

CORPORATE GOVERNANCE IMPACT ON BANK PERFORMANCE EVIDENCE FROM EUROPE

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Abstract

This paper investigates the impact of corporate governance on European bank performance during the period 2002-2011. Using a sample of 73 banks from 11 European countries, we examine the relationship between corporate governance measures more specifically the board size and composition, the gender diversity and the CEO duality on the European bank performance. During the period 2002-2011, our results show that the board size and the gender diversity have a positive and significant impact on bank performance. Large board of directors with more female members led to better bank performance, whereas, the board composition and the CEO duality have no significant effect in explaining the bank performance for the European countries. During the global financial crisis, our findings show that the board size and the board composition are negatively and significantly correlated to the bank performance. Smaller boards of directors with less number of independent (non-executive) directors have outperformed the ones with larger boards and more independent directors during the crisis. However, the gender diversity and the CEO duality have no significant impact on the European bank performance.

Keywords: Corporate Governance, Bank Performance, European Countries, Board Size, Board Composition, Gender Diversity, CEO Duality

1. INTRODUCTION

In 2008 the world economy confronted the most terrible and dangerous financial crisis, since the Great Depression of 1930s. The contagion started in United States in 2007 and spread quickly first to the whole US financial sector and then to different financial markets overseas. A spectacular fall in prices of the shares appeared in all important world markets followed by a massive number of collapses. Many European and American banks declared huge losses in 2007-2008. Moreover, largest bankruptcies have taken place during the financial crisis 2008, such as the bankruptcy of the Lehman Brothers, the oldest investment bank, Merrill Lynch, Morgan Stanley and then Goldman Sacks, due to the huge economic catastrophe, the US government have intervened in order to stop further collapse and bankruptcy. However, the contagion spread everywhere and hit also the European banks. The Global Financial crisis showed how little we know about the corporate governance in banks and how it is important for the banking sector. Corporate governance in banks has special features compared to non-financial companies. The credit institutions are larger than the industrial firms regarding the balance sheet aggregates, also they are characterized by their complex organizational structure. (Hermalin and Weisbach, 2003). The complexity of the banks increases the information asymmetry and decreases the stakeholder's capability to supervise the decisions of the bank managers. Banks play a crucial role for the overall health of an economy. They are also characterized by a high level of leverage due mostly to the deposits collected from their customers. For all these reasons, banks need special

corporate governance features than the other companies, since they have the responsibility to protect the right of the depositors, guarantee the solidity of the payment system and decreasing the systematic risk.

There are different types of corporate governance measures. On one hand, the internal corporate governance proxies which consist on the characteristic of the board of directors such board composition, gender diversity, board size, the CEO duality. On the other hand the external corporate governance proxies which consist on the audit committee, the government regulations, the leverage and the debt. The Basel Committee on Banking Supervision (BSBS) has paid more attention to the need to understand and improve the corporate governance of financial corporations and especially for banks, by stating that good corporate governance is essential to guarantee a better bank performance. Enhancing corporate governance structure including the size and the composition of the board has been the major issue undertaken by the international authorities (Basel Committee, 2006). In addition, corporate governance is regulated by local establishments and the framework of such guidelines is changing over the time for instance, Norway, Germany and UK are among the European countries who updated their corporate governance code in 2012.

Many studies have focused on the impact of corporate governance on non-financial companies and few of them have concentrated on banks' corporate governance (eg, Andreas and Vallelado, 2008; Adams and Mahran, 2008; Caprio et al, 2007). Moreover, a limited number of researchers have investigated the corporate governance on European countries (eg. Staikouras, 2007; Conyon and Peck,

2010). Therefore, the issue associated to the effect of corporate governance and bank performance especially in European countries has received unequal attention compared to non-financial firms and American banks.

This paper aims to narrow down the gap and offer a better understanding of the corporate governance in European banks. We investigate whether there is a relationship between corporate governance and European banks performance, focusing on different proxies of governance such as the board size, the board composition, the gender diversity and the CEO duality and their impact on bank performance over the period 2002-2011. In addition, the global financial crisis of 2008 in the banking sector and its effect on the collapse of stock prices and recession of the economy worldwide may yet oblige the companies to enhance their corporate governance mechanisms and regulations. Moreover, this study is the first, to our knowledge associated the bank performance with the corporate governance measures during the global financial crisis 2008 for the European countries.

The paper is organized as follows: session 2 presents the literature review which includes the specific characteristics of corporate governance in banks, the corporate governance regulations on European countries as well as the theoretical and empirical evidences related to the relationships between the corporate governance and bank performance in general and during the crisis, In session 3 we describe our sample, variables and the model used to test the impact of corporate governance in European banks performance and finally, the last session presents the findings and discussion.

2. CORPORATE GOVERNANCE IN BANKS

2.1. What is special about corporate governance in banks?

Most of the existing literature on corporate governance has focused on firm performance and very limited research have been paid attention to the corporate governance of banks (Levine 2004, Caprio et al 2007). However, the corporate governance on banks is very complex and unique compared to non-financial firms for different reasons. First, banks are large organizations and corporate governance is necessary for banks to perform effectively. Second, according to Levine (1997) the banks play an important role on economic development and growth. Moreover, these organizations have a central role on mobilizing savings and convert them into productive investment. They are a source of external financing for the others firms especially in emerging and developing economies. Banks also play a key role in corporate governance of different firms as equity holders and creditors of firms in different countries. Thus, it is necessary that banks have a good corporate governance so they can apply efficient governance to the companies they fund. Since the banking sector is vulnerable to shock, deficiency in corporate governance can damage the financial system and pose systematic risk to the economy (OECD, 2006). Governments are afraid about the reputation of the banks. So, they pay a special attention to regulate the governance of these

large corporations. As a failure in bank's governance would affect their performance and affects respectively the country's economy and could even spread globally, this is what happened during the Asian financial crisis in 1997 (Pathan et al., 2008) and U.S financial crisis in 2008 (Peni and Vahamaa, 2012). In addition, Kirkpatrick (2009) claimed that the reasons of the financial crisis could be explained by the weaknesses and the failure of corporate governance. For instance, they explain that there are some insufficient areas in regulatory requirement and accounting standards. Corporate governance of banks is also unique. Banks have two special characteristics that make them different from the others firms: Regulation and opaqueness. First, banks are more opaque than non-financial firms, Morgan (2002) claims that the problem of information asymmetries between insiders and outsiders still higher in banks. In addition, the higher opacity in banks increases the agency problem. For instance, the depositors and shareholders would be unable to monitor the banks managers and it could be easier for insiders to exploit outside investors. Second, banks are extremely regulated. The importance of banks in the development and the growth of economy make it essential for the government from all over the world to put strict regulations requirement for the banks which can be considered as supplementary corporate governance mechanisms (Levine 2004).

The traditional corporate governance mechanisms could be limited by the impact of the regulations policies imposed by different countries. For instance, many governments have restrained the concentration of bank ownership. Furthermore, there are certain restrictions of the ability of outsiders to purchase a large proportion of banks' shares without the approval of the government. Also the Basel Committee on Banking Supervision (BCBS) has set up a regulation regarding the number of independent directors in the board of directors. Moreover, the Sarbanes - Oxley act of 2002 requires that the boards of audit committees should have only independent outside directors. Overall, regarding the importance of the banks in country's economy, banks should pay attention to their governance. As good corporate governance has a positive impact on bank performance. However, there are several measures of corporate governance such as the characteristics of boards of directors, the ownership structure, which have an impact on banks performance.

