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Corporate Governance and Financial Distress of European Commercial Banks

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Abstract
This study examines the effects of corporate governance on the financial distress of commercial banks in the European Union during the period of 2005 to 2011.The theoretical framework of this relationship is proposed by the agency theory, testing the effect characteristics of the board of Directors, concentration of ownership , investor protection and the five rating indicators of CAMEL (Capital Adequacy, Asset Quality, Management, Earnings, and Liquidity) from the random effects binary logistic regression model. Our results highlight that critical variable of governance are differentiated according to the period (crisis or stability) to explain the distress. The division of the functions of CEO and chairman of the board leads to a more effective board, they're to be given larger supervision ability. The bank's board of directors should focus more on assessing and appropriately managing risk instead of maximizing short-term profitability ratios. Paradoxically, the high level of investor protection has helped to increase financial distress.

Keywords: Corporate governance, financial distress, bank, board, investor protection.

1. Introduction

The banking crisis of 2007 and 2008 stressed that the link between bank governance and financial distress is important, however, only the internal monitoring mechanisms could prevent excessive risk taking. Corporate governance weaknesses will, largely, result in the systemic fragility of banks and financial instability. The objective of this study is to demonstrate a statistical

relationship between governance mechanisms and financial distress in the banking sector. To that end, this research aims to contribute to the literature on corporate governance in order to help institutional and individual investors to identify and develop a dynamic management approach by investing in banks that promote good corporate governance practices, banks that want to make changes to their corporate governance practices and know the important variables to reduce the likelihood of financial distress, legislators and regulators to identify and focus on corporate governance mechanisms that have an impact on the financial distress of banks.

Relatively few studies (Donoher, 2004; Lajili and Zeghal, 2010; Platt and Platt, 2012) examined the relation between the event of bankruptcy filing and the governance structure of firms. Most of these studies focus on the influence of accounting variables such as capital ratios, non-performing loans, and profit with some success (Schaeck, 2008; Cole and White, 2012). Nevertheless, little research to date has empirically tested the influence corporate governance characteristics, such as ownership structure; have on a bank's probability of financial distress. The global financial turmoil necessitates an intensification of the debate on the corporate governance of banks and through the development of regulations.

The weaknesses in corporate governance within companies and banks were cited as the cause of a number of corporate bankruptcies in the last crisis. The 2009 report by the Organisation for Economic Co-operation and Development (OECD) stressed that the failures and weaknesses in corporate governance of certain financial institutions are largely regarded as a major cause of the financial crisis. A lack of confidence in the global financial markets is attributed to shortcomings in corporate governance practices, and in particular the banks (Kirkpatrick, 2009). These failures have led to conflicts of interest between shareholders and managers of companies and between shareholders and the board. Business leaders may pursue short-term gains at the expense of shareholder wealth (Mallin, 2008). In the European Union (EU), the European Commission concluded that the non-binding nature of a substantial part of the framework of corporate governance, based essentially on voluntary codes of conduct, does not facilitate the implementation of governance practices in the institutions. Remuneration policies and practices adopted by some banks are regarded as an example of failure of corporate governance contributing to the crisis (Bebchuk et al., 2010). In other words, do the governance arrangements and mechanisms influence the financial distress of banks? Can we highlight a significant statistical relationship between the banks' governance characteristics and the occurrence of financial distress?

Therefore, illustrating our subject through the study of the banking sector of the European Union, our sample should lead to interesting empirical findings on the governance of banks and financial distress. The results of this study contribute information to the researchers, investors, regulators and managers who wish to study or develop good corporate governance practices in the banking sector. To this end, the analysis developed in this study makes a contribution by examining the role of the ownership structure, board of directors and investor protection on the probability of financial distress. The model developed is to combine a series of factors to explain financial distress from the random effects binary logistic regression model. Our results show that factors such as the size of the bank is a key determinant of financial distress, the investors' protection and financial distress are positively correlated, the accumulation of CEO and board chairman roles promotes the bank rigidity and limits its organizational capacity to adapt to crises and the economic growth reduces the likelihood of financial distress of banks. We will organize our discussion into four parts. In the first, we will present the analysis of current research on the relationship between bank

governance and financial distress and develop our hypotheses. The second part will deal with the data and methodology. The third part will present our results. Finally, in a last part we will conclude.

2. Literature Review and Hypotheses

Agency theory is an analytical expression of the contractual relationship exists between the two parties whenever one party (the principal) delegates decision making authority and responsibility to another person (the agent) (Ross 1973; Jensen and Meckling 1976). The agency problem is now part of the vocabulary used in the examination of the ownership, management and operation of an organization and the possible appropriation of resources by those who control society. The cornerstone of the agency theory is the assumption that the interests of the principal and the agent are divergent; it opened a result of research, particularly concerning the separation of ownership and control in companies. According to the agency theory, corporate governance mechanisms allow, to some extent, to align the interests of executives with those of shareholders which leads to business performance.

