THE EFFECT OF THE EXPERIENCE OF COMPENSATION COMMITTEE MEMBERS ON THE USE OF NONFINANCIAL PERFORMANCE MEASURES

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ABSTRACT

The importance of nonfinancial performance measures is increasing. Rewarding Chief Executive Officers (CEOs) based on only financial targets could promote short-term thinking and could give too little attention to the future performance of the firm. Previous research has found many benefits in using nonfinancial performance measures, such as the improvement of financial performance. However, there are still many firms where the compensation committee only uses financial performance measures in the annual bonus incentive for the CEO. In this study, the relation between the experience (tenure) of the compensation committee members and the use of nonfinancial performance measures is examined. The results show significant support for the hypothesis that compensation committee tenure is negatively associated with the use of nonfinancial performance measures, suggesting that a long tenure leads to less independence, which gives the CEO an opportunity to influence the committee to not include any nonfinancial measures in the bonus determination. No significant support is found for the second hypothesis, predicting that the effect is stronger when the CEO has more power.

Key words: *nonfinancial performance measures, compensation committee, board tenure, CEO power.*

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1. INTRODUCTION

Firms want to attract and maintain quality managers and they want them to perform their tasks in the best interests of the shareholders. Executive compensation plays an essential role in attracting, maintaining and motivating these quality managers. Because of this important role, most large companies have delegated the specific design of executive compensation to the compensation committee, which is a subcommittee of the board of directors. (Anderson & Bizjak, 2003). The United States government is aware of the important role of executive compensation, reflected by many regulations. The Securities and Exchange Commission (SEC) started their current disclosure regime in 1992, with an important expansion in 2006: every component of executive compensation should be disclosed by public firms in the United States. Part of the disclosure regime is the requirement for firms to include a compensation committee report in their proxy statements. In this report, firms have to identify the goals of the compensation package and the performance measures that are used to determine the compensation. (Dew-Becker, 2009).

The relation between the compensation committee (or board of directors in general) and the compensation of executives has been examined multiple times (Daily et al., 1993; Main et al., 1995; Conyon & Peck, 1998; Conyon & He, 2004; Ryan Jr & Wiggins III, 2004; Sun & Cahan, 2009; Sun et al., 2009). In this research, I want to examine a particular relation that has not been examined before, posed in the following research question:

> *What is the effect of the experience of compensation committee members on the use of nonfinancial performance measures?*

Nonfinancial performance measures have grown in importance in response to criticism of financial measures (Ahmad & Zabri, 2016). Financial performance measures say more about the past than the future (Banker et al., 2000) and promote short-term thinking (Gomes et al., 2004), whereas nonfinancial performance measures possess opposite characteristics. Most previous research has focused on the effects of nonfinancial performance measures (e.g. Banker et al., 2000; Stede et al., 2006; Lee & Yang, 2011; Ahmed & Zabri, 2016) and found that these measures increase financial performance and are valuable in motivating and evaluating managers. Thus, nonfinancial performance measures seem to have many benefits, but Chief Executive Officers (CEOs) might not always like to see these measures in their bonus contracts. In general, CEOs want their compensation to be as high as possible; sometimes they manipulate the numbers to achieve this. Brazel et al. (2009) and Ibrahim & Lloyd (2011) found that

nonfinancial numbers can be harder to manipulate. To support this claim, they also found that firms that include nonfinancial performance measures have lower income-increasing earnings management. When a CEO only has financial performance targets, he can focus on the short-term and might reach the targets easier than when nonfinancial measures are included. Hence, I predict CEOs prefer to only have financial performance targets in their bonus incentives.

Which performance measures are used in bonus incentives for CEOs, is a decision made by the compensation committee (Hermanson et al., 2012). I examine if the experience of the compensation committee, measured by the average tenure of the members, influences the choice of performance measures. Previous research has found that a long tenure can lead to less board independence and governance problems (Vafeas, 2003; Berberich & Niu, 2011; Coles et al., 2015). A potential reason for this is that the board becomes too friendly with the management of the firm, which for example leads to higher pay for the CEO. The board may be even more influenceable when the CEO has more power (Vafeas, 2003; Huang & Hilary, 2018). Based on previous research, the following hypotheses are examined in this thesis:

H1: *The tenure of the compensation committee members is negatively associated with the use of nonfinancial performance measures.*

H2: *The negative association between the tenure of the compensation committee and the use of nonfinancial performance measures is more pronounced when the CEO has more power.*

The sample consists of 200 S&P 500 companies, with cross-sectional data from the years 2016 and 2017. Data on the CEOs and compensation committee members is collected from the ISS (Institutional Shareholder Services) Directors database and data on performance measurement is collected from the hand-collected proxy statements from the Electronic Data Gathering and Retrieval (EDGAR) database from the SEC. Lastly, the Compustat database is used to collect data on the other (control) variables.

To examine the first hypothesis, two different models are used: one logistic regression where the dependent variable is a dummy variable that equals 1 when nonfinancial performance measures are included in the annual CEO bonus and one OLS regression where the dependent variable is a continuous variable indicating the fraction of the bonus that is based on nonfinancial performance. Four additional models are introduced when examining the second hypothesis, that differ in the dependent variable (as explained before) and in the moderating variable: CEO power. The two measures for CEO power are CEO duality, a dummy variable

that equals 1 if the CEO is also chairman of the board, and high CEO tenure, a dummy variable that equals 1 when CEO tenure is higher than the average tenure in the sample. All models are tested in three different ways: without control variables, with control variables and with control variables and industry fixed effects. The control variables account for firm and compensation committee size, financial performance and an innovation-oriented strategy, which Ittner et al. (1997) found has a positive effect on the use of nonfinancial performance measures. The industry fixed effects are based on 2-digit SIC (Standard Industrial Classification) codes.

The correlation matrix, a two sample t-test and the regression tests all show significant support for the first hypothesis. A significant negative association is found between compensation committee tenure (CC tenure) and the use of nonfinancial performance measures, in most cases at the 0.1 percent level. Additional information about this effect is found in the odds ratio, showing that the chance of using nonfinancial performance measures decreases with approximately 15 percent when CC tenure increases with one year. Hence, these results support the prediction that a long tenure can lead to less independence. In this study, this lack of independence is manifested in the absence of nonfinancial performance measures in annual bonus contracts. This raises the importance of regulators to pay attention to long board tenure and gives firms a reason to pay attention to tenure when designing the compensation committee. Contrarily to the results of hypothesis 1, no significant support is found for the second hypothesis, suggesting that CEOs might not (be able to) use their power to influence the performance measures in their bonus contracts. For CEOs with a very long tenure, the opposite result was found: in those cases it is more likely that nonfinancial performance measures are included. A potential explanation is that CEOs with a long tenure are very familiar with the firm, its customers and its employees, which makes it easier to score well on nonfinancial measures, such as customer and employee satisfaction. CEO power could still be a danger to independence, because this study does not rule out that CEOs might still be able to influence other aspects of the compensation, such as the amount. Hence, CEO power should still be considered as a threat to independence by firms as well as regulators. For this study, the results have led to the first hypothesis being accepted and the second hypothesis being rejected.

Previous research has examined characteristics of board members, but this was mostly focused on the effect of those characteristics on the amount of compensation or firm performance. Previous research has examined nonfinancial performance measures as well, but mostly as an independent variable in relation to firm performance. This research, however, examines different aspects of these constructs and has several contributions to existing literature. Firstly,

this study contributes to the compensation committee literature. It gives indications as to how certain characteristics of the members of the committee can influence the process of executive compensation, which is a very important process in firms. This research contributes to the performance measures literature as well. Performance measurement has been reasoned to be one of the most important design decisions for managers (Lee & Yang, 2011), so this study contributes to an important research area. Moreover, nonfinancial measures are becoming more important. Research has shown this for example in Austria, where the use of nonfinancial measures increased with 44 percent from 2002 to 2012 (Mühlbacher et al., 2016) and in The Netherlands, where there was an increase in using nonfinancial measures of approximately 60 percent during the financial crisis (Gijsel, 2012). Even though the effects of the use of nonfinancial performance measures have been examined many times, this research examines if the chance of using these measures is higher under influence of a certain committee members' characteristic. Furthermore, this research will look at certain aspects of CEO power, namely CEO duality and CEO tenure, as a moderating effect. As mentioned before, the results of this study are relevant for firms as well as regulators. Firms could take long tenure and CEO power into account while making compensation decisions and regulators could pay attention to long tenure being a threat to board independence.