2.2. Corporate governance regulations in European banks

After the global financial crisis that hit the world economy in 2008, many European banks have set up many rules and regulations related to the corporate governance in order to improve their banks performance. Corporate governance rules and norms are essential components for successful market economies. European countries have shown their interest in improving corporate governance guidelines since it could have a significant impact on bank performance. There is a major difference between corporate governance on European countries related to the board structure, some of the

European countries use the unitary system the others use the two-tier system.

The one-tier board structure is predominant in European countries and it is characterized by one single board including both executive and non-executive directors. All the directors have the same objectives and goals and they are responsible for all the activities of the company. The one-tier board structure is predominant in UK, Spain, Ireland, Portugal and Italy (Maassen, 2002). On the other hand, the two-tier board structure require a strict separation between the management function (executives) and the supervisory function (non-executives). The management board has the responsibility to run the business while the supervisory board has the obligation to oversee the direction of the business. This type of board structure is mandatory in Germany, Netherland, Austria and Denmark (Macy and O'Hara, 2003). Despite the formal structural differences between the two types of boards structure the one-tier and the two-tier system, there are a significant similarities in both structures. The two types of systems are elected by shareholders. Moreover, there is usually a managerial function and a supervisory function for both structures, while this distinction is more formalized in two-tier board structure. Both board systems have comparable functions, the supervisory board and the unitary board usually designate the directors of the managerial function. In addition, both systems have the responsibilities to ensure that the control systems and the financial reporting are working properly and the company is in agreement with law (Weil et al, 2002). Other rules and regulations are established related to the leadership structure in European countries in order to improve the corporate governance of the banks. The leadership structure is whether the CEO and the chairman of the board should be the same or different person, for the two-tier systems each of the management and supervisory boards have their own separate leadership, the CEO and the chairman of the board is two different person (Hagendorff et al, 2013). However, in the unitary board system, it is common but not usual that the chairman of the board of directors is also the executive director of the company. Therefore, some codes suggest to separate the leadership role in order to increase the independency of the unitary board, to differentiate between the different roles and to reduce the conflict of interest. (Hagendorff et al, 2013) , for instance, in France, for decade, the law related to the unitary boards has required that the leadership should be combined, after a period the law has been changed to allow corporations to choose between separating or combining the CEO and the chairman in the unitary board (Vienot, 2002) , In contrast, the most common practice in both Spain and Italy is to combine the role of the leadership structure in order to balance the power of the CEO and the chairman (Weil et al, 2002).

Gender diversity on corporate boards still an important challenge for the European Union (EU) members. The women still face several barriers to be presented on the board of directors of banks. However, the board diversity is considered to be essential for the performance and effectiveness of the corporations (European commission, 2012). Several EU member have already established rules on

gender quotas for firm boards for example, France and Spain require 40 percent of female by 2017 and 2015 respectively, Italy 30 percent female quota by 2015. Others countries insisted for equal representation between the two genders, for instance, Netherlands, require 30 percent for each gender by 2016 (Davies, 2014).

However, only Norway, which is non EU member has implanted a law with strong sanctions for boards of directors with less than two women by 2006 and less than 40 percent women by 2008 (Rasmussen and Hughes, 2011).

To conclude, many European countries have established rules and regulations related to the corporate governance in order to improve the banks performance, therefore, there are different corporate governance measures which have an effect on bank performance. The following section presents the empirical evidence related to these relationships.

2.3. Corporate governance and bank performance

Different proxies of corporate governance have impact on bank performance. The board features (the board size, the board independence and the gender diversity) and CEO characteristic (CEO duality) are an important measures of corporate governance. In this section, the empirical and theoretical literature related to the relationship between the corporate governance proxies and bank performance in general and during the financial crisis 2008 is presented.

2.3.1. Board size

The board size of directors is an important measure of the corporate governance. However, different empirical studies find different results regarding the relationship between the corporations' performance and the board size of directors. Scholars argue that a large board of directors could be more effective for the firm performance because they raise the pool of resources and expertise in the company which help them to make the best decision, and make it harder for the domination of a CEO. However, other studies demonstrate a negative correlation between the board size and firm performance. As the boards of directors' increase, they become less efficient and might be more associated with bureaucratic problems and increase of decision-making time (Jensen, 1993). Moreover, others scholars explain when the boards of directors get too large, it becomes difficult to communicate, to coordinate and to participate, this would lead to a decrease in the company performance (Golden and Zajac, 2001).

Some empirical studies related to the banking sector find different findings, Adams and Mehran (2005, 2008) show there is no negative relationship between board size and firm performance, they use a sample of 35 US large bank holding companies (BHCs) between the period of 1959 and 1999. They found in contrast with non-financial companies, that the banking firms with large board of directors have a positive relationship with Tobin's Q.

The size of the board of directors is significantly related to the features of bank holding companies (BHC) structure and they explain that the difference between the results depends on the types

of companies; whether it is holding companies, financial or non-financial companies.

Consistent with the finding of Adams and Mehran (2005, 2008), Andres and Vallelado (2008) examine a sample of large commercial banks from different developed countries France, UK, Spain US and Canada and Italy. They find a positive relation between the board size and bank performance. The scholars explain that the presence of several directors in the board has a positive effect on the advisory functions, the monitoring, the improvement of governance and the increase of returns. However, the authors show that there is a limit of approximately of 19 directors.

Other empirical studies find a negative relation between the board size and bank performance. Using a sample of 58 large European Banks during the period 2002-2004, Staikouras et al. (2007) find a negative relationship between bank profitability and the size of the Board of directors. Furthermore, Trabelsi (2010) reveal that the improvement of the number of board of directors has a negative impact on the performance of the banks which is measured by Tobin Q.

Other studies demonstrate there is no significant relationship between board size of directors and bank performance. Ramano *et al.* (2012), Using a sample of 25 Italian banking groups during the period 2006 - 2010 they find that the board size does not impact the performance of the Italian bank in terms of ROA and ROE. They explain there is not an ideal board size for the banks and an increasing or decreasing in the board director's size could have a negative or positive impact on the bank's performance. Regarding the different contrasting theoretical and empirical evidence mentioned above we expect:

H1: Board Size is positively related with bank performance.

Different empirical studies have examined the impact of the board size on bank performance during the financial crisis, for example, Erkens et al (2012), using a sample of 296 financial firm from 30 countries, they show that during the crisis (2007-2008) there is no significant relationship between the board size and firm performance. Moreover, Berger et al (2014) based on a sample of 256 no default and 85 default US commercial banks they found that the management structure including the board size were not decisive for the bank performance during the financial crisis (2007-2010).

Other empirical evidences show different results, Aebi et al (2012) employing a sample of 372 US bank during the financial crisis 2007-2008, they find a positive relationship between the board size and the bank performance measured by ROE and bank's stock returns. However, Hoque and Muradoglu (2010) based on a sample of 347 global banks from 57 countries around the world find that the board size and bank performance (ROA, ROE) are negatively related, they explain that smaller board of directors performs better than the larger one during the financial crisis. In addition, Peni and Vahama (2012) examine a sample of large publicly traded US banks they find that smaller boards have greater profitability and higher market valuation and less negative stock returns during the crisis. They explain that small board of directors is more efficient in tough periods as they take quick decision

compared to the larger boards. Consistent with the previous empirical studies we expect that:

H2: Board size and bank performance are negatively related during the financial crisis.

2.3.2. Board composition

Board composition is a significant corporate governance practice as it could affect the deliberations of the board and the capacity to control the different results and decisions. The findings of previous studies regarding the impact of the board composition to the bank performance are no conclusive.

