

# **CEO Compensation: Dividends and Pay- Performance sensitivity**

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## 1. Introduction

It seems as if it has always been the case that some discontent has existed about the amount of compensation of CEO's and executives. Not only in the United States but also in the Netherlands there have been several cases of public outcry against the level of compensation to be paid out. And more recently there has been an increased push back towards income inequality around the world, making executive compensation ever more relevant in this day and age in particular with regards to corporate governance and the implementation of new policies by the government.

In the last couple of decades CEO compensation has risen dramatically while employee wages have stagnated; this might be the reason why it has had such a negative image in the eyes of some people. But there are definitely some valid reasons for having a compensation scheme such as the one in place. Attraction, and retaining the best executive talent and incentive to increase performance are just a few. Also compensation is used to align shareholder and management goals, so that principal agent problems are avoided. But do the benefits outweigh the costs?

It should come as no surprise that after the amount of attention this topic has received that research on executive compensation has been abundant. Most of the studies have focused on compensation in the U.S. but there have also been studies on companies in China (Firth, Fung, & Rui, 2006), Sweden (Randoy & Nielsen, 2002) and several other countries. A lot of studies have focused on the relationship between performance and pay, as well as differences in governance structures (Cadman, Carter, & Hillegeist, 2010) (Fahlenbrach, 2009) and firm specific variations (Kostiuk, 1990) in the hopes to explain and provide a theory as to better understand how optimal compensation can be achieved. In the coming chapter previous research on rent extraction, principal agent theory, and dividend policy will be reviewed and their significance to this research will be discussed.

Previous research has found a link between compensation and performance that is weaker than would be expected. But when would the cost of higher compensation induce the benefit of higher performance? The aim of this paper is to find out if incentives in the form of higher pay might work better under certain circumstances. We will specifically look at whether or not dividend paying companies, which have been known to pose less free cash flow, have higher pay performance sensitivities. So the goal is to determine if *dividend paying companies have a better compensation performance relationship*. In relation to the aforementioned, the following hypothesis have been composed:

H1: Dividend paying companies have lower cash compensation

H2: Dividend paying companies have higher pay performance sensitivities

H3: Non- dividend paying companies exhibit higher rent extraction

The methodological aspect of this study will be performed as follows. The initial part of this research will look at the relationship between level compensation and performance, using an OLS regression. It will differ from previous studies because Next to the control variables, such as firm size and different governance variables we will also include an indicator variable to represent the companies that pay dividends. Thereafter the aspect of rent extraction will be investigated. Excess compensation will be regressed on firm performance of one year later.

The results indicate that there is a difference in sensitivities between the two groups especially when looking at incentive based compensation. Furthermore there has been some indication for the presence of rent extraction again specifically for the incentive part of compensation.

The remainder of this paper will continue as follows. Chapter 2 will look at previous research and the hypothesis development will also be given. In Chapter 3 the methodology will be discussed in addition to that the criteria for the sample and data gathering will be given. Furthermore the empirical results will be given in chapter 4, discussion and interpretation will follow. In the last section, Chapter 5, there will be a summarization, conclusion and what this could mean for further research will be discussed.

## 2 Hypothesis Development and Literature Review

In this chapter studies will be given that convey the ideas that the research statement is based upon. How corporate governance can influence compensation and firm value will be discussed. Consequently a look will be taken on the existence of agency costs, also the free cash flow hypothesis will be profiled and the existence of rent extraction will be showcased. Furthermore the influence of dividends on all these aspects will be discussed and how it can be used as an indicator to distinguish between companies. Thereafter the research statement and hypothesis will be given.

### 2.1 Prevailing Theories

There are different theories about how compensations structures are brought about; here optimal contracting and managerial power will be discussed. The principals, the ones that invest in companies by buying shares with the expectation of receiving returns on their investment in the future. They expect that these funds will be managed properly by the managers in charge, the agents, and that they will have their best interest at heart. They expect that shareholder wealth maximization will be their primary goal. But due to moral hazard the agents might put their own interests first leading to goal misalignment and causing a principal agent problem.

In order to mitigate these agency problems compensation is structured so that the CEOs are incentivized and are able to make decisions that are best for the shareholders. To accomplish this contracts are set up so that their pay will depend to a certain extent to the performance of the company, in other words the wealth of the executives will be tied to the success of the company. This is the theory of optimal contracting. It assumes that the compensation set in place is in accordance with the abilities of the executives and can only fluctuate because of the economic circumstances of an industry or the business cycle.

On the other hand managerial power indicates that an executive can impose his will on the company in order to benefit himself. It has been assumed that a weaker governance position will cause executives to have more power, and this beneficial position will lead them not to share the same goals as the shareholders, so it aggravates the misalignment of interests and will induce agency costs as a consequence.

There has been a rise in compensation since the 1970's and (Frydman & Jenter, 2010) reviews the previous theories in an attempt to explain which provides a better understanding

of this growth. From the paper it is evident that fractional ownership of companies, the amount of shares in their possession, by executives has always been low providing support for the managerial power theory. But in contrast the absolute value of wealth of executives that is linked to the company is very substantial indicating a correlation with optimal contracting. Their understanding is that the realistic situation is a combination of these approaches, and neither can be discounted.

## **2.2.1 Agency costs, Free Cash Flow and Rent Extraction**

### **Rent Extraction**

As was stated previously managerial power gives executives the ability to impose their will on different areas of a companies' governance. This power can for example provide these executives with more leverage during compensation negotiations among other things. This increase in power can lead executives to have the ability to increase their fixed salary, bonus, shares, options and it can also lead to an increase in perks. This means that they were able to extract more amenities than they normally would have and by doing so increased the agency costs for that company and its shareholders. So to reiterate the power that executives may possess can be used to provide higher compensation and in that way extract rents from the company. This is contrary to optimal contracting and suggests the existence of agency costs, and provides support for the managerial power theory.

The results in (Core, Holthausen, & Larcker, 1999) indicated that agency costs were present and that executives were able to extract rents through weak governance. They investigated the influence of performance on compensation and also looked at the possibility of rent extraction by managers. They found that the market based compensation measure is positive and significantly correlated with compensation. And In order to provide a clear conclusion on rent extraction they devised a methodological approach that included predicting excess compensation that would have been attained under the board and ownership structure set in place and regressing it on subsequent firm performance. The findings indicated that the predicted excess compensation was shown to have a negative effect on both market and accounting based future performance.

The findings in (Chalmers, Koh, & Stapledon, 2006) concluded that there is rent extraction. They investigated if the variation in CEO compensation was due to labor demand or rent extraction with a specific focus on Australia. They conducted a 2 stage analysis

similarly to (Core, Holthausen, & Larcker, 1999) in order to accurately come to a conclusion. A significantly positive correlation was found between return on assets and compensation, but not annual returns. To ascertain the presence of rent extraction future performance was regressed on excess compensation. All the excess compensation components had a negative coefficient, and the majority of the excess compensation components including bonus, options and total compensation all had a significantly negative relationship with subsequent accounting based firm performance. No significant correlation was found between the predicted excess compensation, based on the governance variables, and annual returns. In conclusion the existence of rent extraction was established for accounting based compensation and specifically the incentive based components of compensation.

Both these studies had similar methodologies and detected the presence of agency costs and rent extraction albeit in varying degrees, this might be caused by the difference in the period that the study was conducted or it might be due to the fact that these studies are based in different countries. In this thesis I will use a similar approach to what has been presented in these studies in order to determine if rent extraction is present, the methodology will be broadly explained in the next section.

### **2.2.2 Free Cash Flow Hypothesis and Agency Costs**

Free cash flow is the excess funds that remain after all the activities that keep the company running have been taken care of. These cash flows can amass in expectation of future investments with internal financing and they can also be used for payments to debt and equity holders. The downside of having this free cash flow is that misuse of funds can occur by executives giving rise to agency costs. For instance there could be investments in projects that have negative net present values, or acquisitions made to facilitate a broadening of the corporation.

To illustrate the cash flow hypothesis was introduced in (Jensen M. C., 1986). It was argued that the use of debt can lead to a reduction in free cash flow and thus also in agency costs. Specifically looking at the oil industry which at the time was changing due to regulation. It was seen that the use of accumulating free cash flow lead to inefficiencies, management acquired other companies in an attempt to diversify but these ventures were proven to be unsuccessful. All this came at the expense of the shareholders who saw the value of their company fall. On the other hand companies who were threatened by takeovers chose

to merge, so there was an increase in debt and a payout to shareholders was encouraged, all of which helped to reduce inefficiencies and dampened agency costs. We can see from this paper that the presence of free cash flow leads to misuse of funds by managers and that debt can be used to reduce the agency costs that arise from free cash flow, because funds for new projects are attained through banks that have a better position in the monitoring of company affairs.

Furthermore free cash flow can lead to overinvestment. (Richardson, 2006) has found that there is a significant probability of overinvestment when the amount of free cash flow is high. Using accounting information investment expenditures were calculated, where after the negative NPV investment projects are inferred. A regression concludes that higher overinvestment is correlated with higher free cash flows.

And so the amount of free cash flow is a fairly accurate indication of the presence of agency costs. Overinvestment and the use of free cash flow for empire building, would lead to lower shareholder value. If instead these funds are used to pay shareholders in the form of dividends then there would be less free cash flow and maybe less agency costs.

### **2.2.3 Managerial Power**

Agency costs can occur throughout a corporation, and these costs are realized when a person takes advantage of an opportunity at someone else's expense. In the case of executives governance structures are set in place to reduce or eliminate these costs. Even so agency costs can come about in compensation due to various circumstances, weak governance for example. It has been posited that CEO's can exert power, and this position makes them able to take advantage of the company at the shareholders expense.

In the paper by (Bebchuk & Fried, 2003) they give different instances where agency costs are incurred through the influence that CEOs are able to exert. The CEO will for example simultaneously function as chairman of the board, where the board is responsible for decisions concerning the compensation of executives. He can also appoint board members and is in a position to set compensation and benefits for other board members. Furthermore if compensation consultants provide other corporate services, they will possibly be more lenient with their assessment of the CEO's compensation in an effort to stay in the good graces of the executive.

