
The determinants of executive compensation

*An optimal mix in fixed and variable executive rewards for
listed companies in the Netherlands*

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1. Introduction

1.1 Motivation

“Shareholders Shell in insurrection”

This was the headline of the In Business section of Dagblad de Pers on May 6 2009. Shareholders expressed their concerns about executive bonuses. According to the company’s statutes, a bonus should only be awarded when executives meet their predefined goals. In practice the bonus rewards were granted despite the fact that targets have not been met and subsequently created a conflict situation between shareholders and top management.

During the current credit crunch a lot of critic was expressed on the bonuses and salaries of top executives. While banks are failing to survive without governmental support and large corporations are on the edge of financial distress, executives still earn excessively high bonuses.

This Paper is a study of company performance in relation to executive rewards in order to find the optimal balance in fixed and variable rewards. Established economic- and behavioural theories will be discussed. The most important difference this study recognizes is the difference between fixed and variable rewards. When the variable part can be made more transparent, the fixed part can be valued more accurate. Taking this into account this study will answer the following question:

“What is the optimal balance in fixed and variable executive rewards that has a positive effect on the market value and performance of the firm?”

The goal of this study is to get more insight in executive rewards in the Netherlands and to find a good balance in fixed and variable rewards. When variable payments become more transparent, this can lead to an improvement in internal relations and to a higher market value of the firm.

During the G20 top in London the former Dutch minister of finance Wouter Bos called it an “absolute breakthrough” that there will be stronger regulation and supervision in the financial sector. Furthermore, he was very satisfied with the fact that there are strict formulations about agreements on bonuses and rewards. Former Dutch Prime Minister Jan-Peter Balkenende

concluded: “One thing became clear: the financial-economic world of tomorrow cannot be the same as we saw yesterday, where we observed short-term greed every single day.”

Many top executives in the industry, reward experts and politicians strengthen the discussion.

As shown by some quotes in the media:

Van Lanschot-CEO Floris Deckers: *“Good executives come with costs; they probably have qualities that are scarce these days.”*

Commission-Maas¹: *“Reward policies of financial institutions should be trend-followers instead of trendsetters.”*

VEB²: *“It is a good thing for banks and insurance companies to lower their bonuses. That rewards will be coupled to long-term performance is also good for shareholders.”*

Reward expert Ed Logger³: *“People should focus on risk sensitive result areas instead of shareholder value. Stronger goals are necessary that focus on future organisational climate instead of being backward looking revenue driven.”*

From these quotes it follows that there is still a lot of uncertainty about bonuses and rewards of executives and how to value them. Many people see excessive bonuses as unfair and out of proportion.

1.2 Research objectives, questions and scope

Research objectives

The objective of this study consists of four parts:

- Determine the background and general characteristics of executive rewards.
- Qualify a fair reward system.
- Qualify the market value of companies in relation to CEO rewards.
- Analyse the influence of the mix in fixed and variable rewards on the market value of the firm.

¹ Commission which was set up by the Dutch association of banks in order to give recommendations to improve functioning of the Dutch banking sector and to restore trust.

² Association of security holders, the association represents the interests of individual investors.

³ Reward expert at Hay Group in the Netherlands

Research questions

- Why do executives earn high rewards?

In order to answer the first research question this study first establishes a framework about the background and general characteristics of CEO compensation. It is interesting to see how rewards have developed over the years and to understand the reasoning of increasing rewards. This background provides insight in the creation of reward systems and bonus structure. Further it can have an influence on reward systems today. Section 2 provides a discussion on executive rewards in order to answer the first sub question.

- What is the difference between fixed and variable rewards?

The most important part in reward systems is the balance between fixed and variable rewards. The two parts are complementary to each other therefore you have to choose the optimal mix between quality (fixed) and effort (variable). An important pitfall is that on one hand a bonus has to value the performance delivered by the executive but on the other hand it can influence the CEO's behaviour. Rewards should value the performance after it has been delivered. Otherwise it can lead to a moral hazard problem; executives taking unreasonable risks in order to realize short term goals.

- What determines a fair reward system?

Human resources are very important throughout the company. In order for employees to feel that they are part of a winning team, the boundary with the CEO has to decrease. To achieve a decrease in the differences between top management and lower levels, more knowledge is necessary about reasonable and fair rewards. According to Patricia de Wit, reward specialist at Bureau Baarda, a distinction between distributive justice and exchange justice determines fair remuneration. Section four provides a discussion of theories on fair rewards.

- What determines the market value of the firm?

The purpose of the case study is to find the optimal mix in fixed and variable rewards in relation to the market value of the firm. Section five discusses how to measure the market value of the firm based on evidence from prior empirical research.

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- What is the relation between firm performance, the market value of the firm and executive remuneration?

There are many external factors that influence performance and compensation. Therefore it is interesting to examine the relation between CEO rewards, firm performance and the market value of the firm. Section six describes the relation between firm performance, market value and CEO remuneration. Section seven presents recent developments in CEO remuneration in the Netherlands.

Research scope

Former empirical research found little or no evidence for the pay-performance relationship. Especially the difference between fixed and variable rewards draw little attention. This was mainly caused due to a lack of transparency in variable rewards. However, in 2002 regulation in the Netherlands changed and listed companies were required to publish all information on the components of executive rewards. The selected period under consideration is therefore 2004-2008 since the research data for a pay-performance relationship for both fixed and variable rewards of Dutch listed firms is most reliable. Section eight will describe the research methodology of this study including hypotheses, data collection and research implications. Results are described in section nine. The last section consists of the main conclusion and recommendations.

2. Top executives and high rewards

2.1 General description

A CEO reward is an instrument for shareholders to reduce agency problems. CEO's will get larger incentives to maximize firm value. Since CEO's often don't own the firm they control, they can take too much risk. One of the first studies in this area was from Jensen and Murphy (1990). This study will help to understand the pay-performance relation for CEO's. Information asymmetry between shareholders and managers is a common phenomenon. Shareholders determine the managers' bonus but cannot observe them perfectly. They don't know whether certain actions or investment opportunities will increase shareholder value. This is a classical example of the principal-agent problem. Jensen and Murphy (1990) found evidence that shareholder wealth is affected by many factors in addition to a CEO's decision, like demand and supply conditions, public policy and actions of other executives and employees. However, it is justified to pay a CEO based on wealth creation since it is the main objective for shareholders. The results of Jensen and Murphy (1990) show that there are several factors that create value and therefore it is insufficient to reward executives only on the basis of short term shareholder wealth.

The three components of compensation are salary (fixed), bonus and stock options (variable). Salary is defined as cash compensation, which is determined at the beginning of an annual pay cycle. Annual bonus including stock options is defined as cash compensation, which is determined at the end of an annual pay cycle and is based on only one year's worth of performance information (Abowd and Kaplan 1999).

In 2007 income of top executives in the AEX-index grew with 44% as compared to 2006⁴. According to Hewitt associates⁵ this increase is caused by a strong growth of short-term bonuses, they concluded that executives are rewarded for above average firm performance. During the period described above the overall market was doing very well and therefore CEO's were mainly rewarded for firm performances caused by the market and not by their individual performance. From this perspective many economists believe that CEO's are rewarded for luck. Luck can be defined as observable shocks to performance beyond the CEO's control (Bertrand and Mullainathan 2001).

⁴ Source: 'Bonus top stijgt weer'. Financieel dagblad. September 2007

⁵ HR Consulting and Outsourcing

Wealth creation and market conformity can explain high executive rewards. In practice companies are willing to pay high rewards for a good CEO. As emphasized in the introduction, Floris Deckers⁶ says that apparently these executives have qualities that are scarce and can be exploited. When compensation is defined by the market, demand is high and the availability of qualified executives is scarce the price will be driven up. Companies rather pay a higher price than to miss a chance to attract a highly qualified CEO. This shows the difficulty of regulation. When a salary cap is imposed, the personal differences between CEO's become less transparent. Therefore a re-evaluation of CEO's should be considered. When high rewards based on a short term focus lead to a moral hazard problem or negatively affect internal relations it should be considered to limit those excessive rewards. Therefore, focus should be on long term performance.

2.2 Why nobody can stop the CEO

The critics expressed during the current credit crunch on CEO remuneration are not a recent phenomenon. During every credit crunch in the last century and in political debates excessive high rewards were point of discussion. Still increasing remunerations cannot be explained to lower level employees who experience frozen salaries, reorganisations with forced redundancies and to shareholders who lost their invested capital. Even now, when critics are most severe and in awareness of the fact that excessive bonuses of bankers are one of the causes of the financial crisis, executives still receive high rewards. According to the Wall Street Journal bonuses over the year 2009 will probably exceed the level of 2007 in the U.S. A rough estimate predicts a collection of bonuses of \$140 billion over 2009, an increase of 20% over 2008⁷. Thus, political interventions, a commitment to consider long-term performance and the possibility to recover unjustified bonuses ('Bonus weer terug van weg geweest', de Volkskrant) did not sort any effect.

In practice, sometimes it occurs that a CEO does not feel responsible for organizational well being. When organizations are performing well, CEO's will get high bonuses based on high company performance. However, when it goes wrong there is a lack of responsibility. The real problem is that chief executives suffer from a severe form of overconfidence. Through their selfish and irresponsible behaviour they will damage their organizations and society

⁶ CEO F. van Lanschot Bankiers

⁷ Source: 'Bonus weer terug van weggeweest'. De Volkskrant, October 2009, from the Wall Street Journal.

(Fons Naus, Tilburg University⁸). Xander van Uffelen provides a striking profile of the CEO in his book “Het Grote Graaien”. According to van Uffelen it starts with the rough interpretation of the CEO. CEO’s pretend that they do not require bonuses personally to come to better performances. Meanwhile, CEO’s threaten to move abroad if their demands are not met. As long as CEO’s are driven by rivalry and greed it will be very difficult to find an answer to the salary conflict. Without government intervention and the willingness of CEO’s to give up some of their bonuses, rewards will be determined by the market. Due to the excessive attention for bonuses and to secure their own payments CEO’s were even caught with fraud. CEO’s lost their focus on long-term business and therefore the sustainability of the company.

Part of the controversy over CEO compensation reflects a perception that CEO’s effectively set their own pay levels (Murphy, 1998). However, in most companies a compensation committee consisting of outside directors decide about CEO payments.

Evidence

Bertrand and Mullainathan (2000) examined how compensation responds to luck and how much CEO’s will be charged for the options they are granted. Bertrand and Mullainathan (2000) derived three results from their study:

1. CEO compensation contains a significant amount of pay for luck
2. Well governed firms pay less for luck.
3. CEO’s in well-governed firms are charged heavier for their granted stock options.

In better-governed firms there is tighter control and the shareholders will have more influence in determining compensation contracts. However, even in well-governed firms directors are often unwilling to challenge the CEO. For example because of the value of old friendships and connections, to avoid an uncomfortable atmosphere, avoiding a loose cannon⁹ reputation and the fear of having to resign when the majority disagrees.

Murphy (1998) emphasizes that the empirical evidence on CEO influence over their compensation committee is somewhat mixed. He refers to the following studies; O’Reilly,

⁸ Source: ‘Top heeft gebrekkig zelfbeeld’. De Volkskrant November 2008.

⁹ The expression “loose cannon” refers to an irresponsible and reckless individual whose behaviour endangers the group he or she belongs to. From Wikipedia.

Main and Crystal (1988) find that CEO pay is positively related to executive pay at the committee members' firms. Further, Main, O'Reilly and Wade (1995) conclude that external board members often try to make the firm more successful and therefore can be rather seen as partners than independent evaluators of CEO's. Newman and Mozes (1993) found evidence that CEO pay was higher and less related to performance in compensation committees with at least one company employee. Anderson (1997) found evidence that CEO's who are part of the compensation committee receive lower payments and instead have higher stock ownership.