Andres and Vallelado (2008) explain that appointing outside directors is beneficial for the bank performance since it would avoid the conflict of interest between stakeholders and achieve the different functions of advising and monitoring in effective manner, these directors should have the majority on the board. However, the authors highlight that such majority has a limit and they explain that an extreme proportion of non-executive directors could harm the advisory role of boards, as the executive directors play an important role in facilitating the transfer of the information among the management and directors and provide information and skills that outside directors would find not easy to gather. Moreover, Romano and Guerrini (2012) find that when the percentage of the independent directors on the board is higher, the financial reporting fraud is lower. This explaining by the great percentage of independent directors who appears to guarantee more efficient control. The findings regarding the impact of outside directors are mixed in the banking sector. Some empirical studies show there is no relationship between the board composition and bank performance, for instance, Love and Rachinsky (2007) using a sample of 50 banks in Ukraine and 107 banks in Russia during the period 2003-2006 find there is no relationship between the two variables. However, other studies find that a great presence of independent member (non-executives) in their boards achieve a better performance than others. Busta (2007) after using a sample of 69 listed banks from different countries such France, UK, Spain, Italy and Germany, the author show that the banks who present a higher proportion of non-executives perform better in Continental countries while they find opposite result regarding the case of United Kingdom. Moreover, Staikouras et al (2007) show there is a positive and significant relation between the board independence and the bank performance measured by ROA, ROE and Tobin Q, using a sample of 58 European banks. They explain that the independent directors have a more objective opinion which is more efficient for the supervisory function. Based on the existing literature we expect:

H3: The proportion of non-executive directors is positively related with bank performance.

During the crisis, different empirical evidence have shown the impact of non-executive directors on bank performance, for instance, Cornett et al (2010) find a positive relationship between different corporate governance measures and bank performance during the crisis period, they explain that the more independent directors on the board, the better the bank performance during the crisis

based on a sample of 300 US banks. However, other scholars find different results, Beltratti et al (2012) employing a sample of 98 large banks over the period 2007 until the end of 2008, the authors report that banks with more independent boards experienced lower stock returns during the financial crisis. This is in line with the finding of Erkens et al (2012). Moreover, Minton et al (2010) Using a sample of 652 US banks over the period before and during the financial crisis 2008. They find that during the crisis there is a negative and significant relation between the board independence and the bank performance measured by Tobin Q and stock returns. They explain that boards with fewer interconnections are more efficient during the crisis, so that directors can concentrate more on a specific board. Based on the existing literature our hypothesis is as following:

H4: Board independence is negatively related with bank performance during the financial crisis.

2.3.3. Gender diversity

Gender diversity is considered as an important component of corporate governance, according to Anastasopoulos et al (2002) the presence of women in the boards of directors is good instrument to enhance the board diversity.

There are a small number of literature which are concentrated on the impact of the gender diversity on bank performance for instance, Zahra and Stanton (1988) find there is no significant relationship between the firm performance and gender diversity based on US context. However, according to Heinfeldt (2005) there is a positive correlation between the proportion of the female present on the board of directors and the market value added (MVA).

In contrast with these findings, Shleifer et al (1997) using a sample of 200 US large firms find that the higher percentage of women on the board of directors is disproportionately associated with higher firm performance. They explain that the number of women in the top management is relatively low and present only 4.5% and there are no female chief executive.

Focusing on the banking sector, de Cabo et al (2009), using a sample of 612 European banks during the period 1998 to 2004, their findings indicate that there is no significant relationship between the presence of the female on the board of directors and bank performance measured by ROA and ROE.

Ramano et al. (2012) find that the presence of women on boards of directors has a positive impact on the bank performance measured by ROE and ROA; they explain that their presence on the board of directors of the bank holding enhance the economic findings and can contribute to a large pool of skills knowledge, competencies and relationships useful to rise the performances of the banks. However, the authors show that the presence of the women in the board of the banks holding companies is still limited.

Selvam et al (2006) analysing a sample of 13 Indian banks over the period 2012-2013 they find that women directorship has a positive impact on the performance of banks where the government

has a significant stake. Considering the existing literature our hypothesis:

H5: Banks performance is positively related with the proportion of female in the board of directors.

The issue of gender diversity has become more serious and persistent during the financial crisis, many researchers and economists have examined whether the higher participation of the women on the board of directors is related to better performance or not.

Muller-Kahle and Lewellyn (2011) report that a higher proportion of female present on the board of directors is related with an increase in risk-taking during the US sub-prime crisis. Goel and Thakor (2008) consider that women are less confident than male, however, they explain that overconfidence is related to less information acquisition and provide poorer investment decision.

Finally, due to the lack of the empirical evidence related to the impact of the gender diversity to the bank performance during the crisis, we expect that more female on the board of directors improve bank performance during the global financial crisis as it is important to appoint the most skilled and talented people independently of their gender in order to enhance the corporate governance as well as to accelerate and facilitate the changes that will be requested for a better economic prosperity growth (De Cabo et al, 2009). Even though that women are more risk averse and less overconfident regarding the financial decision making (Agnew et al, 2003). They have other important skills related to the leadership, creativity and innovation which are important to better corporate governance during the financial crisis.

H6: Gender diversity is positively related with bank performance during the financial crisis.

2.3.4. CEO duality

CEO duality is another important measure of corporate governance and it refers to the situation when the CEO of the company also holds the position of the chairman of the board.

There are a limited number of empirical studies who examined the impact of the CEO duality on the bank performance. Most of the previous studies have focused on non-banking sectors.

The results of the previous studies are mixed and still no conclusive, Some of the empirical studies find no significant relationship between the CEO duality and bank/firm performance the others demonstrate a positive or negative relationship.

The supporters of the CEO duality advocate that the CEO duality places the CEO in a powerful position in directing the company operations and allows him to make faster decisions (Finkelstein and Hambrick, 1996). Moreover, the CEO duality could be efficient when such duality can enhance performance and improve conformity. In addition, a CEO who also held the title of the chairman board is able to coordinate and manage board actions and set strategies more quickly especially in tough conditions such crisis. CEO duality could create stability for a company (by decreasing the likelihood of conflict of interest between the board of directors and the management) and thus improve performance.

However, the opponent of the CEO duality, such as the agency theory has underlined the need of separating the two positions in order to guarantee the board independence as well to enhance the firm transparency (Jensen, 1993), moreover, the concentration of the power can worsen the conflict of interest and reduces the supervision of the board manager and also decreases the information flow between the other board of directors (Fama & Jensen, 1983 Jensen, 1993).

The empirical evidence regarding the banking sectors are insufficient, using a sample of 174 banks during the period 1995-2002, Belkhir (2009) found a positive and significant relationship between the CEO duality and bank performance measured by the Tobin Q and ROA. Whereas, Pi and Timme (1993) using a sample of 112 US banks during the period 1987-1990 demonstrate that American banks where the CEO and the chairman of the board are not the same person outperformed the banks with dual CEO. Moreover, Mishra and Nielsen (2000), using a sample of large bank holding companies demonstrate a negative and significant relationship between the CEO duality and accounting performance (ROE,ROA).

Other empirical studies found there is no significant relationship between CEO duality and bank performance for example, Boussaada and Karmani (2015), based on the sample of 38 banks in Middle East and North Africa region (MENA) over the period 2004-2011, the result indicates there is no significant relationship between the CEO duality and bank performance measured with ROA and ROE. They conclude that CEO duality has not impact on the MENA bank performance. Based on the previous empirical studies we expect that:

H7: CEO duality is negatively related with bank performance.

A limited number of empirical studies have focused on the CEO duality and bank performance during the global financial crisis. Aebi et al (2012) show that there is no significant relation between the CEO duality and bank performance measured with buy and hold returns and ROE, using a sample of US bank during the period 2007-2008, Moreover, Berger et al (2012) using a sample of 294 US bank failures and 4021 non default US commercial banks during the financial crisis 2007-2010, they demonstrate that the CEO duality do not have significant impact on bank performance.

