



# **THE BOARD OF DIRECTORS AND ITS INFLUENCE ON RISK PROPENSITY AND FIRM PERFORMANCE**

**– An empirical study of their relations in the banking sector –**

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## Abstract

The aim of this dissertation is to study the influence of differently composed boards of directors, on the firm performance and the companies' risk propensity. Thereby, the boards of the fifty largest financial institutions worldwide over the period 2005-2008 are studied. The particular focus lies on the board composition variables percentages of female, ethnic minority and independent directors, as well as, average age of the board members and board size. The research is unique because the boards' risk propensity is studied the first time. As its determinants act the measures debt-ratio and B.I.S. total capital ratio. Besides, the firm performance indicators return on assets and return on equity were completed by the share performance and the cost/income ratio.

The results of the empirical research indicates that gender and ethnic diversity on the board, as well as, a higher number of outside independent directors and a higher average board age influence firm performance positively. Contrary to this, an increased board size has a negative influence on a bank's financial performance. Considering the risk, a higher average board age, as well as, greater ethnic diversity and an increased number of independent directors have a negative relation to the risk propensity. Female directors and the size of the board are not connected to this measure. Another result was that during the year of the financial crisis the relations between the variables changed and there is no specific board composition that can withstand a situation like this exceptionally well compared to others.

**Keywords:** *board of directors, company performance, risk propensity, board composition, diversity, women, board age, minorities, board size, independent directors, banks, financial institutions*

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## Table of Contents

<b>ABBREVIATIONS.....</b>	<b>VII</b>
<b>LIST OF FIGURES.....</b>	<b>VIII</b>
<b>LIST OF TABLES.....</b>	<b>IX</b>
<b>1. INTRODUCTION.....</b>	<b>1</b>
1.1 BACKGROUND .....	1
1.2 PROBLEM .....	3
1.3 PURPOSE.....	4
1.4 RESEARCH QUESTIONS .....	5
1.5 OUTLINE.....	5
<b>2. METHODOLOGY OF RESEARCH.....</b>	<b>6</b>
2.1 RESEARCH PHILOSOPHY.....	7
2.2 RESEARCH APPROACH.....	8
2.3 RESEARCH STRATEGY .....	10
<b>3. THEORETICAL BACKGROUND .....</b>	<b>12</b>
3.1 CORPORATE GOVERNANCE .....	12
3.2 STRUCTURE OF THE BOARD OF DIRECTORS.....	13
3.3 TASKS OF THE BOARD OF DIRECTORS.....	14
3.4 THEORIES EXPLAINING THE ROLE OF BOARDS.....	15
3.4.1 AGENCY THEORY .....	16
3.4.2 STEWARDSHIP THEORY.....	17
3.4.3 RESOURCE DEPENDENCY THEORY.....	17
3.4.4 STAKEHOLDER THEORY .....	18
3.5 RELATED RESEARCH REGARDING BOARD COMPOSITION.....	19
3.5.1 GENDER DIVERSITY .....	20
3.5.2 AVERAGE AGE OF DIRECTORS.....	22
3.5.3 ETHNICITY .....	23
3.5.4 BOARD SIZE.....	24
3.5.5 BOARD INDEPENDENCE.....	25

3.6 SUMMARY OF THE HYPOTHESES.....	28
3.7 LIMITATIONS.....	29
4. EMPIRICAL STUDY.....	30
4.1 RESEARCH METHODOLOGY .....	30
4.1.1 SAMPLE .....	30
4.1.2 DATA COLLECTION METHOD.....	31
4.2 OPERATIONALIZATION .....	31
4.2.1 BOARD COMPOSITION DATA .....	31
4.2.1.1 Board Size.....	32
4.2.1.2 Average Age .....	32
4.2.1.3 Independent Directors.....	32
4.2.1.4 Women and Ethnic Minorities on the Board.....	33
4.2.2 COMPANY PERFORMANCE INDICATORS .....	33
4.2.2.1 Return on Assets .....	34
4.2.2.2 Return on Equity.....	34
4.2.2.3 Cost/Income Ratio .....	35
4.2.2.4 Share Performance.....	35
4.2.3 RISK MEASURES.....	36
4.2.3.1 Debt Ratio .....	36
4.2.3.2 B.I.S Capital Ratios.....	37
4.3 CREDIBILITY OF THE RESEARCH DATA.....	38
4.3.1 RELIABILITY.....	38
4.3.2 VALIDITY .....	39
4.3.3 GENERALISABILITY.....	40
5. ANALYSIS .....	41
5.1 GENERAL FINDINGS .....	41
5.2 INTERDEPENDENCY BETWEEN THE INDEPENDENT VARIABLES .....	43
5.3 INFLUENCE OF BOARD COMPOSITION ON PERFORMANCE DATA .....	44
5.3.1 RETURN ON ASSETS .....	44
5.3.2 RETURN ON EQUITY .....	46
5.3.3 COST/INCOME RATIO .....	48
5.3.4 DEVELOPMENT OF SHARE PERFORMANCE .....	49
5.3.5 RESULTS OF THIS ANALYSIS .....	51

<b>5.4 INFLUENCE OF BOARD COMPOSITION ON ITS RISK PROPENSITY .....</b>	<b>52</b>
5.4.1 B.I.S. TOTAL CAPITAL RATIO .....	52
5.4.2 DEBT-RATIO.....	53
5.4.3 RESULTS OF THIS ANALYSIS .....	54
<b>5.5 COMPARISON OF 2007 TO 2005/2006 .....</b>	<b>55</b>
5.5.1 COMPANY PERFORMANCE .....	56
5.5.2 RISK PROPENSITY .....	58
<b>5.6 DIFFERENCES BETWEEN CONTINENTS .....</b>	<b>59</b>
5.6.1 COMPANY PERFORMANCE .....	60
5.6.1.1 European Banks.....	60
5.6.1.2 North-American Banks.....	61
5.6.1.3 Asian and Australian Banks.....	63
5.6.2 RISK PROPENSITY.....	64
5.6.2.1 European Banks.....	65
5.6.2.2 North-American Banks.....	65
5.6.2.3 Asian and Australian Banks.....	66
<b>6. CONCLUSION.....</b>	<b>68</b>
<b>6.1 SUMMARY AND PRACTICAL RELEVANCE .....</b>	<b>68</b>
<b>6.2 SELF CRITICISM.....</b>	<b>70</b>
<b>6.3 FUTURE RESEARCH.....</b>	<b>71</b>
<b>BIBLIOGRAPHY.....</b>	<b>XI</b>
<b>AFFIRMATION .....</b>	<b>XVI</b>

## Abbreviations

B.I.S	Bank for International Settlements
Board	Board of Directors
CEO	Chief Executive Officer
CIR	Cost/Income Ratio
Cp.	Compared
Et al.	Et alii
N.d.	No date
N.p.	No page
P.	Page
ROA	Return on Assets
ROE	Return on Equity
Sig.	Significant
Std.	Standard
TMT	Top Management Team
VIF	Variance Inflation Factor

## List of Figures

Figure 1.1	Economic Interdependency .....	1
Figure 2.1	Research Onion .....	6
Figure 3.1	Transaction Conditions.....	13
Figure 3.2	Board of Directors - schema.....	14
Figure 3.3	Stakeholder Groups of a Company.....	19



## List of Tables

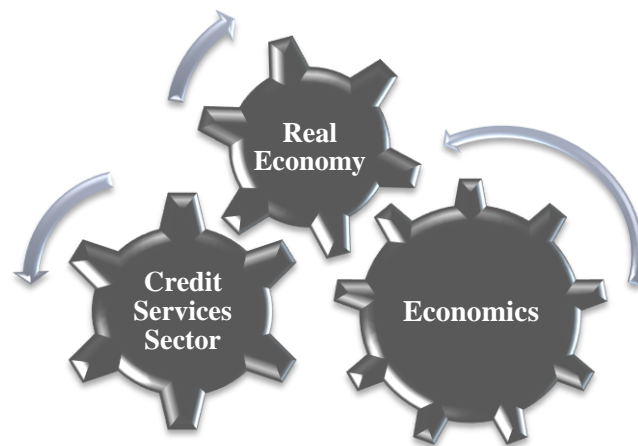
Table 3.1	Hypotheses.....	28
Table 5.1	Descriptive Statistics years 2005-2007.....	42
Table 5.2	Correlations between Independent Variables .....	44
Table 5.3	Correlations between ROA and Board Composition.....	45
Table 5.4	ROA Regression Model.....	46
Table 5.5	Correlations between ROE and Board Composition .....	47
Table 5.6	ROE Regression Model .....	47
Table 5.7	Correlations between Cost/Income Ratio and Board Composition .	48
Table 5.8	Cost/Income Ratio Regression Model .....	49
Table 5.9	Correlation between Share Performance and Board Composition ..	50
Table 5.10	Share Performance Regression Model.....	50
Table 5.11	Summary of Correlations with Performance Indicators .....	51
Table 5.12	Correlations between B.I.S Capital-Ratio and Board Composition	52
Table 5.13	Correlations between Debt-Ratio and Board Composition .....	53
Table 5.14	Debt-Ratio Regression Model .....	54
Table 5.15	Summary of Correlations with Risk Propensity Measures .....	55
Table 5.16	Correlations between Firm Performance and Board Composition in 2005/06 .....	56
Table 5.17	Correlations between Firm Performance and Board Composition in 2007 .....	57
Table 5.18	Correlations between Risk Propensity and Board Composition in 2005/06 .....	58

Table 5.19	Correlations between the Risk Propensity and Board Composition in 2007.....	59
Table 5.20	Correlations between Firm Performance and Board Composition in European banks .....	61
Table 5.21	Correlations between Firm Performance and Board Composition in North-American banks .....	62
Table 5.22	Correlations between Firm Performance and Board Composition in Asian and Australian Banks .....	63
Table 5.23	Correlations between Risk Propensity and Board Composition in European banks .....	65
Table 5.24	Correlations between Risk Propensity and Board Composition in North American banks .....	66
Table 5.25	Correlations between Risk Propensity and Board Composition in Asian and Australian banks.....	67

# 1. Introduction

## 1.1 Background

Shocked by the recent turbulences in capital markets, investors all over the world trembled at the thought of losing their funds due to bankrupt financial institutes. The entire financial world was unhinged because of broad international interdependences between banks. It could only be stabilized by extensive state intervention in the United States, the origin of the crisis, as well as further state regulations and financial assistance for the stricken financial institutions in the U.S. and all over Europe (BBC News - Business, 2008).



**Figure 1.1**      **Economic Interdependency**  
(Source: own graphic)

Since banks act as middlemen governing supply (savings) and demand (loans) of monetary capital, they rely on complete confidence within the credit business and the protection of investors' savings. Efficient financial systems are fundamental for a stable and growing global economy. Financial crises cause liquidity crunches and bankruptcies of banks as we have been able to observe over the last months. As demonstrated in figure 1.1, a high degree of interdependency between the

credit services sector and the real economy will result in chain reactions and a crisis within the global economy as a whole.

There exist multiple reasons for broad interdependences between banks worldwide. On one hand, there is the pursuit of higher rate of returns through generating new business, hedging risk and even proprietary trading. On the other hand, banks have to sustain shareholder value in order to avoid a buyout. Many of the transactions within the capital markets are done between the banks and therefore, credits that have been handed out by one bank to a customer are bought by other banks through different financial instruments.

However, these days show how fast those interdependences can arise a crisis. Managers and directors of banks simply made wrong decisions about specific financial instruments. Although, generally agreed, they are specialists in that field and would know about their businesses, enormous losses in value and particularly in trust caused substantial writing offs in banks. Some institutions could not even recover from it (BBC News - Business, 2008). Thus, the interconnections between the banks became very dangerous and harmful for many of the banks all around the world (Balzli *et al.*, 2008).

Whether developed, traded or just bought, each bank is responsible for its own products and operations. However, behind a company stand the people that act and do business and some of them bear huge responsibilities. Such people are the directors on the bank's board at first instance. They are in charge to govern the firm to a value adding performance.

A well performing bank needs active directors who bring value and can add expertise, needed skills, and perspectives along with the willingness for continuous development (Oss, 2003). Additionally, they have a high responsibility when making loan decisions or amount of debt a company will take. This is particularly important in banks where the amount of debt is naturally very high. Therefore, it is an internal challenge for the directors to manage the tasks the

board has been given concerning the company's processes, risk-management and to evaluate the performance and with that their own decisions as well.

Since many studies have been conducted in the field of corporate governance and financial management, many industries have been discussed already. Therefore and especially considering today's situation with the financial crisis spreading from the United States into the whole world, this paper will focus on the board of directors, their risk propensity and the performance of financial institutions.

## **1.2 Problem**

"A bank which becomes less attractive for investor purposes will shortly lose employees and customers" (Spremann, 2005, p. 39). Furthermore, it will become a candidate for an acquisition. Based on that, bank leaders continuously design new concepts and products to increase the company's performance. However, a big problem is the fact that on the financial market higher returns can only be generated by taking higher risks and/or using legal loopholes.

Due to the precarious developments in the bank sector during the last few years it is important to consider the leaders, in particular the board of directors, of financial institutions who are in charge of decisions primarily affecting the survival of their company and, furthermore, bear a huge responsibility for the entire economy because "a small leak will sink a big ship."

The board of directors plays a very important role in a corporation's decision-making process. Until today, they are still dominated by white male with traditional backgrounds (Adams and Ferreira, 2008). Nevertheless, as previous studies show, diversity in the boardroom can change the performance of a firm whereas it remains undetermined what influence the composition of the board has on the risk propensity of the company. Robinson and Dechant (1997) state that diversity in the board of directors will (1) improve the market place understanding, (2) increase creativity and innovation, (3) produce higher quality

problem-solving, (4) enhance leadership effectiveness and (5) build effective global relationships (pp. 26-27). Therefore, a greater board diversity should enhance the overall outcome.

Furthermore, Robert Campbell, the CEO of Sun Oil, said, that women or minorities can add some perspective to a company which no one has thought about before (cited by Carter, Simkins, and Simpson, 2002, p.2). However, in the banking industry it is not only important how well a company performs, but also how much risk the institutions take. Many regulations state how much equity a company has to have to cover the loan risks. Nevertheless, those requirements are just minimum standards. On top of that, some banks might have a higher core capital ratio to be more secure when the credit risks rise.

