The impact of CEO characteristics on CEO remuneration: Evidence from the Netherlands

Master thesis

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Slow and steady wins the race.

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Abstract

The field of past research regarding CEO remuneration concentrated largely on the research of the pay-performance link. However, in recent years, other researchers did start to investigate other remuneration related fields. Besides the often used agency theory to describe this, other theories were developed and used. This study investigated the impact of the CEO characteristics gender, age, and tenure, on several remuneration categories a CEO can receive. Ordinary least squared (OLS) regression was used to test the impact for 63 non-financial Dutch listed firms during the years 2015 to 2017. Results show that the age of the CEO is positive related to annual bonus and option grants. Indicating that a CEO does want to get paid more in the form of variable pay when they are getting older. A CEO that is longer at the firm than their counterpart benefits from this tenure by receiving a higher fixed salary. According to previous studies, this is due to a CEO with higher tenure being able to influence the supervisory board or remuneration committee who sets his/her remuneration and call for more base salary (fixed and thus the same amount every month and less volatile). Furthermore, additional insight is shed regarding the use of a remuneration committee within the supervisory board. Both, the presence of a remuneration committee and the appointment of a former CEO at the remuneration committee do influence CEO remuneration. This thesis contributes by investigating the effect of CEO characteristics on CEO remuneration instead of the more popular, at Dutch listed firms, (weak) pay-performance relationship. Secondly, it also enlarges the remuneration related field of studies in continental European countries instead of Anglo-Saxon countries.

Keywords: CEO remuneration, CEO characteristics, gender, age, tenure, corporate governance, remuneration committee, Dutch listed firms, agency theory, upper echelons theory, behavioural agency theory, executive compensation

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1. Introduction

The first chapter starts with an introduction to the research topic. Followed by the problem statement, and the theoretical and managerial contributions of this thesis. The introduction concludes with a brief explanation of the structure of this thesis.

1.1 Introduction to the topic

Executive remuneration is a hot subject and maybe became even hotter during the latest financial crisis. When firms had to cut wages, lay off employees or even file for bankruptcy, the majority of the people placed question marks at the remuneration of CEOs (Callan & Thomas, 2014). It seemed like the CEOs were spared. At the beginning of 2018, the Dutch Financial Times[1] reported about the CEO of the Dutch ING bank who got into disrepute. He would get a 50 per cent rise of his wage, to €3 million, only several years after the bank was rescued of bankruptcy by the Dutch government. Eventually, the ING bank did not raise the salary of his CEO by 50 per cent, due to the noise that caused a stir.
Furthermore, there are currently some young CEOs at Dutch firms. Sometimes, they are the founder of the firm too, such as Jitse Groen. The University of Twente alumni is the founder and the current CEO of TakeAway.com, an online food ordering, and home delivery firm. Does a young CEO have different values or ideas when it comes to remuneration? Or do they get paid, just the same as their 'older' equivalents?

The most common term for the amount of compensation that a regular employee or CEO receives for the work that they do is called 'salary'. However, salary is often not the only sort of compensation that a CEO earns at a firm. This composition of the earnings is called remuneration. Remuneration is a reward for employment in the form of base salary supplemented with any bonuses, benefits or other fringe benefits. So, overall a CEO earns a monthly salary for the time that they worked for the firm. Often, they have privileges that ease their work, such as a car. Generally, all benchmarked against peer firms (Conyon, 2006). When the CEO reaches a certain level of profit, revenue or market share growth for example (measures for accounting performances), they can expect a bonus (Conyon, 2006). Which is usually paid annually. Another remuneration possibility is option grants. In line with the agency theory, option grants can be awarded to a CEO to let him act in the same way as the shareholders' interest (Conyon, 2006; Davis, Schoorman & Donaldson, 1997).

In his study, Conyon (2006) researched the compensation of executives and the components of this executive compensation in the United States (US) between 1993 and 2003. He found that the

[1] https://fd.nl/ondernemen/1245550/ing-trekt-salarisverhoging-hamers-in

total pay rose with an annual growth rate of around 7%. Remarkable is the decline of base salary and annual bonuses that were paid to executives and the great increase of option grants and restricted stock that were granted to executives in the US. The decline of the cash components base salary and annual bonus did decrease less for non-CEO executives related to CEOs. For the other parts, option grants and restricted stock, there was a bigger increase for non-CEO executives during the sample period. However, the decrease of base salary and annual bonuses paid to the overall compensation that was paid did not affect the value of both components. For both, the CEOs as the non-CEO executives, the value base salary, option grants, and restricted stocks did increase in the years till 2003.

A more recent empirical data analysis from EY[2] about the executive remuneration in the Netherlands shows that, on average, the base salary of a CEO that is employed at a firm listed at one of the three biggest stock exchanges (AEX/AMX/AsCX), rose in the period 2015-2017. The fixed salary of a CEO from firms of all these three exchanges grew. As did the long-term incentives. The short-term incentives in this period stayed almost the same over time. The bigger the company gets (because then the firm would go an index up in the Euronext listing), the less fixed salary is paid to the CEO of that firm. It is the other way around when it comes to the variable part of CEO compensation.

What makes the compensation of the CEO and why does a CEO also receive other types of allowances in addition to their basic salary? A possible explanation can be found in agency theory (which is also explained in chapter 2). In short, the CEO acts as the manager of the firm because this CEO is appointed by the shareholders of the specific firm. These shareholders often hold shares in more than one firm, so they cannot lead all of these firms on their own. Furthermore, it would be quite a mess when all the shareholders of a firm would lead the firm. Therefore, the shareholders appoint a CEO (and other executives) to lead the firm. The shareholders pay the salary of the CEO, but to let the CEO act in the way of interest of the shareholders they provide the CEO also with other benefits, such as annual bonuses and/or options. In this way, the shareholders try to pass on one of their key points of attention to the CEO, namely an increase in the value of the company.

Executive remuneration packages are used by firms to hire, keep and motivate executives at their firms (Conyon, 2006). Executive remuneration can contain different categories. First of all, base salary is paid to executives every month. Another sort of remuneration executives can receive an annual bonus stated in the annual bonus plan when certain specified goals are reached. These goals are normally set after the year for the next year and are usually based on accounting performance measures, such as a certain level of sales, a certain growth of market share etc. Furthermore, executives can receive stock options, which could also be set as dependent if certain goals are reached.

[2] https://www.ey.com/nl/nl/services/people-advisory-services/ey-executive-remuneration-in-the-netherlands-2018

Lastly, firms can pay additional compensation to the executive in the form of long-term incentive plans, retirement plans or even restricted stock (Conyon, 2006).

All executives are unique humans with a unique set of personal values and characteristics. They make choices based on these personal values and characteristics which have been obtained through hereditary succession and by past experiences. Hambrick and Mason (1984) stated in their article some observable managerial characteristics of executives. These include age, tenure, functional background, education, socioeconomic roots and financial position. As might does the gender of the executive, if the executive is also the founder of the firm, to a lesser extent duality of CEO and chairman position (which is not the case at Dutch firms), and the ownership of the firm by the CEO.

For firms to come to reasonable compensation for their CEO, they take into account many sorts of variables. They look at how the CEO performed in the past, within their firm or at another firm. They look at the size of their company, how many competitors there are that also want to secure themselves of the services of the CEO. Another category that possibly could influence remuneration is the personal characteristics of a CEO. This thesis focusses on the executive characteristics gender, age, and the tenure of the CEO.

Many researchers studied the remuneration of a CEO. However, they lack a consistent definition of remuneration. Often, researchers used only the fixed part, the cash part or only the total amount of compensation (Core, Holthauses & Larcker, 1999; Adhikari, Bulmash, Krolikowski & Sah, 2015; Al-Najjar, 2017; Ellahie, Tahoun & Tuna, 2017). When it comes to CEO characteristics, literature not always uses many CEO characteristics together in studies. A possible explanation for not containing multiple CEO characteristics together within a study might be a possible correlation between each other. However, the effect of each characteristic can be investigated separately. Second, the main focus of studies who do not take into account multiple CEO characteristics together is on firm performance and the pay-performance link. Therefore, the variables are often used as control variables (Adhikari et al., 2015, Andreou, Louca & Petrou, 2017; Ellahie et al., 2017; Hou, Priem & Goranova, 2014). This is especially the case when it comes to studies with a sample of Dutch firms. The major part of these studies is solely focussed on the pay-performance relationship (Duffhues and Kabir, 2008; Van der Laan, van Ees, and van Witteloostuijn, 2010). To the best of my knowledge, no study focused on the explanation of CEO remuneration by CEO characteristics at Dutch firms. Although, some student theses did focus on CEO characteristics[3], or CEO characteristics and CEO pay at Dutch firms[4].

For shareholders and parties like the supervisory board or remuneration board at firms in the Netherlands, it could be helpful to know the effect of CEO age and tenure regarding their

[3] https://essay.utwente.nl/73726/
[4] https://essay.utwente.nl/77729/

compensation. Parties that determine the compensation package of a CEO could, therefore, compose a tailored package to the needs of their CEO, according to their characteristics.

Therefore, this thesis splits the remuneration of Dutch listed firms' CEOs into different categories (see next chapter for further explanation) and examine if the characteristics of a CEO has a significant influence on the amount and distribution of it.

1.2 Problem statement and contributions of the thesis

The main objective of this master thesis is to show if there is a scientific relationship between the CEO characteristics and the remuneration that they receive for the work they perform at Dutch firms. In past research, there is ambiguousness when it comes to the definition of CEO remuneration and the CEO characteristics that are used within these studies. In this research, the main purpose is to bring two sorts of past researches together. First, the research based on the effect of CEO characteristics on CEO remuneration and second, the Dutch samples that are used in past research. Which mainly focused on the pay-performance relationship. Therefore, the research question central to this research is:

"To what extent do the characteristics of a CEO influence the composition of a CEO's remuneration package at Dutch listed firms?"

The sample of this study contains 63 non-financial Dutch firms that are listed on the Euronext Amsterdam. Which makes 84 per cent of all firms that are listed within the Euronext Amsterdam. The data contains the years 2015 to 2017. An OLS-regression is conducted to measure the impact of CEO characteristics and certain corporate governance control mechanisms on the remuneration of a CEO at Dutch firms.

This research contributes to the existing academic literature by answering the possible effect of CEO characteristics on CEO remuneration with recent data from Dutch listed firms. Both related to the short-term and long-term performance parts of CEO remuneration. In previous studies regarding CEO characteristics, these variables were not often taken into account together and tend to be about the relationship between remuneration variables and the effect on performance measures. This study also includes multiple corporate governance variables instead of only CEO characteristics, ownership structure, board structure or executive remuneration categories. Furthermore, it also contributes to existing literature regarding continental European countries instead of Anglo-Saxon countries. Studies regarding Anglo-Saxon countries were mostly studied regarding this subject.

The findings of this research can contribute to policymakers, consultants, and remuneration boards in the Netherlands because they can advise about the remuneration packages of a CEO and tailor the remuneration package of their CEO to the needs of the CEO so that their CEO can work in the best interest of the firm according to agency theories' principal-agent conflict. To a lesser extent, the outcomes of this study regarding the effect of corporate governance control mechanisms on CEO remuneration and decision making could benefit the firms' shareholders in deciding which internal corporate governance mechanisms to introduce.

1.3 Thesis structure

The remaining parts of this thesis build on towards an answer to the central research question of this thesis. First of all, in chapter 2 there is a theoretical review of the theories that are applied within this master thesis, the CEO characteristics, and the components of executive remuneration. It contains an explanation of the three specific theories, the CEO characteristics, and the composition of executive remuneration packages that are used. All supported with empirical evidence. Chapter 2 concludes with the introduction of the hypotheses of this master thesis. Chapter 3 gives an introduction to the research model that is executed. It also contains the independent, dependent, and control variables. These variables are explained further and how these variables are measured during this master thesis. The data sample, how it is composed and information regarding size etc. is the ending part of chapter 3. In chapter 4 the results of the study are discussed. It starts with the descriptive statistics of the data sample, followed by results of the study to answer the research hypotheses and some robustness tests. The last chapter, chapter 5, gives the concluding remarks of this master thesis, provide limitations of this master thesis and recommendations for further research regarding this research topic.

2. Literature review

This chapter explains different kinds of executive characteristics, explain the categories of executive remuneration and give an overview of the theories that are used in this research. Three theories are used: the agency theory, the behavioural agency theory, and the upper echelons theory. The explanation about the executive remuneration, executive characteristics and each of the three theories is further explained, as are the empirical results of it. The last part of this chapter contains the development of the hypotheses.

2.1 Executive remuneration

Executive remuneration packages are used by firms to hire, keep and motivate executives at their firms. The most common approach to understanding and to set the remuneration packages of executives is the agency theory (Conyon, 2006). The agency theory is explained further on, but basically, the agency theory aligns the interest of the principal (firms) and the agent (CEO).

Executive remuneration contains different categories. First of all, base salary is paid to executives every month. This is a fixed amount of salary that is stated in the executives' contract and only increases (or decreases) when an executive negotiates about his/her contract, e.g. during a performance evaluation. Second, executives can receive an annual bonus stated in the performance plan, when certain specified goals are reached. These goals are normally set after one year for the next year and are usually based on accounting performance measures, such as a certain level of sales or a certain growth of profit. However, a growing number of firms are also using nonfinancial performance measures more and more, such as product quality, customer satisfaction, and market share (Banker, Potter, and Srinivasan, 2000). Third, executives can receive stock options. Stock options contain the right, but not the obligation to purchase shares in the future at a given time for a pre-specified exercise price. However, these stock options do often have vesting periods. This means that executive can only exercise the stock options after the vesting period (e.g. 1-3-5 years) is over. This vesting period guarantees some sort of loyalty at the executives to stay for a longer time at the firm. Fourth, firms can pay additional compensation to the executive in the form of long-term incentive plans (which can include shares), retirement plans or even restricted stock (Conyon, 2006). Finally, a CEO often takes part in a pension plan from the firm or get other fringe benefits such as a car etc. However, a firm should carefully compose the executives' remuneration package, because the executives all react differently to the same remuneration package. For example, the effect of executive remuneration on the risk-taking behaviour of a CEO. This effect is further explained hereafter at the behavioural agency theory. Not only the monetary amount of remuneration categories can be used in research. The several

remuneration packages' categories can also be expressed in percentages. This gives a clear view of the distribution of the various remuneration packages (Al-Najjar, 2017).

Now that the different categories of executive remuneration are explained. This thesis discusses how executive remuneration might help with aligning the interest between managers and shareholders or not. Bebchuk and Fried (2003) mentioned in their article the struggle of executive remuneration between the optimal contracting approach and managerial power approach. Where the first one focusses on the ideal solution to mitigate the agency problem and the latter one can also be a part of the same agency problem. The optimal contracting view goes hand in hand with the agency theory because this view recognizes that managers not automatically seek to maximize shareholder value and therefore an agency problem occurs. The supervisory board or remuneration committee set the remuneration of the executive. However, according to Bebchuck and Fried (2003), these board members are also subject to the agency problem. Board members are appointed by the shareholders to act as the controlling body by the absence of the shareholders. So, the board members also want to be re-appointed again. On the other hand, there is the managerial power approach. This includes the phenomenon that managers are not always bargaining at arm's length (the equal relationship between board members and CEO), but suggest that the more power a manager has, the greater his/her ability to extract rents. Managers and board member need to be aware of the so-called 'outrage' costs, which means that the pay of executives is justified and not excessive.

Ways how the managerial power approach works and suboptimal pay structures in the optimal contracting view is explained further. According to the managerial power approach, the pay is higher when managers have relatively more power than the ones setting pay in the following situations: the board is relatively weak, there is no large outside shareholder, there are few institutional shareholders, and the manager is protected by antitakeover measures. Furthermore, the use of consultants who set remuneration, loans at executives and the use of golden goodbyes benefits the power of the manager. Suboptimal pay structures as a result of the optimal contracting view are: 1) the weak link between salary and bonus pay related to performance. Bebchuck and Fried (2003) suggest more equity-based compensation. 2) option plans that do not filter out stock price rises that are caused largely by industry and general market trends and, therefore, not due to the manager. Ways to counteract this suggested by Bebchuck and Fried (2003) are linking the exercise price to an index related to the market or sector, or use firm performance target to 'vest' the options. 3) Another suboptimal pay structure is the vast presence of stock options that are at-the-money. According to Bebchuck and Fried (2003), remuneration committees might be better off when they try to provide risk-averse managers with options to provoke risk-seeking behaviour.

Audit firm PricewaterhouseCoopers (PwC) addressed in one of their articles[5] some of the aforementioned theoretical problems. They stated that remuneration policy is complex because of, for example, finding a strong link between the strategy of a firm and the risk that a manager has to take to reach his goals is hard to link with executive remuneration. Furthermore, they mention conflicting interests between the different stakeholders and variable remuneration that requires risk-taking behaviour of the manager. PwC mention about variable remuneration that it provokes high risk-taking behaviour when providing wrong remuneration schemes, such as all or nothing performance objectives and bonuses regarding financial performance which can be manipulated easily, and the upcoming non-financial KPI's (key performance indicator) for variable remuneration, such as criteria regarding customers, employees, environment and the company itself.

Empirical evidence

Over the years, research containing executive remuneration has taken more variables regarding the remuneration package into account. This gives a more detailed view of the effect of the different remuneration categories. Some researchers made a distinction between contingent and non-contingent pay (Daily, Johnson, Ellstrand, and Dalton, 1998; Core at al., 1999). Others did only study total compensation (Giertz & Mortenson, 2013; Jaiswell & Bhattacharyya, 2016) or only the cash pay slice (percentage) (AL-Najjar, 2017) of it. Because the non-cash component of executive remuneration sometimes contains a lot of categories with a small value, researchers did take the cash component of compensation and also the total amount of compensation to check the influence of cash compensation (Duffhues & Kabir, 2008; Conyon, 2014; Callen & Thomas, 2014; Cole & Mehran, 2016). The variable pay part of executive remuneration is more volatile and therefore changes more often than base salary. So, the following researchers did focus on variable pay only (bonus/shares/options): Ryan and Wiggins (2001), Harvey and Shrieves (2001), Sanders (2001), and Ellahie et al. (2017). But the vast majority of the studies take into account the base salary, annual bonus, and long term, equity-based incentives such as share options, option grants etc. (Mehran, 1995; Gray & Cannella, 1997; Conyon & Murphy, 2000; McKnight, Tomkins, Weir, and Hobson, 2000; McKnight & Tomkins, 2004; Ceccucci & Gius, 2008; Callan and Thomas, 2014).

Salary is measured in different ways in several studies: as the monetary value of the base (cash and non-cash) salary (Ceccucci & Gius, 2008), as the percentage of an executive's total compensation that is attributed to salary for a given year (Conyon, 2006), as the fixed form of remuneration, which is normally paid without challenge (McKnight et al., 2000) or just the yearly CEO salary that is paid (Silberzahn & Arregle, 2018). The definition of bonuses also variates widely. Definitions of bonuses in

[5] https://www.pwc.nl/en/services/corporate-governance/documents/remuneration.pdf

studies are the monetary value of a bonus (cash and non-cash) earned (Ceccucci & Gius, 2008), the percentage of an executive's total compensation that is attributed to the annual bonus for a given year (Conyon, 2006), a short-term pay variable component linked to some element of performance, generally over one year (McKnight et al., 2000), or the yearly CEO bonus that is paid (Silberzahn & Arregle, 2018).

When it comes to option grants: McKnight et al. (2000) used the following definition: "It is a long-term component of pay and grants the holder a right to purchase a specific number of shares within a definite time period at a prearranged price" (p. 187). Conyon (2006) calls it the percentage of an executive's total compensation that is attributed to the value of options granted. Van der Laan et al. (2010) and Silberzahn and Arregle (2018) used the value of the Black-Scholes model, similar to McKnight et al. (2000), However, Silberzahn and Arregle (2018) used the Black and Scholes model only for the in-the-money holdings of the CEO. To value the option grants, six variables are necessary within the Black and Scholes model: the exercise price, the number of options granted, the expected life of the options (taking into account the vesting period), the volatility of the share price, the stock price at the valuation date, and the dividend yield.

Some previous studies did not only test the monetary value of the aforementioned three variables but did also test the percentage of each category related to the sum of the three categories (Conyon, 2006). Some tested the influence of remuneration paid in cash (salary + annual bonus) (Daily et al., 1998; Callan & Thomas, 2014; McKnight & Tomkins, 2004; Adhikari et al., 2015; Al-Najjar, 2017) and the influence of performance-related incentives (annual bonus + option grants)(Harvey & Shrieves, 2001; Ellahie et al. 2017), both in monetary value and as a percentage (Ryan & Wiggins, 2001) related to the sum of all three categories.

Executive remuneration is studied in comparison to many other fields. With the pay-performance relationship as one of the most mentioned relationships. Because remuneration is one way to possibly mitigate the agency theory, internal corporate governance mechanisms of firms are also often studied concerning the pay structure of firms. Think of ownership structures like institutional ownership or a variety of board-related variables. As mentioned before, the pay-performance relationship is one which is not consistent. This applies for studies that used Anglo-Saxon countries as firms from countries which have other rules and laws, such as the Netherlands. Core et al. (1999) found that ROA is negatively related to salary and positive to cash compensation and total compensation. Stock return was found to be positively related to all three aforementioned remuneration components. For the listed firms in the hospitality sector from the USA, Li and Singal (2018) found a positive pay-performance relationship. However, this could be due to industry special characteristics. Also, studies from the Netherlands do not found any positive relationship between pay and performance. Studies used accounting-based and market-based measures, such as ROA, stock return, and Tobin's Q

(Duffhues & Kabir, 2008; Van der Laan et al., 2010). They mentioned two things for further research: use other corporate governance mechanisms, instead of executive remuneration, to counter the agency problem and try more uncommon, maybe not financial, measures when studying the effect of performance on managerial pay. Callan and Thomas (2014) found a significant pay-performance relationship regardless of how this is paid to the executive. They also found that, to a lesser extent, social performance does also significantly impact the pay of a CEO.

In 1998, Barkema and Gomez-Mejia developed "a general framework for understanding executive compensation (p. 140)" after they concluded in their article that the pay-performance relationship is not self-contained but dependent on a variety of other variables regarding company- and executive based criteria, such as firm size, market, individual characteristics or role within the firm, governance, such as ownership structure, board, and contingencies, such as strategy, national culture or market growth.

Core et al. (1998) found in their article that the board and ownership structure of a firm influences executive remuneration. They found that firms with a weaker corporate governance structure will have greater agency problems. So, monitoring of the executives is harder for shareholders at these firms. These agency problems, at their turn, result in higher compensation for executives. However, this higher compensation did not result in better performance. It is even the opposite. Variables that might influence (some categories of) CEO remuneration include board size (Core et al., 1998; Conyon, 2014; Al-Najjar, 2017), the age of board members (Core et al., 1998), CEO duality (Boyd, 1994; Core et al., 1998; Jaiswell & Bhattacharyya, 2016), a remuneration committee (Daily et al., 1998; Conyon, 2014), the frequency of board meetings (Jaiswell & Bhattacharyya, 2016; Al-Najjar, 2017), board independence (Conyon, 2014; Al-Najjar, 2017), institutional shareholders (Jaiswell & Bhattacharyya, 2016), outside blockholders (Core et al., 1998; Harvey & Shrieves, 2001; Ryan & Wiggins, 2001), ownership by the CEO (Boyd, 1994; Core et al., 1998, Ryan & Wiggins, 2001), and percentage of outside directors (Ryan & Wiggins, 2001; Harvey & Shrieves, 2001).

2.2 Executive characteristics

All executives are unique humans with a unique set of personal values and characteristics. They make choices based on these personal values and characteristics which have been obtained through hereditary succession and by past experiences. Hambrick and Mason (1984) stated in their article some observable managerial characteristics. These include age, tenure, functional background, education, socioeconomic roots and financial position. Age is the age of the executive. Tenure is the time the executive is working at his/her current job at his/her current firm. Functional background is based on the orientation that usually has developed from past experiences. Furthermore, the executives'

education, where his/her socioeconomic roots lie (where was he/she born/parents/parents' wealth), and their current financial position could all possibly affect decision making by the executives according to Hambrick and Mason (1984). Other characteristics are the gender of the executive, if the executive is also the founder of the firm, executives' religion, nationality, political connectedness, ownership by the CEO, and to a lesser extent duality of CEO and chairman position. Carpenter, Geletkanycz, and Sanders (2004) summarized several studies that take a broader look then only the executive variables that are used in the initial article by Hambrick and Mason (1984) about the upper echelons theory (which will be explained more detailed later on). They mentioned the possible effect of heterogeneity between executives for better decision making, foreign experience of executives which enhanced foreign firms' sales, furthermore, founding experience and experience at multiple layers of a firm could benefit the firm positively (Carpenter et al., 2004).