Corporate governance following the considered sector does not necessarily have the same efficiency to mitigate agency conflicts. First, regulators play a special role in the banking sector, which can alter the incentive to monitor management. Furthermore, regulatory supervision is seen as an active force, which would lead to a limitation of the same supervision by the board or block holders. However, regulators could act in their own interest and intervene in the operations of banks, causing more serious governance problems. Second, and to the extent that depositors are also stakeholders of the bank, the objective of banking companies is not only to maximize shareholder wealth, but also to protect the interests of stakeholders, that is, depositors in particular. Finally, banks are preconceived to be exceedingly complex and opaque which results in information asymmetries that amplify agency problems (Morgan, 2002). The relationship between corporate governance mechanisms and performance might vary due to the regulatory environment and unique features of the banking (Ungureanu, 2008; Mülbert, 2010). Some authors (Gilson, 1990; Daily and Dalton, 1994b; Gales and Kesner, 1994; Donoher, 2004; Fich and Slezak, 2008; Lajili and Zeghal, 2010; Platt and Platt, 2012) have studied the link between corporate governance and financial distress. The results of their study confirm that corporate governance variables significantly improve the predictive power of prediction models of bankruptcy usually used. The numerous bankruptcy cases thus show a correlation with deficiencies in corporate governance (Magnier, 2010). According to (Lu and Chang, 2009), financial variables and governance better predict the financial difficulties than the macroeconomic variables. Lu and Chang conducted a study on the relationship between financial distress, corporate performance and corporate governance on a sample of companies listed on the Taiwan Stock Exchange. They found that the ability of a company to get out of financial distress depends on its corporate governance practices. They argued that good corporate governance practices can help management to provide better financial information that will help when driving against financial distress.

2. 1. The Concentration of Ownership

In such a situation, the majority shareholders, holder of the largest fraction of the company, provide a role of active monitors to limit opportunism of the leaders. The problem of agency concerns the majority shareholders but also minority shareholders and other stakeholders, including

creditors. This issue is the subject of academic research in agency theory. Conflicts of interest between majority and minority shareholders exist when there is concentration of ownership. This finding is explained, in part, by the attitude of the majority shareholders who tend to generate private benefits exercised through their control over the companies. This kind of practice is not possible for minority shareholders. In larger companies, many shareholders have only a limited amount of shares, which gives them little power in the company's control. Only leaders designate the beneficiaries and the company's value. Consequently, the company's profits will be allocated to external shareholders not holding a company's management control power. Moreover, when the owners want to diversify their assets in various businesses, they invest little in control activities of a business.

Diffused shareholders do not have the necessary motivation to influence a vote, they only affect the outcome slightly (Brickley et al., 1988). Thus, in companies with dispersed shareholding, shareholders are hardly likely to influence the decisions of the leaders and control them (Tosi and Gomez-kai, 1989). There is no force to keep managers under control because the dispersed shareholders evaluate the company, basing on the advertised benefits, which may be subject to the manipulation of leaders (DeAngelo, 1988). Large shareholders can monitor company performance and management behavior in order to protect their investment (Alchain and Demetz, 1972). In companies with concentrated ownership, shareholders are likely to deploy sufficient power to protect their interests and monitor business performance. These shareholders use their voting right in the direction of desired changes much more easily than shareholders of a company with dispersed shareholding. For banking systems whose ownership is diffused, the aversion of leaders compensates the incitement to excessive risk-taking resulting from moral hazard (Saunders et al., 1990; Anderson and Fraser, 2000). The results tend to confirm this hypothesis. So, can we uphold that the more the ownership is concentrated, the greater the incentive to make risky decisions is, while the more the property is diffused, the greater the willingness to engage in agency costs and avoid high risk decisions is. Therefore, the hypothesis tested and developed, will be:

H1: A positive relationship exists between the concentration of ownership and the likelihood of financial distress in commercial banks.

2.2. The Board of Directors

The Board of Directors plays a crucial role in corporate governance because it is the main actor involved in the choice of business model, risk profile, and quality management teams. Thus, we will develop the assumptions of an impact related to the size of the Board of Directors and the accumulated functions of CEO on financial distress.

2.2.1. The Size of the Board of Directors

According to agency theory, the main point in favor of a greater board of directors is that the growth in the number of staff to control the behaviour of the CEO. A small board of directors will be easier to control by the officer on the basis of social cohesion, while a large board will not remain easily influenced or dominated by the CEO. This latter will have the ability to control a small board by various methods. However; it is less likely that a wider board is subject to such malfeasance on the part of management. Thus, the larger the board is, the greater the reduction of opportunistic behaviors of leaders is empirically observed (Changanti et al., 1985), and a small size

of the board of directors is significantly correlated with the company's bankruptcy. In particular, in their sample, they find that the healthy companies tend to be administered by a more influencial board than that of bankrupt companies. Thus, the independence of the board facing the direction promotes better performance. (Gales and Kesner, 1994) find that the reduction in the size of the board is assigned to companies facing bankruptcy. Although the above research focuses on the positive impact of the wide size of the board on the value of the business, some research suggests opposite results. Although most of these studies were performed on samples of non-financial companies, as suggested in previous research, we should note no difference between the effect of agency costs on banks and non-financial companies. So, can we consider that the size of the board has the same effect on the performance of banks. Therefore, the assumption will be the following:

H2a: the size of the board of directors and the likelihood of financial difficulties are negatively associated with the commercial banks.

