

CORPORATE GOVERNANCE AND PERFORMANCE OF EUROPEAN COMMERCIAL BANKS

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Abstract

This paper analyzes empirically the corporate governance influence on key performance figures of publicly traded European banks in the period from 2005 to 2009. Taking all sources of endogeneity into account, performance-governance relation is estimated applying Generalized Method of Moments (GMM) technique. Our results indicate that board size, gender diversity on management board, and existence of compensation committee boost performance of banks; whereas chief executive officer (CEO) personal characteristics affect risk-taking behavior of banks.

Keywords: Corporate Governance, European Banks, Bank Performance, GMM

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1. Introduction

The wave of corporate scandals within the last decades, financial and debt crises are the reasons of increased attention to corporate governance in the recent research literature. Shleifer/Vishny (1997) define corporate governance as the way in which suppliers of finance to corporations assure themselves a return on their investments. This separation of ownership and control is connected with the traditional agency theory, which assesses how the interests of managers can be aligned with those of shareholders.

The recent studies investigate a variety of mechanisms that can improve corporate governance practices and, therefore, lead to the higher shareholders' wealth. Gompers/Ishii/Metrick (2003) construct an equally-weighted corporate governance index (G-Index) that measures the level of shareholder rights restrictions. The G-Index consists of 24 corporate governance provisions compiled by the Investor Responsibility Research Centre (IRRC). The components of the index are provisions that restrict hostile takeovers (e.g., poison pills, staggered board), limit shareholders' voting rights (e.g., cumulative or supermajority voting), protect managers and directors from legal liability or job termination (e.g., golden parachutes, indemnification contracts), and other provisions that provide protection to managers and/or directors. The authors report that firms with stronger shareholder rights are more profitable, have higher sales growth and higher firm value.

Bebchuk/Cohen/Ferrell (2009) analyze which provisions, among 24 provisions reported by IRRC, matter more for the firm value. They create an entrenchment index (E-index), which is based on six provisions: four provisions limit shareholder rights and two enhance resistance of hostile takeovers. The two aforementioned indices have been recently used in a substantial amount of research literature as a measurement of firm's corporate governance quality (e.g., Cremers/Nair (2005), Cremers/Nair/Wei (2007), Masulis/Wang/Xie (2007), Bhagat/Bolton (2008), Harford/Mansi/Maxwell (2008)).

Board characteristics are also considered as important determinates of corporate governance. Board size (Lipton/Lorsch (1992), Jensen (1993)), board independence (Hermalin/Weisbach (1998)), stock ownership of board members (Bhagat/Carey/Elson (1999)), and CEO power (Hermalin/Weisbach (1998))

are the most popular determinants of corporate governance. Numerous empirical studies determine a positive relation between good governance and performance of companies. Bhagat/Bolton (2008) assess performance-governance relation of American companies, whereas Durnev/Kim (2005) carry out the cross-country analysis. The evidence of corporate governance impact on performance is also documented in European countries (Germany (Goncharov/Werner/Zimmermann (2006)), Italy (Abatecola/Poggesi (2010)), Ukraine (Zelenyuk/Zheka (2006))), Asian countries (China (Paskelian/Bell (2009)), Barniv/Bao (2009)), Japan (Sueyoshi/Goto/Omi (2010))), and Australia (Henry (2008)). Results of already existing theoretical and empirical work regard the quality of corporate governance as a key performance driver of companies. Well-governed firms guarantee the credibility of their financial and accounting reports and gain higher market valuation (Mir/Seboui (2008)).

The impact of ownership structure on performance of banks was investigated in different dimensions. Ownership concentration has a large positive influence on bank valuation, especially in countries with weak legal protection of minority shareholders (Caprio/Laeven/Levine (2007)). The large owners, however, have greater incentives to increase bank risk taking (Laeven/Levine (2009)). Privately owned banks seem to be more profitable than mutual and state-owned banks (Iannotta/Nocera/Sironi (2007)). Privately owned banks observe different risk strategies in case when individuals, banks or institutions hold higher equity stakes (Barry/Lepetit/Tarazi (2011)).

However, assessment of board characteristics and its influence on performance of banks is scarce in the literature. The studies of Andres/Vallelado (2008) and Belkhir (2009) examine the influence of several board characteristics on valuation of banks, whereas Pathan (2009) analyzes the relevance of board structure on bank risk-taking. The aforementioned studies are concentrated mainly on US banks. This paper extends already existing studies and analyzes performance-governance relation of European commercial banks. This paper contributes additionally to the literature in further ways: Firstly, we assess different board structures that are common in European countries. Secondly, gender diversity impact on performance of banks is investigated. Thirdly, different chief executive officer (CEO) and chairman characteristics are involved in the analysis. Fourthly, Generalized Method of Moments (GMM) technique is applied for the estimation that takes all sources of endogeneity into account. Finally, we control for level of banks cost efficiency estimating performance-governance relation.

2. Measurement of Corporate Governance

Corporate boards are considered as internal governance mechanism that is a focus of many theoretical and empirical investigations. Board of directors presents a control system, which hire, fire, assess, and compensate executive managers. They ratify and monitor important managers' decisions, that ensure separation of management and control in a corporation (Fama/Jensen (1983)).

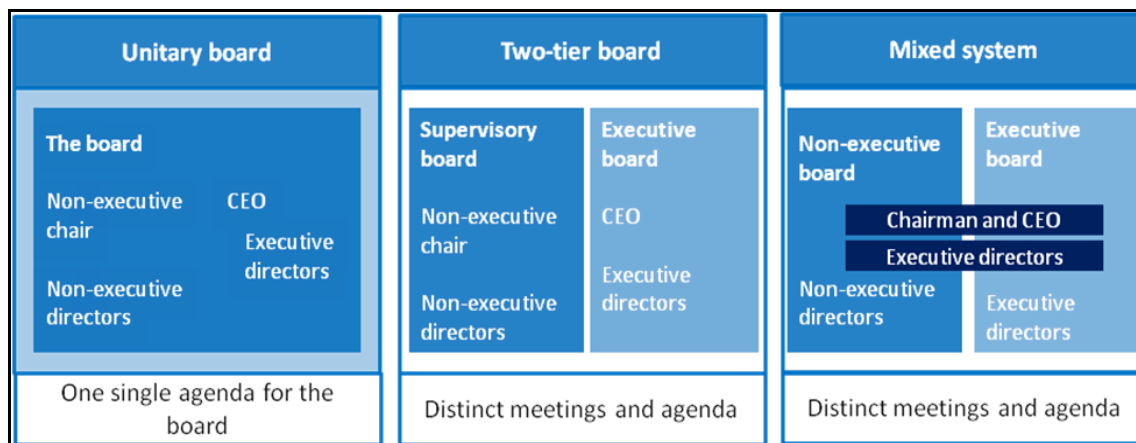
Analyzing European countries, it is important to mention that there are differences in legal structures of the boards. As presented in Figure 1, there are three types of board structure in Europe. Some countries have adopted only one possible board system; some countries allow firms to choose an appropriate structure for their governance (e.g., France, Netherlands, Spain, Portugal). The unitary board of directors (one-tier board or monistic system) is used in common law countries and consists of executive and non-executive directors, who are normally elected by shareholders. United Kingdom and Ireland adopt only one-tier board system.

