

# The effects of female board members on CEO compensation

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How women in the Board of Directors can influence CEO compensation components

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This research investigates the effects on CEO compensation when females occupy board seats and finds that there is no significant relation between women representativeness in the Board of Directors and executive compensation components. The number of female board members does show a significant association with total board size and CEO chairmanship. Board size and CEO chairmanship in turn show significant association with the salary compensation component. Female directors are busier on average than male directors, meaning they hold more board seats at once than male directors. The number of board seats held by directors is associated with a significant impact on the salary, stock, option and total compensation components. The sample for this master thesis' research consists of publicly listed U.S. S&P1500 companies for the years 2007-2009 and contains 3.986 executive years which are matched with 37.418 director years.

**Keywords:**

Executive compensation, female board members, CEO bonus, CEO chairman, board of directors, board member occupancy, board diversity.

## Preface

To complete the master course Accounting & Finance, students are required to write a thesis that merges the adapted skills of the educational program. The basics of writing such a thesis were obtained in the seminar Advanced Financial Accounting, lectured by Dr. Sc. Ind. A.H. Van der Boom. The idea for writing this thesis arose from the actualities and media attention regarding executive bonuses and compensation schemes in times of crisis and especially now during the aftermath of the credit crunch. As differences in the human psyche between men and women are always an actuality of some sort and variation on this subject seems infinite, and discussions on this topic were extant, the decision was made to combine the two. I would like to thank Dr. Sc. Ind. A.H. Van der Boom for lecturing the seminar, guiding me through the process of writing this thesis, and discussing and reviewing certain aspects of life. Furthermore, I would like to thank Inge Schepens for her support with the SPSS statistics. Special acknowledgements go out to Kelly van Cauter, not just for reviewing and criticizing this thesis, but for the greater part of supporting me in all those years of college and being like a sister to me. Both graduating means a lot to me and I thank her for all the laughs we shared, for all the times she reminded me to subscribe for exams and for helping me out with study projects. Finally I thank all those who supported me or contributed to this thesis some way or another<sup>1</sup>.

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# 1 Introduction

## 1.1 CEO compensation

Due to the public opinion, governments are currently employing and developing legislation to control the bonuses of government supported companies their CEO's. Companies that received a bailout (emergency loan of the government) were obliged to make redundancy programs and expenditure cuts. However, their CEO's still received multimillion bonuses. For example, the Bank of America's CEO received a 9.05 million USD restricted stock bonus in 2010 and Goldman Sachs' CEO received an even bigger 12.6 million USD stock bonus in 2010. Both companies had received a bailout. At the same time, salary levels were raised for these CEO's because, with the upcoming legislation on bonuses, companies fear they will lose top executives if their compensation drops<sup>2</sup>. Although these compensations were within the boundaries of commitment and legislation, the bonuses led to negative publicity which influenced company image and the call for new legislation. The US congress had voted positive on a new legislation proposal in March 2009 that allowed for taxes on bonuses of bailout receiving companies their CEO's up to 90%<sup>3</sup>. However, this proposal wasn't supported by the Senate.

The development of CEO compensation and the growth in payment gap between the CEO and lower levels of management that occurred in the last couple of decades, seemed hard to relate to company performance (Fahlenbrach, 2008; Frydman and Jenter, 2010; Perel, 2003). The composition of executive compensation has changed over the decades and with matching the CEO income to firm value, the equity related remuneration became the most substantial source of income for U.S. corporate executives. For the years 2000-2008, the CEO compensation graph of Frydman and Jenter (2010) shows that the stocks and option components formed more than half of the CEO's total payment<sup>4</sup>. And although the total payments to CEO's grew rapidly in the 1970-2000 period, the post 2001 period showed a decline in average pay for CEO's in the U.S. (Frydman and Jenter, 2010). Perhaps this was due to bookkeeping scandals such as Enron, which led to more strict legislation, and the bursting of the IT bubble. The total compensation of CEO's contains measurements on the components salary, bonus, option grants, stock grants, long-term incentive plans pay-outs and other forms of compensation.

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<sup>2</sup> Washington Post Article, published 31-01-2011, by Hugh Son.

<sup>3</sup> Telegraph Article, published 19-03-2009, by James Quinn

<sup>4</sup> The graph on CEO compensation can be found in appendix 2

When considering the impact of equity based compensation components on a CEO's total pay, the responsibilities of the Board of Directors towards company shareholders seem unambiguous. Independency and sufficiency of the board members seem prerequisites to establish equilibrium in the agency conflict that arises. In general, the Board of Directors can be classified in two kinds of board systems. The U.S. for example use a one-tier system and most Anglo-Saxon countries use a two-tier system. In a one-tier board, both executive as well as non-executive directors form the board. In a two-tier system, the executive directors form the management board and the non-executive directors form the supervisory board. The agency theory and the role of the Board of Directors therein will further be elaborated on in the next chapter.

Rose (2007), who investigated the Danish market (public listed companies have two-tier system), mentions that the Board of Directors *"is by far the most important internal control device seeking to control and monitor management in order to deter management from opportunistic behaviour"*. Laux and Laux (2009) use a theoretical model and focus on the two board functions, namely *"designing the CEO incentive pay scheme and overseeing the financial reporting process"*. Both within the one-tier and two-tier systems, the *"ultimate decision authority for approving CEO compensation rests with the boards of directors of public companies"* (Perel, 2003).

The duties and responsibilities of the board combined with the possible conflicting interests of shareholders and CEO has been the object of research in many researches. The independency of the Board of Directors is investigated a lot (Cyert et al., 2002; Felo, 2001; Ghosh and Sirmans, 2005), whereas another stream of research inquires about the assumed relation between performance related compensation and company value objectives (Fahlenbrach, 2008; Frydman and Jenter, 2010; Perel, 2003). With regard to the latter, researchers have found little to no significant evidence that supports the effective functioning of this incentive, that *"should motivate managers to make sound business decisions that increase shareholder value"* (Frydman & Jenter, 2010).

So with the increased attention for CEO compensation schemes, the functioning of the Board of Directors is consequently an interesting research topic. Did the directors grant the CEO excessive compensation? Was the CEO monitored properly by the directors? Questions like these quickly arise when news about abnormal CEO compensation is published, as the Board of Directors is responsible for setting and evaluating the executive pay.

## 1.2 Female representation

Another related issue that has gained more attention due to the excessive earnings of CEO's during these times of low economic activity, is the participation of woman in top management positions. To address the ethical and political issues about a more equal distribution of men and women in executive positions, Spain and Norway have implemented legislation that dictates a minimum number of female board member representation for publicly traded companies. The Dutch, German and British government also discussed such initiatives, however no such regulation is planned for in the United States. Advocates of such regulation, like Euro-commissionaire Reding, state that the crisis would have been different if there were more Lehman Sisters than Lehman Brothers<sup>5</sup>. Reasoning that, due to differences in risk assessment of women and men, the credit crunch would have been less severe. On the other hand, critics of such regulation call the younger and generally less experienced<sup>6</sup> female successors 'golden skirts' to point out the discrimination effect of quota regulation. As implementing a quota could interfere with market functioning, therefore bypassing the economic argument of best-selection criteria when choosing new candidates for executive functions. However, this being such a recent phenomenon, little research is available to base a conclusive answer on the effects of such regulation.

Besides the ethical argument of having female representation in the highest level of management, the economic perspective is that diversity might affect performance and continuity (Erhardt et al, 2003). As women perceive risks different than men (Harris and Jenkins, 2006), assess risks otherwise (Ertac and Szentes, 2011) and evaluate success unlike men (Gill and Prowse, 2010), results are likely to differ when women can influence decisions. Consequently, researchers investigated the relation of board diversity and firm performance, finding positive results (Bell, 2005; Campbell and Minguez-Vera, 2008; Erhardt et al., 2003; Ghosh and Sirmans, 2005; Huse, 2009) as well as non-significant results (Farrell and Hersch, 2003; Rose, 2007; Wang and Clift, 2009). The economic argument for diversity therefore is not conclusive and additional research can further contribute to this issue.

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<sup>5</sup> De Pers.nl Article, published 21-02-2011, by Edward Deiters

<sup>6</sup> Gayle et al. (2010) show that U.S. female executives "have two years less tenure in the firm and two and a half years less executive experience than males."



### 1.3 Research Questions

Prior research has shown that females interpret information on risks, assess outcomes and evaluate success differently than men. Meanwhile regulatory bodies are developing new legislation that introduces a quota on the minimum number of female representativeness. Companies/industries themselves are (due to social pressure?) developing programs that also should enhance female representativeness. This makes it unclear whether legislation is needed or if the market function is sufficient enough. And these opposing views fuel the discussion on the need for diversity.

This thesis will contribute by looking at the association of female board members and executive compensation components, therefore focusing on the economical perspective of increased gender diversity. Results may shed new light on the discussion of mandatory female board members and the functioning of the board in its monitoring activities. The United States is the area of research in this thesis<sup>7</sup> because they haven't introduced legislation dictating a quota, but rather have the market for executives find optimal gender diversity for itself. Furthermore, the credit crunch period pointed out the unclear relation between executive compensation and firm performance, leading to much discussion about the payment setting process. To adapt to these recent developments, the time period for this research is set on 2007-2009.

Although many researchers such as Cyert et al. (2002), Fahlenbrach (2008), Ghosh and Sirmans (2005) try to connect specific company and/or board characteristics to CEO compensation, none combined the specific presence of female board members to CEO compensation, except for Bell (2005) who found that U.S. female CEO's and female board members positively influence female compensation. However, Bell (2005) merely investigated the gender gap between male and female executives and did not address the influence of female board members on executive compensation components specifically. So to examine the association between the presence of female directors and the amount of the U.S. listed companies' CEO's compensation during the past economic turbulent times, the main research question of this thesis is as follows:

***“Is the presence of female board members associated with the amount of CEO compensation (components and in total) of the S&P1500 listed companies between 2007-2009?”***

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<sup>7</sup> By using the S&P1500 composite index to comprise the dataset, the market focus is set on the United States as Standard and Poor's set criteria for index additions, such as the U.S. company criteria which is based on characteristics such as the location of company's assets and revenues, corporate structure and SEC filings.

Several sub questions have been formulated of which answering will gain sufficient insights to address the main research question. At the end of each chapter, one or more sub questions are answered in the summary paragraphs, giving this thesis a clear structure. The sub questions are as follows:

1. What research approach is used in this thesis?
2. What differences between man and women could matter economically?
3. Does increased gender diversity lead to a change in performance?
4. What factors come into play when setting CEO compensation?
5. What hypotheses are tested to answer the main research question?
6. Which test model is used to test the hypotheses?
7. What data sample is used for the test model?
8. What are the results of the test?
9. Which hypotheses are validated?
10. How can these outcomes be interpreted?
11. What limitations restrict this research?
12. What recommendations can be made upon conclusion?

## 1.4 Relevancy

Research on CEO compensation has become a hot item as the financial crisis has raised many questions regarding the setting and monitoring of CEO pay. And the linkage between compensation and firm performance seemed unclear and unexplainable towards stakeholders. As it is the task of the Board of Directors to determine and evaluate executive compensation, the functioning of the board is indissoluble to the discussion on CEO compensation. Combined with the current trend of an increased demand for gender diversity, it becomes interesting to examine the effect females could have on board functioning, thereby the CEO compensation setting process.

This thesis uses the U.S. market, which has the one-tier system for board of directors, as the area of research. The Dutch, along with many other Anglo-Saxon countries, apply the two-tier system. This would imply that the outcomes of this thesis aren't directly applicable in research for the Dutch market, as decision processes in the Board of Directors are likely to differ between the one-tier and two-tier systems. However, on May 31 of this year, the Dutch government accepted new legislation that allows for Dutch listed companies to apply the one-tier system per 1-1-2012<sup>8</sup>. The outcomes of this thesis might therefore be useful in future Dutch research.

Furthermore, by quantifying the relation between the number of female board members and the height of CEO compensation components, the survey from Huse et al. (2009) could be empirically supported as their results show that behavioural control tasks, such as setting the pay, ought to be (positively) influenced by female board members. In addition, test results of this thesis could be additional to those of Bell (2005), who investigated the gender pay gap and found that female directors positively influence female CEO compensation. Results could furthermore add to the discussion on the influence of individual board member characteristics as previous studies show varying results.

Results could be interesting for, among others, shareholders of companies that currently don't have female board representatives, company policy and ethical program makers, governmental policy makers, employees that belong to a minority group and work for a company that has a non-diversified board, and stakeholders of a company that seeks to replace a board member to create or meet the demands for diversity.

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<sup>8</sup> De Accountant, published 1-06-2011, by Eumedion

Although this research can contribute in a positive way by adding to the growing literature on board diversity and the possible consequences, the conclusiveness of the empirical results is limited as authors like Frydman and Jenter (2010), Ghosh and Sirmans (2005), Huse (2009), Rose (2007) and Yermack (2006) indicate that the pay-setting process is influenced by many (social) factors that are seemingly hard to quantify. These limitations will further be elaborated on in the final chapter.

## 1.5 Methodology

To address the main research question, prior literature on social studies, board member studies and CEO compensation is taken into account. From this literature, variables are defined that are used for the research design of this thesis. A multiple regression analysis is used to examine the effect dependent variables and control variables have on the measured compensation components. By using a Multiple Regression Model, the individual clarifying value of the variables can be measured, as well as the combined value. With such a test the relation can be quantified, however the conclusiveness is limited as only an association of the independent (and control) variables with the dependent variables can be established, no causality can be presumed. The detailed description of the model is given in chapter 4.2 and the selection of the sample is given in the subsequent paragraph. As mentioned in the introduction, the composition of a CEO's compensation can be divided in several categories and investigated as such. Rose (2005) states that *"salary is a more discretionary component of executive compensation than executive bonus which is often formulaic"* and that it is therefore *"reasonable to evaluate the gender pay gap in specific components of pay"*. With the data-sources used for constructing the sample of this thesis, a detailed distinction could be made between 'Salary compensation', 'Bonus compensation', 'Current Compensation', 'Stock compensation', 'Options compensation' and 'Total compensation'. The Current Compensation (Salary + Bonus) is taken into account as it quantifies the direct portion of compensation, whereas the others elements are more indirect. The total set of detailed compensation components gives the opportunity to examine the effect female board members have on specific compensation components instead on just an aggregated level of compensation.

## 1.6 Structure of Thesis

In the oncoming chapter, a brief theoretical elaboration is given on what kind of research area this thesis contributes. Thereafter, the main literature that has been used as a base for this thesis is discussed in chapter 3. It consists of reviews regarding the social studies between men and women (in a business environment) and the prior research on CEO compensation and board member effects. After this, in chapter 4 the research design is explained and the hypotheses that will gain insight to answer the main research are formulated. The Multiple Regression Model, as well as the collected data, is discussed in that chapter as well. Chapter 5 contains the model outcomes of the tests used in SPSS and the validation of the hypotheses. Finally, this leads to the conclusions based upon the outcomes and these are, with the acknowledged limitations, given in the final chapter. From this point on, every subsequent chapter will end with a brief summarization of what is discussed in that specific chapter and provide an answer to the sub questions. Hopefully this systematic approach will contribute to the readability of this thesis.

## 2 Research approach

### 2.1 Positive Accounting

The publication of Watts and Zimmerman's paper in 1978 helped generating a new kind of accounting research, the so-called positive accounting theory (PAT). Watts and Zimmerman called for a new approach to research the accounting principles as previous normative research merely generated answers for what-should-be-done questions. In contrast with this prescribing of theoretically optimal accounting practices, the positive accounting approach seeks to describe, explain and predict certain accounting phenomena. It uses empirical data research to analyse the choices managers make in applying and acting on accounting principles. This is associated with the thought that a firm is considered to be a 'nexus of contracts' and its existence is due to the intertwining of involved relations. PAT focuses on the relations and how accounting is used in the functioning of these relationships

With the development of positive accounting theory, as proposed by Watts and Zimmerman as being more scientific than normative research, criticism on this kind of research consequently arose. Christenson (1983) for example discusses the PAT methodology and makes a three-way distinction in the positive/normative arrangement to point out the main argument of PAT methodology criticism. PAT is considered to be too easy in recognizing phenomena, failing to distinct between meta-problems and meta-theories. The difference being: do you want to investigate the problem(s) accounting entities face or do you want to understand "*why management made choices the way it did*" (Christenson, 1983)? Another argument is that PAT makes no positive statement of what is, but merely indicates a trend.

Watts and Zimmerman (1990) discuss the criticism of Christenson (1983) in their 'Positive Accounting Theory: A Ten Year Perspective' paper. On the methodology part the authors state that "*this methodology has been successful in accounting and ... a theory is not discarded merely because of some inconsistent observations. The best theory is determined in a competition to meet the demand from students and practitioners for theories that explain and predict accounting choice*" (Watts and Zimmerman, 1990). On the criticism of PAT being a sociology of accounting and thus not neutral in its observation as preferences of studied objects and observers are influencing the research, Watts and Zimmerman (1990) note that "*an accounting theory that seeks to explain and predict accounting cannot divorce accounting research from the study of people*". Watts and Zimmerman (1990) conclude by

mentioning that the PAT approach therefore still remains legitimate. The research of this thesis contributes to the field of PAT studies.

## 2.2 Agency Theory

As Positive Accounting Theory focuses on the relations, and companies are considered to be a network of relations in this context, an important part of understanding the relationships is defined in the agency theory. Many relations involve the separation of ownership and management, where the principal transfers decision authority to the agent. With such a transfer, efficiency can be lost, consequently resulting in costs. These efficiency deficiencies arise from the assumption that every person is driven by self-interest (personal gain) which results in differences at risk perception and opportunistic behaviour to increase personal wealth. The agency theory therefore addresses two problems. *“The first is the agency problem that arises when (a) the desires or goals of the principal and agent conflict and (b) it is difficult or expensive for the principal to verify what the agent is actually doing”* (Eisenhardt, 1989). So initially there is the possibility of misaligned incentives and secondly there is the hinder in verifying whether or not the agent has acted properly (in the best of interests of the principal). This second problem is because of the information asymmetry that occurs when the agent has (power over) information, which the principal has not.

To decrease the costs that arise from the two problems, agency theory predicts that mechanisms will be put in place. For the first agency conflict that can arise, the principal can apply an accounting based alignment mechanism. By tying the agent’s compensation to the company’s profit, this initial misalignment can be solved. However, this generates a greater necessity for mechanisms to control the second agency conflict that arises, which is about information control. Because if these accounting based mechanisms are put in place, there will be a need for financial statements. Theory predicts that managers will try to influence the preparing of these statements, with personal (material) gain as motivating factor. Subsequently, a demand for monitoring and auditing of these statements is created to ensure managers don’t overstate the profits. This creates the balancing act in which an equilibrium is sought to align the interests of the principal with those of the agent, while auditing and monitoring costs are ought to be acceptable compared to the risk they diminish.

## 2.3 Chapter Summary

To answer the sub question 1: *'What research approach is used in this thesis?'*, this chapter contains a brief theoretical elaboration on positive accounting research and the accompanying agency theory. By examining the relation between female board members and the height of the various compensation components, a conclusion is based upon measured events. The test gives empirical support for the conclusion, which is a perceived one and thus not an absolute one. This thesis therefore contributes to the field of positive accounting research.

The agency theory is important in this matter as the presumptions in this theory are used to explain the behavioural patterns of the CEO's and directors. It clarifies the importance of the Board of Directors in the relation between the agent (CEO) and principal (shareholders). The usage of equity incentives in the CEO's compensation package is to align the interests of the agent and the principal and the subsequent agency conflict that may arise, creates the need for good monitoring. Or as Cyert et al. (2002) state:

*"From the viewpoint of agency theory, various literatures emphasize the role of incentive contracting... and the monitoring role of the Board of Directors"*

The next chapter discusses the prior literature on diversity and CEO compensation. In some of the paper reviews, terms from the agency theory are used to address the interaction between agent and principal as described in this chapter.



## 3 Prior Literature

Previous chapter briefly elaborated on the positive accounting method and the agency theory that is used for this thesis. Prior literature for this thesis' research can be divided into two parts. Firstly, there is literature on diversity. This consists of social studies, which examine the differences between men and women (in a business environment) and studies that examine the effect diversity has on performance. The literature discussed there will clarify why the gender differences could influence the decision making processes, consequently the economic performance of a company. Secondly, there is the prior literature on CEO compensation, which investigates the development and factors that contribute in that matter.

### 3.1 Prior literature on Diversity

#### 3.1.1 Social Studies

To gain insight in what makes women differ from men, this paragraph contains literature that investigates the different behaviour men and women show in a business environment. This kind of research is relevant as it influences the way females and males make their business decisions.

**Gill and Prowse** (2010) take a closer look at the gender differences between men and women when it comes to competitive environments and the choices man/woman make within. Specifically, the behavioural differences men and women show when facing good or bad luck in a competitive environment. The authors use an experimental design, running 6 sessions, using 120 participants and match people randomly. People were asked to move sliders to match that of their randomly selected partner who had the first turn (First Movers), winning prize money (height randomly changed per round) for succeeding as such. For analysis purposes the authors only considered the Second Movers (i.e. those who had to match their partner's set-up) of the simulation as they face a pure optimization problem. Because First Movers had knowledge of the previous success rate and start immediately, Second Movers had time to process this before moving the slides. Furthermore, Second Movers 'choose' their probability of winning as they see their matched partner's move and assess his/her effort). This resulted in a sample of 30 males and 28 females. The authors find that *“women tend to reduce effort following a loss compared to effort after winning a small prize, and the effect is independent of the monetary value of the prize that the women failed to win. Men, on the other hand, reduce effort only after failing to win*

*large prizes. We also find that women lower effort after winning a large prize compared to winning a small prize, but we find no such effect for men*". The experience of a loss is therefore differently processed by men and women. Men only dislike losing large prizes, women dislike any size loss. Women also dislike winning large prizes, and as a resulting conclusion: *"women may have a stronger aversion to competition than men do"*.

This research shows that women behave differently than men when they're faced with a certain outcome of their actions. Women and men experience a win or loss and adjust differently when assessing their next move. The conclusion of Gill and Prowse (2010) is that women don't like to compete the way men do. This distinction between the sexes may be of concern when considering the business environment, as this is a competitive environment as well. So what considerations do people make then before entering a competitive environment?

**Ertac and Szentes** (2011) conduct an experiment by *"giving subjects information about the highest performance in their group in a previous tournament, before they make their tournament entry choice"*. The authors mention prior research in which there was a big difference noticeable between the percentage of males and females that choose the competitive scheme (in which reward is exponential due to competitive score) over the piece-rate incentive scheme (every action is rewarded on a fixed base). And that this *"tendency of women to shy away from competition has been offered as a potential explanation for the observed differences in labour market outcomes, since top-level positions usually involve competitive career paths"*. When no information is provided, the 74 male and 74 female California UCLA students, show results resembling prior research. Men compete significantly more than women do. However, when the simulation is run and information on other groups/peoples' performance is given, the difference between competing men and women is non-significant. Although the performance in competition is higher than in the piece-rate incentive setup, there is no significant difference between the performance of men and women in these two setups. On conclusion, the authors state that *"findings suggest that more transparent performance feedback policies can be useful in reducing the gender gap in self-selection into tournaments and increase the efficiency of the outcome"*.

The research of Ertac and Szentes (2011) shows that women performed equally and when given information about the competition, they participate in the same way as the men. This would imply that women don't avoid competitive environments more than men, but prefer more information when assessing participation. However, these outcomes were from observatory researches and therefore

don't provide an answer as to why the persons acted the way they did, it only shows what they did. To gain more insight in why women and men choose the way they do, the next paper is included.

**Harris and Jenkins** (2006) asked 657 participants (389 females, 268 males) to assess their likelihood of conducting risky activities within 4 domains (gambling, health, recreation, and social). They were furthermore asked to estimate the possible negative outcomes, the severity of those outcomes and the enjoyment when despite the possible negative outcomes, success is achieved. As the authors discuss prior literature, the theory would predict that *“male participants are more likely to take risks than female participants”*. The results of the survey conclude that *“relative to women, men reported a greater overall likelihood of engaging in risky behaviours in the gambling, health, and recreational domains”*. This was mainly due to the greater female judgment on potential negative outcomes. The social domain however showed a different image, as female were equally likely to take on risks like the men. Although the females still thought the negative outcomes to be more severe, there was no difference in the male/female assessment of likelihood and satisfaction in the social area. A fifth domain was added in which the participants were to assess activities with *“high potential payoffs and fixed minor costs”*. As it turns out, the females were more likely to engage in this domain as they were more optimistic in their judgments of good outcomes and the intensity of such a good outcome. And these results *“clearly speak against the suggestion that women engage in risky behaviours less often because they are pessimistic and “feel unlucky” in some global sense”*. Overall, subjects that assign higher probabilities to negative outcomes, also think the outcomes are more severe. Although the risk taking difference is not conclusive in all domains, it remains questionable why gender differences exist. The authors mention 2 evolution theories (generating offspring and protecting offspring) but mention that *“these kinds of evolutionary/functional accounts are notoriously difficult to test, and the point of the present discussion is merely to suggest that any possible innate biological differences in risk perception are as likely to reflect selection pressures related to child-rearing as those related to mate-seeking”*. Another interesting explanation is derived from prior literature which stated that familiarity with a certain risk was associated with reduced risk perception.

Although the setup of Harris and Jenkins (2006) differs from the experimental setup of Gill and Prowse (2010), both researches show that risk perception differs between the sexes. Albeit that with the survey from Harris and Jenkins (2006) a more detailed distinction could be made in the kind of risks. Interpretation of risks and the severity of the outcomes is the main difference in the risk approach of men and women, though this doesn't mean that females/males consistently take on less/more risks.

### 3.1.2 Theoretical studies

Previous paragraph showed that the difference between men and women in risk approach might influence their business decisions. And the definition of diversity is having a range of different people or things that differ from each other. Having both men and women in a group (like the Board of Directors), thus creates diversity. This paragraph discusses two theoretical papers on the possibilities/risks of diversity and how it can create/destroy value.

**Adler** (2002) wrote a theoretical article on companies' expectations regarding the acquirement of female managers in the context of global management. CEO's are increasingly getting aware that in a global economy, the rising of talent to the top should be without gender discrimination, because opportunity costs are too high. Observation reveals that countries and companies increasingly appoint females to leadership positions. Research however, is not conclusive on whether 'females act te same as males' or 'female managers differ from male managers'. Despite this contradictory, extending the pool of possible candidates does create more competition, presumably therefore leading to better selection of managers. How value can be added depends on the different approaches of companies. The companies can do so by 'identifying with men's approaches to managing internationally' or 'denying differences' or 'identifying with women's approaches to managing internationally' or 'creating synergy'. With the identifying options, the belief is that one view is superior to the other and is therefore seen as such by individuals and judged accordingly. With denying, there are assumed to be no differences between man and women and this disables the possibilities that different needs can create. Only by creating synergy, the differences are leveraged between the two sexes and *"is most conducive to sustained, long-term global effectiveness"*.

The theory of Adler (2002) indicates that the presence of females in management levels could contribute to firm performance as diversity could deliver better candidates and variety could create profitable possibilities. How differences are exploited, determines the value of having a diversified group. However, considering the PAT definition of companies being a 'nexus of contracts', the value of an executive is only as relevant as the relations would allow it to. To gain insight in this relations effectiveness, a closer look to behavioural economics is taken.