Further evidence of managerial power have been found in (Kim & Lu, 2011). Abnormal CEO power, above what is necessary to run the company in an efficient manner, will cause a negative relationship to be established. Also power leads to lower firm



performance. Further investigation showed that it is the lack of external monitoring that make these relationships possible. In this case the presence of institutional holdings.

To conclude weak governance makes the influence of CEOs on their companies more pronounced. A company that has a CEO with a lot of power is assumed to use this to acquire compensation that is above what is optimal for the performance being delivered.

## 2.3 Dividends

The reason why companies pay dividends has long been a puzzle. One thing is certain paying dividends puts a strain on free cash flow and prevents misuse of funds. There are several possible theories why firms begin to pay dividends, including the life cycle hypothesis and signaling. With signaling it is presumed that the insiders, the executives, have more information than the public. In order to convey this information they use dividends. The other theory involves the life cycle hypothesis, were a company pays dividend depending on the stage of its life. Older companies with fewer growth opportunities are assumed to be likelier dividend payers. Either way free cash flow is reduced.

Dividends are sticky and as a result a very permanent way to reduce free cash flow. In the evaluation of dividends by (Twu, 2010) it was evident that dividends are very sticky, a company that starts paying dividends will not decrease or stop the payments unless it is absolutely necessary. Companies were divided into previous payers and previous non- payers, in order to see if the determinants differ and to see if dividends were sticky. From the assessment it was concluded that insider holdings, growth and legal protection of shareholders differ among the groups, also companies who paid previously were very likely to pay in the future and the companies that did not pay had a greater chance to continue this trend.

Further evidence of the inability of reducing dividends is provided by (Sar, 2008). It is well documented that after the reduction of dividend payments the value of shares drops significantly, making it a measure of last resort for most companies. This means that once the value of the dividends per share is set it is difficult for the company to reduce this due to the negative message it sends to the market. It provides more disincentive to the reduction and discontinuation of dividends.

In short dividend payments are a fairly permanent way to reduce free cash flow and subdue agency costs. The question is whether dividend paying companies might be used as an indicator for companies that have less agency costs, and therefore lower compensation. Stated

differently can dividends be used as a way to strengthen governance structures, providing better pay- performance alignment?

Contrary to my theory of dividends providing better pay- performance alignment (Bhattacharyya, Mawani, & Morrill, 2008) offers another view on the connection between dividends and compensation. He proposes that higher quality executives have a better chance of finding positive NPV project, and will spend more on these investments than lower quality executive leaving less money to distribute as dividends. And the low quality executives are more likely to distribute cash in the form of dividends back to its shareholders. This in turn will lead to higher compensation for the quality executives because they add more value to the company. Using an alternative methodology than has been proposed here he finds a negative correlation between the dividend payout ratio and compensation.

## 2.4 Hypothesis

To reiterate what has been deduced above compensation is used to align the interest of the people running the company, executives, and the people who own the company. This means that compensation can be used as an incentive to lead these groups of people toward a same goal, namely maximizing company value. If goal alignment is not attained then this can lead to agency costs. Agency costs involve the misuse of company funds in order to further the executives own wellbeing, be it through ‘perks, investing in unprofitable investments or through actual compensation. Rent extraction occurs when a manager is able to exert power in order to gain higher compensation, or other benefits that do not incentivize or serve a purpose for the improvement of the company.

The reasoning here is that the larger the amount of free cash flow available, the more agency costs there are, and the larger the possibility and amount of rent extraction. The assumption is that cash dividends provide a permanent suppression of free cash flow thereby imposing an independent method of monitoring agency costs, since the abolishment of this payout policy comes with dire consequences for the company. This leads me to state that ***dividend paying companies are more efficient than non-dividend paying companies in incentivizing through compensation.*** The following hypothesis will be used to provide an accurate assessment of the research statement.

H1: Dividend paying companies have lower cash compensation

H2: Dividend paying companies have higher pay performance sensitivities

H3: Non- dividend paying companies exhibit higher rent extraction

## **3 Research Design**

### **3.1 Data & Sample**

Data on executive compensation was gathered on S&P 500 firms for the years 2008-2010, this was the most recent available data, as to give a more realistic portrayal of the situation as it stands currently. The performance and governance information was also gathered but for the years 2007-2009. All the compensation information was acquired from the Execucomp database, while the accounting information was collected from the Compustat database, furthermore governance variables were deduced from Optionmetrics. In order to distinguish between the different industries the corporations were segmented into groups based on 4 digit SIC codes. Namely the 12 industry classification of Fama and French this was done so that there are still enough observations for each industry, while still allowing for sufficient separation. The sample consists of 1000 firm year observation, for 438 companies. 258 observations were for non-dividend paying companies and 742 for dividend paying companies.

### **3.2 Methodology**

In order to provide an accurate assessment on compensation an OLS regression will be used in order to establish if there is a significant relationship between firm performance and executive compensation. This type of regression has been used time and again for this very purpose, and with the help of several control variables, related to governance structure and other firm characteristics, I will be able to rule out other effects that are irrelevant for the focus of this research. Compensation was chosen to be the dependent variable and lagged performance the independent variable. This was done so that I am better able to see the consequences of ability and effort embodied by their performance on compensation. Furthermore an indicator variable will be used to differentiate between companies that have paid dividend and those who have not.

$$\begin{aligned}
& \text{Compensation}_t \\
& = \alpha + \beta_1 ROA_{t-1} + \beta_2 \text{dummy} * ROA_{t-1} + \beta_3 \text{StdevROA}_{t-1} \\
& + \beta_4 \text{LN Assets}_{t-1} + \beta_5 \text{Market to Book}_{t-1} + \beta_6 \text{Duality}_{t-1} \\
& + \beta_7 \text{CEO ownership}_{t-1} + \beta_8 \text{Tenure}_{t-1} + \beta_9 \text{Board Size}_{t-1} \\
& + \sum \beta_{10} \text{Industry Effects} + \sum \beta_{11} \text{Year Effects} + \varepsilon
\end{aligned} \tag{1}$$

$$\begin{aligned}
& \text{Compensation}_t \\
& = \alpha + \text{Dummy} + \beta_1 ROE_{t-1} + \beta_2 \text{dummy} * ROE_{t-1} + \beta_3 \text{StdevROE}_{t-1} \\
& + \beta_4 \text{LN Assets}_{t-1} + \beta_5 \text{Duality}_{t-1} + \beta_6 \text{CEO ownership}_{t-1} \\
& + \beta_7 \text{Tenure}_{t-1} + \beta_8 \text{Board Size}_{t-1} + \sum \beta_9 \text{Industry Effects} \\
& + \sum \beta_{10} \text{Year Effects} + \varepsilon
\end{aligned} \tag{2}$$

The abovementioned regressions are used to determine the extent of pay- performance sensitivities. Accounting and market based performance measures, both widely used to determine success of a company, will be used in order to investigate the sensitivities and the differences between the groups of firms. This is done in order to conclude if dividend paying firms have stronger incentive pay. So it can be seen if the compensation of CEO's in dividend paying firms are more affected by their performance.

The next step that will be taken is to predict the excess compensation. Excess compensation is calculated for all the firm year observations using estimated coefficients from equation (1) for return on assets and equation (2) for return on equity. The coefficients of duality, CEO shares, tenure and board size of the previous regressions are used, while the effect of performance and economic variables are not taken into account. This will designate the compensation that is brought about under the current governance structure.

The equation for ROA as the performance measure is:

$$\begin{aligned}
& \widehat{\text{Predicted excess compensation}}_t \\
& = \hat{\beta}_6 \text{Duality}_{t-1} + \hat{\beta}_7 \text{CEO shares}_{t-1} + \hat{\beta}_8 \text{Tenure}_{t-1} + \hat{\beta}_9 \text{Board Size}_{t-1}
\end{aligned}$$

The equation for ROE as the performance measure is:

$$\begin{aligned} \widehat{\text{Predicted excess compensation}}_t & \\ &= \hat{\beta}_5 \text{Duality}_{t-1} + \hat{\beta}_6 \text{CEO shares}_{t-1} + \hat{\beta}_7 \text{Tenure}_{t-1} + \hat{\beta}_8 \text{Board Size}_{t-1} \end{aligned}$$

And the last step that will be taken has been modeled after the paper by (Core, Holthausen, & Larcker, 1999) and involves using the performance measures of one year later as the dependent variable and the predicted excess compensation as the independent variable. With the help of this regression the presence of rent extraction can be detected more reliably. If the predicted excess compensation has a negative effect on future performance after correcting for other effects, including size, we can conclude that agency costs have made it possible for rent extraction to occur and that CEOs are able to influence their pay through weak governance.

$$\begin{aligned} ROA_t = & \\ & \beta_1 \widehat{\text{predicted excess compensation}}_t + \beta_2 \text{Size}_{t-1} + \sum \beta_3 \text{Year Effects} + \\ & \sum \beta_4 \text{Year Effects} + \varepsilon \end{aligned} \tag{3}$$

$$\begin{aligned} ROE_t = & \\ & \beta_1 \widehat{\text{predicted excess compensation}}_t + \beta_2 \text{StdevROE}_{t-1} + \beta_3 \text{LNMarket Value}_{t-1} + \\ & \beta_4 \text{Market to Book ratio}_{t-1} + \sum \beta_5 \text{Industry Effects} + \sum \beta_6 \text{Year Effects} + \varepsilon \end{aligned} \tag{4}$$

### 3.3 Variables

The goal in this next section of the paper is to provide background information on the variables used in the regression and to give an expectation to how these different factors may affect compensation. Next to the main variables of concern, performance and compensation, there will also be an elaboration on the control variables pertaining to governance and other firm characteristics.

