CEOs' influence on their level of compensation

Master Thesis

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Abstract

This research tests the effectiveness of incentive CEO compensation that should align the preferences of shareholders (principal) and the CEO (agent). I investigate whether CEOs received high salaries and bonuses again during the Covid-19 pandemic, like during the financial crisis of 2008. I examine whether there is an effect of the percentage change in revenue on the percentage change in CEO compensation in 2020 compared to 2017 to 2019. I find a positive statistically significant relation, using a sample of 609 U.S. firms. Performing an additional analysis by dividing my sample into three subsamples based on the percentage change in revenue does not provide any statistically significant evidence that this relation is more severe among firms with a substantial reduction in revenue. Nevertheless, on average, CEOs' compensation increased by 18.3% while the firm's revenue decreased by 20% or more. On the other hand, the change in the compensation of CEOs from firms with a decrease in revenue of no more than 20% increased by only 5.5%. This questions the strength and the extent of the positive relation found in this research and whether CEOs have the control to influence their compensation scheme.

Keywords: Agency theory; incentive compensation; percentage change in revenue; CEO compensation; Covid-19 pandemic.

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1. Introduction

The principal-agent theory describes the separation of management and ownership within a company (Eisenhardt, 1989). This separation often results in an agency problem due to the misalignment of shareholders' (principal) preferences and managers' (agent) interests (Jensen & Meckling, 1976). To solve this agency problem, the board of directors provides incentive compensation packages to CEOs in order to realign these preferences. Due to the incentive compensation schemes, CEO compensation is expected to decrease during times of financial distress as a result of bad firm performance and uncertainty about the future. However, The Wall Street Journal stated that CEOs of companies with significant decreases in their share price during the financial crisis of 2008 received bonuses and high salaries (Dolar, Mo & Yang, 2014). This raises questions regarding the effectiveness of incentive compensation.

The subsequent period of financial uncertainty, after the economic crisis of 2008, was caused by the Covid-19 pandemic. The World Health Organization (WHO) defined the disease as a pandemic on the 11th of March 2020 (WHO, 2020). To illustrate the financial consequences of the coronavirus, the S&P 500 went from 3,337.75 points on 21 February 2020 to 2,304.92 points on 20 March 2020. This is a decrease of 30.94% within just a month (Google Finance, 2021). In this study, I examine whether CEOs received higher compensation levels again during the Covid-19 pandemic. This leads to the following research question:

Do CEOs of publicly listed companies have enough control to increase their level of compensation despite the financial impact of the covid-19 pandemic?

CEOs receiving high bonuses and salaries during the financial crisis of 2008 have shown that there is still a gap between the theory and practice of solving the misalignment of interest between principal and agent. Therefore, the answer to this research question is especially of interest to shareholders and boards of directors. It demonstrates to shareholders whether they can trust the board of directors to align their preferences with those of the CEO. On the other hand, the boards of directors are curious whether the incentive compensation for CEOs works. If not, they must revise the compensation packages they provide to CEOs.

To answer the research question of this study, I examine the effect of the change in revenue on the percentage change in total CEO compensation using a sample of 609 U.S. firms. Revenue is a performance measure that can be used as a non-equity incentive. Non-equity incentives are often formula-based performance measures, which is one of the six components of the CEO compensation scheme (Baber, Janakiraman & Kang, 1996; Bebchuk, Fried & Walker, 2002). Therefore, the payment they receive from this component depends on the company's performance. If CEOs could increase their total compensation despite bad firm performance, this would suggest they have control to influence their compensation. On the other hand, according to incentive compensation, CEO compensation is expected to decrease due to bad firm performance during financial distress.

The 609 U.S. firms used in this research are part of the S&P 1500. Companies once part of the S&P 1500 are also included. First, I perform a firm-level analysis. For each company, I calculate the average revenue from 2017 to 2019, which is compared to the revenue of 2020.

This gives the percentage change in revenue for all 609 firms in my sample. I run an Ordinary Least Squares (OLS) regression to test the effect of the percentage change in revenue on the percentage change in total CEO compensation. I find that the percentage change in revenue positively correlates to the change in CEO compensation on a 10% significance level. This means that incentive compensation is adequate to some extent. However, I also perform an additional analysis to test whether the relation between revenue and CEO compensation is different or more severe among firms with a substantial reduction in revenue due to the Covid-19 pandemic. I run the same OLS regression on three different subsamples based on the percentage change in revenue in 2020 compared to 2017 to 2019. Firms in subsample 1 experienced a revenue reduction of 20% or more. Subsample 2 contains of companies with a decrease in revenue of no more than 20%. Companies in subsample 3 saw their revenue increase in 2020.

I do not find any statistically significant results, probably due to the small sample size of the subsamples. Though, I run three ANOVA tests to examine whether the coefficient difference between the subsamples is statistically significant. Only the coefficient difference between subsamples 2 and 3 is statistically significant. This means that for the firms in subsample 2, a one percentage point increase in the percentual change in revenue leads to a decrease in total CEO compensation. Whereas for CEOs in subsample 3, their compensation increases when the percentage change in revenue increases by one percentage point. Furthermore, descriptive statistics of the subsamples show that, on average, CEOs in subsample 1 received 18.3% more compensation in 2020 compared to the three years before. In companies from subsample 2, CEOs only earned 5.5% more compensation. This suggests that CEOs do have the ability to influence their compensation. Future research could further examine this difference.

This study contributes to the literature on the agency problem from the principal-agent theory (Jensen & Meckling, 1976; Eisenhardt, 1989). Previous research mainly focused on how to solve the agency problem (Bebchuk & Fried, 2003). I extend this literature by studying the effectiveness of the measures taken to tackle this agency problem. The rarity of the findings is that it relates to the Covid-19 pandemic. Much research has been conducted on the relation with CEO compensation. For instance, Banker, Darrough, Huang, and Plehn-Dujowich, (2013) examined the relation between past performance and CEO compensation. However, no research has been conducted on the direct relation of the change in revenue to the change in total CEO compensation.

Murphy (2013) stated that revenue can be important in determining CEOs' compensation due to the non-equity incentives in compensation schemes. The finding of my research, that there is a positive correlation between revenue and total CEO compensation, is in line with this argument. Although Murphy (2013) showed that non-equity incentives cover CEO compensation schemes for about a quarter, some boards of directors prefer a higher proportion of non-equity incentives than others. This choice is based on various reasons, such as the quality and experience of the CEO or industry characteristics. This dissimilarity could explain the marginal significance level of only 10%.

