

Pay-Performance Sensitivity for Empire Building and Non- Empire Building CEOs

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Abstract

This master thesis researches the association between CEOs classified as empire builders and the composition of their remuneration package. Additionally, this work researches the moderating effect of several corporate governance factors on remuneration. CEOs analyzed in this sample stem from 1992 to 2020 and work for North-American companies, the sample is in panel data format. The main finding of this study explains that CEOs classified as empire builders receive (proportionally) more equity-based incentives. Therefore, shareholders, and the board of directors should carefully think about inserting equity-based incentives in the remuneration package while simultaneously scrutinizing a CEOs acquisitions and capital outlays.

Chapter 1. Introduction

The position of the CEO within a company has always been a well-researched topic. Acting as the leader of the company the CEO is an interesting field of research due to the visibility of the position and due the influence the CEO can exercise on the company and its performance. Often the public eye inseparably associates the CEO with the company he or she manages, especially if the CEO is also the founder. A CEO can grow a company in a value increasing manner, but a CEO can also grow its company to a point in which it destroys value. The latter is commonly described as empire building (Jensen 1986; Stulz 1990; Masulis et al. 2007; Hope & Thomas, 2008). Stakeholders, and especially shareholders, wish to avoid this and one of their tools at their disposal to achieve this is corporate governance (Shleifer & Vishny, 1997). In this thesis the mechanisms of corporate governance (Denis & McConnell, 2003), and its association with managerial empire building are researched. Therefore, the following research question is formulated:

How does CEO pay differ among empire building CEOs and non-empire building CEOs?

Next to this research question a sub-research question concerning the moderating effect of corporate governance factors is formulated:

What is the influence of corporate governance on CEO pay?

Bearing in mind the negative impact empire building can have on a firm it is important to know whether the corporate governance mechanism of CEO pay is associated with empire building and in what manner. Ultimately, remuneration and the structure of remuneration is one of the main tools to influence CEO motivations and behavior. Furthermore, it is important to know whether other corporate governance factors can influence the association in order to employ them properly.

This thesis aims to shed a light on these questions by researching the association between empire building CEOs and the composition of their remuneration package. To this end CEOs are analyzed and divided into two groups: empire building and non-empire building CEOs. Based on these groups their compensation packages are analyzed via panel data regression. Moreover, the influence of corporate governance factors is researched. These corporate governance factors are: the size of the board, the division between the CEO and chairman position, the share of independent directors on the board, and the percentage of equity owned by the CEO. In order to give this study more depth, variations in the dependent variable will be used, namely the compensation premium which is calculated in two ways.

The evidence of the analysis yields that CEO pay does differ between empire building and non-empire building CEOs. More specifically, empire building CEOs receive a higher

proportion of equity-based incentives as part of their total remuneration. This result also holds with the inclusion of several control variables which are believed to affect CEO pay and its structure. Regarding the influence of above mentioned corporate governance factors as well as the compensation premium the analysis does not find significant results towards the sub-research question. However, this thesis strengthens the results of other papers with the significance of certain control variables in association with the dependent variables.

Prior literature's evidence already uncovered various ways in which CEOs engage in empire building (e.g. Amihud & Lev, 1981; Chen et al., 2012; Gul et al., 2020; Hope & Thomas, 2008; Seo et al. 2015). Based on these papers the CEOs in the sample of this thesis are classified as empire builders. Additionally, prior literature provides evidence on remuneration packages and whether and how it influences a CEO (e.g. Larcker, 1983; Mishra et al., 2002; Sanders & Hambrick, 2007; Wright et al. 2002). This thesis aims to address the question whether empire building CEOs in turn experience commonalities in their remuneration and its composition. Using the evidence of this thesis empire building CEOs could be identified based on their remuneration composition. The results underline that, CEOs who receive a higher proportion of equity-based incentives also have empire building tendencies. Therefore, shareholders and the board of directors should carefully think about how they structure a CEOs remuneration package and, when they want to incentivize the CEO to grow the firm they should carefully scrutinize major capital outlays and acquisitions that are made.

This introduction is followed up by a literature review which discusses the current state of literature for relevant fields of this thesis. Thereafter, the thesis continues with a separate chapter on the hypothesis development, next the research design chapter explains the relevant variables as well as the data sample. Then the chapter on results follows which discusses the relevant evidence that is found. Lastly, a conclusion completes the work.

Chapter 2. Literature Review

2.1 Empire Building

Prior literature defines empire building as the managers' tendency to grow the firm beyond its optimal size or to maintain unutilized resources with the purpose of increasing personal utility from status, power, compensation, and prestige (Jensen 1986; Stulz 1990; Masulis et al. 2007; Hope & Thomas, 2008). In light of the empire building phenomenon Jensen (1986) presents a 'free cash flow' theory which states that firms with high free cash flows (FCF) and low investment opportunities have incentives to grow beyond optimal size. Firm growth enlarges managers' power by increasing resources under their control. Additionally this

increases their prestige (Stulz, 1990) and possibly also their compensation since compensation can often be tied to sales growth, firm size, and firm diversification (Murphy, 1985; Jensen & Murphy, 1990).

In the same paper Jensen (1986) quotes the agency theory as a possible reason for empire building to occur. The agency theory describes the natural conflict between shareholders and managers, this conflict arises because individuals choose their actions to maximize their own utility. This suggests that managers do not always act in the best interest of the shareholders (Jensen & Meckling, 1976). Jensen (1986) argues that one of these actions that aims to maximize own utility is empire building.

In prior research scholars have aimed to find evidence pointing towards empire building practices and its negative consequences. Hope and Thomas (2008) investigate the relation between empire building and firm disclosure of financial information. Above I describe that the agency theory provides an explanation for the occurrence of empire building. One way to tackle the difference of interests described in the agency theory is by monitoring of the principal. In the paper of Hope and Thomas (2008) this form of monitoring is financial statement disclosure. After firms are not required anymore to disclose earnings by geographic location, the authors find that non-disclosers subsequently experience greater expansion of foreign sales, lower foreign profit margins, and lower firm value. These results thus show the negative consequences empire building can have for a firm. From the perspective of the stakeholder theory a firm can also curb empire building via corporate social responsibility (CSR) practices. Gul et al. (2020), find that firms with strong CSR are less likely to involve in empire building via M&A. In a different context Chen et al. (2012) find that cost asymmetry of selling, general, and administrative (SG&A) costs increases as empire building incentives, measured by the FCF. These findings imply that as FCF increases managers have a tendency towards empire building, SG&A costs decrease asymmetrical as sales decrease since managers have grown the firm beyond optimal size. Kuang et al. (2015) confirm this finding in their paper whose results confirm that cost stickiness is a result of empire building. Ultimately, the debate on cost stickiness and empire building is not settled since Brügggen and Zehnder (2014) find that SG&A cost stickiness is positively associated with equity-based pay. They argue that managers with higher proportions of equity-based pay have less incentives to empire-build which means that the cost stickiness found in their firms is not a result of empire building.

Lastly, empire building is also often researched in the mergers & acquisitions (M&A) literature. An early exemplary paper provide Amihud & Lev (1981). They find that managers strive for (unrelated) diversification in order to decrease employment risk. By increasing firm

size they aim to entrench their position in order to reduce the risk of losing their position. Later Morck et al. (1990) find that acquisitions that prompt negative announcement returns are the ones that are motivated by serving managerial objectives instead of maximizing firm value. Shi et al. (2017) and Seo et al. (2015) research CEO acquisition behavior which is based on status and compensation incentives. In the former paper the authors find that CEOs who (just) missed winning a CEO award engage in more intensive acquisition behavior as a means to bolster social recognition and status. In the latter paper the authors find that CEOs who are underpaid relative to comparison CEOs also engage in acquisition activity in order to realign pay with that of their peers, based on compensation and status incentives.

Lastly, CEO empire building has been found in relation with other concepts, Chatterjee and Hambrick (2007) find an increased number of acquisitions with CEOs who can be described as narcissistic. Similarly, Gamache et al. (2015) find that CEOs with a regulatory promotion focus tend to acquire more and make acquisitions with higher values. Related to the CEO personality research of Chatterjee and Hambrick (2007), Malmendier and Tate (2005) find that CEOs who can be described as overconfident have a higher sensitivity of investment to cash flow meaning that they will invest more as cash flow increases due to their overconfidence. Later, Malmendier and Tate (2008) also find that overconfident CEOs make lower-quality acquisitions, depending on the amount of internal resources a overconfident CEO has at his disposal. Similarly to overconfidence Roll (1986) puts forward his managerial ‘hubris hypothesis’. This hypothesis features also in the paper of Hayward and Hambrick (1997), they find that managerial hubris causes higher acquisition premiums next to worse performing acquisitions.