Nguyen, Rahman, and Zhao (2018) stated that an older CEO might be more conservative and be more cautious in their strategies. Also, the adoption of new technological systems tends to be lower when a firm is led by an older CEO. An older CEO also takes less risk (Serfling, 2014) and likes to maintain the status quo. Which is also likely for a CEO who has been employed by the organization for a long time. Their younger counterparts, on the other hand, tend to be able to put more physical and mental effort in their jobs, which could potentially lead to firm growth. A longer CEO tenure could be valuable in a stable environment due to the greater experience and knowledge this CEO has (Li and Signal, 2018). But the contrary also applies. When the environment a firm is acting in is rapidly changing, the CEO needs to adapt quickly and then a CEO with a shorter tenure could be more helpful. The effect of CEO duality is less straightforward. On the one hand, it could help to create a clear line of authority, but on the other hand, could it restrict effective board monitoring (Nguyen et al., 2018). Kulich et al. (2011) mention that difference between men and woman occur due to differences in education, different career choices or experience. This is supported by the assumptions of Lam et al. (2012). They stated that high-level academic qualifications will elevate women to a top management position. Furthermore, women tend to reach a top management position at a younger age than their male counterparts. A female CEO should also harm risk-taking levels, according to Li and Signal (2018). Also, founders of the firm that are CEO will be more likely to have a greater ownership percentage of the firm compared to CEOs who were not at the firm from the beginning (Tzioumis, 2013). They did grow with the firm over time and would therefore only benefit from the firms' good days by merely receiving incentive pay (Silberzahn & Arregle, 2018)

Within a group, the characteristics of individual executives can also affect corporate decision making. (Hambrick & Mason, 1984; Carpenter et al., 2004). Often, not only one executive will make decisions but a management team consisting of multiple executives will lead the firm. One could argue that executives who are more dominant and more aware of the political games within a firm will be

more convincing towards their executive colleagues. This dominant coalition would, therefore, perform the decision making within a firm (Carpenter et al., 2004). Experiences of executives that were shared while they were at the firm will also benefit firm performance. In this way, executives get to know each other's skills and limitations (Kor, 2006).

Empirical evidence

Empirical evidence shows that researchers did investigate the effect of (several) CEO characteristics, as independent variables or as control variables, on executive remuneration. A growing amount of literature focuses more and more on in-depth research about executive characteristics itself. These researchers, however, do not always use the same set of characteristics.

One of the executive characteristics that gains attention in the past years is the gender of an executive. Women are working more often since the 20th century, so they worked themselves up to a higher level of office. Women are often not equally paid in comparison to their male counterparts. This is supported by the evidence of the studies of Conyon (2014) and Cole and Mehran (2016). Who found a negative relationship between the female gender and remuneration paid as salary or an annual bonus.

Kaur and Singh (2019) found that due to women working at smaller firms, have lesser experience and leading younger organizations compared to man, gender is negatively related to firm performance for a CEO at Indian firms. On the other hand, Khan and Vieito (2013) found just the opposite at US firms. They found that a female CEO outperforms a male CEO when it comes to firm performance. The fact that a female CEO is also less risky in comparison to their male counterparts when it comes to business decisions supports this because lower risk levels will cause less large fluctuations when firm performance changes. The fact that the aforementioned studies found contradictory findings indicate the current literature is not quite clear about the relationship between CEO gender and firm performance. This is supported by the article by Lam et al. (2012), who found no clear CEO gender – performance relationship at a Chinese sample.

Researchers found positive relationships between age and the amount of salary an executive receives (Callan & Thomas, 2014; Conyon, 2014; Adhikari et al., 2015; Cole & Mehran, 2016). This can suggest that if someone is getting older, they also earn more money for the work they perform. This can coincide with more experience and therefore, more knowledge. However, some studies also indicate a decrease in gained base salary after a certain age. McKnight et al. (2000) for example found that after the age of 55, the relationship between age and salary decreases. The same applies to the other cash component of remuneration, namely the amount of the annual bonus. Harvey and Shrieves (2001) are not as consentient as the aforementioned authors. They only studied incentives as a whole but did found a negative relationship between age and the amount of the incentives that were paid. Li

and Signal related this negative relationship to the less diversified portfolio of the CEO because more equity pay will lead to a more one-dimensional portfolio, resulting in a more risk-averse behaviour of the executive.

Lazear (1981) did study the effect of age one employee productivity. One mean reason of growing wages of employees overtime is because senior workers have to get the right incentives to keep motivated to perform the job. Increasing wages over time does also increase the productivity of junior workers to. Lazear (1981) calls for a steep linear rising age-earnings relation, to get the workers motivated and increase lifetime wealth levels. When it comes to age influencing firm performance, evidence was found that a younger CEO outperforms an older CEO regarding the performance, financially measured (Serfling, 2014; Nguyen, 2018). However, a CEO is more likely to face stock price crashes in their early years (Andreou et al., 2017). CEO age is also related to lower firm valuation (Nguyen, 2018) and risk-taking behaviour by the CEO is affected by CEO age. As a CEO's age rise, they tend to invest less in research and development, diversify the operations of the firm to split risk, and their operating leverage decreases (Serfling, 2014). Serfling (2014) documented a negative relationship between CEO age and stock return volatility, the proxy for risk-taking behaviour, and a significant effect on firm performance too. Long-term incentives are often used to reduce the negative effect between CEO age and firm performance. McGinnis, Miles, Chu, and Campbell (1999) found for at their US sample, that young executives at a firm with an older CEO can substitute for these higher long-term incentives. This is because the investment horizon of a young executive is much longer in comparison to their older CEO. The young executive keeps the older CEO sharp, focused, and productive.

With the increase of tenure, an executive might get more influence on the supervisory board over time. Therefore, the executive might influence this board so much, that the supervisory board adjusts the remuneration package more and more to the needs of the executive (Harvey & Shrieves, 2001; McKnight & Tomkins, 2004). Which possibly contains more salary instead of share options because this guarantees the income of the CEO (McKnight & Tomkins, 2004). The executive would have more benefit from a package that always pays as much as possible. So, executives should prefer salary above the parts that are dependent on performance. Therefore, McKnight and Tomkins (2004) hypothesized that there would be a negative relationship between tenure and bonuses. They did find this relationship (controlled for firm performance). Also, Harvey and Shrieves (2001) and Ellahie et al. (2017) did found this relationship. If the CEO is also the founder of the firm, Tzioumis (2013) found a positive relationship between CEO tenure and cash pay/total compensation.

CEO tenure was found to harm the valuation of a firm. Nguyen et al. (2018) found that firms with higher growth potential are usually lower valuated when the tenure of the CEO is longer. CEO tenure is also studied concerning firm performance. It was more often found that CEO tenure negative influences firm performance (Kaur & Singh, 2019). According to Kaur and Singh (2019), a CEO wants to

remain the status quo and keep their job until the end of their careers. The CEO can do so because of their relationship with other (non-executive) board members they build in the past years of tenure at the firm working at. Kor (2006) also show results that indicate that a CEO with a longer tenure wants to take less risky decisions and 'please' board members and shareholders with a steady performance. A longer-tenured CEO invests less in research and development in comparison to their shorter tenured counterparts.

Another variable that is studied within the context of executive remuneration and firm performance is the education of executives. One would assume that if an executive has a higher educational level, he/she can take positions at a bigger and more challenging firm. These firms have to pay more in comparison to their smaller counterparts because there are more responsibilities for the executives. Cole and Mehran (2016) did assume this and also found evidence for this assumption. In a recent study, Kaur and Singh (2019) stated that a CEO that is longer from the point that they graduated, the firm benefits less from the education level of the CEO. They found no significant relationship between this educational level and firm performance.

When an executive is a CEO and the board chair of a firm, this is called CEO duality. This is not common at firms from countries other than the United States. At an executive with these two jobs, it is more likely that their job is more complex and therefore demands more from them. Higher remuneration would be more likely. "CEO duality is found to significantly increase CEO cash pay, stock options and total compensation, thus compensating for job complexity" (Tzioumis, 2013, p. 2533). This is in line with other studies (Conyon & Murphy, 2000; Adhikari et al., 2015). Ellahie et al. (2017) studied the effects of inherited beliefs and values of a CEO on CEO pay. They found that these inherited beliefs and values did not count for change in CEO pay between the different ethnicities. They did found that if a firm changes from a CEO with one ethnicity to a CEO with another ethnicity, the compensation of a CEO is likely to change between pay types which are in line with their ethnicity preferences (Ellahie et al., 2017). Furthermore, CEO political preference and the impact of CEO religion are studied by researchers, but only in a non-remuneration related field. Religion was found to be positive significant on discretionary accruals (Cai, Kim, Lee, & Pan, 2019) and political preference was found to have a positive significant effect on the international expansion of firms (Saeed & Ziaulhaq, 2019).

2.3 Agency theory

Jensen and Meckling (1976) defined what agency problems are, what underlying agency costs are, and how agency costs possibly can be reduced. The agency theory describes a problem between an agent and a principal, who act as rational actors who want to maximize their utility. They want to maximize their utility by using as least expenditures as possible. Therefore, the rational agent or principal always

chooses the option that benefits their self-interest the most. (Jensen and Meckling, 1976). In the agency theory, agents are rational, self-interested and risk-averse. Whereas, principals are seen as risk-neutral because they can spread their shareholdings over multiple firms and therefore spread the risks he/she might faces instead of the agent that is highly dependent of the particular firm he/she is working at.

The agency theory has several 'types' of conflicts between agents and principals, such as the principal-owner conflict (type I), the majority and minority shareholder conflict (type II) and the shareholders – stakeholders problem (type III). This research primarily concentrates on type I, the conflict between the owner of a firm and the manager of a firm.

According to Eisenhardt (1989), two problems are arising in agency theory. The first is concerning the conflict between the principal and the agent about their goals and the expensive and difficult control of the principal about the work of the agent. When the manager (agent) is not acting in line with the shareholders (principal) of a firm but acts purely for his benefits. The second problem is regarding the risks the agent and the principal wanted to take. The agent and the principal have another attitude against the risk they would like to take. The manager is concerned with his/her job and wants to secure his/her position and would prefer less risk-taking. Whereas the shareholders of the firm can spread their shareholdings and therefore spread the risk they might face when the firm takes more risk. Therefore, they would like to take more risk sometimes, which they can afford because of their multiple shareholdings. In the agency theory, agents are rational, self-interested and risk-averse. Whereas, principals are seen as risk-neutral. For the agent, the only goal is to make as much money with less effort and the agent has no motivation that is not related to money (Davis et al., 1997; Pepper & Gore, 2015). As mentioned by Davis et al. (1997): "Both agents and principals in agency theory seek to receive as much possible utility with the least possible expenditure. Thus, given the choice between two alternatives, the rational agent or principal chooses the option that increases his or her utility"(p. 22).

The costs that the principal has to make to control if the agent is acting in the same the interests of himself are called agency costs. The principal can reduce these agency costs by introducing internal controls. One way to cover this interest problem is to compensate the agent through executive compensation schemes, to let the agent act in the way the principal desires (Davis et al., 1997). Bonuses can be rewarded to the agent when e.g. a short-term goal is accomplished by the agent (Dechow and Sloan, 1991), such as a certain level of profit or other goals that are reviewed yearly. For the long-term goals, the principal can reward the agent with stock options, restricted stock, and long-term contracts (Dechow and Sloan 1991; Conyon, 2006). When the agent reaches a certain level of stock price valuation or by expanding business activities to other countries or continents. All inline to

motivate the CEO to maximize the firms' value and therefore to maximize shareholders value (Conyon, 2006).

However, incentive pay does not always lead to the exact behaviour that a principal wants to achieve (Dechow and Sloan, 1991). The way an agent act is also be affected by intrinsic factors of the agent and it could encourage opportunistic behaviour by the agent. The board should be aware of this when designing a compensation plan. Another possibility is the introduction of a governance structure, e.g. due to the presence of a board of directors. The board of directors monitors the agent and reports their findings to the principal.

In his article, Azim (2012) summarized all, till then, previous studies about the principal-agent (manager-shareholder) conflict and the mechanisms that are used to mitigate this conflict. Azim (2012) mentioned three ways to let the managers act to the interest of the shareholders. First, perfect contracting, second, the presence of incentives in managers' contracts, and third, the monitoring of managers. However, the first two do also need yearly monitoring and reviewing. The most important part of reducing the principal-agent conflict is monitoring (Azim, 2012). To monitor the manager, there are at least three mechanisms who work side by side or even reinforce each other. These are the market, internal control, and regulation. With the first focusing on the capital market, block shareholders, and the managerial labour market. For this study, particularly block shareholders have my main interest because inside and outside ownership could potentially affect the performance of a firm. Inside (managers) ownership versus the outside ownership by major outside shareholders (principal). The second mechanism encompasses the influence of the amount and structure of managerial compensation, the composition of the board and the existence and composition of any committees.

Empirical evidence

To align the interests of the manager and the shareholders of the firm, these shareholders try to provide the manager with incentives. These incentives vary across firms and are not easily explained. Lewellen, Loderer and Martin (1987) investigated in their article why there are wide variations and the reason behind it. The most common incentives that shareholders use to align their interests with the interest of the manager is by the use of compensation with a certain value which is denoted in money. Such as salary, bonus, stock options, deferred compensation, pensions, and other fringe benefits (Lewellen et al., 1987). According to Lewellen et al. (1987), these forms of compensation would affect two possible owner-manager conflicts, namely the influence of time horizons and the difference in risk exposure. Lewellen et al. (1987) found that to mitigate the horizon problem, salary and bonus was negative, significantly related to long term investments and opportunities. To reduce the difference in

risk exposure by owner and manager, Lewellen et al. (1987) found that firms used stock-based pay. However, the percentage of stock-based pay that is used declined when the beta of the firm increases. In line with Lewellen et al. (1987), Dechow and Sloan (1991) found evidence that earnings-based pay such salary and bonuses, could encourage executives to focus on short-term goals. Gibbons and Murphy (1992) on the other hand, mentioned that the CEO cannot change the strategy of a firm on his own. The CEO is part of a management team that runs the firm and therefore are responsible all together for the firms' strategy. Mehran (1995) added to the aforementioned that firms who have more outside directors would use more equity-based compensation. Less equity-based compensation is used by firms that have a higher percentage of shares held by insiders (e.g. managers) or outside blockholders (Harvey & Shrieves, 2001; Jaiswell & Bhattacharyya, 2016). The effect of corporate governance mechanisms is also a widely used part to address the impact of it on the CEO compensation within the agency theory. For example, the composition of the board of directors and how ownership is divided within the firm. For the first, there is found to be a negative relation between CEO compensation and percentage of inside directors and positively related to board size (Al-Najjar, 2017), percentage of outside directors (Ryan & Wiggins, 2001), and CEO is also the board's chair (Core et al., 1999). For the last argument applies that CEO ownership is negatively related to CEO compensation (Core et al., 1999; Harvey & Shrieves, 2001).

In general, the compensation of a CEO is determined by the shareholders, which are represented by the supervisory board to let them monitor the executives for the shareholders. However, some firms create a remuneration committee consisting of directors from inside and/or outside the firm (former employees with retirement (Brickley, Linck, and Coles, 1999) or directors of other firms). This remuneration committee then sets the compensation of the CEO. In their article, Daily et al. (1998) did not find any significant relationship between the proportion of affiliated directors, interdependent directors or CEOs on the remuneration committee.

Personal characteristics of the CEO are also takin into account in several studies. McKnight et al. (2000) found a positive relationship between CEO age and salary paid (Adhikari et al., 2015). Harvey and Shrieves (2001) found that incentive pay is lower for an older CEO (Tzioumis, 2013; Andreou et al., 2017). Some scholars report a positive relation (McKnight & Tomkins, 2004; Callan & Thomas, 2014). The same applies to the role of tenure on CEO compensation (McKnight & Tomkins, 2004; Ceccucci & Gius, 2008; Tzioumis, 2013; Adhikari et al., 2015; Ellahie et al., 2017). Also, younger managers tend to focus on the short-term outcomes of a firm (Ryan & Wiggins, 2001). As a CEO is getting older and approaches their retirement, they start cutting R&D expenditures. However, remuneration committees can counteract this (Cheng, 2004).

Azim (2012) found that shareholder monitoring can substitute for board monitoring. So, when shareholder monitoring is greater, this is a substitute for lower board monitoring and the other way

around. However, the effect of a more independent board is complementary with monitoring by better auditors. Lastly, Azim (2012) found an inverse relation between shareholder monitoring and the mandatory external auditing way of monitoring. As discussed in the previous paragraph, the shareholders of a firm expect from firms' managers to maximise the firms' performance. This could, e.g. be measured as profit, but also as by the development of the stock price. As Azim (2012) mentioned, the compensation of managers could be used as an internal control mechanism to let the managers act in the way the shareholder's desire. Duffhues and Kabir (2008) used a sample of Dutch firms from the period 1998 to 2001 to study if the pay of executives is a useful control mechanism to encounter the agency problem and which benefits the maximisation of firm performance. They found no evidence that the pay-performance relationship is consistently positive in the Netherlands. In contrast, they even found a negative relationship between the two in several regression results. However, Duffhues and Kabir (2008) used mainly the cash component of executive compensation, because full disclosure of the other information was available after their sample years. A few years later, Van der Laan et al. (2010) performed similar research to also investigate a possible pay-performance relationship. They used Dutch companies in the sample period of 2002 to 2006. In contrast to the study of Duffhues and Kabir (2008), van der Laan et al. (2010) used more executive compensation variables, including salary, cash bonus, stock option grants, share options, and total compensation. Van der Laan et al. (2010) found a weak relation between total executive pay and performance, but not conclusive for all the performance measures that they used in their study. Furthermore, they found several long-term compensation components that are positively related to performance measures. Yet, there is no conclusive relation found by the authors.

2.4 Behavioural agency theory

With the agency theory becoming more popular and well-known throughout the years, several theorists started to make additions to it. As well as Wiseman and Gomez-Mejia (1998). In their article, Wiseman and Gomez-Mejia (1998) build further on the agency theory combined with the prospect theory. In their initial article, Kahneman and Tversky (1979) stated that prospect theory is about the assumption that losses and gains are valued differently. So, people more often make their decision based on the perceived gains instead of perceived losses. A person therefore always chooses the option where the perceived gains are shown. So, Wiseman and Gomez-Mejia (1998) suggest that the role of risk within the agency theory is not well specified enough and that the role that risk plays at the agency theory needs to be examined more regarding personal characteristics. For example, researchers that concentrate their research on agency problems often state that the agent acts risk-averse or risk-neutral against the risks that he or she faces. However, these researchers do not take

into account that it could also be the opposite or just in some cases. Especially, because of past experiences or a difference between an executive's current wealth. Also, the continuity of the risk preferences is taken as rigid. So, according to Wiseman and Gomez-Mejia (1998), a more comprehensive definition of risk and the influence of risk on the agency problem was necessary.

As mentioned earlier, the behavioural agency model of Wiseman and Gomez-Mejia (1998), combines the agency theory and the prospect theory, because the authors argue that these two are complementary. This is because, within the agency theory, the agent (in a perfect world) acts in line with the interests of the principal and the prospect theory states that people act differently in different situations because they handle risks different every time.

In the behavioural agency model, the authors start with explaining the effect of problem framing on risk and risk-bearing. Where the standard agency theory is based on a rigid form of risk preferences, Wiseman and Gomez-Mejia (1998) took a more fluid approach. They stated that the risk-taking behaviour of executives could change with the framing of problems. Especially when it comes to loss aversion and risk-taking behaviour, something interesting occurs. Executives that avoid a loss at all costs, take more risk even over less risky options that merely minimalize that loss. So, the loss-averse executive takes more risk to avoid loss at all times. When the wealth of executives is dependent on, e.g. the performance of the firm. Then executives bear less risk because they can feel the effects of their own decision making. In general, risk-bearing increases the aversion against risk through problem framing which in turn leads to a negative influence on risk-taking. This is the core of the behavioural agency model of Wiseman and Gomez-Mejia (1998). However, there are certainly other variables that influence the problem framing, risk-bearing or risk-taking of executives. One of them is the history of the firm's performance. The past performance of a firm could potentially affect the problem framing of the executive because the reference point of an executive is different after each decision that is made. Another way to affect the problem framing and risk-bearing of an executive by the firm is to adjust the compensation mix of the executive or integrate the pay of stock options to their remuneration package. First of all, contingent pay is a way to align the interest of the principal with the interest of the agent. When contingent pay is connected to the performance of a firm, agents do so. However, when the risk that the agent is fearing is too high, this causes risk aversion at the agent. Also, there is another difference between base pay and variable pay. Base pay is often used to calculate the current wealth of someone, whereas variable pay is not taken into the current wealth of someone (Thaler and Shefrin, 1981). Variable pay is used more for not everyday expenses, such as vacations or the purchase of luxury goods. Therefore, the impact of not getting the variable pay each year does not harm the executives as it does when base pay is not paid to the executive (Sherfrin and Thaler, 1988). Executives are more afraid to lose some of the base pay, then they are afraid of not receiving (some of) the variable pay. This results in the fact that executives pursue more risk for getting the variable

pay when the base pay is secured no matter what. The authors propose that shifting the amount of base pay to variable pay does not enhance the risk-bearing of the executive. It would just make the executive feel that he lost a part of his income. The addition of stock options is proposed to have a positive effect on risk-bearing by the agent only when the downside risk of option grants can not be negative (Wiseman and Gomez-Mejia, 1998). It is likely that when stock options that are positive valued and not exercised yet create a more risk-averse mentality at the executive. Other ways to influence problem framing/risk bearing to enhance risk-taking by executives that are proposed by the authors are: set a high variable-pay performance target and do not use behavioural criteria to evaluate the executive.

Because of the lack of "a settled theory and agreed terminology"(Pepper & Gore, 2015, p. 1046), Pepper and Gore (2015) tried to do so and came up with a review of the positive agency theory (owner-manager conflict) and an explanation of the behavioural agency model. The article stated four modifications of the agency theory for the behavioural agency theory. The first is that the agency theory does not take the performance of the agent and the work motivation of the agent into account. The behavioural agency theory does so. The second, who has already explained above in the article of Wiseman and Gomez-Mejia (1998), is about whether an agent is loss averse or risk-averse. The third modification is that the behavioural agency theory takes time as a hyperbolic discount function, instead of the agency theory who takes it as an exponential function and the last is the perception of the agent that it is getting paid enough for the works he/she delivers.

Wiseman and Gomez-Mejia (1998) and Pepper and Gore (2015) give a clear review of the behavioural agency theory and the differences between this theory and the agency theory. Principals remain risk-neutral under the behavioural agency theory and agents want to make as much money as possible for the least possible effort. However, this is influenced by rationality, motivation, loss, risk, uncertainty, and time preferences. Under the behavioural agency theory, the agents do not entirely focus on making money. Their motivation is intrinsic and extrinsic. Furthermore, under the agency theory, agents are risk-averse, whereas, under the behavioural agency theory, they are loss averse until they feel that they are making a profit. Then they start to be risk-averse. In behavioural agency theory agents discount time according to a hyperbolic discount function instead of an exponential discount function and when agents feel that their effort for the firm is rewarded, then agents are happier and more motivated to work at the same level or even higher for their firm. Table 1 in paragraph 2.6 shows the differences between agency theory and the behavioural agency theory.

