structure and economic growth have argued in favor of one or another financial system, with arguments grounded on how well each model provides better capital allocation to assure long-term growth.

Considering possible claims on the assets and income flows of an indebted company, we can identify the following three main claimants, depending on the financial system in which it operates (Bulow & Shoven 1978): bondholders, banks, and equity holders. Though there is a mix of claimants to the assets of a company in every financial system, their agency costs are related to their specific relationships with the company and with

the rest of stakeholders. Bondholders are not able to renegotiate their loans when insolvency becomes possible, as banks can to some extent, as they are usually numerous and non cohesive in nature. Moreover, the mere failure to honor interest or part of the principal leads to immediate default, and in this case priority in the distribution of assets among other creditors depends on the specific covenants on the bonds. To fix these covenants in a feasible way that the market can accept, it is necessary that regulation enforce them. This is especially important when issuing bonds in a bank-based market where banks detain the capability to renegotiate their debt conditions after issuing bonds. That might explain why in bank-based financial systems it is so difficult to broaden the base of companies that are able to access market bond financing. This would be differential in both financial systems, but as part of the ex-ante contracting due diligence analysis, would have been evaluated by bondholders at issuance date.

Supporters of bank-based financial systems argue that banks are able to reduce agency costs with borrowers, through long-term relationships that enable them to obtain a flow of information about future performance, which is contrasted with actual results, at least, on a yearly basis. When this periodic verification indicates the achievement of expected results, cash flow constraints for the borrower are reduced (Porter, 1992). Should the company suffer financial difficulties, banks are able to review loan conditions. Moreover, they can forecast the likelihood of this happening some time in advance by determining, through covenants, the circumstances under which they consider the company is in such difficulties. The bank -based system allows banks the possibility of renegotiating and even extending credit to enable a company suffering financial distress to continue operations or forcing bankruptcy. As residual claimants of the company's assets, shareholders will always strive to convince creditors to avoid bankruptcy. In the case of bank creditors and bondholders it is possible that shareholders will offer them enough equity position to prevent them from forcing bankruptcy. This will usually happen when the decision maker responsible for the choice to force bankruptcy (mainly bank and shareholders), takes into account not only the net value of the going concern, but also the maturity and priority structure of the debt. According to this premise (Bulow & Shoven, 1978), when there is a long-term debt maturity, a higher rate of cash or liquid assets in the total asset, and an ongoing business with a variable future positive return, the chances of keeping the business running increase (Donaldson et al., 2020). Likewise, as already said, chances increase when the firm has collaterals of the kind privileged by insolvency legislation. This is non-differential in both financial systems, as information to reduce it can be available in both systems.

The adverse selection problem may have affected borrowers during the crisis due to the asymmetric information regarding debtors' future solvency. In such circumstances and to reduce lending risk, only when the borrower had collaterals with current market value more than the loan solicited, would lenders grant new ones (Sudheer & Purnanandam, 2011). New debt increases insolvency risk causing prior borrower debt market value to

decrease, which makes former creditors share with the new secured lenders the non-secured assets to cover their credits. In this case, potential borrowers running successful businesses would not be able to obtain further funding to grow if they do not have additional collaterals. Equity would be the only possible way available to fund new projects or for refinancing in the case of financial problems.

Additionally, banks' capital structure is directly affected by legal regulations (minimums for equity capital and risk credit allowances), which increases agency costs as banks have to implement financial contracts according to the expected value of the issued debt, not only at the time of issuance (ex-ante) but throughout the expected life of the debt (ex-post). This is a further kind of agency cost that is external to the main borrower-bank contract but introduces gains or losses to one of the contracting parties, which would be shifted to the other party in order to achieve their individual goals.

Moreover, the valuation of former debt affects lenders (banks) when they must comply with stress test requirements or specific percentages of equity to total assets. In relation with the effects of this ratio, if banks are not able to increase their own equity, which in a financial crisis is more difficult to achieve in general terms, they need to reduce new lending. To match legal ratio requirements without new equity money, as long-term loans are not liquid in the short term, banks reduce their short-term lending, unless sufficiently covered by collaterals.

As bank guarantees are considered in the ratio calculation as short-term lending, one way to meet the ratio requirements is to reduce this kind of bank assets, making companies with insufficient collaterals reduce their ability to guarantee their operations with suppliers or other creditors (Sudheer & Purnanandam, 2011). This could happen under the 'market for lemons' model (Akerlof, 1995), in the sense that good companies are treated the same as bad companies, in the absence of an objective company rating procedure.

In this situation, companies with insufficient collaterals and with working capital needs funded by banks, face cash cutbacks, as they have to repay short-term credits not renewed as usual, regardless of other considerations as mentioned above for increasing their chances for debt refinancing instead of forcing bankruptcy (Bulow & Shoven, 1978). In this case the agency costs are related to those that the borrower must support due to the principal's (banks) interest in covering its own business risks. The cost to the borrower may even amount to bankruptcy.

Bankruptcy, as an alternative to renegotiation, may lead to inefficient liquidation, as the company's ongoing business may obtain bigger proceeds from the liquidated assets. But as the company (shareholders) cannot pledge future returns, creditors may prefer to take whatever value is available at that present moment rather than letting the company

continue its operations with the prospect of greater but uncertain future proceeds. If there are multiple creditors, renegotiation is even more difficult due to the asymmetric information available to them, and the cost is liquidation for companies that might have continued operations but are obliged to file for bankruptcy.

There is a further threat when the likelihood of terminating funding are high if a company is going through financial troubles: this situation can encourage competitors to show that the company is performing poorly or suffering financial problems as indicated by the Theory of Predation (Bolton & Scharfstein 1990).

Differential agency costs would be those that only appear under specific circumstances, and usually affect the traditional financial contract relationship in each kind of financial system indirectly. Nevertheless, it is in the bank-based financial systems where this kind of differential agency costs are more likely. During the last financial crisis some differential costs have arisen due to their special characteristics.