Based on this, the focus of this paper will be on the composition of the board of directors of financial institutions (banks). To extend the results previous studies have already shown, the authors investigate the connection of the board composition 1) with their risk propensity, which has not been in the focus yet, and 2) with the company performance that has been studied quite often already, but only in other industry sectors. Banks are usually excluded from this kind of research.

### **1.3 Purpose**

The aim of the dissertation is to study the relationship between the composition of the board of directors, the risk the company (represented by its directors) is willing to take, and the firm performance of financial institutions. This will be researched through an explanatory study of annual reports of the fifty largest banks in the world for a time span of three years, wherein bank size is determined by the total assets. This is an important study because the risk propensity in connection with the board composition has not been studied before. Thus, this

study can go deeper into the nature of differently composed boards and their actions regarding critical firm decisions.

#### **1.4 Research Questions**

- How does the composition of the board of directors influence the performance of the company?
- How does the composition of the board of directors influence the risk propensity of the company?

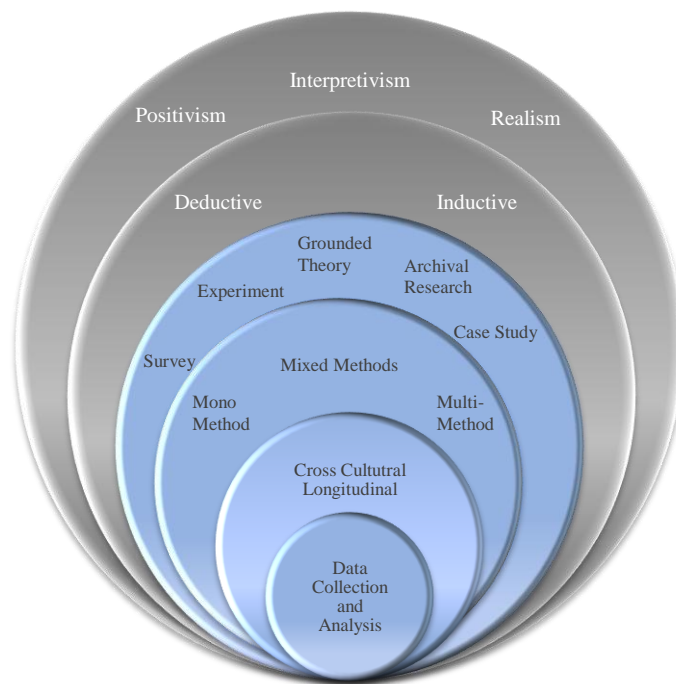
#### **1.5 Outline**

The dissertation proceeds as follows: Chapter II explains the methodology of the research work. The theoretical framework and review of related research on board diversity and firm performance relevant to this study are presented in Chapter III, while the empirical data and methodology are described in Chapter IV. This is followed by the results of our empirical analysis in Chapter V. The paper is concluded in Chapter VI with a discussion about the practical relevance and coevally provide implications of our results as well as recommendations for future research.

## 2. Methodology of Research

Before starting the research for a certain topic it is necessary to clarify the research methods. It is essential to know about the possible procedures and methods before the data collection is started. Otherwise the result might not be clear and data could be inconsistent.

Saunders *et al.* (2007) define a layered scheme for research methodology which has six different areas that have to be considered before the actual data collection and analysis can start as shown in Fig. 2.1 below. First, it is important to know which research philosophy and approach will be taken in the study. On top of that, later, the researchers have to decide on the research strategy, time horizon and techniques and procedures (Saunders, Lewis, and Thornhill, 2007).



**Figure 2.1**      **Research Onion**  
(Source: Saunders, Lewis, and Thornhill 2007)



## 2.1 Research Philosophy

The research philosophy must depend on what the researcher would like to find out. If the position of a natural scientist is taken, where one works with the assumption that only observable phenomena produce credible data, then the principles of **positivism** are regarded. The study is undertaken in a value-free way and scientists are not biased, which means that they do not influence, nor are they influenced by the research subject.

This philosophy is usually marked by a highly structured research method which is supposed to make a replication easier. Furthermore, the first step to take in the research is to create a hypothesis which will be tested later while analyzing the data. Another important factor is that the positivist researcher is mostly interested in facts and not in impressions (Saunders *et al.*, 2007, p. 103). This way the objectivity is supposed to be assured.

Another approach to a scientific investigation is the **realistic** approach. The main statement of this epistemological position is that reality is quite independent of our minds and what is shown to us as reality by our senses is truth (Saunders *et al.*, 2007, p. 104). Realism is quite similar to the positivistic approach because it also assumes that knowledge is developed by collecting and analyzing data.

The approach can be divided into two different forms. Saunders *et al.* (2007) distinguish between direct realism which says that the world is just the way we see it. Critical realism, on the other hand, determines that we only experience images of the real world created by our social conditioning and not reality itself. The situation has to be processed mentally to reach reality. Connected with the assumptions critical realists make, they recognize multi-level studies as very important and are of the opinion that each of the levels can change the understanding of the researcher regarding the study (Saunders *et al.*, 2007). Therefore, there is a great variety of procedures and structures that are possible in a study.

The positivistic approach can be criticized because business and management are far more complex than it is possible to show using a positivistic research approach, where the scientist tries to create ‘laws’ for everything and tries to generalize all findings. Based on that, another philosophy has developed, which is called **interpretivism**. There it is stated that the researcher has to understand the differences between human beings and their roles in society (Saunders *et al.*, 2007). Everyone has his own role and acts it out in the society. This is rather important for being able to interpret actions people undertake. This approach is especially appropriate in fields like human resources, marketing and organizational behavior, where human behavior plays an important role.

Considering the kind of study we are undertaking, positivism is the most appropriate philosophy. This way we will be able to build a theoretical background, collect data without prejudice, and conduct a study not influenced by personal expectations or points of view. The data collection will be completely quantitative. One problem could arise from the fact that in despite of all the rules and regulations, annual reports are created by humans and can still be *cleaned out*, so that numbers shed a better light on companies than they should. However, since that data is collected over a time span of three years, possibly misleading data and failure of human beings in one year should be evened out over time.

## 2.2 Research Approach

Every scientific research involves the use of theory. Depending on at which point of the study it is included and if it is existent at the beginning of the project already, different approaches are taken. On the one hand, there is the **deductive** approach – the initial development of a theory and based on that, a derived hypothesis. During the study the researcher tests it to find out if the statement made at the beginning is true or false.

This approach is usually used in natural sciences, where laws are created to explain certain phenomena and which are supposed to predict their occurrences (Saunders *et al.*, 2007). After controlling the existing theory and the analysis of an outcome the hypothesis is either approved or altered. The deductive approach is mostly combined with a highly structured methodology in order to ensure an easy replication and reliability as Saunders *et al.* state it.

Another important factor is that the researcher should be independent. This is essential for the generalization of the findings at the end of the study. The data that has to be collected in a sufficient number must not be influenced by anyone. Otherwise it would be hard to make any predictions that are supposed to be universally valid.

If a research starts with evaluating factors, exploring possible relationships and creating a theory in the end, the **inductive** approach is used. This way, data is collected in a certain context without setting strict limits as it is done by a formulated hypothesis when using deduction (Saunders *et al.* 2007). Induction is more likely to be used for qualitative data and different research methods in order to shed light on the phenomena from different viewpoints. In the end of the research the findings usually cannot be generalized as it would be done with quantitative data.

Based on that an inductive study might take longer than with a deductive research, because the setting in the latter approach is well known from the beginning and there is set hypotheses which just have to be proven right or wrong (Saunders *et al.*, 2007). The only problem with induction is that there is always the fear of not having useful data because the limits were not fixed at the beginning. Therefore, during the whole process monitoring data and connecting it to the purpose is essential.

This study will be deductive. There have been researches on parts of our study already, which we used to build up a theoretical base. Those theories are used to

create hypotheses which then will be tested through the empirical study. For the part on risk propensity, which has not been studied before, the common behavioral theories are used to create propositions on how the composition should influence the risk propensity.

### 2.3 Research Strategy

Depending on the research question and the purpose of the study there are three different types of studies to choose from. Nevertheless, sometimes it is not possible just to choose one strategy, because a certain topic might call for a combination of the types.

If the researcher wants to get new insights into one topic and find out what happens, he uses an **exploratory strategy**. Within this kind of study there are certain ways of approaching the topic. The first one is to search the literature and detect if other researchers have already examined parts of the topic. Secondly, one can interview experts, who have a well-grounded knowledge in the field which is researched and the third possibility is to interview focus groups to get an insight into the topic (Saunders *et al.*, 2007).

A big advantage of an exploratory study is that it is flexible. However, the researcher has to be open for new ways and findings and be able to change the direction if new data implies that there is also a different angle to the topic (Saunders *et al.*, 2007). Therefore, at the beginning of the study, the focus should be broad and in the course of the research it will be narrowed down to the important factors.

The second possibility is a **descriptive research**, where it is necessary to describe a situation very accurately. Therefore, it is crucial to really know the phenomenon well in the beginning already to be able to collect the right data and information. During such a study it is important to evaluate the available data and to be able to draw conclusions and display the ideas (Saunders *et al.*, 2007).

The third alternative also described by Saunders *et al.* (2007) is the **explanatory study**. There the researcher tries to determine a relationship between certain variables. Thus, the main focus in this kind of research lies on studying a situation or problem closely to be capable of examining the relationship of the main factors. To find out if there is a connection between variables, the researcher can apply statistical tests.

This study will be explanatory. The authors try to explain the links between the different variables of board composition and the possible influence on risk propensity, as well as, company performance. Afterwards there will be statistical tests to find out if the results are significant.

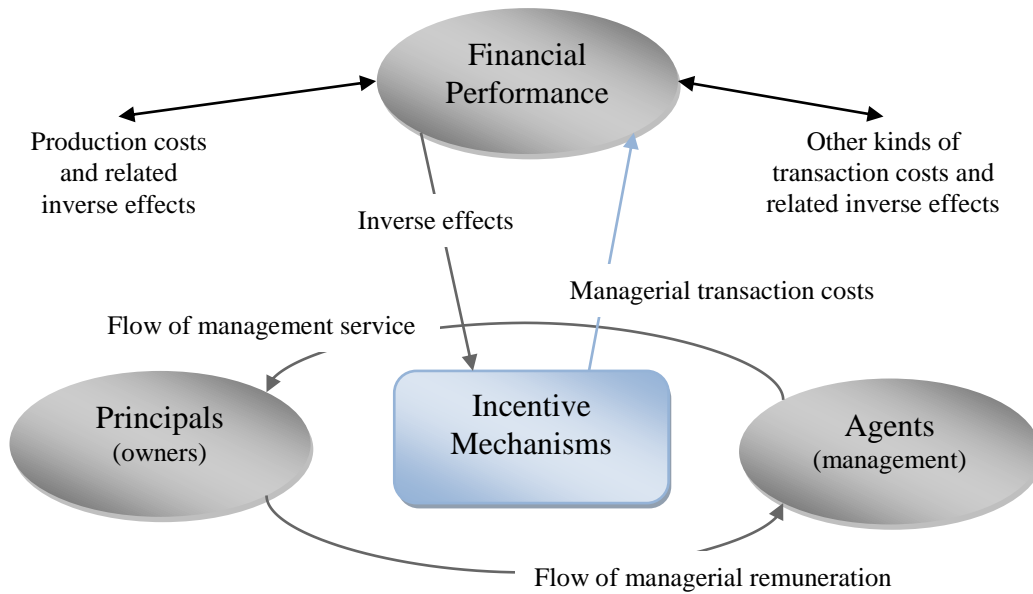
### **3. Theoretical Background**

Banks are all similarly confronted with particular regulations and inspections of banking supervisions. Within this topic, the board of directors plays an important role. There are different factors considering how the composition of a board might influence its performance and the decision-making process. Therefore, factors like independence, age structure, percentage of minorities and women and the size of the board will be analyzed. After determining the composition, the influence of it on the percentage of equity financing and therefore the risk propensity will be analyzed. Furthermore, the composition will also be linked to performance indicators as Return on Assets (ROA), Return on Equity (ROE), and the development of stock quotations.

#### **3.1 Corporate Governance**

The term corporate governance describes processes through which an organization is controlled and directed. Those structures specify which rights and duties certain participants in a company have and how the decision-making process works. This mostly affects the board of directors, the top management team (TMT) as well as shareholders and other stakeholders (OECD, 2005).

Corporate governance is concerned with the possible abuse of power of the managers and the need for certain qualities like openness, integrity and accountability during the whole decision-making process. As shown in Figure 3.1, it also examines how certain mechanisms, including incentives, can help to minimize transactions costs that arise in an organization between principals and agents as described in the agency theory below (Mathiesen, 2002).



**Figure 3.1 Transaction Conditions**  
(Source: Mathiesen, 2002)

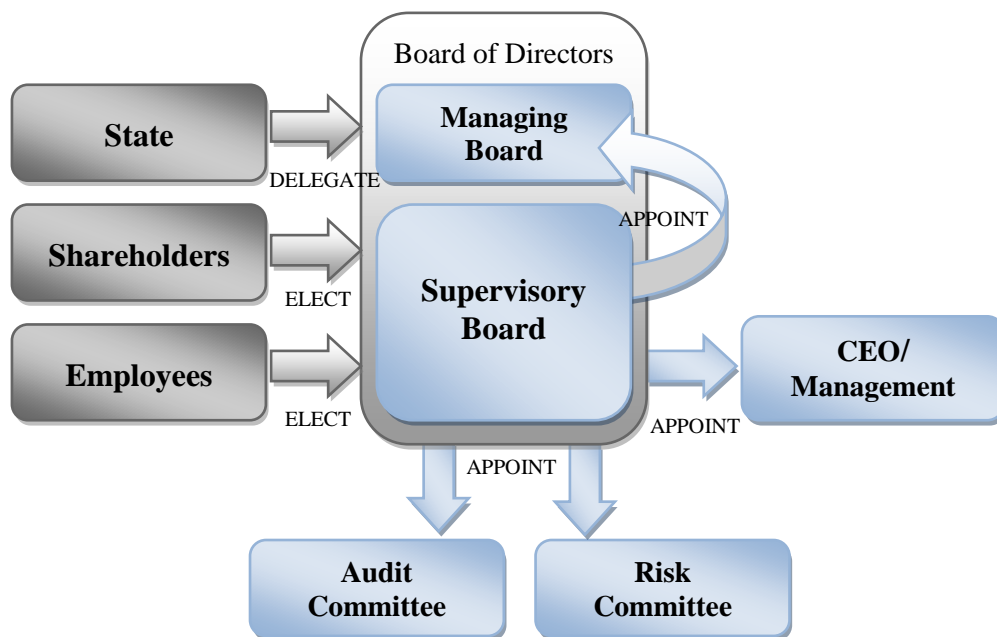
### 3.2 Structure of the Board of Directors

The members of the board are generally elected by the shareholders and their responsibilities vary with the nature and the complexity of the organization. However, there are two different systems regarding the boards of directors. On the one hand there is the Anglo-Saxon system in countries like the United States and Japan (12Manage: The Executive Fast track, 2008). This consists of a one-tier board structure, where executive and non-executive directors work together in the board of directors (Weimer and Pape, 1999). This single board is usually entirely appointed by the shareholders and the CEO often also holds the board chair (12Manage: The Executive Fast track, 2008).