In the book "Control is Good, Trust even Better", Kees Cools examines whether successful CEO's are Sun Kings¹⁰. Sun Kings tolerate no contradiction and therefore it will be hard to stop them. Success makes a CEO untouchable and can make him blind for criticism. A striking quote of De Ruiter¹¹ about Ahold CEO Cees van der Hoeven reads: "The worst thing what can happen to a manager is that he thinks that it is all about him instead of the function he fulfils." Therefore, it's especially due to the CEO's themselves that they earn such high rewards.

2.3 The separation of ownership and control

The separation of ownership and control in modern corporations is the quintessential agency problem¹², and the executive labour market is a natural laboratory for testing its implications (Murphy, 1998). One way to limit agency risk is to reward CEO's with stock options. CEO's will then have a larger incentive to increase firm value. Since, increasing firm value results in an increasing stock price and therefore payouts will increase when exercising the option. An extreme way of dealing with this problem is a management buy-out. A group of senior executives employed by the company will acquire a majority of the shares outstanding with assistance of external investors. The management team will obtain decisive control over the company. Agency costs and the execution of operational management could be influenced by a change in management ownership. Results by Demsetz and Villalonga (2001) show that managerial ownership has a positive relationship with firm performance. The increase in performance when ownership increases is partly explained by a reduction in agency costs.

¹⁰ The expression "Sun King" comes from Louis XIV the king of France from 1643 to 1715. Someone is called a sun king because of his tremendous desire for glory, fame and worship of a hero.

¹¹ President Commissioner of Ahold.

¹² Focus on the conflicting objectives of individuals involved in a firm.

Control

There are two ways to lead a public corporation, by control or by trust. The balance between these two aspects is a key implication to be successful. Main target of control is to reduce uncertainties. However, control does not motivate people to deliver extra and better performances. The degree of control is determined by the number of delegated decisions, and by the reliability of information. Perfect trust is unrealistic. Therefore, control is required to maintain strategic progress and to protect against unfavorable actions or events. One way to motivate employees is to reward performances. Therefore, performance pay is a result of control.

Agency theory

Agency theory elaborates on the principal agent problem, where managers are assumed to be agents who should work in the principal's best interest. The shareholders are the owners and the managers are the decision makers in the company. In practice agents could pursue a self-interested strategy; they want to maximize utility while shareholders want to maximize company value. The separation of ownership and control lies at the core of the principal-agent problem. According to Adam Smith (1937) it cannot be expected that managers watch over other peoples' money with the same vigilance as they would over their own capital. Costs incurred to resolve the agency problem are called agency costs. A better relation between control and trust, a performance-based remuneration or rewarding the managers with stock options can reduce these conflicting interests. In the latter case managers get a larger stake in the company and it changes their perspective from a managerial point of view to an entrepreneurial point of view. When managers are rewarded with stock options they have an incentive to maximize shareholder value since they become shareholders themselves. In this situation managers will try to maximize performance to secure their stock option reward and simultaneously try to maximize shareholder value. This reduces the agency problem since managers will act in better interest of shareholders.

Evidence

Empirical literature on executive compensation generally fails to specify a model of executive pay on which to base and test hypotheses regarding its determinants (Garen, 1994). Garen determines how well a simple principal agent model explains variations in CEO incentive pay and salaries. He finds that variables associated with greater variability of firm and CEO income reduce the pay-performance sensitivity and increase salary.

As discussed before Jensen and Murphy studied the pay-performance relation for Chief Executive Officers. The hypothesis which states that the reduction in the pay-performance sensitivity caused by public and private political forces is consistent with the declines in pay-performance relation and the level of CEO pay since 1930.

According to Jensen and Murphy (1990) shareholders do not know how a CEO can increase shareholder wealth. Therefore it is difficult to estimate, since shareholders expect actions from CEO's they cannot observe perfectly while CEO's are in essence interested in their personal gain related to the activity. The most important conclusion from Jensen and Murphy (1990) is that stock ownership is the largest incentive for CEO's to deliver the desired performance. Further requirements for bonuses are not highly dependent on performance measured in market value of equity, accounting earnings or sales. Surprisingly bonuses appear not really variable from year to year while they represent 50% of CEO pay. In this perspective the evidence can be incomprehensible if external influences like political forces can limit bonuses for exceptional performance.

The results of Jensen and Murphy (1990) on pay-performance sensitivity are represented in the tables 1 and 2 of the appendix. Table 1 represents the distribution of pay-performance sensitivity and table 2 represents the estimated pay-performance sensitivity.

Considering the importance of control regarding the management of an organization it is feasible to consider the results from the book "Control is good, trust is better" from Kees Cools.

The relation between maximizing control and agency theory means that the principal will provide minimal responsibilities to the agent, and the agent has to provide as much information as possible to the principal. Figure 1 in the appendix represents the differences between responsibility, control of own decisions and control of others. Trust can be a good alternative for control. Control prevents a reduction in value while trust can motivate performance.

Cools' findings show that involvement and the authority of making decisions have the highest correlation with performance. This means that an increase in motivation of employees results in an increase in financial returns for the firm. A schematic presentation of the most important

results is given in figure 2 of the appendix. Control is required to improve risk management, because external influences and system failures are inevitable. Control decreases the occurrence of inconvenient surprises and increases trust.

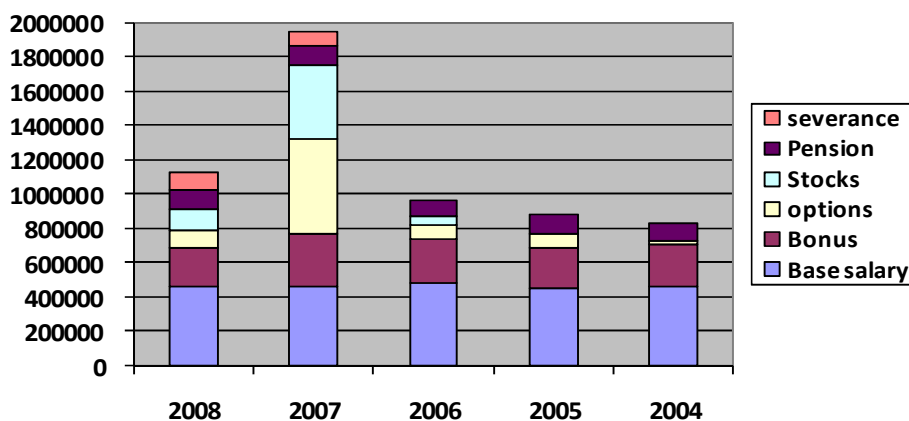
Higher transparency in fixed and variable rewards can lead to higher motivation in the whole organization, while higher control does not motivate people. Prior research did not find a conclusive relation between pay and performance. It appears that CEO remuneration is dependent on a lot of different factors like individual characteristics, luck and external influences.

3. Structure of executive compensation

3.1 Bonuses are back

In the financial world of Wall Street bonuses are back. Despite the critics on bankers and other executives in financial organizations in the U.S., bonuses in 2009 will be even higher than in 2007 when the bonus peak reached its highest level. A rough calculation of The Wall Street Journal predicts that bonuses will increase with approximately 20% with respect to 2008. The calculations are based on the numbers of the first half of 2009 and expected profits over the second half of 2009. Figure 3.1 Shows CEO salary developments in the Netherlands by components. The pressure on executives to focus on long-term performance and to pay back unjustified bonuses still doesn't seem to mitigate the bonus culture.

Figure 3.1 Salary developments by components



Source: www.topsalaris.nl research by Xander van Uffelen on behalf of the Volkskrant.

To find an optimal mix in fixed and variable salary components the case study defines the different drivers of CEO compensation. Fixed rewards consist of base salary, where variable rewards consist of bonus and stock options. Companies need to structure their top management's financial rewards to attract, retain, motivate, and reward senior executives (Firth, Tam and Tang, 1999).

To understand compensation packages, Cuñat and Guadelupe (2008) studied the effect of product market competition on executive compensation packages. Their results show that structure and level of compensation is heavily influenced by deregulations. However, the effect on the total amount of salary payments was small since the variable components

increased and the fixed components decreased. During the 80s and 90s the use of stock options grew substantially and nowadays tends to dominate the compensation packages for top executives (Murphy, 1999). Cuñat and Guadelupe (2008) emphasize that with the increase in variable payments, the sensitivity of pay to performance increases. This is a positive development for highly competitive markets, where excellent performance is necessary to obtain a comparative advantage. Option packages can be considered as cash rewards within the variable salary component.

3.2 Fixed Rewards

Base salary is used to value the quality aspect of the CEO. Quality is determined by knowledge, skills and the ability of solving problems. Quality is, however, not easy to value since it is rather intangible. Still top executive positions require specific qualities to manage difficult tasks and responsibilities. Fixed rewards value the structural contribution of each individual to the organization. Classical salary structures consist of different scales with a limited bandwidth. Within each scale salaries can fluctuate between a minimum and a maximum. When the scale maximum is reached, the only way to increase salary is by promotion to the next scale. This can lead to function-inflation: an overvaluation of the function while not justified by the content (Baarda, 2003). Therefore, Bureau Baarda developed a remuneration model that is based on the qualities an individual adds to the organization and not the function one executes. In the competence-based Baarda model eight different role levels determine the scale. The roles are differentiated by the ability to solve problems and within the roles the differences are determined by knowledge. The model is shown in figure 2 of the appendix.

Johannes M. Pennings¹³ (1993) found that for Dutch firms the executive labor market and subjective evaluations by superiors are the determinants of fixed rewards and salary instead of accounting measures. Fixed rewards are used to value the quality of the CEO, and cannot easily be adjusted. The increase of fixed rewards is a long term process and can be established by a function mutation or for example by increasing experience and improving quality.

¹³ The reliability of the results can be equivocal since the study is somewhat dated. A lot of changes in executive compensation took place since 1993 especially in Europe. Over time the compensation plans in Europe converged more to the American model.

3.3 Variable Rewards

Performance related pay, primarily based on stock returns and accounting profitability, often supplements base salaries and is separately identified in annual reports or other corporate documents (Firth, Tam and Tang, 1999). Variable rewards are used to value effort and performance. This can be qualified as the difference between qualitative and quantitative standards. When composing a reward system one has to choose how to structure fixed and variable rewards. Unlike fixed rewards, CEO's have the ability to influence variable rewards since they are often determined by short-term targets set by the board of directors.

According to the vision of Bureau Baarda, a variable reward should value a CEO's performance, but shouldn't influence behavior. This means that a CEO should act on behalf of the company despite his personal remuneration. Rewards should be determined after performances. When targets¹⁴ are determined in advance, the CEO could make self-interested decisions in order to secure his own payment. This suboptimal behavior can damage the internal relationships between top executives and lower layer employees. Therefore the CEO should always act on behalf of the company.

Baarda recognizes variable rewards for individual and collective performance¹⁵. It appears that the share of variable rewards in relation to total compensation is increasing. Variable rewards are used to motivate people, because success leads to higher rewards. To become successful, variable rewards for individual performance need to be determined by simple and clear performance criteria (Baarda, 2003). Baarda uses performance indicators that describe concrete results, measurable in time, quality, cost and production. The risk profile of CEO income is the distance between salary and the maximum range of variable rewards. CEO's have higher risk profiles than lower level employees since variable rewards are used to encourage entrepreneurial behavior. However, high variable rewards also encourage short-term performance while in an optimal situation CEO's should focus on long term goals. For example, when focus on the quality of products is a tradeoff for selling higher quantities. In a perfect world professionals are supposed to motivate themselves by the satisfaction from challenges in work and not by the rewards they earn.

¹⁴ The CEO will receive his bonus when certain targets are achieved.

¹⁵ Performance of organizations, sections or teams.