Empirical evidence

To describe one phenomenon mentioned above, namely the effect of options that are positive valued, we use the article of Martin, Wiseman and Gomez-Mejia (2016). It is about the current option wealth of the CEO and how this affects the choice of making short term or long term horizon investments. The findings of the article conclude that a CEO who has options that are already have generated wealth for them, they focus more on long term investments. However, when a CEO has recently gain options that have a lot of worth potentially, then they focus more on the short term. So that they generate wealth based upon these options. So, boards need to take into account this phenomenon when granting new options to their CEO. A CEO who owns firm stocks take over fewer firms then a CEO who does not own any firms' stock. So they are acting more risk-averse. However, for a CEO who has the stock option pay as part of their remuneration package, they act more risk-seeking and therefore acquire other firms to add to their firm (Sanders, 2001). Furthermore, in their article, Hou et al. (2017) investigated the effect of CEO tenure on the pay-performance relationship. They found that the effect of pay types of the CEO differ over time. As the CEO tenure becomes longer, CEO tenure affects the risk-taking behaviour of the CEO and therefore there is a need for changes in the composition of the payment types over time. As CEO's view on incentive pay differs overtime when the CEO tenure changes, then a standardization of CEO remuneration packages would not be the best fit anymore. They also found that the different compensation types have a different effect in the early years versus later years.

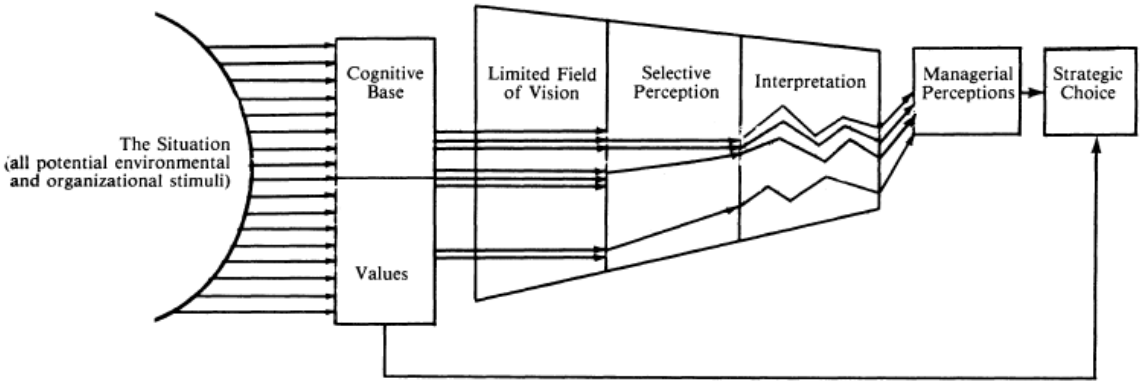
2.5 Upper echelons theory

Hambrick and Mason (1984) developed the upper echelons theory for all of the discussion at that time about the characteristics of top managers and their impact on strategic choices and performance. In short, the upper echelons theory "states that organizational outcomes … are partially predicted by managerial background characteristics" (Hambrick and Mason, 1984, p. 197). Where organizational outcomes are known as strategic choices. In their article, Hambrick and Mason (1984) describe strategic choices as follows: "It is intended to be a fairly comprehensive term to include choices made … more generally associated with the term "strategy." Strategic choices stand in contrast to operational choices …, which lend themselves more to a calculable solution"(p. 195). These strategic choices result in a certain level of performance, but this is explained later in this paragraph.

The upper echelons theory is based on the theory of the dominant coalition. Which includes the strong will of some group within a particular firm that makes the decisions. So, changes within a firm only succeed if the dominant coalition cooperates. The upper echelons theory focuses on the Top Management Team as the main representative of the dominant coalition (Carpenter, Geletkanycz & Sanders, 2004).

One of the fundamentals of the upper echelons theory is the so-called bounded rationality. Every single decision a person takes (in this case decisions by top-managers) is based on the same order of decision making. This always contains a sequential view (Hambrick and Mason, 1984). At first, there is a given situation, e.g. the current machine in the fabric is getting older and the machine needs to be replaced. In the decision-making process, the first problem is the limited field of vision. Managers cannot oversee all the options and all the consequences of a certain decision. In the case of the replacement of the machine. The managers cannot know all the alternatives for the current machine (except when the machine is very company-specific). Furthermore, the decision is influenced by the selective perception of the managers and last, by the interpretation of the managers that are shaped by the managers' cognitive base and his/her values. All these three make the managerial perceptions and it results in a given strategic choice, however, this strategic choice could also be directly influenced by managers' values. In the case of the replacement of the machine, this could be the preference for a specific brand of the machine. Important when assessing how the cognitive bases, values and perceptions could affect the strategic choice of a manager are the background characteristics of managers. Among other things, demographic or tenure background could explain why a manager handles a situation in the way he does.

Figure 1 The influence of the upper echelons theories' bounded rationality on strategic choices that have to make (Hambrick and Mason, 1984). Multiple variables narrow the managerial perception of the strategic choices to be made.



Last, within this the upper echelons theory, causality must always be taken into account. Managers with a certain background could be the result of previous organizational actions. For example, when some firm is a leader within their specific market for the past years and this firm brings out all the latest innovations, then, according to Hambrick and Mason (1984), you would expect managers with a high preference for innovation.

Taking the abovementioned into account, the model of the upper echelons theory is as follows (schematically illustrated in Figure 1): it starts with a certain situation. This could be inside or outside

the organization where the manager acts. Then two sorts of characteristics influence the strategic choice that is made to handle this situation. These are psychological and observable characteristics. The first is based on the bounded rationality, which contains the aforementioned cognitive bases and values. The second is based on the background characteristics of the manager, such as age, tenure, personal finances, education, etc. Finally, the strategic choices affect performance: profitability, growth etc. So, based on figure 1, one can conclude that the original framework of Hambrick and Mason (1984) is a linear one. The situation starts at the Top Management Team (TMT), then the situation needs a strategic choice to be made and finally, the strategic choice affects the firms' performance (Carpenter et al., 2004).

Hambrick and Mason (1984) present various propositions about the observable characteristics of the upper echelons theory. These are age, functional tracks, other career experiences, education, socioeconomic roots, financial position and group characteristics. These characteristics and the propositions given by the authors is further explained. First, the authors base their propositions on previous research that was performed. Based on these articles, they propose that age is associated with the volatility of sales and earnings. Possible explanations for this proposition could be that due to the lower physical or mental stamina at a higher age, executives tend to be less able to come up with new ideas and learn new behaviours. Furthermore, older executives tend to work longer at a firm already than their younger counterparts. Therefore, they have established a higher commitment to the status quo of the firm. Last, because the executives are getting older, they start thinking about their lives after they retire and when they are enjoying their pension. Because of this, they rather take less risk and secure their finances. Second, the functional track of executives, which means the specific orientation within a firm they bring with themselves, such as knowledge about finance, marketing or sales. The propositions are based on the experience the executives bring with themselves and the influence this experience has on the decision-making of the executives. Third, also other career experiences then functional track of executives could be of influence on strategic choices. The tenure of an executive could affect innovation, diversification, profitability and growth. Fourth, the amount of formal (management) education could be associated with innovation and performance. Because through a certain area of education the cognitive base and values of an executive could change. However, not which education an executive has done, but the amount of that same education route influences decision making. The fifth and sixth characteristics could both influence corporate profitability. A background at a lower socioeconomic group will experience greater growth and profit variability (because these firms tend to pursue strategies of acquisition and diversification). Other researchers stated because of the modesty of these executives. Next, financial position, because executives focus on the percentage of income they generate because of the firm that is performing well. The seventh and last characteristic is group heterogeneity. Which means that members of a team

have something in common with each other and that they feel connected because of this connection. Homogeneous management teams make strategic decisions quicker than heterogeneous teams and are associated with profitability in a stable environment. However, in turbulent environments, heterogeneous teams are associated with profitability. So, in short, can be said that: “executives’ experiences, values and personalities greatly influence their interpretations of the situations they face and, in turn, affect their choices” (Hambrick, 2007, p. 334).

In an ‘update’ of the 1984 article, Hambrick (2007) suggested some possible research topics to explore to extend the knowledge of the upper echelons theory, including the effect of executive characteristics on compensation systems. However, the original framework of Hambrick and Mason (1984) is not extended by other but mostly empirical evidence was gathered by other researchers (Carpenter et al., 2004), Hambrick (2007) mentioned researchers that believed that compensation packages must align with the other elements of the organizational context. However, what if the executive characteristics are of influence when designing the compensation packages an executive receives. According to Hambrick (2007):"…if a company radically changes the profile of the TMT (Top Management Team),…, but then fails to adequately adjust the executive compensation system to encourage the new behaviours, the new talents will not be fully tapped”(p. 340).

Empirical evidence

Li and Singal (2018) researched their article about the effect of CEO attributes and compensation on firm performance in the hospitality industry. In addition to the upper echelons theory, they also used the agency theory. A widely used theory when it comes to research about the compensation of managers and is discussed later on. It was found that age has a positive relation with firm performance and that tenure is negatively related to firm performance, however only significant for Tobin’s Q. Kabir, Li and Veld-Merkoulova (2018) found no significant sign between age and R&D expenses (measure for risk) in their article. They studied how age (in the form of the so-called career horizon problem) could affect R&D expenses. Furthermore, a CEO that has experience in the same industry before they took the job at their current firm is negatively related to firm performance. The same applies to a CEO that has experience in manufacturing industries before. Only mixed results exist about CEOs that had a job in other service industries. When a CEO has finished his/her MBA this does not guarantee better firm performance. Otherwise, background can influence firm performance. In the article, it was clear that a CEO with a sales and marketing background positive influences firm performance. In contrast to more finance, law, personnel or general administration background. In general, the article of Li and Singal (2018) found that the CEO attributes had a relatively higher impact on firm performance than the CEO attributes had on CEO compensation. Last, the article of Kor (2006) mention something about the

remaining variables of the upper echelons theory: tenure, shared experience and heterogeneity. Tenure was found the be negatively related to, in this case, R&D intensity which they used as a proxy of risk-taking behaviour. Whereas managers that shared the same experience (working together) and are located within the same management team this would enhance strategic choices and finally, the heterogeneity of the functional background in the top management team is negatively related to R&D intensity (Kor, 2006). "Functional background heterogeneity refers to representation in the top management team of various business functions such as marketing, operations, and finance" (Kor, 2006, p. 1084). In these articles, age was acting the opposite way as in the initial article of Hambrick and Mason (1984) suggested and tenure acting in the same way as the article mentioned. Functional track, socioeconomic background, financial position and group heterogeneity acting only partly as the initial articles mentioned (Hambrick and Mason, 1984).

2.6 Overview of the theories

Table 1 summarizes the key points of the aforementioned three theories.

Table 1 Summary of the theories, namely: agency theory (Jensen and Meckling, 1976), behavioural agency theory (Wiseman and Gomez-Mejia, 1998), and Upper echelons theory (Hambrick and Mason, 1984).

	Agency theory	**Behavioural agency theory**	**Upper echelons theory**
Key idea	Aligning the interest of principals and agents is the primary importance. The relationship between the principal and agent should reflect efficient management of costs of information and risk-bearing	The relationship between principal and agent should reflect the efficient and effective management of the relationship between executive compensation, firm performance, and shareholders' interests. Resulting in the primary importance of agent performance and work motivation	Strategic choices of executives are determined by the executives' managerial background characteristics. These strategic choices, in turn, determine the level of a firms performance
Unit of analysis	The contract between the principal and agent	As for the agency theory	Decision making of Top Management Teams
Human assumptions	Agents are rational, self-interested, and risk-averse	Agents are boundedly rational, loss-, risk- and uncertainty averse, and there is a trade-off between intrinsic and extrinsic motivation	Managerial background characteristics gained at birth and gathered through life affect the decision-making process
Organizational assumptions	There would be a partial goal conflict between principal and agent. Efficiency is the main performance criterion and information asymmetry is present	As for agency theory. However, effectiveness is also a main criterion of performance	Organizational and environmental stimuli are known as the situation, which is the starting point of a strategic choice
Information assumptions	Information is asymmetric and incomplete	As for the agency theory; goal setting is used by the principals to pragmatic reduce information asymmetry	One only has a specific scope of information available upon which a decision has to be made
Relationship between principal and agent	The principal wishes to align the interests of the agent with the interests of the principal	As for the agency theory and the principal also want to motivate the agent to reach a higher performance	N/A
Contracting problems	Moral hazard and wrong choices	As for agency theory	N/A
Key mechanisms	Monitoring and incentive contracts to align the interest	As for agency theory, except that incentive contracts also help to raise the motivation of the agent	Thorough preliminary investigation when hiring executive and via incentive alignment
Problem domain	Three types of conflicts: Type I manager vs. owner, type II majority vs. minority shareholders, and type III shareholders vs. stakeholders.	As for agency theory. However, behavioural agency theory focusses on the decision making of the principal	The effect of managerial background characteristics on decision making regarding strategic choices
Executive compensation	Helps to align the interests of the principal and agent	Helps to change perception regarding the risk-level and therefore affects decision making	Could affect the effect on managerial background characteristics.

2.7 Hypothesis development

In this section, the hypotheses are described that are tested during this research. This study investigates the effect of CEO characteristics on CEO remuneration. The formulated hypotheses are designed to answer the following research question: *"To what extent do the characteristics of a CEO influence the composition of a CEO's remuneration package at Dutch listed firms?".* After the regression models have tested the potential relation between the CEO characteristics and CEO remuneration, the outcomes of the hypotheses are discussed.

This research estimates the impact of the CEO characteristics on several categories of the remuneration a CEO receives. In this case, only base salary, annual bonus, and option grants are taking into account.

2.7.1 Gender

The first CEO characteristic is the gender of the CEO. A common stereotype is that females are in general paid less in comparison to their male counterpart. Several potential reasons why this wage gap between females and males might exists is studied by various researchers. One of these possible explanations is the 'glass ceiling', which prevents a woman from climbing the corporate ladder. The phenomenon females experience in normal day jobs and thus also as an executive.

Other gender differences that account for the pay gap are the age, years of experience and tenure. As female executives become the CEO of the firm, they tend to be younger, less-experienced, and have a shorter tenure at the firm in comparison to their male counterparts. Because firms often return to aged and more-experienced managers, this could potentially harm these female executives who are, in general, younger and less-experienced (Bertrand and Hallock, 2001; Kulich, Trojanowski, Ryan, Haslam, and Renneboog, 2011; Lam, McGuinness & Vieito, 2012). The same applies to the size of the firm and the industry the firm of a CEO is acting in. One assumption that is often met in research regarding executive remuneration is that firm size is positively related to executive remuneration. Because female executives often work at smaller firms in comparison to their male colleagues, which results in smaller remuneration. The same applies to firms in different industries. In some industries, female CEOs are underrepresented and male CEOs dominate top positions at firms from these industries. As CEOs in some industries are better paid than CEOs from other industries, this is also a potential explanation of the gender pay gap.

Furthermore, the masculine characteristics of males are appreciated more by members of the board that are setting pay than their female counterparts with their more feminine characteristics (Kulich et al., 2011). Characteristics that are marked as masculine are, e.g. the ability to exert influence and to implement a change process. Whereas being soft and warm to employees is being associated with feminine ones. This will results in a lower status for a woman compared to men. Shareholders do react differently to the appointment of a female CEO then they do to a male CEO (Kulich et al., 2011).

This difference in perception between a male and a female CEO whether they can lead the firm in the best interest of the shareholders may lead to gender-based differences in evaluating the performance of the CEO. These differences may affect the pay-setting process and therefore affect remuneration. Especially if this female CEO would try to compensate for this pay difference in pay negotiations (Kulich et al., 2011).

Abovementioned reasons are ones that apply to all categories of remuneration but reasons which influence only incentive pay categories of remuneration do also exist. Firms often use performance-based measures to access how much incentive pay a CEO will receive. Differences in their attitude regarding risk-taking and different characteristics between men and women affect corporate financial decision making. In general, a female CEO is acting more risk-averse and their tolerance regarding a certain risk level is smaller compared to a male CEO (Kulich et al., 2011; Khan and Vieito, 2013). Furthermore, the difference in risk-taking between men and women will only get higher when a female CEO has to make these decisions in an uncertain environment. Khan and Vieito (2013) stated that firms are currently not anticipation on the fact that a female CEO could get more risk-taking behaviour when assigning this female CEO more performance-based remuneration, which also concluded that current boards do not take into account the differences in risk-taking behaviour in the compensation packages yet.

All the aforementioned reasons explain partly why there is still a pay gap between male and females. However, a small percentage that remains is still attributable to gender discrimination. So following the aforementioned studies and their overall conclusions that a female CEO receives less remuneration, fixed and variable, this results in the following hypothesis regarding the gender of the CEO:

Hypothesis 1: *CEO female gender is negatively related to CEO base salary, annual bonus, and option grants.*

2.7.2 Age

Regarding the effect of CEO age on the base salary and annual bonuses that a CEO receives: as organizations grow over time and therefore the job complexity of the job of a CEO increases, the CEO has to have more knowledge for understanding the important position he or she has. So over time, a CEO gains more valuable experience and enhances more knowledge due to education, and could, therefore, work at larger firms. Which ultimately leads to a larger pay package as well because larger firms tend to pay higher salary in comparison to smaller equivalents (McKnight et al., 2000). According to McKnight et al. (2000), this is due to "the idea that older CEO's overtime gain valuable experience. This experience serves as a springboard for CEO's to move on and oversee much larger firms and, in turn, their pay packages"(p. 176). Several studies indicate a positive relation between CEO age and

base salary/annual bonuses they receive (McKnight et al., 2000; McKnight & Tomkins, 2004; Callan & Thomas, 2014; Adhikari et al., 2015; Al-Najjar, 2017).

Dechow and Sloan (1991) mention in their article about incentives that a CEO is more focussed on creating firm performance on a short-term base then creating value on the longer term. Shareholders will benefit more from long-term performance-based incentives given to the CEO of the firm they invest in the short-term performances based incentives. Furthermore, as a CEO age, Dechow and Sloan (1991) found that a CEO spends less on R&D expenses (R&D expenses will enhance long-term performance), indicating that they take less risk. Because of the downward turning risk appetite of a CEO who is ageing and who is working longer at the same firm, a CEO has to be incentivized to align their interest with the shareholders. Following the theory, the managerial horizon problem indicates that as the CEO wants to secure their finances before entering retirement, they are trying to act more risk-averse, to secure their income and wealth. This limited personal investment horizon indicates a negative relationship between the age of a CEO and incentives pay because a CEO resists additional equity exposure (Harvey & Shrieves, 2001). Harvey and Shrieves (2001) used the variable 'incentives' for assigning the relationship with age and tenure. However, this variable does not only contain option grants, resulting in a negative relation between CEO age and incentive pay. Other researchers came to the same conclusions, only that they also have very specific research scopes (Tzioumis, 2013; Ryan & Wiggins, 2001). Because current studies are not conclusive about the role of age on the pay of stock options, I follow the theory and hypothesize that an increase in CEO age is negatively related to long-term performance incentives. Given the preference of an older CEO for short-term performance incentives over long-term performance incentives, I will expect a positive relationship between age and the amount of annual bonuses received. All the aforementioned results in the following hypotheses:

Hypothesis 2a: *CEO age is positively related to CEO base salary.*

Hypothesis 2b: *CEO age is positively related to CEO annual bonus.*

Hypothesis 2c: *CEO age is negatively related to CEO option grants.*

2.7.3 Tenure

With the increase of tenure at the firm for the CEO, the CEO can build a good relationship with colleague directors and shareholders by setting a track record of mostly good decision making. The CEO can also build relationships with key persons in the organization and without the organization, to make him-/herself essential for the firm. Given that the CEO will also gain stock in reward for his work for the firm, both points will increase his/her power within the firm. Because, with the increase of tenure, an executive might get more influence on the supervisory board over time (McKnight & Tomkins, 2004). Therefore, the executive might influence this board so much, that the supervisory

board adjusts the remuneration package more and more to the personal preferences of the executive. The executive would have more benefit from a package that always pays as much as possible, without potential performance measures that would decrease his remuneration. So, executives prefer salary above the parts that are dependent on performance. Harvey and Shrieves (2001) also mention that if a CEO has a higher ability to impose their will on the firm's directors and shareholders, this will lower incentive compensation.

McKnight and Tomkins (2004) did found the negative relationship between tenure and annual bonus (controlled for performance). Also, Harvey and Shrieves (2001) and Ellahie et al. (2017) did found this relationship. Tzioumis (2013) found a positive relationship between CEO tenure of a CEO that is the founder of the firm and annual bonus. Harvey and Shrieves (2001) found mixed theoretical foundations for the relation between age and incentives. They suggest that tenure acts probably in the same way as age does. Harvey and Shrieves (2001) used the variable 'incentives' for assigning the relation between age and tenure. However, this variable does not only contain option grants, resulting in a negative relation between CEO age and incentive pay. Other researchers came to the same conclusions, only that they also have very specific research scope (Ryan & Wiggins, 2001; Tzioumis, 2013). So based on the theoretical explanation and the empirical evidence I hypothesize that tenure will be positively related to base salary and negatively related to performance-based measures, due to the increasing influence of the CEO on the board caused by a higher CEO tenure.

Hypothesis 3a: *CEO tenure is positively related to CEO base salary.*

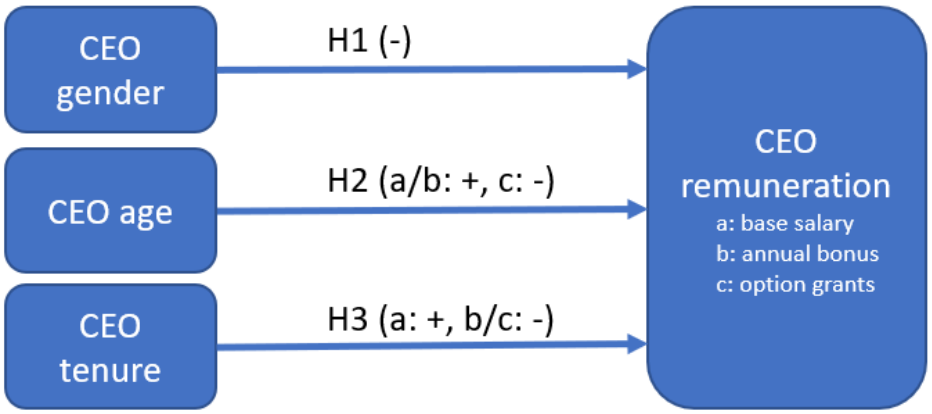
Hypothesis 3b: *CEO tenure is negatively related to CEO annual bonus.*

Hypothesis 3c: *CEO tenure is negatively related to CEO option grants.*

2.7.4 Hypotheses summary

Figure 2 gives an overview of the expected relations which are hypothesized and tested in this study.

Figure 2 Hypothesized relations of this study



3. Methodology and data

In this chapter, the used method in this research is described. The chapter starts with a brief explanation of regression, which methods are used in prior studies, and a brief explanation of the method that is used in this research. Thereafter, the variables that are measured within the research model are further appointed. The variables are divided into dependent, independent, and control variables. The chapter ends with a description of the sample that is used and how the data is gathered.

3.1 Research method

Regression analysis is a widely known and widely used method to measure dependency. Regression analysis is used to prove if a dependent variable can be measured by an independent variable. When testing if one dependent variable can be measured by one independent variable, it is called simple regression. If two or more independent (predictor) variables account for the dependent (criterion) variable, it is called a multiple regression (Hair, Black, Babin, Anderson, and Tatham, 2006). An advantage of multiple regression analysis is that it gives you the influence of one or more independent (predictor) variables on the dependent (criterion) variable (Hair et al., 2006). Furthermore, multiple regression analysis techniques provide you with predictions and explanations simply and straightforwardly (Hair et al., 2006). Disadvantages of multiple regression analysis are the possible presence of outliers in the dataset and the assumption of a pseudo linear relationship between the dependent- and the independent variables.

In other studies, a variety of regression types are used, such as logit- or logistic regression (Bhagat & Bolton, 2008; Adhikari et al., 2015), quantile regression (Nguyen et al., 2018), fixed-effects regression (Guest, 2009; Adhikari et al., 2015), two-staged least squared regression (Azim, 2012; Serfling, 2014), and Structural Equation Modeling (SEM) (Azim, 2012). The last technique is a combination of factor analysis and multiple regression analysis and is used to analyse relationships between variables with direct and indirect effects. It creates path models, which is useful when certain predictor variables are assumed to have relationships between each other (Hair et al., 2006). Logistic regression is a special form of regression, where the dependent variable is only measurable as a binary variable. Which means that it could only be 0 or 1, used to define the difference between man or woman, yes or no etc. The dependent variable is also known as a nonmetric, dichotomous variable, but the logistic regression is quite similar to linear regression (Hair et al., 2006). Nguyen et al. (2018) used the quantile regression because the conditions of linear regression were not applicable to their Australian sample. Quantile regression is useful to overcome one of the following two problems: data containing outliers or OLS regression residuals are not normally distributed (Nguyen et al., 2018). but the majority uses OLS regression and I found this method the best to conduct at this research.