This research is limited, mostly because of the data collecting process. Hand-collecting the proxy statements to find information on performance measures is time-consuming, which leads to a limited sample size. A limited sample size raises questions about the statistical power of the tests and the representativeness of the sample. Moreover, for every firm, only one observation is examined, so the thesis is lacking in time series data. Consequentially, only associations are found in this study; causal inferences cannot be made. Lastly, some control variables may be outdated, because they are based on older studies. However, the results of this study could still be an interesting starting point for future research.

This thesis consists of the literature review and hypothesis development, the sample selection, the research design, the results and finally the conclusion.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

To be in control, firms want to evaluate the performance of their employees. When a firm has developed and is using a group of techniques to evaluate performance, it is called a performance measurement system. A popular example of such a system is the balanced scorecard, which evaluates performance based on four perspectives: financial, customer, process and learning and growth. Previous literature has categorized performance measures in quantitative and qualitative measures or financial and nonfinancial measures. Traditionally, quantitative and financial performance measures are the standard measures. However, the importance of nonfinancial measures has grown in response to criticism of financial measures. (Ahmad & Zabri, 2016). The balanced scorecard is a good example of that.

Focusing merely on financial indicators could lead to promoting short-term thinking (Gomes et al., 2004). Banker et al. (2000) added to this by stating that financial performance measures say more about past than about future performance; they are lagging indicators. On the contrary, nonfinancial measures are leading indicators, because they say something about future performance. Banker et al. (2000), along with other researchers such as Stede et al. (2006), also found evidence that firm performance increases after implementing nonfinancial performance measures. In addition, nonfinancial performance measures are valuable in evaluating and motivating performance of managers (Ahmad & Zabri, 2016). Nonfinancial performance measures are for example product quality, customer satisfaction and employee satisfaction (Ittner et al., 1997).

As mentioned in the introduction, most research on nonfinancial performance measures is focused on its effects, especially its effect on performance (Lee & Yang, 2011). However, there are some studies that have examined certain situations in which it is more likely that nonfinancial measures are used. This is for example the case when a firm follows an innovation-oriented strategy, when there is much noise in financial measures and when a firm has adopted strategic quality initiatives (Ittner et al., 1997).

The performance measures that are used to determine executive compensation need to be disclosed by public firms. The research of Hermanson et al. (2012) showed that compensation committees are responsible for CEO compensation and executive compensation (including special compensation arrangements, such as severance and change in control), the compensation committee report for the proxy statement and committee charter updates. Thus, the compensation committee is responsible for determining and disclosing the performance

measures. I want to examine if a characteristic of the committee members, namely experience, has an effect on the use of nonfinancial performance measures.

Experience will be measured by the average tenure of the compensation committee members. In general, public companies do not have specific limits on board term. However, many investors are concerned that long tenure might influence director independence. These concerns have been taken over by organizations, such as the Institutional Shareholder Services (ISS), which has included director tenure in their company governance ratings since 2014. ISS sees a tenure of more than nine years as a potential danger to a director's independence (Huang & Hilary, 2018).

Previous research has found that longer tenure can lead to less board independence (Vafeas, 2003), governance problems (Berberich & Niu, 2011) and a lack of critical thinking by board members (Coles et al., 2015). Vafeas (2003) introduced the 'management-friendliness' hypothesis, which poses that board members become more connected to the firm's management and less motivated to effectively monitor when tenure increases. Vafeas found for example that participation in the compensation committee of a Senior director (who is a director with a tenure of more than 20 years) is associated with higher pay for the CEO.

Huang & Hilary (2018) have found evidence of an inverted U-shaped relation between firm value and board tenure, reflecting a trade-off between knowledge accumulation and a board's independence. At first, more firm-specific knowledge is accumulated when tenure increases, but when management and the board grow familiar, board independence is undermined (Fracassi & Tate, 2012). Increasing knowledge is associated with an increase in firm value, whereas decreasing independence is associated with a decrease in firm value. Huang & Hilary (2018) explain the U-shaped relation by examining various corporate decisions, such as CEO compensation practices, that show the same kind of relation.

Thus, previous research has found that an high average board tenure could be potentially dangerous for board independence. This could lead to a higher compensation for the CEO, indicating that the CEO can influence the board when independence is low. A question yet to be answered is: would the CEO use that influencing power to promote nonfinancial or financial performance measures? In general, the CEO wants his compensation to be as high as possible. Sometimes, numbers are manipulated to reach certain performance targets. Ibrahim & Lloyd (2011) found that firms including both financial and nonfinancial performance measures in bonus contracts have lower income-increasing earnings management than firms that only

include financial measures. Ibrahim & Lloyd reason that nonfinancial performance measures are harder to manipulate. For example, customer satisfaction data can be externally generated from an independent database. Furthermore, Brazel et al. (2009) state that nonfinancial information can be more easily verified by auditors than financial information (e.g. the number of employees versus the allowance for doubtful accounts). When the CEO does want to manipulate nonfinancial numbers, he will probably need more data and more help from various employees than with the manipulation of financial numbers (e.g. the human resource department needs to be involved to manipulate data on employees). Thus, when the CEO only has financial performance targets, it could be enough to focus on the short term and the CEO could try to manipulate the numbers to receive excessive payments (even if future performance may deteriorate). Receiving excessive pay and reaching targets will likely be more difficult when nonfinancial measures are included. I thus predict that CEOs prefer to only have financial performance targets.

To conclude, I predict that when the average tenure of the compensation committee members of a firm is high, board independence will be lower and CEOs might influence the committee members to use only financial performance measures. This prediction is reflected in the first hypothesis:

H1: The tenure of the compensation committee members is negatively associated with the use of nonfinancial performance measures.

The potential danger to board independence could be higher when the board members are more influenceable. I predict that the chance of the compensation committee being influenced by the CEO is higher when the CEO has more power through CEO duality and a long tenure. Vafeas (2003) and Huang & Hilary (2018) both included CEO power in their research and found that this has a moderating effect on the relation between board tenure and independence. The compensation committee members are part of the board of directors and when the CEO is also chairman of that board, there is a chance that the CEO is more familiar with the compensation committee members and has more power to influence their decisions. Secondly, when both the compensation committee members and the CEO have a long tenure, there is a higher chance that they are more familiar with each other as well, hence there is a higher chance of the CEO being able to influence the decisions of the members of the committee. This leads to the second hypothesis:

H2: *The negative association between the tenure of the compensation committee and the use of nonfinancial performance measures is more pronounced when the CEO has more power.*

The constructs and the operational measures of the hypotheses will be discussed and further explained in chapter 4 and Appendix A includes the Libby Boxes for both hypotheses. The methodology of archival research will be used to examine these hypotheses.

3. SAMPLE SELECTION

I will use the ISS (formerly RiskMetrics) Directors database to obtain information about the compensation committee members. This database contains variables related to individual board directors from S&P 500 companies, such as name, age, committee memberships and tenure. The databases of Institutional Shareholder Services Inc. (ISS) are accessible through the Wharton Research Data Services (WRDS).

As mentioned before, the performance measures used to determine executive compensation can be found in the compensation committee report, which is part of the proxy statement. This report is the responsibility of the compensation committee. I will hand-collect the annual proxy statements of S&P 500 companies from the Electronic Data Gathering and Retrieval (EDGAR) database from the SEC. Besides information about the annual bonus, I register the name of the CEO who receives the bonus. I do this, to make sure this name matches the CEO data I find in the ISS Directors database.

I use the ISS Directors and Compustat databases to retrieve data for the control variables and moderating variables, which will be explained in the research design.

I will retrieve the data from 2016 to 2017. Because of the time-consuming hand-collecting process, the dataset will be cross-sectional. Thus, for every firm in the sample, there will be one observation (which will either be in 2016 or 2017). I want the data to be recent to make this study as relevant as possible. I started this research at the beginning of 2019. For many firms, data from 2018 was not available yet at this time. Consequentially, I use data from 2016 and 2017, not 2018.

Table 1 shows a summary of the sample selection process. The final samples consists of 200 observations without control variables and 185 observations with control variables. The amount of observations for each variable individually is shown in table 2 in paragraph 5.1.

Table 1: Summary of the sample selection process

	Number of observations
Total number of observations from the ISS Directors database	28,319
Filter out all firms that are not part of the S&P 500	(17,507)
Filter out all directors that are not a member of the compensation committee	(6,724)
Filter out all duplicates (based on firm ID)	(3,081)
Filter out all firms that I did not hand-collect the proxy statement of	(807)
Final sample for the main variables (without control variables)	200
Filter out observations that have missing values for one or more control variables	(11)
Filter out observations with extreme values	(4)
Final sample including control variables	185

4. RESEARCH DESIGN

In chapter 2, the hypotheses of this study were developed. This chapter will explain the regression models that will be used, how the theoretical constructs of the hypotheses are operationalized and which control variables are added to the models.