Bertrand and Mullainathan (2001) found evidence that CEO pay responds as much to a lucky dollar as to a dollar earned by their decisions. When CEO motivation decreases due to the awareness of the involvement of luck, it can be argued whether variable rewards have the desirable effect. However, luck is difficult to define and to monitor. In order to make payments more transparent and to mitigate pay for luck a representative of large shareholders can be installed in the board of directors. Conclusion is that there will always be some luck involved, but removing variable rewards is not the right answer. Employees will always consider the balance between the level of effort and the reward. So variable rewards are necessary to motivate CEO's and to value performances but on the other hand higher variable rewards also don't always lead to higher profits.

3.4 Stock options

Stock options are contracts that give the recipient the right to buy a share of stock at a pre-specified exercise price for a pre-specified term. Executive options are non-tradable, and are typically forfeited if the executive leaves the firm before exercising (Murphy, 1998). The past two decades executive stock options increased a lot in proportion of total executive pay. At that time both compensation for outstanding performance and penalties for bad performance were not included in remuneration. Murphy (1998) found little cross-sectional variation between different option designs and ways of granting. This means that most options expire in ten years and on the date the option will be awarded the exercise price is equal to the fair market value. The outcomes of the research are presented in table 3 of the appendix.

Total shareholder return is not equal to the increase in stock prices since it includes dividends. Options are evaluated by their value at inception and treated as a cash reward (Cuñat and Guadelupe, 2008). The rewards for executives from stock options are based on stock price movements. Stock options provide a direct link between managerial rewards and share-price appreciation, since the payout from exercising options increases dollar for dollar with increases in the stock price (Murphy, 1998). Options come with costs; there is a difference between the cost of granting options to CEO's and the value for the executive from receiving the option. To justify stock option rewards the positive effect should be larger than the cost of the option. An incentive effect is an increased performance due to higher motivation. Instead of using options as a reward, companies can trade them on the market. The value of the option to an outside investor is an opportunity cost for the organization. Generally options are more

valuable to outside investors than to executives since outside investors can trade them on the market, hedge the risk and are usually well diversified. According to Murphy (1998) the valuation of stock options to executives will depend on his or her risk aversion, personal wealth and the likelihood of staying with the company until the option is exercised.

Cuñat and Guadelupe (2008) studied the sensitivity of the value of the option packages to changes in the value of the firm. The results are shown in table 2 of the appendix. Stock options increased heavily in relation to variable rewards and have an important position in the pay-performance relation, agency problems and can tie CEO's longer to the company.

Since fixed rewards are based on quality and individual CEO characteristics and variable remuneration is used to reward the performance there will be a stronger pay-performance relation for variable rewards as compared to fixed rewards.

4. A fair reward system

The key to success is good internal relationships. Since approximately 30 percent¹⁶ of firm performance is dependent on employee performance it is important that top management and lower level employees are on good terms. One way to achieve better internal relations is to use levelling, where government interaction¹⁷ decreases the differences in income level.

Jim Collins (2004) recognizes a down-to-earth, pragmatic, committed-to-excellence process as success factor. Jim Collins' conclusion is that human resources are the most important drivers to success. People want to be part of a winning team. To keep employees motivated, the CEO should use a step-by-step approach to build evidence that his or her strategy makes sense and delivers results. A constant change of strategy will bring the company in a downward spiral called a doom-loop.

In the last 20 years the salary gap between top management and employees has been tripled¹⁸. Recently there has been more resistance from lower level employees to unfair relationships. However, according to van Uffelen, in the Netherlands it is generally more accepted that an entrepreneur earns a high reward than when an executive earns a high bonus. It can be difficult for outsiders to understand why executives earn such high rewards, since their performance is hard to quantify and rather non transparent.

Kees Koedijk¹⁹: "When an executive earns one hundred times the salary of an average employee, it cannot be explained anymore." In the current individualistic society all the credits for company profits are attributed to the CEO. This demotivates employees who put a lot of effort in their work on behalf of the company. However, in practice it appears very difficult for both employees and customers to have any influence on high rewards. Examples in the Netherlands are Numico, Philips and Shell; customers criticised executive rewards but kept on buying their products. Considering their position also employees encounter difficulties in criticizing their executives. Managers have a slightly different point of view; they usually don't prefer a salary cap for CEO's since it can limit their own increase in payments.

¹⁶ Source: Bureau Baarda

¹⁷ Based on equality, government can use tax instruments to distribute incomes. This means that tax payments are related to income.

¹⁸ from 16 times modal income for top executives in the 80s to 44 times in 2007 (de volkskrant, 2008)

¹⁹ Since 2007 Dean of the faculty of economics and business administration

When employees consider reward systems as fair it has a positive effect on motivation. The positive effect of trust, company involvement and fairness on motivation in the Netherlands can be explained by the fact that the Netherlands is governed by a system aimed at producing consensus. Compared to the U.S. where executives express a strong belief in the motivational efficacy of executive compensation systems, Dutch executives are strongly motivated by a mixture of immaterial income, such as challenge, pride, freedom and resources (Pennings, 1993).

4.1 Distributive justice and exchange justice

To judge whether a reward system is fair, I will now refer to an interview with Patricia de Wit, Reward specialist at Bureau Baarda. She provides a good insight in the view of Bureau Baarda on performance related remuneration. De Wit starts with a quote of Richard Layard “not the highest income but happiness is the right measure of success in a country”. An example is that people consider their relative income of higher importance than their absolute income. According to de Wit reasonable remuneration relies on two forms of justice, exchange justice and distributive justice. Exchange justice is based on the market, it is a system of supply and demand; the price of a CEO is determined by the market in an economic equilibrium of price and quantity. It is based on what an organization is willing to pay for the qualities and effort a CEO brings to the firm.

Distributive justice is based on a fair distribution of goods and money within a certain environment. This is also called the property rights theory, which addresses the specification of individual rights. It determines how costs and rewards will be allocated among the participants in any organization (Jensen and Meckling, 1976).

Executive compensation can be related to these two forms of justice. First, executive compensation is determined by the prices paid on the market for certain positions. This means that exchange justice is based on external relationships. Second, considering distributive justice a company has to determine how to distribute available capital within the company. De Wit concludes that for a fair reward system both measures are necessary. The problem in recent reward conflicts is that for most companies these structures will hold until management level. Rewards for top management and executives are still largely based on the price paid on the market.

5. The market value of the firm

The long term strategy of an organization should be maximizing market value because in the economic society market value is a widely accepted measure of firm performance. This study will test the correlation between market value of the firm and the different components of executive rewards in order to find an optimal mix in fixed and variable rewards. Supplemented by a proposed structure to limit variable rewards and restore internal relationships within an organization.

The objective of a firm is to create value by generating future cash flows through investments exceeding the initial investment. Value is created on the asset side of the balance sheet through operations and a change in the market value is the net effect on the wealth of shareholders. Stock prices are used to evaluate value creation. Some external factors that can influence the market value are competitiveness, size of the firm and the degree of diversification. The market value of listed firms is given by multiplying the price of the stock by the amount of shares outstanding. This will give the most reliable outcome for a firm's market value since all external influences are included in the price of the stock.

Evidence

Previous research is built on the assumption that market value is dependent on many different factors. First, it is important to value the overall business environment. Nicolau (2005) formalised a model that can value the business environment on a daily basis. In modern economy, organisations are subjected to heavy competition and in the long run only the strongest firms survive. If companies fail to recognize opportunities they face a threat of being outperformed by competitors. Therefore, it is very important to know your competitors and the business environment you participate in.

The environment can be defined as all elements that exist outside the boundary of the organization and have the potential to affect all or part of it (Daft, 1989). However, not all companies have a priority in studying their business environment. Since there is a lack of evidence consistent to a significant relation between the business environment and firm performance.

According to Horschky and Swyngedouw (1987) the price of a security is equal to the discounted value of future cash flows. Therefore, Nicolau (2005) assumes that all relevant information available is included in the stock price. The results conclude that not all environmental factors are recognized but some are recognized quite well. To distinguish relevant factors from irrelevant factors, the model from Nicolau can be used to quantify the influence of environmental factors on firm performance as its direction.

Jones et al. (2004) examined the reaction of the stock market to a set of company investment announcements. Intuitively it is expected that stock markets will react to new investment decisions because this will influence long-term company performance. The market reacts more favourably to the announcement of investments that can be expected to create future investment opportunities than to investments that can be deemed to exercise investments opportunities (Jones et al. 2004). This means that future investment opportunities can be seen as the driver for the market reaction to capital investments. Furthermore, the size of the company appeared to be negatively related to abnormal returns.

6. The relationship between CEO rewards, firm performance and the market value of the firm

After a detailed discussion of CEO compensation and the market value of the firm this section will refer to the relations between these two main components. Executive rewards are split up in three main components, stock options, bonuses and fixed rewards. Fixed rewards are very transparent and therefore no significant relation with the market value of the firm is expected. The variable part, comprised of bonuses and stock options, is much more likely to be dependent on firm performance. This research will evaluate the extent of these relationships.

Separation of ownership and control and property rights theory can influence both CEO rewards and the market value of the firm. The separation of ownership and control is used to limit risk increasing behaviour of CEO's by rewarding the CEO with a stake in the company. This shows the relation between CEO ownership, rewards and the value of the firm. Property rights theory is a measure of distributive justice; it implicates that property rights are rightfully allocated between owners and managers. It is important to note that the value of the firm depends on the ownership structure. Hence, this provides evidence for the relation between CEO rewards²⁰ and the market value of the firm. However, very large CEO ownership imbalances the relationship between CEO's and shareholders²¹.

Evidence

Aggarwal and Samwick (1999a) studied compensation contracts for managers in imperfectly competitive product markets. The study shows that the lack of performance-based incentives, where compensation decreases with higher rival firm performance, is caused by strategic interactions among firms. This means that strategic interactions can limit the extent of relative performance evaluation. In the principal-agent theory linking pay to firm performance will provide incentives for managers to behave optimally. However, when targets have to be reached managers might take irresponsible risks to secure their own payments.

Firth et al. (1999) observed that top management pay is positively correlated with company size. Rewards will be higher for larger companies, because:

²⁰ Through the stock options component.

²¹ Agency problem

-
1. Absolute returns of large companies are higher, therefore even relatively large remunerations are rather inconspicuous for large companies.
 2. Compensation is difficult to monitor for shareholders and it is less likely that shareholders will take action against high rewards.
 3. In a large company managers have extended possibilities and opportunities to show their skills and to manifest their qualities.

Managers have higher responsibilities in larger companies and therefore will receive higher rewards regardless of economic performance (Firth et al. 1999).

Chung and Pruitt (1996) represent an extensive relation between CEO ownership, market value and CEO compensation. They found evidence that ownership structure is related to certain firm characteristics like size, location and operating risk. However, Demsetz and Lehn (1985) had an opposite view and assumed that different firm characteristics lead to different ownership structures, but not vice versa. The most important feature of the study of Chung and Pruitt (1996) is that they considered the timing of determining CEO ownership, firm value and CEO compensation. Evidence shows that these variables are jointly determined and that CEO ownership as part of compensation leads to a reduction of the agency problem.

In addition, Chung and Pruitt (1996) found that CEO experience and firm size are good determinants of compensation. To achieve a higher firm value managers need incentives to realize a higher efficiency. These incentives are achieved by higher executive stock ownership. As expected the level of executive ownership is strongly related to the market value of equity. Merz and Yashiv (2007) show that the interaction between capital and labour adjustment costs is important, and nonlinearities matter.

Conclusion of this section is that total executive remuneration seems to be positively related to firm performance and the market value of the firm. Variable rewards will be stronger related to performance and market value than fixed rewards. The reason for this is that variable rewards consist for a large part of stock options, this is consistent with the strong relation between stock ownership and market value.