2.2.2. The Combination of Functions of Chief Executive Officer (CEO)

The disposition for a separate CEO and chairman is founded onagency theory concerning the potential for a CEO influence of the board. As famed by Finkelstein and D'aveni (1994) reasoning to agency theory, CEO duality leads to an expansion in CEO dominion and thus promotes his entrenchment by reducing board monitoring expertise. (Rechner and Dalton, 1991) find that combining the positions in companies leads to lower profitability. Daily and Dalton (1994b) attribute the responsibility of one and only one person acting as CEO and Chairman of the Board, the risk of bankruptcy. Following the same logic, (Dechow et al., 1996) find that companies subject to accounting manipulation profits are headed by a CEO who is also chairman of the board. These studies suggest that both roles endorsed by a single person leads to dominating the process of internal governance and replacing the counterweight systems, harmful situation at the effectiveness of supervision of the board. As for (Elloumi and Gueyie, 2001), they estimate that the incidence of accumulated functions has no impact on businesse in financial difficulties or healthy companies. However, the separation of the positions of CEO and Chairman of the Board will have a significant result in the resolution of agency problems. The combination of functions of CEO and Chairman of the Board makes it more difficult to assess managers and increases the agency costs and risks of rooting (Fama and Jensen, 1983; Lipton and Lorsch, 1992; Jensen, 1993). This is, in part, due to the role assigned to the Board appointed body in charge of monitoring the actions of managers, thus implementing the OECD (2004) measures, recommending the separation of the two functions. In addition, the CEO of accumulated functions unifies the process of decision making (Anderson and Anthony, 1986; Brickley, Coles, and Jarrell, 1997), but significantly increases the company's rigidity and limits its sense of adaptation and organization, and therefore, its ability to respond to crises (Daily and Dalton, 1994b). Moreover, from the perspective of the agency, combining the functions increases the risks, especially those of a bankruptcy (Eisenhardt, 1989). Therefore, the hypothesis being tested is as follows:

H2b: There is a positive relationship between the accumulation of functions and financial distress banks.

2.3. Investor Protection

The agency theory views that company is specific contracts drive the demand for better governance and monitoring structures and that these encouragements hold around the world, ignoring differences in country-level legal official regimes. The empirical literature has shown that market-based financial systems are more likely to represent high quality institutional environments with strong investor protection and good enforceability of contracts (La Porta et al., 1998). However, the Enron scandal and its bankruptcy raises serious doubts about the investor protection in the United States and therefore the results of (La Porta et al., 1998; La Porta et al., 1999; La Porta et al., 2000; La Porta et al., 2002). (Caprio et al., 2007) determine that the weak protection of investors created a need for dominant owner, strengthening the legal protection of minority shareholders being associated with the value of banks. The regulation that protects investors, aligning the interests of executives with those of shareholders, has a positive impact on operational performance and enterprise value (La Porta et al., 2002; Klapper and love, 2004). To this end, managers operating in countries with strengthened legislation for the protection of investors are less likely to use resources for their own benefit and tend to invest in the interests of shareholders (Wurgler, 2000; Shleifer and Wolfenzon 2002; Bekaert et al., 2010). The regulation of investor protection can be bypassed in the banking sector in loan defaults. The protection of high investors on a national level lessens bank charges through an easier an less expensive monitoring. Countries with a better level of protection of investors tend to have a larger number of listed firms (La Porta et al., 1997; Kumar et al., 1999). The regulation provides transparency of business through the production of detailed information on their activities, annual reports and other publications (La Porta et al., 2000; Loderer and Waelchli, 2010). Thus, we are able to admit the following hypothesis:

H3: The level of investor protection decreases the probability of the bank's financial distress.

2.4. The Bank Size

Large banks, often adopting riskier strategies than their smaller counterparts, are perceived as *"too big to fail"* (Boyd and Runkle, 1993; Boyd and Gertler, 1994; Gropp et al., 2010). Therefore, the findings on the relationship between the size of the bank and failure probability remain mixed. (De Nicolo, 2001; De Nicolo et al., 2004) determine how default probabilities affect the big banks. The existence of a positive relationship between size and profitability is based on the existence of strong economies of scale. However, small banks have a potential for large scale gains (Berger and Humphrey, 1994). (Barros et al., 2007) find that banks with a large and diversified size have a permeability affecting them in time of crises. This suggests that specialized banks, with small size, reduce asymmetric information problems associated with loans. However, above a certain threshold, the bank's size can be a cause of distress, thus the following hypothesis:

H4: There is a positive relationship between the size of the bank and the likelihood of financial distress.

3. Sample, Methodology and Variables

Within this second part, we will treat successively: sample selection, model specification, defining the dependent variable and the independent ones and descriptive statistics.