All in all, prior literature shows that due to the agency problem empire building can occur in various circumstances and in various forms. One thing above mentioned papers have in common are self-serving motivations of CEOs. In order to curb these self-serving motivations, companies and directors alter the CEOs compensation structure. Pay-performance sensitivity is an essential concept here and therefore discussed in the next paragraph.

2.2 Pay-Performance Sensitivity

According to Sanders (2001) there are two ways firms can tie executive pay to firm performance. First, firms can strive to make annual adjustments to CEO salary and bonus levels according to firm performance. Second, CEO pay can be structured with long-term contingent forms of pay so that future levels of pay are contractually tied to achieved firm performance. Theoretically, both pay-performance mechanisms should result in incentive alignment. The

underlying idea of the incentive mechanisms is that a part of CEO pay should be at risk, depending on firm performance. Pay at risk is expected to provide incentives to work harder and achieve higher performance with higher pay according to Mishra et al. (2000). Next to the long-term incentive plans executive compensation usually also contains: a base salary, an annual bonus, and other compensation such as pension benefits or non-financial perks (Murphy, 1999). According to Yermack (1995) large United States (US) firms have been eager to insert long-term incentive components in CEO remuneration contracts (e.g., stock options, restricted stock, long-term performance plans).

Jensen and Murphy (1990) present the following regression that estimates the relation between CEO cash compensation and firm performance:

$$\Delta(\text{CEO salary} + \text{bonus})_t = \alpha + \beta_1 \Delta(\text{shareholder wealth})_{t-1}$$

Here the change in shareholder wealth is defined as the inflation-adjusted rate of return on common stock realized in year t multiplied by the firm value at the end of year t-1. The significant coefficient β_1 indicates how much CEO compensation changes if firm value changes by a certain amount. The model can be extended by including CEO stock and option holdings, this would then yield the sensitivity of total CEO remuneration to changes in shareholder value. Additionally, the model can also be extended by including the prior two year variables which describe the change in shareholder wealth, this approach is adopted by Mishra et al. (2000).

With respect to equity based compensation prior literature researches how the equity component of remuneration affects CEO behavior. Larcker's (1983) paper poses an early example here, he finds (weak) evidence that corporations increase capital investments after adoption of a performance plan. Sanders and Hambrick (2007), find that stock options are positively associated with increased outlays in R&D, capital spending, and acquisitions. Furthermore, the variance in returns of these outlays is positively associated with a CEO's stock options. Lastly, due to excessive risk taking caused by stock option pay CEOs generated more big losses than big gains. In an earlier paper Sanders (2001) researches CEO behavior in relation with equity incentives as well. Here the author finds that firms are more likely to engage in acquisitions and divestitures when the CEO is compensated with stock options. Interestingly, the CEO is less likely to engage in these activities when he owns stock. The reason behind this fact is that CEOs that own stock tend to be more conservative because they face more downside risk to their wealth than CEOs who are paid with stock option incentives. This result is also confirmed by Wright et al. (2002). The results of this paper imply that increased stock ownership stops contributing to risk taking after a certain level on the contrary do option values promote risk taking.

The papers outlined above describe how equity-based incentives in terms of stock ownership can have the unintended effect of lower risk taking by the CEO. Ultimately, this will then also affect the firm performance. The paper of Mishra et al. (2002) finds evidence with respect to this relation. The authors find that increasing pay-for-performance sensitivity and thereby putting a larger share of CEO compensation at risk can be counterproductive for firm performance, especially as the general risk attributed to the firm increases.

The prior literature featuring in this paragraph shows how the inclusion of equity incentives in CEO compensation can affect the CEO's behavior and risk taking. It is important to find the right mix of the various equity-based pay options in order to align CEO incentives and ensure firm value maximization. Regarding the research question at hand it is therefore interesting to see whether there is a common trend in equity-based incentives included in remuneration schemes of empire building CEOs.

2.3 Corporate Governance - Board of Directors

The board of directors belongs, together with the firm's ownership structure and the compensation of executives, to the internal corporate governance mechanisms. The legal environment of the firm and the takeover market make up the external mechanisms (Denis & McConnell, 2003). Both the external and internal mechanisms that make up corporate governance deal with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment (Shleifer & Vishny, 1997). The importance of the board of directors in corporate governance and its effect on firm performance is illustrated in the paper by Larcker et al. (2007). Essentially, the board of directors and the compensation committee are responsible for designing the (optimal) remuneration contract (Cyert et al., 1997).

The relation between the board of directors structure and CEO compensation is researched in the prominent paper written by Core et al. (1999). The authors find that CEO compensation is a decreasing function of the percentage of the board composed of inside directors, and is positively associated to board size, the percentage of the board who are outside directors appointed by the CEO, the percentage of directors who are gray outside directors, the percentage of outside directors who are over 69, the percentage of outside directors who serve on multiple boards, and whether the CEO is also the board chair. An earlier study by Boyd (1994) yields similar results to the study by Core et al. (1999), here the author finds that board control is negatively associated with CEO compensation. Board control is defined as a variable consisting of corporate governance indices such as CEO-Chairman separation, insider ratio, director stock ownership, and director pay.

In line with Boyd (1994), Cyert et al. (1997) find that CEO pay is inversely related to stockholdings of the compensation committee of the board. However, this relation only exists for the salary and bonus share of CEO pay, this is because equity-based components are tied to the long-term performance of the firm and hence aligned with the board and shareholders. Contrary to Boyd (1994) and Cyert et al. (1997), Finkelstein and Hambrick (1989) find shareholder ownership among outside directors is not significantly associated with their measures of compensation. Further, the pay-for-performance sensitivity is less pronounced with outside directors with higher shareholder ownership.

While the authors above have mainly focused on the board composition Yermack (1996) researches the effect of the board from a different angle, namely the board size. The results of this paper show that board size is negatively associated with firm value, meaning that firms with smaller boards are worth more. Moreover, are financial ratios also negatively associated with board size. Lastly, results suggest that CEOs of firms with smaller boards receive stronger compensation incentives and thus have a greater sensitivity to performance in their pay. Similarly to Yermack (1996), Mehran (1995) also finds that CEOs with compensation sensitive to performance tend to produce higher returns for shareholders. Moreover, firms with higher managerial ownership use less equity-based compensation whereas firms with more outside directors have more equity-based compensation. If managers and executives hold more shares in the company cash remuneration tends to increase.

Next to incorporating pay-for-performance sensitivity the board of directors is another form of corporate governance that can be used to align CEO motivations with the ones of shareholders. Literature has shown that boards can influence CEO remuneration in an attempt to influence CEO behavior. Based on this knowledge variables regarding the board of directors are included in this study in order to shed a light at their effect on CEO pay of empire-building CEOs.

Chapter 3. Hypothesis Development

Empire-building CEOs are risk takers who act based on self-serving motivations (Jensen 1986; Stulz 1990; Masulis et al. 2007; Hope & Thomas, 2008). This entails that the risk that they take is done at the expense of shareholders and other stakeholders of the firm. As explained above, this behavior is rooted in the agency theory. Following the agency theories' logic it is key to align incentives of the CEO and the shareholders to overcome the principal-agent problem (Jensen & Meckling, 1976). Shareholders have multiple tools at their disposal to align incentives, one of them is the inclusion of pay-performance sensitivity in the remuneration

contract of the CEO (Denis & McConnel, 2003).

Research finds that CEOs show behavioral responses with respect to the composition of their remuneration contract, more specifically it influences their degree of risk taking. Within equity-based incentives option compensation and stock ownership cannot be regarded as substitutes of one another. Mishra et al. (2002), Sanders (2001), and Wright et al. (2002) find that CEOs' risk taking is concavely related to the stock compensation they receive. Option compensation on the other hand provokes risk taking behavior, this due to the fact that the downside risk for CEOs is larger with stock ownership than with options. Additionally, risk-averse CEOs prefer salary and bonus compensation (Cyert et al., 1997). This entails that non-empire building CEOs, who are likely to be more risk-averse, are expected to receive (relatively) more cash compensation than their empire building counterparts. I expect that empire building CEOs, classified as risk takers in literature, receive relatively more equity-based incentives which causes their greater willingness to take risks. Within their equity incentives I also expect that empire building CEOs receive (relatively) more option compensation since this provokes greater risk taking. This leads me to the following hypothesis:

H1: CEOs classified as empire-builders receive (proportionally) more equity-based compensation.