7. Recent developments in executive remuneration in the Netherlands

This study started with the headline “Shareholders Shell in insurrection”. One year after publication a lot of changes took place in both Dutch government and corporations. Since remuneration development is very dynamic, new developments take place every single day. Besides, companies experience political pressure and regulatory changes. Since the credit crunch the political situation in the Netherlands has been very unstable. Therefore it is impossible to include all recent changes in this study. To give an indication of the latest developments in the Netherlands I will discuss some recent publications from the Volkskrant²².

First, the pressure from the shareholders of Shell on top management resulted in a decrease in top management pay and in more power for shareholders in determining remuneration. Furthermore, Shell now considers their position in the Dow Jones sustainability index to determine yearly bonuses and fixed salary payments are frozen until January 1, 2011. At ING a different trend is observed. In 2009 ING paid € 520 million on bonuses, that’s an increase of 58% compared to the bonus payments in 2008. However the maximum bonus for the board of directors of ING will decrease substantially, CEO Jan Hommen can receive a maximum bonus of € 2,7 million where payments of his predecessor Michel Tilmant could increase to a maximum of € 6 million.

In 2009 CEO remuneration of the largest listed companies in the Netherlands decreased for the second year in a row. Up to 19 out of 23 executives experienced a decrease in payments leading to an average decrease of 21 percent, or in monetary terms, € 2,5 million. New trends show that bad performances result in lower bonuses. According to what the commission Tabaksblat already suggested in 2003, various companies are starting to use a bonus cap of 100 percent of salary for the determination of bonuses. As mentioned above for Shell, more companies are following the example of rewarding their CEO for sustainability. AkzoNobel, TNT, DSM and Shell are the first companies to introduce this new system of executive remuneration. However, there is still a lot of critic on this system since shareholders are afraid that sustainable goals will increase pressure on profitability.

²² Dutch newspaper which publishes remuneration articles on a weblog for top management pay.

8. Research design and methodology

This section will describe the research design and methodology used in the analysis. The research in this study consists of two parts. The first part examines the determinants of CEO remuneration for listed companies in the Netherlands using recently available data. Secondly this research examines the balance between fixed and variable remuneration using the market value of the firm, stock returns, valuation ratio and the market value to total pay ratio to find an optimal mix for listed firms in the Netherlands.

The remainder of this chapter is organized as follows. The first paragraph will describe the hypotheses formulated based on prior empirical research. The second paragraph describes the collection of the data, as well as the relevance and scope of the dataset. Paragraph three explains the models and methodology. The last paragraph will present the implications of the data.

8.1 Hypotheses

To answer the main question this study first examines the determinants of pay of the Chief Executive Officer (CEO). Hypotheses are developed based on prior empirical research. It appears that CEO remuneration is highly dependent on the size of the company while CEO's should be rewarded on the performance they deliver. On the other hand executives should also be held accountable for bad performances. According to the agency theory remuneration is used to attract, retain, motivate and reward senior executives. In this light CEO performance should be associated with shareholder returns.

The first hypothesis concerns firm performance which is measured by the variables stock return and valuation ratio:

***Hypothesis 1:** Executive rewards will be positively related to firm performance.*

All hypotheses are based on total executive remuneration. However, various components of executive rewards are taken into account, both fixed rewards as well as variable rewards (consisting of the sum of bonus and stock options).

The second hypothesis concerns the size of the company:

Hypothesis 2: *Executive rewards are positively related to the size of the company.*

The size of the company is measured by the variable total assets of the firm.

The third hypothesis is related to the market value of the firm and is based on literature discussed earlier in this study:

Hypothesis 3: *Executive rewards are positively related to the market value of the firm.*

The formulation of this hypothesis is consistent with agency theory, since market value is determined by multiplying the price of the shares with the number of shares outstanding. According to the theory executives should get higher payments for generating more shareholder value.

The fourth hypothesis is related to the extent of leverage of the firms in the dataset:

Hypothesis 4: *Executive rewards are negatively related to firms' leverage.*

The reason for this expectation is that the leverage ratio²³ is a measure of control. This is consistent with agency theory which predicts that a higher leverage ratio leads to an increase in monitoring by suppliers of debt, and therefore, to a decrease in executive compensation (Duffhues & Kabir, 2008). Hypothesis four is also consistent to the view of Cools who states that tighter control leads to more transparency and therefore is negatively related to variable rewards. However the leverage ratio is also a measure of company risk. A higher leverage ratio means higher risk of the company which will lead to higher compensation demands.

²³ The leverage ratio is measured by dividing total debt by total assets

The fifth hypothesis concerns company performance in relation to the overall performance of the market:

Hypothesis 5: *Company underperformance compared to average performance in the market is negatively related to executive compensation*

External factors influence performance and compensation. One of the external factors is benchmark performance, it is expected that compensation decreases when companies underperform compared to the average performance in the market.

For hypothesis six this research makes a distinction between value stocks and growth stocks:

Hypothesis 6: *Growth companies are negatively related to executive rewards*

Growth stocks are stocks which are classified as stocks with growth potential and value stocks are classified as stocks which are supposed to be undervalued. Growth stocks can be linked to short term performance while value stocks focus more on long term goals. The hypothesis is based on prior empirical research by Fama & French (2007) who recognize value stocks as those with low ratios of price to book value and find that value stocks have higher average returns than growth stocks.

Hypothesis 7: *Executives from family owned firms receive lower payments.*

Executives of family owned companies will receive lower rewards due to higher monitoring from large family shareholders. According to Mok et al. (1992) family ownership of publicly listed companies is surprisingly common in many of the world's stock markets.

The last hypothesis concerns the second part of this research and takes into account the optimal balance in CEO rewards defined in two different perspectives relative to the market value of the firm, firm performance and efficiency.

Hypothesis 8a: *The optimal percentage of fixed rewards relative to total pay lies between 40% and 60%*

Hypothesis 8b: *Variable payments should not exceed 100% of salary.*

Both hypotheses are tested by analyzing descriptive results on the variables market value, stock return, valuation ratio and market value to total payment for different balances in fixed and variable payments and for different balances of variable payments relative to fixed payments.

8.2 Data collection

The sample for CEO compensation data was derived from the database from the Dutch newspaper “De Volkskrant”, which has collected annual executive compensation data for the last 25 years for large and listed Dutch firms, completed with missing information from annual reports the total sample consists of 102 companies evaluated from 2004 to 2008. This sample contains some outliers, therefore the five companies with the highest market value are excluded from the sample. This means that a total sample of 97 companies is used comprised of 485 CEO observations for the whole research period. Because of limitations in data availability it occurs that the number of observations varies across different variables.

Total executive compensation consists of three parts, salary, bonus and stock options. This research excludes pension and severance pay since these amounts are not accountable to the performance delivered. Severance pay will be paid out when the executive leaves the company and is not accountable to a certain period. Pension is paid out when the executive retires and therefore has no influence on present executive behaviour. Since 2002 firms have to report executive rewards split by base salary, bonus, pension, severance pay and stock and option payments according to Dutch law. This study uses data from 2004 to 2008, since the data for these years are most reliable. The information for the years 2002 and 2003 turned out to be incomplete. Compensation data was less reliable before 2002 since many companies tried to hide their executive rewards. Stock and option payments are accounted to income when an executive actually collects cash since the actual value can differ a lot before cash is actually paid out²⁴.

Company characteristics, market value, total assets, stock price data and net assets were derived from Thomson DataStream database. Companies qualified for the sample when they were listed on the Amsterdam Stock Exchange (AEX), the mid cap index (AMX), the small

²⁴ To collect this information “de Volkskrant” used the database of the Dutch Authority of Financial Markets (AFM) since listed companies have to report stock ownership, including options and changes in ownership in this database.

cap index (AScX) or local listings in the period under consideration. Shareholder information is derived from the ThomsonOne.com database.

8.3 Models and Methodology

CEO remuneration is affected by many external influences, company specific details and individual CEO characteristics. In order to test the pay-performance relation this study uses widely adopted models supplemented with controlling variables and dummy variables for company characteristics. Former research presented results of regression analysis considering two levels of payments and changes in pay. Firth et al. (1999), Conyon and Peck (1998) and Izan et al. (1998) examined both, the pay of the highest paid director (CEO) as well as the average payments of the executive directors. This study focused exclusively on the components of CEO pay in relation to firm performance and the market value of the firm. The second part of the research focuses on the balance between fixed and variable rewards and the relation between bonus payments and salary.

8.3.1 Regression analysis of the reward-performance relationship

This section analyses the relation of the components of top executive pay with firm performance and specific firm characteristics. The regression models used as a base for the model adopted in this study are given below:

$$\text{Pay}_{it} = \alpha + \beta_1 \text{Perf}_{it} + \beta_2 \text{Size}_{it} + \beta_3 \text{Lev}_{it} + \lambda_j + \delta_t + \varepsilon_{it}. \quad (8.1)$$

$$\begin{aligned} \text{CEO (DIRPAY;BON;BON/DIRPAY)}^{25} = & \alpha + \beta_1 \text{SR} + \beta_2 \text{ROSE} + \beta_3 \text{VR} + \beta_4 \text{SIZE} \\ & + \beta_5 \text{GR} + \beta_6 \text{DIR} + \beta_7 \text{FAM} + \beta_8 \text{NONEX} + \beta_9 \text{INS} + \beta_{10} \text{SRDIR}^{26} \end{aligned} \quad (8.2)$$

The first model is used by Duffhues & Kabir (2008) and is adopted from the standard empirical literature on executive compensation. The second model is used by Firth et al. (1999) in order to analyse the determinants of top management pay in Hong Kong. A description of the variables of the model of Firth et al. (1999) is given in the appendix.

²⁵ Dependent variables are: CEO total pay (CEO), average executive pay (DIRPAY), average bonus per executive (BON), average bonus divided by average executive pay (BON/DIRPAY).

²⁶ Independent variables are: Stock return (SR), return on shareholders' equity (ROSE), valuation ratio (VR), total assets (SIZE), growth ratio (GR), directors' share ownership (DIR), dummy family firm (FAM), relative amount of non-executive directors (NONEX), share ownership of institutional shareholders (INS), DIR multiplied by SR (SRDIR).

In order to test hypothesis one through seven, this study uses variables from both equations represented above and extends the model with independent dummy variables that represent specific firm characteristics. The dummy variables included in the model measure whether the stock under- or over performed relative to market performance (MP_{it}), whether the stocks can be classified as growth or value stocks (GV_{it}) and whether the shares of the company are family owned (Fam_{it}).

$$\begin{aligned} \text{CEO (Fix}_{it}; \text{Var}_{it}) = & \alpha + \beta_1 \text{Perf}_{it} + \beta_2 \text{Size}_{it} + \beta_3 \text{Lev}_{it} + \beta_4 \text{MP}_{it} + \beta_5 \text{GV}_{it} + \\ & \beta_6 \text{FAM}_{it} + \lambda_j + \delta_t \end{aligned} \quad (8.3)$$

Intuitively CEO pay is related to performance and size measures previously adopted. Therefore this study includes lagged models that relate the components of CEO pay to performance and size from the previous year.

$$\begin{aligned} \text{CEO}_{it} (\text{Fix}_{it}; \text{Var}_{it}) = & \alpha + \beta_1 \text{Perf}_{it-1} + \beta_2 \text{Size}_{it-1} + \beta_3 \text{Lev}_{it} + \beta_4 \text{MP}_{it} + \beta_5 \text{GV}_{it} + \\ & \beta_6 \text{Fam}_{it} + \lambda_j + \delta_t \end{aligned} \quad (8.4)$$

To improve statistical fit adjustments for non-normality, natural logarithmic transformations are made to the absolute variables.