Two-tier (dualistic) board system, prevailed in civil law countries, is compulsory in Germany and Austria. According to the dualistic board structure, it is mandatory to have two boards: the management board (executive board) and the supervisory board. The supervisory board consists of shareholder representatives and up to 50 percent labour representatives. It appoints, dismisses, advises, and supervises the board of managing directors. The management board is responsible for the managing the company, development and implementation of company's strategies. Thus, there is a clear separation between the functions and responsibilities of the boards. Simultaneous membership in the management and the supervisory board is not permitted.

The characteristic of the mixed board system is that executive directors can be simultaneously members of the non-executive board. Additionally, meetings of the executive and non-executive boards are held

separately, however, with the same chairman and CEO. This structure is widespread in numerous European countries, but is prevalent in Belgium, Portugal, and Sweden.¹

Figure 1. Board structures in Europe²



Board Size

Performance of banks depends on the advising, decision-making and monitoring quality of the board of directors. Effective monitoring and advisory of boards presume better governance of companies. Therefore, boards as independent control mechanism can play an important role for the financial performance and market success of a company. The question is what can influence the effectiveness of communication, coordination and decision making within the boards. Jensen (1993) argues that board size influences effectiveness of directors in monitoring CEO's actions. Because of high coordination costs and free-riding problems, large boards are associated to be less effective in controlling managers than small boards. Thus, large boards make CEOs more powerful influencing board's decisions. Jensen (1993) suggests that the optimal size of the board should be seven or eight people.

This theoretical argumentation leads to empirical research that investigates relationship between board size and performance of companies. Yermack (1996) finds an inverse relation between board size and Tobin's q in a sample of large US industrial corporations. His evidence was supported by Eisenberg/Sundgren/Wells (1998), who analyze small and midsize Finnish firms. Yermack (1996) reports that smaller boards lead to higher likelihood of CEOs' dismissal due to poor performance, and that CEOs' compensation is more dependent on performance in companies with smaller boards. Large sample differences in studies of Yermack (1996) and Eisenberg/Sundgren/Wells (1998) with corresponding average board size of 12.25 and 3.7 members motivated Beiner et al. (2004) for the assessment of Swiss companies with a mean of 6.6 board members. Using simultaneous equation approach, they do not find any significant relationship between board size and firm valuation.

Concerning variability of corporate performance and value, Cheng (2008) reports less volatile performance of companies with large boards. These findings can indicate that occurred communication and coordination problems lead to more compromises in large boards looking for a consensus. This might result in less extreme board decisions that is reflected in less extreme corporate performance.

However, the aforementioned studies do not take complexity of firms into account. More complex firms with corresponding operations have larger information requirements. Since board of directors ratify and monitor managers' decisions, complex firms tend to require larger boards for more advice (Boone et al. (2007)). Thus, advices are more valuable the more complex a firm. The theoretical framework of Adams/Hermalin/Weisbach (2008) assesses this issue. It shows that for a simple firm, it is optimal to have small boards; complex firms gain, however, from larger boards. Estimating complexity of the firms with number of segments, firms size (sales volume), and leverage, Coles/Naveen/Naveen (2008) confirm

¹ See Heidrick&Struggles (2011), p. 11.

² See Heidrick&Struggles (2011), p. 10.

empirically a positive relation between board size and complexity level of companies. They show also that relation between Tobin's q and board size differs for simple and complex firms. Simple firms have a negative relation between market value and number of directors; however, Tobin's q is increasing in board size for complex firms. The achieved results indicate that complex firms require and benefit from large boards.

Analyzing the results of Coles/Naveen/Naveen (2008) suggests that, due to high leverage and complexity, banking should benefit from larger boards. Studies of Andres/Vallelado (2008) and Belkhir (2009) assess this issue empirically. Sample of Andres/Vallelado (2008) consists of banks with one-tier board structure from six OECD countries (Canada, the US, the UK, Spain, France, and Italy). They investigate the influence of board size and fraction of non-executive directors on Tobin's q , return on assets, and annual market return of bank shareholders. They confirm that there is a positive relation between bank size and performance of banks. However, they find an inverted U-shaped relation, i.e., adding additional director to around 19 existing directors reduces bank value. Belkhir (2009) reports also a positive relation between board size and Tobin's q analyzing US banking organizations during the period 1995–2002. This relation is significant for both subsamples: savings and commercial banks. However in contrast to Andres/Vallelado (2008), Belkhir (2009) does not find any quadratic relation between board size and performance of banks.

Pathan (2009) examines the relevance of board structure on risk-taking of US bank holding companies. His findings are consistent with the results obtained by Cheng (2008): large boards are associated with lower variability of stock returns. The negative board size influence on risk of banks is confirmed by all five risk measures used in his study. This indicates that smaller boards are associated with higher risk-taking behavior in banking.

Several aforementioned studies that concentrate on banking industry have assessed in most cases US banks, only four European countries were involved in the study of Andres/Vallelado (2008). In this paper, the further investigations are carried out with the sample of 74 banks from 27 European countries. Firstly, it is analyzed whether there is a linear or quadratic relation between board size and performance in European banking industry, since till now the results are contradicting concerning this issue (Andres/Vallelado (2008), Belkhir (2009)). Secondly, the executive and non-executive directors are considered separately, in order to check the influence of board composition on the performance and risk of banks.

The observed sample of banks has three types of board structures: unitary, two-tiered and mixed boards. The board size is calculated as a sum of executive and non-executive directors. In the boards with the mixed structure, there are members who are both executive and non-executive directors. Determining the complete board size, these members are counted only once. In the analysis, the natural logarithm of the board size, executive and non-executive members is used.