Furthermore, fixed-effects regression assumes that the levels of the independent variables during the research are fixed (Hair et al., 2006). Fixed-effects is sometimes used besides another regression model (Guest, 2009; Adhikari et al., 2015).

In line with other researches (Lewellen et al., 1987; Mehran, 1995; Guest, 2009; Serfling, 2014; Adhikari et al., 2015; Jaiswell & Bhattacharyya, 2016; Nguyen et al., 2018), an Ordinary Least Squares (OLS) regression is used in this research to test if there is a relation between the independent variables and the dependent variable. At OLS regression, the independent variables make a linear function based on the principle of least squares. This is when the sum of the squares of the differences between the dependent variables in the dataset and those predicted by the linear function is minimized.

To test if CEO characteristics influence CEO remuneration, the regression is defined as follows:

$$CEO\ remuneration_{i,t} = \alpha_0 + \beta_1 CEO\ characteristics_{i,t-1} + \beta_2 Board_{i,t-1} + \beta_3 Remuneration\ committee_{i,t-1} + \beta_4 Ownership_{i,t-1} + \beta_x Controls_{i,t} + \varepsilon_{i,t}$$

CEO remuneration$_{i,t}$ = the compensation of the CEO in year *t*;

CEO characteristics$_{i,t-1}$ = CEO gender, age, and tenure in year *t-1*;

Board$_{i,t-1}$ = board characteristics in year *t-1*;

Remun. committee$_{i,t-1}$ = remuneration committee characteristics in year *t-1*;

Ownership$_{i,t-1}$ = ownership characteristic in year *t-1*;

Controls$_{i,t}$ = firm performance, firm size, leverage, and industry effects;

$\varepsilon_{i,t}$ = firm-specific errors.

Where i denotes a specific firm and t denotes the year

The variables are further explained in paragraph 3.2. It explains how these variables are measured and why these variables are included in this research.

3.1.1 Endogeneity problem

One problem that might occur when executing the OLS regression could be the endogeneity problem. The endogeneity problem occurs when there is reverse causality. If I measure the effect of the independent variable on the dependent variable but the independent variable is not correctly measured (Wooldridge, 2009). For example, the value of an independent variable at *t-1* affects the dependent variable at *t* but without ruling out the endogeneity problem, the effect of the independent variable at *t* on the dependent variable at *t* is tested. As an example, it could mean for the performance variable that firms with higher performance pay more remuneration and firms with lower performance pay less remuneration to a CEO. To avoid this problem, some variables are lagged variables. A lagged variable is an adjusted variable and used for variables (in this case the independent variable) that influences another variable, but only at time X_1 or X_2. Cheng (2004) used lagged R&D spending in his

research to study the impact of R&D spending on compensation of the CEO, Conyon (2014) used lagged board characteristics, and Jaiswell and Bhattacharyya (2016) used lagged variables for ownership, board, and CEO attributes. Their reason why they used lagged variables is in line with that of Conyon (2014): all of these attributes affect compensation and performance in the year after it, e.g. the supervisory board in year t sets compensation for year t+1.

3.2 Variables

3.2.1 Dependent variable

The dependent variables of CEO remuneration contain CEO salary, CEO annual bonus, and CEO option grants, as other author used in past articles (Duffhues & Kabir, 2007; Ceccucci & Guis, 2008; Van der Laan et al., 2010; Cole & Mehran, 2015; Li & Singal, 2018). Other remuneration categories that are mentioned in chapter 2.1 are excluded because 1) they are not used at Dutch firms, and 2) they are not reported clearly at all sampled firms. The regressions mentioned in chapter 3 are executed for all the three categories because a different influence of the independent variables on these three different dependent variables is expected. Furthermore, it gives a more complete explanation of which categories are affected in which way by the independent variables. It is very important to define the variables that are measured, because of the many studies that include remuneration and all use another definition of which categories are included/excluded regarding remuneration (Callan & Thomas, 2014).

Regarding the definition of base salary, bonuses and option grants, the definitions given by McKnight et al. (2000) are used. Base salary as the fixed form of remuneration, which is normally paid without challenge. Annual bonus as the short-term pay variable component linked to some element of performance, generally over one year (McKnight et al., 2000), and for option grants the following definition: “It is a long-term component of pay and grants the holder a right to purchase a specific number of shares within a definite time period at a prearranged price” (p. 187).

As some previous studies did, not only the monetary value of the aforementioned three variables is tested but also the percentage of each category related to the sum of the three categories (Conyon, 2006). The influence of remuneration paid in cash (salary + annual bonus) (Daily et al., 1998; McKnight & Tomkins, 2004; Callan & Thomas, 2014; Adhikari et al., 2015; Al-Najjar, 2017) and the influence of performance-related incentives (annual bonus + option grants)(Harvey & Shrieves, 2001; Ellahie et al. 2017), both in monetary value and as a percentage (Ryan & Wiggins, 2001) related to the sum of all three categories are tested.

3.2.2 Independent variables

CEO characteristics

CEO gender is a dummy variable with 1 being a female CEO and 0 being a male CEO (Conyon, 2014; Cole and Mehran, 2016). CEO age is the age of the CEO (McKnight et al., 2000; McKnight & Tomkins, 2014). CEO tenure is the number of years that the CEO serves at the firm in the CEO position until the last available financial year (McKnight & Tomkins, 2014; Serfling, 2014).

3.2.3 Control variables

This study contains several control variables. First of all, variables regarding corporate governance and second, in line with other studies, especially the ones focusing on the pay-performance relationship, firm performance, firm size, leverage, and industry dummies are added to the control variables.

Board characteristics

Board size is measured as the total number of members of the board (Core et al., 1999; Conyon, 2014; Jaiswell & Bhattacharyya, 2016; Al-Najjar, 2017). Board independence is the number of independent directors to the total number of directors on the board (Al-Najjar, 2017). Other authors used a definition based on the non-independent director's view. They defined board independence as the percentage of non-independent directors on the board (Conyon, 2014; Jaiswell & Bhattacharyya, 2016). Both definitions are quite the same. They provide us with a percentage related to the independent directors, only with a different starting point (independent (x) vs non-independent (1-x) directors). However, because this research contains a sample including only Dutch firms, the definition of board independence has to be slightly modified. Since the Netherlands use a two-tier board system, this means that the CEO is part of the executive board and that there is a board consisting of non-executive board members that are called the supervisory board. Because of this, board independence is defined as the ratio of members of the supervisory board to total members of the executive and non-executive board and will name this variable: supervisory board.

Remuneration committee

Remuneration Committee (RC) is measured as the presence of a remuneration committee. This variable is measured as a dummy variable, meaning that firms with a remuneration committee get the value ‘1’ and firms that do not have a remuneration committee gets the value ‘0’. To get a better insight into the background of each member of the remuneration committee, this thesis includes two other dummy variables which will describe the background of remuneration committee members a bit more: RC past CEO is measured as the presence of a former CEO of any firm in the remuneration committee and RC former employment at the firm is measured as the presence of a former employee of the relevant company in the remuneration committee.

Ownership

In the context of the agency theory and stock-based incentives, the ownership structure of the firm is also taking into account. Earlier research showed that CEOs and institutional investors that own shares of the firm could affect CEO remuneration. CEO ownership is the percentage of outstanding shares owned by the CEO (Core et al., 1999; Ryan & Wiggins, 2001). Institutional ownership is measured as the percentage of outstanding equity owned by institutional investors (Ryan & Wiggins, 2001). Jaiswell and Bhattacharyya (2016) also used institutional ownership in their study and defined it as follows: the percentage of a firm's common stock held by non-promoter financial institutions at the end of a fiscal year. So, in line with Ryan and Wiggins (2001). However, split into financial and non-financial institutions.

Other variables

Firm size is measured as the (natural log of the) book value of a firm's total assets (Ryan and Wiggins, 2001; Kabir et al., 2018). Leverage is the total debt to equity ratio, which is measured in this study as the firms total debt divided by total assets (Adhikari et al., 2015; Al-Najjar, 2017; Andreou et al., 2017; Kabir et al., 2018). The influence of leverage could be two-sided. On the one hand, with higher debts, more and more debtors are monitoring the firms' managers, therefore not having to pay more, because of the risk is trusted to the manager from the debtors, the so-called excess compensation. On the other hand, an increase in debts negatively affects leverage but increases the risk of the firm, therefore shareholders providing managers with higher compensation.

Several authors calculated the Return on Assets (ROA) as the net income after tax divided by the average total assets (Core et al., 1999; Jaiswell and Bhattacharyya, 2016). However, ROA can be calculated in multiple ways. Another way of calculating ROA is by dividing operating income through the average total assets (Barber & Lyon, 1996; Bhagat & Bolton, 2008). Using operating income mitigates the influence of potential earnings manipulation. Firm performance is therefore measured as operating income divided by average total assets. For the robustness tests that are performed, one more accounting-based measure of firm performance (ROE) and also two market-based measures, namely Tobin's Q and stock return, are added. ROE is measured as the net income divided by the book value of total assets (Daily et al., 1998; Sanders, 2001). Tobin's Q is measured as the market value of equity + book value of liabilities divided by the book value of total assets (Mehran, 1995; Silberzahn & Arregle, 2018). And, lastly, stock return is measured as the stock price year-end - stock price at year start + cash dividend paid divided by the stock price at year start (Mehran, 1995). The reason for choosing ROA as the main variable regarding firm performance and to choose the other three as control variables is that ROA is a highly important measure of firm performance for setting the executives' compensation (Mehran, 1995).

Following the past research of e.g. Adhakari et al. (2015) and Kabir et al. (2018), industry effects are contained in the research to control for. Kabir et al. (2018) stated in their article that "controlling for industry is important, as there might be significant cross-sectional variation across industries with regard to firm risk-taking and CEO characteristics" (pp. 12-13). How the firms are categorized into different industries is further explained in paragraph 3.3.

3.3 Data and sample selection

The sample of this study contains all firms that are listed at the Euronext Amsterdam. The Euronext Amsterdam contains three indices: the Amsterdam exchange index (AEX), the Amsterdam midcap index (AMX), and the Amsterdam smallcap index (AScX). These three indices have the 75 largest companies of the Netherlands listed. The 25 largest on the AEX, the 25 largest thereafter on the AMX and the other 25 are listed in the AScX. The ORBIS database is used to search for the companies that were listed in on the Euronext Amsterdam in 2015/2016/2017, our initial sample size, therefore, contains 81 firms. This is because some firms are no longer listed on the Euronext Amsterdam or are added to the listings of the Euronext Amsterdam. However, financial firms were excluded from the sample, which makes a sample size of 63 firms. Financial firms were excluded because for firms from this industry profitability and valuation variables are difficult to calculate and to compare with firms from other industries which may lead to biased results (Claessens, Djankov, Fan, Lang, Journal & Dec, 2002). The data used in this research comes from the ORBIS database, and firms' annual reports. ORBIS is a widely used databases that give specific information about multinational firms. It contains information regarding the financials of the firm as well the more general information about the composition of the board. Information about the CEO and board characteristics, such as CEO name, CEO age, CEO tenure, firm name, the board size, and supervisory board are gathered through ORBIS and/or Lexis Nexis. The same applies to the ROA, total assets, operating leverage, and leverage of the firm. These are the more firm-specific characteristics. Further information regarding the remuneration committee, ownership, the total remuneration of the CEO, and the distribution of salary, annual bonus, and option grants comes from annual reports of the firms. In the best-case scenario, the annual reports consist of all our sample years: 2014/2015/2016/2017. However, some firms are no longer listed or added to the listing on the Euronext Amsterdam. Logically, these firms do not have information available for all our sample years. If firms' data from one or more years is missing, this firm is not removed in case of sample bias that might occur in that case. Extreme values within the dataset are winsorized below the 2.5 and above the 97.5 percentages to reduce the effect of extreme outliers in the dataset. Winsorizing the extreme values did lead to a better spread of values of the various variables. Replacing outliers will benefit the study because the sample size will not decrease and

therefore no information will be lost. For the analysis, the statistical software package that is called SPSS Statistics 24 is used.

3.3.1 Industry classification

All the firms that are included in the sample have a classification based on their NACE Rev. 2 main section, such as 'Construction' and 'Manufacturing'. The firms in the sample are classified across 11 different sections. As can be seen in figure 2, the industry representing most firms is the manufacturing industry (30). Followed by the information and communication industry (9). However, there are also certain industries, such as administrative and support services, which contain only 1 firm. Because of some industries with these low frequencies of firms and the fact that in this thesis also the effect per industry is taking into account. Some industries are regrouped together, to create sufficient sizes per industry, in line with other student theses'[6][7]. Two criteria were important at regrouping these industries: First, industries after regrouping needed to be of a reasonable size level, so that the size would be somewhat equally distributed between each other, and second, industries needed to be somewhat related to each other. For example, all firms which operated in an industry which did not include products (service firms) are regrouped together.

Four new groups are created: 'Agriculture, retail, and transport', 'Manufacturing', 'Construction and mining', and 'Other services'. The first contains the NACE Rev. 2 industries 'A - Agriculture, forestry and fishing', 'G - Wholesale and retail trade', and 'H - Transportation and storage', the second contains only the 'C - Manufacturing', the third contains, 'B - Mining and quarrying' and 'F - Construction'. Finally, the fourth group contains 'J - Information and communication', 'M - Professional, scientific and technical activities', 'N – Administrative and support services', 'R - Arts, entertainment and recreation', and 'S - Other service activities'. This fourth group is labelled as 'Other services'. The frequencies per industry are shown in figure 3. The largest group is 'Manufacturing' (30), and the smallest group is 'Construction and Mining' with 7 firms. In appendix B, a list of the firms that are included in the sample, their NACE Rev. 2 core code, and the pooled industry in which they are classified is included.

[6] https://essay.utwente.nl/77729/
[7] https://essay.utwente.nl/79901/

Figure 3 Sample size to industry (NACE Rev. 2)

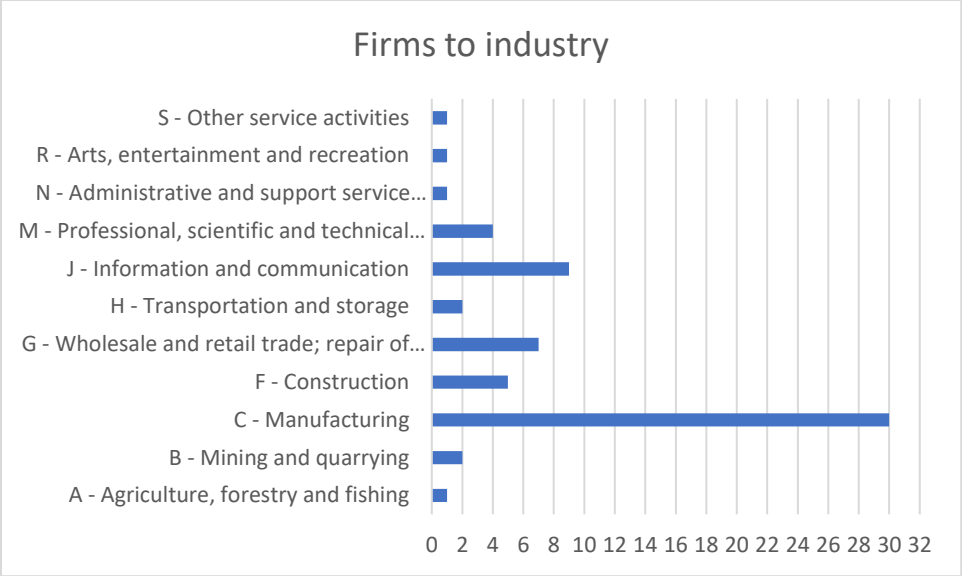
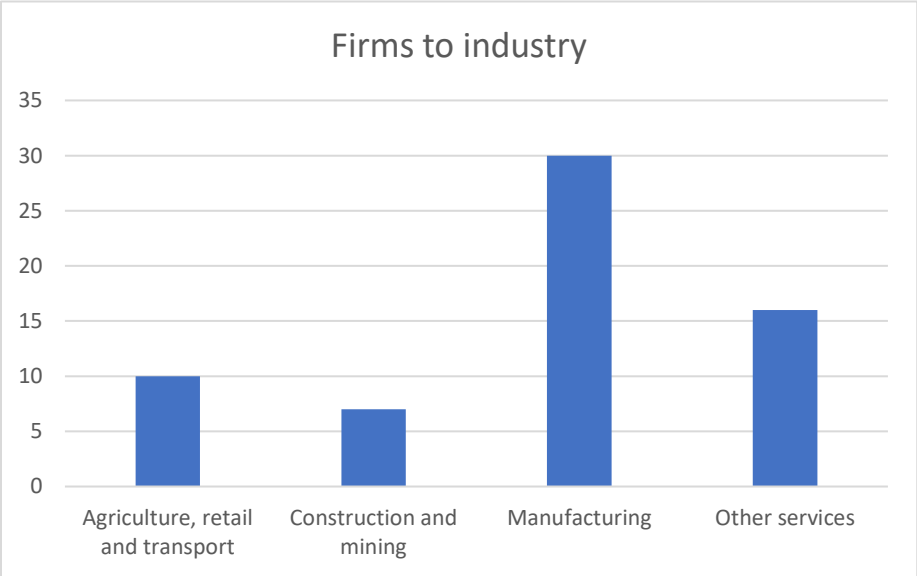


Figure 4 Sample size to industry (after regrouping)



3.4 Robustness tests

To test if the results of the research hold under several circumstances. Several robustness tests are performed during this research. First, as past researchers used several measurement methods of executive remuneration in their studies to investigate the relationship between CEO characteristics and their remuneration, several of these measurement methods are used as robustness checks. One of these methods contains not the monetary value of remuneration, but the distribution of the different categories divided by the total of executive remuneration as a percentage. Furthermore, Harvey and Shrieves (2001) studied the effect of incentive pay, which included all kinds of pay that were dependent on the firms' performance level of the year. Other researchers studied only the cash component of remuneration. Therefore, as for robustness tests, the variables cash pay (base salary +

annual bonus) and incentive pay (annual bonus + stock option grants) are included. Both measured as the amount and the percentage of it. Second, three other ways to measure firm performance are used, to see the effect of the corporate governance control mechanisms. This includes one more accounting-based measure (ROE) and two market-based measured variables (Tobin's Q and stock return). A third robustness test contains another measure of the control variables for firm size. In the model measured as total assets, but in the robustness test measured as total sales.

Table 2 Variable definitions

Name	Definition	Source
CEO remuneration		
Salary (x1000 €)	The monetary amount of base salary for year t	McKnight et al., 2000
Bonus (x1000 €)	The monetary amount of annual bonus for year t	McKnight et al., 2000
Options (x1000 €)	The monetary amount of option grants for year t	McKnight et al., 2000; Van der Laan et al. 2010; Silberzahn & Arregle, 2018
Salary (as % of total pay)	The percentage of base salary to the sum of salary, bonus and option grants for year t	Conyon, 2006
Bonus (as % of total pay)	The percentage of annual bonus to the sum of salary, bonus and option grants for year t	Conyon, 2006
Options (as % of total pay)	The percentage of option grants to the sum of salary, bonus and option grants for year t	Conyon, 2006
Cash pay (x1000 €)	The monetary amount of cash pay (base salary + annual bonus) for year t	Daily et al., 1998; Callan & Thomas, 2014; McKnight & Tomkins, 2004; Adhikari et al., 2015
Cash pay (as % of total pay)	The percentage of cash pay to the sum of salary, bonus and option grants for year t	Harvey & Shrieves, 2001; Ellahie et al. 2017
Incentive pay (x1000 €)	The monetary amount of incentive pay (annual bonus + option grants) for year t	Ryan & Wiggins, 2001
Incentive pay (as % of total pay)	The percentage of incentive pay to the sum of salary, bonus and option grants for year t	Ryan & Wiggins, 2001
CEO characteristics		
CEO gender	1 if CEO is female, 0 if male	Conyon, 2014; Cole & Mehran, 2016
CEO age	The age of the current CEO	McKnight et al., 2000; McKnight & Tomkins, 2014
CEO tenure	The number of years that the current CEO is serving at the firm at his CEO position	McKnight & Tomkins, 2014
Control variables		
Remuneration committee	1 if a RC is present, 0 if not	Daily et al., 1998
RC past CEO	1 if at least one member of the RC is a former CEO, 0 if not	
RC former employment at firm	1 if at least one member of the RC is a former employee of the firm, 0 if not	
Institutional ownership	Shares held by institutional investors / total shares outstanding	Ryan & Wiggins, 2001
CEO ownership	Shares held by the CEO / total shares outstanding	Core et al., 1999; Ryan & Wiggins, 2001
Board size	Total number of board members (management board + supervisory board)	Al-Najjar, 2017; Conyon, 2014; Core et al., 1999; Jaiswell & Bhattacharyya, 2016
Supervisory board	Members of the supervisory board / total board members (management board + supervisory board)	Conyon, 2014; Jaiswell & Bhattacharyya, 2016
Return on Assets (ROA)	Operating income / book value of total assets	Core et al., 1999; Jaiswell & Bhattacharyya, 2016
Return on Equity (ROE)	Net income / book value of total assets	Daily et al., 1998; Sanders, 2001
Tobins Q	(Market value of equity + book value of liabilities) / book value of total assets	Mehran, 1995; Ilberzahn & Arregle, 2018
Stock return	((Stock price year end - stock price year start + cash dividend) / stock price year start)	Mehran, 1995
Total assets (x1M €)	Total assets of the firm in year t	Kabir et al., 2018; Ryan & Wiggins, 2001
Operating revenue (x1M €)	Total sales of the firm in year t	Conyon & Murphy, 2000; Sanders, 2001
Leverage	Total debt / total assets of the firm in year t	Adhikari et al., 2015; Al-Najjar, 2017; Andreou et al., 2017; Kabir et al., 2018
Industry dummy	Industry dummies	Adhakari et al., 2015; Kabir et al., 2018

4. Results

In this chapter, the results of this study are discussed. The chapter is structured as follows: first, the descriptive statistics of all the variables that are used within this study are explained furthermore. It contains clear information about the value of the different variables and research like statistics such as the mean, median and standard deviation. Second, the correlation matrix shows the correlation between every set of variables that are used in this study, which tests for the possible existence of multicollinearity. In the third section, the results of the various regressions are discussed. Finally, the fourth section contains the outcomes of the robustness tests that are performed.

4.1 Descriptive statistics

In table 3, the descriptive statistics of all the variables that are used in this study are reported. The descriptive statistics contain the mean, the median, the standard deviation, the minimum value, maximum value, and the number of observations of dependent variables, the independent variables and the control variables. The data of the variables were winsorized on the 95 per cent scale to reduce the impact of outliers. This means that values which are below the 2.5 and above the 97.5 percentiles were winsorized. Replacing outliers instead of removing does not decrease the sample size and information is therefore not be lost. The maximum of observations that are reached is 185. This is for the variables regarding the remuneration of the CEO of the various Dutch listed firms. The minimum of observations is for the variable that measures the risk-taking behaviour of a CEO, operating leverage, and CEO tenure. The value of observations for these variables is 169. There are years that firms, e.g. were not listed (anymore or yet). In this case, there was no value for that specific firm. The case that the total of observations for all variables did not reach the maximum (185) is due to data that is not reported by the firms or not found in the databases that are used to gather data from. For example, not every firm did disclose the age and tenure of their CEO and this information was also not found by searching on the internet.

Starting with the dependent variables of this study: base salary, annual bonus, and options grants. These variables can be compared with a former study of Van der Laan et al. (2010). They performed a study about the pay-performance relationship within stock-listed firms in the Netherlands for the sample years 2002 to 2006. First, the variable salary in this study has a mean of 576.876 (and a median of 476.000). In comparison with the study of Van der Laan et al. (2010), the salary has risen with around 30 per cent (450.665 in their study). The same applies to the variables annual bonus and the stock options that were granted. Where in the period between 2002-2006 the mean of the annual bonus is 208.637 and the mean for stock options where 94.901 are the means risen to 472.372 (median 251.000) for annual bonus and 634.329 (median 139.000) for stock options granted. Because of the high-skewed variables salary, annual bonus, and option grants. The abovementioned three variables

are used in this study as a logarithm of these variables. The mean values regarding the distribution of the three categories in percentages are as follows: 54% salary, 23.9% bonus, and 22.1% option grants.