Dependent variables

The components of CEO compensation are the dependent variables. The variable CEO_{it} is the amount of total yearly payments to the highest paid director in company i in period t , the variable is calculated as the sum of base salary, annual bonus payments and stock and option cash payments. The dependent variable Fix_{it} is the amount of fixed payments and is given by the annual salary payments of the CEO. The dependent variable Var_{it} is the amount of yearly variable payments to the CEO and is calculated as the sum of bonus, stock and option annual cash payments.

Independent variables

The explanatory variables in the regression model for this study can be subdivided into three categories, company performance and size measures, dummy variables for company characteristics and control variables. The independent variable Perf_{it} stands for firm

performance and is measured in two ways. First, annual stock return to the fiscal year end (SR_{it}) defined as the natural logarithm of stock price at time t minus the natural logarithm of the stock price at time $t-1$. The second measure of firm performance is the valuation ratio (VR_{it}). It is the market capitalisation divided by the book value of net assets. The book value of net assets is computed by subtracting total liabilities from total net assets of the company (shareholders' equity).

Executives should be rewarded when their actions have led to the stock market valuing the company above the book value of net assets (Firth et al. 1999). Intuitively executives should be rewarded for realising a high valuation ratio since this implies that the firm is valued higher on the stock market than the actual book value of net assets. A higher valuation ratio therefore means that the shareholders are better off and indirectly the executives as well by receiving stock rewards. Size is measured by the log of total assets (TA_{it}) and by the market value of the firm (MV_{it}). The market value of the firm is calculated by multiplying the number of shares outstanding with the unadjusted share price in euro.

Three dummy variables are added to the model to analyse the effect of specific firm characteristics on CEO remuneration. The first dummy concerns market under- or over performance (MP_{it}). The dummy variable is taking the value one when stock performance was higher than the annual all share index on the Amsterdam stock exchange (AAX) and it takes the value of zero when the stock return was lower than the AAX.

The second dummy variable is classifying the firms into growth stocks or value stocks (GV_{it}). According to de Jong & Apilado (2009) stocks are ranked on the basis of each stock's book-to-market ratio (BE/ME). Furthermore, value (growth) stocks are defined as having a relatively low (high) market price in relation to some estimation of intrinsic value, such as price-to-book value, price-to-earnings, and price-to-cashflow (Yen et. al. 2004). As discussed earlier growth stocks are stocks that are recognized by the market to have growth potential and value stocks are stocks which are supposed to be undervalued. Growth stocks will take the value of one and value stocks will take the value of zero in the dummy variable. The classification of value or growth to a certain company stock is based on six underlying principles:

- book-to-market ratio (book value of equity / market value of equity): a low percentage demonstrates that the market is already recognizing growth potential. A

high percentage will indicate that the market expectations are stable or negative (underperformance) and therefore the stock is qualified as a value stock.

- Price / earnings ratio (P/E ratio): the firms' P/E ratio compared to the average P/E ratio of similar firms gives insight in the market expectations. The P/E ratio of value (growth) stocks will be lower (higher) than the P/E ratio of comparable firms in the market.
- Dividend payout rate: a firm with growth potential pays little to no dividend since it is expected that there are a lot of investment opportunities. Value stocks are expected to pay more dividends since they are relatively stable.
- Sales growth: this variable is calculated as the average annual sales growth over the five years before 2008. When the value exceeds the average value of the dataset this is indicated as a growth characteristic, a lower value than the dataset average is indicated as a value characteristic.
- Research and development expenses (R&D): high R&D expenses could be an indicator for a growth strategy of the company²⁷.
- Cash flow-to-price ratio (CF/P ratio): Wouters and Plantinga (2004) used this ratio in order to recognize value or growth stocks. When the CF/P ratio is low this shows that the prices of these stocks should exhibit stronger overconfidence effects. This means that a low CF/P ratio is recognized as a growth stock characteristic and a high CF/P ratio as a value stock characteristic.

The six characteristics described above are used to make a reliable distinction between value and growth stocks. When a stock has a majority of growth characteristics the stock is classified as a growth stock. The same holds for value stocks. Value stocks generate superior returns because investors slowly realize that earnings growth rates are higher than initially expected (Wouters & Plantinga, 2004).

The last dummy variable used is the dummy family firm (FAM_{it}). The value is one when at least 10% of the shares are family owned or owned by an individual investor²⁸.

Duffhues and Kabir (2008) used control variables in their analysis in order to control for confounding effects. This study adopts three of these control variables, First of all leverage

²⁷ Due to data limitation, R&D expenses are taken into account for the identification of value or growth stocks but don't take a prominent role in the matter.

²⁸ One exception was made on the allocation. Rood Testhouse is qualified as family firm, although individual investor Kok holds only 4.4% of the shares, he is the largest shareholder of the company.

(Lev_{it}), measured as the ratio of total debt to total assets. When the debt ratio is high this means that the company is facing higher risks. Therefore the CEO should earn a higher reward for the responsibility of this risk. However, a higher debt ratio also means a higher third party interest for managerial decision making and activities. Debt holders will closely monitor the CEO which will put limits to excessive rewards. Additional control variables are the dummies, industry (λ_j) and time (δ_t). The last two control variables are used to pick up common factors that are driven by industry- and economy wide effects (Duffhues & Kabir, 2008). There are four types of industries used for the dummy variable, Manufacturing; Information and Communication Technology; Transportation, Trade and Services and Financial Institutions.

8.3.2 Descriptive analysis of the optimal balance in executive rewards

This section will give a descriptive analysis of different distribution ranges for fixed and variable reward percentages. The dataset will be subdivided in ten ranges of 10 percent each. The performance measures used in the study are market value (MV_{it}), stock returns (SR_{it}), valuation ratio (VR_{it}) and the ratio market value to total CEO payments (MV_{it}/CEO_{it}).

Secondly, this study investigates the relative bonus payments to salary in order to find whether excessive bonuses can be justified based on company performance and whether there should be a bonus cap for CEO remuneration.

8.4 Research implications

Determining rewards based on stock prices can bring some implications. Stock prices can be influenced by external economic factors; executives often have little control over these non corporate financial performances (Firth et al. 1999). Empirical evidence also suggests that there exists a stronger relation between top management pay and company size than between top management pay and corporate performance. A lot of critics claim that there exists a potential risk that executives will focus on short term performance and try to manipulate targets in order to meet their goals.

9. Results

9.1 General characteristics of the sample

For the control variable industry the sample is subdivided in four different industries. Figure 9.1 represents the distribution of the sample by industry sector. From figure 9.1 it's observed that Financial Institutions is the smallest group of the sample with 75 observations over the years 2004 – 2008. Transportation, trade and services is the biggest group and consists of 170 observations. Manufacturing and ICT complete the sample with respectively 95 and 145 observations.

Figure 9.1 Sample distribution by industry

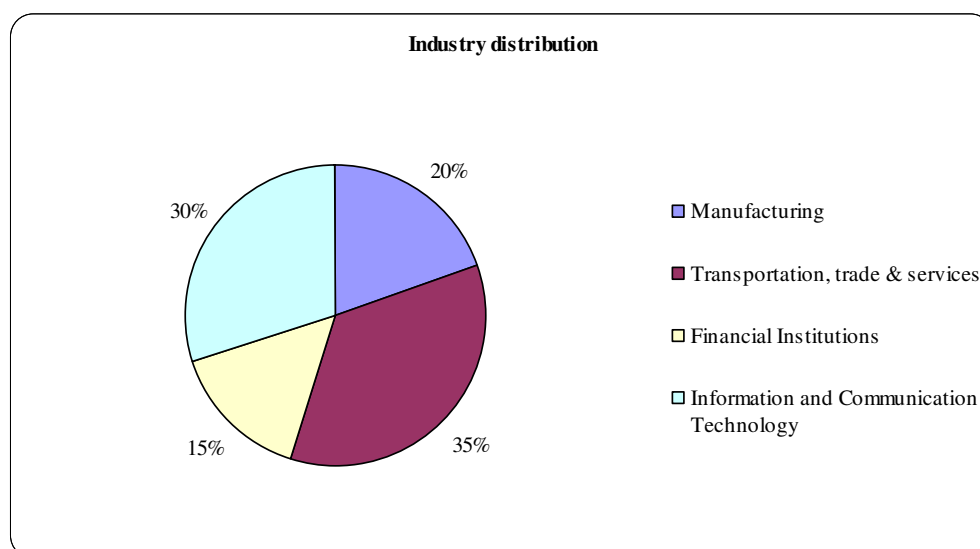


Table 9.1 presents descriptive statistics for the total sample of 485 firm years of listed firms in the Netherlands and the yearly statistics (97 firms) of executive compensation. In 2004 I observed an average total compensation of € 691.317 with a median of € 456.500. From 2004 to 2005 compensation remained almost the same with an increase of only 1,1% of total payment and 1,4% in variable payments, even modal income in the Netherlands increased faster, with 3.1% from € 29.000 to € 29.900²⁹. In 2006 and 2007 I observed a large increase in total CEO remuneration, with an increase in total payments of respectively 32,2% and 36,7%. This is caused by the excessive increase in variable payments during those years. Variable payments increased with 74,8% from 2005 to 2006. While in 2007 variable payments increased with 65%.

²⁹ Source: Central Bureau of Statistics in the Netherlands (CBS).

Tabel 9.1 Descriptive statistics CEO remuneration

	Mean	Median	Standard Deviation	N
Panel A: Total CEO Payments				
2004	691.317	456.500	783.236	84
2005	698.815	495.500	683.956	88
2006	923.671	572.063	1.190.029	94
2007	1.262.577	692.284	1.531.778	89
2008	925.093	513.235	1.169.835	93
2004-2008	903.559	533.059	1.133.905	448
Panel B: Fixed Salary Payments				
2004	418.158	323.450	293.757	84
2005	421.825	333.500	314.002	88
2006	436.478	355.500	313.358	94
2007	433.203	377.699	286.578	88
2008	420.270	395.000	229.097	93
2004-2008	426.134	360.000	287.523	447
Panel C: Variable Payments				
2004	271.565	107.000	577.174	84
2005	275.467	131.360	434.727	88
2006	481.523	178.637	958.233	94
2007	795.254	281.000	1.240.630	89
2008	485.655	117.726	993.146	92
2004-2008	464.818	146.000	911.763	447

The table shows summary statistics of CEO compensation for Dutch listed firms for the years 2004 through 2008. Panel A shows total payments to the highest paid director. Panel B shows the fixed salary payments to the CEO. Panel C shows variable payments consisting of bonus and stock options. All monetary amounts are expressed in euro.

This means that in two years time variable payments almost tripled the amount of 2005. In 2008 executive compensation somewhat recovered from the excessive increase in the two years before and fell back to almost the same amount of 2006 (€ 925.093). This meant a decrease of 26,7%. The fixed salary payments stayed rather constant with a small increase in 2006 and even a decrease in 2007.

The sample contains a few firms that pay relatively high rewards to their CEO this explains the low value of the median for all three components of CEO remuneration. Throughout the five years I find an average total payment for CEO's of € 903.559,- using data from 448 company years.