Board Independence

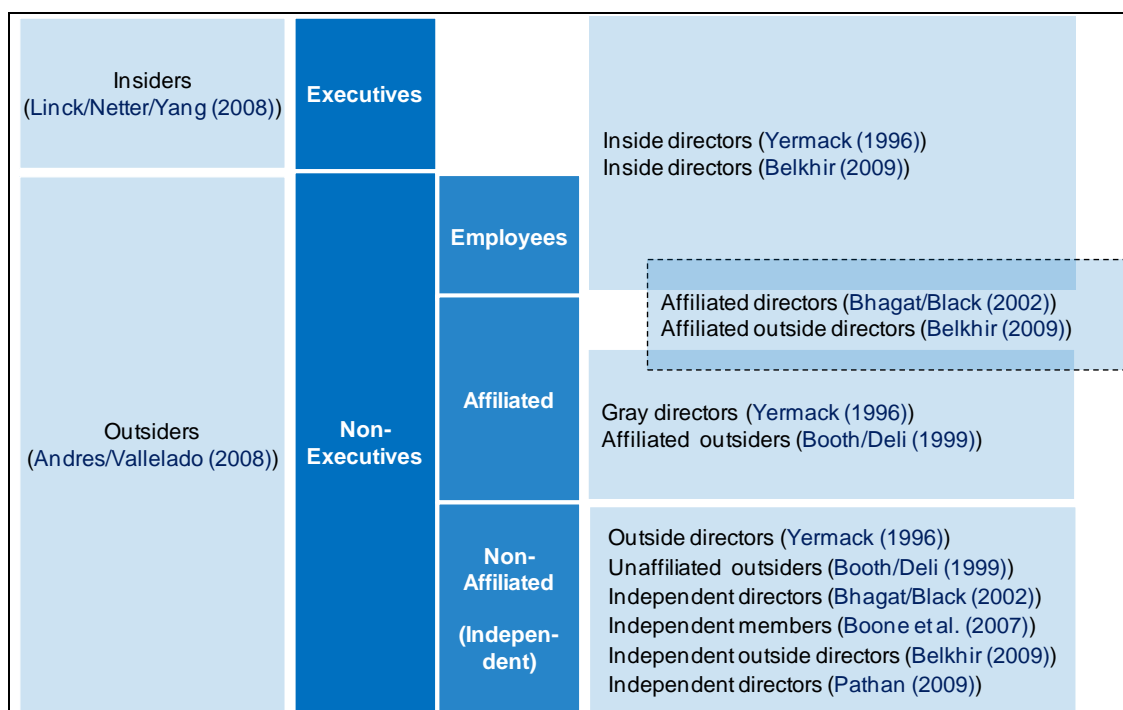
Due to monitoring function, board of directors, as a central internal governance mechanism, have to reduce agency problems occurred between shareholders and management. Outsiders (independent directors) have clear incentives to monitor the executives in effective way. Also, advices provided by outside directors can be better due to their valuable experience, expertise and important connections (Fama/Jensen (1983), Hermalin/Weisbach (1988), Linck/Netter/Yang (2008)). This argumentation implies importance of board independence for successful governance of companies. However, insider representation is also very important for companies due to their firm-specific knowledge (Fama/Jensen (1983), Raheja (2005), Coles/Naveen/Naveen (2008)).

Several empirical studies assess the possible link between board independence and firm performance. It is, however, not straightforward to compare the definitions of independence used in the literature. Some studies define outsiders as non-executive directors, who are independent from managers (Andres/Vallelado (2008), Linck/Netter/Yang (2008)). Numerous studies distinguish between three types of directors: inside directors, affiliated outside directors and non-affiliated outside (independent) directors. Inside directors are the board members who are current or former officers (full-time employees)

of a company. Affiliated outside ("gray"³) directors are those who have business relation with the company (e.g., bankers and lawyers), and those who have family relationship with officers of the firm. Independent (non-affiliated) outside directors are all other outside directors without aforementioned affiliation. With this structure, there are, nevertheless, differences in director definitions. For instance, Belkhir (2009) and Bhagat/Black (2001) consider former employees of a company as affiliated outside directors. In contrast, Yermack (1996) and Booth/Deli (1999) treat former employees as insiders in their studies. Figure 2 summarizes definitions of board members used in several studies.

Empirical results concerning the board independence and its influence on performance of companies are mixed. Bhagat/Black (2001) do not confirm the hypothesis that higher proportion of independent directors on the board is associated with better firm performance. Coles/Naveen/Naveen (2008) conduct a further analysis defining affiliated and independent directors as outsiders. Their findings indicate that complex firms gain from more outsiders, what implies that management of complex firms have a greater need for advice and expertise relative to simple firms. The authors hypothesize that R&D intensive firms need more firm-specific knowledge to select appropriate strategies. Their results show that in high-R&D firms Tobin's q is positively related to the insiders' proportion on the board.

Figure 2. Definitions of directors



Analyzing US holding companies, Belkhir's (2009) results do not show any significant influence of board independence on performance of banks. Pathan (2009) reports a negative relation between independent boards and risk measures of banks. More conservative risk behavior of independent board members can be explained by their high sensitivity to regulatory compliance.

In order to determine fraction of independent directors on the board, the number of non-affiliated directors divided by the total number of non-executive directors is considered in this study. Most of banks disclose information concerning the board independence in their annual reports. Some of banks, however, do not provide this information. Therefore, board independence variable can not be used for the whole sample of banks in the analysis. For the complete sample of banks, the dummy variable is used, which indicates whether banks disclose this information or not. Afterwards, the sample is narrowed and the influence of exact proportion of independent directors on performance of banks is analyzed.

³ Yermack (1996).

Gender Diversity

Board gender diversity is another corporate governance aspect that gains greater attention for both companies and shareholders. Proponents for governance reform promote the importance of gender diversity on the boards. They argue that diversity improves board effectiveness and recommend appointing more female directors (Higgs (2003), Tyson (2003)). Diversity in boards can generate improved brainstorming and creativity, that leads to more alternative solutions of the problems (Hillman/Shropshire/Cannella (2007)). Also not belonging to the "old boys club", female directors can better correspond to the concept of independent directors (Adams/Ferreira (2009)).

Worldwide the companies are under the pressure to increase female presence on the boards. Several European countries have introduced legal requirements for female board seats. For instance, Norway was the first country that has introduced already in 2005 board gender requirements: All listed companies must have 40 percent female representation on the boards from January 2008. Until 2015, listed companies have to increase female quota to 40 percent in Spain and to 30 percent in Netherlands. In France, the proportion of women should not be below 40 percent for listed companies, and also for non-listed firms with revenues or total assets over 50 million euro or employing at least 500 persons for three consecutive years.⁴

This legislative pressure is based on the view that the presence of women on boards can improve governance of firms. Adams/Ferreira (2009) investigate this hypothesis analyzing whether gender diversity influences director attendance behavior, committee assignments, CEO turnover, and compensation. Based on Standard & Poor's (S&P) 500, S&P MidCaps and S&P SmallCap firms in the period of 1996-2003, they find that gender diversity has a significant influence on board's attendance. Firstly, women are seemed to have less attendance problems than men. Secondly, this reduces attendance problems of male directors. These results indicate that the higher the share of female directors, the better attendance behavior of the board members. Also, the authors report that the CEO turnover for poor performance increases with the female presence on the boards.

Gul/Srinidhi/Ng (2011) find that board gender diversity in US listed companies improves stock price informativeness by increasing firm-specific voluntary information disclosures. The authors examine this effect also separating the sample in firms with weak and strong corporate governance. The results show that the relation between gender diversity and stock price informativeness is only significant for firms with weaker corporate governance. This suggests that firms can improve firm-level weak governance by appointing female directors.