The results of this study show that CEOs receive higher compensation when their company's revenue increases. However, the high average mean of 18.3% of the percentage

change in CEO compensation of firms whose revenue decreased by more than 20% questions the extent of this positive correlation.

The findings of my research are especially interesting for the compensation committee of the board of directors and shareholders. It shows the effectiveness of incentive compensation and thus whether the preferences of the shareholders and CEO are aligned. Furthermore, it demonstrates the power and behavior of CEOs during times of financial distress. The compensation committee can use this information to revise the compensation schemes provided to CEOs.

This paper proceeds as follows. The next chapter provides a theoretical background on the agency problem and an overview of the design of compensation schemes for CEOs. In Chapter 3, I present the development of the hypothesis. The methodology and research design are discussed in Chapter 4. Furthermore, this selection describes how the data is obtained and provides descriptive statistics. In Chapter 5, I present and discuss the main results. This section also contains the additional analysis I perform in this research. The final chapter concludes and discusses the main findings of this study.

2. Literature Review

The following chapter describes all relevant theories and concepts from prior literature on the structure and development of compensation schemes for CEOs. I will use insights from previous research for my hypothesis construction. First, I describe an agency problem from the principal-agent theory. Thereafter, I explain how information asymmetry between shareholders and CEOs enlarges the gap between their preferences and therefore increases the ability of CEOs to decide on their compensation pay. Lastly, I address the structure of compensation schemes of CEOs.

2.1 Agency problem

According to the agency theory, ownership and management within a publicly listed company are often separated (Eisenhardt, 1989). The agency theory describes the relationship between the principal, the shareholders, who delegate work to the agent, in this case, the CEO. Consequently, it addresses the issues that arise between the principal and agent due to their different perspectives on risk. This often results in an agency problem due to the misalignment of shareholders' interests and managers' preferences (Jensen & Meckling, 1976). Jensen and Murphy (1990) demonstrated this misalignment by showing that a 1,000$ increase in shareholder value was associated with an increase of only 3$ in CEO wealth. 12 years later, Bebchuk et al. (2002) showed that CEO wealth had increased by only 7$ from 3$ to 10$. The main reason for this small amount of CEO wealth in comparison with shareholder value is due to the immense size of U.S. firms. Therefore, CEOs have little incentive to act in the interest of shareholders due to a lack of benefitting from financial successes themselves as well.

The optimal contracting approach tries to tackle this agency problem. According to this approach, the board provides compensation packages including incentives to CEOs to align their preferences. Within the optimal contracting approach, it is assumed that the board and CEOs have the same bargaining power. However, another agency problem exists between

directors of the board and shareholders since there is no reason to believe that their intention is to maximize shareholder value. Therefore, it is not assured that an optimal contract will be agreed upon by the directors and CEOs (Bebchuk & Fried, 2003).

The reason for directors to deviate is due to the vital role of CEOs in the renomination process of directors to the board. This applies to CEOs in particular. This means that directors aspire to be in favor of CEOs instead of becoming an opposing party. Besides their say in the renomination process, CEOs can affect the salary of directors. This gives them a strong negotiation position in the bargaining process of their performance pay. The ability to determine their compensation schemes increases the power of the CEOs (Core, Holthausen & Larcker, 1999). This ability is unlimited until it cannot be justified anymore to the shareholders (Bebchuk & Fried, 2003).

2.2 Information asymmetry

To align the preferences of shareholders and CEOs and to restore the agency problem described above, stock- and option-based compensation increased tremendously in the last decades. It provides incentives to CEOs to act in the interest of shareholders. However, this change in the compensation scheme of CEOs has mixed, and probably unintentional, consequences (Bergstresser & Philippon, 2006). Compensation depending on stock prices will incentivize CEOs to prioritize increasing this stock price. This is the effect shareholders were trying to achieve by introducing more stock-based compensation to the compensation contracts of CEOs. However, stock-based compensation gives CEOs more control over their compensation. It can trigger them to engage in Earnings Management which means that the financial statements will not present the true underlying economic performance. This is an unintended effect of introducing stock-based compensation to the compensation scheme of CEOs, both for shareholders and all other stakeholders. Furthermore, stock-based compensation has led to a much higher increase in compensation for CEOs due to the compensation they could realize by exercising these stock options. This highlights the power of CEOs and magnifies the performance pay gap between employees and CEOs even more (Murphy, 1999).

CEOs use Earnings Management to achieve earnings objectives to influence their compensation. Previous research shows that CEOs indeed use Earnings Management to control their remuneration. In their literature review on Earnings Management, Healy and Wahlen (1999) listed previous study that showed evidence of managers managing earnings to influence their bonus awards depending on earnings. For example, Healy (1985) and Holthausen, Larcker and Sloan (1995) provide evidence of firms managing earnings when their compensation schemes possess caps on bonus awards. They show that these companies manage earnings compared to firms with similar performances without bonus caps.

Furthermore, Bergstresser and Philippon (2006) show that earnings are manipulated more in companies where the compensation of CEOs is more closely linked to stock values and option holdings. The possibility for CEOs to engage in Earnings Management to influence bonus awards shows again their power to decide on their compensation scheme. Earnings management is legal and difficult to detect. Therefore, this information asymmetry can cause the preferences of stakeholders and CEOs to be misaligned even more.

2.3 Structure of compensation schemes of CEOs

Before looking at CEOs who influence their own compensation schemes, it is essential to focus on the structure of these schemes. Murphy (2013) elaborated on the design of the compensation scheme of CEOs (Murphy, 1999), suggesting that it consists of six primary elements now; a base salary, stock-options, stock awards, non-equity incentives (annual or multi-year bonus linked to accounting performances), discretionary bonuses and other compensation (Baber et al., 1996; Bebchuk et al., 2002). I will elaborate on the components which I believe have a high chance to be influenced by CEOs.

Base salary

Base salary is often determined by industry levels and company size (Murphy, 1999). Therefore, base salaries are not subject to many negotiation possibilities for CEOs.

Stock options

Stock options within compensation schemes solely consist of non-tradable call options since call options will give incentives to CEOs to increase share prices which is in the interest of stockholders. They are exercisable at different points in time to keep CEOs within the company and to have a trend of increasing stock prices over a longer period. Furthermore, stock options become due if a CEO leaves the company before stock options are being exercised. This decreases the chance of CEOs leaving the company even more.