3.1. Sample Selection

The study period is seven years: from 2005 to 2011. We have chosen this period because the mandatory adoption of International Financial Reporting International Standards (IFRS) for banks in the European Union (EU). The filtered sample includes 147 banks spread throughout 18 countries of the European Union. The model is based on financial variables of governance, and certain characteristics related to these countries. The governance and financial data were collected from Thomson ONE Banker databases, Osiris and BankScope. We combine them with the second source of data on bank distress based on detailed research concerning, specifically, the individual banks in the NewsPlus database. The elements within macroeconomic variables were collected from the International Financial Statistics published by the International Monetary Fund. Finally, we have recovered the index of investor protection in the database developed by the World Bank for 2006. The financial data concerning the banks are derived from the consolidated financial statements. Our *panel is balanced***.** It should, therefore, normally lead to 1029 observations for 147 active banks, subject to a study of seven years, arranging data on the property with the consolidated financial statements. The selection of banks in the sample is based on the accessibility, of data for the required period.

3.2. Model Specification

3.2.1. Methods

Since our dependent variable, financial distress, is dichotomous in nature, we employed a binary logistic regression model. The random effects model is preferred for several reasons; the estimat on of fixed effects requires significant changes in variables to produce efficient estimates (Zhou, 2001). Many independent variables are constant in time; however, with a fixed-effect model, these variables will be dropped, making the applicability of this procedure inappropriate for analysis. Our sample is heterogeneous, it includes the banks of the eighteen countries of the European Union, the random effects model allows the use of panel data structure more effectively and estimating the specific effects of individual variables (Greene, 1993), taking into account unobserved heterogeneity among individuals in their regression coefficients using a probability distribution (Greene, 2003).

3.2.2. Logistic Regression Model

The distress indicator P_{ijt} is modeled as a function of three variables groups: governance variables, CAMEL variables and control variables. Thus, the logistic regression model with random effects is part of equation (1) as follows:

$$P_{ijt} = f\,[GOUEX_{ijt,}\ CAMEL_{ijt,}\ CON\ (x_{it,}\ y_{jt})] + \boldsymbol{\varepsilon}_{ijt} \quad (1)$$

With P_{ijt} the dependent binary variable where $P_{ijt} = 1$ if the bank i in the country j at time t is in financial distress, and 0 otherwise;

The vector $GOUEX_{ijt}$ measures the variables of governance:

(BLOCK $_{ijt,}$ BOARD $_{ijt,}$ DUALITY $_{ijt,}$ NOMCOM $_{ijt,}$ CGCOM $_{ijt}$ and Remcom $_{ijt}$).

The $CAMEL_{ijt}$ vector measures the CAMEL variables:

(MGMT $_{ijt,}$ ASSET $_{ijt,}$ LIQ $_{ijt,}$ ROA $_{ijt}$ and CAP $_{ijt}$).

The vector (CON) is composed of a set of control variables with the variable ($x_{it)}$ measuring the bank size (SIZE $_{it}$) which has a specific characteristic. Concerning ($yy_{jt),}$ it is the vector of variables measuring the variables of the country in which the bank operates, the variables referring to the growth of gross domestic product ($GROWTH_{jt}$**)** and the level of investor protection (PROTECTION $_{jt}$).

3.3. Financial Distress Variable

In our empirical study, we adopt the criteria put forward by (Gonzalez-Hermosillo, 1999; Bongini et al., 2001; Arena, 2008; Mannasoo and Mayes 2009; Sahut Mili, 2011; Betz et al., 2012). We use a binary measure of financial distress, which takes the value 1 if it meets one of the conditions listed below and 0 in the opposite case.

- The operation of the bank is temporarily suspended

- The bank is recapitalized or receives liquidity support from the monetary authority

- The bank is eventually merged with another bank because of financial difficulties (that is to say mergers in distress)

- The bank is closed by the government

- The ratio of non-performing loans to total loans for two consecutive years belongs to the fourth quartile of this report in the empirical distribution of the sample.

The banks that belong to non-aforementioned categories are considered as banks without difficulties.

3.4. Corporate Governance Variables

The focus will be put on studying the fault prediction potential of specific corporate governance variables to banks such as ownership structure, accumulated functions of director and Chairman of the Board, nomination committee, remuneration committee, governance committee, size of board and investor protection

Ownership Structure

The study of (Faccio and Lang, 2000) in a sample of 3740 companies in five Western European countries (France, Spain, Italy and the UK) highlighted a low degree of ownership dispersion (38.3 percent of companies are widely held).In conformity with the literature on corporate governance, the dispersion is related to the percentage of outstanding common shares

held by outside shareholders who own at least 5% of the shares of the bank (Faccio and Lang, 2002; Kim et al., 2007;).The majority of shareholders are individuals or organizations holding more than 5 percent of the total share. The concentration of ownership is positively associated with the likelihood of financial distress. Information on the property is collected about Worldscope (Schadewitz and Blevins, 1998).

The Accumulation of an Officer and Chairman

When the same person assumes both functions, that is to say, where the Chairman is also the officer, the corporate governance mechanism is likely to weaken. Furthermore, the control and management of the company by shareholders promote their own interests, sometimes at the expense of other shareholders, especially when the majority of shareholders also have the leadership and chairmanship of the Board of Directors. The variable accumulation of functions underlines the character of this aspect of management. To this end, we consider the combination of the position of an officer and chairman of the board as a dummy variable.