Looking at the CEO characteristics variables: the mean of the age of a CEO is 55.636 (median of 56) and the mean of the tenure of a CEO is 6.941 years (median of 5). The age of a CEO in the Netherlands is quite the same as the age of a CEO in other countries. McKnight and Tomkins (2004) reported an average age of 53.5 for a CEO in the UK in the period between 1992 and 1997. Also for the US between 1992 and 2012, the average age measured by Adhikari et al. (2015) was 55.2, measured by McKnight et al. (2000) was 55 in 1996, and measured by Ryan and Wiggins (2001) was 56.99 in 1997. A CEO that leads the listed-firms in Australia are on average 4.5 years younger than their counterpart that is a CEO at a Dutch firm (51.690)(Nguyen et al., 2018). Some other interesting note is that the minimum and maximum values of CEO age are inline between the different studies. With minimal around 43 and maxima around 72. A CEO at Dutch firms is on average 6.941 years in function as the current CEO of the firm. This is slightly lower in comparison to other studies with their sample in other countries than the Netherlands. However, these studies where mostly conducted before the worldwide crisis of 2008, which not all CEOs have passed unscathed. For the US, Ryan and Wiggins (2001) found the tenure in the US was 9.39 and for the study of Adhikari et al. (2015) the tenure was 8.2. Cole and Mehran (2015) found in their study that in ten years the percentage of female CEOs grew from around 15 per cent in 1993 to around 20 per cent in 2003. This included privately held firms from the US. Conyon (2014) studied the executive compensation at listed US firms in the period between 1992 – 2002 and found that a much smaller amount of females were CEO at a listed firm in this period, 8 per cent. However, within our Dutch sample, 0.033 per cent of the CEOs is a woman. Only two women held the CEO role at Dutch firms during our sample period.

For the variables regarding the existence of a remuneration committee and some characteristics of the people within these remuneration committees, the following occurs: in 70.1% (median of 1) of all the firm observations, there is a remuneration committee composed which sets the remuneration and the goals regarding variable remuneration for the CEO and other executives. Remuneration committees contain members of the supervisory board. Furthermore, in 62.4% of the observations (median of 1), a former CEO of any firm is a member of the remuneration committee. A CEO could indirectly influence their remuneration which they receive if they could affect the appointment of members of the supervisory board by suggesting possible members. In only 3.5% of all the observations (median of 0), there where members of the remuneration committee that have been employed by the firm before.

Board size is measured as the total number of members of the board. The average board consists of 8.006 persons and a median of 8. This is high compared to the study of Van der Laan et al. (2010). They mentioned that the mean number of supervisory board members at Dutch firms was

slightly more than five and the mean number of management board members was slightly more than three. In comparison to other studies, our numbers are low who did not focus on the Dutch firms, such as studies from Jaiswell and Bhattacharyya (2016) and Core et al. (1999). With respective values of 11.37 and 13. However, our number is in line with the recommended board size to make the board work effectively suggested by members Haniffa and Hudaib (2006), which is eight board members. Studies from Al-Najjar (2017) and Conyon (2014) report values in line with this study, 8.96, and 9.45.

Table 3 Descriptive statistics

Variables	Mean	Median	Std. Dev.	Min	Max	N
CEO remuneration						
Salary (x1000 €)	576.876	476.000	322.511	17.500	1630.000	185
Bonus (x1000 €)	472.372	251.000	593.233	0.000	2458.000	185
Options (x1000 €)	634.329	139.000	1057.361	0.000	4292.000	185
Salary (as % of total pay)	0.540	0.499	0.247	0.000	1.000	185
Bonus (as % of total pay)	0.239	0.234	0.146	0.000	0.642	185
Options (as % of total pay)	0.221	0.174	0.217	0.000	0.819	185
Cash pay (x1000 €)	1049.249	755.000	875.811	17.500	4088.000	185
Cash pay (as % of total pay)	0.779	0.826	0.217	0.181	1.000	185
Incentive pay (x1000 €)	1106.701	453.692	1534.240	0.000	6750.000	185
Incentive pay (as % of total pay)	0.460	0.501	0.247	0.000	0.861	185
CEO characteristics						
CEO gender	0.033	0	0.180	0	1	181
CEO age	55.636	56	5.658	44	70	176
CEO tenure	6.941	5	5.587	0	21	169
Control variables						
Remuneration committee	0.701	1	0.459	0	1	177
RC past CEO	0.624	1	0.486	0	1	173
RC former employment at firm	0.035	0	0.185	0	1	171
Institutional ownership	0.300	0.267	0.256	0.000	0.956	182
CEO ownership	0.037	0.001	0.087	0.000	0.340	185
Board size	8.006	8	2.841	4	15	179
Supervisory board	0.664	0.667	0.102	0.394	0.900	179
ROA	0.057	0.060	0.069	-0.107	0.220	178
ROE	0.082	0.100	0.160	-0.654	0.405	179
Tobins Q	1.078	0.894	0.814	0.030	3.724	172
Stock return	0.129	0.071	0.312	-0.350	1.099	167
Total assets (x1M €)	4700242.602	843000.000	9077983.773	16447.300	43655000.000	181
Operating revenue (x1M €)	3050884.038	996968.000	5496870.678	10027.320	25530650.000	182
Leverage	0.552	0.550	0.187	0.060	0.950	181

Variable definitions are stated in chapter 3.2. Table shows full sample of variables used in this study. With N as the number of observations per variable. Variable are winsorized below the 2.5 and above the 97.5 percentiles. Financial firms are excluded.

These studies are more unanimous when it comes to board independence. Al-Najjar (2017) and Conyon (2014) report in their studies board independence of 64.2% and 66.8%. Which is in line with the outcome of this research: 66.2% with a median of 66.7%, hence I use another measurement,

due to the Dutch sample. For the listed firms in the Netherlands 30% (median of 0.267) of their shares is owned by institutional investors. Compared to Indian and US firms this is quite average, with Indian firms having 16.1% of their shares owned by institutional investors and for US firms 58.3% of their shares. One side note is the different definition that is used within this study in comparison to the other studies, because of the two-tier board system in the Netherlands, which is explained in chapter 3.2. The studies of Core et al. (1999) and Ryan and Wiggins (2001) found a mean percentage of CEO ownership of respectively and 1.52 per cent (median of 0.086) and 2.02 per cent (median of 0.019). Our sample shows us a mean of 0.037 per cent (median of 0.001). A large difference between the studies with a US firm sample and our Dutch firm sample.

Regarding the firm performance of the Dutch listed firms, the firms' average ROA within this sample is 0.057 (median of 0.060). Which is smaller than the ROA of Duffhues and Kabir's study (0.081 and a median of 0.092), who also has a Dutch sample, but during the period 1998 – 2001. Interpreting this number only makes sense when compared to another criterion, such as firm size. The mean Return on Equity (ROE) of this research sample is 0.082 (median of 0.100). Furthermore, the mean Tobin's Q of this research sample is smaller (1.078) in comparison to Duffhues and Kabir's (2.065) and the annual stock return the other way around, 0.129 vs. -0.007.

As mentioned before, the total assets of this research sample are smaller in comparison to the total assets of Duffhues and Kabir's study, namely around €4.7 million, but the total of sales only grew from €2,751 million to €3,050 million. However, the standard deviation of the firm size variables is much higher than their means, which suggests a high skewness of these variables. Therefore, the natural logarithm of total assets and sales was used during this study. The mean of the variable leverage is around 55% (55.2% with a median of 0.550) and slightly smaller than the leverage ratio in Duffhues and Kabir's study (2008), 61.6%. Furthermore, when compared to other countries in the world, this leverage is quite high. In the article by Ellahie et al. (2017), they found only Israel had a higher leverage ratio and the other countries around an average of 40 per cent. Companies that are active within the financial industry often have a very high leverage ratio, but in this study, the sample only consists of non-financial companies (Claessens et al., 2002).

4.1.1 Independent-samples t-test

Given that only 2 firms of the sample had a female CEO during the sample period, this will make only 6 out of the 185 observations in this thesis. Therefore, it is unlikely that in the regression that was performed in this thesis, significant values on the effect of CEO gender on CEO remuneration are found. An independent-samples t-test was conducted to compare the CEO remuneration between male and female CEOs. The tables are presented in appendix G. Only for the variable base salary (table 23), there was a significant difference in the scores for a male CEO (M=6.1597; SD=0.70738) and a

female CEO (M=6.6605; SD=0.29408) conditions; t (179)=-1.725, p = 0.086. These results suggest that the gender of a CEO does affect the base salary pay of a CEO. More specifically, the results suggest that a CEO receives more base salary if they are men. The independent-samples t-test did not found this effect for the CEO remuneration variables annual bonus and options grants.

4.2 Correlation matrix

Table 4 shows the pairwise Pearson correlation matrix that was performed. This correlation matrix was performed to analyse if there is a correlation between every pair of variables that are used in this study. The correlation matrix also looks for possible multicollinearity between variables that have a high correlation between each other and which are part of the same regression analysis. To start with the variables of the CEO characteristics: CEO female gender is positively correlated with the control variable leverage (0.278**) at the 0.01 level, and the percentage of executive remuneration that is paid as option grants (0.172*), supervisory board (0.150*) and, control variable for firm size, operating revenue (0.158*) and is negatively correlated at the 0.05 level with the amount of cash that is paid as executive remuneration (-0.172*). CEO age is positively correlated to the variable CEO tenure (0.584**) at the 0.01 level and the percentage of executive remuneration that is paid as salary (0.198**) at the 0.01 level. Furthermore, CEO age is positively correlated to the variable leverage (0.195*) at the 0.05 level, and negatively correlated to salary (-0.173*) at the 0.05 level, bonus (%) (-0.150*) at the 0.05 level, cash pay (-0.161*) at the 0.05 level, and incentive pay (%) (-0.198*) at the 0.05 level. CEO tenure is positively correlated to the variable option grants (0.221*) at the 0.05 level, option grants paid in percentage to the total amount of remuneration (0.173*) at the 0.05 level, incentive pay (0.174*) at the 0.05 level, and negatively correlated to cash (%) (-0.173*) at the 0.05 level. For the CEO characteristic variables, there are some mixed correlations between the variables.

For the dependent variables regarding executive remuneration within this study, there are high correlations between each other. For example, the correlation between salary and cash pay as a percentage compared to total remuneration (0.965**). This is not quite strange because salary is a part of the percentage cash pay variable. A remarkable finding within the correlation matrix is the correlation of -1.000** between salary (%) and incentive pay (%), and the correlation of -1.000** between options (%) and cash (%). Because the first variables of the two pairings is not a component of the total measure, which is the latter variable. However, the abovementioned could not possibly harm the outcomes of the regression analysis further on in this study, because these variables are not taken into the same regressions analysis together. For the corporate governance control mechanism variables that are used, there are also some interesting correlations to mention. First of all, the presence of a remuneration committee and the other variables regarding the characteristics of the remuneration committee are in general positively correlated with the executive remuneration

variables. Especially when a past CEO of a firm is in the remuneration committee, especially to salary (0.570**) at the 0.01 level. However, when the salary variable is measured as a percentage of the total amount of remuneration or as cash pay (salary combined with annual bonus) these correlations tend to get negative. Resulting in, among other things, a negative correlation between salary (%) and the presence of a remuneration committee (-0.508**), a past CEO at the RC (-0.503**) at a 0.01 level. And a negative correlation between cash pay (%) and the presence of a remuneration committee (-0.460**), a past CEO at the RC (-0.504**)at a 0.01 level.

The variables regarding board characteristics and ownership are almost all positively correlated with the remuneration variables. Almost all at the 0.01 level. The variables regarding firm performance gave more mixed outcomes. ROE and stock return are not correlated to the monetary measures of the remuneration variables. However, stock return is correlated to some of the remuneration variables that are used in the robustness tests, but ROE is also not even correlated to one of these variables. Furthermore, Tobin's Q is positively correlated to all of the remuneration variables. To salary (0.232**) at the 0.01 level, annual bonus (0.190*) and option grants (0.220*) at the 0.05 level.

The control variables total assets and operating revenue are also correlated (0.933**). These variables are both used as control variables for the firms' size and that could be the reason why they are correlated to each other. Because operating revenue is used in the robustness checks, these variables are not included in the same regression at the same time. Leverage is also correlated to the firm size variable total assets (0.189*) and the firm size variable operating revenue (0.168*). To control for this correlation, the control variables are included separately at the regression and afterwards all together in a full model.

To test if there is multicollinearity among the variables that are used in the regressions, variance inflation factor (VIF) tests were conducted. These VIF tests generate a score. If a score is below 1 or above 10, then this indicates multicollinearity. So, a score between 1 and 10 is enough to rule out multicollinearity. However, some studies did make this rule of thumb harder and stated that the VIF score should not be higher than 4. Multicollinearity is only important at explanatory variables and not at control variables. The correlation matrix shows a high correlation between the variable which indicate that a remuneration committee is used by the supervisory board of the firm and the variable which shows if one of the members of the remuneration committee is a former COE (0.857**). Because of this high correlation, the VIF scores had to be watched carefully during the regression analysis. The VIF scores were higher than the aforementioned rule of thumb of 4. Therefore, in the regressions that are performed, these variables are separated from each other. Regressions will check the existence of a remuneration committee at a firm will influence CEO remuneration and thereafter, it can be checked whether some characteristics of remuneration committee members affected CEO remuneration. Other VIF scores of the performed regressions are within the abovementioned range of 1 and 4.

Table 4 Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
(1) LnSalary	1.000																										
(2) LnBonus	.817**	1.000																									
(3) LnOptions	.707**	.707**	1.000																								
(4) Salary (as % of total pay)	-.682**	-.835**	-.906**	1.000																							
(5) Bonus (as % of total pay)	.440**	.606**	0.090	-.491**	1.000																						
(6) Options (as % of total pay)	.480**	.472**	.894**	-.809**	-0.115	1.000																					
(7) LnCash pay	.965**	.950**	.734**	-.792**	.599**	.499**	1.000																				
(8) Cash pay (as % of total pay)	-.480**	-.472**	-.894**	.809**	0.115	-1.000**	-.499**	1.000																			
(9) LnIncentive pay	.824**	.915**	.911**	-.960**	.343**	.754**	.899**	-.754**	1.000																		
(10) Incentive pay (as % of total pay)	.682**	.835**	.906**	-1.000**	.491**	.809**	.792**	-.809**	.960**	1.000																	
(11) CEO female gender	0.128	0.065	0.120	-0.112	-0.064	.172*	0.115	-.172*	0.134	0.112	1.000																
(12) CEO age	-.173*	0.138	0.163	.198**	-.150*	-0.129	-.161*	0.129	0.071	-.198**	-0.104	1.000															
(13) CEO tenure	0.104	0.100	.221*	-0.096	-0.098	.173*	0.098	-.173*	.174*	0.096	0.019	.584**	1.000														
(14) Remuneration committee	.427**	.453**	.488**	-.508**	.201**	.460**	.448**	-.460**	.542**	.508**	0.122	-0.021	0.034	1.000													
(15) RC past CEO	.570**	.408**	.540**	-.503**	0.114	.504**	.537**	-.504**	.505**	.503**	0.147	-0.034	0.053	.857**	1.000												
(16) RC former employment at firm	.177*	.256**	.214*	-.150*	0.034	.152*	.204**	-.152*	.179*	.150*	-0.036	0.035	0.022	0.128	0.149	1.000											
(17) SQRTInstitutional ownership	.257**	.344**	.385**	-.415**	.189*	.346**	.294**	-.346**	.440**	.415**	.150*	-0.006	0.098	.466**	.396**	-0.116	1.000										
(18) SQRTCEO ownership	-.349**	-.257**	-.178*	.379**	-.248**	-.265**	-.371**	.265**	-.309**	-.379**	-0.099	0.097	0.050	-.188*	-.162*	-0.091	-0.092	1.000									
(19) Board size	.654**	.657**	.469**	-.566**	.371**	.402**	.685**	-.402**	.638**	.566**	0.033	-0.097	-0.105	.541**	.528**	.235**	.345**	-.293**	1.000								
(20) Supervisory board	.313**	.375**	.502**	-.379**	.165*	.326**	.359**	-.326**	.417**	.379**	.150*	-0.077	0.134	.266**	.284**	.157*	0.128	-0.126	.153*	1.000							
(21) ROA	0.086	0.116	0.083	-.237**	0.094	.212**	0.122	-.212**	0.147	.237**	0.109	-0.078	0.132	-0.036	-0.076	-0.100	.211**	-.281**	-0.020	.178*	1.000						
(22) ROE	0.013	-0.009	-0.027	-0.066	0.091	0.014	0.028	-0.014	-0.030	0.066	0.018	-0.092	0.008	-0.048	-0.049	-.160*	0.102	-0.084	-0.052	-0.065	.629**	1.000					
(23) Tobins Q	.232**	.190*	.220*	-.361**	0.062	.378**	.243**	-.378**	.294**	.361**	-0.014	-0.112	0.137	.179*	0.138	-0.101	.340**	-.294**	0.061	.212**	.552**	.254**	1.000				
(24) Stock return	-0.041	-0.089	-0.042	-0.074	-0.110	.160*	-0.061	-.160*	-0.059	0.074	-0.006	-0.099	0.000	-0.007	0.047	-0.048	0.022	-0.113	-0.029	-0.004	.259**	.280**	0.113	1.000			
(25) LnTotal assets	.662**	.735**	.617**	-.638**	.366**	.488**	.701**	-.488**	.742**	.638**	0.143	-0.117	-0.061	.607**	.564**	.230**	.506**	-.172*	.807**	.182*	-0.045	-0.049	0.037	-0.090	1.000		
(26) LnOperating revenue	.594**	.633**	.425**	-.545**	.352**	.383**	.622**	-.383**	.623**	.545**	.158*	-0.142	-0.075	.585**	.522**	.244**	.509**	-.176*	.741**	0.130	0.020	-0.016	0.076	-0.077	.933**	1.000	
(27) Leverage	0.013	.167*	0.122	0.035	-0.046	-0.010	0.018	0.010	0.119	-0.035	.278**	.195*	0.039	.169*	.246**	0.148	-0.047	0.129	.181*	-0.069	-.237**	-0.050	-.290**	-0.098	.189*	.168*	1.000

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed). Definitions of variables in chapter 3.2

4.3 Regression results

The following paragraph describes the tested hypotheses and the empirical results of the OLS regressions that are performed in this study.

In the correlation matrix, high correlations were found between the executive remuneration variables. To ensure that multicollinearity is excluded, these variables are not used simultaneously in the OLS regressions or used as lagged variables. Furthermore, variance inflation factor (VIF) analysis is performed and the results are analysed. Showing that for other variables there is no multicollinearity problem because all VIF results are 4 or below 4, except for the two variables mentioned in section 4.2.

All regression models are controlled by industry effects. The industry type belonging to a specific firm is reported in Appendix B. All regression tables contain the t-value and the significance of a relationship between the dependent variable and the independent variables. Furthermore, the tables contain the number of firms within the regression analysis and the adjusted R^2. The adjusted R^2 measures how well the variables that are used in the regression analysis are replicated by the model. The adjusted R^2 always increase when adding more variables to the regression. However, one should be aware of overfitting the model with too many predictor variables and create random noise within the data.

4.3.1 CEO remuneration

The regression analyses that are performed who tested the possible relationship between CEO characteristics and the different kinds of executive remuneration. First, the three CEO characteristics are taking separately in the regression and finally, these three CEO characteristics are also taken together within one regression analysis. To check whether relationships may hold. The results of the OLS regressions of the three individual characteristics gender, age, and tenure are presented in table 5, 6 and 7. Table 8 shows all three CEO characteristics within the regression. All the CEO characteristics are taking into account within these regressions and only the monetary value of base salary, annual bonus, and the option grants were investigated. The regressions of Tables 5/6/7/8 are used to answer hypothesis 1, 2, and 3. A negative relation between CEO gender and all pay variants (H1) was hypothesized. As is a positive relationship between CEO age and base salary and annual bonus (H2a/b), a negative relationship between CEO age and option grants (H2c) and finally, a positive relationship between CEO tenure and base salary (H3a) and a negative one between the other pay variants: annual bonus and option grants (H3b/c). The structure of the regression analysis results are as follows: model 1 contains the results of the regression containing a pay variant, the CEO characteristic variable(s), the presence of a remuneration committee and the other control variables. Model 2 contains the results

of the regression containing a pay variant, the CEO characteristic variable(s), the characteristics of persons at the remuneration committee and the other control variables.

To start with the CEO gender variable: Table 5 show only a negative significant relationship with annual bonus. This relationship is negatively significant related to annual bonus at the 5% level at model 1 and negatively significant related to annual bonus at the 10% level at model 2. The relationship does hold negative significant when other variables regarding the remuneration committee are used in the model. This is also the case at other control variables. Some significance levels do change but overall the positive or negative relationship stays. At the other CEO remuneration variables salary and option grants, no significant relationship was found regarding the CEO gender variable. The insignificance or weak significance of these variables might be because only two of the firms in our sample had a female at the head of the firm in those years. Because the full sample contains 63 firms, this could be a reason why this variable is not significantly/weak significantly related to one of the remuneration variables. The economic value of this variable might not contribute much to the regression model. Some former studies did struggle to find significant relationships between CEO pay and female CEOs. Adams and Ferreira (2009) did study woman at US firms and failed to find one. Other did found that a female CEO did earn less compensation than their male counterpart (Bertrand & Hallock, 2001; Conyon, 2014; Gregory-Smith, Main & O'Reilly, 2014). However, Gregory-Smith et al. (2014) did found this relationship only when control variables were not taken into account. Hence, the regression analysis showed only a negative significant relationship between annual bonus and CEO gender, the outcomes of the study of Kulich et al. (2011) is in line with ours. They found that bonuses awarded to men are larger in comparison to their female counterpart. Table 8 shows the same regression analyses of Table 5 but only taking into account all the CEO characteristic variables. Within these regressions, no significant relationship was found between CEO gender and the CEO remuneration variables. This is in line with the findings of Bertrand and Hallock (2001) who addressed the effect of age and tenure for weakening the relationship between gender and the remuneration types. After they included i.a. age and tenure, the significant relationship between gender and the remuneration types were not significant anymore. This corresponds with the findings of this research.

CEO age was found to be positively significant related to annual bonus and option grants at the 1% level in table 6 and also positively significant related to annual bonus and option grants at the 1% level in table 8. Furthermore, CEO age is also negatively significant related to base salary at the 1% level in table 8. This could be because also the variable CEO tenure is added in the regression analysis of table 8. CEO tenure is correlated with CEO age as can be seen in the correlation matrix.