Carty and Weiss (2012) using a sample of US banks, they show there is no relation between CEO duality and bank failure during the financial crisis. Grove et al (2011) based on the sample of US commercial banks find a negative relation between the CEO duality and bank performance measured by ROA during the period of pre-crisis (2006-2007) and negative but no significant association during the crisis (2008).

Whether the CEO is also the chairman of the board or a different person there is not a significant impact for a better bank performance. Consistent with previous empirical studies we expect that:

H8: CEO duality is not related with bank performance during the financial crisis.

To sum up, based on the previous empirical studies, different corporate governance measures such as the board size, the board composition the gender diversity and CEO duality have an effect on bank performance, this relationship depend on the

period of the study whether it is in general or during the crisis

3. SAMPLE, VARIABLES AND MODEL SPECIFICATION

3.1. Sample

In this study we examine the impact of corporate governance (the board size, the board composition, the gender diversity and the CEO duality) on European bank performance. A lot of attention has been given on the corporate governance in US banking sector (eg, Peni and Vähämaa, 2011; Adam and Mehran, 2003; Yermack, 1996) However, a limited number of studies has focused on corporate governance in European countries (eg, Staikouras et al, 2007, Conyon and Peck, 2010). For this reason, we decided to choose a sample of European banks and examine if there are similar results to the previous studies. The time period from 2002-2011 has been chosen by the idea to investigate the impact of corporate governance on bank performance during a long period of 10 years and to compare first our results to the existing empirical studies without differentiate between the crisis and non-crisis periods after that we divide our sample into two period and examine the relationship before the crisis (2002-2006) and during the crisis 2008. In our research we use a secondary data. Our initial sample consist of the 110 largest European banks defined as banks that have at least a total assets of €10 billion between the period 2002-2011.

The focus on the largest credit institutions helps to minimize the high cost of the manual data collection for the governance variables and to exclude the smallest banks. In addition, the requirement of large banks is imposed to examine the role of corporate governance in banks where the potential effect of poor governance could be more serious (Adams and Mehran, 2003; Booth et al, 2002). The 100 largest banks are collected from 11 European countries (Belgium, France, Germany, Greece, Italy, Netherland, Poland, Spain, Sweden, Switzerland, and United Kingdom). We restrict our sample to banks that are covered by *BoardEx* which is the data source for our corporate governance variables. The *BoardEx* is the leading database specialized in information on boards' composition and directors. This restriction decreases our sample to 82 banks. In addition, data related to bank performance (ROE, ROA and Tobin Q) are gathered from the annual balance sheet and income statement of these banks using Thomson Reuters Worldscope and ORBIS. Due to the data shortage, our final sample consists of balanced panel of data with 73 banks from 11 European countries (see appendix 1) and 730 bank-year observations.

3.2. Variables

3.2.1. Dependent variables

The bank performance is the dependent variable in this study. Following the previous empirical researches (e.g., Andres and Vallelado, 2008; Caprio et al. 2007; Staikouras et.al, 2007) we employ Tobin Q, return on equity (ROE), return on assets (ROA) as proxies to measure the market valuation and the financial performance of the banks.

We define Tobin Q as the book value of total assets minus the book value of the equity plus the market value of the equity divided by the book value of total assets. Many other studies use this measure as dependent variable in order to examine the effectiveness of corporate governance such as Andres and Vallelado (2008) and Staikouras et.al (2007).

Tobin Q is used to capture the value of future opportunities in investment. A higher Tobin Q advocates that the market anticipate that the company will raise its value due to various factors. In terms of this study, those factors could comprise the characteristics of the board of directors. If the market anticipates the characteristics of company increase the future performance, the Tobin Q will increase.

We apply another measure of performance, the return on asset (ROA) which in the contrast of Tobin Q measure the actual company performance and it is calculated as the profit before tax divided by the total assets. Moreover, we use the return on the equity (ROE) which is calculated as the profit before tax divided by the equity. In both cases the earnings are collecting before tax to avoid the different taxation systems that are applied across the European countries.

3.2.2. Explanatory variables

The explanatory variables in this study are related to the board structure of the banks (the board size, the board composition and gender diversity) and CEO Characteristic (CEO duality).

Following previous studies such as Conyon and Peck (2010) and Stairoukas (2007), the board size (BOASIZE) is defined as the natural logarithm of the number of director on the board.

The board composition (OUTSIDERS) is calculated by using the proportion of outside directors which is defined as the number of non-executive directors to the total number of directors. (Andres and Vallelado, 2008; Staikouras et.al, 2007; Link et.al, 2008). In addition, regarding the

banks who adopt the two-tier board system, which consist of separating the two boards; the management boards and the supervisory boards, such Germany, the directors that belong to the supervisory board are considered as non-executives (Van Greuning and Brajovic-Bratanovic, 2003). As in De Cabo *et al* (2011), the Gender diversity variable is measured as the proportion of female directors relative to the total number of the board of directors. There is a few empirical studies who examine the importance of gender diversity and its impact on the European banks performance. CEO Duality which is a dummy variable and used to capture the board independency. Consistent with Setiyono and Tarazi (2014), this variable is equal to one if the CEO is the chairman of the board otherwise it is equal to zero.

3.2.3. Control variables

Besides these two types of measures (dependent and independent variables) , we introduce a set of control variables such as the Bank Size, financial leverage (Equity to total assets) and liquidity ratio (Loan to total assets ratio). Considering the existing empirical literature, different methods are used to calculate the bank size variable, such the net

Income, the number of employees and the total assets, In this case and following Hermalin and Weisbach (2003) Staikouras et.al (2007), we have chosen to calculate this variable by using the natural logarithm of the total assets, since it is the most homogenous proxy used among different types of banks. The equity to asset (EA) is included as a measure of the overall capital strength and leverage. A low ratio indicates that the bank is relatively in risky position and a negative coefficient is expected on this variable. However, a higher equity could be explained by a cheaper cost of the capital and therefore a positive effect on profitability (Molyneux 1993). The loan to assets (LA) ratio is used as proxy for catching bank liquidity. Since loans represent an important part of bank's assets and difficult to trade in the secondary market, they are the least liquid assets in a bank's balance sheet after fixed assets .Therefore, a low ratio indicates that the bank is characterized with excess stored liquidity while a high ratio suggest a relative illiquid bank.

Table 1. Definition of the variables

Variables	Definition
Dependent variables	
Return on asset (ROA)	Profit before tax divided by Total Assets
Return on equity (ROE)	Profit before tax divided by Total Equity
Tobin Q	Book Value of Assets minus Book Value of Equity plus Market value of Equity divided by Book Value of Assets
Independent variables	
Board Size	Natural logarithm of the number of directors on the board
Outsiders	The ratio number of non-executive directors over the total number of directors
Gender Diversity	Proportion of female directors to the total number of the board of directors
CEO Duality	Binary variable equal to one if the CEO is the chairman of the board and zero otherwise
Control variables	
Bank Size	Natural logarithm of the total assets
Financial leverage ratio	Total Equity divided by Total Assets
Liquidity ratio	Loans divided by Total Assets

3.3. Model specification

In order to examine the relationship between the corporate governance and bank performance we employ panel data analysis. The panel data analysis has several advantages. First, it control the unobservable and the constant heterogeneity which are in this case the specific characteristics of each bank for example the market perception, the management style and quality and business strategy. Moreover, panel data can identify time and individual effects which is difficult to be detectable by pure time series data or pure cross sectional. In particular, panel data are able to examine the complex issues related to dynamic behavior (Baltagi, 2005). To analyze the relationship between the characteristics of corporate governance and bank performance, numerous studies have used the panel data analysis using the pooled Ordinary least squares (OLS) or fixed effects estimation (Yermak, 1996; Belkhir, 2009; Adam and Mehran, 2008; Staikouras et al, 2007, Andreas and Vallelado, 2008,

among others). Andreas and Vallelado (2008) suggest that when the unobserved and the independent variables are correlated, pooled OLS estimations produces estimators that are inconsistent and biased. In order to overcome this econometric problem they used either the first differences or the fixed effects. In our research, we use panel data analysis fixed and random effects. In order to select the most efficient and consistent model, we use the Hausmen test to choose between the two models. The fixed effects model control the effect of time invariant with the effects of time invariant variables, while the random effect model, it assumes that the unobserved variables are uncorrelated with all the observed variables.