4.1 INDEPENDENT VARIABLE

In this study, the independent variable is the experience of compensation committee members. I measure this construct with the average tenure (TEN_CC) of the committee members. As set out in the literature review, long board tenure can be a threat to independence (Vafeas, 2003; Huang & Hilary, 2018). I predict that nonfinancial performance measures will less likely be used when tenure is higher, because the board independence will be lower. Thus, tenure is a good proxy for the independent variable in this study. Another proxy for experience could be the age of the compensation committee members. However, a member with an old age yet short tenure is more likely to be independent than a member with a younger age and a longer tenure. Thus, age is not used as a proxy for experience.

For each company in the sample, information about tenure is gathered from the ISS Directors database. The number of members in the compensation committee is counted and the average tenure is calculated by adding up the tenure of the different members and dividing it by the number of members in the committee.

4.2 DEPENDENT VARIABLE

The dependent variable is the use of nonfinancial performance measures in determining the annual bonus of the CEO. Information about the annual bonus (or: annual (cash) incentive) is found in the compensation committee report or "compensation discussion and analysis" section in the proxy statement. I focus on the CEO, because the moderating variables are about CEO characteristics and information on other executive officers is less available. I focus on the annual bonus and not the long-term bonus for several reasons. Firstly, most other studies that examine this subject, focus on the annual bonus (such as Ittner et al., 1997 and Matějka et al., 2009; studies that this research design is partly based upon). Secondly, there is a good distribution in this sample: 56 percent of the companies use nonfinancial measures in their annual bonus, 44 percent do not. Lastly, information about performance measures and bonus formulas are best available for the annual incentives.

I measure the use of nonfinancial performance measures with two different proxies. Firstly, I create a dummy variable (NONFIN) that equals 1 if nonfinancial performance is used. Examples of nonfinancial performance are measures for customer satisfaction, health, safety and environment, individual performance and leadership. Most companies disclose the formula where the annual bonus is based on, which has led to the second proxy for the dependent variable. Besides a dummy variable, I employ a continuous variable that shows the percentage of the annual bonus that is based on nonfinancial performance measures (NONFIN_PERC).

4.3 MODERATING VARIABLES

The first hypothesis predicts that when the tenure of compensation committee members is higher, it will be more likely that the members are influenced by the CEO to not use any nonfinancial performance measures. The prediction for the second hypothesis is that this influencing effect will be greater when the CEO has more power. This moderating effect will be examined using two different variables: CEO duality (DUA) and CEO tenure. CEO duality is a dummy variable that equals 1 if the CEO is also chairman of the board. The compensation committee members are members of the board of directors as well and when the CEO is their chairman, they are more likely to be influenced by the CEO. CEO tenure is a variable that denotes the amount of years the CEO has been in his current position (TEN_CEO). Data about CEOs is found in the ISS Directors database. This data is matched with the CEO name collected from the proxy statement, to be absolutely certain that the annual bonus and CEO data belong to the same person.

To find an interaction effect, the moderating variables will interact with the independent variable: average tenure of the compensation committee members (CC tenure). Since CEO tenure and CC tenure are both continuous variables, and finding interactions among continuous variables brings along many difficulties (Shieh, 2009), I create a dummy variable for CEO tenure. This variable equals 1 if the tenure is higher than the average CEO tenure in the sample (TEN_CEO_HIGH). In the descriptive and correlation statistics, the continuous variable CEO tenure will be shown, whereas the regression results include the dummy variable TEN_CEO_HIGH.

4.4 CONTROL VARIABLES

Previous research shows that certain variables can influence the use of nonfinancial performance measures. Excluding those variables can lead to omitted variables bias, which gives endogeneity concerns. Ittner et al. (1997) found several variables that influence the use of nonfinancial performance measures, which are used as control variables in the study of Matějka et al. (2009). The following control variables from Matějka et al. are control variables in this study as well:

- The market-to-book ratio (MTB) in the same year the main variables are collected from. The market-to-book ratio shows the growth and investment opportunities of the firm (Ittner et al., 1997).
- The R&D-to-sales ratio (R&DS) in the same year the main variables are collected from. This ratio shows the growth potential and the tendency of the firm to search for new products (Ittner et al., 1997).
- The employees-to-sales ratio (EMPS) in the same year the main variables are collected from. This ratio contains an indication of the efficiency and the strategy of the firm. (Ittner et al., 1997; Matějka et al., 2009).

In the study of Ittner et al. (1997), these three ratios are all used to measure the construct *organizational strategy.* Ittner et al. look at two different types of firms: *prospectors*, who have a differentiation strategy and *defenders*, who have a cost leader strategy. Prospectors are more flexible and focused on innovation, whereas defenders are more stable and focused on efficiency. Whereas defenders might be more interested in performance measures such as cost control, prospectors might focus more on nonfinancial measures, such as new products. The study of Ittner et al. (1997) found that prospectors are indeed more likely to use nonfinancial measures in their annual bonuses. The market-to-book ratio and R&D-to-sales ratio both contain information about growth (potential), investment and research opportunities; which are important aspects for prospectors. When the employees-to-sales ratio is low, the firm is very efficient (cost leader strategy), whereas a high ratio shows that not every employee generates many sales, so there is more room for creativity. The greater these three ratios, the more likely that a firm is a prospector and will put more emphasis on nonfinancial performance measures. (Ittner et al., 1997).

Additionally, I include the following control variables:

- The amount of directors in the compensation committee (SIZE_CC). This number is a part of the calculation of the independent variable: the average tenure of the compensation committee members. When the committee is smaller, the individual tenure of the members has more influence on the average tenure than when the committee is larger. Thus, to control for this, I add SIZE_CC to the control variables. Besides, when the compensation committee is larger, it might be harder for the CEO to influence the performance measures. When the committee is smaller, the CEO might only need to influence one or two members. Hence, I expect SIZE_CC to be positively associated with the use of nonfinancial performance measures.
- Size of the firm, which is measured by the log of total assets (SIZE). In many studies, size is included as a control variable, with total assets as the proxy. I predict that bigger firms have more controls implemented and have standardized the compensation process, which might make it more difficult for CEOs to influence the compensation committee. Thus, I expect nonfinancial performance measures to be used more in bigger firms.
- Financial performance, which is measured by the return on assets (ROA). This is a widely used measure for financial performance (Waddock & Graves, 1997). I include this control variable, because previous research has found that firm performance increases after implementing nonfinancial performance measures (Banker et al., 2000; Stede et al., 2006). Hence, I predict that ROA is positively associated with the use of nonfinancial measures.

Besides the previously mentioned control variables, I will include industry fixed effects (IFE), which will be based on 2-digit SIC industry codes.

4.5 THE REGRESSION MODELS

In this paragraph, I will discuss the regression models for the first and second hypothesis.

4.5.1 HYPOTHESIS 1

The dependent variable has two different proxies: NONFIN and NONFIN_PERC. The dummy variable has a binary outcome, so for the first proxy I will use a logit regression model, specified in the following function:

(1) $NONFIN = \beta_0 + \beta_1 TEN\_CC + \beta_2 MTB + \beta_3 R\&DS + \beta_4 EMPS + \beta_5 SIZE\_CC + \beta_6 SIZE + \beta_7 ROA + IFE + e.$

The coefficient of interest is β_1. The outcomes of this regression model will show if the probability of using nonfinancial performance measures will significantly change when the experience of the compensation committee members is different. I expect β_1 to be negative, because I predict that a higher tenure leads to less independence, which makes it more likely that the CEO can influence the compensation committee to not use any (or less) nonfinancial performance measures.

The second proxy, NONFIN_PERC, is a continuous variable. The second model for the first hypothesis will consequently be an OLS regression, specified in the following function:

(2) $NONFIN\_PERC = \beta_0 + \beta_1 TEN\_CC + \beta_2 MTB + \beta_3 R\&DS + \beta_4 EMPS + \beta_5 SIZE\_CC + \beta_6 SIZE + \beta_7 ROA + IFE + e.$

The coefficient of interest is β_1. I expect this coefficient to be negative as well. Based on the explanations given before, I expect the coefficients β_2, β_3, β_4, β_5, β_6 and β_7 to be positive in regression (1) as well as in regression (2).