**Firm size** has been a consistent and very significant predictor of executive compensation. It has been used as an independent variable (Kostiuk, 1990) but is mostly used as a control variable in various studies (Chhaochharia & Grinstein, 2009) (Cadman, Carter, & Hillegeist, 2010) (Balsam, Fernando, & Tripathy, 2011) that examine a vast array of topics on executive compensation. There are a couple of explanations on the reason that firm size has

such bearing on pay. The first explanation involves the fact that a larger organization has more complexities, this means that more knowledge and effort is required leading to higher pay. A second explanation can be found in the fact that larger companies have more managerial layers and that there is/should be a difference between the employees in the hierarchal pyramid. This also means that more layers equal higher pay for executives at the top of the pyramid. From the empirical research of other studies it can be said that a positive relationship is expected between firm size and executive compensation. Size is proxied by the logarithm of assets in this study.

**CEO duality** refers to the situation of someone being CEO while at the same time having to head the board of directors as chairman. The board is supposed to protect the interest of the shareholders and be a method of monitoring in order to insure that their management makes the best decisions for the company. The board therefore also makes calls on everything relating to CEO compensation, which might provide some conflict of interest if there is duality. Duality thus provides the CEO an opportunity to exert power due to their position with regards to setting pay, enabling them to use their position in ways that are beneficial to them. Previous research by (Dorata & Petra, 2008) investigated duality in a sub-sample of merger and acquisition firms and non- M&A firms. It was shown that duality by itself does not have a great impact on compensation, but it does decrease the pay performance relationship. Keeping with prior research such as (He, 2008) an indicator variable will be used to signify duality. The variable will equal 1, if the CEO is also chairman of the board, and zero otherwise.

**Investment opportunities** is another variable that has been frequently controlled for. This variable entails the degree to which a company is able to invest in projects with positive net present values. A higher amount of investment opportunities indicates a company that is thriving and that has ample growth possibilities, thus leading to higher pay. Previous research such as (Basu, Hwang, Mitsudome, & Weintrop, 2007) and (Cadman, Carter, & Hillegeist, 2010) have used the book to market ratio to measure for investment opportunities.

**Ownership structure** can be defined as the amount of equity that is in the possession of an executive. This can be viewed as an indicator of CEO power and can also be a gauge for the alignment of shareholder- management interest. Ownership structure has shown to be of reliable influence in determining compensation. In studies by (Meija, Tosi, & Hinkin, 1987) and (Randoy & Nielsen, 2002) they investigated what type of effect the amount of equity has on the decision making skills of executives. In both these studies they included CEO's who

owned 5% or more of equity, but we will define ownership as the percentage of equity in the hands of a CEO. We expect that ownership has a positive effect on compensation

**CEO tenure** refers simply to the length of time that the CEO has held their current position. Chances are that the longer someone has been in their current position the likelier it is that they had something to do with appointing the executives or top management in place, and maybe even board members. So this could indicate that their loyalties lie with the CEO due to these previous events, and that they may be more lenient to causes brought up by their CEO. In studies by (Eriksson & Lausten, 2000) and (Basu, Hwang, Mitsudome, & Weintrop, 2007) among others tenure was used as a control variable. It was shown that tenure did not have that much of an impact on compensation. Even so time and time again it has been used as a determinant of compensation in previous work, with that in mind this variable will also be used. Tenure is proxied by the amount of years that the CEO has been employed by the company and a positive relationship is expected.

**Industry effects** have been accounted for in various studies including (Core, Holthausen, & Larcker, 1999), (Randoy & Nielsen, 2002) (Firth, Fung, & Rui, 2006). It is essentially the separation of the data into segments reflecting the different industries, in this case the 12 industry Fama and French classifications (with the help of 4 digit sic codes) will be used. This will be controlled for with the help of a set of dummy variables. The reason that industry is corrected for is that there may be large discrepancies between the compensation data of the different industries.

**Firm risk** will be corrected for using both the standard deviation of ROA and ROE. This is the proxy used for how volatile the company and its returns are. The riskier a company the higher its volatility. It is presumed that a company that is riskier will have higher remuneration for its executives in order to compensate them for the uncertainty of having the company go bankrupt.

**Compensation and Performance** will be used as the dependent and respectively the independent variables in this study, as has been done in several previous research. For compensation we will be using the logarithm of total compensation, salary as well as total equity. So the logarithm of these three variables will be used to verify a pay- performance relationship. Furthermore return on assets (ROA) and annual stock return will be used to proxy performance as has been done previously as well. The logarithm of different variables, including size and compensation, have been used in this study in order to reduce outliers.

### 3.4 Preliminary Statistics

Preliminary observation of the data revealed that there were some extreme values present that could affect the results. In order to bypass these irregularities some variables were winsorized at different levels. The performance variables ROE and ROA were winsorized at the top and bottom 1%, assets at the top 1% and the different compensation components at the top and bottom 5%. Furthermore the natural logarithm of the compensation components and the amount of shares in the possession of the CEOs were taken, this was also done in order to mitigate the non-normality's.

Table 2 gives the descriptive statistics of the entire sample and the dividend and non-dividend sub samples. In the full sample the mean (median) total compensation is 8.689.016 (7.504.190), the mean (median) non-cash based compensation is 7.372.330 (6.376.744), the mean (median) salary is 1.050.386 (1.000.000). In the dividend paying sub-sample mean (median) total compensation is 9.132.247 (7.824.438), the mean (median) non-cash based compensation is 7.764.158 (6.706.273), the mean (median) salary is 1.104.100 (1.056.077). In the non-dividend paying sub-sample the mean (median) total compensation is 7.414.299 (6.451.323), the mean (median) non-cash based compensation is 6.245.447 (5.392.647), the mean (median) salary is 895.909 (900.000).

Furthermore there are some notable differences that are visible between the two groups. The assets of dividend paying companies are larger than the non-dividend paying companies, 29 billion compared to 9 billion. The market based returns are on average higher for the dividend payers, yet the average for the accounting based measure of performance is the same for both groups. The non-dividend payers are riskier, both the volatilities based on the standard deviation of ROE and ROA are higher than for the companies that pay out dividends. The market to book ratio is also higher for the firms that don't pay dividends, alluding to higher growth opportunities for this groups.

When it comes to the governance variables there are also some differences. Duality, simultaneously holding the CEO and chairman of the board position, is more likely to occur in dividend paying companies. The tenure is higher for non-dividend paying companies, but board size is lower and the amount of shares that the CEO possesses is higher for this group. So except for the higher tenure of the CEO in the non-dividend paying group they seem to have stronger governance in place.



From the preliminary statistics it is clear that the non- dividend paying companies have more investment opportunities as is evident from the higher market to book variable. They are also riskier, perform worst based on market based returns, but they also seem to have a stronger governance in place. Also it can be seen that all the compensation components are lower for the non- dividend paying companies. Notable is that both groups spend about 12 % on salary and 85% on equity based compensation.

**Table 1:**

Full Sample	Mean	Median	Maximum	Minimum	Std. Dev.
Total Compensation (thousands)	8.689	7.504	20.776	1.710	5.129
LN Total Compensation	15,79	15,83	16,85	14,35	0,64
Equity Based Compensation (thousands)	7.372	6.376	18.573	663	4.778
LN Equity Based Compensation	15,55	15,67	16,74	13,41	0,81
Salary (thousands)	1.050	1.000	1.750	504	305
LN Salary	13,82	13,82	14,38	13,13	0,30
Assets (millions)	24.100	9.430	270.000	618	43.000
LN Assets	23,08	22,97	26,32	20,24	1,23
ROE	0,28	0,25	1,52	-0,81	0,29
ROA	0,11	0,10	0,36	-0,14	0,08
StdevROE	0,28	0,08	18,08	0,0017	1,17
StdevROA	0,07	0,03	1,66	0,0005	0,13
Market to Book	2,99	2,33	54,93	-19,47	3,35
Duality	0,72	1	1	0	0,45
CEO Shares (%)	0,73	0,13	35,20	0,0000351	2,68
CEO Shares (transformed)	0,01	0,0013	0,30	0,0000004	0,02
Tenure	6,24	5,00	46,00	0	6,02
Board Size	10,53	10	34	5	2,35
Market Value (millions)	20.900	8.070	504.000	119	40.100
LN Market Value	22,96	22,81	26,95	18,59	1,17

**Table 2:**

Dividends	Mean	Median	Maximum	Minimum	Std. Dev.
Total Compensation (thousands)	9.132	7.824	20.776	1.710	5.265
LN Total Compensation	15,85	15,87	16,85	14,35	0,64
Equity Based Compensation (thousands)	7.764	6.706	18.573	663	4.890
LN Equity Based Compensation	15,62	15,72	16,74	13,41	0,79
Salary (thousands)	1.104	1.056	1.750	504	306
LN Salary	13,87	13,87	14,38	13,13	0,29
Assets (millions)	29.200	12.600	270.000	844	47.800
LN Assets	23,33	23,26	26,32	20,55	1,20
ROE	0,30	0,27	1,52	-0,81	0,30
ROA	0,11	0,10	0,36	-0,14	0,08
StdevROE	0,27	0,08	18,08	0,0017	1,16
StdevROA	0,06	0,03	1,66	0,0005	0,12
Market to Book	2,89	2,22	54,93	-19,47	3,45
Duality	0,77	1	1	0	0,42
CEO Shares (%)	0,63	0,12	35,20	0,0000351	2,71
CEO Shares (transformed)	0,01	0,0012	0,30	0,0000004	0,02
Tenure	6,07	4,00	46,00	0	5,98
Board Size	10,99	11	34	5	2,33
Market Value (millions)	24.000	8.980	504.000	119	44.000
LN Market Value	23,10	22,92	26,95	18,59	1,19

**Table 3:**

No Dividends	Mean	Median	Maximum	Minimum	Std. Dev.
Total Compensation (thousands)	7.414	6.451	20.776	1.710	4.489
LN Total Compensation	15,63	15,68	16,85	14,35	0,63
Equity Based Compensation (thousands)	6.245	5.392	18.573	663	4.252
LN Equity Based Compensation	15,37	15,50	16,74	13,41	0,81
Salary (thousands)	895	900	1.750	504	243
LN Salary	13,67	13,71	14,38	13,13	0,28
Assets (millions)	9.420	4.880	218.000	618	17.000
LN Assets	22,37	22,31	26,11	20,24	1,00
ROE	0,24	0,22	1,52	-0,81	0,25
ROA	0,11	0,11	0,36	-0,14	0,09
StdevROE	0,29	0,07	15,58	0,00	1,20
StdevROA	0,08	0,03	1,26	0,00	0,15
Market to Book	3,26	2,69	26,46	-17,27	3,03
Duality	0,60	1	1	0	0,49
CEO Shares (%)	1,01	0,20	21,43	0,00	2,57
CEO Shares (transformed)	0,01	0,00	0,19	0,00	0,02
Tenure	6,71	5	31	0	6,14
Board Size	9,22	9	15	6	1,83
Market Value (millions)	12.100	5.920	197.000	381	23.600
LN Market Value	22,57	22,50	26,01	19,76	1,01

## 4 Results

### 4.1 Level of CEO compensation

The regression results for the pay- performance sensitivity are reported in table 5 through 10. The results included are for the two different performance measures, ROA and ROE, and the three compensation components. The compensation components include salary, non- cash compensation or equity based compensation and total compensation. Different components are used because performance might cause a disproportionate effect on the different parts of compensation.