We model the performance of bank i at time t by:

$$Performance_{i,t} = \beta_{0,i} + \sum_{k=1}^K \beta_{1,k} Y_{i,k,t} + \varepsilon_{i,t} \quad (1)$$

Table 2. Descriptive statistics (2002-2011) for all countries

Variables	# Obs.	Mean	Median	Standard deviation	Minimum	Maximum
Dependent variables						
Tobin Q	730	1.0272	1.0158	0.1664	0.0842	2.0322
ROA	730	0.0114	0.0098	0.0427	-0.1256	0.1057
ROE	730	0.0970	0.1068	1.0680	-0.3607	0.5000
Independent/Control variables						
Board Size	730	15.8699	15.0000	5.7987	6.0000	34.0000
Outsiders	730	0.7567	0.7692	0.1346	0.1379	0.9630
Gender Diversity	730	0.0898	0.0667	0.1001	0.0000	0.6250
CEO Duality	730	0.3014	0.0000	0.4592	0.0000	1.0000
Bank Size	730	10.9346	10.6319	2.0187	4.4976	14.7658
Financial leverage	730	0.1163	0.05914	0.1762	-0.2103	0.9916
Liquidity ratio	730	0.5187	0.60837	0.2894	0.0000	1.0004

The number of the board of directors varies from 6 to 34 directors. Moreover, the mean and median size of the board are 15.86 and 15 respectively. Our results are close to Andres and Vallelado (2008) who found that the average board of directors is 15.78 over the period 1995 to 2005. Moreover, Booth et al (2002) demonstrate that banking holding companies have larger board of directors (16.37 directors in 1999) than the industrial firm (11.79 directors in 1999). The characteristic of a large board of directors in credit institutions is explained by different reasons. First, board size and bank size are positively related (Hermalin and Weisbach, 2003; Yermalik, 1996) moreover, banks are bigger than manufacturing firms regarding their balance sheets aggregates. Second, the larger board of directors in banks is explained by their organizational structure which is very complex. Banks may control or own different subsidiary financial institutions which each of them has its own board. Therefore, the co-ordination amongst these different boards could have an impact on the structure of the bank board size. Finally, the nature of mergers and acquisitions in the financial sector has an important role in maintaining a larger board size of directors. The number of non-executives directors varies from 13.79% to 96,29%, with a mean of 75.66% (Table 2) similar to Stairkouras et al (2007) they found that the number of non-executive directors in European banks varies from 16.67% to 90%. Furthermore, Booth et al (2002) demonstrate that industrial firms present a significantly a lower percentage of outside directors in their board of directors. They show that the outsiders (non-executive) directors present an average of 71.80 % which is less than the respective

Where $Performance_{i,t}$ is the stacked vector of the dependent (endogenous) variable (the i th bank performance on the t th period), $Y_{i,k,t}$ is the matrix of K bank-specific corporate governance measures and control independent (explanatory) variables, $\beta_{0,i}$ is the bank-specific intercept in the fixed-effects model, $\beta_{1,k}$ is the matrices of coefficients and $\varepsilon_{i,t}$ is a vector of error terms.

4. EMPIRICAL RESULTS

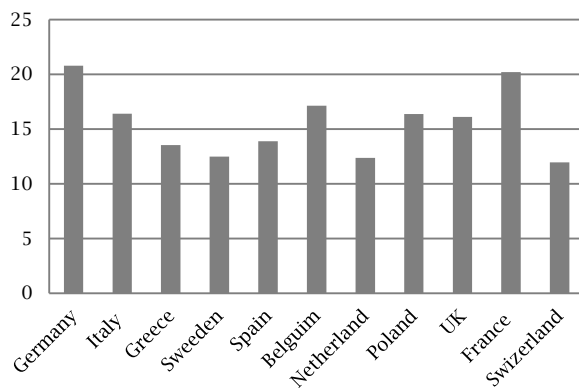
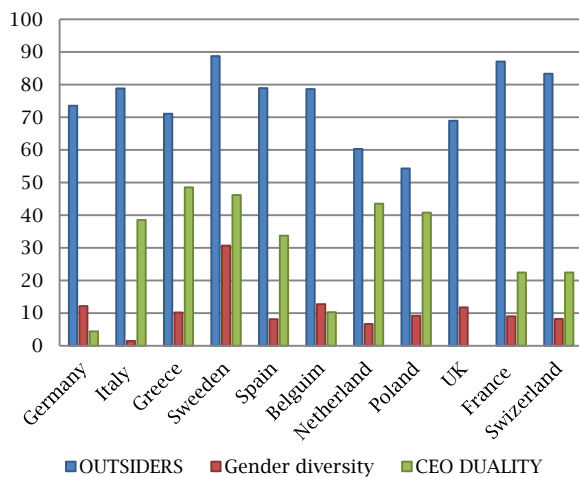
4.1. Descriptive statistics

Table 2 summarizes the descriptive statistics on the corporate governance variables, the bank performance measures and the control variables for the sample of European banks over the period 2002-2011.

board size in banks 81.29%. The proportion of female on the board of directors varies between 0% and 62.5% with a mean of 8.97%. The presence of the female on the board of directors still very low in the European banks. According De Cabo et al (2009) only 7% of the seats are held by women in a sample of 20 European banks. They find also that the maximum number of women in any European banks is 10 percent. Regarding the variable CEO duality, 30 % of the CEO is also the chairman of the board however; the remaining 60% has a separation between the function of the CEO and chairman. Our results are different from Belkhir (2009) who find that 65% of the cases that the CEO is also the chairman of the bank in a sample of 174 banks over the period 1995 -2002. As it concerns the bank performance measures over the period 2002-2011, The average Tobin Q ratio is higher than 1 and it varies between 0.08 and 2.03, the average return on assets (ROA) stands for 1 % and it floats between -12.57 % and 10.55% while the average return on equity (ROE) is 9.69 %. Our findings are close to Stairkouras et al (2008) which they find that the average Tobin Q is 1.03%, ROA is 0.75% and ROE is 14.25% using a sample of 58 European banks. For the control variables, the average Equity to Asset ratio arises at 11.62% (the median is 5.91%), Loan to Asset ratio stands at 51.87 % and the median accounts for 60.83 %, the mean value of the SIZE which is the natural logarithm of the total assets is 10.93. Table 3 reports the average value per country of the corporate governance variables (BOARDSIZE, Outsiders, Gender Diversity and CEO duality) and the bank performance measures (ROA, ROE, Tobin Q) and Figure 1 shows the board size of directors per country over the period 2002 - 2011.