The Spanish case has been selected to test this assumption. Spain has a bank-based financial system where companies' funding needs are fulfilled mainly through bank credit. The rate of indebtedness in the economy during the crisis period was high enough to make agency problems among shareholders and managers described above suitable for this research. Rate of indebtedness reached a point where insolvency costs would already have been taken into consideration for new additional debt issuance, and therefore this case can be considered as a model for such circumstances.

The model proposed aims to prove that the recent financial crisis has had different effects on countries with the same or similar financial systems (bank-based) due to the existence of differential agency costs directly related to company stakeholders, but with critical effects in company costs and funding capabilities and, therefore, in companies' prospects for growth and survival.

Data used for the model come from the BACH (Bank for the Accounts of Companies Harmonized) database whose characteristics regarding content, reliability and representativeness for research purposes are appropriate for this kind of investigation (Calvo, 2016). It contains economic and financial data for 11 European countries since 2000. The effects of the crisis in terms of leverage, capital structure and investment on the companies in the BACH database countries -also by industries and company size- are easily seen. Therefore, it is possible to analyze the influence of this set of company characteristics in relation with agency problems.

2. SPANISH CASE

Spain has a bank-based financial system. Spanish banks have used international cash availability in the early 21st century to fund their credit expansion, for two main reasons: the reduced interest rates after joining the Eurozone, in comparison with previous years using its own national currency, and the low saving rates in the Spanish economy, while an important increase in international liquidity took place at the same time.

The origin of the Spanish problem may be explained by the accelerated indebtedness of the Spanish economy (companies and families) during those years, taking advantage of the low interest rates but concentrating investment mainly in real estate and construction industries. Following the choice of capital structure related to optimal liquidation policy (Titman, 1984), in a financial system with insolvency laws such as those of Spain, which protect debt covered by real estate collaterals, banks had increased their lending amounts with this kind of collaterals. The volume kept growing as the face value of the guarantees increased owing to the real estate bubble. Fig. 1 shows the difference in the rate of consumer inflation and the inflation related to real estate during the years preceding the financial crisis.

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Fig. 1. Real Estate Inflation vs CPI
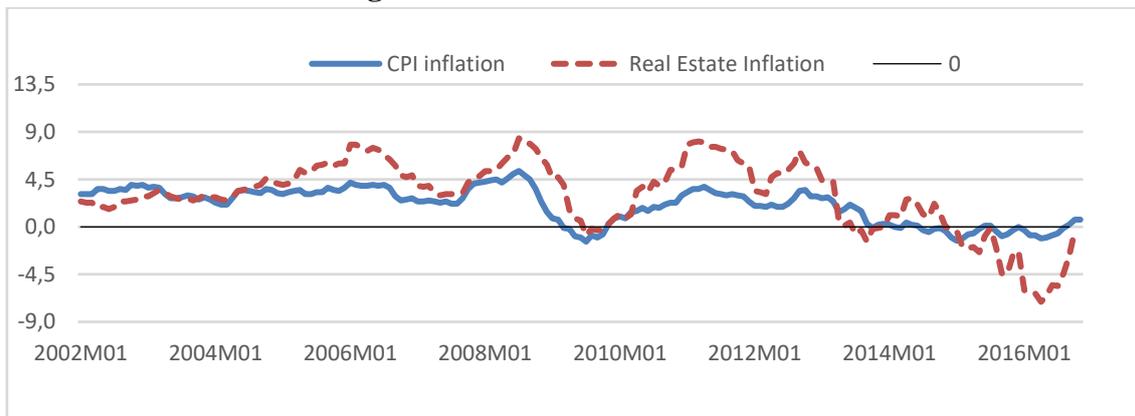
Source: INE (Spanish National Statistics Institute)

Bank and savings banks had increased their number of branches by 17% and the number of employees by 14% during the period 2000 - 2008, as shown in Fig. 2.

Fig. 2: Evolution of number of branches and employees

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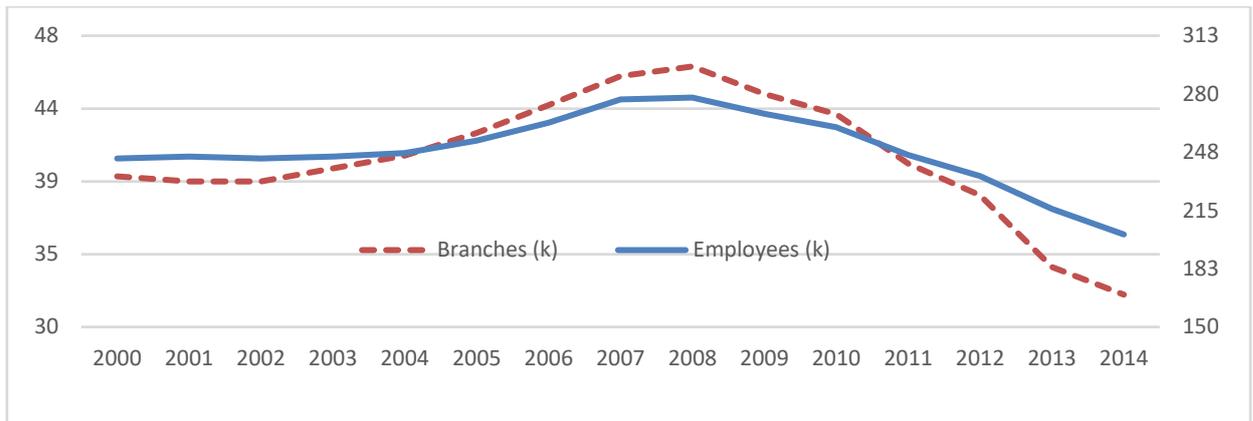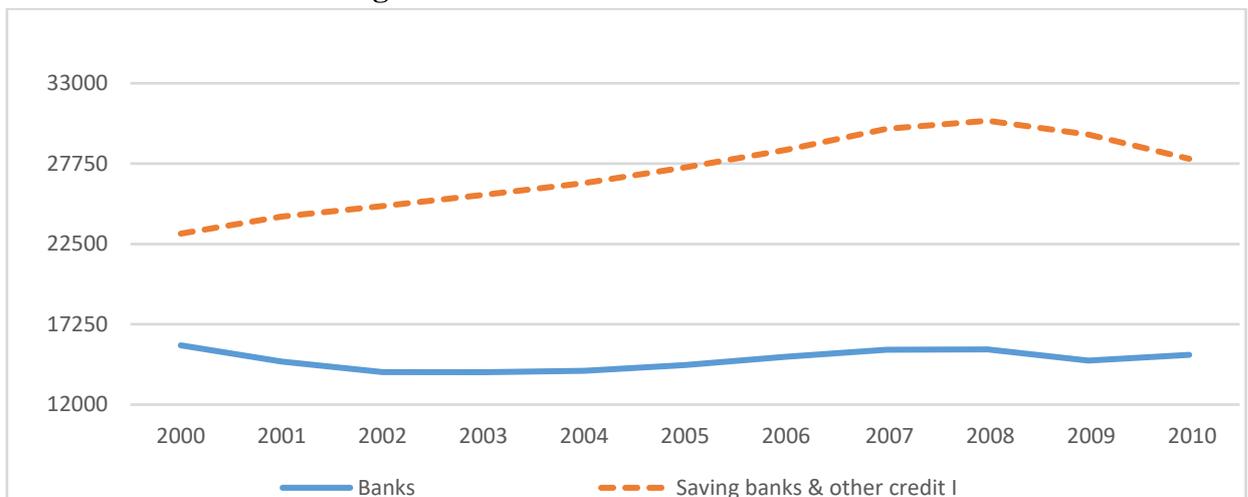