Prior literature records evidence that shows the influence of board structure and composition on CEO remuneration. Independent boards are said to be aligned with the shareholders which ultimately translates into firm performance and value (Boyd, 1994; Core et al., 1999; Cyert et al., 1997; Finkelstein & Hambrick, 1989; Mehran, 1995; Yermack, 1996). In order to achieve this the board of director is responsible for designing the optimal remuneration contract. Following the reasoning in hypothesis 1 it is necessary for empire building CEOs to become more risk averse. However, simultaneously they should retain a certain long-term focus regarding company performance. Again, following Mishra et al. (2002), Sanders (2001), and Wright et al. (2002) I expect that empire building CEOs again receive (relatively) more equity-based compensation. However, within their equity incentives independent boards compensate empire building CEOs with (relatively) more stock ownership in order to make them more risk averse while still aligning their incentives to the firm's. therefore, I formulate the following hypothesis:

H2: CEOs classified as empire builders working under independent boards receive (proportionally) more equity-based compensation..

Chapter 4. Research Design

4.1 Dependent Variable

The principal dependent variable in this study is equity-based compensation as a share of total compensation. Claassen & Ricci (2015) state executive compensation consists of a fixed part and a variable part. Fixed compensation includes base salary bonus and does not explicitly depend on performance or shareholder value. Variable compensation aims to align motivation and goals of executives and shareholders by making compensation contingent on the achievement of future performance targets. In this study equity-based compensation is the sum of (fair value of) restricted stocks and the Black-Scholes or fair value of stock options granted. The remaining part of compensation is made up by the base salary and bonus. Together both are the total compensation of the executive and equity-based compensation divided by total compensation yields the share of equity-based incentives the executive receives (Amzaleg et al., 2015; Brick et al., 2006; Brügggen & Zehnder, 2014; Core et al., 1999; Gao & Li, 2015; Mehran, 1995; Sanders, 2001; Sanders & Hambrick, 2007; Seo et al., 2015)

Two separate models that will be run have the compensation premium as the dependent variable. I follow Larcker et al. (2011) and compute “excess” CEO pay by subtracting the natural logarithm of median pay in a given year for all firms in the same Fama-French industry group and size quintile from the natural logarithm of total annual CEO pay.

Second, I follow Core et al. (2008) and calculate “excess” pay by calculating actual compensation minus expected compensation. The model for expected compensation is obtained by regressing the natural logarithm of compensation on proxies for economic determinants of CEO compensation.

$$\text{Log}(\text{Compensation}_{it}) = \alpha + x_{it}\beta + \mu_{it}$$

Here, x_{it} , consists of: $\log(\text{tenure})_{it}$, $\log(\text{sales})_{it-1}$, S\&P500_{it-1} , $\text{Book-to-market}_{it-1}$, RET_{it} , RET_{it-1} , ROA_{it} , ROA_{it-1} , industry controls $_{it}$, where industry controls consist of the 2-digit SIC code.

With this model an expected sum of CEO compensation is calculated, subtracting this expected sum from the actual sum yields “excess” pay. The results of this regression, based on a panel data sample consisting of 28,492 observations, can be found in appendix 2.

4.2 Independent Variables

4.2.1 Empire Building

A CEO’s empire building tendencies are defined along multiple lines based on prior literature. In this research a distinction is made between direct and indirect measures of empire building. The direct measures are related to acquisitions that the CEO makes, in prior literature

acquisitions are often the main focus since these are not only the largest expenses, they are also able to change the size and the structure of the business the most. The direct measure used is the acquisition ratio which is the sum of the value of all acquisitions made during the year divided by the average market capitalization (Chatterjee & Hambrick, 2007; Chhaochharia et al., 2012; Gamache et al., 2015; Giroud & Mueller, 2010; Gul et al., 2020; Larcker, 1983; Sanders, 2001; Sanders & Hambrick, 2007; Seo et al., 2015; Shi et al., 2017).

Next to the direct measure there are also three indirect measures included in the models. The first one being the growth in capital expenditures, although these expenses are not as large as most acquisitions a CEO can nevertheless empire build via capital expenditures as they increase firm size as well (Chhaochharia et al., 2012; Giroud & Mueller, 2010; Gul et al., 2020; Sanders & Hambrick, 2007; Larcker, 1983). Furthermore, the growth in property, plant, and equipment can be a cause of inefficient firm growth especially since property, plant, and equipment are often one of the largest non-current assets on a firm's balance sheet. Therefore, the growth in property, plant, and equipment is the second indirect measure (Chhaochharia et al., 2012; Giroud & Mueller, 2010; Gul et al. 2020; Larcker, 1983). For these measures the average growth rate of the last three years is calculated in order to make the value more representable. Lastly, as a third indirect measure a firm's spending in research & development (R&D) is considered, often empire building CEOs have their so-called pet projects on which they spend firm resources. Spending on these projects is often recorded via R&D spending, hence the inclusion of this measure in this research as well (Gul et al. 2020; Sanders & Hambrick, 2007). R&D spending is divided by firm size, measured by total assets, to generalize results between firms and to take spending power and firm size into account.

The division of CEOs between empire builders and non-empire builders is done based on a summation of the four measures outlined above. Per measure the median value is calculated for all CEOs, here the year is taken into account. CEOs with a value above the median receive one point, CEOs with three or four points are characterized as empire builders.

4.2.2 Corporate Governance

The corporate governance aspect in this research functions as the moderating variable on CEO remuneration level and composition. Specifically, the board of directors and its level of 'independence' are of interest here. To this end three classic aspects of board independence and the quality of the board of directors are included in the model in order to display their effect on CEO remuneration. Moreover, the percentage of equity owned by the CEO of the firm will be analyzed as a fourth corporate governance variable.

The first variable is the separation between the position of CEO and board chairman, this variable is represented by a dummy variable. The dummy variable takes the value of 1 if the role of the CEO and chairman are filled in by the same person. It can be expected that if this is the case the CEO not only has considerable power in the company but also in the board, meaning that his or her influence over remuneration can be substantial as well (Amzaleg et al., 2014; Boyd, 1994; Brick et al., 2006; Chatterjee & Hambrick, 2007; Core et al., 1999; Gao & Li, 2015; Gul et al., 2020; Hanlon et al., 2003; Malmendier & Tate, 2008; Seo et al., 2015; Shi et al., 2017).

The second measure of board independence is the number of independent directors on the board, operationalized as the share of independent directors among the total directors on the board. Independent directors are not affiliated with the firm in any way bar their directorship position, hence they are expected to be better aligned with shareholders and thus act in shareholders' interests. Therefore, their influence on the design of CEO remuneration, one of the board's main tasks, cannot be underestimated (Amzaleg et al., 2015; Boyd, 1994; Brick et al., 2006; Brüggem & Zehnder, 2014; Chen et al., 2012; Core et al., 1999; Gul et al., 2020; Sanders, 2001; Sanders, 2001; Seo et al., 2015; Shi et al., 2017)

The third measure relates to the quality of the board itself; board size, measured as the total number of directors on the board. Prior research has done extensive research on the board size and its effect on firm performance. Often the conclusion is that board quality decreases as board size increases since directors tend to get complacent and free ride on the effort of other directors (Amzaleg et al., 2014; Brick et al., 2006; Brüggem & Zehnder, 2014; Chen et al., 2012; Core et al., 1999; Gul et al., 2020; Yermack, 1995).

Lastly, equity ownership by the CEO is considered as a corporate governance variable which is unrelated to the board of directors. The variable is measured as the percentage of company shares owned by the CEO. A CEO's equity ownership is another mean to align incentives of the CEO with the shareholders'. As more wealth of the CEO is tied to the performance and value of the firm this can change his or her behavior, e.g. it can make a CEO more risk-averse. In turn, this could also change remuneration preferences (Brick et al., 2006; Brüggem & Zehnder, 2014; Chatterjee & Hambrick, 2007; Gao & Li, 2015; Hope & Thomas, 2008; Malmendier & Tate, 2008; Sanders, 2001; Sanders, 2001; Sanders & Hambrick, 2007).

All four variables are transformed into dummy variables and are run separately in the regressions. The dummy variable regarding the CEO and chairman position is represented by the value of 1 if the role is filled in by the same person. Based on evidence presented by Yermack (1996) the dummy variable for board size takes the value of 1 if the size of the board

consists of either 6, 7, 8, or 9 directors. Similarly to the measures used for empire building are the number of independent directors on the board as well as the percentage of shares owned by the CEO divided along the median value. Values above the median consequently have a value of 1 in their dummy variable. Again, for the last three measures the year is taken into account when calculating the median value.