**Becker** (1993) wrote an article that briefly recaps some of his previous works on behavioural economics, one of which was the discrimination theory (published in 1957). He uses an economical model, unlike Marxian analysts, that doesn't assume the individuals to be solely motivated by

selfishness or material gain. His *“analysis assumes that individuals maximize welfare as they conceive it, whether they be selfish, altruistic, loyal, spiteful, or masochistic. Their behaviour is forward-looking, and it is also assumed to be consistent over time”*. When it comes to discrimination, the common assumptions of employee productivity (the economic competition will let the employee who produces the most efficient survive) and customer product needs (customers will prefer the employee who gives the best product result), don't cover the issue. *“Actual discrimination in the marketplace against a minority group depends on the combined discrimination of employers, workers, consumers, schools, and governments. The analysis shows that sometimes the environment greatly softens, while at other times it magnifies, the impact of a given amount of prejudice”*. Studies fail to quantify the actual size of discrimination, as this can only be measured using indirect approaches, therefore having obvious defects. In order to analyse social issues, the traditional theory of individual choice should be expanded with more attitudes, preferences and calculations. Because behavioural issues are more than just an individual choice and more people than the individual are concerned with it.

With the research of Becker (1993) on behavioural economics, it can be concluded that the effectiveness of performance by diversity is diminished as discrimination occurs. The presence of discrimination diminishes the value that could be realized under the synergy approach of Adler (2002) or worse, it could destroy value. However, quantifying the effect of discrimination is hard to accomplish. In turn, this would mean that adequate measures (such as legislation or company ethics programs) to prevent/solve discrimination are hard to come up with. Based on the theoretical approach that diversity creates possibilities, whilst having negative effects of discrimination that might occur in a diverse group on the other hand, it can't be said that diversity is a good or bad thing per se.

### 3.1.3 Economic studies

The first relevant question from a business perspective with regards to the men/women comparison is whether the behavioural differences lead to a measurable difference in performance. Firstly, it is interesting to assess whether women individually perform better/worse than men.

**Du Rietz and Henrekson (1999)** investigated the female entrepreneurial performance in comparison to their male counterparts for a sample of 4200 Swedish entrepreneurs, 405 of which females. They find prior literature on the gender differences in the performance of entrepreneurs which shows that females perform less than the males. Using conventional economic measures of performance, this underperformance was shown by research for the US and UK market. Du Rietz and Henrekson try to empirically test the hypothesis of female underperformance with their Swedish sample. With their sample of 4200 businesses and a high response rate, this size and reliability allows to make more disaggregated comparisons in comparison to prior literature. The multivariate regression analysis shows that, in line with previous studies, female underperformance is detected at the aggregated level, using 'sales', 'profitability', 'employment' and 'orders' as performance measures. However, *"subsequent analysis shows that this is largely due to the fact that female entrepreneurs tend to be active in small firms, the service sector and in firms that disproportionately produce for private consumption purposes. The gender effect tends to be of little importance in larger size classes and in trade and manufacturing"*. Only the sales variable shows female underperformance after correcting with the control variables. The authors conclude with reasoning that when females underperform on sales, but not on profitability, the hypothesis is not supported with their research. This would imply that the differences between female and male performances are more related to firm and industry specific characteristics, rather than the gender differences between the entrepreneurs in the sample.

Du Rietz and Henrekson (1999) showed that the distinction between men and women is not sufficient to explain differences in performance and based on their results, it can't be claimed that women perform better/worse than men. This complies with the results of Ertac and Szentes (2011). When analysing performance, specific characteristics such as firm size and industry should be taken into account. Considering the theoretical papers of the previous paragraph, diversity could increase value or it can destroy value if discrimination occurs. Accordingly, the following papers are incorporated as they investigate the relation between diversity and firm performance.

**Weber and Zulehner** (2009) test the discrimination theory of Becker, by analysing if the 29.935 Austrian new firms between 1978-2006 show differences in their survival rates when correcting for their prejudice on female workers. What they find is a *“strong negative relationship between the share of female workers and exit probabilities”* with their regression analysis. This effect is mainly noticeable at the lower end of the distribution, for the median and higher end of the sample distribution, there is no significant difference in survival. Companies that initially have a low share of females, but manage to survive, eventually increase their female workforce. Importance of finding equilibrium is evident as the control functions of the model turn out insignificant, meaning that *“unobserved heterogeneity doesn't play a major role when it comes to the relationship between the share of female workers and survival prospects of the firm. Even a gender-neutral firm hiring a large number of male workers, because there is a lack of supply from females, faces a higher exit probability.”* The authors can't conclude on whether the competition element makes anti-discrimination legislation obsolete, as the reaching of equilibrium might still require policy effort.

So on an aggregate level of performance, the outcomes of Weber and Zulehner (2009) show that the presence of women within a company increases the survival rate. Companies apparently are better survivors when a good diversity mix is established. But do these companies also outperform other companies which don't have a well-balanced mixture of the sexes? Considering the research of this thesis, the diversity focus is on the diversity within the boardroom and not for the total company.

**Erhardt et al.** (2003) conduct a study that examines *“the relationship between demographic diversity on boards of directors with firm financial performance”*. They use 127 U.S. companies in 1993 and 1998, using that time interval to consider a change in ROI and ROA. The measure of demographic diversity is calculated by considering the amount of females and ethnic minorities in comparison to the white male board members. Based on the existent literature, *“diversity tends to generate higher creativity, innovation and quality decision-making at individual and group levels”*. This presumably might also be the case at *“the executive board of director level, where these characteristics are most critical”*. In theory, the diversity of the board can be associated with an improvement in the oversight function. By creating more diversity in the group dynamics, more opinions are added to the decision process, which in turn could have a positive impact on the controlling function of the board, thereby improving the agency issues. Their test results show, in line with prior literature, that board diversity is positively associated with firm performance, based on the used financial indicators. With the correlation and

regression analysis they can't determine causality, so whether diversity leads to better performance or better performance leads to the possibility of (allowing for?) more diversity, remains questionable.

Although Erhardt et al. (2003) show that board diversity correlates with firm performance figures, they use female as well as ethnic diversity measures. The following paper used a similar approach.

**Wang and Clift** (2009) take 243 Australian listed companies and check their performance figures for the time period 2000-2006, using a regression test to check whether racial or sexual board diversity associates with financial performance figures. Theoretically, diversity may lead to better performances. *"First, diversity may promote a better understanding of the market"*. As the markets are diverse, a better diversified board could better interpret market needs and therefore contribute to a better performance. *"Second, diversity may increase creativity and innovation"*. As more opinions and views are shared, creativity may increase which in turn could result in better performance. *"Third, diversity may produce more effective problem solving"* due to the heterogeneity in the perspectives. *"Fourth, diversity could enhance the effectiveness of corporate leadership"* as diversity could increase the understanding of the environment. *"Finally, diversity may promote more effective global relationships"* as cultural diversity in an international business sense increases the sensitivity for other cultures. With minority and female diversity as dependent variables, the performance figures of the companies is measured by Return on Assets (ROA), Return on Equity (ROE) and shareholder return. Based on the results of the test, the authors state that *"there is no strong relationship between gender and racial diversity on the board and financial performance. An apparent explanation for the findings is that there are simply very few female and minority directors"*. Unconventional board members might therefore not influence the board as they are adapting conventional behaviour to gain the position. They authors also state that the relation between diversity and performance is not negative, so diversity can be created without destroying shareholder wealth.

Both Erhardt et al (2003) and Wang and Clift (2009) investigate the relation between diversity and indicators of firm performance. Erhardt et al (2003) find a stronger indication of that relation than Wang and Clift (2009) however, they both use ethnic and gender. The following papers addressed the diversity by isolating gender as measure for diversity.

**Campbell and Minguez-Vera** wrote two subsequent papers (2008 & 2010) on the relation between board gender diversity and company performance figures. For both papers, they examined the Spanish market between 1995-2000 and used 68 companies and 408 observations in the 2008 paper. Using a



panel data analysis, the regression shows a positive and significant relation between female representation, as a percentage of the board and by the Blau and Shannon indices, and the approximation of Tobin's Q (as a measure for firm value). However, the presence of females itself doesn't affect firm value. In return, firm value doesn't impact the percentage of women on board, nor does firm size, but the size of the board does. *"This implies that the most important focus for Spanish companies should be the balance between women and men rather than simply the presence of women"*. A greater diversity could be accomplished without destroying value. In contrary, increased gender diversity could well create shareholder value.

In their subsequent paper of 2010, the authors used the same timeframe and assessed the stock fluctuations when a new director (female) was appointed. They found 47 female board appointments and used an event study to analyse stock changes and a regression model to assess the long term effects. What they found was a positive market reaction to female appointments, expressed in higher stock values. This implies that investors do consider adding women to the board as a value adding feature for the company. Furthermore, correlation tests show that the appointments on the long run positively associate with improved firm performance. The panel data analysis to estimate the female influence on the board shows an, expected, negative coefficient for the CEO/chairman duality. *"As the CEO is monitored by the board of directors it is in the CEO's interest to present information to the board that makes the firm's results look good. This conflict of interest is likely to result in a dilution of the monitoring role of the board of directors"*. On conclusion, the results do suggest that gender diversity can be achieved without destroying shareholder value and that it can increase firm value on short term, but also by future increases.

The two papers of Campbell and Minguez-Vera show that diversity relates to company performance figures and that the markets reward female appointment with higher stock prices as a result. In the interests of the shareholders, this implies that gender diversity is paying off. A similar research like that of Campbell and Minguez-Vera (2008) has been conducted for another market.

**Rose (2007)** used 443 observations of Danish firms in 1998-2001 to find out if there was a relation between the board diversity (presence of women) and the firm performance figure. This could help clarify the issue whether increasing board diversity could actually contribute in creating value or whether it is mainly an act to comply with social demands. Theoretically, a higher degree of diversity could contribute in several ways. Firstly, it gives a positive signal to outsiders when it comes to job

applications. This could increase the talent pool, so better candidates for jobs can be found. Secondly, it could increase internal competition as minorities working for the company can see that they are not excluded from the higher positions. Thirdly, it gives an overall better signal to stakeholders and external parties. However, a downside could be that decision processes may take longer, which “may hamper effective problem solving”. As prior literature finds that well diversified boards are matched to superior performance, and more women on board lead to less stock price volatility, board diversity also “results in a higher performance-dependent remuneration for management”. The regression analysis of Rose however, couldn’t find a significant outcome of board diversity on Tobin’s Q (as a measure for firm performance), “hence the results suggest that gender has no impact on firm performance in Danish firms”.

Papers discussed in this sub paragraph so far have shown that females perform equally as men (Du Rietz and Henrekson, 1999) and that diversity can lead to better firm performance. This corresponds with the assumptions of Adler (2002). Like Campbell and Miguez-Vera (2008), Rose (2007) also finds a (albeit non-significant) positive relation between the presence of women on board and the firm value. Erhardt et al (2003) mention the possible improvement of the boards oversight function if the Board of Directors is more diverse, but Campbell and Miguez-Vera (2008) also mention chairmanship of the CEO as a counter effective variable of board effectiveness. The following research investigates further on what specific tasks of the Board of Directors are affected by diversity.

**Huse et al.** (2009) used Norwegian survey data, containing answers of 840 respondents derived in the year 2006, to examine the effect of different board members on the effectiveness of the board. They take ‘Corporate Social Responsibility’, ‘Strategic Control’, ‘Budget Control’ and ‘Behavioural Control’ as the four areas in which the board has responsibilities. The respondents could fill in a Likert scale, to assign their perception with the relative importance for each area. Three items were used to scale the behavioural control area namely, evaluation of CEO behaviour, evaluation of CEO compensation and evaluation of compensation systems for top management. The test results showed that employee-elected board members positively influenced CSR and strategic control areas, but the variables on female board members turned out insignificant in all areas! *“There was, however, a positive relationship between women ratio and board behaviour control tasks”*. This suggests that the effect of female representativeness is marginally measurable and doesn’t support the hypothesis conclusively that diversity increases board control tasks.

At this point it is questionable whether increased diversity leads to better performance as results are contradictory in its conclusiveness. Furthermore, the gender diversity argument also is not sustained consistently in the prior research. What are the motives then to incorporate diversity from a business perspective?

**Farrell and Hersch (2005)** executed an event study that analysed the announcements of new female directors for 266 Fortune & Service 500 listed companies between 1990-1999. They find that board selection is not gender neutral and that the *“the greater number of women directors is not solely a result of an increased supply of qualified female candidates”*. The increased number of female directors over the years could be attributed to the internal drive for diversity, but it is also a response to outside pressure. When looking at the relation between firm performance and the presence of female board representation, the authors state that *“despite finding a positive relation between return on assets and the likelihood of adding a woman to the board, event study results fail to detect any significant market reaction to female additions”*. So although female board members tend to work on boards of better performing companies, the conclusion that gender diverse board lead to better performance, can't be drawn. The likelihood of adding a women to the board is better explained when looking at the number of females already on board, as this significantly decreases the chance of a female being added.

The inconclusiveness on the gender diversity argument is captured by Farrell and Hersch (2005), whose event study shows that there is no market reaction on adding a woman on the board, contrasting with the findings of Campbell and Minguez-Vera (2010). Farrell and Hersch (2005) furthermore conclude that women seem to work in better performing companies (in line with the findings of Erhardt et al., 2003) but the selecting and adding of females to the Board of Directors seems a non-transparent process. The following paper is therefore added as it reviews literature on individual board member value.

**Yermack (2006)** wrote a literature review on the value of individual board members and used some descriptive graphs from the discussed literature to highlight some of the findings. Prior research shows that investors are aware of the fact that an individual board member can add/delete value of a company. And when new information about the directors hit the market, the investors revalue the shares. A connection between director qualification and share value seems plausible, as appointing strong active expertise board members generally lead to a reward by the investors. Firm value can be (significantly) influenced if a new board member is appointed with CEO influence, the number of boards

an (exiting) executive is active in, his/her accounting financial qualifications, or that he/she is already a CEO. Recent trends show that new directors are more independent, have better accounting financial qualifications and more of them are female. The author questions whether regulation (proposals) are therefore necessary as prior literature already shows that *“stock market participants have for years been quit savvy about the value of individual board members”*. Suggesting that *“a well-functioning market for directors might already exist”*.

In contradiction with the findings of Farrell and Hersch (2005), Yermack (2006) reasons that the market function in selecting best-candidates for board positions, is possibly sufficient enough. This would imply that the governmental legislation on adapting quota can be considered as too premature. Perhaps equilibrium can be found by the market itself in selecting the proper persons for board positions.

Questioning whether gender differences (diversity) of the Board of Directors matter economically, and if mandatory diversity could therefore be a good thing, is addressed in the following paper. Trail of thought used by the authors of the following paper is similar to that of this master thesis' research. It furthermore uses the same market to investigate, so the following paper had to be included in this literature review.

**Adams and Ferreira** (2009) assess the effect gender diversity in the Board of Directors has on governance and company performance. They examine 1.939 U.S. listed companies and their 86.714 directors for the time period 1996-2003. They find that female board members have less attendance problems than the men. Furthermore, the bigger the percentage of women on board, the better the attendance of the men becomes. Female directors are also more likely to conduct monitoring activities. The authors also state that the governance is influenced with gender diversity as *“more diverse boards are more likely to hold CEOs accountable for poor stock price performance”*. When it comes to the relation between gender diversity of the board and firm performance (measured by Tobin's Q and ROA), their *“results suggest that, on average, firms perform worse the greater is the gender diversity of the board”*. Consequently, value would only increase when the gender diversity creates better monitoring which enhances the firm value. As a measure for board-level governance, the authors look at the CEO turnover and find that *“the fraction of women on boards appears to be an important determinant of the turnover- performance sensitivity”*. Members of diversified boards, also receive more equity-related compensation, *“which is suggestive of a board that is more aligned with the interests of share- holders”*.

The paper of Adams and Ferreira (2009) shows that the gender differences can create an increase in the board related performance inputs, such as board member attendance. They furthermore provide empirical evidence on the suggestion delivered by the research of Huse et al. (2009), namely that females improve the monitoring related tasks of the board, thereby creating value. Albeit that this assumed effect has limitations, since increased diversity shows a negative relation with firm performance indicators. This research furthermore shows that CEO's receive more equity related compensation, however the distinction in compensation is made on an aggregate level and shows no further details on bonuses, stocks or options components. The authors interpret the increase in equity related compensation for the CEO, as well as for the directors themselves, as an outcome of the increased monitoring quality.

The papers discussed in this paragraph systematically work down from the gender differences to the possible effects these can have on firm performance figures, board tasks and the subsequent selection of board candidates. In the next paragraph, literature on CEO compensation will be discussed and combined with the literature in this paragraph, it forms the theoretical frame of this thesis' object of study.

### 3.2 Prior literature on CEO compensation

This paragraph elaborates on some prior literature that discusses the CEO compensation, the factors that influence the payment setting process and the relation with the Board of Directors characteristics. As explained in chapter 2, the CEO compensation is a tool used in the agency theory to prevent conflicts of interests, but it also creates the need for monitoring. The first paper elaborates on the functioning of and having a compensation contract and how this can be perceived.

**Perel** (2003) wrote the theoretical paper “An Ethical Perspective on CEO compensation” in which he discusses the two competing claims of CEOs being overpaid versus the CEO’s being worth the compensation they get. In theory, the tying of executive compensation to company performance seems reasonable, but it creates controversy in reality as *“evidence suggests that good CEO’s can be overpaid”*. Prior research can’t find a positive relation between CEO compensation and company performance. The Board of Directors has a determining role in the compensation setting, however *“many corporate boards function as entrenched and passive clubs, closely allied with the CEO, and not prone to exercising strong challenges”*. This underlines the agency conflict that arises as the CEO is able to influence his/her own compensation. Stock options as a compensation component could add an element of risk, as the CEO’s compensation could be hard hit and *“on average, 60-70% of a CEO’s compensation comprises stock options”*. The shareholders are in fact the employer of the CEO, but in reality they *“rarely have much say in, or exercise much control over, large salaries and stock option plans for CEO’s and other executives”*. The existent conflicts of interests show that it’s complicated to apply a good working pay-for-performance principle. In defence of the claim on fair payment, general market theory supports the it-is-worth-whatever-someone-deems-appropriate-to-pay-for-it principle, so this could also apply to CEO compensation. As reforms are being made by regulatory bodies, the author stresses the importance of the Board of Directors responsibility. As executive compensation should be examined *“in relation to some metric, value, or standard, rather than being an arbitrary decision made by often ill-informed board members”*.

In his paper, Perel (2003) mentions the pay-for-performance principle as a cause and measure in the agency conflict between the CEO and the shareholders. As the equity related compensation components are substantial in the executive’s total pay, the need for proper monitoring becomes clear as the shareholders face difficulties controlling the payment setting process. The following paper analyses the role of CEO compensation in relation to the aligning of interests.

**Fahlenbrach** (2008) investigates 11.029 CEO years of U.S. publicly traded companies in the time-period 1993-2004 and the role of CEO compensation in corporate governance. He uses a regression analysis on the pay-for-performance related compensation components as well as on the total compensation in relation to the quality of the corporate governance mechanisms. In this case, the term 'corporate governance mechanism' is used to refer to a measure that helps aligning the shareholder interests with that of the CEO. The author formulates three hypotheses on the association of governance mechanisms and CEO compensation, which are as follows:

1. Complementarity hypothesis: strong governance is needed to provide the CEO with pay-for-performance related compensation as prior literature shows that *"increased monitoring.. is associated with a higher fraction of a CEO's salary that is paid in equity"*.
2. Entrenchment hypothesis: the payment setting scheme is not a tool in the agency relation, but a problem within this relation itself. Because, *"if the governance mechanisms of a firm are ineffective, a CEO may be able to influence the compensation contract to his or her advantage"*.
3. Substitution hypothesis: weak governance leads to a higher pay-for-performance sensitivity, as this would help align interests of the shareholders with that of the CEO. The quality of the board is measured using data on board size, non-employee members, and chair duality. A noticeable fact on chair duality is given as the author states that *"CEOs who are also board chairs receive approximately \$325,000 higher total compensation"*.

With these hypotheses, the author tries to clarify whether the strength of the governance associates with pay-for-performance related compensation. With the first hypothesis, strong governance is expected to associate with a high pay-for-performance sensitivity as the governance measures such as monitoring are needed to provide performance related compensation incentives. With the second hypothesis, weak governance is associated with low pay-for-performance sensitivity (yet with high compensation levels on other compensation components) as managers would exploit the weak governance to acquire high compensation which is unaffected by company performance. With the third hypothesis, weak governance is expected to associate with high pay-for-performance sensitivity as compensation schemes would be used to align the interests of the CEO with that of the shareholders when governance is too weak to assure such alignment.

The complementarity hypothesis doesn't sustain as the author finds *“that firms with governance mechanisms that tend to give more power to management, such as CEO/chair duality, more employee directors, and little monitoring by large shareholders, tend to have greater CEO pay-for-performance sensitivity”*. His empirical results partly support the entrenchment hypothesis, but when controlling for governance strength and the shareholder-rights, the results appear inconsistent with the entrenchment hypothesis. The substitution hypothesis finds more support in his results as they are *“consistent with pay-for-performance sensitivity being jointly determined with most governance mechanisms to mitigate the agency problems between shareholders and CEOs”*. Ultimately, the pay-for-performance sensitivity is merely a tool used to prevent agency problems, in the same way other governance mechanisms contribute to this matter. As *“entrenched managers do not seem to considerably influence their pay-for-performance sensitivity and total pay”*, the CEO pay-for-performance sensitivity is there *“to maintain an overall alignment of incentives between managers and shareholders”*.

According to Fahlenbrach (2008) the payment setting and the equity related remuneration that is part of the total pay, is empirically sustained to be a tool in aligning the interests. The effectiveness of a governance tool is related to the quality of the board. Like Campbell and Minguez-Vera (2010), Fahlenbrach (2008) also mentions the CEO/Chair duality and furthermore the size of the board and its independency as factors that determine the board quality. The following paper also investigates the chairman duality and other variables/characteristics that influence the height of the executive compensation.

**Cyert et al.** (2002) examine the top management compensation and the role of a self-interested Board of Directors. They use 1.648 US listed companies in the years 1992-1993 as their sample for the empirical tests. Their results show that external takeover threats play a role in executive compensation, which could help explain the increase in compensation levels following the passage of antitakeover legislation. Their test also shows that director ownership dominates board size when it comes to compensation influence significance and consistently with previous studies: the firm size is the greatest explanatory variable for all forms of executive compensation. And what was not previously documented in the literature: *“firm risk is strongly positively related to both the incentive and non-incentive compensation components”*. Furthermore they notice that the variable ‘CEO ownership’ positively correlates with base salary in small firms. The aforementioned presence of external takeover threats also works as a substitute for managerial control, *“especially in constraining management’s profligacy in awarding equity-based compensation to itself”*. The three factors that negatively relate to contingent



CEO compensation are largest shareholder ownership, size of compensation committee, and default risk, although none significant for base salary and CEO shareholding outweighs board size. Factors that positively relate to CEO (equity) compensation are firm size, chairmanship, and the firm's growth opportunities. Chairmanship impacts the equity component dramatically as *"a CEO chairman receives about 36% greater equity compensation than a non-chairman CEO"*.

In line with previous literature, Cyert et al. (2002) also find that the chairman duality has a significant impact on the (equity related) compensation. Other factors such as board size, firm size and director ownership also influence the height of the compensation components. The following paper analyses the effect specific board characteristics have on CEO compensation.

**Ghosh and Sirmans** (2005) analyse the effect of board composition on CEO compensation of Real Estate Investment Trusts (REIT) in the years 1998-2000. They use 330 firms in their sample for the correlation analysis. The board characteristics show to have a significant result on CEO compensation as this is higher when the board is weak in monitoring (due to large size) and when directors are older. The analysis furthermore shows that the structure of the board is not free of CEO influence, which would cause severe agency problems when the CEO is allowed to *"design boards that reward him at the cost of shareholder wealth"*. Pay-for-performance contracts could function optimally when board structures are dedicated to their monitoring responsibilities, but when the board structure is compromised (therefore allowing CEO entrenchment), the compensation contract allows for excess of the equilibrium rate. *"Consequently, models of CEO compensation that focus only on traditional economic determinants are misspecified, and the results biased"*.

Like the entrenchment hypothesis as used by Fahlenbrach (2008), Ghosh and Sirmans (2005) also stress the possibilities of entrenchment when the control mechanisms are weak. If the CEO can influence the design of the Board's structure, the agency theory predicts the CEO will aim at obtaining a higher level of compensation. The pay-for-performance principle could function properly and help in the aligning of the interests if the boards are well structured and provide proper monitoring.

The following paragraph summarizes all the literature discussed in the paragraphs 3.1 on diversity and the literature on CEO compensation in this paragraph by answering the corresponding sub questions there.

### 3.3 Chapter Summary

This chapter discussed various papers on the social/psychological differences between men and women, the possibilities of diversity, the results from prior literature on diversity, board characteristics and CEO compensation. To answer sub question 2: ***'What differences between man and women could matter economically?'***, the social studies provide the answer. Differences between women and men that could matter in a business environment are as follows:

- They experience loss/win differently (Gill and Prowse, 2010)
- They join competition on a different informed base (Ertac and Szentes, 2011)
- They assess risks and severity of outcomes differently (Harris and Jenkins, 2006)

Consequently, the follow-up question is what the differences between the sexes could mean in an economical context. Du Rietz and Henrekson (1999) show that there is no difference in individual business performance between men and woman. So, although men and women show differences like aforementioned, they achieve similar results in performance figures. Why would creating diversity then, be something to be considered? To address the diversity issue, a theoretical approach on the matter is taken. The theoretical possibilities differences can generate when group dynamics become heterogeneous, are as follows:

- Increased company value due to synergy of diversity (Adler, 2002)
- Decreased company value due to discrimination (Becker, 1993)

Theoretically, the diversity argument is two-sided as it could help companies create value, or it could diminish value. This leads to sub question 3: ***'Does increased gender diversity leads to a change in performance?'***. The economic (empirical) studies on diversity could answer this question and actual test results on diversity and company performance show the following:

- Greater survival rate companies that employ women (Weber and Zulehner, 2009)
- Better company performance indicators with high diversity rate (Erhardt et al., 2003)
- Non measurable effect of diversity on performance (Wang and Clift, 2009)

- Short and long term value increase with gender diversity (Campbell and Minguez-Vera, 2008 & 2010)
- No significant relation between females and firm performance (Rose, 2007)
- No significant increase in board tasks due to female presence (Huse et al., 2009)

Looking at the outcomes of the different researchers, the question of whether diversity leads to a performance alteration in a firm's performance can't be answered on a conclusive base as results vary from positively significant to non-significant. Zooming in on the board specific tasks, the behavioural control tasks are slightly positively influenced according to Huse et al. (2009), but no task is improved significantly. This raises the question how diversity in the boardroom is accomplished and how board member value is perceived. About achieving gender diversity in the Board of Directors the following researches showed:

- Board selection is not gender neutral (Farrell and Hersch, 2005)
- Market functioning might be adequate in selecting best candidates (Yermack, 2006)

The functioning of the Board has a lot to do with the social environment that is current within the executive levels of management. Selecting and acquiring new board candidates are likely to be under the influence of social ties. However, it remains questionable whether selection procedures should be something that legislation has to structure by providing quota for example. With the possible social environmental influences on the decision making processes, it can be concluded that it is hard to completely isolate the gender diversity effect. Most likely the influence of the social environment is not quantifiable and thus forms a limitation on empirical research like this thesis.

