# Erasmus University Rotterdam

Erasmus School of Economics

MSc Accounting, Auditing and Control

Master Specialization Accounting and Finance

# The relation between the number of women in the Board of Directors and board compensation

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December 2016

# Preface

As part of the program MSc Accounting & Finance of the Erasmus School of Economics, and to be able to complete the masters course, students of the Erasmus University Rotterdam are required to do research on a certain course-related topic and write a master thesis about that research. The topic of this thesis has been relevant and discussed in the media and within society for years. Especially, when the financial crisis began, more people expressed their views and emotions regarding the compensation systems within companies. This whole discussion about compensation policies was the perfect moment for associations that support equal rights to bring up discussions about companies' diversity and to treat people equally on the work floor and in rights (e.g. male or female, black or white, etc.). I would like to thank drs. R.H.R.M. Aernoudts for his help on this thesis and, especially, the way he taught me to think like an actual researcher. Furthermore, I would like to thank my parents and brothers for their support on this thesis and all the survey participants for their time spent on my survey.

Tibor van Wissen, 2 December 2016

# Abstract

This research investigates the women representation in the Board of Directors at companies within the S&P 500 index and the effect of women representation on the short term and long term compensation packages of the Board of Directors. The data sample of this research includes public listed firms in the S&P 500 index from 2007 until 2013 with a total of 1.379 board compensation years. By using firm performance as intermediate variable and SPSS Statistics to perform statistical tests on the dataset, I have found no significant relationship between the number of female members in the Board of Directors and the short term and long term compensation packages. However, there are some other significant results that should be noticed. Firstly, I have found a positive effect of women representation in the Board of Directors on the firm performance measured by Operating Return on Assets. Secondly, I have found a positive effect of the firm performance measured by Tobin's Q on the short term and long term compensation packages. Based on my research, I have found no significant relationship exists between women representation in the Board of Directors and the board compensation packages, since board compensation is mainly determined by the Tobin's Q and higher women representation in the Board of Directors has no significant effect on the Tobin's Q.

**Keywords:** board diversity, women representation, board characteristics, board compensation, firm performance, corporate governance, S&P 500.

**JEL classification:** G30, G32, G34 and G35.

# Contents

# 1 Introduction

In recent years, more and more time and effort is spent on the debate regarding the compositions of boards, in particular the representation of women in the Boards, and how this affects firm performance. This debate does not only concern the investors, authorities and other people looking into governance of firms, but now directors are also more involved in this debate. According to the yearly Spencer Stuart Board Index (Spencer Stuart, 2015), in 2015, 117 new female board members were appointed across the S&P 500 boards. This brings the total women population across S&P 500 boards to a percentage of 20, which means the representation of women on those boards grew by 5% last year. There are still 13 S&P 500 companies without any women in the Board of Directors, which is almost 3% of the companies on this index. Considering the fact that the percentage of women in the Board was much lower back in 1990, for example, across Fortune 1000 firms (Farrell & Hersch, 2005), the representation is still too low. In the European Union, there has been a continuing debate about making female representation on boards mandatory for listed companies in order to increase diversity across boards. Even though Norway, Spain, France and Iceland set a threshold of 40% for the minimum percentage of women in the Boards (The New York Times, 2015), there are still many countries which do not have such a mandatory female representation quota.

Besides diversity, the issue of increased women representation on Board of Directors also raises the question if and how it influences firm performance and the question to what extent male and female executives are equally compensated. The relation between women representation on boards and the performance of those companies has been part of research over several years. In general, research suggests that Fortune 500 companies with more women in the Boards, on average, perform better (Carter & Wagner, 2011; Catalyst, 2007). The question regarding equal compensation of male and female executives is subject of my thesis.

In this thesis, I want to examine the effect of more women in the Board of Directors on the short term compensation packages (e.g. salary and cash bonuses) and long-term compensation packages (e.g. stock options) of the Board of Directors. The research question is formulated as follows:

*"Does the number of female members in the Board of Directors affect board compensation?"*

Elkinawy and Stater (2011) found that female executives have significantly lower salaries compared to male executives. This would imply that when the number of female board members increases, the board compensation declines on average. However, as mentioned above, Carter and Wagner (2011) found that firm performance increases with an increasing number of female positions in the Board of Directors. This gives rise to the striking thought that, although more women in the Board of Directors increase firm performance, these women are not rewarded for this. In fact, they seem to receive less compensation compared to male board members on average. In my research I want to find empirical evidence for these relationships. Therefore, in my research I use firm performance as an intermediate variable to answer the main research question. This means that I will – basically – split up the relationship between women representation and board compensation in two parts. Accordingly, I formulate two hypotheses to test the relationship as follows:

**H1: A higher women representation in the Board of Directors results in higher firm performance**
**H2: A higher firm performance results in higher board compensation**


**Figure 1:** Conceptual framework

There is more evidence on how female representation can influence the decisions made by the Board of Directors. Powell & Ansic (1997) found that female board members are less willing to provide extra bonuses above the regular compensation. This is due to the different decision-making strategy between female and male board members. Powell & Ansic (1997) also make suggestions on how gender differences affect the risk taking. They suggest that women tend to seek less risk than male colleagues. For example, in their experiment they performed a currency experiment. During the experiment the participants entered the market individually, and by this entry they created sunk costs (i.e. entry costs). They will gain if the price increases and remains above the entry price. If the price decreases and remains below the entry price, they can avoid losing money by exiting. To detect the difference of risk aversion between men and women, the researchers documented the time each participant stayed in the market when the price fell. They found that, on average, male participants stayed in the market for a longer time compared to female participants. This suggests that men are more risk taking or less risk averse than women. These assumptions are supported by Jianakoplos & Bernasek (1998), Johnson & Powell (1994) and Schubert et al. (1999).

Powell & Ansic (1997) found a different risk-attitude between men and women as well, and they found a relationship between this risk-attitude and compensation. Because of this result, I have conducted a survey with questions related to the risk-attitude of women and men, to find a different risk-attitude between gender as well. In Appendix E 'Survey Questions' you can find the survey I have made and in Appendix F 'Survey Results' you can find the results of the survey. The total number of people who has responded is 98. This number is the sum of 53 men and 45 women. The outcomes of my survey suggest that men are indeed more risk-seeking (or less risk-averse) compared to women.

This thesis contributes to the existing literature and discussions on diversity of the Board of Directors and the compensation of the Board of Directors. More specific, this thesis includes findings that contribute to the discussion of gender diversity in the board and how it affects the overall compensation of that board. I have decided not to investigate the direct link between women representation and compensation as Elkinawy and Stater (2011) did, who found that more women in the Board of Directors decreases board compensation. Instead of investigating the direct link, I have added firm performance as mediating variable. The reason for adding firm performance as mediating variable are the outcomes of a research by Carter and Wagner (2011), who found that firm performance has a positive effect on board compensation. This creates a contradictory situation: while more women in the board increases firm performance (Carter & Wagner, 2011; Catalyst, 2007), the positive effect of firm performance on board compensation shown by Carter and Wagner (2011) does not stand taking the results of Elkinawy and Stater (2011) in consideration, which are – summarized – that more women in the Board of Directors decreases board compensation.

The data sample for this research includes the yearly financial data of companies listed on the index Standard & Poor 500 (i.e. S&P 500) for a period of 7 years, from 2007 until 2013. All of the financial data has been collected from the databases CompuStat (accounting figures), ExecuComp (governance figures), GMI Ratings (governance figures) and RiskMetrics (governance figures). The data was checked if it was complete and correctly exported to Excel for the statistical tests that had to be performed in SPSS Statistics. The results of the statistical tests suggest that, first of all, more women in the Board of Directors have a significantly positive effect on the Operating Return on Assets on a 90% confidence level. Secondly, the results suggest that the Tobin's Q has a significantly positive effect on the short term and long term compensation packages.

Furthermore, I have performed a test to control for multicollinearity, which I have tested by using SPSS and the analyse option Variance Inflation Factors (VIF's; see 6.1.4 Testing Multicollinearity, for more information). The results of this test show that no more further investigation to multicollinearity is required for the multiple regression tests.

After interpreting the outcomes of the statistical tests, conclusions can be made with regards to the reason for doing this research. The research question of this master thesis is: "Does the number of female members in the Board of Directors affect board compensation?". Based on the significant outcomes of the statistical tests, I am able to evaluate the hypotheses I am testing to be able to provide an answer to the research question.

The outcomes of this research can be, among others, interesting for companies that have no women in the Board of Directors at this moment, groups who support gender diversity and policy makers of the government who are tackling the board diversity discussion.

The first hypothesis suggests that more women in the Board of Directors have a positive effect on firm performance. Firm performance is measured by Return on Assets, Operating Return on Assets and Tobin's Q. Based on the outcomes of the statistical tests on the data sample, I can conclude that hypothesis 1 can be rejected on a 95% confidence level. However, on a 90% confidence level, my results suggest a positive effect of higher women presentation in the Board of Directors on the Operating Return on Assets.

The second hypothesis suggests that the higher firm performance has a positive effect on the compensation of members in the Board of Directors. Based on the outcomes of the statistical tests on the data sample, I can conclude that hypothesis 2 cannot be rejected based on Tobin's Q. This means that, based on this research, members in the Board of Directors receive higher short term and long term compensation packages when the firm performance measured by Tobin's Q increases. This suggests that the remuneration of board members are mainly based on stock performance. This would be an interesting subject for further research.

After interpreting the results and drawing conclusions, I am able to come to the answer on my research question. My research question is: “Does the number of female members in the Board of Directors affect board compensation?”. The answer is no. This can already be concluded by testing the first hypothesis. The number of female members in the Board of Directors does not have a significant effect on firm performance (at least at 95% confidence level and highly questionable at 90% confidence level).

For future research on this topic, I recommend future researchers to choose other countries to control for cultural differences, take a later period than the end of the financial crisis and do more research on how the government can facilitate in the needs of women, so these women who have ambition can develop themselves on the same way as men can and offer them the chances to take those high and time taking management positions as well.

The rest of the thesis is divided in seven sections. Section 2 contains the literature review in which I discuss the existing literature about the different independent variables I use in this research. Section 3 contains the hypothesis development. Section 4 discusses the research design in which I discuss the methodology used to conduct this study. Section 5 contains the data of the research sample. Section 6 contains the results of this research. Section 7 contains the conclusions of this research, recommendations for future research and the effect of the global financial crisis during the data sample period.. After section 7, you can find the Appendix and Bibliography.

# 2 Literature Review

Existing literature describes numerous factors related to board characteristics influencing firm performance. Also, as discussed, the relationship between firm performance and board compensation has been investigated (Carter & Wagner, 2011) and more specific the relation between women representation and board compensation (Elkinawy & Stater, 2011).

This chapter includes the review of several variables that control for firm performance (model 1) and compensation of the Board of Directors (model 2). In Figure 2 you can find the dependent, predictor and control variables for each model.

| **Model 1** | |
|---|---|
| | |
| *Dependent Variable* | Firm Performance |
| *Predictor Variable* | Women % |
| *Control Variables* | Blockholder (%)<br>Med. Tenure<br>Board Size<br>Outside (%)<br>Board Stock (%)<br>Busy Board (%)<br>Outside (%)<br>R and D Expend. (%)<br>Firm size<br>Firm age |

| **Model 2** | |
|---|---|
| | |
| *Dependent Variable* | Board Compensation |
| *Predictor Variable* | Firm Performance |
| *Control Variables* | Women (%)<br>Blockholder (%)<br>Med. Tenure<br>Board Size<br>Outside (%)<br>Board Stock (%)<br>Busy Board (%)<br>Outside (%)<br>R and D Expend. (%)<br>Firm size<br>Firm age |

**Figure 2:** Overview of dependent, predictor and control variables per model

In the remainder of this chapter I will discuss each used variable separately in more detail. Furthermore, I will examine what relationships (i.e. positive, negative or none) are found in existing literature. More detailed variable descriptions can be found in Appendix B 'Variable Descriptions'. In Appendix D 'Descriptive Statistics' you can find the median, average, minimum, maximum and standard deviation of the data sample of each year from 2007 until 2013. How the variables are used in the regression analyses to test the hypotheses, will be discussed in chapter 4 'Research Design'.

## 2.1 Firm Performance

Firm performance can be measured in several ways. In both financial and non-financial terms. In this thesis I will measure firm performance in financial terms only. For this, I will look at accounting measures of performance and market measures of performance. Both approaches have their advantages and disadvantages (Merchant & Van der Stede, 2011).

The first advantage of accounting measures is that they can be measured on a timely basis relatively precisely and objectively, which reflects short-term performance. Secondly, compared to other quantities, accounting measures are relatively congruent with the organizational goal or profit maximization. They are designed to provide a better matching of cash inflows and outflows. Correlations between accounting profits and changes in stock prices are positive. Thirdly, they are largely controlled by the managers whose performances are being evaluated, more than stock prices. Accounting profits are also not affected by the uncontrollable factors as with stock prices.

The first disadvantage of accounting measures is that accounting profits are transaction-orientated in a certain period. Most of the changes that do not result in a transaction are not recognized in accounting profit. Secondly, accounting profit calculations ignore some economic values and value changes that accountants feel they cannot be measured accurately and objectively (e.g. intangible assets such as Research in progress, HR, IT, which do not appear in the balance sheet).

Market measures of performance are based on the changes in the value of the firm on the market or return to the shareholders if the dividends are also taken in consideration. Advantages of using market measures are, focused on the market measures in terms of recent transaction prices, that values are available on a timely basis, accurate, can be measures precisely, objective and not manipulable, understandable and cost effective.

Besides advantages of using market measures, there are some limitations when using market measures. The first disadvantage of market measures is that they do not always reflect the realized performance, but instead they are based on expectations. Secondly, the presence of potential congruence failure, which means that market measures do not reflect information that is not available. Thirdly, the presence of feasibility constraint, which means that market measures are not available for privately held firms, wholly-owned subsidiaries or divisions or non-profit organizations.

Taking all advantages and disadvantages in consideration, I will measure firm performance by both accounting and market based measures. In this research, the accounting measures of firm performance are Return on Assets and Operating Return on Assets. The market based measure of firm performance is the Tobin's Q. Return on Assets is calculated by dividing the net income of a company by the average total assets. This variable shows the percentage of how profitable the assets of a firm are used to generate revenue. The Operating Return on Assets is calculated by dividing the earnings before interest and taxes (EBIT) by the average total assets. This variable shows the operating income of the company created per dollar, which is invested in the average total assets. The Tobin's Q is calculated by dividing the market value of assets by the replacements costs of assets. For example, a low Tobin's Q of 0,8 means that it costs more to replace the assets of a firm than the asset is worth on the market, which implies that the asset is undervalued.

$$(1)\ ROA = \frac{Net\ Inco}{Total\ Assets} \qquad (2)\ OROA = \frac{EBIT}{Total\ Assets} \qquad (3)\ Tobin's\ Q = \frac{Market\ value\ of\ assets}{Replacement\ cost\ of\ assets}$$

Clear and conclusive evidence for the relationship between firm performance and board compensation cannot be found in literature. Linck et al. (2008) found a positive correlation between stock performance and the total compensation for directors, for which he used a sample and period after the Sarbanes-Oxley Act was introduced. As a result of this Sarbanes-Oxley Act, companies were subject to more strict regulations regarding disclosure and transparency. I believe that this increase in transparency positively contributes to the quality of my research. Another study found a positive relationship between the firm performance and the remuneration of the Board of Directors by using two accounting variables, namely Return on Assets and Total Assets, and one stock market variable, the Tobin's Q (Lazarides, Dimpretas, & Dimitrios, 2008). The two accounting variables were significantly positive, but the Tobin's Q was not.

## 2.2 Women Representation

### 2.2.1 Relation with firm performance

According to several researches done by scholars (Adams & Ferreira, 2004; Burgess & Tharenou, 2002), professionals (McKinsey & Company, 2007) and societal pressure groups (Catalyst, 2007), the women representation in boardrooms should be higher. For example, Burgess & Tharenou (2002) mention that women increase the diversity of the opinions in the boardroom, bring strategic input into the boardroom, provide role models and mentors for the female employees and contribute to the corporate governance of a company, by reducing the dominant position of the CEO as a result of the power sharing style of women. In case of firm performance, Carter, Simkins and Simpson (2003) found a statistically, significantly, positive relationship between women representation in the Board of Directors and firm performance, measured by Tobin's Q. However, no relationship was found between the diversity of the Board of Directors and firm performance by Rose (2007).

### 2.2.2 Relation with board compensation

In the United States, the years prior to the 1960s, it was allowed by the government that employers could discriminate on the basis of gender. This resulted in an unequal amount of compensation and economical disadvantages for women (Goldberg Dey & Hill, 2007). Around mid-20th century, the federal government of the United States started to pay attention to matters related to the employment of female citizens (National Committee on Pay Equity, 2016). The debate about equal compensation was followed by the passage of the Equal Pay Act of 1963 and the Civil Rights Act of 1964. The compensation of women employees increased since then, but there are still unexplained differences between the compensation of men and women (O'Neill, 2003).

When I look at the firm level of executive boards, there are also differences in pay. Elkinawy and Stater (2011) examined gender differences in executive salaries and total compensation. They found that the salaries of female executives are 5 percent lower than those of male executives. The representation of women on boards have increased, but the salaries are still below those of men. The difference in the compensation between men and women is higher when boards are more male-dominated. In conclusion, the board compensation decreases when more women join the Board of Directors.

## 2.3 Blockholder

### 2.3.1 Relation with firm performance

There are several studies that show a positive relationship between the percentage of blockholders and firm performance (Mikkelson & Ruback, 1985; Mikkelson & Ruback, 1991; Harvey, 1999; San Martin-Reyna & Duran-Encalada, 2012) . For example, Harvey (1999) found that blockholders have more perspectives on the long term compared to non-blockholders, which increases the firm performance. A shareholder can function as a blockholder when he or she has more than 5 percent of the common outstanding shares.

### 2.3.2 Relation with board compensation

Literature mainly focusses on the effect of blockholders on board compensation in relation to family members who are part of the Board of Directors and what their effect is. Faccio and Lang (2001) argued that family members are trying to increase their wealth and interests, which is a negative situation for the smaller shareholders. They are expropriating wealth through high compensations. Examples of these high compensations are extraordinary dividends and cash bonuses.