Source: BDE (Spanish Central Bank)

However, the increase in branches was much higher in savings banks (31.8%) than in banks (-1.6%) as shown in Figure 2.1. Therefore, the competition for clients became cutthroat, owing to expectations that economy of scale would have provided a reduction in costs at the same rate as the reduction in profit spread.
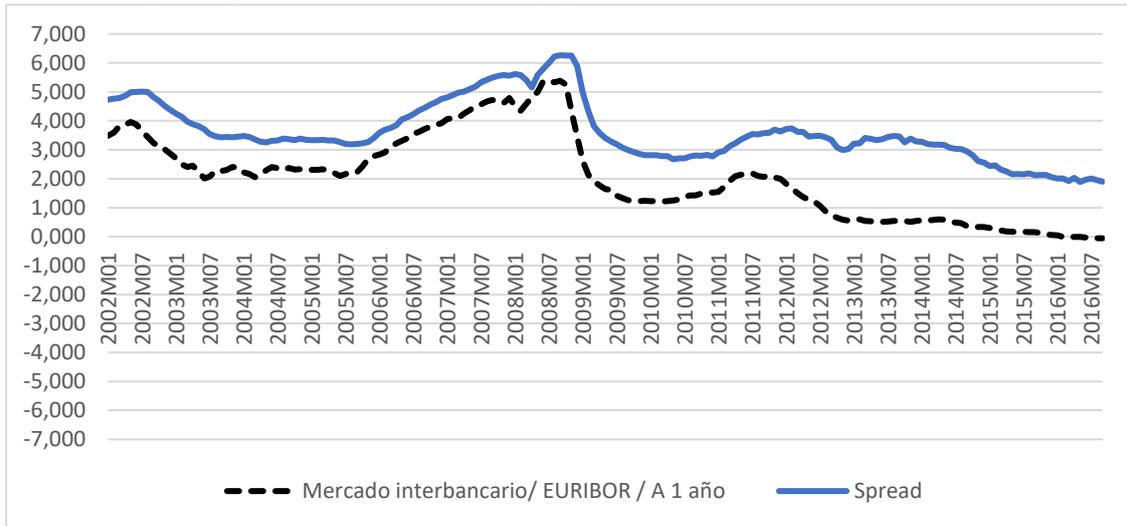
Fig 2.1: Branch number evolution

Source: BDE (Spanish Central Bank)

As shown in Figure 3 below, during the years when liquidity expansion took place, spread in bank loans diminished due to the competence in the bank based financial system, resulting in operational margin reduction.

**Fig. 3: Spread evolution. Mortgage interest rate / EURIBOR 12M.**

Source: BDE (Spanish Central Bank) and INE (Spanish Statistics Institute)

Profitability performance in the banking sector narrowed during the credit expansion years. This, however, was based on revenues that, in the long term, would prove to be unsustainable, when the financial crisis was transmitted to the rest of the economy and massive allowances were needed for the amounts lent to families and businesses on the basis of face collateral values (mainly real estate properties).

Fig. 4: ROE & ROI in the Spanish Bank Industry.
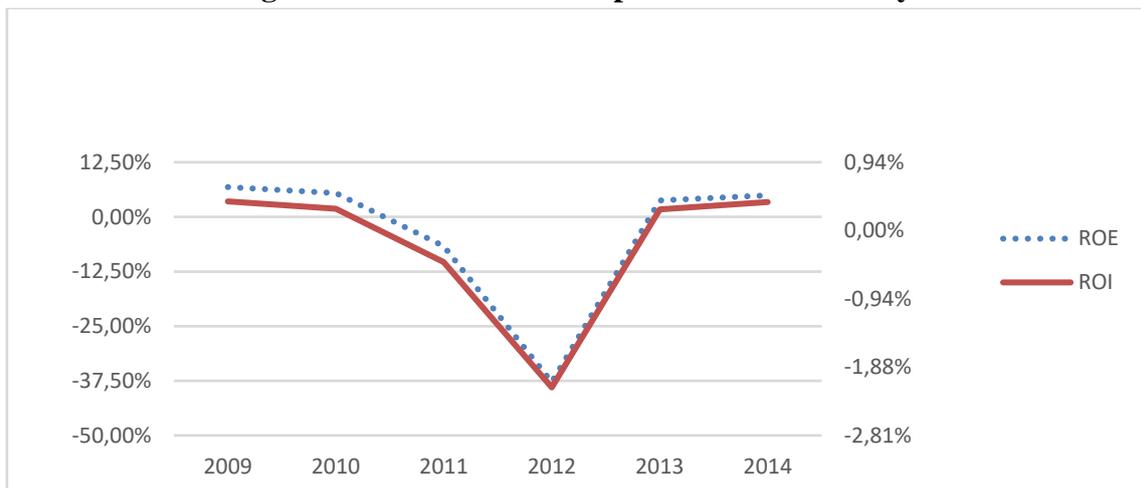
Source: BBVA Research Spanish Bank Situation 26 Feb. 2015 and Spanish Central Bank