4.5.2 HYPOTHESIS 2

For the second hypothesis, I will include CEO power as a moderating variable. There will be four different models, which will differ in the dependent variable (NONFIN or NONFIN_PERC) and in the moderating variable (DUA or TEN_CEO_HIGH):

(3) $NONFIN = \beta_0 + \beta_1 TEN\_CC + \beta_2 DUA + \beta_3 TEN\_CC*DUA + \beta_4 MTB + \beta_5 R\&DS + \beta_6 EMPS + \beta_7 SIZE\_CC + \beta_8 SIZE + \beta_9 ROA + IFE + e.$

(4) $NONFIN = \beta_0 + \beta_1 TEN\_CC + \beta_2 TEN\_CEO\_HIGH + \beta_3 TEN\_CC*TEN\_CEO\_HIGH + \beta_4 MTB + \beta_5 R\&DS + \beta_6 EMPS + \beta_7 SIZE\_CC + \beta_8 SIZE + \beta_9 ROA + IFE + e.$

(5) $NONFIN\_PERC = \beta_0 + \beta_1 TEN\_CC + \beta_2 DUA + \beta_3 TEN\_CC*DUA + \beta_4 MTB + \beta_5 R\&DS + \beta_6 EMPS + \beta_7 SIZE\_CC + \beta_8 SIZE + \beta_9 ROA + IFE + e.$

(6) $NONFIN\_PERC = \beta_0 + \beta_1 TEN\_CC + \beta_2 TEN\_CEO\_HIGH + \beta_3 TEN\_CC*TEN\_CEO\_HIGH + \beta_4 MTB + \beta_5 R\&DS + \beta_6 EMPS + \beta_7 SIZE\_CC + \beta_8 SIZE + \beta_9 ROA + IFE + e.$

In all models, the coefficient of interest is the interaction effect, β_3. The outcome will show if the relation, posed in hypothesis 1, is stronger when the CEO has more power through being chairman on the board or through having a long tenure. I expect all interaction effects to have a negative coefficient, because I predict that the CEO will have a bigger influence on the compensation committee with more power, which will lead to a lesser (or no) use of nonfinancial performance measures.

For the other variables, the expectations for the last four regression models are the same as in regression (1) and (2). This means that I expect coefficient β_1 to be negative and coefficients β_4, β_5, β_6, β_7, β_8 and β_9 to be positive.

5. RESULTS

In the previous chapter, I discussed the variables and the regression models used in this study. In this chapter, I will discuss the results. The first paragraph is focused on the descriptive statistics and the second and third paragraph are focused on the regression results for hypothesis 1 and 2. The chapter ends with some robustness checks.

5.1 DESCRIPTIVE STATISTICS

The descriptive statistics of the variables are shown in table 2. The average tenure of compensation committee members is 9.135 years and the median is 9 years. This is very similar to The United States Board Index of Spencer Stuart, which examines the latest data and trends in the boards of S&P 500 companies. This index showed that the average board tenure in 2017 was approximately 9 years. (Spencer Stuart, 2017), which indicates a representative sample in this study. The dummy variable for nonfinancial performance measures shows a satisfying division of the sample between firms that use nonfinancial performance measures and firms that only use financial performance measures: 56 versus 44 percent to be exact. On average, 16.145 percent of the bonus is based on nonfinancial performance measures.

In 44 percent of the firms, the CEO is also the chairman of the board. CEO tenure is on average shorter than the compensation committee tenure, namely an average of 7.44 years and a median of 5 years.

The median of the R&D-to-sales ratio is 0, because some companies do not have any research & development costs. Most firms have a positive financial performance, with an average return on assets of 5.6 percent. The market-to-book ratio, the employees-to-sales ratio and ROA have less observations than the other variables. The reasons for this are: one firm has a missing employees-to-sales ratio, six firms have a missing market-to-book ratio, one firm has both the employees-to-sales and the market-to-book ratio missing, three firms have the market-to-book ratio and ROA missing and four firms have an extreme market-to-book ratio. The extreme values are deleted, because they might significantly influence the statistical tests when kept in the sample.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Median	Max
TEN_CC	200	9.135	3.533	1	9	23
NONFIN	200	0.560	0.498	0	1	1
NONFIN_PERC	200	16.145	19.869	0	20	70
DUA	200	0.440	0.498	0	0	1
TEN_CEO	200	7.440	8.242	0	5	51
MTB	186	3.769	7.944	-41.824	3.190	42.735
R&DS	200	0.046	0.102	0	0	0.863
EMPS	198	3.010	3.105	0.093	2.370	28.703
SIZE_CC	200	3.975	1	1	4	7
SIZE	200	9.801	1.096	7.614	9.770	14.427
ROA	197	0.056	0.078	-0.338	0.050	0.258

This table shows the descriptive statistics for all variables in this study. Obs = the amount of observations, mean = the average value, std. dev. = the standard deviation, min = the lowest amount, median = the value in the middle of the observations, max = the highest amount. Variables are explained in chapter 4 and in Appendix B.

Table 3 presents the correlations between all variables. I predict that compensation committee tenure and the use of nonfinancial performance measures are negatively associated. The dummy variable and the fraction variable of nonfinancial performance measures are both significantly and negatively correlated with compensation committee tenure at the 0.1 percent level. In this correlation result, control variables are not included yet. However, it still gives a good indication that the predicted relation indeed exists.

There is a positive and significant (at the 1 percent level) correlation between CEO tenure and CC tenure, which means that the average tenure of the compensation committee members tends to be high when CEO tenure is high as well. In these situations, the CEO works with many of the same board/committee members during his tenure, which may not have the best effect on board independence. A potential reason for this positive correlation is that committee members as well as the CEO stay on when firm performance is positive. However, this reason is not reflected in the correlation between ROA and CC/CEO tenure.

Table 3: Correlation matrix

	TEN_CC	NON-FIN	NON-FIN_PERC	DUA	TEN_CEO	MTB	R&DS	EMPS	SIZE_CC	SIZE	ROA
TEN_CC	1										
NONFIN	-0.274***	1									
NONFIN_PERC	-0.260***	0.723***	1								
DUA	0.116	-0.161*	-0.122	1							
TEN_CEO	0.230**	-0.035	-0.051	0.286***	1						
MTB	0.013	0.140	0.164*	0.107	0.048	1					
R&DS	0.154*	0.057	0.229**	-0.032	-0.041	0.192**	1				
EMPS	0.085	-0.073	-0.142	-0.055	0.036	0.010	-0.153*	1			
SIZE_CC	0.021	-0.014	-0.099	0.155*	-0.119	-0.036	-0.208**	0.022	1		
SIZE	-0.124	0.153*	0.134	0.025	-0.020	-0.154*	-0.181*	-0.219*	0.101	1	
ROA	0.108	-0.184*	-0.141	-0.008	-0.064	0.199**	-0.017	0.233**	0.045	-0.185*	1

This table shows the Pearson correlation coefficient between variables. Variable definitions can be found in chapter 4 and in appendix B.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

For the moderating variables, I predict a negative coefficient of the interaction effect. Since the coefficient of CC tenure is negative, the coefficients of CEO duality and CEO tenure should be positive for the interaction effect to turn out negative. However, both moderating variables are negatively correlated with the nonfinancial variables. This contradicts my prediction. Nevertheless, only the association between CEO duality and the nonfinancial dummy variable is significant (at the 5 percent level). Besides, the correlation table only gives a first indication; the regression models later in this chapter will give a more complete view. Accordingly, in the discussion of the regression results, I will go more into the potential reasons why the results might contradict my predictions. An interesting correlation, related to the moderating variables, is the positive and very significant relation between CEO duality and CEO tenure. This means that CEO tenure tends to be higher when the CEO is also chairman of the board. This effect strengthens the power position of the CEO. A reason for this strong correlation could be that a CEO is only trusted to become chairman when he has been with the company for a long time.

In the previous chapter, predictions were made about the control variables. For all control variables, a positive association with nonfinancial performance measures is expected. Table 3 shows mixed results when it comes to these associations. Half of the variables are positively correlated with the nonfinancial variables; the other half are negatively correlated. The market-to-book ratio, the R&D-to-sales ratio and the size have the predicted positive association with the nonfinancial variables. For the market-to-book ratio and the R&D-to-sales ratio, the correlation is significant with the nonfinancial fraction variable, while the size has a significant correlation with the nonfinancial dummy variable. For the negative associations, the only significant relation is found between ROA and the nonfinancial dummy variable at the 5 percent level. I will discuss potential reasons for differences in the predictions and results after showing the regression results.

In table 4, the dummy variable for nonfinancial performance measures divides the sample in two groups. For all variables, the means are shown for the group of firms that only uses financial performance measures in annual bonus contracts and the group of firms that does include nonfinancial performance measures in annual bonus contracts. The difference between the means is statistically tested with a two-sample t-test. The means of the main variable of interest, compensation committee tenure, differ significantly at the 0.1 percent level. As predicted, the mean of CC tenure is higher when nonfinancial performance measures are not included.