## 2.4 Board Tenure

### 2.4.1 Relation with firm performance

McIntyre, Murphy & Mitchell (2007) investigated the impact of several board characteristics on firm performance. They found a positive linear relation between board tenure and Tobin's Q (one measurement of firm performance) and a negative coefficient on squared terms of the board tenure, which indicates a concave relation between firm performance and board tenure. This suggests that members in the Board of Directors need time to adjust to the board in order to contribute, and after some time the contributions will diminish when the levels of tenure grow. Katz (1982) found a similar concave relation between firm performance and board tenure. A concave relation graph line shows an increase (or decrease) in the graph line, which turns around to a decrease (or increase).

### 2.4.2 Relation with board compensation

When the tenure of board members increases, the relationship between these board members and the management is getting more friendly and solid. This will make the board members less independent (Boeker & Goodstein, 1993; Harris & Helfat, 2007; Vafeas, 2003; Wade et al., 1990). For example, Harris & Helfat (2007) found that CEO and non-CEO board members, out of self-interest to protect their tenure and legacy, attempt to shape board decisions that match his or her own best abilities. As discussed before, the less independent the board members are, the more the board compensation increases (Core et al., 1999).

## 2.5 Board Size

### 2.5.1 Relation with firm performance

It is unclear what size of the Board of Directors is most efficient and effective. It depends on the company and segment what size of the board works most effective and efficient (Conger, Finegold, & Lawler, 1998). The effect of larger boards related negatively to firm performance. Cheng (2008) found that extremity in decisions made by the board decreases with board size, because it takes more compromises in a board with more members. He performed some additional tests on the communication and coordination within boards bigger in size versus agency problems in addition to this statement. The results are consistent with the results of Yermack (1996), Jensen (1993), Guest (2009) and Eisenberg, Sundgren, and Wells (1998). They showed that the board size has a negative effect on firm performance.

### 2.5.2 Relation with board compensation

Another important effect of larger board sizes is the effect on monitoring. Core et al. (1999) found that larger boards of directors leads to less effective monitoring. Lipton and Lorsch (1992) found that most boards' behaviour norms are not functional. This means that when board size increases, there are more problems associated with these norms of behaviour. A result of this less effective monitoring is a higher compensation for the directors (Core et al., 1999).

## 2.6 Outside Directors

### 2.6.1 Relation with firm performance

Outsiders in the Board of Directors are directors who are not an employee of the company. These outside directors are seen as more independent directors, who improve the monitoring of the management as they are more likely to provide unbiased opinions (Shivdasani, 1993; Weisbach, 1988). As they discuss in their researches, an improved monitoring of management improves the firm performance. For example, Shivdasani (1993) showed that outside directors have greater incentives to be seen and valued as good monitors, because other companies will also show their interests in these directors on the labour market.

### 2.6.2 Relation with board compensation

As noted above, outsiders in the Board of Directors are seen as independent directors, who improve the monitoring of management (Shivdasani, 1993; Weisbach, 1988). Core et al. (1999) studied the effect of the level of monitoring on director compensation. They found that the board compensation decreases with a more effective monitoring of management. For example, Shivdasani (1993) shows that more outside directors with no or little financial stakes in the company, contribute to the monitoring of management and, therefore, do not take decisions for their personal benefits, but for the company's sake.

## 2.7 Board Stock

### 2.7.1 Relation with firm performance

A well-known study on the relation between the amount of stock the board holds and the performance of the firm is "Management Ownership and Market Valuation" (Morck, Shleifer, & Vishny, 1988). They found that firm performance increases when management holds between 0% and 5% of the outstanding stock, slightly decreases when management holds between 5% and 25% of the outstanding stock and increases again above 25% of the outstanding stock. The decreasing relation between board ownership and firm performance is what they call the 'entrenchment effect'.

### 2.7.2 Relation with board compensation

The study by Melis, Carta and Gaia (2012) showed that a dominant blockholder has great influence on the decision-making within a company. These large shareholders or blockholders show dominancy when they are going to work at the company (Barca & Becht, 2001; Melis, 2000). The Board of Directors and the remuneration committee show a lack of independence, because when they have the right to appoint the directors, it is more likely they choose to appoint themselves or relatives as director instead of choosing professional outside directors (Claessens et al., 2002). The effect of less independency inside the Board of Directors is significantly positive on board compensation (Core et al., 1999).

## 2.8 Busy Board

### 2.8.1 Relation with firm performance

A Board of Directors is called a busy board when more than 50 percent of the directors occupies three or more directorships at three or more unique companies. Fich and Shivdasani (2006), Di Pietra et al. (2008) and Andres, Bongard and Lehmann (2013) found a negative relationship with performance. This included a negative relationship with corporate governance as well. For example, Fich and Shivdasani (2006) found that companies with busy boards have about a 4.2 percent lower market-to-book ratio. Furthermore, these firms show lower Returns on Assets, Asset Turnovers and Operating Return on Sales.

### 2.8.2 Relation with board compensation

A too high number of directorships may affect the effectiveness of the monitoring function of outside directors (Core et al., 1999; Shivdasani & Yermack, 1999). Shivdasani and Yermack (1999), for example, found that companies tend to appoint "gray" outside directors, who are less independent, instead of more independent outside directors. Core et al. (1999) found that less independent directors in the Board of Directors decreases the independency of the board, resulting in higher board compensation for the board members.

## 2.9 Research & Development Expenditures

### 2.9.1 Relation with firm performance

Companies invest in creating new products. Research and Development (R&D) expenditures are therefore necessary. A reason for this is to increase the profits of the company. Existing literature provides a lot of research on this topic. Sougiannis (1994), Lev and Sougiannis (1996), Hsieh et al. (2003), Shortridge (2004), Sher and Yang (2005) and Sridhar et al. (2014) found that investing in R&D increases the firm performance. For example, Sher and Yang (2005) found that firms with innovative capabilities are rarely not positively related to the firm performance. They measured firm performance by the Return on Assets (ROA) and found that firms with higher intensity and bigger departments of Research and Development are the predictors of how firm performance is improved.

### 2.9.2 Relation with board compensation

The effect of R&D expenditures on board compensation was studied by Currim, Lim, and Kim (2012). They found that investing in R&D is a disincentive for top executives on the short term, but on the long term these benefits from R&D are reflected in their compensation package. The disincentive is created by the policies made by the Financial Accounting Standards Board (FASB) based on Generally Accepted Accounting Principles (GAAP). The FASB requires that costs associated with the benefits of investing in R&D must be expensed immediately in that particular period. For example, this single effect can be solved with equity-based compensation (e.g. share options).

## 2.10 Firm Size

### 2.10.1 Relation with firm performance

In literature, there is a considerable amount of evidence that supports a positive relationship between size of the firm and profitability. Jim Lee (2009) found that firm size does play a role in profitability. He provided evidence by using a fixed-effects dynamic panel data model over a period starting in 1987 and ending in 2006. The profit rates of several thousand public US firms are positively correlated with firm size, but in a manner that is not linear. Earlier research also concluded that economies of scale are more important in larger firms (Scherer, 1973; Shepherd, 1972).

### 2.10.2 Relation with board compensation

Rosen (1992) studied the labour market for executive directors and in particular how the contracting worked. He found that the compensation of these directors increases with the firm size. The evidence was mostly perceived by gathering the annual proxy statements by shareholders, which must be reported by law. Gabaix and Landier (2008) and Frederic W. Cook & Co. (2015) also found a positive relation between executive compensation and firm size. For example, Frederic W. Cook & Co. (2015) surveyed 300 companies about their non-employee director compensation programs. The results of their survey are summarized in Figure 3 'Firm size and board compensation' on the next page. Besides the total compensation differences, it is also important to notice that the compensation package changes with the height of the cap. The composition of compensation at large cap shows that 60% of the total compensation is stock awards. Lower cap firms compensate their directors relatively more in cash compared to the larger caps.

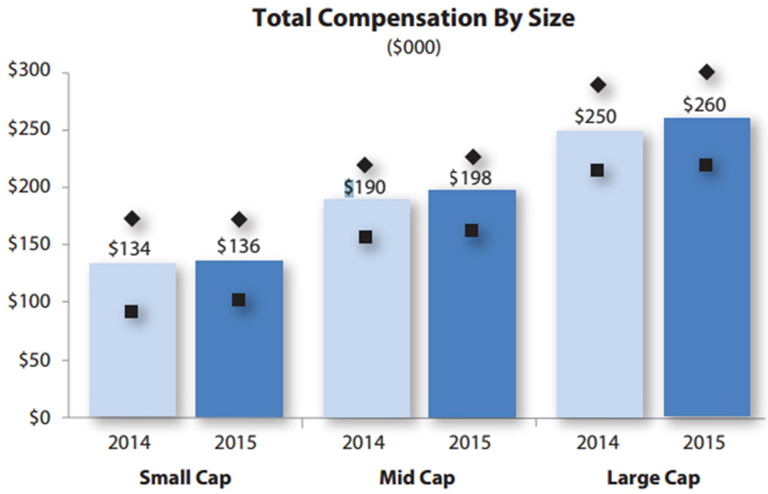



**Figure 3:** Firm size and board compensation

## 2.11 Firm Age

### 2.11.1 Relation with firm performance

Loderer and Waelchli (2011) studied the relationship between the age of a firm and the firm performance. They found that firms higher of age have poorer performance compared to younger firms. They provided two explanations for why companies would age, namely organizational rigidities and rent-seeking behaviour. Organizational rigidities can show themselves when companies push their certain approach through the organization and processes when the approach is considered and evaluated as successful. The consequence of organizational rigidities is the entangling effect that constraints firms in structural rigidities, which are difficult discard from the processes. Rent-seeking behaviour involves the behaviour of companies to increase the existing wealth without creating a new wealth. Olson (1982) showed that when the age of companies increases, the rent-seeking behaviour increases as well as they get older.

### 2.11.2 Relation with board compensation

Besides the variables related to the Board of Directors, ownership, financial capabilities, there is also the age of the firm that may affect the board compensation. Davis and Haltiwanger (1991) found that in the manufacturing business, compensations are higher at older firms than at younger firms. This was confirmed by Brown and Medoff (2003), who found that firms of higher age provide, on average, a higher compensation to employees and executives. As a remark to the conclusion of Brown and Medoff (2003), they concluded that the relationship between firm age and compensation is insignificant or negative when they controlled for employee characteristics.

# 3 Hypothesis Development

In the past years, a lot of discussion has occurred about the position of women in companies and how women are represented at the top of these companies. For example, in the European Union, there has been a continuing debate about making female representation on boards mandatory to listed companies in order to increase diversity across boards. Even though Norway, Spain, France and Iceland set a border of 40% for the minimum percentage of women in the Boards (The New York Times, 2015), there are still many countries left without such a mandatory female representation quota. Powell & Ansic (1997) also make suggestions on how gender difference affects the risk taking. They suggest that women tend to seek less for risk than man. These assumptions are supported by Jianakoplos & Bernasek (1998), Johnson & Powell (1994) and Schubert et al. (1999).

The relation between the number of female members in the Board of Directors and board compensation may be explained by multiple (competing) theories. Therefore, a mediating or intervening variable is used to make it more specific. In this case, the performance of the company is the mediating variable. This means that the relation between the number of female members in the Board of Directors and firm performance must be found, and after that, the relation between firm performance and its effect on board compensation.

The first hypothesis is based on the results of researches done by Catalyst (2007) and McKinsey (2007). They found that female members do increase the performance of the company. They both conclude that the representation of women in the boardroom should be higher, and boards consisting of only men should be less in the future.

**H1: A higher women representation in the Board of Directors results in higher firm performance**

The second hypothesis is focussed on how the board compensation is determined regarding the performance. In every process of deciding how high the board compensation should be, there is a conflict of interest between the management of the company and the shareholders. The compensation for board members are, inter alia, based on firm performance and this also includes the risk taking of the management.

As mentioned before, women tend to seek less risk compared to men (Powell & Ansic, 1997). But on the other hand, why would you decrease the incentives for directors when performance is lower, which can result in less motivation to increase performance again in the future? In conclusion, if women tend to be more risk-averse and the compensation is also based on risk taking, I want to find evidence for the hypothesis below.

**H2: The higher performance of the company results in higher board compensation.**

These two hypotheses will help me to be able to answer the research question. By introducing firm performance as an intermediate variable, I believe this will create a new dimension in the relationship between the representation of women in the Board of Directors and the short term and long term compensation packages of the members in the Board of Directors.

# 4 Research Design

I have based the research design on the predictive validity framework, or the so called 'Libby box', developed by Libby in 1981. The first row in the Libby box shows the conceptual relationship between an independent variable and a dependent variable, which helps explaining the mechanism between those two variables (Libby, 1981). The second row in the Libby box shows the operationalized concepts. For example, the ROA, OROA and Tobin's Q are the operationalized firm performance measures. In the context of my research, and as mentioned in the previous chapter, I split the relationship between these two variables in two parts by using an intermediate (or intervening) variable (i.e. firm performance).

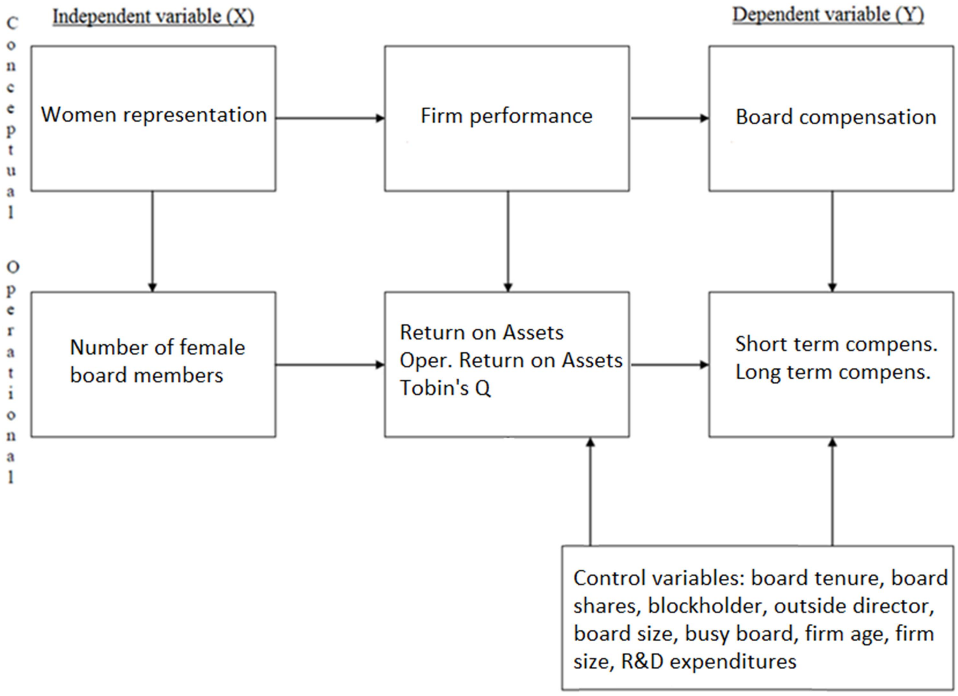



**Figure 4:** Libby box including mediating variable

The first part of the relationship, which also reflects the first hypothesis, is the effect of women representation in Board of Directors on firm performance (model 1). The independent variable is women representation, which is measured by the number of female members in the Board (*Women Representation)*. I measure 'Women Representation' in the same way as Carter, Simkins and Simpson (2003) did, which means that a directorship is seen as one position, without taking part- or fulltime employment into account. The dependent variable is firm performance, which is measured by the Return on Assets (ROA), Operating Return on Assets (OROA) and Tobin's Q.

The second part of the relationship, which also reflects the second hypothesis, is the effect of firm performance on board compensation (model 2). The independent variable is firm performance, measured again by Return on Assets (ROA), Operating Return on Assets (OROA) and Tobin's Q. The dependent variable is board compensation. Board compensation is the sum of short and long term compensation. According to Vafeas (2003), a compensation on the short term is calculated as the sum of salary and cash bonus. A compensation on the long term is considered as long term compensations regarding incentives and stock options granted valued at market price (Murphy, 1999).

To capture the effects of other factors that might influence the dependent variables (model 1: firm performance and model 2: board compensation), but also predictor variables (model 1: women representation and model 2: firm performance), I use several control variables. The choice for the control variables I use are based on researches which are related to this thesis' topic (Chhaochharia & Grinstein, 2009; Vafeas, 2003). These control variables include women in board (%), board tenure, board shares (%), blockholder (%), outside director (%), board size, busy board (%), R&D expenditures (%), firm age and firm size. These variables cover industry, firm-specific and corporate governance components. In Appendix B 'Variable descriptions' you can find the description of each variable.

As discussed earlier, I will use three measures of firm performance, namely the Return on Assets (ROA), Operating Return on Assets (OROA) and Tobin's Q. By this way, they can be used as dependent variables in model 1 and predictor variables in model 2.

$$(1)\ ROA = \frac{Net\ Income}{Total\ Assets} \qquad (2)\ OROA = \frac{EBIT}{Total\ Assets} \qquad (3)\ Tobi\ \ 's\ Q = \frac{Market\ value\ of\ assets}{Replacement\ cost\ of\ assets}$$

In order to test for the hypotheses, I have used Ordinary Least Squares (OLS) regression models. An OLS-regression model assumes a linear relation between the independent and dependent variables. Based on the variables as described, the regression models that I used are as follows:

$$(4) Firm\ Performance = \ _o + b_1 Women\ on\ Board \quad _2 Board\ Tenure + b_3 Board\ Shares + b_4 Blockholde \quad b_5 Outside\ Director + b_6 Board\ Size + b_7 Busy\ Board \quad _8 Firm\ Age + b_9 Firm\ Size + b_{10} R\&D\ Expenditures$$

As discussed before, the firm performance is measured in terms of the ROA, OROA and Tobin's Q.

# 5 Data Sample

For this research I will collect data from the United States index Standard & Poor 500, more known as the S&P 500. The S&P 500 index represents the 500 biggest companies in the United States, measured by market capitalization. Therefore, it is widely considered as good proxy for economic developments in the United States. Moreover, the index includes public listed companies only, by which I can be sure that the financial data required for this thesis is available for all companies.

I have extracted financial date for the period 2007 until 2013. I have chosen this period, because, according to Spencer Stuart During (2015), it is associated with an increase in the number of women in management positions within S&P 500 firms. Also note that the sample period is post the introduction of the Sarbanes-Oxley Act in 2002, which will positively contribute to the quality of the dataset due to increased transparency.

The databases I have used for collecting the data are CompuStat (accounting figures), ExecuComp (governance figures), GMI Ratings (governance figures) and ISS (formerly RiskMetrics) (governance figures). Because board compensation is normally being determined once a year by the remuneration committee, and the information is publicly available for listed companies through SEC filings regarding the proxy statement DEFA14A (Core et al., 1999).