As the financial crisis was global, all bank-based economies would have experienced the same kind of problems. The importance of the Spanish case is that it presented certain agency problems that were different, but critical, to the resolution of the crisis, thus proving the existence of such differential agency costs. These agency problems appeared to stem from market share competition in a narrowing market, and the fact that some of

the players were in worse conditions to continue funding their current clients' needs. Although further empirical research would be needed to determine the causes, the result of the process is that savings banks were unable to follow the same funding renegotiation path as banks. This led the way to a higher client mortality rate, the greater their weight of funding from saving banks. Even in cases where funding was shared by banks and saving banks, the predation theory provides an explanation to what might have happened. With a sinking, oversized market, bank managers might have opted to avoid certain funding renegotiations, despite short-term losses, and betting on a higher market share in the future with the expected disappearance of saving banks that were already showing financial distress.

This process took place during 2011- 2012, with dramatic results for the Spanish banking system, as shown in Fig. 4. It was not the same for the rest of European banks (BBVA research) that did not experience an overall drop in ROE and ROI suffered by Spanish banks over those years.

The rate of mortality of Spanish companies rose following this period of adjustments within the Spanish banking system, with different impacts depending on the legal form and size of the companies: those most heavily hit in rate and weight were sole entrepreneurs in comparison to other types of enterprise, as shown in Figure 4.1.

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**Fig. 4.1: Mortality rate in Spain by legal form.**
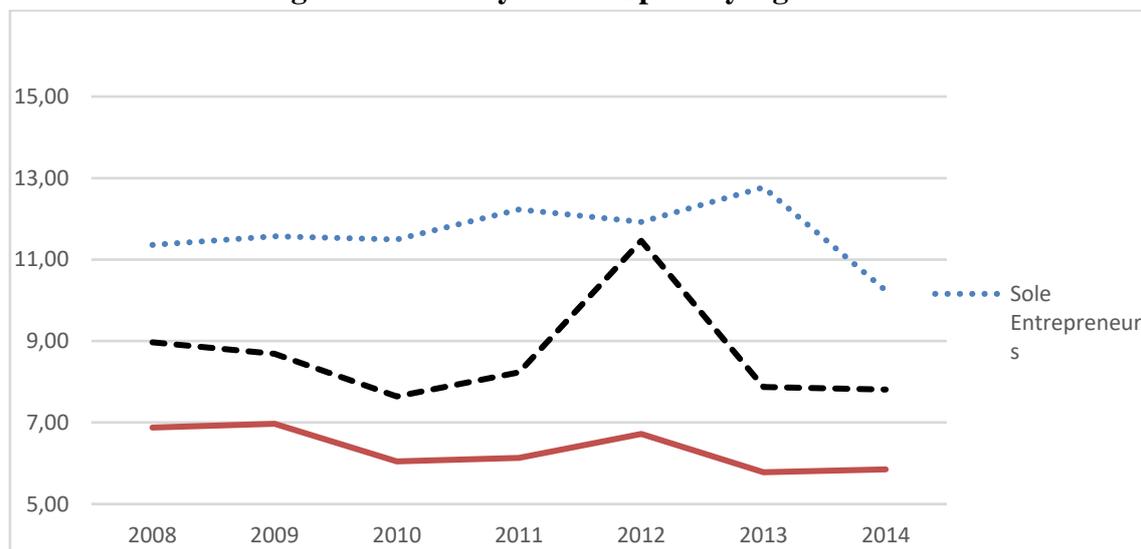
Source: Eurostats

In relation with timing, the rate of mortality for all kinds of enterprises was above the European average among the countries selected from the BACH database throughout the financial crisis. Simultaneously with the banking crisis, this rate increased rapidly only to

decrease sharply at the end of it, dropping below the European mean in 2014 as shown in Figure 4.2 below.

Fig. 4.2: Mortality rate.
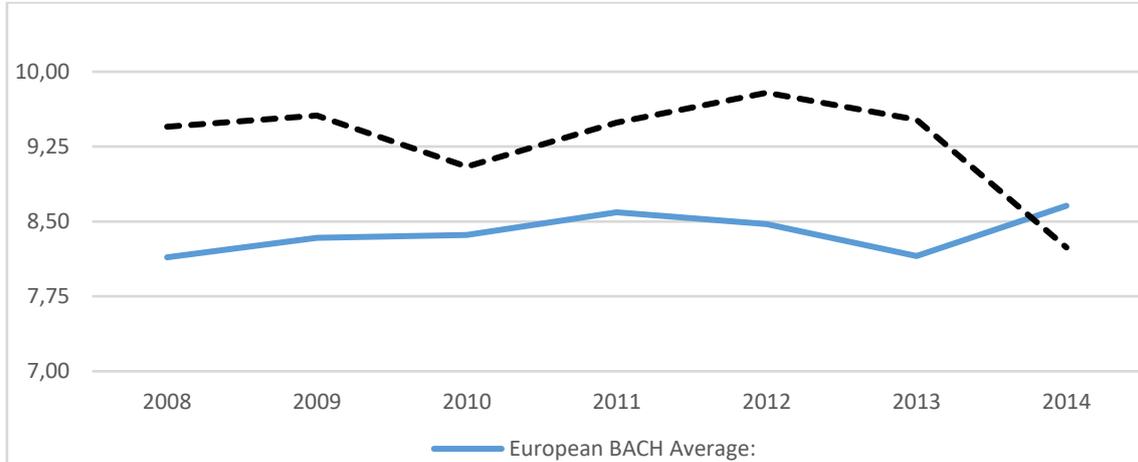
Source: BACH database 2008-2014 (Bank for the Accounts of Companies Harmonized)