Tabel 9.2 Descriptive statistics firm performance and firm characteristics

	Mean	Median	Standard Deviation	N
Panel A: Stock Returns				
2004	0,2479	0,1550	0,3884	88
2005	0,3534	0,2601	0,4044	89
2006	0,2773	0,2496	0,3037	90
2007	-0,0240	-0,0609	0,2934	94
2008	-0,5016	-0,5004	0,2073	96
2004-2008	0,0609	0,0565	0,4535	457
Panel B: Valuation Ratio				
2004	2,0891	1,7077	1,3265	89
2005	3,0154	2,3238	3,8467	90
2006	3,0171	2,4234	1,8794	92
2007	2,5773	2,1387	1,7493	96
2008	1,7620	1,0460	2,9060	94
2004-2008	2,4901	1,9387	2,5472	461
Panel C: Market Value (in thousands)				
2004	1.553.623	237.210	3.434.436	89
2005	1.956.559	327.700	4.108.446	90
2006	2.301.109	488.520	4.613.854	94
2007	2.272.055	501.955	4.667.806	96
2008	1.200.931	184.970	2.745.815	96
2004-2008	1.858.223	324.320	3.991.272	465
Panel D: Total assets (in thousands)				
2004	5.029.012	360.925	25.881.816	94
2005	5.976.589	385.867	29.751.926	97
2006	6.470.745	494.300	32.888.961	97
2007	6.784.744	607.242	33.797.793	97
2008	7.227.305	663.100	32.622.352	97
2004-2008	6.305.575	491.433	31.032.551	482
Panel E: Leverage ratio				
2004	0,2157	0,2092	0,1789	94
2005	0,2541	0,2365	0,2868	97
2006	0,2460	0,2308	0,2158	97
2007	0,2603	0,2231	0,2873	97
2008	0,2900	0,2590	0,3076	95
2004-2008	0,2533	0,2301	0,2602	480

The table shows descriptive statistics of company characteristics and firm performance for a total sample of 97 Dutch listed firms for the years 2004 through 2008. Panel A and B show performance statistics. Panel C, D and E show specific firm characteristics of the sample. All monetary amounts are expressed in euro.

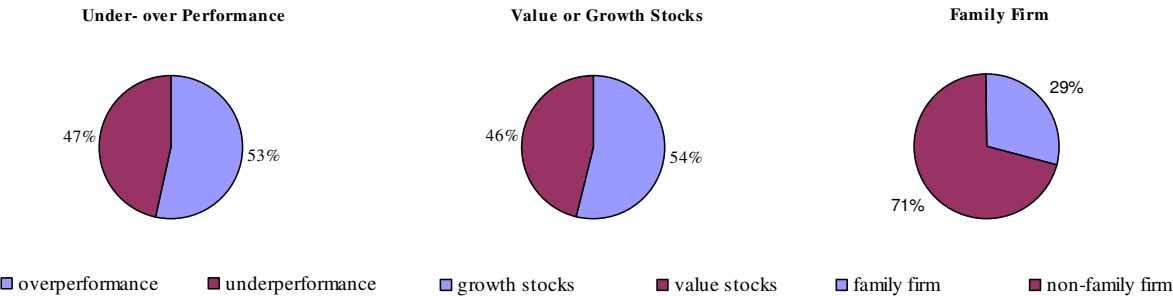
Table 9.2 shows descriptive statistics on company performance, size and leverage for the total dataset over the five year period and for each year separately. Each panel provides information on single variables which are used in the regression model. The most remarkable result is the negative stock return for 2007. While CEO rewards reached the highest level the stock market collapsed. In 2008 the loss on the stock market grew further and it can be observed that companies reacted by decreasing CEO rewards.

From 2004 through 2007 the valuation ratio showed rather large values, this means that the stock market is valuing the firms much higher than their net book values. An average valuation ratio of 2,7 for these four years is extremely high and means that firms are valued on average almost three times higher than their net book value. In 2008 the valuation ratio declined with 31,6% to an average of 1,76. This means that companies are still valued 76% higher than net book values of assets.

The sample firms have an average market value of € 1,86 billion over the period 2004 through 2008. Noticeable is the big drop in 2008, this is caused by the major decrease in share prices during the credit crunch. Furthermore, total assets show a rather stable development with a peak in 2005. For both measures it holds that a few multinationals drive the mean values up. This can be concluded from the low values of the median for market value and total assets (median = € 324 million and € 491 million respectively). Leverage shows small fluctuations and that leads to an average debt ratio over the whole sample of 25,3% (median = 23%).

Finally figure 9.2 shows the distribution of the dummy variables.

figure 9.2 Dummy variables distribution



9.2 Regression results

Table 9.3 represents the results for the regression model used in this study. Panel A, B and C represent the regression results for the components of CEO pay for the contemporaneous model. This means that CEO pay is analysed based on current years' performance and size (variables MV_{it} , SR_{it} , VR_{it} and TA_{it}). While panel D, E and F show the results for the lagged model of CEO remuneration. The lagged model compares current CEO remuneration with prior year performance and size.

Table 9.3 Regression results of the determinants of compensation

Independent variable		Dependent variable					
		Contemporaneous regression model			Lagged regression model		
		Panel A	Panel B	Panel C	Panel D	Panel E	Panel F
Lagged		CEO (1)	Fix (2)	Var (3)	CEO (4)	Fix (5)	Var (6)
(Intercept)		8,742*** (52,476)	9,285*** (16,131)	-6,108*** (-4,392)	8,792*** (50,661)	10,054*** (17,839)	-5,689*** (-4,138)
MV	MVt-1	0,256*** (8,588)	0,053 (,518)	1,004*** (4,03)	0,234*** (7,163)	0,127 (1,194)	0,574** (2,219)
SR	SRt-1	0,256*** (2,804)	0,574* (1,82)	1,901** (2,492)	0,011 (0,104)	-0,276 (-0,793)	2,620*** (3,091)
VR	VRt-1	0,027*** (2,961)	0,030 (0,956)	-0,106 (-1,41)	0,036*** (3,221)	0,005 (0,129)	0,131 (1,463)
TA	TAt-1	0,124*** (4,332)	0,184* (1,854)	0,495** (2,074)	0,136*** (4,306)	0,110 (1,07)	0,819*** (3,288)
Lev		-0,248*** (-2,757)	0,143 (0,458)	-1,794** (-2,398)	-0,248** (-2,541)	-0,006 (-0,017)	-1,407* (-1,825)
MP		-0,044 (-0,732)	-0,085 (-0,409)	0,019 (0,037)	-0,023 (-0,349)	-0,104 (-0,484)	-1,106** (-2,118)
GV		-0,123*** (-2,77)	-0,427*** (-2,776)	-0,765** (-2,064)	-0,116** (-2,378)	-0,419*** (-2,642)	-0,696* (-1,796)
Fam		-0,088* (-1,841)	-0,050 (-0,303)	-1,101*** (-2,781)	-0,093* (-1,788)	-0,051224 (-0,303)	-1,213*** (-2,946)
Adjusted R^2		0,783	0,122	0,475	0,751	0,111	0,440
F -statistic		99,886	4,785	25,667	82,588	4,377	22,244
No. of obs.		410	409	409	406	405	405

The table presents ordinary least square regression results for both contemporaneous firm performance and characteristics as well as lagged firm performance and characteristics. The dependent variables are total CEO payment, fixed executive payments (consisting of executive annual salary) and variable executive payments (consisting of stock, option and bonus cash payments). Firm performance is measured by stock returns (SR) and the valuation ratio (VR). Firm Size is measured by market value (MV) and total assets (TA). Dummy variables are market under- or overperformance (MP), growth or value stocks (GV) and family firm (Fam). Total debt to total assets is measured by leverage (Lev) and is included as control variable. For the sake of brevity are the dummy variables industry (λ) and time (δ) not included in the table. The t-statistics are reported in parentheses. The significance levels 1%, 5% and 10% are indicated by ***, ** and *, respectively. Natural logarithmic values are used for all absolute variables.

Panel A and D show results of total CEO remuneration for the sample, panel B and E show the results on fixed payments and panel C and F show results on the sum of bonuses, stock and option cash payments. The model for CEO pay has a good fit for equation 1 at panel A. Adjusted R^2 is 0,783 which means that about 78% of CEO reward variability is explained by the model.

The results show that total pay is significantly positively related to firm performance measures and firm size variables. This implies that there is evidence of a positive pay performance relationship which is in line with agency theory. Furthermore there is evidence of a negative significant relation between total CEO pay, leverage and the dummy variables value or growth (GV_{it}) and family (Fam_{it}). The negative significant relation with growth stocks is consistent with the hypothesis that value stocks have higher average returns than growth stocks and therefore CEO's receive higher rewards. CEO's at growth companies are expected to take higher risks and realizes faster growth. However, they receive lower rewards. The relationship with family firms can be explained by the fact that companies which are family owned will be closer monitored and therefore the executive earns a lower reward.

The negative relation with leverage shows that a higher amount of debt leads to lower CEO remuneration, this is consistent with agency theory which states that lower CEO remuneration is caused by increased monitoring. In column (2) the regression results on fixed salary payments are presented. The model shows a low adjusted R^2 and F-statistic and therefore has a rather poor explanatory power. This is consistent with the fact that fixed rewards cannot easily be adjusted. A significant positive relationship was found on the variables stock return and total assets. A significant negative relation was found for growth companies. This should mean that an increase in stock return and total assets will increase fixed executive rewards and that executives of value firms receive higher fixed payments than executives from growth companies.

Panel C shows results for variable remuneration and the model explains about 48% of variability in variable rewards. Some of the results are consistent to the results of panel A, like the significant positive relation to company size and stock returns. However, no significant relation was found for the valuation ratio.

In panel D, E and F results are given for the lagged regression model. In this model the relation between the components of executive pay and last year firm performance and size measures are analyzed. The lagged model uses the same variables as the contemporaneous model, but with prior year data for the variables market value, stock return, valuation ratio and total assets.

The results of the model remain rather constant to the contemporaneous model. Remarkable is the result on stock returns. In the contemporaneous model there was a significant positive relation between stock return and total CEO pay at the 1% level while in the lagged model no significant relation was found between these variables. However, for variable remuneration there exists a significant positive relation at the 1% level with stock returns consistent to the results of panel C.

Another difference is the positive relation to the valuation ratio while in the contemporaneous model this relation was negative. The relation was, however, not significant in both models. Against expectations, for market over-performance a negative significant relation was found for variable payments while in all other columns no significant relation is shown. This means that when a company outperforms the market or when performance of rivalry firms decreases executive bonus and stock option payments decrease. The adjusted R^2 and F-statistic are somewhat smaller for the lagged regression model than for the contemporaneous model. However, the lagged model still shows a high statistical fit which implies that last year's performance and size does matter with respect to CEO remuneration.

Most prior research on executive remuneration show rather mixed results and fails to detect a positive pay-performance relation (Duffhues & Kabir, 2008). As presented by the regression results above, this study does find a significant positive relation between executive pay and performance. These findings are broadly in line with the results represented in the study of Firth, Tam and Tang (1999). Another similarity to Firth et al. (1999) is the negative relation for the dummy variable family firm with respect to executive remuneration.

The positive significant relationship between the size of the company and remuneration can be explained by the fact that CEO's of larger companies have higher responsibilities and therefore these companies look for more experienced and higher paid executives. This result is consistent with many studies using data from different types of firms and geographic locations. As discussed before many factors will influence CEO remuneration and higher rewards are not only used to improve corporate performance. Other justifications for high rewards are attracting and retaining talented executives and establishing a long term binding relationship of managers with the firm (Duffhues & Kabir, 2008).

The results of this study should not be interpreted as a reason for giving carte blanche to link CEO remuneration to firm performance. According to Pennings (1993) Dutch executives are motivated by challenge, pride, freedom and resources. As a consequence linking pay to performance will not always lead to the desirable CEO performance but other measures drive executives' motivation. The positive pay performance relation can also be a threat to company performance. When CEO's expect to receive higher payments when company performance is high, they can try to manipulate results and focus on short term targets instead of long term goals.

When companies are in distress and have to cut costs it is hard to justify excess remuneration. Furthermore, it is not always due to the CEO that the company is performing poor, an example is the recent credit crunch. As discussed before companies have to attract talented and good executives in order to try to improve company performance. In order to attract and retain these executives, higher rewards might be a good incentive even when performances are low.

9.3 Results on the optimal mix of CEO compensation

Table 9.4 represents the descriptive results for the distribution of fixed and variable payments to executives. The percentages in the first column represent fixed payments consisting of CEO salary. Each interval has a range of 10%. This means that the statistics for the 0% to 10% fixed payment interval are the same as for the 90% to 100% variable payments interval.