The value of stock options can be subject to the control of CEOs since CEOs can influence share prices in different ways. Initially, CEOs can choose investments with more risk because they benefit from stock-price volatility. Moreover, stock options do not include dividends and therefore are solely more valuable when share prices increase. Therefore, CEOs prefer their company to buy back shares to boost share prices and want to avoid issuing dividends (Murphy, 1999). CEOs benefit financially equally as shareholders with an increase in the share price. This shows that they are likely to put much effort into affecting share prices.

Stock awards

A stock award can give a CEO complete ownership regarding a company's stock. Although it can take some time until the receiver can fully own it, a stock award will always be rewarded and is seen as a form of compensation. The main purpose of a stock award is to incentivize employees to work hard to increase a company's stock price, which aligns their preferences with those of the shareholders. Murphy (2013) showed that stock options and stock awards combined cover approximately half of the total compensation pay of CEOs.

Non-equity incentives

In order to motivate CEOs to ensure that the company performs at its best, their compensation schemes can include formula-based bonus plans. However, during times of financial distress like the Covid-19 pandemic, it is questionable whether formula-based bonus plans can be influenced. To answer this question, non-equity incentives are of importance to my research.

Discretionary bonuses

Paying discretionary bonuses to CEOs is entirely up to the board of directors and does not have specific criteria (Ederhof, 2010). However, CEOs with substantial power over the board could influence the provision of discretionary bonuses (Boyd, 1994; Core et al., 1999).

Other compensation

In addition to the five components which form the basis of the compensation scheme of CEOs, a board of directors can choose to add other forms of compensation.

3. Hypothesis development

Agency theory is central in conducting my research which describes the agency relationship between the principal, the shareholders, and the agent, the CEO. Due to the separation of ownership, the preferences and goals of shareholders and the CEO are misaligned (Eisenhardt, 1989). To realign their preferences again, the board of directors provides CEOs with incentive compensation packages. In my research, I test the effectiveness of these incentive compensation schemes. The main research objective is to assess to what extent the total compensation of CEOs has changed during the Covid-19 pandemic compared with previous years.

An important factor that determines the level of compensation is a company's revenue (Murphy, 2013). Therefore, in my research, I test the relation between the change in revenue of a company and the modification in total compensation of the CEO. Due to non-equity incentives, which have formula-based bonus plans, a decrease in revenue should be associated with a decrease in total compensation for CEOs. Furthermore, stock prices have decreased enormously due to the coronavirus and its impact (Mazur, Dang & Vega, 2021). During these times of financial distress, companies can have difficulties performing at the same level as before. This and the uncertainty of the upcoming period are reflected in decreasing stock prices. Lower stock prices result in lower stock compensation for CEOs. Overall, the intention and structure of CEOs' incentive compensation schemes positively correlate with the company's performance. In other words, the total compensation of CEOs is expected to decrease due to a reduction in revenue during the Covid-19 pandemic.

Although the total compensation of CEOs is expected to decrease during times of financial distress due to bad firm performance and uncertainty about the future, past experiences have illustrated that this is not as straightforward as it seems. During the economic crisis of 2008, The Wall Street Journal argued that many CEOs still received high salaries and bonuses despite companies experiencing significant decreases in stock prices (Dolar et al., 2014). This suggests that incentive compensation of the agency theory is not entirely effective. A reason for the ineffectiveness of incentive compensation is CEO power.

Morse, Nanda and Seru (2011) showed that powerful CEOs are able to force boards to shift the weight towards better firm-specific performance measurements. In this way, CEOs can manipulate their incentive compensation scheme. Furthermore, they find that the ability to change these performance measures increases with more CEO human capital intensity and more

firm volatility. Consequently, Abernethy, Kuang and Qin (2015) illustrate that powerful CEOs can influence the performance measures chosen for their compensation schemes.

The agency theory and its incentive compensation packages predict that the total compensation of CEOs will decrease as a consequence of revenue reduction. However, previous literature has shown that CEO power can affect the effectiveness of incentive compensation. This gives the following composite hypothesis, which I state in null form:

H1: There is no relation between the change in revenue and the change in total compensation for CEOs during the Covid-19 pandemic and the years before.

4. Research design and data

In this chapter, I describe how I operationalize my hypothesis, starting with a description of the regression model and variables that I use in my research. The section regarding the data sample elaborates on the origin and characteristics of the data I use throughout my study. Lastly, descriptive statistics on the variables used in my research are provided at the end of this chapter.

4.1 Empirical model

My research focuses on the change in total compensation of CEOs during the Covid-19 pandemic compared to the three years before. In two steps, I examine the relation between the change in revenue and the change in total compensation for CEOs due to the financial impact of the Covid-19 pandemic. First, to expose the financially affected companies by the coronavirus, I calculate the percentage change in revenue for every company. After that, I test my main hypothesis using the regression model provided in this chapter. This section starts with an explanation for the independent variable.

4.1.1 Independent variable

The independent variable in my regression model is the percentage change in revenue (Δ%Revenue). Murphy (2013) illustrated the importance of non-equity incentives compared to equity awards within compensation schemes of CEOs. He emphasizes that the effectiveness of incentive plans depends on the ability of CEOs to understand how their actions affect their payoff. CEOs are more likely to know how to affect accounting income, like revenue, than how to affect stock prices. Furthermore, due to the restrictions equity awards often have, non-equity incentives are settled in cash much sooner (Murphy, 2013). This shows that non-equity awards can provide a stronger incentive for CEOs to increase their compensation. Therefore, I use the percentage change in revenue as my independent variable to test its relation with the change in total compensation for CEOs.