Promoting better attendance behavior and tougher monitoring of management lead to improvements in board governance. Stronger governance should affect firm performance and shareholder wealth of companies. Carter/Simkins/Simpson (2003) find a positive relation between gender and ethic diversity of the board and firm value for the Fortune 1000 companies. However, too much monitoring can lead to a breakdown in communication between managers and directors, what could have a negative influence on shareholder value (Almazan/Suarez (2003), Adams/Ferreira (2007)). Adams/Ferreira (2009) confirm empirically that on average tough boards with gender diversity do not improve firm value. This relation differs in firms with different levels of shareholder rights, measured by Gompers/Ishii/Metrick (2003) governance index. Gender diversity on boards has a positive influence on shareholder value in companies with weak shareholder rights, where additional monitoring enhances performance. In firms with strong governance, greater gender diversity can lead to overmonitoring that reduces firm value.

There is no evidence of gender diversity research in European banking industry. Therefore, the impact of female board presence on the performance of European banks is analyzed in this paper. The percentage of female non-executive directors out of all non-executive directors is considered. Also, the percentage of female executive directors out of all executive directors is determined.

⁴ For legal requirements see Deloitte (2011).

Board Activity

It is not straightforward to assess the way boards operate. However, board meeting frequency could be an important attribute of board operations. On the one hand, board meeting time is an important mechanism to improve effectiveness of monitoring function (Conger/Finegold/Lawler (1998)). Since higher frequency of meetings can be linked to more detailed control of managers, meetings can be associated with greater shareholder wealth (Andres/Azofra/Lopez (2005)). On the other hand, meeting time can be spent not for the meaningful exchange of ideas and, therefore, is used not in efficient way (Vafeas (1999)). Also, fixed agenda by chief executive officers and routing tasks absorb opportunities of non-executive directors to exercise effective control over management (Jensen (1993), Vafeas (1999)).

Jensen (1993) argues that boards should be relatively inactive and they have to be more active in the presence of problems. Vafeas (1999) assesses this argumentation empirically and reports that, indeed, boards become more active following poor corporate performance. During the crises, boards' activity is highly important to cope with the occurred difficulties, in order to protect shareholders. This inverse relation between performance and board meetings is reflected in findings, that boards with more frequent meetings are valued less by the market. However, the relation runs from poor performance to higher board activity and not vice versa. Empirical results also indicate that for firms with poor prior performance, high meeting frequency is followed by significant performance improvements during the next years. These findings show that board of directors is a reactive institution rather than proactive measure for corporate governance improvements.

In banking, Andres/Vallelado (2008) use the number of meetings held each year as a proxy for boards functioning. They found a positive relation between the board frequency and performance of banks, indicating the proactive role of board meetings. This relation lacks, however, statistical significance.

This analysis is also controls also for number of meetings of non-executive directors. This information was, however, not by all banks disclosed. Therefore, only the narrowed sample of banks can be assessed. In the analysis, the natural logarithm of meetings frequency per year is used.

Board Committees and Auditors Quality

Committees, as organizational units of board of directors, specialize on narrowly defined functions. Delegation of specific tasks to the corresponding committees plays an important role especially in large corporations. Klein (1998) shows a linkage between organizational structure of the boards and firm performance. Although committee existence alone is not reflected in performance of companies, she demonstrates a positive relation between performance and the number of insiders on the finance and investment committees.

Regarding different narrowed tasks, several committees can be established in companies. In banking, for instance, nomination, compensation, audit, corporate governance and risk committees are often observed. The existence of committees is not homogeneous in banks even in the same countries. Some of banks have only two committees and some banks establish six committees on the board.

The nomination committee is responsible for the structure, size and composition of the board. It assesses the board independence, reviews qualifications and experience of the board members. The committee prepares proposals for the appointment of CEO and directors. It prepares also the plan for the appointment of successors to the board. Shivdasani/Yermack (1999) find that if no nomination committee exists or if CEO serves on the nomination committee, firms appoint fewer outside directors. They also show that the stock price reaction to independent director appointments is lower when CEO serves on the nomination committee. However, assessing the UK publicly traded companies, McKnight/Weir (2009) report that having the nomination committee increases agency costs.

The compensation committee determines criteria, structure and amount of the remuneration of top-level managers. Analyzing CEO performance, the committee reviews and recommends CEO compensation. It also submits a proposal to the board of directors for the stock options policy. Sun/Cahan/Emanuel (2009) analyzes the compensation committee governance quality of US listed companies. They find that for

firms with high compensation committee quality, the future firms' performance is more positively associated with CEO stock option grants.

The audit committee is responsible for the monitoring of financial accounting process. It controls the internal audit system and effectiveness of compliance and the auditing of financial statements. It prepares the approval of the annual financial statements and discusses changes of the accounting methods. The audit committee recommends and mandates the external auditors monitoring for their independence and qualifications. Klein (2002) shows that abnormal accruals, as a proxy for earnings management, depend on audit committee independence. The abnormal accruals appear to be more pronounced for firms with less independent audit committees.

Due to scarcity of disclosed information, a deep analysis of committee structures is not conducted within this paper. However, existence of the nomination, compensation and audit committees is considered by the corresponding dummy variables. Also, the natural logarithm of the number of committees is included in the model estimation. To control for quality of external auditors, an indicator variable is introduced that equals to one if auditor belongs to Big 4 and zero otherwise.

Chief Executive Officer and Chairman of the Board

The situation when CEO also holds the title of chairman of the board can lead to the greater CEO control of board decisions. Therefore, CEO duality is associated with CEO power indicator (Hermalin/Weisbach (1998), Adams/Almeida/Ferreira (2005), Pathan (2009)). In order to implement an effective monitoring system, it is suggested to separate the chairman and CEO positions (Fama/Jensen (1983), Jensen (1993)). Goyal/Park (2002) show that the sensitivity of CEO turnover to poor performance is significantly lower when titles of CEO and chairman are combined. It indicates that when the positions are not separated, the CEO power increases and independent monitoring of the board is less effective. The lack of independent oversight of the management can affect performance of companies. There is, however, no strong empirical evidence that CEO duality influences performance negatively (Brickley/Coles/Jarrell (1997), Beasley/Salterio (2001), Adams/Almeida/Ferreira (2005)).

Thus, the empirical work is not consistent with the view that separation of titles would necessarily improve performance. Adams/Hermalin/Weisbach (2008) argue that if CEO shows high abilities and performs well, he or she can be rewarded by being given the chairman title as well. Even if combining this titles leads to increase in CEO power, it does not follow that separation of these positions will improve performance. The authors state that for some corporation CEO duality can be an optimum corporate governance solution, and separating the titles would lead to less efficient solutions.

In banking, Belkhir (2009) reports even a positive relation between CEO duality and Tobin's q , though only in case of savings banks and not commercial banks. Pathan (2009) considers CEO power in case of CEO duality and/or if CEO is internally-hired. His investigations show that CEO power is associated with lower bank risk-taking. In the analysis of this paper, CEO power is indicated with a dummy variable, which is coded to one in case of CEO duality and is zero otherwise.