Tables 1 and 2 below show that the reduction in number of branches and employees has been more pronounced in Spain than in other bank-based system countries in Europe, which is in line with the banking crisis. A deeper analysis should be made taking into consideration density of population and size of each country, to better compare variations, but this alone shows how sharp this cutback was and, therefore, how traumatic it must have been for the actors involved.

Although all countries have restructured their financing systems, the dependence of the Spanish economy on the bank system is higher than average, and due to additional specific circumstances of the Spanish bank sector, added to the effects of the global financial crisis, the result in aggregate company indebtedness differs from other European countries.

Table 4 shows the increase that took place from 2000 - 2008 (234%) in credits to other resident sectors other than Public Administrations, and the reduction during the period 2008 - 2014 (-26%). Considering that most of the investment of this non-resident sector was made in construction and real estate, the decrease in liquidity for households and companies has been severe. The reduction of their deposits during the period 2008 - 2014 reached -36,5%, as shown in table 4. As Spanish sovereign debt during this period subject to a higher risk premium, bank managers would have invested more comfortably in this kind of assets than in companies with no other collaterals, under no other regulatory restrictions, besides the predation theory related reasons described above. The increase in this kind of investment was 187%, as shown in table 4.

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This bank investment policy resulted in debt level variations during the period 2008 - 2013 that, as shown in Figure 5, were negative in Spain while the average in BACH database countries increased by around 10%.

Fig. 5: Debt Variation 2008-2013, 2008=100.
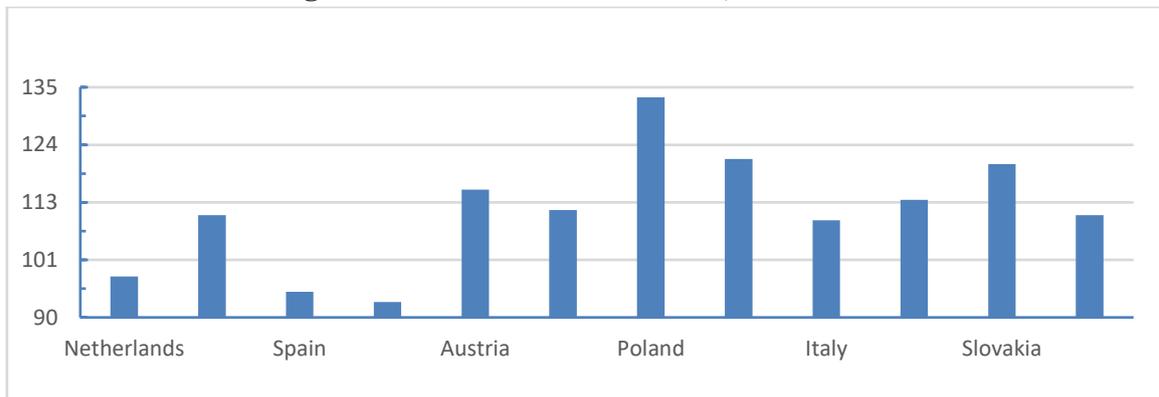
Source: BACH database (Bank for the Accounts of Companies Harmonized)

Not only the sharp reduction in foreign funding that helped credit expansion before the crisis (Table 4), but also the reliance on real estate collaterals, that have some privileges even in cases such as the insolvency of the firm, provide a partial explanation for this debt reduction. Debt reduction, in turn, has effects on net assets investment, as shown below in Figure 6:

Fig. 6: Total Assets Variation 2008-2013, 2008=100.
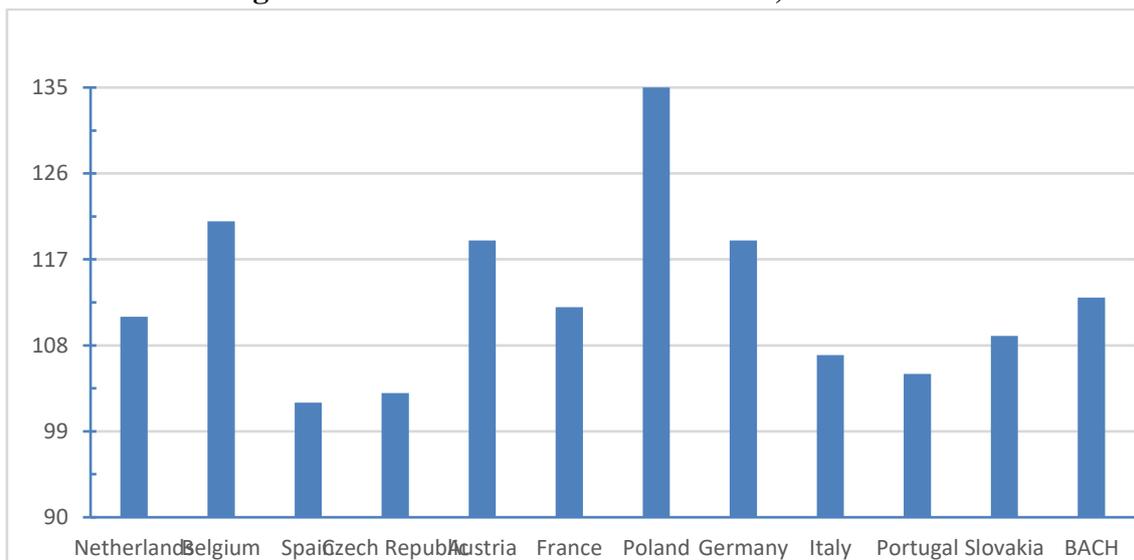
Source: BACH database (Bank for the Accounts of Companies Harmonized)