A paper that has similarly followed the trail of thought as pointed out by the selection of papers in the previous shown order is that of Adams and Ferreira (2009). They investigate the effects of increased gender diversity within the board on several board and governance aspects, one of which the executive compensation setting. This paper is therefore very relevant for this master thesis' research as Adams and Ferreira (2009) also use the U.S. market, albeit with a different time-period and they analyse executive compensation on a less detailed scale. Summarized, they report the following findings regarding the influence of increased gender diversity in the Board of Directors:

- Attendance of the board members increases
- Females are more likely to conduct monitoring activities
- CEO compensation becomes more equity related (due to increased monitoring)
- Directors themselves also earn more equity related compensation
- On average, board gender diversity negatively associates with firm performance
- It is therefore questionable whether mandatory diversity creates value

The second part of this chapter elaborated on prior literature about CEO compensation to address sub question 4: *'What factors come into play when setting CEO compensation?'*. The first paper of Perel (2003) underlines the importance of the Board of Directors and its role in the agency-principal relation. As market functioning could find a proper level of CEO compensation, Perel (2003) mentions that this is unlikely to be the case as the Board of Directors usually has ties with the CEO. This means that the shareholders are facing a disadvantage. An important factor that influences the CEO compensation setting scheme is therefore:

- Social ties of board members with the CEO (Perel, 2003)

Furthermore, the composition of the total compensation can be different for each CEO. Depending on the strength of the governance mechanisms, the pay-for-performance sensitivity is likely to be higher when less/weak mechanisms are in place according to Fahlenbrach's (2008) entrenchment hypothesis. The monitoring capabilities of the Board of Directors are a mechanism that should align the interests of the shareholders with those of the CEO. Maintaining a high pay-for-performance sensitivity (by compensating the CEO with equity related components) can therefore be considered as another aligning mechanism under the entrenchment hypothesis. Consequently:

- Weak governance mechanisms lead to higher pay-out in equity related compensation (Fahlenbrach, 2008). With regards to the quality of the board as a governance mechanism:
- Board size and chairmanship of the CEO influence board quality (Fahlenbrach, 2008)

The results of Fahlenbrach (2008) are partly supporting his entrenchment hypothesis, which states that weak monitoring leads to higher equity pay-outs. This is somewhat contradicting with the results

from Adams and Ferreira (2009), whose results better comply with Fahlenbrach's (2008) complementary hypothesis in which strong monitoring relates with higher equity pay-outs.

Taking the literature on diversity and board members previously mentioned into account, it becomes clear that most board characteristics can influence the quality of the board, consequently the performance of the board. Setting and monitoring the payment process of the CEO is an important task of the board and is thus likely to be influenced by changes in board quality. The following factors like board characteristics and CEO characteristics, that influence the height and composition of CEO compensation, are derived from the prior literature and they are as follows:

- Gender diversity of the board (Adams and Ferreira, 2009; Bell, 2005)
- Chairmanship CEO (Adams and Ferreira, 2009; Bell, 2005; Cyert et al, 2002; Fahlenbrach, 2008)
- Firm size (Cyert et al, 2002)
- Director ownership (Adams and Ferreira, 2009; Cyert et al, 2002)
- Takeover risks (Cyert et al, 2002)
- Directors age (Adams and Ferreira, 2009; Ghosh and Sirmans, 2005)
- Board size (Adams and Ferreira, 2009; Fahlenbrach, 2008; Ghosh and Sirmans, 2005)
- Occupancy directors (Adams and Ferreira, 2009; Ghosh and Sirmans, 2005)
- Blockholders (Cyert et al. 2002; Ghosh and Sirmans, 2005)
- CEO gender (Adams and Ferreira, 2009; Bell, 2005)
- CEO age (Bell, 2005)

The factors influencing CEO compensation, along with the characteristics of the Board (thereby influencing the board quality and effectiveness) are taken into account in the next chapter. The hypotheses used to answer the main research question are formulated there accordingly using the prior literature.

## 4 Research Design

In this chapter the hypotheses are formulated, using the discussed literature in the previous chapter. The Multiple Regression Model is constructed in paragraph 4.2 and descriptive statistics on the sample are given in 4.3. The tests that will be used in order to validate the hypotheses, are elaborated on thereafter.

### 4.1 Hypotheses

The main research question is whether CEO compensation is influenced by the presence of female board members. With the usage of a bonus or pay-for-performance components within CEO compensation packages, good control mechanisms are required and board composition (size and diversity) can influence the quality of aforementioned (Campbell and Minguez-Vera, 2008; Erhardt et al., 2003; Fahlenbrach, 2009). As the survey of Huse et al. (2009) indicates, females are likely to affect the behavioural control tasks of the board in a positive way, which fits the assumption that females are superior in tasks with a social and human aspect. And Adams and Ferreira (2009) confirm this by showing that female directors are more likely to conduct monitoring activities. The social study of Gill and Prowse (2010) furthermore showed that women are less affected by being awarded (high) rewards so this might also be reflected in how they assign rewards. Ertac and Szentes (2011) show that women take on the same risks as men, when they're given more information. This could suggest that female board members seek to find more information, or study the available information in more depth, before entering a discussion within the board and/or voting on board related decisions. This in turn could benefit the quality of the board. By improving the (monitoring) qualities of the board, the equity related compensation of the CEO is expected to diminish (Fahlenbrach, 2008).

The first hypothesis therefore addresses the association between female directorship and the CEO compensation. As mentioned in paragraph 3.1.2, effects of diversity are hard to quantify as performance could benefit from the created synergy (Adler, 2002) or it could diminish if discrimination occurs (Becker, 1993). The effect a minority in a group can have on the output of the group as a total is therefore unlikely to show linear results and is expected to become more evident when acceptance of the minority increases. So in order to address the respective association between female board member

representativeness and a specific output of CEO compensation, the absolute as well as the relative number of female board members is taken into account as this provides better insight in the aforementioned effects of diversity. The monitoring quality of the Board of Directors is expected to improve due to female representativeness in the Board of Directors and the equity related compensation is expected to lower when the female representativeness increases. The first hypothesis is therefore further divided to address the total as well as the equity related compensation of the CEO and the association with the absolute as well as the relative female board member representativeness, resulting in the following hypotheses:

- H1a: The number of female board members is negatively associated with the total amount of CEO compensation**
- H1b: The number of female board members is negatively associated with the equity related amount of CEO compensation**
- H1c: The percentage of female board members is negatively associated with the total amount of CEO compensation**
- H1d: The percentage of female board members is negatively associated with the equity related amount of CEO compensation**

Hypothesis 1 uses the absolute as well as the relative number of female directors, because with the possible existence of discrimination in the board member selection process, there is also the chance that female board members are acquired because of tokenism<sup>9</sup> (Farrell and Hersch, 2005; Wang and Clift, 2009). This would imply that the presence of female directors is highly associated with the total number of board members, because having more female directors would then only be allowed for in relatively large boards. However, besides the variation in Directors, the board size in itself is a factor that could influence the efficiency of the decision making process. Fahlenbrach (2008) mentions that opportunistic

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<sup>9</sup> Tokenism is the acquiring of a required feature, without accepting or enabling its possible added value. Farrell and Hersch (2005) mention the diminished chance of adding a female to the board, when there is already one on board. This could imply that females are acquired because of external pressure and not solely for the internal drive to increase diversity.

behaviour of the CEO could result more easily in capturing the board when they are large. Reasoning that within large boards, the directors feel less personally responsible and decisions are taken less effectively as more views have to be considered. When a CEO 'captures the board' the independence prerequisite is compromised, so the relation between board size and CEO compensation is likely to be positive. This is also supported by Cyert et al. (2002) who state that *"an 'overcrowded' board.. easier for the CEO to control"*. Other researchers like Adams and Ferreira (2009) and Ghosh and Sirmans (2005) also take this variable into account. Consequently, the following hypothesis for this thesis is:

**H2a: The number of female board members is positively associated with board size**

**H2b: Board size is positively associated with the amount of CEO compensation**

As discussed in the literature research, the effects of individual board members could be diminished by several factors. Cyert et al. (2002) and Fahlenbrach (2008) for example bring the chairmanship of the CEO to attention in relation to the compensation package he/she receives. By leading the board, the CEO can influence individual board members and this social interaction might diffuse tasks of the compensation committee members as personal relations come into play. It could also mean that the CEO can influence the process for selecting new board candidates like Perel (2003) mentions and Farrell and Hersch (2005) show. Taking the assumptions for hypothesis 1 into consideration, a CEO that holds chairman position would prefer to have few women on board. This because women monitor better than men (Adams and Ferreira, 2009) and the diversity that is created by adding women to a traditionally male dominated environment could lead to increased discussion inputs, making the chair position harder to exploit for personal interests. The complexity of these social interactions is hard to measure adequately, but the variable 'CEO Chairmanship' has shown to be an influencing factor in the payment setting process by other researchers like Adams and Ferreira (2009) and Bell (2005). Therefore the following hypotheses have been taken into account:

**H3a: Boards where the CEO is chairman have fewer female directors than boards where the CEO isn't chairman**

**H3b: Chairmanship of the CEO is positively associated with the amount of compensation**



Another factor that could diminish the effectiveness of proper interest alignment is mentioned by Yermack (2006), who states that the responsibility board members take in providing good management control and monitoring, associates with their occupancy. The occupancy of directors, expressed as the number of seats they occupy in total in other companies as well, is a factor that influences the quality of the board (Fahlenbrach, 2008; Ghosh and Sirmans, 2005). Assuming that when directors hold several seats on different companies, the dedication and focus within a seat can't be optimal as time and energy restraints require dividing of attention. Consequently, this would imply that boards with active directors (measured in the number of board seats they occupy) show less monitoring effort, which would favour the CEO. As Yermack (2006) notes that more new directors are women and they tend to be less occupied (having less other board seats), the relation is therefore presumed to be positive and the fourth hypothesis is:

**H4a: Female directors hold a lower number of other board seats than male directors**

**H4b: The number of other board seats by directors is positively associated with the amount of CEO compensation**

These four hypotheses on CEO compensation are tested to provide an answer on the main research question of this master thesis' research. In the following paragraph, the Multiple Regression Model used to test the aforementioned hypotheses is explained.

## 4.2 Test Model

To validate the hypotheses as formulated in the previous paragraph, a statistical model is required that can test the association between the dependent and independent variables. As the literature review has revealed, many factors are likely to influence the payment setting, hence the outcomes of the dependent variables (compensation components). An ANOVA test could be used to assess whether two groups show a significant difference in the measured means. This could be useful in testing a single relation between two variables, however for the purpose of this research a more comprehensive test is required. The T-test is quite similar to the ANOVA test, as it can test (one or two sided) whether outcomes significantly differ between two groups. However, this would also imply that only one relation can be tested at a time and as prior literature has mentioned the high complexity of the payment setting process, a T-test would also be insufficient. To test a combination of several variables and their combined effect on a measured output, a Multiple Regression Model can be used. Adams & Ferreira (2009), Bell (2005), Du Rietz and Henrekson (1999), Erhardt et al. (2003), Fahlenbrach (2008), Gayle et al. (2010), Ghosh and Sirmans (2005), Huse et al. (2009), Rose (2007) and Wang & Clift (2009) all use a regression model that incorporates multiple variables in order to measure outputs like CEO compensation or board performance figures.

For this thesis' research a Multiple Regression Model is used that incorporates all the variables that were defined as plausibly explanatory and control variables are added. The independent variables are the measures on female representativeness, chairmanship of the CEO, total board size and the number of seats directors hold. Prior literature indicates that these variables are assumed and/or associated with female board members. The hypotheses as formulated in the previous paragraph also correspond with these independent variables. With the control variables taken into account, the model that will be used is composed as follows:

$$(Comp)_{i,t} = \beta_0 + \beta_1(Fem\#)_{i,t} + \beta_2(Fem\%)_{i,t} + \beta_3(Chair)_{i,t} + \beta_4(Bsize)_{i,t} + \beta_5(OtherS) +$$

*control variables*

Comp (compensation)	Year t CEO compensation, expressed in US dollars; <ul style="list-style-type: none"> <li>i. Salary compensation</li> <li>ii. Bonus compensation</li> <li>iii. Current compensation</li> <li>iv. Stock compensation</li> <li>v. Options compensation</li> <li>vi. Total compensation</li> </ul>
Fem# (amount females)	Number of female board members in year t
Fem% (female %)	Percentage of female board members in year t
Chair (chairmanship)	CEO duality by board chairmanship
Bsize (board size)	Total number of board members in year t
OtherS (other seats)	Total number of other seats directors held
Control variables	Company size (SmallCap, MidCap, S&P500) CEO age CEO gender Percentage of shares owned by CEO Seats held by CEO CEO title holding directors on board

The total compensation is a sum of the base salary component, bonus compensation, stock compensation, options compensation and other compensation. The current compensation comprises the salary and bonus components and is added as a measurement of the more direct compensation components. As stock and option compensation are measured and accounted to a CEO year, their effective execution date might not be in that same year, hence the usage of the 'current compensation' measure. For practical reasons, the compensation component 'other compensation' (as mentioned by the data vendor) is not used as a dependent variable in this model. The descriptives, occurrence and relative impact on the total compensation weren't sufficient enough to be incorporated into the Multiple Regression Model.

Based on prior literature, the five board characteristics that are most likely to influence the height of these compensation components are the aforementioned two female representativeness measures, CEO chairmanship, board size and board occupancy.

As there are other variables that might influence the process, several control variables are taken into account and they are as follows:

1. Cyert et al. (2002) state that *“firm size has the greatest explanatory power for variations in all three types of CEO compensation”*. Therefore the indexation of companies based on their listing status within the S&P (SmallCap, MidCap or S&P500) is taken into account as this serves as an indicator for company size.
2. In that same research of Cyert et al. (2002), the age of the CEO is mentioned as a control variable that *“might impact the effectiveness of corporate governance mechanisms”*. Furthermore, organizational behaviour theory suggests that the CEO tenure would positively impact the payment and Perel (2003) underlines the effect of CEO experience on the payment in their new positions. As tenure and experience data were not fully available for the sample used in this thesis’ research, the variable ‘CEO age’ serves as an indicator for CEO experience/tenure and is therefore taken into account in the model. Bell (2005) also uses the CEO age as an independent variable in her test to address this matter.
3. Bell (2005) investigated the differences in pay between women and men led firms and found that the females earned 8 to 25% less than their male counterparts. Using the ‘CEO age’ control variable, Bell (2005) also notices that female executives *“are younger and have less tenure on average than their male executive counterparts”*. As this effect is not likely to disappear within the time period that exists between the sample of Bell and the one used for this research, the gender of the CEO is added as a control variable.
4. A perhaps intuitive control variable is that of the CEO ownership, reasoning that when the CEO has a major stake in the company, his/hers decision powers are expected to coincide with the relative part owned. Although this variable turned out

- not to be significant in the research of Cyert et al. (2002), it did reveal a positive relation within small companies. Control variable 4 therefore comprises the percentage of shares in possession of the CEO.
5. As Perel (2003) mentions that social ties of executives are a factor highly likely to influence their payment setting process, this had to be addressed in the model. However, the social ties are hard to measure and their effect hard to quantify. To add a control variable that indicates if there are interlocking relations influencing the payment setting process, the number of board seats the CEO holds on other major boards is taken into account. Because, if the CEO serves on other boards, the social relations that he/she has in that board, might have their effect in the board of the CEO's company, therefore the independency of the board(s).
  6. Another variable that is incorporated to address the possible influence of social ties in the compensation setting process is the number of directors that hold the title 'CEO' within the board. In line with the argumentation for control variable 5, the number of CEO's on board of the company that is part of the sample, might give an indication of the intertwining social relationships.

The control variables added to the model account for several factors that might influence the payment setting process. As these are not exclusive, the limitations that remain present are discussed in paragraph 6.2.

### 4.3 Research statistics layout

With the hypotheses and test model being discussed in the first two paragraphs, this paragraph elaborates on the statistic tests that will be used to find the quantitative results needed to answer the hypotheses and ultimately the research question. The results of these statistic tests will be provided in the next chapter.

Paragraph 4.2 elaborated on the regression model which, in line with practices of prior literature, was constructed to test the hypotheses as formulated in paragraph 4.1. The independent variables are expected to show the most significant association with the dependent variables, based on the literature provided in chapter 3. In order to analyse these associations, the individual correlation coefficients will be measured first using a single regression test. With the Multiple Regression Model, it is possible to measure the combined association the independent variables show with the dependent variables. With the extended model, these associations are further tested as control variables might diminish/enhance the strength of the Multiple Regression Model as a whole. That way, the effect of combining the variables can show whether associations strengthen/weaken. The regression tests that will be used are therefore as follows:

1. Single regression test
2. Multiple regression test using independent variables only (MRM 1)
3. Multiple regression test using both independent and control variables (MRM 2)

As some variables in the Multiple Regression Model might associate with each other, ANOVA tests will be performed on the independent variables to analyse whether the female representation in the Board of Directors relates to other independent variables in the test model. By using an ANOVA test, the difference in mean of the groups can be quantified, whereby classification of groups is based on the grouping variable. The ANOVA tests will be performed on the following variables:

4. ANOVA board size in relation to female directorship
5. ANOVA CEO chairmanship in relation to female directorship
6. ANOVA occupancy of directors in relation to female directorship

The outcomes of the ANOVA could clarify whether the grouping variable has significant impact on the measured value of the dependent variable. If the outcome of an ANOVA turns out significant, it is

assumed that the variation of the dependent variable can be clarified with the grouping variable. Significant outcomes would imply that the ANOVA test' dependent variable has less individual explanatory power in the Multiple Regression Model as most of its own variance is determined by another variable which is also part of the Multiple Regression Model. This however, would not compromise the strength of the Multiple Regression Model as a whole although remarks have to be made when looking at the individual strength of the variables.

The ANOVA tests are concentrated on 3 specific associations of the independent variables amongst each other. However, it might be possible that within the complete set of variables used in the Multiple Regression Model, multicollinearity occurs. This could mean that variables are overruled by a (combination of) other variable(s). Perhaps the associations between the independent variables alone aren't significant according the ANOVA's, but an independent variable might still be overruled by the control variables. To test whether this is the case for any of the variables used, the multicollinearity is measured. To fully analyse the strength of the variable female directorship, a final test is on the Multiple Regression Model without using the variable 'Number Of Female Board Members'. This could provide more information on whether this variable is addressing, if any, of the variation in the dependent variables. The last two statistic tests are therefore:

7. Test on multicollinearity within the Multiple Regression Model using both independent and control variables
8. Multiple Regression Model without the variable 'Number Of Female Board Members'<sup>10</sup>

The data sample that will be used is discussed in the following paragraph. All the test results will be presented in chapter 5 according to the layout as presented in this paragraph. The individual results will be analysed per statistic test and the hypotheses as formulated in paragraph 4.1 will be validated accordingly. The conclusions based upon these outcomes will be presented in the final chapter, where the main research question will be answered.

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<sup>10</sup> For practical purposes this model will be referred to as Multiple Regression Model 3

## 4.4 Data Sample

### 4.4.1 Selection procedure

To test the hypotheses, data is collected for the years 2007-2009 of the S&P traded companies their CEO's and directors. Using the Wharton Research Data Services subscription of the university, the Compustat data on CEO compensation was requested and the RiskMetrics, by means of ISS Governance Services, was used to obtain the information on directors.

As the developments regarding executive compensation and legislation are an actual subject due to the credit crunch, the timespan for this sample has been set on past recent years. The year 2010 is not complete in the databases as not all the information has been published by the companies yet, and is therefore excluded from the sample. Furthermore, the RiskMetrics database is compiled in a different way since 2007 and combining it with old registrations might cause unnecessary biases in the sample.

The available data set was filtered of companies that are not part of a subset of the S&P, leaving only the S&P 500, the SmallCap (600) and the MidCap (400), which combined are referred to as the S&P 1500. Companies that had unmatched CEO/Directors data were removed from the sample, as well as matches that had more than one official CEO during a given fiscal year to ensure a full CEO acknowledged compensation could be accounted to that specific year for each company in the sample. Two items were deleted as they were provided with the remark 'unusual situation' by Compustat. The sample is therefore comprised as follows:

Filter	CEO sample
<b>2007/2008/2009</b>	5.552
<b>S&amp;P 1500</b>	4.467
<b>Directors info availability</b>	4.343
<b>Only 1 CEO in a year</b>	3.988
<b>With no unusual remarks</b>	<b>3.986</b>
<b>Matching # Directors</b>	<b>37.418</b>



#### 4.4.2 Sample Descriptives

The sample consists of 3.986 CEO years and the apportionment of these by company size, as scaled by the listing in either MidCap (MD), SmallCap (SM) or S&P500 (SP), shows an expected distribution when taking the number of companies per index into account (400/600/500 respectively). The three years that are used as selection show a slight increase in number of items that are part of the sample.

**FiscalYear \* Index Crosstabulation**

Count

		Index			Total
		MD	SM	SP	
FiscalYear	2007	328	441	443	1212
	2008	365	512	473	1350
	2009	382	559	483	1424
Total		1075	1512	1399	3986

Table 1: Distribution of CEO years

When looking at the gender diversification amongst CEO's, the sample reflects the image that is shown by other researchers such as Bell (2005) and Gayle (2010) who mention the low representation of females in the total number of CEO's. This sample contains 120 female CEO's, who therefore form only 3% of the total population. Over the three years the nominal number of female CEO's increased a respective 28.1% and 14.6% and after correction for the overall increase of the sample 16.7% and 9.1%, suggesting a positive growth trend, although the total numbers are conclusive still in favour of the men.

**Index scale \* Fiscal Year \* Gender code Crosstabulation**

Gender code (1= Male, 2= Female)			Fiscal Year			Total
			2007	2008	2009	
1	Index scale	1 (SM)	427	491	536	1454
		2 (MD)	322	358	374	1054
		3 (SP)	431	460	467	1358
	Total	1180	1309	1377	3866	
2	Index scale	1 (SM)	14	21	23	58
		2 (MD)	6	7	8	21
		3 (SP)	12	13	16	41
	Total	32	41	47	120	

Table 2: Gender diversity of CEO years per index

The age of the CEO's in the sample is normally distributed and has an average of 55.22 years, averaging 53.32 for the non-chairman CEO's and 57.16 for the chairman CEO's<sup>11</sup>. The group statistics of the sample show that female CEO's are, on average, 2.57 years younger than the male CEO's. That the female CEO's are younger complies with the findings of Bell (2005). The CEO's in the sample furthermore show that of the male CEO's, 50% of them have gained the chairman position, in comparison to the 33% for the female CEO's.

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Executives Age	MALE	3866	55.30	7.098	.114
	FEMALE	120	52.73	4.569	.417
Chairmanship	MALE	3866	.50	.500	.008
	FEMALE	120	.33	.473	.043

Table 3: Age distribution of CEO years

On a more detailed level, the following table shows that the ratio of chairman-CEO's compared to non-chairman-CEO's increases as the index level (i.e. company size) increases. This applies to the male CEO's as well as the female CEO's.

Index			Chairmanship		Total
			0	1	
MD	Gender	FEMALE	16	5	21
		MALE	513	541	1054
	Total		529	546	1075
SM	Gender	FEMALE	46	12	58
		MALE	789	665	1454
	Total		835	677	1512
SP	Gender	FEMALE	18	23	41
		MALE	627	731	1358
	Total		645	754	1399

Table 4: Gender diversity in CEO chairmanship

<sup>11</sup> See appendix 3 for the SPSS Figure 3: Executive Age Distribution and Figure 4: Age Distribution CEO Chair and Non-chair

Taking a closer look at the composition and diversification of the Board of Directors that are matched to these 3.986 CEO years, the 4.588 female directors account for 12.26% of the total amount of 37.418 directors, which shows that female representation in this level of executive management is considerably higher compared to the CEO sample. On average a board has 9.39 directors of whom 1.15 are female, comprising 11.53% of the total board.

Descriptive Statistics

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Number Of Board Members	3986	4	34	37418	9.39	2.442
Number Of Female Board Members	3986	0	6	4588	1.15	1.027
Percentage Of Female Board Members	3986	.0	.6	459.7	.115	.0987
Number Of CEO Title Holding Directors	3986	0	7	6195	1.55	.869
Total Number Of Board Seats All Directors	3986	0	34	32620	8.18	5.723
Total Number Of Board Seats Directors Excl. CEO	3986	-1	33	30838	7.74	5.516
CEO Other Seats	3986	0	5	1782	.45	.703
Valid N (listwise)	3986					

Table 5: Descriptive of board characteristics

The occupancy of the directors is shown by the amount of board seats they have on other major companies, as registered by RiskMetrics. This occupancy is taken into account as a higher number of other board seats could imply a lower focus on the tasks within the board that is part of this sample. Suggesting that when the directors can't fully dedicate to their tasks, CEO's can more easily 'capture' the board. The same applies to the total size of the board, as Fahlenbrach (2008) mentions that within large boards, it is easier for a CEO to 'capture' the board as the directors feel less personally responsible when they are with many. The number of CEO-title-holders amongst the directors and seats held by the CEO, when he or she is part of the board, are used as control variables to account for the interlocking effects of executives that serve on several boards, thereby creating non-equilibrium in the payment setting process as social ties become more decisive.

## 4.5 Chapter Summary

This chapter elaborated on the hypotheses that were formulated using prior literature, the test model, the sample to test with and the statistic test that will be used. The first paragraph gives the answer to sub question 5: ***‘What hypotheses are tested to answer the main research question?’***. The hypotheses described in this chapter are formulated to address the following relations:

1. The absolute/relative presentation of female board members negatively associates with the total and or equity related amount of CEO compensation
2. The number of female directors is dependent of total board size and board size positively associates with the amount of CEO compensation
3. Chairmanship of the CEO influences the number of female directors and chairmanship positively associates with the amount of compensation
4. Female directors hold less other board seats and the number of other board seats held by directors positively associates with the amount of CEO compensation

The statistic test will provide empirical evidence on what variables significantly influence the CEO compensation. Considering the main research question of this thesis, the first hypothesis is most directly addressing the relation between female board representation and CEO compensation. Prior literature predicts that the variables defined in hypotheses 2, 3 and 4 are likely to show significant association with female directorship and on the CEO compensation, so these variables are independent variables in the test model as well. This leads to the following sub question 6: ***‘Which test model is used to test the hypotheses?’***. To incorporate all the variables needed to test the hypotheses, and to assess whether they add up or diminish the significance of the outcomes when combined, a Multiple Regression Model is used. The full version of this Multiple Regression Model is constructed as follows:

$$(Comp)_{i,t} = \beta_0 + \beta_1(Fem\#)_{i,t} + \beta_2(Fem\%)_{i,t} + \beta_3(Chair)_{i,t} + \beta_4(Bsize)_{i,t} + \beta_5(OtherS) \\ + \text{control variables}$$

This Multiple Regression Model will be used in different variations. At first a single regression test will show all the individual correlation coefficients of the independent and control variables in relation to the measurements of CEO compensation components (i.e. the dependent variables). Then the Multiple Regression Model will be used to measure the independent variables combined and their associations with the dependent variables. This would give insight in whether the independent variables

are that strongly associated as theory has predicted. The full Multiple Regression Model is performed next, with the control variables added, to test whether the predictive value of the independent variables holds stand or increases/diminishes. Outcomes of the full model will show whether associations can be addressed to the independent variables or whether they are more likely to be explained by the control variables.