On the other hand, in countries like Germany and the Netherlands, companies have adopted a two-tier board structure. There, the board is divided into the managing board and the supervisory board to formally separate powers (12Manage: The Executive Fast track, 2008). The managing board is monitored

and advised in major policies by the supervisory board (Weimer and Pape, 1999). The CEO holds the chair of the managing board, but cannot hold the chair of the supervisory board at the same time (12Manage: The Executive Fast track, 2008).

Even though, the board of directors is usually elected by the shareholders, in some cases also employees elect their own representative(s) from the workforce to support their interests on the board. In state-owned banks directors are delegated to the bank by the State Council and in where the board of directors is spitted up into managing board and supervisory board, the managing directors are appointed by the supervisory board members as shown in Figure 3.2.



**Figure 3.2 Board of Directors - Schema**  
(Source: own graphic)

### 3.3 Tasks of the Board of Directors

In general, directors represent the shareholders interests, because they provide the elementary assets for running a company. Therefore, the main role of the board of directors is to govern an organization while acting for the shareholders in order to



protect their assets and to ensure a decent return on their investments (Oss, 2003; Kennon, 2008).

The board of directors is the “highest governing authority within the management structure at any publicly traded company” (Kennon, 2008, n.p.). For this reason, the board is in charge of defining the corporate mission, setting the company’s objectives and approving the firm’s strategy concerning the well judged allocation of the financial resources (Oss, 2003).

Even though the board holds the total authority for a company’s decision making they cannot manage the company’s day-to-day operations, because this is the role of the CEO and the TMT (Oss, 2003). The resulting conflict potential is discussed in the Agency Theory below. According to Oss (2003) it is the board’s task to govern and the CEOs to manage. Therefore, a clarified classification of who is in charge will eliminate these conflicts.

Furthermore, another stakeholder group exists, as mentioned in the Stakeholder Theory (see Figure 3.3) with additional interests and requirements for the board of directors. Regarding all players and interest groups in an organization, the responsibilities of the board are possible to be divided into a *Governance Role*, a *Service Role* and a *Control Role*. Beside the strategic decisions, an important task of the board members is to appoint special committees like the Audit and Risk Committee, and to select qualified managers, as well as to help and to support them with their skills and expertise. Finally, the board controls if the management meets the company’s objectives concerning ethical tenets or laws (Oss, 2003).

### **3.4 Theories explaining the Role of Boards**

In modern companies there are many different players with different duties and responsibilities. People like the board members, the management and the employees have to be managed in a way aimed at achieving the companies’ objectives. The following four theories describe the relationship between those

different players. The first two theories only focus on the internal perspective in a company while the other two also include external factors and players companies have to deal with.

### 3.4.1 *Agency Theory*

The Agency Theory discusses the problem of different and sometimes opposing interests between two parties in a contractual relationship (Gabrielsson, 2003). Considering a company this would mean that the one who is the principal hires another person, the agent, to fulfill a task for the principal. According to this theory, individuals are self-centered and self-serving. This leads to a situation in which a person would try to maximize his/her own personal advantage. This would also result in agency costs, because of the asymmetric information that shareholders and managers have. To minimize this situation and align both interests and minimize the costs, the principal can try to lead an agent's actions by creating incentives or monitoring an agent's decisions (Gabrielsson, 2003).

In 1983 Fama and Jensen claimed that the board is a control mechanism and monitoring agent for managers. It tries to solve agency problems by determining compensations for managers and being involved in the ratifying and implementation process of managers' decisions. In case managers are not fit for the job, the board of directors should figure out how to support or replace them (Carter *et al.*, 2002; Oss, 2003). For an objective view on the work of the TMT, the board ought to be independent. Independent means the board members "are not associated with or employed by the company" and, therefore, will not be "subject to pressure" when the interests of the shareholders conflict those of the TMT (Kennon, 2008, n.p.).

Carter *et al.* (2002) argue that a more diverse board must be more independent, because members with different backgrounds bring a broader perspective to the company. Therefore, it might be more critical and ask the TMT questions about

decisions that would not come from boards members with traditional backgrounds. However, the different angles might not result in a better monitoring process of the manager, if the number of “different” board members is only marginal.

#### *3.4.2 Stewardship Theory*

The Stewardship Theory also focuses on the internal relationships between the different people connected to an enterprise, but it has a different point of view than the Agency Theory. The major difference between the two theories is that Agency Theory defines individuals as working primarily for themselves and only partly in favor of the company or its owners. Stewardship Theory, on the other hand, rather regards managers as “stewards”, who are trustworthy and always giving their best to achieve company and shareholder goals instead of thinking of their own interests (Elgaied and Rachdi, 2008).

According to this theory, the principals and the agents try to create a relationship to achieve the best possible result for the organization. This way, the board would not play a big part in monitoring the managers, but more in guiding and counseling the TMT if needed (Gabrielsson, 2003). This would result in a less important role of the board composition. However, board members with new points of view and different backgrounds could still make a difference in difficult situations, even if everyone works hand in hand from the start to make the organization successful.

#### *3.4.3 Resource Dependency Theory*

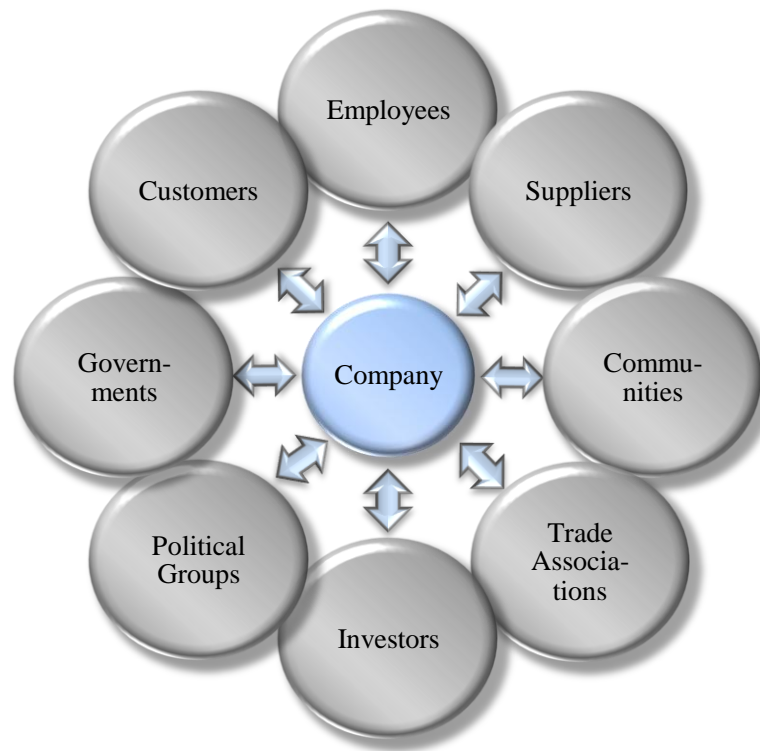
According to Pfeffer and Salancik (1978) the company depends on its ability to link itself with its outside environment. Firms are dependent, because they constantly interact with other companies and individuals to purchase supplies or sell their products. Therefore, it is important for them to gain control over the

environment. Firms have to protect themselves from the uncertainty in order to create a stable flow of resources and products (Pfeffer and Salancik, 1978). In this case the board of directors is seen as a support for managers to achieve those goals.

A possibility to achieve those interactions is to link the boards. According to Richardson this can be done by having directors serve terms on multiple boards (Gabrielsson, 2003). This allows different organizations to cooperate, which is especially important when they depend on each other. That way, networks can be created and uncertainty will be reduced. This results in an enhanced company performance by being superior to such competitors, who do not have a good cooperation with suppliers or customers. Hence, the most important role of boards mentioned in this theory is to link companies to each other by allowing managers and firms access to their personal networks or by using their experiences and thereby affect the financial performance of the enterprise (Pfeffer and Salancik, 1978).

### *3.4.4 Stakeholder Theory*

Just like the Resource Dependency Theory, the Stakeholder Theory is concerned with external effects on an organization. It argues that the survival and performance of a company is linked to its ability to create value and contentment for its stakeholders. The most important groups of stakeholders are stockholders, the employees, customers and communities (Gabrielsson, 2003). In this situation, the task for the board members is to consider the various outside interests in the firm and try to align and satisfy them through their governance policies. The great difficulty here is that certain stakeholder interests are not manageable at the same time.



**Figure 3.3**      **Stakeholder Groups of a Company**  
(Source: York University, 2008)

### **3.5      Related Research regarding Board Composition**

From the theories and former research, it becomes clear that boards have different tasks. Therefore, an optimal structure or composition of the board is essential for fulfilling the tasks. The main tenor in the literature is that in order to work efficiently boards have to be independent with diversity in backgrounds, gender, race and age. However, a certain composition of the board might also affect how much risk the directors are willing to take.

The composition of the board receives more and more attention in terms of structure and stability. If a better structured and more stable board of directors is related to a better firm performance, companies with a well-composed board should perform better than other companies.

For the purpose of this paper, a well-composed board is defined as a stable and diverse board composed of a majority of independent members along with a number of women and ethnic minority directors.

To build the connection to the topic terms – board composition on the one side and firm performance and risk propensity on the other side – it is important to focus on different behavioral patterns which are the result of variations in board compositions. By investigating the influence of the board composition on firm performance and risk propensity it is possible to get insights into how differently composed boards behave regarding specific board tasks.

Differently composed boards behave differently in various situations; for example, when they decide whether to replace a poorly performing CEO or when they choose at what price the company should be sold. The board's decision is also important when the acquisition of another firm has to be approved or when takeover defenses have to be adopted and employed. Finally, the board plays a big role when it comes to establishing the CEO and executives compensation packages (Bhagat and Black, 1999).

### *3.5.1 Gender Diversity*

In recent years, gender diversity in boards of directors has been researched in many studies. Stephenson (2004) said that women bring a different perspective to decision making. Scientists started looking at the possible influence women can have on the overall performance of the company and the risk propensity of a board. However, when having a look at today's corporations, the role of women in boards is still limited and under-represented all over the world (Dutta and Bose, 2006, Stephenson, 2004). Nevertheless, over the last years, the situation has started to change.

In past researches on gender diversity and its influence on performance, most of the researchers found that female directors had a positive influence on the

performance of the board, even though the results have been conflicting and it is still not definitely determined if women on the board enhance the overall firm performance. Adams and Ferreira (2008) determined that female directors attend more meetings than men, but with a rising number of women, men have less problems of also attending. Furthermore, they also stated that women more often join any monitoring-related committees. On top of that, Fondas and Salsalos (2000) found out that a greater number of women on the board would initiate a better control over management.

Another fact discovered by former studies is that if women are employed in high positions, especially in the TMT or the board, companies can deal better with diversity in their own work force and on the product market, where women with an increased purchasing power have become very important as independent consumers in the last century (Bonn, Yoshikawa, and Phan, 2004). Therefore, the first hypothesis is:

**H1a: A higher percentage of women on the board of directors has a positive influence on firm performance.**

When it comes to risk taking, the authors have not found empirical evidence on which influence the share of women on the board has on the debt level a company will adopt. However, in today's society women are still usually seen as more risk averse in many situations than men. An Austrian bank did research on the risk behavior of women when it comes to financial decisions and found out that they usually take less risk than men would in the same situation (Mitterbacher, 2007). Thus, the second assumption is:

**H1b: A higher percentage of women on the board is negatively connected to the risk propensity of the company.**

### 3.5.2 *Average Age of Directors*

The average age of board members and its influence on firm performance has been discussed in studies quite often. However, based on the development of human beings, one can consider that they share certain characteristics at the different ages. The older people become the more their cognitive abilities decrease, especially the memory and learning skills. Furthermore, older board members might strive for financial security and a more secure career. Therefore, they may avoid risky decisions that have to be made for the company (Bonn, Yoshikawa, and Phan, 2004). On the other side, older managers or board directors have much more experience that they can bring into the corporation. This experience can be used to improve operations and processes which can then have a positive effect on the performance.

When it comes to younger people, on the other hand, the preconditions are completely opposite. Young people are typically not as risk averse and more innovative. They are usually more open-minded when it comes to new ideas. Besides this, the learning and memory abilities are still stronger than the ones of older people (Bonn, Yoshikawa, and Phan, 2004).

When considering today's business world with its constant changes and the continuously growing competition and tasks, it is important to be able to react to changes quickly to keep the company on top of the competition. Otherwise it can have fatal consequences, especially observable in the banking industry these days. Therefore, the authors hypothesize that:

**H2a: The average age of the board of directors is negatively connected with firm performance.**

As already mentioned above, older people might strive more for safety than younger ones and try to avoid big risks. For this reason, the next assumption is:



**H2b: The average age of the board is positively connected to risk avoidance of the company.**

### 3.5.3 Ethnicity

Several studies found a positive relation between the percentages of female as well as minority directors on the board and firm financial performance measured for example by Tobin's  $Q$ <sup>1</sup> and return on assets (Carter *et al.* 2007, pp. 21, 24, 26; see also Smith *et al.* 2005)<sup>2</sup>. Therefore, a more diverse board has a positive effect on the financial performance (see also Carter *et al.* 2002). Diversity in board of directors means to have people with different ethnical backgrounds or, as already discussed, women on the board. In this study, ethnic diversity is defined as racial diversity.