After the data is collected and also evaluated by hand to make sure the data I use is correct and unique, the data will be processed using the statistical program SPSS. This program is widely used to make statistical analyses. The statistics included are descriptive statistics, bivariate statistics, predictions for numeral outcomes and predictions for identifying groups.

## 5.1 Survey

Furthermore, I will design and conduct a survey. I will ask fifty men and fifty women to fill in the survey. The survey will contain questions about the person her or his characteristics and several scenarios with investment decisions and pay-offs. This survey will be compared with the existing literature and the empirical tests I performed. The role of this survey is to  The survey questions submitted to the survey participants can be found in Appendix E 'Survey Questions'.

## 5.2 Effect of global financial crisis on data sample

In the sample data I have used a period starting from 2007 until 2013. During this period, the world economy has experienced the global financial crisis. This global financial crisis started in 2008, which had its impact on the worldwide markets. In figure 7 you can find the historical prices of the Standard & Poor 500 index from the year 2000 until 2013. You can see a big drop in the index price of the S&P 500 around September 2008, which was caused by the starting bankruptcy of Lehman Brothers.


**Figure 5:** Historical prices of S&P 500 from 2000 until 2013

In Appendix C 'Descriptive Statistics' you can find the averages, medians, minimums, maximums and standard deviations of each variable for each year I have included in the data sample. In general, over the data sample period, you can see that board compensation (payments) gradually increase, while there is some variation in the firm performance measures that I used. This might indicate the existence of a distortion in the relation between the firm performance measures and board compensation.

# 6 Results

In this chapter I will show, interpret and discuss the results of the collected data, processed in SPSS, and surveys taken by hand. The tables in this chapter only contain the processed information. In case of the survey responses, these can be found in Appendix F 'Survey Results'. The survey questions are also included in Appendix E 'Survey questions'.

## 6.1 Statistical Tests

The statistical results are split in two. Firstly, I discuss the effects of women representation in the Board of Directors on firm performance. Secondly, I discuss the effects of firm performance on the short term and long term board compensation, as shown briefly in the figure below.


**Figure 6:** Conceptual framework

The statistical tests are performed in SPSS Statistics. In Appendix G 'Single Regression Tests' you can find the single effect of each independent variable on each dependent variable. In Appendix H 'Multiple Regression Tests' you can find the multiple effect of all independent variables on each dependent variable.

Several statistical tests are performed in SPSS Statistics and discussed in this paragraph:

1. Single regression tests
2. Multiple regression tests with performance measures as dependent variables (MRM 1)
3. Multiple regression tests with compensation features as dependent variables (MRM 2)
4. Test on multicollinearity within the Multiple Regression Models (VIF-method)

### 6.1.1 Single regression test

Table 1 shows the outcome of the single regression tests, here summarized:

**Correlations**

| | ROA | OROA | Tobin's Q | Short Pay | Long Pay |
|---|---|---|---|---|---|
| *ROA* | 1 | 0.775*** | 0.614*** | -0.086 | -0.014 |
| *OROA* | 0.775*** | 1 | 0.693*** | -0.128*** | -0.010 |
| *Tobin's Q* | 0.614*** | 0.693*** | 1 | -0.258*** | 0.044 |
| *Women (%)* | -0.045* | -0.032 | -0.128*** | 0.152*** | 0.027 |
| *Blockholder (%)* | -0.086*** | -0.052* | -0.015 | -0.138*** | -0.152*** |
| *Med. Tenure* | 0.077*** | 0.064** | 0.122*** | -0.079*** | -0.026 |
| *Board Size* | -0.065** | -0.080*** | -0.220*** | 0.446*** | 0.252*** |
| *Outside (%)* | -0.065** | -0.084*** | -0.135*** | 0.281*** | 0.101*** |
| *Board stock (%)* | 0.045* | 0.057** | 0.048* | -0.023 | 0.014 |
| *Busy Board (%)* | -0.040 | -0.014 | -0.114*** | 0.059** | -0.006 |
| *R&D Expend.(%)* | 0.002 | 0.004 | -0.018 | -0.057** | -0.039 |
| *Firm size* | -0.065** | -0.123*** | -0.189*** | 0.224*** | 0.282*** |
| *Firm age* | 0.048* | 0.028 | -0.085*** | 0.321*** | -0.156*** |

***. Correlation is significant at the 0.01 level (2-tailed).
**. Correlation is significant at the 0.05 level (2-tailed).
*. Correlation is significant at the 0.10 level (2-tailed).

**Table 1:** Pearson's Correlation Coefficients to measure the correlation between the independent-/control variables and the dependent variables ROA, OROA, Tobin's Q, Short Term Compensation and Long Term Compensation for 1.379 board compensation years for the period 2007-2013

In the first column of Table 1 you can find the independent variables and control variables, as I have described in chapter 2 'Literature Review'. The test was done individually for each variable, which means that there is no correlation between the variables (i.e. multicollinearity).

The outcomes of the Pearson Correlation test can be interpreted as follows:

1. A Pearson Correlation of +1 is defined as a perfect (increasing) linear relationship.
2. A Pearson Correlation of -1 is defined as a perfect (decreasing) linear relationship.
3. A Pearson Correlation of 0 is defined as no relationship.

The more the Pearson Correlation moves towards 0, the less the relationship is between the independent or control variables and the dependent variables.

The individual correlation coefficient suggests that the percentage of women in the Board of Directors has a significant negative effect on the Tobin's Q. This can imply that the market responds negatively on the appointment of women in the Board of Directors. Furthermore, the percentage of women in the Board of Directors has a significant positive effect on the short term compensation package.

The outcomes also show that all three firm performance measures have a significant negative effect on the short term compensation package. This can imply that the short term compensation packages are decreasing in value. The reason for this trend can be that companies want to create more incentives for the Board of Directors members to focus on the firm performance and the continuity of the company, instead of thinking on the short term.

However, I believe that the outcomes of a multiple regression test are more reliable, because it encompasses both linear and nonlinear relationships between independent and dependent variables.

### 6.1.2 Women representation effect on firm performance (MRM 1)

Table 2 shows the outcomes of the multiple regression tests with the performance measures as dependent variables. The actual performed multiple regression tests can be found in Appendix H 'Multiple Regression Tests'. Table 2 shows the summary of those tests.

**Model 1**

| | ROA | OROA | Tobin's Q |
|---|---|---|---|
| *Women %* | 0.454 | 1.685* | 0.828 |
| *Women dummy* | -2.371** | -3.041*** | -5.18*** |
| *Blockholder %* | -3.904*** | -2.951*** | -3.25*** |
| *Med. Tenure* | 1.925* | 1462 | 2.545** |
| *Board Size* | -1.861*** | -1566 | -5.064*** |
| *Outside %* | -1.1 | -1.773* | -1431 |
| *Board % stock* | 1154 | 1.749* | 1.674* |
| *Busy Board %* | -1201 | 0.172 | -2.944*** |
| *R and D Expend.* | -0.107 | -0.087 | -1.32 |
| *Firm size* | -2.491** | -4.571*** | -5.079*** |
| *Firm age* | 2.939*** | 2.366** | -0.125 |

***. Regression is significant at the 0.01 level (2-tailed).
**. Regression is significant at the 0.05 level (2-tailed).
*. Regression is significant at the 0.10 level (2-tailed).

**Table 2:** Multiple regression model (1) to measure the relationship between the independent variables, control variables and firm performance measures Return on Assets, Operating Return on Assets and Tobin's Q concerning 1.379 board compensation years for the period 2007-2013

The results of the multiple regression tests show that there is no significant relationship between the women representation in the Board of Directors and firm performance, measured by the ROA, OROA and Tobin's Q, on a confidence level of 95%. On a confidence level of 90%, the relationship between the women representation and the firm performance measure Operating Return on Assets is significantly positive. This result suggests that the influence of women in the Board of Directors have a positive effect on the net profits made with the firms' operating activities. The outcomes then may suggest that women in the Board of Directors do not have (enough) influence on the decision-making regarding the investment and/or financing activities of the firms, because the Return on Assets (which includes returns on investment and financing activities) is not significantly related.

The results of the multiple regression tests are not consistent with the findings of Carter and Wagner (2011) and Krishnan and Park (2005), who found a significantly positive effect of the number of female members in the Board of Directors on the firm performance. This can be explained by different factors. First of all, Carter and Wagner (2011) used the Return on Sales (ROS), Return on Invested Capital (ROIC) and Return on Equity (ROE) to measure firm performance. The different results can be explained by the different performance measures used. A second explanation can be the used data sample period. Namely, I used a period including the global financial crisis, whereas Krishnan and Park (2005) used data of the year 1998. Carter and Wagner (2011) used data from the period 2004 until 2008.

What is interesting, is that I have found a significant positive relationship between women representation in the Board of Directors and the firm performance measured by the Operating Return on Assets. This can be interesting for further research.

### 6.1.3 Firm performance effect on board compensation (MRM 2)

Table 3 shows the outcomes of the multiple regression tests with the board compensation measures as dependent variables. The actual performed multiple regression tests can be found in Appendix H 'Multiple Regression Tests'. Table 3 shows the summary of those tests.

**Model 2**

| | Short Pay | Long pay |
|---|---|---|
| *ROA* | -1.594 | -1.081 |
| *OROA* | -0.802 | -0.905 |
| *Tobin's Q* | 5.167*** | 3.201*** |
| *Women %* | 1.458 | 1.709* |
| *Blockholder %* | -3.405*** | -3.931*** |
| *Med. Tenure* | -1.008 | -0.747 |
| *Board Size* | 8.963*** | 13.523*** |
| *Outside %* | 2.244** | 4.523*** |
| *Board % stock* | -2.081** | -2.704*** |
| *Busy Board %* | -1.693* | -2.321** |
| *R and D Expend.* | -1.133 | -1.732* |
| *Firm size* | 9.009*** | 9.367*** |
| *Firm age* | -9.329*** | -5.689*** |

***. Regression is significant at the 0.01 level (2-tailed).
**. Regression is significant at the 0.05 level (2-tailed).
*. Regression is significant at the 0.10 level (2-tailed).

**Table 3:** Multiple regression model (2) to measure the relationship between the independent variables, control variables and compensation packages on the short and long term concerning 1.379 board compensation years for the period 2007-2013

The results of the multiple regression tests show a significantly positive relationship between the Tobin's Q, which is one of the three firm performance measures, and the compensation of the Board of Directors on a confidence level of 95%. This suggests that only stock performance has influence on the determination of the short term and long term compensation packages. The relationship between the two other firm performance measures – ROA and OROA – and the compensation of the Board of Directors are not significant, not even on a confidence level of 90%.

The test results of my multiple regression tests are consistent with the findings of Linck et al. (2008), who found a positive relationship between the stock performance of a company and the determination of the total compensation packages. Tobin's Q shows the firms' stock performance, because this ratio is calculated by dividing the market value of the company, which is the total outstanding shares times the share price, with the replacement costs of the total assets. This suggests that the connection between share premiums and the determination of the short term and long term compensation packages exists.

My results show the opposite of the results of Lazarides, Dimpretas and Dimitrios (2008). They found that the firm performance measures Return on Assets and Operating Return on Assets were significantly related to the determination of the short term and long term compensation packages. The effect of the firm performance measure Tobin's Q on the short term and long term compensation packages was not significant in their research. In my research, the test results show that in the same relationship between firm performance and board compensation, the effects of Return on Assets and Operating Return on Assets are insignificant and the effect of the Tobin's Q is significant. An explanation for the contradictory results can be the data sample. Lazarides, Dimpretas and Dimitrios (2008) used firms in Greece in their data sample, by which they found that Greek firms, compared to Anglo-Saxon countries (e.g. United States of America and the Netherlands), do not make a connection between share premiums and the remuneration.

### 6.1.4 Testing multicollinearity

Multicollinearity exists when two or more predictor variables are correlated with each other. This means a moderate or high amount of correlation. I used Variance Inflation Factors (VIF) to help myself detecting this multicollinearity. VIF is a measure of how much of the variance of the estimated coefficients is increased or 'inflated' by the existence of correlation among the predictor variables in the model (The Pennsylvania State University, 2016).

| VIF Outcomes MRM 1 | | |
|---|---|---|
| | Collinearity Statistics | |
| | Tolerance | VIF |
| *Women (%)* | 0.476 | 2.102 |
| *Blockholder (%)* | 0.907 | 1.103 |
| *Med. Tenure* | 0.924 | 1.083 |
| *Board Size* | 0.780 | 1.283 |
| *Outside (%)* | 0.848 | 1.170 |
| *Board Stock* | 0.910 | 1.099 |
| *Busy Board (%)* | 0.927 | 1.079 |
| *R and D Expend.* | 0.993 | 1.007 |
| *Firm size* | 0.848 | 1.180 |
| *Firm age* | 0.918 | 1.089 |

| VIF Outcomes MRM 2 | | |
|---|---|---|
| | Collinearity Statistics | |
| | Tolerance | VIF |
| *ROA* | 0.383 | 2.615 |
| *OROA* | 0.316 | 3.165 |
| *Tobin's Q* | 0.447 | 2.235 |
| *Women (%)* | 0.474 | 2.109 |
| *Blockholder (%)* | 0.896 | 1.116 |
| *Med. Tenure* | 0.919 | 1.089 |
| *Board Size* | 0.761 | 1.314 |
| *Outside (%)* | 0.846 | 1.182 |
| *Board (%) stock* | 0.908 | 1.102 |
| *Busy Board (%)* | 0.913 | 1.095 |
| *R and D Expend.* | 0.991 | 1.009 |
| *Firm size* | 0.828 | 1.207 |
| *Firm age* | 0.907 | 1.103 |

**Table 4:** Variance Inflation Factors (VIF) to detect the existence of multicollinearity between the independent and control variables concerning 1.379 board compensation years for the period 2007-2013

According to the Stat 501 Regression Methods of The Pennsylvania State University (2016), the general rule is if a VIF exceeds 4, that VIF should be investigated further. The VIF's exceeding the number of 10 require corrections, because this gives signs of serious multicollinearity. Table 4 and 5 show the VIF outcomes for the two models in this research. None of the tested variables exceed 4, which means that there is no further investigation required of multicollinearity.

## 6.2 Survey

I have collected surveys with a response of 98 people. The gender distribution of the responses are 53 for male and 45 for female. The question asked can be found in Appendix E 'Survey questions'. The answers to the questions for each participant for can be found in Appendix F 'Survey Results'.

Table 5 shows the distribution of risk attitudes at male and female participants. My survey results suggest that men have a different risk attitude compared to women. The portion of risk seeking male participants is 45,682%, while the portion of risk seeking female participants is 37,975%. This suggests that men are more likely to take risk compared to women. This is consistent with the findings in prior literature, such as Powell & Ansic (1997), Jianakoplos & Bernasek (1998), Johnson & Powell (1994) and Schubert et al. (1999).

| Gender | Risk attitude | Q3 | Q4 | Q5 | Q6 | Q7 |
|---|---|---|---|---|---|---|
| **Male** | *Risk seeking* | 32 | 28 | 5 | 12 | 20 |
| | *Risk averse* | 21 | 25 | 23 | 13 | 33 |
| | *Total* | 53 | 53 | 28 | 25 | 53 |
| | *Risk seeking (%)* | 60.377% | 52.830% | 17.857% | 48.% | 37.735% |
| | *Risk averse (%)* | 39.622% | 47.169% | 82.142% | 52.% | 62.264% |
| **Female** | *Risk seeking* | 23 | 17 | 3 | 8 | 18 |
| | *Risk averse* | 22 | 28 | 14 | 20 | 27 |
| | *Total* | 45 | 45 | 17 | 28 | 45 |
| | *Risk seeking (%)* | 51.111% | 37.777% | 17.647% | 28.571% | 4.% |
| | *Risk averse (%)* | 48.888% | 62.222% | 82.352% | 71.428% | 6.% |

| Gender | Risk attitude | Q8 | Q9 | Q10 | Q11 | Average |
|---|---|---|---|---|---|---|
| **Male** | *Risk seeking* | 28 | 29 | 11 | 35 | 22 |
| | *Risk averse* | 25 | 24 | 42 | 18 | 25 |
| | *Total* | 53 | 53 | 53 | 53 | 47 |
| | *Risk seeking (%)* | 52.830% | 54.716% | 20.754% | 66.037% | 45.682% |
| | *Risk averse (%)* | 47.169% | 45.283% | 79.245% | 33.962% | 54.317% |
| **Female** | *Risk seeking* | 29 | 13 | 10 | 23 | 16 |
| | *Risk averse* | 16 | 32 | 35 | 22 | 24 |
| | *Total* | 45 | 45 | 45 | 45 | 40 |
| | *Risk seeking (%)* | 64.444% | 28.888% | 22.222% | 51.111% | 37.974% |
| | *Risk averse (%)* | 35.555% | 71.111% | 77.777% | 48.888% | 62.025% |

**Table 5:** Survey results of male and female participants of all ages

I have also split the results into a group of participants who are 25 and younger and a group of participants who are 26 years and older. The reason for this was that I wanted to find out whether younger people who are still studying or just started with a job, have different risk attitudes compared to older people.