Some empirical studies also analyze personal characteristics of the CEO such as his or her tenure and age (e.g., Boone et al. (2007), Coles/Naveen/Naveen (2008), Linck/Netter/Yang (2008), Brookman/Thistle (2009)). The CEO tenure can be an important factor in board monitoring. The perceived abilities of the CEO by the board of directors results in increasing CEO tenure. The higher CEO tenure might lead to stronger CEO bargaining power, what would decrease the independence and, therefore, monitoring of the board (Hermalin/Weisbach (1998), Hermalin (2005)). Ryan/Wang/Wiggins (2009) find that CEO tenure indeed influences board oversight process proxied by the frequency of board meetings. They report that the number of meetings decline with the CEO tenure, the sensitivity of CEO turnover to firm performance is, however, unaffected by the CEO tenure. This study takes CEO personal characteristics into account, supposing that CEO age and tenure might influence performance and risk-taking behavior of banks. The natural logarithm of the variables is used in the analysis.

Since executive directors have information advantages compared to non-executive ones, there is information asymmetry on the board of directors. Wolff/Rapp (2008) argue that this information asymmetry can be decreased in case when chairman of the board has been before the member of the

executive board in the company. Their empirical evidence shows that the described situation leads to the reduction of the executive compensation, that might indicate lower information asymmetry and, therefore, lower agency costs. In this paper, a dummy variable is considered, which indicates whether a chairman has been an executive director before taking his actual position or not.

The German corporate governance code suggests that chairman of the supervisory board should not be the chairman of the audit committee, in order to improve the independence of financial statement preparation and auditing by the supervisory board. It is supposed that separation of these positions would positively affect performance of banks. Therefore, an indicator variable is introduced in the estimation analysis that takes the combination of these two positions into consideration.

Ownership Concentration

Dispersed ownership and, therefore, the separation of ownership and control can lead to conflict of interests between shareholders and management (Berle/Means (1932), Jensen/Meckling (1976)). In widely held companies, small shareholders lack the incentive to monitor managers, what leads to the free-rider problems (Stiglitz (1985), Agrawal/Nasser (2010)). In contrast, controlling shareholders have strong incentives and the effective means to monitor management, what reduces agency costs and provides a source of corporate governance discipline (Shleifer/Vishny (1986)). However, the interests of large shareholders may sometimes not coincide with the interests of small investors. This situation will lead to a new agency problem, since large shareholders can use their power to advance their own interests (Bebchuk/Hamdani (2009)).

Thus, it is not obvious whether ownership concentration can present a value maximizing corporate governance instrument or not. Concerning empirical investigation, Mehran (1995) reports that incentive-based compensation of randomly-selected 153 manufacturing firms in 1979–1980 declines with the percentage of stocks held by outside blockholders. The author interprets this result as evidence that monitoring by blockholders may be a substitute for incentive pay for executives. Denis/Denis/Sarin (1997) analyze whether ownership structure affects top executive turnover. They find that the probability of executive turnover to firm performance is positively affected by the presence of an outside blockholder. This result is also an evidence for the monitoring function of large shareholders. However, there is no empirical confirmation that controlling shareholders have a positive influence on firm valuation (e.g., Schmid/Zimmermann (2007)). Beiner et al. (2004) report even a negative relation between blockholders and firm performance.

The mixed empirical results can indicate that governance mechanisms in firms with and without controlling shareholders can differ. Bebchuk/Hamdani (2009) devote their paper to this issue and argue that investor protection measures in a company without controlling shareholder can be irrelevant or even harmful for companies with controlling shareholders. Thus in this study, it is controlled for ownership concentration. A free float variable, which measures the proportion of companies' shares that are widely held, is introduced in the estimation equation, The summary of all corporate governance variables is presented in Table 1.

Table 1. Summary of corporate governance variables

Variables	Description
Board Size	
BS	Board size: the natural logarithm of total directors on the board
ED	Executive directors: the natural logarithm of the total executives on the board
NED	Non-executive directors: the natural logarithm of the total non-executives on the board
Board Independence	
BI	Board independence: the number of independent (non-affiliated) directors divided by the total number of non-executive directors
BID	Board independence (a dummy variable): indicates whether banks disclose independence information or not

Gender Diversity	
GDE	Gender diversity among executives: the fraction of female executive directors out of all executives
GDNE	Gender diversity among non-executives: the fraction of female non-executive directors out of all non-executives
Board Activity	
NM	Number of meetings: the natural logarithm of non-executive meetings frequency per year
Board Committees and Auditors Quality	
CN	Committees number: the natural logarithm of the number of existing committees
NC	Nomination committee (a dummy variable): indicates existence of nomination committee
CC	Compensation committee (a dummy variable): indicates existence of compensation committee
AC	Audit committee (a dummy variable): indicates existence of audit committee
Big4	Big 4 (a dummy variable): indicates whether the auditor of a bank belongs to Big Four companies
CEO and Chairman of the Board	
CEOD	CEO duality: a dummy variable is coded to one if CEO also holds the title of chairman of the board
CEOT	CEO tenure: the natural logarithm of CEO tenure
CEOA	CEO age: the natural logarithm of CEO age
CHEX	Chairman before executive: a dummy variable that considers whether a chairman of the board has been before an executive member of the board
CHAC	Chairman is audit committee chairman: a dummy variable, which equals to one if chairman of the board is also the chairman of the audit committee
Ownership Concentration	
FRFL	Free float: the percentage of shares that are widely held

3. Corporate Governance Impact on Performance of Banks

Analyzing the relation between performance and corporate governance characteristics, many studies have used either OLS or fixed-effects estimation (e.g., Mehran (1995), Klein (1998), Yermack (1996), Belkhir (2009)). The OLS estimation is unbiased only in case of independently and identically distributed error terms. The panel data can be affected by the unobserved firm-specific heterogeneity that causes serial correlation in residuals. The fixed-effects model adjusts for unit-specific differences including firm dummies in the regression. Within this estimation model, firm-specific heterogeneity is considered to stay constant over time and be correlated with independent variables. Economically, this heterogeneity is unobservable for the researchers, however, may influence both performance and explanatory variables (corporate governance characteristics and other control variables). For instance, differences in managerial abilities or the CEO's risk aversion can certainly affect firm's performance (Wintoki/Linck/Netter (2011), Schultz/Tan/Walsh (2010)).

However, Wintoki/Linck/Netter (2011) highlight additional two sources of econometric endogeneity in case performance-governance relation, which are not overcome by the fixed-effects estimation model. The next source of endogeneity is related to simultaneity, which occurs in case governance mechanisms and performance are determined simultaneously. For example, the firm chooses in a given period a corresponding board structure with an aim to achieve a particular level of performance in this period, or in reverse case – board characteristics may be determined based on firm's performance. In case of simultaneity existence, fixed-effects estimated parameters are biased. However, estimating system of equation, where corporate governance mechanisms depend on performance and, at the same time, performance depends on corporate governance characteristics will lead to unbiased results. Though

applying the econometric system approach, identification of strictly exogenous instruments is required, that is difficult in practice.