Companies with an ethnically diverse board are more profitable and create more value for shareholders, because unique characteristics come together. Carter *et al.* (2007) cite a number of researchers who conclude that "diversity enhances the effectiveness of board actions which increases the productivity and performance of the corporation resulting in increased profitability and shareholder value" (p. 7).<sup>3</sup> They proceed, that "minority directors provide significant information" and advice to the board and to managers "which improves strategic decision making" (p. 8). In the same manner as outside directors can add expertise to the board because they are experts in specific fields like corporate law, relevant technologies or particular markets, so can ethnic minority directors. Actually, minority directors and outside directors are often the same group.

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<sup>1</sup> **Tobin's Q** is "the ratio of the firm's market value to its book value" (Adams & Mehran, 2008, p. 7), also defined as "the ratio of the market value of a firm divided by the replacement cost of its assets" (Carter *et al.* 2007, p. 15).

<sup>2</sup> Smith *et al.* (2005) observed the 2500 largest Danish firms during the period 1993-2001.

<sup>3</sup> Van der Walt and Ingley (2003); Stephenson (2004); Robinson and Dechant (1997), and Catalyst (2004) cited by Carter *et al.* 2007.

A diverse board also sends important positive signals to the labor market, product market, and financial market and helps to attract and retain talented female and minority managers and employees (Carter *et al.* 2007, p. 10; Stephenson, 2004).

As already mentioned, today, banks are globally linked and connected with institutions and people with different ethnical backgrounds and therefore the writers hypothesize that:

**H3a: A higher number of minority directors on the board is positively related to company performance.**

However, minority directors might still have a similar understanding of doing business, when it comes to making business decisions. Their risk propensity should not be influenced by a different ethnical background. The authors thus hypothesize that:

**H3b: Minority directors do not affect the risk propensity of the company.**

### 3.5.4 Board Size

Board size is seen as one of the most important factors when it comes to the influence on the performance of a company (Kyereboah-Coleman and Biekpe, 2005). The main view regarding board size is that large boards have a negative impact on the performance of the company. That is, because tasks like coordination, decision-making and the communication between the members are more difficult and expensive, the more directors have to be included (Belkhir, 2008). Therefore, the costs would outweigh the gains of having more expertise on the board. Belkhir (2008) cited Jensen's (1993) statement that boards with more than seven or eight people are less effective and easier to control for the CEO.

Earlier research of the board size supports the proposition that smaller boards are better. Yermack (1996) discovered a negative relationship between board size and

firm performance measured by Tobin's Q and several other accounting figures. In their sample of small Finnish firms, Eisenberg *et al.* (1998) also find a negative relationship between the number of directors and financial success of the company. Furthermore, Kyereboah-Coleman and Biekpe (2005) determined that large board sizes are bad for the sales and growth ratio of companies in Ghana.

However, Belkhir (2008) found a non-negative relationship between the size of the board of directors and the firm performance measured by Tobin's Q, as well as, by return on assets (ROA) for financial institutions. Especially savings-and-loan holding companies (SLHC) might increase the value of the company with a rising number of directors. Therefore, the next hypothesis is that:

**H4a: An increasing board size has no negative influence on the company performance.**

When it comes to taking risks, there is not as much empirical evidence. However, if one looks at the decision-making process of a board, especially when its number of directors is very high, the obvious assumption is that for risky decisions it is more difficult to get a consensus the more people have to vote for it. Furthermore, Pfeffer and Salancick (1978) and Lipton and Lorsch (1992) determined a relationship between the capital structure of a company and its board size. Additionally, a study of Abor and Biekpe (2005) discovered that an increasing board size and the debt level of Ghanaian SME are negatively related. Thus, the authors assume that:

**H4b: The board size is negatively related to the risk propensity of the company.**

#### 3.5.5 Board Independence

You can distinguish between *inside directors* (current officers of the company) *affiliated outsiders* (former company officers, and persons who have business

relationships with the company) and *independent directors* (Bhagat and Black, 1999, p. 4). Independent board members (outside directors) are “not associated with or employed by the company” (Kennon, 2008, n.p.). According to Kennon, in the United States at least fifty percent of the directors must meet the requirements of independence. A board with fifty percent of independent directors is called a majority-independent board (Bhagat and Black, 1999, p. 4).

The Sarbanes-Oxley Act of 2002 places a strong emphasis on the independence of directors. Brown *et al.* (2004) confirmed this requirement with positive results in their study on the effects of the independence of the board members on financial firm performance data. They found that independent boards have higher return on equity (ROE) and profit margins. Furthermore, it is determined that outside directors can monitor the management more effectively than insiders (Bonn, Yoshikawa, and Phan, 2004). Therefore, the conclusion of several empirical studies is that, besides a more diverse board, a more independent board has a positive effect on the financial performance (see also Adams and Mehran, 2008).

But, boards with majority-independent directors have both positive and negative effects. On the one hand, inside directors are more involved in the company's operations and might know the business better than outsiders. On the other hand, outside directors might keep cool and act in a more objective way than insiders. Besides that, several studies did not find significant evidence that a higher number of independent directors within the board is related to the quality of financial reporting, or to the likelihood of firm failure. Additionally, there is no evidence of more firm-level diversification or a connection to research and development spending (Bhagat and Black, 1999). Therefore, Bhagat and Black (1999) recommend that it might be valuable for companies to compose their boards with at least a moderate number of inside directors. This is supported by their results that there is a negative relationship between the degree of board independence and firm performance.

However, different firms need different types of boards and an optimal board contains a combination of inside, affiliated and independent directors who bring different skills and knowledge to the board (Bhagat and Black, 1999, pp. 32-33). Along with the company's objectives and shareholder interests, boards of banks additionally bear micro- and macro-economic responsibilities, which can be positively influenced by the optimal composition of the board. For board members of financial institutions, a cooperative board-CEO relationship is elementary. Only when the board gets the complete information about the operating business processes from the CEO, can they make the right decisions for the company. For this reason, it is important to know if inside or outside directors can deal better with the CEO or TMT and generate a higher performance. The writers therefore hypothesize for the banking sector, that:

**H5a: A higher number of outside directors does not influence firm performance.**

Pfeffer and Salancik (1978) developed the Resource Dependency Theory and determined that a number of outside directors upgrade a company's ability to protect itself against outside influences and reduce the uncertainty level. Furthermore, they stated that outsiders might help the company retain a certain status and raise funds. Thus, a higher number of outside directors on the board should increase the debt level of the company. On top of that, independent directors might act more in the shareholders interests than inside directors (Bonn, Yoshikawa, and Phan, 2004), and for this reason we hypothesize:

**H5b: A higher number of outside directors will be positively connected to the risk propensity of the company.**

### 3.6 Summary of the Hypotheses

In table 3.1. below, all hypotheses are presented at one glance. These propositions have been derived from past studies and behavioral theories as presented above.

**Table 3.1 Hypotheses**

<b>Composition</b>	<b>Company Performance</b>	<b>Risk Propensity</b>
<b>Gender Diversity</b>	H1a: A higher percentage of women on the board of directors has a positive influence on firm performance.	H1b: A higher percentage of women on the board is negatively connected to the risk propensity of the company.
<b>Average Age of Directors</b>	H2a: The average age of the board of directors is negatively connected with firm performance.	H2b: The average age of the board is positively connected to risk avoidance of the company.
<b>Ethnic Diversity</b>	H3a: A higher number of minority directors on the board is positively related to company performance.	H3b: Minority directors do not affect the risk propensity of the company.
<b>Board Size</b>	H4a: Increasing board size has no negative influence on the company performance.	H4b: The board size is negatively related to the risk propensity of the company.
<b>Board independence</b>	H5a: A higher number of outside directors does not influence firm performance.	H5b: A higher number of outside directors is positively related to the risk propensity of the company.

### **3.7 Limitations**

This study only investigates the influence of the factor board composition on the firm performance, as well as, on the risk propensity. However, there are also several other internal and external factors and circumstances that affect the performance of a company and the risk propensity of its leaders. Considering the composition of the board this study only focuses on the board size, average age of the board members, ethnical diversity, number of females and independent members.

By changing the perspective and examining what factors actually affect the composition of a board of directors it can be assumed that companies rather develop board structures that are optimal for their current circumstances. In this regard, Bhagat and Black (1999) mention evidence that board composition responds to the firm's regulatory environment. They name businesses where political and legal decisions require outside board members (for example politicians, lawyers, and specialists) or even where organizational changes implicate a new board structure. Considering this, one can assume that boards are dynamic and companies adapt the board structures based on their situations. A dynamic board appreciates the interaction between different types of directors who can add different strengths to the board and the company as well. Important for the future performance of a company is that the board members also know who their customers are and how they want to be served (Oss, 2003)

Differently composed boards fulfill board tasks in other ways, but how those boards work will not be a part of this dissertation. The focus is very narrow and lies only on the composition. Therefore, all other factors having influence on the dependent performance variables and indicators of risk propensity are disregarded.

## **4. Empirical Study**

### **4.1 Research Methodology**

#### *4.1.1 Sample*

In this empirical research the top 50 banks in the world according to Bankersalmanac.com<sup>4</sup> were investigated. The banks were ranked according to their total assets as of June 30, 2008. For the data collection, there was a time span of three years, from 2005 to 2007. This particular group of banks has been chosen, because of their size and international branches. The reasons for choosing the largest banks from all around the world were to have a comparable size of international business when comparing them.

If the banks had only been from one or two countries the differences in size would have been significant and the developments on the financial market would have probably only affected the bigger banks. This might have had an effect on the performance. Thuse, for 2007 the results could have possibly been very inconsistent. Regarding the chosen sample, it can be assured that the international situation has affected them all – some banks more than others, depending on how risky their business operations were. That results in a possible interpretation on how each bank, with managers and board directors, has dealt with the problems and obstacles.

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<sup>4</sup> Bankersalmanac.com is the leading source of intelligent reference data for payments, compliance and risk assessment. It is owned by one of the world's leading business to business publishers, Reed Business Information and part of the Reed Elsevier Group plc, a FTSE 100-listed company. <http://www.bankersalmanac.com/addcon/home/aboutus.aspx> (10/19/08).



#### *4.1.2 Data Collection Method*

The necessary data for this study were collected from the annual reports of the 50 financial institutions. The data about the board of directors were found in the corporate governance section of the reports. Data about the company performance were gathered from the consolidated income statements and balance sheets of the banks. The data were usually dated the 31<sup>st</sup> December of the year. However, some banks adopted a fiscal year ending on March 31, or September 30 of the year. Then, we considered the Annual Reports from March 31, 2008 as belonging to 2007 as well as the Annual Reports from September 30, 2007. This way, it could be assured that the figures were all derived during the a similar time period. Furthermore, the main capital ratios, necessary for the risk propensity were taken from the section risk management.

However, there are no strict regulations on how companies have to structure their annual reports. Therefore, the relevant data of some financial institutions was found in different parts of the annual reports or on the websites of the companies.

### **4.2 Operationalization**

The research data were collected in an Excel sheet for further calculations and preparation purposes with regard to the statistical analysis using the statistics program SPSS. During the research process the researchers also used a complementary list to record secondary and supportive information needed to calculate the total numbers for the primary Excel list.

#### *4.2.1 Board Composition Data*

The five board composition variables were selected by the authors and the corresponding information about those data were collected as presented in the following paragraphs.

#### 4.2.1.1 Board Size

The board size was recorded by counting the members and listing their names. This was done for all three years to find out if there were any changes in the board composition from one year to another. The changes were recorded in the complementary lists. The total number of board members for each bank and each of the three years were transferred to the primary Excel sheet.

#### 4.2.1.2 Average Age

The second piece of information needed was the average age of the directors. To calculate this, the age of each board member was added to the secondary list. Mostly, the age or the date of birth could be found in the annual report or on the bank's homepage. If this was not the case, the members were searched in name databases, or on the Internet to find a biography or another page where the age was recorded. Pages, such as [focusmoney.com](http://focusmoney.com) or [reuters.com](http://reuters.com) also list companies and personal information of their boards of directors. Afterwards, the average age was calculated and listed in the Excel sheet for each of the three years.

#### 4.2.1.3 Independent Directors

Next, the authors looked at the percentage of independent directors. The financial institutions usually indicated in the annual reports or on their homepage which members of the board were independent. However, sometimes it was not explicitly alluded neither in the annual report nor on the company's website. Then, the researchers decided if a director was independent or not using an own definition described above. The authors examined if s/he has any other connection to the company beyond the board activities; for instance if him/her is or was employed by the bank in the last years or bears executive tasks. If there was no connection (excluding shareholding) at all, s/he was defined as independent director. The share ownership of directors was excluded, because at some banks

each director is obliged to hold at least a small number of shares. The sum of all independent directors of each bank was copied to the list and divided by the total number of members.

#### 4.2.1.4 Women and Ethnic Minorities on the Board

The other important composition factors regarding the board were the percentages of women and ethnic minorities on the board of directors. When it came to ethnic minorities, it was very difficult to detect at times. Usually, there was no indication, if the members had different ethnical backgrounds. Therefore, the researchers had to either find it out through the name or the picture. However, if that was not possible, they tried to find biographies on the Internet or looked the directors up in different name databases, where it was sometimes indicated if the person belonged to an ethnic minority group. They were defined as different races and it was adjusted for the continents, especially Asia, where for example Europeans were declared as minorities on the board.

Regarding gender it was easier. Either, the name or the pictures of the directors in the annual report or on the homepage indicated the gender. The numbers of ethnic minorities and women were noted to calculate the percentages compared to the total board size.

#### 4.2.2 *Company Performance Indicators*

To investigate the influence of the board composition on the firm performance the authors chose four performance measures divided into two categories: operating performance and shareholder payout. The three most important financial indicators are the performance measures Return on Assets (ROA), Return on Equity (ROE), and the Efficiency Rate (CIR). Besides this, the researchers also looked at the share performances compared to previous years. These are all common indicators, which are important for shareholders. Furthermore, they are

well comparable to the results previous studies in other industry branches showed using the same indicators. To control for the possibility that the performance indicators will be connected to the size of the bank, total assets were also recorded and will be included in the correlation tables and regression models.