To reach this level of asset investment, it has been necessary in Spain to reduce the leverage ratio at a higher rate compared with other countries, not only reducing debt but

also increasing equity, as shown in Figure 7 below. This is consistent with the adverse selection problem described above.
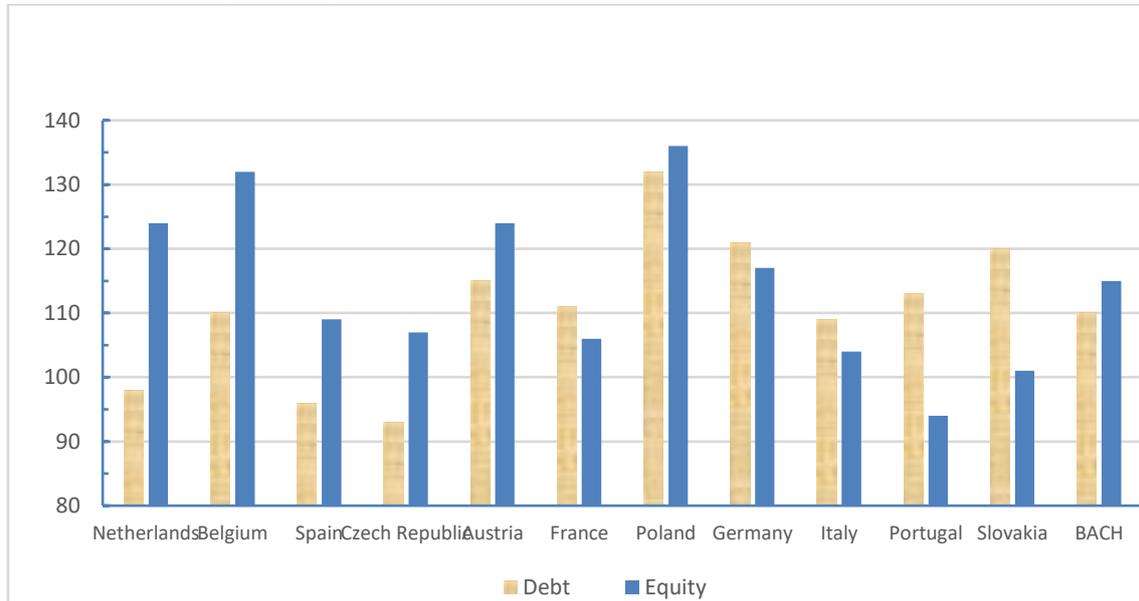
Fig. 7. Capital Structure variation 2008-2013, 2008=100.

Source: BACH database (Bank for the Accounts of Companies Harmonized)

3. CONCLUSION

The agency problems are related to the cost associated to the financing of companies and more precisely, to refinancing. These costs can be attributed as well to the predation benefits that part of the banking sector could achieve if another part were not to remain in business in the future. Savings banks had difficulties to raise additional equity due to their own regulations. In the context of an economic crisis with huge rates of unemployment and firm insolvencies, where allowances for credit losses reduce equity and liquidity rates, with a structure of fixed costs due to branch network expansion, savings banks were vulnerable. The fact is that the restructuring of the banking sector ended with almost the entire savings bank sector converted into banks (Table 3) through mergers and acquisitions, in some cases through previous public intervention. The result of the process was that the final market share is almost the same as before (Martín et al., 2013).

Had the financial system been market-based, the financial crisis would have affected bondholders and shareholders, and the agency costs would have been those described above. The non-cohesive nature of bondholders prevents them from being able to renegotiate their loans, should the firm get into financial distress. They remain in their loan position, while the firm continues operations and pays its interest and principal. At the expiry of bonds, the firm would issue new debt, with maturity according to the

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outcomes of the investment. If the company's track record and forecast development were good enough, the related agency costs would only be those described above, regarding shareholders' and managers' interests.

But if a firm with bank indebtedness needs to renegotiate its short-term loans in a bank-based system undergoing a financial crisis that affects the structure of the sector, the company will face other differential agency costs derived from the situation of the bank pool financing it. Even in the case that the company has a profitable business, with a good payment record, but is in the need to fund working capital, its renegotiating capabilities will not lie in its hands only, unless it has enough collaterals to provide creditors with sufficient liquidity value, in compliance with bank regulation and insolvency legislation.

Moreover, when a firm, for any reason, needs to refinance its debt, endeavoring to match debt maturity to the new cash-flow forecast adapted to the economic crisis scenario, the agency costs described above stemming from agency problems related to maturity (Barnea, et al., 1980) are not the only ones to be faced. Unless the company has enough collaterals to guarantee additional requirements, differential costs would arise again. These differential cost are generated when the bank pool includes some of them likely to take predation profits by not renegotiating debts in firms where they have lower exposure than other competitors, while the main creditors would not be able to compensate the lack of refinancing by the others issuing new debt, unless they have sufficient collaterals. The latter may have done the same in other renegotiation processes, looking to reduce risk in other firms' debt positions.

Debt renegotiations in an economic crisis, therefore, became a new battlefield on which to eliminate competition despite some short-term losses on the home field. These differential costs might arise from the individual interests of banks managers. They would be likely to behave like this, aiming to compensate losses due to a failed renegotiation, with future profits, as the elimination of competitors would provide them with a bigger market share. They would also gain a stronger position to charge better interest spread in the future due to lower competition. The elimination of competitors secures their jobs and better future salary prospects, in a market where increased competition had led to narrow margins.