Finally, Wintoki/Linck/Netter (2011) argue that governance-performance relation is affected by dynamic endogeneity, when past performance of a firm explicitly affects its current corporate governance mechanism. For instance, according to the Hermalin/Weisbach (1998) model, the board independence is negatively correlated to the CEO bargaining power that increases with the positive past firm performance. Also, board decomposition is related to past performance, since board of directors can be replaced in case of poor performance. Empirically, it was also confirmed that current corporate governance mechanism is affected by the past actions and characteristics of a firm (e.g., Boone et al. (2007), Linck/Netter/Yang (2008), Wintoki/Linck/Netter (2011)).

Econometrically, performance-governance relation can be presented with the following model:

$$y_{it} = \alpha + \sum_{k=1}^s \beta_k y_{i,t-k} + \sum_{l=1}^p \gamma_l x_{l,it} + \sum_{m=1}^w \varphi_m z_{m,it} + \eta_i + \varepsilon_{it}, \quad (1)$$

where y represent performance measure, x vector denotes corporate governance characteristics, and z variables stand for control variables. The sources of endogeneity are recognized as follows:⁵

- Dynamic relation between performance and governance characteristics is considered by the introduced lagged independent variables as dependent variable ($y_{i,t-k}$) in the regression;
- Simultaneity is given in (1) if $E\left(\varepsilon_{it} \mid \sum_{l=1}^p x_{l,it}, \sum_{m=1}^w z_{m,it}\right) \neq 0$, where ε_{it} is a random error term;
- Unobserved firm heterogeneity exists in (1) if $E\left(\eta_i \mid \sum_{l=1}^p x_{l,it}, \sum_{m=1}^w z_{m,it}\right) \neq 0$, where η_i is an unobserved firm effect.

In case of such econometric specific of performance-governance relation, dynamic Generalized Method of Moments (GMM) estimator provides consistent and unbiased estimation results. The difference GMM technique was introduced by Holtz-Eakin/Newey/Rosen (1988) and Arellano/Bond (1991), that was further developed to the system GMM framework by Arellano/Bover (1995) and Blundell/Bond (1998). Dynamic panel GMM estimation is increasingly popular in recent corporate governance research papers (e.g., Schultz/Tan/Walsh (2010), Hoechle et al. (2011), Wintoki/Linck/Netter (2011)), since this method is robust to all endogeneity sources mentioned above. This estimation method allows also individual-specific patterns of heteroskedasticity and serial correlation of idiosyncratic error terms (see Roodman (2009b)).

Observing strictly endogenous variables, instrumental variables may be used to absorb correlation between the regressors and the error term. In contrast to two- or three-stage least squares estimation, GMM can use not only exogenous instruments, but also internal instruments – lagged levels of endogenous variables. The lagged dependent variables are also instrumented by their lagged values. The difference GMM transforms regression equation by first-differencing of all variables, so that firm-specific differences (fixed-effects) are eliminated:

$$\Delta y_{it} = \alpha + \sum_{k=1}^s \beta_k \Delta y_{i,t-k} + \sum_{l=1}^p \gamma_l \Delta x_{l,it} + \sum_{m=1}^w \varphi_m \Delta z_{m,it} + \Delta \varepsilon_{it} \quad (2)$$

However under certain conditions, the variables in levels may be weak instruments for the first-differenced equations (see Arellano/Bover (1995)). In order to obtain more efficient estimates, system

⁵ See Wintoki/Linck/Netter (2011).

GMM can be applied. Additionally to differenced equation, the system GMM includes also levels equation in the estimation procedure. This produces a system of equations:

$$\begin{bmatrix} y_{it} \\ \Delta y_{it} \end{bmatrix} = \alpha + \sum_{k=1}^s \beta_k \begin{bmatrix} y_{i,t-k} \\ \Delta y_{i,t-k} \end{bmatrix} + \sum_{l=1}^p \gamma_l \begin{bmatrix} x_{l,it} \\ \Delta x_{l,it} \end{bmatrix} + \sum_{m=1}^w \varphi_m \begin{bmatrix} z_{m,it} \\ \Delta z_{m,it} \end{bmatrix} + \varepsilon_{it} \quad (3)$$

Adding the second equation, new instruments have to be obtained. Here, variables in levels are instrumented with their own lagged differences. The introduced equation in levels includes, however, unobserved heterogeneity. Thus, system GMM requires an additional assumption, namely that the correlations between the regressors and the unobserved effects stay constant over time.

The system GMM uses higher number of instruments than the difference GMM does. It is important to consider the number of instruments used in the estimation, since dynamic panel models can generate "too many weak" instruments, which can lead to biased estimates (Roodman (2009a)). The rule of thumb implies that the number of instruments should not exceed the number of observed panels.

There are two main diagnostics tests within dynamic GMM estimation: the test of overidentifying restriction and the test of autocorrelation of the first and second order. The Arellano/Bond (1991) test for autocorrelation has a null hypothesis of no autocorrelation in idiosyncratic disturbance terms. Testing for serial correlation in levels, the first-order autocorrelation (AR (1)) exists in the first-differenced errors by construction, but there should be no second-order autocorrelation (AR (2)) in error differences. The second test (Sargan or Hansen *J* statistics) of overidentification has a null hypothesis that the instruments are exogenous. Here, high *p* values indicate that the instruments are valid in the model specification.

For the estimation performance-governance relation, the following econometric equation is constructed:

$$\begin{aligned} y_{it} = & \beta_0 + \beta_1 \cdot y_{i,t-1} + \beta_2 \cdot \text{BS}_{it} (\text{ED}_{it}; \text{NED}_{it}) + \beta_3 \cdot \text{BID}_{it} (\text{BI}_{it}) + \\ & \beta_4 \cdot \text{GDE}_{it} + \beta_5 \cdot \text{GDNE}_{it} + (\beta_6 \cdot \text{NM}_{it}) + \beta_7 \cdot \text{CM}_{it} + \beta_8 \cdot \text{NC}_{it} + \\ & \beta_9 \cdot \text{CC}_{it} + \beta_{10} \cdot \text{AC}_{it} + \beta_{11} \cdot \text{Big4}_{it} + \beta_{12} \cdot \text{CEOD}_{it} + \beta_{13} \cdot \text{CEOT}_{it} + \\ & \beta_{14} \cdot \text{CEOA}_{it} + \beta_{15} \cdot \text{CHEX}_{it} + \beta_{16} \cdot \text{CHAC}_{it} + \beta_{17} \cdot \text{FRFL}_{it} + \\ & \sum_{m=1}^w \varphi_m \Delta z_{m,it} + \eta_i + \varepsilon_{it}. \end{aligned} \quad (4)$$

Dependent variable *y* denotes performance or risk measure. Performance of banks is measured by realized rates of return and created shareholder value. Banks risk level is determined by volatility of stock returns and distance to default (market-oriented Z-score⁶). Table 2 describes performance and risk factors used for the estimation. First, the whole board size (BS) is used in the analysis. Afterwards, the influence of the number of executive (ED) or non-executive directors (NED) is separately estimated. Therefore, these variables are presented in the brackets in (4). Also for the complete sample, only board independence dummy variable (BID) can be applied, then the fraction of board independence (BI) is used for the narrowed sample of observations. The data concerning the number of meetings (NM) held during the year is also not complete, so that the number of observations is reduced analyzing this governance feature.