4.3 Control Variables

The control variables used in this research can be divided into variables that belong to the characteristics of the CEO and of the firm. These variables are extracted from prior research and are believed to influence CEO remuneration level as well as remuneration composition.

The first CEO related variable is his or her tenure which is measured as the amount of years that the CEO holds his or her current position. Prior literature includes this variable since it can be expected that as tenure increases the CEOs power to influence remuneration level and composition increases as well. Furthermore, are CEOs with longer tenure said to favor cash-based remuneration especially if they approach the end of their tenure. Lastly, are younger CEOs with shorter tenures said to be more willing to take risk while older CEOs with longer tenures have more to lose and tend to be more conservative. Following, the same reasoning the variable representing CEO age is also included in this study (e.g., Brick et al., 2006; Chatterjee & Hambrick, 2007; Chen et al., 2012; Cyert et al., 1997; Gamache et al., 2015; Gao & Li, 2015; Malmendier & Tate, 2008; Sanders, 2001; Sanders, 2001; Seo et al., 2015; Shi et al., 2017). The last CEO characteristic variable which is believed to be influential for CEO remuneration is CEO gender which is represented by a dummy variable taking the value of 1 if the CEO is male (Brick et al., 2006; Gao & Li, 2015; Shi et al., 2017). Research by Levi et al. 2014 shows that female directors on boards of bidder companies are associated with a lower number of acquisition bids and with the size of the bid premium. This evidence indicates that male CEOs may therefore be more acquisitive which might be reflected in their remuneration. A control variable related to the firm is firm size, measured by the natural logarithm of sales. This variable is often included in prior literature since larger firms are able to offer their managers and executives larger remuneration packages. Moreover, researchers often argue that larger firms are more complex which justifies larger remuneration packages (e.g., Brick et al., 2006; Chatterjee & Hambrick, 2007; Core et al., 1999; Gamach et al., 2015; Gao & Li, 2015; Hanlon et al., 2003; Malmendier & Tate, 2008; Sanders, 2001; Sanders, 2001; Sanders & Hambrick, 2007; Seo et al., 2015).

Next to firm size and age the model also controls for the index to which the firm belongs

the dummy variable S&P 500 becomes 1 if the firm belongs to the Standard & Poor's 500 index which represents the 500 largest publicly traded companies in the United States. Lastly, the model controls for industry trends by including the SIC industry code as a fixed effect (Cadman et al., 2010; Sanders & Hambrick, 2007; Seo et al., 2015). Fixed effects for the 2-digit industry code and for the year of which the data stems are present in every regression that is run.

Regarding the financial performance of the firm the firm's return on assets (ROA) and leverage ratio are included as control variables. Financial performance is expected to influence CEO remuneration since firms with better performance and lower leverage are able to offer higher remuneration contracts. Additionally, higher leverage ratio could influence remuneration since a higher leverage makes the firm inherently more risky (Amzaleg et al. 2015; Brick et al., 2006; Chatterjee & Hambrick, 2007; Core et al., 1999; Gao & Li, 2015; Gul et al., 2020; Hanlon et al., 2003; Hope & Thomas, 2008; Sanders, 2001; Sanders, 2001; Seo et al., 2015; Shi et al., 2017).

To control for firm risk directly this study includes another control variable which portrays the firm risk as the standard deviation of monthly stock returns. Generally, firms with a higher standard deviation in monthly stock returns are more likely to enjoy larger returns, both positively and negatively. These swings in firm performance make the firm as a whole less predictable and thus more risky, literature expects this to affect remuneration since it is more difficult to manage such a firm (Core et al., 1999; Cyert et al., 1997; Mishra et al., 2000).

A last factor that could influence CEO remuneration are a firm's growth opportunities, firms with more and larger growth opportunities are able to (potentially) offer executives higher remuneration contracts in the future. It could be possible that they already act on this now by offering higher remuneration contracts to secure talent, moreover they might choose to offer (relatively) more equity-based incentives than cash-based incentives. The firm's growth opportunities are represented by the book-to-market ratio (Brick et al., 2006; Core et al., 1999; Cyert et al., 1997; Hanlon et al., 2003; Malmendier & Tate, 2008; Shi et al., 2017; Titman et al., 2004).

4.4 Sample

The data used in this study is extracted from various sources, variables regarding the company financials are downloaded from Compustat. Variables related to the firm's stock performance and equity are based on CRSP data, additionally BoardEx is used for the variables related to the board of directors. ExecuComp is used for the variables regarding the CEO, e.g. compensation, tenure, age, etc., lastly, SDC ThomsonOne is used for the data related to the

acquisitions of companies. Appendix 1 shows which sources are used for the variables used in this thesis. The time frame of this study ranges from 1992 to 2020, this frame is chosen since data on executive compensation from ExecuComp is only (largely) available from 1992 onwards. Since data from this database is absolutely essential for the various regressions ExecuComp forms the bottleneck which thus sets the starting year in 1992. Data used stems only from companies in North-America, this decision was made based on the large scale of available data on these companies. For this timeframe and region the entire database is downloaded for all data sources with the exception that financial service firms are excluded from the Compustat data. The resulting datasets used for the regressions are (unbalanced) panel datasets.

The datasets used for the regression are build based on the category of the variable. This entails that there is a dataset with all control variables, a dataset with the independent and moderator variable, and three datasets containing the different dependent variables. For the individual regressions these datasets are merged based on the regression that is run in order to achieve a sample size as large as possible. In every dataset observations are deleted if one of the variables present in the regression is not available, this means the matching of datasets is the only reason for losing observations. Below, one can find the individual datasets with the number of observations as well as the merged datasets used for the regressions accompanied by the ultimate number of observations used.

Nr.	Dataset	Observations	Regression	Datasets	Final Observations
1	Control Variables	29,045	Table 2 R1	2 + 4	10,021
2	Independent Variable	39,260	Table 2 R2	2 + 5	10,079
3	Moderator Variable	19,040	Table 2 R3	2 + 6	10,260
4	DV Pct Equity Comp	33,418	Table 2 R4	1 + 2 + 4	9,842
5	DV CP Core	28,493	Table 2 R5	1 + 2 + 5	9,917
6	DV CP Larcker	23,118	Table 2 R6	1 + 2 + 6	10,063
			Table 3/4 R1, R4	1 + 2 + 3 + 4	6,728
			Table 3/4 R2, R5	1 + 2 + 3 + 5	6,809
			Table 3/4 R3, R6	1 + 2 + 3 + 6	6,922

Chapter 5. Results

5.1 Correlations and Summary Statistics

Table 1

	Mean	S.D.	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Empire Builder _{<i>t</i>}	0.197	0.398	0.000	1.000	1.000														
2 CEO Chairman _{<i>t</i>}	0.479	0.500	0.000	1.000	-0.065	1.000													
3 Board Size _{<i>t</i>}	0.603	0.489	0.000	1.000	0.110	-0.129	1.000												
4 Share Supervisory Directors _{<i>t</i>}	0.398	0.490	0.000	1.000	-0.143	0.120	-0.379	1.000											
5 Pct Equity Owned by CEO _{<i>t</i>}	0.586	0.493	0.000	1.000	0.099	0.059	0.245	-0.273	1.000										
6 Log(Tenure) _{<i>t</i>}	1.887	0.526	1.099	3.332	0.031	0.175	-0.003	-0.031	0.194	1.000									
7 CEO Age _{<i>t</i>}	56.908	7.010	29.000	88.000	-0.103	0.166	-0.061	-0.015	0.084	0.335	1.000								
8 CEO Gender	0.964	0.187	0.000	1.000	0.043	0.031	0.052	-0.024	0.047	0.062	0.029	1.000							
9 Firm Size _{<i>t</i>}	7.562	1.796	0.442	13.230	-0.232	0.202	-0.381	0.396	-0.445	0.062	0.098	-0.066	1.000						
10 ROA _{<i>t</i>}	0.055	0.120	-1.598	0.952	-0.027	0.046	-0.049	0.053	-0.118	0.053	0.011	0.003	0.269	1.000					
11 ROA _{<i>t-1</i>}	0.056	0.126	-1.598	1.006	-0.019	0.045	-0.040	0.058	-0.116	0.066	0.025	-0.000	0.263	0.630	1.000				
12 Bk/Mkt _{<i>t</i>}	0.554	0.276	0.036	4.664	-0.210	0.061	-0.021	0.019	0.061	-0.028	0.097	-0.009	0.087	-0.280	-0.154	1.000			
13 S&P 500 _{<i>t</i>}	0.348	0.476	0.000	1.000	-0.020	0.112	-0.290	0.259	-0.384	0.051	0.015	-0.010	0.583	0.164	0.147	-0.233	1.000		
14 Leverage Ratio _{<i>t</i>}	1.808	38.692	-1024.83	1935.25	-0.008	0.005	-0.039	0.022	-0.008	-0.004	0.018	-0.003	0.028	-0.042	-0.021	0.026	-0.006	1.000	
15 Standard Dev Returns _{<i>t</i>}	0.105	0.076	0.019	3.884	0.057	-0.082	0.104	-0.143	0.166	-0.091	-0.038	0.000	-0.287	-0.266	-0.299	0.160	-0.246	0.006	1.000