All these interests would collide with the firm's interest in obtaining funding and affect the firm no matter its actual insolvency risk (market for lemons) unless it had additional collaterals. These differential agency costs are born by the managers and shareholders of the firm, sometimes even with a forced insolvency situation. Again, contractual incompleteness (Hart & Moore, 1989, 1994) is crucial, as firm managers and shareholders are unable to verify some interest variables in the initial debt contracting, such as financial creditors' actual capability to renegotiate or renew the short-term debt at its maturity. This highlights the need to improve contract incompleteness with regard to this issue, through

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initial contracts with long maturity debt, and financing long life assets in order to avoid or minimize these additional differential agency costs based on bankers' decision rights at the time of renegotiation.

Designing specific regulations in bank-based financial system countries, pursuing matched maturity for debt and investment, would help to avoid this kind of differential costs. This was identified in recent research (Calvo, 2020) where it was found that the level of bank debt and enterprise mortality were not necessarily positively correlated. It showed that the higher or lower enterprise mortality depended on other factors as the state policies. In the case of Poland, policies were applied to support the financing of economically profitable enterprises. In the case of Italy, they simply sought to ensure the survival of as many enterprises as possible, no matter their level of profitability , in contrast with Spain that mortality rate was mainly dependent on the liquidity available from their own resources.

Further research would be desirable to address whether these differential costs affect firms of all sizes, industries or ownership structure in the same way, and also whether it is possible to minimize costs due to different insolvency or banking laws.

Another possible research line is the funding and investment policy for banks in Spain. Analyzing whether Central European Bank funding should have produced better macroeconomic results, according to its maturity; had Spanish banks applied them to fund investments of other resident and non-resident sectors, instead of investing in state bonds as was the case. The target would be to avoid the cost described above, and to find out whether any kind of regulation could be enforced to achieve this goal.

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APPENDIX

Table 1 Number of bank branches per country.

Number of branches

Countries	2010	2011	2012	2013	2014	14 vs 10
France	38.784	38.433	38.359	37.862	37.623	-3,0%
Germany	39.494	37.853	36.239	36.155	35.284	-10,7%
Spain	43.164	40.103	38.142	33.713	31.999	-25,9%
Italy	33.631	33.561	32.872	31.759	30.723	-8,6%
Poland	13.518	14.592	15.170	15.479	14.117	4,4%
United Kingdom	11.756	11.817	11.514	11.347	11.347	-3,5%
Portugal	6.587	6.501	6.259	5.987	5.938	-9,9%
Romania	6.170	6.046	5.723	5.492	5.304	-14,0%
Austria	4.171	4.431	4.460	4.352	4.247	1,8%
Bulgaria	5.849	3.777	3.833	3.770	3.728	-36,3%
Belgium	3.973	3.881	3.819	3.738	3.607	-9,2%
Hungary	3.493	3.449	3.330	3.247	3.112	-10,9%
Greece	4.005	3.847	3.629	3.109	2.688	-32,9%

Differential agency cost related to the kind of financial system in each European country during the 2008 - 2014 financial crisis: the Spanish case

Number of branches

Countries	2010	2011	2012	2013	2014	14 vs 10
Czech Republic	1.990	2.049	2.098	2.135	2.124	6,7%
Sweden	1.937	1.857	1.878	1.974	2.027	4,6%
Netherlands	2.864	2.653	2.466	2.165	1.854	-35,3%
Slovakia	1.224	1.034	1.061	1.256	1.277	4,3%
Finland	1.475	1.446	1.404	1.300	1.188	-19,5%
Denmark	1.654	1.557	1.405	1.256	1.186	-28,3%
Ireland	1.162	1.099	1.065	1.024	994	-14,5%
Cyprus	911	902	850	682	615	-32,5%
Lithuania	951	676	689	656	610	-35,9%
Slovenia	694	687	695	630	592	-14,7%
Latvia	587	549	400	343	319	-45,7%
Luxemburg	226	227	203	213	217	-4,0%
Estonia	202	178	163	140	122	-39,6%
Malta	113	107	107	110	110	-2,7%
	232.595	225.323	219.845	211.907	204.966	**-11,9%**

Source: ECB UK 2014 estimated. [Nota – el decimal con punto, millar con coma].

Table 2: Number of employees by country

Countries	2010	2011	2012	2013	2014	14 vs 10
Germany	667.900	663.800	659.100	655.600	647.300	-3,1%
France	412.933	426.336	421.037	416.262	411.012	-0,5%
United Kingdom	455.594	453.971	439.873	421.508	402.561	-11,6%
Italy	321.081	316.360	309.478	306.607	299.684	-6,7%
Spain	261.389	245.956	234.292	215.953	201.643	-22,9%
Poland	184.858	186.331	181.991	179.385	175.972	-4,8%

Countries	2010	2011	2012	2013	2014	14 vs 10
Netherlands	108.000	105.408	103.447	96.423	94.000	-13,0%
Austria	78.098	78.085	77.424	75.980	74.110	-5,1%
Rumania	66.753	65.772	61.769	58.612	57.732	-13,5%
Belgium	61.861	61.197	60.068	58.237	56.611	-8,5%
Sweden	49.799	49.784	52.186	53.594	54.644	9,7%
Portugal	61.504	59.911	57.348	55.820	53.888	-12,4%
Greece	63.408	59.958	57.006	51.242	45.654	-28,0%
Czech Republic	38.359	39.461	40.147	39.742	40.334	5,1%
Hungary	41.526	41.305	41.103	40.642	39.456	-5,0%
Denmark	47.739	47.224	44.900	36.367	37.201	-22,1%
Bulgaria	34.133	33.897	33.527	32.756	31.715	-7,1%
Ireland	36.438	35.612	31.773	29.832	28.871	-20,8%
Luxemburg	26.255	26.696	26.534	26.237	25.816	-1,7%
Finland	23.353	23.188	22.510	22.402	22.019	-5,7%
Slovakia	18.234	18.452	18.655	18.540	18.656	2,3%
Cyprus	12.643	12.825	12.853	11.142	10.956	-13,3%
Slovenia	11.995	11.813	11.498	11.218	10.682	-10,9%
Latvia	11.534	11.188	10.565	10.029	9.374	-18,7%
Lithuania	9.993	8.707	8.671	8.392	8.952	-10,4%
Estonia	5.497	5.516	5.563	4.861	4.860	-11,6%
Malta	3.914	4.026	4.007	4.197	4.427	13,1%
	3.116.801	3.094.790	3.029.337	2.943.593	2.870.144	**-7,9%**