4.1.1.2 Calculation of independent variable

Initially, I perform a firm-level analysis. In this way, I can determine the financial impact of the Covid-19 pandemic on each company's revenue. To test for the change in revenue,

I calculate the average revenue for the three years before the Covid-19 pandemic, 2017 to 2019. I control for a positive or negative disproportionate financial year by taking the average of at least three years. Besides, by limiting the number of years, I take into consideration that a company could have grown over the years, which will advance their revenue. In other words, I use the following formula to calculate the average revenue for every company:

$$Revenue\ Average_i = \frac{Revenue_{i,2017} + Revenue_{i,2018} + Revenue_{i,2019}}{3}$$

I compare the average revenue of every company with the revenue of 2020 to calculate the percentage change in revenue with the following formula:

$$\Delta\%Revenue_{i,2020} = \frac{Revenue_{i,2020} - Revenue\ Average_i}{Revenue\ Average_i}$$

4.1.2 Dependent variable

My research focuses on the change in total compensation of CEOs during the Covid-19 pandemic. Therefore, I use the percentage change in total compensation of CEOs as my dependent variable. The calculation of my dependent variable is comparable to that of my independent variable. First, I compute the average total compensation of CEOs during the period 2017-2019 with the following formula:

$$Average\ Total\ Compensation_i = \frac{TCOMP_{i,2017} + TCOMP_{i,2018} + TCOMP_{i,2019}}{3}$$

Consequently, I compare the average total compensation of CEOs with the total compensation received in 2020 to find the percentage change with the following formula:

$$\Delta\%TCOMP_{i,2020} = \frac{Total\ Comp_{i,2020} - Average\ Total\ Compensation_i}{Average\ Total\ Compensation_i}$$

4.1.3 Regression model

For my second step, I examine the relation between the percentage change in revenue and the percentage change in total compensation for CEOs. The main objective is to investigate whether companies with a severe decline in their revenue in 2020 due to the coronavirus have paid their CEOs equal or higher compensation levels. This is tested in the additional analysis in section 5.3. To test my main hypothesis, I use an OLS framework to test the effect of the change in revenue on CEO compensation. My regression is constructed from several papers and is illustrated by the following formula:

$$\Delta\%TCOMP_{i,2020} = \beta_0 + \beta_1 \Delta\%Revenue_{i,2020} + \beta_3 LevelOfIndependence_{i,2020} + \beta_4 BoardSize_{i,2020} + \beta_5 Chairman_{i,2020} + \beta_6 Ln(Tenure)_{i,2020} + \beta_7 ROA_{i,2020} + \beta_8 BTM_{i,2020} + \beta_9 Leverage_{i,2020} + Industry\ controls_{i,2020} + \varepsilon_{i,2020}$$

In the following two subsections, I elaborate on the calculation of my dependent variable and the control variables I have chosen for my regression model.

4.1.4 Control variables

To test my hypothesis, I use several control variables to isolate the effect of the percentage change in revenue on the percentage change in total compensation of CEOs. By choosing percentage change rather than the absolute change, I already control for the size of a firm. According to Core et al. (1999), firms with more significant agency problems pay higher compensation levels to their CEO. They find that certain characteristics of the board play a role in this.

Core et al. (1999) find several aspects of the board's structure that decrease the quality of board monitoring, which gives CEOs the ability to affect their level of compensation. In my test, I use three of these conditions; a smaller percentage of outside directors compared to inside directors, the CEO is chairman of the board, and the board size is larger. To control for the quality of monitoring by the board, I use three control variables. Core et al. (1999) showed that CEOs have more difficulty extracting more compensation when the percentage of outside directors on the board increases because they are less easily influenced than inside directors. To compute the board's independence level, I divide the number of outside directors by the total number of directors. For my second control variable, I use a control variable for the board size since Jensen (1993) and Yermack (1996) have shown that CEOs have more influence when boards are larger. In addition, the decisions they make are less effective. I compute the board size by taking the natural logarithm of the number of directors. My last control variable is a dummy variable. When the CEO also is the chairman, the board of directors is less monitored (Yermack, 1996; Core et al., 1999). The dummy variable is 1 if the CEO is the board's chairman and 0 when the CEO is not.

Furthermore, I include some control variables according to the paper of Core, Guay and Larcker (2008). The first control variable I add to my regression model is CEO tenure. Hill and Phan (1991) showed that the longer a CEO works within the company, the more a CEO can influence their compensation packages. Later research by Bebchuk and Fried (2003) found similar findings that increasing CEO tenure strengthens the ability of CEOs to extract more compensation due to the power they have over the board.

The second control variable is an accounting performance measure, the Return On Assets (ROA). ROA controls for firm performance and is calculated by dividing net income by total average assets before subtracting extraordinary items from net income (Core et al., 2008).

Morse et al. (2011) showed that powerful CEOs could force boards to shift the weight towards better firm-specific performance measurements. This ability is strengthened with more CEO human capital intensity and firm volatility. High human capital intensity is demanded in

firms with high levels of complexity and uncertainty. Complex and uncertain industries often have high growth opportunities (Bushman, Indjejikian & Smith, 1996). I include the market-to-book ratio as a proxy to control for these growth opportunities.

Lastly, Coles, Daniel and Naveen (2006) find a strong positive relation between leverage and risk-taking by CEOs. Therefore, I include leverage as a control variable to control for this relation to isolate the effect of the change in revenue on the change in the compensation of CEOs. To control for differences between industries, I have included industry controls. This is especially important during the Covid-19 pandemic since some sectors have taken a more substantial hit financially than others (Dutta, Ghosh & Roy, 2021).

4.2 Data sample

To conduct my research, I collect data from four main databases. My research focuses on U.S. firms from the S&P 1500 and companies once part of the S&P 1500 over 2017 – 2020. I focus on U.S. firms only for several reasons. Firstly, more data is available on U.S. firms compared to firms in other countries. Secondly, there are considerable differences between US and European business cultures. Using only U.S. firms will give a more consistent comparison to my research. I do not choose an explicit industry since almost every sector has suffered financially from the Covid-19 pandemic. Some sectors have been hit harder than others, but the entire business world has experienced the consequences of the coronavirus (Dutta et al., 2021).

The first database used for my research is Compustat. I retrieve data from Compustat Daily Updates – Fundamentals Annual to collect financial data of the U.S. firms in my sample. I collect data for my independent variable, the percentage change in revenue. Furthermore, I retrieve information about the assets, liabilities, stockholders' equity, and net income for my control variables. Due to data availability, I was forced to drop many firm observations. The reason for dropping firm observation was due to missing values, companies whose fiscal year does not end in December, or inactivity in one or more years during my sample period. Unfortunately, Compustat does not provide monthly financial information, making it impossible to determine the revenue of a calendar year for companies whose fiscal year does not end in December. The CRSP database is used to collect data on the market value of the companies to calculate the market-to-book ratio. Observations with missing values were dropped.