Table 3. Descriptive statistics (2002-2011) per country

Countries	Variables							
	# Obs.	Board Size	Outsiders	Gender Diversity	CEO Duality	ROE	ROA	Tobin Q
Germany	90	20.80	73.53%	12.15%	4.44%	6.63%	0.98%	0.915
Italy	179	16.40	78.83%	1.46%	38.55%	7.79%	1.57%	1.009
Greece	68	13.56	71.11%	10.21%	48.53%	6.77%	0.37%	1.026
Sweden	39	12.49	88.78%	30.65%	46.15%	17.20%	1.59%	1.204
Spain	89	13.89	78.96%	8.11%	33.71%	13.50%	1.27%	1.035
Belgium	29	17.14	78.61%	12.73%	10.34%	4.55%	1.41%	0.978
Netherland	39	12.38	60.36%	6.70%	43.59%	12.99%	1.25%	1.052
Poland	49	16.39	54.34%	9.25%	40.82%	14.05%	1.56%	1.165
UK	39	16.13	68.91%	11.79%	0.00%	12.74%	0.94%	1.012
France	49	20.22	87.08%	9.03%	22.45%	8.76%	0.65%	0.999
Switzerland	49	11.98	83.39%	8.26%	22.45%	8.74%	0.66%	1.059

Figure 1. Board size of directors per country**Figure 2.** Outsiders, gender diversity and CEO duality per country

The mean size of the board of directors varies between 12.49 and 22.80 in the European Banks.

The French and German banks have the largest board of directors with 20.22 and 20.80 members respectively, whereas Switzerland has the smallest board of directors with only 12.49 members.

All the banks in the sample show a high proportion of non-executive directors. Swedish and French banks show a high proportion of outside director's accounts for 88.78 % and 87.07% respectively. However, Netherlands and Poland show the lowest proportion with 54.34% and 60.36%

respectively. The presence of the women on the board of directors varies according to the European banks. Sweden present the highest proportion of the female on the bank's board with an average of 30.65 % followed by Belgium with 12.73% and Germany 12.15%. Italian banks, on the other hand, have the lowest proportion 1.46% followed by Dutch banks with 6.70%. The difference in the proportion of female in the board directors could be explained by the regulations imposed in some European countries.

Regarding The CEO duality variable whether the Chief Executive Officer (CEO) holds the same position as the Chairman of the board. UK banks present the lowest proportion of the CEO duality, in our sample UK banks separate the role of the board chair and the CEO. Also, German Banks present a low percentage of CEO duality with 4.44 % as most of German banks adopt two-tier board structure where the supervisory and the management board are separated. Greece and Sweden present the highest percentage of this variable account for 48.53 % and 46.15 % respectively.

The different results between the European banks are explained by the fact that some countries use the one-tier system and the other adopt the two-tier system. As it concerns, the bank performance variables, during the period 2002-2011, Swedish banks present the highest return on equity (17.20%) return on asset (1.59 %) and Tobin Q (1.204). Although, Belgium presents the lowest return on equity with (4.55%), France the lowest return on asset (0.65%) and Germany the lowest TOBIN Q with (0.915).

4.2. Corporate governance empirical results

4.2.1. Corporate governance and European bank performance during 2002-2011

We first start by examining the relation between the corporate governance variables and the European banks performance (*Tobin Q*, *ROE* and *ROA*) for the full sample period (2002-2011). We apply the usual procedure for choosing between fixed and random effects by using the Hausman test statistic for the difference between the fixed-effects and random effects estimates. The test rejects the random-effects specification to all model specifications so fixed effects estimations are employed. Table 4 report the results.

Table 4. Corporate governance and bank performance (2002-2011)

	<i>Tobin Q</i>	<i>ROE</i>	<i>ROA</i>
Board Size	0.0669*** (4.306)	-0.0361*** (-2.986)	0.0192** (2.0431)
Outsiders	0.0249 (0.6438)	0.1263*** (4.201)	0.0004 (0.086)
Gender Diversity	0.2547*** (4.863)	0.0352 (0.863)	0.00434 (0.0070)
CEO Duality	0.0084 (0.766)	0.0076 (0.884)	0.0007 (0.520)
Equity	-0.4665*** (-14.321)	-0.0733*** (-2.892)	0.0188*** (4.866)
Loans	-0.0354* (-1.760)	-0.0092 (-0.585)	-0.0058** (-2.433)
Size	-0.0321*** (-10.855)	0.0058** (2.512)	-0.0012*** (-3.420)
Constant	1.2260*** (24.060)	0.234*** (5.913)	0.0197*** (3.256)
Adj. R-Squared	0.349	0.185	0.140
Nr. observations	730	730	730
Hausman test $\chi^2(7)$	25.216***	26.497***	36.991***

The sample consists of 73 European banks for the period 2002 to 2011. *Tobin Q* is the book value of assets minus book value of equity plus market value of equity divided by book value of assets, *Return on assets* (ROA) is calculated as profit before tax divided by total assets, *Return on equity* (ROE) is defined as profit before tax divided by total equity, *Board Size* is defined as the natural logarithm of the number of directors on the board, *Outsiders* is the ratio number of non-executive directors over the total number of directors, *Gender Diversity* is the proportion of female directors to the total number of the board of directors, *CEO Duality* is a binary variable equal to one if the CEO is the chairman of the board and zero otherwise, *Bank Size* is calculated as the Natural logarithm of the total assets, *Financial leverage* ratio is calculated as total equity divided by total assets and *Loans* is defined as loans divided by total assets. t-statistics in parenthesis. Superscripts indicate statistical significance at 0.01 (*), 0.05 (**), and 0.10 (***) percent levels.

The adjusted R-squared for the different performance measures used varies between 14 and to 35% which indicates a very reasonable overall fit of the data to the regression line. When *Tobin Q* is used as dependent variable, the board size has a positive impact on the bank performance ratio at 1% level of significance. Banks with large board of directors have higher *Tobin Q* ratio. The results show that a large board of directors has a positive impact on bank performance when it is measured by *Tobin Q*. Boards with large number of directors has crucial role in improving the advisory and monitoring functions, enhance governance and increase returns. Also, having a great number of advisors and supervisors reduces the power of the CEO. Moreover, the positive relationship could be explained by the fact that the banks are characterized by their complexity therefore, they need a large board of directors which play an important role in dealing with complexity. Our results are contrary to the theories which predict that small number of directors on the board are more efficient (eg. Staikouras et al, 2007). Our findings are in line with Belkhir (2009), Andres and Vallelado (2008) and Adams and Mehran (2005) who find that the addition of new director in the board has a significant and positive relationship with *Tobin Q*. They provide evidence that rise in board sizes would add value to bank holding company. The coefficient of Outsiders variable, which is the proportion of non-executive directors on the board, is positive but insignificant. This result is consistent with Andres and Vallelado (2008), Adams and Mehran (2003) and Love and Rachinsky (2007). As it concerns the banking sector, the positive relationship between the board composition and the performance is explained by the objective view of the non-executive directors regarding the company. Therefore, they are more suitable to accomplish the

supervisory function. However, the insignificant relationship between the two variables is consistent with the theory; due to regulatory requirement, directors do not emphasize to maximize the value of the company over the soundness and safety. Thus, Banks' regulations have an important role on board structure with regard to size and composition. The Gender diversity variable is positive and significant at 1 % level meaning that the proportion of females on the board of directors has a positive impact on the bank performance measured by *Tobin Q* ratio. The presence of the female on the board of directors has a crucial role in increasing board's independence since women tend to ask different questions than male directors. Moreover, female directors are considered as hard working person and have better communication skills which enable them to add value in the firm by improving the decision making ability and the problem solving of the board. Our findings are consistent with Carter et al (2003) and Pathan and Faff (2013). Still according to the results in table 4, the coefficient of CEO duality is positive but insignificant in relation with *Tobin Q*. The fact that the CEO is also the board chair of the directors has no significant impact on the bank performance, because the additional responsibilities accorded to the CEO do not significantly add capacity to the CEO to influence the performance. This results support Griffith et al (2002) and Adnan et al (2011). However, the result of this study contradicts different number of previous studies Belkhir (2009) which implying that the CEO duality enhance the bank performance. As it concerns the control variables, the bank size appears to be negatively and statistically significant with *Tobin Q* ratio at 1 % level of significance. This could be explained by the increase of portfolio diversification which leads to lower the risks and therefore lower the return of the bank. Our results support Staikouras et al (2007) while it contradict