In table 6 you can find the average risk attitude distribution of the group participants with an age of 25 years and younger. The average portion of male, risk seeking participants with an age of 25 and younger is 45,686% compared to the portion of female, risk seeking participants with an age of 25 and younger of 37,650%.

| Gender | Risk attitude | Q3 | Q4 | Q5 | Q6 | Q7 |
|---|---|---|---|---|---|---|
| **Male** | *Risk seeking* | 20 | 20 | 4 | 7 | 12 |
| | *Risk averse* | 14 | 14 | 16 | 7 | 22 |
| | *Total* | 34 | 34 | 20 | 14 | 34 |
| | *Risk seeking (%)* | 58.823% | 58.823% | 2.% | 5.% | 35.294% |
| | *Risk averse (%)* | 41.176% | 41.176% | 8.% | 5.% | 64.705% |
| **Female** | *Risk seeking* | 12 | 10 | 1 | 4 | 12 |
| | *Risk averse* | 14 | 16 | 9 | 12 | 14 |
| | *Total* | 26 | 26 | 10 | 16 | 26 |
| | *Risk seeking (%)* | 46.153% | 38.461% | 1.% | 25.% | 46.153% |
| | *Risk averse (%)* | 53.846% | 61.538% | 9.% | 75.% | 53.846% |

| Gender | Risk attitude | Q8 | Q9 | Q10 | Q11 | Average |
|---|---|---|---|---|---|---|
| **Male** | *Risk seeking* | 16 | 19 | 5 | 24 | 14 |
| | *Risk averse* | 18 | 15 | 29 | 10 | 16 |
| | *Total* | 34 | 34 | 34 | 34 | 30 |
| | *Risk seeking (%)* | 47.058% | 55.882% | 14.705% | 70.588% | 45.686% |
| | *Risk averse (%)* | 52.941% | 44.117% | 85.294% | 29.411% | 54.313% |
| **Female** | *Risk seeking* | 15 | 6 | 7 | 17 | 9 |
| | *Risk averse* | 11 | 20 | 19 | 9 | 14 |
| | *Total* | 26 | 26 | 26 | 26 | 23 |
| | *Risk seeking (%)* | 57.692% | 23.076% | 26.923% | 65.384% | 37.649% |
| | *Risk averse (%)* | 42.307% | 76.923% | 73.076% | 34.615% | 62.350% |

**Table 6:** Survey results of male and female participants who are younger than 26

In table 7 you can find the average risk attitude distribution of the group participants with an age of 26 years and older. The average portion of male, risk seeking participants with an age of 26 years and older is 45,621% compared to the portion of female, risk seeking participants with an age of 26 years and older of 38,457%. Comparing the results of both groups shows no real difference between the risk attitude of younger and older people.

| Gender | Risk attitude | Q3 | Q4 | Q5 | Q6 | Q7 |
|---|---|---|---|---|---|---|
| **Male** | *Risk seeking* | 12 | 8 | 1 | 5 | 8 |
| | *Risk averse* | 7 | 11 | 7 | 6 | 11 |
| | *Total* | 19 | 19 | 8 | 11 | 19 |
| | *Risk seeking (%)* | 63.158% | 42.105% | 12.500% | 45.455% | 42.105% |
| | *Risk averse (%)* | 36.842% | 57.895% | 87.500% | 54.545% | 57.895% |
| **Female** | *Risk seeking* | 11 | 7 | 2 | 4 | 6 |
| | *Risk averse* | 8 | 12 | 5 | 8 | 13 |
| | *Total* | 19 | 19 | 7 | 12 | 19 |
| | *Risk seeking (%)* | 57.895% | 36.842% | 28.571% | 33.333% | 31.579% |
| | *Risk averse (%)* | 42.105% | 63.158% | 71.429% | 66.667% | 68.421% |

| Gender | Risk attitude | Q8 | Q9 | Q10 | Q11 | Average |
|---|---|---|---|---|---|---|
| **Male** | *Risk seeking* | 12 | 10 | 6 | 11 | 8 |
| | *Risk averse* | 7 | 9 | 13 | 8 | 9 |
| | *Total* | 19 | 19 | 19 | 19 | 17 |
| | *Risk seeking (%)* | 63.157% | 52.631% | 31.578% | 57.894% | 45.620% |
| | *Risk averse (%)* | 36.842% | 47.368% | 68.421% | 42.105% | 54.379% |
| **Female** | *Risk seeking* | 14 | 7 | 3 | 6 | 7 |
| | *Risk averse* | 5 | 12 | 16 | 13 | 10 |
| | *Total* | 19 | 19 | 19 | 19 | 17 |
| | *Risk seeking (%)* | 73.684% | 36.842% | 15.789% | 31.578% | 38.457% |
| | *Risk averse (%)* | 26.315% | 63.157% | 84.210% | 68.421% | 61.542% |

**Table 7:** Survey results of male and female participants who are older than 25

# 7 Conclusions & Recommendations

In this chapter I will describe what can be concluded from the outcomes of the statistical tests. Furthermore, I will provide recommendations for future research to the readers of this thesis and I will control for the effects of the global financial crisis on my data sample during the period 2007 until 2013.

## 7.1 Conclusions

The interest for doing this research was triggered by the results and conclusions of two different researches. Elkinawy and Stater (2011) did research on the relationship between the different compensation of female and male executives. They found that female executives have significant lower salaries compared to male executives. This would imply that when the number of female board members increases, the board compensation declines on average. However, Carter and Wagner (2011) and Krishnan and Park (2005) found that firm performance increases with an increasing number of female positions in the Board of Directors. The strange situation is that Linck et al. (2008) and Lazarides, Dimpretas, & Dimitrios (2008) found a positive correlation between firm performance measures and board compensation for a director. For me, it was the reason to find out why female directors are paid less than male directors, while more female directors increase firm performance.

As a result of these contradictory findings, the research question of this master thesis is: "Does the number of female members in the Board of Directors affect board compensation?".

In this research, compared to Elkinawy and Stater (2011), I have split the direct relation between women in the Board of Directors and board compensation into two components. The first component is the relationship between women representation in the Board of Directors and firm performance. The second component is the relationship between firm performance and board compensation.


**Figure 7:** Conceptual framework

The figure above results in two hypotheses:

H1: A higher women representation in the Board of Directors results in higher firm performance.

H2: A higher firm performance results in higher board compensation.

To validate or not validate the hypotheses, I have performed several statistical tests (see Chapter 6).

**H1: A higher women representation in the Board of Directors results in higher firm performance**

In table 8 you can find the effect of women representation in the Board of Directors on each firm performance measure. The results show no significant relationship between women representation in the Board of Directors and firm performance. This suggests that firms with a Board of Directors consisting of more female members, compared to firms with a Board of Directors consisting of fewer or no female members, have no improved firm performance. However, on a confidence level of 90%, there is a significantly positive relationship between women representation in the Board of Directors and the firm performance measure Operating Return on Assets.

**Model 1**

| | ROA | OROA | Tobin's Q |
|---|---|---|---|
| *Women %* | 0,454 | 1,685* | 0,828 |

*. Regression is significant at the 0.10 level (2-tailed).

**Table 8:** Effect of women representation on firm performance (MRM1)

The results of the multiple regression tests are not consistent with the findings of Carter and Wagner (2011) and Krishnan and Park (2005), who found a significantly positive effect of the number of female members in the Board of Directors on firm performance. This can be explained by different factors. First of all, Carter and Wagner (2011) used the Return on Sales (ROS), Return on Invested Capital (ROIC) and Return on Equity (ROE) to measure firm performance. The different results can be explained by the different performance measures used. A second explanation can be the used data sample period. Namely, I used a period including the global financial crisis, whereas Krishnan and Park (2005) used data of the year 1998. Carter and Wagner (2011) used data from the period 2004 until 2008.

What is interesting, is that I have found a significantly positive relationship between women representation in the Board of Directors and the firm performance measured by the Operating Return on Assets. This can be interesting for further research.

**H2: A higher firm performance results in higher board compensation**

In table 9 you can find the effects of the three firm performance measures on the short term and long term compensation packages. The results show a significant and positive relationship between the firm performance measure Tobin's Q and both the short term and long term packages. This suggests that the determination of the short term and long term compensation packages is mainly based on the stock performance of firms. Therefore, with 99% certainty, hypothesis 2 cannot be rejected.

| **Model 2** | | |
|---|---|---|
| | Short Pay | Long pay |
| *ROA* | -1.594 | -1.081 |
| *OROA* | -0.802 | -0.905 |
| *Tobin's Q* | 5.167*** | 3.201*** |

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

**Table 9:** Effect of firm performance on board compensation (MRM2)

The test results of my multiple regression tests are consistent with the findings of Linck et al. (2008), who found a positive relationship between the stock performance of a company and the determination of the total compensation packages. Tobin's Q can also be seen as stock performance, because this ratio is calculated by dividing the market value of the company, which is the total outstanding shares times the share price, with the replacement costs of the total assets. This means that the connection between share premiums and the determination of the short term and long term compensation packages exists.

**Does the number of female members in the Board of Directors affect board compensation?**

As described above, based on the performed statistical tests, hypothesis 1 is rejected and hypothesis 2 is not rejected. Women in the Board of Directors do have an effect on the Operating Returns on Assets, and the Tobin's Q has an effect on the short term compensation packages and long term compensation packages. This suggests that women have no effect on the firm performance measure that, subsequently, has a significant effect on the determination of the short term and long term compensation packages. Therefore, I have found no significant relationship between the number of female members in the Board of Directors and the short term and long term compensation packages of the members in the Board of Directors.

This main conclusion is not consistent with the findings of Elkinawy and Stater (2011), who found that the overall compensation of the Board of Directors decreases as more female members are appointed as directors, because women receive a lower compensation compared to men. An explanation for the different findings of my research and the research done by Elkinawy and Stater (2011), is that Elkinway and Stater did not use firm performance as an intermediate variable. They studied the difference between the compensation of women and men in a direct way. I tested what effect women in the Board of Directors have on firm performance, and, subsequently, what the effect is of the changed firm performance on the short term and long term compensation packages. If I use the research method of Elkinawy and Stater (2011), I find a direct, significant, positive relationship between women representation in the Board of Directors and the long term compensation packages as well, on a confidence level of 90%. You can find the relationship in table 3.

**Survey Risk Behaviour**

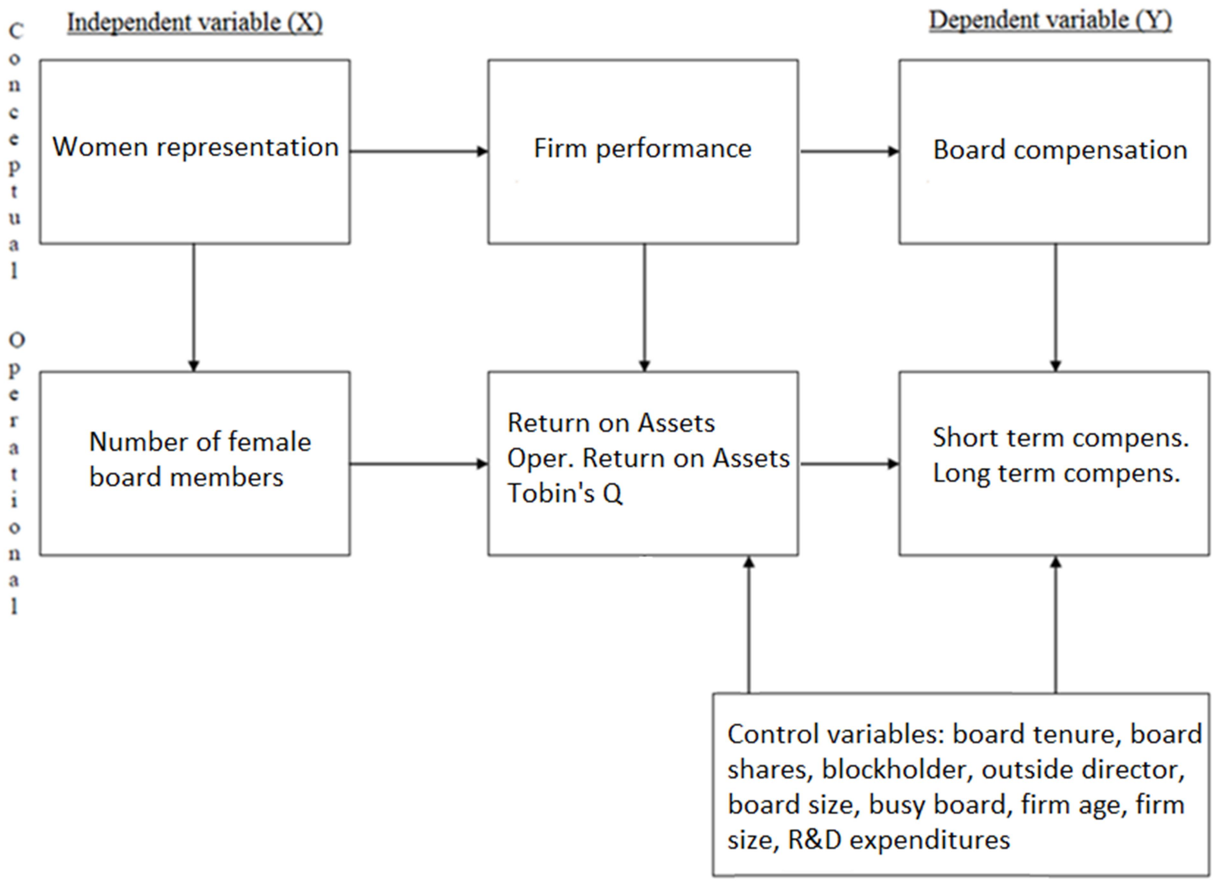
Powell & Ansic (1997) found a different risk-attitude between men and women as well, and they found a relationship between this risk-attitude and compensation. Because of this result, I have conducted a survey with questions related to the risk-attitude of women and men, to find a different risk-attitude between gender as well. In Appendix E 'Survey Questions' you can find the survey I have made and in Appendix F 'Survey Results' you can find the results of the survey. The total number of people who has responded is 98. This number is the sum of 53 men and 45 women. The outcomes of my survey suggest that men are indeed more risk-seeking (or less risk-averse) compared to women.

## 7.2 Recommendations

I have some recommendations for future research on this topic. First of all, I have used the American Standard & Poor 500 index for this research. I recommend future researchers to use an index from other countries, because the position in society of men and women can differ in other cultures. Secondly, the sample period of this master thesis was 2007 until 2013. This period includes the global financial crisis. I recommend for future researchers to choose the period after the financial crisis to investigate (i.e. after 2012). Thirdly, this research suggests that more women in the Board of Directors have an effect on the firm performance measure Operating Return on Assets. This is an opportunity for more women who are motivated to reach the top. Unfortunately, there are still the restraining factors in a woman's life (e.g. pregnancy). To make it possible for women to develop themselves and make it more easier for them to take more busy management positions, I recommend to do more research to how the government can facilitate in the needs of women who are trying to reach the top.

# Appendix

## A Predictive validity framework; Libby box



# B Variable Descriptions

| Variables | Description | Database Variable | Found in Database |
|---|---|---|---|
| *ROA* | Return on Assets, which is calculated by dividing net income by total assets | Assets - Total<br>Net Income (Loss) | CompuStat<br>CompuStat |
| *OROA* | Operating Return on Assets, which is calculated by dividing EBIT by total assets | Assets - Total<br>Earnings Before Interest and Taxes | CompuStat<br>CompuStat |
| *Tobin's Q* | Calculated by dividing market value of assets by replacement cost of assets | Assets - Total<br>Market Value - Total - Fiscal | CompuStat<br>CompuStat |
| *Women (%)* | Calculated by dividing the women on board of directors by board size | Count DirGender=Female<br>Board Size | ExecuComp<br>ISS (form. RiskMetrics) |
| *Blockholder (%)* | Calculated by dividing the sum of shares owned by shareholders with more than 5% of the shares by common shares outstanding | Common x1000000<br>OwnersFivePercentPctg | CompuStat<br>GMI Ratings |
| *Med. Board Tenure* | Calculated by taking the median tenure of the firm's board members | Median DirTenure | ISS (form. RiskMetrics) |
| *Board Size* | Calculated by counting the firm's board members | Using Ticker as condition in Excel function SUM.IF | ISS (form. RiskMetrics) |
| *Outside (%)* | Percentage of outsiders on the board, the number of outsiders divided by the size of the board | 1 - DirectorsInsidePct | GMI Ratings |
| *Board stock (%)* | Shares held by the board, calculated by dividing the shares held by the board by common shares outstanding | Common x1000000<br>Sum DirSharesHeld | CompuStat<br>ISS (form. RiskMetrics) |
| *Busy Board (%)* | Calculated as the number of outsiders on the board with 3 or more board positions divided by the total number of outsiders on the board | (1 - DirectorsInsidePct) * Board Size<br>Using DirMultiple as condition in COUNT.IF | GMI Ratings<br>ISS (form. RiskMetrics) |
| *R&D Expend. (%)* | Calculated by dividing R&D expenses by total sales, it is a control for growth | Research and Development Expense<br>Sales/Turnover (Net) | CompuStat<br>CompuStat |
| *Firm Size* | I assume that the total assets reflect the firm size | Assets - Total | CompuStat |
| *Firm Age* | Calculated by substracting year of establishment from year being researched | CompanyAge | GMI Ratings |
| *Short Pay (x$1000)* | The sum of fees earned or paid in cash awarded to the board of directors | Salary ($)<br>Bonus ($) | ExecuComp<br>ExecuComp |
| *Long Pay (x$1000)* | The sum of stock, options, non-equity incentve plan compensations and other compensations awarded to the board of directors | Value of Stock Awards - FAS 123R ($)<br>Value of Option Awards - FAS 123R ($) | ExecuComp<br>ExecuComp |

# C Descriptive Statistics

The descriptive statistics show the median, average, standard deviation, minimum and maximum values of each independent, dependent and control variable during the sample period. These are not the numbers I have used in SPSS. The data I have used in SPSS contains 1.379 compensation years. For example, the median of the Return on Assets (ROA) in 2008 is calculated by using the function MEDIAN in Microsoft Excel and selecting the list of ROA's of 2008.