The measures of CEO power, namely CEO duality and CEO tenure, are both higher in the group without nonfinancial performance measures. However, only the CEO duality means differ significantly at the 5 percent level. The only other variable where a significant difference (at 5 percent) in means is found, is the return on assets. The financial performance of firms that include nonfinancial performance measures is worse than firms that only use financial measures. This goes against the prediction, which will be discussed in the next paragraphs. The market-to-book ratio is also worth mentioning, because the difference in means is significantly different at the 5.6 percent level. The ratio is much higher for firms that do use nonfinancial performance measures, which shows a great growth potential for this group of firms. Another interesting variable is the size of the compensation committee. There is barely any difference in means between the two groups (3.977 versus 3.973), which indicates that size of the committee might not have any influence on the use of nonfinancial performance measures.

Table 4: Differences in means

	(1) NONFIN = 0 Mean	(2) NONFIN = 1 Mean	(3) Difference in means
TEN_CC	10.205	8.295	1.910***
			(3.931)
DUA	0.534	0.366	0.168*
			(2.398)
TEN_CEO	8.011	6.991	1.020
			(0.869)
MTB	2.500	4.747	-2.247
			(-1.926)
R&DS	0.039	0.051	-0.012
			(-0.848)
EMPS	3.211	2.852	0.359
			(0.807)
SIZE_CC	3.977	3.973	0.004
			(0.028)
SIZE	9.692	9.886	-0.194
			(-1.243)
ROA	0.071	0.045	0.026*
			(2.333)

This table shows the results of a two-sample t test. The variables have been divided in two groups based on the nonfinancial dummy variable: one group includes the firms that do not use nonfinancial performance measures (1) and one group includes the firms that do use them (2). Column (3) shows the difference in means between the two groups. Variable definitions can be found in chapter 4 and in Appendix B.

t statistics in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5.2 COMPENSATION COMMITTEE TENURE AND NONFINANCIAL MEASURES

In this paragraph, I will discuss the regression results for the first hypothesis:

H1: The tenure of the compensation committee members is negatively associated with the use of nonfinancial performance measures.

Table 5 shows the results for this hypothesis. The first 3 regressions are based on the first model, discussed in paragraph 4.5.1, with the dummy variable for nonfinancial performance measures as the dependent variable. Regression (1) is a univariate regression, (2) includes the control variables and (3) includes control variables and industry fixed effects. In the third regression, 29 observations were dropped because there is no within variation in some industry groups. The predicted negative association between CC tenure and the use of nonfinancial performance measures is significantly found in all three regressions. Additionally, table 5 shows the odds ratio. When this ratio is below 1, the effect is negative, which coincides with the negative coefficients. An odds ratio of 0.846 in regression (1) means that the chance of nonfinancial performance measures being included decreases with 15.4 percent (1-0.846) when CC tenure increases with one year. The odds ratios of regression (2) and (3) are very similar; 15.6 and 14.9 percent respectively.

The control variables that showed a positive correlation with the nonfinancial variables in table 3, have positive coefficients in regression (2) and (3) as well. Of those variables, the market-to-book ratio is the only one to be significant at the 5 percent level in both regressions. Size is significant at the 10 percent level in the second regression.

The control variables that showed a negative correlation in table 3, have a negative coefficient in the third regression of table 5 as well. However, in the second regression, only the coefficient of ROA is negative. This is at the same time the only place in table 5 where a coefficient of a control variable is negative and significant (at the 5 percent level). This result contradicts with the prediction that financial performance is positively associated with the use of nonfinancial performance measures. This prediction is based on earlier studies that showed an improvement of financial performance after implementing nonfinancial performance measures. The research design of these studies is different from this study. For example, Banker et al. (2000) used time-series data to compare financial performance before and after implementation of a new performance measurement system. Nonfinancial performance measures were the independent variable and financial performance the dependent variable, which is the opposite from the research design in this study. Because of the cross-sectional data in this study, there is no

'before' and 'after' situation. Hence, firm performance may have improved after implementing nonfinancial measures, but this is not visible in this model. A potential reason for financial performance to be higher on average in firms that do not include nonfinancial performance measures, is that there is a greater focus on financial performance measures. In some of the proxy statements I examined of firms that only use financial measures, ROA even was (one of) the measure(s) that the CEO bonus is based on. Thus, firms that only use financial performance measures may have a higher ROA, but they could be scoring worse on other performance dimensions.

The second part of table 5, regressions (4), (5) and (6), have the fraction of nonfinancial performance measures as dependent variable. This dependent variable is a continuous variable, consequentially, there are no odds ratios for the last three regressions. In the univariate regression, the regression including control variables and the regression including fixed effects, the coefficient of interest is significantly negative at the 0.1 percent level. Thus, all regressions in table 5 convincingly support the first hypothesis: when the tenure of the compensation committee members increases, the likelihood of nonfinancial performance measures being included diminishes.

For the control variables, there are - contrary to the predictions - mixed signs on the coefficients again. However, none of the negative coefficients (for the employees-to-sales ratio and the compensation committee size in regression (5) and (6) and the ROA in regression (5)) are significant. Furthermore, many of the positive coefficients do show some significance. The R&D-to-sales ratio has a positive and significant coefficient in the fifth (at the 0.1 percent level) as well as the sixth regression (at the 1 percent level). The market-to-book ratio coefficient is positive and significant at the 5 percent level in both the fifth and sixth regression. These results support the prediction, based on Ittner et al. (1997), stating that firms with a more innovative strategy are more likely to include nonfinancial performance measures. However, the third proxy Ittner et al. used (the employees-to-sales ratio), does not show similar results. The difference in sample periods (1994-1995 versus 2016-2017) could be part of the reason for the different results.

A third control variable that shows significance, is size. The coefficient of size is positive and significant at the 5 percent level in regression (5) (and significant at the 10 percent level in the sixth regression), suggesting that bigger firms base a higher fraction of their CEO bonus on nonfinancial performance measures.

Table 5: Regression results hypothesis 1

	(1) NONFIN	(2) NONFIN	(3) NONFIN	(4) NONFIN_ PERC	(5) NONFIN_ PERC	(6) NONFIN_ PERC
TEN_CC	-0.167***	-0.169***	-0.161**	-1.437***	-1.516***	-1.663***
	(-3.63)	(-3.37)	(-2.90)	(-3.72)	(-3.87)	(-3.67)
Odds Ratio	0.846	0.844	0.851			
MTB		0.061*	0.061*		0.411*	0.488*
		(2.29)	(2.02)		(2.30)	(2.32)
R&DS		2.186	3.576		48.360***	56.270**
		(1.08)	(1.20)		(3.44)	(3.17)
EMPS		0.024	-0.010		-0.148	-0.056
		(0.45)	(-0.09)		(-0.32)	(-0.06)
SIZE_CC		0.029	-0.189		-0.921	-1.516
		(0.18)	(-0.92)		(-0.66)	(-0.85)
SIZE		0.317	0.191		2.926*	3.096
		(1.76)	(0.88)		(2.10)	(1.76)
ROA		-6.027*	-3.941		-26.950	14.180
		(-2.25)	(-1.17)		(-1.47)	(0.59)
Constant	1.779***	-1.436		29.270***	3.561	2.372
	(3.96)	(-0.74)		(7.74)	(0.23)	(0.12)
Industry fixed effects	No	No	Yes	No	No	Yes
Observations	200	185	156	200	185	185
R^2				0.065	0.197	0.211
Adjusted R^2				0.061	0.165	-0.108

This table shows the regression results for the first hypothesis. Column (1), (2) and (3) are logistic regressions, with a binary variable (the nonfinancial dummy variable) as dependent variable. Column (4), (5) and (6) are OLS regressions with a continuous variable (the nonfinancial fraction) as dependent variable. Column (1) and (4) show univariate results, column (2) and (5) include control variables and column (3) and (6) include industry fixed effects. Variables are defined in chapter 4 and in Appendix B.

t statistics in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The r-squared numbers of regressions (5) and (6) show that including control variables makes the model a better fit. The r-squared of regression (5) is three times the r-squared of regression (4) and the adjusted r-squared shows an almost similar increase. The r-squared increases even more when including industry fixed effects, whereas the adjusted r-squared turns negative. This could be caused by the limited sample size.

5.3 CEO POWER

In this paragraph, I will discuss the regression results for the second hypothesis:

H2: The negative association between the tenure of the compensation committee and the use of nonfinancial performance measures is more pronounced when the CEO has more power.