Source: ECB

Table 3: Spanish Bank Restructuration

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Differential agency cost related to the kind of financial system in each European country during the 2008 - 2014 financial crisis: the Spanish case

Spanish bank sector restructuration (B: Bank, SB: Saving Bank)						
Before restructuring			After restructuring			
1	B	BBVA	1		BBVA	B
2	SB	Caixa Catalunya				
3	SB	Caixa Tarragona				
4	SB	Caixa Manresa				
5	SB	Caixa Sabadell				
6	SB	Caixa Terrassa				
7	SB	Caixa Manlleu				
8	SB	Unicaja	2		UNICAJA BANCO	B
9	SB	Caja Jaén				
10	SB	Caja España				
11	SB	Caja Duero				
12	SB	Caixa Galicia	3		Abanca	B
13	SB	Caixanova				
14	SB	Cajastur	4		Liberbank	B
15	SB	Caja Castilla- La MANCHA				
16	SB	Caja Extremadura				
17	SB	Caja Cantabria				
18	SB	CAI	5		Banco Ibercaja	B
19	SB	Caja Círculo de Burgos				
20	SB	Caja Badajoz				
21	SB	Ibercaja				
22	SB	Caixa Girona	6		Caixabank	B
23	SB	CajaSol				
24	SB	Caja Guadalajara				
25	SB	La Caixa				
26	SB	Caja Navarra				
27	SB	Caja Burgos				
28	SB	Banco de Valencia				
29	SB	Caja Canarias				
30	SB	Caja Madrid	7		Bankia	B
31	SB	Bancaja				

Spanish bank sector restructuration (B: Bank, SB: Saving Bank)					
Before restructuring			After restructuring		
32	SB	La Caja de Canarias			
33	SB	Caixa Laietana			
34	SB	Caja de Avila			
35	SB	Caja de Segovia			
36	SB	Caja Rioja			
37	B	Banco de Sabadell	8	Banco de Sabadell	B
38	SB	CAM			
39	B	Banco Guipuzcoano			
40	B	Banco Gallego			
41	SB	CajaSur	9	Banco Bilbao Vizcaya Kutxa	B
42	SB	Kutxa			
43	SB	BBK			
44	SB	Vital Kutxa			
45	SB	Caja Murcia	10	Banco Mare Nostrum	B
46	SB	Caixa Penedès			
47	SB	Caja Granada			
48	SB	Caja Sa Nostra			
49	SB	Caja Ontinyent	11	Caja Ontinyent	SB
50	SB	Caja Pollensa	12	Caja Pollensa	SB
51	B	Bankinter	13	Bankinter	B
52	B	Banco Popular	14	Banco Popular	B
53	B	Banco Pastor			
54	B	Banco Santander	15	Santander	B
55	B	Banesto			
56	B	Barclays	16	Barclays	B
57	B	Deutsche Bank	17	Deutsche Bank	B
58	B	Banca March	18	Banca March	B
59	B	Banco Pueyo	19	Banco Pueyo	B

Source: (Serrano, 2013)

Table 4: **Aggregated Spanish Bank system balance sheet 2008-2014**

Differential agency cost related to the kind of financial system in each European country during the 2008 - 2014 financial crisis: the Spanish case

€ Trill.								% Variation	
Asset	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**00-08**	**08-14**
Total credit	2.176	2.138	2.153	2.106	1.951	1.716	1.650	217%	-24%
Credit to Public Administration	53	65	79	90	114	87	101	69%	91%
Credit to Other Resident Sector	1.870	1.837	1.844	1.783	1.605	1.448	1.380	234%	-26%
Credit to non-Residents	253	237	230	234	232	180	169	164%	-33%
Fixed income securities and Equity securities	498	599	564	656	766	773	754	132%	51%
Fixed income securities	326	415	384	406	509	493	492	135%	51%
From Fixed income securities: Sovereign debt	100	155	165	198	247	264	288	6%	188%
Equity Securities	172	184	180	251	258	280	262	128%	52%
Interbank assets	263	247	234	251	279	211	155	81%	-41%
Rest of Assets (net Interbank Assets)	287	254	301	387	426	326	354	230%	23%
Total Asset	**3.224**	**3.238**	**3.252**	**3.400**	**3.423**	**3.026**	**2.913**	**184%**	**-10%**

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Aggregated Spanish Bank system balance sheet 2008-2014

€ Trill.								**%** **Variation**	
Equity & Liabilities									
Clients Deposits	2.013	2.015	2.031	1.934	1.725	1.684	1.686	169%	-16%
Public Administration deposits	76	82	79	70	69	63	76	263%	0%
Total Other Resident Sector deposits	1.433	1.427	1.440	1.373	1.317	1.314	1.289	192%	-10%
Nonresidents Deposits	505	507	511	492	339	306	320	113%	-37%
Interbank liabilities	315	305	270	373	573	381	311	95%	-1%
Memorandum Item: net Interbank	52	58	36	122	294	171	157	215%	202%
Bonds and other marketable debt securities	395	434	433	435	394	297	249	625%	-37%
Rest of liabilities	320	294	340	439	535	430	435	253%	36%
Equity	181	190	178	220	195	233	231	134%	28%
Memorandum Item: CEB loans	64	76	67	119	313	202	141	356%	120%
Total Equity & Liabilities	**3.224**	**3.238**	**3.252**	**3.400**	**3.423**	**3.026**	**2.913**	**184%**	**-10%**

Source: BDE (Spanish central Bank) & BBVA Research.

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