| | 2007 | | | | | 2008 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Variables** | **Median** | **Average** | **STD** | **Min** | **Max** | **Median** | **Average** | **STD** | **Min** | **Max** |
| *ROA* | 0,08 | 0,09 | 0,06 | -0,22 | 0,41 | 0,07 | 0,07 | 0,10 | -0,63 | 0,27 |
| *OROA* | 0,13 | 0,14 | 0,08 | -0,18 | 0,69 | 0,13 | 0,13 | 0,08 | -0,28 | 0,43 |
| *Tobin's Q* | 1,50 | 1,79 | 1,13 | 0,05 | 6,82 | 0,99 | 1,14 | 0,74 | 0,03 | 4,55 |
| *Women (%)* | 0,00% | 0,00% | 0,00% | 0,00% | 0,00% | 15,38% | 15,76% | 8,57% | 0,00% | 40,00% |
| *Blockholder (%)* | 16,10% | 17,37% | 14,07% | 0,00% | 79,71% | 13,26% | 16,42% | 14,50% | 0,00% | 81,43% |
| *Med. Board Ten.* | 6,50 | 7,15 | 3,23 | 2,00 | 20,50 | 6,00 | 6,79 | 3,32 | 1,00 | 21,50 |
| *Board Size* | 11,00 | 10,90 | 2,11 | 5,00 | 17,00 | 11,00 | 10,87 | 1,93 | 5,00 | 16,00 |
| *Outside (%)* | 87,50% | 85,44% | 7,10% | 60,00% | 94,12% | 88,89% | 86,00% | 6,74% | 60,00% | 93,75% |
| *Board Stock(%)* | 0,32% | 3,19% | 8,77% | 0,00% | 81,99% | 0,29% | 3,17% | 8,84% | 0,01% | 86,25% |
| *Busy Board (%)* | 33,33% | 31,89% | 18,07% | 0,00% | 88,89% | 33,14% | 35,57% | 22,50% | 0,00% | 133,33% |
| *R&D Expend. (%)* | 1,76% | 4,96% | 7,17% | 0,00% | 39,09% | 1,26% | 4,38% | 6,59% | 0,00% | 26,80% |
| *Firm Size* | 12983,00 | 31307,68 | 69607,97 | 1218,86 | 795337,00 | 13689,85 | 31114,38 | 68405,35 | 1411,85 | 797769,00 |
| *Firm Age* | 50,00 | 60,86 | 42,36 | 4,00 | 205,00 | 51,00 | 61,86 | 42,36 | 5,00 | 206,00 |
| *Short Pay (x$1000)* | 786,25 | 801,89 | 384,09 | 0,00 | 2362,22 | 839,42 | 875,79 | 416,22 | 0,00 | 2747,31 |
| *Long Pay (x$1000)* | 1300,00 | 1551,98 | 1219,69 | 41,28 | 13237,62 | 1294,92 | 1569,51 | 1035,16 | 16,07 | 6949,13 |

| | 2009 | | | | | 2010 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Variables** | **Median** | **Average** | **STD** | **Min** | **Max** | **Median** | **Average** | **STD** | **Min** | **Max** |
| *ROA* | 0,06 | 0,06 | 0,06 | -0,22 | 0,34 | 0,08 | 0,08 | 0,05 | -0,14 | 0,24 |
| *OROA* | 0,10 | 0,11 | 0,07 | -0,14 | 0,35 | 0,12 | 0,13 | 0,06 | -0,06 | 0,35 |
| *Tobin's Q* | 1,17 | 1,30 | 0,74 | 0,17 | 3,65 | 1,20 | 1,37 | 0,76 | 0,18 | 3,92 |
| *Women %* | 16,67% | 15,91% | 8,18% | 0,00% | 45,45% | 16,67% | 16,62% | 8,64% | 0,00% | 50,00% |
| *Blockholder %* | 12,60% | 15,30% | 13,03% | 0,00% | 85,60% | 13,79% | 16,67% | 12,79% | 0,00% | 84,20% |
| *Med. Board Ten.* | 6,50 | 7,06 | 3,23 | 1,00 | 21,00 | 7,00 | 7,16 | 2,88 | 1,00 | 19,00 |
| *Board Size* | 11,00 | 10,94 | 1,91 | 5,00 | 16,00 | 11,00 | 10,90 | 1,98 | 6,00 | 17,00 |
| *Outside %* | 90,00% | 87,09% | 6,18% | 60,00% | 93,75% | 90,00% | 88,13% | 6,66% | 66,67% | 100,00% |
| *Board % Stock* | 0,31% | 3,00% | 8,94% | 0,02% | 89,31% | 0,35% | 2,76% | 8,91% | 0,01% | 96,17% |
| *Busy Board %* | 33,33% | 33,19% | 17,58% | 0,00% | 90,00% | 28,57% | 30,63% | 16,93% | 0,00% | 75,00% |
| *R&D Expend. %* | 1,57% | 4,57% | 7,36% | 0,00% | 42,58% | 1,37% | 4,06% | 6,10% | 0,00% | 25,42% |
| *Firm Size* | 14410,00 | 32813,50 | 68904,68 | 1283,54 | 781818,00 | 15139,40 | 34716,15 | 68424,27 | 1273,98 | 751216,00 |
| *Firm Age* | 52,00 | 62,86 | 42,36 | 6,00 | 207,00 | 53,00 | 63,86 | 42,36 | 7,00 | 208,00 |
| *Short Pay (x$1000)* | 851,06 | 917,78 | 483,51 | 0,00 | 3960,09 | 919,00 | 977,48 | 477,30 | 0,00 | 3141,25 |
| *Long Pay (x$1000)* | 1250,00 | 1497,87 | 1018,19 | 9,08 | 6644,46 | 1364,95 | 1658,80 | 1099,13 | 24,60 | 7530,10 |

| | 2011 | | | | | 2012 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Variables** | **Median** | **Average** | **STD** | **Min** | **Max** | **Median** | **Average** | **STD** | **Min** | **Max** |
| *ROA* | 0,08 | 0,08 | 0,06 | -0,38 | 0,36 | 0,07 | 0,07 | 0,06 | -0,24 | 0,24 |
| *OROA* | 0,12 | 0,13 | 0,06 | 0,00 | 0,47 | 0,11 | 0,12 | 0,06 | -0,04 | 0,33 |
| *Tobin's Q* | 1,09 | 1,26 | 0,77 | 0,20 | 4,61 | 1,18 | 1,32 | 0,81 | 0,20 | 4,62 |
| *Women %* | 13,33% | 13,70% | 6,93% | 0,00% | 35,71% | 18,18% | 18,25% | 8,78% | 0,00% | 50,00% |
| *Blockholder %* | 13,80% | 16,55% | 12,20% | 0,00% | 81,53% | 13,36% | 15,92% | 11,66% | 0,00% | 80,38% |
| *Med. Board Ten.* | 6,00 | 6,71 | 2,88 | 1,00 | 23,00 | 7,50 | 7,42 | 2,78 | 0,00 | 18,00 |
| *Board Size* | 14,00 | 13,76 | 2,22 | 8,00 | 24,00 | 11,00 | 10,84 | 1,89 | 6,00 | 17,00 |
| *Outside %* | 90,00% | 87,49% | 5,87% | 62,50% | 93,75% | 90,00% | 87,80% | 5,85% | 66,67% | 100,00% |
| *Board % Stock* | 0,30% | 2,93% | 9,50% | 0,00% | 98,97% | 0,19% | 2,28% | 8,72% | 0,00% | 102,35% |
| *Busy Board %* | 30,00% | 31,49% | 16,98% | 0,00% | 80,00% | 25,00% | 25,92% | 14,82% | 0,00% | 81,82% |
| *R&D Expend. %* | 1,47% | 4,76% | 7,22% | 0,00% | 32,22% | 1,00% | 4,09% | 7,30% | 0,00% | 65,55% |
| *Firm Size* | 15465,00 | 37113,93 | 68723,20 | 1311,84 | 717242,00 | 16973,00 | 38739,09 | 68101,55 | 1381,27 | 685328,00 |
| *Firm Age* | 54,00 | 64,86 | 42,36 | 8,00 | 209,00 | 55,00 | 65,86 | 42,36 | 9,00 | 210,00 |
| *Short Pay (x$1000)* | 941,00 | 991,44 | 442,32 | 0,00 | 2885,00 | 966,43 | 1028,77 | 470,58 | 0,00 | 3585,00 |
| *Long Pay (x$1000)* | 1441,68 | 1716,14 | 1226,57 | 24,60 | 13352,56 | 1456,29 | 1704,83 | 949,19 | 6,57 | 7166,15 |

| | 2013 | | | | |
|---|---|---|---|---|---|
| **Variables** | **Median** | **Average** | **STD** | **Min** | **Max** |
| *ROA* | 0,07 | 0,08 | 0,05 | -0,10 | 0,30 |
| *OROA* | 0,11 | 0,12 | 0,06 | -0,14 | 0,33 |
| *Tobin's Q* | 1,39 | 1,55 | 0,92 | 0,30 | 5,57 |
| *Women %* | 18,18% | 19,59% | 8,54% | 0,00% | 50,00% |
| *Blockholder %* | 16,61% | 17,11% | 11,38% | 0,00% | 80,47% |
| *Med. Board Ten.* | 7,50 | 7,77 | 2,75 | 1,00 | 19,00 |
| *Board Size* | 11,00 | 10,83 | 1,81 | 6,00 | 17,00 |
| *Outside %* | 90,00% | 87,62% | 6,26% | 63,64% | 94,12% |
| *Board % Stock* | 0,19% | 1,86% | 8,00% | 0,00% | 100,22% |
| *Busy Board %* | 0,00% | 3,31% | 6,77% | 0,00% | 36,36% |
| *R&D Expend. %* | 1,40% | 4,12% | 6,29% | 0,00% | 27,13% |
| *Firm Size* | 17850,10 | 40335,99 | 68899,11 | 1490,27 | 656560,00 |
| *Firm Age* | 56,00 | 66,86 | 42,36 | 10,00 | 211,00 |
| *Short Pay (x$1000)* | 1032,50 | 1070,83 | 471,20 | 0,00 | 3620,42 |
| *Long Pay (x$1000)* | 1513,35 | 1698,17 | 802,55 | 3,36 | 7290,16 |

## D Expected signs on dependent variables

| Variables | Firm Performance: Expected Sign On Firm Performance | Board Compensation: Expected Sign On Board Compensation |
|---|---|---|
| *Firm Performance* | | + |
| *Women on the Board (%)* | + | - |
| *Blockholder (%)* | + | + |
| *Ave. Board Tenure* | + | + |
| *Med. Board Tenure* | + | + |
| *Board Size* | - | + |
| *Outsiders on the Board (%)* | + | - |
| *Board Stock (%)* | +/- | + |
| *Busy Board (%)* | - | + |
| *R&D Expenditures (%)* | + | - |
| *Firm Size* | + | + |
| *Firm Age* | - | + |

# E Survey Questions

Q1. How old are you?

☐ Years

Q2. What is your gender?

☐ Male

☐ Female

Q3. Suppose there are two different situations in which you (may) lose money:

| **Situation 1** | **Situation 2** |
|---|---|
| 1 out of 5 chance of losing $50 | You will lose $10 with certainty |

Which of those two situations would you prefer?

☐ Situation 1

☐ Situation 2

Q4. Suppose that you are the only income earner in the family, and you have a good job guaranteed to earn your (family) income every year for life. You are given the opportunity to take a new and equally good job, with a 50–50 chance it will double your (family) income and a 50–50 chance that it will cut your (family) income by a third. Would you take the new job?

☐ Yes

☐ No

If you answered Yes, please proceed to question 5. If No, please proceed to question 6.

Q5. Suppose the chances were 50–50 that it would double your (family) income, and 50–50 that it would cut it in half. Would you still take the new job?

☐ Yes

☐ No

Please proceed to question 7.

Q6. Suppose the chances were 50–50 that it would double your (family) income and 50–50 that it would cut it by 20 percent. Would you then take the new job?

☐ Yes

☐ No

Q7. Imagine that the Netherlands is preparing for the outbreak of an unusual Asian disease that is expected to kill 600 people. Two alternative programs to combat the disease have been proposed. Assume that the exact scientific estimates of the consequences of the programs are as follows:

- If Program A is adopted, 200 people will be saved.
- If Program B is adopted, there is a 1/3 probability that 600 people will be saved, and a 2/3 probability that no people will be saved.

Which of the two programs would you favour?

☐ Program A

☐ Program B

Q8. Now consider the following additional proposals for combating the same disease:

- If Program C is adopted, 400 people will die.
- If Program D is adopted, there is a 1/3 probability that nobody will die, and a 2/3 probability that 600 people will die.

Which of these two programs would you pick?

☐ Program C

☐ Program D

Q9. Suppose there are two different situations in which you can lose money:

| Situation 1 | Situation 2 |
|---|---|
| 1 out of 20 chance of losing $200 | You will lose $10 with certainty |

Which of those two situations would you prefer?

☐ Situation 1

☐ Situation 2

Q10. Suppose you have an urn containing 30 red balls and 60 other balls that are either black or yellow. You do not know how many black or how many yellow balls there are, but that the total number of black balls plus the total number of yellow equals 60. The balls are well mixed so that each individual ball is as likely to be drawn as any other. You are now given a choice between two gambles:

| Gamble A | Gamble B |
|---|---|
| You receive $100 if you draw a red ball | You receive $100 if you draw a black ball |

Which of these two gambles would you pick?

☐ Gamble A

☐ Gamble B

Q11. Also you are given the choice between these two gambles (about a different draw from the same urn):

| Gamble C | Gamble D |
|---|---|
| You receive $100 if you draw a red or yellow ball | You receive $100 if you draw a black or yellow ball |

Which of these two gambles would you pick?

☐ Gamble C

☐ Gamble D

# F Survey Results

| Survey Number | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *1* | 24 | 1 | 1 | 2 | | 1 | 1 | 2 | 1 | 1 | 2 |
| *2* | 17 | 1 | 1 | 1 | 2 | | 2 | 2 | 1 | 1 | 2 |
| *3* | 24 | 1 | 2 | 1 | 2 | | 1 | 2 | 2 | 2 | 2 |
| *4* | 32 | 1 | 1 | 2 | | 1 | 1 | 1 | 1 | 1 | 1 |
| *5* | 23 | 1 | 1 | 1 | 2 | | 1 | 1 | 1 | 1 | 2 |
| *6* | 25 | 1 | 1 | 1 | 2 | | 2 | 2 | 1 | 2 | 2 |
| *7* | 24 | 1 | 2 | 1 | 2 | | 1 | 1 | 1 | 1 | 2 |
| *8* | 24 | 1 | 2 | 1 | 1 | | 1 | 1 | 2 | 1 | 1 |
| *9* | 23 | 1 | 1 | 1 | 2 | | 1 | 1 | 2 | 1 | 2 |
| *10* | 24 | 1 | 1 | 2 | | 1 | 1 | 1 | 1 | 2 | 2 |
| *11* | 22 | 1 | 2 | 1 | 1 | | 1 | 1 | 1 | 1 | 2 |
| *12* | 21 | 2 | 1 | 1 | 2 | | 2 | 2 | 1 | 1 | 1 |
| *13* | 24 | 1 | 1 | 2 | | 1 | 2 | 2 | 1 | 1 | 2 |
| *14* | 23 | 2 | 2 | 2 | | 2 | 2 | 2 | 2 | 2 | 2 |
| *15* | 23 | 2 | 2 | 2 | | 2 | 2 | 2 | 2 | 1 | 1 |
| *16* | 55 | 2 | 2 | 2 | | 2 | 1 | 1 | 1 | 1 | 1 |
| *17* | 23 | 2 | 2 | 2 | | 2 | 1 | 2 | 2 | 1 | 2 |
| *18* | 31 | 1 | 2 | 2 | | 2 | 1 | 2 | 1 | 1 | 2 |
| *19* | 30 | 2 | 1 | 2 | | 2 | 2 | 2 | 2 | 1 | 2 |
| *20* | 25 | 1 | 2 | 1 | 2 | | 2 | 2 | 1 | 2 | 1 |
| *21* | 21 | 1 | 2 | 1 | 2 | | 1 | 2 | 1 | 1 | 2 |
| *22* | 23 | 2 | 2 | 1 | 2 | | 1 | 1 | 2 | 1 | 2 |
| *23* | 23 | 2 | 1 | 2 | | 1 | 1 | 2 | 2 | 1 | 2 |
| *24* | 21 | 1 | 1 | 2 | | 1 | 2 | 1 | 2 | 1 | 1 |
| *25* | 23 | 2 | 1 | 1 | 2 | | 1 | 2 | 2 | 1 | 2 |
| *26* | 30 | 2 | 2 | 1 | 2 | | 2 | 2 | 1 | 1 | 2 |
| *27* | 24 | 1 | 2 | 1 | 2 | | 1 | 1 | 2 | 1 | 2 |
| *28* | 22 | 2 | 1 | 1 | 2 | | 2 | 2 | 1 | 2 | 2 |
| *29* | 23 | 2 | 2 | 2 | | 2 | 2 | 2 | 2 | 2 | 2 |
| *30* | 19 | 1 | 1 | 1 | 2 | | 2 | 1 | 2 | 1 | 2 |
| *31* | 26 | 1 | 1 | 1 | 2 | | 1 | 2 | 1 | 2 | 1 |
| *32* | 24 | 1 | 2 | 1 | 2 | | 1 | 1 | 2 | 1 | 2 |
| *33* | 27 | 1 | 2 | 2 | | 1 | 2 | 2 | 2 | 1 | 2 |
| *34* | 56 | 1 | 1 | 1 | 2 | | 1 | 1 | 1 | 2 | 1 |
| *35* | 26 | 1 | 1 | 1 | 2 | | 2 | 2 | 2 | 1 | 2 |
| *36* | 26 | 2 | 1 | 1 | 2 | | 1 | 2 | 2 | 1 | 2 |
| *37* | 16 | 2 | 2 | 1 | 2 | | 2 | 1 | 2 | 1 | 2 |
| *38* | 18 | 1 | 1 | 2 | | 2 | 2 | 2 | 1 | 2 | 1 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *39* | 26 | 1 | 1 | 2 | | 2 | 1 | 2 | 2 | 1 | 2 |
| *40* | 22 | 2 | 1 | 2 | | 2 | 2 | 2 | 1 | 1 | 2 |
| *41* | 56 | 1 | 1 | 2 | | 1 | 1 | 1 | 2 | 1 | 1 |
| *42* | 35 | 2 | 2 | 1 | 2 | | 1 | 2 | 2 | 1 | 1 |
| *43* | 23 | 1 | 1 | 1 | 2 | | 1 | 1 | 1 | 1 | 2 |
| *44* | 56 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 | 1 | 1 |
| *45* | 24 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 2 |
| *46* | 24 | 1 | 2 | 2 | | 1 | 1 | 1 | 2 | 1 | 1 |
| *47* | 20 | 2 | 2 | 2 | | 1 | 1 | 1 | 2 | 1 | 2 |
| *48* | 26 | 1 | 2 | 2 | | 2 | 2 | 2 | 2 | 1 | 1 |
| *49* | 24 | 1 | 1 | 2 | | 2 | 1 | 1 | 2 | 1 | 2 |
| *50* | 25 | 1 | 1 | 2 | | 2 | 1 | 2 | 1 | 1 | 1 |
| *51* | 21 | 2 | 2 | 1 | 2 | | 2 | 2 | 2 | 1 | 2 |
| *52* | 24 | 1 | 1 | 2 | | 2 | 2 | 2 | 1 | 1 | 1 |
| *53* | 31 | 1 | 1 | 1 | 1 | | 2 | 1 | 1 | 2 | 2 |
| *54* | 47 | 2 | 1 | 2 | | 1 | 2 | 2 | 2 | 1 | 1 |
| *55* | 23 | 2 | 1 | 2 | | 2 | 1 | 2 | 2 | 1 | 1 |
| *56* | 23 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 | 1 | 2 |
| *57* | 22 | 2 | 2 | 2 | | 2 | 1 | 1 | 2 | 1 | 1 |
| *58* | 19 | 2 | 1 | 2 | | 1 | 2 | 2 | 2 | 2 | 2 |
| *59* | 21 | 2 | 1 | 2 | | 2 | 1 | 2 | 2 | 1 | 2 |
| *60* | 24 | 1 | 2 | 1 | 2 | | 2 | 2 | 2 | 1 | 1 |
| *61* | 24 | 2 | 2 | 2 | | 2 | 1 | 1 | 2 | 2 | 2 |
| *62* | 27 | 1 | 1 | 1 | 2 | | 1 | 2 | 1 | 1 | 2 |
| *63* | 19 | 1 | 1 | 1 | 2 | | 2 | 1 | 2 | 1 | 2 |
| *64* | 37 | 1 | 1 | 2 | | 2 | 1 | 2 | 1 | 1 | 2 |
| *65* | 24 | 1 | 1 | 2 | | 2 | 1 | 1 | 1 | 1 | 2 |
| *66* | 24 | 2 | 2 | 2 | | 2 | 2 | 2 | 2 | 1 | 2 |
| *67* | 24 | 1 | 1 | 1 | 2 | | 1 | 1 | 2 | 1 | 2 |
| *68* | 58 | 2 | 2 | 2 | | 1 | 1 | 1 | 2 | 1 | 1 |
| *69* | 27 | 2 | 1 | 2 | | 2 | 1 | 2 | 2 | 2 | 1 |
| *70* | 51 | 2 | 1 | 2 | | 1 | 1 | 1 | 2 | 1 | 2 |
| *71* | 53 | 2 | 1 | 1 | 1 | | 2 | 2 | 1 | 1 | 1 |
| *72* | 54 | 2 | 1 | 2 | | 2 | 1 | 2 | 2 | 1 | 1 |
| *73* | 23 | 1 | 2 | 1 | 2 | | 2 | 2 | 2 | 1 | 1 |
| *74* | 25 | 2 | 2 | 1 | 2 | | 1 | 1 | 2 | 1 | 1 |
| *75* | 18 | 1 | 2 | 2 | | 1 | 1 | 1 | 2 | 1 | 2 |
| *76* | 24 | 1 | 2 | 2 | | 2 | 1 | 2 | 2 | 1 | 1 |
| *77* | 26 | 1 | 2 | 2 | | 1 | 1 | 2 | 2 | 2 | 1 |
| *78* | 48 | 1 | 1 | 1 | 2 | | 1 | 1 | 2 | 2 | 2 |
| *79* | 47 | 1 | 2 | 1 | 2 | | 2 | 2 | 1 | 1 | 1 |
| *80* | 27 | 2 | 1 | 2 | | 2 | 1 | 2 | 2 | 2 | 1 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *81* | 26 | 2 | 1 | 1 | 1 | | 2 | 2 | 1 | 1 | 1 |
| *82* | 31 | 2 | 2 | 2 | | 2 | 1 | 1 | 2 | 1 | 1 |
| *83* | 43 | 1 | 2 | 2 | | 1 | 2 | 1 | 2 | 1 | 2 |
| *84* | 19 | 2 | 1 | 1 | 2 | | 1 | 1 | 2 | 1 | 1 |
| *85* | 20 | 2 | 1 | 2 | | 2 | 1 | 1 | 2 | 1 | 2 |
| *86* | 25 | 1 | 1 | 2 | | 1 | 1 | 2 | 1 | 1 | 2 |
| *87* | 24 | 2 | 2 | 2 | | 2 | 1 | 1 | 1 | 2 | 1 |
| *88* | 29 | 1 | 2 | 2 | | 2 | 2 | 2 | 1 | 1 | 2 |
| *89* | 26 | 1 | 1 | 1 | 2 | | 1 | 2 | 1 | 1 | 1 |
| *90* | 23 | 2 | 1 | 2 | | 1 | 2 | 1 | 2 | 1 | 1 |
| *91* | 24 | 2 | 2 | 1 | 1 | | 2 | 1 | 1 | 2 | 1 |
| *92* | 26 | 2 | 2 | 2 | | 2 | 1 | 2 | 2 | 2 | 1 |
| *93* | 25 | 1 | 1 | 2 | | 2 | 2 | 2 | 1 | 1 | 2 |
| *94* | 48 | 1 | 1 | 2 | | 2 | 2 | 1 | 2 | 2 | 2 |
| *95* | 24 | 1 | 2 | 1 | 1 | | 1 | 2 | 1 | 1 | 2 |
| *96* | 47 | 2 | 2 | 2 | | 2 | 1 | 1 | 2 | 1 | 1 |
| *97* | 53 | 2 | 2 | 1 | 2 | | 1 | 2 | 1 | 1 | 2 |
| *98* | 55 | 2 | 1 | 2 | | 1 | 2 | 2 | 1 | 1 | 2 |