From the result it is clear that compensation of companies from the United States are more strongly correlated to the market based performance measure than the accounting based measure. All the compensation components were significantly correlated with ROE whereas only total compensation was significantly related to ROA. The regressions using ROA as the performance measure will be discussed first, where after the results using ROE as the performance measure will be presented.

From model one and two in table ... it can be seen that ROA explains little of the total and equity based compensation, however when looking at the salary component we can see that the explanatory power is much higher, namely 18%. Models three and four show that the governance variables add more power to the regression and so do models five and six, which take the economic determinants into account. Models seven and eight encompasses the use of all the variables. The explanatory power varies from 25% for equity based compensation to 40% for salary.

The coefficients for the economic variables have the expected sign for all the three compensation components. Assets is significant throughout and market to book is significant for total compensation and equity based compensation. Size increases all the facets of compensation and more investment opportunities lead to higher total compensation, presumably through higher incentive based compensation.

The governance variables have the expected sign when it comes to total compensation and incentive based compensation. With the salary component tenure does not have the expected sign, but it is insignificant. Duality and CEO shares have the expected sign and are

significant for total and equity based compensation. Whereas duality and board size are significant for salary.

The accounting based measure for performance is positive while the interaction term is negative for all components. This would indicate that dividend paying companies have a lower pay- performance sensitivity, but these variables are not significant. Only the ROA for total compensation is significantly positive, while the interaction term is not. This indicates that there isn't a significant difference in pay- performance sensitivity between dividend and non- dividend paying companies while using accounting based measure for performance.

Tables ... show the results for ROE as the performance measure. From models tree, four and five, six it is evident that the addition of the governance variables and economic variables enriches the regression, as is visible through the increase in explanatory power. As was the case previously models seven and eight combines all the variables. Furthermore 41% of the variation in the regression can be explained for the salary variable, 32% for total compensation and 25% for equity based compensation.

The expected sign for the economic variables are as expected for all the facets of compensation included in this study. As with the previous performance measure assets are positive and significantly correlated with all three compensation measures. The risk measure is positive but only significant for the salary component. This means that an increase in volatility will cause the salary of a CEO to increase to compensate for having this risk. Secondly size will cause an increase in compensation, an increases in size of 1% will increase total compensation by 0.25%.

The coefficient signs for all the governance variables are mostly as expected for the salary component. Tenure however is not as expected it is negative but also insignificant. Duality and board size are positive and significant. The presence of duality here leads to a 6% increase in salary and adding another board member will increase salary by 1.1%. When looking at total compensation and equity based compensation all the signs are as expected. Furthermore duality and CEO shares are significant. Duality leads to a 12% increase and an increase of 1% in CEO shares leads to a 0.511% decrease in equity based compensation.

The performance measure is positive and significant for all the compensation components. The interaction term however is negative and significant for total compensation and equity based compensation. This would suggest that the dividend paying companies have lower returns on equity. This means that there is a difference between dividend and non-dividend paying companies when using return on equity as the performance measure. Especially when total compensation and equity based compensation were looked at. The

conclusion is that pay- performance sensitivity is higher for non- dividend paying companies, making the use of incentives more effective for this group.

From the results it is evident that there is a difference between the pay- performance sensitivity of dividend and non- dividend paying companies. But using either performance measure is clear that the results do not support my hypothesis. Dividend paying companies do not have a higher sensitivity due to less agency costs brought about by lower free cash flow. Rather the results suggest that dividend paying companies have a lower pay- performance sensitivity. This gives support to the theory that was set forth by (bhattacharya 2008). It seems that the higher quality CEOs pay less dividends and have better performance and they would have a higher sensitivity because their ability to find positive NPV projects are higher, thus they increase company value.

**Table 4:**  
**Dependent Variable: LN Total Compensation**

Variable	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
ROA	0,57	(1,25)	0,46	(0,96)	0,60	(1,32)	0,62	(1,29)	0,98	(2,16)**	0,95	(1,91)*	0,91	(1,98)**	0,92	(1,84)*
DUMMY	-0,57	(-0,92)	-0,93	(-1,51)	-0,46	(-0,75)	-1,04	(-1,69)*	-0,10	(-0,18)	-0,85	(-1,42)	-0,11	(-0,19)	-0,88	(-1,47)
*ROA																
Size									0,25	(12,18)***	0,27	(13,30)***	0,25	(11,67)***	0,26	(12,57)***
Stdev									0,43	(3,12)***	0,23	(1,69)*	0,40	(2,85)***	0,20	(1,43)
ROA																
Market									0,02	(3,02)***	0,02	(2,63)***	0,02	(3,13)***	0,02	(2,77)***
to Book																
Duality					0,19	(3,90)***	0,18	(3,68)***					0,11	(2,42)**	0,10	(2,22)**
CEO					-3,63	(-3,09)***	-3,73	(-2,59)**					-3,00	(-2,60)***	-3,10	(-2,43)**
Shares																
Tenure					0,002	(0,520)	0,001	(0,231)					0,002	(0,534)	0,002	(0,460)
Board					0,04	(2,94)***	0,05	(4,03)***					-0,01	(-1,18)	0,005	(0,571)
Size																
Intercept	15,68	(248)***	15,36	(182)***	15,21	(107)***	14,80	(96)***	9,95	(21,45)***	9,23	(19,76)***	10,01	(21,59)***	9,44	(20,77)***
DUMMY	0,27	(3,44)***	0,36	(4,44)***	0,15	(1,85)*	0,28	(3,45)***	-0,0004	(-0,01)	0,14	(1,95)*	-0,006	(-0,085)	0,13	(1,84)*
Industry	NO		YES		NO		YES		NO		YES		NO		YES	
Effects																
Year	YES		YES		YES		YES		YES		YES		YES		YES	
Effects																
R <sup>2</sup>	0,04		0,11		0,09		0,17		0,23		0,29		0,25		0,32	
Adjusted	0,03		0,09		0,08		0,15		0,23		0,54		0,24		0,31	
R <sup>2</sup>																

Compensation has been transformed using the natural logarithm; Size= LN Assets; Stdev=Risk ;M/B=Investment Opportunities; Duality: CEO= Chairman of the board; CEO shares are transformed using  $\ln(1+\text{shares}(\%)/100)$ ; Tenure = the number of years as CEO. Newey- West procedure for estimating standard errors is used to correct for heteroskedasticity and autocorrelation. T- statistics are in parenthesis next to the coefficients.

\*\*\* Significant at the 1% level

\*\*Significant at the 5% level

\* Significant at the 10% level

**Table 5:**  
**Dependent Variable: LN Equity based Compensation**

Variable	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
<b>ROA</b>	0,77	(1,24)	0,61	(0,94)	0,81	(1,30)	0,81	(1,24)	0,11	(1,67)*	1,06	(1,49)	1,02	(1,53)	1,02	(1,44)
<b>DUMMY*ROA</b>	-0,67	(-0,92)	-1,10	(-1,52)	-0,58	(-0,81)	-1,26	(-1,77)*	-0,18	(-0,25)	-0,99	(-1,37)	-0,22	(-0,31)	-1,07	(-1,51)
<b>Size</b>									0,26	(9,10)***	0,29	(10,94)***	0,25	(7,97)***	0,26	(9,36)***
<b>Stdev</b>									0,44	(2,20)**	0,23	(1,17)	0,40	(1,92)*	0,18	(0,89)
<b>ROA</b>									0,03	(3,18)***	0,02	(2,81)***	0,03	(3,27)***	0,03	(2,96)***
<b>Market to Book Duality</b>					0,21	(3,13)***	0,20	(3,12)***					0,13	(2,00)**	0,12	(1,99)**
<b>CEO Shares</b>					-5,49	(-3,16)***	-5,63	(-2,81)***					-4,89	(-2,79)***	-5,04	(-2,67)***
<b>Tenure</b>					0,001	(0,099)	0,000	(0,04)					0,001	(0,090)	0,001	(0,170)
<b>Board Size</b>					0,04	(2,99)***	0,05	(4,02)***					-	(-1,035)	0,009	(0,798)
<b>Intercept</b>	15,42	(156,46)** *	15,03	(116,67)** *	14,96	(85,91)** *	14,43	(66,14)***	9,53	(14,55)***	8,60	(13,56)***	9,69	(13,99)***	8,96	(13,79)***
<b>DUMMY</b>	0,31	(3,14)***	0,43	(4,03)***	0,18	(1,84)*	0,34	(3,21)***	0,03	(0,37)	0,20	(2,23)**	0,02	(0,26)	0,18	(2,09)**
<b>Industry Effects</b>	NO		YES		NO		YES		NO		YES		NO		YES	
<b>Year Effects</b>	YES		YES		YES		YES		YES		YES		YES		YES	
<b>R<sup>2</sup></b>	0,03		0,09		0,08		0,15		0,17		0,23		0,19		0,25	
<b>Adjusted R<sup>2</sup></b>	0,03		0,08		0,08		0,13		0,16		0,22		0,18		0,24	

Compensation has been transformed using the natural logarithm; Size= LN Assets; Stdev=Risk ;M/B=Investment Opportunities; Duality: CEO= Chairman of the board; CEO shares are transformed using  $\ln(1+\text{shares}(\%)/100)$ ; Tenure = the number of years as CEO. Newey- West procedure for estimating standard errors is used to correct for heteroskedasticity and autocorrelation. T- statistics are in parenthesis next to the coefficients.