The results show that the interval 10%-20% generates a high market value. This means that the composition of executive compensation for large companies of the sample mainly consists of variable payments and only for a small part of salary. The results show that when fixed (variable) payments decrease (increase) market value will increase. There are two exceptions, first, the 40%-50% interval shows a lower average market value than the 50%-60% interval. From the low median it follows that the high value of the 50%-60% interval is probably caused by several outliers. The second exception holds for the 0%-10% interval, the interval consists of six companies which paid no salary to their CEO in a particular year. No conclusions can be drawn since this is an exceptional situation.

Table 9.4 Descriptive statistics fixed and variable distribution

Panel A: Market value (in thousands)					Panel B: Stock return				
Range	Mean	Median	Std. Dev.	N	Range	Mean	Median	Std. Dev.	N
0% - 10%	677690	529745	621157	6	0% - 10%	-0,2850	-0,2682	0,4457	6
10% - 20%	6777169	3760555	7365737	12	10% - 20%	0,0954	0,0621	0,2862	12
20% - 30%	5385887	1363605	7101995	26	20% - 30%	0,1029	0,0561	0,4009	26
30% - 40%	4647556	2030230	6214119	32	30% - 40%	0,0863	0,0902	0,4201	32
40% - 50%	2762489	779420	4281815	33	40% - 50%	0,1263	0,1235	0,5805	33
50% - 60%	3503122	762500	5077737	51	50% - 60%	0,1623	0,1349	0,4333	51
60% - 70%	1400001	488880	2532762	61	60% - 70%	0,1604	0,1135	0,3925	60
70% - 80%	1174389	190970	2715329	71	70% - 80%	0,1148	0,0993	0,5001	71
80% - 90%	474654	207040	794906	45	80% - 90%	-0,0601	-0,0157	0,4671	45
90% - 100%	251110	45500	463372	103	90% - 100%	-0,0280	-0,0106	0,4353	103

Panel C: Valuation ratio					Panel D: Market value to total pay (in thousands)				
Range	Mean	Median	Std. Dev.	N	Range	Mean	Median	Std. Dev.	N
0% - 10%	1,4697	1,3518	0,9411	6	0% - 10%	0,7904	0,6666	0,4217	6
10% - 20%	4,1661	4,4283	2,1434	12	10% - 20%	1,1334	0,8137	1,0733	12
20% - 30%	3,3604	2,7293	2,2210	26	20% - 30%	1,9230	0,7415	2,4513	26
30% - 40%	3,5739	3,0498	2,2607	32	30% - 40%	2,3920	1,4774	2,3146	32
40% - 50%	2,5570	2,0999	1,4366	33	40% - 50%	1,7977	1,0069	2,0561	33
50% - 60%	2,8710	2,2555	1,9335	51	50% - 60%	2,4328	0,9625	3,3001	51
60% - 70%	2,2349	2,2196	0,9696	60	60% - 70%	1,6583	0,7694	2,4432	61
70% - 80%	1,7520	1,4588	1,1546	71	70% - 80%	1,4366	0,4483	2,5123	71
80% - 90%	1,9847	1,3039	2,1802	45	80% - 90%	0,9018	0,5010	1,2267	45
90% - 100%	2,6378	1,6413	4,2293	102	90% - 100%	0,6143	0,1663	1,0924	103

The range value of remuneration distribution is given in fixed values. This means that a range of 0% to 10% means that 0% to 10% equal fixed payments and on the opposite consists of 90% to 100% variable remuneration.

The results for stock return show that the highest return is generated by companies in the 50%-60% interval. This means that companies which have a remuneration policy with a good balance in fixed and variable payments realize the highest stock returns. Noticeably is that the largest group in the sample, the 90%-100% interval, realizes a negative stock return on average. The statistics for the valuation ratio show rather the same trend as the statistics for market value. This is explained by the fact that market value is the numerator of the valuation ratio.

The next variable is market value to total executive remuneration. This variable represents the effectiveness of CEO payments, it shows how much market value is generated by each euro paid to the CEO. The highest value can be found in the interval 50%-60%. This result shows that in this interval companies generate the highest market value per euro paid to the executive. The result is consistent with the result from stock returns. In both measures the turning point lies around 50% of fixed payments. This means that when companies increase the relative amount of fixed payments both measures will increase until it reaches 50%. A further increase will lead to a decrease in both variables. The observations for the market

value of the firm are consistent with the positive significant relation between variable payments and market value from the regression model.

Table 9.5 provides the descriptive results for different intervals for the proportion of variable payments relative to total salary payments. For this test, intervals of 20% are used up to maximum of 120%. In this way the analysis gives a good overview of the results for each interval and conclusions can be drawn on the level of variable payments relative to total salary.

Tabel 9.5 Descriptive statistics relative variable payment to salary distribution

Panel A: Market value (in thousands)					Panel B: Stock return				
Range	Mean	Median	Std. Dev.	N	Range	Mean	Median	Std. Dev.	N
0% - 20%	320275	73800	610582	129	0% - 20%	-0,0447	-0,0106	0,4478	128
20% - 40%	818097	183710	2173950	78	20% - 40%	0,0965	0,0748	0,5063	77
40% - 60%	1526137	475890	2785325	67	40% - 60%	0,1659	0,1211	0,3847	65
60% - 80%	2358242	616560	3728049	34	60% - 80%	0,1931	0,1439	0,4286	34
80% - 100%	4397494	878650	5872222	25	80% - 100%	0,0280	0,0463	0,4159	25
100% - 120%	3447941	629980	5303990	19	100% - 120%	0,1809	0,2171	0,6759	18
120% =>	4711097	1401845	6299083	84	120% =>	0,0877	0,0565	0,3950	83
Panel C: Valuation ratio					Panel D: Market value to total pay (in thousands)				
Range	Mean	Median	Std. Dev.	N	Range	Mean	Median	Std. Dev.	N
0% - 20%	2,4757	1,4684	3,9253	128	0% - 20%	0,6872	0,2824	1,1410	151
20% - 40%	1,8172	1,4652	1,3681	78	20% - 40%	1,1554	0,4451	2,0941	100
40% - 60%	2,2260	2,0878	1,0773	66	40% - 60%	1,7653	0,7688	2,6436	51
60% - 80%	2,7533	2,2642	1,9235	34	60% - 80%	2,1414	0,9360	2,8672	31
80% - 100%	2,6727	1,9722	1,7836	25	80% - 100%	2,5424	1,0719	3,5291	20
100% - 120%	2,6410	2,0999	1,6302	19	100% - 120%	1,9732	0,8287	2,4965	13
120% =>	3,4040	2,9585	2,1143	84	120% =>	1,9283	0,9679	2,1029	11

the relative variable payment to salary is calculated by dividing the sum of bonus, stock and option cash payments by total salary payment. The interval of 25% is chosen to create a reasonable number of observations for each interval to compare with each other

Hypothesis 8b states that variable payments should not exceed 100% of salary therefore the interval of 100%-120% is used to analyse the results of variable payments just above 100% and the interval 120% and above to analyse the results when variable payments largely exceed 100% of salary. The results are similar to the results of the descriptive analysis for the fixed and variable distribution since a fixed-variable payment balance of 50:50 corresponds to a variable payment of 100% relative to salary. It is also interesting to combine these results with the results of table 9.4. By means of statistics from different distributions in relative variable payments we can determine an optimal proportion for this sample.

The results show that larger firms pay their executives larger relative variable rewards. The results in panel B show that stock return has the highest value in the interval 60%-80%. When

relative payments exceed 100% of salary by a small amount this leads to higher returns however an excessive amount of variable payments above 120% decreases returns. All other results are consistent to the results of the fixed-variable analysis. The results show that when relative variable payments exceed 100% by a small amount it will still be justified. Exceeding 100% by an excessive amount leads to a decrease in firm performances and efficiency.

Conclusions

This study contributes to the existing literature on executive pay since focus is on the differences between fixed and variable payments in order to find an optimal balance between the two components of CEO remuneration. Research data is obtained from publicly available information in the Netherlands over the period 2004-2008.

According to (Duffhues & Kabir, 2008) there is limited functioning of many corporate governance mechanisms in the Netherlands. Instigated by this assumption the challenge is to find a fair balance of executive payments which is accepted by all stakeholders in the company. A positive pay-performance relationship will give managers incentives to increase firm value which will limit the principal-agent problem between executives and shareholders. Prior empirical research failed to find a significant pay-performance relationship in most other countries.

Despite the lack of a significant pay-performance relation in several prior empirical researches this study finds a significant positive relation between total executive rewards and corporate performance. The findings are consistent with Jensen and Murphy (1990) who predict that total executive rewards should depend on firm performance. However, the lack of a significant relation between fixed rewards and performance indicate that the significant relation for total CEO rewards is mainly caused by variable remuneration. The valuation ratio has a negative relation with variable pay what goes against theoretical arguments and intuition. Consistent with total pay the relation between variable rewards and stock returns is positive and significant.

No significant relation was found between fixed payments and the size of the firm. Market value and total assets are, on the other hand, highly significant clarifications of total executive pay and variable payments. This means that regardless of performance, total executive pay will be higher for larger companies.

The control variable leverage is found to be a statistically significant determinant of total and variable CEO rewards. The negative relation shows that a higher debt ratio leads to lower payments. In other words, the level of executive remuneration in relation to the debt ratio is

more influenced by mitigating monitoring activities than by increased responsibilities due to a higher risk.

No support was found that companies who outperform the market pay higher rewards.

Executives of companies with value stocks are receiving higher payments than executives from growth stock companies, this can be explained by the fact that companies with value stocks are expected to have a more long term view and growth companies have a short term focus. Therefore, the type of company will affect CEO strategic actions. There exists a significant negative relation with all dependent variables for both the contemporaneous model as well as for the lagged model. From this result we can assume that it pays off to shift focus to long term performance. An implication of the model is that the classification of growth and value stocks is based on yearly company characteristics and not on value change over the years. As an addition to this study, future research could use a sample with an extended timeframe and include stock changes from value to growth or vice versa over the years.

Furthermore, the results of the model are consistent to the result of Firth et al. (1999), family owned companies seem to engage in stricter monitoring which lowers executive rewards.

The results of the regression model strengthen the conclusion for hypothesis eight. Based on market value the results show that higher relative variable payments leads to higher market values up to 90% of the control group. In addition, the observations point out that the optimal relative amount of fixed payments lies between 50% and 60%. Therefore the preferred proportion of variable rewards relative to fixed rewards is an almost equal balance, which means that a variable payment about 100% or slightly above should be preferred by the company.

The results support the method suggested by Bureau Baarda. Their remuneration model advises to put a cap of 100% on variable payments in order to control excessive bonuses. According to the conclusions of this study a cap for variable payments at 120% is likely to provide optimal performances.

The results in this study give an indication of the optimal balance between fixed and variable rewards based on actual observations for listed firms in the Netherlands. However, in practice

an optimal balance is highly firm dependent. Executive remuneration is affected by many external and internal factors. Identifying all these factors is a presumably impossible task. Future research is necessary to identify other determinants, such as the social- and demographic situation of executives.