This table presents the correlation and statistics matrix including all variables run in the regressions. Pct equity comp_{*t*} is the percentage of equity-based compensation in total CEO compensation, equity-based compensation is the sum of (fair) value of restricted stocks granted and the Black-Scholes/fair value of options awarded. Premium Core_{*t*} is the CEO's compensation premium calculated based on Core et al. (2008) and Premium Larcker_{*t*} is the CEO's compensation premium calculated based on Larcker et al. (2011). Empire Builder_{*t*} is a dummy variable which takes the value of 1 if the CEO scores a score of 3 or 4 for the direct and indirect measures of empire building in year *t*. CEO Chairman_{*t*} is a dummy variable with the value of 1 if the CEO and Chairman position are held by the same person in year *t*. Board Size_{*t*} is a dummy variable with the value of 1 if the size of the board of the firm in year *t* is 6, 7, 8, or 9. Share Supervisory Directors_{*t*} is a dummy variable with the value of 1 if the share of supervisory directors on the board in year *t* is above the median of all companies in the same year. Pct Equity Owned by CEO_{*t*} is a dummy variable with the value of 1 if the percentage of equity owned by the CEO in year *t* is above the median of all companies in the same year. Log(Tenure)_{*t*} is the logarithm of the CEO's tenure in years in year *t*. CEO Age_{*t*} is the age of the CEO measured in years in year *t*. CEO Gender is a dummy variable with the value of 1 if the CEO is male. Firm size is the size of the firm measured as the logarithm of sales in year *t*. ROA_{*t*} is income before extraordinary items divided by average total assets for year *t*. ROA_{*t-1*} is income before extraordinary items divided by average total assets for year *t-1*. S&P500_{*t*} is a dummy variable with value of 1 if the firm is a member of the S&P500 index in year *t*. Leverage Ratio_{*t*} is the ratio between total liabilities, and stockholder's equity_{*t*}. Standard Dev. Returns_{*t*} is the standard deviation of the stock's return based on the monthly holding returns. Fixed effects for year and 2-digit SIC codes are included in all regressions. *, **, *** indicate two-tailed statistical significance at 10, 5, and 1 percent levels, respectively.

5.2 Empire Builders and Equity Compensation

The first hypothesis predicted that CEOs who are characterized as empire builders receive a higher portion of their compensation in equity-based incentives. The results of the regressions run with respect to this hypothesis can be found in table 2. In the first three regressions only the independent variable is regressed on the dependent variable. In the regressions thereafter the control variables are included as well. The dependent variable is the share of equity-based compensation of total compensation the CEO has receives, where equity-based compensation consists of stock options and restricted stock grants. Additionally, in order to give the research more depth two forms of compensation premiums are used as the dependent variable. The variable of interest is the variable named ‘Empire Builder_t’ which is a dummy variable defined along the lines of four measures of empire building.

Results show that the independent variable is significant and positive in the first regression run without any control variables, similarly the regression run on the same dependent variable with control variables yields a significant and positive independent variable. Here the positive effect is stronger. Given that ‘Empire Builder_t’ is a dummy variable the independent variable interprets that CEOs who score a value of 1 for this variable receive 2.137% more equity-based incentives in their total compensation than their non-empire building counterparts, in the complete regression this is 2.159%. Given the significant and positive coefficient in both models hypothesis 1 is thus accepted.

Next to the independent variable there are also several control variables which are significant. Consistent with prior literature the variable ‘CEO Age_t’ is highly significant and negative, the coefficient tells us that the percentage of equity-based incentives declines with 0.314% for every year the CEO ages. This is very much in line with prior literature which states that as CEOs age they tend to become more risk-averse and conservative and therefore prefer non-equity based compensation (e.g., Brick et al., 2006; Chatterjee & Hambrick, 2007; Chen et al., 2012; Cyert et al., 1997; Gamache et al., 2015; Gao & Li, 2015; Malmendier & Tate, 2008; Sanders, 2001; Sanders, 2001; Seo et al., 2015; Shi et al., 2017). The dummy variable ‘CEO Gender’ takes the value of 1 if the CEO in question is male, for the model this means a 5.57% decrease in the percentage of equity compensation. Additionally, one can see that the share of equity-based incentives increase with firm size, here the increase is 3.45% for every 1% increase in sales. Lastly, a firm’s return on assets and growth opportunities, measured by book-to-market ratio, are negatively related to the share of equity compensation.

In the other models the compensation premium based on Core et al. (2008) and Larcker et al. (2011) are used as the dependent variable, both dependent variables are log transformed.

Here, the models consisting only of the independent variable both show no significant results. With the inclusion of the control variables several significant coefficients appear, although only for the control variables. In both models the compensation premium of the CEO decreases as his or her tenure increases, a 1% increase in tenure causes a 0.1% decline in Core et al.(2008) premium (0.07% in Larcker et al. (2011)). This result is not in line with the expectation that as

Table 2

Dependent Variable						
Independent Variable	Pct equity comp _t	Premium Core _t	Premium Larcker _t	Pct equity comp _t	Premium Core _t	Premium Larcker _t
Empire Builder _t	2.137** (0.669)	0.014 (0.025)	0.022 (0.025)	2.159** (0.669)	0.008 (0.026)	0.006 (0.026)
Log(Tenure) _t				-0.443 (0.606)	-0.098*** (0.024)	-0.070** (0.024)
CEO Age _t				-0.314*** (0.048)	-0.001 (0.002)	0.000 (0.002)
CEO Gender				-5.565** (-1.912)	-0.101 (0.076)	-0.109 (0.077)
Firm Size _t				3.421*** (0.365)	0.066*** (0.016)	-0.008 (0.016)
ROA _t				-12.691*** (-2.565)	-0.160 (0.100)	0.190 (0.099)
ROA _{t-1}				4.626* (-2.118)	-0.068 (0.082)	0.031 (0.081)
Bk/Mkt _t				-3.823** (-1.311)	-0.235*** (0.051)	-0.312*** (0.052)
S&P500 _t				2.818 (-1.566)	-0.264** (0.084)	-0.000 (0.079)
Leverage Ratio _t				-0.004 (0.004)	-0.000 (0.000)	-0.000 (0.000)
Standard Dev. Returns _t				0.978 (-3.825)	-0.575** (0.185)	-0.366* (0.148)
Constant	18.005 (-19.555)	0.002 (1.018)	-0.039 (0.941)	27.459 (-18.942)	0.163 (1.034)	0.555 (0.961)
R ² within	0.0647	0.0060	0.0033	0.0740	0.0123	0.0118
R ² between	0.0898	0.0257	0.0373	0.2077	0.0352	0.0425
R ² overall	0.0716	0.0177	0.0203	0.1324	0.0249	0.0270
N	10,021	10,079	10,260	9,842	9,917	10,063

This table presents the results of panel data regressions for three different dependent variables, one independent variable, and control variables. The sample consists of N amount of observations for ExecuComp CEOs from fiscal years 1992 to 2020. Pct equity comp_t is the percentage of equity-based compensation in total CEO compensation, equity-based compensation is the sum of (fair) value of restricted stocks granted and the Black-Scholes/fair value of options awarded. Premium Core_t is the CEO's compensation premium calculated based on Core et al. (2008) and Premium Larcker_t is the CEO's compensation premium calculated based on Larcker et al. (2011). Empire Builder_t is a dummy variable which takes the value of 1 if the CEO scores a score of 3 or 4 for the direct and indirect measures of empire building in year *t*. Log(Tenure)_t is the logarithm of the CEO's tenure in years in year *t*. CEO Age_t is the age of the CEO measured in years in year *t*. CEO Gender is a dummy variable with the value of 1 if the CEO is male. Firm size is the size of the firm measured as the logarithm of sales in year *t*. ROA_t is income before extraordinary items divided by average total assets for year *t*. ROA_{t-1} is income before extraordinary items divided by average total assets for year *t-1*. S&P500_t is a dummy variable with value of 1 if the firm is a member of the S&P500 index in year *t*. Leverage Ratio_t is the ratio between total liabilities_t and stockholder's equity_t. Standard Dev. Returns_t is the standard deviation of the stock's return based on the monthly holding returns. Fixed effects for year and 2-digit SIC codes are included in all regressions. *, **, *** indicate two-tailed statistical significance at 10, 5, and 1 percent levels, respectively.

the CEOs tenure advances his 'power' to influence compensation increases (e.g., Brick et al., 2006; Chatterjee & Hambrick, 2007; Chen et al., 2012; Cyert et al., 1997; Gamache et al., 2015; Gao & Li, 2015; Malmendier & Tate, 2008; Sanders, 2001; Sanders, 2001; Seo et al., 2015; Shi et al., 2017). Similarly, to the model discussed above the growth opportunities of a firm have a negative and even more significant impact meaning that compensation premium decreases. For a 1 unit increase in 'Bk/Mkt_{t-1} the compensation premium decreases 23% in Core et al.