\*\*\* Significant at the 1% level

\*\*Significant at the 5% level

\* Significant at the 10% level

**Table 6:**  
**Dependent Variable: LN Salary**

Variable	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
<b>ROA</b>	0,20	(0,78)	-	(-0,40)	0,25	(1,03)	0,01	(0,05)	0,47	(1,95)*	0,24	(1,03)	0,45	(1,94)*	0,24	(1,06)
<b>DUMMY</b>	-0,30	(-0,90)	0,09	(-0,66)	-0,23	(-0,74)	-0,27	(-0,92)	-	(-0,25)	-	(-0,63)	-0,09	(-0,30)	-0,22	(-0,77)
<b>*ROA</b>			-						0,08		0,18					
<b>SIZE</b>			0,20						0,13	(11,35)**	0,14	(12,45)**	0,11	(10,06)**	0,12	(11,12)**
<b>Stdev</b>									0,18	(2,44)**	0,12	(1,67)*	0,18	(2,29)**	0,11	(1,52)
<b>ROE</b>									0,00	(1,950)*	0,00	(1,240)	0,005	(1,837)*	0,003	(1,354)
<b>Market to Book</b>									5		3					
<b>Duality</b>					0,12	(5,21)***	0,10	(4,50)***					0,08	(3,93)***	0,06	(3,06)***
<b>CEO Shares</b>					-1,04	(-1,37)	-0,99	(-1,07)					-0,73	(-0,94)	-0,64	(-0,78)
<b>Tenure</b>					-	(-0,430)	-	(-0,430)					-	(-0,490)	-	(-0,314)
<b>Board Size</b>					0,001		0,001						0,001		0,001	
<b>Intercept</b>	13,67	(417,52)**	13,62	(266,26)**	13,32	(183,98)**	13,26	(166,65)**	10,80	(41,98)**	10,58	(42,08)**	10,96	(43,28)**	10,73	(43,06)**
<b>DUMMY</b>	0,24	(5,98)***	0,20	(4,89)***	0,15	(3,93)***	0,15	(3,61)***	0,10	(3,04)***	0,09	(2,54)**	0,08	(2,37)**	0,08	(2,20)**
<b>Industry Effects</b>	NO		YES		NO		YES		NO		YES		NO		YES	
<b>Year Effects</b>	YES		YES		YES		YES		YES		YES		YES		YES	
<b>R<sup>2</sup></b>	0,09		0,18		0,18		0,26		0,31		0,39		0,33		0,40	
<b>Adjusted R<sup>2</sup></b>	0,09		0,17		0,18		0,24		0,30		0,38		0,32		0,39	

Compensation has been transformed using the natural logarithm; Size= LN Assets; Stdev=Risk ;M/B=Investment Opportunities; Duality: CEO= Chairman of the board; CEO shares are transformed using  $\ln(1+\text{shares}(\%)/100)$ ; Tenure = the number of years as CEO. Newey- West procedure for estimating standard errors is used to correct for heteroskedasticity and autocorrelation. T- statistics are in parenthesis next to the coefficients.

\*\*\* Significant at the 1% level

\*\*Significant at the 5% level

\* Significant at the 10% level



**Table 7:**  
**Dependent Variable: LN Total Compensation**

Variable	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
<b>ROE</b>	0,35	(2,54)**	0,41	(2,69)***	0,33	(2,60)**	0,45	(3,13)***	0,33	(2,34)**	0,44	(2,53)**	0,35	(2,61)***	0,46	(2,89)***
<b>DUMMY*ROE</b>	-0,10	(-0,62)	-0,23	(-1,38)	-0,10	(-0,70)	-0,30	(-1,91)*	-0,09	(-0,54)	-	(-1,82)*	-0,11	(-0,73)	-0,36	(-2,11)**
<b>Size</b>									0,23	(11,71)**	0,26	(13,93)**	0,23	(11,54)**	0,25	(13,18)**
<b>Stdev</b>									0,02	(1,00)	0,01	(0,95)	0,02	(0,91)	0,01	(0,91)
<b>ROE Duality</b>					0,18	(3,75)***	0,18	(3,61)***					0,11	(2,35)**	0,10	(2,20)**
<b>CEO Shares</b>					-3,68	(-3,12)***	-3,84	(-2,68)***					-3,12	(-2,69)***	-3,18	(-2,48)**
<b>Tenure</b>					0,00	(0,653)	0,00	(0,356)					0,00	(0,667)	0,00	(0,622)
<b>Board Size</b>					0,03	(2,79)***	0,05	(4,01)***					-0,01	(-1,35)	0,00	(0,501)
<b>Intercept</b>	15,67	(276,43)**	15,33	(173,59)**	15,2	(113,99)**	14,7	(99,44)**	10,6	(24,73)**	9,51	(22,77)**	10,6	(25,07)**	9,70	(23,92)**
<b>DUMMY</b>	0,22	(3,50)***	0,31	(4,52)***	0,11	(1,80)*	0,24	(3,50)***	0,00	(0,030)	0,13	(1,97)**	0,00	(0,040)	0,12	(1,89)*
<b>Industry Effects</b>	NO		YES		NO		YES		NO		YES		NO		YES	
<b>Year Effects</b>	YES		YES		YES		YES		YES		YES		YES		YES	
<b>R<sup>2</sup></b>	0,05		0,12		0,10		0,17		0,22		0,30		0,23		0,32	
<b>Adjusted R<sup>2</sup></b>	0,05		0,10		0,09		0,16		0,21		0,29		0,23		0,30	

Compensation has been transformed using the natural logarithm; Size= LN Assets; Stdev=Risk ;M/B=Investment Opportunities; Duality: CEO= Chairman of the board; CEO shares are transformed using  $\ln(1+\text{shares}(\%)/100)$ ; Tenure = the number of years as CEO. Newey- West procedure for estimating standard errors is used to correct for heteroskedasticity and autocorrelation. T- statistics are in parenthesis next to the coefficients.

\*\*\* Significant at the 1% level

\*\*Significant at the 5% level

\* Significant at the 10% level

**Table 8:**  
**Dependent Variable: LN Equity Based Compensation**

Variable	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
<b>ROE</b>	0,45	(2,59)**	0,54	(2,60)**	0,44	(2,79)***	0,60	(3,23)***	0,43	(2,53)**	0,57	(2,51)**	0,46	(2,93)***	0,62	(3,06)***
<b>DUMMY* ROE</b>	-0,14	(-0,72)	-0,33	(-1,49)	-0,16	(-0,92)	-0,43	(-2,19)**	-0,13	(-0,69)	-	(-1,89)*	-0,17	(-0,98)	-0,49	(-2,41)**
<b>SIZE</b>									0,23	(8,51)***	0,27	(11,55)***	0,23	(7,81)***	0,25	(9,96)***
<b>StdevROE</b>									0,02	(0,83)	0,02	(0,84)	0,02	(0,74)	0,01	(0,79)
<b>Duality</b>					0,20	(3,05)***	0,20	(3,10)***					0,13	(2,01)**	0,12	(2,00)**
<b>CEO Shares</b>					-5,56	(-3,19)***	-5,78	(-2,88)***					-5,00	(-2,83)**	-5,11	(-2,69)***
<b>Tenure</b>					0,001	(0,20)	0,001	(0,13)					0,001	(0,19)	0,002	(0,28)
<b>Board Size</b>					0,04	(2,73)***	0,05	(3,93)**					-0,01	(-1,24)	0,01	(0,74)
<b>Intercept</b>	15,41	(175,19)***	14,99	(124,58)***	14,98	(92,76)***	14,40	(71,08)***	10,25	(17,05)***	8,91	(16,20)***	10,33	(16,54)***	9,23	(16,45)***
<b>DUMMY</b>	0,25	(3,20)***	0,39	(4,18)***	0,14	(1,83)*	0,30	(3,42)***	0,03	(0,47)	0,20	(2,29)**	0,03	(0,42)	0,19	(2,28)**
<b>Industry Effects</b>	NO		YES		NO		YES		NO		YES		NO		YES	
<b>Year Effects</b>	YES		YES		YES		YES		YES		YES		YES		YES	
<b>R<sup>2</sup></b>	0,05		0,10		0,09		0,15		0,15		0,22		0,18		0,25	
<b>Adjusted R<sup>2</sup></b>	0,04		0,08		0,09		0,14		0,15		0,21		0,17		0,23	

Compensation has been transformed using the natural logarithm; Size= LN Assets; Stdev=Risk ;M/B=Investment Opportunities; Duality: CEO= Chairman of the board; CEO shares are transformed using  $\ln(1+\text{shares}(\%)/100)$ ; Tenure = the number of years as CEO. Newey- West procedure for estimating standard errors is used to correct for heteroskedasticity and autocorrelation. T- statistics are in parenthesis next to the coefficients.