The fact that CEO age and their salary is negatively related invalidates the old thinking that when people are ageing, their salary also increases. Hence, given that with age also bonus and option grants will increase. This might indicate a trade-off. Which means that variable pay might be more

Table 5 The relationship between the CEO characteristic gender and CEO remuneration

	LnSalary		LnBonus		LnOptions	
	(1)	(2)	(1)	(2)	(1)	(2)
CEO gender	0.176	0.199	-0.073 *	-0.095 *	-0.309	-0.310
	(1.358)	(1.289)	(-1.809)	(-1.683)	(-1.022)	(-1.021)
RC	0.888		-0.388		0.471	
	(0.142)		(-0.866)		(0.724)	
RCpastCEO		0.000 ***		-0.073 *		0.029 **
		(4.305)		(-1.809)		(2.216)
RCemployment		-0.547		0.486		0.572
		(-0.603)		(0.698)		(0.567)
SQRTInstitutional own	-0.109	-0.006 ***	-0.866	0.847	0.442	0.577
	(-1.613)	(-2.772)	(-0.169)	(0.193)	(0.772)	(0.560)
SQRTCEO own	-0.003 ***	-0.007 ***	-0.036 **	-0.033 **	-0.429	-0.548
	(-3.003)	(-2.710)	(-2.113)	(-2.156)	(-0.794)	(-0.602)
BoardSize	0.009 ***	0.033 **	0.399	0.326	-0.240	-0.157
	(2.642)	(2.147)	(0.846)	(0.985)	(-1.182)	(-1.427)
Supervis. board	0.003 ***	0.046 **	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(2.966)	(2.009)	(4.968)	(5.019)	(5.752)	(5.163)
ROA	0.885	0.422	0.085 *	0.124	0.595	0.409
	(0.750)	(0.806)	(1.736)	(1.549)	(0.533)	(0.828)
LnTotalAssets	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(4.577)	(4.305)	(6.774)	(6.682)	(4.522)	(4.310)
Leverage	-0.039 **	-0.005 ***	0.041 **	0.030 **	0.190	0.366
	(-2.077)	(-2.883)	(2.065)	(2.196)	(1.320)	(0.908)
Constant	0.000 ***	0.000 ***	-0.054 *	-0.050 **	-0.001 ***	-0.005 ***
	(8.121)	(9.248)	(-1.941)	(-3.188)	(-3.453)	(-2.838)
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.555	0.600	0.637	0.641	0.518	0.533
N	170	164	156	153	117	115

This table presents the results of the OLS regressions of CEO characteristic gender and CEO remuneration. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

desired in comparison to base salary. The outcome of the regression results regarding base salary is not in line with the findings of McKnight et al. (2000), one of this thesis' main articles. In comparison to the results, they found a positive relationship between CEO age and base salary. Other studies did found a positive relationship between cash pay and CEO age (Adhikari et al., 2015). This could indicate two possible things: the bonus part of cash pay is more important in comparison to salary or the results of this study are different to other studies when it comes to the relationship of salary. The relationship between CEO age and annual bonus act in the same way as in other studies (McKnight et al., 2000; McKnight and Tomkins, 2014; Adhikari et al., 2015). Lastly, opposite to the hypothesized direction, a positive significant relationship was found between CEO age and stock options. This is not in line with former studies (Harvey & Shrieves, 2001; Ryan & Wiggins, 2001; Tzioumis, 2013). Harvey and Shrieves (2001) mentioned in their article explanations for a positive relationship and a negative relationship between the incentive pay components of executive remuneration and the age of the CEO. Because a

Table 6 The relationship between the CEO characteristic age and CEO remuneration

	LnSalary		LnBonus		LnOptions	
	(1)	(2)	(1)	(2)	(1)	(2)
CEO age	-0.287	-0.334	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(-1.068)	(-0.969)	(5.371)	(5.252)	(4.215)	(4.301)
RC	0.889		-0.286		0.513	
	(0.140)		(-1.072)		(0.656)	
RCpastCEO		0.000 ***		-0.063 *		0.015 **
		(4.292)		(-1.875)		(2.464)
RCemployment		-0.518		0.605		0.703
		(-0.648)		(0.518)		(0.382)
SQRTInstitutional own	-0.169	-0.012 **	-0.366	-0.555	0.771	-0.969
	(-1.382)	(-2.554)	(-0.906)	(-0.592)	(0.291)	(-0.039)
SQRTCEO own	-0.002 ***	-0.005 ***	-0.033 **	-0.029 **	-0.428 **	-0.559
	(-3.139)	(-2.852)	(-2.147)	(-2.210)	(-0.796)	(-0.586)
BoardSize	0.016 **	0.053 *	0.197	0.161	-0.286	-0.176
	(2.426)	(1.946)	(1.295)	(1.411)	(-1.073)	(-1.364)
Supervis. board	0.002 ***	0.031 **	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(3.127)	(2.171)	(5.292)	(5.376)	(6.214)	(5.595)
ROA	0.794	0.359	0.057 *	0.082 *	0.509	0.317
	(0.261)	(0.920)	(1.919)	(1.753)	(0.662)	(1.005)
LnTotalAssets	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(4.610)	(4.365)	(7.720)	(7.667)	(5.257)	(5.067)
Leverage	-0.150	-0.021 **	0.614	0.459	0.832	-0.796
	(-1.446)	(-2.338)	(0.505)	(0.742)	(0.213)	(-0.259)
Constant	0.000 ***	0.000 ***	-0.000 ***	-0.000 ***	-0.000 ***	-0.000 ***
	(6.393)	(7.241)	(-4.957)	(-4.904)	(-5.490)	(-5.067)
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.553	0.599	0.690	0.694	0.582	0.600
N	169	164	154	153	117	115

This table presents the results of the OLS regressions of CEO characteristic age and CEO remuneration. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

positive relationship was found, this suggests that the career horizon problem might be the cause in this particular case (Harvey and Shrieves, 2001).

All models of Table 7 with the CEO tenure as the CEO characteristic in this regression analysis show a positive significant relationship between CEO tenure and the three CEO remuneration variables. Salary and annual bonus are positive significant related with CEO tenure at the 1% level and annual bonus and CEO tenure are positive significant related at the 10% level. By adding the other two CEO characteristic variables gender and age, only the relationship between CEO tenure and base salary remains positive significant at the 1% level. The variable option grants is still positively related, however, not significant and the relationship between tenure and annual bonus even got negative. This may reflect the possibility of correlation that was be seen earlier in the correlation matrix between CEO age and CEO tenure.

Table 7 The relationship between the CEO characteristic tenure and CEO remuneration

	LnSalary		LnBonus		LnOptions	
	(1)	(2)	(1)	(2)	(1)	(2)
CEO tenure	0.007 ***	0.009 ***	0.061 *	0.058 *	0.003 ***	0.004 ***
	(2.731)	(2.666)	(1.891)	(1.910)	(3.011)	(2.933)
RC	-0.949		-0.363		0.559	
	(-0.064)		(-0.913)		(0.586)	
RCpastCEO		0.000 ***		-0.056 *		0.039 **
		(4.167)		(-1.930)		(2.088)
RCemployment		-0.366		0.470		0.630
		(-0.907)		(0.724)		(0.483)
SQRTInstitutional own	-0.067 *	-0.002 ***	-0.587	-0.877	0.754	0.920
	(-1.844)	(-3.081)	(-0.545)	(-0.155)	(0.314)	(0.101)
SQRTCEO own	-0.002 ***	-0.004 ***	-0.057 *	-0.047 **	-0.464	-0.582
	(-3.181)	(-2.919)	(-1.918)	(-2.003)	(-0.735)	(-0.552)
BoardSize	0.008 ***	0.027 **	0.179	0.137	-0.479	-0.335
	(2.708)	(2.239)	(1.352)	(1.495)	(-0.710)	(-0.968)
Supervis. board	0.007 ***	0.063 *	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(2.758)	(1.871)	(4.396)	(4.551)	(5.313)	(4.814)
ROA	0.912	0.447	0.181	0.240	0.854	0.631
	(0.111)	(0.763)	(1.346)	(1.179)	(0.184)	(0.482)
LnTotalAssets	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(4.891)	(4.675)	(6.558)	(6.566)	(4.631)	(4.456)
Leverage	-0.054 *	-0.006 ***	0.187	0.122	0.445	0.712
	(-1.944)	(-2.810)	(1.327)	(1.556)	(0.767)	(0.370)
Constant	0.000 ***	0.000 ***	-0.101	-0.081 *	-0.000 ***	-0.003 ***
	(7.706)	(8.932)	(-1.650)	(-1.759)	(-3.628)	(-3.024)
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.570	0.614	0.637	0.643	0.551	0.565
N	162	159	151	151	113	113

This table presents the results of the OLS regressions of CEO characteristic tenure and CEO remuneration. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

So, a CEO who stays at the firm a long time sees their base salary increase over time. This does underwrite the assumption that a CEO gains more influence over the supervisory board members as the tenure of a CEO increases because a CEO wants as much paid as can every month (McKnight & Tomkins, 2004). So, they would benefit from more fixed salary every month instead of (potential) payment of bonuses or options. Which are more dependent on other factors, such as firm performance. Regarding the incentive pay part of remuneration, annual bonus and option grants, the outcomes of the regression analysis are contradictory. Results are not in line with the results of other authors who were able to find a negative relationship between CEO tenure and annual bonus/option grants (Ryan & Wiggins, 2001; Harvey & Shrieves, 2001) or did not find a significant relationship at all (McKnight & Tomkins, 2004; Tzioumis, 2013). Ones again, these authors included the variable age

Table 8 The relationship between all CEO characteristics and CEO remuneration

	LnSalary		LnBonus		LnOptions	
	(1)	(2)	(1)	(2)	(1)	(2)
CEO gender	0.375	0.393	-0.318	-0.353	-0.618	-0.615
	(0.890)	(0.857)	(-1.003)	(-0.932)	(-0.501)	(-0.505)
CEO age	-0.001 ***	-0.002 ***	0.000 ***	0.000 ***	0.008 ***	0.005 ***
	(-3.310)	(-3.147)	(4.883)	(4.765)	(2.686)	(2.881)
CEO tenure	0.000 ***	0.000 ***	-0.175	-0.202	0.415	0.518
	(4.290)	(4.127)	(-1.364)	(-1.281)	(0.819)	(0.648)
RC	-0.969		-0.309		0.558	
	(-0.039)		(-1.022)		(0.588)	
RCpastCEO		0.000 ***		-0.084 *		0.020 **
		(4.063)		(-1.739)		(2.363)
RCemployment		-0.482		0.639		0.753
		(-0.705)		(0.470)		(0.316)
SQRTInstitutional own	-0.066 *	-0.003 ***	-0.491	-0.669	0.793	-0.955
	(-1.850)	(-3.010)	(-0.690)	(-0.429)	(0.263)	(-0.057)
SQRTCEO own	-0.002 ***	-0.004 ***	-0.028 **	-0.024 **	-0.408	-0.526
	(-3.184)	(-2.887)	(-2.224)	(-2.276)	(-0.831)	(-0.636)
BoardSize	0.002 ***	0.008 ***	0.365	0.303	-0.317	-0.193
	(3.161)	(2.683)	(0.908)	(1.035)	(-1.005)	(-1.311)
Supervis. board	0.027 **	0.166	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(2.228)	(1.391)	(5.515)	(5.577)	(5.825)	(5.342)
ROA	-0.678	0.806	0.031 **	0.046 **	0.558	0.349
	(-0.416)	(0.246)	(2.182)	(2.012)	(0.587)	(0.941)
LnTotalAssets	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(4.437)	(4.225)	(7.789)	(7.734)	(5.114)	(4.982)
Leverage	-0.124	-0.020 **	0.434	0.339	0.682	-0.986
	(-1.548)	(-2.346)	(0.784)	(0.959)	(0.410)	(-0.018)
Constant	0.000 ***	0.000 ***	-0.000 ***	-0.000 ***	-0.000 ***	-0.000 ***
	(7.861)	(8.601)	(-5.127)	(-5.066)	(-4.576)	(-4.346)
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.599	0.638	0.692	0.695	0.576	0.594
N	162	159	151	151	113	113

This table presents the results of the OLS regressions of CEO characteristics and CEO remuneration. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

within their analysis. When also performing the regression, including age and tenure, the significant relationships between the incentive pay types bonus and option grants disappear.

In all regression models, the measure for firm size, total assets of a firm, is positive significant related to base salary, annual bonus, and option grants at the 1% level. This could be because the variables already had a high correlation with the total assets variable, as can be seen in the correlation matrix. However, a high correlation with variables does not matter for control variables. The positive relationship between firm size and all the remuneration categories indicates that as firms grow they will pay more remuneration to their CEO. This could be logically explained as follows: as a firm grows

this is associated with growing job complexity. So, if firms grow, more knowledge and understanding is necessary to fulfil the highest position within the firm. Therefore, pay needs to increase (McKnight et al., 2000). Furthermore, the existence of a remuneration committee within the supervisory board of the firms the CEO is working at is negatively significant related to base salary at the 5% level in table 6. Which means that when a remuneration committee exist the CEO earns less base salary. Albeit the remuneration committee works effectively and does adjust the base salary of the CEO (which might be out of proportion). Remuneration committees might have more knowledge about executive remuneration and, therefore, be less generous when it comes to CEO remuneration.

However, the presence of a past CEO (at any firm) does have a positive significant influence on base salary and option grants, and a negative significant influence on annual bonus at all individual CEO characteristics and the overall regression in Table 8. At table 8, base salary is positive significant at the 1% level, annual bonus negative significant at the 10% level, and option grants positive significant at the 5% level.

When it comes to the variables regarding the board at firms: board size tends to be positively significant related to base salary at the 1% level (Table 8) and not significant to the other two variables. However, for the supervisory board (the percentage of supervisory board members to the total of the executive board and supervisory board members) it works the other way around. This variable is not significantly related to base salary but is positive significant related to the annual bonus variable at the 1% level and the option grants variable at the 1% level. The correlation matrix showed a significant correlation (0.153) at the 10% level between board size and supervisory board though.

Finally, the presence of institutional investors who own a stake of the firm harms the base salary of the CEO. Institutional ownership is negatively related to CEO base salary at the 10% level at model 1 of table 8 and the 1% level in model 2 of Table 8. When the CEO does own a stake of the firm he is working at this will negatively affect the amount of base salary and the amount of annual bonus the executive receives. CEO ownership is negatively related to base salary at the 1% level and negatively related to annual bonus at the 5% level in table 8.

4.4 Robustness tests

In this paragraph, alternative tests that are performed to explore if the results of the previous regression analysis hold under different circumstances are discussed. Therefore, multiple robustness tests are performed. Other measures are used for the dependent, independent, and control variables. The first robustness test contains other measures of the dependent variables, which are also analysed in the next regressions. Other studies did use all kinds of variables to measure the firm performance of a firm. Therefore, other accounting-based and market-based performance measures are used in the robustness test. This contains the second robustness test. Finally, the third robustness test uses

another firm size variable as a control variable. The findings can be found below and the definitions of the used variables can be found in table 2.

4.4.1. Alternative measurements of executive compensation

Previous studies did use various ways to measure the remuneration of a CEO. Whether it is because of sufficient disclosure regulations of countries or just a considered choice. The first robustness test contains the three remuneration variables as a percentage of the total amount of remuneration the CEO receives for a particular year. This can be seen in the tables in appendix C. The outcomes for the variable regarding CEO gender indicates that with this robustness test, no clear significant relationship was found. CEO gender did have a significant negative relationship with the variable annual bonus. However, this relationship remains negative for the percentage of annual bonus but not significant though. In the regular regression analysis, CEO age was positive significant related to annual bonus and option grants. These significant relationships were not found for the same variable measures as a percentage of the total value of remuneration received. For the variable CEO tenure, option grants measured as a percentage is positive significant related to CEO tenure at the 5% level. The option grants variable in the regular regression was also positive significant related. Finally, other significant relationships (remuneration committee, board, and ownership) that were found in the original regression analysis were not found during the robustness test or had a weaker significance level.

Other authors did use more global measures of executive remuneration (Harvey & Shrieves, 2001; Conyon, 2014; Cole & Mehran, 2016). For example, they used all cash pay components or combined all the variable pay components (based on firm performance etc.). In model 4 of the tables in appendix C, the components base salary and annual bonus are combined to variable cash pay. Model 5 shows the incentive pay component, which is the sum of annual bonus and option grants. These two can vary because of multiple reasons. In model 6 and 7, the percentage compared to the total amount of remuneration in comparison to respectively cash pay and incentive pay is measured.

To start with CEO tenure, this variable was found to be positive significant related to both, cash pay and incentive pay at the 1% level. As the outcomes of the regular regression analysis were found that all three CEO remuneration types were positive significant related to CEO tenure, the aforementioned outcomes were expected. Furthermore, in model 6 of table 11, cash pay measured as a percentage is negatively significant related to CEO tenure at the 5% level. So, the sign flipped from positive to negative when the variable is measured as a percentage.

Regarding CEO age, as excepted because annual bonus and option grants were already positive significant related to CEO age in the regular regression, incentive pay is positive significant related to CEO age at the 1% level. This is due to the same fact as at CEO tenure, annual bonus and option grants added up together makes the variable incentive pay. Again, no significant relationship was found for

the variable incentive pay measures as the percentage of total remuneration when the monetary value of incentive pay turns out to be significant.

Model 4 of Table 12 shows a negative significant relation between CEO age and cash pay at the 5% level and a positive significant relationship between CEO tenure and cash pay at the 1% level. In the original regression results, CEO tenure was positively related to salary and no significant relationship was found for bonus. This relationship does not hold and tends to a negative relationship. The original relationship for age vs. salary and bonus did become a significant negative relationship. Suggesting that the salary part of cash pay causes a stronger relation in comparison to annual bonus.

4.4.2. Alternative measurements of firm performance

This study uses four different firm performance measures. Two accounting-based measures, which are the Return on Assets (ROA) and the Return on Equity (ROE), and two market-based measures: Tobin's Q and the average stock return. In the original regression, ROA is used as the variable for firm performance. Results are reported at the tables in appendix D. First of all, the relationship between firm performance and the different remuneration categories: For ROE and stock return, no significant relationship was found. The market-based measure Tobin's Q was found to be positive significant related to salary and annual bonus at the 5% level and to option grants at the 10% level in table 13. At table 14, Tobin's Q was found to be positive significant related to salary and option grants at the 5% level and annual bonus at the 1% level. Finally, at table 14, Tobin's Q was found to be positive significant related to salary and annual bonus at the 5% level. So, in comparison to ROA, Tobin's Q was found to be significant at more remuneration variables and a higher significance level.

The (significant) relationship between the CEO characteristics variables and the CEO remuneration variables do hold under almost all the alternative firm performance measures. Only the relationship between CEO gender and annual bonus is not significant anymore. The same applies to almost all the other variables regarding the remuneration committee, board, and ownership. Stock return had a more negative influence on the relationship between ownership by the CEO and the remuneration variable annual bonus. This relationship was negative significant at the 1% level instead of negatively significant at the 5% level with the calculation of the firm performance measure as ROA, ROE or Tobin's Q.

4.4.3. An alternative measurement of firm size

To test if relationships of the regular regression analysis hold under different circumstances this robustness test uses the total revenue of a firm as another way to control for the size of the firm. Table 17 till 20 in appendix E show the results of the robustness test with the alternative measure for firm size. The variable total assets is significant positive related to base salary and annual bonus at the 1 %

level. Which means that in neither of the robustness checks total revenue of the firm is significantly related to option grants. When it comes to the relationships from the CEO characteristics and CEO remuneration variables, some relationships disappear. First, the significant relationship between CEO gender and CEO annual bonus disappears when using the firm size variable total revenue instead of total assets. The relationships between CEO age and annual bonus/option grants remains and relationships between CEO tenure and the CEO remuneration types got weaker or disappear (option grants). Furthermore, the t-value of the variables that are significant with the total revenue variable is smaller in comparison to the t-values from regular firm size variable. Because, in general, the further the t-value from 0, the greater the evidence that there is a significant difference. Suggesting that variable total assets is a better proxy for the size of a firm then total revenue does.

4.4.4. Subsample manufacturing

The last robustness test takes into account the largest industry within this study. The industry Manufacturing is by far the largest industry within this study. It does include 30 firms and the first industry follows with 16 firms. Results are presented in the tables of Appendix F. The robustness tests are only performed on CEO age and CEO tenure alone. No firms in the industry Manufacturing do contain female CEOs and therefore, the robustness test was not performed for this variable. This also results in a regression including all three variables not being performed. Regarding the results of the tables: the significant relationships between CEO age and annual bonus and option grants do hold. CEO age is positive significant related to annual bonus at the 1% level and positive significant related to option grants at the 10% level. The significant relationships between CEO tenure and the remuneration types do not hold within this robustness test. In both tests, despite the high adjusted R^2 scores of the tests, the relationships between the CEO remuneration types and other variables were less significant or did even disappear. However, the findings for the subsample industry Manufacturing mostly corresponds with the findings of the regular regressions.

5. Conclusion

In this chapter, the conclusion based on the findings of the previous chapter is stated. The limitations of this research and possible recommendations for further research concludes chapter 5.

5.1 Conclusions

In recent years, the topic regarding executive compensation is one with many studies. Authors used all kinds of theories to explain factors affecting executive compensation, used multiple variables, and used samples from all over the world with their uniqueness. Related to the used sample, Dutch listed firms, the pay-performance relationship is often studied. To take a closer look at the effect of a CEO's characteristics on their remuneration, the following research question was central during this research: *To what extent do the characteristics of a CEO influence the composition of a CEO's remuneration package at Dutch listed firms?*

With the use of literature from the past and previous studies regarding remuneration and CEO characteristics, three hypotheses were developed. The agency theory, the behavioural agency theory, and the upper echelons theory were the three theories that were of main interest within this study. OLS regression helped by testing the three hypotheses. The used data was retrieved from the ORBIS database and the firms' annual reports. The dependent variables included base salary, annual bonus, and option grants that were received by the CEO. The variables regarding the characteristics of the CEO contain the gender, age, and tenure at the current firm. The control variables contain variables regarding the remuneration committee, the board composition, ownership, performance (ROA/ROE/Tobin's Q/Stock return), firm size (total assets/total revenue) and leverage. The regression also contains an industry dummy variable. The sample of the study consisted of a total of 81 Dutch listed firms and 63 firms without financial firms. The remuneration data observations come from 2015-2017, while the CEO characteristic and other variables observations come from the year 2014 to 2016.

The first CEO characteristic that has been investigated is the gender of the CEO. Hypothesis 1 stated a negative relationship between the gender of a CEO being female and all of the three remuneration categories. The gender variable was used as a dummy variable, consisting of the value '1' meaning that the CEO is a female and the value '0' a male CEO. In the regression which contained only the variable CEO gender, a negative significant relationship was found with annual bonus. No significant relationship was found for the gender variable when also including the other two CEO characteristic variables. A negative relationship with CEO gender was found for the variables annual bonus and option grants. However, not significant. It should be noted that not many Dutch listed firms employed a female CEO during the sample period. Only PostNL and Wolters Kluwer did. With the use of alternative measures regarding CEO remuneration, no significant relationship was found for CEO gender either. Therefore, we found some evidence that supports hypothesis 1b.

The second CEO characteristic that has been analysed is age. On forehand, the expectation was hypothesized as follows: CEO age is positively related to base salary and annual bonus and negatively related to option grants. One reason for these hypotheses is that a CEO is likely to gain more knowledge over time. After all, they are more mature and therefore are more likely to handle more adequate even in difficult situations in comparison to their younger counterparts. They, therefore, can handle greater responsibilities, hence the growing fixed income. Nevertheless, a negative impact of CEO age on base salary was found (significant at 5% level) when all CEO characteristics were taking into account. The main analysis did found a significant positive impact of age on both, annual bonus and option grants. The results of the robustness tests regarding alternative measures of the remuneration variables show support for the outcomes of the main analysis. Resulting in support for hypothesis 2b only. The positive signs of the incentive pay types indicate that as a CEO grows older they might benefit more from variable pay. The positive sign of option grants could indicate that a CEO wants to earn more option grants which can be vested over time and secure an income after they retire because shares can pay yearly dividend or can be sold when necessary. This supports the statement of Harvey and Shrieves (2001): managers do want to secure their income/wealth for when they retire (career time horizon).

In line with age, tenure was hypothesized to be of positive impact to the remuneration variable base salary and negatively to the variables annual bonus and option grants. This was hypothesized as such because when a CEO stays longer at the firm they might get more influence on the supervisory board and because they have more benefit at a stable income (salary), they tend to prefer base salary over variable pay parts. The main analysis shows the positive impact of tenure on base salary. So, hypothesis 3a is supported. However, no significant relationship was found for the other two categories. Both variables were found to be positive significant related to CEO tenure when other CEO characteristics were not taking into account. That these variables do not remain significant might have to do with the high correlation between CEO age and CEO tenure. The robustness test show results in line with the main analysis. It showed how strong the relation between base salary and tenure is in comparison to the bonus and option variables. Therefore, hypothesis 3b and hypothesis 3c are not supported.

Regarding the ones that set the remuneration policy within the firm; a positive significant relationship was found between the presence of a remuneration committee and base salary/option grants when only CEO age is taking into account. No significant relationship was found in the full model. Furthermore, two more exploring variables regarding the influence of possible members of the remuneration committee on a CEO's remuneration result in the following: if any former CEO is in the remuneration committee, this will benefit the current firms' CEO by earning more base salary (significant at the 1% level) and more option grants (significant at the 5% level). No positive or negative

influence was found when a member of the remuneration committee was a former employee of the firm.

This thesis contributes by investigating the effect of CEO characteristics on CEO remuneration instead of the more popular, at Dutch listed firms, (weak) pay-performance relationship. Secondly, it also enlarges the remuneration related field of studies in continental European countries instead of Anglo-Saxon countries.