the previous studies which explain that the bank size and bank performance are positively correlated this is due to the economies of scale, they demonstrate that the economies of scale increases with bank size which in turn improves the bank performance (Akhavain et al, 1997). The coefficient of the Loan to total asset (LA) demonstrates a negative and significant effect on bank performance at 10% level of significance. This ratio is used as a proxy to measure the bank liquidity. Our results are on line with Molyneux and Thornton (1992). The negative relationship could be explained by the fact that the banks are rapidly growing their loan portfolio therefore they have to pay a greater cost for their funding requirement and this could have a negative impact on the value of the firm. Finally, the equity to total asset ratio (EA) coefficient is negative and statistically significant at 1 % level of significance. This ratio is included as a measure of leverage and capital strength and its effect on bank performance.

In the second model we use ROE (return-on-equity) as bank performance measure. The results show that the Board size coefficient (BOARDSIZE) is negative and significant at 1% level for ROE. This illustrates that the performance of the European banks is deteriorated with the presence of large board of directors. This result is consistent with the results of the studies conducted by Stairoukas et al (2007), Hermalin and Weisbach (2003) and Yermack (1996). The board of directors become less efficient when the number of directors rises, this is due to the considerable problems related to the decision making time, coordination and communication between the boards. The presence of non-executive directors improves the monitoring of management and decreases the conflict of interest among the stakeholders. Moreover, when banks employ a new outside director with advisory competences, the strategic decisions should enhance since there is a complementary relationship between the counselling capabilities of the non-executive directors and those of the CEO. Thus, the bank performance will be improved. Regarding the gender diversity and the CEO duality variables, results show that the coefficients of these two variables are positive but not statistically significant for ROE. The presence of the female on board of directors has no significant impact on bank performance, this is due to the low proportion of female the European banks, therefore, they play a minor role on the board of director, In addition, small boards, who are male dominated and where the homogeneity preference's is stronger will pursue to hold back the female to the access to the top positions on banks. Our finding supports Setiyono and Tarazi (2014), Terjesen and Singh (2008), De Cabo et al (2009). The coefficient of the equity to total asset (EA) illustrates a negative and significant at 1 % level of significance (same result as Tobin Q). Also, the sign of the Bank size is positive and statistically significant at level of 5%, the result is different when Tobin Q is used as dependent variable which shows a negative and significant relationship between the two variables. This is due to the different proxies used to measure the bank performance. Finally, the coefficient of the loan to total assets (LA) is negative but statistically insignificant.

In the last model on table 4, we use ROA (return-on-assets) as a performance measure. Similar to previous findings when Tobin Q is used as

dependent variable, the board size (BOARDSIZE) is positive and significant with the ROA ratio at 5% level of significance. Moreover, the coefficient of the non-executive directors (OUTSIDERS) is positive but insignificant with ROA (same results as for Tobin Q). The significance of this variable is only observed when ROE is used as dependent variable. Regarding CEO duality, the coefficient of this variable is positive but statistically insignificant, this result ties on well with those studies that find no significant relationship between CEO duality and ROA such as Griffith et al,(2002); Adnan et al, (2011). For gender diversity we find a positive and significant relationship with ROA supporting Pathan and Faff (2013), the presence of the female on the board of director has significant impact on bank performance. For this model, all the control variables are significant. The Equity to total assets (EA) presents a positive and significant relationship with ROE at 1% level of significance. This results are consistent with the finding conducted by Stairkouras et al (2007) and Molyneux and Thornton (1992). The positive relationship could be explained by a high level of equity which suggest a decrease in the cost of capital and therefore, this variable may have a positive effect on profitability. On the other hand, a rise in capital may increase the expected earnings by decreasing the estimated cost of financial distress, as well as the bankruptcy cost. The coefficient sign of the bank size (SIZE) is negative but significant at 1% level of significance. Moreover, the Loan to total asset (LA) presents negative and significant relationship with ROA at 5% level of significance.

To sum up, under different measures of the bank performance (Tobin Q, ROE, ROA), we find a mixture of results, regarding the Board size (BOARDSIZE), there is *positive and significant* relationship between board size and bank performance using Tobin Q and ROA. The result are in line with Andreas and Vallealdo (2008) Adams and Mahran (2005). Boards with large number of directors has crucial role in improving the advisory and monitoring functions, enhance governance and increase returns. Also, banks are characterized by their complexity therefore, they need a large board of directors which play an important role in dealing with complexity. This result are in line with our expectation, *hypothesis 1 is accepted*.

The board composition is *positively* related to bank performance, whereas the sign of the coefficient is *not significant* in most of the cases (Tobin Q and ROA). As we mentioned above, the positive relationship between the board composition and the performance could be explained by the objective view of the non-executive directors regarding the company. Therefore, they are more suitable to accomplish the supervisory function. While the non-insignificance relationship is consistent with the regulatory requirement in banking sector, directors do not emphasize value maximization over the soundness and the safety of the firm. Our finding is consistent with Stairoukas (2007) but is not in line with our expectation as we assumed a positive and significant relationship with the bank performance, *Hypothesis 3 is rejected*.

The Gender diversity and the bank performance are *positively and significantly* related to the bank performance in most specification, our findings are consistent with Carter et al (2003) and Pathan and Faff (2013). The female directors are considered as hard working person and have better

communication skills which enable them to add value in the firm by improving the decision making ability and the problem solving of the board. *The hypothesis 5 is accepted.*

In all the models, CEO duality presents a *positive* but *non-significant* relationship under the different proxies of the bank performance (ROE, ROA, and Tobin Q). The funding supports Griffith et al (2002) and Adnan et al (2011). This could be explained that the additional responsibilities accorded to the CEO do not significantly add capacity to the CEO to influence the performance. Or it could be explained by the relative variability of the CEO duality variable during the sample period which it makes hard to identify the effect of the leadership structure on bank performance. This result is not in line with our expectation, *hypothesis 7 is rejected.*

4.2.2. Corporate governance and European bank performance during (pre and during/post financial crisis)

In this section we divide the sample of European banks in two sub-periods: pre financial crisis (2002 to 2006) and during/post financial crisis (2007-2011). We consider a period during/post financial crisis since the literature is not clear regarding the beginning and end of the financial crisis in particular in the banking sector due to the successive government bailouts in different years. In table 5, panels A and B the results for the period pre (2002-2006) and during/post financial crisis are presented. Again we employ fixed effects estimations.