\*\*\* Significant at the 1% level

\*\*Significant at the 5% level

\* Significant at the 10% level

**Table 9:**  
**Dependent Variable: LN**  
**Salary**

Variable	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
<b>ROE</b>	0,21	(3,30)***	0,13	(2,18)**	0,18	(2,80)**	0,15	(2,38)**	0,21	(3,87)***	0,16	(2,92)**	0,20	(3,61)***	0,16	(3,08)***
<b>DUMMY</b>	-0,05	(-0,66)	-0,02	(-0,29)	-0,04	(-0,56)	-0,05	(-0,78)	-0,06	(-0,88)	-0,08	(-1,28)	-0,06	(-0,91)	-0,09	(-1,50)
<b>*ROE</b>									0,12	(10,49)**	0,13	(12,28)**	0,10	(9,57)***	0,12	(11,11)***
<b>SIZE</b>									0,02	(2,93)***	0,01	(2,26)**	0,02	(2,70)***	0,01	(2,22)**
<b>StdevROE</b>																
<b>Duality</b>					0,12	(5,09)**	0,10	(4,45)***					0,08	(3,96)***	0,06	(3,11)***
<b>CEO</b>					-1,06	(-1,44)	-1,01	(-1,13)					-0,80	(-1,05)	-0,70	(-0,86)
<b>Shares</b>					-	(-0,303)	-	(-0,369)					-	(-0,320)	-	(-0,21)
<b>Tenure</b>					0,001	(4,50)**	0,001	(4,98)***					0,001	(1,26)	0,00061	(2,303)**
<b>Board</b>					0,03	(4,50)**	0,03	(4,98)***					0,01	(1,26)	0,011	(2,303)**
<b>Size</b>																
<b>Intercept</b>	13,65	(444,58)**	13,60	(268,35)**	13,32	(187,27)***	13,25	(165,87)**	11,05	(43,75)**	10,68	(44,06)**	11,19	(45,87)***	10,81	(45,36)***
<b>DUMMY</b>	0,21	(6,65)***	0,18	(5,33)***	0,13	(4,19)**	0,13	(3,74)***	0,10	(3,73)***	0,09	(3,14)**	0,08	(2,94)***	0,08	(2,65)***
<b>Industry</b>	NO		YES		NO		YES		NO		YES		NO		YES	
<b>Effects</b>																
<b>Year</b>	YES		YES		YES		YES		YES		YES		YES		YES	
<b>Effects</b>																
<b>R<sup>2</sup></b>	0,12		0,19		0,20		0,26		0,32		0,40		0,33		0,41	
<b>Adjusted</b>	0,12		0,17		0,20		0,25		0,31		0,38		0,33		0,40	
<b>R<sup>2</sup></b>																

Compensation has been transformed using the natural logarithm; Size= LN Assets; Stdev=Risk ;M/B=Investment Opportunities; Duality: CEO= Chairman of the board; CEO shares are transformed using  $\ln(1+\text{shares}(\%)/100)$ ; Tenure = the number of years as CEO. Newey- West procedure for estimating standard errors is used to correct for heteroskedasticity and autocorrelation. T- statistics are in parenthesis next to the coefficients.

- \*\*\* Significant at the 1% level
- \*\*Significant at the 5% level
- \* Significant at the 10% level

## 4.2 Excess CEO compensation and subsequent firm performance

To further establish if the differences present are due to rent extraction or not, compensation that is based on predicted excess salary, excess equity and excess total compensation was regressed onto future firm performance. If rent extraction is a possible reason for the discrepancies, then it is expected that there is a negative relationship between the predicted excess component and firm performance one year later. Here predicted excess compensation is considered to be compensation that can be acquired or captured by the CEO due to the existence of managerial power and weak governance.

In the case of return on assets as the performance measure most of the signs of excess compensation are positive and all are insignificant. The coefficient for salary however is negative and this suggests that the excess compensation of non- dividend paying companies causes firm performance in the future to be lower. The interaction term based on excess total compensation is also negative, this would suggest that dividend paying companies are able to extract rents and this leads to lower future firm performance.

The size variable is negative and statistically significant in all the regressions of excess compensation. From previous results it is clear that larger company leads to higher compensation, but this relationship indicates that it will also lead to diminished performance.

Looking now at return on equity as the performance measure there is some evidence of rent extraction. While the signs of excess compensation are all positive the coefficients for the interaction terms with excess compensation are all negative. These results indicate that dividend paying companies are able to extract rents while the companies that do not pay dividends are not. Specifically when excess compensation based on total and equity compensation is looked at there is a significantly negative relationship with firm performance in the following year, if industry effects are not taken into account. So the ability of CEOs to extract rents can cause lesser performance in the future.

In conclusion no inferences can be made about rent extraction when the accounting measure for performance is used because the coefficients are insignificant. But when using return on equity it is evident that there is a possibility for rent extraction. From these results it is possible that that rent extraction is partially a viable

explanation for the difference in pay- performance sensitivity between dividend and non- dividend paying companies.

**Table 10:**  
**Dependent Variable: ROA**

<b>Variable</b>				
Excess Total Compensation	0,05	(1,07)	0,02	(0,33)
DUMMY*Excess Total Compensation	-0,03	(-0,43)	0,01	(0,19)
LN Size	-0,02	(-7,13)***	-0,01	(-4,84)***
Intercept	0,51	(8,90)***	0,38	(6,04)***
DUMMY	0,014	(1,672)*	0,017	(1,971)**
Industry Effects	NO		YES	
Year Effects	YES		YES	
$R^2$	0,08		0,19	
Adjusted $R^2$	0,08		0,18	

**Dependent Variable: ROA**

<b>Variable</b>				
Excess Equity	0,02	(0,83)	0,00	(0,10)
DUMMY*Excess Equity	0,00	(-0,11)	0,02	(0,52)
LN Size	-0,02	(-7,19)***	-0,01	(-5,08)***
Intercept	0,51	(9,20)***	0,38	(6,41)***
DUMMY	0,01	(1,59)	0,02	(2,12)**
Industry Effects	NO		YES	
Year Effects	YES		YES	
$R^2$	0,08		0,19	
Adjusted $R^2$	0,08		0,18	

**Dependent Variable: ROA**

<b>Variable</b>				
Excess Salary	0,04	(0,33)	-0,02	(-0,15)
DUMMY*Excess Salary	0,03	(0,22)	0,11	(0,70)
LN Size	-0,02	(-6,96)***	-0,01	(-4,93)***
Intercept	0,52	(8,44)***	0,40	(6,07)***
DUMMY	0,006	(0,292)	0,003	(0,139)
Industry Effects	NO		YES	
Year Effects	YES		YES	
$R^2$	0,08		0,19	
Adjusted $R^2$	0,08		0,18	

Excess Compensation has been calculated using the governance and ownership coefficients of the 1<sup>st</sup> regression. Newey- West procedure for estimating standard errors is used to correct for heteroskedasticity and autocorrelation. T- statistics are in parenthesis next to the coefficients.

\*\*\* Significant at the 1% level

\*\*Significant at the 5% level

\* Significant at the 10% level

**Table 11:**  
**Dependent Variable: ROE**

<b>Variable</b>				
Excess Total Compensation	0,36	(1,61)	0,26	(0,99)
DUMMY*Excess Total Compensation	-0,44	(-2,08)**	-0,35	(-1,49)

StdevROE	-0,06	(-1,15)	-0,06	(-1,18)
LN Market Value	0,03	(1,66)*	0,06	(2,21)**
Market to Book	0,06	(2,31)**	0,03	(1,76)*
Intercept	-0,61	(-2,03)**	-0,76	(-2,27)**
DUMMY	0,100	(2,50)**	0,059	(1,225)
Industry Effects	NO		YES	
Year Effects	YES		YES	
$R^2$	0,30		0,35	
Adjusted $R^2$	0,30		0,33	

#### Dependent Variable: ROE

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic
Excess Equity	0,25	(1,69)*	0,18	(1,08)
DUMMY*Excess Equity	-0,28	(-1,91)*	-0,24	(-1,43)
StdevROE	-0,06	(-1,16)	-0,06	(-1,19)
Market to Book	0,06	(2,31)**	0,06	(2,20)**
LN Market Value	0,03	(1,65)*	0,03	(1,77)*
Intercept	-0,61	(-2,02)**	-0,76	(-2,28)*
DUMMY	0,09	(2,40)**	0,06	(1,20)
Industry Effects	NO		YES	
Year Effects	YES		YES	
$R^2$	0,30		0,35	
Adjusted $R^2$	0,30		0,33	

#### Dependent Variable: ROE

Variable				
Excess Salary	0,62	(1,56)	0,35	(0,80)
DUMMY*Excess Salary	-0,54	(-1,24)	-0,46	(-1,06)
StdevROE	-0,06	(-1,15)	-0,06	(-1,18)
Market to Book	0,06	(2,30)**	0,06	(2,20)**
LN Market Value	0,03	(1,42)	0,03	(1,59)
Intercept	-0,62	(-1,88)*	-0,78	(-2,16)**
DUMMY	0,125	(2,161)**	0,087	(1,379)
Industry Effects	NO		YES	
Year Effects	YES		YES	
$R^2$	0,30		0,35	
Adjusted $R^2$	0,30		0,33	

Excess Compensation has been calculated using the governance and ownership coefficients of the 2nd regression. Newey- West procedure for estimating standard errors is used to correct for heteroskedasticity and autocorrelation. T- statistics are in parenthesis next to the coefficients.

\*\*\* Significant at the 1% level

\*\*Significant at the 5% level

\* Significant at the 10% level

## 4.3 Sensitivity Tests

In order to assess the robustness of the results that have been reported additional test were done to see if similar results could be attained. The regressions of equations (1) and (2) were repeated in different circumstances. Firstly without the observations for the financial industry. Then for the manufacturing industry alone. And lastly a different measure for size namely employees was used for the regressions. Employees has been winsorized at the top and bottom 5%.

The results when looking at the sample without the financial industry gives similar conclusions as has been reported above. Return on equity is positive and significant for all three components as is size and duality. Whereas the interaction term with the returns is negative and only significant for equity based and total compensation. Volatility and board size are significantly positive for salary. CEO shares has a significantly negative effect on equity and total compensation.