CEO power is defined with two variables: CEO duality and CEO tenure. The regression models in table 6 use CEO duality as proxy for CEO power, while table 7 shows the regressions where CEO tenure is used. Table 6 includes regressions based on model (3) and (5), explained in paragraph 4.5.2. Model (4) and (6) from that paragraph are shown in table 7. Specifically, the dummy variable TEN_CEO_HIGH will be used, as explained in paragraph 4.3. Table 6 and 7 have the same structure as table 5, meaning that the first three regressions have the nonfinancial dummy variable as dependent variable and the last three regressions have the nonfinancial fraction variable as dependent variable. Regressions (1) and (4) are without control variables, (2) and (5) include control variables and (3) and (6) additionally include fixed effects. The only differences in this paragraph are the inclusion of the variable CEO power and an interaction effect between CEO power and CC tenure.

5.3.1 CEO DUALITY

The inclusion of CEO duality and the interaction effect between CEO duality and CC tenure in table 6, leads to a smaller effect of CC tenure on nonfinancial performance measures, compared to the results in table 5. The predicted negative coefficient is still present in all regressions and there is still significance at the 5 percent level in half of the regressions. The odds ratios decrease from approximately 15 percent to 12.5 percent. CC tenure in the third, fourth and sixth regression does not have a significant result, but the t-statistics in these regressions are still significant at the 10 percent level. Thus, the predicted effect may be less strong in this table, yet it is still present.

Table 6: Regression results for hypothesis 2 with CEO duality

	(1) NONFIN	(2) NONFIN	(3) NONFIN	(4) NONFIN_ PERC	(5) NONFIN_ PERC	(6) NONFIN_ PERC
TEN_CC	-0.130*	-0.145*	-0.118	-0.914	-1.114*	-1.151
	(-2.23)	(-2.24)	(-1.68)	(-1.81)	(-2.19)	(-1.91)
Odds Ratio	0.878	0.865	0.889			
DUA	0.074	-0.412	0.111	5.354	3.123	3.987
	(0.08)	(-0.40)	(0.10)	(0.68)	(0.40)	(0.43)
TEN_CC * DUA	-0.069	-0.041	-0.087	-1.052	-0.800	-0.956
	(-0.72)	(-0.39)	(-0.74)	(-1.33)	(-1.00)	(-1.04)
MTB		0.069*	0.071*		0.448*	0.561**
		(2.49)	(2.22)		(2.50)	(2.64)
R&DS		1.731	2.660		45.970**	54.620**
		(0.91)	(0.94)		(3.27)	(3.08)
EMPS		0.018	-0.005		-0.165	-0.028
		(0.33)	(-0.04)		(-0.36)	(-0.03)
SIZE_CC		0.092	-0.151		-0.741	-1.298
		(0.54)	(-0.72)		(-0.53)	(-0.72)
SIZE		0.338	0.198		2.913*	3.117
		(1.84)	(0.92)		(2.09)	(1.77)
ROA		-6.586*	-4.733		-30.690	9.537
		(-2.37)	(-1.32)		(-1.66)	(0.40)
Constant	1.704**	-1.722		26.630***	1.472	-1.200
	(3.03)	(-0.86)		(5.61)	(0.09)	(-0.06)
Industry fixed effects	No	No	Yes	No	No	Yes
Observations	200	185	156	200	185	185
R^2				0.086	0.212	0.232
Adjusted R^2				0.072	0.172	-0.096

This table shows the regression results for the second hypothesis, with CEO duality as the moderating variable. Column (1), (2) and (3) are logistic regressions, with a binary variable (the nonfinancial dummy variable) as dependent variable. Column (4), (5) and (6) are OLS regressions with a continuous variable (the nonfinancial fraction) as dependent variable. Column (1) and (4) show the results with only the main variables of interest, column (2) and (5) include control variables and column (3) and (6) include industry fixed effects. Variables are defined in chapter 4 and in Appendix B.

t statistics in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Furthermore, table 6 has a different main variable to consider: the interaction effect. Hypothesis 2 predicts that the negative association between the tenure of the compensation committee and the use of nonfinancial performance measures (found in table 5) is more pronounced when the CEO has more power. Thus, to support this hypothesis, the coefficient of the interaction effect should be negative. The coefficients in all six regressions are indeed negative, however, none of them are significant. The reason why I included CEO power in this study, is because previous studies have shown that long board tenure in combination with CEO power can lead to less board independence (Vafeas, 2003; Huang & Hilary, 2018). CEO duality was used as a proxy in the study of Huang & Hilary, whereas it was not a proxy in the study of Vafeas. Besides, these studies examined CEO compensation, but not the specific use of performance measures. Moreover, Itnner et al. (1997) did test if CEO power influences the use of nonfinancial performance measures, however, they could not find significant support. Hence, CEOs might use their power to increase compensation, but not to influence the performance measures that are included in their bonus contracts.

The signs and significance levels of the coefficients of the control variables are similar to those in table 5, which have been discussed earlier in this chapter. The r-squared numbers in the last three regressions have increased with approximately 2 percent and the adjusted r-squared numbers with approximately 1 percent compared to table 5, which indicates a better fit of the model. The adjusted r-squared increased less than the r-squared, which is caused by the addition of variables to the models of table 6.

5.3.2 CEO TENURE

Table 7 shows the regression results for the models including high CEO tenure. This table includes the strongest odds ratios of all regression results in this study. The chances of nonfinancial performance measures to be used decrease with respectively 20.1 (regression (1)), 22.2 (regression (2)) and 17.6 (regression (3)) percent when CC tenure increases with one year. These ratios are accompanied with significant and negative coefficients. For all regressions in table 7, the levels of significance of the CC tenure coefficients are at least 1 percent.

In table 7, another variable of interest is the interaction effect. The interaction effect consists of CC tenure and high CEO tenure, which is a dummy variable that equals 1 if CEO tenure is higher than the average of 7.44 years. As in table 6, the results do not support the second hypothesis. In the case of CEO tenure, most coefficients are positive – contradicting the prediction – and even significant at the 5 percent level in regression (2). The studies of Vafeas

(2003) and Huang & Hilary (2018) that I mentioned before, both included CEO tenure as a proxy for CEO power. Vafeas (2003) found that compensation committees with members that have a high tenure are more likely to give higher compensation to CEOs, especially when the CEO has more power (through for example a higher tenure). However, this effect was only found when high tenure of compensation committee members was defined as a tenure of 20 years or more (in this study only 3 committees have an average tenure of 20 years or more). This could be a reason why no significant support is found for the second hypothesis, besides the reasons mentioned before (Vafeas not using CEO duality as a proxy, Vafeas, Huang & Hilary not examining the specific use of performance measures and Ittner et al. (1997) not finding significant support for the theory of high CEO power leading to less use of nonfinancial performance measures). A potential reason for most coefficients being positive, could be that it might be easier for a CEO with high tenure to score well on nonfinancial performance measures, such as customer and employee satisfaction, because he is more familiar with the firm, the employees and the customers. Hence, he might have more power and may be able to influence the compensation committee members, but with no intention to diminish the use of nonfinancial performance measures.

The coefficients of the control variables are similar to those in table 5 and 6, which have been discussed earlier in this chapter. The r-squared is almost exactly the same as in table 5; only the r-squared in regression (6) has increased with 0.1 percent. The adjusted r-squared decreases with approximately 1 percent, because of the addition of variables. The non-increasing r-squared numbers indicate that CEO tenure does not improve the model fit.