In an attempt to better interpret the associations that will be shown by Multiple Regression Model, ANOVA tests are used to analyse the independent variables' associations with each other. To test the strength of the model, a test for multicollinearity will be performed thereafter. Finally, an alternative version on the Multiple Regression Model will be performed, in which the direct measurements on female board members are extracted.

This leaves the following sub question left to be answered, namely sub question 7: ***'What data sample is used for the test model?'*** The sample that is compiled for this master thesis research consists of the years 2007, 2008 and 2009 and comprises S&P1500 listed companies (therefore U.S. companies only). After a selection on completeness, this gives a total of 3.986 unique CEO years, which are matched to 37.418 directors. Of the 3.986 CEO years, 120 of those are female CEO years. Of the 37.418 directors matched, 4.588 of those are female.

## 5 Test Results

This chapter elaborates on the outcomes of the tests on variables and their subsequent results in the Multiple Regression Model (MRM), using the described dataset of the previous chapter. The results of the test are presented in the first paragraph of this chapter and the hypotheses as formulated in paragraph 4.1 are validated in this chapter's paragraph 5.2. The summary is provided thereafter and interpretation of the results is provided in the sixth and final chapter.

### 5.1 Outcomes statistic tests

The statistic test results are presented in the order as mentioned in paragraph 4.3. The order corresponds with the sub paragraph numbering to provide a clear lay-out:

1. Single regression test
2. Multiple regression test using independent variables only (MRM 1)
3. Multiple regression test using both independent and control variables (MRM 2)
4. ANOVA board size in relation to female directorship
5. ANOVA CEO chairmanship in relation to female directorship
6. ANOVA occupancy of directors in relation to female directorship
7. Test on multicollinearity within the Multiple Regression Model
8. Multiple Regression Model without the variable 'Number Of Female Board Members' (MRM3)

### 5.1.1 Single regression test

The first statistic test performed for this master thesis research, was the single regression test. The following table shows a summarisation of the outcomes:

Correlations							
		Salary	Bonus	Total Current Compensation (Salary And Bonus)	Grant Date Fair Value of Stock Awarded	Grant Date Fair Value of Options Granted	Total Compensation Salary Bonus Other Annual Restricted Stock Grants LTIPP
Number Of Female Board Members	Pearson Correlation	.307**	-.013	.051**	.135**	.134**	.208**
	Sig. (2-tailed)	.000	.425	.001	.000	.000	.000
	N	3986	3986	3986	3986	3986	3986
Percentage Of Female Board Members	Pearson Correlation	.224**	-.025	.021	.089**	.089**	.141**
	Sig. (2-tailed)	.000	.111	.176	.000	.000	.000
	N	3986	3986	3986	3986	3986	3986
Chairmanship (Y=1, N=0)	Pearson Correlation	.167**	.022	.055**	.036*	.017	.070**
	Sig. (2-tailed)	.000	.170	.001	.024	.297	.000
	N	3986	3986	3986	3986	3986	3986
Number Of Board Members	Pearson Correlation	.384**	.033	.110**	.175**	.171**	.262**
	Sig. (2-tailed)	.000	.040	.000	.000	.000	.000
	N	3986	3986	3986	3986	3986	3986
Total Number Of Board Seats Directors Excl CEO	Pearson Correlation	.423**	.047**	.132**	.274**	.280**	.392**
	Sig. (2-tailed)	.000	.003	.000	.000	.000	.000
	N	3986	3986	3986	3986	3986	3986
Index_scale	Pearson Correlation	.486**	.073**	.169**	.317**	.308**	.457**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	3986	3986	3986	3986	3986	3986
ExecutivesAge	Pearson Correlation	.156**	.036*	.067**	.016	-.009	.046**
	Sig. (2-tailed)	.000	.021	.000	.318	.583	.003
	N	3986	3986	3986	3986	3986	3986
Gender Code (M=1,F=2)	Pearson Correlation	.001	-.013	-.012	.012	.000	.001
	Sig. (2-tailed)	.927	.421	.450	.441	.979	.965
	N	3986	3986	3986	3986	3986	3986
Percentage Shares Owned By CEO	Pearson Correlation	-.107**	.057*	.034	-.060**	-.037	-.059**
	Sig. (2-tailed)	.000	.013	.133	.008	.102	.009
	N	1912	1912	1912	1912	1912	1912
Number Of CEO Title Holding Directors	Pearson Correlation	.277**	.028	.083**	.168**	.146**	.228**
	Sig. (2-tailed)	.000	.076	.000	.000	.000	.000
	N	3986	3986	3986	3986	3986	3986
CEO Other Seats	Pearson Correlation	.191**	-.017	.022	.102**	.074**	.126**
	Sig. (2-tailed)	.000	.271	.159	.000	.000	.000
	N	3986	3986	3986	3986	3986	3986

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

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

Table 6: Individual Correlation Coefficients

The first five variables are the independent variables and the last six are the control variables, as described in chapter 4. The individual correlation coefficients show that every variable, both independent and control, have a significant regressive association with one or more compensation component. All, except for the gender code of the CEO which shows no significant association with any of the compensation components. This could imply that in the compensation setting process, no distinction is made between male and female CEO's, hence no discrimination occurs. In terms of equality in payment setting, this could be interpreted as a positive signal. However, a single regression test is too one-sided to base such a conclusion on, but it is interesting to look at the variable CEO gender in the following Multiple Regression Models to see whether the associations remain insignificant.

Looking at all the variables, the index scale seems to associate the most with all of the compensation components, having significant levels of .000 in every measure. This complies with the findings of Cyert et al. (2002). The number of board members and the number of seats they hold (CEO not included if he or she is a board member) also show strong associations with the compensation components. This is also in line with prior literature as Fahlenbrach (2008) as well as Cyert et al. (2002) mention that the relation between compensation and board size is likely to be positive. The significance levels of the number of board seats the directors hold (outside the company for which their part of the sample), is not surprising as Ghosh and Sirmans (2005) mentioned this relation to be positive.

However, the individual correlations are far too broad to explain variations in the compensation components as they might strengthen or nullify each other when combined. To assess the relation between the independent variables and the dependent variables, this is better explained using the combined regression coefficients to determine the relevance of each variable. The results of the multiple regression tests are presented in the following subparagraphs. The ANOVA statistics will furthermore test whether the variable of female directors associates with the total board size, the CEO chairmanship variable and the occupancy of directors (measured by the number of other boards seats they hold). What this single regression test has shown:

- Every independent variable has significant association with at least 4 out of 6 dependent variables (i.e. the compensation components).
- Control variables also have at least a significant association with 4 dependent variables, all except for the gender code of the CEO, which shows no significant association at all.



### 5.1.2 Multiple Regression Model 1

The Multiple Regression Model 1 is used to test the combined regression of the independent variables and the compensation components. The outcomes of the model are computed per dependent variable by SPSS and the results are presented in the following table. For practical purposes, the individual outputs as generated by SPSS are placed in the appendix 3.3 for Model 1.

Model 1

		Salary	Bonus	Total Current Compensation (Salary And Bonus)	Grant Date Fair Value of Stock Awarded	Grant Date Fair Value of Options Granted	Total Compensation
Number Of Female Board Members	t	.583	-.293	-.179	1.468	1.395	2.259
	Sig.	.560	.770	.858	.142	.163	.024
Percentage Of Female Board Members	t	.811	-.421	-.263	-1.272	-1.166	-1.769
	Sig.	.417	.674	.793	.204	.244	.077
Chairmanship (Y=1, N=0)	t	10.935	1.493	3.404	1.841	.567	3.984
	Sig.	.000	.135	.001	.066	.571	.000
Number Of Board Members	t	8.945	1.007	2.576	.950	.592	1.855
	Sig.	.000	.314	.010	.342	.554	.060
Total Number Of Board Seats Directors Excl. CEO	t	18.187	2.631	5.803	13.575	14.222	19.916
	Sig.	.000	.009	.000	.000	.000	.000
Model summary	R	.449	.068	.153	.280	.283	.406
	Rsq	.249	.005	.023	.078	.080	.165

Table 7: Outcomes summary MRM 1

The outcomes of the Multiple Regression Model show that only few of the individual correlation coefficients also show a significant regression outcome in the first model. The number of female board members only shows a significant outcome on the total compensation, but not on a specific compensation component. And the percentage of female board members turns out insignificant on all dependent variables using this combination of independent variables. This indicates that the individual coefficients of variables addressing the female representativeness are nullified by the other independent variables, all except for the number of female board members on total compensation.

The only independent variable that shows (remaining) significant results in all measures is the number of board seats held by the directors. This could indicate that the occupancy of the directors negatively influences the monitoring qualities of the board thereby influencing the payment setting process in favor of the CEO. Or perhaps this gives merely an indication of the complex intertwining of relations in the higher segment of executive management, the so called 'old boys network' in which personal relations are more decisive when determining the payment setting.

Looking at the R values, the five independent variables combined show the largest coefficients on salary and total compensation with a .449 and .406 respectively. What the R-square furthermore shows, is that this combination of variables predicts approximately 25% of the variation in the salary compensation component and 16.5% of the total compensation variance. On the other compensation components, this combination of independent variables only addresses a small part of the variation in the components. To test whether the control variables enhance or diminish the predictive value of the independent variables and/or whether significance levels of the independent variables are altered, the second Multiple Regression Model outcomes are presented next. What this first Multiple Regression Model has shown is:

- The variable number as well as the variable percentage of female board members, becomes insignificant on all compensation components, except for the number of female board members on total compensation.
- Chairmanship of the CEO remains significant on 3 out of 6 associations (this was 5 out of 6 in the single regression test).
- Number of board members only remains significant in 2 out of 6 associations (this was 6 out of 6 in the single regression test).
- The number of board seats directors hold remains highly significant on all associations with the compensation components.

### 5.1.3 Multiple Regression Model 2

The second model incorporates the control variables with the independent variables into the test and the outcomes are summarized in the following table. The outputs of SPSS are placed in the appendix 3.4 for Model 2.

		Model 2					
		Salary	Bonus	Total Current Compensation (Salary And Bonus)	Grant Date Fair Value of Stock Awarded	Grant Date Fair Value of Options Granted	Total Compensation
Number Of Female Board Members	t	-.989	-.267	-.427	.336	.892	1.317
	Sig.	.323	.789	.669	.737	.372	.188
Percentage Of Female Board Members	t	1.899	-.060	.259	-.538	-.843	-1.224
	Sig.	.058	.952	.796	.591	.399	.221
Chairmanship (Y=1, N=0)	t	4.472	-.989	-.223	1.199	-.901	.482
	Sig.	.000	.323	.824	.231	.368	.630
Number Of Board Members	t	5.243	.159	1.032	-1.442	-.642	-1.021
	Sig.	.000	.873	.302	.150	.521	.307
Total Number Of Board Seats Directors Excl CEO	t	4.662	.863	1.625	3.533	4.660	6.143
	Sig.	.000	.388	.104	.000	.000	.000
Index scale	t	13.430	3.436	5.611	7.061	8.558	13.354
	Sig.	.000	.001	.000	.000	.000	.000
Executives Age	t	6.568	3.652	4.675	.106	1.574	3.456
	Sig.	.000	.000	.000	.916	.116	.001
Gender Code (M=1,F=2)	t	.146	.248	.267	1.182	.547	.958
	Sig.	.884	.804	.789	.237	.585	.338
Percentage Shares Owned By CEO	t	-.510	2.749	2.609	-.679	1.292	1.315
	Sig.	.610	.006	.009	.497	.196	.189
CEO Other Seats	t	2.178	-1.750	-1.351	.059	-1.338	-1.177
	Sig.	.030	.080	.177	.953	.181	.240
Number Of CEO Title Holding Directors	t	-.417	-1.134	-1.181	.261	-1.433	-.876
	Sig.	.677	.257	.238	.794	.152	.381
Model summary	R	.535	.142	.209	.239	.292	.426
	Rsq	.286	.020	.044	.057	.085	.182

Table 8: Outcomes summary MRM 2

Adding control variables to the model shows to have an impact on the significance levels of the independent variables. Of the 11 variables (5 independent, 6 control) that were submitted in the multiple regression model, the control variable 'Company Size' seems to have the most significant coefficients. This complies with the findings of Cyert et al. (2002), who mentioned firm size having the most explanatory power of all their used variables. The control variable CEO age is significant on the current compensation components of salary and bonus as well as on the total compensation. This complies with the prior literature of Bell (2005) and Perel (2003) in which the relation between CEO age and compensation was mentioned. And as Perel (2003) also mentions that *"a CEO's track record and established reputation... correlates strongly with the pay the CEO receives in a new position"*, age and tenure are likely to be associated variables so the positive association of CEO age and salary compensation wasn't completely unexpected.

The significant associations of the independent variables are further diminished by the control variables. Chairmanship of the CEO only remains significant on the salary compensation and so does the variable 'Number Of Board Members'. The most significant independent variable 'Number Of Board Seats Directors excl. CEO', is slightly diminished for the bonus and coherent current compensation. However, it remains significant for the salary and the equity related compensation components, and ultimately also for the total compensation. As mentioned by the outcomes of the first model, this might be due to board quality and/or social ties. However, the control variables 'CEO other seats' and 'number of CEO title holding directors' were added to address some measurement of the social dynamics, but these variables show to have little significance.

The values of R and R-square show that the compensation setting process is presumably influenced by more factors than used in the Multiple Regression Model 2. As the values of R and R-square increase slightly (except for the option compensation) in comparison to the first Multiple Regression Model due to the added control variables, the predictive value of the total set of variables remains low for the individual compensation components. The variance of the salary component seems to be predictive for 28.6% and the total compensation's variance for 18.2%. However in this second model, the compensation components of bonus, current compensation, stock and options remain to show small outcomes of R. The predictive value of the combination of variables used in the Multiple Regression Model 2 on those components seems nil.

The outcomes of the second Multiple Regression Model has shown the following:

- The number as well as the percentage of female board members, remains insignificant on all the dependent variables. With the direct measurements on female board participation and their associations with compensation components of the CEO, the outcome would be negative as no significant association could be found with the Multiple Regression Model.
- Chairmanship of the CEO only remains significant on the salary component when the control variables are added.
- The number of board members also only remains significant on the salary component in the second Multiple Regression Model.
- Of all the independent variables, the 'number of board seats directors hold' variable showed the most significant outcomes. However in the second Multiple Regression Model, the control variables also diminish two of those associations, making them no longer significant.
- Although it is not entirely within the specified focus of this master thesis research, it is interesting to see that the variable CEO gender remains insignificant on all measurements as a control variable in the second Multiple Regression Model. As it already showed to be insignificant on every individual regression in the single regression test. This makes it plausible that there is no gender discrimination in the payment setting of a CEO.

In the following subparagraphs, the outcomes of the ANOVA tests will be presented. The ANOVA tests are on the independent variables CEO chairmanship, number of board members (board size), number of board seats directors hold (occupancy) and the number of female board members. By testing these relations, the outcomes of the Multiple Regression Model 2 can be better clarified. The direct measurements of female board participation (number and percentage of female board members) show to have none significant relation within the Multiple Regression Model 2. Perhaps this is due to the fact that they are overruled by the other independent variables. Outcomes of ANOVA could clarify this.

### 5.1.4 ANOVA female directors and total board size

The following test is to analyse whether there is a relation between the number of female directors and the total board size. An ANOVA test is performed to measure the difference between the groups (as categorized by the number of female directors per board) and whether the difference in the variance of mean between the groups was substantial. The results on the ANOVA test are as follows<sup>12</sup>:

#### Descriptives

Number Of Female Board Members

# Female directors	N	Mean of board size	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
0	1222	7.78	1.815	.052	7.68	7.89	4	18
1	1417	9.38	2.053	.055	9.27	9.48	4	20
2	990	10.58	2.360	.075	10.44	10.73	5	34
3	261	11.20	2.251	.139	10.92	11.47	6	18
4	76	12.43	2.276	.261	11.91	12.95	7	19
5	16	13.13	1.408	.352	12.37	13.88	11	15
6	4	16.00	2.000	1.000	12.82	19.18	13	17
Total	3986	9.39	2.442	.039	9.31	9.46	4	34

Table 9: Female directors and their board size

#### ANOVA

Number Of Board Members

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6519.841	6	1086.640	250.621	.000
Within Groups	17252.082	3979	4.336		
Total	23771.923	3985			

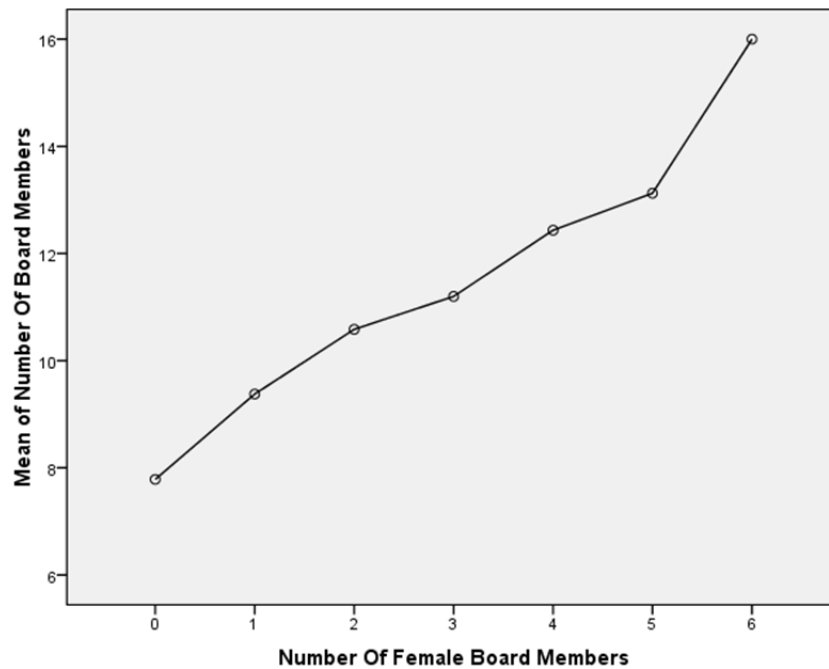
Table 10: ANOVA results of board size groups

This test shows that the number of female board members is highly associated with the total size of the board. To a certain extent this relation is predictable, as there can't be 5 women on a 4 person board, therefore these numbers would always show some association, albeit for a minimum. What these ANOVA results show, is that having one additional female board member is associated with a significant variance of the total (larger) board size mean. The figure below visualizes this relation as the means of the groups increase when the number of female board members rises. ANOVA results show

<sup>12</sup> The additional descriptive frequencies can be found in the appendix 3.2

that this variance of means between the groups is highly significant with a .000 score. This means that a board with 2 women on board is significantly larger than a board with 1 female director, a board with 3 female directors is significantly larger than a board which has 2 female directors etc. Board size is therefore a factor that highly associates with the representation of female directors.

Figure 1: Distribution of female board members in relation to total board size



This outcome could mean that within the Multiple Regression Models, the associations between the variable 'Number Of Female Board Members' and the dependent variables, are likely to be influenced by the board size. This could explain why all the individual significant correlations are (already) nullified in the Multiple Regression Model 1. Although the number of female board members has no significant association with any of the dependent variables, the variable board size does. To assess whether the other independent variable 'CEO Chairmanship' has such an association with the number of female board members, the following ANOVA is on those two variables.

### 5.1.5 ANOVA CEO chairmanship and female directors

The following test was performed to assess whether chairmanship of the CEO associates with the number of female board members. As female directors might influence the group dynamics and/or the efficiency and quality of board related tasks, a CEO who holds chairman position might be affected by such influence and vice versa. The following groups are compared; group 0 represents the boards where the CEO doesn't hold chairman position, group 1 represents the group of boards where the CEO does hold chairman position. The ANOVA outcomes are as follows:

#### Descriptives

Number Of Female Board Members

	N	Mean of # female directors	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
0 (CEO not chairman)	2009	1.07	.974	.022	1.03	1.12	0	6
1 (CEO chairman)	1977	1.23	1.073	.024	1.18	1.28	0	6
Total	3986	1.15	1.027	.016	1.12	1.18	0	6

Table 11: Chairmanship CEO and number of female board members

#### ANOVA

Number Of Female Board Members

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	23.621	1	23.621	22.505	.000
Within Groups	4181.460	3984	1.050		
Total	4205.081	3985			

Table 12: ANOVA results CEO chairmanship and female board members

The descriptives show that on boards where the CEO doesn't hold chairman position, the average female representativeness is 1.07 directors. Boards in which the CEO does hold chairman position, this average of female directors increases to 1.23. According to the ANOVA test, this difference of mean is statistically significant with a score of .000. However, causality of this relation can't be concluded upon using these test results. So the question whether CEO chairmanship leads to more women on board or having more women on board increases the chance of a CEO being voted for chairman, remains unanswered with these results. These outcomes furthermore clarify the findings of the Multiple Regression Models in which the significant individual correlations of the variable 'Number Of Female Board Members' are diminished to non-significant levels.



### 5.1.6 ANOVA female directors and occupancy

The following test was used to check whether female board members are more/less occupied than their male counterparts. The outcomes of this test are relevant for the assessment of board functioning, as theory indicates that more occupied directors lead to weaker governance. And weaker governance could lead to a misalignment in the interests of the CEO and the shareholders. This could be reflected in the compensation package the CEO receives. The ANOVA results on the occupancy of the female board directors in comparison with the male board directors occupancy is as follows:

#### Descriptives

#of Seats on Other Major Company Boards

	N	Mean of # other board seats	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Male directors	32830	.86	1.091	.006	.85	.87	0	8
Female directors	4588	.97	1.160	.017	.93	1.00	0	8
Total	37418	.87	1.101	.006	.86	.88	0	8

Table 13: Female and male directors their occupancy

#### ANOVA

#of Seats on Other Major Company Boards

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	47.507	1	47.507	39.265	.000
Within Groups	45269.260	37416	1.210		
Total	45316.767	37417			

Table 14: ANOVA results female board seats and male board seats

The descriptives show that, on average, the 4588 female directors hold 0.97 seats whereas the 32.830 men on average hold 0.86 seats. ANOVA furthermore shows that this difference between the two groups is considered to be highly significant with a value of .000. Interpretation of this test means that female board members are considered to be, on average, more occupied than the male board members. This is contradictory with the findings of Yermack (2006) who found that female directors were less occupied (albeit non-significant) because they are holding less board seats. And Huse et al. (2009) suggest that board monitoring improves on female directorship, but a high occupancy rate is reasonably influencing the board quality in a negative way so the findings of Huse et al. (2009) are not supported by these ANOVA outcomes. So although the variable 'Number Of Female Board Members'

has no significant associations in the Multiple Regression Models, the variable 'Number Of Board Seats Directors Hold' does. The number of board seats the directors of a board have, is significantly associated with the salary, stocks, options and total compensation components (MRM2). This complies with the thoughts of Adams and Ferreira (2009) and Ghosh and Sirmans (2005), who link the occupancy of directors with decreased monitoring, consequently with higher CEO compensation. Although the female directors in the sample used for this master thesis research are considered to be significantly busier than their male counterparts, the outcomes on the variable 'Total Number Of Board Seats Directors Excl CEO' can't be credited to female participation.

### 5.1.7 Test on multicollinearity

What the outcomes of the ANOVA tests have shown, is that the variables expressing female board participation are highly associated with other independent variables as their individual associations are diminished/nullified when more variables are added. The Multiple Regression Models show that for the variables on female board participation, their significance in explaining the compensation components' variance becomes non-significant due to the other variables added. This 'overruling' can be explained using a test on multicollinearity within the model's variables. As ANOVA only addresses a relation between two variables at once, the test on multicollinearity uses all the independent and control variables of the second Multiple Regression Model. The outcomes of this test are as follows:

Coefficients		
Model	Collinearity Statistics	
	Tolerance	VIF
Number Of Female Board Members	.049	20.519
Percentage Of Female Board Members	.058	17.150
Chairmanship	.876	1.142
Number Of Board Members	.405	2.469
Total Number Of Board Seats Directors Excl CEO	.613	1.633
Index_scale	.708	1.412
ExecutivesAge	.869	1.150
Gender_code	.904	1.106
Percentage Shares Owned By CEO	.899	1.113
CEO Other Seats	.925	1.081
Number Of CEO Title Holding Directors	.854	1.171

Table 15: Multicollinearity statistics

The VIF value represents the 'value inflation factor' and this indicates the instability of the variable within the model. Although there is no general practice on pointing out the value as from which multicollinearity becomes a fact, multicollinearity itself doesn't diminish the value of the model as a whole. However, having VIF scores above 10 can reasonably be mentioned under the assumptions of having multicollinearity. This may not come as a surprise as the variable 'Number Of Female Board Members' has already shown to be overruled, using the Multiple Regression and ANOVA tests. As it would be interesting to see whether any of the associations changes when the variable 'Number Of Female Board Members' is absent at all, the following subparagraph briefly elaborates on this by using the second Multiple Regression Model without the 'Number Of Female Board Members' variable.

### 5.1.8 Multiple Regression Model 3

The single regressions of the number of female board members became insignificant in the Multiple Regression Models. The ANOVA tests have shown that this might be due to the fact that the other independent variables overrule the 'Number Of Female Board Members' variable. In the full model (MRM2) the variables that express a direct measurement on female board participation, show high levels of value inflation. In essence, this means that they are overruled by the other variables and only add little to the predictive value of the model as a whole. For experimental purpose, the Multiple Regression Model is tested again, this time without using the variable 'Number Of Female Board Members' at all. The outcomes are placed in appendix 3.5 and they are summarized as follows:

Model 3

		Salary	Bonus	Total Current Compensation (Salary And Bonus)	Grant Date Fair Value of Stock Awarded	Grant Date Fair Value of Options Granted	Total Compensation
Percentage Of Female Board Members	t	3.568	-1.198	-.578	-.806	.064	.175
	Sig.	.000	.231	.563	.420	.949	.861
Chairmanship (Y=1, N=0)	t	4.445	-.998	-.235	1.210	-.875	.520
	Sig.	.000	.318	.814	.226	.382	.603
Number Of Board Members	t	6.107	-.022	.998	-1.623	-.072	-.203
	Sig.	.000	.982	.318	.105	.943	.839
Total Number Of Board Seats Directors Excl CEO	t	4.605	.847	1.600	3.565	4.731	6.245
	Sig.	.000	.397	.110	.000	.000	.000
Index scale	t	13.394	3.427	5.596	7.102	8.640	13.474
	Sig.	.000	.001	.000	.000	.000	.000
Executives Age	t	6.551	3.648	4.669	.112	1.590	3.480
	Sig.	.000	.000	.000	.911	.112	.001
Gender Code (M=1,F=2)	t	.220	.268	.300	1.161	.482	.863
	Sig.	.826	.788	.764	.246	.630	.388
Percentage Shares Owned By CEO	t	-.489	2.757	2.619	-.687	1.274	1.287
	Sig.	.625	.006	.009	.492	.203	.198
CEO Other Seats	t	2.215	-1.742	-1.337	.047	-1.371	-1.224
	Sig.	.027	.082	.182	.963	.171	.221
Number Of CEO Title Holding Directors	t	-.448	-1.143	-1.195	.272	-1.407	-.836
	Sig.	.654	.253	.232	.786	.160	.404
Model summary	R	.534	.142	.209	.239	.291	.425
	Rsq	.285	.020	.044	.057	.085	.181

Table 16: Outcomes summary MRM 3

Compared to the second Multiple Regression Model all the significant outcomes remain (with exactly the same scores) significant and all the insignificant outcomes remain insignificant (albeit with slightly different scores), except for the variable 'Percentage Of Female Board Members' on the salary component. This is probably due to the small variation caused by extracting the 'Number Of Female Board Members' variable, as that association already showed a near significant score in the second model, rather than it becoming a variable with strong associations at once.