5.2 Limitations and recommendations

In this section, the limitations of this research and possible recommendations are further explained. The first limitations of this research are the limited sample size of the study. Because only Dutch listed firms were taking into account the number of firms included in this study only reaches 81 (63 without the financial firms). With only around 240 observations in the three sample years. This has affected the industry classification. Because some industries did not have sufficient sample size, some industries had to be pooled to reach the substantial sample size. A larger sample size when executing this same research at another European country can reach this. The sample period could also be an issue because it only contains three years. A larger sample period might also benefit the sample size. Aforementioned two points might result in a larger sample size, which might benefit the research with higher reliability, validity, and might even result in more significant relationships.

Furthermore, one can include other variables that are mentioned in the article about the upper echelons theory by Hambrick and Mason (1984). The article included also education, financial situation, and socioeconomic roots. Also, the influence of certain characteristics that are shared within groups in specific firms could be of interest. Including these variables will help understand the effects of executive characteristics even more.

The last recommendation for future research is the use of another statistical model. The model that is most often used in likewise studies is the OLS regression method. Another model that could give helpful insight into the relationship between the various dependent and independent variables is the Structural Equation Model (SEM). This model contains many layers with regression analyses. The influence of the risk-taking behaviour on other variables that are used can be better investigated with SEM. However, this test is not available in SPSS and SPSS was used during this research. Other models, such as two-staged least squared (2SLS) regression can help to mitigate a possible endogeneity problem.

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Appendices

Appendix A – Sample firms

Firm	2015	2016	2017	Firm	2015	2016	2017
AALBERTS INDUSTRIES N.V.				KONINKLIJKE BOSKALIS WESTMINSTER NV			
ABN AMRO GROUP N.V.				KONINKLIJKE BRILL NV			
ACCELL GROUP NV				KONINKLIJKE DSM N.V.			
AEGON NV				KONINKLIJKE KPN NV			
AKZO NOBEL NV				KONINKLIJKE PHILIPS N.V.			
AMG ADVANCED METALLURGICAL GROUP N.V.				KONINKLIJKE VOLKERWESSELS N.V.			
AMSTERDAM COMMODITIES N.V.				KONINKLIJKE VOPAK N.V.			
AND INTERNATIONAL PUBLISHERS NV				LUCAS BOLS N.V			
ARCADIS NV				N.V. KONINKLIJKE PORCELEYNE FLES			
ASM INTERNATIONAL NV				NEDERLANDSCHE APPARATENFABRIEK 'NEDAP' N.V.			
ASML HOLDING N.V.				NEWAYS ELECTRONICS INTERNATIONAL NV			
ASR NEDERLAND NV				NIBC HOLDING NV			
BASIC-FIT N.V.				NN GROUP NV			
BATENBURG TECHNIEK N.V.				NOVISOURCE N.V.			
BE SEMICONDUCTOR INDUSTRIES NV				NSI N.V.			
BETER BED HOLDING NV				OCI N.V			
BEVER HOLDING NV				ORANJEWOUD N.V.			
BINCKBANK NV				ORDINA NV			
BRUNEL INTERNATIONAL NV				PHARMING GROUP NV			
C/TAC NV				POSTNL N.V.			
CORBION N.V.				RANDSTAD N.V.			
CORE LABORATORIES N.V.				REFRESCO DEUTSCHLAND GMBH			
DPA GROUP N.V.				RELX PLC			
ESPERITE N.V.				ROODMICROTEC N.V.			
EUROCOMMERCIAL PROPERTIES N.V.				SBM OFFSHORE N.V.			
FORFARMERS N.V.				SIF HOLDING N.V.			
FUGRO NV				SLIGRO FOOD GROUP N.V.			
GEMALTO N.V.				SNOWWORLD N.V.			
GRANDVISION N.V				STERN GROEP NV			
GROOTHANDELSGEBOUWEN NV				TKH GROUP N.V.			
HEIJMANS NV				TOMTOM NV			
HEINEKEN NV				UNILEVER NV			
HOLLAND COLOURS NV				VALUE8 NV			
HYDRATEC INDUSTRIES N.V.				VAN LANSCHOT KEMPEN NV			
ICT GROUP N.V.				VASTNED RETAIL N.V.			
IMCD N.V.				WERELDHAVE NV			
ING GROEP NV				WESSANEN N.V.			
INTERTRUST N.V.				WOLTERS KLUWER NV			
KARDAN N.V.				**Total**	**78**	**80**	**81**
KAS BANK NV				**Included in sample**			
KENDRION N.V.				**Finance, Insurance, and Real estate firm**			
KONINKLIJKE AHOLD DELHAIZE N.V.				**Not included in sample**			
KONINKLIJKE BAM GROEP NV							

Appendix B – Firms from the sample with NACE Rev. 2 core code and pooled industry

Firm name	NACE Rev. 2 Core code	Industry
AALBERTS INDUSTRIES N.V.	2814	Manufacturing
ACCELL GROUP NV	3091	Manufacturing
AKZO NOBEL NV	2120	Manufacturing
AMG ADVANCED METALLURGICAL GROUP N.V.	1910	Manufacturing
AMSTERDAM COMMODITIES N.V.	4617	Agriculture, retail and transport
AND INTERNATIONAL PUBLISHERS NV	6209	Other services
ARCADIS NV	7112	Other services
ASM INTERNATIONAL NV	2611	Manufacturing
ASML HOLDING N.V.	2611	Manufacturing
BASIC-FIT N.V.	9313	Other services
BATENBURG TECHNIEK N.V.	4329	Construction and mining
BE SEMICONDUCTOR INDUSTRIES NV	2611	Manufacturing
BETER BED HOLDING NV	3109	Manufacturing
BRUNEL INTERNATIONAL NV	7022	Other services
C/TAC NV	6209	Other services
CORBION N.V.	1082	Manufacturing
CORE LABORATORIES N.V.	910	Construction and mining
DPA GROUP N.V.	7810	Other services
ESPERITE N.V.	4690	Agriculture, retail and transport
FORFARMERS N.V.	149	Agriculture, retail and transport
FUGRO NV	7112	Other services
GEMALTO N.V.	6209	Other services
GRANDVISION N.V	4778	Agriculture, retail and transport
HEIJMANS NV	4120	Construction and mining
HEINEKEN NV	1105	Manufacturing
HOLLAND COLOURS NV	2030	Manufacturing
HYDRATEC INDUSTRIES N.V.	2223	Manufacturing
ICT GROUP N.V.	5829	Other services
IMCD N.V.	2059	Manufacturing
INTERTRUST N.V.	7490	Other services
KENDRION N.V.	2229	Manufacturing
KONINKLIJKE AHOLD DELHAIZE N.V.	4711	Agriculture, retail and transport
KONINKLIJKE BAM GROEP NV	4120	Construction and mining
KONINKLIJKE BOSKALIS WESTMINSTER NV	4299	Construction and mining
KONINKLIJKE BRILL NV	5811	Other services
KONINKLIJKE DSM N.V.	2059	Manufacturing
KONINKLIJKE KPN NV	6190	Other services
KONINKLIJKE PHILIPS N.V.	2751	Manufacturing
KONINKLIJKE VOLKERWESSELS N.V.	4299	Construction and mining
KONINKLIJKE VOPAK N.V.	5210	Agriculture, retail and transport
LUCAS BOLS N.V	1101	Manufacturing
N.V. KONINKLIJKE PORCELEYNE FLES	2341	Manufacturing
NEDERLANDSCHE APPARATENFABRIEK 'NEDAP' N.V.	2611	Manufacturing

NEWAYS ELECTRONICS INTERNATIONAL NV	2611	Manufacturing
OCI N.V	2015	Manufacturing
ORANJEWOUD N.V.	9511	Other services
ORDINA NV	6190	Other services
PHARMING GROUP NV	2120	Manufacturing
POSTNL N.V.	5320	Agriculture, retail and transport
REFRESCO DEUTSCHLAND GMBH	1107	Manufacturing
RELX PLC	5819	Other services
ROODMICROTEC N.V.	2611	Manufacturing
SBM OFFSHORE N.V.	910	Construction and mining
SIF HOLDING N.V.	2899	Manufacturing
SLIGRO FOOD GROUP N.V.	4639	Agriculture, retail and transport
SNOWWORLD N.V.	2120	Manufacturing
STERN GROEP NV	4519	Agriculture, retail and transport
TKH GROUP N.V.	2434	Manufacturing
TOMTOM NV	2630	Manufacturing
UNILEVER NV	1089	Manufacturing
VALUE8 NV	2611	Manufacturing
WESSANEN N.V.	1051	Agriculture, retail and transport
WOLTERS KLUWER NV	5829	Other services

Appendix C – Robustness test, CEO remuneration

Table 9 The relationship between the CEO characteristic gender and CEO remuneration. Alternative measures.

	Salary%	Bonus%	Options%	LnCash	LnIncentive	Cash%	Incentive%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CEO gender	0.804	-0.124	0.350	0.484	-0.455	-0.350	-0.804
	(0.249)	(-1.545)	(0.938)	(0.702)	(-0.749)	(-0.938)	(-0.249)
RC	-0.087 *	-0.404	0.013 **	-0.824	0.415	-0.013 **	0.087 *
	(-1.721)	(-0.837)	(2.516)	(-0.222)	(0.818)	(-2.516)	(1.721)
SQRTInstitutional own	-0.556	0.747	0.894	-0.161	0.294	-0.894	0.556
	(-0.590)	(0.323)	(0.134)	(-1.409)	(1.052)	(-0.134)	(0.590)
SQRTCEO own	0.001 ***	-0.040 **	-0.158	-0.001 ***	-0.005 ***	0.158	-0.001 ***
	(3.312)	(-2.075)	(-1.419)	(-3.489)	(-2.841)	(1.419)	(-3.312)
BoardSize	-0.727	0.346	-0.690	0.007 ***	0.842	0.690	0.727
	(-0.349)	(0.946)	(-0.399)	(2.747)	(0.199)	(0.399)	(0.349)
Supervis. board	-0.000 ***	0.173	0.021 **	0.000 ***	0.000 ***	-0.021 **	0.000 ***
	(-3.642)	(1.368)	(2.334)	(4.106)	(5.316)	(-2.334)	(3.642)
ROA	-0.015 **	0.673	0.036 **	0.434	0.101	-0.036 **	0.015 **
	(-2.448)	(0.423)	(2.119)	(0.784)	(1.648)	(-2.119)	(2.448)
LnTotalAssets	-0.000 ***	0.044 **	0.004 ***	0.000 ***	0.000 ***	-0.004 ***	0.000 ***
	(-4.702)	(2.027)	(2.884)	(5.494)	(6.503)	(-2.884)	(4.702)
Leverage	0.198	-0.625	-0.377	-0.085 *	0.237	0.377	-0.198
	(1.291)	(-0.490)	(-0.886)	(-1.733)	(1.187)	(0.886)	(-1.291)
Constant	0.000 ***	-0.295	-0.001 ***	0.000 ***	-0.009 ***	0.000 ***	-0.000 ***
	(11.145)	(-1.051)	(-3.324)	(4.709)	(-2.641)	(9.653)	(-4.372)
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.556	0.162	0.339	0.627	0.656	0.339	0.556
N	170	170	170	170	162	170	170

This table presents the results of the OLS regressions of CEO characteristic gender and CEO remuneration. Measured as a percentage of total. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

Table 10 The relationship between the CEO characteristic age and CEO remuneration. Alternative measures.

	Salary%	Bonus%	Options%	LnCash	LnIncentive	Cash%	Incentive%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CEO age	0.102	-0.285	-0.459	-0.460	0.000 ***	0.459	-0.102
	(1.643)	(-1.072)	(-0.743)	(-0.740)	(4.014)	(0.743)	(-1.643)
RC	-0.074 *	-0.457	0.013 **	-0.830	0.466	-0.013 **	0.074 *
	(-1.797)	(-0.746)	(2.505)	(-0.215)	(0.732)	(-2.505)	(1.797)
SQRTInstitutional own	-0.455	0.750	0.777	-0.207	0.545	-0.777	0.455
	(-0.749)	(0.319)	(0.284)	(-1.268)	(0.607)	(-0.284)	(0.749)
SQRTCEO own	0.001 ***	-0.061 *	-0.132	-0.000 ***	-0.004 ***	0.132	-0.001 ***
	(3.298)	(-1.889)	(-1.515)	(-3.566)	(-2.960)	(1.515)	(-3.298)
BoardSize	-0.697	0.227	-0.569	0.009 ***	0.710	0.569	0.697
	(-0.390)	(1.214)	(-0.571)	(2.654)	(0.373)	(0.571)	(0.390)
Supervis. board	-0.000 ***	0.260	0.015 **	0.000 ***	0.000 ***	-0.015 **	0.000 ***
	(-3.609)	(1.130)	(2.449)	(4.202)	(5.628)	(-2.449)	(3.609)
ROA	-0.020 **	0.868	0.029 **	0.403	0.066 *	-0.029 **	0.020 **
	(-2.356)	(0.167)	(2.205)	(0.838)	(1.852)	(-2.205)	(2.356)
LnTotalAssets	-0.000 ***	0.098 *	0.004 ***	0.000 ***	0.000 ***	-0.004 ***	0.000 ***
	(-4.486)	(1.664)	(2.910)	(5.487)	(7.223)	(-2.910)	(4.486)
Leverage	0.271	-0.401	-0.668	-0.164	0.855	0.668	-0.271
	(1.106)	(-0.842)	(-0.429)	(-1.397)	(0.184)	(0.429)	(-1.106)
Constant	0.000 ***	0.759	-0.039 **	0.000 ***	-0.000 ***	0.000 ***	-0.048 **
	(6.968)	(0.308)	(-2.079)	(3.817)	(-4.719)	(6.686)	(-3.825)
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.564	0.155	0.338	0.627	0.688	0.338	0.564
N	169	169	169	169	161	169	169

This table presents the results of the OLS regressions of CEO characteristic age and CEO remuneration. Measured as a percentage of total. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

Table 11 The relationship between the CEO characteristic tenure and CEO remuneration. Alternative measures.

	Salary%	Bonus%	Options%	LnCash	LnIncentive	Cash%	Incentive%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CEO tenure	-0.107	-0.242	0.018 **	0.008 ***	0.000 ***	-0.018 **	0.107
	(-1.623)	(-1.175)	(2.385)	(2.709)	(3.591)	(-2.385)	(1.623)
RC	-0.112	-0.487	0.022 **	-0.686	0.522	-0.022 **	0.112
	(-1.599)	(-0.697)	(2.317)	(-0.405)	(0.642)	(-2.317)	(1.599)
SQRTInstitutional own	-0.728	0.726	-0.915	-0.092 *	0.584	0.915	0.728
	(-0.348)	(0.351)	(-0.107)	(-1.693)	(0.548)	(0.107)	(0.348)
SQRTCEO own	0.001 ***	-0.066 *	-0.124	-0.000 ***	-0.005 ***	0.124	-0.001 ***
	(3.268)	(-1.849)	(-1.545)	(-3.607)	(-2.884)	(1.545)	(-3.268)
BoardSize	-0.574	0.290	-0.763	0.004 ***	0.469	0.763	0.574
	(-0.564)	(1.061)	(-0.302)	(2.934)	(0.726)	(0.302)	(0.564)
Supervis. board	-0.001 ***	0.200	0.036 **	0.000 ***	0.000 ***	-0.036 **	0.001 ***
	(-3.329)	(1.286)	(2.115)	(3.821)	(4.857)	(-2.115)	(3.329)
ROA	-0.025 **	0.758	0.042 **	0.503	0.187	-0.042 **	0.025 **
	(-2.265)	(0.308)	(2.048)	(0.671)	(1.326)	(-2.048)	(2.265)
LnTotalAssets	-0.000 ***	0.086 *	0.002 ***	0.000 ***	0.000 ***	-0.002 ***	0.000 ***
	(-4.699)	(1.726)	(3.114)	(5.738)	(6.764)	(-3.114)	(4.699)
Leverage	0.115	-0.344	-0.420	-0.070 *	0.500	0.420	-0.115
	(1.587)	(-0.950)	(-0.809)	(-1.826)	(0.676)	(0.809)	(-1.587)
Constant	0.000 ***	-0.604	-0.000 ***	0.000 ***	-0.004 ***	0.000 ***	-0.000 ***
	(11.425)	(-0.520)	(-3.896)	(4.404)	(-2.919)	(10.384)	(-4.532)
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.563	0.155	0.358	0.642	0.682	0.358	0.563
N	162	162	162	162	157	162	162

This table presents the results of the OLS regressions of CEO characteristic tenure and CEO remuneration. Measured as a percentage of total. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

Table 12 The relationship between all CEO characteristics and CEO remuneration. Alternative measures.

	Salary%	Bonus%	Options%	LnCash	LnIncentive	Cash%	Incentive%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CEO gender	0.432	-0.103	0.582	0.779	-0.776	-0.582	-0.432
	(0.788)	(-1.640)	(0.551)	(0.281)	(-0.285)	(-0.551)	(-0.788)
CEO age	0.001 ***	-0.482	-0.009 ***	-0.004 ***	0.033 **	0.009 ***	-0.001 ***
	(3.423)	(-0.705)	(-2.639)	(-2.945)	(2.151)	(2.639)	(-3.423)
CEO tenure	-0.001 ***	-0.584	0.001 ***	0.000 ***	0.118	-0.001 ***	0.001 ***
	(-3.398)	(-0.548)	(3.557)	(4.008)	(1.571)	(-3.557)	(3.398)
RC	-0.106	-0.458	0.019 **	-0.686	0.523	-0.019 **	0.106
	(-1.628)	(-0.744)	(2.378)	(-0.405)	(0.640)	(-2.378)	(1.628)
SQRTInstitutional own	-0.585	0.612	-0.957	-0.103	0.621	0.957	0.585
	(-0.548)	(0.508)	(-0.054)	(-1.639)	(0.495)	(0.054)	(0.548)
SQRTCEO own	0.001 ***	-0.045 **	-0.140	-0.000 ***	-0.004 ***	0.140	-0.001 ***
	(3.409)	(-2.020)	(-1.482)	(-3.614)	(-2.946)	(1.482)	(-3.409)
BoardSize	-0.494	0.419	-0.991	0.002 ***	0.609	0.991	0.494
	(-0.686)	(0.810)	(-0.012)	(3.221)	(0.513)	(0.012)	(0.686)
Supervis. board	-0.003 ***	0.164	0.095 *	0.001 ***	0.000 ***	-0.095 *	0.003 ***
	(-3.012)	(1.398)	(1.679)	(3.401)	(5.167)	(-1.679)	(3.102)
ROA	-0.049 **	0.666	0.099 *	0.784	0.106	-0.099 *	0.049 **
	(-1.982)	(0.433)	(1.659)	(0.274)	(1.627)	(-1.659)	(1.982)
LnTotalAssets	-0.000 ***	0.068 *	0.008 ***	0.000 ***	0.000 ***	-0.008 ***	0.000 ***
	(-4.439)	(1.841)	(2.708)	(5.365)	(7.050)	(-2.708)	(4.439)
Leverage	0.544	-0.859	-0.640	-0.205	0.738	0.640	-0.544
	(0.608)	(-0.178)	(-0.469)	(-1.272)	(0.336)	(0.469)	(-0.608)
Constant	0.000 ***	-0.930	-0.690	0.000 ***	-0.000 ***	0.000 ***	-0.626
	(5.055)	(-0.089)	(-0.400)	(5.234)	(-3.617)	(4.648)	(-0.489)
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.589	0.159	0.382	0.659	0.689	0.382	0.589
N	162	162	162	162	157	162	162

This table presents the results of the OLS regressions of the CEO characteristis and CEO remuneration. Measured as a percentage of total. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

Appendix D – Robustness test, firm performance

Table 13 The relationship between the CEO characteristic gender and CEO remuneration. Alternative firm performance measures.

	LnSalary			LnBonus			LnOptions		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CEO gender	0.170	0.148	0.173	-0.113	-0.129	-0.135	-0.338	-0.363	-0.347
	(1.379)	(1.454)	(1.370)	(-1.595)	(-1.529)	(-1.504)	(-0.963)	(-0.914)	(-0.944)
RC	0.861	-0.882	0.887	-0.307	-0.197	-0.324	0.499	0.635	0.517
	(0.175)	(-0.148)	(0.143)	(-1.026)	(-1.296)	(-0.989)	(0.678)	(0.476)	(0.650)
SQRTInstitutional own	-0.078 *	-0.016 **	-0.119	0.824	-0.630	0.708	0.362	0.762	0.352
	(-1.771)	(-2.443)	(-1.567)	(0.222)	(-0.483)	(0.375)	(0.916)	(0.304)	(0.935)
SQRTCEO own	-0.003 ***	-0.018 **	-0.002 ***	-0.010 ***	-0.051 *	-0.009 ***	-0.344	-0.627	-0.346
	(-3.057)	(-2.397)	(-3.136)	(-2.592)	(-1.969)	(-2.654)	(-0.951)	(-0.487)	(-0.948)
BoardSize	0.008 ***	0.009 ***	0.010 ***	0.386	0.414	0.391	-0.244	-0.239	-0.250
	(2.674)	(2.633)	(2.608)	(0.869)	(0.820)	(0.860)	(-1.171)	(-1.185)	(-1.158)
Supervis. board	0.002 ***	0.010 ***	0.004 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(3.092)	(2.615)	(2.953)	(5.299)	(4.823)	(5.051)	(5.907)	(5.510)	(5.793)
ROE	0.333			0.479			0.818		
	(0.971)			(0.709)			(0.231)		
Tobin's Q		0.011 **			0.024 **			0.094 *	
		(2.571)			(2.281)			(1.691)	
Stock return			-0.621			-0.403			0.921
			(-0.496)			(-0.838)			(0.099)
LnTotalAssets	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(4.640)	(4.993)	(4.396)	(6.584)	(6.821)	(6.160)	(4.492)	(4.660)	(4.378)
Leverage	-0.034 **	-0.124	-0.036 **	0.076 *	0.028 **	0.100 *	0.215	0.120	0.222
	(-2.134)	(-1.545)	(-2.113)	(1.787)	(2.226)	(1.659)	(1.248)	(1.569)	(1.227)
Constant	0.000 ***	0.000 ***	0.000 ***	-0.085 *	-0.034 **	-0.160	-0.001 ***	-0.000 ***	-0.001 ***
	(8.093)	(7.474)	(8.049)	(-1.732)	(-2.145)	(-1.413)	(-3.409)	(-3.681)	(1.933)
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.558	0.573	0.555	0.630	0.642	0.629	0.517	0.528	0.515
N	170	166	163	156	150	145	117	112	113

This table presents the results of the OLS regressions of CEO characteristic gender and CEO remuneration. With alternative measures for firm performance. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

Table 14 The relationship between the CEO characteristic age and CEO remuneration. Alternative firm performance measures.

	LnSalary			LnBonus			LnOptions		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CEO age	-0.325	-0.384	-0.266	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 **	0.000 **
	(-0.987)	(-0.873)	(-1.115)	(5.350)	(5.543)	(4.974)	(4.263)	(4.356)	(4.135)
RC	0.880	-0.872	0.894	-0.219	-0.103	-0.221	0.541	0.744	0.585
	(0.151)	(-0.162)	(0.133)	(-1.234)	(-1.640)	(-1.230)	(0.614)	(0.328)	(0.548)
SQRTInstitutional own	-0.137	-0.033 **	-0.200	-0.580	-0.166	-0.767	0.694	-0.756	0.646 **
	(-1.494)	(-2.149)	(-1.288)	(-0.555)	(-1.393)	(-0.297)	(0.394)	(-0.312)	(0.461)
SQRTCEO own	-0.001 ***	-0.010 ***	-0.001 ***	-0.008 ***	-0.052 *	-0.007 ***	-0.339	-0.682	-0.339
	(-3.263)	(-2.625)	(-3.338)	(-2.669)	(-1.961)	(-2.750)	(-0.960)	(-0.411)	(-0.960)
BoardSize	0.015 **	0.018 **	0.018 **	0.198	0.223	0.221	-0.290	-0.267	-0.281
	(2.451)	(2.398)	(2.394)	(1.294)	(1.225)	(1.229)	(-1.063)	(-1.116)	(-1.083)
Supervis. board	0.001 ***	0.005 ***	0.002 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(3.282)	(2.837)	(3.143)	(5.759)	(5.227)	(5.465)	(6.465)	(6.008)	(6.315
ROE	0.385			0.191			0.493		
	(0.871)			(1.312)			(0.688)		
Tobin's Q		0.016 **			0.003 ***			0.028 **	
		(2.435)			(3.010)			(2.230)	
Stock return			-0.567			-0.678			0.607
			(-0.573)			(-0.416)			(0.516)
LnTotalAssets	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(4.657)	(4.998)	(4.390)	(7.567)	(8.013)	(7.109)	(5.245)	(5.522)	(5.136)
Leverage	-0.133	-0.346	-0.142	0.804	0.361	0.800	0.905	0.545	0.879
	(-1.511)	(-0.944)	(-1.476)	(0.248)	(0.916)	(0.254)	(0.120)	(0.607)	(0.153)
Constant	0.000 ***	0.000 ***	0.000 ***	-0.000 ***	-0.000 ***	-0.000 ***	-0.000 ***	-0.000 ***	-0.000 ***
	(6.266)	(5.755)	(6.340)	(-4.858)	(-5.341)	(-4.355)	(-5.490)	(-5.816)	(-5.339)
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.555	0.569	0.553	0.686	0.701	0.681	0.582	0.598	0.580
N	169	165	162	154	150	150	117	112	113

This table presents the results of the OLS regressions of CEO characteristic age and CEO remuneration. With alternative measures for firm performance. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

Table 15 The relationship between the CEO characteristic tenure and CEO remuneration. Alternative firm performance measures.