Table 7: Regression results for hypothesis 2 with CEO tenure

	(1) NONFIN	(2) NONFIN	(3) NONFIN	(4) NONFIN_ PERC	(5) NONFIN_ PERC	(6) NONFIN_ PERC
TEN_CC	-0.225***	-0.250***	-0.193**	-1.419**	-1.595**	-1.587**
	(-3.62)	(-3.65)	(-2.78)	(-2.77)	(-3.16)	(-2.73)
Odds Ratio	0.799	0.778	0.824			
TEN_CEO_ HIGH	-1.106	-1.878	-0.730	1.181	-1.260	3.428
	(-1.17)	(-1.83)	(-0.64)	(0.14)	(-0.15)	(0.36)
TEN_CC * TEN_CEO_ HIGH	0.132	0.198*	0.083	-0.076	0.178	-0.255
	(1.42)	(1.98)	(0.77)	(-0.09)	(0.22)	(-0.28)
MTB		0.061*	0.060*		0.406*	0.495*
		(2.24)	(1.97)		(2.25)	(2.32)
R&DS		2.318	3.361		48.700***	56.300**
		(1.17)	(1.16)		(3.42)	(3.14)
EMPS		0.015	-0.024		-0.156	-0.065
		(0.28)	(-0.22)		(-0.34)	(-0.07)
SIZE_CC		0.018	-0.183		-0.898	-1.485
		(0.11)	(-0.88)		(-0.64)	(-0.81)
SIZE		0.355	0.204		2.949*	3.024
		(1.92)	(0.93)		(2.09)	(1.69)
ROA		-6.076*	-3.837		-26.870	13.840
		(-2.26)	(-1.15)		(-1.45)	(0.58)
Constant	2.233***	-1.017		28.970***	3.816	2.005
	(3.86)	(-0.51)		(6.15)	(0.24)	(0.10)
Industry fixed effects	No	No	Yes	No	No	Yes
Observations	200	185	156	200	185	185
R^2				0.065	0.197	0.212
Adjusted R^2				0.051	0.156	-0.124

This table shows the regression results for the second hypothesis, with high CEO tenure as the moderating variable. Column (1), (2) and (3) are logistic regressions, with a binary variable (the nonfinancial dummy variable) as dependent variable. Column (4), (5) and (6) are OLS regressions with a continuous variable (the nonfinancial fraction) as dependent variable. Column (1) and (4) show the results with only the main variables of interest, column (2) and (5) include control variables and column (3) and (6) include industry fixed effects. Variables are defined in chapter 4 and in Appendix B.

t statistics in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5.4 ROBUSTNESS TESTS

In this paragraph, I discuss some of the alternative tests I have executed. As discussed in the previous paragraphs, the regression outcomes did not always confirm the predictions. There is a chance that an alternative measure for some of the variables will have a different outcome. To check the validity of the chosen measures, I did a few tests with alternative measures. Not all variables were suitable for this, because it is difficult – if not impossible – to find an alternative measure for variables such as the market-to-book ratio or the use of nonfinancial performance measures. Hence, I will only discuss the alternative measures for the moderating variable high CEO tenure and for the control variable financial performance.

5.4.1 HIGH CEO TENURE

High CEO tenure is a dummy variable that equals 1 when the CEO tenure is above the average tenure of 7.44 years. The regression results that included this measure, are shown in table 7 in paragraph 5.3.2. In most regressions, the interaction effect was positive, which contradicted the prediction. I changed the moderating variable by changing the condition for the dummy to equal 1. I did one test where the condition was lower, namely the median tenure of the CEOs of 5 years and I did several tests where I randomly chose a higher tenure. The results are summarized in table 8. The mentioned regressions are the same models as in table 7, with the only difference being the dummy variable high CEO tenure.

The results of the variables with different conditions do not differ much. There are some small changes in the significance levels and when the condition for tenure is above 9 years, the fifth regression coefficient turns negative. However, when the condition for tenure gets extremely high (above 15 years), the coefficients in all regressions are positive. Hence, all regressions contradict the predicted sign. In the first three regressions, there is a stronger significance as well; even more when tenure is above 20 years. The alternative explanation for this contradiction, discussed in paragraph 5.3.2., seems especially strong for an extreme high CEO tenure. This explanation poses that it might be easier for CEOs with a long tenure to score well on nonfinancial performance measures, such as employee and customer satisfaction, because they are more familiar with the firm. If this is the case, there is no need for the CEO to influence the compensation committee to only include financial measures. Besides, when the CEO has been in his position for such a long time, he must be performing well in both the financial and nonfinancial department; otherwise he would not be in his current position anymore.

Table 8: Alternative measures for high CEO tenure

Condition	Fraction of sample that meets the condition	Results
Tenure > 5 years	47 percent	Only regression (4) and (6) are negative, regression (2) is positively significant at the 10 percent level.
Tenure > 7.44 years	34 percent	Only regression (4) and (6) are negative, regression (2) is even positively significant at the 5 percent level.
Tenure > 9 years	27 percent	Regression (4), (5) and (6) are all negative. Regression (1) is positively significant at the 10 percent level; regression (2) at the 5 percent level.
Tenure > 11 years	22 percent	Regression (4), (5) and (6) are all negative. Regression (2) is significant at the 10 percent level.
Tenure > 15 years	12 percent	All regressions are positive, regression (2) and (3) significant at the 5 percent level and regression (1) at the 10 percent level.
Tenure > 20 years	8 percent	All regressions are positive, regression (1) and (3) significant at the 5 percent level and regression (2) at the 1 percent level.

5.4.2 FINANCIAL PERFORMANCE

The control variable financial performance is measured by ROA (return on assets), a commonly used measure. I predicted positive coefficients for this variable, because previous research has found that implementing nonfinancial performance measures leads to better financial performance. However, the results did not support this prediction. I tried to find out if these results are the same when I use a different, yet also commonly used, measure of financial performance: ROE (return on equity). Before adding it to the regressions, I deleted 4 extreme values. Besides, there were 12 missing and thus excluded observations. In table 9, I summarize the comparison of the different measures of financial performance. In all regressions, I replaced ROA with ROE; all other variables stayed the same.

Table 9: Alternative measure for financial performance

Regression	Result ROA	Result ROE
Table 5, regressions for hypothesis 1	Only regression (6) is positive. Regression (2) is significant at the 5 percent level.	Regressions (3) and (6) are both positive. None of the results are significant.
Table 6, regressions with CEO duality (DUA) as moderating variable	Only regression (6) is positive. Regression (2) is significant at the 5 percent level, regression (5) at the 10 percent level.	All of the regressions have negative coefficients, none of them are significant.
Table 7, regressions with CEO tenure (TEN_CEO_HIGH) as moderating variable	Only regression (6) is positive. Regression (2) is significant at the 5 percent level.	Regression (6) is positive, all other regressions are negative. None of the results are significant.

There are a few changes in the signs of the coefficients. In table 5, ROE shows one more positive sign than ROA. However, in table 6, all signs are negative for ROE, whereas there is still one positive sign for ROA. In table 7, the signs are the same. When financial performance is measured by ROA, some of the negative coefficients have a significance level of 5 or 10 percent. With ROE as a measure, there is never any significance; not even at the 10 percent level. Thus, a different measure of financial performance does not give any interesting differences in the results and no surprising information is found.

6. CONCLUSION

In this thesis, I examined the relation between the experience of compensation committee members and the use of nonfinancial performance measures in the annual bonus incentive for the CEO, translated in the following research question:

> *What is the effect of the experience of compensation committee members on the use of nonfinancial performance measures?*

Previous research has examined the importance of nonfinancial performance measures, mostly by focusing on the consequences of implementing these measures, such as better financial performance. In this study, I focused on a different aspect: nonfinancial performance measures as a consequence instead of a cause. More specifically, I examined if the inclusion of nonfinancial performance measures in annual bonus incentives for CEOs is more likely when the compensation committee has more experience, measured by the average tenure of the members. Based on previous research, I predicted that a long tenure can lead to less board independence, which could make it easier for CEOs to influence the committee. In general, the CEO wants to receive as much compensation as possible. Since nonfinancial targets may be harder to reach and/or manipulate, I predicted that CEOs will try to influence the committee to only include financial performance measures. Thus, for the first hypothesis, I predicted a negative association between the tenure of compensation committee members and the use of nonfinancial performance measures. For the second hypothesis, I predicted that the effect of hypothesis 1 would be stronger when the CEO has more power through duality (CEO also being the chairman of the board) and a long tenure.

Using a cross-sectional analysis, with data from S&P 500 companies in the years 2016 and 2017, I found that there is indeed a negative association between the tenure of compensation committee members and the use of nonfinancial performance measures. There is a significant (at the 0.1 percent level) negative correlation between CC tenure and the nonfinancial variables (a dummy that equals 1 when nonfinancial measures are included and a continuous variable that shows the fraction of the bonus that is based on nonfinancial measures), shown in table 3. Table 4 shows a significant (at the 0.1 percent level) difference in means of CC tenure between the group of firms that does include nonfinancial performance measures and the group of firms that only includes financial performance measures. The regression results in table 5 also show significant (at least at the 1 percent level) results, in the univariate as well as the multivariate models. The odds ratios give additional information: the chance of nonfinancial performance

measures being used decreases with approximately 15 percent when CC tenure increases with one year. In conclusion, the different tests in chapter 5 give strong support for the first hypothesis. Hence, the first hypothesis is accepted.

On the contrary, no significant support is found for the second hypothesis. Two models are exploited to find an interaction effect: one where CC tenure interacts with CEO duality (a dummy variable that equals 1 when the CEO is also chairman of the board) and one where CC tenure interacts with a dummy variable for high CEO tenure. The interaction effect including CEO duality does show the predicted negative coefficients in all regressions, however, none of them are significant. The interaction effect including high CEO tenure shows a positive coefficient in most tests, contradicting the prediction. A potential reason for these results is that previous research did find CEOs can influence board members by increasing their pay when they have more power, but no evidence is found (yet) that they can influence the specific performance measures of the bonus contract as well. Hence, the CEOs might use their power to influence other things than the performance measures, such as the amount of total bonus to be received. To conclude, the second hypothesis is rejected.