# G Single Regression Tests

Single regression 1

Independent variable: Women on Board (%)

Dependent variable: Return on Assets (ROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,045[a] | 0,002 | 0,001 | 0,065558882258536 |

a. Predictors: (Constant), Women %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,012 | 1 | 0,012 | 2,799 | ,095[b] |
| | Residual | 5,918 | 1377 | 0,004 | | |
| | Total | 5,930 | 1378 | | | |

a. Dependent Variable: ROA

b. Predictors: (Constant), Women %

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0,080 | 0,003 | | 25,714 | 0,000 |
| | Women % | 0,000 | 0,000 | -0,045 | -1,673 | 0,095 |

a. Dependent Variable: ROA

Single regression 2

Independent variable: Board Tenure

Dependent variable: Return on Assets (ROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,077[a] | 0,006 | 0,005 | 0,065431822521817 |

a. Predictors: (Constant), Med. Tenure

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,035 | 1 | 0,035 | 8,163 | ,004[b] |
| | Residual | 5,895 | 1377 | 0,004 | | |
| | Total | 5,930 | 1378 | | | |

a. Dependent Variable: ROA

b. Predictors: (Constant), Med. Tenure

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0,064 | 0,005 | | 14,186 | 0,000 |
| | Med. Tenure | 0,002 | 0,001 | 0,077 | 2,857 | 0,004 |

a. Dependent Variable: ROA

Single regression 3
Independent variable: Board Shares (%)
Dependent variable: Return on Assets (ROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,045[a] | 0,002 | 0,001 | 0,0655584508812 |

a. Predictors: (Constant), Board % stock

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,012 | 1 | 0,012 | 2,817 | ,093[b] |
| | Residual | 5,918 | 1377 | 0,004 | | |
| | Total | 5,930 | 1378 | | | |

a. Dependent Variable: ROA
b. Predictors: (Constant), Board % stock

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0,075 | 0,002 | | 40,585 | 0,000 |
| | Board % stock | 0,000 | 0,000 | 0,045 | 1,679 | 0,093 |

a. Dependent Variable: ROA

Single regression 4
Independent variable: Blockholder (%)
Dependent variable: Return on Assets (ROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,086[a] | 0,007 | 0,007 | 0,065382024492753 |

a. Predictors: (Constant), Blockholder %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,044 | 1 | 0,044 | 10,274 | ,001[b] |
| | Residual | 5,886 | 1377 | 0,004 | | |
| | Total | 5,930 | 1378 | | | |

a. Dependent Variable: ROA
b. Predictors: (Constant), Blockholder %

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0,083 | 0,003 | | 29,040 | 0,000 |
| | Blockholder % | 0,000 | 0,000 | -0,086 | -3,205 | 0,001 |

a. Dependent Variable: ROA

Single regression 5
Independent variable: Outside Directors (%)
Dependent variable: Return on Assets (ROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,065[a] | 0,004 | 0,003 | 0,065488226848561 |

a. Predictors: (Constant), Outside %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,025 | 1 | 0,025 | 5,778 | ,016[b] |
| | Residual | 5,906 | 1377 | 0,004 | | |
| | Total | 5,930 | 1378 | | | |

a. Dependent Variable: ROA
b. Predictors: (Constant), Outside %

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 0,133 | 0,024 | | 5,576 | 0,000 |
| | Outside % | -0,001 | 0,000 | -0,065 | -2,404 | 0,016 |

a. Dependent Variable: ROA

Single regression 6
Independent variable: Board Size
Dependent variable: Return on Assets (ROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,065[a] | 0,004 | 0,004 | 0,065485047165818 |

a. Predictors: (Constant), Board Size

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,025 | 1 | 0,025 | 5,913 | ,015[b] |
| | Residual | 5,905 | 1377 | 0,004 | | |
| | Total | 5,930 | 1378 | | | |

a. Dependent Variable: ROA
b. Predictors: (Constant), Board Size

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 0,098 | 0,009 | | 10,699 | 0,000 |
| | Board Size | -0,002 | 0,001 | -0,065 | -2,432 | 0,015 |

a. Dependent Variable: ROA

Single regression 7
Independent variable: Busy Board (%)
Dependent variable: Return on Assets (ROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,040[a] | 0,002 | 0,001 | 0,065573207766836 |

a. Predictors: (Constant), Busy Board %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,009 | 1 | 0,009 | 2,196 | ,139[b] |
| | Residual | 5,921 | 1377 | 0,004 | | |
| | Total | 5,930 | 1378 | | | |

a. Dependent Variable: ROA
b. Predictors: (Constant), Busy Board %

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 0,080 | 0,003 | | 26,255 | 0,000 |
| | Busy Board % | 0,000 | 0,000 | -0,040 | -1,482 | 0,139 |

a. Dependent Variable: ROA

Single regression 8
Independent variable: Firm Age
Dependent variable: Return on Assets (ROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,048[a] | 0,002 | 0,002 | 0,065548769618070 |

a. Predictors: (Constant), Firm age

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,014 | 1 | 0,014 | 3,225 | ,073[b] |
| | Residual | 5,916 | 1377 | 0,004 | | |
| | Total | 5,930 | 1378 | | | |

a. Dependent Variable: ROA
b. Predictors: (Constant), Firm age

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 0,071 | 0,003 | | 22,269 | 0,000 |
| | Firm age | 7,493E-05 | 0,000 | 0,048 | 1,796 | 0,073 |

a. Dependent Variable: ROA

Single regression 9
Independent variable: Firm Size
Dependent variable: Return on Assets (ROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,065[a] | 0,004 | 0,004 | 0,065485884115049 |

a. Predictors: (Constant), Firm size

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,025 | 1 | 0,025 | 5,877 | ,015[b] |
| | Residual | 5,905 | 1377 | 0,004 | | |
| | Total | 5,930 | 1378 | | | |

a. Dependent Variable: ROA
b. Predictors: (Constant), Firm size

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0,078 | 0,002 | | 39,441 | 0,000 |
| | Firm size | -6,229E-08 | 0,000 | -0,065 | -2,424 | 0,015 |

a. Dependent Variable: ROA

Single regression 10
Independent variable: R&D Expenditures (%)
Dependent variable: Return on Assets (ROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,002[a] | 0,000 | -0,001 | 0,065625351482071 |

a. Predictors: (Constant), R&D Expend.

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,000 | 1 | 0,000 | 0,006 | ,940[b] |
| | Residual | 5,930 | 1377 | 0,004 | | |
| | Total | 5,930 | 1378 | | | |

a. Dependent Variable: ROA
b. Predictors: (Constant), R&D Expend.

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0,076 | 0,002 | | 36,110 | 0,000 |
| | R&D Expend. | 1,926E-05 | 0,000 | 0,002 | 0,075 | 0,940 |

a. Dependent Variable: ROA

Single regression 11
Independent variable: Women on Board (%)
Dependent variable: Operating Return on Assets (OROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,032[a] | 0,001 | 0,000 | 0,069580767244129 |

a. Predictors: (Constant), Women %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,007 | 1 | 0,007 | 1,399 | ,237[b] |
| | Residual | 6,667 | 1377 | 0,005 | | |
| | Total | 6,673 | 1378 | | | |

a. Dependent Variable: OROA
b. Predictors: (Constant), Women %

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0,129 | 0,003 | | 38,998 | 0,000 |
| | Women % | 0,000 | 0,000 | -0,032 | -1,183 | 0,237 |

a. Dependent Variable: OROA

Single regression 12
Independent variable: Board Tenure
Dependent variable: Operating Return on Assets (OROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,064[a] | 0,004 | 0,003 | 0,069474588905555 |

a. Predictors: (Constant), Med. Tenure

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,027 | 1 | 0,027 | 5,615 | ,018[b] |
| | Residual | 6,646 | 1377 | 0,005 | | |
| | Total | 6,673 | 1378 | | | |

a. Dependent Variable: OROA
b. Predictors: (Constant), Med. Tenure

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0,116 | 0,005 | | 24,084 | 0,000 |
| | Med. Tenure | 0,001 | 0,001 | 0,064 | 2,370 | 0,018 |

a. Dependent Variable: OROA

Single regression 13
Independent variable: Board Shares (%)
Dependent variable: Operating Return on Assets (OROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,057[a] | 0,003 | 0,002 | 0,069504864660015 |

a. Predictors: (Constant), Board % stock

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,021 | 1 | 0,021 | 4,411 | ,036[b] |
| | Residual | 6,652 | 1377 | 0,005 | | |
| | Total | 6,673 | 1378 | | | |

a. Dependent Variable: OROA
b. Predictors: (Constant), Board % stock

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 0,125 | 0,002 | | 63,641 | 0,000 |
| | Board % stock | 0,000 | 0,000 | 0,057 | 2,100 | 0,036 |

a. Dependent Variable: OROA

Single regression 14
Independent variable: Blockholder (%)
Dependent variable: Operating Return on Assets (OROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,052[a] | 0,003 | 0,002 | 0,069523147183228 |

a. Predictors: (Constant), Blockholder %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,018 | 1 | 0,018 | 3,684 | ,055[b] |
| | Residual | 6,656 | 1377 | 0,005 | | |
| | Total | 6,673 | 1378 | | | |

a. Dependent Variable: OROA
b. Predictors: (Constant), Blockholder %

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 0,131 | 0,003 | | 42,862 | 0,000 |
| | Blockholder % | 0,000 | 0,000 | -0,052 | -1,919 | 0,055 |

a. Dependent Variable: OROA

Single regression 15
Independent variable: Outside Directors (%)
Dependent variable: Operating Return on Assets (OROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,084[a] | 0,007 | 0,006 | 0,069368045287497 |

a. Predictors: (Constant), Outside %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,047 | 1 | 0,047 | 9,865 | ,002[b] |
| | Residual | 6,626 | 1377 | 0,005 | | |
| | Total | 6,673 | 1378 | | | |

a. Dependent Variable: OROA
b. Predictors: (Constant), Outside %

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 0,205 | 0,025 | | 8,109 | 0,000 |
| | Outside % | -0,001 | 0,000 | -0,084 | -3,141 | 0,002 |

a. Dependent Variable: OROA

Single regression 16
Independent variable: Board Size
Dependent variable: Operating Return on Assets (OROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,080[a] | 0,006 | 0,006 | 0,069390774464020 |

a. Predictors: (Constant), Board Size

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,043 | 1 | 0,043 | 8,957 | ,003[b] |
| | Residual | 6,630 | 1377 | 0,005 | | |
| | Total | 6,673 | 1378 | | | |

a. Dependent Variable: OROA
b. Predictors: (Constant), Board Size

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 0,154 | 0,010 | | 15,947 | 0,000 |
| | Board Size | -0,003 | 0,001 | -0,080 | -2,993 | 0,003 |

a. Dependent Variable: OROA

Single regression 17
Independent variable: Busy Board (%)
Dependent variable: Operating Return on Assets (OROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,014[a] | 0,000 | -0,001 | 0,069609428371168 |

a. Predictors: (Constant), Busy Board %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,001 | 1 | 0,001 | 0,264 | ,608[b] |
| | Residual | 6,672 | 1377 | 0,005 | | |
| | Total | 6,673 | 1378 | | | |

a. Dependent Variable: OROA
b. Predictors: (Constant), Busy Board %

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0,127 | 0,003 | | 39,551 | 0,000 |
| | Busy Board % | -4,900E-05 | 0,000 | -0,014 | -0,514 | 0,608 |

a. Dependent Variable: OROA

Single regression 18
Independent variable: Firm Age
Dependent variable: Operating Return on Assets (OROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,028[a] | 0,001 | 0,000 | 0,069588127070567 |

a. Predictors: (Constant), Firm age

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,005 | 1 | 0,005 | 1,107 | ,293[b] |
| | Residual | 6,668 | 1377 | 0,005 | | |
| | Total | 6,673 | 1378 | | | |

a. Dependent Variable: OROA
b. Predictors: (Constant), Firm age

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0,123 | 0,003 | | 36,248 | 0,000 |
| | Firm age | 4,661E-05 | 0,000 | 0,028 | 1,052 | 0,293 |

a. Dependent Variable: OROA

Single regression 19

Independent variable: Firm Size

Dependent variable: Operating Return on Assets (OROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,123[a] | 0,015 | 0,014 | 0,069090542738873 |

a. Predictors: (Constant), Firm size

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,100 | 1 | 0,100 | 21,029 | ,000[b] |
| | Residual | 6,573 | 1377 | 0,005 | | |
| | Total | 6,673 | 1378 | | | |

a. Dependent Variable: OROA

b. Predictors: (Constant), Firm size

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0,130 | 0,002 | | 62,350 | 0,000 |
| | Firm size | -1,243E-07 | 0,000 | -0,123 | -4,586 | 0,000 |

a. Dependent Variable: OROA

Single regression 20

Independent variable: R&D Expenditures (%)

Dependent variable: Operating Return on Assets (OROA)

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,004[a] | 0,000 | -0,001 | 0,069615554588856 |

a. Predictors: (Constant), R&D Expend.

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,000 | 1 | 0,000 | 0,021 | ,884[b] |
| | Residual | 6,673 | 1377 | 0,005 | | |
| | Total | 6,673 | 1378 | | | |

a. Dependent Variable: OROA

b. Predictors: (Constant), R&D Expend.