Using an alternative for the size variable also gives results that do not deviate much from the aforementioned. The signs for both the performance measures are as reported previously, only now the interaction terms for total and equity compensation is significant for ROA. And the control variables also have the same signs and significance for both measures of performance. Size, duality and board size are all significantly positive. CEO shares are significantly negative for total and equity compensation, while risk is positive for salary.

With manufacturing the results of equation (2) are mostly insignificant. ROE has a positive sign, the interaction terms are negative and all are insignificant. Size is significantly positive and risk has a negative relationship with equity and total compensation. The results using ROA as the performance measure, equation (1), however show a different picture. ROA is negative while the interaction term is positive, this implies that dividend paying firms have a higher pay- performance sensitivity than non- dividend paying firms. But only the coefficient for the interaction term of salary is significant at 10%.

The results for these regressions are presented in tables 15 through 19 of the appendix. It is evident that the results indicating lower pay- performance sensitivity for dividend companies are robust. The only discrepancy was the manufacturing industry were the results using the accounting measure are in line with my hypothesis, but in general the contrary has been proven.

## **5 Conclusion**

## 5.1 Implications

The primary objective was to study the difference in how much the compensation of CEOs are correlated with their performance when dividends are introduced. In other words investigate if the inclusion of dividends would lead the firms to have a better pay-performance sensitivity. This was done in order to see if the presence of dividends could help improve governance structures and hinder the manifestation of managerial power. It was proposed that dividend payers have less free cash flow and would therefore also have less agency costs.

Data from S&P 500 firms was compiled to investigate the aforementioned theory. Firstly an OLS regression was set up in order to investigate the presence of any differences in pay-performance sensitivity. Following rent extraction was looked at to explain the differences. This was done in accordance with the methodology of (Core, Holthausen, & Larcker, 1999) and (Chalmers, Koh, & Stapledon, 2006).

The results have shown that firm size and duality have a consistently positive effect on remuneration. Also shares have a negative effect on equity and total compensation whereas board size has a positive effect on salary. A higher amount of the compensation of CEOs in non-dividend paying companies is dependent on their performance than CEOs of dividend paying companies. Furthermore the possibility of rent extraction was only found in dividend paying companies.

From the evidence presented it is clear that dividends do not mitigate the effects of a weak governance structure. On the contrary what can be seen is that pay-performance sensitivity is lower for dividend paying companies, consequently it takes less effort for them to increase remuneration. This means that CEOs for dividend paying companies require a lower increase in their firm performance for the same increase in compensation as companies that don't pay dividends.

Referring back to the hypothesis I can say that firstly dividend paying companies have higher compensation, secondly they also have a lower pay-performance sensitivity and finally dividend paying companies are more likely to exhibit rent extraction. So the opposite of what I proposed was proven. Non-dividend paying companies are more efficient than dividend paying companies in incentivizing through compensation

Possible explanations could lie in the life cycle hypothesis or the ideas regarding low and high quality CEOs and investment opportunities. Companies that pay dividends are assumed to be in a more mature part of their life, these companies have less investment



opportunities as is visible from the market to book ratio, so there is less possibility of increasing their earnings. Consequently these CEOs are less likely to let their compensation depend on the performance. Another explanation for the higher pay- performance sensitivity can be provided by (Bhattacharyya, Mawani, & Morrill, 2008), CEOs of a higher quality are able to find investment opportunities with positive NPV and instead of paying dividends will invest. And because they are more successful they are more likely to have more of their compensation depend on their performance.

## **5.2 Future Research**

Do companies which exhibit higher pay-performance sensitivity CEOs do better in the long run? And does the inflexible nature of dividends have a negative effect on firm investment and their shareholders? These are some questions that arise as consequence of the results, and may be the premise of future research. Furthermore share repurchases and leverage can be looked at as a means to strengthen governance structures.

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## **Appendix:**

**Table 12:**

Calculations of the variables

	<b>Proxy</b>	<b>Calculations</b>	<b>Expectations</b>
<b>Salary</b>	Executive Compensation	LN Salary	
<b>Total Compensation</b>	Executive Compensation	LN Salary +Bonus +stock granted +stock options granted+ long term incentive payouts	
<b>Equity Based Compensation</b>	Executive Compensation	LN stock granted +stock options granted+ long term incentive payouts	
<b>Performance(ROA)</b>	ROA	EBIT/ Total Assets	X
<b>Performance (ROE)</b>	ROE	EBIT/Total Equity	X
<b>Investment Opportunities</b>	Market to book value	Market value of equity/book value of equity	+
<b>Duality</b>	CEO= Chairman	Indicator 1=duality otherwise 0	+
<b>CEO Shares</b>	CEO ownership of shares	Percentage of shares owned by the CEO (CEO shares/Total Shares*100%)	-
<b>Size</b>	Firm size	LN Assets	+
<b>CEO tenure</b>	Tenure	Number of years with CEO title	+
<b>Board size</b>	# of executives on board of directors	Number of board members	+
<b>Market value</b>	Market value of equity	LN MVE	+
<b>Risk</b>	Volatility	Standard deviation RET and ROA (using quarterly returns *4)	+

**Table 13:**

The amount of observations in the different industries for both dividend and non- dividend paying companies.

	Industry	Full sample	Dividend		No Dividends	
1	Consumer Non- Durables	85	75	88%	10	12%
2	Consumer Durables	14	13	93%	1	7%
3	Manufacturing	122	102	84%	20	16%
4	Energy	75	67	89%	8	11%
5	Chemicals and Allied products	43	43	100%	0	0%
6	Business Equipment	178	63	35%	115	65%
7	Telecom	27	24	89%	3	11%
8	Utilities	92	89	97%	3	3%
9	Wholesale	111	85	77%	26	23%
10	Healthcare	77	36	47%	41	53%
11	Finance	59	52	88%	7	12%
12	Other including Mining and Construction	117	93	79%	24	21%
		1000	742	74%	258	26%

**Table 14: Correlation matrix**

	ROE	ROA	LN SIZE	StdevROE	StdevROA	Market to book	Duality	CEO Shares	Tenure	Board Size
ROE	1									
ROA	0,53	1								
LN SIZE	0,04	-0,24	1							
StdevROE	-0,02	-0,07	0,02	1						
StdevROA	-0,14	-0,17	-0,07	0,50	1					
Market to Book	0,68	0,32	-0,11	0,12	-0,05	1				
Duality	0,05	-0,02	0,20	-0,01	-0,02	-0,02	1			
CEO Shares	-0,01	-0,02	-0,07	-0,02	-0,02	0,03	0,07	1		
Tenure	-0,05	-0,03	-0,04	-0,03	0,04	-0,002	0,13	0,41	1	
Board Size	0,07	-0,13	0,49	0,03	-0,04	-0,04	0,12	-0,05	-0,08	1

**Table 15: Sample without the financial industry**

Dependent Variable:	LN Total Compensation				LN Equity Based Compensation				LN Salary			
<b>Variable</b>												
<b>ROE</b>	0,27	(1,97)**	0,30	(2,03)**	0,38	(2,11)**	0,42	(2,15)**	0,23	(3,61)***	0,14	(2,26)**
<b>DUMMY* ROE</b>	-0,13	(-0,90)	-0,26	(-1,70)*	-0,22	(-1,15)	-0,38	(-1,89)*	-0,10	(-1,51)	-0,07	(-0,98)
<b>SIZE</b>	0,26	(1,24)***	0,26	(1,35)***	0,27	(1,04)***	0,27	(1,10)***	0,11	(1,32)***	0,12	(1,43)***
<b>StdevROE</b>	0,01	(0,89)	0,01	(0,91)	0,01	(0,72)	0,01	(0,80)	0,02	(2,53)**	0,01	(1,92)*
<b>Duality</b>	0,12	(2,40)**	0,11	(2,47)**	0,14	(2,13)**	0,14	(2,26)**	0,08	(4,24)***	0,06	(3,27)***
<b>CEO Shares</b>	-3,16	(-2,27)**	-3,17	(-2,12)**	-5,06	(-2,80)***	-5,12	(-2,69)***	-0,80	(-1,12)	-0,66	(-0,89)
<b>Tenure</b>	0,01	(1,73)*	0,01	(1,54)	0,01	(1,25)	0,01	(1,24)	-0,0003	(-0,15)	-0,0003	(-0,16)
<b>Board Size</b>	0,003	(0,26)	0,01	(1,07)	0,01	(0,43)	0,02	(1,09)	0,02	(3,59)***	0,02	(3,33)***
<b>Intercept</b>	9,71	(2,17)***	9,32	(2,21)***	9,21	(1,65)***	8,75	(1,64)***	1,09	(5,81)***	1,08	(5,61)***
<b>DUMMY</b>	-0,01	(-0,19)	0,10	(1,61)	0,02	(0,33)	0,17	(2,08)**	0,08	(2,66)***	0,07	(2,31)**
<b>Industry Effects</b>	NO		YES		NO		YES		NO		YES	
<b>Year Effects</b>	YES		YES		YES		YES		YES		YES	
<b>R<sup>2</sup></b>	0,29		0,35		0,23		0,28		0,37		0,43	
<b>Adjusted R<sup>2</sup></b>	0,28		0,33		0,22		0,26		0,37		0,41	

Compensation has been transformed using the natural logarithm; Size= LN Assets; Stdev=Risk ;M/B=Investment Opportunities; Duality: CEO= Chairman of the board; CEO shares are transformed using  $\ln(1+\text{shares}(\%)/100)$ ; Tenure = the number of years as CEO. Newey- West procedure for estimating standard errors is used to correct for heteroskedasticity and autocorrelation. T- statistics are in parenthesis next to the coefficients.