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Appendix

Table 1 Distribution of Pay Performance Sensitivity,
Jensen-Murphy Sample of 430 Firms

Value of b_1	Percentage Sample
$b_1 \leq 0$	2.38
$0 < b_1 \leq 0.001$	20.00
$0.001 < b_1 \leq 0.002$	15.00
$0.002 < b_1 \leq 0.003$	9.52
$0.003 < b_1 \leq 0.004$	9.52
$0.004 < b_1 \leq 0.005$	5.48
$0.005 < b_1 \leq 0.006$	4.52
$0.006 < b_1 \leq 0.007$	5.00
$0.007 < b_1 \leq 0.008$	3.57
$0.008 < b_1 \leq 0.009$	1.67
$0.009 < b_1 \leq 0.01$	2.14
$0.01 < b_1 \leq 0.05$	15.48
$0.05 < b_1 \leq 0.1$	3.33
$0.1 < b_1 \leq 0.2$	1.43
$0.2 < b_1$	0.95
Mean	0.0130
Standard deviation	0.0381
Median	0.00381
Minimum value	-0.0074
Maximum value	0.447

Note – Sample is that of Jensen and Murphy (1990b).
The variable b_1 is Jensen and Murphy's total incentives
variable; b_1 = pay performance sensitivity.

Table 2 Estimated Pay-Performance Sensitivity.

Total Effects (Over Two Years) on CEO Compensation-Related Wealth Corresponding to Each
\$1,000 Change in Shareholder Wealth for CEO's in *Forbes* Sample from 1974-1986, by Firm Size^a

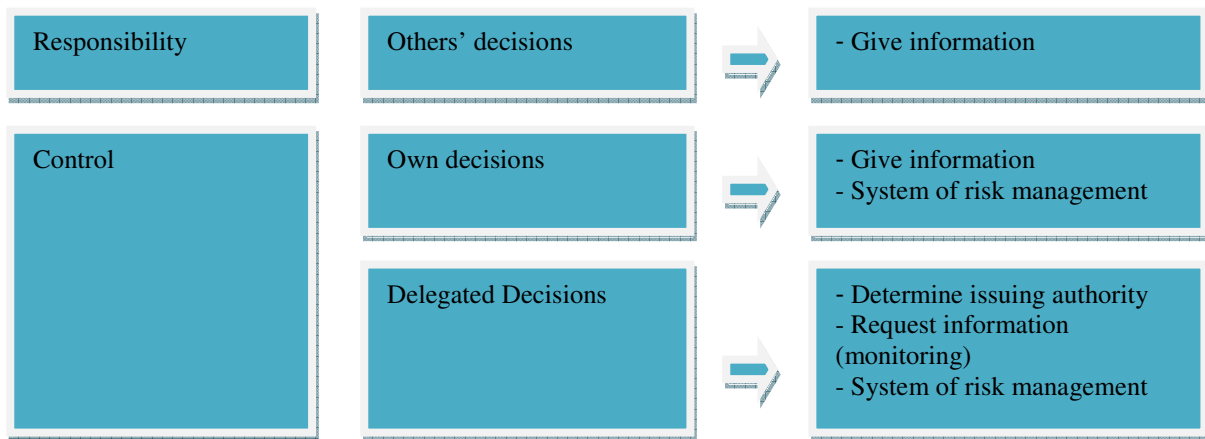
	Predicted CEO-Wealth Change per \$1,000 Change in Shareholder Wealth		
	All Firms	Large Firms	Small Firms
1. Change in This Year's and Next Year's Salary & Bonus	2.2¢	2.0¢	4.1¢
2. Total Compensation + Present Value of the change in Salary & Bonus	30¢	25¢	75¢
3. Change in the Value of Stock Options	15¢	15¢	15¢
4. Change in Direct Pay-Related Wealth (row 2 + row 3) ^b	45¢	40¢	90¢
5. Change in wealth due to dismissal from poor performance ^f	30¢	5¢	225¢
6. Change in Total Pay-Related Wealth (row 4 + row 5)	75¢	45¢	315¢
7. Change in Wealth Related to Stock Ownership for CEO with median Stockholdings ^g	\$2.50	\$1.40	\$4.90
8. Change in All Pay- and Stock-Related Wealth ^h	\$3.25	\$1.85	\$8.05

Source: "Jensen, M.C. & Murphy, K.J. (1990). Performance Pay and Top-Management Incentives."

^a Estimates rounded to the nearest nickel (except for row 1). Large firms have market value in a given year above the *Forbes* sample median for that year, while small firms have market value below the median. Details of the estimates by firm size are not provided in the text but are available upon request.

^b The direct estimate from the 73 manufacturing-firm sample is only 31¢; we've reported the larger estimate as an upper bound.

Figure 1



Source: "Controle is goed, vertrouwen nog beter"; Kees Cools

Figure 2 Trust motivates employees and improves performance

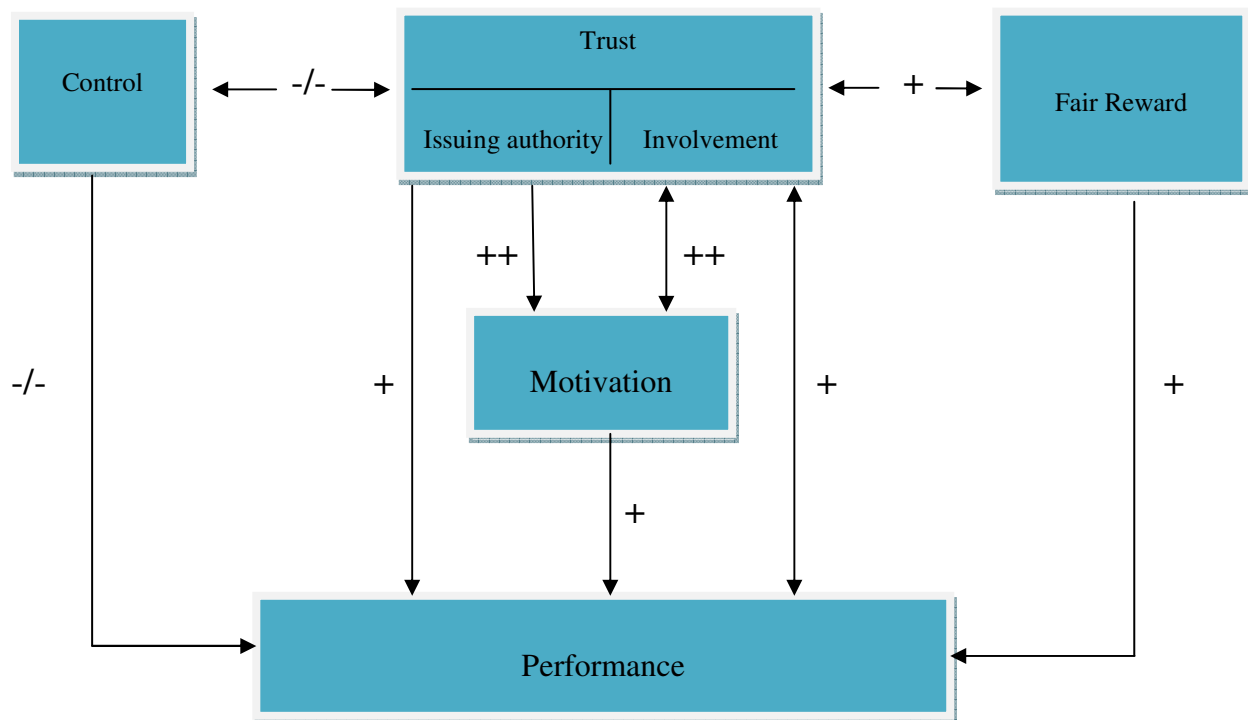


Figure 3 Model Baarda for modern remuneration.

Role	Issues	Nature of the problem
Strategist	Focus	Abstract
Leader	Integrate	
Generalist	Change	
Professional	Renovate	Concrete
Specialist	Optimize	
All-rounder	Regulate	
Basic employee	Support	
Assistant	Assist/perform	

Source: Bureau Baarda BV, brochure rolemodel

Table 3 Distribution of CEO Option Grants for 1,000 Companies in Fiscal 1992^a

Type of Option Grant	Number of Companies ^b	Number of Grants
CEO received <i>no</i> options in fiscal 1992	373	853
CEO received options in fiscal 1992	627	
<i>A. Type of Option</i>		
Replacement Options ^c	5	5
Reload Options ^d	26	120
Regular Option Grants	618	728
<i>B. Exercise Prices (Regular Grants)</i>		
Exercise price is Fair Market Value (FMV)	601	692
“Discount” (Exercise Price < FMV)	21	22
“Premium” (Exercise Price > FMV)	6	11
Exercise Price increases over time	2	2
Exercise Price indexed to market or peers	1	1
<i>C. Term of Option (Regular Grants)</i>		
Term < 5 years	14	14
Term = 5 years	36	41
5 years < Term < 10 years	36	41
Term = 10 years	528	602
Term > 10 years	23	27
Term depends on Performance	2	2
<i>D. Dividend Protection (Regular Grants)</i>		
Yes	7	8
No	611	720

a Data extracted from company proxy statements (see Murphy, 1993, 1995). Fiscal 1992 include sample firms with fiscal closings from October 1992 through June 1993.

b Totals do not add to 1,000 because some firms grant options in multiple categories.

c Replacement options are previously granted options that are reissued at lower exercise prices following large declines in the company’s stock price.

d Reload options are new options granted to replace shares used to finance exercise of existing options.

Source: Table 5 from Executive compensation by Murphy (1998)

Table 4 Option grant sensitivities

	Option grant					
	1	2	3	4	5	6
FIN94 ^{ANN}	0.29 (0.19)	0.53* (0.29)				
FIN94 ^{ANN}		[0.22 (0.13)	0.36** (0.14)		
FIN99					0.37** (0.18)	0.26 (0.20)
Year dummies	yes	yes	yes	yes	yes	yes
Individual FE, firm specific?	yes	yes	yes	yes	yes	yes
Sector trend	no	yes	no	yes	no	yes
Observations	8424	8424	7456	7456	19500	19500
R-squared	0.0082	0.0086	0.00812	0.0083	0.0074	0.0075

significant at 10%; ** significant at 5%; *** significant at 1%

Columns one and two correspond to the 1994^{ANN} experiment. Columns three and four to the 1994^{PASS} experiment and columns five and six to the 1999 experiment. The dependent variable "Opt Grant" is the dollar sensitivity of the value of all the option grants received by the executive in a given year per \$1000 increase of shareholders' value.

FIN94^{ANN}, FIN94^{PASS} and FIN99 capture the increase in the sensitivity of stock option grants following each experiment. FIN94 takes value 1 if the individual is in the Banking sector after 1994, 0 otherwise. FIN94b takes value 1 if the individual is in the banking sector after the Riegle-Neal bill is passed in the state where the bank is incorporated and zero otherwise. FIN99 takes value 1 if the individual is in the financial services sector after 1999, 0 otherwise. Treated99 takes value 1 for executives in the financial services sector, 0 otherwise. All regressions contain firm-specific individual effects and, therefore, account for sector, firm and individual permanent unobserved heterogeneity. They also include year dummies, CEO-tenure interaction dummies, dummies that account for executives changing firm and position dummies. Standard errors are clustered at the four-digit SIC level. See Notes to Table 1 for a definition of all other variables and exact samples.

Source: www.vicentecunat.com Table 6 from executive compensation and competition in the banking and financial sectors by Cuñat and Guadelupe (2008).

Definitions of variables from model 8.2

BON: log of the average bonus paid to the directors. The total bonus payments are divided by the average executive director's total pay.

BON/DIRPAY: the average executive director's bonus divided by the average executive director's total pay.

DIR: proportionate share ownership of directors. It is the number of shares owned by directors divided by the number of shares outstanding.

DIRPAY: log of the average pay of the executive directors. It is the total of the directors' pay excluding directors' fees divided by the number of executive directors. Directors fees are paid to all directors (executive and non-executive) and they are very small when compared to the other components of pay.

ROSE: return on shareholders' equity. It is net profit divided by average stockholders' equity.

GR: annual compound growth in sales measured over three years.

NONEX: non-executive directors of the firm divided by total number of directors.

INS: percentage share ownership held by institutional shareholders.

SRDIR: interaction term formed by multiplying DIR and SR.