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0,126 | 0,002 | | 56,436 | 0,000 |
| | R&D Expend. | 3,988E-05 | 0,000 | 0,004 | 0,146 | 0,884 |

a. Dependent Variable: OROA

Single regression 21

Independent variable: Women on Board (%)

Dependent variable: Tobin's Q

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,128[a] | 0,016 | 0,016 | 0,864694854948628 |

a. Predictors: (Constant), Women %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 17,078 | 1 | 17,078 | 22,840 | ,000[b] |
| | Residual | 1029,579 | 1377 | 0,748 | | |
| | Total | 1046,657 | 1378 | | | |

a. Dependent Variable: Tobin's Q

b. Predictors: (Constant), Women %

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1,553 | 0,041 | | 37,722 | 0,000 |
| | Women % | -0,011 | 0,002 | -0,128 | -4,779 | 0,000 |

a. Dependent Variable: Tobin's Q

Single regression 22

Independent variable: Board Tenure

Dependent variable: Tobin's Q

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,122[a] | 0,015 | 0,014 | 0,865344542111772 |

a. Predictors: (Constant), Med. Tenure

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 15,530 | 1 | 15,530 | 20,739 | ,000[b] |
| | Residual | 1031,127 | 1377 | 0,749 | | |
| | Total | 1046,657 | 1378 | | | |

a. Dependent Variable: Tobin's Q

b. Predictors: (Constant), Med. Tenure

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1,140 | 0,060 | | 19,089 | 0,000 |
| | Med. Tenure | 0,035 | 0,008 | 0,122 | 4,554 | 0,000 |

a. Dependent Variable: Tobin's Q

Single regression 23

Independent variable: Board Shares (%)

Dependent variable: Tobin's Q

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,048[a] | 0,002 | 0,002 | 0,870851186210227 |

a. Predictors: (Constant), Board % stock

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 2,365 | 1 | 2,365 | 3,118 | ,078[b] |
| | Residual | 1044,292 | 1377 | 0,758 | | |
| | Total | 1046,657 | 1378 | | | |

a. Dependent Variable: Tobin's Q

b. Predictors: (Constant), Board % stock

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1,378 | 0,025 | | 56,105 | 0,000 |
| | Board % stock | 0,005 | 0,003 | 0,048 | 1,766 | 0,078 |

a. Dependent Variable: Tobin's Q

Single regression 24

Independent variable: Blockholder (%)

Dependent variable: Tobin's Q

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,015[a] | 0,000 | -0,001 | 0,871743093340695 |

a. Predictors: (Constant), Blockholder %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,225 | 1 | 0,225 | 0,296 | ,587[b] |
| | Residual | 1046,432 | 1377 | 0,760 | | |
| | Total | 1046,657 | 1378 | | | |

a. Dependent Variable: Tobin's Q

b. Predictors: (Constant), Blockholder %

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1,407 | 0,038 | | 36,836 | 0,000 |
| | Blockholder % | -0,001 | 0,002 | -0,015 | -0,544 | 0,587 |

a. Dependent Variable: Tobin's Q

Single regression 25

Independent variable: Outside Directors (%)

Dependent variable: Tobin's Q

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,135[a] | 0,018 | 0,017 | 0,863903553903093 |

a. Predictors: (Constant), Outside %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 18,961 | 1 | 18,961 | 25,406 | ,000[b] |
| | Residual | 1027,696 | 1377 | 0,746 | | |
| | Total | 1046,657 | 1378 | | | |

a. Dependent Variable: Tobin's Q

b. Predictors: (Constant), Outside %

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 2,975 | 0,315 | | 9,439 | 0,000 |
| | Outside % | -0,018 | 0,004 | -0,135 | -5,040 | 0,000 |

a. Dependent Variable: Tobin's Q

Single regression 26

Independent variable: Board Size

Dependent variable: Tobin's Q

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,220[a] | 0,048 | 0,048 | 0,850451097551169 |

a. Predictors: (Constant), Board Size

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 50,718 | 1 | 50,718 | 70,123 | ,000[b] |
| | Residual | 995,939 | 1377 | 0,723 | | |
| | Total | 1046,657 | 1378 | | | |

a. Dependent Variable: Tobin's Q

b. Predictors: (Constant), Board Size

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 2,366 | 0,119 | | 19,937 | 0,000 |
| | Board Size | -0,086 | 0,010 | -0,220 | -8,374 | 0,000 |

a. Dependent Variable: Tobin's Q

Single regression 27
Independent variable: Busy Board (%)
Dependent variable: Tobin's Q

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,114[a] | 0,013 | 0,012 | 0,866182253604649 |

a. Predictors: (Constant), Busy Board %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 13,532 | 1 | 13,532 | 18,037 | ,000[b] |
| | Residual | 1033,124 | 1377 | 0,750 | | |
| | Total | 1046,657 | 1378 | | | |

a. Dependent Variable: Tobin's Q
b. Predictors: (Constant), Busy Board %

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1,529 | 0,040 | | 38,174 | 0,000 |
| | Busy Board % | -0,005 | 0,001 | -0,114 | -4,247 | 0,000 |

a. Dependent Variable: Tobin's Q

Single regression 28
Independent variable: Firm Age
Dependent variable: Tobin's Q

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,085[a] | 0,007 | 0,006 | 0,868684917322134 |

a. Predictors: (Constant), Firm age

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 7,554 | 1 | 7,554 | 10,010 | ,002[b] |
| | Residual | 1039,103 | 1377 | 0,755 | | |
| | Total | 1046,657 | 1378 | | | |

a. Dependent Variable: Tobin's Q
b. Predictors: (Constant), Firm age

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1,503 | 0,042 | | 35,473 | 0,000 |
| | Firm age | -0,002 | 0,001 | -0,085 | -3,164 | 0,002 |

a. Dependent Variable: Tobin's Q

Single regression 29

Independent variable: Firm Size

Dependent variable: Tobin's Q

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,189[a] | 0,036 | 0,035 | 0,856104523162769 |

a. Predictors: (Constant), Firm size

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 37,433 | 1 | 37,433 | 51,074 | ,000[b] |
| | Residual | 1009,224 | 1377 | 0,733 | | |
| | Total | 1046,657 | 1378 | | | |

a. Dependent Variable: Tobin's Q

b. Predictors: (Constant), Firm size

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1,475 | 0,026 | | 56,951 | 0,000 |
| | Firm size | -2,401E-06 | 0,000 | -0,189 | -7,147 | 0,000 |

a. Dependent Variable: Tobin's Q

Single regression 30

Independent variable: R&D Expenditures (%)

Dependent variable: Tobin's Q

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,017[a] | 0,000 | 0,000 | 0,871703566582706 |

a. Predictors: (Constant), R&D Expend.

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,320 | 1 | 0,320 | 0,421 | ,517[b] |
| | Residual | 1046,337 | 1377 | 0,760 | | |
| | Total | 1046,657 | 1378 | | | |

a. Dependent Variable: Tobin's Q

b. Predictors: (Constant), R&D Expend.

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1,401 | 0,028 | | 50,182 | 0,000 |
| | R&D Expend. | -0,002 | 0,003 | -0,017 | -0,649 | 0,517 |

a. Dependent Variable: Tobin's Q

Single regression 31

Independent variable: Return on Assets (ROA)

Dependent variable: Short Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,086[a] | 0,007 | 0,007 | 456269,41002 |

a. Predictors: (Constant), ROA

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 2136238146257,190 | 1 | 2136238146257,190 | 10,261 | ,001[b] |
| | Residual | 286666303508973,000 | 1377 | 208181774516,321 | | |
| | Total | 288802541655231,000 | 1378 | | | |

a. Dependent Variable: Short Pay

b. Predictors: (Constant), ROA

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 997586,877 | 18801,987 | | 53,058 | 0,000 |
| | ROA | -600185,275 | 187362,148 | -0,086 | -3,203 | 0,001 |

a. Dependent Variable: Short Pay

Single regression 32

Independent variable: Operating Return on Assets (OROA)

Dependent variable: Short Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,128[a] | 0,016 | 0,016 | 454175,70493 |

a. Predictors: (Constant), OROA

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 4761080460047,870 | 1 | 4761080460047,870 | 23,081 | ,000[b] |
| | Residual | 284041461195183,000 | 1377 | 206275570947,845 | | |
| | Total | 288802541655231,000 | 1378 | | | |

a. Dependent Variable: Short Pay

b. Predictors: (Constant), OROA

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1058398,202 | 25299,790 | | 41,834 | 0,000 |
| | OROA | -844648,732 | 175811,497 | -0,128 | -4,804 | 0,000 |

a. Dependent Variable: Short Pay

Single regression 33
Independent variable: Tobin's Q
Dependent variable: Short Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,258[a] | 0,067 | 0,066 | 442401,27758 |

a. Predictors: (Constant), Tobin's Q

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 19297629563885,600 | 1 | 19297629563885,600 | 98,599 | ,000[b] |
| | Residual | 269504912091345,000 | 1377 | 195718890407,658 | | |
| | Total | 288802541655231,000 | 1378 | | | |

a. Dependent Variable: Short Pay
b. Predictors: (Constant), Tobin's Q

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1140846,411 | 22441,875 | | 50,836 | 0,000 |
| | Tobin's Q | -135784,400 | 13674,589 | -0,258 | -9,930 | 0,000 |

a. Dependent Variable: Short Pay

Single regression 34
Independent variable: Women on Board (%)
Dependent variable: Short Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,152[a] | 0,023 | 0,022 | 452659,67106 |

a. Predictors: (Constant), Women %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 6654170616075,870 | 1 | 6654170616075,870 | 32,475 | ,000[b] |
| | Residual | 282148371039155,000 | 1377 | 204900777806,213 | | |
| | Total | 288802541655231,000 | 1378 | | | |

a. Dependent Variable: Short Pay
b. Predictors: (Constant), Women %

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 850704,688 | 21552,842 | | 39,471 | 0,000 |
| | Women % | 7102,281 | 1246,300 | 0,152 | 5,699 | 0,000 |

a. Dependent Variable: Short Pay

Single regression 35

Independent variable: Board Tenure

Dependent variable: Short Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,079[a] | 0,006 | 0,006 | 456525,63164 |

a. Predictors: (Constant), Med. Tenure

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1814188383349,250 | 1 | 1814188383349,250 | 8,705 | ,003[b] |
| | Residual | 286988353271881,000 | 1377 | 208415652339,783 | | |
| | Total | 288802541655231,000 | 1378 | | | |

a. Dependent Variable: Short Pay

b. Predictors: (Constant), Med. Tenure

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1037611,524 | 31514,998 | | 32,924 | 0,000 |
| | Med. Tenure | -11972,664 | 4058,025 | -0,079 | -2,950 | 0,003 |

a. Dependent Variable: Short Pay

Single regression 36

Independent variable: Board Shares (%)

Dependent variable: Short Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,023[a] | 0,001 | 0,000 | 457849,56799 |

a. Predictors: (Constant), Board % stock

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 147227204357,062 | 1 | 147227204357,062 | 0,702 | ,402[b] |
| | Residual | 288655314450874,000 | 1377 | 209626226906,952 | | |
| | Total | 288802541655231,000 | 1378 | | | |

a. Dependent Variable: Short Pay

b. Predictors: (Constant), Board % stock

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 955211,799 | 12912,337 | | 73,977 | 0,000 |
| | Board % stock | -1172,665 | 1399,274 | -0,023 | -0,838 | 0,402 |

a. Dependent Variable: Short Pay

Single regression 37

Independent variable: Blockholder (%)

Dependent variable: Short Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,138[a] | 0,019 | 0,018 | 453593,40246 |

a. Predictors: (Constant), Blockholder %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 5488957421460,690 | 1 | 5488957421460,690 | 26,678 | ,000[b] |
| | Residual | 283313584233770,000 | 1377 | 205746974752,193 | | |
| | Total | 288802541655231,000 | 1378 | | | |

a. Dependent Variable: Short Pay

b. Predictors: (Constant), Blockholder %

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1032992,352 | 19877,202 | | 51,969 | 0,000 |
| | Blockholder % | -4915,952 | 951,764 | -0,138 | -5,165 | 0,000 |

a. Dependent Variable: Short Pay

Single regression 38
Independent variable: Outside Directors (%)
Dependent variable: Short Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,281[a] | 0,079 | 0,078 | 439563,44475 |

a. Predictors: (Constant), Outside %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 22744079411415,500 | 1 | 22744079411415,500 | 117,713 | ,000[b] |
| | Residual | 266058462243815,000 | 1377 | 193216021963,555 | | |
| | Total | 288802541655231,000 | 1378 | | | |

a. Dependent Variable: Short Pay
b. Predictors: (Constant), Outside %

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | -783377,327 | 160386,037 | | -4,884 | 0,000 |
| | Outside % | 19928,102 | 1836,764 | 0,281 | 10,850 | 0,000 |

a. Dependent Variable: Short Pay

Single regression 39
Independent variable: Board Size
Dependent variable: Short Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,446[a] | 0,199 | 0,199 | 409826,38293 |

a. Predictors: (Constant), Board Size

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 57524838131713,700 | 1 | 57524838131713,700 | 342,496 | ,000[b] |
| | Residual | 231277703523517,000 | 1377 | 167957664141,988 | | |
| | Total | 288802541655231,000 | 1378 | | | |

a. Dependent Variable: Short Pay
b. Predictors: (Constant), Board Size

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | -86368,749 | 57182,795 | | -1,510 | 0,131 |
| | Board Size | 91953,915 | 4968,696 | 0,446 | 18,507 | 0,000 |

a. Dependent Variable: Short Pay

Single regression 40

Independent variable: Busy Board (%)

Dependent variable: Short Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,059[a] | 0,003 | 0,003 | 457168,42527 |

a. Predictors: (Constant), Busy Board %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1005453260131,870 | 1 | 1005453260131,870 | 4,811 | ,028[b] |
| | Residual | 287797088395099,000 | 1377 | 209002969059,621 | | |
| | Total | 288802541655231,000 | 1378 | | | |

a. Dependent Variable: Short Pay

b. Predictors: (Constant), Busy Board %

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 914300,231 | 21141,268 | | 43,247 | 0,000 |
| | Busy Board % | 1374,322 | 626,590 | 0,059 | 2,193 | 0,028 |

a. Dependent Variable: Short Pay

Single regression 41

Independent variable: Firm Age

Dependent variable: Short Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,321[a] | 0,103 | 0,102 | 433720,99213 |

a. Predictors: (Constant), Firm age

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 29769702713330,500 | 1 | 29769702713330,500 | 158,254 | ,000[b] |
| | Residual | 259032838941900,000 | 1377 | 188113899013,726 | | |
| | Total | 288802541655231,000 | 1378 | | | |

a. Dependent Variable: Short Pay

b. Predictors: (Constant), Firm age

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 730204,318 | 21148,429 | | 34,528 | 0,000 |
| | Firm age | 3473,224 | 276,093 | 0,321 | 12,580 | 0,000 |

a. Dependent Variable: Short Pay

Single regression 42
Independent variable: Firm Size
Dependent variable: Short Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,224[a] | 0,050 | 0,050 | 446284,27827 |

a. Predictors: (Constant), Firm size

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 14545923923265,800 | 1 | 14545923923265,800 | 73,033 | ,000[b] |
| | Residual | 274256617731965,000 | 1377 | 199169657031,202 | | |
| | Total | 288802541655231,000 | 1378 | | | |

a. Dependent Variable: Short Pay
b. Predictors: (Constant), Firm size

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 899379,117 | 13503,334 | | 66,604 | 0,000 |
| | Firm size | 1,496 | 0,175 | 0,224 | 8,546 | 0,000 |

a. Dependent Variable: Short Pay

Single regression 43
Independent variable: R&D Expenditures (%)
Dependent variable: Short Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,057[a] | 0,003 | 0,003 | 457215,38497 |

a. Predictors: (Constant), R and D Expend.

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 946325991165,125 | 1 | 946325991165,125 | 4,527 | ,034[b] |
| | Residual | 287856215664065,000 | 1377 | 209045908252,771 | | |
| | Total | 288802541655231,000 | 1378 | | | |

a. Dependent Variable: Short Pay
b. Predictors: (Constant), R and D Expend.

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 968846,612 | 14639,289 | | 66,181 | 0,000 |
| | R and D Expend. | -3812,776 | 1792,015 | -0,057 | -2,128 | 0,034 |

a. Dependent Variable: Short Pay

Single regression 44
Independent variable: Return on Assets (ROA)
Dependent variable: Long Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,014[a] | 0,000 | -0,001 | 1060266,77042022000000 |

a. Predictors: (Constant), ROA

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 311050226659,250 | 1 | 311050226659,250 | 0,277 | ,599[b] |
| | Residual | 1547976064877730,000 | 1377 | 1124165624457,320 | | |
| | Total | 1548287115104390,000 | 1378 | | | |

a. Dependent Variable: Long Pay
b. Predictors: (Constant), ROA

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1645583,437 | 43691,559 | | 37,664 | 0,000 |
| | ROA | -229021,241 | 435387,197 | -0,014 | -0,526 | 0,599 |

a. Dependent Variable: Long Pay

Single regression 45
Independent variable: Operating Return on Assets (OROA)
Dependent variable: Long Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,010[a] | 0,000 | -0,001 | 1060315,63191905000000 |

a. Predictors: (Constant), OROA

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 168372599447,000 | 1 | 168372599447,000 | 0,150 | ,699[b] |
| | Residual | 1548118742504950,000 | 1377 | 1124269239291,900 | | |
| | Total | 1548287115104390,000 | 1378 | | | |

a. Dependent Variable: Long Pay
b. Predictors: (Constant), OROA

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1648196,246 | 59064,724 | | 27,905 | 0,000 |
| | OROA | -158839,709 | 410448,372 | -0,010 | -0,387 | 0,699 |

a. Dependent Variable: Long Pay

Single regression 46
Independent variable: Tobin's Q
Dependent variable: Long Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,044[a] | 0,002 | 0,001 | 1059367,59578941000000 |

a. Predictors: (Constant), Tobin's Q

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 2935504061496,750 | 1 | 2935504061496,750 | 2,616 | ,106[b] |
| | Residual | 1545351611042900,000 | 1377 | 1122259703008,640 | | |
| | Total | 1548287115104390,000 | 1378 | | | |

a. Dependent Variable: Long Pay
b. Predictors: (Constant), Tobin's Q

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1554531,585 | 53738,985 | | 28,927 | 0,000 |
| | Tobin's Q | 52958,934 | 32744,969 | 0,044 | 1,617 | 0,106 |

a. Dependent Variable: Long Pay

Single regression 47
Independent variable: Women on Board (%)
Dependent variable: Long Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,027[a] | 0,001 | 0,000 | 1059992,82557819000000 |

a. Predictors: (Constant), Women %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1110858892640,750 | 1 | 1110858892640,750 | 0,989 | ,320[b] |
| | Residual | 1547176256211750,000 | 1377 | 1123584790277,240 | | |
| | Total | 1548287115104390,000 | 1378 | | | |

a. Dependent Variable: Long Pay
b. Predictors: (Constant), Women %

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1586800,533 | 50470,276 | | 31,440 | 0,000 |
| | Women % | 2901,886 | 2918,461 | 0,027 | 0,994 | 0,320 |

a. Dependent Variable: Long Pay

Single regression 48

Independent variable: Board Tenure

Dependent variable: Long Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,026[a] | 0,001 | 0,000 | 1060004,14912927000000 |

a. Predictors: (Constant), Med. Tenure

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1077802776557,250 | 1 | 1077802776557,250 | 0,959 | ,328[b] |
| | Residual | 1547209312327840,000 | 1377 | 1123608796171,270 | | |
| | Total | 1548287115104390,000 | 1378 | | | |

a. Dependent Variable: Long Pay

b. Predictors: (Constant), Med. Tenure

Coefficients[a]

| Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1694176,723 | 73174,487 | | 23,153 | 0,000 |
| | Med. Tenure | -9228,248 | 9422,305 | -0,026 | -0,979 | 0,328 |

a. Dependent Variable: Long Pay

Single regression 49

Independent variable: Board Shares (%)