For the percentage change in total CEO compensation, my dependent variable, I retrieve data from ExecuComp. From this database, I collect data on the total compensation of CEOs and data regarding their years as a CEO to calculate CEO tenure. I have dropped observations of companies that hired a new CEO during my sample period as it was inaccessible to appoint the CEO compensation for that particular year in which the CEO was replaced. Besides, the compensation of the previous CEO can be very different from the compensation of the successive CEO. Therefore, excluding these observations make my comparison more consistent.

Data used to compute several control variables about board characteristics are collected from the ISS database. This database provides information on the size and directors of the board. Besides, it states all functions of the CEO within the company. Consequently, the ISS database enabled me to add the size of the board, the level of independence of the board, and whether

the CEO is also the chairman as control variables. After collecting all data necessary to perform my analysis, the final sample contains 609 firm-CEO-level observations. Table 1 shows the missing or incomplete observations per database.

Table 1. Sample selection

Description	Number of firm-level observations
Compustat	6.350
Missing or incomplete Compustat fundamental and CRSP data	(3.207)
Missing or incomplete Execucomp data	(2.469)
Missing or incomplete ISS data	(65)
Total observations	**609**

Notes: Table 1 presents the procedure of the sample selection. The numbers in parentheses are dropped due to missing values.

4.2.1 Descriptive statistics

In table 2, the descriptive statistics of my regression are shown. I have winsorized all numeric variables to the 1.0 and 99.0 percentiles to limit the influence of potential outliers on my results. The average percentual change in total compensation of the CEOs in my sample is 25.5%. The percentage change in revenue, on the other hand, is only 11.6%. The difference between the percentage change in total compensation and the percentage change in revenue could suggest that the relation between my dependent and independent variable is limited. This assumption is strengthened by the very low correlation of 0.089 from the correlation table in Appendix B.

Furthermore, the mean of both variables is positive, which means that overall, the revenue and total compensation of respectively companies and CEOs increased on average despite the Covid-19 pandemic. Despite winsorizing the dependent and the independent variable, they still have a relatively high standard deviation and a relatively high mean compared to the median. This means that the observations of my sample are widely spread.

The board consists of 9 directors on average. The high mean of 81.6% of the Level of independence shows that the board in most of the firms in my sample have clearly more outside directors than inside directors. This means that CEOs have more difficulty extracting higher compensation levels (Core et al., 1999). Approximately half of my sample CEOs are also the board's Chairman. The average Tenure of a CEO is 12 years. The minimum CEO Tenure in my sample is 4 years since the firms that hired a new CEO during my sample period were dropped as an observation.

The average return on assets (ROA) is 2.2%. The relatively high standard deviation of the return on assets shows that the observations of this variable are widely spread. The book-to-market ratio (BTM) is 0.54, which indicates that the market value of the firms within my sample is almost more than twice the book value. Lastly, the mean of Leverage of the sample firms is 0.62, which means that, on average, these firms have more assets than liabilities.

Table 2. Descriptive statistics variables

Variable	Mean	Std. Dev	Q1	Median	Q3
Δ%TCOMP	25.5%	109.1%	-20.6%	10.4%	46.3%
Δ%Revenue	11.6%	50.5%	-8.4%	4.8%	19.9%
LevelOfIndepence	81.6%	9.7%	75.0%	84.6%	88.9%
BoardSize	9.3	2.1	8.0	9.0	11.0
Chairman	0.46	0.50	0.0	0.0	1.00
Tenure	11.8	7.7	6.0	9.0	15.1
ROA	2.2%	8.8%	0.0%	2.5%	6.0%
BTM	0.54	0.52	0.21	0.41	0.72
Leverage	0.62	0.23	0.45	0.62	0.78
Observations	**609**				

Notes: Table 2 presents descriptive statistics for all variables used in my regression. All numerical variables are winsorized to the 1.0 and 99.0 percentiles. Detailed variable definitions are provided in Appendix A.

5. Results

This chapter presents the empirical findings and the interpretation of the main results. First, I present the results of the firm-level analysis, which provides the sample of this research. Thereafter, I examine and show the results regarding the effect of the percentage change in revenue on the percentage change in total CEO compensation. Consequently, I perform an additional test in which I divided my sample into subsamples to examine whether there are differences between these subsamples.

5.1 Firm-level analysis

Before running my regression to test the effect of the percentage change in revenue on the percentage change in total CEO compensation, I perform an analysis at firm-level. I calculate the average revenue of every firm in my sample from 2017 to 2019. I compare this average with the revenue of 2020, which gives me the percentage change in revenue for all 609 companies in my sample. In Table 3, I have elaborated on the descriptive statistics from table 2 to show a more informative division of my sample.

Table 3. Sample division

Percentage change in revenue in 2020	Number of firm-level observations	Total
≤ –50%	31	
> -50% and £ -20%	53	245
> -20% and £ 0%	161	
> 0% and £ 20%	212	
> 20% and £ 50%	96	364
> 50%	56	
Total observations	**609**	**609**

Notes: Table 3 presents an informative division of the sample following the firm-level analysis.

Table 3 illustrates the positive mean of 11.6% from the descriptive statistics in Table 2 and shows that revenue increased in more firms, despite the financial impact of the Covid-19 pandemic. In 245 firms, revenue fell in 2020 compared to 2017 to 2019. 364 companies saw their revenue increase in 2020. Furthermore, Table 3 shows that many firms experienced a change in revenue between a 20% decrease and a 20% increase.

5.2 Effect of the change in revenue on CEO compensation

To test the effect of the change in revenue on the change in total CEO compensation, I have performed an OLS regression. The dependent variable, the percentage change in total CEO compensation, is regressed against the percentage change in revenue in 2020 compared to 2017 to 2019. Control variables are included to isolate this effect. In addition, I have added dummy variables representing the various industries to capture differences among industries on the impact of the change in revenue on the change in CEO compensation. The results of the regression are shown in Table 4.