Equation (4) includes also a vector of control variables (*z*). In the analysis, it is controlled for:

- Cost efficiency (CE, measured applying DEA technique⁷);
- Asset size (natural logarithm of assets);
- Financial structure (leverage ratio);
- Profitability of banks (return on equity);

⁶ Due to high skewness of the Z-score, a log-transformed Z-score is used for the regression (see Laeven/Levine (2009)).

⁷ See Afsharian/Kryvko/Reichling (2011) for further explanations.

- Income diversification (non-interest income over net operating income);
- GDP (natural logarithm of GDP per capita);
- Inflation rate.

Descriptive statistics of dependent and independent variables is presented in Table 3.

Table 2. Performance and risk factors

Performance Factors:	
Average stock return (\bar{R})	The realized average stock return in each year
Jensen’s Alpha (α)	Difference between shareholder value added and required return on equity, presented in relative terms
Risk Factors:	
Volatility of stock returns (σ)	The standard deviation of the monthly stock returns in each year
Market-oriented Z-score (Z^M)	(Average (Return on assets)+Average (Equity/Assets))/ Volatility (Equity/Assets), measured in market values

Note. For additional description see Afsharian/Kryvko/Reichling (2011)

The correlation coefficients between corporate governance parameters are reported in Table 4. In the sample, larger non-executive boards are seemed to exhibit lower fraction of independent directors. There is a positive significant correlation between board size and committee number. It indicates that larger boards are supposed to establish more committees, in order to delegate their work in a proper way. This can lead to the reduction of communication problems and to the improvement of the board monitoring function. CEO age is positively correlated with the board size implying that larger boards appoint older CEOs. The higher fraction of independent directors on the board is associated with rarer occurrence of CEO duality. Banks with larger proportion of free float shares have more directors on the boards, exhibit higher board independence, and establish more committees on the board. This can be interpreted that in case of concentrated ownership, there is an additional governance mechanism of controlling shareholder. Dispersed ownership structure, however, needs higher number of committees and more independent directors for better control of managers.

Applying GMM estimation technique, the corporate governance variables are considered to be strictly endogenous; the control variables are treated as exogenous measures in the respective estimation. The two-step difference GMM model is used for analysis, since system GMM leads to the high number of instruments, which explicitly exceeds number of panels – 74 banks in our case. Schultz/Tan/Walsh (2010) find a causal relation between governance and firm performance applying either pooled OLS technique or fixed-effects model. Since these models are not robust to all sources of possible endogeneity, the authors employ the dynamic difference and system GMM panel methods of estimation. The results of the both methods are similar and show no significant relation between corporate governance and performance, indicating that OLS and fixed-effects estimates are biased and unreliable.

In contrast, our sample does not eliminate the relation between governance characteristics and performance of banks. The results of the GMM specification concerning performance and risk factors are outlined in Table 5. The diagnostics tests confirm the reliability of the used models and instruments. Thus, the statistical test of second-order autocorrelation in error differences is insignificant. Also, the Hansen *J* statistics indicate that the instruments used are valid in the estimation.

Analyzing European banks, the achieved results indicate that board size influences performance of banks significantly (see Table 5). Banks with larger boards show higher rate of return and Jensen’s alpha. Andres/Vallelado (2008) and Belkhir (2009) report a positive relation between board size and Tobin’s *q*, whereas the latter author applies fixed-effects technique for the estimation. Considering the analysis of Coles/Naveen/Naveen (2008), the findings indicate the complexity of bank industry due to high leverage, diversification policy, untransparent financial engineering etc. This leads to the need of large boards for better monitoring and governance of banks.

Table 3. Descriptive statistics of dependent and independent variables

Variable	Mean	Max	Min	SD
Performance and Risk Variables:				
\bar{R}	0.13	2.42	-0.93	0.53
α	0.05	2.36	-1.01	0.54
σ	0.36	2.46	0.01	0.25
Z^M (Ln)	2.51	5.85	-5.08	0.78
Corporate Governance Variables:				
BS (No.)	17.58	40.00	7.00	5.84
ED (No.)	5.94	35.00	1.00	3.40
NED (No.)	11.89	29.00	3.00	4.97
BI	0.57	1.00	0.00	0.24
BID	0.86	1.00	0.00	0.35
GDE	0.08	0.50	0.00	0.13
GDNE	0.12	0.80	0.00	0.12
NM (No.)	10.4	47.00	3.00	6.74
CN (No.)	3.03	7.00	0.00	1.48
NC	0.62	1.00	0.00	0.49
CC	0.44	1.00	0.00	0.50
AC	0.91	1.00	0.00	0.29
Big4	0.98	1.00	0.00	0.15
CEOD	0.12	1.00	0.00	0.33
CEOT	4.86	27.00	0.17	4.40
CEOA	53.52	72.00	34.00	7.11
CHEX	0.26	1.00	0.00	0.44
CHAC	0.10	1.00	0.00	0.30
FRFL (%)	56.30	100.00	0.00	31.83
Control Variables:				
CE	0.57	1.00	0.10	0.24
Asset size (Ln)	11.25	16.09	5.49	2.16
Leverage ratio	18.24	77.08	0.23	10.86
Return on equity	0.12	1.00	-0.50	0.11
Income diversific.	8.92	2120.75	-12.82	113.08
GDP (Ln)	10.52	14.79	8.28	1.03
Inflation rate	2.47	15.25	-1.71	1.76

Table 4. Correlation matrix between corporate governance parameters (numbers in bold indicate significance at 10% level or better)

	BS	ED	NED	BI	BID	GDE	GDNE	NM	CN	NC	CC	AC	Big4	CEOD	CEOT	CEOA	CHEX	CHAC	FRFL
BS	1.00																		
ED	0.50	1.00																	
NED	0.88	0.09	1.00																
BI	-0.27	0.06	-0.33	1.00															
BID	0.05	-0.16	0.14	–	1.00														
GDE	-0.02	0.07	-0.07	0.06	-0.09	1.00													
GDNE	0.01	0.09	-0.02	0.10	0.07	0.09	1.00												
NM	0.01	0.13	-0.04	–	0.12	-0.09	0.19	1.00											
CN	0.35	0.14	0.34	0.23	0.36	-0.07	-0.05	0.27	1.00										
NC	0.03	0.02	0.07	0.15	0.26	-0.16	-0.09	0.50	0.56	1.00									
CC	0.06	0.19	0.01	-0.05	0.18	-0.06	-0.15	0.62	0.41	0.49	1.00								
AC	0.14	0.21	0.07	0.08	-0.02	0.13	0.03	0.19	0.53	0.28	0.37	1.00							
Big4	0.05	-0.06	0.10	-0.08	-0.06	-0.05	-0.01	-0.23	-0.01	0.13	-0.08	-0.05	1.00						
CEOD	-0.14	-0.08	-0.09	-0.12	-0.25	-0.00	-0.08	0.00	-0.18	-0.02	0.06	0.01	0.06	1.00					
CEOT	-0.02	0.09	-0.04	-0.08	0.02	-0.04	0.04	-0.07	-0.11	-0.13	-0.08	-0.14	-0.00	0.07	1.00				
CEOA	0.38	0.13	0.35	-0.24	-0.06	-0.16	-0.13	0.10	0.20	-0.01	0.13	0.07	0.03	0.12	0.31	1.00			
CHEX	0.09	0.15	0.04	0.07	-0.28	0.28	0.15	-0.06	-0.04	0.02	-0.09	0.12	0.05	0.30	-0.17	-0.18	1.00		
CHAC	0.03	-0.12	0.09	0.13	0.03	0.16	0.06	-0.29	-0.04	-0.22	-0.30	0.01	-0.01	-0.13	0.12	0.04	0.13	1.00	
FRFL	0.08	0.13	0.09	0.30	0.04	-0.23	0.12	0.57	0.33	0.45	0.33	0.15	0.01	-0.06	0.08	0.11	-0.05	-0.15	1.00