Dependent variable: Long Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,014[a] | 0,000 | -0,001 | 1060272,56889390000000 |

a. Predictors: (Constant), Board % stock

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 294118784000,000 | 1 | 294118784000,000 | 0,262 | ,609[b] |
| | Residual | 1547992996320390,000 | 1377 | 1124177920348,870 | | |
| | Total | 1548287115104390,000 | 1378 | | | |

a. Dependent Variable: Long Pay

b. Predictors: (Constant), Board % stock

Coefficients[a]

| Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1623643,225 | 29901,954 | | 54,299 | 0,000 |
| | Board % stock | 1657,453 | 3240,391 | 0,014 | 0,511 | 0,609 |

a. Dependent Variable: Long Pay

## Single regression 50

Independent variable: Blockholder (%)
Dependent variable: Long Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,152[a] | 0,023 | 0,023 | 1047990,82423001000000 |

a. Predictors: (Constant), Blockholder %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 35948990022384,700 | 1 | 35948990022384,700 | 32,732 | ,000[b] |
| | Residual | 1512338125082010,000 | 1377 | 1098284767670,300 | | |
| | Total | 1548287115104390,000 | 1378 | | | |

a. Dependent Variable: Long Pay
b. Predictors: (Constant), Blockholder %

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1835467,604 | 45924,665 | | 39,967 | 0,000 |
| | Blockholder % | -12580,737 | 2198,975 | -0,152 | -5,721 | 0,000 |

a. Dependent Variable: Long Pay

## Single regression 51

Independent variable: Outside Directors (%)
Dependent variable: Long Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,101[a] | 0,010 | 0,010 | 1054921,26867619000000 |

a. Predictors: (Constant), Outside %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 15880433068270,200 | 1 | 15880433068270,200 | 14,270 | ,000[b] |
| | Residual | 1532406682036120,000 | 1377 | 1112858883105,390 | | |
| | Total | 1548287115104390,000 | 1378 | | | |

a. Dependent Variable: Long Pay
b. Predictors: (Constant), Outside %

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 178113,088 | 384915,177 | | 0,463 | 0,644 |
| | Outside % | 16651,867 | 4408,104 | 0,101 | 3,778 | 0,000 |

a. Dependent Variable: Long Pay

Single regression 52

Independent variable: Board Size

Dependent variable: Long Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,252[a] | 0,063 | 0,063 | 1026265,00686429000000 |

a. Predictors: (Constant), Board Size

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 98003361943806,200 | 1 | 98003361943806,200 | 93,051 | ,000[b] |
| | Residual | 1450283753160590,000 | 1377 | 1053219864314,150 | | |
| | Total | 1548287115104390,000 | 1378 | | | |

a. Dependent Variable: Long Pay

b. Predictors: (Constant), Board Size

Coefficients[a]

| Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 272863,035 | 143194,056 | | 1,906 | 0,057 |
| | Board Size | 120022,593 | 12442,339 | 0,252 | 9,646 | 0,000 |

a. Dependent Variable: Long Pay

Single regression 53

Independent variable: Busy Board (%)

Dependent variable: Long Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,006[a] | 0,000 | -0,001 | 1060352,91366353000000 |

a. Predictors: (Constant), Busy Board %

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 59503918599,000 | 1 | 59503918599,000 | 0,053 | ,818[b] |
| | Residual | 1548227611185800,000 | 1377 | 1124348301514,740 | | |
| | Total | 1548287115104390,000 | 1378 | | | |

a. Dependent Variable: Long Pay

b. Predictors: (Constant), Busy Board %

Coefficients[a]

| Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1637357,616 | 49034,893 | | 33,392 | 0,000 |
| | Busy Board % | -334,334 | 1453,309 | -0,006 | -0,230 | 0,818 |

a. Dependent Variable: Long Pay

Single regression 54

Independent variable: Firm Age

Dependent variable: Long Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,156[a] | 0,024 | 0,024 | 1047379,9958164200000 |

a. Predictors: (Constant), Firm age

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 37711428893054,700 | 1 | 37711428893054,700 | 34,377 | ,000[b] |
| | Residual | 1510575686211340,000 | 1377 | 1097004855636,410 | | |
| | Total | 1548287115104390,000 | 1378 | | | |

a. Dependent Variable: Long Pay

b. Predictors: (Constant), Firm age

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1877816,865 | 51070,716 | | 36,769 | 0,000 |
| | Firm age | -3909,147 | 666,730 | -0,156 | -5,863 | 0,000 |

a. Dependent Variable: Long Pay

Single regression 55

Independent variable: Firm Size

Dependent variable: Long Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,282[a] | 0,080 | 0,079 | 1017306,1337408000000 |

a. Predictors: (Constant), Firm size

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 123213608163262,000 | 1 | 123213608163262,000 | 119,057 | ,000[b] |
| | Residual | 1425073506941130,000 | 1377 | 1034911769746,650 | | |
| | Total | 1548287115104390,000 | 1378 | | | |

a. Dependent Variable: Long Pay

b. Predictors: (Constant), Firm size

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1475045,873 | 30780,884 | | 47,921 | 0,000 |
| | Firm size | 4,355 | 0,399 | 0,282 | 10,911 | 0,000 |

a. Dependent Variable: Long Pay

Single regression 56

Independent variable: R&D Expenditures (%)

Dependent variable: Long Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,039[a] | 0,002 | 0,001 | 1059555,08213476000000 |

a. Predictors: (Constant), R and D Expend.

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 2388464553531,750 | 1 | 2388464553531,750 | 2,128 | ,145[b] |
| | Residual | 1545898650550860,000 | 1377 | 1122656972077,610 | | |
| | Total | 1548287115104390,000 | 1378 | | | |

a. Dependent Variable: Long Pay

b. Predictors: (Constant), R and D Expend.

Coefficients[a]

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1654955,868 | 33925,221 | | 48,782 | 0,000 |
| | R and D Expend. | -6057,317 | 4152,833 | -0,039 | -1,459 | 0,145 |

a. Dependent Variable: Long Pay

# H Multiple Regression Tests

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,182[a] | 0,033 | 0,026 | 0,064743190130882 |

a. Predictors: (Constant), Firm age, R&D Expend., Board % stock, Women %, Med. Tenure, Firm size, Busy Board %, Blockholder %, Outside %, Board Size

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,196 | 10 | 0,020 | 4,679 | ,000[b] |
| | Residual | 5,734 | 1368 | 0,004 | | |
| | Total | 5,930 | 1378 | | | |

a. Dependent Variable: ROA

b. Predictors: (Constant), Firm age, R&D Expend., Board % stock, Women %, Med. Tenure, Firm size, Busy Board %, Blockholder %, Outside %, Board Size

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95,0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | 0,128 | 0,027 | | 4,773 | 0,000 | 0,076 | 0,181 |
| | Women % | 0,000 | 0,000 | -0,046 | -1,660 | 0,097 | -0,001 | 0,000 |
| | Blockholder % | -0,001 | 0,000 | -0,108 | -3,883 | 0,000 | -0,001 | 0,000 |
| | Med. Tenure | 0,001 | 0,001 | 0,055 | 1,985 | 0,047 | 0,000 | 0,002 |
| | Board Size | -0,002 | 0,001 | -0,069 | -2,318 | 0,021 | -0,004 | 0,000 |
| | Outside % | 0,000 | 0,000 | -0,032 | -1,102 | 0,270 | -0,001 | 0,000 |
| | Board % stock | 0,000 | 0,000 | 0,034 | 1,227 | 0,220 | 0,000 | 0,001 |
| | Busy Board % | -9,529E-05 | 0,000 | -0,029 | -1,036 | 0,300 | 0,000 | 0,000 |
| | R&D Expend. | 3,272E-06 | 0,000 | 0,000 | 0,013 | 0,990 | 0,000 | 0,001 |
| | Firm size | -6,387E-08 | 0,000 | -0,067 | -2,321 | 0,020 | 0,000 | 0,000 |
| | Firm age | 0,000 | 0,000 | 0,080 | 2,882 | 0,004 | 0,000 | 0,000 |

a. Dependent Variable: ROA

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,192[a] | 0,037 | 0,030 | 0,068550721116017 |

a. Predictors: (Constant), Firm age, R&D Expend., Board % stock, Women %, Med. Tenure, Firm size, Busy Board %, Blockholder %, Outside %, Board Size

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0,245 | 10 | 0,024 | 5,213 | ,000[b] |
| | Residual | 6,429 | 1368 | 0,005 | | |
| | Total | 6,673 | 1378 | | | |

a. Dependent Variable: OROA

b. Predictors: (Constant), Firm age, R&D Expend., Board % stock, Women %, Med. Tenure, Firm size, Busy Board %, Blockholder %, Outside %, Board Size

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95,0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | 0,194 | 0,028 | | 6,812 | 0,000 | 0,138 | 0,250 |
| | Women % | 0,000 | 0,000 | -0,016 | -0,596 | 0,551 | -0,001 | 0,000 |
| | Blockholder % | 0,000 | 0,000 | -0,081 | -2,924 | 0,004 | -0,001 | 0,000 |
| | Med. Tenure | 0,001 | 0,001 | 0,042 | 1,539 | 0,124 | 0,000 | 0,002 |
| | Board Size | -0,002 | 0,001 | -0,063 | -2,138 | 0,033 | -0,004 | 0,000 |
| | Outside % | -0,001 | 0,000 | -0,051 | -1,773 | 0,076 | -0,001 | 0,000 |
| | Board % stock | 0,000 | 0,000 | 0,051 | 1,840 | 0,066 | 0,000 | 0,001 |
| | Busy Board % | 3,745E-05 | 0,000 | 0,011 | 0,385 | 0,701 | 0,000 | 0,000 |
| | R&D Expend. | 1,792E-05 | 0,000 | 0,002 | 0,067 | 0,947 | -0,001 | 0,001 |
| | Firm size | -1,267E-07 | 0,000 | -0,125 | -4,348 | 0,000 | 0,000 | 0,000 |
| | Firm age | 0,000 | 0,000 | 0,063 | 2,292 | 0,022 | 0,000 | 0,000 |

a. Dependent Variable: OROA

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,319[a] | 0,102 | 0,095 | 0,828990744155263 |

a. Predictors: (Constant), Firm age, R&D Expend., Board % stock, Women %, Med. Tenure, Firm size, Busy Board %, Blockholder %, Outside %, Board Size

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 106,532 | 10 | 10,653 | 15,502 | ,000[b] |
| | Residual | 940,125 | 1368 | 0,687 | | |
| | Total | 1046,657 | 1378 | | | |

a. Dependent Variable: Tobin's Q

b. Predictors: (Constant), Firm age, R&D Expend., Board % stock, Women %, Med. Tenure, Firm size, Busy Board %, Blockholder %, Outside %, Board Size

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95,0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | 2,852 | 0,344 | | 8,285 | 0,000 | 2,177 | 3,527 |
| | Women % | -0,009 | 0,002 | -0,102 | -3,827 | 0,000 | -0,014 | -0,004 |
| | Blockholder % | -0,006 | 0,002 | -0,086 | -3,189 | 0,001 | -0,009 | -0,002 |
| | Med. Tenure | 0,020 | 0,008 | 0,071 | 2,658 | 0,008 | 0,005 | 0,035 |
| | Board Size | -0,068 | 0,011 | -0,172 | -6,032 | 0,000 | -0,090 | -0,046 |
| | Outside % | -0,005 | 0,004 | -0,040 | -1,426 | 0,154 | -0,013 | 0,002 |
| | Board % stock | 0,005 | 0,003 | 0,049 | 1,820 | 0,069 | 0,000 | 0,010 |
| | Busy Board % | -0,003 | 0,001 | -0,068 | -2,564 | 0,010 | -0,005 | -0,001 |
| | R&D Expend. | -0,003 | 0,003 | -0,027 | -1,049 | 0,294 | -0,010 | 0,003 |
| | Firm size | -1,645E-06 | 0,000 | -0,130 | -4,670 | 0,000 | 0,000 | 0,000 |
| | Firm age | 0,000 | 0,001 | -0,006 | -0,239 | 0,811 | -0,001 | 0,001 |

a. Dependent Variable: Tobin's Q

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,560[a] | 0,313 | 0,307 | 381179,17137 |

a. Predictors: (Constant), Firm age, R and D Expend., OROA, Board % stock, Women %, Busy Board %, Med. Tenure, Blockholder %, Firm size, Outside %, Board Size, Tobin's Q, ROA

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 90471371321781,500 | 13 | 6959336255521,650 | 47,897 | ,000[b] |
| | Residual | 198331170333449,000 | 1365 | 145297560683,846 | | |
| | Total | 288802541655231,000 | 1378 | | | |

a. Dependent Variable: Short Pay

b. Predictors: (Constant), Firm age, R and D Expend., OROA, Board % stock, Women %, Busy Board %, Med. Tenure, Blockholder %, Firm size, Outside %, Board Size, Tobin's Q, ROA

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95,0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | -752343,537 | 162458,034 | | -4,631 | 0,000 | -1071038,019 | -433649,056 |
| | ROA | 304457,711 | 253081,951 | 0,044 | 1,203 | 0,229 | -192014,021 | 800929,442 |
| | OROA | -87984,366 | 262505,769 | -0,013 | -0,335 | 0,738 | -602942,833 | 426974,101 |
| | Tobin's Q | -83452,697 | 17497,471 | -0,159 | -4,769 | 0,000 | -117777,546 | -49127,848 |
| | Women % | 2125,716 | 1102,703 | 0,045 | 1,928 | 0,054 | -37,460 | 4288,893 |
| | Blockholder % | -1421,690 | 844,974 | -0,040 | -1,683 | 0,093 | -3079,279 | 235,898 |
| | Med. Tenure | 2014,216 | 3534,961 | 0,013 | 0,570 | 0,569 | -4920,329 | 8948,761 |
| | Board Size | 67523,686 | 5232,541 | 0,328 | 12,905 | 0,000 | 57258,993 | 77788,380 |
| | Outside % | 10564,537 | 1731,568 | 0,149 | 6,101 | 0,000 | 7167,714 | 13961,360 |
| | Board % stock | -2228,793 | 1222,398 | -0,043 | -1,823 | 0,068 | -4626,775 | 169,190 |
| | Busy Board % | -1010,843 | 544,883 | -0,043 | -1,855 | 0,064 | -2079,741 | 58,055 |
| | R and D Expend. | -2553,960 | 1498,558 | -0,038 | -1,704 | 0,089 | -5493,686 | 385,766 |
| | Firm size | 0,271 | 0,164 | 0,041 | 1,657 | 0,098 | -0,050 | 0,592 |
| | Firm age | 2195,247 | 254,729 | 0,203 | 8,618 | 0,000 | 1695,544 | 2694,950 |

a. Dependent Variable: Short Pay

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,444[a] | 0,197 | 0,189 | 954291,985015229000 |

a. Predictors: (Constant), Firm age, R and D Expend., OROA, Board % stock, Women %, Busy Board %, Med. Tenure, Blockholder %, Firm size, Outside %, Board Size, Tobin's Q, ROA

ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 305218207117617,000 | 13 | 23478323624432,100 | 25,781 | ,000[b] |
| | Residual | 1243068907986780,000 | 1365 | 910673192664,306 | | |
| | Total | 1548287115104390,000 | 1378 | | | |

a. Dependent Variable: Long Pay

b. Predictors: (Constant), Firm age, R and D Expend., OROA, Board % stock, Women %, Busy Board %, Med. Tenure, Blockholder %, Firm size, Outside %, Board Size, Tobin's Q, ROA

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95,0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | -199422,841 | 406717,919 | | -0,490 | 0,624 | -997282,778 | 598437,095 |
| | ROA | -1029063,073 | 633597,258 | -0,064 | -1,624 | 0,105 | -2271992,986 | 213866,840 |
| | OROA | -531982,244 | 657190,031 | -0,035 | -0,809 | 0,418 | -1821194,180 | 757229,692 |
| | Tobin's Q | 236467,614 | 43805,374 | 0,194 | 5,398 | 0,000 | 150534,461 | 322400,767 |
| | Women % | 1033,035 | 2760,646 | 0,010 | 0,374 | 0,708 | -4382,533 | 6448,604 |
| | Blockholder % | -7138,358 | 2115,414 | -0,086 | -3,374 | 0,001 | -11288,174 | -2988,543 |
| | Med. Tenure | -8655,134 | 8849,866 | -0,025 | -0,978 | 0,328 | -26015,947 | 8705,680 |
| | Board Size | 115237,954 | 13099,803 | 0,242 | 8,797 | 0,000 | 89540,026 | 140935,883 |
| | Outside % | 9744,366 | 4335,025 | 0,059 | 2,248 | 0,025 | 1240,332 | 18248,401 |
| | Board % stock | -6234,528 | 3060,305 | -0,052 | -2,037 | 0,042 | -12237,939 | -231,116 |
| | Busy Board % | -2126,294 | 1364,128 | -0,039 | -1,559 | 0,119 | -4802,308 | 549,720 |
| | R and D Expend. | -3894,799 | 3751,679 | -0,025 | -1,038 | 0,299 | -11254,480 | 3464,881 |
| | Firm size | 3,768 | 0,410 | 0,244 | 9,195 | 0,000 | 2,964 | 4,571 |
| | Firm age | -5966,687 | 637,721 | -0,238 | -9,356 | 0,000 | -7217,707 | -4715,668 |

a. Dependent Variable: Long Pay

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