This research contributes to the existing literature in several ways. Firstly, previous research has mostly focused on the effects of nonfinancial performance measures, whereas I contribute to the small part of literature that examines which aspects make it less or more likely that nonfinancial performance measures are included. Secondly, this research contributes to the compensation committee literature, finding that a certain characteristic, experience, can influence the choice of performance measures. The results of this thesis could help firms with the design of their compensation committee and CEO bonus contracts and it could give regulators another reason to see a long tenure as a potential danger to board independence.

The major limitations of this thesis are connected to the data collecting process. Information on the nonfinancial performance measures in annual bonus incentives could only be found by hand-collecting the proxy statements, which is a time-consuming process. Because of this, I could only examine one observation for 200 firms. This thesis uses cross-sectional data and no time series, which means no causal inferences could be made. The small sample size decreased the statistical power of the study as well. Another limitation is that part of the research design is based on the papers of Ittner et al. (1997) and Matějka et al. (2009), which were written many years ago. Some control variables are taken from Ittner et al., so there is a chance these variables are outdated.

Even though this thesis has some limitations, the identified association between CC tenure and nonfinancial performance measures is very strong and should not be overlooked. This result could be a starting point for more research on this subject. For this thesis, the hand-collecting process was a major limitation. However, the database ISS Incentive Lab does have information on performance measures, which I could not access. Hopefully, other researchers will have access to this data in the future. When this is the case, future research can increase sample sizes and include time series data. This will make data collection less time-consuming and the quality of the research better. Additionally, future research can focus on other aspects that influence the use of nonfinancial performance measures. I tried to include control variables that influence the inclusion of nonfinancial measures, however, I found mixed evidence for these variables. Besides, the r-squared of the exploited models was not always very high. As I mentioned before, some of these control variables came from previous papers that may be outdated. Hence, there is a gap in the literature when it comes to this subject, which will hopefully be filled in the future.

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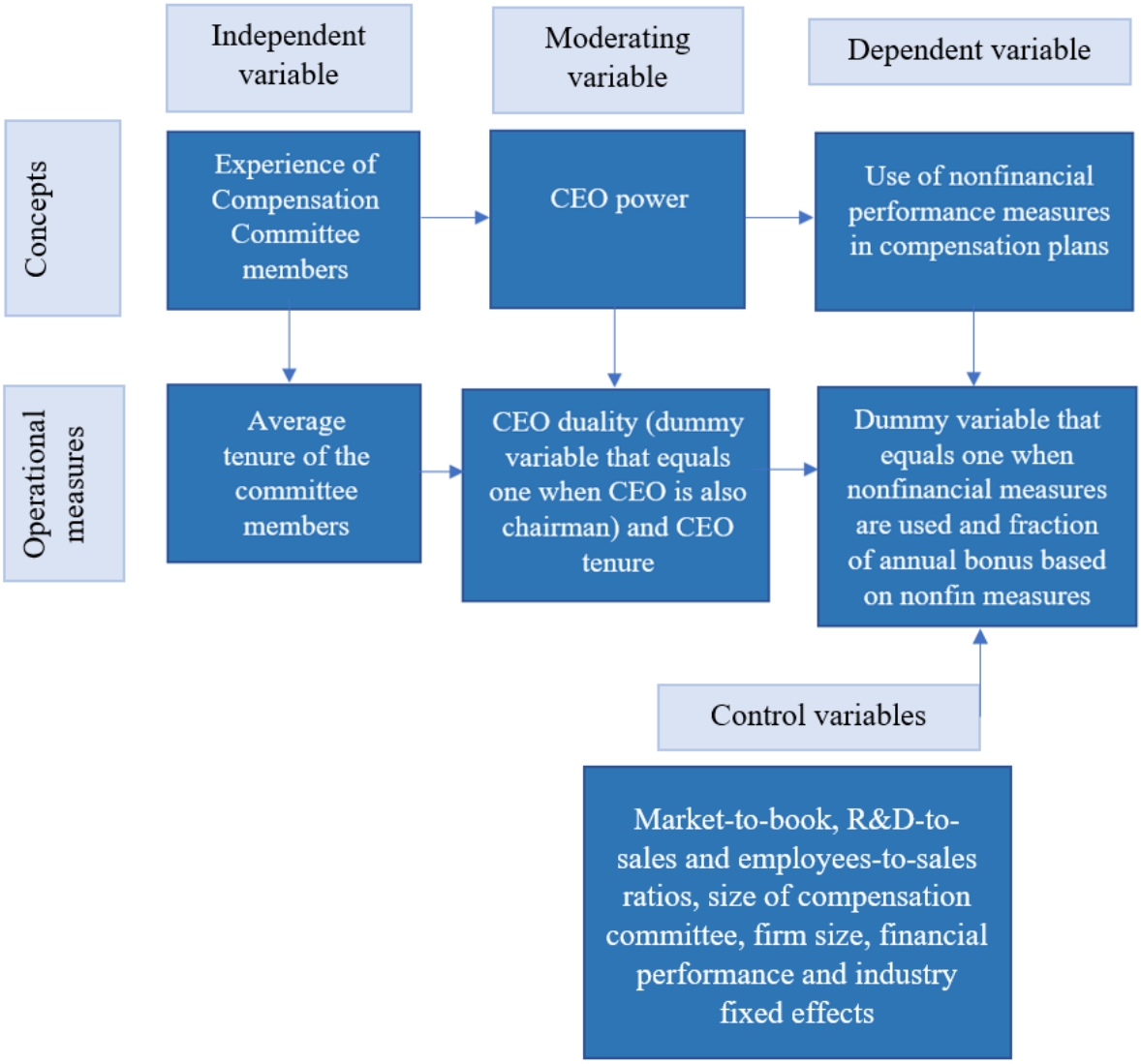
APPENDICES

Appendix A: Libby boxes

Appendix B: List of variables

APPENDIX A: LIBBY BOXES



APPENDIX B: LIST OF VARIABLES

Abbreviation	Name	Explanation
NONFIN	Nonfinancial performance measures dummy	This variable is a dummy variable that equals 1 when the annual bonus for the CEO is (partly) based on nonfinancial performance measures.
NONFIN_PERC	Nonfinancial performance measures fraction	This variable is a continuous variable that indicates the fraction of the annual bonus formula for the CEO that is based upon nonfinancial performance measures.
TEN_CC	Compensation Committee tenure	This variable indicates the average board tenure of the members of the compensation committee. To calculate this, the individual tenures have been added up and divided by the number of members.
DUA	CEO duality	This variable is a dummy variable that equals 1 when the CEO is also chairman of the board.
TEN_CEO_HIGH	CEO tenure	This variable indicates the amount of years the CEO has been in his current position. For the regression results (shown in Table 7), a dummy variable was created that equals 1 if the tenure is higher than the average CEO tenure of the sample. In tables 2 – 4, the continuous variable is used.
MTB	Market-to-book ratio	This variable shows the market-to-book ratio. To calculate this, the market value of equity is divided by the book value of equity.
R&DS	R&D-to-sales ratio	This variable shows the R&D-to-sales ratio. To calculate this, the R&D costs are divided by the sales.
EMPS	Employees-to-sales ratio	This variable shows the employees-to-sales ratio. To calculate this, the number of employees is divided by the sales. In this calculation, the sales number was divided by 1.000.000, so the ratio in this study should be divided by 1.000.000 to find the true amount.
SIZE_CC	Compensation Committee size	This variable indicates the number of members that are in the compensation committee.
SIZE	Size	This variable indicates the size of the company, proxied by the total assets. The asset numbers were

		divided by 1.000.000. However, this still gives massive values. To avoid skewness and normalize the distribution, the log of the variable is taken.
ROA	Return On Assets	This variable shows the return on assets and indicates the financial performance of the firm. To calculate this, the net income is divided by the total assets. A different measure of financial performance, used in the robustness tests, is return on equity (ROE). To calculate this, net income is divided by the book value of equity.
IFE	Industry fixed effects	The industry fixed effects are based on 2-digit SIC industry codes.

Note: Monetary items are all in dollars. Various numbers have been divided by 1.000.000. For all ratios – expect the employees-to-sales ratio, which is explained – this does not matter, because both the numerator and denominator have been divided by 1.000.000. Hence, those ratios still show their true amount.