	LnSalary			LnBonus			LnOptions		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CEO tenure	0.006 ***	0.011 **	0.008 ***	0.048 **	0.068 *	0.055 *	0.003 ***	0.004 ***	0.003 ***
	(2.764)	(2.581)	(2.677)	(1.994)	(1.837)	(1.933)	(3.035)	(2.924)	(3.035)
RC	-0.978	-0.750	-0.952	-0.298	-0.191	-0.307	0.564	0.684	0.575
	(-0.028)	(-0.319)	(-0.060)	(-1.046)	(-1.314)	(-1.025)	(0.579)	(0.408)	(0.562)
SQRTInstitutional own	-0.044 **	-0.011 **	-0.072 *	-0.784	-0.375	-0.916	0.734	-0.878	0.711
	(-2.026)	(-2.568)	(-1.812)	(-0.274)	(-0.890)	(-0.105)	(0.340)	(-0.154)	(0.372)
SQRTCEO own	-0.001 ***	-0.009 ***	-0.001 ***	-0.021 **	-0.077 *	-0.016 **	-0.428	-0.695	-0.421
	(-3.247)	(-2.656)	(-3.315)	(-2.327)	(-1.780)	(-2.445)	(-0.796)	(-0.393)	(-0.809)
BoardSize	0.007 ***	0.008 ***	0.009 ***	0.177	0.196	0.181	-0.483	-0.453	-0.476
	(2.743)	(2.670)	(2.661)	(1.356)	(1.299)	(1.345)	(-0.704)	(-0.754)	(-0.716)
Supervis. board	0.005 ***	0.014 **	0.007 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(2.881)	(2.481)	(2.747)	(4.697)	(4.361)	(4.557)	(5.425)	(5.181)	(5.420)
ROE	0.318			0.488			0.807		
	(1.003)			(0.695)			(0.245)		
Tobin's Q		0.022 **			0.031 **			0.126	
		(2.313)			(2.173)			(1.542)	
Stock return			-0.683			-0.398			0.896
			(-0.410)			(-0.848)			(0.131)
LnTotalAssets	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(4.954)	(5.258)	(4.704)	(6.450)	(6.774)	(6.143)	(4.642)	(4.857)	(4.615)
Leverage	-0.049 **	-0.170	-0.053 *	0.253	0.101	0.286	0.456	0.273	0.452
	(-1.986)	(-1.380)	(-1.954)	(1.147)	(1.649)	(1.072)	(0.748)	(1.101)	(0.755)
Constant	0.000 ***	0.000 ***	0.000 ***	-0.123	-0.050 **	-0.208	-0.000 ***	-0.000 ***	-0.000 ***
	(7.616)	(7.046)	(7.565)	(-1.553)	(-1.978)	(-1.266)	(-3.637)	(-3.927)	(-3.600)
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.573	0.584	0.569	0.634	0.644	0.633	0.551	0.561	0.551
N	162	159	155	151	150	145	113	112	113

This table presents the results of the OLS regressions of CEO characteristic tenure and CEO remuneration. With alternative measures for firm performance. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

Table 16 The relationship between all CEO characteristics and CEO remuneration. Alternative firm performance measures.

	LnSalary			LnBonus			LnOptions		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CEO gender	0.393	0.345	0.406	-0.458	-0.543	-0.462	-0.667	-0.738	-0.661
	(0.857)	(0.948)	(0.834)	(-0.745)	(-0.609)	(-0.738)	(-0.432)	(-0.335)	(0.440)
CEO age	-0.002 ***	-0.004 ***	-0.001 ***	0.000 ***	0.000 ***	0.000 ***	0.008 ***	0.003 ***	0.009 ***
	(-3.183)	(-2.914)	(-3.289)	(4.777)	(5.248)	(4.438)	(2.696)	(2.998)	(2.674)
CEO tenure	0.000 ***	0.000 ***	0.000 ***	-0.238	-0.103	-0.301	0.395	0.581	0.386
	(4.220)	(3.906)	(4.219)	(-1.186)	(-1.640)	(-1.039)	(0.854)	(0.554)	(0.871)
RC	0.969	-0.851	0.964	-0.230	-0.102	-0.223	0.583	0.760	0.617
	(0.039)	(-0.188)	(0.045)	(-1.207)	(-1.644)	(-1.225)	(0.551)	(0.306)	(0.501)
SQRTInstitutional own	-0.036 **	-0.011 **	-0.055 *	-0.758	-0.233	-0.945	0.734	-0.770	0.687
	(-2.111)	(-2.560)	(-1.932)	(-0.309)	(-1.199)	(-0.069)	(0.341)	(-0.293)	(0.405)
SQRTCEO own	-0.002 ***	-0.012 **	-0.002 ***	-0.007 ***	-0.044 **	-0.005 ***	-0.336	-0.647	-0.328
	(-3.079)	(-2.549)	(-3.157)	(-2.759)	(-2.029)	(-2.859)	(-0.966)	(-0.459)	(-0.983)
BoardSize	0.002 ***	0.002 ***	0.002 ***	0.333	0.382	0.352	-0.329	-0.289	-0.312
	(3.166)	(3.102)	(3.124)	(0.972)	(0.877)	(0.935)	(-0.981)	(-1.066)	(-1.015)
Supervis. board	0.027 **	0.053 *	0.036 **	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(2.235)	(1.952)	(2.118)	(5.887)	(5.513)	(5.621)	(5.985)	(5.744)	(5.962)
ROE	0.549			0.171			0.545		
	(0.601)			(1.377)			(0.607)		
Tobin's Q		0.064 *			0.002 ***			0.040 **	
		(1.868)			(3.225)			(2.078)	
Stock return			-0.403			-0.727			0.642
			(-0.839)			(-0.350)			(0.467)
LnTotalAssets	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(4.550)	(4.790)	(4.267)	(7.565)	(8.158)	(7.177)	(5.106)	(5.446)	(5.093)
Leverage	-0.130	-0.249	-0.136	0.668	0.300	0.656	0.756	0.491	0.731
	(-1.522)	(-1.157)	(-1.498)	(0.430)	(1.039)	(0.447)	(0.311)	(0.962)	(0.345)
Constant	0.000 ***	0.000 ***	0.000 ***	-0.000 ***	-0.000 ***	-0.000 ***	-0.000 ***	-0.000 ***	-0.000 ***
	(7.683)	(7.081)	(7.755)	(-4.929)	(-5.594)	(-4.453)	(-4.581)	(-5.011)	(-4.542)
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.600	0.607	0.599	0.686	0.704	0.681	0.576	0.592	0.576
N	162	159	155	151	150	145	113	112	113

This table presents the results of the OLS regressions of the CEO characteristics and CEO remuneration. With alternative measures for firm performance. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

Appendix E – Robustness test, firm size

Table 17 The relationship between the CEO characteristic gender and CEO remuneration. Alternative firm size measure.

	LnSalary		LnBonus		LnOptions	
	(1)	(2)	(3)	(4)	(5)	(6)
CEO gender	0.138	0.159	-0.195	-0.242	-0.725	-0.756
	(1.490)	(1.414)	(-1.302)	(-1.174)	(-0.353)	(-0.311)
RC	0.729		-0.730		0.141	
	(0.347)		(-0.346)		(1.483)	
RCpastCEO		0.000 ***		-0.205		0.011 **
		(4.378)		(-1.76)		(2.591)
RCemployment		-0.587		0.403		0.220
		(-0.544)		(0.838)		(1.233)
SQRTInstitutional own	-0.319	-0.034 **	0.389	0.207	0.035 **	0.031 **
	(-0.999)	(-2.143)	(0.863)	(1.268)	(2.135)	(2.186)
SQRTCEO own	-0.007 ***	-0.015 **	-0.109	-0.104	-0.747	-0.899
	(-2.727)	(-2.453)	(-1.615)	(-1.638)	(-0.323)	(-0.127)
BoardSize	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.036 **	0.064 *
	(4.513)	(3.891)	(3.574)	(3.710)	(2.126)	(1.874)
Supervis. board	0.001 ***	0.023 **	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(3.271)	(2.300)	(5.033)	(5.003)	(5.448)	(4.827)
ROA	-0.688	0.775	0.401	0.487	0.993	0.742
	(-0.402)	(0.286)	(0.842)	(0.697)	(0.008)	(0.330)
LnSales	0.002 ***	0.005 ***	0.000 ***	0.001 ***	-0.957	-0.750
	(3.109)	(2.877)	(3.625)	(3.456)	(-0.053)	(-0.319)
Leverage	-0.052 *	-0.006 ***	0.052 *	0.044 **	0.198	0.400
	(-1.960)	(-2.763)	(1.961)	(2.037)	(1.294)	(0.846)
Constant	0.000 ***	0.000 ***	-0.867	-0.865	-0.765	0.763
	(8.435)	(9.430)	(-0.167)	(-0.171)	(-0.300)	(0.302)
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.526	0.575	0.562	0.565	0.426	0.451
N	170	164	156	153	117	115

This table presents the results of the OLS regressions of CEO characteristic gender and CEO remuneration. With an alternative measure for firm size. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

Table 18 The relationship between the CEO characteristic age and CEO remuneration. Alternative firm size measure.

	LnSalary		LnBonus		LnOptions	
	(1)	(2)	(3)	(4)	(5)	(6)
CEO age	-0.276	-0.324	0.000 ***	0.000 ***	0.002 ***	0.001 ***
	(-1.094)	(-0.990)	(4.609)	(4.487)	(3.208)	(3.267)
RC	0.729		-0.595		0.160	
	(0.347)		(-0.533)		(1.416)	
RCpastCEO		0.000 ***		-0.197		0.007 ***
		(4.365)		(-1.295)		(2.769)
RCemployment		-0.552		0.549		0.308
		(-0.596)		(0.601)		(1.023)
SQRTInstitutional own	-0.459	-0.059 *	0.788	0.548	0.070 *	0.081 *
	(-0.743)	(-1.904)	(0.270)	(0.603)	(1.830)	(1.761)
SQRTCEO own	-0.005 ***	-0.010 ***	-0.105	-0.096 *	-0.731	-0.888
	(-2.871)	(-2.601)	(-1.632)	(-1.674)	(-0.345)	(-0.141)
BoardSize	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.020 **	0.042 **
	(4.284)	(3.687)	(4.120)	(4.237)	(2.354)	(2.063)
Supervis. board	0.001 ***	0.014 **	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(3.457)	(2.489)	(5.385)	(5.387)	(5.853)	(5.218)
ROA	-0.782	0.687	0.363	0.433	0.931	0.658
	(-0.277)	(0.404)	(0.913)	(0.787)	(0.087)	(0.444)
LnSales	0.002 ***	0.004 ***	0.000 ***	0.000 ***	0.680	0.865
	(3.110)	(2.909)	(4.377)	(4.235)	(0.414)	(0.170)
Leverage	-0.207	-0.033 **	0.484	0.383	0.544	0.899
	(-1.266)	(-2.157)	(0.702)	(0.874)	(0.609)	(0.127)
Constant	0.000 ***	0.000 ***	-0.002 ***	-0.003 ***	-0.016 **	-0.047 **
	(6.587)	(7.332)	(-3.146)	(-3.049)	(-2.446)	(-2.010)
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.522	0.572	0.613	0.615	0.475	0.501
N	169	164	154	153	117	115

This table presents the results of the OLS regressions of CEO characteristic age and CEO remuneration. With an alternative measure for firm size. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

Table 19 The relationship between the CEO characteristic tenure and CEO remuneration. Alternative firm size measure.

	LnSalary		LnBonus		LnOptions	
	(1)	(2)	(3)	(4)	(5)	(6)
CEO tenure	0.008 ***	0.009 ***	0.084 *	0.084 *	0.012 **	0.016
	(2.704)	(2.642)	(1.741)	(1.739)	(2.559)	(2.461)
RC	0.911		-0.677		0.185	
	(0.112)		(-0.418)		(1.334)	
RCpastCEO		0.000 ***		-0.166		0.015 **
		(4.225)		(-1.392)		(2.478)
RCemployment		-0.371		0.411		0.274
		(-0.897)		(0.825)		(1.100)
SQRTInstitutional own	-0.216	-0.014 **	0.619	0.356	0.082 *	0.075 **
	(-1.241)	(-2.478)	(0.498)	(0.926)	(1.757)	(1.796)
SQRTCEO own	-0.004 ***	-0.008 ***	-0.139	-0.124	-0.746	-0.889
.	(-2.915)	(-2.670)	(-1.488)	(-1.548)	(-0.325)	(-0.139)
BoardSize	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.014 **	0.026 *
	(4.553)	(3.973)	(3.967)	(4.137)	(2.507)	(2.256)
Supervis. board	0.002 ***	0.027 **	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(3.125)	(2.230)	(4.568)	(4.648)	(5.143)	(4.619)
ROA	-0.648	0.833	0.586	0.680	-0.809	0.933
	(-0.457)	(0.211)	(0.546)	(0.413)	(-0.242)	(0.084)
LnSales	0.001 ***	0.001 ***	0.001 ***	0.001 ***	0.926	-0.871
	(3.522)	(3.350)	(3.557)	(3.449)	(0.093)	(-0.163)
Leverage	-0.078 *	-0.009 ***	0.159	0.115	0.312	0.535
	(-1.772)	(-2.634)	(1.417)	(1.587)	(1.016)	(0.595)
Constant	0.000 ***	0.000 ***	-0.993	-0.949	-0.610	0.930
	(7.899)	(8.984)	(-0.009)	(-0.064)	(-0.511)	(0.088)
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.540	0.588	0.565	0.570	0.457	0.480
N	162	159	151	151	113	113

This table presents the results of the OLS regressions of CEO characteristic tenure and CEO remuneration. With an alternative measure for firm size. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

Table 20 The relationship between all CEO characteristics and CEO remuneration. Alternative firm size measure.

	LnSalary		LnBonus		LnOptions	
	(1)	(2)	(3)	(4)	(5)	(6)
CEO gender	0.309	0.328	-0.556	-0.606	0.967	0.933
	(1.020)	(0.982)	(-0.591)	(-0.518)	(0.042)	(0.085)
CEO age	-0.001 ***	-0.002 ***	0.000 ***	0.000 ***	0.053 *	0.036 **
	(-3.285)	(-3.120)	(4.146)	(4.038)	(1.954)	(2.131)
CEO tenure	0.000 ***	0.000 ***	-0.294	-0.323	0.382	0.486
	(4.248)	(4.084)	(-1.053)	(-0.992)	(0.877)	(0.699)
RC	0.866		-0.627		0.185	
	(0.169)		(-0.487)		(1.335)	
RCpastCEO		0.000 ***		-0.239		0.009 ***
		(4.129)		(-1.183)		(2.648)
RCemployment		-0.525		0.568		0.325
		(-0.637)		(0.573)		(0.990)
SQRTInstitutional own	-0.216	-0.019 **	0.677	0.478	0.095 *	0.101
	(-1.244)	(-2.375)	(0.418)	(0.712)	(1.687)	(1.657)
SQRTCEO own	-0.005 ***	-0.010 ***	-0.099 *	-0.093 *	-0.738	-0.891
.	(-2.869)	(-2.624)	(-1.660)	(-1.692)	(-0.336)	(-0.138)
BoardSize	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.020 **	0.039 **
	(5.048)	(4.460)	(3.750)	(3.877)	(2.366)	(2.092)
Supervis. board	0.013 **	0.096 *	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(2.517)	(1.675)	(5.465)	(5.457)	(5.381)	(4.876)
ROA	-0.347	-0.795	0.278	0.338	-0.973	0.747
	(-0.942)	(-0.261)	(1.090)	(0.962)	(-0.034)	(0.323)
LnSales	0.004 ***	0.006 ***	0.000 ***	0.000 ***	0.710	0.888
	(2.964)	(2.783)	(4.390)	(4.247)	(0.373)	(0.141)
Leverage	-0.154	-0.028 **	0.412	0.348	0.571	0.904
	(-1.432)	(-2.226)	(0.822)	(0.942)	(0.568)	(0.121)
Constant	0.000 ***	0.000 ***	-0.001 ***	-0.002 ***	-0.069 *	-0.125
	(8.017)	(8.667)	(-3.318)	(-3.215)	(-1.836)	(-1.547)
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.572	0.614	0.612	0.613	0.467	0.493
N	162	159	151	151	113	113

This table presents the results of the OLS regressions of the CEO characteristics and CEO remuneration. With an alternative measure for firm size. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

Appendix F – Robustness test, subsample manufacturing

Table 21 The relationship between CEO age and CEO remuneration. Alternative firm sub-sample (manufacturing).

	LnSalary		LnBonus		LnOptions	
	(1)	(2)	(3)	(4)	(5)	(6)
CEO age	0.174	0.187	0.000 ***	0.000 ***	0.075 *	0.054 *
	(1.372)	(1.333)	(9.027)	(9.177)	(1.820)	(1.979)
RC	0.546		-0.000 ***		0.477	
	(0.606)		(-4.183)		(0.717)	
RCpastCEO		0.637		-0.000 ***		0.937
		(0.473)		(-4.596)		(0.080)
RCemployment		-0.251		-0.235		0.423
		(-1.157)		(-1.200)		(0.808)
LnInstitutional own	0.173	0.344	-0.279	-0.091 *	-0.393	-0.822
	(1.377)	(0.952)	(-1.092)	(-1.720)	(-0.863)	(-0.227)
LnCEO own	0.090 *	0.114	-0.092 *	-0.073 *	0.000 ***	0.000 ***
	(1.718)	(1.602)	(-1.712)	(-1.823)	(4.623)	(4.571)
BoardSize	0.458	0.419	0.086 *	0.086 *	0.056 *	0.044 **
	(0.746)	(0.812)	(1.747)	(1.747)	(1.956)	(2.075)
Supervis. board	0.002 ***	0.001 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(3.188)	(3.528)	(8.492)	(8.801)	(6.597)	(6.630)
ROA	0.532	0.464	0.757	0.797	-0.282	-0.221
	(3.188)	(0.737)	(0.310)	(0.259)	(-1.088)	(-1.241)
LnTotalAssets	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.001 ***	0.002 ***
	(8.527)	(8.544)	(12.224)	(12.490)	(3.484)	(3.245)
Leverage	0.147	0.172	0.003 ***	0.002 ***	-0.021 **	-0.027 **
	(1.467)	(1.378)	(3.070)	(3.192)	(-2.379)	(-2.277)
Constant	0.004 ***	0.007 ***	-0.000 ***	-0.000 ***	-0.008 ***	-0.006 ***
	(3.012)	(2.774)	(-10.333)	(-10.764)	(-0.830)	(-2.878)
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.828	0.829	0.911	0.915	0.754	0.750
N	81	81	69	69	57	57

This table presents the results of the OLS regressions of CEO characteristic age and CEO remuneration. With an alternative measure for firm size. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

Table 22 The relationship between CEO tenure and CEO remuneration. Alternative firm sub-sample (manufacturing).

	LnSalary		LnBonus		LnOptions	
	(1)	(2)	(3)	(4)	(5)	(6)
CEO tenure	-0.442	-0.474	0.947	0.631	0.614	0.546
	(-0.773)	(-0.720)	(0.066)	(0.483)	(0.508)	(0.609)
RC	0.301		-0.121		0.399	
	(1.042)		(-1.573)		(0.851)	
RCpastCEO		0.359		-0.053 *		0.885
		(0.923)		(-1.971)		(0.145)
RCemployment		-0.270		-0.243		0.559
		(-1.112)		(-1.179)		(0.588)
LnInstitutional own	0.207	0.383	-0.410	-0.217	-0.401	-0.798
	(1.274)	(0.879)	(-0.829)	(-1.248)	(-0.847)	(-0.257)
LnCEO own	0.120	0.148	-0.165	-0.136	0.000 ***	0.000 ***
	(1.573)	(1.464)	(-1.404)	(-1.513)	(4.367)	(4.265)
BoardSize	0.592	0.549	0.223	0.174	0.054 *	0.039 **
	(0.538)	(0.602)	(1.231)	(1.376)	(1.977)	(2.124)
Supervis. board	0.003 ***	0.001 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
	(3.118)	(3.459)	(5.502)	(5.816)	(6.275)	(6.382)
ROA	0.603	0.515	-0.962	-0.984	-0.276	-0.223
	(0.523)	(0.655)	(-0.048)	(-0.021)	(-1.102)	(-1.237)
LnTotalAssets	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.004 ***	0.008 ***
	(8.105)	(8.034)	(6.619)	(6.817)	(3.008)	(2.771)
Leverage	0.060 *	0.079 *	0.001 ***	0.001 ***	-0.054 *	-0.070 *
	(1.910)	(1.786)	(3.486)	(3.407)	(-1.973)	(-1.857)
Constant	0.000 ***	0.000 ***	-0.001 ***	-0.000 ***	-0.040 **	-0.041 **
	(6.363)	(5.658)	(-3.393)	(-3.762)	(-2.113)	(-2.102)
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.824	0.825	0.789	0.794	0.738	0.730
N	77	77	69	69	56	56

This table presents the results of the OLS regressions of CEO characteristic tenure and CEO remuneration. With an alternative measure for firm size. Unstandardized coefficients are reported. The figures in parentheses represent the t-statistics. * Indicates significance is at the 10% level, ** Indicates significance at the 5% level, *** Indicates significance at the 1% level. Definitions of variables in chapter 3.2.

Appendix G – Independent samples t-test

Table 23 Independent-Samples t-test base salary

Group statistics					
	CEO female gender	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
LnSalary	Male (0)	175	6.1597	0.70738	0.05347
	Female (1)	6	6.6605	0.29408	0.12006
				LnSalary	
				Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F			1.576	
	Sig.			0.211	
t-test for Equality of Means	t			-1.725	-3.810
	df			179	7.172
	Sig. (2-tailed)			0.086	0.006
	Mean difference			-0.50077	-0.50077
	Std. Error Difference			0.29028	0.13143
	95% confidence Interval of the Difference		Lower	-1.07358	-0.81004
			Upper	0.07205	-0.1915

Table 24 Independent-Samples t-test annual bonus

Group statistics					
	CEO female gender	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
LnBonus	Male (0)	154	5.6796	1.12399	0.09057
	Female (1)	6	6.0644	1.21912	0.4977
				LnBonus	
				Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F			0.100	
	Sig.			0.753	
t-test for Equality of Means	t			-0.820	-0.761
	df			158	5.336
	Sig. (2-tailed)			0.413	0.479
	Mean difference			-0.38479	-0.38479
	Std. Error Difference			0.46902	0.50588
	95% confidence Interval of the Difference		Lower	-1.31116	-1.66091
			Upper	0.54158	0.89133

Table 25 Independent-Samples t-test option grants

Group statistics					
	CEO female gender	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
LnOptions	Male (0)	115	5.9399	1.5375	0.14337
	Female (1)	6	6.7884	1.61448	0.65911
				LnOptions	
				Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F			0.370	
	Sig.			0.544	
t-test for Equality of Means	t			-1.315	-1.258
	df			119	5.484
	Sig. (2-tailed)			0.191	0.259
	Mean difference			-0.84848	-0.84848
	Std. Error Difference			0.64524	0.67452
	95% confidence Interval of the Difference		Lower	-2.12611	-2.53737
			Upper	0.42915	0.84042