The Nomination Committee

The nomination committee is able to reduce the influence of leaders on the selection process and, therefore, it encourages the appointment of active administrators according to three main arguments. First, the nomination committee is likely to improve the separation of the management and control in the company (Shivdasani and Yermack, 1999). Secondly, these committees provide the resources and legitimacy necessary to the members to act independently of the Board (Pettigrew and McNulty, 1995; Huse, 2007). Thirdly, the members of the Nomination Committee will be judged, more than the other members, following the recruitment decisions. The existence of the nomination committee is significantly associated with the firms performance (Bruno and Claessens, 2007). To this end, we consider the presence of the nomination committee as a dummy variable.

The Compensation Committee

The presence of a Compensation Committee is expected to improve the efficiency of the Board in determining executive compensation and thus reducing potential agency costs (Conyon and Peck, 1998; Conyon and He, 2011). The Compensation Committee is responsible for evaluating the performance of management and the creation of appropriate compensation packages. To determine the nature and amount of remuneration of company executives, compensation committees may limit agency problems by introducing incentive schemes designed to align the objectives of senior management with those of shareholders (Uzun and al., 2004). A compensation committee can be considered as a monitoring device that helps mitigate some agency problems. We also believe that the presence of the Compensation Committee is a dummy variable.

The Governance Committee

A governance committee focuses more specifically on the standards of qualification of the directors, their responsibilities, remuneration, orientation and training (Mahoney and Shuman, 2003). The presence of a corporate governance committee increases the responsibility of members of the board of administration in decision making and an improved monitoring, reducing opportunism in the behavior of managers. The Committee of Corporate governance plays an

important role in the control, formulation and recommendation of the governance principles and policies. The presence of the governance committee remains, therefore, a dummy variable.

The Size of the Board of Administration

The board size is measured by the number of directors. The variable size is chosen because it is based on the potential of social cohesion, (Lipton and Lorsch, 1992; Jensen, 1993) argues that a small board is more controllable and leads to promote firm performance than a larger board. Therefore, the size should have a negative correlation with the probability of distress.

Investor Protection

We use the index of investor protection developed by the World Bank for 2006. (La Porta et al., 1998; La Portaet al., 2006; Djankov et al., 2008) highlight how the countries of common law tend to adopt very protectionist laws for the investor, as opposed to civil law countries. As for (La Porta et al., 2002), they study, the effects of investor protection rather than the evaluation of companies. Their sample includes 539 large companies in 27 countries over the period 1995-1997. The authors find that a greater protection of minority shareholders is associated with a higher company evaluation. They show, in this way, that improving investor protection in a country underestimates the expropriation of profits by managers and the agency costs.

Table 1 : Presentation of Variables

Variables	**Measurement**
CAP : Capital Adequacy	(Equity Capital + Loan Loss Reserve Allowance) / Total Assets
ASSET : Asset Quality	Loans / Total Assets
MGMT : Management	Total Operating Expense / Total Assets
ROA : Earnings	Net Income/Total Assets
LIQ : Liquidity	Liquid Assets / Total Assets
BLOCK : Concentrated Ownership	The sum of ownership of all shareholders owning 5% or more of the company
BRSIZE : Board Size	The number of directors on a board
DUALITY : CEO Duality	Equal to 1 if the CEO also carries out duties as the Chairman of the Board and 0 if otherwise.
NOMCOM : Nomination committee	The presence of a nomination committee (NOMCOM) is represented as a binary variable that takes the value of 1 if a

	nomination committee exists, otherwise 0.
CGCOM : Corporate governance committee	The presence of a corporate governance committee (CGCOM) is represented as a binary variable that takes the value of 1 if a corporate governance committee exists, otherwise 0.
REMCOM : Remuneration committee	The presence of a remuneration committee (REMCOM) is represented as a binary variable that takes the value of 1 if a nomination committee exists, otherwise 0.
PROTECTION : Investor protection	INVESTOR PROTECTION WB. This index measures investor protection using the Strength of Investor Protection Index from the World Bank for 2006. The index is the average of the extent of disclosure index, the extent of director liability index and the ease of shareholder lawsuits index. The index ranges from 0 to 10 with high values indicating greater investor protection.
SIZE : Bank Size	Natural logarithmic of total assets
GROWTH : The annual GDP growth rate	Gross domestic product annual growth rate

3.5. Descriptive Statistics

The study period is from 2005 to 2011 and it is, itself sub divided into three sub-periods in accordance with the work of Prabha and Wihlborg (2014). The first period before the 2005 crisis to late 2006, the second one during the crisis since early 2007 until the end of 2009 and finally, the period after crisis, ie from 2010 until late 2011, the data have been analyzed with the STATA 13. Table 2 summarizes the sample composition.