More interesting are the outcomes of R and R-square as these express the correlation between the combined (independent and control) variables and the measured dependent variables (R) and the variation of the dependent variables that can be explained using the combined set variables. In essence, these express the explanatory strength of the chosen set of variables. To compare the outcomes of the Multiple Regression Models, the following table is compiled:

		Salary	Bonus	Total Current Compensation (Salary And Bonus)	Grant Date Fair Value of Stock Awarded	Grant Date Fair Value of Options Granted	Total Compensation
Model summary MRM 1	R	0.449	0.068	0.153	0.28	0.283	0.406
	Rsq	0.249	0.005	0.023	0.078	0.08	0.165
Model summary MRM 2	R	0.535	0.142	0.209	0.239	0.292	0.426
	Rsq	0.286	0.02	0.044	0.057	0.085	0.182
Model summary MRM 3	R	0.534	0.142	0.209	0.239	0.291	0.425
	Rsq	0.285	0.02	0.044	0.057	0.085	0.181

Table 17: R and Rsq comparison MRM's

The adding of control variables to the Multiple Regression Model 1 shows to have effect on the strength of the model (MRM2) as the R and R-square values are affected, showing an overall increase. However, the extraction of the variable 'Number Of Female Board Members' appears to have no effect at all on the strength of the model. The ANOVA tests had already shown that this variable was highly associated with the other independent variables and the test on multicollinearity had shown that this variable was overruled by other variables in the model. This test furthermore shows that the variable 'Number Of Female Board Members' essentially contributes little to the strength of the Multiple Regression Model. This experimental version of the Multiple Regression Model has therefore shown that:

- Associations measured by the Multiple Regression Model are hardly affected by the extraction of the variable 'Number Of Female Board Members', neither are the variations in R and R-square affected.

## 5.2 Hypothesis Validation

To validate the hypotheses with the outcomes of the tests, the normal significance level of 5% ( $\alpha 0.05$ ) is being used. In this paragraph, the hypotheses are validated and the subsequent conclusions are formulated in the next and final chapter. The first hypotheses addressed the direct measurements of female representativeness in the board of directors and they are validated as follows:

**H1a: The number of female board members is negatively associated with the total amount of CEO compensation**

The absolute number of female board members showed an individual correlation coefficient on the total compensation with a score of .000, which is lower than the used  $\alpha$  and is thus to be considered significant. In the first Multiple Regression test, the significance slightly diminished as the score became .024, however this is still significant. Ultimately in the second Multiple Regression test with the control variables added, the significance level was nullified as the score rose to .188. This leads to the conclusion that the hypothesis is ***not validated***.

**H1b: The number of female board members is negatively associated with the equity related amount of CEO compensation**

The individual correlation coefficients of the number of female boards members on stock and option compensation are both significant with a score of .000. However in the Multiple Regression Model 1, these scores are .142 and .163 and therefore non-significant. In the extended Multiple Regression Model 2, these scores rise to .737 and .372. This implies that with expanding the regression model with more variables, the number of female board members becomes even less significant. The overruling by other variables also became evident in the multicollinearity test. As no significant association was found in the Multiple Regression Models, the hypothesis is ***not validated***.

**H1c: The percentage of female board members is negatively associated with the total amount of CEO compensation**

The relative representativeness of females in the board of directors is addressed with the percentage of the board that is comprised of female directors. The individual correlation coefficient is significant, scoring .000. In the first Multiple Regression Model the score rises to .077 thereby showing that the other variables nullify the significance of this independent variable. The second Multiple Regression Model furthermore shows that the score even rises further to .221, so the explanatory value of this variable in the context of a model using several other (control) variables, quickly diminishes. The score in the third Multiple Regression Model even rises to .861. The test on multicollinearity shows that this variable is also overruled by other variables in the model. With these scores, this hypothesis is considered **not validated**.

**H1d: The percentage of female board members is negatively associated with the equity related amount of CEO compensation**

Like many variables, the percentage of female board members variable shows highly significant levels on the stock and option compensation components in the singular regression model. However, these individual correlation coefficients rarely hold their significant level when more variables are added to the model. The same applies for this variable on the equity related compensation components as individual coefficients rise from .000/.000 to .204/.244 in the first Multiple Regression Model and to .591/.399 in the second Multiple Regression Model to .420/.949 in the third Multiple Regression Model. This hypothesis therefore also is **not validated**.

None of the direct measurements on the representation of females in the Board of Directors showed significant outcomes on the equity related nor total compensation components. The absolute as well as the relative representation show significant individual correlation coefficients on several compensation components, but none of those hold stand when more independent variables are added. And they remain insignificant when the control variables are added, for the total and equity related compensation, but also for the total current compensation and salary and bonus individually.

The measurements on female representation couldn't validate an association with CEO compensation components. As there are other board characteristics that underlie the assumptions on female board representation influencing CEO compensation, the following hypotheses were taken into account:

**H2a: The number of female board members is positively associated with board size**

Although this hypothesis seems to have great similarity with hypotheses H1c/H1d, the approach is considered on a different base. As theory mentions the phenomena of tokenism, an ANOVA test was performed to analyse whether having one or more female on board is associated with a bigger board. The results of this ANOVA are presented in paragraph 5.1.4 and the outcome was significant with a score of .000. This means that without knowledge of the total board size, one can predict the interval of group mean with 95% confidence by knowing how many female directors there are. This result would implicate that some sort of discrimination occurs when selecting directors, as it is very unlikely to have a board in which males don't dominate. And having several female directors seems a large board characteristic exclusive. This hypothesis is therefore **validated**.

**H2b: Board size is positively associated with the amount of CEO compensation**

With the H2a hypothesis validated, a relation between board size and female representativeness is accepted. Subsequently the relation of board size and CEO compensation is considered. The total number of board members shows significant individual coefficients on all compensation components, however in the first Multiple Regression Model these only hold for salary with a highly significant score of .000 and for the current compensation with a score of .010. Within the second Multiple Regression Model the significance on the current compensation is nullified, however the significance on salary remains .000. This association is therefore validated for that specific compensation component. However, on total compensation the variable 'Board Size' doesn't show significance and the hypothesis is therefore **not validated**.



Another association that has been taken into account is a possible outcome of the social dynamics. Prior literature indicates that female directors are likely to conduct more monitoring activities. And CEO chairmanship has proven to be a variable significantly associated with CEO compensation. The association between the presence of female directors and CEO chairmanship could be helpful in gaining insight in the social dynamics influencing the payment setting and monitoring process.

**H3a: Boards where the CEO is chairman have fewer female directors than boards where the CEO isn't chairman**

To assess whether an association between the two variables exists, an ANOVA was performed to analyse whether boards where CEO holds chairman position have considerably less female directors. Outcomes of this test were presented in paragraph 5.1.2. With a 95% confidence interval, the boards in which the CEO is not chairman have on average 1.03 to 1.12 female directors. Boards where the CEO is chairman show to have between 1.18 and 1.28 female directors on average. This difference in means is significant with a score of .000 in the ANOVA test. Using the theoretical assumptions on increased monitoring activities due to female directors and the agency theory on the self-interest driven motives of the CEO, a negative relation was expected. Instead the relation is positively significant, resulting in the conclusion of the hypothesis being ***not validated***.

**H3b: Chairmanship of the CEO is positively associated with the amount of compensation**

With hypothesis H3a not validated and the ANOVA showing a significant positive relation between female representativeness in the board and CEO chairmanship, the subsequent check is whether CEO chairmanship associates with compensation amounts. Again the individual correlations show some significant scores, but previous hypothesis validation has shown that these rarely hold stand in the multiple regression models. In the first Multiple Regression Model the CEO chairmanship variable remains significant on salary, total current and total compensation with scores of .000, .001 and .000. In the second Multiple Regression Model these seemingly strong scores hold only for the salary component with .000 as scores rise to .824 for total current and .630 for total compensation. This hypothesis is therefore ***not validated***.

Prior literature (Yermack, 2006) predicts that female directors are less busy, holding less board seats. This fits the assumption that female directors are better monitors (Adams & Ferreira, 2009) as they're less likely to divide their concentration and efforts. Consequently this could lead to an alteration of board quality and thereby CEO compensation. To assess this assumed female directors' influence, the following hypotheses were tested.

**H4a: Female directors hold a lower number of other board seats than male directors**

The first part of this analysis consists of an ANOVA test to test whether the difference in the average board seats a director holds, is significant. The outcomes of this test were presented in paragraph 5.1.3. The 4588 female directors in this thesis' sample shown to have significantly more board seats per person than their 32830 male counterparts. This outcome is contradictory with current literature and this hypothesis is therefore ***not validated***.

**H4b: The number of other board seats by directors is positively associated with the amount of CEO compensation**

With the hypothesis H4a considered not validated and the ANOVA test showing that females are, on average, busier than men, this hypothesis addresses the relation between occupancy rates and CEO compensation. Again, looking at the individual correlation coefficients, the results are highly significant on all compensation components. More interesting is that all these scores remain significant in the first Multiple Regression Model, which is unique compared to the previous tested independent variables. Moreover, when adding the control variables in the second Multiple Regression Model, the components Salary, Stock, Option and Total compensation still remain highly significant with all scores of .000! This indicates that this variable is a strong influence in the payment setting process. This hypothesis is therefore ***validated***.

### 5.3 Chapter Summary

This chapter presented the results of the tests performed to validate the hypotheses. Outcomes of the tests were sometimes contradictory with prior literature, showing that the relations between female directors and board specific outcomes, in this case the CEO compensation specifically, are hard to quantify. This paragraph will first give answer to sub question 8: *‘What are the results of the tests?’*.

The regression analysis showed that every independent variable had significant individual correlation coefficients with one or more compensation component. However, when the Multiple Regression was performed, using only the independent variables together, the significance levels of many variables dropped. Performing the Multiple Regression again with the control variables added, the significance levels of only few independent variables on specific compensation components held stand.

	Salary						Bonus						Total Current Compensation (Salary And Bonus)					
	Individual correlation		MRM 1		MRM 2		Individual correlation		MRM 1		MRM 2		Individual correlation		MRM 1		MRM 2	
	Pearson Correlation	Sig. (2-tailed)	t	Sig.	t	Sig.	Pearson Correlation	Sig. (2-tailed)	t	Sig.	t	Sig.	Pearson Correlation	Sig. (2-tailed)	t	Sig.	t	Sig.
Number Of Female Board Members	.307**	.000	.583	.560	-.989	.323	-.013	.425	-.293	.770	-.267	.789	.051**	.001	-.179	.858	-.427	.669
Percentage Of Female Board Members	.224**	.000	.811	.417	1.899	.058	-.025	.111	-.421	.674	-.060	.952	.021	.176	-.263	.793	.259	.796
Chairmanship (Y=1, N=0)	.167**	.000	10.935	.000	4.472	.000	.022	.170	1.493	.135	-.989	.323	.055**	.001	3.404	.001	-.223	.824
Number Of Board Members	.384**	.000	8.945	.000	5.243	.000	.033*	.040	1.007	.314	.159	.873	.110**	.000	2.576	.010	1.032	.302
Total Number Of Board Seats Directors Excl CEO	.423**	.000	18.187	.000	4.662	.000	.047**	.003	2.631	.009	.863	.388	.132**	.000	5.803	.000	1.625	.104
Index_scale	.486**	.000			13.430	.000	.073**	.000			3.436	.001	.169**	.000			5.611	.000
Executives Age	.156**	.000			6.568	.000	.036*	.021			3.652	.000	.067**	.000			4.675	.000
Gender Code (M=1,F=2)	.001	.927			.146	.884	-.013	.421			.248	.804	-.012	.450			.267	.789
Percentage Shares Owned By CEO	-.107**	.000			-.510	.610	.057*	.013			2.749	.006	.034	.133			2.609	.009
Number Of CEO Title Holding Directors	.277**	.000			-.417	.677	.028	.076			-1.134	.257	.083**	.000			-1.181	.238
CEO Other Seats	.191**	.000			2.178	.030	-.017	.271			-1.750	.080	.022	.159			-1.351	.177

	Grant Date Fair Value of Stock Awarded						Grant Date Fair Value of Options Granted						Total Compensation Salary Bonus Other Annual Restricted Stock Grants LTIPP					
	Individual correlation		MRM 1		MRM 2		Individual correlation		MRM 1		MRM 2		Individual correlation		MRM 1		MRM 2	
	Pearson Correlation	Sig. (2-tailed)	t	Sig.	t	Sig.	Pearson Correlation	Sig. (2-tailed)	t	Sig.	t	Sig.	Pearson Correlation	Sig. (2-tailed)	t	Sig.	t	Sig.
Number Of Female Board Members	.135**	.000	1.468	.142	-.336	.737	.134**	.000	1.395	.163	-.892	.372	.208**	.000	2.259	.024	1.317	.188
Percentage Of Female Board Members	.089**	.000	-1.272	.204	-.538	.591	.089**	.000	-1.166	.244	-.843	.399	.141**	.000	-1.769	.077	-1.224	.221
Chairmanship (Y=1, N=0)	.036*	.024	1.841	.066	1.199	.231	.017	.297	.567	.571	-.901	.368	.070**	.000	3.984	.000	.482	.630
Number Of Board Members	.175**	.000	.950	.342	-1.442	.150	.171**	.000	.592	.554	-.642	.521	.262**	.000	1.855	.060	-1.021	.307
Total Number Of Board Seats Directors Excl CEO	.274**	.000	13.575	.000	3.533	.000	.280**	.000	14.222	.000	4.660	.000	.392**	.000	19.916	.000	6.143	.000
Index_scale	.317**	.000			7.061	.000	.308**	.000			8.558	.000	.457**	.000			13.354	.000
Executives Age	.016	.318			.106	.916	-.009	.583			1.574	.116	.046**	.003			3.456	.001
Gender Code (M=1,F=2)	.012	.441			1.182	.237	.000	.979			.547	.585	.001	.965			.958	.338
Percentage Shares Owned By CEO	-.060**	.008			-.679	.497	-.037	.102			1.292	.196	-.059**	.009			1.315	.189
Number Of CEO Title Holding Directors	.168**	.000			.261	.794	.146**	.000			-1.433	.152	.228**	.000			-.876	.381
CEO Other Seats	.102**	.000			.059	.953	.074**	.000			-1.338	.181	.126**	.000			-1.177	.240

Figure 2: Summarization of regression tests



With the 5 independent variables, the variance of the total compensation could be predicted for 16.5%. Adding the control variables strengthens the model by increasing the R-square, meaning that the set of independent and control variables together, then predict 18.2% of the variance in total compensation. The predictive value of the model is greatest for the salary component, with 24.9% in the first Multiple Regression Model and an increase to 28.6% in the second Multiple Regression Model. The figure above shows that the salary component also has the most significant outcomes of the variables and is for 53.5% associated with the set of variables in the second Multiple Regression Model. What the figure furthermore quickly shows, is that the 5 independent variables which are (indirectly) associated with female directorship, have less significant outcomes in the regression models than the control variables.

The independent variables 'Board Size', 'Chairmanship' and 'Other seats' and their associations with female directors were furthermore tested using ANOVA tests. The first ANOVA showed that the presence of female directors is significantly associated with the size of the board. This implies that having a second, third or fourth female director is an exclusive large board feature. This could imply that the female directors are considered a token and that their capacities aren't fully exploited, thereby nullifying the possibilities diversity could bring. This would imply that the chances for a female director of making it to the board associate with the size of the board and the number of female directors already on board. Such discrimination might not be beneficial for the stakeholders, apart from it being obviously unethical.

The second ANOVA furthermore showed boards are likely to have more female directors when the CEO is chairman of the board. Considering the prior literature on increased monitoring activities when females enter the board, this seems contradictory with the agency theory in which is assumed that the CEO is driven by self-interest and therefore would dislike increased monitoring. Causality can't be proven with the statistics, so whether a CEO chairman enhances the chances for females to enter the board or whether female directors enhance CEO's change of becoming chairman, remains questionable.

The third ANOVA focussed on a more detailed director characteristic. As female directors presumably are better monitors according to prior literature, it sounds plausible that this is due to their lower occupancy rate. This implies that they're holding less board seats on other companies. However, what the ANOVA on this thesis' sample showed, was that females were, on average, busier than men. This was also in contradiction with prior literature, as prior research found that females were less occupied.

What the ANOVA tests have shown, is that the independent variables are associated with each other. This could clarify why the significant associations in the single regression test, become insignificant in the Multiple Regression Models. The multicollinearity test on MRM2 showed that the variables 'Number Of Female Board Members' as well as the variable 'Percentage Of Female Board Members' had high VIF scores (20.519 and 17.150 resp.). This indicates that within the Multiple Regression Model, the other variables are accountable for most of the associations and that the variables 'Number Of Female Board Members' and 'Percentage Of Female Board Members' are overruled by the other independent and control variables.

The experimental Multiple Regression Model in which the variable 'Number Of Female Board Members' was taken out completely (MRM3), showed that the model still generated associations of equal levels like it did within the full model (MRM2). This showed the relative non-importance of the variable 'Number Of Female Board Members' in the model, suggesting that the direct measurement on female board participation is unlikely to have robust associations with any compensation components.

Using the results of the ANOVA tests, multicollinearity test and the outcomes of the three Multiple Regression Models, sub question 9: '**Which hypotheses are validated?**' can be answered. The hypotheses are validated as follows:

H1a:	The number of female board members is negatively associated with the total amount of CEO compensation	<b>Not validated</b>
H1b:	The number of female board members is negatively associated with the equity related amount of CEO compensation	<b>Not validated</b>
H1c:	The percentage of female board members is negatively associated with the total amount of CEO compensation	<b>Not validated</b>
H1d:	The percentage of female board members is negatively associated with the equity related amount of CEO compensation	<b>Not validated</b>
H2a:	The number of female board members is positively associated with board size	<b>Validated</b>
H2b:	Board size is positively associated with the amount of CEO compensation	<b>Not validated</b>

H3a:	Boards where the CEO is chairman have fewer female directors than boards where the CEO	<b><i>Not validated</i></b>
H3b:	Chairmanship of the CEO is positively associated with the amount of compensation	<b><i>Not validated</i></b>
H4a:	Female directors hold a lower number of other board seats than male directors	<b><i>Not validated</i></b>
H4b:	The number of other board seats by directors is positively associated with the amount of CEO	<b><i>Validated</i></b>

With none of the direct measurements of female influence in the Board of Directors showing consistent significant outcomes on the compensation components, all 4 hypotheses of H1 are considered not validated. And although the ANOVA test showed a significant result to justify H2a, the board size itself only significantly relates to the compensation component of 'Salary' and not for the total compensation, thus H2b wasn't validated. The association of females with CEO chairmanship was opposing the expectations and turned out significantly *positive* when testing for hypothesis H3a. Furthermore, chairmanship of the CEO only showed a consistent significant outcome for the salary component; therefore H3b was also not validated. Another result that differed from the expectations based on prior literature was that female directors are busier than their male counterparts. This means that H4a is not validated. However, the number of boards seats directors hold is positively related to the salary, equity related components and total compensation. Hypothesis H4b is therefore validated.

## 6 Analysis and Conclusion

With the outcomes of the tests and the validation of the hypotheses in the previous chapter, this chapter presents the analysis of and conclusion based on those results. The limitations that restrict this thesis' research are mentioned in paragraph 6.2, followed by the contributions of this thesis in paragraph 6.3 and the subsequent chapter summary in paragraph 6.4 in which the remaining sub questions are answered. After the answering of the last sub questions, the thesis is finalized by answering the main research question.

### 6.1 Outcomes

This thesis' research has shown that there were no significant outcomes of the direct measurements of female board member participation and the various compensation components. Both the absolute number as well as the percentage of female board members, showed insignificant outcomes in the Multiple Regression Model with all variables added. This is contradictory with previous research such as Adams & Ferreira (2009), who mentioned that within gender diverse Board of Directors, the monitoring capabilities are higher and the *“CEO turnover is more sensitive to stock performance”*. The findings of Adams & Ferreira (2009) comply with the social theories that suggest that females are more risk adverse (Gill and Prowse, 2010) and make better informed decisions (Ertac and Szentes, 2011). Although Adams & Ferreira (2009) also use the US market with the S&P1500 listed companies and a regression model, the outcomes of this master thesis aren't similar. This might be due to recent developments in legislation and/or events such as the credit crunch as Adams and Ferreira (2009) use 1996-2003 as their sample period, whereas in this master thesis research more recent years are used. Another explanation could be the difference in the test models as the Multiple Regression Model for this research contains more variables to account for firm specific and gender related characteristics. Based on the prior literature and the outcomes of this master thesis research, it remains questionable whether female representation in the Board of Directors increases the monitoring qualities of the board, thereby influencing the equity related part of a CEO's compensation. The Multiple Regression Model in this thesis found insignificant outcomes at all the compensation components, equity related as well as non-equity related.

The ANOVA tests on the association between female representativeness and the other independent variables furthermore showed that there is a significant association between the number of female directors and the total board size. Having no female director on board is associated with small boards that are below-sample-average in their board size. One female director is an average board size feature. However, having several women on board is a large board size characteristic. This possibly explains the insignificant relation between female board participation and CEO compensation components as the dominantly male boards are unlikely to allow for much female influences. This possible effect of discrimination and the diminished effects of diversity was mentioned in the prior literature by Becker (1993). It complies with the phenomena of tokenism, as mentioned by Farrell and Hersch (2005) and Wang and Clift (2009). The female presence might not be a board quality influencing factor as they would likely be overruled by the established dominant (male) culture. And the selection of board candidates might be more driven by meeting social demands, rather than increasing and exploiting the actual diversity. The independent variable of 'board size' itself (as expressed by the total number of board members) shows only a significant result on the compensation component 'salary' and has insignificant outcomes on the other compensation components as well as on the total compensation a CEO receives. So although larger boards are likely to have more women on board, the board size itself seems to have no effect on the total compensation a CEO receives.

One of the other independent variables that was taken into account is 'CEO Chairmanship', which showed to be significantly associated with a larger number of female representativeness. With prior literature like Adams and Ferreira (2009) and Huse et al. (2009), who found an increase in the monitoring qualities of boards when females participate, this outcome was unexpected. As agency theory predicts that a CEO will be driven by self-interest, he or she would therefore dislike having female members on board as they presumably increase the monitoring quality, thereby making it harder for the CEO to capitalize on the governance mechanisms and enhance personal gain. The findings of Campbell & Minguez-Vera (2010) support this thought derived from the agency theory, as they found a significant negative coefficient between CEO chairmanship and the estimated influence of female board members on firm value. Explanation for the difference in outcome compared to this master thesis research might be the time period used and the area of research as Campbell & Minguez-Vera (2010) used the country of Spain as their research area with 1995-2000 as timespan. Besides social and/or economical historical events, the cultural differences might therefore also play a role in clarifying the differences in outcomes between this master thesis research and that of Campbell & Minguez-Vera (2010).



Furthermore, within the model used for this master thesis research, the independent variable 'CEO Chairmanship' itself only showed a significant association with the 'salary' compensation component and turns out insignificant on all other compensation measures. This is also contradictory with previous literature as researchers like Cyert et al. (2002) found a significant result on the equity related compensation components when the CEO holds chairman position. The findings of Cyert et al. (2002) therefore seem to support the self-driven interest assumption of the agency theory. Although Cyert et al. (2002) use the same area of research (U.S. listed companies) and also test for correlations between CEO compensation components and CEO/board characteristics, their timespan is 1992-1993. As this master thesis research has a more recent timespan, this might indicate that the governance mechanisms have improved over time, possibly resulting in an impediment for a CEO to exploit his/hers chairman position for personal gain.

Another independent variable used in the Multiple Regression Model was that of board seats held by directors (excl. CEO). With prior literature (Yermack, 2006) mentioning that female directors are likely to be less busy, thereby enhancing board quality, this turned out to be the opposite for the sample used in the Multiple Regression Model. As the ANOVA test showed that the female directors were, on average, busier than the male directors, meaning that a female director holds more board seats than a male director. And holding more board seats at other companies would mean that the dedication and attention can't be optimal as it has to be divided, therefore board quality would diminish. This difference in occupancy between male and female directors might indicate that female directors are more scarce than male directors. Or perhaps the Board of Directors react to the societal pressure of having more women in executive positions, giving the female directors an advantage in the selection process for new board candidates. This could indicate that holding board seats at several companies is the outcome of Board of Directors' preferences and that positions are not gained solely on individual qualifications, but rather on social expectations and relations. Whether the director is too busy when holding multiple board seats to monitor properly or his/her independency is compromised due to the social relations, the number of board seats held by directors is associated with higher CEO compensation. And the Multiple Regression Model shows that the independent variable 'Board Seats Held By Directors excl. CEO' had significant outcomes on the salary, stock, option and total compensation components. Making it the most significantly associated independent variable with the compensation components used in the model. Although prior literature suggests that female directors are less occupied than their male counterparts, they appear more occupied in the sample used and occupancy relates significantly to several CEO compensation components.

Within the Multiple Regression Model, the control variables showed more significant outcomes than the independent variables, with 'Company Size' as the most significant of all. This variable showed strong associations with all compensation components, which is compliant with the findings of Cyert et al. (2002), who found the same with their Multiple Regression Model that addressed board, company and CEO specific characteristics. The relation between company size and CEO compensation seems explicable as the equity related compensation components are likely to be higher with S&P500 listed companies than with SmallCap companies, due to company value, turnover and profit. Another control variable that showed significant associations was that of CEO's age. This turned out to be significant on the current compensation components of salary and bonus, but also on the total compensation he/she receives.

Although some of the independent and control variables in the model showed significant associations with one or more compensation components, the complexity of the compensation setting process is shown by the aggregated predictive value of the variables used in the Multiple Regression Model. Using the 5 independent and 6 control variables combined, only 18.2% of the total compensation's variance can be explained. Consequently, there are likely to be other factors that influence the compensation setting process more than the defined ones in this master thesis' research.

What this research has shown, is that the direct relation between female representativeness and CEO compensation is insignificant for the time period 2007-2009 of U.S. listed S&P1500 companies. Direct measurements of female participation showed none significant result in the Multiple Regression Model. Other independent variables associated with female presentation did show some significant results. Chairmanship, board size and board seats directors (excl. CEO) hold, are associated with female directorship and these three variables showed significant results on the salary component. The occupancy of the board members furthermore showed to be significant on the equity related components and total compensation as well. Indirectly this could associate female directorship with increased CEO compensation. However, this also shows that the effects of female board members on CEO compensation components are hard to measure.

With insignificant results on the direct measures of female participation and contradictory (with prior literature) associations with CEO chairmanship and director occupancy, the outcomes seem to support the view that female directors aren't affecting the CEO's compensation setting process to the extent of which prior literature suggests. Social theory suggests that diversity could increase performance, however discrimination could obstruct this. It seems then, that discrimination could occur

in the non-transparent process of selecting board members. Perhaps female directors are chosen because the (dominantly male) Board of Directors only want to comply with industry/society ethical codes, rather than exploit advantages of increased gender diversity. This would support the beliefs of tokenism, suggesting that female directors are part of the board only because the dominant culture (men) allows them to. This in turn would mean that the females that are most likely to make it to the board, are those who comply the most with the men (as the men are the established dominant culture). Therefore, effects of a (new) female board member are not likely to result in significant outcomes of board performance figures. Whether legislation could improve on the position of female board members remains questionable. Perhaps introducing legislation in the U.S. that dictates a minimum percentage of female board directors like Norway did in 2003, could make the effects of increased gender diversity more visible. However, this in turn would also lead to discrimination in the board candidate selection, making it a dubious approach as well.