#### 4.2.2.1 Return on Assets

The accounting measure of a company's profitability, Return on Assets (ROA), indicates net income from all of the bank's operations relative to the average book value of all assets (Carter, D'Souza, Simkins, & Simpson, 2007, p. 15). It shows how beneficial assets are used by management to create earnings for the company. This means that it is possible to see how much profit was derived from invested assets (Investopedia, Definitions, 2008). It is calculated as:

$$ROA = \frac{Net\ Income}{Average\ Total\ Assets}$$

#### 4.2.2.2 Return on Equity

The ratio Return on Equity (ROE) is a second accounting measure of firm performance showing the income situation of a company by setting profit (net income) in relation to shareholders' equity. It measures a bank's profitability by expressing how much profit a company generates with the capital shareholders have invested (Investopedia, Definitions, 2008). The calculation of ROE is as follows:

$$ROE = \frac{Net\ Income}{Average\ Shareholders'\ Equity^5}$$

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<sup>5</sup> To calculate the Average Shareholders' Equity, the shareholders' equity at the beginning of a period is added to the shareholders' equity at the period's end, and the result is divided by two.

Furthermore, ROE can be interpreted as the growing rate of a bank given that the total amount will be reinvested in the bank and the current capital structure will be maintained. For instance, if a company earns a 15 percent return on equity, it can grow 15 percent simply by reinvesting all the earnings in new opportunities.

#### 4.2.2.3 Cost/Income Ratio

The Cost/Income Ratio (CIR), also called Efficiency Rate, is a ratio revealing a company's cost effectiveness which sets operating expenses in relation to operating income. The cost/income ratio is most commonly used in the financial sector and is calculated as the sum of non-interest expenses as a percentage of the aggregate sum of net interest revenues and noninterest revenues (Deutsche Bank AG, 2008):

$$CIR = \frac{\text{Noninterest Expenses}}{\text{Operating Revenues}}$$

The lower the CIR the more efficiently a bank has operated in a period. An increase means the bank is losing a larger percentage of its income to expenses. The CIR is useful to measure how the bank's costs are changing compared to the bank's income. For instance, if a bank's income is rising but costs are increasing at a higher rate, this ratio will highlight this. Efficiency is also a good measure of profitability.

#### 4.2.2.4 Share Performance

Besides, the influence of macroeconomic and political circumstances and trends, the pricing of the circulating shares is orientated both on the current and the expected economic development of the share issuing bank. Thus, a positive stock market reaction indicates the attitude adopted by the shareholders or prospective investors to invest or rather to divest in particular shares. Even if the dividend ratio is low, the shareholders also benefit from reinvested earnings because

reinvested profits sustain the company's value and, thus, boost the share price. We interpret a higher share performance as an indicator for good company performance. Therefore, the authors complete the performance measures with the comparison of the share performance by calculating it in the following way:

$$\text{Share Performance} = \frac{\text{stock price at the end of the period}}{\text{stock price at the beginning of the period}}$$

#### 4.2.3 Risk Measures

To measure the risk propensity of the company based on differently composed boards the researchers examined the debt ratio, because a higher debt ratio usually implicates a higher risk. It is justified by the fact that – in contrast to equity – outside capital causes repayments and annual interest payments. It also cannot be used to compensate losses. Annual cash outflows restrict the liquidity position of a bank and board members have to act with caution when they decide about fundraising. Furthermore, we look at the B.I.S capital-ratio, because it expresses the ratio between the bank's capital and the bank's risk-weighted position for regulatory purposes in percent.

##### 4.2.3.1 Debt-Ratio

The debt-ratio compares the banks total liabilities to its total assets and shows the amount of leverage used by the bank (Investopedia, Definitions, 2008) The lower the ratio, the less a bank depends on leverage (amounts owed to depositors) and the stronger its equity position is. However, contrary to other industries, financial institutions commonly have a higher debt-ratio because of their business purpose as a capital broker. In general, it is possible to say that the higher the percentage of debt, the more risk that company is considered to have taken on, because a bank has to be able to provide its debt service anytime. Therefore, one measurement for risk propensity is the debt ratio calculated as:

$$\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

#### 4.2.3.2 B.I.S Capital Ratio

The B.I.S capital ratio is a key figure for international banks expressing in percent “the ratio between their capital and their risk-weighted position for regulatory purposes” (Deutsche Bank AG, 2008).

The Bank for International Settlements (B.I.S) situated in Basel (Switzerland) is the oldest international organization fostering the cooperation of central banks and international monetary policy makers (Investopedia, Definitions, 2008). The Basel Committee on Bank Supervision sets banking regulations, which regulate finance and banking internationally.

Banks need to put aside capital to reduce the risks associated with their investing and lending practices. Basel II is the second of the Basel Committee’s recommendations. While the focus of its first accord (Basel I) was mainly on credit risk, the purpose of Basel II was to create standards and regulations on how much capital financial institutions must set aside to absorb market and operational risk. The Basel Committee attempts to integrate capital standards with national regulations by setting minimum capital requirements for financial institutions. Those conditions are supposed to reduce the susceptibility of the banking system in critical situations by ensuring the liquidity of banks and, thus, the protection of investors’ deposits. According to BASEL II regulations, the minimum total capital ratio is eight percent (Basel Committee on Banking Supervision, 2004, p. 12).

$$\frac{\text{Regulatory Capital}}{\text{Sum of credit risk – weighted Assets} + (\text{capital charges for market risk} + \text{operational risk})} \geq 8\%$$

Simplified:

$$\frac{Liable\ Equity}{Risk - weighted\ Assets} \geq 8\%$$

For the purpose of this dissertation, it is checked if the B.I.S capital-ratio is connected to the board composition. The higher the ratio, the more debt is secured by equity. Therefore, it is possible to say that in this case the bank is willing to take less risk.

### **4.3 Credibility of the Research Data**

#### *4.3.1 Reliability*

Reliability is concerned with the question if the data that were collected by the researchers would be consistent with the findings other researchers would have using the same sources (Saunders *et al.*, 2007). The most data were collected by the authors in a quantitative but diligent manner from the published and certified annual reports of the banks. Due to this fact, the research data cannot be interpreted wrong by the researchers and therefore have a high reliability.

However, when it comes to the board composition data about women, minorities and independent directors, the authors had to interpret by using pictures or curriculum vitae of the directors. The gender of the board members is usually recognizable when using pictures. Thus, it is clear and should not be inconsistent when other researchers collect these data. A little more difficult is the question about minorities. For that part, the biographies have to be considered, especially, when it comes to questions about backgrounds and where the people grew up. This fact can lead to different interpretations depending on who collects the data. However, the definitions on ethnic minorities were made clear in the theoretical part and thus, the results should be very consistent.



When deciding about the independence of the directors, there are two factors to consider. First, when the banks noted if the directors were independent, this was just copied for the research. These data are very reliable, because there is no space for interpretation. However, if it was not indicted and the biographies of the directors were read and the decisions about the independence were basically made after reading the professional background. Therefore, other researchers could have a different opinion about directors' independence.

To summarize, most of the data are very reliable, because they are published and just have to be copied. Only for factors, that the authors had to interpret, it could come to inconsistencies, which should be very limited though, because the data collection was done very diligently and clearly set definitions have been used.

#### 4.3.2 *Validity*

Validity of data is concerned with the question if the findings are what they appear to be. The researcher has to find out if the variables really have a causal relationship (Saunders *et al.*, 2007, p.150). In this study, it was made clear through the theoretical background that board composition and company performance, as well as, risk propensity influence each other. This is mainly secured by the fact that the board of directors makes decisions which are intended to influence the financial results.

However, to make sure that the relations between the board and firm performance and risk propensity are not accidental, four performance measures and two risk measures that were studied. A problem could arise, if the results are inconsistent. If that was the case, the contradicting results have to be interpreted and explained.

#### *4.3.3 Generalisability*

The aim of this research study was to be able to generalize the results, which means to be able to apply the results to other settings (Saunders *et al.*, 2007). Other settings could be for example a different group of banks or maybe other companies located in the same countries and also have international operations. For this reason, the quantitative research method was applied. To get reliable and valid results the authors collected almost 150 data sets by investigating 50 banks over three years. The number of banks was not selected by the authors but provided by a public resource which registered the 50 largest banks as measured by their total assets as of June 30, 2008. This amount of research data and the fact, that the sample includes banks situated on three continents in many different countries, allows the authors to generalize the findings.

## **5. Analysis**

The analysis is divided into different parts, *inter alia*, because of the situation in the financial markets that arose during 2007. To make a general comment about the results and the influence of the board composition on firm performance and risk propensity, all years were included in the first correlation table and regression models. Afterwards, the data were split between the years 2007 and 2005/2006, which were kept together. This approach allowed the authors to check, if during the financial crisis in 2007 the relations between the variables have changed or if boards with a certain composition managed to withstand the difficult situation better than others.

Furthermore, during the data research it was obvious that there are big differences between the composition variables on the different continents. This usually has cultural reasons, which have not been studied in the theoretical part. However, for the analysis of the general data, the variable continent was disregarded for reasons of high multi-collinearity with other variables in the regression analysis. Therefore, the banks have been separated by continents for the last part of the analysis to find out if there are any significant differences in the correlations between the board composition variables and the performance and risk measures.

### **5.1 General Findings**

The sample of fifty banks consists of the largest financial institutions from North America, Europe and Asia. The biggest group are the European banks. One bank from the sample had to be excluded because its structure differed too much from the other banks and did not fit to the research questions. It was a state-owned bank which was controlled by politicians to a large percentage. Furthermore, for the year 2005, one more bank had to be left out, because it was just created in 2006 by a merger of two smaller banks.

To be able to compare the banks, all performance indicators that were stated in different currencies have been converted into Euros with the currency rate of December 31 of each year.<sup>6</sup>

In table 5.1 general statistical values of the variables are listed. A value that was controlled for in the research was total assets. This was important for detecting if the board size or any of the other independent variables changed with the size of the bank. However, there is no significant relationship between the total assets and the size of the board (see table 5.2). Therefore, it is possible to say, that banks do not decide about the number of directors based on their size measured by total assets. It is rather noticeable that banks with a two-tier board system have larger boards than the other banks. The maximum number of directors came up to 48, when adding up the number of directors in the supervisory and the managing board compared to a minimum of seven board members in a one-tier system board of directors.

**Table 5.1 Descriptive Statistics years 2005-2007**

	<b>Samples</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Deviation</b>
Total Assets (Mio. €)	146	168,119	2,579,194	732,994	557,269	415,293
Board Size	146	7	48	18.36	17.00	6.92
Board Age (years)	142	49.1	64.70	57.32	57.74	3.44
Women (%)	146	0.00	42.90	10.02	6.8	9.32
Minorities (%)	146	0.00	41.20	3.73	0.00	7.79
Independent Directors (%)	146	0.00	94.10	49.15	50.00	28.80
Share Development cp. to Previous Year (%)	100	-44.75	106.67	14.61	16.90	27.52
ROE (%)	146	-37.90	37.50	14.56	15.35	8.60
ROA (%)	146	-0.30	1.75	0.65	0.59	0.40
Cost/Income Ratio (%)	125	34.70	114.00	58.89	56.00	13.07
Debt-Ratio (%)	146	87.73	98.54	95.31	95.95	2.19
B.I.S Capital (%)	135	8.5	19.70	11.79	11.60	1.72

<sup>6</sup> The currency rates were taken from [www.oanda.com/convert/fxhistory](http://www.oanda.com/convert/fxhistory). There, the historic exchange rates are listed for each currency for each day of the year.

## 5.2 Interdependency between the Independent Variables

Before checking for the influence of the board composition on performance and risk propensity, the interdependency of the independent variables was evaluated in table 5.2. It is noticeable that many of the factors correlate with each other within the one percent significance level. The strongest correlation exists between the variables board age and percentage of independent directors. It shows that the higher the average age of the directors is the more independent directors are on the board. This leads to the conclusion that outside board members are usually older than executive directors.

Another strong significant relationship is shown between the variables board age and board size. This correlation is negative and implies that the average age of the directors decreases when the number of board members increases. The reason for this link could be that the younger board members are introduced into the tasks before the older directors retire.

One more noticeable factor is that the percentage of women on the board is positively correlated with the percentage of minorities on the board. This supports the results of Carter *et al.* in 2002. Furthermore, independent directors correlate significantly positively with women and minorities, which supports the conclusion that female and minority directors usually seem to be outsiders to the bank.

An interesting fact is also that minority directors usually seem to be of more importance in smaller boards. The correlation between the board size and the percentage of minorities is slightly negative, which indicates that smaller boards have a higher percentage of ethnic minority directors.

Furthermore, it is interesting that the boards of directors of banks do not significantly correlate with their total assets, as mentioned before. However, the board age has a very significant positive correlation with the assets. This implies that larger banks usually have an older board of directors. Besides, those banks

also seem to have a slightly higher percentage of independent outside directors as shown by the positive correlation between these two factors.

With the high interdependencies between the independent variables, it could come to multi-collinearity problems in the regression analyses for the dependent performance and risk indicators. Fortunately, this is not the case as shown by the VIF-values, which are lower than 2.5, in the regression models below.

**Table 5.2 Correlations between Independent Variables**

	1	2	3	4	5	6
<b>1 Total Assets</b> <sup>a</sup>	1					
<b>2 Board Size</b> <sup>a</sup>	-.113	1				
<b>3 Board Age</b> <sup>a</sup>	<b>.308***</b>	<b>-.403***</b>	1			
<b>4 Women (%)</b> <sup>a</sup>	-.052	.037	-.026	1		
<b>5 Minorities (%)</b> <sup>a</sup>	.098	<b>-.176**</b>	<b>.254***</b>	<b>.267***</b>	1	
<b>6 Indep. Directors (%)</b> <sup>a</sup>	<b>.208**</b>	-.114	<b>.465***</b>	<b>.369***</b>	<b>.308***</b>	1

\*\*\* Correlation is significant at the 0.01 level (2-tailed)

\*\* Correlation is significant at the 0.05 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

### 5.3 Influence of Board Composition on Performance Data

At the beginning, the correlations of the data from all three years were evaluated together to get a general overview over the connections made between the independent and dependent variables.

#### 5.3.1 Return on Assets

When regarding the influence of the board composition on the first performance indicator it is very obvious that ROA is connected to all variables, except for total assets (see table 5.3). The strongest positive correlation exists between the variables return on assets and percentage of independent directors, followed by minorities. A little weaker connection is shown with the percentage of female directors and the board age. The linkages indicate that outsiders or a more divers

and experienced board (concerning average age) will be positive for the financial institution.