Table 2: Number of commercial banks in each sample countries

Country	Number of commercial banks	Index of investor protection
Austria	8	5
Belgium	2	7
Cyprus	5	6.3
Germany	12	5
Denmark	33	6.3
Spain	12	5
France	7	5.3

UK	9	8
Greece	10	5.3
Hungary	2	4.3
Ireland	2	8.3
Italy	15	6
Luxembourg	1	4.3
Malta	4	5.7
Netherlands	1	4.7
Poland	16	6
Portugal	4	6
Sweden	4	6.3

Table 3 presents summary statistics of subsamples decomposed into pre-crisis periods, crisis and post-crisis. The statistics of the sample variables vary considerably over the period being studied. The percentages of banks undergoing financial distress during the above period, amount respectively to 6.12%, 24.49% and 12.59%. By analyzing the average of governance variables during these three successive phases, we observe a decrease in the average of dual function of CEO (DUALITY) [36.05%; 35.37%; 34.69%]. The average size of the board (BRSIZE) increased from 13.59 to 14.3 members. Thus, the average concentration of ownership (BLOCK) increased from 43.41% to 43.86 % and 44.32%. We observe an increase in the percentage of banks with a governance committee (CGCOM): 8.13%, 9.30% and 11.56% that of the banks with a nomination committee (NOMCOM) respectively 52.38 %, 53.29% and 55.10%, and finally those with a compensation committee (Remcom) respectively, 75.51%, 76.64% and 79.52%. More generally, the crisis has generated the implementation of structural improvement process and board effectiveness by creating governance committees, remuneration and appointment, separation of CEO positions and Chairman of the Board to strengthen the powers and independence of the board. The analysis of CAMEL variables can generate an observation as to the liquidity (LIQ) reduced respectively by 20.31%, 17.34% and 15.42%, indicator of potential liquidity disruptions and weak liquid assets, notwithstanding the decrease in the average management quality ratio (MGMT) successively by 4.45%, 3.79% and 3.43%, specifying that banks have restricted their spending, while the decrease of profitability economic assets (ROA) of 1.52%, 0.43% and -0.09% highlight the impact of the crisis on economic performance. The increase in the ratio of capital adequacy of (CAP) banks from 12.47%, 13% and 14.28% emphasizes that efforts to strengthen solvency and recapitalization. However, an increase in the ratio of asset quality (ASSET) for the period before and during the crisis from 58.47% to 61.47% then a decrease of 61,16% after the crisis, shows the high level of loans and bank risk. The reduction in the level of GDP growth (GROWTH) in the interval before and during the crisis crystallizes at 3.12% to -0.02% and increases by 1.35% after the crisis. Finally the banks size (SIZE) increases by 16.26, 16.66 and 16.7.

Table 3: Descriptive statistics: Precrisis and Post Crisis.

Period	Pre-crisis period (2005-2006)					Crisis period (2007-2008-2009)					Post-crisis period (2010-2011)				
	N	Mean	St. Dev.	Max	Min	N	Mean	St. Dev.	Max	Min	N	Mean	St. Dev.	Max	Min
DISTRESS	294	6.12	24.02	1	0	441	24.49	43.05	1	0	294	12.59	33.22	1	0
CGCOM	294	8.16	27.43	1	0	441	9.30	29.07	1	0	294	11.56	32.03	1	0
DUALITY	294	36.05	48.10	1	0	441	35.37	47.87	1	0	294	34.69	47.68	1	0
NOMCOM	294	52.38	50.03	1	0	441	53.29	49.95	1	0	294	55.10	49.82	1	0
REMCOM	294	75.51	43.08	1	0	441	76.64	42.36	1	0	293	79.52	40.42	1	0
BRSIZE	294	13.59	4.45	30	1	441	13.95	4.49	31	5	294	14.3	4.51	28	5
BLOCK	294	43.41	33.68	91	4.1	441	43.86	33.59	91	4.5	294	44.32	33.54	91	5.1
MGMT	271	4.45	4.59	47.37	1.08	418	3.79	3.25	38.63	-7.61	274	3.43	1.66	13.65	-1.06
ASSET	271	58.47	16.63	93.25	3.85	418	61.47	17.72	91.63	0.16	274	61.16	15.8	89.16	0.93
LIQ	271	20.31	12.75	79.19	2.19	418	17.34	12.08	78.99	0.09	274	15.42	12.28	70.5	0.11
ROA	274	1.52	2.34	28.63	-15.86	424	0.43	5.23	25.23	-82.55	282	-0.09	2.9	11.6	-24.26
CAP	234	12.47	2.78	27.4	7.61	380	13	4.27	49.1	7.56	256	14.28	5.43	68.36	-5
SIZE	294	16.26	2.7	21.4	7.72	441	16.66	2.69	22.06	8.89	294	16.7	2.67	21.71	8.32
GROWTH	294	3.12	1.35	6.2	0.7	441	-0.02	3.55	6.8	-6.8	294	1.35	2.47	6.6	-7.1

We measure the correlation of independent variables tested in our logistic regression models. Thus, from the results of these tests, we defined our models from a linear combination of uncorrelated ratios according to Table 4. The multicollinearity between independent variables is evaluated according to the test of variance inflation factor (VIF). The VIF, varying from 1.07 to 2.83, is frequently inferior to 10, first conventional acceptable level. The absence of multicollinearity thus remains a determining factor (Stevens, 1996).

Table 4 shows the correlation coefficients of Pearson and FIV tests between all explicative variables on which we have based parameter estimation of our logistic regression. The estimation of these models is performed on a sample of 147 European commercial banks.