Table 4. The impact of the change in revenue on total compensation of CEOs during the Covid-19 pandemic

	Dependent variable
Independent variable	*Δ%TCOMP*
Δ%Revenue	0.173* (1.706)
LevelOfIndependence	-0.713 (-1.410)
BoardSize	-0.002 (-0.066)
Chairman	0.030 (-0.305)
Ln(Tenure)	0.005 (0.052)
ROA	0.636 (1.006)
BTM	-0.048 (-0.447)
Leverage	0.099 (0.402)
Constant	1.220** (2.200)
Industry F.E.	Yes
Observations	609
Adj. R-squared	-0.002

Notes: Table 4 presents the results from estimating the OLS regression:

$$\begin{aligned}\Delta\%TCOMP_{i,2020} = {} & \beta_0 + \beta_1\, \Delta\%Revenue_{i,2020} \\ & + \beta_3 LevelOfIndependence_{i,2020} + \beta_4\, BoardSize_{i,2020} \\ & + \beta_5\, Chairman_{i,2020} + \beta_6\, Ln(Tenure)_{i,2020} + \beta_7 ROA_{i,2020} \\ & + \beta_8\, BTM_{i,2020} + \beta_9\, Leverage_{i,2020} \\ & + Industry\ controls_{i,2020} + \varepsilon_{i,2020}\end{aligned}$$

The dependent variable is the percentage change in total compensation of CEOs in 2020. Industry controls are also included in the regression, but they are not tabulated. Detailed variable definitions are provided in Appendix A. *t*-statistics are provided in parentheses. *, **, and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Table 4 shows that the percentage change in total CEO compensation is only statistically significant related to the independent variable. The results in Table 4 provide statistical significance at the 10% level that the percentage change in revenue positively relates to the percentage change in total CEO compensation. Due to the relation between the change in revenue and the change in CEO compensation, I can reject my hypothesis, which was stated in the null form. The positive relation means that a one percentage point increase in the percentage change in revenue leads to an increase in the percentage change in total CEO compensation of 0.173 percentage points.

The absolute change in total CEO compensation in 2020 compared to 2017 to 2019 is $1,203,450. This absolute change presents the mean percentage change in CEO compensation of 25.5%. If the percentage change in revenue increases by one percentage point, the absolute change in CEO compensation increases by 0.173 percentage points. In other words, CEO compensation increases by $2,081.97[1]. Comparing this amount to the $6,056,959 average compensation between 2017 and 2019 of the CEOs from my sample suggests that my result is not economically significant.

Despite the marginally statistically significant influence of the change in revenue on the change in CEO compensation, its relation is in line with the argument stated in the paper written by Murphy (2013). He argues that revenue can be an important factor in determining CEOs' compensation due to the non-equity incentives in compensation schemes. Furthermore, he argues that CEOs often better understand how to affect revenue instead of stock prices. Besides, due to the restrictions on equity awards before they are settled in cash, non-equity awards can provide stronger incentives to CEOs. However, several factors are considered by the board of directors in setting up the proportions of the components within the compensation scheme for CEOs. Industry differences in aspects like the level of complexity and uncertainty that require more CEO human capital intensity are considered. Besides diversity in CEO characteristics and work experiences play an important role during this process.

Some compensation packages will include more non-equity incentives than others. Nevertheless, Murphy (2013) showed that on average, about a quarter of the compensation of CEOs consists of non-equity incentives. The choice by the board on the proportion of non-equity incentives can explain the marginal significant level of 10% since non-equity incentives are more included in the compensation packages of CEOs in some firms than in others. All in all, according to my regression results, the change in the compensation of CEOs and the change in revenue are positively related and therefore move in the same direction.

To test whether the effect of the change in revenue on CEO compensation is more substantial among firms with a significant decrease in revenue, I perform an additional analysis with subsamples. The following section elaborates on this additional analysis.

5.3 Additional analysis

I perform an additional analysis to test whether the effect of the change in revenue on CEO compensation is more severe among firms with a substantial reduction in revenue. For this additional analysis, I create three subsamples. With these subsamples, I run the same regression for every subsample as I used for my hypothesis testing. I explain the criteria I have set for setting up the subsamples below. Table 5 shows these criteria and observations per subsample.

To group the firms that have taken a stronger hit financially than others due to the Covid-19 pandemic, I set a benchmark for a decline in revenue of 20%. These companies form subsample 1. The U.S. government gives financial aid to companies by providing loans and guarantees. However, they do not offer compensation to companies that have experienced a reduction in revenue due to the economic consequences of the Covid-19 pandemic. Therefore, to set a well-founded benchmark for the decrease in revenue, I use the criteria of the support

[1] $1,203,450 * 0.173% = $2,081.97

packages in the Netherlands. The Dutch government compensates firms for up to 90% of their labor costs if their revenue has decreased by 20% or more. Therefore, I assume that a decrease of 20% in revenue is an adequate criterion to represent the financial consequences of the Covid-19 pandemic (International Monetary Fund, 2022).

Subsample 2 consists of firms with a revenue reduction of no more than 20%. These companies are not per se financially hit by the coronavirus. Therefore, to isolate the effect between the dependent and independent variables for companies impacted by the financial consequences of the Covid-19 pandemic, these companies have been excluded from subsample 1. The last subsample includes all companies with a revenue increase in 2020 compared to the average of 2017 to 2019. When observing the financial aspect, these companies are unlikely to have been negatively affected by the Covid-19 pandemic. Therefore, they form subsample 3 and are used for comparison.

Table 5. Subsamples

Percentage change in revenue in 2020	**Number of firm-level observations**
Subsample 1 (£ -20%)	84
Subsample 2 (> -20% and < 0%)	161
Subsample 3 (³ 0%)	364
Total observations	**609**

Notes: This table presents the criteria on which the subsamples are made. The table shows the number of observations per subsample.

Appendix C shows the descriptive statistics for every subsample. The means of the percentage change in revenue show that the subsamples differ substantially from each other. The mean of subsample 1 is -43.0%, subsample 2 has a mean for the percentual change in revenue of -8.5%, and subsample 3 has a mean of 33.2%. The most surprising difference from the descriptive statistics between the subsamples is the percentage change in total CEO compensation. Despite the significant decrease in revenue, CEOs in subsample 1 received on average 18.3% more compensation in 2020 compared to the average of 2017-2019. CEOs in subsample 2, on the other hand, only received 5.5% more compensation in 2020, although the reduction in revenue was less severe. Descriptive statistics of subsample 3 show that CEOs from firms in which revenue increased in 2020 receive much higher compensation. They earned 37.0% more, on average, compared to the three years before.

The results of the OLS regression for subsamples 1, 2, and 3 are shown in Table 6. The regression tests the effect of the percentage change in revenue in 2020 compared to 2017 to 2019 on the change in total CEO compensation. Control variables and industry controls are included again to isolate this effect.