(2008) and 27% in Larcker et al. (2011). Lastly, for the Core et al. (2008) model the compensation premium increases with 0.07% for a 1% increase in firm size.

Table 3

Dependent Variable						
Independent Variable	Pct equity comp _t	Premium Core _t	Premium Larcker _t	Pct equity comp _t	Premium Core _t	Premium Larcker
Empire Builder _t	1.256 (0.997)	-0.016 (0.034)	-0.009 (0.036)	-0.573 (1.312)	-0.044 (0.045)	-0.093* (0.047)
CEO Chairman _t	-0.815 (0.864)	0.034 (0.031)	0.063* (0.032)			
Board Size _t				0.662 (0.801)	0.042 (0.028)	0.030 (0.029)
Empire Builder _t * CEO Chairman _t	-0.380 (1.497)	0.029 (0.051)	0.009 (0.053)			
Empire Builder _t * Board Size _t				2.409 (1.513)	0.058 (0.052)	0.125* (0.054)
Log(Tenure) _t	0.177 (0.720)	-0.097*** (0.026)	-0.066* (0.026)	0.065 (0.715)	-0.094*** (0.025)	-0.060* (0.026)
CEO Age _t	-0.263*** (0.067)	0.001 (0.002)	0.003 (0.002)	-0.265*** (0.067)	0.002 (0.002)	0.004 (0.002)
CEO Gender	-4.532* (2.176)	-0.109 (0.080)	-0.086 (0.081)	-4.684* (2.183)	-0.114 (0.080)	-0.086 (0.081)
Firm Size _t	4.259*** (0.456)	0.117*** (0.019)	0.022 (0.018)	4.307*** (0.460)	0.123*** (0.019)	0.029 (0.018)
ROA _t	-14.242*** (3.148)	-0.054 (0.111)	0.103 (0.112)	-14.167*** (3.150)	-0.049 (0.111)	0.113 (0.113)
ROA _{t-1}	2.692 (2.853)	-0.522*** (0.102)	-0.270** (0.102)	2.498 (2.852)	-0.528*** (0.102)	-0.277** (0.107)
Bk/Mkt _t	-2.021 (1.576)	-0.223*** (0.056)	-0.340*** (0.058)	-1.924 (1.577)	-0.221*** (0.056)	-0.337*** (0.058)
S&P500 _t	2.282 (1.784)	-0.338*** (0.086)	-0.009 (0.079)	2.395 (1.800)	-0.330*** (0.086)	-0.002 (0.079)
Leverage Ratio _t	-0.004 (0.007)	-0.000 (0.000)	-0.000 (0.000)	-0.004 (0.007)	-0.000 (0.000)	-0.000 (0.000)
Standard Dev. Returns _t	-7.023 (4.200)	-0.999*** (0.207)	-0.410** (0.150)	-6.804 (4.196)	-0.992*** (0.207)	-0.402** (0.150)
Constant	0.452 (28.460)	-0.801 (1.194)	-0.497 (1.150)	-1.708 (28.572)	-0.857 (1.193)	-0.521 (1.151)
R ² within	0.0560	0.0205	0.0159	0.0571	0.0208	0.0163
R ² between	0.2224	0.0521	0.0506	0.2198	0.0549	0.0542
R ² overall	0.1396	0.0435	0.0313	0.1379	0.0438	0.0323
N	6,728	6,809	6,922	6,728	6,809	6,922

This table presents the results of panel data regressions for three different dependent variables, one independent variable, two moderator variables, and control variables. The sample consists of N amount of observations for ExecuComp CEOs from fiscal years 1992 to 2020. Pct equity comp_t is the percentage of equity-based compensation in total CEO compensation, equity-based compensation is the sum of (fair) value of restricted stocks granted and the Black-Scholes/fair value of options awarded. Premium Core_t is the CEO's compensation premium calculated based on Core et al. (2008) and Premium Larcker_t is the CEO's compensation premium calculated based on Larcker et al. (2011). Empire Builder_t is a dummy variable which takes the value of 1 if the CEO scores a score of 3 or 4 for the direct and indirect measures of empire building in year *t*. CEO Chairman_t is a dummy variable with the value of 1 if the CEO and Chairman position are held by the same person in year *t*. Board Size_t is a dummy variable with the value of 1 if the size of the board of the firm in year *t* is 6, 7, 8, or 9. Log(Tenure)_t is the logarithm of the CEO's tenure in years in year *t*. CEO Age_t is the age of the CEO measured in years in year *t*. CEO Gender is a dummy variable with the value of 1 if the CEO is male. Firm size is the size of the firm measured as the logarithm of sales in year *t*. ROA_t is income before extraordinary items divided by average total assets for year *t*. ROA_{t-1} is income before extraordinary items divided by average total assets for year *t-1*. S&P500_t is a dummy variable with value of 1 if the firm is a member of the S&P500 index in year *t*. Leverage Ratio_t is the ratio between total liabilities, and stockholder's equity_t. Standard Dev. Returns_t is the standard deviation of the stock's return based on the monthly holding returns. Fixed effects for year and 2-digit SIC codes are included in all regressions. *, **, *** indicate two-tailed statistical significance at 10, 5, and 1 percent levels, respectively.

5.3 The Effect of Corporate Governance Measures

The second hypothesis predicts that the influence of corporate governance factors causes an increase in the proportion of equity-based compensation received. To this end four corporate governance factors are included in the regression models, separately and in interaction. The four corporate governance variables are included in dummy form which means

that the interaction term consists of two dummy variables with the value of 1. The results of the regressions run with the moderating variables can be found in table 3 and 4.

The results in table 3 and 4 show, at most, weak results that some of the corporate governance factors have an influence on the share of equity-based compensation or the compensation premium obtained by the CEO. Model 1 and 4 in table 3 show no significant coefficient for the independent variable as well as the moderator and interaction variable. Model 1 in table 4 shows a weak significance for the interaction variable, the coefficient states that the percentage of equity compensation in total compensation increases by 3.89% if the share of supervisory directors in the company is above median. Given the insignificance of all other corporate governance and independent variables hypothesis 2 is thus rejected.

Besides the insignificant independent variables, moderators, and interactors there are again several (highly) significant coefficients. The tenure of the CEO again decreases the compensation premium in both models. Additionally, an increase in the age of the CEO still decreases the share of equity compensation. Moreover, firm size also still increases the share of equity-based compensation, for example 4.26% and 4.31% in models 1 and 4 of table 3 and a 1% increase causes a 0.12% increase in model 2 and 5 of table 3. Lastly, the models in table 3 and 4 show that compensation premium under both approaches decrease significantly with firm risk. This means that as standard deviation of returns increases the CEOs compensation premium is expected to decrease.

5.4 Options versus Stocks

Literature discussed above explains how equity-based incentives can change the behavior of the CEO. Additionally, evidence found in these papers describes how stock option compensation and stock compensation can affect this behavioral change in different ways. Most importantly, stock option compensation can increase managerial risk-taking (Mishra et al., 2002; Sanders, 2001; Sanders & Hambrick, 2007; Wright et al., 2002). A CEO type which is often characterized by risk-taking is the empire building CEO. Based on self-serving motivations this type engages in riskier business decisions in order to increase and protect personal wealth. Consequently, one could expect that this attitude to risk-taking is also represented in the CEOs remuneration package. To this end the regression models in table 2 are run again. However, the dependent variable in these models is the share of options awarded in the total equity-based remuneration. The results of these regressions can be found in appendix 3.