Table 4: Pearson Correlations Test of the Explanatory Variables

Variables	PROTECTION	BRSIZE	BLOCK	MGMT	ASSET	LIQ	ROA	CAP	SIZE	GROWTH
PROTECTION	1									
BRSIZE	-0.14***	1								
BLOCK	-0.12***	-0.02	1							
MGMT	0.17***	-0.17***	-0.12***	1						
ASSET	-0.04	-0.15***	0.12***	-0.03	1					
LIQ	0.004	0.12***	-0.13***	-0.01	-0.68***	1				
ROA	0.002	-0.02	-0.07**	0.38***	0.08***	0.11***	1			
CAP	0.12***	-0.06**	-0.07**	0.24***	-0.29***	0.25***	0.11***	1		
SIZE	-0.07**	0.34***	0.01	-0.50***	-0.20***	0.11***	-0.02	-0.34***	1	
GROWTH	-0.01	-0.16***	0.08***	0.04	-0.07**	0.10***	0.13***	-0.05	-0.04	1

Significant at a level of (***) 1% (**) 5% (*) 10%.

4. Empirical Results

This last part presents the statistical analysis of distressed banks, and those which are not, according to the countries of the European Union and we analyze the results by multivariate multiple imputation.

4.1. Statistical Analysis of Banks in Distress and Those Which are Not According to the Countries of the European Union

Table 5 presents the number of observations, well as the percentage of banks in distress versus healthy ones, included in each of the countries of our sample. From 2005 to 2011, banks in Ireland, the United Kingdom, Belgium, Greece, France, Germany and Cyprus frequently experienced, financial distress respectively : of 64.29%, 53, 97%, 50.00%, 40.00%, 28.57%, 27.38% and 20%.

However, the financial institutions registered in Hungary, Luxembourg, the Netherlands and Portugal have remained foreign to this situation.

Tableau 5: The number of observations and the percentage of banks in distress and those which are not according to the countries of the European Union

Country	Number of observation of distressed banks	Banks percentage distress	Number banks observation not in distress	Percentage of banks not in distress	TOTAL
Ireland	9	64.29%	5	35.71%	14
UK	34	53.97%	29	46.03%	63
Belgium	7	50.00%	7	50.00%	14
Greece	28	40.00%	42	60.00%	70
France	14	28.57%	35	71.43%	49
Germany	23	27.38%	61	72.62%	84
Cyprus	7	20.00%	28	80.00%	35
Sweden	3	10.71%	25	89.29%	28
Italy	9	8.57%	96	91.43%	105
Spain	6	7.14%	78	92.86%	84
Austria	4	7.14%	52	92.86%	56
Denmark	15	6.49%	216	93.51%	231
Malta	1	3.57%	27	96.43%	28
Poland	3	2.68%	109	97.32%	112
Hungary	0	0.00%	14	100.00%	14
Luxembourg	0	0.00%	7	100.00%	7
Netherlands	0	0.00%	7	100.00%	7
Portugal	0	0.00%	28	100.00%	28
TOTAL	163	15.84%	866	84.16%	1029

4.2. The results of periods estimates

The Financial distress is analyzed in instant cut over four distinct periods, throughout the period 2005-2011; whether the pre-crisis 2005-2006, the crisis 2007-2009 and post-crisis 2010-2011. Table 6 provides the estimated coefficients of random effects logistic models in instantaneous cut.

Table 6: Results of the random effects logistic regression by periods

Variable	Panel A Entire period (2005-2011)	Panel B Pre-crisis period (2005-2006)	Panel C Crisis period (2007-2008-2009)	Panel D Période post-crise (2010-2011)
CGCOM	1.51	-5.19	3.49	0.60
DUALITY	1.64**	-2.69	5.55	1.07
NOMCOM	-1.06	-5.94	-1.52	1.18
REMCOM	- 0.86	3.52	1.94	-2.68*
BRSIZE	0.10	1.31***	0.13	0.04
BLOCK	0.01	0.21***	0.06**	0.005
MGMT	-0.14	0.50	-0.29	-0.08
ASSET	0.04	0.30*	0.03	-0.01
LIQ	0.03	0.07	0.18	0.06
ROA	0.1	-7.19**	-0.29	-0.006
CAP	-0.08	0.55	-0.05	-0.15
SIZE	0.62**	-0.94	1.38**	-0.16
GROWTH	- 0.17***	-0.01	-0.04	-0.12
PROTECTION	1.24**	9.99***	1.87	1.84**
cons	-26.42	-114.20	-58.93	-9.64
N	1029	294	441	294
Pseudo R2	23.83%	50.21%	27.31%	29.75%

Significant at a level of (***) 1% (**) 5% (*) 10%.

It is noted that the results of the panels A, B, C and D are mixed and inconclusive, which guides the discussion throughout the period covering 2005 to 2011. The coefficient on the variable investor protection (PROTECTION) covers the whole period before and after the 1.24 crisis; 9.99; 1.84 positively associated with the likelihood of financial and significant distress respectively at 5% thresholds, 1% and 5% and it is not significant during the crisis. The general suggestion is that a positive relationship cannot be casual, but related to the protection of investors and financial distress correlated with other factors. It remains no less true, that the level of investor protection has been linked to excessive risk taking and bad accounting results displayed. This implies, therefore, explicit and implicit guarantees, and for the investors, moral hazards and a significant reduction in their vigilance, which consequently invalid for the hypothesis 3. The accumulated CEO functions coefficient (DUALITY) is 1.64, for the whole period, positively and significantly associated with the likelihood of financial distress particularly, however insignificant, before, during and after the crisis. These results confirm the hypothesis 2b; the accumulation of role directories stimulates the rigidity of the bank and limits its organizational capacity of adaptation and reaction to crises (Daily and Dalton, 1994b). Once again, it is clear that the separation of the functions improves business performance (Rechner and Dalton, 1991; Pi and Timme, 1993; Boyd, 1995; Bhagat and Bolton, 2008; Balsam and Upadhyay, 2009).