Table 6. The impact of the change in revenue on total compensation of CEOs during the Covid-19 pandemic using subsamples

	Dependent variable		
	Subsample 1	**Subsample 2**	**Subsample 3**
	Δ%TCOMP	*Δ%TCOMP*	*Δ%TCOMP*
Independent variable	1	2	3
Δ%Revenue	-1.512	-0.578	0.105
	(-1.377)	(-0.599)	(0.779)
LevelOfIndependence	-2.119	0.252	-0.605
	(-1.382)	(0.415)	(-0.810)
BoardSize	-0.060	-0.013	0.005
	(-0.730)	(-0.452)	(0.130)
Chairman	-0.034	-0.053	0.012
	(-0.115)	(-0.466)	(0.085)
Ln(Tenure)	-0.093	-0.040	0.003
	(-0.325)	(-0.382)	(0.023)
ROA	1.502	0.391	0.670
	(0.974)	(0.420)	(0.629)
BTM	0.175	0.314	-0.195
	(0.842)	(1.776)	(-1.129)
Leverage	0.283	0.327	0.127
	(0.340)	(1.098)	(0.352)
Constant	2.404	-0.132	0.759
	(1.570)	(-0.178)	(0.833)
Industry F.E.	Yes	Yes	Yes
Observations	84	161	364
Adj. R-squared	-0.032	-0.025	-0.019

Notes: Table 6 presents the results from estimating the OLS regression:

$$\begin{aligned} \Delta\%TCOMP_{i,2020} = {} & \beta_0 + \beta_1\, \Delta\%Revenue_{i,2020} + \beta_3 LevelOfIndependence_{i,2020} \\ & + \beta_4\, BoardSize_{i,2020} + \beta_5\, Chairman_{i,2020} \\ & + \beta_6\, Ln(Tenure)_{i,2020} + \beta_7 ROA_{i,2020} + \beta_8\, BTM_{i,2020} \\ & + \beta_9\, Leverage_{i,2020} + Industry\ controls_{i,2020} + \varepsilon_{i,2020} \end{aligned}$$

The dependent variable is the percentage change in total compensation of CEOs in 2020. Industry controls are also included in the regression, but they are not tabulated. Detailed variable definitions are provided in Appendix A. *t*-statistics are provided in parentheses. *, **, and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

The results in Table 6 do not provide any statistical significance. Therefore, I cannot tell something about the magnitude of the effect of the percentage change in revenue on the percentage change in total CEO compensation for the three different subsamples during the Covid-19 pandemic and the three years before. A plausible reason for the absence of statistical significance is the small sample size of my subsamples.

Despite the absence of statistical significance in the regression results of Table 6 for my subsamples, I can test whether the coefficient difference between my subsamples is statistically significant since the coefficient is negative in columns (1) and (2) but positive in column (3). Therefore, I run three ANOVA tests to compare the coefficient of every subsample with the coefficient of the other two subsamples. The results of the ANOVA tests are demonstrated in Table 7.

Table 7. ANOVA test results

ANOVA test	F-statistic	F-value	P-value
Subsample 1 and 2	F(1,243)	1.209	0.273
Subsample 1 and 3	F(1,446)	1.505	0.220
Subsample 2 and 3	F(1,523)	8.83	0.003***

Notes: Table 7 presents the results of the ANOVA tests for the coefficient difference between the subsamples. *, **, and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

After performing the ANOVA tests, I find that there is only statistical significance for the coefficient difference between subsamples 2 and 3. This means that for the firms in subsample 2, a one percentage point increase in the percentual change in revenue leads to a decrease in total CEO compensation. Whereas for CEOs in subsample 3, their compensation increases when the percentage change in revenue increases by one percentage point. However, I cannot tell what magnitude CEO compensation increases or decreases due to a lack of statistical significance from the OLS regression. The coefficient difference between subsamples 1 and 2 and subsamples 1 and 3 are statistically insignificant.

6. Conclusion

CEO compensation continues to be a topic of discussion for shareholders, boards of directors, and executives. To tackle the agency problem of the misalignment in preferences between shareholders (principal) and the CEO (agent), boards of directors use incentive compensation packages. However, during the financial crisis of 2008, CEOs received bonuses and high salaries, which demonstrated that there is still a gap between practice and theory. Therefore, in this study, I test the effectiveness of incentive compensation during the Covid-19 pandemic using a sample of 609 U.S. firms. Consequently, I can answer the research question addressed in this research whether CEOs in publicly listed companies have enough control to increase their compensation level despite the financial consequences of the Covid-19 pandemic. I find that the percentage change in revenue positively relates to the percentage change in total CEO compensation. A one percentage point increase in the percentage change in revenue increases the percentage change in total CEO compensation by 0.173 percentage points. Using the absolute change of CEO compensation, CEOs receive roughly $2,100 more payment. On an average yearly CEO compensation of $6,056,959, this finding is not economically significant. Nevertheless, I can conclude that CEOs are at least to some extent limited to increasing their compensation level despite the financial impact of the coronavirus.

Additionally, I perform an analysis to test whether this relation is more severe and significant among firms with a substantial decrease in revenue. For this additional test, I create three subsamples according to the percentage change in revenue in 2020 compared to the three years before. I do not find any statistically significant results by running these individual tests. Nevertheless, I test whether the coefficient difference between the subsamples is statistically

significant by running three ANOVA tests. Only the coefficient difference between subsamples 2 and 3 is statistically significant. This means that for the firms in subsample 2, a one percentage point increase in the percentual change in revenue leads to a decrease in total CEO compensation. CEOs in subsample 3, on the contrary, receive higher compensation when the percentage change in revenue increases by one percentage point. Moreover, descriptive statistics of the subsamples show that, on average, CEOs of firms whose revenue decreased by 20% or more received 18.3% more compensation in 2020 than on average between 2017 and 2019. CEOs in companies with a revenue reduction of no more than 20%, on the other hand, only received 5.5% more compensation on average.

This study contributes to the existing literature in multiple ways. First, I elaborate on previous research that focused on the agency theory and incentive compensation which should solve the agency problem (Jensen & Meckling, 1976; Eisenhardt, 1989; Bebchuk & Fried, 2003). I provide evidence of the effectiveness of this incentive compensation. Furthermore, I have examined the direct relation between the change in revenue and the change in total CEO compensation. In contrast, previous research often focused on a different relation with CEO compensation. For instance, Banker et al. (2013) investigated the relation between CEO compensation and past performance. Besides, my results relate to the Covid-19 pandemic, a rare situation since the financial troubles are caused by a worldwide disease. Moreover, my findings of a positive relation between revenue and CEO compensation are in line with the argument of Murphy (2013) regarding the importance of revenue as a factor in determining CEO compensation.