Table 4

Dependent Variable						
Independent Variable	Pct equity comp _t	Premium Core	Premium Larcker	Pct equity comp _t	Premium Core	Premium Larcker
Empire Builder _t	0.018 (0.913)	-0.022 (0.032)	-0.007 (0.033)	2.655* (1.240)	0.053 (0.042)	0.035 (0.044)
Share Supervisory Directors _t	1.313 (0.798)	-0.007 (0.028)	0.007 (0.029)			
Pct Equity Owned by CEO _t				0.718 (0.823)	0.041 (0.029)	0.041 (0.030)
Empire Builder _t * Share Supervisory Directors _t	3.885* (1.561)	0.058 (0.053)	0.006 (0.055)			
Empire Builder _t * Pct Equity Owned by CEO _t				-2.425 (1.499)	-0.089 (0.051)	-0.063 (0.053)
Log(Tenure) _t	0.169 (0.714)	-0.092*** (0.025)	-0.058* (0.026)	0.018 (0.725)	-0.098*** (0.026)	-0.064* (0.026)
CEO Age _t	-0.266*** (0.066)	0.001 (0.002)	0.004 (0.002)	-0.275*** (0.067)	0.001 (0.002)	0.004 (0.002)
CEO Gender	-4.658* (2.176)	-0.108 (0.080)	-0.082 (0.081)	-4.612* (2.180)	-0.108 (0.080)	-0.082 (0.081)
Firm Size _t	4.026*** (0.460)	0.118*** (0.019)	0.024 (0.018)	4.253*** (0.464)	0.121*** (0.019)	0.028 (0.019)
ROA _t	-14.224*** (3.149)	-0.053 (0.111)	0.107 (0.113)	-14.418*** (3.149)	-0.057 (0.111)	0.100 (0.113)
ROA _{t-1}	2.906 (2.850)	-0.519*** (0.102)	-0.267** (0.102)	2.825 (2.852)	-0.515*** (0.102)	-0.263* (0.102)
Bk/Mkt _t	-2.126 (1.575)	-0.223*** (0.056)	-0.340*** (0.058)	-2.069 (1.578)	-0.227*** (0.056)	-0.344*** (0.058)
S&P500 _t	2.123 (1.790)	-0.336*** (0.086)	-0.008 (0.079)	2.325 (1.800)	-0.332*** (0.086)	-0.003 (0.079)
Leverage Ratio _t	-0.004 (0.007)	-0.000 (0.000)	-0.000 (0.000)	-0.004 (0.007)	-0.000 (0.000)	-0.000 (0.000)
Standard Dev. Returns _t	-6.928 (4.194)	-0.997*** (0.207)	-0.412** (0.150)	-7.036 (4.196)	-1.002*** (0.207)	-0.414** (0.150)
Constant	0.869 (28.475)	-0.760 (1.191)	-0.443 (1.149)	-0.236 (28.555)	-0.790 (1.190)	-0.470 (1.150)
R ² within	0.0577	0.0202	0.0148	0.0569	0.0206	0.0154
R ² between	0.2239	0.0536	0.0533	0.2185	0.0534	0.0514
R ² overall	0.1412	0.0443	0.0322	0.1377	0.0446	0.0316
N	6,728	6,809	6,922	6,728	6,809	6,922

This table presents the results of panel data regressions for three different dependent variables, one independent variable, two moderator variables, and control variables. The sample consists of N amount of observations for ExecuComp CEOs from fiscal years 1992 to 2020. Pct equity comp_t is the percentage of equity-based compensation in total CEO compensation, equity-based compensation is the sum of (fair) value of restricted stocks granted and the Black-Scholes/fair value of options awarded. Premium Core_t is the CEO's compensation premium calculated based on Core et al. (2008) and Premium Larcker_t is the CEO's compensation premium calculated based on Larcker et al. (2011). Empire Builder_t is a dummy variable which takes the value of 1 if the CEO scores a score of 3 or 4 for the direct and indirect measures of empire building in year *t*. Share Supervisory Directors_t is a dummy variable with the value of 1 if the share of supervisory directors on the board in year *t* is above the median of all companies in the same year. Pct Equity Owned by CEO_t is a dummy variable with the value of 1 if the percentage of equity owned by the CEO in year *t* is above the median of all companies in the same year. Log(Tenure)_t is the logarithm of the CEO's tenure in years in year *t*. CEO Age_t is the age of the CEO measured in years in year *t*. CEO Gender is a dummy variable with the value of 1 if the CEO is male. Firm size_t is the size of the firm measured as the logarithm of sales in year *t*. ROA_t is income before extraordinary items divided by average total assets for year *t*. ROA_{t-1} is income before extraordinary items divided by average total assets for year *t-1*. S&P500_t is a dummy variable with value of 1 if the firm is a member of the S&P500 index in year *t*. Leverage Ratio_t is the ratio between total liabilities, and stockholder's equity_t. Standard Dev. Returns_t is the standard deviation of the stock's return based on the monthly holding returns. Fixed effects for year and 2-digit SIC codes are included in all regressions. *, **, *** indicate two-tailed statistical significance at 10, 5, and 1 percent levels, respectively.

Given the fact that the independent variable 'Empire Builder' is insignificant in all models there is no evidence pointing towards a higher proportion of options awarded in the CEOs equity-based remuneration. Nevertheless, there are several significant values in the table to be found. Coefficients in model 3 show that whenever the CEO simultaneously holds the position of the chairman there is a 3.5% increase in the share of options awarded. However, if the CEO is classified as empire builder and simultaneously holds the position of the chairman there is (weak) evidence that the share of options awarded actually decreases by 4.6%. The last model provides (strong) evidence that the share of options awarded increases (4.1%) when the percentage of equity held by CEO is higher compared to other CEOs. This effect disappears

when the variable is interacted with the 'Empire Builder,' variable. Moreover, the models show that the share of options awarded decreases as firm size increases, furthermore options awarded increase if the firm is a member of the S&P 500. Interestingly, (weak) evidence shows that options awarded increases as current year ROA increases and options awarded decrease as prior year ROA increases. Lastly, options awarded increase with the length of the CEOs tenure.

Chapter 6. Conclusion

In the introduction of this thesis the following research question is stated:

How does CEO pay differ among empire building CEOs and non-empire building CEOs?

Next to this research question, in a sub-question the effect of several corporate governance factors on the CEOs pay are researched. The main results discussed in the previous section have shown that CEOs classified as empire builders receive a higher share of equity-based compensation in their remuneration than CEOs who are not classified as empire builders. Hypothesis 1 is thus accepted, hypothesis 2 on the other hand is not accepted. The four corporate governance variables introduced in the models do not show a significant effect on the composition of a CEOs remuneration package, neither alone nor in interaction form. Moreover, empire building CEOs do not seem to enjoy a compensation premium given the insignificant results in the models with dependent variables from Core et al. (2008) and Larcker et al. (2011). Lastly, this research supports prior findings due to the level of significance found for various control variables which affect the dependent variables.

The findings of this thesis shed a light on the association between empire building and the CEO's remuneration contract. Empire building can, following the definition stated in the literature review, be seen as a negative phenomenon which companies wish to avoid. Knowing that empire builders receive a higher share of equity-based compensation it is important for stakeholders, especially shareholders and the board, to realize the implications of equity-based incentives. This means that CEOs should be carefully scrutinized for the capital outlays that they make, especially the ones discussed in this study. Equity-based compensation is often used to encourage risk-taking and promote firm growth, the results of this thesis show that this is reflected in the remuneration packages of the respective CEO. Therefore, stakeholders should carefully determine whether the induced behavior of the CEO due to the remuneration structure is value adding for the firm.

Regarding the limitations of this study two main limitations relate to the moderator variables and independent variable. The moderator variables are mainly concerned with the board of directors while a fourth variable represents the percentage of stock ownership of the

firm by the CEO. Although current literature presents evidence that certain board characteristics are more preferable than others (e.g. Eisenberg et al., 1998; Yermack, 1996), there is no ideal board that fits for every firm (Coles et al., 2008). Therefore, a limitation of this study is the definition of the corporate governance variables included. Even though prior evidence has showed mid-sized boards are ideal certain companies might benefit more from larger boards, just like certain companies might also benefit from having a higher share of executive directors on the board. The second limitation pertains to the operationalization of the variable 'Empire Builder'. Although, the measures used are known in prior literature on empire building they do not depict the entire picture. For empire building to be truly empire building the actions by the manager have to decrease the value of the firm. After all, the definition from the papers by Jensen 1986; Stulz 1990; Masulis et al. 2007; Hope & Thomas, 2008, stated that the firm grows beyond its optimal size which entails that the value of the firm is not at its current maximum as well. Detecting true empire building and its negative impact on the firm is challenging especially since the negative consequences of it can arise in the short- or long-term

The second limitation also gives room for an alternative explanation of the findings of this study. Namely, companies in the sample are actually not managed by empire building CEOs. Companies in the sample could for example be in a growth phase, for various reasons. In this case the negative impact of empire building is only present to a limited extent if even at all.