We observe, in the CAMEL type variables, the return on assets coefficient (ROA) before the crisis is -7.19 and significant at the 5% level, is negatively associated with the likelihood of financial distress, while not significant for other periods. However, the coefficients of the variables of CAMEL type quality assets (ASSET), liquidity (LIQ), capital adequacy (CAP) and quality management (MGMT) are not significant for the various periods. We observe that the coefficient of the banks size (SIZE) for the entire period and during the crisis increases respectively to 0.62 and 1.38 (significant at the 5% level) and not significant during and after the crisis. According to the analysis of the entire period, the positive association indicates that large banks are more likely to

encounter a situation of financial distress, confirming the hypothesis 4. The authors (Louzis et al., 2012) explain this association by the Lifesaving guaranteed by the government against the risk of bankruptcy, giving its agencies an excessive level of risk, *increase rate of non-performing loans*, highlighting the leverage effect, which usually contributes to a greater probability of financial distress.

We note that the coefficient of GDP growth (GROWTH) for the entire period is -0.17 significant at the 5% and not meaningful to other periods. We observe a negative relationship between economic growth and financial distress of banks, because as the weaker the economic growth is, the more the businesses and households will reduce their inflows (sales, salaries), resulting, ultimately, in an increase in the probability of financial distress of banks. For the period post-crisis, the variable coefficient (Remcom) is -2.68 significant at the 10% threshold, so that it is not significant for the other periods studied.

The coefficient of the board size (BRSIZE) is 1.31 and significant at the 1% level before the crisis; however, the coefficient is not significant on the other sub-periods studied, leading us to conclude a lack of a statistically significant relationship between the size of the board and financial distress of banks. Therefore, H2a hypothesis is rejected.

The coefficients of the governance committee (CGCOM) and the nominating committee (NOMCOM) are not significant over the various periods studied, and do not indicate an informative relationship between the existence of the governance committee, nominating committee and financial distress of banks. The coefficient of concentration of ownership (BLOCK), before and during the crisis, takes a value respectively of 0.21 and 0.06 significant at 1% and 5%. The H1 hypothesis is thus overturned. The cross-sectional analysis shows that the results are mixed and that there are differential impacts for different time periods in financial distress of banks.

Conclusion

The objective of this study is to demonstrate a statistical relationship between governance mechanisms and the financial distress in the banking sector. Our work highlights that banks in Ireland, the United Kingdom, Belgium, Greece, France, Germany and Cyprus have frequently known financial distress. We notice that a high level of investor protection has helped to increase the financial distress; the bank size is a key determinant to financial distress. The corporate governance variables are distinguished consequently to the period (crisis or stability) to explain the financial distress. The separation of the functions of CEO and chairman of the board makes the board more powerful, thereby giving better supervision capacity. The bank's board of directors should focus better on evaluating and fittingly running risk instead of increasing short-lived expediency ratios. The best protection of investors leads to a weak internal control and increases the excessive risk-taking and the likelihood of financial distress. The agency theory does not address the protection of the interests of other stakeholders of the company, including employees and creditors. It does not take into account particular aspects of institutional contexts of banks. This study contributes by enriching the literature based on the role of corporate governance, the structure of the board, the concentration of property and investor protection to explain the financial distress in the European commercial banks. The methodological contribution of this research is to estimate

instantaneous cutting of panel data and modeling by the technique of binary logistic regression. The operational contribution of our research is translated into recommendations:

According to the agency theory, the board should be proactive in the separation of the functions of CEO, however, we find that the agency theory does not address the protection of the interests of other stakeholders of the company, including employees and creditors. It does not take into account the particular aspects of organizational contexts, regulatory, economic, legal and political environment of banks that can significantly alter the power of the various controls and dictate and shape human relationship. Bank managers have a vision for the short term, to achieve quick profits and excessive risk-taking at the expense of bank solvency and long-term financial strength. This brought huge losses during the crisis and bailouts by the government. Bale III regulations, has no similar effects on the financial health of the European Union banks Union, thus it is not appropriate to the stage of development of some European countries and ignores the particular specificity of each country, the inconsistent implementation of the implementation of Basel III standards between banks of different countries could undermine rather than enhance global financial stability. Legislation should also ensure that compensation committees have more independence in setting executive compensation. Also, they should be linked to the average yield and long-term market and not on short-term accounting profits. This study faces several limitations which takes no characteristics relating to the asymmetry of information and lagged variables. Taking into account the endogeneity existing between corporate governance and distress, and ranking the banks in financial distress in different categories according to a financial metric definition will be sources of future research.

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