## 6.2 Limitations

As mentioned in chapter 3, numerous factors come in to play when setting the CEO pay. Some of them are plausible but hard to quantify, whereas the effect of some are disputable yet can't be discarded as data is non-conclusive. This would imply that within the conclusions based on the outcomes of the tests using the selected data, a bias of some kind is inevitable. Literature shows that there are several external factors and CEO characteristics that influence the height of CEO compensation. Some of these were not incorporated in the research model of this thesis due to attainability problems and are therefore mentioned as limitations:

- ...firm risk is strongly positively related to both the incentive and non-incentive components (Cyert et al., 2002)
- ...CEO cash compensation (in terms of salary and discretionary bonuses) is higher if the board is represented by a greater portion of outside directors (Cyert et al., 2002)
- ...a CEO's track record and established reputation associates strongly with the pay the CEO receives in a new position (Perel, 2003)
- ... shows that externally hired CEO's get paid more than the internal hires.. (Perel, 2003)
- ... director's age positively relates to CEO compensation (Ghosh and Sirmans, 2005)

The factors mentioned above are specific for the measurement of CEO compensation, however this type of study has some limitations in general. As Rose (2007) mentions that *"quantitative studies may experience severe difficulties in capturing board members interpersonal relations, as well as the complex nature of the decision process on corporate boards"*. The variables 'CEO chairmanship' and 'Number of board seats held by directors' used in this thesis are merely indicators for measuring the social complexity. The actual effect of interpersonal relations, the adapting of executives to the establishment and discrimination effects are hard to measure, as only indicators are measurable. And not only do the external perspectives influence the way directors are appointed, but the individual perspectives within the social environment are decisive factors as well. Huse et al. (2009) show that *"women perceived themselves to have lower esteem than the male respondent perceived for the women directors"*. This could mean that the theoretical outcomes of increased gender diversity are restrained from the start as female directors might hold back their full capacity in order not to disturb the group dynamics. Individual perspectives therefore form another hard to quantify influencing factor.

Furthermore, a limitation of quantitative research using regression models is that causality is hard to determine. As associations are measured, it is sometimes unclear whether an increase in the independent factor, results in an increase in the dependent factor. With the assumptions based on prior literature, which sometimes show contradicting results, the causal relation can only be presumed. However, results may still show associations simply due to coincidence, which remains an unaccountable factor in this kind of research.

How individual perspectives, established culture, external pressure and company profile influence the selection of board candidates and to what extent they allow for heterogeneity, is a question that remains unsolved with this master thesis. Furthermore, as mentioned in the introduction, the call for more diversity has increased over the last couple of years and gained more attention. This could mean that acceptance of increased gender diversity is not fully realistic in this time period yet and that relations between female directorship and measurable outputs on board performances are too soon to be significantly measurable.

### 6.3 Contribution and recommendations

By investigating the relation between gender diversity in the Board of Directors and CEO compensation, this master thesis contributes several findings to the discussion on CEO compensation and board diversity. Firstly, the findings of the ANOVA on female directorship and board size showed that female representativeness in the board is highly associated with the board size. It complies with the beliefs of tokenism, suggesting that the women are part of the board due to an external pressure for more gender diversity and that their inputs are discarded by the dominant and established board members. The other ANOVA tests however, showed results that were contradictory with prior literature and stress the need for more research on the topic of female board participation and the subsequent effects on board outputs.

Research with regards to CEO chairmanship and directors could contribute to the discussion on whether directors are enabled to make decision making processes adequately as their task description would prescribe them to do. This type of research could further be narrowed to investigating the position of female board members specifically as research on gender diversity within the Board of Directors is a lesser investigated subject than ethnic diversity within a Board of Directors for example. It might also be interesting to investigate the position and effects of female board directors, using other countries as the research area as cultural differences are likely to affect the position and chances of females making it to the Board of Directors. Furthermore, by investigating the relations between female representativeness within the board and outcomes on board performance figures in an array of different countries, the differences between an one-tier and two-tier system can then perhaps become more visible. This would be interesting for the Netherlands, as upcoming new legislation would allow companies to have an one-tier system, opposed to the two-tier that is the current standard.

As the call for increased gender diversity has gained recent attention and urgency, governments of Norway (2003), Spain (2007) and Finland (2008) implemented legislation and other countries like Germany and the Netherlands are making propositions for new legislation whilst industries are developing their own codes to meet social expectations. Although the discrimination effects and the possibilities of diversity are broadly discussed in prior literature, the effects of having more females in top level management positions is not likewise extensively researched and the current existing literature is not quite one-sided on the effects female directors have on board outputs and CEO compensation. This thesis therefore contributes to this relative recent object of study by presenting quantitative test

results, objectifying the discussion on female board participation, which could lead to a better understanding of the possible outcomes of having legislation in place that commands a gender quota.

Future research could contribute by investigating the relation between board participation and board related outcomes. This might give more insights that can be useful in the discussion regarding enforced diversity within the Board of Directors. Currently the results, this master thesis included, show varying results from significant negative to relative to significant positive associations between female directors and board outputs. By investigating this topic further, perhaps the results can show more resemblance, thereby contributing to the discussion on whether diversity should be enforced. It is also interesting to see whether the participation of females in the Board of Directors increases over the oncoming years, as this thesis has shown that the growth has declined over the past couple of years. Furthermore, the recent years were quite turbulent in terms of capital market movements and these might have also affected the CEO's compensation components. Future research could perhaps find stronger results on the relation between female directorship and CEO compensation if the capital markets stabilize.

## 6.4 Chapter Summary

This chapter gave interpretation to the outcomes of the tests results that are presented in chapter 5. Answering the remaining sub questions will lead to the answer of this master thesis' main research question. The first sub question to address is number 10: ***'How can these outcomes be interpreted?'***. As test results have shown that the direct measurements of female board members have no significant outcomes on CEO compensation components in the Multiple Regression Model, this relation is considered to be non-existent for the sample used. The presence of female board members does however, significantly relates to board size, CEO chairmanship and the number of board seats the members hold outside the company for which they are part of the sample. The CEO chairmanship variable does have a significant outcome in the Multiple Regression Model on the salary component, so does the board size. The only independent variable that showed significant results on several compensation components as well as on the total compensation is that of the number of board seats directors hold. Indirectly then, these relations can be linked to female representativeness. Moreover, these indirect relations more likely express the possibilities of tokenism. And if board size determines the chances of a female being accepted as board member, the potential of diversity is nullified from the start. And under the assumptions of the agency theory, a CEO holding chairman position would likely gather board members he/she can influence. The positive association of female presence within the board and CEO chairmanship therefore doesn't plea for female directors adding new perspectives and increased monitoring capabilities. Perhaps biases in the board candidate selection procedures make it difficult for women to gain board positions, resulting in a relatively small pool of female candidates who fit the profile, who can therefore hold several board seats as they are rare. It remains questionable then, whether females are gaining board positions due to the additional opinions they can provide and additional value they can create. Or whether they're allowed on board because of external pressure and call for greater diversity and they're merely selected on their adaptive capabilities to comply with a homogeneous group.

As with any research, there are some limitations in this master thesis and they're mentioned by answering sub question 11: ***'What limitations restrict this research?'***. The first limitations are that of the Multiple Regression Models used. As the variables of the model were derived from prior literature, the set of independent and control variables is not exclusive. Other variables mentioned in prior literature couldn't be taken into account due to attainability problems or simply because they're not measurable



in discreet terms. Another limitation of the Multiple Regression Model is that determining causality is subjective of assumptions based on prior literature, as the model itself can't produce outcomes to determine a causal relation with. However, what seems to be the most important limitation is the complexity of the social dynamics in which board candidatures are settled and the group dynamics within a Board of Directors that influence decision making processes. Interpersonal relationships and their effect on measurable outputs, such as CEO compensation, are limiting factors on quantitative research investigating such outputs.

With the outcomes of this master thesis, the discussion on mandatory gender quota in the boardroom could be further objectified. This research has furthermore shown that the outcomes weren't unanimous with prior literature, which leads to sub question 12: ***'What recommendations can be made upon conclusion?'***. Future research could be beneficial for providing a more extended time range, as the upcoming of female directorship is a recent phenomenon. Or it could clarify whether this trend actually leads to more diversity and subsequently whether that increase in gender diversity shows significant outcomes on board outputs. As recent years were quite turbulent due to the international credit crunch, follow-up research on this thesis' subject might bring stronger results as the economy stabilizes and measured outputs perhaps show more consistency over time.

On the conclusion of this thesis, the answering of the main research question ***"Is the presence of female board members associated with the amount of CEO compensation (components and in total) of the S&P1500 listed companies between 2007-2009?"*** is as follows:

The absolute as well as the relative representation of females in the Board of Directors of S&P1500 listed companies between 2007-2009 was *not* significantly associated with any CEO compensation component. Other variables that associate with female directors did show some significant associations with compensation components. However, these relations more likely showed the effects of other factors influencing decision making processes regarding CEO pay rather than supporting the argument that gender diversity influences CEO compensation components, by ways of increasing the board performance.

## 7 Thesis summary

This thesis investigated the relation between female directorship and the compensation components of the CEO. Prior literature suggests an increase in monitoring quality of the Board of Directors due to gender diversity. Increased monitoring would imply that equity related compensation, as a tool in aligning the interests of the CEO with those of the shareholders, could diminish. However, the effects of diversity are seemingly hard to measure as several aspects of the social dynamics aren't quantifiable. In theory, diversity can bring all kinds of advantages for most of the stakeholders as the pool of talent increases and more viewpoints are taken into consideration. And ethically and morally, perseverance of equality is considered a good thing. Unfortunately, negative effects of discrimination might also occur, thereby possibly nullifying the advantages diversity can bring. This illustrates the difficulty of investigating relations that are influenced by social dynamics.

By investigating the compensation components of 3.986 executive years, matching them to 37.418 director years and analysing their specific characteristics, this master thesis research lead to some outcomes that are contradictory with prior literature. In the Multiple Regression Model, the variables that express female directorship showed non-significant relations with the CEO compensation components. This is in contrary with the expectations given by prior literature (in which female directorship equals better monitoring, thereby leading to lower equity related compensation for the CEO). The first ANOVA test furthermore showed that the number of female directors is highly associated with board size, which was in line with prior literature. Unexpected was the outcome of the second ANOVA, showing that boards where the CEO holds chairman position, on average have more female directors participating. Assuming that higher levels of gender diversity in the Board of Directors would lead to improved board outputs (of which CEO compensation setting is one), the relation between CEO chairman and number of female directors was assumed to show a negative relation. Instead it showed a significant positive association. The third ANOVA also showed an outcome contradictory with prior literature, namely the higher (then male directors) occupancy rate of female directors. In turn, the variables 'Chairmanship', 'Number of Female Board Members' and 'Total Number of Board Seats Directors excl CEO' all show significant associations with the CEO's salary compensation component. The occupancy of the directors furthermore showed significant associations with the equity related compensation components. Indirectly then linking the female board member characteristics to the height of the compensation components of the CEO.

This master thesis developed some outcomes that are interesting for the diversity debate and the possible legal enforcement of a minimum level of gender diversity, which some governments have already implemented and others are considering. The insignificant relations in the Multiple Regression Model between measurements of female directorship and the CEO compensation components assumed that gender diversity in the Board of Directors hardly affects the CEO's compensation. Whether gender diversity does have an effect on the payment setting can't completely be excluded based on these outcomes alone as the effects of discrimination are hard to measure. In combination with the outcomes of the ANOVA tests, the existence of tokenism therefore seems plausible. As making it to the Board of Directors for a female candidate is related to the total board size (and whether there is already a female director on board) and CEO chairmanship, this could indicate some sort of discrimination. And the higher occupancy rate of the female directors within the sample furthermore supports the argument of tokenism, namely that the female directors are there (partly) due to representative motives of the Board of Directors, rather than for the need of increasing diversity and exploiting the possibly advantages. This could explain the higher occupancy rate of female directors as their presence is desired by company boards (due to social pressure) whilst the pool of female directors is presumably smaller than the pool of male directors.

On conclusion then; this master thesis research has found no significant associations between female directorship and CEO compensation components for the period 2007-2009 for the U.S. companies listed on the S&P1500 index.

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## Appendix

### 1 Newspaper cut-outs

#### The Washington Post

##### Bank of America CEO gets \$9.05 million bonus

By Hugh Son  
Monday, January 31, 2011; 7:36 PM

Bank of America Corp. gave Chief Executive Officer Brian T. Moynihan a \$9.05 million bonus for his first year as leader of the largest U.S. lender by assets, less than the company awarded to its investment banking head.

Moynihan, 51, received the bonus in restricted stock, the Charlotte, N.C.-based bank said Monday in a regulatory filing. Thomas K. Montag, who leads global banking and markets, got \$14.3 million in restricted stock and \$900,000 in cash awards.

Bank of America earned \$6.3 billion from Montag's division last year while the parent company was unprofitable as Moynihan took \$12.4 billion in impairments at operations purchased by his predecessor, Kenneth D. Lewis. The bank's shares "did underperform" in 2010, when they dropped 11 percent amid losses tied to repurchasing faulty mortgages from investors including Fannie Mae and Freddie Mac, Moynihan told analysts Jan. 21.

Awards for executives including Moynihan were based upon "recognition of 2010 as a unique and critical transition year," the company said in the filing.

Moynihan's salary was unchanged from a year earlier, when it was listed at \$950,000. Montag's 2011 salary was raised to \$850,000 from

\$800,000.

Some rivals have been raising base salaries in response to increased pressure from regulators on bonuses. Goldman Sachs Group Inc. gave Chairman and Chief Executive Officer Lloyd Blankfein a \$12.6 million stock bonus for 2010 and raised his base salary to \$2 million this year from \$600,000, the New York-based bank said last week in filings.

Citigroup Inc. boosted CEO Vikram Pandit's base salary to \$1.75 million from \$1 after the bank's first profit for a year under his watch. Pandit declined a bonus for the year.

Bank of America set aside about 10 percent less for year-end compensation in its investment banking division as revenue slipped, two people with direct knowledge of the decision said last week. Employees in Montag's unit were told their year-end payouts on Jan. 27, the people said.

Regulators including the Federal Deposit Insurance Corp., the Federal Reserve and the Securities and Exchange Commission are drafting rules on pay meant to limit practices considered risky. Soaring pay at Wall Street firms over the past three decades gave traders and managers an incentive to disregard risk, the Financial Crisis Inquiry Commission wrote in a book published last week.

- *Bloomberg News*

[http://www.washingtonpost.com/wp-dyn/content/article/2011/01/31/AR2011013105314\\_pf.html](http://www.washingtonpost.com/wp-dyn/content/article/2011/01/31/AR2011013105314_pf.html)



## Europa worstelt met vrouwenquota



Bedrijven met vrouwen in de top zouden beter presteren.

#### Gelijkheid Bij ons gaat het goed met de vrouw

Met 15 procent vrouwen in de top van beursgenoteerde bedrijven (commissarissen en bestuursleden op een hoop geveegd) is Nederland een Europese middenmoter wat betreft vrouwen aan de top. Het kan beter: in Noorwegen hebben ze dankzij een streng vrouwenquotum 39 procent vrouwen in de top. Maar het kan ook veel slechter: Italië scoort slechts 5 procent.

Met de emancipatie gaat het in ons land echter uitstekend, bleek vorige week uit de emancipatiemonitor 2010 van het Centraal Bureau voor de Statistiek en het Sociaal en Cultureel Plan Bureau. Tussen 2005 en 2009 nam het aantal financieel zelfstandige vrouwen toe van 42 naar 48 procent. Ook staat Nederland 'boven' aan de lijst van gender-gelijkheid van de Verenigde Naties: de verschillen tussen man en vrouw zijn hier qua onderwijs, politieke deelname en gezondheid het kleinst ter wereld.

**1.000 Noorse vrouwen** werden sinds het vrouwenquotum van 2003 gerekruteerd. 'Moeilijk, maar het lukte', aldus Marit Hoel van het Noorse Centre voor Corporate Diversity.

Door: Edward Deiters  
Gepubliceerd: maandag 21 februari 2011 23:43  
Update: dinsdag 22 februari 2011 07:17

#### Eerdere beloftes van Europese bedrijven om meer vrouwen in topfuncties te benoemen, haalden niet veel uit. Daarom komt de politiek nu met dwang. Een overzicht van 'gouden rokken' tot 'roze quota'.

'Jammer genoeg is het tot nu toe niet gelukt een vrouw voor ons Group Executive Committee te vinden', aldus Josef Ackermann kort geleden. De bestuursvoorzitter van Deutsche Bank verduidelijkte nog even dat het hier de laag net onder de raad van bestuur betrof. Vervolgens grapte hij: 'Maar ik hoop dat het daar ooit kleurrijker wordt, en mooier ook.'

Zijn woorden vielen zo verkeerd dat bankwoordvoerders hun handen vol hadden aan verontschuldigingen. 'Met sigaren en herenclubs heeft het vrouwbeeld van de chef echt niets te maken. De bank vindt het wel degelijk belangrijk dat er veel vrouwen bij ons werken.'

#### Schandaal

Mooie woorden. Feit is dat er nog steeds nul vrouwen in de top van Deutsche Bank zitten. Van de belofte die de Duitse industrie een jaar of tien geleden maakte om het glazen plafond door te breken, kwam niets terecht. Volgens cijfers van het DIW, het Duitse Instituut voor Economisch Onderzoek was in de raden van bestuur van Dax 30-bedrijven vorig jaar slechts 2,2 procent vrouw. Bij de 200 grootste Duitse bedrijven was dat met 2,5 procent al niet veel beter. De honderd Duitse firma's met de hoogste omzetten? Die hebben in totaal slechts vier vrouwen in hun raden van bestuur.

En de Europese trend is goeddeels hetzelfde. Volgens cijfers van de Europese Commissie zijn de raden van bestuur van Europese beursgenoteerde bedrijven nog steeds voor 89 procent gevuld met mannen.

De Duitse bondskanselier Angela Merkel noemde vorige week de afwezigheid van vrouwen in managementposities een 'echt schandaal'. Ze meldde bedrijven 'een laatste kans' te geven om er iets aan te doen. Anders komen er volgens haar 'bindende voorwaarden'.

Afgelopen weekend dreigde in de Financial Times ook eurocommissaris Viviane Reding met opgelegde quota als de situatie niet snel verandert. 'We hebben het hier niet over kleine bedrijfjes, maar over de 500 grootste beursgenoteerde bedrijven, waar slechts 3 procent van alle commissarissen vrouwelijk is. Bij de raden van bestuur is slechts één op de tien leden een vrouw.' Eerder gaf Reding al aan dat de situatie in 2012 echt verbeterd moet zijn. 'Anders zullen we met wetgeving komen die wordt gesteund door geloofwaardige sancties.'

Over de ernst van die maatregelen is nog niets bekend, maar in Noorwegen kunnen bedrijven zelfs ontbonden worden als ze niet voldoen aan het 40-procentsquotum dat in 2003 werd ingevoerd.

Na Noorwegen volgde in 2007 Spanje. En in Frankrijk geldt sinds 1 januari een wet die het aantal vrouwen in leidinggevende posities binnen zes jaar moet verhogen naar 40 procent. Daarnaast zijn de Britten druk doende met hun eigen vrouwen-naar-de-top-wetgeving en nam zelfs Italië vorig jaar een wet aan die voorschrijft dat besturen van beursgenoteerde bedrijven voor minimaal 30 procent uit vrouwen moeten bestaan. De wet, met de bijnaam 'roze quotum', is overigens nog niet langs de senaat. En dat is ongeveer ook waar het Nederlandse vrouwenquotum zich bevindt: op de stapel in de Eerste Kamer.

#### Gouden rokken

Voorstanders wijzen graag op een McKinsey-onderzoek uit 2007, dat zou aantonen dat bedrijven met meer vrouwen in de top financieel beter presteren. Toch blijkt uit de Noorse praktijk dat in veel gevallen ervaren mannelijke managers en commissarissen worden opgevolgd door jonge vrouwen die weliswaar hoger opgeleid zijn, maar veel minder ervaring hebben, en daarom als bijnaam 'gouden rokken' meekrijgen. Maar dat komt volgens velen doordat er in een relatief korte tijd ruim duizend functies moesten worden ingevuld.

Eurocommissaris Reding gelooft er in ieder geval heilig in: 'De financiële crisis had er mogelijk heel anders uitgezien als er meer Lehman sisters in plaats van brothers waren geweest', zei ze onlangs in een EU-nieuwsbrief.



## The Telegraph

### US Congress backs law to claw back bonuses with 90pc tax

US politicians have agreed to impose a 90pc tax on those working at government-funded companies earning more than \$250,000 (£172,000) in a bid to quell the furore surrounding AIG's \$165m bonus payments.

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By James Quinn Wall Street Correspondent

8:20PM GMT 19 Mar 2009

The House of Representatives, the lower of Congress's two chambers, moved at unusual speed, with members voting 328-93 in favour of the legislation.

The tax would apply to employees of companies which have received more than \$5bn in government funding, and relates to all forms of compensation, either salary and/or bonuses.

It is designed to reclaim the majority of the money paid out to AIG's 400-strong Financial Products team, who are largely responsible for the company's near-downfall last September as a result of dealing in risky, debt-laden investments.

A similar bill is expected to be discussed by the Senate early next week and, if approved and signed off by President Barack Obama, the legislation would allow the majority of the bonuses to be reclaimed by the US taxpayer, which has funded AIG to the tune of \$173bn so far. The president is also working on plans that to give regulators powers to take over non-banks, such as AIG, if they pose systemic risks.

New York Attorney General Andrew Cuomo continued to pursue AIG, saying he would take it to court if it had not provided details of the bonus recipients to him by the close of business last night. AIG chairman Ed Liddy is resisting as he fears for his employees' safety following a number of death threats.

A number of senior AIG executives have already repaid their bonuses as the row over bonuses consumes the US media, and led to a massive public outcry.

Separately, an investigation by the House Ways and Means sub-committee on oversight found that of the top 23 recipients of US government funds, 13 owed federal taxes totalling \$220m.

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Home > Nieuws

## Eerste Kamer neemt wetsvoorstel bestuur en toezicht aan

woensdag 1 juni 2011 | 0 reacties

De Eerste Kamer heeft gisteren het wetsvoorstel Bestuur en toezicht aangenomen. Het wordt daardoor voor beursgenoteerde ondernemingen binnenkort gemakkelijker om het zogenaamde monistisch ('one-tier') bestuursmodel in te voeren.

Dat meldt **Eumedion**, belangenbehartiger van institutionele beleggers op het gebied van corporate governance, in haar **nieuwsbrief van mei**.

Naast de facilitering van de invoering van het 'one-tier'-bestuursmodel is in het wetsvoorstel de bepaling opgenomen dat de rechtsverhouding tussen een bestuurder en de beursgenoteerde onderneming niet langer meer wordt aangemerkt als een arbeidsovereenkomst. Eumedion heeft zich hier lange tijd hard voor gemaakt.

Ook bepaalt het wetsvoorstel dat een persoon maximaal vijf commissariaten bij grote rechtspersonen (waaronder beursgenoteerde ondernemingen) mag bekleden. Voorzitterschappen tellen daarbij dubbel. Bestuurders van grote rechtspersonen mogen niet meer dan twee commissariaten bekleden; zij mogen echter geen voorzitter van een raad van commissarissen zijn.

Tijdens de plenaire behandeling van het wetsvoorstel in de Eerste Kamer heeft minister Opstelten (Veiligheid en Justitie) wel aangekondigd de reikwijdte van dit onderdeel binnenkort te zullen inperken. Toezichthoudende functies bij stichtingen die op grond van wetgeving niet verplicht wettelijk zijn om een jaarrekening op te stellen, tellen niet mee voor het wettelijk toegestane aantal commissariaten. In de praktijk zijn dit vooral stichtingen met een charitatieve, culturele of kerkelijke doelstelling, zoals musea.

Onder druk van de Eerste Kamer heeft de minister verder de toezegging gedaan het gehele wetsvoorstel drie jaar na inwerkingtreding te zullen evalueren op zijn effecten. Het wetsvoorstel zal waarschijnlijk op 1 januari 2012 in werking treden.