Therefore, future research could focus on other and more detailed operationalizations of empire building which also shed more light on the ultimate effects of them on the firm. With a more precise distinction between CEOs the model will have more explanatory power and better inferences could be made about the CEOs empire building actions and its association with remuneration composition. Moreover, models with the main dependent variable show significant coefficients for the 'CEO Gender' variable, model 4 in table 2 indicates, with high significance, that the CEO's share of equity-based compensation is more than 5% lower if the CEO is male. Future research could try to explain this large change between gender, and more interestingly whether male CEOs have more power to influence their remuneration package and its structure. All in all, there are various avenues for interesting future research. Hopefully, this thesis generates your interest, and perhaps it invites you to research further in order to further accumulate our knowledge!

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Appendices

Appendix 1

Variable Name	Source(s)
Pct equity comp	ExecuComp
Premium Core	Compustat, CRSP, ExecuComp
Premium Larcker	Compustat, ExecuComp
Empire Builder	Compustat, SDC ThomsonOne
CEO Chairman	BoardEx
Board Size	BoardEx
Share Supervisory Directors	BoardEx
Pct Equity Owned by CEO	ExecuComp
Log(Tenure)	ExecuComp
CEO Age	ExecuComp
CEO Gender	ExecuComp
Firm Size	Compustat
ROA	Compustat
ROA _{t-1}	Compustat
Bk/Mkt	Compustat, CRSP
S&P500	ExecuComp
Leverage Ratio	Compustat
Standard Dev. Returns	CRSP
Year (fixed effect)	Compustat
SIC (fixed effects)	Compustat

Appendix 2

Dependent variable	
Independent variable	Log(total comp _t)
Log(tenure) _t	0.059*** (0.008)
Log(sales) _{t-1}	0.286*** (0.008)
SP500 _t	0.315*** (0.033)
Bk/Mkt _{t-1}	-0.417*** (0.028)
RET _{t-1}	0.084* (0.040)
RET _t	-0.049 (0.040)
ROA _{t-1}	-0.136* (0.048)
ROA _t	0.256*** (0.048)
R ² within	0.1496
R ² between	0.4509
R ² overall	0.3548

This table presents results of a panel data regression for the logarithm of one measure of CEO compensation and the economic determinants of compensation. The sample consists of 28,492 observations for ExecuComp CEOs from fiscal years 1992 to 2020. Total comp_t is salary, bonus, long-term incentive plan payouts, the (fair) value of restricted stock grants, the (fair) value of options granted during the year and any other annual pay for the CEO in year *t*. Log(tenure)_t is the logarithm of the CEO's tenure in years at the end of year *t*. Log(Sales)_{t-1} is the logarithm of sales for year *t-1*. S&P500_t is one if the firm is in the S&P500 at the end of year *t*, and zero otherwise. Bk/Mkt_{t-1} is (book value of assets)/(book value of liabilities + market value of equity) at the end of year *t-1*. RET_t is the firm's return for year *t*. RET_{t-1} is the firm's return for year *t-1*. ROA_t is income before extraordinary items divided by average total assets in year *t*. ROA_{t-1} is income before extraordinary items divided by average total assets for year *t-1*. Fixed effects for year and 2-digit SIC codes are included in the regression. *, **, *** indicate two-tailed statistical significance at 10, 5, and 1 percent

Appendix 3

Dependent Variable						
Independent Variable	Share Options _t	Share Options _t	Share Options _t	Share Options _t	Share Options _t	Share Options _t
Empire Builder _t	0.009 (0.009)	0.002 (0.009)	0.018 (0.014)	-0.008 (0.018)	-0.010 (0.013)	0.015 (0.017)
CEO Chairman _t			0.035** (0.012)			
Board Size _t				-0.003 (0.011)		
Share Supervisory Directors _t					-0.001 (0.011)	
Pct Equity Owned by CEO _t						0.041*** (0.011)
Empire Builder _t * CEO Chairman _t			-0.046* (0.021)			
Empire Builder _t * Board Size _t				0.010 (0.021)		
Empire Builder _t * Share Supervisory Directors _t					0.028 (0.021)	
Empire Builder _t * Pct Equity Owned by CEO _t						-0.026 (0.020)
Log(Tenure) _t		0.034*** (0.008)	0.021* (0.010)	0.025* (0.010)	0.025* (0.010)	0.019 (0.010)
CEO Age _t		-0.000 (0.001)	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.001 (0.001)
CEO Gender		-0.018 (0.025)	-0.054 (0.030)	-0.051 (0.030)	-0.052 (0.030)	-0.052 (0.030)
Firm Size _t		-0.032*** (0.005)	-0.045*** (0.007)	-0.043*** (0.007)	-0.043*** (0.007)	-0.039*** (0.007)
ROA _t		0.077* (0.036)	0.101* (0.045)	0.102* (0.045)	0.100* (0.045)	0.097* (0.045)
ROA _{t-1}		-0.031 (0.029)	-0.106** (0.040)	-0.107** (0.040)	-0.106** (0.040)	-0.104** (0.040)
Blk/Mkt _t		-0.057** (0.018)	-0.019 (0.022)	-0.018 (0.022)	-0.019 (0.022)	-0.023 (0.022)
S&P500 _t		0.046* (0.021)	0.098*** (0.026)	0.098*** (0.026)	0.098*** (0.026)	0.103*** (0.026)
Leverage Ratio _t		-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Standard Dev. Returns _t		0.083 (0.051)	0.061 (0.056)	0.058 (0.056)	0.057 (0.056)	0.057 (0.056)
Constant	0.872*** (0.247)	1.160*** (0.251)	1.573*** (0.382)	1.605*** (0.383)	1.607*** (0.383)	1.568*** (0.382)
R ² within	0.4124	0.4149	0.1678	0.1663	0.1667	0.1682
R ² between	0.3387	0.3685	0.1883	0.1869	0.1858	0.1888
R ² overall	0.3683	0.3864	0.1730	0.1703	0.1702	0.1730
N	8,387	8,262	5,760	5,760	5,760	5,760

This table presents the results of panel data regressions for one dependent variable, one independent variable, four moderating variables, and control variables. The sample consists of N amount of observations for ExecuComp CEOs for fiscal years 1992 to 2020. Share Options_t is the share of options awarded in year *t* calculated as Black-Scholes/fair value options awarded_t/(Black-Scholes/fair value options awarded_t + (fair) value restricted stocks granted). Empire Builder_t is a dummy variable which takes the value of 1 if the CEO scores a score of 3 or 4 for the direct and indirect measures of empire building in year *t*. CEO Chairman_t is a dummy variable with the value of 1 if the CEO and Chairman position are held by the same person in year *t*. Board Size_t is a dummy variable with the value of 1 if the size of the board of the firm in year *t* is 6, 7, 8, or 9. Share Supervisory Directors_t is a dummy variable with the value of 1 if the share of supervisory directors on the board in year *t* is above the median of all companies in the same year. Pct Equity Owned by CEO_t is a dummy variable with the value of 1 if the percentage of equity owned by the CEO in year *t* is above the median of all companies in the same year. Log(Tenure)_t is the logarithm of the CEO's tenure in years in year *t*. CEO Age_t is the age of the CEO measured in years in year *t*. CEO Gender is a dummy variable with the value of 1 if the CEO is male. Firm size_t is the size of the firm measured as the logarithm of sales in year *t*. ROA_t is income before extraordinary items divided by average total assets for year *t*. ROA_{t-1} is income before extraordinary items divided by average total assets for year *t-1*. S&P500_t is a dummy variable with value of 1 if the firm is a member of the S&P500 index in year *t*. Leverage Ratio_t is the ratio between total liabilities_t and stockholder's equity_t. Standard Dev. Returns_t is the standard deviation of the stock's return based on the monthly holding returns. Fixed effects for year and 2-digit SIC codes are included in all regressions. *, **, *** indicate two-tailed statistical significance at 10, 5, and 1 percent levels, respectively.