The only slightly negative significant correlation exists with the size of the board. This means, when the number of directors increases the return on assets decreases. It leads to the assumption that an extra board member will raise the costs of the bank more than the expertise will help to generate more revenue.

**Table 5.3 Correlations between ROA and Board Composition**

	Women	Board Age	Minorities	Board Size	Independent Directors	Total Assets
<b>ROA<sup>a</sup></b>	<b>.330***</b>	<b>.394***</b>	<b>.426***</b>	<b>-.192**</b>	<b>.441***</b>	<b>-.074</b>
Sig. (2-tailed)	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.020</b>	<b>.000</b>	<b>.378</b>

\*\*\* Correlation is significant at the 0.01 level (2-tailed)

\*\* Correlation is significant at the 0.05 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

The regression model for return on assets as dependent variable shows that about 37 percent of changes in ROA can be explained by modifications in the board composition variables and by total assets (see table 5.4). This is an acceptable value, especially considering the complex environments banks are in and how many other factors also influence the performance of financial institutions.

The regression model shows that regarding return on assets the size of the board has the least influence out of all board composition factors and is not of any significance in this case, even though the correlation between the size of the board and ROA is significant. Board age and the percentage of minorities, on the other hand, are the most important variables in this model.

**Table 5.4 ROA Regression Model**

Dependent Variable: ROA	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta				Tolerance	VIF
(Constant)	-1.338**	.575			-2.328	.021		
<b>Women</b>	<b>.008**</b>	.003	.187		2.459	<b>.015</b>	.779	1.283
<b>Board Age</b>	<b>.035***</b>	.010	.301		3.514	<b>.001</b>	.611	1.637
<b>Minorities</b>	<b>.013***</b>	.004	.251		3.435	<b>.001</b>	.841	1.189
<b>Board Size</b>	-.004	.004	-.074		-1.004	.317	.825	1.212
<b>Independent Directors</b>	<b>.002**</b>	.001	.167		1.992	<b>.048</b>	.636	1.574
<b>Total Assets</b>	<b>-2.274E-7***</b>	.000	-.238		-3.359	<b>.001</b>	.894	1.118
Adjusted R <sup>2</sup>	.368							
F-Value	14.658***							

\*\*\* Factor is significant at the 0.01 level (2-tailed)

\*\* Factor is significant at the 0.05 level (2-tailed)

### 5.3.2 Return on Equity

The correlation between the board and ROE is similar to the one with ROA, but not as strong, as demonstrated in table 5.5. It also shows that the return on equity has nothing to do with the size of the bank. The variables independent directors, female directors, and the board age have a slightly positive correlation to return on equity. The result is supported by the fact that ROE and ROA are also positively connected to each other. The only difference is that for ROE the correlations are not as strong, because for return on equity the debt level and thus the risk propensity of the bank are also important.

Therefore, a strong influence on the debt level could also influence the return on equity. If the debt level increases, but total assets and the profit stay the same, ROE will increase because of the leverage effect. This connection might be the reason for a weaker link between the board composition data and ROE compared to ROA.



**Table 5.5 Correlations between ROE and Board Composition**

	Women	Board Age	Minorities	Board Size	Independent Directors	Total Assets
<b>ROE<sup>a</sup></b>	<b>.215***</b>	<b>.232***</b>	.028	<b>-.141*</b>	<b>.315***</b>	-.067
Sig. (2-tailed)	<b>.009</b>	<b>.006</b>	.737	<b>.090</b>	<b>.000</b>	.418

\*\*\* Correlation is significant at the 0.01 level (2-tailed)

\* Correlation is significant at the 0.1 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

As already seen in the correlation analysis, the connections between the measure ROE and the board composition data are not as strong. The only significant factors in the regression model (table 5.6) are the variables percentages of female and independent directors. The significance, however, is very low and therefore, the variables are not as influential on ROE as on ROA. Furthermore, the adjusted  $R^2$ , which shows which percentage of change in return on equity is explained by a change in board composition, is only at eleven percent. This means, that the board composition has very little influence on ROE.

**Table 5.6 ROE Regression Model**

Dependent Variable: <b>ROE</b>	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	-6.861	14.881		-.461	.645		
<b>Women</b>	<b>.168**</b>	.084	.181	2.003	.047	.779	1.283
<b>Board Age</b>	.356	.257	.141	1.384	.169	.611	1.637
<b>Minorities</b>	-.156	.096	-.142	-1.633	.105	.841	1.189
<b>Board Size</b>	-.145	.111	-.114	-1.303	.195	.825	1.212
<b>Independent Directors</b>	<b>.059*</b>	.031	.191	1.915	.058	.636	1.574
<b>Total Assets</b>	-2.571E-7	.000	-.012	-.147	.884	.894	1.118
Adjusted R <sup>2</sup>	.106						
F-Value	3.776***						

\*\* Factor is significant at the 0.05 level (2-tailed)

\* Factor is significant at the 0.1 level (2-tailed)

### 5.3.3 Cost/Income Ratio

Compared to the other two performance measures the results on the cost/income ratio are rather limited regarding the hypotheses stated above (table 5.7). The percentage of minorities has a slightly negative correlation to the measure CIR which indicates that more ethnic diversity on the board can increase the efficiency of the board of directors. However, the variable size of the board is positively correlated to the CIR even though the correlation is weak. This shows that a larger board will decrease the efficiency of the financial institution. The results comply with the fact that a larger number of directors is also negatively correlated to ROA.

Concerning the other board composition variables and total assets, there was no significant correlation found.

**Table 5.7 Correlations between Cost/Income Ratio and Board Composition**

	<b>Women</b>	<b>Board Age</b>	<b>Minorities</b>	<b>Board Size</b>	<b>Independent Directors</b>	<b>Total Assets</b>
<b>Cost/Income Ratio<sup>a</sup></b>	-.131	.060	<b>-.213**</b>	<b>.198**</b>	.022	.054
Sig. (2-tailed)	.145	.510	<b>.017</b>	<b>.027</b>	.806	.548

\*\* Correlation is significant at the 0.05 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

The CIR regression model has only a very low explanatory power (see table 5.8). It explains just 6.1 percent of the change in the cost/income ratio. This means that the composition of the board is not very important for the cost-income relations a bank has. Within the board composition variables, however, the board size is the most important variable in the regression model.

**Table 5.8 Cost/Income Ratio Regression Model**

Dependent Variable: Cost/Income-Ratio	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	22.494	24.369		.923	.358		
<b>Women</b>	-.117	.132	-.083	-.892	.374	.872	1.146
<b>Board Age</b>	.449	.423	.120	1.062	.291	.600	1.666
<b>Minorities</b>	-.310	.192	-.152	-1.618	.108	.871	1.148
<b>Board Size</b>	<b>.482**</b>	.196	.253	2.463	.015	.725	1.380
<b>Independent Directors</b>	.052	.057	.100	.896	.372	.617	1.621
<b>Total Assets</b>	1.323E-6	.000	.042	.456	.649	.896	1.117
Adjusted R <sup>2</sup>	.061						
F-Value	2.321**						

\*\* Factor is significant at the 0.05 level (2-tailed)

#### 5.3.4 Development of Share Performance

The development of share performance is not significantly correlated with most of the board composition variables. This implies that, for shareholders, there are other more important factors than the board of directors.

However, the variables board age and percentage of independent directors are both negatively correlated to the share performance (see table 5.9). This is particularly interesting when considering that they both have a significant positive relationship with other performance variables as return on assets and return on equity. This result would imply that in despite of influencing the company performance in a good way, shareholders are skeptical towards a board with older directors or with many outsiders. Therefore, one could say, that investors trust dependent inside directors and especially a younger board more.

**Table 5.9 Correlation between Share Performance and Board Composition**

	<b>Women</b>	<b>Board Age</b>	<b>Minorities</b>	<b>Board Size</b>	<b>Independent Directors</b>	<b>Total Assets</b>
<b>Share Performance<sup>a</sup></b>	.084	<b>-.284<sup>***</sup></b>	-.061	.095	<b>-.231<sup>**</sup></b>	<b>-.285<sup>***</sup></b>
Sig. (2-tailed)	.404	<b>.004</b>	.546	.348	<b>.021</b>	<b>.004</b>

\*\*\* Correlation is significant at the 0.01 level (2-tailed)

\*\* Correlation is significant at the 0.05 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

The regression model for explaining the share performance compared to the previous years has the lowest validity within the performance measures (see table 5.10). It explains only nine percent of the changes. The only significant factor is the board age, which lies in the ten percent significance level. As shown below, the board composition variables do not have any significance in the model. The only significant factor is total assets. The coefficient is negative, which implicates that the share performance would rise, if all variables were stable and only the assets decreased.

**Table 5.10 Share Performance Regression Model**

Dependent Variable: <b>Share Performance</b>	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>t</b>	<b>Sig.</b>	<b>Collinearity Statistics</b>	
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>			<b>Tolerance</b>	<b>VIF</b>
(Constant)	133.108 <sup>**</sup>	60.805		2.189	.031		
<b>Women</b>	.120	.303	.042	.395	.694	.836	1.197
<b>Board Age</b>	-1.623	1.097	-.178	-1.480	.142	.642	1.559
<b>Minorities</b>	.205	.358	.061	.574	.568	.825	1.212
<b>Board Size</b>	-.163	.724	-.026	-.225	.822	.694	1.442
<b>Independent Directors</b>	-.194	.158	-.167	-1.227	.223	.497	2.013
<b>Total Assets</b>	<b>-1.431E-5<sup>**</sup></b>	.000	-.238	-2.372	<b>.020</b>	.917	1.091
Adjusted R <sup>2</sup>	.096						
F-Value	2.725 <sup>**</sup>						






\*\* Factor is significant at the 0.05 level (2-tailed)

### 5.3.5 Results of this Analysis

The outcome of this analysis supports the hypotheses H1a and H3a, which state that female and minority directors have a positive influence on the firm performance, but rejects the hypotheses H2a and H5a. Contrary to the hypothesis H2a, where the authors assumed a negative relation between the average age of the board members and the company performance measured by the data ROA and ROE, a positive connection was found. Similarly, this analysis implies a positive connection regarding independent directors against the assumed non-relation (H5a). Since the significance and, thus, the influence of the board composition data on the measures ROA and ROE is considerably higher than on the measure share performance, this slightly negative connection cannot result in a support of hypotheses H2a and H5a.

Furthermore, hypothesis H4a can be rejected too because an increasing board size does actually influence the firm performance. All financial measures (ROA, ROE, and CIR) affirm a negative effect of a larger board. Consequently, an increased number of directors does only produce higher costs which do not result in higher returns. Table 5.11 summarizes the results:

**Table 5.11 Summary of Correlations with Performance Indicators**

Composition	Firm Performance Hypotheses	Correlations
<b>Gender Diversity</b>	H1a: A higher percentage of women on the board of directors has a positive influence on firm performance.	ROA:  ROE:  CIR: – Share Performance: –
<b>Average Age of Directors</b>	H2a: The average age of the board of directors is negatively connected with firm performance.	ROA:  ROE:  CIR: – Share Performance: 

<b>Ethnic Diversity</b>	H3a: A higher number of minority directors on the board is positively related to company performance.	ROA: <b>↗↗↗</b> ROE: – CIR: <b>↘↘</b> Share Performance: –
<b>Board Size</b>	H4a: Increasing board size has no negative influence on the company performance.	ROA: <b>↘↘</b> ROE: <b>↘</b> CIR: <b>↗↗</b> Share Performance: –
<b>Board independence</b>	H5a: A higher number of outside directors does not influence firm performance.	ROA: <b>↗↗↗</b> ROE: <b>↗↗↗</b> CIR: – Share Performance: <b>↘↘</b>

## 5.4 Influence of Board Composition on its Risk Propensity

### 5.4.1 B.I.S. Total Capital-Ratio

The first measure for controlling the risk propensity of the board is the B.I.S. total capital-ratio. However, table 5.12 shows that none of the board composition variables correlates significantly (.10 level) with the B.I.S capital-ratio. Furthermore, it is also not correlated to the total assets of the bank.

**Table 5.12 Correlations between B.I.S Capital-Ratio and Board Composition**

	<b>Women</b>	<b>Board Age</b>	<b>Minorities</b>	<b>Board Size</b>	<b>Independent Directors</b>	<b>Total Assets</b>
<b>BIS Capital-Ratio<sup>a</sup></b>	-.049	-.122	.081	-.064	-.070	.058
Sig. (2-tailed)	.573	.163	.352	.462	.422	.504

<sup>a</sup> Pearson correlation coefficient

Since, the board composition variables are not significantly correlated to the B.I.S capital-ratio, the regression model did not turn up a valid result. Thus, the measure B.I.S capital-ratio is not applicable to gauge the risk propensity of the board.

### 5.4.2 Debt-Ratio

The debt-ratio was chosen as the second indicator for the risk propensity of the board. The next table demonstrates the correlation between the five board composition variables and the risk propensity measured by the debt-ratio. Three columns in table 5.13 indicate a significant (.01 level) negative correlation. Those factors are the average age of the board members as well as the percentage of ethnic minorities and independent directors.

**Table 5.13 Correlations between Debt-Ratio and Board Composition**

	Women	Board Age	Minorities	Board Size	Independent Directors	Total Assets
<b>Debt-Ratio<sup>a</sup></b>	-.110	<b>-.336***</b>	<b>-.423***</b>	.075	<b>-.257***</b>	.060
Sig. (2-tailed)	.187	<b>.000</b>	<b>.000</b>	.369	<b>.002</b>	.471

\*\*\* Correlation is significant at the 0.01 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

The negative correlation means that an increasing number of minorities or independent directors results in a dropping debt-ratio. The same applies if the average age of the board members rises.

The other two board composition variables (board size and number of female directors) and total assets do not correlate with the debt-ratio on a significant level (at least .10 level) and therefore do not influence the risk propensity of the company.

The regression model improves the findings and table 5.14 presents the results of the regressions for the relationship between the board composition variables and the risk propensity measured by the debt-ratio.