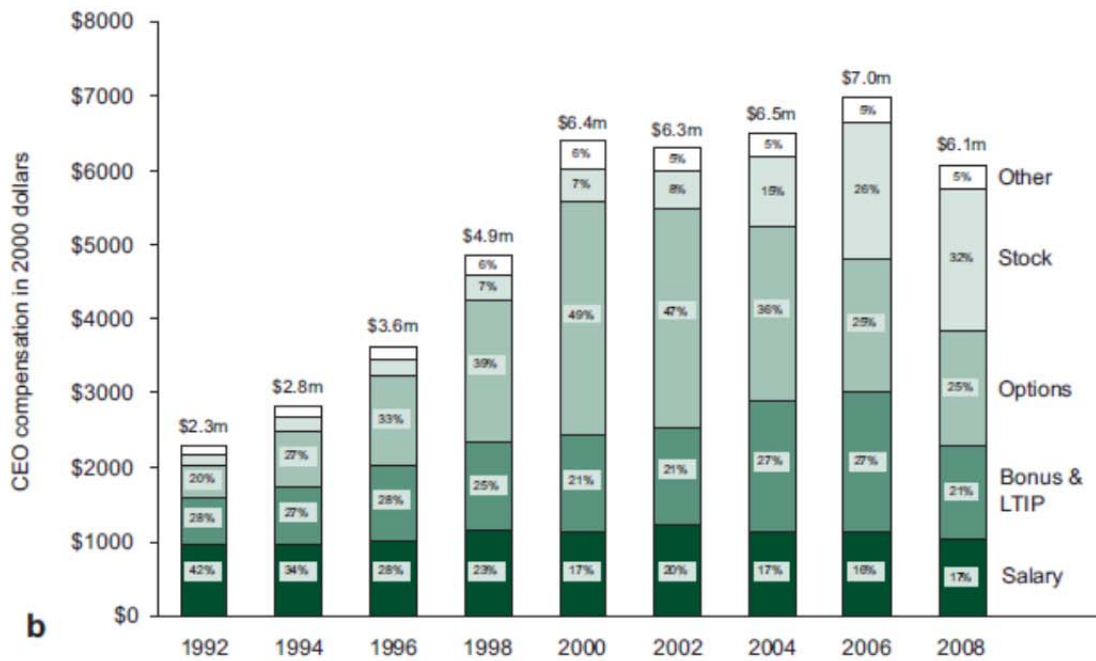
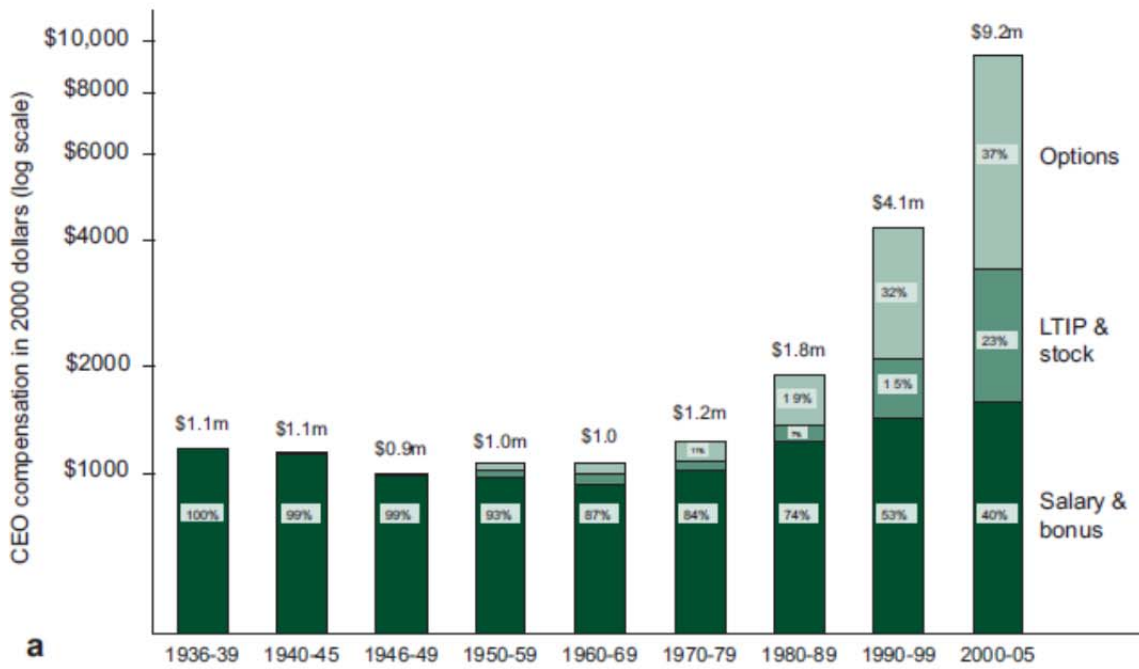
(Bron: Eumedion, **nieuwsbrief mei 2011**)

<http://www.accountant.nl/Accountant/Nieuws/Eerste+Kamer+neemt+wetsvoorstel+bestuur+en+toezich.aspx>

### zie ook

- » **Diversiteit binnen rvc heeft invloed op bonus bestuursvoorzitter**
- » **Aandeelhouders trekken lessen**
- » **'Rigoureuze zelf-evaluatie rvc in corporate governance code wenselijk'**
- » **Kees Storm wederom accountant-commissaris nummer één**
- » **Boardroom dynamics: voorzitter rvc bovenaan rangorde**
- » **Corporate Governance sterker verankerd in organisaties**

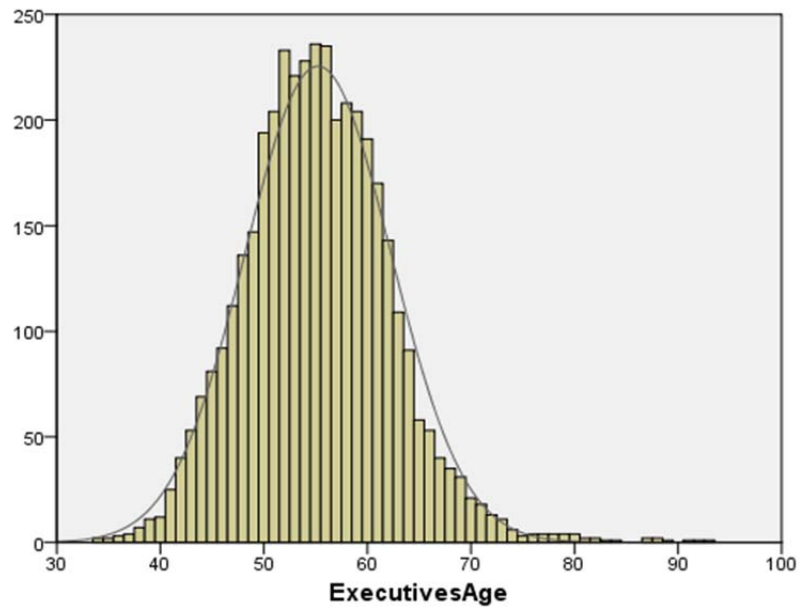
## 2 Graph from Frydman and Jenter paper



### 3 SPSS figures

#### 3.1 Age distribution CEO's

Figure 3: Executive Age Distribution

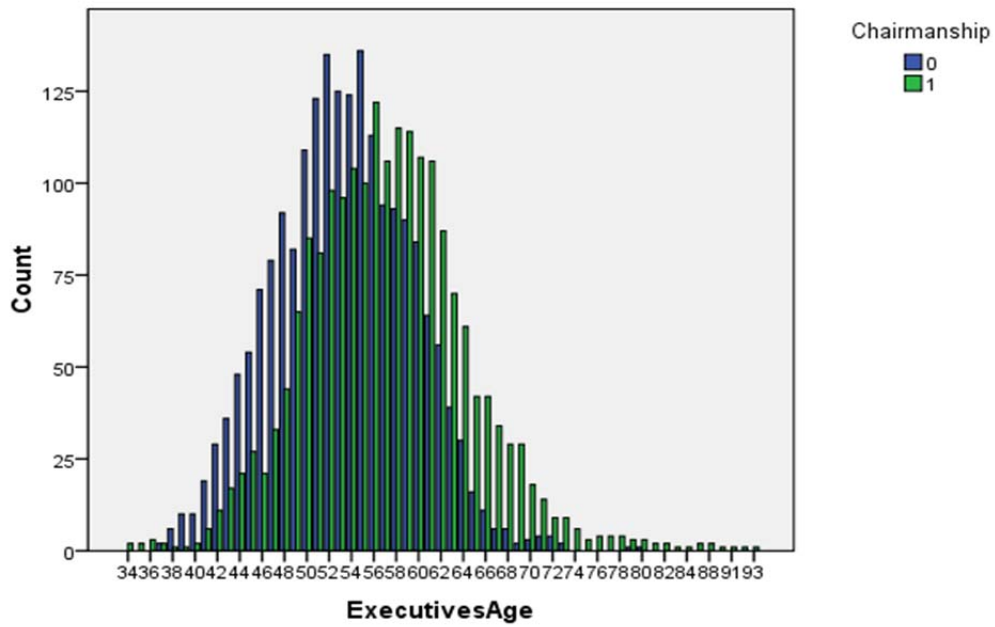


Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
ExecutivesAge	3986	59	34	93	55.22	7.049
Valid N (listwise)	3986					

Table 18: Descriptive CEO age

Figure 4: Age Distribution CEO Chair and Non-chair



Group Statistics

	Chairmanship	N	Mean	Std. Deviation	Std. Error Mean
ExecutivesAge	0	2009	53.32	6.155	.137
	1	1977	57.16	7.366	.166

Table 19: Descriptive CEO chairman age

### 3.2 Female board members and occurrence

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0	1222	30.7	30.7	30.7
1	1417	35.5	35.5	66.2
2	990	24.8	24.8	91.0
3	261	6.5	6.5	97.6
4	76	1.9	1.9	99.5
5	16	.4	.4	99.9
6	4	.1	.1	100.0
Total	3986	100.0	100.0	

Table 20: Female Board member distribution descriptive

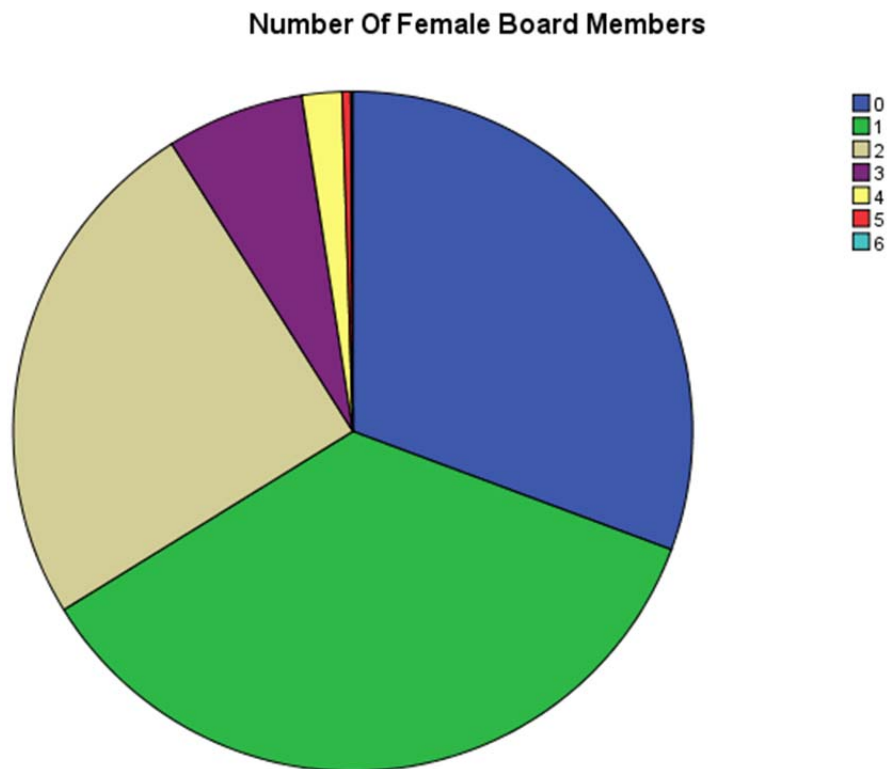


Figure 5: Pie chart of boards having X number of female directors

### 3.3 Dependent variables outputs in Multiple Regression Model 1

#### 3.3.1 Salary MRM 1

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.499 <sup>a</sup>	.249	.248	351676.3855

a. Predictors: (Constant), Total Number Of Board Seats Directors Excl CEO, Chairmanship, Percentage Of Female Board Members, Number Of Board Members, Number Of Female Board Members

b. Dependent Variable: Salary

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.631E14	5	3.262E13	263.753	.000 <sup>a</sup>
	Residual	4.922E14	3980	1.237E11		
	Total	6.553E14	3985			

a. Predictors: (Constant), Total Number Of Board Seats Directors Excl CEO, Chairmanship, Percentage Of Female Board Members, Number Of Board Members, Number Of Female Board Members

b. Dependent Variable: Salary

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	215478.252	32806.301		6.568	.000
	Number Of Female Board Members	14478.833	24819.533	.037	.583	.560
	Percentage Of Female Board Members	186359.614	229739.327	.045	.811	.417
	Chairmanship	122216.149	11176.953	.151	10.935	.000
	Number Of Board Members	33786.381	3777.317	.203	8.945	.000
	Total Number Of Board Seats Directors Excl CEO	21558.847	1185.428	.293	18.187	.000

a. Dependent Variable: Salary



### 3.3.2 Bonus MRM 1

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.068 <sup>a</sup>	.005	.003	1.9060E6

a. Predictors: (Constant), Total Number Of Board Seats Directors Excl CEO, Chairmanship, Percentage Of Female Board Members, Number Of Board Members, Number Of Female Board Members

b. Dependent Variable: Bonus

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.736E13	5	1.347E13	3.709	.002 <sup>a</sup>
	Residual	1.446E16	3980	3.633E12		
	Total	1.453E16	3985			

a. Predictors: (Constant), Total Number Of Board Seats Directors Excl CEO, Chairmanship, Percentage Of Female Board Members, Number Of Board Members, Number Of Female Board Members

b. Dependent Variable: Bonus

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-18166.917	177799.075		-.102	.919
	Number Of Female Board Members	-39377.794	134513.487	-.021	-.293	.770
	Percentage Of Female Board Members	-523713.645	1245109.586	-.027	-.421	.674
	Chairmanship	90460.159	60575.313	.024	1.493	.135
	Number Of Board Members	20611.244	20471.782	.026	1.007	.314
	Total Number Of Board Seats Directors Excl CEO	16900.495	6424.621	.049	2.631	.009

a. Dependent Variable: Bonus



### 3.3.3 Current compensation MRM 1

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.153 <sup>a</sup>	.023	.022	1.9660E6

a. Predictors: (Constant), Total Number Of Board Seats Directors Excl CEO, Chairmanship, Percentage Of Female Board Members, Number Of Board Members, Number Of Female Board Members

b. Dependent Variable: Total Current Compensation (Salary And Bonus)

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.673E14	5	7.347E13	19.007	.000 <sup>a</sup>
	Residual	1.538E16	3980	3.865E12		
	Total	1.575E16	3985			

a. Predictors: (Constant), Total Number Of Board Seats Directors Excl CEO, Chairmanship, Percentage Of Female Board Members, Number Of Board Members, Number Of Female Board Members

b. Dependent Variable: Total Current Compensation (Salary And Bonus)

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	197311.335	183400.856		1.076	.282
	Number Of Female Board Members	-24898.961	138751.501	-.013	-.179	.858
	Percentage Of Female Board Members	-337354.030	1284338.310	-.017	-.263	.793
	Chairmanship	212676.308	62483.813	.053	3.404	.001
	Number Of Board Members	54397.624	21116.771	.067	2.576	.010
	Total Number Of Board Seats Directors Excl CEO	38459.342	6627.037	.107	5.803	.000

a. Dependent Variable: Total Current Compensation (Salary And Bonus)

### 3.3.4 Stock compensation MRM 1

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.280 <sup>a</sup>	.078	.077	3.2743E6

a. Predictors: (Constant), Total Number Of Board Seats Directors Excl CEO, Chairmanship, Percentage Of Female Board Members, Number Of Board Members, Number Of Female Board Members

b. Dependent Variable: Grant Date Fair Value of Stock Awarded

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.630E15	5	7.260E14	67.716	.000 <sup>a</sup>
	Residual	4.267E16	3980	1.072E13		
	Total	4.630E16	3985			

a. Predictors: (Constant), Total Number Of Board Seats Directors Excl CEO, Chairmanship, Percentage Of Female Board Members, Number Of Board Members, Number Of Female Board Members

b. Dependent Variable: Grant Date Fair Value of Stock Awarded

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	107202.920	305449.296		.351	.726
	Number Of Female Board Members	339269.921	231086.972	.102	1.468	.142
	Percentage Of Female Board Members	-2719930.410	2139031.638	-.079	-1.272	.204
	Chairmanship	191618.741	104065.146	.028	1.841	.066
	Number Of Board Members	33407.777	35169.427	.024	.950	.342
	Total Number Of Board Seats Directors Excl CEO	149826.960	11037.156	.242	13.575	.000

a. Dependent Variable: Grant Date Fair Value of Stock Awarded

### 3.3.5 Options compensation MRM 1

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.283 <sup>a</sup>	.080	.079	2.8897E6

a. Predictors: (Constant), Total Number Of Board Seats Directors Excl CEO, Chairmanship, Percentage Of Female Board Members, Number Of Board Members, Number Of Female Board Members

b. Dependent Variable: Grant Date Fair Value of Options Granted

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.901E15	5	5.803E14	69.489	.000 <sup>a</sup>
	Residual	3.323E16	3980	8.350E12		
	Total	3.614E16	3985			

a. Predictors: (Constant), Total Number Of Board Seats Directors Excl CEO, Chairmanship, Percentage Of Female Board Members, Number Of Board Members, Number Of Female Board Members

b. Dependent Variable: Grant Date Fair Value of Options Granted

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-13545.502	269568.163		-.050	.960
	Number Of Female Board Members	284585.200	203941.182	.097	1.395	.163
	Percentage Of Female Board Members	-2201877.562	1887759.560	-.072	-1.166	.244
	Chairmanship	52095.485	91840.612	.009	.567	.571
	Number Of Board Members	18363.687	31038.073	.015	.592	.554
	Total Number Of Board Seats Directors Excl CEO	138534.690	9740.621	.254	14.222	.000

a. Dependent Variable: Grant Date Fair Value of Options Granted

### 3.3.6 Total compensation MRM 1

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.406 <sup>a</sup>	.165	.164	6.0842E6

a. Predictors: (Constant), Total Number Of Board Seats Directors Excl CEO, Chairmanship, Percentage Of Female Board Members, Number Of Board Members, Number Of Female Board Members

b. Dependent Variable:

TotalCompensationSalaryBonusOtherAnnualRestrictedStockGrantsLTIPP

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.911E16	5	5.822E15	157.291	.000 <sup>a</sup>
	Residual	1.473E17	3980	3.702E13		
	Total	1.764E17	3985			

a. Predictors: (Constant), Total Number Of Board Seats Directors Excl CEO, Chairmanship, Percentage Of Female Board Members, Number Of Board Members, Number Of Female Board Members

b. Dependent Variable: TotalCompensationSalaryBonusOtherAnnualRestrictedStockGrantsLTIPP

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	362937.436	567564.984		.639	.523
	Number Of Female Board Members	969833.699	429390.001	.150	2.259	.024
	Percentage Of Female Board Members	-7030850.538	3974602.249	-.104	-1.769	.077
	Chairmanship	770307.761	193366.735	.058	3.984	.000
	Number Of Board Members	121231.157	65349.422	.044	1.855	.064
	Total Number Of Board Seats Directors Excl CEO	408445.405	20508.488	.339	19.916	.000

a. Dependent Variable: TotalCompensationSalaryBonusOtherAnnualRestrictedStockGrantsLTIPP

### 3.4 Dependent variables outputs in Multiple Regression Model 2

#### 3.4.1 Salary MRM 2

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.535 <sup>a</sup>	.286	.282	303717.8260

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Number Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO, Percentage Of Female Board Members

b. Dependent Variable: Salary

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.012E13	11	6.374E12	69.103	.000 <sup>a</sup>
	Residual	1.753E14	1900	9.224E10		
	Total	2.454E14	1911			

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Number Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO, Percentage Of Female Board Members

b. Dependent Variable: Salary

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-201041.614	80009.294		-2.513	.012
	Number Of Female Board Members	-32176.420	32541.158	-.087	-.989	.323
	Percentage Of Female Board Members	548606.824	288967.228	.152	1.899	.058
	Chairmanship	66612.990	14894.957	.093	4.472	.000
	Number Of Board Members	24535.941	4679.841	.160	5.243	.000
	Total Number Of Board Seats Directors Excl CEO	8335.264	1788.042	.115	4.662	.000
	Index_scale	136038.045	10129.397	.309	13.430	.000
	ExecutivesAge	6541.830	996.014	.137	6.568	.000
	Gender_code	6337.358	43329.233	.003	.146	.884
	Percentage Shares Owned By CEO	-1900.758	3726.000	-.010	-.510	.610
	CEO Other Seats	21881.341	10045.494	.044	2.178	.030
	Number Of CEO Title Holding Directors	-4224.591	10133.536	-.009	-.417	.677

a. Dependent Variable: Salary

## 3.4.2 Bonus MRM 2

Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.142 <sup>a</sup>	.020	.015	1.7816E6

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Number Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO, Percentage Of Female Board Members

b. Dependent Variable: Bonus

ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.245E14	11	1.132E13	3.566	.000 <sup>a</sup>
	Residual	6.031E15	1900	3.174E12		
	Total	6.155E15	1911			

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Number Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO, Percentage Of Female Board Members

b. Dependent Variable: Bonus

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1367925.499	469339.321		-2.915	.004
	Number Of Female Board Members	-50998.291	190888.385	-.027	-.267	.789
	Percentage Of Female Board Members	-101247.444	1695099.107	-.006	-.060	.952
	Chairmanship	-86455.703	87374.710	-.024	-.989	.323
	Number Of Board Members	4374.594	27452.228	.006	.159	.873
	Total Number Of Board Seats Directors Excl CEO	9054.974	10488.764	.025	.863	.388
	Index_scale	204180.693	59419.653	.093	3.436	.001
	ExecutivesAge	21335.411	5842.679	.089	3.652	.000
	Gender_code	63011.395	254171.883	.006	.248	.804
	Percentage Shares Owned By CEO	60095.218	21856.942	.066	2.749	.006
	CEO Other Seats	-103103.568	58927.472	-.041	-1.750	.080
	Number Of CEO Title Holding Directors	-67423.416	59443.931	-.028	-1.134	.257

a. Dependent Variable: Bonus

### 3.4.3 Current compensation MRM 2

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.209 <sup>a</sup>	.044	.038	1.8182E6

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Number Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO, Percentage Of Female Board Members

b. Dependent Variable: Total Current Compensation (Salary And Bonus)

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.869E14	11	2.608E13	7.889	.000 <sup>a</sup>
	Residual	6.281E15	1900	3.306E12		
	Total	6.568E15	1911			

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Number Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO, Percentage Of Female Board Members

b. Dependent Variable: Total Current Compensation (Salary And Bonus)

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1568967.113	478965.010		-3.276	.001
	Number Of Female Board Members	-83174.711	194803.319	-.043	-.427	.669
	Percentage Of Female Board Members	447359.381	1729863.927	.024	.259	.796
	Chairmanship	-19842.713	89166.679	-.005	-.223	.824
	Number Of Board Members	28910.535	28015.246	.036	1.032	.302
	Total Number Of Board Seats Directors Excl CEO	17390.238	10703.878	.047	1.625	.104
	Index_scale	340218.738	60638.292	.150	5.611	.000
	ExecutivesAge	27877.241	5962.507	.112	4.675	.000
	Gender_code	69348.753	259384.699	.006	.267	.789
	Percentage Shares Owned By CEO	58194.460	22305.206	.062	2.609	.009
	CEO Other Seats	-81222.227	60136.017	-.032	-1.351	.177
	Number Of CEO Title Holding Directors	-71648.006	60663.068	-.029	-1.181	.238

a. Dependent Variable: Total Current Compensation (Salary And Bonus)

### 3.4.4 Stock compensation MRM 2

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.239 <sup>a</sup>	.057	.052	3.0413E6

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Number Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO, Percentage Of Female Board Members

b. Dependent Variable: Grant Date Fair Value of Stock Awarded

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.068E15	11	9.712E13	10.500	.000 <sup>a</sup>
	Residual	1.757E16	1900	9.249E12		
	Total	1.864E16	1911			

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Number Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO, Percentage Of Female Board Members

b. Dependent Variable: Grant Date Fair Value of Stock Awarded

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-409893.588	801172.634		-.512	.609
	Number Of Female Board Members	109621.298	325850.709	.034	.336	.737
	Percentage Of Female Board Members	-1556207.332	2893571.784	-.050	-.538	.591
	Chairmanship	178882.718	149150.568	.029	1.199	.231
	Number Of Board Members	-67553.464	46861.562	-.050	-1.442	.150
	Total Number Of Board Seats Directors Excl CEO	63264.070	17904.553	.101	3.533	.000
	Index_scale	716183.090	101430.666	.187	7.061	.000
	ExecutivesAge	1053.033	9973.583	.003	.106	.916
	Gender_code	512993.873	433877.043	.028	1.182	.237
	Percentage Shares Owned By CEO	-25350.026	37310.284	-.016	-.679	.497
	CEO Other Seats	5891.236	100590.503	.001	.059	.953
	Number Of CEO Title Holding Directors	26483.885	101472.109	.006	.261	.794

a. Dependent Variable: Grant Date Fair Value of Stock Awarded



### 3.4.5 Options compensation MRM 2

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.292 <sup>a</sup>	.085	.080	2.9799E6

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Number Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO, Percentage Of Female Board Members

b. Dependent Variable: Grant Date Fair Value of Options Granted

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.568E15	11	1.425E14	16.049	.000 <sup>a</sup>
	Residual	1.687E16	1900	8.880E12		
	Total	1.844E16	1911			

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Number Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO, Percentage Of Female Board Members

b. Dependent Variable: Grant Date Fair Value of Options Granted

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1515758.805	785014.412		-1.931	.054
	Number Of Female Board Members	284855.740	319278.882	.089	.892	.372
	Percentage Of Female Board Members	-2391087.929	2835213.609	-.077	-.843	.399
	Chairmanship	-131676.952	146142.467	-.021	-.901	.368
	Number Of Board Members	-29484.629	45916.448	-.022	-.642	.521
	Total Number Of Board Seats Directors Excl CEO	81752.957	17543.450	.131	4.660	.000
	Index_scale	850553.617	99384.990	.223	8.558	.000
	ExecutivesAge	15379.271	9772.433	.037	1.574	.116
	Gender_code	232393.798	425126.518	.013	.547	.585
	Percentage Shares Owned By CEO	47242.924	36557.802	.030	1.292	.196
	CEO Other Seats	-131920.299	98561.772	-.031	-1.338	.181
	Number Of CEO Title Holding Directors	-142526.174	99425.598	-.034	-1.433	.152

a. Dependent Variable: Grant Date Fair Value of Options Granted

### 3.4.6 Total compensation MRM 2

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.426 <sup>a</sup>	.182	.177	5.5333E6

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Number Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO, Percentage Of Female Board Members

b. Dependent Variable:

TotalCompensationSalaryBonusOtherAnnualRestrictedStockGrantsLTIPP

P

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.292E16	11	1.174E15	38.354	.000 <sup>a</sup>
	Residual	5.817E16	1900	3.062E13		
	Total	7.109E16	1911			

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Number Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO, Percentage Of Female Board Members

b. Dependent Variable: TotalCompensationSalaryBonusOtherAnnualRestrictedStockGrantsLTIPP

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4751207.657	1457663.648		-3.259	.001
	Number Of Female Board Members	780794.323	592856.911	.124	1.317	.188
	Percentage Of Female Board Members	-6442203.537	5264601.192	-.105	-1.224	.221
	Chairmanship	130667.342	271366.434	.011	.482	.630
	Number Of Board Members	-87090.715	85260.520	-.033	-1.021	.307
	Total Number Of Board Seats Directors Excl CEO	200115.850	32575.770	.163	6.143	.000
	Index_scale	2464368.499	184544.239	.329	13.354	.000
	ExecutivesAge	62710.054	18146.063	.077	3.456	.001
	Gender_code	756340.769	789401.394	.021	.958	.338
	Percentage Shares Owned By CEO	89245.190	67882.804	.029	1.315	.189
	CEO Other Seats	-215332.014	183015.636	-.025	-1.177	.240
	Number Of CEO Title Holding Directors	-161736.132	184619.642	-.020	-.876	.381

a. Dependent Variable: TotalCompensationSalaryBonusOtherAnnualRestrictedStockGrantsLTIPP

### 3.5 Dependent variables outputs in Multiple Regression Model 3

#### 3.5.1 Salary MRM 3

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.534 <sup>a</sup>	.285	.282	303716.0453

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Percentage Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.003E13	10	7.003E12	75.916	.000 <sup>a</sup>
	Residual	1.754E14	1901	9.224E10		
	Total	2.454E14	1911			

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Percentage Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO

b. Dependent Variable: Salary

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-176751.452	76144.305		-2.321	.020
	Percentage Of Female Board Members	273083.166	76536.990	.076	3.568	.000
	Chairmanship	66181.331	14888.471	.092	4.445	.000
	Number Of Board Members	21484.378	3518.013	.140	6.107	.000
	Total Number Of Board Seats Directors Excl CEO	8215.928	1783.954	.114	4.605	.000
	Index_scale	135349.049	10105.343	.308	13.394	.000
	ExecutivesAge	6524.051	995.846	.136	6.551	.000
	Gender_code	9498.679	43210.864	.004	.220	.826
	Percentage Shares Owned By CEO	-1821.802	3725.123	-.010	-.489	.625
	CEO Other Seats	22233.434	10039.122	.045	2.215	.027
	Number Of CEO Title Holding Directors	-4534.598	10128.626	-.009	-.448	.654

a. Dependent Variable: Salary

## 3.5.2 Bonus MRM 3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.142 <sup>a</sup>	.020	.015	1.7812E6

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Percentage Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO

ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.243E14	10	1.243E13	3.918	.000 <sup>a</sup>
	Residual	6.031E15	1901	3.173E12		
	Total	6.155E15	1911			