Table 5. Corporate governance and bank performance pre, during/post financial crisis (2002-2006)

The sample consists of 73 European banks for the period 2002 to 2006. <i>Tobin Q</i> is the book value of assets minus book value of equity plus market value of equity divided by book value of assets, <i>Return on assets</i> (ROA) is calculated as profit before tax divided by total assets, <i>Return on equity</i> (ROE) is defined as profit before tax divided by total equity, <i>Board Size</i> is defined as the natural logarithm of the number of directors on the board, <i>Outsiders</i> is the ratio number of non-executive directors over the total number of directors, <i>Gender Diversity</i> is the proportion of female directors to the total number of the board of directors, <i>CEO Duality</i> is a binary variable equal to one if the CEO is the chairman of the board and zero otherwise, <i>Bank Size</i> is calculated as the Natural logarithm of the total assets, <i>Financial leverage</i> ratio is calculated as total equity divided by total assets and <i>Loans</i> is defined as loans divided by total assets. t-statistics in parenthesis. Superscripts indicate statistical significance at 0.01 (*), 0.05 (**) and 0.10 (***) percent levels.			
Panel A: Pre Financial Crisis (2002-2006)			
	Tobin Q	ROE	ROA
Board Size	0.0213** (2.048)	0.0385*** (2.924)	-0.0036 (-0.660)
Outsiders	0.3182*** (3.452)	0.0293 (0.338)	0.0147 (1.302)
Gender Diversity	0.2265 (1.674)	0.3199** (2.424)	0.0373** (2.168)
CEO Duality	-0.0219 (-0.757)	-0.0153 (0.5759)	-0.0032 (-0.897)
Equity	0.1892 (0.0905)	0.0922 (0.881)	0.0671*** (4.907)
Loans	0.2229*** (3.159)	0.0212 (0.319)	0.0113 (1.303)
Size	0.0457*** (2.993)	0.0565*** (3.938)	0.00837*** (4.473)
Constant	0.1681 (0.785)	-0.439** (-2.179)	-0.092955*** (-3.539)
Adj. R-Squared	0.773	0.343	0.589609
Nr. observations	365	365	365
Panel B: During/Post Financial Crisis (2007-2011)			
	Tobin Q	ROE	ROA
Board Size	-0.0378* (-2.337)	-0.0267* (-2.478)	0.0061 (0.006)
Outsiders	-0.0331* (-1.673)	-0.1963* (-1.909)	0.0014 (0.085)
Gender Diversity	-0.1211 (0.985)	-0.0130 (-0.101)	-0.0091 (-0.444)
CEO Duality	-0.0864** (-2.385)	-0.0041 (-0.107)	-0.0008 (-0.135)
Equity	0.7492*** (3.2827)	0.5848** (2.449)	0.234*** (6.172)
Loans	0.1691 (1.5356)	-0.0222 (-0.1922)	0.0013 (0.070)
Size	0.0301 (0.832)	-0.0794** (-2.099)	0.0070 (1.164)
Constant	0.4559 (1.031)	1.1254 (2.433)	-0.1120 (-1.526)
Adj. R-Squared	0.659	0.419	0.292
Nr. observations	365	365	365

The board size variable presents a positive and significant coefficient at level of 5 % before the financial crisis for all the performance measures except of ROA while a negative and significant coefficient at level of 10 % for the most bank performance (expect for ROA) during/after the financial crisis. The result shows that boards with small number of directors have performed better than the largest ones during and post financial 2008. Our finding is consistent with Hoque and Muradoglu (2010). Our result could be explained that a smaller boards are quicker and faster in making better decisions in tough period such crisis. Therefore our *second hypothesis is accepted*.

The *Outsiders* variable which is defined as the proportion of non-executive directors on the board of directors had a positive but insignificant coefficient for the overall sample (expect for ROE) reported in the previous section. According to the result shown in the table 5 (panel A), the board composition (outsiders) presents a positive and significant relationship with Tobin Q at 1 % level of significance but insignificant relationship with ROE and ROA. Whereas, during/post the financial crisis, the results show that the board composition and the performance measures are negatively (expect for ROA) and statistically significant at 10% level of significance for ROE and Tobin Q. This implies that the performance of the bank is better when there are fewer external directors on the board of directors. Thus, boards with fewer interconnections were more efficient during the financial crisis, so that directors can concentrate more on a specific board. This result support Guner et al (2008) and Erkens et al (2012). They find that board with higher number of independent directors perform worse during the crisis 2008. *Hypothesis 4 is accepted*.

The presence of women on the board of directors, before the crisis (2002-2006) is positive and significant at level of 5 % for ROE and ROA (10% level for Tobin Q). However, during the global financial crisis the gender diversity variable is *negatively but not significantly* related to all the performance measures used in this paper. Gender diversity does not add any value to the bank performance during the crisis as the woman are more risk averse and are afraid in making decision compared to the male during the crisis. Our result is in line Hoque and Muradoglu (2010). *Hypothesis 6 is rejected*.

Regarding the impact of *CEO Duality* on bank performance during/post and before the crisis, we notice that the sign of the coefficient variable is negative but statistically no significant during pre-crisis for all the performance measures, while during/post crisis there is a negative but non-significant relationship in most cases with ROA and ROE (except for *Tobin Q*). *Hypothesis 8 is accepted*. This implies when the CEO of the bank hold also the position chairman of the board, the performance of the bank declines. This is in contradiction to general belief, when during the crisis there is a positive and significant relation between the CEO duality and firm performance as when the two positions are combined, one single leader could have a better influence. The person has a greater knowledge to the company and industry than an external chairman, moreover, the CEO-chairman can fix a clear goal to raise the shareholder value and recover from the

crisis. However, the negative and non-significant relationship in our studies could be explained that both of the CEO and the chairman of the bank have respond collaboratively and prudently to the financial crisis but their collaboration do not add value to the bank. The results support Grove et al (2011) and Carty and Weiss (2012). With regards to the control variables, the equity to total asset (EA) present a positive and significant relationship with ROA at 1% level of significance during the period of non-crisis, while during/post the crisis we found a positive and significant relationship with all the performance measures analysed. The loan to total asset (LA) and the bank performance measures are positively and significantly related to 1% with only *Tobin Q* during the non-crisis, whereas is positively but not statistically significant to *Tobin Q* and ROA and negatively related to ROE during/post crisis. During the financial crisis, the bank performance has decreased dramatically as loan losses has increased. During the period of non-crisis the bank size demonstrates a positive and significant relationship with all the dependent variables at level of 1 % while during/post crisis a negative and significant relation with only ROE at level of 5%. This is implies that the biggest banks saw the largest loss during the financial crisis compared to the smaller ones. This funding supports Cornett et al (2009). Overall, during and post financial crisis larger banks are less profitability than smaller ones.

5. CONCLUSION

In this study we investigate the impact of the corporate governance on bank performance in a sample of 73 large European banks over the period 2002-2011. More specifically, the corporate governance proxies examined in this study are the board size, the gender diversity, the CEO Duality and the proportion of non-executive directors on the board of directors, whereas the bank performance is captured by accounting measures (*ROA* and *ROE*) and market value measure (*Tobin Q*).

To our knowledge, this is the first study which relates bank performance with corporate governance measures during and post the global financial crisis in 2008 for European countries.

Our results can be summarized as follows: i) board size is positively related with performance before crisis and negative afterwards; ii) During/post financial crisis the board with small number of directors have outperformed the one with the larger boards this could be explained that small board of directors is more efficient in tough periods as they take quick decision compared to the larger boards; iii) During/post the crisis, the results show that the board composition and the performance measures are negatively and statistically significant; iv) no significant relationship was found between gender diversity and the bank performance

Overall, our results show that corporate governance variables have a real impact on bank performance. The mixture of the results depend on the performance measure used as well the time period analysed. Additional research is needed to better understand the impact of corporate governance on bank performance, for example, it is worthy to include other corporate governance measures such the composition and the nature of

the audit committee, the ownership structure, or to incorporate other variables related to the characteristics of the board of directors or the CEO, for instance, the average tenure in bank, the education or the trajectory carrier.

We believe that this paper had added further empirical evidence to the past studies. As we stated above this paper is the first, to our knowledge associated the bank performance with the corporate governance measures during the global financial crisis for European countries. In addition, we employed different corporate governance proxies such as the gender diversity and the CEO duality, since most of the studies related to the European countries have used only the board size and the board composition.

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