**Table 5.14 Debt-Ratio Regression Model**

Dependent Variable: Debt-Ratio	Unstandardized Coefficients		Standardized Coefficients  Beta	t	Sig.	Collinearity Statistics	
	B	Std. Error				Tolerance	VIF
(Constant)	107.048***	3.481		30.756	.000		
<b>Women</b>	.005	.020	.020	.242	.809	.779	1.283
<b>Board Age</b>	<b>-.205***</b>	.060	-.319	-3.405	<b>.001</b>	.611	1.637
<b>Minorities</b>	<b>-.102***</b>	.022	-.364	-4.550	<b>.000</b>	.841	1.189
<b>Board Size</b>	-.022	.026	-.068	-.844	.400	.825	1.212
<b>Independent Directors</b>	-.003	.007	-.034	-.366	.715	.636	1.574
<b>Total Assets</b>	<b>1.108E-6***</b>	.000	.210	2.703	<b>.008</b>	.894	1.118
Adjusted R <sup>2</sup>	.242						
F-Value	8.518***						

\*\*\* Factor is significant at the 0.01 level (2-tailed)

The regression model confirms the high influence of the number of minorities on the board and the average age of the board members on the debt-ratio and therefore, on the boards' risk propensity. An important factor for this regression is also total assets. However, this test also depicts that even though there was found a significant correlation between the number of independent directors and the debt-ratio, other variables do influence the debt-ratio more than the independency of the board members. Since the model has an adjusted R<sup>2</sup> of 24 percent it is possible to say that one fourth of the change in the debt-ratio is explained by the board composition factors and total assets, which is an acceptable value.




#### 5.4.3 Results of this Analysis

The results of this analysis support only hypothesis H2b. The rejection of the hypotheses H1b and H4b is caused by the fact that there is no relationship between neither the board size nor the number of female directors and the risk propensity of the company. Furthermore, hypotheses H3b and H5b can be rejected too, based on the result that there is a different picture of relationships between minority directors, as well as, independent outside directors and risk propensity.



Contrary to the opinion of hypothesis H3b minority directors do affect the risk propensity of the board. Beyond this, hypothesis H5b assumed a positive connection of outsiders and the company's risk propensity, but the analysis presents a negative relationship instead. Table 5.15 concludes the outcomes:

**Table 5.15 Summary of Correlations with Risk Propensity Measures**

<b>Composition</b>	<b>Risk Propensity</b>	<b>Correlations</b>
<b>Gender Diversity</b>	H1b: A higher percentage of women on the board is negatively connected to the risk propensity of the company.	B.I.S Capital-Ratio: – Debt-Ratio: –
<b>Average Age of Directors</b>	H2b: The average age of the board is positively connected to risk avoidance of the company.	B.I.S Capital-Ratio: – Debt-Ratio: 
<b>Ethnic Diversity</b>	H3b: Minority directors do not affect the risk propensity of the company.	B.I.S Capital-Ratio: – Debt-Ratio: 
<b>Board Size</b>	H4b: The board size is negatively related to the risk propensity of the company.	B.I.S Capital-Ratio: – Debt-Ratio: –
<b>Board independence</b>	H5b: A higher number of outside directors is positively related to the risk propensity of the company.	B.I.S Capital-Ratio: – Debt-Ratio: 

## 5.5 Comparison of 2007 to 2005/2006

Considering the financial crisis which affected most of the banks in 2007, the authors check if the outcome is different when only looking at the years before that situation and comparing them with 2007. Perhaps, because of the crisis, the

correlations between the variables have changed and some boards did a better job during those difficult times than others.

### 5.5.1 Company Performance

The years 2005 and 2006 support the general findings overall. Except for the variable board size which does not correlate with the measure ROE anymore, only a shift in the significance level of three variables can be noted. Regarding the measure ROE the correlation of female and independent directors on the board decreased and changed from a very significant rank (.01 level) to a marginal ten percent level (see table 5.16). Likewise, the significance of the measure CIR falls from a five percent grade to the ten percent level. However, the correlation between the measure ROA and all board composition variables is much stronger in the years 2005 and 2006 than in the crisis year.

**Table 5.16 Correlations between Firm Performance and Board Composition in 2005/06**

2005/06	Women	Board Age	Minorities	Board Size	Independent Directors	Total Assets
<b>ROA</b>	<b>.334***</b>	<b>.505***</b>	<b>.521***</b>	<b>-.233**</b>	<b>.517***</b>	.028
Sig. (2-tailed)	<b>.001</b>	<b>.000</b>	<b>.000</b>	<b>.022</b>	<b>.000</b>	.786
<b>ROE</b>	<b>.182*</b>	<b>.297***</b>	.049	-.156	<b>.366***</b>	.145
Sig. (2-tailed)	<b>.075</b>	<b>.004</b>	.632	.128	<b>.000</b>	.155
<b>CIR</b>	-.084	.142	<b>-.182*</b>	<b>.218**</b>	.026	.074
Sig. (2-tailed)	.450	.204	<b>.100</b>	<b>.048</b>	.817	.506
<b>Share Performance</b>	.081	<b>-.358***</b>	-.090	.168	<b>-.346***</b>	-.218
Sig. (2-tailed)	.519	<b>.004</b>	.474	.180	<b>.005</b>	.081

\*\*\* Correlation is significant at the 0.01 level (2-tailed)

\*\* Correlation is significant at the 0.05 level (2-tailed)

\* Correlation is significant at the 0.10 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

In total, the strongest variable influencing the performance measures in the years 2005/06 was the board age while the variable board size lost the most influence.

The following table (table 5.17) demonstrates the crisis year 2007. In 2007 one can see a vast change in the returns of the banks. While the general findings show very high correlations between all board composition data and the performance measure ROA, in 2007 only three of them are still related to it. Besides, the significant level of the variables board age and minority directors altered to a marginal ten percent grade. The variable board age has no significant correlation to the measure ROE anymore. Furthermore, also its significance level to the remaining measures ROA and share performance drops from a very high significant level to only a barely ten percent grade. Similarly, the significance level of the variable minority directors shifts to a lower rank.

**Table 5.17 Correlations between Firm Performance and Board Composition in 2007**

2007	Women	Board Age	Minorities	Board Size	Independent Directors	Total Assets
<b>ROA</b>	<b>.347**</b>	<b>.243*</b>	<b>.274*</b>	-.121	<b>.323**</b>	-.174
Sig. (2-tailed)	<b>.015</b>	<b>.096</b>	<b>.057</b>	.406	<b>.023</b>	.231
<b>ROE</b>	<b>.327**</b>	.147	-.017	-.116	.230	.007
Sig. (2-tailed)	<b>.022</b>	.318	.906	.429	.111	.959
<b>CIR</b>	-.225	-.049	<b>-.261*</b>	.189	.015	.019
Sig. (2-tailed)	.152	.758	<b>.096</b>	.230	.925	.906
<b>Share Performance</b>	.169	<b>-.297*</b>	.031	.064	-.255	<b>-.316*</b>
Sig. (2-tailed)	.333	<b>.083</b>	.858	.713	.139	<b>.064</b>

\*\* Correlation is significant at the 0.05 level (2-tailed)

\* Correlation is significant at the 0.10 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

Furthermore, and contrary to the general findings, the variable board size lost its correlation to all of the performance measures completely and independent directors are only significantly correlated with return on assets.

Finally, it seems that women on the board do influence the returns of a bank in hard times the most since women on board are not only the most significant variable considering the measure ROA but also the only remaining relating variable to the performance measure ROE.

### 5.5.2 Risk Propensity

Considering the risk propensity of the board measured by the B.I.S. total capital-ratio one marginal significant negative correlation (.10 level) with the variable board age could be found in the year 2007 (see table 5.19) but none in the years 2005 and 2006 (see table 5.18). With this exception, the result supports the findings before and disallows to use the B.I.S. capital-ratio as an appropriate measure for risk propensity. The reason for this fact could be the legal obligation of banks to cover the risk-weighted assets with at least eight percent of the liable equity. Therefore, the board members may only assure to hold the eight percent level, but not to tie up a specific percentage of additional capital.

**Table 5.18 Correlations between Risk Propensity and Board Composition in 2005/06**

<b>2005/2006<sup>a</sup></b>	<b>Women</b>	<b>Board Age</b>	<b>Minorities</b>	<b>Board Size</b>	<b>Independent Directors</b>	<b>Total Assets</b>
<b>Debt-Ratio</b>	-.132	<b>-.457***</b>	<b>-.512***</b>	.126	<b>-.326***</b>	-.003
Sig. (2-tailed)	.197	<b>.000</b>	<b>.000</b>	.218	<b>.001</b>	.976
<b>BIS Capital-Ratio</b>	-.048	-.028	.081	-.132	.005	.160
Sig. (2-tailed)	.654	.794	.451	.218	.960	.133

\*\*\* Correlation is significant at the 0.01 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

However, when dividing the data into the years before the financial crisis (2005/06) and the beginning year of the financial crisis (2007) the outcome changes regarding the debt-ratio. By examining the debt-ratio in 2007 you can see that only the number of minority directors correlates with it (.05 level) while in the years 2005/06 besides, the variables board age and independent directors show a strong correlation on a very high significant rank (.01 level).

**Table 5.19 Correlations between the Risk Propensity and Board Composition in 2007**

<b>2007<sup>a</sup></b>	<b>Women</b>	<b>Board Age</b>	<b>Minorities</b>	<b>Board Size</b>	<b>Independent Directors</b>	<b>Total Assets</b>
<b>Debt-Ratio</b>	-.069	-.144	<b>-.282**</b>	-.018	-.141	.139
Sig. (2-tailed)	.638	.327	<b>.049</b>	.901	.335	.342
<b>BIS Capital-Ratio</b>	-.052	<b>-.262*</b>	.078	.047	-.191	-.035
Sig. (2-tailed)	.734	<b>.082</b>	.606	.757	.205	.815

\*\* Correlation is significant at the 0.05 level (2-tailed)

\* Correlation is significant at the 0.10 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

The findings of the crisis year 2007 reveal that no board composition is immune to the effects of a financial crisis caused by the wrong decisions. Also the professional experience of a matured board could not influence the B.I.S. Capital-ratio positively in 2007. Furthermore, it is noticeable that neither before, nor during the financial crisis, the total assets and thus the size of the bank were important for the risk propensity of the bank.

Regarding the years before the crisis, a strong correlation of the risk propensity measures to three of the board composition factors is found, which supports the overall results for the three years together.

## **5.6 Differences between Continents**

Because of the authors' intention to address an international audience which might be interested in specific results regarding the region where they are operating in, the general analysis should be completed with a geographical focus.

This point of view reveals regional differences (possibly due to various cultural or traditional backgrounds) between the board structure and its influence on some risk and performance measures as a start for future research.

### 5.6.1 *Company Performance*

Splitting the banks into the regions where they are headquartered lets correlations between the board composition variables and company performance data shift, as well as, disappear and even emerge. While there exists a strong correlation between the board composition data and the measure ROA in Asian and Australian Banks this connection totally disappears in American Banks. Otherwise, the connection to the measure ROE decrease in the third group enormously in support of the European banks.

#### 5.6.1.1 European Banks

First of all, the researchers only examined banks headquartered in Europe which form the biggest group. Against the expectation that the biggest sample would support the general findings, this consideration results in a modified picture as presented in table 5.20.

In total, all board composition variables lost influence on at least one of the performance measures. Contrary to the general findings, as well as, the results of the region analysis of the other two groups, the variable female directors is not correlated with any performance measures anymore. Therefore, in European banks any specific percentage of women on the directors' board would not influence the bank's performance at all. This outcome would even reject the commonly supported hypothesis H1a.

**Table 5.20 Correlations between Firm Performance and Board Composition in European banks**

Europe	Women	Board Age	Minorities	Board Size	Independent Directors	Total Assets
<b>ROA</b>	.157	<b>.457***</b>	<b>.358***</b>	<b>-.319***</b>	<b>.309***</b>	-.109
Sig. (2-tailed)	.117	<b>.000</b>	<b>.000</b>	<b>.001</b>	<b>.002</b>	.278
<b>ROE</b>	.114	<b>.306***</b>	<b>.183*</b>	<b>-.424***</b>	<b>.255**</b>	.115
Sig. (2-tailed)	.258	<b>.002</b>	<b>.067</b>	<b>.000</b>	<b>.010</b>	.250
<b>CIR</b>	-.111	-.007	.086	.125	-.088	.015
Sig. (2-tailed)	.285	.943	.408	.228	.399	.886
<b>Share Performance</b>	.142	-.104	-.045	.143	-.103	<b>-.285**</b>
Sig. (2-tailed)	.228	.382	.705	.226	.384	<b>.014</b>

\*\*\* Correlation is significant at the 0.01 level (2-tailed)

\*\* Correlation is significant at the 0.05 level (2-tailed)

\* Correlation is significant at the 0.10 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

A further outcome is that neither the measure CIR nor the measure share performance is influenced by any of the board composition variables. This fact supports the lower relevance of these measures found in the general analysis. However, share performance is negatively correlated to the total assets, which implies that smaller banks' shares perform better than the ones of bigger banks in Europe.

Overall, in European banks most of the selected board composition variables have a strong influence on the very important performance measures ROA and ROE.

#### 5.6.1.2 North-American Banks

The latter mentioned influence of the board composition data in European banks cannot be affirmed in the second group, which consists of banks headquartered in North-America. Table 5.21 shows that none of the board composition variables correlates with the measure ROA at least on a marginal ten percent significance level. Even the remaining two variables related to ROE, women and independent directors, only correlate on a marginal ten percent significance level. Besides, the direction of the correlation between independent directors and ROE changed.

Contrary to the general findings, this result would support the authors' hypothesis H5a that a higher percentage of independent directors does not influence the banks performance.

**Table 5.21 Correlations between Firm Performance and Board Composition in North-American banks**

North-America	Women	Board Age	Minorities	Board Size	Independent Directors	Total Assets
<b>ROA</b>	.137	.083	.051	.376	.222	.133
Sig. (2-tailed)	.586	.742	.842	.125	.377	.599
<b>ROE</b>	<b>.465*</b>	-.368	-.319	.271	<b>-.403*</b>	<b>-.427*</b>
Sig. (2-tailed)	<b>.052</b>	.133	.197	.276	<b>.097</b>	<b>.077</b>
<b>CIR</b>	-.439	-.133	-.206	-.397	.246	-.212
Sig. (2-tailed)	.101	.636	.462	.143	.376	.448
<b>Share Performance</b>	.093	<b>-.615***</b>	<b>-.415*</b>	.124	-.383	<b>-.409*</b>
Sig. (2-tailed)	.713	<b>.007</b>	<b>.087</b>	.624	.116	<b>.092</b>

\*\*\* Correlation is significant at the 0.01 level (2-tailed)

\*\* Correlation is significant at the 0.05 level (2-tailed)

\* Correlation is significant at the 0.10 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

Similarly to the results for European banks, the measure CIR is not influenced by the board composition. However, shareholders of North-American banks seem to be more deterred from minority directors because of the appearance of a negative relation.