\*\*\* Significant at the 1% level

\*\*Significant at the 5% level

\* Significant at the 10% level

Table 16 : Sample with employees as an alternative for size

Dependent Variable:	LN Total Compensation				LN Equity Compensation				LN Salary			
Variable												
ROA	0,46	(0,98)	0,43	(0,89)	0,56	(0,88)	0,49	(0,75)	0,25	(1,12)	0,02	(0,08)
DUMMY*ROA	-0,74	(-1,32)	-1,06	(-1,89)*	-0,85	(-1,14)	-1,23	(-1,65)*	-0,39	(-1,39)	-0,31	(-1,15)
Employees	0,000003	(5,58)***	0,000004	(6,64)***	0,000003	(4,67)***	0,000004	(5,22)***	0,000001	(5,97)***	0,000002	(6,57)***
Stdev ROA	0,28	(1,93)*	0,13	(0,85)	0,28	(1,46)	0,10	(0,52)	0,12	(1,64)	0,07	(0,99)
Market to Book	0,02	(2,84)***	0,01	(2,62)***	0,02	(3,06)***	0,02	(2,81)***	0,004	(1,61)	0,002	(0,73)
Duality	0,16	(3,25)***	0,14	(2,79)***	0,18	(2,84)***	0,16	(2,53)**	0,11	(5,39)***	0,08	(4,30)***
CEO Shares	-3,85	(-3,00)***	-3,66	(-2,65)***	-5,75	(-3,44)***	-5,61	(-3,17)***	-1,13	(-1,95)*	-0,92	(-1,41)
Tenure	0,004	(0,70)	0,003	(0,64)	0,002	(0,29)	0,003	(0,36)	-0,001	(-0,30)	-0,0004	(-0,16)
Board Size	0,02	(2,30)**	0,03	(3,07)***	0,02	(1,84)*	0,04	(2,77)***	0,02	(4,19)***	0,02	(4,33)***
Intercept	15,22	(1,30)***	14,88	(1,09)***	14,96	(9,71)***	14,50	(8,13)***	13,33	(2,27)***	13,31	(1,92)***
DUMMY	0,16	(1,95)*	0,23	(2,69)***	0,19	(1,83)*	0,29	(2,64)***	0,15	(4,13)***	0,12	(2,91)***
Industry Effects	NO		YES		NO		YES		NO		YES	
Year Effects	YES		YES		YES		YES		YES		YES	
R <sup>2</sup>	0,16		0,24		0,13		0,20		0,25		0,32	
Adjusted R <sup>2</sup>	0,15		0,22		0,12		0,18		0,24		0,30	

Compensation has been transformed using the natural logarithm; Employees= Firm Size; Stdev=Risk ;M/B=Investment Opportunities; Duality: CEO= Chairman of the board; CEO shares are transformed using  $\ln(1+\text{shares}(\%)/100)$ ; Tenure = the number of years as CEO. Newey- West procedure for estimating standard errors is used to correct for heteroskedasticity and autocorrelation. T- statistics are in parenthesis next to the coefficients.

\*\*\* Significant at the 1% level

\*\*Significant at the 5% level

\* Significant at the 10% level



**Table 17 : Sample with employees as an alternative for size**

Dependent Variable:	LN Total Compensation				LN Equity Compensation				LN Salary			
<b>Variable</b>												
<b>ROE</b>	0,30	(1,99)**	0,34	(2,11)**	0,41	(2,08)**	0,47	(2,18)**	0,24	(3,07)***	0,15	(1,85)*
<b>DUMMY* ROE</b>	-0,16	(-0,94)	-0,28	(-1,57)	-0,21	(-0,97)	-0,38	(-1,63)	-0,13	(-1,62)	-0,10	(-1,10)
<b>Employees</b>	0,000003	(5,31)***	0,000004	(6,44)***	0,000003	(4,41)***	0,000004	(5,05)***	0,000001	(5,67)***	0,000002	(6,25)***
<b>StdevROE</b>	0,01	(0,71)	0,02	(0,91)	0,01	(0,56)	0,02	(0,77)	0,02	(2,53)**	0,02	(2,17)**
<b>Duality</b>	0,16	(3,14)***	0,14	(2,77)***	0,18	(2,75)***	0,16	(2,52)**	0,11	(5,39)***	0,09	(4,42)***
<b>CEO Shares</b>	-3,88	(-3,04)***	-3,69	(-2,69)***	-5,76	(-3,45)***	-5,62	(-3,20)***	-1,16	(-2,05)**	-0,96	(-1,49)
<b>Tenure</b>	0,005	(0,86)	0,004	(0,80)	0,003	(0,42)	0,003	(0,48)	-0,0003	(-0,11)	-0,0002	(-0,06)
<b>Board Size</b>	0,02	(2,22)**	0,03	(3,04)***	0,02	(1,74)*	0,04	(2,75)***	0,02	(4,18)***	0,02	(4,33)***
<b>Intercept</b>	15,28	(1,33)***	14,90	(1,09)***	15,04	(1,01)***	14,52	(8,19)***	13,33	(2,39)***	13,29	(1,92)***
<b>DUMMY</b>	0,10	(1,38)	0,18	(2,19)**	0,13	(1,39)	0,24	(2,33)**	0,13	(3,75)***	0,11	(2,59)**
<b>Industry Effects</b>	NO		YES		NO		YES		NO		YES	
<b>Year Effects</b>	YES		YES		YES		YES		YES		YES	
<b>R<sup>2</sup></b>	0,15		0,24		0,13		0,20		0,26		0,32	
<b>Adjusted R<sup>2</sup></b>	0,14		0,22		0,12		0,18		0,25		0,30	

Compensation has been transformed using the natural logarithm; Employees= Firm Size; Stdev=Risk ;M/B=Investment Opportunities; Duality: CEO= Chairman of the board; CEO shares are transformed using  $\ln(1+\text{shares}(\%)/100)$ ; Tenure = the number of years as CEO. Newey- West procedure for estimating standard errors is used to correct for heteroskedasticity and autocorrelation. T- statistics are in parenthesis next to the coefficients.

\*\*\* Significant at the 1% level

\*\*Significant at the 5% level

\* Significant at the 10% level

**Table 18: Manufacturing Industry**

Dependent Variable:	LN Total Compensation		LN Equity Compensation		LN Salary	
<b>Variable</b>						
<b>ROA</b>	-1,19	(-0,77)	-1,39	(-0,73)	-0,58	(-1,22)
<b>DUMMY*ROA</b>	1,27	(0,83)	0,91	(0,49)	1,00	(1,85)*
<b>SIZE</b>	0,31	(6,55)***	0,33	(5,03)***	0,17	(8,28)***
<b>Stdev ROA</b>	-0,55	(-1,33)	-0,52	(-1,03)	-0,12	(-0,74)
<b>Market to Book</b>	0,02	(1,01)	0,03	(0,99)	0,02	(3,79)***
<b>Duality</b>	0,23	(1,23)	0,35	(1,10)	-0,08	(-1,50)
<b>CEO Shares</b>	-4,33	(-0,28)	-2,13	(-0,11)	0,99	(0,15)
<b>Tenure</b>	-0,003	(-0,36)	-0,002	(-0,17)	-0,0002	(-0,07)
<b>Board Size</b>	0,02	(0,70)	0,02	(0,41)	0,002	(0,19)
<b>Intercept</b>	8,66	(7,13)***	7,88	(4,53)***	1,01	(2,42)***
<b>DUMMY</b>	-0,25	(-1,35)	-0,27	(-1,21)	-0,08	(-1,11)
<b>Year Effects</b>	YES		YES		YES	
<b>R<sup>2</sup></b>	0,48		0,39		0,57	
<b>Adjusted R<sup>2</sup></b>	0,43		0,32		0,52	

Compensation has been transformed using the natural logarithm; Size= LN Assets; Stdev=Risk ;M/B=Investment Opportunities; Duality: CEO= Chairman of the board; CEO shares are transformed using  $\ln(1+\text{shares}(\%)/100)$ ; Tenure = the number of years as CEO. Newey- West procedure for estimating standard errors is used to correct for heteroskedasticity and autocorrelation. T- statistics are in parenthesis next to the coefficients.

\*\*\* Significant at the 1% level

\*\*Significant at the 5% level

\* Significant at the 10% level

**Table 19: Manufacturing Industry**

**Dependent Variable:**    **LN Total Compensation**                      **LN Equity Compensation**                      **LN Salary**

<b>Variable</b>	<b>LN Total Compensation</b>		<b>LN Equity Compensation</b>		<b>LN Salary</b>	
<b>ROE</b>	0,25	(0,62)	0,45	(0,86)	0,10	(0,61)
<b>DUMMY* ROE</b>	-0,08	(-0,20)	-0,32	(-0,60)	0,10	(0,66)
<b>SIZE</b>	0,32	(5,69)***	0,35	(4,51)***	0,16	(7,32)***
<b>StdevROE</b>	-0,02	(-1,94)*	-0,02	(-1,70)*	0,00	(-0,29)
<b>Duality</b>	0,22	(1,20)	0,35	(1,13)	-0,08	(-1,52)
<b>CEO Shares</b>	-9,49	(-0,67)	-5,54	(-0,33)	-2,21	(-0,31)
<b>Tenure</b>	0,0004	(0,05)	0,003	(0,28)	0,001	(0,36)
<b>Board Size</b>	0,01	(0,47)	0,01	(0,35)	-0,003	(-0,30)
<b>Intercept</b>	8,32	(5,95)***	7,36	(3,71)***	1,02	(2,29)***
<b>DUMMY</b>	-0,09	(-0,53)	-0,07	(-0,31)	0,00	(-0,05)
<b>Year Effects</b>	YES		YES		YES	
<b>R<sup>2</sup></b>	0,48		0,39		0,54	
<b>Adjusted R<sup>2</sup></b>	0,43		0,33		0,49	

Compensation has been transformed using the natural logarithm; Size= LN Assets; Stdev=Risk ;M/B=Investment Opportunities; Duality: CEO= Chairman of the board; CEO shares are transformed using  $\ln(1+\text{shares}(\%)/100)$ ; Tenure = the number of years as CEO. Newey- West procedure for estimating standard errors is used to correct for heteroskedasticity and autocorrelation. T- statistics are in parenthesis next to the coefficients.

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\*\*Significant at the 5% level

\* Significant at the 10% level