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Percentage Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO

b. Dependent Variable: Bonus

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1329426.601	446560.570		-2.977	.003
	Percentage Of Female Board Members	-537941.006	448863.538	-.030	-1.198	.231
	Chairmanship	-87139.864	87315.840	-.024	-.998	.318
	Number Of Board Members	-462.008	20631.955	.000	-.022	.982
	Total Number Of Board Seats Directors Excl CEO	8865.831	10462.287	.025	.847	.397
	Index_scale	203088.662	59264.415	.092	3.427	.001
	ExecutivesAge	21307.233	5840.300	.089	3.648	.000
	Gender_code	68021.958	253417.088	.006	.268	.788
	Percentage Shares Owned By CEO	60220.361	21846.584	.066	2.757	.006
	CEO Other Seats	-102545.514	58876.054	-.041	-1.742	.082
	Number Of CEO Title Holding Directors	-67914.764	59400.960	-.028	-1.143	.253

a. Dependent Variable: Bonus

### 3.5.3 Current compensation MRM 3

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.209 <sup>a</sup>	.044	.039	1.8178E6

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Percentage Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.863E14	10	2.863E13	8.663	.000 <sup>a</sup>
	Residual	6.281E15	1901	3.304E12		
	Total	6.568E15	1911			

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Percentage Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO

b. Dependent Variable: Total Current Compensation (Salary And Bonus)

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1506178.053	455732.391		-3.305	.001
	Percentage Of Female Board Members	-264857.840	458082.660	-.014	-.578	.563
	Chairmanship	-20958.533	89109.203	-.006	-.235	.814
	Number Of Board Members	21022.370	21055.711	.026	.998	.318
	Total Number Of Board Seats Directors Excl CEO	17081.759	10677.170	.046	1.600	.110
	Index_scale	338437.710	60481.635	.149	5.596	.000
	ExecutivesAge	27831.285	5960.253	.112	4.669	.000
	Gender_code	77520.637	258621.972	.007	.300	.764
	Percentage Shares Owned By CEO	58398.559	22295.287	.062	2.619	.009
	CEO Other Seats	-80312.080	60085.298	-.031	-1.337	.182
	Number Of CEO Title Holding Directors	-72449.362	60620.985	-.029	-1.195	.232

a. Dependent Variable: Total Current Compensation (Salary And Bonus)

### 3.5.4 Stock compensation MRM 3

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.239 <sup>a</sup>	.057	.052	3.0406E6

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Percentage Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.067E15	10	1.067E14	11.544	.000 <sup>a</sup>
	Residual	1.757E16	1901	9.245E12		
	Total	1.864E16	1911			

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Percentage Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO

b. Dependent Variable: Grant Date Fair Value of Stock Awarded

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-492647.326	762297.185		-.646	.518
	Percentage Of Female Board Members	-617530.475	766228.446	-.020	-.806	.420
	Chairmanship	180353.328	149051.715	.029	1.210	.226
	Number Of Board Members	-57157.144	35219.593	-.043	-1.623	.105
	Total Number Of Board Seats Directors Excl CEO	63670.634	17859.553	.101	3.565	.000
	Index_scale	718530.421	101166.783	.188	7.102	.000
	ExecutivesAge	1113.603	9969.631	.003	.112	.911
	Gender_code	502223.621	432593.350	.027	1.161	.246
	Percentage Shares Owned By CEO	-25619.021	37293.013	-.016	-.687	.492
	CEO Other Seats	4691.695	100503.836	.001	.047	.963
	Number Of CEO Title Holding Directors	27540.044	101399.872	.007	.272	.786

a. Dependent Variable: Grant Date Fair Value of Stock Awarded

## 3.5.5 Options compensation MRM 3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.291 <sup>a</sup>	.085	.080	2.9798E6

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Percentage Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO

ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.561E15	10	1.561E14	17.577	.000 <sup>a</sup>
	Residual	1.688E16	1901	8.879E12		
	Total	1.844E16	1911			

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Percentage Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO

b. Dependent Variable: Grant Date Fair Value of Options Granted

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1730798.016	747057.206		-2.317	.021
	Percentage Of Female Board Members	48104.968	750909.873	.002	.064	.949
	Chairmanship	-127855.507	146071.847	-.021	-.875	.382
	Number Of Board Members	-2469.337	34515.476	-.002	-.072	.943
	Total Number Of Board Seats Directors Excl CEO	82809.431	17502.501	.132	4.731	.000
	Index_scale	856653.260	99144.239	.225	8.640	.000
	ExecutivesAge	15536.664	9770.317	.037	1.590	.112
	Gender_code	204406.828	423944.867	.011	.482	.630
	Percentage Shares Owned By CEO	46543.928	36547.445	.029	1.274	.203
	CEO Other Seats	-135037.360	98494.545	-.031	-1.371	.171
	Number Of CEO Title Holding Directors	-139781.699	99372.668	-.033	-1.407	.160

a. Dependent Variable: Grant Date Fair Value of Options Granted

### 3.5.6 Total compensation MRM 3

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.425 <sup>a</sup>	.181	.177	5.5344E6

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Percentage Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.286E16	10	1.286E15	41.999	.000 <sup>a</sup>
	Residual	5.823E16	1901	3.063E13		
	Total	7.109E16	1911			

a. Predictors: (Constant), Number Of CEO Title Holding Directors, Gender\_code, ExecutivesAge, Percentage Shares Owned By CEO, CEO Other Seats, Percentage Of Female Board Members, Chairmanship, Index\_scale, Number Of Board Members, Total Number Of Board Seats Directors Excl CEO

b. Dependent Variable: TotalCompensationSalaryBonusOtherAnnualRestrictedStockGrantsLTIPP

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-5340633.713	1387524.755		-3.849	.000
	Percentage Of Female Board Members	243664.771	1394680.393	.004	.175	.861
	Chairmanship	141141.985	271302.254	.012	.520	.603
	Number Of Board Members	-13041.351	64106.306	-.005	-.203	.839
	Total Number Of Board Seats Directors Excl CEO	203011.665	32507.757	.165	6.245	.000
	Index_scale	2481087.720	184142.641	.332	13.474	.000
	ExecutivesAge	63141.469	18146.611	.077	3.480	.001
	Gender_code	679628.019	787401.546	.019	.863	.388
	Percentage Shares Owned By CEO	87329.230	67880.323	.028	1.287	.198
	CEO Other Seats	-223875.930	182935.950	-.026	-1.224	.221
	Number Of CEO Title Holding Directors	-154213.481	184566.906	-.019	-.836	.404

a. Dependent Variable: TotalCompensationSalaryBonusOtherAnnualRestrictedStockGrantsLTIPP



## 4 Literature Summary

Author, Title, Published year	Object of study	Sample	Methodology	Results
<b>Adams &amp; Ferreira</b> <i>“Women in the boardroom and their impact on governance and performance”</i> May 2009	Effect of female board members on governance mechanisms and board quality	1.939 U.S. listed companies 86.714 directors 1996-2003	Multiple regression model to test board inputs, board-level governance and company performance	Test results show that gender diversity has significant effects on board inputs. Women have less attendance problems and are more likely to participate in monitoring activities. More gender diversity in the board leads to higher equity payouts for the CEO, as well as for the directors. The diversity in the board, on average, shows a negative relation with firm performance, measured using Tobin’s Q and ROA. Increasing the gender diversity of the board could increase shareholder value, if the monitoring improves. If the governance is already strong, increasing the diversity would diminish shareholder value.
<b>Adler</b> <i>“Global managers: no longer men alone”</i> August 2002	Acquirement of females managers and perception by companies	Non empirical research	Theoretical model to assess the different kind of approaches and assumptions	Companies and governments are increasingly adding females to their top management. The perception of the value added by the females, dictates the treatment of the differences that are apparent between men and women. Mostly, one set of assumptions dominates, but as experience lacks, most of the time the decisions are based on managers’ perceptions. Theoretically, the companies can cope with the differences in four alternative ways. Either by identifying women to men, identifying to women, ignore differences or create synergy. Only creating synergy will be the most profitable for companies as the different needs of men and women are leveraged and can add value.
<b>Bell</b>	Gender gap in top executive jobs and the	2.194 firms	Regression analysis to compare executive	Top women executives are paid less than their male counterparts, although the gap was

<b><i>“Women-Led Firm’s and the Gender Gap in Top Executive Jobs”</i></b>	effect of high ranked women on other female executive’s compensation.	25.529 observations (1.369 subsample) 1992-2003 timespan	compensation values of female executives with and without female board members.	significantly larger for the time period ’92-’97 suggesting a narrowing of the gap. Female executive compensation positively correlates with female influence on the board. This could be explained by the fact that women prefer to work with women, the diminishing treatment differences between man/woman as women advance through the ranks, mentoring of women and preference for women due to social ties. Women-led firms are evident in compensating and representing women better than men-led firms.
July 2005				
<b>Campbell &amp; Minguez-Vera</b> <b><i>“Gender Diversity in the Boardroom and Firm Financial Performance”</i></b>	Gender board diversity in relation to firm performance	Spain 68 companies 408 observations 1995-2000	Panel data analysis, regression model, using Tobin’s Q as a measure for firm value and ‘variety’ and ‘balance’ as measures for diversity	The first test shows that the percentage of women positively and significantly relates to the approximation of Tobin’s Q. Firm leverage doesn’t have a significant effect on Tobin’s Q (firm value), ROA does, and firm size has a negative effect. Firm value doesn’t impact the % of women on board, nor does firm size, but the size of the board does. The presence of women doesn’t have an effect on the firm value and vice versa. This would imply that the presence of female board members doesn’t affects firm value. Firm size negatively correlates with female-presence, which is in contrast to the expectations. The value of a company also doesn’t influence the board diversity, contradictory, firm value is positively influenced by board diversity! The results suggest that increasing gender diversity can be accomplished without destroying, but contrary could well create shareholder value.
December 2008				
<b>Campbell &amp; Minguez-Vera</b> <b><i>“Female board appointments and firm valuation: short and long-”</i></b>	Gender board diversity and firm performance, long and short term effects of female appointments	Spain 47 appointments 1995-2000	Event study for stock changes and regression model for measuring long-term effect, panel data to estimate female	When a new board member is female, the stock markets react positively, suggesting that investors think this is a value added occasion. The regression results show that on the long run, this appointing of females correlates with an

<i>term effects”</i>			influence	improved firm performance over a sustained period. The CEO/Chairman duality shows a negative coefficient, suggesting that these persons can control information, thereby disabling other board members to effectively perform their monitoring tasks.
Feb 2010				
<b>Cyert et al.</b>	Executive compensation and the effect of self-interested Board of Directors, and external takeover as substitute for managerial control	4.865 population 1.648 firms 1992-1993	Theoretical analysis and empirically testing using Pearson and Spearman correlation tests for key variables.	Results show that external takeover threats play a role in executive compensation, which could help explain the increase in compensation levels following the passage of antitakeover legislation. Director ownership dominates board size when it comes to compensation influence significance. Consistently with previous studies, the firm size is the greatest explanatory variable for all forms of executive compensation. Not previously documented in the literature: firm risk is strongly positively related to both the incentive and non-incentive compensation components. Largest shareholder coefficient is significant with large companies, CEO ownership positively correlates with base salary in small firms.
<i>“Corporate Governance, Takeovers, and Top-Management Compensation: Theory and Evidence”</i>				
April 2002				
<b>Du Rietz and Henrekson</b>	The female performance figures in comparison to their male counterparts	4200 Swedish entrepreneurs 405 females	Multivariate regression analysis to test 4 performance measures	On an aggregate level, the females do show under-performance in comparison to their male counterparts. However, when correcting for firm industry and size, the only measure that remains significantly different is the sales measure. Considering the fact that the profitability measure isn't different, the differences between female entrepreneurs and male entrepreneurs are more likely to be clarified using company and industry specific characteristics. The results of the test don't support the thesis of female underperformance.
<i>“Testing the Female Underperformance Hypothesis”</i>				
October 1999				
<b>Erhardt et al.</b>	The relation between demographic diversity and	127 U.S. companies	Regression analysis of percentage of females	Theoretically, the results should suggest that the diversity of the board is associated with the

<p><b>“Board of Directors Diversity and Firm Performance”</b></p> <p>April 2003</p>	<p>firm performance</p>	<p>1993 &amp; 1998</p>	<p>and minorities and financial indicators of firm performance</p>	<p>effectiveness of the oversight function of the board. The diverse group dynamics that arise from a better diversified board allow a broader range of opinions and is likely to have a positive impact on the controlling function of the board, thereby improving the agency issues. Test results show that companies which have better diversified boards, have a positive association with ROA and ROI as performance indicators.</p>
<p><b>Ertac and Szentes</b></p> <p><b>“The effect on gender differences in competitiveness: experimental evidence”</b></p> <p>February 2011</p>	<p>The differences in gender when choosing to compete in a competitive environment</p>	<p>148 US students 74 women 74 men</p>	<p>Experimental model</p>	<p>The students were asked to choose between a tournament entry and a piece-rate setup. When no information was provided, the females significantly opted less for the competitive environment. Once information on other people’s results was given, the females were evenly attracted to the competitive environment. Within the competition, the performance levels are higher than within the piece-rate setup and in both environments, the difference in performance between men and women is negligible.</p>
<p><b>Fahlenbrach</b></p> <p><b>“Shareholder rights, Boards, and CEO compensation”</b></p> <p>May 2008</p>	<p>The role of CEO compensation in corporate governance</p>	<p>11,029 CEO years 1993-2004</p>	<p>Regression analysis of the pay-for-performance sensitivity and total compensation on governance characteristics</p>	<p>What hypothesis is most supported by the regression analysis? <i>Substitution</i>: strong governance equals low pay-for-performance sensitivity, since excess compensation under a weak governance aligns the interests of CEO and shareholders. <i>Entrenchment</i>: a low level of governance and also a low pay-for-performance sensitivity, since risk-averse managers will reduce their exposure to the firm’s stock price. <i>Complementary</i>: strong governance may lead to high pay-for-performance, since good governance like monitoring is needed to execute a correct pay-for-performance mechanism. Firms with governance mechanisms that give more power to management tend to have greater pay-for-performance sensitivity (agency theory). And</p>

				although the index of shareholder rights doesn't correlate with the pay-for-performance sensitivity and CEO compensation as expected under the entrenchment hypothesis, test results partly support this hypothesis. The evidence overall suggests that entrenched managers don't influence their sensitivity and total pay.
<b>Farrell and Hersch</b>  <i>"Additions to corporate boards: the effect of gender"</i>  November 2005	The likelihood of female director entrance on corporate boards	Fortune & Service 500 companies (U.S.)  266 firms  1990-1999	Event study for announcements of new female directors	The results show that the growing population of female board directors over the measured decade, wasn't performance based, but more likely to be a response of companies on the internal/external call for diversity. Women seem to function on boards of better performing firms and the announcement of woman being added to a board, seems to trigger insignificant abnormal returns. The likelihood of a women being added to a board, decreases when there is already a women on the board.
<b>Felo</b>  <i>"Ethics Programs, Board Involvement, and Potential Conflict of Interest in Corporate Governance"</i>  August 2001	Ethics programs, the board involvement therein and the potential conflicts of interest	1995-1996  136 firms	Analysis of covariance using ANCOVA model to test the effect of ethics program on compensation while correcting for firm size	Firms in which the boards are more actively involved in ethics programs, have a higher percentage of independent board members. Active firms are more likely to compensate outside directors with equity. Insider participation on compensation committees isn't significant between ethics-program active and non-active. The existence of an ethics program alone isn't related to potential conflicts of interest, but combined with active oversight, the supplemental analysis shows that it is related to a lower incidence of conflicts in the corporate governance structures. Shareholders could therefore benefit from such a combination of an ethics program an oversight.
<b>Frydman and Jenter</b>  <i>"CEO compensation"</i>	The development of CEO pay and the relation between pay and firm	US market, publicly listed companies.	Literature review	CEO pay grew rapidly in the mid 70's till the 90's, faster than other executives' pay. Stock options were becoming a greater proportion of the total

<b>September 2010</b>	performance.	Papers used on: <ul style="list-style-type: none"> <li>• Level and structure of CEO pay</li> <li>• Relation CEO pay and firm performance</li> <li>• Effects of CEO pay on firm behavior</li> </ul>		compensation. Average pay declined in 2001-2008. Although previous studies have shown the predicted relation between executive pay to stock price performance, this underestimates the short term goals in managerial incentives. This incentive increased over the last decades, most steep in the 90's. Managerial power and competitive market are both important forces that determine CEO pay, but empirically, none is exclusive. There's enough literature that discusses CEO compensation and portfolio incentives in relation to corporate behavior, but measuring causality is extremely difficult.
<b>Gayle et al.</b>  <i>"Gender Differences in Executive Compensation and Job Mobility"</i>  <b>January 2010</b>	The promotion and compensation rates of female vs. male executives, job mobility and attrition rates.	2.818 firms (1.800 subsample)  162.592 observations (71.803 subsample) (16.300 subsample)  1992-2006 period	Multinomial logit model to address rank and employment transitions, regression models on compensation.	Women work longer for one firm, but attrit faster, therefore have a lower average age. They consequently have fewer executive experience and earn lower salaries and compensation, but are a little more likely to have a higher education. The promotion rates are identical, but at the higher ranks the external transition differs between males/females. The authors interpret aforementioned as the glass ceiling. On conclusion it shows that given background and rank, women earn more than men. Aggregate differences observed in the executive market between genders are driven by factors other than compensation packages and promotion opportunities.
<b>Ghosh and Sirmans</b>  <i>"On REIT CEO Compensation: Does Board Structure Matter?"</i>  <b>April 2005</b>	Structure of REIT board's and CEO compensation	330 firms  1998-2000	Correlation analysis between CEO compensation and economic / structure variables.  Two-Stage Least Squares to estimate association	The rise of pay-for-performance contracts created the potential to persevere self-serving incentives. To protect shareholder value by appointing and monitoring the CEO, the board has a critical role. However, the structure of the board as well as the nomination of the CEO leaves a lot to be desired. Board independency is compromised due to interlock and CEO chairmanship. Busy and older directors have less

				time and/or incentives to be critical. This research shows that CEO compensation positively relates with the company's ROA, larger companies pay more and large boards and/or with older board members tend to be more generous. Non-affiliated members impact compensation <u>positive</u> , which is unexpected. Blockholders diminish pay, which is as expected. CEO power in controlling the board selection reflects in setting CEO pay, therefore independent board members will have little effect.
<b>Gill and Prowse</b>  <i>"Gender Differences and Dynamics in Competition: The Role of Luck"</i>  June 2010	Gender differences in competitive environment	120 participants  58 second movers  6 sessions	Experimental simulation	Having people matched and work out a cooperative task, the assessment of loss or win is analyzed. The females tend to be more sensitive for losses as they lower their efforts after a loss, whereas men only lower their efforts after suffering a big loss. Women also don't seem to like winning big prizes, on which could be concluded that women are more competition (risk) averse than men.
<b>Guthrie et al.</b>  <i>"Are Women 'Better' than Men? Personality Differences and expatriate selection"</i>  April 2003	Personal perception of female qualities in selection expatriate candidates	1080 participants  US students	Simulation model	The five personality dimensions are used to simulate a model in which the participants have to value the person specific qualities of males and females in order to select the appropriate person for the hypothetical expatriate job. These selection criteria seem to favor the women, as they are acknowledged as better candidates for the job. However, reality shows that females are underrepresented in these kind of jobs. Could this be due to the fact that women don't personally prefer this kind of work? Or perhaps companies are reluctant to choose women as the function's environment won't accept women?
<b>Harris and Jenkins</b>	Gender impact on risk assessment	657 subjects 389 females	Survey	Male and female students were asked to assess their likeliness to participate in four different

<p><b>“Gender Differences in Risk Assessment: Why do Women Take Fewer Risks than Men?”</b></p>	<p>268 males US students</p>	<p>July 2006</p>		<p>kind of risky activities (gambling, health, recreation, and social) and try to express an estimate on the possible negative outcome occurrence, the impact of a possible negative outcome and the satisfaction when fulfilling such an activity and success is achieved. The women perceived a greater chance of negative outcomes and they expected less of a satisfaction, causing them to show a lower propensity towards gambling, recreation and health. In social risks, the genders did not differ from each other. On the fifth (extra) domain, where high potential payoffs and low fixed costs were presented, the females engaged more than men.</p>
<p><b>Huse et al.</b> <b>“Women and Employee-Elected Board Members, and Their Contributions to Board Control Tasks”</b></p>	<p>The effect of employee-elected board members and female board members on the effectiveness of the board</p>	<p>Norwegian survey data 840 respondents 212 employee-elected 186 woman 2006</p>	<p>Multiple linear regression model</p>	<p>The survey results show that the level of CSR relates to the employee-elected and/or female board members. The findings indicate that these two kinds of board members can contribute to board effectiveness, albeit that the effect is sensitive for real diversity of the board, instead of just a demographic diversity. Besides CSR, strategic and budget control, a seven-point Likert scale is validated for behavioral control. Three items that scaled behavioral control are; evaluation of CEO behavior, evaluation of CEO compensation, evaluation of compensation systems for the top management team. Employee-elected board members positively influence CSR and strategic control, but not budget or behavioral. The two variables on female board members turned out insignificant in <u>all</u> equations! However a positive relation does exist between ratio of female board members and behavioral control.</p>
<p><b>November 2009</b></p>				
<p><b>Khan et al.</b></p>	<p>The intervening variables that determine personal</p>	<p>406 employees</p>	<p>Questionnaire</p>	<p>The researchers use three intervening variables namely; respect and fairness in the workplace,</p>



<p><b><i>“An exploratory study of the effects of diversity dimensions and intervening variables on attitudes to diversity”</i></b></p> <p><b>May 2010</b></p>	<p>attitudes on diversity</p>	<p>10 organizations UAE vested companies</p>	<p>Multiple regression model to test factor analysis components with response data</p>	<p>levels of commitment and levels of frustration. They associate these outcomes with the person’s age, sex and nationality. There wasn’t a clear link between the intervening variables and the personal characteristics. However, the intervening variables are a good indicator for a person his/her personal attitude towards diversity. Whether this relation is causal, can’t be answered with the gained data from the questionnaire and could be investigated on more.</p>
<p><b>Laux and Laux</b></p> <p><b><i>“Board Committees, CEO Compensation and Earnings Management”</i></b></p> <p><b>May 2009</b></p>	<p>Board strategies in setting of and overseeing on CEO compensation schemes</p>	<p>Non-empirical, they use previous studies to analyze the relations between board / committees and their characteristics.</p>	<p>Theoretical model to calculate the equilibrium, benchmark case to underlie the unobservable monitoring activities</p>	<p>The focus is on responsibility for setting the compensation scheme and overseeing the financial reporting process. When the pay-for-performance sensitivity increases, the audit committee’s incentive to engage monitoring is positively affected, since it’s the audit committees responsibility to detect and prevent earnings management. The model as stated predicts that with a higher degree of separation of tasks (setting and monitoring), the incentive schemes are more powerful and board oversight increases. An increase in stock compensation doesn’t necessarily lead to more earnings management. A positive level of separation on boards from the perspective of shareholders is therefore always beneficial, regardless whether this leads to less / more earnings management.</p>
<p><b>Perel</b></p> <p><b><i>“An Ethical Perspective on CEO Compensation”</i></b></p> <p><b>Dec 2003</b></p>	<p>CEO compensation, pro’s and con’s</p>	<p>Non-empirical, the author uses several papers to confirm and/or address the examination of this subject</p>	<p>Theoretical review of past researches</p>	<p>The relation between the board and the CEO needs to become more transparent in order to restore trust issues. No research could find a clear relation between company performance and CEO pay, suggesting that only a small portion of CEO pay is accounted for by performance related metric’s. Although it is a correct assumption to make that a CEO is worth whatever the employer is willing to pay for</p>

				him/her, in practice however it seems that those who pay for the CEO aren't close enough to influence the payment setting process. Setting up stock incentives to align CEO interest's with shareholder interest could cause several unintended side effects, such as self-enrichment. Currently, reforms are being made, but it is uncertain if these will have any effect if this responsibility rests with those who benefit the most from weaknesses in the system.
<b>Rose</b>  <i>“Does female board representation influence firm performance? The Danish evidence”</i>  <b>March 2007</b>	Board diversity and the impact on firm performance	All Danish firms with some exclusions  443 observations  1998-2001	Regression analysis with Tobin's Q as dependent variable	Several arguments can be made why a higher degree of board diversity positively influences firm performance. It attracts better candidates for job applications, it increases the internal labor market competitiveness, and gives a positive signal to external stakeholders. Results on previous research show that; greater diversity is appreciated by shareholders and rewarded accordingly, yet the increase in female board members isn't due to a greater pool of female candidates. Other researches show that a higher degree of board diversity is associated with superior performance and that stock market volatility is lower with a greater proportion of female board members. The results of Rose however show that no connection was found between female board members and (greater) firm performance and this is explained by the social aspect of conforming to existing board members practices in order to gain board position.
<b>Sheridan and Milgate</b>  <i>“Assessing Board Positions: a comparison of female and male board members' view”</i>	Factor's that male board members and female board members account for their nomination	Australian board members  47 female respondents 47 male respondents	Survey research based on questionnaire response	While male and female board members both consider a strong track record, good understanding of business principles and business contacts as prerequisites, women also mentioned visibility and family contacts, whereas men don't. Integrity is mentioned by 6% of the

<b>November 2005</b>		2000-2001		men, 0% of the women. The importance of networks must be considered since previous researches show that women face a disadvantage. Considering aforementioned and the low response rate of the male participants, it's unlikely to expect a significant change in the gender profiles of Australian boards in the nearby future since women might be invisible to those men currently gatekeeping board positions.
<b>Yermack</b> <i>"Board Members and Company Value"</i> <b>March 2006</b>	Research survey on the value of individual board members on company value	Papers used to analyze reaction on:  Board changes Board interlock Quality of Board appointments	Literature review	Research shows that investors are aware of the fact that an individual board member can add/delete value of a company. When new information about the directors hit the market, investors revalue the shares and a connection between director qualification and share value seems more plausible due to recent research. Strong active expertise board members generally lead to a reward by the investors. Firm value can be (significantly) influenced if a new board member is appointed with CEO influence, the number of boards an (exiting) executive is active in, his/her accounting financial qualifications, or that he/she is already a CEO. Recent trends show that new directors are more independent, have better accounting financial qualifications and more of them are female.
<b>Wang &amp; Clift</b> <i>"Is there a 'business case' for board diversity?"</i> <b>May 2009</b>	Relationship between board diversity (female/minority) on firm financial performance	Australian listed companies in 2003  243 firms  2000-2006 timespan for performance figures	Regression test, board diversity as dependent variable	Based on the results, no strong relation could be found between racial diversity and/or the presence of female board members on the financial performance. As other researchers state, this could be due to the fact that one or two female board member(s) is ineffective. Another reason that can explain the weak relation is the socializing effect of minority board members with the conventional board members. The authors state that a negative relation also

				doesn't exist, ergo the diversification of the board can be achieved without counteracting shareholder's value. The number of female/minority board members is related to company size, board size and dividend payout.
<b>Weber and Zulehner</b>	The survival rates of new companies and their prejudice against female employees	1978-2006 29.935 companies Austria	Regression analysis	New companies that have a lower share of female workforce, show a lower survival rate. The companies that have a median or high rate in the sample distribution, are likely to out-survive these companies with 18 months. Even companies that start with a low rate and manage to survive, eventually gain a bigger female workforce. The effect is unprecedented as even companies that hire men due to a lack of females, also face a higher exit probability.
<b><i>"Competition and Gender Prejudice: Are Discriminatory Employers Doomed to Fail?"</i></b>				
<b>October 2009</b>				