Table 5. Regression results of performance and risk measures on corporate governance characteristics

	\bar{R}	α	σ	Z^M
BS	3.0513***	3.0575***	-0.8099	2.7143*
(ED)	(0.8910)	(0.8759)	(-0.1179)	(1.0251)
(NED)	(1.6675)	(1.6876)	(-0.4440)	(1.2515)
(BI)	(-0.001)	(-0.0015)	(0.0026)	(0.0021)
BID	0.0877	0.0681	-0.7429*	0.6117
GDE	0.0409***	0.0422***	0.0061	-0.0073
GDNE	-0.0023	-0.0017	0.0170	-0.0464
(NM)	(-0.1348)	(-0.3880)	(-0.3720)	(-1.0206)
CN	-1.2086	-1.2082	-0.0878	0.9479
NC	0.2879	0.2746	0.2241	-1.1092
CC	2.0314*	2.0634*	-0.3078	0.0196
AC	0.6891	0.6869	0.2770	-0.6175
Big4	2.0918***	2.1475***	-0.3956	1.3841
CEOD	0.4123	0.4129	0.2505	-0.0100
CEOT	0.2305	0.2328	-0.2040**	0.3927*
CEOA	-0.5163	-0.5100	3.6239***	-7.2233***
CHEX	0.7753	0.7699	0.3097	-0.2792
CHAC	-0.2583	-0.2483	1.2171	-5.5684***
FRFL	0.0180	0.0186	-0.0089	-0.0007
y_{t-1}	-0.9273***	-0.9723***	0.8030**	0.5615**
CE	1.0431***	1.0510***	0.2209	0.4707
Model fits:				
Wald χ^2 - statistics	683.23***	657.01***	272.45***	296.74***
AR(1)	-2.10**	-2.03**	-2.05**	-2.28**
AR(2)	-0.53	-0.52	-0.48	0.18
Hansen J statistics	26.91	27.07	24.00	23.83
(p -value)	(0.58)	(0.57)	(0.73)	(0.73)
No. of instruments	52	52	52	52
No. of observations	222	222	222	222

(***, **, and * denote significance at the 1 %, 5 % and 10 % level, resp.; control variables are not reported here)

The international analysis of Andres/Vallelado (2008) confirms a hypothesized inverted U-shaped relation between board size and performance measures. Therefore, we have also tested for a quadratic relationship between board size and performance. The quadratic board size variable exhibits still a positive significant impact (**1.5256*****) on performance measures. Thus similar to Belkhir (2009), an inverted U-shaped relation between board size and performance is not confirmed in our sample of European commercial banks.

Gender diversity on non-executive board has a negative but non-significant effect on performance and value of banks. Adams/Ferreira (2009) explain that the negative relation can occur due to overmonitoring of the firms. Nevertheless, the significance is missing in the analysis. The presence of women on management board improves, however, the market performance of banks significantly.

Among board committees, only presence of compensation committee shows a significant positive influence on capital market performance of banks. It implies that competent managing remuneration of executive directors based on their performance leads to better governance of companies, what is reflected in their positive excess rates of return. Thus, construction and implementation of compensation plans and incentive schemes reduces agency problems between top-level managers and shareholders resulting in

better performance of banks. The market performance is also influenced by the presence of reputed auditors. External Big 4 auditors are seemed to provide a guarantee of reliability of reported financial information of banks.

Concerning the risk-taking behavior of banks, market-oriented Z-score outlines that banks with larger boards are associated to take less risk. These results are consistent with the findings of Cheng (2008) and Pathan (2009). The achieved results in this paper illustrate additionally that banks with large boards take less risk and in parallel improve their performance. Table 5 shows also that the banks, which report their board independence, exhibit lower volatility of the stock returns. That can be interpreted that banks with more disclosed information are considered to be more reliable by the capital market.

Personal characteristics of CEO are significant in explaining risk-taking behavior of banks. The findings show that there is a negative relation between CEO tenure and level of risk. This evidence can imply that the risk aversion of long-tenured CEOs increases during their time in office. Interestingly acquiring deeper knowledge and job-specific skill, CEOs reduce strategic risks. However, the older CEOs are less risk-averse than their younger colleagues. The accumulated experience of the older CEOs enables them to value risky projects in a proper way and to support new risky investments.

The distance to default decreases in case chairman of the board is also the chairman of the audit committee. It indicates that the coincidence of these both positions can lead to disadvantages and, thus, increases the risk of banks. Therefore, German corporate governance code suggests that these positions should be taken by different persons.

Two popular corporate governance measures, namely, CEO duality and board independence do not influence significantly performance of banks in the analyzed sample. This can imply that combining CEO and chairman titles can be an optimal solution for a given company, that does not necessary destroy its performance (Adams/Hermalin/Weisbach (2008)). Consistent with Belkhir (2009), board independence does not influence performance of European commercial banks.

4. Conclusions

The crucial role of banking industry for the economy motivates researches to analyze important performance and risk drivers of banks. This paper concentrates on corporate governance of European banks and its influence on the performance. Board, CEO and chairman characteristics are involved in the study. Estimating governance-performance relation, difference GMM technique is applied that takes endogeneity sources into account. In the analysis, it is controlled for cost efficiency level, bank-specific and macroeconomic parameters.

We obtained a significant relation between board size and capital market performance of banks. This finding indicates that banks, as complex units, gain from larger boards. Here, an inverted U-shaped relation was not found contrasting the results of Andres/Vallelado (2008). Also, distance to default increases as the number of board members increases. Gender diversity seems indeed to influence bank performance. However, diversity only among management members is significant in case of performance measures. The existence of compensation committee is also reflected in better performance. The personal characteristics of CEO are crucial for risk-taking behavior of banks. These results imply that the longer CEO takes his position, the higher his or her risk-aversion. However, the older CEOs, perhaps due to their cumulative experience, are able to support new risky opportunities.

Our analysis shows that governance characteristics are crucial for European bank performance. Differing from production industry, banking has its specifics in performance-governance relation. This should be taken into consideration making important strategic decisions by the shareholders and board of directors.

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