Besides, there is another big difference considering the influence of total assets. The negative correlation between the assets and ROE implies that smaller banks have a greater return on equity than larger banks in North America. Furthermore, as in Europe, the shares of smaller banks perform better compared to the ones of larger banks, even though the correlation is only significant at the ten percent level.



### 5.6.1.3 Asian and Australian Banks

Only Banks headquartered in Asian and Australia support the general correlation of all board composition data and the measure ROA and even at the strongest correlation level. Additionally, only in this group there exists a strong significant connection (.05 level) between the board age as well as the board size and the CIR. However, table 5.22 reports a shift in the direction of the relations between board age and board size regarding the measures ROA and CIR. This outcome would support the hypotheses H2a and H4a against the general result. Therefore, in Asian and Australian banks larger and younger boards produce higher returns at a lower cost level.

**Table 5.22 Correlations between Firm Performance and Board Composition in Asian and Australian banks**

Asia/Australia	Women	Board Age	Minorities	Board Size	Independent Directors	Total Assets
<b>ROA</b>	<b>.746<sup>***</sup></b>	<b>-.557<sup>***</sup></b>	<b>.672<sup>***</sup></b>	<b>.427<sup>**</sup></b>	<b>.562<sup>***</sup></b>	<b>-.332<sup>*</sup></b>
Sig. (2-tailed)	<b>.000</b>	<b>.005</b>	<b>.000</b>	<b>.026</b>	<b>.002</b>	<b>.091</b>
<b>ROE</b>	<b>.349<sup>*</sup></b>	.103	.279	-.028	.221	<b>-.331<sup>*</sup></b>
Sig. (2-tailed)	<b>.074</b>	.631	.158	.889	.269	<b>.091</b>
<b>CIR</b>	-.100	<b>.566<sup>**</sup></b>	-.259	<b>-.525<sup>**</sup></b>	.237	<b>-.705<sup>***</sup></b>
Sig. (2-tailed)	.722	<b>.028</b>	.352	<b>.044</b>	.395	<b>.003</b>
<b>Share Performance</b>	-.463	-.510	.071	.444	-.611	.541
Sig. (2-tailed)	.248	.196	.868	.270	.108	.166

\*\*\* Correlation is significant at the 0.01 level (2-tailed)

\*\* Correlation is significant at the 0.05 level (2-tailed)

\* Correlation is significant at the 0.10 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

Besides, the lowest connection to the measure ROE was found in this group. Only the variable percentage of women correlates at least on a ten percent significance level. Additionally, banks in Asia and Australia support the results shown at European banks by non-existence of a relation between the board composition variables and the measure share performance.

In Asian and Australian banks the total assets play a much bigger role than in Europe or North America. As shown in table 5.22, total assets are correlated with all the performance measures except for the share performance. It is noticeable that all correlations are negative, but at different significance levels. The most important correlation exists with CIR. It shows that the cost/income ratio drops if the total assets of the banks rise. However, even though this is positive for a bank, ROA and ROE also decrease with rising assets. Therefore, one can assume that smaller banks have a better return on assets and equity than larger banks in despite of a higher cost/income ratio.

### 5.6.2 *Risk Propensity*

A very interesting view occurs when the banks are separated into geographical regions such as North America, European countries, and Asian/Australia. Thereby, the researchers found enormous differences regarding the boards' influence on the company's risk propensity.

In banks in Asia/Australia almost all board composition variables correlate with the debt-ratio on very significant levels (.01 level or .05 level). Only the variable board age has no significant relationship neither to the debt-ratio nor the B.I.S. capital-ratio. Although, the only variable connected to the B.I.S. capital-ratio is independent directors.

In North-America the numbers of female and independent directors are correlated with the debt-ratio. In European banks only a strong relationship (.01 level) between the board age, as well as, minority directors and a marginal relationship (.10 level) between the number of independent directors can be found. Surprisingly, board age and board size are strongly related to the B.I.S. capital-ratio in North-American banks contrary to European banks where no significant connections were found at all.

### 5.6.2.1 European Banks

In contrast to the differences in the analysis of the firm performance data in European banks compared to the overall outcomes, the results of this analysis support the general findings. Only a shift in the significant level from a one percent rank to a ten percent grade of the variable independent directors could be noted (see table 5.23).

**Table 5.23 Correlations between Risk Propensity and Board Composition in European banks**

Europe	Women	Board Age	Minorities	Board Size	Independent Directors	Total Assets
<b>Debt-Ratio<sup>a</sup></b>	-.008	<b>-.327***</b>	<b>-.276***</b>	.048	<b>-.168*</b>	.089
Sig. (2-tailed)	.938	<b>.001</b>	<b>.005</b>	.630	<b>.093</b>	.376
<b>BIS Capital-Ratio<sup>a</sup></b>	-.023	-.105	.161	-.026	.042	.086
Sig. (2-tailed)	.821	.305	.114	.796	.680	.399

\*\*\* Correlation is significant at the 0.01 level (2-tailed)

\* Correlation is significant at the 0.10 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

### 5.6.2.2 North-American Banks

Second, banks headquartered in North-America are considered. In contrast to the general findings, the independent variable board age is now significantly correlated with the B.I.S. capital ratio (.01 level) instead of the debt-ratio (see table 5.24). Additionally, the board size is now related to the capital ratio on a marginal 10 percent level (.10 level) but negatively. These negative correlations imply that a smaller board, on the one hand, and a board with an average of younger directors, on the other hand, has a higher total capital ratio.

In this paper higher capital ratios denote less risk propensity of the board since more equity is held or less operating risks are taken. This outcome would reject the hypothesis H2b because the authors assumed a positively connection between the board age and the risk avoidance. Besides, it would also reject H4b since a

negative connection to the capital-ratio implies a positive relation to risk propensity while a negative one was assumed.

**Table 5.24 Correlations between Risk Propensity and Board Composition in North American banks**

North-America	Women	Board Age	Minorities	Board Size	Independent Directors	Total Assets
<b>Debt-Ratio <sup>a</sup></b>	<b>.488**</b>	-.198	-.178	-.071	<b>-.507**</b>	-.170
Sig. (2-tailed)	<b>.040</b>	.432	.480	.779	<b>.032</b>	.501
<b>BIS Capital-Ratio</b>	-.166	<b>-.670***</b>	-.159	<b>-.443*</b>	-.268	-.183
Sig. (2-tailed)	.554	<b>.006</b>	.571	<b>.098</b>	.334	.513

\*\*\* Correlation is significant at the 0.01 level (2-tailed)

\*\* Correlation is significant at the 0.05 level (2-tailed)

\* Correlation is significant at the 0.10 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

Another difference to the general findings is that female directors are now positively correlated to the debt-ratio (.05 level) while overall no significant correlation could be found. However, this result also supports the rejection of hypothesis H1b because the authors assumed a negative relation between the number of woman on the board and the risk propensity. Nevertheless, in North-American countries a higher percentage of female directors stands for a higher debt-ratio and therefore, for a higher risk propensity of the board.

### 5.6.2.3 Asian and Australian Banks

Finally, Asian and Australian banks are regarded. The analysis of the findings of the third group demonstrates the strongest influence of the selected board composition variables on the risk propensity measured by the debt-ratio (see table 5.25). Furthermore, it shows that, in contrast to the general findings, but similar to North-American banks, in Asian and Australian banks there is no significant connection between the board age and the debt-ratio. However, a new correlation appears. In contrast to the other findings, the board size is very significantly correlated with the debt-ratio (.01 level). This negative relation between the board size of Asian and Australian boards and the debt-ratio implies that the debt level

would decrease when the number of board members increases. A lower debt-ratio stands for lower risk propensity. Contrary to the general findings, the outcome of this analysis would support the authors' hypothesis H4b where they assumed that the board size is negatively related to the risk propensity of the board of directors.

**Table 5.25 Correlations between Risk Propensity and Board Composition in Asian and Australian banks**

Asia & Australia	Women	Board Age	Minorities	Board Size	Independent Directors	Total Assets
<b>Debt-Ratio <sup>a</sup></b>	<b>-.552 ***</b>	.202	<b>-.599 ***</b>	<b>-.679 ***</b>	<b>-.412 **</b>	.056
Sig. (2-tailed)	<b>.003</b>	.343	<b>.001</b>	<b>.000</b>	<b>.033</b>	.780
<b>BIS Capital-Ratio</b>	-.165	-.098	.104	-.024	<b>-.482 **</b>	.217
Sig. (2-tailed)	.462	.682	.645	.914	<b>.023</b>	.331

\*\*\* Correlation is significant at the 0.01 level (2-tailed)

\*\* Correlation is significant at the 0.05 level (2-tailed)

<sup>a</sup> Pearson correlation coefficient

There is another difference in the outcome that is contrary to the common findings and the result of the North-American analysis. While generally no significant correlations between woman on the board and the risk propensity measuring data were found, table 5.25 illustrates a very significant negative relation (.01 level) between the number of women on the board and the debt-ratio. Compared to the conclusion of the general findings, this result would support the hypothesis H1b: A higher percentage of women on the board of directors will be negatively connected to the risk propensity of the company. Accordingly, banks in Asia and Australia take less risk when they have more female directors on the board.

Finally, a significant negative correlation between the percentage of independent directors and the B.I.S. capital ratio (.05 level) of Asian and Australian banks could be detected. This finding would support the writers' hypothesis H5b. Since a negative connection implies a lower capital ratio when there is a higher number of outside directors. This result implies that the risk propensity of the board would rise.

## **6. Conclusion**

### **6.1 Summary and Practical Relevance**

The focus of this dissertation was on the board of directors in financial institutions. More precisely, five board composition factors and their influence on a) the company performance and b) the risk propensity of the board were investigated. The five board composition factors are 1) the percentage of women, 2) the average age of all board members, 3) the percentage of minority directors, 4) the size of the board, and 5) the percentage of independent directors.

The result of this dissertation demonstrates that the composition of the board of directors does influence the performance of financial institutions and the risk propensity of the board. The quantity of the sample also allows to generalize the outcomes of the research. Thus, directors, shareholders, and employees of banks could start analyzing the compositions of their board with the goal to generate higher returns and to avoid hazardous risks in the bank's operational business. However, before they can start with the evaluation, they first need an answer on the question:

- How does the composition of the board of directors influence the performance of the company?

Certainly, the composition of the board should have a positive influence on the company's performance. The result of the authors' first research is, that female directors, minority directors, and independent outside directors influence the firm performance positively. The general findings also support the assumption that a smaller but matured board (age-wise) affects the performance of the company in a positive way. Consequently, a more diverse board with more experienced directors can profit from a broad range of ideas, skills and long lasting professional experiences which in total can generate more income. Nevertheless,

everyone has to keep in mind: “Too many cooks spoil the broth”, which means that boards with a large number of members rather produce more costs and disagreements than more returns.<sup>7</sup>

When it comes to the influence of the board composition on the company’s risk propensity, a second question needs to be answered to the group which is responsible to select the board members:

- How does the composition of the board of directors influence the risk propensity of the company?

Since the financial crisis started in the year 2007 it has become even more important for banks’ directors to avoid risks which are out of proportion. For this reason, it is important to know which composition of the board rather avoids risks. The result of the authors’ second research is that matured boards with more minority directors and independent outside directors take less risk. The gender diversity as well as the size of the board do not affect the risk level. Consequently, younger and inside board members rather influence the risk propensity of the board.

To conclude, in financial institutions an ideal composed board of directors generates more income while avoiding hazardous operational risks. According to the authors’ findings, such an ideal board is composed of a clearly arranged mixture of matured inside and outside directors, male and female directors, as well as, directors with different ethnical backgrounds. Consequently, gender diversity and ethnical diversity add value. A smaller board size saves costs. And a small board with a higher number of matured directors can balance the amount of experience a larger but younger board would have.

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<sup>7</sup> The authors’ research has shown that the mean of the board sizes was 17 board members. But according to Austin (2001) the ideal board size of financial institutions should range between nine and twelve directors (n.p).

However, as the analysis also showed, there are differences regarding the board composition between the continents, which are usually related to cultural backgrounds and different traditions. Thus, the board composition and its influence on the performance will vary between countries and continents. Furthermore, as also demonstrated in the analysis, during unstable times as the financial crisis that started in 2007 and affected many banks and economies around the world, there is no specific board composition that can manage such times exceptionally well.

### **6.2 Self Criticism**

This study covers the correlations between the board composition variables and financial performance indicators, as well as, risk measures. For the performance indicators, there are four different measures. But, to measure the banks' risk propensity, the authors used only two variables, of which one showed no correlations and could not be used for explaining any influences of the board.

Another critical point may be that the study covers only three years, where one was an exceptional year because of the financial crisis. Thus, it could have come to different results than if the research period had been extended over a time period of five to ten years in which the economic situation was more stable for financial institutions.

Furthermore, in the general regression models the continents have not been considered as control variables because of multi-collinearity problems between continents and the board composition variables. However, during the data research, it was obvious that the board composition data was varying a lot for banks on the different continents.



### **6.3 Future Research**

To enhance the results, future researchers could extend the period they cover to five or ten years, because then the relations between the board composition variables and the firm performance indicators and risk propensity measures could be even clearer, even though most results in this study have a high significance already.

Furthermore, it could also be studied how a composition of the board in one year influences the financial performance in the next year, because many decisions that are made by the board members do not have immediate effects, but will show their impact over the next periods.

Besides, researchers could also add a more cultural focus and look at the differences between the continents with the culture in background. Furthermore, it is possible to include the continents as variables in the general regression models for each performance and risk indicator.

Regarding risk propensity, future studies could choose other factors, which can indicate the risk propensity of the company because as shown in this study, the B.I.S total capital-ratio has no correlation with any of the board composition variables and is therefore not adequate to demonstrate the influence of the board on the firm's risk propensity.



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## **Affirmation**

We hereby declare, that we wrote this thesis autonomously and without any support or aids aside from those mentioned. All wording that is taken literally or analogously from published or non-published readings is indicated accordingly. This thesis has not been presented in this form to any other board of examination before.

Kristianstad, 2008/11/27

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