The main limitation of this research is the small sample size which decreases the statistical power of the test. Data availability and the requirement that the CEO should not be replaced during my sample period, forced me to drop many observations. I expect that this is the main reason why I did not find any statistically significant results from running the OLS regressions on the three subsamples. Since the difference between the mean of the percentage change in CEO compensation of the subsamples is surprising, it would be interesting for future research to find a way to further examine this difference. Furthermore, future research could use my study as a base to test the relation between CEO compensation and different performance measures or components of the compensation scheme.

A second limitation of my research is the very low adjusted R-squared of my regression model, which means that the control variables used in my research do not add much value to the regression. Together with the small sample size, I expect this to be an explanation for the very limited significant results. Therefore, future research could improve the regression model used in this research to find more significantly statistical results.

The findings of my research are interesting for different stakeholders. Firstly, it shows shareholders whether the board of directors succeeds in aligning their preferences with the interests of the CEOs. It demonstrates the behavior of CEOs and whether they are able to extract more compensation in times of financial distress. Therefore, the compensation committee of the board of directors can use this information to decide whether they should revise the compensation scheme to further limit the rent extraction by CEOs.

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Appendices

Appendix A. Variable descriptions

Variable	Definition	Data Source
Dependent		
Δ%TCOMP	$\frac{Total\ Comp_{i,2020} - Average\ Total\ Compensation_i}{Average\ Total\ Compensation_i}$	Execucomp
Independent		
Δ%Revenue	$\frac{Revenue_{i,2020} - Revenue\ Average_i}{Revenue\ Average_i}$	Compustat
Control		
LevelOfIndependence	The number of independent directors over total directors of the board.	ISS
BoardSize	The size of the board of directors	ISS
Chairman	When the CEO is also the Chairman.	ISS
Ln(Tenure)	The natural logarithm of CEO tenure.	Execucomp
ROA	$\frac{Net\ income_{i,2020}}{End\ year\ total\ assets_{i,2020}}$	Compustat
BTM	$\frac{Book\ value\ of\ total\ assets - Total\ liabilities_{i,2020}}{Market\ value\ of\ equity_{i,2020}}$	Compustat & CRSP
Leverage	$\frac{End\ year\ total\ liabilities_{i,2020}}{End\ year\ total\ assets_{i,2020}}$	Compustat

Notes: Appendix A presents the variable definitions of the variables used in this research

Appendix B. Correlation matrix

(1)	*Δ%TCOMP*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(2)	*Δ%Revenue*	0.089**							
(3)	*LevelOfIn-dependence*	-0.069*	-0.029						
(4)	*BoardSize*	-0.028	-0.085**	0.199***					
(5)	*Chairman*	-0.020	0.005	0.128***	0.005				
(6)	*Ln(Tenure)*	0.006	-0.000	-0.201***	-0.136***	0.302***			
(7)	*ROA*	0.048	0.314***	0.001	-0.025	0.057	0.030		
(8)	*BTM*	-0.032	-0.120***	-0.001	0.049	-0.031	0.012	-0.368***	
(9)	*Leverage*	-0.024	-0.147***	0.146***	0.391***	0.077*	-0.098**	-0.200***	0.029

Notes: Appendix B presents Pearson correlations between the key variables. Detailed variable definitions are provided in Appendix A. *, **, and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively. However, there are no statistically significant correlations between the variables.

Appendix C. Descriptive statistics subsamples

Table 8. Descriptive statistics variables Subsample 1

Variable	**Mean**	**Std. Dev**	**Q1**	**Median**	**Q3**
Δ%TCOMP	18.3%	118.5%	-27.5%	1.2%	46.3%
Δ%Revenue	-43.0%	16.6%	-60.5%	-37.9%	-29.2%
LevelOfIndepence	80.3%	10.4%	75.0%	83.3%	88.9%
BoardSize	9.1	1.9	8.0	9.0	10.0
Chairman	0.42	0.50	0.0	0.0	1.00
Tenure	10.2	6.8	6.0	8.0	12.3
ROA	-8.7%	10.6%	0.0%	-7.1%	-1.6%
BTM	0.81	0.78	0.21	0.54	1.06
Leverage	0.66	0.21	0.50	0.66	0.78
Observations	**84**				

Notes: Table 8 presents the descriptive statistics of subsample 1

Table 9. Descriptive statistics variables Subsample 2

Variable	Mean	Std. Dev	Q1	Median	Q3
Δ%TCOMP	5.5%	63.0%	-31.5%	6.1%	35.4%
Δ%Revenue	-8.5%	5.7%	-12.9%	-7.9%	-3.2%
LevelOfIndepence	82.5%	9.6%	77.8%	85.7%	90.0%
BoardSize	9.3	2.2	8.0	9.0	10.0
Chairman	0.50	0.50	0.0	1.0	1.00
Tenure	12.2	7.6	6.6	9.4	15.7
ROA	2.2%	6.2%	0.0%	2.5%	4.8%
BTM	0.52	0.37	0.27	0.46	0.71
Leverage	0.62	0.21	0.51	0.63	0.78
Observations	**161**				

Notes: Table 9 presents the descriptive statistics of subsample 2

Table 10. Descriptive statistics variables Subsample 3

Variable	Mean	Std. Dev	Q1	Median	Q3
Δ%TCOMP	37.0%	127.4%	-9.0%	17.1%	54.2%
Δ%Revenue	33.2%	53.5%	6.9%	15.9%	34.8%
LevelOfIndepence	81.4%	9.6%	75.0%	84.6%	88.9%
BoardSize	9.4	2.2	8.0	9.0	11.0
Chairman	0.45	0.50	0.0	0.0	1.00
Tenure	11.9	7.6	6.0	9.2	15.6
ROA	4.7%	7.3%	1.0%	3.7%	8.0%
BTM	0.49	0.48	0.16	0.36	0.63
Leverage	0.60	0.23	0.43	0.60	0.79
Observations	**364**				

Notes: Table 10 presents the descriptive statistics of subsample 3